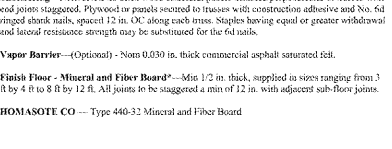
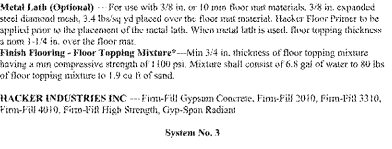
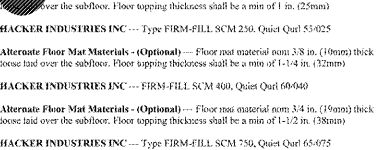
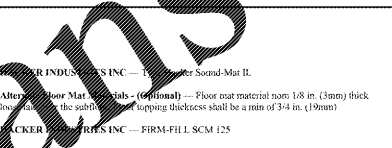
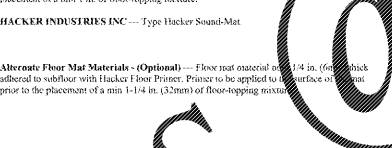
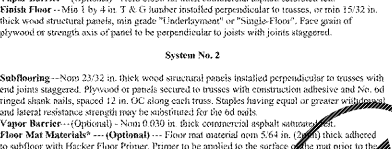
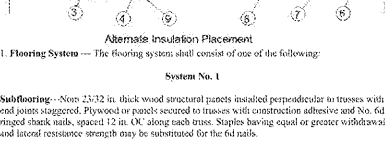
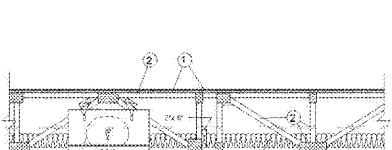
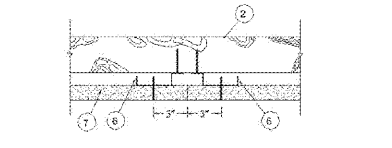
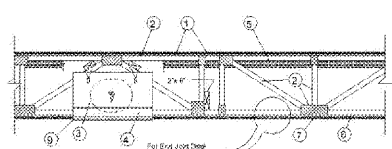


DESIGN No. L521  
UNIT FLOOR/CEILING & CORRIDOR FLOOR/CEILING

Design No. L521  
May 16, 2014  
Unrestrained Assembly Rating - I R  
Finish Rating - 25 Min (See Items 5 and 5A)  
Load Restriction for Canadian Applications - See Guide B3U.2  
When used in Canada it is required that all materials included within the UL design are also UL certified.



**System No. 4**  
**Subflooring** - Non 2x12 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the fd nails.  
**Vapor Barrier** - (Optional) - Non 0.030 in. thick commercial asphalt saturated felt.  
**Finish Flooring - Floor Topping Mixtures** - 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 LK, HSLR, CSJ  
**Floor Mat Materials** - (Optional) - Floor mat material non 1/16 in. 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® Broad Sound Reduction Board, LEVELROCK® Broad Floor Underlayment SRM-25  
**Alternate Floor Mat Materials** - (Optional) - Non 3/8 in. thick floor mat material loose laid over the subfloor.  
**GLASSWORTH L.L.C.** - Type SC50  
**Alternate Floor Mat Material** - (Optional) - Floor mat material nominal 3/8 in. thick loose laid over the subfloor. Floor topping shall be a min 1/2 in. thick.

**OWENS CORNING** - Type QuietZone Acoustical Floor Mat  
**System No. 5**  
**Structural Cement-Fiber Units** - Non 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and centered over the truss. Panels secured to wood trusses with 1-5/8 in. long, No. 8, self-centering wood screw spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, spaced 12 in. from the end edges of the panel.  
**UNITED STATES GYPSUM CO** - Type STRUCTURETE  
**Finish Flooring - Floor Topping Mixtures** - 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 LK, HSLR, CSJ

