



High Performance Enclosures

STRONGER. STRAIGHTER. GREENER.

Design Manual

Detailed planning and designing information
on Premier Structural Insulated Panels (SIPs)



SEPTEMBER 2019

Introduction

Premier Building Systems is North America's largest manufacturer of Structural Insulated Panel Systems (SIPS), and has been manufacturing Premier SIPS for more than 20 years. Premier's testing and analysis programs have produced an extensive and comprehensive amount of data that allows us to help design professionals optimize designs with respect to both structural and energy concerns.

Arming yourself with this accurate data helps you streamline the design process and make informed, dependable decisions. Premier's proprietary data is based upon hard facts. That's a benefit on which you rely on throughout the life of your project.

This Design Guide covers product testing for Premier SIPS' loading criteria, R-values, design details, product specifications, accessory information and guidelines for storage and handling of Premier SIPS.

Local codes, climates and practices will direct the designer or contractor in the application of ventilation, house wraps, vapor barriers, exterior finishes and thermal barriers, and Premier has many resources to aid you throughout the entire process. Along with Premier's engineers and technical division, the entire team strives to provide you with the most current information in this quickly changing market place. Look to Premier's project team to help early and often to ensure that your project starts smoothly and finishes strong.



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Guidelines for Premier SIPS Design & Installation

- Fill all voids with expanding foam.
- Project must meet local code.
- Confirm your installation date at least two weeks prior to requesting on-site assistance.
- Schedule a preconstruction meeting with your installation crew (concrete, plumbing, electrical, siding, roofing, etc.).
- Inventory materials when you receive them.
- Check all SIP for proper cuts and recesses.
- Double check SIP sizes and compare to shop drawings before installation.
- Engineered details take precedence over Premier SIP details.
- Premier SIP details regarding mastic and SIPs tape need to be followed.
- Any changes required at the job site should be communicated with the technical representative.
- Make sure your foundation or floor is level and square.
- Fabricate and pre-install dimensional or I-joist spline material as specified.
- Review engineering for hold downs if applicable.
- Make sure to pre-drill the top and bottom plates for the vertical electrical chases in the wall SIPs.
- Do not put plumbing inside SIPs.
- Do not cut the skins (OSB) for extra electrical chases or plumbing.
- Do not pick up the SIP by the edge of the top skin.
- Remove debris from sill plate before you place the SIP wall panel on it.
- Use mastic on all connections as shown in the Premier SIP details.
- Make sure that both of the wall SIPs skins are bearing on the floor.
- Follow proper nailing requirements according to details and job specific engineering.
- Plumb each SIP in each direction, then secure with nails.
- Do not apply interior or exterior materials over wet SIPs.

Testing

Extensive Testing = Accurate Data

Full scale destructive testing has been conducted on Premier SIPS to obtain the structural design capacities contained in our load charts. Extrapolating design capacities for conditions outside the scope of the load charts is not recommended.

A History of Third Party Monitored Testing

Premier credits a reputation for quality to testing that began in 1968. In 1997 we charted our widest course yet by embarking on an industry leading comprehensive structural test program. These full scale destructive tests by independent code recognized laboratories have allowed Premier to achieve some of the highest load capacities of any SIPS products in the industry.

Stronger. Straighter. Greener.

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Premier SIP Structural Review

Architect/Engineering Review

The Load Design Charts for Premier SIPS have been developed from national testing standards, testing at independent laboratories, and qualified structural engineers. These charts cover most common construction requirements. Each building project should be reviewed by an architect/engineer to determine the suitability of Premier SIPS. Extrapolating design capacities for conditions outside the scope of the load charts is not recommended.

Building Codes

Premier SIPS are recognized as being in compliance with the 2015 and 2018 International Building Code and 2015 and 2018 International Residential Code. Premier SIPS should be designed to comply with the deflection limits of the applicable building code.

Evaluation Reports

The International Code Council Evaluation Service (ICC-ES) has reviewed the independent testing, structural engineering, third party inspections, and QC program for Premier SIPS and has issued Evaluation Report ESR-4524, Listing Report ESL-1207, and Listing Report ESL-1208.



Premier SIP R-values

SIP R-values						
SIP Thickness	R-value at 75° F		R-value at 40° F		R-value at 25° F	
	EPS Core	GPS Core	EPS Core	GPS Core	EPS Core	GPS Core
4-1/2"	15	18	16	19	17	20
6-1/2"	23	27	24	29	25	30
8-1/4"	29	36	32	37	33	39
10-1/4"	37	45	40	47	41	49
12-1/4"	45	54	48	57	50	59

Premier SIP Weight

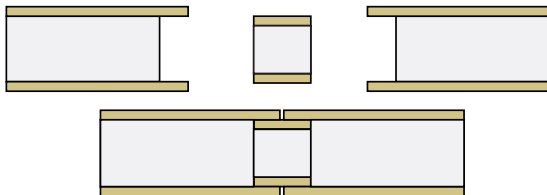
SIP Weight	
SIP Thickness	Weight (psf)
4-1/2"	3.3
6-1/2"	3.5
8-1/4"	3.7
10-1/4"	3.9
12-1/4"	4.0

Premier SIPs can be provided with custom 5/8 in. or 3/4 in. OSB facings. Add 1.3 psf to above SIP weight for 5/8 in. OSB facings. Add 2.2 psf to above SIP weight for 3/4 in. OSB facings.

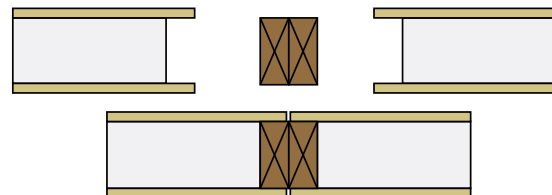
Splines

Premier SIPS are connected by splines. There are three types of spline connections, listed below. Splines vary based on their intended purpose. If splines are simply acting as a connection between panels, the “Type S” spline meets this requirement while eliminating thermal bridging. If the purpose of the spline is also to provide additional structural support, “Type I” or “Type L” splines can be used. Determination of proper spline for the application can be determined by the use of Premier’s Load Design Charts on the following pages.

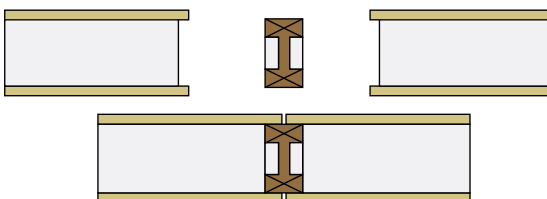
Type S



Type L



Type I



Load Design Chart #1a provides maximum allowable uniformly distributed pounds per lineal foot (PLF) axial load based on SIP thickness and height with Type S spline. Joists or trusses spaced 24 in. o.c. or closer are considered uniform loads. See Load Design Chart 2a for point loads.

Load Design Chart #1a

Uniform Axial Loads - PLF ¹⁻⁴ LOAD DESIGN CHART #1a TYPE S SPLINE						
SIP Thickness	SIP Height (ft.)					
	8	10	12	16	20	24
4-1/2"	3500	2553	2453	2117	NA	NA
6-1/2"	4250	4043	3373	3923	2817	2183
8-1/4"	4917	4327	4473	4197	3497	3067
10-1/4"	4600	4414	4228	4417	3389	3248
12-1/4"	3889	3959	4028	4408	3837	3333

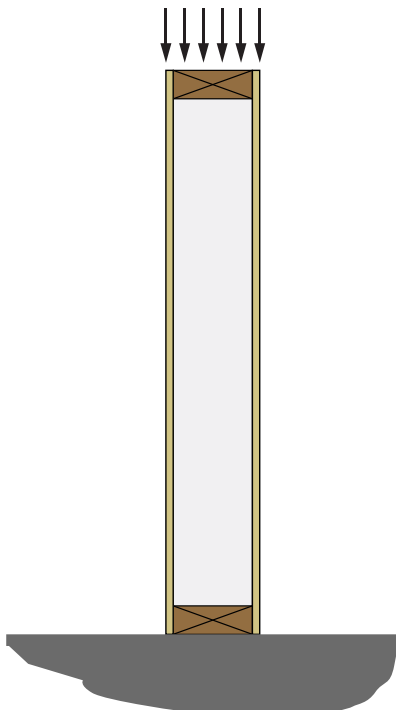
¹ Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

² Uniform axial loads.

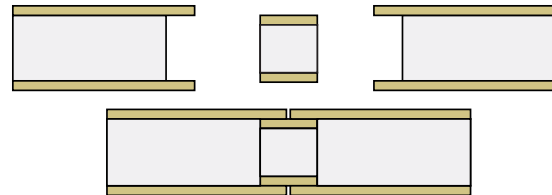
³ Both facings must bear on the supporting foundation or structure.

⁴ Tabulated values for 8-foot (2.44 m) walls apply to SIPs constructed with OSB strength axis oriented either parallel or perpendicular to supports.

Axial



Type S



Load Design Chart #1b provides maximum allowable uniformly distributed pounds per lineal foot (PLF) axial load based on SIP thickness and height with Type L spline. Joists or trusses spaced 24 in. o.c. or closer are considered uniform loads. Use Type L spline for point loads.

Load Design Chart #1b

Uniform Axial Loads - PLF ¹⁻⁴ LOAD DESIGN CHART #1b TYPE L SPLINE						
SIP Thickness	SIP Height (ft.)					
	8	10	12	16	20	24
4-1/2"	4723	3903	3273	2623	NA	NA
6-1/2"	5850	5890	4277	4310	2933	2837
8-1/4"	6807	6110	5557	5180	4837	4083
10-1/4"	5473	5709	5946	5948	4729	4250
12-1/4"	5667	5474	5281	5775	4729	4223

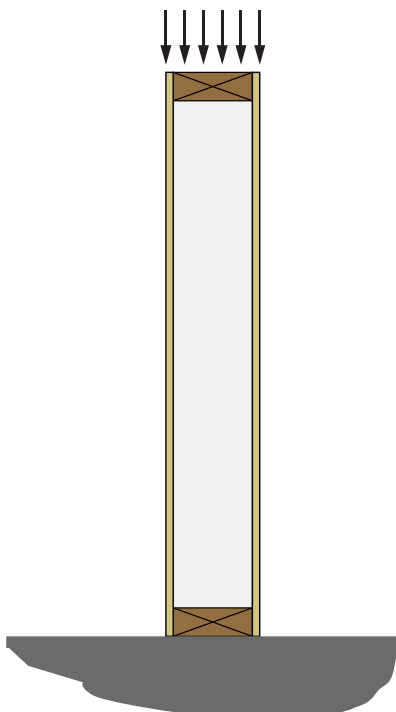
¹ Splines consist of No. 2 or better, Hem-Fir, 1-1/2 inch (38.1 mm) wide with depth equal to the core thickness, spaced to provide no less than two members for every 48 inches (1219.2 mm) of SIPs width. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

² Uniform axial loads.

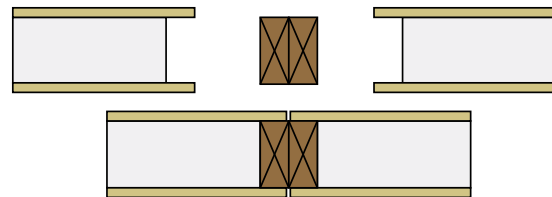
³ Both facings must bear on the supporting foundation or structure.

⁴ Tabulated values for 8-foot (2.44 m) walls apply to SIPs constructed with OSB strength axis oriented either parallel or perpendicular to supports.

Axial



Type L



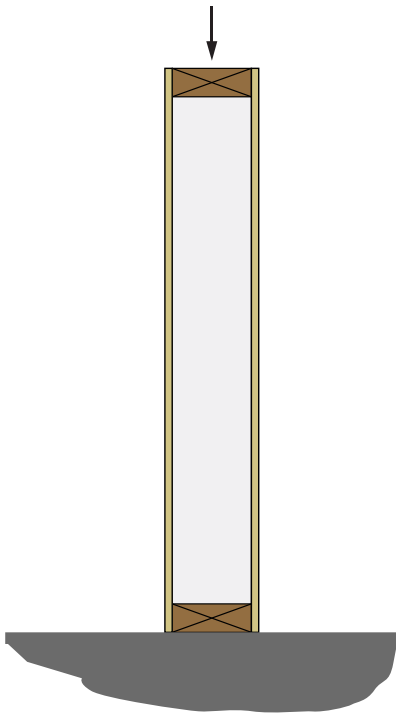
Load Design Chart #2a provides maximum allowable point load in pounds based on SIP Top Plate and/or Cap Plate. Loads exceeding those allowed require additional framing members.

Load Design Chart #2a

Axial Point Loads - LBS ¹⁻² LOAD DESIGN CHART #2a TYPE S SPLINE		
Top Plate Configuration	1-1/2" BEARING WIDTH	3" BEARING WIDTH
Single 2x4 No. 2 or better Hem-Fir Plate	2040	2450
Single 2x4 No. 2 or better Hem-Fir Plate with 1-1/8 in. thick 1.3E Rim Board Cap Plate	4030	4678

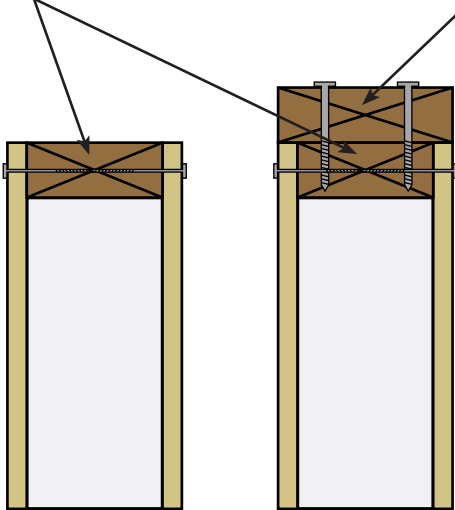
¹ Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.
 ² Tabulated values are based on the strong-axis of the facing material oriented parallel to the span direction.

Axial

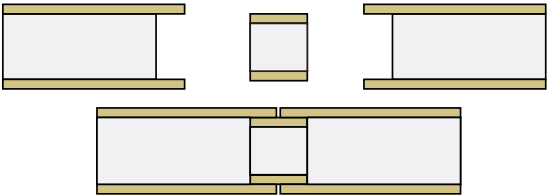


Top Plate

Cap Plate



Type S



Load Design Chart #3a provides maximum allowable uniformly distributed pounds per square foot (PSF) wall transverse load based on SIP thickness and height with Type S Splines.

Load Design Chart #3a

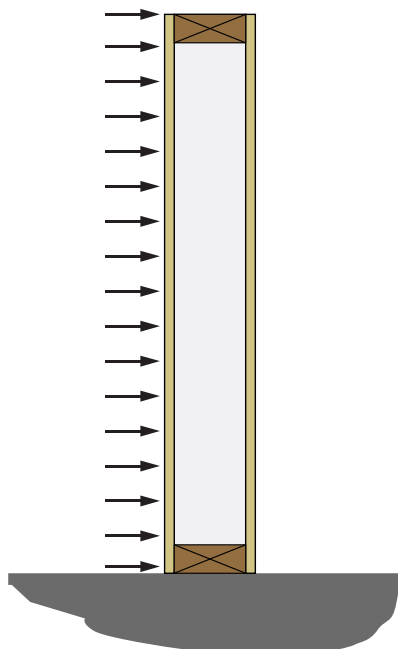
Wall Uniform Transverse Loads - PSF ¹⁻³ LOAD DESIGN CHART #3a TYPE S SPLINE										
SIP Thickness	Deflection Limit	SIP Height (feet)								
		8	10	12	14	16	18	20	22	24
4-1/2"	L/360	32	23	18	14	11	NA	NA	NA	NA
	L/240	48	35	27	21	16	NA	NA	NA	NA
	L/180	55	44	36	28	22	NA	NA	NA	NA
6-1/2"	L/360	51	38	29	23	19	15	12	NA	NA
	L/240	67	53	44	35	28	23	19	NA	NA
	L/180	67	53	44	38	33	29	24	NA	NA
8-1/4"	L/360	67	51	40	32	26	22	18	15	13
	L/240	75	60	50	42	37	33	27	23	19
	L/180	75	60	50	42	37	33	30	26	22
10-1/4"	L/360	83	66	52	43	35	29	25	21	18
	L/240	83	66	55	47	41	36	33	30	27
	L/180	83	66	55	47	41	36	33	30	27
12-1/4"	L/360	89	72	60	51	44	37	32	27	23
	L/240	89	72	60	51	45	40	36	32	30
	L/180	89	72	60	51	45	40	36	32	30

¹ Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

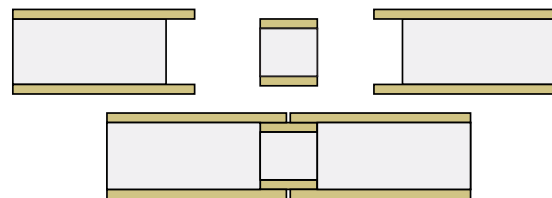
² Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code. Values are based on loads of short duration only.

³ Table values for 8-foot (2.44 m) spans apply to SIPs constructed with the OSB strength axis oriented either parallel or perpendicular to span direction. Table values for other spans are based on the OSB strength axis parallel to the span direction..

Transverse



Type S



Load Design Chart #3b provides maximum allowable uniformly distributed pounds per square foot (PSF) curtain wall transverse load based on SIP thickness and height with Type S Splines. SIPs installed in curtain wall application over support members.

Load Design Chart #3b

Curtain Wall Uniform Transverse Loads - PSF ¹⁻³											
LOAD DESIGN CHART #3b											
TYPE S SPLINE											
SIP Thickness	Deflection Limit	SIP Height (feet)									
		4 ⁴	8	10	12	14	16	18	20	22	24
4-1/2"	L/360	100	32	23	18	14	11	NA	NA	NA	NA
	L/240	143	48	35	27	21	16	NA	NA	NA	NA
	L/180	143	63	47	36	28	22	NA	NA	NA	NA
6-1/2"	L/360	105	51	38	29	23	19	15	12	NA	NA
	L/240	162	76	57	44	35	28	23	19	NA	NA
	L/180	191	80	61	50	42	36	30	24	NA	NA
8-1/4"	L/360	120	67	51	40	32	26	22	18	15	13
	L/240	179	94	71	57	48	40	33	27	23	19
	L/180	179	94	71	57	48	41	36	32	26	22
10-1/4"	L/360	131	86	66	52	43	35	29	25	21	18
	L/240	168	94	75	63	54	47	41	36	32	27
	L/180	168	94	75	63	54	47	41	36	33	28
12-1/4"	L/360	132	94	75	63	53	44	37	32	27	23
	L/240	163	94	75	63	54	47	42	37	34	31
	L/180	163	94	75	63	54	47	42	37	34	31

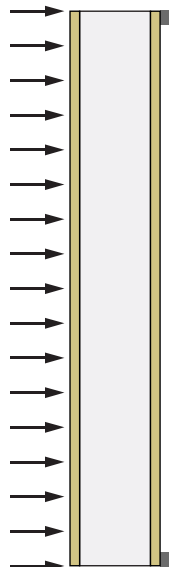
¹ Table values assume a simply supported SIP with 1-1/2 inches (38.1 mm) of continuous bearing. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load. Values do not include the dead weight of the SIP.

² Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code. Values are based on loads of short duration only and do not consider the effects of creep.

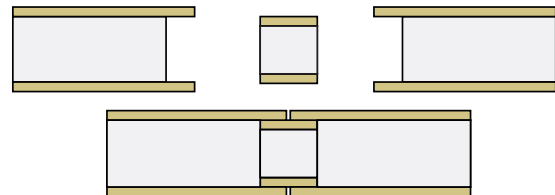
³ Table values for 8-foot (2.44 m) spans apply to SIPs constructed with the OSB strength axis oriented either parallel or perpendicular to span direction. Table values for other spans are based on the OSB strength axis parallel to the span direction.

⁴ SIPs shall be a minimum of 8-foot (2.44 m) long spanning two 4-foot (1.22 m) spans.

Transverse



Type S



Load Design Chart #4a provides maximum allowable uniformly distributed pounds per lineal foot (PLF) shear load based on fastening pattern with Type S or Type L splines. Seismic Design Categories A-C.

Load Design Chart #4a

Shear Loads - PLF ¹⁻⁷ Seismic Design Categories A-C LOAD DESIGN CHART #4a TYPE S or TYPE L SPLINE				
Framing Minimum SG	Minimum Facing Connections ⁴			Shear Load (PLF)
	Chord ^{4, 5}	Plate	Spline	
0.50	0.113"x 2-1/2" nails 6" on center	0.113"x 2-1/2" nails 6" on center	0.113"x 2-1/2" nails 6" on center	410
0.50	0.113"x 2-3/8" nails 6" on center Staggered (2 rows)	0.113"x 2-3/8" nails 6" on center	0.113"x 2-3/8" nails 6" on center ⁶	460
0.42	0.113"x 2-3/8" nails 6" on center Staggered (2 rows)	0.113"x 2-3/8" nails 4" on center Staggered (2 rows)	0.113"x 2-3/8" nails 4" on center ⁶	700
0.42	0.148"x 2-3/8" nails 6" on center Staggered (2 rows)	0.148"x 2-2/8" nails 3" on center	0.148"x 2-3/8" nails 3" on center Staggered (2 rows) ⁷	1000

¹ Wind and seismic loads in seismic design categories A, B, C.

² Aspect ratio (height:width) does not exceed 2:1.

³ Shear wall height-width ratios greater than 2:1, but not exceeding 3.5:1, are permitted for assemblies using lumber splines provided the allowable shear strength values in the table are multiplied by 2w/h.

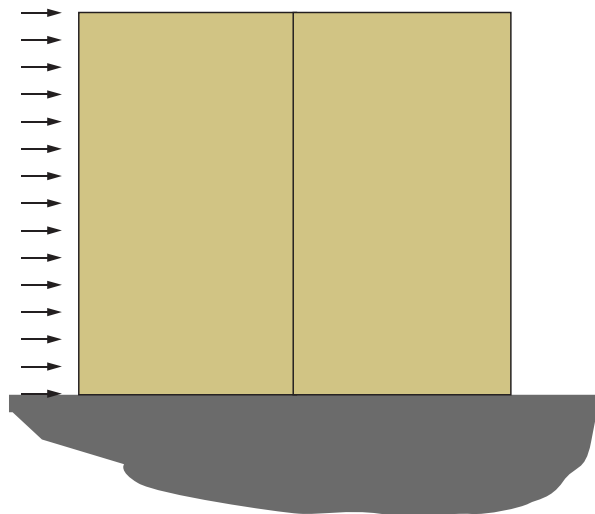
⁴ Required connections must be made on each side of the SIPs. Dimensional or engineered lumber shall have an equivalent specific gravity not less than specified.

⁵ Chords, hold-downs and connections to other structural elements must be designed by a registered designer professional in accordance with accepted engineering practice.

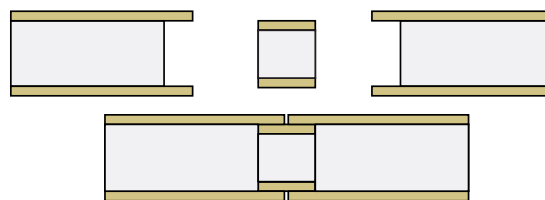
⁶ 4 inch (101.6 mm) wide spline.

⁷ 4 inch (101.6 mm), 23/32 inch (18.25 mm) thick facing.

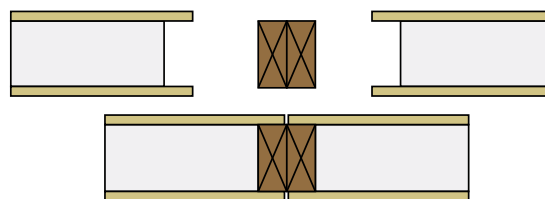
Shear



Type S



Type L



Load Design Chart #4b provides maximum allowable uniformly distributed pounds per lineal foot (PLF) shear load based on fastening pattern with Type S or Type L splines. Seismic Design Categories A-F.

Load Design Chart #4b

Shear Loads - PLF ¹⁻⁷ Seismic Design Categories A-F LOAD DESIGN CHART #4b TYPE S or TYPE L SPLINE				
Framing Minimum SG ⁴	Minimum Facing Connections ⁴			Shear Load ^{2,3} (PLF)
	Chord ⁵	Plate	Spline ⁴	
0.50	0.113"x 2-1/4" nails 6" on center	0.113"x 2-1/4" nails 3" on center	0.113"x 2-1/4" nails 6" on center	360
0.50	0.113"x 2-1/4" nails 6" on center Staggered (2 rows)	0.113"x 2-1/4" nails 6" on center	0.113"x 2-1/4" nails 6" on center	360
0.50	0.113"x 2-3/8" nails 3" on center Staggered	0.113"x 2-3/8" nails 3" on center Staggered	0.113"x 2-3/8" nails 3" on center Staggered ⁷	720
0.50	0.113"x 2-3/8" nails 2" on center Staggered	0.113"x 2-3/8" nails 2" on center Staggered	0.113"x 2-3/8" nails 2" on center Staggered	920

¹ Seismic loads in seismic design categories A, B, C, D, E and F. Walls shall be designed using the seismic design coefficients and limitations provided in ASCE 7-10 for light-framed walls sheathing with wood structural panels rated for shear resistance. SIP walls shall use the following factors for design: Response Modification Coefficient, $R = 6.5$; System Overstrength Factor, $\Omega_0 = 3.0$; Deflection Amplification Factor, $C_d = 4.0$.

² Aspect ratio (height:width) does not exceed 1:1 for Type S spline or 2:1 for Type L spline.

³ Shear wall height-width ratios greater the 2:1, but not exceeding 3.5:1, are permitted for assemblies using lumber splines provided the allowable shear strength values in the table are multiplied by $2w/h$.

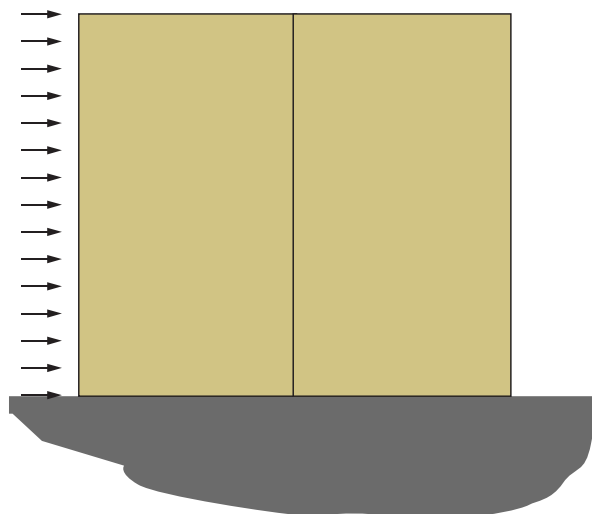
⁴ Required connections must be made on each side of the SIP. Dimensional or engineered lumber shall have an equivalent specific gravity not less than specified in the table for the framing.

⁵ Chords, hold-downs and connections to other structural elements shall be reviewed and approved by a registered designer professional.

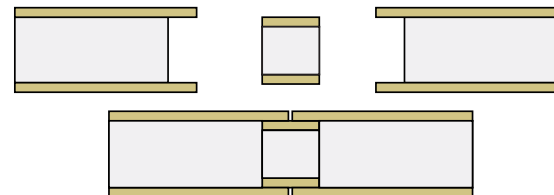
⁶ Solid chord members are required at each end of each shear wall segment. Dimensional double lumber splines must be interconnected using 10d common nails ([0.148-inch-diameter x 3 inches (3.8 mm x 76 mm)] spaced 5-inches (127 mm) on center.

⁷ 3 inch (76.2 mm) wide, 3/4 inch (19 mm) thick facing.

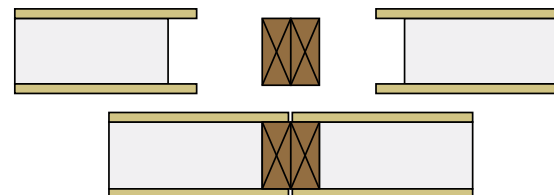
Shear



Type S



Type L



Load Design Chart #5a provides maximum allowable uniformly distributed pounds per lineal foot (PLF) header load for a SIP Header. Loads exceeding those allowed require alternative header.

Load Design Chart #5a

SIP Header Uniform Loads - PLF ¹⁻⁵						
LOAD DESIGN CHART #5a						
Header Depth ³ (inches)	Header Spline ⁵	Deflection Limit ⁴	Header Span (feet)			
			4	8	10	12
12	NO	L/480	740	384	228	142
		L/360	740	384	229	142
		L/240	740	384	229	142
	YES ⁵	L/480	345	243	156	99
		L/360	450	295	190	125
		L/240	630	382	236	153
18	NO	L/480	798	574	385	311
		L/360	798	574	385	311
		L/240	798	574	385	311
	YES ⁵	L/480	705	388	254	235
		L/360	750	482	302	281
		L/240	750	482	302	281
24	NO	L/480	886	629	429	361
		L/360	886	629	429	361
		L/240	886	629	429	361
	YES ⁵	L/480	698	556	368	350
		L/360	896	556	368	350
		L/240	896	556	368	350

¹ Vertical loads only. Lateral loads shall be transferred to the edges of the openings through continuous plate(s) designed in accordance with accepted engineering practice. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

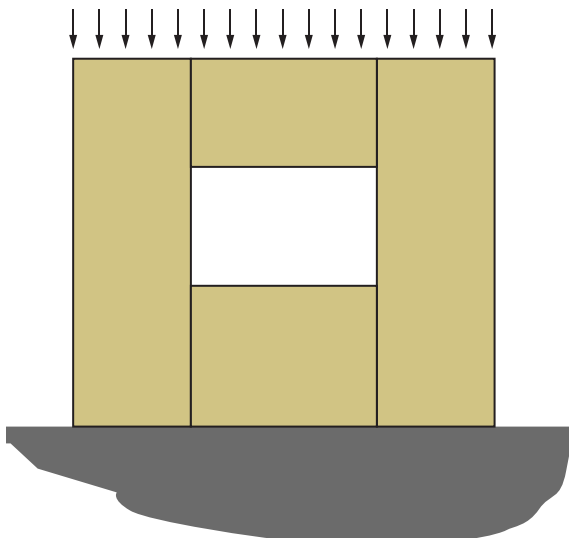
² Tabulated values are based on the strong-axis of the facing material oriented perpendicular to the direction of the header span.

³ Minimum depth of facing above opening.

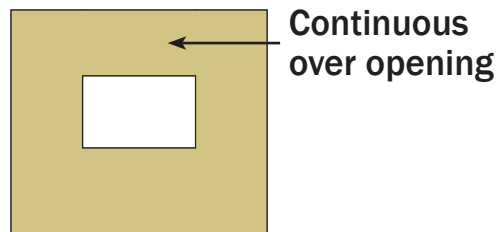
⁴ Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and requirements of applicable building code.

⁵ SIP header may contain a spline a minimum of 6 inches from edge of opening.

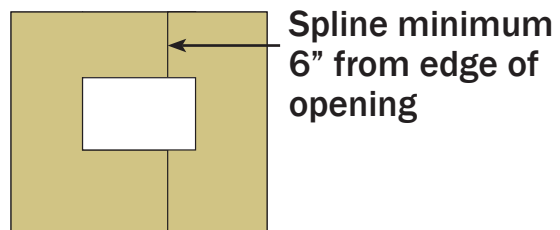
Header



No Header Spline



Header with Spline



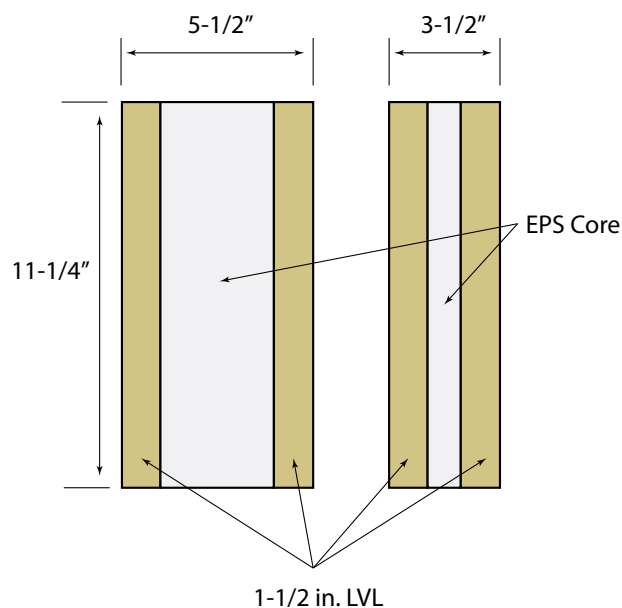
Load Design Chart #5b provides maximum allowable uniformly distributed pounds per lineal foot (PLF) header load for a Premier Insulated Header Beam. Loads exceeding those allowed require alternative header.

Load Design Chart #5b

Premier Insulated Header Beams Uniform Loads - PLF ¹									
LOAD DESIGN CHART #5b									
No. of Trimmer Studs	Deflection	Header Span (ft)							
		2'	3'	4'	5'	6'	7'	8'	
1	L/480	3150	2100	1575	1260	1050	900	788	
	L/360	3150	2100	1575	1260	1050	900	788	
	L/240	3150	2100	1575	1260	1050	900	788	
2	L/480	6300	4200	3150	2520	2100	1800	1545	
	L/360	6300	4200	3150	2520	2100	1800	1575	
	L/240	6300	4200	3150	2520	2100	1800	1575	
No. of Trimmer Studs	Deflection	Header Span (ft)							
		9'	10'	11'	12'	13'	14'	15'	16'
1	L/480	700	630	573	458	360	288	234	193
	L/360	700	630	573	525	480	384	313	257
	L/240	700	630	573	525	485	450	420	386
2	L/480	1085	791	594	458	360	288	234	193
	L/360	1400	1055	792	610	480	384	313	257
	L/240	1400	1245	792	864	720	577	469	386

¹ Values listed for each deflection represent the least value of the bearing capacity of the trimmer, shear or bearing capacity of the header or the actual deflection at the design load. Note: Trimmer stud design capacities must be reviewed.

Header



Load Design Chart #6a provides maximum allowable uniformly distributed pounds per square foot (PLF) roof/floor transverse load based on SIP thickness and span with Type S spline.

Load Design Chart #6a

Roof/Floor Uniform Transverse Loads - PSF ¹⁻⁴											
LOAD DESIGN CHART #6a											
TYPE S SPLINE											
SIP Thickness	Deflection Limit	SIP Span (feet)									
		4 ⁴	8	10	12	14	16	18	20	22	24
4-1/2"	L/360	100	32	23	NA	NA	NA	NA	NA	NA	NA
	L/240	143	48	35	NA	NA	NA	NA	NA	NA	NA
	L/180	143	63	47	NA	NA	NA	NA	NA	NA	NA
6-1/2"	L/360	105	51	38	29	23	NA	NA	NA	NA	NA
	L/240	162	76	57	44	35	NA	NA	NA	NA	NA
	L/180	191	80	61	50	42	NA	NA	NA	NA	NA
8-1/4"	L/360	120	67	51	40	32	26	22	NA	NA	NA
	L/240	179	94	71	57	48	40	33	NA	NA	NA
	L/180	179	94	71	57	48	41	36	NA	NA	NA
10-1/4"	L/360	131	86	66	52	43	35	29	25	21	NA
	L/240	168	94	75	63	54	47	41	36	32	NA
	L/180	168	94	75	63	54	47	41	36	33	NA
12-1/4"	L/360	132	94	75	63	53	44	37	32	27	23
	L/240	163	94	75	63	54	47	42	37	34	31
	L/180	163	94	75	63	54	47	42	37	34	31

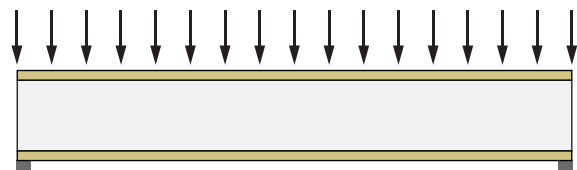
¹ Table values assume a simply supported SIP with 1-1/2 inches (38.1 mm) of continuous bearing. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load. Values do not include the dead weight of the SIP.

² Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code. Values are based on loads of short duration only and do not consider the effects of creep.

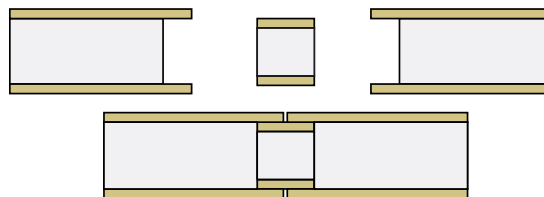
³ Table values for 8-foot (2.44 m) spans apply to SIPs constructed with the OSB strength axis oriented either parallel or perpendicular to span direction. Table values for other spans are based on the OSB strength axis parallel to the span direction.

⁴ SIPs shall be a minimum of 8-foot (2.44 m) long spanning two 4-foot (1.22 m) spans.

Transverse



Type S



Load Design Chart #6b provides maximum allowable uniformly distributed pounds per square foot (PLF) roof/floor transverse load based on SIP thickness and span with Type I spline.

Load Design Chart #6b

Roof/Floor Uniform Transverse Loads - PSF ¹⁻⁴											
LOAD DESIGN CHART #6b											
TYPE I SPLINE											
SIP Thickness	Deflection Limit	SIP Span (feet)									
		4 ⁴	8	10	12	14	16	18	20	22	24
10-1/4"	L/360	197	164	124	72	67	61	48	34	29	24
	L/240	336	164	124	107	96	84	70	49	43	36
	L/180	336	164	124	107	96	84	76	65	56	47
12-1/4"	L/360	258	143	103	86	83	77	61	42	37	32
	L/240	318	143	103	93	85	77	68	59	54	46
	L/180	318	143	103	93	85	77	68	59	54	49

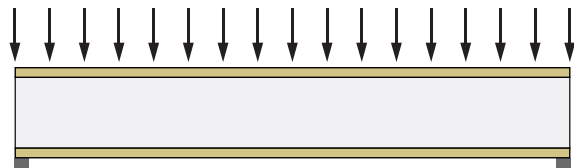
¹ Table values assume a simply supported SIP with 1-1/2 inches (38.1 mm) of continuous bearing. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load. Splines consist of Premier I-beam, 2-1/4 inch (57.2 mm) wide flange (minimum) with a depth equal to the core thickness, spaced not to exceed 48 inches (1219.2 mm) on center.

² Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code.

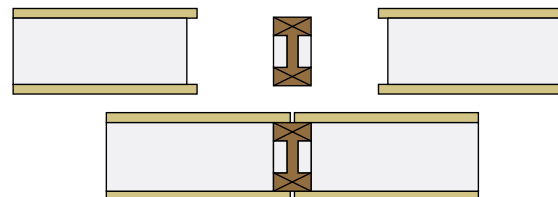
³ Tabulated values for 8-foot (2.44 m) walls apply to SIPs constructed with the OSB strength axis oriented either parallel or perpendicular to supports. Tabulated values for other lengths are based on the strong-axis of the facing material oriented either parallel to the span direction.

⁴ SIP shall be a minimum of 8 foot (2.44 m) long spanning a minimum of two 4-foot (1.22 m) spans.

Transverse



Type I



Load Design Chart #6c provides maximum allowable uniformly distributed pounds per square foot (PLF) roof/floor transverse load based on SIP thickness and span with Type L spline.

Load Design Chart #6c

Roof/Floor Uniform Transverse Loads - PSF ¹⁻⁴											
LOAD DESIGN CHART #6c											
TYPE L SPLINE											
SIP Thickness	Deflection Limit	SIP Span (feet)									
		4 ⁴	8	10	12	14	16	18	20	22	24
4-1/2"	L/360	103	45	33	24	NA	NA	NA	NA	NA	NA
	L/240	225	68	47	34	NA	NA	NA	NA	NA	NA
	L/180	297	91	61	45	NA	NA	NA	NA	NA	NA
6-1/2"	L/360	307	129	57	42	34	25	20	NA	NA	NA
	L/240	307	182	87	61	49	37	30	NA	NA	NA
	L/180	307	182	112	80	65	49	39	NA	NA	NA
8-1/4"	L/360	253	171	82	66	54	41	32	23	NA	NA
	L/240	288	188	128	100	81	61	48	35	NA	NA
	L/180	288	188	133	117	105	80	63	45	NA	NA
10-1/4"	L/360	286	188	117	101	80	58	47	36	32	27
	L/240	326	188	147	134	120	90	71	52	47	41
	L/180	326	188	147	134	121	106	93	68	61	53
12-1/4"	L/360	327	188	167	141	116	91	75	58	47	36
	L/240	327	188	167	153	132	110	97	83	69	53
	L/180	327	188	167	153	132	110	97	83	83	70

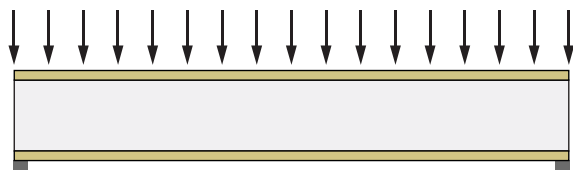
¹ Table values assume a simply supported SIP with 1-1/2 inches (38.1 mm) of continuous bearing. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load. Splines consist of No. 2 or better Hem-Fir, 1-1/2 inches (38.1 mm) wide with a depth equal to the core thickness, spaced to provide not less than two members for every 48 inches (1219.2 mm) of SIP width.

² Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of applicable building code.

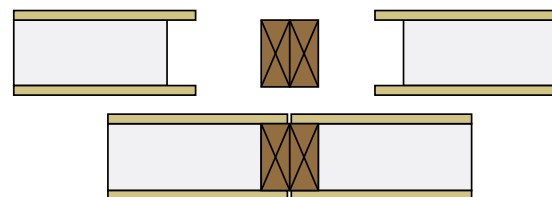
³ Tabulated values for 8-foot (2.44 m) walls apply to SIPs constructed with the OSB strength axis oriented either parallel or perpendicular to supports. Tabulated values for other lengths are based on strong-axis of the facing material oriented parallel to the span direction.

⁴ SIP shall be a minimum of 8 foot (2.44 m) long spanning two 4-foot (1.22 m) spans. No single span condition is allowed.

Transverse



Type L



Load Design Chart #7a provides maximum allowable uniformly distributed pounds per square foot (PLF) diaphragm load based on fastening pattern with Type S spline.

Load Design Chart #7a

Roof/Floor Diaphragms Loads - PLF ¹⁻⁶						
LOAD DESIGN CHART #7a						
TYPE S SPLINE						
Minimum Connections ²				Allowable Shear Load (PLF)	G' Apparent Shear Stiffness (lb/in)	Maximum Aspect Ratio
Interior Supports ²	Spline ³	Boundary ⁴				
		Support	Spline			
SIP Screw 12" on center ⁵	0.113"x 2-1/2" nails 3" on center	SIP Screw 12" on center ⁵	0.113"x 2-1/2" nails, 6" on center	430	24000	4:1
SIP Screw 12" on center ⁵	0.113"x 2-1/2" nails 3" on center 2 rows, Staggered	SIP Screw 3" on center ⁵	0.113"x 2-1/2" nails, 4" on center	530	30300	4:1
SIP Screw 2" on center ⁵	0.113"x 2-1/2" nails 3" on center 2 rows, Staggered	SIP Screw 2" on center ⁵	0.113"x 2-1/2" nails, 1-1/2" on center	750	41300	4:1
SIP Screw 4" on center ⁵	0.113"x 2-1/2" nails 3" on center 2 rows, Staggered	SIP Screw 4" on center ⁵	0.113"x 2-1/2" nails, 3" on center	915	93700	3:1
SIP Screw 4" on center ⁵	0.113"x 2-1/2" nails 6" on center 2 rows, Staggered ⁶	SIP Screw 4" on center ⁵	0.113"x 2-1/2" nails, 6" on center	1130	110600	3:1

¹ The maximum diaphragm length-to-width ratio shall not exceed 4:1. Load may be applied parallel to continuous SIP joints.

² Interior supports shall be spaced not to exceed 12 feet (3.66 m) on center and have a minimum width of 3-1/2 inches (88.9 mm) and a specific gravity of 0.42 or greater. Specified fasteners are required on both side of the SIP joint where SIPs are joined over a support.

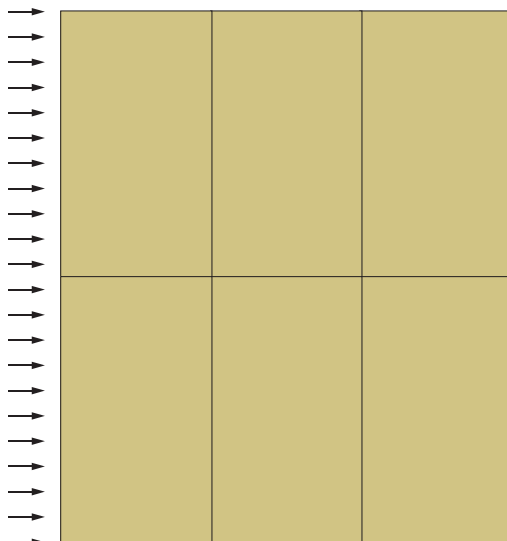
³ Top splines only, at interior SIP-to-SIP joints. Specified fasteners are required on both sides of the SIP joint.

⁴ Boundary spline shall be solid 1-1/2 inches (38.1 mm) wide, minimum, and have a specific gravity of 0.42 or greater. Boundary supports shall have a minimum width of 3-1/2 inches (88.9 mm) and a specific gravity of 0.42 or greater. Specified spline fasteners are required through both facings.

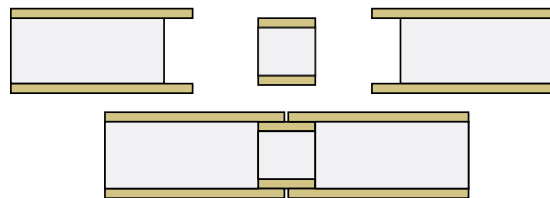
⁵ 1 inch (25.4 mm) penetration.

⁶ 4 inch (101.6 mm) 23/32 in (18.25 mm) thick facing.

Diaphragm



Type S



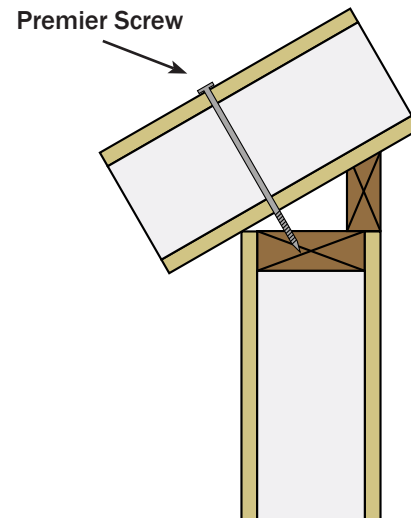
Premier Screw Length Guide provides recommended Premier SIP Screw length required based on SIP thickness and roof slope.



Premier Screw Length Guide

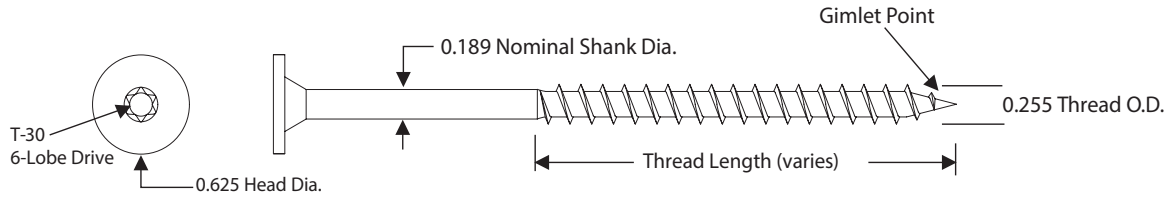
SIP Thickness ¹					
Slope	4-1/2"	6-1/2"	8-1/4"	10-1/4"	12-1/4"
2/12	6"	8"	10"	12"	14"
4/12	6"	8"	10"	12"	14"
6/12	7"	9"	10"	12"	14"
8/12	7"	9"	11"	13"	15"
10/12	8"	10"	12"	14"	16"
12/12	8"	10"	12"	14"	16"

¹ Provides roughly a 1" penetration into the top plate.



Premier Wood Screw properties are provided. All values are average ultimate values. As determined by the project architect/engineer, appropriate safety factors must be used in design.

Premier Wood Screws



Wood Screw Properties			
Tensile (lbs) AISI S904	Shear (lbs) AISI S904	Bending Yield Strength - Fyb (psi) ASTM F1575	Corrosive Resistance ASTM D6294, ETAG 006
3555	2580	185,000	<15% Red Rust after 30 cycles

Withdrawal: Lumber & Engineered Wood - lbs/in. ¹							
SPF/HF (0.42)		DF/SP (0.50)		LVL (0.50)		LSL (0.50)	OSB (7/16")
Face Grain	Edge Grain	Face Grain	Edge Grain	Face Grain	Edge Grain	Face Grain	Face
799	615	899	702	556	495	711	265

¹ Load values include fastener tip.

Withdrawal: Concrete & CMU - lbs ¹		
2500 psi Concrete	5000 psi Concrete	CMU ²
682	869	713

¹ Fastener penetrates 1" into concrete or CMU clock, including the tip.

² Concrete Masonary unit (CMU) conforming to ASTM C90.

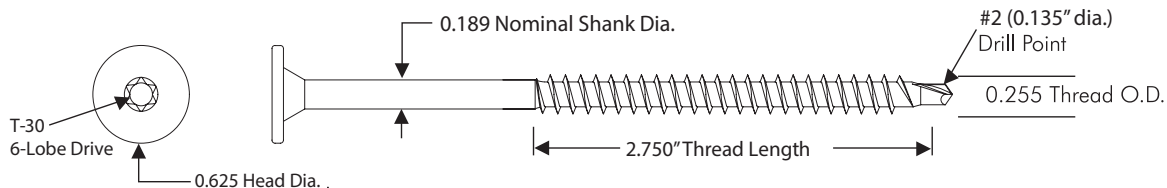
Head Pull-Thru - lbs	
7/16" OSB	SIP
490	630

Lateral Load Resistance - lbs		
Main Member	Side Member	Load
SPF ¹	8-1/4" SIP	943

¹ 1-3/4" fastener embedment into edge grain, including tip.

Premier Light Duty Metal Screw properties are provided. All values are average ultimate values. As determined by the project architect/engineer, appropriate safety factors must be used in design.

Premier Light Duty Metal Screws



Light Duty Metal Screw Properties			
Tensile (lbs) AISI S904	Shear (lbs) AISI S904	Bending Yield Strength - Fyb (psi) ASTM F1575	Corrosive Resistance ASTM D6294, ETAG 006
3390	2490	185,000	<15% Red Rust after 30 cycles

Withdrawal: Corrugated Steel Deck - lbs						
24 ga. (36 ksi)	22 ga. (36 ksi)	22 ga. (85 ksi)	20 ga. (36 ksi)	18 ga. (36 ksi)	16 ga. (36 ksi)	16 ga. (100 ksi)
250	381	435	449	694	896	1186

* Minimum 3/4" penetration of fastener through deck from underside of deck.

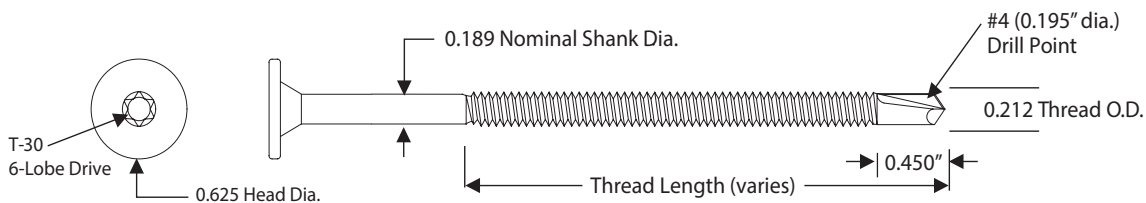
Withdrawal: Lumber & Engineered Wood - lbs/in. ¹							
SPF/HF (0.42)		DF/SP (0.50)		LVL (0.50)		LSL (0.50)	OSB (7/16")
Face Grain	Edge Grain	Face Grain	Edge Grain	Face Grain	Edge Grain	Face Grain	Face
662	497	732	720	540	469	646	284

¹ Load values include fastener tip.

Head Pull-Thru - lbs	
7/16" OSB	SIP
490	630

Premier Heavy Duty Metal Screw properties are provided. All values are average ultimate values. As determined by the project architect/engineer, appropriate safety factors must be used in design.

Premier Heavy Duty Metal Screws



Heavy Duty Metal Screw Properties			
Tensile (lbs) AISI S904	Shear (lbs) AISI S904	Bending Yield Strength - Fyb (psi) ASTM F1575	Corrosive Resistance ASTM D6294, ETAG 006
3855	2625	185,000	<15% Red Rust after 30 cycles

Withdrawal: Corrugated Steel Deck - lbs ¹					
16 ga. (36 ksi)	16 ga. (100 ksi)	12 ga. (50 ksi)	1/8" (36 ksi)	3/16" (60 ksi)	1/4" (60 ksi)
491	794	1255	1454	3098	3814

¹ Minimum (3) threads of penetration of fastener through deck as measured from underside of steel.

Head Pull-Thru - lbs	
7/16" OSB	SIP
490	630

Lateral Load Resistance - lbs		
Main Member	Side Member	Load
1/8" Structural Steel ¹	8-1/4" SIP	929

¹ Minimum (3) threads of penetration of fastener through steel as measured from underside of steel.

Nail and Screw withdrawal design loads when installed in the 7/16 in. OSB facing of a Premier SIP.



Nail and Screw Withdrawal Loads - 7/16 in OSB

Fasteners shall be long enough to penetrate OSB by at least 1/4 in. Please refer to APA Technical Topics TT-109 for complete details.

Wood Screws Withdrawal Loads							
Gauge	#6	#7	#8	#9	#10	#12	#14
Diameter (in.)	0.138	0.151	0.164	0.177	0.190	0.216	0.242
lbs	56	61	66	72	77	87	98

Rink Shank Nail Withdrawal Loads								
Diameter (in.)	0.091	0.094	0.097	0.113	0.120	0.128	0.135	0.148
lbs	36	37	38	45	48	51	53	59

Smooth Shank Nail Withdrawal Loads								
Diameter (in.)	0.092	0.099	0.113	0.120	0.128	0.131	0.135	0.148
lbs	9	10	11	12	13	13	13	14

Nail and Screw withdrawal design loads when installed in the 5/8 in. OSB facing of a Premier SIP.



Nail and Screw Withdrawal Loads - 5/8 in. OSB

Fasteners shall be long enough to penetrate OSB by at least 1/4 in. Please refer to APA Technical Topics TT-109 for complete details.

Wood Screws Withdrawal Loads							
Gauge	#6	#7	#8	#9	#10	#12	#14
Diameter (in.)	0.138	0.151	0.164	0.177	0.190	0.216	0.242
lbs	75	83	90	97	104	118	133

Rink Shank Nail Withdrawal Loads								
Diameter (in.)	0.091	0.094	0.097	0.113	0.120	0.128	0.135	0.148
lbs	49	51	52	61	64	69	73	80

Smooth Shank Nail Withdrawal Loads								
Diameter (in.)	0.092	0.099	0.113	0.120	0.128	0.131	0.135	0.148
lbs	12	13	15	16	17	17	18	20

Nail and Screw withdrawal design loads when installed in the 3/4 in. OSB facing of a Premier SIP.



Nail and Screw Withdrawal Loads - 3/4 in. OSB

Fasteners shall be long enough to penetrate OSB by at least 1/4 in. Please refer to APA Technical Topics TT-109 for complete details.

Wood Screws Withdrawal Loads							
Gauge	#6	#7	#8	#9	#10	#12	#14
Diameter (in.)	0.138	0.151	0.164	0.177	0.190	0.216	0.242
lbs	92	100	109	117	126	143	161

Rink Shank Nail Withdrawal Loads								
Diameter (in.)	0.091	0.094	0.097	0.113	0.120	0.128	0.135	0.148
lbs	59	61	63	74	78	83	88	96

Smooth Shank Nail Withdrawal Loads								
Diameter (in.)	0.092	0.099	0.113	0.120	0.128	0.131	0.135	0.148
lbs	15	16	18	19	21	21	22	24

Premier SIPs Accessories

Premier has designed, developed and tested compatible accessories in order for your Premier SIP products to have the maximum performance. As the largest SIPs manufacturer in North America you can be sure that these accessories have proven themselves in the field year after year.

Premier SIPs Screw Fasteners	11
Premier SIPs Sealant	13
Premier SIPs Tape	13
Premier SIPs Building Wrap.....	14
Recommended SIPs installation tools	14

Accessories: Premier SIP Screw Fasteners

Premier SIPS screw fasteners are factory made and supplied by Premier SIPS with your order. The fasteners were developed specifically for connecting Premier SIPS to each other, beams, purlins and posts of wood and light gauge metal.

Advantages:

- Corrosion resistant coating
- Excellent pull-out resistance
- State of the art tempering and coating technology
- Developed specifically for the attachment of Premier SIPS to beams, purlins, and posts of wood and light gauge metal
- Sizes from 5" to 18" in increments of 1"

SIPs Screw Fastener Specifications

Diameter, Thread & Point		
	Inches	Millimeter
Head Diameter	.635"	16.13mm
Thread Diameter	.255" / 2.45"	6.48mm / 6.22mm
Shank O.D.	.190" / .212"	4.83mm / 5.38mm

Premier SIPS Screw Length Guide (Roof SIP Size)

Pitch	4 1/2"	6 1/2"	8 3/8"	10 3/8"	12 3/8"
2/12	6"	8"	10"	12"	14"
4/12	6"	8"	10"	12"	14"
6/12	7"	9"	10"	12"	14"
8/12	7"	9"	11"	13"	15"
10/12	8"	10"	12"	14"	16"
12/12	8"	10"	12"	14"	16"

This chart will provide roughly a 1" penetration into the top plate.

Pull Out Strength: 1 inch penetration = 980 lbs.

Shear Capacity in SIPs: 1 inch penetration > 830 lbs. (Failure of OSB occurs at this point)

These values are ultimate values. Appropriate safety factors should be applied to obtain design values.

Accessories: Premier SIP Screw Fasteners

Application:

- Dimensional 2x's require a minimum 1" penetration.
- Wall connections require that screws be used 2' o.c.
- Roof connections require that screws be used 1' o.c.
- Frequency of screw fasteners depend on the imposed loads that the SIPs must resist. Follow the requirements specified on your shop drawings.

Screw Fastener Capacities in OSB

In order to finish a project that utilizes Premier SIPs for the walls and roof of the structure, many types of materials need to be fastened to the SIPs. These materials can include, siding, roofing materials, other structural elements, cabinets, and a host of other items.

In many of these applications screws are the preferred fasteners. Data on the pullout and lateral withdrawal capacities of screws into OSB have not been readily accessible. To help clarify the performance of screws installed in OSB, a major manufacturer of OSB, took it upon itself to generate data on various screws installed in OSB. The OSB was exposed to three different environments. Fifteen repetitions of both direct and lateral withdrawal of each screw type, in each of the three environmental conditions were conducted. The following tables summarize the lowest, ultimate average, value achieved for a particular screw type when installed in three different thicknesses of OSB.

Average Direct Withdrawal (Pullout) - lbs.

Screw Size	7/16" OSB	5/8" OSB	3/4" OSB
#6 Deck Screw	177	272	324
#8 Deck Screw	182	309	359
#10 Deck Screw	198	355	363
#12 Roofing Screw	190	312	360
#14 Roofing Screw	177	340	393

These values are ultimate values. Appropriate safety factors should be applied to obtain design values.

Average Lateral Withdrawal (Shear) - lbs.

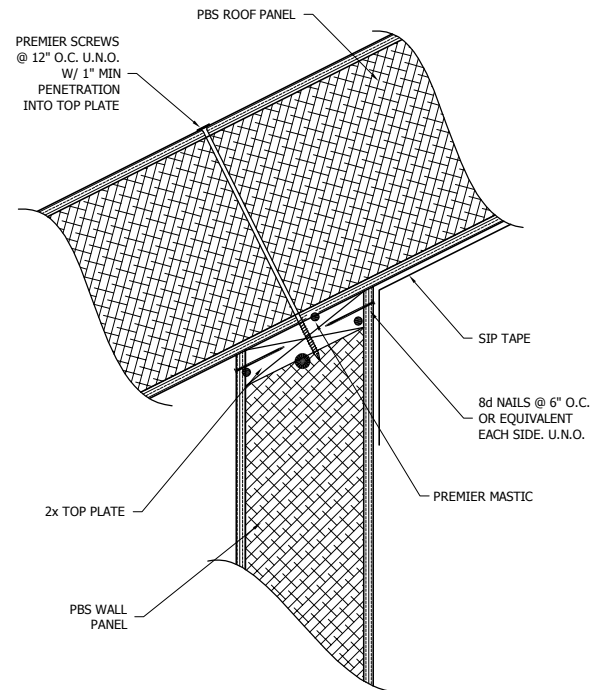
Screw Size	7/16" OSB	5/8" OSB	3/4" OSB
#6 Deck Screw	198	273	295
#8 Deck Screw	118	197	224
#10 Deck Screw	143	260	301
#12 Roofing Screw	436	581	561
#14 Roofing Screw	466	630	797

These values are ultimate values. Appropriate safety factors should be applied to obtain design values.

Premier SIPS sealant shown on our plans and in our specifications is supplied by Premier Building Systems with your order. Premier SIPS Sealant has been specifically formulated to help seal Premier SIPS connections. Consisting of polymers that are designed to remain flexible, Premier's SIPS Sealant provides a seal against water vapor transmission and air infiltration. Premier SIPS Sealant should be installed according to Premier SIPS' recommended installation guidelines.

Advantages:

- Sealant for all types of SIPS construction
- Permanent, non-brittle formula
- Gunable at low temperatures
- Withstands cold and free-thaw cycles
- Retains flexibility with age
- Resistant to moisture, dampness and temperature fluctuation
- Impervious to water wash-out
- Seals foam, wood products and many other materials



Premier SIP Sealant Estimating Chart

SIP Size	Amount of SIPS Mastic (29 oz. Tubes)
4' x 8'	0.91
4' x 10'	1.06
4' x 12'	1.22
4' x 16'	1.52
4' x 20'	1.82
4' x 24'	2.13
8' x 8'	1.22
8' x 10'	1.37
8' x 12'	1.52
8' x 16'	1.82
8' x 20'	2.13
8' x 24'	2.43

This chart has been calculated with a 3/8" diameter bead on wood-to-foam and foam-to-foam interfaces and a 3/16" diameter bead on wood-to-wood interfaces

Accessories: Premier SIP Tape

Premier SIP tape is a patented, pressure-sensitive, highly durable and superior tape that prevents moist air from penetrating the seams between SIPs and along roof lines. The tape is formulated with a permeance of less than 1. The combination of the OSB skins and the SIPs tape meets the building code requirements for vapor retarders.

Advantages:

- High peel and shear strength
- Self-healing
- VOC free
- No odors or fumes; meets air quality criteria for use as an interior sealant
- In-service temperature range of -60° F to 300° F
- Does not stain
- Quick & easy installation – no priming required
- Excellent resistance to water, most chemicals and vapor transmission
- For surface preparation and tape installation guidelines refer to Premier's Installation Guidelines.

Accessories: Premier Building Wrap

- **Strong & Durable:** Premier SIPS building wrap is cross woven to resist tearing around fasteners and will hold-up during installation.
- **Moisture Protection:** Premier SIPS building wrap is water resistant and provides reliable protection in finished wall assemblies.
- **Breathable:** Premier SIPS building wrap is micro-perforated to allow moisture vapor to escape.
- **Stable:** Premier SIPS building wrap is treated to resist excessive degradation from normal UV exposure for up to 300 days.
- **Simple Application:** The lightweight design and familiar installation processes makes installing Premier SIPS building wrap products simple and efficient. Premier SIPS building wrap products are also translucent to make locating studs, openings and corners easy.
- 74 gsm micro-perforated white building wrap = 9/10' x 150' per roll

Premier SIPS Building Wrap Tensile Strength (MD/CD) = 46/36 lbs/inch - ASTM D 828

Water Vapor Transmission = 63 g/m²/24 hours - ASTM E 96

Method A Water Vapor Permeance = 9 perms - ASTM E 96

Method A Water Resistance = 60 minutes - ASTM D 779

Accessories: Recommended SIP Installation Tools

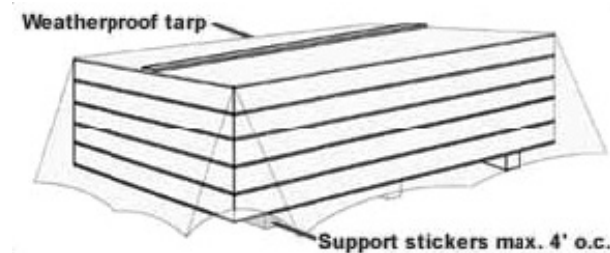
- One or two 29 oz. caulking guns
- Hand saw
- Pry bars
- Sledge hammers
- Mineral spirits
- String line
- Lifting eyebolts
- Lifting plates
- Framers square
- Loose 8d and 16d sinker nails
- Dunnage for supporting SIPs
- Expanding foam
- Fall arrest gear for roofs (if applicable)
- Chalk line
- Levels (4' or longer)
- Two 5'–6' 3/4" bar clamps
- Paint scrapers
- Ladders—step & extension
- Come-along with 2" trucking ratchet straps *or*
- A device similar to Jimmy's Strapjack
SIP Puller for pulling SIPs together
- 1/2" drill motor for 1 1/2" chase holes
- 1 1/2" x 12" auger bit
- One or two 3/8" drill motors
- Chain saw with 14"–16" bar and
chain saw guide for site fabrication
- One or two circular saws
- Power planer
- Foam Scoop and/or Avalon hot knife
- T-30 star-drive bits for SIP screws
- Nail gun or 1/2" crown staple gun
- Reciprocating saw

Storage & Handling

Your Premier SIP order will usually arrive on a flatbed truck. Depending on the site, SIPs should be off-loaded to a clean, flat area with sufficient maneuvering room. (A fork-lift will speed the off-load process.)

SIPs do not come in any particular order. This allows for minimized shipping costs by taking full advantage of the space available on the truck. It is advisable to sort the SIPs as you off load them. This process will require room to shift and stack the SIPs accordingly.

Sort and stack all of the SIPs by SIP ID number and move them as close to their final location as possible. Place at least three stickers a maximum of 4' on center (o.c.) under the SIP stacks to ensure that the SIPs remain flat. The stickers should be a minimum of 3 ½" wide.



Inventory the SIPs as you off-load them. If one is missing or damaged, have driver make note of it on bill of lading, and then call Premier SIPs immediately. We will work to correct the problem as soon as possible.

Remember, you are working with a wood product that may swell after prolonged exposure to moisture. Keep all SIPs and accessories protected from the elements prior to installation. If splines swell, installation may be hampered.

GPS Core SIPS

Specifications

SECTION 061200

STRUCTURAL INSULATED PANELS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Structural Insulated Panels (SIPs).
- B. Related Sections: Section(s) related to this section include:
 - 1. Section 06100 Rough Carpentry
 - 2. Section 06090 Wood and Plastics Fastenings

1.02 SYSTEM DESCRIPTION

- A. Structural Insulated Panels (SIPs) consist of oriented strand board (OSB) laminated with structural adhesives to an insect resistant EPS insulation core, and SIP Manufacturer supplied connecting splines, sealants, and SIP screws.

1.03 REFERENCES

- A. ACSE 7 - Minimum Loads for Buildings and other Structures.
- B. ASTM C578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
- C. ASTM E1803 – Standard Test Method for Determining Structural Capacities of Insulated Panels.
- D. DOC PS2 – Performance Standard for Wood-based Structural-Use Panels.
- E. ICC ES AC04 – Acceptance Criteria for Sandwich Panels.
- F. ICC ES AC05 – Acceptance Criteria for Sandwich Panel Adhesives.
- G. ICC ES AC12 – Acceptance Criteria for Foam Plastic Insulation.
- H. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
- I. ASTM E1333- Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Chamber.
- J. EPA - Registered products listing.

1.04 SUBMITTALS

- A. Product Data:
 - 1. SIP Code Compliance: Submit a code report / material listing report for SIPs showing evidence of compliance with code requirements as an alternate method of construction. Submit current compliance report from an International Accreditation Service (IAS) Accredited Product Certification Agency that has demonstrated compliance with ISO Guide 65, General requirements for bodies operating product certification systems, showing conformance to the International Building Code (IBC) and International Residential Code (IRC).
 - a. Shear Wall use: The submitted code report / material listing report shall include all load cases for transverse, axial and racking shear loading for the SIPs. The report must demonstrate that the SIPs may be used as shear walls in all Seismic Design Categories A, B, C, D, E and F.
 - 2. EPS Code Compliance: Submit ICC ES code report for EPS foam with evidence of compliance with code. Submit current compliance report numbers from ICC ES with conformance to the International Building Code (IBC) and International Residential Code (IRC). Code report shall include compliance with ICC ES AC12.
 - 3. Manufacturer's Instructions: Submit SIP Manufacturer's construction detail book and load design charts.
- B. Calculations: Submit structural calculations by a design professional registered in the state the project is being constructed in and qualified to perform the design work.
- C. Shop Drawings: Submit shop drawings for SIPs showing layout, elevations, product components and accessories.
- D. Quality Assurance Submittals - Submit the following:
 - 1. SIPs: Submit SIP product certificate showing compliance to Third Party Quality Control program of Underwriters Laboratories, Inc.
 - 2. EPS Core: Submit EPS Insulation manufacturer's certificate showing compliance to Third Party Quality Control program of Underwriters Laboratories, Inc.
 - 3. Labels: Submit a copy of the label approved by the Inspection Agency certifying that manufacture of panels complies with specified performance characteristics and physical properties.
 - 4. SIPA Manufacturer Member in Good Standing: Submit SIPA certificate as evidence showing SIP Manufacturer is a SIPA manufacturing member in good standing.

