

**Muskingum County**  
NEW EQUIPMENT PROPOSAL  
NEW DUMP BODY, V-BOX SPREADER, AND SNOW PLOW FOR TANDEM  
AXLE TRUCKS

NOTE: All Equipment shall conform and all bids shall be based on specifications provided.

**LUMP SUM BID (ONE NEW DUMP BODY, V-BOX SPREADER, AND SNOW PLOW FOR TANDEM AXLE CAB & CHASSIS:**

\$ \_\_\_\_\_

**TOTAL FOR TWO (2) DUMP BODIES**                      \$ \_\_\_\_\_

**BIDDER NAME:** \_\_\_\_\_

**SIGNED:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**PHONE/FAX:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

## **BODY SPECIFICATIONS**

### Body Size/Shape

Body Length: 15'  
Body Inside Width: 84"  
Overall Width: 96"  
Side Style: Straight Sides  
Side Height (from floor): 36"  
Rear Body Design: Asphalt with sloped tailgate  
Rear Corner Posts: 8" above rear side height  
Board Pockets: 2" wide  
Headsheet Style: Vertical

### Hoist/Hydraulics

Hoist Style: Trunnion mount  
Cylinder Type: Full double acting telescopic (CS-140)  
Cylinder Cradle Style

### Materials/Construction

Floor Material: 1/4" AR 400  
Floor to side knee brace  
Longsill Material: 8" I-Beam  
Side and Headsheet Material: 7 Gauge 304 Stainless Steel  
Side Bracing Type: Single weld on side brace  
Side Brace Material: 7 Gauge 304 Stainless Steel  
Top Rail Style: Sloped  
Rear Corner Post Material: 7 Gauge 304 Stainless Steel

### Tailgate - High Lift design

Tailgate Sheet Material: 7 Gauge 304 Stainless Steel  
Tailgate Bracing: Two horizontal and two vertical (9 panel)  
Tailgate Brace Material: 7 Gauge 304 Stainless Steel  
Tailgate Top Pivot Hardware: 1- 1/4" pins, 1" plate, non-greasable  
Tailgate Air Operated

### Lighting

Rear Light Holes: Two Oval  
Rear Side Marker Lights  
Lighting Package

### Body Hinge

Body Hinge Type: Greasable blocks, 2" cold rolled pin  
Body Hinge Construction: 8"x 6"x 1/2"

### Paint

Stainless Steel Finish

### Options/Accessories

Cabshield Material: 7 Gauge 304 Stainless Steel

Cabshield Size: 22" x 86" (1/2 cab)

Two (2) Ladders – (1) front roadside and (1) front curbside

LED strobes front and rear

Mudflaps: Front and Rear

2-Shovel holders

Rear hitch to County specifications

Reese receiver hitch

Electric plug to County specifications

Glad hands mounted at rear of truck

Electric Back-up Alarm

30" x 18" x 18" Underbody Stainless Steel Toolbox

### **CENTRAL HYDRAULIC SYSTEM SPECIFICATIONS**

System to be of load sensing type, pumping oil only when needed and in exact volume and pressure required

Pump to automatically revert to stand-by mode when no oil flow is required

Must be able to operate all equipment on truck simultaneously if necessary

Operating speed of various functions must be variable

### Hydraulic Pump

Rexroth model A10V074 cast iron, variable displacement, pressure, and flow compensated, load sense axial piston pump

To be driven off the engine's crankshaft thru Spicer 9553 series driveline

Must automatically, through system logic, select and adjust to the function with the highest pressure demand regardless of the number of functions engaged or the engine RPM

To be side ported

To be equipped with internal bleed-down compensator to prevent gradual pressure buildup when running in standby mode for long periods

Must have adjustable standby pressure of 200-400 PSI

To have case drain for lubrication and cooling in standby mode

### Hydraulic Control Valve

Rexroth model MP18 three section spool valve, of mobile and stack type design

Capable of 2500-PSI operation pressures

Minimum 30 GPM flow capability

Each section must have built-in flow and pressure compensator to allow simultaneous operation of any or all function regardless of any other system function

Sections to be manual double acting to operate dump body, snowplow, lift cylinder, and snowplow power reversing

