

# Conduit and Cable

## FOR MAINTENANCE ONLY

### 1. Purpose

1. This specification covers the requirements for replacing an underground cable with CIC (Cable in Conduit) using trenchless guided boring technology.

### 2. Customers

1. NV Energy (NVE) places a very high priority on the good will of its customers.
2. Prior to beginning any work for the company, the contractor shall first make a reasonable effort to explain to the customer the company he represents, the planned work, and the completion date.
3. Any repair of damages to property caused by the contractor's activities shall be the entire responsibility of the contractor.
4. Whenever a customer complaint or claim is received by the Contractor, the Contractor shall immediately notify the designated Representative of NVE.
5. Contractors Supervisor shall investigate and resolve complaints or claims immediately upon receipt
6. The Contractor shall keep NVE informed as to the status of all complaints or claims on a current basis and confirm the final resolution in writing.

### 3. Safety

1. The contractor shall abide by all Federal, State and local Safety Regulations.
2. The Contractor shall at all times conduct the work in a safe manner so as to safeguard the public from injury to persons and/or property.
3. The Contractor is to use all necessary protection for its employees and to guard against interference with normal operation of power circuits.
4. All crossed utilities must be located before boring.
5. Should the Contractor damage NVE facilities or be involved in an accident involving NVE facilities or the public while performing work for NVE, the designated Representative of NVE shall be notified as soon as possible.
6. All drilling equipment shall have a permanent inherent alarm system capable of detecting electric current. The system shall be equipped with an audible alarm to warn the operator when the drill head nears an electric cable.

### 4. Purchase Order Changes

1. Any deviations from planned work must be approved by the Representative of NVE.
2. A Change Order in the Purchase Order will be initiated by the designated Representative of NVE for revisions in the field involving a change in the Purchase Order cost.

### 5. Extent of Work

1. The contractor is to provide all equipment, labor, and materials needed to replace existing direct buried cables shown on the construction drawings using the guided boring technology.
2. Tunneling shall be performed by a fluid cutting process (high pressure/low volume), utilizing a liquid clay, such as bentonite. The clay lining will maintain tunnel stability and provide lubrication in order to reduce

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frictional drag while the CIC is being installed. In addition, the clay fluid shall be totally inert and contain no environmental risk.

3. Installation shall be in a trench less manner producing continuous bores.
4. The tunneling system shall be remotely steerable and permit electronic monitoring of tunnel depth and location. Accurate placement of CIC within a +/-2" window is required. The turning capability of 90 degrees in a radius of 35' is required.
5. Mechanical, pneumatic, or water jetting methods of tunneling will be considered unacceptable due to the possibility of surface subsidence.
6. The contractor is to provide all required access pits, the hauling away and proper disposal of spoils, backfilling with approved soils, compaction to the NVE specifications as well as City, County or State specifications, and any sod required to restore the area to the original condition.
7. The contractor is responsible for any repair to the customer's satisfaction and all applicable City, County, and State codes.
8. A minimum of 36 inches of cover over the CIC shall be maintained.
9. All trenches and pits shall be compacted to meet NVE specifications as well as City, County, and State codes
10. All cable ends shall be capped watertight.
11. Installation records shall be kept and shall accurately show changes in cable routes or other deviations from the original construction drawing(s).
12. The CIC is to be installed to transformer troughs, pullboxes, riser pole assemblies or switchboxes.
13. During installation, all stress shall be placed on the duct and no stress shall be placed on the cable. Pulling stress on the duct shall be limited to the following manufacturer recommended working loads, 1,700# for 1 1/2" duct and 2,160# for 2" duct. Duct that has necked down due to excessive installation stress shall be rejected.
14. Sufficient cable shall be provided at each end of each CIC run to allow for cable training and termination. NVE will terminate the cable.

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