

**FORM A: BID**  
(See B7)

1. Contract Title SUPPLY & DELIVERY OF TANDEM SAND SPREADERS

2. Bidder

\_\_\_\_\_  
Name of Bidder

\_\_\_\_\_  
Street

\_\_\_\_\_  
City

\_\_\_\_\_  
Province

\_\_\_\_\_  
Postal Code

\_\_\_\_\_  
Facsimile Number

(Mailing address if different)

\_\_\_\_\_  
Street or P.O. Box

\_\_\_\_\_  
City

\_\_\_\_\_  
Province

\_\_\_\_\_  
Postal Code

The Bidder is:

(Choose one)

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

\_\_\_\_\_  
E-mail 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 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 B8)

**SUPPLY & DELIVERY OF TANDEM SAND SPREADERS**

**UNIT PRICES**

ITEM NO.	DESCRIPTION	SPEC. REF.	UNIT	APPROX. QUANTITY	UNIT PRICE	AMOUNT
1.	58,000# GVWR Conv. Cab & Chassis	09115	Each	(7)	\$ _____	\$ _____
2.	13' x 8' U-Body Combination Aluminum Dump/Spreader Body	09115	Each	(7)	\$ _____	\$ _____
3.	12' Reversible Snow-Plow	09115	Each	(7)	\$ _____	\$ _____
TOTAL BID PRICE (GST and MRST extra) (in figures) \$ _____ (in words) _____ _____						

\_\_\_\_\_  
 Name of Bidder

**FORM N: DETAILED SPECIFICATIONS 09115**

**58,000 LBS. GVWR CONVENTIONAL SET BACK AXLE CAB & CHASSIS**

**(CHASSIS)**

**1.0 TYPE-**

1.1 Shall be a 58,000 lbs. GVWR conventional set back axle cab & chassis suitable for use with a 13' x 8' combination aluminium dump/spreader body with a 12' front mounted, reversible snow-plow. The vehicles shall be furnished complete and ready for use with all features and equipment as described herein. **CHASSIS SHALL BE SUPPLIED BY A LOCAL WINNIPEG TRUCK DEALER.**

1.2 **STATE MAKE AND MODEL BEING BID:** \_\_\_\_\_

1.3 **CHASSIS MUST BE 2009 MODEL YEAR-** \_\_\_\_\_

**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.

2.2.1 **THE COMPLETED EQUIPMENT AND ALL ITS COMPONENTS SHALL COMPLY WITH ALL PROVINCIAL AND FEDERAL SAFETY & LIGHTING REGULATIONS FOR THE EQUIPMENT BEING BID. A MANITOBA GOVERNMENT INSPECTION SAFETY STICKER ON THE DRIVER'S SIDE WINDOW SHALL BE PROVIDED. THE COMPLETE UNIT MUST HAVE THE NATIONAL SAFETY MARK (NSM) LABEL CERTIFICATION, AS WELL AS MEET THE REQUIREMENTS TO COMPLETE THE OEM SUPPLIED INCOMPLETE VEHICLE DOCUMENTS SUPPLIED FROM THE CHASSIS MANUFACTURE.**

2.2.2 **\*\*IN CANADA, MODIFICATIONS 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 MODIFICATIONS ARE COMPLIANT WITH ALL CURRENT CANADIAN MOTOR VEHICLE SAFETY STANDARDS (CMVSS)\*\***

2.2.3 **STATE (NSM) #-** \_\_\_\_\_

**3.0 SERVICE FACILITY-**

3.1 For the purpose of warranty repairs, the cab & chassis supplier 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. Further to B9.1, 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.

**4.0 INSTRUCTIONS FOR COMPLETION OF SPECIFICATIONS-**

4.1 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.

