

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

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STANDARD BID CONDITIONS

M-05-145H

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

SPECIFICATION 05-64-5098

FOR

TRUCK MOUNTED CRASH ATTENUATOR

NCHRP-350, TEST LEVEL 3

1. **General:** This specification is intended to describe a Crash Attenuator for Truck Mounting, used for protecting AHTD personnel and equipment and the general public from injury and damage caused when errant vehicles crash into AHTD equipment used in highway operations.
2. **Design and Performance Requirements:** The Truck Mounted Attenuator (TMA) units shall be functionally designed to meet the following requirements.
 - A. To decelerate impacting vehicles traveling at a speed of 62 mph, at weights of both 1,800 and 4,400 pounds, and impacting straight into the rear of the TMA without exceeding the following values:
 - (1) Occupant Impact Velocity: 39 feet per second.
 - (2) Occupant Ridedown Acceleration: 20 G's.
 - B. To prevent impact vehicle roll over and limit intrusion into adjacent traffic lanes.
 - C. To safeguard impact vehicle passenger compartment integrity.
 - D. To minimize the impact acceleration and roll ahead distance of a Stationary TMA Support Truck weighing approximately 19,000 pounds.
 - E. To tolerate routine usage under practical operating conditions of road travel vibration and normal rainfall without water absorption or physical deformation.
3. **Certification:** Each TMA purchased by AHTD shall be identifiable as conforming to test criteria and standards of effectiveness as set forth in NCHRP 350, Test Level 3. Each attenuator shall have approval for use from the FHWA.
 - A. The TMA shall decelerate and stop vehicles weighing 1,800 pounds during impacts at 62 mph. The attenuator shall meet the occupant risk criteria during the impact of a small car into a TMA as required by NCHRP 350, Test 3-50.
 - B. The TMA shall decelerate and stop vehicles weighing 4,400 pounds during impacts at 62 mph. The attenuator shall meet the structural adequacy requirements, the occupant risk criteria and the criteria for an acceptable roll-ahead distance of the supporting truck during the impact of a heavy passenger vehicle into a TMA as required by NCHRP 350, Test 3-51.

All certified test results, associated test reports and films showing ground targets, car targets and a method of timing for obtaining vehicle speed shall be submitted showing that the TMA assembly the vendor is providing has met all test and performance criteria as called out in these specifications. The report shall be in the format of and evaluated by NCHRP 350 guidelines.

4. **Construction:** The complete TMA system shall consist of (but not be limited to) the following basic components:
 - A. A replaceable crush unit using one of the following designs:
 - (1) A cartridge system utilizing expendable (crushable) compression material cartridge(s).
 - (2) A mechanical system utilizing an open unitized steel design incorporating plate ripping or collapsing frame action to absorb energy.
 - (3) A combination cartridge and mechanical system.
 - B. A backup, and a backup support structure properly designed for attaching the system to the truck. The backup frame and/or support platform shall be constructed of steel or aluminum.

The shell housing the compression material of cartridge type systems shall be constructed of aluminum.

Mounting hardware and fasteners shall be constructed of steel or aluminum and designed for mounting on a single rear axle, 31,000 pounds GVWR dump truck.

5. Moisture and Vibration Tests:

A. Cartridge System: The cartridge TMA shall pass the following accelerated endurance tests to ensure long life in field use:

- (1) Vibration Test: The TMA shall be subjected to forty (40) hours of continuous vibration in the 0°, or horizontal, position. Testing shall occur at a frequency of 7 hertz, with an amplitude of 0.6" at the back-up plate.

The following minimum criteria shall be met:

- A maximum rear corner sag of 0.5" at the end of the test period.
- No structural failures permitted. No reasonable expectation of impairment of energy absorbing capability permitted. TMA skin may experience minor distortions, minor cracking and minimal loss of rivet integrity.

- (2) Moisture Test: The dry weight of the TMA shall be determined before exposure to moisture testing. The TMA will then be positioned within a moisture chamber in the normal horizontal operational position and subjected to 24 hours of 6" per hour simulated rainfall on its top and sides. The TMA will then be allowed to drain and dry in the chamber for one hour. The weight gain of the TMA in percent of original dry weight will then be determined.

