



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
707EC021

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
JOHN JOHNSTON 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

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
06/11/2007				

BID OPENING DATE: 07/25/2007 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		065-30		
64,000 GVW CAB & CHASSIS, STAINLESS STEEL DUMP BODY  OPEN END CONTRACT  TO PROVIDE 64,000 GVW CAB AND CHASSIS, STAINLESS STEEL DUMP BODY, AND PISTON PUMP HYDRAULIC SYSTEM AS DESCRIBED IN ATTACHED PROCUREMENT SPECIFICATION 377-2-D  THERE WILL BE A MANDATORY PRE-BID CONFERENCE AT THE STATE CAPITOL COMPLEX, BUILDING 15, CONFERENCE ROOM, AT 10:00 AM. ON 7/12/07. FAILURE TO ATTEND THE PRE-BID CONFERENCE WILL RESULT IN BID DISQUALIFICATION.  QUESTIONS: WRITTEN QUESTIONS WILL BE ACCEPTED THROUGH CLOSE OF BUSINESS (5:00PM EST) ON THURSDAY, 6/28/07.  SEND YOUR QUESTIONS TO: PURCHASING DIVISION JOHN JOHNSTON 2019 WASHINGTON ST. E. CHARLESTON, WV. 25305  QUESTIONS MAY BE SENT VIA FAX, E-MAIL, OR REGULAR MAIL. E-MAIL: JJOHNSTON@WVADMIN.GOV FAX: 304-558-4115  IT IS THE VENDORS RESPONSIBILITY TO VERIFY THAT THEIR QUESTIONS HAVE BEEN RECEIVED BY CALLING 304-558-2402.  EXHIBIT 2  LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE ON ..... AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
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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. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125.00 registration fee.
5. All services performed or goods delivered under State Purchase Orders/Contracts are to be continued for the term of the Purchase Order/Contract, 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.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this contract is automatically null and void, and is terminated without further order.
14. **HIPAA Business Associate Addendum** - The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Covered Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.

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**INSTRUCTIONS TO BIDDERS**

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** 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. Complete all sections of the quotation form.
4. Unit prices shall prevail in cases of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** 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.

**SIGNED BID TO:**

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



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<p>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 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</p>						

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<p>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, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.</p> <p>REV. 9/98</p> <p>EXHIBIT 6</p> <p>PRICE ADJUSTMENT PROVISION:            THE STATE OF WEST VIRGINIA WILL CONSIDER BIDS THAT CONTAIN PROVISIONS FOR PRICE ADJUSTMENTS PRIOR TO THE ORIGINAL EXPIRATION OF THE CONTRACT, PROVIDED THAT SUCH PRICE ADJUSTMENT COVERS BOTH UPWARD AND DOWNWARD MOVEMENT OF THE COMMODITY PRICE, AND THAT ADJUSTMENT IS BASED ON THE "PASS THROUGH" INCREASE OR DECREASE OF RAW MATERIALS AND/OR LABOR, WHICH MAKE UP ALL OR A SUBSTANTIAL PART OF A PRODUCT. ADJUSTMENTS ARE TO BE BASED UPON AN ACTUAL DOLLAR FIGURE, NOT A PERCENTAGE. ALL PRICE ADJUSTMENT REQUESTS MUST BE SUBSTANTIATED IN</p>						

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<p>A MANNER ACCEPTABLE TO THE DIRECTOR PURCHASING, E.G. GOVERNMENTAL BENCH MARKS, GENERAL MARKET INCREASE, PUBLISHED PRICE LISTS. SUCH REQUESTS FOR AND INCREASE SHOULD BE RECEIVED IN WRITING BY THE DIRECTOR OF PURCHASING AT LEAST 30 DAYS IN ADVANCE OF THE EFFECTIVE DATE OF THE INCREASE. ANY TIME THE VENDOR REQUESTS A PRICE ADJUSTMENT, THE PURCHASING DIVISION MAY EITHER ACCEPT THE PRICE ADJUSTMENT AND AMEND THE CONTRACT ACCORDINGLY OR REJECT THE ADJUSTMENT IN ITS ENTIRETY AND CANCEL THE CONTRACT.</p> <p>EXHIBIT 4</p> <p>LOCAL GOVERNMENT BODIES: UNLESS THE VENDOR INDICATES IN THE BID HIS REFUSAL TO EXTEND THE PRICES, TERMS, AND CONDITIONS OF THE BID TO COUNTY, SCHOOL, MUNICIPAL AND OTHER LOCAL GOVERNMENT BODIES, THE BID SHALL EXTEND TO POLITICAL SUBDIVISIONS OF THE STATE OF WEST VIRGINIA. IF THE VENDOR DOES NOT WISH TO EXTEND THE PRICES, TERMS, AND CONDITIONS OF THE BID TO ALL POLITICAL SUBDIVISIONS OF THE STATE, THE VENDOR MUST CLEARLY INDICATE SUCH REFUSAL IN HIS BID. SUCH REFUSAL SHALL NOT PREJUDICE THE AWARD OF THIS CONTRACT IN ANY MANNER.</p> <p>REV. 3/88</p> <p>VENDOR PREFERENCE CERTIFICATE</p> <p>CERTIFICATION AND APPLICATION* IS HEREBY MADE FOR PREFERENCE IN ACCORDANCE WITH WEST VIRGINIA CODE, 5A-3-37 (DOES NOT APPLY TO CONSTRUCTION CONTRACTS).</p> <p>A. APPLICATION IS MADE FOR 2.5% PREFERENCE FOR THE REASON CHECKED:</p>						

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<p>( ) 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</p> <p>( ) BIDDER IS A PARTNERSHIP, ASSOCIATION OR CORPORATION RESIDENT VENDOR AND HAS MAINTAINED ITS HEAD-QUARTERS 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</p> <p>( ) BIDDER IS A CORPORATION 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.</p> <p>B. APPLICATION IS MADE FOR 2.5% PREFERENCE FOR THE REASON CHECKED:</p> <p>( ) 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</p> <p>( ) BIDDER IS A NONRESIDENT VENDOR EMPLOYING A</p>						

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<p>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 BIDDERS' 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.</p> <p>BIDDER UNDERSTANDS IF THE SECRETARY OF TAX &amp; 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) RESCIND THE CONTRACT OR PURCHASE ORDER ISSUED; 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.</p> <p>BY SUBMISSION OF THIS CERTIFICATE, BIDDER AGREES TO DISCLOSE ANY REASONABLY REQUESTED INFORMATION TO THE PURCHASING DIVISION AND AUTHORIZES THE DEPARTMENT OF TAX AND 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.</p> <p>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</p>						

