



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

Request for Quotation

RFQ NUMBER
7011EC18

PAGE
1

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

*709063202 01 304-736-3401

*Worldwide Equipment
 P.O. Box 171
 Jane Lew, WV 26378*

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
03/17/2011				
BID OPENING DATE: 04/21/2011		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		287-36	\$ 153,233. ⁰⁰	\$ 153,233. ⁰⁰
<p>64,000 GVW CAB AND CHASSIS, COMBINATION</p> <p>REQUEST FOR QUOTATION (RFQ) OPEN END CONTRACT</p> <p>THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS FOR AN OPEN END CONTRACT TO PROVIDE 64,000 GVW CAB AND CHASSIS COMBINATION DUMP/SPREADER PER THE ATTACHED SPECIFICATIONS.</p> <p>TECHNICAL QUESTIONS CONCERNING THIS SOLICITATION WILL BE RECEIVED THROUGH THE CLOSE OF THE MANDATORY PRE-BID MEETING. TECHNICAL QUESTIONS MUST BE SUBMITTED IN WRITING TO SHERI SLONE WEST VIRGINIA STATE PURCHASING DIVISION. VENDORS MAY SUBMIT QUESTIONS PRIOR TO THE MANDATORY PRE-BID VIA MAIL AT THE ADDRESS LISTED IN THE BODY OF THIS RFQ, VIA FAX AT 305-558-4115, OR VIA EMAIL AT SHERI.D.SLONE@WV.GOV. WRITTEN QUESTIONS WILL ALSO BE ACCEPTED DURING THE MANDATORY PRE-BID. DEADLINE FOR ALL TECHNICAL QUESTIONS IS THE CLOSE OF THE PRE-BID MEETING. NO ADDITIONAL QUESTIONS WILL BE ACCEPTED AFTER THE PRE-BID MEETING. ANY TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY FORMAL ADDENDUM TO BE ISSUED BY THE PURCHASING DIVISION AFTER THE MANDATORY PRE-BID MEETING.</p>						

RECEIVED

2011 MAY -5 PM 1:10

WV PURCHASING DIVISION

SIGNATURE <i>J. St</i>		SEE REVERSE SIDE FOR TERMS AND CONDITIONS		TELEPHONE 800-879-3039	DATE 5-2-11
TITLE <i>Minipal Sales</i>	FEIN 61-0871032	ADDRESS CHANGES TO BE NOTED AE			



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

PURCHASING

*709063202 01 304-736-3401
**WORLDWIDE EQUIPMENT INC
 5650 US RT 60 EAST
 PO BOX 5407
 HUNTINGTON WV 25705**

SHIP TO

**DIVISION OF HIGHWAYS
 EQUIPMENT DIVISION
 ROUTE 33
 BRUSHY FORK ROAD
 BUCKHANNON, WV
 26201 304-472-1750**

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

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *J. Det* TELEPHONE **800-877-3039** DATE **5-2-11**

TITLE *Managerial Sales* FEIN **61-0871032** ADDRESS CHANGES TO BE NOTED ABOVE



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 304-558-2402**

PROPERTY

*709063202 01 304-736-3401
 WORLDWIDE EQUIPMENT INC
 5650 US RT 60 EAST
 PO BOX 5407
 HUNTINGTON WV 25705

SHIP TO

DIVISION OF HIGHWAYS
 EQUIPMENT DIVISION
 ROUTE 33
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DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
03/17/2011				

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

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

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *Murray Salis* TELEPHONE **800-879-3039** DATE **5-2-11**

TITLE *Murray Salis* FEIN **61-0F71032** ADDRESS CHANGES TO BE NOTED ABOVE



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DIVISION OF HIGHWAYS
 EQUIPMENT DIVISION
 ROUTE 33
 BRUSHY FORK ROAD
 BUCKHANNON, WV
 26201 304-472-1750

*709063202 01 304-736-3401
 WORLDWIDE EQUIPMENT INC
 5650 US RT 60 EAST
 PO BOX 5407
 HUNTINGTON WV 25705

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
03/17/2011				

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

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
			 5-2-2011 DATE		
<p>NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.</p> <p>REV. 09/21/2009</p> <p>EXHIBIT 2</p> <p>LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE UPON AWARD AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING THIRTY (30) DAYS WRITTEN NOTICE.</p> <p>UNLESS SPECIFIC PROVISIONS ARE STIPULATED IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS, AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.</p> <p>RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *[Signature]* TELEPHONE 800-877-3039 DATE 5-2-11

TITLE *Murali Sub* FEIN 61-0871032 ADDRESS CHANGES TO BE NOTED ABOVE

CALLER RESPONDING TO REQ. INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED "VENDOR"



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 304-558-2402**

VENDOR

***709063202 01 304-736-3401
 WORLDWIDE EQUIPMENT INC
 5650 US RT 60 EAST
 PO BOX 5407
 HUNTINGTON WV 25705**

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
03/17/2011				

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

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

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *[Signature]* TELEPHONE **800-879-3038** DATE **5-2-11**

TITLE *Michael S. [unclear]* FEIN **161-0871032** ADDRESS CHANGES TO BE NOTED ABOVE



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304-558-2402

VENDOR

*709063202 01 304-736-3401
 WORLDWIDE EQUIPMENT INC
 5650 US RT 60 EAST
 PO BOX 5407
 HUNTINGTON WV 25705

SHIP TO

DIVISION OF HIGHWAYS
 EQUIPMENT DIVISION
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03/17/2011				

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

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
SEALED BID						
BUYER: SHERI SLONE - FILE 33						
RFQ. NO.: 7011EC18						
BID OPENING DATE: 04/21/2011						
BID OPENING TIME: 1:30 PM						
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: <i>859 253 4639</i>						
CONTACT PERSON (PLEASE PRINT CLEARLY): <i>Jim Dotson</i>						
***** THIS IS THE END OF RFQ 7011EC18 ***** TOTAL: _____						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *[Signature]* TELEPHONE **800-879-3039** DATE **5-2-11**

TITLE *Michael Sab* FEIN **61-0871033** ADDRESS CHANGES TO BE NOTED ABOVE

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EQUIPMENT DIVISION

PROCUREMENT SPECIFICATIONS
NO. 377-2-F

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

1.0 PURPOSE

It is the purpose of these specifications to describe a 64,000 GVW Cab and Chassis, Stainless Steel Combination Dump/Spreader Muni Body, and Piston Pump Hydraulic System (hereinafter referred to as a "dump truck" or a "unit") to be purchased for use by the West Virginia Division of Highways (DOH) on an Open End Contract basis.

2.0 BIDDING PROCEDURES

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

3.0 SPECIFICATIONS

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

3.1 EXCEPTIONS TO NON-MANDATORY SPECIFICATIONS

Exception to a non-mandatory unit specification may be made by the bidder, providing the exception is not available from the manufacturer. **Any such exception must be noted on the bidder's evaluation report and should be accompanied by supporting documentation/literature from the manufacturer. Any exception must be indicated on a separate attachment to the bidder's evaluation report and labeled as "Exception to Specifications".** The state reserves the right to waive minor irregularities in bids or specifications in accordance with §148-1-4(f) of the WV Legislative Rules and Regulations.

3.2 MANDATORY SPECIFICATIONS

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

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

4.0 REPRESENTATIVE UNIT FOR TEST

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

4.1 CONDITION OF UNIT(S) UPON DELIVERY

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

4.2 DELIVERY

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

The vendor is responsible for guaranteeing delivery of the completed units within the time specified and agreed to by the State. **Delivery shall be within 240 calendar days after receipt of purchase agreement.**—The vendor is responsible for establishing and coordinating delivery terms with allied manufacturers or suppliers. Delivery terms should be stated in the bid and the State reserves the right to accept or reject such terms. Failure to reach an agreement may result in rejection of the bid. **The successful bidder shall provide their manufacturer's confirmation of the order to the WVDOH contact person within seven (7) working days after receiving the approved purchase order.**

A completed pilot model for inspection must be provided within 120 calendar days after receipt of the purchase agreement by the successful vendor.

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

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

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

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

5.0 AWARD CRITERIA

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

6.0 SPECIFICATIONS AND GUIDELINES - GENERAL

6.1 IDENTIFICATION OF THE UNIT BEING PROPOSED

The bidder must identify the unit by manufacturer, model, series, and year of manufacture, to enable identification by DOH in the manufacturer's specifications of the proposed unit. The bidder will submit complete descriptive literature of the proposed unit, to establish that the bid is the manufacturer's most current model,

including latest engineering improvements, which have been, or will imminently be, regularly advertised and sold on the open market.

The unit specified herein and offered to be manufactured after January 1, 2011 and be clearly identified and marked with date of manufacture.

6.2 OPERATING AND SERVICE MANUALS AND PARTS LISTS

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

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

6.3 TRAINING:

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

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

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

6.4 PREVENTIVE MAINTENANCE AND OPERATOR PROCEDURES:

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

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

6.5 WARRANTY AND SERVICE POLICY

The Manufacturers warranty or service policy is to apply to the unit. Such warranty or service policy is to be recognized at any authorized unit dealer, representing manufacturer of proposed unit throughout the State of West Virginia. The applicable warranty or service policy will not be contingent upon obtaining routine service, lubrication, and servicing of the unit from factory authorized agencies. It will be the responsibility of the bidder to have available labor to repair or replace any defective replacement parts, components and materials, and to have available those replacement parts, components, and/or materials found to be defective during the terms of the warranty period. The bidder should state the labor rates, locations where parts will be stocked, availability of parts, and discounts offered for parts, when terms of the warranty offer a pro-rated cost for parts and labor. In addition, the successful bidder should offer field work to repair or replace defective parts, components, and materials found to be defective during the terms of the warranty and should provide mechanic's travel rates, mileage charges, field mechanic rates, and any surcharge for miscellaneous items, if applicable, for field work during the warranty period. Submit to Division of Highways any technical or engineering improvements during the term of the warranty. **The unit must be accompanied upon delivery by the unit's manufacturer's executed warranty or service policy.**

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

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

THE "WARRANTY AND SERVICE POLICY QUESTIONNAIRE" ATTACHED IN THE BIDDER'S EVALUATION REPORT MUST BE COMPLETED IN ITS ENTIRETY BY THE SUCCESSFUL BIDDER OR MANUFACTURER PRIOR TO DELIVERY OF THE PILOT MODEL. (SEE SECTION X6.5 OF BIDDER'S EVALUATION REPORT).

6.6 EVALUATION COMMITTEE REQUIREMENTS

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

6.7 UNSPECIFIED ACCESSORIES & FEATURES

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

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

7.0 SPECIFICATIONS OF THE QUOTED UNIT ARE AS FOLLOWS:

8.0 SPECIFICATIONS - CAB & CHASSIS

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

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

8.2 Cab to Axle Dimension: Approximately 126 inches usable

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

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

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

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

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

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

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

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

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

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

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

8.9 Fuel Tanks:

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

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

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

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

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

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

8.10 Electrical System:

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

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

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

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

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

8.10.3 **Alternator Capacity: 110 AMPS minimum with internal regulator.**

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

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

8.10.6 Auxiliary snow plow/salt spreader lighting package:

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

- 8.10.7 Manufacturer or successful vendor shall be required to make provisions for manufacture approved wiring and weatherproof disconnect plug (Weather Pac in line seven (7) pin connector - Part Number 12110751) with approximately three (3) foot "pigtail" to operate combination left and right turn/park lights/auxiliary headlights.**
- 8.10.7.1 Provisions for weatherproof disconnect plug should be located at lower left front grille-bumper area. All wiring connections to be weatherproof with wiring encased in wire looms. Exact location should be discussed with WVDOH representative before pilot review.
- 8.10.7.2 A 7-way trailer connection light socket to be mounted at rear of truck frame. Plug to be Cole Hersee Part No. 12081 or approved equal.
- 8.10.7.3 Manufacturer shall provide body builder circuit interface capability with connection plug to be located at rear of frame for body builder connection to stop, tail, and marker light circuits, ignition controlled auxiliary feed to ground to provide splice free chassis wiring integrity.**
- 8.10.7.4 Manufacturer shall provide body builder circuits – three (3) switches minimum shall be located in the dash instrument panel with one (1) weather protected body builder connection box or module located at the rear under cab. To have 20 amps per channel, 80 amp maximum output. The dash switches are to control the power module with LED backlighting.**
- 8.11 Power Train Overview:**
Lubricants for front axle hubs and differentials, automatic transmission, transfer cases, and all rear differentials shall meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and should have all plugs identified as synthetic or painted red.
- 8.11.1 Transmission: Allison 4500RDS 6 speed or equal shall be provided with manufacture transmission oil cooler**
- 8.11.1.1 Transmission torque capacity shall meet or exceed specified engine torque**
- 8.12 Driveline:
- 8.12.1 Should be Spicer 1810 series main/1710 Interaxle Model J400S driveline or equal.
- 8.13 Rear Axle:
- 8.13.1 To be:
 Dana Spicer D46-170P/R46-170D or equal
 Rockwell RT46-160-P
 Mack S440 (46,000 lb. with pump)

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

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

8.18.2 The wheel end to be equipped with outboard cast brake drums, and 15 degree tubeless steel wheels, hub piloted, 10 hole - 285.75mm bolt circle with 220mm two-piece flange nuts.

8.18.3 Front:

8.18.3.1 Wheels:

22.5 x 9.0, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 10,000 lbs. at a **maximum inflation pressure of 130 PSIG.**

Accuride part number 29039 or equivalent with 0.500 inch thick disc, non standard off set with steel hubs. **Preferred to be powder coated but shall have gray top coat.**

8.18.3.2 Tires: 31580R22.5 - 20 ply

8.18.4 Rear:

8.18.4.1 Wheels:

Shall be 22.5 x 8.25, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 7,500 lbs. at a maximum inflation pressure of 120 PSIG. Accuride part number 29169 or equivalent with 0.472 inch thick disc. **Preferred to be powder coated but shall have gray top coat.**

8.18.4.2 Tires: 11R22.5H

8.18.4.3 **The dual rear wheel/tire assembly shall have clearance between the tires, which permits the use of dual tire chains.**

8.18.5 **All wheels shall include wheel separators**

8.18.6 **Tires (No substitute. All tires shall be radials.)**

<u>Manufacturer</u>	<u>Front Tire</u>	<u>Rear Tire</u>
Goodyear	G-287MSA	G-244 MSD
Michelin	PILOT XZY-3	XDY-3

8.19 Steering:

8.19.1 Power steering: Dual integral or single integral type hydraulic power steering with right wheel power-assist cylinder.

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

- 8.22 Detail/Decorative Stripes with Logo:
- 8.22.1 Width: to be 2 inches
- 8.22.2 WVDOH Logo (to be supplied by WVDOH) is attached (black and white copy) and is approximately 7 inches tall by 7 inches wide. Area behind logo and within 2 inches of logo is not to be striped. Stripes should be cut to follow contour of logo, in lieu of straight cut.
- 8.22.3 Striping material to meet the requirements of ASTM D4956-91 Type V sheeting, a super high-intensity retroreflective sheeting consisting of microprismatic retroreflective elements. **The conspicuity sheeting must meet the requirement of NHSTA, DOT, 49CFR, Part 571 Federal Motor Vehicle safety standards for conspicuity sheeting and be "DOT approved".**
- 8.22.4 The sheeting for both applications above should not be more than .0008 inch thick having approximately 47,000 microprisms per square inch and **shall come with an aggressive high tack pressure sensitive adhesive, reflexite or equal.**
- 8.22.5 Upper stripe color: Dark Blue
- 8.22.6 Lower stripe color: Light Gold
- 8.22.7 Bidder should consult with the WVDOH on proposal for striping before inspection of pilot model.
- 8.22.8 Bidder should attach proposed paint plan with this bid. It should include chips or samples of proposed paints as well as a proposed striping detail on a cab silhouette sheet. Bidder may modify attached striping plan to fit his particular cab shape.
- 8.23 **Vendor must certify that the unit offered will meet or exceed the "Occupational Safety and Health Act of 1970" and subsequent amendments.**
- 8.24 Advertising: No visible decals or nameplates or painted on names representing the manufacturer or model number or trademark should appear on the exterior of the unit. Logos created through the stamping or casting process of manufacture are acceptable.
- 8.25 Preventive Maintenance and Operator's Training School
- 8.25.1 Manufacturers and/or dealers will be required to stage a thorough seminar on the subjects Preventive Maintenance and Operator Training. The seminar should be held at the Equipment Division.
- 8.25.2 To make the program complete, we need, in addition to the operating and service manuals, booklets and pamphlets explaining the Preventive Maintenance and Operator Training procedures to be used by the operators of this equipment.

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

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

9.0 SPECIFICATIONS – 304 STAINLESS STEEL COMBINATION DUMP/SPREADER BODY

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

9.1 Body capacity to be minimum 14 cubic yards water level

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

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

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

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

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

9.6 Dimensions:

9.6.1 Inside length of body not to exceed 174 inches

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

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

9.6.4 Body spacing from cab – 4 inch minimum

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

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

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

- 9.6.8 Cab protector – 24 inches x 94 inches approximate with adequate clearance for cab mounted air horns
- 9.7 Cab protector to be sloped rearward for drainage purposes
- 9.8 Construction of the body sides, front, head, and tailgate shall conform to the following minimum specifications:**
- Steel types shall be 201 stainless steel (unless otherwise noted)**
- 9.8.1 Floor: 1/4 inch thickness 304 stainless steel or abrasion resistant AR400 steel 3/16 inches thick
- 9.8.2 Sides: 7 gauge 3/16 inch thickness 201 stainless steel
- 9.8.3 Tailgate plate: 7 gauge 201 stainless steel
- 9.8.4 Top rail: 7 gauge 201 stainless steel
- 9.8.5 Cab protector: 10 gauge 201 stainless steel
- 9.8.6 Inside formed longitudinal shall be constructed of 1/4 inch 201 stainless steel and outside formed long sill shall be 7 gauge 201 stainless steel with overall combined height of 12 inches minimum including internal stainless steel gussets. A 1/4 inch thick 201 stainless steel fish plate shall be welded to the outside surface outside long sill above the rear hinge.**
- 9.9 All welding inside the body should be continuous, not skip welded. All rails and posts to be continuous welded.
- 9.10 The rear corner posts should be full length, one (1) piece construction.
- 9.11 Cab protector sides, formed with gussets, should extend forward approximately 24 inches. Clearance above highest point of cab should be three (3) inches minimum**
- 9.12 The body shall be a unibody design – no crossmembers**
- 9.12.1 The body shall have one (1) piece sides constructed of 7 gauge 201 stainless steel**
- 9.13 The floor constructed of 3/16 inch AR400 with five (5) inch round floor to side radius
- 9.15 An integrated center conveyor shall provide the ability of the body to convey granular materials with the body down and have the following features:**

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

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

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

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

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

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

- 9.24.7 All steel components to be finished with manufacturer's recommended **rust preventative system to include a minimum of adequate primer and paint.**
- 9.24.8 Steel cab protector mounted triple bend wind deflector to be provided.
- 9.24.9 **Load covering system to be provided with minimum of 18 oz. black vinyl tarp to fit 14 foot 6 inch body.**
- 9.24.10 **Load covering system shall be supplied with all necessary hardware and delivered to the West Virginia Division of Highways as a complete and operational unit.**
- 9.25 Paint:
- 9.25.1 **There shall be no paint on the 304 stainless steel surfaces of the body.**
- 9.25.2 All 304 stainless steel surfaces are to be unpainted and cleaned with an acid wash solution to remove carbon burning from the stainless steel welds.
- 9.25.3 Non-304 stainless steel components on the body to be painted aluminum.
- 9.25.4 Front bumper: Martin Senour Dark Blue #82-5802 or similar (See drawing)
- 9.26 Detail/Decorative Stripes with Logo:
- 9.26.1 Tailgate and body sides to be outlined with red/silver pre-stripped conspicuity retroflective weather resistant striping. **Successful bidder shall consult with WVDOH of proposed striping before review of pilot model.**
- 9.26.2 Bidder to describe proposed method of painting in the compliance report and location of body handrails, handle, grip strut walk rail, and overall body characteristics.
- 9.26.3 WVDOH logo (to be supplied by WVDOH) is attached (black and white copy) and is approximately 7 inches tall and 7 inches wide. Area behind logo and within 1/2 inch of logo is not to be striped. Stripes should be cut to follow contour of logo, in lieu of straight cut. **Striping shall be installed.**
- 9.26.4 Striping material to meet the requirements of ASTM.D4956-91 Type V sheeting, a super high-intensity retroflective sheeting consisting of microprismatic retroflective elements. **The conspicuity sheeting must meet the requirement of NHSTA, DOT, 49CFR, PART 571 Federal Motor Vehicle safety standards for conspicuity sheeting and be "DOT" approved.**

- 9.26.5 The sheeting for both applications above should not exceed more than .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.**
- 9.26.6 **Striping as specified shall be installed by the successful bidder.** Bidder should consult with the WVDOH representative on proposal for striping before pilot review.
- 9.27 **The body shall include all other features considered as standard, but not specifically addressed above.**
- 9.28 **Vendor must certify that unit offered will meet or exceed the "Occupational Safety and Health Act of 1970" and subsequent amendments.**

10.0 SPECIFICATIONS – CENTRAL HYDRAULIC SYSTEM

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

Pre-wet system:

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

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

10.1 Pump System:

- 10.1.1 Pump: Variable volume pressure compensated load sensing axial piston type.
- 10.1.2 Front mounting flange and main housing/case to be of cast iron construction. Inlet and outlet port section to be of high strength ductile iron with SAE split flange or orb type porting.

