

COMPLIANCE TO SPECIFICATIONS

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"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>PACKAGE A: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDRAULICS FOR HI-WAY SPREADER</u>			
Description: Chassis Specifications For A New 2014 GU712 Chassis With SCR Technology To Meet 2010 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase	Chassis: 2014 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811"X 3.54"X .44" Steel- 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase, 180" Ct" 92" CA Usable Ct 92"		
	Platform, 148" Lp 56" Af Used With 180" Wb		
MAXIMUM GVW & AXLE RATINGS	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity- 18,000 Lbs.		
	Rear Single Drive Axle Capacity-30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating-18,000lbs		
	Rear Drive Axle -Gross Axle Weight Rating-30,000lbs		
ENGINE	MP7-405M 405 Hp @ 1500-1900 Rpm. 1480 Lb. Ft. Max. Torque @ 1200 Rpm		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2010 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT	Cummins 18.7 Cfm Air Compressor		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11"X30" Back Of Cab Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
Coolant Protection To Below -34 Degrees Fahrenheit With Coolant Conditioner Filter			

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SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
ENGINE EQUIPMENT	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
ENGINE EQUIPMENT	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382 Fuel Pro. Fuel Heater, Water Separator		
	Hand Primer Pump		
	Hoses, Radiator, Heater, Silicone		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION	Allison Automatic Transmissions-4500RDS 6 Speed		
	Driveline-Main, Meritor 18N Hd With Coated Splines		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT	Air Conditioner With Sanden Rotary Compressor		
	Integral W/Heater And Defroster		
	Tethering Device For Oil Caps And Dipsticks		
	Air Restriction Monitor ,Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) With Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console With 2 Storage Compartments		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM/CD Radio With Weatherband		
	Driver and Passenger side Power door locks and Windows		
	Dpf Regeneration Switch In Dashboard		
Gauge, Air Pressure			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer W/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights , (5) Truck Lite LED Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Gear Shift, Neutral To Range Inhibit		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, RH & LH Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Parking Brake On Indicator Light		
	Right Side Door Peep Window		
	Exterior Sun Visor		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (High-Back) Air Suspension		
	Seat – Rider, Bostrom Mid Back Stationary Seat		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder W/Cab Mounted Shoulder Belt		
Sun visor –Interior , Both Sides (Padded Vinyl			
Side Markers, Lamps And Reflectors			
Starter Switch, Key Type			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Steering Wheel, 18" Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB EQUIPMENT	Windshield Wipers, Sprague 2 Speed Electric Motor W/Intermittent Feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Swept Back Steel		
	Crossmembers, Steel Huck Bolted Back To Back I Beam Type		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum With 8.7 Gallon Def Fluid Tank- Clear Back Of Cab Package		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL 18 18,000 Lb. Capacity-Sealed Kingpins- Maintenance Free Front Axle		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20PLY. M860 (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5x9.0		
	Brakes – Front, Bendix Es165-06d “S” Cam Type 16.5”X6” Cast Spider		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
Dual Steering Box, Sheppard SD110 And HD94 With Tilt And Telescopic Steering Column			
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle/Suspension, Meritor RS-30-185 30,000 Lb. Capacity		
	30,000 Lb.Multileaf Rear Suspension		
	Single Reduction Rear End Gears		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (8)315/80R22.5 18 Ply (M 860 Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.66 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5x8.25 Accuride		
	Brakes – Rear, Bendix ES165-07d “S” Cam 16.5” X 7” Cast Spider With Bronze Bushing		
	Brake Drums – Rear, Cast Outboard Mounted		
Dust Shields – Rear Brake, Furnish			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Oil Seals, Chicago Rawhide (Scotseal)		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers – Quantity, (2) Chambers Double Diaphragm Type		
AIR/BRAKE	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor Wabco 1800 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Whitacker electric jump system mounted under D/S cab with 20FT jumper cable.		
	CB radio hookup in dashboard with antennas mounted to mirrors		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights,		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional And Back-Up Lights-Led Module		
Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250			
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Green-Base Coat/Clearcoat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
	Rear Axle Spare Tire And Rim Mounted		
WARRANTY:	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Basic Vehicle – 12 Months On All Components		
	Allison Transmission – 5 Years / Unlimited Miles		
AIR-FLO CARBON STEEL DUMP BODY			
<u>INTENT</u>	It is the intent of these specifications to describe a 6.05 cubic yard heavy-duty dump body with a scissor type hoist.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>BODY</u>	The inside length of the dump body shall be 10' and inside width shall be 84".		
	It shall have a capacity of 6.05 cubic yards without sideboards.		
	The 7 Ga. steel sides shall be 28 inches high with 10" sideboard pockets capable of increasing the total capacity to 7.78 cubic yards.		
<u>BODY</u>	The straight vertical sides shall be made of 7 Ga. steel with a boxed top rail 4" wide by 6 3/8" high.		
	The dirt shedding sloped top rail is to fold back 45 degrees at top.		
	No seam is to be visible to the outside or bottom of the top rail.		
	Including front corner post, there are to be a minimum of three vertical gussets.		
	The vertical gussets are 6" wide and 3 1/2" deep.		
	The bottom of the sides shall have a 5" 45 degree sloped rub rail that is 4 1/2" wide.		
	The full depth rear corner post shall be a minimum of 16" wide and 5" deep fully welded.		
	There shall be a load binder underneath the body for a ratchet strap hook up for slip in spreaders.		
<u>TAILGATE</u>	The fully welded 6-panel tailgate shall be one piece 7 Ga. steel 36 inches high.		
	Horizontal bracing shall be dirt shedding including top rail with four 4" vertical gussets.		
	The 1" flame cut upper tailgate hinge shall have a minimum 1 1/2" upper pin and 1 1/4" lower tailgate pin.		
	The 1/2" lower latch assembly shall have 1/2" flame cut lower pin cradle.		
	The upper tailgate hinge bracket shall be incorporated into the rear corner post to give the appearance of the tailgate and hinge assembly being the same height as the rear corner post.		
	Sleeve covered 3/8" diameter proof coil chains shall be provided to hook into banjo eye brackets welded onto rear corner posts for tailgate spreading.		
	The tailgate will have two (2) turnbuckles installed.		
	The tailgate shall have a lifting to aid in the removal of the liftgate off the body.		
<u>FRONT HEAD PANEL</u>	The front head panel shall be a one piece 7 Ga. steel panel 10" higher than the side height.		
	A formed V bend will be incorporated the full width and placed in the center of the panel.		
	The top of the panel shall be formed 2 1/2" wide and 1 1/4" deep.		
<u>FLOOR</u>	The crossmemberless floor shall be made of 1/4" AR-400 steel.		
	The floor shall be so designed and constructed that it will not have any underbody crossmember bracing.		
	The floor shall be supported by formed 1/4" thick steel trapezoidal longitudinals that span the entire length of the body.		
<u>SUBFRAME</u>	Subframe shall be made of 5/16" steel formed to a 6" channel.		

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<u>HOIST</u>	Hoist shall have a single cylinder with dual support arms and dual body props.		
	The 8" diameter, 21" stroke cylinder shall have a 2 1/4" chrome plated piston rod and capable of being used in a single acting or double acting application.		
<u>HOIST</u>	The NTEA class 50 rated hoist shall ensure a dump angle of not less than 50 degrees and be capable of obtaining a 17 ton lift capacity with relief valve set at 1500 PSI.		
	The front and rear crossmembers of the hoist shall be fully gusseted.		
	The heavy-duty flame cut platform type rear hinges shall have replaceable 1 1/2" pins.		
	Hoist shall be of fully solid weld construction.		
<u>CABSHIELD</u>	1/2 cab shield shall be made of 10 gauge steel and extends 22 1/2" from the front of the body.		
	Cab shield to be mounted as low as possible.		
<u>AIRGATE</u>	There shall be an air latch tailgate in place of a manual latch, the handle operating the front pivot shaft will be replaced by an air cylinder operated front pivot shaft.		
	The air cylinder shall be 2 1/2" in diameter with an 8" stroke.		
	It shall have a 5/8" chromed rod.		
	Rear latches to include "Philly Type" locks and T turn buckles.		
<u>SPREADER APRON</u>	There shall be a bolt-on, 1-piece rear unit made of 10 gauge steel x 12" wide.		
<u>COAL DOOR</u>	Three (3) 16"W x 12"H coal doors with easy open handle and adjustable chain restraint (chain to be in guard).		
	Splash shields forward of the rear wheels to be fabricated of 10 gauge steel.		
	Catwalk to be welded between boxes on each side fabricated of safety grip strut.		
	Grab handles to be mounted on each side of dump body for easy access to catwalk, fabricated of 3/8" round stock, welded to each side of first vertical side brace.		
<u>FULL REAR</u>	To extend to bottom of longitudinals with five (5) light hole punch cuts.		
	All lights recessed behind skirt across rear.		
	Side lights to be flush mount, rubber grommet type.		
<u>CONSPICUITY TAPING:</u>	Dump truck body sides, rear face and tailgate perimeter to be outlined as per NHSTA guidelines in SCOTHLITE CONSPICUITY SHEETING DIAMON GRADE 980 RED/WHITE 2" WIDE.		
<u>UNDER BODY TOOL BOX</u>	There shall be a underbody tool box mounted where space allows.		
<u>LADDER</u>	Ladder shall have three rungs and have the ability to slide horizontally to the body for storage.		
<u>SPREADER POCKETS</u>	There will be a total of four spreader pockets installed on the outside of the body.		

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<u>LOAD COVER WITHOUT ARMS:</u>	The body shall come equipped with a Pull-Tarps Steel Protector Support System or equal. The tarp system shall be actuated by a single spring which shall be adjustable. The spring shall be protected by an aluminum tube. The tarp system does not require the use of control arms or crank handles. Two (2) tarp control ramps shall be installed on the tailgate to hold the tarp fully extended. The tarp material shall be asphalt rated material		
<u>LIGHTING:</u>	<u>BODY LIGHTS:</u>		
	All body lights to meet Federal Safety Standard #108 and shall be installed using rubber shock mounted recessed lights with body wiring in heavy loom.		
	There shall be three 2" red, round LED marker lights installed below the apron.		
	Marker lights to be LED		
	There shall be a 2" LED light to be installed in the dash to notify the operator that the body is in the "UP" position.		
	<u>DOT3 SYSTEM:</u>		
	The Super-LED DOT light system shall be a Whelen model 00007DS0 as described herein.		
	The product being bid must be a standard production model of the manufacturer.		
	All major components such as LED flashers, LED light heads, cables, lenses, etc., must be designed and manufactured within the United States. Bids offered in which major components (such as LED populated board, etc.) are manufactured off-shore are not acceptable.		
	<u>REAR SUPER-LED® HEAD ASSEMBLIES</u>		
	Mounted into the rear of the vehicle shall be two (2) 700 Linear Super-LED heads, two (LED) brake/tail/turn light modules, and two (2) LED Back-Ups, one set on each side.. Each Super-LED head shall be capable of emitting a full 180 degrees of light in the vertical plane. The light heads shall be recessed into a heavy duty 7 gauge steel housing. The steel housing shall be provided with each set of modules.		
	The two rear 700 Linear Super-LED heads shall utilize a DOT LED flasher which is mounted and encapsulated in a junction box (NOTE: Junction Box must be installed inside the cab). The DOT LED flasher shall allow the two rear 700 Linear Super-LED's to be controlled independently from the front head assembly.		
	The 700 Linear Super-LED assembly, brake light and back-up, including the steel housing, shall be approximately 23-1/2 inches high, 4-7/8 inches deep and 3-1/2 inches wide.		
The modules, as well as the lens, shall be easily replaceable. A waterproof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistance as well as ease of replacement.			
<u>LIGHTING:</u>	The 700 Linear Super-LED lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.		

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	There shall be two (2) LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of (72) Red LED's. The module must be in "signal alert" flash pattern, which flickers three times (within 150 milliseconds) before becoming steady "on". These modules must meet or exceed SAE requirements.		
	There shall be two (2) LED Back-Ups, one (1) located in the bottom position of each steel housing. Each module must contain a minimum of (48) White LED's for maximum light output. These modules shall be supplied with a Clear polycarbonate lens.		
	The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimilar metal corrosion. Units that screw into a steel bracket are unacceptable since they tend to corrode over time.		
	<u>CABLE HARNESSES:</u>		
	The cable being supplied from the rear housings must be heavy-duty TPR-type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14 gauge, pure copper stranded, and fully tin coated. No less than (30) feet of cable shall be provided for each head assembly. All necessary connectors shall be provided, including a strain-relief system.		
	<u>PLOW LIGHTS:</u>		
	To be installed as per DOT Standards, Truck-Lite 's Universal Plow lights with appropriate truck harness kit.		
	These plow lights are to be wired into the trucks existing headlight circuit using the factory installed switch.		
	Plow lights must function in high and low beam modes using existing trucks dimmer switch.		
	At no time shall the plow lights and normal truck headlights be able to operated at the same time.		
	The plow lights shall be mounted as far forward on the hood of the truck as possible.		
	The mounting brackets for the plow lights shall be made of carbon steel and painted in gloss black.		
	<u>CAB SHIELD LIGHTING:</u>		
	There shall be shall be five (5) 700 Linear Super-LED installed in the cab shield, three in the front and one on the passenger's side and one on the driver's side.		
	The 700 Linear Super-LED lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.		
	The LED strobe shall be installed in black flanges.		
	The lights shall be synchronized with the DOT-3 system.		

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<u>WIRING:</u>	Wiring and harness system shall meet ISO rating IP68 and NEMA 6. The connectors shall be zinc die cast E-coated, similar to a MIL spec connector. Each shall have three sealing points- the lock ring itself, a raised portion of the molded plastic around each pin, and a viton O-ring that seals the whole connector. The cable jacket shall be TPE- thermoplastic elastomer, and molded to the connectors. PVC jacketed wire is not acceptable. Connectors and harness shall be rated and tested for a temperature range from - 30C to + 70C. Connectors shall be tested to be water tight when submerged in 6' of water for 24 hours, in 275' of water for 1 hour, and when subjected to a 1000-psi pressure wash. The connectors shall be designed to have NO corrosion after 5000 hours in a 35C salt spray. Cabling shall be rated excellent in low temperature flexibility and in its resistance to oxidation, heat, oil, weather, sun, ozone, abrasion, electrical priorities, flame, water, acid, alkali, gasoline, benzol, toluol, degreaser solvents, alcohol, and weld slag.		
<u>PINTLE HOOK PACKAGE</u>	Rear of the chassis shall have two (2) tow hooks, one on each side of the chassis.		
	A Holland Model T90 Pintle hook shall be mounted to a 5/8" pintle plate. The pintle plate shall be reinforced to the chassis rails.		
	The pintle hook height shall be 29" to 30" to the center of the hook.		
	Two (2) D-rings shall be permanently attached to pintle plate, one on each side of the pintle hook.		
	A weather proof seven (7) spade male and female trailer light plug shall be installed in the rear crossmember with the female wired and the male supplied		
<u>BOSCH-REXROTH CENTRAL HYDRAULIC SYSTEM SECTION:</u>			
<u>VALVES:</u>	The central hydraulic system valve shall be a high-pressure load-sensing valve of sandwich plate design and constructed of cast iron.		
	Aluminum manifold designs shall be unacceptable.		
	The valve shall be horizontally stackable and serviceable without disassembly.		
	This is to include removal of the pressure compensator assembly, load holding check and load sense shuttle valve without having to remove the valve section from the main assembly or removing any of the tie bolts that hold the main valve assembly together.		
	The valve inlet shall have a safety relief valve that is capable of relieving full pump flow to tank in case of a failure in the pump pressure compensator.		
	It shall be rated for a maximum pressure of 5000 psi on the pump side and 6000 psi at the work ports.		
	The valve shall be rated for 40 GPM at the inlet and 35 GPM at the work ports.		
	The valve shall have one individual section for each function. Hybrid manifold designs shall be unacceptable.		
<u>VALVES:</u>	Each valve section shall have a spool that is flow matched for the function it is controlling.		
	It shall have the ability, when required, to vary the working pressure for each individual work port by using built-in load sense reliefs.		

SECTION	SPECIFICATION DETAIL	COMPLY	
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	These reliefs shall have an adjustment range of 500 psi to 5000 psi.		
	It shall have built-in load-pressure compensation to allow simultaneous activation of functions.		
	The load-pressure compensation shall be adjustable by adding or removing shims.		
	This adjustment will allow any one spool to have three distinct flows.		
	All electrically actuated valve sections shall have two separate methods to override the section for troubleshooting and fault finding.		
	All electrical sections shall have a stroke limiter for adjusting the maximum travel of the valve spool in both directions.		
	The pressure, tank and work ports shall be top ported.		
	For ease of service, all electrical solenoids shall be on the same side of the valve.		
	All valving shall be mounted as one main valve assembly.		
	Multiple valve assemblies are unacceptable.		
	All work port pressure limiting shall be by the use of load sense relief valves that are integral to the valve section that is being limited.		
	The use of work port relief valves that divert excess flow to tank shall be unacceptable.		
	To ensure complete system compatibility, the joystick controller, spreader controller, prewet unit, hydraulic valve and hydraulic pump shall be from a single manufacturer.		
	Items that are manufactured by one entity and "branded" with another manufacturer's name shall not be accepted as being from a single manufacturer.		
	Manufacturer shall be ISO 9001 and ISO 14001 certified.		
	Valve sections will be stacked in the following order from inlet to outlet:		
	Body: Double Acting, Electric Proportional with 500 PSI "A" Port Relief		
	Plow Hoist: Double Acting, Electric Proportional		
	Plow Reverse: Double Acting, Electric Proportional		
	Spinner: Single Acting		
	Conveyor: Single Acting		
PUMP:	The hydraulic pump will be crankshaft driven using a 1280/1310-driveline assembly.		
	The piston pump (load sensing type) must be capable of 29 GPM and 3000 PSI at 2500 RPM.		
	Pump must have side ports to avoid multiple 90 degree bends in suction line (rear ports are unacceptable).		
PUMP:	The case drain must be positioned as high as possible and directed back to the reservoir without passing through the return line filter.		
	The pump must have internal bleed down compensator.		
LOW OIL SHUTDOWN	A single normally open, two position, two way, poppet type solenoid valve must be mounted directly to the hydraulic pump discharge port in such a way as to stop all oil flow to the hydraulic system when energized.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The solenoid valve must be wired directly to an in-tank mounted level indicator.		
	The level indicator shall be of the float type and mounted from the top of the reservoir.		
	When the float switch contacts close, the shutdown valve blocks pump flow and an annunciator on the main control will be activated.		
	The momentary switch shall be wired in such a way as to de-energize the system shutdown to facilitate fault finding and equipment stowing.		
<u>HYDRAULIC LINES AND PLUMBING</u>	All hydraulic lines, pipes, hoses, and fittings shall be of sufficient capacity to accommodate the volume of oil without undue heating or turbulence in the system. A 2" suction line with a minimum SAE rating of 100-R4 must be used between the reservoir and the inlet of the pump. All of the pressure hoses, including the signal sensing line to the pump must have swivel fittings on both ends and have a minimum SAE rating of 100-R2. Return lines and the case drain line must have a minimum SAE rating of 100-R1.		
	Hydraulic lines shall be routed to minimize interference with equipment and chassis components requiring periodic servicing. Appropriate support brackets, grommets, and ty-raps shall be provided to protect lines from abrasion, cutting and impact damage. Hoses shall not be installed near manifold or exhaust pipes so tat to be affected by extreme heat. There shall be no pipe fittings used with any high pressure lines. Any and all hydraulic quick disconnect couplings used for spreader system and snow plow reversing system shall be of the bulkhead mounted style and be rigidly attached without the use of any hose clamp arrangements, (Loose hose ends are not acceptable). Dust cap for male ends and dust plugs for the female ends must be attached to couplers. Maximum distance allowed between support clamps on all hydraulic hoses shall be approximately 24".		
<u>VALVE ENCLOSURES</u>	A valve enclosure will be provided for protection of wiring. Valve enclosure must be constructed of 10 gauge steel.		
	Valve will be placed in an enclosure in such manner for complete servicing of valve.		
	Enclosure must have cable restrain and not to be watertight.		
<u>HYDRAULIC RESERVOIR</u>	Hydraulic reservoir to be a minimum of 37 gallon capacity and be constructed of 12' gauge steel.		
<u>HYDRAULIC RESERVOIR</u>	Due to service accessibility, a hydraulic reservoir incorporating an integral valve enclosure that is part of the hydraulic tank, will not be acceptable.		
	The reservoir must be baffled, have a magnetic drain plug, lockable Protecto-Seal cap – NO EXCEPTION, and a suction strainer with a minimum 2" NPTF outlet.		
	A minimum 5" diameter clean-out port.		
	Reservoir shall also have an electrical low-level indicator.		
	There shall be a bumper made out of 7" Channel with a 2" flange (6.9 Ft/lbs.) that wraps around the hydraulic reservoir and the valve enclosure an connects back to the chassis rail.		
<u>FILTER</u>	A Return Line Filter, Muncie RLF501, shall be installed in the return line, near reservoir, in a position that facilitates ease of maintenance.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The filter shall be of minimum 50 GPM flow rating and 10 micron filtration.		
	The element shall be of the spin-on/throw away type, and the filter head shall be equipped with a filter condition indicator.		
<u>SPREADER CONTROL (REXROTH CS-425):</u>	Control shall be by microprocessor for high control accuracy. The microprocessor must incorporate redundant circuitry, be housed in a sealed cast aluminum housing and meet the following electrical and environmental specifications:		
	Spurious interference - (Motor vehicle directive 95/54/EG): 100v/m		
	Load Dump: Max. 70v		
	Operating temperature, housing: -40...80 deg C		
	Storage temperature, housing: -40...105 deg C		
	Vibration resistance: Sinusoidal vibration (IEC 60086-2-6) - 10g / 57...2000 Hz		
	Random vibration: 0.05g ² / Hz		
	(IEC 60086-2-36) 30 min per axis		
	Shock resistance		
	Transport shock 15g / 11ms		
	(IEC 60068-2-27) 3x in each direction/axis (pos./neg.)		
	Continuous Shock 25g / 6ms		
	(IEC 60068-2-29) 1000x in each direction/axis (pos./neg.)		
	Resistance to moisture 95% (+25 to +55 degC)		
	Resistance to salt spray		
	(IEC 60068-2-11) 72h, 35 degC, 5% NaCl		
	Type of protection (DIN / EN 60529) IP 65 fitted with mating connector.		
	The spreader control shall be an "all-in-one" unit that incorporates both spreader functions and body and plow control.		
	It shall have ten (10) PWM outputs. Two (2) for the spinner and conveyor and eight (8) for the joystick functions.		
	All outputs shall be current compensated and have full transient suppression.		
<u>SPREADER CONTROL (REXROTH CS-425):</u>	The controller shall have a single quad axis proportional joystick for the control of both the body and plow functions.		
	The joystick shall be capable of being programmed through the use of the controllers LCD display and the programming buttons on the controller. The use of external programming devices is unacceptable.		
	The controller shall have six (6) locations for either switch functions or indicator lights.		
	The spreader control is to be mounted within easy reach of the driver.		
	The control is to operate in manual mode, open loop, Closed Loop (automatic), 12V trigger or Ground Speed triggered Manual.		
	The spreader control must have a backlit LCD display screen to show Auger/Conveyor application rates, Spinner set point and Ground Speed in operation mode.		
	LCD display shall be capable of showing all programming parameters.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Spreader Control must have pause, blast, stationary unload and reverse (if auger/conveyor is double acting).		
	Controller shall be equipped with two (2) rotary detented knobs with push button feature. All spreader functions including spinner settings, conveyor settings, pause, blast and unloading shall be controlled by these two knobs.		
	Controller will have nine (9) programmable settings for spread width and nine (9) programmable settings for conveyor application rates.		
	Controller must be capable of using a remote pause and blast switch.		
	If operating in closed loop (auger feedback) must be capable of auto nulling the auger/conveyor.		
	Controller shall have both audible and text based error messages.		
	Controller shall have automatic detection of cable, valve, sensor and potentiometer failures.		
	All programming shall be accomplished through the use of the controllers LCD display and the programming buttons on the controller. The use of external programming devices is unacceptable.		
	Any changes to the programming must be accessed via a lockout key. This shall include the changing of controller operating mode. Operators shall not be able to override the operating mode of the controller.		
	Spreader control to be a Rexroth CS-425 to ensure complete compatibility with Rexroth Hydraulic Pump and Rexroth Hydraulic Valve		
<u>WAUSAU HOME SAFE POWER REVERSIBLE TRIP EDGE SNOW PLOW WITH POLYETHYLENE MOLDBOARD</u>			
<u>GENERAL</u>	These specifications describe a Power Reversible Trip Edge snow plow which shall be built from new material and definitely suited for continuous work under difficult conditions of snow removal.		
<u>MOLDBOARD ASSEMBLY</u>	The moldboard shall be not less than 36" high nor less than 120" long.		
	The moldboard sheet shall be formed from not less than 3/8" thick high molecular weight polyethylene sheet.		
<u>MOLDBOARD ASSEMBLY</u>	The polyethylene sheet shall have a minimum tensile strength of 4000 P.S.I., and when tested in accordance with ASTM D638, it shall evidence a minimum of 600T (2") elongation at break.		
	In addition, the sheet shall evidence no break following izod impact test conducted in accordance with ASTM D256A.		
	The sheet shall be formed from a polyethylene material, which is made from new resin, (recycled material is not acceptable), and shall be color impregnated and ultra violet stabilized to a "Schmidt Blue" pigmentation.		
	It shall attach to a frame work which includes not less than ten (10) steel reinforcing ribs at least 1/2" thick x 3-1/2" wide and a lower moldboard reinforcement from not less than 4" x 3" x 1/2" steel angle so as to form a rigid structure.		
	The upper portion of the moldboard shall project over the cutting edge so as to form a continuous, solid, integral snow shield and shall include an upper reinforcement from not less than 3" x 2-1/2" x 3/8" steel angle.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>CUTTING EDGE</u>	Shall be one (1) in number and shall be from ½" x 8" C1065 steel, punched to AASHO standards on 12" centers and supported by a reinforcement from not less than 4" x 4" x ¾" steel angle.		
	The cutting edge shall be reversible for double wear.		
<u>TRIPPING EDGE MECHANISM</u>	Shall be of the single edge design, which shall activate whenever the cutting edge comes into contact with an obstruction on the pavement.		
	Trip activation shall be achieved through five (5) torsion springs from not less than ¾" square wire, having a 3-3/4" O.D., with fifteen (15) active coils each.		
	Each spring shall be pinned in place in a horizontal position and shall butt to the lower moldboard reinforcement and to the cutting edge reinforcement.		
	Spring adjustment shall be provided so as to alter the precharge of springs for varying plowing conditions.		
<u>DRIVE FRAME AND REVERSING MECHANISM</u>	The drive frame and reversing mechanism shall consist of an "A" frame, a truss frame and two (2) single acting hydraulic cylinders with 3-1/2" diameter x 16" stroke.		
	The "A" frame shall be a triangular weldment with 3/8" thick steel plates (top and bottom), a rear member from not less than 1" thick steel plate and two (2) center reinforcements from not less than 3/8" thick steel plate, so to form a boxed center section.		
	The height of the boxed center section shall be 5-3/4".		
	The truss frame shall include a main drive member from 4" square tubing with 3/8" wall.		
	The truss frame shall pin to the moldboard at not less than 4 points over a span of not less than 82" and shall include two (2) moldboard braces which allow for alternate moldboard positioning.		
	Moldboard and truss frame shall pivot about the "A" frame on a lubricated pin, not less than 2-1/2" in diameter, up to 37 degrees either side of the chassis center line.		
<u>DRIVE FRAME AND REVERSING MECHANISM</u>	The pin shall be designed in such a way that it will be easily removed for maintenance.		
	Each cylinder shall have 3-1/2" diameter pistons, which terminate with 2-1/2" diameter connecting lugs.		
	Both the rods and lugs shall be from case hardened, chrome plated steel and shall be protected by a hydraulic cushion valve.		
	The "A" frame shall be fitted with a cable lift arrangement, which shall accommodate plow reversing operations with the plow either on the ground or at the carry position.		
	This arrangement shall be of a design which prohibits plow list, when the moldboard is angled in the carry position.		
	<u>PLOW COUPLING BAR</u>	Shall be of a design, which can be accommodated by a truck mounted "Frink Tor-Lok" quick coupler locking device.	
It shall consist of an angle weldment, which includes an angle drive bar, fitted with attachment ears and male arrowhead shaped coupler.			
This weldment shall pin directly to the rear of the drive frame.			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The arrowhead shall be from 1" thick plate, 4-3/4" wide at its neck, 10" wide at its extremity and 12-1/4" in overall length.		
<u>SPRAY GUARD:</u>	Shall bolt on the top moldboard flange or reinforcement. It shall consist of a 12" wide x 3/8" thick rubber belt, metal retaining strap and necessary mounting hardware.		
<u>ADJUSTABLE CASTER WHEELS:</u>	Two (2) screw adjustable, castered, steel wheels shall be supplied (10" O.D. with 1-1/4" diameter axle and tapered roller bearings). They shall connect at each side of the plow.		
<u>MOLDBOARD SHOES:</u>	The cutting edge shall be fitted with two (2) fabricated steel moldboard shoes. Each moldboard shoe shall offer a minimum of 40 sq. in. of bearing surface and shall attach to the underside of the cutting edge reinforcement.		
<u>CURB SHOE:</u>	An additional bumper shall be supplied at each end of the moldboard (qty. 2). They shall be from a minimum of 3/4" x 6" steel, shall bolt at the cutting edge face and shall project 1" outside each end of the cutting edge.		
<u>WAUSAU LOW MOUNT CUSTOM SNOW PLOW HITCH</u>			
<u>GENERAL:</u>	These specifications are intended to describe a low mount custom designed snow plow hitch designed to keep the hitch and plow as close to the truck grille and/or bumper as possible and allow the hood of the intended chassis to tilt forward for engine service without necessitating movement of the main vertical members. It shall consist of push frame and the plow lifting device.		
<u>GENERAL:</u>	The hitch shall be designed so that the lift arm and hydraulic ram is capable of collapsing and pinning to a stowage position when the plow is not in use. This design requirement is to shorten the protrusion capability of the lift arm arrangement. The main frame shall consist of two (2) formed channels of 3/8" plate for the vertical members. The two horizontal members shall be 4" x 3" x 5/16" wall tubing and incorporate mounting brackets for working and storage positions of the lift arm and hydraulic cylinder. Attached to the push frame shall be a locking device for the coupling of the plow to the truck. The locking device shall have an opening 3-1/2" x 11-1/2" at the front and 2-1/2" x 10-1/2" at the rear. The opening shall be beveled to allow easy entrance of the arrowhead. Two (2) steel spring loaded locking blocks, installed directly behind the beveled opening, shall automatically clamp about the arrowhead, whenever the arrowhead enters the opening during coupling operations. The locking device shall be so designed as to permit oscillation of the snow plow whenever uneven road contours are encountered. A handle shall be supplied to unclamp the locking blocks from the arrowhead whenever uncoupling of the plow from the truck id desired. The hydraulic lift ram shall have a 4" bore, double acting design, with a hard chrome plated piston rod.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>ZIEBART UNDERCOATING PACKAGE</u>			
<u>GENERAL:</u>	MANUFACTURER: Ziebart or equal		
	Sealant must protect against road damage and rust.		
	Sealant must reduce vibration and insulate underbid from heat and road noise.		
	Sealant must penetrate and protect seams and spot welds.		
	Sealant must meet federal and military sealant spec. MIL-C-62218.		
	Sealant must comply with federal standard 297E.		
	Sealant shall be impervious to water, salt and mud.		
	Sealant shall be applied to the following areas:		
	<input type="checkbox"/> Front fender wells		
	<input type="checkbox"/> Cab and body underside		
	<input type="checkbox"/> Chassis frame rails		
<input type="checkbox"/> Door insides			
<input type="checkbox"/> All other area required by Ziebart			
<u>BIDDER QUALIFICATIONS FOR ZIEBART APPLICATIONS</u>	Applicator must be Ziebart Trained and Authorized Technician with experience on all vehicle types.		
	Application must be made in strict adherence to Ziebart application manual, for proper warranty administration.		
<u>BIDDER QUALIFICATIONS FOR ZIEBART APPLICATIONS</u>	To insure proper application and to fulfill warranty obligations, Ziebart must be applied in a heater spray booth of not less than 960 square feet.		
	An inspection of applicator facility will be conducted before any award is made.		
	Authorized Ziebart applicator must have at least 50 applications similar in nature and supply a users list upon request.		

