SECTION 09250

GYPSUM WALLBOARD

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Includes furnishing materials and installation of interior and exterior gypsum wallboard and gypsum wallboard systems and assemblies.

B. Includes suspension system for gypsum board ceilings.

1.02 RELATED SECTIONS

A. Section 05500 - Metal Fabrications: Fabricated steel members required for bracing, supporting and for attachment of hangers for gypsum drywall assembles.

B. Section 06100 - Rough Carpentry: Treated wood blocking and nailers installed in conjunction with the gypsum wallboard.

C. Section 07100 - Waterproofing and Dampproofing: Dampproofing applied over gypsum sheathing joints where gypsum sheathing is used as backup for masonry veneer. Building wrap installed over gypsum sheathing.

D. Section 07920 - Sealants and Caulking: Sealing of gypsum assemblies.

E. Section 08100 - Hollow Metal Doors and Frames: Coordination of door frame installations with drywall work.

F. Section 08305 - Access Doors: Installation of access doors in gypsum wallboard.

G. Section 08640 - Aluminum Clad Windows and Doors: Gypsum wallboard systems installed in conjunction with and adjacent to the window and door wall systems.

H. Section 09530 - Acoustical Treatment: Coordination of installation of acoustical insulation in designated partitions.

I. Section 09900 - Painting: Surface preparation and painting of gypsum wallboard.

1.03 QUALITY ASSURANCE

A. Acceptable Manufacturers: The following manufacturers are acceptable for use on this project subject to compliance with requirements:
   1. United States Gypsum Company
   2. National Gypsum Company
   3. The Celotex Corporation
   4. Substitutions for gypsum board materials and accessories in compliance with sections 01340 and 01600 will be considered by the Architect.

B. Fire-Resistance Rating: Where gypsum drywall systems with fire-resistance ratings are indicated or are required to comply with governing regulations, provide materials and installations identical with applicable assemblies which have been tested and listed by recognized authorities, including UL.

C. Comply with Factory Mutual "Approval Guide" where applicable.

D. Manufacturer: Obtain gypsum board products from a single manufacturer or from manufacturers recommended by the prime manufacturer of the gypsum boards.

E. References
   1. Gypsum Board Standard: Comply with applicable requirements of ANSI/ASTM C 840 for application and finishing of gypsum board, unless otherwise indicated. Refer to Paragraph 3.03 for additional requirements.
   2. Steel Framing Standard: Comply with applicable requirements of ASTM C 754 for installation of steel framing for gypsum board.
   3. Gypsum Board Terminology: GA-505 by Gypsum Association.
   4. Guidelines for Seismic Restraint - Direct Hung Suspended Ceiling Systems as published by the Ceilings & Interior Systems Contractors Association, latest edition. Comply with requirements the applicable seismic zone.
   5. ASTM E 580 - Application of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Requiring Seismic Restraint.

1.04 SUBMITTALS

A. Submit copies of technical data and laboratory test data, describing all materials, to the Architect in accordance with Section 01340. Submit samples upon request.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. All materials shall be delivered to the job site in original unopened bundles or cartons bearing manufacturer's label. Store drywall boards on the job site above ground on level flooring in weathertight shelter and in manufacturers original unopened containers. Drywall must remain dry at all times.

B. Submit a control joint plan for approval by the Architect prior to installation of gypsum wallboard.

PART 2 - PRODUCTS

2.01 GYPSUM WALLBOARD MATERIALS AND ASSEMBLIES

A. Gypsum Wallboard
   1. Gypsum drywall at non-rated partitions shall be 5/8 inch thick with tapered edges.
   2. Gypsum drywall at rated partitions shall be 5/8 inch thick, type X or Fire Code C, or other as required by the Fire Resistance details in the drawings.
   3. Gypsum drywall used on wet walls in toilets, kitchen, sacristy, janitor's closets, and at water fountains, up to 48" high. Provide Georgia Pacific DensShield Tile Backer, or approved equal.

B. Gypsum Sheathing as backup for Masonry Veneer, Cement Board Siding, and metal panels: 5/8" Thickness Dens-Glass Gold Firestop as manufactured by Georgia-Pacific, or approved equal.
   1. Fiberglass Joint Tape for Joint Treatment: 2" Wide, 10x10 woven threads per inch, self-adhering fiberglass joint tape with Dow 795 Silicone Building Sealant, or approved equal.

C. Fasteners
   1. Screws for Drywall Attachment to Metal Framing: For 5/8" wallboard fastened to 25 gauge (maximum) steel framing, Type "S" screws, 1-1/4" long for single layer applications.
   2. Nails and Screws for Drywall Attachment to Wood Blocking and Nailers: Provide 1-1/4" GWP-54 annular-ring nails. Type W drywall screws, minimum 1-1/4" length (for single layer applications), are also acceptable for use in attachment of gypsum wallboard to wood framing and blocking construction.
   3. For Metal Studs to Door Frames, Runners: Type "S" and S-12 Pan Head 3/8" long.
   4. Fasteners for fire-rated assemblies shall be as required for that particular assembly.
   5. Fasteners for Gypsum Sheathing: Galvanized, Type "S" screws, 1" in length.
   6. See also structural engineering requirements for interior and exterior walls used for shear walls.

D. Metal Trim Products
   1. Control Joint: U.S.G. No. 093, all zinc.
   2. Metal Trim: U.S.G. No. 200 Series, all zinc, type as recommended by manufacturer of use intended.
   3. Corner Bead: National Gypsum or U.S.G. No. 100 "Perf-A-Bead" and "Dur-A-Bead".

E. Engineered Suspended Gypsum Board System for Flat Gypsum Board ceilings and suspension of Sound Absorptive Ceiling Panels:
   1. Acceptable Manufacturers:
      a. U.S. Gypsum, 1-800-950-3839
      b. Armstrong, 1-877-ARMSTRONG
      c. Substitutions complying with the requirements of the project, submitted in accordance with section 01600, will be considered.
   2. Suspension System with seismic and expansion control as required by code and drawings.
      a. Provide track, channels, tees, hangers, rods, connectors, anchors etc., as required to suspend ceilings as shown in drawings.
      b. Field measuring of space required prior to submittal of shop drawings
      c. Submit shop drawings: include calculations for weight and seismic loads, dimensions, sizes, and installation instructions. Show and size all standard and custom accessories, attachments. Show coordination with adjacent materials and systems.
      d. Provide complete instructions, templates, layouts and other information required for proper installation of the system.

F. Joint System, Interior
   1. "Perf-A-Tape" joint system utilizing joint compound, tape and topping compound manufactured by U.S. Gypsum or National Gypsum.
   2. Reinforcing Tape: "Perf-A-Tape".
   3. Joint Compound: All-purpose ready-mixed "Perf-A-Tape" cement.

G. Joint System, Exterior
   1. Dow Corning 795 exterior sealant.
   2. Fiber glass tape, 4" wide minimum.

H. Acoustical Sealant: As manufactured by United States Gypsum Company. The sealant shall be resilient, permanently flexible, shrink and stain- resistant and have long life expectancy.

I. Metal Track: National Gypsum or U.S.G. drywall track to match metal studs, 25 gauge.

J. Provide all necessary carriers and framing to receive items built into or recessed in gypsum wallboard partitions and ceilings.

PART 3 - EXECUTION

3.01 INSPECTION

A. Start of work under this section shall constitute acceptance of surfaces as satisfactory to receive work.

3.02 ERECTION AND INSTALLATION

A. Gypsum drywall shall be installed in well ventilated, totally enclosed areas, with temperatures uniformly maintained within the range of 55°F to 70°F. Maintain temperature until building is occupied.

B. Wall Assemblies: Refer to Drawings for wall types and assemblies, including fire-rated assemblies. Completed assemblies shall conform to Underwriters Laboratories, Inc. tests or other tests indicated and/or specified. Finish joints as specified herein where fire-rated assembly will be exposed to view.

