

PROJECT:
Replace Washer Lint Traps and Stacks Phase 2
Multiple Facilities

PROJECT NUMBER: MAHG20-1064

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KEESLER AIR FORCE BASE BILOXI, MISSISSIPPI



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SECTION 00 10 20
LIST OF DRAWINGS

PART 1 GENERAL

1.1 SUMMARY

This document lists the drawings for the project.

1.2 CONTRACT DRAWINGS

Contract drawings are as follows:

<u>DRAWING No.</u>	<u>TITLE</u>
T1.0	TITLE SHEET
M1.0	EXISTING FIXTURE SCHEDULE, FLOOR PENETRATION, INTERCEPTO DETAIL
M2.0	EXISTING RISER DIAGRAM AND EXISTING/NEW INTERCEPTOR LAYOUT
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S1.0	EXISTING STRUCTURAL DRAWING REFERENCES
S2.0	EXISTING INTERIOR STRUCTURAL DRAWING REFERENCES

END OF SECTION

**SECTION 01 30 00
SUBMITTAL PROCEDURES**

PART 1 GENERAL

- 1.0 SUMMARY (Not Applicable)
- 1.1 REFERENCES (Not Applicable)
- 1.2 SUBMITTAL CLASSIFICATION

1.2.1 Submittals are classified as follows:

1.2.1.1 Contracting Officer Approval: The Contracting Officer (CO) approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the CO. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings."

1.2.1.2 Information Only: All submittals not requiring the Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.3 APPROVED SUBMITTALS:

The approval of submittals by the CO shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory.

Approval will not relieve the Contractor of the responsibility for any error, which may exist, as the Contractor is responsible for the dimensions and design of adequate connections, details and satisfactory construction of all work. After submittals have been approved by the CO, no resubmittal for the purpose of substituting materials or equipment will be given consideration unless accompanied by an explanation as to why a substitution is necessary.

1.4 DISAPPROVED SUBMITTALS:

The Contractor shall make all corrections required by the CO and promptly furnish a corrected submittal in the form and number of copies as specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, notice as required under the Contract Clause entitled "Changes" shall be given promptly to the CO.

PART 2 EXECUTION

2.0 GENERAL:

The Contractor shall submit all items listed on the Submittal Register (Material Submittal Schedule (MSS), or equivalent) or specified in the other sections of these specifications. The CO may request submittals in addition to those listed when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same used in the contract drawings. Submittals shall be made in three (3) copies unless otherwise noted on the Submittal Register to the CO. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved and each respective transmittal form or material approval submittal (AF 3000, Material Approval Submittal) shall be stamped, signed and dated by the Contractor certifying that the accompanying submittal complies with the contract requirements. Submittals shall include line number of item from Government-prepared Submittal Register. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating

charts or curves; test reports; test cylinders; samples; O&M manuals including parts list; certifications; warranties and other such required submittals. Submittals requiring CO approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby.

2.1 SUBMITTAL REGISTER: Material Submittal Schedule (MSS):

A Submittal Register on the MSS shall be provided to the Contractor as an attachment to the awarded contract. During the pre-construction meeting, the Contractor shall meet with the CO to jointly review the CO prepared Submittal Register. The Contractor shall be responsible for providing all items listed on the Submittal Register in accordance with the scheduled submittal dates.

2.2 SCHEDULING:

Submittals covering component items forming a system or items that are interrelated, shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. The Contractor shall take special care to timely schedule the submittal date required for long lead-time items and shall allow 30 days for CO review action on all submittals except as noted below. No delays, damages, or time extensions will be allowed for time lost in late submittals.

All submittals will be made on AF 3000, Material Approval Submittal as specified below.

2.2.1 The number of days for CO action on the following submittals will be as indicated:

2.2.1.1 Submittals required on the MSS – 10 calendar days.

2.2.1.2 Any submittal that requests or requires deviation from contract drawings or specifications – 14 calendar days.

2.3 TRANSMITTAL FORM (AF 3000, Material Approval Submittal):

AF 3000, Material Approval Submittal shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor by the CO. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care will be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

2.4 CONTROL OF SUBMITTALS:

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the provided Submittal Register.

2.5 CO APPROVED SUBMITTALS:

Upon completion of review of submittals requiring CO approval, the submittals will be identified as having received approval by being so noted on AF 3000, Material Approval Submittal. Such submittals shall be made in accordance with the Construction Contract Clause entitled "Specifications and Drawings for Construction" and the following: unless otherwise noted on the Submittal Register and when submitting physical documents, three (3) prints of all drawings; or, if catalog cuts, printed specifications or similar publications are used as submittals, three (3) original copies shall be submitted. One corrected copy shall be returned to the Contractor. When submitting documents for review and approval via email, only one copy is required. In cases where "trade names or equal" specifications are used, any equal substitution by the Contractor will be considered a deviation and will require approval. Any submittal requesting a deviation shall be considered as one requiring "approval" action. Payment for materials incorporated into the work will not be allowed if required approvals have not been obtained. Upon completion of

review of submittals requiring CO approval, the submittals will be identified as having received approval by being so noted on AF 3000, Material Approval Submittal.

2.6 INFORMATION ONLY SUBMITTALS:

All other submittals are considered to be "Information Only" submittals and may be subject to review action by the CO or may be simply receipt acknowledged. Any submittal "For Information Only" shall be clearly marked "FIO". Normally, submittals for information only will not be returned. Approval of the Construction Manager (CM) is not required on information only submittals. These submittals will be used for information purposes. The CO reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications and will not prevent the CO from requiring removal and replacement if nonconforming material is incorporated in the work. This also does not relieve the Contractor of the requirement to furnish samples for testing by the CO laboratory or check testing by the CO, in those instances where the technical specifications so prescribe. It shall be the Contractor's responsibility of assuring that the materials and/or equipment covered by that submittal meets the contract requirements. Any such "For Information Only" submittal found to contain errors or omissions shall be resubmitted as one requiring "approval" action. All "For Information Only" submittals shall be made in triplicate unless otherwise specified.

