Resilient Environment Department
BUILDING CODE DIVISION
2307 West Broward Boulevard, Suite 300, Fort Lauderdale, Florida 33312 • 954-765-4400 • **Broward.org/building**

APPLICATION INFORMATION FOR WINDOWS/DOORS REPLACEMENT SHUTTER INSTALLATION

1. You are required to have two (2) complete sets of building plans that include the following: For eligible ePermits, only one set is required. Your submittal shall include:

- All appropriate **Notices of Acceptance** (product approval).
- A **floor plan sketch** indicating the windows to be replaced or the shutters to be installed.
- A **complete current version of the Broward County Uniform Building Permit Application** which must show the total job value for construction including labor and materials.
- If you are a contractor applying for a permit you will be required to submit proof of **Worker's Compensation Insurance.** Such proof of compensation must be evidenced by a certificate of coverage issued by the carrier, a valid exemption certificate approved by the department, or a copy of the employer's authority to self-insure and shall be presented each time the employer applies for a building permit.
- If you are a homeowner applying for a permit, you will be required to complete an **Owner/Builder Affidavit,** in the presence of permitting staff.

2. If your project meets the criteria in the attached document, you may submit your plans for review. If they **do not** meet the criteria your plans must be designed by a **State of Florida Registered Architect/Engineer.**

3. After your plans have been reviewed, which can take up to 15 business days, you will be contacted to either, pick up your plans and address the corrections/changes that are required, or you will be informed that your permit is ready to be issued.

4. If your job is valued at $5,000.00 or more, upon issuance of your permit you will be required to file a **Notice of Commencement.** The Notice of Commencement must be filed with **Records, Taxes and Treasury Division (RTT)** located at 115 South Andrews Avenue, Room #114, Ft. Lauderdale. A certified copy of the current recorded Notice of Commencement containing the filing stamp from RTT must be submitted to Building Code Division, prior to the scheduling the first inspection. For further information, please call (954)831-4000 or send an email to records@broward.org.

(See reverse for updated requirement information)

Retrofit of Windows, Doors, Garage Doors, Shutters, and Skylights
FBC 2004 Existing Building, Alteration Level 1

At the Board of Rules and Appeals meeting of February 9, 2006, an interpretation was approved for Retrofit of Windows, Doors, Garage Doors, Shutters and Skylights, of the 2004 Florida Building Code as follows:

1. Window or door buck inspections are not required the buck shall comply with Section 1714.5.4.1 specifically, unless otherwise tested, buck shall extend beyond the entire face of the window of door frame such that full support of the frame is provided.

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

3. 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 (signed and sealed) by a Florida Professional Engineer or Architect, indicating the location of all retro openings and the required design pressure.
    b. A site-specific plan (not sealed) indicating the location of all 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 pressure based on FBC table 1609.6(b & d) FRC Table R301.2.2 (2 & 3) for windows, doors, shutters, and skylights and table 1609.6E for garage doors.

    Note: FBC Table 1609.6 (b & d) and FRC Table 1609 R301.2.2 (2 & 3) and 1609.6E has been adopted for retrofit windows, doors, shutters and skylights (only with a permit application date preceding September 1, 1994*, and is limited to building with a roof mean height of 30'.

