



# PennSummit Tubular, LLC

## Field Handhole Installation

### Objective:

1. The purpose of the procedure is to define the method of layout, cutting, fit-up and welding of a handhole frame designed to penetrate a pole, provide reinforcement to the pole wall, and provide access to the inside of the pole.
2. Defined methods are required to assure that the entire process is controlled, thereby assuring structural integrity of the final product.

### Special Notes:

1. When co-locating on any pole, PennSummit recommends evaluation of the pole and foundation by the original manufacturer or a registered professional engineer.
2. Use PennSummit handhole frames or approved equal.
3. Contact PennSummit for handhole location and orientation recommendations.
4. All welding shall be performed by an AWS certified welder.
5. The installation procedure should not be attempted if the wind speed is greater than 20 mph and the installation is occurring in the air.
6. No more than (2) 10"x30" handholes (or larger, base exit port style) should be installed at one elevation on the pole. Handhole frames should be installed a minimum of 90 degrees apart if (2) 10"x30" handholes are to be installed at one elevation.
7. No more than (3) 8"x12" handholes (or smaller) should be installed at one elevation on the pole. Install the ports equally spaced around the pole - 120 degree radial spacing.
8. The presence of coaxial cable inside the pole complicates the procedure. Be careful not to burn, nick, or otherwise damage the cable during installation.
9. Installation work performed by others will void the structure warranty unless previous arrangements are made for inspection by PennSummit or otherwise approved in writing.



### **Procedure for Installation:**

1. The installation procedures shall be followed immediately and in sequence. After the hole is cut in the pole wall, immediately begin installation of the handhole. The handhole is required to provide the necessary strength to the structure. Do not cut multiple holes initially and perform all the welding last.
2. Locate the position for layout by specific drawing dimensions and orientation details. Contact PennSummit if location and orientation is not specified.
3. Mark with soapstone the area to be cut by using the actual handhole frame. Special care must be taken to assure that the soapstone lines are sharp and parallel with the outer edge of the handhole frame.
4. Burn or mechanically cut the opening in the pole wall following the soapstone line. The preferred method is mechanically cutting when there is coaxial cable inside the pole. Be extremely careful not to nick or gouge the cable during cutting. PennSummit recommends the use of a fire blanket to protect the coaxial cable if present inside the pole during the welding process.
5. Gouges and corners in the pole wall shall be smoothed and rounded to eliminate notch effects after cutting or burning. The corners of the hole in the pole wall shall follow the same radius as the handhole frame. Do not square-cut the hole in the pole wall.
6. Grind the surface adjacent to the handhole opening for a distance of 1/2" minimum all around. In addition, grind the surface of the handhole frame to be installed for a distance of 1/2" minimum all around the frame in the area to be welded. It is very important that both areas be 100% free of all galvanizing. The surfaces to be welded shall be free from scale, slag, rust, moisture, grease or any other foreign material that would prevent proper welding. Do not weld over galvanizing.
7. Do not weld if the temperature of the steel in the vicinity of the weld area is below 0°F. When the temperature is between 0°F and 32°F, preheat and maintain the steel in the vicinity of the weld area at 70°F during the welding process.
8. Do not weld on wet or frost-covered surfaces and provide adequate protection from high winds.
9. Fit the handhole in the opening in the pole wall, assuring that the protrusion distance, orientation, angle, etc. is in accordance with the drawing. Tack weld the handhole to hold alignment during the welding process.
10. For all welding, use low hydrogen 7018 stick electrodes. 60 series electrodes are not permitted.
  - a. 1/8" maximum diameter for root pass and vertical welds
  - b. 3/16" maximum diameter for flat welding
  - c. 5/32" maximum diameter for horizontal welds

11. Weld the handhole into the pole with a partial penetration groove weld capped with a fillet weld. The fillet weld size shall be equal to the wall thickness of the pole at the handhole location.
12. After final inspection, the area of the welds, the handhole and all surfaces damaged by welding or grinding shall receive a cold - galvanized coating. This coating shall be applied by brush. The galvanizing compound shall contain a minimum of 95% pure zinc. The finished coating shall be a minimum thickness of 3 mills.

