

TONGUE & GROOVE PANEL (T-G)

LOAD TABLES: ThermaSteel Inc.
609 West Rock Road, Radford, Virginia 24141

CSI Division: 07-THERMAL AND MOISTURE PROTECTION CSI
Section: 07410—Metal Roof and Wall Panels

1.0 APPLICABLE BUILDING CODES

1.1 Compliance to the following building codes:

International Building Code® (IBC) 2024,2021, 2018, 2015, 2012, 2009, 2006

International Residential Code® (IRC) 2024,2021; 2018, 2015, 2012, 2009, 2006

1.2 Compliance to the following structural codes:

ASCE/SEI 7-16 & ASCE/SEI 7-22 Minimum Design Loads for Buildings and Other Structures

AISI S100-16 North American Specification for Design of Cold Formed Steel Structural Members, AISI S240 North American Standard for Cold Formed Steel Structural Framing

2.0 PRODUCT USE

Tongue and Groove (T-G) light gage steel insulated composite panels, used for foundation walls, basement walls, above grade exterior and interior walls, floors, roofs and ceilings in Construction Type V for commercial and residential applications. The walls may be either load bearing or non-load bearing. This panelized system has been tested and engineered in North America and Europe. The panels comply with IBC Section K107 as prefabricated construction.

3.0 PRODUCT ALTERNATIVE METHOD

This product requires engineering of a licensed professional when prescriptive methods do not apply. The panels also comply with Section R301.1.3 of the current International Residential Building Code. IRC) Design using the panels can be addressed by the building official under sec. 104 of the IBC sub-heading *Duties and Powers of the Building Official* and sec. 104.11 sub-heading *Alternative materials, design and methods of construction and equipment*.

4.0 PRODUCT DESCRIPTION

Panels consist of expanded polystyrene (EPS) insulation core bonded between two galvanized, light-gauge steel studs rotated sideways for enhanced shear (Ix) and structural framing.

4.1 Corrosion Protection: Panels are manufactured with standard G60 zinc coating. Thicker coating G90 and Galvalume is available.

4.2 Framing: The panel may be used as a wall or a beam or floor or roof, depending on the direction of the loads. Studs are on the long side of the panel (CSJ). The panel is made of two separate steel frames - one on the exterior and one the interior of the

panel. The steel frames are molded together with EPS core. All panels have a thermal break, see Figures 1, 2. The steel members are spaced at 12 inches (305 mm) or 16 inches (406 mm) on center and rotated sideways for enhanced shear resistance (Ix). The light gauge material is roll formed from Nos. 24, 20, 18, 16, or 14-gauge steel sheets, bent to shape. Panels are manufactured by applying a thermosetting adhesive coating to the steel members and then subjecting framing members to low-pressure molding, making them fully braced.

4.2.1 End Metal: The top and bottom of every panel is made of L metal track, ¾" x 2 ¼" (customizable to 2 ¼" x 10") see Figures 1 & 2. End Metal is 24 gauge thick and available at, 14, 16, 18, 20 gauge.

4.2.2 Connector Shear Plate: Shear plates and connectors may be used to connect other structural elements to the panel. Plate size is 3 inches by 5 inches (76 mm by 127 mm), 20 gauge or thicker.

4.2.3 Self-tapping Screws: Screws shall be No.10 self-tapping and produced from steel complying with AISI 1018 or equivalent.

4.3 Standard Panels: The standard manufactured panels are up to 48 inches (1219 mm) wide and up to 12-ft (3,658 mm) long. Standard panel thicknesses are 3½ inches (89 mm), 5½ inches (140 mm) and 7½ inches (190 mm). Panels are manufactured with a leading edge on the exterior side for connecting adjacent panels.

4.4 Wire Chase: Panels have wire chase 11 inch from the bottom.

4.5 Customized Panels: Custom dimensions are available in 1/8-inch increments. Panel thickness: 3.5; 5.5 and 7.5 with 1 or 1.5 lb./cu ft nominal density. Longer lengths can be achieved by connecting multiple panels.

5.0 MATERIAL INFORMATION

5.1 Expanded Polystyrene (EPS): Panels are manufactured with modified grade EPS, BF395 in accordance with ASTM C578 and Sections 2603.3; 2603.5.4 of the IBC. The EPS is tested to flame-spread index of 10 and smoke developed index of 45-125. Tests conducted by the manufacture Styropek in 2-inch thickness at 1.0 lb./cu ft density. See mechanical properties in Table 1. See EPS density properties in Table 2.

TABLE 1. MECHANICAL PROPERTIES PER EPS DENSITY				
EPS Prop	Type I		Type II	
Density (pcf)	1	Avg.	1.5	Avg.
E (psi)	180-220	200	320-360	340
G (psi)	280-320	300	460-500	480

TABLE 2. EPS PANEL DENSITY DESIGN VALUES					
Thickness		Density			
		Minimum		Maximum	
Inches	(mm)	lb./cu ft	(gr/liter)	lb./cu ft	(gr/liter)
3.5	89	1.25	20	1.55	24.8
5.5	140	0.9	14	1.55	24.8
7.5	190	0.9	14	1.55	24.8

5.2 Panel Steel: All steel members shall be manufactured in accordance with ASTM A653 SS, Grade 33, and coated with ASTM A924 G60 galvanizing or galvalume (or G90 if required). Designs can be made available for higher strength steels such as ASTM A653 SS Grade 50/1. Steel thickness refers to minimum uncoated base-metal thickness. The design thickness is based on AISI uncoated values as noted in Table 3.

TABLE 3. LIGHT GAUGE METAL COIL THICKNESS (INCH)					
Gauge	Uncoated		Coated (Galvanized)		
	Minimum	Nominal	AISI Design	Abs min	Nominal
24	0.0209	0.0239	0.022	0.0236	0.0276
22	0.0269	0.0299	0.0283	0.0296	0.0336
20	0.0329	0.0359	0.0346	0.0356	0.0396
18	0.0428	0.0478	0.0451	0.0466	0.0516
16	0.0538	0.0598	0.0566	0.0575	0.0635
14	0.0677	0.0747	0.0713	0.0705	0.0785

5.3 Thermosetting Adhesive: A Thermosetting neoprene phenol adhesive is applied to steel members prior to molding the panel.

6.0 DESIGN

Load Tables in this report were developed based on calculations to resist yielding, local buckling, and lateral buckling in accordance with the United States research publications 2001-2025 North American Specification for the Design of Cold-Formed Steel Structural Members (AISI). The loads stipulated are Allowable Stress Design (ASD), and Load Resistance Factor Design (LRFD). These types of loadings are consistent with IBC and the CBC requirements, providing the designer to meet the code.

ASD: F_y/Ω_c ; LRFD: ϕF_y ; Whereas F_y is the yield stress, Ω_c is the safety factor for allowable strength in compression (typically 1.67), and ϕ is the resistance factor (typically 0.9 for compression).

6.1 Axial Compression: Compressive axial load tables are based on the ASTM E72 standard in which load is applied at 1/3 the panel thickness (t) when measured from the face of the panel. The eccentricity ($e=t/6$); is measured from the panel centerline.

6.2 Wall Bearing Loads: compressive axial loads may act on a wall panel as a point load on two stiffeners (lbs.), or as a distributed

load (lbs./ft). The allowable loads (ASD) or capacity (LRFD) are shown in Tables 5-9.

6.3 Point Loads: Point loads are acting on two stiffeners (lbs.). When a point load is between stud members, the top plate shall be sized to resist bending for the location of the load on the plate. See Figure 4.

6.4 Transverse Loads: Panels may be used to support floor or roof loads (psf) as shown in tables 10-14. The loads in the Tables provide for uniform distributed transverse allowable (ASD) and failure (LRFD) loads. Single span transverse load capacities or deflection control service live loads are given for stud spacings of 16" and 12" on center and EPS densities of 1 pcf and 1.5 pcf.

6.5 Shear Racking Loads: All ThermaSteel panels resist shear. Resistance loads for both 1 pcf and 1.5 pcf panels are provided by in tables 15-19. Studs are rotated sideways for enhanced shear performance, and the EPS is providing full height bracing. All shear panels require 3 No.10 self-tapping screws at the bottom of each stud. Shear panels are equipped with a 20 Gauge thick diagonal strap bracing on both faces of each panel. Bracing is available at, 14, 16, 18, gauge. Additional shear values can be obtained using sheathing in accordance with ASTM E72. Shear racking load tables are for shear only not combined loading. Failure (yielding, local buckling or lateral buckling) of the studs at the leading edge (a strength criterion) and racking (a service) limit are accounted for. The ends of a shear panel will experience up lift (Rt) on one end and compression (Rc) on the other end and shall be provided for in combination with gravity loads in the design process. Axial compressive strength (LRFD) or allowable load (ASD) at leading edge studs are listed in Tables 20a and 20b (Rt and Rc). The leading-edge stud should be checked for gravity and seismic (or wind) load combinations, see Figure 2 and 7. This reaction shall meet either Equations EQ-1, EQ-2 in which the subscript "a" is allowable and "n" is nominal. These equations are valid for both Rc (compression stud) or Rt (tension stud). The equations do not include the contribution of sheathing.

$$\text{ASD: } R_c \leq R_a \quad (\text{EQ-1})$$

$$\text{LRFD: } (R_u = R_c) \leq \phi R_n \quad (\text{EQ-2})$$

6.5 Load Interaction: If loading conditions result in a simultaneously applied axial, shear and transverse load, depending on the code, Equations EQ-3, EQ-4 shall be used:

$$\text{ASD: } \left(\frac{p}{P_a} \right) + \left(\frac{w}{W_a} \right) \leq 1 \quad (\text{EQ-3})$$

$$\text{LRFD: } \left(\frac{P_u}{\phi P_n} \right) + \left(\frac{W_u}{\phi W_n} \right) \leq 1 \quad (\text{EQ-4})$$

Panel shear resistance is accommodated by calculating maximum added axial forces in the studs. Axial stud forces imposed by overturning due to shear is added to the gravity loads in the stud. Axial compressive loads may be either distributed or a point load; p is an axial load, and w is a transverse load. The subscript "a" is allowable, "n" is nominal, and ϕ is a capacity reduction factor, and "u" is factored.

6.6 In-Plane Loads: Panels may be used to resist in-plane shear and in all seismic categories.

6.7 Seismic Design: Shear wall panels with diagonal strap bracing, may be used in zones B; C; D; E; F per code. See coefficients in table 4. For zone E, F, additional sheathing is required. The bottom Track is acting as hold down. The need for additional hold down, the gauge of steel and depth of the track is determined by the engineer.

6.8 Limitations of the Load Tables: Tabulated loads listed in the load tables may be used for shorter spans or shorter heights. Extrapolation of panel lengths is outside the scope of this report. For lengths less than those provided, interpolation may be used.

7.0 INSTALLATION

All panels (T-G) shall be installed in accordance the applicable IRC, IBC and NBC codes and the installation manual of the manufacturer.

7.1 Panel to Panel Connection: The T-G panels shall be connected by the leading edge at the exterior face of the panel (a shear connection). Each leading edge will be connected to the adjacent panel using No. 10 self-tapping screws at 12" On Center for the height of the panel.

7.2 Corners: Corner plates are joined in accordance with the details shown in Figure 3 of this report.

7.3 Exterior and Interior Wall Panels: Each panel shall be attached to top and bottom tracks with No. 10 self-tapping screws. Every stud (exterior and interior) shall be connected to the top and bottom track with 2 No. 10 self-tapping screws per stud (inside and out, and top and bottom).

7.4.1 Roof and Floor Panels: Roof and floor panels may be used as a diaphragm. If the loads exceed in-plane capacity, additional structural element may be added. Connected panels provide a monorhinc behavior.

7.4.2 f-Panel: The system is a stay in place form work for reinforced concrete slab application (floors and roofs). For design, use the f-Panel engineered manual. The system provides load tables for multiple spans 20 ft to 40 ft.

7.5 Cladding and Attachment:

Panel manufactured ready for covering. Attachment of cladding, and hanging, is done directly to the studs.

7.5.1 Exterior Covering: Exterior wall panels shall be protected with a code complying exterior wall covering. For thermal barriers, interior separation, see section 7.5.5 below and applicable code. Long term exposure to sunlight, exceeding 60 days, will damage the face of the panel and cause deterioration of quality and performance.

7.5.2 Interior Coverings: The interior wall panels shall be covered with an approved wall covering in accordance with IBC or IRC and NBC. For thermal barriers, interior separation, see section 7.5.5 below and applicable code.

7.5.3 Roof Covering: Roof panels require thermal barriers, interior separation per section 7.5.5 below and applicable code. Hydro-insulation requirements are per code and tables 21-22.

Minimum roof slope shall be in accordance with IBC Chapter 15 or IRC Chapter 9. The roof shall provide for proper drainage.

7.5.4 Floor Covering: Floor panels shall be covered with a code accepted floor covering. Installation methods shall be in accordance with current IBC, IRC. For tiling products rigid substrate is required.

7.5.5 Thermal Barrier Interior Separation: Except as provided for in IBC Section 2603.4.1 and 2012 IBC Section 2603.10, 2009 and 2006 IBC Section 2603.9 and IRC Sections R316.5 and R316.6, T-G Panels shall be separated from the interior of a building by a thermal barrier of minimum ½ inch (12.7 mm) thick gypsum wallboard or other approved material in accordance with IBC 2603.4. Thermal barrier exceptions in 2012 IBC Sections 2603.4.1.1 through 2603.4.1.14, 2009 or 2006 IBC Sections 2603.4.1 through 2603.13 and IRC Sections R316.5 and R316.6, and the appropriate sections of the NBC do not apply to foam plastic insulation used as an interior wall or ceiling finish in plenums.

7.6.1 Sealing Seams: Panel to panel connection is not a watertight seam. Leading edge seam between panels does not require sealing. Special attention to sealing seams in the following locations: The seam joint between the exterior bottom walls and the track; the interior vertical seam between two panels of exterior walls; all below grade seams.

7.6.2 Sealing Method: Sealing seams can be done by a tape, Caulk, or spray foam. Sealing material and application should be of a non harmful material to the panel and applied in accordance with the manufacturer's recommendations.

7.7 Field Cuts: Field-cutting of the panel, and panel alterations shall be pre-approved by the manufacturer.

7.8 Vapor Barrier: The T-G panels are manufactured with an expanded polystyrene core (EPS). The EPS core has a permeability rating sufficient to not require a vapor barrier on exterior walls, see Tables 21-22 for the covering.

7.9 Tracks: The bottom track shall be a minimum of 18 gauge. The bottom track shall be attached to the floor system on top of sill-foam. Bolts size and spacing shall be determined by the engineer.

8.0 FIRE RATED PANELS

Panels may be used in a noncombustible assembly. Application in fire rated assemblies is per test reports provided by the manufacturer, approved assemblies and applicable code.

