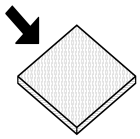
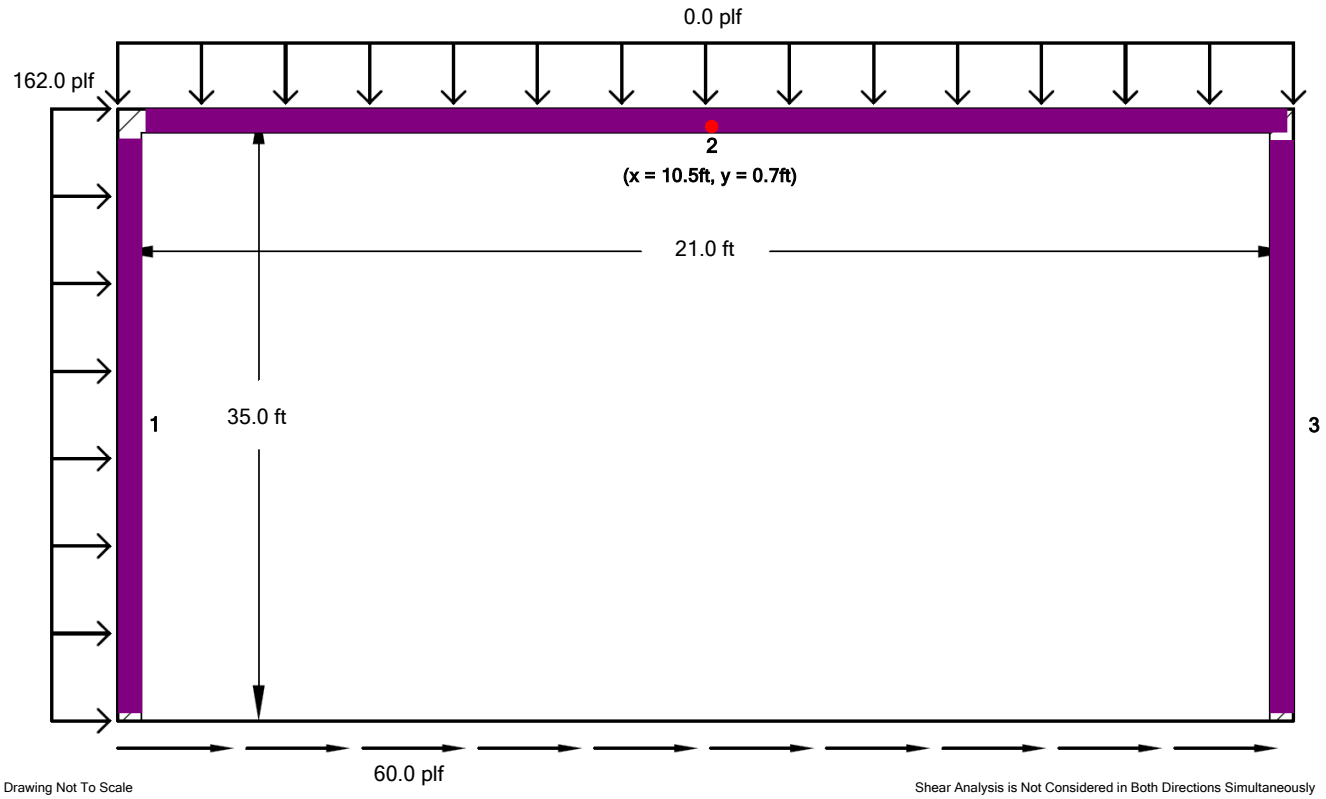


Cantilevered Diaphragm Design Summary

Diaphragm Design Summary				
Diaphragm Loading	**Critical Shear**	**Chord Forces**	**Diaphragm Deflection**	**Diaphragm Aspect Ratio**
Depth Loading	248.47 plf (83%)	2835.0 lbs (29%)	1.207 in	1.67 (56%)
Width Loading	0.00 plf (0%)	0.0 lbs (0%)	0.000 in	1.67 (56%)

Shear Wall Design Summary					
Wall ID	**Design Shear**	**Chord Forces**	**Hold Down Capacity**	**Wall Deflection**	**Wall Aspect Ratio**
Depth Loading - Wall #1	151.69 plf (42%)	1365.21 lbs (13%)	1365.21 lbs (44%)	0.176 in (39%)	0.27 (8%)
Depth Loading - Wall #2	252.38 plf (69%)	2271.46 lbs (22%)	2271.46 lbs (73%)	0.320 in (71%)	0.44 (12%)
Depth Loading - Wall #3	-151.69 plf (42%)	-1365.23 lbs (13%)	-1365.23 lbs (44%)	-0.177 in (39%)	0.27 (8%)
Width Loading - Wall #1	0.00 plf (0%)	0.00 lbs (0%)	0.00 lbs (0%)	0.000 in (0%)	0.27 (8%)
Width Loading - Wall #2	0.00 plf (0%)	0.00 lbs (0%)	0.00 lbs (0%)	0.000 in (0%)	0.44 (12%)
Width Loading - Wall #3	0.00 plf (0%)	0.00 lbs (0%)	0.00 lbs (0%)	0.000 in (0%)	0.27 (8%)

2015 SDPWS Cantilevered Diaphragm Design - Depth Loading



Drawing Not To Scale

Shear Analysis is Not Considered in Both Directions Simultaneously

Diaphragm Type	Framing Species	Panel Thickness	Nail Size/Spacing	Load Case	Construction Method	Diaphragm Capacity
Standard Diaphragm	Douglas Fir	23/32"	10d at 6"	Case 1 & 3	Unblocked	300.0 plf

Shear - Left Line	Shear - Right Line	Shear - Top Line	Shear - Bottom Line	Diaphragm Deflection	Aspect Ratio
147.1 plf (49%)	-146.7 plf (49%)	248.5 plf (83%)	46.8 plf (16%)	1.21 in @ 35.0 ft	1.67 (56%)

