

## SECTION 09111

## NON-LOAD-BEARING METAL FRAMING SYSTEM

## PART 1 GENERAL

## 1.1 SUMMARY

- A. Section includes metal stud framing and accessories at interior and exterior locations.
- B. Related Sections:
  - 1. Section 04810 - Unit Masonry Assemblies: Veneer masonry supported by stud wall.
  - 2. Section 05500 - Metal Fabrications: Metal fabrications attached to stud framing.
  - 3. Section 06100 - Rough Carpentry: Rough wood blocking within stud framing.
  - 4. Section 09260 - Gypsum Board Assemblies: Wall sheathing.
  - 5. Section 07213 - Batt Insulation: Insulation between framing members.
  - 6. Section 09220 - Portland Cement Plaster.
  - 7. Section 09260 - Gypsum Board Assemblies: Metal studs for partitioning.

## 1.2 REFERENCES

- A. ASTM International:
  - 1. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
  - 2. ASTM A591/A591M - Standard Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Mass Applications.
  - 3. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - 4. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members.
  - 5. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
  - 6. ASTM C1002 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases.
- B. National Association of Architectural Metal Manufacturers:
  - 1. NAAMM ML/SFA 540 - Lightweight Steel Framing Systems Manual.
- C. SSPC: The Society for Protective Coatings:
  - 1. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).

### 1.3 SYSTEM DESCRIPTION

- A. Exterior Wall: Metal stud framing system infill, with exterior sheathing specified in Section 09260 Gypsum Board Assemblies.
- B. Exterior Loads: Design and size components to withstand loads caused by positive and negative pressure of wind acting normal to plane of wall in accordance with 2006 International Building Code to design pressure of 20 lb/sq ft.
- C. Maximum Allowable Deflection: 1: 600 span at exterior masonry veneer systems.
- D. Wall System:
  - 1. Design to provide for movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.
  - 2. Design system to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.

### 1.4 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings:
  - 1. Indicate component details, anchorage to structure, type and location of fasteners, and accessories or items required of other related work.
  - 2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement to framing connections.
- C. Product Data: Submit data describing standard framing member materials and finish, product criteria, load charts, and limitations.

### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM C754 and NAAMM ML/SFA 540.
- B. Form, fabricate, install, and connect components in accordance with NAAMM ML/SFA 540.
- C. Furnish framing materials in accordance with SSMA - Product Technical Information.

### 1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
  - 1. Framing Manufacturer: Current member of Steel Stud Manufacturers Association.

- B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.
- C. **Design structural elements under direct supervision of Professional Engineer experienced in design of this Work and licensed in the State of Texas.**

#### 1.7 PRE-INSTALLATION MEETINGS

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

#### 1.8 COORDINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate placement of components within stud framing system specified in other sections.

### PART 2 PRODUCTS

#### 2.1 METAL FRAMING SYSTEM

- A. Manufacturers:
  - 1. Dietrich Industries, Inc.
  - 2. Harrison Manufacturing Co.
  - 3. Unimast Incorporated.
  - 4. Substitutions: Section 01600 - Product Requirements.

#### 2.2 COMPONENTS

- A. Studs: ASTM A591/A591M Coating Class C, non-load bearing rolled steel, channel shaped, punched for utility access, as follows:
  - 1. Depth: As indicated on drawings.
  - 2. Thickness: 20 gage thick minimum; exterior walls 18 gage.
- B. Tracks and Headers: Same material and thickness as studs, bent leg retainer notched to receive studs. Ceiling Runners: With extended leg retainer.
- C. Furring and Bracing Members: Of same material as studs; thickness to suit purpose.
- D. Fasteners: ASTM C1002, self drilling, self tapping screws.
- E. Sheet Metal Backing: 0.036 inch galvanized.

- F. Anchorage Devices: Power actuated, drilled expansion bolts, screws with sleeves as required for application.
- G. Acoustic Sealant: As specified in Section 09260.
- H. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type I Inorganic.

## 2.3 FABRICATION

- A. Fabricate assemblies of sizes and profiles required.
- B. Fit, reinforce, and brace framing members to suit design requirements.
- C. Fit and assemble in largest practical sections for delivery to site, ready for installation.

