

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

[See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances](#)

[See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances](#)

Design No. H513

May 23, 2019

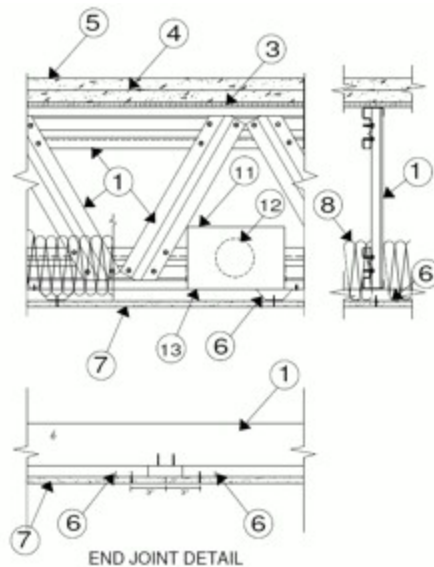
Restrained Assembly Rating - 1

Unrestrained Assembly Rating - 1

Unrestrained Beam Rating - 1

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide [BXUV](#) or [BXUV7](#)

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. Structural Steel Members* — Pre-fabricated light gauge steel truss system consisting of cold-formed, galvanized steel cord and web sections. Trusses fabricated in various sizes, depths, and from various steel thickness. Trusses spaced a max of 48 in. OC.

AEGIS METAL FRAMING, DIV OF MITEK — Ultra-Span, Pre-fabricated Light Gauge Steel Truss System

2. Bridging — (Not Shown) — Location of lateral bracing for truss chord and web sections to be specified on truss engineering.

3. Metal Lath — 3/8 in. rib, 3.4 lb per sq yd expanded steel lath tied to each truss at every other rib and midway between trusses at side laps with 18 SWG galv steel wire. As an alternate, the form material for the concrete may be corrugated steel deck, min 9/16 in. deep, 28 MSG galv steel, mechanically fastened to trusses 15 in. OC. The concrete topping thickness shall be measured to the top plane of the steel deck.

4. Welded Wire Fabric — 6 by 6 in., 10/10 SWG.

5. Normal Weight or Lightweight Concrete — Carbonate or siliceous aggregate, 150 + or - 3 pcf unit weight, 3000 psi compressive strength. Lightweight concrete, expanded shale, clay or slate aggregate by rotary kiln method, 117 + or - 3 pcf unit weight, 3000 psi compressive strength. Min. thickness is 2 in.

6. Furring Channels — Hat channels min 25 MSG galv steel, min 2-5/8 in. wide by min 7/8 in. deep, installed perpendicular to the trusses (Item 2), spaced a max of 16 in. OC when no insulation is used in the cavity and 12 in. OC when insulation is used in the cavity, except at gypsum board end joints. At end joints, two courses of channel positioned 6 in. OC, 3 in. on each side of gypsum board end joints. Channel splices overlapped 4 in. beneath steel trusses. Channels secured to each truss with No. 18 SWG steel wire double strand saddle ties.

6A. Steel Framing Members* — (Optional, Not Shown) — As an alternate to Item 6.

a. **Furring Channels** — Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced as indicated in Item 6, perpendicular to trusses. Channels secured to Cold Rolled Channels at every intersection with a 3/4 in. TEK screw through each furring channel leg. Ends of adjoining channels overlapped 12 in. and fastened together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap, or with two 3/4 in. TEK screws in each leg of the overlap section. Two furring channels used at end joints of gypsum board (Item 7), each extending a min of 6 in. beyond both side edges of the board.

b. **Cold Rolled Channels** — 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to trusses, friction-fitted into the channel caddy on the Steel Framing Members (Item 6Ad) and secured with two 3/4 in. TEK screws. Adjoining lengths of cold rolled channels lapped min. 12 in. and secured along bottom legs with four 3/4 in. TEK screws and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

c. **Blocking** — Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 3-5/8 in. x 20 ga. steel stud (blocking), min. 12 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the trusses at the top and bottom of the blocking at each Steel Framing Member (Item 6Ad) location with minimum 2-1/2 in. screws.

d. **Steel Framing Members*** — Spaced 48 in. OC. max along truss, and secured to the truss on alternating trusses with two, No. 10-16 TEK through mounting holes on the hanger bracket.

