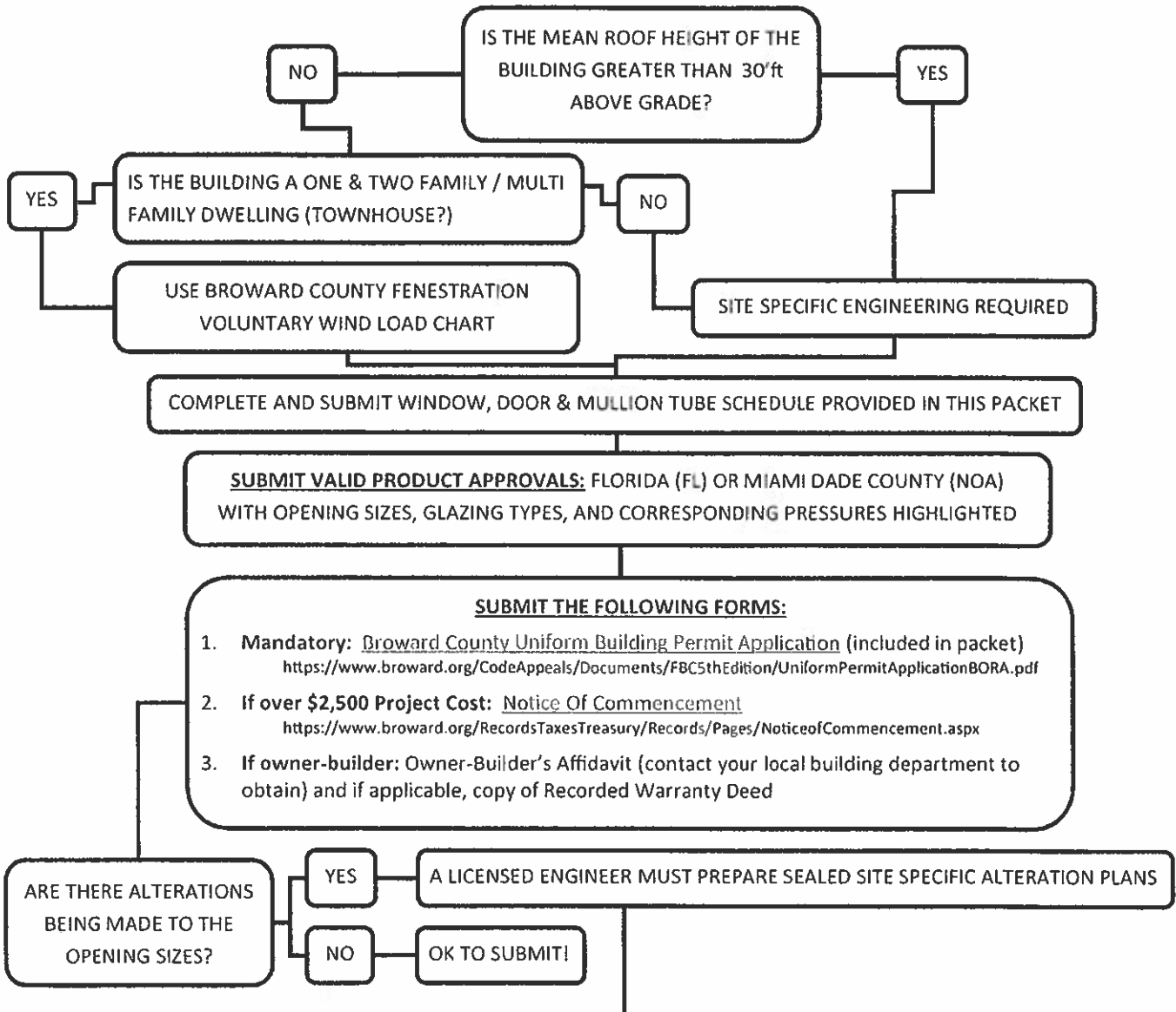


INSTRUCTION FLOWCHART



DESIGN CRITERIA REQUIREMENTS FOR PLANS

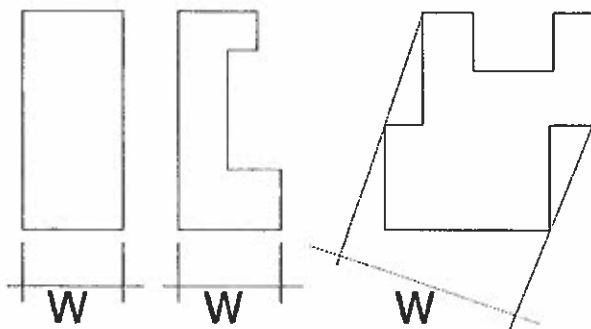
1. Unit sketch, generally to scale illustrating the unit and overall building (if multi-family).
2. Broward requires ASCE 7 calculations using Peak wind velocity $V_{ult}(min) = 170\text{mph}$
3. Either Exposure C (inland) or D (coastal - see description next page)
4. Mean (average) Roof height (see page 3)
5. Overall Building Width & Length (lessor dimension is used to determine width of zone 5)
6. Label each opening dimensions, wind zone (4 or 5) on the layout as shown in example on page 3
7. Each opening shall have a corresponding "mark" which ties into the window, door & mullion schedule provided within this packet

OK TO SUBMIT!

Explanation of Terms