5. Formaldehyde Emission Rates: Submit evidence that the SIP manufacturer has tested the panels in accordance with ASTM E1333 by and IAS accredited testing laboratory and the result of the testing shows formaldehyde levels below .03 ppm.
 - E. Fire Resistant Assemblies - Submit the following:
 1. Submit UL construction number or a code report / material listing report describing each fire-rated assembly.
 2. Submit UL certificate showing flame spread and smoke developed information.
 - F. Warranty: Submit SIP manufacturer's standard warranty document.
- 1.05 QUALITY ASSURANCE
- A. Installer Qualifications: Installer shall be experienced in performing work of this section and should have specialized in installation of work similar to that required for this project.
 - B. Source Limitations: Obtain all SIPs through one manufacturer. All accessories to be furnished or recommended by the SIP manufacturer.
 - C. SIP Manufacturer shall be a Manufacturing Member, in good standing, of the Structural Insulated Panel Association (SIPA).
- 1.06 REGULATORY REQUIREMENTS
- A. SIPs shall be recognized for compliance in a current IAS accredited evaluation report or material listing report compliant with the 2009 IBC and 2009 IRC.
 - B. Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, foundation/structural system/substrate conditions, SIP manufacturer's installation instructions and SIP manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.
- 1.07 DELIVERY, STORAGE & HANDLING
- A. Ordering: Comply with SIP manufacturer's ordering instructions and lead time requirements to avoid construction delays.
 - B. Delivery: Deliver materials from SIP manufacturer with identification labels or markings intact.
 - C. Off-load SIPs from truck and handle using fork lift or other means to prevent damage to SIPs.
 - D. SIPs shall be fully supported in storage and prevented from contact with the ground. Stack SIPs on pallets or on supports at a maximum of four feet on center.
 - E. SIPs shall be fully protected from weather. Protect against exposure to rain, water, dirt, mud, and other residue that may affect SIP performance. Cover stored SIPs with breathable protective wraps. SIPs shall be stored in a protected area.
- 1.08 WARRANTY
- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
 - B. Manufacturer's Warranty: SIP Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
 1. Warranty Period: Twenty (20) years from the date of issue of the warranty.
- PART 2 PRODUCTS
- 2.01 MANUFACTURES / SUPPLIERS
- A. Premier SIPs, 19757 57th Avenue East, Puyallup, WA 98375 Phone 800-275-7086
 - B. Premier SIPs, 1155 Business Park Drive-Bldg "A", Dixon, CA 95620-4303. Phone 707-678-6900
- 2.02 MATERIALS
- A. SIPs consisting of the following:
 1. EPS core UL certified for fire and physical properties of ASTM C578 Type I EPS with borate insect resistant treatment. Insulation manufacturer shall provide Third Party UL certificate.
 2. OSB identified with APA or PFS performance mark with Exposure I durability rating and performance in accordance with DOC PS-2 span rating 24/16 or greater.
 3. Laminating Adhesives shall be in conformance with ICC ES AC05 – Acceptance Criteria for Sandwich Panel Adhesives
- 2.03 ACCESSORIES
- A. Splines: OSB, Premier SIP Spline, or I-beam for use in joining SIPs shall be supplied by SIPs manufacturer.
 - B. Fasteners: corrosion resistant SIP screws compatible with SIP system shall be provided by the SIPs manufacturer.
 1. Wood Screws for attachment to wood members
 2. Heavy Duty Metal Screws for attachment to metal members (16 gauge to 1/4")
 3. Light Duty Metal Screws for attachment to metal decks (18 gauge or thinner)
 - C. SIP Mastic: Shall be specifically designed for use with SIPs. Mastic must be compatible with all components of the SIP. Mastic shall be provided by the SIP manufacturer.

- D. Dimensional Lumber: SPF, #2 or better, or engineered equivalent unless otherwise required by structural drawings.
- E. Vapor Retarder SIP Tape: Tape with an adhesive suitable for indoor use, min. 6 inch wide for use on SIP joints, 18 inch wide for use at roof beams. SIP Tape shall be supplied by the SIP manufacturer.

2.04 FABRICATION

A. Sizes: SIPs shall be fabricated in accordance with approved Shop Drawings

B. Thermal Resistance, R-Value

- 2.05 4 1/2" (114 mm) thick SIP with R-Value of 15.0 at 75°F and an R-Value of 16.2 at 40°F
- 2.06 6 1/2" (165 mm) thick SIP with R-Value of 22.7 at 75°F and an R-Value of 24.5 at 40°F
- 2.07 8 1/4" (210 mm) thick SIP with R-Value of 29.5 at 75°F and an R-Value of 31.8 at 40°F
- 2.08 10 1/4" (260 mm) thick SIP with R-Value of 37.2 at 75°F and an R-Value of 40.2 at 40°F
- 2.09 12 1/4" (311 mm) thick SIP with R-Value of 44.9 at 75°F and an R-Value of 48.5 at 40°F

2.010 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

2.011 RELATED MATERIALS

A. Related Materials: Refer to other sections for related materials as follows:

- 1. Dimensional Lumber: SPF #2 or better or pre-engineered equivalent: Refer to Division 6 Carpentry Sections.

2.012 SOURCE QUALITY

A. Source Quality Assurance: Each SIP component required shall be supplied by SIP manufacturer and shall be obtained from selected SIP manufacturer or its approved supplier.

- 1. Each SIP shall be labeled indicating UL or other ISO Guide 65 approved Third Party certification.
- 2. Provide evidence of UL Third Party inspection and labeling of all insulation used in manufacture of SIPs.
- 3. SIP manufacturer shall provide Lamination/R-Value Warranty documents for building owner acceptance and execution. Manufacturer's standard forms will be submitted.
- 4. Provide SIPs with EPS treated for insect resistance. Treatment shall be EPA registered.
- 5. Dimensional Tolerance - shall comply with values listed in the manufacturer's Quality Control Manual.

B. Source Quality: Obtain SIPs from a single manufacturer.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's ICC-ES or material listing report, Load Design Charts, Detail Book, Shop Drawings, and Product data, including product technical bulletins, for installation.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions.

- 1. Verify conditions of foundation/structural system/substrate and other conditions which affect installation of SIPs. Any adverse conditions shall be reported in writing to the SIP manufacturer and the design professional. Do not proceed with installation until adverse conditions are corrected.

3.03 INSTALLATION

A. SIP Installation:

- 1. SIP Supports: Provide level and square foundation/structural system/substrate that support wall and/or roof SIPs. For wall SIPs, hold sill plate back from edge of rim board 1/2" (12 mm) to allow full bearing of OSB skins. Provide 1 1/2" (38 mm) diameter access holes in plating to align with electrical wire chases in SIPs. Provide adequate bracing of SIPs during erection. Remove debris from plate area prior to SIP placement.
- 2. SIP Fastening: Connect SIPs by nails or staples as shown on drawings. Screws of equal strength may be substituted for nails and staples as specified by engineer. SIP mastic must be used together with each fastening techniques. Where SIP Screw Fasteners are used, provide a minimum of 1" (25.4 mm) penetration into support. Join SIPs using plates and splines. Secure attachment with nails, staples, or screws, and SIP mastic. Apply SIP mastic following SIP manufacturer recommendations.
- 3. SIP Tape: Provide SIP Tape at joints between SIP wall panels, roof panels and at intersection of SIP roof and wall panels and as shown in SIP Manufacturer's details.
- 4. Vapor Retarders: Provide vapor retarders mandated by building code.
- 5. Thermal Barriers: Interior surfaces of SIPs shall be finished with a minimum 15-minute thermal barrier, such as gypsum wallboard, nominal 1" (25 mm) wood paneling, or other approved materials. Apply code approved thermal barriers according to SIP manufacturer's recommendations.

6. Restrictions: Do not install SIPs directly on concrete. Do not put plumbing in SIPs without consulting SIP manufacturer. Do not over cut skins for field-cut openings and do not cut skins for electrical chases. SIPs shall be protected from exposure to solvents and their vapors that damage the EPS foam core.
7. Remove and replace insulated wall or roof SIPs which have become excessively wet or damaged before proceeding with installation of additional SIPs or other work.

3.04 FIELD QUALITY REQUIREMENTS

- A. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

1. Site Visits:

3.05 PROTECTION

- A. Protection: Protect installed product and finish surfaces from damage during construction.
 1. Roof SIPs: Protect roof SIPs from weather by roofing materials to provide temporary protection at the end of the day or when rain or snow is imminent.
 2. After installation, cover SIPs to prevent contact with water on each exposed SIP edges and faces.

END OF SECTION

Details

The following details are provided as a general guideline only. Details relating to your project will be provided on your project specific shop drawings. As with any individual design, engineering may dictate changes in SIP details or configurations. Your final shop drawings should be reviewed in great detail to aid in assembly and root out design inconsistencies. The design professional, general and framing contractors all have a role in this process.

General Details

Detail	Number Subject
PBS-001.....	Overview Section
PBS-002	Overview Section
PBS-003	Typical Timber Frame Details
PBS-004	SIP to Steel Connection
PBS-005	Premier Spline Connection
PBS-005a	Premier Spline Connection for Shearwalls
PBS-006	I-Joist Spline Connection
PBS-007	Double 2x Lumber Connection
PBS-008.....	Spline Fastened at Top Only
PBS-009	SIP to Plate Connection
PBS-010.....	Cap Plate
PBS-011	Wall SIP Corner Connection
PBS-012.....	Wall SIP Angled Corner
PBS-013.....	SIP Tape Application

Floor/Foundation Details

Detail	Number Subject
PBS-101	Recessed Sill Plate
PBS-102.....	Capillary Break on Slab
PBS-103.....	SIP/Foundation Connection
PBS-104.....	Hold Down Connection
PBS-105.....	Strap Hold Down Connection
PBS-106.....	Foundation Framing
PBS-107	Foundation Framing
PBS-108.....	SIP Floor Blocking
PBS-109.....	Floor Blocking
PBS-110	Platform Framing
PBS-111	Platform Framing

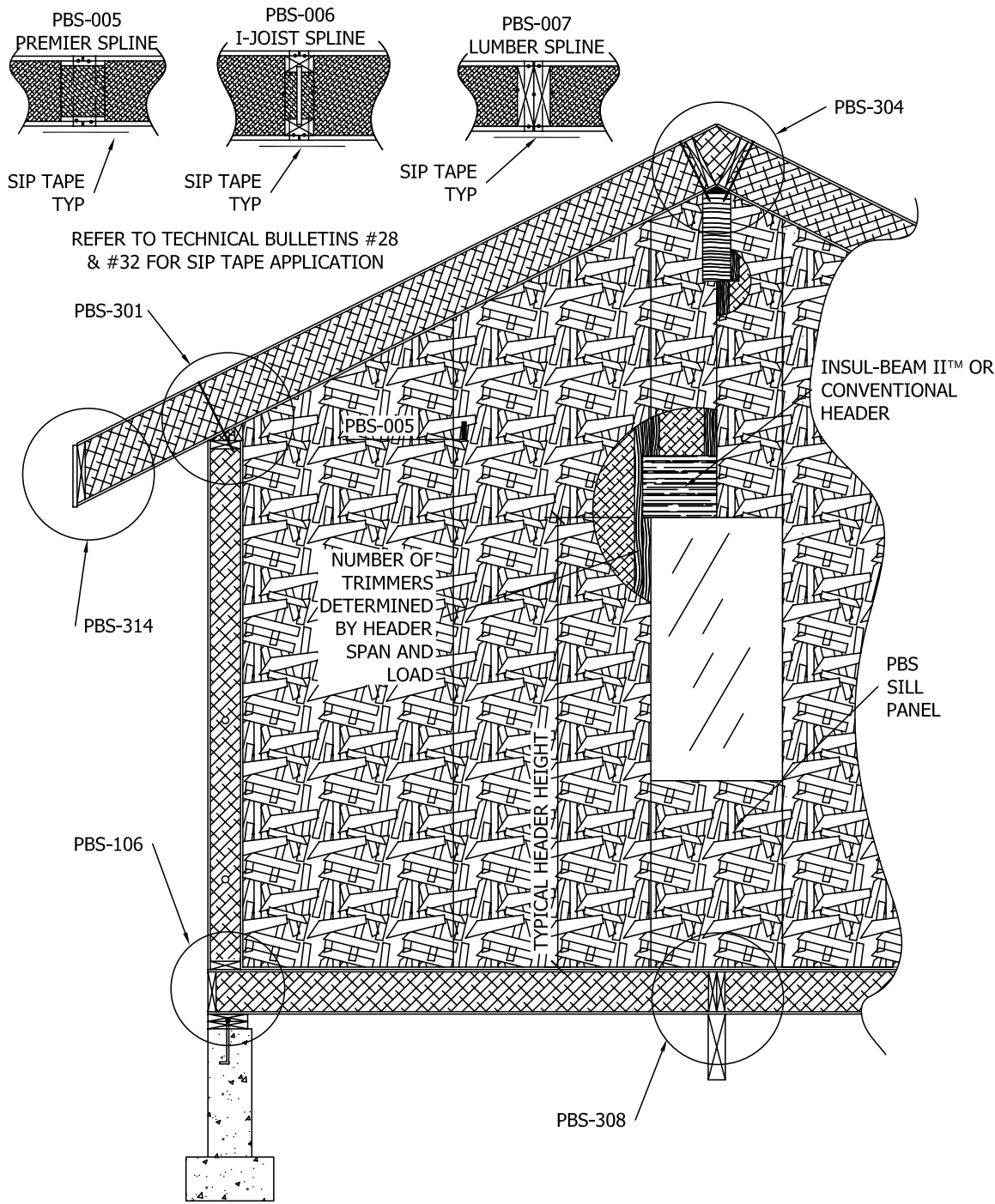
Wall Details

Detail	Number Subject
PBS-201.....	Insul-Beam Header
PBS-202	SIP as Header
PBS-203	Typical SIP Wall
PBS-204	Typical Opening Framing
PBS-205	Truss Bearing
PBS-206	Standard Electrical Chases
PBS-207	Electrical Box Installation
PBS-208	Interior Wall Connection
PBS-209	Typical Cabinet Connection
PBS-210.....	Island Vent Detail
PBS-211	Insul-Beam Above Opening

Roof Details

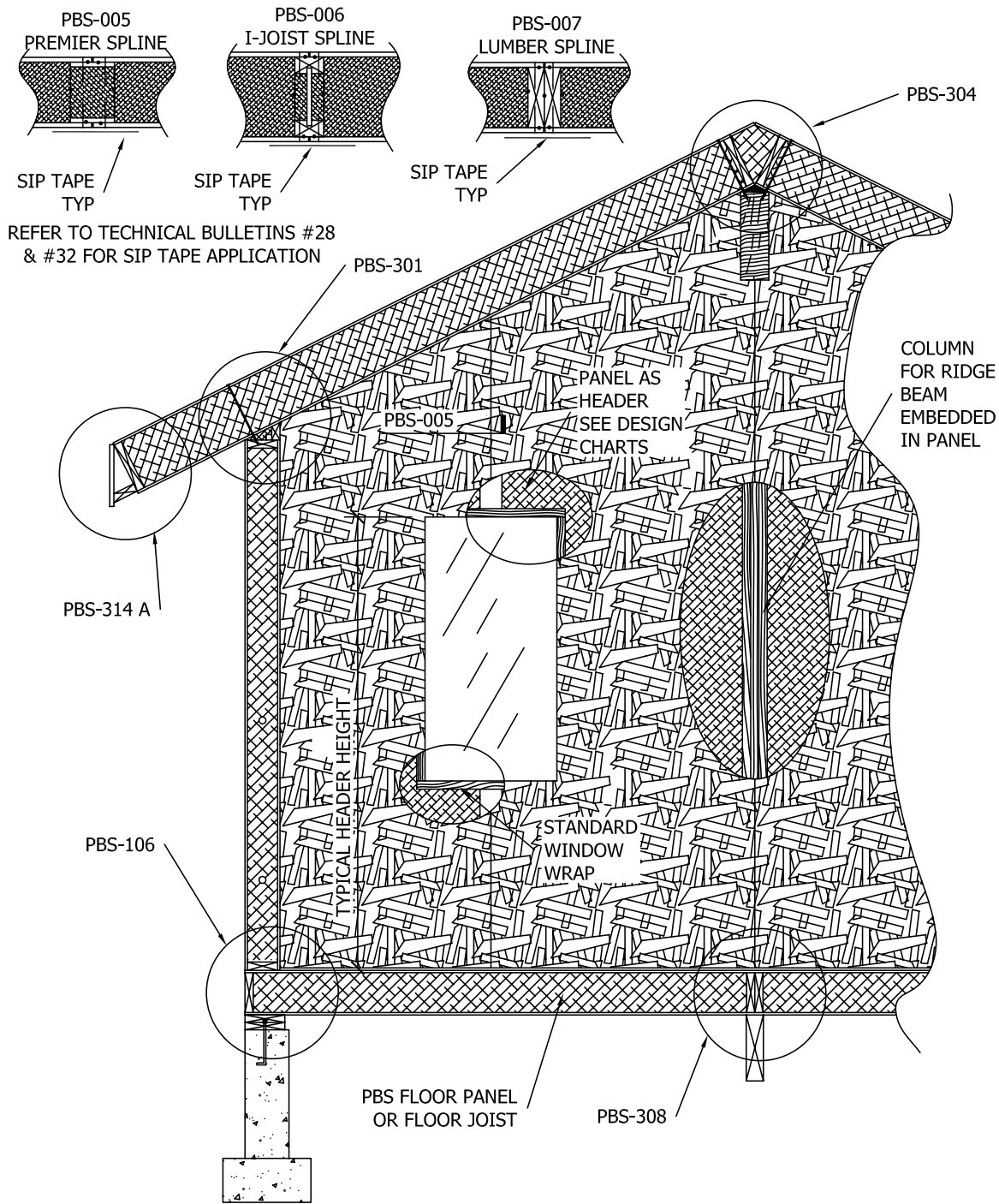
Detail	Number Subject
PBS-301.....	Beveled Block Wall/Roof
PBS-302	Beveled Block Wall/Roof
PBS-303	Beveled Wall/Roof Connection
PBS-304	Ridge Cap Detail
PBS-305	12:12 Pitch Ridge Detail
PBS-306	Roof Valley Connection
PBS-307	Parapet Detail
PBS-308	2x SIP Joint Connection
PBS-309	I-joist SIP Connection
PBS-310.....	Roof/Floor Openings
PBS-311	Roof Penetrations
PBS-312	Vented/Non-Vented Insul-Lam
PBS-313	Floor/Roof Fastening Patterns
PBS-314.....	Eave Details
PBS-315	Roof to ICF Wall Connection
PBS-316.....	Roof Ledger
PBS-317	Plumb Cut Ridge / Hip Ridge with Blocking
PBS-318....	Plumb Cut Ridge / Hip Ridge without Blocking
PBS-319.....	Cantilevered Ridge with Blocking

High Performance Enclosures.



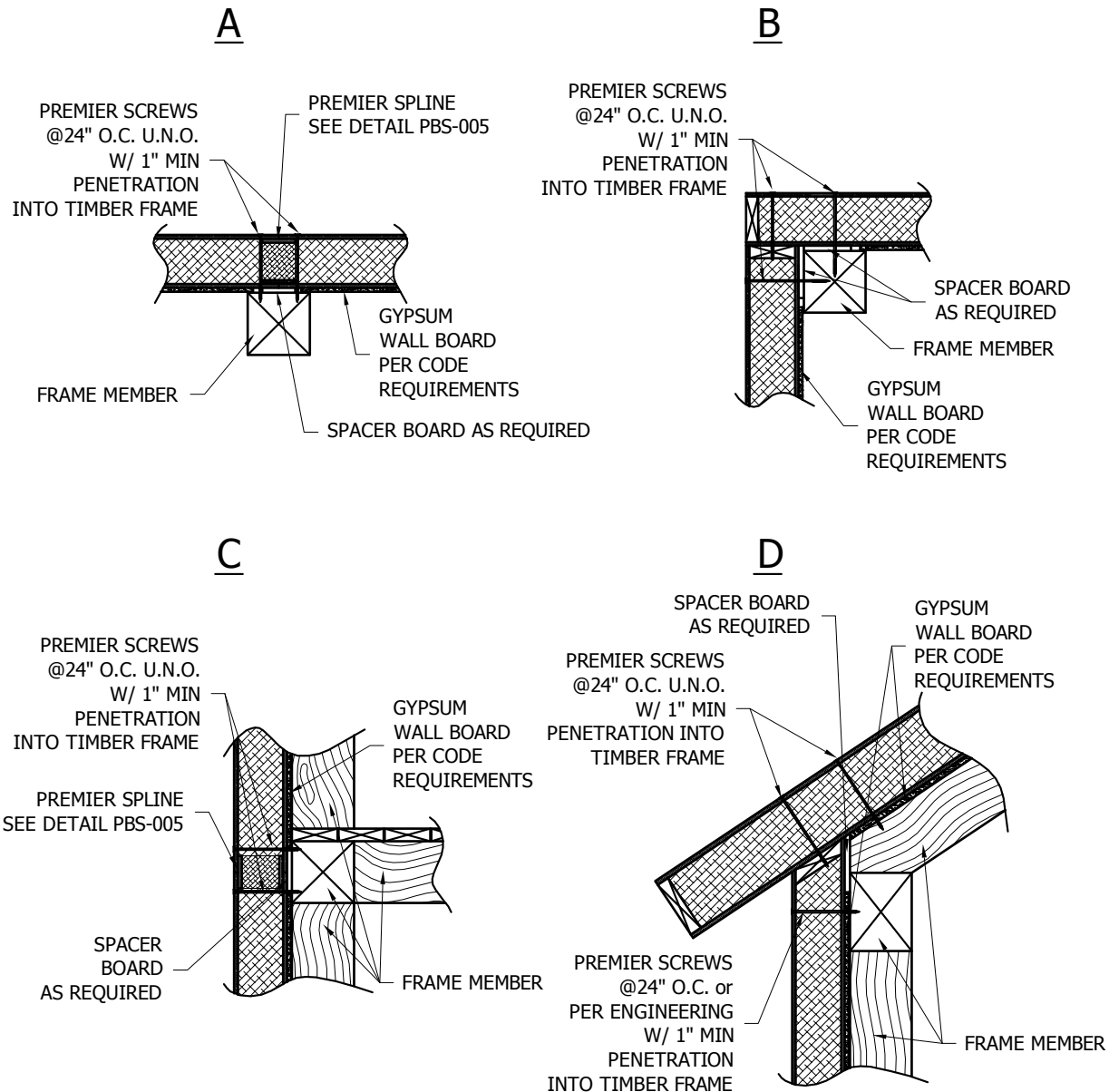
PBS-001 SECTION
PREMIER SIPS

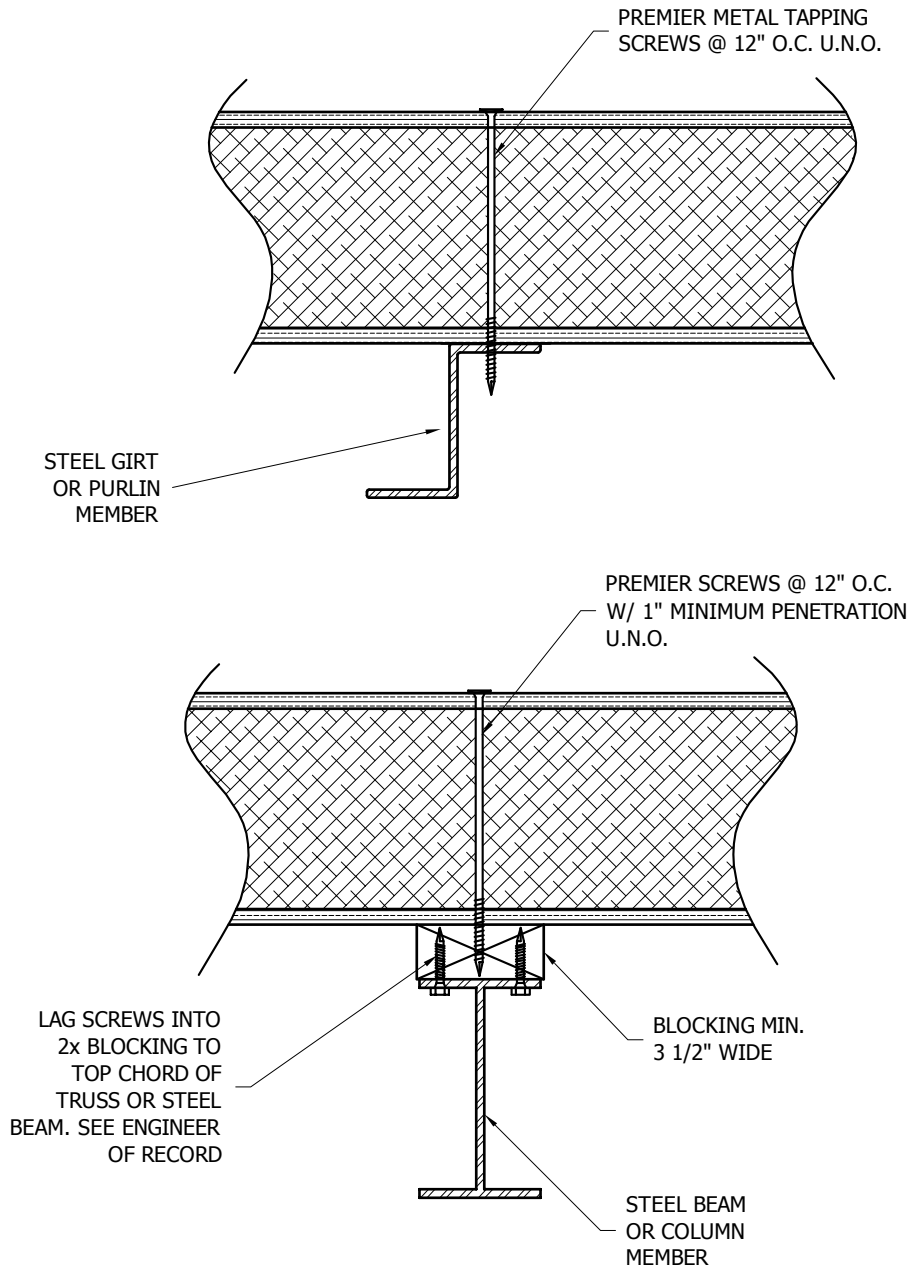
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PBS-002 **SECTION**
PREMIER SIPS

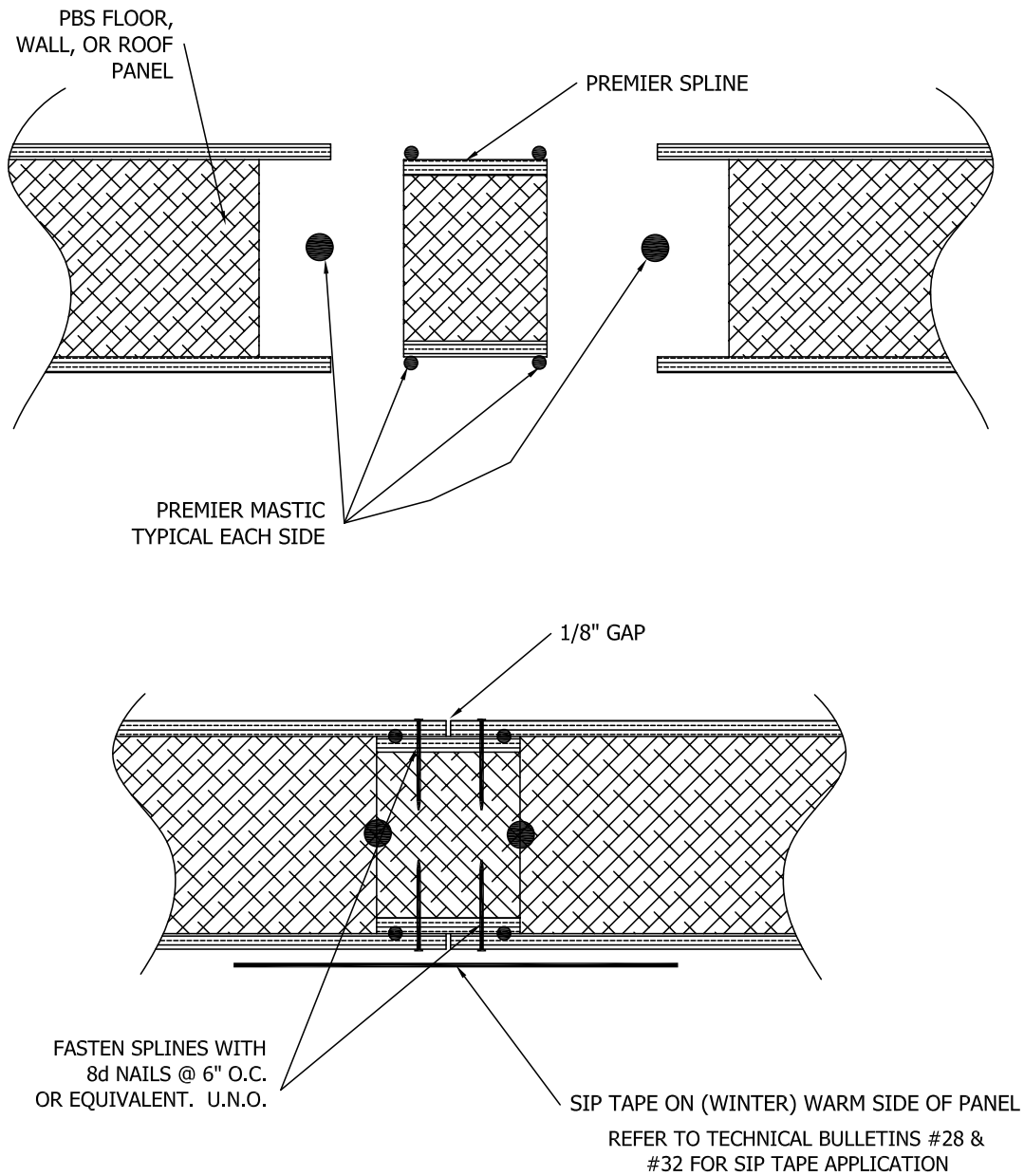
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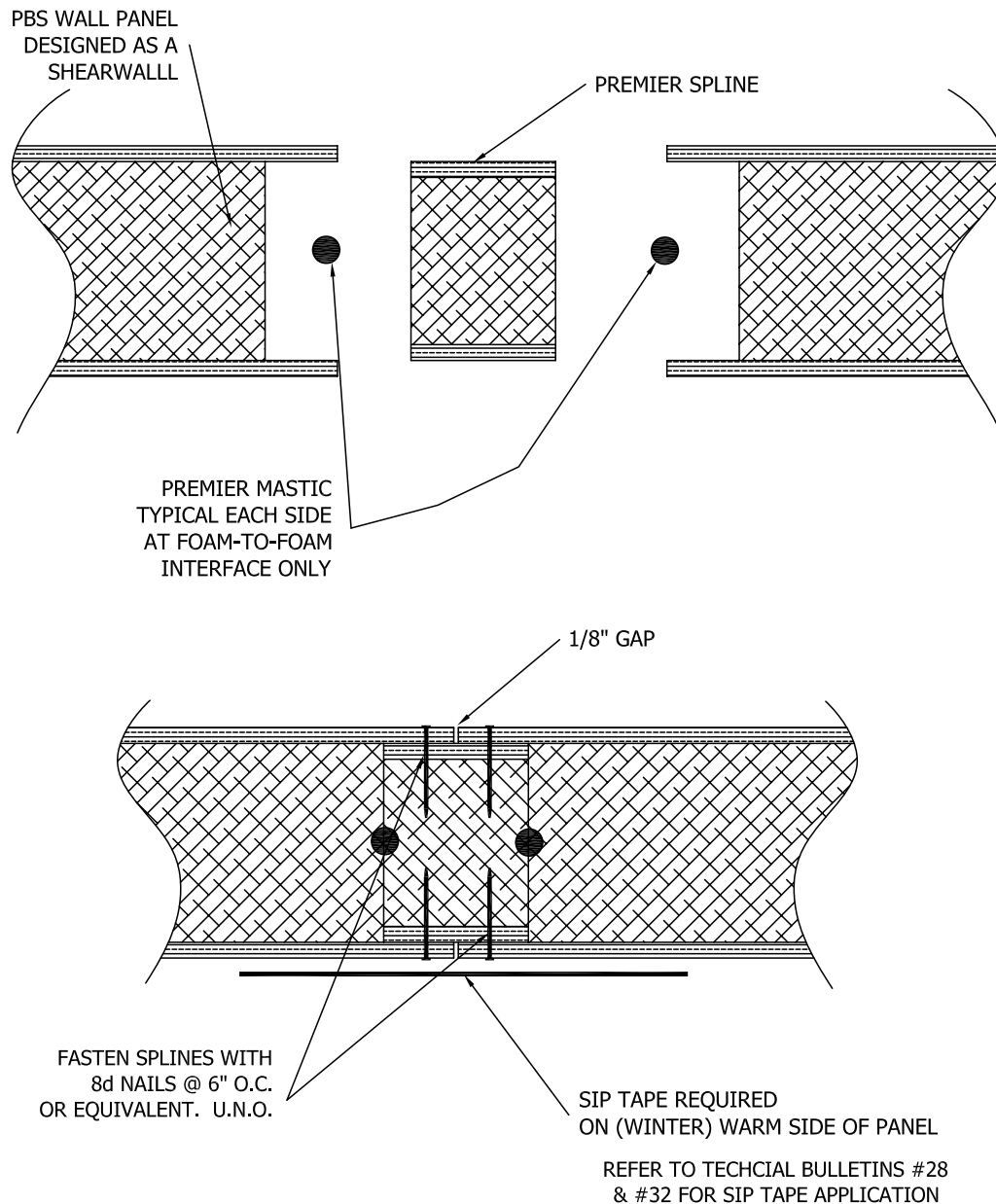




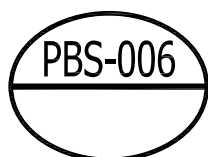
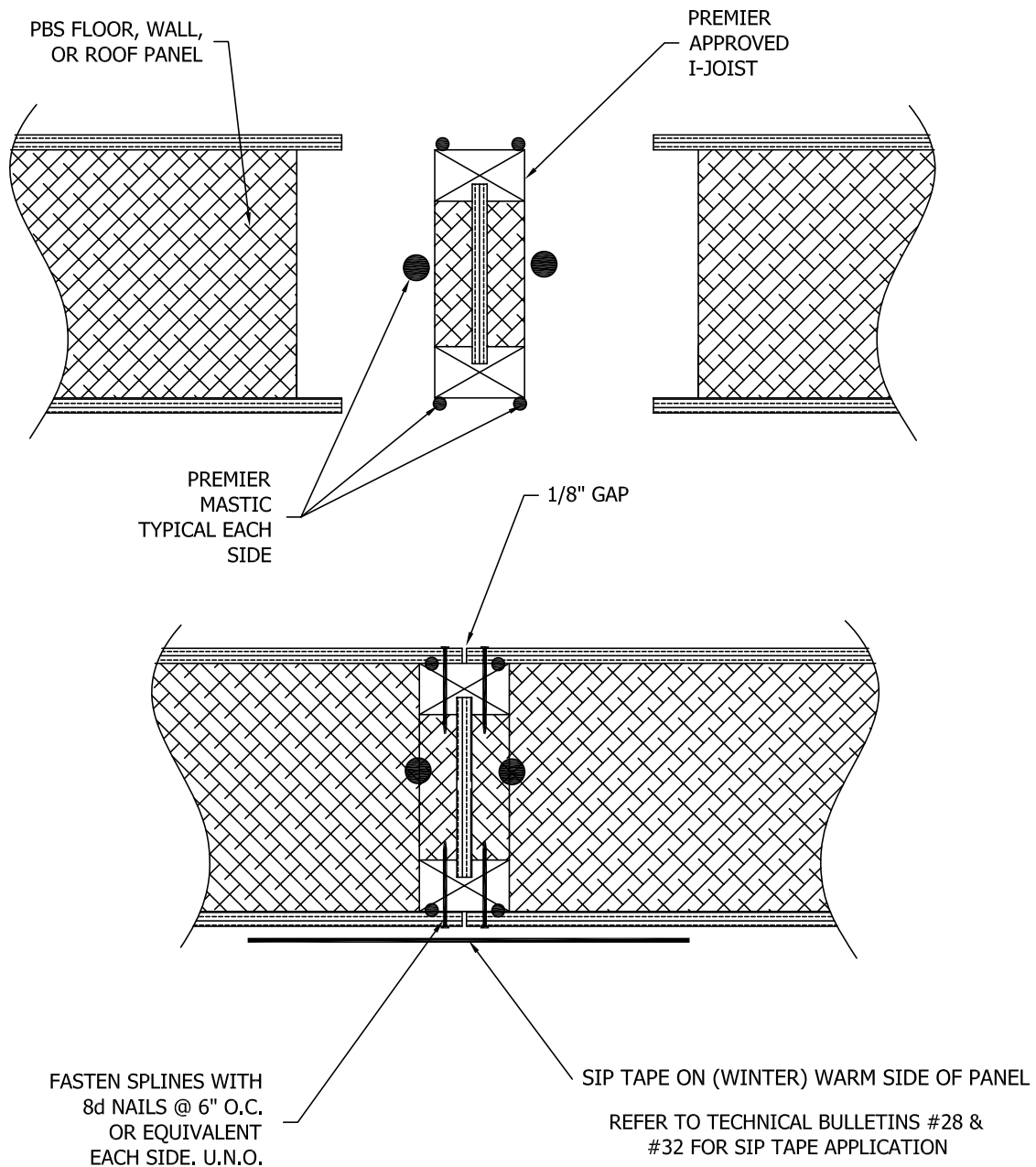
PANEL TO STEEL CONNECTION
PREMIER SIPS