C. Metal Stud Walls
   1. All partitions shall be aligned accurately according to the floor plans. Floor and ceiling runners shall be securely attached at 16 inches o.c. to concrete slabs and structure above with concrete stud nails, power driven anchors or wire ties as required for a sound installation, straight, plumb and rigid.
   2. Studs shall be positioned vertically in the runners, spacing as indicated on drawings. Anchor all studs to runner flanges, on each side of stud, with metal piercing lock fastener or by positive screw engagement with 3/8" Type S, pan head screws through each stud flange and runner flange.
   3. All openings shall receive double studs at jambs.
   4. For all doors 3'-6" or wider, provide minimum 18 gauge welded double stud (to provide rigidity of door framing), with 18 gauge track top and bottom to extend minimum of 5" from door frame.
   5. Extra Metal Studs at Hollow Metal and Solid Core Doors: Provide double 18 gauge metal studs at 6" maximum from door jambs where hollow metal and solid core doors are scheduled.
   6. Studs shall be located no more than 2 inches from door frame jambs, finished opening jambs, partition corners, and partition ends.
   7. Studs shall be securely anchored to the jamb and head anchor clips of each door frame by bolt or screw attachment. Over metal door frames install a cut-to-length section of runner with flanges slit and web bent to allow flanges to overlap adjacent vertical studs and securely screw-attach to adjacent studs. A cut-to-length stud extending from door frame header to ceiling runner shall be positioned at vertical joints at jambs and at 16 inches o.c. across header.
   8. Conditions not specifically specified in this section shall be installed as recommended by the manufacturer.

D. Supplementary Framing
   1. Install framing, runners, furring, blocking, and bracing at openings and terminations in work, and at locations required to support fixtures, equipment, services, heavy trim, furnishings, and similar work which cannot be adequately supported directly upon the gypsum board alone.
   2. Install framing/furring and gypsum wallboard assembly as required to conceal piping, conduit, steel, and wood framing members, etc. Finish as specified herein.

E. Gypsum Wallboard Over Metal Framing
   1. Apply gypsum wallboard to supports with long dimension parallel to supports and all abutting ends and edges occurring over framing member flanges. Wallboard shall be perpendicular to furring channels at masonry walls. Wallboard of the maximum practical length shall be used to minimize end joints. All end joints shall be neatly fitted and staggered. Joints on opposite sides of the partition shall be so arranged as to occur on different studs. Wallboard shall be cut neatly to fit around all outlets and switch boxes.
   2. Space 1 inch type S screws a maximum of 12 inches o.c. in the field of the board and 8 inch o.c. staggered along the vertical abutting edges. See also structural engineering documents for requirements.
   3. Items such as fire extinguisher cabinets, etc., recessed in rated walls shall be backed up with the proper plies of the specified 5/8" fire-rated gypsum drywall to maintain the integrity of the fire-rated wall.
   4. Isolate perimeter of non-load-bearing drywall partitions at structural abutments. Provide 1/4" to 1/2" space and trim edge by flat taping. Seal joints with acoustical sealant. Do not fasten drywall directly to stud system runner tracks.

F. Metal Framed Chase Wall Construction
   1. Chase wall partitions shall be aligned accurately according to the partition layout. A double row of floor and ceiling runners shall be securely attached 24" on center to concrete slabs with power driven anchors.
   2. A double row of metal studs shall be positioned vertically in the runners so that studs are opposite each other in pairs with the flanges pointing in the same direction. Space no greater than 24" on center. Anchor all studs to runner flanges with Metal Lock Fastener or by positive screw engagement through each stud flange and runner flange.
   3. All gypsum drywall chase walls shall be cross braced at each stud. Cross bracing between rows of studs shall be metal runners, fastened to the studs with two (2) No. 8 x 1/2" self-drilling, self-tapping steel screws in each stud. Metal stud cross bracing shall be located as shown on the Drawings but in no instance over 4 feet on center.

4. Apply the specified tile backer board parallel to the studs using 1-1/4" type S drywall screws 8" on center at edges (located 3/8" from the edges) and top and bottom runners, 12" on center in field. Stagger joints 24" each side.
5. Finish joints as specified herein.

G. All cutting of ends and cutouts for switches or outlets, etc., within the field of the wallboard are by this Subcontractor. Locate all electrical outlets covered by this work; cutouts are not to be larger than items received and in a manner acceptable to Architect. All cutouts must be made by knife, not by hammer.

H. Apply corner beads to all external angles. Apply casing beads where indicated on the drawings.

I. Built-ins, etc., recessed in fire-rated walls shall be backed up with the proper number of layers of 5/8" Type X gypsum drywall to maintain the integrity of the fire-rated wall.

J. Piping in Walls: Where piping is to run inside stud walls, cut holes in studs (do not punch tops) to align at proper height for piping. Permit installer of piping to thread piping through as work progresses.

K. Accessories
1. Joint compound and perforated tape shall be used on all face joints and internal angles formed by the intersections of walls. Final application of joint compound shall be sanded smooth. Apply compound in three coats at screw holes, sanding between coats.
2. Provide metal trim, corner beads and expansion joints as shown on the drawings and/or as required, in single lengths. At least two coats of joint compound shall be applied over beads and each coat feathered out onto panel faces. Control joints at shall be spaced 30 feet o.c. each way, maximum, at door frames where possible. Control joints shall be installed only in walls/partitions that exceed the 30' dimension, such as an uninterrupted, continuous wall.
3. Moisture-resistant sealant, as recommended by the drywall manufacturer shall be applied to all raw cut edges and nail heads of moisture-resistant gypsum board. Sealant shall be brush applied as directed by manufacturer.

3.03 FINISHING OF GYPSUM BOARD ASSEMBLIES

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 and level of gypsum board finish indicated.
1. Prefill open joints, rounded or beveled edges, and damaged areas, using setting-type joint compound.
2. Apply joint tape over gypsum board joints except those with trim accessories having concealed face flanges not requiring taping to prevent cracks from developing in joint treatment at flange edges.
3. Applicable to interior and exterior gypsum board. See required materials under Section 09250, Article 2.01 above for tape, sealants, etc. for exterior and interior applications.

B. Levels of Gypsum Board Finish: Provide the following levels of gypsum board finish per GA-214.
1. Level 1
   a. Joints and interior angles: Tape embedded in joint compound; surfaces free of excess compound; tool marks and ridges acceptable.
   b. Locations: Plenum areas above ceilings, areas where assembly is concealed by final construction, smoke barriers, and separation walls in attics. Some smoke and fire assemblies require higher degrees of finish; follow those published requirements.
2. Level 3
   a. Joints and interior angles: Tape embedded in joint compound with one additional coat.
   b. Fastener heads and accessories: Two separate coats joint compound.
   c. Surfaces free of excess compound; joint compound surfaces smooth and free of tool marks and ridges.
   d. Locations: Organ chamber walls and ceiling (if any), and mechanical rooms.
3. Level 4
   a. Joints and interior angles: Tape embedded in joint compound with two additional coats applied over flat joints and one separate coat applied over interior angles.
   b. Fastener heads and accessories: Three (3) separate coats joint compound.

c. Surfaces free of excess compound; joint compound surfaces smooth and free of tool marks and ridges.
d. Locations:
(1) Typical, unless otherwise indicated: Ceilings, soffits, and other interior horizontal surfaces receiving flat paint.
(2) Areas receiving flat paint.

