



**State of West Virginia
Department of Administration
Purchasing Division**

NOTICE

Due to the size of this bid, it was impractical to scan every page for online viewing. We have made an attempt to scan and publish all pertinent bid information. However, it is important to note that some pages were necessarily omitted.

If you would like to review the bid in its entirety, please contact the buyer. Thank you.



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

*709034932 304-744-1321
 GENERAL TRUCK SALES
 PO BOX 8557
 SOUTH CHARLESTON WV 25303

SHIP TO

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

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
06/11/2007				
BID OPENING DATE: 07/25/2007		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		065-30	142,600.00	142,600.00
<p>64,000 GVW CAB & CHASSIS, STAINLESS STEEL DUMP BODY</p> <p>OPEN END CONTRACT</p> <p>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</p> <p>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.</p> <p>QUESTIONS: WRITTEN QUESTIONS WILL BE ACCEPTED THROUGH CLOSE OF BUSINESS (5:00PM EST) ON THURSDAY, 6/28/07.</p> <p>SEND YOUR QUESTIONS TO: PURCHASING DIVISION JOHN JOHNSTON 2019 WASHINGTON ST. E. CHARLESTON, WV. 25305</p> <p>QUESTIONS MAY BE SENT VIA FAX, E-MAIL, OR REGULAR MAIL. E-MAIL: JJOHNSTON@WVADMIN.GOV FAX: 304-558-4115</p> <p>IT IS THE VENDORS RESPONSIBILITY TO VERIFY THAT THEIR QUESTIONS HAVE BEEN RECEIVED BY CALLING 304-558-2402.</p> <p>EXHIBIT 2</p> <p>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</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	304-744-1321	10/17/2007
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
FLEET SALES	55-0177745-01	

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

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.: 707EC021

Bidder's Name: GENERAL TRUCK SALES CORPORATION

Address: 3100 MACCORKLE AVE SW/PO BOX 8557 SOUTH CHARLESTON WV 25303

Telephone Number: 304-744-1321

Years Bidder has been registered to do business with the State of West Virginia: 70 YRS.

Years Company has been an authorized dealer for proposed unit: 20 YRS.

X4.2 DELIVERY:

X4.2.1 Delivery date of completed representative unit: 130 to 150 Calendar Days After Date of Purchase Agreement

X4.2.2 Delivery date of balance of completed units: 180 to 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>142,600.00</u>	per unit
		26-50	<u>142,600.00</u>	per unit
		51 and over	<u>142,600.00</u>	per unit

X6.0 SPECIFICATIONS - GENERAL

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

VOLVO VHD 64E 200

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

X6.3 TRAINING:

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

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

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

If NO, explain time frame _____

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

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

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

X6.5 WARRANTY AND SERVICE POLICY

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

Is warranty literature attached? YES NO

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

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

X6.5 WARRANTY AND SERVICE POLICY QUESTIONNAIRE

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

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

2 YR., 100,000 MILE BASE WARRANTY EXCLUDING NORMAL MAINTENANCE ITEMS

3 YR., 100,000 MILE ENGINE

2 YR., 100,000 MILE DRIVELINE

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.

ALL WARRANTY REPAIRS BY GENERAL TRUCK SALES CORPORATION dba VOLVO TRUCKS OF CHARLESTON

SOUTH CHARLESTON WV

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

GENERAL TRUCK SALES CORPORATION

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: 20 % discount
- B. Terms: Net 60 Manufacturer's published list price less: 20 % discount
- C. Terms: Net 90 Manufacturer's published list price less: 20 % discount

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

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

A. Shop Rate \$ 84.00 per mechanic hour

B. Travel Time Charge \$ 84.00 per mechanic hour
(Specify if one-way) _____; port to port x

C. Mileage Charge \$.10 per vehicle mile
(Specify if one-way) _____; port to port x

D. Field Mechanic Rate \$ 90.00 per mechanic hour

E. Specify period of time that prices are in effect: 01/01/2008

F. Surcharge for miscellaneous items: 15 %

X6.6 EVALUATION COMMITTEE REQUIREMENTS

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

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

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

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

X7.0 SPECIFICATIONS OF THE QUOTED UNIT

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

X8.0 Specifications – Cab and Chassis

Manufacturer: VOLVO Model: VHD64F

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

X8.1 GVWR Rating: 64000 Lbs.

X8.2 Cab to Axle Dimensions: 123 to 151.5 Inches usable

X8.2.1 After frame length: 61 Inches

X8.3 Wheelbase: 190 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) 113.6 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 110,000 PSI yield strength. Is frame extension a "parent rail" material?
 YES NO
- X8.4.2 RBM: 2890000 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, 1.7 million in lb. per rail (RBM).
- X8.4.3 Is main frame and any required liners straight channel or offset channel, full length
- X8.4.4 Is frame RBM approved by manufacturers Engineering Department?
 YES NO
- Is it bolt on or welded extension? **NEITHER** YES NO **INTEGRAL**
- 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 **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 30 inches
- X8.5.5 Floor mats: Rubber floor mats throughout cab area with non-absorbent backing under mats YES NO
- X8.5.6 Turn signals: Manufacturers standard with hazard warning switch YES NO
- X8.5.7 Heater and defroster: Fresh air type, heaviest duty YES NO
- X8.5.8 Windshield wipers and washers: Manufacturer's heaviest duty "artic type" with intermittent feature with manufacturers largest reservoir filled with antifreeze type solvent YES NO
- X8.5.9 Instruments: Are all instruments dash mounted except where specified otherwise? YES NO
 Are all standard instruments supplied, including but not limited to the following: YES NO
- X8.5.9.1 Coolant, oil pressure gauges, to have both dial type readout and either an audible or visual alarm to warn operator when safe operating conditions are exceeded YES NO
- X8.5.9.2 Voltmeter or ammeter YES NO
- X8.5.9.3 Engine RPM tachometer YES NO
- X8.5.9.4 Speedometer with odometer YES NO
- X8.5.9.4.1 Are provisions for dual speedometer leads made available YES NO
- X8.5.9.5 Primary air pressure gauge YES NO
- X8.5.9.6 Auxiliary air pressure gauge YES NO
 Is it combined with primary air pressure gauge YES NO
- X8.5.9.7 Air filter manufacturers heaviest duty dual element type that meets all requirements of extended engine warranty YES NO
- X8.5.9.8 Does unit have front air intake YES NO
 Is an air actuated or cable control valve provided to enable operator to divert air intake to engine compartment while in snow plowing application YES NO
- X8.5.9.9 Is air filter restriction indicator gauge dash mounted YES NO
- X8.5.9.10 Engine hourmeter controlled by engine operation YES NO
- X8.5.9.11 Fuel level reading YES NO

- X8.5.9.12 Parking brake dash controlled with indicator light YES NO 56
- X8.5.9.13 Manufacturers best sound/weather insulation package for proposed cab YES NO
- X8.5.9.14 Outside temperature control with in cab digital read out YES NO
- X8.5.10 Rearview Mirrors:
- X8.5.10.1 West coast type power adjustable with convex spot mirror YES NO
- Size: UPPER 14.5" x 5.9"
- X8.5.10.2 Both mirrors heated type with stainless steel composite powder coated or aluminum hardware with corrosion resistance, heads, and fasteners YES NO
- X8.5.11 Grab Handle: Right hand and left hand sides, internal or external mounting to rear of door opening YES NO
- Are inside handles featured YES NO Is one (1) outside, left, mounted grab handle with non-slip insert for bed aggregate inspection furnished
- X8.5.12 Air horns, with snow shields if cab mounted, with adequate clearance for future installation of body dump cab protector YES NO
- Does it have single air horn used without snow shield if mounted downward on frame rail under hood YES NO
- X8.5.13 Unit includes lockable hand operated throttle control or electronic control for idle up and idle down for hydraulic flow rate YES NO
- X8.5.14 Will manufacturer provide for stationary grille or grille with cutout area to allow tilt hood to clear snow plow mount YES NO
- Is stone/gravel guard provided YES NO
- X8.5.15 Air conditioning: Manufacturers fresh air type heaviest duty with APADS or equal RCD system including replaceable fresh air filter YES NO
- X8.5.16 Radio: AM/FM stereo with weatherband radio feature YES NO
- X8.5.17 Glass: Manufacturers tinted safety glass (all locations) YES NO
- X8.5.17.1 Dual power windows YES NO
- X8.5.18 Manufacturers engine cover or dash mounted extended two (2) cup drink holder YES NO
- X8.5.19 Front mudflaps manufacturers standard for unit bid YES NO

X8.5.20 Emergency triangle warning kit, with hold down stowed (fastened) in the cab YES NO
Manufacturer & Model: JAMES KING & CO 1005

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 YES NO
Manufacturer & Model: KEDDIE DRY CHEMICAL

X8.5.23 List any accessories not indicated above but are included in the manufacturer’s standard cab
SEE ATTACHED LITERATURE

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

X8.6 Engine:

X8.6.1 Will engine manufacturer make provisions for front mounted hydraulic pump to crankshaft pulley YES NO

Manufacturer & Model: 1350/1450 FLANGE

X8.6.1.1 Diesel engine? YES NO

HP: 375 Peak torque 1450 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: VOLVO

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: VOLVO

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 VOLVO VGT BRAKE

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: EATON PL SOLO 9 SPRING with 7 spring damper YES NO

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

X8.8 Cooling System: Is it capable of maintaining engine temperature within the manufacturer's recommended range during continuous operation YES NO

X8.8.1 Does the system incorporate a thermostat and bypass for warm up YES NO

Is it filled with permanent type Dex Cool extended life or equal antifreeze rated to a -30° F or lower YES NO

Is it a low silicate type antifreeze for diesel engines only YES NO

X8.8.2 Is it the largest factory available engine cooling capacity compatible with engines and transmission referenced and for continuous high engine output under extreme temperatures and/or operating conditions due to prolonged snow plowing operations in low gears YES NO

- X8.8.3 Is unit fitted with provisions for visually monitoring coolant without necessitating removal of the cap from the radiator or expansion tank YES NO
- X8.8.4 Does the radiator mounting provide adequate clearance to facilitate the installation of a crankshaft driven PTO drive shaft YES NO
- X8.8.5 Distance between the extreme tip of the radiator fan blade and the centerline of the crankshaft to insure adequate clearance for PTO drive shaft: 3.5 inches
- X8.8.6 Radiator and heater hose manufacturer: VOLVO 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: 75 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: 23 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 @ 0 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 1 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 X YES NO LOCATED IN CAB
- X8.10.7 Will manufacturer _____ or successful vendor X make provisions for manufacture approved wiring and weatherproof disconnect plug X YES _____ NO
- Manufacturer and Model: TO BE PROVIDED BY BODY COMPANY
- seven (7) pin connector _____ YES X NO with _____ foot "pigtail" to operate combination left and right turn/park lights/auxiliary headlights X YES _____ NO
- X8.10.7.1 Are provisions for weatherproof disconnect plug located at lower left front grille-bumper area X YES _____ NO
- All wiring connections weatherproof with wiring encased in wire looms X YES _____ NO
- X8.10.7.2 Is a 7 way trailer connection light socket mounted at rear of truck frame X YES _____ NO
- Manufacturer and Model: VOLVO
- 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 LOCATED IN CAB _____ YES X NO
- X8.10.7.4 Has manufacturer provided body builder circuits – three (3) switches X 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 X YES _____ NO LOCATED IN CAB _____ amps per channel, _____ amp maximum output X YES _____ NO
- Do dash switches control the power module with LED backlighting _____ YES X 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 X YES _____ NO
- X8.11.1 Transmission: EATON transmission oil cooler X YES _____ NO
- X8.11.1.1 Magnetic drain plug X YES _____ NO
- X8.11.1.2 Does transmission torque capacity meet or exceed specified engine torque X YES _____ NO
- X8.12 Driveline:
X8.12.1 Manufacturer and Model: EATON RTO 15908LL

X8.13 Rear Axle:

X8.13.1 Manufacturer and Model: MERTIOR RT 46-160

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

X8.13.3 Ratio: Does gear ratio determined give the vehicles the capability of a top speed of approximately 70 MPH x YES NO
If not 70 MPH, please specify _____ MPH

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

X8.13.5 Rear wheel seals: CHICAGO RAWHIDE

X8.13.6 Drain plug, magnetic x YES NO

X8.14 Front suspension:

X8.14.1 Capacity at ground each front spring 10.4K lb.
Total spring capacity 20.8 K lb.

X8.14.2 Are the front spring pins or bearings/bushing furnished with 360 degree grease grooves to insure adequate lubricant penetration x YES NO

X8.14.3 Are spring hangers heavy castings with sufficient pin and bearing surface to render trouble free service x YES NO

X8.15 Rear suspension: HEDERKSON RT 463

X8.16 Front Axle:

X8.16.1 Capacity: 20.8K lbs.

X8.16.1.1 Does the front axle, drag links, and tie rods have grease zerks installed YES x NO SEALED

X8.16.2 Heavy duty shock absorbers YES x NO

X8.16.3 Oil lubricated front wheel seals x YES NO Manufacturer: CHICAGO RAWHIDE

X8.16.4 Does unit provide adequate tire clearance at maximum turning angles x YES NO

X8.17 Brakes

X8.17.1.1 Type: Full air, with manufacturers ABS in compliance with the most current FMVSS requirements x YES NO

X8.17.2 Compressor: Manufacturer and Model: WABCO 31.8 cu. ft.

X8.17.3 Service Brake Size:

X8.17.3.1 Front: 16.5 5x7 "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: 16.5 x 7 "S" cam with quick change type single _____
OR double pin
- X8.17.3.4 Are all brake chambers sealed brake chambers with epoxy exterior coat on front and rear Chambers YES _____ NO
- Manufacturer: MGM
- 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 3030
- 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 25 inches above road service
Manufacturer and Model: WABCO 1200 UP
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 18180 lbs. at a maximum inflation pressure of 130 PSIG.

Manufacturer and Model: HAYES LEMMERZ
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: 315/80R 22.5 Ply L

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 7800 lbs. at a maximum inflation pressure of _____ PSIG

Manufacturer and Model: HAYES LEMMERZ
With 0.472 inch thick disc YES NO

Powder coated with color similar to gray YES NO

X8.18.4.2 Tires: 11R22.5G

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

Rear Radial Tire: Manufacturer and Model: BRIDGESTONE R260

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): TO BE DETERMINED

Manufacturer: TRW T HP60

X8.19.3 Hydraulic supply pump: Vane type OR roller type x 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 x YES NO

Manufacturer and Model: TRW THP60

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

X8.19.5 Power steering reservoir: "Remote mounted" x YES NO

Capacity: 5 qt. Filter is easy to remove and replace x YES NO

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

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

X8.21 Paint: Describe proposed method of painting:

AS PER DESCRIBED

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 x YES NO

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

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

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

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

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



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

ADDRESS

RFQ COPY
 TYPE NAME/ADDRESS HERE
 GENERAL TRUCK SALES CORPORATION
 PO BOX 8557
 SOUTH CHARLESTON WV 25303

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	FOB	FREIGHT TERMS
07/12/2007				

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:						

SIGNATURE		SEE REVERSE SIDE FOR TERMS AND CONDITIONS	
TITLE	FEIN	TELEPHONE	DATE
FLEET SALES	55-0177745-01	304-744-1321	10/17/2007
ADDRESS CHANGES TO BE NOTED ABOVE			

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



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 Department of Administration
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 2019 Washington Street East
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DIVISION OF HIGHWAYS
 EQUIPMENT DIVISION
 ROUTE 33
 BRUSHY FORK ROAD
 BUCKHANNON, WV
 26201 304-472-1750

DATE PRINTED 09/20/2007	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
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		
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: 304-744-1321 DATE: 10/17/2007

TITLE: FLEET SALES FRIN: 55-0177745-01 ADDRESS CHANGES TO BE NOTED ABOVE

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

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:

1-25 180-240 calendar days after receipt of purchase agreement by
successful vendor

26-50 180-240 calendar days after receipt of purchase agreement by
successful vendor

51 and over 180-240 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



1130 Newark Road P.O. Box 2605 Zanesville, Ohio 4370
740 453-0551

PRICE QUOTATION

QUOTE _____ DATE 10.16.2007
ORDER _____ DATE

PURCHASE ORDER _____

SALESMAN DAVID

COMPANY STATE OF WEST VIRGINIA
ADDRESS

ATTN:

END USER BID #707EC021

PHONE
FAX

CHASSIS INFORMATION	MAKE	MODEL	W/B	CA/CT
	TRANS.	MODEL	TIRES	PAINT

1- HENDERSON MUNIBODY
1- COMPONENT TECHNOLOGY HYDRAULIC SYSTEM
PER THE COMPLETED COMPLIANCE SHEETS
DELIVERED TO BUCKHANNON, WV

NOTE: TRUCK FRAME MUST BE FREE OF OBSTRUCTIONS INSIDE AND OUTSIDE
LEFT FRAME RAILS 23" - 38" FROM BACK OF CAB

PRICE PER UNIT: \$51,912.00

TRADE DESCRIPTION

PRICE
FED. TAX
SALES TAX
SUB TOTAL
TRADE-IN
NET PRICE

This quotation becomes an order when signed here: Name _____ Title _____

This order is not binding until approved by a company official. All quotations and delivery promises made and orders accepted subject to delays caused by fire, accident, strikes or other causes beyond our control. Deliveries delayed by any of the above conditions shall not constitute cause for cancellation of this order. Prices subject to change without notice.

