



SECTION 310

AGGREGATE SURFACE

310.1 Description. This work shall consist of furnishing and placing chat, gravel or crushed stone surfacing in the quantity shown on the contract or as directed by the engineer.

310.2 Material. All material shall be in accordance with Division 1000, Material Details, and specifically [Sec 1006](#). The type and gradation of the surfacing material to be used will be specified in the contract.

310.3 Construction Requirements.

310.3.1 General. The contractor shall furnish, haul and spread surfacing material on the subgrade at the designated rate. The rate of application may be varied at the discretion of the engineer, depending on the nature of the soil encountered in the subgrade. The contractor shall uniformly unload and distribute of the required quantity of material throughout each station. The subgrade shall be prepared as specified in [Sec 209](#), and any work done in reshaping the subgrade before placing surfacing material shall be at the contractor's expense. When it is determined by the engineer to be to the Commission's advantage, hauling may be done over surfacing material previously spread, otherwise, all hauling shall be over the subgrade.

310.3.2 Surface Requirements. Material shall be spread to a uniform thickness over the subgrade and shaped as shown on the plans until the surface is free from ruts and waves. The surface shall be compacted under traffic. Maintenance of the surface shall continue until final project acceptance is made.

310.3.3 Stockpiles. Material shall be stockpiled at locations approved by the engineer, and in the approximate quantity shown on the contract.

310.3.4 Salvage. Designated areas shall be scarified to the full depth of the existing surfacing and such material pulverized to a maximum size of approximately 2 inches (50 mm). Uncontaminated material shall be removed from the roadbed and placed in stockpiles or spread at locations approved by the engineer. Salvaged surfacing material shall be maintained as free as practical of dirt, vegetation or other objectionable material. Salvaging shall not be performed unless approved by the engineer.

310.4. Vehicle Scales. Vehicle scales shall be approved by the engineer and shall be in accordance with the requirements specified herein.

310.4.1 Basis of Acceptance. Scale acceptance will be based on one of the following:

(a) A valid certification or seal of approval by the Missouri Department of Agriculture, Division of Weights and Measures.

(b) A valid certification or seal of approval by a State of Missouri duly appointed Sealer of Weights and Measures in cities or counties of 75,000 population or more.

(c) Certification of calibration from a commercial scale service company showing that the scale meets the requirements of these specifications. The contractor shall furnish the certification of calibration to the engineer.

(d) Calibration from zero weight (mass) through the maximum load to be applied by the application of standard weights in the presence of the engineer by the contractor's personnel. In lieu of starting the calibration at zero weight (mass), standard weights may be applied to an unloaded truck, the weight (mass) of which has been determined on a certified scale and the calibration continued through the maximum load to be applied. Regardless of the form of acceptance, the calibration shall be within the accuracy requirements specified in [Sec 310.4.2](#), and the scales shall meet all requirements of these specifications.

310.4.2 Scale Calibration. Scales shall have been calibrated within the 12-month period immediately prior to any material being delivered or any time the engineer has cause to question the accuracy of the scale. Scales shall be accurate to within 0.4 percent of the net load applied, regardless of the location of the load on the platform. The value of the smallest unit of graduation on a scale shall be no greater than 20 pounds (10 kg). Sensitivity requirements of scales not equipped with balance indicators shall be twice the value of the minimum graduated interval on the weigh beam or 0.2 percent of the nominal capacity of the scale, whichever is less. For scales equipped with balance indicators, the sensitivity requirement shall be the value of the minimum graduated interval on the weigh beam.

310.4.3 Verification. Verification of a vehicle scale may be required by weighing (determining the mass of) a hauling unit on another recently calibrated and certified scale.

310.4.4 Long Vehicles. If equipment to be weighed (for which the mass is to be determined) is of such length that all axles cannot be weighed (that the mass cannot be determined) simultaneously, a level area of concrete or bituminous pavement shall be provided permitting those axles not on the scale platform to be on the pavement during the weighing (mass determination) operation. The approach shall be at least as wide as the platform and of sufficient length to ensure the level positioning of vehicles during weight (mass) determinations. The weighing (mass determination) shall be performed with all brakes released. If equipment to be weighed (for which mass determination is to be made) is equipped with an air bag suspension unit on any axle, the equipment, including semi-trailers or pup trailers, shall be determined on vehicle scales of sufficient size to weigh (determine the mass of) all axles of the combination simultaneously.

310.4.5 Certification. All costs incurred in obtaining certification of calibration or verification shall be at the contractor's expense.

310.5 Method of Measurement.

310.5.1 Measurement by Volume. Stockpiles of salvaged surfacing material may be measured by the average end area method.

310.5.2 Measurement of Aggregate Surfacing by Area. Final measurement of the completed aggregate surface will not be made except for authorized changes during construction, or where appreciable errors are found in the contract quantity. Where required, measurement of aggregate surface, complete in place, will be made to the nearest square yard (m²). The revision or correction will be computed and added to or deducted from the contract quantity.

310.5.3 Measurement by Weight (Mass). Measurement will be made by weighing (determining the mass of) each truck load on scales in accordance with [Sec 310.4](#). Deductions will be made for any moisture in excess of 2.0 percent of the dry weight (mass) of the

material. After deduction for excess moisture has been made, measurement will be made to the nearest ton (Mg) for the total tonnage (mass) of material accepted.

310.6 Basis of Payment. The accepted quantities of aggregate surface will be paid for at the contract unit price. If Type 1 Aggregate for Base is used for this work, payment will be based on plan quantity and contract unit price for Gravel (A), Crushed Stone (B) or Chat (C) in accordance with the contract.