



# BXUV.W440

## 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.

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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](#)

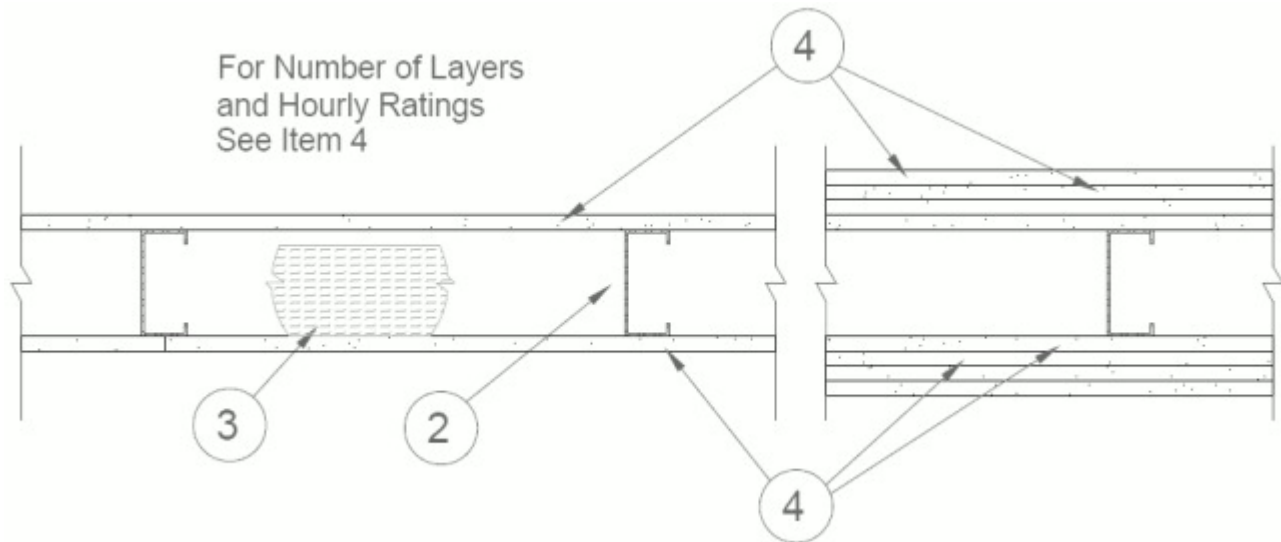
[See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances](#)

## Design No. W440

December 01, 2020

**Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr (See items 4 and 4A)**

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



**1. Floor and Ceiling Runners** — (Not Shown) — For Use with Item 2 — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth as shown in item 4, attached to floor and ceiling with fasteners 24 in. OC max.

**1A. Floor and Ceiling Runners** — (Not Shown — Alternate to Item 1) — For use with Item 2A - Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

**1B. Framing Members\* — Floor and Ceiling Runner** — (Not Shown — Alternate to Item 1) — For use with Item 2B, proprietary channel shaped runners, fabricated from 0.015 in. (bare metal thickness) galvanized steel, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper25™ Track

**CRACO MFG INC** — SmartTrack25™

**MARINO/WARE, DIV OF WARE INDUSTRIES INC** — Viper25™ Track

**FUSION BUILDING PRODUCTS** — Viper25™ Track

**IMPERIAL MANUFACTURING GROUP INC** — Viper25™ Track

**1C. Framing Members\* — Floor and Ceiling Runner** — (Not Shown — Alternate to Item 1) — For use with Item 2C channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max.

**CLARKDIETRICH BUILDING SYSTEMS** — CD ProTRAK

**DMFCWBS L L C** — ProTRAK

**1D. Framing Members\* — Floor and Ceiling Runner** — (Not Shown — Alternate to Item 1) — For use with Item 2D, proprietary channel shaped runners, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, minimum width to accommodate stud size, with 1- 1/8 in. long legs fabricated from min 0.015 in. (min bare metal thickness) galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

**SUPER STUD BUILDING PRODUCTS** — The Edge

**1E. Framing Members\* — Floor and Ceiling Runners** — (Not Shown — Alternate to Item 1) — For use with Item 2E, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max.