PAC INTERNATIONAL L L C — Type RSIC-SI-CRC EZ Clip

6B. **Steel Framing Members*** — (Optional, Not Shown) — As an alternate to Item 6.

a. **Furring Channels** — Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced as indicated in Item 6, perpendicular to trusses and friction fit into Steel Framing Members (Item 6Bc). Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap or with two TEK screws along each leg of the 6 in. overlap. Two furring channels used at end joints of gypsum board (Item 7). Butt joint channels held in place by strong back channels placed upside down, on top of, and running perpendicular to primary furring channels, extending 6 in. longer than length of gypsum side joint. Strong back channels spaced maximum 48 in. OC. Strong back channels secured to every intersection of primary furring channels with four 7/16 in. pan head screws, two along each of the legs at intersections. Butt joint channels run perpendicular to strong back channels and shall be minimum 6 in. longer than length of joint, secured to strong back channels with 7/16 in. pan head screws, two along each of the legs at intersection with strong back channels.

b. **Blocking** — Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 3-5/8 in. x 20 ga. steel stud (blocking), min. 12 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the trusses at the top and bottom of the blocking at each Steel Framing Member (Item 6Bc) location with minimum 2-1/2 in. screws.

c. **Steel Framing Members*** — Used to attach furring channels (Item 6Ba) to trusses. Clips spaced 48 in. OC and secured along truss webs at each furring channel intersection with min. 3/4 in. long self-drilling No. 10-16 TEK screws through each of the provided hole locations. Furring channels are friction fitted into clips.

PAC INTERNATIONAL L L C — Type RSIC-S1-1 Ultra

7. **Gypsum Board*** — One layer of nom 5/8 in. thick by 48 in. wide boards, installed with long dimension parallel to trusses. Attached to the furring channels using 1 in. long Type S bugle-head screws spaced 8 in. OC along butted end-joints and 8 in. OC in the field.

When **Steel Framing Members** (Item 6A) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 7. Adjacent butt joints staggered minimum 48 in. OC.

When **Steel Framing Members** (Item 6B) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 7. Butt joints staggered minimum 24 in. OC.

UNITED STATES GYPSUM CO — Type C

8. **Batts and Blankets*** — Optional - Any thickness mineral wool or glass fiber insulation bearing the UL Classification Marking for Surface Burning Characteristics, having a flame spread value of 25 or less and a smoke value of 50 or less. Insulation fitted in the concealed space, draped over the resilient channel/gypsum wallboard ceiling membrane.

8A. **Loose Fill Material*** — As an alternate to Item 8 — Any thickness of loose fill material bearing the UL Classification Marking for Surface Burning Characteristics, having a flame spread value of 25 or less and a smoke spread value of 50 or less. Loose fill material fitted in the concealed space, draped over the resilient channel/gypsum wallboard ceiling membrane.

9. **Finishing System** — (Not Shown) — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads; paper tape, 2 in. wide, embedded in first layer of compound over all joints. As an alternate, nom 3/32 in. thick veneer plaster

may be applied to the entire surface of gypsum wallboard.

10. **Steel Beam** — Optional — (Not Shown) — W8x35 min size, used to support structural steel members (Item 1) at ends.
11. **Ceiling Damper*** — (Optional) Max nom area shall be 224 sq in. with the length not to exceed 16 in. and the width not to exceed 14 in. Max height of damper shall be 14 in. Aggregate damper openings shall not exceed 89 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 12) shall be installed in accordance with installation instructions.
POTTORFF — Model CFD-521-ST
12. **Air Duct*** — Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.
13. **Grille** — Steel grille, installed in accordance with the installation instructions provided with the ceiling damper.

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