Frank Zulski – Chair
Mark W. Hoffman – Vice Chair
Wade Williams – Member
Brent Shank, PE
Engineer-Manager
Lisa Kleeman
Finance Director



2265 E. Hathaway Road Harbor Springs, MI 49740 Office: (231) 347-8142 Fax: (231) 347-5787 www.emmetcrc.org

# 04/16/2024

## **INVITATION TO BID**

The Emmet County Road Commission will receive sealed bids until 09:00 A.M., Tuesday, May 7, 2024, at which time they will be publicly opened and read aloud at their offices located at 2265 E. Hathaway Road, Harbor Springs, Michigan 49740, for:

#2024-A 12' Stainless-Steel MSV Chassis Mount Spreader #2024-B 12' Stainless-Steel RDS Spreader #2024-C 12' Stainless-Steel Dump Box/MSV Spreader #2024-D 12' SS MSV Spreader/SS Dump Box #2024-E Two (2) 14' SS Dump Boxes/Install MVS Spreader

Bids shall be on forms furnished by the Road Commission and shall be submitted in a sealed envelope clearly marked as to its contents. Specifications and bid form can be found online at <a href="https://www.emmetcrc.org">www.emmetcrc.org</a> or by contacting the Road Commission at (231) 347-8142.

The right is reserved to reject any and or all bids, to waive irregularities in the bid procedure and to award bids in the best interest of the Emmet County Road Commission.

## **EMMET COUNTY ROAD COMMISSION**

Frank Zulski, Jr. – Chairman Mark W. Hoffman – Vice Chairman Wade Williams – Member

# Due 9:00 a.m., Tuesday, May 7, 2024, to:

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

Proposal for one	(1):	
One (1) Hydraulio One (1) Rear mou One (1) Pre-wet s Installed and com	c System, & Underbody unted Cross auger conv system	eyor.
We agree to furni	ish the Emmet County F	Road Commission the following:
Make	N	1odel,
	N	lodel,
	N	/lodel,
Make	IV	/lodel,
	N	lodel ,
Make	N	lodel,
Total price (tax ex		vard of bid
	Business phone:	
	Mobile phone:	
	E-mail address:	
	Print name & tit	le:
	Signature:	
	Date:	

#### EMMET COUNTY ROAD COMMISSION

#### MINIMUM SPECIFICATIONS FOR:

One (1) 12' Stainless-Steel MSV Chassis Mount spreader (201/304 Stainless-Steel)

One (1) Hydraulic System, & Underbody Scraper & 9' Wing.

One (1) Rear mounted Cross auger conveyor.

One (1) Pre-wet system

Installed and complete.

Fifth wheel Hitch to be removed for winter use.

## **GENERAL**

The following specifications describe the minimum requirements for a 12' Stainless-Steel MSV Chassis Mount spreader, underbody scraper, 9' 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.

## **MSV Chassis Mount Spreader**

comply ye	sno
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\*\*\*Chassis Mount Spreader-for Truck bid of 2023L\*\*\*

Sander constructed of stainless-steel (201/304) with a 2" double crimp formed top for greater strength. Approx. dimensions are 144" long x 84" outside width x 55" tall with 45-degree sloped sides. Cross sills are 3"  $\times$  3/16" formed stainless-steel channel.

Chain shields are 10 ga. thick stainless-steel, bolted in with stainless-steel bolts & nuts: removable style. Side supports are 10-gauge stainless-steel and extend the full angled side height of the hopper, placed approx. 2' on center; continuously welded. The rear end plate is 10-gauge stainless-steel, reinforced inside and supported for maximum strength.

Longsills manufactured of 7-gauge stainless-steel and continue beyond the spreader to support the Auger Spreader (MS969) assembly. Both ends shall be slotted to accommodate easy drive and idler shaft removal.

Conveyor Trough is 24" wide, two 6:1 gear boxes with hardened high strength steel alloy gears, supported by ball bearings mounting on a 2" shaft driven by (2) low speed hi-torque motors. Include torque link brackets to reduce gear box stress. One motor (1) to include 100 pulse speed sensor, the drive shaft is supported by (2) keyed 8-tooth cast- gray sprockets that drive the chain. The 2" idler shaft and keyed sprockets are adjustable through the self-aligning 4-bolt flange bearings with two heavy-duty spring-loaded adjuster rods. Design allows 4 inches of adjustment. Grease-able and adjustable from the rear.

Stainless-steel hydraulic tubing to accommodate main chain, cross auger, spinner; shall be mounted to the hopper body minimum 16" off the catwalks and clamps and stainless-steel hardware, 6 tubes drivers' side (1) 1-1/4" tube and three (3) 3/4" tubes and 2 tubes (2) ½".

Conveyor chain is heat treated with 2.25 pitched self-cleaning Pintle type, 7/16" pins with a 21,000 # per strand tensile strength. **High temp belt over chain**. The system includes front and rear wipers.

Conveyor floor is 3/16 stainless-steel removable bolt in style using stainless-steel hardware.

Intermediate floor supports are stainless-steel angle iron braces on 12" centers.

The feed-gate is 12" X 18", 7-gauge stainless-steel and adjustable with self-locking screw-type jack, giving ruler accurate metering. Jack is grease-able, non-rusting poly U-joint and has a stainless-steel crank handle. Manual full opening rear tailgate.

Top screens are 12" elevated carbon steel with heavy duty angle iron frame. ½"x2" bars on 4" centers. Four-inch channel end supports, 6" 9lb main beam, unit bolts on to the top flange of the sander body with stainless-steel hardware. To include center lift loop. Painted all black.

Catwalks, min. 3/16" thick, smooth 201/304 stainless-steel both sides. Shall include support kit, reinforced to hold additional weight of pre-wet tanks. Approx 1100lbs each side.

Cab-Shield; has 20" coverage, constructed of 3/16" 201/304 stainless-steel, 100% continuous welded inside and out to the front of the body.

