



Telling Industries, LLC



Telling Industries, LLC
4420 Sherwin Rd.
Willoughby, OH 44094

Phone: 866-372-6384
Phone: 440-974-3370
Fax: 440-974-3408

Email: sales.corp@tellingindustries.com
Website: www.buildstrong.com

This Manu-Spec® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), including *MasterFormat*®, *SectionFormat*™ and *PageFormat*™. A Manu-Spec is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate product model numbers, styles and types are used in Specifier Notes and in the specification text Article titled "Acceptable Material." Metric conversion, where used, is soft metric conversion.

This Manu-Spec specifies non-structural metal framing as distributed by Telling Industries, LLC. Revise Manu-Spec section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

SECTION 09 22 16 NON-LOAD BEARING STEEL FRAMING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: This Section specifies non-structural metal framing.

Specifier Note: Revise Paragraph below to suit project requirements. Add section numbers and titles per CSI MasterFormat and specifier's practice.

- B. Related Requirements:

Specifier Note: Include in this Paragraph only those sections and documents that directly affect the work of this section. If a reader of this section could reasonably expect to find a product or component specified in this section but it is actually specified elsewhere, then the related section number(s) should be listed in the Subparagraph below. Do not include Division 00 documents or Division 01 sections since it is assumed that all technical sections are related to all project Division 00 documents and Division 01 sections to some degree. Refer to other documents with caution since referencing them may cause them to be considered part of the Contract.

1. Section [_____].

1.2 REFERENCES

Specifier Note: Paragraph below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Paragraph when specifying products and installation by an industry reference standard. List retained standard(s) referenced in this section alphabetically. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Contract Conditions and Section 01 42 00 - References may establish the edition date of standards. This Paragraph does not require compliance with standard(s), but is a listing of all references used in this section. Only include here standards that are referenced in the body of the specification in PARTS 1, 2 and/or 3. Do not include references to building codes at any level.

A. Reference Standards:

1. American Iron and Steel Institute (AISI):
 - a. COSP Specification for the Design of Cold-Formed Steel Structural Members, Code of Standard Practice.
2. ASTM International (ASTM):
 - a. ASTM A641/A641M Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 - b. ASTM A1003 Standard Specification For Steel Sheet, Carbon, Metallic- And Nonmetallic-Coated For Cold-Formed Framing Members
 - c. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - d. ASTM C641 Standard Test Method for Iron Staining Materials in Lightweight Concrete Aggregates.
 - e. ASTM C645 is Standard Specification for Nonstructural Steel Framing Members.
 - f. ASTM C754 is Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
 - g. ASTM C840 Specification for Application and Finishing of Gypsum Board.
 - h. ASTM D226 Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 - i. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
 - j. ASTM E90 is Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
 - k. ASTM E119 is Standard Test Methods for Fire Tests of Building Construction and Materials.
 - l. ASTM E413 Classification for Rating Sound Insulation.
3. Gypsum Association (GA):
 - a. GA-600 Fire Resistance Design Manual.
4. Steel Framing Alliance (SFA)
 - a. Steel Framing Alliance Fire & Acoustic Guide.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate work of this Section with work of other trades for proper time and sequence to avoid construction delays. Comply with Section [01 31 00 - Project Management and Coordination].

Specifier Note: Add additional text to specify unusual or detailed coordination requirements affecting the work results of this Section.

1. [].

- B. Preinstallation Meetings: Conduct preinstallation meeting [one week] prior to commencing [work of this Section] [and] [on-site installations] to verify project requirements, substrate conditions and coordination with other building subtrades, and to review manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section [01 31 19 - Project Meetings]. Specifier Note: Add additional text to describe requirements for meetings to coordinate products and techniques and to sequence related work for sensitive and complex items.

1. [].

- C. Sequencing: Sequence work of this section in accordance with Section [01 12 16 - Work Sequence] [and manufacturer's written recommendations for sequencing construction operations].

Specifier Note: Specify additional text as required to describe the particular sequence of events required to coordinate work that must be done in sequence with, or at the same time as, work in another section.

1. [].

- D. Scheduling: Schedule work of this Section in accordance with Section [01 32 13 - Scheduling of Work].



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Specifier Note: Specify additional text to include requirements for coordinating work that requires unusual scheduling with work of other sections.

1. [_____].

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Contract Conditions and Section 01 33 00 - Submittal Procedures.