**TELLING INDUSTRIES L L C** — TRUE-TRACK™

**1F. Framing Members\* — Floor and Ceiling Runner** — (Not Shown - Alternate to Item 1) — For use with Item 2F, proprietary channel shaped runners, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

**TELLING INDUSTRIES L L C** — Viper25™ Track

**1H. Framing Members\* — Floor and Ceiling Runner** — (Not Shown — Alternate to Item 1) — For use with Item 2H, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper20™ Track

**MARINO/WARE, DIV OF WARE INDUSTRIES INC** — Viper20™ Track

**FUSION BUILDING PRODUCTS** — Viper20™ Track

**IMPERIAL MANUFACTURING GROUP INC** — Viper20™ Track

**1I. Framing Members\* — Floor and Ceiling Runners** — (Not Shown — Alternate to Item 1) — For use with item 2I, channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max.

**SCAFCO STEEL STUD MANUFACTURING CO** — Type SUPREME D24/30EQD and Type SUPREME D20

**TELLING INDUSTRIES L L C** — Type SUPREME D24/30EQD and Type SUPREME D20

**1J. Framing Members\* — Floor and Ceiling Runner** — (Not Shown — Alternate to Item 1) — For use with Item 2J, proprietary channel shaped runners, minimum width to accommodate stud size attached to floor and ceiling with fasteners 24 in. OC max.

**STUDCO BUILDING SYSTEMS** — CROCSTUD Track

**1K. Floor and Ceiling Runners** — (Not Shown — Alternate to Item 1) — Channel shaped, fabricated from min 0.018 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fabricated from min 0.02 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in. OC.

**MARINO/WARE, DIV OF WARE INDUSTRIES INC** — Viper20™ Track VT100.

**FUSION BUILDING PRODUCTS** — Viper20™ Track VT100

**IMPERIAL MANUFACTURING GROUP INC** — Viper20™ Track VT100

**1K. Framing Members\* — Floor and Ceiling Runner** — (Not Shown — Alternate to Item 1) — For use with Item 2J, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

**TELLING INDUSTRIES L L C** — Viper20™ Track

1L. **Framing Members\* — Floor and Ceiling Runner** — (Not Shown — Alternate to Item 1) — For use with Item 2O, proprietary channel shaped runners, fabricated from 0.018 in. (bare metal thickness) galvanized steel, min 3-1/2 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

**RESCUE METAL FRAMING, L L C** — AlphaTRAK

1M. **Framing Members\* — Floor and Ceiling Runner** — (Not Shown — Alternate to Item 1) — For use with Item 2P, proprietary channel shaped runners, fabricated from min. 25 MSG (0.018 in. min. bare metal thickness) galvanized steel, min width to accommodate stud size, attached to floor and ceiling with fasteners 24 in. OC max.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper X Track

2. **Steel Studs** — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, 1-1/4 in. wide, min. depth as indicated under Item 4, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

2A. **Steel Studs** — (Not Shown — Alternate to Item 2) — For use with Items 5, 5A, 5B, and 5C — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height.

2B. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — Proprietary channel shaped studs, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper25™

**CRACO MFG INC** — SmartStud25™

**MARINO/WARE, DIV OF WARE INDUSTRIES INC** — Viper25™

**FUSION BUILDING PRODUCTS** — Viper25™

**IMPERIAL MANUFACTURING GROUP INC** — Viper25™

2C. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — Channel shaped studs, min depth as indicated under Item 4, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

**CLARKDIETRICH BUILDING SYSTEMS** — CD ProSTUD

**DMFCWBS L L C** — ProSTUD

2D. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — Proprietary channel shaped steel studs, minimum width indicated under Item 4, 1-1/4 in. deep fabricated from min 0.015 in. (min bare metal thickness) galvanized steel. Studs 3/8 in. to 3/4 in. less in lengths than assembly heights.

**SUPER STUD BUILDING PRODUCTS** — The Edge

2E. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — Fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

**TELLING INDUSTRIES L L C** — TRUE-STUD™

2F. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — Proprietary channel shaped studs, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.

**TELLING INDUSTRIES L L C** — Viper25™

2H. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper20™

**MARINO/WARE, DIV OF WARE INDUSTRIES INC** — Viper20™

**FUSION BUILDING PRODUCTS** — Viper20™

**IMPERIAL MANUFACTURING GROUP INC** — Viper20™

2I. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — Channel shaped studs, min depth as indicated under Item 4, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

**SCAFCO STEEL STUD MANUFACTURING CO** — Type SUPREME D24/30EQD and Type SUPREME D20

**TELLING INDUSTRIES L L C** — Type SUPREME D24/30EQD and Type SUPREME D20

2J. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — Proprietary channel shaped studs, minimum width indicated under Item 4, Studs to be cut 3/8 to 3/4 in less than the assembly height.

