

## APA Simplified Wall Bracing Method Using Wood Structural Panel Continuous Sheathing

### 1. BASIS OF THE SYSTEM REPORT

- 2015 and 2012 International Residential Code (IRC): Sections R104.11 Alternative Materials, Design and Methods of Construction and Equipment, R301.1.3 Engineered Design, and R602.12 Simplified Wall Bracing
- 2015 and 2012 AWC Wood Frame Construction Manual for One and Two Family Dwellings (WFCM)
- APA Reports T2011L-33, T2012L-16, T2012L-30, T2014L-39, and other test data

### 2. SYSTEM DESCRIPTION

The *Simplified Wall Bracing Method* described in this report provides building officials, builders and designers with an approach and the supporting technical information to meet the requirements of the 2015 and 2012 IRC Simplified Wall Bracing (Section R602.12). In the development of this report, IRC Simplified Wall Bracing has been modified to increase its applicability to a greater percentage of home designs. To achieve broad applicability and acceptance, the system uses the most common type of wall sheathing, wood structural panels, based on their superior structural performance. To provide the user with the greatest possible architectural latitude, this system report only covers continuously sheathed wood structural panel bracing (IRC Method CS-WSP) with an increased sheathing thickness (called “Performance Category” in product standards) and a closer nailing schedule on the first story of a two-story structure. This approach increases the performance of the bracing panels on the first story due to the additional restraint provided by the mass and stiffness of the structure above, through strength from increased fastening and with the use of thicker wood structural panel continuous sheathing. This enhanced performance on the bottom story of multi-story structures leads to reduced length of required bracing in these areas, allowing for the method to be used on homes with abundant window and door openings typically found on the front and back elevations. These decreases in the required bracing of multi-story structures are reflected in **Table 3**.

Additional minimum braced wall panel length information taken from IRC Section R602.10 has been added to this *APA Simplified Wall Bracing Method*. While this adds some level of complexity over the IRC method, it greatly increases the usability of the method.

Design simplification and flexibility are achieved through the enhanced sheathing thickness and nailing described in this report. Intermittent wood structural panel (Method WSP) and other bracing methods, except as specified in **Section 3.1**, are outside the scope of this report. Like the IRC Simplified Bracing Method, the *APA Simplified Wall Bracing Method* shall be permitted for houses located in areas of low to moderate wind and seismicity. To increase the usability of the method, this report includes additional details for IRC simplified bracing provisions. Also included are references to specific areas of the IRC and other publications when additional information is required. Buildings meeting the requirements of this report meet all of the bracing requirements of the 2015 and 2012 IRC Section R602.10, Wall Bracing, with the enhancements discussed in **Section 3** of this report.

### 3. METHODOLOGY

#### 3.1 Applicability

Residential structures must meet all of the following conditions when using this method:

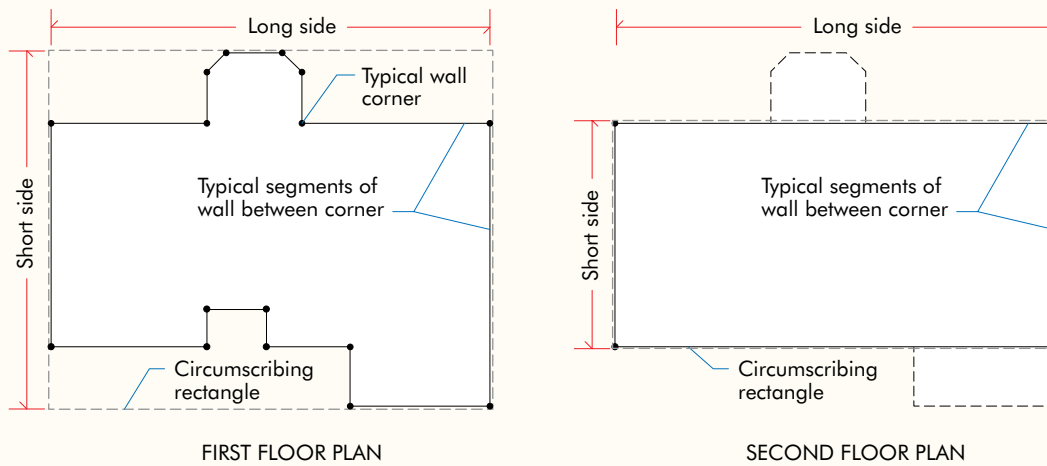
- 1) The entire building shall be continuously sheathed with wood structural panels in accordance with the requirements specified in this section.
- 2) Other bracing provisions of the 2015 and 2012 IRC Section R602.10, except as specified herein, are outside the scope of this method.
- 3) The foundation or basement wall shall be concrete, masonry, or concrete slab, and the structure above shall be 3 stories or less. Permanent wood foundations shall not be permitted.
- 4) Floor cantilevers shall be no more than 24 inches beyond the foundation or bearing wall below.
- 5) Stud wall height shall be 10 feet or less when using the minimum required bracing lengths specified in Table 3 of this report unless adjustments are made for other wall heights up to 12 feet in accordance with Footnote c to Table 3 of this report.
- 6) Roof eave-to-ridge height shall be 15 feet or less.
- 7) Interior finish of exterior walls shall consist of minimum 1/2-inch gypsum boards installed on the interior side fastened in accordance with IRC Table R702.3.5. Interior gypsum finish is not required on continuously sheathed wood structural panels adjacent to garage openings (Method CS-G) and continuously sheathed portal frame (Method CS-PF) bracing panels (see **Section 3.5** of this report).
- 8) Basic wind speed shall be 100 mph (nominal wind speed in the 2012 IRC, which is equivalent to 130 mph ultimate design wind speed in the 2015 IRC) or less and the Wind Exposure Category shall be B or C.
- 9) Seismic Design Category shall be A, B or C for detached one- and two-family dwellings or Seismic Design Category A or B for townhouses.
- 10) Cripple walls, if present, shall be considered as the first story of the structure when using this method unless they are designed in accordance with 2015 and 2012 IRC Section R301.1.2. When the foundation has been engineered/designed to support all of the loads from the structure above, the method described herein shall be permitted. Such foundation systems may include cripple walls, daylight and pile foundations, and permanent-wood and insulated-concrete-form foundations.
- 11) Horizontal joint blocking of the bracing panels may be omitted if the amount of bracing on a given wall is 2 times or more than the minimum required amount of bracing derived from **Table 3** of this report after adjustment by the relevant footnotes.