## 2.4 SHOP FINISHING

- A. Studs: Galvanize to G90 coating class.
- B. Tracks and Headers: Galvanize to G90 coating class.
- C. Accessories: Same finish as framing members.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify rough-in utilities are in proper location.

### 3.2 INSTALLATION

- A. Align and secure top and bottom runners at 16 inches oc.
- B. Place two beads of acoustic sealant between runners and substrate, studs and adjacent construction to achieve acoustic seal.
- C. Place two beads of acoustic sealant between studs and adjacent vertical surfaces to achieve acoustic seal.
- D. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
- E. Install studs vertically at 16 inches oc.
- F. Align stud web openings horizontally.

- G. Secure studs to tracks using fastener method. Do not weld.
- H. Stud splicing not permissible.
- I. Fabricate corners using minimum of three studs.
- J. Double stud at wall openings, door and window jambs, not more than 2 inches from each side of openings.
- K. Brace stud framing system rigid.
- L. Coordinate erection of studs with requirements of door frames, window frames, and; install supports and attachments.
- M. Coordinate installation of wood bucks, anchors, and wood blocking with electrical and mechanical work to be placed within or behind stud framing.
- N. Blocking: Secure wood blocking to studs. Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, hardware, opening frames, and other locations indicated on the Drawings.
- O. Refer to Drawings for indication of partitions extending stud framing through ceiling to structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Install extended leg ceiling runners.
- P. Coordinate placement of insulation in stud spaces after stud frame erection.

### 3.3 ERECTION TOLERANCES

- A. Section 01400 - Quality Requirements: Tolerances.
- B. Maximum Variation From Indicated Position: 1/8 inch in 10 feet.
- C. Maximum Variation From Plumb: 1/8 inch in 10 feet.

END OF SECTION



SECTION 09220  
PORTLAND CEMENT PLASTER

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes Portland cement plaster system.
- B. Related Sections:
  - 1. Section 09111 - Non-Load-Bearing Metal Framing System: Metal stud framing behind plaster base.
  - 2. Section 09260 - Gypsum Board Assemblies.
  - 3. Section 09900 - Painting.

1.2 REFERENCES

- A. ASTM International:
  - 1. ASTM C91 - Standard Specification for Masonry Cement.
  - 2. ASTM C150 - Standard Specification for Portland Cement.
  - 3. ASTM C206 - Standard Specification for Finishing Hydrated Lime.
  - 4. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes.
  - 5. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
  - 6. ASTM C847 - Standard Specification for Metal Lath.
  - 7. ASTM C897 - Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters.
  - 8. ASTM C926 - Standard Specification for Application of Portland Cement-Based Plaster.
  - 9. ASTM C933 - Standard Specification for Welded Wire Lath.
  - 10. ASTM C1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
  - 11. ASTM C1328 - Standard Specification for Plastic (Stucco) Cement.
  - 12. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
- B. Portland Cement Association:
  - 1. PCA - Portland Cement Plaster (Stucco) Manual.
- C. Underwriters Laboratories Inc.:
  - 1. UL - Fire Resistance Directory.
- D. Intertek Testing Services (Warnock Hersey Listed):
  - 1. WH - Certification Listings.

### 1.3 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on plaster materials, characteristics and limitations of products specified.
- C. Samples: Submit two samples, 12 x12 inch in size illustrating finish color and texture.

### 1.4 QUALITY ASSURANCE

- A. Perform Work in accordance PCA Portland Cement Plaster (Stucco) Manual.

### 1.5 QUALIFICATIONS

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

### 1.6 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements.
- B. Exterior Plaster Work: Do not apply cement plaster when ambient temperature is less than 40 degrees F

## PART 2 PRODUCTS

### 2.1 PORTLAND CEMENT PLASTER

- A. Manufacturers:
  1. W.R. Bonsal Co.
  2. The Quikrete Companies.
  3. United States Gypsum Co.
  4. Substitutions: Section 01600 - Product Requirements.

