



HIGHWAY DEPARTMENT

Patrick Gavinski, Highway Commissioner

Telephone (608) 355-4855/Fax (608) 355-4398 P.O. Box 26, Baraboo, WI 53913

Quotations for: Single Axle Patrol Truck Accessory Equipment

Quotations will be reviewed:

Location: Sauk County Highway Department

Date: April 10, 2019

Time: 9:30 A.M.

Contact Person:

Sauk County Highway Department: Patrick Gavinski
Sauk County Highway Commissioner
Telephone: 608-355-4855

Sauk County Highway Department reserves the right to accept any quotation or option deemed most advantageous to Sauk County. The submitters are reminded to make sure their quotation package is complete and has been properly filled out and signed before submittal.

Submitter: _____

Name: _____

Address: _____

Telephone: _____

REQUEST FOR PRICE QUOTATIONS ON
SINGLE AXLE PATROL TRUCK ACCESSORY EQUIPMENT

GENERAL PROCEDURE

To comply with this REQUEST FOR PRICE QUOTATIONS, the following general procedure and attached specifications are to govern. All quotations must be in the office of the Sauk County Highway Commissioner by Wednesday, April 10, 2019 at 9:30 A.M.

Quotations must be sealed and properly identified with the name and address of the company submitting the quotations. Each quotation must be in a separate container or envelope and marked "Quotation On Single Axle Patrol Truck Accessory Equipment".

All quotations must be submitted on the attached forms in order to be considered by Sauk County Highway Committee. The following items shall constitute a complete quotation.

1. General Procedure Sheet.
2. Specification list.
3. Completed Quotation Form(s).
4. Warranty Questionnaire.
5. Detailed specification sheet and any additional information deemed advisable by the submitter of the quotation for the benefit of the Highway Committee in assembling comparative data.

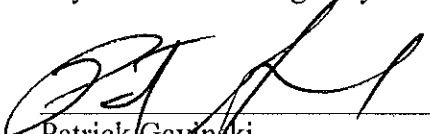
No certified cashiers check or bonds will be required with any quotation, but satisfactory evidence of ability to make delivery of the equipment as specified must be submitted as agreed by both parties.

All quotations will be opened and read by the Highway Committee at the time and date specified above.

The Committee reserves the right to consider all quotations for a period of not exceeding thirty (30) days from date of opening. The Highway Committee will either accept a quotation or reject all quotations within that period of time.

Each company submitting a quotation will be allowed to have a representative appear before the Committee to explain their quotation. A time limit for any such presentation will be established by the Committee at the time that the quotations are opened. The Sauk County Highway Committee reserves their right to reject any or all quotations or parts thereof, and to waive any technicality in any quotation submitted, and to accept such quotations as they deem to be most advantageous to Sauk County.

By Order of the Highway Committee



Patrick Gavinski
Sauk County Highway Commissioner

WARRANTY

Successful bidder shall furnish Warranty covering the Single Axle Patrol Truck Accessory Equipment complete as contained in this proposal and as bid. Warranty to cover and protect Sauk County against faulty material and workmanship covering any and all parts on the complete Single Axle Patrol Truck Accessory Equipment as delivered.

Bidders shall state here the number of days or hours of operation the Warranty will be in effect following the date of delivery to the County of the Dump Body and Central Hydraulic System.

Number of Days _____ Number of Hours _____

What parts of the Single Axle Patrol Truck Accessory Equipment and complete equipment as delivered will not be covered by such a Warranty?

Does Warranty cover replacement parts only? Yes _____ No _____

(A) Does Warranty cover just the replacement of parts F.O.B. Sauk County Garage, Baraboo, WI? Yes _____ No _____

(B) Does Warranty cover the replacement of the parts and all labor to make such replacements on the Hydraulic System at no cost to Sauk County? Yes _____ No _____

If such replacement parts and all labor necessary for making such replacement is covered in the Warranty at no cost to Sauk County will such work be performed by the bidders mechanics in the Sauk County Garage, Baraboo, WI.? Yes _____ No _____

If not, give the name and address of the location of such service that will be made by the bidder.

GENERAL REMARKS pertinent to conditions of Warranty given.