#### 3.2 Circumscribed Rectangle

The building shall be circumscribed as shown in **Figure 1**. The rectangle shall surround all enclosed offsets and projections, such as sunrooms and attached garages, unless an attached garage or portion of the building is to be designed as a separate structure in accordance with IRC Section R301.1.3 or a separate element in accordance with **Appendix A** of this report. Open structures, such as attached carports and decks, shall be permitted to be excluded. The rectangle shall have no side longer than 60 feet and the ratio between the long side and the short side shall not exceed 3:1.

FIGURE 1

**RECTANGLE CIRCUMSCRIBING AN ENCLOSED BUILDING**



**3.3 Wood Structural Panel Sheathing Materials**

The wood structural panel sheathing shall be Rated Sheathing with a minimum 7/16 Performance Category, meeting the requirements of Department of Commerce (DOC) PS1 or PS2.

**3.4 Wood Structural Panel Sheathing Attachment**

The wood structural panel sheathing shall be attached to framing in accordance with the following requirements:

- 1) The sheathing shall be installed with minimum 8d common nails (0.131 x 2-1/2 inches) spaced at 4 inches on center at panel edges and at 12 inches on center over intermediate supports. For single-story or the top story of two- or three-story buildings, the sheathing may be installed with 8d common nails (0.131 x 2-1/2 inches) spaced at 6 inches on center at panel edges and 12 inches at intermediate supports.
- 2) The sheathing shall be applied continuously over all areas of the exterior walls except windows and doors, and including gable ends, and shall be installed either vertically or horizontally.
- 3) All horizontal panel joints shall occur over and be nailed to common framing or blocking with an appropriate panel edge-nailing schedule in accordance with IRC Section R602.10.10.
- 4) Each end of a *braced wall line* with continuous sheathing shall have a 24-inch return corner, as defined in IRC Section R602.10.7, or an 800-lbf hold-down attached to the end stud of the braced wall panel closest to the corner.
  - If a continuously sheathed *braced wall line* contains an opening greater than 20 feet, each end of each of the remaining portions of the *braced wall line* shall have one of the conditions described above.
  - If a continuously sheathed *braced wall line* contains two or more offset *braced wall lines*, as permitted in IRC Section R602.10.1.2, each end of each offset *braced wall line* shall have one of the conditions described above.

- 5) Gypsum wallboard shall be installed on the opposite side of wall bracing panels. Gypsum wallboard shall be 1/2-inch thick and shall be fastened with nails or screws in accordance with IRC Table R702.3.5. **Exception:** Gypsum wallboard shall be permitted to be omitted if the amount of bracing on a given wall is equal to or greater than 1.4 times the minimum required amount of bracing derived from **Table 3** of this report after adjustment by the relevant footnotes.

### 3.5 “Qualified” Bracing Panel

A single “qualified” bracing panel shall consist of a full-height portion of an exterior wall continuously sheathed with wood structural panels with a minimum length as shown in **Tables 1** and **2** of this report. The bracing panel shall have no openings, except that small drilled holes in the wall sheathing and not penetrating the wall framing up to 1-1/2 inches for the passage of wiring and utilities shall be permitted. When using narrow wall bracing methods CS-G and CS-PF, the minimum permissible lengths and contributing lengths for computing available bracing shall be as shown in **Table 1** of this report. When using Method CS-WSP, **Table 1** provides the minimum permissible lengths and contributing lengths based on both the wall height and the adjacent clear opening height. If an 8- or 9-foot-tall wall line is present, Method CS-WSP braced wall segments less than the **Table 1** minimum length may be used, but with a corresponding reduction in contributing lengths for computing available bracing in accordance with **Table 2** of this report.

