Bituminous Surfacing

Project No: _____

Date: _____

Reviewer: _____

Time Elapsed: _____%

Work Completed: _____%

In Company With: _____

Bituminous Surface Mix 3/4" Max.

BSM - Bituminous Surface Mix, Section 402S

Plant Site

1.
    a. Has the engineer approved the bitumen content for the gradation to be used? What percent (BSM, sheet 3)?
    b. Has the district materials engineer specified the temperature limits for the asphalt, aggregate mixing and lay down based on the viscosity of the asphalt? What are the values (BSM, sheet 8)?

    c. Has the source of asphalt changed during the course of work? Has a new mix design been made (BSM, sheet 8)?
2. Were the following design criteria for the mix met (BSM, sheet 2)?
    a. Marshall Stability 1200 pounds min.
    b. Flow (0.01 inch) 10-18
    c. Voids Content 2% to 4%
3. Has the crushing operation been monitored to ensure that 100 percent of the -1/2 inch material is crushed (BSM, sheet 1)?
4. Has the job-mix gradation been submitted to the engineer for approval? Was the approval documented (BSM, sheet 3)?
5. Have there been any changes made to the approved job-mix gradation? Were they approved by the engineer (BSM, sheet 3)?
6. Has the mineral aggregate been dried prior to mixing to achieve an average moisture content of not more than 1 percent by weight (BSM, sheet 9)?
7. Central Mixing Plant - Has the shortest mixing time consistent with satisfactory coating of the aggregate been determined by the engineer? Coating is considered to be satisfactory when all of the particles passing the no. 4 sieve and 96 percent of the particles retained on the No. 4 sieve are coated (BSM, sheet 9).
8. Dryer Drum - Has the shortest mixing time consistent with satisfactory coating of the aggregate been determined by the engineer? Coating requirements are the same as number 7 above except 98 percent is used for particles retained on the No. 4 sieve (BSM, sheet 9).

9. Is the mixing plant equipped with an adequate surge bin capable of dumping into hauling units and loaded in such a manner as to prevent segregation of the mix (BSM, sheet 7)?

Lay down

1. Is the bituminous paver a self-contained, power-propelled unit, equipped with an adjustable activated screed or strike-off assembly, heated if necessary and capable of spreading and finishing the BSM in accordance with the typical section and specified thickness? Where the paver is modified by adding an extension, is the extension activated and heated (BSM, sheet 7)?
2.
    a. Is the paver equipped with a control system capable of automatically maintaining the screed elevation as specified (BSM, sheet 8)?
    b. Are the controls capable of working in conjunction with any of the attachments indicated below and which method has the contractor selected? Has the engineer given written approval (BSM, sheet 8)?
        1. Taut string line (wire) set to grade.
        2. Ski-type device or traveling string line 40 feet minimum length.
        3. Under limited conditions, a short ski or shoe for matching the pavement placed by a previous pass of the paver.

3. Has the bituminous mixture been spread with a self-propelled mechanical spreading and finishing equipment capable of spreading at least a 12 foot width (BSM, sheet 9)?
4. If tack coat is used, has the surface to be treated been swept or flushed free of dust or other foreign material? Has the material been sprayed over the prepared surface by means of a pressure distributor at the rate determined by the engineer (BSM, sheet 8)?
5. Have the longitudinal joints been offset at least 6 inches transversely to avoid a vertical joint through more than one course and in the top course are they restricted to 1 foot either side of the center line or lane lines (BSM, sheet 10)?
6. After spreading, has the surface been rolled longitudinally, beginning at the outside edge or lower side proceeding toward the higher side? Has each pass of one roller overlapped the proceeding pass by at least one-half of the width of the roller (BSM, sheet 10)?
7. Have the rolling operations been conducted in such a manner that shoving or distortion will not develop beneath the roller (BSM, sheet 10)?
8.
    a. Has the paver left a straight and vertical edge adjacent to the next lane to be paved (BSM, sheet 10)?
    b. If a vertical edge is impractical, the engineer may approve a 3:1 or steeper sloped longitudinal edge. Has the sloped edge been compacted with a pneumatic-tire roller (BSM, sheet 1)?

9. Have all passes been brought up even, transversely, at the end of each production day (BSM, sheet 10)?
10. Has the plant production and mix delivery of the hauling units been adjusted so that a continuous uninterrupted forward paving operation is obtained? Unnecessary stopping and starting of the spreading machine shall not be permitted (BSM, sheet 10)?
11. Has the bituminous surface mix only been placed when the air temperature in the shade and the road bed temperature are above 50EF (BSM, sheet 12)?
12. Has the density of the mix been based on the average of all density determinations made in a lot (one day's production)? Has the lot been divided into sublots of 1600 SY? Has one density test been taken within each sublot and the test randomly selected by use of a suitable random number table (BSM, sheet 10)?
13. Has the mean of all density determinations made in the sublots been equal to or greater than 96% of maximum laboratory density with no single determination lower than 92% (BSM, sheet 10)?
14. If an individual test result falls below 92% of maximum laboratory density, has the defective sublot been further compacted? After further compaction, has the original test site and one other randomly selected site within the sublot been tested? Has the average of the two test results been included in determining the mean density for the lot (BSM, sheet 11)?
15. At the ends of structures, has a hand-operated vibratory compactor or small vibratory roller been used directly adjacent to the back wall and approach slab, in a transverse

direction, in addition to normal compaction procedures (BSM, sheet 11)?

16. Has the pavement surface been tested for smoothness as the work progresses? At what frequency are test locations selected both longitudinally and transversely (BSM, sheet 11)?
17. Are the longitudinal measurements made with a 25 foot string line and the transverse measurements made with a 10 foot straightedge (BSM, sheet 11)?
18. Has the variation of the surface from the testing edge been greater than 0.025 feet (approximately 1/4 inch) for the string line and greater than 0.01 fees (approximately 1/8 inch) for the straightedge (BSM, sheet 12)?
19.
    a. Have test samples for gradation and bitumen content been taken as the mix is being placed and obtained immediately behind, the paver prior to any further processing or compaction (BSM, sheet 4)?
    b. Have samples been chosen on a random basis by means of a suitable random number table (BSM, sheet 4)?
    c. Have samples been taken at the appropriate frequency (5 tests for 2,500 tons >, 4 tests 1500 to 2500 tons and a minimum of three tests < 1500 tons)? Check test results on R-138's (BSM, sheets 4, 5 & 6)?
    d. Has independent assurance testing been performed in accordance with DOT's approved sampling & testing program (sieve and extraction, one per 10,000 tons)?

20. Have any price adjustments been assessed for gradation or bitumen content (BSM, sheet 4, 5 & 6)?
21. Have any price adjustments been assessed for density? Have the pay factors for gradation & bitumen content and density been determined independently? Have the two pay factors been multiplied together to arrive at the final pay factor (BSM, sheet 14)?
22. Is a copy of the "Highway Inspector's Manual" available to the project inspectors?

General Comments