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

10.1.10 **Pump Output:**

Shall be capable of providing hoist cylinder extension required

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

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

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

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

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

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

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

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

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

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

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

- 10.3.14.4 **To guarantee safe operation of the vehicle, plow lift must be immediate.**
- 10.3.14.5 **If solenoid valve coils are used, then they shall have manual override capabilities if needed for continued use when coils fail.**
- 10.3.14.6 **Manifold valve shall include a pressure test point for use when checking balance pressures.**
- 10.3.14.7 **Pressure test point must be capable of tapping into the system at pressures of 5000 PSI.**
- 10.3.15 Auxiliary equipment drive circuit control section to be 3-way three position spring centered solenoid operated motor spool. This circuit to be separate and distinct from the spreader control system.
- 10.3.15.1 **Flow limiting control system preset to provide a maximum of 22 GPM at a system load pressure of 2200 PSI. Pump shall be capable of supplying this flow rate with engine speed of 1400 RPM.**
- 10.3.15.2 **An inline mounted control valve may be supplied for this operation in place of directional control valve section. If supplied, proper interconnections and venting of load sense network system shall be provided.**
- 10.3.15.3 Pressure line to be ¾" SAE 100R2 hose and manifold mounted at rear of chassis and equipped with Parker Hannifin SH6-62 quick disconnect coupler and protective metal plug. Mating nipple SH6-63 with protective cap to be supplied. Mounting location to be determined at time of pilot model review.
- 10.3.15.4 **Name of manufacture and model number of proposed directional and auxiliary circuit valves shall be submitted with bid documents.**
- 10.3.16 **Directional control valve assembly must be located in a combination tank/valve stainless enclosure assembly to protect the hydraulic tank/valve from the elements. Reservoir (tank) to be approximately 40 gallon capacity.**
- 10.3.17 Pre-Wet Circuit:
- 10.3.17.1 **A separate circuit shall be provided to control an add-on pre-wet system**

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

10.5 Spreader Control System:

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

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

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

10.9 Hoses and Fittings:

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

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

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 EQUIPMENT DIVISION

BIDDER'S EVALUATION REPORT

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

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

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

Reference Requisition No.: 7011ec18

Bidder's Name: Worldwide Equipmwnt

Address: P.O.Box 171 Jane Lew WV 24720

Telephone Number: 800-879-3039

Years Bidder has been registered to do business with the State of West Virginia: 20 YRS.

Years Company has been an authorized dealer for proposed unit: 31 YRS.

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

X4.2 DELIVERY:

X4.2.1 Delivery date of completed representative unit: 120 Calendar Days After
 Receipt of Purchase Agreement by successful vendor

X4.2.2 Guaranteed delivery date of balance of completed units: 240 Calendar Days After
 Receipt of Purchase Agreement by successful vendor

NOTE: Vendor should type Bidder's Evaluation Report

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

X5.0 AWARD CRITERIA;

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

153,233.⁰⁰ per unit

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

153,691.⁰⁰ per unit

3 year extended is for basic warranty and does not include extended engine wsarranty to 3 years.

X6.0 SPECIFICATIONS - GENERAL

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

2012 Mack GU713 Calender year 2012

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

If not, why? _____

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

YES NO

Will the required Equipment Preventive Maintenance Form (Section X6.2 of Bidders Evaluation Report) be provided upon inspection of the pilot unit?

YES NO

X6.2
2-10-00

EQUIPMENT PREVENTATIVE MAINTENANCE QUESTIONNAIRE

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

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

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

Please see all attached and specs on warranty

X6.5 WARRANTY AND SERVICE POLICY QUESTIONNAIRE

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY AND SUBMITTED WITH YOUR BID.

(If additional lines are needed, make copies of form.)

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

See attached Mack Warranty EGorms

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

Worldwide Equipment Jane Lew, Princeton, Huntington
Charleston Prestonsburg Ky

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

Summersville 750,000 Jane Lew 600,000 Charleston 250,000
Huntington 675,000 logan 225,000 Princeton 800,000

Delivery can be made by the nearest location

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

- A. Terms: Net 30 Manufacturer's published list price less: 13.5 flat % discount
- B. Terms: Net 60 Manufacturer's published list price less: _____ % discount
- C. Terms: Net 90 Manufacturer's published list price less: _____ % discount

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

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

- A. Shop Rate \$ 114.00 per mechanic hour
- B. Travel Time Charge \$ _____ per mechanic hour
(Specify if one-way) _____; port to port _____
- C. Mileage Charge \$ _____ per vehicle mile owner must transfer to f
(Specify if one-way) _____; port to port _____ acility for repairs
- D. Field Mechanic Rate \$ _____ per mechanic hour
- E. Specify period of time that prices are in effect: thru December 2011
- F. Surcharge for miscellaneous items: \$20.00 min of 5% labor

X6.6 EVALUATION COMMITTEE REQUIREMENTS

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

X6.7.2 Are all standard safety features that are required by Federal and State statutes of law included? x 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: 2012 Mack Model: GU713

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

X8.1 GVWR Rating: 64,180 Lbs.

X8.2 Cab to Axle Dimensions: 127 Inches usable

X8.2.1 After frame length: 62 Inches

X8.3 Wheelbase: 214 Inches and is set forward design for snowplow application for various plows x YES NO

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

X8.3.2 BBC (Bumper to Back of Cab) 116.5 Inches excluding frame extension

X8.4 Frame:

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

X8.4.1 Frame material 120,000 PSI yield strength. Is frame extension a "parent rail" material?
305-5-2011 YES NO

X8.4.2 RBM: 2,820,000 million Ins/Lb. per rail Is an integral frame and frame extension Included YES NO

X8.4.2.1 Where engine and radiator adjustments are required, 2,820,000 million in lb. per rail (RBM).

X8.4.3 Is main frame and any required liners straight channel or offset channel, full length
305-5-11

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

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

Does it provide easy service accessibility? YES NO

X8.4.5.1 Front frame mounted tow hooks YES NO

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

X8.5 Cab:

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

Ambient temperature display for outside temperature YES NO

Is hood a tilt hood YES NO

Fenders steel and/or fiberglass YES NO

Is rear air bag suspension provided YES NO

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

- X8.5.1 Cab door locks, both doors, keyed alike YES NO
- X8.5.2 Dual sun visors YES NO
- X8.5.3 Arm rests, both sides YES NO
- X8.5.4 Seats: Fully adjustable air ride high back with head rest, cloth covered both left hand and right hand sides YES NO
- Clearance between seats 23 inches**
- X8.5.5 Floor mats: Rubber floor mats throughout cab area with non-absorbent backing under mats YES NO
- X8.5.6 Turn signals: Manufacturers standard with hazard warning switch YES NO
- X8.5.7 Heater and defroster: Fresh air type, heaviest duty YES NO
- X8.5.8 Windshield wipers and washers: Manufacturer's heaviest duty "artic type" with intermittent feature with manufacturers largest reservoir filled with antifreeze type solvent YES NO
- X8.5.9 Instruments: Are all instruments dash mounted except where specified otherwise?
 YES NO
 Are all standard instruments supplied, including but not limited to the following:
 YES NO
- X8.5.9.1 Coolant, oil pressure gauges, to have both dial type readout and either an audible or visual alarm to warn operator when safe operating conditions are exceeded YES NO
- X8.5.9.2 Voltmeter or ammeter YES NO
- X8.5.9.3 Engine RPM tachometer YES NO
- X8.5.9.4 Speedometer with odometer YES NO
- X8.5.9.4.1 Are provisions for dual speedometer leads made available**
 YES NO
- X8.5.9.5 Primary air pressure gauge YES NO
- X8.5.9.6 Auxiliary air pressure gauge YES NO
 Is it combined with primary air pressure gauge YES NO
- X8.5.9.7 Air filter manufacturers heaviest duty dual element type that meets all requirements of extended engine warranty YES NO

- X8.5.9.8 Does unit have front air intake YES NO
Is an air actuated or cable control valve provided to enable operator to divert air intake to engine compartment while in snow plowing application
 YES NO
- X8.5.9.9 Is air filter restriction indicator gauge dash mounted YES NO
- X8.5.9.10 Engine hourmeter controlled by engine operation YES NO
- X8.5.9.11 Fuel level reading YES NO
- X8.5.9.12 Parking brake dash controlled with indicator light YES NO
- X8.5.9.13 Manufacturers best sound/weather insulation package for proposed cab
 YES NO
- X8.5.9.14 Outside temperature control with in cab digital read out YES NO
- X8.5.10 Rearview Mirrors:
X8.5.10.1 West coast type power adjustable with convex spot mirror YES NO
Size: Aerodynamic Equal to 16&7
- X8.5.10.2 Both mirrors heated type with stainless steel composite powder coated
 or aluminum hardware with corrosion resistance, heads, and fasteners
 YES NO
- X8.5.11 Grab Handle: Right hand and left hand sides, internal or external mounting to rear of door opening
 YES NO
Are inside handles featured YES NO Is one (1) outside, left, mounted grab handle with non-slip insert for bed aggregate inspection furnished
only outside
- X8.5.12 Air horns, with snow shields if cab mounted, with adequate clearance for future installation of body dump cab protector
 YES NO
Does it have single air horn used without snow shield if mounted downward on frame rail under hood
 YES NO
- X8.5.13 Unit includes lockable hand operated throttle control or electronic control for idle up and idle down for hydraulic flow rate
 YES NO
- X8.5.14 Will manufacturer provide for stationary grille or grille with cutout area to allow tilt hood to clear snow plow mount
 YES NO
Is stone/gravel guard provided
 YES NO
- X8.5.15 Air conditioning: Manufacturers fresh air type heaviest duty with APADS or equal RCD system including replaceable fresh air filter
 YES NO

X8.5.16 Radio: AM/FM stereo with weatherband radio feature YES NO

X8.5.17 Glass: Manufacturers tinted safety glass (all locations) YES NO

X8.5.17.1 Dual power windows YES NO

X8.5.18 Manufacturers engine cover or dash mounted extended two (2) cup drink holder YES NO

X8.5.19 Front mudflaps manufacturers standard for unit bid YES NO

X8.5.20 Emergency triangle warning kit, with hold down stowed (fastened) in the cab YES NO
 Manufacturer & Model: Kidde 27RS315

X8.5.21 Manufacturers tilt steering column with cruise control feature YES NO
 OR cruise control feature on dash YES NO
 Locking hand operated throttle steering wheel YES NO
 Diameter: 18 inches

X8.5.22 Fire extinguisher -- rechargeable with vehicle mount. Mounted in the cab for easy and quick access YES NO
 Manufacturer & Model: Kidde 34RC4107

X8.5.23 List any accessories not indicated above but are included in the manufacturer's standard cab

X8.5.24 If you are the successful vendor, will you provide WVDOH with complete list of all filters required for normal maintenance on proposed unit. YES NO

X8.6 Engine:
 Is engine diesel YES NO 11 liter
 Peak HP 395 at 1400 RPM Torque 1560 lb ft. at 1200 RPM
 Is engine compliant and certified to meet US EPA 210 Emission Standards without using Federal EPA credits YES NO
 Manufacturer: Mack MP7 Model: MP7

X8.6.1 Will engine manufacturer make provisions for front mounted hydraulic pump to crankshaft pulley YES NO
 Manufacturer & Model: MackMP7 Series
Series 1350 se
ries flange

- X8.6.1.1 In block engine heater 1500 watt YES NO
- X8.6.1.1.1 Is electrical cable from the heater to plug one piece and waterproof, located left side under driver door YES NO
- X8.6.1.2 Fuel heater/water separator provided inside of engine compartment YES NO
 Manufacturer: Artic Fox 1-7048TEH
- X8.6.1.2.1 Engine fuel system equipped with primer pump YES NO
- X8.6.1.3 Exhaust:
- X8.6.1.3.1 Single vertical exhaust pipe with underbody muffler that will meet all Federal noise abatement requirements YES NO
- Exhaust to the passenger (right) side of unit YES NO
- X8.6.1.3.2 Is tail pipe shielded or insulated to protect personnel from burns when entering or exiting the cab YES NO
- The shield is 180 degrees to 360 degrees and of non-rustable material such as stainless steel or aluminum YES NO
- Manufacturer: Donaldson
- X8.6.1.3.3 Exhaust pipe with rain cap or exhaust turn out YES NO
- X8.6.2 Jacob's Engine Brake Cummins C-Brake Mack Power Leash compression and exhaust or equal _____
- X8.6.3 Are engine components facing wheel areas, on both sides, and the areas to the rear of wheels shielded by means of rubber skirts supported by easily removable steel rods YES NO
- X8.6.4 Engine oil pan is zinc nickel plated aluminum or non-corrosive coated
- X8.7 Clutch: 8.7-8.7.4 were deleted on addendum #2
- X8.7.1 Externally lubricated and manually adjusted with torque limiting clutch brake YES NO
- X8.7.2 Clutch adjustment set to specifications prior to delivery to the Department YES NO
- X8.7.3 Is clutch dual plate ceramic clutch YES NO
- Size: _____ inch Kwik adjust (manual feature) YES NO
- Manufacturer and model: _____ with 7 spring damper YES NO

- X8.7.4 Does clutch meet or exceed peak engine torque YES NO
- X8.8 **Cooling System: Is it capable of maintaining engine temperature within the manufacturer's recommended range during continuous operation** YES NO
- X8.8.1 Does the system incorporate a thermostat and bypass for warm up YES NO
- Is it filled with permanent type Dex Cool extended life or equal antifreeze rated to a -30° F or lower** YES NO
- Is it a low silicate type antifreeze for diesel engines only YES NO
- X8.8.2 Is it the largest factory available engine cooling capacity compatible with engines and transmission referenced and for continuous high engine output under extreme temperatures and/or operating conditions due to prolonged snow plowing operations in low gears YES NO
- X8.8.3 Is unit fitted with provisions for visually monitoring coolant without necessitating removal of the cap from the radiator or expansion tank YES NO
- X8.8.4 **Does the radiator mounting provide adequate clearance to facilitate the installation of a crankshaft driven PTO drive shaft** YES NO
- X8.8.5 **Distance between the extreme tip of the radiator fan blade and the centerline of the crankshaft to insure adequate clearance for PTO drive shaft:** 5 1/2 inches
- X8.8.6 **Radiator and heater silicone hose manufacturer and model:** Thermopol Radiator + Heater
305541
- X8.9 Fuel Tanks:
- X8.9.1 Safety type aluminum fuel tanks as required by FMVSS YES NO
- X8.9.2 **Single aluminum usable:** 116 U.S. gallon; **frame mounted** YES NO
- X8.9.3 Driver and passenger entrance steps-grated self cleaning safety step YES NO
- X8.9.3.1 Are all edges banded (skirting) on the outer perimeter YES NO
- X8.9.3.2 Top of first step above ground: 20.5 inches
- X8.9.4 **Is a fuel draw system provided that meets all Federal 2010 emission standards** YES NO
- X8.10 Electrical System:
- X8.10.1 Type: Manufacturer's 12 volt negative ground system with manufacturers radio interference Suppression YES NO
- X8.10.1.1 Circuit breaker equipped, in easily accessible location, weatherproof YES NO

- X8.10.2 Three (3) or four (4) heavy duty – 12 volt batteries, maintenance free with sealed terminals YES NO
- X8.10.2.1 Reserve capacity: 1000 minutes @ 80 degrees F
- X8.10.2.2 Cold crank AMPS: 3000 total @ 0 degrees F
- X8.10.3 Alternator capacity: 130 AMPS with internal regulator YES NO
- X8.10.4 Wiring: Heavy duty hypalon type or equal in heavy duty sheathing, bundled with lacing cords or non-metallic tie straps YES NO
- X8.10.5 **Lighting: Are provision made available for all required lighting on completed unit (number, location, and color) to conform to the West Virginia Motor Vehicle Code** YES NO
- X8.10.6 Auxiliary snow plow/salt spreader lighting package YES NO
- X8.10.6.1 Will truck vendor provide rear tail lights YES NO
- Truck vendor will provide 3 feet of wiring bundled at the end of the frame for body vendor hook up of tail lights and etc. in the dump bed body YES NO
- X8.10.7 Will manufacturer or successful vendor make provisions for manufacture approved wiring and weatherproof disconnect plug YES NO
- Manufacturer and Model: Delphi 12020829
- seven (7) pin connector YES NO with 3 foot "pigtail" to operate combination left and right turn/park lights/auxiliary headlights YES NO
- X8.10.7.1 Are provisions for weatherproof disconnect plug located at lower left front grille-bumper area YES NO
- All wiring connections weatherproof with wiring encased in wire looms YES NO
- X8.10.7.2 Is a 7 way trailer connection light socket mounted at rear of truck frame YES NO
- Manufacturer and Model: Stay Dry #16-724
- X8.10.7.3 Has manufacturer provided body builder circuit interface capability with connection plug to be located at rear of frame for body builder connection to stop, tail, and marker light circuits, ignition controlled auxiliary feed to ground to provide splice free chassis wiring integrity YES NO

X8.10.7.4

Has manufacturer provided body builder circuits – three (3) switches

 YES NOlocated in the dash instrument panel with one (1) weather protected body builder connection box or module located at the rear under cab YES NO20 amps per channel, 80 amp maximum output YES NODo dash switches control the power module with LED backlighting YES NO

X8.11 Power Train Overview:

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

all plugs identified as synthetic or painted red

 YES NO

X8.11.1

Transmission: Allison 4500 rdstransmission oil cooler YES NO

X8.11.1.1

Does transmission torque capacity meet or exceed specified engine torque

 YES NO

X8.12 Driveline:

X8.12.1

Manufacturer and Model: Spicer 1810 hd

X8.13 Rear Axle:

X8.13.1

Manufacturer and Model: Mack S440-46

X8.13.2

Is each unit equipped with driver controlled main locking differential in forward and rear axle that is manually cab controlled.

 YES NO

X8.13.3

Ratio: Does gear ratio determined give the vehicles the capability of a top speed of approximately 70 MPH

 YES NO

If not 70 MPH, please specify _____ MPH

X8.13.4

Is housing aluminum or other lightweight material

 YES NO

X8.13.5

Rear wheel seals: Stemco

X8.13.6

Drain plug, magnetic

 YES NO

X8.14 Front suspension:

X8.14.1

Capacity at ground each front spring 10,000 lbTotal spring capacity 20,000 lb.