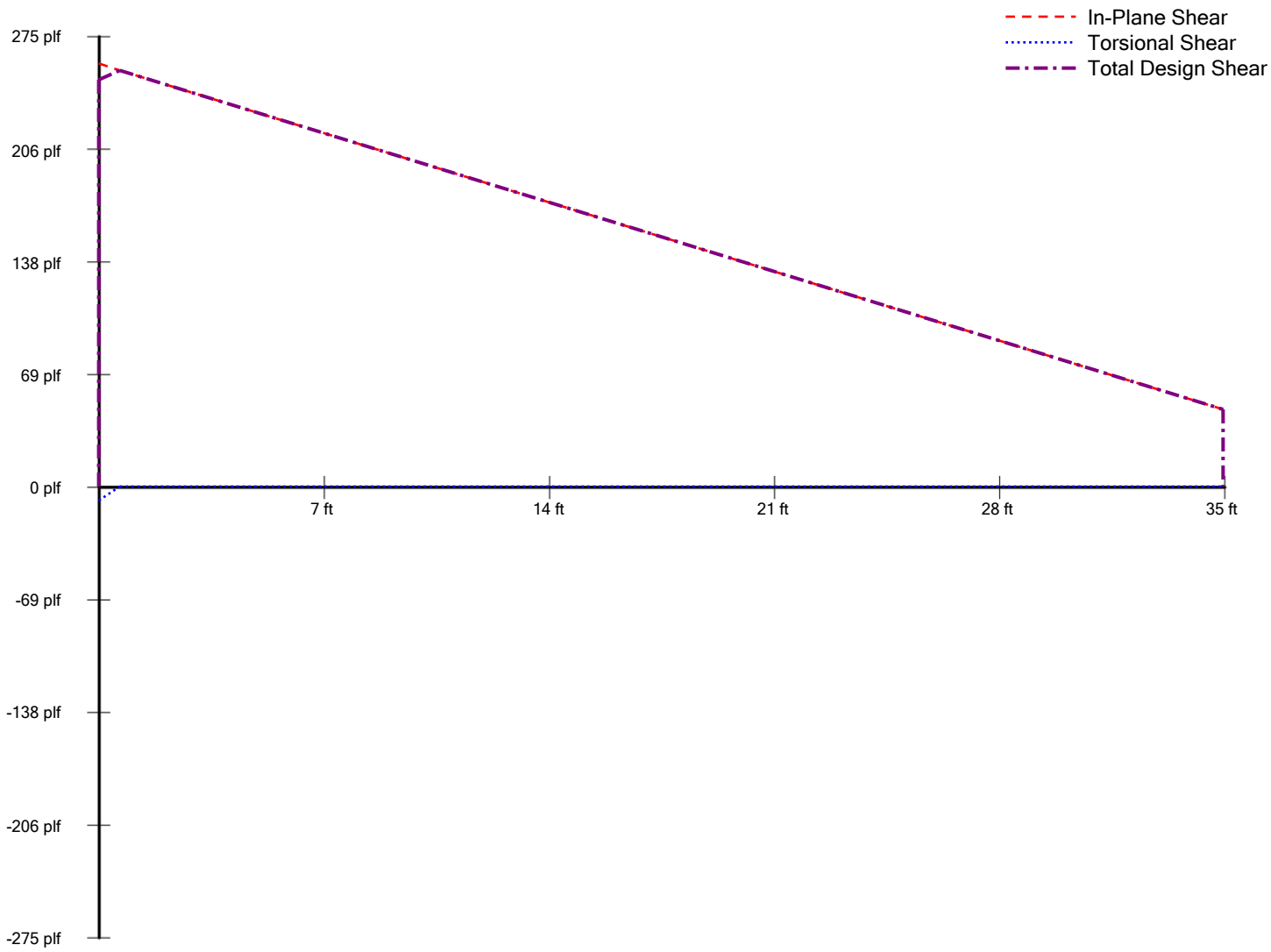
- Design loads indicated in this table have been adjusted for Allowable Stress Design, and include contributions from diaphragm shear and rigid torsional effects.
- Design diaphragm deflection is calculated assuming OSB sheathing installed in dry service conditions. If plywood sheathing is used, diaphragm shear stiffness will be reduced, which may increase diaphragm deflection.
- Deflection values are determined using design strength level wind loads.
- Design torsional loads have been increased per the amplification of accidental torsion factor (Ax) with a value of 1.531.
- Total design torsional distance from diaphragm center of rigidity, including amplification of accidental torsion and user defined torsion, is 16.82 ft.
- This diaphragm has a horizontal structural irregularity Type 1b as defined in Table 12.3-1 in ASCE 7-16. This diaphragm is not permitted in seismic design categories E or F.
- This torsionally irregular structure has an aspect ratio of 1.67 which exceeds allowances per SDPWS Section 4.2.5.1.

Splice Length	Design Moment	Splice Tension	Splice Capacity	Min. Nail Count	Nail Size
16.0 ft	59535.0 ft-lbs	2835.0 lbs (97%)	2932.8 lbs	13	16d Common (0.162" x 3.5")

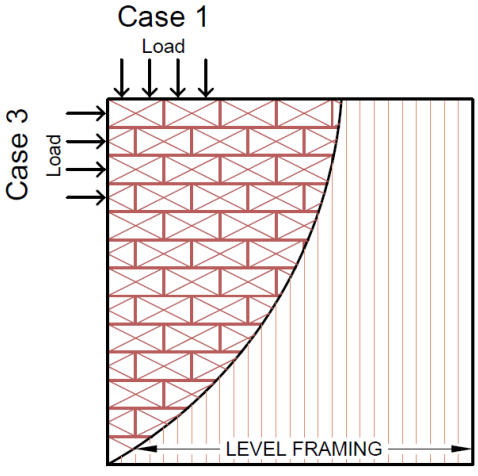
- Nail count is determined at each edge of splice. The splice assembly will require twice the nail count as indicated above to tie each end of splice together.

Diaphragm Moment	Moment Location	Chord Tension	Allowable Tension	Chord Compression	Allowable Compression
59535.0 ft-lbs	17.50 ft From Top	2835.0 lbs (29%)	9867.0 lbs	2835.0 lbs (15%)	19274.1 lbs