NAME AND LOCATION OF 24 HOUR PARTS - SERVICE

SAUK COUNTY HIGHWAY DEPARTMENT

QUOTATION

List Price: One (1) - Single Axle Patrol Truck Accessory Equipment

Total Net Cost, F.O.B. Baraboo
As Bid per Specifications

\$ _____

Total Net Cost, F.O.B. Baraboo
Bid for Equipment Only

\$ _____

Delivery Date: _____

The Sauk County Highway and Parks Committee reserves the right to accept this quotation with or without trade-in.

Name of Company
Submitting Quotation:

By

Title

Address

Telephone Number:

Single Axle Patrol Truck Accessory Equipment

This equipment must be new and the latest type and model manufactured. Enclosed you will find bid specifications for several pieces of equipment. We would like these specifications met. However, it is not our intention to write anyone out of the bidding. Should you need an exemption to these specifications, please note same on your proposal and we will discuss it with you at the review of your proposal.

Body to be mounted on truck chassis at lowest possible height 2" to 3" behind cab, without drilling flanges of the truck frame, and without welding to the frame. Steel referred to as "high tensile", "high resist", "high strength", etc. must conform to A.S.M.E. A606 grade 50 specifications. Certification of material used must be submitted with your bid forms. The body and hoist are to be from the same manufacturer.

A. GENERAL:

1. 10' X 87" Inside dimensions steel body.
2. 5 Yard capacity.
3. 84" cab to trunion dimensions with 12" pivot.

B. UNDER-STRUCTURE:

1. Western style, no cross members.
2. 9" tubular longsils, 7 GA high tensil steel-rust proofed inside.
3. Two OSHA support props with warning decals mounted on the outside of box frame rails.

C. FLOOR:

1. Full 1/4 AR400 rated 145,000 PSI yield strength 180,000 PSI tensile strength steel with continuous welded seams.
2. 9 " self cleaning side to floor radius.
3. Full depth rear binder apron.

D. BODY SIDES:

1. Full 7 gauge extra 50 high tensile steel. 50,000 PSI steel yield strength, 65,000 PSI steel tensile strength.
2. Body to be continuous weld design.
3. 60 " at headsheets.
4. Fully boxed upper rails.
5. Sloped rubrails.
6. Full length center of each side "V" brake reinforcing.
7. 201 Stainless Steel 13" full depth rear corner posts.
8. Steps and grab handle inside and outside of dump body at front drivers side.
9. Step at rear of body over rear axle.
10. Tarp or walk rail full length of body on both sides.
11. Steps and tarp rail to be made of 1/4" x 1 1/2" bar steel.
12. Pockets for side boards shall be full 2" wide at front and back.
13. Front pockets to be one piece design and height of cab shield.
14. Rear pocket to be minimum of 4" high.

E. HEADSHEET:

1. Full 7 gauge exten 50 high tensile steel.
2. 60" Height.
3. Two horizontal "V" brake reinforcements.

F. CABSHIELD:

1. Full 7 gauge exten 50 high tensile steel.
2. 1/2 cabshield (20" to 24").
3. Cabshield to be full width of body.
4. Final installation to be 100% welded to body and to be gusseted as not to interfere with cab.

G. TAILGATE:

1. Full 7 gauge exten 50 high tensile steel.
2. 36" height.
3. Double acting.
4. Chain storage pins.
5. 3 panel boxed design.
6. Flame cut heavy duty hardware.
7. 1" thick hold down hooks.
8. 1 1/2" upper tailgate hinge plates.
9. 1 1/4" upper and lower hinge pins in double shear.
10. Adjustable spreader chains.
11. Positive anti-jump chain locks.
12. Fully adjustable linkage both sides.

H. PAINT:

1. Inspection prior to painting of equipment by Sauk County.
2. Body to be fully sandblasted prior to prime.
3. One (1) coat primer.
4. Three (3) coats finish color DuPont Centari or equal.
5. Color to match cab - truck dealer will supply color code.

I. SNOWPLOW LIGHTS AND BRACKETS:

1. The plow lights shall be ABL Model 3800 LED mounted to the hood using stainless steel light brackets.

J. HOIST: (Roller - Combo type)

1. To be powered by front mounted central hydraulics.
2. NTEA class 60 rating of 21.1 tons, double acting (power up & down) 8" cylinder bore, 21 5/8" stroke, w/internal by-pass, 2 1/4" diameter chrome piston rod.
3. Full length steel subframe.
4. Shall be greaseable bearings at all pivot points.
5. 12" mounting height.
6. 70" hoist mounting distance to body from rear hinge.
7. 50 degree dump angle.
8. Shall be greaseable bearings for rear hinge.
9. Shall have a pull off control that prevents cylinder from over extending.

