ITEM 205

SUBGRADE

205.1 Description. When the road is to be surfaced or paved and after the earthwork has been substantially completed and after all storm sewer and drains have been laid, the subgrade shall be brought to the lines, grades and typical cross section shown on the plans and in accordance with these specifications.

205.2 Construction Methods. After stripping the Contractor shall proof roll the subgrade, (i.e. verify that the subgrade is firm and able to support, without displacement, construction equipment), and correct any soft or yielding areas (by scarifying and aerating, replacing unsuitable material with borrow material, stabilization…..etc).

Proof rolling equipment shall meet the requirements of TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges" Item 216, titled "Proof Rolling", Latest Edition.

Whenever unsuitable natural material is encountered and cannot be handled by the excavation or embankment requirements, then the following requirements shall apply. The unsuitable material shall be excavated to a depth deemed sufficient by the Engineer and the excavated material shall be disposed of off the jobsite at the expense of the Contractor. The excavated area shall be filled to its original level with suitable material meeting the requirements of Item 130, "Borrow". This imported material shall be compacted to 95-percent of standard proctor density, (ASTM Test MethodD698, "Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3)))" using a moisture content ranging from optimum to plus 3-percent above optimum. Soils shall not be compacted at less than the optimum moisture content.

After all holes and depressions are filled with approved material, the subgrade shall be brought up to the lines and grades required and if it is not to be stabilized, it shall be compacted to 95-percent of standard proctor density, (ASTM Method D698), using a moisture content ranging from optimum to plus 3-percent above optimum. The subgrade, without stabilization, shall be compacted to a depth of 9-inches.

After the roadbed has been prepared it shall be allowed to stand, or "cure", under traffic until, in the opinion of the Engineer, it is in a satisfactory condition to receive a surface course. During this curing period, the roadbed shall be maintained by the Contractor, at no additional cost to the City of Deer Park.

The subgrade shall be kept free from all ruts and weak spots. Any ruts and weak spots that develop under traffic shall be repaired with suitable material as they develop.

205.3 Special Subgrade Finish for Concrete Pavement, Constructed by Slip Form Paving Operation. After the subgrade has been prepared, as specified, and has been compacted as specified and immediately before the base or surfacing material is to be placed on the subgrade, it shall be tested as to crown and elevation by the use of a template, or other approved methods, furnished by the Contractor. In the lower edge of the template, there shall be inserted bolts, six-inches apart and to such depth that the heads will just come to the true elevation of the subgrade, when the template is riding on the forms longitudinally.

Testing the elevation of the subgrade shall be done by moving the template back and forth on the forms. If the subgrade, when tested, is found to be as much as one fourth of an inch high, additional excavation shall be made until the required depth is obtained and the excavated material shall be deposited on the shoulders. Unless otherwise provided in the specifications, those areas below the true elevation shall be filled with concrete, making it an integral part of the slab. All expenses for this extra concrete material shall be borne by the Contractor. Before placing the concrete, the subgrade shall be cleaned of all loose material and thoroughly sprinkled.

205.4 Quality Assurance. The Testing Laboratory's representative will determine the Moisture-Density Relationship in accordance with ASTM Method D698, on material secured from the roadway or borrow source, for each type of material encountered or used.

The Testing Laboratory's representative will determine the in-place density in accordance with ASTM Method D2922, "Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods" or ASTM D1556, "Test Methods for Density and Unit Weight of Soil in Place by Sand-Cone Method". The minimum level of testing will consist of at least three tests per lift for each 1,000 feet per lane of roadway or 4,000 square feet (500 square yards of embankment).

205.5 Measurement and Payment. The work prescribed under this item, shall not be paid for directly, but shall be considered as subsidiary work of the Items for Lime Stabilization.

END OF ITEM 205