



2901 W. 60th Street North • Sioux Falls, SD 57107 • 605-336-2995

Regarding the attached bid from Dakota Dunes Community Improvement Dist.

Bid date March 21, 2016 – 7:00 P.M.

I-State Truck Center agrees to honor the bid pricing for the attached bid from Dakota Dunes to any municipalities that would like to purchase (piggyback) off of this bid. I-State Truck Center agrees to honor the bid through the end of 2016 or until future price increases restrict us from do so.

A handwritten signature in black ink, appearing to read "SH", is written over a horizontal line.

Stacy Haberer | General Sales Manager | I-State Truck Center

2901 W. 60th St. N | Sioux Falls, SD 57101

P: 605-336-2995 | F: 605-336-2999 | C: 605-359-2387

www.istate.com www.istatetruck.com

"Pride In Service"

LOCATIONS

INVER GROVE HEIGHTS, MN • BLAINE, MN • BILLINGS, MT
GREAT FALLS, MT • MISSOULA, MT • SIOUX FALLS, SD • SIOUX CITY, IA
AN EQUAL OPPORTUNITY EMPLOYER/CONTRACTOR

www.istatetruck.com



SANITATION PRODUCTS, INC.

901 E. 48th Street North
P.O. Box 86222
Sioux Falls, South Dakota 57118-6222
605.332.2487 Fax 605.332.2349

City of Harrisburg
Attn Dan
Box 26
Harrisburg SD 57032

10-3-2016

Dan,

Sanitation Products Inc. will Honor our portion of the Dakota Dunes SD bid for the truck equipment. This offer will expire March 22, 2017.

Please contact me at 359 4704 if you have any questions.

Sincerely
Sanitation Products Inc.

Randy Schmidt



SANITATION PRODUCTS

Box 86222 • 901 E. 48th St. North
Sioux Falls, SD 57118-6222

RANDY SCHMIDT
SALES

randyspsd@midconetwork.com

Office: 605/332-2487
Fax: 605/332-2349

Cell: 1-605/359-4704
Toll Free: 1-800/669-0487

AFFIDAVIT OF PUBLICATION

State of South Dakota)
:SS
County of Union)

Bruce L. Odson,
the publisher of the Leader-Courier, deposes and says that

The Leader-Courier

is a legal weekly newspaper of a general circulation, printed and published in Elk Point, County of Union, State of South Dakota, and has been such legal newspaper during the time hereinafter mentioned, and that affiant is and was during all the time hereinafter mentioned in charge of the advertising department thereof, and has personal knowledge of all the facts stated in this affidavit: and that the notice and advertisement headed:

Notice to Bidders

a printed copy of which is hereunto attached and made a part hereof, was printed and published in the said newspaper at least once in

each week for 2 successive weeks; that said newspaper at the time of the first publication of said notice hereinafter stated, had, and still has, a bona fide circulation of over two hundred paid copies weekly, and had been published in the said County of Union for more than one year immediately prior to the date of the said publication of said notice, and that said newspaper during said times, was, and is, printed in part in an office maintained at said city of Elk Point, the said place of publication; that the first publication of said notice in said newspaper was

on Thursday, the 4 day of February, 2016

and that the succeeding publications were

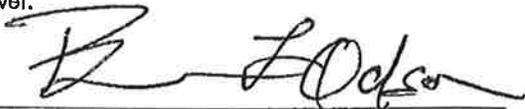
on Thursday, the 11 day of February, 2016

on Thursday, the _____ day of _____, _____

on Thursday, the _____ day of _____, _____

that the fees for the printing and publishing of said notice and advertisement in said newspaper as aforesaid were

\$ 26.54, that the full amount of the fee charged insures to the benefit of the publisher of the said newspaper, that no agreement or understanding for the division thereof has been made with any other person and that no part thereof has been agreed to be paid to any other person whomsoever.

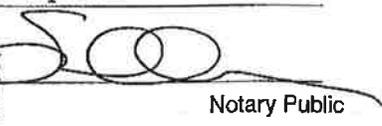


Subscribed and sworn to before me

this 11 day of February, 2016

My commission expires 6-21-17

SUSAN ODSON
NOTARY PUBLIC
SOUTH DAKOTA


Notary Public

NOTICE TO BIDDERS

Dakota Dunes Community Improvement District (CID) will receive sealed bids/proposals for a 2017 new and unused truck chassis with dump box, snow plow and sand spreader.

DESCRIPTION OF WORK:

To furnish to 335 Sioux Point Road, Suite 200 (PO Box 1997) Dakota Dunes, South Dakota 57049, a fully assembled and operational 2017 new and unused truck chassis with dump box, snow plow and spreader in accordance with specifications on file with Dakota Dunes CID. A copy of bid specifications can be obtained by calling Dakota Dunes CID office at (605) 232-4211.

Bids will be received until 12:00 noon, Tuesday, March 1, 2016, at Dakota Dunes Community Improvement District office, at 335 Sioux Point Road, Suite 200, Dakota Dunes, South Dakota 57049, at which time they will be opened. Bids received after this time will not be accepted. Bids must be sealed and plainly marked "Snow Plow BID". No bidder may withdraw his bids for at least thirty (30) calendar days after the scheduled closing time for the receipt of bids. Bid results will be judged on cost and compliance with specifications for award by the Dakota Dunes CID Board of Supervisors at its March 21, 2016 regular meeting.

Dakota Dunes CID reserves the right to reject any and all bids.

Dakota Dunes Community Improvement District

By:
Kim Hoffman, Finance Officer
Publish Feb. 4 and 11, 2016
Published twice at the total approximate cost of \$26.54
5-1-49

**DAKOTA DUNES COMMUNITY IMPROVEMENT DISTRICT
BOARD OF SUPERVISORS REGULAR MEETING
MARCH 21, 2016 - 7:00 P.M.
335 SIOUX POINT ROAD, SUITE 200**

MINUTES

The Board of Supervisors met in a regular session on March 21, 2016, at 7:00 p.m., at 335 Sioux Point Road, Suite 200. Members present were: Messrs. Anderson, Kimmel, and Melstad. Members not present were: Mr. Beaulieu and Ms. Grijalva. Also present was: Mr. Jesse, of Crary Law Firm, counsel for the CID and Stu Betsworth and Dennis Minor of Cornhusker International. Employees present were: Dooley and Hoffman.

1. APPROVAL OF FEBRUARY 15, 2016 REGULAR MEETING MINUTES

A motion was made by Mr. Anderson and seconded by Mr. Kimmel to approve the minutes of the February 15, 2016 regular meeting.

Motion passed 3-0.

2. TREASURER/FINANCIAL REPORT

A motion was made by Mr. Kimmel and seconded by Mr. Anderson to approve the February 2016 financial statements and the vouchers payable in the amount of \$175,871.57.

Motion passed 3-0.

3. BUSINESS

- **AWARD OF TRUCK, DUMP BOX, SAND SPREADER AND PLOW BIDS**

Truck Vendor	Truck Type	Equipment Vendor	Package Price	Difference from Low Bid
Cornhusker	International	Northern	\$138,854	Low Bid
I-State	Freightliner	Northern	\$139,042	\$188
I-State	Freightliner	Steffan	\$142,734	\$3,880
Cornhusker	International	Steffan	\$142,790	\$3,936
I-State	Freightliner	Sanitation	\$142,965	\$4,111 Lowest Responsive Bid
Cornhusker	International	Sanitation	\$142,977	\$4,123
Peterbuilt of SC	Peterbuilt	Northern	\$145,935	\$7,081
SC Truck & Trailer	Kenworth	Steffan	\$147,478	\$8,624
Peterbuilt of SC	Peterbuilt	Steffan	\$149,627	\$10,773

- AWARD OF TRUCK, DUMP BOX, SAND SPREADER AND PLOW BIDS CONTINUED

Following extensive discussion, including input from Stu Betsworth and Dennis Minor of Cornhusker International, a motion was made by Mr. Kimmel and seconded by Mr. Anderson to award the bid to I-State, in the amount of \$142,965, the lowest responsive bid.
Motion passed 3-0.

- CLEAR WELL EXPANSION AND ADDITIONAL HIGH SERVICE PUMP PROJECT PAY REQUEST #7

A motion was made by Mr. Anderson and seconded by Mr. Kimmel to approve pay request #7, to Building Crafts Inc., in the amount of \$144,621.66 for the Clear Well Project.

Motion passed 3-0.

- SRF LOAN DRAW FOR PAY REQUEST #7

A motion was made by Mr. Kimmel and seconded by Mr. Anderson to authorize loan draw #7 on the SRF loan, for the Clear Well Project, in the amount of \$148,799.00, to cover the cost of Pay Request #7 with Building Crafts Inc., and construction engineering as presented.

Motion passed 3-0.

- CHANGE ORDER #1 – CLEAR WELL EXPANSION AND ADDITIONAL HIGH SERVICE PUMP PROJECT

Following discussion, a motion was made by Mr. Kimmel and seconded by Mr. Anderson to approve Change Order #1, contingent upon approval by South Dakota Department of Environment and Natural Resources, with Building Crafts, Inc., for the Clear Well Project.

Motion passed 3-0.

- ORDINANCE 2016-01 AN ORDINANCE AMENDING CHAPTER 3 BUILDING: ARTICLE II. BUILDING CODE, SECTION 3-19 – FIRST READING

A motion was made by Mr. Anderson and seconded by Mr. Kimmel to approve the first reading of Ordinance 2016-01.

Motion passed 3-0.

- EXECUTIVE SESSION – ECONOMIC DEVELOPMENT

A motion was made by Mr. Kimmel and seconded by Mr. Anderson to move into an executive session to discuss economic development.

Roll call was taken: Anderson – aye, Kimmel – aye and Melstad – aye. Beaulieu and Grijalva were not present. Motion passed 3-0.

A motion was made by Mr. Kimmel and seconded by Mr. Anderson to move out of an executive session.

Roll call was taken: Anderson – aye, Kimmel – aye and Melstad – aye. Beaulieu and Grijalva were not present. Motion passed 3-0.

No action will be taken at this time.

4. OTHER

Mr. Dooley reported that on March 31, 2016, South Dakota Senator Mike Rounds will be in North Sioux City conducting a public congressional hearing for the Flood of 2011. He has asked Mr. Dooley to testify.

Mr. Dooley reported that March 22, 2016 a meeting is scheduled with South Dakota DENR regarding the Big Sioux River study to help with predictive tools. The State has budgeted \$750,000, may also help with remapping with FEMA.

Mr. Dooley reported that speeding on East Pinehurst Trail continues to be a concern. The Sheriff's office has ordered flashing current speed signs to alert vehicles if they are speeding. The signs came in wrong and will be reordered. The Sheriff's deputies continue to monitor the speeding. Mr. Dooley has ordered a sign to borrow from SIMPCO to help deter speeders in the meantime.

~~5. ADJOURNMENT~~

A motion was made by Mr. Anderson and seconded by Mr. Kimmel to adjourn at 8:15 pm.

Motion passed 3-0.