8-16-07





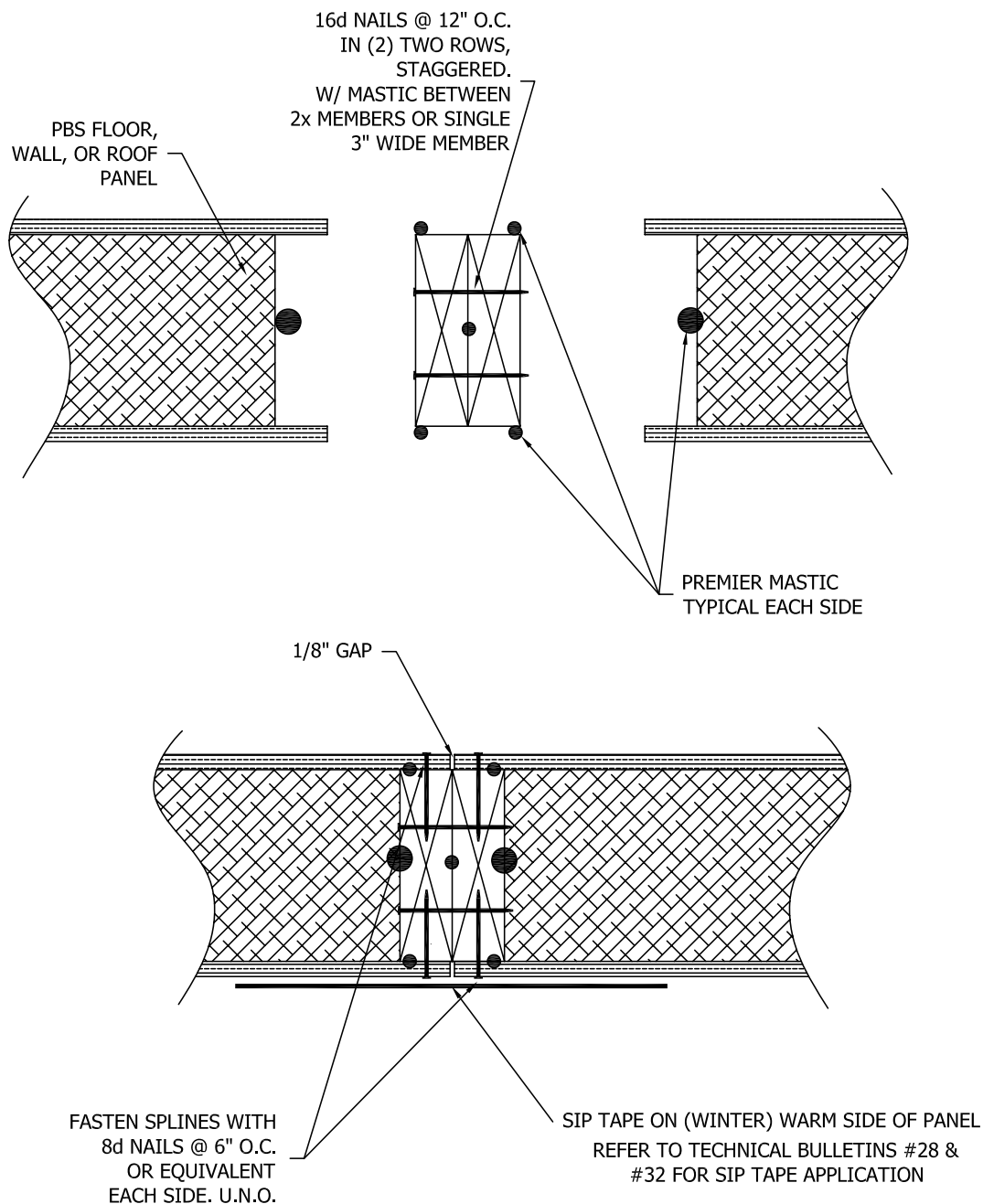
PBS-005a **SPLINE CONNECTION FOR SHEARWALLS**
PREMIER SIPS



I-JOIST SPLINE CONNECTION

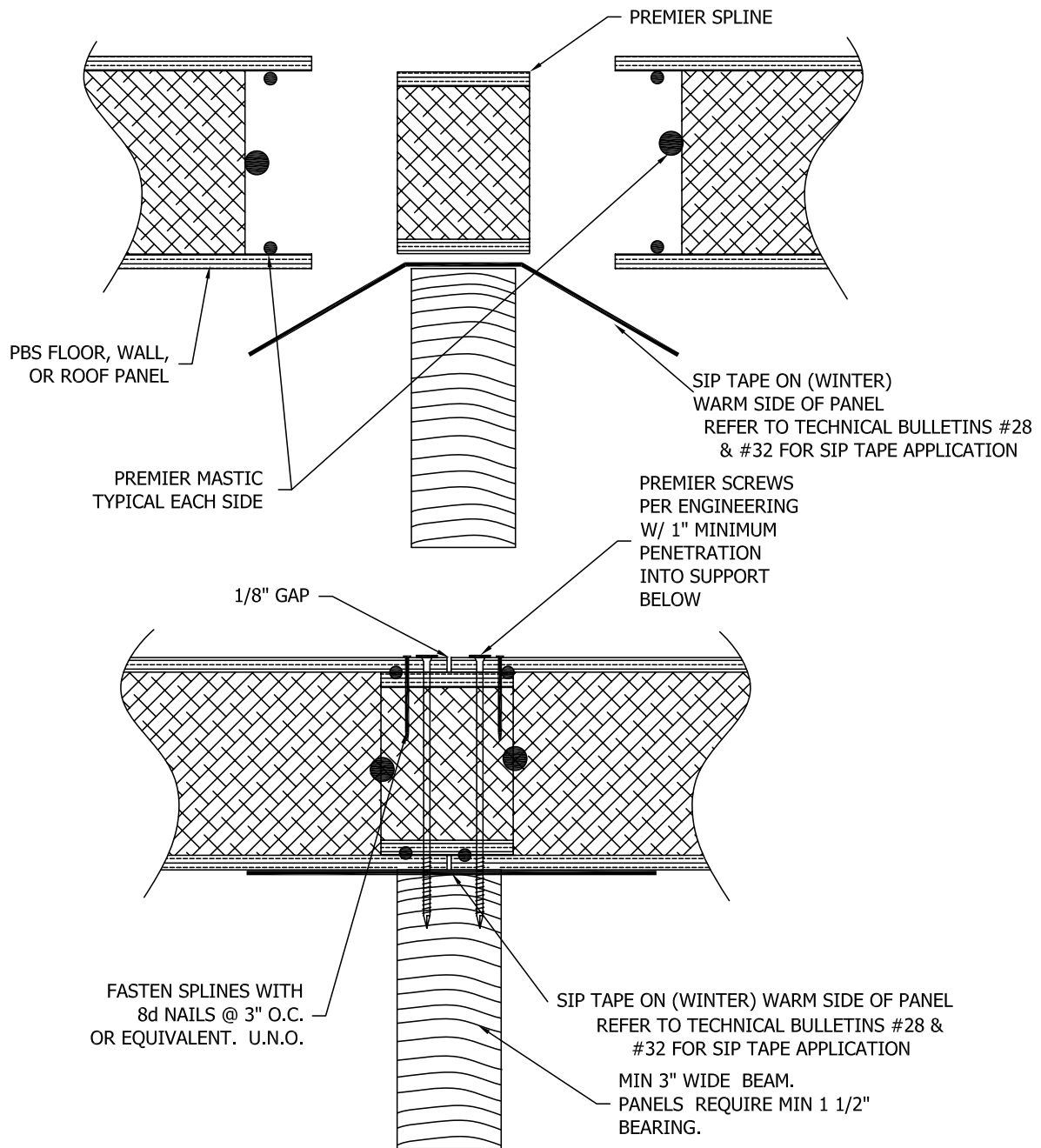
PREMIER SIPS

11-9-10

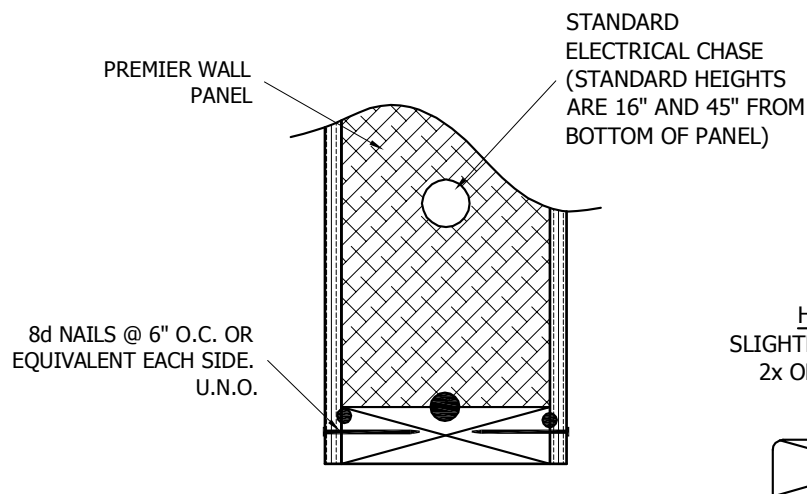
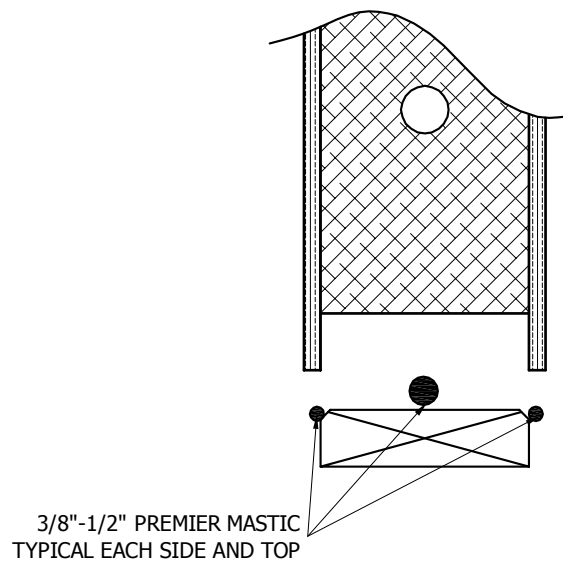


DOUBLE 2x LUMBER CONNECTION PREMIER SIPS

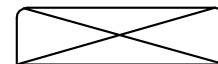
11-9-10



PBS-008 **SPLINE FASTENED AT TOP ONLY** 11-9-10
PREMIER SIPS

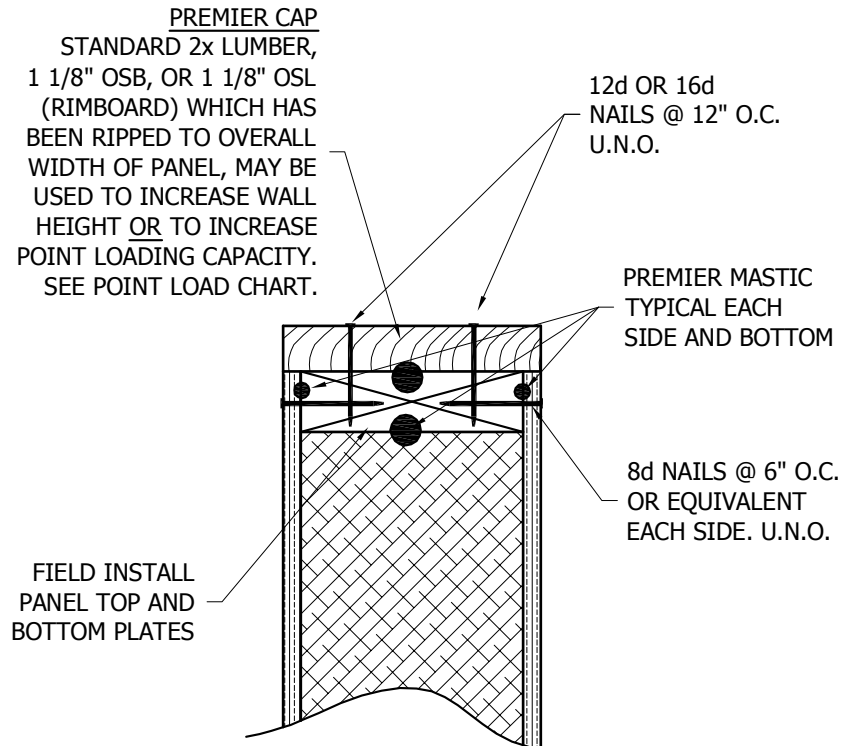


HELPFUL HINT:
SLIGHTLY CHAMFER TOP OF
2x OR WOOD MEMBER



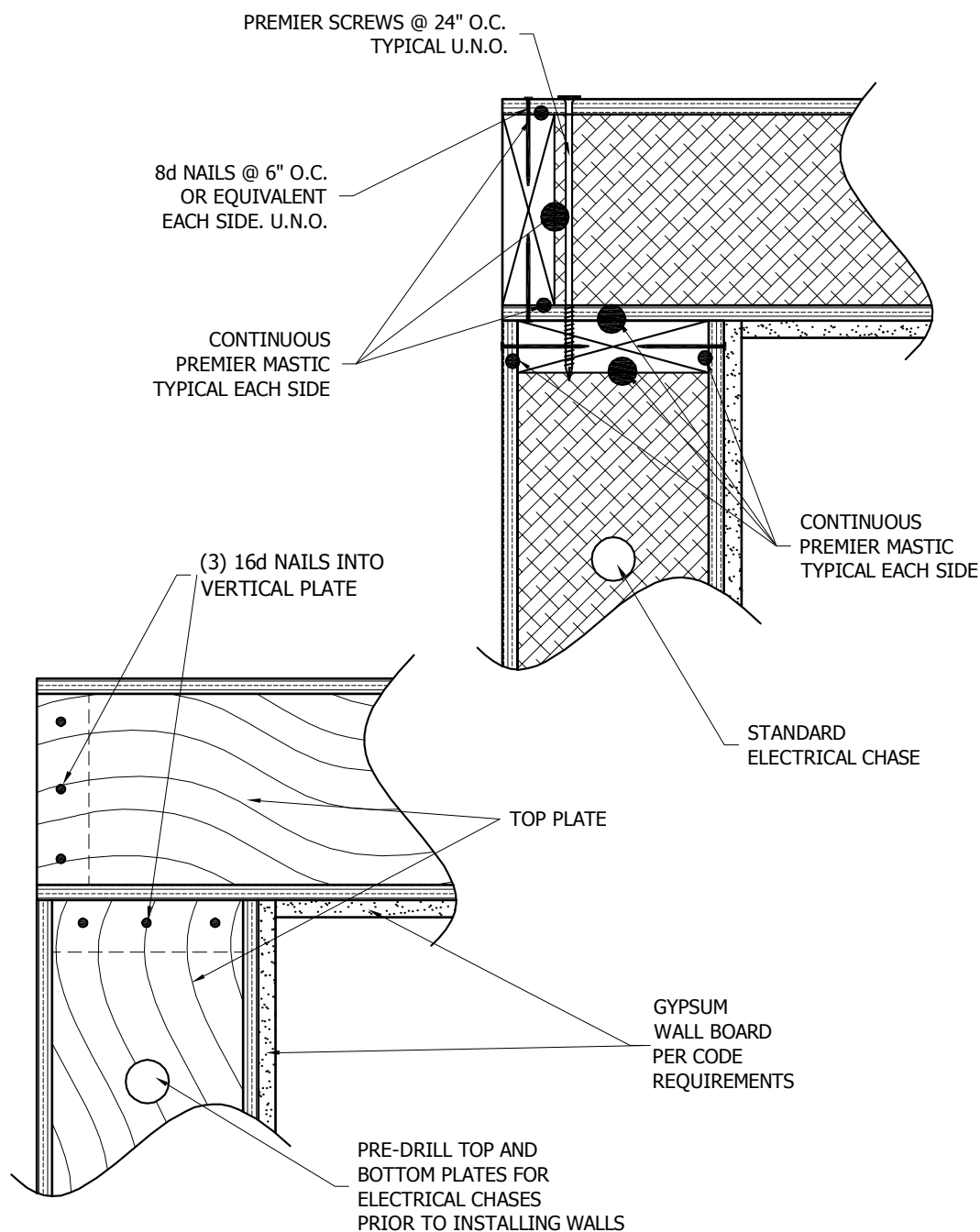
PANEL TO PLATE CONNECTION
PREMIER SIPS

8-16-07



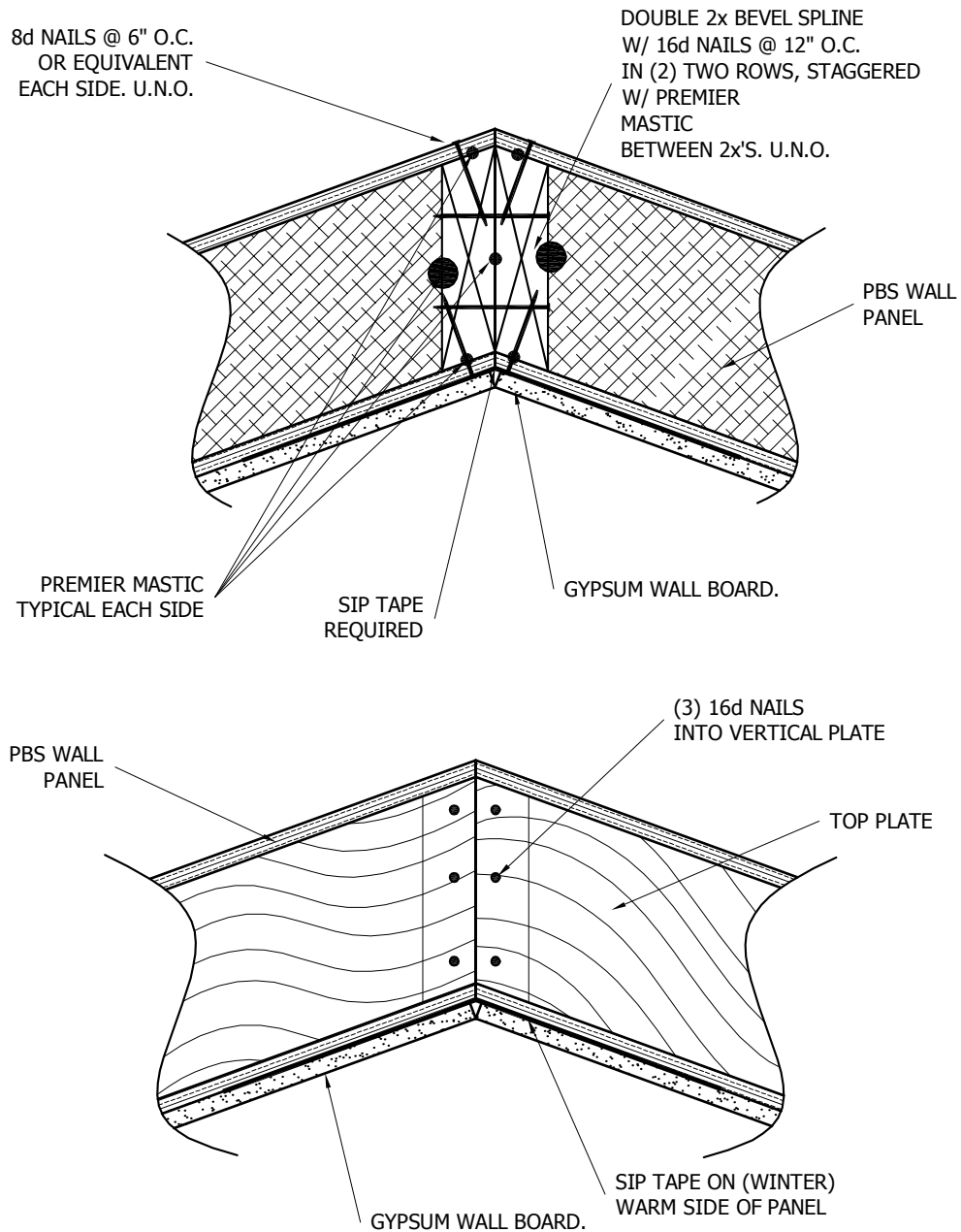
PBS-010 CAP PLATE
PREMIER SIPS

8-16-07



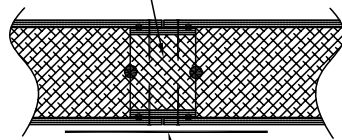
WALL PANEL CORNER CONNECTION
PREMIER SIPS

8-16-07



PBS-012 **WALL PANEL ANGLED CORNER** 8-16-07
PREMIER SIPS

PANEL SPLINE
(i.e. BOX SPLINE, LUMBER, ETC...)



NOTE:
6" SIP TAPE USED
AT PANEL TO PANEL
CONNECTION WHERE
BUTTED TOGETHER

6" SIP TAPE ON (WINTER)
WARM SIDE OF PANEL*

IN PLANE PANEL JOINT (INSTALL LAST)

NOTES:

SURFACE PREPARATION

ALL SURFACES MUST BE CLEAN, DRY AND FREE OF DIRT, OIL, AND ANY OTHER CONTAMINANTS. DO NOT APPLY SIP TAPE ON THE UNDERSIDE OF ROOF PANELS PRIOR TO THE INSTALLATION OF THE ROOFING UNDERLAYMENT AND FINAL ROOF COVERING. SURFACE TEMPERATURE OF THE MATERIAL PBS SIP TAPE IS BEING APPLIED TO SHOULD BE 20° F OR WARMER.

TAPE INSTALLATION

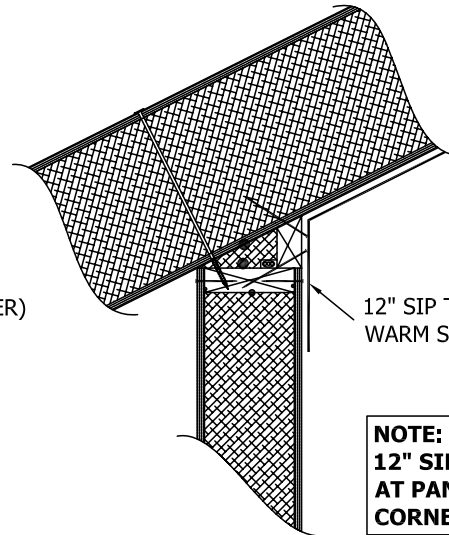
CENTER TAPE OVER JOINT, REMOVE BACKING AND PRESS FIRMLY INTO PLACE. PRESS FROM THE CENTER OUTWARD TO ENSURE A TIGHT SEAL. AFTER TAPE HAS BEEN INSTALLED REMOVE BUBBLES AND WRINKLES WITH A ROLLER OR SIMILAR TOOL.

JOINTS OVER BEAMS

ROLL OUT TAPE CENTERED OVER BEAM PRIOR TO PANEL INSTALLATION AND SECURE WITH STAPLES. AFTER PANELS ARE INSTALLED AND SECURED OVER TAPE, REMOVE BACKING AND PRESS FIRMLY INTO PLACE.

OVERLAPS AND "T" JOINTS

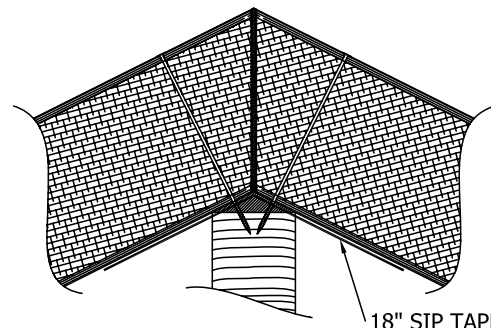
TAPE FOR PANEL TO PANEL CORNERS AND PANEL JOINTS OVER BEAMS SHOULD BE INSTALLED BEFORE IN PLANE PANEL JOINTS. OVERLAP TAPE A MINIMUM OF 3" AT "T" JOINTS AND WHEN CONTINUING A SEAM TO INSURE AN AIRTIGHT SEAL.



12" SIP TAPE ON (WINTER)
WARM SIDE OF PANEL*

NOTE:
12" SIP TAPE USED
AT PANEL TO PANEL
CORNER CONNECTION

PANEL TO PANEL CORNER (INSTALL SECOND)

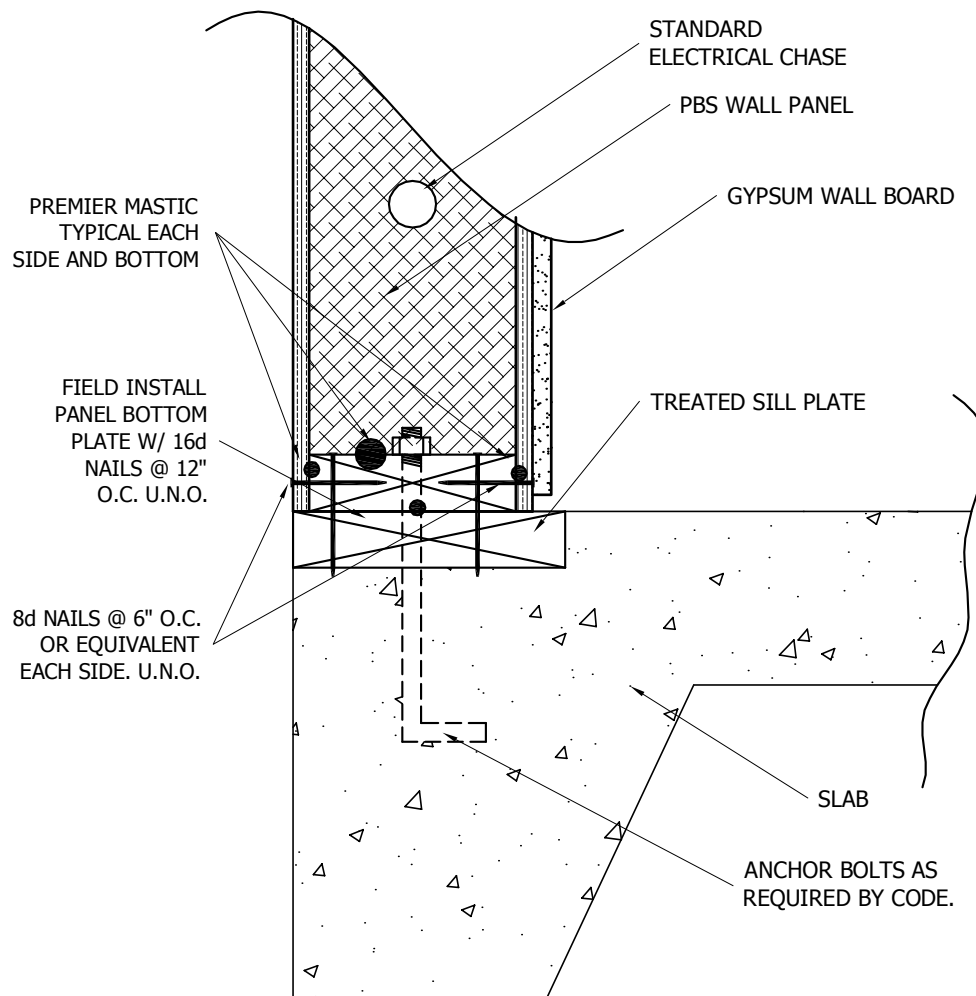


18" SIP TAPE*

NOTE:
18" SIP TAPE USED
AT PANEL TO PANEL
CONNECTION OVER
BEAMS

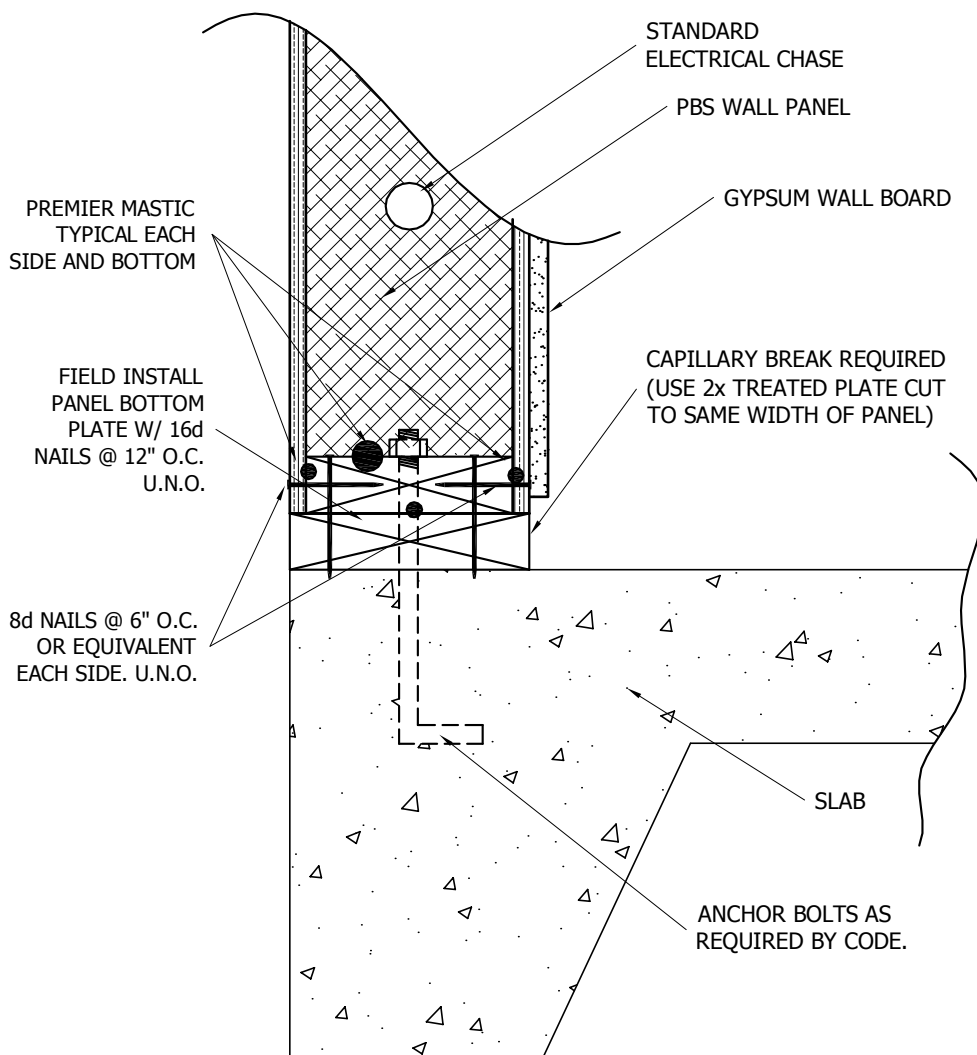
PANEL JOINT OVER BEAM (INSTALL FIRST)

*REFER TO PBS TECHNICAL BULLETINS
#28 & #32 FOR SIP TAPE APPLICATION.



