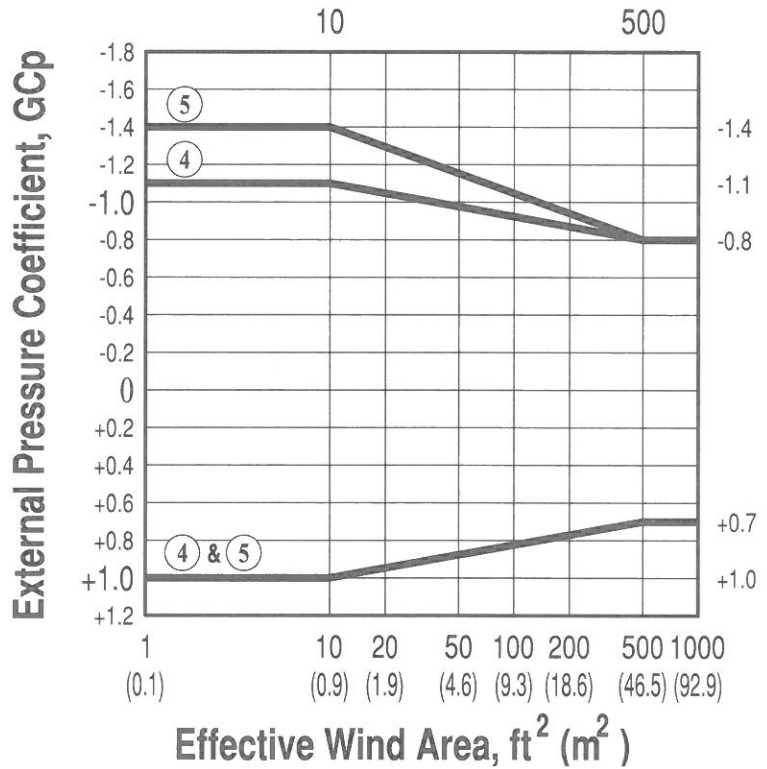
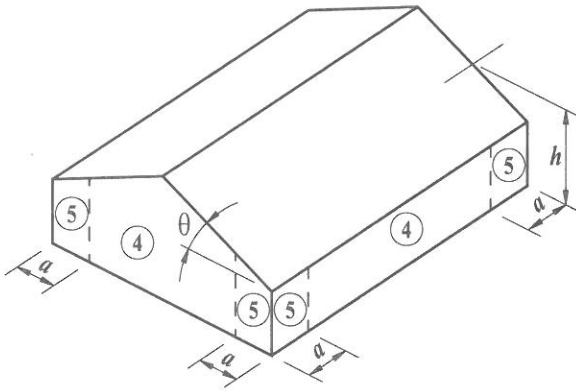


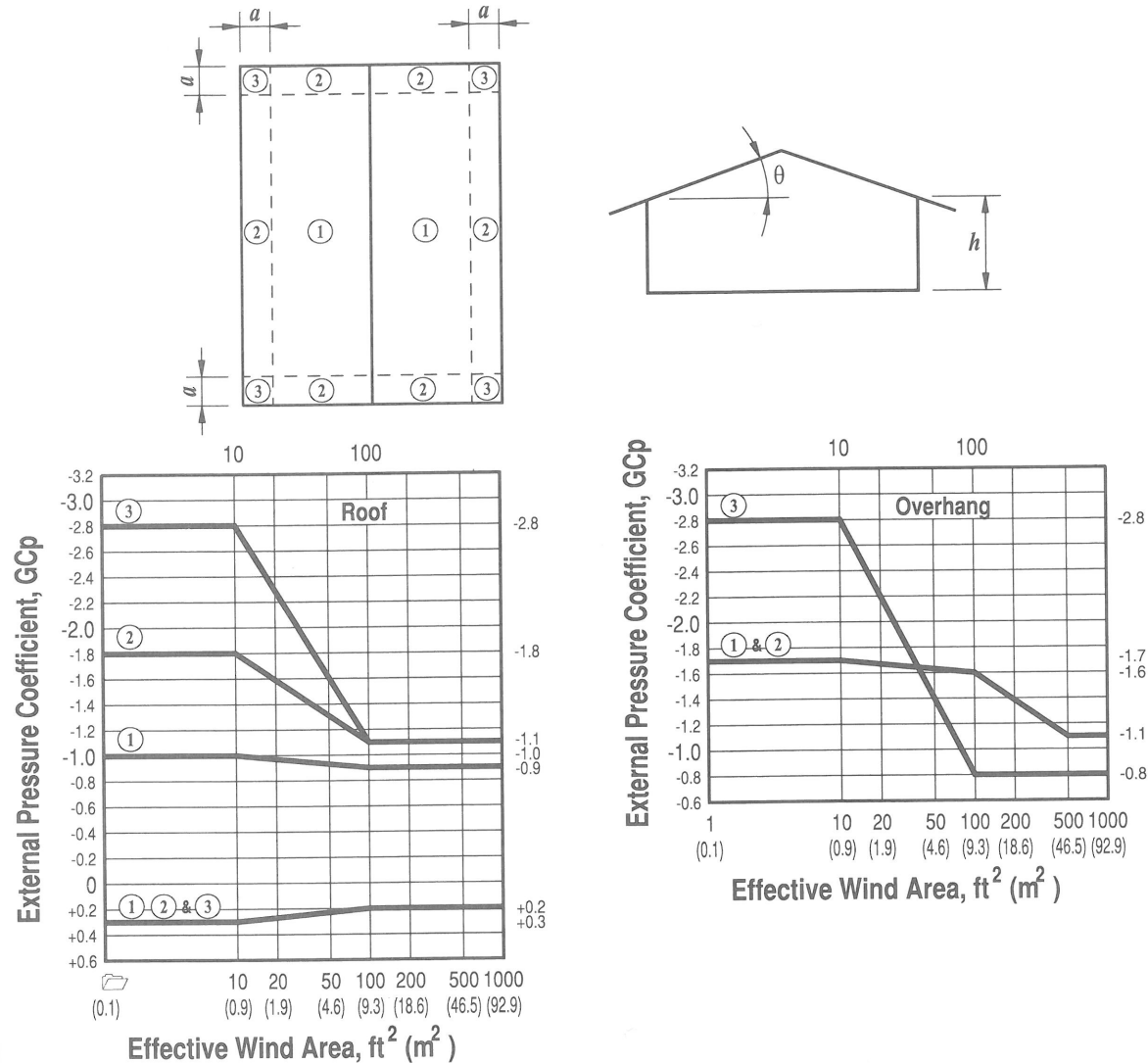
Components and Cladding		$h \leq 60$ ft.
Figure 30.4-1	External Pressure Coefficients, GC_p	Walls
Enclosed, Partially Enclosed Buildings		



Notes:

1. Vertical scale denotes GC_p to be used with q_h .
2. Horizontal scale denotes effective wind area, in square feet (square meters).
3. Plus and minus signs signify pressures acting toward and away from the surfaces, respectively.
4. Each component shall be designed for maximum positive and negative pressures.
5. Values of GC_p for walls shall be reduced by 10% when $\theta \leq 10^\circ$.
6. Notation:
 - a : 10 percent of least horizontal dimension or $0.4h$, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m).
 - h : Mean roof height, in feet (meters), except that eave height shall be used for $\theta \leq 10^\circ$.
 - θ : Angle of plane of roof from horizontal, in degrees.

