WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

STATE PROJECT NUMBER: _____

FEDERAL PROJECT NUMBER: _____

SECTION 219

CONTROLLED LOW-STRENGTH MATERIAL FOR HIGH DENSITY GROUT FOR PIPE LINING

219.1 – DESCRIPTION:

ADD THE FOLLOWING TO THE SECTION:

219.1.2 – Grout: The work covered under this section includes furnishing all labor, materials and equipment required for installing controlled low-strength material to fill the annular space between the liner and the existing pipe. Section 219 applies, with the following exceptions.

219.2 – MATERIALS:

DELETE THE FOLLOWING FROM THE TABLE:

1. Bottom Ash:…

219.3 – PROPERTIES:

DELETE PARAGRAPH ONE AND REPLACE WITH THE FOLLOWING:

Compressive strength shall conform to Type B, 50 psi min. Density shall be greater than 80 and less than 130 pounds per cubic foot.

219.4.2 – Testing:

DELETE SECTION AND REPLACE WITH THE FOLLOWING:

219.4.2 – Testing: Strength testing is not required. One density test shall be performed by the contractor, and observed and approved by the engineer at the time of placement.

219.4.4 – Site Preparation:

DELETE THE SECTION AND REPLACE WITH THE FOLLOWING:

219.4.4 Site Preparation: Construction for controlled low-strength material to fill the annular space between the liner and the existing pipe shall meet the following requirements:

The Contractor shall submit a work plan for placing the liner pipe and the controlled low-strength material including sequence of work, type(s) of equipment, location of equipment, placing procedures (including batching, mixing, and pumping procedures), concrete conveyance provisions, methods for monitoring mix, testing procedures, and cleanup procedures.

Provide an acceptable means of filling the entire void area and be able to demonstrate that this has been accomplished. This may include affixing grout verification tubes in the end walls or bulkheads. Use low-pressure pumping (depending upon liner manufacturer's recommendations). Prevent the movement of any inserted structure from its designated location.

Contractor shall take appropriate precautions to avoid over pressurization, buckling, and floating of the slip liner pipe during the grouting process. Pressure on the annular void shall not exceed 2 PSI to avoid damage to the line pipe. Regardless of the pressure, the contractor shall be solely responsible for any damage of distortion to the insertion pipe, due to the grouting process.

The Contractor shall comply with pipe manufacturer's recommendations for grouting procedures and with the grout manufacturer's procedures for placement of grout, grout pressures, and grout quantity. Multiple grout lifts installations may be required to avoid buckling of the liner pipe.

219.4.5 – Mixing:

DELETE THE SECTION AND REPLACE WITH THE FOLLOWING:

219.4.5 Mixing: Grout batching and mixing for controlled low-strength material to fill the annular space between the liner and the existing pipe shall meet the following requirements:

The Contractor shall follow admixture manufacturer's recommendations concerning the order of charging the mixer with the various ingredients. The as-cast unit weight shall be monitored at the point of placement. Allowance shall be made for any additional mixing that may result from the method of placement, such as mechanical or pneumatic pumping, and for any unit weight changes that may result from these methods.

For continuous mixing operations, provision shall be made for reasonably uniform and continuous rate of addition of all mix components at appropriate positions in the mixing machine, and in the correct ratio, to assure uniformity and the specified limiting requirements at the point of placement.

219.4.6 – Placement:

ADD THE FOLLOWING TO THE SECTION:

219.4.6.1 Protection and Clean-up: Protection and clean-up for controlled low-strength material to fill the annular space between the liner and the existing pipe shall meet the following requirements:

The Contractor shall take all necessary precautions to protect and preserve the interior of the pipe from damage. Spills shall be cleaned up immediately. Any damage to the pipe caused by or occurring during the backfilling operations shall be repaired by a method approved by the Engineer at no additional cost to the WVDOH.

Upon acceptance of the installation work and testing, the contractor shall clean-up and restore the project area affected by operations as approved by the Engineer.