RECESSED SILL PLATE
PREMIER SIPS

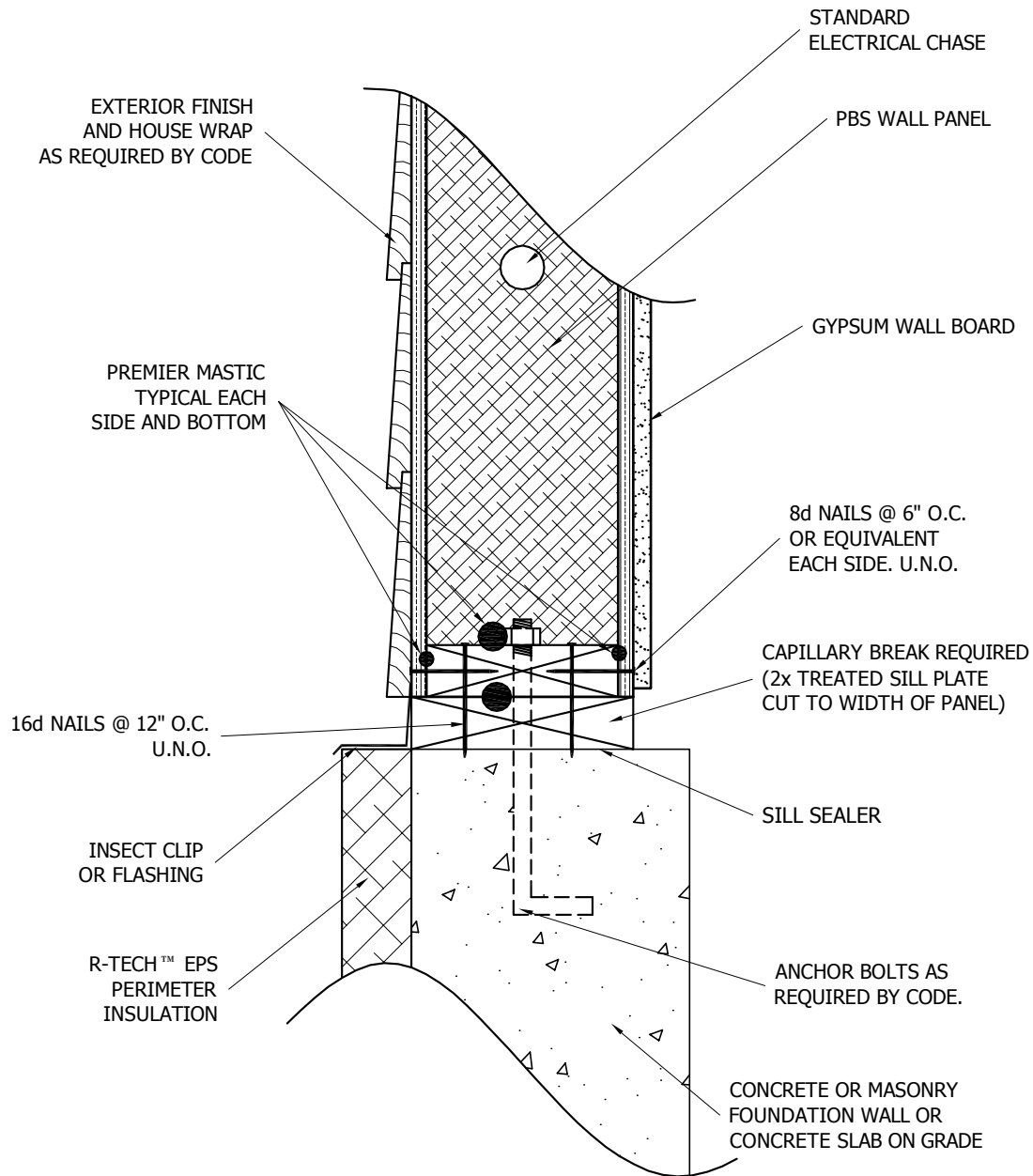
8-16-07



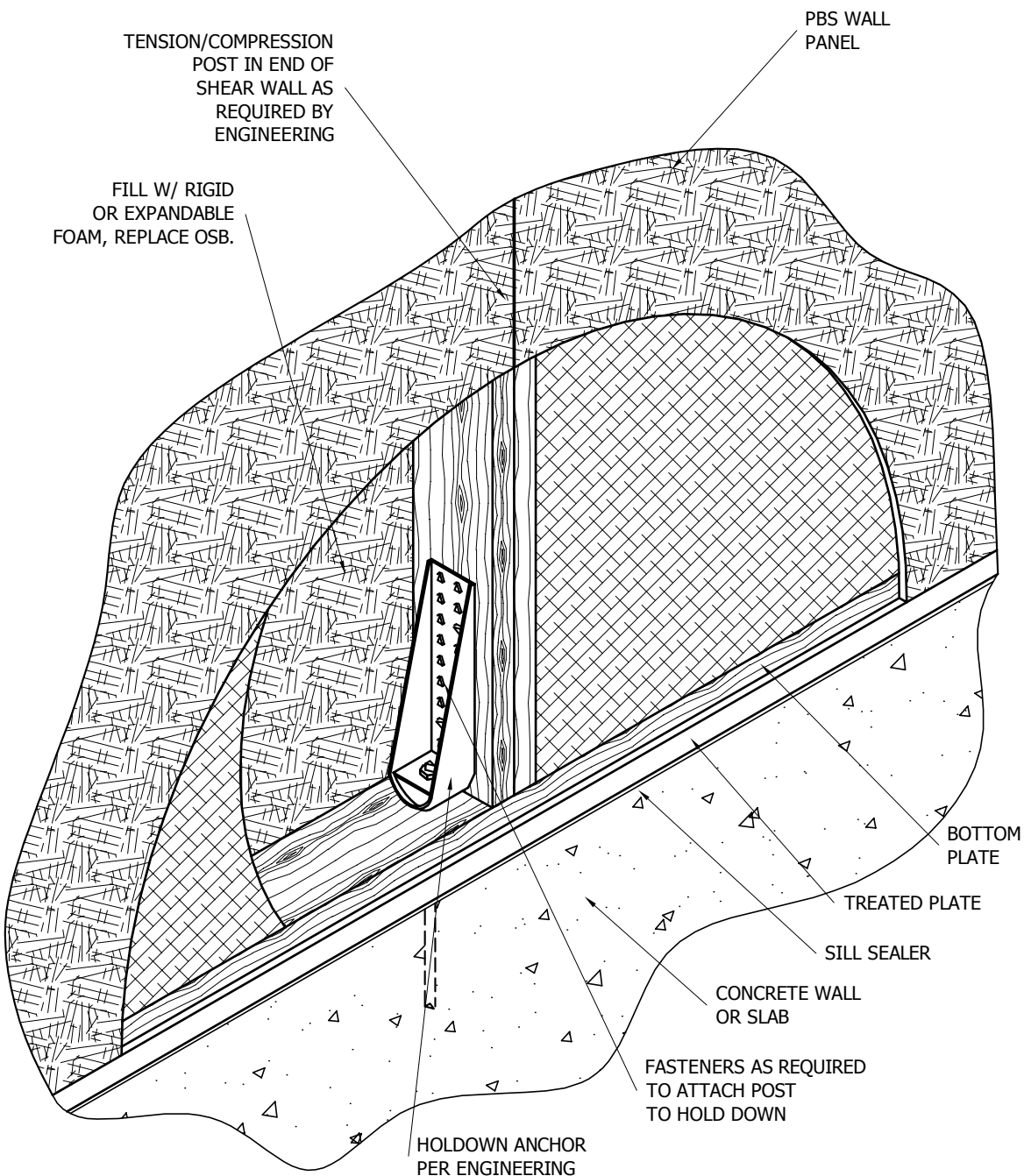
CAPILLARY BREAK ON SLAB

PREMIER SIPS

8-16-07



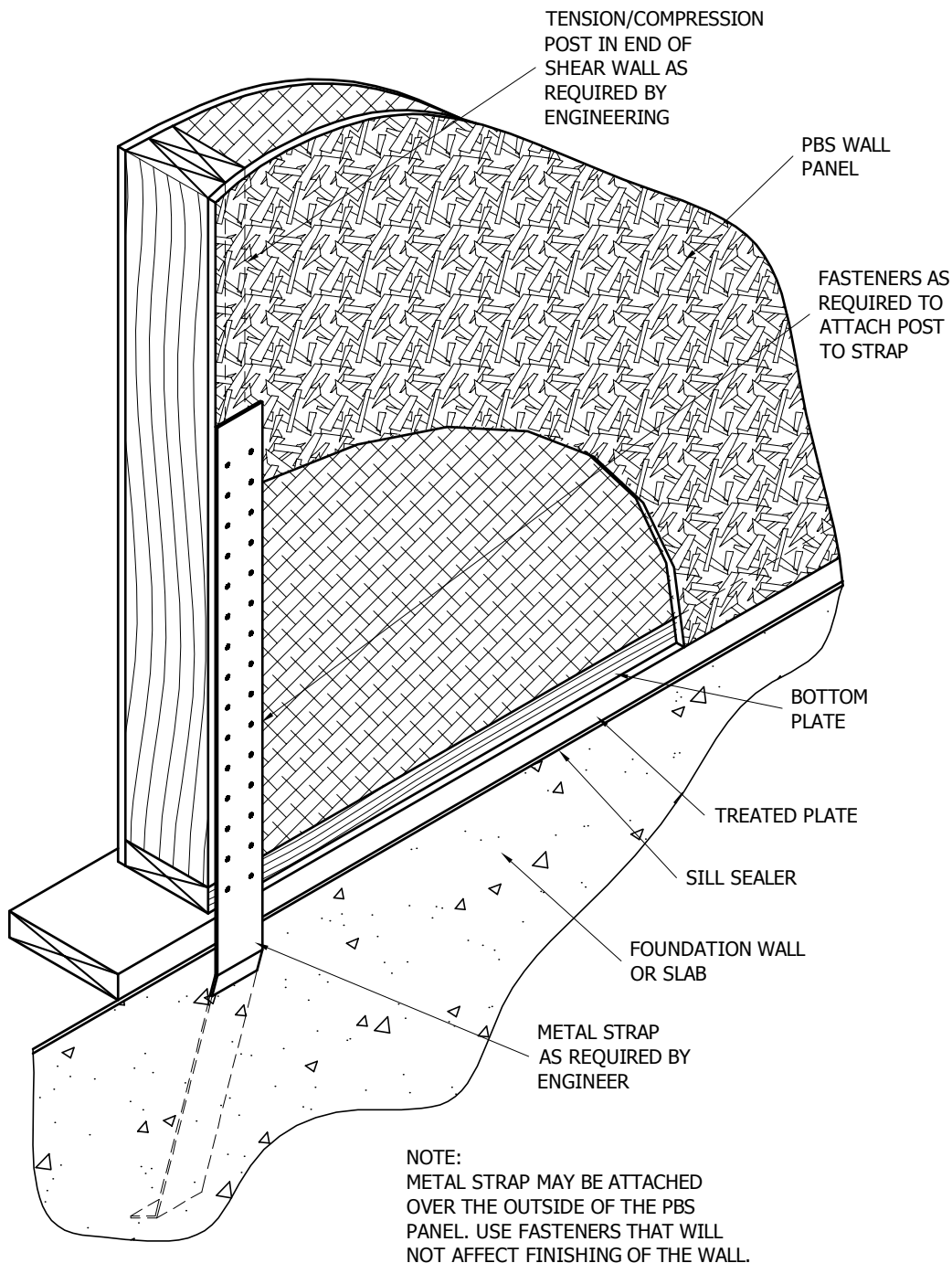
PANEL / FOUNDATION CONNECTION 8-16-07
PREMIER SIPS



HOLD DOWN CONNECTION

PREMIER SIPS

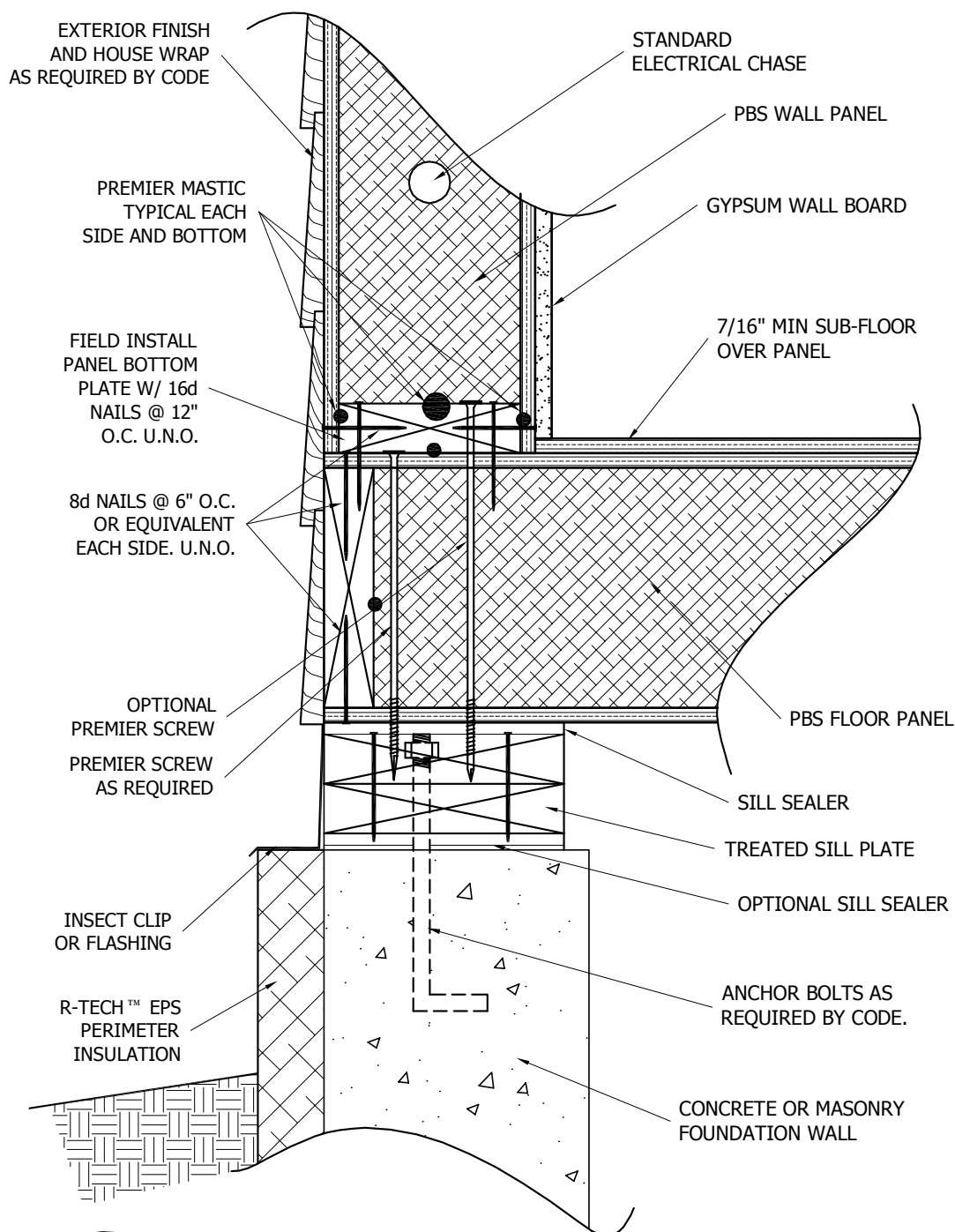
8-16-07



STRAP HOLDDOWN CONNECTION

PREMIER SIPS

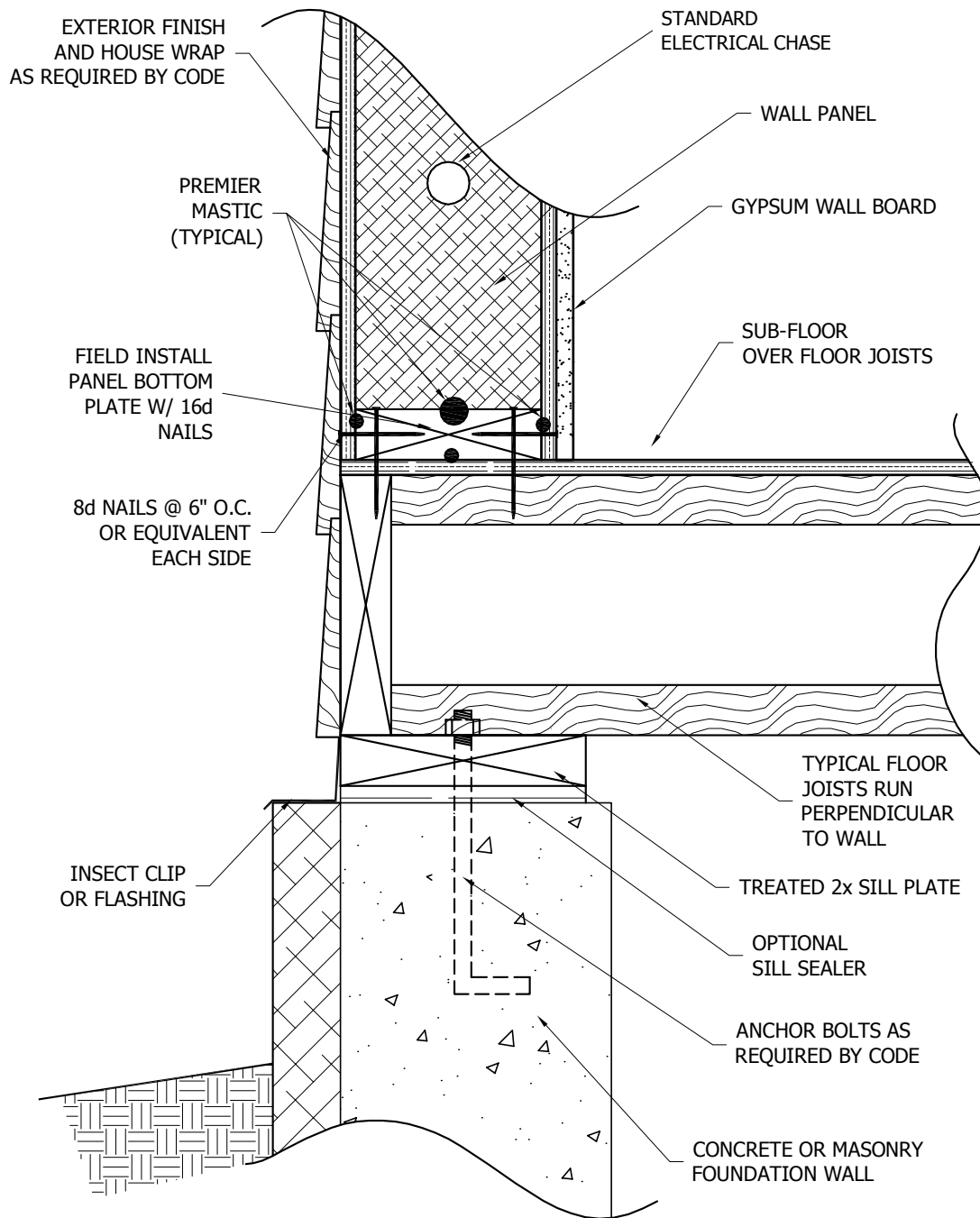
8-16-07

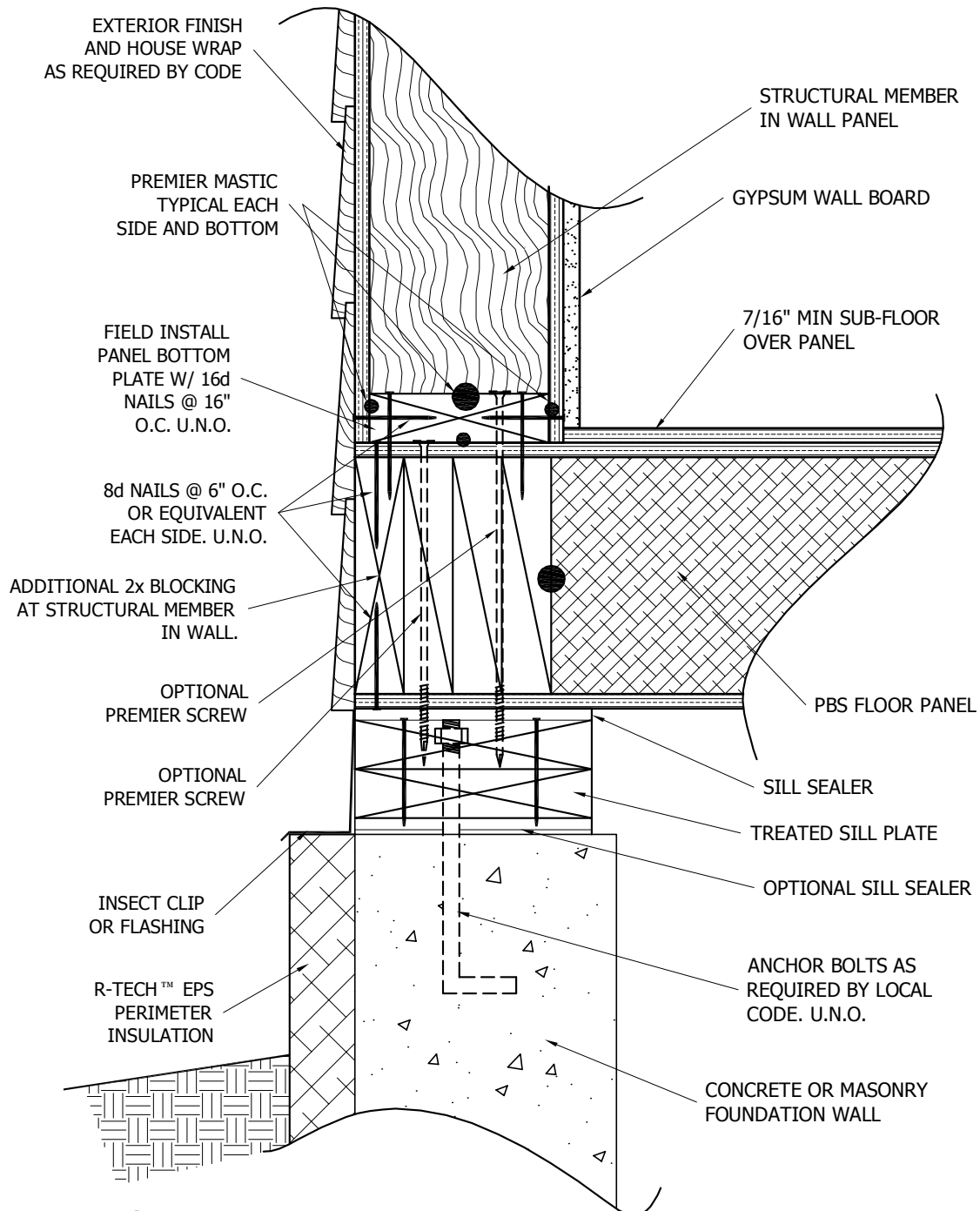


FOUNDATION FRAMING

PREMIER SIPS

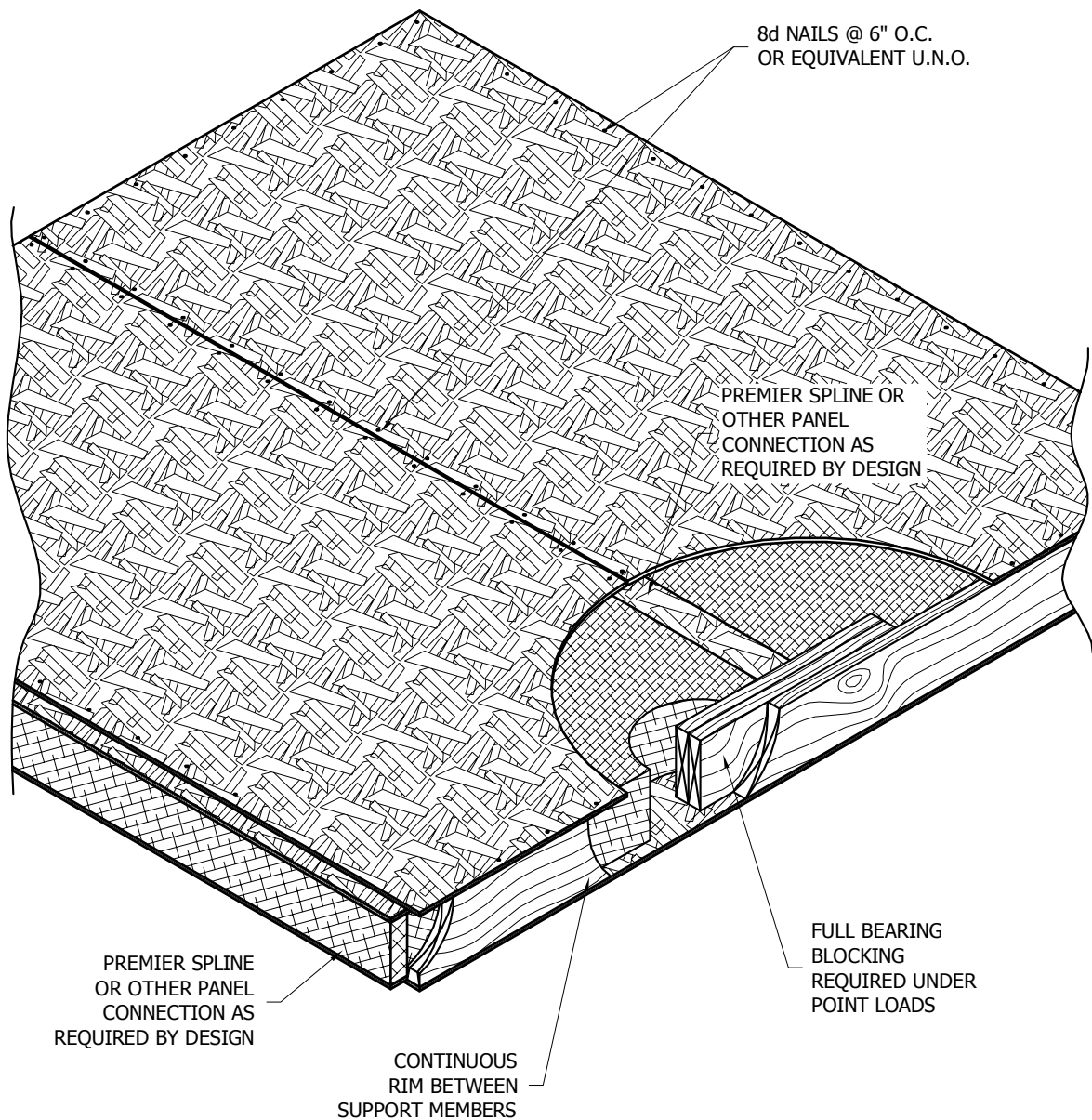
8-16-07





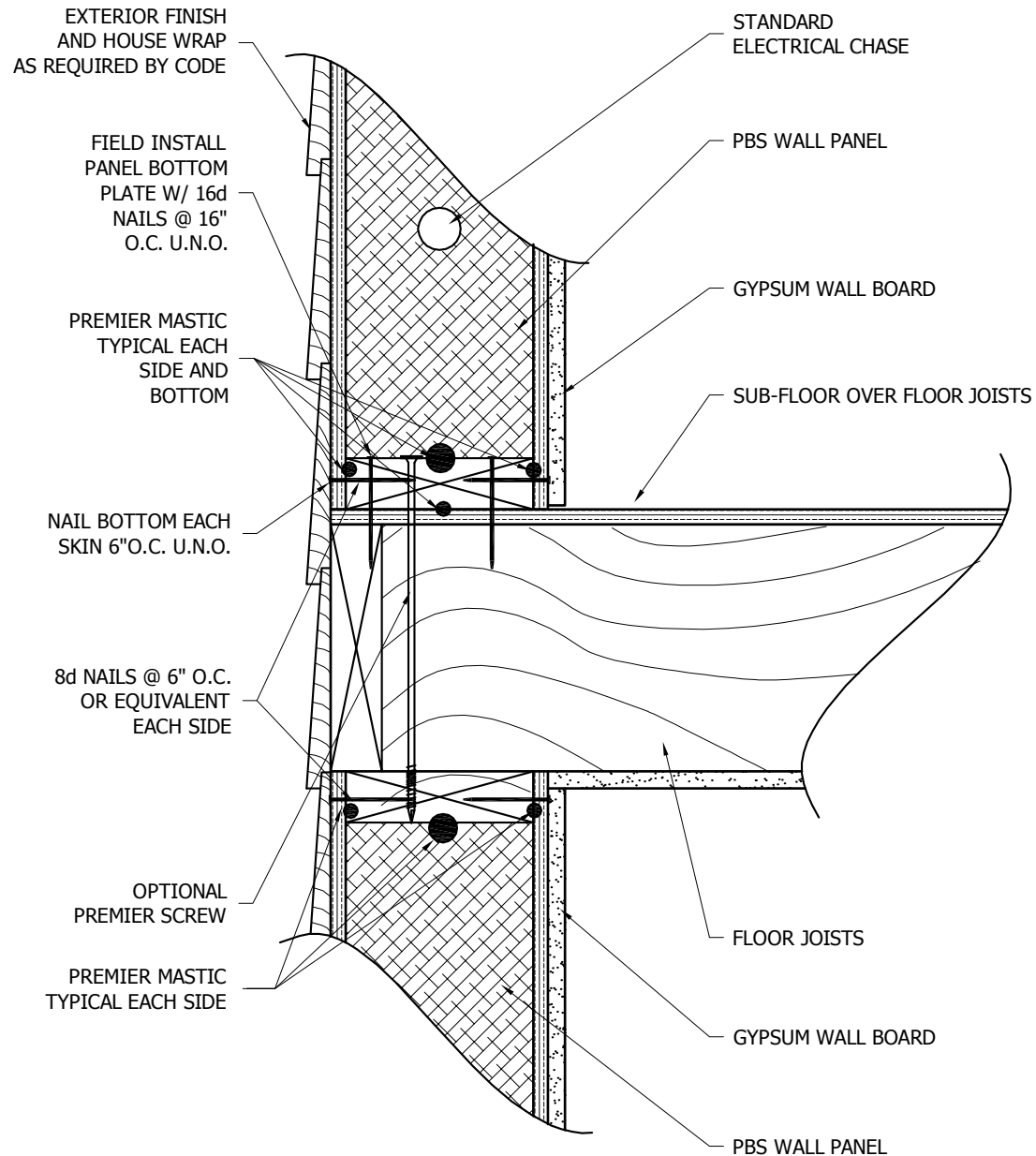
PBS-108 **PANEL FLOOR BLOCKING**
PREMIER SIPS