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<p>CONTAINED WITHIN THIS CERTIFICATE CHANGES DURING THE TERM OF THE CONTRACT, BIDDER WILL NOTIFY THE PURCHASING DIVISION IN WRITING IMMEDIATELY.</p> <p>BIDDER: -----</p> <p>DATE: -----</p> <p>SIGNED: -----</p> <p>TITLE: -----</p> <p>* CHECK ANY COMBINATION OF PREFERENCE CONSIDERATION(S) IN EITHER "A" OR "B", OR BOTH "A" AND "B" WHICH YOU ARE ENTITLED TO RECEIVE. YOU MAY REQUEST UP TO THE MAXIMUM 5% PREFERENCE FOR BOTH "A" AND "B". (REV. 12/00)</p> <p>NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION            PURCHASING DIVISION            BUILDING 15            2019 WASHINGTON STREET, EAST            CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF</p>						

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<p>THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:            SEALED BID</p> <p>BUYER: 33            RFQ. NO.: 707EC021            BID OPENING DATE AND TIME</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY            TO CONTACT YOU REGARDING YOUR BID:            -----            CONTACT PERSON (PLEASE PRINT CLEARLY):            -----</p> <p>***** THIS IS THE END OF RFQ 707EC021 ***** TOTAL: _____</p>						

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
EQUIPMENT DIVISION

PROCUREMENT SPECIFICATIONS  
NO. 377-2-D

OPEN END CONTRACT  
64,000 GVW CAB AND CHASSIS, STAINLESS STEEL DUMP 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 Dump 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, MAY RESULT IN AUTOMATIC DISQUALIFICATION.

3.0 SPECIFICATIONS

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

3.1 EXCEPTIONS TO NON-MANDATORY SPECIFICATIONS

Exception to a non-mandatory unit specification may be made by the bidder, providing the exception is not available from the manufacturer. Any such 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 determine whether the stated exception does or does not reduce the quality and performance of the unit. Failure to provide information for any exceptions may be grounds for rejection of the bid. The state reserves the right to waive minor irregularities in bids or specifications in accordance with §148-1-4(f) of the WV Legislative Rules and Regulations.

### 3.2 MANDATORY SPECIFICATIONS

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

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

### 4.0 REPRESENTATIVE UNIT FOR TEST

The successful vendor must (if specified) provide DOH one (1) completed representative unit to be observed and evaluated on each order to insure compliance with specification. If requested, the time period for testing and evaluation shall be seven (7) working days following receipt of the unit. DOH will incur no obligation for deterioration of surfaces, finishes, seals, and mechanical or electrical parts on the unit resulting from operation and testing within the limits of these specifications; nor will DOH incur obligation for damage to the unit resulting from failure to meet specifications when due care and attention is given by DOH and testing is done within the limits of these specifications. Failure of the pilot unit to satisfactorily meet specifications as bid shall be cause for cancellation of the purchase order, and return of the delivered unit along with all associated equipment to the vendor at the vendors' 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 180 days maximum. The vendor is responsible for establishing and coordinating delivery terms with allied manufacturers or suppliers. Delivery terms shall be stated in the bid and the State

reserves the right to accept or negotiate such terms. Failure to reach an agreement may result in rejection of the bid. The successful bidder shall provide their manufacturer's confirmation of the order to the WVDOH contact person within seven (7) working days after receiving the approved purchase order.

A completed pilot model for inspection must be provided within 90 calendar days after the date 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.

Prices for the units shall be in quantities of 1-25, 26-50, and 51 and over. However, for evaluation purposes, we will use quantities 1-25. DOH reserves the right to place multiple orders in any quantity.

## 6.0 SPECIFICATIONS AND GUIDELINES - GENERAL

### 6.1 IDENTIFICATION OF THE UNIT BEING PROPOSED

The bidder must identify the unit by manufacturer, model, series, and year of manufacture, in the bid to enable identification by DOH in the manufacturer's specifications of the proposed unit. The bidder will submit complete descriptive literature of the proposed unit, to establish that the bid is the manufacturer's most current model, including latest engineering improvements, which have been, or will imminently be, regularly advertised and sold on the open market. The unit specified herein and offered to be manufactured after January 1, 2007 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 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 Letha Lamb, 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

Failure by a manufacturer's authorized dealer to render warranty service when properly presented may subject manufacturer's line for suspension from the approved products list until satisfactory evidence of correction is presented. The warranty table shown below shall be the minimum warranty provided.

Total Vehicle:	2 yrs/100,000 miles	100% Parts and Labor
Engine:	3 yrs/100,000 miles	100% Parts and Labor
Drive Train:	2 yrs/100,000 miles	100% Parts and Labor
Cab:	3 yrs/unlimited miles	100% Parts and Labor
	Structural and Corrosion	

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

\*PLEASE LIST ALL EXTENDED SERVICE CONTRACT COVERAGES, PUBLISHED AND NOT PUBLISHED ALONG WITH COST AS OPTIONS. (ALSO, PROVIDE MANUFACTURERS HOURS VS MILES CONVERSIONS)

\*NOTE: From date of delivery and acceptance of completed units, vehicles to be furnished shall conform to all applicable Federal and Motor Vehicle Safety Standards and all equipment shall conform to the Code of West Virginia and shall include a valid and current state inspection sticker. New vehicle service preparation must be performed by dealer prior to delivery.

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 replace, repair/replace any defective replacement parts, components, and/or materials found to be defective during the terms of the warranty period. The unit must be accompanied upon delivery by the units' manufacturers executed warranty or service policy.

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 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 2.59 million Ins./Lb. (Single frame rail is preferred)

To assure space for installation of the spinner chute, the truck chassis frame rails must be free of obstructions inside the frame rails and along the left outside frame rail in an area approximately 23 inches to 38 inches from the back of the cab

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: Engine manufacturer to make provisions for front mounted hydraulic pump to crankshaft pulley.
  - 8.6.1.1 Engine Diesel - Minimum – 365 HP - Peak Torque 1450 lbs. ft. min.

