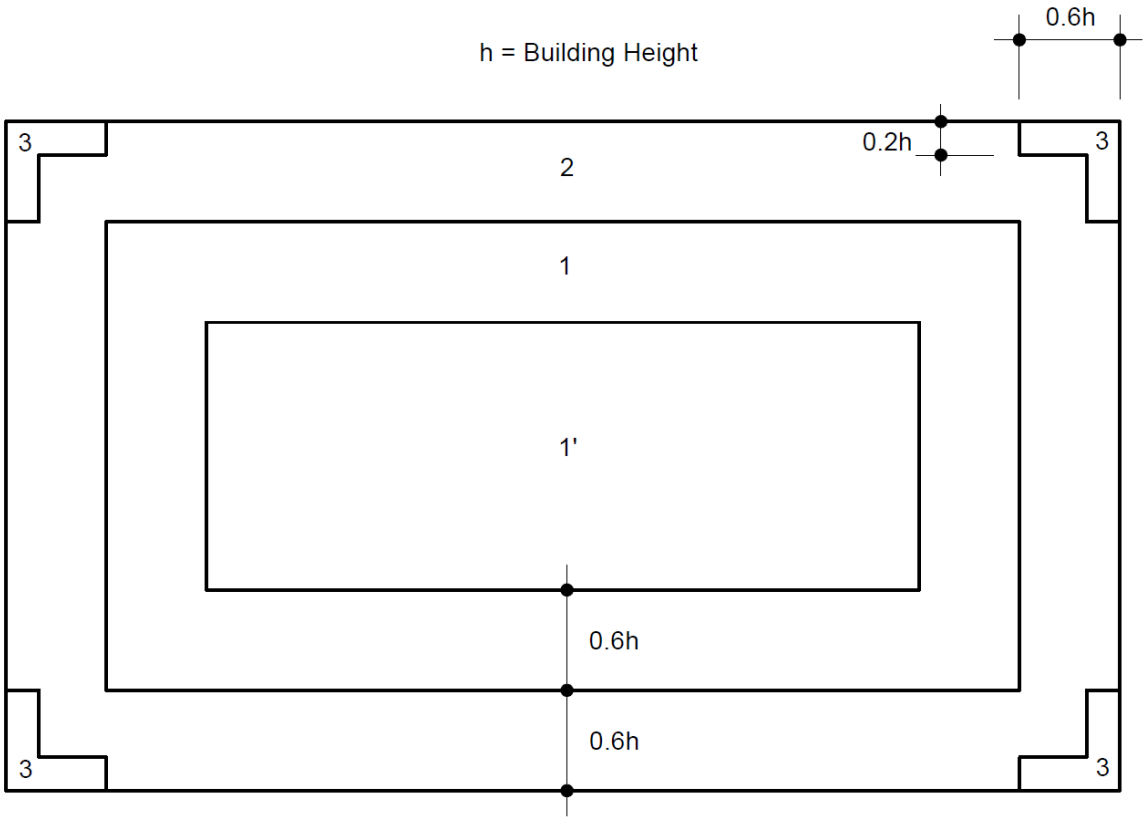
Step 6 – Determine the Roof Zone Layout

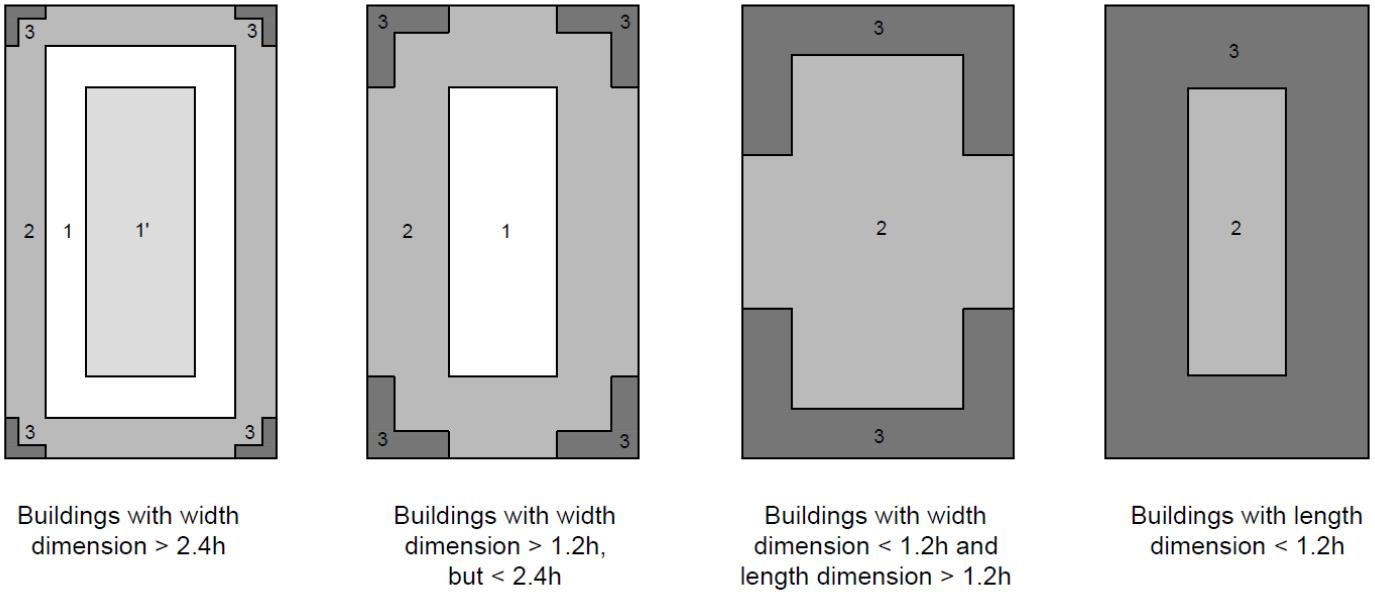
A major change in ASCE 7-16 is the configuration and layout of the roof zones for building heights that are 60 ft. or less, see Figure 1.



The dimensions of Roof Zones 1, 2 and 3 are based on a building's height and are determined as follows:

- Zone 3: This is the corner zone and it is "L-shaped." The length is 60 percent of the building height and the width is 20 percent of the building height.
- Zone 2: This is the perimeter zone and has a width equal to 60 percent of the building height.
- Zone 1: This is the "exterior" field zone and has a width equal to 60 percent of the building height.
- Zone 1': This the "interior" field zone and it is the remaining area left on the roof. It is important to note that Roof Zone 1' may not always exist.

For simple rectangular roof plans, ASCE 7-16 describes four possible scenarios for roof zone layout and it depends on the ratios of the building's width and length dimensions to the roof height, see Figure 2.