- 1: **Exposure C:** All of Broward County. The "Broward County Fenestration Voluntary Wind Load Chart" included within this packet can be used for all detached one & two story dwellings and multiple single-family dwellings (townhomes).
- 2: **Exposure D:** A structure that's within 600' or 20X building height of a flat area/body of water that's a mile long. Generally all areas east of the Intercoastal Waterway. Wind load pressures must be completed by a licensed design professional for all structures.
- 3: **Mean Roof Height ("h"):** Average between the lowest and the highest roof point of a sloped roof, also the highest point of a flat roof (also see page 3).
- 4: **Minimum Building Width:** 10% of least horizontal dimension (W) or 0.4h, whichever is smaller, but not less than either 4% of least horizontal dimension or 3'ft minimum.

MIN. BUILDING WIDTH EXAMPLES (PLAN VIEW):



Mean Roof Height

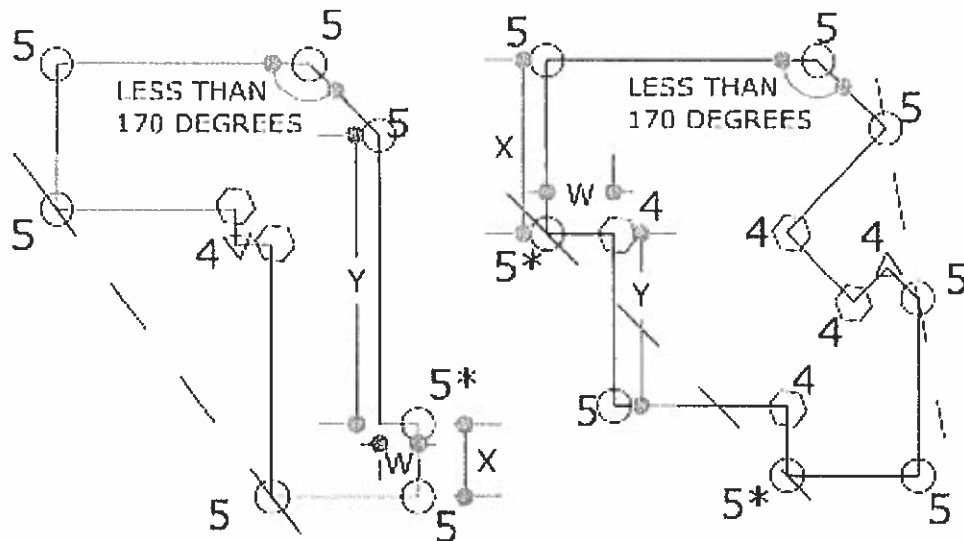
2: FLAT ROOF



2: SLOPED ROOF



ZONE EXAMPLES (PLAN VIEW)