COMPLIANCE TO SPECIFICATIONS

The bidder shall indicate 100% compliance by checking "YES" or non-compliance by checking "NO" for each line item of specification. Any space left blank shall be considered non-compliant. Any deviation from the specification, or where submitted literature does not fully support the meeting of specifications, must be clearly cited in detail, in writing, by the bidder and submitted with the bid. NO verbal interpretations will be accepted! In addition NO deviations below "minimum" specifications as written will be accepted.

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>PACKAGE B: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDRAULICS FOR THE EPOKE SYSTEM</u>			
Description: Chassis Specifications For A New 2014 GU712 Chassis With SCR Technology To Meet 2010 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase	Chassis: 2014 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811"X 3.54"X .44" Steel- 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase, 180" Ct" 92" CA Usable Ct 92"		
	Platform, 148" Lp 56" Af Used With 180" Wb		
MAXIMUM GVW & AXLE RATINGS	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity- 18,000 Lbs.		
	Rear Single Drive Axle Capacity-30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating-18,000lbs		
	Rear Drive Axle -Gross Axle Weight Rating-30,000lbs		
ENGINE	MP7-405M 405 Hp @ 1500-1900 RPM. 1480 Lb. Ft. Max. Torque @ 1200 RPM		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2010 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT	Cummins 18.7 CFM Air Compressor		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11"X30" Back Of Cab Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
Coolant Protection To Below -34 Degrees Fahrenheit With Coolant Conditioner Filter			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater		
	Engine Hoses And Tubing, Silicone		
ENGINE EQUIPMENT	Diesel Particulate Filter /SCR System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382 Fuel Pro. Fuel Heater, Water Separator		
	Hand Primer Pump		
	Hoses, Radiator, Heater, Silicone		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION	Allison Automatic Transmissions-4500RDS 6 Speed		
TRANSMISSION EQUIPMENT/ DRIVELINES	Driveline-Main, Meritor 18N Hd With Coated Splines		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT	Air Conditioner With Sanden Rotary Compressor		
	Integral W/ Heater And Defroster		
	Tethering Device For Oil Caps And Dipsticks		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/ 4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) With Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console With 2 Storage Compartments		
	Dome Light, (4) W/ Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM/CD Radio With Weatherband		
	Driver and Passenger side Power door locks and Windows		
	DPF Regeneration Switch In Dashboard		
	Gauge, Air Pressure		
Gauge, Voltmeter			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
CAB EQUIPMENT	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer W/ Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights , (5) Truck Lite LED Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Gear Shift, Neutral To Range Inhibit		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, RH & LH Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Parking Brake On Indicator Light		
	Right Side Door Peep Window		
	Exterior Sun Visor		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (High-Back) Air Suspension		
	Seat – Rider, Bostrom Mid Back Stationary Seat		
Seat Covering, All Vinyl			
Seat Belts, Lap And Shoulder W/Cab Mounted Shoulder Belt			
Sun visor –Interior , Both Sides (Padded Vinyl)			
Side Markers, Lamps And Reflectors			
Starter Switch, Key Type			
Steering Wheel, 18” Two Spoke Urethane Grip			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Windshield Washers, Electric, Wiper Mounted W/ Reservoir Back Of Cab		
	Windshield Wipers, Sprague 2 Speed Electric Motor W/ Intermittent Feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/ Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Swept Back Steel		
	Crossmembers, Steel Huck Bolted Back To Back I Beam Type		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum With 8.7 Gallon Def Fluid Tank- Clear Back Of Cab Package		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL 18 18,000 Lb. Capacity-Sealed Kingpins- Maintenance Free Front Axle		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20PLY. M860 (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5x9.0		
	Brakes – Front, Bendix Es165-06d “S” Cam Type 16.5”X6” Cast Spider		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
Dual Steering Box, Sheppard SD110 And HD94 With Tilt And Telescopic Steering Column			
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle/Suspension, Meritor RS-30-185 30,000 Lb. Capacity		
	30,000 Lb.Multileaf Rear Suspension		
	Single Reduction Rear End Gears		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (8)315/80R22.5 18 Ply (M 860 Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.66 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5x8.25 Accuride		
	Brakes – Rear, Bendix ES165-07d “S” Cam 16.5” X 7” Cast Spider With Bronze Bushing		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Chicago Rawhide (Scotseal)		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers – Quantity, (2) Chambers Double Diaphragm Type		
AIR/BRAKE	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
AIR/BRAKE	Air Dryer-Meritor Wabco 1800 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Whitacker electric jump system mounted under D/S cab with 20FT jumper cable.		
	CB radio hookup in dashboard with antennas mounted to mirrors		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights,		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional And Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior,Green-Base Coat/Clearcoat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Rear Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
WARRANTY:	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Basic Vehicle – 12 Months On All Components		
	Allison Transmission – 5 Years / Unlimited Miles		
AIR-FLO CARBON STEEL DUMP BODY			
INTENT	It is the intent of these specifications to describe a 6.05 cubic yard heavy-duty dump body with a scissor type hoist.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>BODY</u>	The inside length of the dump body shall be 10' and inside width shall be 84".		
	It shall have a capacity of 6.05 cubic yards without sideboards.		
	The 7 Ga. steel sides shall be 28 inches high with 10" sideboard pockets capable of increasing the total capacity to 7.78 cubic yards.		
	The straight vertical sides shall be made of 7 Ga. steel with a boxed top rail 4" wide by 6 3/8" high.		
	The dirt shedding sloped top rail is to fold back 45 degrees at top.		
	No seam is to be visible to the outside or bottom of the top rail.		
<u>BODY</u>	Including front corner post, there are to be a minimum of three vertical gussets.		
	The vertical gussets are 6" wide and 3 1/2" deep.		
	The bottom of the sides shall have a 5" 45 degree sloped rub rail that is 4 1/2" wide.		
	The full depth rear corner post shall be a minimum of 16" wide and 5" deep fully welded.		
<u>TAILGATE</u>	The fully welded 6-panel tailgate shall be one piece 7 Ga. steel 36 inches high.		
	Horizontal bracing shall be dirt shedding including top rail with four 4" vertical gussets.		
	The 1" flame cut upper tailgate hinge shall have a minimum 1 1/2" upper pin and 1 1/4" lower tailgate pin.		
	The 1/2" lower latch assembly shall have 1/2" flame cut lower pin cradle.		
	The upper tailgate hinge bracket shall be incorporated into the rear corner post to give the appearance of the tailgate and hinge assembly being the same height as the rear corner post.		
	Sleeve covered 3/8" diameter proof coil chains shall be provided to hook into banjo eye brackets welded onto rear corner posts for tailgate spreading.		
	The tailgate will have two (2) turnbuckles installed.		
	The tailgate shall have a lifting to aid in the removal of the tailgate off the body.		
<u>FRONT HEAD PANEL</u>	The front head panel shall be a one piece 7 Ga. steel panel 10" higher than the side height.		
	A formed V bend will be incorporated the full width and placed in the center of the panel.		
	The top of the panel shall be formed 2 1/2" wide and 1 1/4" deep.		
<u>FLOOR</u>	The crossmemberless floor shall be made of 1/4" AR-400 steel.		
	The floor shall be so designed and constructed that it will not have any underbody crossmember bracing.		
	The floor shall be supported by formed 1/4" thick steel trapezoidal longitudinals that span the entire length of the body.		
<u>SUBFRAME</u>	Subframe shall be made of 5/16" steel formed to a 6" channel.		
<u>HOIST</u>	Hoist shall have a single cylinder with dual support arms and dual body props.		
	The 8" diameter, 21" stroke cylinder shall have a 2 1/4" chrome plated piston rod and capable of being used in a single acting or double acting application.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The NTEA class 50 rated hoist shall ensure a dump angle of not less than 50 degrees and be capable of obtaining a 17 ton lift capacity with relief valve set at 1500 PSI.		
	The front and rear crossmembers of the hoist shall be fully gusseted.		
	The heavy-duty flame cut platform type rear hinges shall have replaceable 1-1/2" pins.		
<u>HOIST:</u>	Hoist shall be of fully solid weld construction.		
<u>CABSHIELD</u>	½ cab shield shall be made of 10 gauge steel and extends 22 ½" from the front of the body.		
	Cab shield to be mounted as low as possible.		
<u>AIRGATE</u>	There shall be an air latch tailgate in place of a manual latch, the handle operating the front pivot shaft will be replaced by an air cylinder operated front pivot shaft.		
	The air cylinder shall be 2 ½" in diameter with an 8" stroke.		
	It shall have a 5/8" chromed rod.		
	Rear latches to include "Philly Type" locks and T turn buckles.		
<u>SPREADER APRON</u>	There shall be a bolt-on, 1-piece rear unit made of 10 gauge steel x 12" wide.		
<u>COAL DOOR</u>	Three (3) 16"W x 12"H coal doors with easy open handle and adjustable chain restraint.		
	Splash shields forward of the rear wheels to be fabricated of 10 gauge steel.		
	Catwalk to be welded between boxes on each side fabricated of safety grip strut.		
	Grab handles to be mounted on each side of dump body for easy access to catwalk, fabricated of 3/8" round stock, welded to each side of first vertical side brace.		
<u>FULL REAR</u>	To extend to bottom of longitudinals with five (5) light hole punch cuts.		
	All lights recessed behind skirt across rear.		
	Side lights to be flush mount, rubber grommet type.		
<u>CONSPICUITY TAPING:</u>	Dump truck body sides, rear face and tailgate perimeter to be outlined as per NHSTA guidelines in SCOTHLITE CONSPICUITY SHEETING DIAMON GRADE 980 RED/WHITE 2" WIDE.		
<u>UNDER BODY TOOL BOX</u>	There shall be a underbody tool box mounted where space allows.		
<u>LADDER</u>	Ladder shall have three rungs and have the ability to slide horizontally to the body for storage.		
<u>HYDRAULIC HOOKS</u>	There shall be four (4) hooks along the side of the body to hold and guide the hydraulic hoses for the precision placement spreader to the front hook-ups.		
<u>SPREADER POCKETS</u>	There will be a total of four spreader pockets installed inside and outside of the body.		
<u>LOAD COVER WITHOUT ARMS:</u>	The body shall come equipped with a Pull-Tarps Steel Protector Support System or equal. The tarp system shall be actuated by a single spring which shall be adjustable. The spring shall be protected by an aluminum tube. The tarp system does not require the use of control arms or crank handles. Two (2) tarp control ramps shall be installed on the tailgate to hold the tarp fully extended. The tarp material shall be asphalt rated material.		
<u>LIGHTING:</u>	<u>BODY LIGHTS:</u>		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>LIGHTING:</u>	All body lights to meet Federal Safety Standard #108 and shall be installed using rubber shock mounted recessed lights with body wiring in heavy loom.		
	There shall be three 2" red, round LED marker lights installed below the apron.		
	Marker lights to be LED		
	There shall be a 2" LED light to be installed in the dash to notify the operator that the body is in the "UP" position.		
	<u>DOT3 SYSTEM:</u>		
	The Super-LED DOT light system shall be a Whelen model 00007DS0 as described herein.		
	The product being bid must be a standard production model of the manufacturer.		
	All major components such as LED flashers, LED light heads, cables, lenses, etc., must be designed and manufactured within the United States. Bids offered in which major components (such as LED populated board, etc.) are manufactured off-shore are not acceptable.		
	<u>REAR SUPER-LED® HEAD ASSEMBLIES</u>		
	Mounted into the rear of the vehicle shall be two (2) 700 Linear Super-LED heads, two (LED) brake/tail/turn light modules, and two (2) LED Back-Ups, one set on each side.. Each Super-LED head shall be capable of emitting a full 180 degrees of light in the vertical plane. The light heads shall be recessed into a heavy duty 7 gauge steel housing. The steel housing shall be provided with each set of modules.		
	The two rear 700 Linear Super-LED heads shall utilize a DOT LED flasher which is mounted and encapsulated in a junction box (NOTE: Junction Box must be installed inside the cab). The DOT LED flasher shall allow the two rear 700 Linear Super-LED's to be controlled independently from the front head assembly.		
	The 700 Linear Super-LED assembly, brake light and back-up, including the steel housing, shall be approximately 23-1/2 inches high, 4-7/8 inches deep and 3-1/2 inches wide.		
	The modules, as well as the lens, shall be easily replaceable. A waterproof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistance as well as ease of replacement.		
	The 700 Linear Super-LED lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.		
There shall be two (2) LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of (72) Red LED's. The module must be in "signal alert" flash pattern, which flickers three times (within 150 milliseconds) before becoming steady "on". These modules must meet or exceed SAE requirements.			
<u>LIGHTING:</u>	There shall be two (2) LED Back-Ups, one (1) located in the bottom position of each steel housing. Each module must contain a minimum of (48) White LED's for maximum light output. These modules shall be supplied with a Clear polycarbonate lens.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimilar metal corrosion. Units that screw into a steel bracket are unacceptable since they tend to corrode over time.		
	<u>CABLE HARNESSSES:</u>		
	The cable being supplied from the rear housings must be heavy-duty TPR-type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14 gauge, pure copper stranded, and fully tin coated. No less than (30) feet of cable shall be provided for each head assembly. All necessary connectors shall be provided, including a strain-relief system.		
	<u>PLOW LIGHTS:</u>		
	To be installed as per DOT Standards, Truck-Lite 's Universal Plow lights with appropriate truck harness kit.		
	These plow lights are to be wired into the trucks existing headlight circuit using the factory installed switch.		
	Plow lights must function in high and low beam modes using existing trucks dimmer switch.		
	At no time shall the plow lights and normal truck headlights be able to operated at the same time.		
	The plow lights shall be mounted as far forward on the hood of the truck as possible.		
	The mounting brackets for the plow lights shall be made of carbon steel and painted in gloss black.		
	<u>CAB SHIELD LIGHTING:</u>		
	There shall be shall be five (5) 700 Linear Super-LED installed in the cab shield, three in the front and one on the passenger's side and one on the driver's side.		
	The 700 Linear Super-LED lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.		
	The LED strobe shall be installed in black flanges.		
	The lights shall be synchronized with the DOT-3 system.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>WIRING:</u>	Wiring and harness system shall meet ISO rating IP68 and NEMA 6. The connectors shall be zinc die cast E-coated, similar to a MIL spec connector. Each shall have three sealing points- the lock ring itself, a raised portion of the molded plastic around each pin, and a viton O-ring that seals the whole connector. The cable jacket shall be TPE- thermoplastic elastomer, and molded to the connectors. PVC jacketed wire is not acceptable. Connectors and harness shall be rated and tested for a temperature range from - 30C to + 70C. Connectors shall be tested to be water tight when submerged in 6' of water for 24 hours, in 275' of water for 1 hour, and when subjected to a 1000-psi pressure wash. The connectors shall be designed to have NO corrosion after 5000 hours in a 35C salt spray. Cabling shall be rated excellent in low temperature flexibility and in its resistance to oxidation, heat, oil, weather, sun, ozone, abrasion, electrical priorities, flame, water, acid, alkali, gasoline, benzol, toluol, degreaser solvents, alcohol, and weld slag.		
<u>PINTLE HOOK PACKAGE</u>	Rear of the chassis shall have two (2) tow hooks, one on each side of the chassis.		
	A Holland Model T90 Pintle hook shall be mounted to the 5/8" pintle plate. The pintle plate shall be reinforced to the chassis rails.		
	The pintle hook height shall be 29" to 30" to the center of the hook.		
	Two (2) D-rings shall be permanently attached to the pintle plate, one on each side of the pintle hook.		
	A weather proof seven (7) spade male and female trailer light plug shall be installed in the rear crossmember with the female wired and the male supplied		
<u>CENTRAL HYDRAULIC SYSTEM</u>			
<u>GENERAL:</u>	THE CS-105 incorporates joystick and auxiliary switch functionality in a compact, easy to use package. The backlit LCD display provides active plow and body control. Customizable and easy to read backlit legends and indicators allow for quick identification of functions even in low light conditions. A multi-function joystick allows for control of up to three valve sections.		
	The CS105 also must have a location for up to three (3) backlit rocker switches. These switches must be used for auxiliary light control.		
<u>HYDRAULIC PUMP – REXROTH PUMP MODEL A10VSO60DFR/30L</u>	The PTO mounted flow and pressure compensated pump shall be driven via a hot shift power take off. The hydraulic pump must be of piston type and capable of 35 GPM @ 2000 RPM. Pressure sense line must be internally bled at the pump. Pump case drain must be plumbed directly to reservoir – not through return line filter.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>LOW OIL SHUTDOWN</u>	A single normally open, two position, two way, poppet type solenoid valve must be mounted directly to the hydraulic pump discharge port in such a way as to stop all oil flow to the hydraulic system when energized. The solenoid valve must be wired directly to an in-tank mounted level indicator. The level indicator shall be of the float type and mounted from the top of the reservoir. When the float switch contacts close, the shutdown valve blocks pump flow and an annunciator on the main control will be activated. The momentary switch shall be wired in such a way as to de-energize the system shutdown to facilitate fault finding and equipment stowing.		
<u>HYDRAULIC VALVES – REXROTH VALVE MODEL M4</u>	Central Hydraulic System valving shall be of mobil design to withstand exposure to de-icing chemicals and severe weather conditions without the use of a watertight enclosure. It shall be of cast iron construction, horizontally stackable and serviceable without disassembly. Each section must have built-in flow and pressure compensator to allow simultaneous operation regardless of any other system function. Sections for hoist, snow plow lift and reversing shall be operated by the CS105 joystick. All valving shall be mounted in one main valve assembly. Multiple valve assemblies are unacceptable.		
<u>CABLE ASSEMBLIES</u>	All electrical cables supplied must come complete with attached watertight “quick disconnect” connectors, shielded, heavy duty industrial and anti-scuff and breathing. Wire joints must be soldered and heat shrink tubing used in all joints.		
	Valve sections will be stacked in the following order from inlet to outlet.		
	Inlet: Closed Center Inlet		
	Hoist: DA Mech. With 500 PSI “A” Port Relief		
	Plow Lift: DA Electric Proportional		
	Plow Reverse: DA Electric Proportional		
	Single Acting On/Off Electric Section		
<u>HYDRAULIC LINES AND PLUMBING</u>	All hydraulic lines, pipes, hoses, and fittings shall be of sufficient capacity to accommodate the volume of oil without undue heating or turbulence in the system. A 2” suction line with a minimum SAE rating of 100-R4 must be used between the reservoir and the inlet of the pump. All of the pressure hoses, including the signal sensing line to the pump must have swivel fittings on both ends and have a minimum SAE rating of 100-R2. Return lines and the case drain line must have a minimum SAE rating of 100-R1.		
<u>HYDRAULIC LINES AND PLUMBING</u>	Hydraulic lines shall be routed to minimize interference with equipment and chassis components requiring periodic servicing. Appropriate support brackets, grommets, and ty-raps shall be provided to protect lines from abrasion, cutting and impact damage. Hoses shall not be installed near manifold or exhaust pipes so tat to be affected by extreme heat. There shall be no pipe fittings used with any high pressure lines. Any and all hydraulic quick disconnect couplings used for spreader system and snow plow reversing system shall be of the bulkhead mounted style and be rigidly attached without the use of any hose clamp arrangements, (Loose hose ends are not acceptable). Dust cap for male ends and dust plugs for the female ends must be attached to couplers. Maximum distance allowed between support clamps on all hydraulic hoses shall be approximately 24”.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>VALVE ENCLOSURES</u>	A valve enclosure will be provided for protection of wiring. Valve enclosure must be constructed of 10 gauge steel. Valve will be placed in an enclosure in such manner for complete servicing of valve. Enclosure must have cable restrain and not to be watertight. A valve enclosure will be provided for protection of wiring. Valve enclosure must be constructed of 10 gauge steel. Valve will be placed in an enclosure in such manner for complete servicing of valve. Enclosure must have cable restrain and not to be watertight.		
<u>HYDRAULIC RESERVOIR</u>	Hydraulic reservoir to be a minimum of 37 gallon capacity and be constructed of 12' gauge steel. Due to service accessibility, a hydraulic reservoir incorporating an integral valve enclosure that is part of the hydraulic tank, will not be acceptable. The reservoir must be baffled, have a magnetic drain plug, lockable Protecto-Seal cap – NO EXCEPTION, and a suction strainer with a minimum 2" NPTF outlet. A minimum 5" diameter clean-out port. Reservoir shall also have an electrical low-level indicator.		
	There shall be a bumper made out of 7" Channel with a 2" flange (6.9 Ft/lbs) that wraps around the hydraulic reservoir and the valve enclosure an connects back to the chassis rail.		
<u>FILTER</u>	A Return Line Filter, Muncie RLF-501, shall be installed in the return line, near reservoir, in a position that facilitates ease of maintenance. The filter shall be of minimum 50 GPM flow rating and 10 micron filtration. The element shall be of the spin-on/throw away type, and the filter head shall be equipped with a filter condition indicator.		
<u>WAUSAU HOME SAFE POWER REVERSIBLE TRIP EDGE SNOW PLOW WITH POLYETHYLENE MOLDBOARD</u>			
<u>GENERAL</u>	These specifications describe a Power Reversible Trip Edge snow plow which shall be built from new material and definitely suited for continuous work under difficult conditions of snow removal.		
<u>MOLDBOARD ASSEMBLY</u>	The moldboard shall be not less than 36" high nor less than 120" long.		
<u>MOLDBOARD ASSEMBLY</u>	The moldboard sheet shall be formed from not less than 3/8" thick high molecular weight polyethylene sheet.		
	The polyethylene sheet shall have a minimum tensile strength of 4000 P.S.I., and when tested in accordance with ASTM D638, it shall evidence a minimum of 600T (2") elongation at break.		
	In addition, the sheet shall evidence no break following izod impact test conducted in accordance with ASTM D256A.		
	The sheet shall be formed from a polyethylene material, which is made from new resin, (recycled material is not acceptable), and shall be color impregnated and ultra violet stabilized to a "Schmidt Blue" pigmentation.		
	It shall attach to a frame work which includes not less than ten (10) steel reinforcing ribs at least 1/2" thick x 3-1/2" wide and a lower moldboard reinforcement from not less than 4" x 3" x 1/2" steel angle so as to form a rigid structure.		
	The upper portion of the moldboard shall project over the cutting edge so as to form a continuous, solid, integral snow shield and shall include an upper reinforcement from not less than 3" x 2-1/2" x 3/8" steel angle.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>CUTTING EDGE</u>	Shall be one (1) in number and shall be from 1/2" x 8" C1065 steel, punched to AASHO standards on 12" centers and supported by a reinforcement from not less than 4" x 4" x 3/4" steel angle.		
	The cutting edge shall be reversible for double wear.		
<u>TRIPPING EDGE MECHANISM</u>	Shall be of the single edge design, which shall activate whenever the cutting edge comes into contact with an obstruction on the pavement.		
	Trip activation shall be achieved through five (5) torsion springs from not less than 3/4" square wire, having a 3-3/4" O.D., with fifteen (15) active coils each.		
	Each spring shall be pinned in place in a horizontal position and shall butt to the lower moldboard reinforcement and to the cutting edge reinforcement.		
	Spring adjustment shall be provided so as to alter the precharge of springs for varying plowing conditions.		
<u>DRIVE FRAME AND REVERSING MECHANISM</u>	The drive frame and reversing mechanism shall consist of an "A" frame, a truss frame and two (2) single acting hydraulic cylinders with 3-1/2" diameter x 16" stroke.		
	The "A" frame shall be a triangular weldment with 3/8" thick steel plates (top and bottom), a rear member from not less than 1" thick steel plate and two (2) center reinforcements from not less than 3/8" thick steel plate, so to form a boxed center section.		
	The height of the boxed center section shall be 5-3/4".		
	The truss frame shall include a main drive member from 4" square tubing with 3/8" wall.		
<u>DRIVE FRAME AND REVERSING MECHANISM</u>	The truss frame shall pin to the moldboard at not less than 4 points over a span of not less than 82" and shall include two (2) moldboard braces which allow for alternate moldboard positioning.		
	Moldboard and truss frame shall pivot about the "A" frame on a lubricated pin, not less than 2-1/2" in diameter, up to 37 degrees either side of the chassis center line.		
	The pin shall be designed in such a way that it will be easily removed for maintenance.		
	Each cylinder shall have 3-1/2" diameter pistons, which terminate with 2-1/2" diameter connecting lugs.		
	Both the rods and lugs shall be from case hardened, chrome plated steel and shall be protected by a hydraulic cushion valve.		
	The "A" frame shall be fitted with a cable lift arrangement, which shall accommodate plow reversing operations with the plow either on the ground or at the carry position.		
	This arrangement shall be of a design which prohibits plow list, when the moldboard is angled in the carry position.		
<u>PLOW COUPLING BAR</u>	Shall be of a design, which can be accommodated by a truck mounted "Frink Tor-Lok" quick coupler locking device.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	It shall consist of an angle weldment, which includes an angle drive bar, fitted with attachment ears and male arrowhead shaped coupler.		
	This weldment shall pin directly to the rear of the drive frame.		
	The arrowhead shall be from 1" thick plate, 4-3/4" wide at its neck, 10" wide at its extremity and 12-1/4" in overall length.		
SPRAY GUARD:	Shall bolt on the top moldboard flange or reinforcement.		
	It shall consist of a 12" wide x 3/8" thick rubber belt, metal retaining strap and necessary mounting hardware.		
ADJUSTABLE CASTER WHEELS:	Two (2) screw adjustable, casted, steel wheels shall be supplied (10" O.D. with 1-1/4" diameter axle and tapered roller bearings).		
	They shall connect at each side of the plow.		
MOLDBOARD SHOES:	The cutting edge shall be fitted with two (2) fabricated steel moldboard shoes.		
	Each moldboard shoe shall offer a minimum of 40 sq. in. of bearing surface and shall attach to the underside of the cutting edge reinforcement.		
CURB SHOE:	An additional bumper shall be supplied at each end of the moldboard (qty. 2).		
	They shall be from a minimum of 3/4" x 6" steel, shall bolt at the cutting edge face and shall project 1" outside each end of the cutting edge.		
<u>WAUSAU LOW MOUNT CUSTOM SNOW PLOW HITCH</u>			
GENERAL:	These specifications are intended to describe a low mount custom designed snow plow hitch designed to keep the hitch and plow as close to the truck grille and/or bumper as possible and allow the hood of the intended chassis to tilt forward for engine service without necessitating movement of the main vertical members.		
	It shall consist of push frame and the plow lifting device.		
	The hitch shall be designed so that the lift arm and hydraulic ram is capable of collapsing and pinning to a stowage position when the plow is not in use.		
	This design requirement is to shorten the protrusion capability of the lift arm arrangement.		
	The main frame shall consist of two (2) formed channels of 3/8" plate for the vertical members.		
	The two horizontal members shall be 4" x 3" x 5/16" wall tubing and incorporate mounting brackets for working and storage positions of the lift arm and hydraulic cylinder.		
	Attached to the push frame shall be a locking device for the coupling of the plow to the truck.		
	The locking device shall have an opening 3-1/2" x 11-1/2" at the front and 2-1/2" x 10-1/2" at the rear.		
	The opening shall be beveled to allow easy entrance of the arrowhead.		
	Two (2) steel spring loaded locking blocks, installed directly behind the beveled opening, shall automatically clamp about the arrowhead, whenever the arrowhead enters the opening during coupling operations.		
	The locking device shall be so designed as to permit oscillation of the snow plow whenever uneven road contours are encountered.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	A handle shall be supplied to unclamp the locking blocks from the arrowhead whenever uncoupling of the plow from the truck is desired.		
	The hydraulic lift ram shall have a 4" bore, double acting design, with a hard chrome plated piston rod.		
<u>ZIEBART UNDERCOATING PACKAGE</u>			
<u>GENERAL:</u>	MANUFACTURER: Ziebart or equal		
	Sealant must protect against road damage and rust.		
	Sealant must reduce vibration and insulate underbid from heat and road noise.		
	Sealant must penetrate and protect seams and spot welds.		
	Sealant must meet federal and military sealant spec. MIL-C-62218.		
	Sealant must comply with federal standard 297E.		
	Sealant shall be impervious to water, salt and mud.		
	Sealant shall be applied to the following areas:		
	<input type="checkbox"/> Front fender wells		
	<input type="checkbox"/> Cab and body underside		
<input type="checkbox"/> Chassis frame rails			
<input type="checkbox"/> Door insides			
<u>GENERAL:</u>	<input type="checkbox"/> All other area required by Ziebart		
<u>BIDDER QUALIFICATIONS FOR ZIEBART APPLICATIONS</u>	Applicator must be Ziebart Trained and Authorized Technician with experience on all vehicle types.		
	Application must be made in strict adherence to Ziebart application manual, for proper warranty administration.		
	To insure proper application and to fulfill warranty obligations, Ziebart must be applied in a heater spray booth of not less than 960 square feet.		
	An inspection of applicator facility will be conducted before any award is made.		
	Authorized Ziebart applicator must have at least 50 applications similar in nature and supply a users list upon request.		