Buildings with width dimension > 2.4h

Buildings with width dimension > 1.2h, but < 2.4h

Buildings with width dimension < 1.2h and length dimension > 1.2h

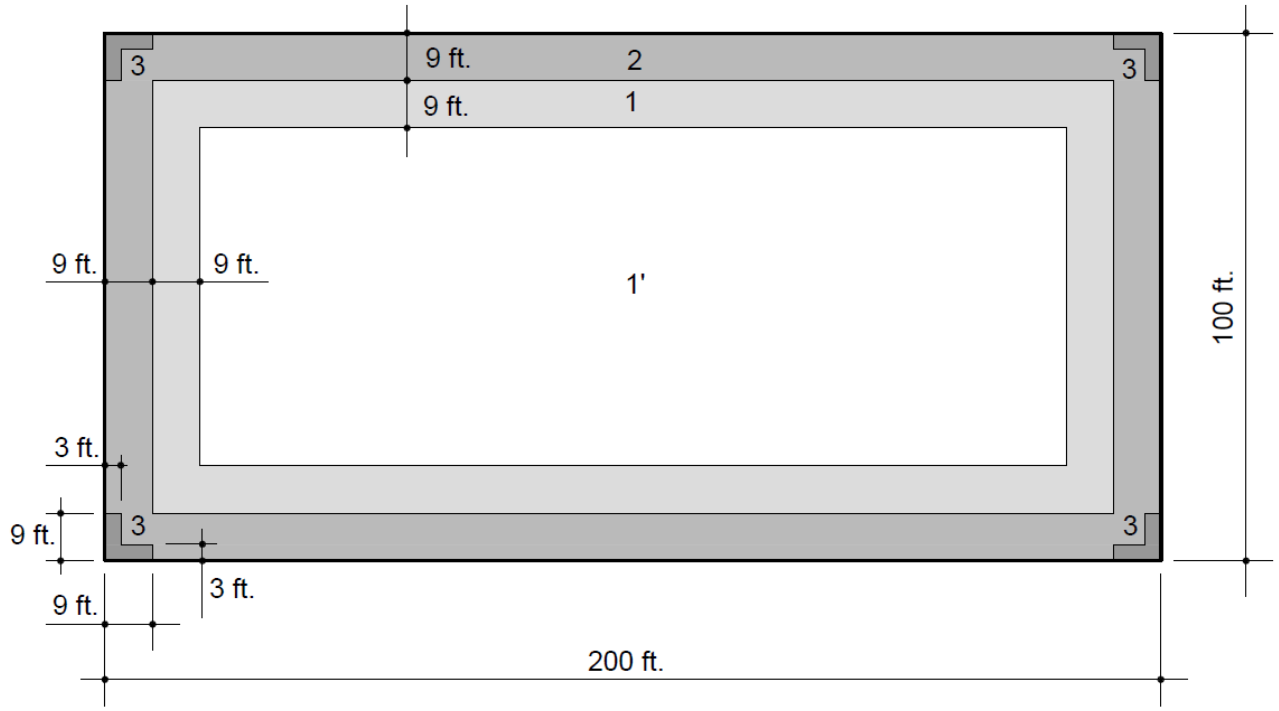
Buildings with length dimension < 1.2h

Figure 2: Four possible scenarios for roof zones depending on the ratios of plan dimensions to the roof height.

