ADDENDUM NO. 01

Issued: February 8, 2021

Project: Shawnee Mission School District
2021 Asphalt Improvements

Project No’s: 20122.00

Owner: Shawnee Mission School District
8200 W. 71 st Street
Shawnee Mission, Kansas 66204

Bidding Documents Issued: January 27, 2021

This Addendum includes these 2 pages and the following attachments:

- Pre-Bid Conference Sign in Sheet

- Project Manual:
  - Reissued Section 321216 – “Asphalt Paving” consisting of 8 pages

- Drawings:
  - N/A

GENERAL – BIDDER’S QUESTIONS

G1 QUESTION: PLEASE CLARIFY SEAL COAT?

G1.1 Answer: See attached reissues specification section 321216 “Asphalt Paving”.

G2 QUESTION: IS THERE CRACK FILLING REQUIRED AT EACH LOCATION?

G2.1 Answer: Yes, see quantities below:

- Apache (4,000 LF)
- Briarwood (2,000 LF)
- Broadmoor (N/A)
- Comanche (1,500 LF)
- Corinth (1,500 LF)
- Indian Creek (N/A)
- Indian Woods (N/A)
- OPES (N/A)
- Career Tech Center (N/A)
- SMDO&M (3,500 LF)
- SMHS (6,500 LF)
- SMWHS (9,500 LF)
- Sunflower (4,000 LF)
- Trailwood (4,000 LF)
SECTION 321216 - ASPHALT PAVING ADDENDUM #1

PART 1 GENERAL (FROM 17116, 17064, 17100)

1.1 SUMMARY

A. Section Includes:
   1. Cold milling of existing asphalt pavement.
   2. Hot-mix asphalt patching.
   3. Hot-mix asphalt paving.
   4. Hot-mix asphalt overlay.
   5. Asphalt surface treatments.

B. Related Requirements:
   1. Section 012200 “Unit Prices” for unit prices affecting the work of this section.
   2. Section 321313 “Concrete Paving” for concrete pavement and for separate concrete curbs, gutters, and driveway aprons.
   3. Section 321373 “Concrete Paving Joint Sealants” for joint sealants and fillers at pavement terminations.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
   1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
      a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
      b. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include technical data and tested physical and performance properties.
   2. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

B. Samples for Verification: For the following product, in manufacturer's standard sizes unless otherwise indicated:
   1. Paving Fabric: 12 by 12 inches minimum.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and testing agency.

B. Material Certificates: For each paving material. Include statement that mixes containing recycled materials will perform equal to mixes produced from all new materials.

C. Material Test Reports: For each paving material, by a qualified testing agency.

D. Field quality-control reports.
1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located.

B. 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 as follows:
   1. Installer shall have not less than 5 years experience under the current company name.
   2. Installer shall have successfully completed not less than 10 track projects in the last 3 years.

C. Asphalt Monitoring: Architect and Owner may monitor asphalt placement and compaction operations, reporting on compliance with specified requirements.
   1. Asphalt determined to be in non-compliance shall be corrected by the Contractor at no additional cost to the Owner.

D. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.

E. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of local state department of transportation for asphalt paving work.
   1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.
   2. State Regulatory Requirements:

1.6 FIELD CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
   1. Prime Coat: Minimum surface temperature of 60 deg F.
   2. Tack Coat: Minimum surface temperature of 60 deg F.
   4. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
   5. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

B. Bituminous Paver: The paver shall be equipped with an approved automatic screed control system capable of grade reference and transverse slope control. The automatic controls shall include a system of sensor-operated devices which sense and follow reference lines or surfaces on one or both sides of the paver. The screed shall be maintained at the proper elevation at each end by controlling the elevation on one end while automatically controlling the transverse slope, or by controlling the elevation of each end independently.

PART 2 PRODUCTS

2.1 MATERIALS - GENERAL

A. General: All work as herein called for shall be done in accord with the latest edition of APWA referenced specification “Standard Specifications for Highway Construction, latest edition” and referenced standards from the local state department of transportation. The work herein required is not of the magnitude of work described in the aforesaid Standard Specification, therefore only applicable limitations will be enforced. However, this is not a relaxing of the requirements for the quality of the work. When work is obviously substandard, necessary tests will be made for compliance to the specifications. Work found to be in noncompliance with the specification shall be removed and replaced, at the expense of the Contractor, including the cost of all tests.
2.2 AGGREGATES

A. General: Use locally available materials and gradations that exhibit a satisfactory record of previous installations.

B. Coarse Aggregate: ASTM D 692/D 692M, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.

C. Fine Aggregate: ASTM D 1073 or AASHTO M 29, sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.
   1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

D. Mineral Filler: ASTM D 242/D 242M or AASHTO M 17, rock or slag dust, hydraulic cement, or other inert material.

2.3 ASPHALT MATERIALS

A. Asphalt Binder: ASTM D 6373 or AASHTO M 320 binder designation PG 64-22.
   1. Provide asphalt binder in accordance with local state department of transportation referenced specification of type as recommended by local paving authorities to suit project conditions.

