

SECTION 02715

HYDRATED LIME TREATED ROADBED

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Materials and procedures for constructing a compacted hydrated lime treated roadbed.

1.2 RELATED SECTIONS

- A. Section 02745: Asphalt Material.
- B. Section 02746: Hydrated Lime.

1.3 REFERENCES

- A. AASHTO T 26: Quality of Water to be Used in Concrete.
- B. AASHTO T 99: The Moisture-Density Relations of Soils Using a 5.5 lb (2.5 kg) Rammer and a 12 inch (305 mm) Drop.
- C. AASHTO T 310: In-place Density and Moisture Content of Soil and Soil-aggregate by Nuclear Methods (Shallow Depth).

1.4 ACCEPTANCE

- A. The Department conducts random sample tests on the grade.
- B. Acceptance Criteria for Density:
 - 1. Lot-by-lot basis where a lot consists of a single layer of not more than 8000 yd² placed.
 - 2. A lot is divided into five approximately equal-sized sublots (1600 yd²).
 - 3. The Department conducts one random moisture and density test within each subplot. AASHTO T 310.
 - 4. Department accepts a lot when the results of the five density tests indicate that the average of 96 percent of maximum laboratory density has been met, with no test less than 92 percent. AASHTO T 99, Method D.
- C. Rework unacceptable lot layer at no additional cost to the Department.

PART 2 PRODUCTS

2.1 HYDRATED LIME

- A. Refer to Section 02746.

2.2 WATER

- A. Potable water or water that meets the specified test standard. AASHTO T 26.
- B. Screen out extraneous material when pumping water from streams, ponds, lakes, etc., by enclosing and positioning the water intake.

2.3 ASPHALTIC MATERIAL

- A. Refer to Section 02745.

PART 3 EXECUTION

3.1 PREPARATION

- A. Compact and finish the roadbed to the lines and grades shown.
- B. Scarify the surface over the entire width to the depth shown.
- C. Mechanically pulverize the material until all soil lumps are broken up.
- D. Remove all unacceptable material and stones greater than 3 inches.
- E. Windrow scarified/pulverized material to facilitate compaction.
- F. Firmly compact the subgrade below the scarified soil to 90 percent of maximum density. AASHTO T 99, Method B.
- G. Correct soft or yielding areas before adding hydrated lime.

3.2 LIMITATIONS

- A. Do not mix and place lime-treated roadbed when the material is frozen.
- B. Begin work when the air temperature is at least 40 degrees F in the shade and rising.

3.3 PROPORTION AND MIX

- A. Uniformly spread the material to be treated over the full width of the roadbed to obtain the compacted thickness shown.
- B. Combine hydrated lime and water for the slurry.
 - 1. Measure water with a calibrated meter and weigh hydrated lime on approved scales.
 - 2. Mix at a ratio of approximately 1 ton of hydrated lime to 500 gallons of water in a central mixing tank or in the tanks used for distribution.
 - 3. The mixing tank must agitate the slurry, providing uniform moisture and preventing settlement of the lime after mixing.
- C. Apply the water-lime slurry with distributors that agitate the slurry during hauling and spreading.
- D. Adjust the number and rate of applications to achieve the required quantity of residual lime without runoff.
- E. Lightly scarify the surface to facilitate absorption of the slurry and to prevent runoff.
- F. Maintain the moisture content of the material during processing within two percent of the optimum. AASHTO T 99, Method D.
- G. Thoroughly blend the material and lime slurry with a traveling mixer until the mixture is uniform in appearance, texture, and moisture content, and is free from pockets of segregated material.
- H. Cure the mixture for at least 48 hours before final spreading and compaction.
- I. Sprinkle the surface lightly during this curing period to compensate for evaporation loss.

3.4 COMPACTION

- A. Spread the mixture over the roadbed and roll the surface with a steel wheel, sheep's foot, pneumatic roller, or a combination.
- B. Maintain the optimum moisture content during compaction within two percent of optimum as shown in article 3.3.G. Dry or sprinkle the mixture uniformly to meet the above moisture requirement.

3.5 FINISHING

- A. Bring the roadbed to within ± 0.1 ft of line and grade.

3.6 MEMBRANE SEAL

- A. When shown on the typical section, seal the compacted roadbed with asphaltic material according to the type and rate shown.
- B. Keep the membrane seal intact until it is covered by base or surface material.
- C. Apply additional membrane seal to those areas where it has been destroyed under construction traffic or adjacent work at no additional cost to the Department.

END OF SECTION