COMPLIANCE TO SPECIFICATIONS

The bidder shall indicate 100% compliance by checking "YES" or non-compliance by checking "NO" for each line item of specification. Any space left blank shall be considered non-compliant. Any deviation from the specification, or where submitted literature does not fully support the meeting of specifications, must be clearly cited in detail, in writing, by the bidder and submitted with the bid. NO verbal interpretations will be accepted! In addition NO deviations below "minimum" specifications as written will be accepted.

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>PACKAGE C: TEN WHEEL TRUCK, DUMP BODY, AND CENTRAL HYDRAULICS FOR HI-WAY SPREADER</u>			
Description: Chassis Specifications For A New 2014 GU713 Chassis With SCR Technology To Meet 2010 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase	Chassis: 2014 Mack GU713 Chassis Or Equal		
	Frame Rails, 11.811"X 3.54"X .44" Steel		
	1/4 inch inside frame reinforcement		
	Section Modulus 32.7cu In/Rbm 3,580,000 In Lbs. Per Rail		
	Wheelbase, 241" CT" 153"		
	Platform, 243" LP 56" AF Used With 241" WB		
MAXIMUM GVW & AXLE RATINGS	Gross Vehicle Weight Rating Of 84,000lbs.		
	Front Axle Capacity- 18,000 Lbs.		
	Rear Dual Drive Axle Capacity- 46,000lbs		
	Front Steer Axle-Gross Axle Weight Rating- 18,000lbs		
	Rear Drive Axle -Gross Axle Weight Rating- 46,000lbs		
ENGINE	MP7-405M 405 HP @ 1500-1900 Rpm. 1480 Lb. Ft. Max. Torque @ 1200 Rpm		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2010 Utilizing Selective Catalyst Reduction (Scr). Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT	Cummins 18.7 Cfm Air Compressor		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11"X30" Back Of Cab Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below -34 Degrees Fahrenheit With Coolant Conditioner Filter		
Engine Block Heater, Gomack (Phillips) - 1500 Watt 120 Volt With Intake Grid Heater			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Engine Hoses And Tubing, Silicone		
ENGINE EQUIPMENT	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382 Fuel Pro. Fuel Heater, Water Separator		
	Hand Primer Pump		
	Hoses, Radiator, Heater, Silicone		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION	Allison Automatic Transmissions-4500RDS 6 Speed		
TRANSMISSION EQUIPMENT/	Driveline-Main, Meritor 18N HD With Coated Splines with 17N interaxle driveshaft		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT	Air Conditioner With Sanden Rotary Compressor		
	Integral W/ Heater And Defroster		
	Tethering Device For Oil Caps And Dipsticks		
	Air Restriction Monitor ,Air Cleaner Intake Mtd		
	Instrument Cluster Display ,Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guarddog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) With Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock		
	Cigar Lighter On Instrument Panel		
	Overhead Console With 2 Storage Compartments		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM/CD Radio With Weatherband		
	Driver and Passenger side Power door locks and Windows		
	Dpf Regeneration Switch In Dashboard		
	Gauge, Air Pressure		
Gauge, Voltmeter			
Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
CAB EQUIPMENT	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer W/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, RH & LH Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights , (5) Truck Lite LED Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Gear Shift, Neutral To Range Inhibit		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, RH & LH Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Parking Brake On Indicator Light		
	Right Side Door Peep Window		
	Exterior Sun Visor		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (High-Back) Air Suspension		
	Seat – Rider, Bostrom Mid Back Stationary Seat		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder W/ Cab Mounted Shoulder Belt		
	Sun visor –Interior , Both Sides (Padded Vinyl		
	Side Markers, Lamps And Reflectors		
	Starter Switch, Key Type		
Steering Wheel, 18” Two Spoke Urethane Grip			
Windshield Washers, Electric, Wiper Mounted W/ Reservoir Back Of Cab			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Windshield Wipers, Sprague 2 Speed Electric Motor W/ Intermittent Feature		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Swept Back Steel		
	Crossmembers, Steel Huck Bolted Back To Back I Beam Type		
FRAME EQUIPMENT/ FUEL TANKS:	Flaps – Wheel (Front) Black Poly Armor		
	Framerail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 66 Gallon Aluminum With 11 Gallon Def Fluid Tank- Clear Back Of Cab Package		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL 18 18,000 Lb. Capacity-Sealed Kingpins- Maintenance Free Front Axle		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20PLY. M860 (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5x9.0		
	Brakes – Front, Bendix Es165-06d “S” Cam Type 16.5”X6” Cast Spider		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Single Steering Box, Sheppard SD110 With Tilt And Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle/Suspension, Mack S462 46,000 Lb. Capacity with power divider differential lockout		
	46,000 Lb. Multileaf Rear Suspension		
	Dual Reduction Rear End Gears		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (8)11R24.5 14 Ply (M726 Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 30/30 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.66 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 24.5x8.25 Accuride		
	Brakes – Rear, Bendix ES165-07d “S” Cam 16.5” X 7” Cast Spider With Bronze Bushing		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Chicago Rawhide (Scotseal)		
	Slack Adjusters – Rear, Haldex – Automatic		
Spring Brake Chambers – Quantity, (4) Chambers Double Diaphragm Type			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
AIR/BRAKE	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor Wabco 1800 Heated With Coalescing Oil Filter		
AIR/BRAKE	Anti-Lock Brake System, Bendix With Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Whitacker electric jump system mounted under D/S cab with 20FT jumper cable.		
	CB radio hookup in dashboard with antennas mounted to mirrors		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights,		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional And Back-Up Lights-Led Module		
Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250			
PTO:	Transmission mounted power take off system		
PAINT:	Cab Exterior, Green-Base Coat/Clear coat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Rear Axle Spare Tire And Rim Mounted		
WARRANTY:	Front bumper guides poles with bulldogs.		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Basic Vehicle – 12 Months On All Components		
	Allison Transmission – 5 Years / Unlimited Miles		
PUSHER AXLE:	Hendrickson 20,000 lb. Steerable pusher axle with automatic lift in reverse		
	Bridgestone (2) 315/80R22.5 M860 20 PLY Tire		
	Accuride (2) 22.5 X 9.0 Steel Hub piloted steel rim		
AIR-FLO MODEL DBI 17' INSULATED DUMP BODY			
GENERAL:	The dump body shall be all steel having a minimum 15 cubic yard water line capacity.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The body shall have the following dimensions:		
	a. Body Length: 204" (+/- 2")		
	b. Inside Width: 90" (+/- 2")		
	c. Outside Width: 102"		
	d. Side Height: 41" (+/- 2")		
	e. Front Height: 49" (+/- 2")		
GENERAL:	f. Tailgate Height: 49" (+/- 2")		
	The entire body (not including the inner floor) including the tailgate and boxed top rail must be fabricated from high tensile strength (HTS) 3/16" steel with a 50,000 PSI minimum yield strength.		
	The inner floor shall be 1/4" T-1 Type A 321/380 Brinell Hardness Number (BHN) having a 100,000 minimum yield tensile strength.		
	Additionally a 1/2" liner of Owens Corning fiberglass insulation - ridged board type #705 or equal shall be installed between the inner and outer shell of the front head, floor; sides; and tailgate.		
	The front body panel shall be body panel shall be fabricated using 3/16" HTS steel.		
	Each side shall be of one (1) piece construction.		
	The body must be reinforced with vertical box type braces, at least five 7" (+/- 1") braces on each side of the body.		
	The sides shall have minimum 4" x 3-3/16" high tensile strength boxed top rails.		
	A dirt shedder rub-rail with a minimum 2" grip strut cat walk between the boxed side braces required.		
	The body shall include a minimum 6" wide 3/16" HTS steel front corner post on each side.		
	The body shall include a minimum 6" wide 3/16" HTS steel rear corner post on each side.		
	A full width 12" (+/- 1") bolster fabricated using 3/16" HTS steel shall be		
	The rear corner posts shall be designed to allow the recessed installation of strobe and tail lights as detailed in the lighting section of these specifications.		
	The contractor shall take into consideration the installation of the lights to ensure that the lights are protected.		
	The under structure shall be comprised of six inch (minimum) I-beam longitudinal rails and four inch (minimum) I beam cross-members spaced on 12" centers with 5-1/2" x 5-1/2" forty-five (45) degree gussets installed between cross-members and longitudinal members at all of the cross-members.		
	All Joints, angle iron braces, reinforcing members etc., must be hot-riveted or electrically welded.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Full weld required on the body shell.		
	Skip welding will not be accepted.		
<u>DUMP BODY HOIST:</u>	The hoist in this specification is required to meet NTEA class 110 when used with a 17' body an installed with a 12" overhang.		
	The capacity at the critical angle (when the smallest diameter stage begins to extend) shall be no less than 28.7 tons(at 2000psi.)		
	The cylinder shall be a trunion mounted telescopic.		
<u>DUMP BODY HOIST:</u>	It shall be installed with the largest stage at the bottom for stability.		
	An inverted telescopic hoist will not be accepted.		
	All components of this cylinder with the exception of the seal kit shall be processed through a liquid salt bath nitriding treatment to enhance the surface hardness and corrosion resistance.		
	Harness achieved will be Rockwell C scale 55 - 60, and corrosion resistance will be roughly five times that of hard chrome plating.		
	The cylinder shall be a bore seal design, with each section sealing against the ID of the next larges diameter tube.		
	As the external surface of these tubes never makes contact with a seal, scrapes and scores on the tube Ods will not affect the sealing capabilities.		
	There will be an oscillating collar on the outer cover of the cylinder to allow the body to be offset 5 to 7 degrees without transferring that side load to either the truck frame or cylinder tubes, and therefore enhancing stability, and longevity.		
	The cylinder shall have a two-year warranty.		
	Safety body props required, capable of holding the body in the raised position.		
	One (1) each side with cradle to hold the loose end in a positive seat on the sub-frame or cross-member.		
<u>TAILGATE</u>	The tailgate of the truck shall be of a sloped (9" - 12") design to assist in unloading operations.		
	The tailgate shall be fabricated using 3/16" HTS steel.		
	The gate must be top hung and shall not project above the rear of the body.		
	The tailgate shall be vertically and horizontally braced to form a minimum of six square panels.		
	The braces shall be of a dirt shedding design.		
	The tailgate shall have a minimum 1-1/4" offset top hinge and a 1-1/4" diameter top hinge pin.		
	The bottom pin shall have a minimum 1-3/8" diameter held in place by a 1/2" plate steel hook.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The tailgate outer latch plate shall be fabricated using 1/2" plate steel.		
	A minimum 3/8" spreader chain with adjusting bracket is required.		
	The tailgate release shall be an air cylinder with adjustable clevis type linkage.		
	The tailgate release cylinder shall be operated through a remote (cab mounted) labeled air valve.		
	There will be a total of four spreader pockets installed on the outside of the body.		
<u>TAILGATE</u>	The locking device for the tailgate shall be positive in action.		
	Grease fittings are required at all pivoting or support bearing points.		
	The tailgate shall have three built in asphalt chutes fabricated from a minimum 1/4" HTS steel.		
	The chutes shall be placed right and left of center on the gate.		
	The chutes shall measure approximately 16" x 16".		
	The chute doors shall ride in guide channels.		
	The chute doors shall be raised and lowered using an over center mechanism with handles having rubber grips.		
	The door mechanism shall include dual 1/2" turnbuckle style threaded adjusting rods with clevis ends installed on each chute door.		
	The tailgate shall also have a lifting eye installed for the ease of removing the tailgate.		
	Rear latches to include "Philly Type" locks and T turn buckles.		
<u>BODY ACCESSORIES</u>	An access ladder and steps must be provided at the driver side of the body designed to allow the operator to safely climb to the top of the body side.		
	Grab handles or safety rails must be provided.		
	Ladder shall have three rungs and have the ability to slide horizontally to the body for storage.		
	A minimum 5/8" tarp rail/grab handle mounted horizontally and running the full length of the body is required.		
	This rail will be positioned approximately 6" below the top of the body.		
	A minimum two inches (2") diameter labeled warning light must be provided and located in the cab on top of the dashboard to indicate to the operator when the body is away from the stowed position.		
	The exact location to be determined upon review of plans.		
	The light must remain on until body is fully seated on the subframe rails.		
	Body shall be equipped with (minimum) 12 gauge steel splash guards forward of the tandem axles.		
	Mud flaps are required.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The flaps must be installed on spring loaded (break-away) brackets.		
	The mud flaps shall be equipped with a 3/8" chain with "S" hook at the lower end and hook ring on the body side so that the mud flaps can be folded and held up for paving operations.		
	Vendor shall supply and install an underbody vibrator.		
	The unit supplied must be capable of producing 2,700 pounds of force.		
	The vibrator electrical requirements shall be a circuit breaker protected 12 Volts, 60 amps.		
	A labeled heavy duty momentary push button type switch shall be mounted in the cab control body vibrator function.		
<u>BODY ACCESSORIES</u>	The tailgate shall have "Philly" Locks as per drawing.		
<u>CAB SHIELD</u>	A half (1/2) cab shield with angled side supports must be installed at the front of the dump body.		
	The shield must be mounted as low as possible, approximately three inches (3") from the cab roof.		
<u>LOAD COVER</u>	The tarping system shall be a PullTarps Steel Protector Plus.		
	The Trap system return shall be actuated by a single spring.		
	Spring tension shall be adjustable.		
	Spring shall be protected by means of an aluminum tube.		
	Tarp system shall not require the use of control arms, or crank handles.		
	Tarp system shall incorporate the use of two (2) control ramps to hold the tarp fully extended.		
	Tarp material shall be an asphalt rated fabric.		
	Tarp system shall be cab shield mounted.		
<u>BACK-UP ALARM:</u>	Back up alarm to be an Ecco electric Model SA914 self adjusting from 87 dB to 112 dB.		
<u>CONSPICUITY TAPING:</u>	Dump truck body sides, rear face and tailgate perimeter to be outlined as per NHSTA guidelines in SCOTHLITE CONSPICUITY SHEETING DIAMON GRADE 980 RED/WHITE 2" WIDE.		
<u>UNDER BODY TOOL BOX</u>	There shall be a underbody tool box mounted where space allows.		
<u>LADDER</u>	Ladder shall have three rungs and have the ability to slide horizontally to the body for storage.		
<u>SPREADER POCKETS</u>	There will be a total of four spreader pockets installed on the inside and outside of the body.		
<u>LIGHTING:</u>	<u>BODY LIGHTS:</u>		
	All body lights to meet Federal Safety Standard #108 and shall be installed using rubber shock mounted recessed lights with body wiring in heavy loom.		
	There shall be three 2" red, round LED marker lights installed below the apron.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Marker lights to be LED		
	There shall be a 2" LED light to be installed in the dash to notify the operator that the body is in the "UP" position.		
	DOT3 SYSTEM:		
	The Super-LED DOT light system shall be a Whelen model 00007DS0 as described herein.		
	The product being bid must be a standard production model of the manufacturer.		
LIGHTING:	All major components such as LED flashers, LED light heads, cables, lenses, etc., must be designed and manufactured within the United States. Bids offered in which major components (such as LED populated board, etc.) are manufactured off-shore are not acceptable.		
	<u>REAR SUPER-LED® HEAD ASSEMBLIES</u>		
	Mounted into the rear of the vehicle shall be two (2) 700 Linear Super-LED heads, two (LED) brake/tail/turn light modules, and two (2) LED Back-Ups, one set on each side.. Each Super-LED head shall be capable of emitting a full 180 degrees of light in the vertical plane. The light heads shall be recessed into a heavy duty 7 gauge steel housing. The steel housing shall be provided with each set of modules.		
	The two rear 700 Linear Super-LED heads shall utilize a DOT LED flasher which is mounted and encapsulated in a junction box (NOTE: Junction Box must be installed inside the cab). The DOT LED flasher shall allow the two rear 700 Linear Super-LED's to be controlled independently from the front head assembly.		
	The 700 Linear Super-LED assembly, brake light and back-up, including the steel housing, shall be approximately 23-1/2 inches high, 4-7/8 inches deep and 3-1/2 inches wide.		
	The modules, as well as the lens, shall be easily replaceable. A waterproof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistance as well as ease of replacement.		
	The 700 Linear Super-LED lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.		
	There shall be two (2) LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of (72) Red LED's. The module must be in "signal alert" flash pattern, which flickers three times (within 150 milliseconds) before becoming steady "on". These modules must meet or exceed SAE requirements.		
	There shall be two (2) LED Back-Ups, one (1) located in the bottom position of each steel housing. Each module must contain a minimum of (48) White LED's for maximum light output. These modules shall be supplied with a Clear polycarbonate lens.		
	The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimilar metal corrosion. Units that screw into a steel bracket are unacceptable since they tend to corrode over time.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	<i><u>CABLE HARNESSSES:</u></i>		
<u>LIGHTING:</u>	The cable being supplied from the rear housings must be heavy-duty TPR-type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14 gauge, pure copper stranded, and fully tin coated. No less than (30) feet of cable shall be provided for each head assembly. All necessary connectors shall be provided, including a strain-relief system.		
	<i><u>PLOW LIGHTS:</u></i>		
	To be installed as per DOT Standards, Truck-Lite 's Universal Plow lights with appropriate truck harness kit.		
	These plow lights are to be wired into the trucks existing headlight circuit using the factory installed switch.		
	Plow lights must function in high and low beam modes using existing trucks dimmer switch.		
	At no time shall the plow lights and normal truck headlights be able to operated at the same time.		
	The plow lights shall be mounted as far forward on the hood of the truck as possible.		
	The mounting brackets for the plow lights shall be made of carbon steel and painted in gloss black.		
	<i><u>CAB SHIELD LIGHTING:</u></i>		
	There shall be shall be five (5) 700 Linear Super-LED installed in the cab shield, three in the front and one on the passenger's side and one on the driver's side.		
	The 700 Linear Super-LED lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.		
	The LED strobe shall be installed in black flanges.		
The lights shall be synchronized with the DOT-3 system.			
<u>WIRING:</u>	Wiring and harness system shall meet ISO rating IP68 and NEMA 6. The connectors shall be zinc die cast E-coated, similar to a MIL spec connector. Each shall have three sealing points- the lock ring itself, a raised portion of the molded plastic around each pin, and a Viton O-ring that seals the whole connector. The cable jacket shall be TPE- thermoplastic elastomer, and molded to the connectors. PVC jacketed wire is not acceptable. Connectors and harness shall be rated and tested for a temperature range from - 30C to + 70C. Connectors shall be tested to be water tight when submerged in 6' of water for 24 hours, in 275' of water for 1 hour, and when subjected to a 1000-psi pressure wash. The connectors shall be designed to have NO corrosion after 5000 hours in a 35C salt spray. Cabling shall be rated excellent in low temperature flexibility and in its resistance to oxidation, heat, oil, weather, sun, ozone, abrasion, electrical priorities, flame, water, acid, alkali, gasoline, benzol, toluol, degreaser solvents, alcohol, and weld slag.		
<u>PINTLE HOOK PACKAGE</u>	Rear of the chassis shall have two (2) tow hooks, one on each side of the chassis.		
<u>PINTLE HOOK PACKAGE</u>	A Holland Model T90 Pintle hook shall be mounted to a 5/8" pintle plate. The pintle plate shall be reinforced to the chassis rails.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The pintle hook height shall be 29" to 30" to the center of the hook.		
	Two (2) D-rings shall be permanently attached to the pintle plate, one on each side of the pintle hook.		
	A weather proof seven (7) spade male and female trailer light plug shall be installed in the rear crossmember with the female wired and the male supplied		
<u>BOSCH-REXROTH CENTRAL HYDRAULIC SYSTEM SECTION:</u>			
<u>VALVES:</u>	The central hydraulic system valve shall be a high-pressure load-sensing valve of sandwich plate design and constructed of cast iron.		
	Aluminum manifold designs shall be unacceptable.		
	The valve shall be horizontally stackable and serviceable without disassembly.		
	This is to include removal of the pressure compensator assembly, load holding check and load sense shuttle valve without having to remove the valve section from the main assembly or removing any of the tie bolts that hold the main valve assembly together.		
	The valve inlet shall have a safety relief valve that is capable of relieving full pump flow to tank in case of a failure in the pump pressure compensator.		
	It shall be rated for a maximum pressure of 5000 psi on the pump side and 6000 psi at the work ports.		
	The valve shall be rated for 40 GPM at the inlet and 35 GPM at the work ports.		
	The valve shall have one individual section for each function. Hybrid manifold designs shall be unacceptable.		
	Each valve section shall have a spool that is flow matched for the function it is controlling.		
	It shall have the ability, when required, to vary the working pressure for each individual work port by using built-in load sense reliefs.		
	These reliefs shall have an adjustment range of 500 psi to 5000 psi.		
	It shall have built-in load-pressure compensation to allow simultaneous activation of functions.		
	The load-pressure compensation shall be adjustable by adding or removing shims.		
	This adjustment will allow any one spool to have three distinct flows.		
	All electrically actuated valve sections shall have two separate methods to override the section for troubleshooting and fault finding.		
	All electrical sections shall have a stroke limiter for adjusting the maximum travel of the valve spool in both directions.		
The pressure, tank and work ports shall be top ported.			
For ease of service, all electrical solenoids shall be on the same side of the valve.			
<u>VALVES:</u>	All valving shall be mounted as one main valve assembly.		
	Multiple valve assemblies are unacceptable.		
	All work port pressure limiting shall be by the use of load sense relief valves that are integral to the valve section that is being limited.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The use of work port relief valves that divert excess flow to tank shall be unacceptable.		
	To ensure complete system compatibility, the joystick controller, spreader controller, prewet unit, hydraulic valve and hydraulic pump shall be from a single manufacturer.		
	Items that are manufactured by one entity and "branded" with another manufacturer's name shall not be accepted as being from a single manufacturer.		
	Manufacturer shall be ISO 9001 and ISO 14001 certified.		
	Valve sections will be stacked in the following order from inlet to outlet:		
	Body: Double Acting, Electric Proportional with 500 PSI "A" Port Relief		
	Plow Hoist: Double Acting, Electric Proportional		
	Plow Reverse: Double Acting, Electric Proportional		
	Spinner: Single Acting		
	Conveyor: Single Acting		
<u>PTO:</u>	The power take-off shall be a Muncie CS Series.		
	The power take-off shall be a 10-bolt mount and must be designed with an integral drag brake to positively stop the output shaft in the "off" position.		
	The power take-off speed ratio shall be 107% of engine speed.		
	Engagement of the power take-off shall be by means of a rocker switch to activate a built-in solenoid control.		
	The power take of shall be equipped with a 7/8" I.D. 13-spline shaft and SAE "B" flange for direct mounting of the hydraulic pump.		
	The power take-off shall have a two year manufacturer's warranty from the date of installation.		
	The power take-off shall be a Muncie model CS24-A1005.		
<u>PUMP:</u>	The piston pump (load sensing type) must be capable of 29 GPM and 3000 PSI at 2500 RPM.		
	Pump must have side ports to avoid multiple 90 degree bends in suction line (rear ports are unacceptable).		
	The case drain must be positioned as high as possible and directed back to the reservoir without passing through the return line filter.		
	The pump must have internal bleed down compensator.		
<u>LOW OIL SHUTDOWN</u>	A single normally open, two position, two way, poppet type solenoid valve must be mounted directly to the hydraulic pump discharge port in such a way as to stop all oil flow to the hydraulic system when energized.		
	The solenoid valve must be wired directly to an in-tank mounted level indicator.		
<u>LOW OIL SHUTDOWN</u>	The level indicator shall be of the float type and mounted from the top of the reservoir.		
	When the float switch contacts close, the shutdown valve blocks pump flow and an annunciator on the main control will be activated.		
	The momentary switch shall be wired in such a way as to de-energize the system shutdown to facilitate fault finding and equipment stowing.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>HYDRAULIC LINES AND PLUMBING</u>	All hydraulic lines, pipes, hoses, and fittings shall be of sufficient capacity to accommodate the volume of oil without undue heating or turbulence in the system. A 2" suction line with a minimum SAE rating of 100-R4 must be used between the reservoir and the inlet of the pump. All of the pressure hoses, including the signal sensing line to the pump must have swivel fittings on both ends and have a minimum SAE rating of 100-R2. Return lines and the case drain line must have a minimum SAE rating of 100-R1.		
	Hydraulic lines shall be routed to minimize interference with equipment and chassis components requiring periodic servicing. Appropriate support brackets, grommets, and ty-raps shall be provided to protect lines from abrasion, cutting and impact damage. Hoses shall not be installed near manifold or exhaust pipes so tat to be affected by extreme heat. There shall be no pipe fittings used with any high pressure lines. Any and all hydraulic quick disconnect couplings used for spreader system and snow plow reversing system shall be of the bulkhead mounted style and be rigidly attached without the use of any hose clamp arrangements, (Loose hose ends are not acceptable). Dust cap for male ends and dust plugs for the female ends must be attached to couplers. Maximum distance allowed between support clamps on all hydraulic hoses shall be approximately 24".		
	The hydraulic spreader lines are to be sent to the back and the location of the hooks are to be determined by the Town of North Hempstead.		
<u>VALVE ENCLOSURES</u>	A valve enclosure will be provided for protection of wiring. Valve enclosure must be constructed of 10 gauge steel.		
	Valve will be placed in an enclosure in such manner for complete servicing of valve.		
	Enclosure must have cable restrain and not to be watertight.		
<u>HYDRAULIC RESERVOIR</u>	Hydraulic reservoir to be a minimum of 37 gallon capacity and be constructed of 12'gauge steel.		
	Due to service accessibility, a hydraulic reservoir incorporating an integral valve enclosure that is part of the hydraulic tank, will not be acceptable.		
	The reservoir must be baffled, have a magnetic drain plug, lockable Protecto-Seal cap – NO EXCEPTION, and a suction strainer with a minimum 2" NPTF outlet.		
	A minimum 5" diameter clean-out port.		
	Reservoir shall also have an electrical low-level indicator.		
<u>HYDRAULIC RESERVOIR</u>	There shall be a bumper made out of 7" Channel with a 2" flange (6.9 Ft/lbs.) that wraps around the hydraulic reservoir and the valve enclosure an connects back to the chassis rail.		
<u>FILTER</u>	A Return Line Filter, Muncie RLF501, shall be installed in the return line, near reservoir, in a position that facilitates ease of maintenance.		
	The filter shall be of minimum 50 GPM flow rating and 10 micron filtration.		
	The element shall be of the spin-on/throw away type, and the filter head shall be equipped with a filter condition indicator.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>SPREADER CONTROL (REXROTH CS-425):</u>	Control shall be by microprocessor for high control accuracy. The microprocessor must incorporate redundant circuitry, be housed in a sealed cast aluminum housing and meet the following electrical and environmental specifications:		
	Spurious interference - (Motor vehicle directive 95/54/EG): 100v/m		
	Load Dump: Max. 70v		
	Operating temperature, housing: -40...80 deg C		
	Storage temperature, housing: -40...105 deg C		
	Vibration resistance: Sinusoidal vibration (IEC 60086-2-6) - 10g / 57...2000 Hz		
	Random vibration: 0.05g ² / Hz		
	(IEC 60086-2-36) 30 min per axis		
	Shock resistance		
	Transport shock 15g / 11ms		
	(IEC 60068-2-27) 3x in each direction/axis (pos./neg.)		
	Continuous Shock 25g / 6ms		
	(IEC 60068-2-29) 1000x in each direction/axis (pos./neg.)		
	Resistance to moisture 95% (+25 to +55 degC)		
	Resistance to salt spray		
	(IEC 60068-2-11) 72h, 35 degC, 5% NaCl		
	Type of protection (DIN / EN 60529) IP 65 fitted with mating connector.		
	The spreader control shall be an "all-in-one" unit that incorporates both spreader functions and body and plow control.		
	It shall have ten (10) PWM outputs. Two (2) for the spinner and conveyor and eight (8) for the joystick functions.		
	All outputs shall be current compensated and have full transient suppression.		
The controller shall have a single quad axis proportional joystick for the control of both the body and plow functions.			
The joystick shall be capable of being programmed through the use of the controllers LCD display and the programming buttons on the controller. The use of external programming devices is unacceptable.			
The controller shall have six (6) locations for either switch functions or indicator lights.			
The spreader control is to be mounted within easy reach of the driver.			
<u>SPREADER CONTROL (REXROTH CS-425)</u>	The control is to operate in manual mode, open loop, Closed Loop (automatic), 12V trigger or Ground Speed triggered Manual.		
	The spreader control must have a backlit LCD display screen to show Auger/Conveyor application rates, Spinner set point and Ground Speed in operation mode.		
	LCD display shall be capable of showing all programming parameters.		
	Spreader Control must have pause, blast, stationary unload and reverse (if auger/conveyor is double acting).		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Controller shall be equipped with two (2) rotary detented knobs with push button feature. All spreader functions including spinner settings, conveyor settings, pause, blast and unloading shall be controlled by these two knobs.		
	Controller will have nine (9) programmable settings for spread width and nine (9) programmable settings for conveyor application rates.		
	Controller must be capable of using a remote pause and blast switch.		
	If operating in closed loop (auger feedback) must be capable of auto nulling the auger/conveyor.		
	Controller shall have both audible and text based error messages.		
	Controller shall have automatic detection of cable, valve, sensor and potentiometer failures.		
	All programming shall be accomplished through the use of the controllers LCD display and the programming buttons on the controller. The use of external programming devices is unacceptable.		
	Any changes to the programming must be accessed via a lockout key. This shall include the changing of controller operating mode. Operators shall not be able to override the operating mode of the controller.		
	Spreader control to be a Rexroth CS-425 to ensure complete compatibility with Rexroth Hydraulic Pump and Rexroth Hydraulic Valve		
<u>ZIEBART UNDERCOATING PACKAGE</u>			
<u>GENERAL:</u>	<u>MANUFACTURER:</u> Ziebart or equal		
	Sealant must protect against road damage and rust.		
	Sealant must reduce vibration and insulate underbid from heat and road noise.		
	Sealant must penetrate and protect seams and spot welds.		
	Sealant must meet federal and military sealant spec. MIL-C-62218.		
	Sealant must comply with federal standard 297E.		
	Sealant shall be impervious to water, salt and mud.		
	Sealant shall be applied to the following areas:		
	<input type="checkbox"/> Front fender wells		
	<input type="checkbox"/> Cab and body underside		
<input type="checkbox"/> Chassis frame rails			
<input type="checkbox"/> Door insides			
<u>GENERAL:</u>	<input type="checkbox"/> All other area required by Ziebart		
<u>BIDDER QUALIFICATIONS FOR ZIEBART APPLICATIONS</u>	Applicator must be Ziebart Trained and Authorized Technician with experience on all vehicle types.		
	Application must be made in strict adherence to Ziebart application manual, for proper warranty administration.		
	To insure proper application and to fulfill warranty obligations, Ziebart must be applied in a heater spray booth of not less than 960 square feet.		
	An inspection of applicator facility will be conducted before any award is made.		
	Authorized Ziebart applicator must have at least 50 applications similar in nature and supply a users list upon request.		

