

SECTION 321010

PAVEMENT REPAIR AND RESTORATION

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment, incidentals, obtain any required right of-way permits and remove and replace pavements over trenches excavated for installation of water or sewer lines and appurtenances as shown on the Construction Plans and standard detail drawings.

1.2 GENERAL

- A. Trenching, Backfilling and Compaction is included in Section 311020.

1.3 SUBMITTALS

- A. Submit, in accordance with Section 013000, complete product data for materials specified in this Section.

PART 2 - PRODUCTS

2.1 PAVEMENT SECTION

- A. Performance / Design Criteria:

1. Superpave designs are defined for equivalent single axle loads (ESAL) ranging from 0.3 to 100 million over 20-year paving life. Consider rate of loading to avoid rutting damage that occurs in first few years of paving life. Estimating ESAL over 20 years for paving designed for shorter life span will affect paving design criteria.
2. Pavement Design: Superpave Type SP-9.5 or Type SP-12.5 as shown or specified and in accordance with Florida Department of Transportation Standard Specifications for Road and Bridge Construction or on the plans.

- B. Asphalt Materials:

1. Use asphalt binder for superpave performance graded asphalt designs. **Insert required performance grade expressed as PG HH-LL where HH equals the average 7-day maximum paving temperature in positive degrees C and LL equals the minimum paving temperature in minus**

degrees C. Available performance grades range from 52 to 70 for maximum temperatures and minus 10 to minus 46 for minimum temperatures, both in 6-degree increments.

2. Provisional standard, AASHTO MP1a, includes requirements for low temperature testing procedures. Both standards use same performance grades. Verify standard permitted by FDOT requirements.
3. Materials for asphalt paving shall comply with Florida Department of Transportation Standard Specifications for Road and Bridge Construction and the plans.

2.2 MIXES

A. Asphalt Paving Mixtures:

1. Asphalt Paving Mixtures shall comply with Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Section 017710 – Contract Closeout
- B. Verify utilities indicated under paving are installed with excavations and trenches backfilled and compacted.
- C. Verify compacted subbase is dry and ready to support paving and imposed loads.
 1. Proof roll subbase with a vibratory roller weighing a minimum of eight (8) tons or a sheepsfoot roller, where appropriate, exerting a compression of at least 250 pounds psi on the tamper foot for at least five (5) passes in minimum two (2) perpendicular passes to identify soft spots.
 2. Remove soft subbase and replace with compacted fill as specified in Section 311030.
- D. Verify gradients and elevations of base are correct.
- E. Verify manhole rings and drainage structures are installed in correct position and elevation.

3.2 PREPARATION

- A. Prepare subbase in accordance with Florida Department of Transportation standards and the plans.

3.3 DEMOLITION

- A. Saw cut and notch existing paving as indicted on plans.
- B. Clean existing paving to remove foreign material, excess joint sealant and crack filler from paving surface.
- C. Repair surface defects in existing paving to provide uniform surface to receive new paving.
- D. Remove demolished asphalt from Site and dispose of properly.

3.4 MILLING OF EXISTING ASPHALT PAVEMENT

- A. Perform all milling operations in accordance with Florida Department of Transportation standards.
- B. Remove existing raised pavement markers prior to milling.
- C. Do not disfigure adjacent Work.
- D. Provide a milling machine capable of maintaining a depth of cut and cross slope that will achieve the results specified in the Contract Documents.
 1. Milling machine shall have a minimum overall length (out to out measurement excluding the conveyor) of eighteen (18) feet and a minimum cutting width of six (6) feet.
 2. Milling machine shall be equipped with a built-in automatic grade control system that can control the transverse slope and the longitudinal profile to produce the specified results.
 3. The City or Engineer will approve any commercially manufactured milling machine that meets the above requirements. If it becomes evident after starting milling that the milling machine cannot consistently produce the specified results, the City or Engineer will reject the milling machine for further use.
 4. The Contractor may use a smaller milling machine when milling to lower the grade adjacent to existing curb or other areas where it is impractical to use the above described equipment.

5. Milling machine shall be equipped with means to effectively limit the amount of dust escaping during the removal operation.
6. For complete pavement removal, the Engineer may approve the use of alternate removal and crushing equipment.

E. Execute removal to depth not less than the depth(s) shown on the plans at each point across full width of surface without detrimental aggregate degradation.

F. Remove milled asphalt from project site and dispose of properly.

3.5 INSTALLATION

A. Subbase: Prepare subbase in accordance with Florida Department of Transportation Standards.

B. Prime Coat and Tack Coat: Install in accordance with Florida Department of Transportation Standards.

C. Single Course Asphalt Paving:

1. Install Work in accordance with Florida Department of Transportation Standards.
2. Place asphalt within 24 hours of applying primer or tack coat.
3. Place asphalt wearing course to thickness indicated on Plans/Details.
4. Compact paving by rolling to specified density. Do not displace or extrude paving from position. Hand compact in areas inaccessible to rolling equipment.
5. Perform rolling with consecutive passes to achieve even and smooth finish without roller marks.

D. Double Course Asphalt Paving:

1. Install Work in accordance with Florida Department of Transportation Standards.
2. Place asphalt binder course within 24 hours of applying primer or tack coat.
3. Place binder course to thickness indicated on Plans.
4. Coordinate times for placement to allow for inspection and testing of

each course.

5. Place wearing course within 24 hours of placing and compacting binder course.
6. When binder course is placed more than 24 hours before placing wearing course, clean surface and apply tack coat before placing wearing course.
7. Place wearing course to thickness indicated on plans.
8. Compact each course by rolling to specified density. Do not displace or extrude paving from position. Hand compact in areas inaccessible to rolling equipment.
9. Perform rolling with consecutive passes to achieve even and smooth finish, without roller marks.

E. Asphalt Paving Overlay

1. Install Work in accordance with Florida Department of Transportation Standards.
2. Apply tack coat to existing paving surface at rate recommended by geotextile fabric manufacturer.
3. Place wearing course to thickness indicated on Plans.
4. Compact overlay by rolling to specified density. Do not displace or extrude paving from position. Hand compact in areas inaccessible to rolling equipment.
5. Perform rolling with consecutive passes to achieve even and smooth finish, without roller marks.

F. Place asphalt mixture when temperature is not more than 15 degrees F less than initial mixing temperature.

G. Curbs

1. Install extruded asphalt curbs of profile as indicated on plans.

3.6 TOLERANCES

A. Flatness: Maximum variation of 1/4 inch measured with 10-foot straight edge.

B. Scheduled Compacted Thickness: Within 3/16 inch.

C. Variation from Indicated Elevation: Within 1/2 inch.

3.7 FIELD QUALITY CONTROL

A. Asphalt Paving Mix Temperature: Measure temperature at time of placement.

B. Asphalt Paving Thickness: ASTM D3549; test one core sample from every 1,000 square yards compacted paving.

C. Asphalt Paving Density: Monitor the roadway density per FDOT standards with either 6-inch diameter roadway cores, a nuclear density gauge, or other density measuring device, at a minimum frequency of once per 1,500 feet of pavement.

3.8 PROTECTION

A. Immediately after placement, protect paving from mechanical injury until surface temperature is less than 160 degrees F.

B. Keep sections of newly compacted asphalt concrete, which are to be covered by additional courses, clean until the successive course is laid.

C. Do not dump embankment or base material directly on the pavement. Dress shoulders before placing the friction course on adjacent pavement.

END OF SECTION