- INDICATES BUILDING CORNER DISCONTINUITY (ZONE 5)
- ▽ INDICATES AN OBSTRUCTED EXTERIOR CORNER (ZONE 4)
- ◊ INDICATES A TYPICAL INTERIOR CORNER (ZONE 4)

NOTE: The corner designated by an * would not be considered a corner if dimension W is less than half the width of the corner zone and dimension X and Y are greater than the width of a corner zone

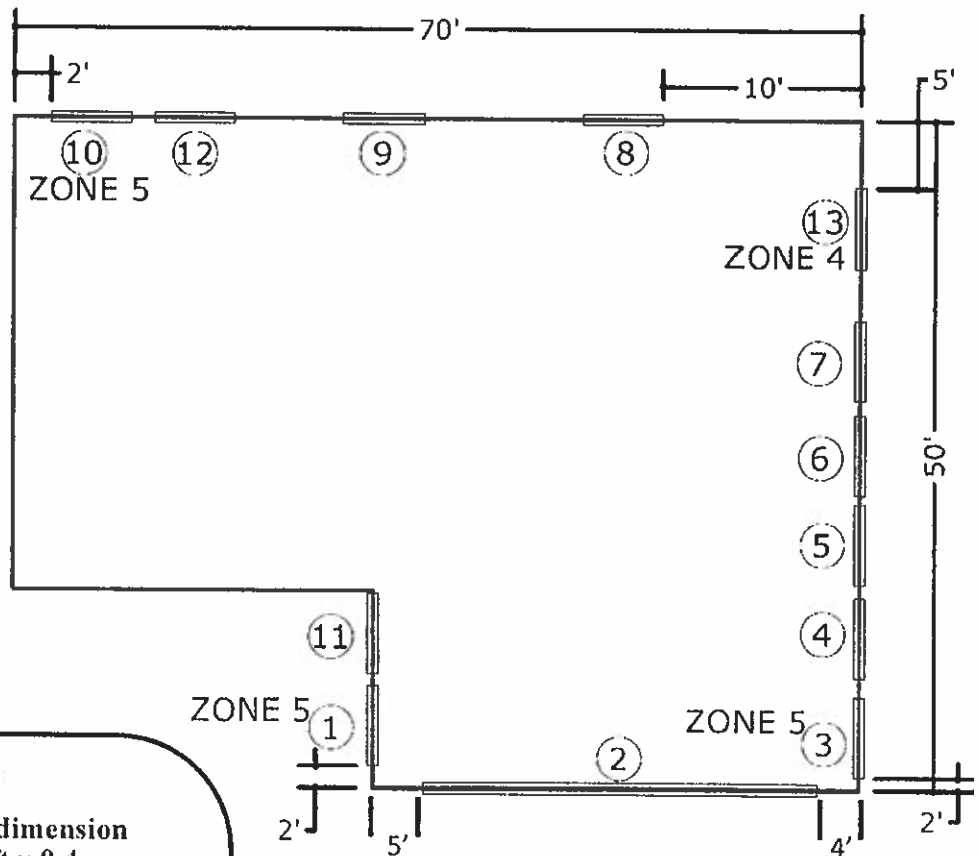
170 degree:
An unobstructed exterior corner with an interior angle of less than 170 degree would be considered a corner zone

See page 3 for example on how to calculate the zone dimensions of a building

Minimum Sketch Requirement

Zone determinations:

1. Zone 5 (corner zone) in this example is calculated as 5'ft in width, any opening within 5'ft of an outside unobstructed corner would be considered in zone 5.
2. In this example, openings 1, 2, 3 & 10 are located in a zone 5 (corner zone).
3. All other opening would be considered zone 4 (interior zone).