8-16-07



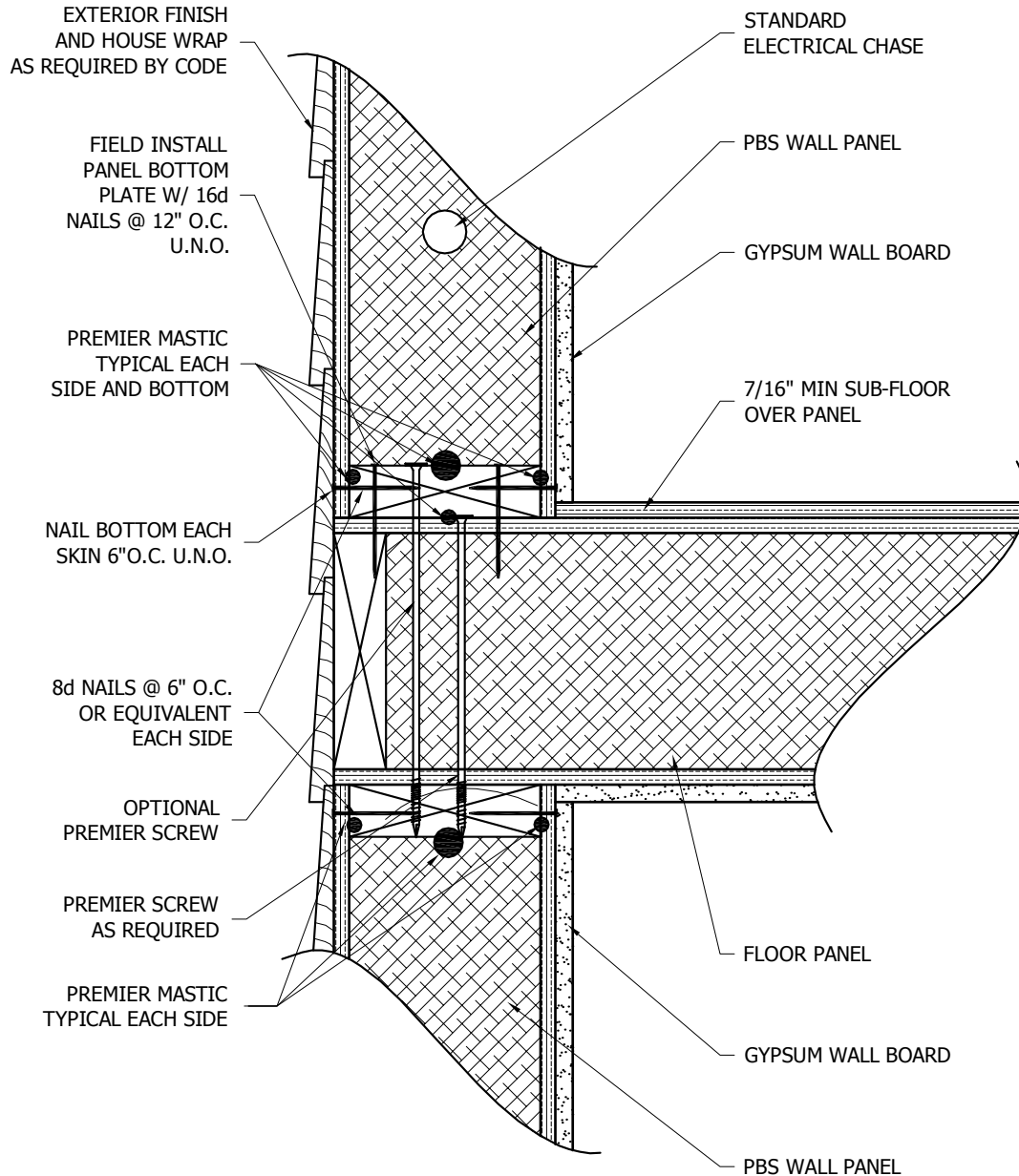
FLOOR BLOCKING
PREMIER SIPS

8-16-07



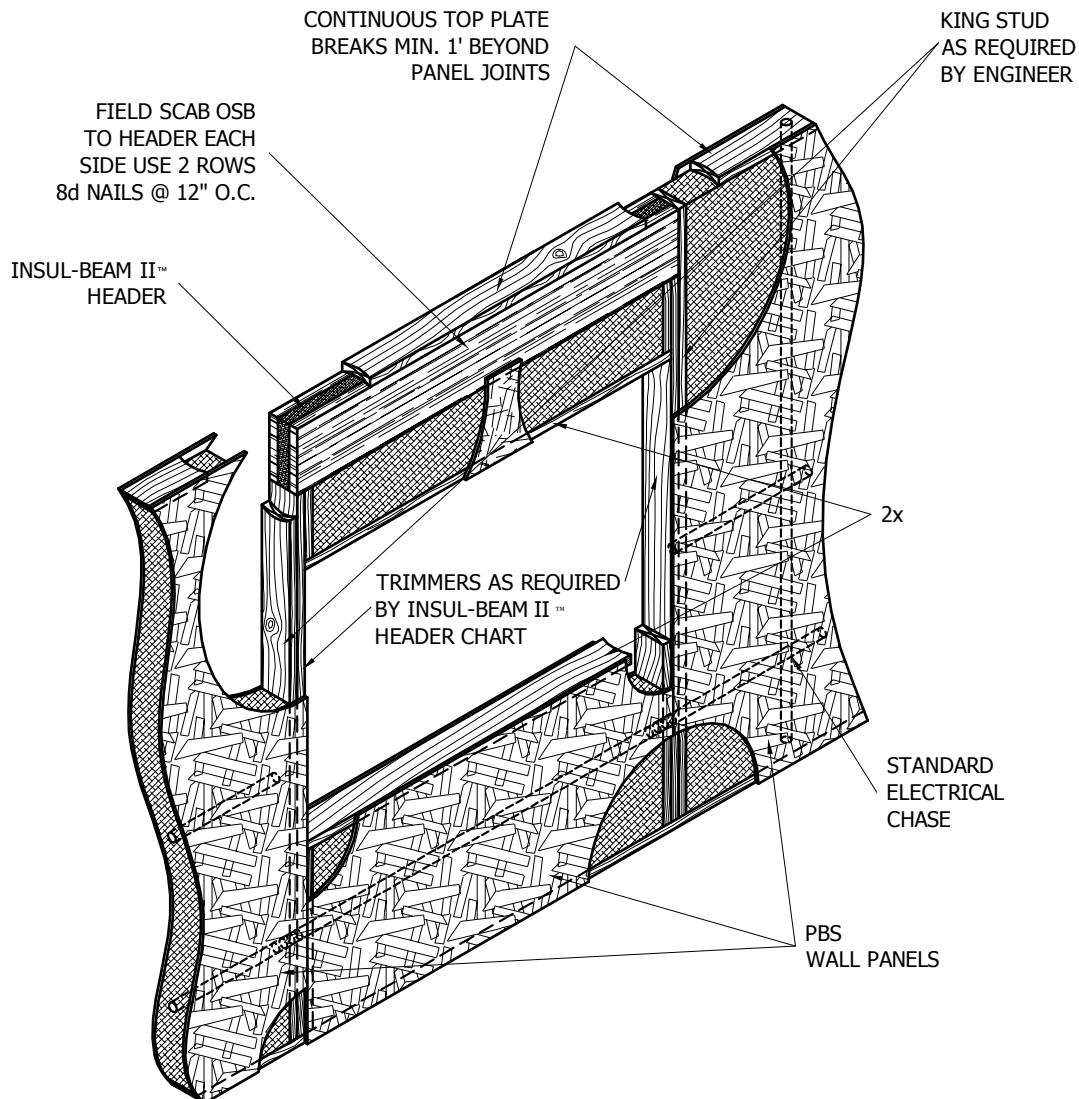
PLATFORM FRAMING
PREMIER SIPS

8-16-07



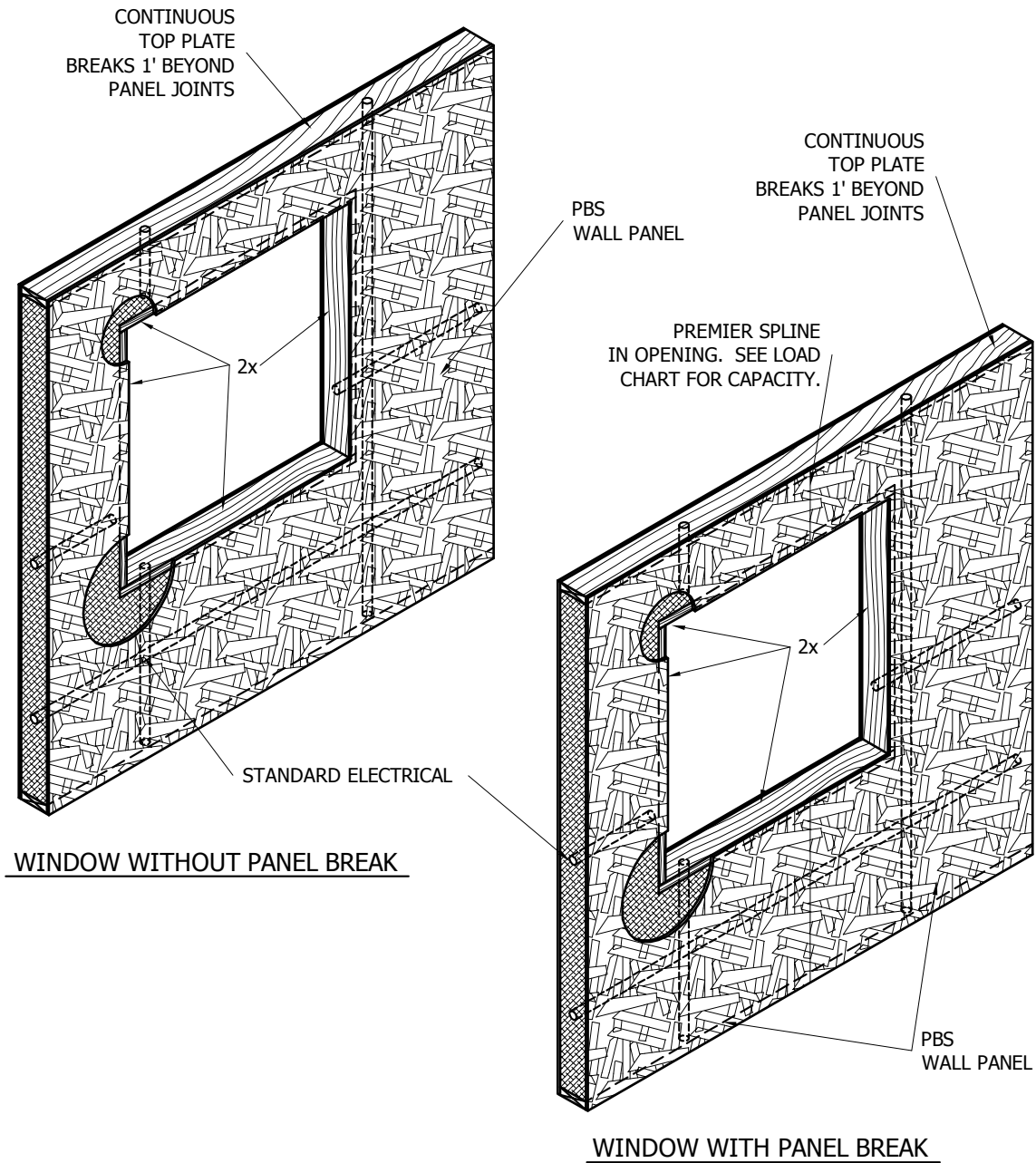
PBS-111 PLATFORM FRAMING
PREMIER SIPS

8-16-07



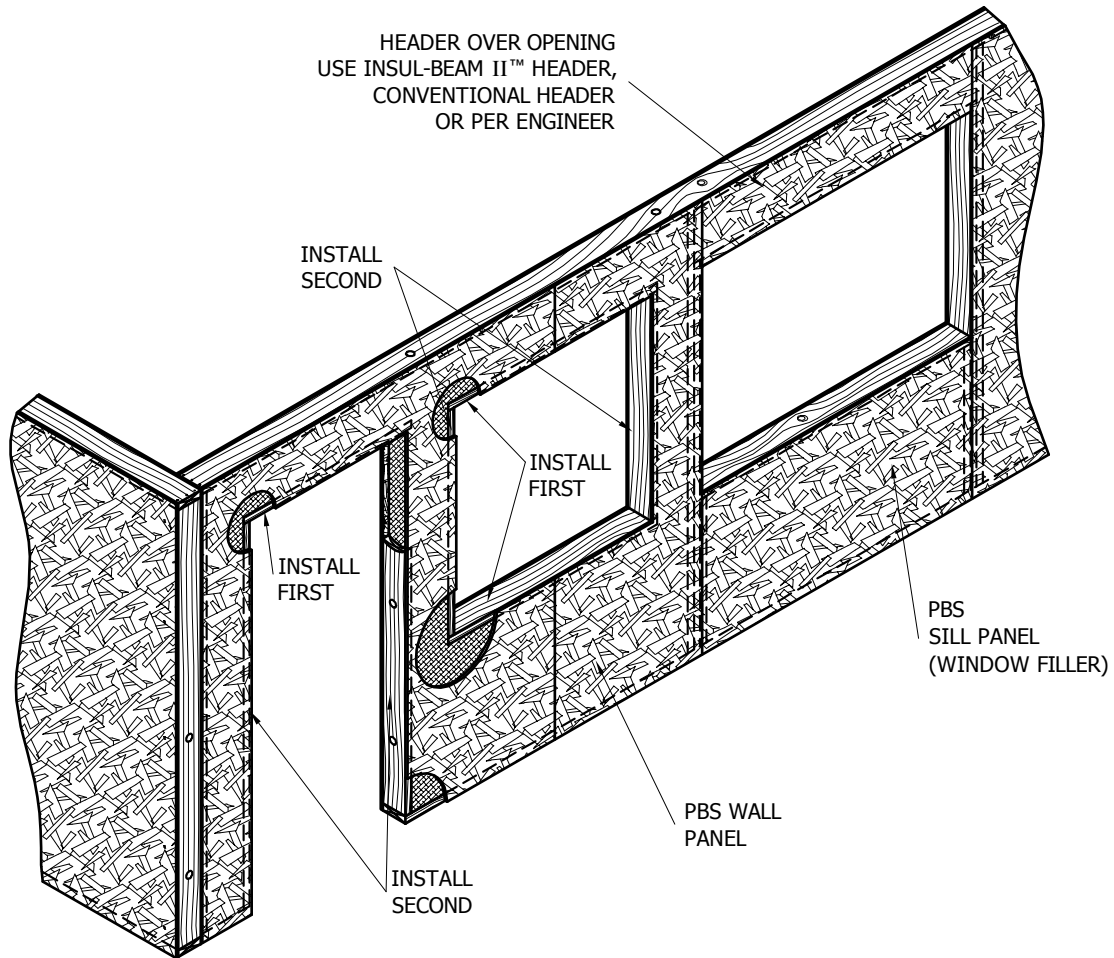
INSUL-BEAM HEADER
PREMIER SIPS

8-17-07



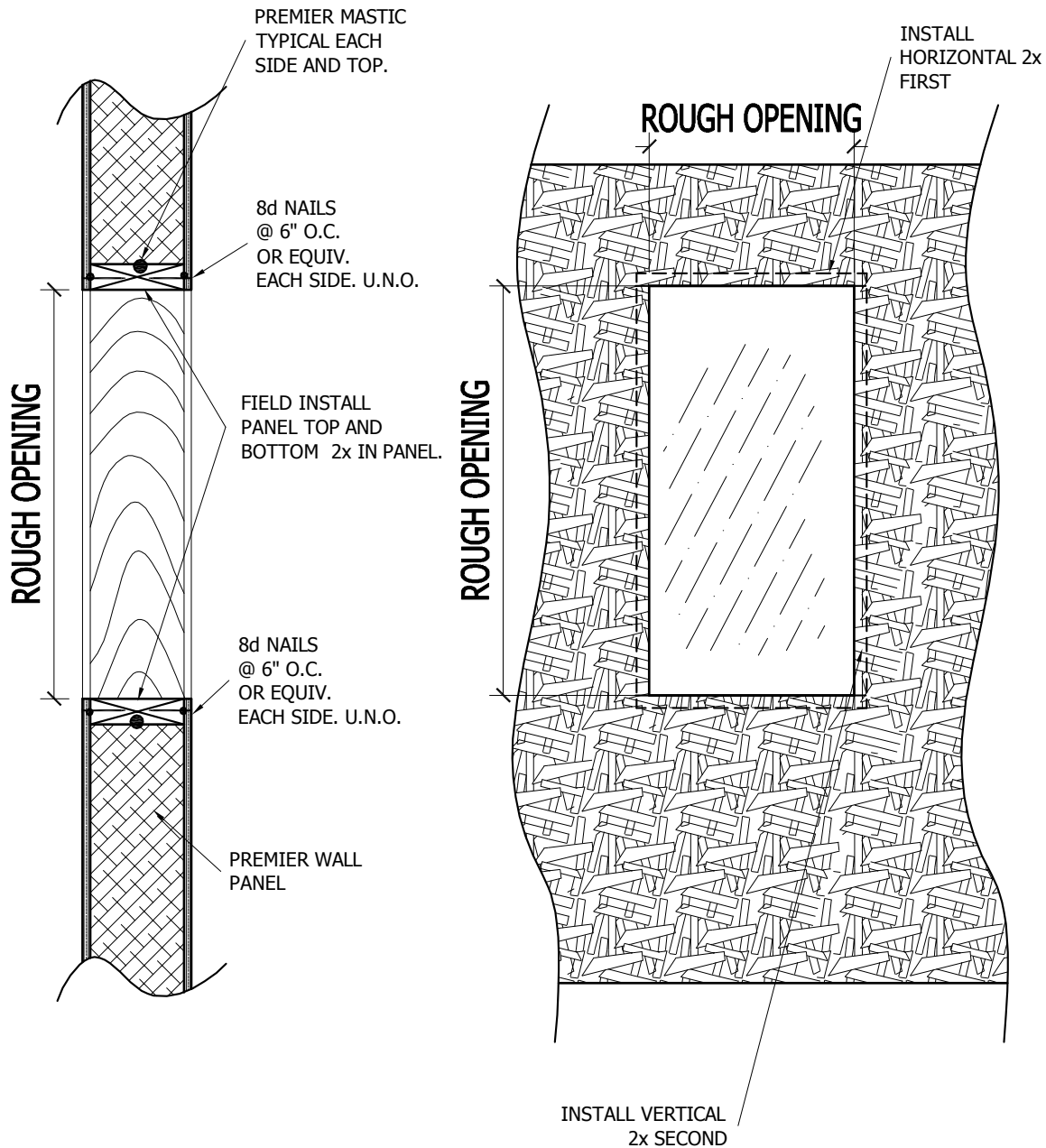
PANEL AS HEADER
PREMIER SIPS

8-17-07



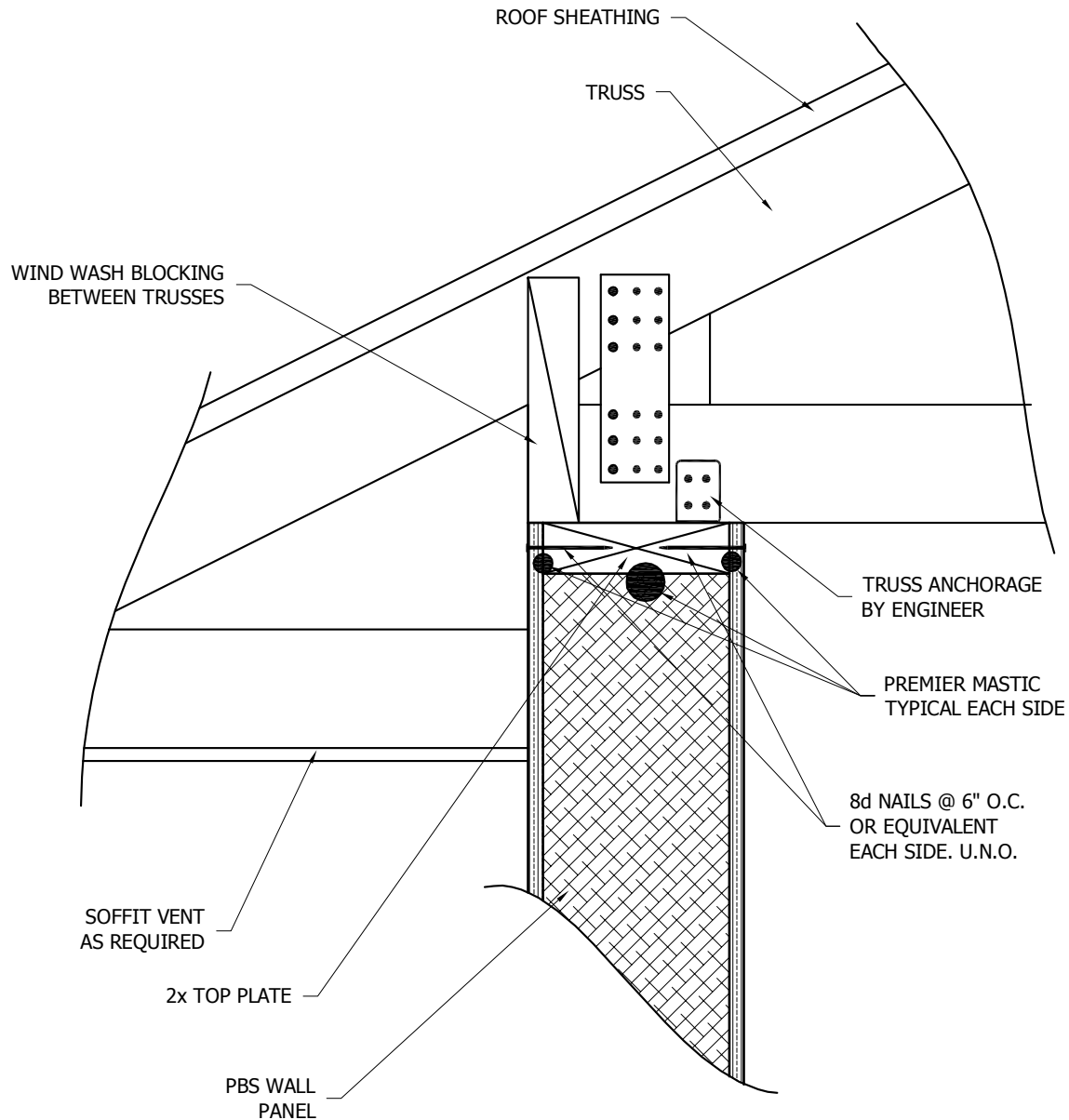
TYPICAL PANEL WALL
PREMIER SIPS

8-17-07



TYPICAL OPENING FRAMING PREMIER SIPS

8-17-07

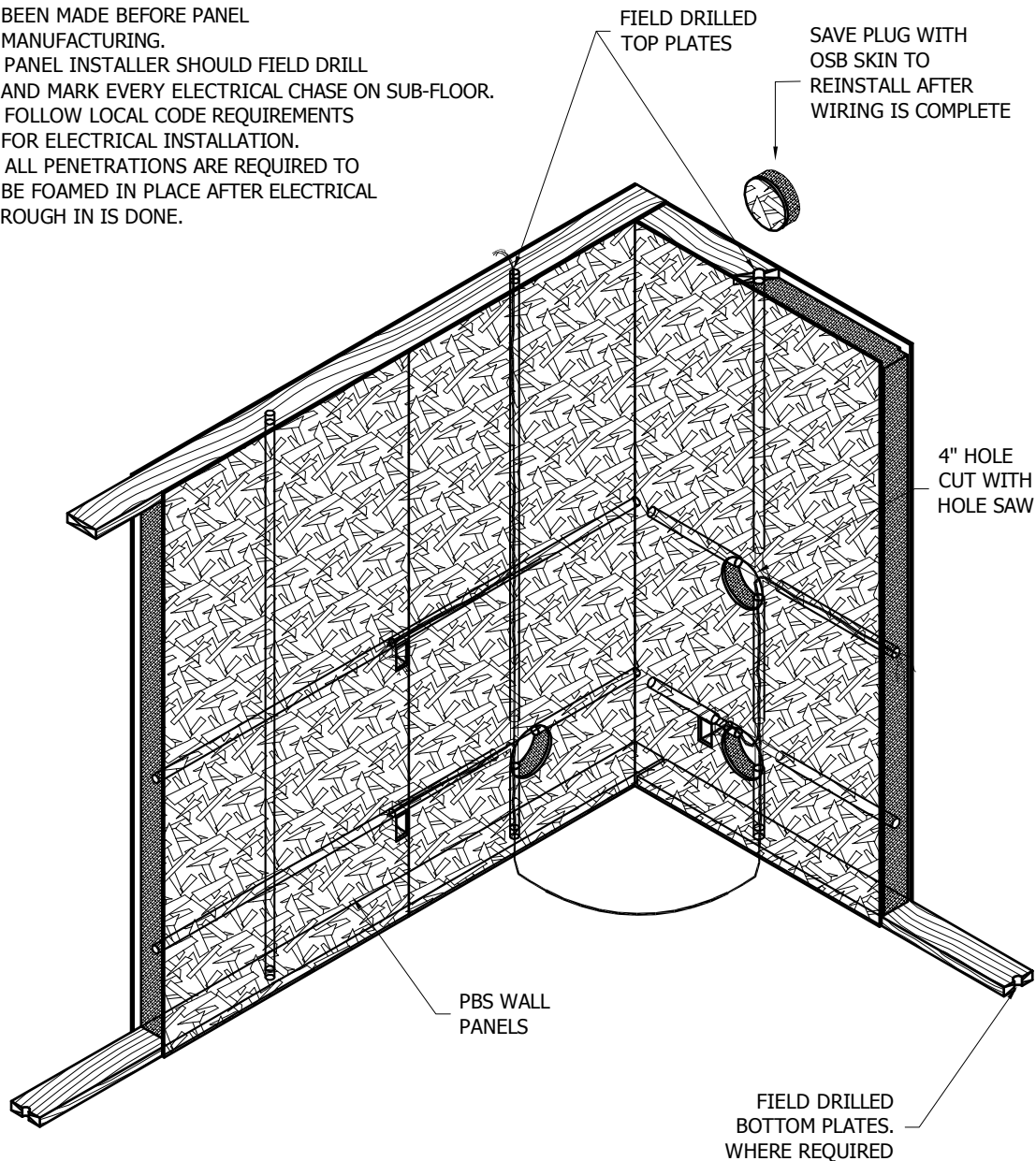


TRUSS BEARING
PREMIER SIPS

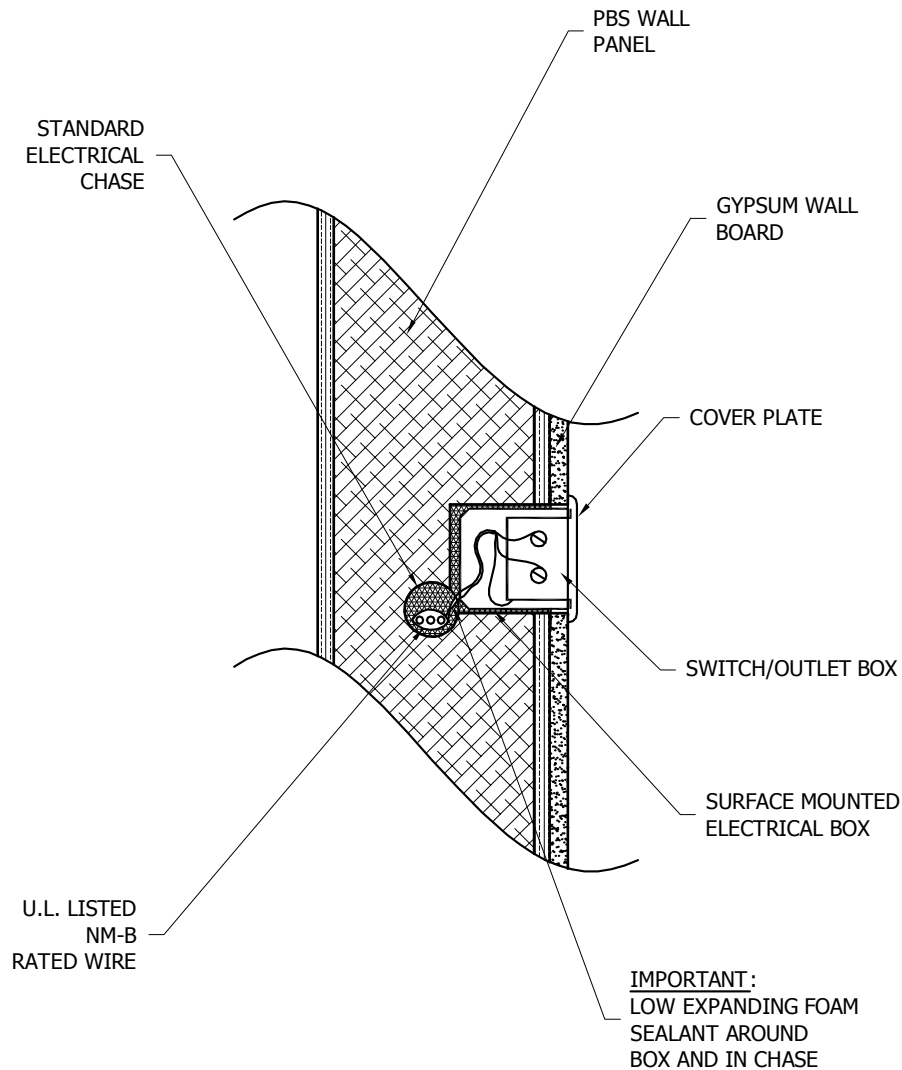
8-17-07

NOTES:

1. FACTORY PROVIDED HORIZONTAL ELECTRICAL CHASES ARE STANDARD 16" AND 45" ABOVE BOTTOM OF PANEL AND ROUGHLY 48" O.C. VERTICALLY UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE BEFORE PANEL MANUFACTURING.
2. PANEL INSTALLER SHOULD FIELD DRILL AND MARK EVERY ELECTRICAL CHASE ON SUB-FLOOR.
3. FOLLOW LOCAL CODE REQUIREMENTS FOR ELECTRICAL INSTALLATION.
4. ALL PENETRATIONS ARE REQUIRED TO BE FOAMED IN PLACE AFTER ELECTRICAL ROUGH IN IS DONE.



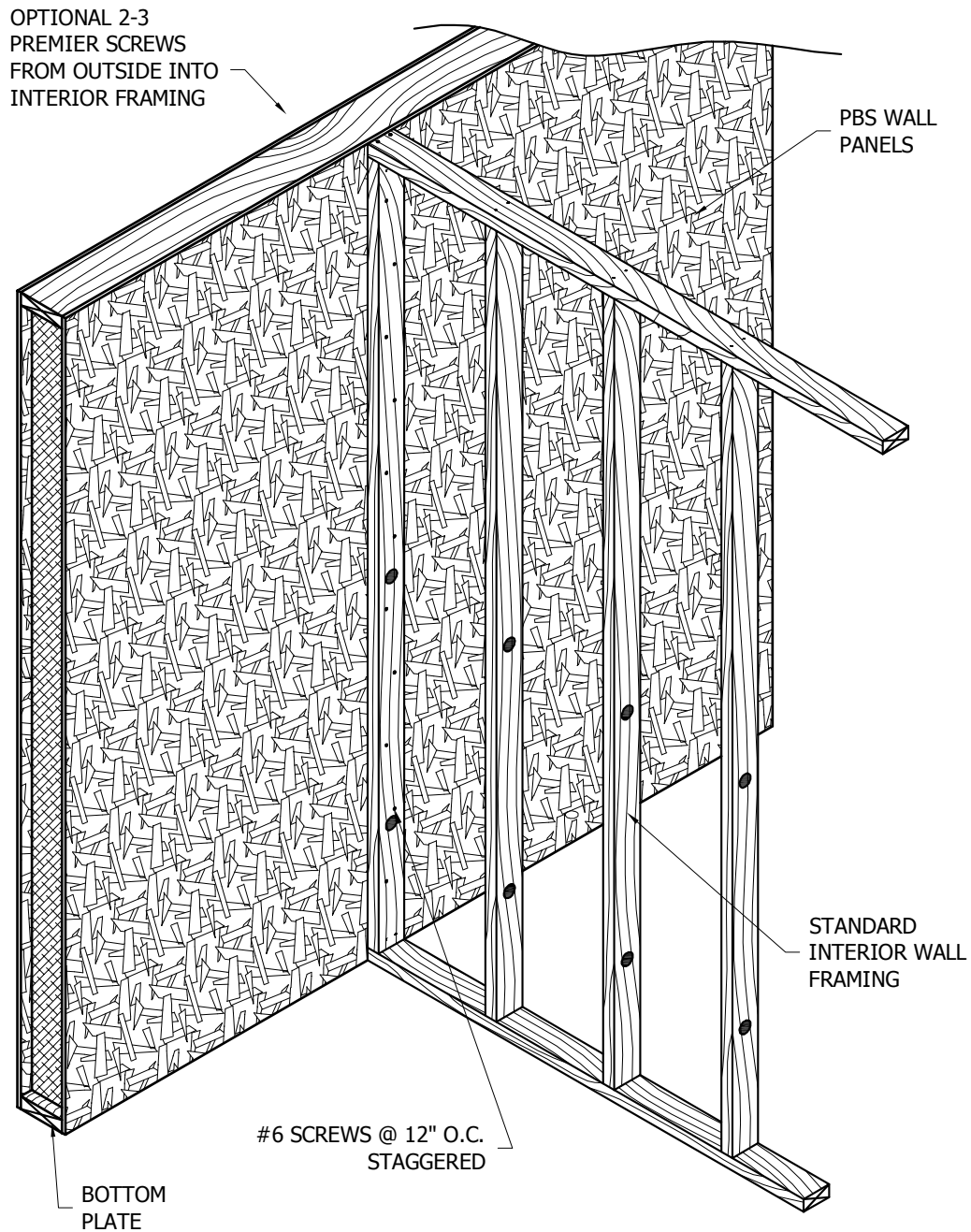
PBS-206 STANDARD ELECTRICAL CHASES 8-17-07
PREMIER SIPS



ELECTRICAL BOX INSTALLATION

PREMIER SIPS

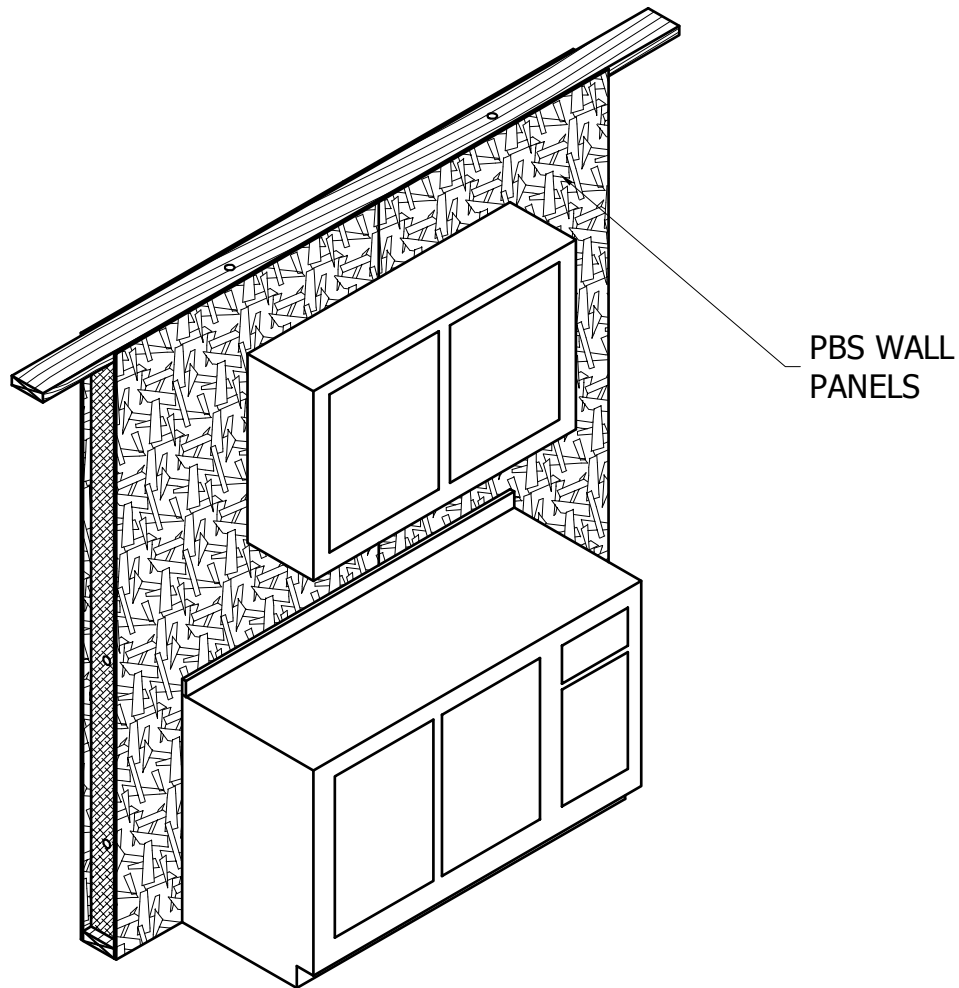
8-17-07



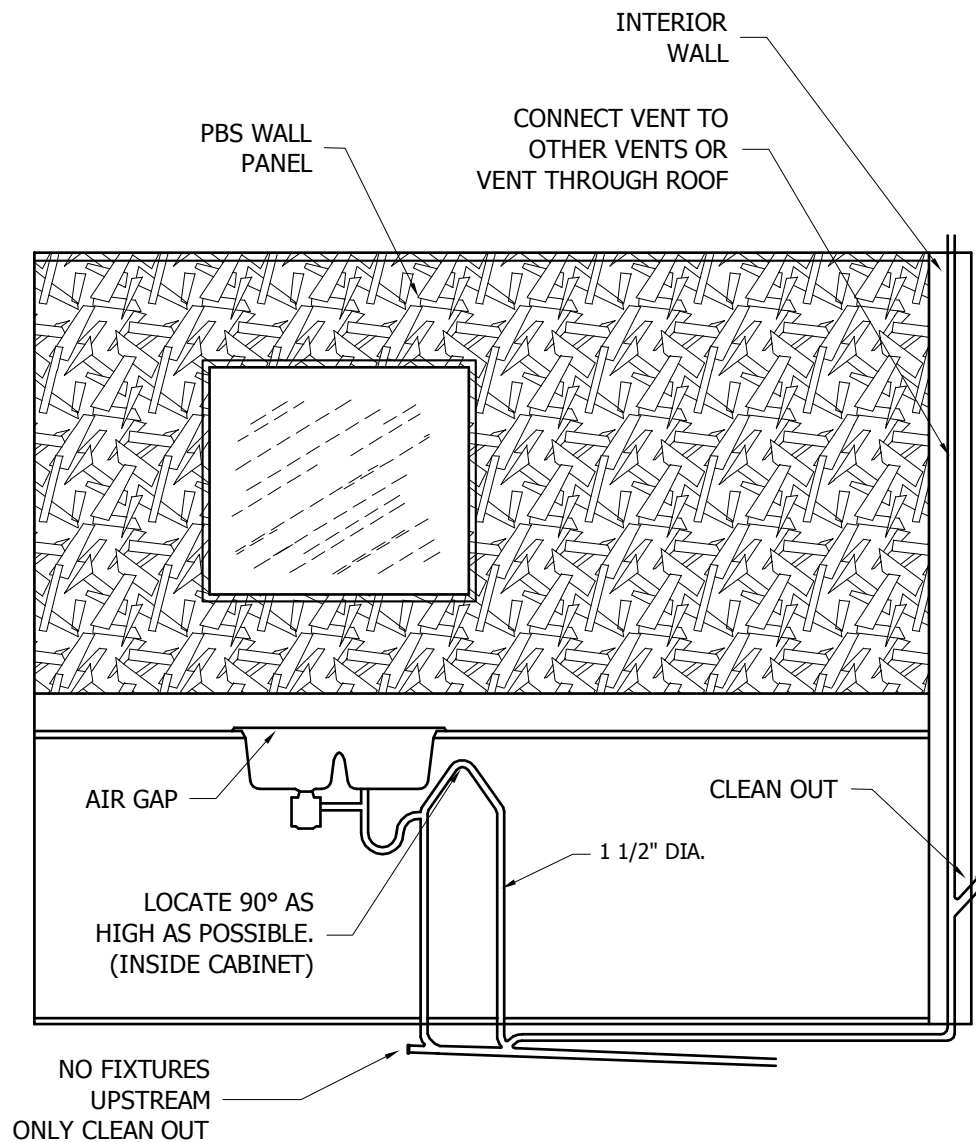
INTERIOR WALL CONNECTION
PREMIER SIPS

8-17-07

FOR TYPICAL CABINET LOADINGS.
FASTEN CABINET TO PANELS FOLLOWING CABINET
MANUFACTURER'S RECOMMENDATIONS.
FOR EXTREME CABINET LOADS CONSULT PREMIER
BUILDING SYSTEMS BEFORE INSTALLATION.

