



TOWNSHIP OF ZORRA

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TENDER 2018-01

Tender for One (1) New 2018 Tandem Truck With Diesel Engine and Approximate 130" Cab to Axle

Sealed tenders, clearly marked as to contents, will be received by the undersigned until **10:00 am on Tuesday, January 9, 2018.**

Tenders must be submitted on the following form supplied by the Township. All manufacturers' literature must accompany the tender. Where a specific brand name is listed, other equivalent products will be considered. The Township of Zorra will pay for 50% of the total tender price upon delivery to the 'Auxiliary Equipment' manufacturer's yard.

Should there be any addenda to this tender, they will be on the Township of Zorra website on or before 12:00 noon on Friday, January 5, 2018. It is the responsibility of any proponent to monitor for any addenda.

The lowest or any tender will not necessarily be accepted.

Aden Corcoran, C.E.T.
Director of Public Works
Township of Zorra
PO Box 306
Ingersoll, ON N5C 3K5
519-485-2490



TENDER 2018-01

SUBMISSION PAGE

Bidder: _____

Address: _____

Phone Number: _____

Printed Name of Authorized Signing Officer: _____

I agree that I have considered all items in this tender and the information provided is true.

Signature: _____

Date: _____

Truck Name: _____

Model: _____

Year: _____

Maximum Overall Length of Unit: _____

Delivery Date for Order Placed on/before January 19, 2018: _____

Should you be the successful bidder on this tender, the Township of Zorra will deduct \$100.00 from the invoiced price for every calendar day this delivery is late for any reason based on the above delivery date.

Total Price: _____

H.S.T.: _____

Total Tendered Price: _____

All prices F. O. B. Township of Zorra – Embro Shop.

Specification Sheet

Cab & Chassis – Diesel – Standard Tandem – C.A. 142”

60,000 lbs. G.V.W.

Item Descriptions Compliance

1. General Specifications

- a) This specification covers a 60,000 lb. G.V.W. diesel snow plow truck.
Yes No
- b) Vehicles must be supplied with suitable components to comply with the following specifications in all aspects. Yes No

2. Detailed Specifications

- a) Make

Specify Make and Model: _____

- b) Engine must meet current emission standards

Specify Make and Model: _____

Describe Means to meet current Emissions, example: EGR, DPF, SCR, DEF, etc.

3. Vehicle Weight

- a) G.V.W.R. 60,000 lb. minimum

Specify G.V.W.R.: _____

- b) The allowable G.V.W.R. as supplied shall be shown on a metal or Mylar tag.
Yes No

- c) Chassis weight shall be 17,000 lbs. minimum

Specify chassis weight: _____

4. Axles

- a) Front axle shall be Wide Track 20,000 lbs. minimum capacity

Specify make: _____

Specify model: _____

Specify capacity: _____

- b) Front wheel seals – wet type synthetic oil

Specify: _____

- c) Power steering shall be supplied with dual steering boxes. Yes No

- d) A setback front axle is required. Yes No

- e) Rear axle shall be tandem, dual drive with interaxle differential and driver controlled full axle lockup.

Specify make: _____

Approved Axles:

- Meritor MT-40-14X-5DCR-P Inc. .500" Housings & Lube Pump
- Dana Spicer DS405P/RD405P Inc. Lube Pump

Specify model: _____

Specify capacity: _____

- f) Synthetic Lube in Rear axles. Yes No

- g) Road speed in low gear at maximum torque shall not exceed 8km/hr. @ 1800-engine rpm

Specify: _____

- h) Approved ratios 5.86 – Maximum geared speed 70 mph

Specify: _____

Ratios: _____

5. Brakes

- a) Air brakes – full ABS
Specify: _____
- b) Front brakes – S-cam type, 16.5" x 6" minimum with 24 sq/in brake chambers
Specify: _____
- c) Rear brakes size 16.5" x 8.625" minimum
Specify: _____
- d) Rear brakes shall be S-cam type with Life Seal brake chambers.
Yes No
- e) Dust shields front and rear. Yes No
- f) Positive rear wheel spring loaded parking brake air reservoir and instrument panel switch. Yes No
- g) Means shall be provided to release the parking brakes from the cab with 0 pressure in the main air reservoir with air pressure remaining in either primary or secondary reservoir. Yes No
- h) Audible and red light low pressure indicator shall be supplied. Yes No
- i) Automatic drain valve shall be supplied with heater to drain moisture from the main air tank – Bendix DV-2 heater. Yes No
- j) Tank to have a separate manual drain with pull cord included. Yes No
- k) Air compressor, 16 C.F.M. minimum capacity. Yes No
Specify C.F.M.: _____
- l) Asbestos-free brake lining shall be supplied. Yes No

6. Frame

- a) Full double frame - resisting bending moment (section modulus x yield strength) shall be 3,240,000 lb per sq in min.

Specify: _____
If front frame extension is required, it must also be reinforced.

- b) Section modulus shall be 27.0 minimum.

