

RW-7 Durham, Franklin, Granville, Person, Vance, Wake & Warren County

If UV cured, and post installation inspections reveal signs of incomplete curing (dripping resin, etc), contractor will trim liner obscuring uncured liner, re-wet, and re-cure with UV.

IV. MEASUREMENT AND PAYMENT

Pre Installation Inspection will be measured and paid for as the actual number of linear feet of pipe inspected, including mobilization of equipment, and production of records. Linear footage is not increased for multiple passes of inspection equipment through a length of pipe.

Pipe Rehabilitation will be measured and paid for as the actual number of linear feet of pipe for the Size, and Method that has been incorporated into the completed and accepted work. Note: At locations shown in the Contract where multiple methods are permitted, the Contractor may select any of the methods specified, however, if only one method is specified, this will be the only method permitted at that location. This price shall include cleaning and preparation of the host pipe, furnishing and installing the liner, lateral reconnection, coupling and expansion devices, annular cement grout, design (if necessary) and shop drawing preparation, furnishing and installing liner and all components of the liner system, capturing any discharges or releases during installation or curing operations, furnishing any documentation or fees required for effluent or condensate disposal, all testing and sampling including furnishing reports and pre and post installation video inspections, waste disposal costs, excavation, sheeting, shoring, disposing of surplus and unsuitable material; backfilling and backfill material; compaction, restoring existing surfaces, and clearing debris and obstructions.

De-Watering will be measured and paid as the actual number of water diversions or bypasses required to complete Pipe Rehabilitation work. Each instance of De-Watering paid includes De-Watering for pre-inspection, installation, post inspections, and remediation (if necessary). All materials, equipment, labor, or other resources required to de-watering a site shall be incidental to the unit cost for De-watering.

Payment will be made under:

Pay Item	Pay Unit
Pre-Installation Inspection	Linear Foot
(Size) Pipe Rehabilitation CIPP Liner	Linear Foot
De-Watering	Each

GROUTING HOST PIPE BEFORE LINING

Description

This Special Provision includes specifications for filling voids below and around a culvert that have been found during cleaning and inspection or are apparent by inverts perforated by corrosion either mid-pipe or at the ends.

Wherever pipe liners are used in pipes of sufficient size to gain access, fill voids before installing pipe liners.

Materials

Refer to Section 1003 of *Standard Specifications* for cement based grout requirements. The contractor may also choose to use a polyurethane grout, resin or foam from the approved products list found at: <https://apps.ncdot.gov/vendor/approvedproducts/>

Construction Methods

Prevent the flow of cementitious material and water from construction activities into waterways and drainage facilities. Follow provisions of the NCDOT Best Management Practices for Construction and Maintenance Activities manual

If voids are found, install grout ports as ordered. Install valves or removable plugs at grout ports. Probe at each grout port location. The probe must be at least 4 feet long, fit through the grout ports, and be rigid enough to sense probe refusal. Grout ports must be watertight. If authorized, you may screw grout ports in place or attach them by other methods. Do not weld grout ports to galvanized surfaces.

Where practicable, pump from downstream / downhill end of pipe toward upstream / uphill end of pipe. Pump grout into voids until it appears that all water and air has been ejected. Where possible, pump until grout escapes from adjacent, unplugged ports. Plug grout ports or close port valves as soon as grout pumping ceases.

Multiple grouting stages may be necessary to 1) close invert, annular, or joint perforations, and 2) inject grout, resin or into remaining voids surrounding pipe. Block or sandbag culvert ends to retain grout during grouting procedure. Remove sandbags or blockages after curing. Finish grout that surcharges from perforations or cracks to a smooth surface.

Grout shall be introduced into voids by injection. The maximum injection pressure at the nozzle must not exceed 5 psi for fluid, unsanded grout mix. Pressure shall be monitored by a pressure gauge.

Monitor the culvert for deformation and cracks. If cracking occurs in a concrete culvert or lining, reduce the grout injection pressure. If deformation of the existing structure exceeds 1/2 inch at any location, reduce the injection pressure. Grouting in lifts may be required to prevent deformation.

Repair any permanent deformations or cracks resulting from your grouting work. Such work is incidental to grouting.

Measurement and Payment

Record the quantity of grout that is installed and submit this quantity. No payment will be made for grout that leaks through to the inside of the culvert. No payment will be made for grout that is wasted, disposed of, or remaining on hand after completion of the work.

Payment will be made under:

Pay Item	Pay Unit
Host Pipe Grouting (One Part)	Gal
Host Pipe Grouting (Two Part)	Gal

TRAFFIC CONTROL:

The Contractor shall maintain traffic, provide traffic control, and conduct all phases of his work in accordance with Section 1101 of the *Standard Specifications*, the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD), the North Carolina Supplement to the MUTCD, and per direction of the Engineer.

Payment for traffic control items shall include all cones, drums, signing, changeable message signs, flashing arrow boards, truck mounted impact attenuators, flaggers and incidentals included to install, shift, and remove the lane closure as shown in Roadway Standard Drawing 1101.02 Sheets 1 thru 15 and shoulder closure as shown in Roadway Standard Drawing 1101.04 Sheet 1 of 1.

Traffic control pay items will be measured and paid for in units of each per site where the Contractor has installed traffic control.

Payment will be made under:

Pay Item	Pay Unit
Lane Closure, Two Lane, Two Way Facility	Each
Lane Closure, Undivided Multi-Lane Facility	Each
Lane Closure, Divided Multi-Lane Facility	Each
Shoulder Closure	Each

MATERIAL AND EQUIPMENT STORAGE & PARKING OF PERSONAL VEHICLES:

11-17-21(Rev. 8-16-22)

1101

SP11 R03

Revise the 2018 *Standard Specifications* as follows:

Page 11-2, Article 1101-8 MATERIAL AND EQUIPMENT STORAGE, line 35-38, delete and replace with the following:

When work is not in progress, keep all personnel, equipment, machinery, tools, construction debris, materials and supplies away from active travel lanes that meets Table 1101-1.

TABLE 1101-1	
MATERIAL AND EQUIPMENT STORAGE FROM ACTIVE TRAVEL LANES	
Posted Speed Limit (mph)	Distance (ft)
40 or less	≥ 18
45-50	≥ 28