**STUDCO BUILDING SYSTEMS** — CROCSTUD

2K. **Framing Members\* — Metal Studs** — (Not Shown — Alternate to Item 2) — Proprietary channel shaped steel studs, min depth as indicated under Item 4, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.

**TELLING INDUSTRIES L L C** — Viper20™

2L. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

**EB METAL INC** — NITROSTUD

2M. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

**OLMAR SUPPLY INC — PRIMESTUD**

2N. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

**MARINO/WARE, DIV OF WARE INDUSTRIES INC** — StudRite™

2O. **Framing Members\* — Steel Studs** — (Not Shown — Alternate to Item 2) For use with Item 1L — Proprietary channel shaped studs, fabricated from min. 0.018 in. (min bare metal thickness) galvanized steel, min 3-1/2 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.

**RESCUE METAL FRAMING, L L C** — AlphaSTUD

2P. **Framing Members\* — Steel Studs** — — (Not Shown — Alternate to Item 2) — Proprietary channel shaped studs, fabricated from min. 25 MSG (0.018 in. min. bare metal thickness) galvanized steel, min depth as indicated under Item 4, spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper X

3. **Batts and Blankets\*** — (As shown in item 4) — Any mineral wool or glass fiber batts, friction fitted between studs and runners. Min. nom thickness as indicated under Item 4. See **Batts and Blankets (BKNV or BZJZ) Categories** for names of Classified companies.

4. **Gypsum Board\* — For 1, 2, 3, and 4 hour ratings when using min. 0.018 in. stud thickness** - Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

**Wallboard Protection on Each Side of the Wall with Min. Stud Thickness 0.018 in.**

Rating, hr	Min. Stud Depth, min. (in.)	No. of Layers, Thickness of Panel, Board orientation	Min.Thickness, Density of Insulation (Item 3)	Fastener Schedule (Type S or S-12 screws)
1	2-1/2	1 layer, 1/2 in., vertical only	1-1/2 in., mineral wool, 3 pcf	1 in. long, spaced 8 in. OC along the edges & ends; 12 in. OC in field
1	2-1/2	1 layer, 5/8 in., vertical or horizontal	1-1/2 in., mineral wool, 3 pcf	1 in. long, 8 in. OC along the edges & ends; 12 in. OC in field (Vertical application) 1 in. long spaced 8 in. OC (Horizontal application)
2	2-1/2	2 layers, 1/2 in., vertical only	Optional	1 in. long, 12 in. OC base layer 1-5/8 long, 12 in. OC face layer
2	2-1/2	2 layers, 5/8 in., vertical only	Optional	1 in. long spaced 12 in. OC base layer, 1-5/8 in. long spaced 12 in. OC face layer

2	2-1/2	2 layers, 5/8 in., horizontal only	Optional	1 in. long spaced 16 in. OC base layer, 1-5/8 in. long spaced 16 in. OC face layer
3	1-5/8	3 layers, 1/2 in., 1st and 2nd layer vertical, 3rd layer vertical or horizontal	Optional	1 in. long (1st layer), 1-5/8 in. long (2nd layer), 2-1/4 in. long (3rd layer); with 1-1/2 in. long Type G between studs at horizontal joints in board; spacing 12 in. OC
3	1-5/8	3 layers, 5/8 in., 1st layer, 2nd layer, 3rd layer vertical or horizontal	Optional	1 in. long (1st layer), 1-5/8 in. long (2nd layer), 2-1/4 in. long (3rd layer); with 1-1/2 in. long Type G between studs at horizontal joints in board; spacing 12 in. OC
4	1-5/8	4 layers, 1/2 in., 1st-3rd layers, vertical only, 4th layer, vertical or horizontal	Optional	1 in. long (1st layer), 1-5/8 in. long (2nd layer), 2-1/4 in. long (3rd layer), 2-5/8 in. long (4th layer) with 1-1/2 in. long Type G between studs at horizontal joints in board; spacing 12 in. OC
4	1-5/8	4 layers, 5/8 in., 1st-4th layers, vertical or horizontal	Optional	1 in. long (1st layer), 1-5/8 in. long (2nd layer), 2-1/4 in. long (3rd layer), 2-5/8 in. long (4th layer) with 1-1/2 in. long Type G between studs at horizontal joints in board; spacing 12 in. OC