Specify: _____

- c) Note: trucks with trunion type motor require frame reinforcing

Section modulus: _____

Frame yield strength: _____

- d) Mounting of snow plow cheek plates shall be possible. Yes No

- e) Any changes in this area from vehicles previously supplied to the Ministry of Transportation of Ontario must be approved by the Equipment Engineering Office. Yes No

- f) Provision shall be supplied to prevent diamond shaping of the frame; the frame shall be bridged by a cross-member installed within 10" of the rear of the cab in order to transfer snow plow wing push to each frame rail; this cross-member shall be gusseted fore and aft, and shall conform generally to drawings "A-7-491" and "A-7-492"; it must be approved by the Equipment Engineering Office. Yes No

- g) Frame shall be supplied as per requirements outlined herein with after frame a minimum of 75". Yes No

- h) Provision for installation of front mount crankshaft driven hydraulic pump including crankshaft adapter. Yes No

- i) Air dryer, air tanks, fuel and oil coolers, etc. shall be mounted in a position that shall avoid interference of the wing harness and sand spinner assembly. Yes No

- j) Body builder access points shall be provided **inside** of cab for auxiliary body lighting installation. Yes No

- k) Separate headlight wiring harness with in cab dash switch shall be provided for connection for snow plow headlights. Yes No

7. Suspension

- a) C.A. shall be approximately 130" clean and clear allowing wing harness to be mounted directly behind the cab without any obstruction from exhaust stack, etc. Yes No

- b) Wheel base as required to suit 130" CA requested. Yes No

- c) Front spring capacity at the ground to match front axle capacity and include rubber auxiliary springs on both sides. Yes No
- d) Rear spring capacity at the ground 8,610 kg/20,000 lbs. each minimum. Yes No
- e) Rear suspension shall be Hendrickson RT-403 or equivalent (with transfer rods). Yes No
- f) Axle spread shall be 54". Yes No

8. Wheels and Tires

- a) Dual rear wheels. Yes No
- b) Three (3) front, first line steel belted radial tubeless type tires 425/65r22.5 – 20 ply rating shall be supplied. Yes No
- c) Nine (9) rear, first line steel belted radial tubeless type tires 11R x 22.5 – 16 ply rating shall be supplied. Yes No

Size: _____

Ply: _____

Rating: _____

- d) Tread design:
 - Front – standard highway tread – Michelin XZY-3 20 ply Yes No
 - Rear – traction tread – Michelin XDS2 16 ply Yes No
- e) Three (3) Accuride 10 bolt hub piloted alloy wheel rims 22.5" x 13.0" shall be supplied. Yes No
- f) Nine (9) Accuride 10 bolt hub piloted alloy wheel rims 22.5" x 8.25" HD .472" shall be supplied. Yes No
- g) Rims shall have load and pressure ratings equal to or greater than those of tires. Yes No
- h) Mud flaps shall be supplied. Yes No

9. Engine

- a) Diesel, in-line 6 cylinder sleeved engine governed at 1800 R.P.M. with exhaust brake. Yes No

b) Engine displacement 8.9 L/min.

Specify: _____

c) Engine net H.P. 350 H.P. min. at 2000 R.P.M.

Specify HP: _____

Specify R.P.M.: _____

d) Minimum net torque shall be 1150 lbs./ft.

Specify net torque: _____

e) Note: required engine ratings must be set at the time of engine manufacture; engines with locally altered ratings are not acceptable. Yes No

f) Governor – engine governor – Electronic

Specify: _____

g) Oil Pan shall have extended life coating. Yes No

h) Engine Brake: Yes No

Specify: _____

10. Transmission

a) Allison 3000RDS-P 6 Speed TCM to be mounted in cab. Yes No

Specify make: _____

Specify model: _____

b) Synthetic transmission fluid. Yes No

c) Transmission oil temperature gauge shall be supplied. Yes No

11. Engine Equipment

a) Alternator – shall be 200 amp brushless alternator with remote voltage sensor. Yes No

Specify make: _____

Specify model: _____

- b) Battery – maintenance–free type; SAE rating combined 12 volt, 2600 CCA min; the batteries must be located in a position to avoid interference with wing harness and sander spinner assembly with aluminium battery box cover.

Specify: _____

- c) Jump start terminals – remote studs. Yes No
- d) High temperature and low oil pressure engine protection alarm bell or buzzer device shall be installed. Yes No
- e) A heavy-duty dual element air cleaner shall be supplied with air intake source inside/outside air with in cab control. Yes No
- f) An automatic temperature controlled on/off type clutch shall be supplied – approved model Horton Drivemaster.

Specify model: _____

- g) Air restriction indicator shall be supplied on the dash. Yes No
- h) Oil filter – full flow type. Yes No
- i) Block heater – 1250 watts minimum – immersion type; receptacle under door. Yes No
- j) Exhaust system to be horizontal with tailpipe to be vertical with aluminized steel guard; tailpipe to be on side of cab and must not protrude behind cab and shall not interfere with the sander/spinner assembly or rear wing post.
Yes No
- k) Regeneration Inhibit switch that resets with when ignition is turned off.
Yes No
- l) Note: crankshaft must be located low enough to allow the front mounted pump to operate with sufficient clearance below the radiator. Yes No
- m) Engine hood shall include Service access door; forward tilting with adequate side access panels with stationary grille. Yes No
- n) Engine oil Temperature gauge. Yes No

12. Cab

- a) Conventional cab with Premium or upgraded interior with full insulation package to include the following equipment. Yes No

- b) Seats – separate driver and a single passenger seat shall be supplied that are adjustable fore and aft. Yes No
- c) Driver's seat to be air suspension, high back (National 2000) or equivalent with arm rest; passenger seat to be air ride; both seats shall be fully padded with heavy duty cloth upholstery construction and 1 chamber lumbar.
Yes No
- d) Sun visors – dual. Yes No
- e) Suspended brake and accelerator peddles. Yes No
- f) Interior Grab handles – Yellow. Yes No
- g) Heated windshield wipers – internal electric with heavy duty motor and intermittent delay with in-cab independently operated shakers.
Yes No
- h) Lights are to automatically come on with wipers. Yes No
- i) Fresh air heater and defroster high output. Yes No
- j) Tachometer. Yes No
- k) An in-dash hour meter shall be supplied. Yes No
- l) Radio – AM/FM shall be supplied. Yes No
- m) 2 Cup holders. Yes No
- n) Seat belts shall be orange or red. Yes No
- o) Factory tinted glass all around cab. Yes No
- p) Floor mat – rubber. Yes No
- q) Electric power windows (both sides) and power door locks to lock automatically at 10 km/hr. Yes No
- r) Mirrors – two (2) powered bright finish heads and brackets West Coast type mirrors complete with built-in lights and heaters including heated convex mirrors on both sides. Yes No
- s) 2 convex heated fender mirrors. Yes No
- t) Grab bars on each side to assist easy entry and exit shall be supplied.
Yes No
- u) 2 Air horns with snow shield shall be supplied. Yes No