4.2 Each bidder is required to fill in every blank. **FAILURE TO DO SO MAY BE USED AS A BASIS FOR REJECTION OF BID.**

	ITEM	SPECIFICATION	BIDDER TO STATE "YES" OR STATE DEVIATION
<b>5.0</b>	<b><u>GVWR-</u></b>		
5.1	Total	58,000 lbs.	_____
5.2	Front	18,000 lbs.	_____
5.3	Rear	40,000 lbs.	_____
<b>6.0</b>	<b><u>DIMENSIONS-</u></b>		
6.1	Wheelbase	As required for 13' x 8' sander/dump body, state-	_____
6.2	Cab to Axle	As required for 13' x 8' sander/dump body, state-	_____
6.3	Turning radius	State-	_____
<b>7.0</b>	<b><u>ENGINE-</u></b>		
7.1	Type	Diesel, inline 6-cylinder	
		(SCR- Selective Catalytic Reduction not acceptable).	
		Engines shall be warranted to use biodiesel at a B10 blend level (10% biodiesel to 90% ultra low sulphur diesel), where the biodiesel will meet product specification ASTM D 6751 to ensure fuel quality, state-	_____
7.2	Horsepower	350 HP gross	_____
7.3	Torque	1150 lb-ft	_____
7.4	Engine shut down	Low oil pressure / high water temperature	_____
7.5	Anti-idling programming	Programming to be determined upon pre-production meet.	_____
7.6	Starting Aid	Cold weather starting aid required, state type-	_____
7.7	Fuel Shut-off	Electric solenoid type	_____
7.8	Air intake	Dual under hood/outside air intake provision c/w under hood air valve, dash mtd., actuated, required for snow-plow application.	_____
7.9	Air cleaner	Dry type, suitable for snow-plow application	_____
7.10	Air intake restriction ind.	Restriction indicator, state location-	_____
7.11	Oil drain plug	Magnetic type	_____
7.12	Oil filter	Full flow, spin-on type	_____

7.13	Fuel filter	Spin-on type	_____
7.14	Fuel/water separator	Heated, drainable, mounted under hood, located to be protected from road spray	_____
7.15	Fuel line primer pump	Required	_____
7.16	Block heater	Immersion type, 1000 Watt with covered recessed male plug, located under driver's side door	_____
7.17	Coolant Extended Life	coolant, antifreeze to -40°F (-40°C)	_____
7.18	Coolant filter	State-	_____
7.19	Coolant hoses	Premium hoses	_____
7.20	Fan Drive	Thermostatically controlled, automatic type	_____
7.21	Air compressor	Water cooled, pressure lubricated, 18 cfm	_____
7.22	PTO Provision	Front engine PTO with adapter plate, under Radiator preferred, state-	_____
7.23	Engine Oil Fluid	Must be synthetic	_____
<b>8.0</b>	<b><u>ELECTRICAL SYSTEM-</u></b>		
8.1	Electrical System	Multiplexed wiring system	_____
8.2	Alternator	Brushless 160 amp	_____
8.3	Starter	Delco Remy with thermal over crank protection	_____
8.4	Circuit breakers	Auto-reset, readily accessible	_____
8.5	Batteries	Three (3) maintenance free (12)-volt, group 31, 2775 CCA combined capacity	_____
8.6	Battery Box	Under cab or frame mounted c/w enclosure, not to Impede with body installation.	_____
8.7	Battery disconnect	In-cab mounted, state exact location-	_____
8.8	Remote boost terminal	Remote battery boost terminal(s), protected from road spray, covered, state location	_____
8.9	Cab marker lights	LED located in exterior sun shade or visor	_____
8.10	Trailer plug wiring	Routed to end of frame plus 3 extra feet of wiring, c/w 6-pole plastic socket. Wiring shall be circuit breaker protected, wired separately from main truck lighting	_____
8.11	2-way radio circuit	Independent 20 Amp circuit, ignition powered, wired under dash loose, labelled	_____

8.12 Accessory switches Six (6) required, dash mtd. for "Beacon", "Plow lights" and additional switch labelled "Aux". All switches complete and wired for body installation, labeled and backlit \_\_\_\_\_

**9.0 EXHAUST SYSTEM-**

9.1 Configuration Single horizontal, after treatment frame mounted Right hand side under cab with vertical tail pipe. Exhaust tip height to be determined upon a Pre-production meet. \_\_\_\_\_

