

DOCUMENT 00010

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END OF SECTION

DOCUMENT 00001

TECHNICAL MANUAL CERTIFICATION SHEET  
**PSU Student Health & Counseling**

University Center Building  
1880 SW 6<sup>th</sup> Avenue  
Portland, Oregon 97201

**CLIENT:**

PSU Student Health & Counseling center  
University Center Building  
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Contact: PSU Facilities Project Manager

**PROJECT MANAGER:**

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EXPIRES: 12-31-2015



EXPIRATION DATE: JUNE 30, 2015

## SECTION 02225

### MINOR DEMOLITION FOR REMODELING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Demolishing designated construction.
  - 2. Cutting and alterations for completion of the Work.
  - 3. Protecting items designated to remain.
  - 4. Removing designated items for reuse and Owner's retention.
  - 5. Removing demolished materials.
  
- B. Related Sections:
  - 1. Section 01 11 00 – Summary of Work.
  - 2. Section 01 50 00 - Temporary Facilities and Controls.
  - 3. Section 01 73 29 – Cutting and Patching.
  - 4. Division 1 – Hazardous Materials

##### 1.2 REFERENCES

- A. Meet requirements of applicable provisions and recommendations of following:
  - 1. Occupational Safety and Health Administration (OSHA).
  - 2. Associated General Contractors of America (AGC): Manual of Accident Prevention in Construction.
  - 3. State of Oregon Basic Safety Code, Part IV Demolition.
  - 4. Oregon Department of Environmental Quality (DEQ).

##### 1.3 SUBMITTALS

- A. Permits, Notices, Certificates:
  - 1. Permits and notices authorizing building demolition.
  - 2. Permit for transport and disposal of debris.
  
- B. Prior to start of Work, submit demolition procedures and operational sequence for Owner's review, including procedures and sequences for any discovered structural elements which differ from those shown in drawings.

##### 1.4 QUALITY ASSURANCE

- A. Conform to applicable code requirements for demolition work, dust control, products requiring electrical disconnection and re-connection.
  
- B. Obtain required permits from authorities having jurisdiction.

## 1.5 SCHEDULING

- A. Cooperate with Owner in scheduling noisy operations and waste removal that may impact Owners operation in adjoining spaces.
- B. Coordinate utility and building service interruptions with Owner.
  - 1. Schedule tie-ins to existing systems to minimize disruption.
  - 2. Coordinate Work to ensure fire alarms, smoke detectors, and other life safety systems remain in full operation in occupied areas

## 1.6 PROJECT CONDITIONS

- A. Demolition procedures and temporary bracing details are responsibility of Contractor.
- B. Cost of repair of damage to existing and remaining construction occurring through negligence or carelessness of Contractor shall be borne by Contractor.
- C. Conduct demolition to minimize interference with adjacent occupied building areas.
- D. Protection:
  - 1. Erect, and maintain temporary barriers and security devices including: fences, guardrails, enclosures, warning signs, lights, and similar measures, for protection of the public and existing improvements indicated to remain.
  - 2. Erect and maintain weatherproof closures for exterior openings.
- E. Maintaining Traffic:
  - 1. Ensure minimum interference with roads, streets, driveways, sidewalks and adjacent facilities.
  - 2. Do not close or obstruct streets, sidewalks, alleys or passageways without authorization from agencies with jurisdiction.
  - 3. If required by governing authorities, provide alternate routes around closed or obstructed traffic ways.
- F. Coordinate with Owner's Representative regarding:
  - 1. Identification and preparation of areas required for access to portion of building necessary for execution of Work.
  - 2. Location of drop box or material stockpiles.
  - 3. Location of below-slab utility services in area to be excavated.
  - 4. Identification of items scheduled for Owner's salvage, and Owner's designated on-site storage area.
- G. Coordinate with project Structural Engineer for cutting of structural members.
- H. Environmental:
  - 1. Provide dust control as necessary to prevent dust from entering occupied portions of building.
  - 2. Coordinate with Mechanical Engineer before closing off air supply and return grilles to isolate active HVAC system from work area.

## 1.7 HAZARDOUS MATERIALS PROCEDURES

- A. Owner will conduct separate testing and removal for asbestos and lead-based paint. See Division 1 for directions from Owner.
- B. Asbestos Containing Materials (ACM) and other hazardous materials, including but limited to lead based paint, PCB Ballast, underground storage tanks:
  - 1. Immediately upon discovery of any suspected ACM or other hazardous materials, stop work and do not carry on any activity in that area which could disturb the suspected ACM or other hazardous materials.
  - 2. Whenever ACM or suspected ACM or other hazardous materials are encountered in area of work, notify Owner's Representative immediately. In such event, Owner's Agent specializing in asbestos or other hazardous material abatement will evaluate circumstances and instruct Contractor on how and when to proceed.
  - 3. Instruct workers at site to be alert for materials that may contain asbestos fibers or other hazardous materials, and to not disturb or attempt to remove such materials. Take precautions to prevent spread of asbestos fibers or other hazardous materials throughout project.
  - 4. Asbestos fibers or other hazardous materials carried around work area or into existing building due to Contractor's carelessness or failure to follow above procedural precautions shall be removed, at Contractor's expense, in accordance with EPA Regulations and current Asbestos Hazard Emergency Response Act.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Materials necessary to completion of demolition work: As selected by Contractor and subject to Architect's review.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that portions of buildings scheduled for demolition are unoccupied.
- B. Verify that utility lines in demolition areas are shut off.

### 3.2 PREPARATION

- A. Existing Conditions:
  - 1. Before start of demolition or alteration work, determine location of existing utilities to remain, and protect such utilities during demolition and construction.
  - 2. Coordinate with Mechanical and Electrical for new and relocation work.
- B. Prevent movement of structure; provide temporary bracing and shoring required to ensure safety of existing structure.

- C. Provide appropriate temporary signage including signage for exit or building egress.
- D. Maintain protected egress from and access to adjacent existing buildings at all times.
- E. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.

### 3.3 DEMOLITION

- A. Demolish and remove designated portions of existing building sections and specific items indicated on Drawings.
- B. Conduct demolition to minimize interference with adjacent and occupied building areas.
- C. Demolish in orderly and careful manner. Protect existing improvements and support structural members.
- D. Use temporary enclosures and other measures to limit dust to lowest practicable level.
- E. Disconnect and remove utilities within demolition areas.
- F. Cap and identify abandoned utilities at termination points when utility is not completely removed. Annotate Record Drawings indicating location and type of service for capped utilities remaining after demolition.
- G. Cease operations immediately when structure appears to be in danger and notify Architect/Engineer.

### 3.4 DISPOSAL

- A. Remove demolished materials from site except where specifically noted otherwise.
- B. Remove materials as Work progresses.
- C. Transport demolition debris to acceptable, licensed landfill or recycling station.
- D. Remove temporary Work.

### 3.5 SALVAGE

- A. Carefully remove items scheduled for Owner's salvage, and place in designated on-site storage area.
- B. Protect items that are listed for salvage or for reinstallation.
- C. All other salvage, except that listed below, shall become property of Contractor.



### 3.6 SALVAGE SCHEDULE

- A. The following items are to be salvaged for reuse in this project:
  - 1. Designated doors, windows, and hardware.
  - 2. Fire rated acoustic ceiling panels.

### 3.7 CLEAN-UP

- A. Leave Site in clean condition ready for new construction.

END OF SECTION

SECTION 02740  
TRAFFIC MARKINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Traffic lines and markings.
  - 2. Paint.
  - 3. Exterior wall base flashing coating.

1.2 REFERENCE STANDARDS

- A. Comply with applicable provisions and requirements of current edition of following.
  - 1. City of Portland Standards and Specifications.

1.3 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Requirements for submittals.
- B. Product Data:
  - 1. Submit product information for materials and installation requirements.

1.4 QUALITY ASSURANCE

- A. Installer: Applicator specializing in performing work of this section with minimum 5 years experience.
- B. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum 3 years experience.

1.5 AMBIENT CONDITIONS

- A. Do not apply when surface exceeds manufacturer's requirements or surface is wet or frozen.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Pavement Marking: Synthetic rubber traffic paint. Color: Yellow.
- B. Wall Base Flashing Coating: Synthetic rubber traffic paint: Color Yellow.
- C. Performance/Design Criterial:

1. Paint Adhesion: Adhere to pavement surface forming smooth continuous film one minute after application. Field test adhesion to metal flashing.
2. Paint Drying: Tack free by touch so as not to require coning or other traffic control devices to prevent transfer by vehicle tires within two minutes after application.

D. Materials:

1. Ready Mixed fast dry waterborne traffic paint, lead-free, nontoxic.
2. NASSHTO Test Deck: Durability rating of 6 or more after in place for 9 months.
3. Pigment, percent by weight: 60 plus or minus 2.
4. Vehicle, percent by weight: 40 plus or minus 2.
5. Non-Volatile, percent by weight of paint: 76.0.
6. Weight per gallon, 13 pounds minimum.
7. Viscosity: 80-95 Kreb Units at 77 degrees F (25 degrees C).
8. Grind (Hegeman Gauge), minimum Field Tested no tracking time under ambient conditions: 20-90 seconds.
9. Dry Through Time, 15 mils (0.4 mm) wet at 90 percent relative humidity, 72 degrees F (22 degrees C), ASTM D1640: 125 minutes maximum.
10. VOC (Volatile Organic Content): 120 g/L maximum.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify existing subbase is dry, clean, and suitable. Test adhesion on metal flashing.

### 3.2 PAVEMENT MARKING

- A. Coordinate with Owners Representative for marking requirements.
- B. Accurately lay outlines and markings as directed. Use templates where possible. Machine paint lines.
- C. Apply pavement marking/pedestrian crossings in accordance with Contract Documents and manufacturer's recommendations. Minimum wet film thickness: 15 mils.
- D. Coat wall base flashing as indicated on Drawings.
- E. Remove spilled or spattered paint from surfaces not intended to be marked.

### 3.3 PROTECTION

- A. Section 01700 - Execution Requirements: Requirements for protecting finished Work.
- B. Protect painted areas from traffic until paint is dry

END OF SECTION

SECTION 05500  
METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes shop fabricated metal items.
  - 1. Miscellaneous steel sections for structural reinforcement of building.
  - 2. Miscellaneous metal items necessary for completion of Work and not found elsewhere.
  - 3. Bollards.
  - 4. Non-shrink grout.
- B. Related Sections:
  - 1. Section 02225 - Minor Demolition.
  - 2. Section 09900 – Paints and Coatings.

1.2 REFERENCES

- A. ASTM International:
  - 1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
  - 2. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
  - 3. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
  - 4. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
- B. American Welding Society:
  - 1. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.
  - 2. AWS D1.1 - Structural Welding Code - Steel.
- C. SSPC: The Society for Protective Coatings:
  - 1. SSPC - Steel Structures Painting Manual.
  - 2. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).

1.3 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal requirements.
- B. Shop Drawings:
  - 1. Submit prior to fabrication.
  - 2. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.

## 1.4 QUALITY ASSURANCE

- A. Qualify welding processes and operators in accordance with AWS Standard Qualification Procedure.
- B. Finish joints in accordance with NOMMA Guideline 1.
- C. Comply with governing codes and regulations. Use experienced installer. Deliver, handle and store materials in accordance with manufacturers recommendations.

## 1.5 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Structural W-Shapes: ASTM A992/A992M.
- B. Hollow Structural Section: ASTM A500, Grade B (Fy=46 ksi)
- C. Structural shapes plates and bars: ASTM A36/A36M.
- D. Steel Pipes: ASTM A53, Schedule 40.
- E. Bolts: ASTM A307.
- F. Nuts: ASTM A563 heavy hex type.
- G. Welding Materials: AWS D1.1; type required for materials being welded.
- H. Shop Primer: SSPC Paint 15, Type 1, red oxide.
- I. Touch-Up Primer: Match shop primer.

### 2.2 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate to profiles indicated; fully welded, uniform, square and true, continuously weld exposed joints and grind smooth.
- C. Provide hot dip galvanized fasteners at exterior applications and where metal fabrication items are built into exterior walls.
- D. All welds shall be made by certified welders, to AWS standards, with E60XX or E70XX electrodes.

- E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify field conditions are acceptable and are ready to receive Work.

### 3.2 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply steel items required to be cast into concrete or embedded in masonry with setting templates to appropriate sections.

### 3.3 INSTALLATION

- A. Install all work in accordance with Contract Documents and applicable provisions of referenced Standards.
- B. Verify field measurement prior to preparation of shop drawings and fabrications.
- C. Install items plumb and level, accurately fitted, free from distortion or defects.
- D. Make provisions for erection stresses. Install temporary bracing to maintain alignment, until permanent bracing and attachments are installed.
- E. Perform field welding in accordance with AWS D1.1.
- F. Obtain approval of Architect/Engineer prior to site cutting or making adjustments not scheduled.
- G. After erection, touch up welds, abrasions, and damaged finishes with prime paint or galvanizing repair paint to match shop finishes.

### 3.4 FIELD QUALITY CONTROL

- A. Welding: Inspect welds in accordance with AWS D1.1.

END OF SECTION

SECTION 06200  
FINISH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Fine Carpentry: Reception window and Mindspa seat.
  - 2. Wood wall dividers.
  - 3. Custom wood slat wall.
  - 4. Plywood wainscoat at exterior.
  - 5. Adustable wall mounted computer kiosk.
  
- B. Related Requirements:
  - 1. Section 09900 - Paints and Coatings: Painting and finishing of non-prefinished carpentry items.
  - 2. Appendix A - Interior Finish Specifications.
  - 3. Section 09260 – Gypsum Board Assemblies: Blocking.

1.2 REFERENCE STANDARDS

- A. Architectural Woodwork Institute:
  - 1. AWI AWS - Architectural Woodwork Standards.
  - 2. WCLIB "Standard Grading and Dressing Rules No. 16".
  - 3. FSC Guidelines - Forest Stewardship Council Guidelines.
  - 4. Green Seal: GS-11 - Product Specific Environmental Requirements.
  - 5. Green Seal: GS-36 - Aerosol Adhesives.
  - 6. Hardwood Plywood and Veneer Association : HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood.
  - 7. South Coast Air Quality Management District: SCAQMD Rule 1168 - Adhesive and Sealant Applications.

1.3 SUBMITTALS

- A. Samples:
  - 1. Submit two samples of wood trim 10 inch long.

1.4 MOCK-UP

- A. Section 01400 - Quality Requirements: Requirements for mockup.
  
- B. Construct mockup panel, 3 feet wide, full height, illustrating connections, technique, and pattern for the custom wood slat wall.
  
- C. Locate where directed by Architect.

- D. Incorporate accepted mockup as part of Work.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Interior Finish Carpentry – Reception Window and Mindspa seat.
  - 1. Wood: Maple to match plywood veneer
  - 2. Plywood Veneer: Maple plain sliced.
  - 3. Sizes: See drawings.
  - 4. Finish: Prefinished.
  
- B. Interior Wall Dividers:
  - 1. Manufacturer: Soelberg Industries: [soelbergi.com/texture3d/dividers/](http://soelbergi.com/texture3d/dividers/). Contact: Charlie Bowen: 360 921-3662.
  - 2. Pattern: Ramo (tree-like cutout).
  - 3. Finish: Manufacturer’s standard wood-look thermoplastic finish.
  - 4. Color: Blonde Maple, 12 mil, SM621.
  - 5. Size: Custom, per drawings. Approx: 8’ hi x 3’-3” wide.
  - 6. Accessories
    - a. Stand Offs: Point support stand offs at wall installation.
    - b. Floor Clips: At divider application.
  - 7. DV-1:
    - a. Finish Construction: Finish all sides.
    - b. Finish Application: Book match.
  - 8. DV-2:
    - a. Finish Construction: Finish 3 sides (all sides but back).
  
- C. Custom Slat Wall:
  - 1. Hardwood Lumber Species: Red Cedar.
  - 2. Cut: Clear Vertical Grain. S4S
  - 3. Sizes: per drawings
  - 4. Furnish material extracted, processed, and manufactured within 500 miles of Project site.
  - 5. Finish: Section 0900 Painting: Transparent finish, interior wood.
  - 6. Accessories:
    - a. Resilient Channels: Paint black.
    - b. Steel Strapping: Paint black.
    - c. Concealed Fasteners.
  
- D. Exterior Plywood Wainscoat:
  - 1. Plywood: ½” CDX.
  - 2. Size: 4 foot x 8 foot x ½” sheets.
  - 3. Finish: Section 0900 Painting – painted wood, exterior.
  - 4. Accessories
    - a. Screws: Stainless steel.
    - b. Flashing: Prefinished 24 gauge sheet metal. Color to be selected.
    - c. Flashing Coating: Section 02740 Traffic Markings.



- E. Adjustable Computer Kiosk:
  - 1. Manufacturer: Herman Miller
  - 2. Series: FX40 series, Y94004.
  - 3. Material and Finish: Anti-Microbial powder coat paint finish.
  - 4. Color: To be selected from manufacturer's standard colors.
  - 5. Track: 40" x 7.5". Wall mounted.
  - 6. Self Storing Keyboard Surface: 19" x 11". Folds against track.

## 2.2 FABRICATION

- A. Fabricate all work in accordance with Contract Documents and applicable standards. No fabrication defects permitted (including dents, overcuts, untrue cuts, open joints, splits, and other defects caused by accident or fabrication process).
- B. Where shop fabricated work must be fitted at job site, make allowance for cutting and fitting
- C. Fabricate divider panels to be removable.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Section 01 70 00 - Execution Requirements: Requirements for installation preparation.
- B. Examine existing conditions prior to installation of millwork items. Require necessary corrections be made prior to commencing installation.
- C. Prime paint surfaces of wood items and assemblies to be in contact with cementitious materials.

### 3.2 DEMOLITION

- A. Modify and extend existing finish carpentry installations using materials and methods as specified.

### 3.3 INSTALLATION

- A. Install work in accordance with AWI AWS Section 6..
- B. Set and secure materials and components in place, plumb and level.
- C. Carefully scribe work abutting other components.
- D. Install components with finishing nails, flat head wood screws with wood plugs, and glued or glued and doweled joints as required by work. All exposed fasteners shall be countersunk, filled and finished.
- E. Install finish carpentry items plumb, level and without distortion, and in accordance with Contract Documents, manufacturer's recommendations, and reviewed Shop Drawings.

1. Set items in place and securely anchor to prevent dislodging.
  2. Locate all joints over solid backing.
- F. Install all finish carpentry and related items not installed by others and necessary to complete Work.

END OF SECTION

## SECTION 06410

### CASEWORK

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Counter tops.
    - a. Plastic laminate finished countertops.
    - b. Transparent finished plywood veneer countertops/window surrounds.
    - c. Transparent finished hardwood edge bands at countertops/window surrounds.
    - d. Solid surface countetops.
  - 2. Light Seat.
    - a. Transparent finished plywood veneer surrounds with hardwood edge band.
    - b. Translucent acrylic panel.
    - c. Accessory hardware.
  - 3. Cabinets.
    - a. Plastic laminate finished cabinets.
    - b. Cabinet hardware.
- B. Related Requirements:
  - 1. Section 01300 - Submittals.
  - 2. Division 1 – Alternates.
  - 3. Appendix A – Interior Finish Schedule.

##### 1.2 REFERENCE STANDARDS

- A. American National Standards Institute:
  - 1. ANSI A135.4 - Basic Hardboard.
  - 2. ANSI A156.9 - Cabinet Hardware.
  - 3. ANSI A208.1 - Mat-Formed Wood Particleboard.
- B. APA-The Engineered Wood Association:
  - 1. APA/EWA PS 1 - Voluntary Product Standard for Construction and Industrial Plywood.
- C. Architectural Woodwork Institute:
  - 1. Architectural Woodwork Standards. (AWI AWS).
  - 2. Architectural Woodwork Quality Standards Illustrated.
- D. Forest Stewardship Council: FSC Guidelines.
- E. Green Guard Environmental Institute (GEI): Indoor air quality standards.
- F. Green Seal: GS-36 - Aerosol Adhesives.
- G. Hardwood Plywood and Veneer Association:

1. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood.

H. National Electrical Manufacturers Association:

1. NEMA LD 3 - High Pressure Decorative Laminates.

### 1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal procedures.

B. Product Data:

1. Submit for casework hardware and operating parts.
2. Submit data on high pressure decorative laminates.

C. Shop Drawings:

1. Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes.

D. Samples: Submit for material, finish and color, for all fabricated items and for plastic laminates.

E. Particle board formaldehyde emission data or Certification each composite wood product contains no added urea-formaldehyde resins.

### 1.4 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Product storage and handling requirements.

B. Protect units from moisture damage.

C. Maintain storage space relative humidity within ranges indicated in AWI AWS Section 2.

### 1.5 AMBIENT CONDITIONS

A. Section 01500 - Temporary Facilities and Controls: Ambient conditions control facilities for product storage and installation.

B. During and after installation of Work of this section, maintain same temperature and humidity conditions in building spaces as will occur after occupancy.

1. Maintain relative humidity within ranges indicated in AWI AWS Section 2.

### 1.6 QUALITY ASSURANCE

A. Perform work in accordance with AWI AWS, Section 10 Custom Grade.

B. Surface Burning Characteristics: Maximum 200/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

## 1.7 QUALIFICATIONS

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

## 1.8 EXISTING CONDITIONS

- A. Verify field measurements prior to fabrication. Indicate field measurements on shop drawings.