Chassis Mounting kit to include 3/4x3/4 angle pinch clamps with front spring loaded to prevent frame damage.

MTG KIT, MV/MSV, CHASSIS,8'-11'33.625/35.25 FRAME, W/SPRG, 201/304

201/304 stainless-steel sander, all welding is continuous, all hardware is stainless-steel. Stainless-steel is unpainted.

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

The ladder shall be bolt on 201/304 stainless-steel hinge down style with 6 rungs. With inside box step.

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

<b>Hydraulic &amp; Fuel T</b>	anks:
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comply y	es :	no
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## 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 intank style. The proper fuel gauge sending unit shall be installed.

Hydraulic System	comp	ly y	/es i	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, MSV rear discharge conveyor chain, 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, 8-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	C	omply	yes	no
Rexroth Bosch CS-160/660 System consisting of six basic components.				
<ul> <li>(1.) Joy-Stick Control Console</li> <li>(2.) Switch module</li> <li>(3.) Ground Speed Sensor</li> <li>(4.) Feed-back devices</li> <li>(5.) Actuator devices</li> <li>(6.) Wiring harness to interconnect <u>all</u> components including, Road Water</li> </ul>	tch wir	ing & se	nsor	
Controls shall be mounted to an armrest pedestal, designed to also hou oil light and momentary override switch.	se tarp	switch,	air-gat	e control, low
* Hands on training to be supplied and conducted @ E.C.R.C. Garage*				
Road Watch: con	mply	yes	_no	_
Install road Watch system, the exact location and mounting option will be a	oprove	d by E.C	C.R.C.	
<u>Toolbox:</u> con	mply	yes	_no	<u> </u>
One (1) 18"x18"x18" stainless-steel, mounted on drivers' side in steel saddle neoprene isolation strips for corrosion resistance.	e, with	stainles	s-steel	hardware and
Tarp System:	mply	yes	_no	<u> </u>
Roll Right 6416 Electric Tarp system (to include spool & housing, tarp tensio be installed, complete and tested.	n bow:	s, and 20	O' aspha	alt tarp). Shall
Air Foil:	mply	yes	_no	_
An Air Foil shall be installed. Welded to the rear upper- most portion of the Foil shall be constructed entirely of 201/304 stainless-steel.	tailgat	es on th	e MSV :	spreader.
<u>Lighting:</u> con	mply	yes	_no	_
Auxiliary plow lights and turn signals shall be Buyers LED heated model 1312 aluminum brackets, as approved by Emmet County Road Commission, with underside of hood for extra rigidity.  One (1) roof mounted remotely controlled articulating halogen Spotlight wit Five (5) LED work lights for Underbody blade and sander discharge areas, locinstallation.  Quad flash LED Strobe lights with 4 strobe heads (1 A/G cab mounted, 3 sprewith Amber LED indicator light mounted outside cab near driver's door for Obisconnect Switch.  As approved by Emmet County Road Commission	approtent approtent approved a	ved rein ective d s to be d mounte	forcem ome. etermii ed),	ents on ned at time of
Underbody Scraper:	С	omply	yes	no
Monroe 12" HD4500 to be installed.  Moldboard shall be 1" thick x 20" high x 12" long made of heat-treated high 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 hou power-reverse cylinders with Socatri shafts & crossover relief. Shall include	-carbo using a	n steel. nd trunr	nion mo	ounted. Dual

Kit, (1) each installed on each side of Hanger Board.

Wing Plow:	comply	yes	_no
One (1) Wing plow  Shall be Monroe Snow & Ice, Model 9D FWMB Para-Glide design with Ottawa and complete on the right rearward frame aft of the underbody scraper. An adjustive shall be provided to allow bi-directional sequencing for the up & down fur Lock valves shall be installed to prevent drifting when in stored position.  An adjustable metering valve will be installed to control articulation speeds. (3) LED light shall be installed on top edge of wing nearest to the discharge end in Scab mounted switch.  Wing assembly will be removed seasonally; to expedite removal, quick disconnection both hydraulic and electrical connections.  As approved by Emmet County Road Commission	ustable hydections of the three LED stainless St	draulic s he wing Strobe li eel light	equencing assembly. ghts and an boxes with
Cross Auger Conveyor:	comply	yes	_no
Shall be a Monroe MS-969-DD-DD-SL-201SS with the following requirements, a 3/8" flighting and driven by a 28ci Direct Drive Hydraulic Motor. Spinner assemb and mounted independent of the bottom cleanout door (driver's side). Self-leve Stainless-steel quick disconnects will be incorporated on hydraulic and pre-w Tailgate assembly.	ly shall be 2 ling feature	201/304 e, 18" pc	stainless- steel ly spinner disc.
***Designed to fit Chassis Mount MSV Spreader***			
Note: Tailgate Spreader & Spinner assembly shall be constructed of 201/304 St brackets, reinforcements, and fasteners.	ainless Ste	el, as we	ell as mounting
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, a reinforcements. Plow hitch shall be bolted to $12$ " min. heavy duty structural channel front bump			
Tow Hooks:	comply	yes	_no
Four (4) Heavy-Duty Drop Forged Frame mounted on front and rear frame or W approved by County) with a minimum rating of 44,600 lbs. each.	ing suppor	t structu	res (as
Pre-Wet System:	comply	yes	_no
Supply and install hydraulic truck mounted liquid dispensing system. Shall be opcontrol system.  Dual 75-Gallon UV stabilized polypropylene tanks.  Bulk-fill and Flusher kit with 3-way valve.  Cross over hose kit-connects both tanks together to equalize.  Shall be all stainless-steel brackets and hardware for mounting to MSV chassis more of the control of the cont	nount sprea	ader. ter, stair	nless-steel

Install all in a NEMA enclosure using 201/304 stainless-steel mounting brackets and hardware.

disconnect coupler for ease of seasonal removing.