END OF SECTION

SECTION 05 40 00
LIGHT GAUGE METAL FRAMING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The intent of this Section is to establish the standard of quality for materials, fabrication and erection of light gauge studs, track, and related accessories to complete the work as indicated on the Drawings and described in the Specifications.
- B. Related Requirements Specified Elsewhere
 - 1. Section 09 25 50 - Gypsum Board Assemblies

1.02 APPLICABLE STANDARDS

- A. American Iron and Steel Institute (AISI): Design of Cold Formed Steel Structural Members.
- B. American Welding Society (AWS): Welding in building Construction.
- C. American Society for Testing and Materials (ASTM),
- D. Building Code as applicable.
- E. American Institute of Steel Construction (AISC): Manual of Steel Construction.

1.03 SUBMITTALS

Shop Drawings

- 1. Indicate all member gauges, spacing's and sizes.
- 2. Indicate shop and field assembly details including cut and connections.
- 3. Indicate type and location of all welds, bolts and fastening devices.
- 4. Shop drawings shall indicate all prefabricated framing with individual panel drawings for each condition.

1.04 QUALITY ASSURANCE

- A. For purposes of designating type, sizes and quality for the work under this Section, Specifications are based on products manufactured or furnished by INRYCO/Milcor Steel Framing Systems.
- B. Products of other manufacturers similar to those specified herein will be acceptable for use on the project when approved in writing by the Contracting Officer. Supporting technical literature, samples, drawings and performance data sheets must be submitted for comparison.
- C. Products for use on this project shall be of one manufacturer unless noted specifically otherwise herein.

PART 2 - MATERIALS

2.01 FRAMING MEMBERS

All framing members shall be of the type and size as shown on the Drawings. Minimum 18 gauge.

PART 3 - EXECUTION

3.01 FABRICATION

- A. Framing components may be pre-assembled into panels prior to erecting. Prefabricated panels shall be square with components and attached in a manner as to prevent racking.
- B. All framing components shall be cut squarely for attachment to perpendicular members, or as required for an angular fit against abutting members. Members shall be held positively in place until properly fastened.
- C. Axially loaded studs shall be installed in a manner, which will assure that the ends of the studs are positioned against the inside track web, prior to stud and track attachment.

3.02 ERECTION WALLS

- A. Erect framing and panels plumb, level and square in strict accordance with the approved shop drawings.
- B. Handling and lifting of prefabricated panels shall be done in a manner as to not cause distortion in any member.
- C. Track shall be securely anchored to the supporting structure.
- D. At track butt joints, abutting pieces of track shall be securely anchored to a common structural element, or they shall be butt-welded or spliced together.
- E. Studs shall be plumbed, aligned and securely attached to the flange or webs of both upper and lower tracks.
- F. Wall stud bridging shall be attached in a manner to prevent stud rotation. Bridging rows shall be spaced according to the manufacturer. Minimum bridging shall be walls Up to 10'-0" height; one row at mid-height. Walls exceeding 10'-0" height; bridging rows spaced not to exceed 5'-0" on center.
- G. Framed wall openings shall include headers and supporting studs as necessary.
- H. Temporary bracing shall be provided until erection is completed.

3.03 RECOMMENDED EQUIPMENT

- A. Cutting
 1. A radial arm 7½ hp (3425 rpm) saw with an 18" x 5/32" friction blade, style 9MR, having 280 teeth (10 teeth per inch) is frequently used in the shop. Other suggested shop cutting equipment includes either the radial arm saw or an abrasive cut-off (chop) saw with a reinforced abrasive blade or a band saw.
 2. For field cutting and small quantities, a 3 hp worm drive Skill saw equipped with a reinforced abrasive cut-off blade, a band saw or a power band saw will serve satisfactorily.

B. Welding

A wire feed type welder is recommended for fastest and most uniform welding in the shop. Good welds are also obtained with a 3/32" or 1/8" AWS type 6013 or 7014 rod with a welding head of 60-110 amperes depending on the gauge of material and the fit of the parts.

C. Screw Attachment

1. For screwing of metal to metal, a reversible screw gun capable of handling metal self tapping screws is acceptable.
2. For attachment of metal to concrete, a self contained, .22 caliber power driving tool may be used.

3.06 CLEAN-UP

- A. Remove all debris from site upon completion of work.

END OF SECTION

SECTION 06 40 20 – INTERIOR ARCHITECTURAL WOODWORK

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Architectural cabinets.
 - 2. Accessories
- B. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips unless concealed within other construction before woodwork installation.
- C. Related Section include the following:
 - 1. Section 06 65 00 "Solid Surface Fabrications".

1.2 SUBMITTALS

- A. Product Data: For cabinet hardware and accessories.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

1.3 QUALITY ASSURANCE

- A. Quality standards - except as otherwise shown or specified, comply with specified provisions of the following:
 - 1. Architectural Woodwork Institute (AWI) "Architectural Woodwork Quality Standards".

1.4 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install woodwork until wet work is complete.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Wood Products:
 - 1. Softwood Plywood: DOC PS 1, Medium Density Overlay (for use with painted plywood only).

2.2 ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural woodwork.
- B. Adhesives, General: Do not use adhesives that contain urea formaldehyde.