10.16.07 STATE OF WV #707EC021 (DAVID)



1130 Newark Road

P.O. Box 2605

Zanesville, Ohio 43702-2605

888-799-6220

740 453-0551

FAX 740 453-7023

Fax # 740-4537023

DATE: 10-15-07

TO: Brown Gardner

FROM: DAVE BITLER

SUBJECT: Specs for ^{Hyd} ~~body~~ on DoH Bid

PAGES: ~~10~~ 15
INCLUDING COVER SHEET

X10.0 SPECIFICATIONS - CENTRAL HYDRAULIC SYSTEM

74

Is the central hydraulic system designed to operate the following:

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

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

Bidder: ACE TRUCK EQUIPMENT CO.

Address: 1130 NEWARK RD. ZANESVILLE, OH 43701

Telephone Number: 740.453.0551

Years company has been an authorized dealer for proposed unit: 12 years

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

COMPONENT TECHNOLOGY MODEL SG03040068 WEST VIRGINIA SYSTEM MANUFACTURED AS

REQUIRED FOR CONTRACT.

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

If NO, refer to specification statement Section 6.6

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

Describe:

Pre-Wet System:

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

Does system operate using a flow meter feedback circuit YES NO

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

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

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

X10.1 Pump System:

- X10.1.1 Pump: Variable volume pressure compensated load sensing axial piston type
 YES NO
- X10.1.2 Front mounting flange and main housing/case of cast iron construction YES NO
 Inlet and outlet port section of high strength ductile iron with SAE split flange porting or orb type porting
 YES NO
- X10.1.3 Is suction port and associated plumbing sized to allow for minimum inlet restriction between the pump and the suction port on the reservoir?
 YES NO
 Does installation comply with pump manufacturers allowable inlet condition specifications
 YES NO
 Is suction plumbing equal to or greater than pump inlet or suction size YES NO
- X10.1.4 Is pressure port of the SAE split flange or ORB type side mounted for direct bolt mounting of solenoid shut down valve assembly
 YES NO
- X10.1.5 Case drain and load sense signal ports of the SAE O-ring type YES NO
 Case drain line taken directly to tank without passing through the return line filter
 YES NO
- X10.1.6 Input shaft has a minimum continuous torque rating equal to 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 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

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

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

X10.3.14.5 Are solenoid valve coils used X YES NO

Will they have manual override capabilities YES NO

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

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

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

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

X10.3.15.1 Flow limiting control system preset to provide 22 GPM at a system load pressure of 2200 PSI. Pump is capable of supplying this flow rate with engine speed of 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 X 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 X YES NO

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

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

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

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 X 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 NOX10.3.17.2 Is hydraulic valve of the sectional type YES NO OR of the cartridge style contained in a manifold YES NOX10.3.17.3 If manifold type valve is supplied, is it attached to the main valve assembly YES NOX10.3.17.4 Is all wiring to pre-wet hydraulic circuit provided as part of the system contained in the bid YES NOX10.3.17.5 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 NOAre overrides manually adjustable over operating flow range in the event of electrical system failure YES NOX10.4.2 Flow control circuits are pressure compensated YES NOProvides spinner and pre-wet flow rate of 7 GPM and a conveyor flow rate of 15 GPMPressure relief valve system limit circuits to 2200 PSIX10.4.3 Load sense circuits connected to directional control valve network for proper pump control YES NODoes 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 NOX10.4.4 Is PWM solenoid control supplied by microprocessor spreader control system YES NOAre solenoids capable of 100% PWM signal without failure YES NOX10.4.5 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 NOX10.4.6 Is electrical switching and indicator light for spreader clogged indication provided YES NOX10.4.7 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 X YES NO
- X10.5.2 Automatic calibration and flexibility of programming X 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 X 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 X 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 X YES NO
- X10.5.6 Programming and output cable connection for material and trip information printer and program uploading is provided X YES NO
- X10.5.7 Control unit capable of accumulating display information up to 999,999 miles and 999,999 tons of discharged material X 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 X YES NO
- X10.5.9 A variable digital access code lockout for application rate selection and for system operating parameters is provided X YES NO
- Is it a key switch X YES NO
- X10.5.10 Backlighted switches and LCD screen utilized for on-board programming and for display readout and application rate selection X 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 X YES NO
- Is spinner speed capable of linking to ground speed for on-off control X YES NO
- X10.5.12 Does display enunciate error message and sound audio alarm when microprocessor system detects any loss of control or accuracy X YES NO
- X10.5.13 Will system be fully functional at time of delivery X YES NO
- X10.5.14 Is truck speed sensor compatible with type of speedometer drive system supplied on chassis X YES NO
- X10.5.15 Is a built-in ground speed simulator provided either internal to the control or located in the control console X 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 YES NO
- X10.7.5 Is an internal steel baffle provided within the tank YES NO
- X10.7.6 Tank stenciled with minimum of 1 1/2" high "Hydraulic Oil" YES NO
- X10.7.7 Tank level switch connection "SO" type wiring and flange mounted within the tank/valve enclosure to protect it from the elements YES NO
- X10.7.8 Pump supply suction port 2 inches NPT and system report port 1.25 inches NPT
- X10.8 Filtration:
- X10.8.1 Manufacturers standard filtration to adequately protect the hydraulic system from damage YES NO
- X10.8.2 Return line filter isolated from reservoir by a full flow non-restrictive type quarter turn brass ball valve if filter not installed in reservoir YES NO
- X10.8.3 Each filter equipped with a differential pressure switch to indicate filter clogged condition by means of a console mounted indicator lamp YES NO
- X10.8.4 One (1) extra replacement filter for each assembly is provided for each truck YES NO
- X10.8.5 Filter assemblies positioned as close to reservoir as possible and in an easily accessible service location YES NO
- X10.9 Hoses and Fittings:
- X10.9.1 Each hose assembly (hose with hose ends) except for suction hose is fitted with JIC swivel connections on ends where connection to system component is made YES NO
- X10.9.2 All pressure line hoses meet or exceed SAE Specification 100R2 and are equal to Gates high pressure hose, type C2AT for sizes up to and including 1 inch ID YES NO
- X10.9.3 Suction hose 2 inch nominal ID and meet SAE Specification 100R4, braided fiber, spiral wire reinforced, rubber covered hose with replaceable bolt-on type fittings YES NO
- X10.9.4 All hydraulic hoses fully cleaned on interior, installed, and ready for operation YES NO
- X10.9.5 Are grommets used when routing hoses through steel bracketing or frame members YES NO
- X10.9.6 Are Snap-Tite quick disconnects (manifold mounted) supplied for forward and rear spinner 1/2 inch pressure and return lines YES NO
- Is iron or galvanized iron pipe for fittings and connectors used YES NO
- X10.9.7 Are all fittings and connectors steel type designed for high pressure hydraulic system use YES NO

- X10.9.8 Pipe thread ported components and connectors are only used when the specific component is 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



1130 Newark Road

P.O. Box 2605

Zanesville, Ohio 43702-2605

888-799-6220

740 453-0551

FAX 740 453-7023

Fax # 740-4537023

DATE: 10-15-07

TO: Brown Gardner

FROM: DAVE BERTOL

SUBJECT: Specs for body on Doh Bid

PAGES: 10

INCLUDING COVER SHEET

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 NC 7
- X9.10.1 Will a rear bolt on spreader apron be provided unless integrated into the rear of the bed YES NC
- 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): YES NO
 - X9.21.1 Tailgate hinged at top, flame cut hardware, pork chop type off-set hardware to achieve maximum opening of tailgate, but has provision for pivoting at the bottom YES NO
 - X9.21.2 Flush mount, 1/2 inch flame cut 304 stainless steel tailgate pivots YES NO
 - X9.21.3 Heavy duty offset hinge plates, one (1) inch flame cut 304 stainless steel YES NO
 - X9.21.4 3/4 inch 304 stainless steel latch hooks with 3/8 inch 304 stainless steel latch plates YES NO
 - X9.21.5 Full perimeter 304 stainless steel boxing with all horizontal edges sloped outward YES NO
 - X9.21.6 Two (2) 10 gauge 304 stainless steel sloped horizontal braces that are flush with perimeter Boxing YES NO
 - X9.21.7 7 gauge 304 stainless steel 10-12 inch x 24- 26 inch rear feedgate YES NO
 - X9.21.8 Cold roll steel upper pins with grease zerks YES NO
 - X9.21.9 Top hinge channel has removable, chain tethered keeper pins YES NO
 - X9.21.10 Latching action at the bottom of gate operable by the truck driver without leaving the truck cab YES NO
 - X9.21.11 Gate is self aligning YES NO
 - X9.21.12 Tailgate lower latch pins 304 stainless steel 1 1/4 inch diameter YES NO
 - X9.21.13 Body integrated or bolt on 304 stainless steel 15 inch spreader apron YES NO
- X9.22 Design and strength characteristic of the entire body such that the unit structural members and the hoisting system will not suffer any deformation, damage, or structural failure resulting from raising a distributed full payload YES NO

9.23 Bumper:

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

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 IO
- 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 IO
- X9.25 Load covering system electrically or air controlled X YES NC
- 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

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- 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

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: **GENERAL TRUCK SALES CORPORATION**

Signed: _____

Signed: 

Title: _____

Title: **VP**

Date: _____

Date: **12/17/07**

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 exceeds five percent of the total contract amount.

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

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

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

Authorized Signature: 

Date: 10/17/07

Volvo Trucks North America

VHD64F200

**VOLVO AND GMC TRUCKS OF CHARLESTON
3100 MACCORKLE AVE SW
SOUTH CHARLESTON, WV 25303-1473**

**Prepared By : O BUSH
304-744-1321**

**Prepared For : DON WEESE
W VA DEPT OF HIGHWAYS**

Wednesday, October 17, 2007 10:13:01 AM EST

Prepared By : O BUSH Dealer Id : 5348D
Model : VHD64F200 Customer : W VA DEPT OF
Deal : Q20061016 / My Deal



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Vehicle Specification

		Description	Front Weight	Rear Weight	Price
BASE MODEL					
004732	BASE MODEL	VHD64F200	8,840	7,479	105,230
VEHICLE ADAPTATION					
S 114010	MARKET ADAPTATION	USA/USA TERRITORY MARKET ADAPTATION	0	0	0
U 999114	MARKET ADAPTATION	Code K906 No Longer Available : Reason Code=Option is not authorized! <- SYSTEM generated description	0	0	0
S 125001	AREA/DOMICILE (EXHAUST)	49 STATE/NON CALIFORNIA	0	0	0
O DKG2	GROSS COMBINATION WEIGHT	80,000 LB GROSS COMBINATION WEIGHT	0	0	0
O 259005	VEHICLE VOCATION	HEAVY CONST/REFUSE OR OFF-ROAD SERVICE	0	0	0
S 260003	OPERATING CONDITIONS	MOUNTAINOUS/ Q UARRY, STARTING GRADES<20%	0	0	0
O 261007	WEIGHT CLASS	GVW 63,001-71,000# (28-32 METRIC TONS)	0	0	0
S 262001	ADDITIONAL AXLE CONFIGURATION	NO ADDITIONAL PUSHER OR TAG AXLES	0	0	0
O 263403	VEHICLE APPLICATION	TRUCK HD VOC/STK,UNIDENTIFIED END USER	0	0	0
S DH30	OPERATING CLASS	OPERATING CLASS THREE (CONSTRUCTION)	0	0	0
S FHL1	VEHICLE WIDTH	102" (2590 MM) VEHICLE WIDTH	0	0	0
CAB					
S 2CD3	CAB TYPE	HSS DAY CAB W/B-PILLAR DEPRESSION	0	0	0
HOOD					
S CD23	HOOD TYPE	CONSTRUCTION HOOD LENGTH	0	0	0
ENGINE					
O 1017A8	ENGINE PACKAGE	VOLVO D13 375 HP 2100 GOV RPM 1450 LB-FT @ 1100 RPM - '07 ENGINE EMISSION LEVEL	73	0	3,095
ENGINE EQUIPMENT					
S 94AA1X	FAULT CODE DISPLAY FILTER	FAULT CODE DISPLAY FILTER	0	0	0
S 0NAA1X	OPTIMIZED FUEL ECON INDICATOR	PERFORMANCE BONUS GUIDE - ENGINE SWEET SPOT GAUGE	0	0	0
S K5A2	ENGINE PROTECTION SYSTEM	ENGINE PROTECTION (SHUTDOWN)	0	0	0
S K7A1	ENGINE IDLE CONTROL	BASIC ENGINE IDLE CONTROL	0	0	0



O 220071	AIR CLEANER PACKAGE	SINGLE STAGE AIR CLEANER W/SAFETY ELEMENT, DRY TYPE WITH DUAL SIDE AIR INTAKE	2	0	73
S JWD1	AIR INTAKE	HOOD MOUNTED AIR INTAKE GRILLE	0	0	0
S H9M1	RADIATOR	930 SQ IN, 2 ROW CORE RADIATOR	0	0	0
S K9AD	COOLANT	BASIC LIFE ANTIFREEZE -34 F (-37 C)	0	0	0
S C4B1	COOLANT MANUFACTURER	GENERIC	0	0	0
S 208025	FAN CLUTCH PACKAGE	ELECTRONIC VISCOUS FAN CLUTCH	0	0	0
S NCD1	STARTER	VOLVO 12V GEAR REDUCTION STARTER (MODEL 105P55)	0	0	0
S PJCK	ALTERNATOR	DELCO REMY 12 V 110 AMP 34SI PAD MOUNT ALTERNATOR	0	0	0
O 810112	BATTERY PACKAGE	3 VOLVO MAINTENANCE FREE 12VOLT 1950CCA BATTERIES	32	10	41
S 230019	EXHAUST SYSTEM	COMPACT DPF MTD RHS UNDER CAB W/ VERT PIPE	0	0	0
S 232088	EXHAUST STACK PACKAGE	10' 0" ALUMINIZED STAINLESS STEEL SINGLE STACK	0	0	0
S K0C4	EXHAUST FEATURES	STRAIGHT STACK, SIDE OUTLET DIFFUSER BOX	0	0	0
S DVC3	LOWER EXHAUST PIPING	ALUMINIZED STAINLESS STEEL EXHAUST PIPE	0	0	0
S CUB1	EXHAUST PIPING FLEX SECTION	STAINLESS STEEL EXHAUST FLEX SECTION	0	0	0
S KNC1	EXHAUST SHIELD	ALUMINUM EXHAUST SHIELD	0	0	0
S JVH1	PRIMARY FUEL FILTER	VOLVO 30 MICRON FUEL FILTER	0	0	0
S J3A3	SECONDARY FUEL FILTER	DUAL ENGINE MOUNTED FUEL FILTER WITH WATER SEPARATOR	0	0	0
O J7BA	AUXILIARY FUEL FILTER	ELECTRIC FUEL HEATER	1	0	118
S VWCA	COMPRESSOR	WABCO 31.8 CFM COMPRESSOR	0	0	0
O 5NA1	ENGINE BLOCK HEATER	PHILLIPS 120V 1500W ENG BLOCK HEATER ONLY, RECEPTACLE MOUNTED LEFT SIDE UNDER DRIVERS DOOR	5	0	83
O HTA8	ENGINE BRAKE	VOLVO ENGINE BRAKE INCLUDING VARIABLE GEOMETRY TURBO BRAKE	25	0	1,343
O NDA1	ENGINE STARTING AID	ENGINE MOUNTED ELECTRIC PREHEATER	6	0	38
S 103005	ENGINE OIL CHECK & FILL	ENGINE MOUNTED-SIDE FILL TUBE	0	0	0
S QHC1	ENGINE OIL PAN	STAMPED STEEL OIL PAN (STANDARD OIL CHANGE INTERVALS)	0	0	0
O T805	PTO, ENGINE MOUNTED FRONT	PREP FOR FRONT ENGINE PTO - FOR 1350/1450 FLANGE	3	0	66

