



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
7011EC18

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
BUYER 33 304-558-2402

VENDOR	RFQ COPY
	TYPE NAME/ADDRESS HERE

SHIP TO	DIVISION OF HIGHWAYS EQUIPMENT DIVISION ROUTE 33 BRUSHY FORK ROAD BUCKHANNON, WV 26201	304-472-1750
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DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
03/17/2011				

BID OPENING DATE: 04/21/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		287-36		
64,000 GVW CAB AND CHASSIS, COMBINATION						
REQUEST FOR QUOTATION (RFQ) OPEN END CONTRACT						
THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS FOR AN OPEN END CONTRACT TO PROVIDE 64,000 GVW CAB AND CHASSIS COMBINATION DUMP/SPREADER PER THE ATTACHED SPECIFICATIONS.						
TECHNICAL QUESTIONS CONCERNING THIS SOLICITATION WILL BE RECEIVED THROUGH THE CLOSE OF THE MANDATORY PRE-BID MEETING. TECHNICAL QUESTIONS MUST BE SUBMITTED IN WRITING TO SHERI SLONE WEST VIRGINIA STATE PURCHASING DIVISION. VENDORS MAY SUBMIT QUESTIONS PRIOR TO THE MANDATORY PRE-BID VIA MAIL AT THE ADDRESS LISTED IN THE BODY OF THIS RFQ, VIA FAX AT 305-558-4115, OR VIA EMAIL AT SHERI.D.SLONE@WV.GOV. WRITTEN QUESTIONS WILL ALSO BE ACCEPTED DURING THE MANDATORY PRE-BID. DEADLINE FOR ALL TECHNICAL QUESTIONS IS THE CLOSE OF THE PRE-BID MEETING. NO ADDITIONAL QUESTIONS WILL BE ACCEPTED AFTER THE PRE-BID MEETING. ANY TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY FORMAL ADDENDUM TO BE ISSUED BY THE PURCHASING DIVISION AFTER THE MANDATORY PRE-BID MEETING.						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS		
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**GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)**

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.htm and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



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 EQUIPMENT DIVISION
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 BRUSHY FORK ROAD
 BUCKHANNON, WV
 26201 304-472-1750

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03/17/2011				

BID OPENING DATE: **04/21/2011** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
				MANDATORY PRE-BID		
				<p>A MANDATORY PRE-BID WILL BE HELD ON TUESDAY 04/05/2011 AT 10 AM, BRUSHY FORK RD IN BUCKHANNON, WV 26201. ALL INTERESTED PARTIES ARE REQUIRED TO ATTEND THIS MEETING. FAILURE TO ATTEND THE MANDATORY PRE-BID SHALL RESULT IN DISQUALIFICATION OF THE BID. NO ONE PERSON MAY REPRESENT MORE THAN ONE BIDDER.</p> <p>AN ATTENDANCE SHEET WILL BE MADE AVAILABLE FOR ALL POTENTIAL BIDDERS TO COMPLETE. THIS WILL SERVE AS THE OFFICIAL DOCUMENT VERIFYING ATTENDANCE AT THE MANDATORY PRE-BID. FAILURE TO PROVIDE YOUR COMPANY AND REPRESENTATIVE NAME ON THE ATTENDANCE SHEET WILL RESULT IN DISQUALIFICATION OF THE BID. THE STATE WILL NOT ACCEPT ANY OTHER DOCUMENTATION TO VERIFY ATTENDANCE. THE BIDDER IS RESPONSIBLE FOR ENSURING THEY HAVE COMPLETED THE INFORMATION REQUIRED ON THE ATTENDANCE SHEET. THE PURCHASING DIVISION AND THE STATE AGENCY WILL NOT ASSUME ANY RESPONSIBILITY FOR A BIDDER'S FAILURE TO COMPLETE THE PRE-BID ATTENDANCE SHEET. IN ADDITION, WE REQUEST THAT ALL POTENTIAL BIDDERS INCLUDE THEIR E-MAIL ADDRESS AND FAX NUMBER.</p> <p>ALL POTENTIAL BIDDERS ARE REQUESTED TO ARRIVE PRIOR TO THE STARTING TIME FOR THE PRE-BID. BIDDERS WHO ARRIVE LATE, BUT PRIOR TO THE DISMISSAL OF THE TECHNICAL PORTION OF THE PRE-BID WILL BE PERMITTED TO SIGN IN. BIDDERS WHO ARRIVE AFTER CONCLUSION OF THE TECHNICAL PORTION OF THE PRE-BID, BUT DURING ANY SUBSEQUENT PART OF THE PRE-BID WILL NOT BE PERMITTED TO SIGN THE ATTENDANCE SHEET.</p> <p>EXHIBIT 10</p>		

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LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
REQUISITION NO.:						
ADDENDUM ACKNOWLEDGEMENT						
I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.						
ADDENDUM NO.'S:						
NO. 1						
NO. 2						
NO. 3						
NO. 4						
NO. 5						
I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.						
VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.						
..... SIGNATURE						
..... COMPANY						

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<p>..... DATE</p>						
<p>NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.</p> <p>REV. 09/21/2009</p> <p>EXHIBIT 2</p> <p>LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE UPON AWARD AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING THIRTY (30) DAYS WRITTEN NOTICE.</p> <p>UNLESS SPECIFIC PROVISIONS ARE STIPULATED IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS, AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.</p> <p>RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE</p>						

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<p>RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM WITH THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.</p> <p>OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK).</p> <p>QUANTITIES: QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIES BY THE STATE SPENDING UNIT. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACT SHALL COVER THE QUANTITIES ACTUALLY ORDERED FOR DELIVERY DURING THE TERM OF CONTRACT, WHETHER MORE OR LESS THAN THE QUANTITIES SHOWN.</p> <p>ORDERING PROCEDURE: SPENDING UNIT(S) SHALL ISSUE A WRITTEN EQUIPMENT CONTRACT ORDER (FORM NUMBER WV-35) FOR COMMODITIES COVERED BY THIS CONTRACT. THE ORIGINAL WV-35 MUST BE SENT TO THE PURCHASING DIVISION OF THE DEPARTMENT OF ADMINISTRATION. AFTER APPROVAL AND ENCUMBRANCE, ONE COPY OF THE PURCHASE ORDER WILL BE RETURNED TO THE SPENDING UNIT AND ONE COPY FORWARDED TO THE VENDOR AS AUTHORIZATION FOR SHIPMENT. NO ORDER IS VALID UNLESS APPROVED AND ENCUMBERED BY THE PURCHASING DIVISION.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FUTHER ORDER.</p>						

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LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
	SEALED BID					
	BUYER:		SHERI SLONE - FILE 33			
	RFQ. NO.:		7011EC18			
	BID OPENING DATE:		04/21/2011			
	BID OPENING TIME:		1:30 PM			
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:						

CONTACT PERSON (PLEASE PRINT CLEARLY):						

***** THIS IS THE END OF RFQ 7011EC18 ***** TOTAL: _____						

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EQUIPMENT DIVISION

PROCUREMENT SPECIFICATIONS
NO. 377-2-F

64,000 GVW CAB AND CHASSIS, STAINLESS STEEL COMBINATION
DUMP/SPREADER MUNI BODY, AND PISTON PUMP HYDRAULIC SYSTEM

1.0 PURPOSE

It is the purpose of these specifications to describe a 64,000 GVW Cab and Chassis, Stainless Steel Combination Dump/Spreader Muni Body, and Piston Pump Hydraulic System (hereinafter referred to as a "dump truck" 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, WILL 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 exception must be noted on the bidder's evaluation report and should be accompanied by supporting documentation/literature from the manufacturer. Any exception must be indicated on a separate attachment to the bidder's evaluation report and labeled as "Exception to Specifications".** 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 as stated in Purchasing Divisions Policies and Procedures. Any bid failing to meet any mandatory item shall be immediately disqualified. Failure to respond in the appropriate evaluation section will 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 may 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 shall be within 240 calendar days after receipt of purchase agreement.** The vendor is responsible for establishing and coordinating delivery terms with allied manufacturers or suppliers. Delivery terms should be stated in the bid and the State reserves the right to accept or reject 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 120 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, 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 or 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.

If a three (3) year bumper to bumper basic parts and labor warranty is available, please quote so along with all costs and conditions.

THE "WARRANTY AND SERVICE POLICY QUESTIONNAIRE" ATTACHED IN THE BIDDER'S EVALUATION REPORT MUST BE COMPLETED IN ITS ENTIRETY BY THE SUCCESSFUL BIDDER OR MANUFACTURER PRIOR TO DELIVERY OF THE PILOT MODEL. (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:

8.0 SPECIFICATIONS - CAB & CHASSIS

Cab and chassis shall have a minimum 2 year basic bumper to bumper warranty including parts and labor

8.1 The GVWR rating shall be 64,000 Lbs. minimum rating

8.2 Cab to Axle Dimension: Approximately 126 inches usable

8.2.1 After frame length shall be no less than 60 inches minimum

8.3 Wheelbase: Approximately 186 Inches and must be set forward design for snowplow application for various plows. (Power Reversible approximately 2,000 lbs.)

8.3.1 Wheel base and CA dimension may be adjusted to provide the optimum legal weight distribution.

8.3.2 BBC (Bumper to Back of Cab) 111 inch minimum to 120 inch maximum dimension excluding frame extension.

8.4 Frame: The manufacturer shall provide a frame that meets or exceeds all Federal requirements for G.V.W.R. specified that extends forward beyond the grille a minimum of 14 inches. Frame shall conform to the following:

8.4.1 Frame material to be minimum 110,000 PSI yield strength. Frame extension to be a "parent rail" material.

- 8.4.2 R.B.M.: Minimum 2.6 million Ins./Lb.** (Approximate Ratings). An integral frame and frame extension is preferred.
- 8.4.2.1 Where engine and radiator adjustments are required, **a minimum of 1.7 million in lb. per rail (RBM) will be accepted.**
- 8.4.3 Main frame and any required liners to be either straight channel or offset channel, full length.
- 8.4.4 Minimum frame RBM to be approved by manufacturers Engineering Department. Bolt-on or welded extension will not be accepted.**
- 8.4.5 Front frame shall accommodate the Department's standard hydraulic PTO shaft and pump, and the plow frame. It shall provide easy service accessibility.**
- 8.4.5.1 Front frame mounted tow hooks
- 8.4.5.2 Omit Factory Installed Front Bumper
In the Body Section under the following paragraphs, you will find information concerning the building of a front bumper for these units. (9.23 through 9.23.9)
- 8.5 Cab:** The cab to be the manufacturer's standard steel, aluminum and/or fiberglass with premium or manufacturers highest level interior trim with inside noise level rating not to exceed 80 dba in compliance with Federal regulations. **Shall include ambient temperature display for outside temperature.** Hood to be tilt hood and fenders either steel and/or fiberglass and should be provided with rear air bag suspension. Also, inner fender panels that are adequate to keep materials from engine compartment.
- 8.5.1 Cab Door Locks, Both Doors, keyed alike
- 8.5.2 Dual Sun Visors
- 8.5.3 Arm Rests, Both Sides
- 8.5.4 Seats:** Fully adjustable air ride high back with head rest, cloth covered both left hand and right hand sides. **Minimum of 12 inch clearance between seats.**
- 8.5.5 Floor Mats: Rubber floor mats throughout cab area with non-absorbent backing under the mats. (No carpeting)
- 8.5.6 Turn Signals: Manufacturers Standard with hazard warning switch.
- 8.5.7 Heater and Defroster: Fresh Air Type, Heaviest Duty

- 8.5.8 Windshield Wipers and Washers: Manufacturer's heaviest duty "artic type" with Intermittent feature with manufacturers largest reservoir filled with antifreeze type solvent
- 8.5.9 Instruments:
All instruments dash-mounted except where specified otherwise.
All standard instruments to be supplied, including but not limited to the following:
- 8.5.9.1 Coolant, oil pressure gauges, to have both dial type readout and either an audible or visual alarm to warn operator when safe operating conditions are exceeded.
- 8.5.9.2 Voltmeter or Ammeter
- 8.5.9.3 Engine RPM Tachometer
- 8.5.9.4 Speedometer with Odometer
- 8.5.9.4.1 Provisions for dual speedometer leads shall be made available.**
- 8.5.9.5 Primary Air Pressure Gauge
- 8.5.9.6 Auxiliary Air Pressure Gauge (may be combined with 8.5.9.5)
- 8.5.9.7 Air filter manufacturers heaviest duty dual element type that meets all requirements of extended engine warranty.
- 8.5.9.8 If unit is equipped with front air intake, an air actuated or cable control valve shall be provided to enable operator to divert air intake to engine compartment while in snow plowing application.**
- 8.5.9.9 Air Filter Restriction Indicator gauge shall be dash mounted**
- 8.5.9.10 Engine Hourmeter (Controlled by engine operation, not by key switch).
- 8.5.9.11 Fuel level reading.
- 8.5.9.12 Parking brake to be dash controlled with indicator light
- 8.5.9.13 Manufacturers best sound/weather insulation package for proposed cab
- 8.5.9.14 Outside temperature control with in cab digital read out

- 8.5.10 Rearview Mirrors:
- 8.5.10.1 Mirrors to be West-Coast Type, approximately 7" x 16" power adjustable with convex spot mirror.
- 8.5.10.2 Both mirrors to be heated type with stainless steel, composite, powder coated or aluminum hardware with corrosion resistance, heads, and fasteners.
- 8.5.11 Grab Handle: Right Hand and Left Hand Sides, internal or external mounting to rear of door opening. If inside handles are featured, one (1) outside, left, mounted grab handle with non-slip insert for bed aggregate inspection must be furnished.**
- 8.5.12 Air horns, with snow shields if cab mounted, with adequate clearance for future installation of body dump cab protector. Single air horn may be used without snow shield if mounted downward on frame rail under hood.
- 8.5.13 Unit to include lockable hand operated throttle control or electronic control for idle up and idle down for hydraulic flow rate.
- 8.5.14 Manufacturer should provide for stationary grille or grille with cutout area to allow tilt hood to clear snow plow mount. Stone/gravel guard to be provided to protect radiator from foreign objects.
- 8.5.15 Air Conditioning: Manufacturers fresh air type heaviest duty with APADS or equivalent RCD (refrigerant control and diagnostics) system to include replaceable fresh air filter.
- 8.5.16 Radio: AM/FM stereo with weatherband radio feature
- 8.5.17 Glass: Manufacturers tinted safety glass (all locations)
- 8.5.17.1 Dual power windows
- 8.5.18 Manufacturers engine cover or dash mounted extended two (2) cup drink holder.
- 8.5.19 Front mudflaps to be manufacturers standard for unit bid.
- 8.5.20 Emergency triangle warning kit, with hold down (KD610-464S, KD Lamp Co. or equal), stowed (fastened) in the cab. (Check with DOH representative before mounting.)
- 8.5.21 Manufacturers tilt steering column with cruise control feature or provide locking hand operated throttle, steering wheel approximately 18 inches diameter

- 8.5.22 Fire extinguisher - rechargeable with vehicle mount. Mounted in the cab for easy and quick access. 2A-10B-C or equal
- 8.5.23 **Accessories not indicated above but are included in the manufacturer's standard cab shall be provided.**
- 8.5.24 **Successful vendor shall provide WVDOH with complete list of all filters required for normal maintenance on proposed unit.**
- 8.6 **Engine: The engine shall be diesel powered 10.8 liter minimum, peak HP 395 @1400-1700 RPM. electronic, minimum torque 1450 lb. ft. @1200 RPM. Engine must be compliant and certified to meet USEPA 210 Emission Standards without using Federal EPA credits.**
- 8.6.1 Engine manufacturer to make provisions for front mounted hydraulic pump to crankshaft pulley.
- 8.6.1.1 In block engine heater 1500 Watt
- 8.6.1.1.1 The electrical cable from the heater to plug to be one piece and waterproof, location - left side under driver door.
- 8.6.1.2 Fuel heater/water separator to be provided inside of engine compartment. Davco, Racor, Alliance, or approved equal.
- 8.6.1.2.1 Engine fuel system to be equipped with primer pump
- 8.6.1.3 Exhaust:
- 8.6.1.3.1 A single vertical exhaust pipe with underbody muffler that will meet all Federal noise abatement requirements. Exhaust to the passenger (right) side of unit.
- 8.6.1.3.2 **The tail pipe must be shielded or insulated to protect personnel from burns when entering or exiting the cab. The shield to be 180 degrees to 360 degrees and shall be of non-rustable material such as stainless steel or aluminum. Riker or equal.**
- 8.6.1.3.3 Exhaust pipe with rain cap or exhaust turn out
- 8.6.2 **Jacob's Engine Brake/Cummins C-Brake/ Mack Power Leash/compression and exhaust or equivalent shall be provided for engine specified.**

- 8.6.3 The engine components facing wheel areas, on both sides, and the areas to the rear of wheels to be shielded by means of rubber skirts supported by easily removable steel rods.
- 8.6.4 Engine oil pan to be zinc nickel plated, aluminum, or non-corrosive coated.
- 8.7 Clutch:
- 8.7.1 Externally lubricated and manually adjusted with torque limiting clutch brake.
- 8.7.2 Clutch adjustment to be set to specifications prior to delivery to the Department.
- 8.7.3 Clutch to be dual plate ceramic clutch, minimum 15 1/2 inch. Kwik-adjust (manual) feature, Eaton Fuller EP1552 with 7 spring damper or equal.**
- 8.7.4 Clutch to meet or exceed peak engine torque.
- 8.8 Cooling System: The cooling system must be capable of maintaining engine temperature within the manufacturer's recommended range during continuous operation.**
- 8.8.1 The system should incorporate a thermostat and bypass for warm up and **shall be filled with permanent type Dex-Cool extended life or equal antifreeze rated to a-30°F or lower.** Low silicate type antifreeze for diesel engine only.
- 8.8.2 The largest factory available engine cooling capacity compatible with engines and transmission referenced and for continuous high engine output under extreme temperatures and/or operating conditions due to prolonged snow plowing operations in low gears.
- 8.8.3 Unit to be fitted with provisions for visually monitoring coolant without necessitating removal of the cap from the radiator or expansion tank.
- 8.8.4 The radiator mounting shall provide adequate clearance to facilitate the installation of a crankshaft driven PTO drive shaft.**
- 8.8.5 The distance between the extreme tip of the radiator fan blade and the centerline of the crankshaft to be a minimum of three inches (3") to insure adequate clearance for PTO drive shaft.**
- 8.8.6 Radiator and heater hoses shall be Gates Blue Stripe EPDM or manufacturer's silicone standard**

8.9 Fuel Tanks:

8.9.1 Safety type aluminum fuel tanks as per the requirements of FMVSS.

8.9.2 Single aluminum 60 U.S. gallon (usable) minimum total capacity, frame mounted

8.9.3 Driver and passenger entrance steps - grated self cleaning safety step

8.9.3.1 All edges to be banded (skirting) on the outer perimeter.

8.9.3.2 Top of the first step approximately 21 inches above ground.

8.9.4 Shall provide a fuel draw system that meets all Federal 2010 emission standards

8.10 Electrical System:

8.10.1 Type: Manufacturer's 12 volt negative ground system with manufacturers radio interference suppression.

8.10.1.1 Circuit breaker equipped, in easily accessible location, weatherproof.

8.10.2 Three (3) or four (4), heavy duty - 12 volt batteries, maintenance free with sealed terminals

8.10.2.1 Reserve Capacity: 555 minutes minimum (@ 80 degrees F)

8.10.2.2 Cold Crank AMPS: Approximately 2500 (@ 0 degrees F)

8.10.3 Alternator Capacity: 110 AMPS minimum with internal regulator.

8.10.4 Wiring: To be heavy duty hypalon type or equal in heavy duty sheathing, bundled with lacing cords or non-metallic tie straps

8.10.5 Lighting: Provisions shall be made available for all required lighting on completed unit (number, location, and color) to conform to the West Virginia Motor Vehicle Code.