2.3 FABRICATION

General: Complete fabrication to maximum extent possible before shipment to Project site. Where necessary for fitting at site, provide allowance for scribing, trimming, and fitting.

- 1. Interior Woodwork Grade: Custom
- 2. Shop cut openings to maximum extent possible. Sand edges of cutouts to remove splinters and burrs. Seal edges of openings in countertops with a coat of varnish.

2.4 FINISHING

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas. Examine shop-fabricated work for completion and complete work as required, including removal of packing and back priming.
- B. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.
- C. Install woodwork level, plumb, true, and straight to a tolerance of **1/8 inch in 96 inches**. Shim as required with concealed shims.
- D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork.
- F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.
- G. Fasten wall cabinets through back, near top and bottom, at ends and not more than **16 inches** o.c.
- H. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop. Caulk space between counter and wall with sealant specified in Section 07 92 00 – Joint Sealants

END OF SECTION

SECTION 06 65 00

SOLID SURFACE FABRICATIONS

PART I - GENERAL

1.01 DESCRIPTION

- A. The work required under this Section consists of acrylic (polymer) solid surface material used for reception counter surfacing and counter top surfacing to complete the work as indicated on the Drawings and described in the Specifications.
- B. Related Sections:
 - 1. Section 06 40 20 – Interior Architectural Woodwork

1.02 REFERENCES

- A. Applicable Standards: Standards of the following, as referenced herein:
 - 1. American National Standards Institute (ANSI)
 - 2. American Society for Testing and Materials (ASTM)
 - 3. National Electrical Manufacturers Association (NEMA)

1.03 SUBMITTALS

- A. Shop Drawings: Indicate dimensions, component sizes, fabrication details, attachment provisions and coordination requirements with adjacent work.
- B. Samples: Submit minimum 2" x 2" (50 mm x 50 mm) samples. Indicate full range of color and pattern variation. Approved samples will be retained as standards for work.
- C. Product Data: Indicate product description, fabrication information and compliance with specified performance requirements.
- D. Maintenance Data: Submit manufacturer's care and maintenance data, including repair and cleaning instructions. Include in project closeout documents.

1.04 QUALITY ASSURANCE

- A. Allowable Tolerances:
 - 1. Variation in component size: $\pm 1/8"$ (3 mm).
 - 2. Location of openings: $\pm 1/8"$ (3 mm) from indicated location.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver no components to project site until areas are ready for installation. Store components indoors prior to installation.
- B. Handle materials to prevent damage to finished surfaces. Provide protective coverings to prevent physical damage or staining following installation for duration of project.

1.06 WARRANTY

- A. Provide manufacturer's ten (10) year warranty against defects in materials. Warranty shall provide material and labor to repair or replace defective materials. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.

PART 2 - PRODUCTS

2.01 SOLID SURFACE FABRICATIONS

- A. Specifications are based on solid surface materials manufactured by Dupont Corian, P.O. Box 80702, Wilmington DE 19880-0702; Phone (800) 426-7426 or Approved Equal.
- C. Material: Homogeneous filled acrylic; not coated, laminated or of composite construction; meeting ANSI Z124.3.
 - 1. Superficial damage to a depth of 0.010" (25mm) shall be repairable by sanding and polishing.
- D. Laundry Counter Tops: Horizontal surfaces and vertical surfaces shall be thick solid polymer material adhesively joined with inconspicuous seams; edge details shall be bullnose style.
- E. Color: Final color selection shall be made through submittal process.

2.02 ACCESSORIES

- A. Joint Adhesive: Manufacturer's standard two part adhesive kit to create inconspicuous, non-porous joints, with a chemical bond.

2.03 FABRICATION

- A. For warranty coverage, fabricator/installer shall be approved or certified by solid polymer manufacturer.
- B. Fabricate components in shop to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and solid polymer manufacturer requirements.
- C. Form joints between components using manufacturer's standard joint adhesive. Joints shall be inconspicuous in appearance and without voids. Attach 2" (50 mm) wide reinforcing strip of solid polymer material under each joint.
- D. Provide holes and cutouts for plumbing and bath accessories as indicated on the drawings and/or Statement of Work.
- E. Rout and finish component edges to a smooth, uniform finish. Rout all cutouts and sand all edges smooth. Repair or reject defective or inaccurate work.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install components plumb and level, in accordance with approved shop drawings and product installation details.
- B. Form filed joints using manufacturer's recommended adhesive, with joints inconspicuous in finished work. Keep component and hands clean when making joints.
- C. Provide backsplashes and endsplashes as indicated. Adhere to countertops using manufacturer's standard color matched silicone sealant.
- D. Keep components and hands clean during installation. Remove adhesives, sealants and other stains.
- E. Protect surfaces from damage. Replace damaged work that cannot be repaired to Architect's satisfaction.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM C1311 (2010) Standard Specification for Solvent Release

Agents

ASTM C509 (2006; R 2011) Elastomeric Cellular Preformed Gasket and Sealing Material

ASTM C734 (2006; R 2012) Low-Temperature Flexibility of Latex Sealant After Artificial Weathering

ASTM C834 (2010) Latex Sealants

ASTM C919 (2012) Use of Sealants in Acoustical Applications

ASTM C920 (2011) Standard Specification for Elastomeric Joint Sealants

ASTM D1056 (2007) Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber

ASTM D1667 (2005; R 2011) Flexible Cellular Materials - Poly (Vinyl Chloride) Foam (Closed-Cell)

ASTM D217 (2010) Cone Penetration of Lubricating Grease

ASTM D2452 (2003; R 2009) Standard Test Method for Extrudability of Oil- and Resin-Base Caulking Compounds

ASTM D2453 (2003; R 2009) Standard Test Method for Shrinkage and Tenacity of Oil- and Resin-Base Caulking Compounds

ASTM E84 (2012c) Standard Test Method for Surface Burning Characteristics of Building Materials

1.2 SUBMITTALS

A. SD-03 Product Data

1. Sealants
2. Primers
3. Bond breakers
4. Backstops

Manufacturer's descriptive data including storage requirements, shelf life, curing time, instructions for mixing and application, and primer data (if required). Provide a copy of the Material Safety Data Sheet for each solvent, primer or sealant material.