TABLE 1

**MINIMUM LENGTH OF BRACED WALL PANELS**  
(Excerpt from the 2015 and 2012 IRC Table R602.10.5, modified in accordance with R602.12.3, Item 1)

Method	Adjacent clear opening height (in.)	Minimum Length (in.)			Contributing Length (in.)
		Wall Height			
		8 ft	9 ft	10 ft	
CS-G	—	24	27	30	Actual Length <sup>(a)</sup>
CS-PF <sup>(c)</sup>	—	16 <sup>(b)</sup>	18 <sup>(b)</sup>	20 <sup>(b)</sup>	1.5 x Actual Length <sup>(a)</sup>
CS-WSP	≤ 60	24	27	30	Actual Length <sup>(a)</sup>
	64	24	27	30	
	68	26	27	30	
	72	27	27	30	
	76	30	29	30	
	80	32	30	30	
	84	35	32	32	
	88	36	35	33	
	92	36	36	35	
	96	36	36	36	
	100		36	36	
	104		36	36	
	108		36	36	
112			36		
116			36		
120			36		

(a) Use the actual length when it is greater than or equal to the minimum length.

(b) The wall height for CS-PF is based on the height of the portal frame, as documented in *APA Report T2014L-39*. The height of the portal frame shall be measured from the bottom of the bottom plate to the top of the portal frame header.

(c) See IRC Figure R602.10.6.4.

### 3.5.1 Partial Credit for CS-WSP Panels

CS-WSP panels in 8- or 9-foot-tall walls between 20 and 24 inches in length that do not meet the minimum length requirements of **Table 1** shall be permitted for use as bracing units at a full or reduced contributing length (depending on the adjacent opening height), as shown in **Table 2** of this report based on the latest APA research results, as documented in *APA Reports T2012L-16* and *T2012L-30*.

TABLE 2  
PARTIAL CREDIT FOR CS-WSP LESS THAN FULL LENGTH WITH 8- AND 9-FOOT TALL WALLS<sup>(a)</sup>

Wall Height (ft)	Length of Full Height Method CS-WSP Panel (in.)	Adjacent to a Clear Opening Height (in.) or Less	Contributing Length of Braced Wall Panel (in.)
8 or 9	24	≤60	24
		64	22
		68	20
		72	18
		76	16
		80	14
	20	≤60	20
		64	18
		68	16
		72	15
		76	13
		80	11

(a) Linear interpolation shall be permitted.

### 3.6 Computing “Qualified” Wall Bracing Length

Within an exterior wall, only those full-height wall panels with a length greater than or equal to the lengths specified in **Tables 1** and **2** of this report shall be deemed to contribute to resisting lateral load, and counted toward the required bracing length. The total bracing length contributing to the side of a rectangle is equal to the sum of the contributing lengths of each “qualified” wall panel. Any length of a qualified bracing panel over the minimum bracing length required in **Table 1** of this report shall be permitted for use toward the total bracing length required for that side of the rectangle. Thus, if the minimum requirement for a specific method is 24 inches in accordance with **Table 1** of this report and two such panels with lengths of 26 and 34 inches are present,  $(26 + 34 =) 60$  inches or  $(60/12 =) 5$  feet of bracing are present and shall be permitted for use in determining the total bracing length for that wall.

For Methods CS-G and CS-PF, the bracing length on either side of the opening is considered a qualified bracing panel and contributes to bracing lengths for meeting the minimum length requirements of **Table 1** of this report. An example is provided in **Appendix B**.

### 3.7 Length of Bracing Required

Determining the minimum bracing length required is relatively straightforward:

- 1) Circumscribe the building with a rectangle. The rectangle shall enclose the maximum building length and width dimensions as described in **Section 3.2**.
- 2) Ensure that the long side of the rectangle is not greater than 3 times the short side of the rectangle or greater than 60 feet. If it is greater, consider using the multiple rectangle method covered in **Appendix A**. The alternatives are to:
  - use the “legacy” bracing provisions of IRC Section R602.10,
  - use the multiple rectangle method in conjunction with the *APA Simplified Wall Bracing Method* (see **Appendix A**), or
  - have the structure designed in accordance with IRC Section R301.1.3 and the International Building Code (IBC).
- 3) With the dimensions of this circumscribed rectangle, use **Table 3** of this report to determine the bracing length that is required on each rectangle side perpendicular to the side used to enter the table. Note that interpolation shall be permitted. Either value, the rounded or interpolated value, shall be multiplied by a wall height adjustment factor in accordance with Footnotes (c) and (d) to **Table 3** of this report, as applicable.