9.0 BELOW GRADE

Panels may be used for foundation walls and basement walls. When applying panels for below grade walls use only 7.5-inch, 1.5 density panels. Based on the combination of axial compressive and transverse load, a wall panel may be sized by the engineer as a foundation wall. For basement walls, use C600 studs spaced at 16 inch or 12-inch On Center as shown in Figure 9. Walls shall be waterproofed as shown in Figure 8 and stiffened on the exterior side with concrete parchment. The design accounts for a non-frost susceptible (NFS) backfill, water proofing and rodent

inhibiting barrier (such as parch cement for foundation walls and ¼ inch galvanized lath) on the outside surface and 5/8-inch gypsum on the inside face of the panel. Backfill shall not be placed until the wall is secured at the footing and top of wall by the floor framing. Heavy equipment shall not be used to compact backfill next to the wall. Compaction of the backfill using a plate compactor is acceptable in no more than 6-inch lifts. At the interior side of the basement wall, the top of the concrete floor slab shall be no less than 4 inches above the bottom of the wall, see Figure 8 and 10. The backfill shall be NFS material such as clean sand or a clean sandy gravel. Drain tile and all other required provisions will be used next to the exterior side of the footing to relieve any water pressure around the wall (out of the scope of this report and per design of the engineer). The wall design details provided in Figures 8, 9, and 10 will meet lateral displacement of $h/240$. The basement wall design is limited to a 10-foot-high basement wall with soil no higher than 12 inches below the top of the wall as shown on Figure 10. The design is based on Rankine's soil pressure theory in which the "at rest" soil pressure coefficient is $k=0.5$. Soil density is assumed to be 120 pcf. The basement wall is shown in Figures 8 and 9. The acting

soil pressure on the wall is shown on Figure 10. The basement wall is to be sized and evaluated using the Allowable Stress Design method (ASD). Table 23 provides the engineer with the allowable axial wall compressive load on a stud line and the allowable moment on that same stud line. Panels may be 4 foot tall to 10 foot tall. Any gravity load acting on the basement wall must meet the following load combination, see Equation EQ-5. This equation is providing for ASD load combinations. It should be noted that the loads (P and M) are the acting axial force, P and the acting moment, M. The subscript, "a" is used to describe the ASD allowable axial load and allowable bending moment.

$$\left(\frac{P}{P_a}\right) + \left(\frac{M}{M_a}\right) < 1 \quad (\text{EQ-5})$$

10.0 IDENTIFICATION

Beckley Engineering LLC # 184-007853-00006 IL
Olabode Beckley Engineer 081-005475 PE, SE

TABLE 4. COEFFICIENTS OF SEISMIC DESIGN

SEISMIC FORCE-RESISTING SYSTEM		RESPONSE MODIFICATION COEFFICIENT (R)	OVERSTRENGTH FACTOR (Ω_0)	DEFLECTION AMPLIFICATION (C_d)	STRUCTURAL SYSTEM LIMITATIONS INCLUDING STRUCTURAL HEIGHT, h_{en} (FT.) LIMITS				
					SEISMIC DESIGN CATEGORY				
					B	C	D	E	F
BEARING WALL SYSTEMS	LIGHT-FRAME (COLD FORMED STEEL) WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE OR STEEL SHEETS	6.5	3	4	NL	NL	65	65	65
	* LIGHT-FRAME WALLS WITH SHEAR PANELS OF ALL OTHER MATERIALS (FOR EXAMPLE EPS)	2	2.5	2	NL	NL	35	NP	NP
	LIFT-FRAME (COLD-FORMED STEEL) WALL SYSTEMS USING FLAT STRAP BRACING	4	2	3.5	NL	NL	65	65	65
BUILDING FRAME SYSTEMS	LIGHT-FRAME (COLD FORMED STEEL) WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE OR STEEL SHEETS	7	2.5	4.5	NL	NL	65	65	65
	* LIGHT-FRAME WALLS WITH SHEAR PANELS OF ALL OTHER MATERIALS (FOR EXAMPLE EPS)	2.5	2.5	2.5	NL	NL	35	NP	NP

NL = NOT LIMITED NP = NOT PERMITTED

* USE THERMASTEEL SHEAR STRUCTURAL PANEL WITH WOOD OR STEEL SHEATHINGS IN CONJUNCTION WITH THE COEFFICIENT, FACTOR, AMPLIFICATION AND LIMITATIONS AS ALLOWED BY THE TABLE FOR SEISMIC CATEGORIES E AND F.

- 1 RESPONSE MODIFICATION COEFFICIENT, R, FOR USE THROUGH TABLE. NOTE THAT R REDUCES FORCES TO STRENGTH LEVEL, NOT AN ALLOWABLE STRESS LEVEL.
- 2 WHERE THE TABULATED VALUE OF THE OVERSTRENGTH FACTOR Ω_0 , IS GREATER THAN OR EQUAL 2.5, Ω_0 IS PERMITTED TO BE REDUCED BY SUBTRACTING THE VALUE OF 0.5 FOR STRUCTURES WITH FLEXIBLE DIAPHRAGMS.
- 4 AN INCREASE IN STRUCTURAL HEIGHT, h_{en} , TO 45 FEET (13.70 METERS) IS PERMITTED FOR SINGLE-STORY STORAGE WAREHOUSE FACILITIES.

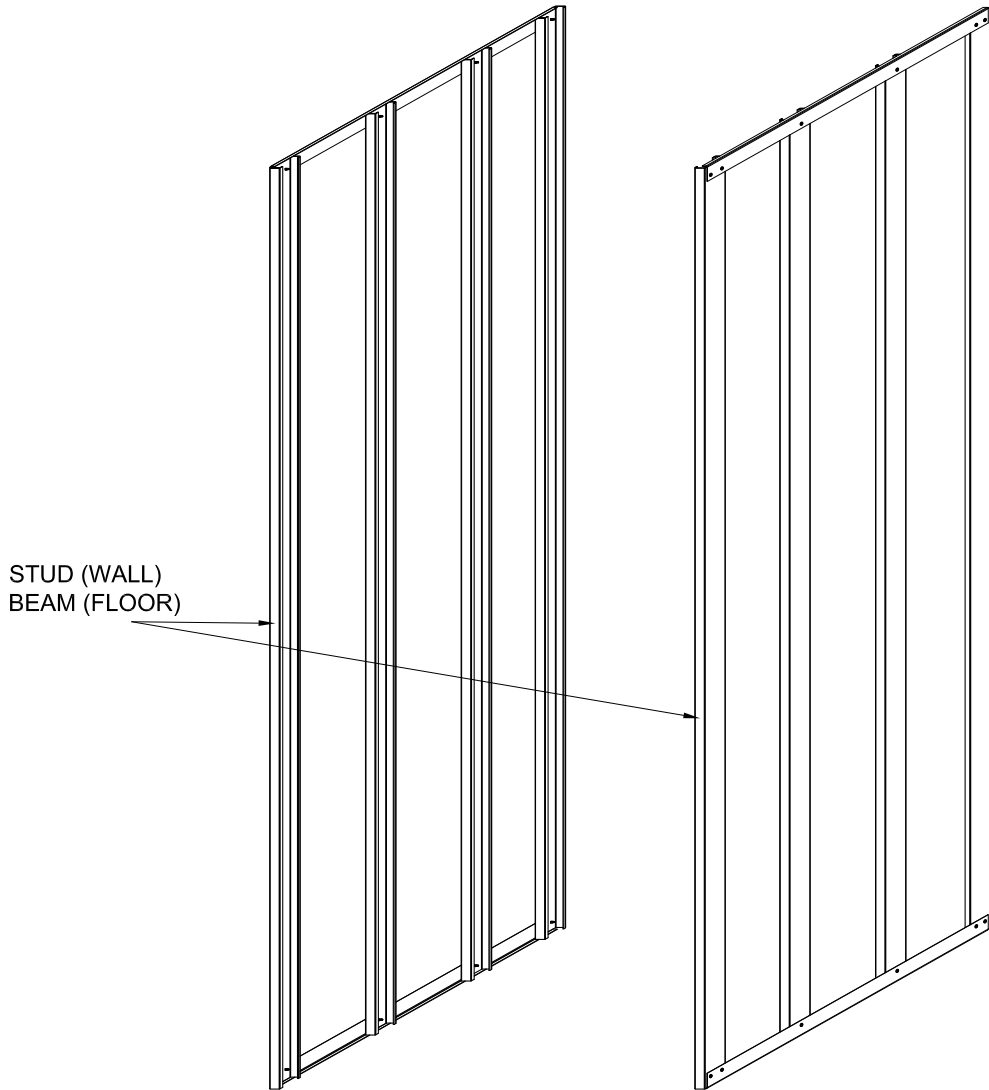


FIGURE 1: STEEL FRAMES WITH THERMAL BREAK

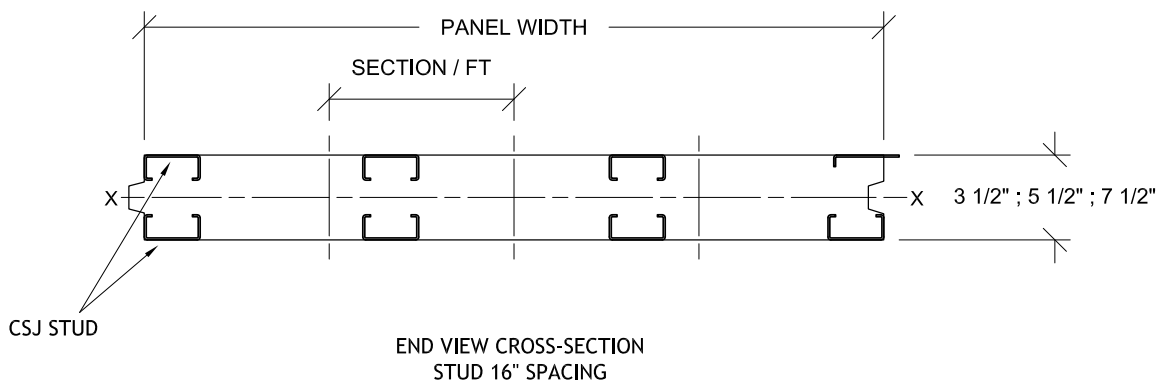
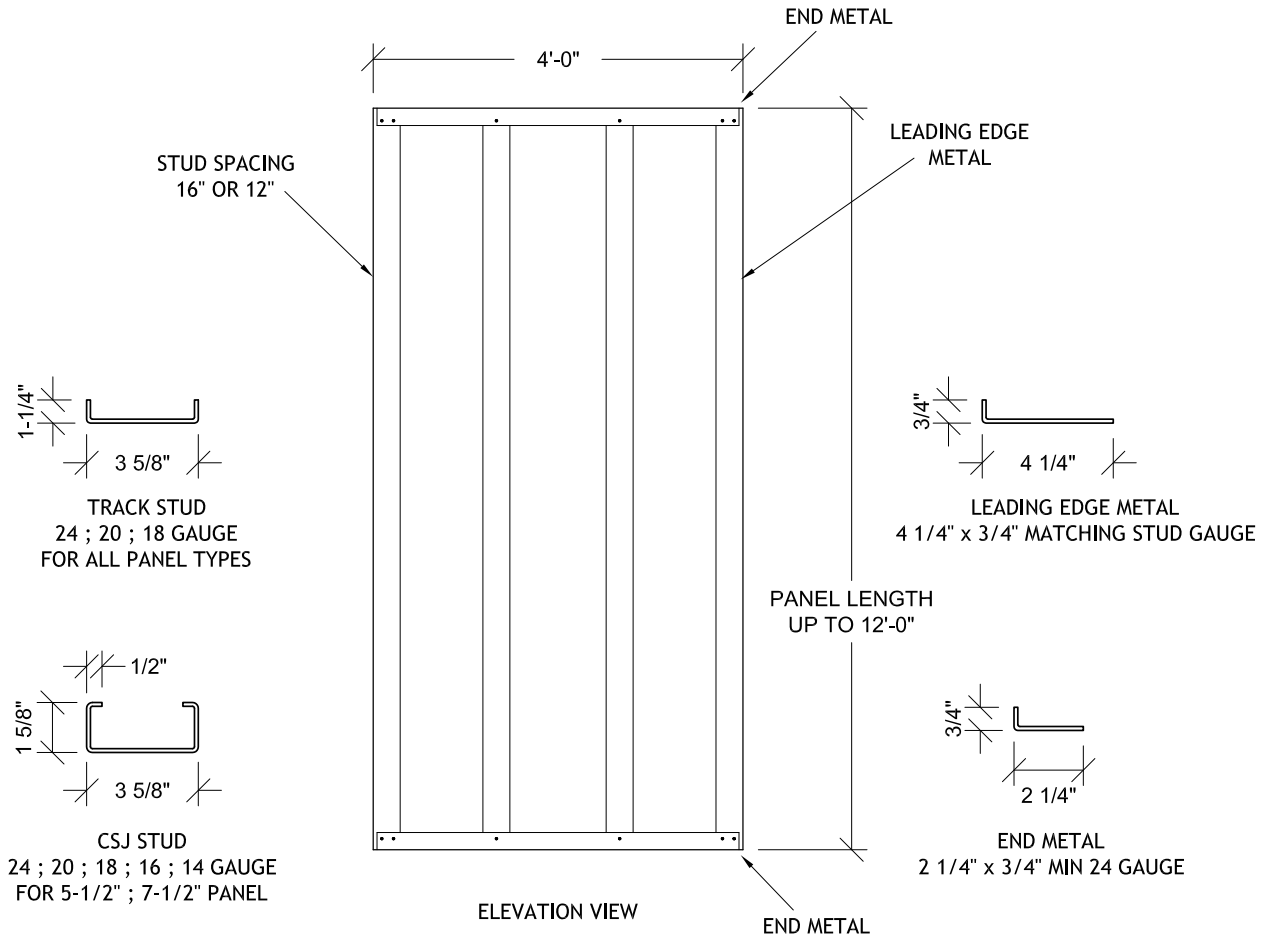