Submitted by,
Kim Hoffman, Secretary

**DAKOTA DUNES COMMUNITY IMPROVEMENT DISTRICT
 DAKOTA DUNES, SOUTH DAKOTA
 BID SPECIFICATIONS FOR TRUCK CHASSIS, DUMP BODY, HYDRAULIC
 SYSTEM, SNOWPLOW, AND V-BOX SPREADER**

TRUCK CHASSIS

**COMPLY
 YES NO**

Truck chassis shall be 2017 or newer and unused.	<u>X</u> ___
The engine shall be 300HP @ 2000 RPM 860 Ft lb. @ 1300 RPM.	<u>X</u> ___
Chassis shall be equipped with an air intake snow door.	<u>X</u> ___
The alternator shall be a 12 Volt 160 amp brushless type.	<u>X</u> ___
The 2 batteries shall be group 31, 12 volt 2250 CCA with threaded studs.	<u>X</u> ___
The battery box shall be mounted under cab on the left side.	<u>X</u> ___
There shall be a battery disconnect switch mounted inside cab	<u>X</u> ___
The air compressor shall be 18.7 CFM minimum.	<u>X</u> ___
Chassis shall be equipped with an exhaust brake with variable geometry turbo and an on/off switch mounted in dash.	<u>X</u> ___
The diesel exhaust tank shall be 6 gallons minimum, filled prior to delivery.	<u>X</u> ___
Engine fan shall be automatically controlled with no override switch.	<u>X</u> ___
The radiator shall be 1200 square inch aluminum.	<u>X</u> ___
The engine shall be equipped with a block heater	<u>X</u> ___

	COMPLY	
	YES	NO
The transmission shall be an Allison RDS 3500 with PTO provision.	<u>X</u>	_____
The transmission shall be a 6 speed with auto neutral.	<u>X</u>	_____
Transmission control shall be push button mounted in cab.	<u>X</u>	_____
Transmission shall be equipped with an electronic oil level check.	<u>X</u>	_____
Transmission shall be filled with synthetic transmission fluid.	<u>X</u>	_____
Transmission cooler shall be integral with the radiator.	<u>X</u>	_____
The front axle shall be 16,000 LB capacity.	<u>X</u>	_____
The front brakes shall be 16.5" x 6" double anchor fabricated shoes.	<u>X</u>	_____
The brake lining shall be non-asbestos.	<u>X</u>	_____
The front axle shall have brake dust shields.	<u>X</u>	_____
The front brakes shall have automatic slack adjusters.	<u>X</u>	_____
The front axle bearings shall be lubricated using synthetic lubricant.	<u>X</u>	_____
The steering shall be TRW TAS-85 power steering or prior approved equal.	<u>X</u>	_____
The front suspension shall be 16,000 LB capacity taper leaf type.	<u>X</u>	_____
The front axle shall be equipped with shock absorbers.	<u>X</u>	_____
The rear axle shall be 23,000# capacity minimum.	<u>X</u>	_____
The rear axle ratio shall be 5:38.	<u>X</u>	_____
The rear differential shall be driver controlled locking type.	<u>X</u>	_____
Differential shall unlock with ignition off.	<u>X</u>	_____

	COMPLY	
	YES	NO
The rear brakes shall be 16.5" x 7", heavy duty cam brakes.	<u>X</u>	_____
The rear brake cams and chambers shall be on rear of the axle.	<u>X</u>	_____
Brake shoes shall have non-asbestos lining.	<u>X</u>	_____
The rear brakes shall be protected with dust shields.	<u>X</u>	_____
The rear brakes shall have automatic slack adjusters.	<u>X</u>	_____
The rear differential shall be filled with synthetic 75W-90 lubricant.	<u>X</u>	_____
The rear suspension shall be 23,000 LB minimum.	<u>X</u>	_____
The rear suspension shall be flat leaf with helper and radius rod.	<u>X</u>	_____
The brake system shall be Wabco 4S/4M ABS without traction control or prior approved equal.	<u>X</u>	_____
The brake system shall have a Wabco SS 1200 or prior approved equal.	<u>X</u>	_____
The air dryer shall be equipped with a heater and governor.	<u>X</u>	_____
The air dryer shall be frame mounted.	<u>X</u>	_____
Chassis tail light wiring shall be routed to a 7 way connector at rear of frame.	<u>X</u>	_____
The frame shall be 7/16" x 3-9/16" x 11-1/8" steel 120 KSI.	<u>X</u>	_____
There shall be a 24" integral front frame extension, bolt on frame extensions will not be accepted.	<u>X</u>	_____
The fuel tank shall be 50 gallon capacity left side mounted.	<u>X</u>	_____
The front tires shall be Michelin XZY-3 315/80R22.5 20 ply radial or prior approved equal.	<u>X</u>	_____
The rear tires shall be Michelin XDE mud and snow 11R 22.5 radial		

or prior approved equal.

X

COMPLY
YES NO

The front wheels shall be 22.5" x 9" 10-hub pilot steel.

X

The rear wheels shall be 22.5' x 8.25" 10-hub pilot steel.

X

The cab shall be an aluminum flat roof conventional cab.

X

The front fenders shall have molded flexible fender extensions.

X

The grille shall be stationary.

X

The cab shall feature dual 26" roof mounted air horns with shields.

X

The door locks and ignition shall be keyed the same.

X

The headlights shall be composite halogen.

X

The marker lights shall be LED.

X

Stop tail and turn lights shall be LED.

X

The mirrors shall be West Coast type heated and remote adjustable.

X

8" convex mirrors shall be mounted under primary mirrors.

X

The cab shall be equipped with a composite exterior sun visor.

X

The right and left windows shall power.

X

8 liter windshield washer reservoir shall be provided.

X

Cab interior shall be grey vinyl.

X

Door panels shall be molded plastic with aluminum kick plate on the lower door.

X

The cab shall have an overhead forward mounted console with upper storage compartments.

X

	COMPLY	
	YES	NO
The cab shall be equipped with a fresh air heater/defroster and AC.	<u>X</u>	_____
The door locks shall be electric.	<u>X</u>	_____
There shall be a 12 volt power supply mounted in dash.	<u>X</u>	_____
The driver's seat shall be a Bostrom wide ride, high back air suspension type or prior approved equal.	<u>X</u>	_____
The passenger seat shall be a non-suspension high back seat.	<u>X</u>	_____
The seat covers shall be cloth, drivers and passengers.	<u>X</u>	_____
The cab shall be equipped with a tilt telescopic steering wheel.	<u>X</u>	_____
The chassis shall be equipped with cruise control.	<u>X</u>	_____
The chassis shall be equipped with the following gauges; Odometer, trip/hour meter, diagnostic, voltage, Low air pressure with light and buzzer, primary and secondary air pressure, air restriction indicator, Fuel, water temp, Transmission temp, engine oil pressure and tachometer.	<u>X</u>	_____
AM/FM/WB with CD player and front input dash mounted.	<u>X</u>	_____
The dash shall be a winged type.	<u>X</u>	_____
Wind shield wipers shall be single motor with timer and artic blades.	<u>X</u>	_____
Chassis shall be wired for snow plow lights with switch in dash.	<u>X</u>	_____
Turn signal shall be self-cancelling type.	<u>X</u>	_____
Cab paint shall be one solid color white.	<u>X</u>	_____
There shall be tow hooks attached to the rear frame under the dump body hinge.	<u>X</u>	_____

DUMP BODY

	COMPLY	
	YES	NO
The dump body shall be 10' in length.	<u>X</u>	_____
The inside width shall be 84".	<u>X</u>	_____
The side height shall be 30".	<u>X</u>	_____
The rear height shall be 36"	<u>X</u>	_____
The front height shall be 46".	<u>X</u>	_____
The floor shall be one piece 3/16" AR 450 minimum.	<u>X</u>	_____
The sides and front shall be fabricated from 10 ga AR 450.	<u>X</u>	_____
The tail gate sheet shall be 1/4" AR 450.	<u>X</u>	_____
The tail gate shall feature 3 Panels.	<u>X</u>	_____
The understructure shall be one piece formed 10" tall.	<u>X</u>	_____
The tailgate shall be latched and unlatched with a 3-1/2" air cylinder with the control valve in cab.	<u>X</u>	_____
The rear corner post and apron shall be 304 stainless steel.	<u>X</u>	_____
There shall be 2 ovals cut into rear posts for strobes and STT Lights.	<u>X</u>	_____
The body shall be equipped with a 1/4 cab shield.	<u>X</u>	_____
The cab shield shall have 3 ovals cut in the top flange for LED strobes.	<u>X</u>	_____
The body shall have a stainless steel grip strut welded to both sides.	<u>X</u>	_____
All marker lights, stop tail and turn lights shall be LED.	<u>X</u>	_____
The hoist shall be a telescopic type with nitrided rods.	<u>X</u>	_____
The telescopic cylinder shall be non-inverted with a steel cover when collapsed, cylinder to be mounted outboard, no dog house.	<u>X</u>	_____

COMPLY
YES NO

The cylinder shall be covered by a 2 year warranty. X

Upper tailgate hinges and tailgate latches shall be cast steel. X

All welds to be continuous, no exceptions. X

The body shall be primed with the following,

Body shall be shot blasted after construction. X

Body shall be coated with powdered zinc and cured. X

The body shall be coated with powder and cured a second time. X

The prime finish shall be gloss black. X

The finish paint shall match the cab. X

HYDRAULIC SYSTEM

The hydraulic pump shall be an axial piston pressure and flow compensated load-sensing type. X

The pump shall have a displacement of 5.61 cubic inches per revolution at maximum stroke which will deliver 23.7 GPM @ 1000 engine RPM. X

The pump shall have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. X

The pump compensator shall have rear facing adjustments. X

The pump shall be rated for 5800 PSI maximum and 4800 PSI continuous. X

The pump shall have a Din type-mounting flange and a Din 5462 8-tooth shaft. X

The pump shall be Force America TXV92 or prior approved equal. X

An OMF8 series hot shift PTO that is mounted to the transmission shall drive the pump. X

	COMPLY	
	YES	NO
Hydraulic oil filter shall be mounted in the reservoir.	<u>X</u>	_____
Hydraulic filter shall be rated for no less than 80 GPM.	<u>X</u>	_____
Filter shall be ZINGA model TS-1200-25-1-0 with ZSRE-409-10 micro-glass filter element and be equipped with visual filter condition indicator gauge.	<u>X</u>	_____
Filter shall also include a TD-150-PMI tank diffuser.	<u>X</u>	_____
The system shall be delivered with one spare filter element.	<u>X</u>	_____
The system shall be designed so that when the float contacts close, the PTO will disengage and stop pump flow.	<u>X</u>	_____
An enunciator in control console will alert the driver that the PTO has been disengaged.	<u>X</u>	_____
The control console will also incorporate an override switch wired to de-energize the shutdown system to facilitate diagnostics and equipment storage.	<u>X</u>	_____
The hydraulic reservoir will be of 35 gallons nominal capacity.	<u>X</u>	_____
The hydraulic reservoir will be constructed of 10-gauge steel and be internally baffled.	<u>X</u>	_____
The valve enclosure lid will protect from both road and pressure washer spray.	<u>X</u>	_____
For ease of removal by a single person, the valve enclosure lid shall weigh less than 22 lbs.	<u>X</u>	_____
The valve enclosure lid shall be black high density polyethylene with stainless steel reinforcements.	<u>X</u>	_____
The valve enclosure lid shall have molded integrated handle for ease of removal.	<u>X</u>	_____
The valve enclosure lid shall be attached to the reservoir via		

(4) rubber straps that can be removed without the use of any tools.

X
COMPLY
YES NO

Mounting bracket is to be designed and supplied by the reservoir supplier.

X

Mounting system should allow for a 1" frame clearance for frame obstructions.

X

Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank.