- X8.14.2 Are the front spring pins or bearings/bushing furnished with 360 degree grease grooves to insure adequate lubricant penetration YES NO
- X8.14.3 Are spring hangers heavy castings with sufficient pin and bearing surface to render trouble free service YES NO
- X8.15 Rear suspension: Mack s440-46,0001b
- X8.16 Front Axle:
- X8.16.1 Capacity: 20,000 lbs.
- X8.16.1.1 Does the front axle, drag links, and tie rods have grease zerks installed YES NO
- X8.16.2 Heavy duty shock absorbers YES NO
- X8.16.3 Oil lubricated front wheel seals YES NO Manufacturer: FAG Grease Sealed
- X8.16.4 Does unit provide adequate tire clearance at maximum turning angles YES NO
- X8.17 Brakes
- X8.17.1.1 Type: Full air, with manufacturers ABS in compliance with the most current FMVSS requirements YES NO
- X8.17.2 Compressor: Manufacturer and Model: Meritor 318 18.7 cu. ft.
- X8.17.3 Service Brake Size:
- X8.17.3.1 Front: 16.5 *6 "S" cam OR power front disc brake system providing equal performance
- X8.17.3.2 Quick change type single OR double anchor pin if drum type brakes
- X8.17.3.3 Rear: 16.5 *7 "S" cam with quick change type single OR double pin
- X8.17.3.4 Are all brake chambers sealed brake chambers with epoxy exterior coat on front and rear Chambers YES NO
- Manufacturer: MGMN
- X8.17.4 Do drum brakes have automatic slack adjusters and are clearance sensing type only, with adjustment on application of the brake YES NO
- X8.17.5 Parking Brake: Rear wheel spring type – severe service spring brakes YES NO
- Manufacturer and Model: MGM TR-TS
- X8.17.5.1 Does parking brake provide modulated emergency braking via the foot valve in the event of a rear service system failure YES NO

X8.17.6 Air dryer with heater 28 inches above road serviceManufacturer and Model: Bendix AD9with spin on desiccant cartridge or equal YES NOIs the installation made in concurrence with the air compressor manufacturer's recommendations YES NOX8.17.6.1 Are all electrical connectors for drain valve and air dryer covered with heat shrink material or have sealed connections YES NOX8.17.7 Manufacturer's standard air tanks for service brakes YES NOAuxiliary tank for parking brake YES NOX8.17.8 Low air pressure warning light and buzzer YES NOX8.17.9 Rear service brake chambers and spring brake chambers mounted to provide adequate clearance for tire chains and backing into bituminous paving machines YES NOFactory installed YES NOX8.17.10 Brake dust covers installed on all wheels YES NOX8.17.11 Unit equipped with hand control valve, tractor protection valve, with provisions for installation of glad hands at rear of truck to enable unit to pull air brake operated equipment trailer YES NOX8.17.11.1 Are glad hands recessed as not to stick out past the end of frame rails YES NO

X8.18 Tires and Wheels:

X8.18.1 Truck equipped with hub piloted steel disc wheels for tubeless tires YES NOX8.18.2 Wheel end equipped with outboard cast brake drums YES NO15 degree tubeless steel wheels, hub piloted, 10 hole -- 285.75mm bolt circle with 220mm two-piece flange nuts YES NO

X8.18.3 Front:

X8.18.3.1 Wheels: Size: 22.5*9.0
10 hole 285.75 mm bolt circle with 220 mm bore, tubeless steel disc YES NORated at 10,000 lbs. at a maximum inflation pressure of 130 PSIG.Manufacturer and Model: Hayes LemmerzWith 0.500 inch thick disc, non standard off set with steel hubs YES NO

Powder coated YES NO Gray top coat YES NO

X8.18.3.2 Tires: 31580r22.5 Ply 20

X8.18.4 Rear:

X8.18.4.1 Wheels: Size: 22.5 *8.25
 10 hole - 285.75 mm bolt circle with 220mm bore, tubeless steel disc
 YES NO

Rated at 7800 lbs. at a maximum inflation pressure of 120 PSIG

Manufacturer and Model: Hayea Lemmerz

With 0.472 inch thick disc YES NO

Powder coated YES NO Gray top coat YES NO

X8.18.4.2 Tires: 11R22.5

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

X8.18.5 All wheels have wheel separators YES NO

X8.18.6 Radial Tires:

Front Radial Tire: Manufacturer and Model: Goodyear G282

Rear Radial Tire: Manufacturer and Model: Goodyear G291

X8.19 Steering:

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

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

Manufacturer: Ross Sheppard

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

Manufacturer and Model: ZF lenkystous

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

X8.19.5 Power steering reservoir:
 "Remote mounted" YES NO
 Capacity: 4 qt. Filter is easy to remove and replat YES NO

X8.19.6 Is the remote filter factory mounted, certified, and engineering approved in conjunction with the appropriate pump YES NO

X8.20 Features considered as standard equipment but not addressed:

X8.21 Paint: Describe proposed method of painting:

Mack high fgloaa, urethane base coat w/o clear coat

X8.21.3 Wheel Paint: powder Coat

X8.22 Detail/Decorative Stripes with Logo:

X8.22.1 Width: 4 inches

X8.22.2 Will WVDOH logo area comply with 8.22.2 of specification YES NO

X8.22.3 Does conspicuity striping material provided meet requirements of Section 8.22.3 through 8.22.8 of specification YES NO

X8.22.4 Does sheeting meet specification as stated is 8.22.4 YES NO

Does it come with aggressive high tack pressure sensitive adhesive YES NO
 Manufacturer: Reflexite

X8.23 Does unit offered meet or exceed ³⁹⁴⁵¹ "Occupational Safety and Health Act of 1970" YES NO

X8.24 Does unit conform to the advertising guidelines YES NO

X8.25 Preventive Maintenance and Operator's Training School

X8.25.1 Will a preventive maintenance and operator's training seminar be provided YES NO

Manuals _____ (OR) CD

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

Describe agenda based upon the needs of the WVDOH

X8.25.3 Will you furnish all training aids; i.e. videos, projectors, etc. required in conducting the training YES NO

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

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

Bidder: ACE TRUCK EQUIPMENT CO.

Address: 1130 NEWARK RD. ZANESVILLE, OH 43701

Telephone Number: 740-453-0551

Years company has been an authorized dealer for proposed unit: 14 years

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

HENDERSON MUNIBODY FF - WV2011

Is descriptive literature full describing proposed combination dump/spreader body attached to your bid proposal? X 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 WITH UNITS

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

X9.1 Body capacity: 14 cubic yards water level

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

X9.3 Front body bulkhead gauge Size: inch stainless steel *SEE ADDENDUM #2*

X9.3.1 Is head sheet vertical X YES NO

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

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

X9.6 Dimensions:

X9.6.1 Inside length of body: 174 inches

- X9.6.2 Inside width of body: 86 - inches wide to maximize capacity and lower the center of gravity
- X9.6.3 Outside width of body: 96 inches at the integral fenders
- X9.6.4 Body spacing from cab 4 inch
- X9.6.5 Basic side height: 44 inches (measure from the floor to top rail)
- Two (2) dirt shedding horizontal 10 gauge 201 stainless steel side braces on each side of body
X YES NO
- X9.6.6 Tailgate height: 52 inches (measure from the floor to top rail)
- X9.6.7 Body overhang: 12 inches (measure from center of hinge pin)
- X9.6.8 Cab protector: 24 inches x 94 inches with adequate clearance for cab mounted air horns
- X9.7 Cab protector sloped rearward for drainage purposes X YES NO

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

Steel types: 7 GAUGE 201 STAINLESS STEEL

- X9.8.1 Floor: inch thickness 304 stainless
OR
abrasion resistant AR400 inches thick
SEE ADDENDUM #2
- X9.8.2 Sides: 7 Gauge 3/16 inch thickness 201 stainless steel
- X9.8.3 Tailgate plate: 7 gauge 201 stainless steel
- X9.8.4 Top rail: 7 gauge 201 stainless steel
- X9.8.5 Cab protector: 10 gauge 201 stainless steel
- X9.8.6 **Is inside formed longitudinal constructed of ¼ inch 201 stainless steel**
 X YES NO
- Outside formed long sill of 7 gauge 201 stainless steel** X YES NO
- with overall combined height of 12 inches including internal stainless gussets**
 X YES NO
- A ¼ inch thick 201 stainless steel fish plate is welded to outside surface outside long sill above the rear hinge**
 X YES NO

- X9.9 Is all the welding inside the body continuous and not skip welded YES NO
 Are all rails and posts continuous welded YES NO
- X9.10 Are the rear corner posts full length, one (1) piece construction YES NO
- X9.11 Cab protector sides, formed with gussets, extending forward _____ inches
 Clearance above highest point of cab is _____ inches
 SEE ADDENDUM #2
- X9.12 Is body a unibody design – no crossmembers YES NO
- X9.12.1 Does the body have one (1) piece sides constructed of 7 gauge 201 stainless steel
 SEE ADDENDUM #2 YES NO
- X9.13 Floor constructed of 3/16 inch AR400 (steel) with 5 inch round floor to side radius
 YES NO
- X9.15 Is there an integrated center conveyor providing the ability of the body to convey granular materials with the body down YES NO
- X9.15.1 12.5 inches truck frame to body floor height for lower center of gravity and lower mounting height
 YES NO
- X9.15.1.1 Will wood products be used between truck frame and bed YES NO
- X9.15.2 Abrasion resistant steel 3/16 inch AR400 conveyor floor YES NO
- X9.15.3 2 inch diameter front and rear shafts with eight (8) tooth sprockets YES NO
- X9.15.4 Drive sprockets are double keyed to shaft YES NO
- X9.15.5 Conveyor width: 28 inches
- X9.15.6 ¼ inch 201 stainless steel formed inner sill which also forms the conveyor chain guard
 YES NO
- X9.15.7 7 gauge 201 stainless steel formed over long sills YES NO
- X9.15.8 3/16 inch AR400 conveyor bed floor YES NO
- X9.15.9 Formed 3/8 inch thick tie plate fully extend between the left and right side of body, located at rear of unit
 SEE ADDENDUM #2
 YES NO
- Will tie plate provide additional structural support at the rear of the body to prevent sagging at the rear corner posts YES NO

- X9.15.10 Are there two (2) inch diameter drive shafts with eight (8) tooth sprockets YES NO
Will sprockets be heat treated to 50 Rockwell C hardness YES NO
- X9.15.11 Will conveyor be driven with 25:1 planetary gearbox drive on the rear shaft with approximately 8 CIR hydraulic motor YES NO
Will motor have an integral conveyor speed sensor YES NO
- X9.15.12 Conveyor chain D667K pintle type (24,500lb. tensile/strand) with 1/2 inch x 1-1/2 inch conveyor crossbars spaced on every other link. YES NO
- X9.15.13 A 10 gauge 201 stainless steel bolt in pan under the conveyor to keep material off chassis frame YES NO
- X9.15.14 **Does the rear apron have a bolt on cover plate which allows for easy access to gear case** YES NO
- X9.16 Is tailgate have 7 gauge 201 stainless steel full perimeter dirt shredding boxed 7 panel with a 7 gauge 201 stainless steel 9 inch x 24 inch fully adjustable rear feed gate YES NO
- X9.16.1 Is rear feedgate lever operated or screw adjustable The feedgate capable of being positively locked into position YES NO
- X9.16.2 Is tail gate hinged at top, flame cut hardware, pork chop type off-set hardware to achieve maximum opening of tail gate YES NO
Does it have provision for pivoting at bottom YES NO
- X9.16.3 Flush mount, 1/2 inch flame cut 304 stainless steel tail gate pivots YES NO
- X9.16.4 Heavy duty offset hinge plates, one (1) inch flame cut 304 stainless steel YES NO
- X9.16.5 1/4 inch 304 stainless steel latch hooks with 3/8 inch 304 stainless steel latch plates YES NO
- X9.16.6 Full perimeter 201 stainless steel boxing with all horizontal edges sloped outward YES NO
- X9.16.7 **Are there three (3) 10 gauge 201 stainless steel sloped horizontal braces that are flush with perimeter boxing** YES NO
- X9.16.8 Stainless steel upper pins with grease zerks YES NO
- X9.16.9 **Latching action at the bottom of gate is operable by the truck driver without leaving the truck cab** YES NO

- X9.16.10 Is gate self aligning YES NO
- X9.16.11 Are tailgate lower latch pins 304 stainless steel 1 ¼ inch diameter YES NO
- X9.17 Does the body have the capability to convey to the rear with a stainless steel material spinner for distributing material** YES NO
- X9.17.1 Does it have a rear chassis mounted stainless steel spinner assembly that is adjustable left to right, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern.** YES NO
- X9.17.2 10 gauge stainless steel 20 inch diameter spinner disc to have replaceable fins YES NO
- X9.17.3 Are spinner disc vanes 304 stainless steel YES NO
- X9.17.4 Is spinner motor mounted on top of spinner disc YES NO
- Is it enclosed in removable material shedding protective cover YES NO
- X9.17.5 Is spinner disc driven by a 4-bolt 2.8 CIR hydraulic motor YES NO
- X9.17.6 Does spinner motor have an integral sensor capable of providing spinner disc feedback to the in-cab console YES NO
- X9.18 Hydraulic Hoist:
- X9.18.1 Is it trunnion mounted to bottom of dump body YES NO
- X9.18.2 Is telescopic hoist no less than N.T.E.A. Class 90 – Double Acting with 26 ton capacity YES NO
- X9.18.3 Is single hoist cylinder trunnion mount YES NO
- X9.18.4 Does hoist cylinder have three (3) stages with 140 inches of stroke YES NO
- Manufacturer and model: MAILHOT CS140-5.5-3DA
- X9.18.5 Does the cylinder have wear and corrosion resistant nitrided cylinder tubes YES NO
- X9.18.6 Cylinder warranty: 2 years
- X9.18.7 Does a five (5) degree oscillating cylinder collar protect the cylinder against side stress, if trunnion mount cylinder provided YES NO
- X9.18.8 Does the body have 6 inch x 8 inch x 1/2 inch formed angle rear hinge assembly installed in the truck chassis frame YES NO
- X9.18.9 Does the rear hinge assembly have cold roll steel hinge pins connecting to 2 1/2 inch hinge blocks with grease zerks YES NO

X9.19 Are the following features included:

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

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

Manufacturer and Model: TRUCK LITE 60250R STOP, TAIL ANDTURN

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

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

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

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

Strobe lights marked and switched from dash board location
 YES NO

Manufacturer and Part #: TRUCK LITE 60122Y

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

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

Manufacturer and Part # of Both Locations: TRUCK LITE 60122Y

Strobe lights marked and switched at dash board location
 YES NO

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

Manufacturer and Part #: TRUCK LITE 80800

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

Manufacturer and Model: TRUCK LITE 60122Y

X9.20.8 Lighted license plate bracket
 YES NO

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

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

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

- X9.21.3 Is the design and strength characteristics of entire body such that the unit structural members and hoisting system will not suffer any deformation, damage, or structural failure resulting from raising a distributed full payload X YES NO
- X9.22 Bumper:
- X9.22.1 Bumper formed out of 1/4 inch roll steel X YES NO
Weighs 10.20 lbs. per square foot
- X9.22.2 Bumper face covers all of truck frame (12 inches) with two (2) flanges of 2.25 inches top and bottom X YES NO
- X9.22.3 Overall width of bumper: 94 inches
- X9.22.4 Bumper straight across front from centerline of truck chassis 21 inches each side of Centerline, making bumper straight 42 inches long in center with ends swept back 30 degrees and 27 inches each side.
- X9.22.5 Bumper has two (2) access holes for utilization of tow hooks X YES NO
*IF NEEDED
- X9.22.6 Upper and lower flanges cut and welded solid at point where bumper is bent and ground off smooth X YES NO
- X9.22.7 Bumper mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side X YES NO
- X9.22.8 Mount angle 1/4 inch x 3 inches x 8 long with four (4) 5/8 inch holes X YES NO
- X9.22.9 Paint on front bumper: BLUE
- X9.23 Underbody Tool Box:
- X9.23.1 One (1) tool box mounted under body on right side frame rail X YES NO
- X9.23.2 Tool box 18 inches high, 24 inches wide, 18 inches deep cradled by a heavy steel angle frame attached to the truck frame X YES NO
- X9.23.3 Construction 14 gauge, A60 galvaneal steel with all seams welded X YES NO
- X9.23.4 Tool box has horizontal hinged fold down door X YES NO
- X9.23.5 Tool box door has cable or chain to hold the door in a horizontal position X YES NO
- X9.24 Load covering system electrically or air controlled X YES NO
- X9.24.1 Electric motor assembly includes 12 volt direct drive motor with forward and reverse action, cab mounted control switch, resettable circuit breaker X YES NO

X9.24.2 Pivot arm assembly constructed in a two (2) piece bent arm configuration of 1.25 inch 14 gauge steel tubing X YES NO

X9.24.3 Bent arm extensions constructed of 1 inch 14 gauge steel tubing

X9.24.4 Rear cross constructed of 1.25 inch 14 gauge steel tubing

X9.24.5 Pivot arm rests included X YES NO

X9.24.6 Underbody spring extension spring 12 inches in length attached to base of pivot arm and of body with articulating spring mounting bracket X YES NO

X9.24.7 All steel components finished with **manufacturer's recommended rust preventative system with adequate primer and paint** *SEE ADDENDUM #2* YES NO

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

X9.24.9 Load covering system provided with a 18 oz. black vinyl tarp to fit 14 foot 6 inch body X YES NO

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

X9.25 Paint: Describe proposed method of painting

X9.25.1 Will the 304 stainless steel surfaces of the body be "paint free" YES NO
X9.25.2 - X9.25.4 *SEE ADDENDUM #2*

SEE ADDENDUM #2

X9.26 Detail/Decorative Stripes with Logo:

Will striping and detailing **you provide** comply with requirements of Section 9.26.1 through 9.26.7 *SEE ADDENDUM #2* ✓ YES NO

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

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

X10.0 SPECIFICATIONS - CENTRAL HYDRAULIC SYSTEM

Is the central hydraulic system designed to operate the following:

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

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

Bidder: ACE TRUCK EQUIPMENT CO.

Address: 1130 NEWARK RD. ZANESVILLE, OH 43701

Telephone Number: 740-453-0551

Years company has been an authorized dealer for proposed unit: 14 years

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

CERTIFIED POWER SG03080009 WEST VIRGINIA SYSTEM MANUFACTURED AS REQUIRED FOR CONTRACT.

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 _____
(MANUALS ARE ALSO AVAILABLE ONLINE)

Describe: _____

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

Pre-Wet System:

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

Does system operate using a flow meter feedback circuit YES NO

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

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

Does central hydraulic system have a minimum two (2) year basis bumper to bumper warranty including parts and labor? YES NO

X10.1 Pump System:

X10.1.1 Pump: Variable volume pressure compensated load sensing axial piston type YES NO

X10.1.2 Front mounting flange and main housing/case of cast iron construction YES NO

Inlet and outlet port section of high strength ductile iron with SAE split flange porting or orb type porting YES NO

X10.1.3 Is suction port and associated plumbing sized to allow for minimum inlet restriction between the pump and the suction port on the reservoir? YES NO

Does installation comply with pump manufacturers allowable inlet condition specifications YES NO

Is suction plumbing equal to or greater than pump inlet or suction size YES NO

X10.1.4 Is pressure port of the SAE split flange or ORB type side mounted for direct bolt mounting of solenoid shut down valve assembly YES NO

X10.1.5 Case drain and load sense signal ports of the SAE O-ring type YES NO

Case drain line taken directly to tank without passing through the return line filter YES NO

X10.1.6 Input shaft has a minimum continuous torque rating equal to 200 % of the imposed load when pump is operated at maximum engine rpm, maximum displacement and system pressure YES NO

Is it minimum SAE "C" keyed YES NO

X10.1.7 Front input shaft bearing heavy duty ball or roller type designed for high axial and radial loading YES NO

Rear shaft bearing of the high speed and load sleeve type design YES NO

Bearings fully lubricated by flooded case oil YES NO

X10.1.8 Ramp/swashplate supported by pressure lubricated bearings of the rocker cam or saddle type for high piston load support YES NO

Ramp angle positioning by means of dual servo control cylinders for rapid pump response and precise pump output control YES NO

X10.1.9 Adjustable load sense and high pressure compensator control valve assembly of the full cartridge or of bolt on housing design for ease of replacement and repair X 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 300 PSI and a maximum standby pressure of 350 PSI for maximum efficiency.

