



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
709EC008

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
MICHAEL AUSTIN 304-558-2402

RFQ COPY
 TYPE NAME/ADDRESS HERE

VENDOR

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
11/19/2008				

BID OPENING DATE: **12/18/2008** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		065-30		
CAB & CHASSIS, STAINLESS STEEL DUMP BODY & PISTON OPEN END CONTRACT TO PROVIDE 33,000 GWV CAB AND CHASSIS, STAINLESS STEEL DUMP BODY, AND PISTON PUMP HYDRAULIC SYSTEM FOR THE WEST VIRGINIA DIVISION OF HIGHWAYS PER THE ATTACHED SPECIFICATIONS. A MANDATORY PRE-BID CONFERENCE WILL BE HELD ON 12/04/2008 @ 10:00 AM, AT THE EQUIPMENT DIVISION, BUCKHANNON, WEST VIRGINIA. FAILURE TO ATTEND PRE-BID WILL RESULT IN BID DISQUALIFICATION. QUESTIONS: WRITTEN QUESTIONS WILL BE ACCEPTED THROUGH CLOSE OF BUSINESS (5:00 PM EST.) ON MONDAY, 12/01/08. SEND YOUR QUESTIONS TO: PURCHASING DIVISION ATTENTION MICHAEL AUSTIN 2019 WASHINGTON ST., EAST CHARLESTON, WV 25305 QUESTIONS MAY BE SENT VIA FAX, E-MAIL, OR REGULAR MAIL. E-MAIL: MICHAEL.D.AUSTIN@WV.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						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

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GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. 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 fee.
5. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
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 may be deemed null and void, and 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 Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
15. **WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT:** If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

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 case 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: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130



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

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<p>APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIES BY THE STATE SPENDING UNIT. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACT SHALL COVER THE QUANTITIES ACTUALLY ORDERED FOR DELIVERY DURING THE TERM OF CONTRACT, WHETHER MORE OR LESS THAN THE QUANTITIES SHOWN.</p> <p>ORDERING PROCEDURE: SPENDING UNIT(S) SHALL ISSUE A WRITTEN EQUIPMENT CONTRACT ORDER (FORM NUMBER WV-35) FOR COMMODITIES COVERED BY THIS CONTRACT. THE ORIGINAL WV-35 MUST BE SENT TO THE PURCHASING DIVISION OF THE DEPARTMENT OF ADMINISTRATION. AFTER APPROVAL AND ENCUMBRANCE, ONE COPY OF THE PURCHASE ORDER WILL BE RETURNED TO THE SPENDING UNIT AND ONE COPY FORWARDED TO THE VENDOR AS AUTHORIZATION FOR SHIPMENT. NO ORDER IS VALID UNLESS APPROVED AND ENCUMBERED BY THE PURCHASING DIVISION.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.</p> <p>REV. 9/98</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 REFUSA</p>						

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<p>SHALL NOT PREJUDICE THE AWARD OF THIS CONTRACT IN ANY MANNER.</p> <p>REV. 3/88</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 A MANNER ACCEPTABLE TO THE DIRECTOR PURCHASING, E.G. GOVERNMENTAL BENCH MARKS, GENERAL MARKET INCREASE, PUBLISHED PRICE LISTS. SUCH REQUESTS FOR AN 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 10</p> <p>REQUISITION NO.:</p>						

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

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<p>REV. 11/96</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 THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: 33</p> <p>RFQ. NO.: 709EC008</p> <p>BID OPENING DATE: -----</p> <p>BID OPENING TIME: -----</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:</p> <p>-----</p>						

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CONTACT PERSON (PLEASE PRINT CLEARLY):						

***** THIS IS THE END OF RFQ 709EC008 ***** TOTAL: _____						

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EQUIPMENT DIVISION

PROCUREMENT SPECIFICATIONS
NO. 371-2-G

33,000 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 33,000 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, will, and/or must" or are stated as a "minimum and/or maximum" are mandatory as stated in Purchasing Divisions Policies and Procedures. Any bid failing to meet any mandatory item shall be immediately disqualified. Failure to respond in the appropriate evaluation section may also be grounds for immediate disqualification at the discretion of the State.

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

4.0 REPRESENTATIVE UNIT FOR TEST

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

4.1 CONDITION OF UNIT(S) UPON DELIVERY

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

4.2 DELIVERY

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

The vendor is responsible for guaranteeing delivery of the completed units within the time specified and agreed to by the State. Delivery is preferred within 180 days after

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

A completed pilot model for inspection should be provided within 90 calendar days after receipt of the purchase agreement by the successful vendor.

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

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

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

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

5.0 AWARD CRITERIA

- 5.1 DOH will recommend the award in accordance with the RFQ evaluation criteria described in the requisition. **The award shall be made to the lowest unit cost vendor that meets or exceeds the specifications.**

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, 2008 and be clearly identified and marked with date of manufacture.

6.2 OPERATING AND SERVICE MANUALS AND PARTS LISTS

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

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

6.3 TRAINING:

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

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

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

6.4 PREVENTIVE MAINTENANCE AND OPERATOR PROCEDURES:

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

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

6.5 WARRANTY AND SERVICE POLICY

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

*Please list all extended service contract coverages published and not published along with cost as options. (Also, provide manufacturers hours vs. miles conversions.)

COMPLETE UNIT SHALL HAVE A MINIMUM 2 YEAR BASIC BUMPER TO BUMPER WARRANTY PARTS AND LABOR EXCLUDING ABUSE AND NORMAL WEAR ITEMS.

***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

8.1 GVW plate rating: 33,000 Lbs.

8.2 Cab to axle dimension: Approximately 84 Inches

8.2.1 Cab to end of frame to be minimum 120 inches (required for pintle hitch installation)

8.3 Wheelbase: Approximately 160 inches, shall be set forward design for snowplow applications for our various plows. (Power Reversible approximately 2,000 lbs.)

8.4 Frame: The manufacturer shall provide a frame that meets or exceeds all Federal requirements for G.V.W.R. specified that has an integral front frame extension with no frame cutouts except to allow engine installation. Extension shall extend forward of the grille area a minimum of 12 inches. A minimum 5 year warranty on frame and shall conform to the following:

8.4.1 Frame Steel: 120,000 P.S.I. yield strength minimum

- 8.4.2 **R.B.M.: 2,040,000 Ins./Lb. Minimum**
- 8.4.3 **To assure space for installation of spinner chute, the truck chassis frame rails must be free of obstructions inside the frame rails and along the left outside frame rail approximately 23 inches to 38 inches from back of cab.**
- 8.4.4 Omit factory installed bumper.
In body section under the following paragraphs, you will find information concerning the build of a front bumper for these units. (Item 9.24, 9.24.1 through 9.24.8)
- 8.5 Cab: The cab to be the manufacturer's standard steel and/or fiberglass, and/or aluminum with premium or manufacturers highest level interior trim with inside noise level rating not to exceed 80dba 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 shall be provided with rear air bag suspension. Also, inner fender panels that are adequate to keep materials from engine compartment.**
- 8.5.1 Unit to be equipped with manufacturers tilt steering column with cruise control feature or provide locking hand operated throttle.
- 8.5.2 Seats- Driver: Fully adjustable high back with head rest, air ride, bucket style; seat to include air lumbar, hip bolsters, side bolsters, and back bolsters, with full cloth on entire seat and **material must be Modura or approved equivalent.**
- 8.5.2.1 Passenger seat to be fully adjustable high back with head rest, air ride, bucket style, cloth covered **or minimum of cloth insert in vinyl. Clearance between drivers and passenger seats shall be a minimum of 12 inches.**
- 8.5.3 Floor Mats: Rubber floor mats throughout cab area with non-absorbent backing under the mats.
- 8.5.4 Heater and Defroster: Fresh Air Type, Heaviest Duty
- 8.5.5 Windshield Wipers and Washers: Manufacturer's heaviest duty artic type with intermittent feature. **Wipers shall be equipped with snow type blades.**
- 8.5.6 **Instruments: Manufacturer's gauges with visual and/or audible and/or programmable warning to inform driver when operating conditions are exceeded shall include:**
- 8.5.6.1 **Voltmeter or Ammeter**
- 8.5.6.2 **Engine RPM Tachometer**