- 8.6.1.2 In block engine heater 1500 Watt
- 8.6.1.2.1 The electrical cable from the heater to plug to be one piece and waterproof, location - left side under driver door.
- 8.6.1.3 Fuel heater/water separator to be provided inside of engine compartment. Davco, Racor, Alliance, or approved equal.
- 8.6.1.3.1 Engine fuel system to be equipped with primer pump
- 8.6.1.4 Exhaust:
  - 8.6.1.4.1 A single vertical exhaust pipe with underbody muffler that will meet all Federal noise abatement requirements. Exhaust to the passenger (right) side of unit.
  - 8.6.1.4.2 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.
  - 8.6.1.4.3 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. (Solo clutch is not acceptable).
  - 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 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 2007 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 eight (8) 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, manual 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: Eaton RTO 14908LL or equal shall be provided with manufacture transmission oil cooler
- 8.11.1.1 Magnetic drain plug.
- 8.11.1.2 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. Shall be powder coated with color similar to gray.
    - 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. Shall be powder coated with color similar to gray.
    - 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: (See enclosed diagram for color reference) - 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 4 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.
- 8.25.2.1 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.
- 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 10.7 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 3/16 inch 304 stainless steel
- 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 – 45 inches (measure from the floor to top rail)
- 9.6.6 Tailgate height – 53 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 304 stainless steel (unless otherwise noted)
  - 9.8.1 Floor: 1/4 inch thickness 304 stainless steel or abrasion resistant AR400 steel
  - 9.8.2 Sides: 3/16 inch thickness
  - 9.8.3 Tailgate plate: 3/16 inch thickness
  - 9.8.4 Top rail: 3/16 inch thickness
  - 9.8.5 Cab protector: 10 gauge
  - 9.8.6 Longitudinal: Minimum 10 inch/7 gauge 304 stainless steel formed inner/10 gauge 304 stainless steel formed with internal stainless steel gussets every 30 inches
  - 9.8.7 For future potential pre-wet application, the combination body shall be capable of accepting frame mounted approximately 85 gallon poly liquid tanks. The body shall be designed to allow maximum protection to the tanks.
- 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.
  - 9.10.1 A rear bolt on spreader apron must be provided unless integrated into the rear of bed.

- 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 and floor which shall incorporate a sloping floor to side radius to adequately feed material to conveyor chain
  - 9.12.2 The sides of the body shall slope to the conveyor to facilitate self cleaning of body without raising.
- 9.13 The boxed top rail should slope inward to shed debris
- 9.14 Full length 304 stainless steel integral rear fenders continuously welded and positioned over wheels of the truck chassis
- 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 The conveyor should have 12 inches or less 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 1/4 inch 304 stainless steel conveyor floor or abrasion resistant steel (AR400)
  - 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 25 inches
  - 9.15.6 Conveyor shall be reversible
  - 9.15.7 Conveyor to be driven with 25:1 planetary gearbox drives or equivalent on both the front and rear shafts with approximately 5.0 CIR hydraulic motors. One (1) motor shall have an integral conveyor speed sensor
  - 9.15.8 Conveyor chain to be D667K pintle type (24,500 lb. tensile/strand) with minimum 3/8 inch x 1 1/2 inch conveyor crossbars welded to every link
  - 9.15.9 A 10 gauge 304 stainless steel bolt in pan under the conveyor to keep material off chassis frame is required

- 9.16 The body shall have the capability to convey to the front or the rear with a material spinner for distributing material:
- 9.16.1 For front spreading, a front feedgate integrated into the head sheet of the body to be no less than 8 inches x 24 inches with infinite adjustment positions.
  - 9.16.2 A 304 stainless steel front spinner chute shall be mounted between chassis frame rails and with the body down be completely enclosed to prevent material from dropping on chassis drive shaft.
  - 9.16.3 For rear spreading, a 7 gauge 304 stainless steel 10-12 inch x 24-26 inch rear feedgate in the body tailgate
  - 9.16.4 Rear feedgate to be lever operated or screw adjustable. The feedgate to be capable of being positively locked into position.
  - 9.16.5 The front spinner bracket and chute shall be mounted to the truck chassis frame and for rear spreading capability the rear spinner chute and brackets shall be installed by successful vendor.
  - 9.16.6 The spinner assembly shall be universal and may be used at front or rear. (The spinner assembly shall be spinner disc, motor, motor shroud and the removable piece that houses these components.)
  - 9.16.7 Spinner assembly must be adjustable left to right, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern.
  - 9.16.8 10 gauge 20 inch diameter spinner disc to have replaceable machined hub.
  - 9.16.9 Spinner disc vanes shall be 409 or 304 stainless steel
  - 9.16.10 If spinner hydraulic motor is mounted on top of spinner disc, the motor shall be enclosed in a removable material shedding protective cover.
- 9.17 Hydraulic Hoist:
- 9.17.1 Trunnion Mount or top lift Telescopic Hoist
  - 9.17.2 Telescopic hoist shall be no less than N.T.E.A. Class 70
  - 9.17.3 Single hoist cylinder to be trunnion mount or top lift.

- 9.17.4 Hoist cylinder shall have three (3) stages with approximately 130 inches of stroke with a six (6) inch diameter first stage – Part number MALHOIT CS-130-6-3 or MALHOIT CS-130-5-3 or equal. (Refer to Line Item 10 – CENTRAL HYDRAULIC SYSTEM)
- 9.17.5 The cylinder shall have wear and corrosion resistant nitrided cylinder tubes.
- 9.17.6 There shall be a minimum two (2) year cylinder warranty.
- 9.17.7 A five (5) degree oscillating cylinder collar shall protect the cylinder against side stress, if trunnion mount cylinder is provided.
- 9.17.8 The body shall have 6 inch x 8 inch x 1/2 inch structural angle rear hinge assembly installed in the truck chassis frame (no hoist subframe).
- 9.17.9 The rear hinge assembly shall have cold roll steel hinge pins connecting to 2 1/2 inch hinge blocks with grease zerks
- 9.18 The following features shall be included:
- 9.18.1 Warning light (bed raised) control console mounted (Refer 10.6.1.1)
- 9.18.2 Hydraulic oil level reading (Refer 10.7.3 and 10.7.7)
- 9.18.3 Safety decals as required
- 9.18.4 304 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.
- 9.18.5 304 stainless steel shovel bracket
- 9.18.6 304 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.
- 9.18.7 The unit shall have air operated tailgate with dual brake chamber air tailgate latches (one on each side). 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.
- 9.18.8 1 1/2 inch 304 stainless steel grip strut walk rail installed on both sides of the body.

