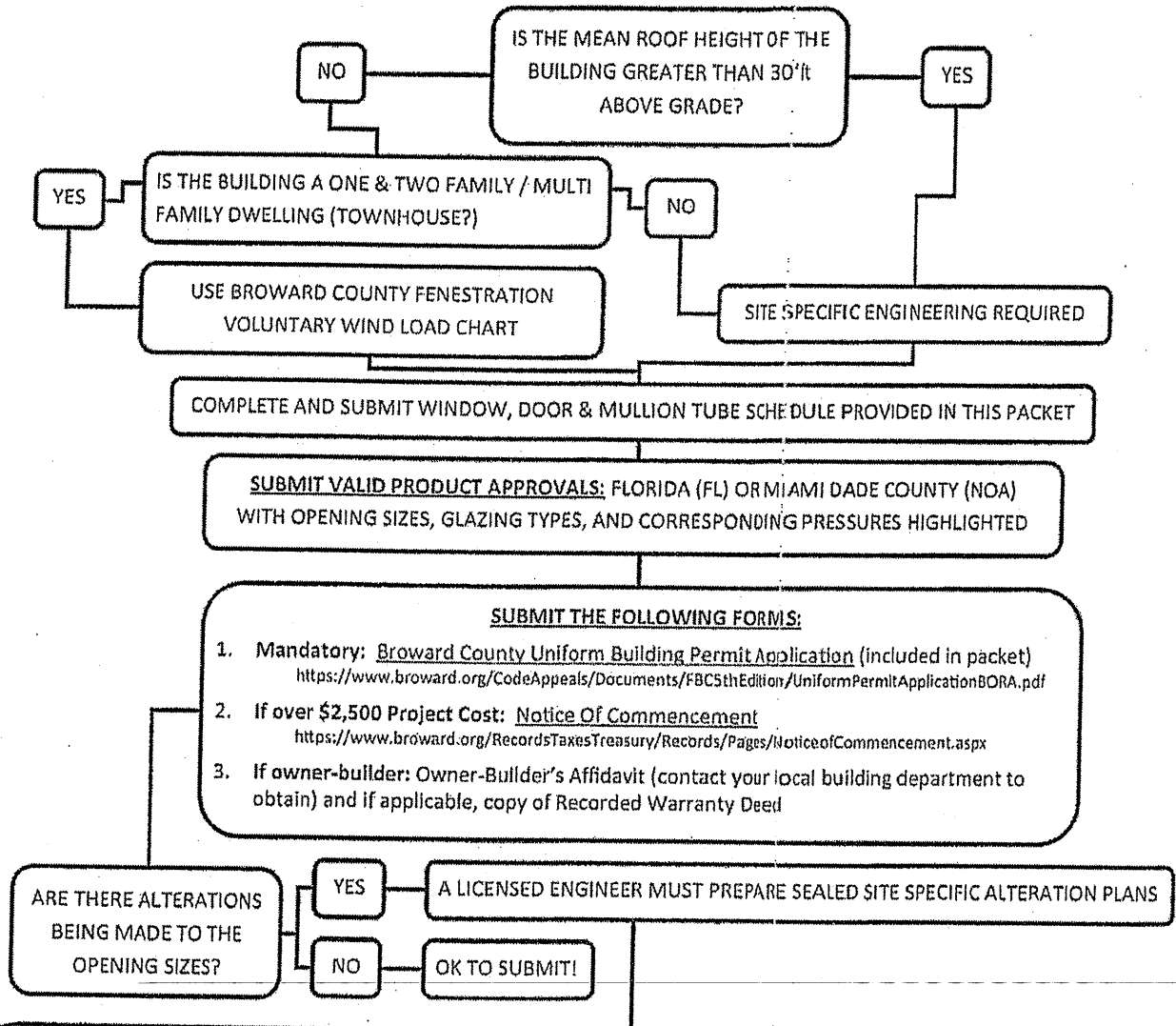


**INSTRUCTION FLOWCHART**



**DESIGN CRITERIA REQUIREMENTS FOR PLANS**

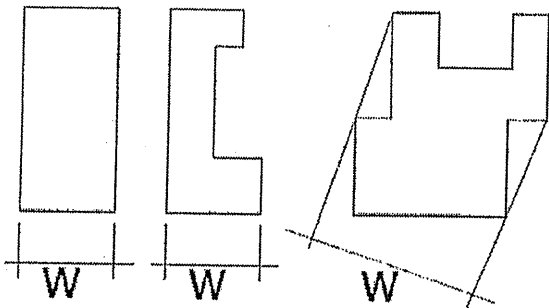
1. Unit sketch, generally to scale illustrating the unit and overall building (if multi-family).
2. Broward requires ASCE 7 calculations using Peak wind velocity  $V_{ult}(min) = 170\text{mph}$
3. Either Exposure C (inland) or D (coastal - see description next page)
4. Mean (average) Roof height. (see 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!

