



COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
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Andy Beshear
GOVERNOR

Jim Gray
SECRETARY

December 7, 2021

CALL NO. 102
CONTRACT ID NO. 211060
ADDENDUM # 2

Subject: Simpson County, NHPP IM 0651 (105)
Letting December 10, 2021

- (1) Added - Special Note - Pages 213(a)-213(b) of 250
- (2) Revised - Proposal Bid Items - Pages 248-250 of 250

Proposal revisions are available at <http://transportation.ky.gov/Construction-Procurement/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

Rachel Mills,

A handwritten signature in cursive script that reads "Rachel Mills".

Rachel Mills, P.E.
Director
Division of Construction Procurement

RM:mr
Enclosures

SPECIAL NOTE FOR PAVER MOUNTED TEMPERATURE PROFILES

This Special Note will apply when indicated on the plans or in the proposal. Section references herein are to the Department's Standard Specifications for Road and Bridge Construction current edition.

1.0 DESCRIPTION. Provide a paver mounted infrared temperature equipment to continually monitor the temperature of the asphalt mat immediately behind all paver(s) during the placement operations for all mainline pavements (including ramps for Interstates and Parkways) within the project limits. Provide thermal profiles that include material temperature and measurement locations.

2.0 MATERIALS AND EQUIPMENT. In addition to the equipment specified in Subsection 403.02 Utilize a thermal equipment supplier that can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verification, and data management and processing as needed during the Project to maintain equipment within specifications and requirements.

Provide operator settings, user manuals, required viewing/export software for analysis. Ensure the temperature equipment will meet the following:

(A) A device with one or more infrared sensors that is capable of measuring in at least 1 foot intervals across the paving width, with a minimum width of 12 feet, or extending to the recording limits of the equipment, whichever is greater. A **Maximum of two (2)** brackets are allowed in the influence area under the sensors. A temperature profile must be made on at least 1 foot intervals longitudinally down the road:

(B) Infrared sensor(s):

(1) Measuring from 32°F to 400°F with an accuracy of $\pm 2.0\%$ of the sensor reading.

(C) Ability to measure the following:

(1) The placement distance using a Global Positioning System (GPS) or a Distance Measuring Instrument (DMI) and a Global Positioning System (GPS).

(2) Stationing

(D) GPS: Accuracy ± 4 feet in the X and Y Direction

(E) Latest version of software to collect, display, retain and analyze the mat temperature readings during placement. The software must have the ability to create and analyze:

(1) Full collected width of the thermal profiles,

(2) Paver speed and

(3) Paver stops and duration for the entire Project.

(F) Ability to export data automatically to a remote data server ("the cloud").

At the preconstruction meeting, provide the Cabinet with rights to allow for web access to the data file location. Access to the data is not to be hindered in any way. The Contractor will provide the Cabinet with any vendor specific software, user id, passwords, etc. needed to access the data through this service, cost of this access is incidental to the thermal profile bid item. The Cabinet is to have access to all data as it is being collected. If a third party is used for collecting and distributing the data the Cabinet is to have the same access rights and time as the Contractor.

This web-based software must also provide the Department with the ability to download the raw files and software and to convert them into the correct format.

(G) The thermal profile data files must provide the following data in a neat easy to read table format.

(1) Project information including Road Name and Number, PCN, Beginning and Ending MPs.

(2) IR Bar Manufacturer and Model number

(3) Number of Temperature Sensors (N)

(4) Spacing between sensors and height of sensors above the asphalt mat

(5) Total number of individual records taken each day (DATA BLOCK)

- (a) Date and Time reading taken
- (b) Latitude and Longitude
- (c) Distance paver has moved from last test location
- (d) Direction and speed of the paver
- (e) Surface temperature of each of the sensors

3.0 CONSTRUCTION. Provide the Engineer with all required documentation at the pre-construction conference.

(A) Install and operate equipment in accordance with the manufacturer’s specifications.

(B) Verify that the temperature sensors are within ± 2.0% using an independent temperature device on a material of known temperature. Collect and compare the GPS coordinates from the equipment with an independent measuring device.