- 8.5.6.3 Speedometer with Odometer**
NOTE: Provisions for dual speedometer leads shall be made available
- 8.5.6.4 Air pressure gauge(s)**
- 8.5.6.5 Air filter to be manufacturers heaviest element type.**
- 8.5.6.6 Air Filter Restriction Indicator shall be dash mounted**
- 8.5.6.7 Engine Hourmeter (Controlled by engine operation, not by key switch).**
- 8.5.6.8 Fuel Gauge(s) with low fuel warning indicator**
- 8.5.6.9 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.**
- 8.5.6.10 Oil pressure gauge**
- 8.5.6.11 Temperature gauge**
- 8.5.6.12 Low coolant indicator**
- 8.5.7 Accessories:**
- 8.5.7.1 Manufacturers dash mounted extended two (2) cup drink holder**
- 8.5.7.2 Air horns with snow shields; if cab mounted, with adequate clearance for future installation of dump body cab protector. Single horn may be used without snow shield if mounted downward on frame rail under hood.**
- 8.5.7.3 Rearview Mirrors: To be heated dual, West Coast Type, approximately 7" x 16" each, power adjustable with convex spot mirror or dual 7" x 14" flat mirrors and power adjustable with separate dual 8" x 6" convex spot mirrors to include fore and aft breakaway feature with corrosive resistant finish equal to stainless steel, powder coat, or aluminum or molded plastic housing and mounting brackets.**
- 8.5.7.4 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.**
- 8.5.7.5 Glass: To be manufacturers tinted safety glass; front, sides, and rear.**
- 8.5.7.5.1 Dual power windows**

- 8.5.7.6 Radio: Manufacturers standard AM/FM stereo. Weather band radio feature.
- 8.5.7.7 Air Conditioning: Manufacturer's fresh air type heaviest duty with APADS or equivalent RCD (refrigerant control and diagnostics) system to include replaceable fresh air filter.
- 8.5.7.8 **Manufacturer shall provide for stationary grille or grille with cutout area to allow tilt hood to clear snow plow mount. Bug screen will be provided behind grille.**
- 8.5.7.9 Front mudflaps to be manufacturers standard for unit bid.
- 8.5.7.10 Emergency triangle warning kit, with hold down (KD610-464S, KD Lamp Co. or equal) stowed (fastened) in the cab. (Check with DOH before mounting)
- 8.5.7.11 Unit to include kit for front mounted CB radio and all power and ground wiring to include co-ax cable, antenna, speaker, etc. **All cable and wiring shall be routed using grommets and wire looms.** (Radio to be provided by successful vendor.)
- 8.5.7.12 **Unit shall have two (2) front frame mounted tow hooks or eyes.**
- 8.5.7.13 **Accessories not indicated above but are included in the manufacturer's standard cab shall be provided.**
- 8.6 Engine – HP: 260 Torque: 660 Lb. Ft.
- 8.6.1 Engine manufacturer to make provisions for front mounted hydraulic pump to crankshaft pulley.
- 8.6.2 Fuel heater/water separator mounted inside engine compartment; Davco, Alliance, Racor or approved equivalent.
- 8.6.3 **Engine block heater with minimum 1000 watt/115v rating to include weather proof spring loaded cap over plug**
- 8.6.4 A single vertical exhaust pipe with horizontal muffler that will meet all Federal noise abatement requirements. Exhaust to be frame mounted on the passenger side of unit with heat shield on vertical exhaust.
- 8.6.5 **Engine shall be equipped with engine brake: compression, compression/exhaust, or exhaust.**
- 8.6.6 Engine oil pan to be zinc nickel plated, aluminum or non-corrosive coated

- 8.6.7 Engine to provide electronic speed control including throttle and cruise control features.
- 8.7 Cooling System:
- 8.7.1 **The cooling system shall be capable of maintaining engine temperature within the manufacturer's recommended range during continuous winter/summer operation. An automatic "on-off" fan drive with nylon fan blades; Horton Drivemaster or approved equivalent will be provided.**
- 8.7.2 **The system shall be filled with permanent type extended life coolant Dex-Cool or equivalent rated to a -34°F minimum.**
- 8.7.3 **The radiator shall provide adequate clearance to facilitate the installation of a crankshaft driven PTO drive shaft. The distance between the extreme tip of the radiator fan blade and the centerline of the crankshaft is a minimum of three inches (3") to insure adequate clearance for PTO drive shaft. Radiator and heater hoses to be of silicone type (Gates Blue Stripe) or approved equivalent with constant torque clamps or equivalent utilized on radiator hoses to minimize cold water leaks.**
- 8.8 Fuel Tank:
- 8.8.1 **Capacity: 52 U.S. gallons minimum. Tank shall comply with FMVSS Filler cap is to be chain tethered.**
- 8.9 Electrical System:
- 8.9.1 Type: Twelve (12) volt negative ground system to include manual reset circuit breakers (main panel) SAE Type III with trip indicators to replace all fuses except for 5 amp fuses.
- 8.9.2 Batteries: (approximate ratings)
- 8.9.2.1 **Cold Crank AMPS: 1950 AMPS minimum with sealed terminals**
- 8.9.2.2 Jump start studs mounted on outside of battery box.
- 8.9.3 **Alternator Capacity: 105 AMPS minimum brushless with internal regulator.**
- 8.9.4 **Lighting: All lighting (number, location, and color) shall conform to the West Virginia Motor Vehicle Code. Unit shall feature daytime running lights. Cab marker lights shall be LED type with halogen headlamps.**
- 8.9.5 **Auxiliary snow plow lighting package shall be included.**
- 8.9.5.1 **Truck vendor may eliminate rear taillights but must provide minimum of eight (8) foot of wiring bundled at end of frame for body vendor hookup of taillights provided in dump bed body.**