A Voyager Model VCCS150B Remote Camera System with M.S. Washer System shall be installed to monitor the right-side win Both Remote Camera Heads shall be installed in a protective so The exact location and mounting option will be approved by E.	ng and rear of the material spreader. stainless-steel enclosure.
Wiring:	comply yesno
All wiring from rear of cab to rear of MSV spreader to be run box mounted on left rear corner of MSV spreader. From the j Electronic back-up alarm.	
Switch Panel:	comply yesno
In-power vehicle control module switch panel model VCMS-SS total of 10 switches. The switches will be wired to accommod strobe, front strobe, dolly lock, truck tailgate, V-bottom tailgate Use factory switches where provided.	ate the following applications: plow lights, rear
Pintle Hitch:	comply yesno
Shall be a Buyers BP760 pintle hitch, having a 12,000 lb. toung capacity, mounted to a 3/4" full steel plate with reinforcement two 3/4" 26,500 lb. rated D-rings for safety chains.  Shall include 7-pin round pin & 4-pin trailer plug connector. As	its and bolted in using grade 8 hardware, with (2)
Option #1:	comply yesno
One-Way Ridged Snowplow: Monroe 12' MPFA38-64-12RGD, 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" k 2 ½" 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 son the push frame side of the moldboard. Anti-plow hang-up roller kit, part #00043300.	oar stock support on 18" centers attached to 2 ½ "x
Option # 2:	comply yesno
Heavy duty top grate system for MSV spreader. 3/4"x 2" bar s System to be approved by Emmet County Road Commission	tock on edge, 1-piece (Grizzly style) top grate kit.
NOTE	

**Remote Camera System** 

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

will be met with the following exceptions\*

comply yes \_\_\_\_no \_\_\_\_

# **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

Due 9:00 a.m., Tuesday, May 7, 2024, to:

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

Proposal for one (1):

One (1) Hydraulic System, & Underbody Scraper & One (1) 9'Patrol Wing and Rear cross auger. It is the intent of this specification to provide new equipment necessary to complete (1) Sander Plow truck for Emmet County Road Commission; that shall include Hydraulic System, Underbody Scraper, and 9' Patrol Wing. This shall include the installation of (1) 12' Monroe RDS-144-96-56-201SS, Radius Dump Spreaders, Serial #, 08-07-1597 with pre-wet systems, as supplied by the Emmet County Road Commission.

Make		Model			,	
		Model				
		Model				
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		Model				
submitted with th	of the specifications and the specifications and specifications are specifications and specifications are specifications and specifications are sp	nway Garag	ge, 2265 E. Hat	thaway Rd		
Terms						
Delivery in	days after a	ward of bid				
	Business name					
	Business addre	ss:				
	Business phone	:				_
	Mobile phone:					_
	E-mail address:	_				
	Print name & ti	tle:				_
	Signature:					
	Date:					

#### EMMET COUNTY ROAD COMMISSION

#### MINIMUM SPECIFICATIONS FOR:

One (1) Hydraulic System, & Underbody Scraper & One (1) 9'Patrol Wing and Rear cross auger. It is the intent of this specification to provide new equipment necessary to complete (1) Sander Plow truck for Emmet County Road Commission; that shall include Hydraulic System, Underbody Scraper, and 9' Patrol Wing. This shall include the installation of (1) 12' Monroe RDS-144-96-56-201SS, Radius Dump Spreaders, Serial #, 08-07-1597 with pre-wet systems, as supplied by the Emmet County Road Commission.

## **GENERAL**

The following specifications describe the minimum requirements for a Install of an 12' Stainless-Steel RDS spreader, underbody scraper, 9' 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.

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 intank style. The proper fuel gauge sending unit shall be installed.

Hydraulic System: co	vlam	ves	no
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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, MSV rear discharge conveyor chain, 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, 8-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.

RDS Hoist:	Comply	YesNo					
Dump body hoist shall be manufactured by Mailhot, telescopic design with trunnion mounting, trunnion collar shall be oscillating, all pivots, pins, and 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, top stage self-bleeding and to be operated off the crank shaft driven hydraulic system.							
Material Spreader, Sander, Dump Box & Pre-Wet		<u>Controls:</u> YesNo					
Rexroth Bosch CS-160/660 System consisting of	six basic comp	nents.					
<ul> <li>(1.) Joy-Stick Control Console</li> <li>(2.) Switch module</li> <li>(3.) Ground Speed Sensor</li> <li>(4.) Feed-back devices</li> <li>(5.) Actuator devices</li> <li>(6.) Wiring harness to interconnect <u>all</u> compon Road Watch wiring &amp; sensor</li> <li>Controls shall be mounted to an armrest pedes control, low oil light and momentary over-rides</li> <li>* Hands on training to be supplied and conduct</li> </ul>	tal, designed to		te				
Road Watch:		comply yesno					
Install road Watch system, the exact location and mount	ing option will b	approved by E.C.R.C.					
Toolbox:	Comply	YesNo					
One (1) 18"x18"x18" Stainless Steel, mounted on d neoprene isolation strips for corrosion resistance. Per unit	rivers' side in si	eel saddle, with S/S hardware	and				
Tarp System:	Comply	YesNo					
Roll Right 6416 Electric Tarp system (to include spo Shall be installed, complete and tested. Per unit	ol & housing, ta	rp tension bows, and 20' asph	nalt tarp)				
Lighting:	Comply	YesNo					

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. Per unit Comply **Underbody Scraper:** 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 in accordance with Monroe Snow & Ice installation procedures. 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. Spinner assembly shall be 201/304 stainless- steel and mounted independent of the bottom cleanout door (driver's side). Selfleveling feature, 18" poly spinner disc. Stainless-steel quick disconnects will be incorporated on hydraulic and pre-wet hoses to facilitate removal of Tailgate assembly. \*\*\*Designed to fit RDS Spreader\*\*\* 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

ECRC BID # 2024-B 12' Stainless-Steel RDS Spreader -bid due 9:00a 5/7/24.

tabs, with reinforcements.