COMPLIANCE TO SPECIFICATIONS

The bidder shall indicate 100% compliance by checking "YES" or non-compliance by checking "NO" for each line item of specification. Any space left blank shall be considered non-compliant. Any deviation from the specification, or where submitted literature does not fully support the meeting of specifications, must be clearly cited in detail, in writing, by the bidder and submitted with the bid. NO verbal interpretations will be accepted! In addition NO deviations below "minimum" specifications as written will be accepted.

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>PACKAGE D: TEN WHEEL TRUCK, DUMP BODY, AND CENTRAL HYDRAULICS FOR E-POKE SYSTEM</u>			
Description: Chassis Specifications For A New 2014 GU713 Chassis With SCR Technology To Meet 2010 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase	Chassis: 2014 Mack GU713 Chassis Or Equal		
	Frame Rails, 11.811"X 3.54"X .44" Steel		
	1/4 inch inside frame reinforcement		
	Section Modulus 32.7cu In/Rbm 3,580,000 In Lbs. Per Rail		
	Wheelbase, 241" CT" 153"		
	Platform, 243" LP 56" AF Used With 241" WB		
MAXIMUM GVW & AXLE RATINGS	Gross Vehicle Weight Rating Of 84,000lbs.		
	Front Axle Capacity- 18,000 Lbs.		
	Rear Dual Drive Axle Capacity-46,000lbs		
	Front Steer Axle-Gross Axle Weight Rating-18,000lbs		
	Rear Drive Axle -Gross Axle Weight Rating-46,000lbs		
ENGINE	MP7-405M 405 HP @ 1500-1900 Rpm. 1480 Lb. Ft. Max. Torque @ 1200 Rpm		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	Epa Carb Emission Certified For 2010 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT	Cummins 18.7 Cfm Air Compressor		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11"X30" Back Of Cab Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below -34 Degrees Fahrenheit With Coolant Conditioner Filter		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater		
ENGINE EQUIPMENT	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382 Fuel Pro. Fuel Heater, Water Separator		
	Hand Primer Pump		
	Hoses, Radiator, Heater, Silicone		
	Injection Pump- Electronic Engine Control		
Radiator, Aluminum Core			
TRANSMISSION	Allison Automatic Transmissions-4500RDS 6 Speed		
TRANSMISSION EQUIPMENT/	Driveline-Main, Meritor 18N HD With Coated Splines with 17N interaxle driveshaft		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT	Air Conditioner With Sanden Rotary Compressor		
	Integral W/Heater And Defroster		
	Tethering Device For Oil Caps And Dipsticks		
	Air Restriction Monitor ,Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guarddog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) With Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock		
	Cigar Lighter On Instrument Panel		
	Overhead Console With 2 Storage Compartments		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM/CD Radio With Weatherband		
	Driver and Passenger side Power door locks and Windows		
	Dpf Regeneration Switch In Dashboard		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Gauge, Air Pressure		
	Gauge, Voltmeter		
CAB EQUIPMENT	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer W/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, RH & LH Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights , (5) Truck Lite LED Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Gear Shift, Neutral To Range Inhibit		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, RH & LH Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Parking Brake On Indicator Light		
	Right Side Door Peep Window		
	Exterior Sun Visor		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (High-Back) Air Suspension		
	Seat – Rider, Bostrom Mid Back Stationary Seat		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder W/Cab Mounted Shoulder Belt		
Sun visor –Interior , Both Sides (Padded Vinyl)			
Side Markers, Lamps And Reflectors			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Starter Switch, Key Type		
	Steering Wheel, 18" Two Spoke Urethane Grip		
CAB EQUIPMENT	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
	Windshield Wipers, Sprague 2 Speed Electric Motor W/Intermittent Feature		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Swept Back Steel		
	Crossmembers, Steel Huck Bolted Back To Back I Beam Type		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 66 Gallon Aluminum With 11 Gallon Def Fluid Tank- Clear Back Of Cab Package		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL 18 18,000 Lb. Capacity-Sealed Kingpins- Maintenance Free Front Axle		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20PLY. M860 (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5x9.0		
	Brakes – Front, Bendix Es165-06d "S" Cam Type 16.5"X6" Cast Spider		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
Single Steering Box, Sheppard SD110 With Tilt And Telescopic Steering Column			
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle/Suspension, Mack S462 46,000 Lb. Capacity with power divider differential lockout		
	46,000 Lb. Multileaf Rear Suspension		
	Dual Reduction Rear End Gears		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (8)11R24.5 14 Ply (M726 Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 30/30 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.66 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 24.5x8.25 Accuride		
	Brakes – Rear, Bendix ES165-07d "S" Cam 16.5" X 7" Cast Spider With Bronze Bushing		
	Brake Drums – Rear, Cast Outboard Mounted		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Chicago Rawhide (Scotseal)		
	Slack Adjusters – Rear, Haldex – Automatic		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Spring Brake Chambers – Quantity, (4) Chambers Double Diaphragm Type		
AIR/BRAKE	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor Wabco 1800 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix With Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Whitacker electric jump system mounted under D/S cab with 20FT jumper cable.		
	CB radio hookup in dashboard with antennas mounted to mirrors		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional And Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Transmission mounted power take off system		
PAINT:	Cab Exterior, Green-Base Coat/Clear coat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Rear Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
WARRANTY:	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Basic Vehicle – 12 Months On All Components		
	Allison Transmission – 5 Years / Unlimited Miles		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
PUSHER AXLE:	Hendrickson 20,000 lb. Steerable pusher axle with automatic lift in reverse		
	Bridgestone (2) 315/80R22.5 M860 20 PLY Tire		
	Accuride (2) 22.5 X 9.0 Steel Hub piloted steel rim		
AIR-FLO MODEL DBI 17' INSULATED DUMP BODY			
GENERAL:	The dump body shall be all steel having a minimum 15 cubic yard water line capacity.		
	The body shall have the following dimensions:		
	a. Body Length: 204" (+/- 2")		
	b. Inside Width: 90" (+/- 2")		
	c. Outside Width: 102"		
	d. Side Height: 41" (+/- 2")		
	e. Front Height: 49" (+/- 2")		
	f. Tailgate Height: 49" (+/- 2")		
	The entire body (not including the inner floor) including the tailgate and boxed top rail must be fabricated from high tensile strength (HTS) 3/16" steel with a 50,000 PSI minimum yield strength.		
	The inner floor shall be 1/4" T-1 Type A 321/380 Brinell Hardness Number (BHN) having a 100,000 minimum yield tensile strength.		
	Additionally a 1/2" liner of Owens Corning fiberglass insulation - ridged board type #705 or equal shall be installed between the inner and outer shell of the front head, floor; sides; and tailgate.		
	The front body panel shall be body panel shall be fabricated using 3/16" HTS steel.		
	Each side shall be of one (1) piece construction.		
	The body must be reinforced with vertical box type braces, at least five 7" (+/- 1") braces on each side of the body.		
	The sides shall have minimum 4" x 3-3/16" high tensile strength boxed top rails.		
	A dirt shedder rub-rail with a minimum 2" grip strut cat walk between the boxed side braces required.		
The body shall include a minimum 6" wide 3/16" HTS steel front corner post on each side.			
The body shall include a minimum 6" wide 3/16" HTS steel rear corner			
A full width 12" (+/- 1") bolster fabricated using 3/16" HTS steel shall be			
The rear corner posts shall be designed to allow the recessed installation of strobe and tail lights as detailed in the lighting section of these specifications.			
The contractor shall take into consideration the installation of the lights to ensure that the lights are protected.			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The under structure shall be comprised of six inch (minimum) I-beam longitudinal rails and four inch (minimum) I beam cross-members spaced on 12" centers with 5-1/2" x 5-1/2" forty-five (45) degree gussets installed between cross-members and longitudinal members at all of the cross-members.		
GENERAL:	All Joints, angle iron braces, reinforcing members etc., must be hot-riveted or electrically welded.		
	Full weld required on the body shell.		
	Skip welding will not be accepted.		
DUMP BODY HOIST:	The hoist in this specification is required to meet NTEA class 110 when used with a 17' body an installed with a 12" overhang.		
	The capacity at the critical angle (when the smallest diameter stage begins to extend) shall be no less than 28.7 tons(at 2000psi.)		
	The cylinder shall be a trunion mounted telescopic.		
	It shall be installed with the largest stage at the bottom for stability.		
	An inverted telescopic hoist will not be accepted.		
	All components of this cylinder with the exception of the seal kit shall be processed through a liquid salt bath nitriding treatment to enhance the surface hardness and corrosion resistance.		
	Harness achieved will be Rockwell C scale 55 - 60, and corrosion resistance will be roughly five times that of hard chrome plating.		
	The cylinder shall be a bore seal design, with each section sealing against the ID of the next larges diameter tube.		
	As the external surface of these tubes never makes contact with a seal, scrapes and scores on the tube Ods will not affect the sealing capabilities.		
	There will be an oscillating collar on the outer cover of the cylinder to allow the body to be offset 5 to 7 degrees without transferring that side load to either the truck frame or cylinder tubes, and therefore enhancing stability, and longevity.		
	The cylinder shall have a two-year warranty.		
Safety body props required, capable of holding the body in the raised position.			
TAILGATE	One (1) each side with cradle to hold the loose end in a positive seat on the sub-frame or cross-member.		
	The tailgate of the truck shall be of a sloped (9" - 12") design to assist in unloading operations.		
	The tailgate shall be fabricated using 3/16" HTS steel.		
	The gate must be top hung and shall not project above the rear of the body.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The tailgate shall be vertically and horizontally braced to form a minimum of six square panels.		
	The braces shall be of a dirt shedding design.		
	The tailgate shall have a minimum 1-1/4" offset top hinge and a 1-1/4" diameter top hinge pin.		
<u>TAILGATE</u>	The bottom pin shall have a minimum 1-3/8" diameter held in place by a 1/2" plate steel hook.		
	The tailgate outer latch plate shall be fabricated using 1/2" plate steel.		
	A minimum 3/8" spreader chain with adjusting bracket is required.		
	The tailgate release shall be an air cylinder with adjustable clevis type linkage.		
	The tailgate release cylinder shall be operated through a remote (cab mounted) labeled air valve.		
	There will be a total of four spreader pockets installed on the outside of the body.		
	The locking device for the tailgate shall be positive in action.		
	Grease fittings are required at all pivoting or support bearing points.		
	The tailgate shall have three built in asphalt chutes fabricated from a minimum 1/4" HTS steel.		
	The chutes shall be placed right and left of center on the gate.		
	The chutes shall measure approximately 16" x 16".		
	The chute doors shall ride in guide channels.		
	The chute doors shall be raised and lowered using an over center mechanism with handles having rubber grips.		
	The door mechanism shall include dual 1/2" turnbuckle style threaded adjusting rods with clevis ends installed on each chute door.		
	The tailgate shall also have a lifting eye installed for the ease of removing the tailgate.		
	An access ladder and steps must be provided at the driver side of the body designed to allow the operator to safely climb to the top of the body side.		
	Grip-strut type and grab handles or safety rails must be provided.		
	Ladder shall have three rungs and have the ability to slide horizontally to the body for storage.		
	A minimum 5/8" tarp rail/grab handle mounted horizontally and running the full length of the body is required.		
	This rail will be positioned approximately 6" below the top of the body.		
	A minimum two inches (2") diameter labeled warning light must be provided and located in the cab on top of the dashboard to indicate to the operator when the body is away from the stowed position.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The exact location to be determined upon review of plans.		
	The light must remain on until body is fully seated on the subframe rails.		
	Body shall be equipped with (minimum) 12 gauge steel splash guards forward of the tandem axles.		
	Mud flaps are required.		
	The flaps must be installed on spring loaded (break-away) brackets.		
<u>TAILGATE</u>	The mud flaps shall be equipped with a 3/8" chain with "S" hook at the lower end and hook ring on the body side so that the mud flaps can be folded and held up for paving operations.		
	Vendor shall supply and install an underbody vibrator.		
	The unit supplied must be capable of producing 2,700 pounds of force.		
	The vibrator electrical requirements shall be a circuit breaker protected 12 Volts, 60 amps.		
	A labeled heavy duty momentary push button type switch shall be mounted in the cab control body vibrator function.		
	The tailgate shall have "Philly" Locks as per drawing.		
<u>CAB SHIELD</u>	A half (1/2) cab shield with angled side supports must be installed at the front of the dump body.		
	The shield must be mounted as low as possible, approximately three inches (3") from the cab roof.		
<u>LOAD COVER</u>	The tarping system shall be a PullTarps Steel Protector Plus.		
	The Trap system return shall be actuated by a single spring.		
	Spring tension shall be adjustable.		
	Spring shall be protected by means of an aluminum tube.		
	Tarp system shall not require the use of control arms, or crank handles.		
	Tarp system shall incorporate the use of two (2) control ramps to hold the tarp fully extended.		
	Tarp material shall be an asphalt rated fabric.		
	Tarp system shall be cab shield mounted.		
<u>BACK-UP ALARM:</u>	Back up alarm to be an Ecco electric Model SA914 self adjusting from 87 dB to 112 dB.		
<u>CONSPICUITY TAPING:</u>	Dump truck body sides, rear face and tailgate perimeter to be outlined as per NHSTA guidelines in SCOTHLITE CONSPICUITY SHEETING DIAMON GRADE 980 RED/WHITE 2" WIDE.		
<u>UNDER BODY TOOL BOX</u>	There shall be a underbody tool box mounted where space allows.		
<u>LADDER</u>	Ladder shall have three rungs and have the ability to slide horizontally to the body for storage.		
<u>SPREADER POCKETS</u>	There will be a total of four spreader pockets installed on the inside and outside of the body.		
<u>HYDRAULIC HOOKS</u>	There shall be four (4) hooks along the side of the body to hold and guide the hydraulic hoses for the precision placement spreader to the front hook-ups.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
LIGHTING:	BODY LIGHTS:		
	All body lights to meet Federal Safety Standard #108 and shall be installed using rubber shock mounted recessed lights with body wiring in heavy loom. There shall be three 2" red, round LED marker lights installed below the apron.		
LIGHTING:	Marker lights to be LED		
	There shall be a 2" LED light to be installed in the dash to notify the operator that the body is in the "UP" position.		
	DOT3 SYSTEM:		
	The Super-LED DOT light system shall be a Whelen model 00007DS0 as described herein.		
	The product being bid must be a standard production model of the manufacturer.		
	All major components such as LED flashers, LED light heads, cables, lenses, etc., must be designed and manufactured within the United States. Bids offered in which major components (such as LED populated board, etc.) are manufactured off-shore are not acceptable.		
	<u>REAR SUPER-LED® HEAD ASSEMBLIES</u>		
	Mounted into the rear of the vehicle shall be two (2) 700 Linear Super-LED heads, two (LED) brake/tail/turn light modules, and two (2) LED Back-Ups, one set on each side.. Each Super-LED head shall be capable of emitting a full 180 degrees of light in the vertical plane. The light heads shall be recessed into a heavy duty 7 gauge steel housing. The steel housing shall be provided with each set of modules.		
	The two rear 700 Linear Super-LED heads shall utilize a DOT LED flasher which is mounted and encapsulated in a junction box (NOTE: Junction Box must be installed inside the cab). The DOT LED flasher shall allow the two rear 700 Linear Super-LED's to be controlled independently from the front head assembly.		
	The 700 Linear Super-LED assembly, brake light and back-up, including the steel housing, shall be approximately 23-1/2 inches high, 4-7/8 inches deep and 3-1/2 inches wide.		
The modules, as well as the lens, shall be easily replaceable. A waterproof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistance as well as ease of replacement.			
The 700 Linear Super-LED lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.			
There shall be two (2) LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of (72) Red LED's. The module must be in "signal alert" flash pattern, which flickers three times (within 150 milliseconds) before becoming steady "on". These modules must meet or exceed SAE requirements.			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	There shall be two (2) LED Back-Ups, one (1) located in the bottom position of each steel housing. Each module must contain a minimum of (48) White LED's for maximum light output. These modules shall be supplied with a Clear polycarbonate lens.		
LIGHTING:	The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimilar metal corrosion. Units that screw into a steel bracket are unacceptable since they tend to corrode over time.		
	<u><i>CABLE HARNESESSES:</i></u>		
	The cable being supplied from the rear housings must be heavy-duty TPR-type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14 gauge, pure copper stranded, and fully tin coated. No less than (30) feet of cable shall be provided for each head assembly. All necessary connectors shall be provided, including a strain-relief system.		
	<u><i>PLOW LIGHTS:</i></u>		
	To be installed as per DOT Standards, Truck-Lite 's Universal Plow lights with appropriate truck harness kit.		
	These plow lights are to be wired into the trucks existing headlight circuit using the factory installed switch.		
	Plow lights must function in high and low beam modes using existing trucks dimmer switch.		
	At no time shall the plow lights and normal truck headlights be able to operated at the same time.		
	The plow lights shall be mounted as far forward on the hood of the truck as possible.		
	The mounting brackets for the plow lights shall be made of carbon steel and painted in gloss black.		
	<u><i>CAB SHIELD LIGHTING:</i></u>		
	There shall be shall be five (5) 700 Linear Super-LED installed in the cab shield, three in the front and one on the passenger's side and one on the driver's side.		
	The 700 Linear Super-LED lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.		
	The LED strobe shall be installed in black flanges.		
The lights shall be synchronized with the DOT-3 system.			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>WIRING:</u>	Wiring and harness system shall meet ISO rating IP68 and NEMA 6. The connectors shall be zinc die cast E-coated, similar to a MIL spec connector. Each shall have three sealing points- the lock ring itself, a raised portion of the molded plastic around each pin, and a Viton O-ring that seals the whole connector. The cable jacket shall be TPE- thermoplastic elastomer, and molded to the connectors. PVC jacketed wire is not acceptable. Connectors and harness shall be rated and tested for a temperature range from – 30C to + 70C. Connectors shall be tested to be water tight when submerged in 6’ of water for 24 hours, in 275’ of water for 1 hour, and when subjected to a 1000-psi pressure wash. The connectors shall be designed to have NO corrosion after 5000 hours in a 35C salt spray. Cabling shall be rated excellent in low temperature flexibility and in its resistance to oxidation, heat, oil, weather, sun, ozone, abrasion, electrical priorities, flame, water, acid, alkali, gasoline, benzol, toluol, degreaser solvents, alcohol, and weld slag.		
<u>PINTLE HOOK PACKAGE</u>	Rear of the chassis shall have two (2) tow hooks, one on each side of the chassis.		
	A Holland Model T90 Pintle hook shall be mounted to a 5/8" pinlte plate. The pintle plate to be reinforced to the chassis rails.		
	The pintle hook height shall be 29" to 30" to the center of the hook.		
	Two (2) D-rings shall be permanently attached to the pintle plate, one on each side of the pintle hook.		
	A weather proof seven (7) spade male and female trailer light plug shall be installed in the rear crossmember with the female wired and the male supplied		
<u>CENTRAL HYDRAULIC SYSTEM</u>			
<u>GENERAL:</u>	THE CS-105 incorporates joystick and auxiliary switch functionality in a compact, easy to use package. The backlit LCD display provides active plow and body control. Customizable and easy to read backlit legends and indicators allow for quick identification of functions even in low light conditions. A multi-function joystick allows for control of up to three valve sections.		
	The CS105 also must have a location for up to three (3) backlit rocker switches. These switches must be used for auxiliary light control.		
<u>HYDRAULIC PUMP – REXROTH PUMP MODEL A10VSO60DFR/30L</u>	The PTO mounted flow and pressure compensated pump shall be driven via a hot shift power take off. The hydraulic pump must be of piston type and capable of 35 GPM @ 2000 RPM. Pressure sense line must be internally bled at the pump. Pump case drain must be plumbed directly to reservoir – not through return line filter.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>LOW OIL SHUTDOWN</u>	A single normally open, two position, two way, poppet type solenoid valve must be mounted directly to the hydraulic pump discharge port in such a way as to stop all oil flow to the hydraulic system when energized. The solenoid valve must be wired directly to an in-tank mounted level indicator. The level indicator shall be of the float type and mounted from the top of the reservoir. When the float switch contacts close, the shutdown valve blocks pump flow and an annunciator on the main control will be activated. The momentary switch shall be wired in such a way as to de-energize the system shutdown to facilitate fault finding and equipment stowing.		
<u>HYDRAULIC VALVES – REXROTH VALVE MODEL M4</u>	Central Hydraulic System valving shall be of mobil design to withstand exposure to de-icing chemicals and severe weather conditions without the use of a watertight enclosure. It shall be of cast iron construction, horizontally stackable and serviceable without disassembly. Each section must have built-in flow and pressure compensator to allow simultaneous operation regardless of any other system function. Sections for hoist, snow plow lift and reversing shall be operated by the CS105 joystick. All valving shall be mounted in one main valve assembly. Multiple valve assemblies are unacceptable.		
<u>CABLE ASSEMBLIES</u>	All electrical cables supplied must come complete with attached watertight “quick disconnect” connectors, shielded, heavy duty industrial and anti-scuff and sheathing. Wire joints must be soldered and heat shrink tubing used in all Valve sections will be stacked in the following order from inlet to outlet.		
<u>CABLE ASSEMBLIES</u>	Inlet: Closed Center Inlet Hoist: DA Mech. With 500 PSI “A” Port Relief Plow Lift: DA Electric Proportional Plow Reverse: DA Electric Proportional Single Acting On/Off Electric Section		
<u>HYDRAULIC LINES AND PLUMBING</u>	All hydraulic lines, pipes, hoses, and fittings shall be of sufficient capacity to accommodate the volume of oil without undue heating or turbulence in the system. A 2” suction line with a minimum SAE rating of 100-R4 must be used between the reservoir and the inlet of the pump. All of the pressure hoses, including the signal sensing line to the pump must have swivel fittings on both ends and have a minimum SAE rating of 100-R2. Return lines and the case drain line must have a minimum SAE rating of 100-R1.		
<u>HYDRAULIC LINES AND PLUMBING</u>	Hydraulic lines shall be routed to minimize interference with equipment and chassis components requiring periodic servicing. Appropriate support brackets, grommets, and ty-raps shall be provided to protect lines from abrasion, cutting and impact damage. Hoses shall not be installed near manifold or exhaust pipes so tat to be affected by extreme heat. There shall be no pipe fittings used with any high pressure lines. Any and all hydraulic quick disconnect couplings used for spreader system and snow plow reversing system shall be of the bulkhead mounted style and be rigidly attached without the use of any hose clamp arrangements, (Loose hose ends are not acceptable). Dust cap for male ends and dust plugs for the female ends must be attached to couplers. Maximum distance allowed between support clamps on all hydraulic hoses shall be approximately 24”.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>VALVE ENCLOSURES</u>	A valve enclosure will be provided for protection of wiring. Valve enclosure must be constructed of 10 gauge steel. Valve will be placed in an enclosure in such manner for complete servicing of valve. Enclosure must have cable restrain and not to be watertight. A valve enclosure will be provided for protection of wiring. Valve enclosure must be constructed of 10 gauge steel. Valve will be placed in an enclosure in such manner for complete servicing of valve. Enclosure must have cable restrain and not to be watertight.		
<u>HYDRAULIC RESERVOIR</u>	Hydraulic reservoir to be a minimum of 37 gallon capacity and be constructed of 12' gauge steel. Due to service accessibility, a hydraulic reservoir incorporating an integral valve enclosure that is part of the hydraulic tank, will not be acceptable. The reservoir must be baffled, have a magnetic drain plug, lockable Protecto-Seal cap -- NO EXCEPTION, and a suction strainer with a minimum 2" NPTF outlet. A minimum 5" diameter clean-out port. Reservoir shall also have an electrical low-level indicator.		
	There shall be a bumper made out of 7" Channel with a 2" flange (6.9 Ft/lbs) that wraps around the hydraulic reservoir and the valve enclosure an connects back to the chassis rail.		
<u>FILTER</u>	A Return Line Filter, Muncie RLFG-501, shall be installed in the return line, near reservoir, in a position that facilitates ease of maintenance. The filter shall be of minimum 50 GPM flow rating and 10 micron filtration. The element shall be of the spin-on/throw away type, and the filter head shall be equipped with a filter condition indicator.		
<u>WAUSAU HOME SAFE POWER REVERSIBLE TRIP EDGE SNOW PLOW WITH POLYETHYLENE MOLDBOARD</u>			
<u>GENERAL</u>	These specifications describe a Power Reversible Trip Edge snow plow which shall be built from new material and definitely suited for continuous work under difficult conditions of snow removal.		
<u>MOLDBOARD ASSEMBLY</u>	The moldboard shall be not less than 36" high nor less than 120" long.		
	The moldboard sheet shall be formed from not less than 3/8" thick high molecular weight polyethylene sheet.		
<u>MOLDBOARD ASSEMBLY</u>	The polyethylene sheet shall have a minimum tensile strength of 4000 P.S.I., and when tested in accordance with ASTM D638, it shall evidence a minimum of 600T (2") elongation at break.		
	In addition, the sheet shall evidence no break following izod impact test conducted in accordance with ASTM D256A.		
	The sheet shall be formed from a polyethylene material, which is made from new resin, (recycled material is not acceptable), and shall be color impregnated and ultra violet stabilized to a "Schmidt Blue" pigmentation.		
	It shall attach to a frame work which includes not less than ten (10) steel reinforcing ribs at least 1/2" thick x 3-1/2" wide and a lower moldboard reinforcement from not less than 4" x 3" x 1/2" steel angle so as to form a rigid structure.		
	The upper portion of the moldboard shall project over the cutting edge so as to form a continuous, solid, integral snow shield and shall include an upper reinforcement from not less than 3" x 2-1/2" x 3/8" steel angle.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>CUTTING EDGE</u>	Shall be one (1) in number and shall be from ½" x 8" C1065 steel, punched to AASHO standards on 12" centers and supported by a reinforcement from not less than 4" x 4" x ¾" steel angle.		
	The cutting edge shall be reversible for double wear.		
<u>TRIPPING EDGE MECHANISM</u>	Shall be of the single edge design, which shall activate whenever the cutting edge comes into contact with an obstruction on the pavement.		
	Trip activation shall be achieved through five (5) torsion springs from not less than ¾" square wire, having a 3-¾" O.D., with fifteen (15) active coils each.		
	Each spring shall be pinned in place in a horizontal position and shall butt to the lower moldboard reinforcement and to the cutting edge reinforcement.		
<u>TRIPPING EDGE MECHANISM</u>	Spring adjustment shall be provided so as to alter the precharge of springs for varying plowing conditions.		
<u>DRIVE FRAME AND REVERSING MECHANISM</u>	The drive frame and reversing mechanism shall consist of an "A" frame, a truss frame and two (2) single acting hydraulic cylinders with 3-1/2" diameter x 16" stroke.		
	The "A" frame shall be a triangular weldment with 3/8" thick steel plates (top and bottom), a rear member from not less than 1" thick steel plate and two (2) center reinforcements from not less than 3/8" thick steel plate, so to form a boxed center section.		
	The height of the boxed center section shall be 5-3/4".		
	The truss frame shall include a main drive member from 4" square tubing with 3/8" wall.		
	The truss frame shall pin to the moldboard at not less than 4 points over a span of not less than 82" and shall include two (2) moldboard braces which allow for alternate moldboard positioning.		
	The drive frame and reversing mechanism shall pivot about the "A" frame on a lubricated pin, not less than 2-1/2" in diameter, up to 37 degrees either side of the chassis center line.		
<u>DRIVE FRAME AND REVERSING MECHANISM</u>	The pin shall be designed in such a way that it will be easily removed for maintenance.		
	Each cylinder shall have 3-1/2" diameter pistons, which terminate with 2-1/2" diameter connecting lugs.		
	Both the rods and lugs shall be from case hardened, chrome plated steel and shall be protected by a hydraulic cushion valve.		
	The "A" frame shall be fitted with a cable lift arrangement, which shall accommodate plow reversing operations with the plow either on the ground or at the carry position.		
	This arrangement shall be of a design which prohibits plow list, when the moldboard is angled in the carry position.		
	<u>PLOW COUPLING BAR</u>	Shall be of a design, which can be accommodated by a truck mounted "Frink Tor-Lok" quick coupler locking device.	

