



19 Parnell St., PO Box 180  
Calabogie ON K0J 1H0  
613-752-2222

**TENDER NO PW 12-2018**

**Tandem Cab and Chassis with Dump Body and Sand/Salt Spreader**

**TENDER CLOSING DATE:** Friday, January 18<sup>th</sup>, 2019 @ 1:00 p.m.  
Sealed in an envelope and clearly marked  
TENDER NO PW 12-2018 and addressed to  
Allison Holtzhauer, CAO Clerk-Treasurer  
19 Parnell St., P.O. Box 180,  
Calabogie, ON K0J 1H0

**DELIVERY LOCATION:** Township of Greater Madawaska – Calabogie Garage  
12470B Lanark Road, Calabogie, ON

**DELIVERED BY:** October 1, 2019

**COMPANY BIDDING:** \_\_\_\_\_

**ADDRESS** \_\_\_\_\_

\_\_\_\_\_

**POSTAL CODE:** \_\_\_\_\_

**TELEPHONE:** \_\_\_\_\_

***LOWEST OR ANY TENDER NOT NECESSARILY ACCEPTED***

**TENDER NO PW 12-2018**  
**Township of Greater Madawaska**  
**Tandem Cab and Chassis with Dump Body and Sand/Salt Spreader**

**Name of Individual or Firm:** \_\_\_\_\_  
(Hereafter referred to as the  
"Contractor")

**Address:** \_\_\_\_\_

**Signature of Person  
Signing for Firm:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Office of Person  
Signing for Firm:** \_\_\_\_\_

**Witness or Firm Seal:** \_\_\_\_\_

**TOTAL TENDER:** \_\_\_\_\_  
(Including Applicable Taxes)

**TENDER NO PW12-2018**  
**Township of Greater Madawaska**  
**Tandem Cab and Chassis with Dump Body and Sand/Salt Spreader**

**Accessibility Declaration**

In submitting this tender/quotation, I/we, on behalf of \_\_\_\_\_  
certify the following: (legal name of company)

- a) As employer and **Consultant OR Constructor** for this project, I/we agree to remain in compliance with the requirements of the "Accessibility For Ontarians With Disabilities Act, 2005", including Ontario Regulation 191/11 and Ontario Regulation 429/07.

Dated at \_\_\_\_\_ this day of \_\_\_\_\_, 2019.

\_\_\_\_\_  
(Authorized Signing Officer)

\_\_\_\_\_  
(Title)

**TENDER NO PW12-2018**  
**Township of Greater Madawaska**  
**Tandem Cab and Chassis with Dump Body and Sand/Salt Spreader**

**PROCEDURES**

1. All inquiries, concerning the Tender, prior to the Tender closing, shall be directed to Jamie Doering, Public Works Manager, 613-752-2222 ext. 201.
2. Notification of Acceptance of Tender will be by telephone and written form of the notice, to the address of the Contractor used on the bid forms. The date of Acceptance shall be deemed to be the date of receipt of the Acceptance Notice by the contractor.
3. A Tender may be voided by superseding it with a later Tender or letter of withdrawal, prior to the closing date and time.

**SPECIAL PROVISIONS**

1. All relevant documentation must be provided with the tender package.
2. Operator's Manual and Line Ticket to be supplied.
3. All Trouble Shooting, Service, Maintenance and Electrical Service Manuals shall be supplied in hard copy and electronic, either stick or cd format.
4. Backup sound alarm shall be mounted in the pintle plate.
5. A plastic license plate light and plate holder shall be supplied to prevent dissimilar metal electrolysis.
6. A Flare Kit shall be supplied.
7. Any cables or hoses that pass through the floor wells of the cab shall be guarded with rubber grommet and sealed with a rubber diaphragm or caulking.
8. Warranty Information must be included, what is covered and for how long.
9. Demos under 1,500 km will be accepted.

**BASIS OF REJECTION OF TENDER**

Tenders not conforming to the following requirements will be disqualified:

1. Tender must be legible, in ink, by typewriter or by printer.
2. Tender must be in possession of the Township by the closing date and time.
3. Tender must be on form provided and not restricted or modified in any way.
4. Tender must be signed and sealed by an authorized official of the bidding organization. A joint tender must be signed and sealed by each company.

**TANDEM CAB AND CHASSIS**

SPECIFICATIONS AND REQUIREMENTS

**General Description**

2019 Model Year

Make \_\_\_\_\_

Model \_\_\_\_\_

**VEHICLE WEIGHT**

GVWR - 68,000 lbs.

The allowable GVWR as supplied shall be shown on a metal or mylar tag YES \_\_\_\_\_ NO \_\_\_\_\_

**WHEELBASE**

State Wheelbase. Must be compatible with body and options as specified Wheelbase: \_\_\_\_\_

**CA DIMENSION**

State CA dimension. Must be compatible with body and options as specified CA Dimension: \_\_\_\_\_

**FRAME**

A full-length frame constructed of Heat Treated Alloy Steel shall be provided. YES \_\_\_\_\_ NO \_\_\_\_\_

Shall be single frame construction YES \_\_\_\_\_ NO \_\_\_\_\_

Resisting bending moment (RBM) shall be 3,350,000 in.-lbs. minimum YES \_\_\_\_\_ NO \_\_\_\_\_

Section modulus shall be 26.83 minimum YES \_\_\_\_\_ NO \_\_\_\_\_

Two (2) front and two (2) rear tow hooks shall be installed and shall be rated for the capacity of the truck YES \_\_\_\_\_ NO \_\_\_\_\_

Mudflaps shall be mounted off the chassis frame, behind and in front of the rear wheels. Shall include front wheel mud flaps and fender extensions to to keep snow and ice off the vehicle. YES \_\_\_\_\_ NO \_\_\_\_\_

All major components mounted to the frame shall be affixed with Grade 8 Huck bolt fasteners YES \_\_\_\_\_ NO \_\_\_\_\_

Mounting of a 25mm (1") thick pintle plate and pintle hitch with hardware and backup light shall be installed with glad hands YES \_\_\_\_\_ NO \_\_\_\_\_

**ENGINE**

Engine shall meet current emissions standards YES \_\_\_\_\_ NO \_\_\_\_\_

Engine shall be a Cummins L9 YES \_\_\_\_\_ NO \_\_\_\_\_

Engine shall have a rated minimum gross HP of at least 380 hp @ 1900 RPM YES \_\_\_\_\_ NO \_\_\_\_\_

Engine shall have a peak torque rating of a minimum of 1250 lb-ft @ 1400 RPM YES \_\_\_\_\_ NO \_\_\_\_\_

Engine compression brake for Cummins engines with selector switch and on/off switch shall be installed YES \_\_\_\_\_ NO \_\_\_\_\_

Engine and transmission fluid shall be capable of being checked by operator while the operator is on the ground YES \_\_\_\_\_ NO \_\_\_\_\_

Engine oil dipstick shall be on the driver side of the engine YES \_\_\_\_\_ NO \_\_\_\_\_