## PART 2 PRODUCTS

### 2.1 CUSTOM CASEWORK

- A. Plastic Laminate Finished Custom Casework: Frameless, flush overlay style, AWI AWS Section 10 Custom Grade.
  - 1. Exterior and Interior Exposed Surfaces: High pressure decorative laminate over medium density fiberboard.
- B. Casework Construction Details:
  - 1. Toe Base Finish: Rubber as specified in Section 09650.
  - 2. Grain Direction: Vertical.
- C. Plastic Laminate Surface Countertops:
  - 1. Exterior and Interior Exposed Surfaces: High pressure decorative laminate over medium density fiberboard.
  - 2. Core at Sink Tops: Exterior or Exterior glue type panels.
  - 3. Splash Top Profile: Square.
  - 4. Deck at Splash Joint: Vertical butt type.
- D. Transparent Finished Plywood Veneer Surface Countertops, Windows Surrounds, and Light Seats:
  - 1. Exterior and Interior Exposed Surfaces: Hardwood lumber and Plywood Veneer:
  - 2. Semi-Exposed Surfaces: Plywood.
- E. Sustainability Requirements:
  - 1. Adhesives: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168.
  - 2. Composite Wood Products: Contain no added urea-formaldehyde resins.

### 2.2 MATERIALS

- A. Lumber Moisture Content Range: 5 percent.
- B. Hardwood Lumber: Maple species.
  - 1. Cut: Plain sawn.
  - 2. Finish: Section 09900

- C. High Pressure Laminate (HPDL): NEMA LD 3; Color, and pattern as selected in Appendix A. Matte surface texture.
  - 1. Horizontal Surfaces: HGS; 0.048 inches (1.2 mm) thick.
  - 2. Vertical Surfaces: VGS; 0.028 inches (0.7 mm) thick.
  - 3. Cabinet Liner: CLS; 0.020 inches (0.5 mm) thick.
  - 4. Backing Sheet: BKL; 0.020 inches (0.5 mm) thick.
  
- D. Decorative Overlay Plywood: APA/EWA PS 1 and HPVA HP-1; particleboard/medium density fiberboard core; melamine or polyester decorative faces; PVC or polyester edge banding; color and pattern as selected.
  
- E. Particleboard:
  - 1. ANSI A208.1 Grade M2 or better; composed of wood chips or sawdust, medium density.
  - 2. ANSI A208.1, Grade M-2, exterior glue when used in countertops with sinks.
  - 3. Glue resin: Phenol formaldehyde resin. (Do not use urea formaldehyde resin.)
  - 4. Maximum formaldehyde emission: 0.05 parts per million.
  - 5. Approved product: “Encore” by Sierra Pine Company.
  
- F. Medium Density Fiberboard:
  - 1. ANSI A208.2, composed of wood fibers, medium density.
  - 2. Formaldehyde-free adhesive system.
  - 3. Approved product: “Meditate” by Sierra Pine Company.
  
- G. Hardwood Plywood: HPVA HP-1, lumber core, maple face species
  - 1. Veneer slicing: Plain sawn.
  - 2. Finish: Section 09900
  
- H. Synthetic Surfacing SF-1: Synthetic marble of **polyester** resins, with integral color and pattern. Stain resistant. See Appendix A, Interior Finish Specifications.
  - 1. Manufacturer: Corian
  - 2. Color: Glacier White.
  - 3. Sizes: See Drawings.
  
- I. Provide all miscellaneous finish hardware, fasteners and securing and finish materials required for complete and proper completion of work.

## 2.3 FABRICATION

- A. Fabricate casework to AWI AWS Section 10 Custom Grade.
- B. Fabricate counter tops to AWI AWS Section 11 Custom Grade.
- C. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.
- D. Fit exposed plywood edges with matching veneer edging. Use one piece for full length only.
- E. Cap exposed high pressure decorative laminate finish edges with material of same finish and pattern unless indicated otherwise.

- F. When necessary to cut and fit on site, fabricate materials with ample allowance for cutting. Furnish trim for scribing and site cutting.
- G. Apply high pressure decorative laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate plastic laminate joints minimum 18 inches from sink cut-outs.

## 2.4 FINISHES

- A. Finish in accordance with Section 09900.

## 2.5 ACCESSORIES

- A. Adhesive for High Pressure Decorative Laminates: Type recommended by laminate manufacturer to suit application.
- B. Acrylic Panel: Evonik Cyro LLC ([www.acrylite.net](http://www.acrylite.net)), Acrylite Satinice, or approved substitution.
  - 1. Texture: Velvet texture or satin finish to be determined. Texture on one side only.
  - 2. Size: per drawings.
  - 3. Color: white.
- C. Fasteners and Anchors:
  - 1. Fasteners: ASTM A153/A153M, hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
  - 2. Nails and Staples: ASTM F1667.
- D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; <> finish in concealed locations and <> finish in exposed locations.
- E. Concealed Joint Fasteners: Threaded steel.
- F. Shelf Rests: In-line bored holes **1-3/8 inches** on center, to within **6 inches** of top and bottom of opening with four support pins for each shelf.
- G. Drawer and Door Pulls: "U" shaped pull, steel with chrome satin finish, 4 inch centers.
- H. Catches: Magnetic.
- I. Drawer Slides: Galvanized steel construction, ball bearings separating tracks, full extension type.
- J. Hinges: Butt Pivot Pin Knuckle disappearing type, steel with chrome satin finish. Self closing, fully concealed, opening angle of 95 degrees. Pivot slide hardware where indicated.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01700 - Execution Requirements: Requirements for installation examination.

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

### 3.2 PREPARATION

- A. Section 01700 - Execution Requirements: Requirements for installation preparation.

### 3.3 INSTALLATION

- A. Install casework in accordance with AWI AWS Section 10 Custom Grade.
- B. Set and secure casework and counter tops in place; rigid, plumb, and level.
- C. Use fixture attachments in concealed locations for wall mounted components.
- D. Use concealed joint fasteners to align and secure adjoining cabinet units.
- E. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
- F. Secure cabinets to floor using appropriate angles and anchorages.
- G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

### 3.4 TOLERANCES

- A. Section 01400 - Quality Requirements: Tolerances.
- B. Conform to AWI AWS Section 10 requirements for the following:
  - 1. Smoothness.
  - 2. Gaps.
  - 3. Flushness.
  - 4. Flatness.
  - 5. Alignment

### 3.5 ADJUSTING

- A. Section 01700 - Execution Requirements: Requirements for starting and adjusting.
- B. Adjust moving or operating parts to function smoothly and correctly.

### 3.6 CLEANING

- A. Section 01700 - Execution Requirements: Requirements for cleaning.
- B. Clean casework, counters, shelves, hardware, fittings, and fixtures.



END OF SECTION

SECTION 07210  
BUILDING INSULATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
  - 1. Rigid board insulation.
  - 2. Thermal blanket insulation.
  - 3. Acoustical insulation.
  
- B. Related Sections:
  - 1. Section 07900 – Joint Sealers.
  - 2. Section 09250 – Gypsum Board Assemblies.
  - 3. Division 1 - Alternates

1.2 REFERENCES

- A. American Society for Testing and Materials(ASTM):
  - 1. ASTM C665.
  - 2. ASTM C518 – Thermal Resistance Values.
  - 3. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
  - 4. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
  - 5. ASTM C991 - Standard Specification for Flexible Glass Fiber Insulation for Pre-Engineered Metal Buildings.
  - 6. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
  - 7. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
  - 8. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.
  - 9. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics
  
- B. U.S. Dept. of Comm. SPR R257 "Thermal Conductance Factors".
  
- C. NMWIA "Standards for Mineral Wool Building Insulation".
  
- D. NAIMA 202 - Standard for Flexible Fiberglass Insulation Systems in Metal Buildings.
  
- E. South Coast Air Quality Management District:
  - 1. SCAQMD Rule 1168 - Adhesive and Sealant Applications

1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.

- B. Product Data: Submit data on product characteristics.

#### 1.4 QUALITY ASSURANCE

- A. Insulation Installed in Concealed Locations Surface Burning Characteristics, ASTM E84:
  - 1. Batt Insulation: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84
  - 2. Foam Plastic Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
  - 3. Other Insulation: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
- B. Insulation Installed in Exposed Locations Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

#### 1.5 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements.
- B. Do not install adhesives when temperature or weather conditions are detrimental to successful installation.

### PART 2 PRODUCTS

#### 2.1 BOARD INSULATION

- A. Board Insulation:
  - 1. Carlisle
  - 2. Owens Corning
  - 3. Dow Chemical
  - 4. Johns Manville, Insulation Group
- B. Glass Fiber Insulation:
  - 1. Certain Teed.
  - 2. Johns Manville, Insulation Group.
  - 3. Owens-Corning Fiberglas.
  - 4. SoundTex.
- C. Board Insulation for Exterior Wall Application: Expanded polystyrene (EPS)
  - 1. Basis of Design: Carlisle Insulfoam T&G.
  - 2. ASTM C578 Type II.
  - 3. No HCFCs used in manufacture.
  - 4. Board Density: Nominal 1.5 lb/cu ft.
  - 5. Board Size: 48 inch width, by length as required.
  - 6. Board Thickness: 1 inch.
  - 7. Board Edges: Tongue and Grooved.
  - 8. Facing: Unfaced.
  - 9. Compressive Strength: Minimum 15 - 21 psi.

10. Thermal Resistance: Minimum aged, in-service R-value of 4 per inch.
11. Foam Surface Burning Characteristics (ASTM E84): flame spread < 25, smoke developed < 450.
12. Water Vapor Transmission (ASTM E96): less than 3.5 perms.

D. Thermal Batt Insulation for Exterior Wall Application:

1. ASTM C665.
2. Kraft faced, pre-formed, glass fiber thermal batt.
3. Thickness: Full depth of cavity.
4. Width: As required to friction-fit tightly between framing members.
5. R-Value: 3.5 per inch.
6. Flame spread/smoke developed: 10/10.
7. Recycled Content: Minimum 30% industrial waste and/or post consumer content.
8. Formaldehyde-free binders.

E. Sound Attenuation Batts:

1. Unfaced, preformed, glass fiber batt for use in interior partitions.
2. Thickness: 3½ inch.
3. Width: As required to friction-fit tightly between framing members.
4. Flame spread/smoke developed: 10/10.
5. Recycled Content: Minimum 30% industrial waste and/or post consumer content.
6. Formaldehyde-free binders

F. Sound Attenuation Batts for wood ceiling tiles:

1. Unfaced, preformed, glass fiber blanket for use in semi-exposed ceiling condition.
2. Thickness: 1 inch
3. Color: Black
4. Width: As required to friction-fit tightly between framing members.
5. Flame spread/smoke developed: 10/10.
6. Recycled Content: Minimum 30% industrial waste and/or post consumer content.
7. Formaldehyde-free binders

## 2.2 ACCESSORIES

A. Insulation Adhesive:

1. Type recommended by insulation manufacturer for application.
2. Interior Adhesives: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168.

B. Mechanical Fasteners:

1. Appropriate for purpose intended and approved by system manufacturer; length required for thickness of material with metal washers.

C. Joint Tape: Insulation manufacturer's standard joint tape.

D. Insulating Foam Sealant:

1. Professional grade bead-applied low pressure one or two-component polyurethane or icynene air sealant foam containing no CFC's, Penta-BDE's, VOC's or Urea Formaldehyde.

2. Compliant with CAN/ULC-S710.
3. UL Classified as a sealant.
4. Dow Chemical Great Stuff Pro or approved substitute.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify substrate, adjacent materials, and insulation boards are dry and ready to receive insulation.

### 3.2 EXTERIOR WALL BATT INSULATION

- A. Friction fit batt insulation between framing members.
- B. Fully insulate small areas between closely spaced framing members; end match neatly with ends fitted snugly; cut and fit insulation around pipes, conduits, outlet boxes, etc., as necessary to maintain insulation integrity.

### 3.3 INSTALLATION – EXTERIOR WALL BOARD INSULATION

- A. Install rigid foam board insulation system in accordance with manufacturer's installation guidelines.
- B. Install boards with long axis perpendicular to supports. Ensure end joints are fully supported.
- C. Install insulation boards to ensure board length spans not less than 3 framing supports.
- D. Cut and fit boards to suit project requirements.
- E. Cut and fit insulation tight to protrusions or interruptions to insulation plane.
- F. Secure boards to framing supports with mechanical screw-type fasteners spaced maximum 12 inches o.c.
- G. Tape insulation board joints.
- H. Insulate around penetrations with compatible spray foam insulation.

### 3.4 INSTALLATION – INTERIOR WALL SOUND ATTENUATION BATT INSULATION

- A. Friction fit batt insulation between framing members.
- B. Fully insulate small areas between closely spaced framing members with fiberglass batt insulation or spray polyurethane foam insulation
- C. End match neatly with ends fitted snugly; cut and fit insulation around pipes, conduits, outlet boxes, etc., as necessary to maintain insulation integrity.

END OF SECTION

## SECTION 07464

### FIBER CEMENT SIDING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section includes:
  - 1. Fiber-cement exterior siding.
  - 2. Moisture barriers.
- B. Related Sections:
  - 1. Section 07900 – Joint Sealers.
  - 2. Section 09620 – Gypsum Board Assemblies
  - 3. Section 09900 – Painting.

##### 1.2 REFERENCES

- A. Conform to applicable provisions of current edition of following:
  - 1. American Plywood Association (APA) Siding Performance Rating Standards PRP 108.
  - 2. HUD/FHA Materials Release 996.

#### PART 2 PRODUCTS

##### 2.1 FIBER CEMENT SIDING

- A. Fiber Cement Siding Manufacturers:
  - 1. Manufacturers:
  - 2. James Hardie Building Products
- B. Fiber Cement Siding:
  - 1. Panel Siding: Smooth panels, 5/16" thick.
  - 2. Finish: Factory applied prime coat. Field finish painted.
- C. Fasteners: As recommended by siding manufacturer for specific application and environmental conditions.
- D. Accessories:
  - 1. PVC Z-Flashing: Install at all horizontal panel joints.
  - 2. PVC H-Channel: Install at all vertical panel joints.

##### 2.2 WEATHER RESISTANT BARRIER

- A. Weather Resistant Barrier:
  - 1. ASTM E 1677.
  - 2. Tensile Strength - ASTM D828: XMD 22 lbf/in.
  - 3. Water Resistance – AATCC 127: 5 hours – no leakage.

4. Water Vapor Transmission – ASTM E96: Minimum 4.7 grains/hr through 1 square meter.
5. Flame Spread: less than 25.
6. Smoke Developed Index: less than 450

B. Products:

1. Wallshield by Vaproshield.
2. Winflex by Bosig.
3. JumboTex 60 by Fortifiber Building Systems Group.
4. Approved substitute.

## PART 3 EXECUTION

### 3.1 WEATHER RESISTANT BARRIER INSTALLATION

- A. Install in accordance with manufacturers instructions.
- B. Comply with ASTM E 2112 for flashing around door and window openings.
- C. Lap horizontal and vertical seams minimum 6". Lap to weather. Angled seams not permitted.
- D. Tape all horizontal and vertical seams and around penetrations.

### 3.2 SIDING INSTALLATION

- A. Apply bonding agent to existing concrete surfaces.

### 3.3 INSTALLATION

- A. Install all work in accordance with Contract Documents and Manufacturer's recommendations.
- B. Use siding manufacturer's recommended types and spacing of fasteners for specific application.
- C. Install siding panels plumb, level, in true alignment and weather-tight. Provide panel joints and install Z flashing only where backed by solid continuous backing and as approved by Architect.

END OF SECTION



## SECTION 07840 FIRESTOPPING

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Section Includes: Firestopping and smoke seals.
- B. Related Sections:
  - 1. Section 07900 - Joint Sealers.
  - 2. Section 09260 - Gypsum Board Assemblies.
  - 3. Division 15 - Mechanical: mechanical work requiring firestopping.
  - 4. Division 16 - Electrical: electrical work requiring firestopping.

#### 1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM E814 - Test Method of Fire Tests of Through-Penetration Firestops.
  - 2. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems.
- B. Underwriters Laboratories, Inc. (UL):
  - 1. UL 1479 - Test Method of Fire Tests of Through-Penetration Firestops.
  - 2. UL 2079 - Tests for Fire Resistance of Building Joint Systems.

#### 1.03 DEFINITIONS

- A. Firestopping (Through-Penetration Protection System): Sealing or stuffing material or assembly placed in spaces between and penetrations through building materials to arrest movement of fire, smoke, heat, and hot gases through fire rated construction.

#### 1.04 PERFORMANCE REQUIREMENTS

- A. Fireproofing Materials: ASTM E814 or UL 1479 to achieve required fire ratings.
- B. Description of Work: Provide firestopping and smoke seals for following areas and any others indicated on Drawings or in Specifications:
  - 1. All openings in fire-rated wall or floor assemblies, both blank (empty) and those accommodating penetrating items such as cables, conduits, pipes, ducts, and other construction items.
  - 2. Expansion joints in fire-rated walls or floors.

#### 1.05 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data:
  - 1. Provide data on product characteristics, performance and limitation criteria for each type of material proposed for use.
  - 2. Schedule: Submit schedule of opening locations and sizes, penetrating items, and required listed design numbers to seal openings to maintain fire resistance rating of adjacent assembly.
  - 3. Provide Manufacturer's printed Preparation and Installation Instructions.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Samples: Provide samples of firestopping material upon Architect's request.

## 1.06 QUALITY ASSURANCE

### A. Qualifications:

1. Manufacturer: Company specializing in manufacturing products specified in this Section, with minimum of three years documented experience.
2. Applicator: Company specializing in performing work of this Section, with minimum of three years documented experience and approved by Manufacturer.

### B. Regulatory Requirements:

1. Conform to 2010 Edition Oregon Structural Specialty Code and City of Portland requirements for through-penetration fire stops Flame (F) and Temperature (T) ratings.
2. F Rating : Minimum of one (1) hour, but not less than fire resistance rating of assembly penetrated.
3. T Rating: When required by Code authority. Based on measurement of temperature rise on penetrating item(s).
4. Fire Test: Conducted with minimum positive pressure differential of 0,01 inches of water column.
5. Provide Certificate of Compliance, from authority having jurisdiction, indicating approval of combustibility.

## 1.07 PROJECT CONDITIONS

### A. Environmental Requirements:

1. Conform to Manufacturer's printed instructions for installation and, when applicable, curing, in accordance with temperature and humidity.
2. Conform to Manufacturer's recommended ventilation and safety requirements.

B. Sequence work to permit firestopping materials to be installed after adjacent and surrounding work is complete.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

#### A. Acceptable Manufacturers:

1. A/D Fire Protection Systems, Inc.
2. Hilti Corp.
3. 3-M Fire Protection Products.
4. Nelson Firestop Products.
5. Substitutions: Under provisions of Section 01600.

### 2.02 MATERIALS

#### A. General:

1. Materials shall be free of asbestos.

2. Different types of products by multiple manufacturers are acceptable as required to meet specified system description and performance requirements; provide only one type for each similar application.
  3. Materials shall provide Flame (F) and Temperature (T) rating as required by Code. Refer to paragraph 1.06.B. above. F Rating, as tested by ASTM E-814 or UL 1479, shall be at least one (1) hour, but not less than fire resistance rating for assembly being penetrated.
  4. Materials shall conform to all applicable governing codes.
- B. Firestop Mortar: Single component Portland cement fly ash mortar. Requires no supports or anchoring devices to pass water hose stream tests. UL classified for both Flame (F) and Temperature (T) ratings. Firestop mortar shall restrict transmission of temperature and passage of flame, smoke and water.
- C. Firestop Sealant: Single component silicone sealant. Provide flexible, airtight, waterproof seal. Gun grade for walls and overhead application, and self-leveling for floor applications. UL classified for both Flame (F) and Temperature (T) ratings. Firestop sealant shall restrict transmission of temperature and passage of flame, smoke and water.
- D. Firestop Mastic: Single component water-based intumescent mastic sealant. UL classified for both Flame (F) and Temperature (T) ratings. Firestop mastic shall restrict transmission of temperature and passage of flame, smoke and water.
- E. Pillows: Asbestos-free fiberglass cloth bags filled with intumescent material. UL classified for both Flame (F) and Temperature (T) ratings.
- F. Sleeve: Prefabricated device used around plastic pipes in fire-rated floors and walls. UL classified for both Flame (F) and Temperature (T) ratings.
- G. Accessories: Primers, cleaners, anchoring devices, back-up materials, clips, supports, dams, and other materials required for complete and proper firestopping installation shall all be as recommended by Firestopping Manufacturer, and shall be suitable for specific application and fire rating requirements.

## PART 3 EXECUTION

### 3.01 EXAMINATION AND PREPARATION

- A. Field verify all site conditions necessary for proper installation prior to start of work. Field verify that openings are ready to receive work of this Section.
- B. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material.
- C. Remove incompatible materials which may affect bond.
- D. Install backing materials to arrest liquid material leakage.
- E. Provide primers as required, which conform to Firestopping Manufacturer's recommendations for various substrates and conditions.

- F. Do not apply firestops to surfaces previously painted or treated with sealer, curing compound, water repellent or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required in compliance with Firestop Manufacturer's instructions.
- G. Mask where necessary to protect adjoining surfaces. Remove excess material and stains on surfaces as required to leave such surfaces in clean, unmarked, undamaged condition.

### 3.03 APPLICATION

- A. Apply primer and materials in accordance with Contract Documents and Manufacturer's printed Application Instructions.
- B. Apply firestopping materials in sufficient thickness to achieve required ratings, and to uniform density and texture.
- C. Install material at walls or partition openings which contain penetrating sleeves, piping, ductwork, conduit, and other items requiring firestopping.
- D. Ensure that anchoring devices, back-up materials, clips, sleeves, supports, and other materials used in actual fire tests are installed.
- E. Install firestops with sufficient pressure to properly fill and seal openings to ensure effective smoke seal.
- F. Tool or trowel exposed surfaces. Remove excess firestop material promptly as work progresses and upon completion.