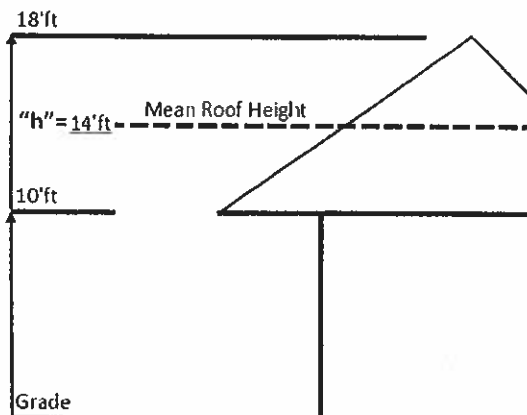


ZONE CALCULATIONS:

Zone 5 = $.10 \times$ least horizontal dimension (50ft \times .10 = 5ft) or $.4 \times$ "h" (14ft \times 0.4 = 5.6ft) whichever is smaller, but not less than either 4% of the least horizontal dimension (50ft \times 4% = 2ft), or 3ft.

Zone 5 (corner zone) would be 5'ft wide.

All others would be zone 4.



Next Steps:

- Complete Window & Door Schedule included within this packet
- Submit all forms to your local building department according to their instructions.
- The local building department may require additional documentation

NAME: _____ SITE ADDRESS: _____ CONTACT #: _____

1 OPENING LOCATION ID	2 PRODUCT ACCEPTANCE NUMBER	3 PRODUCT APPROVAL PRESSURE RATING		4 REQUIRED DESIGN PRESSURE		5 OPENING SIZES		6 ZONE LOCATION		7 Impact Glazing		8 OPENING HAS EXISTING SHUTTERS		9 NEW SHUTTERS REQUIRED		10 MULLION TUBES REQUIRED	
		(+) PSF	(-) PSF	(+) PSF	(-) PSF	WIDTH X HEIGHT IN INCHES	AREA IN SQ. FEET	4 INTER	5 END	YES	NO	YES	NO	YES	NO	YES	NO
						X											
						X											
						X											
						X											
						X											
						X											
						X											
						X											
						X											

IDENTIFY OPENINGS ALPHABETICALLY OR NUMERICALLY ON ELEVATION SHEETS.


IDENTIFY VERTICALLY STACKED GLASS IN THE SAME OPENINGS FROM BOTTOM TO TOP WITH SUB NUMBERS (Example: A, A1, A2, ETC.).



BROWARD COUNTY BOARD OF RULES AND APPEALS

One North University Drive
Suite 3500-B
Plantation, Florida 33324
Phone: 954-765-4500
Fax: 954-765-4504
www.broward.org/codeappeals

FBC 6th Edition (2017) FORMAL INTERPRETATION (#5)

DATE: October 12, 2017
TO: All Building Officials
FROM: James DiPietro, Administrative Director 
SUBJECT: Retrofit of Windows, Doors, Garage Doors, Shutters and Skylights
FBC Existing Building, Alteration Level I

At its meeting of October 12th, 2017 the Board approved an interpretation of Retrofit of Windows, Doors, Garage Doors, Shutters and Skylights, for detached one and two family dwellings, and multiple single family dwellings, (townhouses) with common roof height < 30 feet.

1. A Florida Professional Engineer or Architect may modify the buck or fasteners as specified in a Notice of Acceptance. Such modification must be documented with a signed and sealed letter or drawing.

2. To obtain the required design pressure for a specific opening at a specific site, an individual must utilize one of the following and submit documentation as indicated.

a) A site-specific plan (signed and sealed) by a Florida Professional Engineer or Architect, indicating the location of all retro openings and the required design pressures.

b) A site-specific plan (not sealed) indicating the location of all retro openings accompanied by a worst case design pressure chart (signed and sealed) prepared by a Florida P.E. or Architect.

c) A site-specific plan (not sealed) indicating the location of all openings and indicating the required design pressures based on the Broward County Fenestration Voluntary Wind Load Chart. (see attached chart).

3. Buildings with a (height) > 30 feet or more shall have a site-specific design (signed and sealed) by a Florida Professional Engineer or Architect, indicating the location of all retro openings and the required design pressures for each opening.

NOTE: Generic charts, graphs alone, etc. are not acceptable for buildings above 30 feet.