Engine shall be equipped with a removalbe element full flow oil filter YES \_\_\_\_\_ NO \_\_\_\_\_

An electric starter with thermal over-crank protection shall be installed YES \_\_\_\_\_ NO \_\_\_\_\_

The exhaust system shall meet sound levels of less than 84 dBA at 1600 RPM inside the cab YES \_\_\_\_\_ NO \_\_\_\_\_

The exhaust system shall be equipped with heat shield that must be vertically mounted on the right side with sufficient extension to clear the equipment with a turnback type, non-bright tailpipe YES \_\_\_\_\_ NO \_\_\_\_\_

A Phillips 120V/1250W engine block heater shall be installed YES \_\_\_\_\_ NO \_\_\_\_\_

Engine ratings must be set at the time of engine manufacture. Engines with locally altered ratings are not acceptable YES \_\_\_\_\_ N \_\_\_\_\_

A heavy duty fuel water separator with heater and sight glass mounted outside the left frame rail behind car shall be supplied and mounted. Conmet CM-99-327DD or approved equivalent. The heater shall be capable of being shut off. YES \_\_\_\_\_ NO \_\_\_\_\_

**TRANSMISSION**

Transmission shall be a Manual 10 Speed YES \_\_\_\_\_ NO \_\_\_\_\_

**AXLES**

Front axle shall be of setback design (SBA) YES \_\_\_\_\_ NO \_\_\_\_\_

Front axle shall be a Meritor MFS-22-133A (22,000 lbs capacity) YES \_\_\_\_\_ NO \_\_\_\_\_

Rear axle shall be tandem with driver controlled differential lockout in both rear axles YES \_\_\_\_\_ NO \_\_\_\_\_

Rear axle shall be a Meritor RT-46-164EH (46,000 lbs capacity) YES \_\_\_\_\_ NO \_\_\_\_\_

**SUSPENSION**

Front suspension shall be parabolic, taper leaf with rubber auxiliary springs, with shock absorbers (22,000 lbs capacity) YES \_\_\_\_\_ NO \_\_\_\_\_

Rear suspension shall be Hendrickson HMX-460-54 Walking Beam Type (46,000 lbs capacity) With four (4) rear shock absorbers YES \_\_\_\_\_ NO \_\_\_\_\_

**BRAKES**

System to comply with the Canadian Motor Vehicle Safety Standards and the Regulations thereunder in effect on date of chassis manufacture and shall include the following:

Full air actuated service brakes and spring applied parking brakes shall be installed. The air brake system shall conform to CMVSS 121 Regulations. YES \_\_\_\_\_ NO \_\_\_\_\_

An air compressor with 18.7 CFM minimum shall be installed YES \_\_\_\_\_ NO \_\_\_\_\_

Air tanks shall be mounted under cab outside of left rail YES \_\_\_\_\_ NO \_\_\_\_\_

A four (4) channel Anti-lock brake system (ABS) and traction control shall be installed. YES \_\_\_\_\_ NO \_\_\_\_\_

Vehicle shall include air brakes with Meritor automatic slack adjusters YES \_\_\_\_\_ NO \_\_\_\_\_

Long stroke brake chambers shall be factory installed YES \_\_\_\_\_ NO \_\_\_\_\_

Brake housing dust shields shall be installed YES \_\_\_\_\_ NO \_\_\_\_\_

Hig-mounted brake chambers shall be installed YES \_\_\_\_\_ NO \_\_\_\_\_

Park brake, air maxi-brake (spring brake) type on all rear air chambers shall be installed YES \_\_\_\_\_ NO \_\_\_\_\_

Brake stroke indicators shall be installed YES \_\_\_\_\_ NO \_\_\_\_\_

All brake components must be mounted high up in the frame rails providing maximum ground clearance YES \_\_\_\_\_ NO \_\_\_\_\_

All air brake chambers shall be designed and installed in order to prevent moisture and dirt from entering the air brake chambers YES \_\_\_\_\_ NO \_\_\_\_\_

All air tanks shall have a manual valve with a cable to drain moisture from the air tanks. The cables shall be located in such a position as to reduce ice build up and cables shall be easily accessible to the operator on the side of the truck. YES \_\_\_\_\_ NO \_\_\_\_\_

A Bendix AD-9 automatic air dryer with heater shall be installed. YES \_\_\_\_\_ NO \_\_\_\_\_

**STEERING**

Dual power steering shall be installed YES \_\_\_\_\_ NO \_\_\_\_\_

Tilting, telescopic steering column shall be installed YES \_\_\_\_\_ NO \_\_\_\_\_

**RIMS AND TIRES**

Rims shall be Heavy Duty, five (5) hand hole design YES \_\_\_\_\_ NO \_\_\_\_\_

Rims shall be hub piloted and 22.5" rim size in order to fit tire sizes and meet minimum axle ratings YES \_\_\_\_\_ NO \_\_\_\_\_

Rims shall be aluminum YES \_\_\_\_\_ NO \_\_\_\_\_

Tires shall be brand new "first line", Tier 1 Radial. YES \_\_\_\_\_ NO \_\_\_\_\_

**RIMS AND TIRES continued**

Front tires shall be Michelin 425/65R22.5 XZY-3, Load Range L YES \_\_\_\_\_ NO \_\_\_\_\_

Rear Tires shall be Michelin 11R22.5 XDN-2, Load Range H YES \_\_\_\_\_ NO \_\_\_\_\_



## ELECTRICAL AND LIGHTING

Weather guarded manufacturer's standard 12-volt electrical system shall be provided.

Electrical system shall provide stable voltage and amperage for uninterrupted operation of all installed equipment.

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

Electrical circuits shall be protected with fuses, relays or circuit breakers

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

Three (3) heavy-duty maintenance-free batteries shall be installed. Batteries shall have a combined minimum capacity of 2,775 cold cranking amps (CCA) and shall be mounted behind the cab on the right side in a box with a lid outside the frame rails and accessible for service with the dump box lowered. Splicing of battery cables is not acceptable.

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

A Leece-Neville alternator with a rated output of a minimum of 160 amps shall be installed

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

Exterior lighting shall conform to CMVSS 108. Light Emitting Diode (LED) type lamps shall be provided where available

Lighting shall include:

Halogen Headlights;

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

Parking Lights;

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

Tail Lights;

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

Turn Signal Lights;

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

Sop Lights;

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

Mid-body Signal Lights;

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

Hazard Lights;

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

Two (2) Back-up Lights;

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

Licence Plate Light;

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

Side Marker Lights;

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

Clearance Marker Lights;

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

Two (2) Pedestal Mounted Strobe Lights, one blue and one amber

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

Interior cab lighting activated by door switches shall be provided

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

A back-up alarm of 102 dBA minimum shall be installed

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

A lockable master battery disconnect switch shall be installed in the vehicle in an accessible and for service with the dump box lowered. Splicing of battery cables is not acceptable. visible area with a decal indicating its' location. The switch must be placed in a location that cannot be filled with winter material causing accelerated corrosion and must have access from the ground

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

A pre-trip exterior light inspection feature that enables the operator to visually verify all exterior lights (except back-up lights) are functioning while walking around the vehicle shall be supplied as well as wiring and plug for the trailer

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

### FUEL TANKS

Fuel tank capacity shall be a minimum of 379 Litres (100 US Gallons) mounted left side of chassis complete with full length non-slip steps not to extend past rear of cab

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

### CAB

Cab shall be a two (2) door conventional cab with a low profile hood and an unrestricted forward tilting hood.