If pilot control shifted valving is used, is it designed to be fully functional within this pressure range X 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 X YES NO

X10.1.10 Pump Output: Is it capable of providing hoist cylinder extension required X YES NO

Part number CS-140-5.5-3 DA - 10.5 gallons to fully extend but after filling 9.2 gallons is required to raise the cylinder:

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

Part number CS-140.5.5-3 DA - 10.5 gallons to fully extend 1.4 gallons to fill and 9.2 gallons to extend

5 GPM flow rate	<u> 66 </u>	seconds to raise
10 GPM flow rate	<u> 44 </u>	seconds to raise
15 GPM flow rate	<u> 33 </u>	seconds to raise
20 GPM flow rate	<u> 26 </u>	seconds to raise
25 GPM flow rate	<u> 22 </u>	seconds to raise
30 GPM flow rate	<u> 19 </u>	seconds to raise
40 GPM flow rate	<u> 16 </u>	seconds to raise

X10.1.11 Is the make and model bid in compliance with overall quality of construction, design, and performance of the pump supplied X YES NO

- X10.1.12 Pump:**
Manufacturer and Model: SAUER DANFOSS SERIES 45J FRAME 75CC
- X10.1.13 Is pump manufacturer's 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:** SPICER 1310 SERIES
- 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** 40 PSI at 40 GPM flow when in the switched open position
 Nominal valve rating 50 GPM at 3500 PSI
- X10.2.4 SAE #6 gauge port equipped with Parker Hannifin Model PD361 diagnostic coupling nipple and protective cap provided for pump output pressure testing to be installed in valve manifold and within an easily accessible mounting position** YES NO
- X10.2.5 Valve designed to protect the pump from damage when the system is shut down at high pressure and flow operation** YES NO
- X10.2.6 Valve manufacturer and model:** CERTIFIED POWER HF010809
- X10.2.7 Central control console mounted audio alarm and warning lamp indicating pump pressure/flow shutdown** YES NO
- X10.2.8 Warning lamp press-to-test light and incorporate a switching system into the automatic shutdown assembly to simulate low oil level, shut off pump output flow and test float switch wiring and connection** YES NO

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

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

- X10.3.14.3** Does plow balance system not alter the operation of any other hydraulic function or have an adverse effect on the performance of other hydraulically operated equipment including:
- | | | | | |
|---------------------|---------------|-----|--------------|----|
| Wing Plow | <u> </u> | YES | <u> X </u> | NO |
| Body Hoist | <u> </u> | YES | <u> X </u> | NO |
| Plow Hoist or Angle | <u> </u> | YES | <u> X </u> | NO |
| Spreader functions | <u> </u> | YES | <u> X </u> | NO |
- Are all normal operations of the plow lift/lower functions maintained without additional tasks X YES NO
- X10.3.14.4** Will plow lift be immediate to guarantee safe operation of the vehicle X YES NO
- X10.3.14.5** Are solenoid valve coils used X YES NO
- Will they have manual override capabilities if needed for continued use when coils fail X YES NO
- X10.3.14.6** Does manifold valve include a pressure test point for use when checking balance pressures X YES NO
- X10.3.14.7** Is pressure test point capable of tapping into system at pressures of 5,000 PSI X YES NO
- X10.3.15** Auxiliary equipment drive circuit control section 3-way three (3) position spring centered solenoid operated motor spool X YES NO
- Is the circuit separate and distinct from the spreader control system X YES NO
- X10.3.15.1** Flow limiting control system preset to provide 22 GPM at a system load pressure of 2200 PSI. Pump is capable of supplying this flow rate with engine speed of 1400 RPM
- X10.3.15.2** Is an inline mounted control valve supplied for this operation in place of directional control valve section YES X NO
- If supplied, is proper interconnections and venting of load sense network system provided NOT APPLICABLE YES NO
- X10.3.15.3** Is pressure line 3/4" SAE 100R2 hose and manifold mounted at rear of chassis and equipped with Parker Hannifin SH6-62 quick disconnect coupler and protective metal plug X YES NO
- Is mating nipple SH6-63 with protective cap supplied X YES NO
- Will mounting location be determined at time of pilot model review X YES NO

X10.3.15.4 Manufacturer and model of directional and auxiliary circuit valves:

SAUER DANFOSS MODEL PVG32

X10.3.16 Is directional control valve assembly located in a combination tank/valve stainless enclosure assembly to protect the hydraulic tank/valve from the elements YES NO

Capacity of reservoir (tank) 40 gallon

X10.3.17 Pre-Wet Circuit:

X10.3.17.1 Is a separate circuit provided to control an add-on pre-wet system YES NO

X10.3.17.2 Is hydraulic valve of the sectional type YES NO OR of the cartridge style contained in a manifold YES NO

X10.3.17.3 If manifold type valve is supplied, it it attached to the main valve assembly YES NO

X10.3.17.4 Is all wiring to pre-wet hydraulic circuit provided as part of the system contained in the bid YES NO

X10.3.17.5 Is wiring to the control console related to the rest of the pre-wet system (low level float, flow meter connection, etc.) provided as part of the pre-wet package at the time of pre-wet system install YES NO

X10.4 Spreader Control Valve Assembly:

X10.4.1 Are spinner and conveyor solenoid flow controls of the PWM proportional solenoid type and equipped with manual overrides YES NO

Are overrides manually adjustable over operating flow range in the event of electrical system failure YES NO

X10.4.2 Flow control circuits are pressure compensated YES NO

Provides spinner and pre-wet flow rate of 0-7 GPM and a conveyor flow rate of 0-15 GPM
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Pressure relief valve system limit circuits to 2200 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:** SAUER DANFOSS MODEL PVG32 MANIFOLD
- X10.5 Spreader Control System:
- X10.5.1 Dual flow, ground speed oriented spreader control system of the closed loop microprocessor based type with nonvolatile control memory YES NO
- X10.5.2 Automatic calibration and flexibility of programming YES NO
- X10.5.3 System is capable of operation in ground speed oriented closed loop conveyor feed back, open loop, manual set, blast and unload modes and fully functional in both front and rear material discharge selection**
 YES NO
- X10.5.4 Automatic switchover with display indication from closed loop to open loop operation in the event of loss of feed rate sensor signal is provided
 YES NO
- X10.5.5 Control console digital readouts capable of displaying actual application rate, vehicle ground speed, distance of spread route driven and total quantity of material spread
 YES NO
- X10.5.6 Programming and output cable connection for material and trip information printer and program uploading is provided
 YES NO
- X10.5.7 Control unit capable of accumulating display information up to 999,999 miles and 999,999 tons of discharged material
 YES NO
- X10.5.8 Console programming capable of selection, calibration and display of four (4) separate spread materials with independent application rates of each material capable of being set to fixed rates or to rate increments of a preset maximum application rate
 YES NO
- X10.5.9 A variable digital access code lockout for application rate selection and for system operating parameters is provided
 YES NO
- Is it a key switch YES NO
- X10.5.10 Backlighted switches and LCD screen utilized for on-board programming and for display readout and application rate selection**
 YES NO

- X10.5.11** Is material spread width selectable by no less than 10 position switch with minimum and maximum spinner speed totally programmable through entire flow range YES NO
- Is spinner speed capable of linking to ground speed for on-off control** YES NO
- X10.5.12** Does display enunciate error message and sound audio alarm when microprocessor system detects any loss of control or accuracy YES NO
- X10.5.13** Will system be fully functional at time of delivery YES NO
- X10.5.14** Is truck speed sensor compatible with type of speedometer drive system supplied on chassis YES NO
- X10.5.15** Is a built-in ground speed simulator provided either internal to the control or located in the control console YES NO
- X10.5.16** Are all components required for proper installation and operation of control system onto truck and spreader units supplied YES NO
- X10.5.17** Manufacturer and model of proposed control system :
- CERTIFIED POWER MODELSG51 WITH GL400
-
- X10.6** Central Control Console:
- X10.6.1** Mounted between seats within easy access of the driver YES NO
- X10.6.1.1** Warning light (bed raised) control console mounted YES NO
- X10.6.2** Will all wiring, valve control cables and electrical harness entry into cab and console sealed with grommets YES NO
- X10.6.3** Are remote control valve levers console mounted YES NO
- Are all levers clearly marked as to function and operation YES NO
- X10.6.3.1** Remote control levers to operate push-pull type cables with .250" diameter stainless steel rod ends YES NO
- X10.6.3.2** Is inner cable member 18-8 stainless steel armor wrapped construction with a low resistance nylon liner and polyethylene covered tempered steel wire conduit YES NO
- X10.6.3.3** Is cable to valve connection of the weather resistant bonneted type YES NO
- X10.6.3.4** Hoist control lever OSHA compliant (hoist interlock) YES NO
- X10.6.4** Are central console or dash mounted rocker switches with indicator lamps provided for strobe lights, spreader light and plow lights isolated from all hydraulic system control circuits YES NO

- X10.6.4.1 Are interconnections and cables installed and ready for operation YES NO
- X10.6.4.2 Is hydraulic system automatic shutdown system and control switching relay controlled YES NO
- X10.6.4.3 Relay(s) mounted within the cab YES NO
- X10.6.4.4 An access plate to internal wiring is provided YES NO
- X10.7 Hydraulic Reservoir:
- X10.7.1 Tank/valve enclosure flex mounted to the chassis frame rail YES NO
- X10.7.2 Tank constructed of 7 gauge³⁰⁴ stainless steel YES NO
- X10.7.3 Tank equipped with a combination oil level sight glass and thermometer YES NO
- X10.7.4 Tank equipped with a pressurized ten (10) micron filter/breather cap with removable 500 micron Strainer YES NO
- X10.7.5 Is an internal stainless steel baffle provided within the tank YES NO
- X10.7.6 Tank stenciled with **minimum of 1 1/2" high "Hydraulic Oil"** YES NO
- X10.7.7 Tank level switch connection "SO" type wiring and flange mounted within the tank/valve enclosure to protect it from the elements YES NO
- X10.7.8 Reservoir supply suction port 2 inches NPT and system report port 1.25 inches NPT
- X10.8 Filtration:
- X10.8.1 Manufacturers standard filtration to adequately protect the hydraulic system from damage YES NO
- X10.8.2 Return line filter isolated from reservoir by a full flow non-restrictive type quarter turn brass ball valve if filter not installed in reservoir NOT APPLICABLE YES NO
- X10.8.3 Each filter equipped with a differential pressure switch to indicate filter clogged condition by means of a console mounted indicator lamp YES NO
- X10.8.4 **One (1) extra replacement filter for each assembly is provided for each truck** YES NO
- X10.8.5 Filter assemblies positioned as close to reservoir as possible and in an easily accessible service location YES NO

X10.9 Hoses and Fittings:

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

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

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

- X10.11.2 Start-up and initial run of hydraulic system, checking for leaks, excessive heat, system efficiency** YES NO
- Will you replace any defective component** YES NO
- Will you cover any defects discovered at time of plow installation if equipment is not available at time of initial test of plow circuits** YES NO
- X10.11.3 Refill reservoir to the 40 gallon operating level** YES NO
- X10.12 If any hydraulic lines are located within 10 inches of exhaust system are they metal lines and insulated** YES NO
- X10.13 Are detailed component specifications, product literature, system component layout drawing with bill of materials and full functional hydraulic system schematics in accordance with JIC and ANSI-Y32 format attached with your bid** YES NO
- X10.14 If successful vendor, will you provide WVDOH with a complete list of all filters required for normal maintenance on proposed unit** YES NO
- X10.15 Explain your training sessions with each purchase order covering the operation, maintenance, trouble shooting and calibration/programming of the hydraulic system and spreader controls and where will they be held:**
 THREE (3) ONE (1) DAY TRAINING CLASSES PER PURCHASE ORDER.
-
-

State of West Virginia VENDOR PREFERENCE CERTIFICATE

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

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

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

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

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

Bidder: Worldwide Equipment
Date: 5-2-11

Signed: [Signature]
Title: Munjal Gaba

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

RFQ No. _____

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

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

DEFINITIONS:

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

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

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

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

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Worldwide Equipment

Authorized Signature: [Signature] Date: 5-2-11

State of Kentucky

County of Fayette, to-wit:

Taken, subscribed, and sworn to before me this 2nd day of May, 2011.

My Commission expires 4/17/13, 2013.

AFFIX SEAL HERE

NOTARY PUBLIC [Signature]



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

Request for Quotation

RFQ NUMBER
 7011EC18

PAGE
 1

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

RFQ COPY
 TYPE NAME/ADDRESS HERE

DIVISION OF HIGHWAYS
 EQUIPMENT DIVISION
 ROUTE 33
 BRUSHY FORK ROAD
 BUCKHANNON, WV
 26201 304-472-1750

DATE PRINTED 04/11/2011	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
----------------------------	---------------	----------	-----	---------------

BID OPENING DATE: 04/28/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				ADDENDUM NO. 1		
				THIS ADDENDUM IS ISSUED TO:		
				1.) EXTEND THE BID OPENING DATE FROM 04/21/2011 AT 1:30 PM TO 04/28/2011 AT 1:30 PM.		
				2.) PROVIDE A COPY OF THE MANDATORY PRE-BID SIGN IN SHEET.		
				*****END ADDENDUM NO. 1*****		
0001	1	EA	287-36	64,000 GVW CAB AND CHASSIS, COMBINATION		
				***** THIS IS THE END OF RFQ 7011EC18 ***** TOTAL:		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *J. St* TELEPHONE 800-879-3039 DATE 5-2-11

TITLE *Municipal Sales* FEIN 61-087-1032 ADDRESS CHANGES TO BE NOTED ABOVE

IN RESPONSE TO RFQ, INSERT NAME AND ADDRESS ABOVE LABELLED 'VENDOR'

4/5/2011

Date:

7011EC18

Request for Quotation Number:

Project Description:

PLEASE PRINT LEGIBLY. THIS INFORMATION IS ESSENTIAL TO CONTACT THE ATTENDEES IN A TIMELY MANNER. FAILURE TO DO SO
MAY RESULT IN DELAYS IN YOUR COMPANY GETTING IMPORTANT BID INFORMATION.

Firm Name: MATHEW MOIR TRUCK COMPANY
 Firm Address: P.O. BOX 1304
PARKERSBURG, WV 26102-1304
 Representative Attending: MIKE MATHEW
 Phone Number: 304-485-4418 EXT 601
 Fax Number: 304-485-2517
 Email Address: mmathew@mathcomtrucks.com

Firm Name: MORRISON TRACTS
 Firm Address: 2345 Whitehall Blvd
Fairmont, WV 26554
 Representative Attending: Philip A. CONTRALE
 Phone Number: 304-266-4690
 Fax Number: 366-4698
 Email Address: phil@morrisonttracts.com

Firm Name: Hill International Trucks LLC
 Firm Address: 1-27th Street
Wheeling, WV 26003
 Representative Attending: Keith W. Gallagher
 Phone Number: 304-233-1500
 Fax Number: 304-233-2513
 Email Address: kgallagher@hillintltrucks.com

Firm Name: VIKING CIVES USA
 Firm Address: 1331 Mill St
HARRISVILLE, NY 13648
 Representative Attending: Row Burns
 Phone Number: 1-800-743-1837
 Fax Number: 1-315-543-2366
 Email Address: rburns@vikingcives.com

Firm Name: WEST VIRGINIA TRUCKS CO.
 Firm Address: P.O. BOX 473
CHARLESTON, WV 25322
 Representative Attending: CARLY W. GRADY
 Phone Number: 304-346-5301
 Fax Number: 304-346-5305
 Email Address: WVTRUCKS@NSI-COM

Firm Name: Viking Cives USA
 Firm Address: 14331 Mill St
HARRISVILLE, NY 13648
 Representative Attending: Mike Jackson
 Phone Number: 315-543-2321
 Fax Number: 315-543-2366
 Email Address: mjackson@vikingcives.com

PRE-BID CONFERENCE
SIGN IN SHEET

4/5/2011

Date:

7011EC18

Request for Quotation Number:

Project Description:

PLEASE PRINT LEGIBLY. THIS INFORMATION IS ESSENTIAL TO CONTACT THE ATTENDEES IN A TIMELY MANNER. FAILURE TO DO SO MAY RESULT IN DELAYS IN YOUR COMPANY GETTING IMPORTANT BID INFORMATION.

~~Swanson Products~~
 Firm Name: Swanson Products
 Firm Address: 127 Walnut St
Lindenwood, IL 61049
 Representative Attending: Georgina Bailey
 Phone Number: 216-337-9715
 Fax Number: 215-393-4964
 Email Address: G.Bailey@SwansonProducts.com

Firm Name: Henderson Products Inc
 Firm Address: 16855 Thayer St
Manchester IA 52057
 Representative Attending: Todd Stritzel
 Phone Number: 563-929-0247
 Fax Number: 563-927-7091
 Email Address: Tstritzel@hendersonproducts.com

Firm Name: ACE TRUCK EQUIPMENT
 Firm Address: P.O. Box 2605
Zanesville Ohio 43702
 Representative Attending: DAVID BETER
 Phone Number: 740-4530551
 Fax Number: 740-4537023
 Email Address: DavidAceTruck.NET

Firm Name: Certified Power Inc
 Firm Address: 970 Campus Dr
Mundelein IL 60060
 Representative Attending: Bill Casey
 Phone Number: 717-350-0258
 Fax Number: 866-620-6820
 Email Address: WCasey@CertifiedPower.com

Firm Name: Worldwide Equipment
 Firm Address: 5650 US Rt 66 East
P.O. Box 5407
Huntington WV 25705
 Representative Attending: Jim Dotson
 Phone Number: 859-797-1434
 Fax Number: 859-253-4639
 Email Address: jim-dotson@thetruckpeople.com

Firm Name: DOT-Purchasing
 Firm Address: Stu-Don
 Representative Attending:
 Phone Number:
 Fax Number:
 Email Address:

PRE-BID CONFERENCE
SIGN IN SHEET

Request for Quotation Number: 7011EC18 Date: 4/5/2011

Project Description:

PLEASE PRINT LEGIBLY. THIS INFORMATION IS ESSENTIAL TO CONTACT THE ATTENDEES IN A TIMELY MANNER. FAILURE TO DO SO MAY RESULT IN DELAYS IN YOUR COMPANY GETTING IMPORTANT BID INFORMATION.

Firm Name: WLDK
 Firm Address: _____
 Representative Attending: Laura Kelly
 Phone Number: _____
 Fax Number: _____
 Email Address: _____

Firm Name: _____
 Firm Address: _____
 Representative Attending: _____
 Phone Number: _____
 Fax Number: _____
 Email Address: _____

Firm Name: Angi Nbarman
 Firm Address: DOTH
 Representative Attending: _____
 Phone Number: _____
 Fax Number: _____
 Email Address: _____

Firm Name: _____
 Firm Address: _____
 Representative Attending: _____
 Phone Number: _____
 Fax Number: _____
 Email Address: _____

Firm Name: Marcus Red
 Firm Address: DOTH
 Representative Attending: _____
 Phone Number: _____
 Fax Number: _____
 Email Address: _____

Firm Name: _____
 Firm Address: _____
 Representative Attending: _____
 Phone Number: _____
 Fax Number: _____
 Email Address: _____



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

**request for
 Quotation**

RFQ NUMBER
 7011EC18

PAGE
 1

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

*709063202 01 304-736-3401
 WORLDWIDE EQUIPMENT INC
 5650 US RT 60 EAST
 PO BOX 5407
 HUNTINGTON WV 25705

DIVISION OF HIGHWAYS
 EQUIPMENT DIVISION
 ROUTE 33
 BRUSHY FORK ROAD
 BUCKHANNON, WV
 26201 304-472-1750

DATE PRINTED 04/22/2011	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
BID OPENING DATE: 05/05/2011				

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
BID OPENING TIME 01:30PM						
ADDENDUM NO. 2						
THIS ADDENDUM IS ISSUED TO:						
1.) ADDRESS TECHNICAL QUESTIONS PER THE ATTACHED.						
2.) ADDRESS SPECIFICATION CHANGES PER THE ATTACHED.						
3.) EXTEND THE BID OPENING DATE FROM 04/28/11 @1:30 PM 05/05/11 @1:30 PM.						
*****END ADDENDUM NO. 2*****						
001	1	EA	287-36	64,000 GVW CAB AND CHASSIS, COMBINATION		
***** THIS IS THE END OF RFQ 7011EC18 ***** TOTAL:						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE: *J. Ots* TELEPHONE: 800-879-3077 DATE: 5-2-11

TITLE: *Municipal Sales* FEIN: 61-0871032

ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

PREBID ADDENDUM #2
7011EC18

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

CHANGES TO SPECIFICATIONS:

VENDOR WRITTEN QUESTION:

- 6.5 Does 3 yr. basic need to be included in bid price?
RESPONSE: Yes

FROM:

8.4.5.1 Front frame mounted tow hooks

TO:

8.4.5.1 Shall have front frame mounted tow hooks

VENDOR WRITTEN QUESTION:

- 8.5.4 Seats are cloth with vinyl outer edge just like all other trucks purchased from Mack is this still ok
RESPONSE: Yes list as exception

VENDOR WRITTEN QUESTION:

- 8.5.24 Do you want the complete list of filters to be furnished at time of bid or with pilot model?
RESPONSE: Complete list of filters to be provided by the winning bidder only

VENDOR WRITTEN QUESTION:

- 8.6 My request for waiver or addendum of the specification refers to the following:
"Engine: The engine shall be diesel powered 10.8 liter minimum, peak HP 395 @1400-1700 RPM. Electronic, minimum torque 1450 lb ft. @1200 RPM. Engine must be compliant and certified to meet USEPA 2010 Emission Standards without using Federal EPA credits."
RESPONSE: CHANGE 10.8 TO 10.4 MINIMUM

VENDOR WRITTEN QUESTION:

8.6 I request a waiver to or addendum of the specification to remove the exclusionary language "without using Federal EPA credits". All engines that meet Federal EPA 2010 standards should be acceptable.

RESPONSE: Leave as written

VENDOR WRITTEN QUESTION:

8.6.3 "The engine components facing the wheel areas, on both sides, and the areas to the rear of wheels to be shielded by means of rubber skirts supported by easily removable steel rods." I request a waiver to or addendum of the specification to remove the exclusionary language "by means of rubber skirts supported by easily removable steel rods". All methods of shield that does not interfere with the serviceability of the engine should be acceptable.

RESPONSE: This is a non-mandatory – list as exception.

DELETE:

8.7 Clutch:

8.7.1 Externally lubricated and manually adjusted with torque limiting clutch brake.

8.7.2 Clutch adjustment to be set to specifications prior to delivery to the Department.

8.7.3 Clutch to be dual plate ceramic clutch, minimum 15 ½ inch. Kwik-adjust (manual) feature, Eaton Fuller EP1552 with 7 spring damper or equal.

8.7.4 Clutch to meet or exceed peak engine torque.

FROM:

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

TO:

8.9.2 Single aluminum 110 U.S. gallon (usable) minimum total capacity, frame mounted

FROM:

8.16.1 Capacity: 18,000 lbs. minimum

TO:

8.16.1 Capacity: 20,000 lbs. minimum

VENDOR WRITTEN QUESTION:

8.16.3 Front wheel seals are perm. Sealed with no maintenance. Equal to specs but with no maintenance is this ok as well.

RESPONSE: Non-mandatory – list as exception.