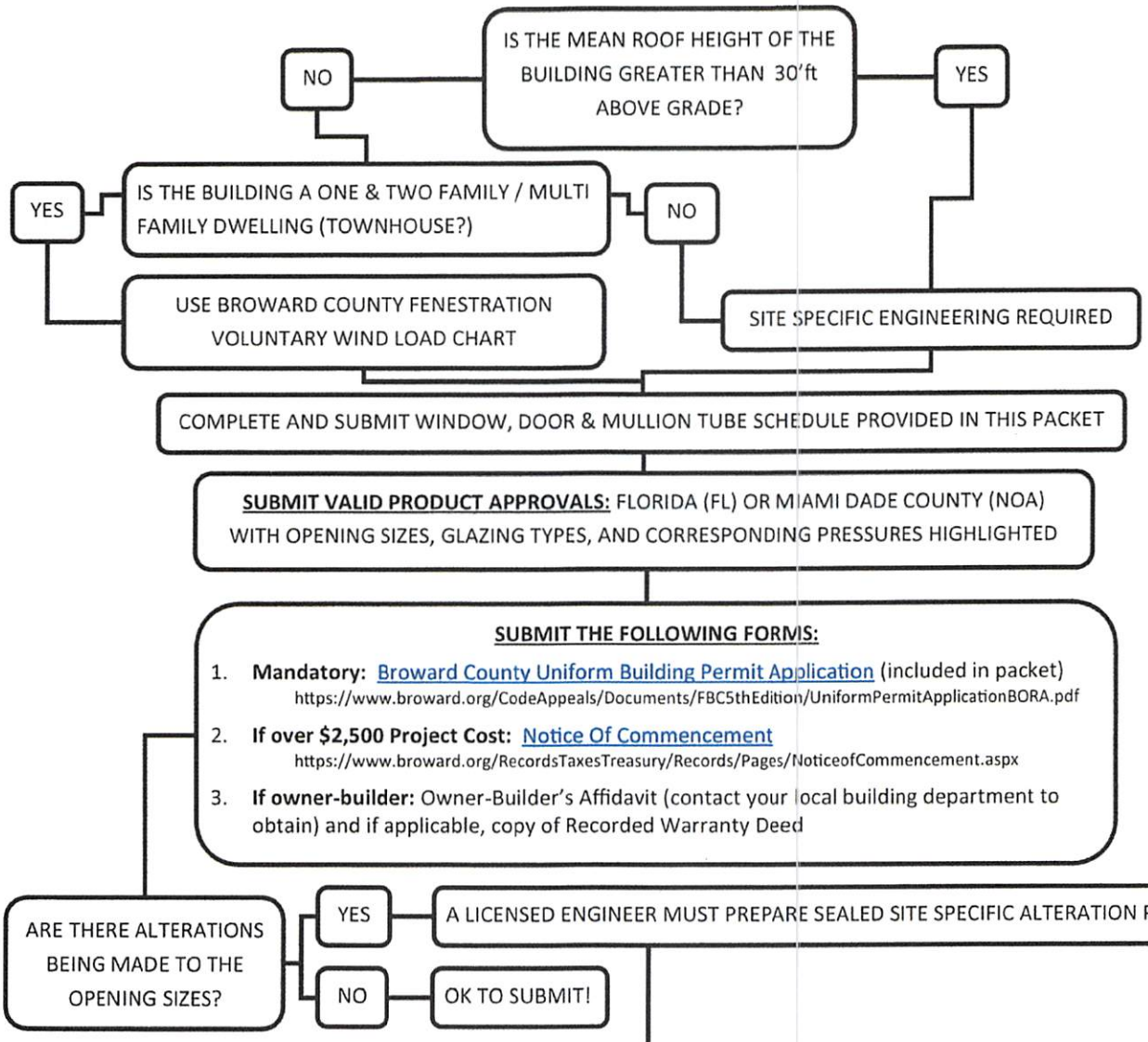
4. Required design pressure is required to meet FBC Table 1609.6 (b & d) FRC Table R301.2.2 (2 & 3) or ASCE-7-02 for windows, doors, shutters and skylights and 1609.6E for garage doors.

    Note: FBC Table 1609.6 (b & d) FRC Table R301.2.2 (2 & 3) 1609.6E may be used to determine wind pressure for retrofit of windows, door, garage doors and skylights, but only on buildings with a permit application prior to September 1, 2004, * and shall be limited to buildings with a maximum roof mean height of 30'.

    *Buildings with a permit application date on or after September 1, 1994, design measures were required to be shown on plans, should be used for retro.

EFFECTIVE DATE: JANUARY 20, 2020

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 Vult(min) = 170mph
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!

SITE SPECIFIC LAYOUT GUIDE INSTRUCTIONS - PAGE 2 of 3

Explanation of Terms

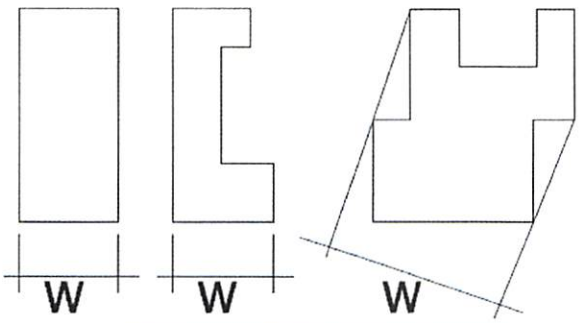
1: **Exposure C:** All of Broward County. The "Broward County Fenestration Voluntary Wind Load Chart" included within this packet can be used for all detached one & two story dwellings and multiple single-family dwellings (townhomes).

