

Due 10:00 a.m., Monday, May 22, 2023, to:

Emmet County Road Commission - 2265 E. Hathaway Road - Harbor Springs, Michigan

Proposal for one (1):

**One (1) Stainless-Steel DVS spreader (201/304 Stainless Steel)
One (1) Hydraulic System, & Underbody Scraper & 9' Patrol Wing.
One (1) Rear mounted Bi-directional cross auger conveyor.
One (1) Pre-wet system
Installed and complete.**

We agree to furnish the Emmet County Road Commission the following:

Make _____ Model _____,
Make _____ Model _____,
Make _____ Model _____,
Make _____ Model _____,
Make _____ Model _____,
Make _____ Model _____,

Which will meet the minimum requirements on the attached specification sheet unless otherwise noted. Exceptions to any of the specifications attached should be clearly noted/highlighted by the bidder and submitted with this proposal. F.O.B Conway Garage, 2265 E. Hathaway Rd, Harbor Springs, MI 49740.

Total price (tax exempt) for one \$ _____

Terms _____

Delivery in _____ days after award of bid

Business name: _____

Business address: _____

Business phone: _____

Mobile phone: _____

E-mail address: _____

Print name & title: _____

Signature: _____

Date: _____

EMMET COUNTY ROAD COMMISSION

MINIMUM SPECIFICATIONS FOR:

**One (1) 14' Stainless-Steel DVS spreader (201/304 Stainless Steel)
One (1) Hydraulic System, & Underbody Scraper & 9' Patrol Wing.
One (1) Rear mounted Bi-directional cross auger conveyor.
One (1) Pre-wet system
Installed and complete.**

GENERAL

The following specifications describe the minimum requirements for a 14' Stainless-Steel DVS spreader, underbody scraper, 9' patrol wing, rear cross auger conveyor and prewet system installed and complete. Exceptions to any specifications listed shall be noted and highlighted by the bidder. Bids not submitted on these forms will not be considered. The Board reserves the right to waive irregularities in the bid procedure, to accept or reject any and or all bids, and to award the bid in the best interest of the Emmet County Road Commission.

DVS Spreader

comply yes ___ no ___

Stainless-Steel Dumping All Purpose V-Box Spreader:

The body shall be 168" long x 89" wide, 44" sides, 50" front and 50" gate, all are approximate inside dimensions, with the total outside width being 96" overall, side height 56", approx. 9.2 cubic yard sides, and 11.1 cubic yard ends. The front shall be sloped to accommodate ahead lift cylinder with partial doghouse and conform to the slope of the body shall be constructed of 3/16" 201/304 stainless-steel, 100% welded inside and out. External forward mounted cylinder not acceptable.

Sides shall be constructed of 3/16" 201/304 stainless-steel, sloped 45 degrees to the conveyor to facilitate complete clean out, 3/16" 201/304 stainless-steel boxed top rail, shall include 201/304 stainless-steel sideboard pockets, body vertical side supports shall be 3/16" 4" x 2" – 201/304 stainless-steel extending from the boxed top rail to the longsills - 100% welded - 36" on center.

Top of tailgate shall be dirt-shedding design. 3/16" 201/304 stainless-steel with 3" boxed perimeter and two 201/304 stainless-steel horizontal braces full width 100% welded. Tailgate shall have double acting design, 3/8" spreader chains, including double banjo eyes. Belt over Chain shall be sufficient length to allow tailgate to lay flat. Tailgate shall be operated by a 3-1/2" air cylinder; cylinder shaft shall be retracted in closed position with in-cab control. The top hinge shall be 1" thick x 4" wide and shall have 1-1/4" grease-able hinge pins, trip rod and latch fingers shall be built of 201/304 stainless-steel.

Rear of Body shall be flush with rear corner pillars; rear overhang past the tailgate is unacceptable.

The rear material door shall extend 16" into the interior of the body to prevent material from escaping through the partially opened door over the conveyor. The door shall be 'A' thick 201/304 stainless-steel approx. 21" wide x 8-1/2" high to include non-rusting, poly universal joint, 201/304 stainless-steel crank handle - jack and ruler.

Replaceable material door and floor cover, both shall be manufactured of 3/16" 201/304 stainless-steel, to be used when using as dump body only.

Rear of body shall be supported by combination of 3/16" 201/304 stainless-steel plate contoured to the slope of the body, both sides, 3/16" 201/304 stainless-steel formed box sections, tied to the rear 3/16" 201/304 stainless-steel corner posts. All shall be 100% welded.

Understructure / Longsills shall be fabricated from 1/4" 201/304 stainless-steel and joined together as follows: Sections of 4" formed 201/304 stainless-steel channel are welded every two feet the length of the spreader at the base of the longsills, where the longsills are then boxed in with 1/4" 201/304 stainless-steel, then there shall be 3/16" x 3 x 3 formed 201/304 stainless-steel angle welded every 12" the full length of the conveyor at the top of the longsills.

