On the Job

Removing a Structural Chimney

by Clay Dusel

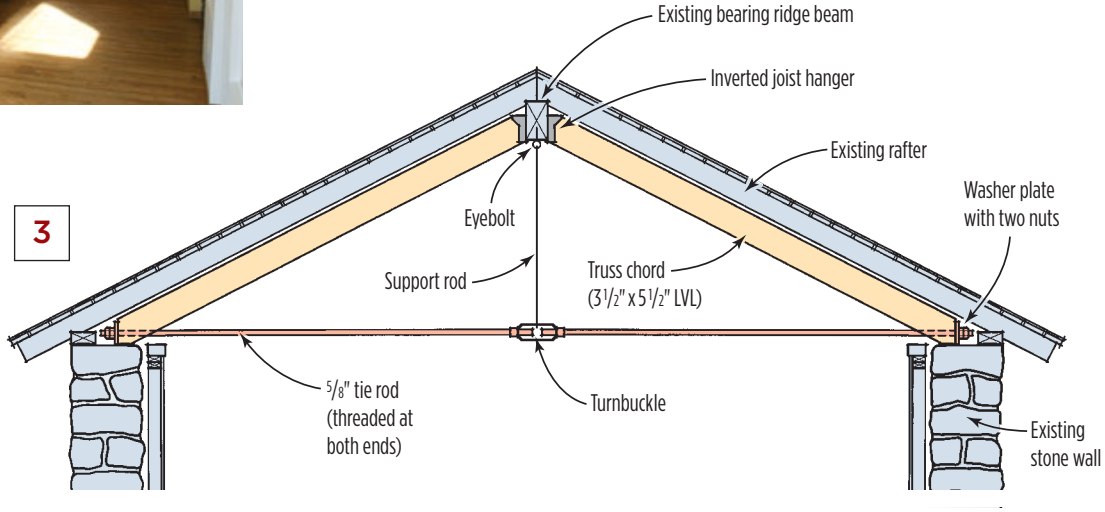
Two summers ago I received a call from some homeowners who wanted to remodel their kitchen and, as part of the project, remove a brick chimney that ran up through the center of the house **(1)**. The chimney had been abandoned decades before when someone removed the original 1890s wood stove and installed a modern furnace in another location.

Jobs like this are common where I work and usually require little more than taking down the chimney, then patching the roof and finishes. In this case it was more complicated, because a past owner had replaced the original roof and ceiling with a cathedralized gable that contained a pair of structural ridge beams. The ends of ridge beams were actually supported by the abandoned chimney **(2)**.

Replacing the chimney with structural posts or installing a full-length ridge beam would have required tearing up the existing ceiling and would have consumed much of the budget for remodeling the kitchen. So with the help of a structural engineer, I devised a way to support the ends of the existing ridge beams with a pair of site-built trusses **(3)**. After removing a 6-foot swath of drywall to


1


2



gain access to the framing, we built the trusses in place along either side of the chimney. Each truss consists of two 3 1/2-inch by 5 1/2-inch LVL top chords and a two-piece steel rod that functions as a collar tie.

The upper ends of the chords butt to the sides of the existing ridge beams and are held in place with upside-down joist hangers **(4)**; the lower ends land on the existing stone exterior walls and are connected end-to-end by the rods **(5)**. The 5/8-inch rods connect in the center with turnbuckles **(6)** and pass through holes in the LVLs, where they terminate with washer plates and double nuts. After all the pieces were in place we used the turnbuckles to tension the rod until the top chords lifted the ridge beams slightly off the brick. At this point, the chimney no longer carried a load, so we tore it down, filled in the missing section of ridge beam, and then patched the roof, ceiling, and floor.

To prevent the collar ties from sagging, we used smaller rods to tie them to the ridge beam above. The support trusses **(7)** do more than just free up space in the center of the room — they create a visual break between the new kitchen and the existing great room.

McCarren Avalon

Clay Dusel *owns Dusel Custom Builders in Boulder, Colo.*