The following minimum criteria shall be met:

- The TMA weight gain as a result of the moisture test shall not exceed 5% of the original TMA dry weight.
- No reduction in energy absorbing capability or structural integrity as a result of moisture testing.

Variations of the vibration and moisture tests specified above may be used, however the basic minimum criteria for the tests shall remain.

B. Mechanical System: Moisture tests are unnecessary for the open frame mechanical TMA, however the manufacturer should include sufficient information and/or test results to prove the mechanical system capable of withstanding vibrations equal to the minimum criteria required for cartridge systems.

6. Leveling Stands: The front of the unit shall be equipped with at least two (2) adjustable caster wheeled leveling stands to assist in mounting of the unit. At least one (1) caster wheeled, retractable, leveling stand shall be located at the rear of the unit for portability purposes when unit is not mounted.
7. Hydraulic Tilt System: The unit shall be equipped with a self-contained electric/hydraulic tilt feature powered by a replaceable fuse protected link to the 12 volt vehicle electrical system that will allow the rear of the device to be lifted from horizontal to vertical or near vertical. The controls for activating this operation shall be located in the truck cab, convenient to the driver, and at the right rear corner of the truck so as to allow the operator to raise the unit to its full 90° tilt position and manually or hydraulically lock the unit in position with a minimum of one (1) locking pin. The manual or hydraulic locking system shall be designed to allow routine locking of the unit in a minimal amount of time (not to exceed three (3) minutes).
8. Mounting: Shall be such that by the removal of a maximum of four (4) bolts or lock pins and any necessary electrical plug connectors, the attenuator assembly, including mounting brackets and hydraulics, may be routinely removed from the supporting truck's mounting plate, within approximately 15 minutes. *Any remaining mounting hardware and components must be completely under the truck body or frame in such a manner that when the unit is removed from a dump truck, the full dump capabilities shall be uninhibited.*

The TMA system furnished shall be approved and recommended by the manufacturer for mounting on a 31,000 pounds GVWR dump truck equipped with a 6 cubic yard dump body. The truck used will have a single rear axle, wheelbase of 138" to 145", cab to axle measurement of 72" and is equipped with dual fuel tanks located outside the frame rails beneath the truck cab. Distance from the fuel tanks to the rear of the truck is 9' 6" or less.

9. Lighting: The TMA shall have a standard trailer lighting system including brake lights, tail lights, turn signals and ICC bar lights configured in such a manner as to provide proper lighting in both the vertical and horizontal positions. A wiring harness shall be provided for connection of the TMA lighting system to that of the vehicle on which the unit is mounted. All wires shall be protected by a replaceable fuse and be color coded or otherwise identified and shall extend the full length of the mounting hardware with enough additional length to reach the receptacle on the supporting vehicle. Shall be equipped with six or seven pole round type trailer connector. Both the plug for the TMA and the receptacle for the supporting vehicle shall be furnished. The lighting arrangement on the TMA shall meet all current Federal regulations.

