

ADDENDUM #4

Owner:
Montana State University
Facilities Management
Owner Rep: Donny Beebe
Project Manager, PDC

Architect:
Architects Alaska, Incorporated
347 S Ferguson Ave, Suite 3
Bozeman, Montana 59718
Project Architect: Thomas Brown

NOTICE TO BIDDERS

This Addendum is issued pursuant to the Instructions to Bidders. This Addendum serves to clarify, revise, and supersede information in the Contract Documents and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

The Bidder shall acknowledge receipt of this Addendum on the Bid Form.

The Date for receipt of bids is unchanged.

BIDDER QUESTIONS

Question 1 **Slab Patch & Repair: Can additional information be provided regarding existing slab (thickness, etc.) so we can properly price slab patch & repair due to plumbing.**

Answer 1 From previous record drawings, our assumption is the existing concrete slab is +/- 6" thick.

Question 2 **Blocking: Since existing shelving and equipment racks are being relocated to other finished walls, are we safe to assume appropriate backing & blocking already exists in these areas? Otherwise, wall demo would be necessary to add blocking.**

Answer 2 Preform demo needed to provide necessary support / blocking securing the relocated shelving.

Question 3 **Flooring & Base Spec: Addendum 3 provided a finish schedule for the 2 rooms affected, but no product specs. Can specification info be provided?**

Answer 3 See attached Specifications: Gypsum Wall Board, Sheet Vinyl Flooring, Fiber Reinforced Panel, and Paint Spec from the previous Lab remodel. Previous Lab remodel cut sheets or submittals are not available.

Question 4 **Paint: Please describe extent of paint scope to be included. Are we just to paint new walls, or should we include existing walls, since so much equipment is being relocated? Should existing HM doors be re-painted with new HM frame?**

Answer 4 Paint new walls and touch up any existing walls affected by relocation/modification work. HM doors do not need repainted unless affected by disassembly and reassembly.

Question 5 **FRP: Is a specification available for the existing FRP that we are to match?**

Answer 5 See attached Fiber Reinforced Panel spec. No actual cut sheets or previous submittals are available.

Question 6 **Fire Sprinkler Modifications: Are any fire sprinkler modifications necessary due to new walls being added?**

Answer 6 No modifications needed for fire sprinklers.

ATTACHMENTS

Specifications: 092116 Gypsum Wall Board, 096500 Sheet Vinyl Flooring, 097700 Fiber Reinforced Panel, 099000 Paint

END OF ADDENDUM

SECTION 09 2116 - GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Acoustic insulation.
- E. Tile backing board.
- F. Gypsum wallboard.
- G. Exterior Gypsum Sheathing.
- H. Joint treatment and accessories.
- I. Reveal moldings and edge trims.
- J. Finish system.

1.2 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.
- B. Section 07 9005 - Joint Sealers: Acoustic sealant.

1.3 REFERENCE STANDARDS

- A. AISI SG02-1 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2001 with 2004 supplement. (replaced SG-971)
- B. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2002 (Reapproved 2007).
- C. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2011a.
- D. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.
- E. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2011.
- F. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2011.
- G. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2011.
- H. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2007.
- I. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.
- J. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.
- K. ASTM E413 - Classification for Rating Sound Insulation; 2010.

1.4 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
- C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- D. Test Reports: For all stud framing products that do not comply with ASTM C645 or C 754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.
- E. Samples: Submit two samples of gypsum board finished with proposed texture application, 12 by 12 inches (300 by 300 mm) in size, illustrating finish color and texture.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Storage and Protection:
 - 1. Store in dry ventilated space off ground.
 - 2. Protect materials from surface contamination, soiling, corrosion, construction traffic, and damage.
 - 3. Support on level platform and fully protect from weather and direct sunlight exposure.

4. Store and support gypsum board in flat stacks to prevent sagging.
5. Protect materials to keep them dry. Remove wet gypsum board from Project site except for gypsum board wetted for application to curved surfaces.
6. Protect gypsum board panels to prevent damage to edges, ends, and surfaces.
7. Do not bend or damage metal trim.

1.6 PROJECT CONDITIONS

- A. Environmental Requirements: Comply with more restrictive of ASTM C840, or manufacturer's written requirements under which products can be installed.
 1. Maintain minimum uniform 50 degrees F temperature in building for 48 hours before and continuously until applied joint treatment and bonding adhesives are thoroughly dry.
 2. Do not allow ambient temperature to exceed 95 degrees F.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing gypsum board application and finishing, with minimum 5 years of experience.

PART 2 - PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
 1. See PART 3 for finishing requirements.
- B. Interior Partitions Indicated as Acoustic: Provide completed assemblies with the following characteristics:
 1. Acoustic Attenuation: STC as indicated calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

2.2 METAL FRAMING MATERIALS

- A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf. Deflection to be 1/360 at all locations to receive tile finish.
 1. Studs: "C" shaped with flat or formed webs with knurled faces.
 2. Runners: U shaped, sized to match studs.
 3. Ceiling Channels: C shaped.
- B. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
- C. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
 1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
 2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot dipped galvanized coating.
 3. Provide top track preassembled with connection devices spaced to fit stud spacing indicated on drawings; minimum track length of 12 feet.
- D. Resilient Channels:
 1. Basis of Design: Clark Dietrich 'RC Deluxe' Resilient Channel
 - a. Material: Grade 33ksi min. yield strength
 - b. Coating: G40EQ
 - c. Thickness: 22mil, 0.0232"

2.3 BOARD MATERIALS

- A. Approved Manufacturers:
 1. Georgia-Pacific Gypsum: <https://www.buildgp.com/georgia-pacific-gypsum>
 2. US Gypsum Corporation: www.usg.com
 3. CertainTeed: <https://www.certainteed.com/drywall/commercial/>
 4. Substitutions
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396, UL Classified Type X;

sizes to minimize joints in place; ends square cut.