If the upper and lower stories share common exterior wall lines and the amount of bracing on the second floor equals or exceeds the amount of bracing located on the story immediately below, **and** the distribution rules of **Section 3.8** for all such stories are met, only the bracing in the bottom story must be checked. If the bottom story checks out, the upper stories will be acceptable as well.

### 3.8 “Distribution Rules” for Bracing Panels













Once the required minimum bracing length has been determined for each side of the circumscribed rectangle using **Table 3** of this report, this bracing length shall be distributed along the actual exterior walls of the structure. In distributing these bracing panels, all of the following *Distribution Rules* shall be met:

- 1) The first qualified bracing panel on each side of the rectangle shall begin within 12 feet of the wall corner. The 12 feet is measured between the wall corner and closest edge of the first full-height qualified bracing panel.
- 2) The distance between the closest edges of adjacent full-height qualified bracing panels shall be 20 feet or less.
- 3) Any exterior wall line with a length of 8 feet or greater shall have, at a minimum, one bracing unit.
- 4) Parallel offset wall sections with 4 feet or less of each other shall be considered the same wall when using the *Distribution Rules* in this section.

In some cases, a greater bracing length is required to meet the *Distribution Rules* than is required by **Table 3**. In this case, the greater bracing length required by the *Distribution Rules* shall govern. In any cases, the bracing length required by **Table 3** or the *Distribution Rules*, whichever is greater, shall be met.

TABLE 3

**MINIMUM REQUIRED BRACING LENGTH ON EACH SIDE OF THE CIRCUMSCRIBED RECTANGLE FOR WIND EXPOSURE B<sup>(a)(b)(c)(d)</sup>**

Wind Speed	Story Level	Eave-to Ridge Height (ft)	Minimum Required Bracing Length on Each Long Side						Minimum Required Bracing Length on Each Short Side						
			Length of Short Side (ft)						Length of Long Side (ft)						
			10	20	30	40	50	60	10	20	30	40	50	60	
90 mph nominal for the 2012 IRC or 115 mph ultimate for the 2015 IRC		10	2.0	3.5	5.0	6.0	7.5	9.0	2.0	3.5	5.0	6.0	7.5	9.0	
			2.9	5.4	7.4	9.9	12.0	14.0	2.9	5.4	7.4	9.9	12.0	14.0	
			4.1	7.9	11.2	14.5	17.8	21.0	4.1	7.9	11.2	14.5	17.8	21.0	
			15	2.6	4.6	6.5	7.8	9.8	11.7	2.6	4.6	6.5	7.8	9.8	11.7
				3.3	6.2	8.5	11.4	13.8	16.1	3.3	6.2	8.5	11.4	13.8	16.1
				4.5	8.7	12.3	16.0	19.6	23.1	4.5	8.7	12.3	16.0	19.6	23.1
100 mph nominal for the 2012 IRC or 130 mph ultimate for the 2015 IRC		10	2.5	4.0	6.0	7.5	9.5	11.0	2.5	4.0	6.0	7.5	9.5	11.0	
			3.7	6.6	9.1	12.0	14.9	17.5	3.7	6.6	9.1	12.0	14.9	17.5	
			5.0	9.5	13.6	17.8	21.9	25.6	5.0	9.5	13.6	17.8	21.9	25.6	
			15	3.3	5.2	7.8	9.8	12.4	14.3	3.3	5.2	7.8	9.8	12.4	14.3
				4.3	7.6	10.5	13.8	17.1	20.1	4.3	7.6	10.5	13.8	17.1	20.1
				5.5	10.5	15.0	19.6	24.1	28.2	5.5	10.5	15.0	19.6	24.1	28.2

For SI: 1 ft = 304.8 mm

(a) Based on IRC Table R602.10.3(1) and modified in accordance with APA Report T2011L-33.

(b) Interpolation shall be permitted.

(c) The *Wall Height Adjustment Factor*, as shown below, shall be used to multiply the minimum bracing lengths listed in the table above to accommodate wall heights from 8 to 12 feet based on IRC Table R602.10.3(2). Interpolation shall be permitted.

	Wall Height (ft)	Wall Height Adjustment Factor
Any Story	8	0.90
	9	0.95
	10	1.00
	11	1.05
	12	1.10

(d) For Wind Exposure Category C, multiply length required from table above by 1.2 for single-story buildings, 1.3 for two-story buildings and 1.4 for three-story structures.

(e) The first story of two stories and the first and second of three stories shall be continuously sheathed with wood structural panels attached with 8d common nails (0.131 x 2-1/2 inches) spaced 4 inches on center around the panel perimeter and at 12 inches on center over intermediate supports.