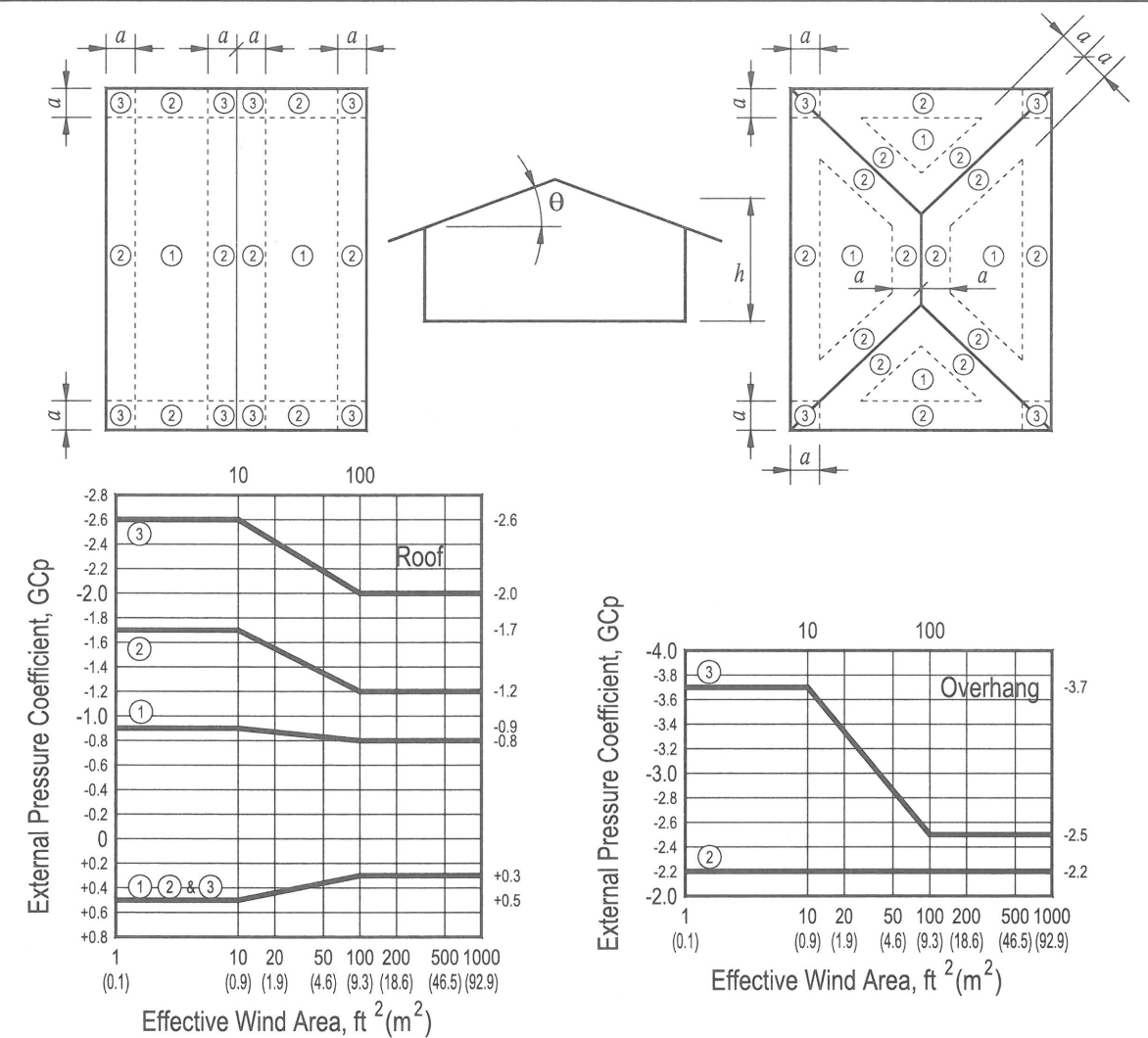
Components and Cladding **h ≤ 60 ft.**
Figure 30.4-2A **External Pressure Coefficients, GC_p**
Enclosed, Partially Enclosed Buildings **Gable Roofs $\theta \leq 7^\circ$**



Notes:

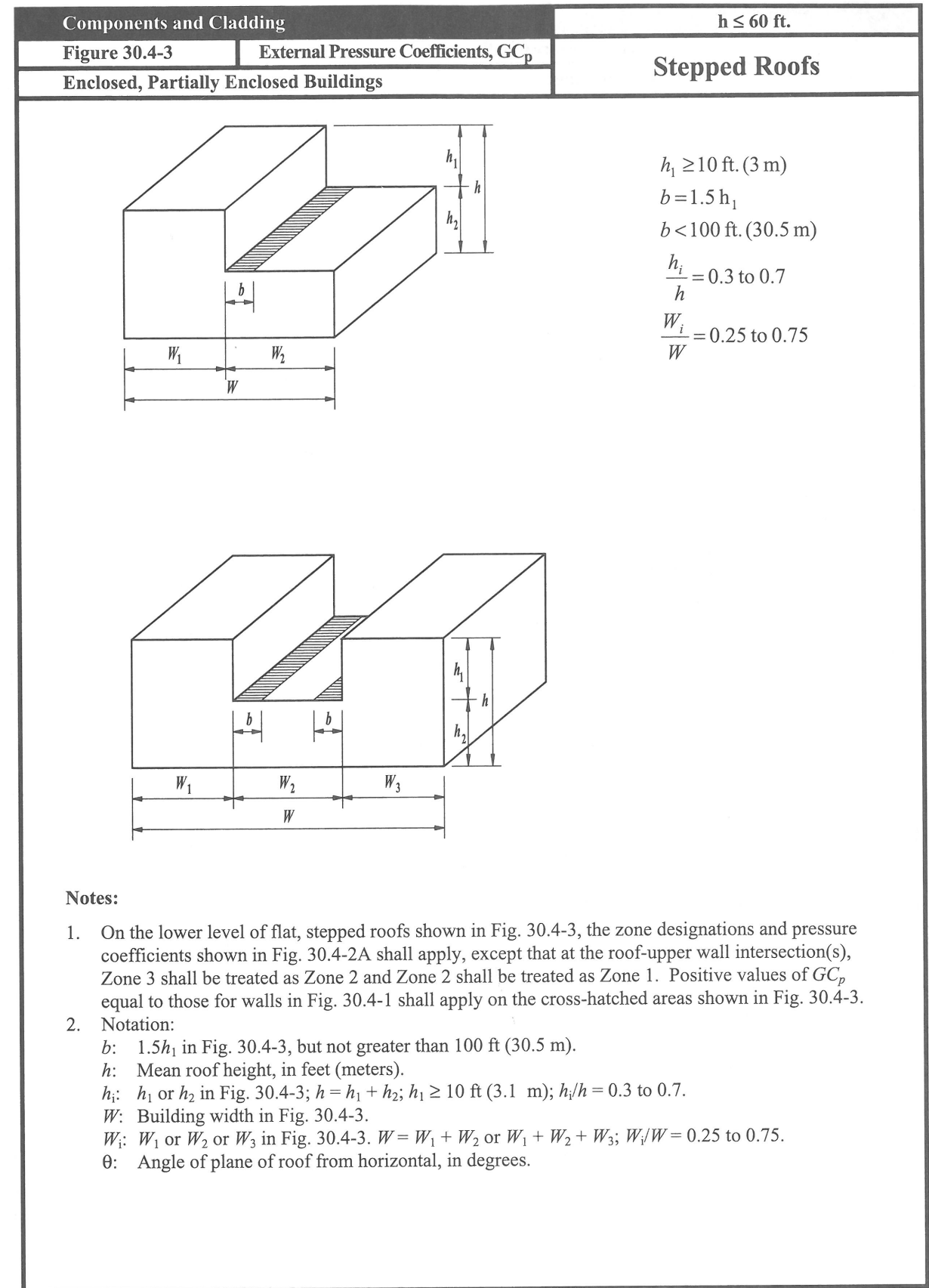
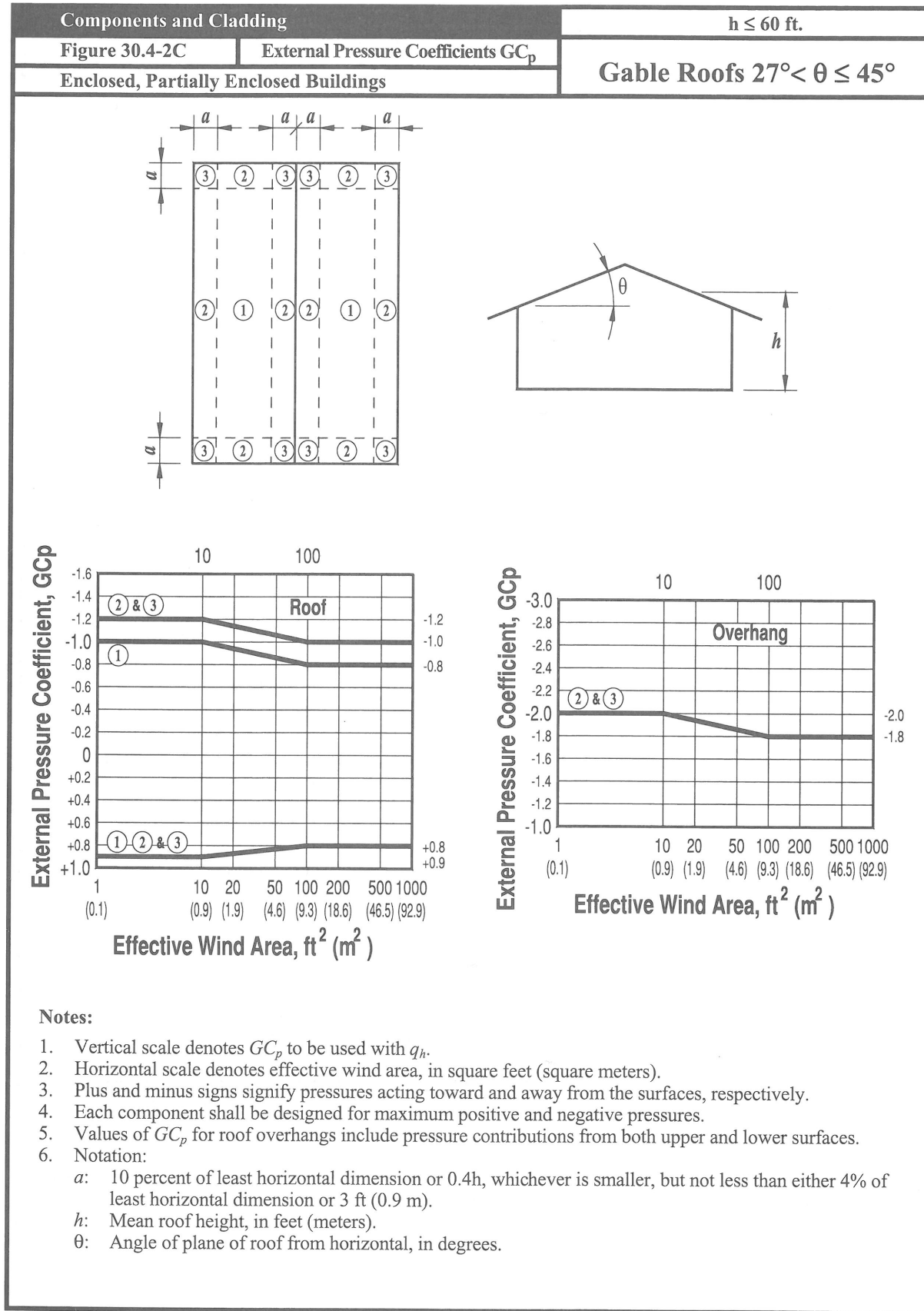
- Vertical scale denotes GC_p to be used with q_h .
- Horizontal scale denotes effective wind area, in square feet (square meters).
- Plus and minus signs signify pressures acting toward and away from the surfaces, respectively.
- Each component shall be designed for maximum positive and negative pressures.
- If a parapet equal to or higher than 3 ft (0.9m) is provided around the perimeter of the roof with $\theta \leq 7^\circ$, the negative values of GC_p in Zone 3 shall be equal to those for Zone 2 and positive values of GC_p in Zones 2 and 3 shall be set equal to those for wall Zones 4 and 5 respectively in Figure 30.4-1.
- Values of GC_p for roof overhangs include pressure contributions from both upper and lower surfaces.
- Notation:
 - a : 10 percent of least horizontal dimension or 0.4h, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m).
 - h : Eave height shall be used for $\theta \leq 10^\circ$.
 - θ : Angle of plane of roof from horizontal, in degrees.