VENDOR WRITTEN QUESTION:

8.18.6 Rear tires G244 is NA from Mack the equal tire is G282 MSD is this ok

RESPONSE: Goodyear tires should be now Front- G291MSA and Rear -G282MSD

DELETE:

8.25 Preventive Maintenance and Operator's Training School

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

8.25.2 To make the program complete, we need, in addition to the operating and service manuals, booklets and pamphlets explaining the Preventive Maintenance and Operator Training procedures to be used by the operators of this equipment. **Must include such things as daily pre-start, inspection procedures, service schedule and routine maintenance required, safety precautions, etc. CD acceptable.**

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

VENDOR WRITTEN QUESTION:

9.0 SPECIFICATIONS

Reads: 304 STAINLESS STEEL

Should be: 201 STAINLESS STEEL

RESPONSE: Should be 201 stainless steel

FROM:

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

TO:

9.3 **Front body bulkhead shall be 7 gauge 3/16 inch 201 stainless steel.**

DELETE:

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

VENDOR WRITTEN QUESTION:

9.6.8 Reads:----with adequate clearance for cab mounted air horns

Clarify...with adequate clearance above for cab mounted air horns

RESPONSE: Stated in pre-bid no issue as written

FROM:

9.8.1 Floor: ¼ inch thickness 304 stainless steel or abrasion resistant AR400 steel 3/16 inches Thick

TO:

9.8.1 Floor: ¼ inch thickness abrasion resistant AR400 steel 3/16 inches thick

VENDOR WRITTEN QUESTION:

9.11 Clarify that as written coincides with spec 9.6.8

RESPONSE: Delete 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.

FROM:

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

TO:

9.12.1 The body shall have one (1) piece sides constructed of 7 gauge 201 stainless steel vertical with AR400 flat floor

VENDOR WRITTEN QUESTION:

9.13 Is this the body floor or the conveyor floor? Should ¼" 201 or 304 stainless be optional?

RESPONSE: Non-mandatory – list as exception.

VENDORS WRITTEN QUESTION:

9.15.6 Can the be a ¼" bolt on formed chain guard? (Bolting on the chain guard makes it easier for maintenance)

RESPONSE: No change

DELETE:

9.15.8 3/16 inch AR400 conveyor bed floor

DELETE:

9.19.6 - (Last Sentence) - Painted aluminum to match the body.

FROM:

9.19.11 Unit to be equipped with 49,000 lb. capacity pintle hook (Holland PH760 or approved equal) centered between rear frame rails. Height from ground level to center line of pintle "eye" to be 32 inches.

TO:

9.19.11 Unit to be equipped with 49,000 lb. capacity pintle hook (Holland PH760 or equal) centered between rear frame rails. Height from ground level to center line of pintle "eye" to be 32 inches.

FROM:

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

TO:

9.24.7 All steel components to be finished with manufacturers recommended rust preventive system which shall include primer and paint.

FROM:

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

TO:

9.25.1 There shall be no paint on the 201 stainless steel surfaces of the body.

FROM:

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

TO:

9.25.2 All 201 stainless steel surfaces are to be unpainted and cleaned with an acid wash solution to remove carbon burning from the stainless steel welds.

FROM:

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

TO:

9.25.3 Non 201 stainless steel components on the body to be painted aluminum.

FROM:

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

TO:

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

VENDORS WRITTEN QUESTION:

10.0 Reads: Provisions shall be made for future add-on hydraulic driven pre-wet system.

Note: there is a vague paragraph following explaining the pre-wet system.

Please confirm there is no pre-wet system required on this specification.

RESPONSE: No pre-wet system for this contract – only provisions for future.

VENDORS WRITTEN QUESTION:

10.1.10 In both paragraphs it state MALHOIT (*misspelled*) cylinder part number reads CS130-6-3. Should be Part number Mailhot CS-140-5.5-3 DA (*to agree with spec 9.18.4*)

RESPONSE: Both paragraphs should be MAILHOT CS140-5.5-3DA

PREBID ADDENDUM #2
7011EC18

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

CHANGES TO BIDDER'S EVALUATION REPORT:

X6.5 VENDOR WRITTEN QUESTION -- No Change Required

FROM:

X8.4.5.1 Front frame mounted tow hooks _YES_NO

TO:

X8.4.5.1 Does unit have front frame mounted tow hooks YES NO

X8.5.4 VENDOR WRITTEN QUESTION -- No Change Required

X8.5.24 VENDOR WRITTEN QUESTION -- No Change Required

VENDOR WRITTEN QUESTION

FROM:

X8.6 -- Line 1 and 2

Engine:

Is engine diesel _YES_NO ___ LITER

Peak HP _ at _ RPM Torque _ lb. ft. at _ RPM

TO:

X8.6 -- Line 1 and 2

Engine:

Is engine diesel YES NO 11 LITER

Peak HP 395 at 1400 RPM Torque 1560 lb. ft. at 1200 RPM

VENDOR WRITTEN QUESTION

X8.6 – Line 3 and 4 – LEAVE AS WRITTEN

Is engine compliant and certified to meet US EPA 2010 Emission Standards without using Federal EPA credits YES NO

Manufacturer: Mack Model: MP7

X8.6.3 VENDOR WRITTEN QUESTION – No Change Required

DELETE:

X8.7 Clutch:

X8.7.1 Externally lubricated and manually adjusted with torque limiting clutch brake YES NO

X8.7.2 Clutch adjustment set to specifications prior to delivery to the Department YES NO

X8.7.3 Is clutch dual plate ceramic clutch YES NO

Size: inch Kwik adjust(manual feature) YES NO

Manufacturer and model: with 7 spring damper YES NO

X8.7.4 Does clutch meet or exceed peak engine torque YES NO

X8.9.2 No Change Required

Single aluminium usable: 116 U.S. gallon; frame mounted YES NO

X8.16.1 No Change Required – Capacity: 20,000 lbs.

X8.16.3 VENDOR WRITTEN QUESTION – No Change Required

X8.18.6 VENDOR WRITTEN QUESTION – No Change Required

Radial Tires:

Front Radial Tire: Manufacturer and Model: Goodyear G291MSA

Rear Radial Tire: Manufacturer and Model: Goodyear G282MSD

DELETE:

X8.25 Preventive Maintenance and Operator's Training School:

- X8.25.1 Will a preventive maintenance and operator's training seminar be provided _YES_NO
Manuals _ or CD _
- X8.25.2 Will booklets and pamphlets be furnished to be used by the operators _YES_NO
Describe agenda _
- X8.25.3 Will you furnish all training aids; i.e. videos, projectors, etc. required in
conducting the training _YES_NO

X9.0 VENDOR WRITTEN QUESTION (SPECIFICATIONS DESCRIPTION-No Change
Required

FROM:

X9.3 Front body bulkhead _gauge Size: _inch _stainless steel

TO:

X9.3 Front body bulkhead 7 gauge Size: 3/16 inch 201 stainless steel

DELETE:

X9.5 Two (2) front truck frame mounted tow hooks or eyes accessible through
bumper _YES_NO

X9.6.8 VENDOR WRITTEN QUESTION – No Change Required

FROM:

X9.8.1 Floor: _ inch thickness 304 stainless_
OR abrasion resistant AR400 _ _ inches thick

TO:

X9.8.1 Floor: 3/16 inch thickness abrasion resistant AR400 steel 3/16 inches thick

VENDOR WRITTEN QUESTION:

DELETE:

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

FROM:

X9.12.1 Does the body have one (1) piece sides constructed of 7 gauge 201 stainless steel YES NO

TO:

X9.12.1 Does the body have one (1) piece sides constructed of 7 gauge 201 stainless steel with AR400 flat floor X YES NO

X9.13 VENDOR WRITTEN QUESTION – No Change Required

X9.15.6 VENDOR WRITTEN QUESTION – No Change Required

DELETE:

X9.15.8 3/16 inch AR400 conveyor bed floor YES NO

DELETE (Last Sentence Only)

X9.19.6 Painted aluminum to match the body YES NO

FROM:

X9.19.11 Unit equipped with 49,000 lb. capacity pintle hook centered between rear frame Rails YES NO
 Manufacturer and Model: Height from ground level to center line of pintle "eye" inches

TO:

X9.19.11 Unit equipped with 49,000 lb. capacity pintle hook centered between rear frame rails X YES NO

Manufacturer and Model: WALLACE MODEL B30

Height from ground level to center line of pintle "eye" 32 inches

FROM:

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

TO:

X9.24.7 All steel components finished with manufacturers recommended rust preventive system includes primer and paint X YES NO

FROM:

X9.25.1 Will the 304 stainless steel surfaces of the body be "paint free" _YES_NO

TO:

X9.25.1 Will the 201 stainless steel surfaces of the body be "paint free"
 YES NO

FROM:

X9.25.2 Describe proposed method of painting _

TO:

X9.25.2 Will all 201 stainless steel surfaces be unpainted and cleaned with an acid wash solution to remove carbon burning from the stainless steel welds
 YES NO

FROM:

X9.25.3 Describe proposed method of painting _

TO:

X9.25.3 Will all non 201 stainless steel components on the body be painted aluminum
 YES NO

FROM:

X9.26.4 Will striping and detailing you provide comply with requirements of Section 9.26.1 through 9.26.7 _YES_NO

TO:

X9.26.4 Will striping material meet the requirement of ASTM D4956-91 Type V sheeting, a super high-intensity retroreflective sheeting consisting of microprismatic retroreflective elements. Does the sheeting meet the requirements of NHSTA, DOT, 49CFR, PART 571 Federal Motor Vehicle safety standards for conspicuity sheeting.
 YES NO

X10.0 VENDORS WRITTEN QUESTION -- No Change Required

X10.1.10 VENDORS WRITTEN QUESTION -- Change in Manufacturer and part number only in specification; blank line in Bidder's Evaluation Report to be filled in -- No Change Required to Bidder's Evaluation Report

**HENDERSON PRODUCTS INC
COMPLETE WARRANTY PROVISIONS**

APPLIES TO West Virginia #7011EC18 Combination Dump/Spreader Body

Authorized by: Janet Tobin ~ Contract Administration Manager Dated: April 14, 2011

A. PARTS REPLACEMENT AND REPAIR:

Henderson Products Inc warrants its manufactured products to be free from defects in material or workmanship for a period of two years after delivery to the original user. This warranty of our products under normal use and service is limited to replacement and repair, at the company's factory, of any parts which are returned to the factory freight prepaid, and after our examination were found to be defective.

B. EXCLUSIONS:

1. This warranty is expressly limited to parts replacement and repair, and is not transferable. Any expressed warranty not herein provided, and any remedy for breach of contract is excluded and disclaimed. The implied warranties of merchantability and of fitness for any particular purpose are limited to two years from delivery to the original user.
2. Any component or part manufactured by others will carry that manufacturers' warranty, and in no case will Henderson Products Inc be liable, either expressed or implied, for warranties in excess of those made by the original manufacturer.
3. Under no circumstances will Henderson Products Inc be liable to the purchaser, or any other person, for any incidental or consequential damages. The user assumes liability for all personal injury or property damage resulting from the handling, possession, or use of the product.
4. Repairs or modifications done by others, or parts from other sources outside the company's factory are not covered by this warranty.

WARRANTY PROCEDURE

1. Prior authorization by Henderson Products Inc must be obtained for all warranty work.
2. Contact our distributor or Henderson Product Inc giving complete details of your request, the unit involved, including serial number, date purchased, who purchased from, and the nature of or reason for the claim.
3. A Warranty Request Number will be assigned, and is required, whenever any warranty is to be paid either in the form of cash, credit, replacement of parts, or service work.
4. The assignment of a Warranty Request Number does not guarantee warranty will be allowed. The number is to identify the request and part to be returned.
5. When parts are shipped on a Warranty Request, you may be required to return defective part(s) for inspection by Henderson Products Inc or the original manufacturer. In this case, you will be invoiced for shipment of new components until the old unit is returned.



WORLDWIDE EQUIPMENT, INC.

(800) 879-3039

JIM DOTSON, MUNICIPAL SPECIALIST

Exceptions to bid Specs;

1. 8.5.4 asked for cloth seats our Seats are vinyl with full cloth inserts, meets specifications
2. 8.5.21 asked for steering wheel option our Locking hand throttle on dash not on steering wheel, but option is standard, also cruise control located in dash also
3. 8.16.3 asked for stemco seal our Front wheel seals Fag greased non maintained seal. No maintiance needed for these seals



GMC
TRUCK



MUNIBODY® FF

HEAVY DUTY • COMBINATION BODY

The Henderson MUNIBODY-FF offers many of the same great features found in our other combination bodies. It too delivers granular material to the front or rear (via its live conveyor), transports high capacity loads and provides the lowest possible center of gravity in the industry.

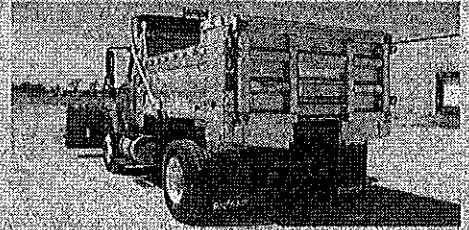
The MUNIBODY-FF shines when it comes to flexibility. This flat-floor combination body works with our wedge tank inserts, pre-wet kits, tailgate spreaders and more...

Thanks to its cross-memberless design, the MUNIBODY-FF goes beyond offering the lowest possible center of gravity. It also eliminates the common washboarding affect and corrosion points found in bodies that require crossmembers for additional support.

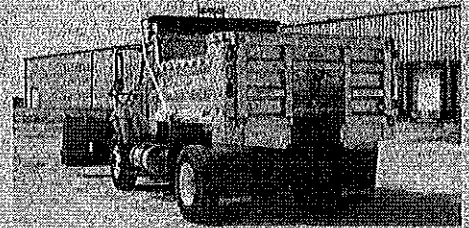
And finally, you have countless options when it comes to the head sheet, side walls, tailgate, etc... We're now able to tap into the many options offered within our MARK 7 product line. Another outstanding by-product of this innovative flat floor combination body design.

Customize this package to any budget, task list, local roads, common weather conditions or simply to your liking.

HIGH CAPACITY • LOW CENTER OF GRAVITY
CROSS-MEMBERLESS • COUNTLESS OPTIONS

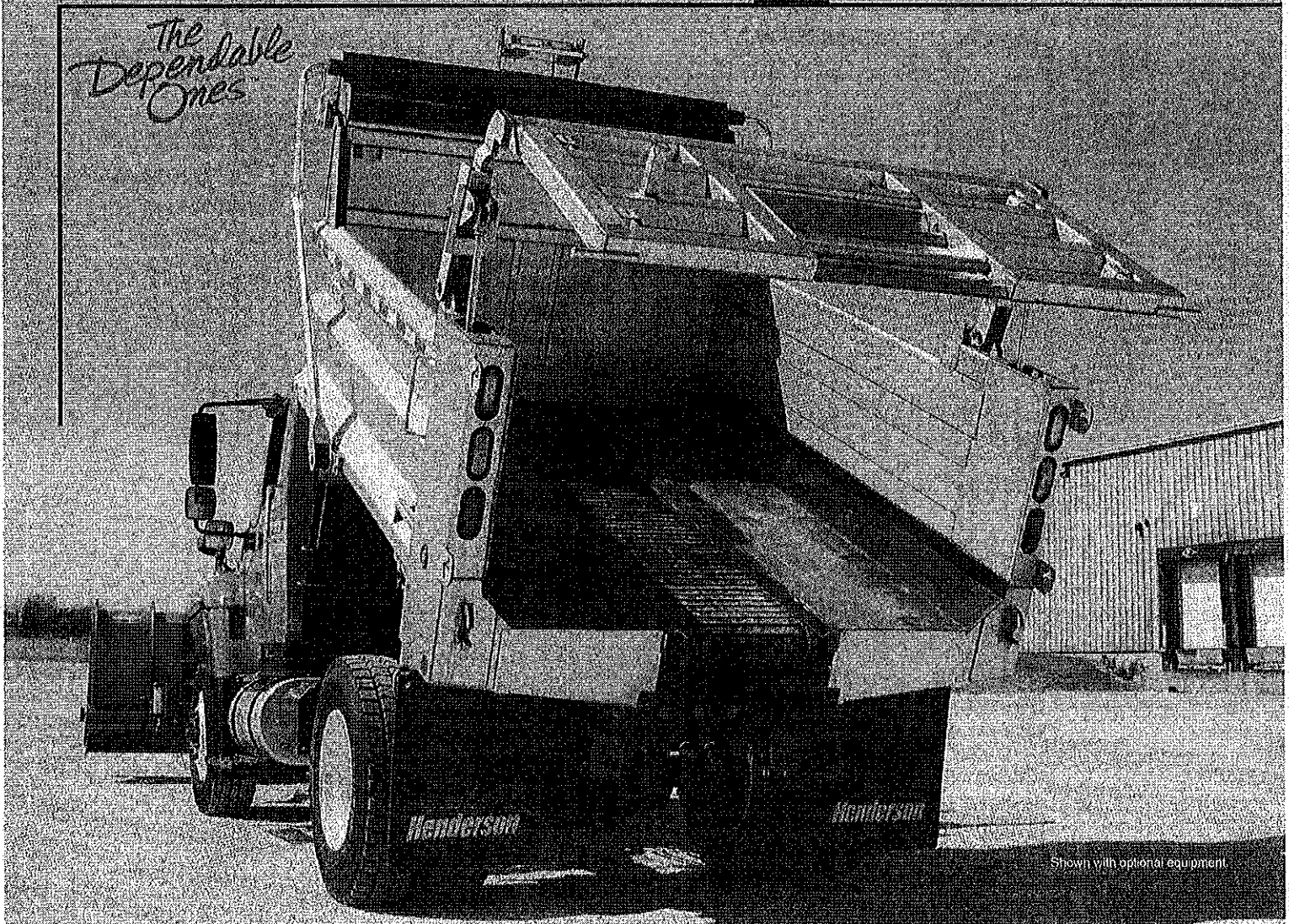


Optional summer gate insert shown above



Optional winter gate insert shown above

The Dependable Ones



Shown with optional equipment



P.O. Box 40, Manchester, IA 62057 • Toll Free: (800) 369-4970 • www.hendersonproducts.com

MUNIBODY-FF
SPECIFICATIONS



Shown with optional equipment.

BUILD YOUR OWN

Choose A Side/Brace Configuration

- Smooth Side
- V-Crimp
- Weld-on Horizontal Brace

Choose A Side Profile

- Straight Sides
- Sloped Sides

Choose A Rear Tailgate Configuration

- Straight Tailgate
- High Lift Tailgate

MUNIBODY DESIGN

Seamless floor sheets with optional 5" radius or 45 degree knee brace. Inside width of 86" for a lower center of gravity and maximum capacity. Optional floor sheets of 3/16" AR400 or 1/4" 304 Stainless Steel. Boxed long sill configuration, constructed of 409 Stainless Steel on Carbon units and 304 on Stainless Steel units.

SIDES

One-piece with optional bracing, numerous heights, see chart above.

TAILGATE

One-piece 8" higher than sides for board provisions.

REAR HINGE ASSEMBLY

Constructed of 6" x 8" x 1/2" structural angle with 2" diameter stainless steel pins connecting through 2-1/2" blocks incorporating greaseless composite bushings. Greaseable pins optional.

MUNIBODY-FF DIMENSIONS & CAPACITY CHART						
LENGTH	HEIGHTS (in)			CAPACITY (Cubic Yards) Sides/Ends	HOIST	
	Sides	Head	Tailgate		Type	Class (NTEA)
10'	36"	52"	48"	8 / 10	CS-90-4-3	40
10'	44"	52"	56"	10 / 12	CS-90-4-3	40
11'	36"	52"	48"	9 / 11	CS-90-4-3	*40
11'	44"	52"	56"	11 / 13	CS-90-4-3	*40
12'	36"	60"	48"	10 / 12	CS-110-5-3	70
12'	44"	60"	56"	12 / 14	CS-110-5-3	70
12'	52"	60"	64"	14 / 16	CS-110-5-3	70
13'	36"	60"	48"	10 / 13	CS-110-5-3	*70
13'	44"	60"	56"	13 / 15	CS-110-5-3	*70
13'	52"	60"	64"	15 / 17	CS-110-5-3	*70
14'	36"	60"	48"	11 / 14	CS-130-6-3	100
14'	44"	60"	56"	14 / 16	CS-130-6-3	100
14'	52"	60"	64"	16 / 19	CS-130-6-3	100
15'	36"	60"	48"	12 / 15	CS-130-6-3	*100
15'	44"	60"	56"	15 / 17	CS-130-6-3	*100
15'	52"	60"	64"	17 / 20	CS-130-6-3	*100
16'	36"	60"	48"	13 / 16	CS-130-6-4	80
16'	44"	60"	56"	16 / 18	CS-130-6-4	80
16'	52"	60"	64"	18 / 21	CS-130-6-4	80

*NTEA dump angle is 50°. MUNIBODY maximum dump angle is 47.5° on some lengths. Above dimensions are Henderson standards only. External hoists use cylinder from next body length.

Continuing with wants and needs, the options go on...

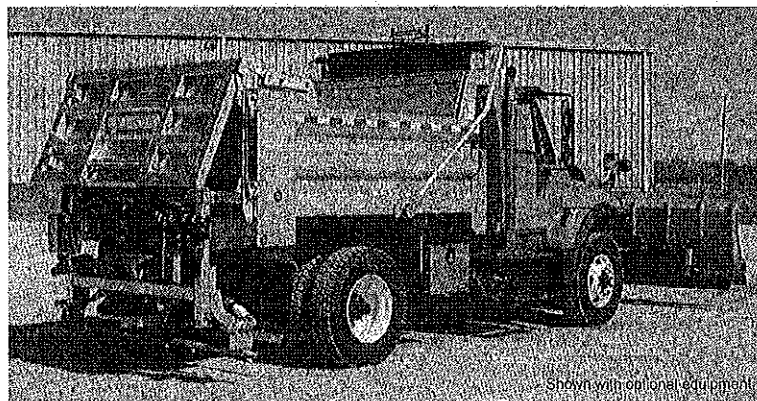
Select Your Grade of Steel

- Grade 50
- AR400
- AR450
- 201 Stainless
- 304 Stainless
- 409 Stainless

Or mix-n-match, as you wish.