4. Level 5
a. Joints and interior angles: Tape embedded in joint compound with two additional coats applied over flat joints and one separate coat applied over interior angles.
b. Fastener heads and accessories: Three (3) separate coats joint compound.
c. Surfaces free of excess compound; joint compound surfaces smooth and free of tool marks and ridges.
d. Utilize either method for final procedure prior to final finish application:
(1) Roll apply batter consistency mixture of gypsum board joint compound and water to surfaces; remove immediately with wide broadknife, without leaving ridges or gouges in finished surface. Allow to dry prior to prime coat application, or;
(2) Apply Level 5 surfacing material at 300-500 s.f. per gallon in accordance with manufacturer's installation instructions; allow to dry.
e. Locations:
(1) Typical, unless otherwise indicated: Walls, ceiling, and pilasters receiving egg-shell, low luster, semi-gloss, or gloss finish paints.
(2) Other Areas: Appearance areas receiving low luster, semi-gloss, or gloss finish paints.

C. Where Level 1 gypsum board finish is indicated, apply joint compound specified for embedding coat.

D. For Level 4 gypsum board finish, embed tape in finishing compound plus two (2) separate coats applied over joints, angles, fastener heads, and trim accessories using one of the following combinations of joint compounds (not including prefill), and sand between coats and after last coat.

E. Where Level 5 gypsum board finish is indicated, apply joint compound combination specified for Level 4 plus a thin, uniform skim coat of joint compound over entire surface. Use joint compound specified for the finish (third coat) or a product specially formulated for this purpose and acceptable to gypsum board manufacturer. Produce surfaces free of tool marks and ridges ready for decoration of type indicated.

F. Allow not less than 24 hours drying time between coats.

G. Exterior Sheathing: 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 seal the sheathing.
1. See required materials under Section 09250, Article 2.01 above for tape, sealants, etc. for exterior applications.
2. Prefill open joints, rounded or beveled edges, and damaged areas, using the specified sealant.
3. Apply fiberglass joint tape over gypsum board joints.
4. Fill joint over tape with specified sealant.
5. Smooth all sealant and joints with putty knife.

3.04 PARTITION PERIMETER CAULKING - WALLS WITH ACOUSTICAL INSULATION

A. Cut panels for loose fit around partition perimeter. Leave a groove no more than 1/8" wide. Apply a 1/4" minimum round bead of sealant each side of runners including those used at partition intersections with dissimilar wall construction. Immediately install panels, squeezing sealant into firm contact with adjacent surfaces. Fasten panels as specified herein. Gypsum panel joint treatment shall be as specified herein.

3.05 COMPLETION

A. Leave gypsum wallboard ready to receive finish painting, as scheduled on Drawings.

3.06 CLEANUP

A. At the completion of this work, remove from the site all excess materials and debris. Leave entire work ready for the application of scheduled finishes.

3.07 PROTECTION

A. Installer shall advise Contractor of required procedures for protection gypsum drywall work from damage and deterioration during remainder of construction period.

B. Touch Up: Return after application of primer but before application of top coats, to inspect surface of substrate for smoothness and damage, and repair surface or touch up joints to satisfaction of the Architect. Coordinate timing of touch up with work of painting to avoid delays in the work.
   1. This does not exclude other repairs or touch up work that may be included or implied by these Specifications or other parts of these Contract Documents.

END OF SECTION

SECTION 09300

TILE

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Includes materials and installation of floor tile, wall tile, and tile bases.

1.02 RELATED SECTIONS

A. Section 03300 - Cast-In-Place Concrete: Concrete slab as substrate for tile flooring. Concrete cutting and patching prior to tile installations.

B. Section 07920 - Sealants and Caulking: Sealing expansion and control joints in floors.

C. Section 09250 - Gypsum Wallboard: Completion of gypsum wallboard installations prior to commencement of tile installations.

D. Section 09900 - Painting: Coordination of painting operations with installation of tile. Protect installed tile during painting operations.

E. Section 10161 - Toilet Partitions and Urinal Screens: Completion of tile work prior to erection of the toilet partitions and urinal screens

F. Section 10800 - Toilet Room Accessories: Coordination of tile installation with the installation of the toilet room accessories.

1.03 QUALITY ASSURANCE

A. Acceptable Manufacturers: The following manufacturers are acceptable for use on this project subject to compliance with project requirements:
   1. American Olean Tile Company
   2. Dal-Tile International
   3. Crossville Ceramics.
   4. Other manufacturers as selected by Architect.

B. Publications: A copy of the following standards shall be kept on the job by the Contractor at all times: USAS 137.1, American National Standards Institute (ANSI) Standard Specifications; Latest Edition of Handbook for Ceramic Tile Installation by the Tile Council of America. These standards shall be referred to for tile installation.

C. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ASTM C 1028:
   1. Surfaces: Minimum 0.6 when wet.

1.04 SUBMITTALS

A. Submit the following the Architect in accordance with Section 01340:
   1. Copy of Master Grade Certificate bearing certification mark of Tile Council of America, signed by both tile manufacturer and tile sub-contractor.
   2. Adhesive manufacturer's Certification of Compliance to required standard.

3. Sample panel, minimum 12", square for each color, pattern and type of tile intended to be used. Samples shall include all tile accessories. Panels shall be properly labeled on back with names of project, product and contractor. Samples shall show limit of range to be expected on the tile installation.
4. Sample marble threshold showing color, markings and finish.

B. Obtain approval of sample submittals before delivering any products to job site.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver all products to job site in manufacturer's unopened, original, standard containers with grade seals unbroken and labels intact. Keep tile cartons dry.

1.06 EXTRA STOCK

A. Supply extra 5% replacement stock of each type tile installed. Deliver to Owner in manufacturer's original cartons with labels intact. All unused stock shall also be turned over to the Owner.

PART 2 - PRODUCTS

2.01 TILE MATERIALS

A. Tile: Provided by the Allowance specified under Section 01020, Allowances. Refer to Drawings for areas scheduled to receive tile. Two colors of tile; patterns shall be as selected by the Architect.

B. Provide all miscellaneous shapes, special shapes, including base, outcorners, bullnoses, etc., necessary for a complete installation. All external corners shall be bullnosed (unless specified/indicated otherwise), internal corners shall be square.

2.02 SETTING MATERIALS

A. Floor Tile
1. Mortar: Laticrete Latapoxy 210 Epoxy Adhesive.
2. Grout: Laticrete Latapoxy SP-100 Stainless Epoxy Grout.

B. Wall Tile
1. Mortar: Laticrete MULTIMAX LITE, or Latapoxy 210 Epoxy Adhesive.
2. Grout: Laticrete Latapoxy SP-100 Stainless Epoxy Grout.

2.03 MISCELLANEOUS

A. Crack Bridging Membrane - All Areas of Installation Where Tile is Installed Over Concrete Slab
1. Products
a. Strataflex anti-fracture membrane, National Applied Construction Products, Inc. of Canal Fulton, Ohio.
b. Nobleseal CIS crack isolation sheet, The Noble Company of Grand Haven, Michigan.
2. Primer: As required by the slip sheet manufacturer.

B. Sealant for application around perimeter of plumbing fixtures (waterclosets, urinals), between tile and another material, shall be white, fungicidal one-part silicone rubber sealant comparable to Dow Corning 782 or 784.
1. Refer to Section 07920 for sealant for use in floor tile control/expansion joints.

C. Thresholds shall be Grade A Georgia Marble, thickness required to make transition between tile and adjoining surfaces, and shall comply with ASTM C-503, for exterior use and abrasion resistance. Thresholds shall be free from cracks, chips, stains or other defects, uniform in tone and coloring. Color(s) as selected by the Architect.

D. Leveling Coat: Leveling coat shall be 1/4" thick or less and shall consist of dry set mortar to which an equal volume of a mixture of one (1) part Portland cement and 1-1/2 parts sand has been added.

E. Brass Edging for Floor Tile where abutted to Resilient Flooring: As manufactured by Schluter System.
   1. Miter corners and angles. Install in longest lengths possible with closely fitted and aligned butt joints, and with horizontal leg keyed into mortar bed. Top edge shall set flush with finished floor tile. Clean, and remove mortar stains.
   2. Color selected by Architect.

