#### SP-XXX FLOWABLE FILL

Version Date: 09/21/2015 Revision Date: XX/XX/XXXX by XXX

**1.0 DESCRIPTION**

The work covered by this special provision includes furnishing all materials, labor, equipment, and incidentals necessary to place flowable fill material in accordance with these provisions, the plans, and as directed.

2.0 MATERIALS

All materials shall be in accordance with Division 10 of the *NCDOT* *Standard Specifications for Roads and Structures*, *ACI 229 – Controlled Low Strength Materials*, as shown on the plans, or directed by the Engineer.

3.0 Submittals

Provide submittal per Article 1000-6 of the *NCDOT Standard Specifications for Road and Structures*.

3.0 CONSTRUCTION METHODS

Discharge flowable fill material directly from the truck into the space to be filled, or by other approved methods.

The mix may be placed full depth or in lifts as site conditions dictate. Compaction of individual layers of flowable fill is not necessary.

Construct formed walls or other bulkheads to withstand the hydrostatic pressure exerted by the flowable fill. Block trench ends outside the roadway with sandbags or mounded soil rather than wood or metal forms. When backfilling utilities such as pipe culverts, distribute the flowable fill evenly to prevent any movement of the line.

For pipe bedding, flowable fill can be placed in lifts to prevent floating the pipe. Each lift should be allowed to harden before continued placement. Other methods of preventing flotation include sand bags placed over the pipe, straps around the pipe anchored into the soil, or as directed by the Engineer.

Construct pipe plugs in accordance with NCDOT Standard 840.71.

Place flowable fill under pressure flow conditions into a properly vented open system until flowable fill emerges from the vent pipes. Pump flowable fill with sufficient pressure to overcome friction and to fill the abandoned pipe completely.

Protect flowable fill from freezing for a period of 36 hours after placement. Do not place flowable fill when ambient air temperature is below 40ºF. Make certain that the temperature of the flowable fill is at least 50ºF at the time of delivery.

The routine use of vibrators is prohibited. If the mix does not self-consolidate, cease placement of the flowable fill material until an acceptable product is provided. Under some conditions, the Engineer may allow placement
of flowable fill under conditions of rain or standing water. Do not place flowable fill under these conditions without prior approval of the Engineer. If the flowable fill placement is not proceeding satisfactorily, the Engineer may rescind such approval at any time.

Once the flowable fill is in the trench, make provision for bleed water that is displaced during the consolidation process to run off and away from the surface of the hardening flowable fill. Do not use plastic sheets as vapor barriers.

An initial subsidence of ⅛ inch per vertical foot of depth of flowable fill is allowed as excess water is displaced.

The Engineer will determine when full traffic may be allowed on the flowable fill. If it is necessary to return traffic in less than 8 hours, or if there is concern that traffic will cause damage to the fill or any structure below, use steel plates to bridge over the hardening flowable fill. If the filled cavity is too wide to bridge, place steel plates on the surface of the hardening flowable fill as soon as it is able to support foot traffic

4.0 MEASUREMENT AND PAYMENT

*Flowable Fill* will be measured and paid in cubic yards, which has been incorporated into the completed and accepted work in accordance with the special provisions.

Payment is full compensation for furnishing and placing the flowable fill material as specified or directed and includes proportioning, mixing, handling, hauling, placing, maintenance, and protection of the flowable fill; providing admixtures, shoring, and steel plates; and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to necessary to complete the work in accordance with the Plans,
the Specifications, and as directed by the Engineer.

Payment will be made under:

**FLOWABLE FILL (EXCAVATABLE) CY**

**FLOWABLE FILL (NON-EXCAVATABLE) CY**