



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

Request for Quotation

RFO NUMBER
 707EC021

PAGE
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF
 JOHN JOHNSTON
 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
06/11/2007				

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

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
001	1	EA		065-30		
64,000 GVW CAB & CHASSIS, STAINLESS STEEL DUMP BODY OPEN END CONTRACT TO PROVIDE 64,000 GVW CAB AND CHASSIS, STAINLESS STEEL DUMP BODY, AND PISTON PUMP HYDRAULIC SYSTEM AS DESCRIBED IN ATTACHED PROCUREMENT SPECIFICATION 377-2-D THERE WILL BE A MANDATORY PRE-BID CONFERENCE AT THE STATE CAPITOL COMPLEX, BUILDING 15, CONFERENCE ROOM, AT 10:00 AM. ON 7/12/07. FAILURE TO ATTEND THE PRE-BID CONFERENCE WILL RESULT IN BID DISQUALIFICATION. QUESTIONS: WRITTEN QUESTIONS WILL BE ACCEPTED THROUGH CLOSE OF BUSINESS (5:00PM EST) ON THURSDAY, 6/28/07. SEND YOUR QUESTIONS TO: PURCHASING DIVISION JOHN JOHNSTON 2019 WASHINGTON ST. E. CHARLESTON, WV. 25305 QUESTIONS MAY BE SENT VIA FAX, E-MAIL, OR REGULAR MAIL. E-MAIL: JJOHNSTON@WVADMIN.GOV FAX: 304-558-4115 IT IS THE VENDORS RESPONSIBILITY TO VERIFY THAT THEIR QUESTIONS HAVE BEEN RECEIVED BY CALLING 304-558-2402. EXHIBIT 2 LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE ON AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS						<i>Price on Add #2 Front Page</i>

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

VENDOR: *JJ* TELEPHONE: *800-879-3039* DATE: *10-16-07*
 MUNICIPAL SALES FEIN: *61-0871032* ADDRESS CHANGES TO BE NOTED ABOVE



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<p>NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING THIRTY (30) DAYS WRITTEN NOTICE.</p> <p>UNLESS SPECIFIC PROVISIONS ARE STIPULATED IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS, AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.</p> <p>RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM WITH THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN</p> <p>OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK).</p> <p>QUANTITIES: QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIES BY THE STATE SPENDING UNIT. IT IS UNDERSTOOD AND AGREED THAT</p>						

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SIGNATURE *[Signature]* TELEPHONE 800-879-3039 DATE 10-16-07

FEIN 66-0871032 ADDRESS CHANGES TO BE NOTED ABOVE



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<p>THE CONTRACT SHALL COVER THE QUANTITIES ACTUALLY ORDERED FOR DELIVERY DURING THE TERM OF CONTRACT, WHETHER MORE OR LESS THAN THE QUANTITIES SHOWN.</p> <p>ORDERING PROCEDURE: SPENDING UNIT(S) SHALL ISSUE A WRITTEN EQUIPMENT CONTRACT ORDER (FORM NUMBER WV-35) FOR COMMODITIES COVERED BY THIS CONTRACT. THE ORIGINAL WV-35 MUST BE SENT TO THE PURCHASING DIVISION OF THE DEPARTMENT OF ADMINISTRATION. AFTER APPROVAL AND ENCUMBRANCE, ONE COPY OF THE PURCHASE ORDER WILL BE RETURNED TO THE SPENDING UNIT AND ONE COPY FORWARDED TO THE VENDOR AS AUTHORIZATION FOR SHIPMENT. NO ORDER IS VALID UNLESS APPROVED AND ENCUMBERED BY THE PURCHASING DIVISION.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.</p> <p>REV. 9/98</p> <p>EXHIBIT 6</p> <p>PRICE ADJUSTMENT PROVISION: THE STATE OF WEST VIRGINIA WILL CONSIDER BIDS THAT CONTAIN PROVISIONS FOR PRICE ADJUSTMENTS PRIOR TO THE ORIGINAL EXPIRATION OF THE CONTRACT, PROVIDED THAT SUCH PRICE ADJUSTMENT COVERS BOTH UPWARD AND DOWNWARD MOVEMENT OF THE COMMODITY PRICE, AND THAT ADJUSTMENT IS BASED ON THE "PASS THROUGH" INCREASE OR DECREASE OF RAW MATERIALS AND/OR LABOR, WHICH MAKE UP ALL OR A SUBSTANTIAL PART OF A PRODUCT. ADJUSTMENTS ARE TO BE BASED UPON AN ACTUAL DOLLAR FIGURE, NOT A PERCENTAGE. ALL PRICE ADJUSTMENT REQUESTS MUST BE SUBSTANTIATED IN</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *JOB* TELEPHONE **800-879-3039** DATE **10-16-07**
 MUNICIPAL SALES FEIN **61-0871032** ADDRESS CHANGES TO BE NOTED ABOVE

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



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

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

NATURE	TELEPHONE	DATE
<i>Municipal Sales</i>	800-877-3039	10-16-07
FEIN	ADDRESS CHANGES TO BE NOTED ABOVE	
67-0871032		

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 5

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AUXILIARY

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<p>() BIDDER IS AN INDIVIDUAL RESIDENT VENDOR AND HAS RESIDED CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR</p> <p>() BIDDER IS A PARTNERSHIP, ASSOCIATION OR CORPORATION RESIDENT VENDOR AND HAS MAINTAINED ITS HEAD-QUARTERS OR PRINCIPAL PLACE OF BUSINESS CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR 80% OF THE OWNERSHIP INTEREST OF BIDDER IS HELD BY ANOTHER INDIVIDUAL, PARTNERSHIP, ASSOCIATION OR CORPORATION RESIDENT VENDOR WHO HAS MAINTAINED ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR</p> <p>X BIDDER IS A CORPORATION NONRESIDENT VENDOR WHICH HAS AN AFFILIATE OR SUBSIDIARY WHICH EMPLOYS A MINIMUM OF ONE HUNDRED STATE RESIDENTS AND WHICH HAS MAINTAINED ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS WITHIN WEST VIRGINIA CONTINUOUSLY FOR THE FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION.</p> <p>B. APPLICATION IS MADE FOR 2.5% PREFERENCE FOR THE REASON CHECKED:</p> <p>() BIDDER IS A RESIDENT VENDOR WHO CERTIFIES THAT, DURING THE LIFE OF THE CONTRACT, ON AVERAGE AT LEAST 75% OF THE EMPLOYEES WORKING ON THE PROJECT BEING BID ARE RESIDENTS OF WEST VIRGINIA WHO HAVE RESIDED IN THE STATE CONTINUOUSLY FOR THE TWO YEARS IMMEDIATELY PRECEDING SUBMISSION OF THIS BID;</p> <p>OR</p> <p>X BIDDER IS A NONRESIDENT VENDOR EMPLOYING A</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

DATE: 10-16-07
 TELEPHONE: 800-879-3039
 FEIN: 610871032
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<p>MINIMUM OF ONE HUNDRED STATE RESIDENTS OR IS A NONRESIDENT VENDOR WITH AN AFFILIATE OR SUBSIDIARY WHICH MAINTAINS ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS WITHIN WEST VIRGINIA EMPLOYING A MINIMUM OF ONE HUNDRED STATE RESIDENTS WHO CERTIFIES THAT, DURING THE LIFE OF THE CONTRACT, ON AVERAGE AT LEAST 75% OF THE EMPLOYEES OR BIDDERS' AFFILIATE'S OR SUBSIDIARY'S EMPLOYEES ARE RESIDENTS OF WEST VIRGINIA WHO HAVE RESIDED IN THE STATE CONTINUOUSLY FOR THE TWO YEARS IMMEDIATELY PRECEDING SUBMISSION OF THIS BID.</p> <p>BIDDER UNDERSTANDS IF THE SECRETARY OF TAX & REVENUE DETERMINES THAT A BIDDER RECEIVING PREFERENCE HAS FAILED TO CONTINUE TO MEET THE REQUIREMENTS FOR SUCH PREFERENCE, THE SECRETARY MAY ORDER THE DIRECTOR OF PURCHASING TO: (A) RESCIND THE CONTRACT OR PURCHASE ORDER ISSUED; OR (B) ASSESS A PENALTY AGAINST SUCH BIDDER IN AN AMOUNT NOT TO EXCEED 5% OF THE BID AMOUNT AND THAT SUCH PENALTY WILL BE PAID TO THE CONTRACTING AGENCY OR DEDUCTED FROM ANY UNPAID BALANCE ON THE CONTRACT OR PURCHASE ORDER.</p> <p>BY SUBMISSION OF THIS CERTIFICATE, BIDDER AGREES TO DISCLOSE ANY REASONABLY REQUESTED INFORMATION TO THE PURCHASING DIVISION AND AUTHORIZES THE DEPARTMENT OF TAX AND REVENUE TO DISCLOSE TO THE DIRECTOR OF PURCHASING APPROPRIATE INFORMATION VERIFYING THAT BIDDER HAS PAID THE REQUIRED BUSINESS TAXES, PROVIDED THAT SUCH INFORMATION DOES NOT CONTAIN THE AMOUNTS OF TAXES PAID NOR ANY OTHER INFORMATION DEEMED BY THE TAX COMMISSIONER TO BE CONFIDENTIAL.</p> <p>UNDER PENALTY OF LAW FOR FALSE SWEARING (WEST VIRGINIA CODE 61-5-3), BIDDER HEREBY CERTIFIES THAT THIS CERTIFICATE IS TRUE AND ACCURATE IN ALL RESPECTS; AND THAT IF A CONTRACT IS ISSUED TO BIDDER AND IF ANYTHING</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *J. J. [Signature]* TELEPHONE 800-879-3039 DATE 10-16-07

E *Municipal Sales* FEIN 61-0871032 ADDRESS CHANGES TO BE NOTED ABOVE



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<p>CONTAINED WITHIN THIS CERTIFICATE CHANGES DURING THE TERM OF THE CONTRACT, BIDDER WILL NOTIFY THE PURCHASING DIVISION IN WRITING IMMEDIATELY.</p> <p>BIDDER: <u>Worldwide Equipment</u></p> <p>DATE: <u>10-16-07</u></p> <p>SIGNED: <u>J-Of</u></p> <p>TITLE: <u>Municipal Sales</u></p> <p>* CHECK ANY COMBINATION OF PREFERENCE CONSIDERATION(S) IN EITHER "A" OR "B", OR BOTH "A" AND "B" WHICH YOU ARE ENTITLED TO RECEIVE. YOU MAY REQUEST UP TO THE MAXIMUM 5% PREFERENCE FOR BOTH "A" AND "B". (REV. 12/00)</p> <p>NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

ATURE	TELEPHONE	DATE
<u>800-874-3039</u>	<u>10-16-07</u>	
FEIN <u>61-0871032</u>		ADDRESS CHANGES TO BE NOTED ABOVE



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8

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

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THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED: SEALED BID						
BUYER:			33			
RFQ. NO.:			707EC021			
BID OPENING DATE AND TIME						
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: 859-253-4639						
CONTACT PERSON (PLEASE PRINT CLEARLY): Jim Dotson						
***** THIS IS THE END OF RFQ 707EC021 ***** TOTAL: _____						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>J. Dotson</i>	TELEPHONE 800-879-3039	DATE 10-16-07
FILE <i>Municipal Sales</i>	FEIN 61-0871032	ADDRESS CHANGES TO BE NOTED ABOVE

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EQUIPMENT DIVISION

PROCUREMENT SPECIFICATIONS
NO. 377-2-D

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

1.0 PURPOSE

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

2.0 BIDDING PROCEDURES

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

3.0 SPECIFICATIONS

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

3.1 EXCEPTIONS TO NON-MANDATORY SPECIFICATIONS

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

3.2 MANDATORY SPECIFICATIONS

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

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

4.0 REPRESENTATIVE UNIT FOR TEST

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

4.1 CONDITION OF UNIT(S) UPON DELIVERY

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

4.2 DELIVERY

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

The vendor is responsible for guaranteeing delivery of the completed units within the time specified and agreed to by the State. Delivery shall be within 180 days maximum. The vendor is responsible for establishing and coordinating delivery terms with allied manufacturers or suppliers. Delivery terms shall be stated in the bid and the State

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

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

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

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

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

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

5.0 AWARD CRITERIA

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

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

6.0 SPECIFICATIONS AND GUIDELINES - GENERAL

6.1 IDENTIFICATION OF THE UNIT BEING PROPOSED

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

6.2 OPERATING AND SERVICE MANUALS AND PARTS LISTS

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

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

6.3 TRAINING:

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

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

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

6.4 PREVENTIVE MAINTENANCE AND OPERATOR PROCEDURES:

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

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

6.5 WARRANTY AND SERVICE POLICY

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

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

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

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

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

The applicable warranty or service policy will not be contingent upon obtaining routine service, lubrication, and servicing of the unit from factory-authorized agencies. It will be the responsibility of the bidder to have available labor to replace, repair/replace any defective replacement parts, components, and/or materials found to be defective during the terms of the warranty period. The unit must be accompanied upon delivery by the units' manufacturers executed warranty or service policy.

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

6.6 EVALUATION COMMITTEE REQUIREMENTS

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

6.7 UNSPECIFIED ACCESSORIES & FEATURES

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

All parts and accessories advertised and regularly supplied as standard shall be included, except those which would represent duplication of these specified, and except those

which, by specification, are not to be furnished. All standard safety features, required by Federal and State Law, shall be included.

7.0 SPECIFICATIONS OF THE QUOTED UNIT ARE AS FOLLOWS:

8.0/ SPECIFICATIONS - CAB & CHASSIS

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

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

8.2✓ Cab to Axle Dimension: Approximately 126 inches usable

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

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

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

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

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

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

8.4.2✓ R.B.M.: Minimum 2.59 million Ins./Lb. (Single frame rail is preferred)

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

8.4.2.1✓ Where engine and radiator adjustments are required, a minimum of 1.7 million in lb. per rail (RBM) will be accepted.

8.4.3✓ Main frame and any required liners to be either straight channel or offset channel, full length.

- 8.4.4 ✓ Minimum frame RBM to be approved by manufacturers Engineering Department. Bolt-on or welded extension will not be accepted.
- 8.4.5 ✓ Front frame shall accommodate the Department's standard hydraulic PTO shaft and pump, and the plow frame. It shall provide easy service accessibility.
- 8.4.5.1 ✓ Front frame mounted tow hooks
- 8.4.5.2 ✓ Omit Factory Installed Front Bumper
In the Body Section under the following paragraphs, you will find information concerning the building of a front bumper for these units. (9.23 through 9.23.9)
- 8.5 ✓ Cab: The cab to be the manufacturer's standard steel, aluminum and/or fiberglass with premium or manufacturers highest level interior trim with inside noise level rating not to exceed 80 dba in compliance with Federal regulations. Shall include ambient temperature display for outside temperature. Hood to be tilt hood and fenders either steel and/or fiberglass and should be provided with rear air bag suspension. Also, inner fender panels that are adequate to keep materials from engine compartment.
- 8.5.1 ✓ Cab Door Locks, Both Doors, keyed alike
- 8.5.2 ✓ Dual Sun Visors
- 8.5.3 ✓ Arm Rests, Both Sides
- 8.5.4 ✓ Seats: Fully adjustable air ride high back with head rest, cloth covered both left hand and right hand sides. Minimum of 12 inch clearance between seats.
- 8.5.5 ✓ Floor Mats: Rubber floor mats throughout cab area with non-absorbent backing under the mats. (No carpeting)
- 8.5.6 ✓ Turn Signals: Manufacturers Standard with hazard warning switch.
- 8.5.7 ✓ Heater and Defroster: Fresh Air Type, Heaviest Duty
- 8.5.8 ✓ Windshield Wipers and Washers: Manufacturer's heaviest duty "artic type" with Intermittent feature with manufacturers largest reservoir filled with antifreeze type solvent
- 8.5.9 ✓ Instruments:
All instruments dash-mounted except where specified otherwise.
All standard instruments to be supplied, including but not limited to the following:
- 8.5.9.1 ✓ Coolant, oil pressure gauges, to have both dial type readout and either an audible or visual alarm to warn operator when safe operating conditions are exceeded.

- 8.5.9.2✓ Voltmeter or Ammeter
- 8.5.9.3✓ Engine RPM Tachometer
- 8.5.9.4✓ Speedometer with Odometer
- 8.5.9.4.1✓ Provisions for dual speedometer leads shall be made available.
- 8.5.9.5✓ Primary Air Pressure Gauge
- 8.5.9.6✓ Auxiliary Air Pressure Gauge (may be combined with 8.5.9.5)
- 8.5.9.7✓ Air filter manufacturers heaviest duty dual element type that meets all requirements of extended engine warranty.
- 8.5.9.8✓ If unit is equipped with front air intake, an air actuated or cable control valve shall be provided to enable operator to divert air intake to engine compartment while in snow plowing application.
- 8.5.9.9✓ Air Filter Restriction Indicator gauge shall be dash mounted
- 8.5.9.10✓ Engine Hourmeter (Controlled by engine operation, not by key switch).
- 8.5.9.11✓ Fuel level reading.
- 8.5.9.12✓ Parking brake to be dash controlled with indicator light
- 8.5.9.13✓ Manufacturers best sound/weather insulation package for proposed cab
- 8.5.9.14✓ Outside temperature control with in cab digital read out
- 8.5.10✓ Rearview Mirrors:
 - 8.5.10.1✓ Mirrors to be West Coast Type, approximately 7" x 16" power adjustable with convex spot mirror.
 - 8.5.10.2✓ Both mirrors to be heated type with stainless steel, composite, powder coated or aluminum hardware with corrosion resistance, heads, and fasteners.
- 8.5.11✓ Grab Handle: Right Hand and Left Hand Sides, internal or external mounting to rear of door opening. If inside handles are featured, one (1) outside, left, mounted grab handle with non-slip insert for bed aggregate inspection must be furnished.

- 8.5.12✓ Air horns, with snow shields if cab mounted, with adequate clearance for future installation of body dump cab protector. Single air horn may be used without snow shield if mounted downward on frame rail under hood.
- 8.5.13✓ Unit to include lockable hand operated throttle control or electronic control for idle up and idle down for hydraulic flow rate.
- 8.5.14✓ Manufacturer should provide for stationary grille or grille with cutout area to allow tilt hood to clear snow plow mount. Stone/gravel guard to be provided to protect radiator from foreign objects.
- 8.5.15✓ Air Conditioning: Manufacturers fresh air type heaviest duty with APADS or equivalent RCD (refrigerant control and diagnostics) system to include replaceable fresh air filter.
- 8.5.16✓ Radio: AM/FM stereo with weatherband radio feature
- 8.5.17✓ Glass: Manufacturers tinted safety glass (all locations)
- 8.5.17.1✓ Dual power windows
- 8.5.18✓ Manufacturers engine cover or dash mounted extended two (2) cup drink holder.
- 8.5.19✓ Front mudflaps to be manufacturers standard for unit bid.
- 8.5.20✓ Emergency triangle warning kit, with hold down (KD610-464S, KD Lamp Co. or equal), stowed (fastened) in the cab. (Check with DOH representative before mounting.)
- 8.5.21✓ Manufacturers tilt steering column with cruise control feature or provide locking hand operated throttle, steering wheel approximately 18 inches diameter
- 8.5.22✓ Fire extinguisher - rechargeable with vehicle mount. Mounted in the cab for easy and quick access. 2A-10B-C or equal
- 8.5.23✓ Accessories not indicated above but are included in the manufacturer's standard cab shall be provided.
- 8.5.24✓ Successful vendor shall provide WVDOH with complete list of all filters required for normal maintenance on proposed unit.
- 8.6✓ Engine: Engine manufacturer to make provisions for front mounted hydraulic pump to crankshaft pulley.
- 8.6.1.1✓ Engine Diesel - Minimum - 365 HP - Peak Torque 1450 lbs. ft. min.

- 8.6.1.2 ✓ In block engine heater 1500 Watt
- 8.6.1.2.1 ✓ The electrical cable from the heater to plug to be one piece and waterproof, location - left side under driver door.
- 8.6.1.3 ✓ Fuel heater/water separator to be provided inside of engine compartment. Davco, Racor, Alliance, or approved equal.
- 8.6.1.3.1 ✓ Engine fuel system to be equipped with primer pump
- 8.6.1.4 ✓ Exhaust:
 - 8.6.1.4.1 ✓ A single vertical exhaust pipe with underbody muffler that will meet all Federal noise abatement requirements. Exhaust to the passenger (right) side of unit.
 - 8.6.1.4.2 ✓ The tail pipe must be shielded or insulated to protect personnel from burns when entering or exiting the cab. The shield to be 180 degrees to 360 degrees and shall be of non-rustable material such as stainless steel or aluminum. Riker or equal.
 - 8.6.1.4.3 ✓ Exhaust pipe with rain cap or exhaust turn out
- 8.6.2 ✓ Jacob's Engine Brake/Cummins C-Brake/ Mack Power Leash/compression and exhaust or equivalent shall be provided for engine specified.
- 8.6.3 ✓ The engine components facing wheel areas, on both sides, and the areas to the rear of wheels to be shielded by means of rubber skirts supported by easily removable steel rods.
- 8.6.4 ✓ Engine oil pan to be zinc nickel plated, aluminum, or non-corrosive coated.
- 8.7 Clutch: ✓
 - 8.7.1 ✓ Externally lubricated and manually adjusted with torque limiting clutch brake.
 - 8.7.2 ✓ Clutch adjustment to be set to specifications prior to delivery to the Department.
 - 8.7.3 ✓ Clutch to be dual plate ceramic clutch, minimum 15 1/2 inch. Kwik-adjust (manual) feature, Eaton Fuller EP1552 with 7 spring damper or equal. (Solo clutch is not acceptable).
 - 8.7.4 ✓ Clutch to meet or exceed peak engine torque.