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	It shall consist of an angle weldment, which includes an angle drive bar, fitted with attachment ears and male arrowhead shaped coupler.		
	This weldment shall pin directly to the rear of the drive frame.		
	The arrowhead shall be from 1" thick plate, 4-3/4" wide at its neck, 10" wide at its extremity and 12-1/4" in overall length.		
<u>SPRAY GUARD:</u>	Shall bolt on the top moldboard flange or reinforcement.		
	It shall consist of a 12" wide x 3/8" thick rubber belt, metal retaining strap and necessary mounting hardware.		
<u>ADJUSTABLE CASTER WHEELS:</u>	Two (2) screw adjustable, casted, steel wheels shall be supplied (10" O.D. with 1-1/4" diameter axle and tapered roller bearings).		
	They shall connect at each side of the plow.		
<u>MOLDBOARD SHOES:</u>	The cutting edge shall be fitted with two (2) fabricated steel moldboard shoes.		
<u>MOLDBOARD SHOES:</u>	Each moldboard shoe shall offer a minimum of 40 sq. in. of bearing surface and shall attach to the underside of the cutting edge reinforcement.		
<u>CURB SHOE:</u>	An additional bumper shall be supplied at each end of the moldboard (qty. 2).		
	They shall be from a minimum of 3/4" x 6" steel, shall bolt at the cutting edge face and shall project 1" outside each end of the cutting edge.		
<u>WAUSAU LOW MOUNT CUSTOM SNOW PLOW HITCH</u>			
<u>GENERAL:</u>	These specifications are intended to describe a low mount custom designed snow plow hitch designed to keep the hitch and plow as close to the truck grille and/or bumper as possible and allow the hood of the intended chassis to tilt forward for engine service without necessitating movement of the main vertical members.		
	It shall consist of push frame and the plow lifting device.		
	The hitch shall be designed so that the lift arm and hydraulic ram is capable of collapsing and pinning to a stowage position when the plow is not in use.		
	This design requirement is to shorten the protrusion capability of the lift arm arrangement.		
	The main frame shall consist of two (2) formed channels of 3/8" plate for the vertical members.		
	The two horizontal members shall be 4" x 3" x 5/16" wall tubing and incorporate mounting brackets for working and storage positions of the lift arm and hydraulic cylinder.		
	Attached to the push frame shall be a locking device for the coupling of the plow to the truck.		
	The locking device shall have an opening 3-1/2" x 11-1/2" at the front and 2-1/2" x 10-1/2" at the rear.		
	The opening shall be beveled to allow easy entrance of the arrowhead.		
	Two (2) steel spring loaded locking blocks, installed directly behind the beveled opening, shall automatically clamp about the arrowhead, whenever the arrowhead enters the opening during coupling operations.		
	The locking device shall be so designed as to permit oscillation of the snow plow whenever uneven road contours are encountered.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	A handle shall be supplied to unclamp the locking blocks from the arrowhead whenever uncoupling of the plow from the truck id desired.		
	The hydraulic lift ram shall have a 4" bore, double acting design, with a hard chrome plated piston rod.		
<u>ZIEBART UNDERCOATING PACKAGE</u>			
<u>GENERAL:</u>	MANUFACTURER: Ziebart or equal		
	Sealant must protect against road damage and rust.		
	Sealant must reduce vibration and insulate underbid from heat and road noise.		
	Sealant must penetrate and protect seams and spot welds.		
	Sealant must meet federal and military sealant spec. MIL-C-62218.		
	Sealant must comply with federal standard 297E.		
	Sealant shall be impervious to water, salt and mud.		
	Sealant shall be applied to the following areas:		
	<input type="checkbox"/> Front fender wells		
	<input type="checkbox"/> Cab and body underside		
	<input type="checkbox"/> Chassis frame rails		
<input type="checkbox"/> Door insides			
<input type="checkbox"/> All other area required by Ziebart			
<u>BIDDER QUALIFICATIONS FOR ZIEBART APPLICATIONS</u>	Applicator must be Ziebart Trained and Authorized Technician with experience on all vehicle types.		
	Application must be made in strict adherence to Ziebart application manual, for proper warranty administration.		
	To insure proper application and to fulfill warranty obligations, Ziebart must be applied in a heater spray booth of not less than 960 square feet.		
	An inspection of applicator facility will be conducted before any award is made.		
	Authorized Ziebart applicator must have at least 50 applications similar in nature and supply a users list upon request.		

COMPLIANCE TO SPECIFICATIONS

The bidder shall indicate 100% compliance by checking "YES" or non-compliance by checking "NO" for each line item of specification. Any space left blank shall be considered non-compliant. Any deviation from the specification, or where submitted literature does not fully support the meeting of specifications, must be clearly cited in detail, in writing, by the bidder and submitted with the bid. NO verbal interpretations will be accepted! In addition NO deviations below "minimum" specifications as written will be accepted.

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<i>PACKAGE E: SIX WHEEL TRUCK, DUMP BODY, AND CENTRAL HYDRAULICS</i>			
CHASSIS:	Chassis: 2014 Mack Gu432 Chassis Or Equal		
FRAME RAILS:	Frame Rails, 11.811"X 3.54"X .44" Steel		
	Single Chassis Frame Rail		
	Section Modulus 23.5Cu In/Rbm 2,820,000 In Lbs. Per Rail		
WHEELBASE:	Wheelbase, 153" Usable Ca 84"		
	Platform, 171" Lp 62" Af Used With 153" Wb		
GVW RATING:	Gross Vehicle Weight Rating Of 46,500Lbs.		
FRONT AXLE RATING:	Front Axle Rating With Specified Tires Total 16,500Lbs		
REAR AXLE RATING:	Rear Tandem Drive Axle Is Rated At 30,000 Lbs.		
ENGINE:	Cummins Isl-D-345 Hp@1600-1900 Rpm		
	1150 Lb. Ft. Max. Torque @ 1400 Rpm		
	8.9 Liter, 534 Cu. In Piston Displacement.		
	Epa Carb Emission Certified For 2010 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT	Cummins 18.7 Cfm Air Compressor		
	Engine Mounted Oil Check And Fill		
	Jacobs Two Stage C Brake		
	(2) 12Volt Mack Grp31 Batteries-1000 Cca Each-Total Of 2000 Cca-Threaded Posts		
	Air Cleaner, 11"X30" Back Of Cab Single Element Dry Type Air Filter		
	12 Volt Heavy Duty Starter-Delco 39Mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below -34 Degrees Fahrenheit With Coolant Conditioner Filter		
	Engine Block Heater, Gomack (Phillips) - 1000 Watt 120 Volt		
	Intake System Electric Grid Heater		
Engine Hoses And Tubing, Silicone			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Hand Primer Pump-For Fuel System		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
ENGINE EQUIPMENT:	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Horton Dma2S- Two Speed, On/Off With Light Weight Plastic Fan		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382 Fuel Pro. Fuel Heater, Water Separator		
	Hand Primer Pump		
	Hoses, Radiator, Heater, Mack Brand Epdm Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
	TRANSMISSION:	Allison Automatic Transmissions-3000Rds 6 Speed	
TRANSMISSION EQUIPMENT/ DRIVELINES:	Driveline-Main, Meritor 17 Mxlwith Coated Splines		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Conventional Cab (Welded Steel Galvanized Shell) With Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Figerglass Tilt Hood With Safety Lock		
	Air Conditioner,Sanden Rotary Compressor With Integral Heater And Defroster		
	Air Filter Restriction Monitor Mounted To Air Filter Housing Under Hood		
	Co-Pilot Driver Display(4.5" Diagonal Graphic Lcd Display W/4-Button Stalk Control-Includes Guarddog Routine Maintenance Monitoring		
	Cigar Lighter On Instrument Panel		
	Overhead Console With 2 Storage Compartments		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	Am/Fm/Cd Radio With Weatherband		
	Engine Shutoff, Key Type		
	Dpf Regeneration Switch In Dashboard		
	Gauge,Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
CAB EQUIPMENT:	Gauge, Speedometer W/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights , (5) Truck Lite Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Gear Shift, Neutral To Range Inhibit		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Mirror-Exterior, West Coast, Rh & Lh Bright Finish-Heated Elements		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Parking Brake On Indicator Light		
	Power Windows And Door Locks On Driver And Passenger Side With Right Side Door Peep Window		
	Exterior Sun Visor		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 910 (High-Back) Air Suspension		
	Seat – Rider, Bostrom High Back Stationary Seat		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder W/Cab Mounted Shoulder Belt		
Sun visor –Interior , Both Sides (Padded Vinyl			
Side Markers, Lamps And Reflectors			
Starter Switch, Key Type			
Steering Wheel, 18” Two Spoke Urethane Grip			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
	Windshield Wipers, Sprague 2 Speed Electric Motor W/Intermittent Feature		
FRAME EQUIPMENT:	Bumper – Front, Swept Back Steel		
FRAME EQUIPMENT:	Crossmembers, Steel Huck Bolted Back To Back I Beam Type		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
FRAME EQUIPMENT/ FUEL TANKS:	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 66 Gallon Aluminum With 6.6 Gallon Def Fluid Tank		
FRONT AXLE:	Front Axle, Fx16.5 16,500 Lb. Capacity-Sealed Kingpins- Maintenance Free Front Axle		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20Ply. M860 (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5X9.0		
FRONT AXLE/ EQUIPMENT/ TIRES:	Brakes – Front, Bendix Es165-06D “S” Cam Type 16.5”X6” Cast Spider		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 16,500 Lb.		
	Steering Box, Sheppard Sd110 With Tilt And Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES/ RATIOS:	Rear Axle/Suspension, Meritor Rs-30-185 Single Reduction Iron Housing 30,000 Lb. Capacity		
	30,000 Lb. Multileaf Spring Suspension		
	Single Reduction Rear Axle Carrier		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial		
	(4)315/80R22.5 20 Ply (M 843 Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Rear Axle, Malleable Housing, 5.66 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5X8.25 Accuride		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Brakes – Rear, Bendix Es165-07D “S” Cam 16.5” X 7” Cast Spider With Bronze Bushing		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
REAR AXLE/ EQUIPMENT/ TIRES/ RATIOS:	Oil Seals, Chicago Rawhide (Scotseal)		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers – Quantity, (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System- Trailer Supply With Hand Control For Trailer- Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For Trailer Lights		
	Air Dryer-Meritor Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix With Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Battery Box(Es), Steel		
	Battery Box Covers, Molded Plastic		
	Battery Box – Mounting, Forward		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights,		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional And Back-Up Lights-Led Module		
Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250			
PTO:	Transmission Mounted Power Take Off System		
PAINT:	Cab Exterior, White		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
WARRANTY:	5 Year, 100,000 Mile, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger , Injectors, And Water Pump.		
	Basic Vehicle – 12 Months On All Components		
	Allison Transmission – 5 Years Unlimited Miles		
AIR-FLO CARBON STEEL DUMP BODY			
<u>INTENT</u>	It is the intent of these specifications to describe a 6.05 cubic yard heavy-duty dump body with a scissor type hoist.		
<u>BODY</u>	The inside length of the dump body shall be 10' and inside width shall be 84".		
	It shall have a capacity of 6.05 cubic yards without sideboards.		
	The 7 Ga. steel sides shall be 28 inches high with 10" sideboard pockets capable of increasing the total capacity to 7.78 cubic yards.		
	The straight vertical sides shall be made of 7 Ga. steel with a boxed top rail 4" wide by 6 3/8" high.		
	The dirt shedding sloped top rail is to fold back 45 degrees at top.		
	No seam is to be visible to the outside or bottom of the top rail.		
	Including front corner post, there are to be a minimum of three vertical gussets.		
	The vertical gussets are 6" wide and 3 1/2" deep.		
	The bottom of the sides shall have a 5" 45 degree sloped rub rail that is 4 1/2" wide.		
	The full depth rear corner post shall be a minimum of 16" wide and 5" deep fully welded.		
<u>TAILGATE</u>	The fully welded 6-panel tailgate shall be one piece 7 Ga. steel 36 inches high.		
	Horizontal bracing shall be dirt shedding including top rail with four 4" vertical gussets.		
	The 1" flame cut upper tailgate hinge shall have a minimum 1 1/2" upper pin and 1 1/4" lower tailgate pin.		
	The 1/2" lower latch assembly shall have 1/2" flame cut lower pin cradle.		
	The upper tailgate hinge bracket shall be incorporated into the rear corner post to give the appearance of the tailgate and hinge assembly being the same height as the rear corner post.		
	Sleeve covered 3/8" diameter proof coil chains shall be provided to hook into banjo eye brackets welded onto rear corner posts for tailgate spreading.		
	The tailgate will have two (2) turnbuckles installed.		
	The tailgate shall have a lifting to aid in the removal of the tailgate off the body.		
<u>FRONT HEAD PANEL</u>	The front head panel shall be a one piece 7 Ga. steel panel 10" higher than the side height.		
	A formed V bend will be incorporated the full width and placed in the center of the panel.		
	The top of the panel shall be formed 2 1/2" wide and 1 1/4" deep.		
<u>FLOOR</u>	The crossmemberless floor shall be made of 1/4" AR-400 steel.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The floor shall be so designed and constructed that it will not have any underbody crossmember bracing.		
	The floor shall be supported by formed 1/4" thick steel trapezoidal longitudinals that span the entire length of the body.		
<u>SUBFRAME</u>	Subframe shall be made of 5/16" steel formed to a 6" channel.		
<u>HOIST</u>	Hoist shall have a single cylinder with dual support arms and dual body props.		
	The 8" diameter, 21" stroke cylinder shall have a 2 1/4" chrome plated piston rod and capable of being used in a single acting or double acting application.		
	The NTEA class 50 rated hoist shall ensure a dump angle of not less than 50 degrees and be capable of obtaining a 17 ton lift capacity with relief valve set at 1500 PSI.		
	The front and rear crossmembers of the hoist shall be fully gusseted.		
	The heavy-duty flame cut platform type rear hinges shall have replaceable 1 1/2" pins.		
	Hoist shall be of fully solid weld construction.		
<u>CABSHIELD</u>	1/2 cab shield shall be made of 10 gauge steel and extends 22 1/2" from the front of the body.		
	Cab shield to be mounted as low as possible.		
<u>AIRGATE</u>	There shall be an air latch tailgate in place of a manual latch, the handle operating the front pivot shaft will be replaced by an air cylinder operated front pivot shaft.		
	The air cylinder shall be 2 1/2" in diameter with an 8" stroke.		
	It shall have a 5/8" chromed rod.		
	Rear latches to include "Philly Type" locks and T turn buckles.		
<u>BODY ACCESSORIES</u>	Splash shields forward of the rear wheels to be fabricated of 10 gauge steel.		
	Catwalk to be welded between boxes on each side fabricated of safety grip strut.		
	Grab handles to be mounted on each side of dump body for easy access to catwalk, fabricated of 3/8" round stock, welded to each side of first vertical side brace.		
<u>FULL REAR SKIRT:</u>	To extend to bottom of longitudinals with five (5) light hole punch cuts.		
	All lights recessed behind skirt across rear.		
	Side lights to be flush mount, rubber grommet type.		
<u>CONSPICUITY TAPING:</u>	Dump truck body sides, rear face and tailgate perimeter to be outlined as per NHSTA guidelines in SCOTHLITE CONSPICUITY SHEETING DIAMON GRADE 980 RED/WHITE 2" WIDE.		
<u>UNDER BODY TOOL BOX</u>	There shall be a underbody tool box mounted where space allows.		
<u>LADDER</u>	Ladder shall have three rungs and have the ability to slide horizontally to the body for storage.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>LOAD COVER WITHOUT ARMS:</u>	The body shall come equipped with a Pull-Tarps Steel Protector Support System or equal. The tarp system shall be actuated by a single spring which shall be adjustable. The spring shall be protected by an aluminum tube. The tarp system does not require the use of control arms or crank handles. Two (2) tarp control ramps shall be installed on the tailgate to hold the tarp fully extended. The tarp material shall be asphalt rated material		
<u>LIGHTING:</u>	<u>BODY LIGHTS:</u>		
	All body lights to meet Federal Safety Standard #108 and shall be installed using rubber shock mounted recessed lights with body wiring in heavy loom.		
	There shall be three 2" red, round LED marker lights installed below the apron.		
	Marker lights to be LED		
	There shall be a 2" LED light to be installed in the dash to notify the operator that the body is in the "UP" position.		
	<u>DOT3 SYSTEM:</u>		
	The Super-LED DOT light system shall be a Whelen model 00007DS0 as described herein.		
	The product being bid must be a standard production model of the manufacturer.		
	All major components such as LED flashers, LED lightheads, cables, lenses, etc., must be designed and manufactured within the United States. Bids offered in which major components (such as LED populated board, etc.) are manufactured off-shore are not acceptable.		
	<u>REAR SUPER-LED® HEAD ASSEMBLIES</u>		
	There will be a total of four spreader pockets installed on the outside of the body.		
	The two rear 700 Linear Super-LED heads shall utilize a DOT LED flasher which is mounted and encapsulated in a junction box (NOTE: Junction Box must be installed inside the cab). The DOT LED flasher shall allow the two rear 700 Linear Super-LED's to be controlled independently from the front head assembly.		
	The 700 Linear Super-LED assembly, brake light and back-up, including the steel housing, shall be approximately 23-1/2 inches high, 4-7/8 inches deep and 3-1/2 inches wide.		
The modules, as well as the lens, shall be easily replaceable. A waterproof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistance as well as ease of replacement.			
The 700 Linear Super-LED lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.			
<u>LIGHTING:</u>	There shall be two (2) LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of (72) Red LED's. The module must be in "signal alert" flash pattern, which flickers three times (within 150 milliseconds) before becoming steady "on". These modules must meet or exceed SAE requirements.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	There shall be two (2) LED Back-Ups, one (1) located in the bottom position of each steel housing. Each module must contain a minimum of (48) White LED's for maximum light output. These modules shall be supplied with a Clear polycarbonate lens.		
	The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimilar metal corrosion. Units that screw into a steel bracket are unacceptable since they tend to corrode over time.		
	<u>CABLE HARNESES:</u>		
	The cable being supplied from the rear housings must be heavy-duty TPR-type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14 gauge, pure copper stranded, and fully tin coated. No less than (30) feet of cable shall be provided for each head assembly. All necessary connectors shall be provided, including a strain-relief system.		
	<u>CAB SHIELD LIGHTING:</u>		
	There shall be five (5) 700 Linear Super-LED installed in the cab shield, three in the front and one on the passenger's side and one on the driver's side.		
	The 700 Linear Super-LED lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.		
	The LED strobe shall be installed in black flanges.		
	The lights shall be synchronized with the DOT-3 system.		
	Wiring and harness system shall meet ISO rating IP68 and NEMA 6. The connectors shall be zinc die cast E-coated, similar to a MIL spec connector. Each shall have three sealing points- the lock ring itself, a raised portion of the molded plastic around each pin, and a viton O-ring that seals the whole connector. The cable jacket shall be TPE- thermoplastic elastomer, and molded to the connectors. PVC jacketed wire is not acceptable. Connectors and harness shall be rated and tested for a temperature range from - 30C to + 70C. Connectors shall be tested to be water tight when submerged in 6' of water for 24 hours, in 275' of water for 1 hour, and when subjected to a 1000-psi pressure wash. The connectors shall be designed to have NO corrosion after 5000 hours in a 35C salt spray. Cabling shall be rated excellent in low temperature flexibility and in its resistance to oxidation, heat, oil, weather, sun, ozone, abrasion, electrical priorities, flame, water, acid, alkali, gasoline, benzol, toluol, degreaser solvents, alcohol, and weld slag.		
<u>PINTLE HOOK PACKAGE</u>	Rear of the chassis shall have two (2) tow hooks, one on each side of the chassis.		
	A Holland Model T90 Pintle hook shall be mounted to a 5/8" pintle plate. The pintle plate shall be reinforced to the chassis frame rails.		
	Two (2) D-Rings shall be permanently attached to the pintle plate, one on each side of the pintle hook.		
	A weather proof seven (7) spade male and female trailer light plug shall be installed in the rear crossmember with the female wired and the male supplied		
<u>CENTRAL HYDRAULIC SYSTEM</u>			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
<u>PTO:</u>	The power take-off shall be a Muncie CS Series.		
	drag brake to positively stop the output shaft in the "off" position.		
	The power take-off speed ratio is to be compatible to the application.		
	Engagement of the power take-off shall be by means of a dash mounted rocker switch to activate a built-in solenoid control.		
	The power take off shall be equipped with a 7/8" I.D. 13-spline shaft and SAE "B" flange for direct mounting of the hydraulic pump.		
	The power take-off shall have a two year manufacturer's warranty from the date of installation.		
<u>PUMP:</u>	The hydraulic pump shall be a Muncie, model PK1-17-02BSBB, with a flow rating of 17 GPM @ 1,000 RPM.		
	The hydraulic pump shall have a maximum rating of 2500 RPM and 2500 PSI.		
	The pump shall be a gear type and of cast iron, roller bearing construction with side and rear ports.		
	The pump shall have an SAE "B" mounting and a 7/8" I.D. 13-spline shaft.		
	The pump shall be capable of being rebuilt and recertified for an additional period of time from the retest date.		
<u>VALVE:</u>	The directional control valve shall be a Muncie 60V stackable series or approved equal.		
	Valve shall be capable of 60 GPM maximum flow and 2,500 PSI.		
	Open center parallel circuit design shall accommodate the necessary work sections to power the DA dump.		
	The inlet section shall incorporate an adjustable relief valve cartridge.		
	The valve bank shall be mounted outside the cab of the vehicle and shall be shifted by heavy duty, cable/lever assemblies, Muncie RVC Series.		
	The cables shall be vinyl covered and both ends shall be bonneted to resist contamination.		
	The cable control shall be equipped with in-cab lever assembly located in a position convenient to the operator.		
<u>HYDRAULIC RESERVOIR</u>	The hydraulic oil reservoir shall be of steel construction with a minimum capacity of 25 gallons.		
<u>HYDRAULIC RESERVOIR</u>	The reservoir shall be constructed to withstand the environmental conditions to which it is subjected and contain a filler/breather cap with a minimum rating of 40 micron filtration.		
	An adequately sized clean-out port shall be incorporated into the reservoir and the reservoir shall be equipped with a return line diffuser and/or baffles to reduce aeration of the hydraulic oil.		
	Reservoir shall be a Muncie Model S025B4AA-GXN or equal.		
<u>FILTER:</u>	A return line filter, Muncie RLF-501, shall be installed in the return line, near the reservoir, in a position that facilitates ease of maintenance.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	The filter shall be rated at a minimum of 50 GPM of flow and 10 micron filtration.		
	The filter shall have a built-in bypass with a minimum 15 PSI rating.		
	The element shall be of the spin-on / throw-away type and the filter head shall be equipped with a filter condition indicator which shows a "clean" filter condition by an arrow in the green area and replacement needed with an arrow in the red area.		
	The element shall be of the spin-on / throw-away type and the filter head shall be equipped with a filter condition indicator which shows a "clean" filter condition by an arrow in the green area and replacement needed with an arrow in the red area.		