2015 SDPWS Cantilevered Diaphragm Design - Depth Loading

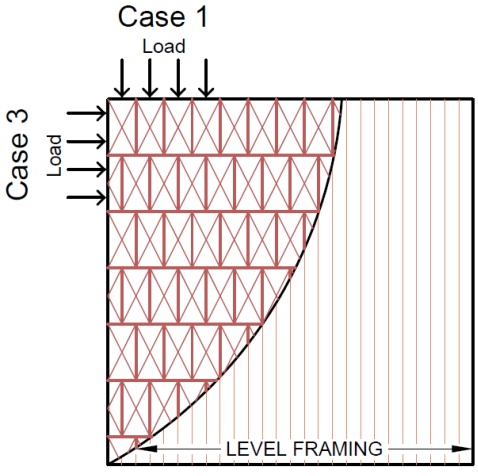


LONG PANEL DIRECTION PERPENDICULAR TO SUPPORTS



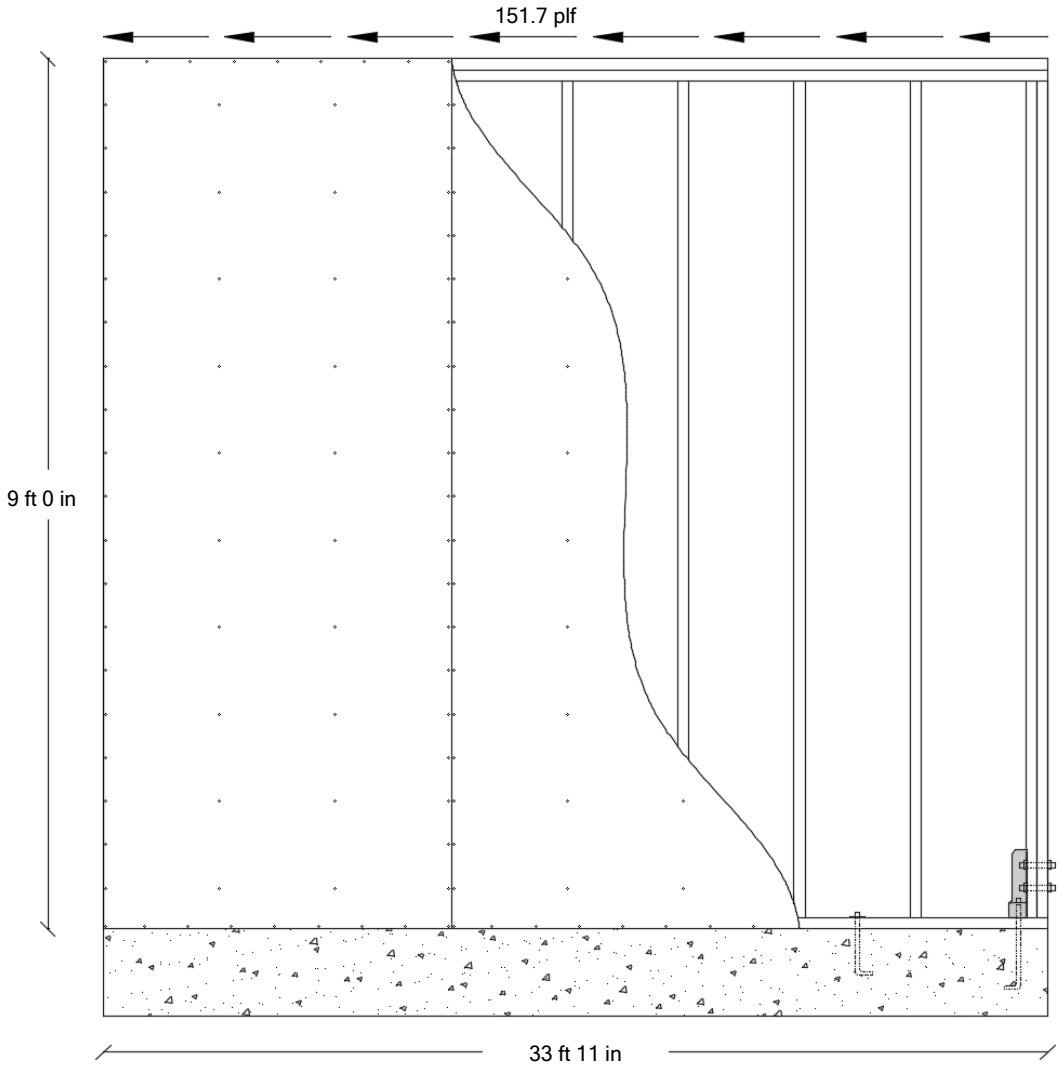
CASE 1 & CASE 3 - UNBLOCKED

LONG PANEL DIRECTION PARALLEL TO SUPPORTS



CASE 1 & CASE 3 - UNBLOCKED

Shear Wall #1 Design - Depth Loading



This drawing is conceptual. Actual construction methods & dimensions may differ from that which is shown above.

Stud Species	Panel Thickness	Nail Size	Edge Nail Spacing	Construction Type	Wall Capacity	Stud Size	Stud Spacing
Douglas Fir	7/16"	8d	6"	Single Panel	365 plf	2x6	16 in

Wall Aspect Ratio	Torsional Load	Diaphragm Shear	Total Design Load	Wall Deflection	Allowable Deflection
0.27 (8%)	5147.8 lbs	0.0 lbs	151.69 plf (42%)	0.176 in (39%)	0.450 in

- Design loads indicated in this table have been adjusted for Allowable Stress Design.
- Allowable deflection limits are determined per Table 12.12-1 of ASCE 7-16. More stringent deflection criteria may be required for windows, doors, or other finish material.
- Design wall deflection is calculated assuming OSB wall sheathing installed in dry service conditions. If plywood sheathing is used, wall shear stiffness will be reduced, which may increase the design wall deflection.
- Deflection values are determined using design strength level wind loads. Deflection limits are set to a value of L/240.
- Design torsional loads have been increased per the amplification of accidental torsion factor (Ax) with a value of 1.531.

Chord Size	Design Tension	Allowable Tension	Allowable Chord Compression	Design Plate Compression	Allowable Plate Compression
Double 2x6 Douglas Fir	1365.21 lbs (8%)	19734.0 lbs	17554.6 lbs	1365.21 lbs (13%)	10312.5 lbs

- All wall framing analysis is determined assuming visual grade #2 lumber.
- Plate compression does not consider compression performance of floor sheathing. Additional analysis may be necessary to accomodate sheathing compression allowance.
- A 0.6 design adjustment has been taken to chord compression to accomodate this multi-ply assembly.

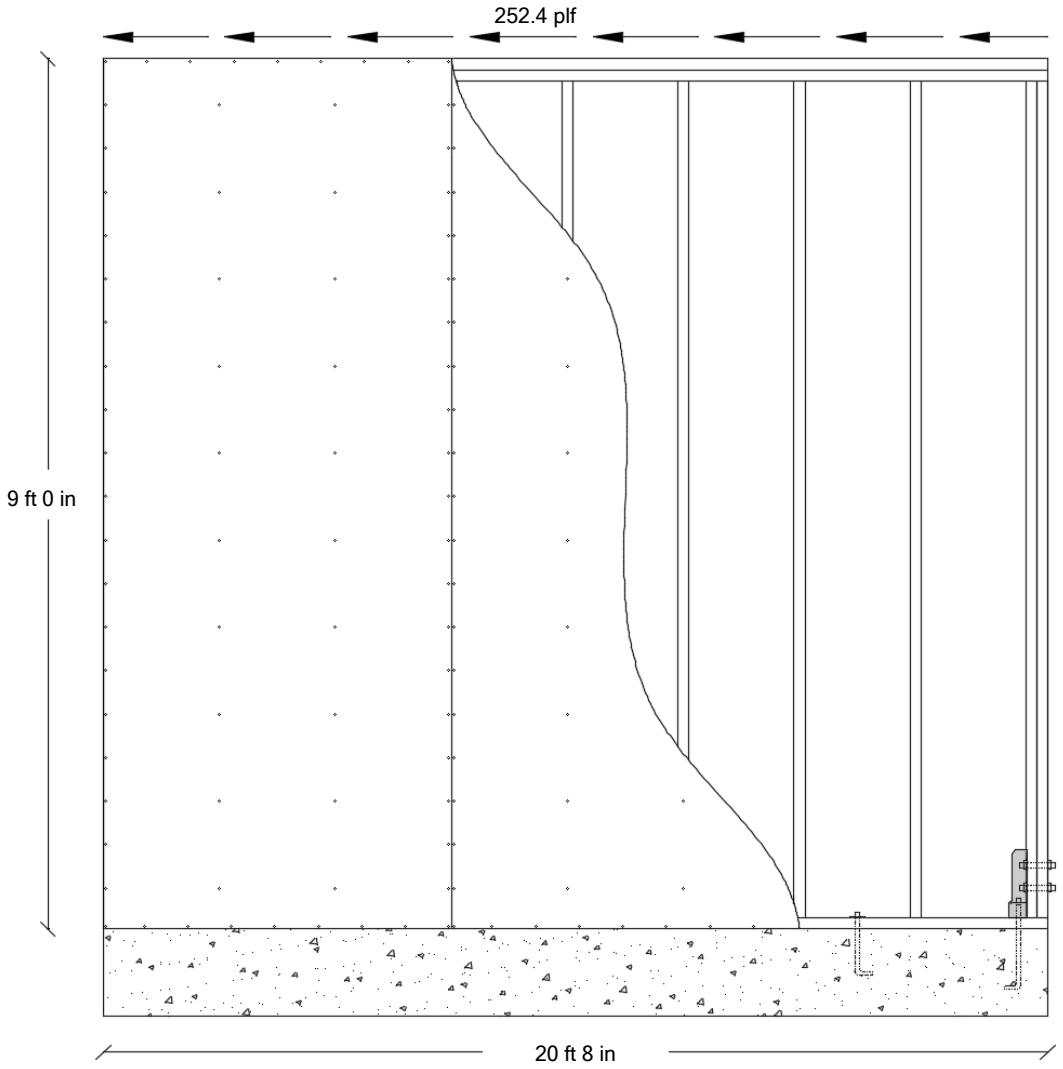
Hold Down	Design Tension	Tension Capacity	Design Deflection	Allowable Deflection
HD3B	1365.21 lbs (44%)	3130.0 lbs	0.052 in (44%)	0.120 in

- Hold down tension loads have not been adjusted for the stabilizing moment induced by design dead load overtop this shear wall.

Total Design Load	Anchor Bolt Size	Anchor Bolt Spacing	Washer Size	Nail Size	Nail Spacing
151.7 plf	5/8"	117 in	Standard cut washer	16d Common	17 in

- Use either the anchor bolt or nailed connection options listed above, dependent upon what structural support is below this shear wall.
- Nail spacing shows 16d common installed in a single row. This spacing does not account for additional load from walls at levels above, and may be increased if rim board and plate below can accommodate multiple rows of fasteners.

Shear Wall #2 Design - Depth Loading



This drawing is conceptual. Actual construction methods & dimensions may differ from that which is shown above.