- 8.8✓ Cooling System: The cooling system must be capable of maintaining engine temperature within the manufacturer's recommended range during continuous operation.
- 8.8.1✓ The system should incorporate a thermostat and bypass for warm up and shall be filled with permanent type Dex-Cool extended life or equal antifreeze rated to a-30°F or lower. Low silicate type antifreeze for diesel engine only.
- 8.8.2✓ The largest factory available engine cooling capacity compatible with engines and transmission referenced and for continuous high engine output under extreme temperatures and/or operating conditions due to prolonged snow plowing operations in low gears.
- 8.8.3✓ Unit to be fitted with provisions for visually monitoring coolant without necessitating removal of the cap from the radiator or expansion tank.
- 8.8.4✓ The radiator mounting shall provide adequate clearance to facilitate the installation of a crankshaft driven PTO drive shaft.
- 8.8.5✓ The distance between the extreme tip of the radiator fan blade and the centerline of the crankshaft to be a minimum of three inches (3") to insure adequate clearance for PTO drive shaft.
- 8.8.6✓ Radiator and heater hoses shall be Gates Blue Stripe or manufacturer's silicone standard
- 8.9✓ Fuel Tanks:
- 8.9.1✓ Safety type aluminum fuel tanks as per the requirements of FMVSS.
- 8.9.2✓ Single aluminum 60 U.S. gallon (usable) minimum total capacity, frame mounted
- 8.9.3✓ Driver and passenger entrance steps - grated self cleaning safety step
- 8.9.3.1✓ All edges to be banded (skirting) on the outer perimeter.
- 8.9.3.2✓ Top of the first step approximately 21 inches above ground.
- 8.9.4✓ Shall provide a fuel draw system that meets all Federal 2007 emission standards
- 8.10✓ Electrical System:
- 8.10.1✓ Type: Manufacturer's 12 volt negative ground system with manufacturers radio interference suppression.
- 8.10.1.1✓ Circuit breaker equipped, in easily accessible location, weatherproof.

- 8.10.2 ✓ Three (3) or four (4), heavy duty - 12 volt batteries, maintenance free with sealed terminals
- 8.10.2.1 ✓ Reserve Capacity: 555 minutes minimum (@ 80 degrees F)
- 8.10.2.2 ✓ Cold Crank AMPS: Approximately 2500 (@ 0 degrees F)
- 8.10.3 ✓ Alternator Capacity: 110 AMPS minimum with internal regulator.
- 8.10.4 ✓ Wiring: To be heavy duty hypalon type or equal in heavy duty sheathing, bundled with lacing cords or non-metallic tie straps
- 8.10.5 ✓ Lighting: Provisions shall be made available for all required lighting on completed unit (number, location, and color) to conform to the West Virginia Motor Vehicle Code.
- 8.10.6 ✓ Auxiliary snow plow/salt spreader lighting package:
- 8.10.6.1 ✓ Truck vendor may eliminate rear tail lights but must provide minimum of eight (8) feet of wiring bundled at the end of the frame for body vendor hook up of tail lights and etc. in the dump bed body.
- 8.10.7 ✓ Manufacturer or successful vendor shall be required to make provisions for manufacture approved wiring and weatherproof disconnect plug (Weather Pac in line seven (7) pin connector - Part Number 12110751) with approximately three (3) foot "pigtail" to operate combination left and right turn/park lights/auxiliary headlights.
- 8.10.7.1 ✓ Provisions for weatherproof disconnect plug should be located at lower left front grille-bumper area. All wiring connections to be weatherproof with wiring encased in wire looms. Exact location should be discussed with WVDOH representative before pilot review.
- 8.10.7.2 ✓ A 7-way trailer connection light socket to be mounted at rear of truck frame. Plug to be Cole Hersee Part No. 12081 or approved equal.
- 8.10.7.3 ✓ Manufacturer shall provide body builder circuit interface capability with connection plug to be located at rear of frame for body builder connection to stop, tail, and marker light circuits, ignition controlled auxiliary feed to ground to provide splice free chassis wiring integrity.
- 8.10.7.4 ✓ Manufacturer shall provide body builder circuits – three (3) switches minimum shall be located in the dash instrument panel with one (1) weather protected body builder connection box or module located at the rear under cab. To have 20 amps per channel, 80 amp maximum output. The dash switches are to control the power module with LED backlighting.

- 8.11✓ Power Train Overview:
Lubricants for front axle hubs and differentials, manual transmission, transfer cases, and all rear differentials shall meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and should have all plugs identified as synthetic or painted red.
- 8.11.1✓ Transmission: Eaton RTO 14908LL or equal shall be provided with manufacture transmission oil cooler
- 8.11.1.1✓ Magnetic drain plug.
- 8.11.1.2✓ Transmission torque capacity shall meet or exceed specified engine torque
- 8.12✓ Driveline:
- 8.12.1✓ Should be Spicer 1810 series main/1710 Interaxle Model J400S driveline or equal.
- 8.13✓ Rear Axle:
- 8.13.1✓ To be:
Dana Spicer D46-170P/R46-170D or equal
Rockwell RT46-160-P
Mack S440 (46,000 lb. with pump)
- 8.13.2✓ Each unit to be equipped with driver controlled main locking differential in forward and rear axle that is manually cab controlled.
- 8.13.3✓ Ratio: Gear ratio to be determined by bidder; however, these vehicles to be capable of a top speed of approximately 70 MPH
- 8.13.4✓ Aluminum or lightweight housing is not acceptable.
- 8.13.5✓ Stemco Guardian rear wheel seals or equal
- 8.13.6✓ Drain plug, magnetic
- 8.14✓ Front Suspension:
- 8.14.1✓ 10,000 lb. capacity at ground each front spring, total spring capacity 20,000lb.
- 8.14.2✓ The front spring pins or bearings/bushing to be furnished with 360 degree grease grooves to insure adequate lubricant penetration.
- 8.14.3✓ Spring hangers to be heavy castings with sufficient pin and bearing surface to render trouble free service.
- 8.15✓ Rear Suspension: Hendrickson RT463 or equal

8.16✓ Front Axle should be:

8.16.1✓ Capacity: 18,000 lbs. minimum

8.16.1.1✓ The front axle, drag links, and tie rods to have grease zerks installed.

8.16.2✓ Heavy Duty Shock Absorbers

8.16.3✓ Front Wheel Seals to be oil lubricated type. (Stemco or equal)

8.16.4✓ Proposed unit must provide adequate tire clearance at maximum turning angles.

8.17✓ Brakes should be:

8.17.1.1✓ Type: Full Air, with manufacturers ABS in compliance with the most current FMVSS requirements.

8.17.2✓ Compressor: Manufacturer's selected model. 15.5 cu. ft. minimum

8.17.3✓ Service Brake Size: (Approximate)

8.17.3.1✓ Front: 16 1/2 inch x 5 inch or 16 1/2 inch x 6 inch "S" cam or a power front disc brake system providing equal performance.

8.17.3.2✓ Quick change type single or double anchor pin if drum type brakes are furnished.

8.17.3.3✓ Rear: 16 1/2 inch x 7 inch "S" cam with quick change type single or double pin.

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

8.17.4✓ Drum brakes to have automatic slack adjusters and be clearance sensing type only, with adjustment on application of the brake

8.17.5✓ Parking Brake: Rear wheel spring type, MGM TR-TS Series or equal - severe service spring brakes

8.17.5.1✓ Parking brake to provide modulated emergency braking via the foot valve in the event of a rear service system failure.

8.17.6✓ Air dryer with heater minimum 20 inches above road surface. Bendix AD-9 or equal with spin on desiccant cartridge or equivalent. Installation made in concurrence with the air compressor manufacturer's recommendations.

8.17.6.1✓ All electrical connectors for drain valve and air dryer to be covered with heat shrink material or have sealed connections.

- 8.17.7 ✓ Manufacturer's standard air tanks for service brakes; auxiliary tank for parking brake.
- 8.17.8 ✓ Low air pressure warning light and buzzer
- 8.17.9 ✓ Rear service brake chambers and spring brake chambers mounted to provide adequate clearance for tire chains and backing into bituminous paving machines. Factory installation, only.
- 8.17.10 ✓ Brake dust covers to be installed on all wheels
- 8.17.11 ✓ Unit to be equipped with hand control valve, tractor protection valve, with provisions for installation of glad hands at rear of truck to enable unit to pull air brake operated equipment trailer
- 8.17.11.1 ✓ Glad Hands: Glad hands shall be recessed as not to stick out past the end of frame rails
- 8.18 ✓ Tires and Wheels:
- 8.18.1 ✓ The truck shall be equipped with hub piloted steel disc wheels for tubeless tires.
- 8.18.2 ✓ The wheel end to be equipped with outboard cast brake drums, and 15 degree tubeless steel wheels, hub piloted, 10 hole - 285.75mm bolt circle with 220mm two-piece flange nuts.
- 8.18.3 ✓ Front:
- 8.18.3.1 ✓ Wheels:
22.5 x 9.0, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 10,000 lbs. at a maximum inflation pressure of 130 PSIG. Accuride part number 29039 or equivalent with 0.500 inch thick disc, non standard off set with steel hubs. Shall be powder coated with color similar to gray.
- 8.18.3.2 ✓ Tires: 31580R22.5 - 20 ply
- 8.18.4 ✓ Rear:
- 8.18.4.1 ✓ Wheels:
Shall be 22.5 x 8.25, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 7,500 lbs. at a maximum inflation pressure of 120 PSIG. Accuride part number 29169 or equivalent with 0.472 inch thick disc. Shall be powder coated with color similar to gray.
- 8.18.4.2 ✓ Tires: 11R22.5H

- 8.18.4.3 ✓ The dual rear wheel/tire assembly shall have clearance between the tires, which permits the use of dual tire chains.
- 8.18.5 ✓ All wheels shall include wheel separators
- 8.18.6 ✓ Tires (No substitute. All tires shall be radials.)
- | <u>Manufacturer</u> | <u>Front Tire</u> | <u>Rear Tire</u> |
|---------------------|-------------------|------------------|
| Goodyear | G-287MSA | G-244 MSD |
| Michelin | PILOT XZY-3 | XDY-3 |
- 8.19 ✓ Steering:
- 8.19.1 ✓ Power steering: Dual integral or single integral type hydraulic power steering with right wheel power-assist cylinder.
- 8.19.2 ✓ Steering system: (flow, pressure, relief valve, etc.) To be selected considering the full front -GVWR axle loading. Ross or Sheppard gear assembly.
- 8.19.3 ✓ Hydraulic supply pump: Vane type or roller type with sufficient oil flow to permit one (1) steering wheel revolution per second with front axle loaded to rated capacity, with plow on, in a "park" condition. Vickers V-20, Eaton or Borg Warner.
- 8.19.4 ✓ The pump should not be the integral filter type unit.
- 8.19.5 ✓ Power steering reservoir: "Remote mounted", minimum 2 quart capacity, incorporating a filter which is easy to remove and replace.
- 8.19.6 ✓ The remote filter referenced above to be factory mounted, certified, and engineering approved in conjunction with the appropriate pump.
- 8.20 ✓ Unit shall include all other features considered as standard equipment but not specifically addressed above.
- 8.21 ✓ Paint: (See enclosed diagram for color reference) - The unit should be painted as described:
- 8.21.1 ✓ Cab exterior and interior: Federal Standard White 595 A (No. 17875)
- 8.21.2 ✓ Grille: Manufacturer's standard grille paint similar to silver or aluminum in color. Grilles made from bright finish or bright plated material do not require painting.
- 8.21.3 ✓ Wheel paint shall be topcoat painted with TGIC Polyester Powder Paint MLD-82008 High Gloss Gray or equal applied over Cathodic Electro-Disposition Gray Primer or equal. (See Section 8.18.3.1 and 8.18.4.1)

- 8.21.4 ✓ Manufacturer's standard plant procedures for cleaning, degreasing, preparing, priming and painting are sufficient to meet the requirements for painting of cab (white). Cab will not be painted white over top another finish color.
- 8.21.5 ✓ The Department reserves the right to view larger paint samples after award of contract and the right to require subtle color changes in both the blue and white paint. Such changes, if any, will only be used for selecting a suitable paint color to match the WVDOH logo.
- 8.21.6 ✓ In order to test the adhesive quality of the paint, the DOH may, at its option, require that the vendor measure adhesion by the criteria set forth in ASTM D3359-74, Method B. A rating of less than 4 on this test would be deemed unacceptable.
- 8.22 ✓ Detail/Decorative Stripes with Logo:
- 8.22.1 ✓ Width: to be 4 inches
- 8.22.2 ✓ WVDOH logo (to be supplied by WVDOH) is attached (black and white copy) and is approximately 7 inches tall by 7 inches wide. Area behind logo and within 2 inches of logo is not to be striped. Stripes should be cut to follow contour of logo, in lieu of straight cut.
- 8.22.3 ✓ Striping material to meet the requirements of ASTM D4956-91 Type V sheeting, a super high-intensity retroreflective sheeting consisting of microprismatic retroreflective elements. The conspicuity sheeting must meet the requirement of NHSTA, DOT, 49CFR, Part 571 Federal Motor Vehicle safety standards for conspicuity sheeting and be "DOT approved".
- 8.22.4 ✓ The sheeting for both applications above should not be more than .0008 inch thick having approximately 47,000 microprisms per square inch and shall come with an aggressive high tack pressure sensitive adhesive, reflexite or equal.
- 8.22.5 ✓ Upper stripe color: Dark Blue
- 8.22.6 ✓ Lower stripe color: Light Gold
- 8.22.7 ✓ Bidder should consult with the WVDOH on proposal for striping before inspection of pilot model.
- 8.22.8 ✓ Bidder should attach proposed paint plan with this bid. It should include chips or samples of proposed paints as well as a proposed striping detail on a cab silhouette sheet. Bidder may modify attached striping plan to fit his particular cab shape.
- 8.23 ✓ Vendor must certify that the unit offered will meet or exceed the "Occupational Safety and Health Act of 1970" and subsequent amendments.

- 8.24✓ Advertising: No visible decals or nameplates or painted on names representing the manufacturer or model number or trademark should appear on the exterior of the unit. Logos created through the stamping or casting process of manufacture are acceptable.
- 8.25✓ Preventive Maintenance and Operator's Training School
- 8.25.1✓ Manufacturers and/or dealers will be required to stage a thorough seminar on the subjects Preventive Maintenance and Operator Training. The seminar should be held at the Equipment Division.
- 8.25.2.1✓ To make the program complete, we need, in addition to the operating and service manuals, booklets and pamphlets explaining the Preventive Maintenance and Operator Training procedures to be used by the operators of this equipment. Must include such things as daily pre-start, inspection procedure, service schedule and routine maintenance required, safety precautions, etc.
- 8.25.3 } The successful vendor shall furnish all training aids; i.e. videos, projectors, etc., required in conducting the training.

9.0 SPECIFICATIONS – 304 STAINLESS STEEL COMBINATION DUMP/SPREADER BODY

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

- 9.1 Body capacity to be minimum 10.7 cubic yards water level
- 9.2 Sideboard pockets and tailgate height should provide additional capacities of two (2) to five (5) cubic yards
- 9.3 Front body bulkhead to be 3/16 inch 304 stainless steel
- 9.4 Cab shield to have sufficient clearance to ensure shield will not hit exhaust when dumping on uneven terrain
- 9.5 Two (2) front truck frame mounted tow hooks or eyes accessible through bumper (Refer 9.24.5)
- 9.6 Dimensions:
- 9.6.1 Inside length of body not to exceed 174 inches
- 9.6.2 Inside width of the body – 86 inches wide to maximize capacity and lower the center of gravity of the unit

- 9.6.3 Outside width of the body – 96 inches at the integral fenders
- 9.6.4 Body spacing from cab – 4 inch minimum
- 9.6.5 Basic side height – 45 inches (measure from the floor to top rail)
- 9.6.6 Tailgate height – 53 inches (measure from the floor to top rail)
- 9.6.7 Body overhang – 10 inches – 18 inches (measure from center of hinge pin)
- 9.6.8 Cab protector – 24 inches x 94 inches approximate with adequate clearance for cab mounted air horns

9.7 Cab protector to be sloped rearward for drainage purposes

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

Steel types shall be 304 stainless steel (unless otherwise noted)

- 9.8.1 Floor: 1/4 inch thickness 304 stainless steel or abrasion resistant AR400 steel
- 9.8.2 Sides: 3/16 inch thickness
- 9.8.3 Tailgate plate: 3/16 inch thickness
- 9.8.4 Top rail: 3/16 inch thickness
- 9.8.5 Cab protector: 10 gauge
- 9.8.6 Longitudinal: Minimum 10 inch/7 gauge 304 stainless steel formed inner/10 gauge 304 stainless steel formed with internal stainless steel gussets every 30 inches
- 9.8.7 For future potential pre-wet application, the combination body shall be capable of accepting frame mounted approximately 85 gallon poly liquid tanks. The body shall be designed to allow maximum protection to the tanks.
- 9.9 All welding inside the body should be continuous, not skip welded. All rails and posts to be continuous welded.
- 9.10 The rear corner posts should be full length, one (1) piece construction.
 - 9.10.1 A rear bolt on spreader apron must be provided unless integrated into the rear of bed.

- 9.11 Cab protector sides, formed with gussets, should extend forward approximately 24 inches. Clearance above highest point of cab should be three (3) inches minimum
- 9.12 The body shall be a unibody design – no crossmembers
 - 9.12.1 The body shall have one (1) piece sides and floor which shall incorporate a sloping floor to side radius to adequately feed material to conveyor chain
 - 9.12.2 The sides of the body shall slope to the conveyor to facilitate self cleaning of body without raising.
- 9.13 The boxed top rail should slope inward to shed debris
- 9.14 Full length 304 stainless steel integral rear fenders continuously welded and positioned over wheels of the truck chassis
- 9.15 An integrated center conveyor shall provide the ability of the body to convey granular materials with the body down and have the following features:
 - 9.15.1 The conveyor should have 12 inches or less truck frame to body floor height for lower center of gravity and lower mounting height
 - 9.15.1.1 Wood products are not acceptable between truck frame and bed
 - 9.15.2 1/4 inch 304 stainless steel conveyor floor or abrasion resistant steel (AR400)
 - 9.15.3 2 inch diameter front and rear shafts with eight (8) tooth sprockets
 - 9.15.4 Drive sprockets are double keyed to shaft
 - 9.15.5 Conveyor width – minimum 25 inches
 - 9.15.6 Conveyor shall be reversible
 - 9.15.7 Conveyor to be driven with 25:1 planetary gearbox drives or equivalent on both the front and rear shafts with approximately 5.0 CIR hydraulic motors. One (1) motor shall have an integral conveyor speed sensor
 - 9.15.8 Conveyor chain to be D667K pintle type (24,500 lb. tensile/strand) with minimum 3/8 inch x 1 1/2 inch conveyor crossbars welded to every link
 - 9.15.9 A 10 gauge 304 stainless steel bolt in pan under the conveyor to keep material off chassis frame is required

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

- 9.17.4 Hoist cylinder shall have three (3) stages with approximately 130 inches of stroke with a six (6) inch diameter first stage – Part number MALHOIT CS-130-6-3 or MALHOIT CS-130-5-3 or equal. (Refer to Line Item 10 – CENTRAL HYDRAULIC SYSTEM)
- 9.17.5 The cylinder shall have wear and corrosion resistant nitrided cylinder tubes.
- 9.17.6 There shall be a minimum two (2) year cylinder warranty.
- 9.17.7 A five (5) degree oscillating cylinder collar shall protect the cylinder against side stress, if trunnion mount cylinder is provided.
- 9.17.8 The body shall have 6 inch x 8 inch x 1/2 inch structural angle rear hinge assembly installed in the truck chassis frame (no hoist subframe).
- 9.17.9 The rear hinge assembly shall have cold roll steel hinge pins connecting to 2 1/2 inch hinge blocks with grease zerks
- 9.18 The following features shall be included:
- 9.18.1 Warning light (bed raised) control console mounted (Refer 10.6.1.1)
- 9.18.2 Hydraulic oil level reading (Refer 10.7.3 and 10.7.7)
- 9.18.3 Safety decals as required
- 9.18.4 304 stainless steel mud guards, 10 gauge x 24 inches x 30 inches permanently attached in front of rear wheels.
NOTE: Rear mud flaps will be furnished by WVDOH. The body vendor to align exhaust stack for body clearance.
- 9.18.5 304 stainless steel shovel bracket
- 9.18.6 304 stainless steel gussets (board pockets) for 4 inch x 6 inch lumber (rough) located at front and rear and mid-rail. 4 inch x 6 inch (rough) oak sideboards supplied and bolted through the gussets. Painted aluminum to match the body.
- 9.18.7 The unit shall have air operated tailgate with dual brake chamber air tailgate latches (one on each side). Pivot shafts included stainless steel bushings to eliminate seizing. Tailgate latch rods that extend the length of the body or have a cross shaft are not required.
- 9.18.8 1 1/2 inch 304 stainless steel grip strut walk rail installed on both sides of the body.

- 9.18.9 OSHA approved backup alarm, electronic ambient, adjusts to background noise, 112 dba shock mounted at the rear.
- 9.18.10 OSHA approved body support, both sides
- 9.18.11 Unit to be equipped with 49,000 lb. capacity pintle hook (Holland PH760 or approved equal) centered between rear frame rails. Height from ground level to center line of pintle "eye" to be 32 inches.
- 9.18.12 Air deflector – hood mounted, blue or smoke. Deflector manufacturer's standard width for the truck mode. Access to front end hood tilt handle to be avoided. Extra handle acceptable.
- 9.19 Lighting: Weather/shock resistant lights LED type with average amp draw between .045 - .72. Grote/Truck Light or equal. All connections to have sure snap plug assemblies and epoxy sealed electronics to protect against shock and vibration.
- 9.19.1 All marker lights 2 1/2 inch diameter flush mount sealed beam lights with integral reflector mounted in rubber base.
- 9.19.2 All ground wires to be attached with plated steel fasteners, tack weld not allowed.
- 9.19.3 Rear lights to be shock mounted, recessed oval stop, tail, turn, and recessed oval back up lights to be mounted in back post. Strobe lights (Trucklite Part #60360Y or equal) to be marked and switched from dash board location.
- 9.19.4 Center rear I.D. lights three (3) located in truck chassis.
- 9.19.5 Two (2) amber oval LED strobe lights (Trucklite Part #60360Y or equal) to be mounted at the front corners of the cab protector, and two (2) amber oval LED strobe lights (Trucklite Part #60360Y or equal) mounted at each outside corner of the cab protector. Strobe lights to be marked and switched at dash board location.
- 9.19.6 Auxiliary headlights (Trucklite Part #80888 or equal with Bulb 27008 or equal) for snowplowing application to be shock mounted on fender of unit. The successful vendor to consult WVDOH for mounting position and bracket dimensions.
- 9.19.7 Two (2) oval amber LED strobe lights mounted at top of rear corner posts right and left sides and to be switched in combination with cab protector strobe. (PSE amber, Model oulxdsih or equal)
- 9.19.8 Must have two (2) front frame mounted tow hooks

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

- 9.22 The design and strength characteristic of the entire body to be such that the unit structural members and the hoisting system will not suffer any deformation, damage, or structural failure resulting from raising a distributed full payload.
- 9.23 Bumper:
- 9.23.1 The bumper to be formed out of 1/4 inch roll steel and weigh approximately 10.20 lbs. per square foot.
- 9.23.2 Bumper face to cover all of truck frame (approximately 12 inches) with two (2) flanges of approximately 2.25 inches top and bottom.
- 9.23.3 Bumper to be approximately 94 inches overall width
- 9.23.4 Bumper to be straight across front from centerline of truck chassis approximately 21 inches each side of centerline, making bumper straight approximately 42 inches long in center with ends swept back approximately 30 degrees and approximately 27 inches each side.
- 9.23.5 Bumper to have two (2) access holes for utilization of tow hooks (Refer 9.6)
- 9.23.6 Upper and lower flanges to be cut and welded solid at point where bumper is bent and ground off smooth.
- 9.23.7 Bumper to be mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side.
- 9.23.8 Mount angle to be approximately 1/4 inch x 3 inches x 8 inches long with four (4) 5/8 inch holes.
- 9.23.9 Front bumper to be painted Martin Senour Dark Blue #82-5802 or similar.
- 9.24 Underbody Tool Box:
- 9.24.1 One (1) tool box to be mounted under body on right side frame rail.
- 9.24.2 Tool box to be 18 inches high, 24 inches wide, 18 inches deep cradled by a heavy steel angle frame attached to the truck frame.
- 9.24.3 Construction should be of 14 gauge minimum A-60 galvanized steel with all seams welded.
- 9.24.4 Tool box to have a horizontal hinged fold down door.
- 9.24.5 Tool box door should have cable or chain to hold the door in a horizontal position.