9.2 Heat shield Required over exhaust next to cab door \_\_\_\_\_

**10.0 TRANSMISSION-**

10.1 Model Allison 3000 RDS with 6-speed programming \_\_\_\_\_

10.2 Shift selector Digital push-button type, dash mounted \_\_\_\_\_

10.3 Fluid Synthetic \_\_\_\_\_

10.3 Cooling capacity As per manufacturer's recommendation for severe duty cycle \_\_\_\_\_

10.4 Oil level dipstick Bayonet type with high and low level markings \_\_\_\_\_

10.5 Trans. drain plug Magnetic type \_\_\_\_\_

10.6 Ground speed signal Ground speed signal provision required \_\_\_\_\_

**11.0 FRONT AXLE-**

11.1 Type Meritor 18,000 lbs. capacity \_\_\_\_\_

11.2 Fluid Synthetic \_\_\_\_\_

**12.0 REAR AXLE-**

12.1 Type Meritor 40,000 lbs. capacity \_\_\_\_\_

12.2 Ratio As per in city usage and for 110 km/hr top speed, state ratio- \_\_\_\_\_

12.2 Differential lock Required for rear drive axle w/dash mtd. Switch \_\_\_\_\_

12.3 Fluid Synthetic \_\_\_\_\_

**13.0 HUBS/ HUB SEALS-**

13.1	Hub seals	Oil lubricated front and rear	_____
13.2	Hubs	Aluminum front & rear hubs, state-	_____
<b>14.0</b>	<b><u>FRONT SUSPENSION-</u></b>		
14.1	Type	Taper leaf spring suspension 18,000 lbs. capacity	_____
<b>15.0</b>	<b><u>REAR SUSPENSION-</u></b>		
15.1	Type	Hendrickson Primax air ride suspension, 46,000 lbs. capacity, state make and model of suspension being bid-	_____
15.2	Susp. control valve	Manual dump valve for air suspension c/w dash mtd. switch, indicator light, gauge and buzzer	_____
<b>16.0</b>	<b><u>RIMS, WHEELS-</u></b>		
16.1	Front	22.5 x 12.25 aluminum wheels, aluminum hub Piloted	_____
16.2	Rear	22.5 x 8.25 aluminum wheels, aluminum hub piloted	_____
<b>17.0</b>	<b><u>TIRES, FRONT-</u></b>		
17.1	Front Tires-	Make & Model Michelin or Bridgestone (Mud & Snow). Front steer tires must be suitable for application and Province of Manitoba weather conditions, state make & model of tires-	_____
17.2	Size	385/65R 22.5, 18-ply	_____
<b>18.0</b>	<b><u>TIRES, REAR-</u></b>		
18.1	Rear Tires-	Make & Model Michelin or Bridgestone (Mud & Snow). Rear Drive tires must be suitable for application and Province of Manitoba weather conditions, state make & model of tires-	_____
18.2	Size	11R 22.5, 16-ply	_____
<b>19.0</b>	<b><u>FRAME-</u></b>		
19.1	Type	Single rail, suitable for request GVWR and Application	_____
19.2	Application	Suitable for sand spreader, snow-plow and dump body application.	_____
19.3	Chassis fasteners	Grade-8 threaded hex headed frame fasteners	_____

19.4	Front frame extension	Integral type, 20 in., state length-	_____
19.5	After-frame	As required for aluminum 13' x 8' U-Body Combination Dump/Spreader Body	_____
<b>20.0</b>	<b><u>STEERING-</u></b>		
20.1	Type	Heavy-duty power, synthetic oil preferred	_____
<b>21.0</b>	<b><u>BRAKES-</u></b>		
21.1	Type	Air, ABS, S-cam drum brakes, front & rear	_____
21.2	Slack adjusters	Meritor (clearance sensing), automatic type	_____
21.3	Parking brake	Spring set, four (4) chamber system	_____
21.4	Brake pots	Vented type	_____
21.5	Dust shields	Required, front and rear	_____
21.6	Moisture ejector	Bendix DV-2, heated, required in all air tanks	_____
21.7	Drain valves	Manual, chain or cable operated, required on each air tank	_____
21.8	Air dryer	Wabco System Saver 1200, heated, state location-	_____
21.9	Air Tanks	Must be aluminum	_____
<b>22.0</b>	<b><u>FUEL TANK-</u></b>		
22.1	Type	Aluminium, 225 L minimum capacity, fully fuelled upon delivery, state location-	_____
22.2	Tank straps	Stainless steel or aluminum straps with minimum 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion	_____
22.3	Fuel separator	Heated, drainable	_____
<b>23.0</b>	<b><u>CAB-</u></b>		
23.1	Type	Conventional w/corrosion inhibitor	_____
23.2	Construction	Aluminum or galvanized steel	_____
23.3	Front axle to BOC	State-	_____
23.4	Cab mounts	Air suspension	_____
23.5	Front grille	Stationary type	_____
23.6	Cab interior / trim	Extreme climate insulation including cloth or vinyl headliner on roof, door panels and rear interior of cab	_____
23.7	Cab silencer package	Required for minimal decibel level	_____