1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 2. Thickness:
 - a. Vertical Surfaces: 5/8 inch (16 mm).
 - b. Ceilings: 5/8 inch (16 mm).
 - c. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
 3. Basis-of-Design Product: Georgia-Pacific Gypsum, 'ToughRock FireGuard X'
- C. Mold Resistant Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396, UL Classified Type X; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces and ceilings at damp areas including bathrooms, food processing areas & kitchens.
 2. Thickness:
 - a. Vertical Surfaces: 5/8 inch (16 mm).
 - b. Ceilings: 5/8 inch (16 mm).
 - c. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
 3. Mold Resistance: Score of 10 when tested in accordance with ASTM D3273.
 4. Basis-of-Design Product: Georgia-Pacific Gypsum, 'ToughRock FireGuard X MoldGuard'

2.4 ACCESSORIES

- A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness as indicated on drawings.
- B. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.
- C. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
 1. Tape: 2 inch (50 mm) wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
 2. Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners, except as otherwise indicated.
 3. Ready-mixed vinyl-based joint compound.
- D. Textured Finish Materials: Latex-based compound; containing fine aggregate.
- E. Screws for Attachment to Steel Members Less Than 0.03 inch (0.7 mm) In Thickness, to Wood Members, and to Gypsum Board: ASTM C1002; self-piercing tapping type; cadmium-plated for exterior locations.
- F. Control Joint Materials: ASTM C1047 and as recommended by gypsum board manufacturer for project conditions.
 1. Type: 3/32 inch wide, PVC (polyvinyl chloride) material.
 2. Tape: 1/4" opening by 7/16" deep reveal
 3. Install per manufacturer's recommendations.
- G. Metals Trim:
 1. General:
 - a. Comply with ASTM C1047.
 - b. Material: Zinc alloy or galvanized steel; zinc alloy required for application in shower areas, exterior soffits, and locker rooms.
 - c. Uncoated sheet metal thickness: 26 gauge minimum.
 - d. Flanges designed for concealment in joint compound, flange width to suit installation requirements.
 2. Corner Beads at Straight Surfaces:
 - a. Drywall Corner Bead, Alabama Metal Industries Corporation (AMICO), Fontana, CA
 - b. Cornerbead, Clinch-On Products, Mounds View, MN.
 - c. Wallboard Corner Bead, National Gypsum Company, Charlotte, NC
 - d. 100 Series Dur-A-Bead, United States Gypsum Company, Chicago, IL
 3. Edge Trim Beads:
 - a. Drywall L-Metal, Alabama Metal Industries Corporation (AMICO), Fontana, CA.
 - b. L-Bead and U-Bead, Clinch-On Products, Mounds View, MN.
 - c. Number 100 and 200 Wallboard Casing, National Gypsum Company, Charlotte, NC.

- d. United States Gypsum Company, Chicago, IL.
 - i. No. 701-A and 801-A J-trim.
 - ii. No. 701-B and 801-B L-trim.
- 4. Control Joints:
 - a. V-Shaped slot.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 FRAMING INSTALLATION

- A. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
 - 1. Level ceiling system to a tolerance of 1/1200.
 - 2. Laterally brace entire suspension system.
- B. Studs: Space studs as permitted by standard.
 - 1. Extend partition framing to structure where indicated and to ceiling in other locations.
- C. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- D. Blocking: Install wood blocking for support of:
 - 1. Framed openings.
 - 2. Wall mounted cabinets.
 - 3. Plumbing fixtures.
 - 4. Toilet partitions.
 - 5. Toilet accessories.
 - 6. Wall mounted door hardware.
 - 7. Wall mounted display boards and accessories.
 - 8. Wall mounted projection screens
- E. Resilient Channels:
 - 1. Install per manufacturer's instruction.

3.3 ACOUSTIC ACCESSORIES INSTALLATION

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
 - 1. Place one bead continuously on substrate before installation of perimeter framing members.
 - 2. Place continuous bead at perimeter of each layer of gypsum board.
 - 3. For non-fire-rated construction, seal around all penetrations by conduit, pipe, ducts, and rough-in boxes.

3.4 BOARD INSTALLATION

- A. Comply with ASTM C 840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- C. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.

3.5 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
 - 1. Not more than 30 feet (10 meters) apart on walls and ceilings over 50 feet (16 meters) long.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

3.6 JOINT TREATMENT

- A. Paper Faced Gypsum Board: Use paper joint tape, bedded with ready-mixed vinyl-based joint compound and finished with ready-mixed vinyl-based joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 5: Walls and ceilings to receive satin, semi-gloss, or gloss paint finish and other areas

- specifically indicated.
2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 3. Level 3: Walls to receive textured wall finish.
 4. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 5. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.
 6. Level 0: Temporary partitions and surfaces indicated to be finished in later stage of project.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).
 2. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile and fixed cabinetry.

3.7 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet (3 mm in 3 m) in any direction.

END OF SECTION 09 2116

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SECTION 09 6500 - RESILIENT FLOORING & ACCESSORIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

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

1.2 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors and concrete finishing.
- B. Section 09 2116 – Gypsum Board Assemblies:

1.3 REFERENCE STANDARDS

- A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2010e1.
- B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.
- C. ASTM F1861 - Standard Specification for Resilient Wall Base; 2008 (Reapproved 2012).
- D. BAAQMD 8-51 - Bay Area Air Quality Management District Regulation 8, Rule 51, Adhesive and Sealant Products; www.baaqmd.gov; 2002.
- E. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; National Fire Protection Association; 2011.
- F. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; Resilient Floor Covering Institute; October 2011.
- G. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.4 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Verification Samples: Submit two samples in manufacturer's standard sample size illustrating color and pattern for each resilient product specified.
- D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Flooring Material: Quantity equivalent of 5% of each type and color.
 - 3. Extra Wall Base: 15 linear feet of each type and color.

