

## **TECHNICAL SPECIFICATIONS**

**SCOPE OF WORK:**

There are many parking areas at Louisville Metro Housing Authority's properties that are in need of repaving, sealing and/or striping throughout the city of Louisville. This project consists of all aspects of repair to these parking areas from grinding top 1.5", site preparation, tack coat, providing a 1.5 " asphalt surface course to sealing and striping the lots.

All parking spaces shall have a concrete wheel bumper. if broken or missing replaced with new

Work will be specified on each individual area photo of that particular site.

After curing of the lots (repave, repair, top) striping lines shall be white and 4" wide. After striping, the lots shall be blocked off and/or watched until striping is capable of handling vehicular traffic.

Any handicap parking areas to remain.

## HOT-MIX ASPHALT PAVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes all work; labor, machinery, disposal and replacement of unsuitable soil, removal of any materials encountered to plan bottom depth for all pavement related items. These items shall include, but are not limited to, repair and placement procedures for pavements. No change in the contract price will be considered for any materials encountered and/or required to be removed, or replaced to achieve the plan requirements.

1. Cold milling (min. 1 1/2") of existing hot-mix asphalt pavement.
2. Hot-mix asphalt paving overlay.
3. Pavement-marking paint.

#### 1.3 SYSTEM DESCRIPTION

- A. Provide hot-mix asphalt paving according to materials, workmanship, and other applicable requirements of standard specifications of the Kentucky Transportation Cabinet (KTC), except as modified herein.

1. Standard Specification: Kentucky Transportation Cabinet (KTC) Standard Specifications for Road and Bridge Construction, latest edition, and Supplemental Specifications to the Standard Specifications.
2. Additional Reference: Asphalt Institute MS-2
3. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.
4. KYTC – Super Pave Asphalt shall not be used on this project. All pavement shall be class "1"

#### 1.4 SUBMITTALS

- A. Job-Mix Designs: For each job mix proposed for the Work.
- B. Material Certifications stating that the job-mix design materials meet the requirements of the Specifications.

## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who has completed hot-mix asphalt paving similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Manufacturer Qualifications: Engage a firm experienced in manufacturing hot-mix asphalt similar to that indicated for this Project and with a record of successful in-service performance.
  - 1. Firm shall be a registered and approved paving mix manufacturer with authorities having jurisdiction or with the DOT of the state in which Project is located.
- C. Regulatory Requirements: Conform to applicable standards of authorities having jurisdiction for asphalt paving work.
- D. Asphalt-Paving Publication: Comply with AI's "The Asphalt Handbook," except where more stringent requirements are indicated.
- E. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
  - 2. Review condition of preparatory work.
  - 3. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.
  - 4. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.
- B. Store pavement-marking materials in a clean, dry, protected location and within temperature range required by manufacturer. Protect stored materials from direct sunlight.

## 1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp. Comply with the provisions of KTC Standard Specifications Section 403.03.01 for temperature requirements. Asphalt Pavement may be placed between November 15<sup>th</sup> and April 1<sup>st</sup> if the ambient temperature requirements are met.
- B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F (4 deg C) for oil-based materials, 50 deg F (10 deg C) for water-based materials, and not exceeding 95 deg F (35 deg C).

1.8 WARRANTY

- A. Submit three (3) year written dual warranty by materials manufacturer and contractor.
- B. Warranty will include statements that warrant performance of the coating against flaking, chipping, loss of adhesion or other abnormal wear.
- C. In the event of abnormal wear within the warranty period manufacturer will supply material and contractor will recoat with specified material to the affected area at no cost to the owner.

PART 2 - PRODUCTS

2.1 AGGREGATES

- A. General: Use materials and gradations that have performed satisfactorily in previous installations.
- B. Coarse Aggregate: Sound, angular crushed stone, or crushed gravel, complying with KTC Standard Specifications Section 805.
- C. Fine Aggregate: Natural sand or sand prepared from stone, gravel, properly cured blast-furnace slag, or combinations thereof complying with KTC Standard Specifications Section 804.
- D. Recycled (Reclaimed) Asphalt Pavement (RAP): milled or removed asphalt pavement may be utilized in accordance with KTC Standard Specifications Section 409.