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Attach. f

Parks

COMPLIANCE TO SPECIFICATIONS

The bidder shall indicate 100% compliance by checking "YES" or non-compliance by checking "NO" for each line item of specification. Any space left blank shall be considered non-compliant. Any deviation from the specification, or where submitted literature does not fully support the meeting of specifications, must be clearly cited in detail, in writing, by the bidder and submitted with the bid. NO verbal interpretations will be accepted! In addition NO deviations below "minimum" specifications as written will be accepted.

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
CHASSIS:	CHASSIS: 2014 FORD F650 TRUCK CHASSIS OR EQUAL-26,000 GVWR		
	FRAME RAILS, 9.125" x 3.062" x 0.312" HIGH STRENGHT ALLOY STEEL		
	TAPERED FRAME RAIL		
	SECTION MODULUS 10.75cu in/RBM 860,000 in lbs. Per rail, 80,000 PSI STEEL		
	WHEELBASE, 158" CA" 84" CA USABLE CA 84"		
	PLATFORM, 165" LP 56" AF USED WITH 158" WB		
ENGINE:	CUMMINS ISB 240 HP @ 2300 RPM.		
	560 LB. FT. MAX. TORQUE @ 1600 RPM.		
	6.7 LITRE, 408 CU. IN PISTON DISPLACEMENT.		
TRANSMISSION:	ALLISON 2200RDS 5 SPEED WITH PTO PROVISION		
ENGINE	STARTER, 12 VOLT-DELCO 38MT		
EQUIPMENT:	AIR CLEANER, UNDER HOOD SINGLE ELEMENT DRY TYPE		
	WITH AIR INTAKE FROM BOTH SIDES OF THE HOOD		
	AIR GOVERNOR, FIREWALL MOUNTED		
	ALTERNATOR, DELCO 12VOLT 185AMP.		
	BATTERIES, (2) 12V M/F GROUP 31 900/1800 TOTAL CCA THREADED STUD TYPE		
	RADIATOR, 717 SQUARE INCH WITH IN TANK TRANSMISSION COOLER		
	COOLANT PROTECTION TO BELOW -40 DEGREES FAHRENHEIT		
	ENGINE BLOCK HEATER, GOMACK (PHILLIPS) - 750 WATT 120 VOLT-MOUNTED IN FRONT BUMPER		
	ENGINE HOSES AND TUBING, SILICONE		
	DIESEL PARTICULATE FILTER HORIZONTAL RH SIDE UNDER THE CAB.		
	EXHAUST AFTER -TREATMENT SYSTEM DIESEL PARTICULATE FILTER CERAMIC CATALYZED, AND SCR TECHNOLOGY TO MEET 0.2 GRAMS OF NOx		
	EXHAUST, OUTBOARD SINGLE (R/S) VERTICLE STRAIGHT EXHAUST STACK		
	POLY-V FAN BELT WITH AUTOMATIC TENSIONER		

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SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	BORG WARNER VISCOUS SCREW ON TYPE FAN DRIVE		
	FLYWHEEL ,LIGHT WEIGHT ALUMINUM		
	FUEL-WATER SEPERATOR: RACOR. FUEL HEATER		
	HAND PRIMER PUMP		
	INJECTION PUMP- ELECTRONIC ENGINE CONTROL		
	CARB CLEAN IDLE LABEL ON HOOD		
TRANSMISSION	DRIVELINE-MAIN, MERITOR 17N HD WITH COATED SPLINES		
EQUIPMENT:	TRANSMISSION BELL HOUSING, ALUMINUM		
CAB:	AIR CONDITIONING, INTEGRAL W/HEATER AND DEFROSTER		
	AIR CONDITIONING COMPRESSOR, ROTARY FREON		
	AIR RESTRICTION MONITOR ,AIR CLEANER INTAKE MOUNTED		
	CAB, CA49 CONVENTIONAL (WELDED STEEL GALVANIZED SHELL)		
	INCLUDES RUST PREVENTATIVE		
	CIGAR LIGHTER ON INSTRUMENT PANEL		
	COAT HOOK (2)		
	DOME LIGHT, (4) W/SELF-CONTAINED SWITCH		
	DOORS, GALVANIZED STEEL		
	DOOR INTERIOR TRIM PANELS		
	ENGINE SHUTOFF, KEY TYPE		
	FLOOR COVERING, BLACK RUBBER MATS W/CLOSED CELL VINYL NITRILE FOAM BACKING		
	GAUGE,AIR PRESSURE		
	GAUGE, VOLTMETER		
	GAUGE CLUSTER, EXHAUST PYROMETER, ENGINE OIL, AND TRANSMISSION OIL TEMPERATURE GAUGES		
	GAUGE, ENGINE COOLANT TEMPERATURE		
	GAUGE, ENGINE OIL PRESSURE		
	GAUGE, FUEL LEVEL		
	GAUGES, ENGLISH DISPLAY		
	GAUGE, SPEEDOMETER W/TRIP ODOMETER (ELECTRONIC 1% ACCURACY)		
	GAUGE, ENGINE TACHOMETER (ELECTRONIC WITH HOURMETER)		
	GLASS-CAB WINDOW, SAFETY TINTED WINDSHIELD, SIDE AND REAR WINDOWS		
	GRAB HANDLES, ALUMINUM, RH & LH BEHIND DOOR		
	GRILLE, ARGENT SILVER FINISH, HORIZONTA L TUBE STYLE		
	HEADLAMP BEZEL- MOLDED PLASTIC (BRIGHT FINISH)		
	HIGH BEAM INDICATOR LIGHT		
	HOOD & FENDERS, FIBERGLASS TILTABLE		
	HORN- ELECTRIC, SINGLE TONE		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	IDENTIFICATION/CLEARANCE LIGHTS , (5) TRUCK LITE BULLET TYPE LAMP		
	INSTRUMENT PANEL, GRAY WITH BLACK GAGE BEZEL		
	INTERIOR TRIM LEVEL, (GREY) FEATURES: PADDED VINYL HEADLINER		
	REAR PANEL WITH STORAGE POUCH, POLYURETHANE FLOOR MAT		
	2 CUP HOLDERS MOUNTED AT BOTTOM OF DASH (CENTER)		
	CHASSIS KEYED AT RANDOM- 4 KEYS		
	MIRROR-EXTERIOR, WEST COAST, RH & LH BRIGHT FINISH HEATED		
	MIRRORS – CONVEX TYPE, BRIGHT FINISH, LH & RH 7.5” DIA; MOUNTED BELOW LOWER ARM OF WEST COAST MIRROR		
	PARKING BRAKE ON INDICATOR LIGHT		
	RADIO PANASONIC AM-FM-WEATHERBAND PLAYER		
	4 –WAY BALANCE (BALANCE & FADER), LCD DISPLAY		
	MIRROR BRACKETS SINGLE TUBE W/BREAKAWAY FEATURE,96” WIDE		
	RADIO ANTENNA- CAB MTD BEHIND LH DOOR		
	CB MOUNTING PLATE (DASH MTD)		
	REAR WINDOW (FIXED TYPE)		
	SEAT - DRIVER (MID-BACK)		
	SEAT – RIDER, TWO MAN FIXED (MID-BACK)		
	SEAT COVERING, ALL VINYL		
	SEAT BELTS, LAP AND SHOULDER W/CAB MOUNTED SHOULDER BELT WITH FIXED D-RING FOR DRIVER AND RIDER SEATS		
	SIDE MARKERS, LAMPS AND REFLECTORS		
	STARTER SWITCH, KEY TYPE		
	STEERING COLUMN, TILT & TELESCOPE		
	STEERING WHEEL, 18” TWO SPOKE URETHANE GRIP		
	SUNVISOR –INTERIOR , BOTH SIDES (PADDED VINYL		
	WINDOW CONTROLS, POWER		
	WINDSHIELD WASHERS, ELECTRIC, WIPER MOUNTED W/RESERVOIR MOUNTED UNDER HOOD		
	WINDSHIELD WIPERS, SPRAGUE 2 SPEED ELECTRIC MOTOR W/INTERMITTENT FEATURE		
FRAME	BUMPER – FRONT, EXTENDED SWEEP BACK STEEL		
EQUIPMENT:	CROSSMEMBERS, STEEL BOLTED BACK TO BACK I BEAM TYPE		
	FLAPS – WHEEL (FRONT) BLACK POLY ARMOR		
	TOWING DEVICE – FRONT, (2) HOOKS		
FUEL TANK:	FUEL TANK – LH, 45 GALLON STEEL WITH 5 GALLON DEF TANK		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
FRONT AXLE:	FRONT AXLE, MERITOR MFS-08-153B 8,500 LB. CAPACITY		
	TIRE BRAND/TYPE – FRONT, GOODYEAR – TUBELESS RADIAL, 245/70R19.5 G PLY. GOODYEAR G647 RSS (ALL POSITION)		
	WHEEL – FRONT, STEEL DISC 10 HOLE HUB PILOTED 19.5 X 6.75		
	BRAKES – FRONT ,HYDRAULIC DISC BRAKES-QUADRAULIC SPLIT SYSTEM		
	FOR 64MM DIAMETER PISTONS-4 CHANNEL ABS ANTILOCK BRAKE SYSTEM		
	DUST SHIELDS – FRONT BRAKE, FURNISH		
	SHOCK ABSORBERS, FRONT		
	DSSA TYPE REAR AXLE MOUNTED PARKING BRAKE WITH DASH MOUNTED BRAKE VALVE		
	SPRINGS – FRONT, MACK TAPERLEAF 8,500 LB.		
	STEERING, HYDRAULIC POWER ASSIST, RECIRCULATING BALL STEERING		
REAR AXLE:	REAR AXLE/SUSPENSION, 17,500 LB. CAPACITY-MERITOR MS-17-14X-3DFL		
	17,500 LB.MULTILEAF REAR SPRINGS		
	SINGLE REDUCTION REAR END GEARS		
	TIRE BRAND/TYPE – REAR, GOODYEAR – TUBELESS RADIAL		
	(4) 245/70R 19.5 14 PLY (THREAD)		
	BRAKES – REAR, HYDRAULIC DISC BRAKES-QUADRAULIC SPLIT SYSTEM WITH TRACTION CONTROL		
	FOR 64MM DIAMETER PISTONS-4 CHANNEL ABS ANTILOCK BRAKE SYSTEM		
	CARRIER/RATIO- REAR AXLE, MALLEABLE HOUSING, 4.33 RATIO		
	DUST SHIELDS – REAR BRAKE, FURNISH		
	REAR SHOCK ABSORBERS		
	WHEELS – REAR, STEEL DISC 10 HOLE HUB PILOTED 19.5 X 6.75 ACCURIDE		
	DUST SHIELDS – REAR BRAKE, FURNISH		
ELECTRICAL	BACK-UP ALARM, WITH INTERMITTENT FEATURE (AMBIENT NOISE SENSITIVE)		
EQUIPMENT:	BATTERY BOX(ES), STEEL		
	BATTERY BOX COVERS, MOLDED PLASTIC		
	BATTERY BOX – MOUNTING, FORWARD OF LH/ FUEL TANK		
	COURTESY LIGHT SWITCH (HEADLAMP AND CLEARANCE)		
	DAYTIME RUNNING LIGHTS,		
	ELECTRIC CIRCUIT PROTECTION PACKAGE, ALL CURCUITS FUSE/BREAKER PROTECTED		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	HEADLIGHTS, SINGLE MOUNTED RECTANGULAR HALOGEN LAMPS FLUSH MTD.		
	REAR LIGHTING, (2) COMBINATION STOP, TAIL DIRECTIONAL AND BACK-UP LIGHTS		
	ELECTRICAL MASTER DISCONNECT SWITCH MOUNTED IN CAB WITH PLACARD		
	SIGNAL FLASHER TYPE, TRANSISTORIZED TURN SIGNAL, FEDERAL MOGUL #250		
	PTO:		
	TRANSMISSION MOUNTED POWER TAKE OFF SYSTEM		
	PAINT:		
	CAB EXTERIOR, OXFORD WHITE		
	FRAME COLOR, BLACK		
	ADDITIONAL EQUIPMENT:		
	FURNISH AND INSTALL WHITACKER ELECTRICAL JUMP SYSTEM WITH 20 FT JUMPER CABLE		
	MANUALS, TWO COMPLETE SET OF PARTS AND SERVICE MANUALS		
WARRANTY:	24 MONTHS / 24,000 MILES-BASIC CHASSIS WARRANTY		
	5 YEARS / 150,000 MILES ON ENGINE, TO INCLUDE AFTER TREATMENT SYSTEM		
	5 YEARS / UNLIMITED MILES ON ALLISON TRANSMISSION		
GENERAL BODY	GALION MODEL 100UDDS 11 FT. DROP SIDE		

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SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	TO BE A GALION MODEL 100UDDS 11 FT 4.3- 5.7 CUBIC YARD CAPACITY. 84" INSIDE WIDTH, 94" QVERALL WIDTH. 11 FT. IN LENGTH. SIDE HEIGHT TO BE 18", BODY END TO BE 24". 6" SIDE BOARD HOLDERS. 1/2 CAB SHIELD TO BE PROVIDED ANS MANUFACTURED OF 3/16" GAUGE HIGH TENSIL STEEL. SIDES TO BE MANUFACTURED OF 10 GAUGE HIGH TENSIL, REINFORCES DIRT SHEDDER DESIGN FORMED IN SHEET AND CAPABLE OF DROPPING DOWN OR COMPLETELY REMOVED. SIDES TO HAVE 2 INTERMEDIATE POSTS. TOP RAIL TO BE BOXED. SPLASH SHIELDS SHALL BE INSTALLED FORWARD OF THE REAR WHEELS. TAILGATE TO BE DOUBLE CATING WITH TWO VERITACAL BRACES HEAVY DUTY QUICK RELEASES ON TOP OF THE TAILGATE. MANUAL TAILGATE RELEASE MOUNTED ON THE FRONT DRIVER SIDE OF THE BODY AN ADDITIONAL LOWER SAFETY LATCH AS PER PREVIOUS VEHICLES. UNDERSTRUCTURE CROSS MEMBERS TO BE ON 12.75 CENTERS. 6" 8.2# STRUCTRUAL LONG SILLS. 3" 3.5# CROSS MEMBERS. LADDERS TO BE MOUNTED ON THE FRONT CORNERS OF THE BODY BOTH SIDES. FLOOR TO BE 3/16" HIGH TENSIL STEEL		
	A HOT SHIFT P.T.O. MUNCIE TO BE INSTALLED ON THE TRANSMISSION.		
POWER TAKE OFF SYSTEM	A G102 PUMP TO OPERATE DUMP BODY ONLY SHALL BE DIRECT MOUNTED TO THE POWER TAKE OFF. ALL CONTROLS FOR THE DUMP OPERATION SHALL BE CAB MOUNTED AS PER THE DIRECTION OF THE TOWN.		
MANUAL TARP	PULLTARP MODEL SUPER SHIELD -108-0215 SYSTEM WITH MESH TARPAULIN SHALL BE MOUNTED TO THE CABSHIELD WITH BODY WOOD SIDE BOARDS.		
BACK UP ALARM	A ECCO AUTOMATICALLY ADJUSTABLE BACK UP ALARM SHALL BE INSTALLED. 97-112 DECIBLE RATING.		
LIGHTING	WHELEN CAB MOUNTED L.E.D. FLASHING LIGHT MODEL L5 THAT PERMANENT MOUNT. A BRANCH GUARD SHALL BE INSTALLED.		
	5G00GFR AMBER L.E.D. LIGHT HEADS REAR MOUNTED INTO CORNERS OF THE DUMP BODY		
	HIDDEN L.E.D. FLASHING LIGHTS SHALL BE MOUNTED IN FRONT CORNER LIGHTS.		

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SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
PINTLE HOOK PACKAGE	A BALL PINTLE HOOK COMBINATION WITH A 2" BALL SHALL BE INSTALLED WITH A FULL PLATE, ICC STEP AND SAFETY EYES. A 7 WAY ELECTRIC PLUG AND BRAKE CONTROLLER SHALL BE INSTALLED ON THE VEHICLE.		
	<u>SNOW PLOW BOSS 8.5 FT. SUPER DUTY STRAIGHT BLADE</u>		
SNOW PLOW	THE BLADE SHALL BE 8'6" WIDE AND IS A FULL MOLDBOARD TRIP DESIGN.		
	BLADE MOLDBOARD SHALL BE CONSTRUCTED OF 11 GAUGE STEEL		
	1/2" X 6" CUTTING EDGE AND CAST IRON SHOES		
	BLADE SHALL BE 29" HIGH WITH 7 VERTICAL AND 2 DIAGONAL RIBS		
	BLADE MEASURES 88" WIDE WHEN ANGLED AT 30 DEGREES		
	BLADE SHALL HAVE A HEAVY DUTY PUSHFRAME AND QUADRANT WHICH 1 1/2" X 10 HYDRAULIC ANGLE RAMS ATTACH DIRECTLY TO. THE QUADRANT HAS BUILT IN CYLINDER STOPS. THE BLADE COMES WITH 4 ADJUSTABLE TRIP SPRINGS AND A SHOCK ABSORBER. THE BLADE AND ALL PARTS SHALL HAVE A BAKED- ON POWDER-COAT FINISH WITH ZINC PRIMER UNDERCOATING.		
	THE PLOW SHALL HAVE A HYDRAUCALLY ASSISTED ATTACHING MECHANISM WITH AN ELECTRIC TOGGLE SWITHC MOUNTED ON THE HEAD GEAR. THE CONNECTING PIN SPRING LEVERS CAN BE PROPERLY POSITIONED AND SHALL ENGAGE AUTOMATICALLY WHEN THE TOGGLE SWITCH IS ENERGIZED AND HEAD GEAR IS RAISED BY USE OF THE HYDRAULIC LIFT CYLINDER AND HYDRAULIC POWER UNIT. THE SYSTEM SHALL HAVE A DIRECT MOUNTED LIFT RAM WITH NO LIFT CHAIN.		

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SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	THE PLOW HEADLAMPS SHALL HAVE SEPARATE HIGH AND LOW BEAM BULBS. EACH HEADLAMP SHALL INCLUDE HALOGEN INFRARED BULB TO PROVIDE WHITER LIGHT. THE SYSTEM SHALL INCLUDE CAB MOUNTED TOGGLE SWITCH TO ENERGIZE PLOW LIGHTS WHEN PLOW IS ATTACHED. HEAD LAMP MOUNTING SHALL INCLUDE WRAP- AROUND TYPE HOLD DOWN MOUNT AND TAB STYLE ADJUSTMENT LOCKING MECHANISM.		
	ELECTRICAL SYSTEM SHALL HAVE 2 CONNECTORS AT THE VEHICLE GRILLE. AND HAND HELD CONTROLLER IN THE CAB.		
	THE COMPLETE HYDRAULIC SYSTEM SHALL BE CONTAINED INSIDE AN ENCLOSURE PROTECTING IT FROM CORROSIVE ELEMENTS AND HYDRAULIC FREEZE UP. THE TWO PART SYSTEM SHALL CONSIST OF AN ELECTRIC HYDRAULIC POWER UNIT AND A SEPARATE ELECTRICALLY ACTIVATED HYDRAULIC VALVE BLOCK. THE ATMOSPHERIC BREATHER FOR THE SYSTEM SHALL BE ENCLOSED FROM THE ELEMENTS TO AVOID WATER INGRESSION EACH TIME THE SYSTEM IS ACTIVATED. THE PLOW ANGLING HYDRAULIC CYLINDERS SHALL HAVE NITRATED COATED RODS TO RESIST CORROSION		
PAINT	COMPLETE BODY SHALL BE PROPERLY CLEANED AND PAINTED IN TOWN OF NORTH HEMPSTEAD COLORS AS PER DIRECTION OF THE TOWN		

Attach. G.

7

COMPLIANCE TO SPECIFICATIONS

The bidder shall indicate 100% compliance by checking "YES" or non-compliance by checking "NO" for each line item of specification. Any space left blank shall be considered non-compliant. Any deviation from the specification, or where submitted literature does not fully support the meeting of specifications, must be clearly cited in detail, in writing, by the bidder and submitted with the bid. NO verbal interpretations will be accepted! In addition NO deviations below "minimum" specifications as written will be accepted.