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).

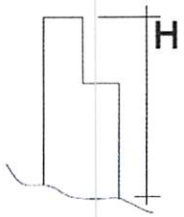
4: **Minimum Building Width:** 10% of least horizontal dimension (W) or 0.4h, whichever is smaller, but not less than either 4% of least horizontal dimension or 3'ft minimum.

MIN. BUILDING WIDTH EXAMPLES (PLAN VIEW):

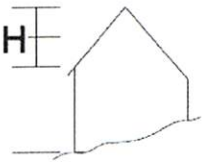


Mean Roof Height

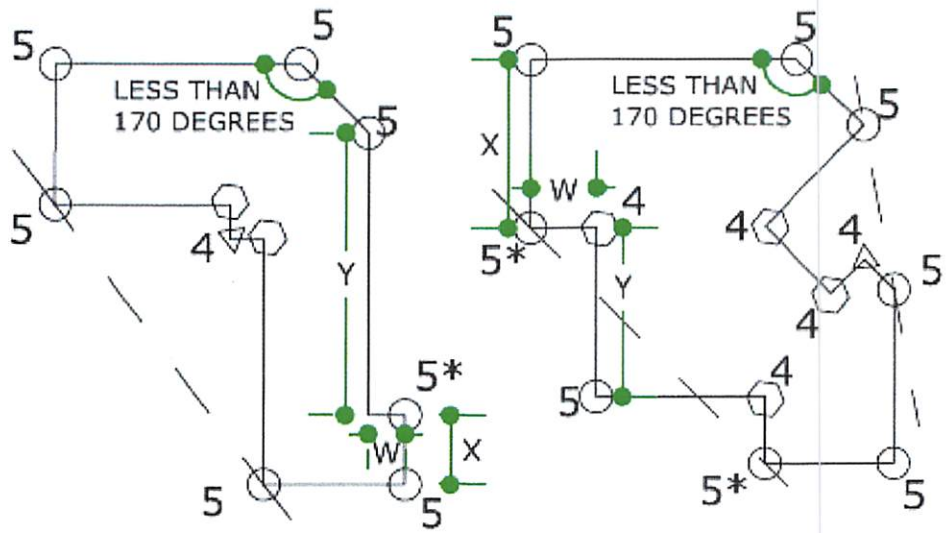
2: FLAT ROOF



2: SLOPED ROOF



ZONE EXAMPLES (PLAN VIEW)



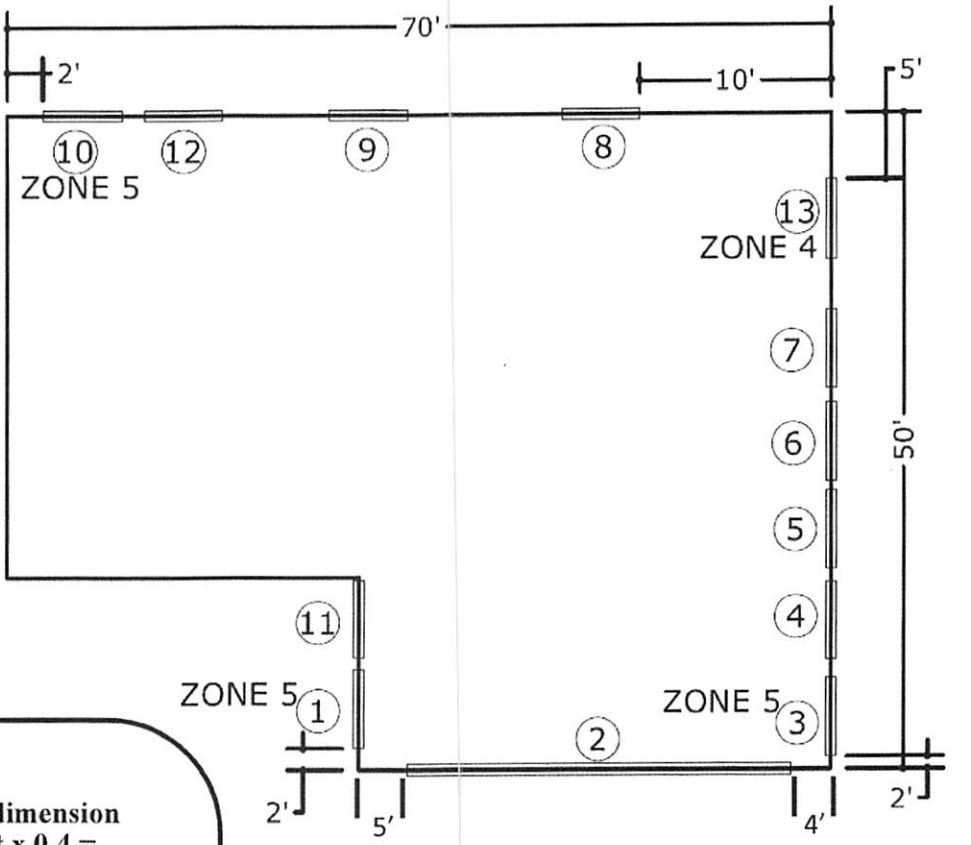
NOTE: The corner designated by an * would not be considered a corner if dimension **W** is less than half the width of the corner zone and dimension **X** and **Y** are greater than the width of a corner zone

