

Wall Bracing Provides Resistance to Lateral (wind and seismic) Loads.

Wall bracing using applicable methods from Table 602.10.5 shall be provided at each floor above grade. Fasteners and spacing per Table 602.10.4. Braced Wall Panels (BWP) shall be connected to foundations, floor framing, and roof framing.

602.10.1.1 Length of a Braced Wall Line

The length of a braced wall line shall be the distance between its end. The end of a braced wall line shall be the intersection with a perpendicular braced wall line, an angled braced wall line as permitted in Section 602.10.1.4, or an exterior wall as shown in Figure 602.10.1.1.

602.10.2 Braced Wall Panels

Braced wall panels shall be full-height sections of wall that shall not have vertical or horizontal offsets. Braced wall panels shall be constructed and placed along a braced wall line in accordance with this section and the bracing methods specified in Section 602.10.4.

602.10.2.2 Locations of Braced Wall Panels

A braced wall panel shall begin within ten feet (3810 mm) from each end of a braced wall line as determined in Section 602.10.1.1. The distance between adjacent edges of braced wall panels along a braced wall line shall not be greater than 20 feet (6096 mm) as shown in Figure 602.10.2.2.

602.10.2.3 Minimum Number of Braced Wall Panels

Braced wall lines with a length of 16 feet (4877 mm) or less shall have no less than two braced wall panels of any length or one braced wall panel equal to 48 inches (1219 mm) or more. Braced wall lines greater than 16 feet (4877 mm) shall have no less than two braced wall panels.

602.10.4.2 Continuous Sheathing Method

Continuous sheathing methods require structural panel sheathing to be used on all sheathable surfaces on one side of a braced wall line including areas above and below openings and gable end walls and shall meet the requirements of Section 602.10.7 and Figure 602.10.5.

602.10.5 Minimum Length of a Braced Wall Panel

The minimum length of a braced wall panel shall comply with Table 602.10.5. For methods CS-WSP and CS-SFB, the minimum panel length shall be based on the adjacent clear opening in accordance with Table 602.10.5 and Figure 602.10.5. Where a panel has an opening on either side of differing heights, the taller opening height shall be used to determine the panel length.

602.10.6.4 Method CS-PF: Continuously Sheathed Portal Frame

Continuously sheathed portal frame braced wall panels shall be constructed in accordance with Figure 602.10.6.4 and Table 602.10.6.4. The number of continuously sheathed portal frame panels in a single braced wall line shall not exceed four.

QUICK REFERENCE GUIDES ARE FOR PLANNING ONLY.

CONTACT THE PLANNING AND DEVELOPMENT DEPARTMENT AT 937-296-2441 WITH ANY QUESTIONS.

