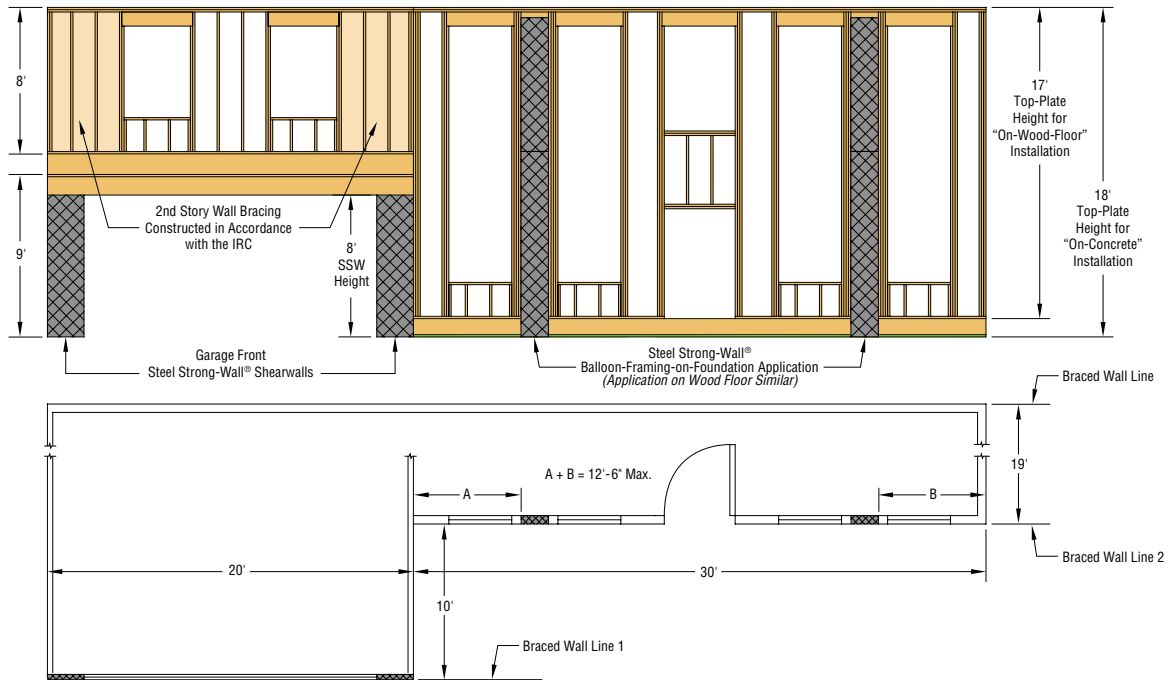


# Wall-Bracing Design Example



## DESIGN CRITERIA

- 2009 IRC
- Basic Wind Speed – 90 mph in Non-HPR Exposure Category B
- With masonry veneer
- Seismic Design Category B
- 3 Braced wall lines at 10' and 19' spacing
- 8' Eave-to-ridge height
- 8" Wide concrete stemwall,  $f'_c = 2500$  psi

## STEP 1 – DETERMINE REQUIRED WALL BRACING

Using the Wall-Bracing-Length Calculator at [www.strongtie.com](http://www.strongtie.com), the required length is:

### Braced Wall Line 1 (Garage Front):

First Story: 4.6' (based on 9' wall height)  
Second Story: 4.0' (based on 8' wall height)

### Braced Wall Line 2 (Balloon Framing):

First Story: 7.9' (based on 8' wall height)  
Note: The required length of bracing for balloon framing is based on the required length for the first story assuming the balloon wall counts as the bracing for both stories.

Use Strong-Wall® shearwall replacements at Braced Wall Line 1 first story and at Braced Wall Line 2.

## STEP 2 – DETERMINE YOUR JOBSITE CATEGORY

Wind

## STEP 3 – SELECT THE STRONG-WALL® SHEARWALL AND ANCHORAGE CLASSIFICATION

### Braced Wall Line 1

Concrete base material  
Garage Front (First of two story)  
Wind  
Go to pages 20-21



Option 1: Two 2.5' equivalent walls  
Two SSW12x8 w/ SSWP-KT  
Anchorage Classification B

Option 2: One 6.0' equivalent wall  
One SSW24x8  
Anchorage Classification C

Choose option 1 to limit anchorage forces into stemwall. Additional options are available.

### Braced Wall Line 2

Concrete base material  
Balloon Framing on Foundation  
Wind  
Go to page 29



Option 1: Two 4' equivalent walls  
Two SSW18x8 w/ SSWBF-KT on SSW18x10-STK  
Anchorage Classification E

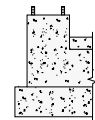
Option 2: Two 4' equivalent walls  
Two SSW21x8 w/ SSWBF-KT on SSW21x10-STK  
Anchorage Classification D

Choose Option 2 to limit anchorage forces into stemwall. Additional options are available.

## STEP 4 – SELECT AN ANCHORAGE SOLUTION

### Braced Wall Line 1:

Concrete Stemwall (Anchorage into Wall)  
Garage Front  
SSW12x8  
Go to page 60



2500 psi, Anchorage Classification B  
Use SSWAB $\frac{3}{4}$  with 24" embedment or  $\frac{3}{4}$ " diameter adhesive anchor with 16" embedment.

### Braced Wall Line 2:

Concrete Stemwall (Anchorage into Wall)  
Perimeter  
SSW21x8  
Go to page 64



2500 psi, Anchorage Classification D  
Use SB1x30 with 24" embedment or 1" diameter adhesive anchor with 20" embedment (interior installation).

Refer to the anchorage sections for additional requirements.

## SUMMARY

### Braced Wall Line 1:

Two SSW12x8 w/ SSWP-KT  
Anchor with SSWAB $\frac{3}{4}$ x30 ( $l_e = 24"$ ) or  $\frac{3}{4}$ " diameter adhesive anchor with 16" embedment using Simpson Strong-Tie® SET, SET-XP™, or AT adhesive.

### Braced Wall Line 2:

Two SSW21x8 w/ SSWBF-KT on SSW21x10-STK  
Anchor with SB1x30 ( $l_e = 24"$ ) or 1" diameter adhesive anchor with 20" embedment interior installation using Simpson Strong-Tie® SET, SET-XP™, or AT adhesive.