Floor and Chain Shield shall have 3/16" 304/201 stainless-steel removable chain shields with 1/4" 201/304 stainless-steel replaceable floor; all bolted with stainless-steel bolts. **Non-replaceable floor and chain shield are not accepted.**

Body conveyor assembly shall be 34" in width and shall have 28,000-pound tensile strength per strand pintle chain, with 1-1/2" x 1/2" bar flights on 2-1/4" centers (bar every link.) With **high temp belt over chain** bolted to every bar flight, includes HD side seals and HD wipers.

The conveyor shall be driven by two 6:1 spur gear boxes and (2) high torque/speed hydraulic motors, (1) one motor to include speed sensor, (1) gearbox with (2) motors is NOT ACCEPTABLE. There shall be 8 tooth hardened sprockets keyed to 2" drive and idler shafts, both shall have heavy duty dust sealed self-aligning four bolt flange bearing, idler shall be adjustable with heavy duty slide rail type adjustment, minimum 1-1/4 rod adjuster designed for conveyor chain adjustment.

Series parallel valve shall be air shift with in-cab control, to allow Hi and Low speed of conveyor chain.

Fenders shall be designed to fit a tandem axle, manufactured of 3/16" 201/304 stainless-steel and installed to the body; shall be reinforced to hold additional weight of pre-wet tanks - approx. 1,500 lbs. per side.

Custom Cab Shield shall be 3/16" thick 201/304 stainless-steel 24" coverage. Cab shield welded 100% inside and out.

Dump Body hoist shall be manufactured by Mailhot or Equivalent, telescopic design with trunnion mounting, trunnion collar shall be oscillating, all pivots, cylinder pin, hinges to be grease-able, cylinder to have a nitride surface for wear and corrosion resistance, cylinder shall be rated 2,500 PSI - double acting, self-bleeding and to be operated off the crank shaft driven hydraulic system.

Remote lube system: remote grease fittings and a line system shall be installed to consolidate fitting in three (3) locations for ease of maintenance. This system shall connect to all grease points, total of 21, except (2) top tailgate pins, (2) rear hinge pins & (2) body pivots.

Misc. requirements:

All components that are 201/304 stainless-steel are not painted. All carbon steel components shall be primed and painted black or silver. Heavy duty spreader complete body, side supports, longsills, catwalks, cab shield and tailgate all to be 201/304 stainless-steel construction and to be continuously welded with stainless-steel wire.

Body Accessories:

(2) grease-able body safety props.

1/4" thick heavy-duty mud flaps, front and rear of the drive axles, installed with stainless steel hardware.

Shovel holder made of 201/304 stainless-steel and to be mounted left front face of dumping "v" spreader, driver's side.

Ladder shall be bolt on 201/304 stainless-steel hinge down style with 6 rungs installed as not to interfere with pre-wet or tarp system. With inside box step.

Location of shovel holder and ladder to be determined at installation.

1/2" poly - installed under the chain to protect truck components, brake valve, drive line and electrical.

Hydraulic & Fuel Tanks:

comply yes ___ no ___

Note: Truck emission system will dictate tank design

Tanks shall be designed to be installed in conjunction with a vertically mounted DPF/SCR exhaust system. The fuel/hydraulic tank shall be min. 7ga. 201/304 stainless-steel construction. Fuel/hydraulic tank shall be 110-gallon fuel & 40-gallon hydraulic.

Solid state fuel sending unit and guarded hydraulic oil sight/ temperature gauge, fuel tank will have a water sump and petcock type drain, and ball type shut off valves on supply & return. The fuel tank vent shall conform to engine manufactures specifications. Tanks shall integrate into a single, integrally constructed unit. The mounting of the tank shall include four (4) rubber bushing type mounting points. Supports for the tank shall be constructed of 4" 7.25 structural channel. The mounting brackets shall extend from the right frame rail and shall cantilever to the outside of the left frame rail. A serrated step shall be installed on the left side.

Hydraulic oil, low-level sensor* with in-cab light & alarm integrated with an electric solenoid shut-off valve at main hydraulic pump outlet, with dash mounted over-ride switches for low-level alarm & pump shut-off. *Low oil sensor will be a solid-state non- float type sensor, mounted in top of oil tank. Hydraulic return filter to be in-tank style. The proper fuel gauge sending unit shall be installed.

Hydraulic System:

comply yes ___ no ___

8.9 cubic-inch load sensing hydraulic-pump (model series 45-E147), front-mounted and driven by engine crankshaft to operate the following: Underbody scraper (up, down & reverse), plow (up & down), two (2) double function wings, dump box with double-acting lift cylinders, RDS rear discharge conveyor chain, bi-directional cross auger & spinner assembly, and pre-wet system functions shall be electronic proportional controlled using Rexroth Bosch CS160 joystick controller. All capable of simultaneous operation.