2.2 ASPHALT MATERIALS.

- A. Tack Coat: Comply with provisions in KTC Standard Specifications Section 406.

2.3 AUXILIARY MATERIALS

- A. Pavement-Marking Paint: Alkyd-resin type, ready-mixed, complying with FS TT-P-115, Type I, or AASHTO M-248, Type N.
- B. Glass Beads: AASHTO M-247.

2.4 MIXES

- A. Hot-Mix Asphalt: Hot-laid, hot-mix asphalt plant mixes designed according to procedures established by the Kentucky Transportation Cabinet (KTC) or Asphalt Institute (AI) MS-2 and complying with the following requirements.

- 1. Provide mixes complying with composition, grading, and tolerance requirements in KTC Standard Specifications or AI MS-2 for the following nominal, maximum aggregate sizes:

- a. Surface Course: Mixture with a nominal maximum aggregate size of 0.38 inch (9.5 mm) with a minimum VMA of 14 percent.

## 2.6 MATERIALS

### A. Pavement Primer:

1. Acrylic based primer compatible with pavement coating.

### B. Oil Spot Primer:

1. Water based acrylic oil spot primer compatible with pavement coating.

### C. Sand: As recommended in printed data sheets by sealer manufacturer.

1. Washed dry silica sand free of dust, trash, clay, organic materials or other contaminants.
2. Gradation: To have an American Foundry Society grain fineness number that is no less than fifty (50) and no more than seventy (70), when tested in accordance with ASTM C 136.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. All existing asphalt to be milled to a min. depth of 1 1/2".
- B. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.
- C. Proof-roll sub-base (where applicable) using loaded dump trucks or heavy rubber-tired construction equipment to locate areas that are unstable or that require further compaction.
- D. Proceed with paving only after unsatisfactory conditions have been corrected.
- E. Patching: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

### 3.2 COLD MILLING

- A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.
  1. Mill to a depth of **1-1/2 inches**.
  2. Mill to a uniform finished surface free of excessive gouges, grooves, and ridges.
  3. Control rate of milling to prevent tearing of existing asphalt course.
  4. Repair or replace curbs, driveway aprons, manholes, and other construction damaged during cold milling.

5. Excavate and trim unbound-aggregate base course, if encountered, and keep material separate from milled hot-mix asphalt.
6. Patch surface depressions deeper than 1 inch after milling, before wearing course is laid.
7. Handle milled asphalt material according to approved waste management plan required in Section 017419 "Construction Waste Management and Disposal."
8. Keep milled pavement surface free of loose material and dust.
9. Do not allow milled materials to accumulate on-site.

### 3.3 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
  1. Sweep loose granular particles from surface of unbound-aggregate base course. Do not dislodge or disturb aggregate embedded in compacted surface of base course.
- B. Tack Coat: Comply with provisions in KTC Standard Specifications Section 406.

### 3.4 HOT-MIX ASPHALT PLACING

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Comply with applicable provisions of KTC Standard Specifications Section 403 for delivery, placement, spreading and compaction of the mixture.
  1. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent.
  2. Surface Course to be 1½ inches thick.

### 3.5 INSTALLATION TOLERANCES

- A. Thickness: Compact each course to produce the thickness indicated within the following tolerances:
  1. Surface Course: Plus or minus 1/4 inch (6 mm).
  2. Design for a minimum fall of 1% to facilitate drainage (2% recommended).

### 3.6 PATCHING AND REPAIRS

- A. Patching: Saw cut perimeter of patch and excavate existing pavement section to sound base. Recompact new subgrade. Excavate rectangular or trapezoidal patches, extending 12 inches (300 mm) into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically.
  1. Tack coat faces of excavation and allow to cure before paving.