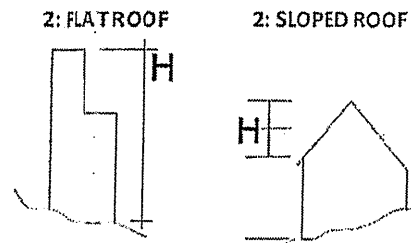
## Explanation of Terms

- 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.

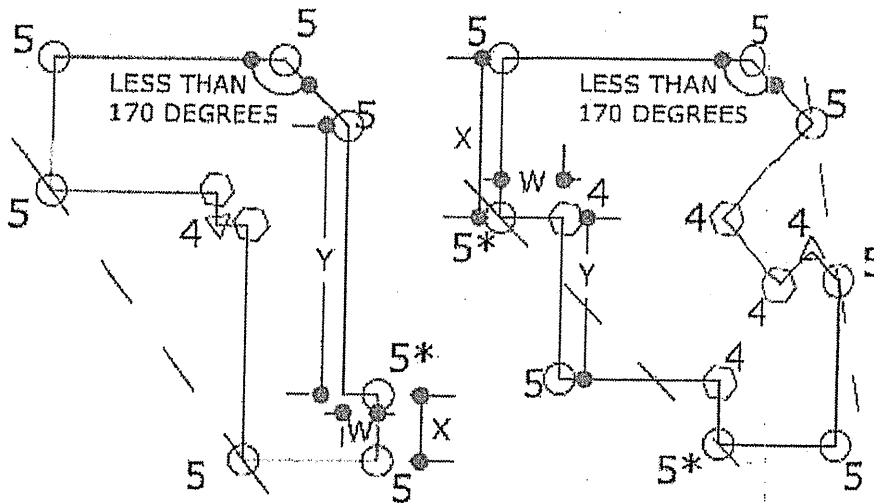
MIN. BUILDING WIDTH EXAMPLES (PLAN VIEW):



Mean Roof Height



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

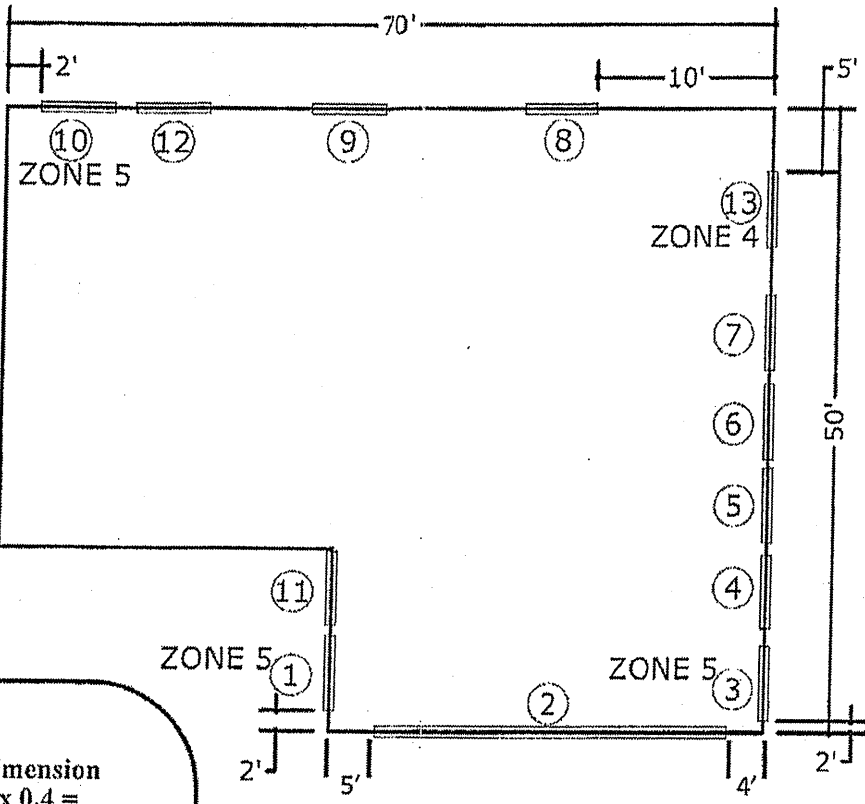
**170 degree:**  
An unobstructed exterior corner with an interior angle of less than 170 degree would be considered a corner zone

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).