- 8.9.6 Manufacturer or successful vendor should make provisions for manufacture approved wiring and weatherproof disconnect plug (Weather Pac in line seven (7) pin connector - Part Number 1211075) with approximately three (3) foot "pigtail" to operate front combination left and right turn/park lights/auxiliary headlights
- 8.9.6.1 Weatherproof disconnect plug to 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.
- 8.9.6.2 Provisions for 7-way trailer connection light socket to be mounted at rear of truck frame. Plug to be Cole Hersee Part No. 12063 or approved equal
- 8.9.6.3 **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.**
- 8.9.6.4 **Manufacturer shall provide body builder circuits – three (3) switches 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. This power module is to be 20 amps per channel, 80 amp maximum output. The dash switches are to control the power module with LED backlighting.**
- 8.10 Transmission: Allison 3500RDS Automatic, 6 speed
- 8.11 Driveline shall be: Spicer 1710 or equal featuring greasable main shaft.
- 8.12 Rear Axle:
- 8.12.1 Rated Capacity: 23,000 Lbs. **Single reduction shall include driver controlled main locking differential.**
- 8.12.2 Rear Spring Capacity: Approximately 23,000 lbs. including 4,500 lb. capacity load stabilizer springs and **shall provide sufficient clearance between spring, brake chambers, and tires to operate with single tire chains.**
- 8.12.3 Ratio: Gear ratio to be determined by bidder; however, these vehicles to be capable of a top speed of approximately 70 MPH.
- 8.12.4 **Rear axle differential, transmission, and front wheel lubrication reservoirs shall be filled with synthetic type lubrication and provided with magnetic drain plugs where applicable**

8.13 Front Axle:

8.13.1 Capacity: 14,000 lbs. minimum I-beam type

8.13.2 Front Spring Capacity: 14,000 lbs Minimum 13,000 lbs rating for use with front plow

8.13.3 Manufacturers heavy Duty Shock Absorbers

8.13.4 Front Wheel Oil Lubricated Wheel Seals to be provided. (Stemco or equal)

8.14 Brakes should be:

8.14.1 Type: Full Air, with manufacturers ABS with traction control in compliance with the most current FMVSS requirements

8.14.2 Compressor: Model TF550 Bendix Westinghouse or equal **10.0 CFM minimum.**

8.14.3 Service Brake Size: (Approximate)

8.14.3.1 Front: 16.5" x 5"

8.14.3.2 Rear: 16.5" x 7"

8.14.4 Parking Brake: Spring set, air release actuating rear axle service brakes. Instrument panel control. 30/30 MGM or equivalent.

8.4.14.1 All brake chambers to be sealed brake chambers with epoxy exterior coat on front and rear chambers; MGM, Anchorlok Goldseal or approved equal.

8.14.5 Air dryer with heater Bendix Westinghouse AD-9 or equal.

8.14.6 Manufacturer's standard air tanks for service brakes; auxiliary tank for parking brake.

8.14.7 Low air pressure warning light and buzzer

8.14.8 Brakes shall meet or exceed all current Federal and State FMVSS requirements.

8.14.9 Brake dust covers to be installed on all wheels.

8.14.10 Unit shall be equipped with tractor protection valve and hand control valve to accommodate installation of glad hands at rear of frame rails to enable unit to pull an air-braked trailer.

8.14.10.1 Glad hands shall be recessed as not to stick out past end of frame rails

8.15 Tires and Wheels:

8.15.1 Wheel, Front and Rear: Shall be 22.5 x 8.25, hub piloted steel disc type, to accommodate specified tire size. Accuride 28828 with 0.472 inches thickness or equal. All wheels to include wheel guard separators.

8.15.2 Tires:

8.15.2.1 Front: 11R22.5H; highway tread, radial, tubeless-Load Range H, 16 ply

8.15.2.2 Rear: 11R22.5G; on/off highway lug tread design, radial, tubeless. Goodyear G-G244 MSD or Michelin XDY-3 or approved equal.

8.16 Manufacturer's standard power steering to be provided for front axle specified

8.17 Unit shall include all other features considered as standard equipment if not specifically addressed above.

8.18 Paint: (See enclosed diagram for color reference)
The unit should be painted as described:

8.18.1 Cab exterior and interior: Federal Standard White 595 A (No. 17875) **Paint process shall be Base Coat-Clear Coat process of Imron 6000 or equal.**

8.18.2 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.

8.18.3 Fuel Tanks, Steps, Air Tanks, and Battery Box to be non-corrosive coated.

8.18.3.1 Wheel paint shall be top coat painted with TGIC polyester powder paint MLD-82008 high gloss gray or equal applied over Cathodic Electro-Disposition Gray Primer or equal.

8.18.4 Detail/Decorative Stripes with Logo:

8.18.4.1 Width: To be 2 inch with taper at front of hood.

8.18.4.2 WVDOH logo (to be supplied by WVDOH) is attached (black and white copy) and is approximately 7" tall by 7" wide. Area behind logo and within ½" 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 by vendor.**

8.18.4.3 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".**

- 8.18.4.4 The sheeting for both applications above should not exceed more than .0.008 inch thick having approximately 47,000 microprisms per square inch and **shall come with an aggressive high tack pressure sensitive adhesive, Reflexite or equivalent.**
- 8.18.4.5 Upper stripe color: Dark Blue
- 8.18.4.6 Lower stripe color: Light Gold
- 8.18.4.7 Bidder should attach his 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 the particular hood or cab shape.
- 8.18.4.8 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.**
- 8.18.5 The Department reserves the right to view larger paint samples after award of contract and the right to require subtle color changes. **Such changes, if any, will only be used for selecting a suitable paint color to match the WVDOH logo.**
- 8.18.6 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.
- 8.19 Vendor must certify that the unit offered will meet or exceed the "Occupational Safety and Health Act of 1970" and subsequent amendments.**
- 8.20 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.
- 8.21 Preventive Maintenance and Operator's Training School
- 8.21.1 **Manufacturers and/or dealers shall be required to stage a thorough seminar on the subjects Preventive Maintenance and Operator Training. The seminar to be held at the Equipment Division, Buckhannon, WV.**
- 8.21.2 The successful vendor to furnish all training aids; i.e. videos, projectors, etc. required in conducting the training.

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

Bidder to attach a copy of the proposed program with his bid, state the time required to perform the program and briefly describe the proposed program.

9.0 SPECIFICATIONS – 304 STAINLESS STEEL COMBINATION DUMP/SPREADER BODY

COMBINATION DUMP/SPREADER BODY SHALL HAVE MINIMUM 2 YEAR BASIC WARRANTY INCLUDING PARTS AND LABOR EXCLUDING ABUSE AND NORMAL WEAR ITEMS

- 9.1 **Body capacity to be minimum 6 cubic yards water level**
- 9.2 Sideboard pockets and tailgate height should provide additional capacities of one (1) cubic yard
- 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 the bumper (Reference 9.24.5)
- 9.6 Dimensions:
- 9.6.1 Inside length of body not to exceed 126 inches
- 9.6.2 Inside width of the body – 88 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 minimum side height – 36 inches (measure from the floor to top rail)**
- 9.6.6 **Tailgate minimum height – 46 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**
- 9.8.1 Floor: 1/4 inch thickness OR ¼ inch AR400**
- 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 the 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 the conveyor chain**

- 9.12.2 The sides of the body to slope to the conveyor to facilitate self cleaning of body without raising.
- 9.13 The boxed top rail to be sloped inward to shed debris
- 9.14 Full length 304 stainless steel integral rear fenders which will incorporate prewet liquid reservoirs (85 gallon)**
- 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 no more than 12 inch truck frame to body floor height for lower center of gravity and lower mounting height
- 9.15.1.1 Wood products are not acceptable
- 9.15.2 1/4 inch 304 stainless steel conveyor floor or 1/4 inch 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 – no less than 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.