TRANSMISSION

S RWKB	TRANSMISSION PACKAGE	EATON FULLER RTO-14908LL, 10 SPEED	0	0	0
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S RVA1	GEAR SHIFT LEVER	FIXED GEAR SHIFT LEVER	0	0	0
O 7RB1	TRANSMISSION LUBRICANT	SYNTHETIC TRANSMISSION LUBRICANT	0	0	0
S T2C3	TRANSMISSION COOLER	WATER TO OIL TRANS COOLER IN RADIATOR	0	0	0
O TKC1	DRIVELINE	UPGRADE DRIVELINE TWO SIZES	10	30	156
S THC2	DRIVELINE MANUFACTURER	SPICER LIFE DRIVELINE WITH XL U-JOINTS	0	0	0
O 250086	CLUTCH	EATON 15.5" 2 PL CER SOLO 9-SPRING (6 PAD)	0	0	187
S RCB1	CLUTCH HOUSING	ALUMINUM CLUTCH HOUSING	0	0	0
S RBA1	CLUTCH FEATURES	EXTENDED LUBE LINE (FOR GREASABLE RELEASE BEARING)	0	0	0

FRONT AXLE

O 370362	FRONT AXLE PACKAGE	VOLVO VF20 20.8K FRONT SPRINGS W/ UNITIZED HUBS	252	0	484
O U5B1	FRONT BRAKE DIMENSION	16.5X6 FRONT BRAKE SIZE	0	0	0
S UDA1	FRONT AXLE BRAKE DUST SHIELD	FRONT BRAKE DUST SHIELDS,	0	0	0
S XABF	POWER STEERING GEAR	TRW THP60 INTEGRAL POWER STEERING GEAR	0	0	0
S M0A1	STEERING SHAFT TYPE	BASIC STEERING SHAFT	0	0	0
S I9A1	STEERING LINKAGE	SEALED DRAG LINK	0	0	0
O XEA1	POWER STEERING ASSIST	RIGHT HAND RAM ASSIST	0	0	0
O 371072	FRONT SUSPENSION PACKAGE	MULTILEAF FRONT SUSPENSION	0	0	0
S IRA1	SPRING MAINTENANCE TYPE	LUBRICATED SPRING PINS AND BUSHINGS	0	0	0
O 0KG1	HUBS, FRONT AXLE	IRON UNITIZED FRONT AXLE HUBS	0	0	0
S U3A1	BRAKE DRUM, FRONT AXLE	CAST IRON FRONT BRAKE DRUM OUTBOARD MOUNTED	0	0	0
O K4AD1X	WHEEL NUT TYPE, FRONT	LOCK SNAP RING W/ LOCK TAB FRONT SPINDLE NUTS - UNITIZED ONLY	0	0	0
O ZGC1	FRONT OIL SEAL CAP	UNITIZED FRONT AXLE OIL SEAL CAP	0	0	0
S 373001	FRONT SHOCK ABSORBER	FRONT SHOCK ABSORBERS	0	0	0
S 7VB1	FRONT AXLE LUBRICANT	SYNTHETIC FRONT AXLE LUBRICANT	0	0	0

REAR AXLE

O 330444	REAR AXLE PACKAGE	ARVIN MERITOR RT46-160 46,000 LB CAPACITY	0	445	2,143
O R4A1	REAR AXLE LUBE PUMP	REAR AXLE LUBE PUMP	0	30	265
O TAJA	REAR AXLE RATIO	4.56 REAR AXLE RATIO	0	0	0
O TUA1	DIFFERENTIAL LOCK	FULL LOCKING WHEEL DIFFERENTIAL	0	63	834
S 0LE1	HUBS, DRIVE AXLE	IRON PRESET DRIVE AXLE HUB	0	0	0
S N2AA1X	WHEEL NUT TYPE, REAR	LOCK TAB DRIVE SPINDLE NUTS	0	0	0



S 1CA2	OIL SEALS, DRIVE AXLE	CHICAGO RAWHIDE PLUS XL DRIVE OIL SEALS	0	0	0
S U4A1	BRAKE DRUM, DRIVE AXLE	CAST IRON DRIVE AXLE BRAKE DRUM OUTBOARD MOUNTED	0	0	0
O 7WB1	REAR AXLE LUBRICANT	SYNTHETIC REAR AXLE LUBRICANT	0	0	84
O 350351	REAR SUSPENSION PACKAGE	46K HENDRICKSON RT463, 54" SPACING W/ TRANSVERSE TORQUE RODS	0	430	875
S ULH2	WHEEL BRAKE TYPE FRONT AND REAR	ARVIN MERITOR Q+ CAST FRONT, Q+ CAST REAR	0	0	0
S U8A1	DRIVE AXLE BRAKE DIMENSION	16.5X7 REAR BRAKE SIZE	0	0	0
S UEA1	DRIVE AXLE BRAKE DUST SHIELD	REAR BRAKE DUST SHIELDS	0	0	0
S VCA1	SLACK ADJUSTER VENDOR FRONT AND REAR	GUNITE AUTOMATIC SLACK ADJUSTER FRONT AND REAR	0	0	0
S WRA1	ANTILOCK BRAKE SYSTEM MANUFACTURER	BENDIX ABS	0	0	0
O 781012	PARKING BRAKE CHAMBER PACKAGE	FOUR CAM TYPE MGM	0	0	72
S UKA1	CHAMBER STROKE LENGTH, FRONT AND REAR	BASIC LENGTH BRAKE CHAMBER STROKE	0	0	0

CHASSIS

O 400236	WHEELBASE	236" WHEELBASE	49	-34	0
O X4B1	FRONT FRAME EXTENSION	24" FRONT FRAME EXTENSION	168	-37	121
O 403011	FRAME RAIL PACKAGE	11.81"X4.13"X.44" STRAIGHT STEEL RAILS	206	258	196
S 8EB1	INTERMEDIATE CROSSMEMBER MATERIAL	STEEL CROSSMEMBER MATERIAL	0	0	0
S OAA1	INTERMEDIATE CROSSMEMBER CONFIGURATION	BASIC INTERMEDIATE CROSSMEMBER	0	0	0
S X8B1	FORWARD REAR SUSP CROSSMEMBER MATERIAL	STEEL CROSSMEMBER MATERIAL	0	0	0
S ZIA1	BOGIE CROSSMEMBER MATERIAL	STEEL CROSSMEMBER MATERIAL	0	0	0
O 402063	OVERHANG	63" OVERHANG	-8	38	0
O Z9B1	FRAME LINER	5MM FULL FRAME LINER	286	296	949
S X6A1	REAR FRAME TREATMENT	STRAIGHT CUT-OFF REAR CROSSMEMBER	0	0	0
S VHD8	AIR DRYER	MERITOR WABCO 1200UP AIR DRYER WITH HEATER AND WITHOUT TURBO CUT OFF VALVE	0	0	0
S U2B1	AIR TANKS	STEEL AIR TANKS	0	0	0
S UWB1	AIR TANK DRAIN VALVE	MANUAL PULL CORD ON ALL AIR TANKS	0	0	0
S 6B99	FIFTH WHEEL LOCATION	NO FIFTH WHEEL POSITION PROVIDED	0	0	0
O 424103	FUEL TANK PACKAGE	SINGLE 75 GAL LH 26 DIA UNPTD ALUM	-21	-11	0
S HBB1	FUEL TANK POSITION	FUEL TANK POSITION 1	0	0	0



S JHA1	FUEL LINES	NYLON FUEL LINES	0	0	0
O J6A1	FUEL TANK SCREEN	FUEL TANK SCREEN	2	0	12
S KHA1	FUEL TANK STRAPS	PAINTED STEEL FUEL TANK STRAPS	0	0	0
S KFA1	FUEL TANK CAP	NON-LOCKING FUEL TANK CAP	0	0	0
O WHC1	TRAILER BRAKE CONNECTION POSITION	TRAILER CONNECTIONS MTD END OF FRAME	6	10	44
S WK99	HOSE TENDER POSITION	NO HOSE TENDER POSITION PROVIDED	0	0	0
S L0A1	ELECTRICAL JUNCTION BOX BACK OF CAB	BODY BUILDER JUNCTION BOX BACK OF CAB	0	0	0
O L1A1	ELECTRICAL JUNCTION BOX END OF FRAME	BODY BUILDER JUNCTION BOX END OF FRAME	0	2	66
O L2A1	ELECTRICAL RECEPTACLE END OF FRAME	ELECTRICAL RECEPTACLE END OF FRAME	-1	5	67
O WLA1	TRAILER BRAKE HAND CONTROL	FULL PRESSURE TRLR BRAKE HAND CONTROL	2	0	59
S L416	BATTERY BOX MOUNTING	BATTERY BOX, LHS, BEHIND FRONT FENDER	0	0	0
S L5A1	BATTERY BOX COVER	BASIC BATTERY BOX COVER	0	0	0
S NQB1	BATTERY BOX CONFIGURATION	BATTERY BOX - 3 CAPACITY	0	0	0
O 4DD1	FRONT BUMPER	HEAVY DUTY STEEL BUMPER-ONE PIECE	0	0	-310
S FRA1	BUMPER POSITION	BUMPER MOUNTED STANDARD POSITION	0	0	0
O 65A1	FRONT FENDER EXTENSION	WITH FRONT FENDER EXTENSION	4	0	111
S 4EB1	FRONT TOWING DEVICE	TWO FRONT TOWING DEVICES	0	0	0

CAB EXTERIOR

X 2D30	CAB SUSPENSION	AIR RIDE CAB SUSP W/LATERAL DAMPENERS	30	10	59
S 21A1	AUXILIARY REAR WINDOW	STANDARD REAR WINDOW	0	0	0
O D2B1	WIPER BLADE	ARCTIC WIPER BLADE	1	0	15
O 28C1	FRONT GRILLE	STATIONARY FRONT GRILLE	1	0	297
S H6A1	BUG SCREEN	BUG SCREEN BEHIND GRILLE	0	0	0
O LZC2	AIR HORN	DUAL ROOF MOUNTED BRIGHT AIR HORNS, DUAL TONE	3	0	140
S 3F51	EXTERIOR SIDE VIEW MIRRORS	BLACK VOCATIONAL MIRRORS W/LONG ARMS	0	0	0
O 3GC1	EXTERIOR MIRROR FEATURES	HEATED, POWER AXIS MIRROR, BOTH SIDES	2	0	164
S 4340	AUXILIARY DOWN VIEW MIRROR	DOWN VIEW MIRROR OVER PASSENGER DOOR	0	0	0
S 4NB1	EXTERIOR SUNVISOR	FIBERGLASS EXTERIOR SUNVISOR W/LED MARKER LAMPS	0	0	0

CAB INTERIOR

O 540055	INTERIOR TRIM PACKAGE	SIGNATURE TECHNO	0	0	54
O 541004	INTERIOR TRIM COLOR	TITANIUM INTERIOR TRIM COLOR	0	0	0



O 520035	DRIVER SEAT PACKAGE	NATIONAL COMFORT AIR SUSPENSION HIGH BACK DRIVER SEAT	2	1	94
O 521035	PASSENGER SEAT PACKAGE	NATIONAL COMFORT AIR SUSPENSION HIGH BACK	27	12	305
O D7H1	SEAT UPHOLSTERY	PLUSH CLOTH SEAT UPHOLSTERY	0	0	23
O 3PC5	SEAT ARMREST	INBRD/OUTBRD DRVR & PASS SEAT ARMREST	10	0	106
S OUA1	SAFETY BELT DRIVER SEAT	SAFETY BELT DRIVER SEAT, BLACK	0	0	0
S OXA1	SAFETY BELT PASSENGER SEAT	SAFETY BELT PASSENGER SEAT, BLACK	0	0	0
O K7AC1X	SAFETY BELT LENGTH	EXTENDED SAFETY BELT LENGTH	0	0	46
S 4AB1	CLIMATE UNIT	INTEGRAL AC W/HEATER-MANUAL CONTROLS	0	0	0
S 4125	PARKING HEATER	WITHOUT PARKING HEATER	0	0	0
S M5A1	DOG HOUSE	DOG HOUSE TWO PIECE	0	0	0
S 6WA1	CENTER CONSOLE FOR BODY CONTROLS	MOUNTING PLATE ONLY FOR BODY CONTROLS	0	0	0
S L3C1	ELECTRICAL CENTER OUTLET	ELECTRICAL COMPLETE KIT FOR BODY BUILDER, ECU DASH TO CHASSIS	0	0	0
S AMA1	FLOOR COVERING, FRONT	GRAY RUBBER FLOOR MAT	0	0	0
O 4JD1	STORAGE OVERHEAD DRIVER	NETTED OVERHEAD STORAGE (DRIVER/PASSENGER) WITH CB RADIO MOUNTING AND AUXILIARY SWITCHES	9	2	87
O 571006	GAUGE PACKAGE	HIGH INSTR LEVEL/FULL DISPLAY	1	0	96
S 0RAD1X	DPF REGENERATION CONTROLS	DPF REGEN CONTROL, AUTO REGEN IN MOTION, MANUAL PARKED REGEN, MANUAL INHIBIT	0	0	0
S PFA1	OUTDOOR/INDOOR TEMPERATURE GAUGE	DASH MOUNTED OUTDOOR TEMPERATURE GAUGE	0	0	0
O PVC2	AIR RESTRICTION INDICATOR	GRADUATED ARI ON FILTER WITH GRAPHIC SYMBOL IN DRIVER MESSAGE CENTER	1	0	6
S N8D1	SPEEDOMETER GRADUATION	MPH SPEEDOMETER GRADUATION	0	0	0
O PAB1	CIRCUIT PROTECTION	SEMI-AUTO RESET TYPE II BREAKERS	1	0	4

LIGHTING

S NJAA	AUXILIARY LAMPS	SNOW PLOW LAMP PREP	0	0	0
O N0A1	MARKER INTERRUPTER SWITCH	DASH MOUNTED MARKER INTERRUPTER SWITCH	0	0	7
S 836002	HEADLAMPS	HALOGEN HEADLAMPS	0	0	0
S LSG1	DAYTIME RUNNING LAMPS	EQUIPPED WITH DAYTIME RUNNING LIGHTS	0	0	0
S NEC1	STOP AND TAIL LIGHTS	DUAL WITH INTEGRAL BACKUP LIGHTS	0	0	0
S NPB1	TURN SIGNAL SWITCH	SELF CANCELLING TURN SIGNAL SWITCH	0	0	0

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O CYA1	INSTEP LAMP	INSTEP LAMP ON DOOR	0	0	0
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AUDIO SYSTEM

O F8D1	AUDIO SYSTEM	AM/FM STEREO	1	0	318
O 5CA1	RADIO SPEAKERS	SPEAKERS IN DASH ONLY	0	0	0
O 5JB1	CB RADIO MOUNTING	OVERHEAD MOUNTED CB RADIO HOLD DOWN	3	0	2
O 5BN1	CB ANTENNA	MULTIPURPOSE ANTENNA (RAMI) SINGLE MIRROR MOUNTED AM/FM/CB ANTENNA W/LEAD FOR CB	2	1	56

MISC CAB EQUIPMENT

S 2WA1	STEERING WHEEL	18" VOLVO SAFETY SPORT STEERING WHEEL	0	0	0
S DUA1	SRS AIR BAG	SRS AIR BAG-DRIVERSIDE ONLY	0	0	0
O 2X35	WINDOW LIFT	POWER WINDOW LIFT BOTH DOORS	6	4	199
O 3AC2	DOOR LOCKS CAB	REMOTE CONTROL DOOR LOCK, BOTH DOORS	3	0	224
S 20A1	KEY TYPE	BASIC UNIQUE KEY	0	0	0
O 8BB1	KEY QUANTITY PER UNIT	4 KEYS PROVIDED PER UNIT	0	0	5
O EAC1	AUXILIARY SWITCH	THREE (3) AUXILIARY SWITCHES W/WIRING	1	0	45
S OIA1	HOOD CATCH CONTROL	HOOD CATCH CONTROL INTERIOR	0	0	0
S NIA1	ELECTRICAL DASH OUTLET	ONE 12 VOLT DASH OUTLET	0	0	0
O 40L2	FIRE EXTINGUISHER	5 POUND ABC DRY TYPE, RECHARGEABLE, MOUNTED IN CAB	5	2	45
O 4V31	AUXILIARY SAFETY EQUIPMENT	TRIANGLE REFLECTOR KIT	3	1	21

WHEELS AND TIRES FRONT

O 084464	RIM/WHEEL PACKAGE FRONT	22.5X9.00 HAYES LEMMERZ STEEL PREPAINTED GRAY 286BC 5 HAND HOLES HUB PILOTED	-34	0	0
S 093553	TIRE PACKAGE FRONT	315/80R22.5L BRIDGESTONE M860 (20000 LBS. GAWR)	0	0	0
S 907002	FRONT WHEEL & TIRE QUANTITY	TWO FRONT WHEELS & TIRES	0	0	0

WHEELS AND TIRES REAR

O 085094	RIM/WHEEL PACKAGE REAR	22.5X8.25 HAYES LEMMERZ STEEL POWDER COAT GRAY 286BC 5 HAND HOLES HUB PILOTED	0	8	0
X 094506	TIRE PACKAGE REAR	11R22.5G MICHELIN XDY3 (23360 LBS. GAWR)	0	112	1,000
S 908008	DRIVE WHEEL & TIRE QUANTITY	EIGHT DRIVE WHEELS & TIRES	0	0	0

