SECTION 09 22 00

METAL SUPPORT ASSEMBLIES

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\*\* NOTE TO SPECIFIER \*\* Steel Stud Manufacturer's Association (SSMA); steel framing.
This section is based on the products of the Steel Stud Manufacturer's Association, who's members cover all US Territories. The SSMA's headquarters is located at:
201 N. Maple Grove Rd. Suite 100
Boise, ID 83704
Phone: 208-229-7660
Email: info@ssma.com
Web: www.ssma.com
[Click Here] for additional information.
This master specification section is intended for use in the preparation of a project specification section covering metal framing systems for interior non-load bearing walls, interior ceilings, and exterior soffits. Load-bearing framing systems are specified in Section 05 40 00 - Cold-Formed Metal Framing. Suspension systems for acoustical ceilings are specified in Section 09 51 23 - Acoustical Tile Ceilings.
This specification is sponsored by the Steel Stud Manufacturers Association (SSMA) who's members are listed under Part 2 - Products.
Mission: SSMA's mission is to pro-actively represent member firms engaged in the manufacture, marketing and sale of cold-formed steel framing members, as a unified voice to the residential and light commercial construction industry serviced by its products, which includes contractors, distributors, design professionals, code officials and standards organizations.
Product Certification: SSMA offers the Code Compliance Certification Program as a means for member manufacturers to certify that structural and non-structural cold-formed steel framing they produce complies with all current code requirements. Certification is independently evaluated.
Sustainability: SSMA has developed Technical Note - Credits for Cold-Formed Steel Framing Manufacturers, for use on projects evaluated under LEED 2.2. Although the wording and examples in the Technical Note do not specifically apply to other versions of LEED or other rating systems, the principles, recycling rates, and other data are still accurate and applicable, and may be quoted/used for requirements beyond LEED 2.2.
Publications: SSMA's technical library currently features SSMA's12/2015 International Building Code (IBC) version of their Product Technical Guide as well as ESR-3064P, which complies with the 2012 and 2015 IBC and 2013 California and Florida Building Codes for both structural and nonstructural products.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Edit the following paragraphs to include only those items specified in this section.

* + 1. Metal stud interior partition framing.
		2. Metal interior wall furring.
		3. Suspended metal channel soffit framing.
		4. Suspended metal channel ceiling framing.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Division 01: Administrative, procedural, and temporary work requirements.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):
			1. A591/A591M - Standard Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Weight (Mass) Applications.
			2. A641 - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
			3. A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
			4. A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.
			5. C635 - Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
			6. C636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
			7. C645 - Standard Specification for Non-Load (Axial) Bearing Steel Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board.
			8. C754 - Standard Practice for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Wall board, Backing Board, or Water-Resistant Backing Board.
			9. E90 - Standard Test Method for Airborne Sound Transmission Loss of Building Partitions.
			10. E413 - Standard Test Method for Classification for Rating Sound Insulation.
		2. Gypsum Association (GA)
			1. GA-600 - Fire Resistance Design Manual.
		3. Steel Stud Manufacturer's Association (SSMA):
			1. Member Directory.
		4. Underwriters Laboratories, Inc. (UL):
			1. Fire Resistance Directory.
	1. SUBMITTALS

\*\* NOTE TO SPECIFIER \*\* Limiting submittals to only those actually required helps to minimize liability arising from the review of submittals. Minimize submittals on smaller, less complex projects.

* 1. Include the following for submission of shop drawings, product data, and samples for the Architect's review.
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Illustrate framing types, gages, and locations.
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: Two representative units of each type, size, pattern and color.
		2. Shop Drawings: Framing layout, components, connections, fastenings, and pertinent details.

\*\* NOTE TO SPECIFIER \*\* Include the following for submission of sustainable design submittals.

* + 1. Sustainable Design Submittals:
			1. Recycled Content.
			2. Regional Materials.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Current member of SSMA.
		2. The following paragraph specifies a minimum level of experience required of the parties performing the work of this section. Retain if required, and edit to suit project requirements.
		3. Installer Qualifications: Minimum \_\_\_\_ years documented experience in work of this Section.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturers Association: The Steel Stud Manufacturer's Association, who's members cover all US Territories. The SSMA's headquarters is located at: 201 N. Maple Grove Rd. Suite 100; Boise, ID 83704; Phone: 208-229-7660; Email: info@ssma.com; Web: www.ssma.com.

