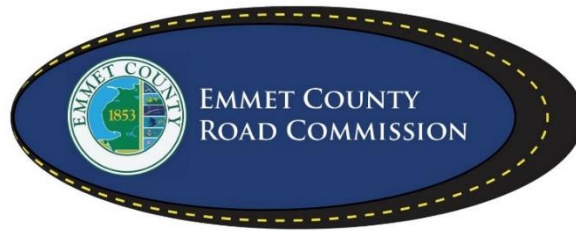


Frank Zulski – Chair
Mark W. Hoffman – Vice Chair
Wade Williams – Member
Brent Shank, PE
Engineer-Manager
Lisa Kleeman
Finance Director



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 www.emmetcrc.org 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) 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.**

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) 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 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) 1/2".

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. 1/2"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.

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, 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

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*

Road Watch:

comply yes ___no ___

Install road Watch system, the exact location and mounting option will be approved by E.C.R.C.

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 MSV spreader. 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 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 drifting when in stored position.

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

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 MSV spreader to be run on PVC pipes, then into an 18 pin Betts junction box mounted on left rear corner of MSV 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 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. As 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 MSV 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

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.

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) 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 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, 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 Yes ___ No ___

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 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 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 over-ride 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.

Toolbox:

Comply Yes ___ No ___

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

Per unit

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.

Per unit

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.

Per unit

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 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). 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 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 tabs, with reinforcements.

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

Per unit

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.

Per unit

Pre-Wet System: Comply Yes ___ No ___

Note: 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.

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 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.
- 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

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.

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 _____	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) Hydraulic System, Underbody Scraper, One (1) 9’Patrol Wing and Rear Cross Auger.

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.

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, 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 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*

Road Watch: comply yes ___ no ___

Install road Watch system, the exact location and mounting option will be approved by E.C.R.C.

Toolbox: Comply Yes ___ No ___

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

Per unit

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.

Per unit

Air Foil: COMPLY YES ___ NO ___

An Air Foil shall be installed. Welded to the rear upper- most portion of the tailgates on the MSV spreader. 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.

Per unit

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 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, 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.
Per unit

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.
Per unit

Pre-Wet System: Comply Yes ___ No ___

Note: 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:

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.
- 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

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) 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.

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) 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) 1/2".

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. 1/2"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.

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, 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 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*

Road Watch:

Comply yes___no___

Install road Watch system, the exact location and mounting option will be approved by E.C.R.C.

Toolbox: Comply Yes ___ No ___

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

Per unit

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.

Per unit

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.

Per unit

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 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 mount 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, 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.

Per unit

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.

Per unit

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 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 mount spreader.

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 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 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.
- 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

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 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.

Serial # 06-03-7070

Serial # 06-06-7073

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:

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.

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.

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, 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___

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

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 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*

Road Watch: Comply YES___ NO___

Install road Watch system, the exact location and mounting option will be approved by E.C.R.C.

Toolbox: Comply YES___ NO___

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

Per unit

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.

Per unit

Air Foil: Comply YES___ NO___

An Air Foil shall be installed. Welded to the rear upper- most portion of the tailgates on the MSV spreader. 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.

Per unit

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 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, 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.

Per unit

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.

Per unit

Pre-Wet System:

Comply YES___ NO___

Note: 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:

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.
- 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

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