1.5 DELIVERY, STORAGE, AND HANDLING

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

1.6 FIELD CONDITIONS

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

PART 2 - PRODUCTS

2.1 RESILIENT FLOORING

- A. Manufacturers:
 - 1. Johnsonite, Inc.
 - 2. Interface Flooring
 - 3. Mannington Commercial
 - 4. Patcraft

5. Substitutions: See Section 01 6000 - Product Requirements.
- B. **LVT-1:** Luxury Vinyl Tile for patching at corridor to east of Extruder Lab.
 1. Basis of Design Product: Interface, Modular Resilient Flooring, 'Natural Woodgrains', with the following characteristics:
 - a. Wear Layer Thickness: 22 mil
 - b. Total Thickness: 4.5 mm
 - c. Backing Class: Commercial Grade
 - d. Finish: Ceramor Coating
 - e. Dimensions: 25cm x 1m (9.845in x 39.38in)
 - f. Color: A00210 Teak
 - g. Installation Pattern: Ashlar
- C. **SV-1:** Homogeneous Sheet Vinyl Flooring
 1. Basis of Design Product: Johnsonite 'IQ Optima', homogeneous sheet vinyl flooring.
 2. Thickness/Wearlayer: 0.080 inch (2.0 mm).
 3. Size specify: [6 ft. 6 inches (2 m)]
 4. Colors and Patterns: As selected by Architect from full range of industry colors
 5. Test data:
 - a. Flexibility (ASTM F137): Passes
 - b. Chemical Resistance (ASTM F925): Passes
 - c. Static Load Limit (ASTM F 970): Passes 250 psi
 - d. Resistance to Heat (ASTM F1514): $\Delta E \leq 8$
 - e. Resistance to Light (ASTM F1515): $\Delta E \leq 8$
 - f. Residual Indentation (ASTM F1914): Passes
 - g. Static Coefficient of Friction (ASTM D 2047): ≥ 0.5 SCOF
 - h. Flammability (ASTM E648, Critical Radiant Flux): Class 1 (≥ 0.45 W/cm²)
 - i. Limited Commercial Warranty: 10 years
 6. Accessories:
 - a. Johnsonite cfs-00-a cove filler strip.
 - b. Manufacturer's recommended cove cap.

2.2 RESILIENT BASE

- A. Manufacturers:
 1. Burke Flooring; www.burkemerger.com.
 2. Johnsonite, Inc; www.johnsonite.com.
 3. Roppe Corp; www.roppe.com.
 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Resilient Base (**RB-1**): ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove, and as follows:
 1. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or NFPA 253.
 2. Height: 4 inch (100 mm).
 3. Thickness: 0.125 inch (3.2 mm) thick.
 4. Finish: Satin.
 5. Length: Roll.
 6. Color: To be selected from manufacturer's standard colors
 7. Accessories: Pre-molded external corners and end stops.

2.3 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
 1. Include in the scope of work $\frac{1}{4}$ " average of filler at entire area to received Flooring Type LVT-1.
- B. Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.
 1. Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District Rule No.1168 and the Bay Area Air Quality Management District Regulation 8, Rule 51.
- C. Moldings, Transition and Edge Strips: Homogeneous rubber composition type.
 1. Manufacturers:

- a. Johnsonite, Inc; www.johnsonite.com.
 - b. Roppe Corp; www.roppe.com.
 - c. Flexco Floors; <http://www.flexcofloors.com/>
 - d. Substitutions: See Section 01 6000 - Product Requirements.
2. Product: Must be ADA-Compliant. See Floor Transitions in drawing for transition types.
 3. Basis of Design Products:
 - a. Transtion 1: Johnsonite "Edge Guard: EG-XXX-J".
 - b. Transtion 2: Johnsonite "Slim-Line: SLT-XX-J".
 4. Colors: Selected by Architect from manufacturer's full range of colors.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
 1. Include in the scope of work $\frac{1}{4}$ " average of filler at entire area to recieved Flooring Type SV-1.
- C. Prohibit traffic until filler is cured.
- D. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- E. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for resilient flooring installation by testing for moisture and pH.
 1. Test in accordance with ASTM F710.
 2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

3.2 PREPARATION

- A. Clean substrate.
- B. Prepare floor substrates as recommended by product manufacturer.
- C. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3.3 INSTALLATION

- A. Starting installation constitutes acceptance of substrate conditions.
- B. Install in accordance with manufacturer's instructions.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Fit joints tightly.
- E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
 1. Resilient Strips: Attach to substrate using adhesive.

1.1 SHEET VINYL FLOORING:

- A. Install with manufacturer's recommended adhesive specified for the site conditions and follow adhesive label for proper use.
- B. Install rolls in sequential order following roll numbers on the labels.
- C. Reverse non-pattern sheets as referenced in the tarket installation instructions.
- D. Roll the flooring in both directions using a 100 pound three-section roller.
- E. Vinyl sheet flooring must be welded.
- F. Provide flash coved base at all sheet vinyl flooring locations.
 1. Install cove filler strip per manufacturer's requirееmntns.
 2. Net fit flooring material into the appropriate cove cap.

3.4 RESILIENT BASE

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

D. Scribe and fit to door frames and other interruptions.

3.5 CLEANING

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

3.6 PROTECTION

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

3.7 SCHEDULE

- A. See Interior Finish Schedule and Interior Finish Plan in Drawings.

END OF SECTION 09 6500

SECTION 09 7700 - FIBERGLASS REINFORCED PLASTIC

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Glass fiber reinforced plastic panels.
- B. Trim.

1.2 RELATED REQUIREMENTS

- A. Section 01 2300 – Alternates: Fiberglass reinforced plastic panels are associated with Alternate 1.

1.3 REFERENCE STANDARDS

- A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics; 2010.
- B. ASTM D2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by Means of Barcol Impressor; 2013a.
- C. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.
- D. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels; 2012.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a.
- F. FDA Food Code - Chapter 6, Physical Facilities; current edition with Supplements, if any.
- G. FM 4880 - Class 1 Fire Rating of Insulated Wall or Wall and Roof/Ceiling Panels, Interior Finish Materials or Coatings and Exterior Wall Systems; 2010.

1.4 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Samples: Submit two samples 6 inch in size illustrating material and surface design of panels.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store panels flat, indoors, on a clean, dry surface. Remove packaging and allow panels to acclimate to room temperature for 48 hours prior to installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Glass Fiber Reinforced Plastic Panels:
 - 1. Marlite: www.marlite.com.
 - 2. Crane Composites, Inc. www.cranecomposites.com.
 - 3. Panolam FRP, www.panolam.com.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.2 PANEL SYSTEMS

- A. Wall Panels at Extruder Lab: **FRP**
 - 1. Panel Size: 4 by 8 feet
 - 2. Panel Thickness: 3 / 32 inch.
 - 3. Surface Design: Smooth.
 - 4. Color: White.
 - 5. Attachment Method: Adhesive only, with trim and sealant in joints.

