

FORM A: BID
(See B8)

1. Contract Title SUPPLY & INSTALLATION OF U-BODY COMBINATION ALUMINUM
DUMP SANDER SPREADER BODIES

2. Bidder

Name of Bidder

Usual Business Name of Bidder as it appears on Invoice (if different from above)

Street

City

Province

Postal Code

(Mailing address if different)

Email Address of Bidder

Facsimile Number

Street or P.O. Box

City

Province

Postal Code

(Choose one)

GST Registration Number (if applicable)

The Bidder is:

a sole proprietor

a partnership

a corporation

carrying on business under the above name.

3. Contact Person

The Bidder hereby authorizes the following contact person to represent
the Bidder for purposes of the Bid.

Contact Person

Title

Telephone Number

Facsimile Number

Email Address

4. Definitions

All capitalized terms used in the Contract shall have the meanings
ascribed to them in the General Conditions and D3.

5. Offer The Bidder hereby offers to perform the Work in accordance with the Contract for the price(s), in Canadian funds, set out on Form B: Prices, appended hereto.

6. Commencement of the Work The Bidder agrees that no Work shall commence until he/she is in receipt of a notice of award from the Award Authority authorizing the commencement of the Work.

7. Contract The Bidder agrees that the Bid Opportunity in its entirety shall be deemed to be incorporated in and to form a part of this offer notwithstanding that not all parts thereof are necessarily attached to or accompany this Bid.

8. Addenda The Bidder certifies that the following addenda have been received and agrees that they shall be deemed to form a part of the Contract:

No.	Dated
_____	_____
_____	_____
_____	_____

9. Time This offer shall be open for acceptance, binding and irrevocable for a period of sixty (60) Calendar Days following the Submission Deadline.

10. Signatures The Bidder or the Bidder's authorized official or officials have signed this _____ day of _____, 20____.

Signature of Bidder or
Bidder's Authorized Official or Officials

(Print here name and official capacity of individual whose signature appears above)

(Print here name and official capacity of individual whose signature appears above)

FORM B: PRICES
(See B9)

SUPPLY & INSTALLATION OF U-BODY COMBINATION ALUMINUM DUMP SANDER SPREADER BODIES

UNIT PRICES

ITEM NO.	DESCRIPTION	SPEC. REF.	UNIT	QUANTITY	UNIT PRICE
1.	U-Body Combination Aluminum Dump Sander Spreader Bodies	15016	Each	4	

Name of Bidder

FORM N: DETAILED SPECIFICATIONS 15016

1.0 **DESCRIPTION/INTENT OF EQUIPMENT-**

- 1.1 These specifications describe the supply & installation of **13' x 8' U-Body Combination Aluminum Dump/Spreader Bodies** and other equipment mounted on 58,000 lbs. GVWR Cab & Chassis provide by the City of Winnipeg and features as specified herein. The successful bidder of the contract shall be notified by the Contract Administrator the make, model and year the chassis. The chassis shall be dropped shipped by the truck manufacture to the successful bidder of this contract. The successful bidder is responsible for ensuring all chassis requirements meets the body installation via chassis manufacture factory line sheet approval sign off acknowledging all chassis specifications meet the requirements of the body installer. (i.e.; cab to axle CA, wheelbase (WB), after frame (AF), usable frame Space (UFS), Gross Vehicle Weight Ratings (GVWR) requirements.
- 1.2 The **13' x 8' U-Body Combination Aluminum Dump/Spreader Bodies** shall be new 2015 model year or newer.
- 1.3 The **13' x 8' U-Body Combination Aluminum Dump/Spreader Bodies** and all other items/components shall be the manufacturer's latest model. The equipment shall be furnished complete and ready for operation. Any parts or accessories not specifically mentioned, but which are required to complete and place the equipment and associated attachments in successful operation shall be furnished as though specifically mentioned in these specifications. The equipment and associated and attachments, and all parts thereof, shall conform in strength and quality of material and workmanship, to the best standards and engineering practice of the industry.

2.0 **OTHER SPECIFICATIONS AND STANDARDS-**

- 2.1 All applicable SAE standards form an integral part of these specifications and shall have precedence in any conflict concerning minimum acceptable standards.
- 2.2 The **13' x 8' U-Body Combination Aluminum Dump/Spreader Bodies and attachments** shall comply with the applicable regulations:
- National Safety Mark, NSM
 - Manitoba Safety and Health Act, Parts 12, 22
 - Canadian Standards Association, CSA
 - Under Writers of Canada, U/L
 - Society of Automotive Engineers, SAE
 - City of Winnipeg Lighting Visibility Standard=<http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf>.
- 2.3 It will be the responsibility of the Bidder to inform the City of any deficiencies in these specifications, for under this Contract the Contractor shall be held responsible for the design, performance, reliability and satisfactory operational function of the units.