B. SD-07 Certificates

1. Sealant
2. Certificates of compliance stating that the materials conform to the specified requirements.

1.3 ENVIRONMENTAL CONDITIONS

Apply sealant when the ambient temperature is between 4 and 32 degrees C (40 and 90 degrees F).

1.4 DELIVERY AND STORAGE

Deliver materials to the job site in unopened manufacturers' external shipping containers, with brand names, date of manufacture, [color,] and material designation clearly marked thereon. Label elastomeric sealant containers to identify type, class, grade, and use. Carefully handle and store materials to prevent inclusion of foreign materials or subjection to sustained temperatures exceeding 32 degrees C 90 degrees F or less than 4 degrees C 0 degrees F.

1.5 QUALITY ASSURANCE

1.4.1 Compatibility with Substrate

Verify that each of the sealants are compatible for use with joint substrates.

1.4.2 Joint Tolerance

Provide joint tolerances in accordance with manufacturer's printed instructions.

PART 2 PRODUCTS

2.1 SEALANTS

Provide sealant that has been tested and found suitable for the substrates to which it will be applied.

2.1.1 Interior Sealant

Provide ASTM C834 [ASTM C920, Type S or M, Grade NS, Class 12.5, Use NT. Location(s) and color(s) of sealant for the following:

1. Location: Small voids between walls and door frames, built-in or surface-mounted equipment and fixtures, and similar items.
2. Color: As selected by Designer of Record

2.1.2 Floor Joint Sealant

Provide ASTM C920, Type S or M, Grade P, Class 25, Use T. Provide location(s) and color(s) of sealant as follows:

1. Location: Seats of metal thresholds for exterior doors.
2. Color: As selected by Designer of Record

2.2 PRIMERS

Provide a non-staining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application.

2.3 BOND BREAKERS

Provide the type and consistency recommended by the sealant manufacturer to prevent adhesion of the sealant to backing or to bottom of the joint.

2.4 BACKSTOPS

Provide glass fiber roving or neoprene, butyl, polyurethane, or polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer. Provide 25 to 33 percent oversized backing for closed cell and 40 to 50 percent oversized backing for open cell material, unless otherwise indicated. Make backstop material compatible with sealant. Do not use oakum and other types of absorptive materials as backstops.

2.5 CLEANING SOLVENTS

Provide type(s) recommended by the sealant manufacturer (except for aluminum and bronze surfaces that will be in contact with sealant).

PART 3 EXECUTION

3.1 SURFACE PREPARATION

Clean surfaces from dirt frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion.

Remove oil and grease with solvent. Surfaces must be wiped dry with clean cloths. When resealing an existing joint, remove existing caulk or sealant prior to applying new sealant. For surface types not listed below, contact sealant manufacturer for specific recommendations.

3.1.1 Steel Surfaces

Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finish work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue-free solvent.

3.1.2 Aluminum or Bronze Surfaces

Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive just prior to sealant application. For removing protective coatings and final cleaning, use non-staining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

3.1.3 Concrete and Masonry Surfaces

Where surfaces have been treated with curing compounds, oil, or other such materials, remove materials by sandblasting or wire brushing. Remove laitance, efflorescence and loose mortar from the joint cavity.

3.1.4 Wood Surfaces

Keep wood surfaces to be in contact with sealants free of splinters and sawdust or other loose particles.

3.2 SEALANT PREPARATION

Do not add liquids, solvents, or powders to the sealant. Mix Multi-component elastomeric sealants in accordance with manufacturer's instructions.

3.3 APPLICATION

A. Acceptable Ratios:

<u>JOINT WIDTH</u>	<u>JOINT DEPTH</u>	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
6 mm (minimum)	6 mm	6 mm
over 6 mm	1/2 of width	Equal to width
For wood, concrete, or masonry.		
6 mm (minimum)	6 mm	6 mm
over 6 mm to 13 mm	6 mm	Equal to width
over 13 mm to 50 mm	50 mm	16 mm
Over 50 mm	As recommended by sealant manufacturer	
For metal, glass, or other nonporous surfaces:		
1/4 inch (minimum)	1/4 inch	1/4 inch

For wood, concrete, or masonry.		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch to 1/2 inch	1/4 inch	Equal to width
over 1/2 inch to 2 inch	1/2 inch	5/8 inch
Over 2 inch	As recommended by sealant manufacturer	
over 1/4 inch	1/2 of width	Equal to width

- B. Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding is not required on metal surfaces.

3.3.2 Masking Tape

Place masking tape on the finish surface on one or both sides of a joint cavity to protect adjacent finish surfaces from primer or sealant smears. Remove masking tape within 10 minutes after joint has been filled and tooled.

3.3.3 Backstops

Install backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified. Install backstops in the following locations:

1. Where backstop is not indicated but joint cavities exceed the acceptable maximum depths specified in paragraph entitled, "Joint Width-to-Depth Ratios".

3.3.4 Primer

Immediately prior to application of the sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.