## 4. LATERAL SUPPORT

For bracing panels in exterior walls located along eaves where the distance between the top of the top plates to the underside of the roof sheathing is 9-1/4 inches or less, blocking between the rafters or trusses shall not be required. When the distance between the top of the top plates to the underside of the roof sheathing above braced walls is greater than 9-1/4 inches and less than 15-1/4 inches, attachment shall be in accordance with IRC Section R602.10.8.2, item 1. These details are not duplicated here because they vary slightly between different editions of the IRC and because the 15-1/4-inches limitation is not commonly exceeded.

If the vertical distance between the underside of the roof sheathing and the top of the top plate is greater than 15-1/4 inches, or if the user wants to use the wall sheathing to block raised-heel trusses to meet the wind uplift and lateral load requirements of IRC sections R602.3.5 and R602.10.2.1, see APA System Report SR-103, *Use of Wood Structural Panels for Energy-Heel Trusses*, or [www.apawood.org/walls](http://www.apawood.org/walls), for more information.

## 5. LIMITATIONS

Recommendations provided in this report are subject to the following conditions:

- 1) The exterior walls of the structure shall be continuously sheathed with a minimum 7/16 Performance Category wood structural panel sheathing meeting the requirements of DOC PS1 or PS2 and shall be attached to framing with 8d common nails (0.131 x 2-1/2 inches) at 4 inches on center around the panel perimeter and at 12 inches on center over intermediate supports. For exterior walls in single story structures or in the top story of multi-story structures, the 8d common nails (0.131 x 2-1/2 inches) shall be permitted to be spaced at 6 inches on center around the panel perimeter and at 12 inches on center over intermediate supports.
- 2) The *APA Simplified Wall Bracing Method* shall be applicable to buildings of no more than three stories, subject to the applicability listed in **Section 3.1** of this report.
- 3) When placed over masonry or concrete stem walls, wall bracing panels used in the *APA Simplified Wall Bracing Method* shall meet the requirements of IRC Section R602.10.9.
- 4) While the *APA Simplified Wall Bracing Method* is not part of the code, it is based on the code and other modifications permitted by IRC Section R301.1.3, Engineering Design. Further modifications to the *APA Simplified Wall Bracing Method* by the user of this report are beyond the scope of this report.
- 5) This report is subject to periodic review. The latest copy of this report is available for free download at [www.apawood.org/resource-library](http://www.apawood.org/resource-library).



## APPENDIX A

### The Multiple-Rectangle Procedure

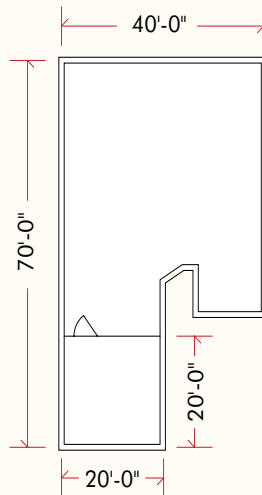
A common issue faced by residential designers using the *APA Simplified Wall Bracing Method* is applying it to houses that are too large and/or not rectangular in shape. Non-rectangular building configurations include T-, L-, and U-shaped buildings. For smaller structures, the *APA Simplified Wall Bracing Method* provides an easy solution by permitting the entire structure to be circumscribed by a rectangle. Even with the circumscribed rectangle procedure described in **Section 3.2** of this report, some homes fall outside of the scope of the APA and IRC simplified bracing provisions due to their size or non-rectangular shape.

The multiple-rectangle procedure described on page 9 simplifies the design process, while still providing a safe and code-compliant structure. An example is presented on page 10 for an L-shaped building. The same principles apply to T- and U-shaped buildings, and other shapes that can be divided into multiple rectangles. This multiple-rectangle procedure shall be permitted when a structure has an exterior dimension greater than 60 feet, and thus, falls outside of the scope of the *APA Simplified Wall Bracing Method*, by dividing the structure into two or more elements that meet the maximum dimension requirements.