### 3.04 FIELD QUALITY CONTROL

- A. Immediately notify Architect or Owner's Representative if firestopping systems herein specified cannot meet performance requirements.
- B. Examine firestops to ensure proper installation and full compliance with this specification.
- C. All areas of work shall remain accessible until inspection to verify compliance with requirements.
- D. Correct unacceptable firestops and provide additional inspection, to verify compliance with requirements, at no additional cost.

### 3.05 CLEANING

- A. Clean work under provisions of Section 01700.
- B. Clean adjacent surfaces of firestopping materials.
- C. If visible in finished work, remove temporary dams after initial cure of firestops.
- D. Correct staining and discoloring on adjacent surfaces.
- E. Remove all debris and excess materials entirely from site, and leave work in neat and clean condition.

### 3.06 PROTECTION OF FINISHED WORK

- A. Protect finished work under provisions of Section 01500.
- B. Protect adjacent surfaces from damage by firestopping installation work.

END OF SECTION

## SECTION 07900

### JOINT SEALERS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section includes sealants and joint backing, and accessories.
- B. Related Sections:
  - 1. Section 08110 – Steel Doors and Frames
  - 2. Section 08800 - Glazing: Glazing sealants and accessories.
  - 3. Section 09260 - Gypsum Board Assemblies.

##### 1.2 REFERENCES

- A. ASTM International:
  - 1. ASTM C792 - Test Method for Effects of Heat Aging on Weight Loss, Cracking, and Chalking of Elastomeric Sealants.
  - 2. ASTM C834 - Standard Specification for Latex Sealants.
  - 3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
  - 4. ASTM C1193 - Standard Guide for Use of Joint Sealants.
  - 5. ASTM D1056 - Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.
  - 6. ASTM D1667 - Standard Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
- B. South Coast Air Quality Management District: SCAQMD Rule for Adhesive and Sealant Applications.

##### 1.3 DEFINITIONS

- A. Sealant Products: Any material with adhesive properties that is used to fill, seal, waterproof gaps or joints between two surfaces. Sealant products include sealant, primers and caulk
- B. Type: Defines whether products are premixed or require mixing at job site.
  - 1. Type M: Multi-component products which require job-site mixing.
  - 2. Type S: Single component products furnished in prepackaged cartridges or other forms in which no job-site mixing is required.
- C. Grade: Defines the flow characteristics of the sealant.
  - 1. Grade P: Products having sufficient flow to fill joints in horizontal surfaces and remain level and smooth at temperatures as low as 40 degrees Fahrenheit (4.4 degrees Celsius).
  - 2. Grade NS: Nonsag or gunnable sealant that permits application in joints on vertical surfaces without sagging or slumping when applied at temperatures between 40 degrees F (4.4 degrees C) and 122 degrees F (50 degrees C).

- D. Class (ASTM C719): Identifies sealants according to their tested movement capabilities in percent of joint width.
  - 1. Standard Classes: 25, 50, 100/-50 (extension/compression).
  - 2. Design to minimum 4 times anticipated movement to accommodate design tolerances and movement based on thermal expansion.
- E. Uses:
  - 1. Use T: Classifies sealants designed for joints in surfaces subject to pedestrian and vehicular traffic.
  - 2. Use NT: Non-traffic exposure.
  - 3. Use I: Sealants designed for immersion in water.
  - 4. Use M, G, A: Refers to sealants which remain adhered, within given parameters, to various standard specimens. (Mortar, Glass, Aluminum)
  - 5. Use O: Substrate materials other than M, G, and A. (Color anodized aluminum, other metals, painted surfaces, brick, stone, tile and wood, etc.)

#### 1.4 SUBMITTALS

- A. Section 01330 - Submittal and Shop Drawings.
- B. Products Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

#### 1.5 QUALITY ASSURANCE

- A. Perform building joint work in accordance with ASTM C 1193.
- B. Compatibility: ASTM C 1087; determine materials forming joints and adjacent materials do not adversely affect sealant materials and do not affect sealant color.
- C. Joint tolerance: Comply with Manufacturer's limitation recommendations.

#### 1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
- B. Applicator: Company specializing in performing Work of this section with minimum three years documented experience, three successfully completed projects of similar scope and complexity and approved by manufacturer.

#### 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements.
- B. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

## 1.8 COORDINATION

- A. Section 01320 - Project Schedule and Coordination.
- B. Coordinate Work with sections referencing this section.

## 1.9 WARRANTY

- A. Warrant installed sealants and accessories against water infiltration, air infiltration, adhesive failure, cohesive failure and other forms of deterioration and it's compatibility with adjacent sealants for a period of five (5) years.
- B. Upon notification of defects within warranty period, make necessary repairs and replacements at Owner's convenience. Repair and replacement shall include resultant damage to adjacent materials and systems.

## PART 2 PRODUCTS

### 2.1 MATERIALS – GENERAL

- A. Hardness (ASTM C661):
  - 1. Determine sealant's proper hardness or consistency in consultation with manufacturer, considering joint movement and exposure for joint size indicated.
  - 2. 15 to 25 Shore A Durometer: For vertical wall joints not subject to vandalism.
  - 3. 25 to 40 Shore A Durometer: For horizontal joints exposed to light traffic or vertical joints subject to vandalism.
  - 4. 35 to 60 Shore A Durometer: For sidewalk joints.
- B. Modulus of Elasticity: In general for elastomeric sealants, provide sealants having the lowest modulus of elasticity consistent with degree of exposure to wear, abrasion and vandalism. Sealants exposed to traffic shall have strength and elasticity sufficiently high to resist damage by traffic.
- C. Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application.
- D. Interior Sealants and Sealant Primers: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168. Maximum VOC of 50 grams per liter.
- E. Color: If not otherwise indicated, or chosen at time of submittals, provide color of exposed joint sealers to closely match finish color of adjacent surfaces

### 2.2 JOINT SEALERS

- A. Manufacturers:
  - 1. BASF Construction Chemicals.
  - 2. Dow Corning Corp.
  - 3. GE Silicones.
  - 4. LymTal International.



5. Pecora Corp.
  6. Sika Corp
  7. Tremco Sealants & Waterproofing
  8. Substitutions: Section 01600 - Product Requirements.
- B. Low Modulus Silicone Sealant (Sealant Type S-1 ): Single component, high performance, general purpose, exterior, non-traffic; ASTM C920, Type S, Grade NS, Class 100/-50, Uses M, G, and A. One of the following or approved equal:
1. “Spectrem 1” (Tremco).
  2. “Sikasil WS-290” (Sika).
  3. “Sonolastic 150 with VLM” (BASF).
  4. “790 Building Sealant” (Dow Corning Corp.).
  5. “Pecora 890 NST” (Pecora).
  6. Approved Equal.
  7. Color: Colors as selected.
  8. Applications: See schedule.
- C. Low Modulus Polyurethane Sealant (Sealant Type S-2 ): Single component, high performance, general purpose, exterior, non-traffic; ASTM C920, Type S, Grade NS, Class 25, Uses M, G, A. One of the following or approved equal:
1. “Dymonic FC” (Tremco).
  2. “Sikaflex-15 LM” (Sika).
  3. “Sonolastic NP 1” (BASF).
  4. “Iso-Flex 830” (LymTal International).
  5. Approved Equal.
  6. Color: Colors as selected.
  7. Applications: See schedule.
- D. Semi-Self Leveling Traffic Bearing Polyurethane Sealant (Sealant Type S-3): Single component, semi-self-leveling, exterior traffic bearing, moisture cure, sealant, ASTM C920, Grade P, Class 25, Use T.
1. “Vulcum 45 SSL” (Tremco).
  2. “Sikaflex-1C SL” (Sika).
  3. “Sonolastic SL 1” (BASF).
  4. Approved Equal.
  5. Color: Colors as selected.
  6. Applications: Use for exterior pedestrian and vehicular traffic bearing joints.
- E. Exterior Metal Lap Joint Sealant (Sealant Type S-4) Butyl or polyisobutylene, non-drying, non-skinning, non-curing gunnable sealant or butyl mastic tape.
1. “Tremco Butyl Sealant” (Tremco).
  2. “BC-158 Butyl Rubber Sealant” (Pecora Corporation).
  3. Approved equal.
  4. Applications: Use for concealed sealant bead in sheet metal work and concealed sealant bead in siding overlaps.
- F. Acrylic-Latex Interior Sealant (Sealant Type S-5): Single component, general purpose, paintable, interior emulsion type sealant, ASTM C 384.
1. “Tremflex 834” (Tremco).
  2. “Sonolac” (BASF).

3. "AC-20 Acrylic Laytex Caulk" (Pecora Corporation).
  4. Approved equal.
  5. Color: Colors as selected.
  6. Applications: Use for interior joints between door and window frames and wall surfaces, and other interior joints for which no other type of sealant is indicated.
- G. Silicone Sanitary Sealant (Sealant 6): Single component white silicone; ASTM C920, Type S, Class 25, Grade NS, Uses A, G, O; mold and mildew resistant.
1. "Pecora 898" (Pecora).
  2. "Omniplus" (BASF).
  3. "Sanitary SCS1700" (General Electric).
  4. Applications: Use for joints between plumbing fixtures and floor and wall surfaces, and joints between kitchen shower room, and rest room counter tops and wall surfaces.
- H. Acoustical Sealant (Sealant 7): Single component, general purpose, butyl or acrylic sealant; ASTM C920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
1. "Acoustical Sealant" (Tremco).
  2. "Pecora BA-98 Acoustic Sealant" (Pecora).
  3. Applications: Use for concealed locations only at acoustically rated construction.
  4. Provide sealant bead between top stud runner and structure and between bottom stud track and floor.

## 2.3 MISCELLANEOUS MATERIALS

- A. Exterior Foam Expansion Joint Filler (Filler Type F-1): 1/2 inch x 4 inch, highly resilient, 99% recovery, closed cell foam with 3/8 inch x 1/2 inch removable sealant reservoir joint cap.
1. ASTM D5249 TYPE 2.
  2. Compression @ 50%: 13 psi.
  3. "Flexible Foam" (Masco).
  4. "Ceramar Flexible Foam" (W.R. Meadows, Inc.).
  5. "Expansion-Joint Filler" (BASF).
  6. Approved Equal.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Primer: Non-staining, high solids, low VOCs type, recommended by sealant manufacturer for joint surfaces and conditions.
- D. Joint Backing: Round foam rod compatible with sealant; ASTM D1056, sponge or expanded rubber, D1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
- E. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify substrate surfaces and joint openings are ready to receive work.
- C. Verify joint backing and release tapes are compatible with sealant.
- D. Verify joint dimensions are within manufacturer's established tolerances.

### 3.2 PREPARATION

- A. Remove loose materials and foreign matter impairing adhesion of sealant.
- B. Clean and prime joints.
- C. Perform preparation in accordance with ASTM C1193.
- D. Protect elements surrounding Work of this section from damage or disfiguration.

### 3.3 INSTALLATION

- A. Perform installation in accordance with ASTM C1193.
- B. Perform acoustical sealant application work in accordance with ASTM C919.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant in continuous beads or rivers free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Provide masking tapes or other precautions to prevent migration or spillage of materials onto adjoining surfaces.
- H. Tool joints concave or as detailed.

### 3.4 CLEANING

- A. Section 01700 - Execution Requirements: Final cleaning.
- B. Clean adjacent soiled surfaces.

### 3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01700 - Execution Requirements: Protecting installed construction.
- B. Protect sealants until cured.

### 3.6 SCHEDULE

- A. Exterior Joints for Which No Other Sealant Type is Indicated: As directed by Architect.
- B. Control and Expansion Joints in Paving: Type S-3.
- C. Lap Joints in Exterior Sheet Metal Work: Type S-4.
- D. Exterior Joints At Unpainted Substrate Materials: Type S-1.
  - 1. Metal siding at aluminum windows.
  - 2. Butt joints in exterior metal work and siding.
- E. Exterior Joints At Substrates Scheduled to be Painted. Type S-2.
  - 1. Wood or fiber cement siding at aluminum windows.
  - 2. Butt joints in exterior wood work and siding.
  - 3. Field painted metal door frames.
- F. Under Exterior Door Thresholds: Type S-2.
- G. Interior Joints Between Door and Window Frames and Wall Surfaces: Type S5.
- H. Other Interior Joints for Which No Other Type of Sealant is Indicated: Type S-5.
- I. Joints Between Plumbing Fixtures and Walls and Floors, and Between Counter tops and Walls: Type S-6.
- J. Joints in Walls Scheduled To Receive Sound Batt Insulation: S-7.

END OF SECTION

## SECTION 08110 - HOLLOW METAL DOORS AND FRAMES

### 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. Standard and custom hollow metal doors and frames.
2. Steel sidelight, borrowed lite and transom frames.
3. Louvers installed in hollow metal doors.
4. Light frames and glazing installed in hollow metal doors.

##### B. Related Sections:

1. Division 08 Section "Flush Wood Doors".
2. Division 08 Section "Glazing" for glass view panels in hollow metal doors.
3. Division 08 Section "Door Hardware".
4. Division 09 Sections "Painting" for field painting hollow metal doors and frames.

##### C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
6. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
8. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
9. ASTM C 1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
10. ANSI/BHMA A156.15 - Hardware Preparation in Steel Doors and Frames.
11. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.

12. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
13. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
14. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
15. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
16. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.
- B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.
- C. Shop Drawings: Include the following:
  1. Elevations of each door design.
  2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
  3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
  4. Locations of reinforcement and preparations for hardware.
  5. Details of anchorages, joints, field splices, and connections.
  6. Details of accessories.
  7. Details of moldings, removable stops, and glazing.
  8. Details of conduit and preparations for power, signal, and control systems.
- D. Samples for Verification:
  1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

### 1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.
- B. Quality Standard: In addition to requirements specified, comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".
- C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 (neutral pressure at 40" above sill) or UL 10C.
  1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.

2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
3. Smoke Control Door Assemblies: Comply with NFPA 105.
  - a. Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.
- D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.
- E. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.
  1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

#### 1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

#### 1.7 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

#### 1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

- B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. CECO Door Products.
  - 2. Curries Company.
  - 3. Security Metal Products.
  - 4. Steelcraft.

### 2.2 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.
- C. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

### 2.3 STANDARD HOLLOW METAL DOORS

- A. General: Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8.
- B. Exterior Doors: Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
  - 1. Design: Flush panel.
  - 2. Core Construction: Manufacturer's standard polyurethane. Where indicated, provide doors fabricated as thermal-rated assemblies with a minimum R-value of 3.2 or better.
  - 3. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
  - 4. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
  - 5. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.



- C. Interior Doors: Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A 1008/A 1008M. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
1. Design: Flush panel.
  2. Core Construction: Manufacturer's standard kraft-paper honeycomb, or one-piece polystyrene core, securely bonded to both faces.
    - a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
  3. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet.
  4. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
  5. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- D. Manufacturers Basis of Design:

## 2.4 STANDARD HOLLOW METAL FRAMES

- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Exterior Frames: Fabricated of hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60.
1. Fabricate frames with mitered or coped corners.
  2. Fabricate frames with "closed and tight" miter seams continuously welded on face, finished smooth with no visible seam unless otherwise indicated.
  3. Frames for Level 3 Steel Doors (up to 48 inches in width): Minimum 14 gauge (0.067-inch -1.7-mm) thick steel sheet.
  4. Frames for Level 3 Steel Doors (48 inches and up in width): Minimum 12 gauge (0.081-inch -2.7-mm) thick steel sheet.
  5. Frames for Level 2 Steel Doors: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
  6. Manufacturers Basis of Design:
    - a. CECO Door Products SQ/SU/SR Series.
    - b. Curries Company M/G Series.
- C. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M.
1. Fabricate frames with mitered or coped corners.
  2. Fabricate frames with "closed and tight" miter seams continuously welded on face, finished smooth with no visible seam unless otherwise indicated.

3. Frames for Level 2 Steel Doors: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
4. Frames for Level 3 Steel Doors (up to 48 inches in width): Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.]
5. Frames for Level 3 Steel Doors (48 inches and up in width): Minimum 14 gauge (0.067-inch -1.7-mm) thick steel sheet.]
6. Frames for Wood Doors: Minimum 16 gauge (0.053-inch-1.3-mm-) thick steel sheet.
7. Frames for Borrowed Lights: Minimum 16 gauge (0.053-inch-1.3-mm-) thick steel sheet.
8. Manufacturers Basis of Design:
  - a. CECO Door Products SQ/SU/SR Series (Masonry Profile).
  - b. Curries Company M/G Series (Masonry Profile).

- D. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.
- E. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

## 2.5 FRAME ANCHORS

- A. Jamb Anchors:
  1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
  2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick.
  3. Compression Type for Drywall Slip-on (Knock-Down) Frames: Adjustable compression anchors.
  4. Windstorm Opening Anchors: Types as tested and required for indicated wall types to meet specified wind load design criteria.
  5. FEMA 361 Storm Shelter Anchors: Masonry T-shaped, wire masonry type, or existing opening type anchors.
- B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.
- C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

## 2.6 HOLLOW METAL PANELS

- A. Provide hollow metal panels of same materials, construction, and finish as specified for adjoining hollow metal work.

## 2.7 LOUVERS

- A. Metal Louvers: Door manufacturer's standard metal louvers unless otherwise indicated.
  1. Blade Type: Vision proof inverted V or inverted Y.

2. Metal and Finish: Galvanized steel, 0.040 inch thick, factory primed for paint finish with baked enamel or powder coated finish. Match pre-finished door paint color where applicable.
- B. Louvers for Fire Rated Doors: Metal louvers with fusible link and closing device, listed and labeled for use in doors with fire protection rating of 1-1/2 hours and less.
1. Manufacturers: Subject to compliance with requirements, provide door manufacturers standard louver to meet rating indicated.
  2. Metal and Finish: Galvanized steel, 0.040 inch thick, factory primed for paint finish with baked enamel or powder coated finish. Match pre-finished door paint color where applicable.

## 2.8 LIGHT OPENINGS AND GLAZING

- A. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints at fabricator's shop. Fixed and removable stops to allow multiple glazed lites each to be removed independently. Coordinate frame rabbet widths between fixed and removable stops with the type of glazing and installation indicated.
- B. Moldings for Glazed Lites in Doors and Loose Stops for Glazed Lites in Frames: Minimum 20 gauge thick, fabricated from same material as door face sheet in which they are installed.
- C. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated. Provide fixed frame moldings and stops on outside of exterior and on secure side of interior doors and frames
- D. Preformed Metal Frames for Light Openings: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated. Match pre-finished door paint color where applicable.
- E. Glazing: Comply with requirements in Division 08 Section "Glazing" and with the hollow metal door manufacturer's written instructions.
1. Factory Glazing: Factory install glazing in doors as indicated. Doors with factory installed glass to include all of the required glazing material.

## 2.9 ACCESSORIES

- A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

## 2.10 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate,

frames for large openings are to be fabricated in sections for splicing or splining in the field by others.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.

C. Hollow Metal Doors:

1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.
2. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.
3. Astragals: Provide overlapping astragals as noted in door hardware sets in Division 08 Section "Door Hardware" on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.
4. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge strap for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".

D. Hollow Metal Frames:

1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
  - a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.
3. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
4. High Frequency Hinge Reinforcement: Provide high frequency hinge reinforcements at door openings 48-inches and wider with mortise butt type hinges at top hinge locations.
5. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge straps for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
6. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
7. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
8. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
9. Jamb Anchors: Provide number and spacing of anchors as follows:
  - a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
    - 1) Two anchors per jamb up to 60 inches high.
    - 2) Three anchors per jamb from 60 to 90 inches high.

- 3) Four anchors per jamb from 90 to 120 inches high.
  - 4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
- b. Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
- 1) Three anchors per jamb up to 60 inches high.
  - 2) Four anchors per jamb from 60 to 90 inches high.
  - 3) Five anchors per jamb from 90 to 96 inches high.
  - 4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
  - 5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.
10. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".
- E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
  2. Reinforce doors and frames to receive non-template, mortised and surface mounted door hardware.
  3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
  4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

## 2.11 STEEL FINISHES

- A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.
1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

- B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness.
- C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.

### 3.3 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.
  - 1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
  - 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
  - 3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
  - 4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.
- C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
  - 1. Non-Fire-Rated Standard Steel Doors:
    - a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
    - b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
    - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.

- d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
- 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
- D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

#### 3.4 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow metal work immediately after installation.
- C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

END OF SECTION 081113

## SECTION 08140 - FLUSH WOOD DOORS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

1. Solid core doors with wood veneer, hardboard or MDF faces.
2. Factory finishing wood doors.
3. Factory fitting wood doors to frames and factory machining for hardware.
4. Louvers installed in flush wood doors.
5. Light frames and glazing installed in wood doors.

- B. Related Sections:

1. Division 08 Section "Hollow Metal Doors and Frames" for wood doors in steel frames.
2. Division 08 Section "Glazing" for glass view panels in wood doors.
3. Division 08 Section "Door Hardware" for door hardware for flush wood doors and wood frames.
4. Division 08 Section "Access Control Hardware" for electromechanical hardware for flush wood doors and wood frames.

- C. Standards and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A208.1 – Wood Particleboard.
2. Intertek Testing Service (ITS Warnock Hersey) - Certification Listings for Fire Doors.
3. NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
4. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
5. UL 10C - Positive Pressure Fire Tests of Door Assemblies; UL 1784 - Standard for Air Leakage Tests of Door Assemblies.
6. Window and Door Manufacturers Association - WDMA I.S.1-A Architectural Wood Flush Doors.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of door indicated. Include details of core and edge construction, louvers, trim for openings, and WDMA I.S.1-A or AWS classifications. Include factory finishing specifications.