3.3.5 Bond Breaker

Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

3.3.6 Sealants

Provide a sealant compatible with the material(s) to which it is applied. Do not use a sealant that has exceeded shelf life or has jelled and cannot be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's printed instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Make sealant uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply sealant, and tool smooth as specified. Apply sealer over the sealant when and as specified by the sealant manufacturer.

3.4 PROTECTION AND CLEANING

3.4.1 Protection

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

3.4.2 Final Cleaning

Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

1. Masonry and Other Porous Surfaces: Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer. Allow excess sealant to cure for 24 hour then remove by wire brushing or

sanding. Metal and Other Non-Porous Surfaces: Remove excess sealant with a solvent-moistened cloth.

-- End of Section --

SECTION 09 25 50

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Interior gypsum wallboard – regular
 - 2. Interior screw type support systems
 - 3. Wallboard finishing (joint tape-and-compound treatment)
 - 4. Gypsum wallboard accessories including control joints
 - 5. Levels of Gypsum Board Finish
- B. Related Sections include the following:

Section 05 40 00 – Light Gauge Metal Framing

1.2 SUBMITTALS

- A. Product Data:
 - Submit manufacturer's product specifications and installation instructions for each gypsum board component, including other data as may be required to show compliance with these specifications.

1.3 QUALITY ASSURANCE

- A. Gypsum Board:
 - 1. GA-216, "Specifications for the Application and Finishing of Gypsum Board" by Gypsum Association
 - 2. GA-214-96, "Recommended Levels of Gypsum Board Finish" by Gypsum Association.
- B. Metal Support System Installation: ASTM C754
- C. Manufacturer: Obtain gypsum board products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of gypsum boards
- D. Allowable Tolerances: 1/8" in 8' - 0" variation in finish surface

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packaged, containers or bundles bearing brand name and identification of manufacturer or supplier
- B. Store materials inside under cover and in a manner to keep them dry, protected from weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.
- C. Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal corner beads and trim from being bent or damaged.

1.5 PROJECT CONDITIONS

- A. Environmental Requirements, General: Comply with requirements of referenced gypsum board application standards and recommendations of gypsum board manufacturer, for environmental conditions before, during and after applications of gypsum board
- B. Cold Weather Protection: When ambient outdoor temperatures are below 55 degrees Fahrenheit, maintain continuous, uniform, comfortable building working temperatures of not less than 55 degrees Fahrenheit. for a minimum period of 48 hours prior to, during and following application of gypsum board and joint reinforcement materials or bonding of adhesives.

- C. Ventilation: Ventilate building spaces as required to remove water in excess of that required for drying of joint treatment material immediately after its application. Avoid drafts during dry, hot weather to prevent too rapid drying.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Gypsum Board:
 1. USG Corporation
 2. G-P Gypsum Corporation
 3. National Gypsum Company
 4. Certainteed Corporation
 5. Temple Inland
 6. Or equal
- B. Metal Support System:
 1. Dietrich Metal Framing, Inc.
 2. MarinoWare; a Division of Ware Industries
 3. Or equal

2.2 NON-LOAD-BEARING STEEL FRAMING, GENERAL

- A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
 1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal, unless otherwise indicated.
 2. Protective Coating: ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating, unless otherwise indicated.

2.3 STEEL FRAMING FOR FRAMED ASSEMBLIES

- A. Steel Studs and Runners: ASTM C 645.
 1. Double 20 gage stud framing at all openings including door and view panels.
 2. 22 gauge at 16" o.c. for other locations.
 3. Use 18 gauge for all runners.
- B. Slip-Type Head Joints: Where indicated or at a minimum where required by the Steel Stud Manufacturers Association (SSMA), provide the following:
 1. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
 2. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
- C. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
 1. Minimum Base Metal Thickness: 25 gauge
 2. Depth: 1-1/2 inches unless otherwise noted.

2.4 STEEL FRAMING ACCESSORIES

- A. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Provide stud manufacturer's standard clips, shoes, ties, reinforcement, and other accessories as needed for a complete partition framing system.

2.5 GYPSUM BOARD MATERIALS

- A. Gypsum Wallboard: ASTM C 1396, of types, edge configuration and thickness indicated below; in maximum lengths available to minimize end-to-end butt joints.
 - 1. Types:
 - a. Regular, unless otherwise indicated.
 - 2. Edges: Tapered.
 - 3. Thickness: 5/8", unless otherwise indicated.
- B. Tile Backer Board (provide at all locations where wall tile occurs and other areas indicated):
 - 1. 5/8" Dens Shield Tile Backer Board as manufactured by Georgia Pacific Corporation.
 - 2. 5/8" Fiber Brand Sheathing – Aqua Tough Tile Backerboard as manufactured by USG Corporation.
 - 3. Equal as approved.

2.6 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
 - 1. Material: Sheet steel zinc coated by the hot dip process or electrolytic process, or sheet steel coated with aluminum.
 - 2. Shapes:
 - a. Cornerbead: use at outside corners, unless otherwise indicated.
 - b. U-Bead: J-shaped; exposed short flange does not receive joint compound, use at exposed panel edges
 - c. Expansion (control) joint: One piece control joint formed with V-shaped slot and removable strip covering slot opening.

