

SECTION 092216 – NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior partitions.
2. Suspension systems for interior ceilings and soffits.

B. Related Sections:

1. Section 054000 – Cold-Formed Metal Framing
2. Section 079200 – Joint Sealants

C. Reference and Industry Standards

1. The following reference standards shall be applicable to this Section:
 - a. New York City Building Code, **current** edition, as amended.
 - b. The current Enterprise Green Communities (EGC) Criteria, and the current New York City overlay.
2. Industry Standards
 - ASTM (American Society for Testing and Materials)

D. The current NYC Overlay of the current Enterprise Green Communities Criteria:

1. Mandatory Requirements: See the NYC Overlay of the EGC reference standard for full specifications.
 - a. All projects must achieve compliance with the mandatory criteria measures that are applicable:
 - Criterion 6.10: Construction Waste Management
2. Optional Project Requirements for Certification Points
 - a. Additionally, rehab projects are required to achieve **55** optional points. Criteria with optional points related to this Specification Section include, but may not be limited to:
 - Criterion 6.2 Recycled Content and Ingredient Transparency
 - Criterion 6.5 Environmentally Responsible Material Selection
 - Criterion 6.7 Regional Materials
 - Criterion 6.10: Construction Waste Management

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of code-compliance certification for studs and tracks.
- B. Documentation for compliance with Enterprise Green Communities Criteria.

1.4 QUALITY ASSURANCE

- A. Engineering and Structural Performance: Provide the services of a Professional Engineer, licensed in the State of New York and who is experienced in providing engineering services of the kind indicated, to design and certify that the work of this section meets or exceeds the performance requirements specified in this section.
- B. Limit deflection to L/240 for non-rigid finishes, L/360 for rigid finishes applied over drywall. Minimum design lateral load is 5 psf within units, 7.5 psf in hallways and common areas

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

2.2 FRAMING SYSTEMS

- A. Framing Members, General: Comply with ASTM C754 for conditions indicated.
 - 1. Steel Sheet Components: Comply with ASTM C645 requirements for steel unless otherwise indicated.
 - 2. Protective Coating: Hot-dip galvanized unless otherwise indicated.
- B. Studs and Tracks: ASTM C645. Use **[either]** conventional steel studs and tracks **[or embossed, high-strength steel studs and tracks]**.
 - 1. Minimum Base-Steel Thickness: **[As required by performance requirements for horizontal deflection] [0.0147 inch] [0.0179 inch] [0.0190 inch] [0.0269 inch] [0.0296 inch] [0.0329 inch]**.
 - 2. Depth: **[3-5/8 inches] [6 inches] [4 inches] [2-1/2 inches] [1-5/8 inches]**.

- C. Firestop Tracks: Top track manufactured to allow partition heads to expand and contract with movement of structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
- D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
 - 1. Minimum Base-Steel Thickness: [**As indicated on Drawings**] [**0.0179 inch**] [**0.0269 inch**] [**0.0296 inch**] [**0.0329 inch**] <Insert thickness>.
- E. Cold-Rolled Channel Bridging: Steel, 0.0538-inch minimum base-steel thickness, with minimum 1/2-inch-wide flanges.
 - 1. Depth: [**As indicated on Drawings**] [**1-1/2 inches**] <Insert depth>.
 - 2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch-thick, galvanized steel.
- F. Hat-Shaped, Rigid Furring Channels: ASTM C645.
 - 1. Minimum Base-Steel Thickness: [**As indicated on Drawings**] [**0.0179 inch**] [**0.0296 inch**] [**0.0329 inch**] <Insert thickness>.
 - 2. Depth: [**As indicated on Drawings**] [**7/8 inch**] [**1-1/2 inches**].
- G. Resilient Furring Channels: 1/2-inch-deep, steel sheet members designed to reduce sound transmission.
 - 1. Configuration: [**Asymmetrical**] [**or**] [**hat shaped**].
- H. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges.
 - 1. Depth: [**As indicated on Drawings**] [**3/4 inch**] <Insert depth>.
 - 2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch.
 - 3. Tie Wire: ASTM A641, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.
- I. Z-Shaped Furring: With slotted or non-slotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum uncoated-steel thickness of 0.0179 inch, and depth required to fit insulation thickness indicated.

2.3 SUSPENSION SYSTEMS

- A. Tie Wire: ASTM A641, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.
- B. Wire Hangers: ASTM A641, Class 1 zinc coating, soft temper, 0.16 inch in diameter.
- C. Hanger Rods: Provide mild-steel rods, sized as required, hot-dip galvanized.
- D. Flat Hangers: Steel sheet, in size indicated on Drawings.

- E. Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-steel thickness of 0.0538 inch and minimum 1/2-inch-wide flanges.
 - 1. Depth: [**As indicated on Drawings**] [**2-1/2 inches**] [**2 inches**] [**1-1/2 inches**].
- F. Furring Channels (Furring Members):
 - 1. Cold-Rolled Channels: 0.0538-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges, 3/4 inch deep.
 - 2. Steel Studs and Tracks: ASTM C645. Use [**either**] conventional steel studs and tracks [**or embossed, high-strength steel studs and tracks**].
 - a. Minimum Base-Steel Thickness: [**As indicated on Drawings**] [**0.0147 inch**] [**0.0179 inch**] [**0.0190 inch**] [**0.0269 inch**] [**0.0296 inch**] [**0.0329 inch**].
 - b. Depth: [**As indicated on Drawings**] [**1-5/8 inches**] [**2-1/2 inches**] [**3-5/8 inches**].
 - 3. Hat-Shaped, Rigid Furring Channels: ASTM C645, 7/8 inch deep.
 - a. Minimum Base-Steel Thickness: [**As indicated on Drawings**] [**0.0179 inch**] [**0.0296 inch**] [**0.0329 inch**] <Insert thickness>.
 - 4. Resilient Furring Channels: 1/2-inch-deep members designed to reduce sound transmission.
 - a. Configuration: [**Asymmetrical**] [**or**] [**hat shaped**].

2.4 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 - 1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Isolation Strip at Exterior Walls: Provide one of the following:
 - 1. Asphalt-Saturated Organic Felt: ASTM D226, Type I (No. 15 asphalt felt), non-perforated.
 - 2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C754.
 - 1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C841 that apply to framing installation.
 - 2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C1063 that apply to framing installation.

3. Gypsum Board Assemblies: Also comply with requirements in ASTM C840 that apply to framing installation.
- B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.
- C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- D. Install bracing at terminations in assemblies.
- E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.2 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.
 1. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb unless otherwise indicated.
 - b. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 2. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
 3. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
 - a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
 4. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
 5. Curved Partitions:
 - a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.

- b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches o.c.

E. Z-Shaped Furring Members:

1. Erect insulation, specified in *Section 072100 – Thermal Insulation*, vertically and hold in place with Z-shaped furring members spaced 24 inches o.c.
2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches from corner and cut insulation to fit.

- F. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.3 INSTALLING CEILING SUSPENSION SYSTEMS

- A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- C. Suspend hangers from building structure as follows:
 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - a. Size supplemental suspension members and hangers to support ceiling loads within **[performance limits established by referenced installation standards]** <Insert deflection limit>.
 3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for

structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.

5. Do not attach hangers to steel roof deck.
 6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 8. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
- E. Seismic Bracing: Sway-brace suspension systems [**with hangers used for support**] <Insert requirements>.
- F. Installation Tolerances: Install suspension systems that are level to within [**1/8 inch in 12 feet**] <Insert dimensions> measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216