- 9.18.9 OSHA approved backup alarm, electronic ambient, adjusts to background noise, 112 dba shock mounted at the rear.
- 9.18.10 OSHA approved body support, both sides
- 9.18.11 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.
- 9.18.12 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.
- 9.19 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.
- 9.19.1 All marker lights 2 1/2 inch diameter flush mount sealed beam lights with integral reflector mounted in rubber base.
- 9.19.2 All ground wires to be attached with plated steel fasteners, tack weld not allowed.
- 9.19.3 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.
- 9.19.4 Center rear I.D. lights three (3) located in truck chassis.
- 9.19.5 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.
- 9.19.6 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 WVDOH for mounting position and bracket dimensions.
- 9.19.7 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 oulxdlsh or equal)
- 9.19.8 Must have two (2) front frame mounted tow hooks



- 9.19.9 Lighted license plate bracket
- 9.20 There should be the following at the front or rear both sides of the body:
  - 9.20.1 304 stainless steel fold down ladder that locks into position when either in the down or up position
  - 9.20.2 Two (2) 304 stainless grab handles
- 9.21 Tailgate (304 stainless steel):
  - 9.21.1 The tailgate to be hinged at top, flame cut hardware, pork chop type off-set hardware to achieve maximum opening of tailgate, but shall have provision for pivoting at the bottom. (Thus double acting tailgate being able to lay the tailgate down.)
  - 9.21.2 Flush mount, 1/2 inch flame cut 304 stainless steel tailgate pivots.
  - 9.21.3 Heavy duty offset hinge plates, one (1) inch flame cut 304 stainless steel.
  - 9.21.4 3/4 inch 304 stainless steel latch hooks with 3/8 inch 304 stainless steel latch plates.
  - 9.21.5 Full perimeter 304 stainless steel boxing with all horizontal edges sloped outward.
  - 9.21.6 Shall have two (2) 10 gauge 304 stainless steel sloped horizontal braces that are flush with perimeter boxing.
  - 9.21.7 There shall be a 7 gauge 304 stainless steel 10-12 inch x 24-26 inch rear feedgate
  - 9.21.8 Cold roll steel upper pins with grease zerks.
  - 9.21.9 Top hinge channel should have removable, chain tethered keeper pins.
  - 9.21.10 Latching action at the bottom of gate should be operable by the truck driver without leaving the truck cab.
  - 9.21.11 Gate to be self aligning.
  - 9.21.12 Tailgate lower latch pins should be 304 stainless steel 1 1/4 inch diameter.
  - 9.21.13 To have a body integrated or bolt on 304 stainless steel 15 inch spreader apron.

9.22 The design and strength characteristic 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.

9.23 Bumper:

9.23.1 The bumper to be formed out of 1/4 inch roll steel and weigh approximately 10.20 lbs. per square foot.

9.23.2 Bumper face to cover all of truck frame (approximately 12 inches) with two (2) flanges of approximately 2.25 inches top and bottom.

9.23.3 Bumper to be approximately 94 inches overall width

9.23.4 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.

9.23.5 Bumper to have two (2) access holes for utilization of tow hooks (Refer 9.6)

9.23.6 Upper and lower flanges to be cut and welded solid at point where bumper is bent and ground off smooth.

9.23.7 Bumper to be mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side.

9.23.8 Mount angle to be approximately 1/4 inch x 3 inches x 8 inches long with four (4) 5/8 inch holes.

9.23.9 Front bumper to be painted Martin Senour Dark Blue #82-5802 or similar.

9.24 Underbody Tool Box:

9.24.1 One (1) tool box to be mounted under body on right side frame rail.

9.24.2 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.

9.24.3 Construction should be of 14 gauge minimum A-60 galvaneal steel with all seams welded.

9.24.4 Tool box to have a horizontal hinged fold down door.

9.24.5 Tool box door should have cable or chain to hold the door in a horizontal position.

9.25 Load covering system to be electrically or air controlled:

- 9.25.1 Electric motor assembly to include 12 volt direct drive motor with forward and reverse action, cab mounted control switch, resettable circuit breaker.
- 9.25.2 Pivot arm assembly should be constructed in a two (2) piece bent arm configuration of approximately 1 1/4 inch 14 gauge steel tubing.
- 9.25.3 Bent arm extensions to be constructed of minimum of one (1) inch 14 gauge steel tubing.
- 9.25.4 Rear cross to be constructed of approximately 1 1/4 inch 14 gauge steel tubing.
- 9.25.5 Pivot arm rests to be included.
- 9.25.6 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.
- 9.25.7 All steel components to be finished with manufacturer's recommended rust preventative system to include a minimum of adequate primer and paint.
- 9.25.8 Steel cab protector mounted triple bend wind deflector to be provided.
- 9.25.9 Load covering system to be provided with minimum of 18 oz. black vinyl tarp to fit 14 foot 6 inch body.
- 9.25.10 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.

9.26 Paint:

- 9.26.1 There shall be no paint on the 304 stainless steel surfaces of the body.
- 9.26.2 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.
- 9.26.3 Non-304 stainless steel components on the body to be painted aluminum.
- 9.26.4 Front bumper: Martin Senour Dark Blue #82-5802 or similar (See drawing)

9.27 Detail/Decorative Stripes with Logo:

- 9.27.1 Tailgate and body sides to be outlined with red/silver pre-stripped conspicuity retroflective weather resistant striping. Successful bidder shall consult with WVDOH of proposed striping before review of pilot model.
- 9.27.2 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.
- 9.27.3 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.
- 9.27.4 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.
- 9.27.5 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.
- 9.27.6 Bidder should attach his proposed paint plan with this bid. It should include chips of samples of proposed paints as well as proposed striping detail on a cab silhouette sheet. Bidder may modify attached striping plan to fit his particular hood or cab shape.
- 9.27.7 Striping as specified shall be installed by the successful bidder. Bidder should consult with the WVDOH representative on proposal for striping before pilot review.
- 9.28 The body shall include all other features considered as standard, but not specifically addressed above.
- 9.29 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 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 A priority section shall be installed to allow plow 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 3-way three position spring centered cylinder spool for operation of a single 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 Adjustable flow control shall be installed to limit downward speed rate of dump body.
- 10.3.12 Snowplow lift control section to be 3-way three position spring centered cylinder spool with float detent for operation of a single acting lift cylinder. (Thus, eliminating skip plowing.)
- 10.3.12.1 Full flow workport relief valve preset at maximum required unlock pressure installed in power down workport. Workport relief valve also to be installed in power up workport if maximum system pressure output setting exceeds normal operating pressure limit of plow lift cylinder. If three (3) way valve is provided for plow hoist circuit, a full flow work port relief will not be required for the plow lower circuit.
- 10.3.12.2 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 motor spool for operation of worm gear driven type reversing system.
- 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.
- 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 ¾" 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 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 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 Pump 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 forward and rear spinner 1/2 inch pressure and return lines. 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-D

OPEN END CONTRACT  
64,000 GVW CAB AND CHASSIS, STAINLESS STEEL DUMP BODY, AND  
PISTON PUMP HYDRAULIC SYSTEM

NOTE TO BIDDER: Procurement Specification No. 377-2-D, 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 exception sheets, 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.