\*\* NOTE TO SPECIFIER \*\* The following list includes manufacturers that are known to produce one or more of the products specified in this section, and that have websites available to assist in product research. Careful consideration of product attributes in relationship to project requirements is required before including products in the paragraphs that follow. This list is not intended to include every available manufacturer.

* + 1. Acceptable Association Manufacturers:
			1. Consolidated Fabricators Corporation. ([www.confabbpd.com](http://www.confabbpd.com) )
			2. Custom Stud, Inc. ([www.customstud.com](http://www.customstud.com) )
			3. Frametek Steel Products. ([www.frameteksteel.com](http://www.frameteksteel.com) )
			4. Olmar Supply Inc. ([www.olmarsupply.com](http://www.olmarsupply.com) )
			5. SCAFCO Corporation. ([www.scafco.com](http://www.scafco.com) )
			6. Steel Construction Systems. ([www.steelconsystems.com](http://www.steelconsystems.com) )
			7. United Metal Products, Inc. ([www.unitedmetalproducts.info](http://www.unitedmetalproducts.info) )
			8. Novus Advanced Manufacturing (<https://novussteel.us>)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	1. PERFORMANCE REQUIREMENTS

\*\* NOTE TO SPECIFIER \*\* Include the following for fire-rated assemblies.

* + 1. Fire Resistance Ratings:
			1. Construct assemblies to achieve fire resistance ratings indicated on Drawings.
				1. Conform with applicable GA or UL design number.
				2. Conform with referenced design number.
			2. If requirements of assembly numbers referenced conflict with Contract Document requirements, conform to assembly requirements.
		2. Acoustic Ratings: Construct assemblies to achieve acoustic ratings indicated on Drawings, tested to ASTM E90 and classified in accordance with ASTM E413.

\*\* NOTE TO SPECIFIER \*\* Refer to manufacturer's technical data for assistance in determining allowable deflections.

* + 1. Deflection Limits:
			1. Limit deflection of partitions based on 5 psf (239.4 Pa) uniform design load.
				1. Partitions receiving tile, plaster, or cut stone: L/240.
				2. Partitions receiving tile, plaster, or cut stone: L/360.
				3. Partitions receiving tile, plaster, or cut stone: \_\_\_\_.
				4. Other partitions: L/120.
				5. Other partitions: \_\_\_\_.
				6. If partition height exceeds stud manufacturer's limiting height for applicable loading and deflection, install bracing above ceiling, decrease stud spacing, or increase stud gage.
			2. Limit deflection of partitions based on \_\_\_\_ psf (\_\_\_\_ Pa) uniform design load.
				1. Partitions receiving tile, plaster, or cut stone: L/240.
				2. Partitions receiving tile, plaster, or cut stone: L/360.
				3. Partitions receiving tile, plaster, or cut stone: \_\_\_\_.
				4. Other partitions: L/120.
				5. Other partitions: \_\_\_\_.
				6. If partition height exceeds stud manufacturer's limiting height for applicable loading and deflection, install bracing above ceiling, decrease stud spacing, or increase stud gage.
			3. Limit deflection of ceilings: L/360.
			4. Limit deflection of ceilings: \_\_\_\_.
	1. MATERIALS
		1. Steel: A653/A653M or ASTM A1003/1003M,
			1. Class: G40 hot dip galvanized.
			2. Class: \_\_\_\_ hot dip galvanized.
		2. Recycled Content: Minimum \_\_\_\_ percent, with \_\_\_\_ percent classified as post-consumer.
	2. COMPONENTS
		1. Provide components in accordance with ASTM C645.
		2. Studs: Non-load bearing roll-formed steel, SSMA stud profile, C-shaped, punched for utility access.
		3. Top and Bottom Tracks:
			1. Same material and finish as studs. C-shaped.
			2. Standard Track: SSMA stud track profile, 1-1/4 inch (32 mm) legs.
			3. Standard Track: SSMA stud track profile, 1-1/2 inch (38 mm) legs.
			4. Standard Track: SSMA stud track profile, \_\_\_\_ inch (\_\_\_\_ mm) legs.
			5. Deep Leg Track: SSMA deep stud track profile, 2 inch (51 mm) legs.
			6. Deep Leg Track: SSMA deep stud track profile, \_\_\_\_ inch (\_\_\_\_ mm) legs.

