

The Board of County Commissioners of Daviess County will receive sealed Bids until 9:00 A.M., EST, on December 22, 2020 in the Commissioners Room, Daviess County Government Center, Washington, Indiana, on the following equipment:

(1) 2021 OR NEWER 86,000 POUND GVW Tri - AXLE DUMP TRUCK (Class A)

Specifications for bidders for said equipment are on file at the Daviess County Highway Department, 5247E 100N Montgomery, Indiana 47558.

All bids must be accompanied by a Non Collusion Affidavit, and Bid Bond equal to 10% of the bid price.

The Daviess County Commissioners reserve the right to reject any and all bids.

Patricia K. Ball

Patty Ball, Auditor
Daviess County

SPECIFICATIONS

for

86,000 GVW SBA Tri- Axle Dump Truck Class A
Intended use: Dump/ Front Plow Truck

General

It is the intent of these specifications to describe a new tri axle dump truck in sufficient detail to secure bids on comparable equipment. All parts not specifically mentioned, which are necessary to provide a complete unit, shall be included in the bid and shall conform in strength and quality of material and workmanship to what is usually provided to the trade in general. The truck shall be a current model under standard production by the manufacturer.

Unit shall be manufactured and assembled with conformance to the best known Engineering Standards of the trade, relative to design, strength, quality, durability and workmanship. Every item assembled upon this unit must meet the latest Federal Safety Standards.

Any units not in substantial compliance with these specifications will be rejected. It will be the responsibility of the Bidder to conform with the requirements unless deviations have been specifically cited by the Bidder and acceptance made on the base of the exception.

Special attention is particularly called to the requirements of the Indiana State Board of Accounts and the local agency in regard to submitting proposals.

All bids are to be accompanied by a Non Collusion Affidavit and Bid Bond equal to 10% of the bid price. Bidder shall complete blanks in the right hand column of the specifications under the heading "Provided by Item Proposed by Bidder" and include this with the other items mentioned above. The bidder shall also specifically mention those items where the unit being bid does not meet the Owners minimum requirements at the bottom of the page where that item is mentioned. It is brought to the attention of the Bidder that not meeting the Owner's minimum requirements does not necessarily mean that the bid will be rejected. The degree to which the unit conforms to the specifications will be considered in the Owner's evaluation of the bids.

Bidders shall also attach literature or brochure of the model being offered with his bid. The Bid shall include the cost for delivery of a Parts Book and a Service Manual for the model being bid.

The successful Bidder shall indemnify and save harmless the local agency from any and all suits, costs and penalties or claims for infringements by reason of use of any patented designs, devices, or materials or any trademark or copyright in connection with the specific unit furnished under this proposal at anytime during manufacture and after purchase of the specified unit(s).

Term "or Equal" Where the term "or equal" is used in these specifications and Bidder deviates from the specified item, he shall file (with his bid) a letter fully explaining and justifying his proposed article or equal.

Acceptance of Unit Payment for the above unit(s) shall be made after delivery of same and after a properly authorized representative of the "local agency" has given his approval of the satisfactory delivery and operation of said unit(s).

A certificate of origin shall be furnished with each unit as it is delivered.

ENGINE AND ENGINE EQUIPMENT

Minimum Requirements of Local Agency

Engine shall be Cummins or Cummins Paccar diesel in-line 6 cylinder four cycle turbo charged engine with the following minimum specification: Must be wet sleeve design. (no parent bore) 11.9 L minimum

Horsepower: 475 hp

Torque: 1700 ft-lbs

Provided by Item Proposed by Bidder

Wet sleeve Yes() No()

Horsepower: ___ hp @ ___ rpm

Torque: ___ ft- ___ rpm

Engine Make: _____

Model: _____

Cylinders: _____ Cycle: _____

Bore/Stroke ___ in x ___ in

Displacement: ___ CID ___ liter

Exhaust Brake

Yes()

No()

Describe exception to the Specification:

TRANSMISSION EQUIPMENT

Minimum Requirements of Local Agency

Provided by Item Proposed by Bidder

6 Speed Automatic with W/ PTO provision,
Capable of accepting the maximum torque output
of the engine being bid.
Shall include snowplow programming and auto
neutral activate with parking brake.