3.0 **SERVICE FACILITY-**

- 3.1 For the purpose of warranty repairs, the Bidder shall have an authorized service facility located within 10 km of the boundaries of the City of Winnipeg. The facility, or a portion thereof, shall be dedicated to the service and maintenance of the type equipment being offered. Bidders shall provide a description of the service facility including, but not limited to, number of qualified service staff, years of service experience, and general service capabilities within three (3) Business Days upon request of the Contract Administrator.

3.2 If a suitable warranty facility is not available within 10 km of the boundaries of the City of Winnipeg, the Bidder may propose that the City of Winnipeg Repair Facility perform warranty work. Any Work performed by the City of Winnipeg Repair Facility shall be charged to the Contractor at the Facility's shop rate in effect at the time the work is performed (for example, shop rate for 2015: \$88.00/hour and \$ 112.00/hour for overtime and callout).

3.3 Location of the service facility located within 10 km of the boundaries of the City of Winnipeg. The Bidder shall choose and fill in one (1) of the of the Clauses listed below. (3.3.1) or 3.3.2).

3.3.1 Bidder's own facility location. **State** the location of the service facility below.

3.3.2 Bidder elects to have warranty work be performed by the City of Winnipeg Repair Facility.

3.3.3 If the bidder elects to have warranty work be performed by the City of Winnipeg Repair Facility, the bidder shall provide all warranty claim authorization procedures prior to contract award.

4.0 **REFERENCES-**

4.1 Provide five (5) Canadian references where this equipment is used in a working environment where climatic conditions are similar to the City of Winnipeg

5.0 **MAKE & MODEL-**

5.1 **State** make and model of the equipment bid- _____

6.0 **INSTRUCTIONS FOR COMPLETION OF SPECIFICATIONS-**

6.1 Each bid will be evaluated based on adherence to all terms, conditions and requirements outlined in the Bid Opportunity package.

6.2 All items in these specifications must be answered indicating compliance or non-compliance. **BIDDERS SHALL STATE "YES" FOR COMPLIANCE OR STATE DEVIATION**, or give reply where requested to do so. Deviations shall be clearly stated and fully detailed. Alternatives will be considered subject to evaluation.

6.3 **EACH BIDDER IS REQUIRED TO FILL IN EVERY BLANK. FAILURE TO DO SO MAY BE USED AS A BASIS FOR REJECTION OF BID**

7.0 **PERFORMANCE RELIABILITY-**

7.1 The responsibility for the design of the **13' x 8' U-Body Combination Aluminum Dump/Spreader Bodies and associated attachments**, its performance and reliability shall rest upon the Contractor.

7.2 The term “repeated failures” as used herein is defined to mean that the same component, subassembly, or assembly develops repeated defects, breakdowns and/or malfunctions rendering the vehicle inoperative, or requiring repeated shop correction, service and/or replacement during the warranty period applicable for said component, subassembly, of assembly. Minor items or ordinary service adjustments are not included, or considered under the scope of “repeated failures”, as well as other factors, such as operational damage due to accidents, misuse or lack of proper maintenance, service and lubrication attention by not following the manufacturer’s preventative maintenance schedule.

7.3 Where the **13’ x 8’ U-Body Combination Aluminum Dump/Spreader Bodies and associated attachments** develops “repeated failures” in service, the Contractor shall make any necessary engineering changes, repairs, alterations or modifications in order to guarantee reliability of performance.

7.4 **The equipment shall be capable of consistent top performance in City of Winnipeg Environment. Note: The City of Winnipeg has four seasons with ambient temperatures ranging from approximately 90°F (32°C) to -40°F (-40°C)**

8.0 FUEL-

8.1 Where applicable, all equipment must be fully fuelled upon delivery (no exceptions).

9.0 QUALIFICATIONS OF MANUFACTURER & CONTRACTOR-

9.1 The manufacturer of the **13’ x 8’ U-Body Combination Aluminum Dump/Spreader Bodies and associated attachments** shall have five (5) years continuous experience manufacturing **13’ x 8’ U-Body Combination Aluminum Dump/Spreader Bodies and associated attachments**.

9.2 The manufacturer shall have in effect a documented quality control program ensuring that the quality of materials and workmanship, including welding, conforms to the best standards and engineering practice of the industry.

9.3 The Contractor shall have five (5) years continuous experience servicing, repairing and maintaining **13’ x 8’ U-Body Combination Aluminum Dump/Spreader Bodies and associated attachments** of the type being offered.