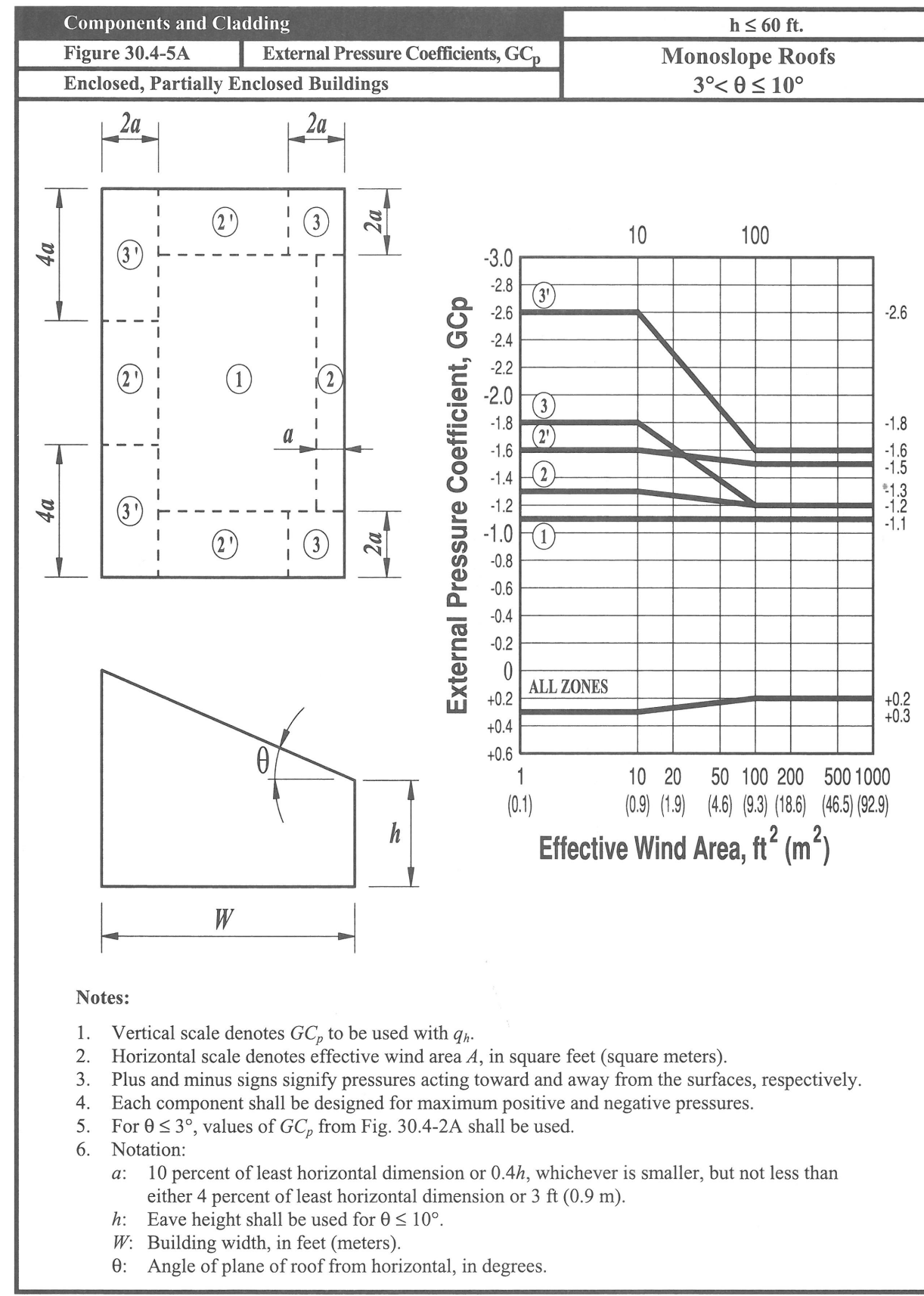
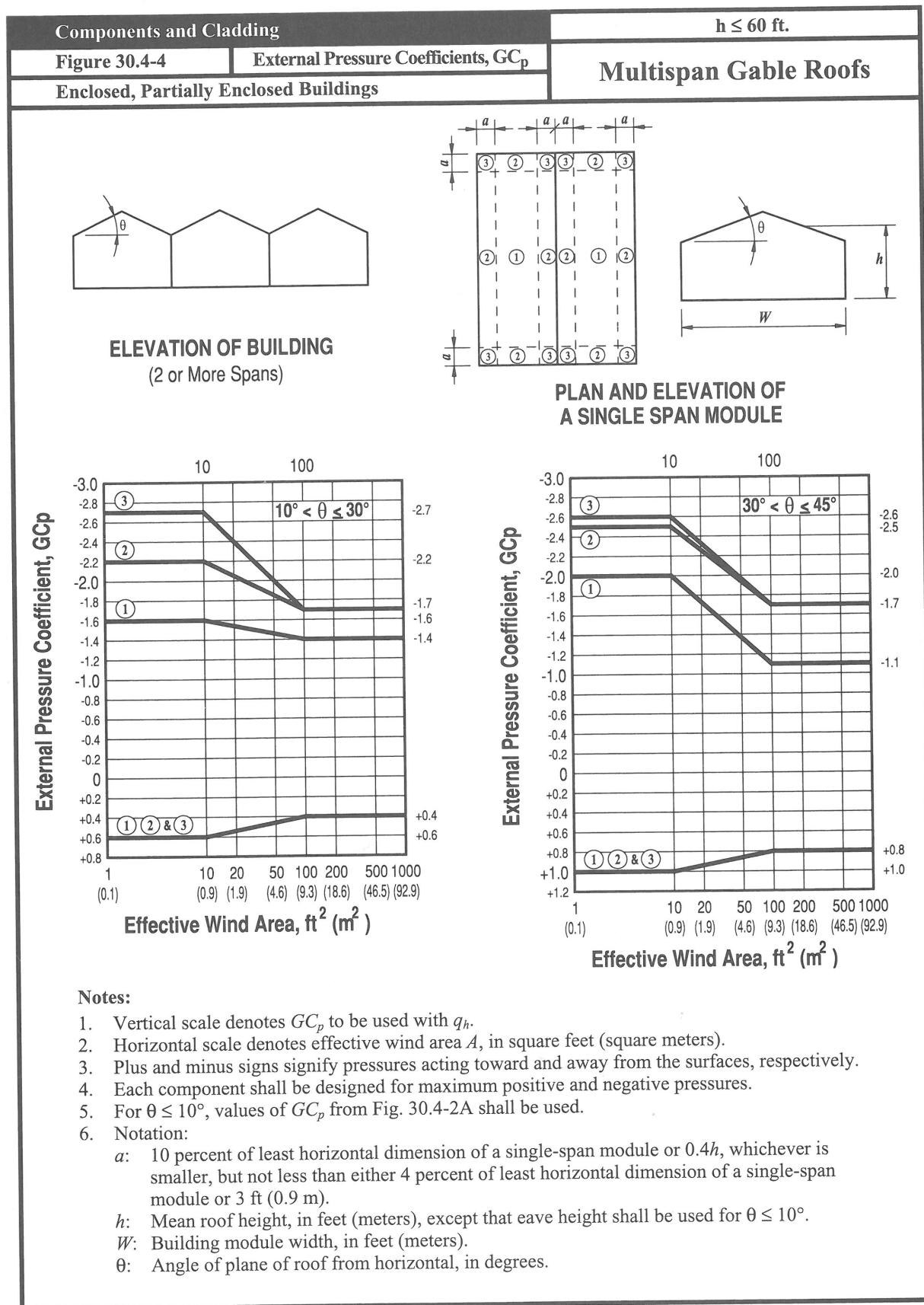
Components and Cladding **h ≤ 60 ft.**
Figure 30.4-2B **External Pressure Coefficients, GC_p**
Enclosed, Partially Enclosed Buildings **Gable/Hip Roofs $7^\circ < \theta \leq 27^\circ$**