\*\* NOTE TO SPECIFIER \*\* Include the following where deflection of overhead structure is anticipated.

* + - 1. Deflection track: Deep leg track with slotted screw holes.
				1. Permitted movement of overhead structure without damage to partition: 1/2 inch (13 mm).
				2. Permitted movement of overhead structure without damage to partition: \_\_\_\_ inch (\_\_\_\_ mm).

\*\* NOTE TO SPECIFIER \*\* Include the following for ceiling framing fabricated from channels.

* + 1. Suspended Ceiling Framing:
			1. Runner Channels: Cold rolled formed steel. Channel shaped.
				1. Channel Depth: 1-1/2 inch (38 mm) legs.
				2. Channel Depth: \_\_\_\_ inch (\_\_\_\_ mm) legs.
				3. Galvanized Steel Thickness: 16 gage.
				4. Galvanized Steel Thickness: \_\_\_\_ gage.
			2. Furring Channels: Cold rolled formed steel. Hat shaped.
				1. Depth: 7/8 inch (22 mm) deep.
				2. Depth: \_\_\_\_ inch (\_\_\_\_ mm) deep.
				3. Galvanized Steel Thickness: 25 gage.
				4. Galvanized Steel Thickness: \_\_\_\_ gage.

\*\* NOTE TO SPECIFIER \*\* Include the following for a proprietary ceiling framing system.

* + 1. Suspended Ceiling Framing per ASTM C635: Manufactured specifically for suspended gypsum board ceiling applications.
			1. Tees: Double web design; 1-1/2 inches (38 mm) high with 1-3/8 inch (35 mm) wide knurled faces, with interlocking ends and punched holes for cross tees and hanger wires.
			2. Material: Galvanized steel.
		2. Suspended Soffit Framing:
			1. Runner Channels. Cold roll formed steel.
				1. Channel Depth: 1-1/2 inches (38 mm).
				2. Channel Depth: \_\_\_\_ inches (\_\_\_\_ mm).
				3. Galvanized Steel Thickness: 16 gage.
				4. Galvanized Steel Thickness: \_\_\_\_ gage.
			2. Furring Channels: Cold roll formed steel.
				1. Channel Depth: 3/4 inches (19 mm).
				2. Channel Depth: \_\_\_\_ inches (\_\_\_\_ mm).
				3. Galvanized Steel Thickness: 16 gage.
				4. Galvanized Steel Thickness: \_\_\_\_ gage.
		3. Resilient Channels:
			1. Depth x Width: 1/2 x 2-1/2 inches (13 x 64 mm).
			2. Depth x Width: \_\_\_\_ x \_\_\_\_ inches (\_\_\_\_ x \_\_\_\_ mm).
			3. Steel Thickness: 25 gage.
			4. Steel Thickness: \_\_\_\_ gage.
		4. Wall Furring Channels:
			1. Hat Shaped: 7/8 inch (22 mm) deep.
			2. Hat Shaped: \_\_\_\_ inch (\_\_\_\_ mm).
			3. Hat Shaped: Depth as indicated.
			4. Z-Shaped: \_\_\_\_ inch (\_\_\_\_ mm).
			5. Z-Shaped: Depth as indicated.
			6. Steel Thickness: 25 gage.
			7. Steel Thickness: \_\_\_\_ gage.

\*\* NOTE TO SPECIFIER \*\* Include the following for a proprietary shaft wall framing system. Coordinate with liner panels specified in Section 09 2900.

* + 1. Shaft Wall Framing: \_\_\_\_ x \_\_\_\_ or approved substitute, consisting of studs formed to receive gypsum liner panels and top and bottom tracks.
	1. ACCESSORIES
		1. Fasteners:
			1. Pan Head Screws: 3/8 inch (9 mm) long pan head screws.
			2. Pan Head Screws: \_\_\_\_ inch (\_\_\_\_ mm) long pan head screws.
		2. Wire: ASTM A 641, galvanized steel.
			1. Hanger Wire: 8 gage base steel thickness.
			2. Hanger Wire: \_\_\_\_ gage base steel thickness.
			3. Tie Wire: 18 gage base steel thickness, soft annealed.
			4. Tie Wire: \_\_\_\_ gage base steel thickness, soft annealed.
		3. Wall Furring Brackets: Galvanized steel, two piece adjustable type.
		4. Furring Channel Clips: Galvanized steel.
1. EXECUTION

\*\* NOTE TO SPECIFIER \*\* Delete article if not required. Delete options not required.

