SECTION 32 15 40
STONE FINES PAVING

PART 1 GENERAL

1.1 RELATED WORK

Section 32 11 00: Base Courses

1.2 QUALITY ASSURANCE

A. Applicable Standards: Any reference shall mean the current or latest editions as described.

American Society for Testing and Materials.

B. Coordination: Contractor shall be responsible for the proper installation of all site improvements by other trades which are all or in part embedded, built-in, abutted to or covered over by the crushed stone paving, ensuring that such work is completed in ample time so that progress of the work is not delayed.

1.3 SUBMITTALS

A. Samples and Product Data: Submit the following items:

1. Stone fines: One pint for each size and color range.

2. Organic Stabilizer: One pint, including manufacturer's literature.

3. On-site Sample: One sample 12 ft. x 12 ft. at thickness shown on Drawings for stone fines with organic stabilizer additive.

1.4 FINAL ACCEPTANCE:

Stone fines paving will be accepted by the Project Manager upon satisfactory completion of all work, and in conjunction with Final Acceptance of all landscape paving work.

PART 2 PRODUCTS

2.1 STONE FINES

A. Physical Properties:

1. Fine Aggregate:
<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>#4</td>
<td>95-100</td>
</tr>
<tr>
<td>#30</td>
<td>30-50</td>
</tr>
<tr>
<td>#200</td>
<td>5-15</td>
</tr>
<tr>
<td>Sand Equivalent</td>
<td>38 Minimum</td>
</tr>
</tbody>
</table>

2. Color: Tan, beige, gold or red to be selected by the Project Manager.

2.2 ORGANIC STABILIZER

A. Manufacturer: Stabilizer; 4832 East Indian School Road, Phoenix, Arizona 85018. Tel. (602) 852-0718. Distributed by: KRC Rock, (619) 744-1036.

B. Mixing: The stone fines and the organic stabilizer shall be thoroughly mixed by the stone fines supplier prior to delivery of the material to the site.

PART 3 EXECUTION

3.1 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. General: Deliver, store, handle and protect aggregate and stone fines material with provision for drainage and against intrusion of dirt, debris, or other foreign matter.

B. Stone fines material shall be stored under cover to prevent accumulation of moisture until placed.

3.2 PROJECT/SITE CONDITIONS

A. Environmental Requirements:

1. Prevent wind or rain disturbance of setting materials, protect from sheet flow from adjacent areas, and generally maintain optimum installation conditions.

2. Do not install stone fines paving in conditions of standing water.

B. Layout and Grades: All lines not previously established at the site shall be laid out by a registered Land Surveyor or registered Civil Engineer employed by the Contractor in accordance with the Contract Documents. Layout shall be coordinated with the work of other sections.

3.3 SUBGRADE PREPARATION

A. Verification of Subgrades: Verify that subgrades have been rough graded to lines and grades to within 0.10 feet.
B. Compaction: Compact subgrade to minimum 90% or as specified in the Drawings.

3.4 ORGANIC STABILIZED STONE FINES PAVING

A. General: Install all organic-stabilized stone fines work true to grade, properly coinciding with adjacent work and elevations. Provide a finished surface uniform in texture and appearance. Do not permit finished work to vary more than 3/16 inch in 10 feet from true profile and cross section.

B. Installation:

1. Subbase: Thoroughly clean subbase of all debris, loose dirt and other extraneous materials before installing stone fines. Do not install stone fines when subbase is wet or muddy.

2. Install aggregate base section and compact to minimum 95% or as specified in the Drawings.

32. Mixing: The stone fines supplier shall blend the organic stabilizer with stone fines at the rate of 8-10 lbs. of stabilizer per ton of stone fines, or as recommended by the manufacturer of the organic stabilizer for the specific type of stone fines selected for the project. The material shall be thoroughly blended with a cement mixer, revolving blades, or rotary drum. It is essential that the stabilizer be mixed thoroughly and uniformly with the stone fines.