2. Partially fill excavation with dense-graded, hot-mix asphalt base mix and compact while still hot. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.
  3. Meet the requirements of Section 406 of the KYDOH "Standard Specifications".
- B. Crack and Joint Filling: Remove existing filler material from cracks or joints to a depth of 1/4 inch (6 mm). Refill with asphalt joint-filling material to restore watertight condition. Remove excess filler that has accumulated near cracks or joints.
- C. Tack Coat: Apply uniformly to existing surfaces of previously constructed asphalt or portland cement concrete paving and to surfaces abutting or projecting into new, hot-mix asphalt pavement. Apply at a uniform rate of 0.05 to 0.15 gal./sq. yd. (0.2 to 0.7 L/sq. m) of surface.
1. Allow tack coat to cure undisturbed before paving.
  2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

### 3.7 JOINTS

- A. Construct joints to ensure continuous bond between adjoining paving sections. Construct joints free of depressions with same texture and smoothness as other sections of hot-mix asphalt course.
1. Clean contact surfaces and apply tack coat.
  2. Offset longitudinal joints in successive courses a minimum of 6 inches (150 mm).
  3. Offset transverse joints in successive courses a minimum of 24 inches (600 mm).
  4. Construct transverse joints by bulkhead method or sawed vertical face method as described in AI's "The Asphalt Handbook."

### 3.8 COMPACTION

- A. General: Compact hot-mix paving with hot, hand tampers or vibratory-plate compactors.
1. Complete compaction before mix temperature cools to 185 deg F (85 deg C).
- B. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while still hot, with back of rake or smooth iron. Compact thoroughly using tamper or other satisfactory method.
- C. Repairs: Remove paved areas that are defective or contaminated with foreign materials. Remove paving course over area affected and replace with fresh, hot-mix asphalt.

### 3.9 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Allow paving to cure for 30 days before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.



- D. Apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).

- 1. Broadcast glass spheres uniformly into wet pavement markings at a rate of 6 lb/gal. (0.72 kg/L).

### 3.10 APPLICATION

- A. Apply all coats uniformly at a rate of 0.14 - 0.17 gallons per square yard per coat using mixed diluted material.
- B. Allow each coat to cure sufficiently to take traffic without scuffing.
- C. Allow final coat to cure a minimum of twenty four (24) hours under good drying conditions before allowing traffic.

### 3.11 FIELD QUALITY CONTROL

- A. Remove and replace asphalt where test results or measurements indicate that it does not comply with specified requirements.

END OF SECTION

# Parking Lot Paving and/or Striping

## Scattered Sites – Phase II

### Proposal #1492

- 4400 Noltemeyer Wynde Ct. – Scattered Sites #17
- 2903 Six Mile Ln. - Scattered Sites #34
- 9910 Taylorsville Rd. - Scattered Sites #34
- 4502 & 4509 Landside Dr. - Scattered Sites #34
- 3332 Breckinridge Ln. - Scattered Sites #34
- 4317 Norbrook - Scattered Sites #34
- 5508 DelMaria Way - Scattered Sites #34



## Noltemeyer Wynde

Grinding 1.5 inches, site prep, tack coat, 1.5 Asphalt Surface Coarse and Striping.

42 Parking Spaces 15 Handicap and No Parking at Dumpster

Parking Spaces – Handicap Spaces

- A- 8-1
- B- 0-8
- C- 13-1
- D- 3-3
- E- 5-2
- F- 13-0



**2903 Six Mile Ln.**

Grinding 1.5 inches, site prep, tack coat, 1.5 Asphalt Surface Coarse and Striping.

24 Parking Spaces 1 Handicap and No Parking at Dumpster

Parking Spaces – Handicap Spaces

- A. 2 - 0
- B. 3 - 0
- C. 13 - 1



### Taylorsville Road

Grinding 1.5 inches, site prep, tack coat, 1.5 Asphalt Surface Coarse and Striping.

17 Parking Spaces 0 Handicap and No Parking at Dumpster



**4502 Landside Drive**

Grinding 1.5 inches, site prep, tack coat, 1.5 Asphalt Surface Coarse and Striping.

9 Parking Spaces 0 Handicap and No Parking at Dumpster



**4509 Landside Drive**

Grinding 1.5 inches, site prep, tack coat, 1.5 Asphalt Surface Coarse and Striping.

8 Parking Spaces 0 Handicap and No Parking at Dumpster



**3332 Breckinridge Ln.**

Grinding 1.5 inches, site prep, tack coat, 1.5 Asphalt Surface Coarse and Striping.

