SECTION 092900 - GYPSUM BOARD

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
	* + 1. RELATED DOCUMENTS
				1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
			2. SUMMARY
				1. Section Includes:

Interior gypsum board for walls, ceilings and soffits

Exterior gypsum board for ceilings and soffits.

Tile backing panels in first subparagraph below may be specified in this Section or in Section 093013 "Ceramic Tiling."

Tile backing panels.

Texture finishes.

* + - * 1. Related Requirements:

Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

Section 054000 Cold Form Metal Framing

Section 061600 "Sheathing" for gypsum sheathing for exterior walls.

Section 079219 "Acoustical Joint Sealants" for acoustical joint sealants installed in gypsum board assemblies.

Section 092116.23 "Gypsum Board Shaft Wall Assemblies" for metal shaft-wall framing, gypsum shaft liners, and other components of shaft-wall assemblies.

Section 092216 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support gypsum board panels.

Section 092613 "Gypsum Veneer Plastering" for gypsum base for veneer plaster and for other components of gypsum-veneer-plaster finishes.

Retain subparagraph below if tile backing panels are not specified in this Section.

Section 093013 "Ceramic Tiling" for cementitious backer units installed as substrates for ceramic tile.

* + - 1. SUBMITTALS
				1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				4. Product Data: Catalog sheets, specifications and installation instructions for each item specified:

Gypsum wallboard.

Gypsum board, Type X.

Flexible gypsum board.

Gypsum ceiling board.

Foil-backed gypsum board.

Abuse-resistant gypsum board.

Impact-resistant gypsum board.

Mold-resistant gypsum board.

Gypsum board, Type C.

Glass-mat interior gypsum board.

Acoustically enhanced gypsum board.

Skim-coated gypsum board.

Exterior gypsum soffit board.

Glass-mat gypsum sheathing board.

Glass-mat, water-resistant backing board.

Cementitious backer units.

Water-resistant gypsum backing board.

Interior trim.

Exterior trim.

Aluminum trim.

Joint treatment materials.

Laminating adhesive.

Sound-attenuation blankets.

Acoustical sealant.

Textured finishes.

* + - * 1. Sustainable Design Submittals:

Retain "Samples" paragraph below for single-stage Samples. Retain "Samples for Initial Selection" and "Samples for Verification" paragraphs for two-stage Samples.

* + - * 1. Samples: For the following products:

Retain "Trim Accessories" Subparagraph below if special trim types and profiles are required. Delete if only standard-type trims are required.

Trim Accessories: Full-size Sample in 12-inch long length for each trim accessory indicated.

Textured Finishes: [**Manufacturer's standard size**] <**Insert size**> for each textured finish indicated and on same backing indicated for Work.

Fasteners: 10 each for type specified.

Retain "trim accessory" option in "Samples for Initial Selection" paragraph below if special trim types and profiles are required. Delete if only standard-type trims are required.

* + - * 1. Samples for Initial Selection: For each type of [**trim accessory**] [**and**] [**textured finish**] indicated.
				2. Samples for Verification: For the following products:

Retain "Trim Accessories" Subparagraph below if special trim types and profiles are required. Delete if only standard-type trims are required.

Trim Accessories: Full-size Sample in 12-inch long length for each trim accessory indicated.

Textured Finishes: [**Manufacturer's standard size**] <**Insert size**> for each textured finish indicated and on same backing indicated for Work.

* + - 1. QUALITY ASSURANCE
				1. Mockups: Build mockups of at least 100 sq. ft in surface area to demonstrate aesthetic effects and to set quality standards for materials and execution.

Build mockups for the following:

Each level of gypsum board finish indicated for use in exposed locations.

Each texture finish indicated.

Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.

Simulate finished lighting conditions for review of mockups.

* + - 1. DELIVERY, STORAGE AND HANDLING
				1. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.
			2. FIELD CONDITIONS
				1. Environmental Limitations: Comply with ASTM C840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.
				2. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
				3. Do not install panels that are wet, moisture damaged, and mold damaged.

Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

* + - * 1. Comply with gypsum board manufacturer’s printed temperature and ventilation requirements during application and finishing. Ventilate installation areas to relieve excess moisture.
1. PRODUCTS
	* + 1. PERFORMANCE REQUIREMENTS

Retain "Fire-Resistance-Rated Assemblies" paragraph below where gypsum board is part of fire-resistance-rated assemblies. Indicate design designations of specific assemblies on Drawings.

* + - * 1. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E119 by an independent testing agency.

Retain "STC-Rated Assemblies" paragraph below where gypsum board is part of STC-rated assemblies. Indicate design designations of specific assemblies on Drawings.

* + - * 1. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.
			1. GYPSUM BOARD, GENERAL
				1. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.
			2. INTERIOR GYPSUM BOARD
				1. Gypsum Wallboard: ASTM C1396.

Gypsum wallboard is also available in 1/4- and 3/8-inch thicknesses for limited applications.

Thickness: 1/2 inch.

Long Edges: [**Tapered**] [**Tapered and featured (rounded or beveled) for prefilling**].

* + - * 1. Gypsum Board, Type X: ASTM C1396.

Thickness: 5/8 inch.

Long Edges: [**Tapered**] [**Tapered and featured (rounded or beveled) for prefilling**].

* + - * 1. Flexible Gypsum Board: ASTM C1396. Manufactured to bend to fit radii and to be more flexible than standard regular-type gypsum board of same thickness.

Thickness: 1/4 inch.

Long Edges: Tapered.

* + - * 1. Gypsum Ceiling Board: ASTM C1396.

Thickness: 1/2 inch.

Long Edges: Tapered.

The foil backing on gypsum board in "Foil-Backed Gypsum Board" paragraph below creates a vapor barrier. Verify limitations and proper uses with manufacturers.

* + - * 1. Foil-Backed Gypsum Board: ASTM C1396.

Core: [**As indicated on Drawings**] [**3/8 inch, regular type**] [**1/2 inch, regular type**] [**5/8 inch, Type X**] [**Type C as required by fire-resistance-rated assembly indicated on Drawings**].

Long Edges: [**Tapered**] [**Tapered and featured (rounded or beveled) for prefilling**].

"Abuse-Resistant Gypsum Board" paragraph below describes products tested according to ASTM C1629 for resistance to abrasion, indentation, and soft-body impact. See "Abuse- and Impact-Resistant Gypsum Board" Article in the Evaluations for additional information. Verify availability with manufacturers.

* + - * 1. Abuse-Resistant Gypsum Board: ASTM C1396 gypsum board, tested according to ASTM C1629.

Core: [**As indicated on Drawings**] [**1/2 inch, regular type**] [**5/8 inch, Type X**].

Surface Abrasion: ASTM C1629, meets or exceeds [**Level 1**] [**Level 2**] [**Level 3**] requirements.

Indentation: ASTM C1629, meets or exceeds [**Level 1**] [**Level 2**] [**Level 3**] requirements.

Soft-Body Impact: ASTM C1629, meets or exceeds [**Level 1**] [**Level 2**] [**Level 3**] requirements.

Long Edges: Tapered.

Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

"Impact-Resistant Gypsum Board" paragraph below describes products tested according to ASTM C1629 for resistance to abrasion, indentation, and soft- and hard-body impact. See "Abuse- and Impact-Resistant Gypsum Board" Article in the Evaluations for additional information. Verify availability with manufacturers.

* + - * 1. Impact-Resistant Gypsum Board: ASTM C1396 gypsum board, tested according to ASTM C1629.

Core: [**As indicated on Drawings**] [**1/2 inch, regular type**] [**5/8 inch, Type X].**

Surface Abrasion: ASTM C1629, meets or exceeds [**Level 1**] [**Level 2**] [**Level 3**] requirements.

Indentation: ASTM C1629, meets or exceeds [**Level 1**] [**Level 2**] [**Level 3**] requirements.

Soft-Body Impact: ASTM C1629, meets or exceeds [**Level 1**] [**Level 2**] [**Level 3**] requirements.