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

Cab must be constructed of high strength galvanized steel

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

Must be equipped with an air ride suspension

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

A stationary grill shall be supplied

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

Driver and passenger seats shall be a National 2000, high profile, high back with Modura cloth material and must include:

High back; YES \_\_\_\_\_ NO \_\_\_\_\_

Air Suspension; YES \_\_\_\_\_ NO \_\_\_\_\_

Fore and aft adjustment; YES \_\_\_\_\_ NO \_\_\_\_\_

Air lumbar; YES \_\_\_\_\_ NO \_\_\_\_\_

Adjustable dampening system; YES \_\_\_\_\_ NO \_\_\_\_\_

Driver's seat retractable arm rest, right side; and YES \_\_\_\_\_ NO \_\_\_\_\_

Passenger's seat retractable arm rest, left side YES \_\_\_\_\_ NO \_\_\_\_\_

Retractable three-point seatbelts YES \_\_\_\_\_ NO \_\_\_\_\_

The cab shall be equipped with a tinted and heated windshield YES \_\_\_\_\_ NO \_\_\_\_\_

The cab shall be provided with windshield wipers with at least two (2) continuous speeds and one (1) intermittent speed. YES \_\_\_\_\_ NO \_\_\_\_\_

The windshield wipers shall be provided with arctic wiper blades	YES _____	NO _____
The cab shall be provided with two (2) rotating and pivoting interior sun visors	YES _____	NO _____
The cab shall be provided with padded armrests on both doors, coat hooks and rubber mats	YES _____	NO _____
The cab shall be provided with powered windows	YES _____	NO _____
The cab shall be provided with a look-down mirror mounted at the top of the right hand door	YES _____	NO _____
The cab shall be mounted with an exterior stainless steel visor	YES _____	NO _____
The cab shall be provided with powered door locks	YES _____	NO _____
Shall have a minimum of six (6) OEM dash switches for body builder equipment	YES _____	NO _____
The cab shall be equipped with Manufacturers' premium insulation and sound suppressant material to ensure that the interior cab noise level does not exceed 74 dBA @ 1500 RPM	YES _____	NO _____
Chassis manufacturer's standard air conditioning operating on an environmentally friendly chlorofluorocarbon (CFC) free refrigerant shall be installed.	YES _____	NO _____
Shall include a high capacity cab heater with multiple fresh air intakes and shall include discharge outlets to the floor and to the windshield	YES _____	NO _____
The defroster system shall be capable of working effectively on all cab windows simultaneously (front and sides)	YES _____	NO _____
A minimum of two (2) dome lights inside the cab	YES _____	NO _____
A document compartment shall be installed	YES _____	NO _____
<b>CAB continued</b>		
Stainless steel exterior grab bars shall be installed on both sides of the cab to provide safe three (3) point entrance and exit for the operator	YES _____	NO _____
A factory installed AM/FM radio with Bluetooth shall be installed and must MUTE when the transmission is in reverse	YES _____	NO _____
Two (2) stainless steel heated power mirrors shall be installed	YES _____	NO _____
Stainless steel West Coast break away style - 7.55" x 14.1"	YES _____	NO _____
Power operated	YES _____	NO _____

Heated	YES _____	NO _____
LED clearance lights	YES _____	NO _____
Integral heated convex mirror	YES _____	NO _____

One (1) heated convex mirrors shall be mounted on the left front and right front fenders as not to interfere with the opening of the hood

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

Dual roof mounted air horns shall be installed with snow shields. Shall be a minimum of 120 dBA

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

**CONTROLS AND INSTRUMENTS**

All instrumentation shall be clearly visible by the driver/operator while seated in the driver's seat. An adjustable instrumentation/dash light switch shall be installed.

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

The vehicle must include gauges for monitoring the following systems

Engine oil pressure;	YES _____	NO _____
Coolant temperature;	YES _____	NO _____
Ammeter/Voltmeter;	YES _____	NO _____
Fuel level;	YES _____	NO _____
Air pressure;	YES _____	NO _____
Tachometer;	YES _____	NO _____
Transmission temperature; and	YES _____	NO _____
Air filter restriction	YES _____	NO _____

Warning devices shall be provided for the following:

	Audible	Visual
Engine low oil pressure	_____	_____
High coolant temperature	_____	_____
High transmission temperature	_____	_____
Low air pressure	_____	_____
Hydraulic oil level	_____	_____

Cruise control with fast idle feature shall be installed

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

Shall have an anti-idling provision in the engine program to limit idling to fifteen (15) minutes and shutting down thereafter. Shall be equipped with an override feature for special circumstances

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

**PAINT**

The vehicle shall be painted using the manufacturer's standard commercial painting system YES \_\_\_\_\_ NO \_\_\_\_\_

The vehicle cab shall be painted Dark Safety Yellow (NAV 4017, or approved equivalent) YES \_\_\_\_\_ NO \_\_\_\_\_

The vehicle chassis shall be painted Black YES \_\_\_\_\_ NO \_\_\_\_\_

**PARTS AND SERVICE**

The successful bidder must have parts and service facilities located within an 80 kms radius of The Township of Greater Madawaska. YES \_\_\_\_\_ NO \_\_\_\_\_

**ALL SEASON COMBINATION  
DUMP BODY / SPREADER**

**GENERAL**

These specifications describe an All Season Combination Dump Body and Sand/Salt Spreader. The dump box shall remain stationary on the chassis frame while spreading. Rear discharge shall be front hoist tilt action as per conventional dump bodies. The unit will be oval shaped of a roll-formed type design to permit gravity flow unloading, and prevent material bridging over conveyor chain. The body side panels shall include breaks at a maximum of 1" intervals. Bodies for which the breaks are at intervals greater than 1" will not be accepted, and will deem their bid inadmissible. The main conveyor will be centred and recessed along the length of the box. The cross conveyor chain will be chassis frame mounted with spreader discharge on the front, left side (driver's) of dump box.

**SPECIFY**

**MAKE:** \_\_\_\_\_

**MODEL:** \_\_\_\_\_

**SPECIFICATION**

Body shall be oval shaped, permitting materials to unload by gravity flow into spreading position. YES \_\_\_\_\_ NO \_\_\_\_\_

Water level capacity will be 12.5 cu.yd., minimum. Bodies of less capacity will not be accepted. YES \_\_\_\_\_ NO \_\_\_\_\_

Water level capacity with 10" sideboards will be 15.4 cu.yd., minimum. YES \_\_\_\_\_ NO \_\_\_\_\_

Outside length 15' minimum. YES \_\_\_\_\_ NO \_\_\_\_\_

Inside length 14' minimum. YES \_\_\_\_\_ NO \_\_\_\_\_

Overall width 8' maximum. YES \_\_\_\_\_ NO \_\_\_\_\_

Height of sides to be 50" minimum.