2.3 MATERIALS

- A. Panels: Glass fiber reinforced plastic, complying with ASTM D5319.
 - 1. Surface Burning Characteristics: Flame Spread Index of 25, maximum; Smoke Developed Index of 450, maximum; when whole system is tested in accordance with ASTM E84.
 - 2. Class 1 fire rated as tested in accordance with FM Approval Standard 4880.
 - 3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

4. Scratch Resistance: Barcol hardness score of not less than 35, when tested in accordance with ASTM D2583.
 5. Impact Strength: Not less than 6 ft-lb/in, when tested in accordance with ASTM D256.
 6. Surface Characteristics and Cleanability: Provide products that are smooth, durable, and easily cleanable, in compliance with FDA Food Code, Chapter 6 - Physical Facilities.
- B. Trims: Extruded aluminum, color coordinating with panel, shapes as required for conditions.
- C. Adhesive: Type recommended by panel manufacturer.
- D. Sealant: Type recommended by panel manufacturer; clear.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions and substrate flatness before starting work.
- B. Verify that substrate conditions are ready to receive the work of this section.

3.2 INSTALLATION - WALLS

- A. Install panels in accordance with manufacturer's instructions.
- B. Cut and drill panels with carbide tipped saw blades or drill bits, or cut with snips.
- C. Apply adhesive to the back side of the panel using trowel recommended by adhesive manufacturer.
- D. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.
- E. Install panels with manufacturer's recommended gap for panel field and corner joints.
- F. Place trim on panel before fastening edges, if required.
- G. Fill channels in trim with sealant before attaching to panel.
- H. Install trim with adhesive and screws or nails as required.
- I. Seal gaps at floor, ceiling, and between panels with specified sealant to prevent moisture intrusion.
- J. Remove excess sealant as paneling is installed.

END OF SECTION 09 7700

SECTION 09 9000 - PAINTING AND COATING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Preparation and priming of surfaces scheduled at end of this Section to receive finish coatings.
 - 2. Painting and finish coating of exterior and interior items and surfaces, including:
 - a. Exposed interior surfaces.
 - b. Scheduled and otherwise identified exterior surfaces.
 - 3. Exterior and interior items and surfaces not requiring painting, unless noted otherwise:
 - a. Surfaces coated by other specification sections.
 - b. Items with factory applied finishes.
 - c. Aluminum, stainless steel, brass, bronze, chromium plate, copper, and nickel.
 - d. Brick, stone, ceramic tile, plastic laminate, and precast concrete.
 - e. Moving parts of operating units.
 - f. Code required labels or equipment identification plates.
 - g. Acoustical ceilings.
 - 4. Field finish coating of shop or factory primed items. Refer to individual Sections for priming requirements.
 - 5. Finish coatings schedule.
 - 6. Preparation work and coatings specified in this Section are in addition to shop and factory applied finishes and surface treatment specified in other Sections.
 - 7. Refer to Divisions 15 and 16 for painting requirements for items in dedicated mechanical and electrical spaces.
 - 8. Paint all other items unless specifically indicated not to be painted.
 - 9. Color schedule.
- B. Related Sections:
 - 1. Section 01 2300 – Alternates: Finish at some existing interior components is associated with Alternate 1 & 2.
 - 2. Section 03 3000 – Cast-in-place concrete: for concrete floor finish
 - 3. Division 21 – Fire Suppression: Piping identification.
 - 4. Division 22 – Plumbing: Piping identification.
 - 5. Division 23 – Heating, Ventilating, and Air Conditioning: Mechanical identification.
 - 6. Division 26 – Electrical: Electrical identification.

1.2 DEFINITIONS

- A. Conform to PDCA Glossary for interpretation of terms used in this Section except as modified below.
- B. Exposed Surfaces: Surfaces of products, assemblies, and components visible from any angle after final installation. Includes internal surfaces visible when operable doors, panels or drawers are open, and surfaces visible behind registers, grilles, or louvers.
- C. Concealed Surfaces: Surfaces permanently hidden from view in finished construction and which are only visible after removal or disassembly of part or all of product or assembly.
- D. Inaccessible Spaces: Spaces not intended for human use.
- E. Spaces listed below are defined as "Concealed" or "Inaccessible":
 - 1. Space between suspended ceilings and floor or roof construction above.
 - 2. Inside furred spaces.
 - 3. Inside of partitions.
 - 4. Mechanical and electrical items enclosed within casework or equipment.
 - 5. Foundation spaces.
 - 6. Crawl spaces.
 - 7. Trenches and manholes.
 - 8. Mechanical shafts or chases.
 - 9. Enclosed elevator shafts.
 - 10. Utility tunnels
- F. Sheen: Degree of luster as measured with specular gloss meter in accordance with ASTM D523:
 - 1. Flat: 85 degree meter Below 15

2. Eggshell: 60 degree meter 5 to 20
3. Satin: 60 degree meter 15 to 35
4. Semi-gloss: 60 degree meter 30 to 65
5. Gloss: 60 degree meter 65 to 80
6. High Gloss: 60 degree meter Over 80
- G. Industrial Maintenance Primers and Topcoats: High performance coatings formulated for and applied to substrates in industrial, commercial, or institutional situations for purpose resisting heavy abrasion, immersion, prolonged exposure to temperatures in excess of 250 degrees F, prolonged moisture condensation, chemical corrosion, solvent cleaning, or exterior exposure of metal structures.
- H. Metallic Pigmented Coatings: Coatings containing at least 0.4 pounds of metallic pigment per gallon of coating as applied.
- I. System DFT: Dry film thickness of entire coating system unless otherwise noted.