8.10.6 Auxiliary snow plow/salt spreader lighting package:

8.10.6.1 Truck vendor may eliminate rear tail lights but must provide minimum of four (4) feet of wiring bundled at the end of the frame for body vendor hook up of tail lights and etc. in the dump bed body.

8.10.7 Manufacturer or successful vendor shall be required to make provisions for manufacture approved wiring and weatherproof disconnect plug (Weather Pac in line seven (7) pin connector - Part Number 12110751) with approximately three (3) foot "pigtail" to operate combination left and right turn/park lights/auxiliary headlights.

8.10.7.1 Provisions for weatherproof disconnect plug should be located at lower left front grille-bumper area. All wiring connections to be weatherproof with wiring encased in wire looms. Exact location should be discussed with WVDOH representative before pilot review.

8.10.7.2 A 7-way trailer connection light socket to be mounted at rear of truck frame. Plug to be Cole Hersee Part No. 12081 or approved equal.

8.10.7.3 Manufacturer shall provide body builder circuit interface capability with connection plug to be located at rear of frame for body builder connection to stop, tail, and marker light circuits, ignition controlled auxiliary feed to ground to provide splice free chassis wiring integrity.

8.10.7.4 Manufacturer shall provide body builder circuits – three (3) switches minimum shall be located in the dash instrument panel with one (1) weather protected body builder connection box or module located at the rear under cab. To have 20 amps per channel, 80 amp maximum output. The dash switches are to control the power module with LED backlighting.

8.11 Power Train Overview:

Lubricants for front axle hubs and differentials, automatic transmission, transfer cases, and all rear differentials shall meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and should have all plugs identified as synthetic or painted red.

8.11.1 Transmission: Allison 4500RDS 6 speed or equal shall be provided with manufacture transmission oil cooler

8.11.1.1 Transmission torque capacity shall meet or exceed specified engine torque

8.12 Driveline:

8.12.1 Should be Spicer 1810 series main/1710 Interaxle Model J400S driveline or equal.

8.13 Rear Axle:

8.13.1 To be:
 Dana Spicer D46-170P/R46-170D or equal
 Rockwell RT46-160-P
 Mack S440 (46,000 lb. with pump)

- 8.13.2 Each unit to be equipped with driver controlled main locking differential in forward and rear axle that is manually cab controlled.
- 8.13.3 Ratio: Gear ratio to be determined by bidder; however, these vehicles to be capable of a top speed of approximately 70 MPH
- 8.13.4 Aluminum or lightweight housing is not acceptable.
- 8.13.5 Stemco Guardian rear wheel seals or equal
- 8.13.6 Drain plug, magnetic
- 8.14 Front Suspension:
 - 8.14.1 10,000 lb. capacity at ground each front spring, total spring capacity 20,000lb.
 - 8.14.2 The front spring pins or bearings/bushing to be furnished with 360 degree grease grooves to insure adequate lubricant penetration.
 - 8.14.3 Spring hangers to be heavy castings with sufficient pin and bearing surface to render trouble free service.
- 8.15 Rear Suspension: Hendrickson RT463 or equal
- 8.16 Front Axle should be:
 - 8.16.1 Capacity: 18,000 lbs. minimum**
 - 8.16.1.1 The front axle, drag links, and tie rods to have grease zerks installed.
 - 8.16.2 Heavy Duty Shock Absorbers
 - 8.16.3 Front Wheel Seals to be oil lubricated type. (Stemco or equal)
 - 8.16.4 Proposed unit must provide adequate tire clearance at maximum turning angles.**
- 8.17 Brakes should be:
 - 8.17.1.1 Type: Full Air, with manufacturers ABS in compliance with the most current FMVSS requirements.
 - 8.17.2 Compressor: Manufacturer's selected model. 15.5 cu. ft. minimum**
 - 8.17.3 Service Brake Size: (Approximate)
 - 8.17.3.1 Front: 16 1/2 inch x 5 inch or 16 1/2 inch x 6 inch "S" cam or a power front disc brake system providing equal performance.

- 8.17.3.2 Quick change type single or double anchor pin if drum type brakes are furnished.
- 8.17.3.3 Rear: 16 1/2 inch x 7 inch "S" cam with quick change type single or double pin.
- 8.17.3.4 All brake chambers to be sealed brake chambers with epoxy exterior coat on front and rear chambers. MGM, Anchorlok Goldseal or approved equal.
- 8.17.4 Drum brakes to have automatic slack adjusters and be clearance sensing type only, with adjustment on application of the brake
- 8.17.5 Parking Brake: Rear wheel spring type, MGM TR-TS Series or equal - severe service spring brakes
- 8.17.5.1 Parking brake to provide modulated emergency braking via the foot valve in the event of a rear service system failure.
- 8.17.6 Air dryer with heater minimum 20 inches above road surface.** Bendix AD-9 or equal with spin on desiccant cartridge or equivalent. Installation made in concurrence with the air compressor manufacturer's recommendations.
- 8.17.6.1 All electrical connectors for drain valve and air dryer to be covered with heat shrink material or have sealed connections.
- 8.17.7 Manufacturer's standard air tanks for service brakes; auxiliary tank for parking brake.
- 8.17.8 Low air pressure warning light and buzzer
- 8.17.9 Rear service brake chambers and spring brake chambers mounted to provide adequate clearance for tire chains and backing into bituminous paving machines. Factory installation, only.
- 8.17.10 Brake dust covers to be installed on all wheels
- 8.17.11 Unit to be equipped with hand control valve, tractor protection valve, with provisions for installation of glad hands at rear of truck to enable unit to pull air brake operated equipment trailer
- 8.17.11.1 Glad Hands: Glad hands shall be recessed as not to stick out past the end of frame rails**
- 8.18 Tires and Wheels:
- 8.18.1 The truck shall be equipped with hub piloted steel disc wheels for tubeless tires.**

- 8.18.2 The wheel end to be equipped with outboard cast brake drums, and 15 degree tubeless steel wheels, hub piloted, 10 hole - 285.75mm bolt circle with 220mm two-piece flange nuts.
- 8.18.3 Front:
- 8.18.3.1 **Wheels:**
22.5 x 9.0, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 10,000 lbs. at a **maximum inflation pressure of 130 PSIG.** Accuride part number 29039 or equivalent with 0.500 inch thick disc, non standard off set with steel hubs. **Preferred to be powder coated but shall have gray top coat.**
- 8.18.3.2 Tires: 31580R22.5 - 20 ply
- 8.18.4 Rear:
- 8.18.4.1 **Wheels:**
Shall be 22.5 x 8.25, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 7,500 lbs. at a maximum inflation pressure of 120 PSIG. Accuride part number 29169 or equivalent with 0.472 inch thick disc. **Preferred to be powder coated but shall have gray top coat.**
- 8.18.4.2 Tires: 11R22.5H
- 8.18.4.3 **The dual rear wheel/tire assembly shall have clearance between the tires, which permits the use of dual tire chains.**
- 8.18.5 **All wheels shall include wheel separators**
- 8.18.6 **Tires (No substitute. All tires shall be radials.)**
- | <u>Manufacturer</u> | <u>Front Tire</u> | <u>Rear Tire</u> |
|---------------------|-------------------|------------------|
| Goodyear | G-287MSA | G-244 MSD |
| Michelin | PILOT XZY-3 | XDY-3 |
- 8.19 Steering:
- 8.19.1 Power steering: Dual integral or single integral type hydraulic power steering with right wheel power-assist cylinder.

- 8.19.2 Steering system: (flow, pressure, relief valve, etc.) To be selected considering the full front -GVWR axle loading. Ross or Sheppard gear assembly.
- 8.19.3 Hydraulic supply pump: Vane type or roller type with sufficient oil flow to permit one (1) steering wheel revolution per second with front axle loaded to rated capacity, with plow on, in a “park” condition. Vickers V-20, Eaton or Borg Warner.
- 8.19.4 The pump should not be the integral filter type unit.
- 8.19.5 Power steering reservoir: “Remote mounted”, minimum 2 quart capacity, incorporating a filter which is easy to remove and replace.**
- 8.19.6 The remote filter referenced above to be factory mounted, certified, and engineering approved in conjunction with the appropriate pump.
- 8.20 Unit shall include all other features considered as standard equipment but not specifically addressed above.**
- 8.21 Paint: - The unit should be painted as described:
- 8.21.1 Cab exterior and interior: Federal Standard White 595 A (No. 17875)
- 8.21.2 Grille: Manufacturer's standard grille paint similar to silver or aluminum in color. Grilles made from bright finish or bright plated material do not require painting.
- 8.21.3 Wheel paint shall be topcoat painted with TGIC Polyester Powder Paint MLD-82008 High Gloss Gray or equal applied over Cathodic Electro-Disposition Gray Primer or equal. (See Section 8.18.3.1 and 8.18.4.1)**
- 8.21.4 Manufacturer's standard plant procedures for cleaning, degreasing, preparing, priming and painting are sufficient to meet the requirements for painting of cab (white). Cab will not be painted white over top another finish color.
- 8.21.5 The Department reserves the right to view larger paint samples after award of contract and the right to require subtle color changes in both the blue and white paint. Such changes, if any, will only be used for selecting a suitable paint color to match the WVDOH logo.
- 8.21.6 In order to test the adhesive quality of the paint, the DOH may, at its option, require that the vendor measure adhesion by the criteria set forth in ASTM D3359-74, Method B. A rating of less than 4 on this test would be deemed unacceptable.

8.22 Detail/Decorative Stripes with Logo:

8.22.1 Width: to be 2 inches

8.22.2 WVDOH logo (to be supplied by WVDOH) is attached (black and white copy) and is approximately 7 inches tall by 7 inches wide. Area behind logo and within 2 inches of logo is not to be striped. Stripes should be cut to follow contour of logo, in lieu of straight cut.

8.22.3 Striping material to meet the requirements of ASTM D4956-91 Type V sheeting, a super high-intensity retroreflective sheeting consisting of microprismatic retroreflective elements. **The conspicuity sheeting must meet the requirement of NHSTA, DOT, 49CFR, Part 571 Federal Motor Vehicle safety standards for conspicuity sheeting and be "DOT approved".**

8.22.4 The sheeting for both applications above should not be more than .0008 inch thick having approximately 47,000 microprisms per square inch and **shall come with an aggressive high tack pressure sensitive adhesive, reflexite or equal.**

8.22.5 Upper stripe color: Dark Blue

8.22.6 Lower stripe color: Light Gold

8.22.7 Bidder should consult with the WVDOH on proposal for striping before inspection of pilot model.

8.22.8 Bidder should attach proposed paint plan with this bid. It should include chips or samples of proposed paints as well as a proposed striping detail on a cab silhouette sheet. Bidder may modify attached striping plan to fit his particular cab shape.

8.23 Vendor must certify that the unit offered will meet or exceed the "Occupational Safety and Health Act of 1970" and subsequent amendments.

8.24 Advertising: No visible decals or nameplates or painted on names representing the manufacturer or model number or trademark should appear on the exterior of the unit. Logos created through the stamping or casting process of manufacture are acceptable.

8.25 Preventive Maintenance and Operator's Training School

8.25.1 Manufacturers and/or dealers will be required to stage a thorough seminar on the subjects Preventive Maintenance and Operator Training. The seminar should be held at the Equipment Division.

8.25.2 To make the program complete, we need, in addition to the operating and service manuals, booklets and pamphlets explaining the Preventive Maintenance and Operator Training procedures to be used by the operators of this equipment.

Must include such things as daily pre-start, inspection procedure, service schedule and routine maintenance required, safety precautions, etc. CD acceptable.

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

9.0 SPECIFICATIONS – 304 STAINLESS STEEL COMBINATION DUMP/SPREADER BODY

The combination dump/spreader body shall have a minimum two (2) year basic bumper to bumper warranty including parts and labor.

9.1 **Body capacity to be minimum 14 cubic yards water level**

9.2 Sideboard pockets and tailgate height should provide additional capacities of two (2) to five (5) cubic yards

9.3 Front body bulkhead to be 7 gauge 3/16 inch 201 stainless steel

9.3.1 Head sheet shall be vertical. Head sheets which are sloped to accommodate the hoist are not acceptable.

9.4 Cab shield to have sufficient clearance to ensure shield will not hit exhaust when dumping on uneven terrain

9.5 Two (2) front truck frame mounted tow hooks or eyes accessible through bumper (Refer 9.24.5)

9.6 Dimensions:

9.6.1 Inside length of body not to exceed 174 inches

9.6.2 Inside width of the body – 86 inches wide to maximize capacity and lower the center of gravity of the unit

9.6.3 Outside width of the body – 96 inches at the integral fenders

9.6.4 Body spacing from cab – 4 inch minimum

9.6.5 Basic side height – 44 inches (measure from the floor to top rail). Two (2) dirt shedding horizontal 10 gauge 201 stainless steel side braces on each side of body.

9.6.6 Tailgate height – 52 inches (measure from the floor to top rail)

9.6.7 Body overhang – 10 inches – 18 inches (measure from center of hinge pin)

9.6.8 Cab protector – 24 inches x 94 inches approximate with adequate clearance for cab mounted air horns

9.7 Cab protector to be sloped rearward for drainage purposes

9.8 Construction of the body sides, front, head, and tailgate shall conform to the following minimum specifications:

Steel types shall be 201 stainless steel (unless otherwise noted)

9.8.1 Floor: 1/4 inch thickness 304 stainless steel or abrasion resistant AR400 steel 3/16 inches thick

9.8.2 Sides: 7 gauge 3/16 inch thickness 201 stainless steel

9.8.3 Tailgate plate: 7 gauge 201 stainless steel

9.8.4 Top rail: 7 gauge 201 stainless steel

9.8.5 Cab protector: 10 gauge 201 stainless steel

9.8.6 Inside formed longitudinal shall be constructed of ¼ inch 201 stainless steel and outside formed long sill shall be 7 gauge 201 stainless steel with overall combined height of 12 inches minimum including internal stainless steel gussets. A ¼ inch thick 201 stainless steel fish plate shall be welded to the outside surface outside long sill above the rear hinge.