Hard-Body Impact: ASTM C1629, meets or exceeds [**Level 1**] [**Level 2**] [**Level 3**] requirements according to test in Annex A1.

Long Edges: Tapered.

Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

Paragraph below is department of correctional services (docs) standard for areas where fire rated impact resistant gypsum board is required. Docs also allows fire rated gypsum board with flattened expanded metal mesh backer.

These manufacturers make similar products with moisture resistant gypsum board laminated to polycarbonate and frp or acrylic pvc sheets. Contact the manufacturer for more detailed information.

* + - * 1. Polycarbonate Laminated Gypsum Board: Type X 5/8 inch Fire Resistant Gypsum Board laminated to .080 inch thick polycarbonate. Laminated product shall meet “Class A” interior wall and finish classification. Long edges of gypsum board tapered with beveled or rounded edges.

Acceptable Products:

CoreGuard by Pinnacle Armor, 5425 E. Home Ave. #104, Fresno, CA 93727, (800) 200-0915, [www.pinnaclearmor.com](http://www.pinnaclearmor.com).

NuGuard Security Wall Panels, Nudo Products, Inc., 1500 Taylor Ave., Springfield, IL 62703, (800) 826-4132, [www.nudo.com](http://www.nudo.com).

Approved equivalent.

Paragraph below is Office of Mental Health standard for areas where fire rated impact resistant gypsum board is required. Coreguard uses 5/8 inch gypsum board plus .03 inch polycarbonate for a total thickness of slightly more than 5/8 inch.

These manufacturers make similar products with moisture resistant gypsum board laminated to polycarbonate and frp or acrylic pvc sheets. Contact the manufacturer for more detailed information.

* + - * 1. Polycarbonate Laminated Gypsum Board: Type X nominal 5/8 inch fire resistant gypsum board laminated to .030 inch thick polycarbonate. Laminated product shall meet “Class A” interior wall and finish classification. Long edges of gypsum board tapered with beveled or rounded edges.

Acceptable Products:

CoreGuard by Pinnacle Armor, 5425 E. Home Ave. #104, Fresno, CA 93727, (800) 200-0915, [www.pinnaclearmor.com](http://www.pinnaclearmor.com).

NuGuard Security Wall Panels by Nudo Products, Inc., 1500 Taylor Ave., Springfield, IL 62703, (800) 826-4132, [www.nudo.com](http://www.nudo.com).

Approved equivalent.

* + - * 1. Mold-Resistant Gypsum Board: ASTM C1396. With moisture- and mold-resistant core and paper surfaces.

Core: [**As indicated**] [**1/2 inch, regular type**] [**5/8 inch, Type X**].

Long Edges: Tapered.

Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

* + - 1. SPECIALTY GYPSUM BOARD

Type C gypsum board has fire-resistive capability greater than that of Type X. Design designations of independent testing agencies indicated on Drawings generally determine product requirements for Type C gypsum board. Type C gypsum board from different manufacturers cannot be intermixed because the ratings apply only to assemblies identical in materials and construction to those tested.

* + - * 1. Gypsum Board, Type C: ASTM C1396. Manufactured to have increased fire-resistive capability.

Thickness: As required by fire-resistance-rated assembly indicated on Drawings.

Type C gypsum board is available in 1/2- and 5/8-inch thicknesses.

Long Edges: Tapered.

* + - * 1. Glass-Mat Interior Gypsum Board: ASTM C1658. With fiberglass mat laminated to both sides. Specifically designed for interior use.

Core: [**As indicated**] [**1/2 inch, regular type**] [**1/2 inch, Type C**] [**5/8 inch, Type X**] [**5/8 inch, abuse resistant**].

Long Edges: Tapered.

Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

* + - * 1. Acoustically Enhanced Gypsum Board: ASTM C1396. Multilayer products constructed of two layers of gypsum boards sandwiching a viscoelastic sound-absorbing polymer core.

