**Section 920.70 Drilled Well Construction in Consolidated Formations**

a) Drift or Earth Cover Less Than 30 Feet in Thickness

1) The well casing shall extend to a depth of at least 40 feet below finished ground surface. The diameter of the drill hole shall be a minimum of 3 inches greater than the outerdiameter of the casingor coupling, whichever is greater*.* The annular space shall be pressure grouted as provided for in Section 920.90(h). If plastic casing is installed, it shall be installed in accordance with Section 920.90(g). (See Illustration D.)

2) If a well is drilled to obtain water below the upper bedrock formation, it shall comply with subsection (a)(1) and the well casing shall be seated firmly in rock. When a liner is installed through the casing, the annular space between the casing and the liner shall be pressure grouted in accordance with Section 920.90(h). If the upper bedrock formation is a water-bearing formation, the liner shall be installed in accordance with Section 920.40(c).

b) Drift or Earth Cover Over 30 Feet in Thickness

1) When an oversized drill hole is constructed for the installation of the casing and the annular space is to be grouted through a tremie pipe installed in the annular space, the diameter of the drill hole shall be a minimum of 3 inches greater than the outer diameter of the casing or coupling, whichever is greater. After the casing is installed, the annular space shall be grouted as provided for in Section 920.90(h). The annular space shall be grouted from the bottom of the casing to ground level. The tremie pipe shall be installed to the bottom of the annular space. No device shall be installed to prevent the tremie pipe from being installed into the annular space or to prevent the grout from filling the annular space. (See Illustration E.)

2) When grout is pumped into the annular space through the inside of the casing, the diameter of the drill hole shall be a minimum of 2 inches greater than the outer diameter of the casing or coupling, whichever is greater. The entire length of casing shall be grouted as provided in Section 920.90(h). If plastic well casing is installed, it shall be installed as required in Section 920.90(g).

3) When the casing is installed by mechanically driving the casing, an oversized hole shall be constructed to a depth of at least 10 but not more than 20 feet to allow removal of the drive nipple and installation of a joint of casing. While the casing is being driven, the bottom of the oversized hole shall be filled with granulated bentonite or natural clay mixture. After the casing is installed, either the annular space that exists around the well casing shall be grouted as required in Section 920.90(h) or, when the diameter of the oversized hole is a minimum of 3 inches greater than the outer diameter of the casing or coupling, whichever is greater, the annular space that exists around the well casing can be filled with bentonite or natural clay. (See Illustration F.)

c) Flowing Artesian Well. A well that is constructed in a location where flowing artesian conditions are encountered or expected to occur shall be grouted to protect the artesian aquifer, prevent erosion of overlying geologic materials, and confine the flow to within the casing. Initial drilling operations shall extend into but not through the formation confining the water. The casing shall be installed and the annular opening between drill hole and casing shall be pressure grouted in accordance with Section 920.90(h). If plastic casing is installed, it shall be installed in accordance with Section 920.90(g). The hole shall then be extended into the artesian formation. Flow control from the well shall be provided by valved pipe connections, watertight pump connections, or receiving reservoirs set at an altitude corresponding to the artesian head. The flowing well discharge control shall be provided to conserve groundwater and to prevent the loss of artesian head by preventing or reducing continuous discharges. A flow discharge pipe, where installed, shall not be directly connected to a sewer or other source of contamination.

(Source: Amended at 37 Ill. Reg. 19676, effective November 25, 2013)