1.4 ACTION SUBMITTALS

- A. General: Submit listed submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures].
- B. Product Data: Submit specified products as follows:
 1. Manufacturer's product data, including manufacturer's technical data sheet(s).
 2. Catalog pages illustrating products to be incorporated into project.
 3. Material Safety Data Sheets (MSDS).

1.5 INFORMATION SUBMITTALS

Specifier Note: Specify submittal of test reports or evaluation service reports intended to document required tests without repeating the test requirements specified in Division 01.

- A. General: Submit listed submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures].

Specifier Note: Specify submittals intended to document manufacturer installation, storage and other instructions.

- B. Manufacturer's Instructions: Submit manufacturer's storage and installation instructions.
- C. Source Quality Control: Submit documentation verifying that components and materials specified in this Section are from single manufacturer.
- D. Qualification Statements:
 1. Submit letter of verification for Manufacturer's Qualifications.
 2. Submit letter of verification for Installer's Qualifications.

1.6 QUALITY ASSURANCE

- A. Qualifications:
 1. Manufacturer:
 - a. Having [5] years experience manufacturing components similar to or exceeding requirements of project.
 - b. Having sufficient capacity to produce and deliver required materials without causing delay in work.
 2. Installer: Acceptable to the manufacturer, experienced in performing work of this section and has specialized in installation of work similar to that required for this project.

Specifier Note: Retain the following Paragraph when certification related to sustainability submittals is a project requirement.

- B. Sustainability Standards Certification: Provide certification for [_____] materials certified by [certification organization's name] in accordance with [certification organization's standard].

Specifier Note: If a mock-up is required, retain Paragraph below.

- C. Mock-up: Construct mock-up where [indicated] [directed] by [Owner] [Architect] [Consultant] in accordance with Section [01 43 00 - Quality Assurance].
 1. Construct showing non-structural metal framing work.

2. Dimensions and Process: Construct to [] feet (m) using proposed procedures, colors, textures, finishes and quality of work.
3. Purpose: To judge quality of work, substrate preparation and material application.
4. Locate where [directed] [indicated].
5. Do not proceed with work prior to receipt of written acceptance of mock-up.
6. When accepted, mock-up will demonstrate the minimum standard of quality required for this work. [Approved mock-up may [not] remain part of finished work] [Remove mock-up and dispose of materials when no longer required and when directed by [Owner] [Architect] [Consultant]].

1.7 DELIVERY, STORAGE & HANDLING

A. Delivery and Acceptance Requirements:

1. Deliver material in accordance with Section [01 61 00 - Common Product Requirements] and in accordance with manufacturer's written instructions.
2. Deliver materials in manufacturer's original packaging with identification labels intact and in sizes to suit project.

B. Storage and Handling Requirements:

1. Store materials protected from exposure to harmful weather conditions and at temperatures per AISI COSP section F3.

C. Packaging Waste Management:

Specifier Note: The disposal of packaging waste into landfill sites demonstrates an inefficient use of natural resources and consumes valuable landfill space. Specifying appropriate packaging and construction waste management and disposal procedures may contribute to points required for USGBC's LEED® construction project certification.

Specifier Note: Include the following Subparagraphs to specify information that will provide direction to the Contractor for the disposal of construction waste materials using environmentally responsible methodology other than landfill resources.

1. Separate waste materials for [reuse] [and] [recycling] in accordance with Section [01 74 19 - Construction Waste Management and Disposal].

Specifier Note: USGBC's LEED® certification includes credits for the diversion of construction waste from landfill. Diversion can be tracked by either weight or volume but must be consistent for all materials. Manufacturer may reclaim packaging and delivery materials for recycling.

2. Remove packaging materials from site and dispose of at appropriate recycling facilities.
3. Collect and separate for disposal [paper] [plastic] [polystyrene] [corrugated cardboard] packaging material [in appropriate onsite bins] for recycling.
4. Fold metal and plastic banding. Flatten and place in designated area for recycling.

Specifier Note: Add additional Subparagraphs for pallets, crates, padding and other packing materials that are typically associated with the specified products.

5. Remove:
 - a. Pallets from site [and return to supplier or manufacturer].
 - b. [].

1.8 [FIELD] [SITE] CONDITIONS

Specifier Note: Specify the ambient conditions under which the work must be performed in order for the work results to provide the specified quality. Conditions can include factors such as temperature, humidity, lighting, or conditions of completion of related work or substrates.