* 1. INSTALLATION OF PARTITION FRAMING
		1. Install in accordance with ASTM C754 and manufacturer's instructions.
		2. Top and Bottom Tracks:
			1. Attach at ends and 24 inches (610 mm) on center maximum.
			2. Attach at ends and \_\_\_\_ inches (\_\_\_\_ mm) on center maximum.
		3. Position Studs Vertically in Tracks.
			1. Center to Center Spacing: 16 inches (406 mm) maximum unless indicated otherwise.
			2. Center to Center Spacing: \_\_\_\_ inches (\_\_\_\_ mm) maximum unless indicated otherwise.
		4. Install deflection track at head of partitions extending to structure. Fasten studs to top track in manner permitting track movement.
			1. Cut studs 1/2 inch (13 mm) shorter than required length and fit into top track.
			2. Cut studs \_\_\_\_ inch (\_\_\_\_ mm) shorter than required length and fit into top track.
		5. Door Frames and abutting Construction:
			1. Locate studs 2 inches (51 mm) from door frames and abutting construction.
			2. Locate studs \_\_\_\_ inches (\_\_\_\_ mm) from door frames and abutting construction.
		6. Use heavier gage studs or double studs on both sides of openings in partitions.
		7. Install horizontal track as header above openings in partitions. Install studs from header to top track.
		8. Brace furred partitions with adjustable bracket located at mid height.
		9. Provide wood or metal bracing in partitions to receive and support fixtures, trim, accessories and other applied items.
		10. Ceiling Height Partitions Bracing to Structure:
			1. On center Maximum: 48 inches (1219 mm).
			2. On center Maximum: \_\_\_\_ inches (\_\_\_\_ mm).

\*\* NOTE TO SPECIFIER \*\* Include the following for ceiling framing fabricated from channels. Delete options not required.

* 1. INSTALLATION OF CEILING FRAMING
		1. Install in accordance with ASTM C754 and manufacturer's instructions.
		2. Hanger Wire Spacing:
			1. On Center Maximum Along Runner Channels: 36 inches (914 mm).
			2. On Center Maximum Along Runner Channels: 48 inches (1219 mm).
			3. On Center Maximum Along Runner Channels: \_\_\_\_ inches (\_\_\_\_ mm).
			4. Within 6 inches (152 mm) of ends of channels; secure to structure above.
			5. Within \_\_\_\_ inches (\_\_\_\_ mm) of ends of channels; secure to structure above.
		3. Runner Channels Spacing:
			1. On Center Maximum: 48 inches (1219 mm).
			2. On Center Maximum: (\_\_\_\_ inches (\_\_\_\_ mm).
			3. Within 6 inches (152 mm) of abutting construction.
			4. Within \_\_\_\_ inches (\_\_\_\_ mm) of abutting construction.
			5. Position channels for ceiling height; level and saddle tie along channels.
			6. Clearance Between Channels and Abutting Construction: 1 inch (25 mm).
			7. Clearance Between Channels and Abutting Construction: \_\_\_\_ inch (\_\_\_\_ mm).
			8. Overlap channels ends 12 inches (305 mm) at splices. Secure each end with double loop tie wire.
			9. Overlap channels ends \_\_\_\_ inches (\_\_\_\_ mm) at splices. Secure each end with double loop tie wire.
		4. Furring Channels Spacing:
			1. On Center Maximum: 16 inches (406 mm).
			2. On Center Maximum: (\_\_\_\_ inches (\_\_\_\_ mm).
			3. Perpendicular to Runners and Within 6 inches (152 mm) of abutting construction.
			4. Perpendicular to Runners and Within \_\_\_\_ inches ( mm) of abutting construction.
			5. Clearance Between Channels and Abutting Construction: 1 inch (25 mm).
			6. Clearance Between Channels and Abutting Construction: \_\_\_\_ inch (\_\_\_\_ mm).
			7. Secure to runners with clips on alternate sides of runners; saddle tie if clips cannot be alternated.
			8. Overlap channel ends 8 inches (203 mm) at splices. Secure each end with double loop tie wire.
			9. Overlap channel ends \_\_\_\_ inches (\_\_\_\_ mm) at splices. Secure each end with double loop tie wire.
		5. Where openings interrupt furring or runner channels, install reinforcing to restore stability.
		6. Provide double runner or furring channels side by side where expansion and control joints occur; do not continue channels over joints.