1.3 SYSTEM REQUIREMENTS

- A. Perform testing according to following methods:
 1. Solids Content by Volume: ASTM D2832.
 2. Surface Burning Characteristics: ASTM E84.
- B. Application Requirements: Apply scheduled coatings to exposed surfaces of items and spaces unless specifically indicated otherwise.
- C. Surfaces Not To Be Painted:
 1. Architectural concrete.
 2. Clay and glass unit masonry, decorative concrete unit masonry, and stone.
 3. Aluminum and aluminum based alloys, copper and copper based alloys, lead and lead based alloys, nickel and nickel based alloys, stainless steel, plated architectural metals, and "weathering" metals.
 4. Decorative plastic and metal laminates, and synthetic countertops.
 5. Elastomeric membranes and flashings, roofing materials, and exterior sealants and caulking.
 6. Acoustic materials.
 7. Rubber, vinyl, or plastic seals and bumpers.
 8. Surfaces concealed or inaccessible in finished construction unless specifically required.
 9. Other surfaces specifically scheduled or indicated to remain unfinished or unpainted.
- D. Materials and Products Not To Be Painted:
 1. Items with integral or factory-applied final finish unless indicated otherwise.
 2. Wire fencing and areaway grating.
 3. Cast metal stair nosings trench drain grates, manhole covers, and curb inlets.
 4. Wire mesh partitions and gates, metal storage shelving.
 5. Moving parts of operating equipment such as valve and damper operators, linkages, sensing devices, motor and fan shafts.
 6. UL, FM or other code-required labels, name plates, identification or performance rating labels.
 7. Sprinkler heads.
 8. Mechanical and electrical items within unfinished spaces unless noted otherwise.
- E. Interface with Adjacent Systems:
 1. Review other Sections specifying prime coats to ensure compatibility of total coating system for various substrates.
 2. Upon request from other trades, furnish information on characteristics of finish materials proposed for use to ensure compatibility of various coatings.
 3. Test compatibility of existing coatings, including shop applied primers and previously applied coatings, by applying specified special coating to small, inconspicuous area.
 4. If specified coating lifts or blisters existing coating, apply barrier or tie coat as recommended by coating manufacturer.
 5. If no compatible barrier or tie coat exists, remove existing coating completely and apply coating system as specified for new work.

1.4 SUBMITTALS

- A. General: Submit in accordance with Section 01 3000 – Administrative Requirements.
- B. Product Data:
 1. Submit product data, including label analysis for each product proposed for use.

2. Specifically include percent solids-by-volume and lead content (percent of weight of dried film).
3. Schedule:
 - a. List each material proposed for use, and cross-reference to specific coating system and substrate application.
 - b. Identify each material by manufacturer's catalog number, product name, and generic classification.
 - c. Include typewritten list identifying coating systems and colors applied to each room, space, or item.
- C. Color and Sheen Samples:
 1. Prepare 1 sample of each opaque finish coating specified in each color and sheen selected for appearance verification.
 2. Apply to 12 by 12 by 1/4 inch hardboard. Apply sufficient coating thickness to provide proper hiding and appearance.
 3. Label each sample to indicate material, color, and sheen.
- D. Coating System Samples:
 1. Prepare 1 sample of each transparent coating system scheduled on actual wood substrate proposed for use. Apply in each top coat color selected.
 2. Prepare 1 sample of each opaque coating system scheduled on actual substrate materials proposed for use. Apply in most common top coat color scheduled.
 3. Step back each coat and process at least one inch to show bare substrate and each coat and process in system build-up.
 4. Minimum sample size of 4 by 8 inches.
 5. Label each sample to indicate materials, color, sheen, DFT of each coat applied, and total system DFT.
- E. Closeout Submittals:
 1. Submit under provisions of Section 01 7800 – Closeout Procedures and Submittals.
 2. Warranty: Submit specified warranty.

1.5 QUALITY ASSURANCE

- A. Single Source Responsibility:
 1. Provide products of single manufacturer for use in each coating system.
 2. Do not mix products of different manufacturers without approval of Architect and manufacturers involved.
 3. Provide manufacturer recommended materials (base and tints) for deep tone colors.
- B. Applicator Qualifications: Company specializing in commercial painting and finishing with 3 years documented experience.
- C. Regulatory Requirements:
 1. Comply with CPSC 16 CFR 1303 and other applicable federal, state, and local regulation limiting lead content of coatings to be applied.
- D. Certifications: Submit certification from manufacturer that materials furnished for use on this Project meet or exceed specified requirements and comply with applicable federal, state, and local requirements regarding lead content.

1.6 FIELD SAMPLES

- A. General: Comply with requirements of Section 01 4000 – Quality Requirements.
- B. Sample Installation: Duplicate finishes of approved coating system samples on wall surfaces and other interior and exterior components selected by Architect.
- C. Provide full-coat finish on at least 100 sq ft of surface until required color, sheen, and texture are obtained. Simulate finished lighting conditions for review of in-place work.
- D. Request review by Architect of first finished room, space, or item for each coating system for color, texture, quality, and workmanship.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of Section 01 6000 – Product Requirements.
- B. Deliver products to site in manufacturer's sealed and labeled containers; inspect to verify compliance with specified requirements.
- C. Label containers to indicate manufacturer's name, product name and type of coating, brand code or

stock number, date of manufacture, coverage, surface preparation, drying time, cleanup, color designation and instructions for mixing and reducing.

- D. Store coating materials in tightly covered containers in well ventilated area at ambient temperatures of 45 degrees F minimum and 90 degrees F maximum, unless required otherwise by manufacturer. Maintain containers in clean condition, free of foreign materials and residue with labels in legible condition.
- E. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.8 PROJECT CONDITIONS

- A. Environmental Conditions: Comply with more restrictive of following or manufacturer's requirements under which systems can be applied.
 - 1. Provide continuous ventilation during application of coatings to exhaust hazardous fumes.
 - 2. Provide heating necessary to maintain surface and ambient temperatures within specified limits.
 - 3. Maintain temperature and humidity conditions for minimum 24 hours before, during, and 48 hours after application of finishes, unless longer times are required by manufacturer.
 - 4. Do not permit wide variations in ambient temperatures which might result in condensation on freshly coated surfaces.
 - 5. Provide illumination of not less than 80 foot candles measured mid-height at substrate surface during application of coatings.
 - 6. Apply water reducible coatings only when ambient and surface temperatures are between 50 degrees F and 90 degrees F.
 - 7. Apply solvent reducible coatings only when ambient and surface temperatures are between degrees F and 90 degrees F.
 - 8. Do not apply coatings under any of following conditions:
 - a. When surfaces are damp or wet.
 - b. During snow, rain, fog, or mist.
 - c. When relative humidity is less than 20 percent or exceeds 85 percent.
 - d. When temperature is less than 5 degrees F above dew point.
 - e. When dust may be generated before coatings have dried.
 - f. In direct sunlight.
 - g. When wind velocity is above 20 mph.
 - 9. Application of coatings may continue during inclement weather provided work areas and surfaces to be coated are enclosed and specified environmental conditions are maintained.