F. Sealant for application around perimeter of plumbing fixtures (waterclosets, urinals, etc.), between tile and another material, shall be white, fungicidal one-part silicone rubber sealant comparable to Dow Corning 782 or 784. Refer to Section 07920 for sealant for use in floor tile control/expansion joints.

PART 3 - EXECUTION

3.01 PREPARATION

A. All surfaces receiving tile shall be dry, clean, free from oily or waxy films. Do not start work until all grounds, anchors, hangers, electrical and mechanical work in or behind the tile have been installed. Inspect subfloors which are to receive tile covering. Correct defects or conditions that will interfere with or prevent a satisfactory tile installation. Do not proceed with installation until such defects or conditions have been corrected. The starting of installation work in a room or space shall imply acceptance of the surfaces to receive the tile in that space.

B. Do not install any materials until temperature of materials and substructures have been maintained at or above 50°F minimum for a period of 24 hours.

3.02 INSTALLATION - GENERAL

A. Where possible, lay out work so that no tile less than half-size occurs. For heights stated in feet and inches, maintain full courses to produce nearest attainable heights without cutting tile. Obtain exact locations of expansion joints and accessories before installing tile.

B. Marble thresholds shall be installed at each door opening where tile begins. Install each threshold in a bed of mortar and set as indicated on the Drawings. One piece of marble will be used for each threshold. Notch thresholds at door jambs to follow profile of door frame.

C. After tile work and grout is dry, apply continuous sealant in tile control joints, perimeter of waterclosets, perimeter of urinals, where tile butts ceilings and where tile butts other materials.

D. As the work progresses, all surfaces shall be cleaned with burlap. Upon completion scrub the entire installation with fiber brushes and water. Do not use acid or metal scrapers. Before traffic is permitted over finished tile work, cover the floors with untreated building paper or board walkways. Cracked, broken or damaged tiles shall be removed and replaced prior to Substantial Completion Inspection.

3.03 TILE INSTALLATION

A. Comply with the following from Tile Council of America Handbook Standards
   1. Floors, interior, concrete:
      a. F113; Dry-set Mortar or Latex-Portland Cement Mortar.
      b. F115; Dry-set Mortar, Epoxy Grout.
      c. Floors, Interior, Concrete, Epoxy Mortar and Grout: F131; Epoxy Mortar and Grout.

3.04 FLOOR CONTROL/EXPANSION JOINTS

A. Floor tile shall be aligned to show uniform joints and then allowed to set until firm. Tile shall be set with all joints in alignment and shall be uniform and true, maintained straight from wall to wall, uniform in width for entire length of wall in either direction.

B. Provide expansion and control joints over control and expansion joints in substrate (floors). Provide expansion joint at tile perimeter abutting walls. Consult with Architect before constructing any control and expansions joints for location verification. Expansion or control joints shall be 1/4 inch wide, through the tile and bed, shall be provided and constructed as recommended by the Tile Council of America, Inc., as specified hereinbefore.
   1. Joints shall be sealed with sealant not less than 1/4 inch deep.
   2. Sealant type and color shall be approved by Architect prior to installation.

3.05 REPAIR

A. Any loose, uneven, or misaligned tile shall be removed and reinstalled at no additional expense to the Owner.

3.06 CLEANUP AND PROTECTION

A. Remove all excess materials and debris from the job site. Leave entire work in a neat condition ready for Substantial Completion Inspection.

B. Protect the completed installations of the tile from damage until the Date of Substantial Completion. Any tile damaged during this period of time shall be replaced at no expense to the Owner.

END OF SECTION

SECTION 09510

ACOUSTICAL TILE AND GYPSUM CEILING SYSTEMS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Includes: Materials and installation of suspended, lay-in ceiling systems.

1.02 RELATED SECTIONS

A. Section 05500 - Metal Fabrications: Metal framing / metal fabrications for supplemental supports for the ceiling systems.

B. Section 09250 - Gypsum Wallboard: Completion of drywall partition construction prior to installation of ceiling systems.

C. Section 09530 - Acoustical Treatment: Some ceilings to receive sound batt insulation above lay-in. See drawings.

D. Section 09900 - Painting: Coordination of painting operations with the installation of the ceiling system. Protection of ceiling systems during painting operations.

E. Division 22 - Plumbing: Coordination of ceiling installations with mechanical apparatus installed in ceiling system. Provide additional supports as required.

F. Division 23 - Heating, Ventilating and Air Conditioning (HVAC): Coordination of ceiling installations with HVAC apparatus installed in ceiling system. Provide additional supports as required.

G. Division 26 - Electrical: Coordination of ceiling installations with light fixture installation and other electrical apparatus. Provide additional supports as required.

1.03 QUALITY ASSURANCE

A. Reference Standards - Materials and installation shall comply with the following:
   1. Suspension system shall comply with ASTM C 635, "Standard Specification for Metal Suspension Systems for Acoustical and Lay-In Panel Ceilings.
   2. Installation of ceiling system shall comply with ASTM C 636, "Recommended Practice for Installation of Acoustical Tile and Lay-In Panels".
   3. Guidelines for Seismic Restraint - Direct Hung Suspended Ceiling Systems as published by the Ceilings & Interior Systems Contractors Association, latest edition for the applicable seismic area. Comply with requirements for the applicable seismic loading.
   4. ASTM E 580 - Application of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Requiring Seismic Restraint.

B. Installer Qualifications: Firms with not less than three (3) years of successful experience in installation of acoustical ceilings similar to requirements for this project.

C. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other work supported by or penetrating through ceilings, including light fixtures, HVAC equipment, and partition systems.

D. Acceptable Manufacturers: The following manufacturers are acceptable for use on this project subject to compliance with project requirements:
   1. Armstrong Ceiling Systems.
   2. USG Interiors, Inc.
   3. The Celotex Corporation.

1.04 SUBMITTALS

A. Submit copies of technical data, shop drawings and two (2) 12" x 12" physical samples of each type ceiling tile proposed for installation. Submit to the Architect in accordance with Section 01340.

B. Extra Stock: Furnish one (1) carton/box of each type ceiling tile installed. Cartons/boxes shall be labeled identifying the type ceiling tile. Excess ceiling materials shall be boxed, labeled and turned over to the Owner; refer to Section 01700.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Care shall be taken in handling all portions of the ceiling during transportation and at the job site. All material must arrive at the job site packed in heavy, unopened cartons bearing the manufacturer's labels. Store material under cover, in a dry location and in a manner to prevent damage. Broken, chipped or cracked panels shall not be installed.

PART 2 - PRODUCTS

2.01 CEILING TILE

A. Acoustical Ceiling Tile
   1. Type 1 (Typical 2x4 ceilings): Armstrong Ultima Tegular, size shown in plans, designed for installation with a 9/16" exposed tee system. The ceiling tile shall have the following features: NRC of 0.70, a CAC of 35 and a light reflectance of 0.89.
   2. Type 2 (Safe Room ceilings): USG Halcyon, 1-1/2" thick, size shown in plans, for installation in 9/16" exposed tee system. The ceiling tile shall have the following features: NRC of 1.00, a CAC of 25 and a light reflectance of 0.90, R-value of 6.6.
   3. Type 3 (Kitchen and Toilets): Armstrong Clean Room VL, size shown in plans, designed for installation with a 9/16" exposed tee system. The ceiling tile shall have the following characteristics: NRC of 10, a CAC of 40 and a light reflectance of 0.83.