10.0 NATIONAL SAFETY MARK-

10.1 In Canada, modification to new vehicles can only be done at facilities that are recognized by Transport Canada. All of these facilities must have a National Safety Mark from Transport Canada. Transport Canada National Safety Mark is a label that indicates that the modifications are compliant with all current Canadian Motor Vehicle Safety Standards (CMVSS)

STATE (NSM) # - _____

11.0 MANITOBA SAFETY INSPECTION- (IF APPLICABLE)

11.1 The vehicles shall be complete with a current Manitoba Safety Sticker affixed to the driver’s side vent window.

12.0 SPECIFICATIONS- (The chassis will be supplied to the location of the successful bidder)

WEIGHT & DIMENSIONS-

12.1 Body weight – Approx. 4850 lbs. _____

12.2 Nominal length: inside – 140” @ conveyor floor _____

12.3 Nominal width: inside 86” and outside 100” _____

12.4 Height of sides – 45 in. approx. without plank gussets _____

12.5 Height of tailgate – 53” in. approx. _____

12.6 Height of front – 60” match chassis cab height. _____

12.7 Capacity (water level) – 7.6 m3 _____

FRONT-

12.8 Construction – ¼ in. aluminium plate with provision for a front mounted hoist _____

12.9 Cab shield – approx. 24 in. deep with 20° slope, full width of dump body, c/w reinforced ends _____

SIDES AND FLOOR-

12.10 Construction – ¼ in. 5083-H321 high tensile aluminium construction lined with ½” Quick Silver Oil and heat resistant polymer liner. _____

12.11 Top side rail – heavy duty, reinforced, 4” x 4” x ¼” square tubing _____

12.12 Plank gussets – for 2 in. width planks, with ½ in. diameter boltholes. _____

12.13 Sides to incorporate integral fenders sloped away from body. _____

12.14 Rear side post – formed, one per side, 10 gauge actual 3/16” corner post material _____

12.15 Lifting lugs – four (4) located at front and rear of side top-rails _____

12.16 Access ladder – one (1) required, aluminium, located at rear passenger side corner of body, 3 in. from side of body, fold-up design. _____

12.17 Ladder rungs – traction type rungs, 11-gauge approx., 2¼ in. width, 4-hole design _____

12.18 First rung to be 18 in. from ground level, 14 in. rung spacing to top of body. _____

12.19 Grab handles – located for ergonomic access to top of box. _____

TAILGATE-

12.20 Construction – ¼ in. 5083-H321 aluminium with vertical and horizontal reinforcement stiffeners. _____

12.21 Type – shall be a two way tailgate able to open from the top and bottom. _____

12.22 Tailgate shall not protrude above floor in horizontal or full down position. _____

12.23 There shall be a minimal gap between tailgate and the floor and sides when tailgate is in closed position. _____

12.24 Vertical and horizontal structural reinforcement’s c/w a self-cleaning bottom rail. _____

12.25 Tailgate shall be structurally reinforced and shall have heavy duty ¼ in. end plates. _____

12.26 Tailgate pins – 1¼ in. steel, top and bottom. _____

- 12.27 Support chains – 7/16 in. transport, grade 70, adequately fastened c/w chain storage. _____
- 12.28 Spreader chains – 7/16 in. transport, grade 70, adequately fastened c/w chain storage _____
- 12.29 Support and spreader chains shall be equipped with a protective cover. _____
- 12.30 Tailgate locking mechanism – in-cab control, air operated with air brake pot operated trip. Shall have grease fittings at all bushings/shaft supports. _____
- 12.31 The locking mechanism shall be adjustable to ensure adequate lock-up with tailgate closed. _____

SCREENS-

- 12.32 Screen support – 6” I beam heavy-duty construction _____
- 12.33 Screens – four (4) sections, easily removable, heavy duty steel construction. _____
- 12.34 Screen openings – 3" x 3". _____
- 12.35 Wire size – 3/8 in. _____

CONVEYOR ASSEMBLY-

- 12.36 Discharge – **Rear centre** discharge. _____
- 12.37 Rear idler assembly shall be guarded to prevent accidental contact with chain, sprockets and shaft. _____
- 12.38 Conveyor shall be an integral part of the body floor and include integral chain link covers. _____
- 12.39 Frame will be 1/4” with replaceable wear plate _____
- 12.40 Conveyor cover will be 1/2” high temperature rubber easy to install and remove via main conveyor chain. _____
- 12.41 Chain will be 24in. width pintle chain type, self-cleaning, 667X 40,000 lbs. capacity Model Pintle 667X 21” chain width _____
- 12.42 Scraper bars will be 3/8” x 1/4” approx. 4 in. spacing, 100% welded _____
- 12.43 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. _____
- 12.44 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. _____
- 12.45 Automated chain tensioning system to be centrally located between main conveyor drive and idle shafts with access to automated conveyor chain tensioning system shall be from the side(s) of the body. _____
- 12.46 All grease fittings for entire conveyor assembly (including tensioner) shall be readily accessible or shall be equipped with remote grease zerks as required. _____