K. ELECTRICAL:

1. All wiring for the body lights shall be routed to and wired through a Midland #20709 junction box located within frame rails at the rear of truck in a county approved location.
2. High quality, double jacketed (Non aluminum) wire shall be of adequate gauge to carry anticipated current loads.
3. All lights to be recessed, rubber mounted, and each light to have its own ground wire.
4. Recessed tail lights and back-up lights to be mounted in rear corner post. Grote model # 54672
5. Clearance lights to be Grote model #G1032.
6. Frame mounted tail lights to be Grote model #54672
7. Grommets to be used wherever wire passes through metal.
8. All wiring in loom with heat shrunk connectors and sealed joints and all eyelet connectors to be seal coated.
9. All plug connections to be packed with dielectric grease.
10. Cab mounted, central switch box for controlling auxiliary lighting. 6 switch bank to be installed by truck manufacturer at factory.
11. All the add-on accessories shall be into trucks main fuse block, "In line" type fuses are not acceptable.
12. All add-on circuits shall be labeled and a simple wire diagram provided.
13. Two (2) recessed strobe lights to be mounted in rear corners posts at top location, to be Grote Supernova model #77363 or equal.
14. Front mounted strobe beacons to be mounted at outside top corner of truck mirrors, to be Signal model #200212A or equal.
15. Cab Shield Lights: Two (2) Federal Signal HighLighter Plus LED Model, one mounted on each end of the cab shield. The entire light shall be flush or above any portion of the cab shield.
16. A Truck-lite model #33075R marker light to be mounted to the top rear of each wing.
17. Pavement/Air Temperature sensor installed and connected to the spreader controller.
18. Plow up sensor to be installed and connected to the spreader controller

L. BACK-UP ALARM:

1. Back-up alarm to be furnished with truck chassis and to be remounted if needed by Vendor.

M. HITCH:

1. 3/4" steel plate to be flush mounted at rear of truck frame for hitch mounting.

N. PARTS AND SERVICE MANUALS:

1. Supply parts and service manuals for dump body and hydraulic system.

O. INSTALLATION:

1. All equipment to be installed and to function correctly.
2. Assembled unit must meet or exceed all regulatory agency requirements.

P. HYDRAULIC HOSE:

1. High pressure hose shall be not less than 3/4" I.D., have a working pressure of 2000 lbs. minimum and a test pressure of 5000 lbs.

2. Low pressure hose for return shall be of 1" I.D. minimum and have a working pressure of 250 lbs. and a test pressure of 1000 lbs.
3. Plow hoist and power reverse hoses to reach end of frame rails in front of grill.
4. Wing cylinder hoses to reach right frame rail and grill area with 1' of slack.
5. Spreader hoses to reach rear of frame to a mounted hydraulic manifold - location to be discussed with Sauk County.
6. Dump body to be mounted on chassis for easy removal when mounting V-box sander for winter operation.

The following specifications are to apply to the equipment offered in this quotation. The equipment must be new and the latest type and model manufactured and must equal or exceed these specifications.

SPECIFICATIONS

		<u>Meets Specs</u>	<u>Does not meet specs.</u>
R.	<u>HYDRAULIC PUMP:</u>		
	1. Hydraulic Pump shall be a Force America FAS D 45 - no exceptions.	_____	_____
	2. Piston pump capable of 55 G.P.M. and 4000 P.S.I. at 2400 R.P.M.	_____	_____
	3. Pump to have side ports to avoid multiple 90 bends in the suction line. Rear parts are not acceptable.	_____	_____
	4. Case/control drain must be directed back to tank without passing through the filter.	_____	_____
	5. One inch 1/4 turn ball valve mounted on discharge side of pump.	_____	_____
	6. Pump to be mounted as close to radiator as possible.	_____	_____
	7. Pump to be crank shaft driven using 1280/1310 drive line components.	_____	_____
	8. Pump driveline must be removable without removing pump.	_____	_____
	9. Drive shaft must be covered and cover must be removable.	_____	_____
	10. Front pump bracket to be bolted to truck frame for easy maintenance.	_____	_____
S.	<u>HYDRAULIC VALVING:</u>		
	1. Hydraulic valve must be sectional style design.	_____	_____
	2. Valve must be compatible to pressure-compensated load sensing type system.	_____	_____
	3. Hoist section must be capable of nominal 40 G.P.M.	_____	_____
	4. All other sections capable of nominal 20 G.P.M.	_____	_____
	5. All valving must have adjustable flow compensators.	_____	_____