FIGURE 2: THERMASTEEL PANELS

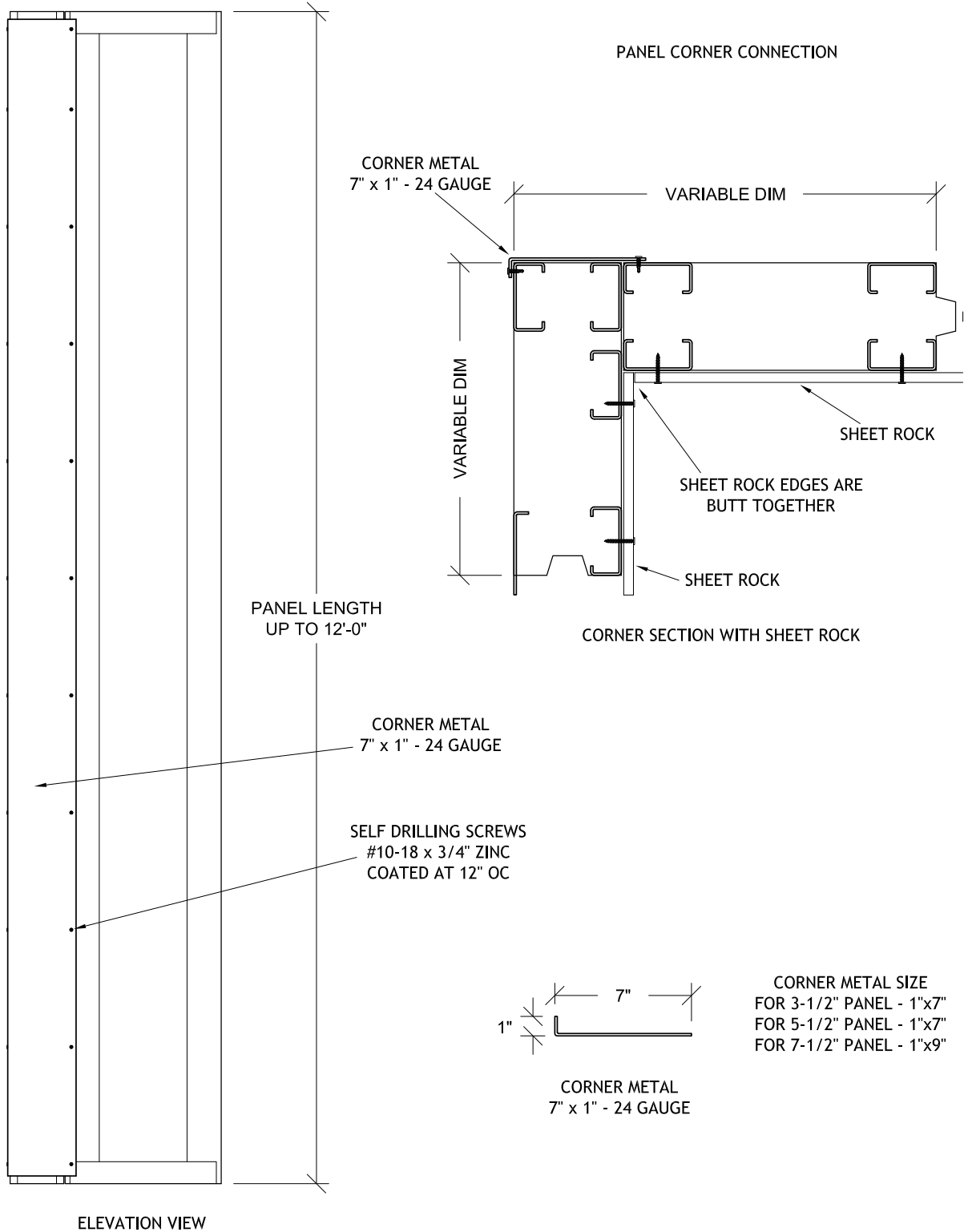


FIGURE 3: CORNER DETAILS

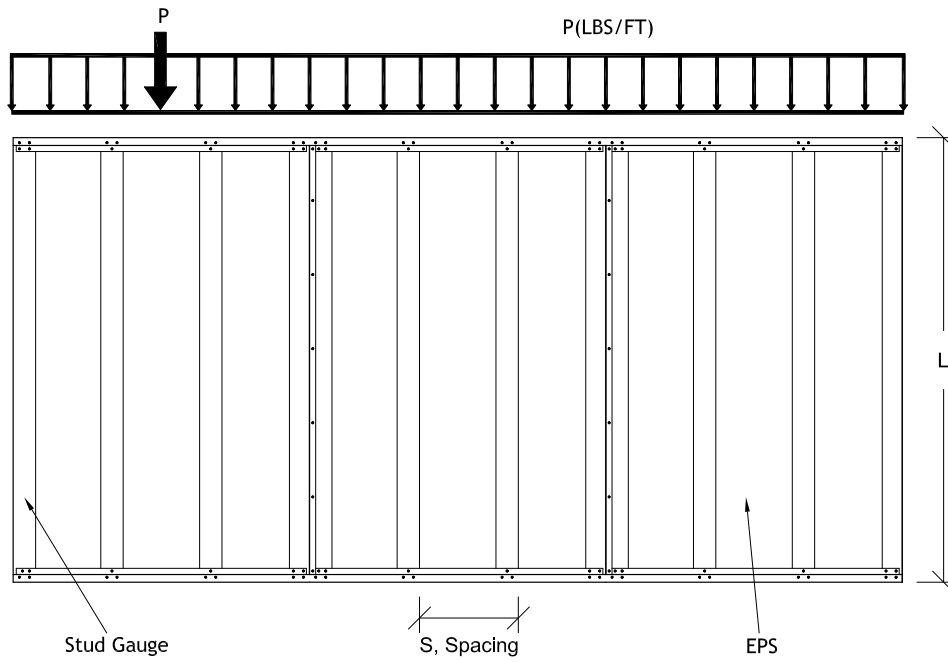


FIGURE 4: AXIAL DISTRIBUTED LOAD AND POINT LOAD ACTING ON A STUD PACK

TABLE 5: 3½ THICK PANEL AXIAL LOAD EPS DENSITY = 1.50

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	ALLOWABLE STRESS DESIGN (ASD)		LOAD RESISTANCE FACTOR DESIGN (LRFD)		VERTICAL SHORTENING OF WALL DUE TO AXIAL LOAD STRENGTH (INCHES)		
						AXIAL DISTRIBUTED LOAD STRENGTH PER 2 STUDS STIFFENERS (LBS)	AXIAL DISTRIBUTED LOAD STRENGTH PER FEET OF WALL WIDTH (LBS/FEET)	AXIAL DISTRIBUTED LOAD STRENGTH PER 2 STUDS STIFFENRES (LBS)	AXIAL DISTRIBUTED LOAD STRENGTH PER FEET OF WALL WIDTH (LBS/FEET)			
3½ THICK WALL PANEL	1.50	24	362T075-18	12	8	3,181	3,976	4,867	6,083	0.05483		
					9	3,148	3,935	4,816	6,021	0.06105		
					10	3,112	3,890	4,761	5,952	0.06706		
					11	3,073	3,841	4,702	5,877	0.07283		
					12	3,031	3,788	4,637	5,796	0.07835		
				16	8	3,183	3,183	4,870	4,870	0.05482		
					9	3,151	3,151	4,821	4,821	0.06105		
					10	3,114	3,114	4,764	4,764	0.06705		
					11	3,075	3,075	4,705	4,705	0.07282		
					12	3,033	3,033	4,640	4,640	0.07835		
				20	362T075-33	12	8	5,620	7,025	8,599	10,748	0.05304
							9	5,542	6,927	8,479	10,598	0.05883
		10	5,455				6,818	8,346	10,432	0.06435		
		11	5,360				6,700	8,201	10,251	0.06955		
		12	5,259				6,573	8,046	10,057	0.07444		
		16	8			5,622	5,622	8,602	8,602	0.05304		
			9			5,544	5,544	8,482	8,482	0.05883		
			10			5,457	5,457	8,349	8,349	0.06434		
			11			5,362	5,362	8,204	8,204	0.06955		
			12			5,261	5,261	8,049	8,049	0.07444		
		18	362T075-43			12	8	7,188	8,984	10,998	13,746	0.05228
							9	7,075	8,844	10,825	13,531	0.05789
				10	6,952		8,690	10,637	13,296	0.06321		
				11	6,818		8,522	10,432	13,039	0.06818		
				12	6,674		8,342	10,211	12,763	0.07281		
				16	8	7,190	7,190	11,001	11,001	0.05228		
					9	7,077	7,077	10,828	10,828	0.05789		
					10	6,954	6,954	10,640	10,640	0.06320		
					11	6,820	6,820	10,435	10,435	0.06818		
					12	6,676	6,676	10,214	10,214	0.07281		
				16	362T075-54	12	8	8,841	11,052	13,527	16,910	0.05167
							9	8,692	10,865	13,299	16,623	0.05714
		10	8,528				10,660	13,048	16,310	0.06230		
		11	8,350				10,438	12,776	15,970	0.06710		
		12	8,159				10,199	12,483	15,604	0.07152		
		16	8			8,843	8,843	13,530	13,530	0.05167		
			9			8,694	8,694	13,302	13,302	0.05714		
			10			8,530	8,530	13,051	13,051	0.06230		
			11			8,352	8,352	12,779	12,779	0.06709		
			12			8,161	8,161	12,486	12,486	0.07152		

TABLE 6: 5½ THICK PANEL AXIAL LOAD EPS DENSITY = 1.00

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	ALLOWABLE STRESS DESIGN (ASD)		LOAD RESISTANCE FACTOR DESIGN (LRFD)		VERTICAL SHORTENING OF WALL DUE TO AXIAL LOAD STRENGTH (INCHES)		
						AXIAL DISTRIBUTED LOAD STRENGTH PER 2 STUDS STIFFENERS (LBS)	AXIAL DISTRIBUTED LOAD STRENGTH PER FEET OF WALL WIDTH (LBS/FEET)	AXIAL DISTRIBUTED LOAD STRENGTH PER 2 STUDS STIFFENERS (LBS)	AXIAL DISTRIBUTED LOAD STRENGTH PER FEET OF WALL WIDTH (LBS/FEET)			
5½ THICK WALL PANEL	1.00	24	362S162-18	12	8	4,779	5,974	7,312	9,140	0.05408		
					9	4,750	5,937	7,268	9,084	0.06047		
					10	4,717	5,896	7,217	9,021	0.06673		
					11	4,681	5,852	7,162	8,954	0.07284		
					12	4,642	5,803	7,102	8,879	0.07880		
				16	8	4,781	4,781	7,315	7,315	0.05408		
					9	4,751	4,751	7,269	7,269	0.06047		
					10	4,719	4,719	7,220	7,220	0.06672		
					11	4,683	4,683	7,165	7,165	0.07284		
					12	4,644	4,644	7,105	7,105	0.07880		
				20	362S162-33	12	8	8,508	10,635	13,017	16,272	0.05278
							9	8,444	10,555	12,919	16,149	0.05893
		10	8,373				10,466	12,811	16,013	0.06493		
		11	8,295				10,369	12,691	15,865	0.07076		
		12	8,211				10,264	12,563	15,704	0.07640		
		16	8			8,509	8,509	13,019	13,019	0.05278		
			9			8,445	8,445	12,921	12,921	0.05893		
			10			8,374	8,374	12,812	12,812	0.06493		
			11			8,297	8,297	12,694	12,694	0.07076		
			12			8,212	8,212	12,564	12,564	0.07640		
		18	362S162-43			12	8	10,926	13,657	16,717	20,895	0.05229
							9	10,838	13,548	16,582	20,728	0.05836
				10	10,741		13,427	16,434	20,543	0.06427		
				11	10,635		13,294	16,272	20,340	0.06999		
				12	10,520		13,150	16,096	20,120	0.07553		
				16	8	10,927	10,927	16,718	16,718	0.05229		
					9	10,840	10,840	16,585	16,585	0.05836		
					10	10,743	10,743	16,437	16,437	0.06427		
					11	10,637	10,637	16,275	16,275	0.06999		
					12	10,521	10,521	16,097	16,097	0.07553		
				16	362S162-54	12	8	13,473	16,841	20,614	25,767	0.05194
							9	13,360	16,700	20,441	25,551	0.05794
		10	13,235				16,544	20,250	25,312	0.06378		
		11	13,098				16,373	20,040	25,051	0.06943		
		12	12,950				16,187	19,814	24,766	0.07488		
		16	8			13,474	13,474	20,615	20,615	0.05194		
			9			13,362	13,362	20,444	20,444	0.05794		
			10			13,237	13,237	20,253	20,253	0.06378		
			11			13,100	13,100	20,043	20,043	0.06943		
			12			12,951	12,951	19,815	19,815	0.07488		
		14	362S162-68			12	8	16,619	20,774	25,427	31,784	0.05162
							9	16,475	20,593	25,207	31,507	0.05757
				10	16,315		20,393	24,962	31,201	0.06334		
				11	16,139		20,174	24,693	30,866	0.06892		
				12	15,949		19,936	24,402	30,502	0.07430		
				16	8	16,620	16,620	25,429	25,429	0.05162		
					9	16,476	16,476	25,208	25,208	0.05757		
					10	16,316	16,316	24,963	24,963	0.06334		
11	16,140				16,140	24,694	24,694	0.06892				
12	15,950				15,950	24,404	24,404	0.07430				

TABLE 7: 5½ THICK PANEL AXIAL LOAD EPS DENSITY = 1.50

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	ALLOWABLE STRESS DESIGN (ASD)		LOAD RESISTANCE FACTOR DESIGN (LRFD)		VERTICAL SHORTENING OF WALL DUE TO AXIAL LOAD STRENGTH (INCHES)		
						AXIAL DISTRIBUTED LOAD STRENGTH PER 2 STUDS STIFFENERS (LBS)	AXIAL DISTRIBUTED LOAD STRENGTH PER FOOT OF WALL WIDTH (LBS/FEET)	AXIAL DISTRIBUTED LOAD STRENGTH PER 2 STUDS STIFFENERS (LBS)	AXIAL DISTRIBUTED LOAD STRENGTH PER FOOT OF WALL WIDTH (LBS/FEET)			
5½ THICK WALL PANEL	1.50	24	362S162-18	12	8	4,787	5,984	7,324	9,156	0.05408		
					9	4,758	5,947	7,280	9,099	0.06046		
					10	4,725	5,906	7,229	9,036	0.06672		
					11	4,689	5,861	7,174	8,967	0.07283		
					12	4,650	5,812	7,115	8,892	0.07879		
				16	8	4,790	4,790	7,329	7,329	0.05408		
					9	4,761	4,761	7,284	7,284	0.06046		
					10	4,728	4,728	7,234	7,234	0.06672		
					11	4,692	4,692	7,179	7,179	0.07283		
					12	4,653	4,653	7,119	7,119	0.07879		
				20	362S162-33	12	8	8,515	10,644	13,028	16,285	0.05277
							9	8,452	10,564	12,932	16,163	0.05893
		10	8,381				10,476	12,823	16,028	0.06492		
		11	8,303				10,379	12,704	15,880	0.07075		
		12	8,218				10,273	12,574	15,718	0.07640		
		16	8			8,519	8,519	13,034	13,034	0.05277		
			9			8,455	8,455	12,936	12,936	0.05892		
			10			8,384	8,384	12,828	12,828	0.06492		
			11			8,306	8,306	12,708	12,708	0.07075		
			12			8,222	8,222	12,580	12,580	0.07640		
		18	362S162-43			12	8	10,933	13,667	16,727	20,911	0.05229
							9	10,846	13,557	16,594	20,742	0.05836
				10	10,749		13,436	16,446	20,557	0.06426		
				11	10,643		13,303	16,284	20,354	0.06999		
				12	10,527		13,159	16,106	20,133	0.07553		
				16	8	10,937	10,937	16,734	16,734	0.05229		
					9	10,849	10,849	16,599	16,599	0.05836		
					10	10,752	10,752	16,451	16,451	0.06426		
					11	10,646	10,646	16,288	16,288	0.06999		
					12	10,530	10,530	16,111	16,111	0.07553		
				16	362S162-54	12	8	13,480	16,850	20,624	25,781	0.05194
							9	13,368	16,710	20,453	25,566	0.05794
		10	13,243				16,553	20,262	25,326	0.06377		
		11	13,106				16,382	20,052	25,064	0.06943		
		12	12,957				16,196	19,824	24,780	0.07488		
		16	8			13,484	13,484	20,631	20,631	0.05194		
			9			13,371	13,371	20,458	20,458	0.05794		
			10			13,246	13,246	20,266	20,266	0.06377		
			11			13,109	13,109	20,057	20,057	0.06943		
			12			12,960	12,960	19,829	19,829	0.07488		
		14	362S162-68			12	8	16,627	20,783	25,439	31,798	0.05162
							9	16,482	20,603	25,217	31,523	0.05756
				10	16,322		20,402	24,973	31,215	0.06334		
				11	16,416		20,183	25,116	30,880	0.06892		
				12	15,956		19,945	24,413	30,516	0.07430		
				16	8	16,630	16,630	25,444	25,444	0.05162		
					9	16,485	16,485	25,222	25,222	0.05756		
					10	16,325	16,325	24,977	24,977	0.06334		
11	16,150				16,150	24,710	24,710	0.06892				
12	15,959				15,959	24,417	24,417	0.07430				