- v) Air conditioning shall be supplied. Yes No
- w) Wiring in overhead console for 2-way radio. Yes No
- x) Tool Box secured in cab or sealed box outside of cab. Yes No
- y) Flare or Triangle kit and ABC multipurpose 10 lb fire extinguisher.
Yes No
- z) Tilt and Telescopic Steering Column. Yes No
- aa) Built-in Bluetooth Yes No

13. Fuel Tank

- a) One 264L/70 gal. aluminium tank shall be provided on the left side and include stainless straps. Yes No

Specify: _____

- b) Step or side-mounted acceptable. Yes No
Specify model: _____

- c) Tank must not interfere with spinner or sander box.

Location: _____

- d) A fuel gauge shall be supplied. Yes No
- e) Fuel/water separator. Yes No

14. Lights

The following lights shall be supplied:

- a) LED rear red directional lights with arrow lenses. Yes No
- b) LED stop lights. Yes No
- c) Five identification streamlined LED cab lights. Yes No
- d) Switch in cab to cycle chassis lights for performing Pre-trip inspection.
Yes No
- e) Four-way flasher. Yes No
- f) Back-up lights. Yes No

- g) 360 Degree visibility Amber and Blue Light Bar SWS 16884 or approved equivalent permanently mounted on hydraulic tank. Yes No
- h) Two 150mm LED floodlights mounted on each side of rear light bar activated when vehicle is in reverse. Yes No

15. Paint

- a) Colour: exterior shall be painted candy apple red. Yes No
- b) Interior to be charcoal. Yes No

16. Attachments

- a) Anti-freeze to -40°C Extended Life. Yes No
- b) Rear tow hooks. Yes No
- c) Fender mounted front mud flaps and extensions. Yes No
- d) Bug screen – full radiator coverage. Yes No
- e) Balance panels – under each door. Yes No
- f) Visor over windshield. Yes No
- g) Back up alarm minimum 102 db. Yes No
- h) Complete set of spare filters or first service to performed by Dealer at “No Charge”. Yes No
- i) Heated Windshield. Yes No
- j) Access Door to allow for checking Engine Oil and Transmission Fluid. Yes No
- k) Engine Hood opening shall not be impeded by Plow Harness or Plow Equipment. Yes No
- l) High resolution camera with in-cab display shall be mounted on the rear of the completed vehicle. Yes No

17. Warranty

- a) Signed manufacturer’s factory warranty shall be supplied. Yes No
- b) Where minimums are called for the vehicle must meet or exceed the capacity, size or performance specified. Yes No

- c) This specification lists only the major details of a unit; therefore, it is the supplier's responsibility to deliver a fully equipped vehicle with compatible components to provide dependable efficient service for a snow plow application. Yes No
- d) Vehicle shall meet or surpass the mandatory requirements of the "Canadian Motor Vehicle Safety Regulations" (SOR 84.812) amended, and must bear the National Safety Mark, outlined in those regulations. Yes No
- e) Parts and service manual. Yes No

18. Note

- a) Dealer to deliver chassis to the dump body manufacturer. Yes No

19. Warranty Description

- a) Price to install window in right hand door at the bottom front; cost not to be included in tender. \$ _____

20. Lubecore or approved equal Double Acting Automatic Greasing System to be installed.

The following pages detail the specifications for the snow plow, wing, box and accessory items known as “Auxiliary Equipment” for the truck chassis specified earlier in this tender.

Description	Requirements	Conform	
		Yes	No
Snow & Ice Control Equipment General Specifications	The snow and ice control equipment supplied under this specification shall be the manufacturer’s latest model standard commercial product and shall have demonstrated industry acceptance by having been manufactured and sold in significant numbers to Ontario Municipalities, and shall have been proven in service for the application for at least one year prior to issuing of this tender document.		
	The below specifications describe a combination side tilt spreader body, hydraulic power tilt power detach front plow harness, power tilt one way plow, cable lift rear wing harness and wing . The equipment bid shall be in compliance with the listed specifications.		
	The total installed overall length with all items included in this tender mounted shall not exceed 38'. A drawing showing the overall length shall be supplied to the Township of Zorra within two weeks of award of this tender.		
Demonstration	A demonstration of equipment bid may be required, if requested it will be the responsibility of the bidder to arrange this demonstration at the Municipalities location within 5 working days of written notification, all equipment demonstrated will be the exact models offered by the bidder on this tender document.		
References	Where references are requested in this tender document the information must be completed in full and all references supplied are to be for the models of equipment offered by the bidder in the answered specification.		
National Safety Mark	As required by law under the Motor Vehicle Safety Act the intermediate or final stage manufacturer(s) that shall install the combination spreader/dump body and snow plow equipment onto the incomplete truck chassis possess a valid National Safety Mark registered with Transport Canada and will affix their registered National Safety Mark sticker onto the chassis thus certifying the unit as complete.		

Installation

The company that shall install the snow & ice control equipment on to the truck chassis shall be currently actively engaged in the business of snow & ice control equipment installations and shall provide proof of demonstrated ability by providing the following information.

Specify: _____

Registered National Safety Mark Number of Equipment Installer: _____

Name and Address of Equipment Installer: _____

List the last 5 installations completed for Ontario municipalities. Provide name of municipality, contact name, and phone number.

