

plenty of airspace to neutralize pressure fluctuation caused by the horizontal offset.

**711.3 Offsets below lowest branch.** Where a vertical offset occurs in a soil or waste *stack* below the lowest horizontal *branch*, a change in diameter of the *stack* because of the offset shall not be required. If a horizontal offset occurs in a soil or waste *stack* below the lowest horizontal *branch*, the required diameter of the offset and the *stack* below it shall be determined as for a *building drain* in accordance with Table 710.1(1).

- ❖ No size increase is required in vertical offsets that are below the lowest horizontal branch connection to the stack [see Commentary Figure 711.3(1)]. The pressure differences created by such offsets mainly affect the behavior of horizontal branches downstream of the offset, and if there are no horizontal branches downstream, there is nothing to protect by sizing increases. Horizontal offsets that are below the lowest horizontal branch connection must be sized as a building drain in accordance with Table 710.1(1) [see Commentary Figure 711.3(2)]. Because of the greater offset angle, oversizing is required to minimize pressure fluctuations; however, offset venting is not required.

#### **711.2.1 Omission of vents for horizontal stack offsets.**

Vents for horizontal stack offsets required by Section 711.2 shall not be required where the stack and its offset are one pipe size larger than required for a building drain [see Table 710.1(1)] and the entire stack and offset are not less in cross-sectional area than that required for a straight stack plus the area of an offset vent as provided for in Section 907.

- ❖ This section provides an alternative to the venting requirements of Section 711.2 for stacks having horizontal offsets. If the stack above and below the offset and the horizontal offset are sized one pipe size larger than the pipe size required for a building drain and the resulting stack and offset piping size provides the same or larger cross-sectional area than would be required for a straight stack plus the area of the required offset vent piping as required by Section 907, then venting of the offset in accordance is not required (see Commentary Figure 711.2.1). This generous stack and offset oversizing requirement provides for

plenty of airspace to neutralize pressure fluctuation caused by the horizontal offset.

## SECTION 907 VENTS FOR STACK OFFSETS

### 907.1 Vent for horizontal offset of drainage stack.

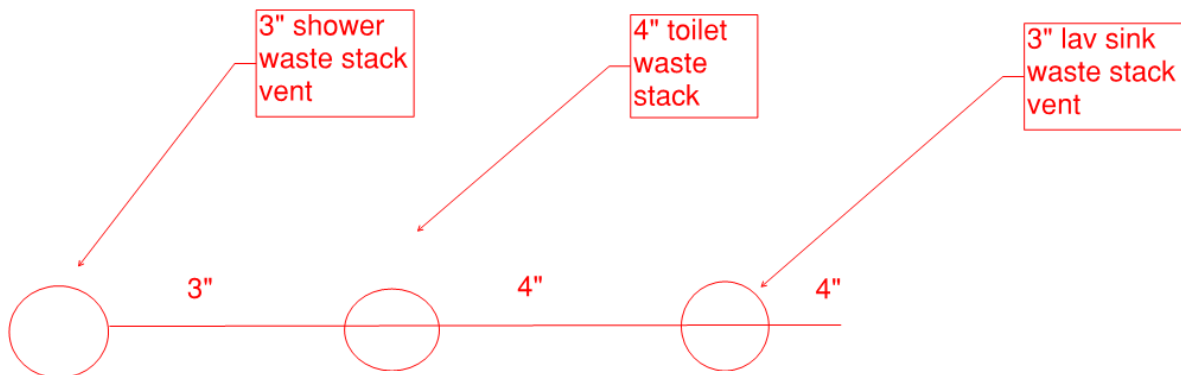
Horizontal offsets of drainage stacks shall be vented where five or more *branch intervals* are located above the offset. The offset shall be vented by venting the upper section of the drainage stack and the lower section of the drainage stack.

### 907.2 Upper section.

The upper section of the drainage stack shall be vented as a separate stack with a vent stack connection installed in accordance with Section 904.4. The offset shall be considered the base of the stack.

### 907.3 Lower section.

The lower section of the drainage stack shall be vented by a yoke vent connecting between the offset and the next lower horizontal branch. The yoke vent connection shall be permitted to be a vertical extension of the drainage stack. The size of the yoke vent and connection shall be a minimum of the size required for the vent stack of the drainage stack.



4" toilet stack is separated from lav stack and shower stack by 3 ft

Stacks are 5 stories tall or about 50 ft