TABLE 8: 7½ THICK PANEL AXIAL LOAD EPS DENSITY = 1.00

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	ALLOWABLE STRESS DESIGN (ASD)		LOAD RESISTANCE FACTOR DESIGN (LRFD)		VERTICAL SHORTENING OF WALL DUE TO AXIAL LOAD STRENGTH (INCHES)		
						AXIAL DISTRIBUTED LOAD STRENGTH PER 2 STUDS STIFFENERS (LBS)	AXIAL DISTRIBUTED LOAD STRENGTH PER FEET OF WALL WIDTH (LBS/FEET)	AXIAL DISTRIBUTED LOAD STRENGTH PER 2 STUDS STIFFENERS (LBS)	AXIAL DISTRIBUTED LOAD STRENGTH PER FEET OF WALL WIDTH (LBS/FEET)			
						7½ THICK WALL PANEL						
7½ THICK WALL PANEL	1.00	24	362S162-18	12	8	4,757	5,946	7,278	9,097	0.05380		
					9	4,739	5,924	7,251	9,064	0.06030		
					10	4,719	5,899	7,220	9,025	0.06672		
					11	4,697	5,872	7,186	8,984	0.07306		
					12	4,674	5,842	7,151	8,938	0.07929		
				16	8	4,759	4,759	7,281	7,281	0.05380		
					9	4,741	4,741	7,254	7,254	0.06030		
					10	4,721	4,721	7,223	7,223	0.06672		
					11	4,699	4,699	7,189	7,189	0.07305		
					12	4,675	4,675	7,153	7,153	0.07929		
				20	362S162-33	12	8	8,548	10,685	13,078	16,348	0.05301
							9	8,512	10,640	13,023	16,279	0.05939
							10	8,472	10,590	12,962	16,203	0.06568
							11	8,428	10,535	12,895	16,119	0.07187
							12	8,381	10,476	12,823	16,028	0.07796
						16	8	8,550	8,550	13,082	13,082	0.05301
							9	8,514	8,514	13,026	13,026	0.05939
							10	8,474	8,474	12,965	12,965	0.06568
							11	8,430	8,430	12,898	12,898	0.07187
							12	8,382	8,382	12,824	12,824	0.07796
		18	362S162-43			12	8	11,023	13,779	16,865	21,082	0.05275
							9	10,975	13,719	16,792	20,990	0.05909
							10	10,922	13,653	16,711	20,889	0.06533
							11	10,864	13,580	16,622	20,777	0.07148
							12	10,800	13,500	16,524	20,655	0.07752
						16	8	11,025	11,025	16,868	16,868	0.05275
							9	10,977	10,977	16,795	16,795	0.05909
							10	10,924	10,924	16,714	16,714	0.06533
							11	10,865	10,865	16,623	16,623	0.07148
							12	10,802	10,802	16,527	16,527	0.07752
				16	362S162-54	12	8	13,638	17,048	20,866	26,083	0.05257
							9	13,578	16,972	20,774	25,967	0.05887
							10	13,510	16,888	20,670	25,839	0.06509
							11	13,436	16,795	20,557	25,696	0.07121
							12	13,355	16,694	20,433	25,542	0.07721
						16	8	13,640	13,640	20,869	20,869	0.05257
							9	13,579	13,579	20,776	20,776	0.05887
							10	13,512	13,512	20,673	20,673	0.06509
							11	13,438	13,438	20,560	20,560	0.07012
							12	13,357	13,357	20,436	20,436	0.07721
		14	362S162-68			12	8	16,875	21,094	25,819	32,274	0.05241
							9	16,799	20,998	25,702	32,127	0.05869
							10	16,713	20,892	25,571	31,965	0.06488
							11	16,619	20,774	25,427	31,784	0.07097
							12	16,517	20,647	25,271	31,590	0.07694
						16	8	16,877	16,877	25,822	25,822	0.05241
							9	16,800	16,800	25,704	25,704	0.05869
							10	16,715	16,715	25,574	25,574	0.06488
							11	16,621	16,621	25,430	25,430	0.07097
							12	16,519	16,519	25,274	25,274	0.07694

TABLE 9: 7½ THICK PANEL AXIAL LOAD EPS DENSITY = 1.50

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	ALLOWABLE STRESS DESIGN (ASD)		LOAD RESISTANCE FACTOR DESIGN (LRFD)		VERTICAL SHORTENING OF WALL DUE TO AXIAL LOAD STRENGTH (INCHES)		
						AXIAL DISTRIBUTED LOAD STRENGTH PER 2 STUDS STIFFENERS (LBS)	AXIAL DISTRIBUTED LOAD STRENGTH PER FEET OF WALL WIDTH (LBS/FEET)	AXIAL DISTRIBUTED LOAD STRENGTH PER 2 STUDS STIFFENRES (LBS)	AXIAL DISTRIBUTED LOAD STRENGTH PER FEET OF WALL WIDTH (LBS/FEET)			
7½ THICK WALL PANEL	1.50	24	362S162-18	12	8	4,767	5,959	7,294	9,117	0.05380		
					9	4,750	5,937	7,268	9,084	0.06030		
					10	4,730	5,912	7,237	9,045	0.06671		
					11	4,708	5,885	7,203	9,004	0.07035		
					12	4,684	5,855	7,167	8,958	0.07929		
				16	8	4,772	4,772	7,301	7,301	0.05379		
					9	4,754	4,754	7,274	7,274	0.06029		
					10	4,734	4,734	7,243	7,243	0.06671		
					11	4,712	4,712	7,209	7,209	0.07304		
					12	4,689	4,689	7,174	7,174	0.07928		
					20	12	8	8,559	10,698	13,095	16,368	0.05301
							9	8,523	10,653	13,040	16,299	0.05939
		10	8,483	10,603			12,979	16,223	0.06568			
		11	8,439	10,549			12,912	16,140	0.07187			
		12	8,391	10,489			12,838	16,048	0.07796			
		16	8	8,563		8,563	13,101	13,101	0.05301			
			9	8,527		8,527	13,046	13,046	0.05939			
			10	8,487		8,487	12,985	12,985	0.06567			
			11	8,443		8,443	12,918	12,918	0.07187			
			12	8,395		8,395	12,844	12,844	0.07796			
			18	12		8	11,034	13,792	16,882	21,102	0.05275	
						9	10,986	13,732	16,809	21,010	0.05909	
		10			10,933	13,666	16,727	20,909	0.06533			
		11			10,874	13,593	16,637	20,797	0.07148			
		12			10,810	13,513	16,539	20,675	0.07752			
		16		8	11,038	11,038	16,888	16,888	0.05275			
				9	10,990	10,990	16,815	16,815	0.05908			
				10	10,937	10,937	16,734	16,734	0.06533			
				11	10,879	10,879	16,645	16,645	0.07015			
				12	10,815	10,815	16,547	16,547	0.07752			
				16	12	8	13,649	17,061	20,883	26,103	0.05256	
						9	13,588	16,985	20,790	25,987	0.05887	
		10	13,520			16,901	20,686	25,859	0.06509			
		11	13,446			16,808	20,572	25,716	0.07120			
		12	13,365			16,706	20,448	25,560	0.07721			
		16	8		13,653	13,653	20,889	20,889	0.05256			
			9		13,593	13,593	20,797	20,797	0.05887			
			10		13,525	13,525	20,693	20,693	0.06509			
			11		13,451	13,451	20,580	20,580	0.07120			
			12		13,370	13,370	20,456	20,456	0.07721			
			14		12	8	16,886	21,107	25,836	32,294	0.05241	
						9	16,809	21,011	25,718	32,147	0.05869	
		10		16,724		20,905	25,588	31,985	0.06488			
		11		16,630		20,787	25,444	31,804	0.07097			
		12		16,527		20,659	25,286	31,608	0.07694			
		16		8	16,890	16,890	25,842	25,842	0.05241			
				9	16,814	16,814	25,725	25,725	0.05869			
				10	16,728	16,728	25,594	25,594	0.06488			
11	16,634			16,634	25,450	25,450	0.07096					
12	16,532			16,532	25,294	25,294	0.07694					

TABLE 10: 3½ THICK PANEL TRANSVERSE LOAD EPS = 1.50

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN (LRFD)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/180 (PSF)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/240 (PSF)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/360 (PSF)	TRANSVERSE DEFLECTION DUE TO ALLOWABLE DISTRIBUTED LOAD (IN)		
						ALLOWABLE TRANSVERSE DISTRIBUTED LOAD PER UNIT WALL AREA (PSF)	ALLOWABLE TRANSVERSE DISTRIBUTED LOAD PER UNIT WALL AREA (PSF)						
3½ THICK WALL PANEL	1.50	24	362T075-18	12	8	221	332	434	326	217	0.27183		
					9	150	225	305	229	152	0.29475		
					10	105	158	222	167	111	0.31362		
					11	76	114	167	125	84	0.33322		
					12	57	86	129	97	64	0.35345		
				16	8	194	292	348	261	174	0.29737		
					9	135	203	244	183	122	0.33293		
					10	95	143	178	133	89	0.35763		
					11	69	104	134	100	67	0.37999		
					12	52	78	103	77	51	0.40306		
				20	362T075-33	12	8	336	505	568	426	284	0.31550
							9	241	362	399	299	199	0.36322
		10	176				265	291	218	145	0.40385		
		11	130				195	218	164	109	0.43553		
		12	98				147	168	126	84	0.46533		
		16	8			286	430	454	341	227	0.33560		
			9			209	314	319	239	160	0.39311		
			10			156	234	233	174	116	0.44624		
			11			117	176	175	131	87	0.49279		
			12			89	134	135	101	67	0.53069		
		18	362T075-43			12	8	438	658	655	491	328	0.35637
							9	327	491	460	345	230	0.42655
				10	250		376	336	252	168	0.49657		
				11	194		292	252	189	126	0.56476		
				12	153		230	194	146	97	0.62943		
				16	8	365	549	524	393	262	0.37139		
					9	275	413	368	276	184	0.44858		
					10	212	319	268	201	134	0.52747		
					11	167	251	202	151	101	0.60659		
					12	133	200	155	117	78	0.68448		
				16	362T075-54	12	8	538	809	748	561	374	0.38365
							9	410	616	526	394	263	0.46796
		10	320				481	383	287	192	0.55618		
		11	254				382	288	216	144	0.64709		
		12	205				308	222	166	111	0.73946		
		16	8			444	667	599	449	299	0.39523		
			9			340	511	421	315	210	0.48479		
			10			267	401	307	230	153	0.57961		
			11			213	320	230	173	115	0.67863		
			12			173	260	177	133	89	0.78077		

TABLE 11: 5½ THICK PANEL TRANSVERSE LOAD EPS = 1.00

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN (LRFD)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/180 (PSF)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/240 (PSF)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/360 (PSF)	TRANSVERSE DEFLECTION DUE TO ALLOWABLE DISTRIBUTED LOAD (IN)		
						ALLOWABLE TRANSVERSE DISTRIBUTED LOAD PER UNIT WALL AREA (PSF)	ALLOWABLE TRANSVERSE DISTRIBUTED LOAD PER UNIT WALL AREA (PSF)						
5½ THICK WALL PANEL	1.00	24	362T075-18	12	8	456	685	1,068	801	534	0.22775		
					9	335	504	750	563	375	0.06805		
					10	249	374	547	410	273	0.30333		
					11	185	278	411	308	205	0.33054		
				12	137	206	316	237	158	0.34640			
				16	8	377	567	855	641	427	0.23533		
					9	280	421	600	450	300	0.28012		
					10	211	317	438	328	219	0.32163		
					11	160	240	329	247	164	0.35718		
				12	122	183	253	190	127	0.38388			
				20	362T075-33	12	8	707	1,063	1,562	1,171	781	0.24146
							9	531	798	1,097	823	548	0.29058
		10	406				610	800	600	400	0.33866		
		11	314				472	601	451	300	0.38381		
		12	245			368	463	347	231	0.42409			
		16	8			580	872	1,249	937	625	0.24740		
			9			439	660	877	658	439	0.29995		
			10			338	508	640	480	320	0.35270		
			11			265	398	481	360	240	0.40400		
		12	209			314	370	278	185	0.45215			
		18	362T075-43			12	8	854	1,284	1,883	1,412	942	0.24197
							9	640	962	1,323	992	661	0.29034
				10	487		732	964	723	482	0.33663		
				11	374		562	724	543	362	0.37835		
				12	288	433	558	418	279	0.41280			
				16	8	700	1,052	1,507	1,130	753	0.24789		
					9	529	795	1,058	794	529	0.29979		
					10	406	610	771	579	386	0.35098		
					11	316	475	580	435	290	0.39929		
				12	247	371	446	335	223	0.44234			
				16	362T075-54	12	8	1,043	1,568	2,221	1,666	1,110	0.25051
							9	795	1,195	1,560	1,170	780	0.30587
		10	619				930	1,137	853	569	0.36317		
		11	491				738	854	641	427	0.42136		
		12	394			592	658	494	329	0.47942			
		16	8			851	1,279	1,777	1,333	888	0.25543		
			9			652	980	1,248	936	624	0.31348		
			10			511	768	910	682	455	0.37434		
			11			407	612	684	513	342	0.43711		
		12	330			496	526	395	263	0.50088			
		14	362S162-68			12	8	1,295	1,946	2,637	1,978	1,319	0.26196
							9	1,016	1,527	1,852	1,389	926	0.32904
				10	808		1,214	1,350	1,013	675	0.39892		
				11	656		986	1,015	761	507	0.47387		
				12	541	813	781	586	391	0.55348			
				16	8	1,036	1,557	3,110	1,583	1,055	0.26195		
					9	819	1,231	1,482	1,112	741	0.33153		
					10	658	989	1,080	810	540	0.40579		
11	535				804	812	609	406	0.48327				
12	442			664	625	469	313	0.56596					

TABLE 12: 5½ THICK PANEL TRANSVERSE LOAD EPS = 1.50

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN (LRFD)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/180 (PSF)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/240 (PSF)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/360 (PSF)	TRANSVERSE DEFLECTION DUE TO ALLOWABLE DISTRIBUTED LOAD (IN)		
						ALLOWABLE TRANSVERSE DISTRIBUTED LOAD PER UNIT WALL AREA (PSF)	ALLOWABLE TRANSVERSE DISTRIBUTED LOAD PER UNIT WALL AREA (PSF)						
5½ THICK WALL PANEL	1.50	24	362T075-18	12	8	456	685	1,069	802	535	0.22771		
					9	335	504	751	563	375	0.26800		
					10	249	374	547	411	274	0.30327		
					11	185	278	411	308	206	0.33048		
				12	137	206	317	238	158	0.34634			
				16	8	377	567	856	642	428	0.25527		
					9	280	421	601	451	300	0.28005		
					10	211	317	438	329	219	0.32155		
					11	160	240	329	247	165	0.35709		
				12	122	183	254	190	127	0.38379			
				20	362T075-33	12	8	707	1,063	1,563	1,172	781	0.24143
							9	531	798	1,097	823	549	0.29054
		10	406				610	600	600	400	0.33861		
		11	315				473	601	451	301	0.38374		
		12	245			368	463	347	231	0.42401			
		16	8			580	872	1,250	938	625	0.24736		
			9			439	660	878	659	439	0.29990		
			10			339	510	640	480	320	0.35264		
			11			265	398	481	361	241	0.40392		
		12	209			314	371	278	185	0.45205			
		18	362T075-43			12	8	855	1,285	1,884	1,413	942	0.24195
							9	640	962	1,323	992	662	0.29030
				10	487		732	965	724	482	0.33658		
				11	374		562	725	544	362	0.37830		
				12	288	433	558	419	279	0.41274			
				16	8	701	1,054	1,508	1,131	754	0.24786		
					9	529	795	1,059	794	529	0.29974		
					10	406	610	772	579	386	0.35093		
					11	316	475	580	435	290	0.39922		
				12	247	371	447	335	223	0.44226			
				16	362T075-54	12	8	1,044	1,569	2,222	1,666	1,111	0.25048
							9	795	1,195	1,561	1,170	780	0.30584
		10	620				932	1,138	853	569	0.36313		
		11	491				738	855	641	427	0.42132		
		12	394			592	658	494	329	0.47936			
		16	8			1,778	2,672	1,778	889	889	0.25540		
			9			1,249	1,877	1,249	624	624	0.31344		
			10			910	1,368	910	455	455	0.37430		
			11			684	1,028	684	342	342	0.43705		
		12	527			792	527	263	263	0.50081			
		14	362S162-68			12	8	1,295	1,946	2,637	1,978	1,319	0.26196
							9	1,016	1,527	1,852	1,389	926	0.32904
				10	808		1,214	1,350	1,013	675	0.39892		
				11	656		986	1,015	761	507	0.47387		
				12	541	813	781	586	391	0.55348			
				16	8	1,036	1,557	2,110	1,583	1,055	0.26195		
					9	819	1,231	1,482	1,112	741	0.33153		
					10	658	989	1,080	810	540	0.40579		
11	535				804	812	609	406	0.48327				
12	442			664	625	469	313	0.56596					