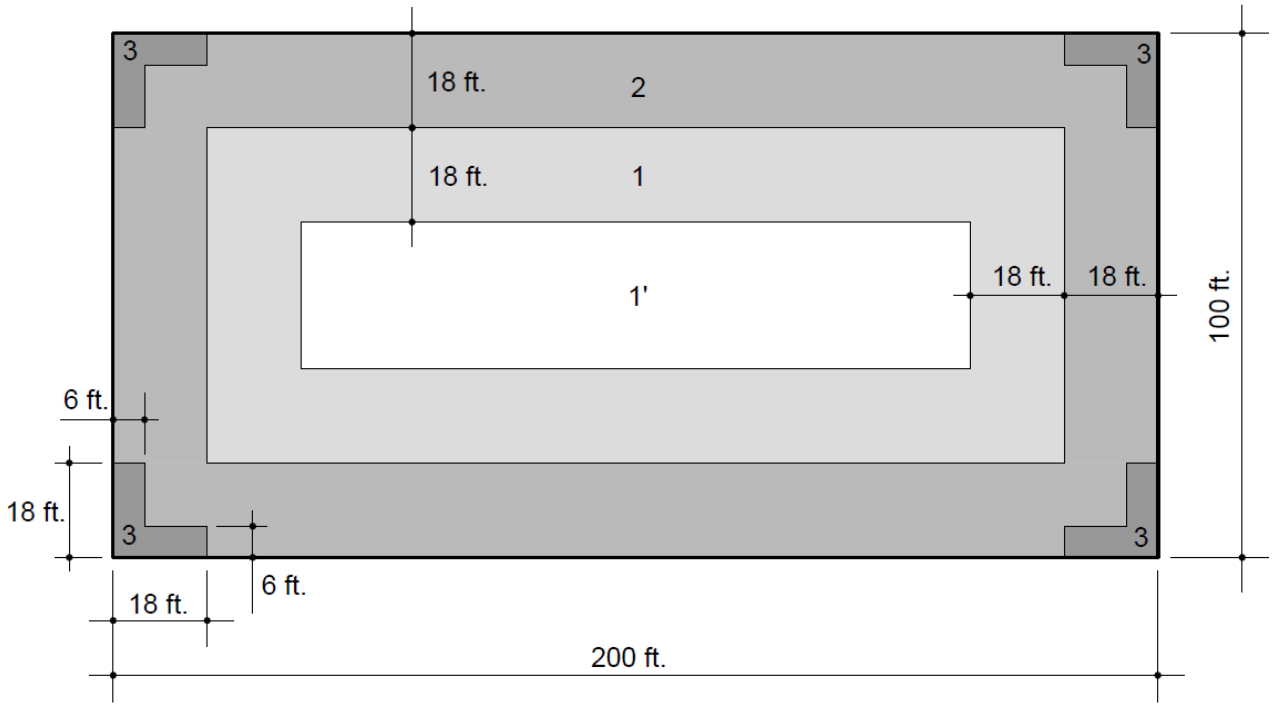
Rectangular Roof Plan Examples

To illustrate how the roof zone layout will vary on a rectangular roof plan with actual dimensions, the following are examples for a 100 ft. by 200 ft. building at heights of 15, 30, 45 and 60 ft.

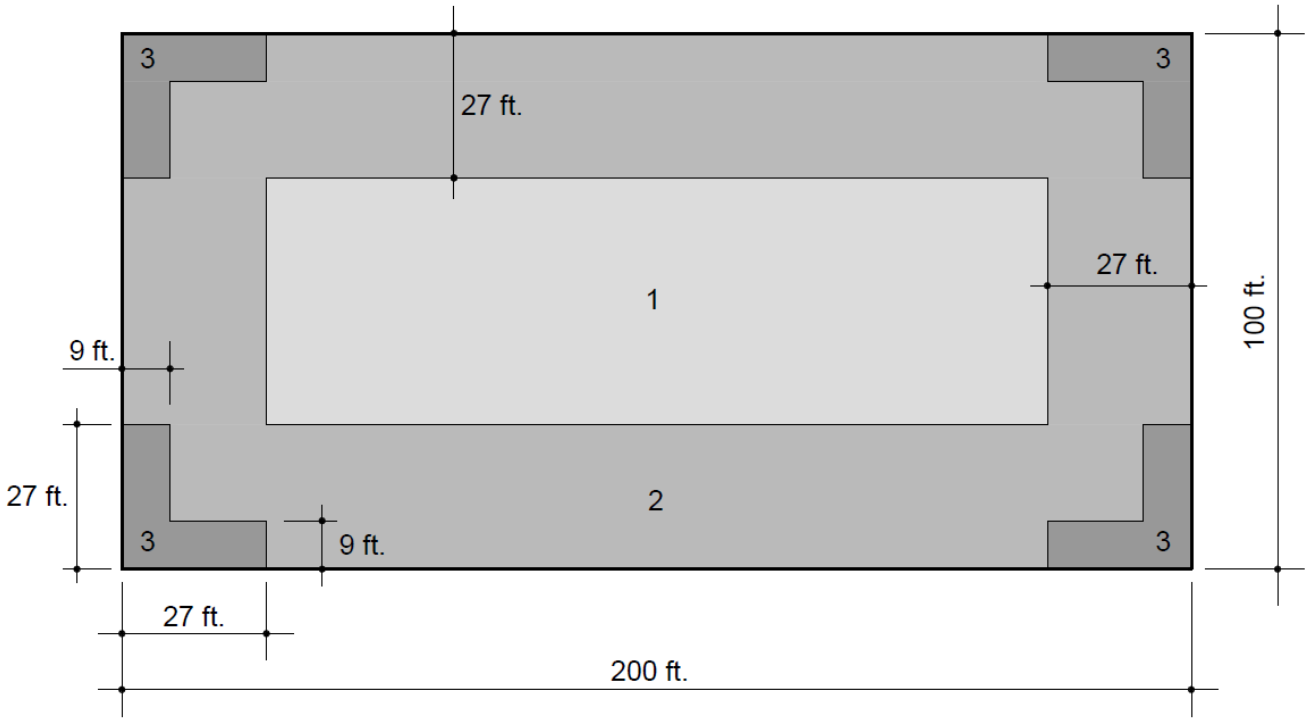
Example: 15 ft. building
0.6h = 9 ft.
0.2h = 3 ft.