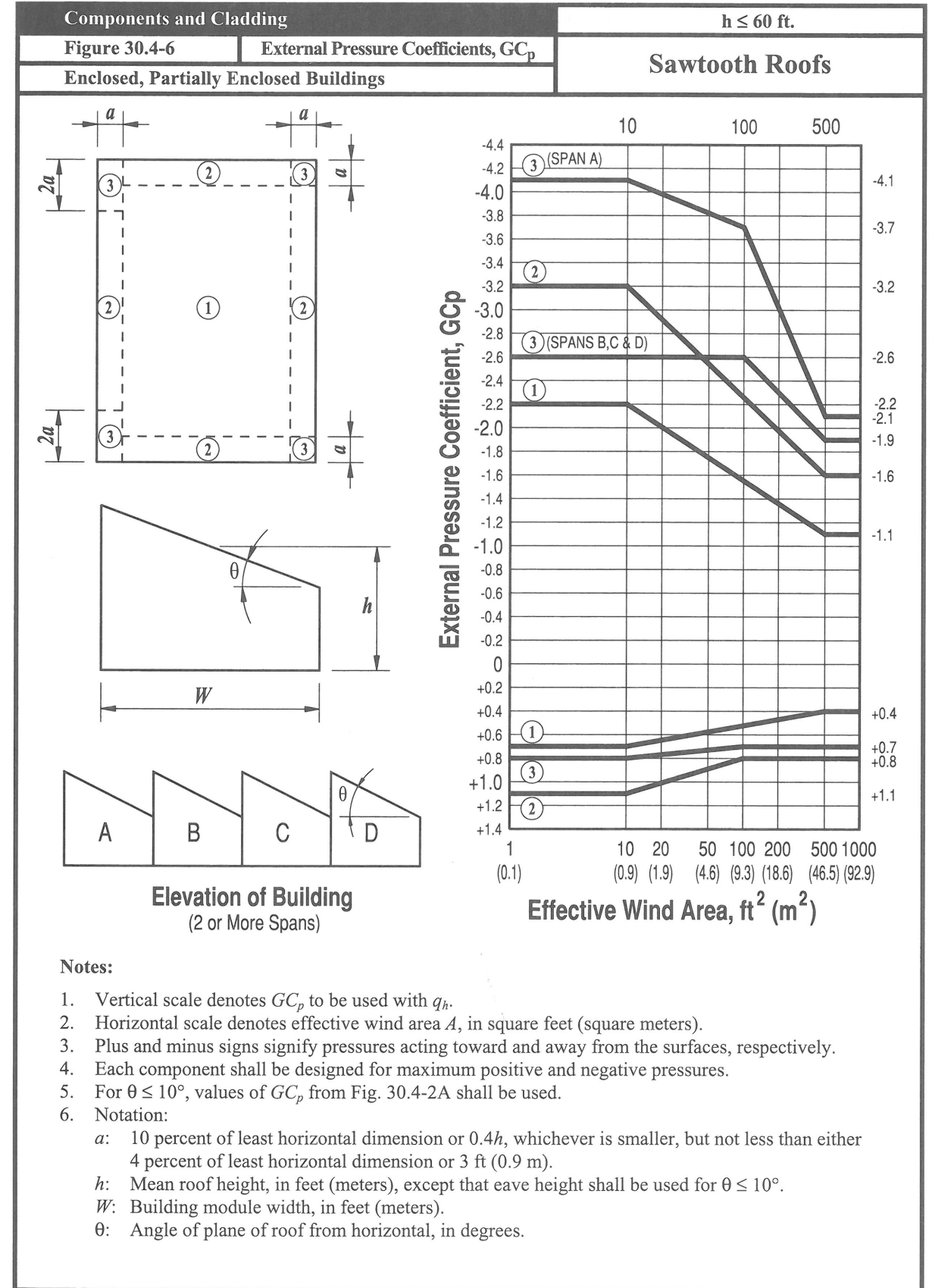
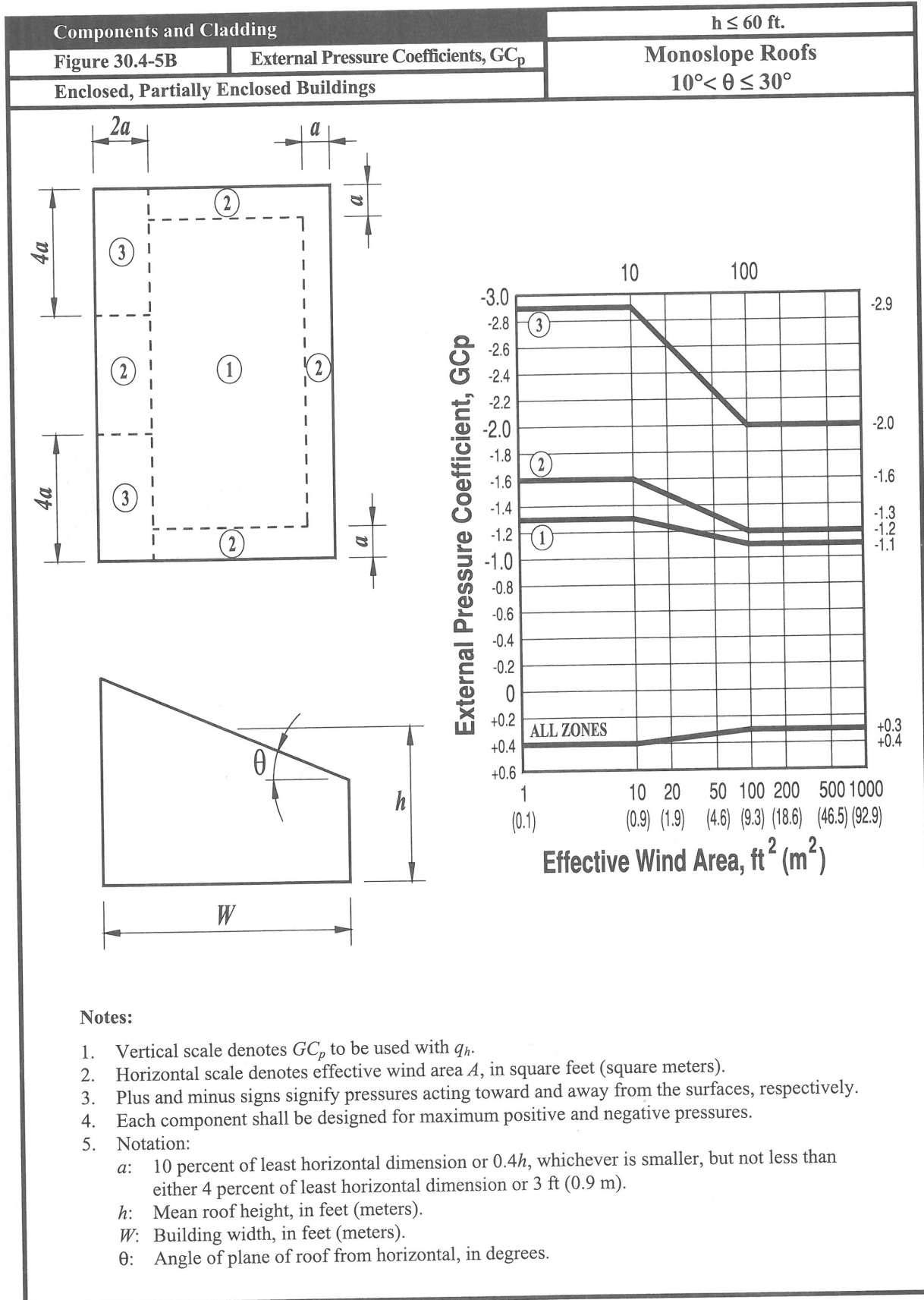