### 2.2 COMPONENTS:

- A. Plaster Base Materials:
  1. Cement: ASTM C150, Type I Portland cement. Type N masonry cement.
  2. Lime: ASTM C206, Type S.
  3. Aggregate: Natural sand, within the following sieve sizes and percentage retained limits:
 

a.	No.4:	0
b.	No.8:	0 to 5



- |  |    |         |           |
|--|----|---------|-----------|
|  | c. | No.16:  | 5 to 30   |
|  | d. | No.30:  | 30 to 65  |
|  | e. | No.50:  | 65 to 95  |
|  | f. | No.100: | 90 to 100 |
4. Water: Clean, fresh, potable and free of mineral or organic matter capable of affecting plaster.
- B. Plaster Finish Materials:
1. Cement: As specified for plaster base coat, gray color.
  2. Lime: As specified for plaster base coat.
  3. Water: Clean, fresh, potable, and free of matter capable of affecting plaster.
- C. Finish Aggregate:
1. Mineral Aggregate: Finish Coat; Marble No. 8 sieve; Bedding Coat: Sand No.16 sieve.
- D. Furring And Lathing:
1. Expanded Metal Lath: ASTM C847, galvanized, diamond mesh, self-furring. Casing Bead: Formed sheet steel, depth governed by plaster thickness, maximum possible lengths, expanded metal flanges, with square edges; galvanized.
  2. Corner Bead: Formed sheet steel, depth governed by plaster thickness, maximum possible lengths, expanded metal flanges with radiused edge; galvanized.
  3. Base Screed: Formed sheet steel, depth governed by plaster thickness, maximum possible lengths, expanded metal flanges, with beveled edge; galvanized.
  4. Control and Expansion Joint Accessories: Formed sheet steel, accordion profile, 2 inch expanded metal flanges each side, galvanized.
  5. Anchorage: Tie wire, nails, and other metal supports, of type and size to suit application; to rigidly secure materials in place, galvanized.
  6. Fasteners: ASTM C1002, self drilling, self tapping screws.

### 2.3 MIXES

- A. Dash-Bond Coat: 1 part Portland Cement and maximum 2 parts of sand, proportioned by volume.
- B. Base Coats: Mix and proportion cement plaster base coat in accordance with ASTM C926, Type C in accordance with PCA Portland Cement Plaster (Stucco) Manual.
- C. Finish Coat: Mix and proportion cement plaster finish coat in accordance with ASTM C926, Type F. in accordance with PCA Portland Cement Plaster (Stucco) Manual.
- D. Mix only as much plaster as can be used prior to initial set.

- E. Add color pigments to finish coat.
- F. Mix materials dry, to uniform color and consistency, before adding water.
- G. Protect mixtures from freezing, frost, contamination, and excessive evaporation.
- H. Do not retemper mixes after initial set has occurred.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Metal Lath and Accessories: Verify lath is flat, secured to substrate, and joint and surface perimeter accessories are in place.
- C. Mechanical and Electrical: Verify services within walls have been tested and approved.

### 3.2 PREPARATION

- A. Dampen masonry surfaces to reduce excessive suction.
- B. Clean concrete surfaces of foreign matter. Clean surfaces using acid solutions, solvents, or detergents. Wash surfaces with clean water.

### 3.3 EXISTING WORK

- A. Extend existing Portland cement plaster installations using materials and methods as specified.
- B. Repair existing damaged Portland cement plaster which remains or is to be remodeled.

### 3.4 INSTALLATION

- A. Installation of Lathing Materials:
  - 1. Install metal lath in accordance with ASTM C1063.
- B. Installation of Accessories:
  - 1. Install accessories in accordance with ASTM C1063.
  - 2. Place corner bead at external wall corners; fasten at outer edges of lath only.
  - 3. Place strip mesh diagonally at corners of lathed openings. Secure rigidly in place.