- 9.25 Load covering system to be electrically or air controlled:
- 9.25.1 Electric motor assembly to include 12 volt direct drive motor with forward and reverse action, cab mounted control switch, resettable circuit breaker.
 - 9.25.2 Pivot arm assembly should be constructed in a two (2) piece bent arm configuration of approximately 1 1/4 inch 14 gauge steel tubing.
 - 9.25.3 Bent arm extensions to be constructed of minimum of one (1) inch 14 gauge steel tubing.
 - 9.25.4 Rear cross to be constructed of approximately 1 1/4 inch 14 gauge steel tubing.
 - 9.25.5 Pivot arm rests to be included.
 - 9.25.6 Underbody spring to be extension spring approximately 12 inches in length attached to base of pivot arm and of body with articulating spring mounting bracket.
 - 9.25.7 All steel components to be finished with manufacturer's recommended rust preventative system to include a minimum of adequate primer and paint.
 - 9.25.8 Steel cab protector mounted triple bend wind deflector to be provided.
 - 9.25.9 Load covering system to be provided with minimum of 18 oz. black vinyl tarp to fit 14 foot 6 inch body.
 - 9.25.10 Load covering system shall be supplied with all necessary hardware and delivered to the West Virginia Division of Highways as a complete and operational unit.
- 9.26 Paint:
- 9.26.1 There shall be no paint on the 304 stainless steel surfaces of the body.
 - 9.26.2 All 304 stainless steel surfaces are to be unpainted and cleaned with an acid wash solution to remove carbon burning from the stainless steel welds.
 - 9.26.3 Non-304 stainless steel components on the body to be painted aluminum.
 - 9.26.4 Front bumper: Martin Senour Dark Blue #82-5802 or similar (See drawing)

- 9.27 Detail/Decorative Stripes with Logo:
- 9.27.1 Tailgate and body sides to be outlined with red/silver pre-stripped conspicuity retroflective weather resistant striping. Successful bidder shall consult with WVDOH of proposed striping before review of pilot model.
- 9.27.2 Bidder to describe proposed method of painting in the compliance report and location of body handrails, handle, grip strut walk rail, and overall body characteristics.
- 9.27.3 WVDOH logo (to be supplied by WVDOH) is attached (black and white copy) and is approximately 7 inches tall and 7 inches wide. Area behind logo and within 1/2 inch of logo is not to be striped. Stripes should be cut to follow contour of logo, in lieu of straight cut. Striping shall be installed.
- 9.27.4 Striping material to meet the requirements of ASTM.D4956-91 Type V sheeting, a super high-intensity retroflective sheeting consisting of microprismatic retroflective elements. The conspicuity sheeting must meet the requirement of NHSTA, DOT, 49CFR, PART 571 Federal Motor Vehicle safety standards for conspicuity sheeting and be "DOT" approved.
- 9.27.5 The sheeting for both applications above should not exceed more than .0008 inch thick having approximately 47,000 microprisms per square inch and shall come with an aggressive high tack pressure sensitive adhesive, Reflexite or equivalent.
- 9.27.6 Bidder should attach his proposed paint plan with this bid. It should include chips of samples of proposed paints as well as proposed striping detail on a cab silhouette sheet. Bidder may modify attached striping plan to fit his particular hood or cab shape.
- 9.27.7 Striping as specified shall be installed by the successful bidder. Bidder should consult with the WVDOH representative on proposal for striping before pilot review.
- 9.28 The body shall include all other features considered as standard, but not specifically addressed above.
- 9.29 Vendor must certify that unit offered will meet or exceed the "Occupational Safety and Health Act of 1970" and subsequent amendments.

10.0 SPECIFICATIONS – CENTRAL HYDRAULIC SYSTEM

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

Pre-wet system:

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

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

10.1 Pump System:

- 10.1.1 Pump: Variable volume pressure compensated load sensing axial piston type.
- 10.1.2 Front mounting flange and main housing/case to be of cast iron construction. Inlet and outlet port section to be of high strength ductile iron with SAE split flange or orb type porting.
- 10.1.3 Suction port and associated plumbing shall be sized to allow for minimum inlet restriction between the pump and the suction port on the reservoir. Installation must comply with pump manufacturers allowable inlet condition specifications. *Suction plumbing shall be equal to or greater than pump inlet or suction size. Example: 32 size equals 2 inch fitting to the industry.
- 10.1.4 Pressure port to be of the SAE split flange or ORB type side mounted for direct bolt mounting of solenoid shut down valve assembly.
- 10.1.5 Case drain and load sense signal ports to be of the SAE O-ring type. Case drain line taken directly to tank without passing through the return line filter.
- 10.1.6 Input shaft to have a minimum continuous torque rating equal to 200% of the imposed load when pump is operated at maximum engine rpm, maximum displacement and system pressure. Minimum SAE "C" keyed.

- 10.1.7 Front input shaft bearing of the heavy duty ball or roller type designed for high axial and radial loading. Rear shaft bearing of the high speed and load sleeve type design. Bearings to be fully lubricated by flooded case oil.
- 10.1.8 Ramp/swashplate supported by pressure lubricated bearings of the rocker cam or saddle type for high piston load support. Ramp angle positioning by means of dual servo control cylinders for rapid pump response and precise pump output control.
- 10.1.9 Adjustable load sense and high pressure compensator control valve assembly of the full cartridge or of bolt-on housing design for ease of replacement and repair.
- 10.1.9.1 System design and components to provide flow, pressure and performance requirements stated herein with a maximum operating load sense differential pressure of 300 PSI and a maximum standby pressure of 350 PSI for maximum efficiency. If pilot control shifted valving is utilized in the system they are to be designed to be fully functional within this pressure range.
- 10.1.9.2 High pressure compensator valve to be preset to limit the maximum pump output pressure to the maximum required operating pressure plus load sense differential and margin pressure to prevent premature de-stroking of ramp resulting in reduced or insufficient pump output.
- 10.1.10 Pump Output:
- Shall be capable of providing hoist cylinder extension required
- Part number MALHOIT CS-130-6-3 or equal – 15.5 gallons to fully extend but after filling 11 gallons is required to raise the cylinder:
- 10 GPM flow rate – 66 seconds to raise
 - 15 GPM flow rate – 44 seconds to raise
 - 20 GPM flow rate – 33 seconds to raise
 - 25 GPM flow rate – 26 seconds to raise
 - 30 GPM flow rate – 22 seconds to raise
 - 35 GPM flow rate – 19 seconds to raise
 - 40 GPM flow rate – 16 seconds to raise

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

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

- 10.1.11 Reference Models: Rexroth A10VO Series 31, Parker P2 Series, Vickers PVH800 Discovery Series. These references are given to represent the overall quality of construction, design and performance of the pump to be supplied. It is the responsibility of the bidder to assure compliance with the written specifications herein.
- 10.1.12 Name of manufacture and model number of proposed pump shall be submitted with bid documents.
- 10.1.13 Pump supplied shall be of a manufacture's standard product release and design. Pump models proprietary to a specific bidder and/or OEM are not acceptable.
- 10.1.14 Pump driveline assembly to be of the keyed shaft design utilizing a 4 bolt driveshaft flange and matching drive yoke on the pump.
- 10.1.14.1 Driveline to have a minimum continuous torque rating equal to 200% of the imposed load when pump is operating at maximum system requirements. Minimum Spicer 1310 series or equal.
- 10.1.14.2 Dual journals and yokes to be incorporated to connect the pump shaft and engine drive flange with an angular misalignment no greater than six (6) degrees and not less than two (2) degrees.
- 10.2 Pump Shutdown System:
- 10.2.1 Normally closed, energize to open, solenoid operated control valve of the cartridge and manifold design to be directly bolted to pump pressure port. Solenoid electrical connection of the Packard "Weatherpack" type with "SO" cable wiring.
- 10.2.2 Valve controlled by a console mounted "Master On" switch with pilot lamp for normal system operation and by a float switch located in hydraulic reservoir to automatically shut off pump pressure port flow to all down stream functions in the event of low hydraulic oil level.

- 10.2.3 Pressure drop across valve not to exceed 40 PSI at 40 GPM flow when in the switched open position. Nominal valve rating of 50 GPM @ 3,500PSI.
- 10.2.4 SAE #6 gauge port equipped with Parker Hannifin model PD361 diagnostic coupling nipple and protective cap provided for pump output pressure testing to be installed in valve manifold and within an easily accessible mounting position.
- 10.2.5 Valve to be designed to protect the pump from damage when the system is shut down at high pressure and flow operation.
- 10.2.6 Name of manufacture and model number of proposed valve shall be submitted with bid documents.
- 10.2.7 Central control console mounted audio alarm and warning lamp indicating pump pressure/flow shutdown to be provided.
- 10.2.8 The warning lamp to be a press-to-test light and incorporate a switching system into the automatic shutdown assembly to simulate low oil level, shut off pump output flow and test float switch wiring and connections.
- 10.2.9 A console mounted electrical override function switch to be provided to allow momentary operation of hydraulic functions in emergency situations.
- 10.3 Directional Control Valve Assembly:
 - 10.3.1 Valve to be of the stacked section type and of closed center circuit design.
 - 10.3.2 Each work section to be pressure compensated with fully integrated load sense network. Flow output to be relative to spool travel with preset maximum flow rate obtained at maximum spool stroke to provide feathering control of operated function.
 - 10.3.3 Dump body, snowplow lift and snowplow power angle sections to be of the manual cable shift type. Auxiliary circuit section to be of the electric solenoid shift type. Both ends of each section valve spool to be sealed with weather resistant caps or cable entry bonnets.
 - 10.3.4 Valve assembly flow capacity rating and pressure drop characteristics shall be sufficient to provide for the required pump output and circuit flow rates at the specified maximum load sense differential pressure settings.
 - 10.3.5 All valve ports to be of the SAE O-ring seal type and be of sufficient size to handle required section flow rates at stated load sense differential pressure.

- 10.3.6 A priority section shall be installed to allow plow to raise in a system over demand situation.
- 10.3.7 Main pressure inlet relief valve provided to reduce system pressure shock loads. To be preset at pressure so as not to interfere with pump pressure compensator and to prevent premature relief opening at system high demand operation.
- 10.3.8 If pilot pressure reducing valve is required for solenoid section control, design shall meet operating requirements as set forth in section 10.1.9.1. Pilot supply and tank venting to be internal within the valve assembly sections.
- 10.3.9 Load sense network high pressure relief provided and preset to limit system maximum operating pressure. Set point to provide proper pressure margin to pump pressure compensator and high pressure relief valve as to prevent premature loss of required flow rates and pressure capability.
- 10.3.10 SAE #6 gauge port equipped with Parker Hannifin PD361 diagnostic coupling nipple with protective cap for load sense testing to be installed in an easily accessible location.
- 10.3.11 Dump body control section to be 3-way three position spring centered cylinder spool for operation of a single acting hoist cylinder.
- 10.3.11.1 Full flow workport relief valve installed in power up port. Set point to prevent operating pressure from exceeding hoist cylinder normal operating pressure rating.
- 10.3.11.2 Adjustable flow control shall be installed to limit downward speed rate of dump body.
- 10.3.12 Snowplow lift control section to be 3-way three position spring centered cylinder spool with float detent for operation of a single acting lift cylinder. (Thus, eliminating skip plowing.)
- 10.3.12.1 Full flow workport relief valve preset at maximum required unlock pressure installed in power down workport. Workport relief valve also to be installed in power up workport if maximum system pressure output setting exceeds normal operating pressure limit of plow lift cylinder. If three (3) way valve is provided for plow hoist circuit, a full flow work port relief will not be required for the plow lower circuit.
- 10.3.12.2 Adjustable flow control installed to limit downward speed of snowplow. Flow limiting control system preset for proper plow lift speed to be supplied to reduce over demand operation and to increase system efficiency. Flow limit to be determined at time of pilot model review.

10.3.13 Snowplow power angle control section to be 4 way three (3) position spring centered motor spool for operation of worm gear driven type reversing system.

10.3.13.1 Flow limiting control system preset for proper plow reversing speed to be supplied to reduce over demand operation and to increase system efficiency. Flow limit to be determined at time of pilot model review.

10.3.14 Plow Balance Valve:

10.3.14.1 The hydraulic system shall be supplied with a plow balance valve

10.3.14.2 Valve shall be designed to offset a specific (adjustable) plow weight when activated.

10.3.14.3 Plow balance system must not alter the operation of any other hydraulic function or have an adverse effect on the performance of other hydraulically operated equipment including:

Wing Plow
Body Hoist
Plow Hoist or Angle
Spreader functions

All normal operations of the plow lift/lower functions shall be maintained without additional tasks.

10.3.14.4 To guarantee safe operation of the vehicle, plow lift must be immediate.

10.3.14.5 If solenoid valve coils are used, then they shall have manual override capabilities.

10.3.14.6 Manifold valve shall include a pressure test point for use when checking balance pressures.

10.3.14.7 Pressure test point must be capable of tapping into the system at pressures of 5000 PSI.

10.3.15 Auxiliary equipment drive circuit control section to be 3-way three position spring centered solenoid operated motor spool. This circuit to be separate and distinct from the spreader control system.

10.3.15.1 Flow limiting control system preset to provide a maximum of 22 GPM at a system load pressure of 2200 PSI. Pump shall be capable of supplying this flow rate with engine speed of 1400 RPM.

- 10.3.15.2 An inline mounted control valve may be supplied for this operation in place of directional control valve section. If supplied, proper interconnections and venting of load sense network system shall be provided.
- 10.3.15.3 Pressure line to be 3/4" SAE 100R2 hose and manifold mounted at rear of chassis and equipped with Parker Hannifin SH6-62 quick disconnect coupler and protective metal plug. Mating nipple SH6-63 with protective cap to be supplied. Mounting location to be determined at time of pilot model review.
- 10.3.15.4 Name of manufacture and model number of proposed directional and auxiliary circuit valves shall be submitted with bid documents.
- 10.3.16 Directional control valve assembly must be located in a combination tank/valve enclosure assembly to protect the hydraulic tank/valve from the elements. Reservoir (tank) to be approximately 40 gallon capacity.
- 10.3.17 Pre-Wet Circuit:
- 10.3.17.1 A separate circuit shall be provided to control an add-on pre-wet system
- 10.3.17.2 Hydraulic valve may be of the sectional type or of the cartridge style contained in a manifold.
- 10.3.17.3 If a manifold type valve is to be supplied, it must be attached to the main valve assembly (not separate or "power beyond".)
- 10.3.17.4 All wiring to the pre-wet hydraulic circuit shall be provided as part of the system contained in this bid.
- 10.3.17.5 Wiring to the control console related to the rest of the pre-wet system (low level float, flow meter connection, etc.) shall be provided as part of the pre-wet package at the time of pre-wet system install (not as part of this bid).
- 10.4 Spreader Control Valve Assembly:
- 10.4.1 Spinner and conveyor solenoid flow controls to be of the PWM proportional solenoid type and equipped with manual overrides. Overrides to be manually adjustable over operating flow range in the event of electrical system failure.

- 10.4.2 Flow control circuits to be pressure compensated and provide a spinner and pre-wet flow rate of 0-7 GPM and a conveyor flow rate of 0-15 GPM. Pressure relief valve system shall limit circuits to a maximum of 2200 PSI.
- 10.4.3 Load sense circuits to be connected to directional control valve network for proper pump control. Design shall prevent improper high pressure load sense signal and pressure line loading when spreader valve is not in use and when spreader quick disconnects are uncoupled.
- 10.4.4 PWM solenoid control supplied by microprocessor spreader control system. Solenoids to be capable of 100% PWM signal without failure.
- 10.4.5 Solenoid operated directional control valve and in-cab mounted electrical switch to operate spreader conveyor reverse required for front or rear material discharge selection to be provided.
- 10.4.6 Electrical switching and indicator light for spreader clogged indication to be provided.
- 10.4.7 Name of manufacture and model number of proposed valve shall be submitted with bid documents.
- 10.5 Spreader Control System:
 - 10.5.1 Dual flow, ground speed oriented spreader control system to be of the closed loop microprocessor based type with nonvolatile control memory.
 - 10.5.2 Automatic calibration and flexibility of programming are required.
 - 10.5.3 System must be capable of operation in ground speed oriented closed loop conveyor feed back, open loop, manual set, blast and unload modes and be fully functional in both front and rear material discharge selection.
 - 10.5.4 Automatic switchover with display indication from closed loop to open loop operation in the event of loss of feed rate sensor signal to be provided.
 - 10.5.5 Control console digital readouts to be capable of displaying actual application rate, vehicle ground speed, distance of spread route driven and total quantity of material spread.
 - 10.5.6 Programming and output cable connection for material and trip information printer and program uploading to be provided.
 - 10.5.7 Control unit to be capable of accumulating such display information up to 999,999 miles and 999,999 tons of discharged material.

- 10.5.8 Console programming to be capable of selection, calibration and display of four (4) separate spread materials with independent application rates of each material capable of being set to fixed rates or to rate increments of a preset maximum application rate.
- 10.5.9 A variable digital access code lockout for application rate selection and for system operating parameters to be provided. A key switch will be acceptable.
- 10.5.10 Backlighted switches and LCD screen shall be utilized for on-board programming and for display readout and application rate selection.
- 10.5.11 Material spread width to be selectable by no less than a ten (10) position switch with minimum and maximum spinner speed totally programmable through entire flow range. Spinner speed shall be capable of linking to ground speed for on-off control.
- 10.5.12 Display must enunciate error message and sound audio alarm when microprocessor system detects any loss of control or accuracy.
- 10.5.13 System shall be fully functional at time of delivery.
- 10.5.14 Truck speed sensor to be compatible with type of speedometer drive system supplied on chassis.
- 10.5.15 A built-in ground speed simulator to be provided either internal to the control or located in the control console.
- 10.5.16 All components required for proper installation and operation of control system onto truck and spreader units must be supplied.
- 10.5.17 Name of manufacture and model number of proposed control system shall be submitted with bid documents.
- 10.6 Central Control Console:
 - 10.6.1 To be mounted between seats within easy access of the driver.
 - 10.6.1.1 Warning light (bed raised) to be control console mounted
 - 10.6.2 All wiring, valve control cables and electrical harness entry into cab and console shall be sealed with grommets.
 - 10.6.3 Remote control valve levers to be console mounted. All levers to be clearly marked as to their function and operation.

- 10.6.3.1 Remote control levers to operate push-pull type cables with .250" diameter stainless steel rod ends.
- 10.6.3.2 Inner cable member to be 18-8 stainless steel armor wrapped construction with a low resistance nylon liner and polyethylene covered tempered steel wire conduit.
- 10.6.3.3 Cable to valve connection shall be of the weather resistant bonneted type.
- 10.6.3.4 Hoist control lever must be OSHA 1926.601(b)(11) compliant (Hoist interlock).
- 10.6.4 Central control console or dash mounted rocker switches with indicator lamps to be provided for strobe lights, spreader light and plow lights isolated from all hydraulic system control circuits.
 - 10.6.4.1 All interconnections and cables to be installed and ready for operation.
 - 10.6.4.2 Hydraulic system automatic shutdown system and control switching to be relay controlled.
 - 10.6.4.3 Relay(s) to be mounted within the cab.
 - 10.6.4.4 An access plate to internal wiring to be provided.
- 10.7 Hydraulic Reservoir and Valve Enclosure Assembly
 - 10.7.1 Tank/valve enclosure to be flex mounted to the chassis frame rail.
 - 10.7.2 Tank to be constructed of seven (7) gauge 304 stainless steel minimum.
 - 10.7.3 Tank equipped with a combination oil level sight glass and thermometer.
 - 10.7.4 Tank to be equipped with a ten (10) micron filler/breather cap with removable five hundred (500) micron strainer.
 - 10.7.5 An internal steel baffle to be provided within the tank.
 - 10.7.6 Tank to be stenciled (letters minimum 1 ½ " high) "Hydraulic Oil"
 - 10.7.7 Tank level switch connection to be "SO" type wiring and mounted within the tank/valve enclosure to protect it from the elements.
 - 10.7.8 Pump supply suction port to be minimum 2" NPT and system return port a minimum 1 ¼" NPT.

10.8 Filtration:

- 10.8.1 Manufacturers standard filtration to adequately protect the hydraulic system from damage
- 10.8.2 Return line filter to be isolated from reservoir by a full flow non-restrictive type quarter turn brass ball valve if filter is not installed in the reservoir.
- 10.8.3 Each filter to be equipped with a differential pressure switch to indicate filter clogged condition by means of a console mounted indicator lamp.
- 10.8.4 One (1) extra replacement filter for each assembly shall be provided for each truck.
- 10.8.5 Filter assemblies to be positioned as close to reservoir as possible and in an easily accessible service location.