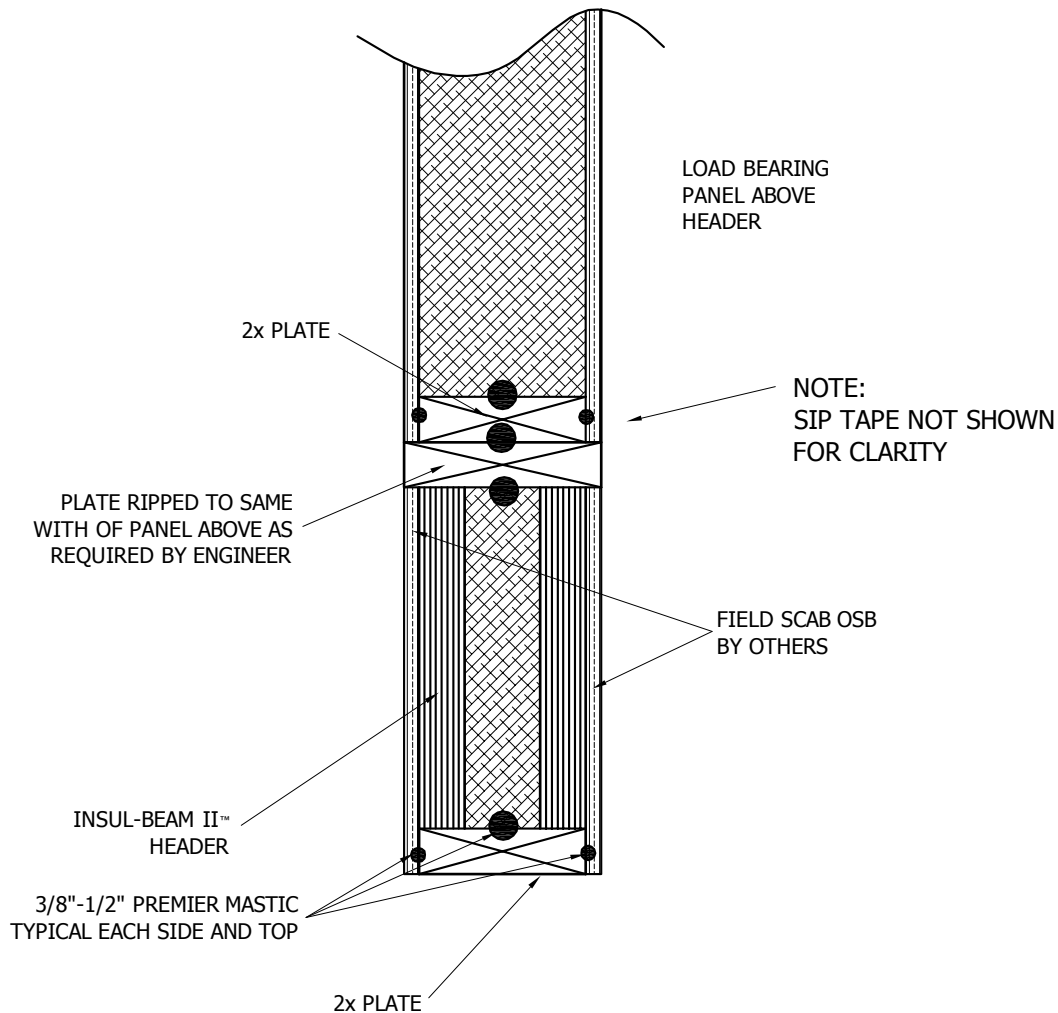


PBS-209 **TYPICAL CABINET CONNECTION** 8-17-07
PREMIER SIPS

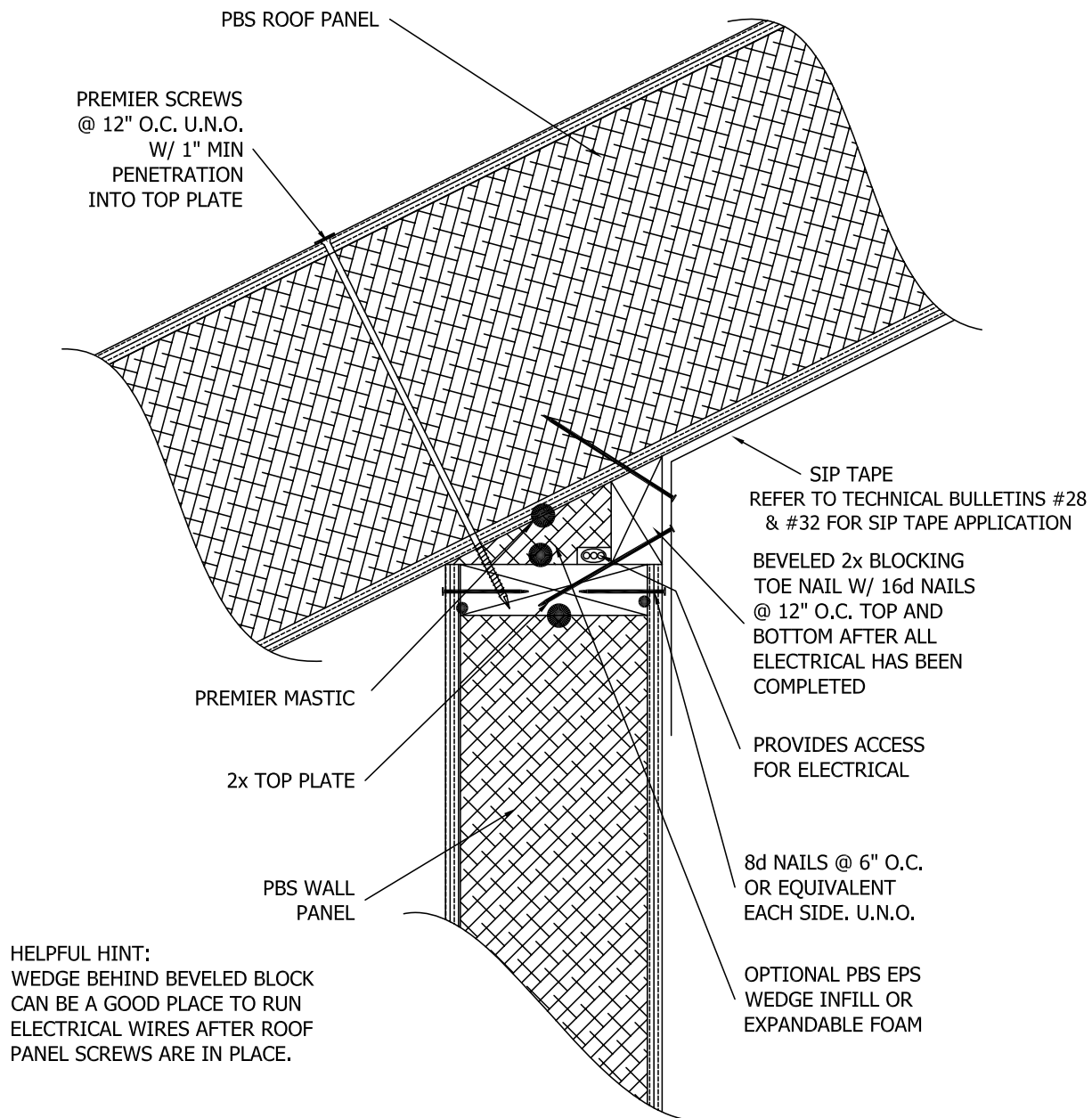


ISLAND VENT DETAIL
PREMIER SIPS

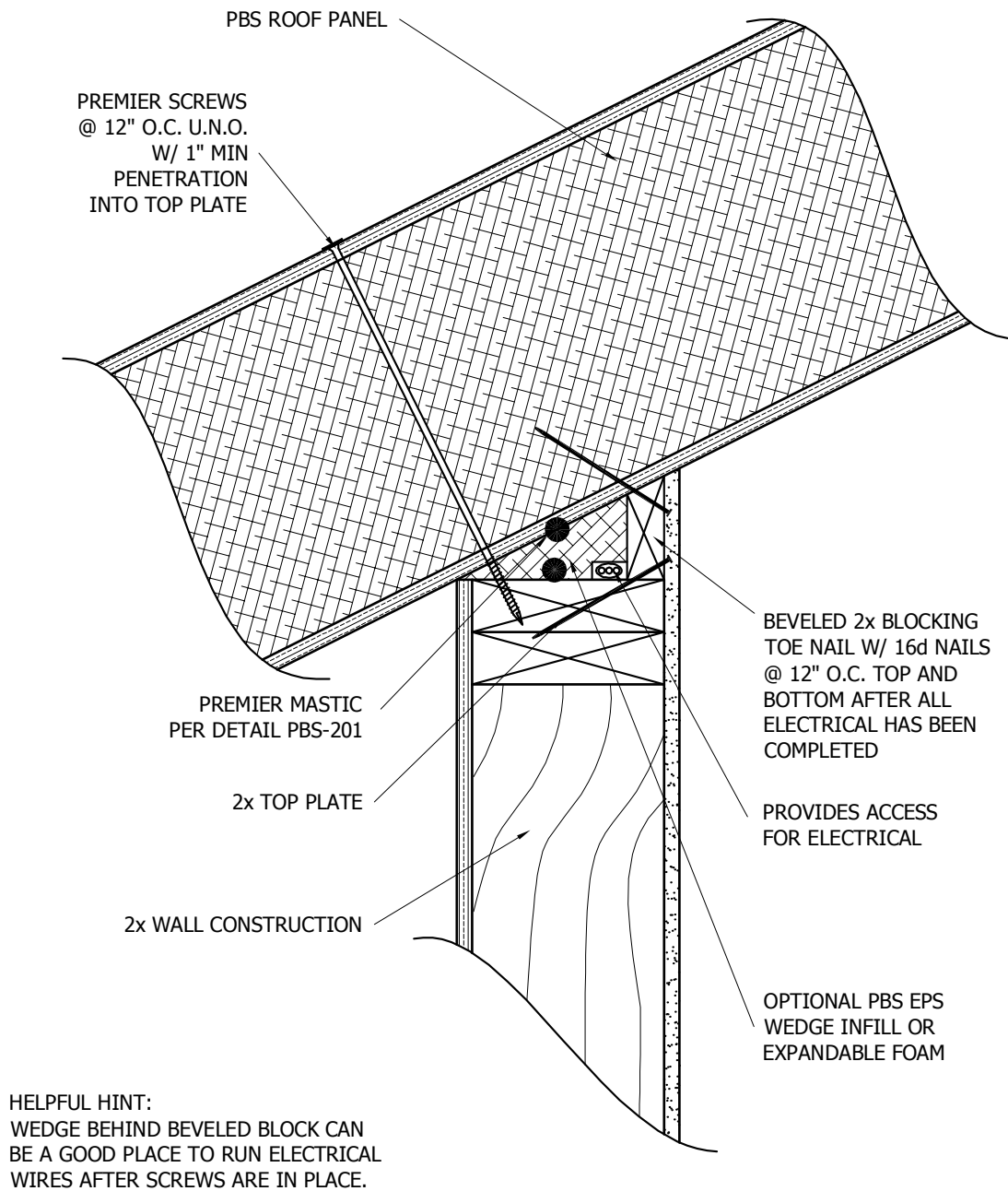
8-17-07



PBS-211 INSUL-BEAM HEADER ABOVE OPENING 11-9-07
PREMIER SIPS

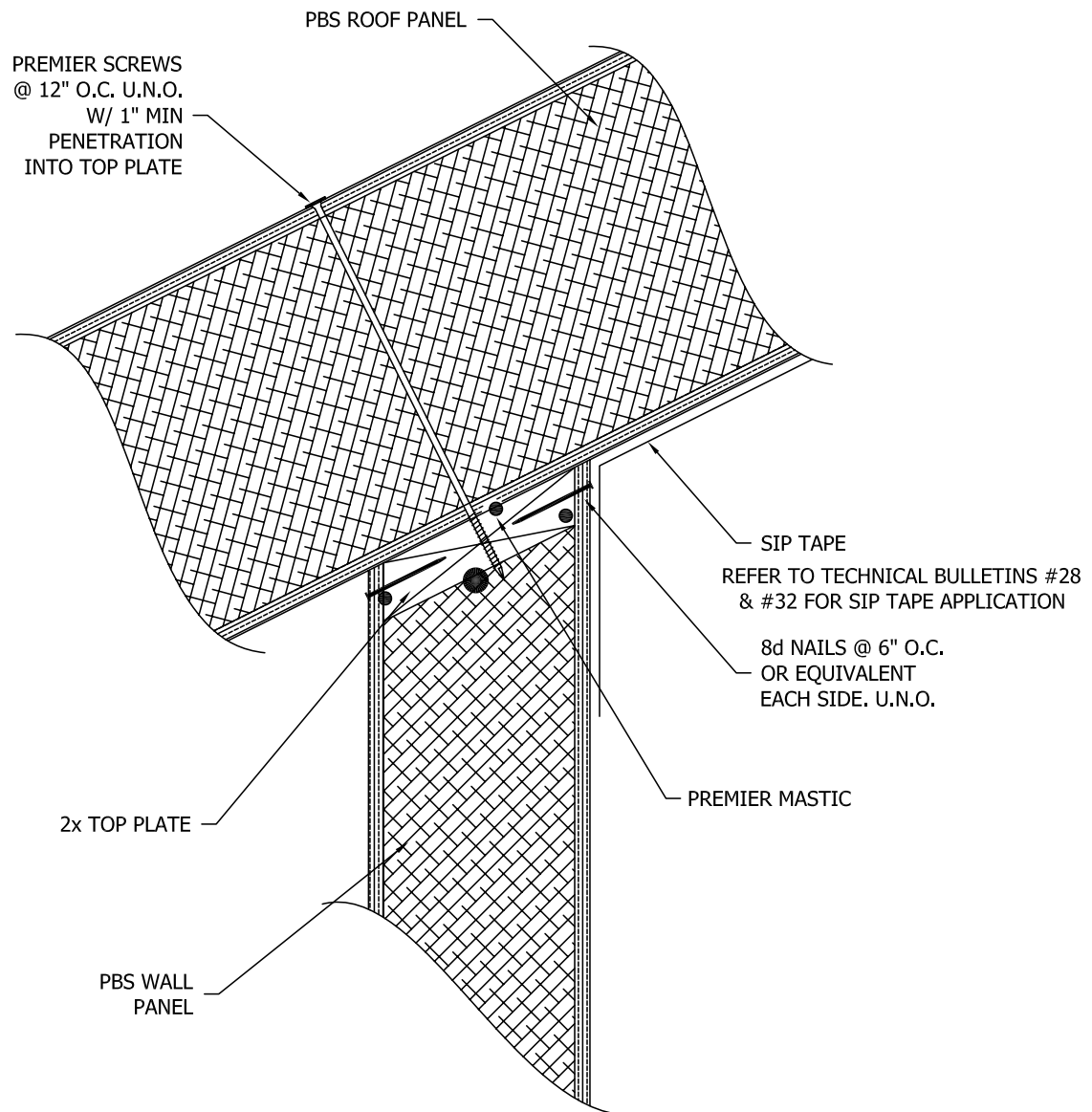


BEVELED BLOCK PANEL WALL/ROOF 11-9-10
PREMIER SIPS



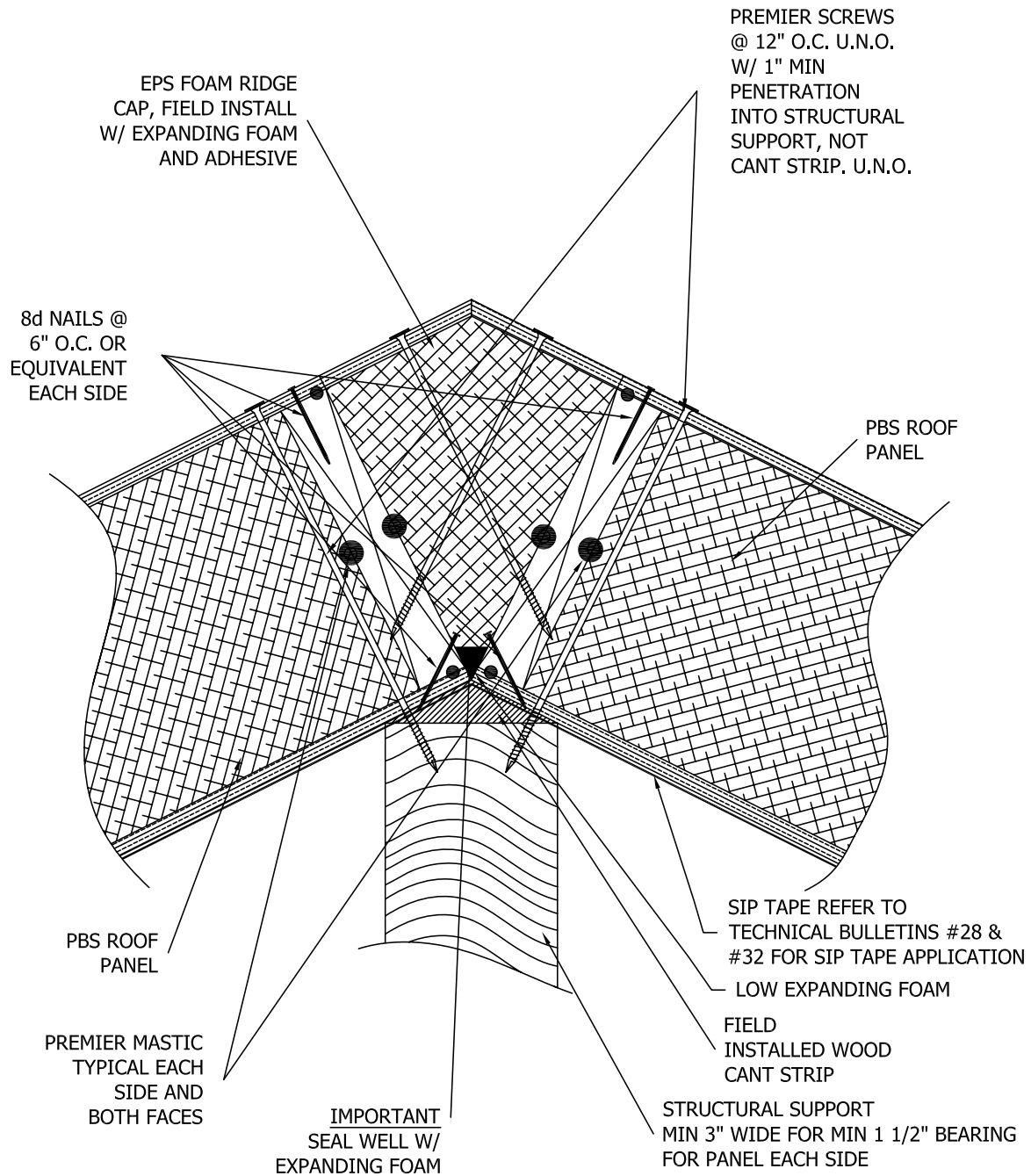
BEVELED BLOCK 2x WALL/ROOF
PREMIER SIPS

8-17-07

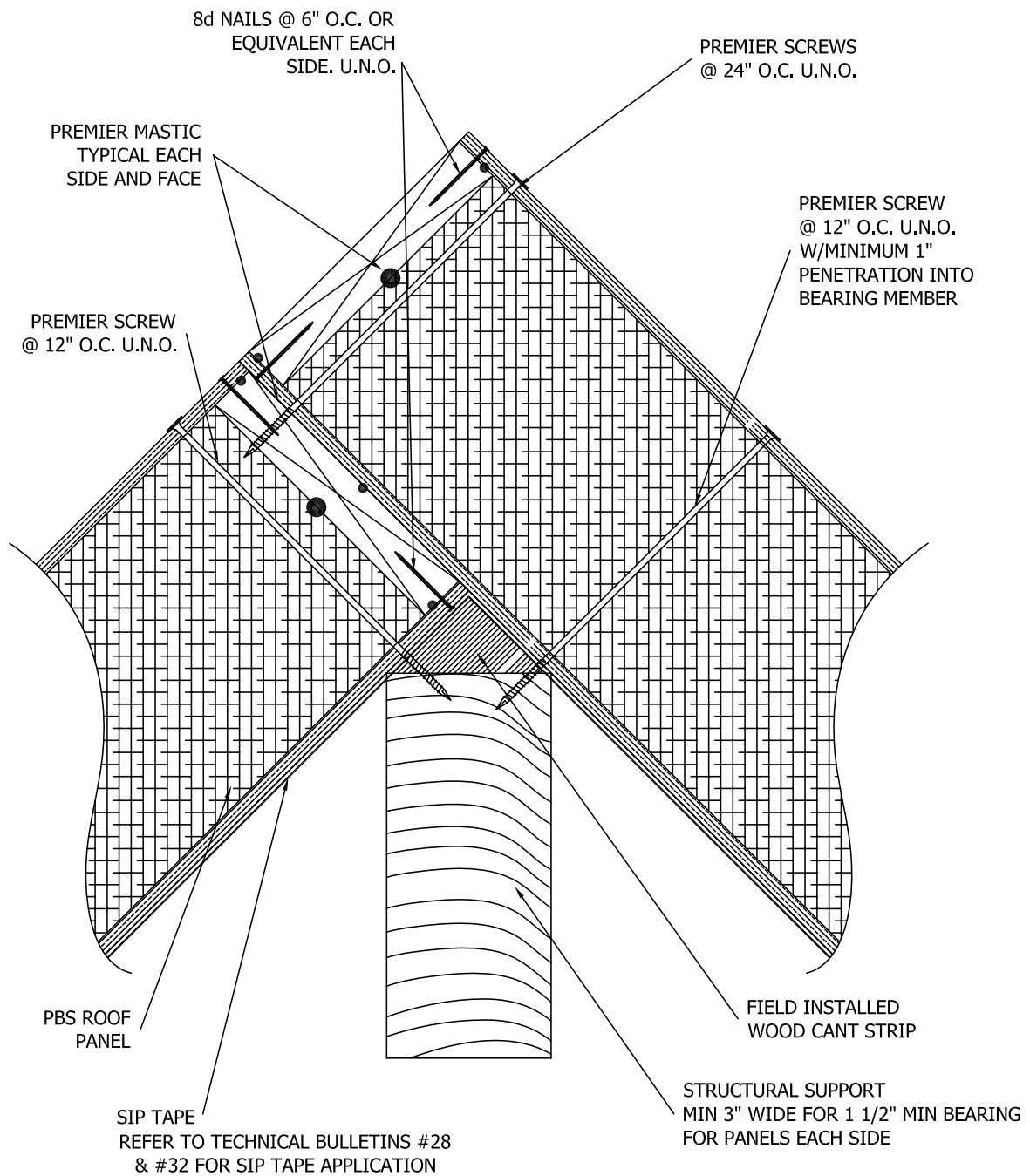


BEVELED PANEL WALL/ROOF CONNECTION
PREMIER SIPS

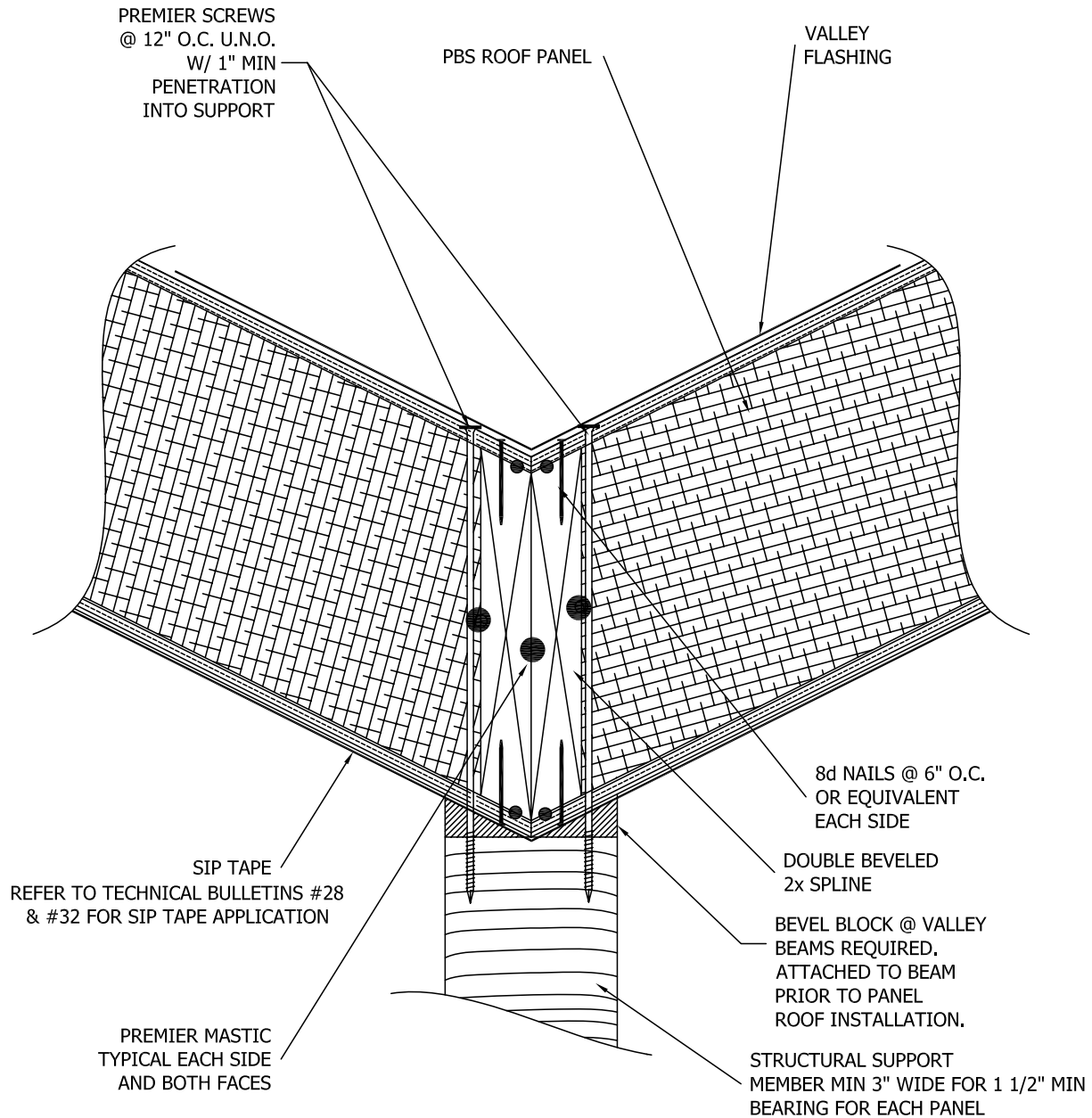
11-9-10



PBS-304 **RIDGE CAP DETAIL** 11-9-10
PREMIER SIPS

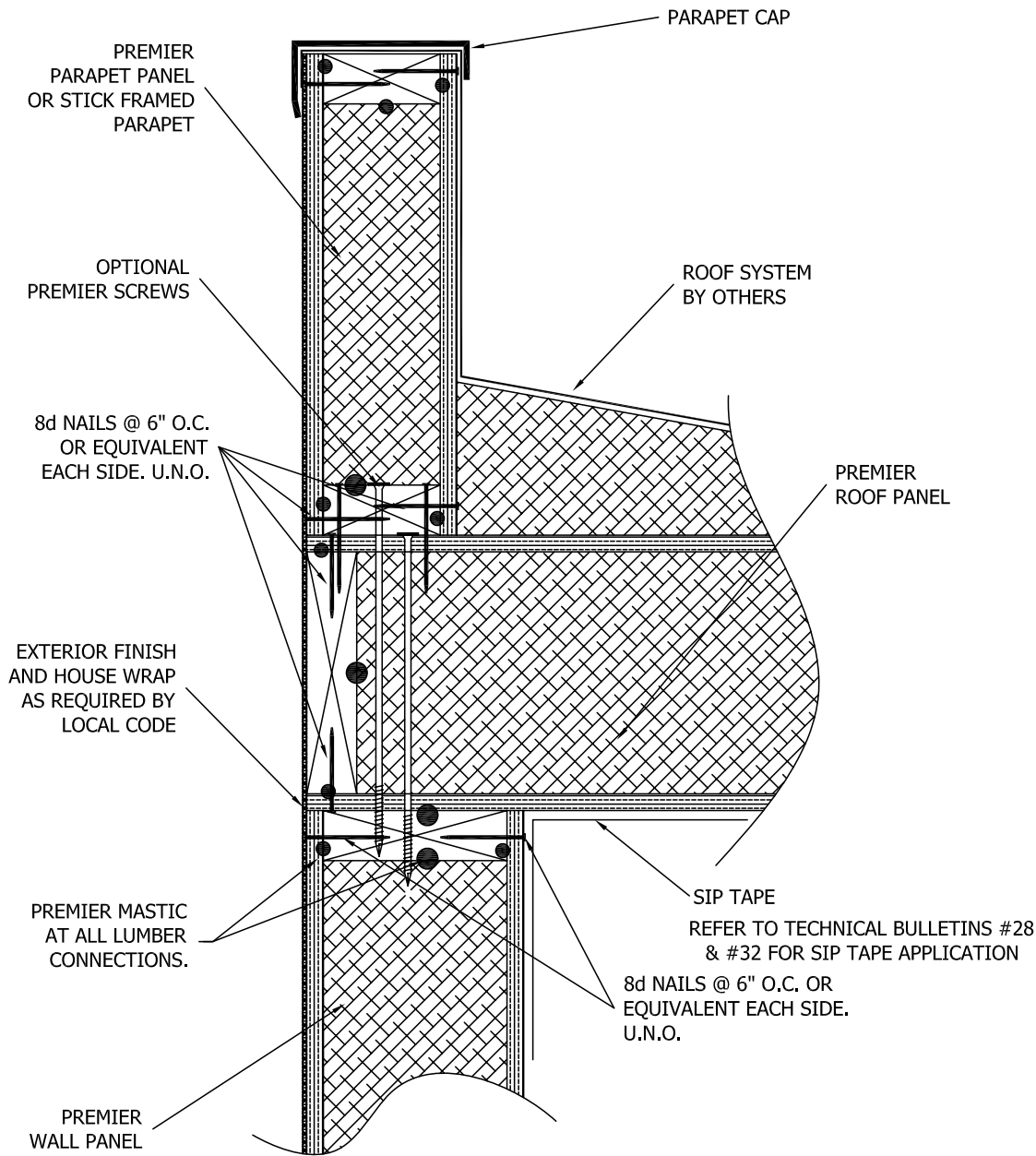


PBS-305 12:12 PITCH RIDGE DETAIL 11-9-10
PREMIER SIPS



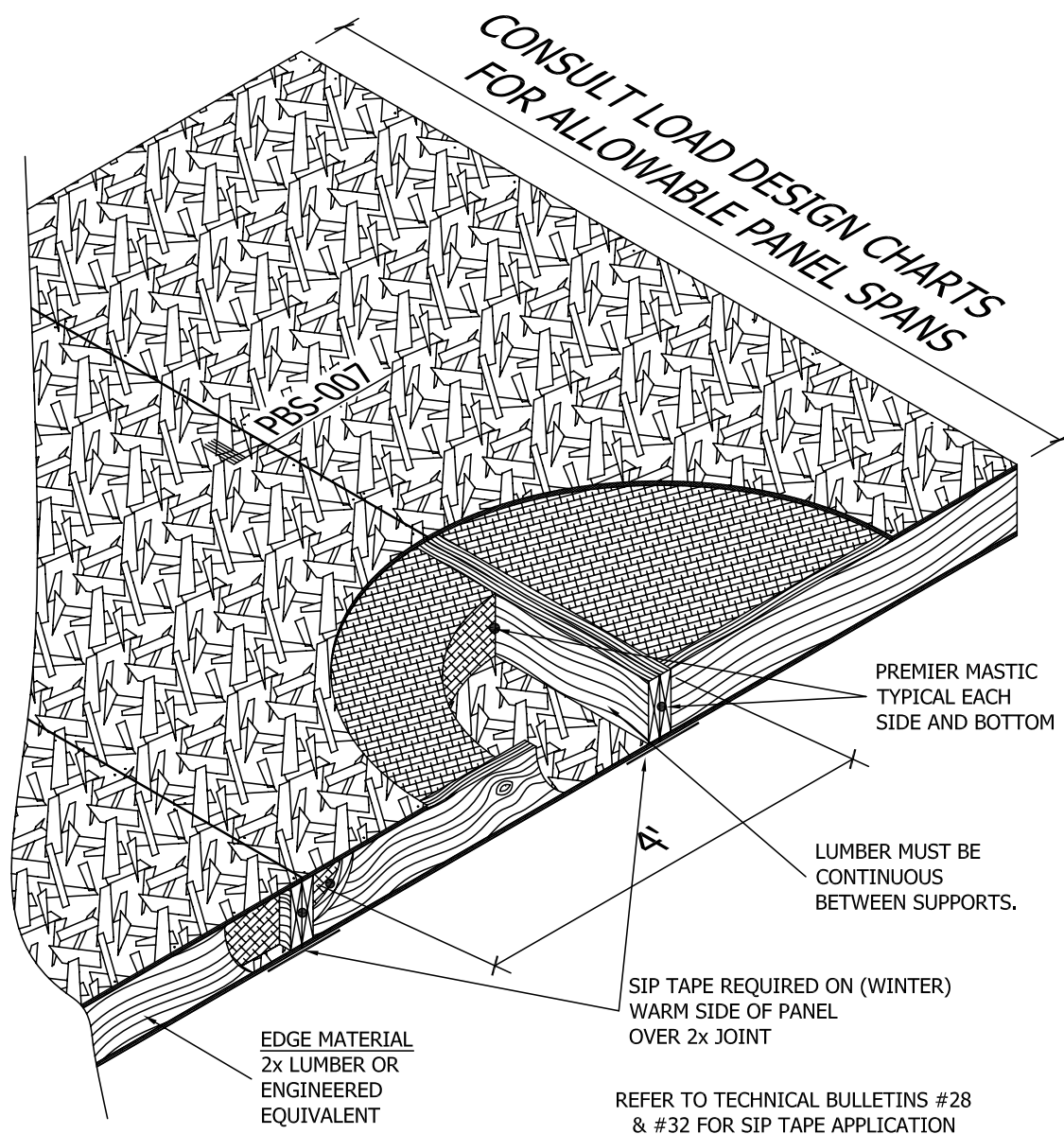
ROOF VALLEY CONNECTION PREMIER SIPS

11-9-10

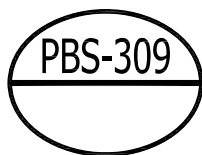
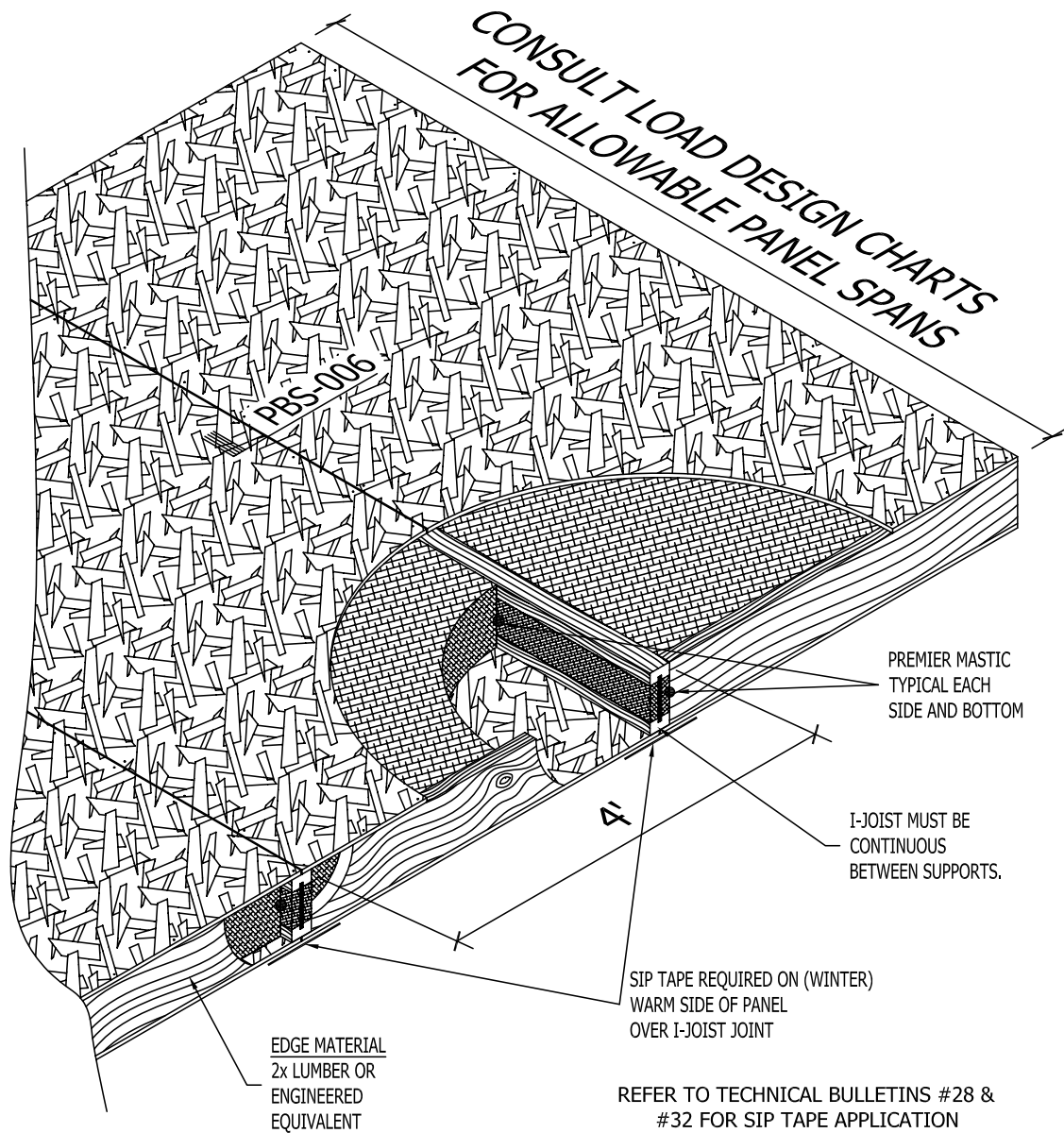


PBS-307 **PARAPET DETAIL**
PREMIER SIPS

11-9-10

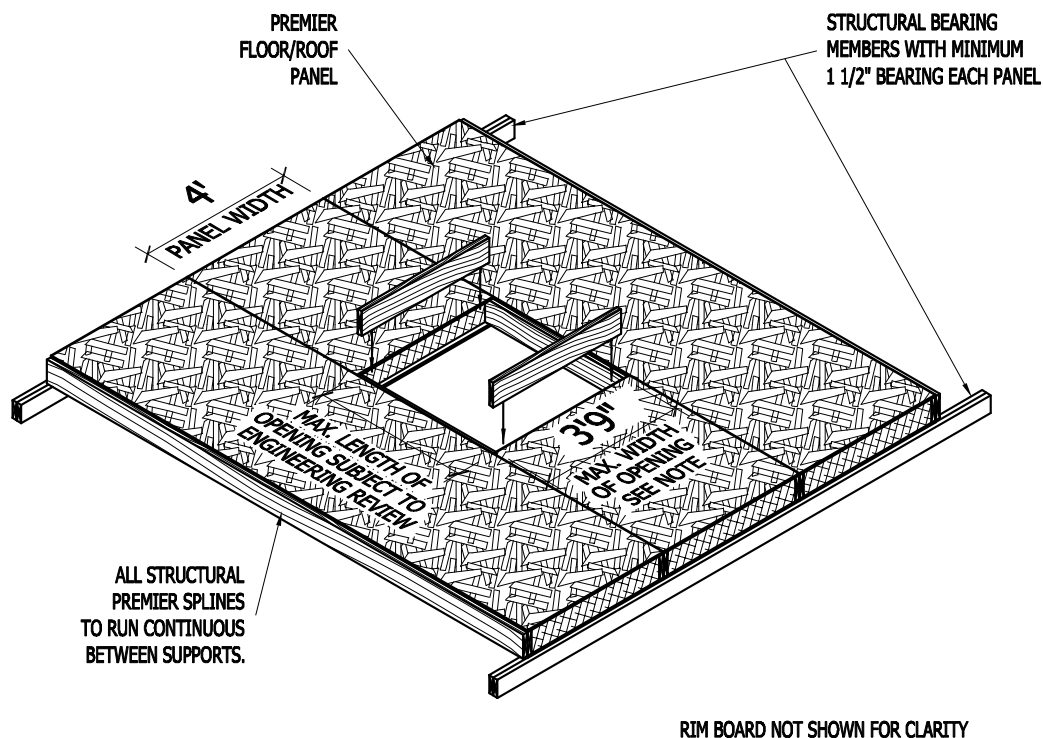


PBS-308 2x PANEL JOINT CONNECTION 11-9-10
PREMIER SIPS



I-JOIST PANEL CONNECTION PREMIER SIPS

11-9-10



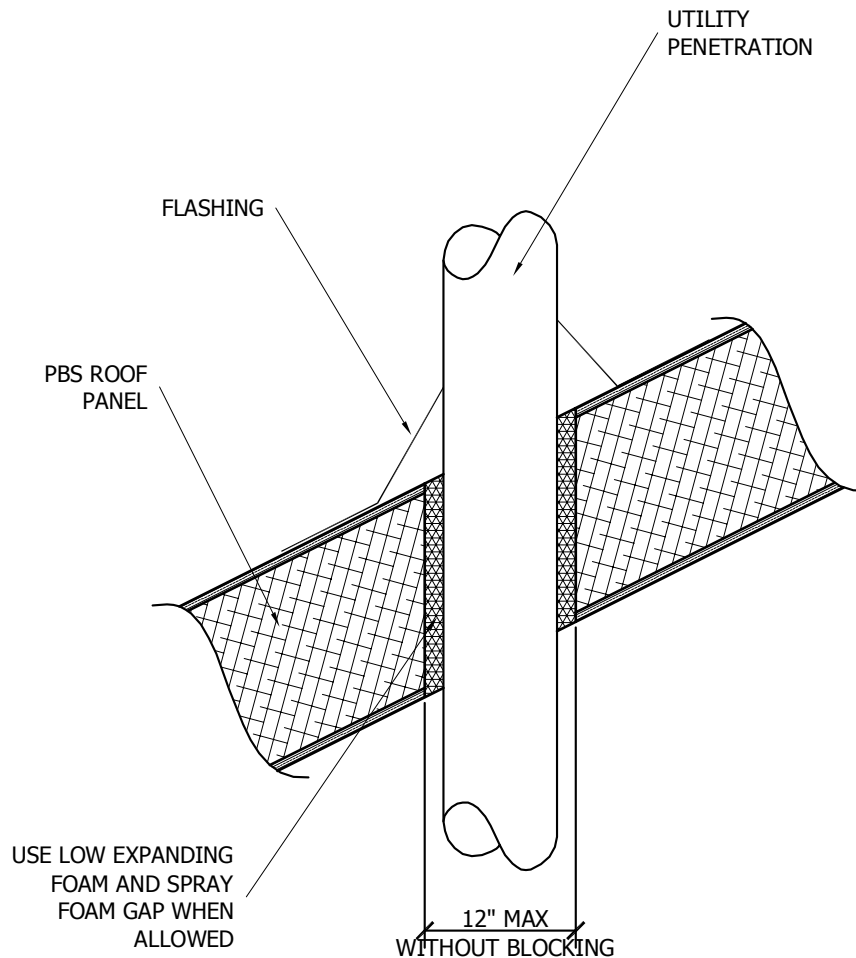
ALL FLOOR/ROOF OPENINGS MUST BE APPROVED BY A LICENSED ENGINEER.