**CERTAINTED GYPSUM INC** — 1/2 in. thick Type C; 5/8 in. thick Type C, Type X, Type X-1, Easi-Lite Type X-2, EGRG, GlasRoc, GlasRoc-2, GlasRoc Sheathing Type X, SilentFX

4A. **Gypsum Board\*** — (Not Shown — Alternate to Item 4 ) — **For 1 and 2 hour ratings when using min. 0.015 in. stud thickness** — For 1 hr rating (Vertical application) — Vertical joints are centered over studs and staggered from vertical joints on opposite sides of the wall. For 1 hr rating (Horizontal application) — Horizontal joints need not be staggered on opposite faces or backed by steel framing. For 2 hr rating (Horizontal application) — Two layers of 5/8 in. thick gypsum board applied horizontally. Horizontal joints need not be staggered on opposite faces or backed by steel framing. Face layer horizontal joints must be staggered a minimum 12 in. from the base layer when applied horizontally. For 2 hr rating (Vertical application) - Two layers of 5/8 in. thick gypsum boards applied vertically. Vertical joints are centered over studs and staggered between layers and on opposite sides of the wall.

**Wallboard Protection on Each Side of the Wall with Min. Stud Thickness 0.015 in**

Rating, hr	Min. Stud Depth, min. (in.)	No. of Layers, Thickness of Panel, Board orientation	Min.Thickness, Density of Insulation (Item 3)	Fastener Schedule (Type S or S-12 screws)
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1	3-5/8	1 layer, 5/8 in., vertical or horizontal	Optional	<p>Vertical application - One layer of 5/8 in. thick gypsum board applied vertically with 1 in. long Type-S bugle head screws spaced 8 in. OC at the perimeter and 12 in. OC in the field with the 1st screw installed 4 in. from the board edges at the perimeter and 6 in. from the board edge in the field.</p> <p>Horizontal application - One layer of 5/8 in. thick gypsum board applied horizontally to studs with 1 in. long Type-S bugle head screws spaced 8 in. OC at the perimeter and in the field with the 1st screw installed 4 in. from the board edge.</p>
2	3-5/8	2 layers, 5/8 in., vertical or horizontal	Optional	<p>Horizontal application - Base layer is attached to studs with 1 in. long Type-S bugle head screws, spaced 16 in. OC with 1st and 2nd screws installed 1 in. and 8 in. from board edge, respectively; and to track spaced 16 in. OC. with the 1st screw installed 3 in. from board edge. Face layer attached to studs with 1-5/8 in. long Type S bugle head screws spaced 16 in. OC. with the 1st and 2nd screws installed 1 in. and 8 in. from board edge, respectively; and to track spaced 16 in. OC. with the 1st and 2nd screws installed 2 in. and 11 in. from board edge.</p> <p>Vertical application - Base layer attached to studs with 1 in. long Type-S bugle head screws, spaced 16 in. OC. with 1st screws installed 8 in. from board edge in the field and 3 in. from board edge in the perimeter. Face layer attached to studs with 1-5/8 in. long Type-S bugle head screws, spaced 16 in. OC. with 1st screw installed 16 in. from board edge in the field and 1st and 2st screws installed 2 in. and 11 in. from board edge in the perimeter, respectively.</p>

**CERTAINTED GYPSUM INC** — 5/8 in. thick Type C, Type X-1, Easi-Lite Type X-2, EGRG, GlasRoc, GlasRoc-2, GlasRoc Sheathing Type X, SilentFX

5. **Gypsum Board\*** — (Not Shown) — As an alternate to Item 4 when used as the base layer on one or both sides of wall when 5/8 in or 3/4 in. thick products are specified. For direct attachment only to steel studs Item 2A, not to be used with Item 3 - Nom 5/8 in. or 3/4 in. may be used as alternate to all 5/8 in. or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to 20 MSG steel studs Item 2A with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 11) or Lead Discs or Tabs (see Item 12).