Core: [**As indicated**] [**1/2 inch, regular type**] [**1/2 inch, Type X**] [**5/8 inch, regular type**] [**5/8 inch, Type X**] [**1-3/8 inch, regular type**].

Long Edges: Tapered.

* + - * 1. Skim-Coated Gypsum Board: ASTM C1396. Manufactured with a factory-applied skim coat.

Core: [**As indicated**] [**1/2 inch, regular type**] [**5/8 inch, Type X**].

Long Edges: Tapered.

* + - 1. EXTERIOR GYPSUM BOARD FOR CEILINGS AND SOFFITS
				1. Exterior Gypsum Soffit Board: ASTM C1396, with manufacturer's standard edges.

Core: [**As indicated**] [**1/2 inch, regular type**] [**5/8 inch, Type X**].

* + - * 1. Glass-Mat Gypsum Sheathing Board: ASTM C1177, with fiberglass mat laminated to both sides and with manufacturer's standard edges.

Core: [**As indicated**] [**1/2 inch, regular type**] [**5/8 inch, Type X**].

* + - 1. TILE BACKING PANELS

Tile backing panels may be specified in this Section or in Section 093013 "Ceramic Tiling."

* + - * 1. Glass-Mat, Water-Resistant Backing Board: ASTM C1178, with manufacturer's standard edges.

Core: [**As indicated on Drawings**] [**1/2 inch, regular type**] [**5/8 inch, Type X**].

Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

* + - * 1. Cementitious Backer Units: ANSI A118.9 and ASTM C1288 or ASTM C1325, with manufacturer's standard edges.

Thickness: [**1/4 inch** ] [**1/2 inch** ] [**5/8 inch** ] [**As indicated**].

Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

According to the International Building Code, water-resistant gypsum backing board is not permitted for use as a backing board for tile in tub and shower areas or as wall board or ceiling panels in shower areas.

* + - * 1. Water-Resistant Gypsum Backing Board: ASTM C1396, with manufacturer's standard edges.

Core: [**As indicated on Drawings**] [**1/2 inch, regular type**] [**5/8 inch, Type X**] [**Type C as required by fire-resistance-rated assembly indicated on Drawings**].

* + - 1. TRIM ACCESSORIES
				1. Interior Trim: ASTM C1047.

Material: [**Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet**] [**Galvanized or aluminum-coated steel sheet or rolled zinc**] [**Plastic**] [**Paper-faced galvanized-steel sheet**].

Shapes:

Cornerbead.

Bullnose bead.

LC-Bead: J-shaped; exposed long flange receives joint compound.

L-Bead: L-shaped; exposed long flange receives joint compound.

U-Bead: J-shaped; exposed short flange does not receive joint compound.

Expansion (control) joint.

Curved-Edge Cornerbead: With notched or flexible flanges.

Retain "Base-of-Wall Galvanized Moisture Barrier Trim" or "Base-of-Wall PVC Moisture Barrier Trim" Subparagraph below, if required. Verify acceptance of product if used in fire-rated assemblies. PVC product does not have tested assemblies but has an independent engineering judgment letter for 1/2-inch-high material. When this Section was updated, VersaDry was the only manufacturer that manufactured base-of-wall galvanized moisture barrier trim; Waterguard was the only manufacturer that manufactured base-of-wall PVC moisture barrier trim.

Base-of-Wall Galvanized Moisture Barrier Trim: Galvanized-steel sheet, 2 inches high.

Base-of-Wall PVC Moisture Barrier Trim: Extruded PVC, [**1/2 inch**] [**1-3/4 inch**] [**3-1/2 inch**] high.

* + - * 1. Exterior Trim: ASTM C1047.

Material: [**Hot-dip galvanized-steel sheet, plastic, or rolled zinc**] <**Insert material**>.

Shapes:

Cornerbead.

LC-Bead: J-shaped; exposed long flange receives joint compound.

Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

Indicate dimensions and profiles of aluminum trim on Drawings.

* + - * 1. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.

Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B221, Alloy 6063-T5.