10.9 Hoses and Fittings:

- 10.9.1 Each hose assembly (hose with hose ends), except for suction hose, to be fitted with JIC swivel connections on ends where connection to system component is made.
- 10.9.2 All pressure line hoses are to meet or exceed SAE Specification 100R2 and to be equal to Gates high pressure hose, type C2AT for sizes up to and including 1" ID.
- 10.9.3 Suction hose to be 2" nominal ID and meet SAE Specification 100R4, braided fiber, spiral wire reinforced, rubber covered hose with replaceable bolt-on type fittings.
- 10.9.4 All hydraulic hoses to be fully cleaned on interior, installed and ready for operation.
- 10.9.5 Grommets to be used when routing hoses through steel bracketing or frame members. (Refer 10.9.6)
- 10.9.6 Snap-Tite quick disconnects (manifold mounted) shall be supplied for the forward and rear spinner 1/2 inch pressure and return lines. Use of iron or galvanized iron pipe for fittings and connectors is not acceptable.
- 10.9.7 All fittings and connectors to be of the steel type designed for high pressure hydraulic system use.
- 10.9.8 Pipe thread ported components and connectors to be used only when the specific component is not available with SAE or JIC porting.

- 10.9.9 All pipe thread connectors used are to be coated with liquid Teflon pipe sealer prior to assembly. Use of Teflon tape is not acceptable.
- 10.9.10 Hoses run to the front of truck chassis for snowplow functions to be manifold mounted behind the front bumper with sufficient access for pump service and snowplow hitch installation. Successful vendor should contact WVDOH representative for location prior to pilot model review.
- 10.9.11 Snowplow lines to be equipped with complete ½ inch "VH" series Snap-tite quick disconnects (coupler and nipple to be supplied) and metal caps and plugs.
- 10.10 Any items not specifically stated herein but necessary for proper system installation and operation shall be supplied and shall comply with recommended hydraulic industry standards.
- 10.11 Vendor shall be responsible for initial servicing and pre-testing of hydraulic system which includes the following:
- 10.11.1 Initial fill of reservoir with a high grade 32AW hydraulic fluid to approximately forty (40) gallon level, to be marked on sight glass.
- 10.11.2 Start-up and initial run of hydraulic system, checking for leaks, excessive heat, system efficiency, etc. Vendor will be responsible for replacing any defective component. Vendor will not be responsible for initial test of plow circuits if equipment is not available to do so; however, vendor will be responsible for any defects discovered at time of plow installation.
- 10.11.3 Refill reservoir to the forty (40) gallon operating level.
- 10.12 Any hydraulic lines located within 10" of exhaust system to be metal lines and insulated.
- 10.13 Detailed component specifications, product literature, system component layout drawing with bill of materials and full functional hydraulic system schematics, in accordance with JIC and ANSI-Y32 format, shall be submitted with bid documents.
- 10.14 Successful vendor shall provide WVDOH with complete list of all filters required for normal maintenance on proposed unit.
- 10.15 With each purchase order, a minimum of three (3) one (1) day training sessions covering the operation, maintenance, trouble shooting and calibration/programming of the hydraulic system and spreader controls to be provided by the successful bidder at an Equipment Division facility.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EQUIPMENT DIVISION

BIDDER'S EVALUATION REPORT

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

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

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

Reference Requisition No.: 707ECO21

Bidder's Name: Worldwide Equipment

Address: P.O. Box 171 Jane Lew WV 26378

Telephone Number: 304-884-7815

Years Bidder has been registered to do business with the State of West Virginia: 19 YRS.

Years Company has been an authorized dealer for proposed unit: 30 YRS.

X4.2 DELIVERY:

X4.2.1 Delivery date of completed representative unit: 150 Calendar Days After Date of Purchase Agreement

X4.2.2 Delivery date of balance of completed units: 240 Calendar Days After Date of Purchase Agreement

NOTE: Vendors can complete Bidder's Evaluation Report at Purchasing's Web Site
www.state.wv.us/admin/purchase

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

X5.0 AWARD CRITERIA;

X5.1 Prices for quantities of

1-25	<u>137,165.⁰⁰</u>	per unit
26-50	<u>137,165.⁰⁰</u>	per unit
51 and over	<u>137,165.⁰⁰</u>	per unit

X6.0 SPECIFICATIONS - GENERAL

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

Mack G0713

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 Letha Lamb Training Academy prior to the delivery of the pilot? YES ___ NO

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

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

X6.5 WARRANTY AND SERVICE POLICY

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

Is warranty literature attached? YES ___ NO

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

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

SEE Attached list on Warranty's

X6.5 WARRANTY AND SERVICE POLICY QUESTIONNAIRE

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

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

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.

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

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

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

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

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

- | | | |
|----|---|--|
| A. | Shop Rate | \$ _____ per mechanic hour |
| B. | Travel Time Charge
(Specify if one-way) | \$ _____ per mechanic hour
_____ ; port to port _____ |
| C. | Mileage Charge
(Specify if one-way) | \$ _____ per vehicle mile
_____ ; port to port _____ |
| D. | Field Mechanic Rate | \$ _____ per mechanic hour |
| E. | Specify period of time that prices are in effect: _____ | |
| F. | Surcharge for miscellaneous items: _____ % | |

X6.5 EVALUATION COMMITTEE REQUIREMENTS

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

X6.7 Will all parts, equipment, accessories, material, design and performance characteristics not specified herein, but which are necessary to provide a complete unit, be furnished with the unit and conform in strength, quality of material, and quality of workmanship to those which are advertised and provided to the market in general by the unit industry? YES NO

X6.7.1 Are all parts and accessories adequate and regularly supplied as standard to be included except those which may be duplications of specifications herein, and except these by specification are not to be furnished? YES NO

X6.7.2 Are all standard safety features that are required by Federal and State statutes of law included? YES NO

X7.0 SPECIFICATIONS OF THE QUOTED UNIT

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

X8.0 Specifications – Cab and Chassis

Manufacturer: Mack Model: GU713

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

X8.1 GVWR Rating: 64,000 Lbs.

X8.2 Cab to Axle Dimensions: 126 Inches usable

X8.2.1 After frame length: 62 Inches

X8.3 Wheelbase: 226 Inches set forward design for snowplow application for various plows YES NO

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

X8.3.2 BBC (Bumper to Back of Cab) 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? YES NO

X8.4.2 RBM: 2,820,000 million Ins/Lb. per rail Single frame rail YES NO

To assure space for installation of spinner chute, are the truck chassis frame rails free of obstruction inside the frame rails and along the left outside frame rail in an area approximately 23 inches from the back of the cab YES NO

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

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

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

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

Does it provide easy service accessibility? YES NO

X8.4.5.1 Front frame mounted tow hooks YES NO

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

X8.5 Cab:

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

Ambient temperature display for outside temperature YES NO

Is hood a tilt hood YES NO

Fenders steel and/or fiberglass YES NO

Is rear air bag suspension provided YES NO

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

X8.5.1 Cab door locks, both doors, keyed alike YES NO

X8.5.2 Dual sun visors YES NO

X8.5.3 Arm rests, both sides YES NO

- X8.5.4 Seats: Fully adjustable air ride high back with head rest, cloth covered both left hand and right hand sides YES NO
 Clearance between seats 23 inches
Cloth seats w/ vinyl edges, same as last trucks. JD 10-16-07
- X8.5.5 Floor mats: Rubber floor mats throughout cab area with non-absorbent backing under mats YES NO
- X8.5.6 Turn signals: Manufacturers standard with hazard warning switch YES NO
- X8.5.7 Heater and defroster: Fresh air type, heaviest duty YES NO
- X8.5.8 Windshield wipers and washers: Manufacturer's heaviest duty "artic type" with intermittent feature with manufacturers largest reservoir filled with antifreeze type solvent YES NO
- X8.5.9 Instruments: Are all instruments dash mounted except where specified otherwise? YES NO
 Are all standard instruments supplied, including but not limited to the following: YES NO
- X8.5.9.1 Coolant, oil pressure gauges, to have both dial type readout and either an audible or visual alarm to warn operator when safe operating conditions are exceeded YES NO
- X8.5.9.2 Voltmeter or ammeter YES NO
- X8.5.9.3 Engine RPM tachometer YES NO
- X8.5.9.4 Speedometer with odometer YES NO
- X8.5.9.4.1 Are provisions for dual speedometer leads made available YES NO
- X8.5.9.5 Primary air pressure gauge YES NO
- X8.5.9.6 Auxiliary air pressure gauge YES NO
 Is it combined with primary air pressure gauge YES NO
- X8.5.9.7 Air filter manufacturers heaviest duty dual element type that meets all requirements of extended engine warranty YES NO
- X8.5.9.8 Does unit have front air intake YES NO
 Is an air actuated or cable control valve provided to enable operator to divert air intake to engine compartment while in snow plowing application YES NO
- X8.5.9.9 Is air filter restriction indicator gauge dash mounted YES NO
- X8.5.9.10 Engine hourmeter controlled by engine operation YES NO
- X8.5.9.11 Fuel level reading YES NO

- X8.5.9.12 Parking brake dash controlled with indicator light YES NO 56
- X8.5.9.13 Manufacturers best sound/weather insulation package for proposed cab YES NO
- X8.5.9.14 Outside temperature control with in cab digital read out YES NO
- X8.5.10 Rearview Mirrors:
- X8.5.10.1 West coast type power adjustable with convex spot mirror YES NO *AERO style*
- Size: 7" x 16" min.
- X8.5.10.2 Both mirrors heated type with stainless steel composite powder coated or aluminum hardware with corrosion resistance, heads, and fasteners YES NO
- X8.5.11 Grab Handle: Right hand and left hand sides, internal or external mounting to rear of door opening YES NO
- Are inside handles featured YES NO Is one (1) outside, left, mounted grab handle with non-slip insert for bed aggregate inspection furnished
- X8.5.12 Air horns, with snow shields if cab mounted, with adequate clearance for future installation of body dump cab protector YES NO
- ⊙ Does it have single air horn used without snow shield if mounted downward on frame rail under hood YES NO
- X8.5.13 Unit includes lockable hand operated throttle control or electronic control for idle up and idle down for hydraulic flow rate YES NO
- X8.5.14 Will manufacturer provide for stationary grille or grille with cutout area to allow tilt hood to clear snow plow mount YES NO
- Is stone/gravel guard provided YES NO
- X8.5.15 Air conditioning: Manufacturers fresh air type heaviest duty with APADS or equal RCD system including replaceable fresh air filter YES NO
- X8.5.16 Radio: AM/FM stereo with weatherband radio feature YES NO
- X8.5.17 Glass: Manufacturers tinted safety glass (all locations) YES NO
- X8.5.17.1 Dual power windows YES NO
- X8.5.18 Manufacturers engine cover or dash mounted extended two (2) cup drink holder YES NO
- X8.5.19 Front mudflaps manufacturers standard for unit bid YES NO

X8.5.20 Emergency triangle warning kit, with hold down stowed (fastened) in the cab 57

Manufacturer & Model: JKC 1005 or Equal YES NO

cruise in dash

X8.5.21 Manufacturers tilt steering column with cruise control feature YES NO

OR
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

Manufacturer & Model: Kiddie 5lb ABC or equal YES NO

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

none

X8.5.24 If you are the successful vendor, will you provide WVD0H with complete list of all filters required for normal maintenance on proposed unit. YES NO

X8.5 Engine:

X8.5.1 Will engine manufacturer make provisions for front mounted hydraulic pump to crankshaft pulley YES NO

Manufacturer & Model: Mack MP7

X8.6.1.1 Diesel engine? YES NO

HP: 365 Peak torque 1460 lbs. ft.

X8.6.1.2 In block engine heater 1500 watt YES NO

X8.6.1.2.1 Is electrical cable from the heater to plug one piece and waterproof, located left side under driver door YES NO

X8.6.1.3 Fuel heater/water separator provided inside of engine compartment YES NO

Manufacturer: Racor

X8.6.1.3.1 Engine fuel system equipped with primer pump YES NO

X8.6.1.4 Exhaust:

X8.6.1.4.1 Single vertical exhaust pipe with underbody muffler that will meet all Federal noise abatement requirements YES NO

Exhaust to the passenger (right) side of unit YES NO

- X8.6.1.4.2 Is tail pipe shielded or insulated to protect personnel from burns when entering or exiting the cab YES NO
- The shield is 180 degrees to 360 degrees and of non-rustable material such as stainless steel or aluminum YES NO
- Manufacturer: Donaldson
- X8.6.1.4.3 Exhaust pipe with rain cap or exhaust turn out YES NO
- X8.5.2 Jacob's Engine Brake Cummins C-Brake Mack Power Leash compression and exhaust or equal _____
- X8.6.3 Are engine components facing wheel areas, on both sides, and the areas to the rear of wheels shielded by means of rubber skirts supported by easily removable steel rods YES NO
- X8.6.4 Engine oil pan is zinc nickel plated aluminum or non-corrosive coated
- X8.7 Clutch:
- X8.7.1 Externally lubricated and manually adjusted with torque limiting clutch brake YES NO
- X8.7.2 Clutch adjustment set to specifications prior to delivery to the Department YES NO
- X8.7.3 Is clutch dual plate ceramic clutch YES NO
- Size: 15.5 inch Kwik adjust (manual feature) YES NO
- Manufacturer and model: Fuller CL7981 with 7 spring damper YES NO ^{9 Springs}
- 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 hose manufacturer: Mack Silicone

X8.9 Fuel Tanks:

X8.9.1 Safety type aluminum fuel tanks as required by FMVSS YES NO

X8.9.2 Single aluminum usable: 64 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 2007 emission standards YES NO

X8.10 Electrical System:

X8.10.1 Type: Manufacturer's 12 volt negative ground system with manufacturers radio interference Suppression YES NO

X8.10.1.1 Circuit breaker equipped, in easily accessible location, weatherproof YES NO

X8.10.2 Three (3) or four (4) heavy duty - 12 volt batteries, maintenance free with sealed terminals YES NO

X8.10.2.1 Reserve capacity: 555 minutes @ 80 degrees F

X8.10.2.2 Cold crank AMPS: 3000 total @ 0 degrees F

X8.10.3 Alternator capacity: 110 AMPS with internal regulator YES NO

X8.10.4 Wiring: Heavy duty hypalon type or equal in heavy duty sheathing, bundled with lacing cords or non-metallic tie straps YES NO

X8.10.5 Lighting: Are provision made available for all required lighting on completed unit (number, location, and color) to conform to the West Virginia Motor Vehicle Code YES NO

X8.10.6 Auxiliary snow plow/salt spreader lighting package YES NO

- X8.10.6.1 Truck vendor will provide 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 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: Weather Dac
- seven (7) pin connector YES NO with 4 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: Phillips 57g 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 NO
- located in the dash instrument panel with one (1) weather protected body builder connection box or module located at the rear under cab YES NO
- 25 amps per channel, 80 amp maximum output YES NO
- Do dash switches control the power module with LED backlighting YES NO
- X8.11 Power Train Overview:
Do lubricants for front axle hubs and differentials, manual transmission, transfer cases, and all rear differentials meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and all plugs identified as synthetic or painted red YES NO
- X8.11.1 Transmission: Fuller RTD-14908LL transmission oil cooler YES NO
- X8.11.1.1 Magnetic drain plug YES NO
- X8.11.1.2 Does transmission torque capacity meet or exceed specified engine torque YES NO
- X8.12 Driveline:
X8.12.1 Manufacturer and Model: Meritor 18N HA

X8.13 Rear Axle:

X8.13.1 Manufacturer and Model: Mack S440 46,000 lbs

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 71.8 MPH

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

X8.13.5 Rear wheel seals: Stemas

X8.13.6 Drain plug, magnetic YES NO

X8.14 Front suspension:

X8.14.1 Capacity at ground each front spring 10,000 lb.
Total 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 S5440 46,000 same as Previous Susp.

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 Grease Filled Manufacturer: FAG

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 18.7 cu. ft.

X8.17.3 Service Brake Size:

X8.17.3.1 Front: Meritor S Cam "S" cam OR power front disc brake system providing equal performance

- X8.17.3.2 Quick change type single OR double anchor pin if drum type brakes _____ 62
- X8.17.3.3 Rear: Meritor S cam "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: MGM TR-T5
- 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-T5
- 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 service
Manufacturer and Model: AD-9
with spin on desiccant cartridge or equal YES _____ NO
- Is the installation made in concurrence with the air compressor manufacturer's recommendations YES _____ NO
- X8.17.6.1 Are all electrical connectors for drain valve and air dryer covered with heat shrink material or have sealed connections YES _____ NO
- X8.17.7 Manufacturer's standard air tanks for service brakes YES _____ NO
Auxiliary tank for parking brake YES _____ NO
- X8.17.8 Low air pressure warning light and buzzer YES _____ NO
- X8.17.9 Rear service brake chambers and spring brake chambers mounted to provide adequate clearance for tire chains and backing into bituminous paving machines YES _____ NO
Factory installed YES _____ NO
- X8.17.10 Brake dust covers installed on all wheels YES _____ NO
- X8.17.11 Unit equipped with hand control valve, tractor protection valve, with provisions for installation of glad hands at rear of truck to enable unit to pull air brake operated equipment trailer YES _____ NO
- X8.17.11.1 Are glad hands recessed as not to stick out past the end of frame rails YES _____ NO

X8.18 Tires and Wheels:

X8.18.1 Truck equipped with hub piloted steel disc wheels for tubeless tires YES NO

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

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

X8.18.3 Front:

X8.18.3.1 Wheels: Size: 22.5 x 9.0
10 hole 285.75 mm bolt circle with 220 mm bore, tubeless steel disc YES NO

Rated at 10,000 lbs. at a maximum inflation pressure of 130 PSIG.

Manufacturer and Model: Accuride
With 0.500 inch thick disc, non standard off set with steel hubs YES NO

Powder coated with color similar to gray YES NO

X8.18.3.2 Tires: 315 / 80 R22.5 Ply 20

X8.18.4 Rear:

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

Rated at 7,500 lbs. at a maximum inflation pressure of 120 PSIG

Manufacturer and Model: Accuride JD 10-16-07
With 0.472 inch thick disc YES NO

Powder coated with color similar to gray YES NO

X8.18.4.2 Tires: 11R 22.5

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 G287 MSA

Rear Radial Tire: Manufacturer and Model: Goodyear G244 Traction
FB 10-16-07

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): SD110 + HB94
Manufacturer: 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 Company - TN4

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 replace YES NO

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

X8.20 Features considered as standard equipment but not addressed:
List of All Stand Equip included

X8.21 Paint: Describe proposed method of painting:
Standard white meeting spec, cab urethane base coat w/out clear 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

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

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

X8.25 Preventive Maintenance and Operator's Training School

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

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

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

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

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

Bidder: 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: 12 years

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

HENDERSON MUNI-WV 07

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 EACH UNIT

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: 12.7 cubic yards water level

X9.2 Sideboard pockets and tailgate height provides additional capacities of 2 to 5 cubic yards

X9.3 Front body bulkhead: 3/16" inch 304 stainless steel

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 X YES NO

X9.6 Dimensions:

- X9.6.1 Inside length of body: 174 inches
- X9.6.2 Inside width of body: 88 inches wide to maximize capacity and lower the center of gravity
- X9.6.3 Outside width of body: 95 at the integral fenders
- X9.6.4 Body spacing from cab 4 inch
- X9.6.5 Basic side height: 45 inches (measure from the floor to top rail)
- X9.6.6 Tailgate height: 53 inches (measure from the floor to top rail)
- X9.6.7 Body overhang: 10-18 inches (measure from center of hinge pin)
- X9.6.8 Cab protector: 22 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 type: 304 STAINLESS STEEL

- X9.8.1 Floor: 1/4" inch thickness 304 stainless NO OR abrasion resistant AR400 YES
- X9.8.2 Sides: 3/16 inch thickness
- X9.8.3 Tailgate plate: 3/16 inch thickness
- X9.8.4 Top rail: 3/16 inch thickness
- X9.8.5 Cab protector: 10 gauge
- X9.8.6 Longitudinal: 10 inch/ 7 gauge 304 stainless steel formed inner/
10 gauge 304 stainless steel formed with internal stainless steel gussets every
30 inches
- X9.8.7 For future potential pre-wet application, will the combination body be capable of accepting frame mounted approximately 85 gallon poly liquid tanks X YES NO
Is the body designed to allow maximum protection to the tanks X YES NO
- X9.9 Is all the welding inside the body continuous and not skip welded X YES NO
Are all rails and posts continuous welded X YES NO

- X9.10 Are the rear corner posts full length, one (1) piece construction YES NO 67
- X9.10.1 Will a rear bolt on spreader apron be provided unless integrated into the rear of the bed YES NO
- X9.11 Cab protector sides, formed with gussets, extending forward 22 inches
Clearance above highest point of cab is 3 inches
- X9.12 Is body a unibody design – no crossmembers YES NO
- X9.12.1 Does the body have one (1) piece sides and floor which incorporates a sloping floor to side radius to adequately feed material to conveyor chain YES NO
- X9.12.2 The sides of the body slope to the conveyor to facilitate self cleaning of body without raising YES NO
- X9.13 The boxed top rail slopes inward to shed debris YES NO
- X9.14 Full length 304 stainless steel integral rear fenders are continuously welded and positioned over wheels of the truck chassis YES NO
- X9.15 Is there an integrated center conveyor providing the ability of the body to convey granular materials with the body down YES NO
- X9.15.1 Does the conveyor have 12 inches or less truck frame to body floor height for lower center of gravity and lower mounting height YES NO
- X9.15.1.1 Will wood products be used between truck frame and bed YES NO
N/A CONVEYOR LONG SILLS SIT DIRECTLY ON TRUCK FRAME.
- X9.15.2 1/4 inch 304 stainless steel NO conveyor floor OR abrasion resistant steel (AR400)YES
- X9.15.3 2 inch diameter front and rear shafts with eight (8) tooth sprockets YES NO
- X9.15.4 Drive sprockets are double keyed to shaft YES NO
- X9.15.5 Conveyor width: 25 inches
- X9.15.6 Is conveyor reversible YES NO
- X9.15.7 Is conveyor driven with 25:1 planetary gearbox drives on both the front and rear shafts YES NO
Hydraulic motors 5.0 CIR
- Does one (1) motor have an integral conveyor speed sensor YES NO
- X9.15.8 Is conveyor chain D667K pintle type (24,500 lb. tensile/strand) YES NO
With 3/8 inch x 1 1/2 inch conveyor crossbars welded to every link
- X9.15.9 Is there a 10 gauge 304 stainless steel bolt in pan under the conveyor to keep material off chassis frame YES NO

