

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EQUIPMENT DIVISION

PROCUREMENT SPECIFICATIONS
NO. 021-2-E

OPEN END CONTRACT
10 FOOT OR 11 FOOT POWER REVERSIBLE SNOWPLOW (HYDRAULIC)

1.0 PURPOSE

It is the purpose of these specifications to describe a 10 Foot or 11 Foot Power Reversible Snowplow (Hydraulic) (hereinafter referred to as a "plow" or a "unit") to be purchased for use by the West Virginia Division of Highways (DOH) on an Open End Contract basis.

2.0 BIDDING PROCEDURES

The current purchasing procedures regarding bidding as established by the Department of Administration, Purchasing Division, shall apply. Failure to submit the " Request for Quotation" forms, complete in its entirety and according to directions indicated, may subject the bidder to disqualification. **Each bid submitted shall also be accompanied by a Bidder's Evaluation Report completed in detail.** Addendums in order, along with exception sheets, should be with Bidder's Evaluation Report. **FAILURE TO SUBMIT THE BIDDER'S EVALUATION REPORT, COMPLETE IN ITS ENTIRETY, MAY RESULT IN AUTOMATIC DISQUALIFICATION.**

3.0 SPECIFICATIONS

The specifications named herein, mandatory and non-mandatory, establish the acceptable level of quality only and are not intended to reflect a preference or favor any particular brand or vendor.

3.1 EXCEPTIONS TO NON-MANDATORY SPECIFICATIONS

Exception to a non-mandatory unit specification may be made by the bidder, providing the exception is not available from the manufacturer. **Any such exceptions must be noted on the bidder's evaluation report and should be accompanied by supporting documentation/literature from the manufacturer. A summary of exceptions must be prepared by vendor on a separate attachment to the bidder's evaluation report labeled as "Exception to Specifications" and should be provided with the bid.** The state reserves the right to determine whether the stated exception does or does not reduce the quality and performance of the unit. Failure to provide information for any exceptions may be grounds for rejection of the bid. The state reserves the right to waive minor irregularities in bids or specifications in accordance with §148-1-4(f) of the WV Legislative Rules and Regulations.

3.2 MANDATORY SPECIFICATIONS

All specifications preceded by "shall, will, and/or must" or are stated as a "minimum and/or maximum" are mandatory. Any bid failing to meet any mandatory item shall be immediately disqualified. Failure to respond in the appropriate evaluation section may also be grounds for immediate disqualification at the discretion of the State.

A mandatory pre-bid conference is scheduled for this equipment purchase as stated in the RFQ. Vendors having products with variations or exceptions in specified mandatory items are expected to address any such variations or exceptions during the pre-bid conference. **The State shall review and consider any such variation or exception, and may at its sole discretion, issue an addendum to change mandatory specifications deemed to be in the State's best interest. Bids from any vendor failing to attend the mandatory pre-bid shall be disqualified. Bids containing any variation or exception to a mandatory specification that was not addressed during the pre-bid conference and accepted by the issuance of an Addendum shall be disqualified.**

4.0 REPRESENTATIVE UNIT FOR TEST

The successful vendor must (if specified) provide DOH one (1) completed representative unit to be observed and evaluated on each order to insure compliance with specification. If requested, the time period for testing and evaluation shall be seven (7) working days following receipt of the unit. DOH will incur no obligation for deterioration of surfaces, finishes, seals, and mechanical or electrical parts on the unit resulting from operation and testing within the limits of these specifications; nor will DOH incur obligation for damage to the unit resulting from failure to meet specifications when due care and attention is given by DOH and testing is done within the limits of these specifications. **Failure of the pilot unit to satisfactorily meet specifications as bid shall be cause for cancellation of the purchase order, and return of the delivered unit along with all associated equipment to the vendor at the vendor's expense.**

4.1 CONDITION OF UNIT(S) UPON DELIVERY

All units must arrive at the prescribed delivery point having been completely preserviced with oil, lubricants, and coolant. All prescribed precautions pertaining to first operations and break-in of the unit are to be posted conspicuously on the unit for ready observance by the operator.

4.2 DELIVERY

Delivery point of the completely assembled representative unit will be the DOH, Equipment Division, Route 33 at Brushy Fork Road, Buckhannon, West Virginia (26201).