X4.2 DELIVERY:

X4.2.1 Delivery date of completed representative unit: \_\_\_\_\_ Calendar Days After Date of Purchase Agreement

X4.2.2 Delivery date of balance of completed units: \_\_\_\_\_ Calendar Days After Date of Purchase Agreement

**NOTE: Vendors can complete Bidder's Evaluation Report at Purchasing's Web Site [www.state.wv.us/admin/purchase](http://www.state.wv.us/admin/purchase)**

The Procurement Specifications does not have to be returned with the bid.

## X5.0 AWARD CRITERIA;

X5.1 Prices for quantities of

1-25		per unit
26-50		per unit
51 and over		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

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 WVDOH.

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 \_\_\_\_\_

AIR INNER \_\_\_\_\_

AIR OUTER \_\_\_\_\_

FUEL PRIMARY \_\_\_\_\_

FUEL SECONDARY \_\_\_\_\_

COOLANT \_\_\_\_\_

HYDRAULIC \_\_\_\_\_

OTHER \_\_\_\_\_

ENGINE \_\_\_\_\_

TRANSMISSION \_\_\_\_\_

POWER STEERING \_\_\_\_\_

HYDRAULIC \_\_\_\_\_

DIFFERENTIALS \_\_\_\_\_

BRAKE FLUID \_\_\_\_\_

COOLANT \_\_\_\_\_

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 Letha Lamb 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 the minimums in all areas as stated in Section 6.5 of specifications \_\_\_\_\_ YES \_\_\_\_\_ NO

Is warranty literature attached? \_\_\_\_\_ YES \_\_\_\_\_ NO

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.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

X6.5 WARRANTY AND SERVICE POLICY QUESTIONNAIRE

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY BY THE SUCCESSFUL BIDDER OR MANUFACTURERS TECHNICAL REPRESENTATIVE PRIOR TO DELIVERY OF PILOT MODEL TO THE WVDOH (If additional lines are needed, make copies of form.)

1. Define the terms of the standard warranty. If not offered, so state. (Attach copy)

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2. Define warranty service to be performed at DOH facilities and warranty service to be performed at manufacturer's representative facility. List name and location of manufacturer's representative.

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3. List locations for parts inventories that are within the State of West Virginia. Also, list availability levels, if known.

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4. During the term of warranty, list the guarantee discount to manufacturer's published list price for parts that bidder will sell the parts to owner.

- A. Terms: Net 30      Manufacturer's published list price less: \_\_\_\_\_ % discount
- B. Terms: Net 60      Manufacturer's published list price less: \_\_\_\_\_ % discount
- C. Terms: Net 90      Manufacturer's published list price less: \_\_\_\_\_ % discount

5. During the term of warranty, will all manufacturers or engineering improvements be submitted to Division of Highways?      \_\_\_\_\_ YES \_\_\_\_\_ NO

6. During the term of warranty, list the guaranteed rates charged for repair to the unit.

A. Shop Rate      \$ \_\_\_\_\_ per mechanic hour

B. Travel Time Charge      \$ \_\_\_\_\_ per mechanic hour  
(Specify if one-way)      \_\_\_\_\_ ; port to port \_\_\_\_\_

C. Mileage Charge      \$ \_\_\_\_\_ per vehicle mile  
(Specify if one-way)      \_\_\_\_\_ ; port to port \_\_\_\_\_

D. Field Mechanic Rate      \$ \_\_\_\_\_ per mechanic hour

E. Specify period of time that prices are in effect: \_\_\_\_\_

F. Surcharge for miscellaneous items: \_\_\_\_\_ %

## 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 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 Single frame rail \_\_\_\_\_ YES \_\_\_\_\_ NO
- To assure space for installation of spinner chute, are the truck chassis frame rails free of obstruction inside the frame rails and along the left outside frame rail in an area approximately 23 inches from the back of the cab  
\_\_\_\_\_ 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 been 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 56
- 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:
- X8.6.1 Will engine manufacturer make provisions for front mounted hydraulic pump to crankshaft pulley \_\_\_\_\_ YES \_\_\_\_\_ NO  
 Manufacturer & Model: \_\_\_\_\_
- X8.6.1.1 Diesel engine? \_\_\_\_\_ YES \_\_\_\_\_ NO  
 HP: \_\_\_\_\_ Peak torque \_\_\_\_\_ lbs. ft.
- X8.6.1.2 In block engine heater 1500 watt \_\_\_\_\_ YES \_\_\_\_\_ NO
- X8.6.1.2.1 Is electrical cable from the heater to plug one piece and waterproof, located left side under driver door \_\_\_\_\_ YES \_\_\_\_\_ NO
- X8.6.1.3 Fuel heater/water separator provided inside of engine compartment \_\_\_\_\_ YES \_\_\_\_\_ NO  
 Manufacturer: \_\_\_\_\_
- X8.6.1.3.1 Engine fuel system equipped with primer pump \_\_\_\_\_ YES \_\_\_\_\_ NO
- X8.6.1.4 Exhaust:
- X8.6.1.4.1 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

- X8.6.1.4.2 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: \_\_\_\_\_
- X8.6.1.4.3 Exhaust pipe with rain cap or exhaust turn out \_\_\_\_\_ YES \_\_\_\_\_ NO
- X8.5.2 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 hose manufacturer: \_\_\_\_\_
- 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 2007 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 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, manual transmission, transfer cases, and all rear differentials meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and all plugs identified as synthetic or painted red \_\_\_\_\_ YES \_\_\_\_\_ NO
- X8.11.1 Transmission: \_\_\_\_\_ transmission oil cooler \_\_\_\_\_ YES \_\_\_\_\_ NO
- X8.11.1.1 Magnetic drain plug \_\_\_\_\_ YES \_\_\_\_\_ NO
- X8.11.1.2 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 \_\_\_\_\_ 62
- 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 with color similar to gray  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 with color similar to gray  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:

\_\_\_\_\_  
\_\_\_\_\_

X8.22 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

X8.23 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

X8.25.2 Will booklets and pamphlets be furnished to be used by the operators \_\_\_\_\_ YES \_\_\_\_\_ NO