23.8	Hood/Firewall/Engine	Insulated hood liner, engine cover and firewall	_____
23.9	Floor covering	Rubber mat with under-padding	_____
23.10	Floor mats	Two (2) heavy-duty rubber	_____
23.11	Driver's seat	High back, air suspension w/foldable armrests, lumbar support, heavy-duty cloth upholstery, complete with seat covers.	_____
23.12	Passenger seat	High back, air suspension w/foldable armrests, lumbar support, heavy-duty cloth upholstery, complete with seat covers.	_____
23.13	Sun visors	Dual flip-up type	_____
23.14	Steering wheel	Tilt and telescopic type	_____
23.15	12-Volt power outlet	(2) Required	_____
23.16	Radio	Factory installed AM/FM/CD	_____
23.17	Starter switch	Key operated c/w three (3) sets of keys	_____
23.18	Interior light	Dome light with driver and passenger door switches	_____
23.19	Heater / Defroster	High output, capable of keeping all windows clear at an outside temperature of -35°F (-37°C)	_____
23.20	Air conditioning	Required	_____
23.21	Brake & accel. pedals	Hanging type brake and accelerator pedals	_____
23.22	Horn	Dual electric	_____
23.23	Exterior mirrors	Dual heated, lighted exterior mirrors. Shall come with convex mirrors. Suitable for 102 in. equipment width	_____
23.24	Down view mirror	Required over passenger door, state size-	_____
23.25	Windows & windshield	Factory Tint	_____
23.26	Power windows	Required on driver and passenger side. Controls for both windows required on driver side	_____
23.27	Windshield wipers	Electric, intermittent	_____
23.28	Wiper blades	Snow type	_____
23.29	Windshield washers	Electric, required with spray nozzles on wiper blades	_____
23.30	Grab handles	Dual exterior	_____
23.31	Entrance steps	Dual each side, open grate / grip type	_____
23.32	Winter front	Heavy-duty vinyl w/twist lock or snap type fasteners	_____

23.33	Fender extensions	Front Fender extensions required	_____
23.34	Exterior Visor	Exterior sun visor required	_____
23.35	Dash	Wing type dash for operator convenience	_____
23.36	Fender Mtd. Mirrors	OEM suitable for mounting plow lights, heated	_____
23.37	Flare kit	Required, state location	_____
23.38	Fire Extinguisher	(10) lbs. required, state location	_____
23.39	First aid kit	Required, state location	_____

**24.0 INSTRUMENTATION-**

24.1	Oil pressure	Gauge	_____
24.2	Coolant temperature	Gauge	_____
24.3	Transmission oil temp.	Gauge	_____
24.4	LOP/HWT	Warning light and buzzer	_____
24.5	Voltmeter	Gauge	_____
24.6	Air reservoir pressure	Gauge with LAP warning light and buzzer	_____
24.7	Engine hourmeter	Required, non-resetable type	_____

**25.0 TOW HOOKS-**

25.1	Location	(2) front inside frame rail, (2) rear mounted	_____
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**26.0 FRONT BUMPER-**

26.1	Type	Front bumper delete, see body spec. for configuration	_____
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**27.0 COLOUR-**

27.1	Exterior	White	_____
27.2	Interior	Blue or grey	_____
27.3	Frame & suspension	Primed and finished with black Imron 5000 paint	_____

**28.0 ACCESSORIES-**

28.1	Flare kit	Three (3) triangular reflectors, CVSA approved	_____
28.2	Fire Extinguisher	(10) lbs. fire extinguisher required	_____
28.3	First Aid Kit	Required	_____

**29.0 WARRANTY- (58,000 LBS. GVWR CONVENTIONAL SET BACK AXLE CAB & CHASSIS)**

29.1	Basic Vehicle	Five (5) years, 320,000 km	_____
29.2	Batteries	One (1) year, unlimited km	_____
29.3	Drive-train	Seven (7) years, unlimited km	_____
29.4	Cab structure/corrosion	Eight (8) years, unlimited km	_____
29.5	Frame & cross-members	Ten (10) years, unlimited km	_____
29.6	Cab paint	One (1) year or 100 000 km	_____
29.7	Engine	including injectors, fuel pump, turbo Eight (8) years or 400, 000 km	_____
29.8	Transmission	Five (5) years, unlimited km	_____
29.9	Axles, front & rear	Seven (5) years or 240 000 km	_____
29.10	Towing	Five (5) years	_____

**30.0 ONLINE DEALER SUPPORT-**

The following information shall be available web based on line at the time of delivery of the equipment and shall be included in bid price. On-line dealer support shall be for a (9) year life cycle. The City reserves the right to extend the time a further two (2) years, depending on equipment requirements. **State additional cost per year-** \_\_\_\_\_

30.1	Operational (Operator manual) information	_____
30.2	Parts/technical/service/repair information	_____
30.3	Preventative maintenance schedules	_____
30.4	State Website address-	_____
30.5	Website subscriptions that is necessary in providing delivery of the information shall be included in the cost.	_____
30.6	The information contained in the website must be deemed acceptable by the City's equipment inspector. In the event that the City inspector finds the that the information contained on the website. <ul style="list-style-type: none"><li>• Does not provide enough detail,</li><li>• Is too difficult to navigate</li></ul> At the inspectors discretion, the Contractor shall instead, supply the required manuals/CD's/paper bound copies. _____	

**13' X 8' ALUMINUM COMBINATION DUMP/SPREADER BODY W/SNOW PLOW  
(DUMP BODY, SAND SPREADER, SNOW-PLOW)**

## 1.0 SCOPE-

- 1.1 These specifications describe the supply and installation of a nominal 13 ft. x 8 ft. aluminium dump/spreader body complete with a sand spreader control system, pre-wetting system and a front-mounted snow-plow, to be installed by the successful bidder on a cab and chassis vehicle provided by the Contractor.