### Operator Controls

Three (3) Morse 40 series single-axis extra heavy-duty lever-actuated cable controls

Control cables to have 1/8" diameter armor wrapped stainless steel over galvanized steel core wire

All control conduits are to be sealed with rod seals and conduit seals for maximum protection from the elements and all exposed cable rod ends to be stainless steel

Control levers are to be mounted beside driver's seat on a steel console

Cable entry to enclosed hydraulic control valve to be bulkhead mounted

### Spreader Control

The spreader will be controlled by a dual knob, pressure and flow compensated flow control with on/off handle. The control will include separated knobs for adjusting the flow to the auger and spinner (if equipped) A bypass hose will be included for the spinner circuit if it is not used. Spreader valve to be mounted on a steel console beside driver's seat

### Reservoir

A 30-gallon, all 10-gauge steel, welded hydraulic oil reservoir

To have a vertical internal baffle

**To have 100 micron 2" I>D> minimum, suction strainer**

Top filler/breather with screen to have twist-off cap

Sight/temperature gauge to be installed in a readily visible location and protected

Magnetic drain plug to be furnished

Suction and return ports to be on opposite sides of baffle

Low oil shut down system

Low oil level sensor in reservoir at 1/3-full level with warning light on dash and wired so in the event of a hydraulic failure shuts off oil flow thru suction side of pump

To have top opening to accommodate in-tank return line filter

Integral weatherproof compartment in top of reservoir to accommodate 3-spool hydraulic control valve

To have removable cover with automotive type rubber weather seal

To have rubber battery-box type cover hold-downs

To have breather on top of cover to prevent condensation in compartment

All plumbing front hydraulic valve ports to bulkhead of compartment to be JIC steel hydraulic lines with bulkhead fittings

### Filter

In-tank mounted return line filter

80 GPM flow capability

Throwaway cartridge type element

Condition gauge to be furnished and in a readily visible location

15PSI safety bypass in head

### Hoses

All hoses to be wire braid reinforce with high-pressure JIC37 degree fittings on both ends for ease in maintenance

All fittings in various hydraulic components to be forged steel, including pipe-to-JIC adapters

Hoses run to front and rear of truck for snowplow and spreader with stainless steel quick coupler, caps, and plugs

Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforce

All hoses to be routed to minimize interference with equipment and chassis components that require periodic servicing  
Suitable clamps and ties are to be installed at regular intervals to secure hydraulic hoses and minimize movement, flexing and abrasion during truck operation

## **SPREADER SPECIFICATIONS**

### **General**

This specification shall describe a V-box material spreader capable of hauling and spreading free flowing granular materials from a width of four (4) to forty (40) feet.

### **Body**

This spreader shall be constructed of 10 Gauge 304 stainless steel with a double crimped top edge forming a 2" section for greater rigidity.

The hopper body length shall be 15 feet with two feet of longitudinal overhung for supporting the spinner assembly. Sloping front.

The hopper to be more than 84" inside top width with the height to be 62".

The capacity of the hopper shall be 12 cubic yards water level full.

The body sides and ends shall be 10 Gauge 304 stainless steel and have not less than forty-five degree pitch to ensure free flow of material to the conveyor.

The body longitudinal shall be manufactured of 7 Gauge 304 stainless steel.

The channel cross sills shall be 7 Gauge 304 stainless steel that ties the lower edge of the longitudinal to each side support with additional reinforcing under cross supports.

These cross supports shall be wide enough to allow the hopper box to be mounted on various width truck frames or slide into a dump box.

The body and conveyor shall be electrically welded into a rugged solid unit.

A 10 Gauge 304 stainless steel 10" x 18" stainless steel feed gate.

The screw type jack with stainless steel crank shall be provided and be self-locking.

A heavy-duty 304 stainless steel lift hook shall be provided at each corner.

The rear endplate shall be reinforced inside and supported outside to give it maximum strength.

All stainless steel joints shall be welded with stainless steel welding wire.

All sub-assemblies shall be secured with stainless steel hardware.

A mounting kit shall be provided to safely secure the hopper to the truck.

#### Conveyor

The conveyor system shall be of the barflight type running longitudinally with the body feeding material to the feed gate opening.

The overall conveyor width shall be 24”.