ORIGINAL DATE: September 12, 2012
RE-ISSUED: October 12, 2017
EFFECTIVE DATE: January 1, 2018

****PLEASE POST AT YOUR PERMIT COUNTER****

Page 1 of 2 F.I. #5

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Fire Service Professional
Vice-Chair
Mr. Kenneth B. Wynn
Representative Disabled Community
Mr. John Famularo,
Roofing Contractor
Mrs. Shalanda Giles Nelson,
General Contractor
Mr. Daniel Lavrich, P.E.
Structural Engineer
Mr. Daniel Rourke
Master Plumber
Mr. Gregg D'Attilio,
Mechanical Contractor
Mr. Stephen E. Bailey, P.E.
Electrical Engineer
Mr. Ron Burr
Swimming Pool Contractor
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Master Electrician
VACANT
Consumer Advocate
Mr. Abbas H. Zackria, CSI
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Roofing Contractor

Board Attorney
Charles M. Kramer, Esq.

Board Administrative Director
James DiPietro

—Established 1971—

Broward County Fenestration Voluntary Wind Load Chart*

Per ASCE 7-10 Method 1, Part 1 and FBC (2017) for Retrofitting in Accordance with Formal Interpretation #5

For Detached One- and Two family dwellings and Multiple Single-Family Dwellings (Townhouses) with Mean Roof Height ≤ 30 feet

Wind 170 mph (3-second gust) / Exposure C** / $K_d = 0.85 / K_{zt} = 1.0$ / Pressures are in PSF / Not for use in Coastal (Exposure 'D' areas)

* Using Allowable Stress Design methodology ($P = 0.6w$) / ** Exposure shall be determined according to ASCE 7-10 Section 26.7.3 (Exposure Categories)

Effective Wind Area (ft ²)	Location: Gable or Hip Roof	Mean Roof Height of 15 feet						Mean Roof Height of 20 feet						Mean Roof Height of 25 feet						Mean Roof Height of 30 feet					
		Zone 2		Zone 3		Zone 1		Zone 2		Zone 3		Zone 1		Zone 2		Zone 3		Zone 1		Zone 2		Zone 3			
		+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-		
10	Gable/Hip	16.0	-37.8	16.0	-63.4	16.0	-95.4	16.3	-40.2	16.3	-67.4	16.3	-101.4	17.1	-42.1	17.1	-70.6	17.1	-106.3	17.8	-43.7	17.8	-73.4	17.8	-110.4
20	Roof	16.0	-36.8	16.0	-56.7	16.0	-79.1	16.0	-39.1	16.0	-60.2	16.0	-84.0	16.0	-41.0	16.0	-63.1	16.0	-88.0	16.7	-42.6	16.7	-65.6	16.7	-91.5
50	$\theta \leq 7^\circ$	16.0	-35.6	16.0	-47.7	16.0	-57.4	16.0	-37.8	16.0	-50.7	16.0	-61.0	16.0	-39.6	16.0	-53.2	16.0	-63.9	16.0	-41.1	16.0	-55.2	16.0	-66.4
100	(0 to 1.5:12)	16.0	-34.6	16.0	-41.0	16.0	-41.0	16.0	-36.8	16.0	-43.6	16.0	-43.6	16.0	-38.5	16.0	-45.7	16.0	-45.7	16.0	-40.0	16.0	-47.4	16.0	-47.4
10	Gable/Hip	21.8	-34.6	21.8	-60.2	21.8	-89.0	23.1	-36.8	23.1	-64.0	23.1	-94.6	24.3	-38.5	24.3	-67.1	24.3	-99.2	25.2	-40.0	25.2	-69.7	25.2	-103.0
20	Roof***	19.9	-33.6	19.9	-55.4	19.9	-83.3	21.1	-35.7	21.1	-58.9	21.1	-88.5	22.1	-37.4	22.1	-61.7	22.1	-92.7	23.0	-38.9	23.0	-64.1	23.0	-96.3
50	$7^\circ < \theta \leq 27^\circ$	17.3	-32.4	17.3	-49.0	17.3	-75.6	18.4	-34.4	18.4	-52.1	18.4	-80.3	19.3	-36.0	19.3	-54.6	19.3	-84.2	20.0	-37.4	20.0	-56.7	20.0	-87.5
100	(1.5 to 6:12)	16.0	-31.4	16.0	-44.2	16.0	-69.8	16.3	-33.3	16.3	-47.0	16.3	-74.2	17.1	-35.0	17.1	-49.2	17.1	-77.8	17.8	-36.3	17.8	-51.1	17.8	-80.8
10	Gable Roof	34.6	-37.8	34.6	-44.2	34.6	-44.2	36.8	-40.2	36.8	-47.0	36.8	-47.0	38.5	-42.1	38.5	-49.2	38.5	-49.2	40.0	-43.7	40.0	-51.1	40.0	-51.1
20	$27^\circ < \theta \leq 45^\circ$	33.6	-35.9	33.6	-42.3	33.6	-42.3	35.7	-38.1	35.7	-44.9	35.7	-44.9	37.4	-39.9	37.4	-47.1	37.4	-47.1	38.9	-41.5	38.9	-48.9	38.9	-48.9
50	(6 to 12:12)	32.4	-33.3	32.4	-39.7	32.4	-39.7	34.4	-35.4	34.4	-42.2	34.4	-42.2	36.0	-37.1	36.0	-44.2	36.0	-44.2	37.4	-38.6	37.4	-46.0	37.4	-46.0
100		31.4	-31.4	31.4	-37.8	31.4	-37.8	33.3	-33.3	33.3	-40.2	33.3	-40.2	35.0	-35.0	35.0	-42.1	35.0	-42.1	36.3	-36.3	36.3	-43.7	36.3	-43.7