(1) Ensure the independent survey grade GPS measurement device is calibrated to the correct coordinate system (using a control point), prior to using these coordinates to validate the equipment GPS.

(2) The comparison is considered acceptable if the coordinates are within 4 feet of each other in the X and Y direction.

(C) Collect thermal profiles on all Driving Lanes during the paving operation and transfer the data to the “cloud” network or if automatic data transmission is not available, transfer the data to the Engineer at the end of daily paving.

(D) Contact the Department immediately when System Failure occurs. Daily Percent Coverage will be considered zero when the repairs are not completed within two (2) working days of System Failure. The start of this two (2) working day period begins the next working day after System Failure.

(E) Evaluate thermal profile segments, every 150 feet, and summarize the segregation of temperature results. Results are to be labeled as Minimal 0°-25°F, Moderate 25.1°-50°F and Severe >50°. Severe readings over 3 consecutive segments or over 4 or more segments in a day warrant investigation on the cause of the differential temperature distribution.

4.0 MEASUREMENT. The Department will measure the total area of the pavement lanes mapped by the infrared scanners. Full payment will be provided for all lanes with greater than 85% coverage. Partial payment will be made for all areas covered from 50% coverage to 85% coverage at the following rate Coverage area percentage X Total bid amount. And area with less than 50% coverage will not be measured for payment.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

1. Payment is full compensation for all work associated with providing all required equipment, training, and documentation.
2. Delays due to GPS satellite reception of signals or equipment breakdowns will not be considered justification for contract modifications or contract extensions.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	SQFT

PROPOSAL BID ITEMS

Report Date 12/7/21

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	1,045.00	TON		\$	
0020	00100		ASPHALT SEAL AGGREGATE	627.00	TON		\$	
0030	00103		ASPHALT SEAL COAT	75.00	TON		\$	
0050	00194		LEVELING & WEDGING PG76-22	1,000.00	TON		\$	
0060	00210		CL4 ASPH BASE 1.50D PG76-22	748.00	TON		\$	
0070	00342		CL4 ASPH SURF 0.38A PG76-22 (REVISED 12-7-2021)	82,103.00	TON		\$	
0080	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
0090	02677		ASPHALT PAVE MILLING & TEXTURING	82,104.00	TON		\$	
0100	02696		SHOULDER RUMBLE STRIPS	298,289.00	LF		\$	
0110	20071EC		JOINT ADHESIVE	455,498.00	LF		\$	
0120	20509ED		BLOW UP/RELIEF JOINT	320.00	SQYD		\$	
0130	24878EC		ASPHALT EMULSION FOR FOG SEAL	161.00	TON		\$	
0140	24970EC		ASPHALT MATERIAL FOR TACK NON- TRACKING	522.00	TON		\$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0150	00078		CRUSHED AGGREGATE SIZE NO 2	4,345.00	TON		\$	
0160	01005		PERFORATED PIPE EDGE DRAIN-4 IN	14,109.00	LF		\$	
0170	01010		NON-PERFORATED PIPE-4 IN	1,200.00	LF		\$	
0180	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM	1.00	LS		\$	
0190	01020		PERF PIPE HEADWALL TY 1-4 IN	5.00	EACH		\$	
0200	01024		PERF PIPE HEADWALL TY 2-4 IN	5.00	EACH		\$	
0210	01028		PERF PIPE HEADWALL TY 3-4 IN	5.00	EACH		\$	
0220	01032		PERF PIPE HEADWALL TY 4-4 IN	5.00	EACH		\$	
0230	01740		CORED HOLE DRAINAGE BOX CON-4 IN	5.00	EACH		\$	
0240	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	5.00	EACH		\$	
0250	01983		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	5.00	EACH		\$	
0260	02159		TEMP DITCH	36,197.00	LF		\$	
0270	02160		CLEAN TEMP DITCH	18,099.00	LF		\$	
0280	02360		GUARDRAIL TERMINAL SECTION NO 1	5.00	EACH		\$	
0290	02369		GUARDRAIL END TREATMENT TYPE 2A	1.00	EACH		\$	
0300	02381		REMOVE GUARDRAIL	400.00	LF		\$	
0310	02562		TEMPORARY SIGNS	1,200.00	SQFT		\$	
0320	02575		DITCHING AND SHOULDERING	72,394.00	LF		\$	
0330	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0340	02671		PORTABLE CHANGEABLE MESSAGE SIGN	4.00	EACH		\$	
0350	02703		SILT TRAP TYPE A	2.00	EACH		\$	
0360	02704		SILT TRAP TYPE B	2.00	EACH		\$	
0370	02705		SILT TRAP TYPE C	2.00	EACH		\$	
0380	02706		CLEAN SILT TRAP TYPE A	2.00	EACH		\$	
0390	02707		CLEAN SILT TRAP TYPE B	2.00	EACH		\$	
0400	02708		CLEAN SILT TRAP TYPE C	2.00	EACH		\$	