- B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the wood door supplier in order to prepare the doors and frames to receive the finish hardware items.
- C. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.
  - 1. Indicate dimensions and locations of mortises and holes for hardware.
  - 2. Indicate dimensions and locations of cutouts.
  - 3. Indicate requirements for veneer matching.
  - 4. Indicate doors to be factory finished and finish requirements.
  - 5. Indicate fire protection ratings for fire rated doors.
- D. Samples for Initial Selection: For factory finished doors.
  - 1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches, for each material and finish. For each wood species and transparent finish, provide set of three samples showing typical range of color and grain to be expected in the finished work.
  - 2. Corner sections of doors, 8 by 10 inches, with door faces and edges representing actual materials to be used.
    - a. Provide samples for each species of veneer and solid lumber required.
    - b. Finish veneer faced door samples with same materials proposed for factory finished doors.
  - 3. Frames for light openings, 6 inches long, for each material, type, and finish required.
- E. Informational Submittals:
  - 1. Submit manufacturer's environmental documentation and applicable sustainability program credits that are available to contribute towards a LEED rated project certification.
- F. Warranty: Sample of special warranties.

#### 1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain flush wood doors through one source from a single manufacturer wherever possible.
- B. Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, latest edition, "Industry Standard for Architectural Wood Flush Doors".
- C. Fire Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing at positive pressure according to NFPA 252 (neutral pressure at 40" above sill) or UL 10C (neutral pressure testing according to UL 10B where specified).

1. Oversize Fire Rated Door Assemblies: For units exceeding sizes of tested assemblies provide manufacturer's construction label, indicating compliance to independent 3<sup>rd</sup> party certification agency's procedure, except for size.
  2. Temperature Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire test exposure.
  3. Smoke Control Door Assemblies: Comply with NFPA 105.
    - 1) Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.
  4. Blocking: When through-bolts are not to be used, indicate size and location of blocking in 45, 60 and 90 minute mineral core doors.
- D. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for receiving, handling, and installing flush wood doors.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package pre-finished doors individually in plastic bags or cardboard cartons and wrap bundles of doors in plastic sheeting.
- C. Mark each door on top rail with opening number used on Shop Drawings.

#### 1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weather tight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

#### 1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
  1. Failures include, but are not limited to, the following:
    - a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
    - b. Telegraphing of core construction in wood face veneers exceeding 0.01 inch in a 3-inch span.

- c. Telegraphing of core construction and delaminating of face in decorative laminate-faced doors.
2. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.
3. Warranty Period for Solid Core Interior Doors: Life of installation according to manufacturer's written warranty.

## PART 2 - PRODUCTS

### 2.1 DOOR CONSTRUCTION – GENERAL

- A. WDMA I.S.1-A Performance Grade: Extra Heavy Duty; Aesthetic Grade: Premium.
- B. Fire Rated Doors: Provide construction and core as needed to provide fire ratings indicated.
  1. Category A Edge Construction: Provide 45, 60 and 90 minute fire rated doors edge construction with intumescent seals concealed by outer stile (Category A). Comply with specified requirements for exposed edges.
  2. Pairs: Provide fire retardant stiles that are listed and labeled for applications indicated without formed steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
    - a. Where required or specified, provide formed steel edges and astragals with intumescent seals. Finish steel edges and astragals with baked enamel.
- C. Environmentally Responsible Doors: Provide where specified doors manufactured with the following environmentally responsible components:
  1. Engineered Composite Lumber Core:
    - a. Certified Wood: Interior wood flush doors (including fire rated doors) to be manufactured in accordance with FSC principles and criteria for wood building component and have FSC Chain of Custody certification.
    - b. Low Emitting Materials: Interior wood flush doors must contain no added urea-formaldehyde resins.
    - c. Stiles and Rails: No added urea formaldehyde.
  2. Veneer Face: Forest Stewardship Council (FSC) certified, as available.

### 2.2 CORE CONSTRUCTION

- A. Engineered Composite Core Wood Doors:

1. Structural Composite Lumber: Engineered hardwood composite wood products tested in accordance with WDMA I.S.1A, Testing Cellulosic Composite Materials for Use in Fenestration Products containing no added Urea Formaldehyde. Comply with minimum performance levels below:
  - a. Screw Withdrawal, Face: 700 lbf (3100 N).
  - b. Screw Withdrawal, Edge: 550 lbf (2440 N).
2. LEED: Meet requirements of EQ4.4.
3. Sound Transmission Class: Have an operable STC rating of 30.
4. Basis of Design: Graham EC, EC5.

## 2.3 VENEERED DOORS FOR TRANSPARENT FINISH

### A. Interior Solid Core Doors:

1. Grade: Premium
2. Faces: Veneer grades as noted below; veneer minimum 1/50-inch (0.5mm) thickness at moisture content of 12% or less.
  - a. Plain Sliced Select White Maple, AA grade faces.
3. Match between Veneer Leaves: Book match.
4. Assembly of Veneer Leaves on Door Faces:
  - a. Running Match.
5. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
6. Transom Match: Continuous match.
7. Vertical Edges: Matching same species as faces. Wood or composite material, one piece, laminated, or veneered. Minimum requirements per WDMA section P-1, Performance Standards for Architectural Wood Flush Doors.
8. Horizontal Edges: Solid wood or structural composite material meeting the minimum requirements per WDMA section P-1, Performance Standards for Architectural Wood Flush Doors
9. Construction: Five plies. Stiles and rails are bonded to core, then entire unit sanded before applying face veneers.
10. At doors over 40% of the face cut-out for lights and or louvers, furnish engineered composite lumber core.

## 2.4 LIGHT FRAMES AND GLAZING

- A. Metal Frames for Light Openings in Fire Rated Doors over 20-minute rating: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated.
- B. Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with the flush wood door manufacturer's written instructions.

## 2.5 FABRICATION

- A. Factory fit doors to suit frame opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
  - 1. Comply with requirements in NFPA 80 for fire rated doors.
- B. Factory machine doors for hardware that is not surface applied. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates.
  - 1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
  - 2. Metal Astragals: Factory machine astragals and formed steel edges for hardware for pairs of fire rated doors.
- C. Transom and Side Panels: Fabricate matching panels with same construction, exposed surfaces, and finish as specified for associated doors. Finish bottom edges of transoms and top edges of rabbeted doors same as door stiles.
- D. Openings: Cut and trim openings through doors in factory.
  - 1. Light Openings: Trim openings with moldings of material and profile indicated.
  - 2. Glazing: Comply with applicable requirements in Division 08 Section "Glazing."
  - 3. Louvers: Factory install louvers in prepared openings.
- E. Electrical Raceways: Provide flush wood doors receiving electrified hardware with concealed wiring harness and standardized Molex™ plug connectors on both ends to accommodate up to twelve wires. Coordinate connectors on end of the wiring harness to plug directly into the electrified hardware and the through wire transfer hardware or wiring harness specified in hardware sets in Division 08 "Door Hardware". Wire nut connections are not acceptable.

## 2.6 FACTORY FINISHING

- A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
  - 1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

- B. Transparent Finish: Provide a clear protective coating over the wood veneer allowing the natural color and grain of the selected wood species to provide the appearance specified. Stain is applied to the wood surface underneath the transparent finish to add color and design flexibility.
  - 1. Grade: Premium.
  - 2. Finish: Meet or exceed WDMA I.S. 1A TR6 Catalyzed Polyurethane finish performance requirements.
  - 3. Staining: As selected by Architect from manufacturer's full range.
  - 4. Sheen: Satin.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine doors and installed door frames before hanging doors.
  - 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
  - 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Hardware: For installation, see Division 8 Section "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and the referenced quality standard, and as indicated.
  - 1. Install fire rated doors in corresponding fire rated frames according to NFPA 80.
- C. Factory Fitted Doors: Align in frames for uniform clearance at each edge.
- D. Factory Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

### 3.3 ADJUSTING

- A. Operation: Re-hang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

## SECTION 087100 – DOOR HARDWARE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
  - 1. Swinging doors.
  - 2. Sliding doors.
  - 3. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
  - 1. Mechanical door hardware.
  - 2. Electromechanical door hardware, power supplies, back-ups and surge protection.
  - 3. Cylinders specified for doors in other sections.
- C. Related Sections:
  - 1. Division 08 Section “Door Hardware Schedule”.
  - 2. Division 08 Section “Hollow Metal Doors and Frames”.
  - 3. Division 08 Section “Interior Aluminum Doors and Frames”.
  - 4. Division 08 Section “Flush Wood Doors”.
  - 5. Division 08 Section “Access Control Hardware”.
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
  - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
  - 2. ICC/IBC - International Building Code.
  - 3. NFPA 80 - Fire Doors and Windows.
  - 4. NFPA 101 - Life Safety Code.
  - 5. NFPA 105 - Installation of Smoke Door Assemblies.
  - 6. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards:
  - 1. ANSI/BHMA Certified Product Standards - A156 Series
  - 2. UL10C – Positive Pressure Fire Tests of Door Assemblies

### 1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
  - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
  - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
  - 3. Content: Include the following information:
    - a. Type, style, function, size, label, hand, and finish of each door hardware item.
    - b. Manufacturer of each item.
    - c. Fastenings and other pertinent information.
    - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    - e. Explanation of abbreviations, symbols, and codes contained in schedule.
    - f. Mounting locations for door hardware.
    - g. Door and frame sizes and materials.
  - 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
  - 1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
    - a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
    - b. Complete (risers, point-to-point) access control system block wiring diagrams.
  - 2. Electrical Coordination: Coordinate with related Division 26 Electrical Sections the voltages and wiring details required at electrically controlled and operated hardware openings.



- D. Keying Schedule: Prepared under the supervision of the Owner, separate schedule detailing final keying instructions for locksets and cylinders in writing. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner to approve submitted keying schedule prior to the ordering of permanent cylinders.
- E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.
- F. Warranties and Maintenance: Special warranties and maintenance agreements specified in this Section.

#### 1.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Installer Qualifications: Installers, trained by the primary product manufacturers, with a minimum 3 years documented experience installing both standard and electrified builders hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor in good standing by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
  - 1. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- D. Source Limitations: Obtain each type and variety of Door Hardware specified in this Section from a single source, qualified supplier unless otherwise indicated.
  - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
  - 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- E. Regulatory Requirements: Comply with NFPA 70, NFPA 80, NFPA 101 and ANSI A117.1 requirements and guidelines as directed in the model building code including, but not limited to, the following:

1. NFPA 70 "National Electrical Code", including electrical components, devices, and accessories listed and labeled as defined in Article 100 by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
  2. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI A117.1 as follows:
    - a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
    - b. Door Closers: Comply with the following maximum opening-force requirements indicated:
      - 1) Interior Hinged Doors: 5 lbf applied perpendicular to door.
      - 2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
    - c. Thresholds: Not more than 1/2 inch high. Bevel raised thresholds with a slope of not more than 1:2.
  3. NFPA 101: Comply with the following for means of egress doors:
    - a. Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
    - b. Thresholds: Not more than 1/2 inch high.
  4. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252 (neutral pressure at 40" above sill) or UL-10C.
    - a. Test Pressure: Positive pressure labeling.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
1. Function of building, purpose of each area and degree of security required.
  2. Plans for existing and future key system expansion.
  3. Requirements for key control storage and software.
  4. Installation of permanent keys, cylinder cores and software.
  5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, arrange for manufacturers' representatives to hold a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
  2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
  3. Review sequence of operation narratives for each unique access controlled opening.
  4. Review and finalize construction schedule and verify availability of materials.
  5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

#### 1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.
- C. Door and Frame Preparation: Related Division 08 Sections (Steel, Aluminum and Wood) doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

#### 1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions

of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
  - 1. Structural failures including excessive deflection, cracking, or breakage.
  - 2. Faulty operation of the hardware.
  - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
  - 1. Ten years for mortise locks and latches.
  - 2. Seven years for heavy duty cylindrical (bored) locks and latches.
  - 3. Five years for exit hardware.
  - 4. Twenty five years for manual surface door closers.
  - 5. Two years for electromechanical door hardware.

## 1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Continuing Service: Beginning at Substantial Completion, and running concurrent with the specified warranty period, provide continuous (6) months full maintenance including repair and replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door opening operation. Provide parts and supplies as used in the manufacture and installation of original products.

## PART 2 - PRODUCTS

### 2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
  - 1. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
    - a. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing

requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

- B. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

## 2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity, unless otherwise indicated:
  - a. Two Hinges: For doors with heights up to 60 inches.
  - b. Three Hinges: For doors with heights 61 to 90 inches.
  - c. Four Hinges: For doors with heights 91 to 120 inches.
  - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
  - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
  - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
  - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
  - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
4. Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:
  - a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the following applications:
    - 1) Out-swinging exterior doors.
    - 2) Out-swinging access controlled doors.
    - 3) Out-swinging lockable doors.
5. Acceptable Manufacturers:
  - a. Hager Companies (HA).
  - b. McKinney Products (MK).

## 2.3 DOOR OPERATING TRIM

- A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified automatic, self-latching, and manual flush bolts and surface bolts. Manual flush bolts to be furnished with top rod of sufficient length to allow bolt location approximately six feet from the floor. Furnish dust proof strikes for bottom bolts. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
1. Acceptable Manufacturers:
    - a. Door Controls International (DC).
    - b. Rockwood Manufacturing (RO).
    - c. Trimco (TC).
- B. Door Push Plates and Pulls: ANS/BHMA A156.6 certified door pushes and pulls of type and design specified below or in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with square corners and beveled edges, secured with exposed screws unless otherwise indicated.
  2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
  3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
  4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
    - a. Acceptable Manufacturers:
      - 1) Rockwood Manufacturing (RO).
      - 2) Trimco (TC).

## 2.4 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinders: Original manufacturer cylinders complying with the following:
1. Mortise Type: Threaded cylinders with rings and straight- or clover-type cam.
  2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
  3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
  4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
  5. Keyway: Verify Keyway and system requirements with owners locksmith.

- D. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:
  - 1. Removable Cores: Core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware. Provide removable core (small or large format) as specified in Hardware Sets.
  
- E. Security Cylinders: ANSI/BHMA A156.5, Grade 1, patented security cylinders and keys able to be used together under the same facility master or grandmaster key system. Cylinders are to be factory keyed.
  - 1. Acceptable Manufacturers:
    - a. Schlage Lock (SC) - Primus Everest. Verify with owners locksmith.
    - b. No Substitution – Facility Standard.
  
- F. Keying System: Each type of lock and cylinders to be factory keyed. Conduct specified "Keying Conference" to define and document keying system instructions and requirements. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner. Incorporate decisions made in keying conference, and as follows:
  - 1. Master Key System: Cylinders are operated by a change key and a master key.
  - 2. Grand Master Key System: Cylinders are operated by a change key, a master key, and a grand master key.
  - 3. Great-Grand Master Key System: Cylinders are operated by a change key, a master key, a grand master key, and a great-grand master key.
  - 4. Existing System: Master key or grand master key locks to Owner's existing system.
  - 5. Keyed Alike: Key all cylinders to same change key.
  
- G. Key Quantity: Provide the following minimum number of keys:
  - 1. Top Master Key: One (1)
  - 2. Change Keys per Cylinder: Two (2)
  - 3. Master Keys (per Master Key Group): Two (2)
  - 4. Grand Master Keys (per Grand Master Key Group): Two (2)
  - 5. Construction Keys (where required): Ten (10)
  - 6. Construction Control Keys (where required): Two (2)
  - 7. Permanent Control Keys (where required): Two (2)
  
- H. Construction Keying: Provide construction master keyed cylinders or temporary keyed construction cores where specified. Provide construction master keys in quantity as required by project Contractor. Replace construction cores with permanent cores. Furnish permanent cores for installation as directed under specified "Keying Conference".
  
- I. Key Registration List: Provide keying transcript list to Owner's representative in the proper format for importing into key control software.

## 2.5 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified mortise locksets furnished in the functions as specified in the Hardware Sets. Locksets to be manufactured with a corrosion resistant, stamped 12 gauge minimum formed steel case and be field-reversible for handing without disassembly of the lock body. Lockset

trim (including knobs, levers, escutcheons, roses) to be the product of a single manufacturer. Furnish with standard 2 3/4" backset, 3/4" throw anti-friction stainless steel latchbolt, and a full 1" throw stainless steel bolt for deadbolt functions.

1. Acceptable Manufacturers:

- a. Schlage (SC) – L9000 Series.
- b. No Substitution – Facility Standard.

B. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Grade 1 certified cylindrical (bored) locksets furnished in the functions as specified in the Hardware Sets. Lock chassis fabricated of heavy gauge steel, zinc dichromate plated, with through-bolted application. Furnish with solid cast levers, standard 2 3/4" backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt. Locks are to be non-handed and fully field reversible.

1. Locksets to incorporate a free-wheeling lever design with a lifetime warranty against lever sag and spring breakage on all locking functions.

2. Acceptable Manufacturers:

- a. Schlage (SC) – ND Series.
- b. No Substitution – Facility Standard.

C. Lock Trim Design: As specified in Hardware Sets.

## 2.6 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.5.
4. Dustproof Strikes: BHMA A156.16.

## 2.7 ELECTRIC STRIKES

A. Standard Electric Strikes: Heavy duty, cylindrical and mortise lock electric strikes conforming to ANSI/BHMA A156.31, Grade 1, UL listed for both Burglary Resistance and for use on fire rated door assemblies. Stainless steel construction with dual interlocking plunger design tested to exceed 3000 lbs. of static strength and 350 ft-lbs. of dynamic strength. Strikes tested for a



minimum 1 million operating cycles. Provide strikes with 12 or 24 VDC capability and supplied standard as fail-secure unless otherwise specified. Option available for latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike.

1. Acceptable Manufacturers:

a. HES (HS).

B. Provide electric strikes with in-line power controller and surge suppressor by the same manufacturer as the strike with the combined products having a five year warranty.

## 2.8 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.

2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.

a. Fire Exit Removable Mullions: Provide keyed removable mullions for use with fire exit devices complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252. Mullions to be used only with exit devices for which they have been tested.

3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.

4. Flush End Caps: Provide heavy weight impact resistant flush end caps made of architectural metal in the same finish as the devices as in the Hardware Sets. Plastic end caps will not be acceptable.

5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty trim with cold forged escutcheons, beveled edges, and four threaded studs for thru-bolts.

a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets. Provided free-wheeling type trim where indicated.

b. Where function of exit device requires a cylinder, provide an interchangeable core type keyed cylinder (Rim or Mortise) as specified in Hardware Sets.

6. Vertical Rod Exit Devices: Provide and install interior surface and concealed vertical rod exit devices as Less Bottom Rod (LBR) unless otherwise indicated.

7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
  8. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
  9. Rail Sizing: Provide exit device rails factory sized for proper door width application.
  10. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Mounting rails to be formed from smooth stainless steel, brass or bronze architectural materials no less than 0.072" thick, with push rails a minimum of 0.062" thickness. Painted or aluminum metal rails are not acceptable. Exit device latch to be investment cast stainless steel, pullman type, with deadlock feature.
1. Acceptable Manufacturers:
    - a. Von Duprin (VD) - 35A/98 XP Series.
    - b. No Substitution – Facility Standard.

## 2.9 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
  2. Standards: Closers to comply with UL-10C and UBC 7-2 for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
  3. Cycle Testing: Provide closers which have surpassed 10 million cycles in a test witnessed and verified by UL.
  4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
  5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
    - a. Where closers are indicated to have mechanical dead-stop, provide heavy duty arms and brackets with an integral positive stop.
    - b. Where closers are indicated to have mechanical hold open, provide heavy duty units with an additional built-in mechanical holder assembly designed to hold open against normal wind and traffic conditions. Holder to be manually selectable to on-off position.

- c. Where closers are indicated to have a cushion-type stop, provide heavy duty arms and brackets with spring stop mechanism to cushion door when opened to maximum degree.
  - d. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics. Provide drop plates or other accessories as required for proper mounting.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates, and through-bolt or security type fasteners as specified in the door Hardware Sets.

## 2.10 ARCHITECTURAL TRIM

### A. Door Protective Trim

- 1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
- 2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
- 3. Metal Protection Plates: ANSI/BHMA A156.6 certified metal protection plates (kick, armor, or mop), beveled on four edges (B4E), fabricated from the following.
  - a. Stainless Steel: .050-inch thick, with countersunk screw holes (CSK).
  - b. Brass or Bronze: .050-inch thick, with countersunk screw holes (CSK).
  - c. Laminate Plastic or Acrylic: 1/8-inch thick, with countersunk screw holes (CSK).
- 4. Fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets.
- 5. Metal Door Edging: Door protection edging fabricated from a minimum .050-inch thick metal sheet, formed into an angle or "U" cap shapes, surface or mortised mounted onto edge of door. Provide appropriate leg overlap to account for protection plates as required. Height to be as specified in the Hardware Sets.
- 6. Acceptable Manufacturers:
  - a. Rockwood Manufacturing (RO).

## 2.11 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor

stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Acceptable Manufacturers:
  - a. Rockwood Manufacturing (RO).
  - b. Trimco (TC).

## 2.12 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
  1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
  1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and UBC 7-2, Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated, based on testing according to ASTM E 1408.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Acceptable Manufacturers:
  1. Pemko Manufacturing (PE).

## 2.13 ELECTRONIC ACCESSORIES

## 2.14 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

## 2.15 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

### 3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

### 3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
  - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
  - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
  - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."

4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

### 3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

### 3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

### 3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. and provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

### 3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SCHEDULE

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
- B. Manufacturer's Abbreviations:

- 1. MK - McKinney
- 2. RO - Rockwood
- 3. SC - Schlage
- 4. VD - Von Duprin
- 5. HS - HES
- 6. LC - LCN Closers
- 7. RF - Rixson
- 8. PE - Pemko
- 9. 00 - Other

**Hardware Schedule**

**Set: 1.0**

Doors: 202A, 230A, 230B, 232A, 232B, 232C, 232D, 234A, 291A, 305A, 307C, 309C, 311A, 312A, 313A, 317A, 320A, 340A, 390A

1 All hardware existing. 00

Notes: All hardware existing, clean, adjust and repair as needed to ensure proper function.