1. _____

2. _____

3. _____

4. _____

5. _____

Description	Requirements	Conform	
		Yes	No
Modifications	Any modifications and or alterations made by the bidder to this tender document will result in disqualification of the bidders submission.		
Safety	The design and operation must incorporate safety devices and attachments necessary to ensure that the equipment provided is capable of being operated with maximum safety		
	Complete safety and warning decal kit		
Inspection	The vendee reserves the right to inspect the equipment at any stage of manufacturing and/or installation of equipment on to the truck chassis and to have any deviations corrected upon request; a final inspection will be completed by the consignee at the time of delivery.		
	A cab layout inspection shall be arranged at the installers location with Township staff to review and confirm the detailed placement of all in cab controls at the time of installation.		
	A pre-delivery inspection will be arranged at the installers location with Township staff after final completion of the finished installation.		
Address	<p>State address of facility where completed equipment will be installed on to the truck chassis and Company name of installer</p> <p>Specify: _____</p> <p>_____</p> <p>_____</p> <p>_____</p>		
Parts	<p>O.E.M. spare replacement parts must be stocked in inventory by the successful bidder in sufficient quantity to provide adequate product support and to ensure timely delivery of spare parts orders and if requested the bidder must be able to provide supporting documentation.</p> <p>Address of Parts Warehouse:</p> <p>_____</p> <p>_____</p>		

Description	Requirements	Conform	
		Yes	No
Warranty	Warranty coverage will be for a minimum of one year from the date of delivery, manufacturer's warranty statement will be included with the bid submission.		
Manuals	One copy of an operation, parts and service manual will be provided for each unit, hydraulic & electrical schematic drawings must be included in the manual and must be specific to the actual completed installation .		
After Sales	It is a requirement of this tender that the bidder maintains an after sales service facility and employees staff qualified to perform after sales service work and that the bidder is also capable of providing in field mobile field service at our location, the bidder if requested must be prepared to provide a tour of this facility.		
Prep	All steel components shot blasted prior to application of primer.		
Primer	Tow coats of a high quality epoxy primer with a minimum of 4 ml. dry thickness shall be applied to all steel components other than the sander body.		
Rubber Helper Spring	Aeon rubber helper spring installed front right side to prevent chassis sag to the right side with wing installed.		
MTO Cross Member	Chassis reinforcement located approximately 10" behind cab between chassis frame rails, designed to with stand forces exerted during wing operation's		
Paint	Spreader body coated with a organic zinc primer and then two coats of Chromate epoxy primer finish paint, Dupont Imron Elite 2.0 dry film thickness backed on		
	Plow Harness, wing harness, plow, wing, oil tank, valve stack assembly & all related components Baril DCC-181		
	There will be no bare steel-to steel contact of any components; all steel surfaces will be painted as per above specifications before final assembly		
Paint Color	Spreader body N1080EF Zorra yellow		
	Plow & Wing gloss black		

Description	Requirements	Conform	
		Yes	No
Hydraulic Hose	All hydraulic hoses will be properly routed and secured to eliminate abrasion, protective covering will be applied at all potential wear points.		
	All hydraulic hoses must be SAE 100 R16 performance rated Specify: _____		
	All hydraulic hose Eaton Aeroquip Bruiser FC735 Specify: _____		
	Hose hanger tube stainless steel		
C.A. Requirements	All equipment specified including spreader body shall fit on the truck chassis specified with a CA of approximately 130". to be confirmed with installation layout drawing.		
Chain	All lift chain, and safety chain grade 70 proof coil plated with yellow zinc Dichromate.		
Hydraulic Quick Disconnects	Quick disconnect hydraulic couplers for plow harness & plow functions shall be one hand connect or disconnect under full system pressure, Safeway Flow Master S70 series		
Air Controls	Proportional feather able air controls shall be supplied one for each of the ten individual valve sections in the main valve stack		
	An air dryer lubricator and air protection valve shall be installed in the air control system.		
	The air control mounting stand will be fully adjustable and located between the driver and passenger seat within easy view and reach of the operator.		
	Heavy duty cab floor reinforcement plate and bracing for the pedestal stand		
	Air control pedestal made of brushed aluminum		
Electronics	Lighting switches shall be illuminated function labelled two position paddle switches		
	Switches mounted in brushed aluminum enclosure integral with printed circuit board		
	Total number of switches 9 with capability to control 12 separate functions		
	The switch enclosure shall be complete with manual reset circuit breakers		
	Electrical connection to the switch consul shall be one connection direct plug in		

Description	Requirements	Conform	
		Yes	No
Electronics (cont'd)	Plow lights shall be direct plug in to the OEM chassis plow light connection or a relay and separate harness shall be installed		
	There shall be no cutting of or splicing into the OEM chassis wiring harness by the installer of the snow & ice control equipment		
	All connections shall be either direct plug in to chassis OEM supplied connection or a relay board shall be installed & a entire separate circuit run		
	Electrical sealed weather tight junction boxes mounted in a raised position behind the chassis cab on drivers side above the main valve bank		
Hydraulic Cylinders	All hydraulic cylinders with the exception of the body hoist cylinder shall be in compliance with the following specifications		
	Rated at 3000 psi minimum working pressure		
	Rod material Stelmi 200 HR .001 thick chrome layer induction hardened to 1045ksi		
	Cylinder seals shall be Hallite		
	All porting shall be SAE O-Ring ports		
	Part number and date code to be stamped into the outside of the barrel		
Hydraulic Valves	Hydraulic valves sectional stackable mounted raised behind chassis cab in a vertical position on the driver's side integral with the rear wing harness		
	Make Hydro Control Model HCD with bronze sleeve shifters. Specify: Make: _____ Model: _____		
	The HCD valve stack will include the following eleven individual working sections: 1 D.A. Plow Lift; 1 D.A. Mouldboard Tilt; 1 D.A. Tilt Front Harness; 1 D.A. Front Of Wing; 1 D.A. Rear Of Wing; 1 D.A. Wing Braces; 1 D.A Side Tilt; 1 D.A. Upper Harness Lock Pin; 1 D.A. Lower Harness Lock Pin; 1 S.A. Body Hoist; 1 D.A Wing Positioner.		

