

- In other cases, the Engineer may determine that the defective portions must be entirely removed. Add, mix, spread, and compact new material according to the Specifications and at no cost to the Department.
- If a surface is less than 3 in (75 mm) deep, scarify the area to a depth of at least 3 in (75 mm), except in the case of stabilized bases or subbases. Mix and compact the new and old materials.
- Repair stabilized bases or subbases according to Section 301, Section 302, Section 310, or Section 316, whichever is applicable.

300.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

300.4 Measurement

Base and Subbase courses will be measured in accordance with the Specification Section for the item.

Bituminous prime will not be measured for separate payment.

300.4.01 Limits

General Provisions 101 through 150.

300.5 Payment

Base and Subbase courses will be paid for in accordance with the Specification Section for the item. Include the cost of furnishing and applying bituminous prime in the Unit Price Bid for each individual Base Item according to the applicable provisions of Section 412.

No separate payment will be made for adding water or for aerating or rolling for the purpose of adding water. Include the cost of controlling moisture content in the prices bid for the pertinent Pay Items.

Separate payment will be made only for clearing and grubbing listed in the Proposal or required in the Plans and designated a Pay Item by the Engineer.

No separate payment will be made for stripping excavation unless shown on the Plans and included in the Proposal as a Pay Item.

300.5.01 Adjustments

If the Contractor for the subbase or base is responsible for the subgrade under another Pay Item, no additional payment will be made for any repairs made to the subgrade, except as provided in Section 209.

If another party (not the Contractor) is responsible for the subgrade, removing unsuitable materials will be paid for according to the Earthwork Item in the Contract.

Include compaction, scarification, and any other preparation necessary for the subgrade in the Unit Price Bid for the pertinent base course.

Section 301—Soil-Cement Construction

301.1 General Description

This work includes constructing a base, subbase, or shoulder course composed of soil, or a mixture of soils, and stabilizing with Portland cement. Construct according to these Specifications and conform to the lines, grades, and typical sections shown on the Plans or established by the Engineer.

The provisions in Section 300 apply to this Item.

301.1.01 Definitions

General Provisions 101 through 150.

301.1.02 Related References

A. Standard Specifications

Section 109—Measurement and Payment

Section 205—Roadway Excavation

301.2

Section 300—General Specifications for Base and Subbase Courses

Section 412—Bituminous Prime

Section 814—Soil Base Materials

Section 821—Cutback Asphalt

Section 830—Portland Cement

Section 831—Admixtures

Section 880—Water

B. Referenced Documents

GDT 19

GDT 20

GDT 21

GDT 59

GDT 67

GDT 86

AASHTO T 134

301.1.03 Submittals

Before constructing a test section, submit a Construction Work Plan to the Engineer for approval.

301.2 Materials

Ensure that materials meet the requirements of the following Specifications:

Material	Specification
Soil-Cement Material	Subsection 814.2.02
Portland cement	Subsection 830.2.01
Water	Subsection 880.2.01
Fly Ash and Slag	Subsection 831.2.03
Cutback Asphalt RC-30, RC-70, RC-250, or MC-30, MC-70, MC-250	Subsection 821.2.01
Blotter Material (Sand)	Subsection 412.3.05.G.3

When fly ash or slag is specified as an admixture in the soil-cement base, use fly ash or slag that meets the physical requirements of Subsection 831.2.03.

301.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

301.3 Construction Requirements

A. General

1. Methods

This Specification is based on the mixed-in-place and central plant mix methods. Supplement in-place or plant mixing with plow, harrow, or blade mixing when the Engineer permits.

When the Plans and Proposal indicate that the material will be paid by the ton (megagram), use the central plant mixing method. If the work will be paid by the square yard (meter), the Plans and Proposal will indicate the required thickness and the mixing method to be used.

When payment is made by the square yard (meter) and a roadway mixer is used, the Engineer will determine if the materials in the roadbed are suitable for use. If the Engineer approves, use materials in the roadbed without payment, except for the payment per cubic yard (meter) provided in Subsection 301.5.A, "Soil-Cement Material" below.