1.9 WARRANTY

- A. Comply with provisions of Section 01 7800 – Closeout Procedures and Submittals.
- B. Provide a one hundred twenty (120) month FULL PAINT SYSTEM WARRANTY issued by the Paint Manufacturer including materials and labor beginning upon date of completion and final acceptance.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer:
 - 1. Sherwin-Williams
 - 2. Cabot wood stains.
 - 3. Benjamin Moore and Company.
 - 4. Columbia Paints and Coatings.
 - 5. PPG Industries, Inc.
 - 6. Pratt and Lambert Specialty Products.
 - 7. Tnemec Company, Inc.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 APPLICATIONS/SCOPE

- A. Interior Paints and Coatings:
 - 1. Concrete: Existing structural concrete; previously coated and un-coated.
 - 2. Metal: structural, ferrous metals, primed; ferrous metal previously coated; new door frames and doors.

3. Wood: underside of existing decking; new wood trims.
4. Gypsum Board: new walls and ceilings.

2.3 COATING MATERIALS – GENERAL

- A. Paints and Coatings:
 1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
 2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufacturer's product instructions for optimal color conformance.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.
- D. Color: Refer to Finish Schedule for paint colors, and as selected.

2.4 FILLERS AND SEALERS

- A. Interior Block Filler:
 1. Benjamin Moore and Company: Super Craft Block Filler No. 285
 2. PPG Industries, Inc.: Speedhide Acrylic Latex Masonry Block Filler, 6-7.
 3. Sherwin-Williams: Interior/Exterior Block Filler No. B25W25.
- B. Paste Wood Filler:
 1. Benjamin Moore and Company: Benwood Wood Filler #238
 2. Sherwin-Williams: Sher-wood Wood Filler.

2.5 PRIME COATINGS

- A. Acrylic Latex Ferrous Metal Primer:
 1. Benjamin Moore: Acrylic Metal Primer M04
 2. Sherwin Williams: Pro Cryl Universal Metal Primer B66W310
 3. PPG Pitt-Tech Int/Ext Industrial DTM Primer/Finish Enamel 90-712 Series.
- B. Galvanized Primer:
 1. Benjamin Moore: Acrylic Metal Primer M04
 2. PPG Industries, Inc.: Galvanized Steel Primer No. 6-209.
 3. Sherwin-Williams: Galvite HS B50WZ30.
- C. Latex Primer: Interior
 1. Benjamin Moore: Super Spec Primer Sealer & Latex Undercoat No 253.
 2. PPG Industries, Inc.: Speedhide Latex Wall Sealer No. 6-2.
 3. Sherwin-Williams: PrepRite Primer B28W200
- D. Latex Primer: Interior Wood
 1. Sherwin-Williams: Premium Wall and Wood Primer, B28W8111
 2. PPG Industries, Inc.: Speedhide Latex Wood Primer

2.6 WATER REDUCIBLE COATINGS

- A. Interior Premium Acrylic Latex Enamel:
 1. Benjamin Moore and Company:
 - a. Eggshell: Super Spec Latex Eggshell Enamel (286)
 - b. Pearl Finish: Super Sec Latex Pearl Finish (277)
 - c. Semi-Gloss: Super Spec Latex Semi-Gloss Enamel (283)
 - d. Gloss: Impervex Metal & Wood Enamel no. 309
 2. PPG Industries, Inc.:
 - a. Eggshell: Speedhide Acrylic Latex Enamel, 6-411.
 - b. Semi-Gloss: Speedhide Acrylic Latex Enamel, 6-500.
 - c. Gloss: Speedhide Gloss Acrylic Latex Enamel 6-8534 Series.
 3. Sherwin-Williams:
 - a. Eggshell: ProMar 200 EgShel B20W200.
 - b. Semi-Gloss: Pro Mar 200 Latex Semi Gloss B31 Series

- c. Gloss: Pro Classic Gloss B21
- B. Water Based Epoxy:
 - 1. Benjamin Moore and Company: Super Spec Acrylic Epoxy Enamel No. 256
 - 2. PPG Industries, Inc.: Pitt-Glaze Water Based Acrylic Epoxy Enamel 16-551.
 - 3. Sherwin Williams: Water Based Epoxy B70-200.

2.7 ACCESSORY MATERIALS

- A. Muriatic acid, mildewcide, TSP (tri-sodium phosphate), acidic-detergent, zinc sulfate, sodium metasilicate, and solvent: Commercially available, non-damaging to surface being cleaned; as specified in PDCA Specification Manual; acceptable to coating manufacturer.
- B. Metal Conditioner: Proprietary phosphoric acid based, etching type solution; acceptable to coating manufacturer.
- C. Rust Inhibitor: Water containing 0.32 percent of sodium nitrite and 1.28 percent by weight of secondary ammonium phosphate (dibasic); or water containing 0.2 percent by weight of chromic acid or sodium chromate or sodium dichromate or potassium dichromate.
- D. Spackling compound, putty, plastic wood filler, liquid de-glosser, latex patching plaster, latex base filler, thinners, and other materials not specifically indicated but required to achieve finishes specified: Pure, of highest commercial quality, compatible with coatings and acceptable to coating manufacturer.
- E. Do not use products of different manufacturers in combination.

2.8 MIXING

- A. Use factory prepared colors matching approved samples. Site tinting will not be permitted.
- B. Thoroughly mix and stir coatings before use to ensure homogeneous dispersion of ingredients. Prior to application, blend multiple containers of same material and color by pouring from one container to another several times to ensure uniform consistency, color, and smoothness.
- C. Mix only in clean mixing pails of material recommended by manufacturer to avoid contamination.
- D. Remove film which may form on surface of material in containers and strain material before using. Stir frequently during use to maintain pigments in suspension. Do not stir film into material.
- E. Apply coatings of consistency recommended by manufacturer. Thin only within recommended limits using thinners approved by coating manufacturer.

2.9 COLORS AND FINISHES

- A. Refer to Schedules at end of this Section.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions and proceed with work in accordance with Section 01 7000.
- B. Measure moisture content of substrates using recently calibrated electronic moisture meter. Do not apply coatings if moisture content of surfaces exceeds lesser of percentages listed below or those required by coating manufacturer. If excess moisture content exists and cannot be reduced, obtain written approval of coating manufacturer before application of coatings.
 - 1. Gypsum board and gypsum plaster: 17 percent.
 - 2. Architectural woodwork, trim, cabinets, and casework: 10 percent; measure with resistance type meter in accordance with ASTM D4442.
 - 3. Common board and dimension lumber: 12 percent; measure with resistance-type meter in accordance with ASTM D4442.
 - 4. Masonry, concrete, CMU, and Portland cement plaster: 17 percent for solvent reduced coatings. Test concrete floors in accordance with ASTM D4263.
 - 5. Canvas and cotton insulation coverings: 12 percent max.
- C. Prior to applying alkali and acid sensitive coatings, test surface pH with universal pH paper placed against wetted surface. Substrate pH shall not exceed pH of clean wash water.
- D. Beginning of execution constitutes acceptance of existing conditions.