X

The enclosure will use a gasket-less passive technology.
(No rubber seals, gaskets, or weather stripping.)

X

The enclosure lid will be removable within seconds by one person without the use of tools.

X

All valve fittings, hose ends, filter, filler breather, sending units and any electrical connections are to be protected by enclosure cover.

X

The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter.

X

The cover will protect from both road and pressure washer spray.

X

The use of bulkhead fittings is not permitted.

X

The directional control valve must be easily accessible from all (6) sides without the use of tools.

X

Hose exit and entrance must allow for components to be mounted adjacent to the enclosure.

X

A 2" full flow brass ball valve shall be plumbed at the suction port of the tank.

X

A low oil/high temp sending unit shall be mounted in the reservoir.

X

All hydraulic lines/hoses shall be minimum 2 wire and supported every 24".

X

	COMPLY	
	YES	NO
All hose fittings shall be JIC type, the control valve shall feature O-ring type seals on the ports for JIC adaptors.	<u>X</u>	_____
The hydraulic system shall be filled with a multi viscosity ISO 32 hydraulic oil.	<u>X</u>	_____
Controls for all valve functions and electronic spreader control will be integrated into a single, self-contained control center.	<u>X</u>	_____
The control center shall be a padded armrest style that is ergonomically designed.	<u>X</u>	_____
Control center shall be modular in design for ease of installation, service, wiring and connectors shall be keyed and color coded throughout.	<u>X</u>	_____
A sealed, pre-wired harness for all valve controls must be provided.	<u>X</u>	_____
All components must be durable for long life and trouble free operation.	<u>X</u>	_____
The electronic controller shall be a fully proportional multi-stick controller to operate all cylinder functions.	<u>X</u>	_____
Multi-stick PWM driver electronics shall include as standard the capability to control at least 9 proportional outputs simultaneously.	<u>X</u>	_____
Use of a single, 3-axis joystick with pushbuttons in the handle to change joystick operation modes (from Plow to Wing, for instance) is unacceptable, as it presents a safety risk to the operator.	<u>X</u>	_____
Controls for 5100ex spreader must be located on armrest at the operator's fingertips.	<u>X</u>	_____
The control center shall feature 2 joy sticks Hoist with lockout and Plow lift/plow angle dual axis.	<u>X</u>	_____
The controls shall be a remote interface panel for the 5100ex spreader control.	<u>X</u>	_____
This panel shall consist of three knobs that will control auger, spinner		

and prewet rates.

X

COMPLY
YES NO

These knobs shall be color coded to match the 5100ex LCD display for ease of operation.

X

There shall also be five auxiliary rocker switches available.

X

These switches shall control either auxiliary lighting functions or spreader control functions.

X

The switches shall be located between the joysticks and spreader control interface and each shall be rated for 15 amps continuous current minimum.

X

Console options shall be capable of supplying full rated power to switch outputs when all four auxiliary switches are at full 15 amp load.

X

For ease of operation the multi-stick control shall include the following features: LED-backlit nomenclature for all joystick functions and a momentary push-button at the top of the hoist stick to provide hoist-interlock.

X

The "Hoist" decal shall be located near the Hoist joystick, shall be illuminated amber while disabled, and change to green backlighting when the driver engages the hoist interlock button.

X

The green "Hoist" LEDs shall remain illuminated while the hoist is under operation and shall time-out after a period of hoist inactivity that is selectable from 0 to 15 seconds.

X

The plow joystick shall have the option to include a momentary pushbutton for activation of remote spreader standby, remote spreader blast, electric joystick interlock, or to activate one of several selectable 12V, 2A outputs for functions such as body vibrator or function toggling.

X

The multi-stick communication hardware/software shall include 4 integral float options.

X

The use of add-on float modules is unacceptable.

X _____
COMPLY
YES NO

For flexibility of use the integral float programming shall have the following standard features:

(4) axis functional float on any or all of the outputs with selectable forward/back, right/left functionality

X _____

3-way or 4-way float functionality

Selectable (3) second float delay timer

X _____

Optional float enable switch inputs.

X _____

When float output for a given joystick function is active, the LED-backlit nomenclature shall blink ON/OFF to provide visual feedback to the operator that the float function is engaged.

X _____

To ensure longevity of performance all lighting to be solid-state LED technology.

X _____

The use of incandescent lamps or EL backlighting is unacceptable.

X _____

All function joysticks shall be of contact-less Hall-effect design and offer up to a 5-Million cycle life.

X _____

The use of potentiometers is unacceptable.

X _____

Joystick MIN/MAX output duty cycle thresholds, dead bands and error thresholds for each joystick output shall be customizable in the field through a built-in easy to use software interface.

X _____

Laptops or personal computers shall not be necessary to calibrate the joystick MIN/MAX settings or other system characteristics.

X _____

Joystick calibration data shall be retained on-board and shall be easily transferrable between joystick system components.

X _____

To increase safety of operation, joystick communication hardware/software shall include the following standard features:

Input power monitor circuitry with power quality diagnostics.

X _____

	COMPLY	
	YES	NO
Joystick output open/short circuit detection and operator notification	<u>X</u>	_____
Joystick input off-center checking on all axes and output shutdown on system power-up	<u>X</u>	_____
Joystick out-of-range fault condition checking and output shutdown	<u>X</u>	_____
True outputs off with joystick centered	<u>X</u>	_____
LED-backlit nomenclature shall illuminate and flash RED when any error condition exists and an audible alarm shall sound.	<u>X</u>	_____
LED-backlit nomenclature shall blink ON/OFF with increasing frequency as the corresponding function is increased in speed to give the operator visual feedback of each joystick output.	<u>X</u>	_____
The joystick control system shall be equipped with a qualified ESTOP device that immediately disconnects battery power from all joystick outputs.	<u>X</u>	_____
All joystick-operated outputs shall immediately cease to function, an audible alarm shall sound, and the joystick system display shall inform the operator that the ESTOP device has been activated.	<u>X</u>	_____
The ESTOP device must remove power from the joystick outputs while maintaining power to the display and CPU for diagnostic purposes.	<u>X</u>	_____
The operator must manually reset the ESTOP device in order to return the joysticks to operational status.	<u>X</u>	_____
The electronic spreader control shall include proportional controls for Auger, Spinner, and Prewet spreader functions and shall be integrated into a small, rugged, plastic injection molded, control box.	<u>X</u>	_____
The controller shall also be capable of reversing auger.	<u>X</u>	_____
The auger and prewet functions shall be operable in manual mode, open loop mode, and closed loop mode.	<u>X</u>	_____

	COMPLY	
	YES	NO
Spread rates for granular, spinner, and prewet shall have the ability to be adjustable inside of calibration.	<u>X</u>	_____
Materials shall be capable of being named.	<u>X</u>	_____
A security code shall be selectable in calibration to lock out undesired changes to the calibration settings.	<u>X</u>	_____
An optional supervisor USB key shall be available for quick access to the calibration menu.	<u>X</u>	_____
The controller shall be modular in design for ease of installation and service.	<u>X</u>	_____
The controller shall be capable of being mounted anywhere in the cab.	<u>X</u>	_____
A RAM mount shall be used to allow for easy installation and swivel capabilities.	<u>X</u>	_____
Wiring connectors shall be keyed with wiring labeled throughout.	<u>X</u>	_____
The spreader harness shall include DIN connectors that illuminate when the output is active.	<u>X</u>	_____
All components must be durable for long life and trouble free operation. Spinner and spreader control dials shall be on the right side of the controller to allow for a clear view of the display while being adjusted.	<u>X</u>	_____
The spinner and spreader control knobs shall be color coded and correlated with the granular and spinner settings on the screen.	<u>X</u>	_____
The enclosure shall provide a built in, protective surrounding around the spinner and spreader control knobs to prevent unintentional use and damage to the knobs.	<u>X</u>	_____
The controller shall include off the shelf integration with PreCise brand GPS/AVL systems for advanced material logging and maintenance reporting.	<u>X</u>	_____
The controller shall also provide onboard current event and season		

totals for granular and prewet materials.

X _____

COMPLY
YES NO

An integrated USB port shall be used for data retrieval, firmware upgrades, and for loading and saving of calibration settings.

X _____

The controller shall include a 3.5" high brightness, color, touch screen LCD with adjustable backlighting.

X _____

The touchscreen shall be used for calibration only and shall not be needed during normal spreading operation.

X _____

The touch screen shall allow for easy navigation of calibration menus and data viewing menus.

X _____

The screen shall display warnings for oil level, oil temp, filter bypass, low granular material, low liquid material, granular and prewet feedback errors, and granular and feedback range errors.

X _____

Optional audible warnings shall coincide with each visual warning and shall be individually adjustable.

X _____

There shall also be a dedicated red LED on the face of the controller for an additional body up indicator.

X _____

This LED shall not rely on software of the controller to operate.

X _____

The electronic spreader control shall be a FORCE America 5100EX or prior approved equal.

X _____

REVERSABLE PLOW

Cutting width shall be 12' at 0 degrees.

X _____

Moldboard height shall be 43" with a 6" cutting edge.

X _____

Moldboard shall be a smooth rolled design with a radius of 18"

X _____

Moldboard shall be 10 ga A607 50,000 PSI steel.

X _____

	COMPLY	
	YES	NO
Moldboard reinforcement shall be 10 vertical ribs or 5 rolled 4" channel ribs.	<u>X</u>	_____
The vertical braces shall be reinforced with horizontal cross members of 4" structural channel.	<u>X</u>	_____
Top edge of moldboard shall be double flanged or reinforced with a 2x2x3/16 angle iron.	<u>X</u>	_____
The bottom support structure shall be a 4"x4"x3/4" a36 mod angle This angle shall be boxed the entire length between bolt holes.	<u>X</u>	_____
Moldboard shall have built in snow deflectors.	<u>X</u>	_____
A 12" rubber flap shall be bolted to the top edge of the moldboard.	<u>X</u>	_____
Plow shall have variable mold board pitch allowing cutting edge attack Angle to be changed from 15 to 35 degrees.	<u>X</u>	_____
Plow shall have 2 compression spring loaded pitch adjustment bars to allow the plow to trip over obstructions.	<u>X</u>	_____
Plow must return to normal plow position without having to reset manually.	<u>X</u>	_____
Each spring shall be 9/16" diameter with a solid load rate of 1644 lbs.	<u>X</u>	_____
The reversible angle push frame shall be heavy duty construction and shall be designed to distribute the plowing forces across the entire length of the lower moldboard angle.	<u>X</u>	_____
The push frame shall attach to the moldboard with no less than 4 1-1/4" diameter pins.	<u>X</u>	_____
The main push frame shall be manufactured from 4"x4"x1/4" wall square tubing grade A 500B or better.	<u>X</u>	_____
The reversible A-frame shall be tubular construction minimum 4"x2"x3/16" grade A 500B or better.	<u>X</u>	_____

The reversible A frame shall straddle the push frame, doubled so that the pivot pin is supported at the top and bottom for maximum strength.

COMPLY

YES NO

X _____

The pivot pin shall be 1-1/2" diameter minimum.

X _____

The plow shall feature a full floating oscillating feature to allow the plow to follow changing road contours, this feature will not be sacrificed with any quick attach.

X _____

The hydraulic reversing cylinders shall be 2 double acting, minimum 3" diameter 20" stroke with 1-1/2" nitrided shafts.

X _____

Hydraulic cylinders shall be capable of high pressure operation with a burst pressure strength tested to 8000 PSI.