**UNITED STATES GYPSUM CO** - Types LK, HSLR, CSJ  
**Floor Mat Materials** - (Optional) - Floor mat material non 1/16 in. 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® Broad Sound Reduction Board, LEVELROCK® Broad Floor Underlayment SRM-25  
**2. Trusses** - Parallel chord trusses, spaced a max of 24 in. OC, fabricated from lumber, with lumber oriented vertically or horizontally. Min truss depth shall be 18 in. when a Damper is used and 18 in. when a Ceiling Damper is used. Trusses shall be installed together with min 0.035 in. thick gyp steel plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs on each side of the truss, forming a split tooth type plate. Each tooth shall be 1/2 in. long and 1/4 in. wide. These points are diagonally opposite each other for each tooth. The top half of the tooth has a twist for stiffness. The joints are repeated on approx. 7/8 in. center with four teeth per inch of plate width.  
**3. Air Damp\*** - Any 1/4 Class 0 non-flammable air duct with a damper in accordance with the instructions provided by the damper manufacturer.  
**4. Ceiling Damper\*** - Any 1/4 Class 0 non-flammable air duct with a damper in accordance with the instructions provided by the damper manufacturer. Max height of damper shall be 17 in. Aggregate damper openings shall not exceed 128 sq. in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturer's installation instructions provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.

**C&S AIR PRODUCTS** - Model RD-521-IP, RD-521-NP  
**POTTOREFF** - Model CFD-521-IP, CFD-521-NP  
**5. Batts and Blankets** - (Optional) - Glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced 24 in. OC, no insulation shall be installed in the unoccupied space. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced 16 in. OC, the insulation shall be a max of 3 1/2 in. thick, and shall be secured against the subflooring with staples at 12 in. OC or held suspended in the unoccupied space with 0.090 in. dian gyp steel wires attached to the wood trusses at 12 in. OC. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced a max of 12 in. OC, or when the Steel Framing Members (Item 6B) are used, there is no need for the small trusses and insulation can be secured against the subflooring, held suspended in the unoccupied space or draped over the resilient or furring channels (or Steel Framing Members) and gypsum panel membrane. When Steel Framing Members (Item 6C) are used, max 3 1/2 in. thick insulation shall be draped over the furring channels (Item 6C) and gypsum board ceiling membrane, and friction-fitted between trusses and Steel Framing Members (Item 6C). The finished rating has only been determined when the insulation is secured to the subflooring.  
**5A. Fiber, Sprayed\*** - (Dry) Dens-Pak 100% Borate Formulation - (Optional) - As an alternate to Item 5, when used, the resilient channel and gypsum board attachment is modified as specified in Items 6 and 7 and wire mesh (Item 10) shall be attached to the furring channels to facilitate installation of the material. The finished rating when Fiber, Sprayed is used has not been determined. The fiber is applied without water or adhesive at a nominal dry density of 3.3 lb/ft<sup>3</sup> in accordance with the application instructions supplied with the product. When Item 5A (Fiber, Sprayed) is used, two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 6B, 6C, or 6D.  
**5. GREENFIBER L.L.C.** - IN5735, IN5745, IN5745.D, IN5770LD to be used with dry application only.  
**5B. Fiber, Sprayed\*** - (Lessa Fill 100% Borate Formulation) - (Optional) - As an alternate to Item 5 and 5A. The finished rating when Fiber, Sprayed is used has not been determined. The fiber is applied without water or adhesive at a nominal dry density of 3.3 lb/ft<sup>3</sup> in accordance with the application instructions supplied with the product. Wire mesh (Item 10) shall be attached to the furring channels to facilitate installation of the material. When Item 5B (Fiber, Sprayed) is used, two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 6B, 6C, or 6D.  
**5. GREENFIBER L.L.C.** - IN5735, IN5745, IN5745.D, IN5770LD to be used with dry application only.

**6. Resilient Channels - Mineral and Fiber Board\*** - Min 1/2 in. thick, supplied in sizes ranging from 1 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.  
**ROMASOTE CO** - Type 440-32 Mineral and Fiber Board

**6. Resilient Channels - Mineral and Fiber Board\*** - Min 1/2 in. thick, supplied in sizes ranging from 1 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.  
**ROMASOTE CO** - Type 440-32 Mineral and Fiber Board

**6. Resilient Channels - Mineral and Fiber Board\*** - Min 1/2 in. thick, supplied in sizes ranging from 1 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.  
**ROMASOTE CO** - Type 440-32 Mineral and Fiber Board

**6. Resilient Channels - Mineral and Fiber Board\*** - Min 1/2 in. thick, supplied in sizes ranging from 1 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.  
**ROMASOTE CO** - Type 440-32 Mineral and Fiber Board

