

# Standard Specifications for Roads and Structures- 2018

## **Division 15: Utility Construction- Major Revisions**

The following revisions take effect with the January 2018 let and apply to both Centrally and Division managed projects and any other projects that reference the 2018 edition. Additional information is provided where questions will likely arise.

### Section 1505: Excavation, Trenching, Pipe Laying and Backfilling for Utilities

- Added shoring for Building and Structure Protection. This will be a paid item.

Bore pits may be relocated close to existing structures that need protection. As the Contractor could not have accounted for this in his bid, this makes it clear payment will be made for shoring that is **in addition to** what is required for the actual utility installation. It will be paid as temporary shoring (SP) and require a supplemental agreement if not already a line item in the contract.

### Section 1510: Water Lines

- Added pay item for *Ductile Iron Water Pipe Fittings* by the pound.

Note, this was done in an SP effective January 2017.

### Section 1515: Utility Controls

- Added pay item for *Fire Hydrant Leg* by the linear foot.
- Clarified that when relocating a fire hydrant, valves will be paid for if there is no properly functioning existing valve.
- Added pay item for \_\_\_" *Water Service Line* by linear foot for pipes 2 inches or greater.
- Added pay item for *Water Service Line* by linear foot for pipes less than 2 inches.

*Fire Hydrant Leg* is a separate pay item from other 6" *Water Line* and will likely have a higher bid price due to installation requirements. Existing hydrants do not always have an existing or properly functioning valve. This revision compensates the Contractor for the cost of the valve, **if needed**, when relocating a fire hydrant. Valves will also be paid for on proposed *Fire Hydrant*. The pay item is the same as that used on the water line, 6" *Valve*.

### Section 1520: Sanitary Sewer

- Added pay item for *Sewer Service Line* paid by linear foot.
- Added pay item for Ductile Iron Sewer Pipe Fittings by the pound.

Size is not specified on *Sewer Service Line* because this information is not included in the survey data, thereby preventing a size specific quantity estimate. Note, the pay item for *Ductile Iron Sewer Pipe Fittings* was added by an SP effective in January 2017.

### Section 1540: Encasements

- Added that encasements 24” and larger, installed for future use, require certification of durability and a design life of 100 years.
- Downsized the casing pipe that must have the annular space filled from 36” to 24” and added the option to certify durability and a design life of 100 years in lieu of filling.

The intent is to increase consistency with encasements, regardless of how they are installed (trenched or bored). Bored encasements already had the “certification” option, so it was extended to trenched encasements. While it’s obvious an encasement installed for future use cannot be filled when installed, it was pointed out that there is no guarantee they will ever be used. Therefore, the concern was not just with the annular space, but rather the entire cross sectional area. Hence, the certification requirement for future use encasements, 24” and larger. Possible methods for achieving a design life of 100 years include increasing wall thickness, utilizing cathodic protection, and using non-ferrous pipe.

### Section 1550: Trenchless Installation of Utilities

- When there is only one feasible option that method will be shown on the contract plans with a reasonable length/profile and location of bore pits (based on pre-let information, utilizing bore estimating program, etc.).
- Removed “in soil” and “not in soil” pay items and replaced with *Bore and Jack of \_\_\_*”; *Directional Drilling of \_\_\_*”; and *Tunneling of \_\_\_*”.
- If conditions allow, the Contractor may elect to use the pipe ramming method in lieu of bore and jack. Payment for the pipe ramming method will be paid as bore and jack.
- Casing pipe is no longer incidental and downsized the casing pipe that must have the annular space filled from 36” to 24”.

### Background

After receiving significant feedback on the 2012 Trenchless Installation (TI) specs, a workgroup was formed, primarily with NCDOT personnel experienced in construction and one prime contractor. This resulted in several revisions, primarily of a contractual nature and listed above. A second workgroup was formed consisting of NCDOT personnel (Utilities and Geotech), boring subcontractors, TI design engineers, Rail Division, PEF representing NC Railroad, and utility owner/designer. This resulted in numerous technical revisions to the TI specs.

### Length and Method

The 2012 specs called for the delineation of the “no dig” area but did not intend to show a realistic length of the trenchless installation nor was a specific method identified. The length of the “no dig” area was to be the quantity for payment. The 2018 TI specs call for the designer to select the appropriate method (Bore and Jack, Directional Drilling, or Tunneling) and show this on the plans with a reasonable length, profile, size/location of bore pits, etc. based on pre-let information (this is not a complete design). If there are two feasible options, they should be shown on sequential sheets (e.g., UC-10 and UC-10A) and bid as an alternate. Pipe Ramming can be substituted for bore and jack if appropriate for field conditions (still paid under *Bore and Jack*

\_\_\_”). The Contractor will be paid for the actual length of the trenchless installation, it may vary somewhat from the “conceptual plan”.

#### “In Soil”/“Not in Soil”

Numerous issues were identified with the 2012 spec’s 2 pay items, “in soil” and “not in soil”. Primary issues include a lack of a clear definition of each, the practicality of switching cutter heads every time soil conditions change, and inappropriate bid prices by bidders gambling they would not encounter rock. All agreed, it would be much simpler to have one pay item however, the additional risk to the Contractor would likely result in excessively high bid prices. The compromise reached was that to mitigate the risk, NCDOT may include additional subsurface information to the bidders.

(At the time of this writing, we have not requested additional soil borings therefore, this guidance may be updated in the future.)

Generally speaking, soil borings at both ends and spaced no more than 50 feet apart along the length of the bore should be sufficient. The depth of the soil borings should extend 10 feet below the profile for directional drilling and perhaps 3 feet for bore and jack. If soil borings taken for roadway or structures are within close proximity to the TI, additional borings may not be needed. Review existing borings before requesting additional. This is a judgment call by the designer however, the project manager must understand the relationship between risk and bid price.

The Geotechnical Engineering Unit is supportive of this effort and a standardized request letter for soil borings is located [here](#).

#### Engineer’s Certification

NC General Statute §89C requires that the Department’s highway construction plans be signed and sealed by a NC licensed Professional Engineer. The information provided for the TI does not constitute a complete design therefore, the contractor is responsible for submitting a complete (signed and sealed) design to the Engineer before work can begin. We are aware this has been rarely enforced, resulting in complaints of inconsistency when it is. Beginning with the January 2018 let, there will be a renewed effort to inform the contractor of this requirement (during advertisement) and increased enforcement by the Construction Unit.

## **Other Revisions**

There are numerous other revisions to the 2018 specs. Many are minor in nature or simply offer clarification. Others incorporate what had been included in the the UC Special Provision template. The document [“Final Draft- Division 15 Utility Construction”](#), contains all the changes, select “Review” and “All Markup” to view the changes.

## **Questions???**

If you have any questions/comments regarding Division 15 of the spec book or suggestions on improving this document, please contact Carl Barclay at 919-707-6982 or [cbarclay@ncdot.gov](mailto:cbarclay@ncdot.gov) .