2.02 SUSPENSION SYSTEMS

A. Suspension System, Intermediate Duty: Mechanical suspension system shall be exposed grid design, pre-painted low-sheen white.
   1. The suspension system for Acoustical Lay-In Ceilings shall be formed from commercial quality cold-rolled steel electro-galvanized coated with the following components:
      a. Main tee with a double web design with a rectangular bulb, with exposed flange with rolled cap. The suspension system shall have integral reversible splice.
      b. Cross tee with double web design and with a rectangular bulb; with web extending to form a positive interlock with main tee; with the lower flange extended and offset.
      c. Wall molding with an angle shape.
      d. Accessories: Clips, Splice Plates, and other accessories required for complete installation.
      e. Hanger wires shall be Class 1 zinc coating, soft temper, pre-stretched, having a yield stress load of at least three (3) times design load, but not less than 12 gauge. Comply with ASTM A 641.
      f. Color shall be white.

2. Suspension System for suspended drywall shall by USG Drywall Suspension Systems.
   a. Main Tees: Fire-Rated Heavy-Duty classification 1.617" high x 144" long, integral reversible splice with knurled face. (DGLW-26 1-1/2" Face and 1.617" high)
   b. Cross Members: Fire-Rated members with knurled face. Cross Tees: DGLW-424 cross tee 1-1/2" high x 48" long with 1-1/2" wide face; DGLW-224 Fire-Rated: 1-1/2" high x 24" long with 1-1/2" face
   c. Quick release cross tee ends for positive locking and removability without tools
   d. Accessory Cross Tees: Cross tees must have knurled faces and quick release cross tee ends for positive locking and removability without tools.
   e. Wall Moldings: Single web with knurled face
   f. Accessories: Clips, Splice Plates, and other accessories required for complete installation.
   g. Wire: Hanger Wire 12 ga., galvanized or as noted on drawings

PART 3 - EXECUTION

3.01 INSTALLATION

A. Acoustical material shall be installed under conditions as outlined in the current bulletin of the Acoustical Materials Association. All areas to receive suspended acoustical ceiling shall be broom cleaned and uninterrupted for free movement of scaffolding.

B. The suspension system shall support the ceiling assemblies with a maximum deflection of 1/360 of the span. Space main tee suspension members 4'-0" o.c. Space hanger for main tees not more than 6" from the end, and not more than 4'-0" o.c., across the length. Provide additional hangers as necessary for support of fixtures (one wire at each corner of each fixture) and other items so as not to cause excessive deflection and at each side of suspension system splices. Support main tees only from hangers. Do not bear on walls or partitions. Do not suspend system from conduits, pipes, roof deck, ducts, etc. Hang only from structure and/or supplemental framing. Support cross runners from main runners. Interlock ends of cross runners with main runners. In all cases, the ceiling assembly shall be level 1/8".
   1. Install additional hanger wires, splay hangers or other means of seismic restraint as required to meet the requirements of ASTM E 580 and the requirements of the applicable seismic code. Do not attach hangers to piping, conduit, duct or decking. Provide carrying trapeze support where obstruction cannot be avoided by splaying hanger 45 degrees from vertical or less.

C. Install moldings at walls, partitions, columns, pipes and other obstructions that extend through and above the ceiling system. Securely attach moldings with appropriate fastening devices spaced not over 16" o.c.

D. Install panels to rest on flanges of inverted tees with board units fitting neatly against abutting surfaces and supported by wall angels, as applicable. Balance border areas to avoid units less than 1/2 unit width wherever possible.

E. Install hold-down clips in accordance with applicable code requirements.

3.02 CLEANING AND PROTECTION

A. Upon completion of the ceiling installation, remove from the job site all excess materials and debris. Clean ceiling tiles prior to Substantial Completion Inspection.

B. Protect completed installations until the date of Substantial Completion. Remove and replace any tiles which are and that have become discolored or damaged, at no expense to the Owner.

END OF SECTION

SECTION 09530

ACOUSTICAL TREATMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Includes materials and installation of:
   1. Acoustical blanket type insulation in wall assemblies.

1.02 RELATED SECTIONS

A. Section 09250 - Gypsum Wallboard: Sound attenuation blankets installed in conjunction with the gypsum wallboard system. Wall mounted absorption panels installed over complete gypsum wallboard assemblies.

B. Section 09900 - Painting: Coordination of the painting operations with the installation of the wall mounted absorption panels.

C. Section 10520 - Fire Extinguishers, Cabinets, and Accessories: Coordination of panels with fire extinguisher cabinets.

1.03 QUALITY ASSURANCE

A. Fire Ratings: Comply with fire-resistance, flammability and insurance ratings indicated, and comply with regulations as interpreted by governing authorities. A flame spread of 25 and smoke developed of 25 shall not be exceeded when tested in accordance with ASTM E 84.

B. Sound Transmission Ratings: Install acoustical insulation to provide indicated STC ratings when tested per ASTM E 90.

C. Single Resource Responsibility: Obtain wall mounted absorption panels system, accessories, and mounting hardware from a single manufacturer.

1.04 SUBMITTALS

A. Submittals shall be in accordance with Section 01340.

B. Product Data: Submit manufacturer's material specifications and installation instructions including instructions for handling, storage, protection, and maintenance.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver acoustical products in manufacturer's original, unopened wrappings, with labels intact. Protect insulation from physical damage and from becoming wet, soiled, or covered with ice or snow (whether in storage or in place). Store in a dry place with adequate air circulation. Do not deliver materials to building until "wet work", such as concrete, has been completed and cured to a condition of equilibrium. Comply with manufacturer's recommendations for handling, storage, and protection during installation. Remove from the job site all materials found to be wet or that has been previously wet or soiled.

1.06 PROJECT CONDITIONS

A. Do not begin installation until spaces to receive acoustical wall systems have been enclosed and maintained at approximately same humidity and temperature conditions as planned for occupancy.

B. Maintain temperature and humidity as recommended by manufacturer.

PART 2 - PRODUCTS

2.01 SOUND ATTENUATION BLANKETS

A. Thermafiber SAFB (Sound Attenuation Fire Blankets), manufactured by Owens Corning, paperless, 3" thickness, 2.5 pounds per cubic foot density, or equal product by other manufacturer approved in advance. Provide widths for tight fit between framing members.

PART 3 - EXECUTION

3.01 INSTALLATION OF SOUND ATTENUATION BLANKETS

A. Partitions: Install blankets in full height in stud cavities in all assemblies as indicated in drawings. Batts shall be friction fit between the framing. Install batts full height of partitions leaving no voids or spaces exposed. Fit batts behind electrical outlet boxes, pipes and other items placed in walls. Butt ends of blankets together, and fill all voids. Stuff insulation into all cracks and joints to provide a full layer of material.

B. Ceilings: Friction fit between framing or tightly butted. Leave 6" clear around lights and junction boxes or other heat producing elements.

C. Where friction fitting in wall assemblies is impractical, use a pistol type hand stapler and attach blanket to back of gypsum panel at each corner at least 2" from edges and in center of blanket. Use paper washer or staple over a 6d nail laid flat on the blanket to prevent the staple from pulling through the blanket.

D. Hold insulation back a minimum of 3" from recessed light fixtures and/or other heat generating apparatus which are built into the wall systems.

3.02 CLEANUP

A. Upon completion of the installation of the insulation, remove from the site all excess materials and debris and leave ready for the next sequence of work to be performed.

3.03 PROTECTION

A. Protect wall mounted absorption panels from damage until date of Substantial Completion. Remove and replace panels that are damaged, soiled and are otherwise unacceptable to the Architect.

END OF SECTION

SECTION 09660

RESILIENT FLOORING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Includes materials and installation of:
   1. Resilient floor tile.
   2. Resilient base.
   3. Luxury Vinyl Tile.