MISC TIRE EQUIPMENT

O 15B1	TIRE INFLATION VALVE	FLOWTHROUGH INFLATOR CAP	0	0	6
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PAINT

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 Deal : Q20061016 / My Deal



S 950800	CAB PAINT SCHEME	SINGLE COLOR PAINT	0	0	0
O 955040	CAB PAINT TYPE	DUPONT ELITE BC/CC-SOLID	0	0	162
S 9801T4	FIRST CAB COLOR	GLACIER WHITE P3029	0	0	0
S 9861U1	CHASSIS COLOR	BLACK P3036	0	0	0
O 9872J5	BUMPER COLOR	ISLAND BLUE P3305	0	0	60
X 988949	DISC WHEEL OR RIM COLOR	STEEL DISC WHEELS OR RIMS-VENDOR GRAY, ALUMINUM OR PROSTEEL DISC-UNPAINTED	0	0	0
O 9892J5	SPOKE WHEEL / HUB COLOR	ISLAND BLUE P3305	0	0	71

BUSINESS SERVICES

O D6Z1	COMMUNICATION EQUIPMENT	NO COMMUNICATION EQUIPMENT PROVIDED	-3	0	-558
O 886001	VOLVO ACTION SERVICE AGREEMENT	SILVER LEVEL VOLVO ACTION SERVICE WITHOUT VOLVO LINK SENTRY	0	0	0
S 38CN	OPERATOR'S MANUAL LANGUAGE	ENGLISH	0	0	0

WARRANTY

S 898002	WARRANTY QUALIFICATION	STANDARD WARRANTY QUALIFIED	0	0	0
X 899031	WARRANTY TYPE	PREMIUM COVERAGE 36 MONTHS/ 250,000 MILES/ 9000 HOURS GVW<71,000_LBS/TRUCK	0	0	2,100
O 896001	VOLVO D11/D13 ENGINE EXTENDED COVERAGE	VOLVO PURCHASE PLAN 07-1 FOR D11/13 ENGINE 36 MONTHS/100K_MILES OR 2,500 HOURS	0	0	750
O 893101	ADDITIONAL VOLVO ENGINE COVERAGE	D11/D13 EXTENDED MAJOR COMPONENTS 60mo/600,000miles	0	0	185
S 948001	2007 EPA SURCHARGE	2007 EPA SURCHARGE NET/NET NO DISCOUNT	0	0	7,500
O 889002	VEHICLE COMPONENT COVERAGE	EXTENDED A/ C SEALED SYST EM, HEATER CORE & BLOWER MOTOR_36/350,000	0	0	375

SUB TOTALS

BASE WEIGHT/PRICE	8,840	7,479	105,230
FACTORY OPTION WEIGHT/PRICE	1,181	1,688	25,341
DEALER OPTION WEIGHT/PRICE	0	0	0

TOTALS

TOTAL PRICE(\$)			130,571
TOTAL WEIGHT(LB)	10,021	9,167	19,188



Engine Parameters

10/17/2007

Description	Default Value	Customer Selection
Customer Password	000000	000000
Road Speed Limit (RSL) (MPH)	68	68
RSL VSPD Priority	0	1
RSL Fuel Efficiency Priority	0	0
Differential Road Speed Governor Enabled	1	0
Gear Down Vehicle Speed	RSL-10	RSL-5
1900 RPM Limit in Top Gears	1	1
Consider Perf. Bonus Guide (Sweet Spot)	1	1
Performance Bonus Enabled	0	0
Maximum Speed Bonus(MPH)	3	3
Number of Speed Bonus Steps	1	1
Consider Fuel Economy	1	1
Fuel Economy Target(MPG)	7	7
Consider Idle Time	1	1
Idle Time Target %	25	25
Sweet Spot Target %	90	90
Running Interval(miles)	3000	3000
Cruise Control Enable	1	1
Maximum Cruise Control Spd (MPH)	65	65
Minimum Cruise Control Spd (MPH)	30	30
Cruise Control VSPD Priority	0	1
Cruise Control Fuel Efficiency Priority	0	0
Eng Brake with Cruise	0	0
Fan ON with Engine Brake	0	0
Idle Shutdown Enabled (ISD)	1	1
Idle Shutdown Time	5	5
Engine Load in PTO	0	0
Allow Permanent Override	0	0
Minimum Ambient	0	0
Maximum Ambient	120	120

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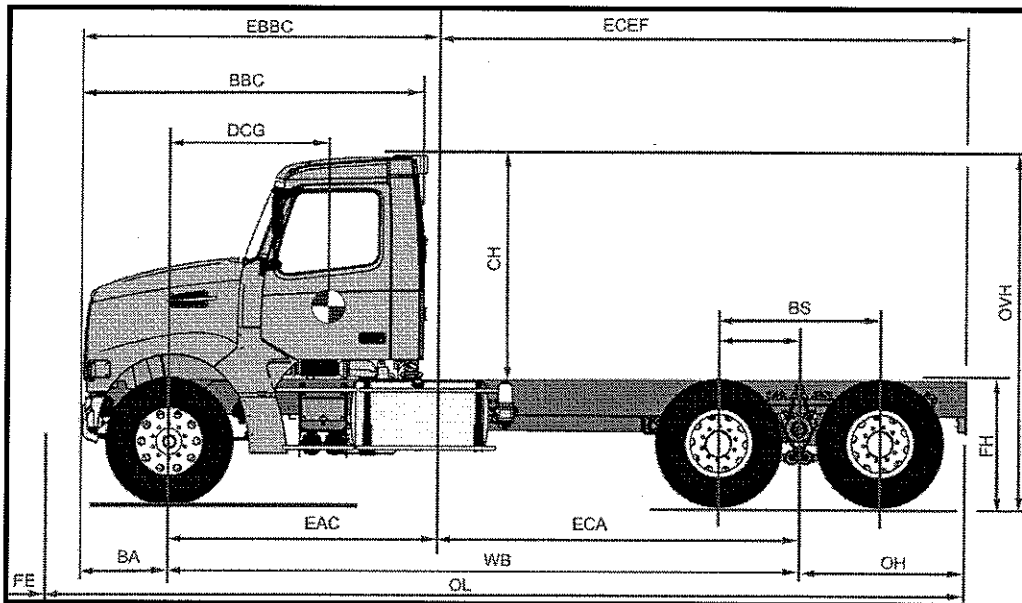


Maximum Eng Spd @ 0 MPH	2000	2000
Engine Protection Enabled	1	1
Coolant Warmhold Temp(F)	158	158
Maximum Engine Idle Bump-Up Speed (RPM)	670	670
Engine Idle Resume Speed (RPM)	670	670



Dimension

	DIMENSION	LENGTH
FE	Front Frame Extension(in)	24.0
BA	Bumper to Front Axle(in)	29.1
WB	Wheelbase(in)	236.0
OH	Overhang(in)	63.0
OL	Overall Length(in)	352.1
BBC	Bumper to Back of Cab(in)	113.6
EBBC	Eff. Bumper to Back of Cab(in)	113.6
ECA	Eff. Cab to Rear Axle(in)	151.5
EAC	Eff. Front Axle to Back of Cab(in)	84.5
ECEF	Eff. Cab to End of Frame(in)	214.5
5W	Unladen 5th Wheel Height(in)	0.0
FH	Unladen Frame Height(in)	44.4
CH	Cab Height(in)	74.3
OVH	Overall Height(in)	118.7
DCG	Driver CG(in)	64.5



Coverage Comparison Chart

**Volvo Models D11F, D13F, D16F
2007 Emission Engines
Extended (Purchased) Volvo Engine
Coverage Plans
(As of January 1st, 2007)**

PLAN 07-6: Limited Coverage. Vocational

PLAN 07-5: Limited Coverage

PLAN 07-4: Limited Coverage

PLAN 07-3: Limited Coverage.

PLAN 07-2: Limited Coverage.

PLAN 07-1: Full Coverage except for maintenance items.

Covered Components	Qualifications and Limitations	Standard Components	Major Components	Emissions Components	Emission Coverage Plans						Plan 3 has a \$250 Deductible		
					Plan 07-1	Plan 07-2	Plan 07-3	Plan 07-4	Plan 07-5	Plan 07-6	Plan I 36mo/300K	Plan II 48mo/400K	Plan III 60mo/500K
Air Compressor					☑	☑	☑	☑	☑	☑			
Air Compressor Sprocket					☑	☑	☑	☑	☑	☑			
Bearings	All Internal Lubricated Bearings and Bushings Only	☑	☑	☑	☑	☑	☑	☑	☑	☑			
Camshaft, caps and bolts	Failures resulting from the valve and injector adjustments not being maintained properly will NOT be covered. Normal maintenance adjustments are NOT covered.	☑	☑	☑	☑	☑	☑	☑	☑	☑	X	X	X
Connecting rods, caps, and bolts		☑	☑	☑	☑	☑	☑	☑	☑	☑	X	X	X
Coolant Duct Cover		☑	☑	☑	☑	☑	☑	☑	☑	☑			
Crankcase Ventilation Assembly		☑	☑	☑	☑	☑	☑	☑	☑	☑			
Crankshaft		☑	☑	☑	☑	☑	☑	☑	☑	☑	X	X	X
Crankshaft Hub		☑	☑	☑	☑	☑	☑	☑	☑	☑			
Cylinder block casting, main caps and bolts		☑	☑	☑	☑	☑	☑	☑	☑	☑	X	X	X
Cylinder Block Expansion Plugs		☑	☑	☑	☑	☑	☑	☑	☑	☑			
Cylinder Block Heater		☑	☑	☑	☑	☑	☑	☑	☑	☑			
Cylinder head casting and bolts		☑	☑	☑	☑	☑	☑	☑	☑	☑	X	X	X
Cylinder Head Expansion Plugs		☑	☑	☑	☑	☑	☑	☑	☑	☑			
Cylinder Head Gasket		☑	☑	☑	☑	☑	☑	☑	☑	☑			
EGR (Exhaust Gas Recirculation) Components	All Components Including Pipes, clamps, fittings, & gaskets. Excludes: EGR cooler vibration damper is a maintenance item.	☑	☑	☑	☑	☑	☑	☑	☑	☑			
EGR Control Valve	Plan 07-4 Limited to 36 months, or 300,000 miles (483,000 km) or 7,500 hours. Plan 07-6 Limited to 60 months.	☑	☑	☑	☑	☑	☑	☑	☑	☑	X	X	X
EGR Cooler	Plan 07-4 Limited to 36 months, or 300,000 miles (483,000 km) or 7,500 hours. Plan 07-6 Limited to 60 months.	☑	☑	☑	☑	☑	☑	☑	☑	☑	X	X	X
EGR Mixing Chamber	Plan 07-4 Limited to 36 months, or 300,000 miles (483,000 km) or 7,500 hours. Plan 07-6 Limited to 60 months.	☑	☑	☑	☑	☑	☑	☑	☑	☑	X	X	X
EGR System Wiring Harness		☑	☑	☑	☑	☑	☑	☑	☑	☑			
Electrical EA harness supplied with engine	(From ECU to sensors and injectors) Plan 07-4 Limited to 36 months or 300,000 miles (483,000 km), or 7,500 hours	☑	☑	☑	☑	☑	☑	☑	☑	☑			
Electronic Control Unit (ECU)	Plans 07-4 & 07-5 limited to 300,000 miles. Plan 07-6 limited to 60 months. For the failure to be covered under Emissions Components, the failure must effect the emissions of the unit.	☑	☑	☑	☑	☑	☑	☑	☑	☑	X	X	X
Engine brake mechanism (VEB)	Includes: VEB Control valve and VEB Rocker arms. Factory Installed Only.	☑	☑	☑	☑	☑	☑	☑	☑	☑			
Exhaust After-Treatment System Arvin Meritor (ARM) Emissions Related Components	Includes: Diesel Particulate Filter (DPF), Air Solenoid Valve, Air Check Valve, Atomization Block, Cold Junction Block, Control Module, Ignition Coil, Fuel Pump, Pre Thermal Regen. Temp. Sensor, Post Thermal Regen. Temp. Sensor, Downstream DPF Temp. Sensor, Internal Thermal Regen. Temp. Sensor, and the DPF Differential Pressure Sensor.	☑	☑	☑	☑	☑	☑	☑	☑	☑			
Exhaust After-Treatment System Fleetguard Emissions Solutions (FES) Emissions Related Components	Includes: Diesel Particulate Filter (DPF), After-Treatment Hydrocarbon Injector (AHI), AHI shutoff valve, Discharge Recirculation (Heat Mode) Valve, Pre Catalyst Temp. Sensor, Post catalyst Temp. Sensor, DPF Differential Pressure Sensor, and the Downstream DPF Temp. Sensor.	☑	☑	☑	☑	☑	☑	☑	☑	☑			
Exhaust manifold casting		☑	☑	☑	☑	☑	☑	☑	☑	☑			
Exhaust manifold joint seals, gaskets, wraps or rings.	Plan 07-4: Limited to 36 months or 300,000 Miles or 7,500 Hours	☑	☑	☑	☑	☑	☑	☑	☑	☑			
Fan Belt tensioner Assembly & Bracket	Excludes: Fan Belt	☑	☑	☑	☑	☑	☑	☑	☑	☑			
Flywheel		☑	☑	☑	☑	☑	☑	☑	☑	☑			
Flywheel housing		☑	☑	☑	☑	☑	☑	☑	☑	☑			
Flywheel Ring Gear	Excludes: failures caused by Starter failure.	☑	☑	☑	☑	☑	☑	☑	☑	☑			
Fuel Filter Housing		☑	☑	☑	☑	☑	☑	☑	☑	☑			

CONTENTS

Fuel injector sleeves	Seals included																			X	X	X	
Fuel Injectors	Adjustments Not Covered																			X			
Fuel Pressure Regulator Valve																							
Fuel transfer pump																							
Gaskets, Seals, O Rings, Silicone Sealant	Plan 07-4 Limited to 36 months, or 300,000 miles (483,000 km) or 7,500 hours.																						
Gears	All Internally lubricated gears only																				X	X	X
Hoses and Lines, Supplied with Engine	Fluid Carrying, Engine to Engine Mounted.																						
Intake manifold																					X	X	X
Ladder Frame																							
Oil Cooler Core	Engine oil cooler																				X	X	X
Oil Fill Tube and Cap																							
Oil Filter Housing																							
Oil pan																					X	X	X
Oil pump																					X	X	X
Pistons, rings and liners	Wear out NOT covered																				X	X	X
Power Steering Pump																					X	X	X
Pre-heater	Factory installed only																						
PTO drive / REPTO (Rear engine mounted PTO Drive)	Factory Installed only. Excludes All Pumps or Driven Devices Plans 07-4 & 07-5 Limited to 36 Months or 300,000 miles (483,000 km) or 7500 Hours. Plan 07-6 limited to 36 months.																						
Rocker Arm Assembly and Shafts	Includes VEB Rockers and Non-VEB rockers. Failures resulting from the valve and injector adjustments not being maintained properly will <u>NOT</u> be covered. Normal Maintenance Adjustments are not covered.																				X	X	X
Sensor, Cam (Engine Position)																							
Sensor, Coolant temperature																							
Sensor, Crankshaft (Engine Timing)																							
Sensor, EGR Temp. and Pressure																							
Sensor, Engine Oil Level and Temp.																							
Sensor, Engine oil pressure																							
Sensor, Fuel pressure and temperature																							
Sensor, Humidity																							
Sensor, Intake boost pressure and temperature																							
Sensor, Nox / O2																							
Sensors, DPF Temp. and Pressure																							
Starter Motor	Plans 07-4 & 07-5 Limited to 36 months, or 300,000 miles (483,000 km) or 7,500 hours. Plan 07-6 limited to 36 months.																						
Thermostat (Coolant)																							
Thermostat housing (Coolant)																							
Thermostat Side Cover (Coolant)																							
Timing gear cover and Plate																					X	X	X
Towing	Standard: Covered 24 months or 250,000 miles (402,000 kilometers) or 3,600 hours Plans 07-1 & 07-4 Limited to 36 months, or 300,000 miles (483,000 km) or 7,500 hours with a warrantable failure.	YES																					
Turbocharger Assembly	Includes the VGT Actuator Module																					X	
Valve assembly	Includes the Valves, Springs, Keepers, Guides, Rotators and Seats. Failures resulting from the valve adjustments not being maintained properly will <u>NOT</u> be covered. Normal maintenance adjustments are <u>NOT</u> covered.																				X	X	X
Valve cover																							
Valve Yokes (Bridge) and Pins	Failures resulting from the valve adjustments not being maintained properly will <u>NOT</u> be covered. Normal maintenance adjustments are <u>NOT</u> covered.																						
Vibration dampers and bolts	Attached to the Crankshaft or Camshaft																						
Water pump assembly	Plans 07-4 & 07-5 Limited to 36 months, or 300,000 miles (483,000 km), or 7,500 hours. Plan 07-6 limited to 36 months.																				X		
Water Pump Housing																							

* Indicates Component is Covered If Within Time/Mileage/Hours Limits.
 Plans, Prices, and Sales Codes are Color Coded. Colors will not show if printed in black and white or faxed.
 Restrictions:
 Plans 07-1, 07-2, 07-3, 07-4, and 07-6 REQUIRE Extended Life Antifreeze and a Primary Fuel Filter.
 Plans 07-1, 07-4, 07-5, and 07-6 require a starter with gear reduction or over-crank protection.