9.9 All welding inside the body should be continuous, not skip welded. All rails and posts to be continuous welded.

9.10 The rear corner posts should be full length, one (1) piece construction.

9.11 Cab protector sides, formed with gussets, should extend forward approximately 24 inches. **Clearance above highest point of cab should be three (3) inches minimum**

9.12 The body shall be a unibody design – no crossmembers

9.12.1 The body shall have one (1) piece sides constructed of 7 gauge 201 stainless steel

9.13 The floor constructed of 3/16 inch AR400 with five (5) inch round floor to side radius

9.15 An integrated center conveyor shall provide the ability of the body to convey granular materials with the body down and have the following features:

- 9.15.1 12.5 inches truck frame to body floor height for lower center of gravity and lower mounting height
- 9.15.1.1 Wood products are not acceptable between truck frame and bed
- 9.15.2 Abrasion resistant steel 3/16 inch AR400 conveyor floor
- 9.15.3 2 inch diameter front and rear shafts with eight (8) tooth sprockets
- 9.15.4 Drive sprockets are double keyed to shaft
- 9.15.5 Conveyor width – minimum 28 inches**
- 9.15.6 ¼ inch 201 stainless steel formed inner sill which also forms the conveyor chain guard**
- 9.15.7 7 gauge 201 stainless steel formed over long sills
- 9.15.8 3/16 inch AR400 conveyor bed floor**
- 9.15.9 Formed 3/8 inch thick tie plate to fully extend between the left and right side of the body, located at the rear of the unit. **This tie plate will provide additional structural support at the rear of the body to prevent sagging at the rear corner posts.**
- 9.5.10 Two (2) inch diameter drive shafts with eight (8) tooth sprockets. Drive sprockets are double keyed with ½ inch keys to shaft. **Sprockets shall be heat treated to 50 Rockwell C hardness.**
- 9.5.11 Conveyor to be driven with 25:1 planetary gearbox drive or equivalent on the rear shaft with approximately 8.0 CIR hydraulic motor. **And motor shall have an integral conveyor speed sensor.**
- 9.5.12 Conveyor chain to be D667K pintle type (24,500 lb. tensile/strand) **with minimum ½ inch x 1 ½ inch conveyor crossbars spaced on every other link**
- 9.5.13 A 10 gauge 201 stainless steel bolt in pan under the conveyor to keep material off chassis frame is required.
- 9.5.14 The rear apron shall have a bolt on cover plate which allows for easy access to gear case.**

- 9.16 7 gauge 201 stainless steel full perimeter dirt shredding boxed 7 panel tail gate with a 7 gauge 201 stainless steel 9 inch x 24 inch fully adjustable rear feed gate.
- 9.16.1 Rear feed gate to be lever operated or screw adjustable. The feedgate to be capable of being positively locked into position.
- 9.16.2 The tail gate to be hinged at top, flame cut hardware, pork chop type off-set hardware to achieve maximum opening of tail gate, **but shall have provision for pivoting at the bottom.** (Thus double acting tail gate being able to lay the tail gate down.)
- 9.16.3 Flush mount, ½ inch flame cut 304 stainless steel tail gate pivots
- 9.16.4 Heavy duty offset hinge plates, one (1) inch flame cut 304 stainless steel
- 9.16.5 ¾ inch 304 stainless steel latch hooks with 3/8 inch 304 stainless steel latch plates
- 9.16.6 Full perimeter 201 stainless steel boxing with all horizontal edges sloped outward
- 9.16.7 **Shall have three (3) 10 gauge 201 stainless steel sloped horizontal braces that are flush with perimeter boxing.**
- 9.16.8 Stainless steel upper pins with grease zerks.
- 9.16.9 **Latching action at the bottom of gate shall be operable by the truck driver without leaving the truck cab.**
- 9.16.10 Gate to be self aligning
- 9.16.11 Tailgate lower latch pins should be 304 stainless steel 1 ¼ inch diameter
- 9.17 **The body shall have the capability to convey to the rear with a stainless steel material spinner for distributing material.**
- 9.17.1 **It shall have a rear chassis mounted stainless steel spinner assembly that is adjustable left to right, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern.**
- 9.17.2 10 gauge stainless steel 20 inch diameter spinner disc to have replaceable fins
- 9.17.3 **Spinner disc vanes shall be 304 stainless steel**
- 9.17.4 **If spinner motor is mounted on top of spinner disc, the motor shall be enclosed in removable material shedding protective cover.**

- 9.17.5 **The spinner disc shall be driven by a 4-bolt 2.8 CIR hydraulic motor**
- 9.17.6 **Spinner motor shall have an integral sensor capable of providing spinner disc feedback to the in-cab console.**
- 9.18 Hydraulic Hoist:
- 9.18.1 **Shall be a Trunnion Mounted to bottom of dump body, not at top.**
- 9.18.2 **Telescopic hoist shall be no less than N.T.E.A. Class 90 – “Double Acting” with 26 ton capacity**
- 9.18.3 Single hoist cylinder to be trunnion mount
- 9.18.4 **Hoist cylinder shall have three (3) stages with approximately 140 inches of stroke – Part number MALHOIT CS-140-5.5-3DA or equal.**
- 9.18.5 **The cylinder shall have wear and corrosion resistant nitrided cylinder tubes.**
- 9.18.6 **There shall be a minimum two (2) year cylinder warranty.**
- 9.18.7 **A five (5) degree oscillating cylinder collar shall protect the cylinder against side stress, if trunnion mount cylinder is provided.**
- 9.18.8 **The body shall have 6 inch x 8 inch x 1/2 inch formed angle rear hinge assembly installed in the truck chassis frame (no hoist subframe).**
- 9.18.9 **The rear hinge assembly shall have cold roll steel hinge pins connecting to 2 1/2 inch hinge blocks with grease zerks**
- 9.19 **The following features shall be included:**
- 9.19.1 **Warning light (bed raised) control console mounted**
- 9.19.2 **Hydraulic oil level reading**
- 9.19.3 **Safety decals as required**
- 9.19.4 **201 stainless steel mud guards, 10 gauge x 24 inches x 30 inches permanently attached in front of rear wheels.**
NOTE: Rear mud flaps will be furnished by WVDOH. The body vendor to align exhaust stack for body clearance.
- 9.19.5 **201 stainless steel shovel bracket**

- 9.19.6 **201 stainless steel gussets (board pockets) for 4 inch x 6 inch lumber (rough) located at front and rear and mid-rail. 4 inch x 6 inch (rough) oak sideboards supplied and bolted through the gussets. Painted aluminum to match the body.**
- 9.19.7 **The unit shall have air operated tailgate spring applied air release mechanism. Pivot shafts included stainless steel bushings to eliminate seizing. Tailgate latch rods that extend the length of the body or have a cross shaft are not required.**
- 9.19.8 **1 1/2 inch 304 stainless steel grip strut walk rail installed on both sides of the body.**
- 9.19.9 **OSHA approved backup alarm, electronic ambient, adjusts to background noise, 112 dba shock mounted at the rear.**
- 9.19.10 **OSHA approved body support, both sides**
- 9.19.11 **Unit to be equipped with 49,000 lb. capacity pintle hook (Holland PH760 or approved equal) centered between rear frame rails. Height from ground level to center line of pintle “eye” to be 32 inches.**
- 9.19.12 **Air deflector – hood mounted, blue or smoke. Deflector manufacturer’s standard width for the truck mode. Access to front end hood tilt handle to be avoided. Extra handle acceptable.**
- 9.20 **Lighting: Weather/shock resistant lights LED type with average amp draw between .045 - .72. Grote/Truck Light or equal. All connections to have sure snap plug assemblies and epoxy sealed electronics to protect against shock and vibration.**
- 9.20.1 **All marker lights 2 1/2 inch diameter flush mount sealed beam lights with integral reflector mounted in rubber base.**
- 9.20.2 **All lights shall be connected to chassis through a weatherproof junction box located at the rear of truck.**
- 9.20.3 **Rear lights to be shock mounted, recessed oval stop, tail, turn, and recessed oval back up lights to be mounted in back post. Strobe lights (Trucklite Part #60360Y or equal) to be marked and switched from dash board location.**
- 9.20.4 **Center rear I.D. lights three (3) located in truck chassis.**

- 9.20.5 Two (2) amber oval LED strobe lights (Trucklite Part #60360Y or equal) to be mounted at the front corners of the cab protector, and two (2) amber oval LED strobe lights (Trucklite Part #60360Y or equal) mounted at each outside corner of the cab protector. Strobe lights to be marked and switched at dash board location.
- 9.20.6 Auxiliary headlights (Trucklite Part #80888 or equal with Bulb 27008 or equal) for snowplowing application to be shock mounted on fender of unit. The successful vendor to consult WVDOT for mounting position and bracket dimensions.
- 9.20.7 Two (2) oval amber LED strobe lights mounted at top of rear corner posts right and left sides and to be switched in combination with cab protector strobe. (PSE amber, Model oulxdsih or equal)
- 9.20.8 Lighted license plate bracket
- 9.21 There should be the following at the front or rear both sides of the body:
- 9.21.1 304 stainless steel fold down ladder that locks into position when either in the down or up position
- 9.21.2 Two (2) 304 stainless grab handles
- 9.21.3 The design and strength characteristics of the entire body to be such that the unit structural members and the hoisting system will not suffer any deformation, damage, or structural failure resulting from raising a distributed full payload.
- 9.22 Bumper:
- 9.22.1 The bumper to be formed out of 1/4 inch roll steel and weigh approximately 10.20 lbs. per square foot.
- 9.22.2 Bumper face to cover all of truck frame (approximately 12 inches) with two (2) flanges of approximately 2.25 inches top and bottom.
- 9.22.3 Bumper to be approximately 94 inches overall width
- 9.22.4 Bumper to be straight across front from centerline of truck chassis approximately 21 inches each side of centerline, making bumper straight approximately 42 inches long in center with ends swept back approximately 30 degrees and approximately 27 inches each side.
- 9.22.5 Bumper to have two (2) access holes for utilization of tow hooks

- 9.22.6 Upper and lower flanges to be cut and welded solid at point where bumper is bent and ground off smooth.
- 9.22.7 Bumper to be mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side.
- 9.22.8 Mount angle to be approximately 1/4 inch x 3 inches x 8 inches long with four (4) 5/8 inch holes.
- 9.22.9 Front bumper to be painted Martin Senour Dark Blue #82-5802 or similar.
- 9.23 Underbody Tool Box:
 - 9.23.1 One (1) tool box to be mounted under body on right side frame rail.
 - 9.23.2 Tool box to be 18 inches high, 24 inches wide, 18 inches deep cradled by a heavy steel angle frame attached to the truck frame.
 - 9.23.3 Construction should be of 14 gauge minimum A-60 galvaneal steel with all seams welded.**
 - 9.23.4 Tool box to have a horizontal hinged fold down door.
 - 9.23.5 Tool box door should have cable or chain to hold the door in a horizontal position.
- 9.24 Load covering system to be electrically or air controlled:
 - 9.24.1 Electric motor assembly to include 12 volt direct drive motor with forward and reverse action, cab mounted control switch, resettable circuit breaker.
 - 9.24.2 Pivot arm assembly should be constructed in a two (2) piece bent arm configuration of approximately 1 1/4 inch 14 gauge steel tubing.
 - 9.24.3 Bent arm extensions to be constructed of minimum of one (1) inch 14 gauge steel tubing.**
 - 9.24.4 Rear cross to be constructed of approximately 1 1/4 inch 14 gauge steel tubing.
 - 9.24.5 Pivot arm rests to be included.
 - 9.24.6 Underbody spring to be extension spring approximately 12 inches in length attached to base of pivot arm and of body with articulating spring mounting bracket.

9.24.7 All steel components to be finished with manufacturer’s recommended **rust preventative system to include a minimum of adequate primer and paint.**

9.24.8 Steel cab protector mounted triple bend wind deflector to be provided.

9.24.9 Load covering system to be provided with minimum of 18 oz. black vinyl tarp to fit 14 foot 6 inch body.

9.24.10 Load covering system shall be supplied with all necessary hardware and delivered to the West Virginia Division of Highways as a complete and operational unit.

9.25 Paint:

9.25.1 There shall be no paint on the 304 stainless steel surfaces of the body.

9.25.2 All 304 stainless steel surfaces are to be unpainted and cleaned with an acid wash solution to remove carbon burning from the stainless steel welds.

9.25.3 Non-304 stainless steel components on the body to be painted aluminum.

9.25.4 Front bumper: Martin Senour Dark Blue #82-5802 or similar (See drawing)

9.26 Detail/Decorative Stripes with Logo:

9.26.1 Tailgate and body sides to be outlined with red/silver pre-striped conspicuity retroflective weather resistant striping. Successful bidder shall consult with WVDOH of proposed striping before review of pilot model.

9.26.2 Bidder to describe proposed method of painting in the compliance report and location of body handrails, handle, grip strut walk rail, and overall body characteristics.

9.26.3 WVDOH logo (to be supplied by WVDOH) is attached (black and white copy) and is approximately 7 inches tall and 7 inches wide. Area behind logo and within 1/2 inch of logo is not to be striped. Stripes should be cut to follow contour of logo, in lieu of straight cut. Striping shall be installed.

9.26.4 Striping material to meet the requirements of ASTM.D4956-91 Type V sheeting, a super high-intensity retroflective sheeting consisting of microprismatic retroflective elements. The conspicuity sheeting must meet the requirement of NHSTA, DOT, 49CFR, PART 571 Federal Motor Vehicle safety standards for conspicuity sheeting and be “DOT” approved.

- 9.26.5 The sheeting for both applications above should not exceed more than .0008 inch thick having approximately 47,000 microprisms per square inch **and shall come with an aggressive high tack pressure sensitive adhesive, Reflexite or equivalent.**
- 9.26.6 **Striping as specified shall be installed by the successful bidder.** Bidder should consult with the WVDOH representative on proposal for striping before pilot review.
- 9.27 **The body shall include all other features considered as standard, but not specifically addressed above.**
- 9.28 **Vendor must certify that unit offered will meet or exceed the “Occupational Safety and Health Act of 1970” and subsequent amendments.**

10.0 SPECIFICATIONS – CENTRAL HYDRAULIC SYSTEM

The central hydraulic system described herein is to be designed to operate the following: A front mounted telescopic dump body hoist cylinder, a hydraulically driven integrated salt and abrasive spreader system requiring the simultaneous operation of two (2) hydraulic motors in two (2) different modes with conveyor reverse, a single acting snowplow lifting cylinder, a snowplow power angle system, plow balance system, and an auxiliary equipment drive circuit. **Provisions shall be made for a future add-on hydraulic driven pre-wet system.**

Pre-wet system:

Supplied spreader control must contain the ability to control a closed loop pre-wet system. System must operate using a flow meter feedback circuit. Controller software must allow for adjustability of pre-wet output by the operator, represented in gallons per ton. Information related to pre-wet application rate and total flow in gallons must be displayed on the screen while the pre-wet system is active. (A second control unit in the cab dedicated to pre-wet operation is not acceptable.)

The central hydraulic system shall have a minimum two (2) year basic bumper to bumper parts and labor warranty included.

10.1 Pump System:

10.1.1 Pump: Variable volume pressure compensated load sensing axial piston type.

10.1.2 Front mounting flange and main housing/case to be of cast iron construction. Inlet and outlet port section to be of high strength ductile iron with SAE split flange or orb type porting.

- 10.1.3 **Suction port and associated plumbing shall be sized to allow for minimum inlet restriction between the pump and the suction port on the reservoir. Installation must comply with pump manufacturers allowable inlet condition specifications.**
***Suction plumbing shall be equal to or greater than pump inlet or suction size. Example: 32 size equals 2 inch fitting to the industry.**
- 10.1.4 Pressure port to be of the SAE split flange or ORB type side mounted for direct bolt mounting of solenoid shut down valve assembly.
- 10.1.5 Case drain and load sense signal ports to be of the SAE O-ring type. Case drain line taken directly to tank without passing through the return line filter.
- 10.1.6 **Input shaft to have a minimum continuous torque rating equal to 200% of the imposed load when pump is operated at maximum engine rpm, maximum displacement and system pressure. Minimum SAE "C" keyed.**
- 10.1.7 Front input shaft bearing of the heavy duty ball or roller type designed for high axial and radial loading. Rear shaft bearing of the high speed and load sleeve type design. Bearings to be fully lubricated by flooded case oil.
- 10.1.8 Ramp/swashplate supported by pressure lubricated bearings of the rocker cam or saddle type for high piston load support. Ramp angle positioning by means of dual servo control cylinders for rapid pump response and precise pump output control.
- 10.1.9 Adjustable load sense and high pressure compensator control valve assembly of the full cartridge or of bolt-on housing design for ease of replacement and repair.
- 10.1.9.1 **System design and components to provide flow, pressure and performance requirements stated herein with a maximum operating load sense differential pressure of 300 PSI and a maximum standby pressure of 350 PSI for maximum efficiency. If pilot control shifted valving is utilized in the system they are to be designed to be fully functional within this pressure range.**
- 10.1.9.2 High pressure compensator valve to be preset to limit the maximum pump output pressure to the maximum required operating pressure plus load sense differential and margin pressure to prevent premature de-stroking of ramp resulting in reduced or insufficient pump output.

10.1.10

Pump Output:**Shall be capable of providing hoist cylinder extension required**

Part number MALHOIT CS-130-6-3 or equal – 15.5 gallons to fully extend but after filling 11 gallons is required to raise the cylinder:

10 GPM flow rate – 66 seconds to raise
 15 GPM flow rate – 44 seconds to raise
 20 GPM flow rate – 33 seconds to raise
 25 GPM flow rate – 26 seconds to raise
 30 GPM flow rate – 22 seconds to raise
 35 GPM flow rate – 19 seconds to raise
 40 GPM flow rate – 16 seconds to raise

Part number MALHOIT CS-130-5-3 or equal – 10.2 gallons to fully extend – 1.2 gallons to fill and 9 gallons to extend

5 GPM flow rate – 87 seconds to raise
 10 GPM flow rate – 44 seconds to raise
 15 GPM flow rate – 29 seconds to raise
 20 GPM flow rate – 22 seconds to raise
 25 GPM flow rate – 17 seconds to raise
 30 GPM flow rate – 15 seconds to raise
 40 GPM flow rate – 11 seconds to raise

10.1.11

Reference Models: Rexroth A10VO Series 31, Parker P2 Series, Vickers PVH800 Discovery Series. These references are given to represent the overall quality of construction, design and performance of the pump to be supplied. It is the responsibility of the bidder to assure compliance with the written specifications herein.