YES \_\_\_\_\_

NO \_\_\_\_\_

Height of tailgate to be 55" minimum.

YES \_\_\_\_\_

NO \_\_\_\_\_

Height of front panel to be 60" minimum.

YES \_\_\_\_\_

NO \_\_\_\_\_

Top rail of body will be 6" x 4" x 3/8" structural rectangular tubing – a break-formed type steel top rail support system will not be acceptable.

YES \_\_\_\_\_

NO \_\_\_\_\_

All body welds will be 100% continuous inside and outside.

YES \_\_\_\_\_

NO \_\_\_\_\_

Body sides, front panel and tailgate will be constructed of 3/16" thick, Hardox 450, hi-tensile, 205,000 psi yield strength, abrasion resistant steel.

YES \_\_\_\_\_

NO \_\_\_\_\_

Body floor will be constructed of 3/16" thick, Hardox 450, hi-tensile, 205,000 psi yield strength, abrasion resistant steel.

YES \_\_\_\_\_

NO \_\_\_\_\_

Dump box access ladder shall be 16" wide, recessed and be flush with dump body top rail and fender. The ladder must slope inward from bottom to top, and be located on drivers side at front of box.

Dump box shall include screens on top.

YES \_\_\_\_\_

NO \_\_\_\_\_

## HOIST

Hoist shall be a front mount, three (3) stage telescopic with 5" bore – must be Mailhot model CS130-5.5-3 – alternate or inverted type hoists will not be acceptable.

YES \_\_\_\_\_

NO \_\_\_\_\_

Hoist class shall be 80/30 ton.

YES \_\_\_\_\_

NO \_\_\_\_\_

Cylinder stroke shall be 330 cm (130") minimum.

YES \_\_\_\_\_

NO \_\_\_\_\_

Dump box tipping angle shall be a minimum of 50 degrees. YES \_\_\_\_\_ NO \_\_\_\_\_

Rear hinge assembly shall be supplied with hinge pin dia. of 2.5" minimum. YES \_\_\_\_\_ NO \_\_\_\_\_

Hoist control valve shall be air operated. YES \_\_\_\_\_ NO \_\_\_\_\_

**TAILGATE**

Tailgate height shall be 55" minimum. YES \_\_\_\_\_ NO \_\_\_\_\_

Tailgate shall be rectangular shaped to allow use of asphalt or stone chip type spreaders. YES \_\_\_\_\_ NO \_\_\_\_\_

Construction shall be of 3/16" thick, Hardox 450, hi-tensile, 205,000 psi yield strength, abrasion resistant steel YES \_\_\_\_\_ NO \_\_\_\_\_

Exterior vertical side support tubes to be 3 1/2" x 3 1/2" x 1/4" wall HSS square tubing – no exception. YES \_\_\_\_\_ NO \_\_\_\_\_

Latch mechanism for the tailgate shall be air trip and latch type utilizing two air pot boosters – units with only a single air pot booster, or air cylinder to activate tailgate, will not be acceptable. YES \_\_\_\_\_ NO \_\_\_\_\_

Spreader chains and brackets shall be supplied on tailgate and rear corner posts. Chains shall be grade 70 coil proof 5/16" minimum. YES \_\_\_\_\_ NO \_\_\_\_\_

Asphalt door in tailgate with a dimension of 17" x 26" shall be provided. Cantilevered handle offset to curbside to operate sliding door. YES \_\_\_\_\_ NO \_\_\_\_\_

**CONVEYOR**

The main conveyor shall be recessed along the length of dump box floor. YES \_\_\_\_\_ NO \_\_\_\_\_



The conveyor chain shall include the minimum specifications:

- 0,000 lbs. tensile strength YES \_\_\_\_\_ NO \_\_\_\_\_
- 667X self cleaning pintle chain – no exception
- utilizes ¼" x 1 ¼" crosses welded to every 4<sup>th</sup> link (approx. 9" apart)

The main conveyor shall be hydraulic direct drive via planetary drive mechanism providing a minimum of 38,000 lbs., torque capacity and 50,000 in/lbs peak. Standard 25:1 gear reducers will not be acceptable. YES \_\_\_\_\_ NO \_\_\_\_\_

Connection of the planetary drive shaft to the main conveyor shaft shall be accomplished via a split two piece coupler assembly. YES \_\_\_\_\_ NO \_\_\_\_\_

Each of the two body long sill weldments will be vertical slotted. By simply removing the drive shaft flange bearings and uncoupling the planetary and main conveyor drive shafts, the entire conveyor drive shaft assembly will drop out through the vertical long sill slots providing easy access and simple maintenance. YES \_\_\_\_\_ NO \_\_\_\_\_

Idler end of main conveyor will also be of the vertical slotted drop out design as described above. YES \_\_\_\_\_ NO \_\_\_\_\_

Conveyor chain tension to be regulated via an automatic chain tensioning system. This tensioning system will provide appropriate chain tension for the main conveyor chain at all times and under all normal operating conditions. YES \_\_\_\_\_ NO \_\_\_\_\_

The fully automated chain tensioner will eliminate the requirement for any manual chain tension adjusting mechanisms such as conventional threaded rod and nut tensioners, or hydraulic grease ram tensioners. Automated chain tensioner system must be provided – no exception. YES \_\_\_\_\_ NO \_\_\_\_\_

Bolt-on door panel shall be provided for easy access to automatic chain tensioning mechanism. Access panel to be located on body longmember. YES \_\_\_\_\_ NO \_\_\_\_\_

Underside of main conveyor to have poly guard to prevent material spillage on to chassis components and frame rails. YES \_\_\_\_\_ NO \_\_\_\_\_

The flow control gate between main and cross conveyor shall be screw adjustable by hand crank from drivers side of dump body. YES \_\_\_\_\_ NO \_\_\_\_\_

## CROSS CONVEYOR

The cross conveyor shall be hydraulic direct drive.

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

A cross conveyor assembly shall be used to discharge material from main conveyor to the left side spinner and chute assembly.

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

Cross conveyor assembly to mount on chassis frame rails independent from and in front of main combination spreader unit.

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

Cross conveyor unit shall be of an easily removable design to reduce added weight in non-spreading applications.

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

Cross conveyor weldment shall be fabricated from a minimum 3/16" Cor-ten A corrosion resistant material. Cor-ten A steel must be utilised – no exception.

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

Cross conveyor chain to be fabricated from two strands of D662 pintle chain spaced apart on 10" centres.

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

Cross flites 100% welded to chain links.