**Set: 2.0**

Doors: 307A

8 Hinge	TA2714 NRP 4-1/2" x 4-1/2"	US26D	MK
1 Fire Rated Surf Vert Rod	9927L-F LBR 996L(Std)	US26D	VD
1 Fire Rated Surf Vert Rod	9927EO-F LBR	US26D	VD
1 Cylinder	20-798	626	SC
1 Cylinder	20-079	626	SC
2 Surface Closer	4011 REG	AL	LC
2 Electromagnetic Holder	998	689	RF
1 Gasketing	S773D		PE
2 Meeting Stiles	18041CNB		PE

Notes: Magnetic wall holders tied to fire alarm, in the event of alarm, power drops to magnetic holders which release doors. Doors close and latch.  
Egress allowed at all times.

**Set: 3.0**

Doors: 307B

8 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Flush Bolt	550 top bolt only	US26D	RO
1 Cylindrical Lock	ND94 J RHO	626	SC
1 Cylinder	20-798	626	SC
2 Wall Stop	403	US26D	RO
2 Silencer	608		RO

**Set: 4.0**

Doors: 307D, 307E

4 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Mortise Lock	L9496 J L583-363 06B	626	SC
1 Cylinder	20-798	626	SC
1 Surface Closer	4011 REG	AL	LC
1 Kickplate	K1050 10" x 34" 4BE	US32D	RO
1 Wall Stop	403	US26D	RO
3 Silencer	608		RO

**Set: 5.0**

Doors: 307F, 308C

4 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Cylindrical Lock (passage)	ND10S RHO	626	SC
1 Wall Stop	403	US26D	RO
3 Silencer	608		RO

**Set: 6.0**

Doors: 307G, 307H

4 Hinge	TA2714 NRP 4-1/2" x 4-1/2"	US26D	MK
1 Cylindrical Lock	ND96 J RHO	626	SC
1 Cylinder	20-798	626	SC
1 Electric Strike	4500-12/24	630	HS
1 Surface Closer	4111 EDA	AL	LC



1 Wall Stop	403	US26D	RO
3 Silencer	608		RO

Notes: Card reader and access control system by security contractor.  
Presenting valid credentials momentary releases electric strike and allows entry. Electric strike relocks after set time delay.  
Power for electric strike by security contractor.  
Egress allowed at all times.  
Fail secure.

**Set: 7.0**

Doors: 308A, 308B, 308D, 308E, 308F, 308G, 309B, 309E, 309F, 310A, 310B, 310C, 310D, 310F, 310G, 340B, 340C, 340D, 340E, 340M, 340N

4 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Cylindrical Lock	ND92 J RHO	626	SC
1 Cylinder	20-798	626	SC
1 Wall Stop	403	US26D	RO
3 Silencer	608		RO

**Set: 8.0**

Doors: 309A

4 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Cylindrical Lock	ND94 J RHO	626	SC
1 Cylinder	20-798	626	SC
1 Surface Closer	4011 REG	AL	LC
1 Kickplate	K1050 10" x 34" 4BE	US32D	RO
1 Wall Stop	403	US26D	RO
3 Silencer	608		RO

**Set: 9.0**

Doors: 340F, 340G, 340H, 340J, 340K, 340L

4 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Push Plate	70F	US32D	RO
1 Pull Plate	107x70C	US32D	RO
1 Surface Closer	4011 REG	AL	LC
1 Kickplate	K1050 10" x 34" 4BE	US32D	RO
1 Gasketing	S773D		PE

**Set: 10.0**

Doors: 390B

3 Hinge	TA2714 NRP 4-1/2" x 4-1/2"	US26D	MK
1 Cylindrical Lock	ND94 J RHO	626	SC
1 Cylinder	20-798	626	SC
1 Surface Closer	4111 EDA	AL	LC
1 Kickplate	K1050 10" x 34" 4BE	US32D	RO
1 Wall Stop	403	US26D	RO
1 Threshold	271A		PE
1 Gasketing	S773D		PE
1 Door Bottom	420APKL		PE

**Set: 11.0**

Doors: 390C

3 Hinge (heavy weight)	T4A3386 NRP 4-1/2" x 4-1/2"	US32D	MK
1 Cylindrical Lock	ND96 J RHO	626	SC
1 Cylinder	20-798	626	SC
1 Surface Closer	4111 SCUSH	AL	LC
1 Threshold	271A		PE
1 Gasketing	S773D		PE
1 Gasketing	315CN		PE
1 Rain Guard	346C		PE

END OF SECTION 087100

## SECTION 08800

### GLAZING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Glass for doors and relites.
- B. Related Sections:
  - 1. Section 07900 - Joint Sealers: Sealant and back-up material other than glazing sealants.
  - 2. Section 08110 - Steel Doors and Frames: Glazed relites.
  - 3. Section 08210 – Wood Doors: Glazed doors.
  - 4. Section 08733 – Glass Film: Films for selected existing and new glazed openings.

##### 1.2 REFERENCES

- A. American National Standards Institute:
  - 1. ANSI Z97.1 - Safety Glazing Materials Used in Buildings Safety.
- B. ASTM International:
  - 1. ASTM C509 - Standard Specification for Elastomeric Cellular Preformed Gasket and Sealing Material.
  - 2. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
  - 3. ASTM C1036 - Standard Specification for Flat Glass.
  - 4. ASTM C1193 - Standard Guide for Use of Joint Sealants.
  - 5. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass.
  - 6. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings.
  - 7. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
- C. Consumer Products Safety Commission:
  - 1. CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing.
- D. Safety Glazing Certification Council (SGCC).
- E. Insulating Glass Certification Council (IGCC).
- F. Glass Association of North America:
  - 1. GANA - Sealant Manual.
  - 2. GANA - Glazing Manual.
  - 3. GANA - Laminated Glass Design Guide.
- G. National Fenestration Rating Council Incorporated:

1. NFRC 100 - Procedures for Determining Fenestration Product U-Factors.
- H. National Fire Protection Association:
  1. NFPA 80 - Standard for Fire Doors, Fire Windows.
- I. Sealed Insulating Glass Manufacturer's Association (SIGMA) "Specification for Sealed Insulating Glass Units".
- J. Underwriters Laboratories Inc.:
  1. UL 10C - Positive Pressure Fire Tests of Door Assemblies.

### 1.3 PERFORMANCE REQUIREMENTS

- A. Glass Thickness:
  1. As specified in Part 2 of this Section, or:
  2. If thickness is not specified in Part 2 of this Section, select minimum thickness in accordance with ASTM E1300 to resist dead loads, and positive and negative live loads acting normal to plane of glass in accordance with OSSC Building Code.
- B. Interior Glass Deflection: Maximum differential deflection for two adjacent unsupported edges when 50 plf force is applied to one panel at any point up to 42 inches above finished floor: less than thickness of glass.

### 1.4 SUBMITTALS

- A. Not required.

### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA Glazing Manual for glazing installation methods.

### 1.6 QUALIFICATIONS

- A. Installer: Company specializing in performing Work of this section with minimum three years documented experience.
- B. Design glass under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Oregon.

## PART 2 PRODUCTS

### 2.1 FLOAT GLASS MATERIALS

- A. Annealed Glass: ASTM C1036, Type 1 transparent flat, Quality Q3, float glass.
  1. Furnish annealed glass except where heat strengthened or tempered glass is required to meet specified performance requirements..

- B. Tempered (Safety) Glass: ASTM C1048, Type 1 transparent flat, Quality Q3, Kind FT fully tempered, Condition A uncoated, float glass with horizontal tempering.
  - 1. Furnish tempered glass where heat strengthened glass cannot meet specified performance requirements.
  - 2. Furnish tempered glass conforming to CPSC 16 CFR 1201 Category II at locations where safety glass is required by OSSC code and as indicated on Drawings.

## 2.2 FLOAT GLASS PRODUCTS

- A. Float Glass Manufacturers:
  - 1. AGC Flat Glass North America, Inc.
  - 2. Cardinal Glass Industries.
  - 3. Guardian Industries Corp.
  - 4. Pilkington North America, Inc.
  - 5. PPG Industries.
- B. Clear Glass: Annealed, and Tempered float glass as specified; Class 1 clear.
  - 1. Clear annealed glass (FG-CA).
  - 2. Clear tempered glass (FG-CT).
  - 3. Minimum Thickness, unless otherwise indicated:
    - a. 1/4 inch for all other applications.

## 2.3 GLAZING SEALANTS

- A. Glazing Sealants:
  - 1. Glazing Sealants: Comply with ASTM C1193.
  - 2. Manufacturer's standard sealants compatible with adjacent materials including glass, laminated glass core, insulating glass seals, and glazing channels.
  - 3. Confirm compatibility of glazing sealant with laminated glass interlayer, such as polyvinyl-butyl (PVB).
- B. Color: As selected.
- C. Interior Sealants and Sealant Primers: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168.

## 2.4 GLAZING ACCESSORIES

- A. Pre-Formed Glazing Tape: Material recommended by glass manufacturer 10 to 15 Shore A durometer hardness. Size to suit application.
- B. Setting Blocks: Elastomeric material recommended by glass manufacturer, compatible with insulating glass unit secondary seal. Hardness: 80 to 90 Shore A durometer. Length: 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area. Minimum 1/4 inch thick.
- C. Spacer Shims: Elastomeric material recommended by glass manufacturer, 50 to 60 Shore A durometer hardness, minimum 3 inch long x one half the height of glazing stop x thickness to suit application.

- D. Glazing Clips: Manufacturer's standard type.

## 2.5 FABRICATION

- A. Cut glass to fit each opening with minimum edge clearances and maximum bite on glass as recommended by glass manufacturer. Do not nip glass edges.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify openings for glazing are correctly sized and within acceptable tolerance.

### 3.2 PREPARATION

- A. Clean glazing channels, stops and rabbets of obstructions and deleterious substances which might impair work. Verify weeps are clear and ready to receive glazing.
- B. Comply with manufacturer's instructions for preparation of surfaces immediately before application of primer and glazing compounds or tapes.
- C. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- D. Prime surfaces scheduled to receive sealant.

### 3.3 INSTALLATION

- A. Perform installation in accordance with GANA Glazing Manual.
- B. Comply with manufacturer's instructions and reference standards for installation of materials specified.
- C. Inspect glass immediately before installation. Do not install pieces which are improperly sized or have damaged edges, scratches, abrasions or other evidence of damage.
- D. Use setting blocks at sill of proper size to support glass in accordance with manufacturer's recommendations. Place in locations recommended by glass manufacturer.
- E. Completely conceal edge binding of insulating glass units with glazing material and extend material minimum 1/8 inch onto glass surfaces at each edge, to provide glazing seal independent of hermetic seal.
- F. Install exterior glass watertight and airtight, and capable of withstanding temperature changes, wind loading and impact from operation (doors and operable sash) without failure or breakage of glass, failure of seal, exudation of sealant and excessive deterioration of glazing materials.

### 3.4 CLEANING

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

END OF SECTION

## SECTION 08871

### WINDOW FILM

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Film products applied to glass surfaces to impart aesthetic characteristics.
- B. Related Sections:
  - 1. Section 08800 - Glazing.

##### 1.2 REFERENCES

- A. American National Standards Institute:
  - 1. ANSI Z97.1 - "Safety Glazing Materials Used in Buildings—Safety Performance Specifications and Methods of Test."
- B. ASTM International:
  - 1. ASTM D 1044.
  - 2. ASTM E 84.
  - 3. ASTM D4830.
  - 4. ASTM D 882.
- C. Insulating Glass Certification Council (IGCC).
- D. National Fire Protection Association:
  - 1. NFPA 80 - Standard for Fire Doors, Fire Windows.

##### 1.3 PERFORMANCE REQUIREMENTS

- A. Scratch Resistance: Maximum 5.0 percent haze increase when tested to ASTM D 1044, using 100 revolutions, a CS-10F Taber abrading wheel and 500 g weights.
- B. Surface Burning Characteristics: Flame Spread Index of 0 and Smoke Development Index of 30 or less when tested in accordance to ASTM E 84.
- C. Puncture Strength of 79 lbs under ASTM D4830.
- D. Tensile Properties:
  - 1. Measured in accordance with ASTM D 882
  - 2. Minimum Tensile Strength of film: 32,000 psi.
  - 3. Minimum Elongation at Break: 100%.
  - 4. Minimum Break Strength: 133 lb/in.



## 1.4 QUALIFICATIONS

- A. Manufacturer Qualifications: Experienced in manufacturing systems similar to those indicated for this Project and meeting the standards of the International Standards Organization (ISO), ISO 9001 Quality Assurance in Production and Installation.
- B. Installer Qualifications: Experienced installer certified, licensed, or otherwise qualified by film manufacturer as having the necessary experience, staff, and training to install manufacturer's products according to specified requirements

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Manufacturer/Product:
  - 1. Solvx, SX-3140 – Dusted Crystal.
- B. Color: White pattern.
- C. Locations: See Drawings.

### 2.2 GLAZING FILM ACCESSORIES

- A. Comply with requirements of glazing film manufacturer for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Adhesive: Pressure sensitive acrylic adhesive system.
- C. Cleaners, Primers, and Sealers: Types recommended by glazing film manufacturer:

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine glass and surrounding adjacent surfaces for conditions affecting installation.
- B. Report conditions that may adversely effect installation.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions for surface preparation.
- B. Immediately before beginning installation of films, clean glass surfaces of substances that could impair glazing film's bond, including mold, mildew, oil, grease, dirt and other foreign materials.
- C. Protect window frames and surrounding conditions from damage during installation

### 3.3 INSTALLATION

- A. Comply with glazing film manufacturers' written installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
- B. Install film continuously, but not necessarily in one continuous length. Install with no gaps or seams.
- C. Install film with mounting solution and custom cut to the glass with neat, square comers and edges to within 1/8 inch of the window frame.
- D. Install film absent of bubbles, wrinkles, blisters, edge lifting and blemishes.
- E. Remove and replace with new film:
  - 1. Any installed film not uniform in appearance with no visible streaks, banding, thin spots or pinholes when viewed from a distance of 10 feet against a bright uniform sky or background.

### 3.4 CLEANING

- A. Remove excess mounting solution at finished seams, perimeter edges, and adjacent surfaces.
- B. Use cleaning methods recommended by glazing film manufacturer.
- C. Replace films that cannot be cleaned.

END OF SECTION

## SECTION 09260

### GYPSUM BOARD ASSEMBLIES

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Metal stud wall framing.
  - 2. Metal channel ceiling framing.
  - 3. Gypsum board and joint treatment.
- B. Related Requirements:
  - 1. Section 09900 – Painting.

##### 1.2 REFERENCE STANDARDS

- A. Comply with applicable provisions of current edition of the following:
- B. ASTM International:
  - 1. ASTM C645 - Standards for Gypsum Board and Nonstructural Steel Framing and components.
  - 2. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
  - 3. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
- C. Gypsum Association:
  - 1. GA 214 - Recommended Levels of Gypsum Board Finish.
  - 2. GA 216 - Application and Finishing of Gypsum Board.
  - 3. GA 600 - Fire Resistance Design Manual Sound Control.
- D. Underwriters Laboratories Inc.:
  - 1. UL - Fire Resistance Directory.

##### 1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM C840, ASTM C1280, GA-214, GA-216 and GA-600.
- B. Fire Rated Wall Construction: Rating as indicated on Drawings.
  - 1. Tested Rating: Determined in accordance with ASTM E119.

#### PART 2 PRODUCTS

##### 2.1 GYPSUM BOARD ASSEMBLIES

- A. Manufacturer and Product List:

1. CertainTeed
2. Georgia-Pacific
3. National Gypsum Co.
4. United States Gypsum Co.
5. Section 01600 - Product Requirements: Requirements for substitutions for other manufacturers and products.

B. Performance / Design Criteria:

1. Select interior stud thickness to resist minimum 5 psf uniform load and maximum deflection of L/240.
2. Exterior stud thickness to resist minimum wind pressure of 20 psf uniform load and maximum deflection of L/240.
3. Seismic Loads: Design and size components to withstand seismic loads and sway displacement as calculated according to ASCE 7 and applicable codes.

## 2.2 COMPONENTS

A. Framing Materials:

1. Non-load Bearing Studs and Tracks: ASTM C645; galvanized sheet steel, minimum 25 gage, except use 20 gage where indicated or required for specified load and deflection criteria. Roll form to C shape. Stud sizes as indicated on drawings.
2. Furring, Framing, and Accessories: ASTM C645. Provide deflection heads to separate from structure.
3. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
4. Seismic Bracing: As required for seismic performance requirements.

B. Gypsum Board Materials: ASTM C1396/C1396M; Type X fire resistant where indicated on Drawings.

1. Standard Gypsum Board: 5/8 inch thick, maximum available length in place; ends square cut, tapered edges on long sides.
  - a. Recycled Content:
  - b. Paper: 100% post-consumer.
2. Gypsum: Maximum recycled content possible or minimum 95% synthetic gypsum, or combination of both.
3. Moisture Resistant Gypsum Board: 5/8 inch thick, maximum available length in place; ends square cut, tapered edges.

## 2.3 ACCESSORIES

- A. Gypsum Board Accessories: ASTM C1047; metal; corner beads, edge trim, and expansion joints.
- B. Metal Accessories: Galvanized steel.
- C. Joint Materials: ASTM C475/C475M; GA-216; reinforcing tape, joint compound, and water.
- D. Fasteners: ASTM C1002; length to suit application.
  1. Gypsum Board Screws: ASTM C1002; length to suit application.

2. Screws for Steel Framing: Type S.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01700 - Execution Requirements: Requirements for installation examination.
- B. Verify site conditions are ready to receive work and opening dimensions are as instructed by manufacturer.

3.2 INSTALLATION

- A. Metal Stud Installation:
  - 1. Install studs in accordance with ASTM C754, GA-216 and GA-600.
  - 2. Metal Stud Spacing: 24 inches on center.
  - 3. Refer to Drawings for indication of stud framing to ceiling only. Attach ceiling runner securely ceiling framing in accordance with indicated details.
  - 4. Refer to Drawings for indication of partitions extending stud framing through ceiling to structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runners.
  - 5. Door Opening Framing: Install double studs at door frame jambs. Blocking: Install blocking for support of plumbing fixtures, toilet accessories, hardware, and light fixtures.
- B. Wall Furring Installation:
  - 1. Install thermal insulation in conjunction with Section 07213 vertically and hold in place with Z-furring channels spaced maximum 24 inches on center, not more than 3 inches from external corners and 12 inches at internal corners. Secure Z-furring channels maximum 24 inches on center.
  - 2. Erect metal stud framing tight to or spaced from masonry and concrete walls, attached by adjustable furring brackets.
- C. Ceiling Framing Installation:
  - 1. Install in accordance with ASTM C754 and GA-216.
  - 2. Coordinate location of hangers with other work.
  - 3. Install ceiling framing independent of walls, columns, and above ceiling work.
  - 4. Reinforce openings in ceiling suspension system which interrupt main carrying channels or furring channels, with lateral channel bracing. Extend bracing minimum 24 inches past each end of openings.
  - 5. Laterally brace entire suspension system as required for seismic design category.
- D. Gypsum Board Installation:
  - 1. Install gypsum board in accordance with ASTM C840.
  - 2. Erect single and double layer in accordance with structural and fire resistance requirements, recommendations of Gypsum Association and as indicated on Drawings.
  - 3. Erect single layer fire rated gypsum board [vertically], with edges and ends occurring over firm bearing.
  - 4. Use screws when fastening gypsum board to metal furring or framing.

5. Treat cut edges and holes in [moisture resistant gypsum board with sealant.
6. Place control joints consistent with lines of building spaces.
7. Place corner beads at external corners and as indicated on Drawings. Use longest practical length. Place edge trims where gypsum board abuts dissimilar materials and as indicated on Drawings.

E. Interior Joint Treatment:

1. Finish to ASTM C840.
2. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
3. Feather coats on to adjoining surfaces so that camber is maximum 1/32 inch.

### 3.3 TOLERANCES

- A. Section 01400 - Quality Requirements: Tolerances.
- B. Maximum Variation of Finished Gypsum Board Surface from Flat Surface: 1/8 inch in 10 feet.

### 3.4 CORRECTION OF DEFECTIVE WORK

- A. For one year after Final Acceptance, repair and repaint, at no additional cost, all surfaces with loose plaster, loose fasteners, or defective joints.

END OF SECTION

## SECTION 09300

### TILE

#### GENERAL

##### 1.1 SUMMARY

- A. Section includes:
  - 1. Ceramic tile floor and wainscoat.
- B. Related Sections:
  - 1. Section 02225 – Minor Demolition for Remodeling.
  - 2. Appendix A – Interior Finish Specifications.

##### 1.2 REFERENCES

- A. American National Standards Institute:
  - 1. ANSI A108.1 - Installation of Ceramic Tile, A collection.
  - 2. ANSI A118.6 - Ceramic Tile Grouts.
  - 3. ANSI A137.1 - Ceramic Tile.
- B. Tile Council of America:
  - 1. TCA - Handbook for Ceramic Tile Installation.

##### 1.3 SUBMITTALS

- A. Section 01300 - Submittal Procedures.
- B. Product Data: Manufacturer's Specifications and installation & maintenance recommendations.
- C. Samples: Minimum 12" square for each color, pattern and type of tile, grouted as specified. Obtain Architect's approval of sample panels prior to delivering products to Project Site.
- D. Certificates:
  - 1. Tile: Conform to ANSI A137.1, state grade, tile type, identification marks for tile packages, name and location of Project, issued by manufacturer when tile is shipped.
  - 2. Mortars, adhesives, grouts: Manufacturer's certification that materials are suitable for intended use.