Direct mount 12-volt automatic low oil shut-down system, with in cab manual override.

Rexroth M4-12, 9-Bank valve, EPC. With mid inlet feature, **NO Exceptions.**

Valves shall be mounted outside of cab in a stainless-steel weather-tight enclosure.

Cross auger to be ground speed triggered to start and stop with main conveyor.

Hydraulic hoses and lines to be enclosed in nylon covers at all chafing points.

All ridged hydraulic lines shall be of stainless-steel construction. Routing pressure hoses shall be on the left side of engine to stay away from turbo heat. Use all stainless-steel hangers and leave room for service of engine.

System to be approved by Emmet County Road Commission prior to installation.

Material Spreader, Sander, Front mount broom & Pre-Wet Controls

comply yes ___ no ___

Rexroth Bosch CS-160/660 System consisting of six basic components.

- (1.) Joy-Stick Control Console
- (2.) Switch module
- (3.) Ground Speed Sensor
- (4.) Feed-back devices
- (5.) Actuator devices
- (6.) Wiring harness to interconnect all components including, Road Watch wiring & sensor

Controls shall be mounted to an armrest pedestal, designed to also house tarp switch, air-gate control, low oil light and momentary override switch.

* Hands on training to be supplied and conducted @ E.C.R.C. Garage*

Toolbox:

comply yes ___ no ___

One (1) 18"x18"x18" stainless-steel, mounted on drivers' side in steel saddle, with stainless-steel hardware and neoprene isolation strips for corrosion resistance.

Tarp System:

comply yes ___ no ___

Roll Right 6416 Electric Tarp system (to include spool & housing, tarp tension bows, and 20' asphalt tarp). Shall be installed, complete and tested.

Air Foil:

comply yes ___ no ___

An Air Foil shall be installed. Welded to the rear upper- most portion of the tailgates on the DVS body. Foil shall be constructed entirely of 201/304 stainless-steel.

Lighting:

comply yes ___ no ___

Auxiliary plow lights and turn signals shall be Buyers LED heated model 131200 hood mounted, custom built aluminum brackets, as approved by Emmet County Road Commission, with approved reinforcements on underside of hood for extra rigidity.

One (1) roof mounted remotely controlled articulating halogen Spotlight with protective dome.

Five (5) LED work lights for Underbody blade and sander discharge areas, locations to be determined at time of installation.

Quad flash LED Strobe lights with 4 strobe heads (1 A/G cab mounted, 3 spreaders mounted), with Amber LED indicator light mounted outside cab near driver's door for OEM supplied Master Electrical Disconnect Switch.

As approved by Emmet County Road Commission

Underbody Scraper:

comply yes ___ no ___

Monroe 12" HD4500 to be installed.

Moldboard shall be 1" thick x 20" high x 12" long made of heat-treated high-carbon steel.

Circle shall be 1" thick solid steel (no notches)

Circle clamp shall be heavy-duty with poly shim.

Two (2) Actuating Cylinders with Socatri shafts enclosed in shock spring housing and trunnion mounted. Dual power-reverse cylinders with Socatri shafts & crossover relief. Shall include a manifold bracket for a grease line kit, (1) each installed on each side of Hanger Board.

Wing Plow:

comply yes ___ no ___

One (1) Wing plow

Shall be a Monroe Snow & Ice, Model 9D FWMB Para-Glide design with Ottawa wing bracket. One (1) installed and complete on the right rearward frame aft of the underbody scraper. An adjustable hydraulic sequencing valve shall be provided to allow bi-directional sequencing for the up & down functions of the wing assembly. Lock valves shall be installed to prevent drift when in stored position.

An adjustable metering valve will be installed to control articulation speeds. (3) Three LED Strobe lights and a LED ICC light shall be installed on top edge of wing nearest to the discharge end in stainless-steel light boxes with cab mounted switch.

Wing assembly will be removed seasonally; to expedite removal, quick disconnect provisions shall be provided for both hydraulic and electrical connections.

As approved by Emmet County Road Commission

Cross Auger Conveyor:

comply yes ___ no ___

Shall be a Monroe MS-969-DD-DD-SL-201SS with the following requirements, a 9" X 96" Auger w/ a 4" pitch and 3/8" flighting and driven by a 28ci Direct Drive Hydraulic Motor.

Dual spinner assembly shall be 201/304 Stainless-Steel and mounted independent of the bottom cleanout door (driver's and passenger side). Self-leveling feature, 18" poly spinner discs.