42. Depth: Install at the depth specified in the Drawings.

53. Finish Surface: Grade the stabilized stone fines smooth to finish grade shown in the Drawings.

64. Watering: After spreading, water stone fines paving surface using a garden hose with coarse spray nozzle to achieve full depth moisture penetration and saturation of the spread mixed material and to activate the organic stabilizer. Applied water pressure shall not be allowed to disturb the leveled surface and shall be allowed to evenly pond on the surface (manufacturer’s suggested rate is at approximately 20 gpm per 1,000 square feet of stone fines surface). Let watered mix stand until surface water is no longer present (manufacturer’s suggested time is 6 to 24 hours) and the mix is moist but not wet.

   a. During watering operations, test for depth of water penetration by random inspection test core taken at a minimum of one (1) test per each 500 square feet.

   b. After inspection, fill test core holes with material removed, smooth, and hand tamp to match adjoining surface grade.
Compaction: Compact stone fines paving surface in a minimum of two (2) operations after watering. Compact until surface elevations are within tolerances specified herein and to a uniform density within range of 90 to 92 percent at optimum moisture content. Hand tamp near edges of adjoining material to avoid damage to adjoining curbs, lawns, edge materials, and other work. Do not compact over root balls of trees and shrubs under any circumstance.

a. First Compaction Operation: While the stone fines mix is still thoroughly moist, roll with a heavy lawn type roller (minimum 225 pounds and maximum 30 inch width), to achieve finish grade and initial compaction. Hand tamp at edges as specified.

b. Second Compaction Operation: Use a heavy (1 ton minimum) small rider equipment type roller, after having initially used the lawn roller, to obtain the desired final dense, smooth, uniform texture.

c. Do not use wackers or vibratory rollers.

C. Tolerances for Stone Fines Paving:

1. The final paving surface level shall not deviate from the design levels by more than plus or minus 1/16 inch. The surface level of the paving immediately adjacent to drainage outlets, gutter, and channels shall not deviate by more than 3/16 inch. The final surface, when measured under a 10 foot long steel or aluminum straightedge, shall not vary by more than 3/16 inch.

2. The stone fines surface with adjacent pavements shall not show any difference in level. All humps or depressions exceeding the specified tolerance shall be corrected at no additional cost to Stanford.

D. Protection: Protect the paving against traffic, injury or defacement, or damage by rain during curing period and subsequent construction operations until Final Acceptance.

E. Damaged or Defective Installation: Repair and replace in accordance with these Specifications at no additional cost to Stanford.

3.5 INSPECTION AND ADJUSTMENTS

A. Finished stone fines surface shall be smooth, uniform and solid, with no evidence of chipping or cracking. Dried, compacted stone fines surface material shall be firm all the way through with no spongy areas. Loose material shall not be present on the surface initially.
B. Loose gravel on the surface, or unconsolidated stone fines screenings below the surface, is considered evidence of improper bonding due to poor mixing or insufficient watering. Contractor shall furnish tests for questionable conditions or as directed by Project Manager.

1. Test the loose material for adequate bonding by wetting, then tamping, and allowing it to dry. If the material still is unconsolidated, the organic stabilizer did not get mixed adequately throughout the stone fines screenings. If the material now is solid, initial watering was insufficient.

2. Cracking or sponginess is evidence of excessive organic stabilizer in the mix.

C. Unconsolidated areas shall be dug out, and shall be replaced with new crushed aggregate screenings with a high proportion of fines meeting the grading requirements as specified and, pre-blended to specified proportions. Patch areas then shall be wetted thoroughly and rolled smooth as specified for installations.

D. Any significant irregularities shall be smoothed out prior to final acceptance of work. Smoothing shall be accomplished by rewetting/saturating rough areas thoroughly, and then rolling the surface again with a heavy roller (1000 - 1500 lbs. powered walk-behind or small rider type).

3.6 CLEAN-UP

A. Keep all areas of work clean, neat and orderly at all times. Keep all adjacent planting areas clean during paving operations.

B. Remove all surplus materials, tools, equipment, rubbish and debris resulting from the work.

END OF SECTION