A. Ambient Conditions:

1. Installation Location: Assemble and erect components only when temperatures are above [] degrees F (degrees C).



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2. Maintain materials, substrates and surrounding air temperature between [[_____] degrees F (degrees C)] [[_____] degrees F (degrees C)] and [[_____] degrees F (degrees C)] prior to, during and 48 hours after completion of framing.

PART 2 PRODUCTS

Specifier Note: Retain Article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as “or equal,” “or approved equal” or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining “or equal” products.

2.1 NON-STRUCTURAL FRAMING

A. Manufacturer: Telling Industries, LLC.

1. Contact: 4420 Sherwin Rd., Willoughby, Ohio, 44094; Phone: 866-372-6384, 440-974-3370; Fax: 440-974-3408; E-mail: sales.corp@tellingindustries.com; Website: www.buildstrong.com.

Specifier Note: Substitution procedures must appear either in the Contract Conditions or in Section 01 25 00 – Substitution Procedures. Do not include substitution procedures here.

2. Single Source Responsibility: Provide components and materials specified in this section from a single manufacturer.
3. Substitution Limitations:
 - a. Substitutions: [In accordance with [Contract Conditions] [and] [Section 01 25 00 - Substitution Procedures]] [No substitutions permitted].

Specifier Note: Include an overall description of the system, assembly, product or material. Include required properties or characteristics that do not obviously belong under other titles. Examples: Configuration, size and color.

B. Description:

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Contract Conditions and Section 01 41 00 - Regulatory Requirements. Repetitive statements should be avoided.

1. Regulatory Requirements:
 - a. In accordance with Section [01 41 00 - Regulatory Requirements].
 - b. [_____].
2. Sustainability Characteristics:
 - a. [_____].
3. Compatibility:
 - a. Ensure components and materials are compatible with specified accessories and adjacent materials.

Specifier Note: Performance characteristics are usually stated with some form of evaluation or verification. Performance usually, but not universally, applies to systems and assemblies. Performance criteria can include structural, safety, fire resistance, vapor retardancy, acoustical, thermal, operational capacity and durability.

Specifier Note: The term “Design Criteria” is used when describing the intended characteristics of a product for which the Contractor is assigned design responsibility.

C. Performance Criteria:

1. Provide non-load bearing steel stud partitions with deflections conforming to L/360 at 15 PSF for veneer plaster walls and L/240 at 5 PSF typical for gypsum board walls.

2. Fire-resistive Rating: Where indicated on Drawings, provide materials and construction that are identical to those assemblies whose fire resistance rating has been determined per ASTM E119 by a testing and inspecting organization acceptable to authorities having jurisdiction.
 - a. Meet or exceed fire resistance requirements outlined under provisions of the GA-600 Fire Resistance Design Manual for wall and ceiling assemblies or design designations in the Underwriter's Laboratories Fire Resistance Directory or in the listing of other testing and inspecting agencies acceptable to authorities having jurisdiction.
 - b. Meet or exceed flame/fuel/smoke requirements of ASTM E84 surface burning characteristics for finish materials.
 3. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E413 by a qualified independent testing agency.
- D. Materials:
1. Framing Members: Comply with ASTM C645 for conditions indicated.
 - a. Steel Sheet Components: Comply with ASTM A1003 requirements for metal, unless otherwise indicated.
 - b. Protective Coating: Comply with ASTM A1003.

Specifier Note: Retain components below to conform to project requirements.