2.7 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475.
- B. Joint Tape:
 - 1. Interior Gypsum Wallboard: Paper.
 - 2. Tile Backing Panels: As recommended by panel manufacturer.
- C. Setting Type Joint Compound: Factory prepackaged, job mixed chemical-hardening powder products for bedding and filling, formulated for uses indicated.
 - 1. For taping and filling only.
 - 2. For prefilling gypsum board joints.
 - 3. For filling joints and treating fasteners of mold and mildew resistant backing board behind base for ceramic tile.
 - 4. For topping compound, use sandable formulation.
- D. Drying-Type Joint Compounds: Factory prepackaged vinyl-based products complying with the following requirements for formulation and intended use.
 - 1. Ready-Mix Formulation: Factory-mixed product.
 - 2. All-purpose compound formulated for use as both taping and topping compound (use for finish (third and above) coats only.)
- E. Joint Compound for Tile Backing Panels: As recommended by backing panel manufacturer.

2.8 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 - 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

PART 3 EXECUTION

3.1 PREPARATION

- A. Do not deliver or install gypsum board until building is fully enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

3.2 EXAMINATION

- A. Examine substrates to which gypsum board construction attaches or abuts, installed hollow metal frames, cast-in anchors and structural framing with Installer present for compliance with requirements for installation tolerances and other conditions affecting performance of gypsum board assemblies specified in this Section.
 - 1. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.3 INSTALLATION

A. Metal Support Systems:

- 1. Wall/Partition Support System: Support systems shall extend from floor to heights indicated on partition types/schedule.
 - a. Install runner tracks at floors and bottom of roof or floor framing members and where stud system abuts other construction. Where partitions parallel, but are not directly beneath framing members, where there is no floor above, provide runner, or stud, headers between beams, spaced 4 feet on center, attached at each end, and secure top runner of partition thereto.
 - b. Space studs 16 inches on center, unless otherwise indicated.
 - c. Frame door openings with 20 gage vertical studs. Provide runner track header of same gage as jamb studs, and jack studs same as partition studs across head of opening.
 - d. Frame other openings same as door openings and frame above and below openings same as above door head.
 - e. Install supplementary framing, runners, blocking and bracing at openings and terminations in the work, and at locations required to support fixtures, equipment, services, heavy trim and similar work which cannot be adequately supported on gypsum board alone.
 - f. Secure perimeter framing to structural elements with suitable fasteners located 2 inches from each end and 24 inches apart between, except top runner parallel to, but not directly under, framing members will be attached with 2 screws to headers provided at 48 inches on center. Anchor studs adjacent to door and fixed light openings, partition intersections, and corners to top and bottom runner flanges. Make web-flange bend at each end of runner over openings and screw to jamb studs with 2 screws each end.

B. Gypsum Board

- 1. Install, fasten and finish gypsum wallboard and accessories in strict accordance with manufacturer's printed directions and recommendations, with GA-216.
- 2. Install gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16" open space between boards. Do not force into place.
- 3. Locate edge and end joints over supports. Position boards so that both tapered edge joints abut, and mill-cut or field-cut end joints abut. Do not place tapered edges against cut edges or ends.
- 4. Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.
 - a. Fasten base layer to metal supports with screws, spaced 12" o.c. along supported edges and 24" o.c. along intermediate supports.
 - b. Fasten single layer and face layer to metal supports with screws, spaced 12" o.c. for 24" stud spacing and 16" o.c. for 16" stud spacing, unless otherwise indicated. Stagger screws on abutting edges and ends.

C. Trim Accessories

1. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges by nailing or stapling in accordance with manufacturer's instructions and recommendations.
2. Install metal corner beads at all exposed external corners of gypsum board work.
3. Install metal edge trim when edge of gypsum board would otherwise be exposed or semi-exposed and where work is tightly abutted to other work.
4. Control Joints:
 - a. Install control joints at locations indicated, or if not indicated, at spacings and locations required by ASTM C 840 and manufacturer's recommendations; and approved by Contracting Officer for visual effect.
 - 1) Provide not more than 30 feet apart on walls and ceilings.

3.4 FINISHING OF GYPSUM WALL BOARD

- A. General: Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim and control joints; penetrations; fastener heads, surface defects and elsewhere as required to prepare work for decoration.
- B. Prefill open joints using setting-type joint compound.
- C. Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.
- D. Finish interior gypsum wallboard by applying the following joint compounds in three coats (not including prefill of openings in base), sand between coats, and after last coat.
 1. Embedding and First Coat: Setting-type joint compound.
 2. Fill (Second) Coat: Setting-type joint compound.
 3. Finish (Third) Coat: Ready-mix drying all-purpose or topping compound.
- E. Glass-Mat Water Resistant Backer Board: Comply with glass mat backer board manufacturer's recommendations.
- F. Partial Finishing: Omit third coat and sanding on concealed drywall construction indicated for drywall finishing or which requires finishing to achieve sound rating.
- G. Levels of Finish: Provide in accordance with Gypsum Association GA 214, "Recommended Levels of Gypsum Board Finish".
 1. Level 1: Concealed areas, except provide higher level of finish as required to comply with acoustical ratings.
 - a. All joints and interior angles shall have tape set in joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.
 2. Level 2: not used
 3. Level 3: not used
 4. Level 4: all Gypsum board surfaces, except where another finish level is indicated.
 - a. All joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges.
 5. Level 5: not used.

3.5 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

SECTION 09 91 00

PAINT

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Interior Primer.
- B. Interior Paint.
- C. Wall/Ceiling Preparation.