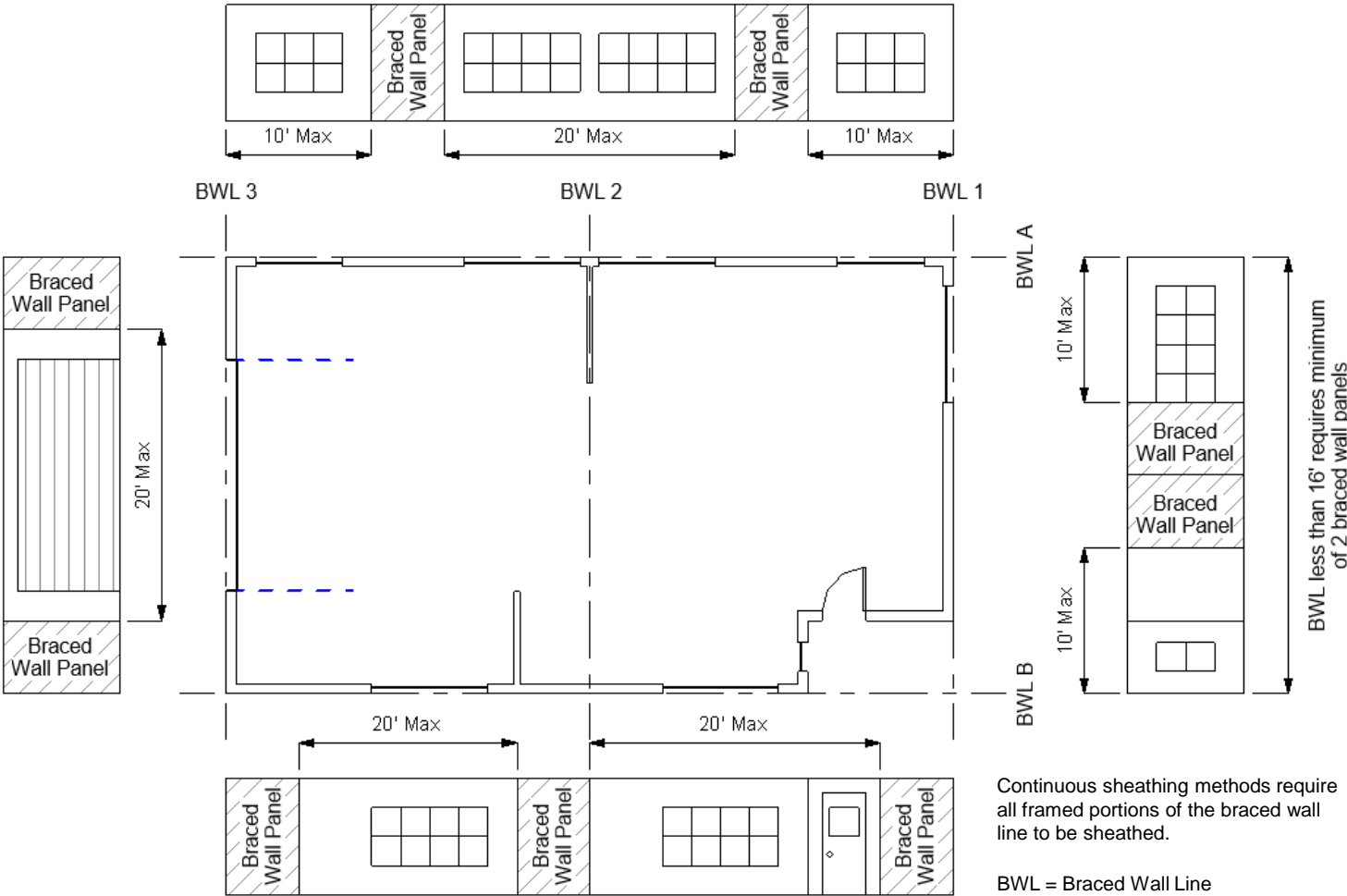


Figure 602.10.2
Location of Braced Wall Panels

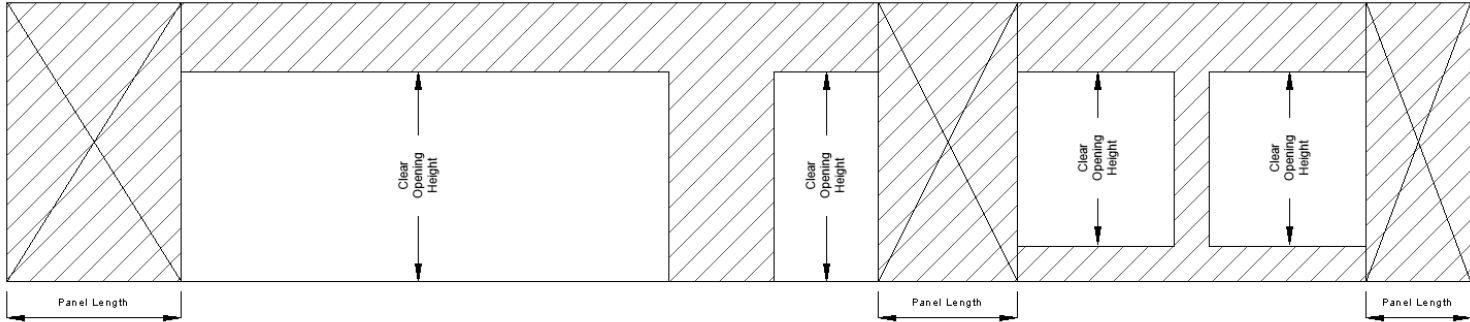
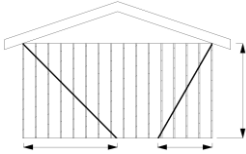
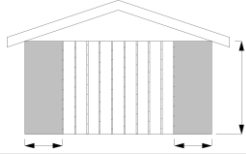
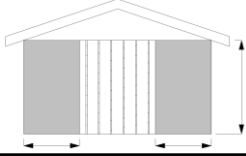
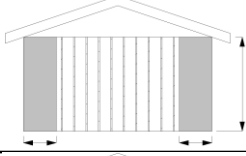
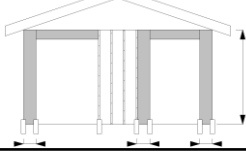
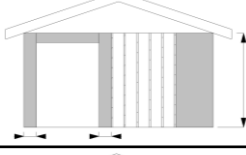
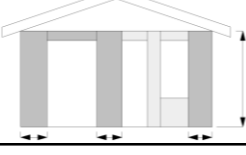
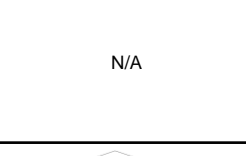


Figure 602.10.5
Braced Wall Panels with Continuous Sheathing

Table 602.10.4
Bracing Methods

Methods, Material	Minimum Thickness	Figure	Connection Criteria (a)		
			Fasteners	Spacing	
Intermittent Bracing Methods	LIB Let-in-bracing	1 x 4 wood or approved metal straps at 45° to 60°		Wood: 2-8d common nails or 3-8d (2½" long x 0.113" dia.) nails	Wood: per stud and top and bottom plates
				Metal strap: per manufacturer	Metal: per manufacturer
	WSP Wood structural panel (See Section 604)	3/8"		Exterior sheathing per Table 602.3(3)	6" edges 12" field
				Interior sheathing per Table 602.3(1) or 602.3(2)	Varies by fastener
