OKLAHOMA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISIONS
FOR
PORTLAND CEMENT CONCRETE

These Special Provisions revise, amend, and where in conflict, supersede applicable sections of the 1999 Standard Specifications for Highway Construction, English and Metric. Units of measurement are provided in the subsections in both English and Metric equivalents. The units for this project shall be those specified in the project plans.

701.05. FINE AGGREGATE. *(Replace entirely with the following:)*

(a) **Materials Covered.** These Specifications cover the quality and size of fine aggregate for Portland cement concrete pavements or bases, highway bridges, and incidental structures.

Mortar sand shall meet the requirements of AASHTO M 45.

(b) **General Requirements**. Fine aggregate shall consist of natural sand or, at the approval of the Materials Engineer, a combination of natural sands or natural sand and manufactured sand. Stockpile fine aggregate in accordance with Subsection 106.09. Fine Aggregate shall conform to the requirements of AASHTO M 6, Class A, except as modified by these specifications.

A combination of two fine aggregate sources may be used, when approved by the Materials Engineer, if the following requirements are met:

- The two materials may be stockpiled and batched separately or stockpiled in combination when mixed under controlled conditions at the aggregate suppliers facility.
- The combined fine aggregate meets gradation requirements of 701.05(c).
- Each material has 3.0% or less passing the #200 sieve when tested in accordance with AASHTO T 11.
- The approved concrete mix design shall include the gradation and percentage of each fine aggregate used when the aggregates are stored and batched separately.
- The approved concrete mix design shall include the gradation and fineness modulus of the combined fine aggregate.
- When manufactured sand is approved for use in combination with natural sand, the fine aggregate blend shall have an acid insoluble residue of at least 60% by weight when tested in accordance with OHDL-25.
- All natural sand sources of fine aggregate shall be from a fine aggregate source on the Approved Materials List for use in Portland cement concrete. All crushed fine aggregate (manufactured sand) shall be obtained from a coarse aggregate source on the Approved

Materials List for use in Portland cement concrete .

- Each fine aggregate source is to conform to the requirements of AASHTO M 6, Class A, except for grading requirements.

(c) **Gradation.** Fine aggregate shall be well graded from coarse to fine, and when tested by means of laboratory sieves in accordance with AASHTO T 27 and T 11, shall conform to the following requirements:

Sieve No.	Percent Passing
⅜ inch (9.5mm)	100
No. 4 (4.75 mm)	95 - 100
No. 8 (2.36 mm)	80 - 100
No. 16 (1.18 mm)	50 - 85
No. 30 (600µm)	25 - 60
No. 50 (300µm)	5 - 30
No. 100 (150µm)	0 - 10
No. 200 (75µm)	0.0 - 3.0

The gradation requirements given above represent the extreme limits which shall determine suitability for use. The gradation from any one source shall maintain a reasonable uniformity and not be subject to extreme changes in percentages of gradation. Use the average fineness modulus to determine the degree of uniformity. The average fineness modulus is the average of the last 10 tests obtained and tested by the Residency Engineer for the source and maintained by his office. Reject any fine aggregate that has a variation in fineness modulus greater than 0.20 from the sources average fineness modulus.

Note: The fineness modulus of aggregate is determined by adding the total percentage of material in the sample that are coarser than each of the following sieves (cumulative percentages retained), and dividing the sum by 100; No. 100 (150µm), No. 50 (300µm), No. 30 (600µm), No. 16 (1.18 mm), No. 8 (2.36 mm), No. 4 (4.75 mm), ⅜ inch (9.5mm).