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

SITE SPECIFIC LAYOUT GUIDE INSTRUCTIONS

Minimum Sketch Requirement



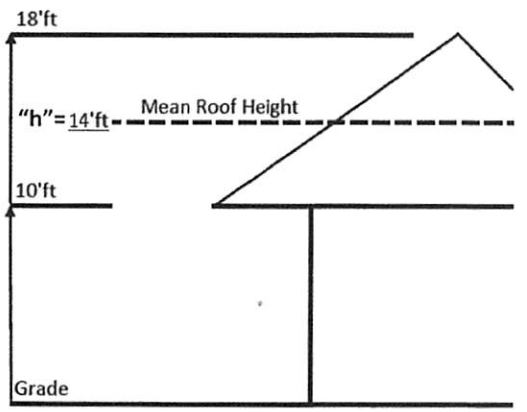
Zone determinations:

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

BORA Policy 20-01 **BROWARD COUNTY UNIFORM RETROFIT WINDOW & DOOR SCHEDULE** PAGE____OF____

NAME:_____ SITE ADDRESS:_____ CONTACT #:_____

1	2	3		4		5		6		7		8		9		10	
OPENING LOCATION ID	PRODUCT ACCEPTANCE NUMBER	PRODUCT APPROVAL PRESSURE RATING		REQUIRED DESIGN PRESSURE		OPENING SIZES		ZONE LOCATION		Impact Glazing		OPENING HAS EXISTING SHUTTERS		NEW SHUTTERS REQUIRED		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											
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						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 Fenestration Voluntary Wind Load Chart*

Per ASCE 7-16 Part 1 and FBC (2020) for Retrofitting in Accordance with Formal Interpretation #24

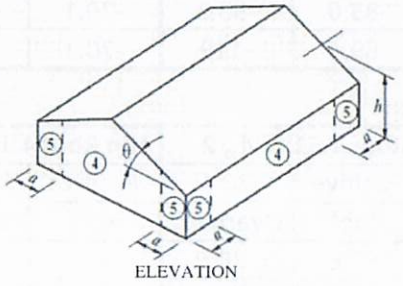
For Detached One-and Two family dwellings and Multiple Single-Family Dwellings (Townhouses) with Mean Roof Height ≤ 30 feet

Wind 170 mph (3-second gust) / Exposure C** / Kd = 0.85 / Kzt = 1.0 / Pressures are in PSF / Not for use in Coastal (Exposure 'D' areas)

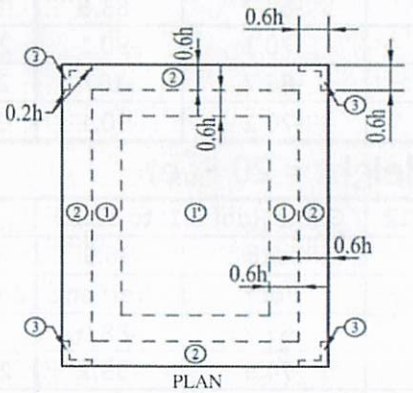
* Using Allowable Stress Design methodology (P = 0.6w) / ** Exposure C or D shall be determined according to ASCE 7-16 Section 26.7 (Exposure Categories)