Description	Requirements	Conform	
		Yes	No
Front Mount Tandem Dry Mode Pump	The hydraulic pump supplied shall be a front mount engine crankshaft driven tandem two stage dry mode gear pump. Specify: Make: _____ Model: _____		
	First stage 24 GPM @ 2,000 RPM Specify: _____		
	Second stage 29 GPM @ 2,000 RPM Specify: _____		
	The first stage of the pump will be dedicated to the operation of the spinner and conveyor system.		
	The second stage of the pump will operate all plow/wing functions and the body hoist.		
	Single stage one-section hydraulic pumps will NOT be acceptable.		
	There will be NO flow divider valves used to split oil flows between spreader and plow / wing functions.		
	Oil Reservoir	Oil reservoir of 35 U.S. Gal. capacity, 3/16" pickled and oiled steel, welded oil tight integral with rear wing harness, raised above chassis frame rails behind chassis cab. Specify: Capacity: _____ U.S. Gl.	
Reservoir to have a weather proof screw down filler / breather cap with fine mesh screen and provisions for clean out by hand.			
A removable magnetic trap shall be supplied.			
The oil return port shall be fitted with a diffuser to prevent turbulence and foaming of oil on the inside of the reservoir.			
Oil level and temperature gauge			
Hydraulic filter element for return line spin on filter assembly 10mmicron absolute.			
Hydraulic filter element for pressure side spin on filter assembly 10 micron absolute.			

Description	Requirements	Conform	
		Yes	No
Oil Reservoir (cont'd)	Oil shut off valve to be installed.		
	Low oil level indicator with warning light in chassis cab		
Spreader Body	The body will be a combination unit dumping to the rear and shall incorporate a hydraulic tilting floor to allow conversion to the spreading mode.		
	Model MG 1314 or equivalent in compliance with the below specifications and approved by the Township. Specify: Make: _____ Model: _____		
Construction	Outside length 14 ft. Specify: _____		
	Inside length 13 ft. Specify: _____		
	Overall width outside 98" Specify: _____		
	Overall width inside 86" Specify: _____		
	Height of sides 38" inches from conveyor floor Specify: _____		
	Height of front panel 53" to match chassis cab Specify: _____		
	Height of tailgate 48 inches from conveyor floor Specify: _____		
	Cab shield 24" 10 gauge Cor-ten steel		

Description	Requirements	Conform	
		Yes	No
Construction (cont'd)	All body welds will be 100% continuous inside and outside.		
	Front head high tensile Hardox 450 3/16" corrosion resistant high tensile steel plate (203,000 lbs/in ² tensile strength), reinforced with (2) channels.		
	Sides high tensile Hardox 450 3/16", reinforced with 3 verticals side posts (203,000 lbs/in ² tensile strength)		
	Floor high tensile Hardox 450 3/16", reinforced with 3 verticals side posts all welded 100% (203,000 lbs/in ² tensile strength), with 3 channel cross members		
	Tailgate high tensile Hardox 450 3/16", reinforced with vertical and horizontal boxed bracing (203,000 lbs/in ² tensile strength)		
	Top rail of body 4 inch x 4 inch x 3/8 inch square tubing		
	All horizontal bracing tapered to shed dirt		
	Body inside width to be tapered from front (cab end) of body to rear (tailgate end) of body design for quick load release		
	Front (cab end) inside body floor to be 1" wider than rear (tailgate end) of body floor width		
	All floor reinforcement via cross members only and shall be free of any honey comb or lattice type woven floor reinforcement or understructure		
	The floor and the right side of the body shall raise as one integral unit and tilt to the left to feed the conveyor		
	Conveyor with a front discharge chute installed on the left side of the floor		
	Adjustable manual discharge gate installed at the left front side adjustable manual discharge gate installed at the left front side of the body for the purpose of controlling the amount of material to the spinner		
	Hinges on the lifting floor section 1-1/4", stainless steel all bushings complete with grease fittings		
	Remote mount grease fittings for side tilt hinge with one central grease bank		
The design of the hinge shall prevent any accumulation of material which could cause stress in this critical area			

Description	Requirements	Conform	
		Yes	No
Construction (cont'd)	Sides and the floor joined together by a QT-400 3/16" plate		
	Right curb side mounted integrally with the lifting floor and a solid curb side outer wall shall provide added strength, security and support		
	Curb side outer wall shall provide protection for the side tilt floor section as well as the rear and front corners against loading damages		
	Longitudinals consist of 2 -10 structural channels joined at the rear by a 13" apron		
	Two 4" x 4" tubing reinforcements located between the two channels at the point where the two side tilt cylinders are fixed		
	A 3/8" plate joining the channels at the front and provides attachment point for the cylinder base		
	Safety prop installed under the body to support the weight of the empty body in the raised side tilt position		
	Safety prop installed at front hoist to support the weight of the empty body in the raised dump position		
	One shovel holder in accessible position right front side constructed of 304 stainless steel		
	Grip strut access ladder located drivers side front of body with fold down lower section all constructed of 304 stainless steel		
	Hardwood side boards 2" x 10" painted black		
Dual Function Tailgate	Dual function air trip tailgate actuated from inside chassis cab		
	Air trip actuated via one single air brake chamber		
	Spreader chains & brackets 5/16" minimum 70 proof coil		
	Tailgate chains enclosed in protective cover		
	Height adjustable asphalt gate located lower centre of the tailgate		
	Top hinges and vertical hinges on left side		
	Tailgate shall open to unload body to rear and will also swing open as a barn door and latch against the outside passenger side of the spreader body		
	Latch handle assembly for swing out door operation located lower drivers side at rear at man ground reach level		
	Coal chute centred in lower middle of the tailgate with adjustable opening gate with handle		