TABLE 13: 7½ THICK PANEL TRANSVERSE LOAD EPS = 1.00

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN (LRFD)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/180 (PSF)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/240 (PSF)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/360 (PSF)	TRANSVERSE DEFLECTION DUE TO ALLOWABLE DISTRIBUTED LOAD (IN)		
						ALLOWABLE TRANSVERSE DISTRIBUTED LOAD PER UNIT WALL AREA (PSF)	ALLOWABLE TRANSVERSE DISTRIBUTED LOAD PER UNIT WALL AREA (PSF)						
7½ THICK WALL PANEL	1.00	24	362T075-18	12	8	504	758	1,731	1,299	866	0.15538		
					9	365	549	1,216	912	608	0.18006		
					10	265	398	886	665	443	0.19964		
					11	192	289	666	500	333	0.21160		
					12	138	207	513	385	257	0.21461		
				16	8	420	631	1,386	1,039	693	0.16159		
					9	308	463	973	730	487	0.18997		
					10	228	343	709	532	355	0.21466		
					11	170	256	533	400	266	0.23347		
					12	125	188	411	308	205	0.24402		
				20	362T075-33	12	8	845	1,270	2,770	2,077	1,385	0.16280
							9	624	938	1,945	1,459	973	0.19256
		10	467				702	1,418	1,064	709	0.21970		
		11	352				529	1,065	799	533	0.24252		
		12	266				400	821	616	410	0.25929		
		16	8			699	1,051	2,216	2,216	1,108	0.16813		
			9			521	783	1,557	1,557	778	0.20097		
			10			395	594	1,135	1,135	567	0.23231		
			11			303	455	853	853	426	0.26065		
			12			234	352	657	657	328	0.28448		
		18	362T075-43			12	8	1,046	1,572	3,447	2,586	1,724	0.16179
							9	767	1,153	2,421	1,816	1,211	0.19003
				10	568		854	1,765	1,324	883	0.21440		
				11	421		633	1,326	995	663	0.23260		
				12	309		464	1,021	766	511	0.24212		
				16	8	865	1,300	2,758	2,069	1,379	0.16727		
					9	642	965	1,937	1,453	969	0.19878		
					10	482	724	1,412	1,059	706	0.22770		
					11	365	549	1,061	796	531	0.25199		
					12	275	413	817	613	409	0.26947		
				16	362T075-54	12	8	1,316	1,978	4,161	3,121	2,080	0.16867
							9	988	1,485	2,922	2,192	1,461	0.20289
		10	757				1,138	2,130	1,598	1,065	0.23680		
		11	588				884	1,601	1,200	800	0.26942		
		12	462				694	1,233	925	616	0.29976		
		16	8			1,082	1,626	3,329	2,497	1,664	0.17333		
			9			819	1,231	2,338	1,754	1,169	0.21009		
			10			632	950	1,704	1,278	852	0.24738		
			11			497	747	1,281	960	640	0.28433		
			12			395	594	986	740	493	0.32008		
		14	362S162-68			12	8	1,714	2,576	5,040	3,780	2,520	0.18133
							9	1,320	1,984	3,540	2,655	1,770	0.22380
				10	1,042		1,566	2,580	1,935	1,290	0.26924		
				11	839		1,261	1,939	1,454	969	0.31727		
				12	686		1,031	1,493	1,120	747	0.36748		
				16	8	1,395	2,097	4,032	3,024	2,016	0.18447		
					9	1,078	1,620	2,832	2,124	1,416	0.22847		
					10	854	1,284	2,065	1,548	1,032	0.27589		
11	690				1,037	1,551	1,163	776	0.32636				
12	567				852	1,195	896	597	0.37954				

TABLE 14: 7½ THICK PANEL TRANSVERSE LOAD EPS = 1.50

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN (LRFD)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/180 (PSF)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/240 (PSF)	TRANSVERSE DISTRIBUTED LOAD PER UNIT AREA OF WALL DUE TO L/360 (PSF)	TRANSVERSE DEFLECTION DUE TO ALLOWABLE DISTRIBUTED LOAD (IN)		
						ALLOWABLE TRANSVERSE DISTRIBUTED LOAD PER UNIT WALL AREA (PSF)	ALLOWABLE TRANSVERSE DISTRIBUTED LOAD PER UNIT WALL AREA (PSF)						
7½ THICK WALL PANEL	1.50	24	362T075-18	12	8	505	759	1,734	1,301	867	0.15533		
					9	365	549	1,218	913	609	0.18000		
					10	266	400	888	666	444	0.19957		
					11	192	289	667	500	334	0.21152		
					12	138	207	514	385	257	0.21452		
				16	8	420	631	1,388	1,041	694	0.16154		
					9	309	464	975	731	488	0.18990		
					10	229	344	711	533	355	0.21457		
					11	170	256	534	401	267	0.23336		
					12	125	188	411	309	206	0.24389		
				20	362T075-33	12	8	846	1,272	2,772	2,079	1,386	0.16277
							9	625	939	1,947	1,460	974	0.19252
		10	468				703	1,420	1,065	710	0.21965		
		11	353				531	1,066	800	533	0.24246		
		12	266				400	821	616	411	0.25921		
		16	8			699	1,051	2,219	1,664	1,109	0.16810		
			9			522	785	1,558	1,169	779	0.20093		
			10			396	595	1,136	852	568	0.23225		
			11			303	455	854	640	427	0.26058		
			12			234	352	657	493	329	0.28438		
		18	362T075-43			12	8	1,046	1,572	3,450	2,588	1,725	0.16177
							9	767	1,153	2,423	1,817	1,212	0.19000
				10	568		854	1,766	1,325	883	0.21436		
				11	421		633	1,327	995	664	0.23255		
				12	309		464	1,022	767	511	0.24205		
				16	8	866	1,302	2,761	2,071	1,381	0.16724		
					9	642	965	1,939	1,454	970	0.19874		
					10	483	726	1,414	1,060	707	0.22764		
					11	365	549	1,062	797	531	0.25192		
					12	275	413	818	614	409	0.26938		
				16	362T075-54	12	8	1,317	1,979	4,163	3,123	2,082	0.16865
							9	989	1,486	2,924	2,193	1,462	0.20286
		10	757				1,138	2,132	1,599	1,066	0.23677		
		11	588				884	1,602	1,201	801	0.26937		
		12	462				694	1,234	925	617	0.29971		
		16	8			1,083	1,628	3,332	2,499	1,666	0.17331		
			9			819	1,231	2,340	1,755	1,170	0.21006		
			10			633	951	1,706	1,279	853	0.24734		
			11			497	747	1,282	961	641	0.28428		
			12			395	594	987	740	494	0.32001		
		14	362S162-68			12	8	1,714	2,576	5,043	3,782	2,521	0.18131
							9	1,321	1,985	3,542	2,656	1,771	0.22378
				10	1,043		1,568	2,582	1,936	1,291	0.26922		
				11	839		1,261	1,940	1,455	970	0.31724		
				12	686		1,031	1,494	1,121	747	0.36745		
				16	8	1,396	2,098	4,035	3,026	3,026	0.18445		
					9	1,079	1,622	2,834	2,125	2,125	0.22845		
					10	855	1,285	2,066	1,549	1,549	0.27586		
11	691				1,039	1,552	1,164	1,164	0.32632				
12	567				852	1,196	897	897	0.37950				

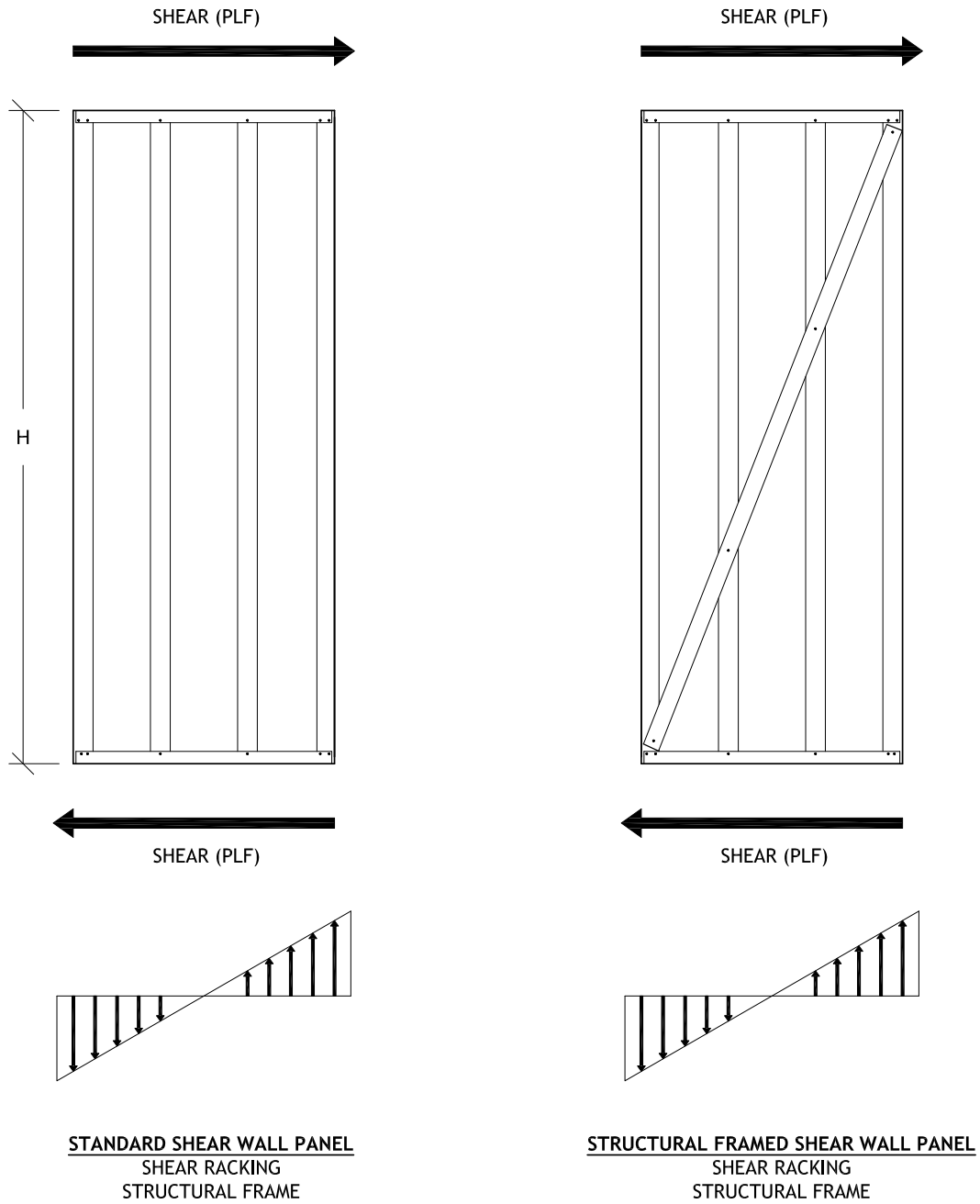


FIGURE 5: SHEAR WALL PANEL

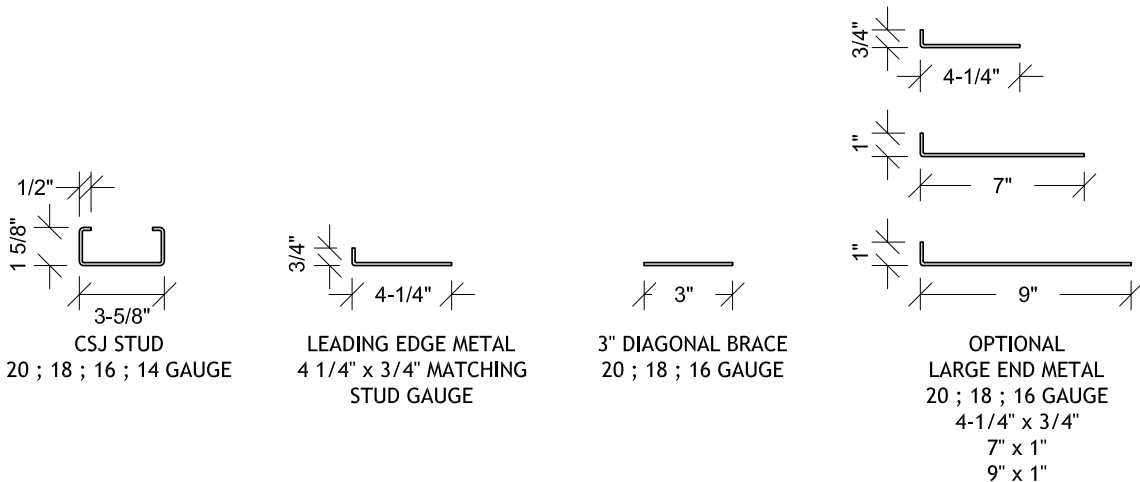
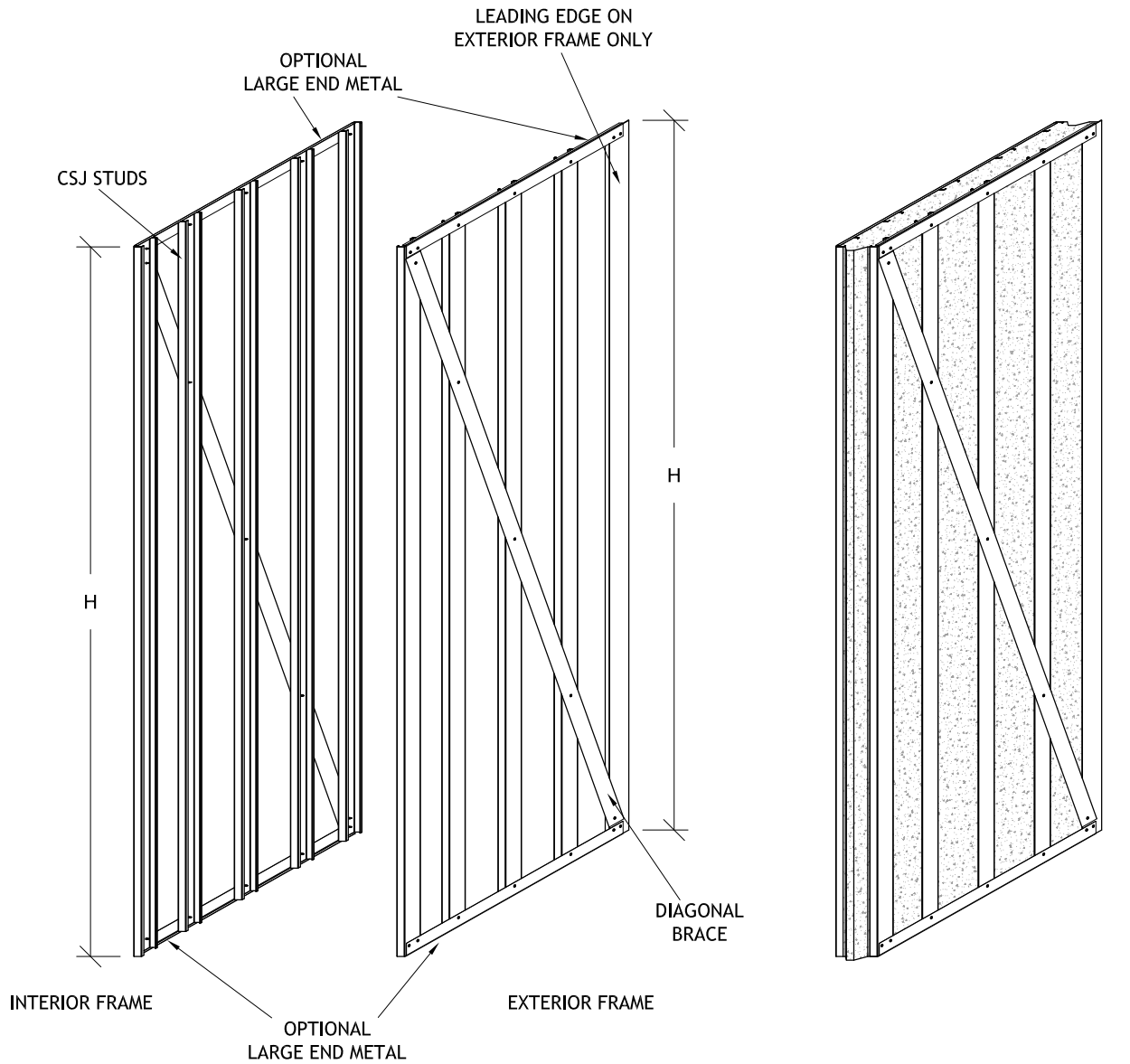