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

The cross conveyor shall utilise a D662 pintle type chain. The crossers shall be 3/16" thick x 1" wide, and spaced every 4". The chain shall have a minimum tensile strength of 17,000 lbs.

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

Cross conveyor assembly to include replaceable polymer guards to prevent material from entering between chain links – open type chain links will not be acceptable.

## SPINNER

A polyurethane spinner shall be installed on the left hand side (Driver side) to spread ahead of rear wheels.

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

Spinner disc will be hydraulic direct drive and to include a clean - off anti coning device.

YES \_\_\_\_\_

NO \_\_\_\_\_

Spinner height shall be adjusted to accommodate various chassis heights and capable of a discharge rate from 199 lbs./lane mile to 2,500 lbs./lane mile.

YES \_\_\_\_\_

NO \_\_\_\_\_

A poly lined hinged extendible salt chute shall be installed on the left side only.

YES \_\_\_\_\_

NO \_\_\_\_\_

### **SANDER CONTROLS**

Ace Ecobite II Pro in-cab electrically operated automated spreader controller – no exception. Includes 2 section valve assembly installed outside cab on left side valve mounting bracket. Body builder shall calibrate spreader controller before delivery.

YES \_\_\_\_\_

NO \_\_\_\_\_

### **FENDERS AND FLAPS**

Fenders shall be continuous along the full length of dump body to provide cover for rear wheels and to protect the body. Fenders to be fabricated from minimum 10 GA Cor-ten "A" corrosion resistant steel.

YES \_\_\_\_\_

NO \_\_\_\_\_

Integral fenders to be sloped away from unit (material shedding design) to prevent any excess material spilled during loading from pilling up on fenders.

YES \_\_\_\_\_

NO \_\_\_\_\_

Red/White 2" reflective tape to be installed along body fenders and across bottom of tailgate.

YES \_\_\_\_\_

NO \_\_\_\_\_

### **PAINT**

The dump body shall be shot blasted and epoxy primed with 3 mils of Dupont DTM type primer.

YES \_\_\_\_\_

NO \_\_\_\_\_

Finish paint shall be Dupont Imron 5000 "ELITE" polyurethane enamel and colour matched to the truck cab – Dupont Imron 5000 Elite finish paint must be utilized – no exception.

YES \_\_\_\_\_

NO \_\_\_\_\_

Specify Paint Manufacturer : \_\_\_\_\_.

Specify Paint Type : \_\_\_\_\_.

Finish Paint to be a "Baked On" process (no substitutes).

YES \_\_\_\_\_

NO \_\_\_\_\_

### **PINTLE HOOK**

A Holland model PH410RA pintle hook, complete with air cushion, rated at 100,000 MGTW minimum, shall be provided and include 2 safety chain hooks.

YES \_\_\_\_\_

NO \_\_\_\_\_

The hook shall be bolted to a heavy duty pintle plate at the rear of the chassis.

YES \_\_\_\_\_

NO \_\_\_\_\_

Body builder shall relocate chassis supplied glad hands onto pintle hook plate.

YES \_\_\_\_\_

NO \_\_\_\_\_

### **AIR TARP**

An air tarp shall be supplied with fabricated tarp arms dimensions of 1 ½" x 2 ½" rectangular steel tubing, and a 1/8" asphalt type mesh tarp. Tarp to be operated by twin air cylinders operated from inside the cab. Electric type tarp mechanisms, and air tarps utilizing air motors in lieu of cylinders, will not be acceptable.

YES \_\_\_\_\_

NO \_\_\_\_\_

### **LIGHTS AND WIRING**

All box lights to be LED type.

YES \_\_\_\_\_

NO \_\_\_\_\_

Grote "Ultra Blue Seal" wiring harness for body lights & electrical shall be supplied (no substitutes).

YES \_\_\_\_\_

NO \_\_\_\_\_

Auxilliary lighting will plug directly into OEM supplied connections.

YES \_\_\_\_\_

NO \_\_\_\_\_

*Cutting, splicing, soldering or shrink tubing of connections is not acceptable.*

Box lighting kit to include Grote Ultra Blue Seal LED rear stop lights, tail lights, turn signals, and back-up lights, and shall be installed in rear corner posts.

YES \_\_\_\_\_

NO \_\_\_\_\_

Grote blue and amber LED strobe lights to be high mounted in each upper rear corner posts for maximum visibility.

YES \_\_\_\_\_

NO \_\_\_\_\_

Spinner and cross conveyor lights shall be supplied, with separate in-cab switches.

YES \_\_\_\_\_

NO \_\_\_\_\_

Blue and amber incandescent warning lights to be installed below tailgate, centre of rear axle.

YES \_\_\_\_\_

NO \_\_\_\_\_

Dual independent easily removable rear corner post light brackets shall be installed on top of each corner post at the tailgate. Each bracket shall be equipped with LED lights as follows – 4” red and 7” red. In addition, the left side bracket shall include a 4” blue LED strobe light. Plugs shall be installed on each upper side of the rear corners posts.

YES \_\_\_\_\_

NO \_\_\_\_\_

Star 200B blue and 200A amber revolving beacon lights shall be installed on pedestal attached to top of oil reservoir behind cab. Beacon lights shall be visible 360° around vehicle.

YES \_\_\_\_\_

NO \_\_\_\_\_

### HYDRAULICS

All fittings, valves, hoses and drive shaft shall be supplied and installed. All hoses shall be equipped with swivels on both ends.

YES \_\_\_\_\_

NO \_\_\_\_\_

The hydraulic reservoir shall be of sufficient capacity to supply necessary oil supply. Reservoir must not interfere with the box installation.

YES \_\_\_\_\_

NO \_\_\_\_\_

A sight gauge to allow easy checking of the hydraulic oil level in the reservoir shall be supplied.

YES \_\_\_\_\_

NO \_\_\_\_\_

### GENERAL

Prototype units will not be acceptable. The bidder must be able to demonstrate a solid history of use of the combination U-body/spreader offered in this tender by Ontario Municipalities, for a minimum period of five(5) years, and references must be supplied as upon request.

YES \_\_\_\_\_

NO \_\_\_\_\_

Installation of this equipment shall meet or surpass the mandatory requirements of the Canada Motor Vehicle Safety Act and its regulations in effect on the date of manufacture. Installer of the truck equipment must be certified with Transport Canada and bear the National Safety Mark.

YES \_\_\_\_\_

NO \_\_\_\_\_

Specify National Safety Mark Number: \_\_\_\_\_.

**ONE WAY PLOW**

This one way plow shall conform with the provisions of M.T. O. standards ES-414, except that the dimensions of this specification shall prevail when the two contradict.

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

The plow shall operate effectively and without modification with the M.T.O. snow plow truck harness as per spec ES-401.

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

The weight of the plow shall range from 1,850 to 2,150 lbs. and shall be constructed to prevent the accumulation of water in any area.

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

The plow shall have a hood extending 18" past the vertical centre line, in normal operating positions.