Notes:

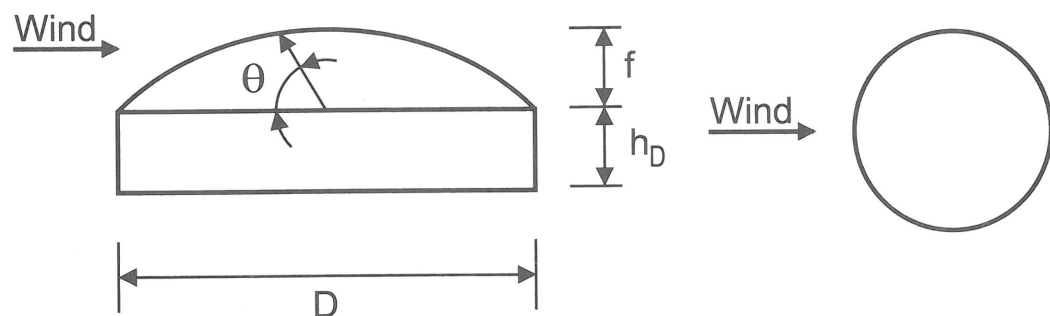
- Vertical scale denotes GC_p to be used with q_h .
- Horizontal scale denotes effective wind area, in square feet (square meters).
- Plus and minus signs signify pressures acting toward and away from the surfaces, respectively.
- Each component shall be designed for maximum positive and negative pressures.
- Values of GC_p for roof overhangs include pressure contributions from both upper and lower surfaces.
- For hip roofs with $7^\circ < \theta \leq 27^\circ$, edge/ridge strips and pressure coefficients for ridges of gabled roofs shall apply on each hip.
- For hip roofs with $\theta \leq 25^\circ$, Zone 3 shall be treated as Zone 2.
- Notation:
 - a : 10 percent of least horizontal dimension or 0.4h, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m).
 - h : Mean roof height, in feet (meters), except that eave height shall be used for $\theta \leq 10^\circ$.
 - θ : Angle of plane of roof from horizontal, in degrees.







Components and Cladding		All Heights
Figure 30.4-7	External Pressure Coefficients, GC_p	Domed Roofs
Enclosed, Partially Enclosed Buildings and Structures		

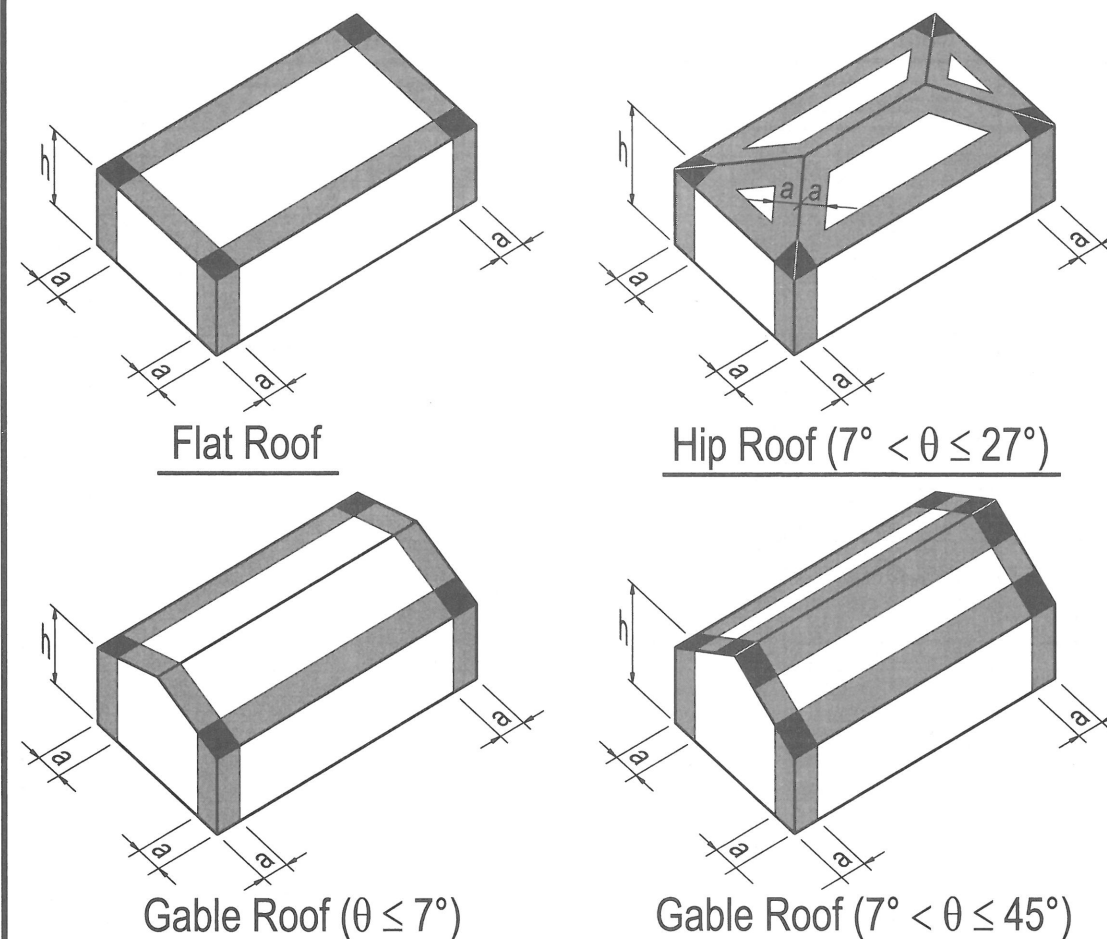


θ , degrees	Negative Pressures	Positive Pressures	Positive Pressures
		0 – 90	0 – 60
GC_p	-0.9	+0.9	+0.5

Notes:

1. Values denote GC_p to be used with $q_{(h_D+f)}$ where $h_D + f$ is the height at the top of the dome.
2. Plus and minus signs signify pressures acting toward and away from the surfaces, respectively.
3. Each component shall be designed for the maximum positive and negative pressures.
4. Values apply to $0 \leq h_D/D \leq 0.5$, $0.2 \leq f/D \leq 0.5$.
5. $\theta = 0$ degrees on dome springline, $\theta = 90$ degrees at dome center top point. f is measured from springline to top.