Make: _____

Model: _____

Speeds

Forward: _____

Reverse: _____

Temperature gauge to be provided

Yes()

No()

Describe exceptions to the Specifications:

COOLING SYSTEM

Minimum Requirements of Local Agency Bidder

Provided by Item Proposed by

The unit shall be equipped with the following items within the cooling system:

Overflow Recovery System	Yes()	No()
Corrosion Resistor Mechanism	Yes()	No()
Silicone Hose System, or equal	Yes()	No()
Engine Block Heater(s) 1000 watt min.	Yes()	No()
Radiator Fan shall be modulated type air operated	Yes()	No()
Air Fan Clutch	Yes()	No()
Fin and tube type radiator core having maximum frontal opening available for the engine and transmission being bid.	Yes()	No()

Frontal area:_____sq. in.
RadiatorCapacity:_____gal.

Describe exceptions to the Specifications:

CHASSIS/FRAME

Minimum Requirements of Local Agency

Provided by Item Proposed by Bidder

CT 149.0" Spacing.

Cab to Trunnion spacing is: _____

Wheelbase

Wheelbase is: _____

Center front axle to BOC

CFA to BOC is: _____

Single Exhaust shall be mounted vertically with a vertical exhaust pipe RH side of cab.

Yes() No()

RH Under Cab DPF/ SCR

Yes() No()

Single Frame rail shall be continuous full length.

Yes() No()

Zinc Phosphate Anti Corrosion Treated Frame Rails

Yes() No()

Frame rail yield strength 120,000 KSI (minimum)

Yes() No()

Section modulus 21.43 minimum

Yield Strength: _____ psi

Resistant Bending Moment (RBM) 2,572,000 #

Section Modulus: _____ "3

RBM: _____ #

12in integral front frame extension

Yes() No()

Describe exceptions to the Specifications:

CHASSIS/FRAME (con't)

Minimum Requirements of Local Agency

Provided by Item Proposed by Bidder

Heavy Duty Front Bumper, Tapered chrome
Steel channel, steel design (minimum 12"),
With Tow Hooks (Front tow hooks to be
frame mounted with access Through
front bumper by installation contractor.)

Yes()

No()

Stationary Chrome Grill to accommodate 34" hustings
plow hitch.

Yes()

No()

A minimum hinge to rear (overhang) dimension of 18".

Hinge to rear dimension: _____"

Describe exceptions to the Specifications:

FILTERS

Minimum Requirements of Local Agency

Provided by Item Proposed by Bidder

Air filter shall be replaceable paper type, heavy duty, dual element.

Yes()

No()

Oil filters shall be full flow, spin on type.

Yes()

No()

Engine shall be equipped with primary and secondary fuel filters with fuel/ water separator.

Yes()

No()

Engine shall be equipped with water filter.
(Not required with extended life coolant.)

Yes()

No()

Describe exceptions to the Specifications:

12 VOLT ELECTRICAL SYSTEM

<u>Minimum Requirements of Local Agency</u>	<u>Provided by Item Proposed by Bidder</u>	
Starter shall be rated Heaviest Duty for this application by the manufacturer.	Yes()	No()
Alternator shall be 200 amp brushless Delco Remy Model 29-SI type 300, or equal	Yes()	No()
Engine shall be equipped with a minimum of two Group 31 Heavy duty 12 volt batteries, 170 amp-hour, 1300 total coldcrank power at 0 degree F, 15 plates/cell.	Yes()	No()
Battery Master Disconnect Switch	Yes()	No()
Exterior jump start lug	Yes()	No()
Electrical system shall be weatherproof equipped with circuit breakers.	Yes()	No()
Special sealed beam LED tail lights shall be part of the dump Body Specifications.	Yes()	No()
Factory Installed Cab Mounted Stainless Steel plow light brackets and Wiring. Factory Wiring shall penetrating the cab roof. Factory PTO Switch.	Yes()	No()
Hood Mounted plow light brackets shall be curved aluminum with aluminum mounting plates with rubber gasket between the mounting plates and the fiberglass hood. PLK10 or equal.	Yes()	No()
Switch and wiring for plow work lights. Wiring shall be Coiled at front of firewall.	Yes()	No()
Plow Lights shall be controlled be factory installed switch with circuit breaker. Factory chassis headlights shall disengage when plow lights are on.	Yes()	No()
Plow lights shall be equipped with high/ low beam as well as turn signals.	Yes()	No()
Body Builder Connections Junction Box 5' BOC	Yes()	No()

Describe exceptions to the Specifications:

SBA FRONT AXLE EQUIPMENT

Minimum Requirements of Local Agency

20,000# front axle rating w/ wide track
20,000# suspension taper leaf
Heavy duty dual power steering gears
Heavy duty power steering cooler
Heavy duty shock absorbers to be factory installed
Front tires to be tubeless, radial type, 425/65R R22.5
20,000 LBS. GAWR, rib type tread 20 PR.
Tires shall be Michelin XZY
Wheels to be 12.25 x 22.5 tubeless rims. Disc type
Aluminum with 4.5" wheel well fender extension.
Max wheel offset of 3.88"

Provided by Item Proposed by Bidder

Front axle rating: _____ #
Front axle suspension: _____ #
Yes() No()
Yes() No()
Yes() No()
Yes() No()
Yes() No()
Type: _____
Size: _____

Describe exceptions to the Specifications:

REAR AXLES EQUIPMENT

Minimum Requirements of Local Agency

Provided by Unit Proposed by Bidder

46,000# rear axle rating

Rear axle rating: _____ #

46,000# suspension

Rear axle suspension: _____ #

Rear Axle Gear Ratio 5.38

Rear axle ratio _____

Rear tires shall be tubeless, radial type 11.00R22.5, load range 16PR.

Yes()

No()

Tires Shall be Michelin X Works XDY

Yes()

No()

Wheels to be 8.25 x 22.5 tubeless rims. Disc type. Aluminum

Yes()

No()

Rear axle to be equipped with dash mounted differential lock control.

Yes()

No()

Inter-axle & Differential Lock to be equipped with dash mounted Control.

Yes()

No()

FR and RR Differential Lock

Yes()

No()

Rear Suspension shall be Henderson HaulMaxx or equal

Yes()

No()

Rear Shock Absorbers for bid suspension type and rating

Yes()

No()

Pusher Axle shall be Hendrickson 20,000# air lift Non Steerable lift axle with 16.5 x 6 brakes and FL1 axle. Shall include dash mounted valve and gauge for single lift axle.

Yes()

No()

Pusher axle tires shall be 11.00R22.5 load range 14PR

Yes()

No()

Pusher axle wheels to be 8.25 x 22.5 tubeless rims. Disc type aluminum.

Yes()

No()

Describe exceptions to the Specifications:

AIR/BRAKE EQUIPMENT

Minimum Requirements of Local Agency

Provided by Unit Proposed by Bidder

Service air brakes shall be dual air, with anti-lock braking system.

Yes() No()

Shoe size to be 16.5" x 6" S-cam front, and 16.5" x 7" S-cam rear.

Shoe size: Front: _____
Rear: _____

Air compressor to be 18.7 cfm minimum

Capacity: _____ cfm

Air system shall be equipped with:

Make: _____

Heated air dryer with spin-on replacement cartridge. Air Dryer Shall Include Heater. Dryer shall be mounted Inside of frame rail right side.

Model: _____

Parking brake shall be piggy-back, spring actuated, dual diaphragm, min 30 sq. in.

Size: _____

All Drums shall include dust covers

Yes() No()

Parking brake chamber to be provided for both rear axles.

Yes() No()

Rear Brake Chambers shall be inverted for paver clearance.

Yes() No()

Pull cords on all air tanks.

Yes() No()

Anti-Lock Braking System

Yes() No()

Smart Electronic Traction Control

Yes() No()

Describe exceptions to the Specifications:

FUEL TANK

Minimum Requirements of Local Agency

Provided by Unit Proposed by Bidder

One aluminum tank (left side) with a combined capacity of 70 gallons minimum.

Yes()

No()

A heated fuel/water separator shall be included in the fuel System.

Yes()

No()

LH DEF Tank (11 gallon Minimum)

Yes()

No()

Describe exceptions to the Specifications:

Air Ride Extended CAB Shall

Minimum Requirements of Local Agency

Provided by Unit Proposed by Bidder

Cab shall be equipped with the following standard features:

Extended Cab	Yes()	No()
Deluxe insulation package	Yes()	No()
All window tinted glass	Yes()	No()
Door operated dome light	Yes()	No()
12 Volt Accessory Plug	Yes()	No()
Two-Way Radio terminals/ Wiring Mtd Under Header	Yes()	No()
Air cab mount	Yes()	No()
Adjustable Steering Column (tilt & telescope)	Yes()	No()
Driver's seat to be Bostrum Air, high back cloth, or equal with armrest	Yes()	No()
Companion' s seat, placed at least 14" from driver's seat.	Yes()	No()
Dual air horns	Yes()	No()
Heavy duty heater and defroster	Yes()	No()
Dual sun visors	Yes()	No()
Dual arm rest	Yes()	No()
Insulated head liner highest quality this application	Yes()	No()
AM/FM radio	Yes()	No()
Intermittent electric windshield wipers	Yes()	No()
Electric operated windows	Yes()	No()
Dual , heated & motorized, West Coast style mirrors (16" x 7"), with 8" adjustable convex mirror, both sides	Yes()	No()
Backup alarm (self adjusting)	Yes()	No()
Exterior grab handles	Yes()	No()
Electronic throttle control	Yes()	No()
Marker lights	Yes()	No()
Factory installed air conditioning w/cab filter	Yes()	No()

Describe exceptions to the Specifications:

Extended CAB (con't)

Minimum Requirements of Local Agency

Provided by Unit Proposed by Bidder

Dash mounted gauges

Fuel	Yes()	No()
Tachometer	Yes()	No()
Hour meter (Hobb's or equal)	Yes()	No()
Voltmeter (needle type, calibrated)	Yes()	No()
Oil pressure (needle type, calibrated)	Yes()	No()
Water temperature (needle type, calibrated)	Yes()	No()
Air pressure (needle type, calibrated)	Yes()	No()
Transmission temperature (needle type, calibrated)	Yes()	No()
Air Filter Restriction Indicator	Yes()	No()

High water temperature/low oil pressure emergency shutdown/alarm mechanism shall be dash mounted.

Yes() No()

Cab paint color shall be base coat/ clear coat white.

Paint Color Shall Is:

Describe exceptions to the Specifications:

WARRANTY/REPAIR PARTS

Minimum Requirements of Local Agency

Provided by Unit Proposed by Bidder

Bidder to provide description of all warranties and component warranties available.

Yes() No()

Bidder shall provide warranty from date of delivery of completed unit(s).

Yes() No()

Parts Book and Service Manuals for truck, body, and hydraulic system shall be provided.

Yes() No()

Highest consideration will be given to those Bidders whose warranty facility is located nearest the Owner's base of operations, which is located in Montgomery ,IN.

Location of warranty facility:

Distance from Owner's base of operations: _____miles

Parts inventory shall be of sufficient size and diversification as to offer a level of parts availability (at the Bidder's warranty facility) of 95% within 48 hours of the order by the Owner.

_____ % available within 48 hours

Delivery time of preventative maintenance items such as filters, belts, hoses shall not exceed 24 hours to the Owner's base of operations.

_____ hours delivery for PM parts

Hours and days of parts department operation.

Describe exceptions to the Specifications:

SPECIFICATIONS

for

HEAVY DUTY DUMP BODY

for

86,000 GVW TRI-AXLE DUMP TRUCK

GENERAL

It is the intent of these specifications to describe a dump body for use with a 86,000 GVW tri- axle dump truck used for general highway maintenance including asphalt. Unless otherwise approved, all component parts of this system shall be made in the USA. All parts not specifically mentioned, which are necessary to provide a complete unit, shall be included in the bid and shall conform in strength and quality of material and workmanship to what is usually provided to the trade in general.

Unit shall be manufactured and assembled with conformance to the best known Engineering Standards of the trade, relative to design, strength, quality, durability and workmanship. Every item assembled upon this unit must meet the latest Federal Safety Standards,

Any unit not in substantial compliance with these specifications will be rejected. It will be the responsibility of the Bidder to conform with the requirements unless deviations have been specifically cited by the Bidder and acceptance made on the basis of the exception.

Minimum Requirements of Local Agency

Provided by Unit Proposed by Bidder

Body

The dimensions shall be 17.0' long by 96" wide O.D measurements.

Rear hinge dimension shall be 12" minimum.

(Do Not Include spread apron in measurement)

The body shall be equipped with an electric tarp system that conforms with FVMSS regulations. Tarp must be for asphalt.

Length:_____ft.

Width:_____in.

Rear Hinge Dimension_____in.

Sides

The sides of the body shall be made of 5/32" 450 HBW 215,000 high strength steel.

Side height shall be 42".

Top rail shall be 4'x4'x3/16' tubing.

Tensile Strength:_____

Side Height:_____

Top Rail:_____

Bottom Rail:_____

Sideboards shall be included.

Yes ()

No()

Deck

Deck shall be 3/16" 450 HBW 215,000 PSI

Longsills shall be 3/16" 250 HBW 110,000 PSI

high strength steel. Shall Be Crossmemberless design.