- X9.16 Does the body have the capability to convey to the front or the rear with a material spinner for distributing material YES NO
- X9.16.1 For front spreading, is there a front feedgate integrated into the head sheet of the body no less than 8 inches x 24 inches with infinite adjustment positions YES NO
- X9.16.2 A 304 stainless steel front spinner chute mounted between chassis frame rails and with the body down be completely enclosed to prevent material from dropping on chassis drive shaft YES NO
- X9.16.3 For rear spreading, a 7 gauge 304 stainless steel 10-12 inch x 24-26 inch Rear feedgate in the body tailgate YES NO
- X9.16.4 Is rear feedgate lever operated YES or screw adjustable NO The feedgate capable of being positively locked into position YES NO
- X9.16.5 Is the front spinner bracket and chute mounted to the truck chassis frame and for rear spreading capability the rear spinner chute and brackets installed by successful vendor YES NO
- X9.16.6 Is the spinner assembly universal and may be used at front or rear YES NO
- X9.16.7 Is the spinner assembly adjustable left to right, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern YES NO
- X9.16.8 Does 10 gauge 20 inch diameter spinner disc have replaceable machined hub YES NO
- X9.16.9 Is spinner disc vanes 409 NO or 304 YES stainless steel
- X9.16.10 If spinner hydraulic motor is mounted on top of spinner disc, the motor is enclosed in a removable material shedding protective cover YES NO
- X9.17 Hydraulic Hoist:
- X9.17.1 Is it a trunnion mount or top lift telescopic hoist
- X9.17.2 Is telescopic hoist no less than N.T.E.A. Class 70 YES NO
- X9.17.3 Is single hoist cylinder trunnion mount or top lift
- X9.17.4 Does hoist cylinder have three (3) stages with 135 inches of stroke with a six (6) inch diameter first stage YES NO
- Manufacturer and model: MAILHOT_CS135-6-3
- X9.17.5 Does the cylinder have wear and corrosion resistant nitrided cylinder tubes YES NO

- X9.17.6 Cylinder warranty: 2 years
- X9.17.7 Does a five (5) degree oscillating cylinder collar protect the cylinder against side stress, if trunnion mount cylinder provided YES X NO
NOT APPLICABLE
- X9.17.8 Does the body have 6 inch x 8 inch x 1/2 inch structural angle rear hinge assembly installed in the truck chassis frame X YES NO
- X9.17.9 Does the rear hinge assembly have cold roll steel hinge pins connecting to 2 1/2 inch hinge blocks with grease zerks X YES NO
- X9.18 Are the following features included:
- X9.18.1 Warning light (bed raised) console mounted X YES NO
- X9.18.2 Hydraulic oil level reading X YES NO
- X9.18.3 Safety decals as required X YES NO
- X9.18.4 304 stainless steel mud guards, 10 gauge x 24 inches x 30 inches permanently attached in front of rear wheels X YES NO
- Will body vendor align exhaust stack for body clearance X YES NO
- X9.18.5 304 stainless steel shovel bracket X YES NO
- X9.18.6 304 stainless steel gussets (board pockets) for 4 inch x 6 inch lumber (rough) located at front and rear and mid-rail X YES NO
- 4 inch x 6 inch (rough) oak sideboards supplied and bolted through the gussets X YES NO
- Painted aluminum to match the body X YES NO
- X9.18.7 Does the unit have air operated tailgate with dual brake chamber air tailgate latches (one on each side) X YES NO
- Pivot shafts included stainless steel bushings to eliminate seizing X YES NO
- X9.18.8 1 1/2 inch 304 stainless steel grip strut walk rail installed on both sides of the body X YES NO
- X9.18.9 OSHA approved backup alarm, electronic ambient, adjusts to background noise, 112 dba shock mounted at the rear X YES NO
- X9.18.10 OSHA approved body support, both sides X YES NO
- X9.18.11 Unit equipped with 49,000 lb. capacity pintle hook centered between rear frame rails X YES NO
- Manufacturer and Model: WALLACE B30
- Height from ground level to center line of pintle "eye": 32 inches

- X9.18.12 Air deflector-hood mounted, blue or smoke YES NO 70
- Deflector manufacturer's standard width for truck mode YES NO
- Width: DEPENDS ON CHASSIS MAKE
- Access to front end hood tilt handle YES NO
- Extra handle YES NO

X9.19 Lighting: Weather/shock resistant lights LED type with average amp draw between .045 - .72
 YES NO

Manufacturer and Model: TRUCK LITE MODEL #0

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

- X9.19.1 All marker lights 2 1/2 inch diameter flush mount sealed beam lights with integral reflector mounted in rubber base TRUCK LITE TL10250R YES NO
- X9.19.2 All ground wires attached with plated steel fasteners YES NO
- X9.19.3 Rear lights shock mounted, recessed oval stop, tail, turn, and recessed oval back up lights mounted in back post TRUCK LITE TL60250R YES NO
- Strobe lights marked and switched from dash board location YES NO

Manufacturer and Part #: TRUCK LITE 60360Y

- X9.19.4 Center rear I.D. lights three (3) located in truck chassis YES NO
- X9.19.5 Two (2) amber oval LED strobe lights mounted at the front corners of the cab protector, and two (2) amber oval LED strobe lights mounted at each outside corner of the cab protector YES NO

Manufacturer and Part # of Both Locations: TRUCK LITE 60360Y

Strobe lights marked and switched at dash board location YES NO

- X9.19.6 Auxiliary headlights for snowplowing application shock mounted on fender of unit YES NO
- Manufacturer and Part #: TRUCK LITE 80853

- X9.19.7 Two (2) oval amber LED strobe lights mounted at top of rear corner posts right and left sides and switched in combination with cab protector strobe YES NO

Manufacturer and Model: TRUCK LITE 60360Y

- X9.19.8 Two (2) front frame mounted tow hooks YES NO
- X9.19.9 Lighted license plate bracket YES NO

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

- X9.20.1 304 stainless steel fold down ladder that locks into position when either in the down or up position YES NO
- X9.20.2 Two (2) 304 stainless grab handles YES NO
- X9.21 Tailgate (304 stainless steel):
- X9.21.1 Tailgate hinged at top, flame cut hardware, pork chop type off-set hardware to achieve maximum opening of tailgate, but has provision for pivoting at the bottom YES NO
- X9.21.2 Flush mount, 1/2 inch flame cut 304 stainless steel tailgate pivots YES NO
- X9.21.3 Heavy duty offset hinge plates, one (1) inch flame cut 304 stainless steel YES NO
- X9.21.4 3/4 inch 304 stainless steel latch hooks with 3/8 inch 304 stainless steel latch plates YES NO
- X9.21.5 Full perimeter 304 stainless steel boxing with all horizontal edges sloped outward YES NO
- X9.21.6 Two (2) 10 gauge 304 stainless steel sloped horizontal braces that are flush with perimeter Boxing YES NO
- X9.21.7 7 gauge 304 stainless steel 10-12 inch x 24- 26 inch rear feedgate YES NO
- X9.21.8 Cold roll steel upper pins with grease zerks YES NO
- X9.21.9 Top hinge channel has removable, chain tethered keeper pins YES NO
- X9.21.10 Latching action at the bottom of gate operable by the truck driver without leaving the truck cab YES NO
- X9.21.11 Gate is self aligning YES NO
- X9.21.12 Tailgate lower latch pins 304 stainless steel 1 1/4 inch diameter YES NO
- X9.21.13 Body integrated or bolt on 304 stainless steel 1.5 inch spreader apron YES NO
- X9.22 Design and strength characteristic of the entire body such that the unit structural members and the hoisting system will not suffer any deformation, damage, or structural failure resulting from raising a distributed full payload YES NO

9.23 Bumper:

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

Weights 10.20lbs. per square foot

- X9.23.2 Bumper face covers all of truck frame (12 inches) with two (2) flanges of 2.25 inches top and bottom X YES NO
- X9.23.3 Overall width of bumper: 94 inches
- X9.23.4 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.
- X9.23.5 Bumper has two (2) access holes for utilization of tow hooks X YES NO
- X9.23.6 Upper and lower flanges cut and welded solid at point where bumper is bent and ground off smooth X YES NO
- X9.23.7 Bumper mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side X YES NO
- X9.23.8 Mount angle 3/8 inch x 3 inches x 8 long with four (4) 5/8 inch holes X YES NO
- X9.23.9 Paint on front bumper: BLUE 82-5802
- X9.24 Underbody Tool Box:
- X9.24.1 One (1) tool box mounted under body on right side frame rail X YES NO
- X9.24.2 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
- X9.24.3 Construction 14 gauge, A-60 galvaneal steel with all seams welded X YES NO
- X9.24.4 Tool box has horizontal hinged fold down door X YES NO
- X9.24.5 Tool box door has cable or chain to hold the door in a horizontal position X YES NO
- X9.25 Load covering system electrically or air controlled X YES NO
- X9.25.1 Electric motor assembly includes 12 volt direct drive motor with forward and reverse action, cab mounted control switch, resettable circuit breaker X YES NO
- X9.25.2 Pivot arm assembly constructed in a two (2) piece bent arm configuration of 1 1/4 inch 14 gauge steel tubing X YES NO
- X9.25.3 Bent arm extensions constructed of 1 inch 14 gauge steel tubing
- X9.25.4 Rear cross constructed of 1 1/4 inch 14 gauge steel tubing

- X9.25.5 Pivot arm rests included YES NO
- X9.25.6 Underbody spring extension spring 12 inches in length attached to base of pivot arm and of body with articulating spring mounting bracket YES NO
- X9.25.7 All steel components finished with manufacturer's recommended rust preventative system with adequate primer and paint YES NO
- X9.25.8 Steel cab protector mounted triple bend wind deflector provided YES NO
- X9.25.9 Load covering system provided with a 18 oz. black vinyl tarp to fit 14 foot 6 inch body YES NO
- X9.25.10 Load covering system supplied with all necessary hardware and delivered to the West Virginia Division of Highways as a complete and operational unit. YES NO

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

NO PAINT ON STAINLESS

NON STAINLESS BODY PARTS PAINTED ALUMINUM

FRONT BUMPER PAINTED BLUE

X9.27 Detail/Decorative Stripes with Logo:

Will striping and detailing you provide comply with requirements of Section 9.27.1 through 9.27.7 YES NO

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

X9.29 Does the proposed unit meet or exceed the "OSHA OF 1970" and/or subsequent changes

YES NO

X10.1 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 YES NO

X10.1.9.1 System design and components provide flow, pressure and performance requirements ⁷⁶ with a maximum operating load sense differential pressure of 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 MAILHOT MODEL CS 135-6-3 - 15.5 gallons to fully extend but after filling 11 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 MAILHOT MODEL CS 135-6-3 - 10.2 gallons to fully extend 1.2 gallons to fill and 9 gallons to extend

5 GPM flow rate	<u>87</u>	seconds to raise
10 GPM flow rate	<u>44</u>	seconds to raise
15 GPM flow rate	<u>29</u>	seconds to raise
20 GPM flow rate	<u>22</u>	seconds to raise
25 GPM flow rate	<u>17</u>	seconds to raise
30 GPM flow rate	<u>15</u>	seconds to raise
40 GPM flow rate	<u>11</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: REXROTH A10V071 SERIES 31

X10.1.13 Is pump manufacturers standard product release and design X 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 X 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: COMPONENT TECHNOLOGY
- 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 78
 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 A priority section installed to allow plow to raise in a system over demand situation
 YES NO
- X10.3.7 Main pressure inlet relief valve provided to reduce system pressure shock loads
 YES NO
 Is it preset at pressure so as not to interfere with pump pressure compensator and to prevent premature relief opening at system high demand operation YES NO
- X10.3.8 If pilot pressure reducing valve is required for solenoid section control, design meets operating requirements as set forth in Section 10.1.9.1
 YES NO
 Pilot supply and tank venting internal within the valve assembly section YES NO
- X10.3.9 Load sense network high pressure relief provided and preset to limit system maximum operating pressure
 YES NO
 Set point provides proper pressure margin to pump pressure compensator and high pressure relief valve as to prevent premature loss of required flow rates and pressure capability
 YES NO
- X10.3.10 SAE #6 gauge Oport equipped with Parker Hannifin PD361 diagnostic coupling nipple with protective cap for load sense testing to be installed in an easily accessible location
 YES NO
- X10.3.11 Dump body control section 3-way three (3) position spring centered cylinder spool for operation of a single acting hoist cylinder
 YES NO

X10.3.11.1 Full flow workport relief valve installed in power up port YES NO 79

Set point to prevent operating pressure from exceeding hoist cylinder normal operating pressure rating YES NO

X10.3.11.2 Adjustable flow control installed to limit downward speed rate of dump body YES NO

X10.3.12 Snowplow lift control section is 3-way three (3) position spring centered cylinder spool with float detent for operation of a single acting lift cylinder YES NO

X10.3.12.1 Full flow workport relief valve preset at maximum required unlock pressure installed in power down workport YES NO

Workport relief valve installed in power up workport if maximum system pressure output setting exceeds normal operating pressure limit of plow lift cylinder YES NO

Is a three (3) way valve provided for plow hoist circuit YES NO

X10.3.12.2 Adjustable flow control installed to limit downward speed of snowplow YES NO

Flow limiting control system preset for proper plow lift speed to be supplied to reduce over demand operation and to increase system efficiency YES NO

Will flow limit be determined at time of pilot model review YES NO

X10.3.13 Snowplow power angle control section is 4 way three (3) position spring centered motor spool for operation of worm gear driven type reversing system YES NO

X10.3.13.1 Flow limiting control system preset for proper plow reversing speed to be supplied to reduce over demand operation and to increase system efficiency YES NO

Will flow limit be determined at time of pilot model review YES NO

X10.3.14 Plow Balance Valve:

X10.3.14.1 Is hydraulic system supplied with a plow balance valve YES NO

X10.3.14.2 Is valve designed to offset a specific (adjustable) plow weight when activated YES NO

X10.3.14.3 Does plow balance system not alter the operation of any other hydraulic function or have an adverse effect on the performance of other hydraulically operated equipment including:

- Wing Plow YES NO
- Body Hoist YES NO
- Plow Hoist or Angle YES NO
- Spreader functions YES NO

80

Are all normal operations of the plow lift/lower functions maintained without additional tasks YES NO

X10.3.14.4 Will plow lift be immediate to guarantee safe operation of the vehicle YES NO

X10.3.14.5 Are solenoid valve coils used YES NO

Will they have manual override capabilities YES NO

X10.3.14.6 Does manifold valve include a pressure test point for use when checking balance pressures YES NO

X10.3.14.7 Is pressure test point capable of tapping into system at pressures of 5,000 PSI YES NO

X10.3.15 Auxiliary equipment drive circuit control section 3-way three (3) position spring centered solenoid operated motor spool YES NO

Is the circuit separate and distinct from the spreader control system YES NO

X10.3.15.1 Flow limiting control system preset to provide 22 GPM at a system load pressure of 2200 PSI. Pump is capable of supplying this flow rate with engine speed of 1173.67 RPM

X10.3.15.2 Is an inline mounted control valve supplied for this operation in place of directional control valve section YES NO

If supplied, is proper interconnections and venting of load sense network system provided YES NO

X10.3.15.3 Is pressure line 3/4" SAE 100R2 hose and manifold mounted at rear of chassis and equipped with Parker Hannifin SH6-62 quick disconnect coupler and protective metal plug YES NO

Is mating nipple SH6-63 with protective cap supplied YES NO

Will mounting location be determined at time of pilot model review YES NO

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

REXROTH MP-18 SERIES

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

Capacity of reservoir (tank) 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 is 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 7 GPM and a conveyor flow rate of 15 GPM

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: REXROTH MP18 SERIES

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:
COMPONENT TECHNOLOGY ^{SG51}SG53 W/ GL400 CONTROL
- 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 gauge 304 stainless steel YES NO
- X10.7.3 Tank equipped with a combination oil level sight glass and thermometer YES NO

- X10.7.4 Tank equipped with a pressurized ten (10) micron filter/breather cap with removable 500 micron Strainer X YES NO
- X10.7.5 Is an internal steel baffle provided within the tank X YES NO
- X10.7.6 Tank stenciled with minimum of 1 1/2" high "Hydraulic Oil" X 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 X YES NO
- X10.7.8 Pump 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 X 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 X 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 X YES NO
- X10.8.4 One (1) extra replacement filter for each assembly is provided for each truck X YES NO
- X10.8.5 Filter assemblies positioned as close to reservoir as possible and in an easily accessible service location X 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 X 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 X 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 X YES NO
- X10.9.4 All hydraulic hoses fully cleaned on interior, installed, and ready for operation X YES NO
- X10.9.5 Are grommets used when routing hoses through steel bracketing or frame members X YES NO
- X10.9.6 Are Snap-Tite quick disconnects (manifold mounted) supplied for forward and rear spinner 1/2 inch pressure and return lines X YES NO
- Is iron or galvanized iron pipe for fittings and connectors used YES X NO
- X10.9.7 Are all fittings and connectors steel type designed for high pressure hydraulic system use X 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 ONE DAY TRAINING SESSIONS PER P.O.
-

FROM:

X8.18.4.1

Rear Wheels: Size _____
10 hole 285.75 mm bolt circle with 220mm bore, tubeless steel disc ___ YES ___ NO
Rated at _____ lbs. at a maximum inflation pressure of _____ PSIG
Manufacturer and Model: _____
With 0.500 inch thick disc, non standard off set with steel hubs ___ YES ___ NO
Powder coated with color similar to gray ___ YES ___ NO

TO:

X8.18.4.1

Rear Wheels: Size _____
10 hole 285.75 mm bolt circle with 220mm bore, tubeless steel disc
_____ YES _____ NO
Rated at _____ lbs. at a maximum inflation pressure of _____ PSIG
Manufacturer and model: _____
With 0.472 inch thick disc _____ YES _____ NO
Powder coated _____ YES _____ NO Gray top coat _____ YES _____ NO

FROM:

X8.25.1

Will a preventive maintenance and operator's training seminar be provided
_____ YES _____ NO

TO:

X8.25.1

Will a preventive maintenance and operator's training seminar be provided
_____ YES _____ NO

Manuals _____ (OR) CD _____

FROM:

X10.3.12

Snowplow lift control section is 3 way three (3) position spring centered cylinder
spool with float detent for operation of a single acting lift cylinder ___ YES ___ NO

TO:

X10.3.12

Snowplow lift control section is 4 way three (3) position spring centered cylinder
spool with float detent for operation of a single acting lift cylinder
_____ X _____ YES _____ NO

FROM:

X10.3.14.5 Are solenoid valve coils used YES ___ NO
Will they have manual override capabilities ___ YES ___ NO

TO:

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

AGREEMENT ADDENDUM

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

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

ACCEPTED BY:
STATE OF WEST VIRGINIA

VENDOR

Spending Unit: _____

Company Name: Worldwide Equipment

Signed: _____

Signed: J-D

Title: _____

Title: Municipal Sales

Date: _____

Date: 10-16-07

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

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

DEFINITIONS:

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

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

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

LICENSING: Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY: The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendors should visit www.state.wv.us/admin/purchase/privacy for the Notice of Agency Confidentiality Policies.