- T. CONTROL VALVE: - Valve to be Force America "Add-A-Stack".
The control valve shall be a bankable, load sensing type of valve with a minimum capacity of 40 G.P.M. for the hoist section. The valve bank shall have sections for:
1. BOX HOIST - Double-acting, spring return to center, downside relief at 500 P.S.I. For the hoist protection
 2. PLOW HOIST - Double-acting, spring return to center integral flow control.
 3. POWER REVERSE - Double acting, spring return to center with integral pressure compensate flow control.
 4. RIGHT WING TOE - Double acting, spring return to center with integral pressure compensated flow control.
 5. RIGHT WING HEEL - Double acting, spring return to center with integral pressure compensated flow control, with adjustable work port relief on the wing raise port. 1500 PSI (A) Port Relief Valve.
 6. SPREADER - Dual flow cab control, Auger 12 V. Electric - proportional 0-14 G.P.M. and Spinner 12 V. Electric - proportional 0-5 G.P.M.
 7. WING - Shall be equipped with locking valve to hold wing in transport position when not in use.
 8. Liquid Prewet - 2 way, 12 volt electric proportional 5 G.P.M.
 9. Valve to include adjustable relief to protect power reverse, wing toe, wing heel.
 10. Only SAE & JIC fittings, no exceptions. Suction part to have 90 sweep type. Elbow to minimize restrictions.
 11. Control valve shall be mounted in a Stainless steel weather sealed box on outside of truck frame rail in a Sauk County approved location with a removable cover for maintenance and inspection work. Valve shall be "boxed in" by the cover, so that the valve is open on 3 side and top for ease of service. The valve cover shall be secured by 4 rubber latches.

U. <u>CONTROLS</u> - Shall be Bulkhead Style Cable System	<u>Meets Specs</u>	<u>Does not meet specs.</u>
1. Sections 1 -5 will be actuated by the Morse RVC cable control system. No exception	_____	_____
2. (1) Single axis control for dump box	_____	_____
3. (2 & 3) Joystick "+" pattern controls for plow	_____	_____
4. (4 & 5) Joystick "+" pattern controls for left wing	_____	_____
6. (8 & 9) Must be sealed completely with 3M brand elecxtrokote	_____	_____
7. Cable core must be stainless steel and capable of 100 pounds push-pull.	_____	_____
8. Controls to be mounted beside the driver. See Sauk County before mounting.	_____	_____

V. RESERVOIR/VALVE ENCLOSURE: FORCE America VT-35

The hydraulic reservoir/valve enclosure combination shall be frame mounted with 35 gallon capacity. The reservoir must be equipped with the following:

Lockable basket type filler breather cap

Magnetic drain plug

Two inch NPT suction with 100 mesh screen type filter

Separate return port for control drain line

Sight temperature gauge externally mounted

The hydraulic reservoir shall also be equipped with an electric level or level/temperature sending unit to be wired to the control panel and back lit for designated warning.

The valve shall be mounted on a plate attached to the outside of the reservoir. All hoses must connect to the bottom of the valve, and exit the rear of the reservoir/valve enclosure combination through an integral hose guard. The enclosure cover must have a gasketless passive seal design, to eliminate spray while venting moisture. The valve MUST be exposed on all sides with the cover removed, for ease of service. Further, the valve mounting plate MUST swing out for ease of valve service and hose replacement. Oil filter, filler breather, and level/temperature sender MUST be enclosed by the enclosure cover.

Reservoir/Valve Enclosure shall be **FORCE America VT35 Valve/Tank Assembly**

W. SPREADER CONTROL FORCE AMERICA SSC-5100 EX:

The electronic spreader control shall be designed for precise, closed-loop control of granular and pre-wet liquid application as standard and shall have the ability to control direct application liquid when optional equipment is selected. The electronic spreader control shall have a field replaceable battery back up that protects memory functions. Data memory shall be 512K RAM. For data logging unit shall retain a minimum of four thousand (4000) events. The electronic spreader firmware shall be upgradeable by downloading files from the supplier's web site at no charge to the municipality for the life. The unit must be protected from reverse polarity, as well as be over-voltage protected by using a five-amp reset circuit breaker. All circuit boards to be conformal coated. The spreader control is to be capable of self-diagnostics for system errors and correction procedures. Error codes shall be displayed in plain English, coded messages that require an additional document to interpreted are not acceptable.

