

DRAFT

Latest Revision August 18, 2008

CRITERIA TO ALLOW HORIZONTAL DIRECTIONAL DRILLING USING A CUTTING HEAD

This guideline is for perpendicular crossing of roadways and does not apply to utility installations that run parallel to the roadway within the Right-of-Way

All lines under pressure or transporting a hazardous material will require a steel casing or approved equal with vents installed at the Right-of-Way limits

A Performance Bond is required for a period of 5 years from the completion date of the installation to cover any roadway failures. The value of the bond shall be related to the pipe diameter installed and is shown in Table 1. Should the repairs exceed this amount then the utility company is still responsible for the cost of the repairs and no new permits shall be issued to the utility until the repair costs have been satisfied. The utility has the option to supply individual bonds, a yearly bond or have SCDOT named as an additional insurer on their general liability insurance.

Notify the Resident Maintenance Engineer for the county in which the work is to be done by fax or email 48 hours before performing the boring operation

Only perpendicular crossings will be allowed. Any other type crossing will be evaluated on a case by case basis for non controlled access roads only.

The permit application submittal must include at a minimum the following information:

- ① Site layout plan, project schedule and company experience record
- ② Location of entry and exit points, access pit locations, and equipment and pipe layout areas
- ③ Proposed drill path alignment (both horizontal and vertical) to include the lowest point of the roadway cross section
- ④ Location and clearances of all existing utility crossings and structures
- ⑤ Depth of cover over the casing
- ⑥ Soil analysis to a depth of five feet below the proposed drill elevation

- ⑦ Supply the theoretical amount of drilling fluid to be used during the drilling operation (calculation based on drilling diameter and number of pre-reams)
- ⑧ Supply data sheet showing the actual amount of drilling fluid used during the drilling operation
- ⑨ Provide the source of the make up water for the drilling fluids
- ⑩ Supply field pH and hardness reading for the make up water, drilling fluids on the data sheet each time new fluids are mixed
- ⑪ On systems that recycle drilling fluids, complete testing logs shall be filled out to verify that the drilling fluids are being maintained in accordance with the original mix or to demonstrate the reason for changing the drilling fluid mix during the completion of the pull
- ⑫ Length, product pipe diameter, pipe material, pipe wall thickness, and pipe ream diameter for proposed directional drill
- ⑬ Detailed pipe calculations confirming ability of product pipe or casing pipe to withstand installation loads
- ⑭ Proposed and actual viscosity, density, and composition of drilling fluids whether they are bentonite or polymer based (based on soil analysis)
- ⑮ Name of drilling fluids being used for boring (Company Name), Name of the field Representative (drilling fluids manufacturer) that will provide the technical support, fluids testing and recommendations as needed during the drilling and pulling phase
- ⑯ Construction method including diameter of pilot hole, number and size of pre-reams
- ⑰ Drilling fluid pumping capacity in gallons per minute (gpm), and gallons per rod (gpr), pressures, and flow rates proposed and actual pumping rates (rates may change as soil conditions and soil types change)
- ⑱ Show all right-way-lines, controlled access lines, property lines and other utility right-of-way or easements
- ⑲ Show all elevations
- ⑳ Type and capacity of drilling machine to include the manufacturer, model number, thrust/pullback (in lbs.), maximum torque, drilling speed, drill pipe length, drilling distance and power source

- ②① Type of tracking method/system, operation range and accuracy
- ②② Type and capacity of mud mixing system
- ②③ A detailed plan for monitoring ground surface movement (settlement or heave) due to the drilling operation at the time of drilling and subsequent to the drilling operation being completed
- ②④ Contingency plan for frac-out or drilling hole failure
- ②⑤ Traffic control plan when applicable
- ②⑥ Disposal plan for spent drilling fluids, ie: (land farming, landfill, etc.)
- ②⑦ Upon completion of the drilling operation supply accurate as built drawing within 30 days to the State Utility Engineer. The As-Built drawings must include the following information: Actual path alignment, depth of cover for the casing, actual length, product diameter, casing diameter, actual viscosity, density and composition of drilling fluid, actual fluid pumping capacity, pressure and flow rates, and all final elevations
- ②⑧ Confirm the drilling unit is equipped with an electrical strike safety package and a safety plan in the event of an electrical strike

The following Table details the recommended minimum depths below the lowest point on the road cross-section:

PERFORMANCE BOND AMOUNTS FOR DIFFERENT PIPE DIAMETERS

For pipes 2 inches to 6 inches in diameter the minimum cover shall be 6 feet. Performance Bond value \$10,000.
For pipes greater than 6 inches to 14 inches in diameter the minimum cover shall be 10 feet. Performance Bond value \$20,000.
For pipes greater than 14 inches to 24 inches in diameter the minimum cover shall be 15 feet. Performance Bond value \$40,000.
For pipes greater than 24 inches to 48 inches in diameter the minimum cover shall be 25 feet. Performance Bond value \$75,000.