	GB Gypsum board	1/2"		Nails or screws per Table 602.3(1) for exterior locations	For all braced wall panel locations: 7" edges (including top and bottom plates) 7" field
				Nails or screws per Table 702.3.5 for interior locations	
	PBS Particleboard sheathing (See Section 605)	3/8" or ½" for maximum 16" stud spacing		For 3/8" 6d common (2" long x 0.113" dia.) nails. For ½", 8d common (2½" long x 0.113" dia.) nails	3" edges 6" field
	PFH Portal frame with hold-downs	3/8"		See Section 602.10.6.2	See Section 602.10.6.2
	PFG Portal frame at garage	7/16"		See Section 602.10.6.3	See Section 602.10.6.3
CS-WSP Continuously sheathed wood structural panel	3/8"		Interior sheathing per Table 602.3(3)	Varies by fastener	
CS-G (b and c)	3/8"	N/A	See Method CS-WSP	See Method CS-WSP	
CS-PF Continuously sheathed portal frame	7/16"		See Section 602.10.6.4	See Section 602.10.6.4	

- a. Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C.
- b. Applies to panels next to garage door opening where supporting gable end wall or roof load only. Shall only be used on one wall of garage.
- c. Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table 602.7(1). A full-height clear opening shall not be permitted adjacent to a Method CS-G panel.

