

STATE

OF

TENNESSEE

REV. 10-22-01

March 1, 2006

SPECIAL PROVISION

REGARDING

GRINDING CONCRETE PAVEMENT

Description. The work shall consist of grinding Portland Cement Concrete Pavement to substantially eliminate joint faulting and/or to restore proper drainage, riding characteristics and skid resistance to the pavement surface. The work shall be accomplished in accordance with these Specifications and in reasonably close conformity to the details on the Plans.

Equipment. The grinding equipment shall be a power driven, self-propelled machine that is specifically designed to smooth and texture Portland Cement Concrete Pavement with diamond blades. The effective wheel base of the machine shall not be less than 12.0 feet. It shall have a set of pivoting tandem bogey wheels at the front of the machine and the rear wheels shall be arranged to travel in the track of the fresh cut pavement. The center of the grinding head shall be no further than 3.0 feet forward from the center of the back wheels.

The equipment shall be of a size that will cut or plane at least 3.0 feet wide. It shall also be of a shape and dimension that does not encroach on traffic movement outside of the Work area. The equipment shall be capable of grinding the surface without causing spalls at cracks, joints, or other locations.

Equipment other than that specified above may be used when permission to do so is requested by the Contractor and granted by the Engineer in accordance with Subsection 105.17.

Construction. The Plans will designate the areas of pavement surfaces to be ground. Grinding of bridge decks and roadway shoulders will not be required unless indicated on the Plans or required to improve drainage.

The construction operation shall be scheduled and proceed in a manner that produces a uniform finished surface. Grinding will be accomplished in a manner that eliminates joint or crack faults while providing positive lateral drainage by maintaining a constant cross-slope between grinding extremities in each lane. Auxiliary or ramp lane grinding shall transition as required from the mainline edge to provide positive drainage and acceptable riding surface. The entire area designated on the Plans shall be ground until the pavement surfaces of adjacent sides of transverse joints and cracks are in the same plane. The operation shall result in pavement that conforms to the typical cross-section and requirements specified herein. It is the intention of this Specification that the faulting at joints and cracks be eliminated, that the overall riding

characteristics be within the limits specified, and that substantially all of the pavement surface be textured except that extra depth

grinding to eliminate minor depressions in order to provide texturing for 100 percent of the pavement surface will not be required.

The Contractor shall establish positive means for removal of grinding and/or grooving residue. Solid residue shall be removed from pavement surfaces before being blown by traffic action or wind. Residue shall not be permitted to flow across lanes used by public traffic or into gutters or drainage facilities. Residue shall be disposed of in a manner that will prevent residue, whether in solid or slurry form, from reaching any waterway in a concentrated state.

Residue may be continuously discharged on adjacent roadway slopes or ditches if the Engineer determines that there is sufficient vegetative cover to adequately filter the residue. However, if the Engineer determines that there is not sufficient vegetative cover on the adjacent roadway slopes and ditches to adequately filter the residue, then the residue shall be collected in approved storage tanks and deposited in settling basins, spread over flat vegetated areas, or filtered by other means approved by the Engineer.

Final Surface Finish. The grinding process shall produce a pavement surface that is true to grade and uniform in appearance with a longitudinal line type texture. The line type texture shall contain parallel longitudinal corrugations that present a narrow ridge corduroy type appearance. The peaks of the ridges shall be approximately 1/16 inch higher than the bottoms of the grooves with approximately 50 to 52 evenly spaced grooves per foot for pavements constructed with limestone coarse aggregate and 53 to 57 evenly spaced grooves for pavements constructed with aggregate other than limestone. Grinding chip thickness shall be a minimum of 0.100 inches thick for pavements constructed with limestone coarse aggregate and a minimum of 0.080 inches thick for pavements constructed with coarse aggregate other than limestone.

The finished pavement surface shall be measured for riding quality. The grinding shall produce a riding surface, which does not exceed the specified requirements indicated below.

Ground pavement surfaces on mainline traffic lanes, auxiliary lanes, ramps, acceleration lanes and deceleration lanes shall be tested with the Rainhart Profilograph using a 2.5 millimeter (0.1 inch) blanking band.

Any area 0.1 mile in length with a Rainhart Profilometer roughness index value in excess of the applicable values specified below shall be reground for profile with equipment approved by the Engineer:

1. Mainline traffic lanes and auxiliary lanes more than one half mile in length - 0.7 inch.
2. Auxiliary lanes one half mile in length or less, ramps, acceleration lanes and deceleration lanes - 1 inch.

Grinding along the inside edge of the existing pavement shall conform to the straightedge requirements.

Transverse joints and random cracks shall be visually inspected to insure that adjacent surfaces are in the same plane. Misalignment of the planes of the surfaces on adjacent sides of the joints or cracks which is in excess of 1/16 shall be ground until the surfaces are flush.

The transverse slope of the pavement shall be uniform to a degree that no depressions or misalignment of slope greater than 1/4 inch in 12 feet are present when tested with a straightedge placed perpendicular to the centerline. Straightedge requirements do not apply across longitudinal joints or outside of areas ground.

Measurement. Grinding Concrete Pavements will be measured by the square yard. The quantity of pavement grinding will be determined by multiplying the finished ground width by the total length ground.

Basis of Payment. The Contract Price per square yard for grinding concrete pavement shall be full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved in grinding the existing surface, removing residue and cleaning the pavement in accordance with these Specifications and as shown on the Plans.