

## Design No. H507

May 05, 2020

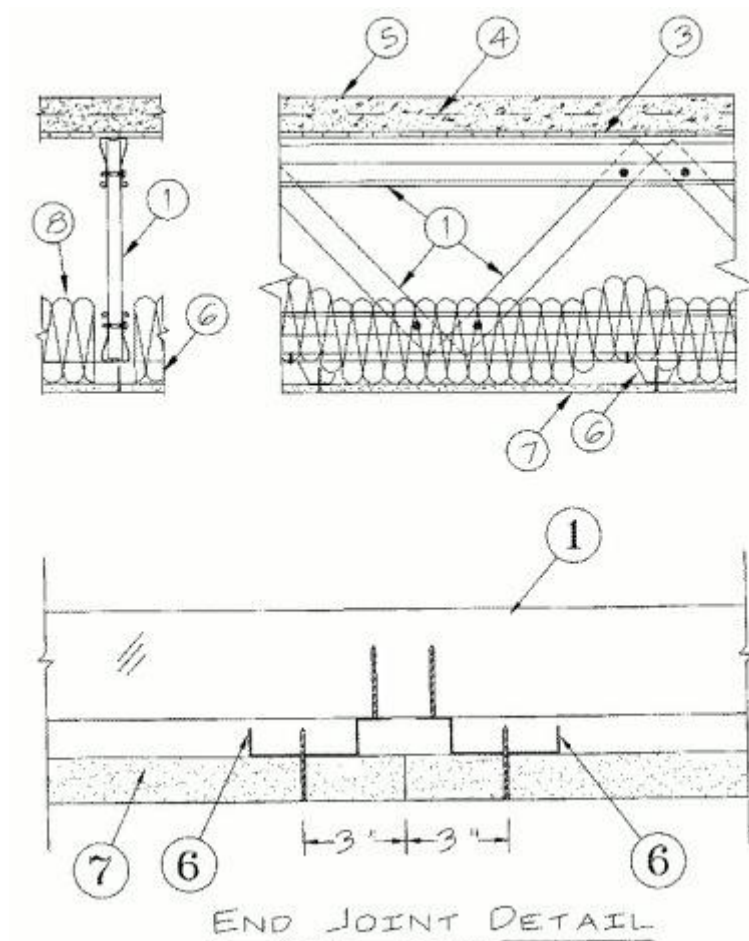
**Restrained Assembly Rating - 1 and 2 Hr. (See Items 7 and 8)**

**Unrestrained Assembly Rating - 1 and 2 Hr. (See Items 7 and 8)**

**Unrestrained Beam Rating - 1 and 2 Hr. (See Items 7 and 8)**

**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, galv steel chord 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

**TRUSSTEEL, DIV OF ITW BUILDING COMPONENTS INC** — TrusSteel

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/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 or Lightweight Concrete** — Carbonate or siliceous aggregate,  $150 \pm 3$  pcf unit weight, 3000 psi compressive strength. Lightweight concrete, expanded shale, clay or slate aggregate by rotary kiln method,  $117 \pm 3$  pcf unit weight, 3000 psi compressive strength. Min. thickness is 2 in.

6. **Furring Channels** — Resilient channels formed of 25 MSG galv steel, installed perpendicular to the steel trusses, (Item 1), spaced a max of 16 in. OC when no insulation (Item 8 or 8A ) is fitted in the concealed spaced, or a max of 12 in. OC when insulation (Item 8 or 8A) is fitted in the concealed space, draped over the resilient channel/gypsum wallboard ceiling membrane. Two courses of resilient channel positioned 6 in. OC at wallboard butt-joints (3 in. from each end of wallboard). Channels oriented opposite at wallboard butt-joints. Channel splices overlapped 4 in. beneath steel trusses. Channels secured to each truss with Type S12 by 1/2 in. long screws.