Components and Cladding – Method 1		$h \leq 60$ ft.
Figure 30.5-1	Design Wind Pressures	Walls & Roofs
Enclosed Buildings		



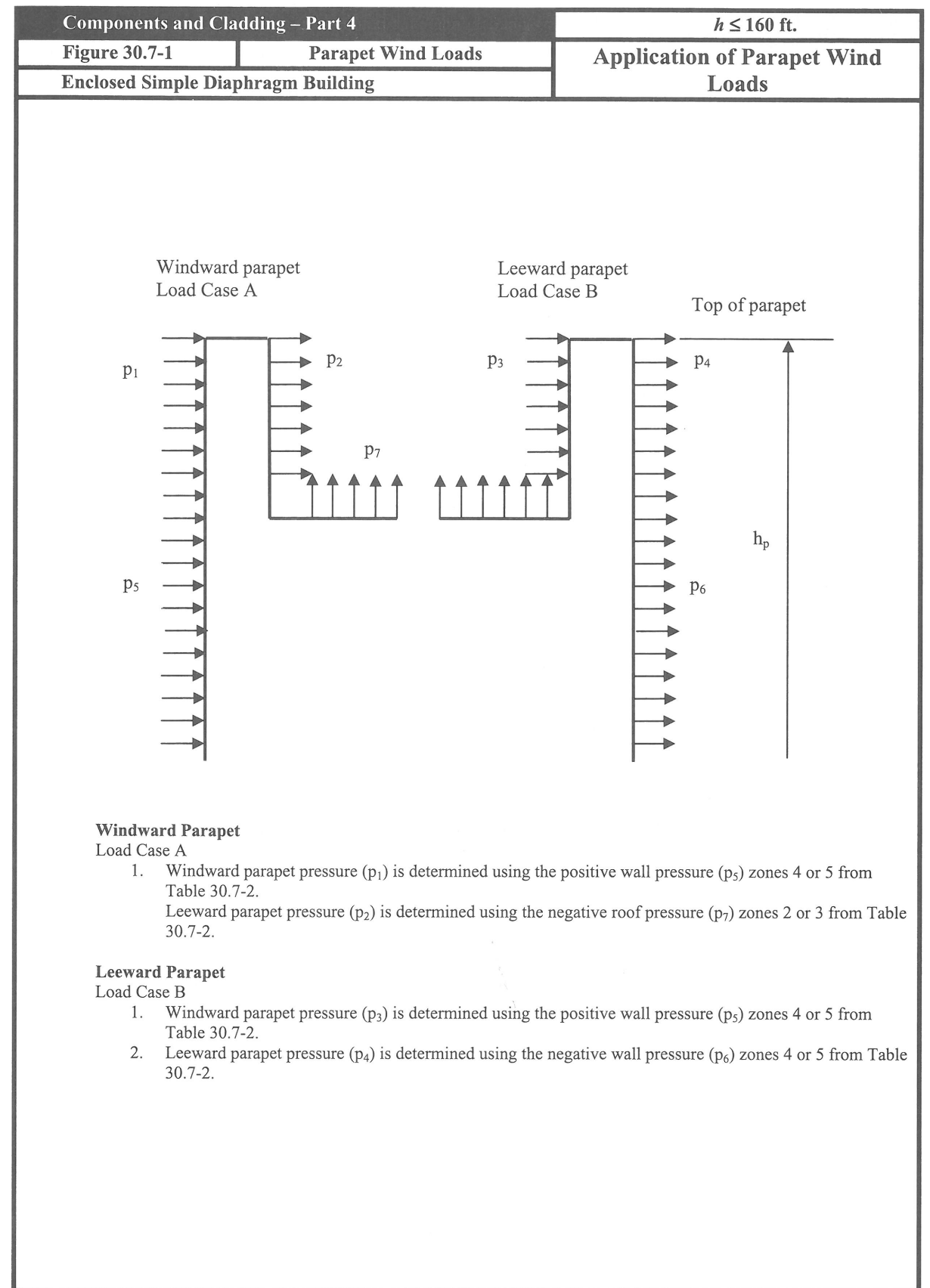
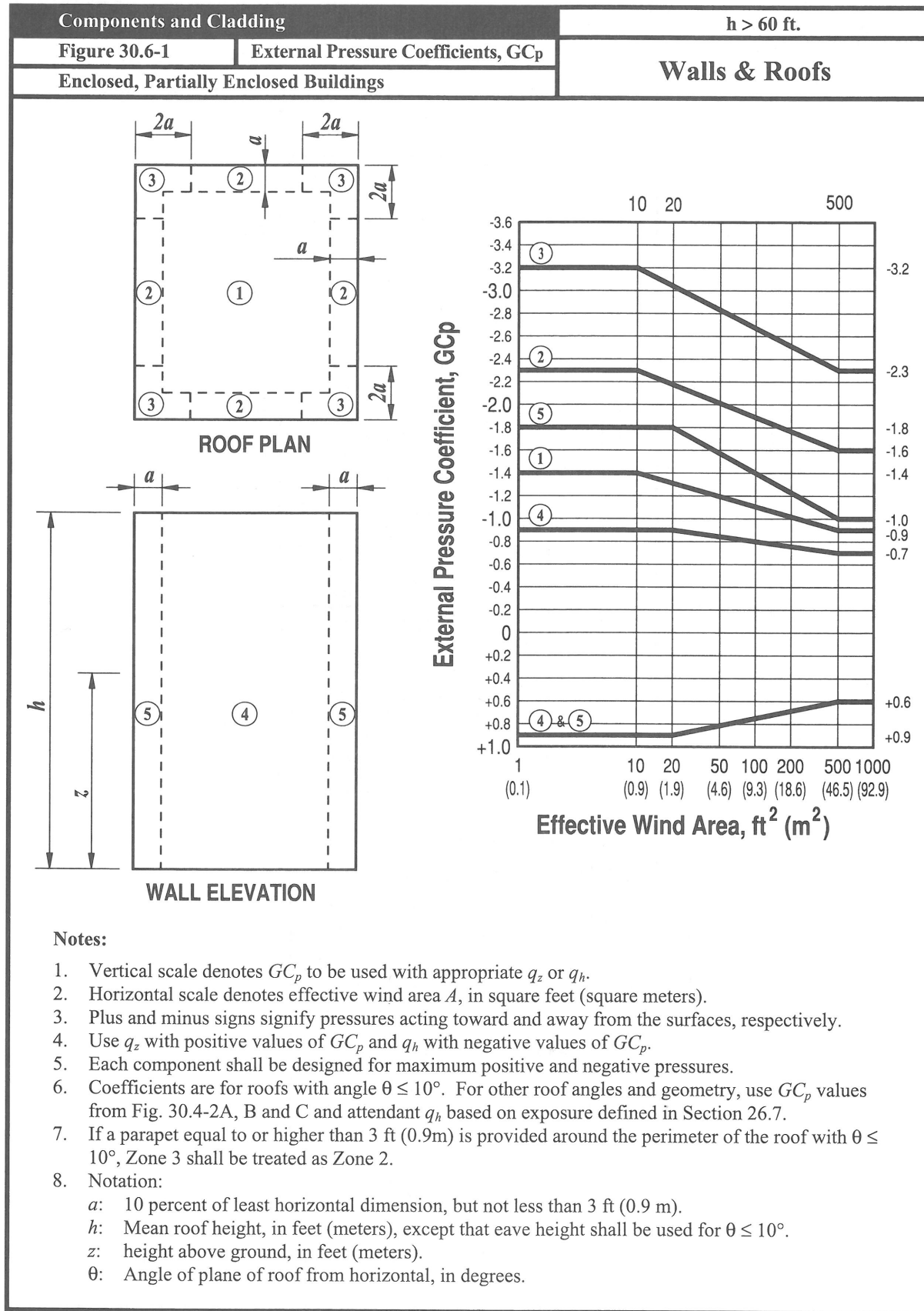
Interior Zones
Roofs - Zone 1 / Walls - Zone 4