4. Place casing beads at terminations of plaster finish. Butt and align ends. Secure rigidly in place.
  5. Position to provide convenient access to concealed work requiring access.
- C. Control And Expansion Joints: Install exterior contraction joints after initial set, scribed every as indicated on Drawings by cutting through 2/3 of cement plaster depth, neatly, in straight lines.
1. For horizontal exterior surfaces, install control and expansion joints not to exceed 100 sq. ft.
  2. For vertical exterior surfaces install control and expansion joints as indicated on Drawings.
  3. Establish control and expansion joints with specified joint device.
- D. Plastering:
1. Apply plaster in accordance with PCA Plaster (Stucco) Manual.
  2. Apply base coat to nominal thickness of 3/8 inch, brown coat to nominal thickness of 3/8 inch, and finish coat to nominal thickness of 1/8 inch over metal lath surfaces.
  3. Moist cure base and brown coats. Apply brown coat immediately following initial set of scratch coat.
  4. After curing, dampen previous coat prior to applying finish coat.
  5. Apply finish coat, fine sand float texture with selected color in accordance with PCA Portland Cement Plaster (Stucco) Manual.
  6. Avoid excessive working of surface. Delay troweling as long as possible to avoid drawing excess fines to surface.
  7. Moist cure finish coat for minimum period of 48 hours.
- 3.5 ERECTION TOLERANCES
- A. Section 01400 - Quality Requirements: Tolerances.
  - B. Maximum Variation from Flat Surface: 1/8 inch in 10 feet.
- 3.6 ADJUSTING
- A. Section 01700 - Execution Requirements: Testing, adjusting, and balancing.
  - B. Remove damaged or defective plaster by cutting and replace with specified materials to match adjacent plaster.

END OF SECTION



SECTION 09260  
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes metal channel ceiling framing; gypsum board and joint treatment; and textured finish.
- B. Related Sections:
  - 1. Section 06100 - Rough Carpentry: Wood blocking.
  - 2. Section 08115 - Standard Steel Frames.
  - 3. Section 09111 - Non-Load Bearing Metal Framing System.
  - 4. Section 09111 - Non-Load Bearing Metal Framing System.
  - 5. Section 09220 - Portland Cement Plaster.
  - 6. Section 09900 – Painting.

1.2 REFERENCES

- A. ASTM International:
  - 1. ASTM C36 - Standard Specification for Gypsum Wallboard.
  - 2. ASTM C475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - 3. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board.
  - 4. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members.
  - 5. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
  - 6. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
  - 7. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
  - 8. ASTM C1002 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases.
  - 9. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
- B. Gypsum Association:
  - 1. GA 214 - Recommended Levels of Gypsum Board Finish.
  - 2. GA 216 - Application and Finishing of Gypsum Board.
  - 3. GA 600 - Fire Resistance Design Manual Sound Control.
- C. Underwriters Laboratories Inc.:
  - 1. UL - Fire Resistance Directory.

- D. Intertek Testing Services (Warnock Hersey Listed):
  - 1. WH - Certification Listings.

### 1.3 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate special details associated with acoustic seals.
- C. Product Data: Submit data on metal framing, gypsum board, joint tape, and acoustic accessories.
- D. Samples: Submit two samples of corner and edge reinforcement.

### 1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM C840, ASTM C1280, GA-214, GA-216 and GA-600.

### 1.5 QUALIFICATIONS

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

### 1.6 PRE-INSTALLATION MEETINGS

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

## PART 2 PRODUCTS

### 2.1 GYPSUM BOARD ASSEMBLIES

- A. Manufacturers:
  - 1. Celotex Building Products.
  - 2. G-P Gypsum Corp.
  - 3. National Gypsum Co.
  - 4. United States Gypsum Co.
  - 5. Substitutions: Section 01600 - Product Requirements.

### 2.2 COMPONENTS

- A. Framing Materials:

1. Studs and Tracks: Refer to Section 09111 Non-Load Bearing Metal Framing Systems.
  2. Furring, Framing, and Accessories: ASTM C645.
  3. Fasteners: ASTM C1002 and GA-216.
  4. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
  5. Adhesive: ASTM C557 and GA-216.
- B. Gypsum Board Materials:
1. Standard Gypsum Board: ASTM C36; 5/8 inch thick, maximum available length in place; ends square cut, tapered edges.
  2. Gypsum Sheathing Board: ASTM C79/C79M; moisture resistant type; 1/2 inch thick, maximum available size in place; ends square cut, square edges; water repellent paper faces. Dens-Glass Gold, as manufactured by Georgia Pacific.

### 2.3 ACCESSORIES

- A. Corner Beads: Metal.
- B. Edge Trim: GA-216; Type L and U exposed reveal bead.
- C. Joint Materials: ASTM C475; GA-216; reinforcing tape, joint compound, adhesive, and water.
- D. Textured Finish Materials: Latex based texturing material.
- E. Fasteners: ASTM C1002, Type S12 and GA-216.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify site conditions are ready to receive work and opening dimensions are as indicated on shop drawings.