As standard, the control unit shall have password protection to prevent unauthorized use of set up function. As an option, iButton technology shall be available for saving and loading of calibration parameters. The control unit shall be capable of self-calibration of auger/conveyor feed rates and require no additional timepieces to calibrate. Programming shall allow for blast function to be set one of three ways: momentary, timed or by distance traveled. The unit must also be capable of spreading up to four different granular materials and ten programmable spread rates. Controller shall have programmable nomenclatures for granular and pre-wet materials. Programming shall provide for automatic default to open loop in the event of a feedback failure. The unit must provide three operational modes: manual, open loop (ground speed only) and closed loop (ground speed with auger/conveyor feedback). Programming shall also provide for two-speed axle input as required.

Text display that shall consist of a two line alphanumeric fluorescent display shall inform the operator of spread rate information (US or metric) and calibration parameters. The unit must be capable of displaying logged spread run information for intermediate reference and be able to download data to a serial printer or PC computer when complete data is required. The unit will provide real time and date. The unit must provide for three compensated valve outputs. In addition the unit shall have a bi-directional RS232 port for printer or data collection. Unit shall have a standby (pass) and blast feature as standard. Unit shall provide stationary unload functions on granular, pre-wet and direct functions. The unit shall also be upgraded for event logging. The control shall have a programmable jump-start feature to provide immediate material flow at start up. The unit must be programmable to interface with road temperature sensors, direct liquid application systems, and AVL/data management equipment. Salter control shall be a **Force America SSC-5100 EX**.

W. FORCE AMERICA DATACOMMANDER:

A Mobile Data Collection System (MDC) with AVL/GPS system shall be supplied with each vehicle.

MDC (Mobile Data Collection System) system shall be fully integrated in all aspects with the FORCE America 5100 MA Patrol Commander Control Center.

1. The system must support the FORCE America Advanced firmware/protocol. Device Communication must be bi-directional, to include device handshaking with Send/Receive/Delete routine. Data integrity must be protected by a 16-bit Cyclic Redundant Check-sum and allow for dynamic string definition. (This allows for accurate and verified communication between the SSC 5100 series spreader controller and the AVL modem.)
2. The system must communicate at a 19200 baud rate between the FORCE America SSC 5100 series controller and the AVL modem.
3. The system must be able to collect and show 37 separate events off the FORCE America 5100.
4. The communications technology to be used for transmitting data shall be dual mode – 802.11b/g and GPRS. System shall include all necessary hardware items, processors, antennas, etc. (This provides the flexibility to use either 802.11b/g wireless or GPRS to do automatic data downloads if necessary.)
5. The system shall provide a RS-232 serial connection, six (6) discrete inputs, J1939 and J1708 connections. (The variety of connectors provides flexibility in reading spreader controllers, plow positions, hoist positions, etc. as needed.)
6. System shall support at least 16MB flash memory for storage of data over extended periods of connectivity loss. (This allows for storing all readings until 802.11b/g or GPRS coverage is re-established then transmitting the stored data to provide an updated history of the vehicle.)
7. System shall provide Store and Forward capabilities. (System collects vehicle activity data and geo-stamp data and stores onboard until data can be securely transmitted to provide a detailed historical record of activity while in the field.)
8. The system shall provide ability to detect and report previous power loss if unit is disconnected then reconnected. (This reports if someone was to disable the system during their shift whether inadvertent or intentional.)
9. GPS receiver shall be accurate to less than 8 meters, for at least 90% of readings. (Provides accurate mapping data for corresponding application rates from spreader controller.)

System shall have less than 8mA typical current draw in key-off mode. (Provides minimal battery discharge when not in use.)

System shall meet SAE J1455 environmental specifications and provide +/- 25g shock rating (Provides a ruggedized solution in the high abuse environment that system will be used in.)

System shall support over-the-air firmware updates. (This allows for updating the system without the need to return to the district shop to be updated.)

System shall support over-the-air configuration updates for the following:

1. Start time report intervals
2. Reporting transmit intervals
3. Reporting power up/down
4. Setting GPS database triggers for distance, time, speed and angle.