If it is necessary to add other materials to those in the roadbed to meet the desired thickness or to modify the physical properties of the existing materials, these materials will be measured and paid by the cubic yard (meter).

2. Fly Ash and Slag

Unless otherwise specified in the Contract, fly ash and slag shall be used only in central plant mix construction. Apply fly ash and slag to the mix according to the procedures for cement established in Subsection 300.3.02.A, "Central Mix Plants" and Subsection 301.3.05.A.4, "Cement."

3. Weather Limitations

Ensure the following:

Mix and place cement-treated base or subbase only when the weather permits the course to be finished without interruption in the time specified.

Mix and place materials only when the moisture content of the soil to be used in the mixture meets the limits specified in this Subsection.

Begin mixing only when the air temperature is above 40 °F (4 °C) in the shade, and rising.

Ensure that the temperature of the soil to be used in the mixture and the subbase or subgrade is above 50 °F (10 °C).

4. Interruption of Work

If the work is interrupted for more than two hours after cement has been added, or if rain increases the cement's moisture content outside the limits specified in Subsection 301.3.05.B.7.c, "Moisture Control," remove and replace the affected portion at no additional cost to the Department.

301.3.01 Personnel

Ensure that only experienced and capable personnel operate equipment.

301.3.02 Equipment

Use equipment that meets the requirements of Subsection 300.3.02 and this subsection. The Engineer will approve equipment type and condition before construction begins.

Provide sufficient equipment in good working condition to do the following:

- Allow continuous prosecution of the Work.
- Mix, place, and compact within the required time limits.

Use any applicable equipment specified in Subsection 412.3.02, "Equipment" for bituminous prime.

301.3.03 Preparation

A. Subgrade or Subbase Preparation

Prepare the subgrade or subbase as specified in Subsection 300.3.03.C, "Preparing the Subgrade" or Subsection 300.3.03.D, "Preparing the Subbase" if the base, subbase, or shoulders will be composed entirely of new materials, whether mixed-in-place or central plant mixed. Place materials only on dry, thawed subgrade or subbase.

301.3.04 Fabrication

General Provisions 101 through 150.

301.3.05 Construction

A. In-Place Mixing

1. Soil

If additional soil is needed on the roadbed, place and spread the soil uniformly to the proper depth to obtain the specified thickness.

2. Pulverization

Pulverize the roadbed materials as follows:

- a. Loosen and pulverize roadbed materials to the width and depth to be stabilized without disturbing or damaging the underlying subgrade.

301.3.05

- b. Continue pulverizing until 100 percent of roadbed material passes through a 1-1/2 in (37.5 mm) sieve, and until at least 80 percent of the soil, excluding any stone or gravel, passes through a No. 4 (4.75 mm) sieve.
- c. Add water to assist pulverization if necessary.
- d. Remove all roots, sod, and rocks that exceed 3 in (75 mm) in diameter.
- e. Remove all other harmful materials.

3. Moisture Adjustments

Immediately before spreading cement, adjust the moisture content of the in-place material so it will stabilize to within 100 to 120 percent of optimum moisture (amount of moisture in the mixture at maximum dry density).

4. Cement

Spread cement as follows:

- a. Uniformly spread the required amount of Portland cement with a cyclone-type mechanical spreader or its equivalent.
- b. Apply the Portland cement at a rate that ensures the pounds spread are within ± 10 percent of the amount specified. Furnish a square-yard cloth, scales and personnel for checking the spread rate of cement placed.
- c. Apply cement on soils with a moisture content less than 120 percent of optimum.
- d. Apply cement on days when wind will not interfere with spreading.
- e. If the cement content is below the 10 percent limit in the mixing area, add additional cement to bring the affected area within the tolerance specified and recalibrate the mechanical spreader's spread rate. If the cement content is more than the 10 percent limit in the mixing area, the excess quantity will be deducted from the Contractor's pay for cement.
- f. Regulate operations to limit the application of cement to sections small enough so that all of the compacting and finishing operations specified in Subsection 301.3.05.B.7, "Compacting and Finishing" can be completed within the required time limits.
- g. Pass only spreading and mixing equipment over the spread cement. Operate this equipment so that it does not displace cement.
- h. Replace damaged cement at no additional cost the Department when damage is caused by:
 - Hydration due to rain, before or during mixing operations
 - Spreading procedures contrary to the requirements mentioned above
 - Displacement by the Contractor's equipment or other traffic

