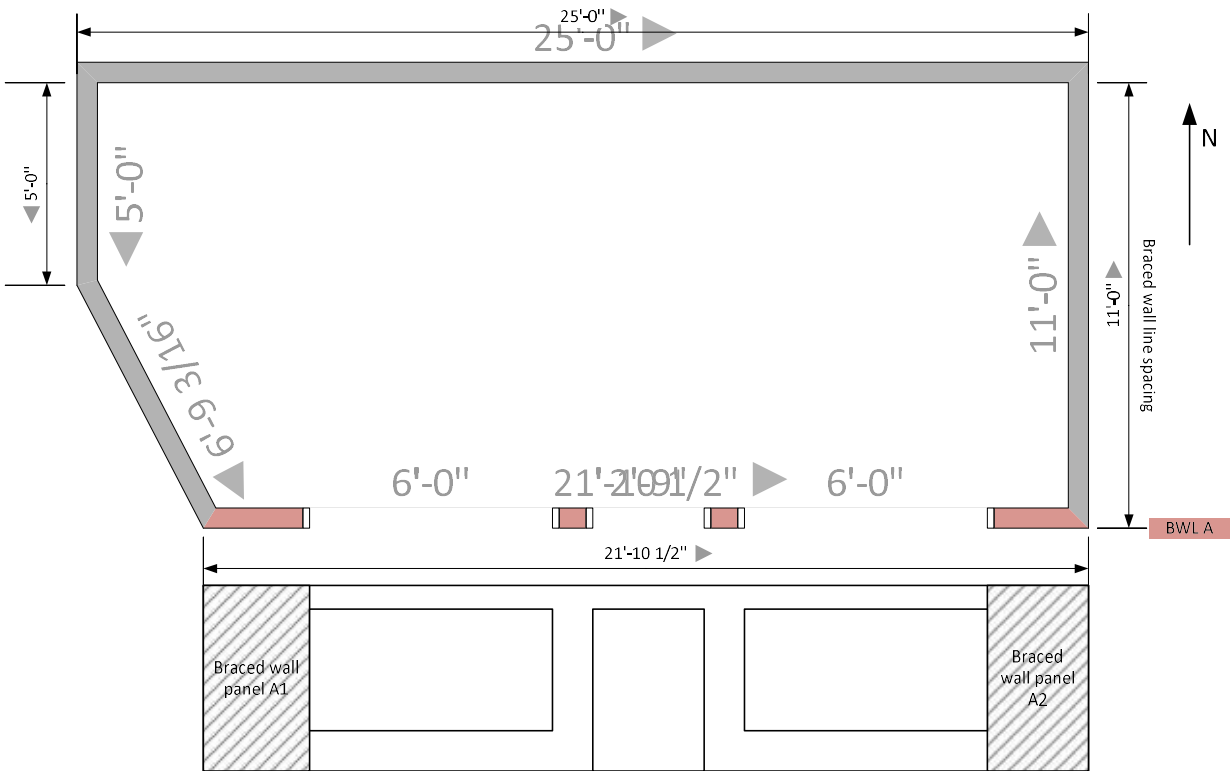


Braced wall length calculations



Braced wall length calculations for BWL A

Method: CS-WSP

Table R602.10.3(1)

Bracing requirements based on wind speed

Exposure category B			Min. tot. len. (ft.) of BW panels req. along each BWL
Basic wind speed (mph)	Story location	Braced wall line spacing (ft.)	Method CS-WSP
≤ 85	Ground, one-story structure	10	1.5
		11.3	1.69375
		20	3.0

Table R602.10.3(2)

Wind adjustment factors to the required length of wall bracing

Adjustment based on	Story/supporting	Condition	Adjustment factor	Method
Exposure category	One-story structure	B	1.00	All methods

Roof eave-to-ridge height	Roof only	≤ 5 feet	0.70	
Wall height adjustment	Any story	9 feet	0.95	
Number of BWLs	Any story	2	1.00	

Total adjustment factor = $1.00 \times 0.70 \times 0.95 \times 1.00 = 0.665$

Adjusted braced wall line length = $1.69375 \times 0.665 = 1.13$ feet

Table R602.10.3(3)

Bracing requirements based on seismic design category

Soil class D Wall height = 10 feet 10 psf floor dead load 15 psf rood/ceiling dead load BWL spacing ≤ 25 feet			Min. tot. len. (ft.) of BW panels req. along each BWL
Seismic design category	Story location	BWL length (feet)	Method CS-WSP
D ₂	Ground, one-story structure	20	4.3
		25	5.35
		30	6.4

Table R602.10.3(4)

Seismic adjustment factors to the required length of wall bracing

Adjustment based on	Story/supporting	Condition	Adjustment factor	Method
Story height	Any story	≤ 10 feet	1.0	All methods
BWL spacing in SDC D ₂	Any story	≤ 25 feet	1.0	
Wall dead load	Any story	> 8 psf and < 15 psf	1.0	
Roof/ceiling dead load for wall supporting	Roof only	≤ 15 psf	1.0	

Total adjustment factor = 1.0

Adjusted braced wall line length = $5.35 \times 1.0 = 5.35$ feet

Final adjusted braced wall line length = 5.35 feet = 64 inches

Table R602.10.5

Minimum length of braced wall panels

Method		Minimum length (inches)			Contributing length (inches)
		Wall height			
		8 feet	8.5 feet	9 feet	
CS-WSP	Adjacent clear opening height (inches)				
	≤ 64	24	25.5	27	Actual
	68	26	26.5	27	
	72	27	<u>27</u>	27	

There will be two braced wall panels, one at each end of BWL A.

Length of braced wall panel A1 = 28 inches

Length of braced wall panel A2 = 36 inches