

SECTION 2200 - PAVING

**CITY OF LEE’S SUMMIT, MISSOURI
STANDARD SPECIFICATIONS**

The City of Lee’s Summit hereby adopts Section 2200 of the Kansas City Metropolitan Chapter of APWA Construction and Material Specifications, current edition. The following additions, deletions and/or revisions are adopted as a part of Section 2200 for use within Lee’s Summit. Text in bold italics indicates revisions or additions to the APWA standard.

2201 SUBGRADE PREPARATION:

2201.4.E Roll Testing of compacted Subgrade: ADD the following paragraph:

Roll testing shall be conducted on the finished layer of improved subgrade. Chemical stabilized subgrade shall be roll tested in accordance with Section 2202.7.1 or 7.2, whichever is applicable. Subgrade mechanically stabilized with geogrid or woven geotextile overlaid by aggregate base shall be roll tested on the finished aggregate base layer instead of the unimproved subgrade soils. Areas failing roll testing will be reworked and retested.

The City will have the final authority in approving or failing roll testing. The Contractor/Developer shall retain a qualified testing lab as described in Section 1000, Appendix B at no cost to the City.

2201.4 Subgrade Construction: ADD the following

F. Quality Control Testing:

TEST	FREQUENCY
<i>Density/Moisture Curve</i>	<i>1 per material Type</i>
<i>Gradation</i>	<i>1 per material Type</i>
<i>Plasticity Index</i>	<i>1 per material Type</i>
<i>In-Place Moisture Density</i>	<i>1 per 500 square yards of subgrade Minimum, 4 per day</i>
<i>Roll testing</i>	<i>Per Section 2201.4.E above</i>

2202.1 Scope: ADD the following:

Subgrade stabilization material shall be one of the following, as indicated on the plans.

A. Chemical Stabilization with either Fly ash, Portland Cement, hydrated lime, quicklime or Lime Kiln Dust (LKD).

B. Mechanical Stabilization will use Biaxial Geogrid, Triangular Geogrid, or Woven Polypropylene Geotextiles for roadway construction that are listed in the current Lee’s

Summit Public Works Approved Products List.

2202.5 Thickness MODIFY as follows:

Minimum thickness for compacted soil mixture shall be 9 inches.

2202.7 Subgrade Stabilization: ADD the following

F. Quality Control Testing:

<i>TEST</i>	<i>FREQUENCY</i>
<i>Density/Moisture Curve</i>	<i>1 per material Type</i>
<i>Gradation</i>	<i>1 per material Type</i>
<i>Plasticity Index</i>	<i>1 per material Type</i>
<i>In-Place Moisture Density</i>	<i>1 per 750 square yards of subgrade Minimum, 4 per day</i>
<i>Roll testing</i>	<i>Per Section 2201.4.E above</i>

2203 UNTREATED COMPACTED AGGREGATE

2203.3.A. Materials: ADD the following sentence at the end.

MoDOT Type 5 aggregate may be used for untreated aggregate layer in lieu of the material specified in this paragraph.

2203.4.A.7. Untreated Compacted Aggregate Construction: ADD the following

7. Quality Control Testing:

<i>TEST</i>	<i>FREQUENCY</i>
<i>Density/Moisture Curve</i>	<i>1 per material Type</i>
<i>Gradation</i>	<i>1 per material Type</i>
<i>Plasticity Index</i>	<i>1 per material Type</i>
<i>In-Place Moisture Density</i>	<i>1 per 750 square yards of agg. base Minimum, 4 per day</i>
<i>Roll testing</i>	<i>Per Section 2201.4.E above</i>

Testing shall be performed by a qualified testing lab hired by the Contractor.

Any work by Contractor prior to test submittals and subsequent City's review and approval shall be work done at the Contractor's risk.

Test reports shall be submitted to the City daily. The reports shall clearly indicate the location of all tests by street name, station and/or lot number, type of subgrade material, and subgrade elevation of test. The reports shall include the results of all tests (pass or fail) and all re-tests.