5. Mixing

Mix the material as follows:

- a. Uniformly windrow the material if the mixing plant requires it. Otherwise, shape the material to the proper line, grade, and cross-section before mixing.
- b. Mix the material according to either roadmix method in Subsection 301.3.05.A.6, "Road Methods."
- c. Begin mixing as soon as practical after the cement is spread, and continue until a homogeneous and uniform mixture is produced. If the equipment does not produce a homogeneous and uniform mixture meeting these Specifications, make any necessary changes to meet the Engineer's requirements.

6. Road Methods

a. Multiple Pass Mixing

Perform multiple pass mixing as follows:

- 1) After spreading the cement, mix it with the material to be treated.
- 2) Ensure that the material has been adjusted for moisture as stated in Subsection 301.3.05.B.7.c, "Moisture Control."
- 3) Continue mixing with successive passes until a uniform mixture of cement and soil, or soil-aggregate is obtained.
- 4) Immediately after the preliminary mixing of cement and soil or soil-aggregate, add water as needed to maintain or bring the mixture to within the moisture requirements of Subsection 301.3.05.B.7.c, "Moisture Control."
- 5) Uniformly mix the additional water to incorporate it into the full depth of the mixture.

b. Traveling Plant Mixing

Perform traveling plant mixing as follows:

- 1) After spreading the cement, mix it with an approved traveling plant mixer.
- 2) Ensure that the mixer picks up the full depth of material from the windrow on the roadbed onto the bottom shell or pan.
- 3) Mix at a speed that ensures a uniform mixture of soil, cement, and water.
- 4) Apply water through a water-metering device on the plant to uniformly distribute the proper amount of water to the loose material on the shell or pan. Distribute the water so that cement balls do not form.
- 5) Continue to mix the cement and water so that all material to be treated is mixed at once.
- 6) Ensure that there is enough mixture to produce, after final compaction, a course within allowable tolerances.

7. Compacting and Finishing

Compact and finish according to Subsection 301.3.05.B.7, "Compacting and Finishing".

B. Central Plant Mixing

1. Soil

Do the following:

- a. Before introducing any soil into the mixer, pulverize it until 100 percent passes a 1-1/2 in (37.5 mm) sieve.
- b. Ensure that at least 80 percent of the soil, excluding any stone or gravel, passes through a No. 4 (4.75 mm) sieve.
- c. Have enough stockpile material meeting the requirements of Subsection 300.3.05.B, "Mining And Mixing In A Pit" for at least one day of base construction before operations begin.

2. Cement

Do the following:

- a. Measure cement by weight.
Uniformly add cement into the mixture. The cement incorporated, per ton (megagram) of soil, shall be within ± 5 percent of the amount prescribed by the Engineer.
- b. Perform cement checks that compare the actual percent cement in the mixture with the required percent cement specified in the approved Mix Design for the Project on each of the first two tankers supplying cement to the plant. If these checks are within the specified tolerance, one cement check per day will be required.
- c. Perform and make available to the Engineer a minimum of four daily comparison checks between the certified scales and the plant computer to ensure the proper percentage of cement is being incorporated into the mixture between cement checks.
- d. When a cement check is out of the specified tolerance, at least two, passing one-tanker checks, are required before returning to a one cement check per day basis. When three consecutive cement checks fail to meet the specified tolerance, discontinue soil-cement plant production. Correct the problem, and recalibrate the plant as specified in Subsection 300.3.06.A "Monitoring Quality Control" before resuming the work.
- e. When the cement content exceeds the specified tolerance, the Department will deduct the excess cement from the Contractor's pay for cement. When the cement content does not meet the specified tolerance, the Engineer will evaluate the strength of the affected area after 7 days.
- f. Correct any areas of base with deficient strength as specified in the Strength Correction Chart at no additional cost to the Department, regardless of the percent of compaction. This correction also applies to the test section described in Subsection 301.3.05.B.7.a, "Test Section."
- g. Quantities of cement used in calibrating the plant will also be deducted from the Contractor's pay for cement.

