

Section 02337

LIME/FLY-ASH STABILIZED SUBGRADE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Foundation course of lime/fly-ash stabilized sub grade material.
 - 1. Application of lime slurry and fly-ash to sub grade
 - 2. Mixing, compaction, and curing of lime, slurry, fly-ash, water and sub grade into a stabilized foundation

1.02 MEASUREMENT AND PAYMENT

- A. Unit Prices.
 - 1. Measurement and payment for lime/fly-ash stabilized sub grade is on per ton basis compacted in place to proper density. Separate measurement will be made for each required thickness of sub grade course.
 - a. Limits of measurement shall match actual pavement replaced, but no greater than the maximum pavement replacement limits shown on Drawings. Limits for measurement will be extended to include installed lime/fly ash stabilized sub grade material that extends 1 foot beyond outside edge of pavement to be replaced, except where proposed pavement section shares a common longitudinal or transverse edge with existing pavement section. No payment will be made for lime/fly ash stabilized sub grade in areas beyond these limits.
 - b. Limits of measurement and payment shall match pavement replacement limits shown on Drawings, except as noted in Paragraph 1.02.A.1.a, or as approved by City Engineer.
 - 2. Payment for hydrated lime and quicklime is by ton of 2000 pounds dry-weight basis.
 - 3. Payment for commercial lime slurry is by ton of 2000 pounds of lime calculated on percentage by weight of dry solids for grade of slurry.
 - 4. Payment for fly ash is on unit price basis per ton
 - 5. Refer to Section 01270 - Measurement and Payment for unit price procedures.

- B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 DEFINITIONS

- A. Moist Cure: Curing soil lime/fly-ash material to obtain optimum hydration.
- B. 1000-Foot Roadway Section: 1000 feet per lane width or approximately 500 square yards of compacted sub grade for other than full-lane-width roadway sections.

1.04 REFERENCES

- A. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcinated Natural Pozzolan for use as Mineral Admixture in Portland Cement Concrete.

1.05 SUBMITTALS

- A. Conform to requirements of Section 01330 - Submittal Procedures.
- B. Submit certification that fly-ash, hydrated lime, quicklime, or commercial lime slurry complies with these specifications.
- C. Submit weight tickets, certified by supplier, with each bulk delivery of materials to work site.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Conform to requirements of Section 02336 - Lime Stabilized Sub grade.
- B. Quicklime can be dangerous; exercise extreme caution if used for Work. Become informed about recommended precautions in handling, storage and use of quicklime.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Water: clean, clear and free from oil, acids, alkali, or vegetable matter.
- B. Conform to requirements of Section 02336 - Lime Stabilized Sub grade for Type A hydrated lime, Type C quicklime, and Type B commercial lime slurry shall.
- C. Fly-Ash: Residue or ash remaining after burning finely pulverized coal at high temperatures conforming to requirements of ASTM C 618, Class C, and following:

1. Minimum CaO content of 20 percent

2. Loss on ignition not to exceed 3 percent
 3. Contain no lignite ash
- D. Asphaltic Seal Cure: Conform to requirements of Section 02336 - Lime Stabilized Sub grade.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Conform to Part 3 of Section 02336 - Lime Stabilized Sub grade with following exceptions:
1. Include fly ash in percentage amounts in lime or lime slurry as established from geotechnical evaluation for application, mixing, and compaction.
 2. Apply lime/fly-ash as single mix, single pass over lower PI soils.
 3. Conduct operations to minimize elapsed time between mixing and compacting lime/fly-ash stabilized sub grade in order to take advantage of rapid initial set characteristics. Complete compaction within 2 hours of commencing compaction, and not more than 6 hours after adding and mixing last stabilizing agent.

3.02 QUALITY CONTROL

- A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.
- B. Soil will be sampled to establish percent of fly-ash and hydrated lime, quicklime, or lime slurry to be applied to sub grade material.
- C. Testing will be in accordance with Part 3 of Section 2336-Lime-Stabilized Sub grade.

END OF SECTION