Plow hitch shall be bolted to 12" min. heavy duty sends.  Per unit	tructural chan	nel fron	t bumper flared back with boxed
Tow Hooks:	Comply	Yes	No
Four (4) Heavy-Duty Drop Forged Frame mounted approved by County) with a minimum rating of 44, Per unit		ear fram	e or Wing support structures (as
Pre-Wet System:	Comply	Yes	No
<b>Note</b> : Pre-wet systems will be supplied by the E.C.F any parts necessary to provide serviceable working tanks & spray nozzles as necessary.			
Remote Camera System:	Comply	Yes	No

A Voyager Model VCCS150B Remote Camera Systems with M.S. Foster & Associates, Inc. Model MSF8470038000 Washer System shall be installed to monitor the Rear and Right-side blind spots of Material Spreaders.

Both Remote Camera Heads shall be installed in a protective Stainless-Steel enclosure.

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

Per unit

## Option 1:

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 ½ "x 2 ½" 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.
- Per unit

## Option 2:

Heavy duty top grate system for RDS material spreaders. System to be approved by Emmet County Road Commission

I have read and understand the instr specifications will be met with the following	ructions in the bid specifications, and I certify that the above exceptions*
* Differences in bid specifications must be N	•
	Signature & Title

# **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

Signature and Title

Submitted by:

**Business Name** 

Due 9:00 a.m., Tuesday, May 7, 2024, to:

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

Proposal for one (1):

One (1) Hydraulic System, Underbody Scraper, One (1) 9'Patrol Wing and Rear Cross Aguer.

One (1) 12' 201/304 Stainless Steel Dump Box, (Dump box will be installed, made sure all functions work, removed, and install of owner supplied sander body)

It is the intent of this specification to provide new equipment necessary to complete (1) Sander Plow truck for Emmet County Road Commission; that shall include Hydraulic System, Underbody Scraper, and 9' Patrol Wing and Rear Cross Auger. This shall include the installation of (1) 12' Monroe MSV/144/84/56/30, Chassis Mounted Spreader, Serial #, 99-09-8734 with pre-wet systems, as supplied by the Emmet County Road Commission. The up-fitter will supply and install any parts necessary to provide serviceable working systems.

Make	Model	,
Make	Model	,
Make	Model	,
Make	·	,
Make	Model	,
Make		,
Exceptions to any of t	he specifications attached	the attached specification sheet unless otherwise noted. If should be clearly noted/highlighted by the bidder and arage, 2265 E. Hathaway Rd, Harbor Springs, MI 49740.
Total price (tax exemp	ot) 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:	
	Nate:	

#### EMMET COUNTY ROAD COMMISSION

#### MINIMUM SPECIFICATIONS FOR:

One (1) Hydraulic System, Underbody Scraper, One (1) 9'Patrol Wing and Rear Cross Aguer.

One (1) 12' 201/304 Stainless Steel Dump Box, (Dump box will be installed, made sure all functions work, removed, and install of owner supplied sander body)

It is the intent of this specification to provide new equipment necessary to complete (1) Sander Plow truck for Emmet County Road Commission; that shall include Hydraulic System, Underbody Scraper, and 9' Patrol Wing and Rear Cross Auger. This shall include the installation of (1) 12' Monroe MSV/144/84/56/30, Chassis Mounted Spreader, Serial #, 99-09-8734 with pre-wet systems, as supplied by the Emmet County Road Commission. The up-fitter will supply and install any parts necessary to provide serviceable working systems.

### **GENERAL**

The following specifications describe the minimum requirements for an Install of a 12' Stainless-Steel Dump box, underbody scraper, 9' wing, rear cross auger conveyor. This shall include the installation of (1) 12' Monroe MSV/144/84/56/30, Chassis Mounted Spreader, Serial #, 99-09-8734 with pre-wet systems, as supplied by the Emmet County Road Commission. 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.

and to award the bid in the best interest of the Emmet County Road Commission.				
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 intank style. The proper fuel gauge sending unit shall be installed.

<b>Hydraulic System</b>	comply	yes_	no	
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, MSV rear discharge conveyor chain, 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, 8-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.

Stainless-Steel Dump Box:	
---------------------------	--

COMPLY YES\_\_\_ NO\_\_\_

12' Stainless-steel Crysteel dump box

144" long

87" inside width

96" outside width

Front 50" high, sides 44" high, tailgate 44" high, (all inside dimensions)

11 Cubic Yard capacity

Front sides & tailgate 7ga. 201 Stainless Steel

Floor, 1/4" thick AR400 Steel min.

Sealed understructure

18" Rear pillar & Front pillar width

Air release tailgate, w/ 3-1/2" cylinder

Heavy duty 9-panel tailgate

Double banjo ears & Heavy-duty tailgate chains

All tailgate linkage shall be grease able including upper pins.

24" 10-gauge 201 Stainless Steel cab shield, continuously welded.

(2) 3-Hole oval light box's P/N 00089105B welded to uppermost outside of rear corner posts.

SS shovel holder and SS ladder

## **Hoist System:**

COMPLY YES NO

Crysteel Turbo T63113 Telescopic cylinder, 110 Performance Class.

Capacity - 42 ton telescopic 3-Stage cylinder

Chrome plated cylinder sections

6", 5", 4" cylinder stage sizes

50-degree dump angle

(2) Heavy Duty body props with grease fittings

Heavy Duty grease able rear hinge line with removable pins

Hoist to operate at published rated capacity @ 2,500 PSI

Body and Hoist shall have a 5-year warranty; 3 years full warranty and remaining 2 years at 50/50 parts & labor.