10.1.12

Name of manufacture and model number of proposed pump shall be submitted with bid documents.

10.1.13

Pump supplied shall be of a manufacture's standard product release and design. Pump models proprietary to a specific bidder and/or OEM are not acceptable.

10.1.14

Pump driveline assembly to be of the keyed shaft design utilizing a 4 bolt driveshaft flange and matching drive yoke on the pump.

- 10.1.14.1 **Driveline to have a minimum continuous torque rating equal to 200% of the imposed load when pump is operating at maximum system requirements. Minimum Spicer 1310-series or equal.**
- 10.1.14.2 Dual journals and yokes to be incorporated to connect the pump shaft and engine drive flange with an angular misalignment no greater than six (6) degrees and not less than two (2) degrees.
- 10.2 Pump Shutdown System:
- 10.2.1 **Shall be normally closed, energize to open, solenoid operated control valve of the cartridge and manifold design to be directly bolted to pump pressure port. Solenoid electrical connection of the Packard "Weatherpack" type with "SO" cable wiring.**
- 10.2.2 Valve controlled by a console mounted "Master On" switch with pilot lamp for normal system operation and by a float switch located in hydraulic reservoir to automatically shut off pump pressure port flow to all down stream functions in the event of low hydraulic oil level.
- 10.2.3 Pressure drop across valve not to exceed 40 PSI at 40 GPM flow when in the switched open position. Nominal valve rating of 50 GPM @ 3,500PSI.
- 10.2.4 SAE #6 gauge port equipped with Parker Hannifin model PD361 diagnostic coupling nipple and protective cap provided for pump output pressure testing to be installed in valve manifold and within an easily accessible mounting position.
- 10.2.5 Valve to be designed to protect the pump from damage when the system is shut down at high pressure and flow operation.
- 10.2.6 **Name of manufacture and model number of proposed valve shall be submitted with bid documents.**
- 10.2.7 Central control console mounted audio alarm and warning lamp indicating pump pressure/flow shutdown to be provided.
- 10.2.8 The warning lamp to be a press-to-test light and incorporate a switching system into the automatic shutdown assembly to simulate low oil level, shut off pump output flow and test float switch wiring and connections.
- 10.2.9 A console mounted electrical override function switch to be provided to allow momentary operation of hydraulic functions in emergency situations.

10.3 Directional Control Valve Assembly:

- 10.3.1 Valve to be of the stacked section type and of closed center circuit design.
- 10.3.2 Each work section to be pressure compensated with fully integrated load sense network. Flow output to be relative to spool travel with preset maximum flow rate obtained at maximum spool stroke to provide feathering control of operated function.
- 10.3.3 Dump body, snowplow lift and snowplow power angle sections to be of the manual cable shift type. Auxiliary circuit section to be of the electric solenoid shift type. Both ends of each section valve spool to be sealed with weather resistant caps or cable entry bonnets.
- 10.3.4 Valve assembly flow capacity rating and pressure drop characteristics shall be sufficient to provide for the required pump output and circuit flow rates at the specified maximum load sense differential pressure settings.**
- 10.3.5 All valve ports to be of the SAE O-ring seal type and be of sufficient size to handle required section flow rates at stated load sense differential pressure.
- 10.3.6 If valve supplied is pre-compensated design, a priority section shall be installed to allow flow to raise in a system over demand situation.**
- 10.3.7 Main pressure inlet relief valve provided to reduce system pressure shock loads. To be preset at pressure so as not to interfere with pump pressure compensator and to prevent premature relief opening at system high demand operation.
- 10.3.8 If pilot pressure reducing valve is required for solenoid section control, design shall meet operating requirements as set forth in section 10.1.9.1. Pilot supply and tank venting to be internal within the valve assembly sections.**
- 10.3.9 Load sense network high pressure relief provided and preset to limit system maximum operating pressure. Set point to provide proper pressure margin to pump pressure compensator and high pressure relief valve as to prevent premature loss of required flow rates and pressure capability.
- 10.3.10 SAE #6 gauge port equipped with Parker Hannifin PD361 diagnostic coupling nipple with protective cap for load sense testing to be installed in an easily accessible location.
- 10.3.11 Dump body control section to be 4-way three position spring centered cylinder spool for operation of a double acting hoist cylinder.

- 10.3.11.1 Full flow workport relief valve installed in power up port. Set point to prevent operating pressure from exceeding hoist cylinder normal operating pressure rating.
- 10.3.11.2 Full flow work port relief valve installed in power down port set at 500 PSI to prevent full system pressure on down stroke.
- 10.3.12 Snowplow lift control section to be 4-way three position spring centered cylinder spool for operation of a double acting lift cylinder. (Thus, eliminating skip plowing.)
- 10.3.12.1 Adjustable flow control installed to limit downward speed of snowplow. Flow limiting control system preset for proper plow lift speed to be supplied to reduce over demand operation and to increase system efficiency. Flow limit to be determined at time of pilot model review.
- 10.3.13 Snowplow power angle control section to be 4 way three (3) position spring centered cylinder spool for operation of cylinder type reversible plow.
- 10.3.13.1 Flow limiting control system preset for proper plow reversing speed to be supplied to reduce over demand operation and to increase system efficiency. Flow limit to be determined at time of pilot model review.
- 10.3.14 Plow Balance Valve:
- 10.3.14.1 **The hydraulic system shall be supplied with a plow balance valve**
- 10.3.14.2 **Valve shall be designed to offset a specific (adjustable) plow weight when activated.**
- 10.3.14.3 **Plow balance system must not alter the operation of any other hydraulic function or have an adverse effect on the performance of other hydraulically operated equipment including:**
- Wing Plow
 - Body Hoist
 - Plow Hoist or Angle
 - Spreader functions
- All normal operations of the plow lift/lower functions shall be maintained without additional tasks.**

- 10.3.14.4** To guarantee safe operation of the vehicle, plow lift must be immediate.
- 10.3.14.5** If solenoid valve coils are used, then they shall have manual override capabilities if needed for continued use when coils fail.
- 10.3.14.6** Manifold valve shall include a pressure test point for use when checking balance pressures.
- 10.3.14.7** Pressure test point must be capable of tapping into the system at pressures of 5000 PSI.
- 10.3.15 Auxiliary equipment drive circuit control section to be 3-way three position spring centered solenoid operated motor spool. This circuit to be separate and distinct from the spreader control system.
- 10.3.15.1** Flow limiting control system preset to provide a maximum of 22 GPM at a system load pressure of 2200 PSI. Pump shall be capable of supplying this flow rate with engine speed of 1400 RPM.
- 10.3.15.2** An inline mounted control valve may be supplied for this operation in place of directional control valve section. If supplied, proper interconnections and venting of load sense network system shall be provided.
- 10.3.15.3 Pressure line to be 3/4" SAE 100R2 hose and manifold mounted at rear of chassis and equipped with Parker Hannifin SH6-62 quick disconnect coupler and protective metal plug. Mating nipple SH6-63 with protective cap to be supplied. Mounting location to be determined at time of pilot model review.
- 10.3.15.4** Name of manufacture and model number of proposed directional and auxiliary circuit valves shall be submitted with bid documents.
- 10.3.16** Directional control valve assembly must be located in a combination tank/valve stainless enclosure assembly to protect the hydraulic tank/valve from the elements. Reservoir (tank) to be approximately 40 gallon capacity.
- 10.3.17 Pre-Wet Circuit:
- 10.3.17.1** A separate circuit shall be provided to control an add-on pre-wet system

- 10.3.17.2 Hydraulic valve may be of the sectional type or of the cartridge style contained in a manifold.
- 10.3.17.3 **If a manifold type valve is to be supplied, it must be attached to the main valve assembly (not separate or “power beyond”).**
- 10.3.17.4 **All wiring to the pre-wet hydraulic circuit shall be provided as part of the system contained in this bid.**
- 10.3.17.5 **Wiring to the control console related to the rest of the pre-wet system (low level float, flow meter connection, etc.) shall be provided as part of the pre-wet package at the time of pre-wet system install (not as part of this bid).**
- 10.4 Spreader Control Valve Assembly:
- 10.4.1 Spinner and conveyor solenoid flow controls to be of the PWM proportional solenoid type and equipped with manual overrides. Overrides to be manually adjustable over operating flow range in the event of electrical system failure.
- 10.4.2 Flow control circuits to be pressure compensated and provide a spinner and pre-wet flow rate of 0-7 GPM and a conveyor flow rate of 0-15 GPM. **Pressure relief valve system shall limit circuits to a maximum of 2200 PSI.**
- 10.4.3 Load sense circuits to be connected to directional control valve network for proper pump control. **Design shall prevent improper high pressure load sense signal and pressure line loading when spreader valve is not in use and when spreader quick disconnects are uncoupled.**
- 10.4.4 PWM solenoid control supplied by microprocessor spreader control system. Solenoids to be capable of 100% PWM signal without failure.
- 10.4.5 Solenoid operated directional control valve and in-cab mounted electrical switch to operate spreader conveyor reverse required for front or rear material discharge selection to be provided.
- 10.4.6 Electrical switching and indicator light for spreader clogged indication to be provided.
- 10.4.7 **Name of manufacture and model number of proposed valve shall be submitted with bid documents.**

10.5 Spreader Control System:

- 10.5.1 Dual flow, ground speed oriented spreader control system to be of the closed loop microprocessor based type with nonvolatile control memory.
- 10.5.2 Automatic calibration and flexibility of programming are required.
- 10.5.3 System must be capable of operation in ground speed oriented closed loop conveyor feed back, open loop, manual set, blast and unload modes and be fully functional in both front and rear material discharge selection.**
- 10.5.4 Automatic switchover with display indication from closed loop to open loop operation in the event of loss of feed rate sensor signal to be provided.
- 10.5.5 Control console digital readouts to be capable of displaying actual application rate, vehicle ground speed, distance of spread route driven and total quantity of material spread.
- 10.5.6 Programming and output cable connection for material and trip information printer and program uploading to be provided.
- 10.5.7 Control unit to be capable of accumulating such display information up to 999,999 miles and 999,999 tons of discharged material.
- 10.5.8 Console programming to be capable of selection, calibration and display of four (4) separate spread materials with independent application rates of each material capable of being set to fixed rates or to rate increments of a preset maximum application rate.
- 10.5.9 A variable digital access code lockout for application rate selection and for system operating parameters to be provided. A key switch will be acceptable.
- 10.5.10 Backlighted switches and LCD screen shall be utilized for on-board programming and for display readout and application rate selection.**
- 10.5.11 Material spread width to be selectable by no less than a ten (10) position switch with minimum and maximum spinner speed totally programmable through entire flow range. Spinner speed shall be capable of linking to ground speed for on-off control.**
- 10.5.12 Display must enunciate error message and sound audio alarm when microprocessor system detects any loss of control or accuracy.**

- 10.5.13 System shall be fully functional at time of delivery.**
- 10.5.14 Truck speed sensor to be compatible with type of speedometer drive system supplied on chassis.
- 10.5.15 A built-in ground speed simulator to be provided either internal to the control or located in the control console.
- 10.5.16 All components required for proper installation and operation of control system onto truck and spreader units must be supplied.**
- 10.5.17 Name of manufacture and model number of proposed control system shall be submitted with bid documents.**
- 10.6 Central Control Console:
- 10.6.1 To be mounted between seats within easy access of the driver.
- 10.6.1.1 Warning light (bed raised) to be control console mounted
- 10.6.2 All wiring, valve control cables and electrical harness entry into cab and console shall be sealed with grommets.**
- 10.6.3 Remote control valve levers to be console mounted. All levers to be clearly marked as to their function and operation.
- 10.6.3.1 Remote control levers to operate push-pull type cables with .250" diameter stainless steel rod ends.
- 10.6.3.2 Inner cable member to be 18-8 stainless steel armor wrapped construction with a low resistance nylon liner and polyethylene covered tempered steel wire conduit.
- 10.6.3.3 Cable to valve connection shall be of the weather resistant bonneted type.**
- 10.6.3.4 Hoist control lever must be OSHA 1926.601(b)(11) compliant (Hoist interlock).**
- 10.6.4 Central control console or dash mounted rocker switches with indicator lamps to be provided for strobe lights, spreader light and plow lights isolated from all hydraulic system control circuits.
- 10.6.4.1 All interconnections and cables to be installed and ready for operation.

- 10.6.4.2 Hydraulic system automatic shutdown system and control switching to be relay controlled.
- 10.6.4.3 Relay(s) to be mounted within the cab.
- 10.6.4.4 An access plate to internal wiring to be provided.

10.7 Hydraulic Reservoir and Valve Enclosure Assembly

- 10.7.1 Tank/valve enclosure to be flex mounted to the chassis frame rail.
 - 10.7.2 Tank to be constructed of seven (7) gauge 304 stainless steel minimum.**
 - 10.7.3 Tank equipped with a combination oil level sight glass and thermometer.
 - 10.7.4 Tank to be equipped with a ten (10) micron filler/breather cap with removable five hundred (500) micron strainer.
 - 10.7.5 An internal stainless steel baffle to be provided within the tank.
 - 10.7.6 Tank to be stenciled (**letters minimum 1 ½ “ high**) “Hydraulic Oil”
 - 10.7.7 Tank level switch connection to be “SO” type wiring and mounted within the tank/valve enclosure to protect it from the elements.
 - 10.7.8 Reservoir supply suction port to be minimum 2” NPT and system return port a minimum 1 ¼” NPT.**
- 10.8 Filtration:
- 10.8.1 Manufacturers standard filtration to adequately protect the hydraulic system from damage
 - 10.8.2 Return line filter to be isolated from reservoir by a full flow non-restrictive type quarter turn brass ball valve if filter is not installed in the reservoir.
 - 10.8.3 Each filter to be equipped with a differential pressure switch to indicate filter clogged condition by means of a console mounted indicator lamp.
 - 10.8.4 One (1) extra replacement filter for each assembly shall be provided for each truck.**
 - 10.8.5 Filter assemblies to be positioned as close to reservoir as possible and in an easily accessible service location.

10.9 Hoses and Fittings:

- 10.9.1 Each hose assembly (hose with hose ends), except for suction hose, to be fitted with JIC swivel connections on ends where connection to system component is made.
- 10.9.2 All pressure line hoses are to meet or exceed SAE Specification 100R2 and to be equal to Gates high pressure hose, type C2AT for sizes up to and including 1" ID.
- 10.9.3 Suction hose to be 2" nominal ID and meet SAE Specification 100R4, braided fiber, spiral wire reinforced, rubber covered hose with replaceable bolt-on type fittings.
- 10.9.4 All hydraulic hoses to be fully cleaned on interior, installed and ready for operation.
- 10.9.5 Grommets to be used when routing hoses through steel bracketing or frame members. (Refer 10.9.6)
- 10.9.6 **Snap-Tite quick disconnects (manifold mounted) shall be supplied for the spinner 1/2 inch pressure and return lines – VH Series Auger/Conveyor.** Use of iron or galvanized iron pipe for fittings and connectors is not acceptable.
- 10.9.7 All fittings and connectors to be of the steel type designed for high pressure hydraulic system use.
- 10.9.8 Pipe thread ported components and connectors to be used only when the specific component is not available with SAE or JIC porting.
- 10.9.9 All pipe thread connectors used are to be coated with liquid Teflon pipe sealer prior to assembly. Use of Teflon tape is not acceptable.
- 10.9.10 Hoses run to the front of truck chassis for snowplow functions to be manifold mounted behind the front bumper with sufficient access for pump service and snowplow hitch installation. Successful vendor should contact WVDOH representative for location prior to pilot model review.
- 10.9.11 Snowplow lines to equipped with complete ½ inch "VH" series Snap-tite quick disconnects (coupler and nipple to be supplied) and metal caps and plugs.
- 10.10 Any items not specifically stated herein but necessary for proper system installation and operation shall be supplied and shall comply with recommended hydraulic industry standards.**

- 10.11 Vendor shall be responsible for initial servicing and pre-testing of hydraulic system which includes the following:**
- 10.11.1 Initial fill of reservoir with a high grade 32AW hydraulic fluid to approximately forty (40) gallon level, to be marked on sight glass.
 - 10.11.2 Start-up and initial run of hydraulic system, checking for leaks, excessive heat, system efficiency, etc. Vendor will be responsible for replacing any defective component. Vendor will not be responsible for initial test of plow circuits if equipment is not available to do so; however, vendor will be responsible for any defects discovered at time of plow installation.
 - 10.11.3 Refill reservoir to the forty (40) gallon operating level.
- 10.12 Any hydraulic lines located within 10” of exhaust system to be metal lines and insulated.
- 10.13 Detailed component specifications, product literature, system component layout drawing with bill of materials and full functional hydraulic system schematics, in accordance with JIC and ANSI-Y32 format, shall be submitted with bid documents.**
- 10.14 Successful vendor shall provide WVDOH with complete list of all filters required for normal maintenance on proposed unit.**
- 10.15 With each purchase order, a minimum of three (3) one (1) day training sessions covering the operation, maintenance, trouble shooting and calibration/programming of the hydraulic system and spreader controls to be provided by the successful bidder at an Equipment Division facility.**

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EQUIPMENT DIVISION

BIDDER'S EVALUATION REPORT

PROCUREMENT SPECIFICATIONS FOR OPEN END CONTRACT
NO. 377-2-F

64,000 GVW CAB AND CHASSIS, STAINLESS STEEL
COMBINATION DUMP/SPREADER MUNI BODY, AND PISTON PUMP HYDRAULIC SYSTEM

NOTE TO BIDDER: Procurement Specification No. 377-2-F, Paragraph 2.0 recommends the completion and submittal of this Report with your bid. Purpose of this Report is to enable the West Virginia Division of Highways Evaluation Committee to make full and fair evaluation of the bid. Addendums in order, along with a summary of exception as a separate attachment, should be with Bidder's Evaluation Report. FAILURE TO SUBMIT THIS REPORT, COMPLETE IN ITS ENTIRETY, MAY SUBJECT THE BIDDER TO DISQUALIFICATION.