12.47 Planetary 25:1 gear box – mounted at discharge end, serviceable, bolt-on, c/w built-in feedback sensor motor. _____

12.48 The gear box mounting plate shall be adjustable to allow alignment of input and conveyor shafts and will deliver 34,518 IN/LB peak torque with 24,750 IN/LB continuous. Peak torque is 50,000in/lb _____

12.49 Drive and idler shafts manufactured from 2” dia high-resistance stress proofed SAMSON 100. _____

12.50 A polyethylene sheet, ½ in. thick, shall be installed on frame rails under the main conveyor c/w clean-out provision to prevent spreader material from collecting on truck chassis frame. _____

State price deduct if the poly sheet is deleted \$ _____

12.51 Discharge gate shall be designed so that spillage does not occur with the conveyor stopped and gate is open. _____

12.52 Discharge gate opening scale – required with eleven (11) markings, evenly spaced and numbered from 0 (closed) to 10 (fully open). The scale and indicator shall be visible by the operator. _____

SPINNER ASSEMBLY-

12.53 Spinner shall be hydraulically operated, equipped with quick couplers. Couplers shall be installed in banks in convenient locations, equipped with colour coding, covers and plugs. Exact spinner deflectors and height shall be determined upon a pre-production meeting. _____

12.54 Chute and shroud – 3/16 in. heavy duty steel plate construction. _____

12.55 Spinner motor – Parker TB050FS1 _____

12.56 Rotation – dual rotation, actuated in cab. _____

12.57 Drive shaft – completely sealed. _____

12.58 **Rear mount** Spinner assembly to be chassis mounted, adjustable. _____

12.59 Spinner disk – 20 in. diameter approx., height adjustable. Spinner disk material – 5/8” polyurethane disc. **State** if large spinner is available. Exact height type and size to be determined upon pre-production meeting. _____

12.60 Fins – six (6) moulded integral with disc. _____

12.61 Spinner disk, shaft and motor shall be capable of quick attachment without the use of tools. _____

12.62 Spread – shall be capable of spreading evenly up to 35 ft. _____

HEADLIFT HOIST-

12.63 Front hoist – multi-stage, front-mounted headlift hoist, nitrated, quenched and polished cylinder stages, protected against corrosion. _____

12.64 Capacity – 20 tons @ 2,000 psi. 30 ton @ 2,000psi _____

12.65 Dumping angle – 45° from horizontal, cylinder must lower under its own weight with empty load in low ambient temperatures. _____

12.66 Grease fittings – required at all pivot points. _____

TARPAULIN-

12.67 An air tarp shall be supplied with fabricated tarp arms dimensions of 1 ½" x 2 ½" 5083 aluminium, 1/8" mesh tarp, powered by twin air cylinders operated from in the cab. _____

12.68 Tarp assembly shall not interfere with rear warning light visibility, stowed or un-stowed. _____

HYDRAULICS – **MUST BE PARKER HYDRAULICS**

12.69 Hydraulic pump – front mounted, variable displacement, load sensing axial piston pump, Parker P1075 pump, no substitutes. _____

12.70 Hydraulic pump shall be crankshaft driven by splined tubular drive shaft (square style drive shafts are not acceptable) attached to pump with a taper lock collar. _____

12.71 Hydraulic pump drive shaft shall be equipped with accessible grease fittings on U-joint crosses. _____

12.72 Hydraulic valve bank – pressure compensated, stackable, proportionally controlled using electric solenoids with pulse width modulation, Parker Pulsar VPL, no substitutes. _____

12.73 Each section to have a manual override on the valve in case of electric control failure. _____

12.74 The valve banks (for 5 sanding units) shall be configured to operate the following functions: _____

- i) Main conveyor – shall operate in two (2) directions with proportional speed.
- ii) Spinner – shall operate in two (2) directions with proportional speeds.
- ii) Box hoist(s) – Parker VPL
- iv) Plow hydraulics – double acting cylinders providing raise/lower and angling left and right.
- v) Gate – valve shall provide bi-directional control of gate.