- E. Steel Framing:
1. Steel Studs and Runners: ASTM C645. ViperStud listed below is knurled, not dimpled. No dimpled studs allowed.
 - a. Minimum Base Metal Thickness: [(25 Gauge EQ Stud & Track) Viper25, 0.0147 inch (0.3734 mm) (ViperTrack25 same thickness; approved for use on Viper25, Viper20)] [(1⁵/₈ inch, 2¹/₂ inch 3⁵/₈ inch Web) Viper20 (20 Gauge EQ Stud & Track) (Viper20 Track same thickness) 0.0195 inch] [(4 inch and 6 inch Web) Viper20 (20 Gauge EQ Stud & Track) (Viper20 Track same thickness) 0.0209 inch].
 - b. Web Size: [1⁵/₈ inches (42 mm)] [2¹/₂ inches (64 mm)] [3¹/₂ inches (89 mm)] [3⁵/₈ inches (92 mm)] [4 inches (102 mm)] [6 inches (152 mm)].
 - c. Flanges: Equal lengths 1¹/₄ inches (32 mm).
 2. Slip-type Head Joints: Where indicated, provide the following:
 - a. Single Long-leg Runner System: ASTM C645 top runner with 2 inch (50.8 mm) deep flanges in thickness not less than indicated for studs, installed with studs friction-fit into top runner and with continuous bridging located within 12 inches (305 mm) of the top of studs to provide lateral bracing.
 - b. Double-runner System:
 - 1) ASTM C645 top runners.
 - 2) Inside runner with 2 inch (50.8 mm) deep flanges in thickness not less than indicated for studs and fastened to studs.
 - 3) Outer runner sized to friction-fit inside runner.
 - c. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 3. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
 - a. Minimum Base Metal Thickness: [25 gauge, 0.0179 inch (0.4547 mm)] [22 gauge, 0.0269 inch (0.6834 mm)] [20 gauge, 0.0296 inch (0.7518 mm)] [As indicated on Drawings].
 4. Cold-rolled Channel Bridging: 0.0538 inch (1.37 mm) bare steel thickness, with minimum 1/2 inch (12.7 mm) wide flanges.
 - a. Depth: [3/4 inch (19 mm)] [1¹/₂ inches (38.1 mm)] [2 inches (51 mm)] [As indicated on Drawings].
 - b. Clip Angle: Not less than 1¹/₂ × 1¹/₂ inches (38.1 × 38.1 mm), 0.068 inch (1.73 mm) thick, galvanized steel.
 5. Hat-shaped, Rigid Furring Channels: ASTM C645.
 - a. Minimum Base Metal Thickness: [25 gauge, 0.0179 inch (0.4547 mm)] [22 gauge, 0.0269 inch (0.6834 mm)] [20 gauge, 0.0296 inch (0.7518 mm)] [18 gauge, 0.0428 inch (1.087 mm)] [As indicated on Drawings].
 - b. Depth: [7/8 inch (22.2 mm)] [1¹/₂ inches (38.1 mm)] [As indicated on Drawings].

6. Resilient Furring Channels: 1/2 inch (12.7 mm) deep, steel sheet members designed to reduce sound transmission.
 - a. Configuration: [Asymmetrical or hat shaped] [Asymmetrical] [Hat shaped].
 7. Cold-rolled Furring Channels: 0.0538 inch (1.37 mm) bare steel thickness, with minimum 1/2 inch (12.7 mm) wide flanges.
 - a. Depth: [3/4 inch (19.1 mm)] [As indicated on Drawings].
 - b. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum bare steel thickness of 0.0296 inch (0.7518 mm).
 - c. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.0625 inch (1.59 mm) diameter wire, or double strand of 0.0475 inch (1.2065 mm) diameter wire.
 8. Z-shaped Furring: With nonslotted web, face flange of 1 1/4 inches (31.8 mm), wall attachment flange of 3/4 inch (19 mm), minimum bare metal thickness of 0.0179 inch (0.4547 mm), and depth required to fit insulation thickness indicated.
 9. CT Studs: Cold-formed galvanized steel C-studs, ASTM C645, 33 KSI steel.
 - a. Minimum Base Metal Thickness: [25 gauge, 0.0179 inch (0.4547 mm)] [20 gauge, 0.0329 inch (0.8357 mm)].
 - b. Web Size: [2 1/2 inches (64 mm)] [4 inches (102 mm)] [6 inches (152 mm)].
 - c. Fasteners:
 - 1) 25 Gauge Framing: Type S screws.
 - 2) 20 Gauge Framing: Type S-12 screws.
 10. Tabbed Track and Jamb Track: Cold-formed galvanized steel track, ASTM C645, 33 KSI steel.
 - a. Minimum Base Metal Thickness: [25 gauge, 0.0179 inch (0.4547 mm)] [20 gauge, 0.0329 inch (0.8357 mm)].
 - b. Web Size: [2 1/2 inches (64 mm)] [4 inches (102 mm)] [6 inches (152 mm)].
 - c. Fasteners:
 - 1) 25 Gauge Framing: Type S screws.
 - 2) 20 Gauge Framing: Type S-12 screws.
 11. H Stud and C Runner: Cold-formed galvanized steel, ASTM C645.
 - a. Minimum Base Metal Thickness: 25 gauge, 0.0179 inch (0.4547 mm).
 - b. Web Size: 2 inches (51 mm).
 - c. Fasteners:
 - 1) 25 Gauge Framing: Type S screws.
 - 2) 20 Gauge Framing: Type S-12 screws.
- F. Suspension System Components:
1. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.0625 inch (1.59 mm) diameter wire, or double strand of 0.0475 inch (1.21 mm) diameter wire.
 2. Hanger Attachments to Concrete:
 - a. Anchors: Fabricated from corrosion-resistant materials with holes or loops for attaching wire hangers and capable of sustaining without failure a load equal to 5 times that imposed by construction as determined by testing according to ASTM E488.
 - 1) Type: [Cast-in-place anchor, designed for attachment to concrete forms] [Post installed, chemical anchor] [Post installed, expansion anchor].
 - b. Powder-actuated Fasteners: Suitable for application indicated, fabricated from corrosion-resistant materials with clips or other devices for attaching hangers of type indicated, and capable of sustaining without failure a load equal to 10 times that imposed by construction as determined by testing according to ASTM E1190.
 3. Wire Hangers: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.162 inch (4.12 mm) diameter.
 4. Flat Hangers: Steel sheet, 1 × 3/16 inch (25.4 × 4.76 mm) by length indicated on drawings.
 5. Carrying Channels: Cold-rolled, commercial steel sheet with a base metal thickness of 0.0538 inch (1.37 mm) and minimum 1/2 inch (12.7 mm) wide flanges.
 - a. Depth: [3/4 inch (19 mm)] [1 1/2 inches (38 mm)] [2 1/2 inches (64 mm)] [2 inches (51 mm)] [As indicated on Drawings].
 6. Furring Channels:

- a. Cold-rolled Channels: 0.0538 inch (1.37 mm) bare steel thickness, with minimum 1/2 inch (12.7 mm) wide flanges, 3/4 inch (19.1 mm) deep.
 - b. Steel Studs: ASTM C645. ViperStud listed below is knurled, not dimpled. No dimpled studs allowed.
 - 1) Minimum Base Metal Thickness: [(25 Gauge EQ Stud & Track) Viper25, 0.0147 inch (0.3734 mm) (ViperTrack25 same thickness; approved for use on Viper25, Viper20)] [(1 5/8 inch, 2 1/2 inch 3 5/8 inch Web) Viper20 (20 Gauge EQ Stud & Track) (Viper20 Track same thickness) 0.0195 inch] [(4 inch and 6 inch Web) Viper20 (20 Gauge EQ Stud & Track) (Viper20 Track same thickness) 0.0209 inch].
 - 2) Web Size: [1 5/8 inches (42 mm)] [2 1/2 inches (64 mm)] [3 1/2 inches (89 mm)] [3 5/8 inches (92 mm)] [4 inches (102 mm)] [6 inches (152 mm)].
 - c. Flanges: Equal lengths 1 1/4 inches (32 mm).
 - d. Furring Channels: 1 1/2 inches (38 mm) deep.
 - 1) Minimum Base Metal Thickness: [25 gauge, 0.0179 inch (0.45 mm)] [22 gauge, 0.0269 inch (0.68 mm)] [20 gauge, 0.0296 inch (0.75 mm)] [As indicated on Drawings].
 - e. Resilient Furring Channels: 1/2 inch (12.7 mm) deep members designed to reduce sound transmission.
 - 1) Configuration: [Asymmetrical or hat shaped] [Asymmetrical] [Hat shaped].
7. Grid Suspension System for Ceilings: ASTM C645, direct-hung system composed of main beams and cross-furring members that interlock.

2.2 ACCESSORIES

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 1. Fasteners for Metal Framing: Type, material, size, corrosion resistance and holding power required to fasten steel members to substrates.
- B. Isolation Strip at Exterior Walls: Provide 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 (3.2 mm) thick, in width to suit steel stud size.

2.3 SOURCE QUALITY CONTROL

Specifier Note: Describe each test to be conducted. Include test method, sampling requirements, observation by independent authorities (if any) and reporting requirements. Describe each inspection to be conducted, including method, personnel and reporting requirements.