Accessories & Extras

- Steps/Walk Rails
- Hydraulic Tanks
- Tarp Shrouds
- Vibrator Mounts
- Ladders
- Top Rails
- Cab Shields
- And More...



Shown with optional equipment.

Visit us online for our full product line-up: Dump Bodies, Combination Bodies, Liquid Air Control Systems, Brakes, Front End Attachments, Inverters, Generators, Stacker Piles, Roll-Over Protection, V-Flex Spacers, Tailgate Spacers, Air Vests, Air Seats, Tack Units, Direct Gear, Square-Crossed Hoists and more.

MAECK®

vocational

- Dump
- Mixer
- Construction

GRANITE

AXLE FORWARD

6x4

GU713

STANDARD POWERTRAIN SPECIFICATIONS

ENGINE: MACK MP7-325M

Peak Horsepower – 325HP at 1500-1900 RPM
Horsepower – 300 HP at 2100 Gov. RPM
Max. Torque – 1200 lb/ft at 1100-1300 RPM
V-MAC IV – Total Vehicle Electronics
Air Compressor – 318 (18.7 cfm)
Air Cleaner – 11" Single Element
Alternator – Delco 12V 130A (24SI)
Batteries, (3) Mack 12V 650/1950 CCA Threaded Stub Type
Bug Screen – Radiator Mounted
Coolant Protection, -34°F (-37°C)
Mack Coolant Conditioner
Diesel Particulate Filter – Vertical RH Side Under Cab
Exhaust After Treatment System – Ceramic
Mack PowerLeash™ Engine Brake
Silicone Engine Hoses and Tubing
Poly-V Fan Belt w/Automatic Tensioner
Fan Drive, Electronically Modulated Multi-Speed Viscous
Flywheel Housing – Aluminum (Lightweight)
Fuel Water Separator w/Manual Drain
Mack EPDM Radiator & Heater Hoses
Radiator – Aluminum Core
Starter – 12V Gear Reduction
Electronic Starter Interlock

TRANSMISSION: MACK TM308

8-Speed, Ratios: 17.77 Low – 0.71 High
Clutch – CL39DC13 15.5" Ceramic 9 Spring, 6 Paddle,-----
Manual Adjust
Mechanical Cable Clutch Assist
Transmission Bell Housing – Aluminum
Main Driveline – Meritor 17N HD
Interaxle Driveline – Meritor 17N HD

SPECIFICATIONS



Mack Trucks, Inc., Allentown, Pennsylvania



www.macktrucks.com

Suspension – Multileaf (Camelback) 38,000 lb Rating
Spring Brake Chambers – (4) 30/30 Double Diaphragm
Type/Mechanical Spring Release

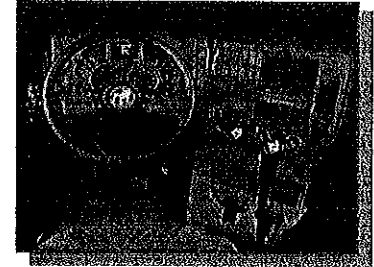
Suspension – Mack Taperleaf 12,000 lb. Ground Load Rating
(2 Leaf Spring)
Steering – Sheppard SD110

STANDARD CAB INTERIOR/EXTERIOR SPECIFICATIONS

CAB: CA68 CONVENTIONAL

Air Conditioner w/Integral Heater
Ash Tray
Cab Mounting – Four Point System w/2 Air Bags and
Shocks at Rear
Cigar Lighter
Coat Hook
Co-Pilot Enhanced Driver Display with Button and Stalk
Control
Cup Holders, Driver's & Rider's Side
Dome Lights, 2 Lamps LH/ 2 Lamps RH
Galvanized Steel Visibility Doors
Door Trim – Padded w/Vinyl Arm Rest Pads
Engine Shutoff – Key Type
Floor Mats, Mack Signature Polyurethane
Gauges – Air Pressure, Engine Coolant Temperature, Engine
Oil Pressure, Engine Oil Temperature, Speedometer,
Tachometer, Fuel Level
Gauge Cluster – Exhaust Pyrometer & Transmission Oil
Temperature Gauges
Grab Handles, Aluminum RH & LH Behind Door
Grille – Silver Painted w/o Grille Surround
Hood – One Piece Insulated Fiberglass with Forward tilt 75°
Fenders – Fiberglass w/Wheel Splash Aprons and Black
Polyarmour Mud Flaps
Horn – Mack Rectangular Single Trumpet Air Horn, Single
Tone w/Snow Shield
Identification and Clearance Lights (5)
Instrument Panel – Charcoal w/Black Gage Bezel
Interior Trim: Purebred – Sandstone
Keys – (2) Keyed at Random
Low Air Pressure Indicator Light and Buzzer

Exterior Mirrors –RH & LH Bright Finish Mack Bulldog
w/Stainless Steel Arms
Overhead Console, 2 Storage Compartments w/Net Retainers
Parking Brake On Indicator Light
12 Volt Auxiliary Power Outlets (2) – Dash Mounted
AM/FM Stereo CD w/Weather Band
CB – 5 way Binding Post
Driver Seat – Bostrom Talladega 915 Mid-Back Air
Suspension
Rider Seat – Mack Fixed Mid-Back Non-suspension
Seat Belts – Lap and Shoulder w/Cab Mounted Shoulder Belt
Key Type Starter Switch
Steering Column, Adjustable
Tilt Telescope
Steering Wheel – Two Spoke
Urethane Grip Painted
Spokes & Bulldog Horn
Cap
Rear Storage Pouch
Interior Sun Visor Both Sides
RH Door Peep Window
Window Control – Hand
Crank Operation
Windshield – Safety Tinted 2 Piece
Safety Tinted Side and Rear Windows
Windshield Wipers – Electric Wiper Mounted w/Reservoir
Mounted under Hood
Windshield Wipers – 2 Speed Electric Motor w/Intermittent
Feature
Paint Color – Mack White (Cab, Hood & Fenders), Mack
Black (Chassis Running Gear)



ADDITIONAL STANDARD SPECIFICATIONS

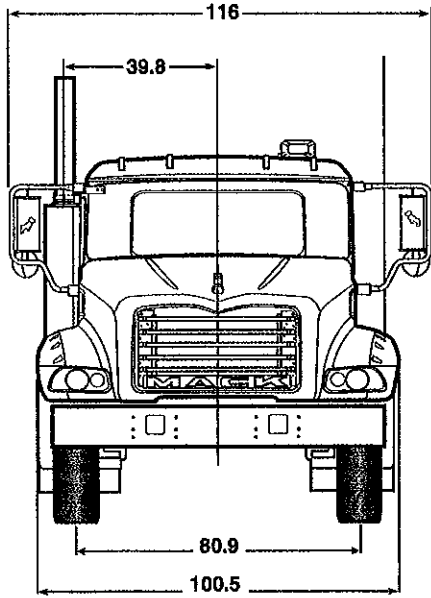
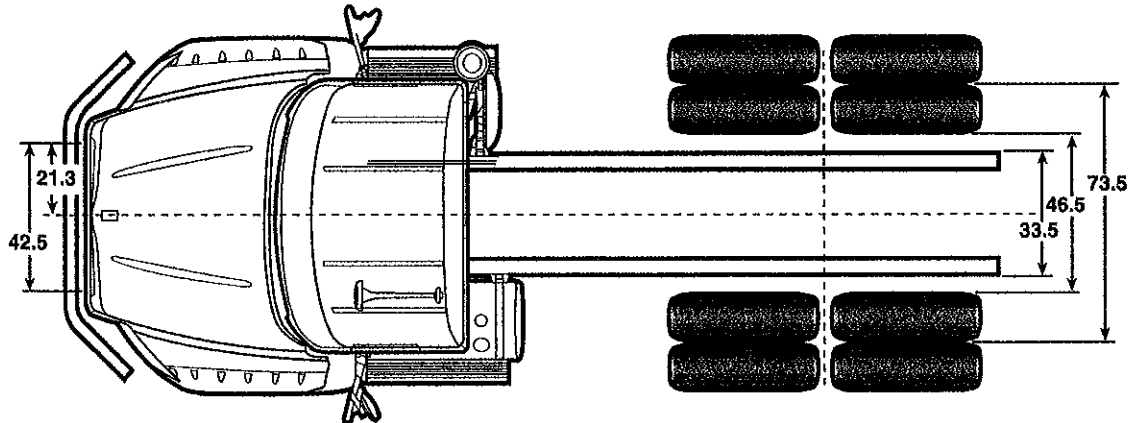
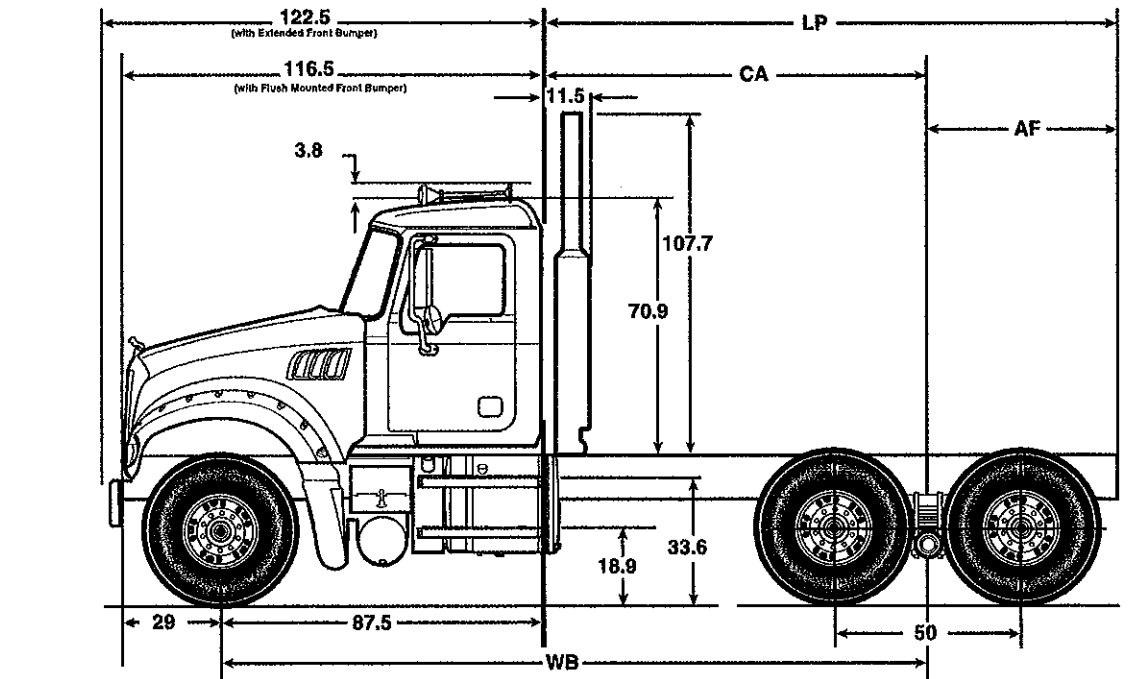
AIR/BRAKE

Dual Air Brake System
Air Dryer - 1200P w/Coalescing Filter
Air Reservoirs – Steel
Anti-Lock Brake System w/o Traction Control
Parking Brake Control – Single Valve System

ELECTRICAL

12 Volt Electrical System
Battery Box – Steel w/Molded Plastic Cover Mounted LH Rail
Courtesy Light Switch – Headlamp and Clearance
Daytime Running Lights
Electric Circuit Protection Package
Body Link II
Waterproof Electrical Connections
Headlights – Halogen Flush
Transistorized Turn Signal Flasher

STANDARD CHASSIS DIMENSIONS



FRAME EQUIPMENT/FUEL TANKS

- Frame Rail w/out Liner – 11.81" x 3.54" x .32" Steel
- Section Modulus – 17.7 in³
- RBM (per rail) – 2,120,000 lb. in.
- Front Bumper – Extended Swept Back Steel Channel
- Bumper to Back of Cab (BBC) – 122.5"
- Crossmembers – BOC & Intermediate(s) Steel HD Back-to-Back Channel
- Front Frame Extension
- Front Tow Hooks
- Fuel Tanks – 50 Gallon LH Steel 22" dia.
- Diesel Exhaust Fluid (DEF) Tank - 11.8 Gallon, 22" Diameter, Frame Mounted on Left Side with Painted Cover

STANDARD WHEELBASE/LOAD PLATFORM

For standard wheelbase and load platform information refer to your current version of MACKTRAQ

AVAILABLE DRIVELINE COMPONENTS

TRANSMISSIONS

MODEL	SPEEDS (LOW/HIGH)	RATIOS (LOW/HIGH)
TM308	8	17.77/0.71
TM308M	8	17.77/0.71
TM309	9	25.21/0.71
TM309M	9	25.21/0.71
T309	9	11.40/0.71
T309(LR)	9	13.93/0.71
T310	10	13.81/0.73
T310M	10	17.35/0.73
T310ME	10	17.35/0.73
T310MLR	10	27.31/0.71
T313	13	13.44/0.74
T313 LR	13	16.42/0.71
T318	18	13.44/0.71
T318LR	18	16.42/0.71
4000-EVS	5	3.51/0.74
4500-EVS	5	4.70/0.76
4500 RDS	5	4.70/0.76
4000-EVS	6	3.51/0.74
4500-EVS	6	4.70/0.67
4500 RDS	6	4.70/0.76
RTX-14609B	9	12.57/0.73
RTX-16709B	9	12.46/0.73
FRO-12210C	10	12.69/0.74
FRO-13210C	10	12.69/0.74
FRO-14210C	10	12.69/0.74
FRO-15210C	10	12.69/0.74
FRO-16210C	10	12.69/0.74
FRO-18210C	10	12.94/0.74
RTO-14908LL	10	14.56/0.74
RTO-14910B-AS3	10	10.69/0.74
RTO-14910C-AS3	10	12.80/0.73
RTO-16908LL	10	14.56/0.74
RTO-16910B-AS3	10	10.69/0.74
RTO-16910C-AS3	10	12.80/0.73
RTO-14909ALL	11	26.08/0.73
RTO-16909ALL	11	26.08/0.73
RTLO-14913A	13	12.31/0.73
RTLO-16913A	13	12.31/0.73
RTLO-18913A	13	12.31/0.73
RTO-14915	15	13.31/0.79
RTO-16915	15	13.31/0.79
RTLO-14918A-AS3	18	14.40/0.73
RTLO-14918B	18	14.40/0.73
RTLO-16918A-AS3	18	14.40/0.73
RTLO-16918B	18	14.40/0.73
RTLO-18918B	18	14.40/0.73

MP7-ENGINES

MODEL	HORSEPOWER (KW)
MP7-345C	345 HP [257 kW] @ 1500-1700 RPM 320 HP [239 kW] @ 1950
MP7-365C	365 HP [272 kW] @ 1500-1700 RPM 340 HP [254 kW] @ 1950
MP7-395C	395 HP [295 kW] @ 1500-1700 RPM 370 HP [276 kW] @ 1950
MP7-325M	325 HP [242 kW] @ 1500-1900 RPM 300 HP [224 kW] @ 2100
MP7-365M	365 HP [272 kW] @ 1500-1900 RPM 335 HP [250 kW] @ 2100
MP7-405M	405 HP [302 kW] @ 1500-1900 RPM 370HP [276 kW] @ 2100

MP8-ENGINES

MODEL	HORSEPOWER (KW)
MP8-415C	415 HP [309 kW] @ 1500-1700 RPM 390 HP [291 kW] @ 1950
MP8-445C	445 HP [332 kW] @ 1500-1700 RPM 420 HP [314 kW] @ 1950
MP8-505C	505 HP [377 kW] @ 1500-1700 RPM 430 HP [321 kW] @ 1950
MP8-426M	425 HP [317 kW] @ 1500-1800 RPM 340 HP [254 kW] @ 2100
MP8-455M	455 HP [339 kW] @ 1500-1700 RPM 420 HP [313 kW] @ 2100
MP8-505M	505 HP [377 kW] @ 1500-1700 RPM 339 HP [253 kW] @ 2100

AXLES

CAPACITY	MAKE	MODEL
12,000 lb. [5 443 kg]	MACK	FXL12
14,600 lb. [6 600kg]	MACK	FXL14.6
18,000 lb. [8 165 kg]	MACK	FXL18
20,000 lb. [9 072 kg]	MACK	FXL20
23,000 lb. [10 400 kg]	MACK	FXL23
38,000 lb. [17 239 kg]	MACK	S38R/SB38
	MACK	SB38
40,000 lb. [18 144 kg]	DANA SPICER	DS405/DS405P
	MERITOR	RT40-145
44,000 lb. [19 958 kg]	MACK	S440
	MACK	S440-46/S462
46,000 lb. [20 866 kg]	DANA SPICER	D46-170HP
	MERITOR	RT46-160 RT46-164EH
52,000 lb. [23 586 kg]	MACK	S522
58,000 lb. [26 309 kg]	MACK	S582
65,000 lb. [29 484 kg]	MACK	S652



A SALES ENGINEERING PUBLICATION

The information in this brochure was accurate as of the date of the publication. Illustrations may not be representative of current product. Mack Trucks, Inc. reserves the right to make changes in specifications, equipment or design, or to discontinue models or options without notice at any time.

HEAVY DUTY WARRANTY CERTIFICATE



Mack Trucks, Inc., warrants certain individual components of the new Mack truck to be free from defects in material and workmanship under normal use and service up to the periods as specified, provided all Mack Trucks, Inc. maintenance and inspection requirements found in the Operator's Manuals and service manual/instructions are followed. All warranty periods are calculated from date in service. All coverage is 100% for parts and labor excepts as noted.

LIMITATIONS AND EXCLUSIONS TO THIS WARRANTY APPEAR ON THE REVERSE SIDE OF THIS CERTIFICATE. THESE LIMITATIONS AND EXCLUSIONS ARE IMPORTANT AND MUST BE READ AND UNDERSTOOD.

This warranty applies to Model Year 2012 models manufactured by Mack Trucks, Inc. with EPA '10 Engine Emissions operated in the United States and Canada. Specific coverage is based on the application and weight class as described in the following chart:

CHASSIS BUILT WITH EPA '10 EMISSION ENGINES VEHICLE APPLICATION: HEAVY DUTY (C)		Hours	Months	Miles	Kilometers
SCHEDULE 1. BASIC VEHICLE* **Roadside Assistance and Towing on warrantable failures are covered for 3 month or 5,000 miles/8,050 km. *Brake Drums are covered for 12 months or 25,000 miles/40 000 kilometers only.		---	12	100,000	161 000
SCHEDULE 2. MACK DIESEL ENGINE Standard Warranty: **Standard Warranty Includes: Roadside Assistance and Towing on warrantable engine failures.		6,250	24	250,000	402 500
Major Components:	Block Stiffener (Ladder Frame) Camshaft Forging Camshaft Caps & Bolts Connecting Rod & Cap Forging Coolant Pump Housing Crankshaft Forging Cylinder Block Casting Cylinder Head Casting & Bolts	12,500	60	500,000	805 000
	Engine Gears (Rear Mounted) Exhaust Manifold Casting Flywheel Housing Intake Manifold Casting Main Bearing Bolts & Caps Oil Pump Drive & Driven Gears Thermostat Housing Timing Gear Cover & Mounting Plate				
Coverage also applies to consumables such as lubricant, antifreeze, filter elements, belts, hoses and similar maintenance items not reusable and replaced directly as a result of a warrantable engine, carrier, or transmission failure. Components not manufactured by Mack Trucks, Inc., but used on MACK diesel engine assemblies are excluded from the coverage in Schedule 2. These components are covered by the component manufacturer's warranty in effect at the time of delivery. Consult your local Mack service facility for details.					
SCHEDULE 3. MACK T300 and TM300 TRANSMISSIONS		---	36	400,000	644 000
SCHEDULE 4. DPF SYSTEM COMPONENTS (OEM WARRANTY) DPF/SCR SYSTEM COMPONENTS (EMISSION WARRANTY)		6,250 3,250	24 60	250,000 100,000	402 500 161 000
*Roadside Assistance and Towing on warrantable DPF/SCR failures		6,250	24	250,000	402 500
SCHEDULE 5. MACK CARRIER / AXLE HOUSING / FRONT AXLE BEAM Rear Carriers and Housings Front I-Beam Rear Carrier Seals, Gaskets S65 Bogie and Carrier, Regardless of Carrier Model		---	36 36 12 12	300,000 300,000 100,000 100,000	483 000 483 000 161 000 161 000
SCHEDULE 6. TRUNNION BRACKET AND SPINDLE, SUSPENSION TRUNNION (except Bushings).		---	36	300,000	483 000
SCHEDULE 7. FRAMES: SIDE RAILS AND CROSSMEMBERS		---	36	300,000	483 000
SCHEDULE 8. CAB STRUCTURE		---	24	200,000	322 000
SCHEDULE 9. CAB CORROSION Coverage applies to perforation (an actual hole in the cab panel) due to corrosion. Coverage does not apply to corrosion caused by damage to paint finish.		---	60	500,000	805 000
SCHEDULE 10. Components not manufactured by Mack Trucks, Inc. may have warranty coverage different from the above as they are covered by the manufacturer's warranty. Consult your local MACK sales facility for details.					