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

All ribs shall be of one piece construction 100% welded both sides 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 1/2" x 2 1/2" angle iron and welded securely to the ribs and moldboard with a continuous bead. All other welds must also be 100%.

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

The thickness of the moldboard and hood shall be 10 U.S.S. ga. (.1345)

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

The moldboard shall be hydraulically pivoted to allow tilting in different positions.

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

The moldboard brace rod shall be adjustable for plow angles of 45 degree, 50 degree and 55 degree.

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

Male end of adjusting brace assembly to be solid steel.

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

Both male and female ends shall have 5/8" mounting pins.

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

The female end shall be at the top to prevent the accumulation of water.

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

Holes in drive bars for push frame shall be 1 1/4" diameter.

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

The distance from the centre line of the holes to the end of the drive bar shall be 1 1/2".

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

The height of the moldboard at the top of curve shall be as follows:

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

Front End: 26" min.

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

Rear End: 54" min.

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

The overall length shall be 13'10"

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

The plow shall be fitted with two shoes as per M.T.O. ES-508.

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

There shall be eight vertical ribs, 3 1/2" high by 3/8" thick. Minimum weld between the moldboard and rib shall be 100% weld each side.

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

The bottom rail on the moldboard shall be 5" x 3" x 1/2" 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 endholes and between two holes in the middle of the moldboard. The moldboard shall be continuously welded to the bottom rails. YES \_\_\_\_\_ NO \_\_\_\_\_

The moldboard shall be designed for use with M.T.O. cutting edge ES-505 and with the M.T.O. standard nose piece ES-507. A carbide cutting edge and standard nose piece shall be supplied. YES \_\_\_\_\_ NO \_\_\_\_\_

Moldboard shall have a total bearing area (pin dia. times web thickness times number of webs involved) or 4 1/2" square inches minimum at the point where the drive links attach. YES \_\_\_\_\_ NO \_\_\_\_\_

Trip links safety mechanism shall be incorporated the blade mechanism must return to the normal plowing position automatically. Trip springs must be secured with lock nuts. YES \_\_\_\_\_ NO \_\_\_\_\_

Two separate lift chains shall be used and these shall pick up on the drive frame at points approximately 48" apart. YES \_\_\_\_\_ NO \_\_\_\_\_

The height of the shoes shall be adjustable as shown on M.T.O. ES-521. Height adjustable one way snow plow shoe holder. YES \_\_\_\_\_ NO \_\_\_\_\_

The shoes shall oscillate. YES \_\_\_\_\_ NO \_\_\_\_\_

The moldboard shall be formed in the shape of a smooth curve. YES \_\_\_\_\_ NO \_\_\_\_\_

The horizontal distance from the discharge end of the plow blade to the discharge end of the moldboard shall be 24" minimum. YES \_\_\_\_\_ NO \_\_\_\_\_

A sturdy eye 1/2" thickness shall be provided at the centre of gravity for handling of the moldboard. YES \_\_\_\_\_ NO \_\_\_\_\_

The design and quality shall meet M.T.O. requirements. YES \_\_\_\_\_ NO \_\_\_\_\_

The complete snow plow unit shall be painted black as per M.T.O. ES-301. YES \_\_\_\_\_ NO \_\_\_\_\_

36" high marker rods shall be installed on each side of the moldboard. YES \_\_\_\_\_ NO \_\_\_\_\_

Driveframe shall be equipped with quick tach style swivel bar. YES \_\_\_\_\_ NO \_\_\_\_\_

A spare parts manual shall be supplied. YES \_\_\_\_\_ NO \_\_\_\_\_

A signed manufacturer's warranty shall be supplied. YES \_\_\_\_\_ NO \_\_\_\_\_

*hydraulic tilt front plow harness or approved equivalent:* YES \_\_\_\_\_ NO \_\_\_\_\_

The front plow harness will 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 YES \_\_\_\_\_ NO \_\_\_\_\_

The harness tilt and return function will be performed by the operator from inside the chassis cab via proportional air over hydraulic control. YES \_\_\_\_\_ NO \_\_\_\_\_

One single locking shaft will be manually removed prior to performing the tilt function – dual load bearing pin designs to unlock front harness will not be accepted. YES \_\_\_\_\_ NO \_\_\_\_\_

The locking shaft shall be non load bearing design with no weight actually on the shaft YES \_\_\_\_\_ NO \_\_\_\_\_

The single lock shaft will have an outside diameter of 1 ½” inches and overall length will be a minimum of 30 inches. YES \_\_\_\_\_ NO \_\_\_\_\_

A handle will be provided on one end of the lock shaft 4 inches square, 3/8-inch tube by ¾ inch the other end will be chamfered at 30° degrees. YES \_\_\_\_\_ NO \_\_\_\_\_

The lock shaft will when installed be located inside the full length connecting tube. YES \_\_\_\_\_ NO \_\_\_\_\_

The connecting tube and lock shaft assembly will together form the upper connection point of the cheek plate weldment to the front plate assembly. YES \_\_\_\_\_ NO \_\_\_\_\_

The connecting tube overall length will be 23 3/8” inch, inside 1.612” inches, outside diameter 1.90” inches. YES \_\_\_\_\_ NO \_\_\_\_\_

The hydraulic power tilt cylinder will be double acting 2 ½ inches with a 6-inch stroke chrome piston rod. YES \_\_\_\_\_ NO \_\_\_\_\_

Two lower pivot tubes will be provided, the outer pivot tube will be connected to the right and left side cheek plates, the inner pivot tube will be permanently attached to the front plate assembly. YES \_\_\_\_\_ NO \_\_\_\_\_

The inner pivot tube will rotate forward inside the outer pivot tube allowing the front plate assembly to travel forward into the tilted position and will rotate rearward to return the front assembly to the normal working position. YES \_\_\_\_\_ NO \_\_\_\_\_

The inner pivot tube will be 4 inches outside diameter 2 ¾ inches inside diameter, 52 inch long seamless mechanical tubing. YES \_\_\_\_\_ NO \_\_\_\_\_

There will be two inner pivot tube gussets ½ inch plate, 18 13/16 inches long, 5” inches wide tapered to 2 ¼ inches. YES \_\_\_\_\_ NO \_\_\_\_\_

End plate located on inner tube ½” material 12” x 6” to provide lower mounting location for wing front post. YES \_\_\_\_\_ NO \_\_\_\_\_

The outer pivot tube will be 5 9/16” outside diameter, 4 1/16” inside diameter, 25 3/8 inch long extra heavy pipe. YES \_\_\_\_\_ NO \_\_\_\_\_

There will be two outer pivot tube gussets ½ inch plate, 8 inch x 8 inch triangular. YES \_\_\_\_\_ NO \_\_\_\_\_



Outer pivot tube fitted with three 1/8-inch NPT Grease fittings for lubrication, one each located approximately 2 inches in from the end of the tube and one located in the centre.

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

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.

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

Overall height of the front plate will be 49 inches with a 5.25 inch 90° degree bend at the bottom.