Roof and Wall Zone Chart Diagrams

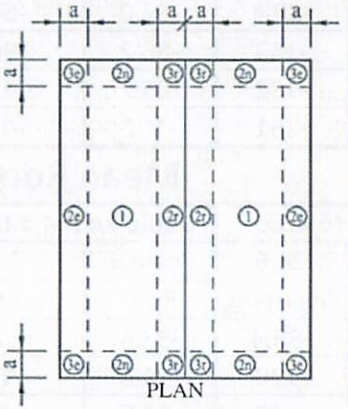
Wall Pressure Chart



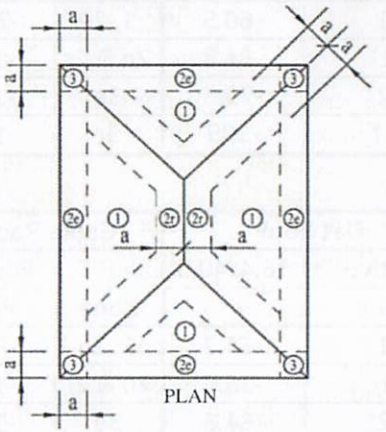
Flat Roof Uplift Chart



Gable Roof Uplift Chart



Hip Roof Uplift Chart



Instructions on how to use these Charts: Determine Mean Roof Height, ***h*** , which is top of roof for flat roofs or the mean roof height for pitched roofs. Find your least horizontal dimension for your building, not including a overhang if it occurs. Calculate the value of, ***a*** , = 10% of least horizontal dimension or 0.4*h, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 feet. If your roof height is less than 30 feet, but not exactly 15, 20, or 25 feet, you will need to go to the next higher roof height. If your Mean Roof Height is higher than 30 feet, these charts do not apply. Review the diagram which illustrate the wall and roof zones and determine the wind zone in which the component is located. Determine the tributary area of the component. If the tributary area falls in between values, use the value of the smaller tributary area. Select the positive and negative wind pressures corresponding to the wall or roof zone where your component is located. Door pressures shown are for the most common door sizes and are worst case for heights <= 30 Feet.

Wall Pressure For All Roof Types

Mean Roof Height	15 Ft						20 Ft					
Tributary Area	10	20	35	50	100	500	10	20	35	50	100	500
Wall Positive Pressure	38.0	36.2	34.9	34.0	32.3	28.3	40.3	38.5	37.0	36.1	34.3	30.1
Zone 4 Negative Pressure	-41.2	-39.5	-38.1	-37.2	-35.5	-31.5	-43.7	-41.9	-40.5	-39.5	-37.7	-33.5
Zone 5 Negative Pressure	-50.8	-47.4	-44.6	-42.9	-39.5	-31.5	-54.0	-50.4	-47.4	-45.6	-41.9	-33.5
Mean Roof Height	25 Ft						30 Ft					
Tributary Area	10	20	35	50	100	500	10	20	35	50	100	500
Wall Positive Pressure	42.3	40.4	38.8	37.8	35.9	31.5	43.9	41.9	40.3	39.3	37.3	32.8
Zone 4 Negative Pressure	-45.8	-43.9	-42.4	-41.4	-39.5	-35.1	-47.6	-45.7	-44.1	-43.1	-41.1	-36.5
Zone 5 Negative Pressure	-56.6	-52.8	-49.7	-47.8	-43.9	-35.1	-58.8	-54.7	-51.7	-49.6	-45.7	-36.5

Garage/Door Pressures

<= 30 Ft			
Effective Wind Area		Positive	Negative
Width	Height		
8	8	38.6	-48.2
10	10	37.4	-45.7
14	14	35.4	-41.8
9	7	38.7	-48.3
16	7	37.0	-45.0
3	7	41.8	-54.6
6	7	39.8	-50.6

SIMPLIFIED ROOF UPLIFT CHART FOR ROOFING APPLICATIONS

This simplified chart represents the worst case wind pressures for the various roof slopes and heights. This chart is based on a Tributary Area = 10 SF which is required for roofing applications. If the roof height is less than 30 feet, but not exactly 15, 20, or 25 feet, you will need to go to the next higher roof height. If your roof height is higher than 30 feet, these charts do not apply. Refer to Roof Chart Diagrams on Page 1 for Roof Zone Locations