Volvo Trucks North America

PRODUCT INFORMATION

101-7A8 Volvo D13 375 HP 2100 GOV RPM 1450 lb-ft @ 1100 RPM - '07 Engine Emission Level

Affects: VN, VHD

Related: Engine Equipment
Transmission
Rear Axle

Restrictions: None

The Volvo D13 is derived from the popular Volvo D12 engine, and is fully compliant with EPA '07 emission standards, while still delivering outstanding power and fuel economy. This new engine draws upon Volvo's 60-plus years of diesel innovation and experience that has been proven around the world.

The Volvo D13 is available in all VN and VHD models, offering 335 to 485 horsepower, with 1350 to 1650 pound-feet of torque. This puts it right in the sweet spot for distribution, LTL, truckload, linehaul freight and vocational applications, while its weight – 2529 pounds – gives it a great ratio of power to weight.

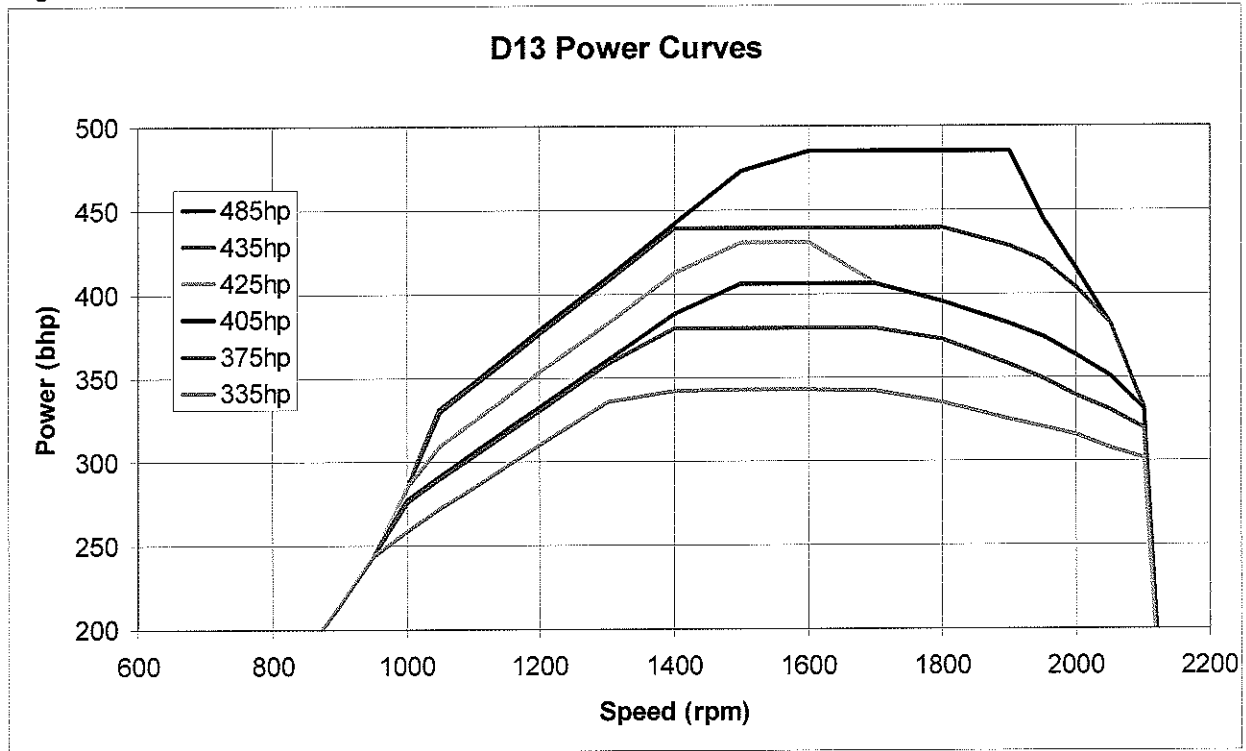
Features: 375 hp and 1450 lb-ft torque

[D13 Engine Power and Torque Charts](#)

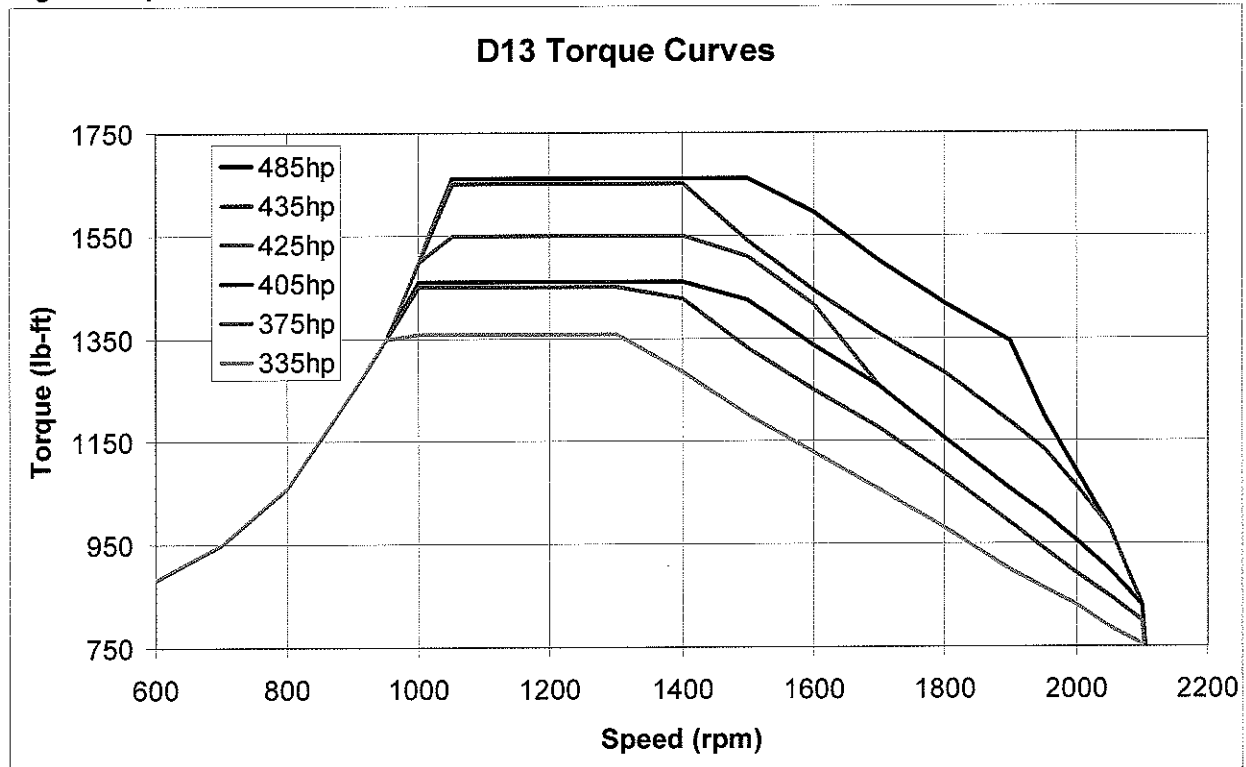
[Additional Specifications](#)

PRODUCT INFORMATION

Engine Power Chart



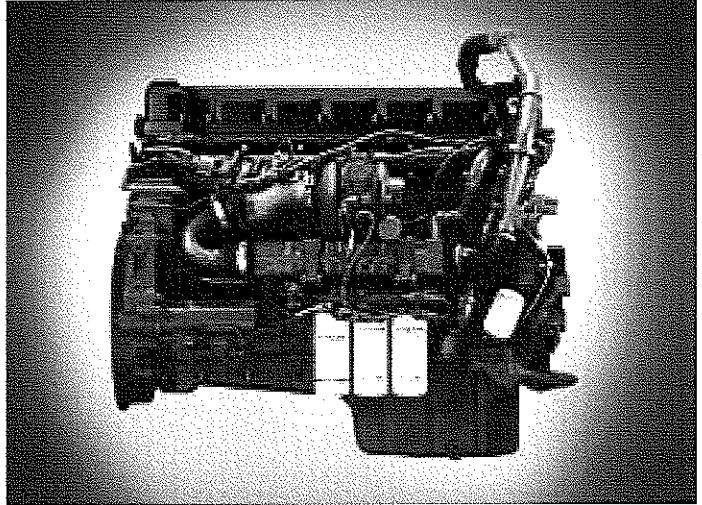
Engine Torque Chart





VOLVO D13

375 / 1450



Advertised Power, HP 375
 Peak Power, HP 380
 Peak torque, lb-ft@rpm 1450@1100

Governed rpm 2100
 Recommended cruise speed range, rpm 1300-1500
 Start engagement torque, lb-ft@rpm 850@800

SPECIFICATIONS

Performance:

Base Engine Configuration
 2007 Emissions
 Aftertreatment
 Aspiration
 Cam / Valve Configuration
 Cylinder Head
 Injection System
 Electronic Management System
 Rating Upratability
 Displacement, cu. in. (L)
 Compression Ratio
 Bore & Stroke, in. (mm)
 Cylinder Spacing, in. (mm)
 Full Dress Dry Weight, lb. (kg)

Power: 335-485 hp
 Torque: 1350-1650 lb-ft
 4 cycle / Inline Six
 Cooled Exhaust Gas Recirculation
 Diesel Particulate Filter with Oxidation Catalyst
 Sliding Nozzle Variable Geometry Turbocharger
 SOHC / 4 valves per cylinder
 One Piece Rigid Deck Cylinder Head
 Dual Solenoid Electronic Unit Injectors
 Volvo VECTRO
 Software Only, Throughout Range
 780 (12.8L)
 16.0:1
 5.16 x 6.22 (131 x 159)
 6.61 (168)
 2519 (1143)

Fuel and Lubrication:

Fuel Specification
 Fuel Filters
 Total Lube Oil Capacity, qts. (L)
 Oil Filtration
 Oil Specification

Ultra Low Sulfur Diesel, 15 ppm
 Primary plus Secondary
 38 (36)
 Two Full Flow, One Bypass
 Volvo VDS-4

Engine Equipment:

Air Compressor, CFM
 VGT-Brake
 VGT-Brake Rating
 I-VEB Engine Brake
 Engine Brake Rating at 2200 rpm
 Engine Brake Rating at 1500 rpm
 Engine Brake Weight, lbs (kg)
 Fuel Filter with Elec. Water Indication & Drain
 Electronic Oil Level Indicator
 PTO Port for Live Rear PTO Pump or Shaft
 Preheater, Electrical

Twin Cylinder, 31.8
 Standard
 230 HP @ 2200 rpm
 Optional
 450 hp @ 2200 rpm
 310 hp @ 1500 rpm
 25 (12)
 Standard
 Standard
 Standard
 Optional



Volvo Trucks. Driving Success.®





VOLVO D13

375 / 1450

FEATURE

BENEFIT

High Efficiency Cooled Exhaust Gas Recirculation (EGR) to control NOx



Proven over billions of miles for high reliability and long life

Particulate control via Catalyzed Diesel Particulate Filter (DPF) with integrated oxidation catalyst and 'Primarily Passive' regeneration



Reducing active regenerations means greater fuel mileage

Volvo D11, D13, and D16 share common design platform



More thorough component development assures better design and evaluation

Ultra-high 35,000 psi fuel injection pressure



Meeting US'07 emissions with maximum fuel economy

Damper on camshaft
Cam driven from flywheel with rear gear train



Reduced injection system generated torsional vibration and high frequency 'buzz' for longer component life

Sliding nozzle variable geometry turbocharger



Fewer parts in hot stream for long service life

Electronic turbocharger actuator



Faster and more accurate for better fuel consumption

Oil-cooled EGR valve with precise response



Consistent temperature for high reliability and accurate flow

Precision Flow Cooled Exhaust Gas Recirculation with Delta-P pressure sensor for accurate EGR measurement



Together with accurate turbocharger and EGR valve, this closed-loop system is tuned to give just the EGR needed, no more, no less, for optimum fuel consumption

Optional I-VEB - strongest in class engine brake at cruise rpm



Exceptional retardation at the rpm you drive

I-VEB intelligently modulates the engine brake power for "downhill cruise" to maintain a steady vehicle speed



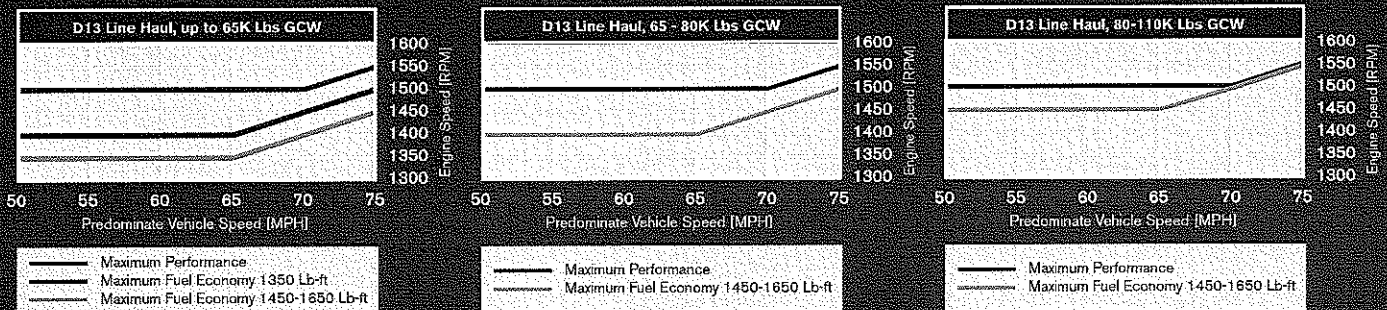
Greater driver satisfaction, improved safety

'Performance Bonus Guide' software helps the driver operate in the most fuel efficient zone



By altering the driver's behavior through incentives, fuel savings can be significant and driver retention can be increased

VOLVO D13 DRIVETRAIN RECOMMENDATIONS



For example, with 80k lbs GCW, 1650 lb-ft torque, 295/75R22.5 drive tires and 0.74 transmission top gear ratio, the 3.42 axle ratio would come closest to the 1400 rpm at 65 mph recommendation.

For your truck specifications, ask your salesman to help you choose a rear axle ratio which comes closest to that engine speed.

A low engine cruise speed also helps to keep DPF regenerations to a minimum. Never specify a truck for a cruise speed above 1600 rpm.

Volvo Trucks. Driving Success.®



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PV835-843A

Volvo Trucks North America

PRODUCT INFORMATION

RW-KB Eaton® Fuller® 8LL Transmission (RTO-14908LL)

Affects: VN, VHD

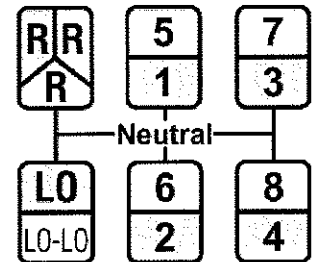
Related: RW-KA RTO-11908LL
RW-LP RTO-16908LL

Restrictions: None

Features: 1450 lb-ft torque. 8 road speed gears, 2 additional deep-reduction ratios in low and reverse. High-capacity tapered roller bearings on both auxiliary countershafts.

Benefits: Excellent on/off highway versatility. Improved performance and service life.

See Additional Selling Features.



Model	Internal Oil Pump	Oil Capacity pints (L)	Length in. (cm)	Weight* lbs (kg)	PTO Speed % of engine
RTO-11908LL	Option	28 (13.2)	33.1 (13)	690 (313.6)	94**
RTO-14908LL	Option	28 (13.2)	33.1 (13)	690 (313.6)	94**
RTO-16908LL	Standard	28 (13.2)	33.1 (13)	690 (313.6)	94**

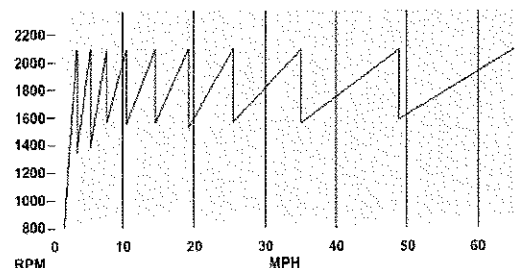
* Weight is approximate, less clutch housing, shift controls, output yoke, and lubricant.