Reference Requisition No.: _____

Bidder's Name: _____

Address: _____

Telephone Number: _____

Years Bidder has been registered to do business with the State of West Virginia: _____ YRS.

Years Company has been an authorized dealer for proposed unit: _____ YRS.

X3.2 Have you complied with all mandatory specifications? _____ YES _____ NO

X4.2 DELIVERY:

X4.2.1 Delivery date of completed representative unit: _____ Calendar Days After
Receipt of Purchase Agreement by successful vendor

X4.2.2 Guaranteed delivery date of balance of completed units: _____ Calendar Days After
Receipt of Purchase Agreement by successful vendor

NOTE: Vendor should type Bidder's Evaluation Report

The "Bidder's Evaluation Report" is available for download on Purchasing's Web site at
www.state.wv.us/admin/purchase

X5.0 AWARD CRITERIA;

X5.1 Price per completed unit including minimum 2 year bumper to bumper parts and labor warranty :

_____ per unit

If a 3 year bumper to bumper basic parts and labor warranty excluding normal wear items and misuse is available, please state price for completed unit:

_____ per unit

X6.0 SPECIFICATIONS - GENERAL

X6.1 Manufacturer, model, series, and date of manufacture of proposed unit:

Is descriptive literature, fully describing proposed unit attached to your bid? _____ YES _____ NO

If not, why? _____

X6.2 Will the required number of service manuals, and complete parts list be delivered to the Equipment Division at Buckhannon upon completion of delivery of total units?

_____ YES _____ NO

Will the required Equipment Preventive Maintenance Form (Section X6.2 of Bidders Evaluation Report) be provided upon inspection of the pilot unit? _____ YES _____ NO

X6.2
2-10-00

EQUIPMENT PREVENTATIVE MAINTENANCE QUESTIONNAIRE

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY BY SUCCESSFUL BIDDER OR MANUFACTURER'S TECHNICAL REPRESENTATIVE PRIOR TO DELIVERY OF PILOT MODEL TO THE WVD0H.

DESCRIPTION: _____ MAKE: _____

MODEL: _____ YEAR: _____ PURCHASE AMOUNT: _____

ENGINE: MAKE: _____ MODEL: _____ FUEL TYPE: _____

HORSEPOWER: _____ CYLINDER: _____ ENGINE SERIAL: _____

COOLING SYSTEM CAPACITY: _____

BELTS: DESCRIPTION: _____ PART NUMBERS: _____

GVW: _____ AXLE CAPACITY: FRONT: _____ REAR: _____

TIRES: FRONT MAKE & SIZE: _____

REAR MAKE & SIZE: _____

DIMENSIONS OF UNIT: LENGTH: _____ WIDTH: _____ LENGTH: _____

VENDOR CONTACT PERSON: _____ PHONE: _____

PARTS:

BATTERY MAKE: _____ MODEL: _____ CCA: _____

TOP OR SIDE POST: _____ DIMENSIONS: LENGTH _____ WIDTH _____ HEIGHT _____

SPARK PLUGS OR FUEL INJECTORS MAKE: _____ PART # _____

FUEL PUMP OR INJECTION PUMP MAKE: _____ MODEL: _____

ALTERNATOR MAKE: _____ PART #: _____

STARTER MAKE: _____ PART #: _____

TURBO CHARGER MAKE: _____ PART #: _____

TRANS. MAKE: _____ MODEL: _____ AUTO/MANUAL: _____

HYDRAULIC PUMP MAKE: _____ MODEL: _____

FILTERS	MAKE	PART NO.	LUBRICANT	MANUFACTURER TYPE
OIL	_____	_____	ENGINE	_____
AIR INNER	_____	_____	TRANSMISSION	_____
AIR OUTER	_____	_____	POWER STEERING	_____
FUEL PRIMARY	_____	_____	HYDRAULIC	_____
FUEL SECONDARY	_____	_____	DIFFERENTIALS	_____
COOLANT	_____	_____	BRAKE FLUID	_____
HYDRAULIC	_____	_____	COOLANT	_____
OTHER	_____	_____	OTHER	_____

X6.3 TRAINING:

Will training seminar be conducted on Preventive Maintenance, Operator and Mechanic Training _____ YES _____ NO _____

Will you conduct training with each purchase order against this open end contract? _____ YES _____ NO

Will training be conducted within 2 working days from the delivery of the pilot unit on the individual purchase order? _____ YES _____ NO

If NO, explain time frame _____

Will an Operator's Manual be furnished directly to Training Academy prior to the delivery of the pilot? _____ YES _____ NO

X6.4 If you are the successful vendor, will you furnish all training aids, i.e., videos, projectors, required in conducting the training? _____ YES _____ NO

X6.4.1 Will all manuals, booklets, etc. explaining preventive maintenance, operator procedures, and service schedule be delivered with each unit? _____ YES _____ NO
If NO, explain _____

X6.5 WARRANTY AND SERVICE POLICY

Will the warranty and service you provide comply with all areas as stated in Section 6.5 of specifications _____ YES _____ NO

Is warranty literature attached? _____ YES _____ NO

Is a minimum two (2) year bumper to bumper basic parts and labor warranty excluding abuse and normal wear items included? _____ YES _____ NO

Describe:

Will the equipment have a valid and current state inspection sticker? _____ YES _____ NO

List all extended service contract coverages, published and not published, along with a cost as options. Also, provide manufacturers hours vs. miles conversion.

X6.6 EVALUATION COMMITTEE REQUIREMENTS

Is all component specifications, product literature, component models provided for Evaluation Committee bid determination? _____ YES _____ NO

X6.7 Will all parts, equipment, accessories, material, design and performance characteristics not specified herein, but which are necessary to provide a complete unit, be furnished with the unit and conform in strength, quality of material, and quality of workmanship to those which are advertised and provided to the market in general by the unit industry?

_____ YES _____ NO

X6.7.1 Are all parts and accessories adequate and regularly supplied as standard to be included except those which may be duplications of specifications herein, and except these by specification are not to be furnished?

_____ YES _____ NO

X6.7.2 Are all standard safety features that are required by Federal and State statutes of law included?

_____ YES _____ NO

X7.0 SPECIFICATIONS OF THE QUOTED UNIT

The bidder should complete the following schedule in order for the Division to compare the actual bid unit to the specifications. Should the bidder except a requirement, then such exception may be only on the basis that such feature is not offered by the manufacturer. The Division will have the sole discretion as to whether the bidder's substitution meets the requirements of the specifications.

X8.0 Specifications – Cab and Chassis

Manufacturer: _____ Model: _____

Will a minimum 2 year basic bumper to bumper warranty including parts and labor be furnished? _____ YES _____ NO

X8.1 GVWR Rating: _____ Lbs.

X8.2 Cab to Axle Dimensions: _____ Inches usable

X8.2.1 After frame length: _____ Inches

X8.3 Wheelbase: _____ Inches and **is set forward design for snowplow application for various plows** _____ YES _____ NO

X8.3.1 Have you adjusted wheelbase and CA dimension to provide the optimum legal weight distribution? _____ YES _____ NO

X8.3.2 BBC (Bumper to Back of Cab) _____ Inches excluding frame extension

X8.4 Frame:

Does the frame meet or exceed all Federal requirements for GVWR specified that extends forward beyond the grille a minimum of 14 inches? YES NO

X8.4.1 Frame material _____ PSI yield strength. Is frame extension a "parent rail" material? YES NO

X8.4.2 RBM: _____ million Ins/Lb. per rail Is an integral frame and frame extension Included YES NO

X8.4.2.1 Where engine and radiator adjustments are required, _____ million in lb. per rail (RBM).

X8.4.3 Is main frame and any required liners straight channel or offset channel, full length

X8.4.4 Is frame RBM approved by manufacturers Engineering Department? YES NO
Is it bolt on or welded extension? YES NO

X8.4.5 Does front frame accommodate the Department's standard hydraulic PTO shaft and pump, and the plow frame? YES NO

Does it provide easy service accessibility? YES NO

X8.4.5.1 Front frame mounted tow hooks YES NO

X8.4.5.2 Has the factory installed front bumper to be omitted YES NO

X8.5 Cab:

Manufacturers standard steel, aluminum and/or fiberglass with premium or manufacturers highest level interior trim with inside noise level rating not to exceed 80 dba in compliance with Federal regulations YES NO

Ambient temperature display for outside temperature YES NO

Is hood a tilt hood YES NO

Fenders steel and/or fiberglass YES NO

Is rear air bag suspension provided YES NO

Are inner fender panels adequate to keep materials from engine compartment YES NO

- X8.5.1 Cab door locks, both doors, keyed alike _____ YES _____ NO
- X8.5.2 Dual sun visors _____ YES _____ NO
- X8.5.3 Arm rests, both sides _____ YES _____ NO
- X8.5.4 Seats: Fully adjustable air ride high back with head rest, cloth covered both left hand and right hand sides _____ YES _____ NO
- Clearance between seats _____ inches**
- X8.5.5 Floor mats: Rubber floor mats throughout cab area with non-absorbent backing under mats _____ YES _____ NO
- X8.5.6 Turn signals: Manufacturers standard with hazard warning switch _____ YES _____ NO
- X8.5.7 Heater and defroster: Fresh air type, heaviest duty _____ YES _____ NO
- X8.5.8 Windshield wipers and washers: Manufacturer's heaviest duty "artic type" with intermittent feature with manufacturers largest reservoir filled with antifreeze type solvent _____ YES _____ NO
- X8.5.9 Instruments: Are all instruments dash mounted except where specified otherwise?
_____ YES _____ NO
- Are all standard instruments supplied, including but not limited to the following:
_____ YES _____ NO
- X8.5.9.1 Coolant, oil pressure gauges, to have both dial type readout and either an audible or visual alarm to warn operator when safe operating conditions are exceeded _____ YES _____ NO
- X8.5.9.2 Voltmeter or ammeter _____ YES _____ NO
- X8.5.9.3 Engine RPM tachometer _____ YES _____ NO
- X8.5.9.4 Speedometer with odometer _____ YES _____ NO
- X8.5.9.4.1 Are provisions for dual speedometer leads made available**
_____ **YES** _____ **NO**
- X8.5.9.5 Primary air pressure gauge _____ YES _____ NO
- X8.5.9.6 Auxiliary air pressure gauge _____ YES _____ NO
Is it combined with primary air pressure gauge _____ YES _____ NO
- X8.5.9.7 Air filter manufacturers heaviest duty dual element type that meets all requirements of extended engine warranty _____ YES _____ NO

- X8.5.9.8** Does unit have front air intake _____ YES _____ NO
Is an air actuated or cable control valve provided to enable operator to divert air intake to engine compartment while in snow plowing application
 _____ YES _____ NO
- X8.5.9.9** Is air filter restriction indicator gauge dash mounted _____ YES _____ NO
- X8.5.9.10 Engine hourmeter controlled by engine operation _____ YES _____ NO
- X8.5.9.11 Fuel level reading _____ YES _____ NO
- X8.5.9.12 Parking brake dash controlled with indicator light _____ YES _____ NO
- X8.5.9.13 Manufacturers best sound/weather insulation package for proposed cab
 _____ YES _____ NO
- X8.5.9.14 Outside temperature control with in cab digital read out _____ YES _____ NO
- X8.5.10 Rearview Mirrors:
- X8.5.10.1 West coast type power adjustable with convex spot mirror _____ YES _____ NO
 Size: _____
- X8.5.10.2 Both mirrors heated type with stainless steel _____ composite _____ powder coated
 _____ or aluminum hardware _____ with corrosion resistance, heads, and
 fasteners _____ YES _____ NO
- X8.5.11 Grab Handle: Right hand and left hand sides, internal or external mounting to rear of door opening
 _____ YES _____ NO
- Are inside handles featured _____ YES _____ NO **Is one (1) outside, left, mounted grab handle with non-slip insert for bed aggregate inspection furnished**
- X8.5.12 Air horns, with snow shields if cab mounted, with adequate clearance for future installation of body dump cab protector
 _____ YES _____ NO
- Does it have single air horn used without snow shield if mounted downward on frame rail under hood
 _____ YES _____ NO
- X8.5.13 Unit includes lockable hand operated throttle control or electronic control for idle up and idle down for hydraulic flow rate
 _____ YES _____ NO
- X8.5.14 Will manufacturer provide for stationary grille or grille with cutout area to allow tilt hood to clear snow plow mount
 _____ YES _____ NO
- Is stone/gravel guard provided _____ YES _____ NO
- X8.5.15 Air conditioning: Manufacturers fresh air type heaviest duty with APADS or equal RCD system including replaceable fresh air filter
 _____ YES _____ NO

- X8.5.16 Radio: AM/FM stereo with weatherband radio feature _____ YES _____ NO
- X8.5.17 Glass: Manufacturers tinted safety glass (all locations) _____ YES _____ NO
- X8.5.17.1 Dual power windows _____ YES _____ NO
- X8.5.18 Manufacturers engine cover or dash mounted extended two (2) cup drink holder
_____ YES _____ NO
- X8.5.19 Front mudflaps manufacturers standard for unit bid _____ YES _____ NO
- X8.5.20 Emergency triangle warning kit, with hold down stowed (fastened) in the cab
_____ YES _____ NO
Manufacturer & Model: _____
- X8.5.21 Manufacturers tilt steering column with cruise control feature _____ YES _____ NO
OR
Locking hand operated throttle steering wheel _____ YES _____ NO
Diameter: _____ inches
- X8.5.22 Fire extinguisher – rechargeable with vehicle mount. Mounted in the cab for easy and quick
access _____ YES _____ NO
Manufacturer & Model: _____
- X8.5.23 List any accessories not indicated above but are included in the manufacturer's standard
cab**

- X8.5.24 . If you are the successful vendor, will you provide WVDOH with complete list of all filters
required for normal maintenance on proposed unit.** _____ YES _____ NO
- X8.6 Engine:**
Is engine diesel _____ YES _____ NO _____ liter
Peak HP _____ at _____ RPM Torque _____ lb ft. at _____ RPM
Is engine compliant and certified to meet US EPA 210 Emission Standards without using Federal
EPA credits _____ YES _____ NO
Manufacturer: _____ Model: _____
- X8.6.1 Will engine manufacturer make provisions for front mounted hydraulic pump to crankshaft
pulley _____ YES _____ NO
Manufacturer & Model: _____

- X8.6.1.1 In block engine heater 1500 watt _____ YES _____ NO
- X8.6.1.1.1 Is electrical cable from the heater to plug one piece and waterproof, located left side under driver door _____ YES _____ NO
- X8.6.1.2 Fuel heater/water separator provided inside of engine compartment _____ YES _____ NO
 Manufacturer: _____
- X8.6.1.2.1 Engine fuel system equipped with primer pump _____ YES _____ NO
- X8.6.1.3 Exhaust:
- X8.6.1.3.1 Single vertical exhaust pipe with underbody muffler that will meet all Federal noise abatement requirements _____ YES _____ NO
- Exhaust to the passenger (right) side of unit _____ YES _____ NO
- X8.6.1.3.2 Is tail pipe shielded or insulated to protect personnel from burns when entering or exiting the cab _____ YES _____ NO**
- The shield is _____ degrees to _____ degrees and of non-rustable material such as stainless steel or aluminum _____ YES _____ NO**
- Manufacturer: _____**
- X8.6.1.3.3 Exhaust pipe with rain cap or exhaust turn out _____ YES _____ NO
- X8.6.2 Jacob's Engine Brake _____ Cummins C-Brake _____ Mack Power Leash _____ compression and exhaust _____ or equal _____**
- X8.6.3 Are engine components facing wheel areas, on both sides, and the areas to the rear of wheels shielded by means of rubber skirts supported by easily removable steel rods _____ YES _____ NO
- X8.6.4 Engine oil pan is zinc nickel plated _____ aluminum _____ or non-corrosive coated _____
- X8.7 Clutch:
- X8.7.1 Externally lubricated and manually adjusted with torque limiting clutch brake _____ YES _____ NO
- X8.7.2 Clutch adjustment set to specifications prior to delivery to the Department _____ YES _____ NO
- X8.7.3 Is clutch dual plate ceramic clutch _____ YES _____ NO**
- Size: _____ inch Kwik adjust (manual feature) _____ YES _____ NO**
- Manufacturer and model: _____ with 7 spring damper _____ YES _____ NO**