The vendor is responsible for guaranteeing delivery of the completed units within the time specified and agreed to by the State. Delivery is preferred within 135 days after

receipt of purchase agreement. The vendor is responsible for establishing and coordinating delivery terms with allied manufacturers or suppliers. **Delivery terms shall be stated in the bid and the State reserves the right to accept or negotiate such terms.** Failure to reach an agreement may result in rejection of the bid. **The successful bidder shall provide their manufacturer's confirmation of the order to the WVDOH contact person within seven (7) working days after receiving the approved purchase order.**

A completed pilot model for inspection must be provided within 45 calendar days after receipt of the purchase agreement by the successful vendor.

Delivery is an integral part of this specification and failure to comply will be cause to initiate a D.O.T. Administrative Form WV-82, Vendor Performance Form. The WV-82 Form will provide a means of officially notifying the Purchasing Division and the vendor of unsatisfactory performance; such as late deliveries, poor service, inadequate parts supplies, etc.

The decision to initiate subject Form will be at the sole discretion of the D.O.H. Commissioner's established Equipment Review Board.

Issuance of the WV-82 Vendor Complaint Form on unsatisfactory delivery against any vendor will be cause to refuse to consider similar items from those vendors on future Request For Quotations.

(NOTE: Delivery time could be altered due to labor strikes, severe inclement weather conditions, etc.)

5.0 AWARD CRITERIA

5.1 DOH will recommend the award in accordance with the RFQ evaluation criteria described in the requisition. **The award shall be made to the lowest unit cost vendor that meets or exceeds the specifications.** DOH reserves the right to place multiple orders in any quantity.

6.0 SPECIFICATIONS AND GUIDELINES - GENERAL

6.1 IDENTIFICATION OF THE UNIT BEING PROPOSED

The bidder must identify the unit by manufacturer, model, series, and year of manufacture, in the bid to enable identification by DOH in the manufacturer's specifications of the proposed unit. The bidder will submit complete descriptive literature of the proposed unit, to establish that the bid is the manufacturer's most current model, including latest engineering improvements, which have been, or will imminently be, regularly advertised and sold on the open market. The unit specified herein and offered to be manufactured after January 1, 2011 and be clearly identified and marked with date of manufacture.

6.2 OPERATING AND SERVICE MANUALS AND PARTS LISTS

An operator's manual must be included with each unit upon delivery. A "line sheet" (if applicable) and Equipment Preventative Maintenance Questionnaire (as shown in X6.2 of the Bidder's Evaluation Report) must be with pilot unit upon delivery. In addition, there must be 12 service, shop, or maintenance manuals; ten (10) to be distributed to the Districts and two (2) for the Equipment Division. Also, there must be 14 parts manuals; ten (10) to be distributed to the Districts and four (4) for Equipment Division use. CD ROM is preferred in lieu of parts and service manuals.

* NOTE: MANUALS SHALL BE DELIVERED UPON COMPLETION OF DELIVERY OF TOTAL UNITS. FAILURE TO DO SO WILL DELAY PAYMENT.

6.3 TRAINING:

Manufacturers and/or dealers will be required to stage a thorough seminar on the subjects of Preventative Maintenance, Operator and Mechanic Training. **In order to keep the operators and mechanics updated, the successful vendor shall conduct training with each purchase order against this open end contract.** Training is preferred within 2 working days after delivery of the pilot unit on the individual purchase order.

Manufacturers and/or dealers shall be required to furnish the Training Academy with one (1) Operator's Manual to be shipped direct to WVDOH Training Academy, Post Office Box 610, Buckhannon, West Virginia 26201 prior to delivery of the pilot.

The seminar to be held at the W. Va. Division of Highways, Equipment Division, Buckhannon, West Virginia.

6.4 PREVENTIVE MAINTENANCE AND OPERATOR PROCEDURES:

Manufacturers and/or dealers will be required to submit to the Equipment Division, in addition to the operating and service manuals, booklets and pamphlets explaining the Preventive Maintenance and Operator Procedures to be used by the operators of this equipment, and must include such things as daily prestart inspection procedure, service schedule, and routine maintenance required, safety precautions, etc.

The successful vendor shall furnish all training aids; i.e., videos, projectors, etc. required in conducting the training.