- A. Tests and Inspections:

Specifier Note: Describe specific requirements for coordinating special inspections, such as providing access to authorities having jurisdiction or other third parties.

1. Manufacturer Services.
2. [_____].

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Verify that conditions of substrates previously installed under other sections or contracts are acceptable for product installation in accordance with manufacturer's instructions prior to non-structural metal framing installation.
 1. Inform [Owner] [Architect] [Consultant] of unacceptable conditions immediately upon discovery.
 2. Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval from [Owner] [Architect] [Consultant]].
 3. [_____].

Specifier Note: Specify actions required to prepare the surface, area or site for incorporation of the section's primary products. Describe requirements for exposure or removal of existing assemblies, components, products or materials.

3.2 PREPARATION

Specifier Note: Specify preparatory work required prior to erection of primary products.

- A. Ensure structure or substrate is adequate to support steel framing.

Specifier Note: Retain below to comply with project requirements.

- B. Ceiling Anchorage: Coordinate installation of ceiling suspension with installation of overhead structural systems to ensure that insert anchorage provisions have been installed to receive ceiling anchors in a manner that will develop their full strength and at spacing required to support ceiling.
 - 1. Provide concrete inserts and steel deck devices to other trades for installation well in advance of time needed for coordination with other construction.

Specifier Note: Specify preparatory work, such as selective removal of existing work, required prior to execution of new work. Specify requirements for exposure or removal of existing assemblies, components products or materials.

- C. Demolition/Removal:
 - 1. [].

3.3 ERECTION

- A. Coordinate erection of [systems] [components] [products] in accordance with Section [01 73 16 - Erection].
- B. Metal Framing - General:
 - 1. Install steel framing to comply with ASTM C754 and with ASTM C840 requirements applicable to framing installation.
 - 2. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement at locations indicated below:
 - a. Where edges of suspended ceilings abut building structure horizontally at ceiling perimeters or penetrations of structural elements.
 - b. Where partitions and wall framing abuts overhead structure.
 - c. Provide slip-type joint as detailed to attain lateral support and avoid axial loading.
 - 3. Do not bridge building expansion and control joints with steel framing or furring members. Independently frame both sides of joints with framing or furring members.
- C. Metal Framing - Walls and Partitions:
 - 1. Install runners (track) at floors, ceilings and structural walls and columns where gypsum board stud system abuts other construction.
 - a. Where studs are installed directly against exterior walls, install asphalt felt strips between studs and wall.

Specifier Note: Retain below if stud spacing is not indicated on the drawings and edit to comply with project requirements.

- 2. Stud Spacing: Maximum 16 inches (406 mm) on center unless noted otherwise.
- 3. Installation Tolerances: Install each steel framing and furring member so that fastening surfaces do not vary more than 1/8 inch (3 mm) from plane of faces of adjacent framing.
- 4. Blocking: Bolt or screw steel channels to metal studs. Install concealed wood blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, hardware and other related items that require backing for support as indicated.
- D. Metal Framing - Suspended and Furred Ceilings:
 - 1. Secure hangers to structural support by connecting directly to structure where possible; otherwise connect to cast-in concrete inserts or other anchorage devices or fasteners as indicated.