Stud Species	Panel Thickness	Nail Size	Edge Nail Spacing	Construction Type	Wall Capacity	Stud Size	Stud Spacing
Douglas Fir	7/16"	8d	6"	Single Panel	365 plf	2x6	16 in

Wall Aspect Ratio	Torsional Load	Diaphragm Shear	Total Design Load	Wall Deflection	Allowable Deflection
0.44 (12%)	-187.6 lbs	5405.4 lbs	252.38 plf (69%)	0.320 in (71%)	0.450 in

- Design loads indicated in this table have been adjusted for Allowable Stress Design.
- Allowable deflection limits are determined per Table 12.12-1 of ASCE 7-16. More stringent deflection criteria may be required for windows, doors, or other finish material.
- Design wall deflection is calculated assuming OSB wall sheathing installed in dry service conditions. If plywood sheathing is used, wall shear stiffness will be reduced, which may increase the design wall deflection.
- Deflection values are determined using design strength level wind loads. Deflection limits are set to a value of L/240.
- Design torsional loads have been increased per the amplification of accidental torsion factor (Ax) with a value of 1.531.

Chord Size	Design Tension	Allowable Tension	Allowable Chord Compression	Design Plate Compression	Allowable Plate Compression
Double 2x6 Douglas Fir	2271.46 lbs (13%)	19734.0 lbs	17554.6 lbs	2271.46 lbs (22%)	10312.5 lbs

- All wall framing analysis is determined assuming visual grade #2 lumber.
- Plate compression does not consider compression performance of floor sheathing. Additional analysis may be necessary to accomodate sheathing compression allowance.
- A 0.6 design adjustment has been taken to chord compression to accomodate this multi-ply assembly.

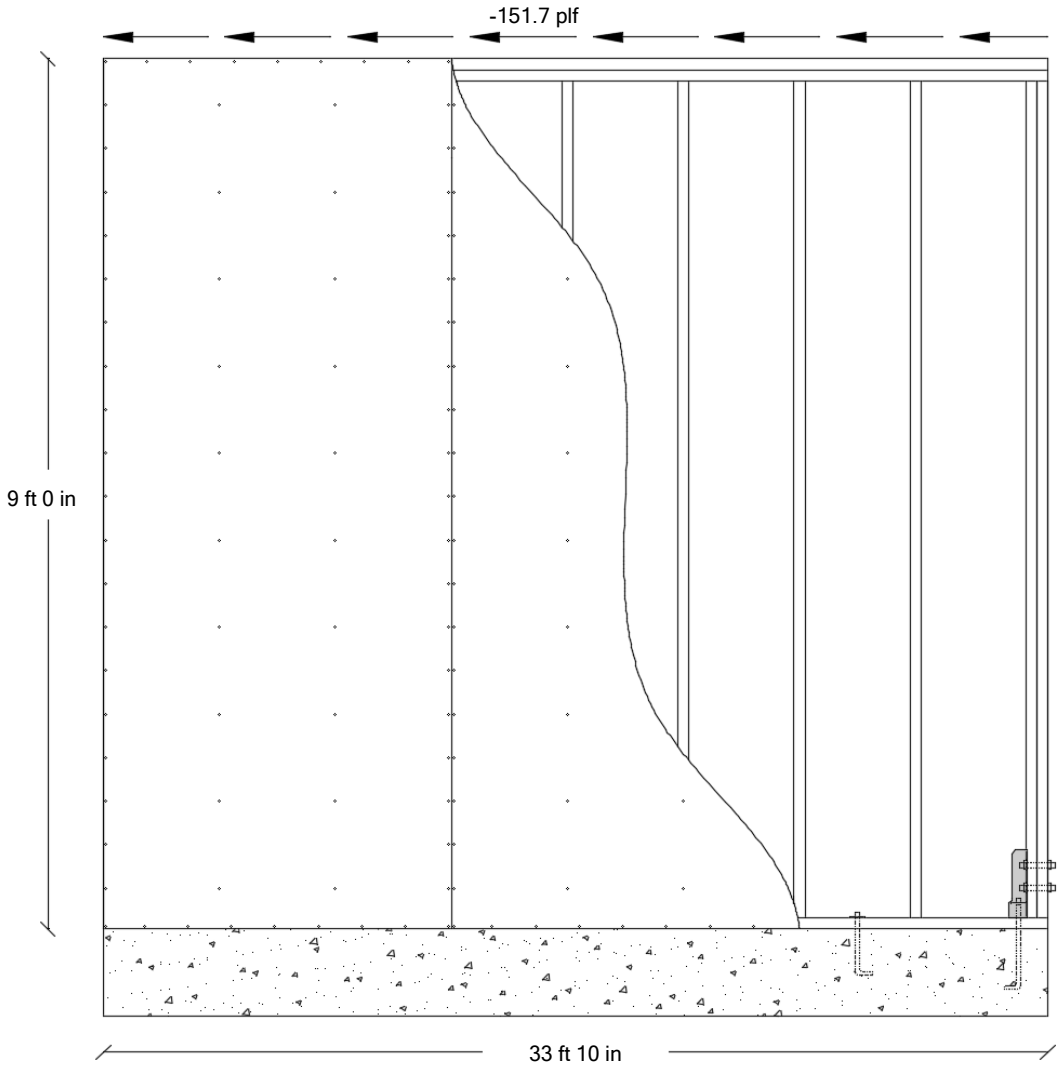
Hold Down	Design Tension	Tension Capacity	Design Deflection	Allowable Deflection
HD3B	2271.46 lbs (73%)	3130.0 lbs	0.087 in (73%)	0.120 in

- Hold down tension loads have not been adjusted for the stabilizing moment induced by design dead load overtop this shear wall.

Total Design Load	Anchor Bolt Size	Anchor Bolt Spacing	Washer Size	Nail Size	Nail Spacing
252.4 plf	5/8"	70 in	Standard cut washer	16d Common	10 in

- Use either the anchor bolt or nailed connection options listed above, dependent upon what structural support is below this shear wall.
- Nail spacing shows 16d common installed in a single row. This spacing does not account for additional load from walls at levels above, and may be increased if rim board and plate below can accommodate multiple rows of fasteners.

Shear Wall #3 Design - Depth Loading



This drawing is conceptual. Actual construction methods & dimensions may differ from that which is shown above.

Stud Species	Panel Thickness	Nail Size	Edge Nail Spacing	Construction Type	Wall Capacity	Stud Size	Stud Spacing
Douglas Fir	7/16"	8d	6"	Single Panel	365 plf	2x6	16 in

Wall Aspect Ratio	Torsional Load	Diaphragm Shear	Total Design Load	Wall Deflection	Allowable Deflection
0.27 (8%)	-5134.5 lbs	0.0 lbs	-151.69 plf (42%)	-0.177 in (39%)	0.450 in

- Design loads indicated in this table have been adjusted for Allowable Stress Design.
- Allowable deflection limits are determined per Table 12.12-1 of ASCE 7-16. More stringent deflection criteria may be required for windows, doors, or other finish material.
- Design wall deflection is calculated assuming OSB wall sheathing installed in dry service conditions. If plywood sheathing is used, wall shear stiffness will be reduced, which may increase the design wall deflection.
- Deflection values are determined using design strength level wind loads. Deflection limits are set to a value of L/240.
- Design torsional loads have been increased per the amplification of accidental torsion factor (Ax) with a value of 1.531.

Chord Size	Design Tension	Allowable Tension	Allowable Chord Compression	Design Plate Compression	Allowable Plate Compression
Double 2x6 Douglas Fir	1365.23 lbs (8%)	19734.0 lbs	17554.6 lbs	1365.23 lbs (13%)	10312.5 lbs

- All wall framing analysis is determined assuming visual grade #2 lumber.
- Plate compression does not consider compression performance of floor sheathing. Additional analysis may be necessary to accomodate sheathing compression allowance.
- A 0.6 design adjustment has been taken to chord compression to accomodate this multi-ply assembly.