3. Mixing

Do the following:

- a. Measure proportions of soil, cement, and water separately and accurately before mixing.
- b. Charge all materials into the mixer together. Begin mixing immediately.
- c. Mix until a homogeneous and uniform mixture is produced. If the final blend of materials is not homogeneously mixed or does not meet the moisture range specified in Subsection 301.3.05.B.7.c, "Moisture Control," cease plant operations until corrections are made in the plant or to the materials.

301.3.05

4. Hauling

Do the following:

- a. Deliver soil-cement material to the Project.
- b. Spread soil-cement material so that compaction can begin within 45 minutes after the soil, cement, and water have been charged into the mixer.
- c. Protect the mixture in transit by using a securely fastened waterproof cover large enough to extend down over the sides and the end of the bed of each haul vehicle.

5. Spreading

Spread the soil-cement mixture as follows:

- a. Use an approved mixture spreader as specified in Subsection 300.3.02.D, "Mixture Spreader" to obtain the specified thickness. Spread the mixture the full width of the area to be covered.
- b. Ensure that trucks and other construction equipment, including motor graders, do not travel over the material until compaction equipment has made initial passes over the mixture.
- c. Ensure that less than 30 minutes elapse between the placement of cement-treated material in adjacent lanes at any location, unless longitudinal joints are specified.

6. Thickness of Course

Compact the soil-cement base to a maximum thickness of 8 in (200 mm). Place the full thickness in one course only and compact as specified in Subsection 301.3.05.B.7, "Compacting and Finishing" below.

7. Compacting and Finishing

a. Test Section

Construct a test section as follows:

- 1) Use the first section of each constructed soil-cement base course as a test section.
- 2) Use a test section between 350 ft (100 m) and 500 ft (150 m) long for the designated width.
- 3) Before constructing a test section, submit a Construction Work Plan to the Engineer for approval. The Construction Work Plan must indicate proposed equipment and compaction procedures.
- 4) If the Construction Work Plan is approved, the Engineer will evaluate the Work Plan during test section construction. The Engineer will evaluate compaction, moisture, homogeneity of mixture, thickness of course, and laminations or compaction planes (scabbing).
- 5) If the Engineer determines that the Work Plan is not satisfactory, revise the compaction procedure and augment or replace equipment, as necessary, to complete work according to the Specifications.

b. Time Limits

Observe the following time limits:

- 1) Begin compaction within 45 minutes of the time water is added to the soil-cement mixture.
- 2) Complete compaction within 2 hours.
- 3) Complete all operations in four hours, from adding cement to finishing the surface.

c. Moisture Control

Control moisture as follows:

- 1) During compaction, ensure a uniform moisture content of the mixture that is between 100 and 120 percent of the optimum moisture content.
- 2) If the moisture content exceeds the tolerance at any time, cease operations immediately and make the adjustments necessary to bring the moisture content within tolerance.
- 3) Do not use materials that "pump" under construction traffic, regardless of moisture content.

d. Additional Compaction Requirements

Perform the following additional compaction requirements:

- 1) Compact the soil-cement base, subbase, or shoulder course to at least 98 percent of the maximum dry density as determined in this Subsection.
- 2) Do not perform vibratory compaction on materials more than 1-1/2 hours old, measured from the time the cement was added to the mixture.
- 3) Uniformly compact the mixture and then fine-grade the surface to the line, grade, and cross-section shown on the Plans.