12.75 Hydraulic connectors – colour coded quick disconnect for spinner and plow hydraulics. Couplers shall be installed in banks in convenient locations, equipped with covers and plugs. _____

12.76 Suction line and case drain ball valves – required, easily accessible, lockable with bolts. _____

12.77 Valve enclosure and hydraulic tank (for sanding units) – 1-piece design, mounted behind the cab on top of the frame rails, approx. 35"H x 24"W x 12"D. Enclosure shall be spring mounted on one side to allow for truck frame flexing. Hydraulic tanks for future dump bodies shall be frame rail mounted. _____

12.78 Outlet ports shall exit the enclosure facing the rear of the truck cab. _____

12.79 All fittings shall be ORB or JIC threads where possible. No NPT connections are acceptable. _____

- 12.80 All external tubing to be stainless steel on valve enclosure. _____
- 12.81 Rear of valve enclosure shall open on side-mounted hinges. The opening shall swing sufficiently to access, adjust and completely remove internal components. The cover shall be completely water tight c/w heavy duty hood-type or battery box-type latches. _____
- 12.82 Drain hole – approx. ½ in. diameter. _____
- 12.83 The entire enclosure shall be completely weather proof with the exception of the drain hole. All covers, bulkheads, fitting openings etc. must be sealed. _____
- 12.84 Hydraulic tank section – mounted behind the cab on top of the frame rails, approx. 160 Litre capacity. All set screws are to be flush mounted and hydraulic tank shut off before filters. _____
- 12.85 Dimensions – 35"H x 30"W x 12"D approx. _____
- 12.86 Breather cap – 3 in. diameter, pressurized @ 5 psi, mounted on a 6 in. stand pipe. _____
- 12.87 The hydraulic tank shall have a ¾ in. diameter magnetic drain plug. Magnetic plug is not required if a magnetic element in the return filter is supplied. _____
- 12.88 The hydraulic tank shall be equipped with a 1 in. diameter case drain inlet. _____
- 12.89 The interior of the hydraulic tank shall be coated with Glyptol to prevent the tank from corroding. _____
- 12.90 Electric low level sensor – mounted inside tank, activating a light and buzzer located inside the cab. The alarm shall be activated when oil level is approx. 13 in. from the bottom of the tank. The wiring must enter the side of the tank near the top of the tank. _____
- 12.91 Sight glass – two (2) level gauges required, one high mounted, one low mounted, each required in a protective metal case. _____
- 12.92 Hydraulic filters:
- 12.93 Return filter – serviceable without oil loss, tank mounted preferred, c/w clogging indicator. _____
- 12.94 Pressure side filter – non-bypass type, absolute rated filter element, located before oil reaches the valve bank, c/w clogging indicator. _____
- 12.95 Both filters shall contain a corrosion resistant coating, beta rating of 200, 10 micron particle size, and shall be ergonomically located for servicing. _____
- 12.96 Hydraulic hoses – “ Artic Rated” wire braid reinforced, rated for system operating pressure with 4 to 1 safety factor for burst pressure. _____
- 12.97 Hydraulic hoses to be properly routed, fastened and protected at wear and scuff locations. _____
- 12.98 Hose fittings – hydraulic full flow, crimp-on (non-reusable) type. _____
- 12.99 Black iron fittings not acceptable on pressure lines or pump suction line. _____

12.100 Bulkhead fittings shall be installed on all quick couplers and all points where hydraulic lines flex such as dump box hinge. _____

12.101 Hydraulic oil – Petro Canada HVI-22. _____

HYDRAULIC COMMISSIONING-

Note: A Hydraulic Commissioning or start-up procedure after the installation of the entire system is required as follows:

12.102 Start-up pump at no load – hydraulic oil shall be pre-filtered through a 10 micron absolute, ensure all fittings are tightened and hose routing proper. _____

12.103 Flush system at high and low pressure – ensure all fittings are tight. _____

12.104 Bleed air and fix leaks – ensure all functions are operating properly. _____

12.105 Verify performance and pump adjustments – maximum and standby pressure adjustments. _____

12.106 Program and set-up Sand Spreader Control System – solenoid nulling, ground speed signal, etc.. _____

12.107 Road test – verify operation of all functions to include hydraulic functions, controller functions, pre-wetting functions, electrical functions and lighting functions. _____

SAND SPREADER CONTROL SYSTEM-

12.108 The control system shall be Parker IQAN Controls, no substitutes. The system must be fully compatible with AVL reporting software also to be able to connect to an InterFleet MDU which has a 9 pin (male) serial port for exporting material data such as kg/km, spinner rate, material selected, rod and air temp and accumulative total for both dry and liquid materials. All cables needed to connect to the InterFleet MDU must be supplied. _____

12.109 The successful bidder shall be responsible for ensuring the control system is supplied with the manufacturer's latest software version. _____

12.110 Mounting location – Controller shall be in dash, ergonomically located for operator. Exact location to be determined at time of installation. _____

12.111 Remote pause required on top of joystick. _____

12.112 The controller shall not be wired through the ignition, i.e., shall receive power when engine is shut-off. _____

12.113 Sand gate read back device – automatic feedback to controller. The read back device shall be an integral part of the cylinder. Capability of operating in closed loop. _____