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: \_\_\_\_\_ inch 304 stainless steel

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: \_\_\_\_\_ 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)
- 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 type: \_\_\_\_\_

X9.8.1 Floor: \_\_\_\_\_ inch thickness 304 stainless \_\_\_\_\_ OR abrasion resistant AR400 \_\_\_\_\_

X9.8.2 Sides: \_\_\_\_\_ inch thickness

X9.8.3 Tailgate plate: \_\_\_\_\_ inch thickness

X9.8.4 Top rail: \_\_\_\_\_ inch thickness

X9.8.5 Cab protector: \_\_\_\_\_ gauge

X9.8.6 Longitudinal: \_\_\_\_\_ inch/ \_\_\_\_\_ gauge 304 stainless steel formed inner/  
 \_\_\_\_\_ gauge 304 stainless steel formed with internal stainless steel gussets every  
 \_\_\_\_\_ inches

X9.8.7 For future potential pre-wet application, will the combination body be capable of accepting frame mounted approximately 85 gallon poly liquid tanks \_\_\_\_\_ YES \_\_\_\_\_ NO

Is the body designed to allow maximum protection to the tanks \_\_\_\_\_ 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
- X9.10.1 Will a rear bolt on spreader apron be provided unless integrated into the rear of the bed  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 and floor which incorporates a sloping floor to side radius to adequately feed material to conveyor chain  YES  NO
- X9.12.2 The sides of the body slope to the conveyor to facilitate self cleaning of body without raising  YES  NO
- X9.13 The boxed top rail slopes inward to shed debris  YES  NO
- X9.14 Full length 304 stainless steel integral rear fenders are continuously welded and positioned over wheels of the truck chassis  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 Does the conveyor have 12 inches or less 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 1/4 inch 304 stainless steel \_\_\_ conveyor floor OR abrasion resistant steel (AR400)\_\_\_
- 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 Is conveyor reversible  YES  NO
- X9.15.7 Is conveyor driven with 25:1 planetary gearbox drives on both the front and rear shafts  YES  NO  
Hydraulic motors \_\_\_\_\_ CIR  
Does one (1) motor have an integral conveyor speed sensor  YES  NO
- X9.15.8 Is conveyor chain D667K pintle type (24,500 lb. tensile/strand)  YES  NO  
With \_\_\_\_\_ inch x \_\_\_\_\_ inch conveyor crossbars welded to every link
- X9.15.9 Is there a 10 gauge 304 stainless steel bolt in pan under the conveyor to keep material off chassis frame  YES  NO

- X9.16 Does the body have the capability to convey to the front or the rear with a material spinner for distributing material \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.16.1 For front spreading, is there a front feedgate integrated into the head sheet of the body no less than 8 inches x 24 inches with infinite adjustment positions \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.16.2 A 304 stainless steel front spinner chute mounted between chassis frame rails and with the body down be completely enclosed to prevent material from dropping on chassis drive shaft \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.16.3 For rear spreading, a \_\_\_\_\_ gauge 304 stainless steel \_\_\_\_\_ inch x \_\_\_\_\_ inch Rear feedgate in the body tailgate \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.16.4 Is rear feedgate lever operated \_\_\_\_\_ or screw adjustable \_\_\_\_\_ The feedgate capable of being positively locked into position \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.16.5 Is the front spinner bracket and chute mounted to the truck chassis frame and for rear spreading capability the rear spinner chute and brackets installed by successful vendor \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.16.6 Is the spinner assembly universal and may be used at front or rear \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.16.7 Is the spinner assembly 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
- X9.16.8 Does 10 gauge 20 inch diameter spinner disc have replaceable machined hub \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.16.9 Is spinner disc vanes 409 \_\_\_\_\_ or 304 \_\_\_\_\_ stainless steel
- X9.16.10 If spinner hydraulic motor is mounted on top of spinner disc, the motor is enclosed in a removable material shedding protective cover \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.17 Hydraulic Hoist:
- X9.17.1 Is it a trunnion mount \_\_\_\_\_ or top lift telescopic hoist \_\_\_\_\_
- X9.17.2 Is telescopic hoist no less than N.T.E.A. Class 70 \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.17.3 Is single hoist cylinder trunnion mount \_\_\_\_\_ or top lift \_\_\_\_\_
- X9.17.4 Does hoist cylinder have three (3) stages with \_\_\_\_\_ inches of stroke with a six (6) inch diameter first stage \_\_\_\_\_ YES \_\_\_\_\_ NO
- Manufacturer and model: \_\_\_\_\_
- X9.17.5 Does the cylinder have wear and corrosion resistant nitrided cylinder tubes \_\_\_\_\_ YES \_\_\_\_\_ NO

- X9.17.6 Cylinder warranty: \_\_\_\_\_ years
- X9.17.7 Does a five (5) degree oscillating cylinder collar protect the cylinder against side stress, if trunnion mount cylinder provided \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.17.8 Does the body have 6 inch x 8 inch x 1/2 inch structural angle rear hinge assembly installed in the truck chassis frame \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.17.9 Does the rear hinge assembly have cold roll steel hinge pins connecting to 2 1/2 inch hinge blocks with grease zerks \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.18 Are the following features included:
- X9.18.1 Warning light (bed raised) console mounted \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.18.2 Hydraulic oil level reading \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.18.3 Safety decals as required \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.18.4 304 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
- X9.18.5 304 stainless steel shovel bracket \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.18.6 304 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
- X9.18.7 Does the unit have air operated tailgate with dual brake chamber air tailgate latches (one on each side) \_\_\_\_\_ YES \_\_\_\_\_ NO
- Pivot shafts included stainless steel bushings to eliminate seizing \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.18.8 1 1/2 inch 304 stainless steel grip strut walk rail installed on both sides of the body \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.18.9 OSHA approved backup alarm, electronic ambient, adjusts to background noise, 112 dba shock mounted at the rear \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.18.10 OSHA approved body support, both sides \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.18.11 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

- X9.18.12 Air deflector-hood mounted, blue or smoke  YES  NO 70
- Deflector manufacturer's standard width for truck mode  
Width: \_\_\_\_\_  YES  NO
- Access to front end hood tilt handle  YES  NO
- Extra handle  YES  NO
- X9.19 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
- X9.19.1 All marker lights 2 1/2 inch diameter flush mount sealed beam lights with integral reflector  
mounted in rubber base  YES  NO
- X9.19.2 All ground wires attached with plated steel fasteners  YES  NO
- X9.19.3 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 #: \_\_\_\_\_
- X9.19.4 Center rear I.D. lights three (3) located in truck chassis  YES  NO
- X9.19.5 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
- X9.19.6 Auxiliary headlights for snowplowing application shock mounted on fender of unit  
 YES  NO
- Manufacturer and Part #: \_\_\_\_\_
- X9.19.7 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: \_\_\_\_\_
- X9.19.8 Two (2) front frame mounted tow hooks  YES  NO
- X9.19.9 Lighted license plate bracket  YES  NO