Description	Requirements	Conform	
		Yes	No
Hoist	Front mounted 2 stage telescopic cylinder with 30 ton capacity CS series rod sealed		
	Rear dump angle variable to 50 degrees.		
Side Tilt Cylinders	Lifting floor raised by two, 4" diameter (I.D.) x 22" double acting cylinders into the spreading position		
	Oil flow divider in order to ensure uniform lifting of the dual cylinders under the floor		
	The floor in the full lift side tilt position will be at more than 38° to horizontal		
Main Conveyor	Conveyor recessed along body left side for the entire length of the dump box floor		
	Pintle chain self-cleaning consisting of 2 strands of 14,000 pound ultimate strength steel C-188 with 3/8" x 1 1/4" bar flights on every second link		
	Pintle chain flights welded to every second chain link		
	The chain shall travel in a recessed trough with a 3/16" thick QT-400 steel floor		
	Outside chain width 18 3/4"		
	Drive gear box driven by a hydraulic motor with 25:1 reduction worm gear		
	Drive gear box with brass gears		
	Drive motor with replaceable integral built in speed sensor fully immersed in hydraulic oil		
	Drive gear-box mounted with 1 1/2" drive shaft two 8 tooth sprockets and a flange bearing		
	Idler end, fitted with two bearings mounted on a sliding system with a 1 1/2" shaft and two idler sprockets		
	Idler bearings complete with remote grease lines and grease fittings mounted in a accessible position on the lower drivers side of the body corner post		
	Chain tension adjusted via 2 grease cylinders mounted with the seal at top of the cylinder, not on the bottom of the rod		
	Protective conveyor cover with hinges and grease fittings provided for protection when the body is used for conventional hauling		
Conveyor cover made of high tensile Hardox 450 3/16" steel			
Spinner Assembly	Polyurethane spinner shall be installed on left side to spread ahead of rear wheels		
	Spinner vanes shall be curved design		

Description	Requirements	Conform	
		Yes	No
Spinner Assembly (cont'd)	Spinner disc flat design and not cone shaped		
	Hydraulic motor shall drive the spinner assembly		
	Adjustable poly spinner chute with vibrator		
	The spinner shall be capable of spreading evenly up to a 20 FT radius with a main operating range of 0 to 15 FT radius.		
	Spinner assembly capable of discharge rate from 100 lbs./lane mile to 2500 lbs./lane mile.		
	The spinner disc shall be complete with anti caking device to help prevent material build up on the spinner disc		
	Hydraulic hoses to the spinner motors are to be complete with quick disconnect automatic sealing breakaway couplers and are to be assembled so that the male end may plug into the female end on the spinner motor when the spinner assembly is disconnected and removed		
	Heated LED spinner spotlight		
Automated Spreader Control System	Latest generation Dickey-john Flex Four spreader control with 2-section valve for granular functions Specify: _____		
	Calibration keyboard for Dickey-john Flex Four spreader control		
Fenders & Mud Flaps	One pair of aluminum fenders over rear dual wheels attached by brackets to chassis frame rails		
	Poly spacers between tops of fenders and fender mounting brackets		
	Mud flaps located fore and aft of the fenders		
Load Cover	An air tarp shall be standard equipment with fabricated tarp arms dimensions of 1 ½" X 2 ½" steel tubing and 1/8" mesh tarp		
	The load cover shall be powered by a single cold weather rated air cylinder mounted under the body between the chassis frame rails		
	Tarp actuated via in cab control		
	Tarp arms shall be offset dog leg design		
Lights & Wiring	Lights and wiring shall be completely sealed modular Grote Ultra Blue Seal wiring system		
	Dialectic grease applied at all connection points		

Description	Requirements	Conform	
		Yes	No
Lights & Wiring	Self flashing six inch oval LED strobes one blue and one amber rubber grommet mounted in upper rear body corner posts		
	LED 4" round blue and amber strobes at end of chassis frame rails mounted inside stainless steel enclosures		
	Single upper tailgate mounted removable raised light bar with LED lamps with 2 x 4 inch red's, 2 x 7 inch red's and 1 x 4 inch left side blue strobe & 1 x 4 inch right side amber strobe. Light bar and light housing to be manufactured from 5083-H321 aluminum.		
	Right & left side heated LED back up lights mounted on upper light bar and wired to chassis reverse circuit with in cab off switch		
	Two six inch LED back up lights in rear corner posts		
	Four LED six inch oval red, combination stop, tail & turn rubber grommet mounted in rear body corner posts		
	Yellow and amber clearance lights front & rear of body left & right side LED		
	Rear 3-in a row clearance lights LED		
	Remove OEM chassis tail lights and return in chassis cab		
Pintle Hook	Heavy duty pintle plate, fabricated from 44W steel plate, rated for hook capacity		
	Holland PH30RP41 mounted at 24" from ground level		
	Two safety eyes installed on pintle plate		
	Six wire trailer plug with relay board and separate circuit no splice connection to chassis wiring		
Hydraulic Power Tilt Power Detach Plow Harness	Viking model VCL 500HD or equivalent in compliance with the below specifications and approved by the Township. Specify:		
	Make: _____		
	Model: _____		
	Plow harness must be mounted as tight as possible to front of grill & chassis supplied OEM frame extensions are to be cut as short as possible		