X _____

The hydraulic circuit shall include a cushion valve.

X _____

Plow shall be equipped with 2 1-1/2" thick x 11" diameter mushroom shoes.

X _____

Shoes shall be screw adjustable without the use of any tools.

X _____

PLOW HITCH

The hitch shall be a heavy duty bumper to frame hitch.

X _____

Connection shall be a pin type quick connect, single lever.

X _____

Lower portion of hitch shall be braced to truck chassis with a 3/4" x 4" A-36 steel bars reinforced with to form a T section.

X _____

Vertical risers and lifting yoke shall be low profile to allow clearance for opening hood, without tilting or removing plow.

X _____

Plow lift cylinder shall be 4" x 10" single acting type.

X _____

SAND SPREADER

The spreader required under these specifications shall be of a heavy duty, self-contained, hopper-type design.

X _____

COMPLY
YES NO

This unit shall consist of a 304 Stainless steel body, feed conveyor, spinner disc, power drive, and all components necessary to make a complete operating unit.

X _____

It shall be capable of uniformly spreading sand, cinders, salt, calcium chloride, or mixtures of each up to a width of forty feet.

X _____

Bidders must submit with their bid complete specifications on the unit they propose to furnish.

X _____

Bids with exceptions to these specifications shall be considered informal.

X _____

The unit, as bid, shall be a current design and production unit.

X _____

Bidders shall submit current literature for the make and model being bid.

X _____

All sheet steel gauges and bar stock sizes listed throughout this specification will conform to ASTM standards.

X _____

The use of any other standards will not be considered.

X _____

BODY

The spreader hopper shall be constructed of no less than 12-gauge 304 stainless steel.

X _____

The hopper body length shall be not greater than 10' feet with longitudinals extending one foot beyond for mounting the spinner assembly.

X _____

The hopper shall be not greater than 82" wide with a body side height not to exceed 50".

X _____

The body shall be of an all welded steel construction and not less than 5.2 cubic yards struck capacity.

X _____

The body sides shall have not less than forty-five (45) degree pitch to insure free flow of material to the conveyor.

X _____

Both front and rear end gates shall be tapered 23 degrees

X _____

COMPLY
YES NO

The body shall be rigidly constructed and the entire top of the body is to be 2-1/4" x 1-1/8" channel-formed for additional support.

X _____

In addition, the rear end gate shall be reinforced on three sides of the feed gate opening.

X _____

The body longitudinal sills shall be a minimum of 12-gauge 304 stainless steel with the bottom longitudinal flanges supported on formed 7-gauge 304 stainless 3" channel cross sills.

X _____

The longitudinal sills shall be of a "formed-over" design to provide protection to the conveyor chain strands.

X _____

There shall be an adequate number of 12-gauge 304 stainless steel body supports rigidly tying the channel cross sill to both the longitudinal sill and body side sheets to provide the highest degree of resistance to warping or twisting under heavy loads.

X _____

At each corner of the body shall be a lifting loop constructed from no less than 3/4" 304 stainless round material.

X _____

Welding procedures for this body shall provide for: full welding of the side sheets to the end gates on the outside of the body.

X _____

Full welding of the side sheets to the body longitudinals on the outside of the body.

X _____

Full welding of the side supports to the side sheets, longitudinal and cross sills on one side.

X _____

The lifting loops shall also be fully welded to the end gates.

X _____

The practice of skip welding any of the aforementioned components to another will not be accepted.

X _____

CONVEYOR

The conveyor system shall be of the chain bar flight type running longitudinally with the body, feeding materials through the feed

gate opening and onto the distributor disc.

X _____

COMPLY
YES NO

At the rear of the hopper body, a feed gate opening of no less than 12" high by 18" wide shall supply be provided.

X _____

A feed gate of no less than 12-gauge 304 stainless steel and running in self cleaning, heavy-duty feed gate slides will be provided to accurately regulate the amount of material exiting to the spinner disc.

X _____

Adjustment of this feed gate shall be controlled through a screw type jack with a minimum rating of 135 foot pounds of torque.

X _____

A curb side operated handle connected to the jack by a stainless steel u-joint rated at no less than 250 foot pounds of torque will be provided.

X _____

To provide accurate calibration of the material flow, a feed gate indicator and ruler shall be provided.

X _____

The overall width of the conveyor system shall be not less than 24".

X _____

The conveyor bottom shall be a minimum of 10- gauge 304 stainless steel, flange type construction.

X _____

The conveyor floor shall be adequately braced, with 1/4" x 1-1/2" bars, on 12" centers to provide rigidity to the conveyor chain floor.

X _____

The conveyor bottom will be considered as replaceable with the flanged section of the bottom panel bolted to the longitudinal sills with stainless hardware positioned every 12" for the length of the bottom panel.

X _____

There shall be formed rolled lips at both the front and rear of the bottom panel.

X _____

A replaceable wiper belt will be provided, on the rear lip, to assist in the prevention of material carry back.

X _____

The conveyor gearbox shall have a 50:1 reduction and be of a worm gear drive with a bronze gear.

X _____

Gear cases consisting of cast-iron gears will not be acceptable.

X _____
COMPLY
YES NO

The gear case housing shall be cast-iron and will not be bolted directly to the longitudinal sill but instead mounted to a 10-gauge 304 stainless plate that will provide ease in serviceability to the drive assembly.

X _____

Conveyor drive sprockets shall be 8-tooth, drop forged steel, keyed to a 1-1/2" diameter (minimum) C-1045 shaft.

X _____

The drive bearing opposite the gear case shall be a heavy-duty, dust sealed, self-aligning, four bolt flange equipped with a grease fitting.

X _____

The idler sprockets shall be 8-tooth, drop forged steel, keyed, and mounted on not less than a 1-1/2" C-1045 shaft.

X _____

The idler bearings shall be of an actual "take-up" design, capable of being lubricated, and mounted into a screw type, positive adjustment, self-cleaning adjustment fixture with 4" (minimum) of full travel for proper tension at all times.

X _____

Flange or pillow block bearings used for the purpose of chain adjustment will not be accepted.

X _____

CONVEYOR CHAIN

The conveyor chain shall be heat-treated, 2-1/4" pitch, self-cleaning pintle-type with 7/16" locked non-turning pins.

X _____

The rated average tensile strength shall be 21,700 pounds per strand.

X _____

Chain bar flights shall have a cross section of 1/4" x 1-1/2" and be welded on both the top and bottom of each bar to the chain strand.

X _____

Chain bar flights should be located on approximately 4-1/2" centers.

X _____

SPINNER ASSEMBLY

COMPLY
YES NO

The distributor disc shall be 20" diameter, 10-gauge 304 stainless steel, and equipped with six replaceable fins.

X _____

The hydraulic motor will directly couple to the distributor disc, through a replaceable hub, with the hydraulic motor mounted above the spinner disc and outside of the material flow.

X _____

Material shall be guided from the conveyor end to the distributor disc through an enclosed chute.

X _____

At the top of the front panel of this enclosed chute, a wiper belt shall be installed to clean the underside of the conveyor chain.

X _____

The spinner chute is to be vertically adjustable 15" (in 3" increments) providing a 27" to 42" spinner disc position below the mounting surface.

X _____

To adjust the placement of the material on the spinner disc two adjustable flow deflectors will be provided.

X _____

These internal deflectors shall be adjustable without the use of tools.

X _____

To control the direction and width of the material being spread, the spinner shall come equipped with baffles in the front, rear, and on both sides of the spinner disc.

X _____

The front baffle shall be fixed position and extend out to the right and left of the spinner disc at a distance proper to prevent material from striking the underside of the operating chassis.

X _____

These baffles are to be equipped with flexible rubber corner shields.

X _____

These shields shall be of a design that will prohibit material from coming into contact with the underside of the truck chassis or the front end of a trailing vehicle.

X _____

Adjustment of the baffles shall be accomplished without the use of tools.

X _____

The chute and baffles shall be no less than 12- gauge 304 stainless steel.

X _____

COMPLY
YES NO

The spinner chute shall also contain a stainless rear deflector panel which, when properly positioned will allow material to be unloaded with out running over the spinner disc.

X _____

DUMP BODY MOUNT

The mounting kit is to include four 3" nylon straps with ratchet.

X _____

The straps will fasten to the spreader body with adjustable formed channels and to the dump body with "J" hooks.

X _____

No drilling of holes to fasten ratchet to spreader will be accepted. Each strap will be rated at no less than 5000 pound working load.

X _____

A tailgate latch device manufactured from 3" x 4.1 pound channel with 1-1/2" diameter pins welded at each end and fastened to the body sills through included brackets.

X _____

The pins are locked into place by the dump body tailgate latch.

X _____

POWER DRIVE

To be hydraulic and having two hydraulic motors.

X _____

One powering the spinner and the other the conveyor.

X _____

The hydraulic motor will directly couple to the distributor disc, through a replaceable hub.

X _____

The conveyor hydraulic motor shall be of the orbital, low speed, hi-torque type, integrally mounted to the conveyor gearbox.

X _____

Manual is to be furnished with each unit covering the operation, maintenance, and parts listing for the unit as well as promoting safe operation and maintenance procedures

X _____

AUTOMATIC TIRE CHAINS

The truck shall be equipped with automatic tire chains.

X _____

The tire chains shall be air operated with controls mounted in the cab.

X _____

COMPLY
YES NO

Each chain wheel shall have 6 chains.

X _____

ELECTRICAL

The truck shall have all LED lights

X _____

All wiring connections for add on circuits shall be soldered and shrink tubed.

X _____

All wiring shall be supported at intervals of no less than 24"

X _____

All wiring shall be encased in plastic loom and routed to prevent rubbing and chafing.

X _____

There shall be a light bar mounted on the cab with 2 plow lights with turn signals and high /low beam.

X _____

The light bar shall be constructed from aluminum tubing and stainless steel brackets mounted to the inside of the door frame.

X _____

There will be no holes drilled in the top of the cab, all wiring for light bar shall be routed down the back of the cab.

X _____

There shall be an electric horn warning if the truck door is open with the truck in gear.

X _____

There shall be a switch in the cab for flashing all exterior lights, this is to aid the operators pre-trip inspection.

X _____

The body builders modules shall be located at the rear truck frame.

X _____

It is the intent of these specifications to provide for the purchase of one new and unused Truck Chassis, Dump Body, Snow Plow and Hitch, Sand Spreader and Hydraulic System with Electronic Controls. Truck will be delivered operational with all components installed. These specifications are the minimum standards to which all bids will be evaluated. All bidders shall fill out the bid form completely and list any and all exceptions to the specifications.

Fallure to list exceptions/deviations will result in bid being rejected as non-responsive.

BID FORM

Furnish (1) 2017 or newer truck chassis, dump body, hydraulic system, reversible snow plow and sand spreader.