System shall include notifications when a vehicle is due for preventive maintenance based on engine hour readings.

The system shall provide hourly usage reports to reflect how many minutes in each hour a vehicle was in use.

The system shall provide mileage reports to reflect how many miles in each day, month, and year vehicle drove.

The system shall provide the ability to draw geo-fences, label fences, and show the accumulation of time and mileage within said fence.

System shall provide user-configurable notifications for excess speeds, excess idle times, and operation after normal operating hours, previous power loss, maintenance exceptions, geo-fence violation, and battery voltage.

The system shall provide user-configurable odometer and hour meter synching to the vehicle's actual odometer and hour meter. System shall also include the ability to readjust both odometer and hour meters if a variance occurs.

Hardware/Firmware:

1. Vehicle AVL/GPS system shall be of rugged design, constructed of components intended and suitable for the mobile equipment market. To ensure longevity in harsh mobile environments, the system shall conform to SAE1455 for chassis-mounted devices, as well as not be damaged by mechanical shock of +/- 25g. For guaranteed low-temperature operation, the device must operate without degradation of performance in ambient temperatures of -30°C to 60°C.
2. The modem shall be dual mode 802.11b/g and GSM/GPRS. It shall include two RS-232 serial connections and one J1939 and J1708 connections. The unit will support a minimum 16MB flash memory for storing data over extended periods of connectivity loss and also provide ability to detect and report previous power loss if unit is disconnected then reconnected.

3. The AVL/GPS system shall be protected and immune to over-voltage conditions and reverse polarity. System shall utilize a live 12V connection to the vehicle battery. To minimize vehicle battery drain, unit current draw shall not exceed 8mA during sleep mode (key off).
4. The system shall contain all necessary hardware and on-board memory to log GPS coordinates including (latitude/longitude), speed, heading and time, engine hours (ignition "on" time) and spreader data.
5. Data strings of outputting data collected by the system from the on-board electronic spreader control shall include comprehensive spreader activity including spreader status, material feed rates, actual materials applied, operating modes, and warning and error conditions and be capable of supporting new spreader functions and features as added. Spreader event data shall be produced and collected based on programmable event triggers that can be based on a field status change. This is to reduce the flow of data and monthly charges due to larger volumes of data being transmitted.
6. The AVL/GPS system shall also log the status change of (6) discrete digital inputs to allow for monitoring the state and condition of various optional vehicle sensors. Connections to unit shall be made with plug-in connectors (not hardwired) to facilitate simple field replacement of components.
7. The unit shall come with two antennas. One shall be GPS dual-band and the other is GPRS-850/1900 MHz. The GPS antenna is 3-5Vdc, 23.5-32.5dB of gain, and is equipped with a male SMA connector. The GPRS antenna is 3-5Vdc, has less than 3dBi gain, and is equipped with a RP-SMA connector.

The AVL/GPS system shall be a Force America Data Commander IX-302 transceiver or approved equal.

X. FORCE America Prewet Tailgate System: TG100 with HCL TG Power Unit

Plumbing and Hardware:

The system shall include a 1 ½" polypropylene quick fill port with shut off ball valve and integral camlock and cap. The pump inlet plumbing shall include a Y-strainer with a serviceable screen filter cartridge. The inlet plumbing must also have a cleanout device that allows the connection of a ¾" male garden hose thread for proper pump maintenance, no exceptions. The bypass plumbing shall include a ¾" polypropylene bypass valve with adjustable pressure relief and 60 PSI pressure gauge. All hose, which is supplied, shall be nylon reinforced PVC hose with a working pressure of no less than 200 PSI and a maximum temperature rating of 100 degrees F. All fasteners in this kit shall be 316 stainless steel.

Discharge Nozzles:

The spray system shall utilize three nozzles to apply solution on material being conveyed to the spinner. The brass spray nozzles shall be mounted in brass nozzle bodies and the discharge line must include an inline check valve to prevent siphoning and also needs to incorporate a poly quick disconnect fitting to aid in spreader removal.

Liquid Tank TG100:

The system shall include one 100-gallon Tailgate style tank constructed of UV stabilized polyethylene plastic. The tank shall have a specific gravity rating of no less than 1.9 and shall weigh approximately 71 pounds. The dimensions should be 29" H x 15" W x 70" L. The tank shall include a molded in enclosure with a polyethylene removable cover, two molded in internal baffles, a 5" vented lid with a neoprene gasket and a positive ventilation device, which is splash proof. The tank is held in place with a frame and three steel mounting straps, all of which are powder coated. All tank fittings must be replaceable polypropylene bulkhead adapters; spin weld fittings are unacceptable.