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

Overall height of the front plate will be 49 inches with a 5.25 inch 90° degree bend at the bottom.

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

Right and left side plates, 15 3/4" maximum width by 49 1/4" high by 3/8" plate welded to the front plate.

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

Upper cross channel 6" by 52" at 13 lbs./ft. welded to the right and left side plates

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

End plate located on upper cross channel 1/2" material 12" x 6" to provide upper mounting location for wing front post

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

1/2" steel plate pump and tilt cylinder mounting bracket welded to the cheek plate assembly, 24 1/4" wide by 18 1/2".

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

Cheek plates will be specified to suit chassis frame rails, 1/2" steel plate and will extend back along the chassis frame rails as far as possible.

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

Cheek plates flame cut from 44W steel plate.

Specify:

Minimum Yield: \_\_\_\_\_

Minimum Tensile: \_\_\_\_\_

Fasteners attaching cheek plates to the chassis frame rails will be minimum grade 8 N.C. hex head bolts

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

Two pairs of drive ears 100% welded to the front plate spaced at standard 30 1/2" centers

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

Three sets of plow drive bar connection holes located in drive ears - height to lower drive connection 19" mounted with truck empty

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

Quick-tack hitch pockets bolted to drive ears

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

Hydraulic plow lift cylinder, double acting 4" diameter with 10" stroke, cylinder rod chrome plated

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

Plow lift yoke 3/4" steel plate, braced with two 1/4" x 2" flat bar diagonal braces.	YES _____	NO _____
Two mounting locations in lift yoke to provide location for mounting of plow hydraulic lift cylinder in winter operating position and stored summer position	YES _____	NO _____
Mounting plates for plow lift cylinder, lift yoke and lift yoke braces all 1/2" steel plate 100% welded to front plate.	YES _____	NO _____
Two sealed beam halogen plow lights with high and low beam and built in integral directional's with switch in cab	YES _____	NO _____
Two independent double acting valve sections will be incorporated in the valve stack, one section will provide hydraulic power for the plow lift function and the second valve section will provide hydraulic power for the hydraulic power tilt function.	YES _____	NO _____
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.	YES _____	NO _____
Lift yoke brace mounting plates positioned to provide minimum 23.5" span.	YES _____	NO _____

**SPECIFICATIONS**

Cable Type FRONT WING POST

48" front post

The post shall be an 8" I beam @ 18.4 lbs/ft. Rated – no alternative front post construction will be permitted.

SPECIFY:

The harness assembly shall be of heavy construction to sustain snow plowing operations under severe conditions.

The design and construction of the wing post shall be in compliance with MTO ES403, or be of equivalent design. Brace "A" in a second sturdy cross member shall replace ES403. This cross member shall be bolted to both cheek plates. Alternate braces must be approved.

The wing post, when mounted, shall not be higher than the wing tower.

The sheave pin shall be provided with a grease fitting and an iolite bushing.

A safety stop, limited slide travel shall be supplied.

Lifting cable shall not be mounted to the hinge pin.

**CONFIRMATIONS**

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

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

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

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

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

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

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

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

An 8" grab link shall be provided with a tip over arrangement. A spring shall be included to return the wing to normal position after it has tripped.	YES _____	NO _____
Bottom of wing post shall be approx. 11" from the ground, truck empty and shall be protected by a shoe.	YES _____	NO _____
A 3" x 30" stroke D.A. cylinder shall be mounted on the inside of the front post and shall operate the front wing slide through 2 (6" dia) sheaves and a cable.	YES _____	NO _____
Front slide shall be provided with a tip over, arrangement. A spring shall be included to return the blade to normal position after it has tripped.	YES _____	NO _____
The main supporting member for the front post shall be 4" OD x 2 3/4" ID x 5/8" wall tube cross member running through both cheek plates, reinforced with a 1/2" steel plate between the cheek plate and front post.	YES _____	NO _____
The auxiliary support shall be a 6" x 13 lb/ft channel running across the top of both cheek plates	YES _____	NO _____
Aeon 5000 lb. rubber block helper spring kit shall be installed to the R.H. front chassis springs	YES _____	NO _____
12" Grote #12020 convex mirror on backside of front post on a extended 10" angle iron bracket to aid driver in winging mode	YES _____	NO _____
Two (2) 6" Grote front post spot lights on 18" extended adjustable bracket, with separate in-cab switches.	YES _____	NO _____
Tube style crossmember approximately 10" back of cab to assist in preventing diamond shaping of frame when winging.	YES _____	NO _____
The rear structure shall attach directly to the right side of the chassis close behind the cab	YES _____	NO _____
Cable Type VCL350SCL REAR WING POST		
The rear structure shall attach directly to the right side of the chassis close behind the cab	YES _____	NO _____
The supporting structure shall extend across both chassis side rails and along the right side to provide a distribution of the wing load under heavy duty operation	YES _____	NO _____
Bottom of wing tower shall have a ground clearance of 14" minimum, truck empty.	YES _____	NO _____
The spacing of the holes in the slides for connecting the wing braces shall be approximately 17".	YES _____	NO _____
Approved size of ram controlling the rear end of wing shall be 3" dia. x 30" stroke cylinder, with a cable and sheave assembly.	YES _____	NO _____
Approved size of ram controlling wing brace slide shall be 3" dia. x 36" stroke and shall be double acting.	YES _____	NO _____

Wing tower shall be painted black.	YES _____	NO _____
<b>The wing tower shall be of a heavy construction and bolted to the right side of the truck chassis.</b>	YES _____	NO _____
An integral BOC oil reservoir of 130 litre (35 US gallon.) capacity.	YES _____	NO _____
An oil filter with spin-on element shall be installed in the return line ahead of the reservoir with a shut-off valve between the filter and reservoir.	YES _____	NO _____
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 – 10" channel construction must be utilised for rear wing post construction – no exception.	YES _____	NO _____
One pipe brace 2" 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.	YES _____	NO _____
The rear wing tower shall be heavily braced and gusseted to the frame cheek plate.	YES _____	NO _____
For maximum strength two channels shall be used to form support integral with the rear post.	YES _____	NO _____
Two triangular stiffeners shall be incorporated into the assembly	YES _____	NO _____
Hydraulic hoses shall connect the rams of the tower with the valves in the control box. Hoses shall be two ply braided steel, SAE100R16 with swivels on both ends.	YES _____	NO _____
All sheave pins shall be provided with oil impregnated bronze bearings and grease fitting.	YES _____	NO _____
A safety chain shall be provided for securing wing when not in use.	YES _____	NO _____
Guide bars to contain the rear wing slide shall be welded 100% from the bottom up 2 feet.	YES _____	NO _____
35 U.S. gallon oil reservoir, integral with rear wing tower, installed on top of the frame rails back of cab, shall be supplied complete with oil filter, oil level sight / temperature gauge, breather type filler cap, drain plug and ball valve shut-offs	YES _____	NO _____
6" rear wing light w/in-cab switch	YES _____	NO _____
Manufacturer's literature shall be included	YES _____	NO _____
Manufacturer's warranty	YES _____	NO _____