Table 602.10.5

Minimum Length of Braced Wall Panels

Method (See Table 602.10.4)		Minimum Length (a) (inches)					Contributing Length (inches)
		Wall Height					
		8 feet	9 feet	10 feet	11 feet	12 feet	
WSP, PBS		48	48	48	53	58	Actual (b)
GB		48	48	48	53	58	Double-sided = Actual Single sided = 0.5 x Actual
LIB		55	62	69	NP	NP	Actual (b)
CS-G		24	27	30	33	36	Actual (b)
CS-WSP, CS-SFB	Adjacent Clear Opening Height (inches)	Minimum Length (a) (inches)					Actual (b)
	≤64	24	27	30	33	36	
	68	26	27	30	33	36	
	72	27	27	30	33	36	
	76	30	29	30	33	36	
	80	32	30	30	33	36	
	84	35	32	32	33	36	
	88	38	35	33	33	36	
	92	43	37	35	35	36	
	96	48	41	38	36	36	
	100	--	44	40	38	38	
	104	--	49	43	40	39	
	108	--	54	46	43	41	
	112	--	--	50	45	43	
	116	--	--	55	48	45	
	120	--	--	60	52	48	
	124	--	--	--	56	51	
	128	--	--	--	61	54	
	132	--	--	--	66	58	
136	--	--	--	--	62		
140	--	--	--	--	66		
144	--	--	--	--	72		
Method (See Table 602.10.4)		Porter Header Height					
		8 feet	9 feet	10 feet	11 feet	12 feet	
PFH	Supporting roof only	16	16	16	Note c	Note c	48
	Supporting one story and roof	24	24	24	Note c	Note c	
PFG	--	24	27	30	Note d	Note d	1.5 x Actual (b)
CS-PF	SDC A, B, and C	16	18	20	Note e	Note e	1.5 x Actual (b)

- a. Linear interpolation shall be permitted.
- b. Use the actual length where it is greater than or equal to the minimum length.
- c. Maximum header height for PFH is 10 feet in accordance with Figure 602.10.6.2, but wall height shall be permitted to be increased to 12 feet with pony wall.
- d. Maximum header height for PFG is 10 feet in accordance with Figure 602.10.6.3, but wall height shall be permitted to be increased to 12 feet with pony wall.
- e. Maximum header height for CS-PF is 10 feet in accordance with Figure 602.10.6.4, but the wall height shall be permitted to be increased to 12 feet with pony wall.