PROPOSAL BID ITEMS

Report Date 12/7/21

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0410	02726		STAKING	1.00	LS		\$	
0420	02775		ARROW PANEL	4.00	EACH		\$	
0430	04903		REFERENCE MARKER	69.00	EACH		\$	
0440	05950		EROSION CONTROL BLANKET	9,680.00	SQYD		\$	
0450	05952		TEMP MULCH	6,453.00	SQYD		\$	
0460	05953		TEMP SEEDING AND PROTECTION	4,840.00	SQYD		\$	
0470	05963		INITIAL FERTILIZER	.50	TON		\$	
0480	05964		MAINTENANCE FERTILIZER	.30	TON		\$	
0490	05985		SEEDING AND PROTECTION	9,680.00	SQYD		\$	
0500	05992		AGRICULTURAL LIMESTONE	6.00	TON		\$	
0510	06401		FLEXIBLE DELINEATOR POST-M/W	883.00	EACH		\$	
0520	06404		FLEXIBLE DELINEATOR POST-M/Y	165.00	EACH		\$	
0530	06412		STEEL POST MILE MARKERS	28.00	EACH		\$	
0540	06511		PAVE STRIPING-TEMP PAINT-6 IN	282,184.00	LF		\$	
0550	06542		PAVE STRIPING-THERMO-6 IN W	217,723.00	LF		\$	
0560	06543		PAVE STRIPING-THERMO-6 IN Y	8,274.00	LF		\$	
0570	06546		PAVE STRIPING-THERMO-12 IN W	9,881.00	LF		\$	
0580	06549		PAVE STRIPING-TEMP REM TAPE-B	1,800.00	LF		\$	
0590	06550		PAVE STRIPING-TEMP REM TAPE-W	7,200.00	LF		\$	
0600	06551		PAVE STRIPING-TEMP REM TAPE-Y	7,200.00	LF		\$	
0610	06556		PAVE STRIPING-DUR TY 1-6 IN W	3,534.00	LF		\$	
0620	06557		PAVE STRIPING-DUR TY 1-6 IN Y	2,356.00	LF		\$	
0630	06568		PAVE MARKING-THERMO STOP BAR-24IN	110.00	LF		\$	
0640	06569		PAVE MARKING-THERMO CROSS-HATCH	307.00	SQFT		\$	
0650	06574		PAVE MARKING-THERMO CURV ARROW	39.00	EACH		\$	
0660	06585		PAVEMENT MARKER TY IVA-MW TEMP	180.00	EACH		\$	
0670	06586		PAVEMENT MARKER TY IVA-MY TEMP	180.00	EACH		\$	
0680	06613		INLAID PAVEMENT MARKER-B W/R	3,931.00	EACH		\$	
0690	06614		INLAID PAVEMENT MARKER-B Y/R	103.00	EACH		\$	
0700	10020NS		FUEL ADJUSTMENT	130,518.00	DOLL	\$1.00	\$	\$130,518.00
0710	10030NS		ASPHALT ADJUSTMENT	327,824.00	DOLL	\$1.00	\$	\$327,824.00
0720	20758ED		REMOVE AND RESET PERF PIPE HEADWALL	5.00	EACH		\$	
0730	21802EN		G/R STEEL W BEAM-S FACE (7 FT POST)	400.00	LF		\$	
0740	23044ES508		CONCRETE MEDIAN BARRIER TY 14C(50)	6.00	LF		\$	
0750	24679ED		PAVE MARK THERMO CHEVRON	3,417.00	SQFT		\$	
0760	24891EC		PAVE MOUNT INFRARED TEMP EQUIPMENT	5,452,299.00	SF		\$	
0770	25075EC		QUEUE PROTECTION VEHICLE	600.00	HOUR		\$	
0780	25117EC		FURNISH QUEUE PROTECTION VEHICLES	12.00	MONT		\$	
0790	26136EC		PORTABLE QUEUE WARNING ALERT SYSTEM	6.00	MONT		\$	
0800	26137EC		QUEUE WARNING PCMS	60.00	MONT		\$	
0810	40030		TEMPORARY SILT FENCE	36,197.00	LF		\$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0820	00078		CRUSHED AGGREGATE SIZE NO 2	151.00	TON		\$	
0830	00462		CULVERT PIPE-18 IN	24.00	LF		\$	
0840	00464		CULVERT PIPE-24 IN	4.00	LF		\$	

