

**BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada**

Design No. M541

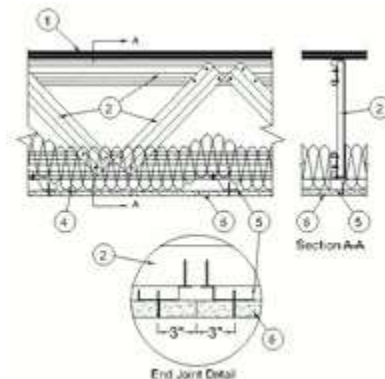
June 07, 2018

Unrestrained Assembly Rating — 1 Hr

Unrestrained Beam Rating — 1 Hr

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. Flooring System — The flooring system shall consist of one of the following:

System No. 1

Subflooring — Min 23/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Plywood or panel mechanically fastened to trusses 12 in. OC in conjunction with construction adhesive.

Vapor Barrier — (Optional) — Nom 0.030 in thick commercial asphalt saturated felt.

Finish Flooring — Min 1 by 4 in. T & G lumber installed perpendicular to trusses, or min 15/32 in. thick wood structural panels, min grade

"Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered.

System No. 2

Subflooring — Min 23/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Plywood or panel mechanically fastened to trusses 12 in. OC in conjunction with construction adhesive.

Vapor Barrier — (Optional) — Nom 0.010 in. thick commercial asphalt saturated felt.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

Floor Mat Materials* — (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.

UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

Alternate Floor Mat Material* — (Optional) — Floor mat material nominal 3/8 in. thick loose laid over the subfloor. Floor topping shall be a min 3/4 in. thick. Thickness increased to min 1 in. for used with LEVELROCK® Brand Floor Underlayment SRM-25.

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

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

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

4. Batts and Blankets* — (Optional) — Any thickness of mineral wool or glass fiber insulation fitted in the concealed space, draped over the

resilient channels and gypsum board ceiling membrane. Any mineral wool or glass fiber insulation bearing the UL Classification Marking for Surface Burning Characteristics having a flame spread index of 25 or less and a smoke developed index of 50 or less may be used.

See **Batts and Blankets** (BKNV) category in the Building Materials Directory for names of manufacturers.

4A. Loose Fill Material* — (Optional) — As an alternate to Item 4, any thickness of loose fill material installed on top of gypsum board ceiling membrane. Any loose fill material bearing the UL Classification Marking for Surface Burning Characteristics having a flame spread index of 25 or less and a smoke developed index of 50 or less may be used.

See **Loose Fill Materials** (BPHX) category in the Building Materials Directory for names of manufacturers.

5. 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.

5A. Alternate Steel Framing Members* — (Not Shown) — As an alternate to Item 5, main runners, cross tees or channels, and wall angle or channels as listed below:

a. **Main Runners** — Nom 10 or 12 ft long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft OC perpendicular to trusses. Main runners suspended a min of 2 in. beneath bottom chord of trusses with min 12 SWG galv steel hanger wires spaced 48 in. OC. Hanger wires to be located adjacent to main runner/cross tee intersections.

b. **Cross Tees or Channels** — Cross tees, nom 4 ft long, 15/16 in or 1-1/2 in. wide face, or cross channels nom 4 ft long, 1-1/2 in. wide face, installed perpendicular to the main runners, spaced 16 in. OC when no insulation is used in the cavity and 12 in. OC when insulation is used in the cavity . Additional cross tees or cross channels used at 8 in. from each side of butted gypsum board end joints. The cross tees or cross channels may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

c. **Wall Angle or Channel** — Used to support steel framing member ends and for screw attachment of the gypsum board. Min 0.016 in. thick painted or galvanized steel angle with 1 in. legs or min 0.016 in. thick painted or galvanized

steel channel with a 1 by 1 1/2 by 1 in. profile, attached to walls at perimeter of ceiling with fasteners 16 in. OC.
USG INTERIORS LLC — Types DGL, RX

6. 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.

UNITED STATES GYPSUM CO — Type C

6A. Alternate Gypsum Board* — For use with **Steel Framing Members*** (Item 5A) - Nom 5/8 in. thick, 48 in. wide gypsum board installed with long dimension parallel to the main runners. Gypsum board fastened to each cross tee or channel with one screw located at the mid-span of the cross tee or channel, one screw located 1-1/2 in. from each wallboard side joint and 8 in. OC. Except at gypsum board end joints, gypsum board screws shall be located 1/2 in. from the joint. Gypsum board fastened to main runners with drywall screws 1/2 in. from side joints, midway between intersections with cross tees or channels and max. 8 in. OC. End joints of adjacent gypsum board sheets shall be staggered not less than 32 in. Gypsum board sheets screw attached to leg of wall angle with drywall screws spaced 8 in. OC.

UNITED STATES GYPSUM CO — Type C

7. Gypsum Board Batten Strip* — Min. 3 in. wide gypsum board strips cut from the same gypsum panels described in Item 6. Gypsum board strips loosely-laid over each butt joint extending 3 in. on each side of the joint.

8. Finishing System — (Not Shown) — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads. Nom 2 in. wide paper tape 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 board.

9. Steel Beam — (Optional, Not Shown) — W8x35 min size, used to support structural steel members (Item 2) at ends.

10. Ceiling Damper* — (Optional) - (Not Shown) - 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

11. **Air Duct*** — (Not Shown) - Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.

12. **Grille** — (Not Shown) - Steel grille, installed in accordance with the installation instructions provided with the ceiling damper.

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