

## NOTICE TO CONTRACTORS

11-005

Proper Roof Bracing Update

Per IRC R802.5.1

(This Notice replaces Notice 08-005)

**Effective: Immediately**

*Distributed on March 11, 2011*

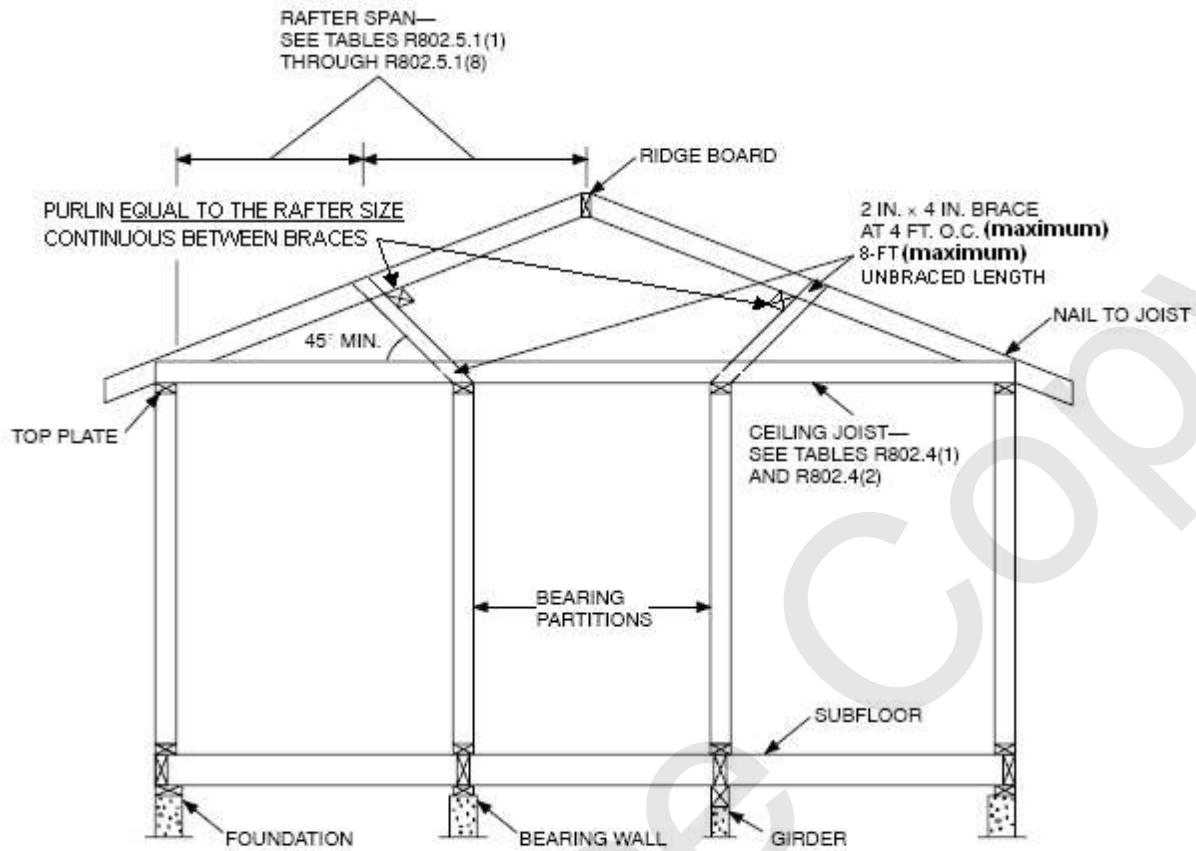
*This NOTICE TO CONTRACTORS contains important information for builders and contractors that do business in the City of Stillwater. Please circulate this to others in your organizations and to your sub-contractors as may be applicable.*

**Issue:** Proper Roof Bracing Clarification and Detail

**Applicable Code Section(s):** **R802.5.1 Purlins.** Purlins are permitted to be installed to reduce the span of rafters as shown in Figure R802.5.1. Purlins shall be sized no less than the required size of the rafters that they support. Purlins shall be continuous and shall be supported by 2-inch by 4-inch (51 mm by 102 mm) braces installed to bearing walls at a slope not less than 45 degrees from the horizontal. The braces shall be spaced not more than 4 feet (1219 mm) on center for 2-inch by 4-inch (51 mm by 102 mm) or 6 feet (1829 mm) on center for 2-inch by 6-inch (51 mm by 152 mm) and the unbraced length of braces shall not exceed 8 feet (2438 mm).

**R802.3 Framing details.** Rafters shall be framed to ridge board or to each other with a gusset plate as a tie. Ridge board shall be at least 1-inch (25.4 mm) nominal thickness and not less in depth than the cut end of the rafter. At all valleys and hips there shall be a valley or hip rafter not less than 2-inch (51mm) nominal thickness and not less in depth than the cut end of the rafter. Hip and valley rafters shall be supported at the ridge by a brace to a bearing partition or be designed to carry and distribute the specific load at that point. Where the roof pitch is less than three units vertical in 12 units horizontal (25-percent slope), structural members that support rafters and ceiling joists, such as ridge beams, hips and valleys, shall be designed as beams.

**Code Official's Administrative Ruling:** Page 2 illustrates how to properly brace rafters that exceed allowable spans based on species and grade of lumber. This illustration and Section R802.5.1 also require purlin bracing to be provided at 4'-0" maximum intervals and if bracing exceeds 8'-0" in length they shall also be braced. A new local amendment was added in the 2009 IRC adoption which permits purlin brace spacing to be increased to 6 feet on center when minimum 2 by 6 purlins are installed. Please remember that the code specifically requires that the minimum size of the purlin has to be equal to the rafter being supported. For example, a 2x6 purlin would not be allowed to support 2x8 rafters, even if it is supported every 6 feet. It is also important to note that purlin, ridge and hip braces may be installed to be supported by structural beams or columns as well as bearing walls. Braces landed on ceiling joist assemblies will not be acceptable. The new spacing allowance for the braces is effective immediately.



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.018 rad.

**Note:** Where ceiling joints run perpendicular to the rafters, rafter ties shall be nailed to the rafter near the plate line and spaced not more than 4 feet on center.

FIGURE R802.5.1  
BRACED RAFTER CONSTRUCTION

Any questions or comments regarding this notice may be directed to 405-742-8218 or email.

Michael Roberts, CBO

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