# Material Spreader, Sander, Dump Box & Pre-Wet and Cross auger 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 <u>all</u> 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\*

Road Watch:	comply yesno
Install road Watch system, the exact location and mount	ing option will be approved by E.C.R.C.
Toolbox:	Comply YesNo
One (1) 18"x18"x18" Stainless Steel, mounted on driver isolation strips for corrosion resistance.  Per unit	s' side in steel saddle, with S/S hardware and neoprene
Tarp System:	Comply YesNo
Roll Right 6416 Electric Tarp system (to include spool & installed, complete and tested.  Per unit	housing, tarp tension bows, and 20' asphalt tarp). Shall be
Air Foil:	COMPLY YES NO
An Air Foil shall be installed. Welded to the rear uppershall be constructed entirely of 201/304 stainless-steel.	most portion of the tailgates on the MSV spreader. Foil
Lighting:	Comply YesNo
Auxiliary plow lights and turn signals shall be Buyers LED aluminum brackets, as approved by Emmet County Road of hood for extra rigidity.  One (1) roof mounted remotely controlled articulating how five (5) LED work lights for Underbody blade and sander installation.  Quad flash LED Strobe lights with 4 strobe heads (1 A/G with Amber LED indicator light mounted outside cab need bisconnect Switch.  As approved by Emmet County Road Commission.	d Commission, with approved reinforcements on underside lalogen Spotlight with protective dome.  discharge areas, locations to be determined at time of cab mounted, 3 spreaders mounted),
Per unit	
<u>Underbody Scraper:</u>	Comply YesNo
Monroe 12" HD4500 to be installed.  Moldboard shall be 1" thick x 20" high x 12" long made of 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 Dual power-reverse cylinders with Socatri shafts & cross	in shock spring housing and trunnion mounted.

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 FWME complete on the right rearward frame aft of the installation procedures. An adjustable hydraulic sequencing for the up & down functions of the when in stored position. An adjustable metering valve will be installed to ICC light shall be installed on top edge of wing mounted switch. Wing assembly will be removed seasonally; to e both hydraulic and electrical connections. As approved by Emmet County Road Commission	e underbody scra sequencing val wing assembly. control articula earest to the di expedite remova on.	aper in a ve shall Lock val ation spo scharge	accordar be provi lves shall eeds. (3) end in S	ded to allow bi-directional be installed to prevent drifting three LED Strobe lights and an LED stainless Steel light boxes with cab ect provisions shall be provided for	
Cross Auger Conveyor:	Comply	Yes	No	_	
Shall be a Monroe MS-969-DD-DD-SL-201SS wi 3/8" flighting and driven by a 28ci Direct Drive I and mounted independent of the bottom cleane Stainless-steel quick disconnects will be incor Tailgate assembly. ***Designed to fit Chassis m	Hydraulic Motor out door (driver porated on hyd	r. Spinne 's side). draulic	er assem Self-levo and pre-	bly shall be 201/304 stainless- steel eling feature, 18" poly spinner disc.	
Plow Hitch:	Comply Yes	No			
Hustings style heavy duty 34" wide Quick Hitch And lift arm. Plunger pins shall be a Monroe p/r reinforcements. Plow hitch shall be bolted to 12" min. heavy dut Per unit	n# 05022221 wit	th greas	e zerks,		
Tow Hooks:	Comply	Yes_	No		
Four (4) Heavy-Duty Drop Forged Frame mounts by County) with a minimum rating of 44,600 lbs Per unit	ed on front and				
Pre-Wet System:	Comp	ly	Yes	No	
<b>Note</b> : Pre-wet systems will be supplied by the E.C.R.C. as is with unit; the up-fitter will supply and install any parts necessary to provide serviceable working systems. To include controls and relocation of poly tanks & spray nozzles as necessary.					
Remote Camera System:	Compl	y Yes	No	_	

A Voyager Model VCCS150B Remote Camera Systems with M.S. Foster & Associates, Inc. Model MSF8470038000 Washer System shall be installed to monitor the Rear and Right-side blind spots of Material Spreaders.

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. Per unit

## Option 1:

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
   "x 2 ½" 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.
- Per unit

# Option 2:

Heavy duty top grate system for MSV material spreaders. System to be approved by Emmet County Road Commission

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 Exception and Clarifications to Bid Specifications.

Signature & Title	

# **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

**Business Name** 

Submitted by:

Signature and Title

# Due 9:00 a.m., Tuesday, May 7, 2024, to:

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

Proposal for one (1)	•						
One (1) 12' Stainless-	Steel MSV Chassis Mo	ount sp	reader (201/3	304 Stainless	-Steel)		
One (1) 12' 201/304 S	Stainless Steel Dump	Вох					
One (1) Hydraulic Sys	-	•	& 9' Wing.				
One (1) Rear mounted		or.					
One (1) Pre-wet syste							
Installed and complet	te.						
We agree to furnish	the Emmet County Ro	oad Cor	nmission the	following:			
Make	Mo	odel			,		
Make	Me	odel					
Make	Me	odel					
Make	Me	odel			,		
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Which will meet the	minimum requireme	nts on t	the attached s	pecification	sheet unles	ss otherwise	noted.
	f the specifications at			•			
·	proposal. F.O.B Conv			•		•	
		•	3 /	,	, ,	<b>3</b> /	
Total price (tax exer	npt) for one \$						
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Terms							
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Delivery III	uays after aw	aru or b	ли				
	Business name:						
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	Print name & title	٠.					
	& title						
	Cianatura						
	Signature:	,					

Date:

#### EMMET COUNTY ROAD COMMISSION

### MINIMUM SPECIFICATIONS FOR:

One (1) 12' Stainless-Steel MSV Chassis Mount spreader (201/304 Stainless-Steel)

One (1) 12' 201/304 Stainless Steel Dump Box

One (1) Hydraulic System, & Underbody Scraper & 9' Wing.

One (1) Rear mounted Cross auger conveyor.

One (1) Pre-wet system.

Installed and complete.

### **GENERAL**

The following specifications describe the minimum requirements for a Install of an 12' Stainless-Steel Chassis mounted MSV spreader, 12' Stainless-Steel Dump box, underbody scraper, 9' 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.