NET BID \$ 64,121.00 + \$ 78,844.00 = \$ 142,965.00 ✓

DELIVERY DATE: 60 Days After Receipt of Chassis *10 weeks or equiv*

Year, Make and Model of truck chassis 2017 Freightliner 108SD

Make and Model of dump body Galion 430 FT SMS

Make and Model of snow plow and hitch Falls 1243 Plow / 44B Hitch

Make and Model of sand spreader HiWay E2500

BIDDER INFORMATION

NAME I-State Truck Center

ADDRESS 4801 Harbor Drive Sioux City, IA 51111

PHONE (712) 252-2714

Kiel Mead
Name (Please Print) 
Signature

Sales Representative
Title 2-29-16
Date

Reversible Plow	Sanitation		Steffan's		Northern	
	YES	NO	Yes	No	Yes	NO
Cutting width shall be 12' at 0 degrees	X		X		X	
Moldboard height shall be 43" with a 6" cutting edge	X		X		X	
Moldboard shall be a smooth rolled design with a radius of 18"	X		X			X
Moldboard shall be 10 gal AG07 50,000 PSI steel	X		X			
Moldboard reinforcement shall be 10 vertical ribs or 5 rolled 4" channel ribs	X					
The vertical braces shall be reinforced with horizontal cross members of 4" structural channel	X		X			
Top edge of moldboard shall be double flanged or reinforced with a 2x2x3/16 angle iron	X		X		X	
The bottom support structure shall be a 4"x4"x3/4" a36 mod angle. This angle shall be boxed the entire length between bolt holes	X		X		X	
Moldboard shall have built in snow deflectors	X		X		X	
a 12" rubber flap shall be bolted to the top edge of the moldboard	X		X		X	
Plow shall have variable mold board pitch allowing cutting edge attack. Angle to be changed from 15 to 35 degrees	X			X		X
Plow shall have 2 compression spring loaded pitch adjustment bars to allow the plow to trip over obstructions	X		X		X	
Plow must return to normal plow position without having to reset manually	X		X		X	
Each spring shall be 9/16" diameter with a solid load rate of 1644 lbs.	X		X		X	
The reversible angle push frame shall be heavy duty construction and shall be designed to distribute the plowing forces across the entire length of the lower moldboard angle.	X		X			
The push frame shall attach to the moldboard with no less than 4 1-1/4" diameter pins	X		X		X	
The main push frame shall be manufactured from 4"x4"x1/4" wall square tubing grade A 500B or better	X		X		X	
The reversible A-frame shall be tubular construction minimum 4"x2"x3/16" grade A 500B or better	X		X		X	
The reversible A frame shall straddle the push frame, doubled so that the pivot pin is supported at the top and bottom for maximum strength	X		X			
The pivot pin shall be 1-1/2" diameter minimum	X		X		X	
The plow shall feature a full floating oscillating feature to allow the plow to follow changing road contours, this feature will not be sacrificed with any quick attach	X		X		X	

Note: Shaded area denotes material deviation from Spec

Saldon Steffen Northair

The hydraulic reversing cylinders shall be 2 double acting, minimum 3" diameter 20" stroke with 1-1/2" nitrided shafts	X		X			X
Hydraulic cylinders shall be capable of high pressure operation with a burst pressure strength tested to 8000 PSI	X					X
The hydraulic circuit shall include a cushion valve	X		X			X
Plow shall be equipped with 2 1-1/2" thick x 11" diameter mushroom shoes	X				X	X
Shoes shall be screw adjustable without the use of any tools.	X		X			X

DUMP BODY	Sanitation		Steffan's		Northern	
	YES	NO	Yes	NO	Yes	NO
The dump body shall be 10' length	X		X		X	
The inside width shall be 84"	X		X		X	
The side height shall be 30"	X		X		X	
The rear height shall be 36"	X		X		X	
The front height shall be 46"	X		X		X	
The floor shall be one piece 3/16" AR 450 minimum	X		X		X	
The sides and front shall be fabricated from 10 ga AR 450	X		X		X	
The tail gate shall feature 3 panels	X		X		X	
The understructure shall be one piece formed, 10" tall	X		X		X	
The tailgate shall be latched and unlatched with a 3-1/2" air cylinder with the control valve in cab	X		X		X	
The rear corner post and apron shall be 304 stainless steel	X		X		X	
There shall be 2 ovals cut into rear posts for strobes and STT Lights	X		X		X	
The body shall be equipped with a 1/4 cab shield	X		X		X	
The cab shield shall have 3 ovals cut in the top flange for LED strobes	X		X		X	
The body shall have a stainless steel grip strut-welded to both sides	X		X		X	
All marker lights, stop tail and turn lights shall be LED	X		X		X	
The hoist shall be a telescopic type with nitrided rods	X		X		X	
The telescopic cylinder shall be non-inverted with a steel cover when collapsed, cylinder to be mounted outboard, no dog house	X		X		X	
The cylinder shall be covered by a 2 year warranty	X		X		X	
Upper tailgate hinges and tailgate latches shall be cast steel - flare cut steel	X		X		X	
All welds to be continuous, no exceptions	X		X		X	
The body shall be primed with the following:						
Body shall be shot blasted after construction	X		X		X	
Body shall be coated with powdered zinc and cured	X		X		X	
The body shall be coated with powder and cured a second time	X		X		X	
The prime finish shall be gloss black - primed gray	X		X		X	
The finish paint shall match the cab	X		X		X	

Note: Shaded Area denotes Material deviation from Spec

	Sanitation		Steffan's		Northern	
	YES	NO	Yes	No	Yes	NO
Plow Hitch						
The hitch shall be a heavy duty bumper to frame hitch	X		X		X	
Connection shall be a pin type quick connect, single lever	X		X		X	
Lower position of hitch shall be braced to truck chassis with a 3/4" x 4" A-36 steel bars reinforced with to form a T section	X		X		X	
Vertical risers and lifting yoke shall be low profile to allow clearance for opening hood, without tilting or removing plow	X		X		X	
Plow lift cylinder shall be 4"x10" single acting type	X		X		X	
Sand Spreader						
The spreader required under these specifications shall be of a heavy duty, self-contained, hopper-type design	X		X		X	
This unit shall consist of a 304 stainless steel body, feed conveyor, spinner disc, power drive, and all components necessary to make a complete operating unit	X				X	
It shall be capable of uniformly spreading sand, cinders, salt, calcium chloride, or mixtures of each up to a width of forty feet	X		X		X	
Bidders must submit with their bid complete specifications on the unit they propose to furnish	X		X		X	
Bids with exceptions to these specifications shall be considered informal	X		X		X	
The unit, as bid, shall be a current design and production unit	X		X		X	
Bidders shall submit current literature for the make and model being bid	X		X		X	
All sheet steel gauges and bar stock sizes listed throughout this specification will conform to ASTM standards	X		X		X	
The use of any other standards will not be considered	X				X	

Note: Shaded Area denotes material deviation from Specs

Body	Sanitation		Steffan's		Northern	
	YES	NO	Yes	No	Yes	NO
The spreader hopper shall be constructed of no less than 12-gauge 304 stainless steel	X				X	
The hopper body length shall not be greater than 10' feet with longitudinals extending one foot beyond for mounting the spinner assembly	X				X	
The hopper shall be not greater than 82" wide with a body side height not to exceed 50"	X			X		X
The body shall be of an all welded steel construction and not less than 5.2 cubic yards struck capacity	X		X		X	
The body sides shall have not less than forty-five (45) degree pitch to insure free flow of material to the conveyor	X		X		X	
Both front and rear end gates shall be tapered 23 degrees	X			X		X
The body shall be rigidly constructed and the entire top of the body is to be 2-1/4" x 1-1/8" channel-formed for additional support	X		X			
In addition, the rear end gate shall be reinforced on three sides of the feed gate opening	X		X			X
The body longitudinal sills shall be a minimum of 12-gauge 304 stainless steel with the bottom longitudinal flanges supported on formed 7-gauge 304 stainless 3" channel cross sills	X				X	
The longitudinal sills shall be of a "formed-over" design to provide protection to the conveyor chain strands	X		X			X
There shall be an adequate number of 12-gauge 304 stainless steel body supports rigidly tying the channel cross sill to both the longitudinal sill and body side sheets to provide the highest degree of resistance to warping or twisting under heavy loads	X		X		X	
At each corner of the body shall be a lifting loop constructed from no less than 3/7" 304 stainless round material	X					
Welding procedures for this shall provide for: full welding of the side sheets to the end gates on the outside of the body	X		X		X	
Full welding of the side sheets to the body longitudinals on the outside of the body	X		X		X	
Full welding of the side supports to the side sheets, longitudinal and cross sills on one side	X		X		X	
The lifting loop shall also be fully welded to the end gates	X		X		X	
the practice of skip welding any of the aforementioned components to another will not be accepted	X		X		X	

Sta. Note: Shaded Areas denote material de vation from Spec

Conveyor	Sanitation		Staffan's		Northern	
	YES	NO	Yes	No	Yes	NO
The conveyor system shall be of the chain bar flight type running longitudinally with the body, feeding materials through the feed gate opening and onto the distributor disc	X		X		X	
At the rear of the hopper body, a feed gate opening of no less than 12" high by 18" wide shall supply be provided	X		X		X	
A feed gate of no less than 12-gauge 304 stainless steel and running in self clearing, heavy-duty feed gate slides will be provided to accurately regulate the amount of material exiting to the spinner disc	X		X		X	
Adjustment of this feed gate shall be controlled through a screw type jack with a minimum rating of 135 foot pounds of torque	X		X		X	
A curb side operated handle connected to the jack by a stainless steel U-joint rated at no less than 250 foot pounds of torque will be provided	X		X		X	
To provide accurate calibration of the material flow, a feed gate indicator and ruler shall be provided	X		X		X	
The overall width of the conveyor system shall be not less than 24"	X		X		X	
The conveyor bottom shall be a minimum of 10-gauge 304 stainless steel, flange type construction	X		X		X	
The conveyor floor shall be adequately braced, with 1/4" to 1-1/2" bars, on 12" centers to provide rigidity to the conveyor chain floor	X		X		X	
The conveyor bottom will be considered as replaceable with the flanged section of the bottom panel bolted to the longitudinal sills with stainless hardware positioned every 12" for the length of the bottom panel	X		X		X	
There shall be formed rolled lips at both the front and the rear of the bottom panel	X		X		X	
A replaceable wiper belt will be provided, on the rear lip, to assist in the prevention of material carry back	X		X		X	
The conveyor gearbox shall have a 50:1 reduction and be of a worm gear drive with a bronze gear	X		X		X	
Gear cases consisting of cast-iron gears will not be acceptable	X		X		X	
The gear case housing shall be cast-iron and will not be bolted directly to the longitudinal sill but instead mounted to a 10-gauge 304 stainless plate that will provide ease in serviceability to the drive assembly. Conveyor drive sprockets shall be 8-tooth, drop forged steel, keyed to a 1-1/2" diameter (minimum) C-1045 shaft	XX		X	X	X	XX

Solution Steffen Northern

The drive bearing opposite the gear case shall be a heavy-duty, dust sealed, self-aligning. Four bolt flange equipped with a grease fitting	X		X			X
The idler sprockets shall be 8-tooth, drop forged steel, keyed, and mounted on not less than a 1-1/2" C-1045 shaft	X		X			X
The idler bearings shall be of an actual "take-up" design, capable of being lubricated, and mounted into a screw type, positive adjustment, self-cleaning adjustment fixture with 4" (minimum) of full travel for proper tension at all times	X		X			X
Flange or pillow block bearings used for the purpose of chain adjustment will not be accepted	X		X			X
Conveyor Chain	Sanitation		Steffen's		Northern	
	YES	NO	Yes	No	Yes	NO
The conveyor chain shall be heat-treated, 2-1/4" pitch, self-cleaning pintle-type with 7/16" locked non-turning pins	X		X			X
The rated average tensile strength shall be 21,700 pounds per strand	X			X		X
Chain bar flights shall have a cross section of 1-4" x 1-1/2" and be welded on both the top and bottom of each bar to the chain strand	X		X			X
Chain bar flights should be located on approximately 4-1/2" centers	X		X			X