Mean Roof Height = 15 Feet

Flat Roof		Gable Roof 1.51 to 4:12			Gable Roof 4.1 to 6:12		Gable Roof 6.1: to 12:12		Hip Roof 1.51 to 4:12			Hip Roof 4.1 to 6:12	
Positive*	15.4/38.0		Positive	23.2	Positive	23.2	Positive	34.7		Positive	28.3	Positive	28.3
Zone		Zone	Roof	Overhang	Roof	Overhang	Roof	Overhang	Zone	Roof	Overhang	Roof	Overhang
1	-60.5	1, 2e	-70.1	-80.4	-54.0	-64.3	-63.7	-83.6	1	-63.7	-74.0	-50.8	-60.8
1'	-34.8	2n & 2r	-102	-113	-86.2	-96.5	-70.1	-90.1	2e	-89.4	-99.7	-70.1	-79.0
2	-79.8	3e	-102	-132	-86.2	-116	-86.7	-107	2r	-83.0	-93.3	-70.1	-79.0
3*	-109	3r	-122	-151	-102	-128	-70.1	-90.1	3	-89.4	-119	-70.1	-95.3

Mean Roof Height = 20 Feet

Flat Roof		Gable Roof 1.51 to 4:12			Gable Roof 4.1 to 6:12		Gable Roof 6.1: to 12:12		Hip Roof 1.51 to 4:12			Hip Roof 4.1 to 6:12	
Positive*	16.4/40.3		Positive	24.6	Positive	24.6	Positive	36.9		Positive	30.1	Positive	30.1
Zone		Zone	Roof	Overhang	Roof	Overhang	Roof	Overhang	Zone	Roof	Overhang	Roof	Overhang
1	-64.2	1, 2e	-74.5	-85.4	-57.4	-68.3	-67.7	-88.9	1	-67.6	-78.6	-54.0	-64.6
1'	-36.9	2n & 2r	-109	-120	-91.5	-102	-74.5	-95.7	2e	-95.0	-106	-74.5	-84.0
2	-84.8	3e	-109	-140	-91.5	-123	-92.1	-113	2r	-88.1	-99.1	-74.5	-84.0
3*	-116	3r	-129	-161	-108	-136	-74.5	-95.7	3	-95.0	-126	-74.5	-101

Mean Roof Height = 25 Feet

Flat Roof		Gable Roof 1.51 to 4:12			Gable Roof 4.1 to 6:12		Gable Roof 6.1: to 12:12		Hip Roof 1.51 to 4:12			Hip Roof 4.1 to 6:12	
Positive*	17.2/42.3		Positive	25.8	Positive	25.8	Positive	38.7		Positive	31.5	Positive	31.5
Zone		Zone	Roof	Overhang	Roof	Overhang	Roof	Overhang	Zone	Roof	Overhang	Roof	Overhang
1	-67.3	1, 2e	-78.1	-89.5	-60.2	-71.6	-70.9	-93.1	1	-70.9	-82.4	-58.6	-67.7
1'	-38.7	2n & 2r	-114	-125	-96	-107	-78.1	-100	2e	-99.6	-111	-78.1	-88.0
2	-88.8	3e	-114	-147	-96	-129	-96.6	-119	2r	-92.4	-104	-78.1	-88.0
3*	-121	3r	-135	-168	-113	-143	-78.1	-100	3	-99.6	-133	-78.1	-106

Mean Roof Height = 30 Feet

Flat Roof		Gable Roof 1.51 to 4:12			Gable Roof 4.1 to 6:12		Gable Roof 6.1: to 12:12		Hip Roof 1.51 to 4:12			Hip Roof 4.1 to 6:12	
Positive*	17.9/43.9		Positive	26.8	Positive	26.8	Positive	40.2		Positive	32.8	Positive	32.8
Zone		Zone	Roof	Overhang	Roof	Overhang	Roof	Overhang	Zone	Roof	Overhang	Roof	Overhang
1	-70.0	1, 2e	-81.1	-93.1	-62.6	-74.5	-73.7	-96.8	1	-73.7	-85.6	-58.8	-70.4
1'	-40.2	2n & 2r	-118	-130	-99.8	-112	-81.1	-104	2e	-103	-115	-81.1	-91.4
2	-92.3	3e	-118	-153	-99.8	-134	-100	-123	2r	-96.0	-108	-81.1	-91.4
3*	-126	3r	-141	-175	-118	-148	-81.1	-104	3	-103	-138	-81.1	-110

* If Parapet >= 3 Ft occurs around entire building use the same Zone 2 pressure for Zone 3 and use the higher positive pressure shown