

SECTION 32 12 16 – ASPHALT PAVING

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. Mixing, spreading, compacting and finishing of bituminous pavements for base, leveling and surface courses on roads, parking lots, and other areas.

1.02 RELATED WORK

- A. Section 01 45 29 Testing Laboratory Services
- B. Section 31 23 00 Site Excavation
- C. Section 32 11 23 Aggregate Base Course
- D. Section 31 22 19.13 Spreading and Grading Topsoil
- E. Section 32 17 23 Pavement Marking

1.03 QUALITY ASSURANCE

- A. Perform work in accordance with the State of Tennessee Department of Transportation-Bureau of Highways-Standard Specifications for Road and Bridge Construction, latest Edition, hereinafter referred to as “State Highway Specifications.” Measurements and payments portions of those State Specifications do not apply to work performed under this contract.
- B. Mixing Plant: Comply with requirements of State Highway Specifications.
- C. Qualifications of Asphaltic Concrete Producer: Use only materials which are furnished by a bulk asphaltic concrete producer regularly engaged in production of hot-mix, hot-laid asphaltic concrete.

1.04 PAVING QUALITY REQUIREMENTS

- A. General: In addition to other specified conditions, comply with the following minimum requirements.
 - 1. Test in-place asphaltic concrete courses for compliance with requirements for density, thickness and surface smoothness.
 - 2. Provide final surfaces or uniform texture, complying with required grades and cross-sections.
 - 3. Take not less than 4 inches diameter pavement specimens for each completed course, from locations as directed by the testing agency.
 - 4. Repair holes from test specimens as specified for patching defective work.
- B. Density
 - 1. Compare density of in-place material against laboratory specimens of same asphaltic concrete mixture, when subjected to 50 blows of standard Marshall hammer on each side of specimen.
 - 2. Minimum acceptable density of in-place course material is 97% of the recorded laboratory specimen density.

1.05 REGULATORY REQUIREMENTS

- A. Comply with applicable local standards, codes and ordinances for paving work on public property.

1.06 TESTS

- A. Testing and analysis of asphaltic mix will be performed under provisions of Division 1 of the Specifications.

1.07 SUBMITTALS

- A. Samples: Provide samples of materials for laboratory testing and job-mix design as required by Owner's Representative.
- B. Certificates:
 - 1. Provide certificates, in lieu of laboratory test reports.
 - 2. Certify that materials comply with specification requirements.
 - 3. Signed by asphaltic concrete producer and Contractor.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Do not place asphalt when the base surface temperature is less than 40°F.
- B. Do not apply materials when substrate is wet or contains sufficient moisture to prevent uniform distribution and proper penetration.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Tack Coat: Emulsified asphalt SS-1, diluted with equal parts of water.
- B. Asphalt Cement: ASTM D946, 60-70 penetration grade.
- C. Stone Base: Grading D pug mill mix in accordance with Tennessee Department of Transportation Specification Section 303.
 - 1. Coarse aggregate: ASTM D692.
 - 2. Fine aggregate: ASTM D1073.
- D. Mineral Filler: Shall meet the requirements of AASHTO M17 finely ground particles of limestone, hydrated lime, Portland cement, or other approved mineral dust, free from foreign matter.

2.02 ASPHALT PAVING MIX

- A. Use dry materials to avoid foaming. Mix uniformly.
- B. Mix designation: State Highway Specification Sections as follows:
 - 1. Asphaltic Concrete Surface Course: Section 411, grading "E."
 - 2. Binder Course: Section 307, grading "B modified."
- C. The pavement shall be constructed in accordance with Sections 407 and 303 of the State Highway Specifications.

PART 3 – EXECUTION

3.01 INSPECTION

- A. Verify compacted sub-grade is dry and ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.
- C. Beginning of installation means acceptance of substrate.

3.02 3.2 PREPARATION

- A. Prepare mix materials and place of deposit in accordance with referenced state highway specifications.

- B. Tack Coat:
 - 1. Apply to contact surfaces of concrete items which abut pavement.
 - 2. Apply to contact surfaces of existing asphalt or concrete pavement at the rate of .05 gal/sq. yd. of surface.
- C. Frames of subsurface structures:
 - 1. Coat surfaces of new and existing frames with oil to prevent bond with asphalt paving.
 - 2. Set to be flush with finish surface and surround with a ring of compacted asphaltic concrete to one inch below top of frame. Adjust as required to meet paving.
 - 3. Provide temporary covers over openings until completion of rolling operations.

3.03 PLACING ASPHALT PAVEMENT

- A. Place materials in accordance with referenced State Highway Specifications.
- B. Place, spread, and strike-off to compacted thickness indicated with paving machine, except that inaccessible and small areas may be placed by hand.
- C. Place topping course within 2 hours of placing and compacting binder course.
- D. Compact pavement by rolling. Do not displace or extrude pavement from position. Hand compact area inaccessible to rolling equipment.
 - 1. Average relative density: Minimum of 97%.
 - 2. Individual relative density: Minimum of 94%.
- E. Develop rolling with consecutive passes to achieve even and smooth finish of uniform texture, without roller marks.
- F. Make joints between successive days work, or between old and new pavements in accordance with referenced State Highway Specifications. Ensure a continuous bond is attained.

3.04 TOLERANCES

- A. Flatness: $\pm \frac{1}{4}$ inch measured with a 10 ft. straight edge.
- B. Compacted scheduled thickness: $\pm \frac{1}{4}$ inch of design thickness.
- C. Variation from true elevation: 0.05 feet.

3.05 PATCHING

- A. Remove defective or deficient areas for full depth of course.
 - 1. Cut sides parallel and perpendicular to direction of traffic with edges vertical.
 - 2. Apply tack coat to exposed surfaces and place asphalt on prepared surfaces as specified above.

3.06 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed as defined in Division 1 of the specifications.

3.07 PROTECTION

- A. Immediately after placement, protect pavement from mechanical injury for 7 days.
- B. Cover openings of substrate structures in paved area until permanent coverings are placed.

3.08 SCHEDULE OF PAVEMENT SECTIONS

- A. Place and compact materials to the thickness called for on the Drawings.

END OF SECTION

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