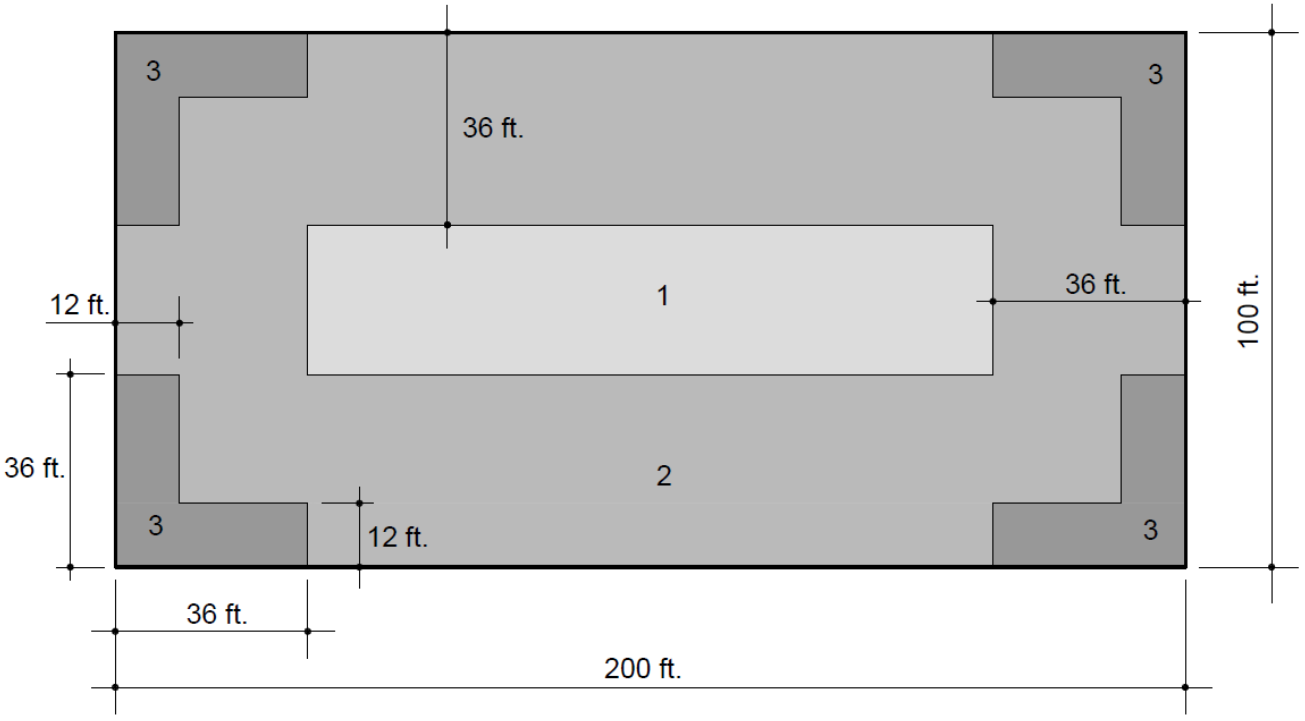
Example: 30 ft. building
0.6h = 18 ft.
0.2h = 6 ft.



Example: 45 ft. building
0.6h = 27 ft.
0.2h = 9 ft.