B. Asphalt Cement: ASTM D 3381/D 3381M for viscosity-graded material or ASTM D 946/D 946M for penetration-graded material.
   1. Provide asphalt cement in accordance with local state department of transportation referenced specification of type as recommended by local paving authorities to suit project conditions.

   1. Provide Cutback Prime Coat in accordance with local state department of transportation referenced specification of type as recommended by local paving authorities to suit project conditions.

D. Emulsified Asphalt Prime Coat: ASTM D 977 or AASHTO M 140 emulsified asphalt, or ASTM D 2397/D 2397M or AASHTO M 208 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.
   1. Provide Emulsified Asphalt Prime Coat in accordance with local state department of transportation referenced specification of type as recommended by local paving authorities to suit project conditions.

E. Tack Coat: ASTM D 977 or AASHTO M 140 emulsified asphalt, or ASTM D 2397/D 2397M or AASHTO M 208 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.
   1. Provide Tack Coat in accordance with local state department of transportation referenced specification of type as recommended by local paving authorities to suit project conditions.

F. Fog Seal: ASTM D 977 or AASHTO M 140 emulsified asphalt, or ASTM D 2397/D 2397M or AASHTO M 208 cationic emulsified asphalt, slow setting, factory diluted in water, of suitable grade and consistency for application.

   a. Pavement sealer shall be a rubber fortified heavy-bodied and high-solids refined coal tar pitch emulsion meeting ASTM D 3320-00.
   b. Sand: Clean, hard and durable, free from clay, salt and organic matter. Sand shall be well graded as follows: U.S. Sieve/Total % Retained; No. 30 / 0.10, No. 40 / 4.80, No. 50 / 34.20, No. 70 / 36.90, No. 100 / 17.60, No. 140 / 5.90, No. 200 / 0.20 and No. 270 / 0.10.

H. Water: Potable.

2.4 AUXILIARY MATERIALS

A. Recycled Materials for Hot-Mix Asphalt Mixes: Reclaimed asphalt pavement; reclaimed, unbound-aggregate base material; and recycled tires or asphalt shingles from sources and gradations that have performed satisfactorily in previous installations, equal to performance of required hot-mix asphalt paving produced from all new materials.

B. Herbicide: Commercial chemical for weed control, registered by the EPA, and not classified as "restricted use" for locations and conditions of application. Provide in granular, liquid, or wettable powder form.

C. Sand: ASTM D 1073 or AASHTO M 29, Grade No. 2 or No. 3.

D. Paving Geotextile: AASHTO M 288 paving fabric; nonwoven polypropylene; resistant to chemical attack, rot, and mildew; and specifically designed for paving applications.

E. Joint Sealant: ASTM D 6690, Type II or III, hot-applied, single-component, polymer-modified bituminous sealant.

2.5 MIXES

A. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction and complying with the following requirements:
   1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.

B. Emulsified-Asphalt Slurry: ASTM D 3910, Type 1.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protection: Provide protective materials, procedures, and worker training to prevent asphalt materials from spilling, coating, or building up on curbs, driveway aprons, manholes, and other surfaces adjacent to the Work.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
   1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
   2. Proof roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
   3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

3.3 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 as indicated on Drawings.
   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 as required by local and state authority having jurisdiction.
8. Keep milled pavement surface free of loose material and dust.
9. Do not allow milled materials to accumulate on-site.

3.4 DEMOLITION OF EXISTING ASPHALT PAVING

A. Temporary Shoring: Provide, and maintain shoring, bracing, and supports as required to preserve stability and prevent movement, settlement, or collapse of existing asphalt paving to remain, and to prevent unexpected or uncontrolled movement or collapse of asphalt paving being demolished.

B. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
   1. Neatly cut asphalt plumb, square, and true to dimensions required. Use cutting methods least likely to damage asphalt paving to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping.
   2. Demolish in small sections. Saw-cut perimeter of area to be demolished, and then break up and remove.
   3. Dispose of demolished items and materials promptly.

3.5 PATCHING

A. Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

B. Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseat concrete pieces firmly.
   1. Undersealing: Pump hot undersealing asphalt under rocking slab until slab is stabilized or, if necessary, crack slab into pieces and roll to reseat pieces firmly.
   2. Remove disintegrated or badly cracked pavement. Excavate rectangular or trapezoidal patches, extending into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Recompact existing unbound-aggregate base course to form new subgrade.

C. Tack Coat: Before placing patch material, apply tack coat uniformly to vertical asphalt surfaces abutting the patch. Apply at a rate of 0.05 to 0.15 gal./sq. yd.:
   1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
   2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

D. Placing Patch Material: Fill excavated pavement areas with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

3.6 REPAIRS

A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.
   1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.