### 3.2 EXISTING WORK

- A. Extend existing gypsum board installations using materials and methods as specified.
- B. Repair and remodel existing gypsum board assemblies which remain or are to be altered.

### 3.3 INSTALLATION

- A. Metal Stud Installation:
  - 1. Install studs in accordance with Section 09111.
- B. Wall Furring Installation:
  - 1. Erect wall furring for direct attachment to concrete masonry and concrete walls.
  - 2. Erect furring channels vertically; space maximum 16 inches o.c, not more than 4 inches from floor and ceiling lines or abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
- C. Ceiling Framing Installation:
  - 1. Install in accordance with ASTM C754 and GA-216.
  - 2. Coordinate location of hangers with other work.
  - 3. Install ceiling framing independent of walls, columns, and above ceiling work.
  - 4. Reinforce openings in ceiling suspension system which interrupt main carrying channels or furring channels, with lateral channel bracing. Extend bracing minimum 24 inches past each end of openings.
  - 5. Laterally brace entire suspension system.
- D. Acoustic Accessories Installation:
  - 1. Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.
- E. Gypsum Board Installation:
  - 1. Install gypsum board in accordance with GA-216 and GA-600.
  - 2. Erect single layer board with ends and edges occurring over firm bearing.
  - 3. Use screws when fastening gypsum board to metal furring or framing.
  - 4. Erect exterior gypsum sheathing in accordance with ASTM C1280, horizontally, with edges butted and ends occurring over firm bearing.
  - 5. Place control joints consistent with lines of building spaces as directed by the Architect.
  - 6. Place corner beads at external corners as indicated on Drawings. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials and at other locations where detailed. Install reinforcing tape at internal corners.
- F. Joint Treatment:
  - 1. Finish in accordance with GA-214 Level 4.
  - 2. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
  - 3. Feather coats on to adjoining surfaces so that camber is maximum 1/32 inch.
- G. Texture Finish: Spray apply finish texture coating.



3.4 ERECTION TOLERANCES

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

END OF SECTION



SECTION 09510  
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes suspended metal grid ceiling system and perimeter trim.
- B. Related Sections:
  - 1. Section 09260 - Gypsum Board Assemblies.
  - 2. Division 15: Sprinkler heads in ceiling system.
  - 3. Division 15: - Air Outlets and Inlets: Air diffusion devices in ceiling system.
  - 4. Division 16: - Interior Luminaries: Light fixtures in ceiling system.
  - 5. Division 16: - Public Address and Music Equipment: Speakers in ceiling system.
  - 6. Division 16: - Fire Alarm and Smoke Detection Systems.

1.2 REFERENCES

- A. ASTM International:
  - 1. ASTM C635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
  - 2. ASTM C636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
  - 3. ASTM E1264 - Standard Classification for Acoustical Ceiling Products.
- B. Ceilings and Interior Systems Construction Association:
  - 1. CISCA - Acoustical Ceilings: Use and Practice.
- C. Underwriters Laboratories Inc.:
  - 1. UL - Fire Resistance Directory.
- D. Intertek Testing Services (Warnock Hersey Listed):
  - 1. WH - Certification Listings.

1.3 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on metal grid system components, acoustic units.
- C. Samples: Submit two 12 x 12 inch in size illustrating material and finish of acoustic units.

- D. Samples: Submit two 12 inches long, of suspension system main runner, cross runner, and perimeter molding.
- E. Manufacturer's Installation Instructions: Submit special procedures, perimeter conditions requiring special attention.

#### 1.4 QUALITY ASSURANCE

- A. Conform to CISCA requirements.

#### 1.5 QUALIFICATIONS

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

#### 1.6 PRE-INSTALLATION MEETINGS

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

#### 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements.
- B. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustic unit installation.

#### 1.8 SEQUENCING

- A. Section 0110 - Summary: Work sequence.
- B. Sequence Work to ensure acoustic ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- C. Install acoustic units after interior wet work is dry.

#### 1.9 EXTRA MATERIALS

- A. Section 01700 - Execution Requirements: Spare parts and maintenance products.
- B. Furnish 200 sq ft of extra tile to Owner.