2203 DRAINABLE BASE COURSE:

2203.4.C Plant Mix Bituminous Drainable Base Course: ADD the following:

6. *and handle, place and compact materials in accordance with the following.*
- a. *Contamination of the finished base material that affects the drainage capability of the product shall not be permitted. Any areas determined to be contaminated shall be completely removed without disturbing the adjacent or underlying material and replaced at contractor's expense.*
 - b. *Rutting or other displacement of the permeable base or the underlying base will not be permitted. If displacement occurs, the material shall be completely removed without disturbing the adjacent or underlying material and shall be replaced at the contractor's expense.*
 - c. *A minimum of three passes of a 5 to 10 ton steel wheel roller shall be made, compacting the material until no further displacement is noted. Compaction shall begin as soon after spreading the mixture as the mixture is able to bear the weight of the roller without undue displacement and shall be completed before the temperature of the mixture drops below 100 F. The compacted thickness of a single lift shall be a maximum of 4 inches.*

2205 ASPHALTIC CONCRETE SURFACE AND BASE

2205.3 Materials: ADD the following.

2205.3.A

<i>Asphalt location</i>	<i>Mix Type</i>	<i>Recycled Mix Allowed?</i>	<i>Upper PG Limit</i>	<i>Lower PG limit</i>
<i>Industrial/Arterial surface</i>	<i>5 or 6</i>	<i>no</i>	<i>70 or greater</i>	<i>-22 or less</i>
<i>Base courses greater than 2 inches below the surface on industrial and arterial streets</i>	<i>5</i>	<i>yes</i>	<i>64 or greater</i>	<i>-22 or less</i>
<i>Local and Collector surface</i>	<i>5 or 6</i>	<i>no</i>	<i>64 or greater</i>	<i>-22 or less</i>
<i>Base courses greater than 2 inches below the surface on local and collector streets</i>	<i>5</i>	<i>yes</i>	<i>64 or greater</i>	<i>-22 or less</i>

2205.9.E Density and Surface Requirements: DELETE the last sentence: “Tests shall be performed at intervals as directed by the Engineer” and

REPLACE with “*Test shall be performed as required by the DCM Section 1000 – Appendix A, 2201.4 Subgrade Construction:* ADD the following

2206 ASPHALT CRACK SEALING, ASPHALT CRACK FILLING, CHIP SEALING, SLURRY SEALING, AND MICROSURFACING

2206.3 Crack Sealing/Filling: Delete paragraph A and replace with the following:

A. *Crack Sealant and Filler Material: Material shall comply with ASTM D6690 Type II as shown below.*

<u>TEST</u>	<u>METHOD</u>	<u>SPECIFICATION</u>
<i>Cone Penetration at 25°C (77°F)</i>	<i>ASTM D5329</i>	<i>90 max</i>
<i>Softening Point</i>	<i>ASTM D36</i>	<i>80°C (176°F) minimum</i>
<i>Bond at -29°C (-20°F), 50% extension</i>	<i>ASTM D5329</i>	<i>Pass 3 cycles</i>
<i>Resilience</i>	<i>ASTM D5329</i>	<i>60% minimum</i>
<i>Asphalt Compatibility</i>	<i>ASTM D5329</i>	<i>Pass</i>

Additionally, material shall meet the following standards:

<u>TEST</u>	<u>METHOD</u>	<u>SPECIFICATION</u>
<i>Application Temperature Range</i>	<i>ASTMD5167</i>	<i>193 – 204°C (380 – 400°F)</i>
<i>Maximum Heating Temperature</i>	<i>ASTM D6690</i>	<i>204°C (400°F)</i>

2208 PORTLAND CEMENT CONCRETE PAVEMENT

2208.6 Repairing Defects: DELETE section 2208.10 in its entirety and replace with the following:

Any damaged concrete panel, or panels, with random cracking shall be removed and replaced at the Contractor’s expense. The minimum replacement area shall be one full panel. Any alternate repair methods shall be approved by the Owner.

2208.3.A Materials-Concrete: DELETE Paragraphs 1-4, and REPLACE with the following.