Finish: [**Corrosion-resistant primer compatible with joint compound and finish materials specified**] <**Insert requirements for Class II anodic finishes and factory-painted, baked-enamel finishes**>.

Paragraph below is for docs as an option to polycarbonate laminated gypsum board.

* + - * 1. Flattened Expanded Metal Mesh: ASTM F 1267, Type II, Class 1, grade as selected by fabricator; 13 gage, 1/2 inch carbon sheet steel, diamond style.
			1. JOINT TREATMENT MATERIALS
				1. General: Comply with ASTM C475.
				2. Joint Tape:

Interior Gypsum Board: Paper.

Exterior Gypsum Soffit Board: Paper.

Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.

Tile Backing Panels: As recommended by panel manufacturer.

* + - * 1. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

Prefilling: At open joints[**, rounded or beveled panel edges,**] and damaged surface areas, use setting-type taping compound.

Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use [**setting-type taping**] [**drying-type, all-purpose**] compound.

Use setting-type compound for installing paper-faced metal trim accessories.

Fill Coat: For second coat, use [**setting-type, sandable topping**] [**drying-type, all-purpose**] compound.

Finish Coat: For third coat, use [**setting-type, sandable topping**] [**drying-type, all-purpose**] compound.

Skim Coat: For final coat of Level 5 finish, use [**setting-type, sandable topping compound**] [**drying-type, all-purpose compound**] [**high-build interior coating product designed for application by airless sprayer and to be used instead of skim coat to produce Level 5 finish**].

* + - * 1. Joint Compound for Exterior Applications:

Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.

Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.

* + - * 1. Joint Compound for Tile Backing Panels:

Glass-Mat, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.

Cementitious Backer Units: As recommended by backer unit manufacturer.

Water-Resistant Gypsum Backing Board: Use setting-type taping compound and setting-type, sandable topping compound.

If required, insert joint treatment products designed for use with mold-resistant gypsum board products such as "ProForm XP" by National Gypsum Company.

<**Insert products**>.

* + - 1. AUXILIARY MATERIALS
				1. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
				2. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
				3. Steel Drill Screws: ASTM C1002 unless otherwise indicated.

Retain first subparagraph below if panels are attached to cold-formed metal framing specified in Section 054000 "Cold-Formed Metal Framing."

Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

Retain subparagraph below for cementitious backer units.

For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

* + - * 1. Sound-Attenuation Blankets: ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

* + - * 1. Acoustical Sealant: As specified in Section 079219 "Acoustical Joint Sealants."
				2. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."
				3. Vapor Retarder: As specified in Section 072600 "Vapor Retarders."
			1. TEXTURE FINISHES
				1. Primer: As recommended by textured finish manufacturer.
				2. Polystyrene Aggregate Ceiling Finish: Water-based, job-mixed, polystyrene aggregate finish with flame-spread and smoke-developed indexes of not more than 25 when tested according to ASTM E84.

Texture: [**Fine**] [**Medium**] [**Coarse**].

* + - * 1. Aggregate Finish: Water-based, job-mixed, aggregated, drying-type texture finish for spray application.

Coordinate texture requirements with products retained or inserted above. Georgia-Pacific product is not available in spatter knock-down finish.

Texture: [**Light spatter**] [**Spatter knock-down**] <**Insert texture**>.

* + - * 1. Non-Aggregate Finish: Premixed, vinyl texture finish for spray application.

Coordinate texture requirements with products retained or inserted above.

Texture: [**Orange peel**] [**Spatter**] [**Spatter knock-down**] <**Insert texture>.**

* + - * 1. Acoustical Finish: Water-based, chemical-setting or drying-type, job-mixed texture finish for spray application.

Application Thickness: [**1/2 inch**] <**Insert dimension**>.

Surface-Burning Characteristics: As determined by testing identical products according to ASTM E84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

Flame-Spread Index: [**25**] <**Insert value**> or less.

Smoke-Developed Index: [**50**] [**450**] <**Insert value**> or less.

NRC: [**0.55**] <**Insert NRC**> according to ASTM C423.