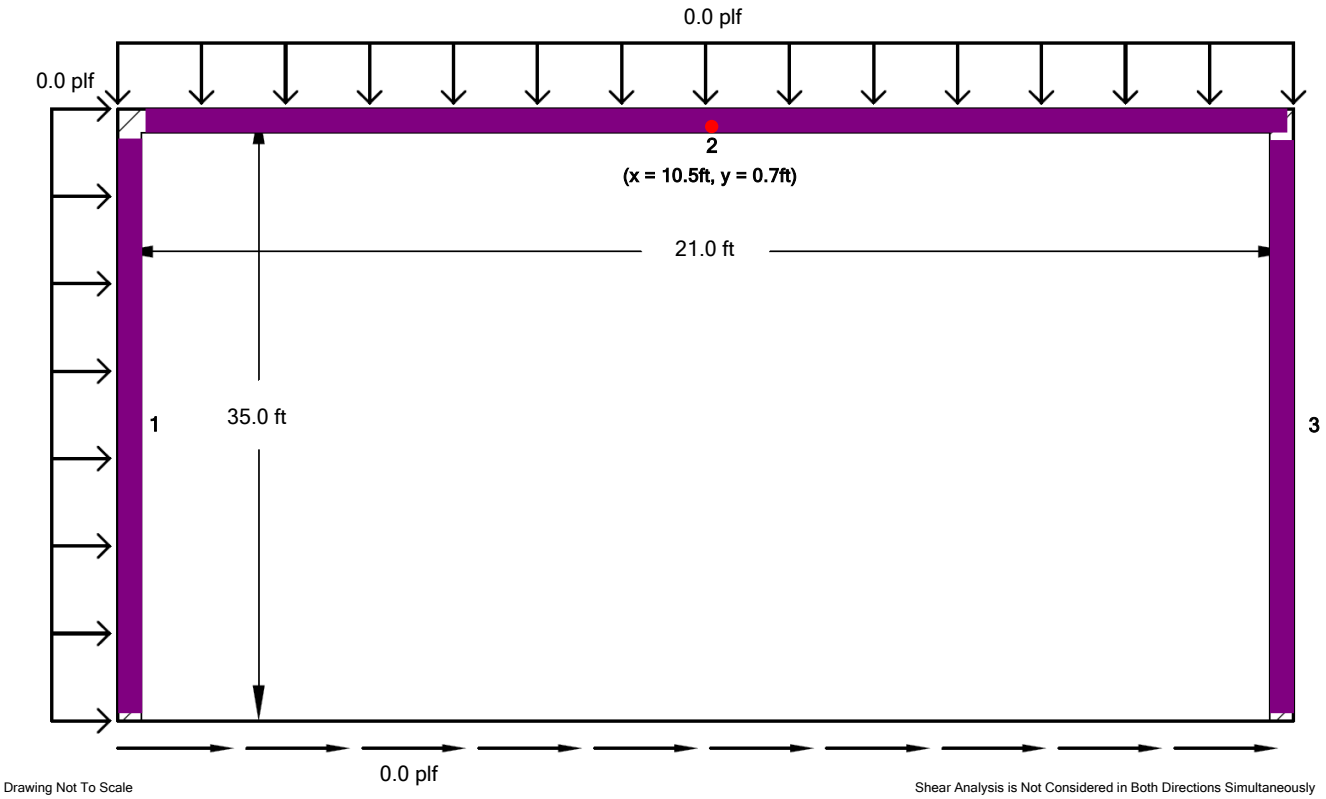
Hold Down	Design Tension	Tension Capacity	Design Deflection	Allowable Deflection
HD3B	1365.23 lbs (44%)	3130.0 lbs	0.052 in (44%)	0.120 in

- Hold down tension loads have not been adjusted for the stabilizing moment induced by design dead load overtop this shear wall.

Total Design Load	Anchor Bolt Size	Anchor Bolt Spacing	Washer Size	Nail Size	Nail Spacing
-151.7 plf	5/8"	117 in	Standard cut washer	16d Common	17 in

- Use either the anchor bolt or nailed connection options listed above, dependent upon what structural support is below this shear wall.
- Nail spacing shows 16d common installed in a single row. This spacing does not account for additional load from walls at levels above, and may be increased if rim board and plate below can accommodate multiple rows of fasteners.

2015 SDPWS Cantilevered Diaphragm Design - Width Loading



Drawing Not To Scale

Shear Analysis is Not Considered in Both Directions Simultaneously

Diaphragm Type	Framing Species	Panel Thickness	Nail Size/Spacing	Load Case	Construction Method	Diaphragm Capacity
Standard Diaphragm	Douglas Fir	23/32"	10d at 6"	Case 1 & 3	Unblocked	300.0 plf

Shear - Left Line	Shear - Right Line	Shear - Top Line	Shear - Bottom Line	Diaphragm Deflection	Aspect Ratio
0.0 plf (0%)	0.0 plf (0%)	0.0 plf (0%)	0.0 plf (0%)	0.00 in @ 10.5 ft	1.67 (56%)

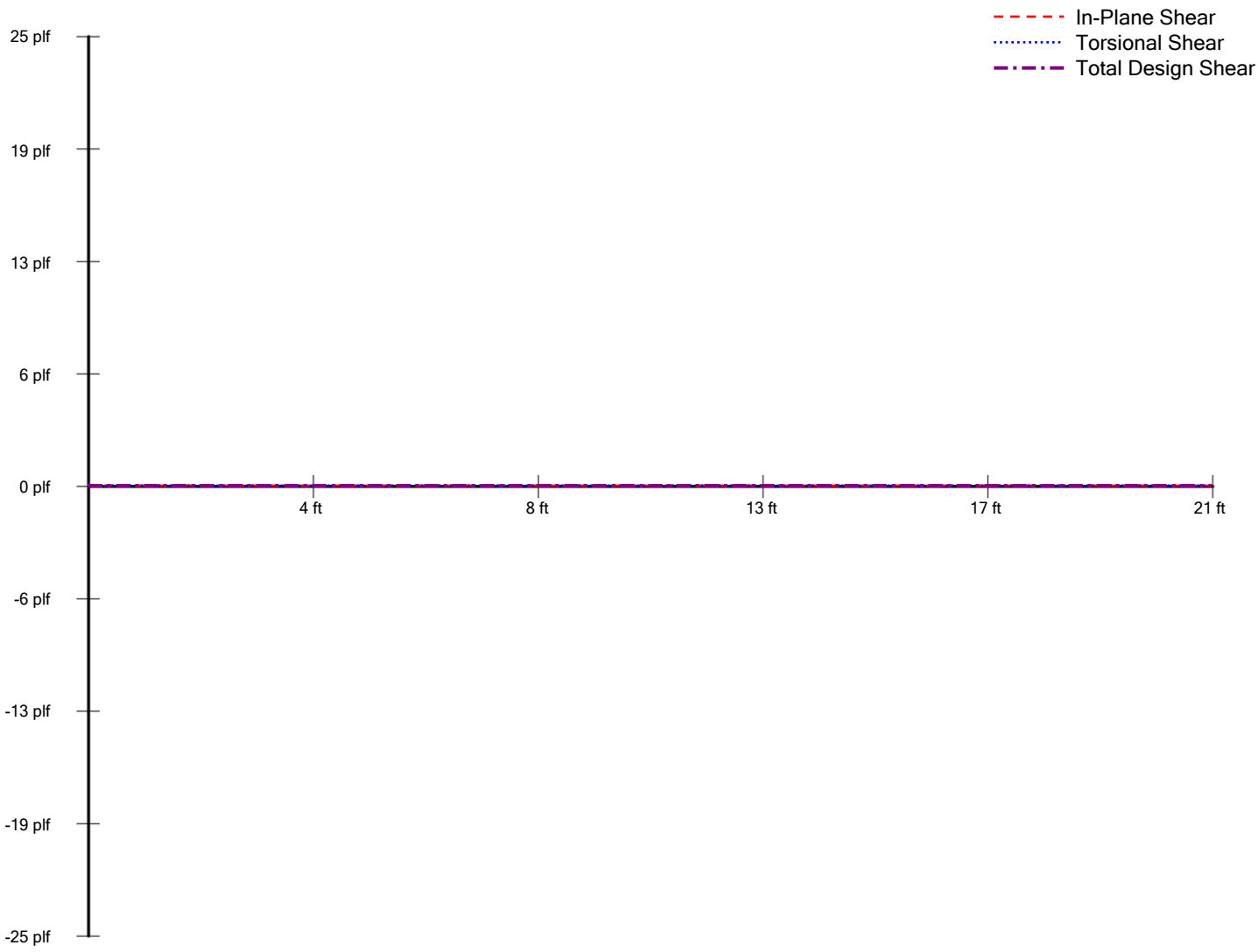
- Design loads indicated in this table have been adjusted for Allowable Stress Design, and include contributions from diaphragm shear and rigid torsional effects.
- Design diaphragm deflection is calculated assuming OSB sheathing installed in dry service conditions. If plywood sheathing is used, diaphragm shear stiffness will be reduced, which may increase diaphragm deflection.
- Deflection values are determined using design strength level wind loads.
- Design torsional loads have been increased per the amplification of accidental torsion factor (Ax) with a value of 2.641.
- Total design torsional distance from diaphragm center of rigidity, including amplification of accidental torsion and user defined torsion, is 0.00 ft.
- This diaphragm has a horizontal structural irregularity Type 1b as defined in Table 12.3-1 in ASCE 7-16. This diaphragm is not permitted in seismic design categories E or F.
- This torsionally irregular structure has an aspect ratio of 1.67 which exceeds allowances per SDPWS Section 4.2.5.1.