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	THREE WHEEL BROOM STREET SWEEPER WITH BELT CONVEYOR		
CHASSIS:			
	Configuration shall be three wheel, rear steer. Front steer configurations shall not be acceptable.		
	For safety, steering strut shall have dual tires. Single tire steer wheels shall not be acceptable in case of flat tire.		
	To protect the target vehicle receiving the hopper discharge, sweeper shall have permanently fixed heavy duty steel bumpers with rubber padding, capable of limiting the forward movement of the sweeper before the sweeper drive wheels or chassis can impact the target vehicle.		
	For maximum strength, chassis shall be fully welded; formed channel and boxed tube style. Bolt together chassis shall not be acceptable due to limited structural strength.		
	Chassis shall have front and rear tow hooks.		
	Engine compartment cover shall have two raising assist cylinders.		
	Rear axle shall be strut type, having a minimum capacity of 7,400 lbs.		
	Front axles shall be stub type, each having a minimum capacity of 10,000 lbs.		
	A centralized grease manifold is to be installed.		
	Front and rear illuminated license plate holders shall be provided.		
	Dual limb guards shall be supplied which protect both sides of the Pelican and direct low tree branches up and over the sweeper. A crossbar is to be included to strengthen the limb guards on both sides.		
	A slow moving vehicle warning decal shall be provided.		
	Three triangle shaped reflectors for emergency stopping on roadside shall be included.		
6.0 CHASSIS ENGINE			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Diesel engine shall be 4 cylinder, turbocharged, dynamically counter balanced, 276 cu/in. (John Deere 4045T or equal). Engine shall have EPA Tier 4i emissions and be capable of operating on bio-diesel up to B20.		
	Horsepower rating shall be 55KW @ 2500 RPM. With electronic throttle.		
	Engine shall be rubber mounted.		
	For greater heat dissipation and lower cost of maintenance, engine shall have individually replaceable wet sleeve cylinder liners.		
	Air cleaner shall be dual element safety dry-type.		
	Anti-freeze/water mixture shall be rated at -20 degrees.		
	Diesel fuel tank shall have a minimum capacity of 35 U.S. gallons.		
	For operator safety in the event of engine cutout, steering system shall have a manual override.		
	An engine shutdown shall be included which protects against damage when either low oil pressure or high coolant temperature conditions occur.		
	In addition to the existing filter/separator supplied with the engine, a heated fuel/water separator shall be installed for optimal fuel filtration of dirt and water.		
	A 1000 watt engine block heater shall be provided which assists with starting the auxiliary engine in cold weather conditions.		
	Two extra ignition/door key shall be supplied for the sweeper.		
	Silicone hoses shall be installed on the auxiliary engine in lieu of standard rubber hoses.		
<u>7.0 HYDROSTATIC TRANSMISSION</u>			
	Pump shall be variable displacement with separate variable displacement wheel drive motors.		
	Power shall be evenly distributed through planetary torque hubs.		
	Power shall be transferred from wheel drive motors to planetary torque hubs without side loading.		
	Single foot pedal shall automatically produce required torque at a set pressure.		
	To prevent the possibility of contamination and the resulting damage to the transmission system, transmission shall be protected by 10 micron filter with cab restriction indicator.		
	Single foot pedal shall control both forward and reverse directions.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Hydrostatic transmission shall be computer controlled to optimize propel system to engine power.		
8.0 TIRES AND WHEELS			
	Front drive tires shall be tubeless radial tires, 11R22.5 (14 Ply Rated) mounted on disc wheels.		
	Dual rear tires shall be tubeless radial tires, 10R17.5 (16 Ply Rated) 15 mounted on disc wheels.		
	To reduce chassis fatigue, sweeper shall be equipped with fully sprung guide wheel strut utilizing two large heavy duty springs.		
9.0 BRAKES			
	Service brakes shall be full power, hydraulically applied, three-caliper disc type.		
	For safety, the hydrostatic system shall be equipped with a priority relief valve to enable the sweeper to gradually coast to a stop when the accelerator pedal is released. The Highway Department has determined that systems that abruptly stop the sweeper by dynamically braking when the accelerator pedal is in the neutral position are potentially dangerous to our operators and following vehicles and will not be accepted.		
	For safety, loss of engine power shall not automatically engage brakes.		
	For safety, loss of hydraulic power shall not automatically engage brakes.		
	For safety, neither brake engagement nor disengagement shall be dependent upon the engine running.		
	For safety, neither brake engagement nor disengagement shall be dependent on any electrical circuit.		
	To safely provide redundancy, parking brake shall be positively and mechanically applied to drive axle.		
	Neither parking brake engagement nor disengagement shall be dependent on any electrical circuit.		
10.0 CAB			
	To maximize operator visibility, cab glass area shall be not less than 6,000 square inches.		
	For safety and maximum operator visibility, door windows shall be one piece sag glass. Opera windows to open.		
	Front windows shall be tinted. Front window area shall be a minimum of 2600 square inches for optimum forward visibility.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	For safety, minimum cab visibility shall be approximately 360° without using mirrors.		
	For operator safety, cab doors shall be rear opening (hinged at front), with secondary latch.		
	Right-hand Bostrom mid back air suspension seat with woven nylon cloth upholstered, foam cushioned bucket type with three point seat belts. Left seat to be standard seat.		
	Sweeper shall include one (1) inside rear view mirror and two (2) heated and in-cab remote controlled west coast cab mirrors.		
	To maximize operator visibility, outside mirrors shall be mounted forward of the cab enclosure.		
	For safety during night sweeping, rocker switches shall be internally illuminated so that they can be readily identified without the use of the cab dome light.		
	Windshield wiper shall be two-speed intermittent with washer.		
	Interior of cab shall be lined with acoustical insulation, have automotive type trim, and center console.		
	Dash shall be faced with soft molded plastic.		
	There shall be a soft textured steering wheel with center horn at the operator position with tilt and telescopic steering wheel for safer operation.		
	Sweeper shall have an automatic electronic back-up alarm.		
	Sound levels within the cab shall not exceed OSHA standards.		
	Door latch systems shall be FMVSS approved.		
	Doors and ignition shall be keyed alike.		
	An AM/FM radio w/ CD shall be provided.		
	Cab interior environment shall be fully conditioned by air conditioner / fresh air heater / ventilator / defroster with 6 adjustable vents and dome light. No portion of the air conditioning system shall protrude above the cab roofline.		
	A 2½-lb. fire extinguisher shall be provided.		
	An automatic rear view camera with full color 5.6" LCD monitor shall be provided. Camera shall monitor display the area behind the sweeper whenever the sweeper is moving in reverse. The display shall be selectable to allow continuous rear view at all times. The display shall have an additional camera input to allow future		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	expansion of additional cameras. The camera shall be equipped with infra red lamps to allow night vision.		
11.0 SIDE BROOMS			
	Side broom shall be hydraulic, direct drive; vertical digger type mounted on right and left sides.		
	To provide flexibility for varying sweeping conditions, broom speed shall be variable, (90 RPM to 160 RPM), by operator from cab while moving independent of sweeping speed.		
	Broom down pressure shall be adjustable by operator from the cab while sweeping.		
	Each broom shall consist of four (4) replaceable plastic segments, filled with 26" long tempered wire.		
	Broom diameter shall be not less than 36", protruding not less than 13" beyond outside of tire while sweeping.		
	Tilting of right side broom shall be variable from the cab. An electrically controlled linear actuator shall allow the operator to tilt the side broom inward and outward from the cab, while sweeping.		
	An in cab indicator showing the degree of tilt is to be installed.		
12.0 MAIN BROOM			
	Broom shall be hydraulic, direct drive, not less than 35" diameter and not less than 68" long and be equipped with a cover to prevent debris from going into engine compartment.		
	To provide flexibility for varying sweeping conditions, broom speed shall be variable, (80 RPM to 140 RPM), by operator from cab while moving independent of sweeping speed.		
	Broom shall be prefab disposable strip type, filled with polypropylene		
	Sweeping path shall be not less than 8 feet wide with one gutter broom activated.		
	To protect the broom mechanism, the main broom shall raise automatically when the sweeper is reversed. The broom will return to its sweep position when a forward direction is resumed.		
	To be equipped with greaseable dirt shoes.		
13.0 CONVEYOR			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Conveyor with Chevron style cleats and sipes shall be hydraulically driven and able to load hopper to 100% of rated useable capacity.		
	Conveyor shall be reversible in direction without stopping or reversing any broom.		
	Conveyor shall be capable of effectively sweeping debris of varying sizes (from large bulky trash 6" in height to fine sand) without the need to make any adjustments to the conveyor system.		
	To reduce wear on all conveyance components, a conveyor belt having molded Chevron style cleats and sipes shall carry, not drag, debris to the hopper.		
	To protect the broom mechanism, the main broom shall raise automatically when the sweeper is reversed. The broom will return to its position and down pressure when a forward direction is resumed.		
	An audible conveyor stall alarm is to be provided as a warning to the operator.		
	A lower conveyor wash out shall be supplied		
14.0 HOPPER			
	For safety, the hopper shall be front dumping, allowing an operator to observe the dump target and surrounding area at all times from the cab, without the use of mirrors. No rear dumping sweeper will be considered or accepted.		
	Hopper shall dump at varying heights ranging from ground level through a height of 9-1/2 feet.		
	Hopper shall have a dumping reach of 33 in. forward.		
	To extend wear life, tilt arm bearings shall be perma-lube Teflon impregnated composite.		
	Dump cycle shall be not more than 60 seconds.		
	Volumetric capacity shall be not less than 3.6 cubic yards, useable capacity not less than 3.5 cubic yards.		
	A LifeLiner Hopper System shall be provided to protect the hopper against corrosion and wear and to facilitate the removal of the debris when dumping. This liner system shall provide protection such that the hopper will be warranted for the life of the sweeper. Bare steels including stainless steels are unacceptable as they do not provide sufficient protection for long term wear.		
15.0 WATER SYSTEM			
	Tank capacity shall be not less than 220 U.S. gallons.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Tank shall be constructed of non-rusting material (polyethylene or 7 gauge type 304 stainless steel). Because epoxy lining has the potential to chip and flake off causing clogs in the water system, water tank constructions containing epoxy liners will not be accepted.		
	STATE TANK CONSTRUCTION: _____		
	Pump shall be twin diagram capable of running dry.		
	Water fill gauge shall be visible from normal operating position.		
	Sweeper shall be equipped with an automatic internal hopper/conveyor flush and wash down system.		
	Water fill hose shall be not less than 16'8" in length, equipped with 2-1/2" NST hydrant coupler.		
	Storage basket shall be provided for fill hose.		
	A hydrant wrench shall be supplied.		
16.0 HYDRAULIC SYSTEM			
	Power shall be provided by shaft and gear driven pumps.		
	Hydraulic reservoir shall be not less than 33 gallons, baffled and with sight gauge.		
	Test ports shall be at staggered height, including individual ports for sweeping functions, hopper functions and propulsion.		
	To prevent contamination of the reservoir during the dump cycle, the reservoir vent shall be equipped with 10 micron, spin on filter.		
	To prevent the possibility of contamination and the resulting damage to the hydraulic system, suction lines for drive to have 10 micron filter with cab mounted restriction indicator.		
	To prevent the possibility of contamination and the resulting damage to the hydraulic system, return lines for drive to have 10 micron filter with cab mounted restriction indicator.		
	To prevent contamination of the reservoir when adding hydraulic fluid, all oil added shall pass through a 10 micron filter located within the fill spout.		
	To maximize cooling efficiency and permit thorough cleaning, the hydraulic cooler shall be mounted along side the water radiator.		
	Cooler shall be protected by a 125 PSI bypass valve.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	To minimize environmental damage caused by leaking hydraulic fittings, all pressure hydraulic fittings shall be flat-face "O" ring or "O" ring boss type.		
	All circuits shall have quick-disconnect check ports.		
	A warning indicator shall be supplied to warn operator if the hydraulic oil in the reservoir falls below the acceptable level required.		
	A shutdown shall be supplied which stops the engine when the hydraulic oil in the reservoir falls below the acceptable level required.		
17.0 ELECTRICAL			
17.1	Unitized alternator/regulator shall be not less than 120 ampere.		
17.2	Battery shall be maintenance free, 12 volt, 180 minimum reserve, 925 CCA.		
	For safety, all electrical circuits shall be protected with automatically self-resetting circuit breakers which do not require any action by the operator to reset.		
	All lighting shall be D.O.T. approved including combination stop and tail lights, sealed multiple beam headlights, high beam - low beam switch, adjustable side broom spotlights, illuminated gauges and instrument panel, internally illuminated rocker switches, self canceling directional signals, and hazard switch.		
	For ease of electrical "trouble shooting", all wiring shall be harnessed, identified by color coded and word coded wires (i.e. "Ignition", "Headlight" etc.)		
	All terminals and electrical splices shall be crimped and soldered.		
	To prevent deterioration from oxidation all electrical splices shall be fully and completely insulated with heat shrinkable tubing.		
	All electrical connections shall be sealed with weatherproof, polarized connectors.		
	Two alternating LED lights mounted on the back of the sweeper in the battery cover shall be provided.		
	Rear flood and back-up lights to be installed.		
	LED clearance lights to be installed.		
	Electrical system shall have complete plug-in diagnostics that includes fault codes and troubleshooting.		
18.0 CONTROLS			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	All sweeper controls shall be mounted on a central control console with locking ignition for use from the right position. This allows the operator to view all important information from either operating position.		
	The controls shall include all sweep, spray water, and lighting functions.		
	The controls for sweep, spray water, and lighting functions shall be conventional rocker switches.		
	Rocker switches shall be clearly identified by name and international symbol.		
	Hydraulic functions shall be controlled by electric rocker switches.		
	Hopper dump functions shall be controlled by a single "joy" stick that meets the SAE standard. Multiple levers shall not be acceptable.		
19.0 INSTRUMENTS			
	Instrument panel shall be full vision illuminated with tachometer, hour meter, speedometer, odometer, fuel gauge, hydrostatic oil temperature gauge, water temperature gauge, oil pressure gauge, voltmeter gauge, hydraulic filter/drive filter indicator and engine air intake restriction indicator.		
20.0 PAINT			
20.1	All visible exterior metallic surfaces shall be coated prior to assembly with polyester powder coat. The paint must be a minimum of 2 mils thick. The uses of acrylic enamels and/or polyurethane's are not acceptable.		
20.2	Color shall be the Town of North Hempstead Highway Department color of "White".		
20.3	Vehicle shall have an accent color of Grey on the lower portions of the unit.		
21.0 MANUALS			
	Two parts manual shall be provided.		
	Two operator manual shall be provided.		
	A repair, service and trouble shooting manual shall be supplied with the unit.		
	A John Deere parts manual shall be supplied with the unit.		
	A John Deere operator manual shall be provided.		
22.0 WARRANTY			

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
	Manufacturer's warranty shall be not less than one (1) year on entire vehicle.		
	Bidders submitting literature stating warranties which do not fully comply with warranty requirements of these specifications, must submit a letter from the manufacturer certifying warranty compliance as an integral part of their proposal. Failure to comply may cause the proposal to be deemed "non-responsive" and rejected		
23.0 SERVICE AND TRAINING			
	Vendors shall have a full parts and service facility within a reasonable distance from the Town of North Hempstead Highway Department garage. State location and distance. _____		
	A qualified technician shall provide complete training to Town of North Hempstead Highway Department personnel at the Town of North Hempstead Highway Department Garage. Training shall include safety, operation, maintenance and service.		
24.0 DELIVERY			
	Sweeper shall be delivered F.O.B. Town of North Hempstead Highway Department in new operating condition.		
	Acceptance shall be subject to the inspection and approval of the Town of North Hempstead Highway Department.		
	Bidder shall state delivery time after receipt of order:		
25.0 REFERENCES			
	Bidder shall state the length of time in service as an authorized dealer for the product being proposed.		
	Bidder shall submit the name, address, responsible party and phone number of not less than ten (10) <u>municipal</u> owners of comparable models (including having an identical debris conveyance system) to that being offered, who have used such models over a ten year span. If none, state so.		
26.0 QUALITY			
	Sweeper shall be manufactured by a company with a registered quality standard no less than ISO 9001.		

SECTION	SPECIFICATION DETAIL	COMPLY	
		YES	NO
27.0 OPTIONAL ITEMS			
	The Town of North Hempstead Highway Department may choose, at its sole discretion, to add any or all of optional items to this purchase. Bidder shall state the amount to be added to the Bidder's Proposal, should each item be selected.		
	99 HP Engine in lieu of standard		
	ADDITIONAL COST: \$		
	Manufacturer's warranty shall be not less than five (5) years on the sweeper only (not Power plant), including parts and labor.		
	ADDITIONAL COST: \$		
28.0 EXCEPTIONS AND DEVIATIONS			
Bidder shall fully describe every variance, exception and/or deviation. Additional sheets may be used if required.			
PERIOD OF CONTRACT:			
	To be one year from date of award. At the termination date of contract period, the contract may be extended for one year with price adjustment, BY MUTUAL CONSENT OF BOTH THE CONTRACTING PARTIES		
PARTICIPATION BY POLITICAL SUBDIVISIONS:			
	The bidder agrees that by submitting a successful bid, any political subdivision of New Your State will be permitted to participate in the awarded contract per the same terms and conditions set forth in the contract; provided, however that any political subdivision choosing to utilize the contract will be wholly responsible for any debts incurred by them as participants of the contract.		

PROPOSAL FORM

Attach. H



SPECIFICATION FOR: AN ARTICULATED WHEEL LOADER

It is the intent of these specifications to describe a rubber tired, diesel powered, four (4) wheel drive articulating wheel loader. The following specification is based upon a Komatsu WA270-7. The Town has evaluated different types of wheel loaders and determined that this product is best suited for the Town's needs in safety, quality, performance and standardization. This specification shall not be interpreted as restrictive, but rather as a measure of safety, quality and performance against which all wheel loaders offered will be compared.

In comparing proposals, consideration will not be confined to price only. The successful bidder will be the one whose product is judged shall best serve the interests of the Town when price, product, safety, quality and delivery are considered. The Town reserves the right to reject any or all bids or any part thereof, and to waive any minor technicalities. A contract will be awarded to the bidder submitting the lowest possible bid meeting the requirements.

The wheel loader described shall be the manufacturer's current production model and shall be built no earlier than the 2013 model year

ENGINE

The loader shall be equipped with a six (6) cylinder, four (4) cycle, direct start, direct injection, turbocharged diesel engine with an air-to-air aftercooler. It shall have a bore and stroke of not less than 4.21" x 4.88" producing a displacement of not less than 408 cu.in.

The engine shall be rated, per SAE J1349 standards, at a governed 2000 rpm, to produce the following ratings:

- Gross Horsepower ----- 153 min.
- Net Horsepower ----- 149 min.

The engine shall be equipped with the following:

- Two (2) Stage, Dry Type, Radial Sealed Air Cleaner
 w/Dust Evacuator & Dust Indicator
- Air Intake, Preheat Type Starting Aid
- All Speed Electrical Governor
- Engine Shut-off Key Type
- Fuel Strainer / Sediment Trap
- Fuel / Water Separator
- Gear Pump Driven, Force Lubrication
 w/Full Flow Lubrication
- Hydraulic Driven, Cooling Fan
 w/Manual & Auto Reversing Modes
- Gull Wing Engine Doors
 w/Gas Spring Assist

ENGINE (Cont'd.)

- Hinged Radiator Mask
w/Gas Spring Assist
- Curved Exhaust Stack
- Hydraulic Actuated Variable Geometric Turbocharger

The engine shall be equipped with a diesel particulate filter (DPF) that shall employ both passive and active regeneration by way of a diesel oxidation catalyst. The regeneration process shall be flameless and shall not affect the operation of the wheel loader. The diesel particulate filter shall be capable of manual stationary regeneration. The engine shall meet all current EPA Tier IV emissions regulations.

The wheel loader shall be equipped with two (2) selectable power modes:

- E Mode: Maximum Fuel Efficiency
- P Mode: Maximum Power – Hard digging / Hill Climb

ELECTRICAL SYSTEM

The loader shall be equipped with a 24 Volt electrical system, which shall be equipped with the following:

- 24 Volt / 60 Amp Alternator
- 24 Volt / 5.5 kW Starter
- Two (2) 12 Volt / 92 Amp Hour / 680 CCA Batteries

The main harness and controller connectors for the electrical system shall employ sealed DT connectors.

TRANSMISSION

The loader shall be equipped with an electronically controlled, hydrostatic transmission with one (1) piston type pump with two (2) piston type motors, one (1) high speed, one (1) low speed. The system shall be designed to provide the correct power to the transfer case for the work requirements.

Engine power shall be transmitted hydraulically to the transfer case. Power will be transmitted from the transfer case to the differentials mechanically.

The transmission will be a full auto-shift design with speed range select. The transmission shall be designed to permit the operator to adjust the maximum speed in 1st speed range.

The transmission shall have not less than four (4) speeds in forward and reverse. The following speeds shall be considered the minimum for each speed range:

TRANSMISSION (Cont'd.)

<u>Speed</u>	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4 th</u>
FWD/REV (MPH)	0.6 - 8.1 / 0.6 - 8.1	8.1	11.8	23.6

A three (3) mode (Max/On/S) traction control system shall be provided. A “Max” traction button shall be located on the work equipment lever to cancel the traction control temporarily. There shall be two (2) additional control modes that can be set through the monitor panel.

An inching pedal shall provide for simultaneous control of travel and equipment hydraulic speeds.

OVERRUN PROTECTION SYSTEM

The loader shall be equipped with an overrun protection system designed to prevent damage to drive train components and brakes. The system shall be designed to automatically control travel speed on down slopes of six (6) degrees or less.

The system shall be designed to sense travel speed and restrict discharge of the transmission pump and motors. The top travel speed will be restricted to 23 mph.

For slopes in excess of six (6) degrees, use of the service brake is required. When the machine is on a steep slope and travel speed exceeds 22 mph a caution lamp shall alert the operator to apply brakes to reduce speed.

DIFFERENTIALS

The loader shall be equipped with torque proportioning differentials on both axles. The differential shall be designed to prevent slippage of the tire on one side until the resistance between tires on the right and left sides exceed 38%.

RIDE CONTROL SYSTEM

The loader shall be equipped with an electronically controlled suspension system. It shall be designed to optimize productivity by improving material retention in the bucket and improving operator comfort and control.

The system shall employ a single accumulator and shall be designed to absorb low frequency vibration when traveling on rough ground. The accumulator shall adjust automatically to high or low pressure settings based on travel speed and load weight. The system shall engage automatically when travel speed exceeds 3.1 mph.

AXLES

The loader shall be equipped with heavy duty axles with semi- floating shafts and four (4) wheel, inboard mounted planetary type final drives. The front axle shall be fixed. The rear axle shall be center pin mounted and shall oscillate not less than +/- 12 degrees for a total of not less than 20 degrees.

STEERING

The loader shall employ a center pivot, articulating frame type steering system. It shall be hydraulic power assisted and shall be independent of engine rpm. It shall receive flow from a dedicated steering pump.

The frame shall articulate not less than 40 degrees in either direction. Both the upper and lower center bearings shall be a tapered roller type.

Articulation shall be effected by two (2) double acting cylinders with a bore and stroke of not less than 2.76" x 17.8".

The minimum turning radius when measured at the center of the outside tire shall be not greater than 17' 0".

LOADER MECHANISM

The loader lift mechanism shall be a single bellcrank, "Z-Bar" design. It shall have not more than thirteen (13) pivot points, all of which shall be equipped with sealed linkage pins.

The boom lift arms shall be a single plate design, fabricated from high tensile steel. They shall be designed to withstand maximum stress.

Boom lift shall be effected by two (2) cylinders with a bore and stroke of not less than 5.1" x 28.2". Bucket tilt shall be effected by a single cylinder with a bore and stroke of not less than 5.9" x 19.3".

Loader boom lift and bucket tilt shall be controlled by a single (1) lever on the operator's right. This lever will be equipped with a switch to shift the transmission from forward to neutral to reverse. A second control lever shall control any attachments, such as a multi-purpose bucket, that require an auxiliary hydraulic flow. A safety lock shall be provided for the control levers.

The loader control levers shall employ a pilot control system with a dedicated pump providing flow to a proportional pressure valve.

The loader shall be equipped with a dual stage hydraulic system to increase operational efficiency and reduce horsepower demands. The system shall feed flow from the main loader pump to a control valve while a switch pump shall feed flow to a cut off pump. The switch pump

LOADER MECHANISM (Cont'd.)

shall either return flow to the reservoir or to the control valve depending on the requirements of the work being performed.

The loader lift mechanism shall be equipped with a "Rap Out" design linkage. This shall permit shock dumping to remove sticky material.

The loader lift mechanism shall be equipped with an automatic bucket positioner. This device shall stop the bucket automatically at the desired digging angle. The positioner may be reset to meet the digging angle requirement for a particular job.

The loader lift mechanism shall be equipped with an automatic boom kickout. This device shall stop the boom at the desired lifting height. The kickout may be set manually if required.

MULTI-PURPOSE BUCKET

The wheel loader shall be equipped with a pin-on multi-purpose bucket with an SAE rated capacity of not less than 2.5 cu. yd. at a density of not less than 2,700 lb./cu. yd. The bucket shall be not less than 106" wide and shall be equipped with reversible bolt-on cutting edges.

BRAKES

The loader shall be equipped with four (4) wheel hydraulic, inboard mounted, wet disc service brakes. The brakes shall be controlled by two (2) pedals. Both pedals shall be used for braking.

A service brake check port shall be located on each axle case. This shall permit the checking of brake wear at service intervals without disassembling the axle housing.

The loader shall be equipped with a wet disc parking brake, which shall be located inside the transfer case output shaft. The parking brake shall be spring applied and hydraulically released. It shall be self-adjusting.

HYDRAULIC SYSTEM

The loader shall employ a two (2) stage hydraulic system. The system shall employ a full flow, cartridge type filter with a ten (10) micron element. The reservoir shall be equipped with a sight gauge. The system shall include an oil cooler located in the bottom tank of the main radiator.

The hydraulic system shall employ three (3) gear type pumps. The loader relief valve shall be set for a maximum pressure of 4,555 psi. The steering relief valve shall be set for a maximum pressure of 3,000 psi.

The loader and steering pumps shall provide a total flow of not less than 39.6 gpm. The pilot pump shall provide a flow of not less than 14.3 gpm.

HYDRAULIC SYSTEM (Cont'd.)

All hydraulic flow shall pass through a three (3) spool control valve. The first spool shall feed the steering circuit. The second spool shall provide flow to the loader circuits. The third spool shall provide flow for hydraulically driven attachments. All necessary piping and controls shall be provided for an attachment circuit.

The hydraulic system shall be sufficient to provide flow for the cycle times:

Raise Boom	-----	5.7 sec.
Lower Boom	-----	3.2sec.
<u>Dump Bucket</u>	-----	<u>2.0 sec.</u>
Total Cycle	-----	10.8 sec.

An oil cooler shall be provided for the hydraulic system.

OPERATOR'S COMPARTMENT

The loader shall have its operator's compartment located on the rear frame over the articulation joint. The operator's compartment shall consist of a fully enclosed steel cab with an integral ROPS/FOPS canopy. The cab shall be a two (2) door walk through design. The cab shall be supported by viscous hydro-mounts, which employ rubber and silicon oil to reduce vibration and noise. The noise level in the cab shall not exceed 70 dB(A).

The cab shall be equipped with the following:

- Air Conditioner / Heater / Defroster / Pressurizer
- Electrically Heated Rear Window
- Front (Intermittent) Wiper & Rear Wiper
- Front & Rear Washers
- Two (2) Internal & Two (2) External Rearview Mirrors
- Heated Air Suspension Type Seat
w/3" Retractable Seatbelt
Adjustable Armrests
- AM/FM C/D Radio with Speakers and Auxiliary Jack
- High Resolution LCD 7" Color Monitor
- Rearview Monitoring System (Camera)
- Sound Suppression
- Tilttable, Telescopic Steering Wheel
- Ashtray & Lighter
- Two (2) 12V Outlets
- Hot/Cold Storage Box
- Sun Visor
- Floor Mat

Access to the cab shall be by means of steps built into the rear fenders on both sides. Safety rails shall be provided.

OPERATOR'S COMPARTMENT (Cont'd.)

The loaders shall be equipped with an AM/FM Radio with a Cassette Player. The radio shall employ 60 Watt Speakers. An antenna shall be provided.

INSTRUMENTATION

The loader shall be equipped with an equipment management / monitor system. The monitor shall be located in a convenient and visible position behind the steering wheel and shall include both analog gauges and warning lights.

The instrumentation shall include the following:

Gauges:

- Engine Water Temperature
- Fuel Level
- Transmission Oil Temperature
- Speedometer (MPH)

LCD Displays:

- Filter / Oil Replacement Time
- HST Selection
- Odometer
- Service Meter
- Trouble Shooting

Lights:

- Axle Oil Temperature
- Battery Charge
- Brake Oil Pressure
- Central Warning
- Directional Indicator
- Engine Oil Pressure
- Engine Pre-Heater
- Transmission Oil Filter Clogging
- Head Lamp High Beam
- Maintenance
- Parking Brake Reminder
- Parking Brake Warning
- Radiator Water Level
- Transmission Speed Range
- Turn Signal

REMOTE MONITORING SYSTEM

The loader shall be equipped with a satellite based, remote wireless, and monitoring system. The system shall be designed to utilize global positioning satellite technology. The system shall be

designed to be operated by any Windows based PC operating system using commercially available software.

The system shall provide the following minimum capabilities:

- 1) System shall automatically report on a daily basis – operating hours; fuel level; maximum cooling system fluid temperature during cycle; location on a graphic map including latitude & longitude coordinates.
- 2) System shall allow user to assign a protected geofence.

REMOTE MONITORING SYSTEM (Cont'd)

- 3) System to transmit specific machine, engine and drive train error and caution codes.
- 4) System shall provide monthly and annual summery reports including but not limited to working hours, location, equipment status and load summary ratio charts.
- 5) System shall be capable of remotely preventing the loader from restarting (engine lock).
- 6) System shall be capable of notifying designated personnel, via an e-mail or text message, when routine maintenance is due.
- 7) System shall routinely notify the OEM and authorized distributor upon the occurrence of fault or abnormality code.

The system shall include no charge monitoring, which shall encompass items 1 through 7 as shown above as well as any forward capable software enhancements released in the future by the OEM.

LIGHTS

The loader shall be equipped with the following lights:

- Two (2) Front Halogen Work Lights - Chassis Mtd.
w/Hi-Low Beams
- Two (2) Front Halogen Work Lights - Cab Mtd.
- Two (2) Rear Halogen Work Lights - Chassis Mtd.
- Two (2) Front & Two (2) Rear Turn Signals
- Stop, Tail & Back-up Lights
- One (1) Roof mounted Whelen LED Amber Light Model L31HAF
- Four Whelen 500 series LED lights with Whelen metal housing to be mounted above each turn signal or brake light

The loader shall be equipped with a strobe light package. Four (4) perimeter lights shall be wired to flash in sequence. A switch in the cab shall control the strobe light package.

AUTOMATIC LUBRICATION SYSTEM

The loader shall be equipped with a Vogel automatic lubrication system. The system shall employ an electrically driven gear type pump. The system reservoir shall have a capacity of not less than 5 lb. The pump shall operate at a nominal pressure of 550 psi and shall be mounted as to be easily accessible for service and maintenance.