## 2.0 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.

**2.2.1 THE COMPLETED EQUIPMENT AND ALL ITS COMPONENTS SHALL COMPLY WITH ALL PROVINCIAL AND FEDERAL SAFETY & LIGHTING REGULATIONS FOR THE EQUIPMENT BEING BID. A MANITOBA GOVERNMENT INSPECTION SAFETY STICKER ON THE DRIVER'S SIDE WINDOW SHALL BE PROVIDED. THE COMPLETE UNIT MUST HAVE THE NATIONAL SAFETY MARK (NSM) LABEL CERTIFICATION, AS WELL AS MEET THE REQUIREMENTS TO COMPLETE THE OEM SUPPLIED INCOMPLETE VEHICLE DOCUMENTS SUPPLIED FROM THE CHASSIS MANUFACTURE.**

**2.2.2 \*\*IN CANADA, MODIFICATIONS 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 MODIFICATIONS ARE COMPLIANT WITH ALL CURRENT CANADIAN MOTOR VEHICLE SAFETY STANDARDS (CMVSS)\*\***

**2.2.3 STATE (NSM) #- \_\_\_\_\_**

## 3.0 QUALIFICATIONS OF MANUFACTURER / CONTRACTOR-

- 3.1 The Contractor shall be an authorized distributor/supplier of the snow removal and sand spreader control system equipment being bid.
- 3.2 The Contractor of the snow removal equipment shall have a minimum of three (3) continuous years of experience manufacturing or installing sand spreaders, pre-wetting systems, controls and snow plows of the type being offered.
- 3.3 The Contractor 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 snow removal and sand spreader control system equipment being offered. Further to B9.1, Bidders shall provide a description of the service facility including, but not limited to, number of qualified service staff, years of service experience on snow removal equipment of the equipment being offered, and general service capabilities. A description of the service facility shall be provided within 3-calendar days upon request by the Contract Administrator.

## 4.0 INSTRUCTIONS FOR COMPLETION OF SPECIFICATIONS-

- 4.1 All items in these specifications must be answered indicating compliance or non-compliance. **BIDDERS SHALL STATE "YES" FOR COMPLIANCE OR STATE DEVIATION, OR GIVE A REPLY WHERE REQUESTED TO DO SO.** Deviations shall be clearly stated and fully detailed. Alternatives will be considered subject to evaluation.
- 4.2 Each bidder is required to fill in every blank. **FAILURE TO DO SO MAY BE USED AS A BASIS FOR REJECTION OF BID.**

## 5.0 PERFORMANCE-

5.1 The dump-spreader w/snow-plow shall be capable of consistent top performance for hauling, spreading and plowing at temperatures up to -40°C, i.e., during the winter environment which is normal to the City of Winnipeg.

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**6.0 CONSTRUCTION MATERIAL-**

6.1 Body sides, tailgate and front panel shall be fabricated of minimum ¼ in. 5083-H321, 50,000 psi yield when lined with ½” QuickSilver oil and heat resistant polymer liner or equivalent.

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6.2 All fasteners, washers, hardware, brackets and accessories shall be 316 stainless steel.

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**7.0 WEIGHT & DIMENSIONS-**

7.1 Body weight – state weight.

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7.2 Nominal length:, inside – , state-

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7.3 Nominal width: , inside and outside, state-

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7.4 Height of sides – 38 in. approx. without plank gussets, state-

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7.5 Height of tailgate – 46 in. approx., state-

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7.6 Height of front – to match chassis cab height.

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7.7 Capacity (water level) – , state-

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**8.0 FRONT-**

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

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

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**9.0 SIDES AND FLOOR-**

9.1 Construction – ¼ in. 5083-H321 high tensile aluminium construction lined with ½” QuickSilver oil and heat resistant polymer liner or equivalent.

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9.2 Top side rail – heavy duty, reinforced, 4” x 4” x ¼” square tubing or equal, state material.

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

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9.4 Sides to incorporate integral fenders, sloped away from body.

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9.4.1 Rear side post – formed, one per side, 10 ga. min..

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

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9.6 Access ladder – one (1) required, aluminium, located at rear passenger side corner of body, min. 3 in. from side of body,

fold-up design.