6.5 WARRANTY AND SERVICE POLICY

The Manufacturers warranty or service policy is to apply to the unit. Such warranty or service policy is to be recognized at any authorized unit dealer, representing manufacturer of proposed unit throughout the State of West Virginia. The applicable warranty or service policy will not be contingent upon obtaining routine service,

lubrication, and servicing of the unit from factory authorized agencies. It will be the responsibility of the bidder to have available labor to repair or replace any defective replacement parts, components and materials, and to have available those replacement parts, components, and/or materials found to be defective during the terms of the warranty period. The bidder should state the labor rates, locations where parts will be stocked, availability of parts, and discounts offered for parts, when terms of the warranty offer a pro-rated cost for parts and labor. In addition, the successful bidder should offer field work to repair or replace defective parts, components, and materials found to be defective during the terms of the warranty and should provide mechanic's travel rates, mileage charges, field mechanic rates, and any surcharge for miscellaneous items, if applicable, for field work during the warranty period. Submit to Division of Highways any technical or engineering improvements during the term of the warranty. **The unit must be accompanied upon delivery by the unit's manufacturer's executed warranty or service policy.**

A mandatory minimum two (2) year bumper to bumper basic parts and labor warranty excluding abuse and normal wear items is required for this unit.

THE "WARRANTY AND SERVICE POLICY QUESTIONNAIRE" ATTACHED IN THE BIDDER'S EVALUATION REPORT MUST BE COMPLETED IN ITS ENTIRETY AND SUBMITTED WITH YOUR BID. (SEE SECTION X6.5 OF BIDDER'S EVALUATION REPORT).

6.6 EVALUATION COMMITTEE REQUIREMENTS

Detailed component specifications, product literature, component models, required for specification compliance determination by the Evaluation Committee should be provided with each bid. Any information supplied that is contrary to/or conflicting with the specifications and/or attached Bidders Evaluation Report may be sufficient cause for rejection of bid.

6.7 UNSPECIFIED ACCESSORIES & FEATURES

All parts, equipment, accessories, material, design and performance characteristics not specified herein, but which are necessary to provide a complete unit, must be furnished with each unit and required to conform to strength, quality of material, and quality of workmanship to those which are advertised and provided to the market in general by the unit industry.

All parts and accessories advertised and regularly supplied as standard shall be included, except those which would represent duplication of these specified, and except those which, by specification, are not to be furnished. All standard safety features, required by Federal and State Law, shall be included.

7.0 SPECIFICATIONS OF THE QUOTED UNIT ARE AS FOLLOWS:

The hydraulically reversible snowplow to be designed for mounting on a single axle or tandem dump truck. The snowplow to be capable of plowing to the right or left at an angle of approximately thirty-five degrees (35°) discharging snow to the right or left. It should be a straight blade type with an integral type snow shield. It should have two (2) trip spring settings inside the two (2) moldboard struts.

The hydraulic power for lifting and reversing will be supplied by the truck central hydraulic system; however, the vendor shall supply the hose and fittings to connect both systems to the valve located under the front bumper.

The blade to be the sectional type, made up of three (3) and four (4) foot sections to total 10 feet or 11 feet wide, having a tungsten carbide inserted cutting edge.

The snowplow to be a Henderson RSP Reversible Snowplow or equal.

7.1 Moldboard:

7.1.1 Overall Width:

7.1.1.1 **OPTION #1 - 10 Foot**

7.1.1.2 **OPTION #2 - 11 Foot**

7.1.2 Overall Height: 36 Inches

7.1.3 Moldboard Construction: 10 US Ga. 304 Stainless Steel minimum and rolled to give the snow a free rolling action. Break formed not acceptable.

7.1.4 Travel Arc: Thirty-five degrees (35°) minimum each way; total seventy degrees (70°).

7.1.5 Moldboard shall have a cutting edge attack angle with three (3) different adjustments from 5 Degree, 10 Degree, and 20 Degree vertical measurement from ground using 3/4 inch pins.

7.1.6 Weight of Plow: 10 foot - 1750 pounds minimum
11 foot – 1815 pounds minimum

7.1.7 Vertical Ribs: Minimum of eight (8) vertical ribs, 1/2 inch x 3-1/2 inch formed steel.

- 7.1.8 Snow Shield: An additional rubber snow shield to be provided. It should be approximately 5/16 inch x 12 inch belting and run the entire length of plow. Mounted in such a manner as not to add to overall plow height.
- 7.1.9 To be all continuously welded ribs, moldboard, and angles.
- 7.1.10 Shall be reinforced at the top and bottom edges.** Top of the moldboard to be reinforced with an integrally structural channel 3-1/2 inch x 2-1/2 inch x 3/8 inch. Formed not acceptable. Bottom angle of not less than 4 inch x 4 inch x 3/4 inch angle gusseted.