X9.20 Are the following at the front or rear both sides of the body:

- X9.20.1 304 stainless steel fold down ladder that locks into position when either in the down or up position \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.20.2 Two (2) 304 stainless grab handles \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21 Tailgate (304 stainless steel): \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.1 Tailgate hinged at top, flame cut hardware, pork chop type off-set hardware to achieve maximum opening of tailgate, but has provision for pivoting at the bottom \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.2 Flush mount, 1/2 inch flame cut 304 stainless steel tailgate pivots \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.3 Heavy duty offset hinge plates, one (1) inch flame cut 304 stainless steel \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.4 3/4 inch 304 stainless steel latch hooks with 3/8 inch 304 stainless steel latch plates \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.5 Full perimeter 304 stainless steel boxing with all horizontal edges sloped outward \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.6 Two (2) 10 gauge 304 stainless steel sloped horizontal braces that are flush with perimeter Boxing \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.7 7 gauge 304 stainless steel 10-12 inch x 24- 26 inch rear feedgate \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.8 Cold roll steel upper pins with grease zerks \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.9 Top hinge channel has removable, chain tethered keeper pins \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.10 Latching action at the bottom of gate operable by the truck driver without leaving the truck cab \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.11 Gate is self aligning \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.12 Tailgate lower latch pins 304 stainless steel 1 1/4 inch diameter \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.21.13 Body integrated or bolt on 304 stainless steel 15 inch spreader apron \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.22 Design and strength characteristic of the entire body 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 \_\_\_\_\_ YES \_\_\_\_\_ NO

9.23 Bumper:

X9.23.1 Bumper formed out of 1/4 inch roll steel \_\_\_\_\_ YES \_\_\_\_\_ NO

Weighs \_\_\_\_\_ lbs. per square foot



- X9.23.2 Bumper face covers all of truck frame ( \_\_\_\_\_ inches) with two (2) flanges of \_\_\_\_\_ inches top and bottom \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.23.3 Overall width of bumper: \_\_\_\_\_ inches
- X9.23.4 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.
- X9.23.5 Bumper has two (2) access holes for utilization of tow hooks \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.23.6 Upper and lower flanges cut and welded solid at point where bumper is bent and ground off smooth \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.23.7 Bumper mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.23.8 Mount angle \_\_\_\_\_ inch x \_\_\_\_\_ inches x \_\_\_\_\_ long with four (4) 5/8 inch holes \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.23.9 Paint on front bumper: \_\_\_\_\_
- X9.24 Underbody Tool Box:
- X9.24.1 One (1) tool box mounted under body on right side frame rail \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.24.2 Tool box \_\_\_\_\_ inches high, \_\_\_\_\_ inches wide, \_\_\_\_\_ inches deep cradled by a heavy steel angle frame attached to the truck frame \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.24.3 Construction \_\_\_\_\_ gauge, \_\_\_\_\_ galvaneal steel with all seams welded \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.24.4 Tool box has horizontal hinged fold down door \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.24.5 Tool box door has cable or chain to hold the door in a horizontal position \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.25 Load covering system electrically or air controlled \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.25.1 Electric motor assembly includes 12 volt direct drive motor with forward and reverse action, cab mounted control switch, resettable circuit breaker \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.25.2 Pivot arm assembly constructed in a two (2) piece bent arm configuration of \_\_\_\_\_ inch \_\_\_\_\_ gauge steel tubing \_\_\_\_\_ YES \_\_\_\_\_ NO
- X9.25.3 Bent arm extensions constructed of \_\_\_\_\_ inch \_\_\_\_\_ gauge steel tubing
- X9.25.4 Rear cross constructed of \_\_\_\_\_ inch \_\_\_\_\_ gauge steel tubing

- X9.25.5 Pivot arm rests included  YES  NO
- X9.25.6 Underbody spring extension spring \_\_\_\_\_ inches in length attached to base of pivot arm and of body with articulating spring mounting bracket  YES  NO
- X9.25.7 All steel components finished with manufacturer's recommended rust preventative system with adequate primer and paint  YES  NO
- X9.25.8 Steel cab protector mounted triple bend wind deflector provided  YES  NO
- X9.25.9 Load covering system provided with a \_\_\_\_\_ oz. black vinyl tarp to fit 14 foot 6 inch body  YES  NO
- X9.25.10 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

X9.26 Paint: Describe proposed method of painting  
 X9.26.1 – X9.26.4

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X9.27 Detail/Decorative Stripes with Logo:  
 Will striping and detailing you provide comply with requirements of Section 9.27.1 through 9.27.7  
 YES  NO

X9.28 All body features considered as standard, but not specifically addressed:

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X9.29 Does the proposed unit meet or exceed the "OSHA OF 1970" and/or subsequent changes  
 YES  NO

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: \_\_\_\_\_

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 76  
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



- X10.3.11.1 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 Adjustable flow control installed to limit downward speed rate of dump body  YES  NO
- X10.3.12 Snowplow lift control section is 3-way three (3) position spring centered cylinder spool with float detent for operation of a single acting lift cylinder  YES  NO
- X10.3.12.1 Full flow workport relief valve preset at maximum required unlock pressure installed in power down workport  YES  NO  
 Workport relief valve installed in power up workport if maximum system pressure output setting exceeds normal operating pressure limit of plow lift cylinder  YES  NO  
 Is a three (3) way valve provided for plow hoist circuit  YES  NO
- X10.3.12.2 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 motor spool for operation of worm gear driven type reversing system  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 \_\_\_\_\_ 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 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

X10.4.4 Is PWM solenoid control supplied by microprocessor spreader control system  YES  NO

Are solenoids capable of 100% PWM signal without failure  YES  NO

X10.4.5 Solenoid operated directional control valve and in-cab mounted electrical switch operates spreader conveyor reverse required for front or rear material discharge selection provided  YES  NO

X10.4.6 Is electrical switching and indicator light for spreader clogged indication provided  YES  NO