Dump Body Mount

The mounting kit is to include four 3" nylon strap with ratchet
 The straps will fasten to the spreader body with adjustable formed channels and
 to the dump body with "J" hooks
 No drilling of holes to fasten ratchet to spreader will be accepted. Each strap
 will be rated at no less than 5000 pound working load
 A tailgate latch divide manufactured from 3"x4.1 pound channel with 1-1/2"
 diameter pins welded at each end and fastened to the body sills through
 included brackets
 The pins are locked into place by the dump body tailgate latch

Power Drive

To be hydraulic and having two hydraulic motors
 One powering the spinner and the other the conveyor
 The hydraulic motor will directly couple to the distributor disc, through a
 replaceable hub
 The conveyor hydraulic motor shall be of the orbital, low speed, hi-torque,
 integrally mounted to the conveyor gearbox
 Manual is to be furnished with each unit covering the operation, maintenance,
 and parts listing for the unit as well as promoting safe operation and
 maintenance procedures

Automatic Tire Chains

The truck shall be equipped with automatic tire chains
 The tire chains shall be air operated with controls mounted in the cab
 Each chain wheel shall have 6 chains

Sanitation		Seffan's		Northern	
YES	NO	Yes	No	Yes	NO
X		X		X	
X		X		X	
X		X			
X		X		X	
X		X		X	

Sanitation		Seffan's		Northern	
YES	NO	Yes	No	Yes	NO
X		X		X	
X		X		X	
X		X		X	
X		X		X	
X		X		X	

Sanitation		Seffan's		Northern	
YES	NO	Yes	No	Yes	NO
X		X		X	
X		X		X	
X		X		X	

Electrical	Sanitation Products	Staffan's		Northern	
		YES	NO	Yes	NO
The truck shall have all LED lights		X		X	
All wiring connections for add on circuits shall be soldered and shrink tubed		X		X	
All wiring shall be supported at intervals of no less than 24"		X		X	
All wiring shall be encased in plastic loom and routed to prevent rubbing and chafing		X		X	
There shall be a light bar mounted on the cab with 2 plow lights with turn signals and high/low beam		X		X	
The light bar shall be constructed from aluminum tubing and stainless steel brackets mounted to the inside of the door frame		X		X	
There will be no holes drilled in the top of the cab, all wiring for light bar shall be routed down the back of the cab		X		X	
There shall be an electric horn warning if the truck door is open with the truck in gear		X		X	
There shall be a switch in the cab for flashing all exterior lights, this is to aid the operators pre-trip inspection		X		X	
The body builders modules shall be located at the rear truck frame		X		X	

Spinner Assembly	Sanitation		Stefan's		Northern	
	YES	NO	Yes	No	Yes	NO
The distributor disc shall be 20" diameter, 10-gauge 304 stainless steel, and equipped with six replaceable fins	X		X		X	
The hydraulic motor will directly couple to the distributor disc, through a replaceable hub, with the hydraulic motor mounted above the spinner disc and outside of the material flow	X		X		X	
Material shall be guided from the conveyor end to the distributor disc through an enclosed chute	X		X		X	
At the top of the front panel of this enclosed chute, a wiper belt shall be installed to clean the underside of the conveyor chain	X		X		X	
The spinner chute is to be vertically adjustable 15" (in 3" increments) providing a 27" to 42" spinner disc position below the mounting surface	X		X		X	
To adjust the placement of the material on the spinner disc two adjustable flow deflectors will be provided	X		X		X	
These internal deflectors shall be adjustable without the use of tools	X		X		X	
To control the direction and width of the material being spread, the spinner shall come equipped with baffles in the front, rear, and on both sides of the spinner disc. The front baffle shall be fixed position and extend out to the right and left of the spinner disc at a distance proper to prevent material from striking the underside of the operating chassis	XX		XX		XX	
These baffles are to be equipped with flexible rubber corner shields	X		X		X	
These shields shall be of a design that will prohibit material from coming into contact with the underside of the truck chassis or the front end of a trailing vehicle	X		X		X	
Adjustment of the baffles shall be accomplished without the use of tools	X		X		X	
The chute and baffles shall be no less than 12-gauge 304 stainless steel	X					
The spinner chute shall also contain a stainless steel red deflector panel which, when properly positioned will allow material to be unloaded without running over the spinner disc	X					

Note: Shaded Areas denotes material division from 5/25/05

HYDRAULIC SYSTEM	Sanitation		Steffan's		Northern	
	YES	NO	Yes	No	Yes	NO
The hydraulic pump shall be an axial piston pressure and flow compensated load-sensing type	X		X		X	
The pump shall have a displacement of 5.61 cubic inches per revolution at maximum stroke which will deliver 23.7 GPM @ 1000 engine RPM	X		X		X	
The pump shall have a minimum 2" suction line and 1/2" control drain line plumbed directly back to the reservoir	X		X		X	
The pump compensator shall have rear facing adjustments	X		X		X	
The pump shall be rated for 5800 PSI maximum and 4800 PSI continuous	X		X		X	
The pump shall have a Din type-mounting flange and a Din 5462 8-tooth shaft	X		X		X	
The pump shall be Force America TXV92 or prior approval equal	X		X		X	
An OMF8 series hot shift PTO that is mounted to the transmission shall drive the pump	X			X	X	
Hydraulic oil filter shall be mounted in the reservoir	X		X		X	
Hydraulic filter shall be rated for no less than 80 GPM	X		X		X	
Filter shall be ZINGA model TS-1200-25-1-0 with ZSRE-409-10 micro-glass filter element and be equipped with visual filter condition indicator gauge	X		X		X	
Filter shall also include a TD-150-PMI tank diffuser	X		X		X	
The system shall be delivered with one spare filter element	X		X		X	
The system shall be designed so that when the float contacts close, the PTO will disengage and stop pump flow	X		X		X	
An annunciator in control console will alert the driver that the PTO has been disengaged	X		X		X	
The control console will also incorporate an override switch wired to de-energize the shutdown system to facilitate diagnostics and equipment storage	X		X		X	
The hydraulic reservoir will be of 35 gallons nominal capacity	X		X		X	
The hydraulic reservoir will be constructed of 10-gauge steel and be internally baffled	X		X		X	
The valve enclosure lid will protect from both road and pressure washer spray	X		X		X	
For ease of removal by a single person, the valve enclosure lid shall weigh less than 22 lbs.	X		X		X	
The valve enclosure lid shall be black high density polyethylene with stainless steel reinforcements	X		X		X	
The valve enclosure lid shall have molded integrated handle for ease of removal	X		X		X	
The valve enclosure lid shall be attached to the reservoir via (4) rubber straps that can be removed without the use of any tools	X		X		X	
Mounting bracket is to be designed and supplied by the reservoir supplier	X		X		X	
Mounting system should allow for 1" frame clearance for frame obstructions	X		X		X	
Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank	X		X		X	
The enclosure will use a gasket-less passive technology (No rubber seals, gaskets, or weather stripping)	X		X		X	
The enclosure lid will be removable within seconds by one person without the use of tools	X		X		X	
All valve fittings, hose ends, filter, filter breather, sending units and any electrical connections are to be protected by enclosure cover	X		X		X	
The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter	X		X		X	
The cover will protect from both road and pressure washer spray	X		X		X	
The use of bulkhead fittings is not permitted	X		X		X	

UGA, HAN, JETTA, APT, TUN

The directional control valve must be easily accessible from all (6) sides without the use of tools	X		X		X	
Hose exit and entrance must allow for components to be mounted adjacent to the enclosure	X		X		X	
A 2" full flow brass ball valve shall be plumbed at the suction port of the tank	X		X		X	
A low oil/high temp sending unit shall be mounted in the reservoir	X		X		X	
All hydraulic lines/hoses shall be minimum 2 wire and supported every 24"	X		X		X	
All hose fittings shall be JIC type, the control valve shall feature O-ring seals on the ports for JIC adaptors	X		X		X	
The hydraulic system shall be filled with a multi viscosity ISO 32 hydraulic oil	X		X		X	
Controls for all valve functions and electronic spreader control will be integrated into a single, self-contained control center	X		X		X	
The control center shall be a padded armrest style that is ergonomically designed	X		X		X	
Control center shall be modular in design for ease of installation, service, wiring and connectors shall be keyed and color coded throughout	X		X		X	
A sealed, pre-wired harness for all valve controls must be provided	X		X		X	
All components must be durable for long life and trouble free operation	X		X		X	
The electronic controller shall be a fully proportional multi-stick controller to operate all cylinder functions	X		X		X	
Multi-stick PWM driver electronics shall include as standard the capability to control at least 9 proportional outputs simultaneously	X		X		X	
Use of single, 3-axis joystick with pushbuttons in the handle to change joystick operation modes (from Plow to Wing, for instance) is unacceptable, as it presents a safety risk to the operator	X		X		X	
Controls for 5100ex spreader must be located on armrest at the operator's fingertips	X		X		X	
The control center shall feature 2 joy sticks Hoist with lockout and Plow loft/plow angle dual axis	X		X		X	
The controls shall be a remote interface panel for the 5100ex spreader control	X		X		X	
This panel shall consist of three knobs that will control auger, spinner - Two knobs and prewet rates	X		X		X	
These knobs shall be color coded to match the 5100ex LCD display for ease of operation	X			X	X	
There shall also be five auxiliary rocker switches available	X		X		X	
These switches shall control either auxiliary lighting functions or spreader control functions	X		X		X	
The switches shall be located between the joysticks and spreader control interface and each shall be rated for 15 amps continuous current minimum	X		X		X	
Console options shall be capable of supplying full rated power to switch outputs when all four auxiliary switches are at full 15 amp load	X		X		X	
For ease of operation the multi-stick control shall include the following features: LED-backlit nomenclature for all joystick functions and a momentary push-button at the top of the hoist stick to provide hoist-interlock	X		X		X	
The "Hoist" decal shall be located near the Hoist joystick, shall be illuminated amber while disabled, and change to green backlighting when the driver engages the hoist interlock button.	X		X		X	
The green "Hoist" LED shall remain illuminated while the hoist is under operation and shall time-out after a period of hoist inactivity that is selectable from 0 to 15 seconds	X		X		X	