- 4) Loosened material accumulated during this process is considered waste and is to be removed from the Project. Do not use additional layers of cement-treated materials in order to conform to cross-sectional or grade requirements.
 - 5) Use a pneumatic-tired roller to roll the finished surface until the surface is smooth, closely knit, free from cracks, and in conformance with the proper line, grade, and cross-section.
If the Engineer requires, lightly apply water to the finished surface to aid in sealing the completed base and preparing the surface for priming.
 - 6) At any place inaccessible to the roller, secure the required compaction with mechanical tampers approved by the Engineer. The same compaction requirements stated in the above Subsection apply.
- e. Additional Finishing Requirements
- Perform the following additional finishing requirements:
- 1) Use the automatically controlled screed equipment when required by Subsection 300.3.03.H, "Fine Grading Machine" of the Specifications. Control fine-grading for this requirement with sensing wires or a taut stringline. Furnish, install, and maintain this operation as a part of this Pay Item. When automatically controlled screed equipment is not required, fine-grading with motor graders is permitted.
 - 2) Fine-grade the surface of the cement-stabilized subbase for Portland cement concrete pavement or the cement-stabilized base for asphaltic concrete pavement.
 - 3) Fine-grade immediately after placement and compaction. Roll the subbase again according to this Subsection.
8. Construction Joints
- Form construction joints as follows:
- a. Form a straight transverse joint at the end of each day's construction or when the work is interrupted so that the material cannot be compacted within the time limit specified in this Subsection.
 - b. Create the straight transverse joint by cutting back into the completed work to form a true vertical face free of loose or shattered material.
 - c. Form the joint at least 2 ft (600 mm) from the point at which the strike-off plate of the spreader comes to rest at the end of the day's work, or at the point of interruption.
 - d. Form a longitudinal joint as described above if the soil-cement mixture is placed over a large area where it is impractical to complete the full width during one day's work. Use the procedure for forming a straight transverse joint. Ensure that waste material is removed from the compacted base.
9. Prime
- Apply bituminous prime to the finished surface of the base course at the end of each day or as soon as the Engineer determines it is practical. Apply prime only to an entirely moist surface.
- If weather delays prime application, apply prime as soon as the surface moisture is adequate. Apply prime according to Section 412.
10. Opening To Traffic
- No traffic or equipment is permitted to operate on the finished base, subbase, or shoulders until the prime has hardened enough so that it does not pick up under traffic. For the first seven days after priming, traffic is restricted to lightweight vehicles such as passenger cars and pickup trucks. Vehicles with an average axle load exceeding 20,000 pounds (9 Mg) will not be allowed on the finished base or subbase at any time.
- Correct any failures caused by traffic at no additional cost to the Department.
11. Protection of Course
- Maintain the base, subbase, or shoulder course constructed under these Specifications until the Engineer determines that it has sufficiently cured and is ready to be covered with the next base or pavement course. Make repairs specified in Subsection 300.3.06.B, "Repairing Defects" whenever defects appear. This preservation action does not relieve the Contractor of his responsibility to maintain The Work until final acceptance as specified in Section 105.

301.3.06 Quality Acceptance

A. Compaction Tests

Test compaction as follows:

1. Determine the maximum dry density for central plant mix construction from representative samples of the material to be compacted according to GDT19 (AASHTO T 134).
2. Determine the maximum dry density for mixed-in-place construction according to GDT 19 or GDT 67 .

301.3.06

3. Determine the in-place density of the cement-stabilized base, subbase, or shoulders as soon as possible after compaction, but before the cement sets. Determine in-place density according to GDT 20, GDT 21, or GDT 59.