9.6.1 Ladder rungs – traction type rungs, 11-gauge approx., 2¼ in. width, 4-hole design or equal.

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

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

**10.0 TAILGATE-**

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

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

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

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

10.3 Vertical and horizontal structural reinforcements c/w a self-cleaning bottom rail.

10.3.1 Tailgate shall be structurally reinforced and shall have heavy duty (minimum ¼ in.) end plates.

10.4 Tailgate pins – 1¼ in. steel, top and bottom.

10.5 Support chains – 7/16 in. transport, grade 70, adequately fastened c/w chain storage.

10.5.1 Spreader chains – 7/16 in. transport, grade 70, adequately fastened c/w chain storage.

10.5.2 Support and spreader chains shall be equipped with a protective cover.

10.6 Tailgate locking mechanism – in-cab control, air operated with air brake pot operated trip. Shall have grease fittings at all bushings/ shaft supports.

10.6.1 The locking mechanism shall be adjustable to ensure adequate lock-up with tailgate closed.

**11.0 SCREENS-**

11.1 Screen support – 6" I beam heavy-duty construction state material and dimensions.

11.2 Screens – four (4) sections, easily removable, heavy duty steel construction.

11.3 Screen openings – 3" x 3" approx., state-

- 11.4 Wire size –  $\frac{3}{8}$  in., state- \_\_\_\_\_
- 12.0 CONVEYOR ASSEMBLY-**
- 12.1 Discharge – front centre discharge. \_\_\_\_\_
- 12.2 Rear idler assembly shall be guarded to prevent accidental contact with chain, sprockets and shaft. \_\_\_\_\_
- 12.3 Conveyor shall be an integral part of the body floor and include integral chain link covers \_\_\_\_\_
- 12.4 Frame will be  $\frac{1}{4}$ " min. with replaceable wear plate \_\_\_\_\_
- 12.5 Conveyor cover will be  $\frac{1}{2}$ " high temperature rubber easy to install and remove via main conveyor chain. \_\_\_\_\_
- 12.6 Chain will be 24in. width minimum, pintle chain type, self-cleaning, 667X 40,000 lbs. capacity minimum. State make and model. \_\_\_\_\_
- 12.6 Scraper bars will be  $\frac{3}{8}$ " x  $1\frac{1}{4}$ " approx. 4 in. spacing, 100% welded \_\_\_\_\_
- 12.7 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. \_\_\_\_\_
- 12.8 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. \_\_\_\_\_
- 12.9 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. \_\_\_\_\_
- 12.11 All grease fittings for entire conveyor assembly (including tensioner) shall be readily accessible or shall be equipped with remote grease zerks as required. \_\_\_\_\_
- 12.12 Planetary 25:1 gear box – mounted at discharge end, serviceable, bolt-on, c/w built-in feedback sensor motor. \_\_\_\_\_
- 12.12.1 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. \_\_\_\_\_
- 12.13 Drive and idler shafts manufactured from 2" dia high-resistance stress proofed SAMSON 100. \_\_\_\_\_
- 12.14 A polyethylene sheet, min.  $\frac{1}{2}$  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. \_\_\_\_\_
- 12.15 Discharge gate shall be designed so that spillage does not occur with \_\_\_\_\_

the conveyor stopped and gate is open.

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12.15.1 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 when looking out the rear window of the truck.

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**13.0 SPINNER ASSEMBLY-**

13.1 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.

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13.2 Chute and shroud – minimum 3/16 in. heavy duty steel plate construction.

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13.3 Spinner motor – Parker or equal, state make, model and part Number-

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13.3.1 Rotation – dual rotation, actuated in cab.

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13.4 Drive shaft – completely sealed.

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13.5 Spinner assembly to be chassis mounted, adjustable.

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13.6 Spinner disk – 20 in. diameter approx., height adjustable.

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13.6.1 Spinner disk material – 5/8" polyurethane disc

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13.6.2 Fins – six (6) moulded integral with disc

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

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

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**14.0 HEADLIFT HOIST-**

14.1 Front hoist – multi-stage, front-mounted headlift hoist, nitrated, quenched and polished cylinder stages, protected against corrosion. State make and model being bid.

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14.2 Capacity – minimum 20 tons @ 2,000 psi.

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

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14.4 Grease fittings – required at all pivot points.

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**15.0 TARPAULIN-**

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

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15.2 Tarp assembly shall not interfere with rear warning light visibility,

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stowed or un-stowed.

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16.0 **HYDRAULICS** – **\*\*MUST BE PARKER HYDRAULICS\*\***

16.1 Hydraulic pump – front mounted, variable displacement, load sensing axial piston pump, **Parker P1075 pump**, no substitutes

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16.1.1 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.

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

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

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

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16.2.2 The valve banks (**for 7 sanding units**) shall be configured to operate the following functions:

i) Main conveyor – shall operate in two (2) directions with proportional speed.