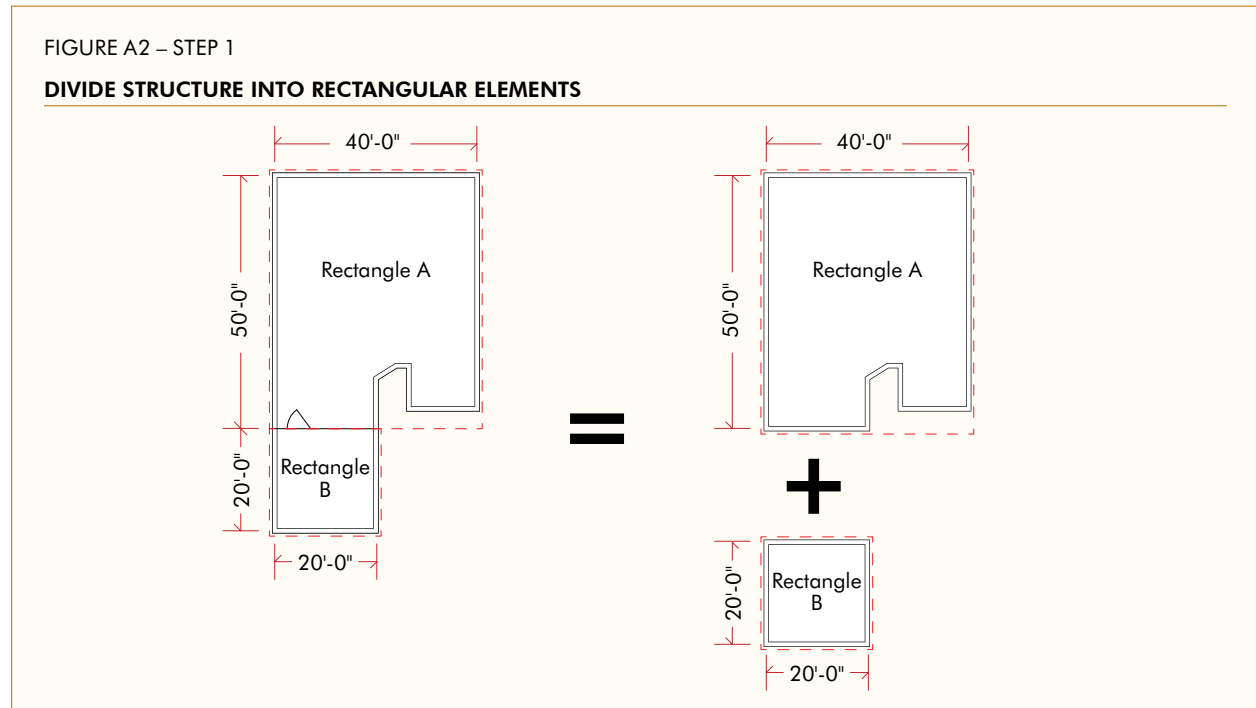
**Figure A1** is an example of a floor plan that falls outside the requirements of the *APA Simplified Wall Bracing Method* because of the 70-foot building dimension.