- 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, there will be a 7 gauge 304 stainless steel 10-12 inch x 24-26 inch rear feedgate in the body tailgate.
- 9.16.4 Rear feed gate 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.
- 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 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
- 9.17.2** Telescopic hoist shall be no less than N.T.E.A. Class 40
- 9.17.3 Single hoist cylinder to be trunnion mount
- 9.17.4** Hoist cylinder shall have three (3) stages with approximately 90 inches of stroke with a four (4) inch diameter first stage. Part number MALHOIT CS-90-4-3
- 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

- 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 (Reference 10.6.1.1)
- 9.18.2 Hydraulic oil level reading
- 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.
- 9.18.13** Screen over hopper shall be provided with approximately 3/8” inch rod across 3/8” inch rod for 2 3/4” inch grid opening. (to prevent oversize material from entering hopper during filling.)
- 9.18.14** Screen frame should be 1/4” inch by 1 1/2” inch angle iron welded to rods and hinged to 5” inch I beams.
- 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) to be 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 with 27008 bulb 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 ouxdlsih or equal)
- 9.19.8** Must have two (2) rear 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.**
- 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.
 - 9.23.4.1 Bumper to have two (2) access holes for utilization of tow hooks (Reference 9.6)
- 9.23.5 Upper and lower flanges to be cut and welded solid at point where bumper is bent and ground off smooth.
- 9.23.6 Bumper to be mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side.
- 9.23.7 Mount angle to be approximately 1/4 inch x 3 inches x 8 inches long with four (4) 5/8 inch holes.
- 9.23.8 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 galvanized 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 retroreflective 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 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.**
- 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 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, presented 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 excluding abuse and normal wear items.

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 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.**
- 10.1.4 Pressure port to be of the SAE split flange type or ORB 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 for a 50 degree body dump angle in 13 seconds at 1500 engine rpm at a 1000 PSI system load.**
- 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 and flow 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 Shall have pressure compensation of the spinner and auger sections and also a priority section must be installed to allow for operation of the plow hoist in any circumstance.**
- 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 Flow limiting system preset at required flow rates to provide performance as stated in section 10.1.10 as maximum for dump body up and down to reduce system over demand operation.
- 10.3.12 Snowplow lift control section to be a three (3) way three (3) position spring centered cylinder spool with float detent for operation of a single acting lift cylinder with pilot controlled load lock valves. (If the valve design does not

require a load holding check valve to properly carry the plow weight, then the pilot operated load holding check valve may be eliminated.)

- 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 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 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.
- 10.3.14.1 **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.**
- 10.3.14.2 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.**
- 10.3.14.3 Pressure line to be 3/4" SAE 100R2 hose and manifold mounted at rear of chassis and equipped with Parker Hannifin SH6-62 quick disconnect coupler and protective metal plug. Mating nipple SH6-63 with protective cap to be supplied. Mounting location to be determined at time of pilot model review.
- 10.3.14.4 **Name of manufacture and model number of proposed directional and auxiliary circuit valves shall be submitted with bid documents.**
- 10.3.15 **Directional control valve assembly with tank must be in an enclosure to protect it from the elements.**

10.3.16 Pre-Wet Circuit:

- 10.3.16.1 A separate circuit shall be provided to control an add-on pre-wet system**
- 10.3.16.2 Hydraulic valve may be of the sectional type or of the cartridge style contained in a manifold.
- 10.3.16.3 If a manifold type valve is to be supplied, it must be attached to the main valve assembly (not separate or “power beyond”).**
- 10.3.16.4 All wiring to the pre-wet hydraulic circuit shall be provided as part of the system contained in this bid.**
- 10.3.16.5 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 the 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 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 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 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 Hydraulic reservoir of approximately forty (40) gallon operating capacity to be flex mounted to the chassis frame rail and valve enclosure assembly.
 - 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. (Reference 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 1/2 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. (Based on a purchase of 1-25 units.)

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EQUIPMENT DIVISION

NOTE:

Vendor should type

Bidder's Evaluation Report

BIDDER'S EVALUATION REPORT

PROCUREMENT SPECIFICATIONS FOR OPEN END CONTRACT
NO. 371-2-G

33,000 GVW CAB AND CHASSIS, STAINLESS STEEL DUMP BODY, AND
PISTON PUMP HYDRAULIC SYSTEM

NOTE TO BIDDER: Procurement Specification No. 371-2-G, Paragraph 2.0 recommends the completion and submittal of this Report with your bid. Purpose of this Report is to enable the West Virginia Division of Highways Evaluation Committee to make full and fair evaluation of the bid. Addendums in order, along with a summary of exception as a separate attachment, should be with Bidder's Evaluation Report.
FAILURE TO SUBMIT THIS REPORT, COMPLETE IN ITS ENTIRETY, MAY SUBJECT THE BIDDER TO DISQUALIFICATION.

Reference Requisition No.: _____

Bidder's Name: _____

Address: _____

Telephone Number: _____

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

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

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

X4.2 DELIVERY:

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

X4.2.2 Delivery date of balance of completed units: _____ Calendar Days After Receipt of
Purchase Agreement

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

X6.2
2-10-00

EQUIPMENT PREVENTATIVE MAINTENANCE QUESTIONNAIRE

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

AIR INNER _____ TRANSMISSION _____

AIR OUTER _____ POWER STEERING _____

FUEL PRIMARY _____ HYDRAULIC _____

FUEL SECONDARY _____ DIFFERENTIALS _____

COOLANT _____ BRAKE FLUID _____

HYDRAULIC _____ COOLANT _____

OTHER _____ OTHER _____

X6.3 TRAINING:

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

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

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

If NO, explain time frame _____

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

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

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

X6.5 WARRANTY AND SERVICE POLICY

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

Is warranty literature attached? _____ YES _____ NO

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

Describe:

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: _____

X8.1 GVW plate rating: _____ Lbs.

X8.2 Cab to axle dimension: _____ Inches.

X8.2.1 Cab to end of frame: _____ inches

X8.3 Wheelbase: _____ inches, set forward design for our snowplow applications _____ YES _____ NO

X8.4 Frame: Will you provide a frame that meets or exceeds all Federal requirements for GVWR specified that has an integral front frame extension with no frame cutouts except to allow engine installation? _____ YES _____ NO

Will extension extend forward of the grille area a minimum of 12 inches _____ YES _____ NO

Warranty on frame: _____ years and conform to the following:

- X8.5.5 Windshield wipers and washers: Manufacturers heaviest duty artic type with intermittent feature
 _____ YES _____ NO
- Wipers equipped with snow type blades _____ YES _____ NO
- X8.5.6 **Instruments: Are manufacturer's gauges with visual and/or audible, and/or programmable warning to inform driver when operating conditions are exceeded included:**
- X8.5.6.1 Voltmeter or ammeter _____ YES _____ NO
- X8.5.6.2 Engine RPM tachometer _____ YES _____ NO
- X8.5.6.3 Speedometer with odometer _____ YES _____ NO
 Are provisions for dual speedometers leads available _____ YES _____ NO
- X8.5.6.4 Air pressure gauge(s) _____ YES _____ NO
- X8.5.6.5 Air filter to be manufacturers heaviest element type _____ YES _____ NO
- X8.5.6.6 Air filter restriction indicator dash mounted _____ YES _____ NO
- X8.5.6.7 Engine hourmeter (controlled by engine operation) _____ YES _____ NO
- X8.5.6.8 Fuel gauge(s) with low fuel warning indicator _____ YES _____ NO
- X8.5.6.9 Is unit equipped with 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
- X8.5.6.10 Oil pressure gauge _____ YES _____ NO
- X8.5.6.11 Temperature gauge _____ YES _____ NO
- X8.5.6.12 Low coolant indicator _____ YES _____ NO
- X8.5.7 Accessories:
- X8.5.7.1 Manufacturers dash mounted extended two (2) cup drink holder
 _____ YES _____ NO
- X8.5.7.2 Air horns with snow shields _____ YES _____ NO
 If cab mounted, adequate clearance for future installation of dump body cab protector
 _____ YES _____ NO
- Single horn without snow shield _____ YES _____ NO
 Mounted downward on frame rail under hood _____ YES _____ NO

- X8.5.7.3 Rearview Mirrors:
 Heated dual, West Coast Type YES NO Size: _____
 Power adjustable with convex spot mirror YES NO
 (OR)
 dual flat mirrors (Size: _____) and power adjustable with separate dual
 (Size: _____) convex spot mirrors YES NO
- to include fore and aft breakaway feature with corrosive resistant finish equal to stainless steel, powder coat or aluminum or molded plastic housing and mounting brackets
 YES NO
- X8.5.7.4 Grab Handle:
 Right hand and left hand sides internal or external mounting to rear of door opening
 YES NO
- If inside handles, one (1) outside, left, mounted grab handle with non-slip insert for bed aggregate inspection furnished YES NO**
- X8.5.7.5 Glass: Manufacturers tinted safety glass; front, sides, and rear YES NO
- X8.5.7.5.1 Dual power windows YES NO
- X8.5.7.6 Radio: Manufacturers standard AM/FM stereo YES NO
 Weather band radio feature YES NO
- X8.5.7.7 Air Conditioning: Manufacturers fresh air type heaviest duty with APADS or equivalent RCD system to include replaceable fresh air filter YES NO
- X8.5.7.8 **Manufacturers stationary grille or grille with cutout area to allow tilt hood to clear snow plow mount YES NO**
Bug screen provided behind grille YES NO
- X8.5.7.9 Front mudflaps manufacturers standard for unit bid YES NO
- X8.5.7.10 Emergency triangle warning kit, with hold down or stowed in the cab
 YES NO
 Make/Model: _____
- X8.5.7.11 Does unit include kit for front mounted CB radio and all power and ground wiring to include co-ax cable, antenna, speaker, etc. YES NO
All cable and wiring routed using grommets and wire looms YES NO
 Radio make and model: _____
- X8.5.7.12 **Two (2) front frame mounted tow hooks or eyes YES NO**

X8.5.7.13

Accessories included in manufacturers standard cab not listed above:

X8.6 Engine:

Make: _____ Model: _____
_____ HP . Torque @ _____ Lb. Ft.

X8.6.1 Has engine manufacturer made provisions for front mounted hydraulic pump to crankshaft pulley _____ YES _____ NO

X8.6.2 Fuel heater/water separator mounted inside engine compartment _____ YES _____ NO

Manufacturer: _____

X8.6.3 Engine block heater _____ watt/ _____ v rating includes weather proof spring loaded cap over plug _____ YES _____ NO

X8.6.4 Single vertical exhaust pipe with horizontal muffler that meets all Federal noise abatement requirements _____ YES _____ NO

Exhaust frame mounted on the passenger side of unit with heat shield on vertical exhaust _____ YES _____ NO

X8.6.5 Engine equipped with engine brake _____ YES _____ NO

Compression _____ YES _____ NO (or) Compression/Exhaust _____ YES _____ NO (or) Exhaust _____ YES _____ NO

Manufacturer: _____

X8.6.6 Is engine oil pan zinc nickel plated _____ YES _____ NO
(OR)

Aluminum _____ YES _____ NO (OR) Non-Corrosive coated _____ YES _____ NO

X8.6.7 Engine provides electronic speed control including throttle and cruise control features _____ YES _____ NO

X8.7 Cooling System:

X8.7.1 Is cooling system capable of maintaining engine temperature within the manufacturers recommended range during continuous winter/summer operation _____ YES _____ NO

Does unit provide an automatic "on-off" fan drive with nylon fan blades _____ YES _____ NO

Manufacturer: _____

- X8.7.2** Will the system be filled with permanent type extended life coolant Dex-Cool or equivalent rated at a -34°F minimum YES NO
- X8.7.3** Does the radiator provide adequate clearance to facilitate the installation of a crankshaft driven PTO drive shaft YES NO
- The distance between the extreme tip of the radiator fan blade and the centerline of the crankshaft is _____ inches to insure adequate clearance for PTO drive shaft**
- Radiator and heater hoses are silicone type or approved equivalent with constant torque clamps or equivalent utilized on radiator hoses to minimize cold water leaks YES NO
- X8.8 Fuel Tank:**
- X8.8.1** Capacity: _____ US gallons. Does tank comply with FMVSS YES NO
- Filler Cap is chain tethered YES NO
- X8.9 Electrical System:**
- X8.9.1** Type: _____ volt negative ground system includes manual reset circuit breakers (main panel) SAE Type III with trip indicators to replace all fuses except for 5 amp fuses. YES NO
- X8.9.2 Batteries:**
- X8.9.2.1** Cold Crank AMPS _____ AMPS with sealed terminals
- X8.9.2.2** Jump start studs mounted on outside of battery box YES NO
- X8.9.3** Alternator Capacity: _____ AMPS brushless with internal regulator
- X8.9.4** Lighting: All lighting conforms to the West Virginia Motor Vehicle Code YES NO
- Unit features daytime running lights YES NO
- Cab marker lights are LED type with halogen headlamps. YES NO
- X8.9.5** Is auxiliary snow plow lighting package included YES NO
- X8.9.5.1** Will truck vendor eliminate rear taillights YES NO
Is there at least eight (8) foot of wiring bundled at end of frame for body vendor hookup of taillights provided in dump bed body YES NO
- X8.9.6** Will manufacturer YES NO or successful vendor YES NO make provisions for manufacture approved wiring and weatherproof disconnect plug YES NO
- Manufacturer and Part number _____
- Will there be three (3) foot "pigtail" to operate front combination left and right turn/park lights/auxiliary headlights. YES NO