3.2 PREPARATION - GENERAL

- A. Protect completed construction from damage. Furnish drop cloths, shields, and protective methods to prevent spray, splatter, or droppings from disfiguring other surfaces.
- B. Remove surface hardware, mechanical diffusers, escutcheons, registers, electrical plates, light fixture

- trim, fittings, fastenings and similar items prior to preparing surfaces for finishing. Provide surface-applied protective masking for non-removable items. Carefully store removed items for reinstallation.
- C. Remove mildew by scrubbing with mildewcide. Rinse thoroughly with clean water.
 - D. Before beginning application of coatings, ensure surfaces are clean, dry, and free of dirt, dust, rust or rust scale, oil, grease, mold, mildew, algae, efflorescence, release agents, or any other foreign material which could adversely affect coating adhesion or finished appearance.

3.3 SURFACE PREPARATION

- A. General:
 - 1. Correct minor defects.
 - 2. Remove temporary labels, wrappings, and protective coverings from surfaces to be coated.
 - 3. Seal stains, marks, and other imperfections which may bleed through surface finishes.
- B. Cloth Insulation Coverings:
 - 1. Remove dirt, grease, oil, and other foreign substances.
 - 2. Seal with thin coating of drywall compound thinned with latex PVA primer to working consistency.
- C. Gypsum Board:
 - 1. Refer to Section 09 2116 for general surface preparation.
 - 2. Fill remaining cracks, depressions, holes and other irregularities with spackling compound.
 - 3. Sand rough or high spots left by joint cement or spackling compound without damaging paper face.
 - 4. Remove dust by wiping with damp cloths or vacuuming.
- D. Existing Concrete:
 - 1. Remove dirt, scale, loose material, efflorescence, and powder by wire brushing or by other approved methods.
 - 2. Remove oil and grease with solution of TSP, rinse, and allow to dry.
 - 3. Wash and neutralize surfaces as recommended by coating manufacturer, rinse, and allow to dry.
- E. Existing Plaster:
 - 1. Remove dirt, efflorescence, scale, loose sand, and powder by wire brushing or by other approved methods.
 - 2. Remove oil and grease with solution of TSP, rinse, and allow to dry.
 - 3. Wash portland cement plaster to receive solvent reducible coatings with zinc sulfate solution, rinse, and allow to dry.
 - 4. Wash gypsum plaster to receive solvent reducible coatings with acidic-detergent, rinse and allow to dry.
 - 5. Fill hairline cracks, small holes and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces.
- F. Steel - Uncoated:
 - 1. Remove weld spatter by chipping or grinding.
 - 2. Clean interior and weather protected steel in accordance with SSPC SP2 "Hand Tool Cleaning" and SP3 "Power Tool Cleaning". Clean areas of excessive corrosion or scale in accordance with SSPC SP7 "Brush-Off Blast Cleaning".
 - 3. Clean exterior steel permanently exposed to elements in accordance with SSPC SP6 "Commercial Blast Cleaning".
 - 4. Apply metal conditioner to bare surfaces in accordance with manufacturer's recommendations, paying particular attention to abrasions, welds, bolts, and nuts. Allow to set as recommended by solution manufacturer. Rinse with clean water with rust inhibitor mixed with water or applied immediately following rinse. Allow to dry.
 - 5. Prime coat or clear coat as indicated immediately.
- G. Steel - Prime Coated:
 - 1. Remove loose primer and rust to feather-edge at adjacent sound primer by cleaning in accordance with SSPC SP2 "Hand Tool Cleaning" and SP3 "Power Tool Cleaning".
 - 2. Apply metal conditioner to abrasions, welds, bolts, and nuts in accordance with manufacturer's recommendations. Allow to set as recommended by manufacturer. Rinse with clean water with rust inhibitor mixed with water or applied immediately following rinse.
 - 3. Allow to dry.
 - 4. Prime coat bare areas immediately.

H. Steel - Galvanized:

1. Remove white rust by cleaning in accordance with SSPC SP2 "Hand Tool Cleaning" and SP3 "Power Tool Cleaning". Exercise care not to remove galvanizing.
2. Pretreat surfaces to receive solvent reducible coatings immediately.

I. New Wood - Opaque Finish:

1. Remove excess residue from knots, pitch streaks, cracks, open joints, and sappy spots. Ensure exposed fasteners are countersunk.
2. Sand wood surfaces and edges smooth. Remove dust after each sanding.
3. Fill nail holes, cracks, open joints and other defects with putty or plastic wood filler.

3.4 APPLICATION

A. General Requirements:

1. Coat all surfaces specified, scheduled, illustrated, and otherwise exposed unless specifically noted otherwise.
2. Apply coatings of type, color, and sheen as scheduled.
3. Apply products in accordance with Section 01700. Use application materials, equipment, and techniques as recommended by coating manufacturer and best suited for substrate and type of material being applied.
4. Do not apply finishes to surfaces that are improperly prepared.
5. Number of coats specified are minimum number acceptable.
6. Apply coating systems to total dry film thickness scheduled. Apply material at not less than manufacturer's recommended spreading rate. Do not exceed maximum single coat thickness recommended by coating manufacturer. Do not double-back with spray equipment building up film thickness of two coats in one pass.
7. Ensure that edges, corners, crevices, welds, and exposed fasteners receive dry film thickness equivalent of flat surfaces.
8. Finish edges of coatings adjoining other materials or colors sharp and clean, without overlapping.

B. Prime Coats:

1. Apply initial coat to surfaces as soon as practical after preparation and before subsequent surface deterioration.
2. Apply primer to wood and metal sash before field glazing.