Tensile Strength:_____

Deck is:_____

Cabsheild & Bulkhead

36" Continuous welded Cabsheild & bulkhead shall be included. It shall be constructed as to conform with cab & body for safety & protection as needed & required.

There shall be an integrated wind deflector for tarp system.

Bolt on wind deflector is not acceptable.

Maximum clearance from bottom of cab shield to top of

Air horns shall be 4".

Yes ()

No()

Tail Gate

Tailgate shall be 48" tall, 3/16" 450 HBW
Tailgate shall be 215,000 PSI Steel

Yes () No ()
Thickness: _____
Tensile strength: _____

Tailgate shall be equipped with chute for harder spreader

Yes() No()

Shall be equipped with 5/16" chain spreading device
and fasteners.

Yes() No()

Apron

An 8" weld on apron with bolt in center section
to accommodate Harder Spreader shall be included.

Yes () No ()

Hoist

Hoist shall be MAILHOT Trunnion mount double acting
Cylinder. Hoist doghouse not to exceed 12" in depth.

Yes() No()

Safety Strut:

Must be installed and comply with OSHA and
FMVSS requirements.

Yes() No()

Ladder:

Fold Up Ladder shall be provided on drivers side, rigidly
mounted directly behind the cab and shall meet
all OSHA and FMVSS safety regulations.

Yes() No()

Lights:

The body shall be equipped with a sufficient number of
lights and reflectors so placed as to meet Indiana State
and F.M.V.S.S. specifications.

Yes() No()

Lights shall be LED type mounted in rubber grommets.
All bidder installed wire connections shall be made
with a dedicated un-interrupted harness.

Yes() No()

3- 6" Oval holes for stop tail turn, strobe and back up lights
in each rear post.

Yes() No()

Welding:

All welds shall be continuous.

Yes() No()

Mud Flaps:

No Sail Mud flaps shall be mounted behind the rear axle according to FMVSS specifications. Heavy Duty Poly, tube mount quarter fenders shall be mounted in front of front rear axle.

Yes() No()

Paint:

Preparation - All metal shall be chemically cleaned before being primed. Unit shall be primed with a high quality zinc oxide primer before painting. Finish shall be Axalta paint or equal. Paint color shall be black.

Yes() No()

Describe exceptions to the Specifications:

SPECIFICATIONS

for

Hydraulics System & Controls

for

86,000 GVW Tri- Axle Dump Truck

General

It is the intent of these specifications to describe a hydraulics system for a tri-axle dump truck to be suited for general highway maintenance. All parts not specifically mentioned, which are necessary to provide a complete unit, shall be included in the bid and shall conform in strength and quality of material and workmanship to what is usually provided to the trade in general.

Unit shall be manufactured and assembled with conformance to the best known Engineering Standards of the trade, relative to design, strength, quality, durability and workmanship. Every item assembled within this system must meet the latest Federal Safety Standards.

Any units not in substantial compliance with these specifications will be rejected. It will be the responsibility of the Bidder to conform with the requirements unless deviations have been specifically cited by the Bidder and acceptance made on the bases of the exception.

Where the term "or equal" is used in these specifications and Bidder deviates from the specified item, he shall file (with his bid) a letter fully explaining and justifying his proposed article or equal.

SPECIFICATIONS FOR CENTRAL HYDRAULIC SYSTEM

GENERAL:

This specification shall describe a **Muncie Cable Controlled Central Hydraulic System with MESP Electronic Spreader Control**. It shall be designed to properly operate the vehicles dump body, front snow plow lift and angle, as well as the material spreader. It will be the system provider’s responsibility to see that all components are compatible for optimal flow, pressure, speed and temperature operation.