TG System HCL (Hydraulic Closed Loop) Power Unit:

The closed loop hydraulic liquid dispensing system is designed for a constant application rate of deicing solution directly onto the granular material spread by tailgate type spreaders. The system calibration and programmable application rates are accomplished by the use of a micro-processor based controller. The system comes complete with a liquid spray pump, sprayer tank, tank mounting straps, discharge nozzles, closed loop flow meter that is accurate + or - 1% on flows from .5 to 10 GPM, plumbing, and hardware.

Liquid Pump:

Pump shall be constructed of a bronze corrosion resistant casting with special cast bronze gears. The pump shall have ½" NPT ports and shall include self-lubricating bearings. The pump shall be coupled to a 5 GPM hydraulic motor via a tooth and jaw style coupler and shall incorporate a stainless steel coupler guard that will also serve as a flowmeter mount. This pump and motor combination shall be capable of producing 10 GPM at 1800 RPM. The assembly shall be mounted on a stainless steel plate in order to be mounted in the end of a tailgate style tank.

Y. Minimum Specifications for Power Reversible Snow Plows.

1. LENGTH:
12 Feet.
2. HEIGHT:
48 Inches.
3. MOLDBOARD THICKNESS:
10 Gauge
4. VERTICAL RIBS:
8 - 1/2" X 4".
5. MOLDBOARD TOP ANGLE:
2 X 3 X 3/8"
6. MOLDBOARD BOTTOM ANGLE:
4 X 4 X 3/4"
7. CUTTING EDGE:
1/2 X 8"
8. REVERSING CYLINDER:
4 X 13 inch with 2 inch rod, Burst strength 8,000 PSI.
9. Reversing cylinders must be mounted above the push frame with hydraulic hose inlets on top of cylinders.
10. DXV cushion valve to protect reversing cylinder.
11. Trunion link and trunion link bolt (1" Grade 8) must be inserted from the top with double locking nuts underneath.
12. Must be able to adjust moldboard pitch.
13. Full moldboard trip to allow plow to trip when hitting an obstruction. Spring assembly should consist (4) 5/16 oil tempered extension type springs. Spring tension should be easily adjustable with standard tools.
14. Snow deflector shield 1/2" x 12" x 12'.
15. Standard AASHO punching on cutting edge.
16. Quick hitch to be pin and loop style hitch coupled to plow in such a manner that there is no more than 39" from base of hitch to back of moldboard.
17. Truck hitch attachment shall be furnished by dealer and designed to evenly transmit the snow plow load to the truck frame under continuous severe service. The attachment to the truck frame shall be a custom side plate design extending back as far as practical from the front of the truck and have two (2) angle braces and mounting brackets shall be incorporated so as to transmit thrust from the lower push frame to the underside of the chassis frame rails at a point forward of the truck front axle.
18. The hydraulic lift ram shall be 3 1/2" in diameter, double acting design, with a hard chrome plated rod.
19. Moldboard to be of panel design for extra strength.
20. Plow to be designed to stay level when fully raised and reversing from right to left.
21. All welds to be continuous and completely welded on both sides when possible.
22. Hydraulic hoses to turn ram to have quick couplers.
23. Plow to be primed and painted with finish color Black.
24. Dealer shall supply mounting instructions and specifications to Sauk County for correct mounting/removal procedures after the initial installation by bidder.
25. There shall be service, parts and operators manuals delivered with units.