**6. Resilient Channels - Mineral and Fiber Board\*** - Min 1/2 in. thick, supplied in sizes ranging from 1 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.  
**ROMASOTE CO** - Type 440-32 Mineral and Fiber Board

**6. Resilient Channels - Mineral and Fiber Board\*** - Min 1/2 in. thick, supplied in sizes ranging from 1 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.  
**ROMASOTE CO** - Type 440-32 Mineral and Fiber Board

**6. Resilient Channels - Mineral and Fiber Board\*** - Min 1/2 in. thick, supplied in sizes ranging from 1 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.  
**ROMASOTE CO** - Type 440-32 Mineral and Fiber Board

channel/gypsum panel ceiling membrane. The resilient channels are spaced 12 in. OC. Channels secured to each truss with 1-1/4 in. long Type 5 bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, centered opposite each gypsum panel end joint as shown in the above illustration. Additional channels shall extend min 6 in. beyond each side edge of panel.  
**6A. Furring Channels** - (Not Shown) - As an alternate to Item 6.  
**a. Furring Channels** - Formed of No. 25 MSJ galv steel, 2-1/16 in. x 2-1/2 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5, 5A or 5B is applied over the furring channels/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item 6. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.  
**b. Steel Framing Members** - Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC. RSC-C (2.75) clips secured to alternating trusses with two No. 8 x 1-1/2 in. coarse drywall screws, one through the hole at each end of the clip. When insulation, Items 5 or 5A is applied over the furring channels/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC, and secured to consecutive trusses. 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. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. When Fiber, Sprayed (Item 5B) is used, two layers of non 5/8 in. thick, 4 ft wide gypsum board shall be installed as described in Item 7.  
**PAC INTERNATIONAL INC** - Types RSC-1, RSC-V, RSC-C (2.75), RSC-V (2.75)  
**6B. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 and 6A, main runners, cross tees, cross channels and wall angle as listed below:  
**a. Main Runners** - Non 10 x 12 ft long, 15 1/8 in. x 1-1/2 in. wide face, spaced 4 ft. OC. Main runners suspended by Item 12 SWG galv steel hanger wires spaced 48 in. OC. Hanger wires to be located adjacent to main runner/cross tee intersections. Hanger wires wrapped and twisted end to end with 1/4 in. dia. galv steel wire, with 15 in. dia. end of twisted wire.  
**b. Cross Tees or Channels** - Non 4 ft long cross tees, with 15 1/8 in. x 1-1/2 in. x 1-1/2 in. wide face, with 1-1/2 in. long cross tees, with 1-1/2 in. wide face, spaced 16 in. OC, installed perpendicular to the main runners. Additional cross tees or channels used 8 in. from each side of hanger/gypsum board end joints. The cross tees or channels may be riveted or welded to the wall angle or channel to facilitate the ceiling installation.  
**c. Wall Angle or Channel** - Painted or galv steel angle with 1 in. legs or channel with 1 1/8 in. legs, 1-9/16 in. deep attached to walls at perimeter of ceiling. Wall angle or channel used in OC. To support steel framing members and for screw-anchoring.  
**CGC INC** - Type DGI or RK  
**USG INTERIORS LLC** - Type DGI or RK

**6C. Steel Framing Members** - (Not Shown) - As an alternate to Items 6, 6A and 6B.  
**a. Furring Channels** - Formed of No. 25 MSJ galv steel, 2-1/16 in. x 2-1/2 in. wide at the base and 1-1/4 in. wide at the face, spaced 16 in. OC. Channels secured to trusses and Cold Rolled Channels at every intersection. Furring channels secured to Cold Rolled Channels with a 1-1/2 in. pan head self-drilling screw, through each furring channel lip. Ends of adjoining channels overlapped 6 in. and tied together with two double strand No. 18 AWG galv steel wire, one at each end of overlap. Supplemental furring channels at base layer of outer layer gypsum board butt joints are not required. Butts and joints draped over furring channels as described in Item 7. Two layers of gypsum board shall be installed over furring channels as described in Item 7.  
**b. Cold Rolled Channels** - 1-1/2 in. x 1-1/2 in. x 1-1/2 in. formed from No. 16 gyp steel, positioned vertically and parallel to trusses, friction-fitted into the channel width of the Steel Framing Members (Item 6C). Adjoining lengths of cold rolled channels lap joint min 1 in. and wire-tied together with two double strand 18 AWG galv steel wire, one at each end of overlap.  
**c. Blocking** - Where truss design does not permit direct fall removal of the hanger block, a piece of nominal 2 by 4 in. lumber (blocking), min. 6 in. long to permit full contact of the hanger block, to be secured vertically to the side of the truss (Item 2) at the top and bottom of the blocking at each Steel Framing Member (Item 6C) location.  
**d. Steel Framing Members** - Hangers spaced 48 in. OC, max along truss, and secured to the blocking (Item 6C) or alternating trusses with a single 5/16 in. by 2 in. hex head lag bolt or four 8 x 1-1/4 in. drywall screws through existing blocking in the hanger bracket. The two 1/4 in. long steel teeth on the hanger are embedded in the side of the blocking. Hanger installation by blocking and leveling both heights adjusted such that furring channels are flush with bottom of truss before gypsum board installation. Spring gauges of hanger chosen per manufacturer's instructions.