1.	<u>MINIMUM PTO REQUIREMENTS:</u>	COMPLIANCE
1.01	The power take-off shall be a Muncie MC Series or equal to power take off. It shall be a 10 bolt mount and be designed with an integral drag brake to positively stop the output shaft in the “off” position. The power take-off speed ratio to be compatible to the application. Engagement of the power take-off shall be by means of a factory, 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 manufacturer’s warranty from the date of installation.	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.	<u>MINIMUM HYDRAULIC PUMP REQUIREMENTS:</u>	
2.01	The hydraulic pump shall be a Muncie PK Series or equal. model PK11302BSBB , with a flow rating of 13 GPM @ 1,000 RPM. The hydraulic pump shall have a maximum rating of 2500 RPM and 3000 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.	<input type="checkbox"/> Yes <input type="checkbox"/> No
3.	<u>CYLINDER CONTROL VALVE:</u>	
3.01	The directional control valve shall be a Muncie V130 stackable series or equal. Valve shall be capable of 30 GPM maximum flow and 3,000 PSI. Open center, <u>parallel circuit design</u> shall accommodate the necessary work sections to power raise, plow angle and dump. The valve bank shall be mounted to the spreader manifold inside of a weather –tite enclosure and shall be shifted by heavy duty, cable/lever assemblies, Muncie RVC Series. The cable shall be vinyl covered and both ends shall be boneted to resist contamination. The cable control shall be equipped with an in-cab lever assembly located in a position convenient to the operator.	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.	<u>CYLINDER CONTROL ACTUATORS:</u>	
4.01	The dump body hoist and front snow plow lift and angle cylinder valves will be actuated with high quality push/pull cable assemblies. There shall be individual cables to shift each function and they shall be brought into the vehicle cab in a sealed manner. The controllers for the operator will be placed in a pedestal that will mount to the floor of the vehicle cab and placed in an ergonomic position for the operator.	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.	<u>SPREADER CONTROL; MUNCIE MESP:</u>	
5.01	The spreader system will be controlled with an electronic groundspeed controller. The controller will have simple digital displays, soft paddle actuators, and a menu that is easy to calibrate. It shall have On/Off, Blast and Pause push button control panel assembly.	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.02	A sealed conduited cable will connect the operator control panel to the manifolded cartidge valves mounted in the valve/tank assembly.	<input type="checkbox"/> Yes <input type="checkbox"/> No

5.03	The valve sections for the groundspeed spreader control will be a cartridge design mounted to a simple manifold assembly. The manifold will have pressure relief protection and it will have its hydraulic oil supplied from the cylinder control valve assembly	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.04	Both solenoid valves shall have direct acting wet armature solenoid operators and manual overrides. Both valves shall be mounted to a common manifold	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.05	Valves shall be proportional flow controls with infinite resolution from 0-8 GPM and 0-17GPM for the spinner and auger/conveyor respectively. Independent pressure compensation shall be provided for each with individual compensators mounted in the manifold assembly	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.06	Manifold assembly shall include a relief cartridge assembly screw adjustable from 300-3,000 PSI, rated for 30 GPM of flow. This relief cartridge shall provide isolated spreader system protection. Pump bypass cartridge shall also be part of manifold assembly to provide automatic oil flow unloading	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.07	Manifold circuit design shall include a hydraulic logic shuttle cartridge valve to prevent interactions of spinner and conveyor regardless of independent or simultaneous	<input type="checkbox"/> Yes <input type="checkbox"/> No
6.	<u>HYDRAULIC SYSTEM / STAINLESS STEEL OIL RESERVOIR:</u>	
6.01	The hydraulic oil reservoir and total valve system shall mount in a valve/tank assembly. This will be a one "unit" design and will mount to the frame rail of the vehicle. The top of the reservoir, which will be a minimum of 35 gallons, will be the dry compartment for the cylinder and spreader valves, the in tank filter assembly, and the reservoir fill cap/breather assembly. This one piece unit will have a sealed lid with at least two over-center style latches for a weather tight valve/tank assembly. This unit will be stainless steel.	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.	<u>HYDRAULIC LINES:</u>	
7.01	Rear hydraulic lines shall be stainless steel lines with flexible hose only at end points. The ends of the lines will have quick disconnects for auger / spreader connection. All steel lines will be securely mounted with elastomeric vibration reducing connections at all securing points.	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.02	Front hydraulic lines shall be flexible hose with protective hose wrap where needed. The ends of these lines shall have quick disconnects for snow plow connections. All quick disconnects shall have dust covers.	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.03	The inlet to the pump shall be SAE 100R4 type hose with minimum I.D. of 1.50 inches. The main pressure line shall be SAE 100R2 type hose with a minimum I.D. of .75 inches. All return line hoses shall be SAE 100R1 type hose with a minimum of 1.25 inches	<input type="checkbox"/> Yes <input type="checkbox"/> No
8.	<u>MINIMUM LIGHT PANEL REQUIREMENTS:</u>	
8.01	Hydraulic system shall be equipped with a multi-sensor light display, Muncie model MSD1. The display shall be a single unit including indicators for hot oil, cold oil, low oil, body up, and filter condition. The display will connect to the sensors by means of a wiring harness.	<input type="checkbox"/> Yes <input type="checkbox"/> No
8.02	Normally closed <u>COLD OIL</u> Sensor with a 44 degree fahrenheit trip point	<input type="checkbox"/> Yes <input type="checkbox"/> No
8.03	Normally open <u>LOW OIL</u> Sensor and normally open <u>HOT OIL</u> sensor with a 185 degree fahrenheit trip point	<input type="checkbox"/> Yes <input type="checkbox"/> No
8.04	Normally open <u>TILT</u> sensor with 15 degree trip point	<input type="checkbox"/> Yes <input type="checkbox"/> No
8.05	Normally open <u>FILTER</u> condition sensor with 20 psi activation point	<input type="checkbox"/> Yes <input type="checkbox"/> No

