

STANDARD BID CONDITIONS

M-14-035P

1. **ACCEPTANCE AND REJECTION:** The Arkansas State Highway and Transportation Department (AHTD) reserves the right to reject any or all bids, to accept bids in whole or in part (unless otherwise indicated by bidder), to waive any informalities in bids received, to accept bids on materials or equipment with variations from specifications where efficiency of operation will not be impaired, and to award bids to best serve the interest of the State.
2. **PRICES:** Unless otherwise stated in the Bid Invitation, the following will apply: (1) unit prices shall be bid, (2) prices should be stated in units of quantity specified (feet, each, lbs., etc.), (3) prices must be F.O.B. destination specified in bid, (4) prices must be firm and not subject to escalation, (5) bid must be firm for acceptance for 30 days from bid opening date. In case of errors in extension, unit prices shall govern. Discounts from bid price will not be considered in making awards.
3. **BID BONDS AND PERFORMANCE BONDS:** If required, a **Bid Bond** in the form of a cashier's check, certified check, or surety bond issued by a surety company, in an amount stated in the Bid Invitation, must accompany bid. Personal and company checks are not acceptable as Bid Bonds. Failure to submit a Bid Bond as required will cause a bid to be rejected. The Bid Bond will be forfeited as liquidated damages if the successful bidder fails to provide a required Performance Bond within the period stipulated by AHTD or fails to honor their bid. Cashier's checks and certified checks submitted as Bid Bonds will be returned to unsuccessful bidders; surety bonds will be retained. The successful bidder will be required to furnish a **Performance Bond** in an amount stated in the Bid Invitation and in the form of a cashier's check, certified check, or surety bond issued by a surety company, unless otherwise stated in the Bid Invitation, as a guarantee of delivery of goods/services in accordance with the specifications and within the time established in the bid. Personal and company checks are not acceptable as Performance Bonds. In some cases, a cashier's check or certified check submitted as a Bid Bond will be held as the Performance Bond of the successful bidder. Cashier's checks or certified checks submitted as Performance Bonds will be refunded shortly after payment has been made to the successful bidder for completion of all terms of the bid; surety bonds will be retained. Surety bonds must be issued by a surety company authorized to do business in Arkansas, and must be signed by a Resident Local Agent licensed by the Arkansas State Insurance Commissioner to represent that surety company. Resident Agent's Power-of-Attorney must accompany the surety bond. Certain bids involving labor will require Performance Bonds in the form of surety bonds only (no checks of any kind allowed). In such cases, the company issuing the surety bond must comply with all stipulations herein and must be named in the U. S. Treasury listing of companies holding Certificates of Authority as acceptable sureties on Federal Bonds and as acceptable reinsuring companies. Any excess between the face amount of the bond and the underwriting limitation of the bonding company shall be protected by reinsurance provided by an acceptable reinsuring company. Annual Bid and Performance Bonds on file with E & P Division must have sufficient unencumbered funds to meet current bonding requirements, or the bid will be rejected, unless the balance is submitted as set forth above, prior to bid opening.
4. **TAXES:** The AHTD is not exempt from Arkansas State Sales and Use Taxes, or local option city/county sales taxes, when applicable, and bidders are responsible to the State Revenue Department for such taxes. These taxes should not be included in bid prices, but where required by law, will be paid by the AHTD as an addition thereto, and should be added to the billing to the AHTD. The AHTD is exempt from Federal Excise Taxes on all commodities except motor fuels; and excise taxes should not be included in bid prices except for motor fuels. Where applicable, tax exemption certificates will be furnished by the AHTD.
5. **"ALL OR NONE" BIDS:** Bidders who wish to bid "All or None" on two or more items shall so stipulate on the face of bid sheet; otherwise, bid may be awarded on an individual item basis.
6. **SPECIFICATIONS:** Complete specifications should be attached for any substitution or alternate offered, or where amplification is necessary. Bidder's name must be placed on all attachments to the bid.
7. **EXCEPTIONS TO SPECIFICATIONS:** Any exceptions to the bid specifications must be stated in the bid. Any exceptions to manufacturer's published literature must be stated in the bid, or it will be assumed that bidder is bidding exactly as stated in the literature.
8. **BRAND NAME REFERENCES:** All brand name references in bid specifications refer to that commodity or its equivalent, unless otherwise stated in Bid Invitation. Bidder should state brand or trade name of item being bid, if such name exists.
9. **FREIGHT:** All freight charges should be included in bid price. Any change in common carrier rates authorized by the Interstate Commerce Commission will be adjusted if such change occurs after the bid opening date. Receipted common carrier bills that reflect ICC authorized rate changes must be furnished.
10. **SAMPLES, LITERATURE, DEMONSTRATIONS:** Samples and technical literature must be provided free of any charge within 14 days of AHTD request, and free demonstrations within 30 days, unless AHTD extends time. Failure to provide as requested within this period may cause bid to be rejected. Samples, literature and demonstrations must be substantially the same as the item(s) being bid, unless otherwise agreed to by AHTD. Samples that are not destroyed will be returned upon request at bidders expense. Samples from successful bidders may be retained for comparison with items actually furnished.
11. **GUARANTY:** Unless otherwise indicated in Bid Invitation, it is understood and agreed that any item offered or shipped on this bid shall be newly manufactured, latest model and design, and in first class condition; and that all containers shall be new, suitable for storage or shipment and in compliance with all applicable laws relating to construction, packaging, labeling and registration.
12. **BACKORDERS OR DELAY IN DELIVERY:** Backorders or failure to deliver within the time required may constitute default. Vendor must give written notice to the AHTD, as soon as possible, of the reason for any delay and the expected delivery date. The AHTD has the right to extend delivery if reasons appear valid. If reason or delivery date is not acceptable, vendor is in default.
13. **DEFAULT:** All commodities furnished will be subject to inspection and acceptance by AHTD after delivery. Default in promised delivery or failure to meet specifications authorizes the AHTD to cancel award or any portion of same, to reasonably purchase commodities or services elsewhere and to charge full increase, if any, in cost and handling to defaulting vendor. Applicable bonds may be forfeited.
14. **ETHICS:** *"It shall be a breach of ethical standards for a person to be retained, or to retain a person, to solicit or secure a State contract upon an agreement of understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies maintained by the contractor for the purpose of securing business."* (Arkansas Code, Annotated, Section 19-11-708).