FIGURE 6: SHEAR WALL PANEL CONFIGURATION

TABLE 15: 3½ THICK PANEL RACKING SHEAR NO GRAVITY LOAD EPS = 1.50

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	COMPOSITE MOMENT OF INERTIA STRONG DIRECTION (IN ⁴)	STORY DRIFT DUE TO LIMITING SHEAR FORCE Δ [*] (IN)	ALLOWABLE STORY DRIFT PER CODE Δ _a = 0.015 x HEIGHT (IN)	PANEL STIFFNESS K (LBS/IN)	LIMITING SHEAR FORCE PER 4FT PANEL (LBS)		LIMITING SHEAR FORCE (LBS/FOOT)			
										ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN (LRFD)	ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN (LRFD)		
3½ THICK WALL PANEL	1.50	24	362T075-18	12	8	30,313	0.001029	1.4400	305	9,930	15,094	2,483	3,773		
					9	30,313	0.001302	1.6200	214	9,930	15,094	2,483	3,773		
					10	30,313	0.001608	1.8000	156	9,930	15,094	2,483	3,773		
					11	30,313	0.001945	1.9800	117	9,930	15,094	2,483	3,773		
					12	30,313	0.002315	2.1600	90	9,930	15,094	2,483	3,773		
				16	8	25,539	0.001209	1.4400	322	7,944	12,075	1,986	3,019		
					9	25,539	0.001302	1.6200	226	7,944	12,075	1,986	3,019		
					10	25,539	0.001608	1.8000	165	7,944	12,075	1,986	3,019		
					11	25,539	0.001945	1.9800	124	7,944	12,075	1,986	3,019		
					12	25,539	0.002315	2.1600	95	7,944	12,075	1,986	3,019		
				20	362T075-33	12	8	55,395	0.001029	1.4400	558	9,930	15,094	2,483	3,773
							9	55,395	0.001302	1.6200	392	9,930	15,094	2,483	3,773
		10	55,395				0.001608	1.8000	286	9,930	15,094	2,483	3,773		
		11	55,395				0.001945	1.9800	215	9,930	15,094	2,483	3,773		
		12	55,395				0.002315	2.1600	165	9,930	15,094	2,483	3,773		
		16	8			46,667	0.001029	1.4400	588	7,944	12,075	1,986	3,019		
			9			46,667	0.001302	1.6200	413	7,944	12,075	1,986	3,019		
			10			46,667	0.001608	1.8000	301	7,944	12,075	1,986	3,019		
			11			46,667	0.001945	1.9800	226	7,944	12,075	1,986	3,019		
			12			46,667	0.002315	2.1600	174	7,944	12,075	1,986	3,019		
		18	362T075-43			12	8	71,884	0.001029	1.4400	724	9,930	15,094	2,483	3,773
							9	71,884	0.001302	1.6200	509	9,930	15,094	2,483	3,773
				10	71,884		0.001608	1.8000	371	9,930	15,094	2,483	3,773		
				11	71,884		0.001945	1.9800	279	9,930	15,094	2,483	3,773		
				12	71,884		0.002315	2.1600	215	9,930	15,094	2,483	3,773		
				16	8	60,556	0.001209	1.4400	763	7,944	12,075	1,986	3,019		
					9	60,556	0.001302	1.6200	536	7,944	12,075	1,986	3,019		
					10	60,556	0.001608	1.8000	390	7,944	12,075	1,986	3,019		
					11	60,556	0.001945	1.9800	293	7,944	12,075	1,986	3,019		
					12	60,556	0.002315	2.1600	226	7,944	12,075	1,986	3,019		
				16	362T075-54	12	8	89,479	0.000888	1.4400	901	9,930	15,094	2,483	3,773
							9	89,479	0.001264	1.6200	633	9,930	15,094	2,483	3,773
		10	89,479				0.001608	1.8000	461	9,930	15,094	2,483	3,773		
		11	89,479				0.001945	1.9800	347	9,930	15,094	2,483	3,773		
		12	89,479				0.002315	2.1600	267	9,930	15,094	2,483	3,773		
		16	8			75,377	0.000878	1.4400	949	7,944	12,075	1,986	3,019		
			9			75,377	0.001250	1.6200	667	7,944	12,075	1,986	3,019		
			10			75,377	0.001608	1.8000	486	7,944	12,075	1,986	3,019		
			11			75,377	0.001945	1.9800	365	7,944	12,075	1,986	3,019		
			12			75,377	0.002315	2.1600	281	7,944	12,075	1,986	3,019		

TABLE 16: 5½ THICK PANEL RACKING SHEAR PER NO GRAVITY LOAD EPS = 1.00

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	COMPOSITE MOMENT OF INERTIA STRONG DIRECTION (IN ⁴)	STORY DRIFT DUE TO LIMITING SHEAR FORCE Δt (IN)	ALLOWABLE STORY DRIFT PER CODE Δa = 0.015 x HEIGHT (IN)	PANEL STIFFNESS K (LBS/IN)	LIMITING SHEAR FORCE PER 4FT PANEL (LBS)		LIMITING SHEAR FORCE (LBS/FOOT)				
										ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN (LRFD)	ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN (LRFD)			
5½ THICK WALL PANEL	1.00	24	362T075-18	12	8	30,300	0.001029	1.4400	305	9,930	15,094	2,483	3,773			
					9	30,300	0.001302	1.6200	214	9,930	15,094	2,483	3,773			
					10	30,300	0.001608	1.8000	156	9,930	15,094	2,483	3,773			
					11	30,300	0.001945	1.9800	117	9,930	15,094	2,483	3,773			
					12	30,300	0.002315	2.1600	90	9,930	15,094	2,483	3,773			
				16	8	25,526	0.001029	1.4400	321	7,944	12,075	1,986	3,019			
					9	25,526	0.001302	1.6200	226	7,944	12,075	1,986	3,019			
					10	25,526	0.001608	1.8000	165	7,944	12,075	1,986	3,019			
					11	25,526	0.001945	1.9800	124	7,944	12,075	1,986	3,019			
					12	25,526	0.002315	2.1600	95	7,944	12,075	1,986	3,019			
					20	362T075-33	12	8	55,382	0.001029	1.4400	558	9,930	15,094	2,483	3,773
								9	55,382	0.001302	1.6200	392	9,930	15,094	2,483	3,773
		10	55,382	0.001608				1.8000	286	9,930	15,094	2,483	3,773			
		11	55,382	0.001945				1.9800	215	9,930	15,094	2,483	3,773			
		12	55,382	0.002315				2.1600	165	9,930	15,094	2,483	3,773			
		16	8	46,654			0.001029	1.4400	587	7,944	12,075	1,986	3,019			
			9	46,654			0.001302	1.6200	413	7,944	12,075	1,986	3,019			
			10	46,654			0.001608	1.8000	301	7,944	12,075	1,986	3,019			
			11	46,654			0.001945	1.9800	226	7,944	12,075	1,986	3,019			
			12	46,654			0.002315	2.1600	174	7,944	12,075	1,986	3,019			
			18	362T075-43			12	8	71,872	0.001209	1.4400	724	9,930	15,094	2,483	3,773
								9	71,872	0.001302	1.6200	508	9,930	15,094	2,483	3,773
		10			71,872	0.001608		1.8000	371	9,930	15,094	2,483	3,773			
		11			71,872	0.001945		1.9800	279	9,930	15,094	2,483	3,773			
		12			71,872	0.002315		2.1600	215	9,930	15,094	2,483	3,773			
		16			8	60,543	0.001029	1.4400	762	7,944	12,075	1,986	3,019			
					9	60,543	0.001302	1.6200	535	7,944	12,075	1,986	3,019			
					10	60,543	0.001608	1.8000	390	7,944	12,075	1,986	3,019			
					11	60,543	0.001945	1.9800	293	7,944	12,075	1,986	3,019			
					12	60,543	0.002315	2.1600	226	7,944	12,075	1,986	3,019			
					16	362T075-54	12	8	89,467	0.000888	1.4400	901	9,930	15,094	2,483	3,773
								9	89,467	0.001264	1.6200	633	9,930	15,094	2,483	3,773
		10	89,467	0.001608				1.8000	461	9,930	15,094	2,483	3,773			
		11	89,467	0.001945				1.9800	347	9,930	15,094	2,483	3,773			
		12	89,467	0.002315				2.1600	267	9,930	15,094	2,483	3,773			
		16	8	75,364			0.000878	1.4400	949	7,944	12,075	1,986	3,019			
			9	75,364			0.001250	1.6200	666	7,944	12,075	1,986	3,019			
			10	75,364			0.001608	1.8000	486	7,944	12,075	1,986	3,019			
			11	75,364			0.001945	1.9800	365	7,944	12,075	1,986	3,019			
			12	75,364			0.002315	2.1600	281	7,944	12,075	1,986	3,019			
			14	362T075-68			12	8	111,440	0.000713	1.4400	1,123	9,930	15,094	2,483	3,773
								9	111,440	0.001015	1.6200	788	9,930	15,094	2,483	3,773
		10			111,440	0.001392		1.8000	575	9,930	15,094	2,483	3,773			
		11			111,440	0.001853		1.9800	432	9,930	15,094	2,483	3,773			
		12			111,440	0.002315		2.1600	333	9,930	15,094	2,483	3,773			
		16			8	93,873	0.000705	1.4400	1,182	7,944	12,075	1,986	3,019			
					9	93,873	0.001004	1.6200	830	7,944	12,075	1,986	3,019			
					10	93,873	0.001377	1.8000	605	7,944	12,075	1,986	3,019			
11	93,873				0.001833	1.9800	455	7,944	12,075	1,986	3,019					
12	93,873				0.002315	2.1600	350	7,944	12,075	1,986	3,019					