SPECIFY:

Parts manual shall be supplied with each unit. YES \_\_\_\_\_ NO \_\_\_\_\_

Harness shall be prepped and painted Medium Gloss BLACK YES \_\_\_\_\_ NO \_\_\_\_\_

**SPECIFICATIONS**

**CONFIRMATIONS**

**12' WING MOLDBOARD**

SPECIFY: \_\_\_\_\_  
 MAKE: \_\_\_\_\_  
 MODEL: \_\_\_\_\_

Overall length 12 feet YES \_\_\_\_\_ NO \_\_\_\_\_

Inside intake height 29" YES \_\_\_\_\_ NO \_\_\_\_\_

Outside discharge height 39" YES \_\_\_\_\_ NO \_\_\_\_\_

Moldboard thickness 10 gauge minimum YES \_\_\_\_\_ NO \_\_\_\_\_

Two drive ribs for connecting the wing brace shall be provided. YES \_\_\_\_\_ NO \_\_\_\_\_

Two drive ribs shall be located approximately 10' 2" and 10' 8" from the nose end of the wing. YES \_\_\_\_\_ NO \_\_\_\_\_

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. YES \_\_\_\_\_ NO \_\_\_\_\_

Lower wing angle shall be 6" x 4" x 3/4". YES \_\_\_\_\_ NO \_\_\_\_\_

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 of the wing. YES \_\_\_\_\_ NO \_\_\_\_\_

Two adjustable wing braces shall be supplied. YES \_\_\_\_\_ NO \_\_\_\_\_

The upper brace shall be of a shock 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. YES \_\_\_\_\_ NO \_\_\_\_\_

The lower brace shall incorporate a 5/8" x 6" compression spring to absorb any shock the wing encounters. YES \_\_\_\_\_ NO \_\_\_\_\_

Upper brace – extended 90" C.C. YES \_\_\_\_\_ NO \_\_\_\_\_

Collapsed 60" C.C. YES \_\_\_\_\_ NO \_\_\_\_\_

Extended distances shall be measured with spring fully retracted. YES \_\_\_\_\_ NO \_\_\_\_\_

Lower brace – Extended 88" C.C. YES \_\_\_\_\_ NO \_\_\_\_\_

Collapsed 58" C.C. YES \_\_\_\_\_ NO \_\_\_\_\_

One spare pin for adjusting the wing braces shall be supplied with each brace. YES \_\_\_\_\_ NO \_\_\_\_\_

The top edge of the wing shall be boxed in and welded 100% to the ribs and the moldboard so as to avoid any pockets. YES \_\_\_\_\_ NO \_\_\_\_\_

**Adjustable needle valve in hydraulics back of cab to allow operator to be able to slow / speed mode functions of wing.**  YES  NO

High wear wing blade shall be supplied YES \_\_\_\_\_ NO \_\_\_\_\_

36" ORANGE fluorescent wing marker attached to rear of wing YES \_\_\_\_\_ NO \_\_\_\_\_

Conspicuity reflective on wing arm and on rear edge of wing YES \_\_\_\_\_ NO \_\_\_\_\_

All steel will be shotblasted, epoxy ZINC primed and finished in Medium Gloss BLACK finish YES \_\_\_\_\_ NO \_\_\_\_\_

**HYDRAULIC SYSTEM:**

The hydraulic pump supplied shall be a Dowty Model 2PL158/220 front mount Tandem Dry Mode pump with in cab air shift. YES \_\_\_\_\_ NO \_\_\_\_\_

The first stage shall produce 13 US G.P.M. at 1,000 R.P.M. and 23 US G.P.M. at 1,800 R.P.M. YES \_\_\_\_\_ NO \_\_\_\_\_

The second stage shall produce 18 US G.P.M. at 1,000 R.P.M. and 32 US G.P.M. at 1,800 R.P.M. YES \_\_\_\_\_ NO \_\_\_\_\_

One pump section shall be dedicated to the operation of the plow, wing and hoist only. YES \_\_\_\_\_ NO \_\_\_\_\_

The second pump section shall strictly operate the conveyor and spinner assembly to ensure uninterrupted flow of material. YES \_\_\_\_\_ NO \_\_\_\_\_

Pump mounting plate and splined drive shaft shall be supplied. YES \_\_\_\_\_ NO \_\_\_\_\_

The pump shall be driven from the crankshaft of the truck engine. YES \_\_\_\_\_ NO \_\_\_\_\_

The pump shall have a manufacturer's R.P.M. rating equivalent or higher than that of the truck engine at governed speed. YES \_\_\_\_\_ NO \_\_\_\_\_

Hydraulic hoses to connect pump shall be supplied. Their size shall be adequate for quick operation of all hydraulic operations and shall be 2 ply braided steel SAE100RS, with swivels on both ends. YES \_\_\_\_\_ NO \_\_\_\_\_

Specification

The drive shaft shall be supplied with spline long enough to allow telescopic retraction of the shaft in order to change fan belt without removing the pump. YES \_\_\_\_\_ NO \_\_\_\_\_

The hydraulic system must be set up so all other hydraulic functions do not “ rob “ the sander equipment. YES \_\_\_\_\_ NO \_\_\_\_\_

A parts manual shall be supplied with each unit. YES \_\_\_\_\_ NO \_\_\_\_\_

Hydraulic control valves will be stackable and sectional type HCD-6 with HCD6-L20 air shift – no exceptions. YES \_\_\_\_\_ NO \_\_\_\_\_

***The valves shall be open center type to operate with a hydraulic gear pump.*** YES \_\_\_\_\_ NO \_\_\_\_\_

To prevent corrosion the air shifters will have a bronze sleeve. YES \_\_\_\_\_ NO \_\_\_\_\_

The control valve will include the following 7 sections: YES \_\_\_\_\_ NO \_\_\_\_\_

- 1 single acting for body hoist
- 1 double acting for plow lift
- 1 double acting for hydraulic moldboard tilt
- 1 double acting section for front harness hydraulic tilt forward
- 1 double acting section for front of wing lift
- 1 double acting section for rear of wing lift
- 1 double acting section for rear wing slide

The hydraulic control valves will be operated by proportional featherable in cab air controls – model RMH866000 – no exception. YES \_\_\_\_\_ NO \_\_\_\_\_

The control panel assembly shall be of a remote design pedestal mounted and adjustable. YES \_\_\_\_\_ NO \_\_\_\_\_

An oil reservoir of adequate capacity shall be supplied complete with oil filter oil level sight gauge, breather type filler cap, drain plug and oil shut off valve. YES \_\_\_\_\_ NO \_\_\_\_\_

The complete valve stack assembly will be installed well above the chassis frame rails on the left side back of cab in an easily accessible location, protected from the road debris. The junction boxes for the lights must also be installed at this location. YES \_\_\_\_\_ NO \_\_\_\_\_