PORTAL FRAMES

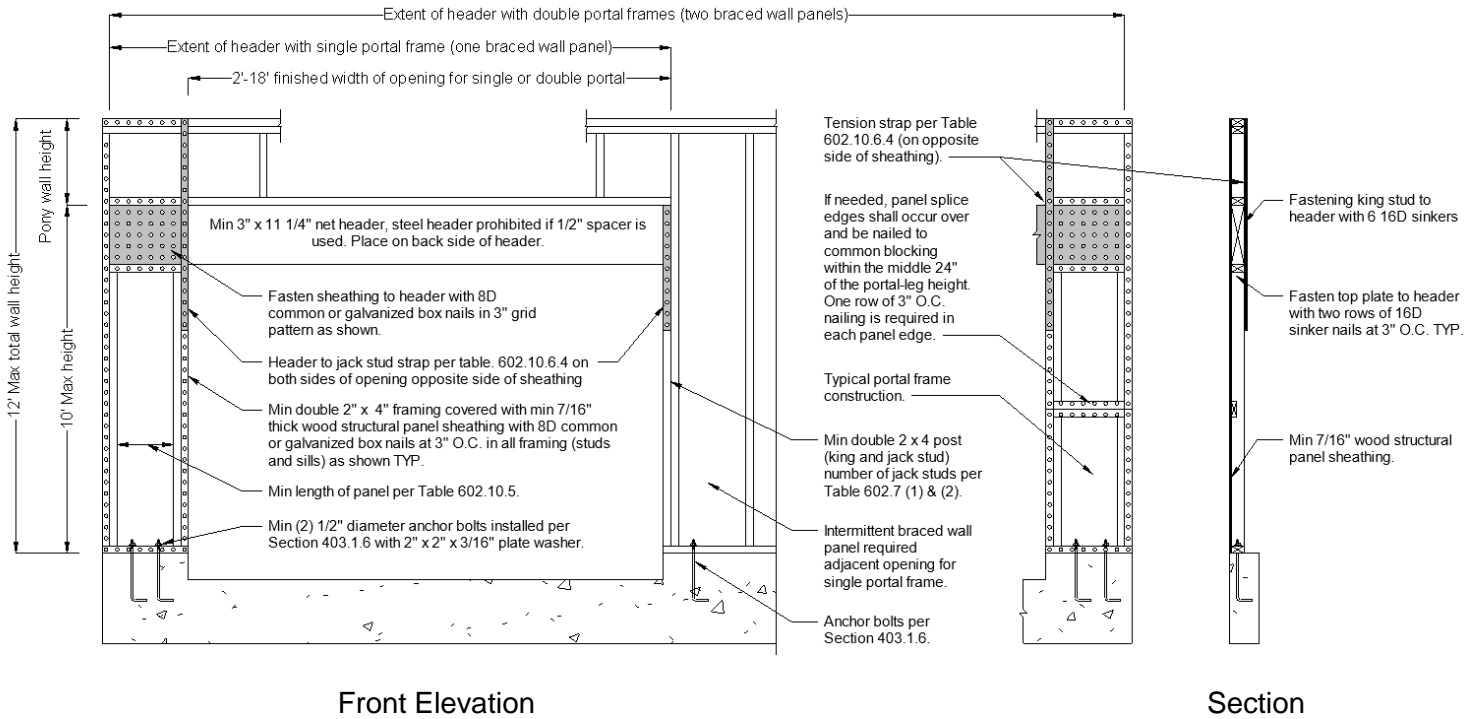
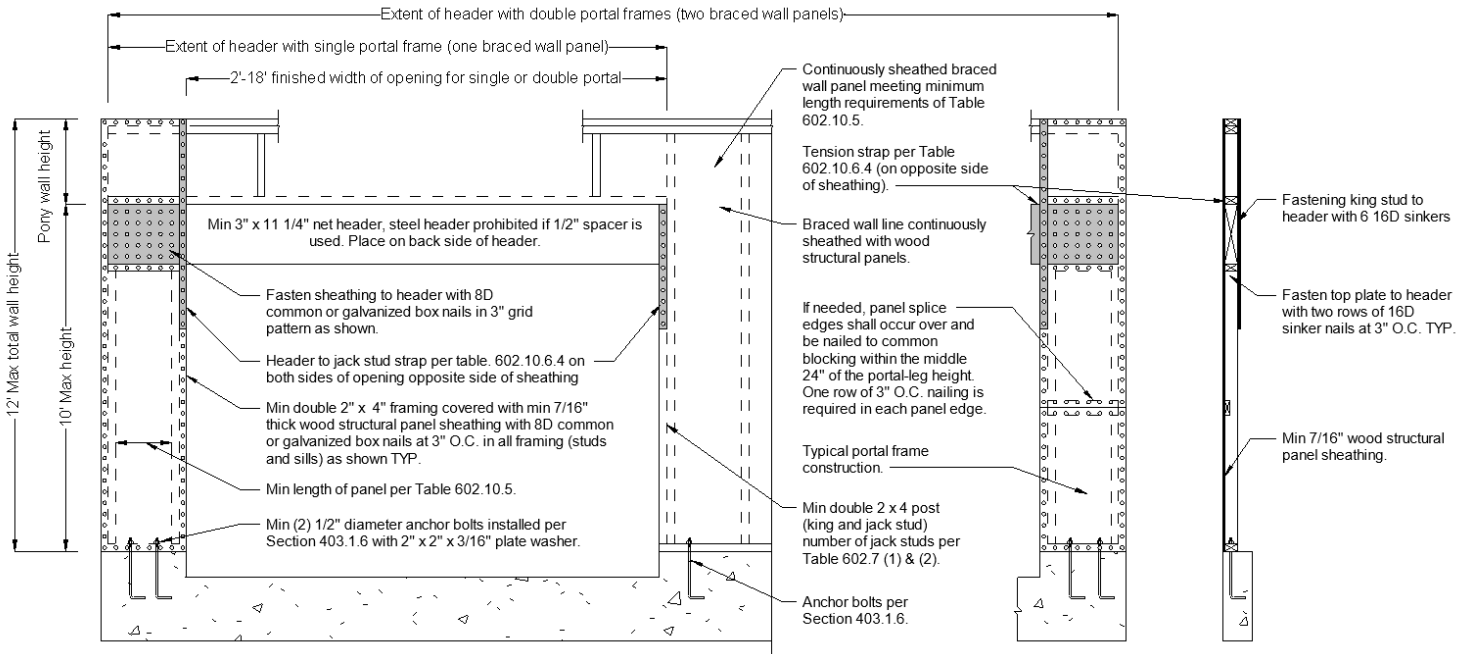