1.2 RELATED SECTIONS

- A. Section 06 40 20 – Interior Architectural Woodwork
- B. Section 09 25 50 – Gypsum Board Assemblies

1.3 REFERENCES

- A. MPI (APL) - Master Painters Institute.
- B. SCAQMD 1168 - South Coast Air Quality Management District Rule #1168; October 3, 2003.
- C. SSPC (PM1) - Steel Structures Painting Manual, Vol. 1, Good Painting Practice; Society for Protective Coatings; 1993, Third Edition.
- D. SSPC (PM2) - Steel Structures Painting Manual, Vol. 2, Systems and Specifications; Society for Protective Coatings; 1995, Seventh Edition.
- E. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

1.4 DEFINITIONS

- A. Paints are available in a wide range of sheens or glosses, as measured by a gloss meter from a 60 degree angle from vertical, as a percentage of the amount of light that is reflected. The following terms are used to describe the gloss of products.
 - 1. Flat - Less than 5 units.
 - 2. Matte - 0 - 10 units.
 - 3. Eggshell - 10 - 25 units.
 - 4. Satin - 20 - 35 units.
 - 5. Semi-Gloss - 35 - 70 units.

1.5 SUBMITTALS

- A. Product Data: Provide a complete list of all products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category.
 - 2. Cross-reference to specified paint system(s) that the product is to be used in; include description of each system.
- B. Samples: Submit three paper samples, 5 inches by 7 inches (127mm x 178mm) in size, illustrating selected colors for each color and system selected with specified coats cascaded.
- C. Manufacturer's Instructions: Indicate special surface preparation procedures.
- D. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

Final color selection shall be made through the submittal process.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: a single manufacturer with a minimum of ten (10) years' experience will supply all primary products specified in this section.
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Disposal:
 1. Never pour leftover coating down any sink or drain. Use up material on the job or seal can and store safely for future use.
 2. Do not incinerate closed containers.
 3. For specific disposal or recycle guidelines, contact the local waste management agency or district. Recycle whenever possible.

1.8 PROJECT CONDITIONS

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

1.9 WARRANTY

- A. At project closeout, provide to the Owner or owner's representative an executed copy of the Manufacturer's standard form outlining the terms and conditions of and any exclusions to their Limited Warranty against Manufacturing Defect.

1.10 EXTRA MATERIALS

- A. At project closeout, supply the Owner or owner's representative one gallon of each product for touch-up purposes.
- B. At project closeout, provide the color mixture name and code to the Owner or owner's representative for accurate future color matching.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer, or Approved Equal:
 1. PPG Paints
 2. Benjamin Moore & Co Approved Manufacturers
 3. Sherwin Williams

2.2 MATERIALS – GENERAL

- A. Volatile Organic Compound (VOC) Content:
 1. Provide coatings that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.

- b. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- B. Compatibility: Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

2.3 MIXING AND TINTING

- A. Except where specifically noted in this section, all paint shall be ready-mixed and pre-tinted. Agitate all paint prior to and during application to ensure uniform color, gloss, and consistency.
- B. Thinner addition shall not exceed manufacturer's printed recommendations. Do not use kerosene or other organic solvents to thin water-based paints.
- C. Where paint is to be sprayed, thin according to manufacturer's current guidelines.

2.4 INTERIOR PRIMERS - NEW CONSTRUCTION

- A. Gypsum Board, Plaster:
 - 1. Latex:
 - a. One (1) Coat - Ultra Spec® 500 Interior Latex Primer #N534 (MPI listed Product, Categories 50, 50-X, 149, 149-X), or approved equal
- B. Ferrous Metals:
 - 1. Alkyd:
 - a. One (1) Coat - Super Spec® HP Alkyd Metal Primer #P06, or approved equal

2.5 INTERIOR PRIMERS - PREVIOUSLY PAINTED SURFACES

- A. Previously Painted:
 - 1. Latex:
 - a. One (1) Coat - Ultra Spec® 500 Interior Latex Primer #N534 (MPI listed Product, Categories 50, 50-X, 149, 149-X) , or approved equal
- B. Ferrous Metals:
 - 1. Alkyd:
 - a. One (1) Coat - Super Spec® HP Alkyd Metal Primer #P06, or approved equal

2.6 INTERIOR FINISH COAT

- A. Eggshell Finish:
 - 1. Latex:
- B. Two (2) Coats – Ultra Spec® 500 Interior Eggshell Finish N538 (MPI Listed Product Categories 52, 52-X Green), or approved equal
- C. Satin/Semi-Gloss Finish:
 - 1. Latex:
 - a. Two (2) Coats – Ultra Spec® 500 Interior Semi-Gloss Finish N539 (MPI Listed Product Categories 43, 43-X Green), or approved equal
 - b. Two (2) Coats Ultra Spec® 500 Interior Gloss Finish N540 (MPI Listed Product Categories 54, 54-X Green), or approved equal
- D. High Gloss Finish:
 - 1. Latex:
 - a. Two (2) Coats Ultra Spec® 500 Interior Gloss Finish N540 (MPI Listed Product Categories 54, 54-X Green), or approved equal
- E. High Gloss Finish (Metals):
 - 1. Latex:
 - a. Two (2) Coats Super Spec HP® D.T.M. Acrylic Gloss Enamel P28 (MPI Listed #114, 154), or approved equal

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Ensure that surfaces to receive paint are dry immediately prior to application.
- C. Ensure that moisture-retaining substrates to receive paint have moisture content within tolerances allowed by coating manufacturer. Where exceeding the following values, promptly notify Contracting Officer and obtain direction before beginning work.
 - 1. Concrete and Masonry: 13 percent. Allow new concrete to cure a minimum of 28 days.
 - 2. Exterior Wood: 17 percent.
 - 3. Interior Wood: 15 percent.
 - 4. Interior Finish Detail Woodwork, Including Trim, and Casework: 10 percent.
 - 5. Plaster and Gypsum: 15 percent.
 - 6. Concrete Slab-On-Grade: Perform calcium chloride test over 24 hour period or other acceptable test to manufacturer. Verify acceptable moisture transmission and pH levels.
- D. Examine surfaces to receive coatings for surface imperfections and contaminants that could impair performance or appearance of coatings, including but not limited to, loose primer, rust, scale, oil, grease, mildew, algae, or fungus, stains or marks, cracks, indentations, or abrasions.
- E. Correct conditions that could impair performance or appearance of coatings in accordance with specified surface preparation procedures before proceeding with coating application.