1.02 RELATED SECTIONS

A. Section 03300 - Cast-In-Place Concrete: Floor slab as substrate for resilient flooring.

B. Section 09250 - Gypsum Wallboard: Completion of gypsum wallboard partitions prior to installing flooring and base.

C. Section 09300 - Tile: Coordination of the tile installation with the installation of the resilient base.

D. Section 09900 - Painting: Coordination of painting operations with resilient flooring and base installations. Protection of resilient flooring and base during painting operations.

1.03 SUBMITTALS

A. Tile and base samples of each color selected, samples of accessory items, and manufacturer's product data for adhesive(s) shall be submitted to the Architect in accordance with Section 01340.

B. Submit bound copies of maintenance manuals describing the care of installed materials. Refer to Section 01700.

C. Extra Stock - Submit in accordance with Section 01700:
   1. Furnish not less than 200 square feet of each type, size, pattern, and color installed. Materials shall be from the same run as the installed tile. Provide a minimum of 20 linear feet of base, roll stock only. Such items shall be provided in unopened cartons for Owner's maintenance requirements.

1.04 QUALITY ASSURANCE

A. Acceptable Manufacturer - Floor Tile: The following manufacturer is for establishing quality and performance. Other manufacturers are acceptable for use on this project subject to compliance with project requirements.
   1. Armstrong World Industries, "Excelon Imperial Texture".
   2. Substitutions in accordance with Section 01600.

B. Acceptable Manufacturer – Base, Stair Treads, Risers: The following manufacturers are acceptable for use on this project, subject to compliance with project requirements.
   1. Johnsonite of Chargin Falls, Ohio
   2. Substitutions in accordance with Section 01600.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver and store materials in manufacturer's original, unopened packaging. Containers shall indicate manufacturer's brand name, color and pattern and production run color code. Protect materials against damage and freezing. Store resilient flooring materials in spaces where they will be installed for at least 48 hours before beginning installation.

1.06 ENVIRONMENTAL REQUIREMENTS/JOB CONDITIONS

A. Maintain minimum temperature of 65°F in spaces to receive the resilient flooring, for at least 48 hours prior to installation, during installation and for not less than 48 hours after installation. Subsequently, maintain minimum temperature of 55°F in areas where work is completed.

B. Moisture content of floor slabs at time of installation shall be 5% or lower.

C. Surface pH of concrete slab shall be no greater than 9.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Resilient Floor Tile: 12"x12"x1/8" thick vinyl composition. Floor tile shall meet the following requirements:
   1. Shall be asbestos free.
   2. Flame Spread Rating: 75 or less by ASTM E 84.
   3. Smoke Density: Less than 450 by ASTM E 662.
   4. Critical Radiant Flux: 0.45 minimum by ASTM E 468.
   5. All vinyl tile shall be from the same batch number to the extent possible. Tile shall have a uniform disbursement of color and texture throughout the thickness of the tile. Comply with ASTM F 1066, non-asbestos formulated.

B. Base
   1. Rubber: 4" high, coved at resilient flooring and straight at areas of carpet installation, roll stock only. Provide premolded interior and exterior corners. Wrapping of corners will not be permitted. Mitered interior corners will not be permitted.
   2. Resilient Wall Base: Masquerade Series, as manufactured by Johnsonite/Tarkett, profiles and heights as shown in the drawings.
      a. Install with Tarkett Cove Base Adhesive.

C. Resilient edging strips required, shall be the beveled type and shall match flooring. Provide the following as manufactured by Mercer Plastics Company.
   1. Resilient Flooring to Concrete: #633 "Tile Reducer".
   2. Resilient Flooring to Carpet: #400 "Custom Edge".
   3. Carpet Edge Reducer: #160 "Universal Reducer".

D. Adhesives: As recommended by the base and flooring manufacturers.

E. Primer, Crack Fill and latex leveling compound as recommended by the tile and manufacturers for the material and substrate involved.

F. Cleaner and wax shall be as recommended by the resilient flooring manufacturer.

2.02 LUXURY VINYL TILE

A. Luxury Vinyl Tile: COREtec Plus, as manufactured by US Floors.
   1. 5" x 8" plank flooring with 0.5 mm wear surface.
   2. Manufacturer's adhesive for direct gluing to concrete floor.
   3. Manufacturer's setting and tapping blocks.

B. Transition Strip: See Section 09300 - Tile.

PART 3 - EXECUTION

3.01 COORDINATION

A. Installations shall not begin until the work of all other trades, including painting, has been completed or near completion.

3.02 EXAMINATION OF SURFACE

A. Examine the substrates for the purpose of determining their fitness to receive the floor tile and base. If the substrate is found to be not in proper condition, notify the General Contractor before proceeding with the laying of the floors. No flooring or base shall be installed until all defects in the substrates have been corrected. No floors shall be installed over areas that have been treated with chemical compounds without approval of the adhesive manufacturer.

3.03 INSTALLATION

A. Preparation: After the floors have been thoroughly cleaned of all foreign matter, apply a thin film of adhesive and spread evenly with a cement finisher's trowel with notched edges as recommended by the tile manufacturer. Prime concrete floor areas as recommended by the floor tile manufacturer.

B. Floor Tile: Tile shall be laid, starting in the center of the rooms/areas, worked towards the wall with no borders, except at doors where tile color changes. The tile shall be laid in pattern as indicated/scheduled, with each tile laid tightly abutting the adjacent tile. Install tile flooring in checkerboard pattern where no special pattern is indicated or scheduled. Do not use less than 1/2 tile in either direction. Each tile shall be thoroughly cemented in place.

C. Edging Strips: At all door openings having floors of other material and where no threshold is provided, install the specified edging strip.

D. Resilient Base: The resilient base shall be applied, making certain that all parts are neatly secured to the wall. Butt joints shall be tight, flush and even.

E. Linoleum Installation: Install rolls in a common area using the same register number. Install rolls in numerical order according to sequence number. Reverse alternate sheets during installation. Underscribe and heat weld all seams. Rout seams with hand or electric router. Heat weld with color matched welding tread, of thickness recommended by manufacturer.

3.04 CLEANING/FINISHING

A. Cleaning of the resilient flooring materials and base shall be done in accordance with the flooring manufacturers' recommendations.

B. After cleaning of the resilient flooring, apply a minimum of five (5) coats of plastic floor finish or wax, as recommended by the flooring manufacturer. Each coat shall be buffed to a lustrous finish.

3.05 PROTECTION

A. Protect newly installed flooring with layers of undyed and untreated building paper. Do not allow traffic across the newly installed flooring. Protect installations until the date of Substantial Completion.

END OF SECTION

SECTION 09900

PAINTING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Includes furnishing and application of painting materials to surfaces, including:
   1. Surface preparation of all surfaces to be painted. Paint all surfaces (interior and exterior) as applicable.
   2. Touching up of prime coats and other preparation necessary prior to finish painting.
   3. Painting, staining and otherwise finishing of new surfaces as indicated/scheduled on the Drawings and specified in this and other Sections of this Project Manual.

B. "Paint" as used herein means all coating systems materials including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

C. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors or materials are designated in "schedules". Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these colors from standard colors or finishes available.

1.02 RELATED SECTIONS

A. Section 03300 - Cast-In-Place Concrete: Surface preparation and painting of concrete surfaces.

B. Section 04200 - Reinforced Unit Masonry: Painting and staining of masonry walls and partitions.

C. Section 05120 - Structural Steel Framing: Painting of exposed steel members.

D. Section 05500 - Metal Fabrications: Painting of exposed metal items.

E. Section 06200 - Finish Carpentry: Painting, staining and otherwise finishing of finish carpentry items.

F. Section 07920 - Sealants and Caulking: Coordination of sealant and caulking installation with application of paint.

G. Section 08100 - Hollow Metal Doors and Frames: Surface preparation and painting of all hollow metal work.

H. Section 08210 - Wood Doors: Surface preparation and painting/staining of wood doors.

I. Section 08710 - Finish Hardware: Installation of hardware items after finish painting is complete.

J. Section 09250 - Gypsum Wallboard: Surface preparation and painting of gypsum wallboard systems.

K. Division 22 - Plumbing: Painting of mechanical equipment exposed to view and exposed to weather.

L. Division 23 - Heating, Ventilating and Air Conditioning (HVAC): Painting of HVAC equipment exposed to view and exposed to weather.