All concrete materials for paving curb and gutter, sidewalks, paths, commercial driveways and other pavements in the right of way shall conform to the KCMMB specifications. Note that KCMMB, although recommended, is not required for residential driveways.

2208.3.B Materials-Reinforcement: DELETE Paragraphs 1 and REPLACE with the following.

Bars: All bars shall be Epoxy coated and shall conform to ASTM A775.

2209 CURBING

2209.4.D Construction Details: Revise paragraph D to read as follows:

D. Curb Machine: *A slip-form curb machine shall be used to place any section of curb greater than 100 feet in length.* The machine must be equipped with mechanical internal vibrators and capable of placing curb to the correct cross section, line and grade within the allowable tolerances.

2209.4.E.2 Contraction Joints: Delete the first sentence of paragraph 2. and replace with the following:

Curbing for asphalt pavements shall have contraction joints at intervals of not more than 10 feet. They shall extend through the entire curb section from the top of the curb to a depth 2 inches below pavement surface

Curbing for concrete pavements shall have contraction joints aligned with transverse pavement joints, but no greater than 15-foot intervals.

2209.4.E.3 ADD the following

3. Longitudinal joints: Generally, longitudinal joint spacing should have the same spacing as the transverse joint spacing. The ratio between transverse and longitudinal joint spacing should not exceed 1.25. If monolithic curb is used, the width of the curb and gutter is included in the panel width along longitudinal joints. Maximum longitudinal spacing is shown in Table below:

<u><i>Thickness of PCC</i></u>	<u><i>Max. Longitudinal joint spacing</i></u>
<u><i>6 inch</i></u>	<u><i>12 feet</i></u>

<u>7 inch</u>	<u>14 feet</u>
<u>8 inch</u>	<u>14 feet</u>
<u>9 inch</u>	<u>15 feet</u>

2211 SMOOTHNESS

2211.4 Construction: *DELETE and replace with the following*

A. Arterials and Collectors:

- 1. Pavement smoothness on major arterial and minor arterial streets will be measured at the Contractor's expense by a 25-foot California profilograph using a 0.2 inch blanking band. Run one trace three feet from the longitudinal joint between the lanes, and another three feet from the shoulder or curb edge of the lane (five feet from the back of curb). The profilograph and testing shall be performed by a trained and certified operator. A copy of the operator's profilograph certification shall be submitted to the City prior to testing. The Contractor shall provide the Engineer with the profilogram and its evaluation within two days after paving has been completed.*
- 2. All pavements will be corrected at the Contractor's expense to less than 15 inches per mile. Pavement sections with a horizontal curve radius of less than 300 feet and/or vertical curves or transition areas with K values less than 30 will be excluded from the profilograph specification. Bumps greater than 0.25 inches in 25 feet shall be corrected to a bump height of less than 0.25 inches.*
- 3. For asphalt pavements, the profiligraph shall be run on the top of the base course. Grinding and corrections shall be made on the base course before placing the final surface course.*

B. Local and Access Roads:

- 1. Finished pavements on local roads, access roads and other areas exempted from profilographing shall be checked with a 10 foot straightedge placed parallel to the center line at any location within a driving lane. Areas showing high spots of more than 1/4 of an inch in 10 feet shall be marked and ground down with approved grinding equipment to an elevation where the area or spot will not show surface deviations in excess of 1/8 inch when tested with a 10 foot straight edge.*

2. *For asphalt pavements, the straight-edge smoothness shall be measured on the top of the base course. Grinding and corrections shall be made on the base course before placing the final surface course.*

C. Corrections.

1. *Smoothness corrections shall be made by diamond grinding. Grinding will be performed on the full width of the lane failing to meet the smoothness criteria. The cost of correcting the smoothness and associated traffic control shall be at Contractor's expense.*

D. Final Report:

The Contractor shall submit a final report to the Engineer with final profilograph results or straightedge measurements verifying compliance with the specified pavement smoothness requirements.

E. Measurement and Payment:

There is no measurement or payment for smoothness. These items shall be subsidiary to other pay items. There are no pay adjustments (incentive or disincentive) shall be made to the smoothness or pavement items based on the results of the profilograph testing.