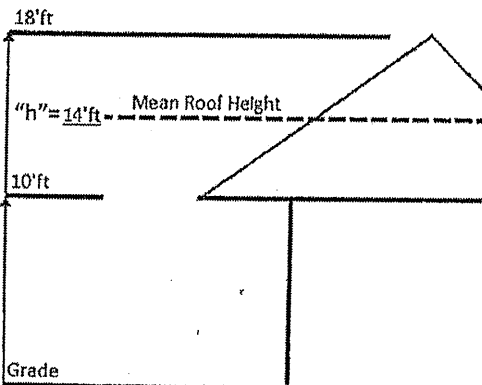


**ZONE CALCULATIONS:**

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

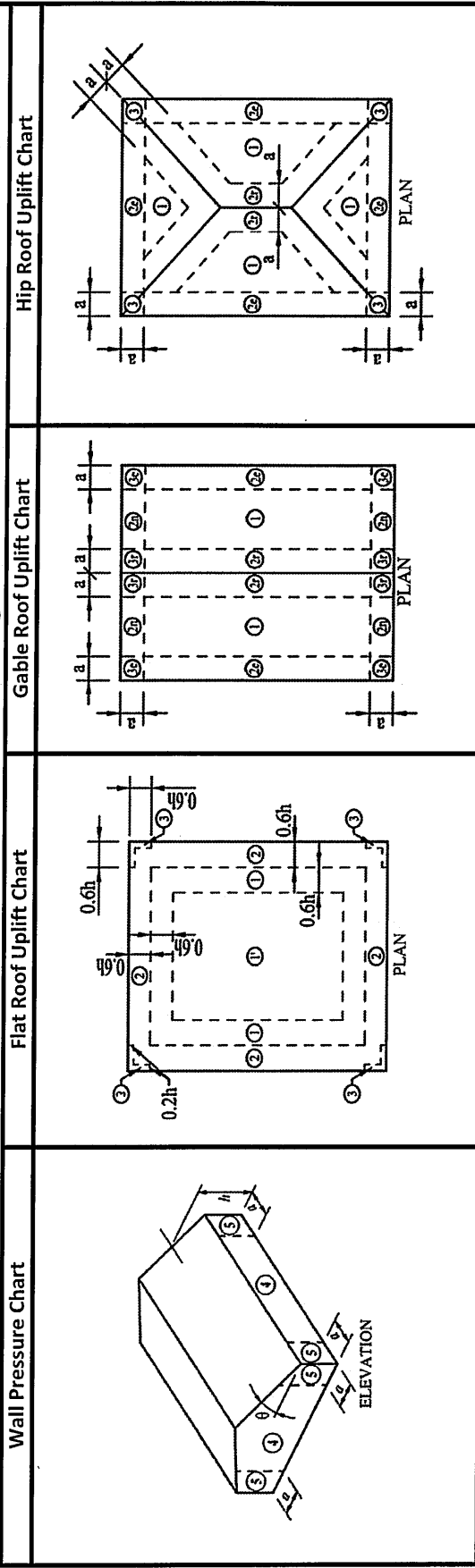
IDENTIFY OPENINGS ALPHABETICALLY OR NUMERICALLY ON ELEVATION SHEETS.