**Roadside Assistance and Towing coverage does not apply to vendor engines, transmissions and axles.

3/19/2010: Schedule 3. Terms changed to 36 months, 400,000 miles, 644,000 km's

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES AND REPRESENTATIONS OR CONDITIONS, STATUTORY OR OTHERWISE, EXPRESSED OR IMPLIED INCLUDING, BUT NOT LIMITED TO, IMPLIED INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

THESE LIMITATIONS AND EXCLUSIONS ARE IMPORTANT AND MUST BE READ AND UNDERSTOOD

LIMITATIONS - Mack Trucks, Inc.'s obligation is limited to, at its sole option, repair or replacement of parts which are acknowledged by it to be defective. In the case of acknowledged defective assemblies, exchange with factory rebuilt units may occur. The defective parts or assemblies replaced shall become the property of Mack Trucks, Inc.. Warranty repairs performed by the dealer's shop in accordance with the terms of the warranty set forth herein are free of charge. Warranty repairs do not constitute an extension of the original warranty period for the vehicle or any part thereof. Warranty consideration can only be given if the deficiency is brought to the attention of an authorized Mack Truck dealer upon discovery and the vehicle must be made available, in a timely fashion during the coverage period, for repair.

NO PAYMENT OR OTHER COMPENSATION WILL BE MADE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL EXPENSES OR DAMAGES OF ANY KIND.

EXCLUSIONS:

1. **REPAIR:** Warranty consideration can only be given if the deficiency is brought to the attention of an authorized Mack Truck dealer upon discovery and the truck must be made available, in a timely fashion during the warranty period, for repair. Failures resulting from the user's unreasonable delay in making the truck available, after being notified of a potential product problem, are not covered.
2. **REPEAT REPAIRS:** The term "repeat repair" only refers to the repair or replacement of the exact same part or component more than once. Repair or replacements of different components within the same system does not constitute a repeated repair.
3. **DAMAGES:** Damages due to accidents, misuse, negligence, improper operations, alterations, storage or transport, operation at excessive speeds, loading beyond the factory rated load capacity, and improper or insufficient maintenance services are not covered. Damages due to failure to follow Mack Trucks, Inc. service procedures are considered damages due to improper maintenance services.
4. **APPLICATION:** The responsibility of determining the correct application and/or specification for a vehicle sold to a customer belongs at the selling location. Vehicle application problems, including but not limited to, replacement of incorrect axle or transmission gear ratios, failures of component parts of vehicles being operated in excess of factory rated load capacities, or the use of a vehicle for a purpose of which it was not intended are not covered.
5. **ENVIRONMENTAL DAMAGE:** Parts made out of cloth, leather, wood, rubber, synthetics, paint or chrome which have been effected by exposure to the elements or chemical influence including, but not limited to road salts/chemicals, industrial fall-out or the use of improper cleaners, polishes, and or waxes are not covered.
6. **GLASS:** Glass breakage and scratches are not covered unless positive physical proof of manufacturing responsibility is established.
7. **SUSPENSION PARTS:** Suspension parts, including but not limited to rubber bushings, torque rod bushings, spring pins and bushings, and all greased lubrication points that fail due to improper maintenance, abnormally severe service or abuse are not covered.
8. **ALTERATIONS:** Any vehicle repaired and/ or altered in any way, so as to adversely effect, in Mack Trucks, Inc.'s sole judgment, its stability or reliability, is not covered.
9. **OPTIONAL EQUIPMENT:** Any part of the truck that fails, malfunctions or does not perform as a result of improper conversion or installation of special bodies or equipment by other manufacturers or suppliers is not covered.
10. **MAINTENANCE AND PARTS CONSUMED ("Consumables"):** Normal maintenance services including, but not limited to, replacement of oil filters, adjustments of the engine injection pump / transmission / brakes / linkages, as well as diagnosis, test time and all other adjustments, are not covered. Parts which are normally consumed or worn out during the vehicle's usual service life and customarily replaced during usual maintenance service are not covered or have limited coverage. These parts include, but are not limited to, the following:
NOT COVERED - Brake linings, clutch brake, clutch linings, mud flaps and brackets.
COVERED FOR 30 DAYS - Fluorescent lights or ballast, light bulbs, fuses, wiper blades and all filters (oil, fuel, air, etc.).
COVERED FOR 90 DAYS - Loose fasteners, leaking fittings or hose clamps.
COVERED FOR 12 MONTHS, OR 100,000 MILES (161,000 KM) OR 3,250 OPERATING HOURS, WHICHEVER OCCURS FIRST - Cab suspension on models used in heavy duty applications, batteries, frame paint, sealed light assemblies, exhaust flex pipe, hose clamps, all rubber/nylon bushings or mounts, flexible hoses, all belts, shock absorbers (leakage only), wheel seals, and all grease lubricated points (tie rods ends, king-pins, u-joints, spring pins, etc.)
11. **ALIGNMENT:** Alignment of axle(s) and balancing of tires, including changing of axle camber, caster, toe and thrust angle settings are not covered.
12. **NON-GENUINE PARTS:** Any vehicle which has been repaired by use of parts and accessories, as well as major assemblies and exchange units, which are substandard and which cause a vehicle component or system to fail are not covered.
13. **TIRES:** Tires are covered by separate warranties given by their respective manufacturers.
14. **CAB STRUCTURE AND CORROSION:** Cab structural defects or cab corrosion that occurs in areas of the cab that have been previously damaged, repaired, altered or modified are not covered. Cab corrosion where metal is perforated from the outside to the inside is not covered.
15. **ENGINES AND AUTOMATIC TRANSMISSIONS:** The engines and Allison automatic transmissions used in Mack trucks are warranted by their respective manufacturers. Refer to the engine and transmission manufacturers' warranty statements.
16. **ODOMETER READING:** Any vehicle in which the odometer has been disconnected or the mileage reading has been altered and the actual mileage cannot be readily determined is not covered.
17. **ACCESS TO INFORMATION:** The user must allow Mack Trucks, Inc. full access to all data stored in all Electronic Control Modules; failure to do so may result in the loss of warranty coverage.
18. **PREMIUM LABOR:** Labor for overtime and/or shift differential is not covered.
19. **EXCESSIVE LABOR:** Excessive labor for a warrantable repair due to installation of equipment or body by the customer is not covered.
20. **MISC. EXPENSE:** Road service, towing, meals, lodging, telephone calls, travel time, loss of cargo, downtime, loss of revenue, rental vehicles, or driver's wages and other miscellaneous expenses are not covered. Shop supplies, lube oil, lubricants, sealers, anti-freeze, filter elements and labor performed by a non-approved location are not covered.
21. **ADDITIONAL COMPONENTS:** Components or parts that are not installed by Mack Trucks, Inc. are not covered. Mack Trucks, Inc. factory manufacturing records will determine Mack Trucks, Inc. installations.
22. **APPLICATION CHANGE OR CHANGE OF OWNERSHIP:** If at any time during the term of the original warranty there is a change in the application of the vehicle or a change in ownership, the owner must notify Mack Trucks, Inc., Post Office Box 26115, Greensboro, NC 27402-6115 in writing and within 30 days of date of the change. Failure to provide such timely notice may result in the warranty becoming null and void. If the change in ownership is accepted by Mack Trucks, Inc., and/or the change in application does not affect coverage, Mack Trucks, Inc. will transfer any remaining applicable portion of the warranty to the new owner or, for the new application.



Mack Trucks, Inc. Custom Purchased Coverage Quote Form

Print Form

Submit by Email

This form should be used when there is NO coverage or BPE Code published that fit your customer's needs. Additional coverage may be requested if the truck is within nine (9) months of the Date In Service and if the vehicle is still within warranty mileage limits.

- Step 1: Complete quote information, vehicle detail and dealer information. To fax this form 336-393-2579 or e-mail this form adm.purchased.coverage.quotes@volvo.com
Step 2: Coverage approval will be sent back with a quote number and coverage price within 48 hours or two (2) business day.
Step 3: Upon receipt of quote number and coverage price, complete the Request For Bulldog Protection Plan form (FS26F (REV.02/10) upon delivery. It is required to include the Custom Quote Form with the FS26F Form.

VEHICLE DETAILS

Form fields for vehicle details including Date In Service (June 2011), Number of trucks (28), Mack Transmission (Allison), Model (GU713), Operation Class (Heavy Duty), Mack Carrier, Cab Size, Vocation (Heavy Vocational), Total Axles (2), GVW/GCW (64,180), Engine (MP 7), Engine HP Rating (395), Serial Number (s) (On order TBD), Time (Months), Miles.

Request Description: Dump Trucks

If this a Municipal request please provide the bid requirements pertaining to the warranty section. Municipal requests can take longer. Please allow a week.

CUSTOMER & DEALER INFORMATION

Form fields for customer and dealer information including Dealer Code (Q125), Customer Name (State of West Virginia), Phone (610-351-8758), Sales Rep (John Stuart/ Dan Wickline), Fax (610-351-8599), E-mail (john.stuart@macktrucks.com/ danton.wickline@macktrucks.com).

QUOTE (For Mack Internal Use Only)

Quote #: 11046-04, Price Each: US\$, Date: Feb 15, 2011, Initials: LF

Quote is valid for 90 days from this approval date, at which time an order must be placed or locked in with an order confirmation. Quotes for subsequent plans, even to the same customers, will require a new quotation.

Comments (For Mack Internal use Only): There is no bumper to bumper warranty. Engine Standard Warranty is 24/250K. Emissions Standard Warranty is 60/100K. Chassis Standard Warranty is 12/100K. Plan B Heavy GU 24/100K - Bronze 36/100K/6250 Hours - EA Harness/Sensor 36/100K/6250 Hours -

Current Date 5/4/11



Prepared For:

sion Dept of Admin, Purchasing Divi
2019 Washington St
Charleston, WV 25305-0130

Presented By:

Worldwide Equipment
945 Nandino Blvd
Lexington, Kentucky 40511
859-797-1434
jim.dotson@thetruckpeople.com

May 4, 2011
2012 GU713
Ref#: AGDR001412B

Description

ORDER/CUSTOMER/VEHICLE INFORMATION

INITIAL REGISTRATION LOCATION, UNITED STATES, WEST VIRGINIA	Opt
IDLE EMISSION CERTIFICATION, IDLE EMISSION CERTIFICATION - CARB 08	Std
TYPE OF SERVICE, MUNICIPAL	Opt
VEHICLE APPLICATION CLASS, HEAVY VOCATIONAL - Unlimited operation on concrete, asphalt, or maintained gravel/packed dirt with a maximum 3% grade; limited operation on unmaintained surfaces with maximum 5% grade; limited operation on concrete, asphalt, or maintained gravel/packed dirt with maximum 10% grade. (3 AXLES) 78,000 lbs (35,281 kg) MAX GVW. (4 AXLES) 80,000 lbs (36,288 kg) MAX GVW.	Opt
CARRIER APPLICATION, WITH CRD150-151, Unlimited miles on 3% grade maintained gravel/packed dirt or paved, Max 15% miles on 10% grade maintained gravel/packed dirt or paved, Max 10% miles on 5% unmaintained, maintained gravel, packed dirt, or paved. 90000# (41000 kg) MAX GCW. (Carrier Code USA-V1)	Std
VEHICLE TYPE, STRAIGHT TRUCK WITH TRAILER	Inc
VEHICLE USE AND BODY/TRAILER TYPE, SNOW PLOW. On/Off Hwy	
COMMODITIES, SALT	
BRAKE - STOPPING DISTANCE, BRAKE REGULATION, STOPPING DISTANCE 94M (310FT)	Std
FILE STATUS, QUOTE	
PRICE BOOK LEVEL, 2012B PRICE BOOK LEVEL	Std
PRODUCT TYPE, PRODUCT TYPE - CML64R	Opt
PRODUCT CLASS, PRODUCT CLASS 28	Opt
BACK OFFICE PROCESS, BACK OFFICE PROCESS	Std
BVS/FRT AXLE POS/SALES PACKAGES	
CHASSIS (BASE MODEL), GU703 6-WHEEL TRUCK	Std
ENGINE/TRANSMISSION/CLUTCH	
ENGINE, MACK MP7-395C 395 HP @1500-1700 RPM (PEAK) 1560 LB FT. MAX TORQUE @ 1100-1200 RPM	Opt
TRANSMISSION, ALLISON RDS4500-6 AUTOMATIC TRANS.	USR
CLUTCH, MANUAL ADJUSTING, CL39DC13 EATON ADVANTAGE EZ-PEDAL, 9-SPRING, 2-PLATE, 15.5" CERAMIC CLUTCH, 6 PADDLES, MANUAL ADJ	Std
EXHAUST/EMISSIONS	
DPF, CLARTECH HHS DPF RH SIDE UNDER CAB W/SCR FRAME MTD RH SIDE	Std
EXHAUST AFTER-TREATMENT SYSTEM, EXHAUST AFTER-TREATMENT SYSTEM DIESEL PARTIC FILTER CERAMIC PASSIVE REGEN	Std
DPF SMART SWITCH, NO INHIBIT DPF REGENERATION SWITCH	Std
EXHAUST, EXHAUST - SINGLE/CAB MTD, SINGLE (R/S) VERT EXHAUST CAB MOUNTED, LOWER VENTURI DIFFUSER, TURNED END	Opt
FURNISH STEEL PAINTED HEAT SHIELD FOR FRAME MTD MACK CAP DPF	Std
ENGINE EQUIPMENT	
AIR COMPRESSOR, MERITOR/WABCO 318 18.7 CFM	Std
AIR CLEANER, 11"	Opt
AIR GOVERNOR	Std
INSIDE/OUTSIDE AIR INTAKE W/IN-CAB CONTROL FOR SNOWPLOWS	Opt
ALTERNATOR, DELCO 12V 130A (24SI) BRUSH-TYPE	Std

Description

BATTERIES, (3) MACK 12V 1000/3000 CCA THREADED STUD	Opt
BUG SCREEN, RADIATOR MOUNTED	Std
TEXACO LONG LIFE ENGINE COOLANT #7998 WITH NITRITES (50/50 mix) to -34 degrees F (-37 degrees Celsius)	Opt
SPIN ON CANISTER W/O CHEMICAL FOR USE W/TEXACO EXTENDED LIFE COOLANT ONLY	Opt
ENGINE BRAKE, MACK POWERLEASH	Std
ENGINE BLOCK HEATER, 120V 1500 WATT ENGINE BLOCK HEATER	Opt
ENGINE HOSES AND TUBING, SILICONE (DOES NOT INCLUDE HEATER & RADIATOR HOSES)	Std
FAN DRIVE, BORG WARNER COOL LOGIC FAN DRIVE (HDMS) ELECTRONICALLY CONTROLLED VARIABLE	Std
FLYWHEEL HOUSING, LIGHT WEIGHT, ALUMINUM	Std
FUEL HEATER, ARCTIC FOX FUEL WARMER	USR
FUEL-WATER SEPARATOR, MACK W/MANUAL DRAIN VALVE (INTEGRAL W/PRIMARY FUEL FILTER)	Std
HAND PRIMER PUMP	Inc
HOSES - RADIATOR/HEATER, SILICONE	Opt
OIL PAN HEATER, W/O OIL PAN HEATER	Std
RADIATOR, ALUMINUM CORE	Std
ELECTRIC PREHEATER	Opt
STARTER, 12 VOLT DELCO 39MT-MXT	Opt
ELECTRONIC STARTER INTERLOCK	Std
TRANSMISSION EQUIPMENT/DRIVELINES	
CLUTCH ASSIST (AIR), Information is not required	Opt
CLUTCH PEDAL, W/O CLUTCH PEDAL	Inc
TRANSMISSION BELL HOUSING, ALUMINUM	Std
FURNISH FOR ALLISON TRANSMISSION W/DIRECT MOUNT COOLER	Inc
SYNTHETIC LUBRICANT - TRANSMISSION, TRANSYND SYNTHETIC LUBE FOR ALLISON TRANS	Opt
VOCATIONAL PACKAGE - ALLISON, ALLISON VOCATIONAL PKG. #99113 RUGGED DUTY SERIES (RDS) - ON/OFF HIGHWAY	Opt
WITHOUT DRIVESHAFT GUARD FOR CENTER BEARING	Std
DRIVELINE - MAIN, SPICER 1810 HD W/COATED SPLINES	Opt
DRIVELINE - INTERAXLE, SPICER 1710 HD W/COATED SPLINES	Opt
CAB (A thru G)	
BLEND AIR HVAC W/APADS	Opt
AIR CONDITIONING COMPRESSOR, ROTARY FREON	Std
AIR RESTRICTION MONITOR (INTAKE), W/O AIR RESTRICTION MONITOR	Std
ASH TRAY	Std
DASH CONTROL/POWER SUPPLY/LOCAL INSTALLATION PLOW LAMPS W/LEAD FURNISH AT GRILLE W/2W/3W WEATHER PACK CONNECTION	Opt
CAB, LH-DRIVE CA68 CONV CAB	Std
CAB MOUNTING, AIR SUSPENSION	Std
CERTIFIED WEIGHT	Opt
CIGAR LIGHTER	Std
COAT HOOK (2)	Std
DRIVERS AND PASSENGER SIDE CUP-HOLDERS	Std
PROVIDE (6) MISC SWITCHES	Opt

Description

PARK BRAKE AND ENGINE RUNNING ACTIVATED	Std
(4) LAMPS RH & LH DOME LAMPS-DOOR & SWITCH ACTIVATED; (2) CAB REAR DOME LAMPS-SWITCH ACTIVATED	Std
DOOR INTERIOR TRIM PANELS, PADDED VINYL WITH ARM REST PADS	Std
ENGINE SHUTOFF, KEY TYPE	Std
FENDER EXTENSIONS, FENDER EXTENSIONS	Opt
5LB FIRE EXTINGUISHER BETWEEN LH SEAT BASE AND DOOR WITH VALVE AIMED REARWARD	Opt
FLOOR COVERING, POLYURETHANE FLOOR MAT	Std
GAUGE, AIR PRESSURE	Std
GAUGE, VOLTMETER	Std
GAUGE CLUSTER, EXHAUST PYROMETER AND TRANSMISSION OIL TEMPERATURE GAUGES	Std
GAUGE, ENGINE COOLANT TEMPERATURE	Std
GAUGE, ENGINE OIL PRESSURE	Std
GAUGE, ENGINE OIL TEMPERATURE	Std
GAUGES, ENGLISH/METRIC DISPLAY	Std
WITHOUT REAR AXLE OIL TEMPERATURE GAUGE	Std
GAUGE, SPEEDOMETER W/TRIP ODOMETER (ELECTRONIC 1% ACCURACY)	Std
ENGINE TACHOMETER	Std
GEAR SHIFT, DASH MOUNTD SHIFTER	Inc
GLASS - CAB WINDOW, SAFETY TINTED WINDSHIELD, SIDE AND REAR WINDOWS	Std
STANDARD GRAB HANDLE OPTION RH & LH, BEHIND DOOR	Std
GRILLE - HOOD AIR INTAKE, BRIGHT FINISH GRILLE	Opt
GRILLE, SILVER PAINTED W/O GRILLE SURROUND	Std
CAB (H thru R)	
HEADLINER, VINYL COVERED FOAM PADDED HEADLINER	Std
HOOD AND FENDERS, COMPOSITE MATERIAL	Std
HOOD INSULATION	Std
PAINTED HOOD LATCHES	Std
HORN - AIR, (2) MACK RECTANGULAR SINGLE TRUMPET, CHROME PLATED STEEL W/SNOW SHIELDS	Opt
HORN - ELECTRIC, DUAL TONE (TWO HORNS)	Opt
IDENTIFICATION/CLEARANCE LIGHTS, (5) MARKER AND CLEARANCE, INCANDESCENT, SURFACE MOUNTED	Std
IN-DASH STORAGE, W/O UPPER STORAGE OPTION	Opt
INSTRUMENT CLUSTER DISPLAY, CO-PILOT DRIVER DISPLAY (ENHANCED 4.5" DIAGONAL GRAPHIC LCD DISPLAY W/4-BUTTON STALK CONTROL) (INCLUDES GUARDOG ROUTINE MAINTENANCE MONITORING)	Std
INSTRUMENT PANEL, CHARCOAL GRAY	Std
INTERIOR TRIM (PUREBRED - SLATE GRAY) Vinyl headliner & seat covering, 2 netted storage compartments and center CB radio mounting provisions in overhead console, rear panel with storage pouch, polyurethane floor mat, 2 cup holders, slate gray instrument panel with black gauge bezel, Sandstone door panels & trim, RH door peep window, padded interior sun & visors both sides, 2 spoke slate grey urethane cushion grip steering wheel with Bulldog horn button, adjustable tilt/telescoping steering column, hand crank lh/rh windows, 2 general overhead lights, 1 driver overhead light & 1 map non-glare overhead light, 2 12V power sources, seat belts, lap and shoulder w/cab mtd shoulderbelt, 2 coat hangers, 2 trash bag hooks, RH storage compartment, RH Door Peep Window	Opt
KEYED ALIKE CHASSIS	
KEY NUMBER 122	