Stainless steel quick disconnects will be incorporated on hydraulic and pre-wet hoses to facilitate removal of Tailgate assembly.

*****Designed to fit DVS Spreader*****

Note: Tailgate Spreader & Spinner assembly shall be constructed of 201/304 Stainless Steel, as well as mounting brackets, reinforcements, and fasteners.

Plow Hitch:

comply yes ___ no ___

Hustings style heavy duty 34" wide Quick Hitch with 3" double acting cylinder

And lift arm. Plunger pins shall be a Monroe p/n# 05022221 with grease zerks, and secondary locking tabs, with reinforcements.

Plow hitch shall be bolted to 12" min. heavy duty structural channel front bumper flared back with boxed ends.

Tow Hooks:

comply yes ___ no ___

Four (4) Heavy-Duty Drop Forged Frame mounted on front and rear frame or Wing support structures (as approved by County) with a minimum rating of 44,600 lbs. each.

Pre-Wet System:

comply yes ___ no ___

Supply and install hydraulic truck mounted liquid dispensing system. Shall be operated by Bosch CS160/660 control system.

Dual 100-Gallon (min.) UV stabilized polypropylene tanks.

Cross over hose kit-connects both tanks together to equalize.

Shall be all stainless-steel brackets and hardware for mounting to DVS body.

7 GPM bronze pump with stainless-steel shaft, driven by hydraulic motor, include flow meter, stainless-steel suction strainer, (2) brass spray nozzles- .129 orifice, 5 psi check valve (located as high as possible), poly disconnect coupler for ease of seasonal removing. Install all in a NEMA enclosure using 201/304 stainless-steel mounting brackets and hardware.

Remote Camera System

comply yes ___ no ___

A Voyager Model VCCS150B Remote Camera System with M.S. Foster & Associates, Inc. Model MSF8470038000 Washer System shall be installed to monitor the right-side wing and rear of the material spreader.

Both Remote Camera Heads shall be installed in a protective stainless-steel enclosure.

The exact location and mounting option will be approved by E.C.R.C.

Wiring:

comply yes ___ no ___

All wiring from rear of cab to rear of DVS spreader to be run on PVC pipes, then into an 18 pin Betts junction box mounted on left rear corner of radius dump spreader. From the junction box to rear lighting back-up alarm, etc. Electronic back-up alarm.

Switch Panel:

comply yes ___ no ___

In-power vehicle control module switch panel model VCMS-SS142 – to control vehicle 12-volt auxiliary devices total of 10 switches. The switches will be wired to accommodate the following applications: plow lights, rear strobe, front strobe, dolly lock, truck tailgate, V-bottom tailgate, V-bottom safety, and scraper lights. Use factory switches where provided.

Pintle Hitch:

comply yes ___ no ___

Shall be a Buyers BP760 Style pintle hitch, having a 12,000 lb. toung weight capacity, 60,000 gross trailer weight capacity, mounted to a 3/4" full steel plate with reinforcements and bolted in using grade 8 hardware, with (2) two 3/4" 26,500 lb. rated D-rings for safety chains.

Shall include 7-pin round pin & 4-pin trailer plug connector. per ECRC specifications.

Option #1:

comply yes ___ no ___

One-Way Ridged Snowplow: Monroe 12' MPFA38-64-12RGD, 316, HH34 3" Off Set, Part #00176288

One-way, ridged mounted, no trip snowplow:

34" female plow side Husting's Hitch.

Reinforced moldboard manufactured from 10-gauge steel.

Boomerang style shoe rockers.

Manually pinned shoe adjustments.

Single ear standard cast plow shoes.

3/8" thick x 18" deep rubber snow deflector with 9 3/8" x 2" bar stock support on 18" centers attached to 2 1/2 "x 2 1/2" x 3/8" angle iron with a 3/16" x 2" backer support.

Cutting edge to be 5/8" x 8" standard punch.

Plow to be blasted powder coated.

Snowplow to be finished in orange powder coat on the front side of the moldboard, and flat black powder coat on the push frame side of the moldboard.

Anti-plow hang-up roller kit, part #00043300.

Option # 2:

comply yes ___ no ___

Heavy duty top grate system for DVS spreader. 3/4"x 2" bar stock on edge, 1-piece (Grizzly style) top grate kit. System to be approved by Emmet County Road Commission

NOTE

I have read and understand the instructions in the bid specifications, and I certify that the above specifications will be met with the following exceptions*

* Differences in bid specifications must be Noted & Highlighted on page marked

EXCEPTIONS AND CLARIFICATIONS TO BID SPECIFICATIONS

Fuel & Hydraulic Tanks

Hydraulic System

Underbody Scraper

Wing Plow

Sander & Pre-Wet System & Controls

Lighting

Option's 1 & 2

Submitted by: _____
Signature and Title

Business Name