The plow joystick shall have the option to include a momentary push button for activation of remote spreader standby, remote spreader blast, electric joystick interlock, or to activate one of several selectable 12V, 2A outputs for functions such as body vibrator or function toggling	X	X	X	
The multi-stick communication hardware/software shall include 4 integral float options	X	X	X	
The use of add-on float modules is unacceptable	X	X	X	
For flexibility of use the Integral float programming shall have the following standard features	X	X	X	
(4) axis functional float on any or all of the outputs with selectable forward/back, right/left functionality	X	X	X	
3-way or 4-way float functionality	X	X	X	
Selectable (3) second float delay timer	X	X	X	
Optional float enable switch inputs	X	X	X	
When float output for a given joystick function is active, the LED-backlit nomenclature shall blink ON/OFF to provide visual feedback to the operator that the float function is engaged	X	X	X	
To ensure longevity of performance all lighting to be solid-state LED technology	X	X	X	
The use of Incandescent lamps or EL backlighting is unacceptable	X	X	X	
All function joysticks shall be of contact-less Hall-effect design and offer up to a 5-Million cycle life	X	X	X	
The use of potentiometers is unacceptable	X	X	X	
Joystick MIN/MAX output duty cycle thresholds, dead bands and error thresholds for each joystick output shall be customizable in the field through a built-in easy to use software interface	X	X	X	
Laptops or personal computers shall not be necessary to calibrate the joystick MIN/MAX settings or other system characteristics	X	X	X	
Joystick calibration data shall be retained on-board and shall be easily transferrable between joystick system components	X	X	X	
To increase safety of operation, joystick communication hardware/software shall include the following standard features:	X	X	X	
Input power monitor circuitry with power quality diagnostics	X	X	X	
Joystick output open/short circuit detection and operator notification	X	X	X	
Joystick input off-center checking on all axes and output shutdown on system power-up	X	X	X	
Joystick out-of-range fault condition checking and output shutdown	X	X	X	
True outputs off with joystick centered	X	X	X	
LED-backlit nomenclature shall illuminate and flash RED when any error condition exists and an audible alarm shall sound	X	X	X	
LED-backlit nomenclature shall blink ON/OFF with increasing frequency as the corresponding function is increases in speed to give the operator visual feedback of each joystick output	X	X	X	
The joystick control system shall be equipped with a qualified ESTOP device that immediately disconnects battery power from all joystick outputs	X	X	X	
All joystick-operated outputs shall immediately cease to function, an audible alarm shall sound, and the joystick system display shall inform the operator that the ESTOP device has been activated	X	X	X	
The ESTOP device must remove power from the joystick outputs while maintaining power to the display and CPU for diagnostic purposes	X	X	X	
The operator must manually reset the ESTOP divide in order to return the joysticks to operational status	X	X	X	
The electronic spreader control shall include proportional controls for Auger, Spinner, and Prewet spreader functions and shall be integrated into a small, rugged, plastic injection molded, control box	X	X	X	
The controller shall also be capable of reversing auger	X	X	X	

Calibration Station Northern

The auger and prewet functions shall be operable in manual mode, open loop mode, and closed loop mode	X	X	X	
Spread rates for granular, spinner, and prewet shall have the ability to be adjustable inside of calibration	X	X	X	
Materials shall be capable of being named	X	X	X	
A security code shall be selectable in calibration to lock out undesired changes to the calibration settings	X	X	X	
An optional supervisor USB key shall be available for quick access to the calibration menu	X	X	X	
The controller shall be modular in design for ease of installation and service	X	X	X	
The controller shall be capable of being mounted anywhere in the cab	X	X	X	
A RAM mount shall be used to allow for easy installation and swivel capabilities	X	X	X	
Wiring connectors shall be keyed with wiring labeled throughout	X	X	X	
The spreader harness shall include DIN connectors that illuminate when the output is active	X	X	X	
All components must be durable for long life and trouble free operation. Spinner and spreader control dials shall be on the right side of the controller to allow for a clear view of the display while being adjusted	X	X	X	
The spinner and spreader control knobs shall be color coded and correlated with the granular and spinner settings on the screen	X	X	X	
The enclosure shall provide a built in, protective surrounding around the spinner and spreader control knobs to prevent unintentional use and damage to the knobs	X	X	X	
The controller shall include off the shelf integration with PreCise brand GPS/AVL systems for advanced material logging and maintenance reporting	X	X	X	
The controller shall also provide onboard current event and season totals for granular and prewet materials	X	X	X	
An integrated USB port shall be used for data retrieval, firmware upgrades, and for loading and saving of calibration settings	X	X	X	
The controller shall include a 3.5" high brightness, color, touch screen LCD with adjustable backlighting	X	X	X	
The touchscreen shall be used for calibration only and shall not be needed during normal spreading operation	X	X	X	
The touch screen shall allow for easy navigation of calibration menus and data viewing menus	X	X	X	
The screen shall display warnings for oil level, oil temp, filter bypass, low granular material, low liquid material, granular and prewet feedback errors, and granular and feedback range errors	X	X	X	
Optional audible warnings shall coincide with each visual warning and shall be individually adjustable	X	X	X	
There shall also be a dedicated red LED on the face of the controller for an additional body up indicator	X	X	X	
This LED shall not rely on software for the controller to operate	X	X	X	
The electronic spreader control shall be a FORCE America 5100ex or prior approval equal	X	X	X	

400U/T Dump Body

*A continued tradition
since the early 1900's*



Tough & Versatile

The rugged design of the Galion 400U/T series body makes it ideal for heavy loading and hauling conditions. This product is suitable for contractor, municipal and other applications where durability is key. The 400U/T series is available with front mount telescopic or underbody hoist to meet your most demanding requirements. Known the world over, Galion bodies provide the ultimate in dump body engineering, longer lift and maximum performance.



- Available in 9' and 10' lengths
- Material-shedding boxed top rails
- For 72"- 84"CA
- 8 gauge floor and sides
- Double acting tailgate
- 6-panel tailgate
- Tarp-friendly upper gate hardware
- Full-depth rear corner posts

All Galion bodies are powder coated and Zinc Primed, providing Corrosive resistance that is 700% greater than industry standard paint processes.



A 23" cab protector is optional equipment on the 400U/T

400U/T

Galion
Galion-Godwin Truck Body Co. LLC
www.galiongodwin.com

400U/T Specifications:

General Dimensions:

Available in 9' and 10' inside lengths, 84" inside width, standard side heights of 24", 26" and 30" with 10" higher ends.

Sides:

8 gauge high tensile steel with material shedding boxed top rails, full depth 15" rear corner post, 3 intermediate vertical side braces, 10" front and rear board extension pockets and full length tarp rails.

Floor:

8 gauge high tensile steel with 2" floor to side radius.

Front Bulkhead:

8 gauge high tensile steel construction with two bend top flange and one formed in place intermediate "V" brace.

Tailgate:

8 gauge high tensile steel, 6 panel design with full perimeter box bracing, two intermediate vertical braces and one intermediate horizontal brace, double acting design with long chains and two sets of banjo eyes and full width lower tailgate pin.

Tailgate hardware:

Heavy duty cast "tarp friendly" top hardware and overshot lower hardware and manual release handle.

Lights:

Meets all requirements of FMVSS108 with oval stop/tail/turn lights recessed in rear corner posts. All lighting is recessed, shock mounted, complete with factory wiring harness.

Understructure:

Stacked design utilizing 6" structural longitudinals gusseted to 4" structural channel crossmembers on 12" centers, lubricated front and rear cross shafts and full width rear bolster.

Safety Features:

All Galion 400U/T bodies are shipped with a "body up" warning light and OSHA required back up alarm.

Options:

Formed horizontal side brace ILO vertical bracing
Various cab protectors (sleek, widths to 90", long version)
6" higher ends ILO 10"
Coal door in gate
Air tailgate
Additional light holes
Bolt on spreader apron
Mailhot hoist option
L.E.D. lighting ILO incandescent
Barn door tailgate ILO double acting
Cast HD quick release top hardware
Other gauges, material types and understructures available

*The 400U/T body is built
for front mount telescopic or
underbody hoist applications
(your choice).*



Pictured is the 8 gauge high tensile steel 6 panel tailgate with chains and chain adjusters.



Pictured is a close view of the 15" 8 gauge rear corner post and 10" deep rear bolster. Also pictured is the double acting tarp friendly hardware.

FULL FACTORY WARRANTY
complete parts and service available
through nationwide authorized distributors

Galion-Godwin Truck Body Co. LLC.
7415 Peabody-Kent Rd. Winesburg OH. 44690 P.O. Box 208
(877) 450- 4794 Fax (330) 359-5660

Gal

SANITATION PRODUCTS, INC.
901 E. 48th Street North
Sioux Falls, SD 57104
800-669-0487

N.C.

Falls[®] PR Series

Power Reversible E-1

Power Reversible E-1 w/Slotted Trip

Power Reversible E-1 w/Trip Edge

Power Reversible E-1 w/Reduced Curl

Power Reversible E-1 One Way

POWER REVERSIBLE E-1 SERIES

For Trucks, Motor Graders and Wheel Loaders



Deep roll casts snow perfectly and reduces snow cloud.

***Rigid and trip blade units for use at all operating speeds.
Recommended for airports, highways, city streets and rural roads.***

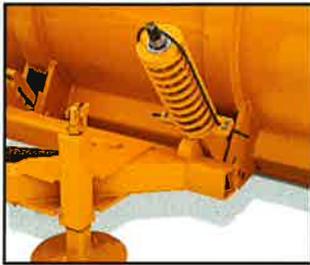
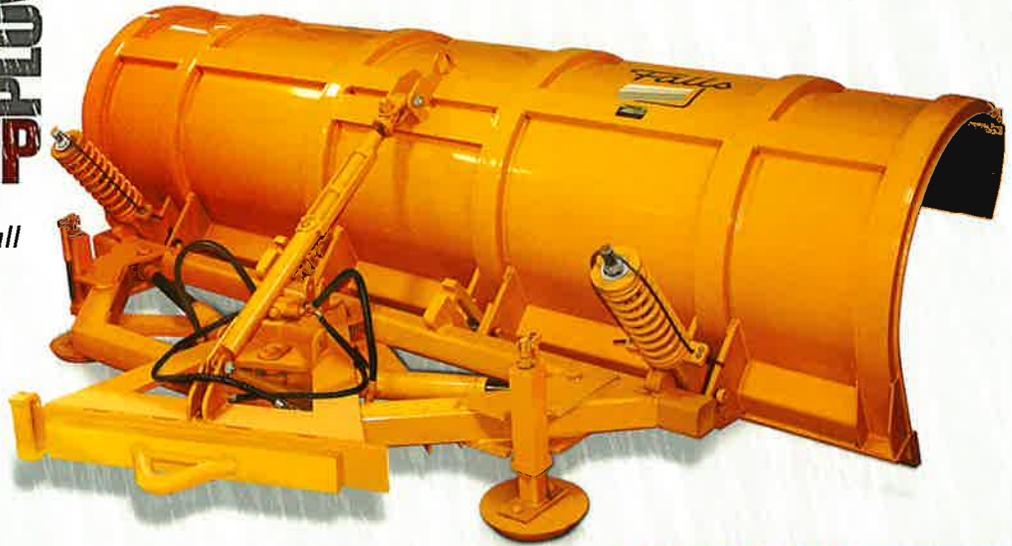
- Heavy-duty double A-frame.
- Quick coupler plow units attach to push plate with 2" diameter pivot bolt allowing desired snow plow oscillation for cleaner plowing.
- Five rolled, heavy channel iron ribs provide maximum rollboard rigidity. Horizontal channel braces reinforce transverse stability.
- Moldboard may be tilted forward or back depending on snow and road conditions.
- Nitrided cylinders for increased corrosion resistance.
- Bottom support structure is constructed of 4" x 4" x 3/4" A-36MOD angle iron reinforced between bolt holes.
- Heavy-duty tubular push frame distributes plowing stresses across full length of moldboard.
- Two heavy-duty single-acting reversing cylinders for quick control with hydraulic cushion valve for circuit protection.
- Standard screw-adjustable mushroom shoes.



POWER REVERSIBLE SLOTTED TRIP

Slotted Trip units for use at all operating speeds. Recommended for airports, highways, city streets and rural roads.

Same great features as our basic E-1 but with the tough, exclusive Falls Slotted Trip mechanism.



< The Falls Slotted Trip unit is overbuilt to get you through those tough winters.