**ARKANSAS STATE HIGHWAY
AND TRANSPORTATION DEPARTMENT**

NOTICE OF NONDISCRIMINATION

The Arkansas State Highway and Transportation (Department) complies with the Americans with Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973, Title VI of the Civil Rights Act of 1964 and other federal equal opportunity laws and therefore does not discriminate on the basis of race, sex, color, age, national origin, religion or disability, in admission or access to and treatment in Department programs and activities, as well as the Department's hiring or employment practices. Complaints of alleged discrimination and inquiries regarding the Department's nondiscrimination policies may be directed to Joanna P. McFadden, Section Head - EEO/DBE (ADA/504/Title VI Coordinator), P. O. Box 2261, Little Rock, AR 72203, (501) 569-2298, (Voice/TTY 711), or the following email address: Joanna.Mcfadden@arkansashighways.com.

This notice is available from the ADA/504/Title VI Coordinator in large print, on audiotape and in Braille.

SPECIFICATION FOR PORTABLE HIGH-SPEED INERTIAL PROFILING SYSTEM

BY

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

January, 2014

1. The intended use of the product

The Arkansas State Highway and Transportation Department (AHTD) Research Section currently has Lightweight Profilers (LWPs) and a California Profilograph to collect pavement smoothness. These products have been used for 10 % verification jobs and for creating the new smoothness specification. To allow for the collection of data at a higher speed, to eliminate the use of traffic control in 'open-to-traffic' situations, which reduces the amount of personnel needed, and to accurately compare data with the industry during 10% verification jobs, the product described here is needed.