** Constant mesh-type PTO required; right-side opening.

Overall Ratio	REVERSE		
FWD	Low L	Low	High
19.58	15.22	9.95	2.89

Ratio and Percent Step																		
LL	%	L	%	1	%	2	%	3	%	4	%*	5	%	6	%	7	%	8
14.56		9.42		6.24		4.63		3.40		2.53		1.83		1.36		1.00		0.74
	55		51		35		36		34		38		35		36		34	

* Range shift.



PRODUCT INFORMATION

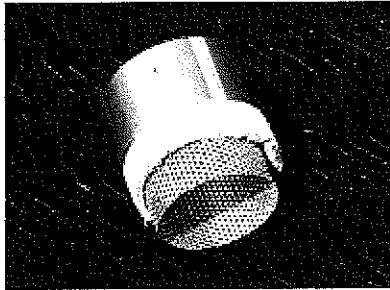
2C-D3 HSS Day Cab with B-Pillar Depression

Affects: VHD

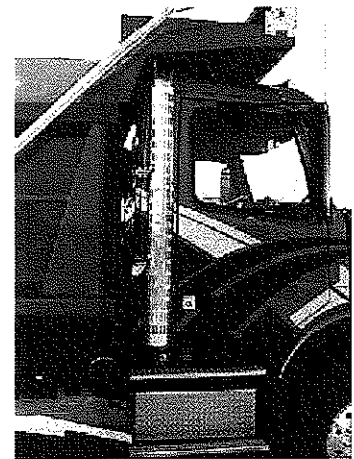
Related: 2C-D1 HSS Day Cab
2C-H1 HSS Flat Integral Sleeper Cab
2C-K1 HSS Stand-Up Integral Sleeper Cab
2C-N1 HSS Full Integral Sleeper Cab
2C-P1 HSS Premium Full Integral Sleeper Cab
2C-PA HSS Premium Mid Roof Integral Sleeper Cab

Restrictions: See also Exterior Dimensions in Performance Tables.

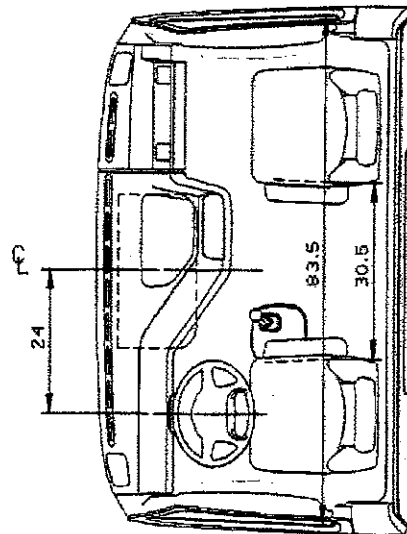
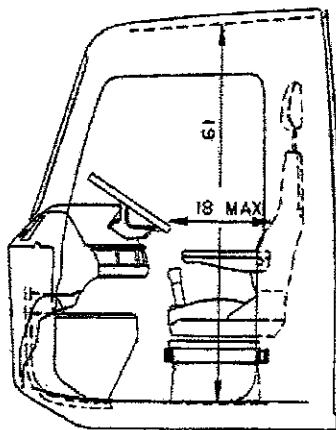
Features: The VHD is available with a unique exhaust solution that does not protrude behind the cab. It has a horizontal muffler with a vertical pipe with a "Pack Stack" design.



The stack is a 6" pipe with surrounding a 5" perforated inner pipe. Fiberglass insulation separates the inner and outer pipes. This reduces heat and noise in the cab and contributes to the overall operating comfort and efficiency of the VHD.

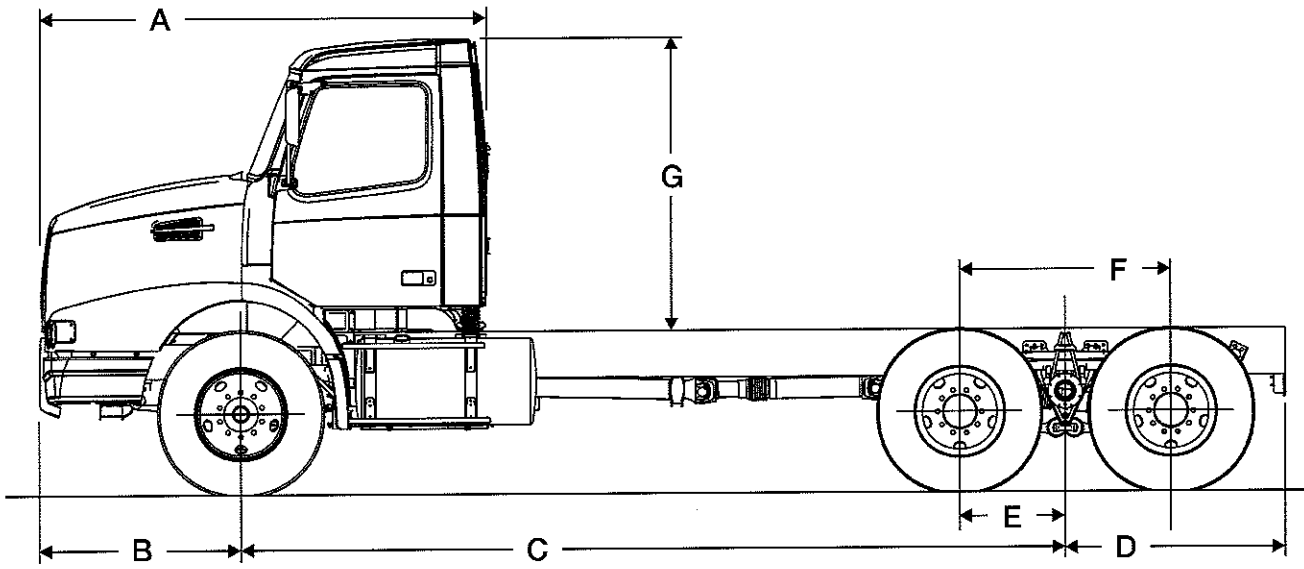


Interior Dimensions



Note: 18" clearance between steering wheel and seat back is with steering wheel in fixed position.

See next pages for exterior dimensions.



VHD 64B

	Measurement
A	113.6"
B	51.2"
C	208"
D	55"
E	27"
F	54"
G	74.3"

Volvo Trucks North America

PRODUCT INFORMATION

330-444 Arvin Meritor RT46-160 – Single Reduction, Tandem Axle, 46,000 lb Capacity

Affects: VN, VHD

Related: Engine Package
Transmission
Rear Axle Ratio
Rear Suspension Package

Restrictions:

This tandem drive axle is designed for heavy-duty hauling or on-/off-road applications. It is especially suited for rugged applications, including heavy linehaul, logging, refuse, mining, and construction (dump trucks and concrete mixers). The wide range of available ratios allow customers to tailor the axle to specific load and terrain requirements.

Feature	Benefit
Large (18") hypoid-Generoid gearing	Higher torque-handling capacity; greater strength, longer life, quieter operation
Precision-forged differential gears	Maximum strength and greater resistance to shock impact
Rigid bolted ring gear attachment	Greater durability and serviceability
Rugged single-piece forward carrier design	Precise alignment, fewer leaks

Manufacturer	Meritor				
	RT-44-145(P)	RT-46-160	RT-46-169 ³	RT-46-164 ³	RT-46-16H ³
GAWR	44,000	46,000		46,000	
GCW – Turnpike ¹	--	185,000		185,000	
GCW – Highway ¹	--	160,000		160,000	
GCW – On/Off Highway ¹	--	140,000		140,000	
GVW – Truck Only ¹	68,000	--		--	
Ring Gear Size	15.31	18.0		18.0	
Single Reduction	YES				
Axle Shaft Body Diameter	2.00	2.25		2.25	
Axle Shaft Spline Diameter	2.10 (41 splines)	2.35 (46 splines)		2.35 (46 splines)	
Axle Housing Size	4.61 x 5.28				
Axle Wall Thickness	0.50	0.50	0.50		0.63
Interaxle Differential Lock	Standard				
Wheel Differential Lock	Optional ²				
Ratios	3.42, 3.58, 3.73, 3.90, 4.11, 4.33, 4.63, 4.88, 5.29, 5.86	3.07, 3.21, 3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.89, 5.38, 5.63, 6.14*, 6.43*, 6.83*, 7.17*			
Weight, Front / Rear ² – lb (kg)	742 (337) / 608 (276)	944 (429) / 760 (345)		983 (447) / 799 (363)	

¹Maximum GCW (Gross Combination Weight) and GVW (Gross Vehicle Weight) ratings shown can be limited by vehicle operational application and overall vehicle component configuration. Refer to Spicer Application Guidelines (AXAG-0200) for detailed application information.
²Approximate axle weights less oil, brakes, hubs, drums or rotors, bearing cones, seals, wipers, suspension brackets, yokes, and options. For lubrication pump (P), add 30 lb (13.6 kg). For optional wheel differential lock, add the following: for 145 series, add 10 lb (4.5 kg) to front, 16 lb (7.3 kg) to rear; for 160/169/164/16H series, add 22 lb (10 kg) to front, 20 lb (9.1 kg) to rear.
³Light-weight aluminum carrier housing also available.
*Not available with aluminum carrier housing.

Additional Selling Information

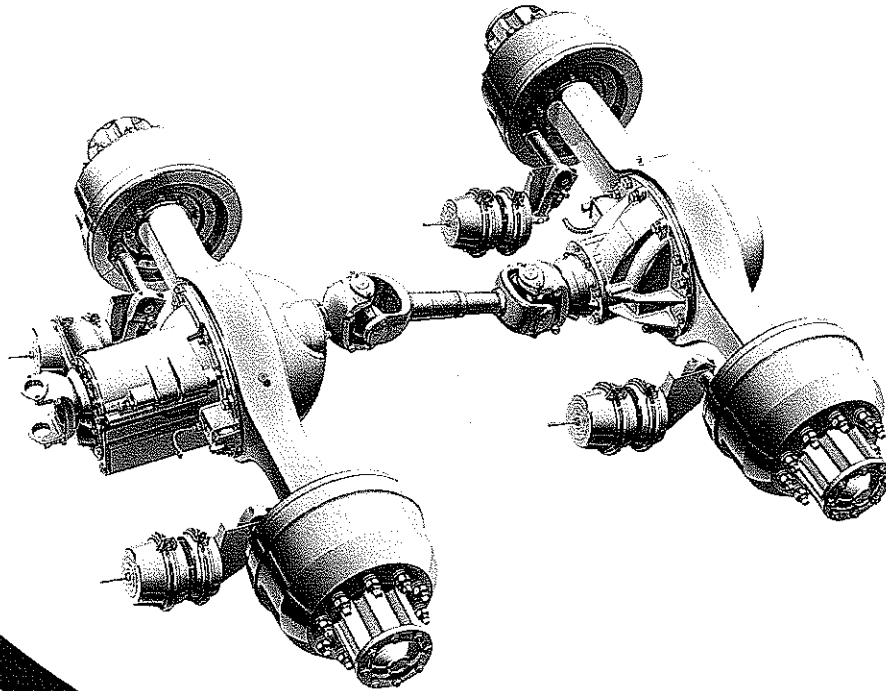
If you see information that is incorrect or incomplete, please call Sales Engineering at (336) 393-3200.

Last Updated: February 4, 2004

Meritor® RT-46-160, RT-46-160A, RT-46-160P, RT-46-169

46,000 lbs. GAWR

Tandem Drive Axles - Hypoid Single Reduction



Product Summary

The Meritor® RT-46 series tandem axle has the designed-in, high-performance capability to be used in heavy-duty highway hauling or on-/off-road applications. This tandem is designed to be highly durable in rugged applications. Equipped with a large, bolted-on, 18-inch ring gear that provides high torque handling capability and a heavy housing (0.50 inch) to give you greater pulling power and capacity.

The RT-46 series offers a broad range of gear ratios (sixteen, from 3.07 to 7.17), exclusive hypoid Generoid™ gearing, ArvinMeritor's extended-life triple-lip oil seals and full compatibility with OEM factory-fill of ArvinMeritor-approved, extended-drain lubricants.

The RT-46 series is compatible with Cummins Smart Torque (STX) engines that limit torque output in start-up gears and retard mode without impacting vehicle performance.

Available as options for the RT-46-160 are the very popular driver-controlled differential lock (DCDL) in both the forward and rear carriers; a pressurized filtered lube system in the forward carrier (RT-46-160P); and an aluminum rear/rear carrier (RT-46-160A) to save 43 pounds.

Application Summary

The RT-46 series is an ideal and practical choice in many applications. The many available ratios allow you to precisely tailor the axle to your load and terrain needs.

Applications for these axles include: heavy linehaul, some logging vehicles, refuse trucks, mining vehicles and construction vehicles (dump trucks and concrete mixers). ArvinMeritor also offers the RT-46-164EH and the RT-50-160 for tougher vocational duties.



Features

Large (18-inch) hypoid Genereoid gearing

Benefits

High torque handling capacity, longer life, greater strength, quieter operation

Bolted ring gear attachment	Greater joint strength and integrity
Ribbed differential case	Better gear rigidity
Precision-forged differential gears	Durability, greater strength
Rugged, single-piece carrier design	Precise alignment, fewer joints
Unitized pinion seals	Seal lips are completely encased to keep lubricant in and help prevent installation and contamination damage
Compatibility with OEM factory-fill of extended-drain lubricants	Reduces operating costs
No initial lubrication drop requirement	Reduces operating costs
Meritor® "R" spindle design	Industry-standard brake and wheel equipment compatibility; Central Tire Inflation (CTI) system compatibility
Availability of driver-controlled differential lock	Maximum traction
Backed by ArvinMeritor's comprehensive warranty; up to 5-Years/750,000-Miles in some vocations	Provides long-term protection from defective material or workmanship
Optional aluminum rear/rear carrier on RT-46-160/A	Reduces standard weight by 43 pounds
Availability of pressurized filtered-lube system (RT-46-160P) option	Virtually eliminates spin-out potential

Specifications*: RT-46-160/A/P/169

AXLE MODEL	GAWR RATING POUNDS (KG)	GCW POUNDS (Kg) HIGHWAY		STANDARD RATIOS	HOUSING SIZE/ WALL THICKNESS AT SPRING SEAT INCHES (MM)	WEIGHT ① POUNDS (KG)	OIL CAPACITY ② PINTS (LITERS)	BRAKE TYPES AND SIZES INCHES (MM)	HUB AND DRUM OR ROTOR, BOLT CIRCLE DIAMETER INCHES (MM)
		TURNPIKE	PAVED						
RT-46-160 RT-46-169	46,000 (20866)	185,000 (83916)	160,000 (72576)	3.07, 3.21, 3.42, 3.58, 3.73, 3.91,	5.28 x 4.61/0.50 or /0.63 Wide Track (134 x 117/12.7 or /16)	Forward Axle 944 (428.2) Rear Axle 760 (344.7)	Forward 39.1 (18.5) Rear 34.4 (16.3)	Cam-Master® Q Plus™ Dura-Master® Air Disc ADB-1560 Stopmaster® Wedge 15 x 7 (381 x 178)	10 Stud, 11.25 (285.75) 10 Stud, 13.19 (335) Cast Spoke Wheels
RT-46-160P				4.10, 4.30, 4.56, 4.89, 5.38, 5.63, 6.14, 6.43, 6.83, 7.17		Forward Axle 974 (441.8) Rear Axle 760 (344.7)			
RT-46-160A				Forward Axle 944 (428.2) Rear Axle 717 (325.2)					

* Permitted use of axles and components, including capacity ratings where stated, vary with application and service. Applications should be approved by ArvinMeritor On-Highway Axle and Brake Engineering departments. Approved ratings may be higher or lower than indicated above, dependent upon engineering review. Refer to TP-9441 Axle Application Guidelines for specifics.

① Axle weights less oil, brakes, hubs, drums or rotors, bearing cones, seals, wipers, suspension brackets, yokes and options.

② Oil capacities for standard track axles measured at the various common drive pinion angles and include quantities for both wheel ends. Capacities will change if track or drive pinion angle is different.

Meritor® axles are covered by ArvinMeritor's industry-competitive warranty.

For complete details, refer to publication SP-95155 or contact your ArvinMeritor representative.

Meritor Heavy Vehicle Systems, LLC

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Troy, MI 48064 USA
800-535-5560
arvinmeritor.com

Litho in USA

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Revised 11-01
TP-9391 (47865/11900)

ArvinMeritor™

Volvo Trucks North America

PRODUCT INFORMATION

093-553 315/80R22.5L Bridgestone M860 (20000 lbs. GAWR)

Affects: All Models

Related: Vehicle Model and Application
Rim/Wheel Package Front (084)
Front Axle Package (370)

Restrictions: None

M860

Application guidelines:
An all-position radial tire designed for steering positions in refuse hauling, high scrub and special service applications.



Sidewall protector ribs enhance casing protection by fighting curbing damage and abrasion.

Deep 24/32" tread depth provides long original mileage.