1. EXECUTION
	* + 1. EXAMINATION
				1. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
				2. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
				3. Proceed with installation only after unsatisfactory conditions have been corrected.
			2. INSTALLATION AND FINISHING OF PANELS, GENERAL
				1. Comply with ASTM C840.
				2. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
				3. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
				4. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
				5. Form control and expansion joints with space between edges of adjoining gypsum panels.
				6. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.

Fit gypsum panels around ducts, pipes, and conduits.

Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch wide joints to install sealant.

Indicate perimeter isolation on Drawings. See "Crack Control" Article in the Evaluations.

* + - * 1. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
				2. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

Retain "Wood Framing" paragraph below for wood framing where fire ratings are not required.

* + - * 1. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.
				2. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C919 and with manufacturer's written instructions for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.
				3. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.
			1. INSTALLATION OF INTERIOR GYPSUM BOARD
				1. Install interior gypsum board in the following locations:

Wallboard Type: [**As indicated on Drawings**] [**Vertical surfaces unless otherwise indicated**].

Type X: [**As indicated on Drawings**] [**Where required for fire-resistance-rated assembly**] [**Vertical surfaces unless otherwise indicated**] <**Insert requirements**>.

Flexible Type: [**As indicated on Drawings**] [**Apply in double layer at curved assemblies**].

Ceiling Type: [**As indicated on Drawings**] [**Ceiling surfaces**].

Foil-Backed Type: [**As indicated on Drawings**] <**Insert requirements**>.

Abuse-Resistant Type: [**As indicated on Drawings**] <**Insert requirements**>.

Impact-Resistant Type: [**As indicated on Drawings**] <**Insert requirements**>.

Mold-Resistant Type: [**As indicated on Drawings**] <**Insert requirements**>.

Type C: [**As indicated on Drawings**] [**Where required for specific fire-resistance-rated assembly indicated**].

Glass-Mat Interior Type: [**As indicated on Drawings**] <**Insert requirements**>.

Acoustically Enhanced Type: [**As indicated on Drawings**] <**Insert requirements**>.

Skim-Coated Type: [**As indicated on Drawings**] <**Insert requirements**>.

* + - * 1. Single-Layer Application:

On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.

On partitions/walls, apply gypsum panels [**vertically (parallel to framing)**] [**horizontally (perpendicular to framing)**] unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

Stagger abutting end joints not less than one framing member in alternate courses of panels.

Usually retain first subparagraph below if vertical application of panels is specified.

At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.

On Z-shaped furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.

Fastening Methods: Apply gypsum panels to supports with steel drill screws.

* + - * 1. Multilayer Application:

Retain first subparagraph below for multilayer gypsum board ceilings.

On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.

Revise first two subparagraphs below if wall conditions permit economical use of horizontal application of base layer and face layers are laminated to base layers.

On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.

On Z-shaped furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.

First option in "Fastening Methods" Subparagraph below is required for some fire-resistance-rated assemblies.

Fastening Methods: Fasten base layers [**and face layers separately to supports with screws**] [**with screws; fasten face layers with adhesive and supplementary fasteners**].

Insert specific requirements for particular substrate in "Laminating to Substrate" paragraph below.

* + - * 1. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written instructions and temporarily brace or fasten gypsum panels until fastening adhesive has set.
				2. Curved Surfaces:

Install panels horizontally (perpendicular to supports) and unbroken, to extent possible, across curved surface plus 12-inch long straight sections at ends of curves and tangent to them.

For double-layer construction, fasten base layer to studs with screws 16 inches o.c. Center gypsum board face layer over joints in base layer, and fasten to studs with screws spaced 12 inches o.c.

* + - 1. INSTALLATION OF EXTERIOR GYPSUM PANELS FOR CEILINGS AND SOFFITS
				1. Apply panels perpendicular to supports, with end joints staggered and located over supports.

Retain first subparagraph below unless perimeter relief is provided by trim. If retaining, indicate sealant in gap on Drawings to keep insects from entering above ceiling areas.