**RAY-BAR ENGINEERING CORP** — Type RB-LBG

5A. **Gypsum Board\*** — (Not Shown) — As an alternate to Item 4 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in thick products are specified. For direct attachment only to steel studs Item 2A, not to be used with Item 3 - Nom 5/8 or 3/4 in. may be used as alternate to all 5/8 or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to



studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Gypsum board secured to 20 MSG steel studs Item 2B with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 11A) or Lead Discs (see Item 12A).

**MAYCO INDUSTRIES INC** — Type X-Ray Shielded Gypsum

5B. **Gypsum Board\*** — (Not Shown) — As an alternate to Item 4 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

**RADIATION PROTECTION PRODUCTS INC** — Type RPP - Lead Lined Drywall

5C. **Gypsum Board\*** — (Not Shown) — As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3. Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or No. 6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

**NEW ENGLAND LEAD BURNING CO INC, DBA NELCO** — Nelco

6. **Furring Channels** — (Optional, not shown, for single or double layer systems only) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws.

6A. **Framing Members\*** — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 6, furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 5. Not for use with Item 5, 5A, 5B or 5C.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 6Aa) to studs (Item 2). Clips spaced max. 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.

**PAC INTERNATIONAL L L C** — Types RSIC-1, RSIC-1 (2.75)

6B. **Framing Members\*** — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 6 and 6A, furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel, 2-5/8 in. wide by 7/8 in deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 5. Not for use with Item 5, 5A, 5B or 5C.

b. **Steel Framing Members\*** — — Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC, and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.

**STUDCO BUILDING SYSTEMS** — RESILMOUNT Sound Isolation Clips - Type A237R

6C. **Steel Framing Members\*** — — (Optional on one or both sides, not shown, for single or double layer systems.) (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with a double strand of No. 18 AWG twisted steel wire. Gypsum board attached to furring channels as described in Item 5. Not for use with Item 5, 5A, 5B, or 5C.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 6Ca) to studs (Item 2). Clips spaced 48 in. OC, and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

**REGUPOL AMERICA** — Type SonusClip

6D. **Steel Framing Members\*** — (Optional on one or both sides, not shown, for single or double layer systems.) (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below:

a. **Resilient Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 5. Not for use with Item 5, 5A, 5B, or 5C.

b. **Steel Framing Members\*** — Used to attach resilient channels (Item 6Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.

**KEENE BUILDING PRODUCTS CO INC** — Type RC+ Assurance Clip

7. **Joint Tape and Compound** — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layer panels. Paper tape and joint compound may be omitted when gypsum panels are supplied with a square edge.

8. **Siding, Brick or Stucco** — (Optional, Not Shown) — Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties attached to each stud with steel screws, not more than each sixth course of brick.

9. **Caulking and Sealants\*** — (Optional, Not Shown) — A bead of acoustical sealant applied around the partition perimeter for sound control.

10. **Lead Batten Strips** — (Not Shown — For Use With Item 5) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5) and optional at remaining stud locations. Required behind vertical joints.

10A. **Lead Batten Strips** — (Not Shown — For Use With Item 5A) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-

201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations.

**11. Lead Discs or Tabs** — (Not Shown, For Use With Item 5) — Used in lieu of or in addition to the lead batten strips (Item 11) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

**11A. Lead Discs** — (Not Shown, for use with Item 5A) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

**12. Lead Batten Strips** — (Not Shown — For Use With Item 5C) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5E) and optional at remaining stud locations.

**13. Lead Tabs** — (Not Shown — For Use With Item 5C) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 5E) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

**14. Barrier Mesh** — (Optional, Not Shown) - Attached to steel studs on one or both sides of the wall using Barrier Mesh Clips spaced at maximum 12 inches on center vertically, using a flat head type screw penetrating through the steel at least 3/8 of an inch. For Steel Studs less than 0.033 inches in thickness, use self-piercing screws. For Steel Studs equal to or greater than 0.033 inches in thickness, use steel drill screws (self-tapping). Gypsum Board (Item 4) to be installed directly over the Barrier Mesh using prescribed screw patterns with lengths increased by a minimum 1/8 in. Barrier Mesh may be installed with the long dimension of the diamond pattern positioned vertically or horizontally. Barrier Mesh joints may occur as butt joints at the framing members and secured using the Barrier Mesh Clips or occur in between framing members as overlapping joints secured using 18 SWG wire ties spaced a maximum 12 in. on center.

**CLARKDIETRICH BUILDING SYSTEMS** — Barrier Mesh, Barrier Mesh Clips

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

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