7.2 Cutting Edge:

7.2.1 The cutting edge shall be sectioned, standard AASHO punched, in three (3) foot and four (4) foot lengths.

7.2.2 Blade Sections:

7.2.2.1 To be **minimum 1/2 inch thick by six (6) inches wide** having a GRADE WC cemented tungsten carbide insert of approximately 88 Rockwell A scale hardness.

7.2.2.2 The insert to be silver soldered on all sides of a milled slot near the center of the working edge.

7.2.2.3 The braze joint to have a transverse rupture strength of **345,000 PSI minimum**

7.2.2.4 Blade section must be identifiable by manufacturer, name and part number stamped on the reverse side of each section.

7.2.2.5 Wrap around curb guards to be mounted right and left side of plow

7.2.2.6 Curb guards to be 5/8 inch thick, approximately 6 inches high, and 8 inches long

7.3 Safety Trip Mechanism:

7.3.1 Tripping mechanism must be attached to semi-circle and moldboard ribs and shall use two (2) compressions springs.

7.3.2 Springs shall be two (2) external compression springs sitting inside two (2) moldboard adjusting struts made from (2) 1/2 inch x 2.5 inch bars sliding to a 3/4 inch x 2.5 inch center bar with an overall length of 39.5 inches

7.3.3 The trip mechanism must hold the plow rigid in the plowing position and trip automatically when the cutting edge comes in contact with an obstruction then return to normal plowing position.

7.4 Push Frame:

7.4.1 Push frame shall be of all welded construction designed per manufacturer's heavy duty specifications. Push frame shall be no less than 120 inches in length for 10 foot and 132 inches in length for 11 foot plow made of x 4 inch x 4inch x 3/8 inch structural tube.

7.4.2 Moldboard to push frame connection to be by a minimum of seven (7) hinges with each hinge having a fully welded in bushing to house pin. Bushings shall be 1-1/4 inches mounted to two (2) 5/8 inch mounting ears for total bearing surface per bushing of 2-1/2 inch.

7.4.3 The plow push frame shall be equipped with an oscillating center pin of plow portion hitch of 2 inch with push plate being 1 inch x 33 inches x 5 inches feature to permit the plow to follow uneven road surfaces. Semi-Circle shall be 3-1/2 inch x 3-1/2 inch x 1/2 inch.

7.4.4 Hydraulic Power Reversing Mechanism:

7.4.4.1 Shall be two (2) double acting 4 inch x 2 inch power reversing nitrided hydraulic cylinders fitted with the fixed base end near the center of the push frame. Cylinders shall be mounted above the semi-circle.

7.4.4.2 Hydraulic power reverse mechanism shall include a dual cross-over relief cushion valve rated at a minimum of 40 G.P.M.

7.4.4.3 The "A" frame is made from 4 inch channel with 2.5 inch flanges supporting a 2 inch center reversing pin mounted in a 3 inch, 1/2 inch wall tube and having a grease fitting. The push ends are welded to a 1 inch x 33 inches x 5 inch base plate having a 2 inch pivot hole for the oscillator bar to attach to.

7.4.5 Skid Shoes:

7.4.5.1 Caster mounted carbide mushroom type shoes, one (1) each side shall be provided.

7.4.5.2 Manufacturer's standard adjusting mechanism shall be included.

7.5 Hitch:

7.5.1 Designed as a universal heavy duty type unit to carry plows of weight specified when mounted on 32,000 pound class trucks minimum.