> Precise moldboard curvature provides proper lift, roll, and throw.



▲ Heavy-duty tubular push frame distributes plowing stresses.

POWER REVERSIBLE TRIP EDGE

Trip Edge units for use at all operating speeds. Recommended for airports, highways and city streets.

Same great features as our basic E-1 but with the tough, exclusive Falls Trip Edge mechanism. Available in 1-, 2- or 3-section Trip.



▲ Heavy-duty tubular push frame distributes plowing stresses.



< Precise moldboard curvature provides proper lift, roll, and throw (shown in stainless steel).



POWER REVERSIBLE ONE WAY PLOW



One Way Power Reversible Plows are for use at all operating speeds. Recommended for airports, highways, city streets and rural roads.

- Heavy-duty double A-frame.
- Quick coupler plow units attach to push plate with 2" diameter pivot bolt allowing desired snow plow oscillation for cleaner plowing.
- Four rolled, heavy channel iron ribs provide maximum rollboard rigidity. Horizontal channel braces reinforce transverse stability.
- Moldboard may be tilted forward or back depending on snow and road conditions.
- Bottom support structure is constructed of 4" x 4" x 3/4" A-36 MOD angle iron reinforced between bolt holes. Discharge end is reinforced with an additional 1/2" x 7" 1045 steel plate.
- Heavy-duty tubular push frame distributes plowing stresses across entire length of moldboard.
- Two heavy-duty single-acting reversing cylinders for quick control with hydraulic cushion valve for circuit protection.
- Nitrided cylinders for increased corrosion resistance.
- 3/8" landslide plate has renewable nose.
- Standard screw-adjustable mushroom shoes.
- Slotted Trip and Trip Edge available.



▲ Heavy-duty tubular push frame distributes plowing stresses.



▲ Curvature provides proper lift, roll, and throw. Deep roll casts snow perfectly and reduces snow cloud.

POWER REVERSIBLE REDUCED CURL PLOW



Now Available!

The entire Falls PR Series is available with our optional Reduced Curl moldboard. Perfect for Wheel Loader and Tractor applications.



SPECIFICATIONS

MODEL	PR1043	PR1143	PR1243	PR1255
Cutting Width @ 0 degrees @ 35 degrees	10' 0" (3.05m) 8' 2" (2.49m)	11' 0" (3.35m) 9' 0" (2.74m)	12' 0" (3.66m) 9' 10" (3m)	12' 0" (3.66m) 9' 10" (3m)
Moldboard Height	43" (1.09m)	43" (1.09m)	43" (1.09m)	55" (1.4m)
Moldboard Ribs	Five (5) Rolled Heavy Channel Iron			
Moldboard Thickness	10 ga.(3mm) A607-50 Steel			7 ga.(5mm) A607-50
Snow Deflectors	Standard — Built-in			
Cutting Edge (AASHO punch)	5/8" x 6" x 10'	5/8" x 6" x 11'	5/8" x 6" x 12'	5/8" x 6" x 12'
Spring Trip Assemblies	2	2	2	Optional
Approx. Weight, plow & hyd-reverse	1800 lbs. (818 kg)	1900 lbs. (863 kg)	2000 lbs. (909 kg)	2200 lbs. (1,000 kg)
Approx. Total Weight w/hitch assembly	2250 lbs. (1,022 kg)	2350 lbs. (1,068 kg)	2450 lbs. (1,114 kg)	2650 lbs. (1,205 kg)

Also available are models PR1443, PR1455, & PR1655. Prices and specifications on request only.

MODEL	311HR	312R
Cutting Width @ 0 degrees @ 35 degrees	11' 0" (3.35m) 9' 0" (2.74m)	12' 0" (3.66m) 9' 10" (3m)
Moldboard Height, nose	30" (.762m)	
Moldboard Height, discharge	58" (1.473m)	60" (1.524m)
Moldboard Ribs	Four (4) Rolled Heavy Channel Iron	
Moldboard Thickness	7 ga.(2.38mm) A607-50 Steel	
Snow Deflectors	Standard — Built-in	
Cutting Edge (AASHO punch)	5/8" x 6" x 11'	5/8" x 6" x 12'
Spring Trip Assemblies	2	
Approx. Weight, plow & hyd-reverse	1900 lbs. (863 kg)	2000 lbs. (909 kg)
Approx. Total Weight w/hitch assembly	2350 lbs. (1,068 kg)	2450 lbs. (1,114 kg)

POWER REVERSE – Infinite adjustment from 0 – 35 degrees, left or right. Two heavy-duty, single-acting cylinders provide smooth adjustment with the moldboard raised or lowered or while under full load. The high pressure construction (8,000 psi min. burst) enable the cylinders to withstand normal plowing stresses. A cushion valve (standard equipment) protects the cylinders and the hydraulic circuits from sudden impact or surge.

TRIP MECHANISM – Compression spring-loaded tilting bars or slotted trip assemblies allow the plow to "trip" over unavoidable road hazards and return to normal plowing position. Especially recommended in urban applications.

YOUR DEALER IS:

Sanitation Products, Inc.
901 E 48th Street N
Sioux Falls, SD 57118-6222
(605) 332-2487



LITTLE FALLS MACHINE, INC.

300 Lindbergh Drive South
Little Falls, MN 56345
Toll-free 800-772-PLOW
Phone (320) 632-9266 • Fax (320) 632-3484
www.fallsplows.com

Specifications are subject to change without notice.

The policy and promise of Little Falls Machine, Inc. is continuing product improvement. Design change and structural alterations may occur without prior notice. Such changes will not sacrifice quality or product integrity.

Falls® is a trademark of Little Falls Machine, Inc.
Little Falls Machine, Inc. is an equal opportunity employer.

Hi-Way®

E2500

Heavy-Duty Spreader



The Hi-Way **E2500** includes innovative features and benefits at a competitive price. It incorporates heavy-duty construction and a spinner hopper that accommodates spreading, dumping and storage.

Standard Features:

- Heavy-duty 7-gauge bottom panel and 10-gauge body and longills. Unpainted 304 stainless steel units are made of 12-gauge body, stakes and sills with 10-gauge conveyor bottom panel.
- 24" (61 cm) wide conveyor chain with 1/4" x 1 1/2" (.6cm x 3.8cm) cross bars for spreading deicing materials. The conveyor is driven with a 50:1 gear reduction drive with hi-torque/low-speed hydraulic motor.
- Heavy-duty spinner hopper broadcasts material up to 40' (12m) with a hydraulic drive, 20" (51 cm) disc and six bolt-on spinner fins.
- A diverter panel provides spinner dump-over capabilities without using tools.
- The spinner hopper swings-up 180° for convenient ground storage.

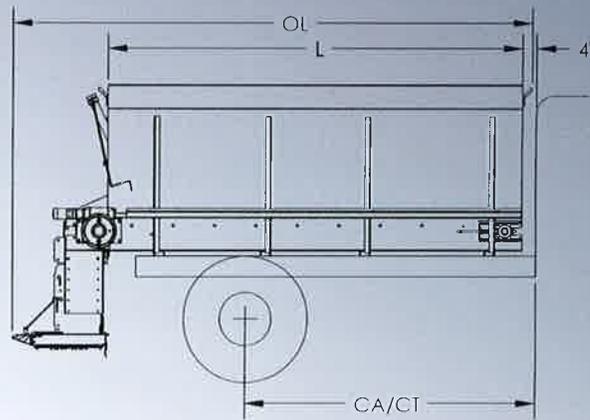
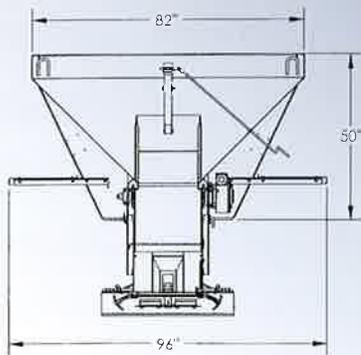
Optional Equipment:

- Dual control hydraulic system provides independent speed control to the spinner and conveyor.
- Fenders, mud flaps and cab shield are just some of the options available.
- Other popular options: inverted "V", hinged top screens, extended idler adjustment, and extended idler grease tubes.

E2500 Specifications



L Inside Body Length	Body Width	Overall Width (w/fenders)	OL Overall Length	Height-H	Struck Capacity	Conveyor Width	Truck CA/CT*	Spreader Shipping Weight Approx**
9' (2.74 m)	82" (208.3 cm)	96" (244 cm)	138" (350.5 cm)	50" (127 cm)	4.7 yd ³ (3.6 m ³)	24" (61 cm)	72" (182.9 cm)	1845 lbs. (837 kg)
10' (3.05 m)	82" (208.3 cm)	96" (244 cm)	150" (381.0 cm)	50" (127 cm)	5.2 yd ³ (3.9 m ³)	24" (61 cm)	84" (213.4 cm)	1964 lbs. (891 kg)
11' (3.35 m)	82" (208.3 cm)	96" (244 cm)	162" (411.5 cm)	50" (127 cm)	5.8 yd ³ (4.4 m ³)	24" (61 cm)	84" (213.4 cm)	2127 lbs. (965 kg)
12' (3.66 m)	82" (208.3 cm)	96" (244 cm)	174" (442.0 cm)	50" (127 cm)	6.3 yd ³ (4.8 m ³)	24" (61 cm)	102" (259.1 cm)	2234 lbs. (1013 kg)
13' (3.96 m)	82" (208.3 cm)	96" (244 cm)	186" (472.4 cm)	50" (127 cm)	6.9 yd ³ (5.3 m ³)	24" (61 cm)	102"-108" (259-274 cm)	2378 lbs. (1078 kg)
14' (4.27 m)	82" (208.3 cm)	96" (244 cm)	198" (502.9 cm)	50" (127 cm)	7.5 yd ³ (5.7 m ³)	24" (61 cm)	120" (304.8 cm)	2495 lbs. (1131 kg)
15' (4.57 m)	82" (208.3 cm)	96" (244 cm)	210" (533.4 cm)	50" (127 cm)	8.0 yd ³ (6.1 m ³)	24" (61 cm)	120" (304.8 cm)	2710 lbs. (1229 kg)
16' (4.88 m)	82" (208.3 cm)	96" (244 cm)	222" (563.9 cm)	50" (127 cm)	8.6 yd ³ (6.6 m ³)	24" (61 cm)	138" (350.5 cm)	2828 lbs. (1283 kg)



*Typical Cab to Axle measurement. Please consult federal, state, and local weight laws and chassis manufacturer's ratings to ensure neither government weight restrictions nor the GVWR and GAWRs are exceeded.

**Approximate weight includes the spreader and spinner hopper.

With only a few tool-free adjustments, the diverter panel bypasses the spinner chute for dumping over the spinner.

SANITATION PRODUCTS, INC.
901 E. 48th Street North
Sioux Falls, SD 57104
800-669-0487

Hi-Way *NEW LEADER*
Highway Equipment Company
Building the best since 1939.

Highway Equipment Company
 1330 76th Ave. SW • Cedar Rapids, IA 52404-7052
 Phone: (319) 363-8281 or (800) 363-1771
 Fax: (319) 286-3351 or (800) 363-8267
 Online: www.highwayequipment.com
 E-mail: information@highwayequipment.com

Products and specifications subject to change without notice. Photos and illustrations may or may not include optional equipment. Hi-Way® is a registered trademark of Highway Equipment Company. Copyright 2011 Highway Equipment Company, Inc. Form No. HI137-2011-12