- X8.7.4 Does clutch meet or exceed peak engine torque _____ YES _____ NO
- X8.8 Cooling System: Is it capable of maintaining engine temperature within the manufacturer's recommended range during continuous operation _____ YES _____ NO**
- X8.8.1 Does the system incorporate a thermostat and bypass for warm up _____ YES _____ NO
- Is it filled with permanent type Dex Cool extended life or equal antifreeze rated to a -30° F or lower _____ YES _____ NO**
- Is it a low silicate type antifreeze for diesel engines only _____ YES _____ NO
- X8.8.2 Is it the largest factory available engine cooling capacity compatible with engines and transmission referenced and for continuous high engine output under extreme temperatures and/or operating conditions due to prolonged snow plowing operations in low gears _____ YES _____ NO
- X8.8.3 Is unit fitted with provisions for visually monitoring coolant without necessitating removal of the cap from the radiator or expansion tank _____ YES _____ NO
- X8.8.4 Does the radiator mounting provide adequate clearance to facilitate the installation of a crankshaft driven PTO drive shaft _____ YES _____ NO**
- X8.8.5 Distance between the extreme tip of the radiator fan blade and the centerline of the crankshaft to insure adequate clearance for PTO drive shaft: _____ inches**
- X8.8.6 Radiator and heater silicone hose manufacturer and model: _____**
- X8.9 Fuel Tanks:
- X8.9.1 Safety type aluminum fuel tanks as required by FMVSS _____ YES _____ NO
- X8.9.2 Single aluminum usable: _____ U.S. gallon; frame mounted _____ YES _____ NO**
- X8.9.3 Driver and passenger entrance steps-grated self cleaning safety step _____ YES _____ NO
- X8.9.3.1 Are all edges banded (skirting) on the outer perimeter _____ YES _____ NO
- X8.9.3.2 Top of first step above ground: _____ inches
- X8.9.4 Is a fuel draw system provided that meets all Federal 2010 emission standards _____ YES _____ NO**
- X8.10 Electrical System:
- X8.10.1 Type: Manufacturer's 12 volt negative ground system with manufacturers radio interference Suppression _____ YES _____ NO
- X8.10.1.1 Circuit breaker equipped, in easily accessible location, weatherproof _____ YES _____ NO

- X8.10.2 Three (3) ___ or four (4) ___ heavy duty – 12 volt batteries, maintenance free with sealed terminals _____ YES _____ NO
- X8.10.2.1 **Reserve capacity:** _____ minutes @ _____ degrees F
- X8.10.2.2 Cold crank AMPS: _____ total @ _____ degrees F
- X8.10.3 **Alternator capacity:** _____ AMPS with internal regulator _____ YES _____ NO
- X8.10.4 Wiring: Heavy duty hypalon type or equal in heavy duty sheathing, bundled with lacing cords or non-metallic tie straps _____ YES _____ NO
- X8.10.5 **Lighting: Are provision made available for all required lighting on completed unit (number, location, and color) to conform to the West Virginia Motor Vehicle Code** _____ YES _____ NO
- X8.10.6 Auxiliary snow plow/salt spreader lighting package _____ YES _____ NO
- X8.10.6.1 Will truck vendor provide rear tail lights _____ YES _____ NO
- Truck vendor will provide _____ feet of wiring bundled at the end of the frame for body vendor hook up of tail lights and etc. in the dump bed body** _____ YES _____ NO
- X8.10.7 **Will manufacturer _____ or successful vendor _____ make provisions for manufacture approved wiring and weatherproof disconnect plug** _____ YES _____ NO
- Manufacturer and Model: _____
- seven (7) pin connector** _____ YES _____ NO with _____ foot “pigtail” to operate combination left and right turn/park lights/auxiliary headlights _____ YES _____ NO
- X8.10.7.1 Are provisions for weatherproof disconnect plug located at lower left front grille-bumper area _____ YES _____ NO
- All wiring connections weatherproof with wiring encased in wire looms _____ YES _____ NO
- X8.10.7.2 Is a 7 way trailer connection light socket mounted at rear of truck frame _____ YES _____ NO
- Manufacturer and Model: _____
- X8.10.7.3 **Has manufacturer provided body builder circuit interface capability with connection plug to be located at rear of frame for body builder connection to stop, tail, and marker light circuits, ignition controlled auxiliary feed to ground to provide splice free chassis wiring integrity** _____ YES _____ NO

- X8.10.7.4** Has manufacturer provided body builder circuits – three (3) switches _____ YES _____ NO
 located in the dash instrument panel with one (1) weather protected body builder
 connection box or module located at the rear under cab _____ YES _____ NO
 _____ amps per channel, _____ amp maximum output _____ YES _____ NO
 Do dash switches control the power module with LED backlighting _____ YES _____ NO

X8.11 Power Train Overview:

Do lubricants for front axle hubs and differentials, automatic transmission, transfer cases, and all rear differentials meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants _____ YES _____ NO

all plugs identified as synthetic or painted red _____ YES _____ NO

X8.11.1 **Transmission:** _____

transmission oil cooler _____ YES _____ NO

X8.11.1.1 **Does transmission torque capacity meet or exceed specified engine torque** _____ YES _____ NO

X8.12 Driveline:

X8.12.1 Manufacturer and Model: _____

X8.13 Rear Axle:

X8.13.1 Manufacturer and Model: _____

X8.13.2 Is each unit equipped with driver controlled main locking differential in forward and rear axle that is manually cab controlled _____ YES _____ NO

X8.13.3 Ratio: Does gear ratio determined give the vehicles the capability of a top speed of approximately 70 MPH _____ YES _____ NO

If not 70 MPH, please specify _____ MPH

X8.13.4 Is housing aluminum or other lightweight material _____ YES _____ NO

X8.13.5 Rear wheel seals: _____

X8.13.6 Drain plug, magnetic _____ YES _____ NO

X8.14 Front suspension:

X8.14.1 Capacity at ground each front spring _____ lb.

Total spring capacity _____ lb.

- X8.14.2 Are the front spring pins or bearings/bushing furnished with 360 degree grease grooves to insure adequate lubricant penetration _____ YES _____ NO
- X8.14.3 Are spring hangers heavy castings with sufficient pin and bearing surface to render trouble free service _____ YES _____ NO
- X8.15 Rear suspension: _____
- X8.16 Front Axle:
- X8.16.1 Capacity: _____ lbs.**
- X8.16.1.1 Does the front axle, drag links, and tie rods have grease zerks installed _____ YES _____ NO
- X8.16.2 Heavy duty shock absorbers _____ YES _____ NO
- X8.16.3 Oil lubricated front wheel seals _____ YES _____ NO Manufacturer: _____
- X8.16.4 Does unit provide adequate tire clearance at maximum turning angles _____ YES _____ NO**
- X8.17 Brakes
- X8.17.1.1 Type: Full air, with manufacturers ABS in compliance with the most current FMVSS requirements _____ YES _____ NO
- X8.17.2 Compressor: Manufacturer and Model: _____ cu. ft.**
- X8.17.3 Service Brake Size:
- X8.17.3.1 Front: _____ "S" cam _____ OR power front disc brake system providing equal performance _____
- X8.17.3.2 Quick change type single _____ OR double anchor pin if drum type brakes _____
- X8.17.3.3 Rear: _____ "S" cam with quick change type single _____ OR double pin _____
- X8.17.3.4 Are all brake chambers sealed brake chambers with epoxy exterior coat on front and rear Chambers _____ YES _____ NO
- Manufacturer: _____
- X8.17.4 Do drum brakes have automatic slack adjusters and are clearance sensing type only, with adjustment on application of the brake _____ YES _____ NO
- X8.17.5 Parking Brake: Rear wheel spring type – severe service spring brakes _____ YES _____ NO
- Manufacturer and Model: _____
- X8.17.5.1 Does parking brake provide modulated emergency braking via the foot valve in the event of a rear service system failure _____ YES _____ NO

X8.17.6 Air dryer with heater _____ inches above road service

Manufacturer and Model: _____

with spin on desiccant cartridge or equal _____ YES _____ NO

Is the installation made in concurrence with the air compressor manufacturer's recommendations

_____ YES _____ NO

X8.17.6.1 Are all electrical connectors for drain valve and air dryer covered with heat shrink material or have sealed connections _____ YES _____ NO

X8.17.7 Manufacturer's standard air tanks for service brakes _____ YES _____ NO

Auxiliary tank for parking brake _____ YES _____ NO

X8.17.8 Low air pressure warning light and buzzer _____ YES _____ NO

X8.17.9 Rear service brake chambers and spring brake chambers mounted to provide adequate clearance for tire chains and backing into bituminous paving machines _____ YES _____ NO

Factory installed _____ YES _____ NO

X8.17.10 Brake dust covers installed on all wheels _____ YES _____ NO

X8.17.11 Unit equipped with hand control valve, tractor protection valve, with provisions for installation of glad hands at rear of truck to enable unit to pull air brake operated equipment trailer

_____ YES _____ NO

X8.17.11.1 Are glad hands recessed as not to stick out past the end of frame rails

_____ YES _____ NO

X8.18 Tires and Wheels:**X8.18.1 Truck equipped with hub piloted steel disc wheels for tubeless tires _____ YES _____ NO**

X8.18.2 Wheel end equipped with outboard cast brake drums _____ YES _____ NO

15 degree tubeless steel wheels, hub piloted, 10 hole – 285.75mm bolt circle with 220mm two-piece flange nuts _____ YES _____ NO

X8.18.3 Front:

X8.18.3.1 Wheels: Size: _____

10 hole 285.75 mm bolt circle with 220 mm bore, tubeless steel disc _____ YES _____ NO

Rated at _____ lbs. at a **maximum inflation pressure of _____ PSIG.**

Manufacturer and Model: _____

With 0.500 inch thick disc, non standard off set with steel hubs _____ YES _____ NO

Powder coated YES NO Gray top coat YES NO

X8.18.3.2 Tires: _____ Ply _____

X8.18.4 Rear:

X8.18.4.1

Wheels: Size: _____
10 hole – 285.75 mm bolt circle with 220mm bore, tubeless steel disc
 YES NO

Rated at _____ lbs. at a maximum inflation pressure of _____ PSIG

Manufacturer and Model: _____

With 0.472 inch thick disc YES NO

Powder coated YES NO Gray top coat YES NO

X8.18.4.2 Tires: _____

X8.18.4.3 **Does the dual rear wheel/tire assembly have clearance between the tires, which permits the use of dual tire chains** YES NO

X8.18.5 **All wheels have wheel separators** YES NO

X8.18.6 **Radial Tires:**

Front Radial Tire: Manufacturer and Model: _____

Rear Radial Tire: Manufacturer and Model: _____

X8.19 Steering:

X8.19.1 Power steering: Dual integral OR single integral type hydraulic power steering with right wheel power-assist cylinder YES NO

X8.19.2 Steering system: (flow, pressure, relief valve etc): _____

Manufacturer: _____

X8.19.3 Hydraulic supply pump: Vane type OR roller type with sufficient oil flow to permit one (1) steering wheel revolution per second with front axle loaded to rated capacity, with plow on, in a "park" condition YES NO

Manufacturer and Model: _____

X8.19.4 Is the pump the integral filter type unit YES NO

- X8.19.5 Power steering reservoir:**
"Remote mounted" YES NO
Capacity: _____ qt. Filter is easy to remove and replace YES NO
- X8.19.6 Is the remote filter factory mounted, certified, and engineering approved in conjunction with the appropriate pump YES NO
- X8.20 Features considered as standard equipment but not addressed:**
-
- X8.21 Paint: Describe proposed method of painting:

- X8.21.3 Wheel Paint:** _____
- X8.22 Detail/Decorative Stripes with Logo:
- X8.22.1 Width: _____ inches
- X8.22.2 Will WVDOH logo area comply with 8.22.2 of specification YES NO
- X8.22.3 Does conspicuity striping material provided meet requirements of Section 8.22.3 through 8.22.8 of specification** YES NO
- X8.22.4 Does sheeting meet specification as stated in 8.22.4 YES NO
- Does it come with aggressive high tack pressure sensitive adhesive** YES NO
Manufacturer: _____
- X8.23 Does unit offered meet or exceed "Occupational Safety and Health Act of 1970"**
 YES NO
- X8.24 Does unit conform to the advertising guidelines YES NO
- X8.25 Preventive Maintenance and Operator's Training School
- X8.25.1 Will a preventive maintenance and operator's training seminar be provided YES NO
 Manuals _____ (OR) CD _____
- X8.25.2 Will booklets and pamphlets be furnished to be used by the operators YES NO
Describe agenda _____
- X8.25.3 Will you furnish all training aids; i.e. videos, projectors, etc. required in conducting the training**
 YES NO

X9.0 SPECIFICATIONS – 304 STAINLESS STEEL COMBINATION DUMP/SPREADER BODY

The bidder should complete the following schedule in order for the Division to compare the actual bid unit to the specifications. Should the bidder except a requirement, then such exception may be only on the basis that such feature is not offered by the manufacturer. The Division will have the sole discretion as to whether the bidder's substitution meets the requirements of the specifications.

Bidder: _____

Address: _____

Telephone Number: _____

Years company has been an authorized dealer for proposed unit: _____ years

Manufacturer, model, series, and date of manufacture of proposed combination dump/spreader body:

Is descriptive literature full describing proposed combination dump/spreader body attached to your bid proposal? _____ YES _____ NO

If NO, refer to specification statement Section 6.6

When will required number of operating manuals, service manuals, and complete parts list be delivered to the Equipment Division at Buckhannon? _____ prior to deliver of unit or _____

Does the combination dump/spreader body have a minimum two (2) year basic bumper to bumper Warranty including parts and labor? _____ YES _____ NO

X9.1 Body capacity: _____ cubic yards water level

X9.2 Sideboard pockets and tailgate height provides additional capacities of _____ to _____ cubic yards

X9.3 Front body bulkhead _____ gauge Size: _____ inch _____ stainless steel

X9.3.1 Is head sheet vertical _____ YES _____ NO

X9.4 Does cab shield have sufficient clearance to ensure shield will not hit exhaust when dumping on uneven Terrain _____ YES _____ NO

X9.5 Two (2) front truck frame mounted tow hooks or eyes accessible through bumper _____ YES _____ NO

X9.6 Dimensions:

X9.6.1 Inside length of body: _____ inches

- X9.6.2 Inside width of body: _____ inches wide to maximize capacity and lower the center of gravity
- X9.6.3 Outside width of body: _____ inches at the integral fenders
- X9.6.4 Body spacing from cab _____ inch**
- X9.6.5 Basic side height: _____ inches (measure from the floor to top rail)
- Two (2) dirt shedding horizontal 10 gauge 201 stainless steel side braces on each side of body
_____ YES _____ NO
- X9.6.6 Tailgate height: _____ inches (measure from the floor to top rail)
- X9.6.7 Body overhang: _____ inches (measure from center of hinge pin)
- X9.6.8 Cab protector: _____ inches x _____ inches with adequate clearance for cab mounted air horns
- X9.7 Cab protector sloped rearward for drainage purposes _____ YES _____ NO

X9.8 Construction of the body sides, front, head, and tailgate:

Steel types: _____

- X9.8.1 Floor: _____ inch thickness 304 stainless ____
OR
abrasion resistant AR400 _____ inches thick
- X9.8.2 Sides: _____ Gauge _____ inch thickness _____ stainless steel
- X9.8.3 Tailgate plate: _____ gauge _____ stainless steel
- X9.8.4 Top rail: _____ gauge _____ stainless steel
- X9.8.5 Cab protector: _____ gauge _____ stainless steel
- X9.8.6 Is inside formed longitudinal constructed of ¼ inch 201 stainless steel**
_____ YES _____ NO
- Outside formed long sill of 7 gauge 201 stainless steel** _____ YES _____ NO
- with overall combined height of _____ inches including internal stainless gussets**
_____ YES _____ NO
- A ¼ inch thick 201 stainless steel fish plate is welded to outside surface outside long sill above the rear hinge**
_____ YES _____ NO

- X9.9 Is all the welding inside the body continuous and not skip welded _____ YES _____ NO
 Are all rails and posts continuous welded _____ YES _____ NO
- X9.10 Are the rear corner posts full length, one (1) piece construction _____ YES _____ NO
- X9.11 Cab protector sides, formed with gussets, extending forward _____ inches
Clearance above highest point of cab is _____ inches
- X9.12 Is body a unibody design – no crossmembers _____ YES _____ NO
- X9.12.1 Does the body have one (1) piece sides constructed of 7 gauge 201 stainless steel _____ YES _____ NO
- X9.13 Floor constructed of _____ inch _____ (steel) with _____ inch round floor to side radius _____ YES _____ NO
- X9.15 Is there an integrated center conveyor providing the ability of the body to convey granular materials with the body down _____ YES _____ NO
- X9.15.1 12.5 inches truck frame to body floor height for lower center of gravity and lower mounting height _____ YES _____ NO
- X9.15.1.1 Will wood products be used between truck frame and bed _____ YES _____ NO
- X9.15.2 Abrasion resistant steel 3/16 inch AR400 conveyor floor _____ YES _____ NO
- X9.15.3 2 inch diameter front and rear shafts with eight (8) tooth sprockets _____ YES _____ NO
- X9.15.4 Drive sprockets are double keyed to shaft _____ YES _____ NO
- X9.15.5 Conveyor width: _____ inches
- X9.15.6 ¼ inch 201 stainless steel formed inner sill which also forms the conveyor chain guard _____ YES _____ NO
- X9.15.7 7 gauge 201 stainless steel formed over long sills _____ YES _____ NO
- X9.15.8 3/16 inch AR400 conveyor bed floor _____ YES _____ NO
- X9.15.9 Formed _____ inch thick tie plate fully extend between the left and right side of body, located at rear of unit _____ YES _____ NO
- Will tie plate provide additional structural support at the rear of the body to prevent sagging at the rear corner posts _____ YES _____ NO**