##### 1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with TCA Handbook and ANSI A108 Series/A118 Series.

##### 1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

- B. Installer: Company specializing in performing Work of this section with minimum three years experience.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Protect adhesives and grouts from freezing or overheating.

#### 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements.
- B. Do not install adhesives and grouts in unventilated environment.
- C. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

### PART 2 PRODUCTS

#### 2.1 TILE

- A. Manufacturers:
  - 1. American Olean, Dal Tile.
  - 2. Substitutions: Section 01600 - Product Requirements.
- B. Acceptable Setting Material Manufacturers:
  - 1. Hydroment
  - 2. Custom Building Products.
  - 3. Laticrete International, Inc

#### 2.2 COMPONENTS

- A. Ceramic Wall Tile:
  - 1. CT-1 See Interior Finish Specifications - Appendix 'A'.
- B. Ceramic Floor Tile:
  - 1. CT-2: See Interior Finish Specifications - Appendix 'A'.
- C. Substrate leveling Compound:
  - 1. Approved Product: 84 LatiLevel, by Laticrete International Inc.
  - 2. Primer: Laticrete Admix and Primer.
- D. Thin-Set Adhesive:
  - 1. Approved Product: 254 Platinum, by Laticrete International Inc.
  - 2. Polymer fortified thin-set mortar.
  - 3. Comply with ANSI A118.4 and ANSI A118.11.



- E. Grout Materials:
  - 1. Acceptable Product: SpectraLock Pro, by Laticrete International Inc.
  - 2. High performance epoxy grout.
  - 3. Comply with ANSI A118.3.
  - 4. Color: Laticrete #89 Smoke Grey - subject to Architect's approval of submittal samples

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine surfaces to receive tile, setting beds or accessories prior to installation of tile.
- B. Verify surfaces are free from defects or conditions adversely affecting quality and execution of tile installation.

### 3.2 SUBSTRATE PREPARATION

- A. Repair and level substrate surface irregularities and cracks up to 1 inch in thickness:
  - 1. Prime surfaces in accordance with manufacturer's installation instructions.
  - 2. Install self-leveling compound in accordance with manufacturer's installation instructions.
  - 3. Surface deviation tolerance: 1/4" in 10'- 0".
- B. Protect surrounding work from damage.
- C. Vacuum clean surfaces.
- D. Prepare substrate surfaces for adhesive installation.

### 3.3 INSTALLATION

- A. Install tile, and grout in accordance with:
  - 1. TCA Handbook.
  - 2. Applicable requirements of ANSI A108.1 through A108.11.
  - 3. Manufacturer's recommendations.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Place edge strips at exposed tile edges.
- D. Align new joints with existing joints.
- E. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners neatly.
- F. Place tile with joints uniform in width, subject to variance in tolerance allowed in tile size.
  - 1. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- G. Allow tile to set for a minimum of 48 hours prior to grouting.

- H. Grout tile joints:
  - 1. Joint width: Verify with Architect.
  - 2. Color: Verify with Architect.
  - 3. Prepare and install in accordance with manufacturer's installation instructions.
- I. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

#### 3.4 CLEANING

- A. Section 01700 - Execution Requirements: Final cleaning.
- B. Clean tile and grout surfaces.

#### 3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Leave finished installation clean and free of cracked chipped, broken, unbonded or otherwise defective tile work.
- B. Protect installed ceramic tile work with kraft paper or other heavy covering during construction period to prevent damage and wear.

END OF SECTION

## SECTION 09510

### ACOUSTICAL CEILINGS

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes:

1. Acoustical lay-in tiles.
2. Wood acoustical lay-in tiles.
3. Suspended and surface attached suspended metal grid ceiling system and perimeter trim.

###### B. Related Sections:

1. Section 07210 – Building Insulation. (for acoustic insulation at wood ceiling tiles.)
2. Division 15 - Mechanical: Ceiling grilles.
3. Division 16 - Electrical: Ceiling lighting.
4. Division 16 - Fire alarm components in ceiling systems.
5. Division 1: Alternates
6. Drawings: Reflected Ceiling Plan: Location of ceiling types and alternates.

###### C. Comply with applicable provisions of current edition of following:

1. Acoustical and Insulating Materials Assn. current bulletin.
2. UBC Standards 47-19 Ceiling Bracing.
3. ASTM C635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
4. ASTM C636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
5. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
6. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
7. ASTM E580/E580M - Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint.
8. ASTM E1264 - Standard Classification for Acoustical Ceiling Products.
9. Green Seal: GS-11 - Product Specific Environmental Requirements.
10. Intertek Testing Services (Warnock Hersey Listed): WH - Certification Listings.
11. National Fire Protection Association: NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.
12. Underwriters Laboratories Inc.:UL - Fire Resistance Directory.

##### 1.02 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's specifications and installation recommendations.

C. Samples: For each panel and tile type.

- D. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other work or ceiling finishes, interrelation of mechanical and electrical items related to system. Indicate method of suspension where interference exists.
- E. Maintenance Material Submittals: Section 01700 - Execution Requirements: Requirements for maintenance material. Furnish extra materials equal to not less than 10% of each type acoustical material supplied. Furnish in full, unopened cartons only.

### 1.03 QUALITY ASSURANCE

### 1.04 QUALIFICATIONS

- A. Manufacturer: All acoustical materials for each type shall be product of single Manufacturer.

## PART 2 PRODUCT

### 2.01 MANUFACTURERS

- A. Acceptable Acoustical Lay-In Panel Manufacturers:
  - 1. Armstrong.
  - 2. 9Wood
  - 3. Section 10600 – Product Requirements: Requirements for substitutions for other manufacturers and products.

### 2.02 MATERIALS

- A. Hanger Wire: min. 12 ga. galv., pre-straightened, soft annealed, mild steel wire.
- B. Hanger Wire Framing: attachment devices with minimum carrying capacity of 5 times design load.
- C. Existing Fire Rated Suspension System:
  - 1. Repair and brace existing suspension system as required at new work. Connect existing ceiling systems in adjacent rooms after removing demising wall. Modify and adjust grids as required.
  - 2. Conform to requirements of ASTM C635 and UL G243.
  - 3. Support suspension system from structure.
- D. New Fire Rated Suspension System:
  - 1. Basis of Design Product: Armstrong Prelude XL Fireguard, exposed grid, 15/16”.
  - 2. ASTM C635 intermediate duty.
  - 3. Main Beams: Rotary stitched double-web construction of 1-11/16” height with peaked top bulb and 15/16” wide bottom flange with prefinished steel capping.
  - 4. Cross Tees: Double-web construction, 1-3/8” height, 15/16: bottom flange with prefinished steel cap. Staked on end to allow cross tee removal. Pre-finished in baked enamel.
  - 5. Color: White.
  - 6. Wall Moldings: Angle molding with hemmed and prefinished exposed flange..
  - 7. Hold Down clips: No 30 MSG spring steel, placed over cross tees at 2’ oc.

## E. Systems

1. **ACT-1:** 2x4 Fire Rated ceiling tiles
  - a. Basis of Design Product: Armstrong Cortega Second Look II, Medium Texture. No substitutions allowed.
  - b. Armstrong No: 2758.
  - c. Color: White.
  - d. Sizes: 24" x 48" x 3/4". Scoring creates nominal 24" x 24" squares.
  - e. Weight: 1.2 lbs/sf.
  - f. Edge Profile: 15/16" angled tegular lay-in.
  - g. Material: Wet-formed mineral fiber.
  - h. Flame Spread: 250 or less. Smoke Developed: 50 or less.
  - i. Fire Performance: ASTM E84 and ULC S102 surface burning characteristics.
  - j. Surface Finish: Factory-applied latex paint: white.
  - k. Fire Rating: Fire Guard, to meet UL G243 system requirements.
  - l. NRC Range: 0.55
  - m. Light Reflectance: 0.82.
  - n. Suspension System: Armstrong Prelude XL Fire Guard, exposed grid, 15/16".
  
2. **ACT-2:** 2x4 & 2x2 Perforated wood ceiling tiles.
  - a. Basis of Design Product: 9Wood.
  - b. Manufacturers: 9Wood, Armstrong, or approved substitute.
  - c. 9Wood: XL Channel Tiles, 5200 Series, Staggered Perforated Pattern.
  - d. Sizes: 24" x 48" x 1" & 24" x 24" x 1" end tiles.
  - e. Perforation Option: 5232-08, 9.8% open. Perforation spacing: 32 mm, Perforation size: 8 mm diameter.
  - f. Edge Profile: 3/8" reveal.
  - g. Materials: MDF/ particle board with veneer selected from manufacturer's standard veneers. FSC certified wood veneer and core. Basis of design: domestic wood.
  - h. Finish: Prefinished: clear satin sheen.
  - i. Flame Spread Fire Rating: Class C.
  - j. Installation Pattern: Ashlar.
  - k. NRC Range: 0.55 or better with acoustical insulation.
  - l. Light Reflectance: 0.90.
  - m. Support System: 9Wood XL Channel System, Color: Black
  - n. Accessories: Supplemental reinforcement at electrical penetrations.
  - o. Section 09260 Gypsum Board Assemblies – Acoustical insulation.
  - p. Section 09260 Gypsum Board Assemblies – Metal furring strips.
  
3. **ACT-3:** 2x4 Fire Rated ceiling tiles
  - a. Existing system. Salvage and reuse panels from areas of new construction.

### 2.03 ACCESSORIES

- A. Touch-up Paint: Type and color to match acoustic and grid units.
- B. Acoustic Sealant: for perimeter moldings specified in Section 07900.

## PART 3 EXECUTION

### 6.01 EXAMINATION

- A. Section 01700 - Execution Requirements: Requirements for installation examination.
- B. Verify layout of hangers will not interfere with other work.

### 6.02 INSTALLATION

#### A. Lay-In Grid Suspension System:

1. Install suspension system in accordance with ASTM C635, ASTM C636 and as supplemented in this section.
2. Install suspension system in accordance with ASCE 7, ASTM E580/E580M and CISCA for Seismic Zone 3-4.
3. Install system capable of supporting imposed loads with maximum deflection of 1/240 maximum.
4. Locate system on room axis according to reflected plan.
5. Install after major above ceiling work is complete. Coordinate location of hangers with other work.
6. Locate system on room axis according to reflected plan.
7. Install after major above ceiling work is complete. Coordinate location of hangers with other work. Install hanger clips during steel deck erection. Install additional hangers and inserts as required.
8. 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.
9. Where ducts or other equipment prevent regular spacing of hangers, reinforce nearest affected hangers to span extra distance.
10. Do not support components on main runners or cross runners when weight causes total dead load to exceed deflection capability. Do not eccentrically load system, or produce rotation of runners.
11. Adjust suspension system to be level to within 1/8 inch in 12 feet.
12. Perimeter Molding:
  - a. Install edge molding at intersection of ceiling and vertical surfaces into bed of acoustic sealant.
  - b. Use longest practical lengths.
  - c. Miter corners.
  - d. Install at junctions with other interruptions.
13. Install light fixture boxes constructed of acoustic panel above light fixtures in accordance with UL assembly requirements and light fixture ventilation requirements.

#### B. Non-Suspended Grid Systems

1. Install suspension system in accordance with ASTM C635, ASTM C636 and as supplemented in this section.
2. Install suspension system in accordance with ASCE 7, ASTM E580/E580M and CISCA for Seismic Zone 3-4.
3. Install system capable of supporting imposed loads with maximum deflection of 1/240 maximum.
4. Locate system on room axis according to reflected plan.

5. Install after major above ceiling work is complete. Coordinate location of connections with other work.
6. Locate system on room axis according to reflected plan.
7. Install after major above ceiling work is complete. Coordinate location of hangers with other work.
8. Coordinate with wood ceiling tile layout and 9Wood XL Channels.
9. Do not support components on main runners or cross runners when weight causes total dead load to exceed deflection capability. Do not eccentrically load system, or produce rotation of runners.
10. Adjust system to be level to within 1/8 inch in 12 feet.
11. Finish: All exposed material to be painted black.
12. Perimeter Molding:
  - a. Install edge molding at intersection of ceiling and vertical surfaces.
  - b. Use longest practical lengths.
  - c. Miter corners.
  - d. Install at junctions with other interruptions.

C. Acoustic Units:

1. Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.
2. Lay directional patterned units [one way with pattern parallel to [ongest room axis. Fit border trim neatly against abutting surfaces.
3. Install units after above ceiling work is complete.
4. Install acoustic units level, in uniform plane, and free from twist, warp, and dents.
5. Cutting Acoustic Units:
6. Cut to fit irregular grid and perimeter edge trim.
7. Cut edges to match adjacent panels at field cut units.
8. Double cut and field paint exposed edges of tegular units.
9. Where round obstructions occur, install preformed closures to match perimeter molding.

### 6.03 TOLERANCES

- A. Section 01400 - Quality Requirements: Tolerances.
- B. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- C. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

## SECTION 09570

### LINEAR WOOD BAFFLE CEILINGS

#### PART 1 GENERAL

##### 1.1 SUMMARY

###### A. Section Includes:

1. Concealed suspension system.
2. Linear wood baffles /grilles.
3. Perimeter trim and accessories.

###### B. Related Requirements:

1. Section 01030 - Alternates.
2. Section 09260 - Gypsum Board Assemblies: Suspension system as substrate for this section.
3. Section 16510 - Interior Luminaires: Light fixtures in ceiling system.

##### 1.2 REFERENCE STANDARDS

###### A. ASTM International:

1. ASTM A641- Standard Specification for Zinc Coated (Galvanized) Carbon Steel Wire.
2. ASTM C635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
3. ASTM C636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
4. E 84: Standard Test Method for Surface Burning Characteristics of Building Materials.
5. ASTM E 580: Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint.
6. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

###### B. AWI (QSI): Architectural Woodwork Quality Standards Illustrated.

###### C. Ceilings and Interior Systems Construction Association:

1. CISCA - Acoustical Ceilings: Use and Practice.

###### D. Green Seal:

1. GC-03 - Anti-Corrosive Paints.

##### 1.3 COORDINATION

###### A. Section 01300 - Administrative Requirements: Requirements for coordination.

###### B. Coordinate Work of this section with installation of mechanical and electrical components and with other construction activities affected by Work of this section.



#### 1.4 PRE-INSTALLATION MEETINGS

- A. Section 01300 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum one week prior to commencing work of this section.

#### 1.5 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Shop Drawings:
  - 1. Reflected ceiling plan with details showing layout of panel system and support.
  - 2. Indicate location of mechanical and electrical components and details of junction with dissimilar materials.
  - 3. Indicate installation details required for seismic design loads.
- D. Samples: Submit two samples illustrating color and finish of exposed to view components.

#### 1.6 QUALITY ASSURANCE

- A. Single Source: Panels shall be purchased from a single manufacturer.
- B. Sustainable Design Requirements:
  - 1. Wood Veneer: Provide sustainable harvested wood manufactured within 500 miles of Project site.
  - 2. Core: FSC certified.

#### 1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years experience approved by manufacturer.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Accept factory-finished products on site in manufacturer's unopened factory packaging only.

## 1.9 PROJECT CONDITIONS

- A. Stabilize and acclimate panels in room in which they will be installed immediately prior to installation. Maintain temperature and humidity closely approximate to conditions that will exist when building is occupied.

## 1.10 WARRANTY

## PART 2 PRODUCTS

### 2.1 LINEAR WOOD CEILING SYSTEM

- A. Manufacturer List:
  - 1. 9Wood, Inc.
  - 2. Armstrong
  - 3. Architectural Surfaces, Inc.
  - 4. Ceilings Plus.
  - 5. Norton Industries.
  - 6. Rulon Company.
  - 7. Sound Seal.
  - 8. Section 01600 - Product Requirements: Requirements for substitutions for other manufacturers and products.
- B. Performance / Design Criteria:
  - 1. Installed Ceiling and Suspension System:
    - a. Support dead loads, including light fixtures, without eccentric loading of supports.
    - b. Resist dead loads with maximum deflection of 1/360 of span.
  - 2. Seismic Loads: Design and size components to withstand seismic loads and sway displacement as calculated according to ASCE 7 and applicable codes for Seismic Design Category D.
  - 3. Flame Spread: Class C, 200 or less; Smoke Developed, 450 or less.

### 2.2 COMPONENTS

- A. Linear Panels:
  - 1. Basis-of-Design Product: 1100 Style Cross Piece Grille by 9Wood Inc., Springfield OR.
  - 2. Species: Plain Sliced Maple Veneer.
  - 3. Member Size: 3 1/4" x 3/4".
  - 4. Edge Profile: Square.
  - 5. Members per lineal foot: 3 (6" o.c. and 5 1/4" gap).
  - 6. Joints: Open reveal.
  - 7. Finish: Clear satin sheen.
  - 8. Panel Width: 12" min.
  - 9. Core: Fire Rated Particle Board, FSC rated.
- B. Attachment System:
  - 1. Directly attach system to gypsum wall board ceiling.

2. Manufacturer's standard heavy duty formed steel T-grid system, using main runners, and cross-tees. Mounting clips as required for direct attachment to gypsum wall board ceiling structure above.
  3. Suspension Wire: Not required.
  4. Braces, Ties, Hanger Rods, Flat Hangers and Angle Hangers: Not required.
  5. Attachment Devices: Size for 3 times the design load indicated in ASTM C 635, Table 1, Direct Hung.
- C. Edge Moldings: Open reveal.
- D. Light Fixtures: Fabricated to fit system, requiring no interruption of suspension components, and independently suspended.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify work above ceiling is complete and conditions affecting ceiling installation and anchorages are acceptable.
- B. Verify utilities are available, in proper location, and ready for use.

### 3.2 INSTALLATION

- A. Suspension Components:
  1. Install suspension system in accordance with ASCE 7, ASTM E580/E580M and CISCA for Seismic Zone 3-4, and in accordance with Manufacturer's instructions.
  2. Hang carrying members from purlins independent of walls, columns, ducts, light fixtures, pipe, and conduit.
  3. Where carrying members are spliced, avoid visible displacement of face panels with adjacent panels.
  4. Where ducts or other equipment prevent regular spacing of hangers, reinforce nearest adjacent hangers to span required distance.
  5. Locate suspension system for linear panel layout parallel to building lines.
- B. Linear Panels:
  1. Install panels in accordance with Manufacturer's instructions.
  2. Install with undamaged edges and fitted accurately to suspension system runners and edge moldings.
  3. Scribe and cut panels at borders and penetrations to provide neat precise fit.
  4. Stagger end joints minimum 12 inches.
  5. Butt interior end joints tight.
  6. Install recessed space closures between linear panels at interior and exterior locations.
  7. Install edge moldings at intersections of ceiling with other finishes, and at vertical surfaces; use maximum piece lengths.
  8. Exercise care when site cutting sight-exposed finished components to ensure surface finish is not defaced.

### 3.3 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation From Dimensioned Position: 1/4 inch.

### 3.4 CLEANING

- A. Comply with manufacturer's instructions for cleaning and touchup of minor finish damage.
- B. Remove and replace wood ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

## SECTION 09650

### RESILIENT FLOORING

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes:

1. Resilient sheet flooring.
2. Resilient base.

###### B. Related Sections:

1. Section 01300 - Submittals.
2. Section 01400 - Quality Control.
3. Appendix A – Interior Finish Specifications: Color selections.
4. Section 09685 – Carpet Tile: Resilient base at carpet areas.

##### 1.02 REFERENCES

- A. ASTM F2034 Type I - Standard Specification for Sheet Linoleum Flooring.

##### 1.03 QUALITY ASSURANCE

###### A. Installer Qualifications:

1. Experienced with the work of this Section, specializing in installing linoleum floor coverings with a record of successful in-service performance.
2. Approved by Manufacturer.

##### 1.04 SUBMITTALS

- A. Submit under provisions of Section 01300.

###### B. Product Data:

1. Resilient Sheet flooring and base.
2. Adhesives: Indicate VOC limits and recommended temperature and humidity range.

- C. Samples of selected flooring, weld rods and base, fully labeled.

##### 1.05 MAINTENANCE MATERIALS

- A. Replacement material in the amount of 0.5 percent of installed sheet flooring, for each type, color and pattern installed. Extra materials must precisely match materials installed, must be wrapped in suitable packaging and must be clearly labeled.

##### 1.06 PROJECT CONDITIONS

- A. Maintain a temperature of 70<sup>0</sup> F (21<sup>0</sup> C) plus or minus 5<sup>0</sup> F (3<sup>0</sup> C) in spaces to receive resilient flooring products. Specified temperature shall be maintained at least 48 hours before, during, and 48 hours after the installation

## PART 2 PRODUCT

### 2.01 SHEET FLOORING MATERIALS

RF-1: Natural Sheet Linoleum Flooring: See Appendix A: Interior Finish Specifications, for color selections and material information.

### 2.02 RESILIENT BASE MATERIALS

#### A. Resilient Base: RB-1, RB-2

1. Manufacturer: Flexco, Roppe, or approved substitute.
2. Type: Rubber base, commercial grade.
3. Style: Top set, cove base at resilient flooring areas, 4 inch and 6 inch heights as indicated on Drawings, color as selected by Architect.
4. Standard roll stock required. 48" base sections not acceptable.
5. Adhesive: As recommended by base manufacturer with low/no VOC.
6. Appendix A: Interior Finish Specifications, for color selections.

### 2.03 MISCELLANEOUS ACCESSORIES

#### A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement based or blended hydraulic cement based formulation as approved by floor covering manufacturer for applications indicated.

#### B. Adhesive:

1. Type recommended by manufacturer of resilient product for specific substrate conditions.
2. Toxicity/IEQ:
  - a. Provide adhesives with a VOC content no greater than 10 grams per liter per South Coast Air Quality Management District Rule #1168.
  - b. Comply with applicable regulations regarding toxic and hazardous materials, GS-36 for Commercial Adhesive.