To protect the chain link strands, the top edge of the longitudinal shall be formed down over the strands exposing only the drag chain bar to the material.

The conveyor floor shall be of the flat design, replaceable, and manufactured of 7 Gauge 304 stainless steel floor and rollover edges.

The gearbox shall have hardened and ground bronze gears mounted on a 2” diameter drive shaft and supported on tapered roller bearings.

These gears shall be machine cut and mounted in anti-friction sealed bearings and running in oil.

The gearbox ratio shall be 25:1

The drive and idler sprockets shall be 8 tooth drop forged steel sprockets keyed to the 2” diameter drive shaft and 2” diameter idler shaft.

Both the conveyor shafts shall have heavy duty, dust sealed, self-aligning ball bearings equipped with grease fittings.

A heavy-duty spring loaded idler adjustment assembly shall provide approximately 4” of adjustment for proper conveyor chain tension.

#### Conveyor Chain

The conveyor chain shall be heat treated 2.25” pitch self cleaning pintle type with 7/16” pins, and a tensile strength per strands of 21,000 pounds.

This chain shall utilize 3/8” x 1 1/2” crossbars on 4 1/2” centers.

#### Spinner Assembly

The distributor disc shall be 20” in diameter, made of stainless steel and have six replaceable formed stainless steel spinner vanes.

This disc shall be mounted on a cast iron hub connected directly to the hydraulic motor.

The material shall be guided from the conveyor to the distribution disc by means of one 10 Gauge 304 stainless steel adjustable, internal, material deflector.

The entire spinner assembly shall be manufactured of 10 Gauge 304 stainless steel.

### Power Drive

The conveyor chain shall be driven through the worm drive gearbox by a low speed, high torque “orbital type” hydraulic motor.

This motor shall be directly coupled to the gearbox and protected from the elements by the housing.

The spinner disc shall be driven by an independent low speed, high torque “orbital type” hydraulic motor.

This motor shall be directly coupled to the spinner hub thus eliminating any extension shaft or bearings.

### Top Screens

The top screens shall be constructed of 3/8” rods welded to form a 2.5” square mesh, which is framed by a combination of 1/4” x 1 1/2” flat steel and 2” angle iron with the edge supports reinforced by 1/4” x 1” flat bars.

### Stainless Steel Inverted V

All stainless steel metal shall be left unpainted.

### Leg Stand

The spreader shall come equipped with a storage stand system designed to be bolted directly to the v-box.

This skid type arrangement shall be constructed entirely of structural tubing.

The main frame on which the hopper will mount shall be constructed of 5” x 5” x 3/16” tubing.

There shall be sufficient lateral bracing constructed of 4” x 4” x 3/8” tubing to support the hopper.

The forward “leg” shall be constructed of 3” x 4” x 3/16” tubing and shall be designed to fold up as the vehicle back underneath the stand.

Machined steel caster wheels with lubeable bronze bushing bearings shall be mounted at the front of the main frame to allow the unit to roll into the vehicle.

Rear “legs” shall be of a self-storing telescopic design.

The lower “leg” shall be constructed of 3 1/2” x 3 1/2” x 3/16” tubing, and shall telescope inside the upper “leg” that is constructed of 4” x 4” x 3/16” tubing for storage.

The rear “legs” shall extend beyond the spinner assembly to help protect the spinner assembly from accidental damage.

Spreader installed in dump body & held in place at rear with tailgate latch & at front with (2) two ratchet straps.

Spreader light installed at rear.

## **SNOW PLOW SPECIFICATIONS**

### **Moldboard**

The Moldboard to be a "J" shaped blade with a 19" radius and the last 12 inches a 6" radius.

The Moldboard to be a 42" high and 10' long at the cutting edge.

The Moldboard to be made of 10 gauge steel paneled for additional strength.

The Moldboard to be reinforced at the top by a self-formed channel and the bottom with a one piece structural angle of 4" x 4" x 3/8". To this angle, a cutting edge backing of 5/8" x 3" to be welded and further braced by gussets 1/2" x 2 1/2" welded between each cutting edge bolt position.

The Structural triangle to be constructed so that when the cutting edge is bolted to the backing the front face of the cutting edge will be flush with the Moldboard face to prevent the snow buildup on top of the blade.