2. Product requirements

a. General

- i. The System shall meet the requirements for a "class 1" profilometric device as outlined in ASTM E 950-94, "Standard Test Method for Measuring the Longitudinal Profile of Traveled Surfaces with An Accelerometer Established Inertial Profiling Reference" and World Bank Technical Paper # 46 "Guidelines for Conducting and Calibrating Road Roughness Measurements."
- ii. The System shall consist of two accelerometers, two laser transducers, mounting system and a hardware/software package for automatic recording and preliminary data processing in the field.
- iii. A digital encoder assembly (or DMI encoder), mechanically linked to one of the vehicle wheels, shall be used for collecting suitable digital distance/speed information to the signal processing electronics.
- iv. The System shall be able to measure, calculate in real-time, display, store (on computer hard drive) longitudinal road profile and roughness data in both wheel paths, plus vehicle position (linear reference) and speed.
- v. The System shall be mountable onto an industry standard 2"x 2" hitch receiver, rear or front, on a reasonably sized vehicle, such as, a full size pickup or van.

The mounting hardware shall be height adjustable for different vehicles. A stabilization system must be included if required to perform satisfactorily.

- vi. The System shall be capable of providing Profile Index (PI) and International Roughness Index (IRI) with Stop-and-Go velocity testing.
- vii. The System shall be operable at highway speeds between 25 mph to 70 mph. Sudden changes in speed of more than 5 mph must not adversely affect IRI and/or PI.
- viii. The System shall be able to operate in an ambient temperature range of +32F to +105F outside the vehicle, and +40F to +105F inside the vehicle, provided that no condensing moisture occurs. All electronic components shall be housed in water resistant and dust tight enclosures.
- ix. The System power requirement shall be 12 VDC nominal (10.5 to 14.5 VDC) only, provided from the electrical system of the towing vehicle.
- x. The System shall be of a modular design capable of adding the following hardware components without major modifications to the System: Differential Global Positioning System (DGPS), Texture and additional lasers (1 to 3) for rutting measurement.

b. Data Acquisition System

- i. The laser displacement sensors shall have a measuring range of at least +/- 100 mm (+/- 3.9375 inches) from the mid-range position (which is the nominal measuring position, i.e., the long-term, average "zero" position).
- ii. The vertical displacement measuring resolution of the laser sensors shall be better than or equal to 0.05 mm (+/- 0.002 inch).
- iii. The sensor assembly shall include an aviation-grade precision accelerometer with a minimum resolution of 0.0001g.
- iv. The profiling system electronics shall sample the signals from the laser sensors and accelerometers at a rate of no less than 16 kHz (corresponding to less than 0.08 inch of vehicle travel between samples at any speed up to 70 mph). Optional texture laser sensor(s) shall be sampled at 62.5 kHz.
- v. The system shall be able to measure horizontal distance with an optical encoder with a resolution of 0.15 inches. The optical encoder shall be located on the rear axle of the vehicle.
- vi. The System shall allow the operator to collect data starting at non-zero stationing and collect negative direction data.

- vii. The profile wavelength shall range from 1.8 to 760 feet and pavement elevation sampling shall include up to 16,000 samples per second.
- viii. The electronic processing unit shall provide all necessary power for the laser sensors, accelerometers and digital encoder and shall be interfaced to an operator computer through a standard Ethernet network cable.

c. Computer and Software

- i. The computer system included with the System shall be a “ruggedized” notebook computer which meets the following minimum specification: A multi-core processor, 4GB RAM, 500GB Hard Drive, 13” LCD flat screen, an industrial reliable/rugged keyboard (spill proof), two USB 3.0, 1394 OHCI compliant, a DVD +/- RW/DVD -RAM/CDRW, and 1GB Ethernet port.
- ii. The entire notebook case should consist of a hardened magnesium alloy in addition to meeting the above specifications.
- iii. Touchscreen operator interface capabilities are preferred.
- iv. A Windows XP (or newer) based data collection program shall be supplied, which shall facilitate full control of the testing operations and calibration procedures from the laptop keyboard.
- v. The data collection program shall be designed so that additional computers can be utilized as a backup for the System, such as using the computer in the existing AHTD ROW system as the platform to run the data collection program and communicate with the profiling system electronics.
- vi. The data collection program shall allow the laser, accelerometer, and DMI calibration factors associated with a specific profiler to be transferred from one computer to another without requiring the profiler to be recalibrated or needing shipment of any component to the manufacturer.
- vii. The data collection program in the System shall be able to accept/send communication messages from/to the image capturing software in the existing AHTD ROW system upon data collection start-up /shut-down in order to synchronize the process.
- viii. The System shall be able to provide real-time computation of PI and IRI in accordance with World Bank guidelines, and Ride Number (RN), for both wheel paths. This PI, IRI and RN data shall be displayed on the PC screen and stored during testing. The profile reporting interval shall be selectable to approximately 1 inch or more (typically 4 inches or 6 inches).