Description

LOW AIR PRESSURE INDICATOR LIGHT AND BUZZER	Std
MIRRORS - EXTERIOR, AERODYNAMIC MOTO MIRROR PACKAGE: RH/LH MOTORIZED & HEATED	Opt
MIRRORS - CONVEX TYPE, BRIGHT FINISH, LH & RH 8.0" DIA HEATED; MOUNTED BELOW LOWER ARM OF WEST COAST MIRROR	Opt
OVERHEAD CONSOLE, (2) STORAGE COMPARTMENTS AND NET RETAINERS W/CENTER MOUNTING FOR CB PROVISIONS	Std
PARKING BRAKE ON INDICATOR LIGHT	Std
PERSONALIZED NAME PLATE	
STATE OF WEST VIRGINIA	
POWER OUTLETS, (2) 12-VOLT AUXILIARY POWER OUTLETS - DASH MOUNTED	Std
AM/FM STEREO CD W/WEATHERBAND	Std
RADIO ANTENNA, CAB MOUNTED BEHIND LH DOOR	Inc
POWER LEADS (5-WAY BINDING POSTS FOR CB RADIO) IN HEADER CONSOLE	Std
CB RADIO MOUNTING REINFORCEMENT IN HEADER CONSOLE	Std
REAR WINDOW (FIXED TYPE)	Std
EMERGENCY TRIANGLE KIT PARALLEL TO INSIDE SURFACE OF RIDERS SEAT BASE	Opt
CAB (S thru Z)	
SEAT - DRIVER, BOSTROM TALLADEGA 915 (HI-BACK) AIR SUSPENSION	Opt
SEAT - RIDER, BOSTROM TALLADEGA 915 (HI-BACK) AIR SUSPENSION	Opt
SEAT ARM RESTS, INBOARD MOUNTED ARM REST, DRIVER'S & RIDER'S SEAT	Inc
SEAT COVERING, CLOTH W/VINYL TRIM RIDER AND DRIVER	Opt
SEAT BELTS, LAP AND SHOULDER W/CAB MOUNTED SHOULDER BELT	Std
W/O ROOF VENT VENTILATION	Std
STARTER SWITCH, KEY TYPE	Std
STEERING COLUMN, ADJUSTABLE TILT TELESCOPE	Std
STEERING WHEEL, TWO SPOKE URETHANE GRIP PAINTED SPOKES & BULLDOG HORN CAP	Std
STORAGE POUCH REAR	Std
SUN VISOR - INTERIOR, BOTH SIDES (PADDED VINYL)	Std
WINDOW CONTROLS, POWER WINDOW LIFT WITH ELECTRIC DOOR LOCK, LH & RH	Opt
WINDSHIELD, 2-PIECE WINDSHIELD	Std
WINDSHIELD WASHERS, ELECTRIC, WIPER MOUNTED W/RESERVOIR MOUNTED UNDER HOOD	Std
WINDSHIELD WIPERS, ARTIC TYPE WIPERS WITH 2 SP AND INTERMITTENT FEATURE	USR
FRAME EQUIPMENT/FUEL TANKS	
BUMPER - FRONT, EXT.-SWEPT BACK-STEEL CHANNEL 122.5"/3112 mm BBC	Std
CROSSMEMBERS, BOC AND INTERMEDIATE(S) STEEL HD BACK-TO-BACK CHANNEL	Std
CROSSMEMBER (BEHIND REAR AXLE), STEEL SINGLE CHANNEL (1) W/AF of 70" to 129".	Inc
WITHOUT FIFTH WHEEL MOUNTING ANGLES	Std
FLAPS - MUD (FRONT), BLACK POLYARMOUR MUD FLAP	Std
FRONT FRAME EXTENSION, 20" FOR SNOW PLOW MOUNT (CONT' PARENT RAIL) W/TILT W/O INSPECTION	Opt
HATCHS-W/SWEPT-BACK BUMPER	
TOWING DEVICE - FRONT, HOOKS	Std
TOWING DEVICE - REAR, HOOKS (FRAME MOUNTED)	Opt
FUEL TANK - LH, 116 GALLON (439 L) STEEL, SLEEVED D-SHAPED	Opt

Description

FUEL TANK - RH, OMIT RH STANDARD	Std
6.6 GALLON (25 L) 22" DIAMETER TANK LEFT SIDE FRAME MTD	Inc
PAINTED FINISH DEF TANK COVER	Std
W/O FUEL LINE OPTION	Inc
RELOCATE FUEL TANK, W/O RELOCATED FUEL TANK(S)	Std
FRONT AXLE/EQUIPMENT/TIRES	
FRONT AXLE, 20000# (9072kg) MACK FXL20 WIDE PIVOT CENTER	Opt
FRONT AXLE - TWIN STEER, WITH SINGLE STEER FRONT AXLE	Std
TIRES BRAND/TYPE - FRONT, GOODYEAR - TUBELESS RADIAL PLY, (2) 315/80R22.5 20 L G291 (ALL POS)	Opt
WHEELS - FRONT, STEEL DISC (10-HOLE)	Std
(2) 22.5x9.0 (228 mm) HAYES LEMMERZ 10-HOLE HUB PILOTED (11 1/4"/286mm BC)(FIVE HAND HOLE)(5.25" INSET)	Opt
WHEELS - POLISHED (FRONT), W/O FRONT DISC WHEEL BRIGHT FINISH	Std
BRAKES - FRONT, BENDIX ES165-06D, 16.5" x 6" CAST SPIDER	Opt
BRAKE DRUMS - FRONT, CAST OUTBOARD MOUNTED	Inc
DUST SHIELDS - FRONT BRAKE, FURNISH	Opt
HUBS - FRONT, FERROUS	Std
FAG SCHAEFFLER, FRONT HUB OIL SEAL	Std
SHOCK ABSORBERS, FRONT	Std
SLACK ADJUSTERS - FRONT, GUNITE 2000 - AUTOMATIC	Std
SPRINGS - FRONT, MACK MULTILEAF 20000# (9072kg) GROUND LOAD RATING	Opt
STEERING, SHEPPARD SD110 + HD94	Opt
PROTECTIVE NYLON SPACER BETWEEN DISCS WHEEL TO DRUM	Opt
REAR AXLE/EQUIPMENT/TIRES/RATIOS	
REAR AXLE/SUSPENSION, 46000# (20866kg) MACK S440-46 FAB STEEL HOUSING - RECERTIFICATION, S440 MACK MULTILEAF (CAMELBACK) 46000# - RECERTIFICATION	Opt
TIRES BRAND/TYPE - REAR, GOODYEAR - TUBELESS RADIAL PLY, (8) 11R22.5 16 H G282MSD (DRIVE)	Opt
CARRIER/RATIO - REAR AXLE, CRDP150/151, 5.04 RATIO	Opt
WHEELS - REAR, STEEL DISC (10 HOLE)	Std
(8) 22.5x8.25 (210 mm) HAYES LEMMERZ 10-HOLE HUB PILOTED (11 1/4"/286 mm BC)(TWO HAND HOLE)	Std
BRAKES - REAR, BENDIX ES165-07D, 16.5x7 CAST SPIDER	Std
BRAKE DRUMS - REAR, CAST OUTBOARD MOUNTED	Std
DUST SHIELDS - REAR BRAKE, FURNISH	Opt
HUBS - REAR, FERROUS	Std
OIL SEALS, STEMCO-GUARDIAN	Opt
POWER DIVIDER LOCKOUT W/WARNING LIGHT AND BUZZER (INCLUDES IN CAB MANUAL AIR VALVE)	Opt
SLACK ADJUSTERS - REAR, GUNITE 2000 - AUTOMATIC	Std
SUSPENSION - AXLE SPACING, 50" AXLE SPACING (BOGIE WHEELBASE)	Std
SUSPENSION - HEIGHT CONTROL KIT, MACK	Inc
SPRINGS, ANTI-SWAY	Std
SPRING BRAKE CHAMBERS - QUANTITY, (4) DOUBLE DIAPHRAGM TYPE, MECHANICAL SPRING RELEASE, (2) MOUNTED ON EACH AXLE	Std
SPRING BRAKE CHAMBERS - VENDOR, MGM TR-TS CHAMBERS	USR
SPRING BRAKE CHAMBERS, TYPE 30/30 REAR	Std

Description

SYNTHETIC LUBRICANT - REAR AXLE, 75W - 90 (SYNTHETIC LUBRICANT) - SYNTHETIC	Opt
TRANSVERSE TORQUE ROD (REAR AXLE ONLY)	Inc
BRONZE TRUNNION BUSHING	Inc
PROTECTIVE NYLON SPACER BETWEEN DISCS WHEEL TO DRUM	Opt
FRAME/WHEELBASE/PLATFORM	
FRAME RAILS, 11.811" x 3.54" x .44" (300 x 90 x 11.1mm) STEEL Section Modulus: 23.5 cu in/RBM 2,820,000 in lbs per rail	Opt
WHEELBASE, 214" (5445 mm) WB 127" CA (3222 mm)	Opt
PLATFORM, 189" LP (4802 mm) 62" AF (1580 mm) USED WITH 214" WB	Opt
FRAME REINFORCEMENT - INSIDE, W/O 5MM INSIDE CHANNEL REINFORCEMENT	Std
AIR/BRAKE	
AIR BRAKE SYSTEM, DUAL	Std
AIR DRYER, BENDIX HEATED AIR DRYER, AD9 W/COALESCING OIL FILTER	Opt
AIR TANK LOCATION, USE ONLY TWO AIR RESERVOIRS MTD. FWD. OF LH FUEL TANK	USR
AIR RESERVOIRS, STEEL	Std
ANTI-LOCK BRAKE SYSTEM, BENDIX WITH TRACTION CONTROL	Opt
AIR CONTROL VALVES - VENDOR, BENDIX SWITCHES AND VALVES WHERE POSSIBLE	Inc
BRAKE CONTROL VALVE SYSTEM, TWO (2) VALVE DUAL BRAKE SYSTEM - TRAILER SUPPLY AND TRACTOR-TRAILER PARK	Opt
DRAIN VALVES, MANUAL (PETCOCK) DRAIN VALVES ON ALL TANKS	Std
HAND CONTROL VALVE FOR TRAILER BRAKES	Inc
TRAILER CONNECTIONS	
TRAILER AIR CONNECTIONS, TRAILER AIR BRAKE CONNECTIONS, END OF FRAME WITHOUT HOSE TENDER	Opt
TRAILER ELECTRICAL RECEPTACLE, SINGLE 7 PINS STD SAE TYPE, END OF FRAME	Opt
OMIT TRAILER CONNECTORS HOLDER	Std
ELECTRICAL	
BATTERY BOX(ES), STEEL	Std
BATTERY BOX COVERS, MOLDED PLASTIC	Std
BATTERY BOX - MOUNTING, RIGHT HAND UNDER CAB	Std
BATTERY SHOCK PADS	Opt
COURTESY LIGHT SWITCH (HEADLAMP AND CLEARANCE)	Std
ELECTRIC CIRCUIT PROTECTION PACKAGE, ALL CIRCUITS FUSE/BREAKER PROTECTED	Std
WATERPROOF ELECTRICAL CONNECTIONS SPRAYED W/PROTECTIVE COATING	Std
"BODY LINK" III W/CAB PASS-THRU	Std
DASH CONTROL & WIRING, W/HOLESIZE TO ACCOMMODATE LOCAL INSTALL OF RND/RECT AUX FOG OR DRIVING HEADLIGHTS, HALOGEN FLUSH	Opt
SIGNAL FLASHER TYPE, TRANSISTORIZED FLASHER FOR TURN SIGNAL	Std
PAINT	
PAINT - CAB EXTERIOR, SINGLE COLOR, MACK WHITE (HIGH GLOSS)	Std
PAINT - CAB, URETHANE BASE COAT W/O CLEAR COAT	Std
PAINT - CHASSIS RUNNING GEAR, MACK BLACK (URETHANE)	Std
PAINT - BUMPER, SAME AS CHASSIS RUNNING GEAR	Inc
PAINT - FRONT SPOKE WHEELS, WITHOUT OPTIONAL SPOKE WHEEL PAINT	Std

Description

WITHOUT OPTIONAL SPOKE WHEEL PAINT	Std
PRE-FINISHED FRONT DISC WHEELS, GRAY POWDER COAT PAINT	USR
PRE-FINISHED REAR DISC WHEELS, GREY POWDER COATED PAINT	USR
PAINT PROCESS CODES	
SAME COLOR AS CHASSIS RUNNING GEAR (5ZB-A1X)	Inc
CHASSIS RUNNING GEAR - STD COLOR (MACK BLACK) (6AB-Z1X)	Inc
W/O PAINT FOR FUEL TANK (7HB-Z1X)	Inc
W/O CUSTOM PAINT FOR HUB&DRUM/SPOKES (5YB-Z1X)	Inc
W/O CUSTOM PAINTED FRONT/REAR RIM/WHEEL (6BB-Z1X)	Inc
PTO/SPECIALTY/ADDITIONAL EQUIPMENT	
PTO - CRANKSHAFT ADAPTER, 1350 SERIES FLANGE (DOES NOT INCLUDE FRONT FRAME EXTENSION)	Opt
PTO - REAR ENGINE (REPTO), WITHOUT REAR ENGINE POWER TAKE OFF	Std
V-MAC IV PROGRAMMABLE PARAMETERS	
CRUISE CONTROL SETTINGS WALLISON TRANS	
CRUISE CONTROL MAX SET SPEED (MPH) 65 mph	
CRUISE CONTROL MIN SET SPEED (MPH) 20 mph	
CRUISE CONTROL AUTORESUME W/CLUTCH Omit	
CRUISE'N BRAKE ENGAGEMENT DELAY (MPH) 3 mph	
DATAMAX SETTING FOR USE WITH INSTRUMENT CLUSTER DISPLAY (C0J002)	Std
ENGINE OVERSPEED COMPANY LIMIT (RPM) 2200 rpm	
FUELED ENGINE OVERSPEED COMPANY LIMIT (RPM) 2100 rpm	
VEHICLE OVERSPEED COMPANY LIMIT (MPH) 75 mph	
FUELED VEHICLE OVERSPEED COMPANY LIMIT (MPH) 70 mph	
IDLE LOGGING DELAY (MIN) 2	
PERIODIC TRIP TYPE Monthly Trip Summary	
PERIODIC TRIP HOUR OF DAY 0 (disable)	
PERIODIC TRIP DAY OF WEEK 0 (disable)	
PERIODIC TRIP DAY OF MONTH 1	
DAYTIME RUNNING LIGHTS W/O OVERRIDE SWITCH	Std
DRL OVERRIDE SWITCH SPEED THRESHOLD (MPH) 00	
DRL OVERRIDE SWITCH OFF TIME (MIN) 00 mph	
CO-PILOT FLEET TRIP PROGRAMMING ACCESS Fleet Level	
FLEET MANAGEMENT VIA CO-PILOT Omit	
DEL MESSAGES CO-PILOT ACTIVATION Omit	
EHT MAX ENGINE SET SPEED (RPM)	
2100 rpm	
EHT MIN ENGINE SET SPEED (RPM) 700 rpm	
EHT VEHICLE SPEED RANGE LIMIT (MPH) 10 mph	
EHT RAMP RATE (RPM/Sec)	
EHT SINGLE SPEED CONTROL ACTIVATION Omit	
EHT SINGLE SPEED CONTROL SET SPEED (RPM) 0000 rpm	
EHT JUMP-TO-MIN SET SPEED Omit	
ENGINE PROTECTION - OIL PRESSURE SHUTDOWN Furnish	

Description

ENGINE PROTECTION - COOLANT LEVEL SHUTDOWN	Omit
ENGINE PROTECTION - COOLANT TEMP SHUTDOWN	Furnish
ENGINE PROTECTION - ENGINE OIL TEMP SHUTDOWN	Furnish
ENGINE PROTECTION TRANS OIL TEMP SHUTDOWN	Furnish
FUEL ECONOMY INCENTIVE FOR USE WITH INSTRUMENT CLUSTER DISPLAY (C0J 0002)	Std
FEI PENALTY TARGET FUEL ECONOMY	No Driver Incentive
FEI PENALTY TARGET FUEL ECONOMY (MPG)	0.0
FEI PENALTY VEHICLE SPEED DECREASE (MPH)	0 mph
FEI REWARD TARGET FUEL ECONOMY (MPG)	0.0
FEI REWARD VEHICLE SPEED INCREASE (MPH)	0 mph
FEI DISTANCE CALCULATION INTERVAL (Miles)	00
GOVERNOR SETTINGS FOR USE WITH AUTOMATIC TRANSMISSIONS	Inc
GOVERNOR TYPE	Min-Max Governor
ENGINE HIGH IDLE SPEED IN UPPER GEARS	0000
ENGINE LOW IDLE SET SPEED (RPM)	650 rpm
DRIVER LOW IDLE ADJUST FEATURE ACTIVATION	Omit
SMART IDLE FEATURE ACTIVATION	Omit
SMART IDLE ELEVATED IDLE RPM TIME (MINS)	10
IDLE COOLDOWN FEATURE ACTIVATION	Omit
IDLE SHUTDOWN FEATURE ACTIVATION	Omit
IDLE SHUTDOWN TIME (MINS)	10
IDLE SHUTDOWN WARNING TIME (SECS)	30
IDLE SHUTDOWN WARM-UP TEMPERATURE (DEG F)	100
IDLE SHUTDOWN WARM-UP TIMER (MINS)	5
IDLE S/D OVERRIDE W/EHT	Omit
IDLE S/D OVERRIDE W/PTO	Furnish
IDLE S/D OVERRIDE W/ENGINE LOAD	Furnish
MAINTENANCE MONITOR FEATURE ACTIVATION	Furnish
MAINTENANCE MONITOR OEM DEFAULT INTERVALS	MP Vocational
MAINTENANCE DUE WARNING PERCENT	90
PTO 1 MAX ENGINE SET SPEED (RPM)	2100 rpm
PTO 1 MIN ENGINE SET SPEED (RPM)	600 rpm
PTO 1 VEHICLE SPEED RANGE LIMIT (MPH)	10 mph
PTO 1 RAMP RATE (RPM/Sec)	100
PTO 1 SINGLE SPEED CONTROL ACTIVATION	Omit
PTO 1 SINGLE SPEED CONTROL SET SPEED (RPM)	1000 rpm
PTO 1 SINGLE SPEED CONTROL AUTOSET	Omit
PTO 1 JUMP-TO-MIN SET SPEED	Omit
PTO 1 VEHICLE LIMITING SPEED (MPH)	60 mph
PTO 2 MAX ENGINE SET SPEED (RPM)	2100 rpm
PTO 2 MIN ENGINE SET SPEED (RPM)	600 rpm
PTO 2 VEHICLE SPEED RANGE LIMIT (MPH)	10 mph
PTO 2 RAMP RATE (RPM/Sec)	100

Description

PTO 2 SINGLE SPEED CONTROL ACTIVATION	Omit
PTO 2 SINGLE SPEED CONTROL SET SPEED (RPM)	1000 rpm
PTO 2 SINGLE SPEED CONTROL AUTOSET	Omit
PTO 2 JUMP-TO-MIN SET SPEED	Omit
PTO 2 VEHICLE LIMITING SPEED (MPH)	60 mph
SPEED SENSOR TAMPER DETECTION SYSTEM ACTIVATION	Furnish
SPEED SENSOR TAMPER DETECTION TORQUE LIMIT (%)	50
TRANSMISSION SETTINGS, TRANSMISSION SETTINGS FOR USE W/O EATON AUTO/ULTRASHIFT	Std
EATON AUTOSHIFT/ULTRASHIFT SHIFT MODE W/O Eaton Auto/Ultrashift Mode	
CUSTOMER VEHICLE LIMITING SPEED (MPH)	65 mph
LGVLS FEATURE ACTIVATION	Omit
LOWER GEAR VEHICLE LIMITING SPEED (MPH)	00 mph
DEALER INFORMATION	
ENGINE WARRANTY, 2YR/250,000 MILES ENGINE WARRANTY US10	Std
MANUALS, PEDIGREED PROTECTION PLAN TECH. SERVICE MANUAL PROVIDED	Std
PILOT INSPECTION, REQUESTED	Opt
ALLISON	
P&S MANUALS	
WARRANTY TO MEET SPECS	
BODY	
PDI	
STANDARD SHIPPING INSTRUCTIONS	Std
MARKETING PROMOTION, ALLISON EDGE PROGRAM	USR
PERFORMANCE/GRAPHICS/TECH DATA	
AMBIENT TEMPERATURE, 77F (25.0C)	Std
BACK OF CAB INTERFERENCES, 0.0" (0mm) FROM BACK OF CAB	Inc