## PART 2 PRODUCTS

### 2.1 SUSPENDED ACOUSTICAL CEILINGS

- A. Manufacturers:
  - 1. Armstrong World Industries.
  - 2. Celotex Building Products.
  - 3. USG Interiors.
  - 4. Substitutions: Section 01600 - Product Requirements.

### 2.2 COMPONENTS

- A. Acoustic Tile: ASTM E1264, conforming to the following:
  - 1. Size: 24 x 48 inches.
  - 2. Thickness: 5/8 inches.
  - 3. Composition: Wet formed mineral.
  - 4. Light Reflectance: LR 0.80 percent.
  - 5. NRC Range: 0.55.
  - 6. Ceiling Attenuation Class: Class (CAC Range): Minimum 35
  - 7. Fire Hazard Classification: Class A.
  - 8. Edge: Square.
  - 9. Surface Color: White.
  - 10. Surface Finish: Factory applied vinyl latex paint.
  - 11. Manufacturer: Armstrong Fissured #755, or approved equal.
- B. Grid:
  - 1. Non-fire Rated Grid: ASTM C635, intermediate duty; exposed T; components die cut and interlocking. Grid Materials: Commercial quality cold rolled steel with galvanized coating.
  - 2. Exposed Grid Surface Width: 15/16 inch.
  - 3. Grid Finish: White.
  - 4. Accessories: Stabilizer bars, clips, splices, perimeter trim required for suspended grid system.
  - 5. Support Channels and Hangers: Primed steel; size and type to suit application and ceiling system flatness requirement specified.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify layout of hangers will not interfere with other work.

### 3.2 EXISTING WORK

- A. Extend existing acoustical ceiling installations using materials and methods as specified.
- B. Clean and repair existing acoustical ceilings which remain or are to be reinstalled.

### 3.3 INSTALLATION

- A. Lay-In Grid Suspension System:
  - 1. Install suspension system in accordance with ASTM C636 and as supplemented in this section.
  - 2. Locate system on room axis according to reflected ceiling plan.
  - 3. Install after major above ceiling work is complete. Coordinate location of hangers with other work.
  - 4. Install hanger clips during steel deck erection. Install additional hangers and inserts as required.
  - 5. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
  - 6. Where ducts or other equipment prevent regular spacing of hangers, reinforce nearest affected hangers and related carrying channels to span extra distance.
  - 7. Do not support components on main runners or cross runners when weight causes total dead load to exceed deflection capability. Support fixture loads by supplementary hangers located within 6 inches of each corner; or support components independently.
  - 8. Do not eccentrically load system, or produce rotation of runners.
- B. Acoustic Units:
  - 1. Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.
  - 2. Lay directional patterned units as directed by the Architect.
  - 3. Install units after above ceiling work is complete.
  - 4. Install acoustic units level, in uniform plane, and free from twist, warp, and dents.
  - 5. Cutting Acoustic Units:
    - a. Cut to fit irregular grid and perimeter edge trim.
  - 6. Where bullnose concrete block corners occur, install preformed closures to match perimeter molding.

### 3.4 ERECTION TOLERANCES

- A. Section 01400 - Quality Requirements: Tolerances.
- B. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

- C. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION





SECTION 09900  
PAINTS AND COATINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and field application of paints, stains, and other coatings.
  - 1. Section 04810 - Unit Masonry Assemblies.
  - 2. Section 05500 - Metal Fabrications: Shop primed items.
  - 3. Section 06200 - Finish Carpentry.
  - 4. Section 08114 - Standard Steel Doors.
  - 5. Section 08115 - Standard Steel Frames
  - 6. Section 09220 - Portland Cement Plaster.

1.2 REFERENCES

- A. ASTM International:
  - 1. ASTM D16 - Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
  - 2. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
- B. Painting and Decorating Contractors of America:
  - 1. PDCA - Architectural Painting Specification Manual.
- C. SSPC: The Society for Protective Coatings:
  - 1. SSPC - Steel Structures Painting Manual.

1.3 DEFINITIONS

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

1.4 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on finishing products.
- C. Samples:
  - 1. Submit two paper chip samples, 6 x 6 inch in size illustrating range of colors available for each surface finishing product scheduled.
- D. Manufacturer's Installation Instructions: Submit special surface preparation procedures, substrate conditions requiring special attention.