Splice Length	Design Moment	Splice Tension	Splice Capacity	Min. Nail Count	Nail Size
16.0 ft	0.0 ft-lbs	0.0 lbs (0%)	225.6 lbs	1	16d Common (0.162" x 3.5")

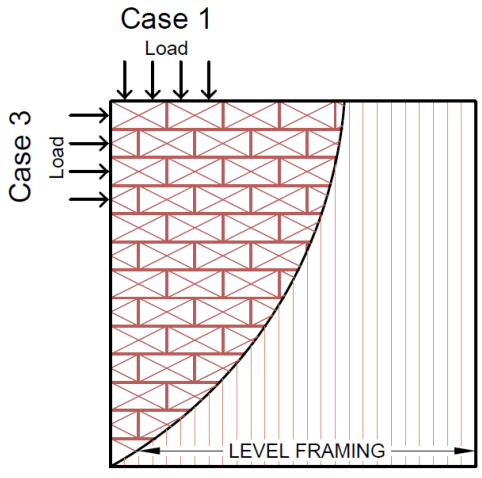
- Nail count is determined at each edge of splice. The splice assembly will require twice the nail count as indicated above to tie each end of splice together.

Diaphragm Moment	Moment Location	Chord Tension	Allowable Tension	Chord Compression	Allowable Compression
0.0 ft-lbs	10.50 ft From Left	0.0 lbs (0%)	9867.0 lbs	0.0 lbs (0%)	19274.1 lbs

2015 SDPWS Cantilevered Diaphragm Design - Width Loading

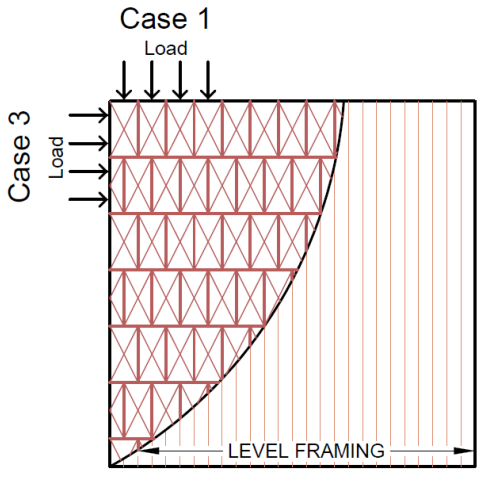


LONG PANEL DIRECTION PERPENDICULAR TO SUPPORTS



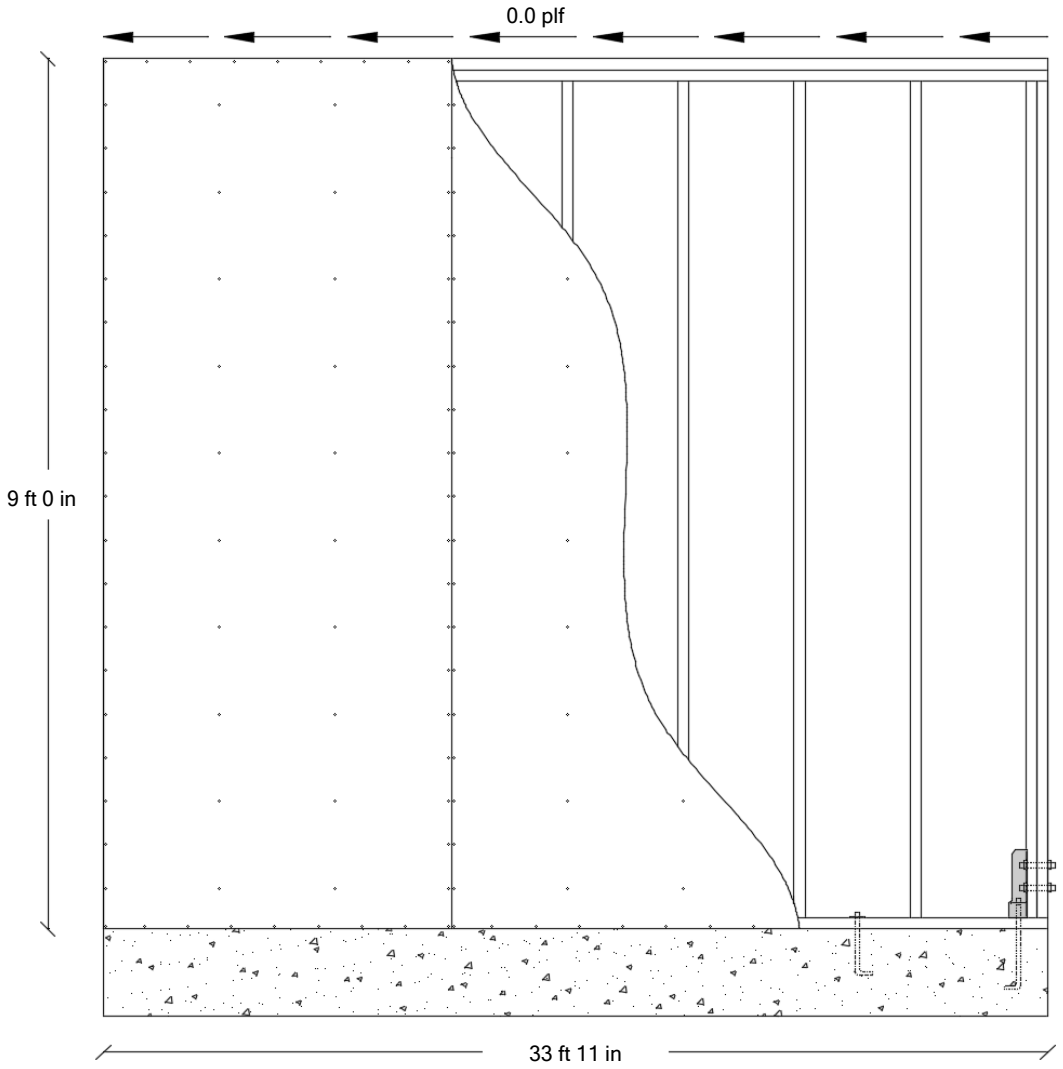
CASE 1 & CASE 3 - UNBLOCKED

LONG PANEL DIRECTION PARALLEL TO SUPPORTS



CASE 1 & CASE 3 - UNBLOCKED

Shear Wall #1 Design - Width Loading



This drawing is conceptual. Actual construction methods & dimensions may differ from that which is shown above.