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ii) Spinner – shall operate in two (2) directions with proportional speeds.

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iii) Box hoist(s) – Parker VPL

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iv) Plow hydraulics – double acting cylinders providing raise/lower and angling left and right.

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v) Gate – valve shall provide bi-directional control of gate.

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16.3 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.

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

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16.5 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.

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

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16.5.2 All fittings shall be ORB or JIC threads where possible. No NPT connections acceptable.

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- 16.5.3 All external tubing to be stainless steel on valve enclosure. \_\_\_\_\_
- 16.5.4 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. \_\_\_\_\_
- 16.5.5 Drain hole – approx. ½ in. diameter. \_\_\_\_\_
- 16.5.6 The entire enclosure shall be completely weather proof with the exception of the drain hole. All covers, bulkheads, fitting openings etc. must be sealed. \_\_\_\_\_
- 16.6 Hydraulic tank section – mounted behind the cab on top of the frame rails, approx. 160 Litre capacity. \_\_\_\_\_
- 16.6.1 Dimensions – 35"H x 30"W x 12"D approx.. \_\_\_\_\_
- 16.6.2 Breather cap – 3 in. diameter, pressurized @ 5 psi, mounted on a 6 in. stand pipe. \_\_\_\_\_
- 16.6.3 The hydraulic tank shall have a 1½ in. diameter magnetic drain plug. Magnetic plug is not required if a magnetic element in the return filter is supplied. \_\_\_\_\_
- 16.6.4 The hydraulic tank shall be equipped with a 1 in. diameter case drain inlet. \_\_\_\_\_
- 16.6.5 The interior of the hydraulic tank shall be coated with Glyptol or equivalent to prevent the tank from corroding. \_\_\_\_\_
- 16.6.6 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. \_\_\_\_\_
- 16.6.7 Sight glass – two (2) level gauges required, one high mounted, one low mounted, each required in a protective metal case. \_\_\_\_\_
- 16.7 **Hydraulic filters:**
- 16.7.1 Return filter – serviceable without oil loss, tank mounted preferred, c/w clogging indicator. \_\_\_\_\_
- 16.7.2 Pressure side filter – non-bypass type, absolute rated filter element, located before oil reaches the valve bank, c/w clogging indicator. \_\_\_\_\_
- 16.7.3 Both filters shall contain a corrosion resistant coating, beta rating of 200, 10 micron particle size, and shall be ergonomically located for servicing. \_\_\_\_\_
- 16.8 Hydraulic hoses – wire braid reinforced, rated for system operating pressure with 4 to 1 safety factor for burst pressure. \_\_\_\_\_
- 16.8.1 Hydraulic hoses to be properly routed, fastened and protected at wear and scuff locations. \_\_\_\_\_

16.9 Hose fittings – hydraulic full flow, crimp-on (non-reusable) type. \_\_\_\_\_

16.9.1 Black iron fittings not acceptable on pressure lines or pump suction line. \_\_\_\_\_

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

16.11 Hydraulic oil – Petro Canada HVI-22. \_\_\_\_\_

**17.0 SAND SPREADER CONTROL SYSTEM-**

17.1 The control system shall be **Parker Controls, no substitutes.**  
The system must be fully compatible with the Grey Island's data and 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. \_\_\_\_\_

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

17.3 Mounting location – Controller shall be ergonomically located for operator. Exact location to be determined at time of installation. \_\_\_\_\_

17.4 Remote pause required on top of joystick. \_\_\_\_\_

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

17.6 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 \_\_\_\_\_

17.7 Control system enclosure – all controls and switches must be clearly identified and back-lit. \_\_\_\_\_

17.8 Material sensor – infra red, located at the spinner. \_\_\_\_\_

**18.0 PRE-WETTING SYSTEM-**

18.1 Model – Parker Controls variable ratio pre-wetting system, no substitutes, 0-10 gpm approx., plumbed through conveyor circuit return line oil. Equipped with flow meter capable of operating in closed loop. \_\_\_\_\_

18.2 An adjustment pressure relief valve shall be installed in the pre-wet pump /flowmeter enclosure. \_\_\_\_\_

18.3 A provision shall be provided to flush pre-wet pump and lines with clean water without draining pre-wet tank. \_\_\_\_\_

18.3.1 Provision for calibration wet kit. \_\_\_\_\_

18.4 Reservoirs – polyethylene construction, 5/16 in. wall thickness min., frame mounted under body each side, 600 Litre combined capacity minimum, capable of filling from ground level when body is in the down position. \_\_\_\_\_