6A. **Furring Channels** — (Not Shown) — As an alternate to Item 6 — Hat channels min 20 MSG galv steel, min 2-5/8 in. wide by min 7/8 in. deep, installed perpendicular to the trusses (Item 1) spaced a max of 16 in. OC when no insulation (Item 8 or 8A) is fitted in the concealed spaced, or a max of 12 in. OC when insulation (Item 8 or 8A ) is fitted in the concealed space, draped over the resilient channel/gypsum wallboard ceiling membrane. Two courses of channel positioned 6 in. OC, 3 in. from each end of wallboard. Channel splices overlapped 6 in. beneath steel trusses. Channels secured to each truss with No. 18 SWG steel wire double strand saddle ties. Channels tied together with double strand of No. 18 SWG steel wire at each end overlap.

6B. **Furring Channels** — As an alternate to Items 6 or 6A, resilient channels, double legged formed of 25 MSG galv steel, 2-7/8 in. wide by 1/2 in. deep, installed perpendicular to the trusses (Item 1) spaced max 16 in. OC when no insulation (Item 8 or 8A) is fitted in the concealed space, or a max of 12 in. OC when insulation (Item 8 or 8A) is fitted in the concealed space, draped over the resilient channel/gypsum wallboard ceiling membrane. Two courses of resilient channel positioned 6 in. OC at wallboard butt-joints (3 in. from each end of wallboard). Channel splices overlapped 4 in. beneath steel trusses. Channels secured to each truss with Type S12 by 1/2 in. long screws or with No. 18 SWG galv steel wire double strand saddle ties. Channels tied together with double strand of No. 18 SWG galv steel wire at each end of overlap .

6C. **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 6Cd) 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 6Cd) 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 screws through mounting holes on the hanger bracket.

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

6D. **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 6Dc). 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 6Dc) location with 16d nails or minimum 2-1/2 in. screws.

c. **Steel Framing Members\*** — Used to attach furring channels (Item 6Da) 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

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

a. **Furring channels** — Formed of No. 25 MSG galv steel. 2-9/16 in. in. wide by 7/8 in. deep, spaced as described in item 6, perpendicular to trusses. Channels secured to trusses as described in Item b. 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.

b. **Steel Framing Members\*** — Used to attach furring channels (Item a) to the steel trusses (Item 1). Clips spaced a max of 48 in. OC. RSIC-1 clips secured to alternating trusses with No. 8 x 1-5/8 in. fine thread screw through the center grommet. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel.

**PAC INTERNATIONAL L L C** — Type RSIC-1

7. **Gypsum Board\*** — For the 1 Hr. Ratings — One layer of nom 5/8 in. thick by 48 in. wide boards, installed with long dimension parallel to trusses. Attached to the resilient channels using 1 in. long Type S bugle-head screws. Screws spaced a max of 12 in. OC along butted end-joints and in the field when no insulation (Item 8 or 8A) is fitted in the concealed space, or a max of 8 in. OC along butted end-joints and in the field when insulation (Item 8 or 8A) is fitted in the concealed space, draped over the resilient channel/gypsum wallboard ceiling membrane. For the 2 Hr. Ratings - Two layers of nom 5/8 in. thick by 48 in. wide boards, installed with long dimension parallel to trusses. Base layer attached to the resilient channels using 1 in. long Type S bugle-head screws. Screws spaced a max of 12 in. OC along butted end-joints and in the field. Face layer attached to the resilient channels using 1-5/8 in. long Type S bugle-head screws spaced 12 in. OC along butted end-joints and 12 in. OC in the field. Screws staggered from base layer screws. Face layer side and end joints offset a minimum 16 in. from base layer side and end joints.

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

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

When **Steel Framing Members** (Item 6E) are used (**For 1 hour ratings - one layer of board**), gypsum panels installed with long dimensions perpendicular to furring channels. Panels attached to the furring channels using 1 in. long Type S bugle-head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field. Butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. Each end of each gypsum panel shall be supported by a single length of furring channel equal to the width of the gypsum panel plus 6 in. on each end. The two support furring channels shall be spaced approximately 3-1/2 in. OC, and be attached with one clip at each end of the channel. (**For 2 hour ratings - two layers of board**), base layer installed as described above. Outer layer attached as described in Item 7.

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** — Type LGFC-C/A

8. **Batts and Blankets\*** — Optional for the 1 Hr Ratings — To be omitted for the 2 Hr Ratings. 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 — Optional for the 1 Hr Ratings — To be omitted for the 2 Hr Ratings. 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.

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[Last Updated](#) on 2020-05-05