X10.4.7 Manufacturer and model of valve: \_\_\_\_\_

## X10.5 Spreader Control System:

- X10.5.1 Dual flow, ground speed oriented spreader control system of the closed loop microprocessor based type with nonvolatile control memory \_\_\_\_\_ YES \_\_\_\_\_ NO
- X10.5.2 Automatic calibration and flexibility of programming \_\_\_\_\_ YES \_\_\_\_\_ NO
- X10.5.3 System is capable of operation in ground speed oriented closed loop conveyor feed back, open loop, manual set, blast and unload modes and fully functional in both front and rear material discharge selection \_\_\_\_\_ YES \_\_\_\_\_ NO
- X10.5.4 Automatic switchover with display indication from closed loop to open loop operation in the event of loss of feed rate sensor signal is provided \_\_\_\_\_ YES \_\_\_\_\_ NO
- X10.5.5 Control console digital readouts capable of displaying actual application rate, vehicle ground speed, distance of spread route driven and total quantity of material spread \_\_\_\_\_ YES \_\_\_\_\_ NO
- X10.5.6 Programming and output cable connection for material and trip information printer and program uploading is provided \_\_\_\_\_ YES \_\_\_\_\_ NO
- X10.5.7 Control unit capable of accumulating display information up to 999,999 miles and 999,999 tons of discharged material \_\_\_\_\_ YES \_\_\_\_\_ NO
- X10.5.8 Console programming 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 \_\_\_\_\_ YES \_\_\_\_\_ NO
- X10.5.9 A variable digital access code lockout for application rate selection and for system operating parameters is provided \_\_\_\_\_ YES \_\_\_\_\_ NO
- Is it a key switch \_\_\_\_\_ YES \_\_\_\_\_ NO
- X10.5.10 Backlighted switches and LCD screen utilized for on-board programming and for display readout and application rate selection \_\_\_\_\_ 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 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 Pump 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 forward and rear spinner 1/2 inch pressure and return lines \_\_\_\_\_ 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:
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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:

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**AGREEMENT ADDENDUM**

In the event of conflict between this addendum and the agreement, this addendum shall control:

1. **ARBITRATION** - Any references to arbitration contained in the agreement are hereby deleted. Disputes arising out of the agreement shall be presented to the West Virginia Court of Claims.
2. **HOLD HARMLESS** - Any clause requiring the Agency to indemnify or hold harmless any party is hereby deleted in its entirety.
3. **GOVERNING LAW** - The agreement shall be governed by the laws of the State of West Virginia. This provision replaces any references to any other State's governing law.
4. **TAXES** - Provisions in the agreement requiring the Agency to pay taxes are deleted. As a State entity, the Agency is exempt from Federal, State, and local taxes and will not pay taxes for any Vendor including individuals, nor will the Agency file any tax returns or reports on behalf of Vendor or any other party.
5. **PAYMENT** - Any references to prepayment are deleted. Payment will be in arrears.
6. **INTEREST** - Should the agreement include a provision for interest on late payments, the Agency agrees to pay the maximum legal rate under West Virginia law. All other references to interest or late charges are deleted.
7. **RECOUPMENT** - Any language in the agreement waiving the Agency's right to set-off, counterclaim, recoupment, or other defense is hereby deleted.
8. **FISCAL YEAR FUNDING** - Service performed under the agreement may be continued in succeeding fiscal years for the term of the agreement, contingent upon funds being appropriated by the Legislature or otherwise being available for this service. In the event funds are not appropriated or otherwise available for this service, the agreement shall terminate without penalty on June 30. After that date, the agreement becomes of no effect and is null and void. However, the Agency agrees to use its best efforts to have the amounts contemplated under the agreement included in its budget. Non-appropriation or non-funding shall not be considered an event of default.
9. **STATUTE OF LIMITATION** - Any clauses limiting the time in which the Agency may bring suit against the Vendor, lessor, individual, or any other party are deleted.
10. **SIMILAR SERVICES** - Any provisions limiting the Agency's right to obtain similar services or equipment in the event of default or non-funding during the term of the agreement are hereby deleted.
11. **ATTORNEY FEES** - The Agency recognizes an obligation to pay attorney's fees or costs only when assessed by a court of competent jurisdiction. Any other provision is invalid and considered null and void.
12. **ASSIGNMENT** - Notwithstanding any clause to the contrary, the Agency reserves the right to assign the agreement to another State of West Virginia agency, board or commission upon thirty (30) days written notice to the Vendor and Vendor shall obtain the written consent of Agency prior to assigning the agreement.
13. **LIMITATION OF LIABILITY** - The Agency, as a State entity, cannot agree to assume the potential liability of a Vendor. Accordingly, any provision limiting the Vendor's liability for direct damages or limiting the Vendor's liability under a warranty to a certain dollar amount or to the amount of the agreement is hereby deleted. In addition, any limitation is null and void to the extent that it precludes any action for injury to persons or for damages to personal property.
14. **RIGHT TO TERMINATE** - Agency shall have the right to terminate the agreement upon thirty (30) days written notice to Vendor.
15. **TERMINATION CHARGES** - Any provision requiring the Agency to pay a fixed amount or liquidated damages upon termination of the agreement is hereby deleted. The Agency may only agree to reimburse a Vendor for actual costs incurred or losses sustained during the current fiscal year due to wrongful termination by the Agency prior to the end of any current agreement term.
16. **RENEWAL** - Any reference to automatic renewal is hereby deleted. The agreement may be renewed only upon mutual written agreement of the parties.
17. **INSURANCE** - Any provision requiring the Agency to insure equipment or property of any kind and name the Vendor as beneficiary or as an additional insured is hereby deleted.
18. **RIGHT TO NOTICE** - Any provision for repossession of equipment without notice is hereby deleted. However, the Agency does recognize a right of repossession with notice.
19. **ACCELERATION** - Any reference to acceleration of payments in the event of default or non-funding is hereby deleted.
20. **AMENDMENTS** - All amendments, modifications, alterations or changes to the agreement shall be in writing and signed by both parties. No amendment, modification, alteration or change may be made to this addendum without the express written approval of the Purchasing Division and the Attorney General.

ACCEPTED BY:  
**STATE OF WEST VIRGINIA**

**VENDOR**

Spending Unit: \_\_\_\_\_

Company Name: \_\_\_\_\_

Signed: \_\_\_\_\_

Signed: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

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 owned 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 exceeds 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.

**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, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, 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.

**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. Vendors should visit [www.state.wv.us/admin/purchase/privacy](http://www.state.wv.us/admin/purchase/privacy) for the Notice of Agency Confidentiality Policies.

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

Vendor's Name: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_ Date: \_\_\_\_\_