OKLAHOMA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION
FOR
AGGREGATE BASE (PLANT MIXED)

These Special Provisions amend, and where in conflict, supersede applicable Sections of the 2009 Standard Specifications for Highway Construction, English and Metric.

(Replace with the following:)

303.01 DESCRIPTION

This work consists of providing and placing one or more layers of aggregates and specified additives onto a prepared subgrade or subbase by incorporating water into the aggregate base material with specialized equipment and methods away from the subgrade, and using specialized equipment for spreading the aggregate material onto the subgrade.

303.02 MATERIALS

Provide aggregate material for the gradation type shown on the Plans (Type A, Type B or Type C) in accordance with Subsection 703.01, "Aggregate for Aggregate Base."

During aggregate production, do not change the approved gradation type or source, unless the Engineer approves another gradation type or source in writing.

303.03 EQUIPMENT

A. Stationary Plant

Provide a central mixing plant of the pugmill type, rotary drum type, or continuous type of mixer. Establish stationary plant location within reasonable proximity to the project in order to deliver the aggregate base material at the proper moisture and consistency requirements.

B. Traveling Plant

Provide a traveling plant of the type that picks up the material from a windrow or from a blanket of loose material. The mixer may be of the pugmill or auger type, or of the transverse shaft type that mixes the materials by means of revolving paddles that lift all the loose material from the working area.

Ensure the traveling plant has provisions for introducing the water at the time of mixing, through a metering device, or by other approved methods, and can apply the water by means of controls which will supply a uniform ratio of water in the approximate amount required for optimum moisture.

Ensure the device by which the mixing machine picks up the material can be controlled and operated on each pass of the mixer as to pick up all the material to be treated and at the same time avoid cutting into the working area.

C. Spreading Equipment

Provide a spreader similar to a concrete paver or an asphalt lay-down machine meeting the requirements of Subsection 411.03.C, "Pavers" or alternate equipment approved by the Engineer capable of placing the aggregate base material in a single operation to the final slope and elevation within the tolerances required in Subsection 301.04.A, "Tolerances".

D. Compactor

Provide a self propelled, steel wheeled compactor weighing at least 10 ton [9 metric ton].

303.04 CONSTRUCTION METHODS

A. Preparation of Subgrade

Prepare the subgrade in accordance with Subsection 310.04.B, "Subgrade Method B for All Other Subbases, Bases, Pavement, or Surface," or as required by the Contract.

B. Preparation of Existing Base Course

Prepare existing aggregate base course in accordance with Section 311, "Processing Existing Base and Surface," or as required by the Contract.

C. Mixing Aggregate Base

Uniformly mix aggregate base materials and water using a stationary or traveling plant at locations away from the subgrade to achieve a uniform material near optimum moisture. Use of on-grade mixing methods for the aggregate base and water will only be allowed for a recycled concrete pavement generated within the project or in other special circumstances approved in advance by the Engineer.

(1) Stationary Plant

Uniformly mix the aggregate and water in an approved central mixing plant (pugmill, rotary drum, or continuous mixer). Add water during the mixing operation to achieve the proper moisture content for compaction in accordance with Subsection 303.04.E, "Shaping and Compaction."

(2) Traveling Plant

Perform the following steps to uniformly mix the aggregate and water using a traveling plant:

- Clean the specified area of vegetation and deleterious materials.

- Overlay the specified area with at least 3 in [75 mm] of base material and compact to achieve a work table for mixing operations.
- If the mixing machine requires a blanket of material, spread the windrow to a uniform depth and width consistent with the machine's capability.
- Add water during the mixing operation to achieve the proper moisture content for compaction in accordance with Subsection 303.04.E, "Shaping and Compaction." Avoid using excess water during mixing and compaction to prevent undue softening of the subgrade.
- Ensure the device used to pick up the material does not contaminate the mixture by cutting into the work table.
- Continue mixing until the aggregate and water are evenly distributed and a uniform mixture is produced, meeting specification requirements.
- During the mixing process, adjust the mixing equipment to prevent material from moving in a longitudinal direction.

D. Spreading

Transport the non-segregated aggregate base material that is near optimum moisture content to the roadbed then place using equipment capable of spreading the material in a single operation to the final slope and elevation , such as an asphalt lay-down machine. An alternate method of spreading may be used when one of the following conditions exist:

- Plan quantities for aggregate base material less than 2,500 cubic yards [1,900 cubic meters].
- Aggregate base width is too narrow or variable for the use of the spreading equipment.
- Aggregate base material used for temporary pavements, shoulders, and county roads.
- Aggregate base is placed on an untreated subgrade.
- Aggregate base material is recycled concrete pavement generated within the project.
- Other conditions as noted in the plans.

Place aggregate base material in layers of from 4 in to 8 in [100 mm to 200 mm] compacted thickness.

Spread and compact the aggregate base material over the full width of the roadbed before placing a succeeding layer. Finish compacted layers to the grades, elevations, and thicknesses shown on the Plans. Correct segregated areas at no additional cost to the Department. Stagger longitudinal and transverse joints at least 1 ft [0.3 m] in each succeeding layer.

When constructing successive layers of aggregate base, minimize disturbance to the surface of the previously placed layer. Adjust placement procedures or equipment to ensure compliance with the Contract requirements.

E. Compaction

Compact each layer to the proper density: no less than 98 percent of maximum density for Type A Aggregate Base, and 95 percent for Types B and C Aggregate Base. Determine maximum density in accordance with AASHTO T-180, Method D. Measure the in-place field density in accordance with AASHTO T-310; direct transmission is the preferred method (rod projected into base as opposed to

back-scatter mode). Provide sufficient moisture content in the aggregate base material at the time of placement near the optimum moisture content to enable proper compaction. Prevent damage to aggregate particles during compaction. Moisture content will aid in the base compaction and reduce the compactive effort necessary and minimize the breakdown of the gradation of the material.

If during compaction the moisture content drops below optimum moisture such that the required percent compaction cannot be obtained, apply water uniformly over the base materials as needed to ensure a uniform texture, firmly keyed aggregates, and proper consolidation of layers. On-grade mixing methods must not cause instability to the underlying subgrade material due to moisture saturation. If instability is caused, the methods must be suspended and improved to eliminate that condition.

Cure the aggregate base material such that there is no free standing water before applying the prime coat or the succeeding layer of aggregate base or pavement section. If the density required by the Contract is achieved, the Department will not consider moisture content as an acceptance criterion.

F. Tolerances

Finish the aggregate base in accordance with Subsection 301.04.A, "Tolerances."

303.05 METHOD OF MEASUREMENT

The Engineer will measure the volume of the compacted in-place *Aggregate Base Type A*, *Type B*, and *Type C* by multiplying the completed length of aggregate base by the area of the typical section shown on the Plans.

303.06 BASIS OF PAYMENT

The Department will pay for each pay item at the contract unit price per the specified pay unit as follows:

Pay Item:	**Pay Unit:**
(A) AGGREGATE BASE TYPE A, PLANT MIXED	Cubic Yard [Cubic Meter]
(B) AGGREGATE BASE TYPE B, PLANT MIXED	Cubic Yard [Cubic Meter]
(C) AGGREGATE BASE TYPE C, PLANT MIXED	Cubic Yard [Cubic Meter]