PROPOSAL BID ITEMS

Report Date 12/7/21

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0850	01204		PIPE CULVERT HEADWALL-18 IN	3.00	EACH		\$	
0860	01208		PIPE CULVERT HEADWALL-24 IN	2.00	EACH		\$	
0870	01310		REMOVE PIPE	32.00	LF		\$	
0880	01450		S & F BOX INLET-OUTLET-18 IN	2.00	EACH		\$	
0890	02469		CLEAN SINKHOLE	8.00	EACH		\$	
0900	02484		CHANNEL LINING CLASS III	1,355.00	TON		\$	
0910	02555		CONCRETE-CLASS B	4.00	CUYD		\$	
0920	02603		FABRIC-GEOTEXTILE CLASS 2	127.00	SQYD		\$	
0930	02625		REMOVE HEADWALL	6.00	EACH		\$	
0940	22660EN		REPLACE GRATE	4,696.00	LB		\$	
0950	23484EC		PIPE LINER ACCEPTANCE TESTING	1.00	LS		\$	
0960	23956EC		PIPE REPAIR	1.00	EACH		\$	
0970	24585EC		SECURITY PLATE ASSEMBLY	46.00	EACH		\$	
0980	24861EC		PVC FOLD AND FORM PIPE LINER-15 IN	105.00	LF		\$	
0990	24862EC		PVC FOLD AND FORM PIPE LINER-18 IN	315.00	LF		\$	

Section: 0004 - SIGNALIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1000	04830		LOOP WIRE	1,900.00	LF		\$	
1010	04895		LOOP SAW SLOT AND FILL	850.00	LF		\$	
1020	24963ED		LOOP TEST	6.00	EACH		\$	

Section: 0005 - TRAFFIC LOOPS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1030	04793		CONDUIT-1 1/4 IN	160.00	LF		\$	
1040	04795		CONDUIT-2 IN	140.00	LF		\$	
1050	04820		TRENCHING AND BACKFILLING	290.00	LF		\$	
1060	04829		PIEZOELECTRIC SENSOR	18.00	EACH		\$	
1070	04830		LOOP WIRE	9,400.00	LF		\$	
1080	04895		LOOP SAW SLOT AND FILL	1,210.00	LF		\$	
1090	20359NN		GALVANIZED STEEL CABINET	2.00	EACH		\$	
1100	20360ES818		WOOD POST	4.00	EACH		\$	
1110	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	6.00	EACH		\$	
1120	20392NS835		ELECTRICAL JUNCTION BOX TYPE C	1.00	EACH		\$	

Section: 0006 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1130	02568		MOBILIZATION	1.00	LS		\$	
1140	02569		DEMOBILIZATION	1.00	LS		\$	