NOTE:
FOR OPENINGS LARGER IN SIZE THAN SHOWN ABOVE OR FOR OPENINGS THAT CUT THROUGH SPLINES, ADDITIONAL FRAMING TO SUPPORT PANEL EDGES MAY BE NEEDED PER ENGINEERING REQUIREMENTS.



ROOF/FLOOR OPENINGS
PREMIER SIPS

8-20-07



NOTE:

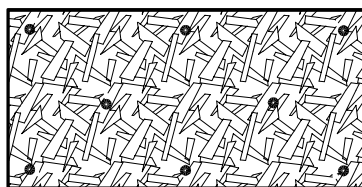
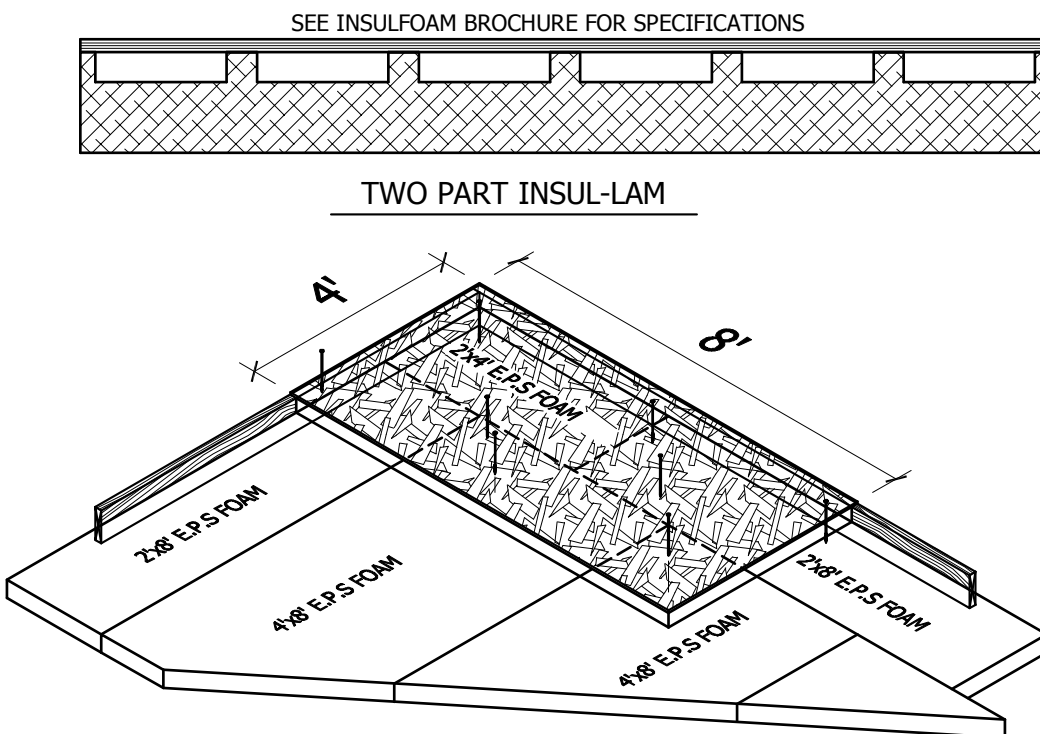
1. PROTECT EPS CORE FROM TEMPERATURES OF 160°F OR ABOVE. USE ZERO CLEARANCE INSULATING MATERIAL DESIGNED FOR HIGH TEMPS AS REQUIRED.



ROOF PENETRATIONS
PREMIER SIPS

8-20-07

PREMIER VENTED INSUL-LAM INSULATION



SCREW PATTERN- 8 PREMIER SCREWS
PER 4'x8' SHEET or PER ENGINEER.

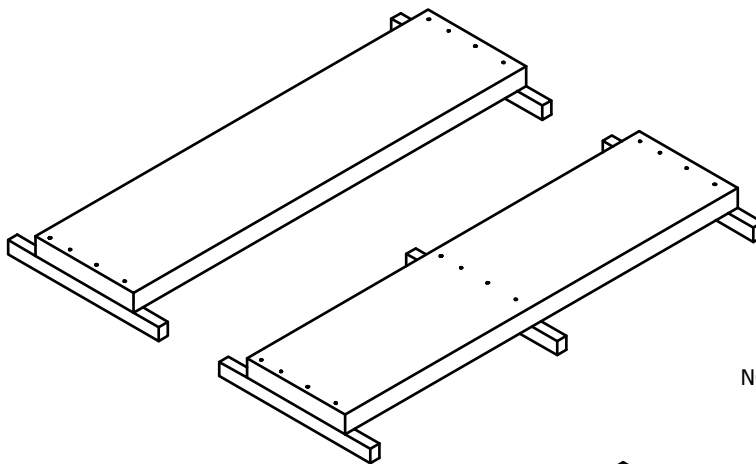
NOTE:

- THESE ARE NON-STRUCTURAL PANELS.
- OPTIONAL THICKNESSES AVAILABLE.



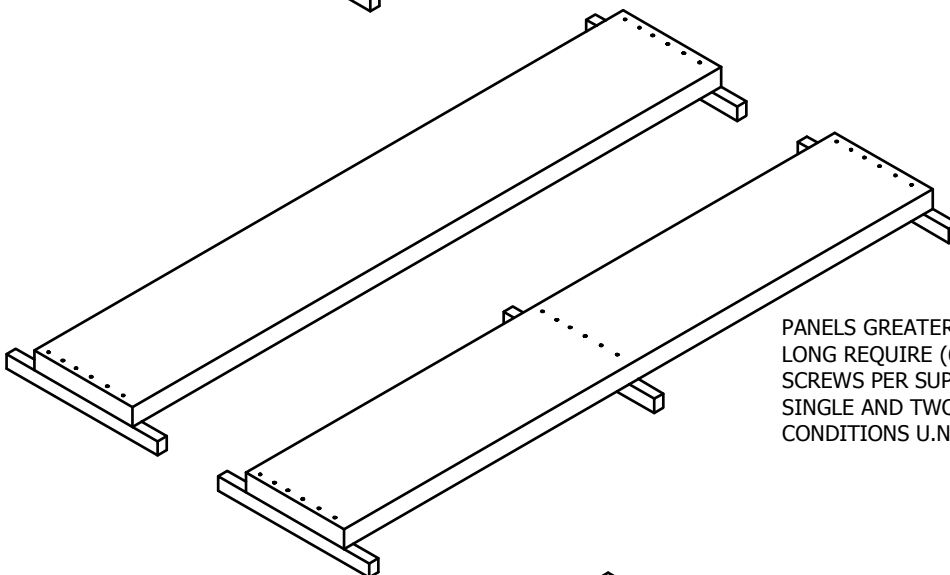
VENTED/NON-VENTED INSUL-LAM
PREMIER SIPS

8-20-07

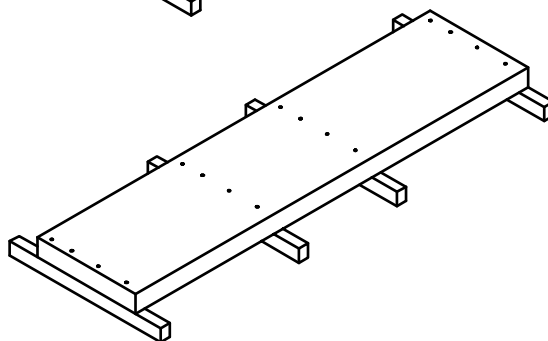


PANELS UP TO 16'-0" LONG
REQUIRE (4) PREMIER SCREWS
PER SUPPORT FOR SINGLE AND
TWO SPAN CONDITIONS U.N.O.

NOTE: ALL PANELS ARE
SHOWN 4' WIDE.



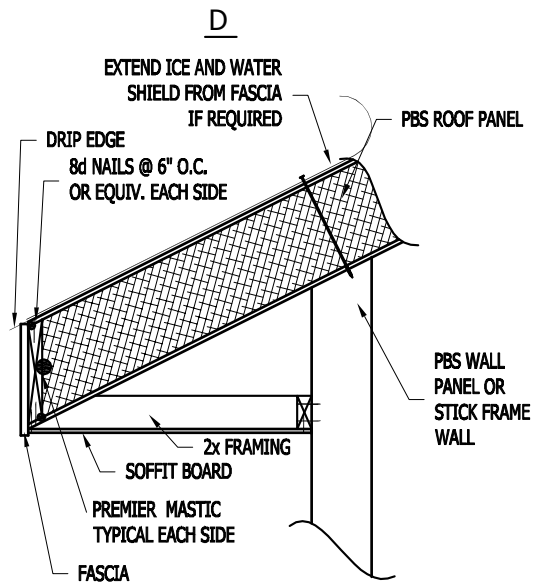
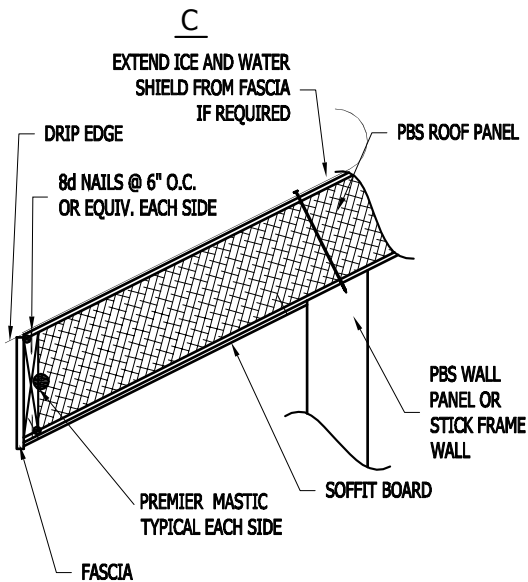
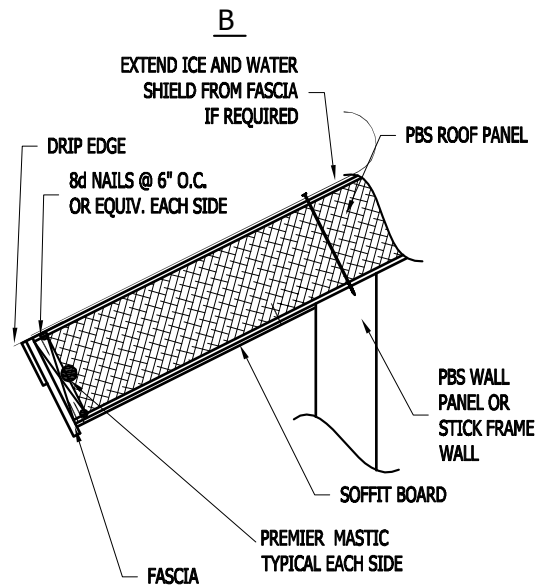
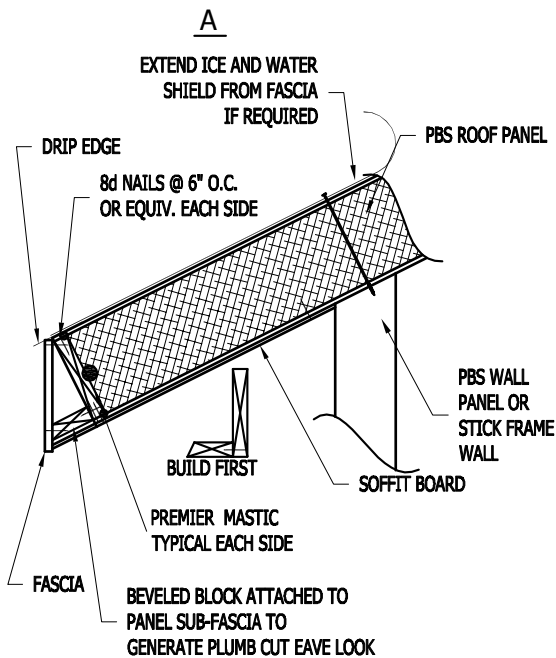
PANELS GREATER THAN 16'-0"
LONG REQUIRE (6) PREMIER
SCREWS PER SUPPORT FOR
SINGLE AND TWO SPAN
CONDITIONS U.N.O.



PANELS ANY LENGTH WITH
MULTIPLE SPAN CONDITIONS
REQUIRE (4) PREMIER SCREWS
PER SUPPORT U.N.O.



FLOOR/ROOF FASTENING PATTERNS 8-20-07
PREMIER SIPS

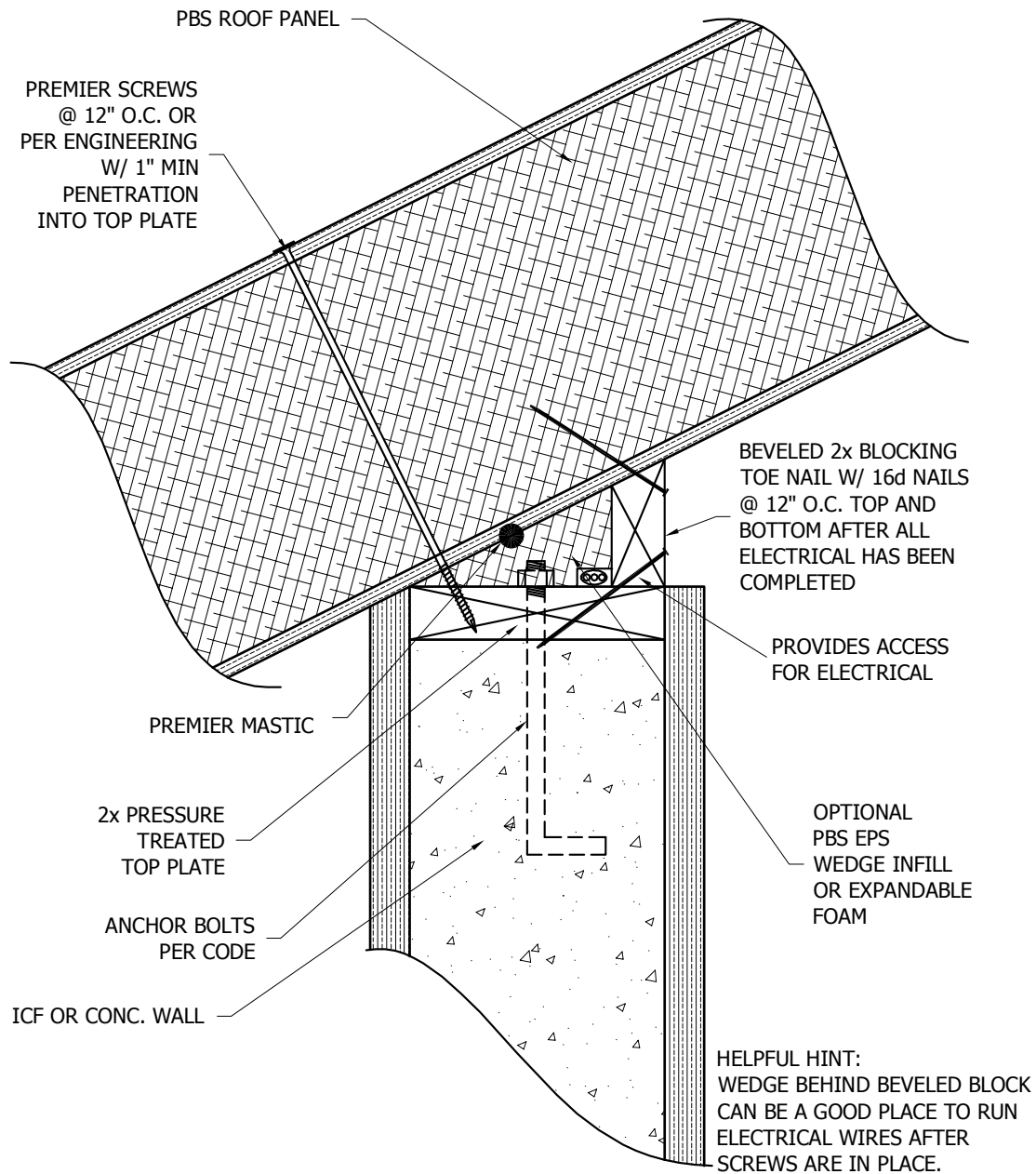


NOTE:
- SEE LOAD DESIGN CHARTS FOR
MAXIMUM OVERHANG.



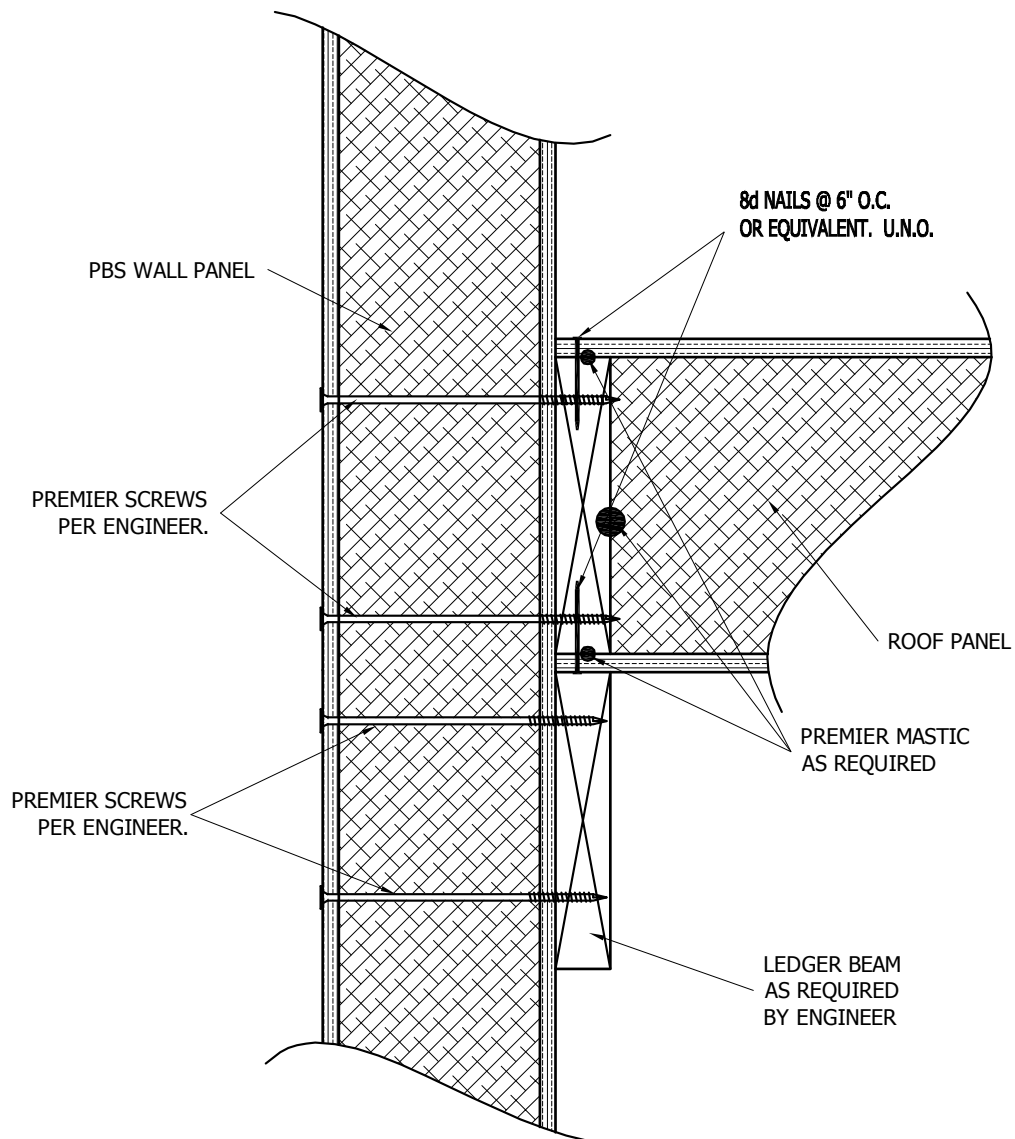
EAVE DETAILS
PREMIER SIPS

8-20-07



ROOF TO ICF WALL CONNECTION PREMIER SIPS

8-20-07

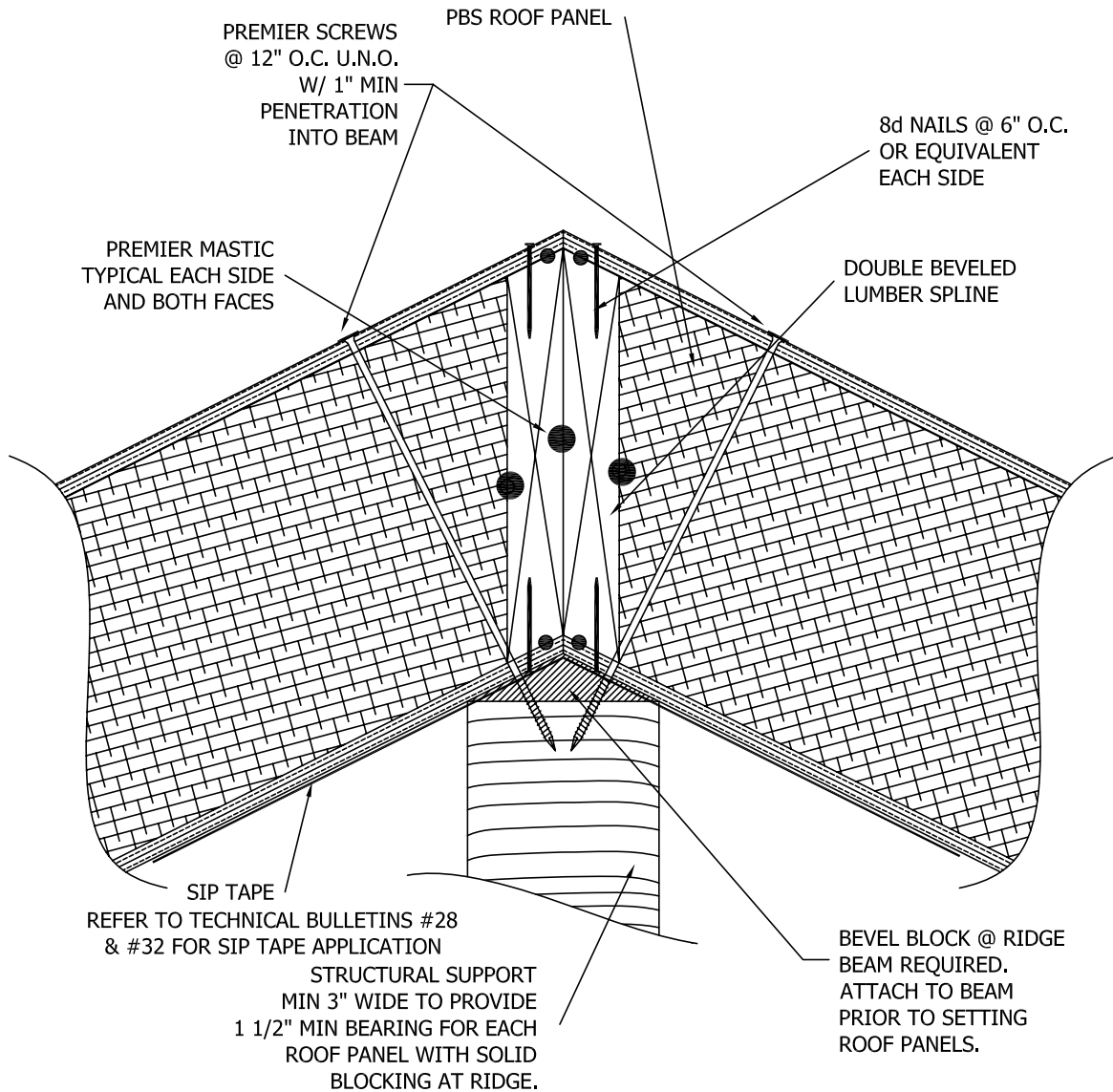


NOTE: THIS DETAIL IS ONLY PERMITTED WHEN DESIGNED BY A LICENSED STRUCTURAL ENGINEER.



ROOF LEDGER
PREMIER SIPS

8-20-07

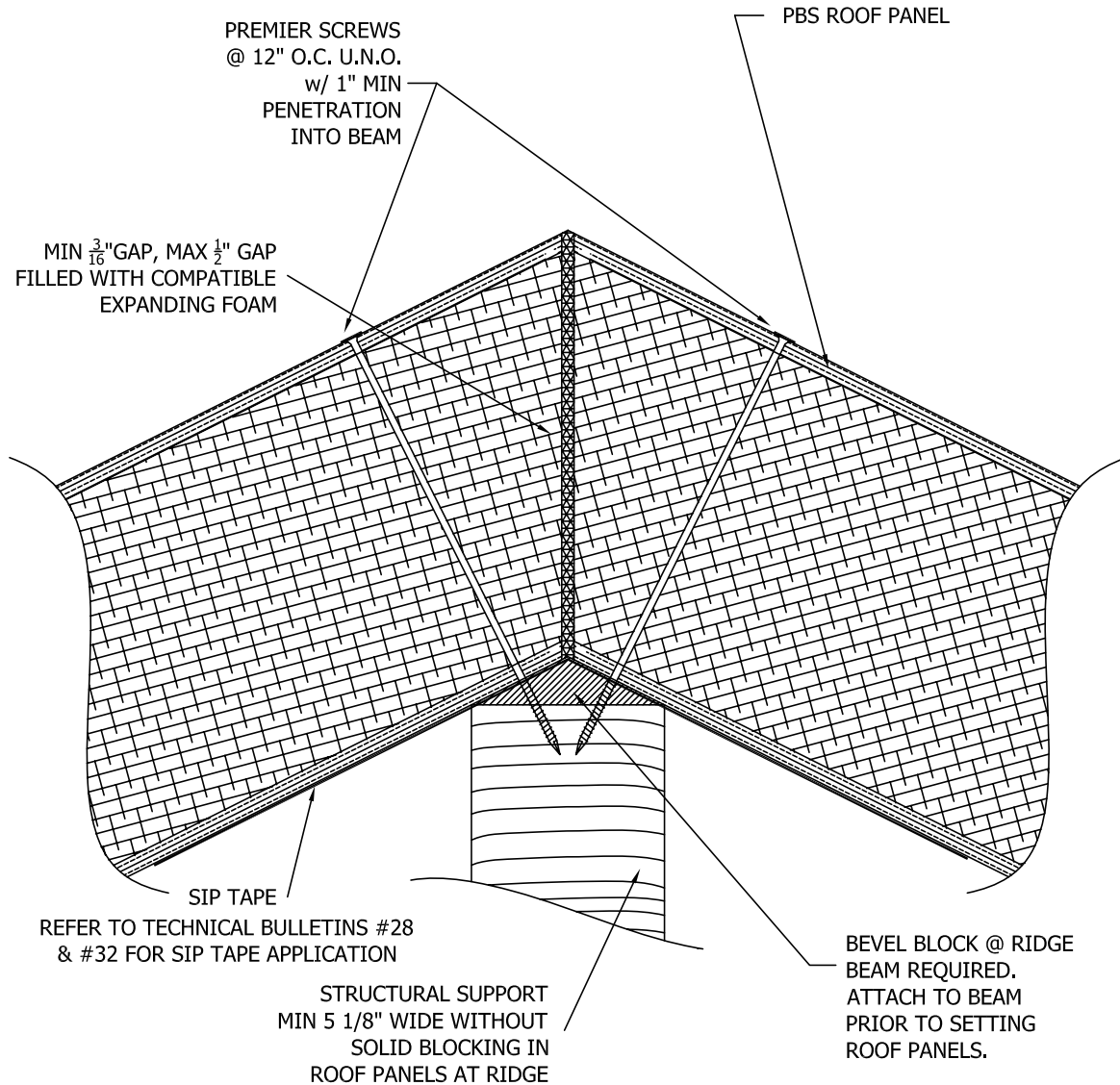


PLUMB CUT RIDGE / HIP RIDGE WITH BLOCKING
PREMIER SIPS

11-9-10

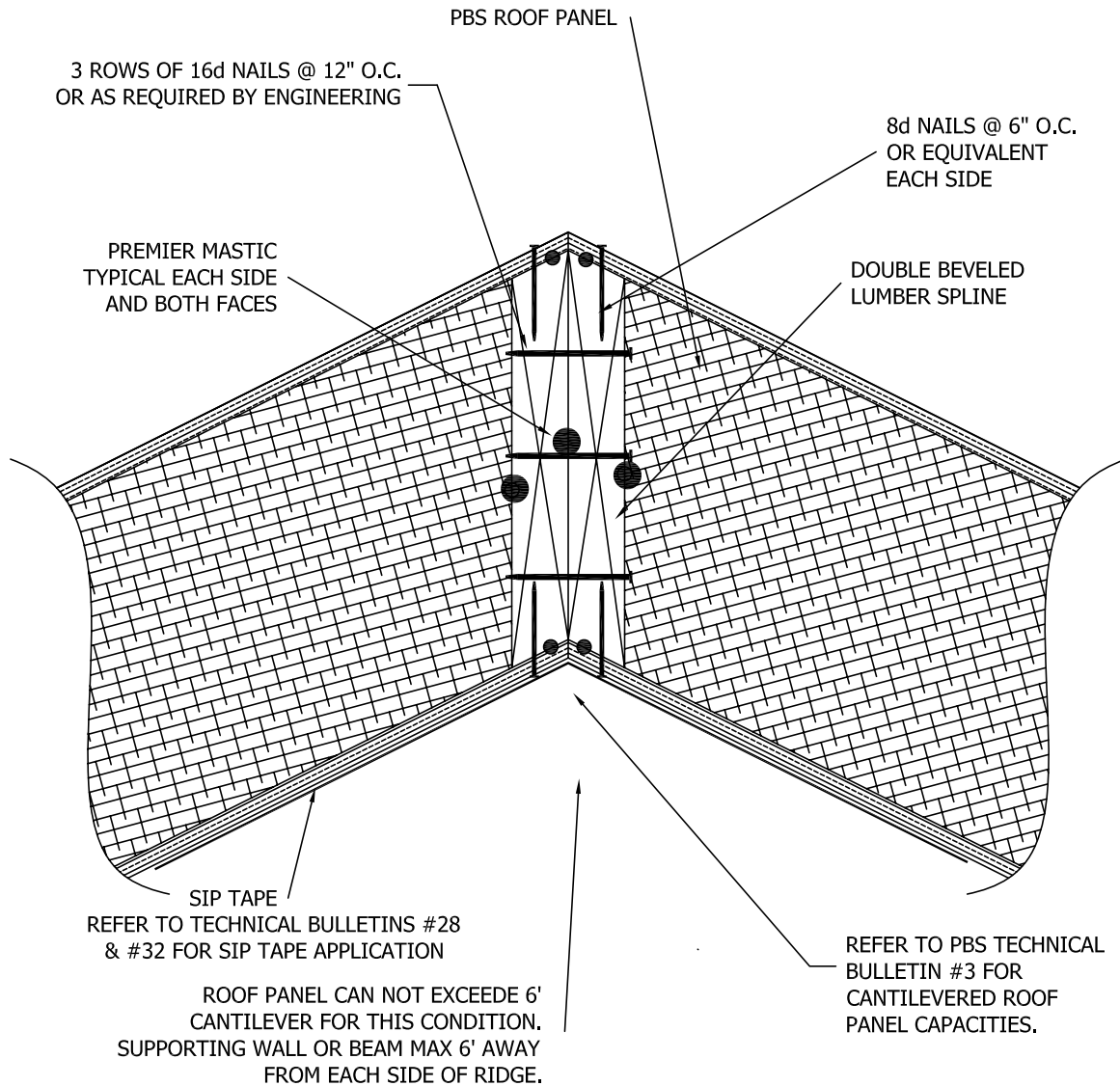
Roof Details: Plumb Cut Ridge/Hip Ridge

without Blocking PBS-318



PLUMB CUT RIDGE / HIP RIDGE WITHOUT BLOCKING
PREMIER SIPS

11-9-10



CANTILEVERED RIDGE WITH BLOCKING
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11-9-10



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