**SPECIFICATIONS FOR A
HUSTING STYLE HITCH**

GENERAL:

This specification shall describe a **Husting Style** snow plow hitch. This unit shall also consist of truck and plow portions, cylinder, and have continuous seam welding. Bidders must submit with their proposal complete specifications on the unit

MINIMUM REQUIREMENTS		
1.	TYPE:	COMPLIANCE
1.01	Plow hitch shall be an automatic snap coupling, 34" wide equipped with 3" x 10" stroke cylinder power up, power down	<input type="checkbox"/> Yes <input type="checkbox"/> No
1.02	Automatic locking shall be accomplished by dual actuated, spring loaded locking lugs	<input type="checkbox"/> Yes <input type="checkbox"/> No
1.03	A lever shall be provided for retraction of locking lugs	<input type="checkbox"/> Yes <input type="checkbox"/> No
1.04	Locking lugs shall be 2" (minimum) diameter	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.	TRUCK PORTION:	<input type="checkbox"/> Yes <input type="checkbox"/> No
201	The truck portion of the automatic snap coupling hitch shall be 34" wide, 42" high (minimum) and shall be fabricated from 1/2" structural steel (minimum), adequately cross membered and securely mounted to the factory bumper	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.02	Hitch shall be tapered and have a rubber strip on the chassis side to allow the opening of the chassis hood	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.03	Bottom support members shall be securely attached to the main frame of the truck chassis	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.04	Anti-rust plating shall be incorporated to prevent transverse movement of hitch and rearward thrust against triangular bottom support members	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.05	Stabilizer bars shall be connected between top portion of the hitch and main frame of the truck	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.06	All fasteners shall be of high tensile type	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.07	A lift arm and base support for the hydraulic cylinder shall be included. Lift arm shall be one solid piece of 1/2" material	<input type="checkbox"/> Yes <input type="checkbox"/> No
3.	PLOW PORTION:	
3.01	The plow portion shall be constructed of 4" x 8" angle with 4" channel lift arms. Shall be attached to the plow.	<input type="checkbox"/> Yes <input type="checkbox"/> No

SPECIFICATIONS FOR A REVERSIBLE SNOW PLOW

GENERAL:

This specification shall describe a 12' power reversing snow plow. This unit shall also consist of twin hydraulic reversing cylinders, rolled steel moldboard and continuous seam welding. Unit shall be manufactured in the USA by an ISO 9001:2008 certified company. Bidders must submit with their proposal complete specifications on the unit they propose to furnish.