- X9.15.10 Are there two (2) inch diameter drive shafts with eight (8) tooth sprockets _____ YES _____ NO
Will sprockets be heat treated to 50 Rockwell C hardness _____ YES _____ NO
- X9.15.11 Will conveyor be driven with 25:1 planetary gearbox drive on the rear shaft with approximately _____ CIR hydraulic motor _____ YES _____ NO
Will motor have an integral conveyor speed sensor _____ YES _____ NO
- X9.15.12 Conveyor chain _____ pintle type (_____ lb. tensile/strand) with _____ inch x _____ inch conveyor crossbars spaced on every other link. _____ YES _____ NO
- X9.15.13 A _____ gauge _____ stainless steel bolt in pan under the conveyor to keep material off chassis frame _____ YES _____ NO
- X9.15.14 **Does the rear apron have a bolt on cover plate which allows for easy access to gear case** _____ YES _____ NO
- X9.16 Is tailgate have 7 gauge 201 stainless steel full perimeter dirt shredding boxed 7 panel with a 7 gauge 201 stainless steel 9 inch x 24 inch fully adjustable rear feed gate _____ YES _____ NO
- X9.16.1 Is rear feedgate lever operated _____ or screw adjustable _____ The feedgate capable of being positively locked into position _____ YES _____ NO
- X9.16.2 Is tail gate hinged at top, flame cut hardware, pork chop type off-set hardware to achieve maximum opening of tail gate _____ YES _____ NO
Does it have provision for pivoting at bottom _____ YES _____ NO
- X9.16.3 Flush mount, ½ inch flame cut 304 stainless steel tail gate pivots _____ YES _____ NO
- X9.16.4 Heavy duty offset hinge plates, one (1) inch flame cut 304 stainless steel _____ YES _____ NO
- X9.16.5 ¼ inch 304 stainless steel latch hooks with 3/8 inch 304 stainless steel latch plates _____ YES _____ NO
- X9.16.6 Full perimeter 201 stainless steel boxing with all horizontal edges sloped outward _____ YES _____ NO
- X9.16.7 **Are there three (3) 10 gauge 201 stainless steel sloped horizontal braces that are flush with perimeter boxing** _____ YES _____ NO
- X9.16.8 Stainless steel upper pins with grease zerks _____ YES _____ NO
- X9.16.9 **Latching action at the bottom of gate is operable by the truck driver without leaving the truck cab** _____ YES _____ NO

- X9.16.10 Is gate self aligning _____ YES _____ NO
- X9.16.11 Are tailgate lower latch pins 304 stainless steel 1 ¼ inch diameter _____ YES _____ NO
- X9.17 Does the body have the capability to convey to the rear with a stainless steel material spinner for distributing material _____ YES _____ NO**
- X9.17.1 Does it have a rear chassis mounted stainless steel spinner assembly that is adjustable left to right, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern. _____ YES _____ NO**
- X9.17.2 10 gauge stainless steel 20 inch diameter spinner disc to have replaceable fins _____ YES _____ NO
- X9.17.3 Are spinner disc vanes 304 stainless steel _____ YES _____ NO
- X9.17.4 Is spinner motor mounted on top of spinner disc _____ YES _____ NO
- Is it enclosed in removable material shedding protective cover _____ YES _____ NO
- X9.17.5 Is spinner disc driven by a 4-bolt 2.8 CIR hydraulic motor _____ YES _____ NO
- X9.17.6 Does spinner motor have an integral sensor capable of providing spinner disc feedback to the in-cab console _____ YES _____ NO
- X9.18 Hydraulic Hoist:
- X9.18.1 Is it trunnion mounted to bottom of dump body _____ YES _____ NO
- X9.18.2 Is telescopic hoist no less than N.T.E.A. Class 90 – Double Acting with 26 ton capacity _____ YES _____ NO
- X9.18.3 Is single hoist cylinder trunnion mount _____ YES _____ NO
- X9.18.4 Does hoist cylinder have three (3) stages with _____ inches of stroke _____ YES _____ NO
- Manufacturer and model: _____
- X9.18.5 Does the cylinder have wear and corrosion resistant nitrided cylinder tubes _____ YES _____ NO
- X9.18.6 Cylinder warranty: _____ years
- X9.18.7 Does a five (5) degree oscillating cylinder collar protect the cylinder against side stress, if trunnion mount cylinder provided _____ YES _____ NO
- X9.18.8 Does the body have 6 inch x 8 inch x 1/2 inch formed angle rear hinge assembly installed in the truck chassis frame _____ YES _____ NO
- X9.18.9 Does the rear hinge assembly have cold roll steel hinge pins connecting to 2 1/2 inch hinge blocks with grease zerks _____ YES _____ NO

X9.19 Are the following features included:

- X9.19.1** Warning light (bed raised) console mounted YES NO
- X9.19.2** Hydraulic oil level reading YES NO
- X9.19.3** Safety decals as required YES NO
- X9.19.4** 201 stainless steel mud guards, 10 gauge x 24 inches x 30 inches permanently attached in front of rear wheels YES NO
- Will body vendor align exhaust stack for body clearance YES NO
- X9.19.5** 201 stainless steel shovel bracket YES NO
- X9.19.6** 201 stainless steel gussets (board pockets) for 4 inch x 6 inch lumber (rough) located at front and rear and mid-rail YES NO
- 4 inch x 6 inch (rough) oak sideboards supplied and bolted through the gussets YES NO
- Painted aluminum to match the body YES NO
- X9.19.7** Does the unit have air operated tailgate spring applied air release mechanism YES NO
- Pivot shafts included stainless steel bushings to eliminate seizing YES NO
- X9.19.8** 1 1/2 inch 304 stainless steel grip strut walk rail installed on both sides of the body YES NO
- X9.19.9** OSHA approved backup alarm, electronic ambient, adjusts to background noise, 112 dba shock mounted at the rear YES NO
- X9.19.10** OSHA approved body support, both sides YES NO
- X9.19.11** Unit equipped with 49,000 lb. capacity pintle hook centered between rear frame rails YES NO
- Manufacturer and Model: _____
- Height from ground level to center line of pintle "eye": _____ inches
- X9.19.12** Air deflector-hood mounted, blue or smoke YES NO
- Deflector manufacturer's standard width for truck mode YES NO
- Width: _____
- Access to front end hood tilt handle YES NO
- Extra handle YES NO

X9.20 Lighting: Weather/shock resistant lights LED type with average amp draw between .045 - .72
 _____ YES _____ NO

Manufacturer and Model: _____

All connections have sure snap plug assemblies and epoxy sealed electronics to protect against shock and vibration
 _____ YES _____ NO

X9.20.1 All marker lights 2 1/2 inch diameter flush mount sealed beam lights with integral reflector mounted in rubber base
 _____ YES _____ NO

X9.20.2 Are all lights connected to chassis through a weatherproof junction box located at the rear of truck
 _____ YES _____ NO

X9.20.3 Rear lights shock mounted, recessed oval stop, tail, turn, and recessed oval back up lights mounted in back post
 _____ YES _____ NO

Strobe lights marked and switched from dash board location
 _____ YES _____ NO

Manufacturer and Part #: _____

X9.20.4 Center rear I.D. lights three (3) located in truck chassis
 _____ YES _____ NO

X9.20.5 Two (2) amber oval LED strobe lights mounted at the front corners of the cab protector, and two (2) amber oval LED strobe lights mounted at each outside corner of the cab protector
 _____ YES _____ NO

Manufacturer and Part # of Both Locations: _____

Strobe lights marked and switched at dash board location
 _____ YES _____ NO

X9.20.6 Auxiliary headlights for snowplowing application shock mounted on fender of unit
 _____ YES _____ NO

Manufacturer and Part #: _____

X9.20.7 Two (2) oval amber LED strobe lights mounted at top of rear corner posts right and left sides and switched in combination with cab protector strobe
 _____ YES _____ NO

Manufacturer and Model: _____

X9.20.8 Lighted license plate bracket
 _____ YES _____ NO

X9.21 Are the following at the front or rear both sides of the body:

X9.21.1 304 stainless steel fold down ladder that locks into position when either in the down or up position
 _____ YES _____ NO

X9.21.2 Two (2) 304 stainless grab handles
 _____ YES _____ NO

- X9.21.3 Is the design and strength characteristics of entire body such that the unit structural members and hoisting system will not suffer any deformation, damage, or structural failure resulting from raising a distributed full payload _____ YES _____ NO
- X9.22 Bumper:
- X9.22.1 Bumper formed out of 1/4 inch roll steel _____ YES _____ NO
- Weighs _____ lbs. per square foot
- X9.22.2 Bumper face covers all of truck frame (_____ inches) with two (2) flanges of _____ inches top and bottom _____ YES _____ NO
- X9.22.3 Overall width of bumper: _____ inches
- X9.22.4 Bumper straight across front from centerline of truck chassis _____ inches each side of Centerline, making bumper straight _____ inches long in center with ends swept back _____ degrees and _____ inches each side.
- X9.22.5 Bumper has two (2) access holes for utilization of tow hooks _____ YES _____ NO
- X9.22.6 Upper and lower flanges cut and welded solid at point where bumper is bent and ground off smooth _____ YES _____ NO
- X9.22.7 Bumper mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side _____ YES _____ NO
- X9.22.8 Mount angle _____ inch x _____ inches x _____ long with four (4) 5/8 inch holes _____ YES _____ NO
- X9.22.9 Paint on front bumper: _____
- X9.23 Underbody Tool Box:
- X9.23.1 One (1) tool box mounted under body on right side frame rail _____ YES _____ NO
- X9.23.2 Tool box _____ inches high, _____ inches wide, _____ inches deep cradled by a heavy steel angle frame attached to the truck frame _____ YES _____ NO
- X9.23.3 Construction _____ gauge, _____ galvaneal steel with all seams welded _____ YES _____ NO**
- X9.23.4 Tool box has horizontal hinged fold down door _____ YES _____ NO
- X9.23.5 Tool box door has cable or chain to hold the door in a horizontal position _____ YES _____ NO
- X9.24 Load covering system electrically or air controlled _____ YES _____ NO
- X9.24.1 Electric motor assembly includes 12 volt direct drive motor with forward and reverse action, cab mounted control switch, resettable circuit breaker _____ YES _____ NO

X9.24.2 Pivot arm assembly constructed in a two (2) piece bent arm configuration of _____ inch _____ gauge steel tubing _____ YES _____ NO

X9.24.3 Bent arm extensions constructed of _____ inch _____ gauge steel tubing

X9.24.4 Rear cross constructed of _____ inch _____ gauge steel tubing

X9.24.5 Pivot arm rests included _____ YES _____ NO

X9.24.6 Underbody spring extension spring _____ inches in length attached to base of pivot arm and of body with articulating spring mounting bracket _____ YES _____ NO

X9.24.7 All steel components finished with **manufacturer's recommended rust preventative system with adequate primer and paint** _____ YES _____ NO

X9.24.8 Steel cab protector mounted triple bend wind deflector provided _____ YES _____ NO

X9.24.9 Load covering system provided with a _____ oz. black vinyl tarp to fit 14 foot 6 inch body _____ YES _____ NO

X9.24.10 Load covering system supplied with all necessary hardware and delivered to the West Virginia Division of Highways as a complete and operational unit. _____ YES _____ NO

X9.25 Paint: Describe proposed method of painting

X9.25.1 Will the 304 stainless steel surfaces of the body be "paint free" _____ YES _____ NO

X9.25.2 – X9.25.4

X9.26 Detail/Decorative Stripes with Logo:

Will striping and detailing **you provide** comply with requirements of Section 9.26.1 through 9.26.7 _____ YES _____ NO

X9.27 All body features considered as standard, but not specifically addressed:

X9.28 Does the proposed unit meet or exceed the "OSHA OF 1970" and/or subsequent changes _____ YES _____ NO

X10.0 SPECIFICATIONS - CENTRAL HYDRAULIC SYSTEM

Is the central hydraulic system designed to operate the following:

A front mounted telescopic dump body hoist cylinder, a hydraulically driven integrated salt and abrasive spreader system requiring the simultaneous operation of two (2) hydraulic motors in two (2) different modes with conveyor reverse, a single acting snowplow lifting cylinder, a snowplow power angle system, plow balance system and an auxiliary equipment drive circuit _____ YES _____ NO

Are provisions made for future add on pre-wet system _____ YES _____ NO

Bidder: _____

Address: _____

Telephone Number: _____

Years company has been an authorized dealer for proposed unit: _____ years

Manufacturer, model, series, and date of manufacture of proposed central hydraulic system:

Is descriptive literature full describing proposed central hydraulic system attached to your bid proposal? _____ YES _____ NO

If NO, refer to specification statement Section 6.6

When will required number of operating manuals, service manuals, and complete parts list be delivered to the Equipment Division at Buckhannon? _____ prior to deliver of unit or _____

Describe: _____

Are provisions made for a future add-on hydraulic driven pre-wet system _____ YES _____ NO

Pre-Wet System:

Does supplied spreader control contain the ability to control a closed loop pre-wet system _____ YES _____ NO

Does system operate using a flow meter feedback circuit _____ YES _____ NO

Does controller software allow for adjustability of pre wet output by the operator, represented in gallons per ton _____ YES _____ NO

- Is information related to pre wet application rate and total flow in gallons displayed on the screen while the pre wet system is active** _____ YES _____ NO
- Does central hydraulic system have a minimum two (2) year basis bumper to bumper warranty including parts and labor?** _____ YES _____ NO
- X10.1 Pump System:
- X10.1.1 Pump: Variable volume pressure compensated load sensing axial piston type _____ YES _____ NO
- X10.1.2 Front mounting flange and main housing/case of cast iron construction _____ YES _____ NO
- Inlet and outlet port section of high strength ductile iron with SAE split flange porting or orb type porting _____ YES _____ NO
- X10.1.3 Is suction port and associated plumbing sized to allow for minimum inlet restriction between the pump and the suction port on the reservoir?** _____ YES _____ NO
- Does installation comply with pump manufacturers allowable inlet condition specifications** _____ YES _____ NO
- Is suction plumbing equal to or greater than pump inlet or suction size** _____ YES _____ NO
- X10.1.4 Is pressure port of the SAE split flange or ORB type side mounted for direct bolt mounting of solenoid shut down valve assembly _____ YES _____ NO
- X10.1.5 Case drain and load sense signal ports of the SAE O-ring type _____ YES _____ NO
- Case drain line taken directly to tank without passing through the return line filter _____ YES _____ NO
- X10.1.6 Input shaft has a minimum continuous torque rating equal to _____% of the imposed load when pump is operated at maximum engine rpm, maximum displacement and system pressure** _____ YES _____ NO
- Is it minimum SAE "C" keyed** _____ YES _____ NO
- X10.1.7 Front input shaft bearing heavy duty ball or roller type designed for high axial and radial loading _____ YES _____ NO
- Rear shaft bearing of the high speed and load sleeve type design _____ YES _____ NO
- Bearings fully lubricated by flooded case oil _____ YES _____ NO
- X10.1.8 Ramp/swashplate supported by pressure lubricated bearings of the rocker cam or saddle type for high piston load support _____ YES _____ NO
- Ramp angle positioning by means of dual servo control cylinders for rapid pump response and precise pump output control _____ YES _____ NO

- X10.1.9 Adjustable load sense and high pressure compensator control valve assembly of the full cartridge or of bolt on housing design for ease of replacement and repair _____ YES _____ NO
- X10.1.9.1 **System design and components provide flow, pressure and performance requirements with a maximum operating load sense differential pressure of _____ PSI and a maximum standby pressure of _____ PSI for maximum efficiency.**
- If pilot control shifted valving is used, is it designed to be fully functional within this pressure range _____ YES _____ NO
- X10.1.9.2 High pressure compensator valve preset to limit the maximum pump output pressure to maximum required operating pressure plus load sense differential and margin pressure to prevent premature de-stroking of ramp resulting in reduced or insufficient pump output _____ YES _____ NO
- X10.1.10 **Pump Output: Is it capable of providing hoist cylinder extension required _____ YES _____ NO**
- Part number _____ - _____ gallons to fully extend but after filling _____ gallons is required to raise the cylinder:
- | | | |
|------------------|-------|------------------|
| 10 GPM flow rate | _____ | seconds to raise |
| 15 GPM flow rate | _____ | seconds to raise |
| 20 GPM flow rate | _____ | seconds to raise |
| 25 GPM flow rate | _____ | seconds to raise |
| 30 GPM flow rate | _____ | seconds to raise |
| 35 GPM flow rate | _____ | seconds to raise |
| 40 GPM flow rate | _____ | seconds to raise |
- Part number _____ - _____ gallons to fully extend
_____ gallons to fill and _____ gallons to extend
- | | | |
|------------------|-------|------------------|
| 5 GPM flow rate | _____ | seconds to raise |
| 10 GPM flow rate | _____ | seconds to raise |
| 15 GPM flow rate | _____ | seconds to raise |
| 20 GPM flow rate | _____ | seconds to raise |
| 25 GPM flow rate | _____ | seconds to raise |
| 30 GPM flow rate | _____ | seconds to raise |
| 40 GPM flow rate | _____ | seconds to raise |
- X10.1.11 Is the make and model bid in compliance with overall quality of construction, design, and performance of the pump supplied _____ YES _____ NO