## **MSV Chassis Mount Spreader**

comply	yes	no

# \*\*\*Chassis Mount Spreader-for Truck bid of 2023L\*\*\*

Sander constructed of stainless-steel (201/304) with a 2" double crimp formed top for greater strength. Approx. dimensions are 144" long x 84" outside width x 55" tall with 45-degree sloped sides. Cross sills are 3" X 3/16" formed stainless-steel channel.

Chain shields are 10 ga. thick stainless-steel, bolted in with stainless-steel bolts & nuts: removable style. Side supports are 10-gauge stainless-steel and extend the full angled side height of the hopper, placed approx. 2' on center; continuously welded. The rear end plate is 10-gauge stainless-steel, reinforced inside and supported for maximum strength.

Longsills manufactured of 7-gauge stainless-steel and continue beyond the spreader to support the Auger Spreader (MS969) assembly. Both ends shall be slotted to accommodate easy drive and idler shaft removal.

Conveyor Trough is 24" wide, two 6:1 gear boxes with hardened high strength steel alloy gears, supported by ball bearings mounting on a 2" shaft driven by (2) low speed hi-torque motors. Include torque link brackets to reduce gear box stress. One motor (1) to include 100 pulse speed sensor, the drive shaft is supported by (2) keyed 8-tooth cast- gray sprockets that drive the chain. The 2" idler shaft and keyed sprockets are adjustable through the self-aligning 4-bolt flange bearings with two heavy-duty spring-loaded adjuster rods. Design allows 4 inches of adjustment. Grease-able and adjustable from the rear.

Stainless-steel hydraulic tubing to accommodate main chain, cross auger, spinner; shall be mounted to the hopper body minimum 16" off the catwalks and clamps and stainless-steel hardware, 6 tubes drivers' side (1) 1-1/4" tube and three (3) 3/4" tubes and 2 tubes (2) ½".

Conveyor chain is heat treated with 2.25 pitched self-cleaning Pintle type, 7/16" pins with a 21,000 # per strand tensile strength. **High temp belt over chain**. The system includes front and rear wipers.

Conveyor floor is 3/16 stainless-steel removable bolt in style using stainless-steel hardware.

Intermediate floor supports are stainless-steel angle iron braces on 12" centers.

The feed-gate is 12" X 18", 7-gauge stainless-steel and adjustable with self-locking screw-type jack, giving ruler accurate metering. Jack is grease-able, non-rusting poly U-joint and has a stainless-steel crank handle. Manual full opening rear tailgate.

Top screens are 12" elevated carbon steel with heavy duty angle iron frame. ½"x2" bars on 4" centers. Four-inch channel end supports, 6" 9lb main beam, unit bolts on to the top flange of the sander body with stainless-steel hardware. To include center lift loop. Painted all black.

Catwalks, min. 3/16" thick, smooth 201/304 stainless-steel both sides. Shall include support kit, reinforced to hold additional weight of pre-wet tanks. Approx 1100lbs each side.

Cab-Shield; has 20" coverage, constructed of 3/16" 201/304 stainless-steel, 100% continuous welded inside and out to the front of the body.

Chassis Mounting kit to include 3/4x3/4 angle pinch clamps with front spring loaded to prevent frame damage.

MTG KIT, MV/MSV, CHASSIS,8'-11'33.625/35.25 FRAME, W/SPRG, 201/304

201/304 stainless-steel sander, all welding is continuous, all hardware is stainless-steel. Stainless-steel is unpainted.

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

The ladder shall be bolt on 201/304 stainless-steel hinge down style with 6 rungs. With inside box step.

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

Нν	/drau	lic	&	Fue	l Tan	ks:
	a. aa		•			

Comply	yes _	no	
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## 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 intank style. The proper fuel gauge sending unit shall be installed.

Hydraulic Sy	ystem:
--------------	--------

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, MSV rear discharge conveyor chain, 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, 8-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.

## **Stainless-Steel Dump Box:**

CONTENT 153 NO	OMPLY YES	NO
----------------	-----------	----

12' Stainless-steel Crysteel dump box

144" long					
87" inside width					
96" outside width					
Front 50" high, sides 44" high, tailgate 44" high, (all inside dimensions)					
11 Cubic Yard capacity					
Front sides & tailgate 7ga. 201 Stainless Steel					
Floor, 1/4" thick AR400 Steel min.					
Sealed understructure					
18" Rear pillar & Front pillar width					
Air release tailgate, w/ 3-1/2" cylinder					
Heavy duty 9-panel tailgate					
Double banjo ears & Heavy-duty tailgate chains					
All tailgate linkage shall be grease able including upper pins.					
24" 10-gauge 201 Stainless Steel cab shield, continuously welded.					
(2) 3-Hole oval light box's P/N 00089105B welded to uppermost outsid	le of rear co	orner	posts.		
SS shovel holder and SS ladder					
Hoist System:	COMPLY	YES_	NO	)	
Crystaal Turba T62112 Talassania sulindar, 110 Parformansa Class					
Crysteel Turbo T63113 Telescopic cylinder, 110 Performance Class.					
Capacity - 42 ton telescopic 3-Stage cylinder					
Chrome plated cylinder sections					
6", 5", 4" cylinder stage sizes					
50-degree dump angle (2) Heavy Duty body props with grease fittings					
Heavy Duty grease able rear hinge line with removable pins					
Hoist to operate at published rated capacity @ 2,500 PSI		2	+ 50	/FOt.a	0 1-1
Body and Hoist shall have a 5-year warranty; 3 years full warranty and r	remaining <i>i</i>	2 year	's at 50/	'50 parts	& labor.
Material Spreader, Sander, Dump Box & Pre-Wet and Cross auger Con			Voc	No	
	Comply		Yes	No	
Rexroth Bosch CS-160/660 System consisting of six basic component	ts.				
(1.) Joy-Stick Control Console					
(2.) Switch module					
<ul><li>(3.) Ground Speed Sensor</li><li>(4.) Feed-back devices</li></ul>					
(5.) Actuator devices					
(6.) Wiring harness to interconnect <u>all</u> components including,					
Road Watch wiring & sensor					
Controls shall be mounted to an armrest pedestal, designed to also	house tar	p swit	ch, air-و	gate cont	trol, low oil
light and momentary override switch.					
* Hands on training to be supplied and conducted @ E.C.R.C. Garag	ge*				
Road Watch:	Comply		yes	no	_
Install road Watch system, the exact location and mounting option will I	be approve	ed by I	E.C.R.C.		