*** For Hip Roofs with angle > 7 degrees (1.5:12) and ≤ 25 degrees (5:5:12), Zone 3 shall be treated as Zone 2 (Figure 30.4-2 B, Note 7, p. 337)

Effective Wind Area (ft ²)	Location	Mean Roof Height of 15 feet						Mean Roof Height of 20 feet						Mean Roof Height of 25 feet						Mean Roof Height of 30 feet					
		Zone 4		Zone 5		Zone 4		Zone 5		Zone 4		Zone 5		Zone 4		Zone 5		Zone 4		Zone 5		Zone 4		Zone 5	
		+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
10	Wall	37.8	-41.0	37.8	-50.6	40.2	-43.6	40.2	-53.8	42.1	-45.7	42.1	-56.4	43.7	-47.4	43.7	-58.6	41.8	-45.5	41.8	-54.6	39.2	-42.9	39.2	-49.4
20		36.1	-39.3	36.1	-47.2	38.3	-41.7	38.3	-50.1	40.2	-43.8	40.2	-52.6	41.8	-45.5	41.8	-54.6	39.2	-42.9	39.2	-49.4	37.2	-40.9	37.2	-45.5
50		33.8	-37.0	33.8	-42.7	36.0	-39.4	36.0	-45.4	37.7	-41.3	37.7	-47.5	35.8	-39.4	35.8	-43.8	32.6	-36.3	32.6	-43.7	32.6	-36.3	32.6	-36.3
100		32.1	-35.3	32.1	-39.3	34.1	-37.5	34.1	-41.7	31.4	-35.0	31.4	-43.8	31.4	-35.0	31.4	-35.0	31.4	-35.0	31.4	-35.0	31.4	-35.0	31.4	-35.0
500		28.2	-31.4	28.2	-31.4	29.9	-33.3	29.9	-33.3	29.9	-33.3	29.9	-33.3	29.9	-33.3	29.9	-33.3	29.9	-33.3	29.9	-33.3	29.9	-33.3	29.9	-33.3

Garage Door Wind Loads

for a Building with 30-foot Mean Roof Height

Exposure C

Tables 1609.7(1) & (2), and Section 1609.3.1

Effective Wind Area	Roof Angle	Wind Load	
		Width	Height
8	0 - 10 degrees	35.2	-39.8
10	10	34.1	-38.2
14	14	32.3	-36.1
9	> 10 degrees	38.4	-43.4
16	7	36.8	-41.0

Design is based on the 3-second gust (wind velocity) for Risk Category II (general residential & commercial construction) per FBC 1620.2. Identify the zone per the figure or information by others. Any questionable zone is to be considered the more critical zone.