12.114 Control system enclosure – all controls and switches must be clearly identified and back-lit. _____

12.115 Material sensor – infra red, located at the spinner. _____

PRE-WETTING SYSTEM-

12.116 Model – Parker Controls variable ratio pre-wetting system, no substitutes, 0-8 gpm approx., plumbed through conveyor circuit return line oil. Equipped

- with flow meter capable of operating in closed loop. _____
- 12.117 An adjustment pressure relief valve shall be installed in the pre-wet pump /flowmeter enclosure. _____
- 12.118 A provision shall be provided to flush pre-wet pump and lines with clean water without draining pre-wet tank. Spray applicator shall be a single down pipe with check valve and a fan spray onto the spinner assembly to prevent material chute plugging. Exact type, dimensions, and location shall be determined upon pre-production meeting. _____
- 12.119 Provision for calibration wet kit. _____
- 12.120 Reservoirs – polyethylene construction, 5/16 in. wall thickness min., frame mounted under body each side, 140 gallons each per side capacity, capable of filling from ground level when body is in the down position. Also shall be equipped with with a 2" male quick coupler _____
- 12.121 Drain hole – 2 in. diameter minimum, c/w shut-off valves. _____
- 12.122 The reservoir shall be equipped with a sight gauge c/w floating level indicator. _____
- 12.123 Reservoir shall contain permanent markings indicating amount of liquid in tank, 50 L graduation approx.. _____
- IN-CAB SYSTEM CONTROLS-**
- 12.124 Control enclosure – all auxiliary controls and warning lights shall be contained in an enclosure measuring 13"L x 7"W x 9"D approx.. Controls shall be mounted on the top face. _____
- 12.125 Mounting location – the control enclosure shall be mounted in dash, ergonomically angled and positioned at the appropriate height to alleviate driver fatigue during prolonged use. _____
- 12.126 All controls and switches shall be clearly identified and back-lit for night time use. _____
- 12.127 Main power switch – required to supply power to all auxiliary panel functions, wired through ignition. _____
- 12.128 Plow control and dump box function – single quad joystick control, fully proportional in all directions, dual mode for dump box and plow. _____
- 12.129 Remote pause required on top of joystick. _____
- 12.130 A switch on the control panel shall actuate plow functions in one mode, dump function in the other mode, or changeable with trigger in joystick. _____
- 12.131 The vertical axis (forward and backward) shall control the plow raise/lower and the dump raise/lower. Joystick forward plow and box lower, joystick rearward plow and box raise. _____
- 12.132 The horizontal axis (side to side) shall actuate plow angle left/right in "Plow" mode, and the raise/lower in "Dump" mode. _____
- 12.133 Low hydraulic oil level light – complete with buzzer. _____
- 12.134 Plow power float function – required to limit amount of down force exerted by the _____

plow on the road surface. Plow shall continue to follow the contours of the road surface while actuation.

12.135 Inductive plow float sensor – shall be supplied for fully auto power float operation. Pressure switch not acceptable.

12.136 Power float pilot light – Installed in control enclosure, activated when power float operation is "on". Pilot light required in addition to the back-lit switch.

12.137 Plow lower and lift controls must override the power float system.

ELECTRICAL & LIGHTING- (See Appendix "A")

12.138 All lighting to conform to C.M.V.S.S. and Manitoba Highway Traffic Act.

12.139 All supplier installed lighting and lighting equipment shall be LED Grote or Truck-Lite (unless otherwise specified) and shall include the following components:

- Combination turn/stop and taillights , one (1) per side.
- High mounted combination turn/stop and taillights – or oval shaped light, grommet, one (1) per side.
- Back-up lights – one (1) per side.
- Grommets – taillights and back-up lights to be mounted in grommets.
- All rear lighting shall be fully visible when tailgate is lowered to horizontal position.
- Enclosures – taillights and reverse lights shall be housed in stainless steel tubing enclosures. Diodes shall not be installed in the enclosures.
- 3-Light cluster located on rear conveyor cover as to not be hidden by spinner assembly.
- Clearance lamps – housed in mounting grommets.
- No clearance light shall protrude beyond the dump body.
- Licence plate lamp – , complete with licence plate bracket

12.140 Harnesses – Grote Blue Seal System, properly routed and secured. Splices not acceptable.

12.141 Junction boxes – , complete with necessary compression fittings, required for all vehicle lighting harness connections, located to be protected from damage.

12.142 All plug-in connectors and entire inside of junction boxes shall be coated with Grote dielectric compound prior to assembly.