M. Division 26 - Electrical: Painting of electrical equipment exposed to view and exposed to weather.

1.03 QUALITY ASSURANCE

A. Acceptable Manufacturers - The following manufacturers are acceptable for use on this project subject to compliance with requirements:
   1. Sherwin-Williams Company of Cleveland, Ohio.
   2. PPG Industries, Inc./Pittsburgh Paint Division of Pittsburgh, Pennsylvania.
   3. Farrell-Calhoun Paint of Memphis, Tennessee.
   4. Porter Paints, Porter International of Louisville, Kentucky.

B. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

C. Coordination of Work: Review other Sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings systems for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

D. Acceptable Surfaces: The paint contractor and General Contractor shall be solely responsible for determining that the wall is ready and suitable to be painted.

1.04 SUBMITTALS

A. Submit color chips and manufacturer's product data to the Architect for color selection and product review. Submittals shall include spread and coverage rate per coat.

B. After initial selections, submit 8-1/2" x 11" drawdowns of colors, for Architect's approval. Submit two (2) sets.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver products and materials in original unbroken containers with legible labels intact bearing manufacturer's brand and name with application instructions printed thereon. Paint shall arrive on the job ready mixed, except for tinting of undercoats and possible thinning as recommended by manufacturer.

1.06 JOB CONDITIONS

A. Inspection of Surfaces: The painting contractor shall be responsible for inspecting the work of others prior to the application of any paint or finishing material. If any surface to be finished cannot be put in proper condition for finishing by customary cleaning, sanding, and puttying operations, the painting contractor shall immediately notify the General Contractor in writing or assume responsibility for and rectify any unsatisfactory finish resulting.

B. Environmental Requirements: Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating systems can be applied. Do not apply finish in areas where dust is being generated.

C. Protection: All materials used on the job shall be stored in a single place designated by the Contractor. Such storage place shall be kept neat and clean. All damage to the storage area and its surroundings shall be repaired. Any soiled or used rags, waste and trash must be removed from the building every night, and every precaution taken to avoid the danger of fire.

D. Protect surfaces and objects inside and outside the building, as well as the grounds, lawns, shrubbery, and adjacent properties against damage. The painting contractor shall hold himself responsible for damage to adjacent furnishings.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All paint and primer applied in the field shall be the products of a single manufacturer. For the purpose of clarification, only the products of one manufacturer have been listed herein.

B. Extra Stock: Supply an extra 2% of total quantity of each paint used with a minimum of three (3) gallons of each paint. Furnish in manufacturer's unopened, labeled containers for Owner's use.

2.02 PAINTING SCHEDULES

A. Exterior Painting Schedule
   1. Galvanized Metal, Including Galvanized Steel Lintels, Weather Exposed HVAC and Electrical Equipment: Paint steel lintels to match color of brick header. Paint all roof vents and penetrations to match color of flat roof finish.
      a. First coat: SW Galvite B50W3 Series, DFT mils: 2.
         Omit first coat on items where compatible factory primer has been applied.
      b. Second and third coats: SW Industrial Enamel B54 Series, DFT mils: 2.5, each coat.
   2. Ferrous Metals, Including Weather Exposed HVAC and Electrical Equipment: Paint all roof vents and penetrations to match color of flat roof finish.
      a. First coat: SW Kem Kromik Metal Primer B50 Series, DFT mils: 3.
         Omit first coat on items where compatible factory primer has been applied.
      b. Second and third coats: SW Industrial Enamel B54 Series, DFT mils: 2.5, each coat.
   3. Copper/Aluminum, Including Weather Exposed HVAC and Electrical Equipment: Paint all roof vents and penetrations to match color of flat roof finish.
      a. First coat: SW Zinc Chromate Primer B50Y1 Series, DFT mils: 3.
      b. Second and Third coats: SW Industrial Enamel B54 Series, DFT mils: 2.5, each coat.
   4. Weather Exposed Ferrous Piping: Paint all roof vents and penetrations to match color of flat roof finish.
      a. First coat: SW Kem Kromik Metal Primer B50W1 Series, DFT mils: 3.
      b. Second and Third coats: SW Silver-Brite Aluminum B59S11 Series, DFT mils: 1 per coat.
   5. Masonry and Concrete
      a. First coat: SW Heavy Duty Block Filler B42W46 Series, DFT mils: 10.
      b. Second and Third coats: SW A-100 Gloss, Latex House Paint A8 Series, DFT mils: 1.4, each coat.
   6. Fiber Cement Board, Trim, Etc.
      a. Follow manufacturer's printed instructions for surface preparation and application of the coating. Spray equipment must be specifically designed for aggregate coatings application.
      b. First coat: SW Loxon primer for fiber cement board
      c. Apply two (2) coats, 50 sq. ft. per gallon SW exterior latex enamel. If additional coat is required to uniformly cover the surface, apply such coat at no additional cost to the Owner.
   7. Painters Caulk - Acrylic/Silicone
      a. White, Paintable caulking compound, ASTM C 834.
   8. Clear Sealer for Split Face masonry units and associated concrete
      a. DRYLOK Protector Clear Low Sheen Penetrating Sealer

B. Interior Painting Schedule
   1. Galvanized Metal
      a. First coat: SW Galvite B50W3 Series, DFT mils: 2.
         Omit first coat on items where compatible factory primer has been applied.
      b. Second and third coats: SW Industrial Enamel B54 Series, DFT mils: 2, each coat.
   2. Ferrous Metals - Semi-Gloss Enamel
      a. First coat: SW Kem Kromik Metal Primer B50 Series, DFT mils: 3.
         Omit first coat on items where compatible factory primer has been applied.
      b. Second and third coats: SW Industrial Enamel B54 Series, DFT mils: 2, each coat.

3. Gypsum Drywall - Gloss Enamel Finish - Restrooms, Kitchen
   a. First coat: SW ProMar 200 Latex Wall Primer B28 Series, DFT mils: 1.5.
   b. Second and Third coats: SW ProMar 200 Alkyd Semi-Gloss Enamel B34 Series, DFT mils: 2, each coat.
4. Gypsum Wallboard - Flat Finish - Typical Walls and Ceilings
   a. First coat: SW ProMar 400 Latex Wall Primer, B28 Series, DFT mils: 1.1.
   b. Second and Third coats: SW ProMar 200 Latex Flat Wall Paint, B30 Series, DFT mils: 1.4.
5. Gypsum Wallboard - Eg-Shel Enamel Finish - Corridors, Offices, Classrooms, etc.
   a. First coat: SW ProMar 200 Latex Wall Primer B28 Series, DFT mils: 1.4.
   b. Second and Third coats: SW ProMar 200 Alkyd Eg-Shel Enamel B20 Series, DFT mils: 1.8, each coat.
6. Gypsum Wallboard – Semi Gloss Enamel Finish - Gypsum board pilasters
   a. First coat: Kelly-Moore 970 Acry-Plex.
   b. Second and Third coats: Kelly-Moore 1680 High Gloss Enamel
7. Wood - Semi-Gloss Enamel Finish
   a. First coat: SW ProMar 200 Alkyd Enamel Undercoater B49W200 Series, DFT mils: 2.
   b. Second and Third coats: SW ProMar 200 Alkyd Semi Gloss Enamel B34 Series, DFT mils: 2, each coat.
8. Wood - Open Grain and Close Grain - Stained Finish
   a. AWI Premium Grade for all stained finished woodwork and doors, stain color chosen by Architect.
   b. AWI Premium Grade, System TR-6, Catalized Polyurethane, with reduced vinyl sealer washcoat, filled finish, stain and minimum three (3) top coats.