#### C. Resilient Edge Strips:

1. Solid rubber or vinyl edging, in tapered or rounded profile, nominally 1 inch in width and 1/8 inch in thickness.
2. Color: Match floor covering.

#### D. Heat-Welding Bead:

1. Solid-strand product of floor covering manufacturer.
2. Color: To be selected to match floor covering.

## PART 3 EXECUTION

### 3.01 PREPARATION

#### A. Prepare substrates according to manufacturer's written recommendations to ensure adhesion of floor coverings.

- B. Mechanically remove adhesive, paint, oils, waxes, sealers and curing compounds on substrate not compatible with adhesive to be used. Do not use solvents except as approved by Owner's Representative.
- C. Remove ridges, bumps and other irregularities. Fill cracks, contraction joints, holes and depressions with subfloor filler as recommended by manufacturer to achieve smooth flat hard surface.
- D. Test substrate for moisture content and test concrete floors for alkalinity.

### 3.02 GENERAL INSTALLATION REQUIREMENTS

- A. Comply with manufacturer's published recommendations for installation in each area, extending resilient flooring into spaces that are partially concealed. Cut and fit tightly to fixtures, pipes, and other obstructions, as well as to walls and partitions.
- B. Inspect substrate for levelness and smoothness and require corrections to defects prior to start of work.
- C. Condition all flooring materials a minimum of 48 hours prior to starting installation. Maintain ambient temperature between 65 degrees F and 100 degrees F throughout installation and for 48 hours after completion.

### 3.03 RESILIENT SHEET FLOORING INSTALLATION

- A. Layout and Matching:
  1. Establish optimum use of material with minimum number of seams in each space.
  2. Locate seams in inconspicuous and low-traffic areas not less than 6 inches away from parallel joints in flooring substrate.
  3. Maintain uniformity of floor covering direction.
  4. Match patterns carefully at seams, following manufacturer's directions.
  5. Terminate flooring at centerline of door openings where adjacent floor finish is dissimilar. Where flooring continues through door opening, continue established pattern with no interruption.
- B. Seams:
  1. Heat-welded.
  2. Wait a minimum of 10 to 24 hours before heat welding depending on adhesive manufacturer's recommendations.
  3. Weld seams immediately after grooving to prevent groove contamination.

### 3.04 INSTALLATION OF RESILIENT BASE

- A. Fit joints tightly and make vertical. Use maximum lengths to minimize joints.
- B. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold.
- 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 INSTALLATION OF MISCELLANEOUS ACCESSORIES

A. Resilient Edge Strips:

1. At locations shown on drawings, or where otherwise required to protect edge of resilient flooring, install resilient edge strips securely with recommended adhesive, to achieve tightly butted joint.
2. Use maximum available lengths to minimize joints.

3.05 CLEANING

- A. Initial Cleaning: Remove excess and waste materials promptly, and sweep or vacuum clean resilient flooring as soon as installation has been completed in each area. After adhesive has had adequate time to set, mop each area with damp mop and mild detergent.
- B. Final Cleaning: Remove scuff marks, excess adhesive, and other foreign substances, using only cleaning products and techniques recommended by manufacturer of resilient products.

3.06 PROTECTION

- A. Construction Period:
1. Do not allow traffic on flooring for 24 hours after installation.
  2. Cover traffic routes across completed resilient flooring with plywood, hardboard, or other durable material to protect against damage from loaded dollies and other construction traffic.
- B. Polish: Apply protective polish to clean resilient flooring surfaces, unless manufacturer of resilient product recommends otherwise.
- C. Final Protection: Cover resilient floor surface with non-staining building paper until substantial completion in each area.

END OF SECTION



## SECTION 09685

### CARPET TILE

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Patching/cutting of existing direct-glued carpet.
  - 2. Carpet Tile.
  - 3. Resilient Base.
  - 4. Accessories.
- B. Related Requirements:
  - 1. Appendix A - Interior Finish Specifications

##### 1.2 REFERENCE STANDARDS

- A. ASTM International:
  - 1. ASTM D2859 - Standard Specification for Ignition Characteristics of Finished Textile Floor Covering Materials.
- B. Carpet and Rug Institute:
  - 1. CRI Carpet Installation Standard - Standard for Installation of Commercial Carpet.
  - 2. CRI Green Label Plus Testing Program.
  - 3. CRI Model Specifications for Commercial Carpets.
- C. Consumer Products Safety Commission:
  - 1. CPSC 16 CFR 1630 - Standard for the Surface Flammability of Carpets and Rugs.
- D. National Fire Protection Association:
  - 1. NFPA 253 - Standard Method of Test for Critical Radiant Flux for Floor Covering Systems Using a Radiant Heat Energy Source.

##### 1.3 PRE-INSTALLATION MEETINGS

- A. Section 01300 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum two weeks prior to commencing work of this section.

##### 1.4 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data on specified products, describing physical [and performance] characteristics; sizes, patterns, colors available, and method of installation.

- C. Shop Drawings: Indicate seaming plan, method of joining seams, direction of carpet pile and pattern, and location of edge moldings and edge. Samples:
  - 1. Submit two 12 x 12 inch samples in size illustrating color and pattern for each carpet material specified.
  - 2. Submit samples for edge strips and all other exposed accessories for each color specified.

## 1.5 CLOSEOUT SUBMITTALS

- A. Section 01700 - Execution Requirements: Requirements for submittals.
- B. Operation and Maintenance Data: Submit maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

## 1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Section 01700 - Execution Requirements: Requirements for maintenance materials.
- B. Extra Stock Materials:
  - 1. Furnish 10% overage of carpet tile of each type, color, and pattern specified.

## 1.7 QUALITY ASSURANCE

- A. Surface Burning Characteristics:
  - 1. Floor Finishes: Comply with one of the following:
    - a. CPSC 16 CFR 1630 and ASTM D 2859.

## 1.8 AMBIENT CONDITIONS

- A. Section 01500 - Temporary Facilities and Controls: Ambient conditions control facilities for product storage and installation.
- B. Store materials in area of installation for 48hours prior to installation.
- C. Maintain minimum 70 degrees F ambient temperature 1 day prior to, during and 24 hours after installation.
- D. Ventilate installation area during installation and for 3 days after installation.

## PART 2 PRODUCTS

### 2.1 CARPET

- A. Manufacturer List:
  - 1. Shaw Contract Group
  - 2. Bentley
  - 3. Substitutions: Section 01300

## 2.2 COMPONENTS

- A. Carpet Tile
  - 1. CPT-1: See Interior Finish Specifications - Appendix 'A'.
  - 2. CPT-2: See Interior Finish Specifications - Appendix 'A'.
- B. Resilient Base
  - 1. RB-1: See Interior Finish Specifications - Appendix 'A'.
  - 2. RB-2: See Interior Finish Specifications - Appendix 'A'.

## 2.3 ACCESSORIES

- A. Sub-Floor Filler: Type recommended by flooring material manufacturer.
- B. Moldings and Edge Strips: 1/8 inch thick vinyl, style and color as selected.
- C. Seam Adhesive: Recommended by manufacturer.
- D. Contact Adhesive: Recommended by sheet carpet and carpet tile manufacturer Adhesives: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01700 - Execution Requirements: Requirements for installation examination.
- B. Verify floor surfaces are smooth and flat within tolerances and are ready to receive work.

### 3.2 PREPARATION

- A. Section 01700 - Execution Requirements: Requirements for installation preparation.
- 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.

### 3.3 CARPET TILE INSTALLATION

- A. Install carpet tile in accordance with CRI Carpet Installation Standard.
- B. Do not mix carpet from different cartons unless from same dye lot.
- C. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

- D. Install carpet tile in ashlar pattern, with pile direction alternating to next unit, set parallel to building lines. Review decisions where aligning with existing conditions.
- E. Locate change of color or pattern between rooms under door centerline.
- F. Fully adhere carpet tile to substrate.

#### 3.4 RESILIENT BASE INSTALLATION

- A. Fit joints tightly and make vertical. Maintain minimum dimension of **18 inches** between joints.
- B. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

#### 3.5 CUTTING AND PATCHING OF EXISTING BROADLOOM CARPET

- A. Fold back existing carpet as required for new construction.
- B. Fully adhere repositioned carpet sections.

#### 3.6 CLEANING

- A. Section 01700 - Execution Requirements: Requirements for cleaning.
- B. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- C. Clean and vacuum sheet carpet surfaces.

#### 3.7 PROTECTION

- A. Section 01700 - Execution Requirements: Requirements for protecting finished Work.
- B. Do not permit traffic over unprotected floor surface.
- C. Cover carpeting in traffic areas with protective non-staining building paper. Do not use plastic sheeting.

END OF SECTION

SECTION 09720  
WALL COVERING & UPHOLSTERY

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Fabric wallcovering surface preparation and wall covering.
  - 2. Custom Vinyl Supergraphic.
  - 3. Cushion and fabric installation for Mindspa light seat.
- B. Related Sections:
  - 1. Section 09260 – Gypsum Board Assemblies: Wall substrate.

1.2 REFERENCES

- A. ASTM International: ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. National Fire Protection Association: NFPA 255.
- C. Underwriters Laboratories: UL 723.

1.3 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate wall elevations with seaming layout.
- C. Product Data: Submit data on covering and adhesive.
- D. Samples: Submit two samples of covering, 4x4 inch in size illustrating color, finish, and texture.
- E. Manufacturer's Installation Instructions: Submit special procedures, and perimeter conditions requiring special attention.
- F. Warranty: Manufacturer's standard 2 year warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01700 - Execution Requirements: Closeout procedures.
- B. Operation and Maintenance Data: Submit data on cleaning, touch-up, and repair of covered surfaces.

## 1.5 QUALITY ASSURANCE

### A. Surface Burning Characteristics:

1. Textile Wall Coverings: Comply with one of the following:
  - a. Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

## 1.6 QUALIFICATIONS

- ### A. Installer: Company specializing in performing work of this section within minimum 5 years experience.

## 1.7 MOCKUP – WC-1

- A. Section 01400 - Quality Requirements: Requirements for mockup.
- B. Construct mockup panel, 6 feet wide, full height, illustrating installed covering, joint seaming technique, and pattern.
- C. Locate where directed by Architect/Engineer.
- D. Incorporate accepted mockup as part of Work.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Inspect roll materials on site to verify acceptance.
- C. Protect packaged adhesive from temperature cycling and extremes.
- D. Do not store roll goods on end.

## 1.9 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements.
- B. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by adhesive or wall covering product manufacturer.
- C. Maintain these conditions 24 hours before, during, and after installation of adhesive and covering.
- D. Provide lighting level of 80 ft candles measured mid-height at substrate surfaces.

## 1.10 EXTRA MATERIALS

- A. Section 01700 - Execution Requirements: Spare parts and maintenance products.
- B. Supply 25 linear feet of each color and pattern of covering; store where directed.

- C. Package and label each roll by manufacturer, color and pattern, and destination room number.

## PART 2 PRODUCTS

### 2.1 WC-1: WALL COVERING

#### A. Manufacturers:

1. BuzziSpace: BuzziSkin, self adhesive wallpaper in BuzziFelt. Manufacturer's representative: Jayson Gates, 503.869.8325.
2. Substitutions: Section 01600 - Product Requirements.

### 2.2 COMPONENTS

#### A. Self adhesive wallpaper, conforming to the following:

1. Total Thickness: 0.24 inch plus 0.04 inch self adhesive backing
2. Roll Size: Width: 3.21 feet. Length: 33 feet.
3. Color: See Appendix A – Interior Finish Specifications.
4. Surface Texture: Felt. Pattern: natural.
5. Fire: Flame Spread: Class B, 75 or less. Smoke Developed Index: 450 or less.
6. Installation: Multi-color vertical stripes of random widths as indicated on drawings.
7. 100% recycled P.E.T. felt.

B. Self Adhesive Backing: Type recommended by covering manufacturer to suit application to substrate.

C. Wall Paper Paste: Type recommended by covering manufacturer to suit application to substrate.

D. Termination Trim: None. Terminates at inside corners and other architectural features.

### 2.3 CUSTOM VINYL SUPERGRAPHIC

A. Vinyl film, adhesive backed. Suitable for gypsum wall board installation.

B. Color to be selected by Architect from Manufacturer's standard colors. Graphic design to be provided by Architect.

### 2.4 MINDSPA WINDOW SEAT CUSHION

A. Manufacturer: Commercial Upholstery, Portland, OR 503.771 4145

B. Cushion: Single piece, 2" thick, bottom and 2 sides to 30" height. Fit to curve of window. Fire resistant foam with low smoke. Foamex, Firm 2535 foam at seat and 2525 foam at seat back.

C. Backer: 3/8" thick hardboard.

D. Cushion Wrap: 3/4 oz cushion flat Dacron.

E. Fabric: To be selected from commercial.

- F. Construction: Hook and loop fastener strips. Wrap foam around backer and staple. Install four Velcro strips to attach the cushion to of a square edge metal top

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify substrate surfaces are ready to receive work, and conform to requirements of covering manufacturer.
- C. Measure moisture content of surfaces using electronic moisture meter. Do not apply coverings unless moisture content of surfaces is below manufacturer's recommendations.
- D. Verify flatness tolerance of surfaces does not vary more than 1/8inch in 10 feet nor vary at rate greater than 1/16inch/ft.

### 3.2 PREPARATION

- A. Wash impervious surfaces rinse and neutralize; wipe dry.
- B. Surface Appurtenances: Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- C. Surfaces: Correct defects and clean surfaces which affect work of this section.
- D. Marks: Seal with shellac those which may bleed through surface finishes. Vacuum clean surfaces free of loose particles.

### 3.3 INSTALLATION

- A. Apply primer if needed for installation.
- B. Apply adhesive to immediately prior to application of covering. Let contact adhesive set tack free.
- C. Razor trim edges on flat work table, changing blade often to prevent rough cut edges. Do not razor cut on gypsum board surfaces.
- D. Use covering in pattern sequence.
- E. Apply covering smooth, without wrinkles, gaps or overlaps. Eliminate air pockets and ensure full bond to substrate surface. Butt edges tight. Horizontal seams are not acceptable.
- F. Do not seam within 2 inches of internal corners or within 6inches of external corners.



- G. Install covering before installation of bases, hardware, or items attached to or spaced slightly from wall surface.
- H. Remove excess adhesive while wet from seams before proceeding to next covering sheet. Wipe clean.

#### 3.4 CLEANING

- A. Section 01700 - Execution Requirements: Final cleaning.
- B. Clean coverings of excess adhesive, dust, dirt, and other contaminants.
- C. Reinstall wall plates and accessories removed prior to work of this section.

END OF SECTION

SECTION 09900  
PAINTS AND COATINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
  - 1. Preparation of surfaces for paint coatings.
  - 2. Interior painting of new and existing surfaces.
  
- B. Related Sections:
  - 1. Section 06200 - Finish Carpentry
  - 2. Section 08110 – Steel Doors and Frames.
  - 3. Section 08210 – Wood Doors.
  - 4. Section 09212 - Gypsum Board Assemblies.

1.2 REFERENCES

- A. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
  
- B. Painting and Decorating Contractors of America: PDCA - Architectural Painting Specification Manual.
  
- C. South Coast Air Quality Management District: SCAQMD Rule 1113 - Architectural Coatings.
  
- D. Green Seal Paints Standard GS-11.
  
- E. SSPC: The Society for Protective Coatings: SSPC.

1.3 DEFINITIONS

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

1.4 SUBMITTALS

- A. List of actual materials proposed, identified with Specification cross references.
  
- B. Product Data: Manufacturer's data on finishing products.
  
- C. Manufacturer's Installation Instructions: Submit special surface preparation procedures, substrate conditions requiring special attention.
  
- D. Samples:
  - 1. Two painted samples for each color and texture.
  - 2. Keep accurate record of color samples and insure that paint supplied matches approved samples.

## 1.5 QUALITY ASSURANCE

- A. Surface Burning Characteristics: Fire Retardant Finishes: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

## 1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum [three] years experience.
- B. Applicator: Company specializing in performing work of this section with minimum years experience.

## 1.7 DELIVERY, STORAGE, AND HANDLING

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

## 1.8 AIR QUALITY REQUIREMENTS

- A. Comply with regulations of the South Coast Air Quality Management District (SCAQMD) for Architectural Coatings regulations effective 7/1/2002.
- B. Comply with all applicable local, regional, state and Federal Air Resources Board and Federal Lead Content Regulations.
- C. Non-Specialty Paint Products VOC Content Limits: Comply with the following:
  - 1. Interior Flat and Non-Flat Paints: Maximum volatile organic compound content in accordance with GS-11.
  - 2. Interior Clear Wood Finishes: Maximum volatile organic compound content in accordance with SCAQMD Rule 1113.
  - 3. Exterior Flat Paint: 100 grams/liter (g/l).
  - 4. Exterior Non-Flat Paint: 150 g/l.
  - 5. Primers, sealers, and undercoaters: 200 g/l.
  - 6. Stains: 250 g/l.
  - 7. Consult South Coast Air Quality Management District ruling for VOC limits of other types of coatings.

## 1.9 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer.

- B. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by paint product manufacturer.
- C. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- D. Minimum Application Temperature for Varnish Finishes: 65 degrees F unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candle measured mid-height at substrate surface.

#### 1.10 EXTRA MATERIALS

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

### PART 2 PRODUCTS

#### 2.1 PAINTS AND COATINGS

- A. Manufacturers: Paint, Transparent Finishes, Stain, Primer Sealers.
  - 1. Benjamin Moore
  - 2. Fuller-O'Brien
  - 3. Miller Paint Co., Inc.
  - 4. Pittsburgh
  - 5. Rodda Paint Company
  - 6. Sherwin/Williams Co.
  - 7. Watco
  - 8. Substitutions: Under provisions of Section 01 60 00.
- B. Products for each general purpose shall be of same manufacturer. Do not use products of different manufacturers over one another, except for shop prime coats specified in other sections.
- C. Coatings:
  - 1. General: Conform to PDCA Revised Table of Products, current Edition.
  - 2. Commercial quality and "best grade."
  - 3. Ready mixed, except field catalyzed coatings. Process pigments to soft paste consistency, capable of being readily and uniformly dispersed to homogeneous coating.
  - 4. Good flow and brushing properties; capable of drying or curing free of streaks or sags.
  - 5. Recycled Paint: Metro Paints may be used for Semigloss Enamel (W) products.
  - 6. Coatings Types and Colors: See Appendix 'A' - Interior Finish Specifications.
- D. Maximum VOC Content:
  - 1. Interior Flat and Non-Flat Paints: Maximum volatile organic compound content in accordance with GS-11.
  - 2. Interior Anti-Corrosive Paints: Maximum volatile organic compound content in accordance with GC-03.

3. Interior Clear Wood Finishes: Maximum volatile organic compound content in accordance with SCAQMD Rule 1113.

## 2.2 ACCESSORY MATERIALS

- A. Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve finishes specified; commercial quality.
- B. Patching Materials: Latex filler.
- C. Fastener Head Cover Materials: Latex filler.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify surfaces are ready to receive Work as instructed by product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report conditions capable of affecting proper application.

### 3.2 PREPARATION

- A. Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing
- B. Correct defects and clean surfaces capable of affecting work of this section.
- C. Seal with shellac marks which may bleed through surface finishes.
- D. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
- E. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- F. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- G. Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.
- H. Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.
- I. Wood Doors Scheduled for Painting: Seal wood door top and bottom edge surfaces with clear sealer.

J. Metal Doors Scheduled for Painting: Prime metal door top and bottom edge surfaces.

### 3.3 EXISTING WORK

A. Extend existing paint and coatings installations using materials and methods compatible with existing installations and as specified.

### 3.4 APPLICATION

A. Comply with manufacturer's recommendations for application.

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless specified otherwise.

D. Sand wood and metal surfaces lightly between coats to achieve required finish.

E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

F. Where clear finishes are required, tint fillers to match wood. Work fillers into grain before set. Wipe excess from surface.

G. Prime concealed surfaces of interior and exterior woodwork with primer paint.

H. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.

I. Finishing Mechanical And Electrical Equipment:

1. Paint shop primed equipment.
2. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
3. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are shop finished.
4. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

J. Touch up and patch surfaces as required after the completion of work by other trades.

### 3.5 CLEANING

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

B. Dispose of empty containers, excess paint, solvents, paint scrapings, rags and other debris to acceptable, licensed landfill or recycling station as required for hazardous materials.

### 3.6 COATING SYSTEMS

- A. Interior and Exterior Ferrous Metals. (Including doors and frames both inside and outside.)
  - 1. Prime Coat: Rust inhibitive metal primer (omit if pre-primed).
  - 2. Finish: 2 coats alkyd enamel, semi-gloss.
  - 3. Total Coating Thickness: 4.5 mils dry (minimum).
  
- B. Interior Gypsum Board (dry areas).
  - 1. Prime Coat: High quality, high solids, drywall primer.
  - 2. Wall Finish: 2 coats Interior Latex Eggshell.
  - 3. Ceiling Finish: 2 coats Interior Latex Flat.
  - 4. Total Coating Thickness: 4.0 mils dry (minimum).
  
- C. B. Interior Gypsum Board. (Wet areas)
  - 1. Prime Coat: High quality, high solids, drywall primer.
  - 2. Finish: S-G Epoxy Enamel, degree of gloss as selected by Architect.
  - 3. Total Coating Thickness: 4.0 mils dry.
  
- D. Wood - Transparent:
  - 1. Finish: Two coats oil.
  - 2. Product: Watco Danish Oil 350 VOC.
  - 3. Light sand between coats.
  
- E. Exterior Fiber Cement Walls.
  - 1. One coat of primer sealer latex.
  - 2. One coat of latex - match existing color and gloss.

END OF SECTION

SECTION 10510  
PHENOLIC LOCKERS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes solid phenolic lockers and accessories.

1.2 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Indicate locker plan layout, numbering plan and key codes.