Stud Species	Panel Thickness	Nail Size	Edge Nail Spacing	Construction Type	Wall Capacity	Stud Size	Stud Spacing
Douglas Fir	7/16"	8d	6"	Single Panel	365 plf	2x6	16 in

Wall Aspect Ratio	Torsional Load	Diaphragm Shear	Total Design Load	Wall Deflection	Allowable Deflection
0.27 (8%)	0.0 lbs	0.0 lbs	0.00 plf (0%)	0.000 in (0%)	0.450 in

- Design loads indicated in this table have been adjusted for Allowable Stress Design.
- Allowable deflection limits are determined per Table 12.12-1 of ASCE 7-16. More stringent deflection criteria may be required for windows, doors, or other finish material.
- Design wall deflection is calculated assuming OSB wall sheathing installed in dry service conditions. If plywood sheathing is used, wall shear stiffness will be reduced, which may increase the design wall deflection.
- Deflection values are determined using design strength level wind loads. Deflection limits are set to a value of L/240.
- Design torsional loads have been increased per the amplification of accidental torsion factor (Ax) with a value of 2.641.

Chord Size	Design Tension	Allowable Tension	Allowable Chord Compression	Design Plate Compression	Allowable Plate Compression
Double 2x6 Douglas Fir	0.00 lbs (0%)	19734.0 lbs	17554.6 lbs	0.00 lbs (0%)	10312.5 lbs

- All wall framing analysis is determined assuming visual grade #2 lumber.
- Plate compression does not consider compression performance of floor sheathing. Additional analysis may be necessary to accomodate sheathing compression allowance.
- A 0.6 design adjustment has been taken to chord compression to accomodate this multi-ply assembly.

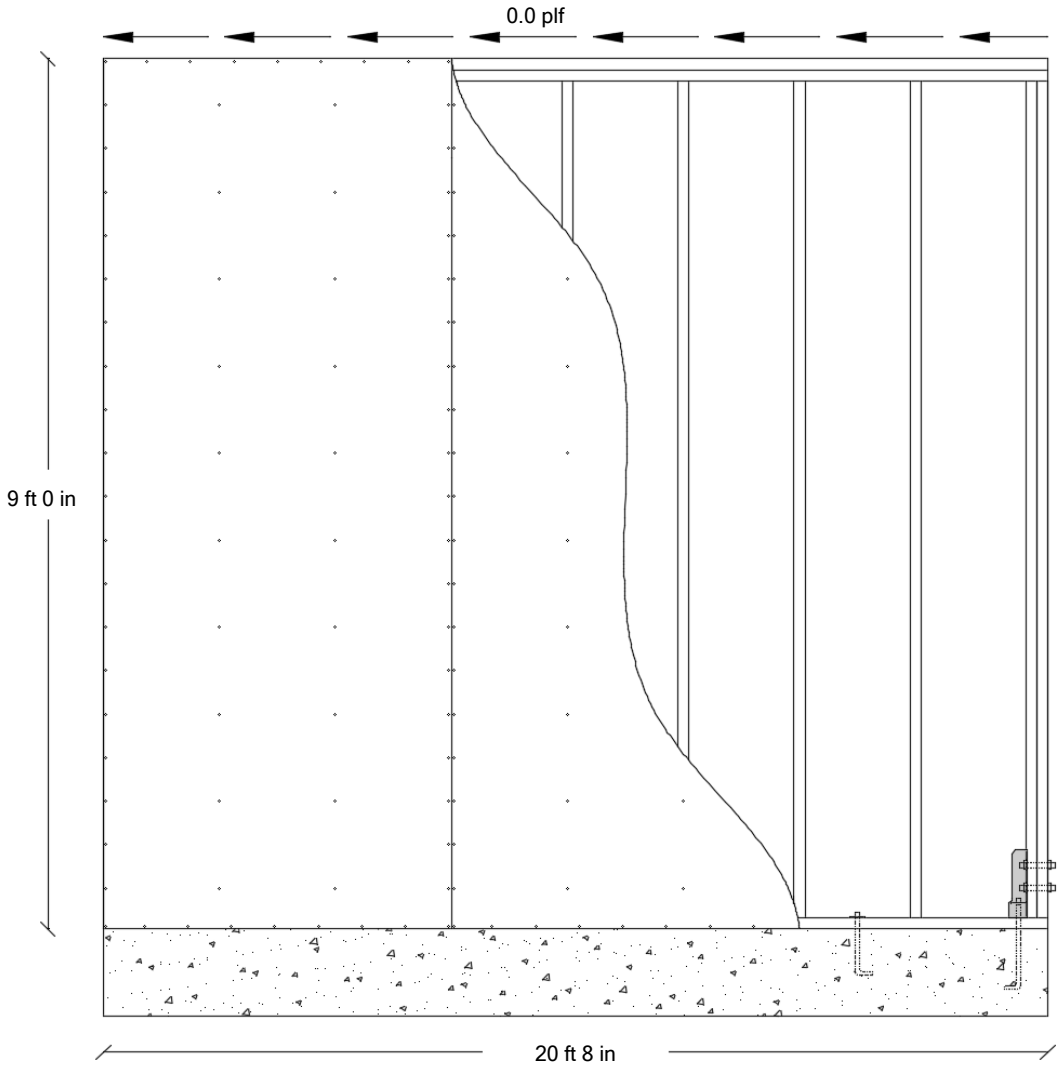
Hold Down	Design Tension	Tension Capacity	Design Deflection	Allowable Deflection
HD3B	0.00 lbs (0%)	3130.0 lbs	0.000 in (0%)	0.120 in

- Hold down tension loads have not been adjusted for the stabilizing moment induced by design dead load overtop this shear wall.

Total Design Load	Anchor Bolt Size	Anchor Bolt Spacing	Washer Size	Nail Size	Nail Spacing
0.0 plf	5/8"	738936090 in	Standard cut washer	16d Common	112032245 in

- Use either the anchor bolt or nailed connection options listed above, dependent upon what structural support is below this shear wall.
- Nail spacing shows 16d common installed in a single row. This spacing does not account for additional load from walls at levels above, and may be increased if rim board and plate below can accommodate multiple rows of fasteners.

Shear Wall #2 Design - Width Loading



This drawing is conceptual. Actual construction methods & dimensions may differ from that which is shown above.

Stud Species	Panel Thickness	Nail Size	Edge Nail Spacing	Construction Type	Wall Capacity	Stud Size	Stud Spacing
Douglas Fir	7/16"	8d	6"	Single Panel	365 plf	2x6	16 in

Wall Aspect Ratio	Torsional Load	Diaphragm Shear	Total Design Load	Wall Deflection	Allowable Deflection
0.44 (12%)	0.0 lbs	0.0 lbs	0.00 plf (0%)	0.000 in (0%)	0.450 in

- Design loads indicated in this table have been adjusted for Allowable Stress Design.
- Allowable deflection limits are determined per Table 12.12-1 of ASCE 7-16. More stringent deflection criteria may be required for windows, doors, or other finish material.
- Design wall deflection is calculated assuming OSB wall sheathing installed in dry service conditions. If plywood sheathing is used, wall shear stiffness will be reduced, which may increase the design wall deflection.
- Deflection values are determined using design strength level wind loads. Deflection limits are set to a value of L/240.
- Design torsional loads have been increased per the amplification of accidental torsion factor (Ax) with a value of 2.641.