FIGURE A1

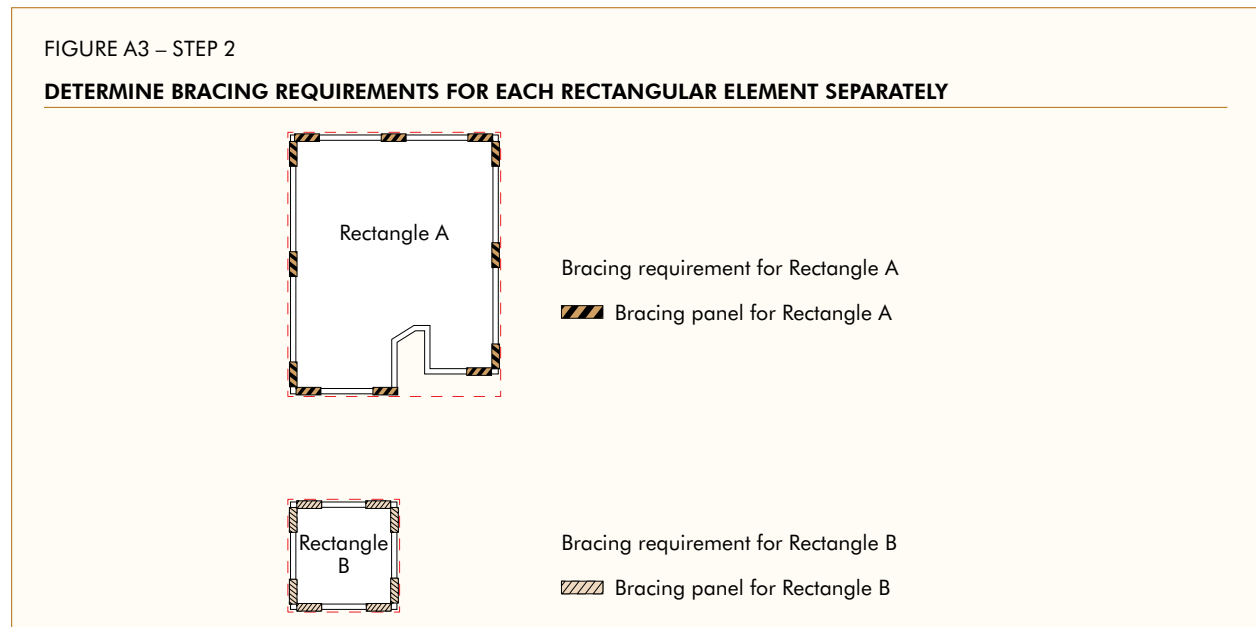
#### FLOOR PLAN



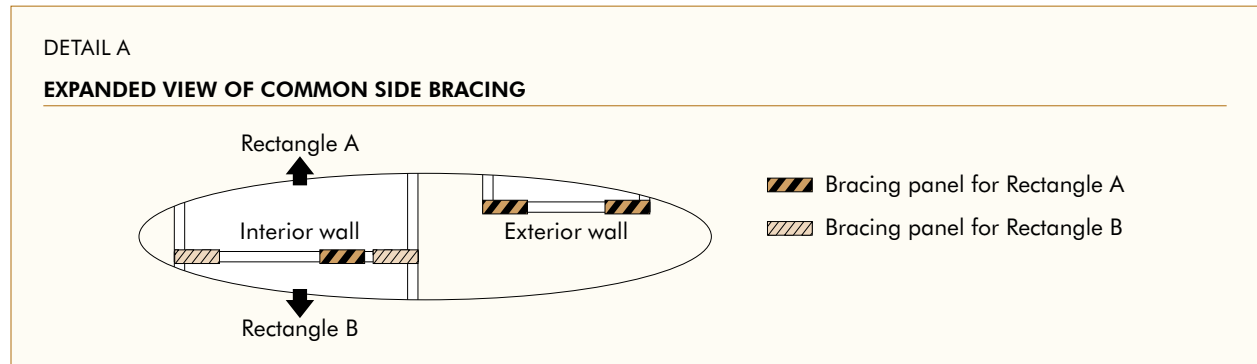
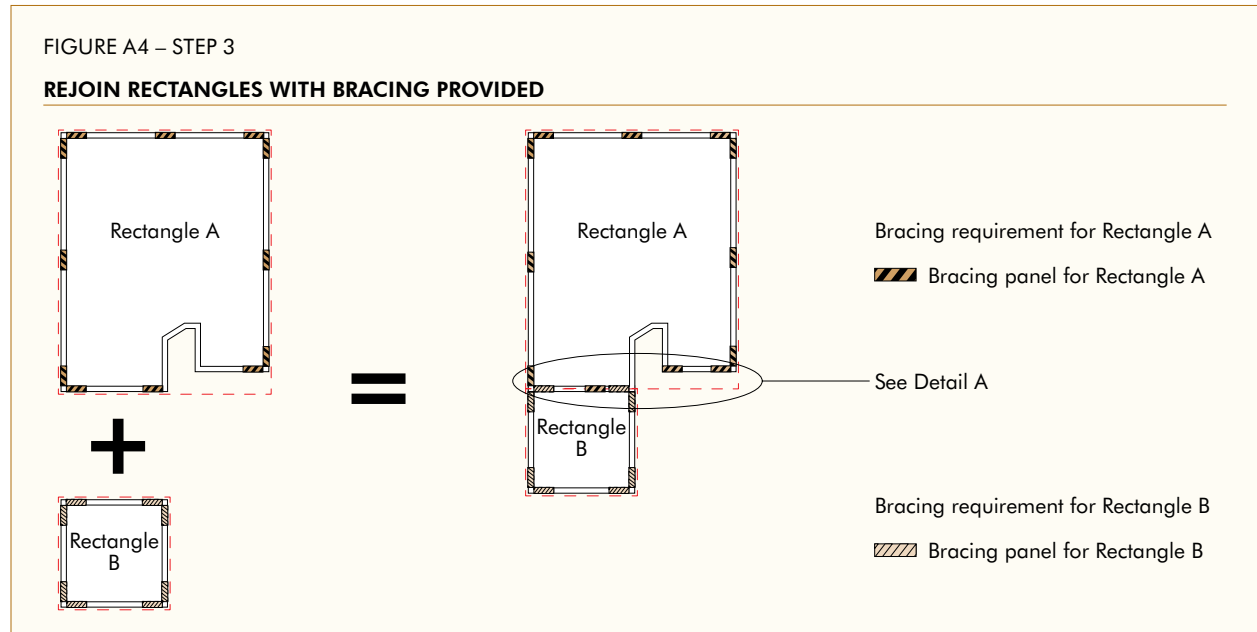
**STEP 1: Divide the structure into rectangular elements.** There are often multiple ways to do this. Typically, the easiest solution is to divide the building in such a way that the “common side” or “common wall line” of the two rectangles contains wall panels that are permitted to be used for bracing (see **Figure A2**).



**STEP 2: Determine bracing requirements for each individual rectangular element using the APA Simplified Wall Bracing Method.** Each individual rectangle is treated and braced as if it were a completely independent and separate structure from the other rectangles. The braced wall line lengths and distance between braced wall lines are measured on each rectangle separately (see **Figure A3**). Note that any braced wall line with a length of 8 feet or greater must have at a minimum of 3 feet of equivalent bracing.



**STEP 3: Rejoin the rectangles with bracing provided.** The rules that must be applied to the common side when rejoining the rectangles are presented below. Once rejoined, the increased common-side bracing will reflect the appropriate distribution of load. See **Detail A**.