- X10.1.12 Pump:
Manufacturer and Model:** _____
- X10.1.13 Is pump manufacturers standard product release and design** _____ YES _____ NO
- X10.1.14 Is pump driveline assembly of the keyed shaft design utilizing a 4 bolt driveshaft flange and matching drive yoke on the pump** _____ YES _____ NO
- X10.1.14.1 Does driveline have a minimum continuous torque rating equal to 200% of the imposed load when pump is operating at maximum system requirements** _____ YES _____ NO
- Manufacturer and Model:** _____
- X10.1.14.2 Are dual journals and yokes incorporated to connect the pump shaft and engine drive flange with an angular misalignment no greater than six (6) degrees and not less than two (2) degrees** _____ YES _____ NO
- X10.2 Pump Shutdown System:**
- X10.2.1 Normally closed, energize to open, solenoid operated control valve of the cartridge and manifold design to be directly bolted to pump pressure port** _____ YES _____ NO
- Is solenoid electrical connection of the Packard "Weatherpack" type with "SO" cable wiring** _____ YES _____ NO
- X10.2.2 Is valve controlled by a console mounted "Master On" switch with pilot lamp for normal system operation and by a float switch located in hydraulic reservoir to automatically shut off pump pressure port flow to all down stream functions in the event of low hydraulic oil level** _____ YES _____ NO
- X10.2.3 Pressure drop across valve** _____ PSI at _____ GPM flow when in the switched open position
- Nominal valve rating _____ GPM at _____ PSI
- X10.2.4 SAE #6 gauge port equipped with Parker Hannifin Model PD361 diagnostic coupling nipple and protective cap provided for pump output pressure testing to be installed in valve manifold and within an easily accessible mounting position** _____ YES _____ NO
- X10.2.5 Valve designed to protect the pump from damage when the system is shut down at high pressure and flow operation** _____ YES _____ NO
- X10.2.6 Valve manufacturer and model:** _____
- X10.2.7 Central control console mounted audio alarm and warning lamp indicating pump pressure/flow shutdown** _____ YES _____ NO
- X10.2.8 Warning lamp press-to-test light and incorporate a switching system into the automatic shutdown assembly to simulate low oil level, shut off pump output flow and test float switch wiring and connection** _____ YES _____ NO

- X10.2.9 A console mounted electrical override function switch provided to allow momentary operation of hydraulic functions in emergency situations YES NO
- X10.3 Directional Control Valve Assembly:
- X10.3.1 Valve stacked section type and of closed center circuit design YES NO
- X10.3.2 Each work section pressure and flow compensated with fully integrated load sense network YES NO
- Flow output is relative to spool travel with preset maximum flow rate obtained at maximum spool stroke providing feathering control of operated function YES NO
- X10.3.3 Dump body, snowplow lift, and snowplow power angle sections of the manual cable shift type YES NO
- Auxiliary circuit section of the electric solenoid shift type YES NO
- Both ends of each section valve spool sealed with weather resistant caps or cable entry bonnets YES NO
- X10.3.4 Valve assembly flow capacity rating and pressure drop characteristics sufficient to provide for the required pump output and circuit flow rates at the specified maximum load sense differential pressure settings** YES NO
- X10.3.5 All valve ports of the SAE o-ring seal type and of sufficient size to handle required section flow rates at stated load sense differential pressure YES NO
- X10.3.6 Is valve a pre-compensated design** YES NO
A priority section installed to allow plow to raise in a system over demand situation YES NO
- X10.3.7 Main pressure inlet relief valve provided to reduce system pressure shock loads YES NO
- Is it preset at pressure so as not to interfere with pump pressure compensator and to prevent premature relief opening at system high demand operation YES NO
- X10.3.8 If pilot pressure reducing valve is required for solenoid section control, design meets operating requirements as set forth in Section 10.1.9.1** YES NO
- Pilot supply and tank venting internal within the valve assembly section** YES NO
- X10.3.9 Load sense network high pressure relief provided and preset to limit system maximum operating pressure YES NO
- Set point provides proper pressure margin to pump pressure compensator and high pressure relief valve as to prevent premature loss of required flow rates and pressure capability YES NO

- X10.3.10 SAE #6 gauge 0port equipped with Parker Hannifin PD361 diagnostic coupling nipple with protective cap for load sense testing to be installed in an easily accessible location _____ YES _____ NO
- X10.3.11 Dump body control section 4-way three (3) position spring centered cylinder spool for operation of a double acting hoist cylinder _____ YES _____ NO
- X10.3.11.1 Full flow workport relief valve installed in power up port _____ YES _____ NO
- Set point to prevent operating pressure from exceeding hoist cylinder normal operating pressure rating _____ YES _____ NO
- X10.3.11.2 Is full flow work port relief valve installed in power down port set at 500 PSI to prevent full system pressure on down stroke _____ YES _____ NO
- X10.3.12 Snowplow lift control section is 4-way three (3) position spring centered cylinder spool for operation of a double acting lift cylinder _____ YES _____ NO
- X10.3.12.1 Adjustable flow control installed to limit downward speed of snowplow _____ YES _____ NO
- Flow limiting control system preset for proper plow lift speed to be supplied to reduce over demand operation and to increase system efficiency _____ YES _____ NO
- Will flow limit be determined at time of pilot model review _____ YES _____ NO
- X10.3.13 Snowplow power angle control section is 4 way three (3) position spring centered cylinder spool for operation of cylinder type reversible plow _____ YES _____ NO
- X10.3.13.1 Flow limiting control system preset for proper plow reversing speed to be supplied to reduce over demand operation and to increase system efficiency _____ YES _____ NO
- Will flow limit be determined at time of pilot model review _____ YES _____ NO
- X10.3.14 Plow Balance Valve:
- X10.3.14.1 Is hydraulic system supplied with a plow balance valve _____ YES _____ NO
- X10.3.14.2 Is valve designed to offset a specific (adjustable) plow weight when activated _____ YES _____ NO

- X10.3.14.3** Does plow balance system not alter the operation of any other hydraulic function or have an adverse effect on the performance of other hydraulically operated equipment including:
- | | |
|---------------------|--------------------|
| Wing Plow | _____ YES _____ NO |
| Body Hoist | _____ YES _____ NO |
| Plow Hoist or Angle | _____ YES _____ NO |
| Spreader functions | _____ YES _____ NO |
- Are all normal operations of the plow lift/lower functions maintained without additional tasks _____ YES _____ NO
- X10.3.14.4** Will plow lift be immediate to guarantee safe operation of the vehicle _____ YES _____ NO
- X10.3.14.5** Are solenoid valve coils used _____ YES _____ NO
- Will they have manual override capabilities if needed for continued use when coils fail _____ YES _____ NO
- X10.3.14.6** Does manifold valve include a pressure test point for use when checking balance pressures _____ YES _____ NO
- X10.3.14.7** Is pressure test point capable of tapping into system at pressures of 5,000 PSI _____ YES _____ NO
- X10.3.15** Auxiliary equipment drive circuit control section 3-way three (3) position spring centered solenoid operated motor spool _____ YES _____ NO
- Is the circuit separate and distinct from the spreader control system _____ YES _____ NO
- X10.3.15.1** Flow limiting control system preset to provide _____ GPM at a system load pressure of _____ PSI. Pump is capable of supplying this flow rate with engine speed of _____ RPM
- X10.3.15.2** Is an inline mounted control valve supplied for this operation in place of directional control valve section _____ YES _____ NO
- If supplied, is proper interconnections and venting of load sense network system provided _____ YES _____ NO
- X10.3.15.3** Is pressure line 3/4" SAE 100R2 hose and manifold mounted at rear of chassis and equipped with Parker Hannifin SH6-62 quick disconnect coupler and protective metal plug _____ YES _____ NO
- Is mating nipple SH6-63 with protective cap supplied _____ YES _____ NO
- Will mounting location be determined at time of pilot model review _____ YES _____ NO

X10.3.15.4

Manufacturer and model of directional and auxiliary circuit valves:

X10.3.16

Is directional control valve assembly located in a combination tank/valve stainless enclosure assembly to protect the hydraulic tank/valve from the elements

_____ YES _____ NO

Capacity of reservoir (tank) _____ gallon

X10.3.17

Pre-Wet Circuit:

X10.3.17.1

Is a separate circuit provided to control an add-on pre-wet system

_____ YES _____ NO

X10.3.17.2

Is hydraulic valve of the sectional type _____ YES _____ NO OR of the cartridge style contained in a manifold _____ YES _____ NO

X10.3.17.3

If manifold type valve is supplied, is it attached to the main valve assembly

_____ YES _____ NO

X10.3.17.4

Is all wiring to pre-wet hydraulic circuit provided as part of the system contained in the bid

_____ YES _____ NO

X10.3.17.5

Is wiring to the control console related to the rest of the pre-wet system (low level float, flow meter connection, etc.) provided as part of the pre-wet package at the time of pre-wet system install

_____ YES _____ NO

X10.4 Spreader Control Valve Assembly:

X10.4.1

Are spinner and conveyor solenoid flow controls of the PWM proportional solenoid type and equipped with manual overrides

_____ YES _____ NO

Are overrides manually adjustable over operating flow range in the event of electrical system failure

_____ YES _____ NO

X10.4.2

Flow control circuits are pressure compensated

_____ YES _____ NO

Provides spinner and pre-wet flow rate of _____ GPM and a conveyor flow rate of _____ GPM**Pressure relief valve system limit circuits to _____ PSI**

X10.4.3

Load sense circuits connected to directional control valve network for proper pump control

_____ YES _____ NO

Does design prevent improper high pressure load sense signal and pressure line loading when spreader valve is not in use and when spreader quick disconnects are uncoupled

_____ YES _____ NO

- X10.5.11** Is material spread width selectable by no less than 10 position switch with minimum and maximum spinner speed totally programmable through entire flow range YES NO
- Is spinner speed capable of linking to ground speed for on-off control** YES NO
- X10.5.12** Does display enunciate error message and sound audio alarm when microprocessor system detects any loss of control or accuracy YES NO
- X10.5.13** Will system be fully functional at time of delivery YES NO
- X10.5.14** Is truck speed sensor compatible with type of speedometer drive system supplied on chassis YES NO
- X10.5.15** Is a built-in ground speed simulator provided either internal to the control or located in the control console YES NO
- X10.5.16** Are all components required for proper installation and operation of control system onto truck and spreader units supplied YES NO
- X10.5.17** **Manufacturer and model of proposed control system** :
-
- X10.6** Central Control Console:
- X10.6.1** Mounted between seats within easy access of the driver YES NO
- X10.6.1.1** Warning light (bed raised) control console mounted YES NO
- X10.6.2** Will all wiring, valve control cables and electrical harness entry into cab and console sealed with grommets YES NO
- X10.6.3** Are remote control valve levers console mounted YES NO
- Are all levers clearly marked as to function and operation YES NO
- X10.6.3.1** Remote control levers to operate push-pull type cables with .250" diameter stainless steel rod ends YES NO
- X10.6.3.2** Is inner cable member 18-8 stainless steel armor wrapped construction with a low resistance nylon liner and polyethylene covered tempered steel wire conduit YES NO
- X10.6.3.3** Is cable to valve connection of the weather resistant bonneted type YES NO
- X10.6.3.4** Hoist control lever OSHA compliant (hoist interlock) YES NO
- X10.6.4** Are central console or dash mounted rocker switches with indicator lamps provided for strobe lights, spreader light and plow lights isolated from all hydraulic system control circuits YES NO

- X10.6.4.1 Are interconnections and cables installed and ready for operation _____ YES _____ NO
- X10.6.4.2 Is hydraulic system automatic shutdown system and control switching relay controlled _____ YES _____ NO
- X10.6.4.3 Relay(s) mounted within the cab _____ YES _____ NO
- X10.6.4.4 An access plate to internal wiring is provided _____ YES _____ NO
- X10.7 Hydraulic Reservoir:
- X10.7.1 Tank/valve enclosure flex mounted to the chassis frame rail _____ YES _____ NO
- X10.7.2 Tank constructed of _____ gauge _____ stainless steel _____ YES _____ NO**
- X10.7.3 Tank equipped with a combination oil level sight glass and thermometer _____ YES _____ NO
- X10.7.4 Tank equipped with a pressurized ten (10) micron filter/breather cap with removable 500 micron Strainer _____ YES _____ NO
- X10.7.5 Is an internal stainless steel baffle provided within the tank _____ YES _____ NO
- X10.7.6 Tank stenciled with **minimum of 1 1/2" high** "Hydraulic Oil" _____ YES _____ NO
- X10.7.7 Tank level switch connection "SO" type wiring and flange mounted within the tank/valve enclosure to protect it from the elements _____ YES _____ NO
- X10.7.8 Reservoir supply suction port _____ inches NPT and system report port _____ inches NPT**
- X10.8 Filtration:
- X10.8.1 Manufacturers standard filtration to adequately protect the hydraulic system from damage _____ YES _____ NO
- X10.8.2 Return line filter isolated from reservoir by a full flow non-restrictive type quarter turn brass ball valve if filter not installed in reservoir _____ YES _____ NO
- X10.8.3 Each filter equipped with a differential pressure switch to indicate filter clogged condition by means of a console mounted indicator lamp _____ YES _____ NO
- X10.8.4 One (1) extra replacement filter for each assembly is provided for each truck _____ YES _____ NO**
- X10.8.5 Filter assemblies positioned as close to reservoir as possible and in an easily accessible service location _____ YES _____ NO

X10.9 Hoses and Fittings:

- X10.9.1 Each hose-assembly (hose with hose ends) except for suction hose is fitted with JIC swivel connections on ends where connection to system component is made _____ YES _____ NO
- X10.9.2 All pressure line hoses meet or exceed SAE Specification 100R2 and are equal to Gates high pressure hose, type C2AT for sizes up to and including 1 inch ID _____ YES _____ NO
- X10.9.3 Suction hose 2 inch nominal ID and meet SAE Specification 100R4, braided fiber, spiral wire reinforced, rubber covered hose with replaceable bolt-on type fittings _____ YES _____ NO
- X10.9.4 All hydraulic hoses fully cleaned on interior, installed, and ready for operation _____ YES _____ NO
- X10.9.5 Are grommets used when routing hoses through steel bracketing or frame members _____ YES _____ NO
- X10.9.6 Are Snap-Tite quick disconnects (manifold mounted) supplied for spinner 1/2 inch pressure and return lines (VH Series Auger/Conveyor) _____ YES _____ NO**
- Is iron or galvanized iron pipe for fittings and connectors used _____ YES _____ NO
- X10.9.7 Are all fittings and connectors steel type designed for high pressure hydraulic system use _____ YES _____ NO
- X10.9.8 Pipe thread ported components and connectors are only used when the specific component is not available with SAE or JIC porting _____ YES _____ NO
- X10.9.9 Are all pipe thread connectors used coated with liquid Teflon pipe sealer prior to assembly _____ YES _____ NO
- X10.9.10 Hoses that run to the front of truck chassis for snowplow functions are manifold mounted behind the front bumper with sufficient access for pump service and snowplow hitch installation _____ YES _____ NO
- X10.9.11 Are snowplow lines equipped with complete 1/2 inch "VH" series Snap-tite quick disconnects (coupler and nipple supplied) and metal caps and plugs _____ YES _____ NO
- X10.10 Items not specifically stated but are necessary for proper system installation and operation are supplied and comply with recommended hydraulic industry standards:**

X10.11 Will initial servicing and pre-testing of hydraulic system be included for:

- X10.11.1 Initial fill of reservoir with a high grade 32 AW hydraulic fluid to approximately 40 gallon level, marked on sight glass : _____ YES _____ NO**

X10.11.2 Start-up and initial run of hydraulic system, checking for leaks, excessive heat, system efficiency YES NO

Will you replace any defective component YES NO

Will you cover any defects discovered at time of plow installation if equipment is not available at time of initial test of plow circuits YES NO

X10.11.3 Refill reservoir to the 40 gallon operating level YES NO

X10.12 If any hydraulic lines are located within 10 inches of exhaust system are they metal lines and insulated YES NO

X10.13 Are detailed component specifications, product literature, system component layout drawing with bill of materials and full functional hydraulic system schematics in accordance with JIC and ANSI-Y32 format attached with your bid YES NO

X10.14 If successful vendor, will you provide WVDOH with a complete list of all filters required for normal maintenance on proposed unit YES NO

X10.15 Explain your training sessions with each purchase order covering the operation, maintenance, trouble shooting and calibration/programming of the hydraulic system and spreader controls and where will they be held:

State of West Virginia **VENDOR PREFERENCE CERTIFICATE**

Certification and application* is hereby made for Preference in accordance with **West Virginia Code**, §5A-3-37. (Does not apply to construction contracts). **West Virginia Code**, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

1. Application is made for 2.5% resident vendor preference for the reason checked:

- _____ Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
- _____ Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
- _____ Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or**,

2. Application is made for 2.5% resident vendor preference for the reason checked:

- _____ Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,

3. Application is made for 2.5% resident vendor preference for the reason checked:

- _____ Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,

4. Application is made for 5% resident vendor preference for the reason checked:

- _____ Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or**,

5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:

- _____ Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or**,

6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:

- _____ Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: _____ Signed: _____

Date: _____ Title: _____

**Check any combination of preference consideration(s) indicated above, which you are entitled to receive.*

RFQ No. _____

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code* §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: _____

Authorized Signature: _____ Date: _____

State of _____

County of _____, to-wit:

Taken, subscribed, and sworn to before me this ____ day of _____, 20__.

My Commission expires _____, 20__.

AFFIX SEAL HERE

NOTARY PUBLIC _____