DIVISION 32 – EXTERIOR IMPROVEMENTS
32 12 00 FLEXIBLE PAVING

PART 1 - GENERAL

1.01 DESIGN CRITERIA

A. General:

1. WSDOT Specifications: All paving design and construction on the WSU campuses shall conform to the current adopted edition of the Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge and Municipal Construction.

2. Coordinate general paving with parking, emergency vehicle, bus and truck travel areas. Work shall be scheduled to limit the impact of heavy equipment near occupied buildings for consideration of ventilation into air intakes, windows and doors, in addition to vibrations affecting the building during occupied hours. See Section 31 00 00 “Earthwork” for requirements on selecting and specifying project haul routes.

3. When existing asphalt surfaces are planned to remain, the Geotechnical Engineer of Record shall prepare a soils report including core samples to determine the existing section’s weight limitations, expected life, and the feasibility of retaining the existing pavement.

B. Specific Requirements:

1. Subgrade: The Civil Engineer of Record shall specify the required depth and degree of compaction. Compact at least the top 6-inches of subgrade to 95% of maximum theoretical density using ASTM D1557 (Modified Proctor method).

   i. See WSU Design Standard 31 00 00 “Earthwork”: native soils are generally not suitable as structural fill.

2. Base Course and Top Course: The Civil Engineer of Record shall specify the required structural fill, depths, and degree of compaction. Compact at least to 95% of maximum theoretical density using ASTM D1557 (Modified Proctor method). Minimum depths of base course and top course are identified in the paragraphs below.

3. Roads, Streets, Driveways, and Parking Areas: Shall be constructed of 5-inch minimum asphalt pavement, placed and compacted in two lifts, over an 8-inch minimum compacted crushed rock base and a 4-inch minimum crushed surfacing top course.

4. Sidewalks: Cement concrete sidewalks and service access ways are preferred at WSU. When the WSU Project Manager (PM) approves asphalt sidewalks due to site constraints and limitations, the sidewalks

shall be constructed of 3-inch minimum asphalt pavement over a 6-inch minimum compacted crushed rock base.

i. Service Access Ways: When the WSU Project Manager (PM) approves asphalt service access ways, they shall be constructed of 5-inch minimum asphalt pavement, placed and compacted in two lifts, over an 8-inch minimum compacted crushed rock base.

5. For all new asphalt construction or repairs, pavement edges shall be saw cut and squared off to ensure better transitions between existing and new surfaces.

6. All patching of existing asphalt paved surfaces shall match the existing paving thickness and grade. Asphalt patches shall also comply with the required minimum pavement thicknesses specified above.

7. Overlay of existing asphalt surfaces is discouraged without careful consideration of the existing substrate and pavement conditions and the expected remaining pavement life, and must be specifically approved by the WSU PM. Minimum compacted thickness of any asphalt overlays shall be 2-inches. The Civil Engineer of Record shall specify thickness (depth) and class of asphalt for all overlays of existing asphalt paved surfaces.

8. Use of glass or rubber additives for pavement design must be approved by the WSU PM and WSU Engineering Services.

PART 2 - PRODUCTS

A. Asphalt Binder: Asphalt binder on the Pullman campus shall be PG 64-28, unless specified otherwise by the Civil Engineer of Record.

B. Aggregate Mix:

1. Single Lift Asphalt Pavement: Shall be 3-inch lift minimum. Use Class ½-inch aggregate, unless specified otherwise by the Civil Engineer of Record.

2. Two-Lift Asphalt Pavement

i. First (lower) Lift: Shall be 3-inch lift minimum. Use Class 1¼-inch aggregate, unless specified otherwise by the Civil Engineer of Record.

ii. Second (top) Lift: Shall be 2-inch lift minimum. Use Class ½-inch aggregate, unless specified otherwise by the Civil Engineer of Record.

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PART 3 - EXECUTION

3.01 FIELD QUALITY CONTROL

A. Contractor shall submit asphalt mix design for approval by Design Engineer of Record and WSU Engineering Services.

B. Inspection and Testing: WSU may retain a Special Inspector to perform on-site inspection and testing services. During the course of construction, the Inspector will advise the WSU PM in writing, with written copy to the Contractor, if any work does not appear to conform to the Contract Documents. Special Inspectors may perform inspections and tests including, but not limited to, those specified below:

   i. Field verification of asphalt mix design.

   ii. Field verification of materials and application.

   iii. Field verification of compacted asphalt pavement thickness.

   iv. Field density of compacted asphalt pavement.

   v. Compaction tests per WSDOT Standard Specifications.

C. Asphalt Pavement Repair: Where testing and inspection indicates non-compliance with project specifications or the WSU Design and Construction Standards, Contractor shall repair or replace all defective asphalt by approved methods in order to meet the requirements.

D. Acceptable Tolerances:

   1. Slope and Smoothness: Designer shall specifically identify design slopes prior to 100% Construction Drawings. Preferred slope is 2%; any proposed deviation less than 2% requires approval from WSU Engineering Services; 1% is the minimum acceptable slope.

   2. Paving or Base Course Thickness: Compacted thickness shall not vary more than +/- ¼-inch.

   3. Settlement: No more than 1-inch settlement post-construction.

3.02 PREPARATION OF EXISTING SURFACED ROADS AND STREETS

A. Before overlay of asphalt pavement on an existing surface, all faulty asphalt patches, grease drippings, and any other objectionable matter shall be entirely removed from the existing pavement. The existing pavement shall be thoroughly cleaned by sweeping to remove dust and other foreign matter.

B. A tack coat of emulsified asphalt shall be applied uniformly to all existing surfaces on which any course of asphalt pavement is to be placed, applied at a rate determined by the Civil Engineer of Record.

C. Preparation of Asphalt Patches

1. Where existing asphalt pavement must be removed due to deterioration and/or settlement, the area shall be uniformly defined in size and shape. The existing asphalt shall be removed by cutting pavement vertically at a sufficient distance (at least 6-inches) beyond the damaged pavement. Then the affected pavement shall be broken up and removed.

2. The base course under the removed pavement shall be restored or replaced to correct the condition that caused the deterioration and/or settlement. This shall be shown in the project plans and specifications.

D. Miscellaneous Details of Construction

1. Unless otherwise specified, construction of one course or lift upon another shall not proceed until the underlying course is completely cooled and set.

2. Where the asphalt pavement is to be placed against a cement concrete or stone curb or gutter, against a cold pavement joint or any metal surface, a thick paint of tack coat (generally SS1 tack oil) shall be applied in advance of the placing. The application shall be thin and uniform.

3. Existing curbs and gutters shall be protected from overspray with splash board.

E. Unfavorable Weather: Asphalt shall not be applied when the ground temperature is lower than 50^{o} F or unless otherwise specified. Placement of asphalt during inclement weather requires specific approval from the WSU Construction Manager.

1. When the WSU CM approves placement of asphalt during inclement weather, Contractor shall apply a top seal coat at a later date, when weather conditions allow.

END OF SECTION