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

Vendor's Name: Worldwide Equipment
Authorized Signature: [Signature] Date: 10-16-07



Prepared For:
ST. OF W. VIRGINIA -DOT (TF)

Presented By:
WORLDWIDE EQUIPMENT
JIM DOTSON, MUNICIPAL SALES
LEXINGTON, KY 40511
800-879-3039

Page 1
Oct 16, 2007
2009 GU713
Reff#: FBBY025309A

Pid Code	Description		Front Wt	Rear Wt.
ORDER/CUSTOMER/VEHICLE INFORMATION				
5050001	INITIAL REGISTRATION LOCATION, UNITED STATES, WEST VIRGINIA	Opt		
0130002	TYPE OF SERVICE, MUNICIPAL	Opt		
APP0003	VEHICLE APPLICATION CLASS, VOCATIONAL CLASS "C" - 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		
CAR0080	CARRIER APPLICATION, WITH CRD92-93 (except 3.86 ratio) or CRD112-113, Unlimited miles on max 3% grade roads (max 15% miles on max 10% grade or max 10% on max 5% grade). 80000# (36287 kg) MAX GCW. (Carrier Code USA-V1)	Std		
0010002	VEHICLE TYPE, STRAIGHT TRUCK WITH TRAILER	Inc		
0061799	VEHICLE USE & BODY/TRAILER TYPE, SNOW PLOW. On/Off Hwy COMMODITIES, UNKNOWN			
FIL 0001	FILE STATUS, QUOTE			
BVS				
0020750	CHASSIS (BASE MODEL), GU703 6-WHEEL TRUCK	Std	8173	7823
ENGINE/TRANSMISSION/CLUTCH				
1001502	ENGINE, MACK MP7-365C 365 HP @1500-1700 RPM (PEAK) 1460 LB. FT. MAX. TORQUE @ 1200 RPM	Opt		
1362131	TRANSMISSION, 10 SPEED MANUAL (OVERDRIVE), FULLER RTO-14908LL (14.56/0.74)	Opt	59	11
1331025	CLUTCH, MANUAL ADJUSTING, EATON/FULLER CL7981 15.5" TWO-PLATE W/DAMPENED CERAMIC COAX 9-SPRING 6-PADDLE DRIVEN DISC & 2.0" DIA SPLINE-1650# CAP	Std		
ENGINE EQUIPMENT				
1134100	AIR COMPRESSOR, MERITOR/WABCO 318 18.7 CFM	Std		
1250101	AIR CLEANER, 11" x 30" (279 mm x 762 mm) UNDER HOOD SINGLE ELEMENT DRY TYPE W/AIR INTAKE FROM BOTH SIDES OF HOOD AIR GOVERNOR - CHASSIS MOUNTED W/O OPTIONAL LOCATION	Std		
1270002	INSIDE/OUTSIDE AIT INTAKE W/IN-CAB CONTROL FOR SNOWPLOWS	Opt	20	
1321225	ALTERNATOR, DELCO 12V 110A (35SI)	Opt	7	
3165106	BATTERIES, (3) MACK 12V 1000/3000 CCA THREADED STUD	Opt		
1210001	BUG SCREEN, RADIATOR MOUNTED	Std		
1199003	TEXACO LONG LIFE ENGINE COOLANT #7998 WITH NITRITES (50/50 mix) to -34 degrees F (-37 degrees Celsius)	Opt		
1230015	SPIN ON CANISTER W/O CHEMICAL FOR USE W/TEXACO EXTENDED LIFE COOLANT ONLY	Opt		
DPF0003	DIESEL PARTICULATE FILTER, DIESEL PARTICULATE FILTER VERTICAL RH	Opt	-10	-1

Pid Code	Description		Front Wt	Rear Wt
	SIDE UNDER CAB (MACK CAP)			
EAS0002	EXHAUST AFTER-TREATMENT SYSTEM, EXHAUST AFTER-TREATMENT SYSTEM DIESEL PARTIC FILTER CERAMIC CATALYZED	Std		
RGN0003	DPF REGENERATION CONTROL, AUTO IN MOTION, MAN. STATIONARY MAN. INHIBIT	Std		
1100700	ENGINE BRAKE, MACK POWERLEASH	Std		
1290009	ENGINE BLOCK HEATER, 120V 1500 WATT ENGINE BLOCK HEATER	Opt	1	
	ENGINE HOSES AND TUBING, SILICONE (DOES NOT INCLUDE HEATER & RADIATOR HOSES)	Std		
1305022	EXHAUST, DPF, OUTBOARD, SINGLE (R/S) VERTICAL STRAIGHT EXHAUST STACK PLAIN END, TOP OUTLET DIFFUSER	Opt	-2	
	POLY-V FAN BELT WITH AUTOMATIC TENSIONER	Std		
1180026	FAN DRIVE, BEHR FAN AND ELECTRONIC MODULATING FAN DRIVE	Std		
1400002	FLYWHEEL HOUSING, LIGHT WEIGHT, ALUMINUM	Std		
2931003	FUEL-WATER SEPARATOR, RACOR FUEL FILTER 1000 FH, 12V/ELECTRICAL HEATER W/MACK INTEGRAL FUEL/WATER SEPARATOR	Opt	8	
	HAND PRIMER PUMP	Inc		
1240002	HOSES - RADIATOR/HEATER, SILICONE	Std		
4880000	RADIATOR, ALUMINUM CORE	Std		
1311212	STARTER, 12 VOLT GEAR REDUCTION STARTER	Std		
4110004	ELETRONIC STARTER INTERLOCK	Std		
	TRANSMISSION EQUIPMENT/DRIVELINES			
4630001	CLUTCH ASSIST (AIR), AIR OPERATED CLUTCH ASSIST	Std		
8490100	CLUTCH RELEASE HOSE, CLUTCH RELEASE LUBE HOSE	Opt	1	
1920001	TRANSMISSION BELL HOUSING, IRON	Opt	45	8
1390001	TRANS OIL COOLER (INTEGRAL OIL PUMP)	Opt	44	1
SL40003	SYNTHETIC LUBRICANT - TRANSMISSION, 50W (SYNTHETIC LUBRICANT)	Opt		
3380000	WITHOUT DRIVESHAFT GUARD FOR CENTER BEARING	Std		
1951003	DRIVELINE - MAIN, MERITOR 18N HD W/COATED SPLINES	Inc	6	17
2041002	DRIVELINE - INTERAXLE, MERITOR 17N HD W/COATED SPLINES	Std		
	CAB (A thru G)			
1731004	BLEND AIR HVAC W/APADS	Opt	1	
	AIR CONDITIONING COMPRESSOR, ROTARY FREON	Std		
1260002	AIR RESTRICTION MONITOR (INTAKE), GRADUATED LOCK-UP TYPE (W/MEMORY) DASH MOUNTED	Opt	1	
	ASH TRAY	Std		
5760011	AUX LAMP PROVISIONS, AUX. WIRING 7 SWITCHES FOR PLOW LIGHTS AND TURN SIGNALS, BUNDLED AT GRILLE WITH WEATHER-PACK CONNECTORS FOR LOCAL INSTALLATION OF LAMPS	USR		
1443000	CAB, LH-DRIVE CA68 CONV CAB	Std		
	CAB MOUNTING, AIR SUSPENSION	Std		
9970001	CERTIFIED WEIGHT	Opt		
5750001	CIGAR LIGHTER	Std		

Pid Code	Description		Front Wt	Rear Wt
	COAT HOOK (2)	Std		
	DRIVERS AND PASSENGER SIDE CUP-HOLDERS	Std		
1649028	DASH MOUNTED SWITCHES, FIVE SWITCHES IN DASH, 25 AMP. EACH	USR		
	(4) LAMPS RH & LH DOME LAMPS-DOOR & SWITCH ACTIVATED; (2) CAB	Std		
	REAR DOME LAMPS-SWITCH ACTIVATED			
	DOOR INTERIOR TRIM PANELS, PADDED VINYL/FABRIC W/ARM REST AND	Inc		
	LIGHTED POCKET			
3410001	ENGINE SHUTOFF, KEY TYPE	Std		
2090005	FENDER EXTENSIONS, FENDER EXTENSIONS	Opt	5	
7860007	5LB FIRE EXTINGUISHER BETWEEN LH SEAT BASE AND DOOR WITH VALVE	Opt	6	
	AIMED REARWARD			
1840007	FLOOR COVERING, POLYURETHANE FLOOR MAT	Std		
	GAUGE, AIR PRESSURE	Std		
	GAUGE, VOLTMETER	Std		
8330017	GAUGE CLUSTER, EXHAUST PYROMETER AND TRANSMISSION OIL	Std		
	TEMPERATURE GAUGES			
	GAUGE, ENGINE COOLANT TEMPERATURE	Std		
	GAUGE, ENGINE OIL PRESSURE	Std		
	GAUGE, ENGINE OIL TEMPERATURE	Std		
1980001	GAUGES, ENGLISH DISPLAY	Std		
1990008	GAUGE, SPEEDOMETER W/TRIP ODOMETER (ELECTRONIC 1% ACCURACY)	Std		
2000010	ENGINE TACHOMETER	Std		
6390004	ROADWATCH AMBIENT AIR TEMP GAUGE FOR OUTSIDE AND ROAD TEMPS	Opt	1	
	(FAHRENHEIT)			
1450001	GLASS - CAB WINDOW, SAFETY TINTED WINDSHIELD, SIDE AND REAR	Std		
	WINDOWS			
	GRAB HANDLES, ALUMINUM, RH & LH, BEHIND DOOR	Std		
B700003	GRILLE - HOOD AIR INTAKE, GRILLE PAINTED GRAY	Std		
4000017	GRILLE, BRIGHT FINISH GRILLE	Opt		
	CAB (H thru R)			
3400011	HOOD AND FENDERS, FIBERGLASS-CAMOPLAST	Std		
1540002	HORN - AIR, (2) MACK RECTANGULAR SINGLE TRUMPET (ONE EACH SIDE	Opt	8	
	OF CAB ROOF)			
3610002	HORN - ELECTRIC, SINGLE TONE	Std		
3120005	IDENTIFICATION/CLEARANCE LIGHTS, (5) MARKER AND CLEARANCE	Std		
C0I0001	IN-DASH STORAGE, MEMO AREA AND CLIP	Std		
C0J0001	INSTRUMENT CLUSTER DISPLAY, SEGMENTED LCD DRIVER DISPLAY	Std		
	INCLUDES VOLTMETER, ODO, HOUR METER, (2) TRIP ODOMETER(S),			
	SWEET SPOT & MAINTENANCE LAMPS			
A270003	INSTRUMENT PANEL, WOODGRAIN FINISH AND DRIVER & PASSENGER	Opt		
	SIDE CUP HOLDERS (HVAC MTD)			
0042102	INTERIOR TRIM (PEDIGREE - SANDSTONE) Vinyl headliner, cloth/vinyl seat	Opt		
	trim, 3 overhead storage compartments w/nets, rear panel with storage pouch,			

Pid Code	Description		Front Wt	Rear Wt
	signature polyurethane floor mat, brushed nickel instrument panel with chrome gauge bezels, diamond pattern fabric on doors, padded interior sun visors both sides, 2 spoke urethane grip brushed nickel spokes, brushed nickel mack horn cap, 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, 2 cup holders, 2 trash bag hooks, 2 coat hangers, rh storage compartment, seat belt retractors, rh door peep window, lighted door mounted map pocket lights.			
1600001	CHASSIS KEYPED AT RANDOM - 2 KEYS	Std		
	LOW AIR PRESSURE INDICATOR LIGHT AND BUZZER	Std		
3600005	MIRROR BRACKETS, SINGLE TUB W/BREAKAWAY FEATURE (FOR 102" WIDE TRAILER)	Std		
1522113	MIRRORS - EXTERIOR, AERODYNAMIC MOTO MIRROR PACKAGE: RH/LH MOTORIZED & HEATED	Opt	7	
1532002	MIRRORS - CONVEX TYPE, BRIGHT FINISH, LH & RH, 8" DIA. CONVEX PARKING BRAKE ON INDICATOR LIGHT	Std Std		
	POWER OUTLETS, (2) 12-VOLT AUXILIARY POWER OUTLETS - DASH MOUNTED	Std		
1740029	AM/FM PREMIUM STEREO CD W/WEATHER BAND	Opt	3	
1560004	RADIO ANTENNA, CAB MOUNTED BEHIND LH DOOR	Inc		
1660003	POWER LEADS (5-WAY BINDING POSTS FOR CB RADIO) IN HEADER CONSOLE	Std		
4320004	CB RADIO MOUNTING REINFORCEMENT IN HEADER CONSOLE	Std		
1550001	REAR WINDOW (FIXED TYPE)	Std		
7840002	EMERGENCY TRIANGLE KIT PARALLEL TO INSIDE SURFACE OF RIDERS SEAT BASE	Opt	12	3
	CAB (S thru Z)			
1962270	SEAT - DRIVER, BOSTROM TALLADEGA 915 (HI-BACK) AIR SUSPENSION	Opt	1	
1972270	SEAT - RIDER, BOSTROM TALLADEGA 915 (HI-BACK) AIR SUSPENSION	Opt	35	9
1659001	SEAT ARM RESTS, INBOARD MOUNTED ARM REST, DRIVER'S & RIDER'S SEAT	Opt	5	1
4850002	SEAT COVERING, CLOTH W/VINYL TRIM DRIVER AND RIDER SEATS	Inc		
5920005	SEAT BELTS/RETRACTORS, LAP AND SHOULDER W/CAB MOUNTED SHOULDER BELT W/ADJUSTABLE D-RING FOR DRIVER & RIDER SEATS	Inc		
3730000	W/O ROOF VENT VENTILATION	Std		
2380001	STARTER SWITCH, KEY TYPE	Std		
4390001	STEERING COLUMN, ADJUSTABLE TILT TELESCOPE	Std		
1610012	STEERING WHEEL, TWO SPOKE URETHANE GRIP PAINTED SPOKES & BULLDOG HORN CAP	Std		
4150003	OVERHEAD CONSOLE, (2) STORAGE COMPARTMENTS AND NET RETAINERS W/CENTER MOUNTING FOR CB PROVISIONS	Std		
	STORAGE POUCH REAR	Std		
3540002	SUN VISOR - INTERIOR, BOTH SIDES (PADDED VINYL)	Std		

Pid Code	Description		Front Wt	Rear Wt
1460008	WINDOW CONTROLS, POWER WINDOW LIFT WITH ELECTRIC DOOR LOCK, LH & RH	Opt	14	
	WINDSHIELD WASHERS, ELECTRIC, WIPER MOUNTED W/RESERVOIR MOUNTED UNDER HOOD	Std		
1489007	WINDSHIELD WIPERS, ARCTIC WIPER BLADES	USR		
	FRAME EQUIPMENT/FUEL TANKS			
2794102	BUMPER - FRONT, EXT.-SWEPT BACK-STEEL CHANNEL 122.5"/3112 mm BBC	Std		
2811055	CROSSMEMBERS, BOC AND INTERMEDIATE(S) STEEL HD BACK-TO-BACK CHANNEL	Std		
4679990	CROSSMEMBER (BEHIND REAR AXLE), W/O OPTIMAL CROSSMEMBERS BEHIND REAR AXLE/BOGIE	Std		
8190000	WITHOUT FIFTH WHEEL MOUNTING ANGLES	Std		
2241032	FRONT FRAME EXTENSION, 20" FOR SNOW PLOW MOUNT (CONT' PARENT RAIL) W/TILT W/O INSPECTION HATCHS-W/SWEPT-BACK BUMPER	Opt	88	-14
2430009	TOWING DEVICE - FRONT, HOOKS	Std		
2882066	FUEL TANK - LH, 66 GALLON 22" DIAMETER ALUMINUM	Opt	30	12
5900000	W/O FUEL LINE OPTION	Inc		
	FRONT AXLE/EQUIPMENT/TIRES			
2401501	FRONT AXLE, 20000# (9072kg) MACK FXL20 WIDE PIVOT CENTER	Opt	427	
9005360	TIRES BRAND/TYPE - FRONT, GOODYEAR - TUBELESS RADIAL PLY, (2) 315/80R22.5 20 L G287MSA (ALL POS)	Opt	46	
250 2000	WHEELS - FRONT, STEEL DISC (10-HOLE)	Std		
5312246	(2) 22.5x9.0 ACCURIDE 10-HOLE HUB PILOTED (11 1/4"/286mm BC)	Opt	26	
2481000	HUBS - FRONT, FERROUS	Std		
2411105	BRAKES - FRONT, MERITOR "S" CAM TYPE 16.5" x 6" Q+	Opt	32	
2472200	BRAKE DRUMS - FRONT, CAST OUTBOARD MOUNTED	Inc		
4860000	BRAKE LINING, FURNISH STANDARD FRONT BRAKE LINING	Std		
6370001	DUST SHIELDS - FRONT BRAKE, FURNISH	Opt		
2460001	FACTORY OPTION	Std		
3850001	SHOCK ABSORBERS, FRONT	Std		
2420009	SLACK ADJUSTERS - FRONT, GUNITE 2000 - AUTOMATIC	Std		
2442003	SPRINGS - FRONT, MACK MULTILEAF 20000# (9072kg) GROUND LOAD RATING	Opt	155	
2452214	STEERING, SHEPPARD SD110 + HD94	Opt	115	
B440001	PROTECTIVE NYLON SPACER BETWEEN DISCS WHEEL TO DRUM	Opt		2
	REAR AXLE/EQUIPMENT/TIRES/RATIOS			
268 1904	REAR AXLE/SUSPENSION, 46000# (20866kg) MACK S440-46 FAB HOUSING -	Opt		443
1861934	RECERTIFICATION, SS440 MACK MULTILEAF (CAMELBACK) 46000# - RECERTIFICATION			
9015285	TIRES BRAND/TYPE - REAR, GOODYEAR - TUBELESS RADIAL PLY, (8) 11R22.5 16 H G244 (TRACTION)	Opt		112
018 0407	CARRIER/RATIO - REAR AXLE, MACK MALLEABLE CRDPC92/CRD93, 4.42	Opt		
2570442	RATIO			

Pid Code	Description		Front Wt	Rear Wt
267 2000	WHEELS - REAR, STEEL DISC (10 HOLE)	Std		
3462353	(8) 22.5x8.25 (210 mm) ACCURIDE 10-HOLE HUB PILOTED (TWO HAND HOLE) - HEAVY DUTY	Opt		-32
2641000	HUBS - REAR, FERROUS	Std		
2531104	BRAKES - REAR, MERITOR "S" CAM 16.5"x7" Q+	Std		
2632200	BRAKE DRUMS - REAR, CAST OUTBOARD MOUNTED	Std		
4870000	BRAKE LINING, FURNISH STANDARD REAR BRAKE LINING	Std		
6380001	DUST SHIELDS - REAR BRAKE, FURNISH	Opt		
2622001	OIL SEALS, STEMCO-GUARDIAN	Opt		
2560003	POWER DIVIDER LOCKOUT W/WARNING LIGHT AND BUZZER (INCLUDES IN CAB MANUAL AIR VALVE)	Opt		50
2550009	SLACK ADJUSTERS - REAR, GUNITE 2000 - AUTOMATIC	Std		
2690050	SUSPENSION - AXLE SPACING, 50"	Std		
4020002	SPRINGS, ANTI-SWAY	Std		
2370002	SPRING BRAKE CHAMBERS - QUANTITY, (4) DOUBLE DIAPHRAGM TYPE, MECHANICAL SPRING RELEASE, (2) MOUNTED ON EACH AXLE	Std		
3009020	SPRING BRAKE CHAMBERS - VENDOR, MGM TR-TS TAMPER RESISTANT	USR		
4790001	SPRING BRAKE CHAMBERS, TYPE 30/30 REAR	Std		
SL30002	SYNTHETIC LUBRICANT - REAR AXLE, 75W - 90 (SYNTHETIC LUBRICANT) - SYNTHETIC	Opt		
3290001	TRANSVERSE TORQUE ROD (REAR AXLE ONLY)	Inc		
2700002	BRONZE TRUNNION BUSHING	Inc		
B430001	PROTECTIVE NYLON SPACER BETWEEN DISCS WHEEL TO DRUM	Opt		2
FRAME/WHEELBASE/PLATFORM				
2741028	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		
2710226	WHEELBASE, 226" (5745 mm) WB 139" CA (3522 mm)	Opt		
2720201	PLATFORM, 201" LP (5102 mm) 62" AF (1580 mm) USED WITH 226" WB	Opt	251	184
2730000	FRAME REINFORCEMENT - INSIDE, W/O 5MM INSIDE CHANNEL REINFORCEMENT	Std		
AIR/BRAKE				
	AIR BRAKE SYSTEM, DUAL	Std		
3520100	AIR CONTROL VALVES - VENDOR, BENDIX SWITCHES AND VALVES WHERE POSSIBLE	Inc		
2960105	AIR DRYER, BENDIX "SYSTEM GUARD" AD-9 HEATED	Opt		
2801000	AIR RESERVOIRS, STEEL	Std		
6980006	ANTI-LOCK BRAKE SYSTEM, BENDIX WITHOUT TRACTION CONTROL	Std		
3020002	BRAKE CONTROL VALVE SYSTEM, TWO (2) VALVE DUAL BRAKE SYSTEM - TRAILER SUPPLY AND TRACTOR-TRAILER PARK	Opt		
3010001	HAND CONTROL VALVE FOR TRAILER BRAKES	Inc		
2970000	MANUAL DRAIN VALVE LANYARD, W/O LANYARD	Std		
5170002	TRAILER CONNECTIONS, FULL - TO REAR OF CHASSIS INCLUDES: (2) AIR LINES AND (1) SEVEN WIRE CABLE W/SEVEN WIRE PLUG ROUTED TO	Opt	24	20

Pid Code	Description		Front Wt	Rear Wt
	REAR OF CHASSIS, (2) GLAD HANDS MOUNTED TO SUPPORT BAR AT REAR OF CHASSIS, BREAKAWAY SAFETY VALVE, AND (2) VALVE SYSTEM (TRACTOR PARK, TRACTOR/TRAILER PARK AND SUPPLY)			
	ELECTRICAL			
1850001	BATTERY BOX(ES), STEEL	Std		
4050005	BATTERY BOX COVERS, MOLDED PLASTIC	Std		
3930013	BATTERY BOX - MOUNTING, BATTERY BOX LEFT HAND RAIL (1) COURTESY LIGHT SWITCH (HEADLAMP AND CLEARANCE)	Std		
8690004	ELECTRIC CIRCUIT PROTECTION PACKAGE, ALL CIRCUITS FUSE/BREAKER PROTECTED WATERPROOF ELECTRICAL CONNECTIONS SPRAYED W/PROTECTIVE COATING	Std		
B830008	"BODY LINK" II W/CAB FLOOR PASS THRU HOLE/RUBBER BOOT	Std		
3102500	HEADLIGHTS, HALOGEN FLUSH	Std		
3152013	SIGNAL FLASHER TYPE, TRANSISTORIZED FLASHER FOR TURN SIGNAL	Std		
	PAINT			
950 3100	PAINT - CAB EXTERIOR, SINGLE COLOR, MACK WHITE (HIGH GLOSS)	Std		
9442007				
9960001	PAINT - CAB, URETHANE BASE COAT W/O CLEAR COAT	Std		
9410000	PAINT - CAB INTERIOR, SAME COLOR AS CAB EXTERIOR COLOR	Std		
9512006	PAINT - CHASSIS RUNNING GEAR, MACK BLACK (URETHANE)	Std		
9520000	PAINT - FRONT SPOKE WHEELS, WITHOUT OPTIONAL SPOKE WHEEL PAINT	Std		
9530000	WITHOUT OPTIONAL SPOKE WHEEL PAINT	Std		
6520003	PRE-FINISHED FRONT DISC WHEELS, POWDER COATED GRAY PAINT	USR		
6530003	PRE-FINISHED REAR DISC WHEELS, POWDER COATED GREY	USR		
	PTO/SPECIALTY/ADDITIONAL EQUIPMENT			
1830003	PTO - CRANKSHAFT ADAPTER, 1000/1100 SERIES FLANGE FOR FRONT END SNOW PLOW PTO DRIVE (DOES NOT INCLUDE FRONT FRAME EXTENSION)	Opt	17	-2
4160000	PTO - REAR ENGINE (REPTO), WITHOUT REAR ENGINE POWER TAKE OFF	Std		
1060001	PRE-CLEANER AIR FILTER			
0000000	PLEASE DO NOT MOUNT TRI ANGLE KIT			
	V-MACK IV PROGRAMMABLE PARAMETERS			
9330065	CRUISE CONTROL MAX SET SPEED (MPH) 65 mph			
A020020	CRUISE CONTROL MIN SET SPEED (MPH) 20 mph			
A2W0001	CRUISE CONTROL AUTORESUME W/CLUTCH Furnish			
AL10003	CRUISE'N BRAKE ENGAGEMENT DELAY (MPH) 3 mph			
A902200	ENGINE OVERSPEED COMPANY LIMIT (RPM) 2200 rpm			
A3K2100	FUELED ENGINE OVERSPEED COMPANY LIMIT (RPM) 2100 rpm			
A880075	VEHICLE OVERSPEED COMPANY LIMIT (MPH) 75 mph			
A870070	FUELED VEHICLE OVERSPEED COMPANY LIMIT (MPH) 70 mph			
A1Y0002	IDLE LOGGING DELAY (MIN) 2			
XYZ0003	PERIODIC TRIP TYPE Monthly Trip Summary			