20 Parking Spaces and No Parking at Dumpster

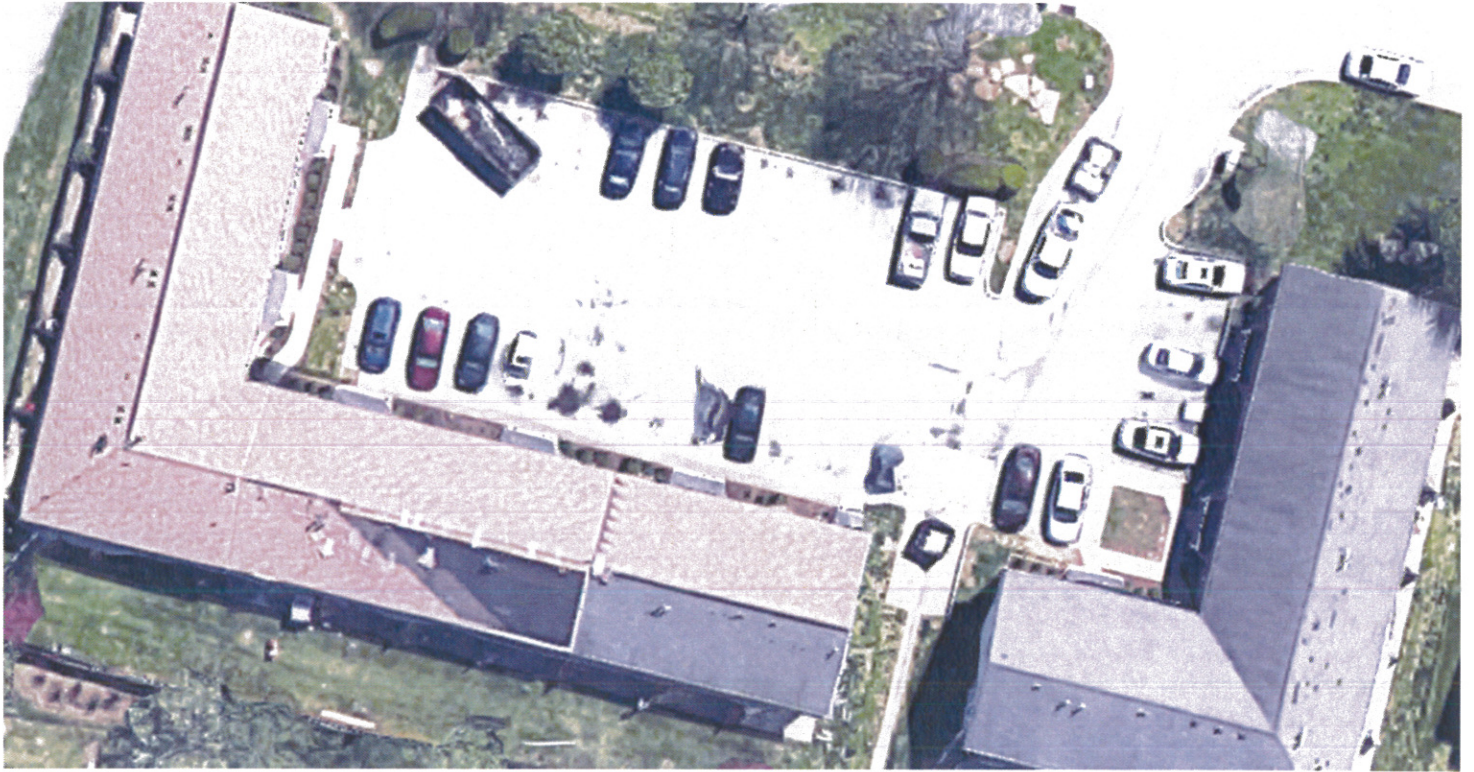




**4317 Norbrook Dr.**

Grinding 1.5 inches, site prep, tack coat, 1.5 Asphalt Surface Coarse and Striping.

14 Parking Spaces and No Parking at Dumpster



### DelMaria Way

Grinding 1.5 inches, site prep, tack coat, 1.5 Asphalt Surface Coarse and Striping.

31 Parking Spaces 0 Handicap and No Parking at Dumpster

Parking Spaces

- A. 7
- B. 12
- C. 12