Chord Size	Design Tension	Allowable Tension	Allowable Chord Compression	Design Plate Compression	Allowable Plate Compression
Double 2x6 Douglas Fir	0.00 lbs (0%)	19734.0 lbs	17554.6 lbs	0.00 lbs (0%)	10312.5 lbs

- All wall framing analysis is determined assuming visual grade #2 lumber.
- Plate compression does not consider compression performance of floor sheathing. Additional analysis may be necessary to accomodate sheathing compression allowance.
- A 0.6 design adjustment has been taken to chord compression to accomodate this multi-ply assembly.

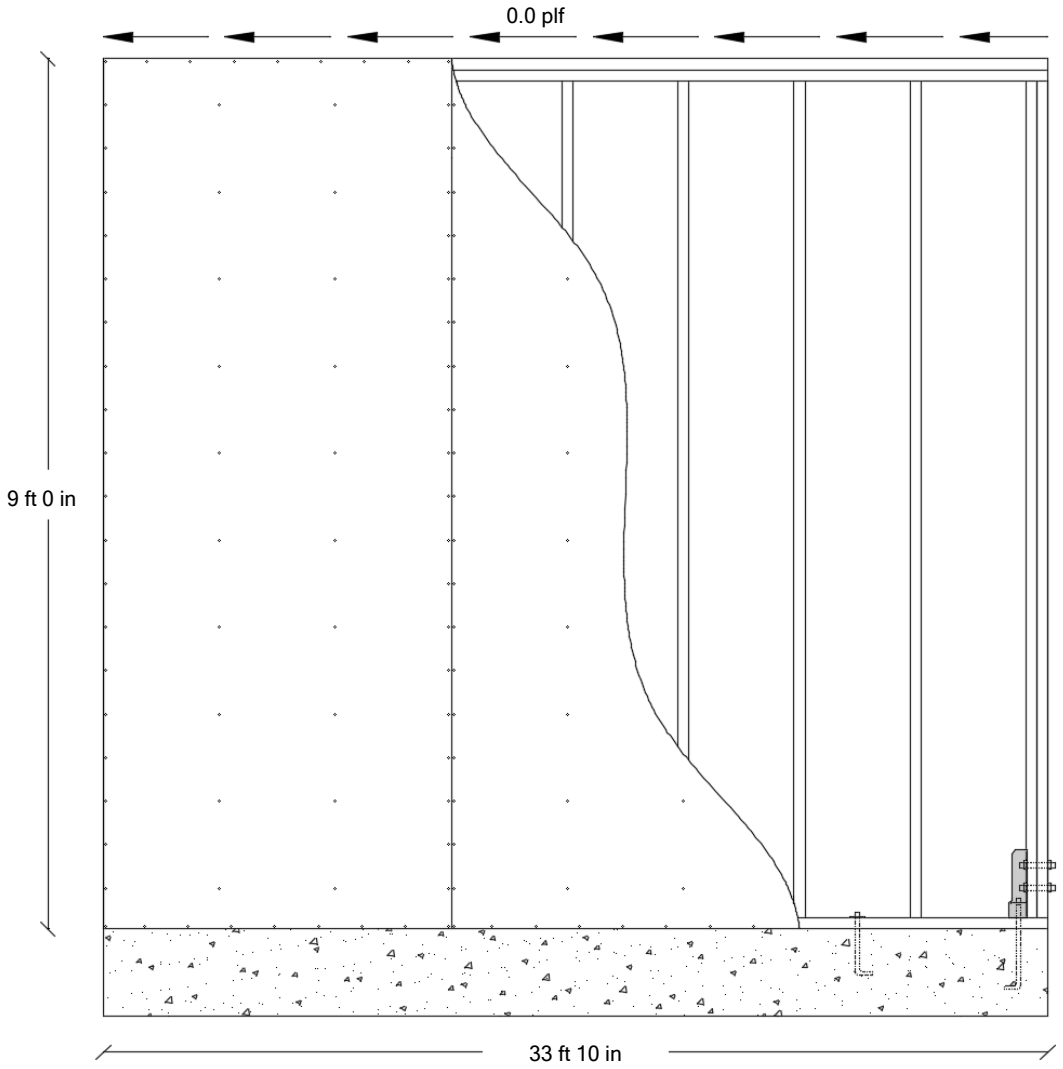
Hold Down	Design Tension	Tension Capacity	Design Deflection	Allowable Deflection
HD3B	0.00 lbs (0%)	3130.0 lbs	0.000 in (0%)	0.120 in

- Hold down tension loads have not been adjusted for the stabilizing moment induced by design dead load overtop this shear wall.

Total Design Load	Anchor Bolt Size	Anchor Bolt Spacing	Washer Size	Nail Size	Nail Spacing
0.0 plf	5/8"	135221288 in	Standard cut washer	16d Common	20501292 in

- Use either the anchor bolt or nailed connection options listed above, dependent upon what structural support is below this shear wall.
- Nail spacing shows 16d common installed in a single row. This spacing does not account for additional load from walls at levels above, and may be increased if rim board and plate below can accommodate multiple rows of fasteners.

Shear Wall #3 Design - Width Loading



This drawing is conceptual. Actual construction methods & dimensions may differ from that which is shown above.

Stud Species	Panel Thickness	Nail Size	Edge Nail Spacing	Construction Type	Wall Capacity	Stud Size	Stud Spacing
Douglas Fir	7/16"	8d	6"	Single Panel	365 plf	2x6	16 in

Wall Aspect Ratio	Torsional Load	Diaphragm Shear	Total Design Load	Wall Deflection	Allowable Deflection
0.27 (8%)	0.0 lbs	0.0 lbs	0.00 plf (0%)	0.000 in (0%)	0.450 in

- Design loads indicated in this table have been adjusted for Allowable Stress Design.
- Allowable deflection limits are determined per Table 12.12-1 of ASCE 7-16. More stringent deflection criteria may be required for windows, doors, or other finish material.
- Design wall deflection is calculated assuming OSB wall sheathing installed in dry service conditions. If plywood sheathing is used, wall shear stiffness will be reduced, which may increase the design wall deflection.
- Deflection values are determined using design strength level wind loads. Deflection limits are set to a value of L/240.
- Design torsional loads have been increased per the amplification of accidental torsion factor (Ax) with a value of 2.641.

Chord Size	Design Tension	Allowable Tension	Allowable Chord Compression	Design Plate Compression	Allowable Plate Compression
Double 2x6 Douglas Fir	0.00 lbs (0%)	19734.0 lbs	17554.6 lbs	0.00 lbs (0%)	10312.5 lbs

- All wall framing analysis is determined assuming visual grade #2 lumber.
- Plate compression does not consider compression performance of floor sheathing. Additional analysis may be necessary to accomodate sheathing compression allowance.
- A 0.6 design adjustment has been taken to chord compression to accomodate this multi-ply assembly.

Hold Down	Design Tension	Tension Capacity	Design Deflection	Allowable Deflection
HD3B	0.00 lbs (0%)	3130.0 lbs	0.000 in (0%)	0.120 in

- Hold down tension loads have not been adjusted for the stabilizing moment induced by design dead load overtop this shear wall.

Total Design Load	Anchor Bolt Size	Anchor Bolt Spacing	Washer Size	Nail Size	Nail Spacing
0.0 plf	5/8"	738922100 in	Standard cut washer	16d Common	112030124 in

- Use either the anchor bolt or nailed connection options listed above, dependent upon what structural support is below this shear wall.
- Nail spacing shows 16d common installed in a single row. This spacing does not account for additional load from walls at levels above, and may be increased if rim board and plate below can accommodate multiple rows of fasteners.