Z. Minimum Specifications for Mounted Patrol Wings. Uni-Glide or Para-Glide Wing Post

1. One (1) Unit is to be mounted to the right side of patrol trucks and have the ability to fold close to truck for transportation when not in use.
2. Wing shall have 8 feet cutting edge.
3. Moldboard to be made a minimum of 3/16" steel.
4. Moldboard to be double formed and be an integral design.
5. Moldboard to be punched A.A.S.H.O.
6. Front wing post shall have 4" x 21" stroke double acting vertical lift cylinder. (No cables).
7. Moldboard able to float a minimum of 14".
8. Front wing post to be mounted rigidly to frame and be mounted so hood may be opened without moving wing post. (Equipment must be furnished to allow post to tilt forward to allow hood to be opened if needed).
9. Heel lift cylinder to be 4" x 21" stroke, double acting and must be attached to front post.
10. Heel lift cylinder to have a hydraulic locking device.
11. Telescope wing tube shall be spring cushioned and adjustable.
12. Height site gauge for wing toe.
13. Wing shall be equipped with a trip cutting edge.
14. Minimum of 12 inches of clearance at the toe end of the wing when in transport position.
15. All hydraulic hoses needed to be of length to reach a hydraulic manifold mounted near wing post.
16. 1/2 inch flame cut cheek plates/hangar plates.
17. 3/4" thick saddle slab/heavily gusseted.
18. 4" x 6" x 4 3/8" cross tube.
19. (NOTE). Dealer must supply all materials needed to mount wing to patrol trucks.
20. Wing to be primed and painted black.
21. There shall be service, parts and operators manuals delivered with unit.
22. Dealer shall supply mounting instructions and specifications to Sauk County for correct mounting/removal procedures after the initial installation by bidder.
23. **County Requests: Para-Glide or A-Frame Toe Lift Wing System.**

AA. UNDER-TAILGATE TYPE SPREADER

Minimum specifications for under-tailgate type spreader.

1. Length: 96".
2. Width: 22".
3. Trough: 201 stainless steel with 1/4" one piece endplates. All interior seams are to be continuously electrically welded.
4. A one piece combination cover and rear panel shall be removable and hinged so it can be raised for spreading and lay flat for dumping over the spreader.
5. The bottom shall be hinged and unobstructed swing-out lever lock mechanism type that one person can easily open and operate safely.
6. Auger: Shall be a full 7' long, 9" in diameter, 6" pitch, 3/8" thick and welded to a 2 7/8" O.D. pipe supported by 1 1/4" shafts. The idler shaft is to be supported by a H.D. 1 1/4" sealed, self-aligning, with lubrication fittings, 4 - bolt flange bearing. The Helical coil shall be mono-directional capable of feeding granular material in either direction.
7. Direct Drive: Shall be a Char-Lynn low speed, high torque drive motor directly attached. The connection between the drive shaft and auger shall be a 201 stainless steel shaft coupler to be servo adaptable.
8. Spinner Assembly: Shall be mounted independent of bottom cleanout door. Each spinner shall be 18" in diameter and made of polyurethane. It shall be self-leveling and adjustable for variations of spread pattern and be equipped with a shield to keep material from striking the truck.
8. Each spinner disc shall be direct mounted on a Char-Lynn low speed high torque motor
9. Trough Mount: Spreader shall be designed with quick disconnect mounting hardware and tailgate shields.
10. Spreader shall have discharge port to discharge material out of left side.
11. Pre wet application should be discharged into the auger prior to discharge onto the spinner
12. Hoses are to be furnished to reach rear of patrol truck.
13. Spreader shall be equipped to be controlled by Electronic Spreader Control.
14. Dealer will supply all materials needed to mount unit to patrol truck.
15. The successful bidder shall furnish one parts manual, one service manual and one operator's manual per spreader.

16. The successful bidder shall furnish mounting instructions and specifications to Sauk County for correct mounting/removal procedures after the initial installation by bidder.

PICKUP AND DELIVERY:

Successful bidder shall be responsible for pickup of chassis from truck dealer and delivery to Sauk County.

DELIVERY TIME:

Successful bidder shall state amount of time required to install all equipment and return vehicle to Sauk County.

MANUALS AND PARTS INFORMATION:

The successful bidder shall furnish service manuals, parts manuals, electric diagrams, hydraulic diagrams.

Also to be furnished is an itemized parts list of all parts and part numbers used in the installation and make up of the boxes and hydraulics.

WARRANTY:

All warranty work shall either be done at the Sauk County Repair Shop at Baraboo, or the bidder shall be responsible for the pick-up and return of the unit to be serviced.

Unit shall have at least a two (2) year 100% parts and labor warranty.

Quotes are to be F.O.B. at Sauk County Highway Shop, Baraboo.

There shall be no travel expenses.

Control must be provided with Detail Operator's Manual, and Wiring Diagrams. Manufacturer's Representative must provide one (1) hour operator's training and two (2) hours mechanic's training at Sauk County Highway Shop. Manufacturer's Representative also responsible for providing on-site calibration assistance.