1.	<u>MINIMUM MOLDBOARD REQUIREMENTS:</u>	<u>Compliance</u>
1.01	Quick mount Level lift design allows continuous level lift in any position.	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.02	Height of moldboard is (42)".	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.03	Length of moldboard is (12').	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.04	12" Integral Shield mold board	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.05	Cutting path at 35° for an 11' length is 114"	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.06	7GA steel rolled moldboard with eight (8) 1/2" x 3-1/2" rolled ribs for extra strength and rigidity. Continuous welded one-piece	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.07	Each rib with be reinforced with an additional 1/2" x 3 1/2" steel at each pivot point. Additionally a 1 1/4" bushing will be installed for strength.	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.08	There is to be a trip stop at every rib to evenly space out the trip force	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.09	4" x 4" x 3/4" bottom angle with 1/2" x 3" gussets every 12"	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.10	80" semi circle to be 3-1/2" x 3-1/2" x 1/2" angle	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.11	3-1/2" x 2-1/2" x 3/8" top angle with drain holes to allow moisture to escape.	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.12	Two horizontal braces for added rigidity	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.13	Four (4) position attack angle is adjustable to 5°, to 20°	<input type="checkbox"/> Yes No <input type="checkbox"/>
1.14	5/8" x 8" one piece powder coated cutting edge with AASHO punching-standard	<input type="checkbox"/> Yes No <input type="checkbox"/>
		<input type="checkbox"/> Yes No <input type="checkbox"/>
2.	<u>TRIP ASSEMBLY:</u>	<u>Compliance</u>
2.01	Full moldboard trip with two (2) adjustable, internal compression springs.	<input type="checkbox"/> Yes No <input type="checkbox"/>
2.02	5/8" Trip-spring anchor plates are encased and continuous welded to the push frame providing greater strength.	<input type="checkbox"/> Yes No <input type="checkbox"/>
		<input type="checkbox"/> Yes No <input type="checkbox"/>
3.	<u>PUSH FRAME:</u>	<u>Compliance</u>
3.01	4" x 4" x 3/8" structural steel tube push frame width is 120" (on 10') or 132" (on 11') and 144" (on 12'). Two 1/2" thick, adjustable height, running gear mounts, and two (2) 1/2" thick lift chain mounts.	<input type="checkbox"/> Yes No <input type="checkbox"/>
3.02	Semi-circle is 3-1/2" x 3-1/2" x 1/2" angle welded the push frame.	<input type="checkbox"/> Yes No <input type="checkbox"/>
3.03	Eight (8) moldboard-to-push frame pivot points with 1-1/4" bushings pinned to two 5/8" mounting ears with 1 1/4" plated pivot pins.	<input type="checkbox"/> Yes No <input type="checkbox"/>
3.04	Twin 4" x 10" x 1-1/2" chrome plated hydraulic cylinders are double-acting for heavy duty power reversing. Twin reversing cylinders are located <i>above</i> the push frame for protection against road debris and ease of service. (4" x 2" x 10" double acting cylinders optional)	<input type="checkbox"/> Yes No <input type="checkbox"/>
3.05	Plow-mounted adjustable cushion valve plumbed to cylinders (standard). Valve to be adjustable (set at 2000PSI), 10 GPM and to have 1/2" SEA threads	<input type="checkbox"/> Yes No <input type="checkbox"/>
3.06	4" x 13.8lb structural channel "A" frame supporting a 2" center reversing king pin mounted in a 3" tube with a 1/2" wall with grease fitting	<input type="checkbox"/> Yes No <input type="checkbox"/>
3.07	A-frame to be welded to a 1" X 5" X 33" base plate with a 1 1/2" pivot hole	<input type="checkbox"/> Yes No <input type="checkbox"/>
		<input type="checkbox"/> Yes No <input type="checkbox"/>
4.	<u>PAINT:</u>	<u>Compliance</u>
4.01	All metal surfaces are to be <u>SANDBLASTED</u> to remove slag, splatter, oxide, and oil residue.	<input type="checkbox"/> Yes No <input type="checkbox"/>

4.02	All surfaces are high-pressure cleaned and degreased with phosphate solution. Moldboard is to be primer powdercoated and powdercoated orange. Push frame assembly and hitch components are powder coated black.	<input type="checkbox"/> Yes No <input type="checkbox"/>
5.	<u>OPTIONS:</u>	
5.01	12" X 3/8" 2-ply Rubber Deflector(belted) with mounting hardware	<input type="checkbox"/> Yes No <input type="checkbox"/>
5.02	Sight Markers 3/4" X 36" flourescent orange, nylon	<input type="checkbox"/> Yes No <input type="checkbox"/>
5.03	Carbide Blades(3/4" x 6")	<input type="checkbox"/> Yes No <input type="checkbox"/>
5.04	Plow running gear (1317131): Adjustable height, 3" structural steel tube housing with grease fitting, 1-1/4" screw adjustment with folding crank handle. 2-1/2" structural steel tube post with 1/2"x5-3/4" diameter steel foot with multi-bolt pattern.	<input type="checkbox"/> Yes No <input type="checkbox"/>
5.05	Shall be equipped with Model 6509 swivel snow-wheel system	<input type="checkbox"/> Yes No <input type="checkbox"/>

Pricing

Total Bid Price for Completed Unit FOB Daviess County Highway Dept. Montgomery, Indiana

\$ _____

Bidders Estimated Delivery Date _____

Signature of Bidder _____