## 1.5 CLOSEOUT SUBMITTALS

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

## 1.6 QUALIFICATIONS

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

## 1.7 PRE-INSTALLATION MEETINGS

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

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- C. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- D. Paint Materials: Store at minimum ambient temperature of 45 degrees F and maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

## 1.9 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements.
- B. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer.
- C. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by paint product manufacturer.

- D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.
- F. Provide lighting level of 80 ft candle measured mid-height at substrate surface.

#### 1.10 SEQUENCING

- A. Section 01100 - Summary: Work sequence.
- B. Sequence application to the following:
  - 1. Do not apply finish coats until paintable sealant is applied.
  - 2. Back prime wood trim before installation of trim.

### PART 2 PRODUCTS

#### 2.1 PAINTS AND COATINGS

- A. Manufacturers: Paint, Transparent Finishes, Stain, Primer Sealers and Block Fillers.
  - 1. Sherwin Williams.
  - 2. Coronado Paints.
  - 3. Devoe Paint Co.
  - 4. The Glidden Co.
  - 5. ICI Paint Stores.
  - 6. Substitutions: Section 01600 - Product Requirements.

#### 2.2 COMPONENTS

- A. Coatings: Ready mixed, except field catalyzed coatings. Prepare coatings:
  - 1. To soft paste consistency, capable of being readily and uniformly dispersed to homogeneous coating.
  - 2. For good flow and brushing properties.
  - 3. Capable of drying or curing free of streaks or sags.
- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve finishes specified; commercial quality.
- C. Patching Materials: Latex filler.
- D. Fastener Head Cover Materials: Latex filler.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify surfaces and substrate conditions are ready to receive Work as instructed by product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report conditions capable of affecting proper application.
- D. Test shop applied primer for compatibility with subsequent cover materials.

### 3.2 PREPARATION

- A. Surface Appurtenances: Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. Surfaces: Correct defects and clean surfaces capable of affecting work of this section. Remove or repair existing coatings exhibiting surface defects.
- C. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium and bleach. Rinse with clean water and allow surface to dry.
- D. Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- E. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
- F. Concrete Floors: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- G. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
- H. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- I. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

- J. Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- K. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by [hand] [power tool] wire brushing or sandblasting; clean by washing with solvent. Apply treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- L. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. [Prime metal items including shop primed items.]
- M. Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.
- N. Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.
- O. Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior paintable caulking compound after prime coat has been applied.
- P. Exterior Wood Scheduled to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior caulking compound after sealer has been applied.
- Q. Metal Doors Scheduled for Painting: Prime metal door top and bottom edge surfaces.

### 3.3 EXISTING WORK

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

### 3.4 APPLICATION

- A. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- B. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless specified otherwise.
- C. Sand wood and metal surfaces lightly between coats to achieve required finish.

- D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- E. Where clear finishes are required, tint fillers to match wood. Work fillers into grain before set. Wipe excess from surface.
- F. Prime concealed surfaces of interior woodwork with primer paint.
- G. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.
- H. Finishing Mechanical And Electrical Equipment:
  - 1. Refer to Division 15 and Division 16 for schedule of color coding and identification banding of equipment, duct work, piping, and conduit.
  - 2. Paint shop primed equipment.
  - 3. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
  - 4. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are shop finished.
  - 5. Paint exposed conduit and electrical equipment occurring in finished areas.
  - 6. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
  - 7. Color code equipment, piping, conduit, and exposed duct work in accordance with requirements indicated..
  - 8. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

### 3.5 FIELD QUALITY CONTROL

- A. 01700 - Execution Requirements: Testing, adjusting, and balancing.

### 3.6 CLEANING

- A. Section 01700 - Execution Requirements: Final cleaning.
- B. Collect waste material which may constitute fire hazard, place in closed metal containers, and remove daily from site.