Description	Requirements	Conform	
		Yes	No
Hydraulic Power Tilt Power Detach Plow Harness (cont'd)	The front plow harness shall tilt forward to allow the chassis hood to tilt forward over centre of its pivots and stay open without the need of any additional supports		
	The harness tilt and return function shall be performed by the operator from inside the chassis cab via feather air over hydraulic control.		
	The plow, wing, wing front post and removable portion of front harness to be easily and quickly attachable or detachable as one integral assembly		
	Swing arm: The male swing arm to be rotated on the shaft, and the hub ends are to be guided by four anti-friction polymer discs in the mounting bracket.		
	The swing arm is to be operated by two double acting hydraulic cylinders with the following specifications:		
	Piston diameter 2 1/2"		
	Piston rod diameter 1-1/18"		
	Stroke 6"		
	The cylinder rod's shall be hard chrome plated and buffed		
	These cylinders shall permit the front harness to tilt forward by disengaging the top and engaging the bottom hydraulic operated lock pins.		
	The truck hood (cab) can be tilted forward for easy access to the engine without detaching the front harness from the truck.		
	Hydraulic locking shall be achieved by two double acting, hydraulic cylinders with chrome piston rods.		
	One cylinder shall provide upper locking and the other cylinder shall perform the lower locking function.		
	Two double acting valve sections incorporated in the main valve stack to provide hydraulic power to the upper and lower lock pin cylinders		
For safety, the lock cylinder controls shall be mounted outside of the cab on the driver's side of the front harness in a position to allow the operator visibility of the hydraulic lock pins while performing the lock or unlock function.			

Description	Requirements	Conform	
		Yes	No
Hydraulic Power Tilt Power Detach Plow Harness (cont'd)	Upper and lower harness lock pins shall be visible for sight check by operator to ensure the lock pins are engaged		
	Lock pin controls enclosed in protective 304 stainless steel enclosure with gasket seal & vertical hinged opening door		
	Two independent in cab feather joystick air controls will be pedestal mounted inside the chassis cab, one control will operate exclusively the plow lift function and the second control will operate exclusively the hydraulic power tilt function.		
	Single valves & controls operating multiple functions will not be acceptable.		
	Plow shall be equipped with VBL Polar Flex Blades		
	The front plate will be one solid piece of 3/8 inch steel plate with cut out of sufficient size to allow cooling of the chassis radiator.		
	Front plate minimum 44W steel plate		
	Overall height of the front plate will be approximately 49 inches with a 5.25 inch 90° degree bend at the bottom.		
	Overall width of the front plate will be approximately 57.5 inches at the top and 40 inches at the bottom.		
	Upper cross channel 6" by 52" 13 lbs./ft. welded to the right and left side plate		
	End plate located on upper cross channel 1/2" material 12" x 6" to provide upper mounting location for wing front post		
	Cheek plates will be specified to suite chassis frame rails, 1/2" 44W steel plate and will extend back along the chassis frame rails as far as possible.		
	Fasteners attaching cheek plates to the chassis frame rails will be minimum grade 8 N.C. hex head bolts		
	Two pairs of drive ears 100% welded to the front plate spaced at standard 30 1/2" centers		
Three sets of plow drive bar connection holes located in drive ears height to lower drive connection 19" mounted with truck empty			
Quick-tack hitch pockets bolted to drive ears			

Description	Requirements	Conform	
		Yes	No
Hydraulic Power Tilt Power Detach Plow Harness (cont'd)	Lift or grab link for nose chain shall be 18" minimum		
	Hydraulic plow lift cylinder, double acting 4" diameter with 10" stroke, cylinder rod chrome plated		
	Plow lift yoke 3/4" steel plate, braced with two 1/4" x 2" flat bar diagonal braces.		
	Two mounting locations in lift yoke to provide location for mounting of plow hydraulic lift cylinder in winter operating position and stored summer position		
	Mounting plates for plow lift cylinder lift yoke and lift yoke braces all 1/2" 44W steel plate 100% welded to front plate.		
	Lift yoke brace mounting plates positioned to provide minimum 23.5" span.		
	Two LED plow lights with high and low beam and built in integral directionals		
	Right and left side plow light mounting brackets extending 7" up from top of front plate with light mounting positions on 55" centers		
	Vapor proof wiring for plow lights, with direct no splice plug in connection to OEM chassis wiring connection		
Cable Wing Harness	Viking Model VCL350SCL or equivalent in compliance with the below specifications and approved by the Township. Specify: Make: _____ Model: _____		
	The wing harness shall be of heavy construction to sustain snow plowing operations under severe conditions		
	Bottom of wing tower shall be protected by shoe, and shall have a ground clearance of 14" minimum, truck empty.		
	The spacing of the holes in the slides for connecting the wing braces shall be approximately 17".		
	Approved size of ram controlling the front end of wing shall be 3" dia. x 30" stroke approx. with a cable and sheave assembly		

Description	Requirements	Conform	
		Yes	No
Cable Wing Harness (cont'd)	Approved size of ram controlling wing brace slide shall be 3" dia. x 36" stroke approx. and shall be double acting		
	Hydraulic cylinder piston rods shall be hard chrome plated		
	The wing tower shall be of a heavy construction and bolted to the right side of the truck chassis		
	Wing tower shall be of 10" channel construction with a 25 degree offset and its mountings shall be sufficient to sustain snow plowing operations under severe conditions.		
	One pipe brace 2 3/4" diameter shall connect the bottom of the wing tower and the truck chassis near the forward mount of the right rear springs to reduce the shock of the truck frame		
	The rear wing tower shall be heavily braced and gusseted to the frame Cheek plate		
	For maximum strength two channels shall be used to form a triangular support integral with the rear post		
	The first channel shall be 4" x 66 1/2" 13.8 lb/ft slopping diagonal brace		
	The second channel shall be 4" x 40" 13.8 lb/ft horizontal brace bolted to the chassis rails and welded to the brace box.		
	Two triangular stiffeners shall be incorporated into the assembly		
	All sheave pins shall be provided with oil impregnated bronze bearing and grease fitting		
	A safety chain shall be provided for securing wing when not in use.		
	Guide bars to contain the rear wing slide shall be welded 100% from the bottom up 2 feet		
	The front post shall be fabricated of 8" minimum I Beam 18.4 lbs/ft.		
	The 8" I beam front post shall be triple certified in compliance with G40.21 manufactured from 50W steel minimum		
Front trip hinge with internal wire trip spring, 7" minimum width			
Rear wing brace slide fully cable operated			
Additional	Front and Rear heated LED wing spot light supplied and installed		