C. Intermediate and Top Coats:

1. Allow previously applied coat to dry before next coat is applied.
2. Sand and dust lightly between coats as recommended by coating manufacturer.
3. Apply each coat to achieve uniform finish, color, appearance, and coverage free of brush and roller marks, runs, misses, visible laps or shadows, hazing, bubbles, pin holes, or other defects.
4. If stains, undercoats, or other conditions show through final topcoat, correct defects and apply additional topcoats until coating film is of uniform finish, color, and appearance.

D. Finish Matching:

1. Finish closets same as adjoining rooms, unless otherwise specified.
2. Finish tops, bottoms, and edges of doors same as door faces. Apply sanding sealer to cutouts. When faces are different colors, finish edges of doors to match space from which they are visible when door is in partly open position.
3. Finish other surfaces not specifically mentioned to match adjoining surfaces.

E. Mechanical and Electrical Items:

1. Refer to Division 21 – Fire Suppression, Division 22 – Plumbing, Division 23 - Heating, Ventilating, and Air Conditioning, and Division 26 - Electrical for schedule of color coding and identification banding of equipment, ductwork, piping, and conduit. Color code equipment, piping, conduit and exposed ductwork in accordance with requirements indicated.
2. Prior to finishing mechanical and electrical items, remove louvers, grilles, covers, and access panels and finish separately. Replace when dry.
3. Paint interior surfaces of ducts, and heating cabinets that are visible or reflective behind grilles and registers with one coat of flat black paint.
4. Paint both sides and edges of plywood equipment backboards before installing equipment.
5. Do not apply coatings over name plates, tags, or other equipment identification.
6. Reinstall trim, fittings, and other items removed for finishing.

3.5 FIELD QUALITY CONTROL

- A. General: Comply with requirements of Section 01 4000.
- B. Periodically test film thickness of each coat with wet film gage to ensure coatings are being applied to proper thickness.
- C. Request review of each applied coat by Architect before application of successive coats. Only reviewed coats will be considered in determining number of coats applied.
- D. Immediately prior to Substantial Completion, perform detailed inspection of painted surfaces and repair or refinish abraded, stained, or otherwise disfigured surfaces.
- E. Testing: Owner reserves right to employ independent testing agency to verify acceptability of substrates and conformance of coating materials to specified requirements; and to test coating quality and dry film thickness.
- F. If test results show that material does not comply with specified requirements, remove noncomplying coatings, recoat with acceptable material, and pay costs of additional testing to ensure compliance.

3.6 CLEANING

- A. Promptly remove spilled, splashed, or spattered coatings. Clean spots, oil, and other soiling from finished surfaces using cleaning agents and methods which will not damage materials.
- B. If completed construction is damaged beyond normal cleaning or repair by painting operations, replace damaged items at no additional cost to Owner.
- C. Maintain premises and storage areas free of unnecessary accumulation of tools, equipment, surplus materials, and debris.
- D. Collect waste, cloths, and material which may constitute fire hazards and place in closed metal containers; remove from site daily along with empty containers.

3.7 PROTECTION

- A. Protect finished work in accordance with Section 01 7000.
- B. Protect work of other trades against damage from coating activities. Correct damage by cleaning, repairing, replacing, and recoating as acceptable to Architect.
- C. Provide "Wet Paint" signs and other methods to protect newly coated surfaces. Remove when directed or when no longer needed.

3.8 FINISH COATINGS SCHEDULE. NOTE: it is not the intent of this schedule to state in detail each surface to receive finish; it is intended only as a guide. Omission of any surface from this list shall not relieve the contractor from the responsibility of providing finish. Any further clarification required shall be brought to the attention of the architect.

- A. Interior Coating Systems:
 - 1. Concrete Surfaces:
 - a. Existing Structural Concrete:
 - i. System Epoxy Finish (at Extruder Lab):
 - Sheen: Satin.
 - Prime Coat: Interior Block Filler at 11.0 mils.
 - Under Coat: Water Based Epoxy at 2.5 mils.
 - Top Coat: Water Based Epoxy 2.5 mils.
 - 2. Metal Surfaces:
 - a. Non-Ferrous Metals and Zinc-Coated (Galvanized) Steel:
 - i. System Latex Finish:
 - Sheen: Satin.
 - Prime Coat: Galvanized Primer at 2.0 mils.
 - Under Coat: Interior Latex Enamel at 1.5 mils.
 - Top Coat: Interior Latex Enamel at 1.5 mils.
 - b. Ferrous Metals - Uncoated:
 - i. System Latex Finish:
 - Sheen: Satin.
 - Prime Coat: Acrylic Latex Ferrous Metal Primer
 - Under Coat: Interior Latex Enamel at 1.5 mils.
 - Top Coat: Interior Latex Enamel at 1.5 mils.
 - c. Ferrous Metals - Previously Coated:

- i. System Latex Finish:
 - Sheen: Satin.
 - Prime Coat: Acrylic Latex Ferrous Metal Primer
 - Under Coat: Interior Latex Enamel at 1.5 mils.
 - Top Coat: Interior Latex Enamel at 1.5 mils.
- 3. Wood Surfaces
 - a. Miscellaneous new wood trim.
 - i. System Water Based Epoxy:
 - Sheen: Satin.
 - Prime Coat: Latex Primer at 1.0 mils.
 - Under Coat: Water Based Epoxy at 2.5 mils.
 - Top Coat: Water Based Epoxy 2.5 mils.
 - System DFT: 6 mils.
- 4. Gypsum Surfaces:
 - a. Gypsum Board:
 - i. System Water Based Epoxy:
 - Sheen: Satin.
 - Prime Coat: Latex Primer at 1.0 mils.
 - Under Coat: Water Based Epoxy at 2.5 mils.
 - Top Coat: Water Based Epoxy 2.5 mils.
 - System DFT: 6 mils.
- 5. Plaster Surfaces:
 - a. Existing plaster finish:
 - i. System Water Based Epoxy at Walls:
 - Sheen: Satin.
 - Prime Coat: Latex Primer at 1.0 mils.
 - Under Coat: Water Based Epoxy at 2.5 mils.
 - Top Coat: Water Based Epoxy 2.5 mils.
 - System DFT: 6 mils.

3.9 PAINT COLOR SCHEDULE:

- A. P-1: Manufacturer: TBD. (off white)
- B. P-2: Manufacturer: TBD (charcoal grey)
- C. P-3: Manufacturer: TBD: Ceiling White. (off white)

END OF SECTION 09 9000