The lubrication system shall employ piston type distributors to provide lubricant via metering nipples, which shall be inter changeable. The system shall employ push to connect fittings. All fittings shall be able to withstand pressures up to 4,350 psi.

The lubrication system shall be monitored by an electronic control module, which shall incorporate a digital display to show system status.

TIRES

The loader shall be equipped with 20.5-R25 XHA (L3) Michelin tires. A Spare rim and tire shall be provided.

PAINT

The loader shall be painted the manufacturer's standard colors.

SERVICE CAPACITIES

The following service capacities shall be considered minimums for a loader of this class:

Cooling System - 7.4 gal. Axle (ea. Front & Rear) - 4.9 gal.

Engine Crankcase - 6.7 gal. Hydraulic System - 20.6 gal.

Transfer Case - 2.1 gal. Fuel Tank - 49.1 gal.

OPERATING DIMENSIONS & CAPACITIES

The following operating parameters, which are calculated per SAE J-732C and J-742B standards are to be considered minimums for a loader of this class:

Max. Hinge Pin Height	-----	13' 0"
Dump Clearance @ Max. Hgt.	-----	9' 9"
Reach @ Max. Hgt.	-----	3' 1"
Reach @ 7' Dump Hgt.	-----	5' 2"
Overall Length (Bucket on Ground)	-----	24' 0"
Turn Radius (Outside Bucket)	-----	17' 0"
Breakout Force	-----	29,487#
Tip Load – Straight	-----	23,093#
Tip Load - Full Turn	-----	20,216#
Operating Weight	-----	28,351#

Note: For purpose of comparison, the referenced data is based on a machine equipped with a general purpose bucket.

ADDITIONAL EQUIPMENT

The loader shall be quipped with the following additional equipment:

- | | |
|---------------------------------------|---------------------------------------|
| Back-up Alarm | Electric Horn |
| Standard Counterweight | Add'l Counterweight |
| Lifting Eyes | Front Hand Rails -- Left & Right Hand |
| Full Front & Partial Rear Fenders | |
| Two parts manual shall be provided | |
| Two operator manual shall be provided | |

VANDALISM PROTECTION

The loader will be provided with the following:

- Caplock & Cover for Fuel Tank
- Padlocks for:
 - Battery Boxes
 - Engine Hood Side Panels & Rear Grill
 - Transfer Case Oil Filler Cover

SPARE PARTS

The loader specified shall be supplied with the following spare parts package:

- One (1) Complete Set of Radiator Hoses
w/ Clamps
- Three (3) Complete Sets of All Filters
- One (1) Complete Set of All Belts
- One (1) Grease Gun
w/ One (1) Case of Cartridges
- Three (3) Spare Keys

Only original equipment manufacturer's genuine replacement parts shall be quoted. Generic parts will not be accepted. A listing of parts bid by part number must be submitted as part of the bid.

COMPLIMENTARY MAINTENANCE PROGRAM

The successful bidder shall perform periodic maintenance on the machine being offered at no charge. It shall include, but not be limited to, the following service at the noted hourly intervals:

DESCRIPTION	INTERVALS				
	250	500	1000	1500	2000
CLEAN AC FRESH AND RECIRC AIR FILTERS	X				
REPLACE HYDRAULIC OIL FILTER ELEMENT	X				X
REPLACE HST OIL FILTER	X		X		X
KOWA SAMPLING – (Engine, Front & Rear, Hydraulics, Transfer case)	X	X	X	X	X
CHECK AND CLEAN AIR CLEANER	X	X	X	X	X
CHECK AND CLEAN FUEL BREATHER ELEMENT	X	X	X	X	X
LUBRICATE REAR AXLE PIVOT PIN	X	X	X	X	X
LUBRICATE WORK EQUIPMENT	X	X	X	X	X
DRAIN SEDIMENT FROM FUEL TANK	X	X	X	X	X
COMPLETE 50 POINT INSPECTION FORM	X	X	X	X	X
RESET MONITOR PANEL MAINTENANCE COUNTER FOR APPROPRIATE ITEMS	X	X	X	X	X
CHANGE ENGINE OIL		X	X	X	X
REPLACE ENGINE OIL FILTER		X	X	X	X
REPLACE AC FRESH & RECIRC AIR FILTERS		X	X	X	X
REPLACE FUEL PRE-FILTER		X	X	X	X
CHANGE ENGINE OIL			X		X
REPLACE FUEL MAIN FILTER			X		X
CHANGE OIL IN TRANSFER CASE			X		X
CLEAN TRANSFER CASE STRAINER			X		X
CLEAN TRANSFER BREATHER			X		X
LUBRICATE CENTER HINGE PIN			X		X
CHANGE OIL IN HYDRAULIC TANK					X
REPLACE HYDRAULIC TANK BREATHER ELEMENT					X
CLEAN HYDRAULIC TANK STRAINER					X
CHANGE FRONT AND REAR AXLE OIL					X
CLEAN BRAKE CIRCUIT STRAINER					X
REPLACE KCCV FILTER					X
CHANGE COOLANT					X

WARRANTY

The loader shall carry a twelve (12) month / unlimited hour full machine warranty and an additional twenty-four (24) month powertrain (parts & labor) warranty to a machine total thirty-six months / 5,000 hours.

VENDOR PARTS & SERVICE REQUIREMENTS

- Vendor submitting bid must be manufacturers' authorized representing dealer for the products being bid, capable of extending all services available including manufacturers' warranty repairs, parts and other support services.
- Vendor shall stock an ample supply (as recommended by manufacturer) of the replacement parts for the specific models to be serviced. Proof of inventory can be provided prior to award.
- All replacement parts shall be genuine "O.E.M." as supplied by the equipment manufacturer.
- Manufacturers' parts price books (or price tapes, discs, or CD's if specified) shall be supplied upon award of contract and supplied as updated through term of contract.
- Vendor shall have full repair facilities available for inspection, capable of performing all possible type repairs "on premises" including, but not limited to: engine, transmission and other component overhaul; welding and fabricating; crawler undercarriage overhaul, hydraulic cylinder repair, machining, steam cleaning, painting, etc.
- With exception to smaller sub-components (i.e., starters, alternators, injection pumps, injectors), all repair work shall be performed by Vendor and their employees only. Use of O.E.M. rebuilt parts and components with warranty shall also be available.
- Vendor shall submit to the Office of Purchasing, insurance policies indicating full and complete coverage for all equipment which is in its' possession or control. The insurance includes; Theft, vandalism, fire damage, floods, acts of God, etc. The insurance shall be

VENDOR PARTS & SERVICE REQUIREMENTS (Cont'd.)

equal to the replacement purchase price of the equipment. In addition, the insurance shall cover equipment for similar mishaps as numerated above during the transportation of equipment. In the event of an accident during the transportation of equipment, Vendor shall assume all responsibility including any and all damage to equipment.

- All equipment to be repaired can be inspected on using agency property. However, should repair or inspection require special facilities, tooling, etc., the equipment can be moved by Vendor.
- Upon inspection, Vendor shall submit a time and cost estimate indicating the approximate number of hours that will be required and the cost of parts and any other charges that will be used to affect repairs.
- Vendor shall be capable of servicing equipment on-site, if required, with the use of properly equipped service vehicles. Typical service vehicles shall be equipped with, at a minimum, the following items: compressed air, hydraulic crane, gas and electric welding equipment, typical hand and pneumatic tooling for repairing heavy equipment and specific diagnostic tools for trouble-shooting, i.e., hydraulic flow meters and gauges, electrical system checkers, temperature measuring equipment, etc.
 - Vendor shall be capable of providing transportation via there owned and operated low-bed equipment trailers, flat beds, boom trucks, etc. as required by the type of equipment. Vendor shall not sublet the transportation of equipment.

- Vendor technicians shall have received manufacturer's sponsored training for the equipment to be repaired. Technicians possess all applicable regulatory certifications if specific work requires same.
- Vendor shall maintain, at all servicing facilities, a complete library of manufacturer's parts manuals, service manuals, service bulletins and all other related parts and service publications. In addition to printed media, all these materials shall be available via a live "Extranet" between manufacturer and Vendor providing continuously updated timely information.
- Vendor shall be staffed with Regional Product Support Sales Representatives full time in the field. Their function is to assist equipment users with any parts or service related issues.
- Vendor shall be capable of providing the equipment owner with an Intranet connection to allow access to parts and service information via the Internet. This connection provides latest parts and service information from manufacturer and parts pricing, inventory status and ordering capability from Vendor.
- Periodic maintenance services shall be available on-site via dedicated lube service vehicles. Vehicles shall carry an inventory of lubes, coolant and filters, waste oil recovery and minor parts making it capable of field response to most all models without need for return to shop facility in most instances.
- A manufacturer-sponsored program of lube oil analysis shall be available. Reports from lab are to be provided in triplicate to: equipment owner, Vendor and manufacturer thus providing the additional monitoring for abnormal results assuring proper response.
- A 24-hour Vendor telephone response system shall be available through all locations.
- All field service trucks, low beds and lube trucks shall be equipped with 2-way communications capability.

VENDOR PARTS & SERVICE REQUIREMENTS (Cont'd.)

- Proof of additional qualification, if required, shall be provided. Proof via statements from manufacturers and previous contracts may also be requested.

A Hach. I.

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2014 FORD F-550 SUPER DUTY 4X4 REGULAR CAB

The bid compliance sheet must be filled out in full and **absolutely no exceptions** to the bid will be accepted.

<u>Specifications</u>	<u>Compliance</u>		
	<u>Yes</u>	<u>No</u>	<u>Exceptions</u>
One New 2014 Ford F-550 Super Duty 4x4	_____	_____	_____
Regular Cab DRW	_____	_____	_____
Preferred Equipment Package 660A XL	_____	_____	_____
189" Wheelbase / 84" CA	_____	_____	_____
19,500 lb GVW	_____	_____	_____
7,000lb. Front axle (minimum) Mono-beam, Dana-non independent suspension Independent coil springs	_____	_____	_____
14,706 lb. Rear axle (minimum) Full Floating with leaf springs	_____	_____	_____
Snow Plow Package	_____	_____	_____
Electronic Transfer Case Shift	_____	_____	_____
6.7L Turbo Diesel V-8	_____	_____	_____
300 hp @2800 rpm (minimum)	_____	_____	_____
660 lbs ft torque @ 1600 rpm	_____	_____	_____
B20 Diesel Fuel Rating-No Exceptions	_____	_____	_____
Cold Start system to be glow plugs	_____	_____	_____
Engine block heater	_____	_____	_____
200 amp alternator	_____	_____	_____
Dual 12v 750cca/78 amp Batteries	_____	_____	_____

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<u>Specifications</u>	Compliance		
	<u>Yes</u>	<u>No</u>	<u>Exceptions</u>
Electronic 6 speed automatic transmission	_____	_____	_____
4.88 Ratio Rear Axle-limited slip	_____	_____	_____
Shock Absorbers-front and rear	_____	_____	_____
Stabilizer Bars Front/Rear	_____	_____	_____
(6) Tires 225/70Rx19.5 G (traction on rear)	_____	_____	_____
(6) Wheels, 10 hole, 19.5 inch Steel	_____	_____	_____
(1) Spare Tire and Wheel (Traction)	_____	_____	_____
4 wheel disc brakes w/ABS and Traction Control	_____	_____	_____
Fuel Tank: 40 gallon	_____	_____	_____
Cab Color: Green Metallic with clear coat	_____	_____	_____
Cab Interior: Steel	_____	_____	_____
HD Vinyl 40/20/40 split bench seat	_____	_____	_____
Air Conditioning	_____	_____	_____
AM/FM stereow/ digital clock	_____	_____	_____
Power and Heat Telescopic TT Mirrors	_____	_____	_____
Driver and Passenger Airbags	_____	_____	_____
Seat Mounted Driver and Passenger side impact Air Bags	_____	_____	_____
Curtain 1 st Row Overhead Air Bag	_____	_____	_____
Roof Clearance Lights	_____	_____	_____
Daytime Running Lights	_____	_____	_____
Front Tow Hooks	_____	_____	_____

<u>Specifications</u>	Compliance		
	<u>Yes</u>	<u>No</u>	<u>Exceptions</u>
Trailer Brake Controller	_____	_____	_____
6" Angular Black Molded in Color Running Board	_____	_____	_____
Exterior Back Up Alarm mounted by Factory	_____	_____	_____
Cab Side Impact Beams	_____	_____	_____
Factory Installed Upfitter Switches	_____	_____	_____
Securi-lock Ignition Disable	_____	_____	_____
Electronic Shift on the Fly Feature	_____	_____	_____
Transmission PTO-must be able to operate for stationary Unload of material from body	_____	_____	_____
Doors and ignition must be keyed alike	_____	_____	_____
4 Keys must be supplied	_____	_____	_____

WARRANTY – NO EXCEPTIONS

BASIC VEHICLE-60 MONTHS / 100,000 MILES

DIESEL ENGINE – 60 MONTHS / 100,000 MILES

POWER TRAIN – 60 MONTHS / 100,000 MILES

CORROSION PERFORATION – 60 MONTHS / UNLIMITED MILES

ROAD SIDE ASSISTANCE – 60 MONTHS / 60,000 MILES

TOOL BOX:

OPTION STEEL TOOL BOX:

One adjustable shelf (51-1/2"L x 23"W x 1"H) is powder coated

Optional adjustable shelf, standard, plus floor storage

Two Folding J Hooks, passenger side

Four doors with stainless steel rivet less locking T-handle latches

Automotive rubber bulb sealed doors with gas spring door holders

Built-in frame mounting rails which save time on installation

14 gauge steel body with 12 gauge doors

Oversized, 1/4" pin stainless steel continuous door hinges

Overall Dimensions: 85"L x 55"H x 24"W

DROP SIDE BODY:

A. TO BE GALION MODEL 100USDDSD9, CAPACITY 3.5- 4.7 CUBIC YARDS. 84" INSIDE WIDTH, 94" OVERALL WIDTH. 11 FT. IN LENGTH. SIDE HEIGHT TO BE 18". BODY END HEIGHT TO BE 24". 6" SIDE BOARD HOLDERS. ONE HALF CAB SHIELD TO BE PROVIDED AND MANUFACTURED OF 10 GAUGE HIGH TENSIL STEEL. SIDES TO BE MANUFACTURED OF 10 GAUGE HIGH TENSIL STEEL, REINFORCES DIRT SHEDDER DESIGN FORMED IN SHEET AND CAPABLE OF DROPPING DOWN OR COMPLETELY REMOVED. SIDES TO HAVE TWO INTERMEDIATE SIDE POSTS. TOP RAIL TO BE BOXED. SPLASH SHIELDS TO BE INSTALLED FORWARD OF THE REAR WHEELS. TAILGATE TO BE DOUBLE ACTING WITH TWO VERTICAL BRACES. HEAVY DUTY QUICK RELEASES ON TOP OF TAILGATE. MANUAL TAILGATE RELEASE MOUNTED ON THE FRONT DRIVERS SIDE CORNER OF THE BODY. AN ADDITIONAL LOWER SAFETY LATCH TO BE INSTALLED AS PER ATTACHED DRAWING. TOP PIN TO BE 3/4" HOOKS TO BE 1/2" TOP HINGE TO BE 1/2" AND 3/8" OUTER LATCH PLATE. UNDERSTRUCTURE CROSS MEMBERS TO BE ON 12.75" CENTERS 6" 8.2# LONG SILLS. CROSS MEMBERS TO BE 3" 3.5#. LADDERS TO BE MOUNTED ON THE FRONT CORNERS OF THE BODY BOTH SIDES. FLOOR TO BE 10 GAUGE HIGH TENSIL STEEL. ALL BODY WIRING TO BE ENCASED IN VINYL TUBING

AND LACED THROUGH THE STEEL CHANNELS ON THE UNDERSIDE OF THE BODY. MUD FLAPS TO BE INSTALLED. COLOR TO BE SCHOOL BUS YELLOW. TWO OVAL S/T/T IN EACH REAR CORNER POST. BACK UP ALARM AND BODY UP LIGHT TO BE INSTALLED.

HOIST:

A TO BE GALION MODEL PF 624 DA NTEA CLASS 30 11.1 TON CAPACITY. P.T.O. DRIVEN, SINGLE CYLINDER, DOUBLE ACTING DIRECT LIFT HOIST. CYLINDER TO BE 6" DIAMETER WITH 1 3/4" CHROME PLATED ROD, 50 DEGREE DUMP ANGLE.

ELECTRICAL:

WHELEN CAB MOUNTED L.E.D. FLASHING LIGHT M MODEL L31HAF PERMANENT MOUNT.
5G00FGR AMBER L.E.D. LIGHT HEADS REAR MOUNTED
HIDDEN L.E.D. FLASHING LIGHTS IN CORNER PARKING LIGHTS

POWER TAKE OFF:

A. A HOT SHIFT P.T.O. MUNCIE OR CHELSEA TO BE INSTALLED ON TRANSMISSION. A PUMP TO BE INSTALLED AS PER THE DUMP BODY MANUFACTURERS RECOMMENDATION.

PINTLE HOOK:

- A. A BALL PINTLE HOOK COMBINATION WITH A 2" BALL SHALL BE INSTALLED WITH A FULL PLATE, ICC STEP, AND SAFETY EYES.
- B. A 7 WAY ELECTRIC PLUG AND BRAKE CONTROLLER SHALL BE INSTALLED.

The Superintendent of Highways, or his representative must approve the location of all mounted equipment other than standard production items, i.e. lights, radios etc.

NOTE: THE USE OF "3M" SCOTCHLOCK CONNECTORS IS NOT ACCEPTABLE FOR USE IN ANY CIRCUIT ON THE VEHICLE. ALL SPLICES MUST BE SOLDERED AND PROTECTED WITH HEAT SHRINK TUBING. ALL POWER CONNECTIONS FOR ANY INSTALLED ACCESSORIES MUST BE MADE TO AN EXISTING POWER SOURCE, i.e. terminal block. THE FUSE PANEL IS NOT TO BE USED TO SUPPLY POWER FOR ANY ADD ON ACCESSORIES, (i.e. radio, strobe light, central hydraulic system etc.). ACCESSORIES ARE TO BE PROTECTED BY A SEPARATE CIRCUIT BREAKER OF PROPER RATING, ONE FOR EACH INSTALLED ITEM.

PARTICIPATION BY POLITICAL SUBDIVISIONS: The bidder agrees that by submitting a successful bid, any political subdivision of New York State will be permitted to participate in the awarded contract per the same terms and conditions set forth in the contract; provided, however that any political subdivision choosing to utilize the contract will be wholly responsible for any debts incurred by them as participants of the contract.

Attach. J.

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2014 FORD F-550 SUPER DUTY 4X2 CREW CAB

The bid compliance sheet must be filled out in full and **absolutely no exceptions** to the bid will be accepted.

<u>Specifications</u>	<u>Compliance</u>		
	<u>Yes</u>	<u>No</u>	<u>Exceptions</u>
One New 2014 Ford F-550 Super Duty 4x2	_____	_____	_____
Crew Cab- four door cab	_____	_____	_____
Preferred Equipment Package 660A XL	_____	_____	_____
200" Wheelbase / 84" CA	_____	_____	_____
19,500 lb GVW	_____	_____	_____
7,000lb. Front axle (minimum) Mono-beam, Dana-non independent suspension Independent coil springs	_____	_____	_____
14,706 lb. Rear axle (minimum) Full Floating with leaf springs	_____	_____	_____
6.7L Turbo Diesel V-8	_____	_____	_____
300 hp @2800 rpm (minimum)	_____	_____	_____
660 lbs ft torque @ 1600 rpm	_____	_____	_____
B20 Diesel Fuel Rating-No Exceptions	_____	_____	_____
Cold Start system to be glow plugs	_____	_____	_____
Engine block heater	_____	_____	_____
200 amp alternator	_____	_____	_____
Dual 12v 750cca/78 amp Batteries	_____	_____	_____
Electronic 6 speed automatic transmission	_____	_____	_____
4.88 Ratio Rear Axle-limited slip	_____	_____	_____

1 of 5

<u>Specifications</u>	<u>Compliance</u>		
	<u>Yes</u>	<u>No</u>	<u>Exceptions</u>
Shock Absorbers-front and rear	_____	_____	_____
Stabilizer Bars Front/Rear	_____	_____	_____
(6) Tires 225/70Rx19.5 G (traction on rear)	_____	_____	_____
(6) Wheels, 10 hole, 19.5 inch Steel	_____	_____	_____
(1) Spare Tire and Wheel (Traction)	_____	_____	_____
4 wheel disc brakes w/ABS and Traction Control	_____	_____	_____
Fuel Tank: 40 gallon	_____	_____	_____
Cab Color: Green Metallic with clear coat	_____	_____	_____
Cab Interior: Steel	_____	_____	_____
HD Vinyl 40/20/40 split bench seat	_____	_____	_____
Air Conditioning	_____	_____	_____
AM/FM stereow/ digital clock	_____	_____	_____
Power and Heat Telescopic TT Mirrors	_____	_____	_____
Driver and Passenger Airbags	_____	_____	_____
Seat Mounted Driver and Passenger side impact Air Bags	_____	_____	_____
Curtain 1 st Row Overhead Air Bag	_____	_____	_____
Roof Clearance Lights	_____	_____	_____
Daytime Running Lights	_____	_____	_____
Front Tow Hooks	_____	_____	_____

<u>Specifications</u>	Compliance		
	<u>Yes</u>	<u>No</u>	<u>Exceptions</u>
Trailer Brake Controller	_____	_____	_____
6" Angular Black Molded in Color Running Board	_____	_____	_____
Exterior Back up Alarm mounted by Factory	_____	_____	_____
Cab Side Impact Beams	_____	_____	_____
Factory Installed Up fitter Switches	_____	_____	_____
Securi-lock Ignition Disable	_____	_____	_____
Transmission PTO-must be able to operate for stationary Unload of material from body	_____	_____	_____
Doors and ignition shall be keyed alike	_____	_____	_____
4 keys must be supplied	_____	_____	_____

WARRANTY – NO EXCEPTIONS

BASIC VEHICLE-60 MONTHS / 100,000 MILES

DIESEL ENGINE – 60 MONTHS / 100,000 MILES

POWER TRAIN – 60 MONTHS / 100,000 MILES

CORROSION PERFORATION – 60 MONTHS / UNLIMITED MILES

ROAD SIDE ASSISTANCE – 60 MONTHS / 60,000 MILES

TOOL BOX:

OPTION STEEL TOOL BOX:

One adjustable shelf (51-1/2"L x 23"W x 1"H) is powder coated

Optional adjustable shelf, standard, plus floor storage

Two Folding J Hooks, passenger side

Four doors with stainless steel rivet less locking T-handle latches

Automotive rubber bulb sealed doors with gas spring door holders

Built-in frame mounting rails which save time on installation

14 gauge steel body with 12 gauge doors

Oversized, 1/4" pin stainless steel continuous door hinges

Overall Dimensions: 85"L x 55"H x 24"W

DROP SIDE BODY:

A. TO BE GALION MODEL 100USDDSS9, CAPACITY 3.5- 4.7 CUBIC YARDS. 84" INSIDE WIDTH, 94" OVERALL WIDTH. 9 FT. IN LENGTH. SIDE HEIGHT TO BE 18". BODY END HEIGHT TO BE 24". 6" SIDE BOARD HOLDERS. ONE HALF CAB SHIELD TO BE PROVIDED AND MANUFACTURED OF 10 GAUGE HIGH TENSILE STEEL. SIDES TO BE MANUFACTURED OF 10 GAUGE HIGH TENSILE STEEL, REINFORCES DIRT SHEDDER DESIGN FORMED IN SHEET AND CAPABLE OF DROPPING DOWN OR COMPLETELY REMOVED. SIDES TO HAVE TWO INTERMEDIATE SIDE POSTS. TOP RAIL TO BE BOXED. SPLASH SHIELDS TO BE INSTALLED FORWARD OF THE REAR WHEELS. TAILGATE TO BE DOUBLE ACTING WITH TWO VERTICAL BRACES. HEAVY DUTY QUICK RELEASES ON TOP OF TAILGATE. MANUAL TAILGATE RELEASE MOUNTED ON THE FRONT DRIVERS SIDE CORNER OF THE BODY. AN ADDITIONAL LOWER SAFETY LATCH TO BE INSTALLED AS PER ATTACHED DRAWING. TOP PIN TO BE 3/4" HOOKS TO BE 1/2" TOP HINGE TO BE 1/2" AND 3/8" OUTER LATCH PLATE. UNDERSTRUCTURE CROSS MEMBERS TO BE ON 12.75" CENTERS 6" 8.2# LONG SILLS. CROSS MEMBERS TO BE 3" 3.5#. LADDERS TO BE MOUNTED ON THE FRONT CORNERS OF THE BODY BOTH SIDES. FLOOR TO BE 10 GAUGE HIGH TENSIL STEEL. ALL BODY WIRING TO BE ENCASED IN VINYL TUBING AND LACED THROUGH THE STEEL CHANNELS ON THE UNDERSIDE OF

THE BODY. MUD FLAPS TO BE INSTALLED. COLOR TO BE SCHOOL BUS YELLOW. TWO OVAL S/T/T IN EACH REAR CORNER POST. BACK UP ALARM AND BODY UP LIGHT TO BE INSTALLED.

HOIST:

A TO BE GALION MODEL PF 624 DA NTEA CLASS 30 11.1 TON CAPACITY. P.T.O. DRIVEN, SINGLE CYLINDER, DOUBLE ACTING DIRECT LIFT HOIST. CYLINDER TO BE 6" DIAMETER WITH 1 3/4" CHROME PLATED ROD, 50 DEGREE DUMP ANGLE.

ELECTRICAL:

WHELEN CAB MOUNTED L.E.D. FLASHING LIGHT M MODEL L31HAF PERMANENT MOUNT.
5G00FGR AMBER L.E.D. LIGHT HEADS REAR MOUNTED
HIDDEN L.E.D. FLASHING LIGHTS IN CORNER PARKING LIGHTS

POWER TAKE OFF:

A. A HOT SHIFT P.T.O. MUNCIE OR CHELSEA TO BE INSTALLED ON TRANSMISSION. A PUMP TO BE INSTALLED AS PER THE DUMP BODY MANUFACTURERS RECOMMENDATION.

PINTLE HOOK:

- A. A BALL PINTLE HOOK COMBINATION WITH A 2" BALL SHALL BE INSTALLED WITH A FULL PLATE, ICC STEP, AND SAFETY EYES.
- B. A 7 WAY ELECTRIC PLUGS AND BRAKE CONTROLLER SHALL BE INSTALLED.

The Superintendent of Highways, or his representative must approve the location of all mounted equipment other than standard production items, i.e. lights, radios etc.

NOTE: THE USE OF "3M" SCOTCH LOCK CONNECTORS IS NOT ACCEPTABLE FOR USE IN ANY CIRCUIT ON THE VEHICLE. ALL SPLICES MUST BE SOLDERED AND PROTECTED WITH HEAT SHRINK TUBING. ALL POWER CONNECTIONS FOR ANY INSTALLED ACCESSORIES MUST BE MADE TO AN EXISTING POWER SOURCE, i.e. terminal block. THE FUSE PANEL IS NOT TO BE USED TO SUPPLY POWER FOR ANY ADD ON ACCESSORIES, (i.e. radio, strobe light, central hydraulic system etc.). ACCESSORIES ARE TO BE PROTECTED BY A SEPARATE CIRCUIT BREAKER OF PROPER RATING, ONE FOR EACH INSTALLED ITEM.

PARTICIPATION BY POLITICAL SUBDIVISIONS: The bidder agrees that by submitting a successful bid, any political subdivision of New York State will be permitted to participate in the awarded contract per the same terms and conditions set forth in the contract; provided, however that any political subdivision choosing to utilize the contract will be wholly responsible for any debts incurred by them as participants of the contract.