10. Safety Plaques or Decals: Safety plaques or decals shall be furnished and shall be affixed at the operator's station and at any hazardous area. The plaques or decals shall include necessary warnings and precautions. Necessary warning plaques, stickers or decals for mounting on the vehicle dash or controls shall be furnished with the unit.
11. Color: The complete unit shall be painted safety yellow. The rear facing of the TMA in the operating position shall be striped with alternating 4" black and 4" safety yellow 45° striping. The striping will form an inverted "V" at the center of the unit and will slope down and toward the outside of the unit, in both directions from the center. The bottom of the TMA shall be painted with the same pattern, except that the stripes shall be 6" black and 6" safety yellow.
12. Warranty: Units purchased under this specification shall be warranted against defects in material and workmanship for a minimum period of twelve (12) months (365 days) from date unit is placed in operation by AHTD. If the manufacturer's standard warranty exceeds twelve (12) months, then the standard warranty period shall be in effect
 - A. Warranty shall include all parts, labor and transportation costs to the location of equipment.
 - B. If equipment cannot be repaired on location, warranty shall include cost of transport to the facility where the repair work will be done.
 - C. It will be the responsibility of the successful bidder to insure that repairs are completed in a timely manner.
 - D. Recent prior failure to provide warranty-work, parts, replacement parts or service, in a timely manner, for equipment from the same manufacturer or dealer shall be grounds for the rejection of any submitted bid, or for the denial of any otherwise qualified low bidder, whether such failure is attributable to the manufacturer or the dealer of the equipment. For the purposes of this paragraph "timely manner" means a period of time not exceeding thirty (30) calendar days to provide requested warranty-work, parts, replacement parts, or service. For the purposes of this paragraph "manufacturer" means the original manufacturer of the equipment and its successor or successors, regardless of number, and whether acquired by sale, merger, or otherwise. For the purposes of this paragraph "replacement part" means a part redesigned by a manufacturer to correct a design or engineering defect and which replacement part is capable of providing dependable performance in normal operation conditions for its normal service life without failure. Such bid or bids may be rejected by the Department until such failure or failures have been remedied to the satisfaction of the Department and until such manufacturer or dealer is providing such warranty-work, parts, replacement parts, and service in a timely manner.
13. Current Model: Units furnished under this specification shall be the latest improved model in current production, as offered to commercial trade, built for the U.S. market, and shall be of quality workmanship and material. Machines manufactured for foreign markets will not be accepted. All equipment offered under this specification shall be new. Used, reconditioned, shopworn, demonstrator, prototype or discontinued models are not acceptable. Manufacturers of the units supplied must have been in the business of producing operational units for at least two years and must have recently sold similar units to domestic governmental agencies. The model furnished must have been in production for a minimum of one year, or be the latest version of a previous model. Bidder/s may be required to submit documentation substantiating the aforementioned requirements. A list of user references may also be required.
14. All parts, accessories and tools necessary for satisfactory operation of this unit shall be furnished whether or not they are specifically mentioned in this specification (including standard equipment as regularly furnished by manufacturer as shown on printed literature and specifications - unless specifically excluded by this specification).
15. Successful bidder shall furnish one (1) copy each of operator's manual, service manual, installation manual and illustrated parts book with each unit delivered. In addition, one (1) copy each of operator's manual, service manual, installation manual and illustrated parts book shall be furnished to Equipment and Procurement Division, P.O. Box 2261, Little Rock, AR 72203 (11302 W. Baseline Road, Little Rock, AR 72209 if shipping UPS).

The manuals supplied shall include the electrical, mechanical, hydraulic system and controls. Additionally, one set of complete wiring, plumbing and hydraulic schematics shall be delivered with each unit. All schematics shall be clear, legible and indicate the location of each component. Hydraulic schematics shall include the diameter and length of each hose and manufacturer and part number of each fitting.

Parts manuals shall show the manufacturer of each part and all cross referencing between the vendor and the manufacturers.

The successful bidder may provide Shop Repair Manuals and Parts Manuals on computer media (CD ROM, Floppy Disks, etc.) in lieu of printed manuals.
16. Parts Inventory & Service Facilities: The successful bidder shall maintain a representative inventory of replacement parts and service facilities for servicing equipment bid on.

17. Demonstration: The Arkansas State Highway & Transportation Department reserves the right to require a demonstration, under actual working conditions, of equipment bid under this specification before award is made. The demonstration would be performed (free of any charge) by the bidder or an authorized representative at a mutually acceptable location. If requested, the bidder should be prepared to demonstrate the equipment within thirty (30) days after notification. Failure of the bidder to perform a satisfactory demonstration within the specified time may be grounds for rejection of the bid.
18. Cooperative Purchasing: Other tax-supported entities* in Arkansas (cities, counties, state agencies, school districts, etc.) may purchase from this Contract on an individual basis under the same specifications and conditions, and at the pricing set forth by each vendor, all at the discretion of each vendor in each case. Prices could be reduced by a vendor for minor alterations in conditions (changing order quantities, deleting options, etc.) as agreed by both parties, but could not be raised above the contract bid price except for any additional freight charges. Vendors would not be required to sell to any such entity under this contract, and those entities would not be obligated to purchase from the contract.

Each entity wishing to purchase from the contract must make contact directly with the appropriate vendor(s). The Highway Department shall remain "out of the loop" for such transactions: all contact, orders, invoices, payments, etc. regarding such transactions must take place exclusively between the tax-supported entity and the vendor. The Department shall be held harmless of any and all liability arising from such transactions.

* Tax-supported entities are defined as those receiving more than half of total funding from appropriated tax funds.