- X8.9.6.1 Is weatherproof disconnect plug located at lower left front grille/bumper area
 _____ YES _____ NO
- Are all wiring connections weatherproof with wiring encased in wire looms
 _____ YES _____ NO
- X8.9.6.2 Are provisions for 7-way trailer connection light socket mounted at rear of truck frame
 _____ YES _____ NO
- Manufacturer and Part number _____
- X8.9.6.3 **Will manufacturer provide body builder circuit interface capability with connection Plug 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
- X8.9.6.4 **Will manufacturer provide body builder circuits – three (3) switches 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
- Is this power module 20 amps per channel, 80 amp maximum output**
 _____ YES _____ NO
- Do the dash switches control the power module with LED backlighting**
 _____ YES _____ NO
- X8.10 Transmission
- Manufacturer: _____ Model: _____
- X8.11 Driveline: _____
 Does it have a greasable main shaft _____ YES _____ NO
- X8.12 Rear Axle:
- X8.12.1 Rated Capacity: _____ Lbs. **Single reduction includes driver controlled main locking differential**
 _____ YES _____ NO
- X8.12.2 Rear Spring Capacity: _____ Lbs. including _____ lb. capacity load stabilizer Springs
 _____ YES _____ NO
- Does it provide sufficient clearance between spring, brake chambers, and tires to operate with single tire chains**
 _____ YES _____ NO
- X8.12.3 Gear ratio: _____
 Are vehicles capable of a top speed of 70 MPH _____ YES _____ NO

- X8.12.4 **Is rear axle differential, transmission, and front wheel lubrication reservoirs filled with synthetic type lubrication and provided with magnetic drain plugs where applicable** _____ YES _____ NO
- X8.13 Front Axle:
- X8.13.1 **Capacity:** _____ lbs. I-beam type
- X8.13.2 **Front Spring Capacity:** _____ lbs.; _____ lbs. rating for use with front plow
- X8.13.3 Manufacturers heavy duty shock absorbers _____ YES _____ NO Make: _____
- X8.13.4 Front wheel oil lubricated wheel seals _____ YES _____ NO Make: _____
- X8.14 Brakes:
- X8.14.1 Type: Full air, with manufacturers ABS with traction control in compliance with the most current FMVSS requirements _____ YES _____ NO
- X8.14.2 Compressor: Model and Make: _____ CFM
- X8.14.3 Service Brake Size:
- X8.14.3.1 Front: _____
- X8.14.3.2 Rear: _____
- X8.14.4 Parking Brake: Spring set, air release actuating rear axle service brakes _____ YES _____ NO
Instrument panel control _____ YES _____ NO _____ MGM
- X8.4.4.1 Are all brake chambers sealed brake chambers with epoxy exterior coat on front and rear chambers _____ YES _____ NO Make: _____
- X8.14.5 Air dryer with heater _____ YES _____ NO Make and Model: _____
- X8.14.6 Manufacturer's standard air tanks for service brakes; auxiliary tank for parking brake _____ YES _____ NO
- X8.14.7 Low air pressure warning light and buzzer _____ YES _____ NO
- X8.14.8 **Do brakes meet all current Federal and State FMVSS requirements** _____ YES _____ NO
- X8.14.9 Are brake dust covers installed on all wheels _____ YES _____ NO
- X8.14.10 **Is unit equipped with tractor protection valve and hand control valve to accommodate installation of glad hands at rear of frame rails to enable unit to pull an air-braked trailer** _____ YES _____ NO

X8.14.10.1 Are glad hand recessed as not to stick out past end of frame rails YES NO

X8.15 Tires and Wheels:

X8.15.1 Wheel, Front and Rear _____ x _____ hub piloted steel disc type, to accommodate specified tire size YES NO

Make and Model: _____ with 0.472 inches thickness YES NO

All wheels include wheel guard separators YES NO

X8.15.2 Tires: (Describe)

X8.15.2.1 Front: _____

X8.15.2.2 Rear: _____

X8.16 Manufacturers standard power steering for front axle specified YES NO

Manufacturer: _____

X8.17 Features considered as standard equipment not specifically addressed:

X8.18 Paint:

X8.18.1 Specify cab exterior and interior color and paint type:

X8.18.2 Is truck grille manufacturer's standard similar to silver/aluminum in color? YES NO

X8.18.3 Are fuel tanks, steps, air tanks and battery box non-corrosive coated? YES NO

X8.18.3.1 Is wheel paint provided as specified? YES NO

X8.18.4 Detail/Decorative Stripes with Logo:

X8.18.4.1 Are stripes provided 2" type with taper at front of hood? YES NO

X8.18.4.2 Does the conspicuity striping material provided meet requirements of Section 8.18.4.3 through 8.18.4.6 of the specification section? YES NO

Will you install the striping? YES NO

X8.18.4.7 Is your proposed paint plan attached with your bid? YES NO

If not, why? _____

X8.18.4.8 Will you use manufacturer's standard plant procedures for prepping of cab for painting? _____ YES _____ NO

X8.19 Does the proposed unit meet or exceed the "OSHA of 1970" and/or subsequent changes? _____ YES _____ NO

X8.20 Does the unit conform to the advertising guidelines? (Describe)

X8.21 Preventive Maintenance and Operator's Training School:

X8.21.1 Will a preventative maintenance and operator's training seminar be provided? _____ YES _____ NO

X8.21.2 If you are the successful vendor, will you furnish all training aids, i.e., videos, projectors, required in conducting the training? _____ YES _____ NO

X8.21.3 Will all manuals, booklets, etc. explain preventive maintenance, operator procedures, and service schedule be delivered with each unit? _____ YES _____ NO
If NO, explain _____

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.

Reference Requisition No. on request for proposal: _____

Bidder's Name: _____

Address: _____

Telephone Number: _____

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

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

Is descriptive literature, fully describing proposed dump/spreader body attached to your bid? _____ YES _____ NO

If NO, why _____
Refer to Section 6.1 of the specification

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

Will combination dump/spreader body have minimum 2 year basis warranty including parts and labor excluding abuse and normal wear items _____ YES _____ NO

X9.1 Body capacity _____ cubic yards water level

X9.2. Sideboard pockets and tailgate height provide additional capacities of _____ cubic yard

X9.3 Front body bulkhead 3/16 inch 304 stainless steel _____ YES _____ NO

X9.4 Cab shield has 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 the 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 of the unit

X9.6.3 Outside width of body _____ inches at the integral fenders

X9.6.4 Body spacing from cab _____ inches

X9.6.5 Basic minimum side height _____ inches (measure from the floor to top rail)

X9.6.6 Tailgate minimum height _____ inches (measure from the floor to top rail)

X9.6.7 Body overhang _____ inches to _____ 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 Is cab protector sloped rearward for drainage purposes _____ YES _____ NO

X9.8 Construction of the body sides, front, head, and tailgate conform to the following minimum Specifications

Steel types are 304 stainless steel _____ YES _____ NO

X9.8.1 Floor: _____ inch thickness

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

Will the body be designed to allow maximum protection to the tanks _____ YES _____ NO

X9.9 Is all welding inside the body continuous, 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 Is a rear bolt on spreader apron provided _____ YES _____ NO
Is it integrated into the rear of the bed _____ YES _____ NO

X9.11 Cab protector sides, formed with gussets, extend forward _____ inches. Clearance above highest point of cab is _____ inches

X9.12 Is the body a unibody design – no crossmembers _____ YES _____ NO

X9.12.1 The body has one (1) piece sides and floor which incorporates a sloping floor to side radius to adequately feed material to the conveyor chain. _____ YES _____ NO

X9.12.2 Do 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 is sloped inward to shed debris _____ YES _____ NO

X9.14 Full length 304 stainless steel integral rear fenders which incorporate prewet liquid reservoirs (85 gallon) _____ YES _____ NO

X9.15 An integrated center conveyor provides the ability of the body to convey granular materials with the body down _____ YES _____ NO

The following features are provided:

- X9.15.1 Does the conveyor have no more than 12 inch truck frame to body floor height for lower center of gravity and lower mounting height _____ YES _____ NO
- X9.15.1.1 Have you used wood _____ YES _____ NO Type of material: _____
- X9.15.2 1/4 inch 304 stainless steel conveyor floor _____ YES _____ NO or 1/4 inch abrasion resistant steel (AR400) _____ YES _____ NO
- X9.15.3 2 inch diameter front and rear shafts with eight (8) tooth sprockets _____ YES _____ NO
- X9.15.4 Drive sprockets are double keyed to shaft _____ YES _____ NO
- X9.15.5 Conveyor width – 25 inches or more _____ YES _____ NO
- X9.15.6 Conveyor is reversible** _____ YES _____ NO
- X9.15.7 Conveyor is driven with 25:1 planetary gearbox drives or equal on both the front and rear shafts with 5.0 CIR hydraulic motors _____ YES _____ NO
- One (1) motor has an integral conveyor speed sensor _____ YES _____ NO
- X9.15.8 Conveyor chain is D667K pintle type (24,500 lb. tensile/strand) with **minimum 3/8 inch x 1 1/2 inch conveyor crossbars welded to every link** _____ YES _____ NO
- X9.15.9 A 10 gauge 304 stainless steel bolt in pan under the conveyor to keep material off chassis frame _____ YES _____ NO

X9.16 The body has the capability to convey to the front or the rear with a material spinner for distributing material:

- X9.16.1 For front spreading, a front feedgate integrated into the head sheet of the body _____ inches x _____ inches
- X9.16.2 A 304 stainless steel front spinner chute is 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 the rear feed gate lever operated _____ YES _____ NO or screw adjustable _____ YES _____ NO
- Is the feedgate capable of being positively locked into position _____ YES _____ NO

- X9.16.5 The front spinner bracket and chute is mounted to the truck chassis frame and for rear spreading capability the rear spinner chute and brackets are installed by the successful vendor _____ YES _____ NO
- X9.16.6 The spinner assembly is universal and may be used at front or rear _____ YES _____ NO
- X9.16.7 Spinner assembly is adjustable left to right, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern. _____ YES _____ NO
- X9.16.8 10 gauge 20 inch diameter spinner disc has replaceable machined hub _____ YES _____ NO
- X9.16.9 Is the spinner 409 or 304 stainless steel _____ YES _____ NO
- X9.16.10 If spinner hydraulic motor is mounted on top of spinner disc, is the motor enclosed in a removable material shedding protective cover _____ YES _____ NO
- X9.17 Hydraulic Hoist:
- X9.17.1 Trunnion Mount _____ YES _____ NO
- X9.17.2 Telescopic hoist is no less than N.T.E.A. Class 40 _____ YES _____ NO
- X9.17.3 Single hoist cylinder is trunnion mount _____ YES _____ NO
- X9.17.4 Hoist cylinder has three (3) stages with _____ inches of stroke with a four (4) inch diameter first Stage _____ YES _____ NO
 Manufacturer and part number: _____
- X9.17.5 The cylinder has wear and corrosion resistant nitrided cylinder tubes _____ YES _____ NO
- X9.17.6 Cylinder warranty: _____ years
- X9.17.7 A five (5) degree oscillating cylinder collar protects the cylinder against side stress _____ YES _____ NO
- X9.17.8 The body has 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 The rear hinge assembly has cold roll steel hinge pins connecting to 2 1/2 inch hinge blocks with grease zerks _____ YES _____ NO
- X9.18 The following features are included:
- X9.18.1 Warning light (bed raised) control 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 exhaust stack be aligned 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
- Deflector manufacturer's standard width for truck mode _____ YES _____ NO
- Width: _____
- Access to front end hood tilt handle _____ YES _____ NO
- Extra handle _____ YES _____ NO
- X9.18.13 Is screen over hopper provided with 3/8 inch rod across 3/8 inch rod for 2 3/4 inch grid opening (to prevent oversize material from entering hopper during filling) _____ YES _____ NO

- X9.18.14** Is screen frame ¼ inch by 1 ½ inch angle iron welded to rods and hinged to 5 inch I-beams
 _____ 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
- Make and Model: _____
- 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
- Make and Model: _____
- 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
- Make and Model: _____
- 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) rear 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
- X9.23 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.
- X9.23.4.1 Does bumper have two (2) access holes for utilization of tow hooks _____ YES _____ NO
- X9.23.5 Upper and lower flanges cut and welded solid at point where bumper is bent and ground off smooth _____ YES _____ NO
- X9.23.6 Bumper mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side _____ YES _____ NO
- X9.23.7 Mount angle _____ inch x _____ inches x _____ long with four (4) 5/8 inch holes _____ YES _____ NO
- X9.23.8 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

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- 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

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:

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

X10.0 SPECIFICATIONS - CENTRAL HYDRAULIC SYSTEM

Is the central hydraulic system designed to operate the following:

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

Are provisions made for a future add on hydraulic driven 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 _____

Pre-Wet system:

Does 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 operator, presented in gallons per to Ton _____ YES _____ NO

Is information related to pre-wet application rate and total flow in gallons displayed on the screen while Pre-wet system is active _____ YES _____ NO

Will central hydraulic system have minimum 2 year basis warranty including parts and labor excluding abuse and normal wear items _____ 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
 _____ 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 type or ORB 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**
- SAE "C" keyed _____ YES _____ NO**
- X10.1.7 Front input shaft bearing heavy duty ball or roller type designed for high axial and radial loading _____ YES _____ NO
 Rear shaft bearing of the high speed and load sleeve type design _____ YES _____ NO
 Bearings fully lubricated by flooded case oil _____ YES _____ NO
- X10.1.8 Ramp/swashplate supported by pressure lubricated bearings of the rocker cam or saddle type for high piston load support _____ YES _____ NO
 Ramp angle positioning by means of dual servo control cylinders for rapid pump response and precise pump output control _____ YES _____ NO
- X10.1.9 Adjustable load sense and high pressure compensator control valve assembly of the full cartridge or of bolt on housing design for ease of replacement and repair _____ YES _____ NO