B. Finished Surface Tests

Test the finished surface as follows:

1. Check the finished surface of the cement stabilized base, subbase, or shoulder course transversely.
2. Place a 15 ft (4.5 m) straightedge parallel to the centerline. Additionally, use one of the following tools:
 - A template, cut true to the required cross-section and set with a spirit level on nonsuperelevated sections
 - A system of ordinates, measured from a stringline
 - A surveyor's level
3. Ensure that ordinates measured from the bottom of the template, stringline, or straightedge to the surface do not exceed 1/4 in (6 mm) at any point. Rod readings shall not deviate more than 0.02 foot (6 mm) from the required readings.
4. Correct any variations from requirements immediately, as specified in Subsection 300.3.05.D,

C. Tolerances

1. Thickness Measurements
 - a. Thickness requirements apply to shoulder construction where the Plans specify a uniform thickness, or where the shoulders will be surfaced. Do the following:
 - b. Determine the thickness of the base, subbase, or shoulder course, by making as many checks as necessary to determine the average thickness.
2. Deficient Thickness
 - a. If any measurement is deficient in thickness more than 1/2 in (13 mm), make additional measurements to determine the deficient area.
 - b. Correct any area deficient by more than 1/2 in (13 mm) to the design thickness by using one of the following methods according to these Specifications:
 - Apply Asphaltic Concrete 9.5 mm Superpave.
 - Remove material to the full depth of the course and reconstruct to the required thickness.

No payment will be made for any 9.5 mm Superpave asphaltic concrete applied to correct deficiencies nor will payment be made for removing and reconstructing the deficient work.

3. Average Thickness

Average thickness is measured as follows:

- a. The average thickness per linear mile (kilometer) is determined from all measurements within the mile (kilometer) increments.
 - b. The average thickness shall not exceed the specified thickness by more than 1/2 in (13 mm).
 - c. If the unit of payment is by the ton (megagram) or cubic yard (meter), and the average thickness for any mile (kilometer) increment exceeds the allowable 1/2 in (13 mm) tolerance, payment for the excess quantity in that increment will be deducted.
 - d. The excess quantity is calculated by multiplying the average thickness that exceeds the allowable 1/2 in (13 mm) tolerance by the surface area of the base, subbase, or shoulder, as applicable.
4. Strength
Do the following:
 - a. Ensure that the strength of the soil-cement base, subbase, or shoulder course is at least 300 psi (2070 kPa), as determined from testing the unconfined compressive strength of cores from the completed course in accordance with GDT 86.
 - b. If a strength test falls below 300 psi (2070 kPa), do the following:
 - 1) Isolate the affected area by securing additional cores.
 - 2) Average all compressive strengths in the affected area to determine the basis for corrective work according to the table below or the Engineer's directions.

5. Compaction

The compaction requirement for soil-cement base, subbase, or shoulder course shall be a minimum of 98 percent of the specified theoretical density.

If any compaction test falls below 98 percent, core and retest the represented area for compressive strength determination after 7 days. If the strength is 300 psi (2070 kPa) or greater, no correction will be required. If the strength is less than 300 psi (2070 kPa), isolate the affected area by obtaining additional cores.

Average all compressive strengths in the affected area to determine the basis for corrective work, according to the following table.

Compressive Strength	Correction Work
300 psi (2070 kPa) or greater	None
200 psi (1380 kPa) to 299 psi (2069 kPa)	6 in & 8 in (150 mm & 200 mm) base—add 135 lbs/yd ² (75 kg/m ²) asphaltic concrete
Less than 200 psi (1380 kPa)	Reconstruct affected area

Ensure that a corrected area requiring asphaltic concrete is at least 150 ft (45 m) long.

Perform corrective work requiring asphaltic concrete or reconstruction at no additional cost to the Department.

301.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

301.4 Measurement

A. Soil-Cement Material

Soil-cement material is measured by the cubic yard (meter), loose volume, as specified in Section 109, during mixed-in-place construction if it is necessary to add materials to the roadbed or to build up the base, subbase, or shoulders with new material.

B. Soil-Cement Stabilized Base, Subbase, and Shoulder Course

Soil-cement stabilized base, subbase, and shoulder course are measured as follows:

1. The surface length is measured along the centerline when payment is specified by the square yard (meter). The width is specified on the Plans.
 - a. Irregular areas, such as turnouts and intersections, are measured by the square yard (meter).
 - b. Material is measured in tons (megagrams), as mixed and accepted, when payment is specified by the ton (megagram).

