

## 218-R-576 QC/QA FOR SOIL FILL SECTIONS AND QC/QA FOR SUBGRADE

(Adopted 02-18-21)

The Standard Specifications are revised as follows:

SECTION 218, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

**SECTION 218 – ~~BLANK~~ QC/QA FOR SOIL FILL SECTIONS AND QC/QA FOR SUBGRADE**

**218.01 Description**

*This work shall consist of incorporating QC/QA processes in the construction of soil fill sections using a combination of borrow, embankment, and excavation, or in the construction of subgrades, all in accordance with 105.03, 203, and 207.*

**218.02 Quality Control**

*QC testing shall include DCP in accordance with ITM 509, LWD in accordance with ITM 508, moisture in accordance ITM 506 or AASHTO T 255, and one-point proctor in accordance with ITM 512.*

**(a) Quality Control Plan**

*The Contractor shall prepare and submit a QCP in accordance with ITM 803. The QCP shall be submitted to the Engineer at least 15 days prior to the Contractor's planned start date for soil or subgrade work. The QCP will be returned either as accepted or showing changes or corrections required within 15 days of receipt. If required to be changed or corrected, the QCP shall be resubmitted until it is accepted. Soil and subgrade operations shall not begin until the Contractor receives written notice from the Engineer that the QCP has been accepted.*

**(b) Quality Control Manager and Technician**

*The Contractor shall provide a QC Manager and QC Technician in accordance with ITM 803, section 4.5. The QC Technician shall be qualified in accordance with the Department's Division of Materials and Tests Directive 107 for ITM 506, ITM 508, ITM 509, and ITM 512, and AASHTO T 255.*

**CONSTRUCTION REQUIREMENTS**

**218.03 General Requirements**

*QC testing shall be performed in accordance with the QCP and ITM 803 section 14.6 or section 14.7.*

*Soil Management shall be in accordance with the QCP and ITM 803. Adjustments shall be made to compaction procedures when the soil type changes.*

*The Contractor shall provide documentation in accordance with the QCP and ITM 803 by the end of the following business day or before the next QA test, whichever comes first.*

**218.04 Test Sections**

*Test sections shall be constructed in accordance with the QCP.*

Test sections shall be constructed for non-chemically modified soils in accordance with 203, ITM 513, and ITM 803 to determine compaction pattern and rolling passes necessary to meet the DCP requirements. The roller equipment selected for use and rolling pattern shall be based on best compaction practice for the soil types encountered on the contract. Intelligent compaction methods described in ITM 513 may be used but will not be required. The soil in the test section shall meet the requirements of 203.

#### **218.05 Acceptance of Soil Compaction**

Acceptance of the compaction of the soils and subgrade will be based on the results of measurements and tests performed by the Engineer.

The moisture content and compaction acceptance of the soil fill sections will be determined in accordance with 203.23 and 203.24. The moisture content and compaction acceptance of chemically modified soils will be determined in accordance with 215 or 207.

The Contractor shall notify the Engineer when a lift area is ready for acceptance testing. Testing will be performed at random locations in accordance with ITM 802 at the frequency described below.

<i>FREQUENCY OF QA TESTING</i>		
<i>Test</i>	<i>Soils</i>	<i>Subgrade</i>
<i>Moisture Content</i>	<i>1 per day</i>	<i>1 per every 4 h</i>
<i>Strength or Stiffness</i>	<i>3 per 2,000 cu yd.</i>	<i>3 per 2,000 cu yds</i>
		<i>3 per 1,400 cu yds for chemically modified soil</i>
<i>Gradation</i>	<i>---</i>	<i>1 per every 2,500 cu yds of chemically modified soil</i>
<i>Maximum Dry Density</i>	<i>1 at start of work and 1 for every change in soil type</i>	<i>---</i>
<i>One Point Proctor</i>	<i>1 per every 3 days and 1 for every change in soil type</i>	<i>---</i>
<i>Spreading</i>	<i>---</i>	<i>ITM 516</i>
<i>Adjustment of Chemical</i>	<i>---</i>	

#### **218.06 Deficiencies**

Individual soil fill sections or subgrade locations that do not meet the requirements of 203.23 and 203.24, will be considered deficient. All locations exhibiting deflections or rutting in excess of the values shown in 203.26, as determined by the Department, will also be considered deficient.

When a deficiency is identified at the random location or by additional selective testing, the Contractor shall investigate and correct the deficiency by reworking the location in accordance with the QCP. The Engineer will subsequently randomly select at least two additional locations within the remaining lift area and perform acceptance testing. If either of the two additional locations fails to meet the acceptance criteria, then the entire lift area shall be evaluated by the Contractor in accordance with the QCP and

*reworked as necessary. All reworked areas shall be proofrolled in accordance with 203.26 before acceptance testing is resumed in that lift area.*

*Locations where rework is not required may still be reworked at the Contractor's option in accordance with the QCP. Reworked areas are subject to further review for deflections or rutting at the discretion of the Department.*

**218.07 Method of Measurement**

*Performing the QC services portion of the work, including but not limited to, equipment required for the QC/QA soil process, all quality control procedures including the QCP, on-site training, testing facility, construction of test sections, QC testing, inspection, and other professional services necessary will not be measured for payment.*

**218.08 Basis of Payment**

*Where a QC/QA soil fill section or subgrade has not been constructed and conditions exist below the specified subgrade compaction depth that prevent achieving the specified compaction, payment for correcting such conditions will be made based on the directed method of treatment.*

*All costs for performing the QC services portion of the work, including but not limited to, equipment required for the QC/QA soil process, all quality control procedures including the QCP, on-site training, testing facility, construction of test sections, QC testing, inspection, and other professional services necessary shall be included in the lump sum items below.*

*Payment will be made under:*

<b><i>Pay Item</i></b>	<b><i>Pay Unit Symbol</i></b>
<i>QC/QA Services for Soil Fill Sections .....</i>	<i>LS</i>
<i>QC/QA Services for Subgrade .....</i>	<i>LS</i>