Stone rejectors in center grooves combat stone retention and enhance casing durability.

Tough tread compound resists cuts, chips, chunks and tears.

Maximized tread width for enhanced handling and long tread life.

Speed rating of 65 mph allows higher sustained speed for on-highway driving.

Available sizes and technical data

Tire Size	Article Number	Load Rng.	Ply Rating	Meas. Rim	Tread Depth	Weight	Overall Diameter	Overall Width	Overall Width [loaded]	Static Loaded Radius	Revs Per Mile	Load Limit Single	Load Limit Dual	Max. Speed
					32nds/mm	lbs/kg	in/mm	in/mm	in/mm	in/mm	rpm/rpk	lbs@psi/kg@kpa		mph/kph
315/80R22.5	186-301	L	20	9.00	24	163	42.8	12.6	13.9	19.9	485	10000@130	9090@130	65
				metric:	19	73.9	1087	320	353	505	301	4535@900	4125@900	104

Volvo Trucks North America

PRODUCT INFORMATION

094-506 11R22.5G Michelin XDY3 (23360 lbs. GAWR)

Affects: All Models

Related: Vehicle Model and Application
Rim/Wheel Package Front (084)
Front Axle Package (370)

Restrictions: None



XDY® 3

A premium on/off road drive tire optimized for exceptional traction and wear in mixed and severe on/off road service.

Application: Regional Haul, Mixed and Severe On/Off Road Service

- Long original tread life offered from 31/32nd tread depth.
- Excellent protection against aggression, chipping and scaling due to new tread compound formulation.
- Directional tread design.
- Maximized soft soil and mud traction throughout the tire life as ribs and shoulder edges retain their aggressive notches.
- Extra-robust three steel belt construction for excellent retreadability.

Specifications:

Size	Tread	LR	Catalog Number	Loaded Radius (in)	Overall Diameter (in)	Overall Width (in)	Approved Rims	Min Dual Spacing (in)	RPM	Tread Depth (32nds)	Max Speed (mph)	Max.Load Per Tire		Max.Load Per Tire		Tire Weight (lbs)
												Single lbs.	psi	Dual lbs.	psi	
11R22.5	XDY3	G	47957	19.8	42.2	11.3	8.25,7.50,-	12.5	490	31	65	6175	105	5840	105	140
11R22.5	XDY3	H	97079	19.8	42.2	11.3	8.25,7.50,-	12.5	490	31	65	6610	120	6005	120	140
315/80R22.5	XDY3	L	40302	20.0	43.3	12.5	9.00,8.25,-	13.8	480	31	65	9090	130	8270	130	170
11R24.5	XDY3	H	47962	20.8	44.4	11.3	8.25,7.50,-	12.5	467	31	65	7160	120	6610	120	150
12R24.5	XDY3	H	47966	21.3	45.6	11.3	8.25,9.00,-	13.2	454	31	65	7830	120	7160	120	169

Brown Gardner

From: "Gary Grady" <wvtractor@msn.com>
To: <dmeeks@wvtruck.net>; <terry_dotson@teamworldwide.com>; <brown@gtsww.com>;
<mcoburn@suddenlinkmail.com>; <mmatheny@mathenymotors.com>;
<cwhitlow@mountaininternational.com>
Sent: Wednesday, October 17, 2007 8:34 AM
Attach: WVDH TA Dump Eval.doc; WVDH TA Dump Eval 2.pdf; Viking Proline Literature.pdf
Subject: WVDH TA Bid 707EC021

Our delivered price for each Viking Pro-Line PL1314W B1 with Component Technology hydraulics meeting all mandatory specifications is \$61,000.00. Compliance pages and specs are attached.
Gary Grady West Virginia Tractor Company 346-5301

Optim "B" Add # 9,088.⁰⁰
with this Body

10/17/2007

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
 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

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: _____ West Virginia Tractor Company _____

Address: _____ P.O. Box 473 Charleston, WV 25322 _____

Telephone Number: _____ 346-5301 _____

Years company has been an authorized dealer for proposed unit: _____ 4 _____ years

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

_____ Viking Pro-Line Model PL1314W B1 2007 and later as ordered _____

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 _____ at delivery _____

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: _____ 13 _____ 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
Provided by truck dealer

X9.6 Dimensions:

- X9.6.1 Inside length of body: 156 inches
- X9.6.2 Inside width of body: 86 inches wide to maximize capacity and lower the center of gravity
- X9.6.3 Outside width of body: 96 at the integral fenders
- X9.6.4 Body spacing from cab 6 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 inches (measure from center of hinge pin)
- X9.6.8 Cab protector: 24 inches x 94 inches with adequate clearance for cab mounted air horns

X9.7 Cab protector sloped rearward for drainage purposes YES NO

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

Steel type: 304 SS

- X9.8.1 Floor: 1/4 inch thickness 304 stainless OR abrasion resistant AR400 AR450
- 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: 12 inch/ 3/16 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 YES NO
- Is the body designed to allow maximum protection to the tanks YES NO
- X9.9 Is all the welding inside the body continuous and not skip welded YES NO
- Are all rails and posts continuous welded YES NO

- X9.10 Are the rear corner posts full length, one (1) piece construction YES NO
- X9.10.1 Will a rear bolt on spreader apron be provided unless integrated into the rear of the bed YES NO
- X9.11 Cab protector sides, formed with gussets, extending forward 24 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
- X9.15.2 1/4 inch 304 stainless steel conveyor floor OR abrasion resistant steel (AR400) AR450
- 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 inch x 24 inch Rear feedgate in the body tailgate YES NO
- X9.16.4 Is rear feedgate lever operated or screw adjustable The feedgate capable of being positively locked into position YES NO
- X9.16.5 Is the front spinner bracket and chute mounted to the truck chassis frame and for rear spreading capability the rear spinner chute and brackets installed by successful vendor YES NO
- X9.16.6 Is the spinner assembly universal and may be used at front or rear YES NO
- X9.16.7 Is the spinner assembly adjustable left to right, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern YES NO
- X9.16.8 Does 10 gauge 20 inch diameter spinner disc have replaceable machined hub YES NO
- X9.16.9 Is spinner disc vanes 409 or 304 stainless steel
- X9.16.10 If spinner hydraulic motor is mounted on top of spinner disc, the motor is enclosed in a removable material shedding protective cover YES NO
- X9.17 Hydraulic Hoist:
- X9.17.1 Is it a trunnion mount or top lift telescopic hoist
- X9.17.2 Is telescopic hoist no less than N.T.E.A. Class 70 YES NO
- X9.17.3 Is single hoist cylinder trunnion mount or top lift
- X9.17.4 Does hoist cylinder have three (3) stages with 150 inches of stroke with a six (6) inch diameter first stage YES 5" NO
- Manufacturer and model: Malhoit CS-130-5-3 SA
- 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 N/A NO
- X9.17.8 Does the body have 6 inch x 8 inch x 1/2 inch structural angle rear hinge assembly installed in the truck chassis frame 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: Holland PH-760
- Height from ground level to center line of pintle "eye": 32 inches

- X9.18.12 Air deflector-hood mounted, blue or smoke YES NO
- Deflector manufacturer's standard width for truck mode
Width: Full – depending on truck supplied YES NO
- Access to front end hood tilt handle YES NO
- Extra handle as required YES NO

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

Manufacturer and Model: Grote Blue Seal

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

X9.19.1 All marker lights 2 1/2 inch diameter flush mount sealed beam lights with integral reflector mounted in rubber base YES NO

X9.19.2 All ground wires attached with plated steel fasteners YES NO

X9.19.3 Rear lights shock mounted, recessed oval stop, tail, turn, and recessed oval back up lights mounted in back post YES NO

Strobe lights marked and switched from dash board location YES NO

Manufacturer and Part #: Grote 53962Y

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: Grote 53962Y

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 ATL

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: Grote 53962L

X9.19.8 Two (2) front frame mounted tow hooks Truck Dealer YES NO

9.19.9 Lighted license plate bracket Truck Dealer YES NO

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

X9.20.1 304 stainless steel fold down ladder that locks into position when either in the down or up position YES NO

X9.20.2 Two (2) 304 stainless grab handles YES NO

X9.21 Tailgate (304 stainless steel): YES NO

X9.21.1 Tailgate hinged at top, flame cut hardware, pork chop type off-set hardware to achieve maximum opening of tailgate, but has provision for pivoting at the bottom YES NO

X9.21.2 Flush mount, 1/2 inch flame cut 304 stainless steel tailgate pivots YES NO

X9.21.3 Heavy duty offset hinge plates, one (1) inch flame cut 304 stainless steel YES NO

X9.21.4 3/4 inch 304 stainless steel latch hooks with 3/8 inch 304 stainless steel latch plates YES NO

X9.21.5 Full perimeter 304 stainless steel boxing with all horizontal edges sloped outward YES NO

X9.21.6 Two (2) 10 gauge 304 stainless steel sloped horizontal braces that are flush with perimeter Boxing YES NO

X9.21.7 7 gauge 304 stainless steel 10-12 inch x 24- 26 inch rear feedgate YES NO

X9.21.8 Cold roll steel upper pins with grease zerks YES NO

X9.21.9 Top hinge channel has removable, chain tethered keeper pins YES NO

X9.21.10 Latching action at the bottom of gate operable by the truck driver without leaving the truck cab YES NO

X9.21.11 Gate is self aligning YES NO

X9.21.12 Tailgate lower latch pins 304 stainless steel 1 1/4 inch diameter YES 1" NO

X9.21.13 Body integrated or bolt on 304 stainless steel 15 inch spreader apron YES NO

X9.22 Design and strength characteristic of the entire body such that the unit structural members and the hoisting system will not suffer any deformation, damage, or structural failure resulting from raising a distributed full payload YES NO

9.23 Bumper:

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

Weighs 10.2 lbs. 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 YES NO
- X9.23.3 Overall width of bumper: _94_ inches
- X9.23.4 Bumper straight across front from centerline of truck chassis _24_ inches each side of Centerline, making bumper straight _48_ 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 YES NO
- X9.23.6 Upper and lower flanges cut and welded solid at point where bumper is bent and ground off smooth YES NO
- X9.23.7 Bumper mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side YES NO
- X9.23.8 Mount angle _1/4_ inch x _3_ inches x _8_ long with four (4) 5/8 inch holes YES NO
- X9.23.9 Paint on front bumper: _____Martin Senour #82-5802 Blue_____
- X9.24 Underbody Tool Box:
- X9.24.1 One (1) tool box mounted under body on right side frame rail YES NO
- X9.24.2 Tool box _18_ inches high, _24_ inches wide, _24_ inches deep cradled by a heavy steel angle frame attached to the truck frame YES NO
- X9.24.3 Construction _14_ gauge, _A60_ galvaneal steel with all seams welded YES NO
- X9.24.4 Tool box has horizontal hinged fold down door YES NO
- X9.24.5 Tool box door has cable or chain to hold the door in a horizontal position YES NO
- X9.25 Load covering system electrically or air controlled YES NO
- X9.25.1 Electric motor assembly includes 12 volt direct drive motor with forward and reverse action, cab mounted control switch, resettable circuit breaker YES AIR NO
- X9.25.2 Pivot arm assembly constructed in a two (2) piece bent arm configuration of _1.5 X1.25 .100" gauge steel tubing YES NO
- X9.25.3 Bent arm extensions constructed of _1.5 X 2.25_ inch _100" gauge steel tubing
- X9.25.4 Rear cross constructed of _2_ inch _14_ gauge steel tubing

- X9.25.5 Pivot arm rests included YES NO
- X9.25.6 Underbody spring extension spring N/A inches in length attached to base of pivot arm and of body with articulating spring mounting bracket Spring in tarp roll 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 16 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

304 SS sheet is not painted.

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 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 YES NO

X10.1.9.2 High pressure compensator valve preset to limit the maximum pump output pressure to maximum required operating pressure plus load sense differential and margin pressure to prevent premature de-stroking of ramp resulting in reduced or insufficient pump output YES NO

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

Part number Malhoit CS-130-5-3 - 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 - 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

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

X10.1.12 Pump:
Manufacturer and Model: Rexroth A10V071 Series 31

X10.1.13 Is pump manufacturers standard product release and design YES NO

X10.1.14 Is pump driveline assembly of the keyed shaft design utilizing a 4 bolt driveshaft flange and matching drive yoke on the pump YES NO

- X10.1.14.1 Does driveline have a minimum continuous torque rating equal to 200% of the imposed load when pump is operating at maximum system requirements YES NO
 Manufacturer and Model: 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 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 0port equipped with Parker Hannifin PD361 diagnostic coupling nipple with protective cap for load sense testing to be installed in an easily accessible location YES NO
- X10.3.11 Dump body control section 3-way three (3) position spring centered cylinder spool for operation of a single acting hoist cylinder YES NO

- X10.3.11.1 Full flow workport relief valve installed in power up port YES NO
Set point to prevent operating pressure from exceeding hoist cylinder normal operating pressure rating YES NO
- X10.3.11.2 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 Add YES NO
- X10.3.12.1 Full flow workport relief valve preset at maximum required unlock pressure installed in power down workport YES NO
Workport relief valve installed in power up workport if maximum system pressure output setting exceeds normal operating pressure limit of plow lift cylinder YES NO
Is a three (3) way valve provided for plow hoist circuit YES NO
- X10.3.12.2 Adjustable flow control installed to limit downward speed of snowplow YES NO
Flow limiting control system preset for proper plow lift speed to be supplied to reduce over demand operation and to increase system efficiency YES NO
Will flow limit be determined at time of pilot model review YES NO
- X10.3.13 Snowplow power angle control section is 4 way three (3) position spring centered motor spool for operation of worm gear driven type reversing system YES NO
- X10.3.13.1 Flow limiting control system preset for proper plow reversing speed to be supplied to reduce over demand operation and to increase system efficiency YES NO
Will flow limit be determined at time of pilot model review YES NO
- X10.3.14 Plow Balance Valve:
- X10.3.14.1 Is hydraulic system supplied with a plow balance valve YES NO
- X10.3.14.2 Is valve designed to offset a specific (adjustable) plow weight when activated YES NO
- X10.3.14.3 Does plow balance system not alter the operation of any other hydraulic function or have an adverse effect on the performance of other hydraulically operated equipment including:
- Wing Plow YES NO
Body Hoist YES NO
Plow Hoist or Angle YES NO
Spreader functions YES NO

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

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

X10.3.14.5 Are solenoid valve coils used YES NO

Will they have manual override capabilities Add 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, is it attached to the main valve assembly YES NO

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

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

X10.4 Spreader Control Valve Assembly:

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

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

X10.4.2 Flow control circuits are pressure compensated YES NO

Provides spinner and pre-wet flow rate of 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 MP-18 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, G1400 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 YES NO
- X10.7.5 Is an internal steel baffle provided within the tank YES NO
- X10.7.6 Tank stenciled with minimum of 1 1/2" high "Hydraulic Oil" YES NO
- X10.7.7 Tank level switch connection "SO" type wiring and flange mounted within the tank/valve enclosure to protect it from the elements YES NO
- X10.7.8 Pump supply suction port 2 inches NPT and system report port 1 1/4 inches NPT
- X10.8 Filtration:
- X10.8.1 Manufacturers standard filtration to adequately protect the hydraulic system from damage YES NO
- X10.8.2 Return line filter isolated from reservoir by a full flow non-restrictive type quarter turn brass ball valve if filter not installed in reservoir YES NO
- X10.8.3 Each filter equipped with a differential pressure switch to indicate filter clogged condition by means of a console mounted indicator lamp YES NO
- X10.8.4 One (1) extra replacement filter for each assembly is provided for each truck YES NO
- X10.8.5 Filter assemblies positioned as close to reservoir as possible and in an easily accessible service location YES NO
- X10.9 Hoses and Fittings:
- X10.9.1 Each hose assembly (hose with hose ends) except for suction hose is fitted with JIC swivel connections on ends where connection to system component is made YES NO
- X10.9.2 All pressure line hoses meet or exceed SAE Specification 100R2 and are equal to Gates high pressure hose, type C2AT for sizes up to and including 1 inch ID YES NO
- X10.9.3 Suction hose 2 inch nominal ID and meet SAE Specification 100R4, braided fiber, spiral wire reinforced, rubber covered hose with replaceable bolt-on type fittings YES NO
- X10.9.4 All hydraulic hoses fully cleaned on interior, installed, and ready for operation YES NO
- X10.9.5 Are grommets used when routing hoses through steel bracketing or frame members YES NO
- X10.9.6 Are Snap-Tite quick disconnects (manifold mounted) supplied for forward and rear spinner 1/2 inch pressure and return lines YES NO
- Is iron or galvanized iron pipe for fittings and connectors used YES NO
- X10.9.7 Are all fittings and connectors steel type designed for high pressure hydraulic system use YES NO

X10.9.8 Pipe thread ported components and connectors are only used when the specific component is not available with SAE or JIC porting YES NO