TABLE 17: 5½ THICK PANEL RACKING SHEAR PER PANEL NO GRAVITY LOAD EPS = 1.50

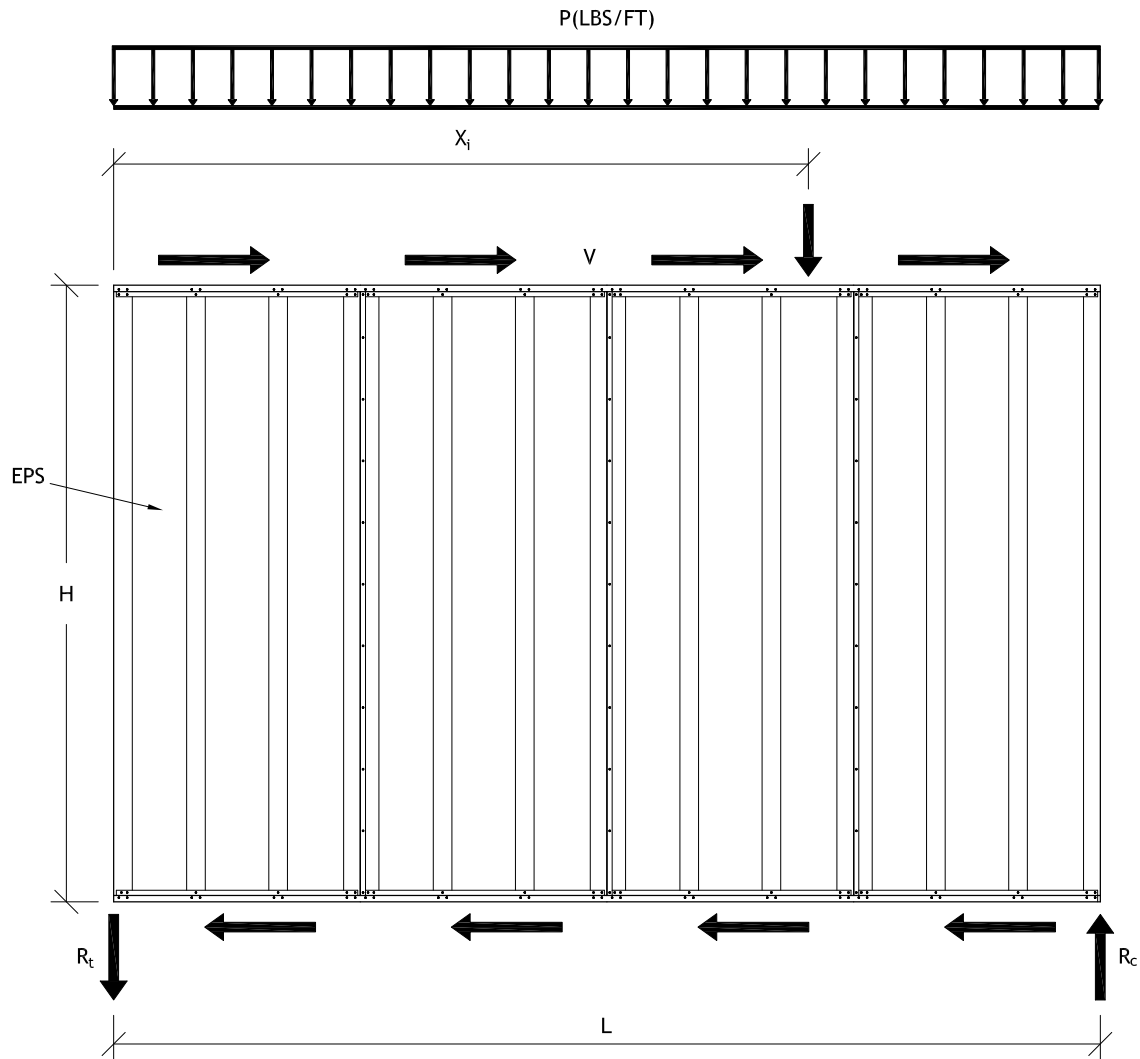
WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	COMPOSITE MOMENT OF INERTIA STRONG DIRECTION (IN ⁴)	STORY DRIFT DUE TO LIMITING SHEAR FORCE Δr (IN)	ALLOWABLE STORY DRIFT PER CODE Δa = 0.015 x HEIGHT (IN)	PANEL STIFFNESS K (LBS/IN)	LIMITING SHEAR FORCE PER 4FT PANEL (LBS)		LIMITING SHEAR FORCE (LBS/FOOT)				
										ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN	ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN			
5½ THICK WALL PANEL	1.50	24	362T075-18	12	8	30,335	0.001029	1.4400	306	9,930	15,094	2,483	3,773			
					9	30,335	0.001302	1.6200	215	9,930	15,094	2,483	3,773			
					10	30,335	0.001608	1.8000	156	9,930	15,094	2,483	3,773			
					11	30,335	0.001945	1.9800	118	9,930	15,094	2,483	3,773			
					12	30,335	0.002315	2.1600	91	9,930	15,094	2,483	3,773			
				16	8	25,561	0.001209	1.4400	322	7,944	12,075	1,986	3,019			
					9	25,561	0.001302	1.6200	226	7,944	12,075	1,986	3,019			
					10	25,561	0.001608	1.8000	165	7,944	12,075	1,986	3,019			
					11	25,561	0.001945	1.9800	124	7,944	12,075	1,986	3,019			
					12	25,561	0.002315	2.1600	95	7,944	12,075	1,986	3,019			
				20	362T075-33	12	8	55,417	0.001209	1.4400	558	9,930	15,094	2,483	3,773	
							9	55,417	0.001302	1.6200	392	9,930	15,094	2,483	3,773	
		10	55,417				0.001608	1.8000	286	9,930	15,094	2,483	3,773			
		11	55,417				0.001945	1.9800	215	9,930	15,094	2,483	3,773			
		12	55,417				0.002315	2.1600	165	9,930	15,094	2,483	3,773			
		16	8			46,689	0.001029	1.4400	588	7,944	12,075	1,986	3,019			
			9			46,689	0.001302	1.6200	413	7,944	12,075	1,986	3,019			
			10			46,689	0.001608	1.8000	301	7,944	12,075	1,986	3,019			
			11			46,689	0.001945	1.9800	226	7,944	12,075	1,986	3,019			
			12			46,689	0.002315	2.1600	174	7,944	12,075	1,986	3,019			
			18			362T075-43	12	8	71,906	0.001029	1.4400	724	9,930	15,094	2,483	3,773
								9	71,906	0.001302	1.6200	509	9,930	15,094	2,483	3,773
		10		71,906	0.001608			1.8000	371	9,930	15,094	2,483	3,773			
		11		71,906	0.001945			1.9800	279	9,930	15,094	2,483	3,773			
		12		71,906	0.002315			2.1600	215	9,930	15,094	2,483	3,773			
		16		8	60,578		0.001029	1.4400	763	7,944	12,075	1,986	3,019			
				9	60,578		0.001302	1.6200	536	7,944	12,075	1,986	3,019			
				10	60,578		0.001608	1.8000	391	7,944	12,075	1,986	3,019			
				11	60,578		0.001945	1.9800	293	7,944	12,075	1,986	3,019			
				12	60,578		0.002315	2.1600	226	7,944	12,075	1,986	3,019			
				16	362T075-54		12	8	89,501	0.000887	1.4400	902	9,930	15,094	2,483	3,773
								9	89,501	0.001263	1.6200	633	9,930	15,094	2,483	3,773
		10	89,501			0.001608		1.8000	462	9,930	15,094	2,483	3,773			
		11	89,501			0.001945		1.9800	347	9,930	15,094	2,483	3,773			
		12	89,501			0.002315		2.1600	267	9,930	15,094	2,483	3,773			
		16	8			75,399	0.000878	1.4400	949	7,944	12,075	1,986	3,019			
			9			75,399	0.001250	1.6200	667	7,944	12,075	1,986	3,019			
			10			75,399	0.001608	1.8000	486	7,944	12,075	1,986	3,019			
			11			75,399	0.001945	1.9800	365	7,944	12,075	1,986	3,019			
			12			75,399	0.002315	2.1600	281	7,944	12,075	1,986	3,019			
			14			362T075-68	12	8	111,475	0.000712	1.4400	1,123	9,930	15,094	2,483	3,773
								9	111,475	0.001014	1.6200	789	9,930	15,094	2,483	3,773
		10		111,475	0.001391			1.8000	575	9,930	15,094	2,483	3,773			
		11		111,475	0.001852			1.9800	432	9,930	15,094	2,483	3,773			
		12		111,475	0.002315			2.1600	333	9,930	15,094	2,483	3,773			
		16		8	93,908		0.000705	1.4400	1,182	7,944	12,075	1,986	3,019			
				9	93,908		0.001003	1.6200	830	7,944	12,075	1,986	3,019			
				10	93,908		0.001376	1.8000	605	7,944	12,075	1,986	3,019			
11	93,908			0.001832	1.9800		455	7,944	12,075	1,986	3,019					
12	93,908			0.002315	2.1600		350	7,944	12,075	1,986	3,019					

TABLE 18: 7½ THICK PANEL RACKING SHEAR NO GRAVITY LOAD EPS = 1.00

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	COMPOSITE MOMENT OF INERTIA STRONG DIRECTION (IN ⁴)	STORY DRIFT DUE TO LIMITING SHEAR FORCE Δr (IN)	ALLOWABLE STORY DRIFT PER CODE Δa = 0.015 x HEIGHT (IN)	PANEL STIFFNESS K (LBS/IN)	LIMITING SHEAR FORCE PER 4FT PANEL (LBS)		LIMITING SHEAR FORCE (LBS/FOOT)			
										ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN	ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN		
7½ THICK WALL PANEL	1.00	24	362T075-18	12	8	30,309	0.001029	1.4400	305	9,930	15,094	2,483	3,773		
					9	30,309	0.001302	1.6200	214	9,930	15,094	2,483	3,773		
					10	30,309	0.001608	1.8000	156	9,930	15,094	2,483	3,773		
					11	30,309	0.001945	1.9800	117	9,930	15,094	2,483	3,773		
					12	30,309	0.002315	2.1600	90	9,930	15,094	2,483	3,773		
				16	8	25,535	0.001209	1.4400	322	7,944	12,075	1,986	3,019		
					9	25,535	0.001302	1.6200	226	7,944	12,075	1,986	3,019		
					10	25,535	0.001608	1.8000	165	7,944	12,075	1,986	3,019		
					11	25,535	0.001945	1.9800	124	7,944	12,075	1,986	3,019		
					12	25,535	0.002315	2.1600	95	7,944	12,075	1,986	3,019		
				20	362T075-33	12	8	55,392	0.001029	1.4400	558	9,930	15,094	2,483	3,773
			9				25,535	0.001302	1.6200	181	9,930	15,094	2,483	3,773	
			10				55,392	0.001608	1.8000	286	9,930	15,094	2,483	3,773	
			11				55,392	0.001945	1.9800	215	9,930	15,094	2,483	3,773	
			12				55,392	0.002315	2.1600	165	9,930	15,094	2,483	3,773	
			16			8	46,663	0.001029	1.4400	588	7,944	12,075	1,986	3,019	
						9	46,663	0.001302	1.6200	413	7,944	12,075	1,986	3,019	
						10	46,663	0.001608	1.8000	301	7,944	12,075	1,986	3,019	
						11	46,663	0.001945	1.9800	226	7,944	12,075	1,986	3,019	
						12	46,663	0.002315	2.1600	174	7,944	12,075	1,986	3,019	
			18			362T075-43	12	8	71,881	0.001029	1.4400	724	9,930	15,094	2,483
					9			71,881	0.001302	1.6200	509	9,930	15,094	2,483	3,773
		10			71,881			0.001608	1.8000	371	9,930	15,094	2,483	3,773	
		11			71,881			0.001945	1.9800	279	9,930	15,094	2,483	3,773	
		12			71,881			0.002315	2.1600	215	9,930	15,094	2,483	3,773	
		16			8		60,552	0.001029	1.4400	762	7,944	12,075	1,986	3,019	
					9		60,552	0.001302	1.6200	536	7,944	12,075	1,986	3,019	
					10		60,552	0.001608	1.8000	390	7,944	12,075	1,986	3,019	
					11		60,552	0.001945	1.9800	293	7,944	12,075	1,986	3,019	
					12		60,552	0.002315	2.1600	226	7,944	12,075	1,986	3,019	
		16			362T075-54		12	8	89,476	0.000888	1.4400	901	9,930	15,094	2,483
						9		89,476	0.001264	1.6200	633	9,930	15,094	2,483	3,773
				10		89,476		0.001608	1.8000	461	9,930	15,094	2,483	3,773	
				11		89,476		0.001945	1.9800	347	9,930	15,094	2,483	3,773	
				12		89,476		0.002315	2.1600	267	9,930	15,094	2,483	3,773	
				16		8	75,373	0.000878	1.4400	949	7,944	12,075	1,986	3,019	
						9	75,373	0.001250	1.6200	667	7,944	12,075	1,986	3,019	
						10	75,373	0.001608	1.8000	486	7,944	12,075	1,986	3,019	
						11	75,373	0.001945	1.9800	365	7,944	12,075	1,986	3,019	
						12	75,373	0.002315	2.1600	281	7,944	12,075	1,986	3,019	
				14		362T075-68	12	8	111,449	0.000713	1.4400	1,123	9,930	15,094	2,483
					9			111,449	0.001015	1.6200	788	9,930	15,094	2,483	3,773
			10		111,449			0.001392	1.8000	575	9,930	15,094	2,483	3,773	
			11		111,449			0.001852	1.9800	432	9,930	15,094	2,483	3,773	
12	111,449		0.002315		2.1600			333	9,930	15,094	2,483	3,773			
16	8		93,882		0.000705		1.4400	1,182	7,944	12,075	1,986	3,019			
	9		93,882		0.001004		1.6200	830	7,944	12,075	1,986	3,019			
	10		93,882		0.001377		1.8000	605	7,944	12,075	1,986	3,019			
	11		93,882		0.001833		1.9800	455	7,944	12,075	1,986	3,019			
	12		93,882		0.002315		2.1600	350	7,944	12,075	1,986	3,019			

TABLE 19: 7½ THICK PANEL RACKING SHEAR NO GRAVITY LOAD EPS = 1.50

WALL TYPE	EPS DENSITY (PCF)	GAUGE	STUD TYPE	STUDS SPACING (INCHES)	WALL HEIGHT (FEET)	COMPOSITE MOMENT OF INERTIA OF STRONG DIRECTION (IN ⁴)	STORY DRIFT DUE TO LIMITING SHEAR FORCE Δr (IN)	ALLOWABLE STORY DRIFT PER CODE Δa = 0.015 x HEIGHT (IN)	PANEL STIFFNESS K (LBS/IN)	LIMITING SHEAR FORCE PER 4FT PANEL (LBS)		LIMITING SHEAR FORCE (LBS/FOOT)			
										ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN	ALLOWABLE STRESS DESIGN (ASD)	LOAD RESISTANCE FACTOR DESIGN		
7½ THICK WALL PANEL	1.50	24	362T075-18	12	8	30,357	0.001029	1.4400	306	9,930	15,094	2,483	3,773		
					9	30,357	0.001302	1.6200	215	9,930	15,094	2,483	3,773		
					10	30,357	0.001608	1.8000	157	9,930	15,094	2,483	3,773		
					11	30,357	0.001945	1.9800	118	9,930	15,094	2,483	3,773		
					12	30,357	0.002315	2.1600	91	9,930	15,094	2,483	3,773		
				16	8	25,583	0.001029	1.4400	322	7,944	12,075	1,986	3,019		
					9	25,583	0.001302	1.6200	226	7,944	12,075	1,986	3,019		
					10	25,583	0.001608	1.8000	165	7,944	12,075	1,986	3,019		
					11	25,583	0.001945	1.9800	124	7,944	12,075	1,986	3,019		
					12	25,583	0.002315	2.1600	95	7,944	12,075	1,986	3,019		
					20	362T075-33	12	8	55,439	0.001029	1.4400	558	9,930	15,094	2,483
				9	55,439			0.001302	1.6200	392	9,930	15,094	2,483	3,773	
			10	55,439	0.001608			1.8000	286	9,930	15,094	2,483	3,773		
			11	55,439	0.001945			1.9800	215	9,930	15,094	2,483	3,773		
			12	55,439	0.002315			2.1600	165	9,930	15,094	2,483	3,773		
			16	8	46,711		0.001029	1.4400	588	7,944	12,075	1,986	3,019		
				9	46,711		0.001302	1.6200	413	7,944	12,075	1,986	3,019		
				10	46,711		0.001608	1.8000	301	7,944	12,075	1,986	3,019		
				11	46,711		0.001945	1.9800	226	7,944	12,075	1,986	3,019		
				12	46,711		0.002315	2.1600	174	7,944	12,075	1,986	3,019		
				18	362T075-43		12	8	71,928	0.001029	1.4400	725	9,930	15,094	2,483
			9					71,928	0.001302	1.6200	509	9,930	15,094	2,483	3,773
			10			71,928		0.001608	1.8000	371	9,930	15,094	2,483	3,773	
			11			71,928		0.001945	1.9800	279	9,930	15,094	2,483	3,773	
		12	71,928			0.002315		2.1600	215	9,930	15,094	2,483	3,773		
		16	8			60,600	0.001029	1.4400	763	7,944	12,075	1,986	3,019		
			9		60,600	0.001302	1.6200	536	7,944	12,075	1,986	3,019			
			10		60,600	0.001608	1.8000	391	7,944	12,075	1,986	3,019			
			11		60,600	0.001945	1.9800	294	7,944	12,075	1,986	3,019			
			12		60,600	0.002315	2.1600	226	7,944	12,075	1,986	3,019			
			16		362T075-54	12	8	89,523	0.000887	1.4400	902	9,930	15,094	2,483	3,773
		9					89,523	0.001263	1.6200	633	9,930	15,094	2,483	3,773	
		10		89,523			0.001608	1.8000	462	9,930	15,094	2,483	3,773		
		11		89,523			0.001945	1.9800	347	9,930	15,094	2,483	3,773		
		12		89,523			0.002315	2.1600	267	9,930	15,094	2,483	3,773		
		16		8		75,421	0.000877	1.4400	950	7,944	12,075	1,986	3,019		
				9	75,421	0.001249	1.6200	667	7,944	12,075	1,986	3,019			
				10	75,421	0.001608	1.8000	486	7,944	12,075	1,986	3,019			
				11	75,421	0.001945	1.9800	365	7,944	12,075	1,986	3,019			
				12	75,421	0.002315	2.1600	281	7,944	12,075	1,986	3,019			
				14	362T075-68	12	8	111,497	0.000712	1.4400	1,123	9,930	15,094	2,483	3,773
		9					111,497	0.001014	1.6200	789	9,930	15,094	2,483	3,773	
		10	111,497				0.001391	1.8000	575	9,930	15,094	2,483	3,773		
		11	111,497				0.001852	1.9800	432	9,930	15,094	2,483	3,773		
		12	111,497				0.002315	2.1600	333	9,930	15,094	2,483	3,773		
		16	8			93,930	0.000705	1.4400	1,183	7,944	12,075	1,986	3,019		
			9		93,930	0.001003	1.6200	831	7,944	12,075	1,986	3,019			
			10		93,930	0.001376	1.8000	606	7,944	12,075	1,986	3,019			
11	93,930		0.001832		1.9800	455	7,944	12,075	1,986	3,019					
12	93,930		0.002315		2.1600	350	7,944	12,075	1,986	3,019					



$$R_c = \left[\frac{pL}{2} + \sum_i \left\{ \frac{x_i}{L} \right\} p_i \right]_{gravity} + \left[\frac{Vh}{L} \right]_{racking}$$