\*\* NOTE TO SPECIFIER \*\* Include the following for a proprietary ceiling framing system. Delete options not required.

* 1. INSTALLATION OF CEILING FRAMING
		1. Install in accordance with ASTM C636 and manufacturer's instructions.
		2. Hanger Wire Spacing:
			1. On Center Maximum: 48 inches (1219 mm).
			2. On Center Maximum: \_\_\_\_ inches (\_\_\_\_ mm).
			3. Install additional hangers where required to support light fixtures and ceiling supported equipment.
		3. Do not suspend hangers directly from metal deck. Attach steel channel horizontally to adjacent framing members; place hanger at regular spacing.
		4. Hang suspension system independent of walls, columns, ducts, pipes, and conduit.
		5. Where ducts or other equipment prevent regular spacing of hangers:
			1. Reinforce nearest related hangers to span extra distance.
			2. Suspend steel channel horizontally beneath duct or equipment; place hanger at regular spacing.
		6. Main Tee Installation:
			1. On Center Spacing: 48 inches (1219 mm). Fully engage end locks.
			2. On Center Spacing: \_\_\_\_ inches (\_\_\_\_ mm). Fully engage end locks.
		7. Cross Tees: Install perpendicular to main tees to form a rectangular grid pattern. Lock cross tees to main tees.
			1. Grid Pattern Modules: 16 x 48 inches (406 x 1219 mm).
			2. Grid Pattern Modules: 24 x 48 inches (610 x 1219 mm).
			3. Grid Pattern Modules: \_\_\_\_ x \_\_\_\_ inches ( mm).

\*\* NOTE TO SPECIFIER \*\* Delete article if not required. Delete options not required.

* 1. INSTALLATION OF RESILIENT FURRING
		1. Install channels perpendicular to framing:
			1. On Center Spacing: 16 inches (406 mm) maximum.
			2. On Center Spacing: \_\_\_\_ inches (\_\_\_\_ mm) maximum.
			3. Locate channels 2 inches (51 mm) of floor and 6 inches (152 mm) of ceiling.
			4. Locate channels within \_\_\_\_ inches (\_\_\_\_ mm) of floor and within 6 inches (152 mm) of ceiling.
		2. Screw attach channels to each support.
		3. Screw attach channel framing member through both flanges, centered in framing member.
			1. Channel Overlap at Splices: 2 inches (51 mm).
			2. Channel Overlap at Splices: \_\_\_\_ inches (\_\_\_\_ mm).

\*\* NOTE TO SPECIFIER \*\* Delete article if not required. Delete options not required.

* 1. INSTALLATION OF WALL FURRING
		1. Install in accordance with ASTM C754 and manufacturer's instructions.
		2. Channel Spacing: Secure with fasteners staggered on alternating flanges.
			1. On Center Maximum: 24 inches (610 mm).
			2. On Center Maximum: \_\_\_\_ inches (\_\_\_\_ mm).
			3. Distance from Corners: 3 inches (76 mm).
			4. Distance from Corners: \_\_\_\_ inches (\_\_\_\_ mm).
		3. Channel Nesting Distance at Splices:
			1. Overlap: 8 inches (203 mm).
			2. Overlap: \_\_\_\_ inches (\_\_\_\_ mm).
			3. Secure with two fasteners in each flange.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required. Delete option not required.

* 1. INSTALLATION OF SHAFT WALL SYSTEM
		1. Install in accordance with manufacturer's instructions.
		2. Position tracks at floor and ceiling with short leg toward finish side of wall.
			1. Attach at ends and 24 inches (610 mm) on center maximum.
			2. Attach at ends and \_\_\_\_ inches (\_\_\_\_ mm) on center maximum.
		3. If wall height exceeds maximum panel length, position panel end joints within upper or lower third of wall. Stagger joints top and bottom in adjacent panels; reinforce end joints with horizontal stud.
		4. Install stud between tracks with liner inserted into stud groove.
		5. Progressively install succeeding studs and liner panels.
		6. Install full length studs vertically at intersections, door openings, corners, and ends of partitions.
		7. Frame openings cut within a liner panel with track around perimeter.
		8. Over doors, install horizontal track; attach to studs with clip angles and screws.

END OF SECTION