*ADD THE FOLLOWING SECTION:*

SECTION 117 – CONTRACTOR QUALITY CONTROL TESTING

117.01 GENERAL

* 1. The testing procedures and frequency shall comply with Table I, Appendix X.
  2. For the purposes of testing, the following common structural items are hereby defined as non-structural and will only be required to meet the minimum requirement of once per week per mix design:
     1. Utility Collars.
     2. Sidewalk.
     3. CLSM.
     4. ADA ramps

117.02 TESTING EXCEPTIONS

* 1. AASHTO Test Method Modifications: Add items 1 through 3 shown below to Section 9.4.15 of AASHTO T310 In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
     1. If a test fails, it is acceptable to rotate the moisture-density gauge on axis of the probe to achieve a better seating of the gauge. The process can be performed numerous times.
     2. The depth of probe shall equal the lift depth of compacted material
     3. Perform a new AASHTO T180 proctor according to the guidelines as follows:
        1. The onset of each new construction process
        2. When compaction readings are over 101 percent
        3. When the source of material changes
        4. When required at the discretion of the Engineer







* 1. CONSTRUCTION
  2. Bridge Abutments
     1. The zone for structural backfill for bridge abutments is within 50 feet of the structure. Walk behind equipment must be used at the face of the walls.
  3. Concrete Plant Inspection
     1. The minimum requirement for plant inspection and field testing of concrete is set at one (1) inspection per week per mix design. The field sampling shall be performed on the same concrete placement as the plant inspection.
  4. Reinforcement Bar Testing
     1. Tensile testing of reinforcing steel is required for all structural concrete at the frequency specified in the QC tables. However, tensile testing of reinforcing steel used in non-structural items as listed in Subsection 117.01 “General” is not required.
  5. Concrete Testing
     1. The following Table 3 applies to testing for each individual mix. Frequencies apply to each mix individually. Aggregate sampling and testing is required any time a plant inspection is performed.

**Table 3 – Concrete Mix Test Frequency**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Size of Concrete Placement and Aggregate Testing** | **Any Individual Day** | | **Cumulative for the Week** | |
| Structural Concrete | Non-Structural Concrete | Structural Concrete | Non-Structural Concrete |
| Less than 3 cy | NO Tests | NO Tests | NO Tests | NO Tests |
| 3 cy. to 50 cy | YES – 1 Minimum | NO compression Tests | YES – 1Minimum | YES – 1 Minimum |
| More than 50 cy | YES & 1/100 CY Thereafter | YES & 1/100 CY Thereafter | YES & 1/100 CY Thereafter | YES & 1/100 CY Thereafter |

* 1. Soil Compaction Lifts
     1. In order to reduce the possibility that testing frequencies are not being met, the following guideline is presented.
        1. Figure 1 is an example for trenches and from Appendix X, Table 1, the frequency of testing is 1/100 Linear Feet (LF) / per Lift. The Lighter colored lifts on the Left hand side of the diagram were placed in the morning (AM). The Darker colored lifts on the Right hand side were placed in the afternoon (PM).
           1. In the AM (lighter) the following testing would be required:

The 1st Lift would require one (1) test.

The 2nd Lift would require one (1) test.

The 3rd Lift would require one (1) test.

The 4th Lift would require one (1) test.

* + - * 1. In the PM (darker), the following testing would be required:

The 1st Lift would require one (1) test.

The 2nd Lift would require two (2) tests.

The 3rd Lift would require two (2) tests.

The 4th Lift would require two (2) tests.



**Figure 1 – Trench Backfill**

END OF SECTION 117