Description	Requirements	Conform	
		Yes	No
Additional (cont'd)	Convex mirror 12" mounted on front wing post		
	SWS 16884 blue/amber strobe adjustable pedestal stand mounted from rear oil reservoir. These lights must be visible within 30 metres of the truck in all directions.		
One Way Plow	These specifications describe a One Way snow plow with power tilt mouldboard		
	Viking Model VCL120HSE9(or equivalent in compliance with the below specifications and approved by the municipality. Specify: Make: _____ Model: _____		
	If required in order to comply with the 38' installed maximum overall length restriction the upper intake end of the moldboard may be cropped to suite		
	Constructed to prevent the accumulation of water in any area.		
	13' 10" overall length, 11' cutting edge, 9' clearing path, 26" intake and 54" discharge height		
	Mouldboard shall be smooth rolled formed		
	Hydraulic power tilt mouldboard in cab controlled with angle indicator rod		
	Mouldboard tilt via 4 x 10" hydraulic cylinder with induction hardened chrome piston rod		
	An additional double acting valve section shall be installed in the main valve stack and in cab feather air control in cab to operate the mouldboard power tilt function		
	Compression safety trip		
	Trip link safety mechanism shall be incorporated the blade mechanism must return to the normal plowing position automatically. trip springs must be secured with lock nuts		
	Two separate lift chains shall be used and these shall pick up on the drive frame at points approximately 48" apart		
	All welds 100% continuous		
The plow shall have a hood extending 18" past the vertical center line, in normal operating positions			

Description	Requirements	Conform	
		Yes	No
One Way Plow (cont'd)	All ribs shall be of one-piece construction 100% welded both side to the moldboard.		
	The top edge of the moldboard shall be welded 100% to the ribs.		
	The top rail of the moldboard shall be manufactured of 2 ½" X 2 ½" angle iron and welded 100% to the ribs and moldboard with a continuous bead.		
	The thickness of the moldboard and hood shall be of 10 U.S.S. ga. (.1345).		
	There shall be eight vertical ribs, 3 ½" high by 3/8" thick. Minimum weld between the moldboard and rib shall be 100% weld each side		
	The bottom rail on the moldboard shall be 5" X 3" X ½" angle below with a 3" X 2" X 3/8" gussets shall be welded between the two legs of the bottom angle, between each bolt hole, except for the two sets of end holes and between two holes in the middle of the moldboard. The moldboard shall be continuously welded to the bottom rails.		
	Drive frame equipped with height adjustable shoes		
	The shoes shall oscillate		
	The moldboard shall be roll formed in a smooth curve		
	A sturdy eye ½" thickness shall be provided at the center of gravity for handling of the moldboard		
Quick Tach	Fitted with oscillating beam to suite Quick-Tach hitch		
Cutting Edge	Valley Blades Polar Flex blade kit with nose shoe		
Shoes	Two standard skid shoes		
Deflector	Full length rubber deflector ½" x 12"		
Marker Rods	Two 36" flexible florescent orange marker rods at each end of plow		
Wing	Viking model VCL144WHD-HP or equivalent in compliance with the below specifications and approved by the Township. Specify: Make: _____ Model: _____		

Description	Requirements	Conform	
		Yes	No
Wing (cont'd)	Hydraulic operated horizontal wing positioner with air over hydraulic in cab feather air control, hydraulic hoses & quick disconnect couplers to allow the wing to be carried in the raised stored position below the passenger side window		
	Hydraulic wing positioner cylinder horizontally mounted on the rear side of the wing		
	Overall length 12 feet.		
	Inside intake height 29".		
	Outside discharge height 39"		
	Moldboard thickness 10 U.S.S. gauge minimum.		
	Two drive ribs for connecting the wing brace shall be provided		
	The drive ribs shall be located approximately 8"6" and 10'10" from the nose end of the wing.		
	The plate for mounting the wing to the wing post shall be 1" thick. The mounting hole shall be far enough from the edge of the plate to Avoid failure in this area		
	Lower wing angle shall be 6" X 4" X 3/4".		
	The mounting of the nose end of the wing to the wing post shall be by means of a hinge and rectangle spring, to allow tipping over the wing		
	Two adjustable wing braces shall be supplied		
	The upper brace shall be of a stock release type, including a spring retraction. The spring shall provide adequate stability of the wing in normal operating conditions, and shall retract the wing from tip-over position.		
	The distance between the center of the mounting holes of the wing Braces shall be as follows: Upper brace – Extended 90" C.C. Collapsed 60" C.C.		
	Extended distances shall be measured with spring fully retracted Lower brace – Extended 88" C.C. Collapsed 58" C.C.		
One spare pin for adjusting the wing braces shall be supplied with each Brace.			

Description	Requirements	Conform	
		Yes	No
Wing (cont'd)	The top edge of the wing shall be boxed in and welded 100% to the ribs and the moldboards so as to avoid all pockets		
	Florescent orange 36" flexible marker rod		
	One Valley Blades three piece Highwear wing blade with built in shoe blocks		

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**TENDER 2018-01
ONE (1) NEW 2018 TANDEM TRUCK
WITH DIESEL ENGINE AND
APPROXIMATE 130" CAB TO AXLE**

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Date Stamp	
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