12.143 Back-up alarm – 97 dB(A) or equivalent, installed at rear of dump body, located to be protected from damage.

12.144 Mini Light Bar – 360° visibility, mounted to top of cab guard c/w stainless steel beacon guard.

12.145 Oval warning lights – Four (4) required, as high as possible in rear corner pillars of box, above high mounted taillights, two (2) per side. One amber & one blue. Switches for amber blue shall be labelled summer (amber only) and winter (blue only)

12.146 Mini light bar and warning lights shall be actuated by separate switches located on the control panel.

12.147 Trailer plug – one (1) plastic 6-pole connector, installed near hitch, wired to code and separately protected through the chassis manufacturer's factory auxiliary

- fuse panel/circuit breakers. _____
- 12.148 Snow plow light kit – daytime running light compatible snow plow light kit, w/appropriate adapter kit for truck headlights, rubber or shock mounted on hood of truck. A 4' wiring harness for snow plow headlights shall be supplied. _____
- 12.149 Plow lights shall be operated by dash mounted switch. _____
- 12.150 A clearly marked switch shall be installed on the instrument panel to allow the operator to switch between plow lights and truck lights. _____
- 12.151 All switches for plow lights, beacon lights, auxiliary lighting etc., shall be mounted on the chassis cab dash with rocker type switches, back-lit with permanent type labels. _____
- 12.152 All wiring for the back-up alarm, warning beacons/strobes and plow lights shall be colour coded, loomed and properly secured. _____
- 12.153 All electrical connectors shall be crimped and soldered, then sealed using heat shrink tubing. _____
- 12.154 All joining of wires shall be soldered and sealed using heat shrink tubing or approved OEM weather tight connections (crimp on electrical connectors for joining wires are not acceptable). _____
- 12.155 All electrical cable supplied shall be shielded, low temperature rated, anti-scuff, industrial type cables, Tectran 742A2 Articflex or equal. _____
- 12.156 Any holes required to run wires through shall be drilled (not punched), grommetted and sealed as required. _____
- MISCELLANEOUS-**
- 12.157 Rear hitch plate – $\frac{3}{4}$ in. thick solid steel, (laminated plates unacceptable) installed to chassis frame. _____
- 12.158 "A" frame hitch reinforcement – 3" x 3" x $\frac{1}{4}$ " angle iron, welded to back of hitch plate and bolted to chassis frame web. _____
- 12.159 Pintle hitch – Premier 240 or approved equal, installed on hitch plate at a 24 in. height. _____
- 12.160 Lunette eyes for trailer safety chains – one (1) each side of hitch, Buyers Products B48. _____
- 12.161 Rear fenders – poly construction, frame mounted, 1-piece, Fenderco TRF-3 _____
- 12.162 Mudflaps – black rubber, no-name, required front and rear of back tires c/w anti-sail brackets. Required rear of front tires. _____
- 12.163 Rear mud flaps shall not contact the ground when the sander-dump body is at maximum dump angle. _____
- 12.164 Dump body prop – dump hinge safety prop, steel construction, to support empty dump body in raised position and permit servicing of hoist, operable by a single person, designed so as not to interfere with hoist cylinder or surroundings. _____
- 12.165 Dump body prop to be complete with receiving bracket. _____

- 12.166 All grease fittings for the entire spreader including conveyor assembly, spinner assembly, cylinder mounts, pivot points, dump body prop, plow, etc., shall be readily accessible or shall be equipped with remote grease zerks as required. _____
- 12.167 Front bumper extensions – full width heavy duty steel bumper extensions. _____
- 12.168 Side planks – 2” x 6”, painted black on all sides, installed and bolted into gussets. _____
- 12.169 Body clearances shall be approx 0.0625 in. between bushings and shafts on any rotating parts for trip mechanism to prevent seizing. The rear tailgate must seal properly to hold salt without spilling through any spaces. _____
- 12.170 Complete unit shall have Groeneveld CPL Systems Inc. Auto greasing system Single Line EP0. _____
- 12.171 A rust inhibitor shall be applied to the frame, Frame cross members and chassis cab. Exact locations to be determined upon a pre-production meet. State product- _____
- 12.172 Quick attachments shall be capable of fitting both manufacturer’s Tenco and Viking plows currently owned by the City of Winnipeg. _____
- 12.173 Plumbing of hydraulic hoses at spinner to ensure all are identical to prevent left right errors when switched. _____
- 12.174 The puck board/frame cover should be full length of spreader to prevent material build up in frame. _____
- 12.175 The drop chute designed or extended to reach within 2 inches of conveyor to prevent spillage into frame. Chute will be designed to not impede with spinner when box is fully lifted in dump position. _____
- 12.176 Driveshaft cover cut to minimum requirements to prevent chute plugging. _____
- 12.177 Conveyor designed or modified to prevent material spillage when unit stopped. _____
- 12.178 Calcium tanks with an ignition shut off valve on tanks, located as near to spinner as possible. _____
- 12.179 Plow Mount- Plow mount shall accommodate City of Winnipeg owned snow plows Model Viking VCL 3912 FRINK _____