Install with 1/4-inch open space where panels abut other construction or structural penetrations.

Fasten with corrosion-resistant screws.

* + - 1. INSTALLATION OF TILE BACKING PANELS
				1. Glass-Mat, Water-Resistant Backing Panels: Comply with manufacturer's written installation instructions and install at [**showers, tubs, and where indicated**] [**locations indicated to receive tile**]. Install with 1/4-inch gap where panels abut other construction or penetrations.
				2. Cementitious Backer Units: ANSI A108.11, at [**showers, tubs, and where indicated**] [**locations indicated to receive tile**].
				3. Water-Resistant Backing Board: Install where indicated with 1/4-inch gap where panels abut other construction or penetrations.

Retain paragraph below if tile backing panels abut thinner board in same plane, or vice versa, and detail these conditions on Drawings.

* + - * 1. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.
			1. INSTALLATION OF TRIM ACCESSORIES
				1. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

Generally, retain first option in "Control Joints" paragraph below and indicate joints on Drawings. See the Evaluations for discussion of control joints.

* + - * 1. Control Joints: Install control joints [**at locations indicated on Drawings**] [**according to ASTM C840 and in specific locations approved by Director’s Representative for visual effect**].
				2. Interior Trim: Install in the following locations:

Cornerbead: Use at outside corners[**unless otherwise indicated**].

Bullnose Bead: Use [**at outside corners**] [**where indicated**] <**Insert requirements**>.

LC-Bead: Use [**at exposed panel edges**] <**Insert requirements**>.

L-Bead: Use [**where indicated**] <**Insert requirements**>.

U-Bead: Use [**at exposed panel edges**] [**where indicated**] <**Insert requirements**>.

Curved-Edge Cornerbead: Use at curved openings.

* + - * 1. Exterior Trim: Install in the following locations:

Cornerbead: Use at outside corners.

LC-Bead: Use [**at exposed panel edges**] <**Insert requirements**>.

* + - * 1. Aluminum Trim: Install in locations [**indicated on Drawings**] <**Insert requirements**>.
			1. FINISHING GYPSUM BOARD
				1. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
				2. Prefill open joints[**, rounded or beveled edges,**] and damaged surface areas.
				3. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

See "Gypsum Board Finish Levels" Article in the Evaluations for a discussion of requirements of various levels.

* + - * 1. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C840:

Gypsum board finish levels are minimum requirements established by ASTM C840 without elaboration.

Level 1: Ceiling plenum areas, concealed areas, and where indicated.

Level 2: [**Panels that are substrate for tile**] [**Panels that are substrate for acoustical tile**] [**Where indicated on Drawings**] <**Insert locations**>.

Level 3 is suitable for surfaces receiving medium- or heavy-textured finishes before painting or heavy wallcoverings where lighting conditions are not critical.

Level 3: [**Where indicated on Drawings**] <**Insert locations**>.

Level 4 is suitable for surfaces receiving light-textured finishes, wallcoverings, and flat paints. It is generally the standard exposed finish. Gloss and semigloss enamel paints are not usually recommended over this level of finish. ASTM C840 requires application of "drywall primer" on surfaces before final decoration. Specify priming of gypsum board surfaces in Section 099123 "Interior Painting."

Level 4: [**At panel surfaces that will be exposed to view unless otherwise indicated**] <**Insert locations**>.

Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

Level 5 is suitable for surfaces receiving gloss and semigloss enamels and other surfaces subject to severe lighting. It is considered a high-quality gypsum board finish.

Level 5: [**Where indicated on Drawings**] <**Insert locations**>.

Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

* + - * 1. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.
				2. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.
				3. Cementitious Backer Units: Finish according to manufacturer's written instructions.
			1. INSTALLATION OF TEXTURE FINISHES
				1. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
				2. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture[**matching approved mockup and**] free of starved spots or other evidence of thin application or of application patterns.
				3. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written instructions.
			2. PROTECTION
				1. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
				2. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
				3. Remove and replace panels that are wet, moisture damaged, and mold damaged.

Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900