**6D. Steel Framing Members** - (Not Shown) - As an alternate to Items 6, 6A, 6B and 6C.  
**a. Furring Channels** - Formed of No. 25 MSJ galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5 or 5A is applied over the furring channels/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item 6. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.  
**b. Steel Framing Members** - Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC, and secured to the bottom chord of alternating trusses with two No. 8 x 1-1/2 in. coarse drywall screws, one through the hole at each end of the clip. When insulation, Items 5 or 5A is applied over the furring channels/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC, and secured to consecutive trusses. 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. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. Two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 5B.  
**KINETICS NOISE CONTROL INC** - Type JONAC

**6E. Steel Framing Members** - (Not Shown) - As an alternate to Items 6, 6A, 6B, 6C and 6D.  
**a. Furring Channels** - Formed of No. 25 MSJ galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5 or 5A is applied over the furring channels/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item 6. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.  
**b. Steel Framing Members** - Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC, and secured to the bottom chord of alternating trusses with two No. 8 x 1-1/2 in. coarse drywall screws, one through the hole at each end of the clip. When insulation, Items 5 or 5A is applied over the furring channels/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC, and secured to consecutive trusses. 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. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. Two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 5B.  
**KINETICS NOISE CONTROL INC** - Type JONAC

**6F. Steel Framing Members** - (Not Shown) - As an alternate to Items 6, 6A, 6B, 6C and 6D.  
**a. Furring Channels** - Formed of No. 25 MSJ galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5 or 5A is applied over the furring channels/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item 6. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.  
**b. Steel Framing Members** - Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC, and secured to the bottom chord of alternating trusses with two No. 8 x 1-1/2 in. coarse drywall screws, one through the hole at each end of the clip. When insulation, Items 5 or 5A is applied over the furring channels/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC, and secured to consecutive trusses. 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. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. Two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 5B.  
**KINETICS NOISE CONTROL INC** - Type JONAC

**6G. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.  
**6C. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.

**6G. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.  
**6C. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.

**6G. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.  
**6C. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.

**6G. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.  
**6C. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.

**6G. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.  
**6C. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.

**6G. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.  
**6C. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.

**6G. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.  
**6C. Steel Framing Members** - (Not Shown) - As an alternate to Items 6 through 6F. Not for use with Items 5, 5A or 5B. Main runners non 12 long, spaced 72 in. OC. Cross tees, non 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with hanger gypsum board end joints centered between trusses.

cross tees spaced 8 in. OC. The main runners and cross tees may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.  
**USG INTERIORS LLC** - Type DGI or RK  
**7. Gypsum Board** - Non 5/8 in. thick, 48 in. wide gypsum panels. When resilient channels (Item 6) are used, gypsum panels installed with gypsum board screws spaced 12 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. When insulation (Item 5 or 5A) is applied over the resilient channel/gypsum panel ceiling membrane screw spacing shall be reduced to 8 in. OC. End joints secured to both resilient channels as shown in end joint detail. When Steel Framing Members (Item 6A) are used, gypsum panels installed with long dimension perpendicular to furring channels. Panels attached to the furring channels using 1 in. long Type 5 bugle-head steel screws spaced 8 in. OC along hanger end of the field of the panel. 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 board plus 6 in. on each end. The two support furring channels shall be spaced approximately 2 in. on each end of the field and 8 in. 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 board plus 6 in. on each end. The two support furring channels shall be spaced approximately 2 in. on each end of the field and 8 in. 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 board plus 6 in. on each end. 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