- ix. The output file must be of a type that allows the operator to view the data within Notepad, or other similar Window's text viewing software, and be capable of importing the raw data into Microsoft Excel using the Excel import functions.
- x. The System must be able to export all profile data (left and right wheel path) in a format (i.e. *.ERD, *.ADF) usable in PROVAL.
- xi. The System shall be able to report using construction stations (i.e. 50+00).

3. Technical Support

- a. The manufacturer must have a well established history of providing equipment support to current customers including 24-hour technical support, if needed.
- b. The System shall be designed so that the technical support team can provide support remotely through a high speed web access portal.
- c. The vendor shall provide contact information (name, email, telephone, and address) of at least 5 transportation agencies that have experience dealing with vendor's technical support.

4. Documentation/Part Availability

- a. Three complete sets of User Manuals, specifically for the name and model number of the portable profiler, shall be provided by the manufacturer which shall include a set of drawings and diagrams for all equipment so that the user will be able to install, operate and maintain the System.
- b. All proprietary electronic parts shall be available on short notice from the manufacturer as replacement parts, and they shall be readily interchangeable.
- c. A complete list of parts for all major equipment with each test system shall be provided including serial numbers and part numbers.

5. Vendor requirements

- a. Each vendor must provide documentation that the device meets the requirements as outlined in section 2.a.i.
- b. The vendor will not have had any equipment rejected by the state of Arkansas within the last two years.
- c. The quoted price must include all the expenses including the System, shipping and training.

- d. The vendor must provide new production modeling equipment system that has been used in profiling highways. The vendor must submit at least three references from companies or government agencies utilizing for the same purpose.

6. Performance Accuracy and Calibration

- a. The System shall have a repeatability error on IRI data of typically less than 5% (coefficient of variation) or 0.1 m/km (6 in/mile) (Sample standard deviation), whichever is the greater, at test sections of a length of 160 m (0.1 mile) minimum.
- b. Equipment, procedures and software necessary to perform static calibration of the laser sensors and accelerometers and field calibration of distance measurement (if applicable) shall be included with the System.
- c. Field replacement of any component shall not require re-calibration of the System. Equipment accuracy shall remain stable for all types of (dry) pavements, and calibration shall not be required on a frequent basis.

7. Delivery

The new production model equipment and system must be delivered in working condition, ready to be mounted to the data collection vehicle within a maximum of six weeks from notification of successful bid acceptance.

The System shall be delivered to:

Arkansas State Highway and Transportation Department

Attn. Tymli Frierson

System Information and Research Division

10324 Interstate 30

Little Rock, Arkansas 72209

8. Training requirements

A qualified representative of the manufacturer shall provide instruction in the operation, calibration and maintenance of the profiler at no extra cost. This instruction shall be provided to at least five (5) AHTD operators. The purpose of this instruction is to train at least five (5) AHTD operators, engineers and engineering specialists with the features, operation, calibration and maintenance of the profiler. The training is to begin no later than ten (10) calendar days

after delivery of the profiler. Training will consist of, at minimum, a one (1) day session. At the conclusion of the training, all staff should be able to operate the profiler in normal production modes.

9. Warranty

The manufacturer shall guarantee the profiler system against defective workmanship or materials for a period of one (1) year of actual field services, commencing with the date the profiler is placed in operation. Any defect of workmanship, material or software failure, which develops during the first year of field operation shall be replaced, repaired or corrected at no expense to the Department including any transportation costs. During the last thirty (30) days of the warranty period, the profiler system shall be checked and service personnel will make any necessary adjustments from the manufacturer. This service shall be conducted on site at AHTD.

10. Firmware and Software Upgrades

Within the warranty period, the manufacturer shall provide, at no extra cost any and all released software upgrades to the profiler system. The manufacturer shall indicate their method and procedure of supplying and installing the software.