End Zones
Roofs - Zone 2 / Walls - Zone 5

Corner Zones
Roofs - Zone 3

Notes:

1. Pressures shown are applied normal to the surface, for exposure B, at $h=30$ ft (9.1m). Adjust to other conditions using Equation 30.5-1.
2. Plus and minus signs signify pressures acting toward and away from the surfaces, respectively.
3. For hip roofs with $\theta \leq 25^\circ$, Zone 3 shall be treated as Zone 2.
4. For effective wind areas between those given, value may be interpolated, otherwise use the value associated with the lower effective wind area.
5. Notation:
 a : 10 percent of least horizontal dimension or $0.4h$, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m).
 h : Mean roof height, in feet (meters), except that eave height shall be used for roof angles $< 10^\circ$.
 θ : Angle of plane of roof from horizontal, in degrees.



Components and Cladding – Part 4		h ≤ 160 ft.
Figure 30.7-2	Roof Overhang Wind Loads	Application of Overhang Wind Loads
Enclosed Simple Diaphragm Building		

$p_{ovh} = 1.0 \times$ roof pressure p from tables for edge Zones 1, 2
 $p_{ovh} = 1.15 \times$ roof pressure p from tables for corner Zone 3

Notes:

- p_{ovh} = roof pressure at overhang for edge or corner zone as applicable from figures in roof pressure table.
- p_{ovh} from figures includes load from *both* top and bottom surface of overhang.
- Pressure p_s at soffit of overhang can be assumed same as wall pressure p_w .

Components and Cladding		0.25 ≤ h/L ≤ 1.0
Figure 30.8-1	Net Pressure Coefficient, C_N	Monoslope Free Roofs $\theta \leq 45^\circ$
Open Buildings		

Roof Angle θ	Effective Wind Area	C_N											
		Clear Wind Flow						Obstructed Wind Flow					
		Zone 3		Zone 2		Zone 1		Zone 3		Zone 2		Zone 1	
0°	≤ a ²	2.4	-3.3	1.8	-1.7	1.2	-1.1	1	-3.6	0.8	-1.8	0.5	-1.2
	> a ² , ≤ 4.0a ²	1.8	-1.7	1.8	-1.7	1.2	-1.1	0.8	-1.8	0.8	-1.8	0.5	-1.2
	> 4.0a ²	1.2	-1.1	1.2	-1.1	1.2	-1.1	0.5	-1.2	0.5	-1.2	0.5	-1.2
7.5°	≤ a ²	3.2	-4.2	2.4	-2.1	1.6	-1.4	1.6	-5.1	1.2	-2.6	0.8	-1.7
	> a ² , ≤ 4.0a ²	2.4	-2.1	2.4	-2.1	1.6	-1.4	1.2	-2.6	1.2	-2.6	0.8	-1.7
	> 4.0a ²	1.6	-1.4	1.6	-1.4	1.6	-1.4	0.8	-1.7	0.8	-1.7	0.8	-1.7
15°	≤ a ²	3.6	-3.8	2.7	-2.9	1.8	-1.9	2.4	-4.2	1.8	-3.2	1.2	-2.1
	> a ² , ≤ 4.0a ²	2.7	-2.9	2.7	-2.9	1.8	-1.9	1.8	-3.2	1.8	-3.2	1.2	-2.1
	> 4.0a ²	1.8	-1.9	1.8	-1.9	1.8	-1.9	1.2	-2.1	1.2	-2.1	1.2	-2.1
30°	≤ a ²	5.2	-5	3.9	-3.8	2.6	-2.5	3.2	-4.6	2.4	-3.5	1.6	-2.3
	> a ² , ≤ 4.0a ²	3.9	-3.8	3.9	-3.8	2.6	-2.5	2.4	-3.5	2.4	-3.5	1.6	-2.3
	> 4.0a ²	2.6	-2.5	2.6	-2.5	2.6	-2.5	1.6	-2.3	1.6	-2.3	1.6	-2.3
45°	≤ a ²	5.2	-4.6	3.9	-3.5	2.6	-2.3	4.2	-3.8	3.2	-2.9	2.1	-1.9
	> a ² , ≤ 4.0a ²	3.9	-3.5	3.9	-3.5	2.6	-2.3	3.2	-2.9	3.2	-2.9	2.1	-1.9
	> 4.0a ²	2.6	-2.3	2.6	-2.3	2.6	-2.3	2.1	-1.9	2.1	-1.9	2.1	-1.9

Notes:

- C_N denotes net pressures (contributions from top and bottom surfaces).
- Clear wind flow denotes relatively unobstructed wind flow with blockage less than or equal to 50%. Obstructed wind flow denotes objects below roof inhibiting wind flow (>50% blockage).
- For values of θ other than those shown, linear interpolation is permitted.
- Plus and minus signs signify pressures acting towards and away from the top roof surface, respectively.
- Components and cladding elements shall be designed for positive and negative pressure coefficients shown.
- Notation:
 - a : 10% of least horizontal dimension or 0.4h, whichever is smaller but not less than 4% of least horizontal dimension or 3 ft. (0.9 m)
 - h : mean roof height, ft. (m)
 - L : horizontal dimension of building, measured in along wind direction, ft. (m)
 - θ : angle of plane of roof from horizontal, degrees