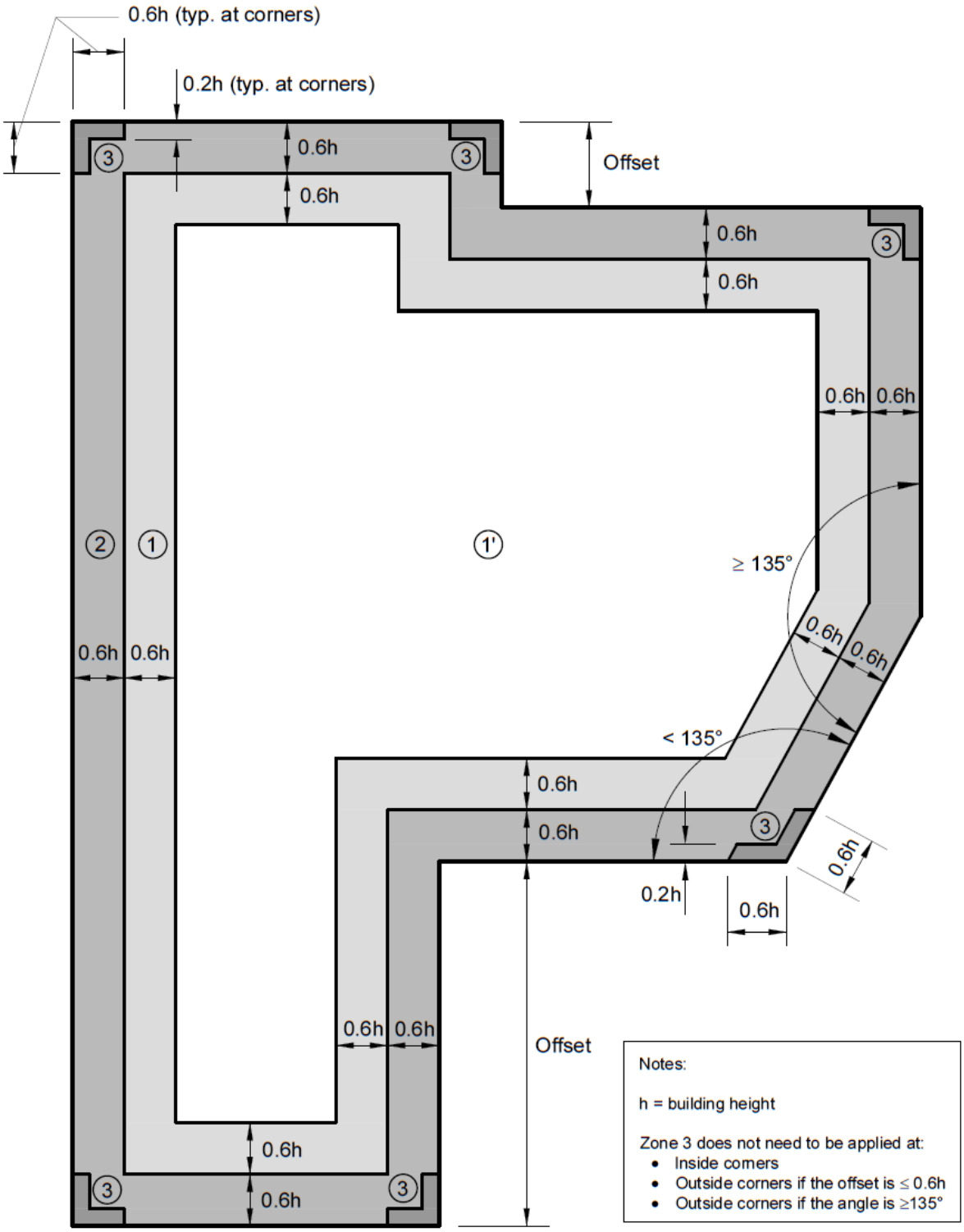
Example: 60 ft. building
0.6h = 36 ft.
0.2h = 12 ft.



Non-rectangular Roof Plan Examples

Many roofs are not simple rectangles. Figure 2 is a roof plan with different corner conditions that may be encountered. Note that Zone 3 does not need to be applied at:

- Inside corners
- Outside corners where there is an offset with a distance ≤ 0.6h
- Outside corners where the angle is ≥ 135°



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