B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch.
   1. Clean cracks and joints in existing hot-mix asphalt pavement.
   2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.
   3. Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.
3.7 SURFACE PREPARATION

A. Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
   1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

C. Cutback Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd.. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.
   1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
   2. Protect primed substrate from damage until ready to receive paving.

D. Emulsified Asphalt Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.10 to 0.30 gal./sq. yd. per inch depth. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.
   1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
   2. Protect primed substrate from damage until ready to receive paving.

E. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd..
   1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
   2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.8 PAVING GEOTEXTILE INSTALLATION

A. Apply tack coat, asphalt binder, or asphalt cement uniformly to existing pavement surfaces at a rate of 0.20 to 0.30 gal./sq. yd..

B. Place paving geotextile promptly according to manufacturer's written instructions. Broom or roll geotextile smooth and free of wrinkles and folds. Overlap longitudinal joints 4 inches and transverse joints 6 inches.

C. Protect paving geotextile from traffic and other damage, and place hot-mix asphalt overlay the same day.

3.9 PLACING HOT-MIX ASPHALT

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
   1. Place hot-mix asphalt surface course in single lift.
   2. Spread mix at a minimum temperature of 250 deg F.
   3. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
   4. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.
   1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement about 1 to 1-1/2 inches from strip to strip to ensure proper compaction of mix along longitudinal joints.
   2. Complete a section of asphalt base course before placing asphalt surface course.
C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.10 JOINTS

A. Construct joints to ensure a 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 to joints.
   2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
   3. Offset transverse joints, in successive courses, a minimum of 24 inches.
   4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to Al MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."
   5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
   6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.11 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
   1. Complete compaction before mix temperature cools to 185 deg F.
B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
   1. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041/D 2041M, but not less than 90 percent or greater than 96 percent.
D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.12 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
   1. Base Course: Plus or minus 1/4 inch.
   2. Surface Course: Plus 1/4 inch, no minus.
B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
   1. Base Course: 1/4 inch.
   2. Surface Course: 1/8 inch.
   3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.
3.13 SURFACE TREATMENTS

A. Fog Seals: Apply fog seal at a rate of 0.10 to 0.15 gal./sq. yd. to existing asphalt pavement and allow to cure. With fine sand, lightly dust areas receiving excess fog seal.

B. Sand and Slurry Seals: Apply sand slurry coat in three applications for all drive lanes and two applications on parking areas. Apply each application in a uniform thickness according to ASTM D 3910 and slurry seal manufacturer’s recommendations. Allow to cure.
   1. Roll slurry seal to remove ridges and provide a uniform, smooth surface.
   2. Mix Rate for First Coat: 0.12 to 0.15 gallons/sq yd of sealer to 4 lbs (dry weight) per gallon sand.
   3. Mix Rate for Second Coat: 0.08 to 0.12 gallons/sq yd of sealer to 4 lbs (dry weight) per gallon sand.
   4. Mix Rate for Third Coat: 0.08 to 0.12 gallons/sq yd of sealer to 4 lbs (dry weight) per gallon sand.

3.14 ASPHALT REPAIR

A. All asphalt areas to receive synthetic track surfacing shall be clean, sound, free of grease, oils and other foreign materials.
   1. Any oil spills (hydraulic, diesel, motor oil, etc.) must be completely removed, either by chipping out or removing and replacing with new, keyed-in asphalt leveling (surface) course mix.
      a. Minimum depth of asphalt replacement shall be 1-inch.

3.15 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549/D 3549M.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979/D 979M or AASHTO T 168.
   1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041/D 2041M, and compacted according to job-mix specifications.
   2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726/D 2726M.
      a. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, with no fewer than three cores taken.
      b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726/D 2726M.

E. Replace and compact hot-mix asphalt where core tests were taken.

F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

A. END OF SECTION
G3  QUESTION: ON THE SEALCOAT IF THERE’S A CERTAIN SPEC OR ON THE APPLICATIONS IS IT ONE COAT OR TWO COATS AND IS IT A SQUEEGEE OR JUST A SPRAY OR BOTH?

G3.1  Answer: Pro Blend Seal Coat - first application squeegeed to help level out and fill voids and cracks. Second / Third application can be spray or squeegee, contractor option.

G4  QUESTION: DO PAINTED CURBS NEED TO BE RE-STRIPED / PAINTED?

G4.1  Answer: Yes, all curbs are to be repainted.

PROJECT MANUAL REVISIONS

A1  SECTION 000110 - TABLE OF CONTENTS

A1.1  REPLACE existing Section 321216 “Asphalt Paving” with the attached revised Section 321216 “Asphalt Paving”, noted as Addendum #1.

END OF ADDENDUM NO. 01