FIGURE 7: GRAVITY AND SHEAR LOAD INTERACTION

TABLE 20a. LIMITING STUD FORCE (Rc) IN COMPRESSION

Gauge	Ht (ft)	3.5- inch		5.5- inch		7.5- inch	
		LRFD	ASD	LRFD	ASD	LRFD	ASD
		ϕR_n	R_a	ϕR_n	R_a	ϕR_n	R_a
		(kips)	(kips)	(kips)	(kips)	(kips)	(kips)
20	8	4.1	2.5	6.3	4.7	8.4	6.3
20	9	4.1	2.5	6.3	4.7	8.4	6.3
20	10	4.1	2.5	6.3	4.7	8.4	6.3
20	12	4.1	2.5	6.3	4.7	8.4	6.3
18	8	7	4.4	10.1	7.5	11.9	8.9
18	9	7	4.4	10.1	7.5	11.9	8.9
18	10	7	4.4	10.1	7.5	11.9	8.9
18	12	6.7	4.2	9.6	7.2	11.9	8.9
16	8	10.7	6.7	15.6	11.7	16	12
16	9	10.1	6.3	15.6	11.7	15.9	11.9
16	10	9.5	6	15.6	11.7	15.7	11.7
16	12	8.3	5.2	15.6	11.7	15.2	11.4

TABLE 20b. LIMITING STUD FORCE (Rt) IN TENSION

Gauge	Ht (ft)	3.5- inch		5.5- inch		7.5- inch	
		LRFD, LSD	ASD	LRFD	ASD	LRFD	ASD
		ϕR_n	R_a	ϕR_n	R_a	ϕR_n	R_a
		(kips)	(kips)	(kips)	(kips)	(kips)	(kips)
20	8	13.4	8.1	13.4	8.1	13.4	8.1
20	9	13.4	8.1	13.4	8.1	13.4	8.1
20	10	13.4	8.1	13.4	8.1	13.4	8.1
20	12	13.4	8.1	13.4	8.1	13.4	8.1
18	8	17.6	10.6	17.6	10.6	17.6	10.6
18	9	17.6	10.6	17.6	10.6	17.6	10.6
18	10	17.6	10.6	17.6	10.6	17.6	10.6
18	12	17.6	10.6	17.6	10.6	17.6	10.6
16	8	22	13.2	22	13.2	22	13.2
16	9	22	13.2	22	13.2	22	13.2
16	10	22	13.2	22	13.2	22	13.2
16	12	22	13.2	22	13.2	22	13.2

TABLE 21. ROOF APPLICATION

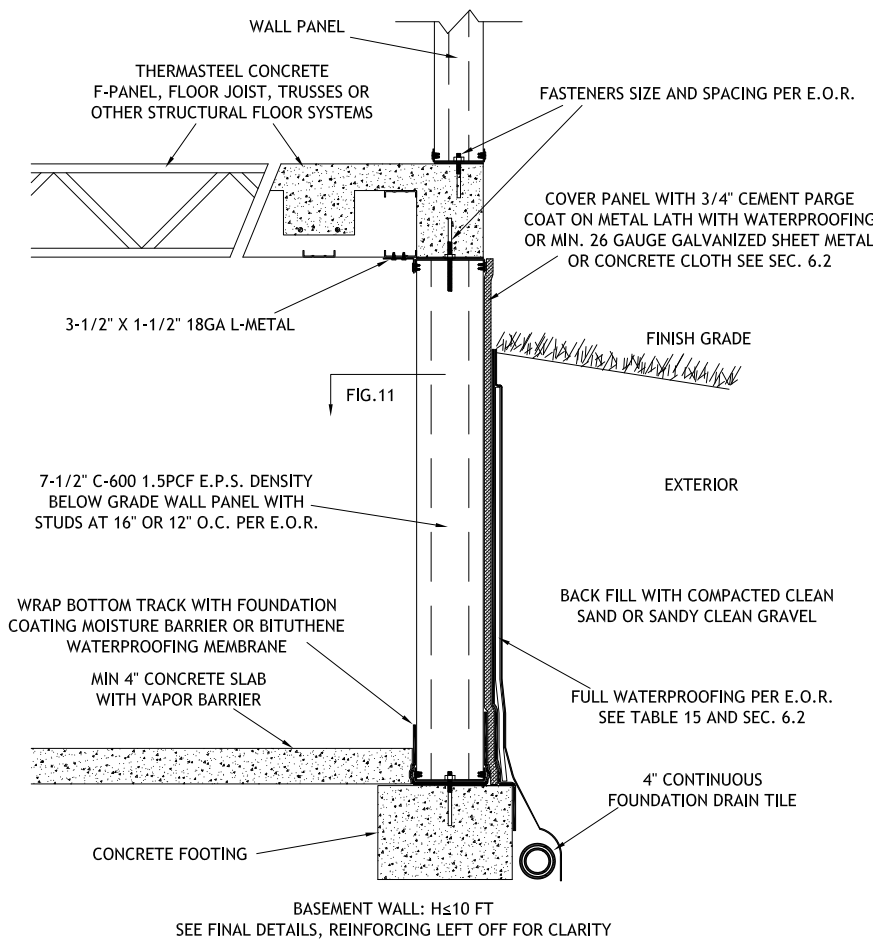
SHINGLES ROOF	METAL DECK ROOF	OTHER ROOF TYPE
Sheathing and underlayment per manufacturer	Underlayment and metal deck per manufacturer	Per case
Use shingle nails per manufacturer	Use screws with seals per manufacturer	Per case
Furring out shingles with strips will cause condensation – Not permitted		

TABLE 22: WEATHER BARRIER AND WATER PROOFING APPLICATIONS

TYPE	ABOVE GRADE		BELOW GRADE	
	VAPOR PRESSURE	WATER PRESSURE	VAPOR PRESSURE	WATER PRESSURE
EXTERIOR WALLS	No vapor barrier required	Full hydro insulation	Full hydro insulation	Full hydro insulation
INTERIOR WALLS	No vapor barrier required	Full hydro insulation	No vapor barrier required	Full hydro insulation
FLOORS	No vapor barrier required	Full hydro insulation	Full hydro insulation	Full hydro insulation
ROOF	Underlayment and roof cover required	Full hydro insulation	N/A	N/A
FOUNDATION	Full hydro insulation	Full hydro insulation	Full hydro insulation	Full hydro insulation

Vapor pressure - for atmospheric pressure and when panel is covered with rain screen such as Siding, Eifs, Brick etc.

Hydro insulation- Full water proofing membrane system



BASEMENT WALL: H≤10 FT
SEE FINAL DETAILS, REINFORCING LEFT OFF FOR CLARITY

FIGURE 8: TYPICAL BELOW GRADE WALL

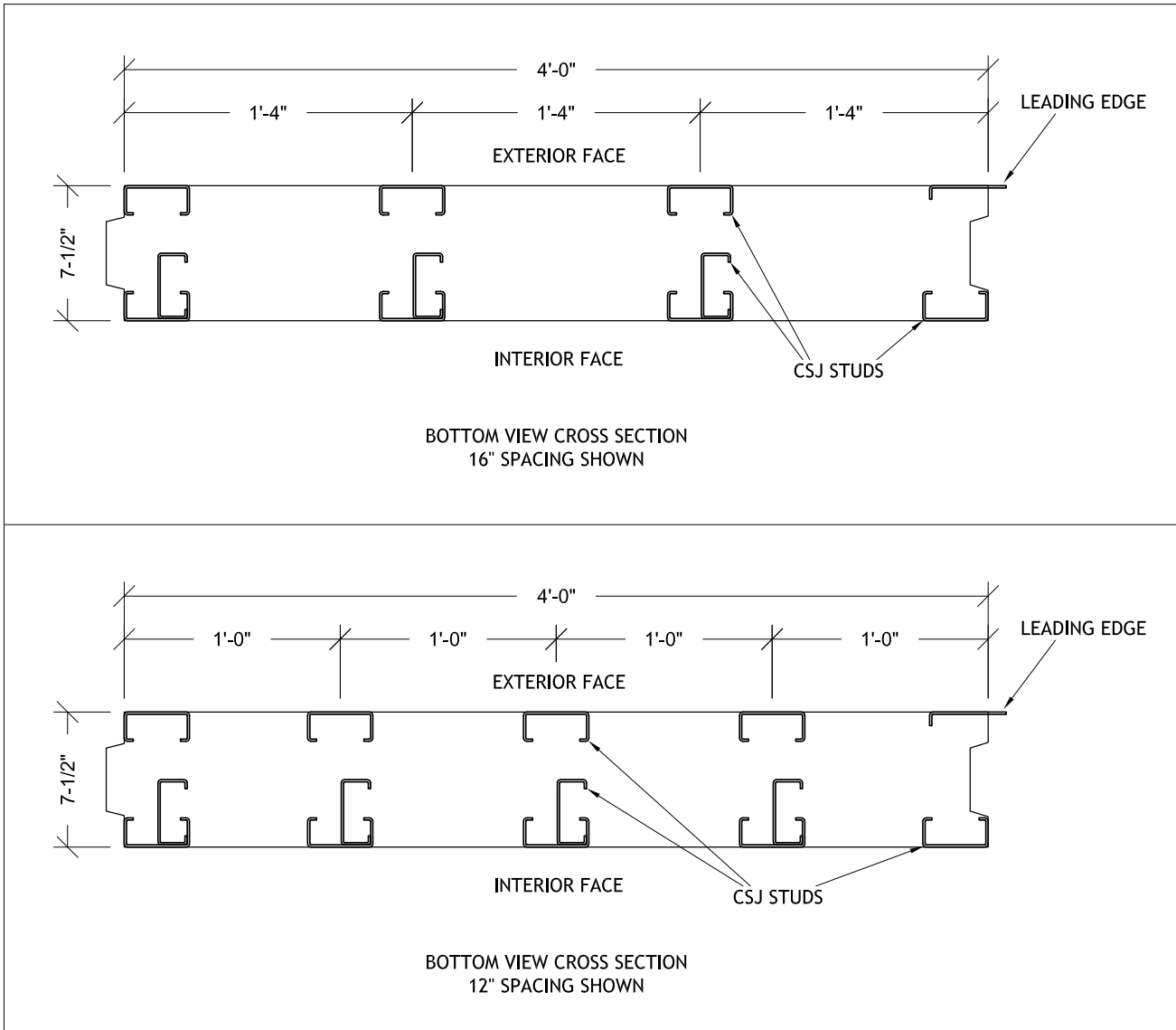


FIGURE 9: BELOW GRADE WALL SECTION WITH C600 STUDS EVERY 16 OR 12 INCH ON CENTER

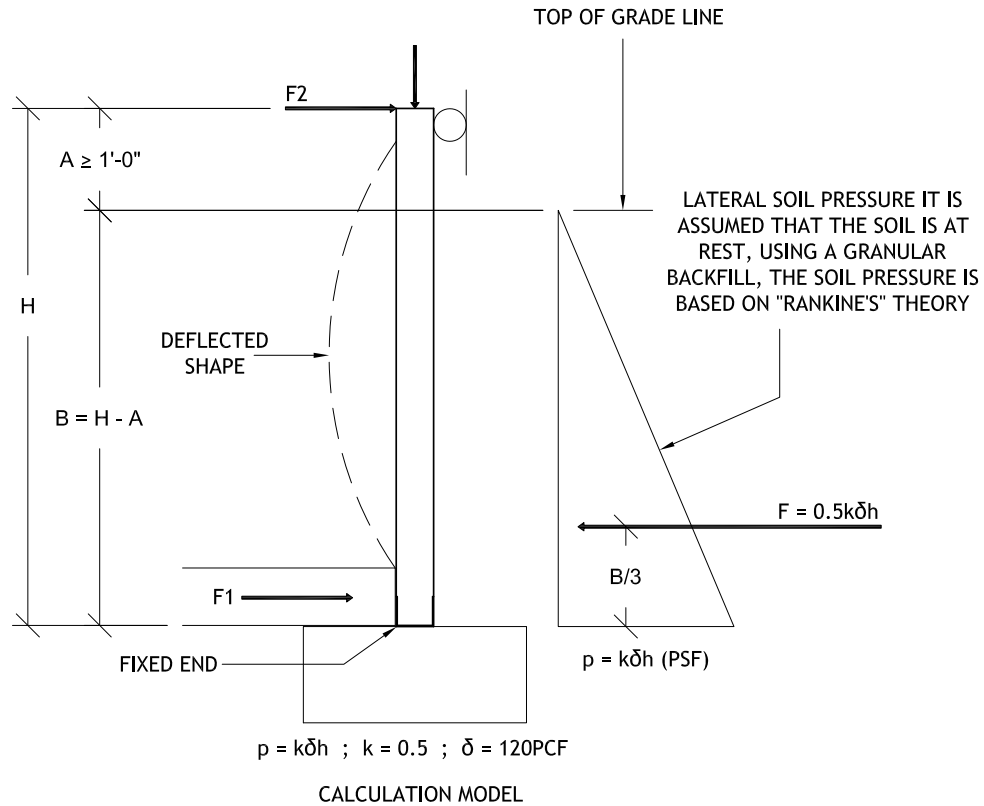


FIGURE 10: BELOW GRADE WALL WITH RANKINE'S SOIL PRESSURE THEORY

TABLE 23. BELOW GRADE WALL ALLOWABLE LOADS

STUD SECTION C600 WITH 1.5 pcf AT 16 OR 12 INCH ON CENTER						
CONDITION			STUD SPACING @ 16" o.c.		STUD SPACING @ 12" o.c.	
PANEL HEIGHT	MAX BACKFILL HEIGHT	SOIL PRESSURE AT THE BOTTOM	TRANSVERSE LOAD P (plf)	ASD ACTING MOMENT	TRANSVERSE LOAD P (plf)	ASD ACTING MOMENT
H (ft)	h (ft)	(psf)	p(max) at the bottom	M (ft-k)/16"	p(max) at the bottom	M (ft-k)/12"
4	3	180	240	0.19	180	0.14
5	4	240	320	0.32	240	0.24
6	5	300	400	0.8	300	0.6
7	6	360	480	1.35	360	1.01
8	7	420	560	2.1	420	1.58
9	8	480	640	3.08	480	2.31
10	9	540	720	4.34*	540	3.26

Max allowable axial compressive load is 10.78 kips per stud line

*Max allowable axial bending moment per stud line is 3.88 (ft-k) kips per stud line

For increased seismic and shear performance it is recommended to key in the panel 1.5" into the footing

Maximum moments imposed by backfill occur at the bottom of the wall (h-ft)

Load interaction shall be satisfied in which P (kips) & M (ft-k)

$$\left(\frac{p}{10.78} + \frac{M}{3.88} \right) \leq 1$$