C. Product Data: Submit data on locker types, sizes and accessories.

D. Samples: Submit two 3 ½ x 3 ½ inches of each color or pattern scheduled.

E. Manufacturer's Installation Instructions: Submit installation template and attachment devices.

F. Closeout Documents: Submit operations and maintenance data, and warranty.

1.3 QUALITY ASSURANCE

A. Qualifications:

1. Fabricator shall have 15 years or more experience in fabrication of solid phenolic materials and shall be experienced in performing work of similar size and scope.
2. Fabricator shall be capable of providing field service representation.
3. Installer shall be approved by the manufacturer and be experienced in performing work of similar size and scope.

1.4 DELIVERY, STORAGE, AND PROTECTION

A. Section 01600 - Product Requirements: Product storage and handling requirements.

B. Protect locker finish and adjacent surfaces from damage.

1.5 Coordination and Project Conditions

A. Field Measurements: Before material fabrication, verify actual field measurements and show actual measurements on shop drawings.

B. Coordination: Coordinate field measurements with fabrication schedule construction progress to avoid construction delays



## 1.6 1.06 Warranty

- A. Submit executed copy of the manufacturer's 15-year warranty against defects in material and 2 years against workmanship signed by an authorized representative manufacturer.

## PART 2 PRODUCTS

### 2.1 SOLID PHENOLIC LOCKERS

#### A. Manufacturers:

1. Spec-Rite Designs, model: Design Tec fabricated from solid phenolic composite material.
2. Substitutions: Section 01600 - Product Requirements

### 2.2 COMPONENTS

#### A. Panel Material:

1. Decorative papers impregnated with the melamine resin on faces with a clear protective overcoat and integrally compression molded within a core consisting of solid phenolic impregnated kraft papers.
2. Core or panel material shall meet fire resistance per ASTM E84 Class B.
3. Colors:
  - a. Doors and Ancillary Panels: To be selected from Manufacturer's standard stocking color range. Up to 3 colors to be selected.
  - b. Core: Black
  - c. Locker Interior: Manufacturer's standard stocking color collection range.

#### B. Doors:

1. Material: 1/2" (13mm) thick solid phenolic composite material.
2. Corners: Rounded.
3. Edges: Crescent profile; machine polished and free from tooling imperfections.
4. Door Fastening: Blind Fixing.

#### C. Locker Bodies:

1. Exposed edges: Straight profile; eased edges to remove sharpness; machine polished and free from tooling imperfections.
2. Tops, bottoms, and intermediate shelves: 3/8" (10mm) thick solid phenolic composite material with ventilation holes.
3. Locker backs: 1/4" (6 mm) thick solid phenolic composite material.
4. Locker sides: 3/8" (10 mm) thick solid phenolic composite material.

#### D. Ancillary Panels: Finished end panels and closures shall be 1/2" (13mm) thick solid phenolic composite material.

#### E. Hardware:

1. Hinges:
  - a. Material: 304-grade stainless steel.
  - b. Type: Stop Hinge that limits the door opening to 90 degrees.

- c. Quantity: Three (3) for full height doors and two (2) for multi-tier units.
  - 2. Fasteners: Exposed fasteners shall be 304 stainless steel.
  - 3. Fastener Application: Apply directly into or through the material.
  - 4. Other Reinforcement: Aluminum or metal profiles for reinforcements shall not be permitted.
  - 5. Interior Hooks: See Schedule.
  - 6. Door Identification (identification plates): See Section 2.04 C.
- F. Base:
    - 1. Base furnished with locker: Adjustable leg mounted: 3-3/4" adjustable to 5-1/2", ABS plastic mounting-leveling leg.
  - G. Size and number: Per Schedule.
  - H. Locking System: Kenstan® spring-bolt key lock.
  - I. Locker Top: 1/2" top shall be flat with 1/4" (6mm) thick solid phenolic composite material).
  - J. Door Identification: Fonts to be a minimum 1/2" high and up to four alphanumeric characters. Numbering sequence to be provided by architect.
    - 1. Stainless steel with black numbers mounted with permanent adhesive integral with the locking mechanism.
  - K. ADA Accessibility Options: Where lockers are provided in accessible spaces, at least five percent (5%) of each type of locker shall comply with accessibility guidelines.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify prepared bases are in correct position and configuration.

### 3.2 INSTALLATION

- A. Install lockers in locations as shown on shop drawings per manufacturer's instructions.
- B. Install lockers plumb, level, square, rigid, and flush.
- C. Use hardware supplied or recommended by the manufacturer.
- D. Attach number plates to doors as indicated on shop drawings.
- E. Install all required trim, fillers, end panels, and closures per manufacturer's instructions. Install accessories.
- F. Replace components not operating smoothly.

### 3.3 ADJUSTMENT

- A. Adjust doors and locks for smooth operation without binding.
- B. Lubricate door hinges and locks per manufacturer's instructions.

### 3.4 CLEANING

- A. Section 01700 - Execution Requirements: Final cleaning.
- B. Clean locker interiors and exterior surfaces.

### 3.5 SCHEDULES

#### A. 2<sup>nd</sup> Floor, Staff Locker Room #230:

- 1. Two tier locker configuration.
- 2. Locker layout with corners.
- 3. Overall number of doors: 26.
- 4. Size: Overall height (excluding base): 71 ¾". Size: 12 inches (300 mm) wide, 12-3/8" inches (375 mm) deep, 72 inches (1 830 mm) high, double tier;
- 5. Hardware: top coat hook.

#### B. 3<sup>rd</sup> Floor, Testing Suite #340:

- 1. Three tier locker configuration.
- 2. Locker layout with straight
- 3. Overall number of doors: 45.
- 4. Size: Overall height (excluding base): 71 ¾".: 15 inches (300 mm) wide, 15-3/8" inches (375 mm) deep, 72 inches (1 830 mm) high.

END OF SECTION

## SECTION 10522 FIRE EXTINGUISHERS

### PART 1 GENERAL

#### 1.01 SUMMARY

A. Section Includes:

1. Fire Extinguishers.

B. Related Sections:

1. Section 01300 - Submittals.
2. Section 01400 - Quality Controls.
3. Section 06100 - Rough Carpentry: Blocking for wall mounted items.

#### 1.02 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Submit Manufacturer's specifications and installation recommendations.

#### 1.03 WARRANTY

A. Provide Manufacturer's standard warranty against defects in workmanship and materials.

### PART 2 PRODUCT

#### 2.01 MANUFACTURERS

A. Acceptable Manufacturers:

1. Amerex.
2. J.L. Industries.

B. Substitutions: Under provisions of Section 01600

#### 2.02 MATERIALS

A. Extinguishers:

1. Type: Fire Class ABC, dry chemical.
2. U.L. Rating: 4A-60BC.
3. Capacity: 10 lbs.
4. Range: 15 ft.
5. Construction: All metal.
6. Model: Amerex No. 456, or approved substitute.

B. Cabinets and Brackets:

1. Mounting Bracket: Manufacturer's standard wall mount bracket.
2. FE -1 (2 location)
  - a. Cabinets: J.L. Industries, Cosmopolitain, 1035S21 – 18.

- b. Recessed, flat trim, stainless steel, solid front with vertical die cut letters. Verify cabinet size to fit extinguishers.
- 2. FE -2 (2 locations)
  - a. Cabinets: J.L. Industries, Cosmopolitain, 1037S21 – 18.
  - b. Semi-recessed, 3” rolled trim, stainless steel, solid front with vertical die cut letters. Verify cabinet size to fit extinguishers.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Install fire extinguishers in accordance with:
  - 1. Contract Documents and Manufacturer's recommendations.
  - 2. Applicable codes.
- B. Assure that extinguishers are properly charged and serviced, and service tag securely fastened to each unit.

END OF SECTION

## SECTION 10810 TOILET ACCESSORIES

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Section Includes: Toilet accessories complete with all necessary fittings and connectors. Sizes and locations as indicated on Drawings.
- B. Related Sections:
  - 1. Section 01300 - Submittals.
  - 2. Section 01400 - Quality Controls.
  - 3. Section 09260 – Gypsum Board Assemblies

#### 1.02 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Submit Manufacturer's specifications and installation recommendations for each item.
- C. Item and Location List: List all items and indicate locations and mounting heights.

#### 1.03 WARRANTY

- A. Provide manufacturer's standard warranty against defects in workmanship and materials for all items.
- B. Warranty period shall begin on date of Substantial Completion.
- C. Replace immediately, at no cost to Owner, items delivered to Site in damaged or defective condition.

### PART 2 PRODUCT

#### 2.01 MANUFACTURERS

- A. Acceptable Manufacturers:
  - 1. Bobrick.
  - 2. Bradley.
  - 3. Parker.
- B. Substitutions: Under provisions of Section 01642.

#### 2.02 MATERIALS

- A. Premanufactured Stainless Steel: ASTM A167.
- B. Finish: Type 304 Satin.

## 2.03 TOILET ACCESSORIES

A. Bobrick numbers used for example only.

A. Grab Bars:

1. Satin-finish 1¼" diameter 18 gauge stainless steel tubing with concealed anchors. 1½" clearance between grab bar and wall. 2. Lengths:
  - a. 18 inch: B-5806 x 18 straight grab bar.
  - b. 36 inch: B-5806 x 36 straight grab bar.
  - c. 42 inch: B-5806 x 42 straight grab bar.
2. Mirror: Un-framed float glass mirror. Sizes vary, see drawings.
3. Toilet Seat Cover Dispenser:
  - a. Satin finish stainless steel surface-mounted seat cover dispenser. Minimum 250 seat cover capacity.
  - b. Product: B-221 manufactured by Bobrick.

B. Accessories furnished and installed by Owner. Provide backing.

1. Soap Dispenser.
2. Towel Dispenser.
3. Toilet Paper Dispenser.
4. Waste Receptacle.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Prior to application of substrate, inspect for adequate blocking for wall mounted items. Verify and coordinate rough-in dimensions and requirements for all items.
- B. Install items in locations shown on Drawings, plumb, true and in accordance with Manufacturer's Instructions.
- C. Adjust accessories for proper operation.
- D. After completion of installation, clean and polish exposed surfaces.

### 3.02 SCHEDULE

A. Toilet Rooms 307A & 307B

1. Grab bars.
2. Mirror
3. Toilet Paper Dispenser – furnished by owner, installed by contractor.
4. Soap Dispenser – furnished by owner, installed by contractor.
5. Towel Dispenser – furnished by owner, installed by contractor.
6. Waste Receptacle – furnished by owner, installed by contractor.

END OF SECTION

SECTION 11450  
KITCHEN APPLIANCES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes: Kitchen equipment Owner furnished, Contractor installed.
- B. Related Sections:
  - 1. Section 07900 - Joint Sealers.
  - 2. Section 15410 - Plumbing Fixtures.
  - 3. Section 16150 - Wiring Connections: Electrical characteristics and wiring connections.

1.2 QUALITY ASSURANCE

- A. Perform Work as follows:
  - 1. Install Owner furnished refrigerators including water supply line hookup and relocation from first floor.
  - 2. Install Owner furnished dishwasher including water supply line hookup and relocation from first floor.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Store products clear of floor in manner to prevent damage.
- C. Coordinate size of access and route to place of installation.

1.4 COORDINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate Work with location and placement of utilities. Coordinate characteristics of utilities with requirements of food service equipment.
- C. Sequence installation to accommodate required utility connections.

PART 2 EXECUTION

2.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify ventilation outlets, service connections, and supports are correct and in required location.



- C. Verify electric power is available and of correct characteristics.
- D. Verify that opening dimensions are as required by appliance manufacturers.

## 2.2 EXISTING EQUIPMENT

- A. Move and re-install equipment, ready for utility connection.
- B. Coordinate Work with Owner to minimize interruption to Owner's normal operations.
- C. Clean existing equipment to be re-used.
- D. Re-used Equipment: Refer to schedule Drawings for re-used equipment.

## 2.3 INSTALLATION

- A. Sequence installation and erection to accommodate required utility connections.
- B. Install items only in clean dry areas where other construction is complete and all debris cleared away.

## 2.4 ADJUSTING

- A. Section 01700 - Execution Requirements: Testing, adjusting, and balancing.
- B. Adjust equipment and apparatus to ensure proper working order and conditions.
- C. Remove and replace equipment creating excessive noise or vibration.
- D. Turn refrigerators on to moderate temperature settings after installation.

## 2.5 CLEANING

- A. Section 01700 - Execution Requirements: Final cleaning.
- B. Remove masking or protective covering from stainless steel and other finished surfaces.
- C. Wash and clean equipment.
- D. Polish glass, plastic, hardware, accessories, fixtures, and fittings.

END OF SECTION

SECTION 12493  
HORIZONTAL LOUVER BLINDS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes horizontal metal slat louver blinds and operating hardware.
- B. Related Sections:
  - 1. Appendix A: Interior Finish Specification.

1.2 REFERENCES

1.3 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal requirements.
- B. Shop Drawings: Indicate opening sizes, tolerances required, method of attachment, clearances, and operation.
- C. Product Data: Submit data indicating physical and dimensional characteristics, and operating features.
- D. Samples: Submit two samples, illustrating slat materials and finish, color, core/want type and color.
- E. Manufacturer's Installation Instructions: Submit special procedures, perimeter conditions requiring special attention, and maintenance information.

1.4 QUALIFICATIONS

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

1.5 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.6 COORDINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate the Work with window installation and placement of concealed blocking to support blinds.

## 1.7 EXTRA MATERIALS

- A. Section 01700 - Execution Requirements: Spare parts and maintenance products.
- B. Supply ten additional slats.
- C. Supply two additional complete blind assemblies of each size.
- D. Supply 2 extra lift cords/wands.

## PART 2 PRODUCTS

### 2.1 HORIZONTAL LOUVER BLINDS

- A. Manufacturers:
  - 1. Bali Window Treatments Model.
  - 2. Graber Window Treatments Model.
  - 3. Hunter Douglas Window Fashions Model.
  - 4. Levolor Contract Model.
  - 5. Springs Windows Fashions Model.
  - 6. Window Accessory Co., Inc. Model.
  - 7. Substitutions: Section 01600 - Product Requirements Not permitted.

### 2.2 COMPONENTS

- A. Basis of Design: Levelor, Riviera, 2" metal blinds.
- B. Blinds: Horizontal slat louvers hung from full-width headrail with full-width bottom rail; manual control of raising and lowering by cord with full range locking open and closed point locking; blade angle adjustable by control wand.
- C. Metal Slats: Spring tempered pre-finished aluminum steel; square radiused slat corners, with manufacturing burrs removed.
  - 1. Width: 2 inch.
  - 2. Thickness: 0.011 inch.
  - 3. Color: As selected.

### 2.3 FABRICATION

- A. Fabricate blinds to fit within openings with uniform edge clearance of inch cover window frames completely.
- B. At openings requiring multiple blind units, fabricate separate blind assemblies with space of inch between assemblies, occurring at window mullion centers.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify openings are ready to receive work.
- C. Verify structural blocking and supports are correctly placed.

### 3.2 EXISTING WORK

- A. Remove abandoned window treatments and patch surfaces.
- B. Clean and repair existing window treatments indicated to remain or to be reinstalled.

### 3.3 INSTALLATION

- A. Install blinds.
- B. Secure in place with flush countersunk concealed fasteners.
- C. Place intermediate head supports at inch oc.

### 3.4 ERECTION TOLERANCES

- A. Section 01400 - Quality Requirements: Tolerances.
- B. Maximum Variation of Gap at Window Opening Perimeter: 1/4 inch.
- C. Maximum Offset From Level: 1/8 inch.

### 3.5 ADJUSTING

- A. Section 01700 - Execution Requirements: Testing, adjusting, and balancing.
- B. Adjust blinds for smooth operation.

### 3.6 CLEANING

- A. Section 01700 - Execution Requirements: Final cleaning.
- B. Clean blind surfaces just prior to occupancy.

END OF SECTION

130010 type	code	specifications	notes
I. <b>Base – Rubber</b>	RB-1	Roppe Color: TBD	General Wall Base
	RB-2	Roppe Color: TBD	Wall Base at Dark Accent Paint Location
II. <b>Carpet</b>	CPT-1	Bentley Carpet <b>Style: Oscar Worthy</b> <b>Style Number: 40W260220T</b> <b>Color: Bankable Stars</b> <b>Color Number: 442705</b> <b>Installation Method: Ashlar</b> Construction: Tufted Tip-Sheared Fiber: Antron Legacy c nylon and Antron Brilliance of nylon Dye Method: Piece Dyed Soil/Stain Protection: Protekt Secondary Backing: NexStep Cushion Tile Yarn Weight: 26oz./yd. Machine Gauge: 1/12 in Stitches: 11.0/in Pile Density: 8,410oz/yd Total Weight: 94oz/yd Total Thickness: 0.375 in Radiant Panel: Passes Class 1, ASTM-E648 Smoke Density: ASTM-E662 Static: AATCC-134 Flammability: Passes Methenamine Pill Test (DOC-FF1-70)	General Carpet
	CPT-2	Shaw Carpet <b>Style: Earth Tone</b> <b>Style Number: 59338</b> <b>Color: Iroko</b> <b>Color Number: 38761</b> <b>Installation Method: Ashlar</b> Construction: Multi-level Pattern cut/loop Fiber: Eco Solution Q Nylon Dye Method: 50% Solution Dyed/ 49% Yarn Dyed Tufted Weight; 32 oz./yard Gauge: 1/12 Stitches: 9.5/in Total Thickness: 0.117 in Size: 24"x24" Secondary Backing: Eco Worx Tile Protective Treatments: ssp shaw soil protection Radiant Panel: ASTM E 648 Class 1 NBS Smoke: ASTM E 662 Less than 450 Warranty: Lifetime Commercial Limited *for more warranty info. please call 877-502-7429	Transition Carpet & Second Floor Spaces

130010 type	code	specifications	notes
<b>III. Plumbing/Hardware Appliances</b>		Dishwasher Drawer Fisher & Paykel Single Dish Drawer Tall DD24SCTB7 Black <a href="http://www.fisherpaykel.com/us/kitchen/dishwashing/dishdrawer/DD24SCTB7/">http://www.fisherpaykel.com/us/kitchen/dishwashing/dishdrawer/DD24SCTB7/</a>	Dishwasher at Tea Station
		Sink Elkay Gourmet Undermount Single Bowl Sink Model: ELUH129 Overall Size: 14.5"Wx11.75"D Min. Cabinet Size: 18"	Tea Station
		Faucet	Tea Station
		Instant Hot Water InSinkErator The Indulge™ Modern (F-HC3300)	Tea Station
<b>IV. Paint</b>	PT-1	Miller Paint Color: Composed CW048W Interior Latex Paint Finish: Eggshell	General Wall Color PSU Standard
	PT-2	Miller Paint Color: Composed CW048 Interior Latex Paint Finish: Satin	Trim at General Wall Color. Ceiling color unless otherwise indicated. PSU Standard
	PT-3	Miller Paint Color: Gropius Gray H0147A Interior Latex Paint Finish: Eggshell	Dark Accent Color See paint location plan.
	PT-4	Sherwin Williams Color: Seahawk SW1209 Interior Latex Paint Finish: Eggshell	Dark Accent Color OPTA
	PT-5	Miller Paint Color: Wish Upon a Star 0668 Interior Latex Paint Finish: Eggshell	Accent at Lobby Recessed Soffit Color
	PT-6	Miller Paint	Medium Accent

130010 type	code	specifications	notes
		Color: Gobi Beige 8203M Interior Latex Paint Finish: Eggshell	Color PSU Standard
	PT-7	Miller Paint Color: North Beach Blue 0485 Interior: Latex Paint Finish: Eggshell	Medium Accent Color
		<b>NOTES:</b> All paints to be submitted to designer for approval. Test swatches to be applied to walls for approval.	
<b>V. Plastic Laminate</b>	PL-1	Formica Color: Asian Night Color Number: 7949K-18	Built-in casework
	PL-2	Pionite Color: Pearl of the Orient Color Number: AG601 Suede	Built-in casework uppers (unless otherwise indicated) *see tea cabinet detail*
	PL-3	Formica – ColorCore 2 Color: New White Color Number: 7223C-58 Matte Finish	ALTERNATE Countertops
<b>VI. Resilient Flooring</b>	RF-1	Forbo - Marmoleum Style: Real Color: 3120 Rosato Color Number: 3120	Kitchen/Break Room. Renovated dental area.
<b>VII. Solid Surface</b>	SF-1	Corian Glacier White	Countertops
<b>VIII. Tile</b>	CT-1	American Olean Forest Series Color: White Color Number: 422190 BG6311 Size: 12"x24" Installation: Stacked	Wall Tile at restrooms
	CT-2	American Olean Decorum Color: Refined Beige DR02 Finish: Unpolished Size: 12"x12"	Floor Tile at restrooms

<b>130010 type</b>	<b>code</b>	<b>specifications</b>	<b>notes</b>
	T-2b	Dal Tile Keystone Color: Suede Gray Color Number: D182 Size: 2"x2"	OPTB – Floor Tile at restrooms
<b>IX. Wallcovering</b>	WC-1	Manufacturer: BuzziSpace Product: Buzziskin Size: roll 33' x 3.21' Color A: Offwhite #63 Color B: EcoBrown #58 Color C: Anthracite #68 See website for install instructions. <a href="http://www.buzzispace.com/products/buzziskin">www.buzzispace.com/products/buzziskin</a> Product Representative: Jayson Gates Absolute Resource. 503.869.8325 jayson@absolute-resource.com	Mind Spa
<b>X. Window Film</b>	WF-1	Solyx SX-3140 – Dusted Crystal	Window film for door and window relite.
<b>XI. Window Covering - Blinds</b>	WB-1	Levelor (or equal) Riviera 2" Metal Blinds Color: TBD	