X10.9.9 Are all pipe thread connectors used coated with liquid Teflon pipe sealer prior to assembly YES NO

X10.9.10 Hoses that run to the front of truck chassis for snowplow functions are manifold mounted behind the front bumper with sufficient access for pump service and snowplow hitch installation YES NO

X10.9.11 Are snowplow lines equipped with complete 1/2 inch "VH" series Snap-tite quick disconnects (coupler and nipple supplied) and metal caps and plugs YES NO

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

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

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

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

Will you replace any defective component YES NO

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

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

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

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

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

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

Three (3) one (1) day training sessions in Buckhannon

X5.0 AWARD CRITERIA;

X5.1 Prices for quantities of

1-25	<u>53.057</u>	per
26-50	<u>53.057</u>	per
51 and over	<u>53.057</u>	pe

X6.0 SPECIFICATIONS - GENERAL

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

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

If not, why? _____

X6.2 Will the required number of service manuals, and complete parts list be delivered to the Equipment Division at Buckhamon 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

Optim "C"
ADD \$1,145.00 with this Body

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 dealer 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 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 YES NO

Is the body designed to allow maximum protection to the tanks YES NO

X9.9 Is all the welding inside the body continuous and not skip welded YES NO

Are all rails and posts continuous welded YES NO

X9.10 Are the rear corner posts full length, one (1) piece construction YES NO 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 longshills sit directly on truck frame

X9.15.2 1/4 inch 304 stainless steel OR 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 or screw adjustable The feedgate capable of being positively locked into position YES NO

X9.16.5 Is the front spinner bracket and chute mounted to the truck chassis frame and for rear spreading capability the rear spinner chute and brackets installed by successful vendor YES NO

X9.16.6 Is the spinner assembly universal and may be used at front or rear YES NO

X9.16.7 Is the spinner assembly adjustable left to right, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern YES NO

X9.16.8 Does 10 gauge 20 inch diameter spinner disc have replaceable machined hub YES NO

X9.16.9 Is spinner disc vane 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 C135-6-3

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
Manufacturer and Model: Holland PH760 X YES NO
- 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: _____
- 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 10

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 6000 Series

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 6000 Series

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 80888

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 6000 Series

X9.19.8 Two (2) front frame mounted tow hooks dealer provided 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 x YES NO

X9.20.2 Two (2) 304 stainless grab handles x YES NO

X9.21 Tailgate (304 stainless steel): x YES NO

X9.21.1 Tailgate hinged at top, flame cut hardware, pork chop type off-set hardware to achieve maximum opening of tailgate, but has provision for pivoting at the bottom x YES NO

X9.21.2 Flush mount, 1/2 inch flame cut 304 stainless steel tailgate pivots x YES NO

X9.21.3 Heavy duty offset hinge plates, one (1) inch flame cut 304 stainless steel x YES NO

X9.21.4 3/4 inch 304 stainless steel latch hooks with 3/8 inch 304 stainless steel latch plates x YES NO

X9.21.5 Full perimeter 304 stainless steel boxing with all horizontal edges sloped outward x YES NO

X9.21.6 Two (2) 10 gauge 304 stainless steel sloped horizontal braces that are flush with perimeter Boxing x YES NO

X9.21.7 7 gauge 304 stainless steel 10-12 inch x 24- 26 inch rear feedgate x YES NO

X9.21.8 Cold roll steel upper pins with grease zerks x YES NO

X9.21.9 Top hinge channel has removable, chain tethered keeper pins x YES NO

X9.21.10 Latching action at the bottom of gate operable by the truck driver without leaving the truck cab x YES NO

X9.21.11 Gate is self aligning x YES NO

X9.21.12 Tailgate lower latch pins 304 stainless steel 1 1/4 inch diameter x YES NO

X9.21.13 Body integrated or bolt on 304 stainless steel 15 inch spreader apron x 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 x YES NO

9.23 Bumper:

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

Weights 10.20 lbs. 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 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 21 inches each side.
- X9.23.5 Bumper has two (2) access holes for utilization of tow hooks YES NO
- X9.23.6 Upper and lower flanges cut and welded solid at point where bumper is bent and ground off smooth YES NO
- X9.23.7 Bumper mounted by two (2) mounting angles bolted to front of truck frame with two (2) 5/8 inch bolts each side YES NO
- X9.23.8 Mount angle 1/4 inch x 3 inches x 8 long with four (4) 5/8 inch holes YES NO
- X9.23.9 Paint on front bumper: Martin Senour Dark Blue #82-5802

X9.24 Underbody Tool Box:

- X9.24.1 One (1) tool box mounted under body on right side frame rail YES NO
- X9.24.2 Tool box 18 inches high, 24 inches wide, 18 inches deep cradled by a heavy steel angle frame attached to the truck frame YES NO
- X9.24.3 Construction 14 gauge, A66 galvanneal steel with all seams welded YES NO
- X9.24.4 Tool box has horizontal hinged fold down door YES NO
- X9.24.5 Tool box door has cable or chain to hold the door in a horizontal position YES NO
- X9.25 Load covering system electrically or air controlled YES NO
- X9.25.1 Electric motor assembly includes 12 volt direct drive motor with forward and reverse action, cab mounted control switch, resettable circuit breaker YES NO
- X9.25.2 Pivot arm assembly constructed in a two (2) piece bent arm configuration of 1/4 inch 14 gauge steel tubing YES NO
- X9.25.3 Bent arm extensions constructed of 1 inch 14 gauge steel tubing
- X9.25.4 Rear cross constructed of 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 any Stainless Steel
Paint Bumper Martin Senour Dark Blue 85-5802

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

X10.3 SPECIFICATIONS - CENTRAL HYDRAULIC SYSTEM

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Is the central hydraulic system designed to operate the following:

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

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

Bidder: _____

Address: _____

Telephone Number: _____

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

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

Component Technology Model SG03040008 West Virginia System

Manufacturer's Manual - Manufactured as required for Contract

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

If NO, refer to specification statement Section 6.6

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

Describe: _____

Pre-Wet System:

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

Does system operate using a flow meter feedback circuit YES NO

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

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

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

X10.1 Pump System:

- X10.1.1 Pump: Variable volume pressure compensated load sensing axial piston type YES NO
- X10.1.2 Front mounting flange and main housing/case of cast iron construction YES NO
Inlet and outlet port section of high strength ductile iron with SAE split flange porting or orb type porting YES NO
- X10.1.3 Is suction port and associated plumbing sized to allow for minimum inlet restriction between the pump and the suction port on the reservoir? YES NO
Does installation comply with pump manufacturers allowable inlet condition specifications YES NO
Is suction plumbing equal to or greater than pump inlet or suction size YES NO
- X10.1.4 Is pressure port of the SAE split flange or ORB type side mounted for direct bolt mounting of solenoid shut down valve assembly YES NO
- X10.1.5 Case drain and load sense signal ports of the SAE O-ring type YES NO
Case drain line taken directly to tank without passing through the return line filter YES NO
- X10.1.6 Input shaft has a minimum continuous torque rating equal to 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 75 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 YES NO

X10.1.9.2 High pressure compensator valve preset to limit the maximum pump output pressure to maximum required operating pressure plus load sense differential and margin pressure to prevent premature de-stroking of ramp resulting in reduced or insufficient pump output YES NO

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

Part number Malhoit CS130-S-3 - 15.5 gallons to fully extend but after filling 11 gallons is required to raise the cylinder.

10 GPM flow rate	<u>46</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 Malhoit CS-130-S-3 - 10.2 gallons to fully extend 1.2 gallons to fill and 9 gallons to extend

5 GPM flow rate	<u>37</u> seconds to raise
10 GPM flow rate	<u>34</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 YES NO

X10.1.12 Pump: Manufacturer and Model: Keworth A10V071 Series 31

X10.1.13 Is pump manufacturers standard product release and design YES NO

X10.1.14 Is pump driveline assembly of the keyed shaft design utilizing a 4 bolt driveshaft flange and matching drive yoke on the pump YES NO

X10.1.14.1 Does driveline have a minimum continuous torque rating equal to 200% of the imposed load when pump is operating at maximum system requirements YES NO

Manufacturer and Model: 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 1500 PSI

X10.2.4 SAE #6 gauge port equipped with Parker Hannifin Model PD361 diagnostic coupling ripple 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 Flow 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	<input checked="" type="checkbox"/>	YES	<input type="checkbox"/>	NO
Body Hoist	<input checked="" type="checkbox"/>	YES	<input type="checkbox"/>	NO
Plow Hoist or Angle	<input checked="" type="checkbox"/>	YES	<input type="checkbox"/>	NO
Spreader functions	<input checked="" type="checkbox"/>	YES	<input type="checkbox"/>	NO

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

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

X10.3.14.5 Are solenoid valve coils used YES NO

Will they have manual override capabilities YES NO

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

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

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

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

X10.3.15.1 Flow limiting control system preset to provide 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, is it attached to the main valve assembly YES NO

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

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

X10.4 Spreader Control Valve Assembly:

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

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

X10.4.2 Flow control circuits are pressure compensated YES NO

Provides spinner and pre-wet flow rate of 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: Kenworth MP-18 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 announce 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 S&S1/S&S3 w/1400 Cabal

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 YES NO
- X10.7.5 Is an internal steel baffle provided within the tank YES NO
- X10.7.6 Tank stenciled with minimum of 1 1/2" high "Hydraulic Oil" YES NO
- X10.7.7 Tank level switch connection "SO" type wiring and flange mounted within the tank/valve enclosure to protect it from the elements YES NO
- X10.7.8 Pump supply section port 2 inches NPT and system return port 1 1/4 inches NPT

X10.8 Filtration:

- X10.8.1 Manufacturers standard filtration to adequately protect the hydraulic system from damage YES NO
- X10.8.2 Return line filter isolated from reservoir by a full flow non-restrictive type quarter turn brass ball valve if filter not installed in reservoir YES NO
- X10.8.3 Each filter equipped with a differential pressure switch to indicate filter clogged condition by means of a console mounted indicator lamp YES NO
- X10.8.4 One (1) extra replacement filter for each assembly is provided for each truck YES NO
- X10.8.5 Filter assemblies positioned as close to reservoir as possible and in an easily accessible service location YES NO

X10.9 Hoses and Fittings:

- X10.9.1 Each hose assembly (hose with hose ends) except for suction hose is fitted with JIC swivel connections on ends where connection to system component is made YES NO
- X10.9.2 All pressure line hoses meet or exceed SAE Specification 100R2 and are equal to Gates high pressure hose, type C2AT for sizes up to and including 1 inch ID YES NO
- X10.9.3 Suction hose 2 inch nominal ID and meet SAE Specification 100R4, braided fiber, spiral wire reinforced, rubber covered hose with replaceable bolt-on type fittings YES NO
- X10.9.4 All hydraulic hoses fully cleaned on interior, installed, and ready for operation YES NO
- X10.9.5 Are grommets used when routing hoses through steel bracketing or frame members YES NO
- X10.9.6 Are Snap-Tite quick disconnects (manifold mounted) supplied for forward and rear spinner 1/2 inch pressure and return lines YES NO
- Is iron or galvanized iron pipe for fittings and connectors used YES NO
- X10.9.7 Are all fittings and connectors steel type designed for high pressure hydraulic systems use YES NO

X10.9.8 Pipe thread ported components and connectors are only used when the specific component is not available with SAE or JIC porting YES NO

X10.9.9 Are all pipe thread connectors used coated with liquid Teflon pipe sealer prior to assembly YES NO

X10.9.10 Hoses that run to the front of truck chassis for snowplow functions are manifold mounted behind the front bumper with sufficient access for pump service and snowplow hitch installation YES NO

X10.9.11 Are snowplow lines equipped with complete 1/2 inch "VH" series Snap-fit quick disconnects (coupler and nipple supplied) and metal caps and plugs YES NO

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

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

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

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

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

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

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

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

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

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

Three (3) one (1) day Training Sessions per PO

FROM:
XB.18.4.1

Rear Wheels: Size _____
10 hole 285.75 mm bolt circles 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:
XB.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:
XB.25.1

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

TO:
XB.25.1

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

Manuals ~~X~~ (OR) CD ~~X~~

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

Oct 11 07 06:37a The Careys

10

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

Viking Proline Series Combination Spreaders

General Truck



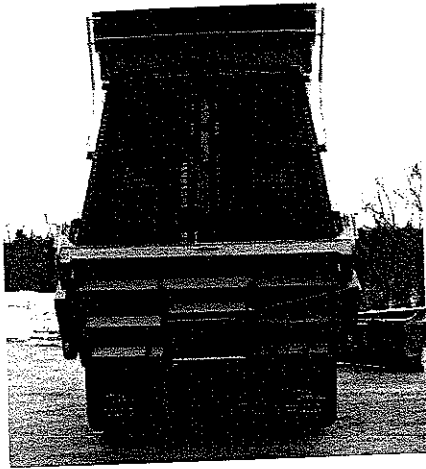
Shown with Rear Discharge & 304 Stainless Steel Option

FEATURES:

1. All operations controlled from in-cab.
2. Radius design allows for free flow of material to conveyor.
3. Automatic chain tensioning system
4. No hinges, lock pins or moving body parts in sanding mode. Body down during spread operations.
5. Telescopic hoist for dump mode eliminated sub-frame for lower center of gravity.
6. Body available in 10', 11', 13', and 14' lengths.
7. Light weight of body increases payload.
8. Square tailgate is double acting.
9. Main conveyor chain covered except for cross slats. This allows discharge of sand, gravel or cold patch.
10. Fast accurate discharge gate setting with screw adjustment outside body.
11. Positive close and release of tailgate by means of two airbrake maxi chambers with in-cab control.
12. 25:1 planetary gear box gives up to 50,000 in/lbs of torque to start spreading any load.
13. 50 degrees of dump angle assures complete discharge of load while round shape eliminates corners which make material stick. Depending on over hang.



Proline Series Combination Spreaders

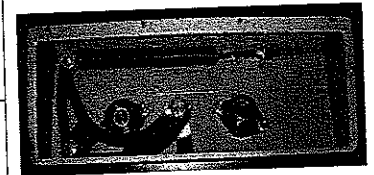


AVAILABLE OPTIONS:

- Front Discharge with Cross Conveyor
 - Rear Discharge
 - Bi-Directional Discharge
 - 304 Stainless Steel Construction
 - AR400 Construction
 - Side Boards
 - Bar Flites Every Link
 - Poly Liquid Tanks
 - Ground Speed Control
 - Top Screens
 - Twin Spinner Available
 - Poly Liner
 - Cab Shield 24"
 - Air Tarp
 - Hi-Temp Rubber Belt over Conveyor Chain
- Other options available consult your local dealer.

NOTE: Changes in design may occur thru product development.

MODEL	1011LW	1112LW	1314LW	1415LW
Inside Length	10'	11'	13'	14'
CA / CT required with 3" between cab & body	84"	96"	112"	120"
Water Level Capacity	6.0 cu. Yd.	6.6 cu. Yd.	9.9 cu. Yd.	10.7 cu. Yd.
10" Boards	8.1 cu. Yd.	9 cu. Yd.	12.7 cu. Yd.	13.8 cu. Yd.
Side Thickness	3/16	3/16	3/16	3/16
Side Material	Corten	Corten	Corten	Corten
Side Height	38"	38"	45"	45"
Tailgate 3/16. Corten	46"	46"	53"	53"
Front Panel Height	53"	53"	60"	60"
Double Acting Tailgate	Yes	Yes	Yes	Yes
Hoist	Top Lift - 20T Telescopic 3 Stage NTEA 40	Top Lift - 20T Telescopic 3 Stage NTEA 40	Top Lift - 30T Telescopic 3 Stage NTEA 60	Top Lift - 30T Telescopic 3 Stage NTEA 70
Conveyor Width	23"	23"	23"	23"
Conveyor Floor / A R Steel	1/4"	1/4"	1/4"	1/4"
Drive and Idler Shaft	2"	2"	2"	2"
Chain 667X	STD	STD	STD	STD
Cross Flites Every Other Link	STD	STD	STD	STD
Planetary Gear Reduction	25:1	25:1	25:1	25:1
Air Tailgate	STD	STD	STD	STD
Poly Spinner	STD	STD	STD	STD
Poly Return Cover	STD	STD	STD	STD
Conveyor Cover	STD	STD	STD	STD
Fenders	Integral	Integral	Integral	Integral
Ladder - Right Rear	STD	STD	STD	STD
Automatic Chain Tensioning System	STD	STD	STD	STD
Body Weight Installed	4,250	4,450	5,600	5,800



Chain Tensioning Unit



DEALER:

Viking-Cives (USA)
14331 Mill Street
Harrisville, NY 13648
(315) 543-2321
Fax (315) 543-2366

Viking-Cives, Ltd.
P.O. Box 1120, RR#4
Mt. Forest, ONT N0G2L0
(519) 323-4433
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Viking-Cives, (USA)
212 North Evans Road
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