Figure 602.10.6.3

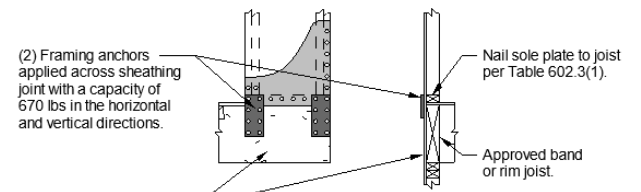
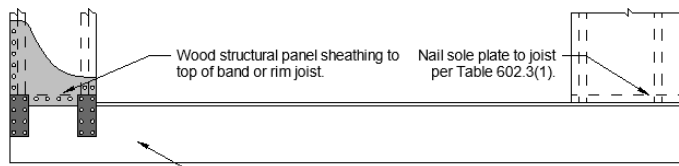
Method PFG – Portal Frame at Garage Door Openings in Seismic Design Categories A, B, and C

PORTAL FRAMES CONTINUED



Over Concrete or Masonry Block Foundation

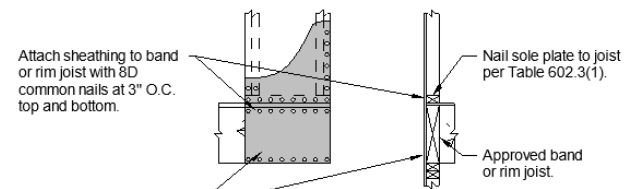
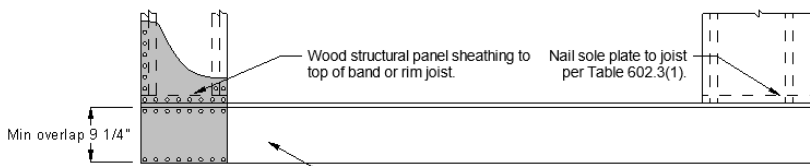
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Over Raised Wood Floor – Framing Anchor Option

Section

(where portal sheathing does not lap over band or rim joist)



