1. Minimize vertical alignment mismatches between adjacent cuts, 1/16 in (2 mm) maximum.
2. Check the transverse slope closely as the work progresses. Correct mismatches immediately.
3. If one or more lanes are not to be ground, ensure that the vertical interface edge between the ground and unground lanes is not misaligned more than 1/8 in. (3 mm).

   Feather the cut from the ground lanes into the unground lanes to meet this requirement.

431.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

431.4 Measurement

Pavement grinding on existing pavements is measured by the square yard (meter). Determine the quantity of pavement grinding by multiplying the finished ground width by the total length ground.

431.4.01 Limits

General Provisions 101 through 150.

431.5 Payment

The Contract Price per square yard (meter) for grinding concrete pavement is full compensation for furnishing labor, materials, tools, equipment, and incidentals grinding the existing surface, removing residue, and cleaning the pavement according to these Specifications and as shown on the Plans.

Payment will be made under:

Item No. 431	Grind concrete pavement	Per square yard (meter)

431.5.01 Adjustments

General Provisions 101 through 150.

Section 432—Mill Asphaltic Concrete Pavement

432.1 General Description

This work includes milling existing asphaltic concrete pavement to restore proper grade and/or transverse slope, removing structurally unsound material, providing clearance for overlay in curb and gutter sections, or other purposes deemed necessary due to existing conditions. Perform the work according to these Specifications and Plan details.

432.1.01 Definitions

General Provisions 101 through 150.

432.1.02 Related References

A. Standard Specifications

Section 109—Measurement and Payment

B. Referenced Documents

GDT 93

432.1.03 Submittals

General Provisions 101 through 150.

432.2 Materials

432.2.01 Delivery, Storage, and Handling

When specified, stockpile the milled material at locations shown on the Plans.

1. Uniformly stockpile the materials approximately 6 – 8 ft (1.8 – 2.4 m) high.
2. Maintain the existing drainage pattern of water from the stockpile storage area.
3. Dress the reclaimed asphalt area to drain rainwater from the material.

4. Obtain the Engineer's approval of the stockpile locations and the method used to prevent milled material degradation, segregation, and reconsolidation.

432.3 Construction Requirements

432.3.01 Personnel

General Provisions 101 through 150.

432.3.02 Equipment

A. Milling Equipment

Use power-driven, self-propelled milling equipment that is the size and shape that allows traffic to pass safely through areas adjacent to the work. Also, use equipment that is:

- Designed to mill and remove a specified depth of existing asphalt paving
- Equipped with grade and slope controls operating from a stringline or ski and based on mechanical or sonic operation
- Capable of removing pavement to an accuracy of 1/8 in (3 mm)
- Furnished with a lighting system for night work, as necessary
- Provided with conveyors capable of side, rear, or front loading to transfer the milled material from the roadway to a truck

B. Dust Control

Provide power brooms, vacuum sweepers, power blowers, or other means to remove loose debris or dust. Do not allow dust control to restrict visibility of passing traffic or to disrupt adjacent property owners.

432.3.03 Preparation

General Provisions 101 through 150.

432.3.04 Fabrication

General Provisions 101 through 150.

432.3.05 Construction

A. Milling Operation

Follow the Plans to mill the designated areas and depths including bridge decks, shoulders, and ramps, as required. Ensure the following requirements are met:

1. Schedule the construction operation. Use milling methods that will produce a uniform finished surface and maintain a constant cross slope between extremities in each lane.
2. Provide positive drainage to prevent water accumulation on the milled pavement, as shown on the Plans or directed by the Engineer.
3. Bevel back the longitudinal vertical edges greater than 2 in (50 mm) that are produced by the removal process and left exposed to traffic. Bevel them back at least 3 in for each 2 in (75 mm for each 50 mm) of material removed. Use an attached mold board or other approved method.
4. When removing material at ramp areas and ends of milled sections, taper the transverse edges 10 ft (3 m) to avoid creating a traffic hazard and to produce a smooth surface.
5. Protect with a temporary asphaltic concrete tie-in (paper joint) vertical edges at other areas such as bridge approach slabs, drainage structures, and utility apputenance greater than 1/2 in that are left open to transversing vehicles. Place the temporary tie-in at taper rate of at least 6 to 1 horizontal to vertical distance.
6. Remove dust, residue, and loose milled material from the milled surface. Do not allow traffic on the milled surface and do not place asphaltic concrete on the milled surface until removal is complete.

The reclaimed asphaltic pavement becomes the Contractor's property unless otherwise specified.

432.3.06 Quality Acceptance

Ensure that the milling operation produces a uniform pavement texture that is true to line, grade, and cross section.

Milled pavement surface acceptance testing will be performed using the Laser Road Profiler method in GDT 126. Milled pavement will be evaluated on individual test sections, normally 1 mile (1 km) long.

When the milled surface is to be left as the final wearing surface, ensure that indices do not exceed:

- 1025 on milled pavement surfaces on interstates when the milled surface will be the final wearing surface
- 1175 for other on-system routes when the milled surface will be the final wearing surface
- 1175 on Interstates and 1325 for other on-system routes if the milled surface will be overlaid

Remill mile (kilometer) areas to meet the specified limits when the indices are exceeded. Remill at no additional cost to the Department.

Milled pavement surfaces are subject to visual and straightedge inspection. Keep a 10 ft (3 m) straightedge near the milling operation to measure surface irregularities of the milled pavement surface. Remill irregularities greater than 1/8 in per 10 ft (3 mm in 3 m) at no additional cost to the Department.

Ensure that the cross slope is uniform and that no depressions or slope misalignments greater than 1/4 in per 12 ft (6 mm in 3.6 m) exist when the slope is tested with a straightedge placed perpendicular to the center line.

432.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

432.4 Measurement

Milling existing asphaltic concrete pavement is measured by the square yard (meter) as described in Subsection 109.01, "Measurement and Quantities."

432.4.01 Limits

General Provisions 101 through 150.

432.5 Payment

Milling asphaltic concrete pavement, measured as specified, will be paid for at the Contract Unit Price bid per square yard (meter). The price bid for this item includes the credit value of all Reclaimed Asphalt Pavement (RAP) recovered, and no adjustment in the unit price for this item or other items will be considered for variations in the amount of RAP actually recovered.

Payment is full compensation for furnishing equipment, milling, hauling, stockpiling milled material, and satisfactorily performing the work.

Payment will be made under:

Item No. 432	Mill asphaltic concrete pavement, ___ in (mm) depth	Per square yard (meter)

432.5.01 Adjustments

General Provisions 101 through 150.

Section 433—Reinforced Concrete Approach Slabs

433.1 General Description

This work includes building reinforced concrete approach slabs for bridges on completed and accepted subgrades.

433.1.01 Definitions

General Provisions 101 through 150.

433.1.02 Related References

A. Standard Specifications

Section 430—Portland Cement Concrete Pavement

Section 441—Miscellaneous Concrete

Section 500—Concrete Structures

Section 511—Reinforcement Steel

Section 621—Concrete Barrier