3.7 SCHEDULE

**EXTERIOR SCHEDULE - NEW CONSTRUCTION**

			<b>MDF/PER COAT</b>	<b>VOC/g/L</b>
<b>A. STUCCO</b>				
1.	Primer:	One coat S-W Loxon Acrylic Primer (A24W300)	3.2	130
2.	Finish:	Two coats SherLastic Elastomeric Coating (A5-100)	12.0	96
<b>B. FERROUS METAL - UNPRIMED</b>				
1.	Primer:	One coat S-W Kem Kromik Universal Metal Primer (B50WZ Series)	3.0	405
2.	Finish:	Two coats S-W Industrial Enamel (B54 Series)	2.0	440
<b>C. FERROUS METAL - SHOP PRIMED</b>				
1.	Primer:	Touch up as needed with S-W Kem Kromik Universal Metal Primer (B50WZ Series)	3.0	405
2.	Finish:	Two coats S-W Industrial Enamel (B54 Series)	2.0	440
<b>D. GALVANIZED METAL (NON-FERROUS METAL)</b>				
1.	Finish:	Two coats S-W DTM Acrylic Semi-Gloss Coating (B66W200 Series)	2.5	208

**INTERIOR SCHEDULE - NEW CONSTRUCTION**

<b>A. CONCRETE MASONRY UNITS (C.M.U.)</b>				
1.	Block Filler:	S-W Heavy Duty Block filler (B42W46)		43
2.	Finish:	Two coats S-W ProMar 200 Interior Latex Semi-Gloss (B31W2200 Series)	1.5	85

<b>B. GYPSUM BOARD - CEILINGS</b>			
1.	Primer:	One coat S-W PrepRite 200 Latex Primer (B28W200)	1.10      86
2.	Finish:	Two coats S-W ProMar 200 Interior Latex Eg-Shel (B20W2200 Series)	1.6      142
<b>C. FERROUS METAL - UNPRIMED</b>			
1.	Primer:	One coat S-W Kem Kromik Universal Metal Primer (B50WZ Series)	3.0      405
2.	Finish:	Two coats S-W Industrial Enamel (B54 Series)	2.0      440
<b>D. FERROUS METAL - SHOP PRIMED</b>			
1.	Primer:	Touch up as needed with S-W Kem Kromik Universal Metal Primer (B50WZ Series)	3.0      405
2.	Finish:	Two coats S-W Industrial Enamel (B54 Series)	2.0      440
<b>E. GALVANIZED METAL (NON-FERROUS METAL)</b>			
1.	Finish:	Two coats S-W DTM Acrylic Semi-Gloss Coating (B66W200 Series)	2.5      208

**INTERIOR SCHEDULE - PREVIOUSLY PAINTED**

<b>A. CONCRETE MASONRY UNITS (C.M.U.)</b>			
1.	Block Filler:	Spot Fill Bare CMU S-W Heavy Duty Block filler (B42W46)	43
2.	Finish:	Two coats S-W ProMar 200 Interior Latex Semi-Gloss (B31W2200 Series)	1.5      85
<b>B. GYPSUM BOARD</b>			
1.	Primer:	Spot Prime Bare Gypsum S-W PrepRite 200 Latex Primer (B28W200)	1.10      86
2.	Finish:	Two coats S-W ProMar 200 Interior Latex Semi-Gloss (B31W2200 Series)	1.5      85
<b>C. WOOD - PAINTED</b>			
1.	Primer:	Spot Prime Bare Wood S-W PrepRite Wall & Wood Oil Primer (B49W2)	1.9      473
2.	Finish:	Two coats S-W ProMar 200 Interior Alkyd Semi-Gloss (B34W200 Series)	1.7      442



D. FERROUS METAL - UNPRIMED

1.	Primer:	Spot Prime Bare Metal		
		S-W Kem Kromik Universal Metal Primer (B50WZ Series)	3.0	405
2.	Finish:	Two coats S-W Industrial Enamel (B54 Series)	2.0	440

E. FERROUS METAL - SHOP PRIMED

1.	Primer:	Spot Prime Bare Metal		
		S-W Kem Kromik Universal Metal Primer (B50WZ Series)	3.0	405
2.	Finish:	Two coats S-W Industrial Enamel (B54 Series)	2.0	440

F. GALVANIZED METAL (NON-FERROUS METAL)

1.	Finish:	Two coats S-W DTM Acrylic Semi-Gloss Coating (B66W200 Series)	2.5	208
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END OF SECTION