- 7.5.2 The hitch shall be a bumper to frame type adaptable to any conventional truck and to accommodate the tilt front end on the carrier.**
- 7.5.2.1 Hitch shall be attached to truck's frame rails.**
- 7.5.2.2 Hitch to include a lift system designed at a rated capacity of 8,000 lbs minimum. Lift cylinder must be same size as plows reversing cylinder for WVDOH's interchangeability.**
- 7.5.3 Truck Portion Hitch Attachment of WVDOH quick release design.:**
- 7.5.3.1 Hitch frame height shall be 33- 5/8 inches and hitch width of 26 inches**
- 7.5.3.2 Hitch frame members are 1/2 inch x 4 inch x 4 inch structural angle or tubing. This hitch is low profile for access to the truck's engine compartment.**
- 7.5.3.3 The lift arm and lift frame shall be designed to accept a 4 inch lift cylinder with nitrided cylinder tube. Cylinders pins are to be 1 inch cold rolled steel..**
- 7.5.3.4 Self-storing lift arm, accomplished by pulling one 1 inch pin and folding the cylinder up, allows you to re-pin to store.**
- 7.5.3.5 The telescopic lift arm shall be manufactured of 4 inch x 4 inch x 3/8 inch square outer tubing and 3 inch x 3 inch x 3/8 inch square inner tubing. The lifting plate shall be 3/8 inch x 4 inch flat material and have two (2) banjo-type chain eyes able to accept 1/2 inch chain as well as the weight of the plow. Shall also have two (2) stabilizer arms mounted to receiver tube of telescoping arm and outside pivot of hitch.**
- 7.5.4 Shall provide custom 1/2 inch Grade 50 or better cheek plates are to be bolted welded or bolted to main hitch and to allow for bolting to truck's frame rail.**
- 7.6 Hydraulic System: Hydraulic pressure will be supplied from the truck central hydraulic system through a lift valve and reversing valve (main bank valve) to the plow lift and reversing cylinders. The vendor shall be required to supply the following hydraulic components:**
- 7.6.1 One (1) 4 inch lift cylinder with 10 inch stroke double-acting nitrided hydraulic lift cylinder (even if we only use one (1) line fitting in upper end with breather), clevis pinned top and bottom.**
- 7.6.2 Two (2) four (4) inch double acting nitrided hydraulic reversing cylinders**

- 7.6.3 Three (3) pieces of two (2) wire hydraulic pressure hose one-quarter (1/4) inch diameter and approximately ten (10) feet long. Each hose must be equipped with:**
- 7.6.3.1 One (1) quick coupler at plow end with dust caps. Prefer Snap-Tite Couplers VHN-8 Nipple Hose, VHN-8 Nipple Reverse Cylinder, VHC-8 Nipple Reverse Cylinder 90° Fitting.**
 - 7.6.3.2 Two (2) crimp-type hose fittings with male JIC 370 threads. One (1) to mate with swivel and the other to mate with quick coupler.**
 - 7.6.3.3 One (1) JIC 370 - swivel - 90°elbow/male JIC 370.**
 - 7.6.3.4 One (1) adaptor to mate bank valve port to JIC swivel.**
- 7.7 Unit shall include all other features considered as standard equipment but not specifically addressed above.**
- 7.8 Vendor must certify that snowplow offered will comply with Occupational Safety and Health Act of 1970 and subsequent amendments.**
- 7.9 It is the intention of the West Virginia Division of Highways to secure a close fitting, simple, **reversible snowplow that will be designed to operate as close as possible to the vehicle pushing it, to maintain truck balance within reasonable limits.**
- Key features for acceptability will be a relatively light weight compact unit.** Lift by cable acceptable providing side shifting of cable is not impeded by lift point device.
- Vendors are cautioned that a push frame and/or hitch assembly designed without regard to overall distance of truck to front of plow which would jeopardize truck balance may be judged as not conforming to these specifications.
- 7.10 Paint: The entire unit to not be painted but rather Powder Coated in accordance with West Virginia Division of Highways requirements as follows:
- 7.10.1 The entire unit to be sandblasted and thoroughly cleaned, free of rust, grease, and scale. All surfaces are high-pressure cleaned and degreased with phosphate solution prior to powder coating.
 - 7.10.2 The complete assembly to receive one (1) layer of powder coating. The front may be sprayed in enamel.

- 7.10.3 The front of the plow to be given one (1) layer of powder coating Federal Yellow (No. 93-6578) DuPont Deluxe equipment enamel or equal quality powder of other manufacturer.
- 7.10.4 The rear of the plow to be given one (1) layer of powder coating of manufacturer's standard Black (Flat) equipment enamel.
- 7.10.5 The push frame and hitch to be given one (1) layer of powder coating of manufacturer's standard Black (Flat) equipment enamel. **Complete coverage of the push frame and hitch is mandatory.**
- 7.11 Advertising: Manufacturer shall attach a metal plate on the reverse side of moldboard stating manufacturer, series or model number, size and type of blade (approximately six (6) inch to eight (8) inch square). Date of manufacture shall also be stamped on the plate or the moldboard. No large decals or painted advertisement are permitted.**
- 7.12 All loose hardware to be in a separate container for each plow and shipped with each plow.