Pid Code	Description	Front Wt	Rear Wt
C0U0000	PERIODIC TRIP HOUR OF DAY 0 (disable)		
C0V0000	PERIODIC TRIP DAY OF WEEK 0 (disable)		
C0W0001	PERIODIC TRIP DAY OF MONTH 1		
9050003	PARK BRAKE SET (ENGAGED) AND ENGINE RUNNING DEACTIVATED CO-PILOT FLEET PROGRAMMING ACCESS	Std	
D0E0000	FLEET MANAGEMENT VIA DRIVER DISPLAY Omit		
D0B0000	DEL MESSAGES DRIVER DISPLAY ACTIVATION Omit		
A942100	EHT MAX ENGINE SET SPEED (RPM) 2100 rpm		
A030500	EHT MIN ENGINE SET SPEED (RPM) 500 rpm		
A010010	EHT VEHICLE SPEED RANGE LIMIT (MPH) 10 mph		
A970100	EHT RAMP RATE (RPM/Sec)		
A950000	EHT SINGLE SPEED CONTROL ACTIVATION Omit		
A961000	EHT SINGLE SPEED CONTROL SET SPEED (RPM) 1000 rpm		
AE50000	EHT JUMP-TO-MIN SET SPEED Omit		
A070001	ENGINE PROTECTION - OIL PRESSURE SHUTDOWN Furnish		
A080000	ENGINE PROTECTION - COOLANT LEVEL SHUTDOWN Omit		
A060001	ENGINE PROTECTION - COOLANT TEMP SHUTDOWN Furnish		
C0X0001	ENGINE PROTECTION - ENGINE OIL TEMP SHUTDOWN Furnish		
A2Y0000	ENGINE PROTECTION TRANS OIL TEMP SHUTDOWN Omit		
A830001	ALLOW FAN OVERRIDE WHEN MOVING Furnish		
A840001	FAN OVERRIDE TIME WHEN MOVING (MIN) 1		
A820000	ALLOW FAN OVERRIDE WHEN PARKED Omit		
A3A0000	FAN ACTIVATION WITH PTO Omit		
A810060	AIR CONDITIONING OVERRIDE TIME (SEC) 60		
AK50000	FEI PENALTY TARGET FUEL ECONOMY No Driver Incentive		
AK70050	FEI PENALTY TARGET FUEL ECONOMY (MPG) 5.0		
AK80003	FEI PENALTY VEHICLE SPEED DECREASE (MPH) 3 mph		
A860070	FEI REWARD TARGET FUEL ECONOMY (MPG) 7.0		
AK60003	FEI REWARD VEHICLE SPEED INCREASE (MPH) 3 mph		
AK90050	FEI DISTANCE CALCULATION INTERVAL (Miles) 50		
A260002	MIN/MAX GOVERNOR	Std	
A110650	ENGINE LOW IDLE SET SPEED (RPM) 650 rpm		
A100000	DRIVER LOW IDLE ADJUST FEATURE ACTIVATION Omit		
C0K0000	SMART IDLE FEATURE ACTIVATION Omit		
C0T0010	SMART IDLE ELEVATED IDLE RPM TIME (MINS) 10		
B690000	IDLE COOLDOWN FEATURE ACTIVATION Omit		
9080000	IDLE SHUTDOWN FEATURE ACTIVATION Omit		
9340010	IDLE SHUTDOWN TIME (MINS) 10		
A3B0030	IDLE SHUTDOWN WARNING TIME (SECS) 30		
A170100	IDLE SHUTDOWN WARM-UP TEMPERATURE (DEG F) 100		
A160005	IDLE SHUTDOWN WARM-UP TIMER (MINS) 5		
A140000	IDLE S/D OVERRIDE W/EHT Omit		

Pid Code	Description	Front Wt	Rear Wt
A130001	IDLE S/D OVERRIDE W/PTO Furnish		
A230001	IDLE S/D OVERRIDE W/ENGINE LOAD Furnish		
C0N0001	MAINTENANCE MONITOR FEATURE ACTIVATION Furnish		
C0P0005	MAINTENANCE MONITOR OEM DEFAULT INTERVALS MP Vocational		
AG60090	MAINTENANCE DUE WARNING PERCENT 90		
A412100	PTO 1 MAX ENGINE SET SPEED (RPM) 2100 rpm		
A980600	PTO 1 MIN ENGINE SET SPEED (RPM) 600 rpm		
A1A0010	PTO 1 VEHICLE SPEED RANGE LIMIT (MPH) 10 mph		
A2B0100	PTO 1 RAMP RATE (RPM/Sec) 100		
2330000	PTO 1 SINGLE SPEED CONTROL ACTIVATION Omit		
A051000	PTO 1 SINGLE SPEED CONTROL SET SPEED (RPM) 1000 rpm		
AF60000	PTO 1 JUMP-TO-MIN SET SPEED Omit		
A4A0085	PTO 1 VEHICLE LIMITING SPEED (MPH) 85 mph		
A622100	PTO 2 MAX ENGINE SET SPEED (RPM) 2100 rpm		
A1B0600	PTO 2 MIN ENGINE SET SPEED (RPM) 600 rpm		
A1D0010	PTO 2 VEHICLE SPEED RANGE LIMIT (MPH) 10 mph		
A1E0100	PTO 2 RAMP RATE (RPM/Sec) 100		
A1Z0000	PTO 2 SINGLE SPEED CONTROL ACTIVATION Omit		
A611000	PTO 2 SINGLE SPEED CONTROL SET SPEED (RPM) 1000 rpm		
AK10000	PTO 2 JUMP-TO-MIN SET SPEED Omit		
A4B0085	PTO 2 VEHICLE LIMITING SPEED (MPH) 85 mph		
A790050	SPEED SENSOR TAMPER DETECTION TORQUE LIMIT (%) 50		
B0A0002	EATON AUTOSHIFT/ULTRASHIFT SHIFT MODE Eaton Autoshift Mode: Performance		
9320065	CUSTOMER VEHICLE LIMITING SPEED (MPH) 65 mph		
A200000	LGVLS FEATURE ACTIVATION Omit		
A210065	LOWER GEAR VEHICLE LIMITING SPEED (MPH) 65 mph		
	DEALER INFORMATION		
WAR0001	STANDARD ENGINE WARRANTY, 3YR/300,0000 MILES STANDARD ENGINE WARRANTY	Std	
4460001	MANUALS, PEDIGREED PROTECTION PLAN TECH. SERVICE MANUAL PROVIDED	Std	
	PILOT INSPECTION, WITHOUT PILOT INSPECTION DEALER SERVICE ALLOWANCE (COMMISSION)	Opt	
	STANDARD SHIPPING INSTRUCTIONS	Std	
	PERFORMANCE/GRAPHICS/TECH DATA		
	AMBIENT TEMPERATURE, 77F (25.0C)	Std	
	BACK OF CAB INTERFERENCES, 13" (330mm) FROM BACK OF CAB	Inc	
	BULLDOG PROTECTION PLANS		



PERFORMANCE DATA

Engine..... MACK MP7-365C
 Max HP..... 365
 Max Torque..... 1460
 Transmission..... RTO-14908LL
 Rear Axle..... S440-46
 Ratio..... 4.42
 Rear Tire Size..... 11R22.5
 Revolutions per mile.... 498
 GVW Rating..... 64,180#
 GCW Rating..... 80,000#
 Road Surface..... MACADAM/ASPHALT
 Altitude..... 1000 ft
 Frontal Height..... 13.0 ft
 Frontal Width..... 96.0 in
 Required Grade..... 3%
 Measurement..... English

UPPER GEAR DATA

Gear	Ratio	% Grade	MPH	RPM
8	1.36	5.5%	24.1	1200
8	1.36	2.6%	39.1	1950
9	1.00	3.7%	32.7	1200
9	1.00	1.3%	53.2	1950
10	0.74	2.2%	44.2	1200
10	0.74	-0.1%	71.8	1950

Level Road 0.0 70.4 1911
 Cruise Control

Starting Grade @ 1st Gear: 20.0%+
 @ 2nd Gear: 20.0%+

Minimum 1.5% grade recommended
 in top gear at peak torque RPM.

Calculated @ 4.42 Rear Axle Ratio

Gear #	Transmission Ratios		Gear Reduction	% Split	Gradeability Start	RPM After Shift	Operating Range	
	Reverse	Forward					MPH	MPH
1	15.33	14.56	64.36		40.7%			3.7
2	9.83	9.42	41.64	54.6	26.1%	1262	3.7	5.6
3	2.89	6.24	27.58	51.0	17.0%	1292	5.6	8.5
4		4.63	20.46	34.8	12.4%	1447	8.5	11.5
5		3.40	15.03	36.2	8.8%	1432	11.5	15.6
6		2.53	11.18	34.4	6.3%	1451	15.6	21.0
7		1.83	8.09	38.3	4.2%	1410	21.0	29.0
8		1.36	6.01	34.6	2.6%	1449	29.0	39.1
9		1.00	4.42	36.0	1.3%	1434	39.1	53.2
10		0.74	3.27	35.1	-0.1%	1443	53.2	71.8
11								
12								
13								
14								
15								
16								
17								
18								

PERFORMANCE DATA IS FOR COMPARATIVE ANALYSIS
 AND MAY NOT REPRESENT ACTUAL PERFORMANCE.



Prepared For:
ST. OF W. VIRGINIA -DOT (TF)

Presented By:
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800-879-3039

October 16, 2007
09A 1.0
Ref #: FBBY025309A

GVW RATING - 64,180#

Max Front GAWR	18,180#	Max Rear GAWR	46,000#
Front Axle	20,000#	Rear Axle	46,000#
Front Springs	20,000#	Rear Suspension	46,000#
Front Tires	18,180#	Rear Tires	48,040#
Front Wheels/Rims	20,000#	Rear Wheels/Rims	60,000#



WARRANTY COVERAGES AND LIMITATIONS: All Coverage is 100% Parts and Labor

VEHICLE APPLICATION: HEAVY DUTY (C - ON/OFF HIGHWAY) STARTING MODEL YEAR 2008 MP7('07) ENGINE		Hours	Months	Miles	Kilometers
SCHEDULE 1. BASIC VEHICLE * (Includes Roadside Assistance and Towing for warrantable failures**)		----	12	100,000	161 000
*Brake Drums are covered for 12 months or 25,000 miles/40 000 kilometers only.					
SCHEDULE 2. MACK DIESEL ENGINE					
Standard Warranty:		10,800	36	300,000	483 000
Optional Standard Warranty:		6,250	24	250,000	402 500
** Standard & Optional Standard Warranty Includes: Roadside Assistance and Towing on warrantable engine failures.		6,250	24	250,000	402 500
Major Components:	Block Stiffener (Ladder Frame) Oil Pump Drive & Driven Gears Camshaft Forging Thermostat Housing Camshaft Caps & Bolts Timing Gear Cover & Mounting Plate Connecting Rod & Cap Forging Coolant Pump Housing Crankshaft Forging Cylinder Block Casting Cylinder Head Casting & Bolts Engine Gears (Rear Mounted) Exhaust Manifold Casting Flywheel Housing Intake Manifold Casting Main Bearing Bolts & Caps	12,500	60	500,000	805 000
**Roadside Assistance and Towing on warrantable Mack engine failures.		6,250	24	250,000	402 500
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 & TM300 TRANSMISSIONS		----	36	400,000	644 000
** Roadside Assistance and Towing on warrantable Mack transmission failures		----	12	100,000	161 000
SCHEDULE 4. MACK AXLES					
Rear Carriers and Housings		----	36	300,000	483 000
Front I-Beam		----	36	300,000	483 000
S65 Bogie and Carrier, Regardless of Carrier Model		----	12	100,000	161 000
** Roadside Assistance and Towing on warrantable Mack carrier failures		----	12	100,000	161 000
SCHEDULE 5. Trunnion Bracket and Spindle, Suspension Trunnion (except Bushings).		----	36	300,000	483 000
** Roadside Assistance and Towing on warrantable failures		----	12	100,000	161 000
SCHEDULE 6. FRAMES: SIDE RAILS AND CROSSMEMBERS		----	36	300,000	483 000
** Roadside Assistance and Towing on warrantable failures		----	12	100,000	161 000
SCHEDULE 7. CAB STRUCTURE		----	24	200,000	322 000
SCHEDULE 8. CAB CORROSION		----	60	500,000	805 000
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.					
SCHEDULE 9. Components not manufactured by Mack Trucks, Inc. may have warranty coverage different from above as they are covered by the manufacturer's warranty. Consult your local MACK sales facility for details.					

** maximum \$600 per occurrence

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

BPP EXTENDED WARRANTY QUOTATION 0727502

DEALER: S100
FOR: ROSE TUKEVA / DAN WICKLINE
CUSTOMER: WEST VIRGINIA
VEHICLE: GU713
NUMBER OF VEHICLES:
SPECIFICATIONS: MACK MP7 ENGINE
WARRANTY APPLICATION: C
VOCATION: DUMP/PLOW

TERMS
BULLDOG PROTECTION PLAN EXTENDED WARRANTY TERMS ARE SUBJECT TO THE SAME EXCEPTIONS, EXCLUSIONS,
SET FORTH IN THE APPLICABLE MACK STANDARD WARRANTY, WHICH IS INCORPORATED HEREIN BY REFERENCE.

FUNCTIONAL COVERAGE: MACK BASIC CHASSIS
CAB STRUCTURE

COVERAGE: MACK BASIC CHASSIS COVERED UNDER PLAN 'B'.
CAB STRUCTURE: CAB PANELS, COWL, DOOR POSTS, FLOORBOARDS, STRUCTURAL POSTS,
DOORS AND APPLIES TO CRACKED OR BROKEN PANELS.
REFER MACK WARRANTY MANUAL, DEALER PORTAL OR MACKTRAQ PROGRAM FOR
PLAN 'B' DETAILS.

EXCLUSION: PARTS/COMPONENTS NOT LISTED IN COVERAGE SECTION ABOVE.

PARTS & LABOR COVERAGE: 100% PARTS & LABOR, NO DEDUCTIBLE

COVERAGE LIMITS/
DEALER NET PLAN 'B' -- 24 MONTHS/100,000 MILES
CAB STRUCTURE -- 36 MONTHS/UNLIMITED MILEAGE

ALL BPP CUSTOM QUOTES ARE VALID FOR 90 DAYS FROM DATE OF ISSUANCE, AT WHICH TIME THEY MUST HAVE BEEN
PURCHASED OR LOCKED IN WITH AN ORDER CONFIRMATION. QUOTES FOR SUBSEQUENT PLANS, EVEN TO THE SAME
CUSTOMER, WILL REQUIRE A NEW QUOTATION.
The customer has 12 months to exercise the option to purchase extended coverage. If a customer declines to exercise this
option at the time of delivery the original quote and/or MACKTRAQ pricing will be honored for 90 days from date of delivery.
Within this 90 days, the registration for BPP coverage must be received by Mack Trucks, Inc.
The sale price of any purchased coverage beyond this point will be subject to the existing prices at that time.

Donna Lamarche
MACK TRUCKS, INC.
Date: 10/3/2007



Basic Vehicle Bulldog Protection Plan: Plan B and CB

Mack Trucks Extended Warranty Plans run concurrently with the MACK standard Warranty, and continues to run after its expiration until the end of the period selected.

The Extended Protection Plan can only be acquired in conjunction with the purchase or lease of a new Mack motor vehicle. The extended Warranty is only authorized for the specific vehicle and purchaser registered at the time of application. The extended Warranty must be purchased at the time of sale or up to 365 days of initial date of delivery to the first user/purchaser, provided the application is approved by Mack Trucks, Inc. while the component(s) for which the applicant is requesting coverage are still within their Standard Warranty period.

WHAT THIS AGREEMENT COVERS:

FRAME and SUSPENSION

Air Spring Bags • Battery Mounting •Hendrickson-Manufactured Suspension Components • MACK Walking Beam • MACK Suspension • Shock Absorbers • Shock Absorber Mounting Brackets • Springs Front, Rear and Helper • Spring Mounting Brackets, Clips and U-Bolts • Stabilizer Bar and Brackets • Suspension Height Control Valve • Tie Rods •Torque Rod • Tow Hook • Trunnion Bushings, Seals, and Insulators. The following items are covered in the *Standard Warranty* (A Application) for 60 months or 500,000 miles/805 000 kilometers, whichever occurs first or (C Application) for 36 months/or 300,000 miles/483 000 kilometers, whichever occurs first: **Frame Crossmembers • Frame Reinforcements • Frame Side Rails • Huck Bolts.**

CLUTCH/TRANSMISSION

Air Shift (Piping, Knob and Selector) • Clutch and Clutch Brake (excluding lining and adjustment and wear out) •Clutch Pedal and Linkage • Gear Shift Lever and Assembly • Speedometer Drive Gear • Transmission Dipstick • Transmission Mounting • Transmission Oil Cooler and External Lines.

DRIVELINE

Capscrews and Nuts • Center Hanger Bracket and Bearing • Shafts • Universal Joints • Yoke Clamp Plates • Yokes.

ENGINE ACCESSORIES

Air Cleaner Housing • Air Cleaner Mounting • Air Cleaner Piping • Air Conditioner Compressor • Air Starter • Block Heater • Chassis Mounted Engine Oil Filter Mounting • Clamps • Engine Mounting (Front and Rear) • Exhaust Gas Recirculation Heat Exchanger Piping • Exhaust Pipes • Exhaust System Shields • Expansion Tank and Mounting • Fan • Fan Drive • Fan Shroud • Fan Spacer and Attaching Bolts • Fuel Filter Restriction Indicator • Fuel Piping (Fuel Tank to Primary Fuel Filter) • Fuel Warmer and Separator • Muffler • Oil Filler (Tube, Cap, Dipstick Guide and Dipstick) • Radiator Cap • Radiator Hoses • Radiator Mounting • Shutter (Cylinder and Control Valves) •Starter • Starter Mounting • Tail Pipes • Tank (Fuel) • Tank Mounting (Fuel) • Valves (Shutoff and Switching) • Voltage Regulator.

V-MAC COMPONENTS AND SENSORS (OFF-ENGINE)

Coolant Level Sensor • Electronic Accelerator Pedal • Fuel Filter Restriction Sensor.

STEERING

Cross Steering Tube • Drag Link • Hoses and Lines • King Pin and King Pin Bushings • Pitman Arms • Reservoir • Steering Arms • Steering Gear (Sheppard and TRW/Ross) • Steering Axle I Beam • Steering Column • Steering Gear Mounting Bracket • Steering Knuckle • Steering Post • Steering Pump • Steering Shaft • Steering Universal Joint • Steering Wheel.

AIR and BRAKES / WHEEL ENDS

Air Dryer • Air Governor Valve • Air Lines • Air Reservoir • Axle Shafts • Brake Valves • Brake Chamber • Brake Pedal • Brake Spider • Brake Wheel Cylinder • Cam Roller • Cowl Vent • Disc Brake Caliper • Hub • Hub Caps • Hubodometer • Low Air Pressure Indicator and Sending Unit • Moisture Ejector • Return Spring • Rubber Mounts • Slack Adjuster • Trailer Connection • Wheel Bearings • Wheels (except Alcoa).

CAB

Air Conditioning and Heating (Motor, Ducts, Controls, Core, Fan, Valves, Dryer, Condenser, Evaporator, Piping, and Mounting Brackets) • Bumper and Bumper Brackets • Cab Hold Down Lock • Cab Lift Jack • Cab Steps • Chassis Mounted Charge Air Cooler and Charged Air Cooler Piping • Door Glass • Door Hinges, Handles and Locks • Door Post Lock and Hinge • Grab Handles • Hood Assemblies (Sheet Metal and Fiberglass) • Hood Mounting (Hinges and Latch) • Hood Ornament and Base • Interior Trim • Keyless Entry Receiver Module • Keyless Entry Transmitter • MACK Factory-Installed Air Fairings • MACK Factory-Installed Sleeper Box • Mirrors • MACK Factory-Installed Mud Flaps • Mounting Brackets and Cab Air Bags • Radiator (Core and Upper and Lower Tank) • Radiator Grille • Safety Belt • Seats • Sheet Metal Fenders and Mounting Bracket • Sun Visor • Window Regulator • Windshield • Windshield Seal. The following items are covered in the *Standard Warranty* for 60 months or 500,000 miles/805 000 kilometers, whichever occurs first: Cab Panels • Cowl • Door Posts • Doors • Floor Boards • Structural Posts.

ELECTRICAL

ABS Electronic Module • ABS Relay Valves • ABS Modulators • ABS Wiring Harness • ABS Sensors • Alternator and Alternator Mounting • ATC Valve • Back-Up Lights (except bulbs) • Battery Cables • Cab Roof Lights (except bulbs) • Cab and Sleeper Box Lights (except bulbs) • Circuit Breakers • Co-Pilot Alarm • Co-Pilot Assembly • Co-Pilot Display Screen • Co-Pilot Housing • Co-Pilot Push Buttons • Dome Light (except bulb) • Fuse Box (except fuses) • Gauges • Gauge Sending Units • Head Lamps (except sealed beams) • Horn (Electric and Air) • Instrument Panel • MPH Sensor • Pyrometer • Relays • Speedometer Head • Switches • Tachometer Head • Tail Lamps (except bulbs) • Turn Signals (except bulbs) • V.I.P.[®] Display • Windshield Wiper (Motor, Arms, Linkage and Valve) • Windshield Washer (Reservoir, Piping and Nozzles) • Wire Harness (excluding EGR Wire Harness).

SERVICES AND PARTS NOT COVERED

1. Items not listed above under "What This Agreement Covers".
2. Abuse, accident or negligence.
3. Adjustment of brakes, clutches and controls.
4. Brake and clutch lining replacement for normal wear.
5. Specification changes or error in specifications.
6. Damage in transit.
7. Paint.
8. Duplication of repairs because of faulty diagnosis or workmanship and temporary repairs.
9. Engine tune-up.
10. Downtime and driver-layover expense.
11. Headlight adjustment; sealed beam and bulb replacement.
12. Filter elements and lubricants, except as needed to complete a repair under Warranty
13. Fuel system cleaning.
14. Injection-tip service or replacement for normal use and wear.

