430.06 MEASUREMENT: Areas of the pavement will be subjected to depth measurements to ensure Plan and Specification compliance. Areas to be examined will be designated by the Engineer. Areas that are deficient in excess of 1/4 inch may be removed and replaced or a reduction in payment may be established by the Engineer. Disposition of slab depth deficiencies shall be as directed by the Engineer.

430.07 PAYMENT:

A. GENERAL: The Contract Unit Price per square yard of Concrete Pavement will be the basis for payment of all Concrete Pavement that is completed and accepted.

Payment shall be full compensation for furnishing and placing all materials, including reinforcements, dowels, and joint materials, supplies, and incidentals necessary to complete the Work.

Payment will be made under:

Item No. 430. Plain Portland Cement Concrete Pavement, Class No. 3, Concrete _____ Inch Thick .....per Square yard

Item No. 430. Plain Portland Cement Concrete Pavement, Class HES, Concrete _____ Inch Thick .....per Square Yard

Item No. 430. Continuously Reinforced Concrete Pavement, Class No. 3 Concrete _____ Inch Thick .....per Square Yard

Item No. 430. Continuously Reinforced Concrete Pavement, Class HES Concrete _____ Inch Thick .....per Square Yard

SECTION 431—GRIND CONCRETE PAVEMENT

431.01 DESCRIPTION: The Work shall consist of grinding Portland Cement concrete pavement to eliminate joint faulting and/or to restore proper drainage, and riding characteristics 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.

431.02 EQUIPMENT: The grinding equipment shall be a power drive, 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 be not less than 12 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 freshly cut pavement. The center of the grinding head shall be no further than 3 feet forward from the center of the back wheels.

The equipment shall be of a size that will cut or plane at least 3 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.

The equipment shall be checked periodically to assure it is in proper working order, especially the "roundness" of wheels on the grinding equipment and any "out of round" wheel(s) shall be immediately corrected.

431.03 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 promote drainage, or to conform to smoothness requirements if work is new construction or bridge decks. Grinding will be done only after all necessary spall repairs, slab replacements and pressure grouting have been completed in the area to be ground.

The construction operation shall be scheduled and shall proceed in a manner that produces a uniform finished surface. Grinding shall be accomplished in a manner such that positive lateral drainage will be provided 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 and at end of cut 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 the requirements specified in Sub-Section 431.04. 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 necessary to provide texturing for 100 percent of the pavement surface will not be required.

The Contractor shall establish positive means for removal of grinding residue. Solid residue shall be removed from pavement surfaces before it is 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.

431.04 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 corrugations parallel to the outside pavement edge which present a narrow ridge corduroy type appearance. The peaks of the ridges shall be $1/16$ inch $\pm$ $1/32$ inch higher than the bottoms of the grooves with approximately 55 to 60 evenly spaced grooves per foot. It shall be the Contractor's responsibility to select the number of grooves per foot to be used to produce the previously described surface finish for each aggregate type that may be present in the concrete surface on the project. Any groove spacing that does not meet the previously described surface finish will not be accepted.

The finished pavement surface will 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 the mainline shall meet a pavement smoothness index value not to exceed 50 inches/mile on each $1/4$ mile section of each vehicle lane. Tests shall be conducted in accordance with procedures specified in GDT 93 except that all smoothness values shall be calculated and reported for each $1/4$ mile section of each vehicle lane.

Any areas not meeting the smoothness requirements shall be reground to meet the requirements at no additional cost to the Department.

When regrinding is required to meet the smoothness or final surface finish specified herein, the entire width of the lane must be reground in the area to be corrected. Regrinding of only a portion of the width of a lane will not be allowed. Likewise, the moderate to major deviations throughout the deficient 1/4 mile section of the lane shall be spot reground as necessary to meet the smoothness and final surface finish requirements. Spot regrinding of only the largest deviations on a portion of the deficient 1/4 mile section of the lane will not be allowed.

The Engineer may require that profilograph traces be obtained prior to any regrinding to aid in locating the deviations within a failed area. The profilograph testing will be done by the Department in accordance with GDT 78. Any necessary traffic control for profilograph testing shall be provided by the Contractor at no cost to the Department.

In addition, at the discretion of the Engineer, all ground surfaces on the mainline that meet the smoothness requirements may be subjected to profilograph testing in accordance with GDT 78 to isolate locations with individual bumps or depressions exceeding 2/10 inch outside the blanking band. Any corrective grinding necessary to eliminate these bumps or depressions shall be done at no additional cost to the Department.

Ground pavement surfaces on ramps, acceleration and deceleration lanes, and other areas not suitable for testing with the Maysmeter shall be tested for Pavement Profile Index value with the Rainhart Profilograph. Readings shall not exceed 7 inches per mile and any areas which exceed this value shall be reground to meet this value, at no additional cost to the Department. In addition, individual bumps or depressions exceeding 2/10 inch outside the blanking band on the profilograph trace shall be reground at no additional cost to the Department.

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 inch shall be ground until the surfaces are flush.

The transverse slope of pavement shall be uniform to a degree that no depressions or misalignment of slope greater than 1/8 inch in 12 feet are present when tested with a straightedge placed perpendicular to the centerline. This includes, but is not limited to, any mismatch in vertical alignment between adjacent cuts which are to be held to the minimum amount possible (1/16 inch maximum). This is to be checked closely and necessary control and corrective action taken immediately as the work progresses.

In the event that one (or more) lane(s) are not to be ground, the vertical alignment of the edge at the interface between ground and unground lane(s) shall be not more than 1/8 inch and the Contractor shall "feather" the cut from the ground lane(s) into the unground lane(s) as necessary to meet this requirement.

Any deficiencies in the final surface finish due to improper Contractor operation and/or equipment shall be corrected by the Contractor at no expense to the Department. This includes, but is not limited to (1) "corrugation" of pavement due to "out of round" wheels on grinding equipment and improper