PART 3 - EXECUTION

3.01 COOPERATION WITH OTHER TRADES

A. This work shall be scheduled and coordinated with other trades and shall not proceed until other work and job conditions are as required to achieve satisfactory results.

3.02 GENERAL REQUIREMENTS

A. Before starting any work, surfaces to receive paint finishes shall be examined carefully for defects which cannot be corrected by the procedures specified herein and which might prevent satisfactory painting results. Work shall not proceed until such damages are corrected.

B. Secure approval of color samples before applying any paint or finish. All priming coats and undercoats shall be tinted to the approximate shade of the final coat.

C. Start of painting shall be construed as acceptance of the surfaces to receive paint or other finish.

D. Maintain temperature in building at constant 65°F, or above, and provide adequate ventilation for escape of moisture from building in order to prevent mildew, damage to other work and improper drying of paint. Once painting has commenced, provide constant temperature of 65°F, or above, and prevent wide variation in temperature which might result in condensation on freshly painted surfaces.

E. Surfaces to receive work described in this section shall be smooth, even, sound, thoroughly clean and dry and free of defects which would adversely affect application of this work. Surfaces which do not meet the tolerances or quality requirements imposed within the specifications governing substrate construction, shall be repaired or replaced prior to initiating this work.

F. All materials shall be mixed, thinned, modified, and applied only as specified by the manufacturer's direction on the container.

G. Application shall be sufficiently heavy to achieve pleasingly uniform color and lucid effect; matching approved sample.

H. All coats shall be thoroughly dry before applying succeeding coats.

I. Inspection of Coats: Notify the Architect for inspection between coats at least 24 hours in advance. The number of coats specified are intended to provide full coverage. Satisfactory coverage subject to the approval of the Architect. Additional coat or coats will be required by the Architect if these coats do not give sufficient coverage. Final coat shall match approved sample panel.

3.03 PREPARATION OF SURFACES

A. General
1. Surfaces shall be clean, dry and adequately protected from dampness.
2. Surfaces shall be smooth, even and true to plane.
3. Surface shall be free of any foreign material which will adversely affect adhesion or appearance of applied coating.
4. Remove all loose, spalling paint from previously painted surfaces utilizing wire brushes, pressure washing or mechanical means, as required to provide a smooth and sound substrate for the application of new paint.
5. Mildew shall be removed and neutralized by scrubbing affected areas thoroughly with a solution made by adding two ounces of Tri-Sodium Phosphate and eight ounces of Sodium Hypochloride (Clorox) to one gallon warm water. Use a scouring powder if necessary to remove mildew spores. Rinse with clear water and allow to dry before painting.

B. Gypsum Wallboard
1. Fill narrow, shallow cracks and small holes with spackling compound.
2. Rake deep, wide cracks and deep holes.
   a. Dampen with clear water.
   b. Fill with thin layers of drywall joint cement.
3. Allow to thoroughly dry.
4. Sand smooth. Do not raise nap of paper on wallboard.

C. Wood and Fiber Cement Products
1. Clean soiled surfaces with alcohol wash.
2. Except where rough exterior surface is specified, sand to smooth and even surface, then dust or vacuum.
3. Apply shellac to all knots, pitch and resinous sapwood before priming coat is applied.
4. Fill nail holes, cracks, open joints and other defects with wood filler or lead putty as required after priming coat has dried. Filler material must be compatible with finish being applied. Color to match finish color.

D. Preparation of Ferrous Metal Surfaces
1. Remove rust, mill scale and defective paint down to sound surface or bare metal, using scraper, sandpaper, or wire brush as necessary. Grind if necessary to remove shoulders at edge of sound paint to prevent flaws from photographing through finish coats.
2. Remove dirt and grease with mineral spirits and wipe dry with clean cloths.
3. Touch-up all bare metal and damaged shop coats with specified rust-inhibitive primer.
4. Necessary touching up of shop primer shall be done on ferrous metal surfaces of all items installed adjacent to concrete prior to any openings between metal surface and adjacent surfaces being filled in or caulked.

E. Preparation of Galvanized Metal Surfaces
1. Remove dirt and grease with mineral spirits and wipe dry with clean cloths.
2. All galvanized steel surfaces shall be pre-treated with proprietary acid-bound resinous or crystalline zinc phosphate preparations used according to the manufacturer's directions prior to painting.

F. Preparation of Masonry and Concrete Surfaces
1. Masonry surfaces must be free from dirt, loose or excess mortar, and be thoroughly dry. Perform moisture test prior to application of paint over any masonry surface. Moisture content must be within range recommended by paint manufacturer for the application involved.
2. Point all open mortar joints; fill all holes with mortar.

3. Comply with requirements set forth in Section 03300 for patching and repairing of concrete surface irregularities prior to application of any paint materials.

G. Preparation of Aluminum Surfaces: Remove dirt and grease with mineral spirits, and wipe dry with clean cloths.

H. Preparation of Copper Surfaces
1. Buff or polish surfaces to bright color.
2. Remove dirt and grease from surface with a mild phosphoric acid. Wipe dry with clean cloths.
3. Apply finish while surface is clean and bright.

3.04 APPLICATION

A. General
1. Protection of Adjacent Surfaces and Mixed Items
a. The Contractor not only shall protect his work at all times, but shall also protect all adjacent work and materials by dropcloth, covering or other methods during progress of his work.
b. Remove and protect hardware, accessories, device plates, lighting fixtures, factory finished work, and similar items, or provide ample in-place protection. Upon completion of each space, carefully replace all removed items. This work shall be done only by skilled mechanics.
c. Remove electrical panel box covers and doors before painting wall. Paint separately and reinstall after paint is dry.
2. The undercoats of paint and enamel shall be of approximate shade of the final coat. All metal surfaces calling for enamel or varnished finish shall first have priming coat well sanded, and shall be sanded between coats with fine sandpaper or steel wool that will produce an even, smooth finish. Each coat shall be perfectly dry before applying succeeding coats.
3. Do not apply initial coating until moisture content of surface is within limitations recommended by paint manufacturer. Test with moisture meter. Exterior surfaces shall not be painted in damp, frosty, or cold weather. Latex paints shall not be applied when surface or air temperature is below 50°F.
4. Surfaces shall be finished the same as nearest or adjoining surfaces unless otherwise shown.
5. Exposed access doors or panels, exposed electric panelboard covers, exposed pipes, ducts and raceways shall be painted the same color as adjacent surfaces. All piping exposed in finished areas shall be painted as required for interior ferrous metal. Where galvanized pipe occurs, prime galvanized surface as specified.
6. Hardware and accessories, fixtures and similar items placed prior to painting shall be removed or protected during painting, replaced on completion of painting.
7. Remove silencers from metal door frames prior to painting. Afterwards, replace silencers.
8. The tops, bottoms and edges of all doors to be painted shall be finished to match the surface of the doors after the hardware has been attached. Any door found unpainted upon the completion of the painting work shall be taken down and painted.
9. Any exposed metal such as chairs, nails or tie wires in reinforced concrete slabs shall be covered with a rust inhibitive material.
10. All weather exposed HVAC and electrical equipment shall be painted.

3.05 FIELD QUALITY CONTROL

A. The first finished area or item of each color scheme required shall be reviewed by the Architect for color, texture, and workmanship.

B. First acceptable area or items shall be used as project standard for each color scheme.

3.06 CLEANUP

A. During progress of the work, keep areas free form any unnecessary accumulation of tools, equipment and surplus materials and debris.

B. At completion of work, remove from the project site all surplus painting materials and all debris. Remove all spatters and leave this part of the work in a clean and finished condition.

END OF SECTION