Toolbox:	Comply	Yes	No
One (1) 18"x18"x18" Stainless Steel, mounted on drivers' side isolation strips for corrosion resistance. Per unit	e in steel saddle, with S/S	S hardwar	e and neoprene
Tarp System:	Comply	Yes	No
Roll Right 6416 Electric Tarp system (to include spool & housi installed, complete and tested. Per unit	ing, tarp tension bows, a	nd 20' asp	ohalt tarp). Shall be
Lighting:	Comply	Yes	No
Auxiliary plow lights and turn signals shall be Buyers LED head aluminum brackets, as approved by Emmet County Road Conference of hood for extra rigidity.  One (1) roof mounted remotely controlled articulating halogofive (5) LED work lights for Underbody blade and sander disclinstallation.  Quad flash LED Strobe lights with 4 strobe heads (1 A/G cab right Amber LED indicator light mounted outside cab near drightsconnect Switch.  As approved by Emmet County Road Commission.  Per unit	nmission, with approved en Spotlight with protect harge areas, locations to mounted, 3 spreaders mo	reinforce ive dome be deteri	ments on underside mined at time of
Underbody Scraper:	Comply	Yes	No
Monroe 12" HD4500 to be installed.  Moldboard shall be 1" thick x 20" high x 12" long made of head 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 shall power-reverse cylinders with Socatri shafts & crossover Shall include a manifold bracket for a Grease line Kit, (1) each Hanger Board.	nock spring housing and t	runnion r	mounted.
Wing Plow:	Comply	Yes	No
One (1) Wing plow Shall be a Monroe Snow & Ice, Model 9D FWMB Para-Glide d complete on the right rearward frame aft of the underbody s installation procedures. An adjustable hydraulic sequencing v sequencing for the up & down functions of the wing assembly	craper in accordance wit	th Monroe allow bi-	e Snow & Ice directional

when in stored position.

An adjustable metering valve will be installed to control articulation speeds. (3) three LED Strobe lights and an 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.

Shall be a Monroe MS-969-DD-DD-SL-201SS with the following 3/8" flighting and driven by a 28ci Direct Drive Hydraulic Motor. and mounted independent of the bottom cleanout door (driver's Stainless-steel quick disconnects will be incorporated on hydr Tailgate assembly. ***Designed to fit Chassis mount MSV Spread	Spinner assembly shales side). Self-leveling features and pre-wet ho	l be 201/304 stainless- steel ature, 18" poly spinner disc.
Plow Hitch:	Comply Yes	No
Hustings style heavy duty 34" wide Quick Hitch with 3" double at And lift arm. Plunger pins shall be a Monroe p/n# 05022221 with reinforcements.  Plow hitch shall be bolted to 12" min. heavy duty structural chan Per unit	grease zerks, and sec	
Tow Hooks:	Comply Yes	No
Four (4) Heavy-Duty Drop Forged Frame mounted on front and reby County) with a minimum rating of 44,600 lbs. each.  Per unit	ear frame or Wing sup	port structures (as approved
Pre-Wet System: Supply and install hydraulic truck mounted liquid dispensing syst system. Dual 75-Gallon UV stabilized polypropylene tanks. Bulk-fill and Fl Cross over hose kit-connects both tanks together to equalize. Shall be all stainless-steel brackets and hardware for mounting to 7 GPM bronze pump with stainless-steel shaft, driven by hydraul suction strainer, (2) brass spray nozzles129 orifice, 5 psi checket coupler for ease of seasonal removing. Install all in a NEMA enclosure using 201/304 stainless-steel mounting.	usher kit with 3-way von MSV chassis mount sic motor, include flow valve (located as high	alve. spreader. meter, stainless-steel as possible), poly disconnect
Remote Camera System:	-	YesNo
A Voyager Model VCCS150B Remote Camera Systems with M.S. Washer System shall be installed to monitor the Rear and Right-SBoth Remote Camera Heads shall be installed in a protective Stain The exact location and mounting option will be approved by E.C. Per unit	side blind spots of Mat inless-Steel enclosure.	erial Spreaders.

**Cross Auger Conveyor:** 

Comply

Yes\_\_\_\_No\_\_\_\_

## Option 1:

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 ½ "x 2 ½" 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.
- Per unit

# Option 2:

Heavy duty top grate system for RDS material spreaders. System to be approved by Emmet County Road Commission

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 Exception and Clarifications to Bid Specifications.

Signature & Title

# **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**

**EXCEPTIONS AND CLARIFICATIONS TO BID SPECIFICATIONS** 

## Due 9:00 a.m., Tuesday, May 7, 2024, to:

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

Proposal for two (2):

Two (2) Hydraulic System, Underbody Scraper, Two (2) 9'Patrol Wing and Rear Cross Augers.

**Two (2) 14' 201 Stainless Steel Dump Boxes,** (Dump box will be installed, made sure all functions work, removed, and install of owner supplied sander body)

It is the intent of this specification to provide new equipment necessary to complete Two (2) Sander Plow truck for Emmet County Road Commission; that shall include Hydraulic System, Underbody Scraper, and 9' Patrol Wing and Rear Cross Auger.

This shall include the installation of Two (2) 14' Monroe MSV/168/84/304SS Chassis Mounted Spreader, with pre-wet systems, as supplied by the Emmet County Road Commission.