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

### Broward County 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  $\leq$  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



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 an overhang if it occurs. Calculate the value of,  $a$ , = 10% of least horizontal dimension or  $0.4 \cdot h$ , 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  $\leq$  30 Feet.

| Mean Roof Height         | Wall Pressure For All Roof Types |       |       |       |       |       |       |       |       |       |       |       | Garage/Door Pressures |       |     |     |                     |          |          |   |    |    |    |
|--------------------------|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------------|-------|-----|-----|---------------------|----------|----------|---|----|----|----|
|                          | 15 Ft                            |       |       |       | 20 Ft |       |       |       | 25 Ft |       |       |       | $\leq$ 30 Ft          |       |     |     |                     |          |          |   |    |    |    |
|                          | 10                               | 20    | 35    | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 100                   | 150   | 200 | 250 | Effective Wind Area | Positive | Negative |   |    |    |    |
| Tributary Area           | 38.0                             | 36.2  | 34.9  | 34.0  | 32.3  | 28.3  | 40.3  | 38.5  | 37.0  | 36.1  | 34.3  | 30.1  | 500                   | Width | 8   | 10  | 14                  | 14       | Height   | 8 | 10 | 14 | 14 |
| Wall Positive 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 | 500                   | Width | 8   | 10  | 14                  | 14       | Height   | 8 | 10 | 14 | 14 |
| Zone 4 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 | 500                   | Width | 8   | 10  | 14                  | 14       | Height   | 8 | 10 | 14 | 14 |
| 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 | 500                   | Width | 8   | 10  | 14                  | 14       | Height   | 8 | 10 | 14 | 14 |
| Mean Roof Height         | 10                               | 20    | 35    | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500                   | Width | 8   | 10  | 14                  | 14       | Height   | 8 | 10 | 14 | 14 |
| Tributary Area           | 42.3                             | 40.4  | 38.8  | 37.8  | 35.9  | 31.5  | 43.9  | 41.9  | 40.3  | 39.3  | 37.3  | 32.8  | 500                   | Width | 8   | 10  | 14                  | 14       | Height   | 8 | 10 | 14 | 14 |
| Wall Positive 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 | 500                   | Width | 8   | 10  | 14                  | 14       | Height   | 8 | 10 | 14 | 14 |
| Zone 4 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 | 500                   | Width | 8   | 10  | 14                  | 14       | Height   | 8 | 10 | 14 | 14 |
| 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 | 500                   | Width | 8   | 10  | 14                  | 14       | Height   | 8 | 10 | 14 | 14 |

## 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<br>Positive* | 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 |          |          |       |
|------------------------|-------------------------|----------|----------|------------------------|----------|-------|-------------------------|----------|-------|-----------------------|----------|----------|----------------------|----------|----------|-------|
|                        | Zone                    | Positive | Overhang | Roof                   | Overhang | Roof  | Positive                | Overhang | Roof  | Zone                  | Positive | Overhang | Roof                 | Positive | Overhang | Roof  |
| 15.4/38.0              |                         | 23.2     | 23.2     | 23.2                   | 23.2     | 23.2  | 34.7                    | 34.7     | 34.7  |                       | 28.3     | 28.3     | 28.3                 | 28.3     | 28.3     | 28.3  |
| 1                      | 1, 2e                   | -70.1    | -80.4    | -54.0                  | -64.3    | -63.7 | -83.6                   | -83.6    | -83.6 | 1                     | -63.7    | -74.0    | -50.8                | -50.8    | -60.8    | -60.8 |
| 1'                     | 2n & 2r                 | -102     | -113     | -86.2                  | -96.5    | -70.1 | -90.1                   | -90.1    | -90.1 | 2e                    | -89.4    | -99.7    | -70.1                | -70.1    | -79.0    | -79.0 |
| 2                      | 3e                      | -102     | -132     | -86.2                  | -116     | -86.7 | -107                    | -107     | -107  | 2r                    | -83.0    | -93.3    | -70.1                | -70.1    | -79.0    | -79.0 |
| 3*                     | 3r                      | -122     | -151     | -102                   | -128     | -70.1 | -90.1                   | -90.1    | -90.1 | 3                     | -89.4    | -119     | -70.1                | -70.1    | -95.3    | -95.3 |