The Moldboard shall be reinforced with a minimum of six (6) full length vertical ribs. Vertical ribs to be 1/2" x 3" formed steel continuously welded on both sides of edge to the Moldboard sheet and secured at the top to the formed channel and at the bottom to the structural angle.

The lower rear cross angle to be provided with ten (10) ears 3/4" thick on 88" hinge point centers for attachment to the table assembly at five (5) points with 1" pins.

### **Cutting Edge**

The cutting edge to be 1/2" thick x 6" wide and full length of Moldboard, AASHO standard punched flush with moldboard and be easily replaceable.

### **Tripping Mechanism**

To be attached to the table and to the Moldboard and consist of 4 extension springs.

The springs to control the trip so that the plow will be held rigid for plowing and will trip automatically when coming in contact with any solid object and return automatically to the original plowing position when released.

The extent of the forward motion of the Moldboard to be controlled by a mechanical telescopic tripping post assembly constructed of 1 1/4" x 2" inside bar, 3/4" x 2 1/4" outside

bars and reinforced with 1/4" x 2" bars. The tripping post assembly to be independent of the springs and to prevent the top of the moldboard from contacting the road surface.

Connecting the tripping post to the Moldboard and table will be 1" diameter.

#### Reversing Mechanism

The reversing table assembly has 2 1/2" diameter reversing cylinders and a automatic latching device which secures the Moldboard into one of eleven different plowing angles from 35 degrees right to 35 degrees left.

#### Level Lift Mechanism

Mechanically - activated that holds a raised plow Moldboard equi-distant from the ground to the bottom of the cutting edge regardless of Moldboard plowing angle, whether full right, bulldoze, full left or anywhere in between.

#### QCP Plow Portion

Consists of a 1 15/16" diameter U-shaped loop welded to a 4" car channel. The channel is welded to and between the plow push arms.

#### Plow Markers

Snow Plow equipped with two (2) plow markers. Markers constructed of high density polyethylene 1 1/4" O.D. x 1" I.D. by 24" long, safety yellow with a flexible joint.

#### Hitch/QCP

Vertical uprights to be built of 4" x 3" x 3/8" wall tubing.

The vertical lift frame will be attached to a lower push plate section constructed of 6" x 4" x 1/2" angles, 6" channel with heavy duty 1/2" thick gussets.

Hitch will have a bumper angle constructed of 6" x 4" x 1/2" angle. Hitch shall have two (2) 1" x 3" x 48" push braces. Push braces shall attach to bottom of hitch and run diagonally to angle brackets that bolt directly to the truck frame rail.

The hitch lift beam to consist of two (2) 5/8" x 3" bars secured by 10 gauge top cap and a minimum of three (3) 1/2" x 3" spacers.

The lift beam to be assembled so that it may drop down to allow full tilting of the truck hood without any interference. The pivot pins holding the lift beam to the lift frame shall be 1" diameter minimum. A mounting ear to be provided to lock the beam in the down position, the lift cylinder to be so positioned that if accidentally extended it will not cause any damage to the hitch or to the truck.

The lower push plate main member to be fabricated from 1/2" steel plate with the exception of the curved pushing plates which will be 5/8" steel plate.

The lower push plate to run between and be solidly attached to both tubular support members. Additional gussets of 1/2" thick material to also be furnished for maximum strength. The quick hitch to provide self-alignment with the mating plow section while being engaged.

An automatic cast coupling hook of high carbon steel to pivot inside the fabricated member. It will have an effective working cross section of twelve square inches and to latch automatically when the mating plow portion is in the engagement position. Sufficient openings to be provided in the bottom and back part of the fabricated member to prevent the build-up of ice and snow.

A spring loaded lock pin to accomplish the dual function of preventing unwanted locking in the open position and to hold the latch positively in the closed position.

The quick hitch design will allow permissible plow misalignment within a range of 6" in height and 7" left to right of center.

The plow lift cylinder to be double acting 3" bore x 10" stroke. The piston rod is steel construction, treated with a nitride process.

Lights installed on stainless steel brackets to county specification.

1/2" x 12" x 10' rubber snow deflector installed to front of Moldboard.