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ubmitted with th	nis proposal. F.O.B Coi	nway Garage, 2265 E. H	lathaway Rd, Harbor Springs, N
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Date:

#### **EMMET COUNTY ROAD COMMISSION**

#### MINIMUM SPECIFICATIONS FOR:

Two (2) Hydraulic System, Underbody Scraper, Two (2) 9'Patrol Wing and Rear Cross Augers.

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Serial # 06-03-7070

Serial # 06-06-7073

### **GENERAL**

The following specifications describe the minimum requirements for an Install of a two (2) 14' Stainless-Steel Dump boxes, underbody scraper, 9' wing, rear cross auger conveyor. This shall include the installation of (2) 14' Monroe MSV/168/84/56/304SS Chassis Mounted Spreaders, Serial #, 06-03-7070 & 06-03-7073 with pre-wet systems, as supplied by the Emmet County Road Commission. 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.

<u>Hydra</u>	aulic &	. Fue	el Tank	<u>(s:</u>	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 intank style. The proper fuel gauge sending unit shall be installed.

Hydraulic System:	Comply	YES	NO
riyaraane system.	Compry	1 2	110

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, MSV rear discharge conveyor chain, 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, 8-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. Comply YES\_\_\_ NO\_\_\_ **Stainless-Steel Dump Box:** 14' Stainless-steel Crysteel dump box 168" long 87" inside width 96" outside width Front 50" high, sides 44" high, tailgate 44" high, (all inside dimensions) 11 Cubic Yard capacity Front sides & tailgate 7ga. 201 Stainless Steel Floor, 1/4" thick AR400 Steel min. Sealed understructure 18" Rear pillar & Front pillar width Air release tailgate, w/ 3-1/2" cylinder Heavy duty 9-panel tailgate Double banjo ears & Heavy-duty tailgate chains All tailgate linkage shall be grease able including upper pins. 24" 10-gauge 201 Stainless Steel cab shield, continuously welded. (2) 3-Hole oval light box's P/N 00089105B welded to uppermost outside of rear corner posts. SS shovel holder and SS ladder Comply YES\_\_\_ NO\_\_\_ **Hoist System:** Crysteel Turbo T63113 Telescopic cylinder, 110 Performance Class. Capacity - 42 ton telescopic 3-Stage cylinder Chrome plated cylinder sections 6", 5", 4" cylinder stage sizes 50-degree dump angle (2) Heavy Duty body props with grease fittings

Heavy Duty grease able rear hinge line with removable pins

Hoist to operate at published rated capacity @ 2,500 PSI

Body and Hoist shall have a 5-year warranty; 3 years full warranty and remaining 2 years at 50/50 parts & labor.

## Material Spreader, Sander, Dump Box & Pre-Wet and Cross auger 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 <u>all</u> 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*			
Road Watch:	Comply	YES	_ NO
Install road Watch system, the exact location and mounting option will be approved by	E.C.R.C.		
<u>Toolbox:</u> One (1) 18"x18"x18" Stainless Steel, mounted on drivers' side in steel saddle, with S/S isolation strips for corrosion resistance. Per unit	Comply hardware a		
Tarp System: Roll Right 6416 Electric Tarp system (to include spool & housing, tarp tension bows, and installed, complete and tested. Per unit	Comply d 20' aspha		
Air Foil:	Comply	YES	NO
An Air Foil shall be installed. Welded to the rear upper- most portion of the tailgates on shall be constructed entirely of 201/304 stainless-steel.	the MSV s	preader	r. Foil
Lighting:	Comply	YES	_ NO
Auxiliary plow lights and turn signals shall be Buyers LED heated model 131200 hood maluminum brackets, as approved by Emmet County Road Commission, with approved motion of hood for extra rigidity.  One (1) roof mounted remotely controlled articulating halogen Spotlight with protective Five (5) LED work lights for Underbody blade and sander discharge areas, locations to be 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 Disconnect Switch.  As approved by Emmet County Road Commission.  Per unit	einforcemo re dome. re determin unted),	ents on i	underside me of
<u>Underbody Scraper:</u>	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 (include 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 tree 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.		unted.	
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 in accordance with Monroe Snow & Ice installation procedures. 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 drifting when in stored position.

An adjustable metering valve will be installed to control articulation speeds. (3) three LED Strobe lights and an 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. Spinner assembly shall be 201/304 stainless- steel and mounted independent of the bottom cleanout door (driver's side). Self-leveling feature, 18" poly spinner disc. Stainless-steel quick disconnects will be incorporated on hydraulic and pre-wet hoses to facilitate removal of Tailgate assembly. ***Designed to fit Chassis mounted MSV Spreader***						
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, a reinforcements.  Plow hitch shall be bolted to 12" min. heavy duty structural channel front bump Per unit		-				
Tow Hooks:	Comply	YES	NO			
Four (4) Heavy-Duty Drop Forged Frame mounted on front and rear frame or W by County) with a minimum rating of 44,600 lbs. each.  Per unit	ing suppoi	rt structu	res (as approved			
Pre-Wet System:	Comply	YES	NO			
<b>Note</b> : Pre-wet systems will be supplied by the E.C.R.C. as is with unit; the up-fitter will supply and install any parts necessary to provide serviceable working systems. To include controls and relocation of poly tanks & spray nozzles as necessary.						
Remote Camera System:	Comply	YES	NO			

A Voyager Model VCCS150B Remote Camera Systems with M.S. Foster & Associates, Inc. Model MSF8470038000 Washer System shall be installed to monitor the Rear and Right-side blind spots of Material Spreaders. 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.

Per unit

## Option 1:

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Exception and Clarifications to Bid Specifications.

Signature & Title

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Underbody Scraper			
Wing Plow			
Sander & Pre-Wet S	System & Controls		
Lighting			
		_	
Option's 1 & 2			
C. Jameitta J. L.			
Submitted by: Sign	nature and Title	 Business Name	