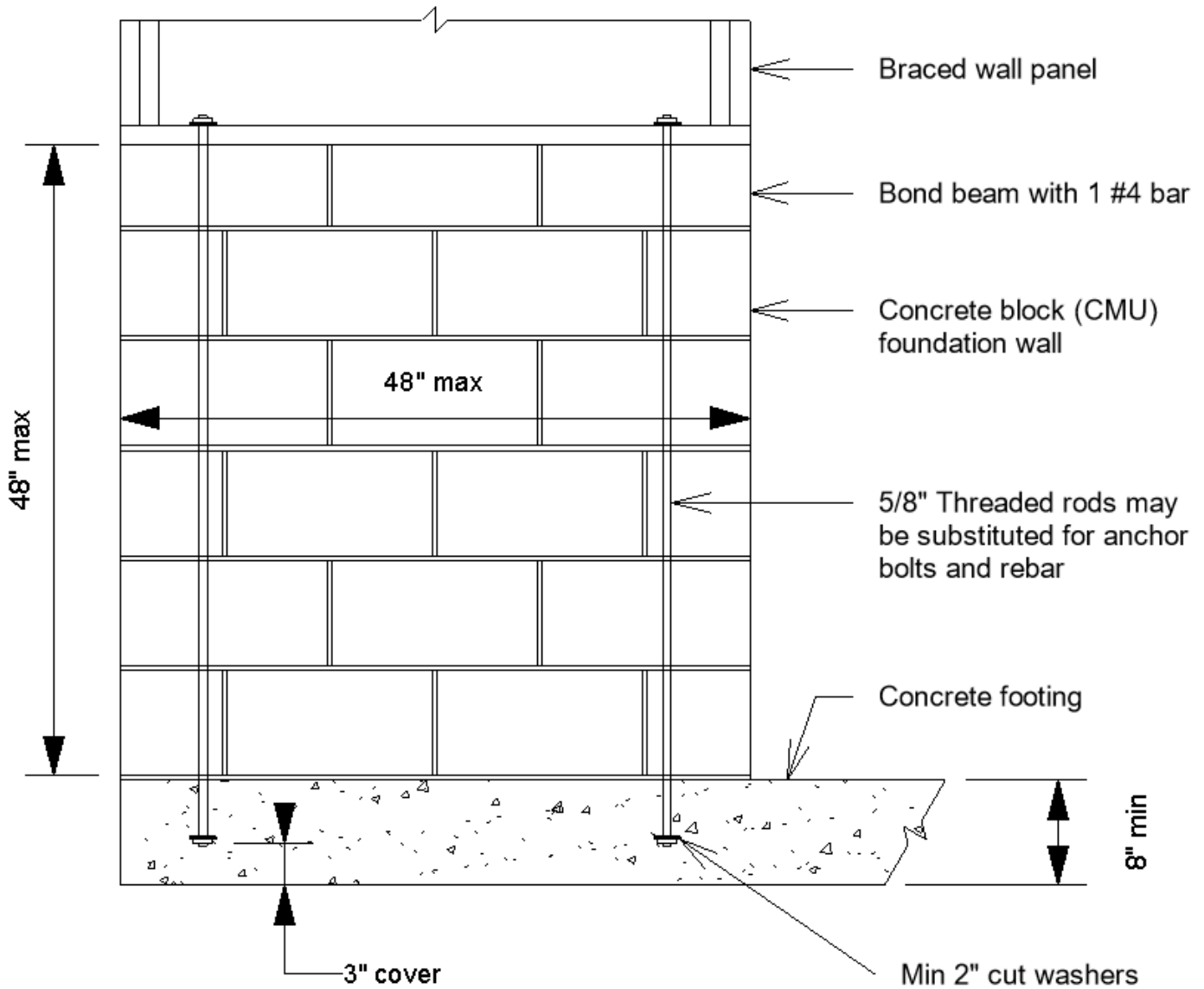
Over Raised Wood Floor – Overlap Option

Section

(where portal sheathing laps over band or rim joist)

Figure 602.10.6.4

Method CS-PF – Continuously Sheathed Portal Frame Panel Construction



Masonry Stem Wall Reinforcement Detail: Sample

GENERAL NOTES:

1. Masonry stem walls with a length of 48" or less supporting braced wall panels shall be reinforced with rebar per Fig 602.10.9 of as option shall allow threaded rod instead of anchor bolts and rebar.
2. Grout bond beams and all cells which contain rebar, threaded rods, and anchor bolts.
3. Stem wall definition: foundation wall from top of footing to top of foundation wall.