The actual weight is determined by weighing each loaded vehicle on a required motor truck scale as the material is hauled to the roadway. The actual weight will be the pay weight; no deduction will be made for the weight of the cement.

C. Portland Cement

Portland cement is measured by the ton (megagram).

D. Fly Ash and Slag

Fly ash and slag are measured by the ton (megagram) according to this Specification.

E. Prime

Bituminous prime is not measured for separate payment. Include the cost of furnishing and applying bituminous prime according to the provisions of Section 412 in the Unit Price Bid for each individual base item.

F. Unsuitable Material

Unsuitable materials that have been removed are measured and paid for according to the Earthwork Item in the Contract.

301.4.01 Limits

General Provisions 101 through 150.

301.5 Payment

A. Soil-Cement Material

Where in-place mixing is done, and when it is necessary to add other materials to those in the roadbed or to build up the base, subbase, and shoulders entirely with new materials, the added soil-cement material, in place and accepted, will be paid at the Contract Price per cubic yard (meter). Payment will be full compensation for soil-cement material; mixing in the pit; loading, hauling, and unloading; and spreading

B. Soil-Cement Stabilized Base, Subbase, and Shoulder Course

Where specified, soil-cement stabilized base, subbase, and shoulder course, in place and accepted, will be paid at the Contract Price per square yard (meter). Payment will be full compensation for roadbed preparation, mixing on the road, shaping, pulverizing, watering, compaction, defect repair, and maintenance.

C. Pre-mixed Soil-Cement Stabilized Base, Subbase, and Shoulder Course

Where specified, pre-mixed soil-cement stabilized base, subbase, and shoulder course, in place and accepted, will be paid at the Contract Price per ton (megagram) or square yard (meter).

Payment will be full compensation for roadbed preparation; all materials except Portland cement; loading, hauling, and unloading; mixing; spreading; watering; rolling and shaping; and maintenance.

D. Portland Cement

Portland cement will be paid at the Contract Price per ton (megagram). Payment is full compensation for furnishing, hauling, and applying the material. Only Portland cement incorporated in the finished course will be paid; no payment will be made for cement used to correct defects due to the Contractor's negligence, faulty equipment, or plant calibration error.

E. Fly Ash and Slag

Fly ash and slag will be paid at the Contract Price per ton (megagram), according to this Subsection. Payment will be full compensation for hauling and applying the materials. Only fly ash and slag incorporated into the finished course will be paid; no payment will be made for fly ash and slag used to correct defects due to the Contractor's negligence, faulty equipment, or plant calibration error.

Payment will be made under:

Item No. 301	Soil-cement material—including material and haul	per cubic yard (meter)
Item No. 301	Soil-cement stabilized base, subbase, and shoulder course ___ in (mm)	per square yard (meter)
Item No. 301	Pre-mixed soil-cement stabilized base, subbase, and shoulder course—including material and haul	per ton (megagram) or per square yard (meter)
Item No. 301	Pre-mixed soil-cement stabilized base and shoulder course—including material and haul	per ton (megagram) or per square yard (meter)
Item No. 301	Portland cement	per ton (megagram)
Item No. 301	Fly ash and slag	per ton (megagram)

301.5.01 Adjustments

General Provisions 101 through 150.

Section 302—Sand-Bituminous Stabilized Base Course**302.1 General Description**

This work includes constructing a base course composed of sand, or a mixture of sands that is stabilized with bituminous materials. Construct the base course according to these Specifications and to the lines, grades, and typical cross-sections shown on the Plans or established by the Engineer.

All of the provisions of Section 300 apply to this Item.

302.1.01 Definitions

General Provisions 101 through 150.

302.1.02 Related References**A. Standard Specifications**

Section 105—Control of Work

Section 109—Measurement and Payment