- a. Do not attach hangers to metal deck tabs.
 - b. Do not attach hangers to metal roof deck
 - c. Do not attach hangers to underside of concrete slabs with power actuated fasteners.
2. Install metal ceiling framing per ASTM C754, and space main runners at 4 feet (1219 mm) on center, maximum.
 3. Do not connect or suspend steel framing from ducts, pipes or conduit.
 4. Keep hangers and braces 2 inches (51 mm) clear of ducts, pipes or conduits.
 5. Sway-brace suspended steel framing with hangers used for support.
- E. Metal Framing - Shaft Wall:
1. Anchor tabbed track perimeter framing at abutting horizontal and vertical construction.
 2. Anchor with approved fasteners spaced maximum 24 inches on center.
 3. Apply indicated sealant in a continuous application at the perimeter.
 4. Space CT Studs at 24 inches on center. Adjust the spacing at ends of shaft wall construction so end studs are minimum 8 inches from the ends.
 5. Install the first liner board panel. The panel length shall be $\frac{3}{4}$ inch less than the total height of the framed section. Plumb the panel against the web of the tabbed track and bend out tabs in tabbed track to secure the panel in place.
 6. Insert a CT Stud into the top and bottom tabbed track and fit tightly over the previously installed 1 inch panel. Allow equal clearance between track and stud at top and bottom tabbed track. The stud length shall be $\frac{3}{4}$ inch less than the total height of the framed section.
 7. Install the second 1 inch liner board panel inside the tabbed track and within the tabs of the CT studs.
 8. Install succeeding studs and panels in the same manner as described for the first and second panels until the wall section is complete.
 9. Anchor the final panel section at 12 inches on center with tabs from the tabbed track.
 10. Where wall heights exceed the standard or available length of the liner board panels, the panels shall be cut and stacked with joints occurring within the top or bottom third of the wall height. The shorter panels shall be minimum 24 inches long and of sufficient length to engage 2 studs.
 11. For doors, ducts or other large penetrations or openings, install jamb track as perimeter framing. Use 20 gauge track with a 3 inch back leg for elevator doors and block cavity. Install 12 inch wide gypsum filler strips for doors exceeding 7 ft 0 inches height.
- F. Metal Framing - Area Separation Wall:
1. Foundation: Position 2 inch C-runner at floor and attach securely to foundation at ends and 24 inches on center. Caulk under runner at foundation with minimum of $\frac{1}{4}$ inch bead of acoustical sealant when specified to reduce noise transmission.
 2. First Floor: Install H-studs and insert liner board. Attach two thicknesses of 1 inch liner board vertically in C-runner with long edges in H-stud. Continue installing H-studs and liner board alternately until wall is complete. Attach horizontal C-runner to top of liner board, fastening flanges of C-runner at all corners on both sides of liner board with $\frac{3}{8}$ inch drill point screws.
 3. Intermediate Floors: Attach C-runner to C-runner cap on wall below, staggering end joints at least 12 inches. Fasten C-runner together using double $\frac{3}{8}$ inch screws at ends and 24 inches on center. Fasten H-studs to adjacent framing with aluminum breakaway clips. Attach breakaway clips to H-stud with one $\frac{3}{8}$ inch drill point screw and to adjacent wood framing with $1\frac{1}{4}$ inch drywall screw. Install fire blocking between solid wall system and adjacent framing at floor lines, bottom of truss line and any other locations according to code requirements.
 4. Roof: Cut liner board and H-studs to follow roof pitch. Fasten H-studs to framing with an aluminum breakaway clip.

Specifier Note: Specify how existing work is to be repaired, restored and cleaned.

3.4 REPAIR/RESTORATION

- A. Coordinate [repair] [restoration] of [systems] [components] [products] in accordance with Section [01 73 13 - Application].
1. [].

3.5 CLEANING

- A. Perform cleanup in accordance with Section [01 74 00 - Cleaning and Waste Management] and Section [01 74 13 – Progress Cleaning].
- B. Upon completion, remove surplus materials, rubbish, tools and equipment in accordance with Section [01 74 23 - Final Cleaning].

Specifier Note: Specify special measures needed to minimize waste, collect recyclable waste and dispose of or recycle field generated construction waste created during demolition, construction or final cleaning.

- C. Waste Management:
 - 1. Coordinate recycling of waste materials with Section [01 74 19 - Construction Waste Management and Disposal].
 - 2. Collect recyclable waste and dispose of or recycle field-generated construction waste created during demolition, construction or final cleaning.
 - 3. Remove recycling containers and bins from site.
 - 4. [_____].

Specifier Note: Specify protection methods completed after installation, but prior to acceptance by the owner. Protection of surrounding areas and surfaces during application or installation is included under PART 3, Preparation. Include only statements unique to this Section.

Specifier Note: Coordinate the following Article with Section 01 76 00 - Protecting Installed Construction.

3.6 PROTECTION

- A. Protect installed product from damage during construction in accordance with Section [01 76 00 - Protecting Installed Construction].
- B. Repair damage to adjacent materials caused by framing installation.
- C. [_____].

Specifier Note: Specify attachments such as schedules, tables, illustrations or forms in this location if they are not incorporated directly within the specification text.

3.7 ATTACHMENTS

Specifier Note: Schedules are sometimes placed in the specifications rather than on the drawings. Include schedules that indicate item/element/product/equipment, location and other coordinating data.

- A. Schedules:
 - 1. [_____].

END OF SECTION