

Chester Building Official Code Enforcement

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Framing Notes

Here is a quick check sheet for framing requirements. Sufficient fastening (nailing) as applicable is required in each instance. These notes in no way are intended to be a complete set of requirements. All spans are defined in the span tables within the building codes. These noted items would be considered a minimum requirement and construction practices in excess of these provisions are certainly allowed and in many instances considered minimum standard practices. Ground snow load for Chester is 65psf minimum while 70psf is recommended.

Sill or bottom plate to foundation connection is to be with a minimum of ½ anchor bolts sunk a minimum depth of 7" into the foundation form. Anchor bolts are to be secured with washers and nuts. Anchor bolts are to be located within 12 inches of corners and ends of lumber pieces and are to be spaced not more than 6 feet on center overall. Straps or other means of attachment are not approved. A sill sealer is required under the bottom plate. The bottom plate as attached to the concrete must be of pressure treated lumber.

Bridging is required. Joists are to be supported laterally at the ends and at each support by solid blocking. Blocking can be omitted only where the ends are restrained by rim joist or hanger attachments to headers. On 2 x 12 or larger bridging is required every 8 feet.

Joist shall be lapped a minimum of 3 inches at the center support girder and/or beam.

Holes bored in joist are not to be within 2 inches of the top or bottom and may not be larger than 1/3 the actual depth of the joist.

Notches are not to be placed anywhere within the middle 1/3 of the joist. Depth of notches cannot be more than 1/6 the actual depth of the joist when placed elsewhere.

Wood members with a thickness of over 4 inches should never be notched except at the ends – this includes build up girders. When notched on the ends this can never be more than ¼ the actual depth of the lumber. Engineered lumber should never be notched unless noted on engineering drawings.

Where any opening spans are in excessive of 4 feet the header joist /trimmer joist must be doubled. The ends of header joists more than 6 feet in length are to be supported by hangers and the ends of tail joist greater than 12 feet are to be supported on hangers or on ledger strips not less than 2 inches.

Joist shall have a minimum of 1½ inches of bearing on wood or metal and not less than 3" on masonry/concrete. Wood bearing on concrete shall be separated with pressure treated lumber. Standard lumber shall have no direct contact with concrete.

Where floor joists support concentrated loads exceeding 300 pounds (ex. bath tube & laundry room areas) floor joists shall be doubled.

Header studs (on which a header rest) are to be continuous from the header to the bottom plate. Cutting the header stud (jack stud) to support the sill is not allowed. Most header spans will require a double jack stud.

Minimum width of narrow walls (i.e. those adjacent to garage door openings) is to be based on a 6:1 height-to-width ratio: (for example 16" minimum for 8' wall, 20" for a 10' wall, etc.). Provisions allowing for this require headers to extend to end walls and for solid sheathing to be applied to the corners. Minimum of two anchor bolts required. Top plate continuity is required.

A minimum of 3 studs shall be provided at each corner of any exterior wall. Open corners are required.

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- Double top plates are required for all exterior stud walls. Double top plates shall overlap at corners and intersections. Spliced end joints shall bear directly on the wall stud.
- The number of jack studs required on a (2) 2 x 8 or greater header is always a minimum of 2 jack studs. This varies depending on the span tables as provided by the code. The building width, header span and placement of the headers determine the number of jack studs. Generally with 70psf snow load this is a minimum of two (2).
- Exterior walls and bearing interior walls studs may be cut or notched a maximum of 25% of actual width. Non-bearing walls are allowed to be cut or notched a maximum of 40%.
- Bored holes in bearing studs cannot be greater than 40% of the actual width and not greater than 60% if a double stud is provided. For non-bearing studs 60% maximum is allowed. A bored hole cannot be located in the same section of the stud as a notch. Bored holes are not to be within 5/8 of an inch to the stud face.
- Collar ties are not to be spaced more than 4 feet.
- Ceiling joist or rafter ties shall be provided within the bottom 1/3 of the rafter height or a structural girder shall be provided at the ridge. Such girder shall be supported by an appropriate in wall column or post.
- Cantilever with load bearing walls shall not exceed the depth of the joist, shall be solid blocked at the support, and shall have a continuous band/trim joist. Floor cantilevers constructed in accordance with Table R502.3.3 (1) shall be permitted when supporting a light-frame bearing wall and roof only. Floor cantilevers supporting an exterior balcony are permitted per Table R502.3.3 (2).
- Cantilever with non-load bearing walls shall not be greater than the length of the joist divided by four (L/4). As with load bearing solid blocking is required at the support and a continuous band/trim joist is required.
- Load bearing walls are not to exceed 10 feet in height. Non-bearing walls may reach 20-foot maximum.
- Building length or width cannot be greater than 80 feet. The aspect ratio (L/W) cannot be less than 1:4 nor greater than 4:1. The maximum story height shall not be more than 10 feet for prescriptive codes and not more than 12 feet for engineered design elements.
- Fire blocking is to be provided to cut off all vertical and horizontal draft openings. Fire blocking is required in all concealed construction vertically at the ceiling and floor levels and horizontally at intervals not exceeding 10 feet. Fire blocking is required at gable end wall balloon framing at the ceiling line, concealed spaces of soffits, drop ceilings and cove ceilings, chimneys at floor intersections, and concealed spaces between stair stringers at the top and bottom of the run; to list a few specific locations. Fire blocking (draft stopping) is required at all openings around vents, pips, bath tub plumbing (trap) area, ducts and electrical (holes) penetrations.
- Attic access, where required, shall not be constructed in closets. The rough framed opening is not to be less than 22 inches by 30 inches and shall be located in a hallway or other readily accessible location. A 30 inch unobstructed headroom above the opening is required.
- Operable Window sills located greater than 72 inches (6 feet) from grade must be set a minimum of 24 inches off the floor in which the window is located.
- Properly sized egress windows are required for all bedrooms – framing must accommodate these sizing requirements.