- X10.1.9.1** System design and components provide flow, pressure and performance requirements with a maximum operating load sense differential pressure of _____ PSI and a maximum standby pressure of _____ PSI for maximum efficiency.
- If pilot control shifted valving is used, is it designed to be fully functional within this pressure range _____ YES _____ NO
- X10.1.9.2** High pressure compensator valve preset to limit the maximum pump output pressure to maximum required operating pressure plus load sense differential and margin pressure to prevent premature de-stroking of ramp resulting in reduced or insufficient pump output _____ YES _____ NO
- X10.1.10** **Pump Output: Is it capable of providing hoist cylinder extension required for a 50 degree Body dump angle in 13 seconds at 1500 engine RPM at a 1000 PSI system load** _____ YES _____ NO
- 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 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 Is valve designed to protect the pump from damage when the system is shut down at high pressure and flow operation _____ YES _____ NO
- X10.2.6 Valve manufacturer and model:** _____
- X10.2.7 Central control console mounted audio alarm and warning lamp indicating pump pressure/flow shutdown _____ YES _____ NO
- X10.2.8 Warning lamp press-to-test light and incorporate a switching system into the automatic shutdown assembly to simulate low oil level, shut off pump output flow and test float switch wiring and connection _____ YES _____ NO
- X10.2.9 A console mounted electrical override function switch provided to allow momentary operation of hydraulic functions in emergency situations _____ YES _____ NO
- X10.3 Directional Control Valve Assembly:
- X10.3.1 Valve stacked section type and of closed center circuit design _____ YES _____ NO
- X10.3.2 Each work section pressure and flow compensated with fully integrated load sense network _____ YES _____ NO
- Flow output is relative to spool travel with preset maximum flow rate obtained at maximum spool stroke providing feathering control of operated function _____ YES _____ NO
- X10.3.3 Dump body, snowplow lift, and snowplow power angle section of the manual cable shift type _____ YES _____ NO
- Auxiliary circuit section of the electric solenoid shift type _____ YES _____ NO
- Both ends of each section valve spool sealed with weather resistant caps or cable entry bonnets _____ YES _____ NO
- X10.3.4 Valve assembly flow capacity rating and pressure drop characteristics sufficient to provide for the required pump output and circuit flow rates at the specified maximum load sense differential pressure settings** _____ YES _____ NO
- X10.3.5 All valve ports of the SAE o-ring seal type and of sufficient size to handle required section flow rates at stated load sense differential pressure _____ YES _____ NO

- X10.3.6 Pressure compensation of the spinner and auger sections and also a priority section installed to allow for operation of the plow hoist in any circumstance** _____ YES _____ NO
- X10.3.7 Main pressure inlet relief valve provided to reduce system pressure shock loads
_____ YES _____ NO
- Is it preset at pressure so as not to interfere with pump pressure compensator and to prevent premature relief opening at system high demand operation
_____ YES _____ NO
- X10.3.8 If pilot pressure reducing valve is required for solenoid section control, design meets operating requirements as set forth in Section 10.1.9.1** _____ YES _____ NO
- Pilot supply and tank venting internal within the valve assembly section _____ YES _____ NO
- X10.3.9 Load sense network high pressure relief provided and preset to limit system maximum operating pressure
_____ YES _____ NO
- Set point provides proper pressure margin to pump pressure compensator and high pressure relief valve as to prevent premature loss of required flow rates and pressure capability
_____ YES _____ NO
- X10.3.10 SAE #6 gauge port equipped with Parker Hannifin PD361 diagnostic coupling nipple with protective cap for load sense testing to be installed in an easily accessible location
_____ YES _____ NO
- X10.3.11 Dump body control section 3-way three (3) position spring centered cylinder spool for operation of a single acting hoist cylinder
_____ YES _____ NO
- X10.3.11.1 Full flow workport relief valve installed in power up port _____ YES _____ NO
- Set point to prevent operating pressure from exceeding hoist cylinder normal operating pressure rating
_____ YES _____ NO
- X10.3.11.2 Flow limiting system preset at required flow rates provides performance as stated in Section 10.1.10 as maximum for dump body up and down to reduce system over demand operation
_____ 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 with pilot controlled load lock valve
_____ YES _____ NO
- Does the valve design require a load holding check valve to properly carry the plow weight
_____ 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
- 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
- X10.3.14 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
- X10.3.14.1 **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
 _____ YES _____ NO
- X10.3.14.2 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
- X10.3.14.3 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
- X10.3.14.4 **Manufacturer and model of directional and auxiliary circuit valves:**
-

- X10.3.15** Is directional control valve assembly with tank in an enclosure to protect it from the elements _____ YES _____ NO
- X10.3.16 Pre-Wet Circuit:
- X10.3.16.1** Is a separate circuit provided to control an add-on pre-wet system _____ YES _____ NO
- X01.3.16.2 Is the hydraulic valve of the sectional type ___ YES OR of the cartridge style contained in a manifold ___ YES
- X10.3.16.3** Is a manifold type valve supplied _____ YES _____ NO Is it attached to the main valve assembly _____ YES _____ NO
- X10.3.16.4** Is all wiring to the pre-wet hydraulic circuit provided as part of the system _____ YES _____ NO
- X10.3.16.5** Is the wiring to 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 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 a 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 Is 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** Is hoist control lever OSHA compliant (hoist interlock) _____ YES _____ NO
- X10.6.4 Are central control 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 mounted within the cab _____ YES _____ NO
- X10.6.4.4 Is an access plate to internal wiring provided _____ YES _____ NO
- X10.7 Hydraulic Reservoir and Valve Enclosure Assembly:
- X10.7.1 Hydraulic reservoir _____ gallon operated capacity flex mounted to the chassis frame rail and valve enclosure assembly _____ YES _____ NO
- X10.7.2 Tank constructed of _____ gauge 304 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 filler/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 mounted within tank/valve enclosure to protect it from 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 is not installed in the 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 **Snap tite quick disconnects (manifold mounted) supplied for the forward and rear spinner 1/2 Inch pressure and return lines** _____ YES _____ NO
- X10.9.7 Are all fittings and connectors steel type designed for high pressure hydraulic system use _____ YES _____ NO
- X10.9.8 Pipe thread ported components and connectors are only used when the specific component is not available with SAE or JIC porting _____ YES _____ NO
- X10.9.9 Are all pipe thread connectors used coated with liquid Teflon pipe sealer prior to assembly _____ YES _____ NO
- X10.9.10 Hoses that run to the front of truck chassis for snowplow functions are manifold mounted behind the front bumper with sufficient access for pump service and snowplow hitch installation _____ YES _____ NO
- X10.9.11 Are snowplow lines equipped with complete 1/2 inch "VH" series Snap-tite quick disconnects (coupler and nipple supplied) and metal caps and plugs _____ YES _____ NO

X10.10 Items not specifically stated but are necessary for proper system installation and operation are supplied and comply with recommended hydraulic industry standards:

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

- X10.11.1 Initial fill of reservoir with a high grade 32 AW hydraulic fluid to approximately 40 gallon level, marked on sight glass _____ YES _____ NO
- X10.11.2 Start-up and initial run of hydraulic system, checking for leaks, excessive heat, system efficiency _____ YES _____ NO
- Will you replace any defective component _____ YES _____ NO
- Will you cover any defects discovered at time of plow installation if equipment is not available at time of initial test of plow circuits _____ YES _____ NO

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

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

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

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

X10.15 Explain your training sessions with each purchase order (based on a purchase 1-25 units) covering the operation, maintenance, trouble shooting and calibration/programming of the hydraulic system and spreader controls and where will they be held:

VENDOR PREFERENCE CERTIFICATE

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

- 1. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. Application is made for 5% resident vendor preference for the reason checked: Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

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

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

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

Bidder: _____ Signed: _____

Date: _____ Title: _____

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

STATE OF WEST VIRGINIA
Purchasing Division**PURCHASING AFFIDAVIT****VENDOR OWING A DEBT TO THE STATE:**

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

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:

West Virginia Code §21-1D-5 provides that: Any solicitation for a public improvement construction contract shall require each vendor that submits a bid for the work to submit at the same time an affidavit that the vendor has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code. A public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the West Virginia Code may take place before their work on the public improvement is begun.

ANTITRUST:

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

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

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 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 is in compliance with the requirements as stated.

Vendor's Name: _____

Authorized Signature: _____ Date: _____