S T A T E   **O F**   **T E N N E S S E E**

(Rev 10-11-21)   January 1, 2021

SPECIAL PROVISION

REGARDING

GRINDING CONCRETE PAVEMENT

Description

The work consists of grinding Portland Cement Concrete Pavement to 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 wheelbase of the machine shall not be less than 12.0 feet. 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.

Alternate equipment use may be requested in writing in accordance with **105.17**.

Construction Requirements

The Plans will designate the areas of concrete 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 work 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 work shall result in pavement that conforms to the typical cross-section requirements, the faulting at joints and cracks should be eliminated, the rideability shall be within the limits specified, and the pavement surface shall 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.

Establish a positive means for removing grinding and grooving residue. Remove solid residue from pavement surface during the grinding or grooving operations. Do not allow residue to flow across lanes used by public traffic, into gutters or drainage facilities. Dispose of residue in a manner that will prevent residue, whether in solid or slurry form, from reaching any waterway in a concentrated state.

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 Department will conduct rideability testing using a roadway profiler to provide an International Roughness Index (IRI). Testing will be performed on each lane for mainline, auxiliary lanes, and all ramps.

To determine pavement rideability, the Department will evaluate the pavement using 0.1-mile Mean IRI (MRI) sections for overall roughness and IRI for individual continuous 25-foot sections for localized roughness in each wheel path. Mean IRI (MRI) shall be the average of each wheel path. Each 0.1-mile section will be considered a lot. IRI data will be calculated per ASTM E 1926. Each lot shall have a maximum Mean IRI value of 100 inches per mile. No individual continuous 25-foot section shall exceed an IRI of 220 inches per mile in either wheel path.

Perform corrective action to reduce the Mean IRI for each lot or IRI for any individual continuous 25-foot section that fails to meet the requirements specified. No more than 0.25 inches (two grinding passes) of material shall be removed by corrective diamond grinding without approval of the Engineer.

A grinding strategy plan is required before any corrective action begins. Submit a copy of the grinding plan to the Engineer at least 5 days prior to starting any work. After Corrective action is complete, the Department will retest and evaluate the pavement.

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 ensure 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

The Department will measure Grinding Concrete Pavement by the square yard. Only the ground portion will be measured for payment.

Basis of Payment

The Department will pay for accepted quantities, complete in place, at the contract prices as follows:

Item No.	Description	Unit
503-01	Grinding Concrete Pavement	Square Yard

Such payment shall be full compensation for furnishing all labor, materials, tools, equipment, and incidentals to complete the work