3.2 PREPARATION – GENERAL

- A. Clean surfaces thoroughly prior to coating application.
- B. Do not start work until surfaces to be finished are in proper condition to produce finished surfaces of uniform, satisfactory appearance.
- C. Stains and Marks: Remove completely, if possible, using materials and methods recommended by coating manufacturer; cover stains and marks which cannot be completely removed with isolating primer or sealer recommended by coating manufacturer to prevent bleed-through.
- D. Remove Mildew, Algae, and Fungus using materials and methods recommended by coating manufacturer.
- E. Remove dust and loose particulate matter from surfaces to receive coatings immediately prior to coating application.
- F. Remove or protect adjacent hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items not indicated to receive coatings.
- G. Move or protect equipment and fixtures adjacent to surfaces indicated to receive coatings to allow application of coatings.
- H. Protect adjacent surfaces not indicated to receive coatings.
- I. Prepare surfaces in accordance with manufacturer's instructions for specified coatings and indicated materials, using only methods and materials recommended by coating manufacturer.

3.3 SURFACE PREPARATION

- A. Concrete and Concrete Masonry: Clean surfaces free of loose particles, sand, efflorescence, laitance, form oil, curing compounds, and other substances which could impair coating performance or appearance.
- B. Existing Coatings:
 - 1. Remove surface irregularities by scraping or sanding to produce uniform substrate for coating application; apply one coat primer of type recommended by coating manufacturer for maximum coating adhesion.
 - 2. If presence of lead in existing coatings is suspected, cease surface preparation and notify Contracting Officer immediately.

- C. Gypsum Board: Repair cracks, holes and other surface defects with joint compound to produce surface flush with adjacent surfaces.
- D. Metals - Aluminum, Mill-Finish: Clean and etch surfaces with a phosphoric acid- water solution or water based industrial cleaner. Flush with clean water and allow to dry, before applying primer coat.
- E. Metals - Ferrous, Unprimed: Remove rust or scale, if present, by wire brush cleaning, power tool cleaning, or sandblast cleaning; remove grease, oil, and other contaminants which could impair coating performance or appearance by solvent cleaning, with phosphoric-acid solution cleaning of welds, bolts and nuts; spot-prime repaired welds with specified primer.
- F. Metals - Ferrous, Shop-Primed: Remove loose primer and rust, if present, by scraping and sanding, feathering edges of cleaned areas to produce uniform flat surface; solvent-clean surfaces and spot-prime bare metal with specified primer, feathering edges to produce uniform flat surface.
- G. Metals - Galvanized Steel (not passivated): Clean with a water-based industrial strength cleaner, apply an adhesion promoter followed by a clean water rinse. Alternately, wipe down surfaces using clean, lint-free cloths saturated with xylene or lacquer thinner; followed by wiping the surface dry using clean, lint-free cloths.
- H. Metals - Galvanized Steel, Passivated: Clean with water-based industrial strength cleaner. After the surface has been prepared, apply recommended primer to a small area. Allow primer to cure for 7 days, and test adhesion using the "cross-hatch adhesion tape test" method in accordance with ASTM D 3359. If the adhesion of the primer is positive, proceed with a recommended coating system for galvanized metal.
- I. Wood:
 1. Seal knots, pitch streaks, and sap areas with sealer recommended by coating manufacturer; fill nail recesses and cracks with filler recommended by coating manufacturer; sand surfaces smooth.
 2. Apply primer coat to back of wood trim and paneling.

3.4 APPLICATION – GENERAL

- A. Apply each coat to uniform coating thickness in accordance with manufacturer's instructions, not exceeding manufacturer's specified maximum spread rate for indicated surface; thins, brush marks, roller marks, orange-peel, or other application imperfections are not permitted.
- B. Allow manufacturer's specified drying time, and ensure correct coating adhesion, for each coat before applying next coat.
- C. Inspect each coat before applying next coat; touch-up surface imperfections with coating material, feathering, and sanding if required; touch-up areas to achieve flat, uniform surface without surface defects visible from 39".
- D. Remove dust and other foreign materials from substrate immediately prior to applying each coat.
- E. Where paint application abuts other materials or other coating color, terminate coating with a clean sharp termination line without coating overlap.
- F. Where color changes occur between adjoining spaces, through framed openings that are of same color as adjoining surfaces, change color at outside stop corner nearest to face of closed door.
- G. Re-prepare and re-coat unsatisfactory finishes; refinish entire area to corners or other natural terminations.

3.5 CLEANING

- A. Clean excess coating materials, and coating materials deposited on surfaces not indicated to receive coatings, as construction activities of this section progress; do not allow to dry.
- B. Re-install hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items that have been removed to protect from contact with coatings.
- C. Reconnect equipment adjacent to surfaces indicated to receive coatings.
- D. Relocate to original position equipment and fixtures that have been moved to allow application of coatings.
- E. Remove protective materials.

3.6 PROTECTION

- A. Protect completed coating applications from damage by subsequent construction activities.
- B. Repair to Contracting Officer's acceptance coatings damaged by subsequent construction activities. Where repairs cannot be made to Contracting Officer's acceptance, re- apply finish coating to nearest adjacent change of surface plane, in both horizontal and vertical directions.

END OF SECTION