WELDING-

- 12.180 The Contractor shall be CWB Certified, and/or ASME qualified or have Journeyman qualifications, specifically with respect to welding on stainless steel, side and rear hinge assemblies, and front snow plow hitch plate. All welding shall be of excellent workmanship and appearance, and shall conform to CSA Standard W59. _____
- 12.181 All welds shall be continuous welds where applicable. _____
- 12.182 The combo body manufacturer shall have a documented quality control program in effect including inspection of welds by a qualified inspector. _____
- 12.183 As required by law under the Motor Vehicle Safety Act, the intermediate _____

or final stage manufacturer that installs the combination spreader body and snow plow equipment onto the incomplete truck chassis must possess a valid National Safety Mark registered with Transport Canada. The NSM decal will be affixed onto the chassis certifying the unit as complete.

INSTALLATION-

12.184 Any holes required in the chassis frame web must be drilled and reamed to fit bolts.

12.185 Drilling on chassis frame flanges is not permitted.

12.186 Welding on the chassis frame is not permitted with the exception of installation of dump body pivot support.

12.187 Tire clearance – min. 4 in. plus full suspension deflection.

FINISH-

12.188 All steel components shall be sandblasted, properly cleaned, primed and finished as follows: (Note: stainless steel and aluminium components shall remain unfinished).

12.189 Front and rear hitch plates with accessories, hydraulic oil reservoir and valve enclosure, and underside of floor (steel) shall be primed with Endura EP32 Intermix Epoxy Primer then finished with 3-5 mils black Endura EX-2C Topcoat. (Inside of steel floor excluded).

12.190 All unprotected components in the valve enclosure, including the interior of the enclosure shall be primed with a suitable primer.

WEIGHT DISTRIBUTION-

12.191 The completed unit and all associated components shall not exceed the City of Winnipeg's limit for gross vehicle weight, axle and tire loads with the unit (including the chassis) fully fuelled and operational, full liquid tank, one (1) operator, and including a full payload (struck capacity) of dry sand.

NOTE: THE CITY OF WINNIPEG AND THE PROVINCE OF MANITOBA LIMITS THE GROSS VEHICLE WEIGHT AND AXLE AND TIRE LOADS TO:

- Front axle (steering axle) – 7300 kg (16,094 lbs.).
- Rear axle (tandem axle) – 16 000 kg (35,274 lbs.).
- Tire load – 9 kilograms for each millimetre width of tire (approx. 500 lbs. per inch of tire width).

12.192 **State** weight distribution of the complete vehicle with the unit fully fuelled, with one (1) operator (200 lbs.), full pre-wet tanks and full payload(struck capacity) of dry sand @ 2700 lbs/yd³:

U-body dump/sander body, aluminium.

i) Front axle weight – state weight (lbs.).

ii) Rear axle weight – state weight (lbs.).

12.193 Weigh scale ticket – the Contractor shall provide a certified weigh scale ticket upon delivery of the completed unit. The scale ticket shall include front and rear axle weights including one (1) 200 lbs. operator ,fuel tanks full, full pre-wet tanks and full payload (struck capacity) of dry sand @ 2700 lbs/yd3: _____

13.0 WARRANTY-

13.1 One year warranty, unlimited hours _____

13.2 All warranty information shall be detailed and include all exclusions. The successful bidder shall provide all published warranty information upon delivery of the equipment. Bidder shall state all warranty information. _____

14.0 DELIVERY-

14.1 **Delivery Point-** The complete unit shall be serviced, ready for operation and delivered F.O.B. with the freight prepaid, including invoice and N.I.V.S. (if applicable) to the body manufacture. The successful bidder shall be notified by the Contractor Administrator the delivery address prior to issuance of the purchase order. _____

14.2 **Delivery Time-** Equipment shall be delivered between 8:00 am and 3:00 pm on Business Days. **State delivery time from chassis arrival-** _____

14.3 **Delivery Contact-**The Contractor shall contact the Contract Administrator prior to delivery of the equipment. _____

14.4 **P.D.I-** A pre-delivery inspection shall be performed by the Contractor on the equipment. Proof upon inspection including completed check list _____

15.0 MANUALS-

15.1 Manuals supplied under this contract shall be in English and shall be specifically for the cab & chassis, snow plow, sander/dump box, pre-wetting system and control system supplied. General purpose manuals are not acceptable. The manuals shall cover the complete equipment including all components thereof, CD is preferred where available. _____

15.2 The following manuals shall be supplied with the units when delivered: _____

a) **Operator's manual** – Two (2) per unit (one operators manual shall be sent to the Equipment Operator Training Branch _____

b) **Parts and service manuals** – one (1) complete sets including preventative maintenance schedules. CDs are preferred. _____

c) **Detailed wiring schematics** – three (3) complete sets, including _____

trouble shooting guide.