15. Major components/parts replaced without prior authorization from the MACK Warranty Department or Service Organization.
16. Overtime and holiday labor without prior authorization.
17. Normal wear of covered parts.
18. Performance complaints are not covered (for example, low power and poor fuel economy) unless caused by the failure of a qualified part.
19. Wire harnesses are covered for a defect in the harness. Cleaning corroded external connections, in the extended warranty period, is not covered.
20. Telephone, FAX and other communication expense.
21. Tires and tubes, disc brake pads & rotors, and brake drums.
20. Towing and/or road call (see **Standard Warranty**)
21. Transportation expense for obtaining replacement part.
22. Unauthorized modifications and/or failures resulting from unauthorized alteration or non-MACK parts.
23. Wheel alignment, wheel and tire balancing and tire rotation.
24. Windshield wiper blades.
25. Rattles, squeaks, vibrations and unusual noises can develop during early use of the vehicle. Up to 90 days after delivery, the necessary adjustments or corrections will be covered by warranty. Such adjustment or corrections after this period are usually the result of use; therefore, are not covered by warranty.
26. Misapplication—failure of any kind resulting from using the vehicle in a type of service for which the vehicle was not designed or built.
27. Transmissions not manufactured by MACK are covered under the transmission manufacturers warranty.
28. Rear axles and rear axle gear carriers not manufactured by MACK are covered under the rear axle manufacturers warranty.
29. Turbochargers are not covered under this warranty.
30. Batteries, engine belts, brake & clutch lining, wheel seals, consumables, radios, refrigerators, voltage converters, Temp-A-Start, Qualcom, and televisions are not covered under this warranty.
31. Engines, transmissions and rear axle gear carriers are not covered under this warranty, but may have coverage under other Warranties.

Customer Responsibilities:

1. Maintain the warranted vehicle according to the proper maintenance schedule required by the manufacturer.
2. In the event of a failure or claim, MACK may request proof of service showing the date and mileage when required maintenance was performed.
3. Present vehicle to a MACK-authorized repair facility within the time and mile limit of the warranty.
4. Stop operation of the vehicle when damage is noted so as not to cause further damage; continued operation may cause damage which would not be covered under this warranty.
5. If necessary, make your vehicle available for inspection by a representative of MACK.

•

In the case of defects in material or workmanship, THIS AGREEMENT INCLUDES repair or replacement (at the option of Mack Trucks, Inc.) of the items listed under *WHAT THIS AGREEMENT COVERS*, PROVIDED:

1. The vehicle is presented at any MACK-authorized repair facility.
2. The parts are returned to Mack Trucks, Inc.
3. Upon inspection by Mack Trucks, Inc., the parts are found to be defective.

THIS AGREEMENT EXCLUDES items listed under *SERVICES AND PARTS NOT COVERED* and also excludes parts damaged DUE TO:

1. Lack of proper maintenance as defined in the Operator's Manual.
2. Use of the chassis in any manner for which it was not designed.
3. Driver abuse or error.

•

You may have other rights under the terms of the Standard Warranty, the GASEOUS EMISSION CONTROL SYSTEMS WARRANTY, or the NOISE EMISSION CONTROL SYSTEMS WARRANTY.

WARRANTY COVERAGES AND LIMITATIONS: All Coverage is 100% Parts and Labor

VEHICLE APPLICATION: HEAVY DUTY (STARTING MODEL YEAR 2008) MP '07 EMISSIONS -- VOCATIONAL, ON/OFF HIGHWAY / HEAVY (C)	Hours	Months	Miles	Kilometers
SCHEDULE 1. BASIC VEHICLE* (includes Roadside Assistance and Towing for warrantable failures**)	---	12	100,000	161 000
*Brake Drums are covered for 12 months or 25,000 miles/40 000 kilometers only				
SCHEDULE 2. MACK DIESEL ENGINE				
Standard Warranty:	10,800	36	300,000	483 000
Optional Standard Warranty:	6,250	24	250,000	402 500
**Standard & Optional Standard Warranty Includes: Roadside Assistance and Towing on warrantable engine failures	6,250	24	250,000	402 500
Major Components: Block Stiffener (Ladder Frame) Engine Gears (Rear Mounted) Camshaft Forging Exhaust Manifold Casting Camshaft Caps & Bolts Flywheel Housing Connecting Rod & Cap Forging Intake Manifold Casting Coolant Pump Housing Main Bearing Bolts & Caps Oil Pump Drive & Driven Gears Crankshaft Forging Thermostat Housing Cylinder Head Casting Timing Gear Cover & Mounting Plate Cylinder Head Casting & Bolts Timing Gear Cover & Mounting Plate	12,500	60	500,000	805 000
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 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.				
**Roadside Assistance and Towing on warrantable Mack engine failures	6,250	24	250,000	402 500
SCHEDULE 3. MACK T300 and TM300 TRANSMISSIONS	---	36	400,000	644 000
**Roadside Assistance and Towing on warrantable Mack transmission failures	---	12	100,000	161 000
SCHEDULE 4. MACK AXLES				
Rear Carriers and Housing	---	36	300,000	483 000
Front I-Beam	---	36	300,000	483 000
S65 Bogie and Carrier, Regardless of Carrier Model	---	12	100,000	161 000
**Roadside Assistance and Towing on warrantable Mack carrier failures	---	12	100,000	161 000
SCHEDULE 5. Trunnion Bracket and Spindle, Suspension Trunnion (except Bushings).	---	36	300,000	483 000
**Roadside Assistance and Towing on warrantable failures	---	12	100,000	161 000
SCHEDULE 6. FRAMES: SIDE RAILS AND CROSSMEMBERS	---	36	300,000	483 000
**Roadside Assistance and Towing on warrantable failures	---	12	100,000	161 000
SCHEDULE 7. CAB STRUCTURE	---	24	200,000	322 000
SCHEDULE 8. CAB CORROSION	---	60	500,000	805 000
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.				
SCHEDULE 9. 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.				

** maximum \$600 per occurrence

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

BPP EXTENDED WARRANTY QUOTATION 0727502A

DEALER: S100
FOR: ROSE TUKEVA / DAN WICKLINE
CUSTOMER: WEST VIRGINIA
VEHICLE: GU713
NUMBER OF VEHICLES:
SPECIFICATIONS: MACK MP7 ENGINE
WARRANTY APPLICATION: C
VOCATION: DUMP/PLOW

TERMS
BULLDOG PROTECTION PLAN EXTENDED WARRANTY TERMS ARE SUBJECT TO THE SAME EXCEPTIONS, EXCLUSIONS,
SET FORTH IN THE APPLICABLE MACK STANDARD WARRANTY, WHICH IS INCORPORATED HEREIN BY REFERENCE.

FUNCTIONAL COVERAGE: MACK BASIC CHASSIS
CAB STRUCTURE

COVERAGE: MACK BASIC CHASSIS COVERED UNDER PLAN 'B'.
CAB STRUCTURE: CAB PANELS, COWL, DOOR POSTS, FLOORBOARDS, STRUCTURAL POSTS,
DOORS AND APPLIES TO CRACKED OR BROKEN PANELS.
REFER MACK WARRANTY MANUAL, DEALER PORTAL OR MACKTRAQ PROGRAM FOR
PLAN 'B' DETAILS.

EXCLUSION: PARTS/COMPONENTS NOT LISTED IN COVERAGE SECTION ABOVE.

PARTS & LABOR COVERAGE: 100% PARTS & LABOR, NO DEDUCTIBLE

COVERAGE LIMITS/
DEALER NET

PLAN 'B' -- 24 MONTHS/100,000 MILES - Quoted on Bid.
PLAN 'B' -- 36 MONTHS/100,000 MILES - Only Avail. if additional money is paid
CAB STRUCTURE -- 36 MONTHS/UNLIMITED MILEAGE Quoted on Bid.

↓
Quoted on Add # 2
Pg 7. # 5.1.

ALL BPP CUSTOM QUOTES ARE VALID FOR 90 DAYS FROM DATE OF ISSUANCE, AT WHICH TIME THEY MUST HAVE BEEN
PURCHASED OR LOCKED IN WITH AN ORDER CONFIRMATION. QUOTES FOR SUBSEQUENT PLANS, EVEN TO THE SAME
CUSTOMER, WILL REQUIRE A NEW QUOTATION.

The customer has 12 months to exercise the option to purchase extended coverage. If a customer declines to exercise this
option at the time of delivery the original quote and/or MACKTRAQ pricing will be honored for 90 days from date of delivery.
Within this 90 days, the registration for BPP coverage must be received by Mack Trucks, Inc.
The sale price of any purchased coverage beyond this point will be subject to the existing prices at that time.

Donna Lamarche
MACK TRUCKS, INC.
Date: 10/3/2007
updated 10/16/2007

8.4.5.2 Front Bumper cannot be deleted because of transp. laws on trucks. Trucks must have bumpers that are driven to body company

8.5.10.1 Mirrors are Aerodynamic style but are Moto, heated and do have convex mirrors. equal

Jul. 16, 2007 1:28PM

No. 4354 P. 2



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

Request for Quotation

RFQ NUMBER
707EC021

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
**JOHN JOHNSTON
304-558-2402**

*709063202 03 304-884-7815
WORLDWIDE EQUIPMENT INC
PO BOX 171 NORTHERN DIVISION

JANE LEW WV 26378
- ATTN: GREG ST. CLAIR -
RECEIVED JUL 16 2007

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

DATE PRINTED 07/12/2007	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
BID OPENING DATE: 07/25/2007		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO. 1						
BID OPENING DATE AND TIME CHANGED						
FROM: 07-25-07 AT 1:30 P.M.						
TO: POSTPONE UNTIL FURTHER NOTICE						
NO OTHER CHANGES						
0001	1	EA		065-30		
64,000 GVW CAB & CHASSIS, STAINLESS STEEL DUMP BODY						
***** THIS IS THE END OF RFQ 707EC021 ***** TOTAL:						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE: *[Signature]* TELEPHONE: **800-879-3038** DATE: **10-16-07**

TITLE: *[Signature]* FEIN: **61-0871032** ADDRESS CHANGES TO BE NOTED ABOVE

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

SIGN IN SHEET

RFQ # 707 E C 021

Date: 7-12-07

Firm & Representative Name:

Mailing Address:

Phone, Fax, & E-Mail:

1. WORLDWIDE EQUIP. INC P.O. BOX 171

P 314-884-7815

GREG ST. CLAIR

JANE LEW, W.V. 26378

F " 884-8046

E-mail greg.stclair@teamworldwide.com

2. MOUNTAIN INT'L TRUCKS INC

P.O. Box 7771

P 304/776-5600

Chuck Whitlow

Charleston, WV 25356

F 304/776-4184

E-mail cwhitlow@mountaininternational.com

3. Benson Manufacturing P.O. Box 970

P 304-489-9020

Robert Smith

Mineral Wells WV
26150

F 304-489-2828

E-mail Rsmith@bensonintl.com

4. Henderson Manufacturing P.O. Box 40

P 563-927-2828

Glenn Beck

Manchester, IA 52057

F 563-927-7010

E-mail _____

5. ITI TRAILERS + TRUCK BODIES P.O. Box 59

P 814-634-0080

Tim Buterbaugh

MEYERSDALE PA 15552

F 814-634-5846

E-mail _____

Please print or write legibly!

Your fax # is essential to contact you timely!

SIGN IN SHEET

RFQ # _____

Date: _____

Firm & Representative Name:

Mailing Address:

Phone, Fax, & E-Mail:

1. Gen.Truck Sales
Kevin Wilson

3100 McCorkle Ave SW
So. Chgo. WVa 25303

P (304) 744-1321
F '' '' 7852

E-mail Kevin@GTS WV.com

2. FORCE AMERICA
Craig Ferguson

4172 Fisher Rd.
Columbus, OH 43228

P (614) 351-4884
F (740) 363-8452

E-mail craig.us@forceamerica.com

3. Her. Trc. Equipment
Mike Coburn

322 Dry H. II Rd.
Beckley, W.V. 25804

P 304-254-7827
F 304-254-9007

E-mail mcoburn@hei-trucks.com

4. MIKE MADHIMY
MADHIMY MOTOR TRUCK CO

P.O. BOX 1304
PARKERSBURG, WV 26102-1304

P 304-485-4418
F 304-485-2566

E-mail _____

5. GARY BRADY
WV TRACTOR

D.O. Box 473
Charleston, WV 25322

P 346-5301
F 346-5305

E-mail Wvtractor@msk.com

Please print or write legibly!

Your fax # is essential to contact you timely!

SIGN IN SHEET

RFQ # _____

Date: _____

Firm & Representative Name:

Mailing Address:

Phone, Fax, & E-Mail:

1. WV TRACTOR CO

PO Box 473

P 304-389-7082

MICHAEL P GRADY

CHARLESTON, WV 25322

F 304-346-5305

E-mail gradyjmabe@msn.com

2. _____

P _____

F _____

E-mail _____

3. _____

P _____

F _____

E-mail _____

4. _____

P _____

F _____

E-mail _____

5. _____

P _____

F _____

E-mail _____

Please print or write legibly!

Your fax # is essential to contact you timely!

PURCHASING CONTINUATION SHEET

Buyer: JJ-33	Page 7	Req. or P.O. No.: 707EC021
Spending Unit: Division of Highways		

Vendor:

Requisition No.: 707EC021

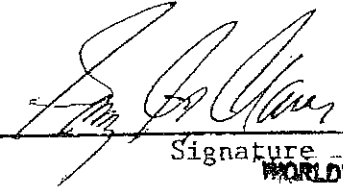
ADDENDUM ACKNOWLEDGEMENT

I hereby acknowledge receipt of the following checked addendum(s) and have made the necessary revisions to my proposal, plans and/or specifications, 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.



 Signature
WORLDWIDE EQUIPMENT, INC.
 Northern Division
 P.O. Box 171
 Company Jane Lew, WV 26378

 7-16-07
 Date

SIGN IN SHEET

RFQ # _____

Date: _____

Firm & Representative Name:

Mailing Address:

Phone, Fax, & E-Mail:

1. I T E TRAILERS & TRUCK BODIES P.O. Box 59 MEYERSDALE PA. P (814) 634-0080
GREG BUTERBAUGH F (814) 634-5846
G.BUTERBAUGH@ITIMFG.COM
 E-mail _____

2. DAVID BEITZEL PO Box 2605 P 740-4530551
ACE TRUCK EQ Co Zanesville Ohio 43702 F 740-4537023
 E-mail _____

3. POD JARVIS P.O. Box 420 P 606-874-2151
R/S-GODWIN TRUCK BODY AUEN, KY 41601 F 606-874-9136
 E-mail _____

4. RONALD KESSLER PO Box 114 P 234-595-2306
MONROE TRIL. ECF. PINEOLA NC 28662 F 608-328-8390
1051 W 7TH ST
MONROE, LA 70506 E-mail R.KESSLER@MONROE
TRAILER.COM

5. Paul Bugh PO Box 8557 P 304-744-1321
Geneva Truck Svc SAC Har, W.Va. F 304-744-7852
 E-mail _____

Please print or write legibly!

Your fax # is essential to contact you timely!

SIGN IN SHEET

RFQ # TOTECO 2/1
Date: 7-12-07

Firm & Representative Name:

Mailing Address:

Phone, Fax, & E-Mail:

1. R/S Harry Walla

PO Box 420

P 606-874-2151

R/S Godwin Tr. Body

Allen, Ky 41601

F 606-874-9136

E-mail HWALLA@RSBody.com

2. WV Truck & Trailer Co

1 JAIN DR.

P 304 204 2435

D. Meeks

CROSS LANES WV 25313

F 304 204 2448

E-mail D.MEEKS@WVTRUCK.NET

3. W.V. Truck

1 JAIN DRIVE

P 304-204-2435

Sonny Wagoner

CROSS LANES, WV 25313

F 304-204-2448

E-mail Sonny@Forkh1.net

4. Component Technology

204 Covered Bridge Rd

P 610-533-0024

DAVE AUSTIN

NOERTHAMPTON PA 18067

F 610-502-1971

E-mail daustin@certifiedpower.com

5. Component Technology

726 Moores Mountain Rd

P 717-766-9493

Bill Carey

Mechanicsburg PA 17055

F 866-620-8820

E-mail W.Carey@Certifiedpower.com

Please print or write legibly!

Your fax # is essential to contact you timely!

Sep. 21. 2007 2:09PM

No. 6193 P. 2



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

**Request for
 Quotation**

RFQ NUMBER
 707EC021

PAGE
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF
 JOHN JOHNSTON
 304-558-2402

VENDOR

*709063202 03 304-884-7815
 WORLDWIDE EQUIPMENT INC
 PO BOX 171 NORTHERN DIVISION

JANE LEW WV 26378

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
09/20/2007				
BID OPENING DATE: 10/17/2007		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO. 2						
CHANGES TO THE SPECIFICATIONS PER THE ATTACHED.						
BID OPENING DATE AND TIME CHANGED						
FROM: POSTPONE UNTIL FURTHER NOTICE						
TO: 10/17/07 AT 1:30 P.M.						
NO OTHER CHANGES.						
0001	1	EA		065-30	\$ 137,165. ⁰⁰ /unit	\$ 137,165. ⁰⁰ /unit
	64,000	GVW CAB &		CHASSIS, STAINLESS STEEL DUMP BODY		
***** THIS IS THE END OF RFQ 707EC021 ***** TOTAL:						

RECEIVED SEP 21 2007

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *[Signature]* TELEPHONE 800-879-3039 DATE 10-16-07

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

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

FROM:

6.5 WARRANTY AND SERVICE POLICY (2nd Paragraph)

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

TO:

6.5 WARRANTY AND SERVICE POLICY (2nd Paragraph)

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

ADD:

6.5 WARRANTY AND SERVICE POLICY (add new paragraph after mandatory 2 year)

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

FROM:

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

TO:

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

FROM:

8.7.3 Clutch to be dual plate ceramic clutch, minimum 15 1/2 inch. Kwik adjust (manual) feature, Eaton Fuller EP1552 with 7 spring damper or equal. (Solo clutch is not acceptable.

TO:

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.

FROM:

8.8.6 Radiator and heater hoses shall be Gates Blue Stripe or manufacturer's silicone standard

TO:

8.8.6 Radiator and heater hoses shall be Gates Blue Stripe, EPDM, or manufacturer's silicone standard.

FROM:

10.3.12 Snowplow lift control section to be 3 way three position spring centered cylinder spool with float detent for operation of a single acting lift cylinder. (Thus, eliminating skip plow.)

TO:

10.3.12 Snowplow lift control section to be 4 way three position spring centered cylinder spool with float detent for operation of a single acting lift cylinder. (Thus, eliminating skip plowing.)

FROM:

10.3.14.5 If solenoid valve coils are used, then they shall have manual override capabilities.

TO:

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.

ADDENDUM #2
707EC021

OPEN END CONTRACT

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

CHANGES TO BIDDER'S EVALUATION REPORT:

FROM:

X4.2.2 Delivery date of balance of completed units: _____ calendar days after date of purchase agreement

TO:

X4.2.1 Guaranteed delivery of balance of completed units in the following quantities:

- 1-25 240 calendar days after receipt of purchase agreement by successful vendor
- 26-50 240 calendar days after receipt of purchase agreement by successful vendor
- 51 and over 240 calendar days after receipt of purchase agreement by successful vendor

FROM:

X4.2.2 Delivery date of completed representative unit _____ calendars after date of purchase agreement

TO:

X4.2.2 Delivery date of completed pilot model 150 calendar days after receipt of purchase agreement by successful vendor

FROM:

X5.1 Prices for quantities of 1-25 _____ per unit
 26-50 _____ per unit
 51 and over _____ per unit

TO:

X5.1 Prices for quantities of complete unit including minimum 2 year bumper to bumper parts and labor warranty:

1-25 * 137,165.⁰⁰ per unit
 26-50 * 137,165.⁰⁰ per unit
 51 and over * 137,165.⁰⁰ per unit

If a 3 year bumper to bumper basic parts and labor warranty excluding normal wear items

and misuse available, please state price

Add \$ 705.⁰⁰ per unit on top of Price Listed Above. Each Unit

ADD AS 4th PARAGRAPH:

X6.5 WARRANTY AND SERVICE POLICY

Will a minimum 2 year bumper to bumper basic parts and labor warranty excluding normal wear items and misuse be provided YES NO

Is a 3 year bumper to bumper parts and labor warranty excluding normal wear items and misuse available YES NO

Describe: SEE Attachment Listed w/bid.

NO CHANGE

X8.3 Wheelbase: 226 inches set forward design for snowplow application for various plows YES NO

NO CHANGE

X8.7.3 Is clutch dual plate ceramic clutch

YES NO

Size: 15.5 inch Kwik adjust (manual feature)

YES NO

Manufacturer and model: Fuller CL7981 with 7 spring damper YES ^{9 spring} NO

NO CHANGE

X8.8.6 Radiator and heater hose manufacturer:

Mach Silicone

NO CHANGE

X8.10.6.1 Truck vendor will provide 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

YES NO

FROM:

X8.18.3.1

Front Wheels: Size 22.5 x 9.0

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

Rated at 10,000 lbs. at a maximum inflation pressure of 130 PSIG

Manufacturer and Model: Accuride

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

Powder coated with color similar to gray YES NO

TO:

X8.18.3.1

Front Wheels: Size 22.5 x 9.0

10 hole 285.75 mm bolt circle with 220mm bore, tubeless steel disc

YES NO

Rated at 10,000 lbs. at a maximum inflation pressure of 130 PSIG

Manufacturer and model: Accuride

With 0.500 inch thick disc, non standard off set with steel hubs

YES NO

Powder coated YES NO Gray top coat YES NO

FROM:

X8.18.4.1

Rear Wheels: Size 22.5 x 8.25
10 hole 285.75 mm bolt circle with 220mm bore, tubeless steel disc YES NO
Rated at 7,500 lbs. at a maximum inflation pressure of 120 PSIG
Manufacturer and Model: Accuride
With 0.500 inch thick disc, non standard off set with steel hubs YES NO
Powder coated with color similar to gray YES NO

TO:

X8.18.4.1

Rear Wheels: Size 22.5 x 8.25
10 hole 285.75 mm bolt circle with 220mm bore, tubeless steel disc
 YES NO
Rated at 7,500 lbs. at a maximum inflation pressure of 120 PSIG
Manufacturer and model: Accuride
With 0.472 inch thick disc YES NO
Powder coated YES NO Gray top coat YES NO

FROM:

X8.25.1

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

TO:

X8.25.1

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

Manuals (OR) CD

FROM:

X10.3.12

Snowplow lift control section is 3 way three (3) position spring centered cylinder spool with float detent for operation of a single acting lift cylinder YES NO

TO:

X10.3.12

Snowplow lift control section is 4 way three (3) position spring centered cylinder spool with float detent for operation of a single acting lift cylinder
 YES NO

SEE Body Quote

FROM:

X10.3.14.5

Are solenoid valve coils used YES NO

Will they have manual override capabilities YES NO

TO:

X10.3.14.5

Are solenoid valve coils used

YES NO

Will they have manual override capabilities if needed for continued use when coils fail

YES NO