### Mean Roof Height = 20 Feet

| Flat Roof<br>Positive* | 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 |          |          |       |
|------------------------|-------------------------|----------|----------|------------------------|----------|-------|-------------------------|----------|-------|-----------------------|----------|----------|----------------------|----------|----------|-------|
|                        | Zone                    | Positive | Overhang | Roof                   | Overhang | Roof  | Positive                | Overhang | Roof  | Zone                  | Positive | Overhang | Roof                 | Positive | Overhang | Roof  |
| 16.4/40.3              |                         | 24.6     | 24.6     | 24.6                   | 24.6     | 24.6  | 36.9                    | 36.9     | 36.9  |                       | 30.1     | 30.1     | 30.1                 | 30.1     | 30.1     | 30.1  |
| 1                      | 1, 2e                   | -74.5    | -85.4    | -57.4                  | -68.3    | -67.7 | -88.9                   | -88.9    | -88.9 | 1                     | -67.6    | -78.6    | -54.0                | -54.0    | -64.6    | -64.6 |
| 1'                     | 2n & 2r                 | -109     | -120     | -91.5                  | -102     | -74.5 | -95.7                   | -95.7    | -95.7 | 2e                    | -95.0    | -106     | -74.5                | -74.5    | -84.0    | -84.0 |
| 2                      | 3e                      | -109     | -140     | -91.5                  | -123     | -92.1 | -113                    | -113     | -113  | 2r                    | -88.1    | -99.1    | -74.5                | -74.5    | -84.0    | -84.0 |
| 3*                     | 3r                      | -129     | -161     | -108                   | -136     | -74.5 | -95.7                   | -95.7    | -95.7 | 3                     | -95.0    | -126     | -74.5                | -74.5    | -101     | -101  |

### Mean Roof Height = 25 Feet

| Flat Roof<br>Positive* | 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 |          |          |       |
|------------------------|-------------------------|----------|----------|------------------------|----------|-------|-------------------------|----------|-------|-----------------------|----------|----------|----------------------|----------|----------|-------|
|                        | Zone                    | Positive | Overhang | Roof                   | Overhang | Roof  | Positive                | Overhang | Roof  | Zone                  | Positive | Overhang | Roof                 | Positive | Overhang | Roof  |
| 17.2/42.3              |                         | 25.8     | 25.8     | 25.8                   | 25.8     | 25.8  | 38.7                    | 38.7     | 38.7  |                       | 31.5     | 31.5     | 31.5                 | 31.5     | 31.5     | 31.5  |
| 1                      | 1, 2e                   | -78.1    | -89.5    | -60.2                  | -71.6    | -70.9 | -93.1                   | -93.1    | -93.1 | 1                     | -70.9    | -82.4    | -58.6                | -58.6    | -67.7    | -67.7 |
| 1'                     | 2n & 2r                 | -114     | -125     | -96                    | -107     | -78.1 | -100                    | -100     | -100  | 2e                    | -99.6    | -111     | -78.1                | -78.1    | -88.0    | -88.0 |
| 2                      | 3e                      | -114     | -147     | -96                    | -129     | -96.6 | -119                    | -119     | -119  | 2r                    | -92.4    | -104     | -78.1                | -78.1    | -88.0    | -88.0 |
| 3*                     | 3r                      | -135     | -168     | -113                   | -143     | -78.1 | -100                    | -100     | -100  | 3                     | -99.6    | -133     | -78.1                | -78.1    | -106     | -106  |

### Mean Roof Height = 30 Feet

| Flat Roof<br>Positive* | 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 |          |          |       |
|------------------------|-------------------------|----------|----------|------------------------|----------|-------|-------------------------|----------|-------|-----------------------|----------|----------|----------------------|----------|----------|-------|
|                        | Zone                    | Positive | Overhang | Roof                   | Overhang | Roof  | Positive                | Overhang | Roof  | Zone                  | Positive | Overhang | Roof                 | Positive | Overhang | Roof  |
| 17.9/43.9              |                         | 26.8     | 26.8     | 26.8                   | 26.8     | 26.8  | 40.2                    | 40.2     | 40.2  |                       | 32.8     | 32.8     | 32.8                 | 32.8     | 32.8     | 32.8  |
| 1                      | 1, 2e                   | -81.1    | -93.1    | -62.6                  | -74.5    | -73.7 | -96.8                   | -96.8    | -96.8 | 1                     | -73.7    | -85.6    | -58.8                | -58.8    | -70.4    | -70.4 |
| 1'                     | 2n & 2r                 | -118     | -130     | -99.8                  | -112     | -81.1 | -104                    | -104     | -104  | 2e                    | -103     | -115     | -81.1                | -81.1    | -91.4    | -91.4 |
| 2                      | 3e                      | -118     | -153     | -99.8                  | -134     | -100  | -123                    | -123     | -123  | 2r                    | -96.0    | -108     | -81.1                | -81.1    | -91.4    | -91.4 |
| 3*                     | 3r                      | -141     | -175     | -118                   | -148     | -81.1 | -104                    | -104     | -104  | 3                     | -103     | -138     | -81.1                | -81.1    | -110     | -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