

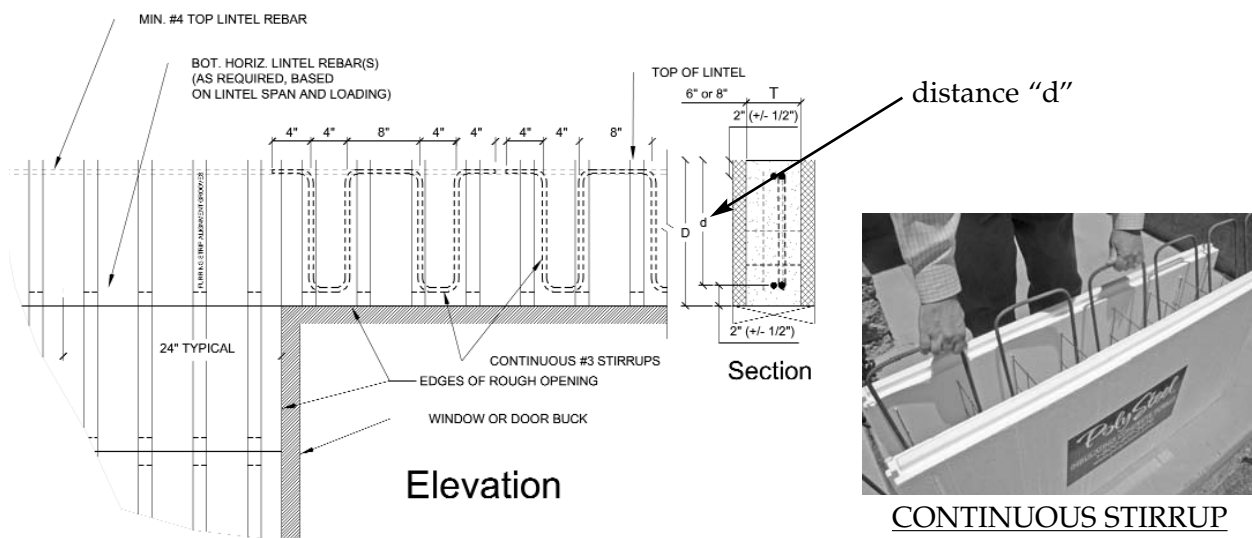
## D.8 CONTINUOUS STIRRUPS FOR LINTELS

The ACI 318 Building Code Requirements for Structural Concrete requires that shear reinforcement (stirrups) be provided in certain areas of high shear stresses. We have outlined the requirements of stirrups in our lintel tables in the Design Section of this Manual.

The most common method of providing shear reinforcement is to install “C” or “S” shaped stirrups and secure them around the top and bottom rebars. (See [Figure 3.10](#) in Section C.9.5.a of the Manual). However, there is another, easier, and more cost-effective solution that still meets the design requirements for shear reinforcement. Referred to as the “Continuous Stirrup”, it is a single continuous rebar (usually #3, grade 40) bent in a repeating or galloping pattern to extend from the top of a lintel to the bottom (see detail below) then back up again; repeated as much as needed. This continuous stirrup is placed in the PolySteel cavity after the placement of the top and bottom reinforcing, then secured in place. Continuous stirrups can usually be purchased from a rebar supplier already bent and ready to drop in.

These stirrups will provide a stirrup spacing of 8” on center. No “special engineering” is required; they meet all ACI 318 code requirements. ACI 318 Section 11.5.1.1(a) states “Shear reinforcement consisting of the following shall be permitted: stirrups perpendicular to axis of member.” ACI 318 Section 11.5.3 states “Stirrups and other bars or wires used as shear reinforcement shall extend to a distance “d” (see below) from extreme compression fiber and shall be anchored at both ends according to 12.13 to develop the design yield strength of reinforcement.” The need for a standard stirrup hook to hook around a longitudinal bar is eliminated by the continuous nature of the rebar. These stirrups are independent of the horizontal reinforcing and do not need to cross over them. All other reinforcing requirements remain the same. The stirrups may be secured to the horizontal reinforcing to hold them in place when placing concrete.

**FIGURE 4.5** CONTINUOUS STIRRUP



**Note:** The continuous stirrup as shown above is acceptable for use in the PS•4000 Forms if the lintel depth (D) is > 18”. The depth is limited by the maximum stirrup spacing of 8”, which limits the depth to 16” + 2” or 18” overall.