### Rules for joining at the common side:

- 1) The total bracing from both rectangles along the common side must be provided on the common side.
- 2) In the example shown in **Figure A4**, the common side of Rectangle A has a portion that is interior and a portion that is exterior to the house, while the common side of Rectangle B is entirely an interior wall. The bracing panels shall be permitted to be repositioned or redistributed along the common side as long as the total of the panels is at least equal to the total of the two separate rectangles.
- 3) The wall bracing location provisions of the *APA Simplified Wall Bracing Method* must be met along the common side, as well as along the extended wall line.
- 4) When the common wall line for both rectangles is an interior wall, the common wall bracing in the *APA Simplified Wall Bracing Method* shall be permitted to be made of Method GB (Gypsum Board) bracing. In this common wall line, the amount of doubled-sided Method GB bracing along the common wall shall be at least two times the required bracing length of Method CS-WSP bracing found in **Table 3** of this report. The Method GB bracing shall be attached to both sides of the framing in accordance with IRC Table R602.10.4. The Method GB panels shall be attached along all panel edges including the top and bottom plates. “Floating the corners” shall not be permitted.
- 5) When the common wall line for both rectangles has both exterior and interior wall line portions, the common wall bracing in the *APA Simplified Wall Bracing Method* shall be permitted to be made of both Method CS-WSP and Method GB bracing. In this case, the total length of the double-sided Method GB and the single-sided CS-WSP braced wall panels together shall not be less than two times the required length of Method CS-WSP bracing listed in **Table 3** of this report (see **Note 1** below). Method GB bracing shall be installed as required in **Item 4** above.
- 6) If insufficient bracing length is available along the common wall line in **Item 5** above, use Method CS-WSP in the entire common wall line, including the interior wall line portion, to avoid the need to double the amount of wall bracing required in **Table 3** of this report. If this still does not provide sufficient bracing length, consider other options provided in **Section 3.7, Item 2**, of this report.

*Note 1: IRC Section R602.10.4.1.5 permits mixing bracing methods in a wall line provided that the longest required bracing length of the mixed methods is used. As this report only provides the bracing amount for CS-WSP and the double-sided Method GB is approximately 1/2 of the capacity of Method CS-WSP, doubling the bracing amount listed in **Table 3** of this report provides the required amount of bracing for such cases.*

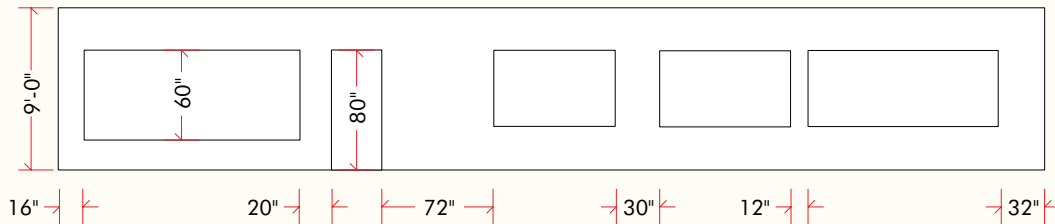
## APPENDIX B

### Example for Computing Qualified Wall Bracing Length

An example wall configuration is shown in **Figure B1**. Wood structural panels of 7/16 Performance Category meeting DOC PS2 are used to continuously sheath the wall with 8d common nails (0.131 x 2-1/2 inches) at 4 inches on center around the panel perimeter and at 12 inches on center over intermediate supports. The house configuration meets the applicability requirements of this report (i.e., **Sections 3.1** and **3.8**).

FIGURE B1

#### AN EXAMPLE WALL CONFIGURATION (Bottom story of two- or three-story structure)



#### THE QUALIFIED WALL BRACING LENGTH IS DETERMINED AS FOLLOWS:

Segment Length (in.)	Greater Than Length Required in Table 1	Contributing Length (in.)	Greater Than Length Required in Table 2	Contributing Length (in.)	Amount Of Bracing Length Contributed (in.)
16	No	0	No	0	0
20	No	0	Yes	11	11
72	Yes	72	—	—	72
30	Yes	30	—	—	30
12	No	0	No	0	0
32	Yes	32	—	—	32
					Total = 145 in. or 12.1 ft

## APA Simplified Wall Bracing Method Using Wood Structural Panel Continuous Sheathing

APA – The Engineered Wood Association is an accredited certification body under ISO/IEC 17065 by Standards Council of Canada (SCC) and an accredited inspection agency by the International Code Council (ICC) International Accreditation Service (IAS) under ISO/IEC 17020. APA is also a testing organization accredited by IAS under ISO/IEC 17025. APA is a recognized testing laboratory by Miami-Dade County, and a Product Testing Laboratory, Product Quality Assurance Entity, and Product Validation Entity by the Florida Department of Business and Professional Regulation.

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