- 18.4.1 Drain hole – 2 in. diameter minimum, c/w shut-off valves. \_\_\_\_\_
- 18.5 The reservoir shall be equipped with a sight gauge c/w floating level indicator. \_\_\_\_\_
- 18.5.1 Reservoir shall contain permanent markings indicating amount of liquid in tank, 50 L graduation approx.. \_\_\_\_\_
- 19.0 **IN-CAB SYSTEM CONTROLS-**
- 19.1 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. \_\_\_\_\_
- 19.2 Mounting location – the control enclosure shall be mounted on a heavy duty bracket, ergonomically angled and positioned at the appropriate height to alleviate driver fatigue during prolonged use. \_\_\_\_\_
- 19.3 All controls and switches shall be clearly identified and back-lit for night time use. \_\_\_\_\_
- 19.4 Main power switch – required to supply power to all auxiliary panel functions, wired through ignition. \_\_\_\_\_
- 19.5 Plow control and dump box function – single quad joystick control, fully proportional in all directions, dual mode for dump box and plow. \_\_\_\_\_
- 19.5.1 Remote pause required on top of joystick. \_\_\_\_\_
- 19.5.2 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. \_\_\_\_\_
- 19.5.3 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. \_\_\_\_\_
- 19.5.4 The horizontal axis (side to side) shall actuate plow angle left/right in "Plow" mode, and the tilt floor raise/lower in "Dump" mode. \_\_\_\_\_
- 19.6 Low hydraulic oil level light – complete with buzzer. \_\_\_\_\_
- 19.7 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. \_\_\_\_\_
- 19.7.1 Inductive plow float sensor – shall be supplied for fully auto power float operation. Pressure switch not acceptable. \_\_\_\_\_
- 19.7.2 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. \_\_\_\_\_
- 19.7.3 Plow lower and lift controls must override the power float system. \_\_\_\_\_

**20.0 SNOW PLOW-**

- 20.1 Type – shall be a published heavy duty light weight design, front-mounted, Hydraulically reversible snow plow c/w quick connect plow hook-up system. State make and model being bid- \_\_\_\_\_
- 20.2 Dimensions – suitable for clearing a ten (10) ft. wide path when angled, 144"L x 42"H approx., state dimensions. \_\_\_\_\_
- 20.3 Moldboard – 1-piece reversible, approx. 0.300" thick with tubular steel frame. \_\_\_\_\_
- 20.3.1 Moldboard face shall be high density plastic material, capable of performing in -40° temperature without fracturing. \_\_\_\_\_
- 20.3.2 Vertical reinforcement ribs – minimum seven (7) heavy duty vertical ribs, 3/8 in. thick minimum. \_\_\_\_\_
- 20.3.3 Horizontal reinforcements – required top and bottom, heavy duty tubular steel construction. \_\_\_\_\_
- 20.4 Trip edge – minimum three (3) section trip blade capable of clearing manholes, catch basins and other obstructions without damaging the plow. Trip edge shall protrude minimum 4 in. above the pavement. \_\_\_\_\_
- 20.4.1 Trip edge springs – minimum six (6) heavy duty coil type springs, horizontally mounted, torsion type. \_\_\_\_\_
- 20.4.2 Blade shoes – two (2) heavy duty carbide swivel type shoes, screw adjustable for height, replaceable mushroom style wear pads. \_\_\_\_\_
- 20.4.3 Shoes shall swivel no more than 45° either side of centre. \_\_\_\_\_
- 20.5 Cutting edge – each blade section shall be equipped with a bolt-on high carbon steel cutting edge. The cutting edge mount shall be spring loaded to allow deflection of the cutting edge when an obstacle is encountered. \_\_\_\_\_
- 20.6 Snow deflector – top mounted, steel construction, curved to follow contour of plow, designed to prevent snow from coming over top of snow plow, full width x 12 in. deep approx.. \_\_\_\_\_
- 20.7 Curb damage protectors – high carbon steel, located on each side of plow, bolted to the cutting edge. \_\_\_\_\_
- 20.8 Angling – 30° left and right, two (2) industrial type cylinders, with nitrated piston rods. \_\_\_\_\_
- 20.9 Plow lift mechanism – parallel lift design utilizing a heavy duty chain and plate assembly. State details of lift mechanism. \_\_\_\_\_
- 20.10 Mouldboard shall be equipped with a self-levelling device to keep cutting edge parallel to road surface while the plow is in the carry position regardless of the degree of angle. \_\_\_\_\_
- 20.11 Lift cylinder – double acting, nitrated quenched and polished, protected against corrosion, minimum 4 in. diameter barrel, \_\_\_\_\_

- 12 in. stroke approx.. State make and model being bid. \_\_\_\_\_
- 20.11.1 Lift cylinder and the lift cylinder mechanism shall be enclosed within the hitch when the plow is detached from the chassis to form a flat surface. \_\_\_\_\_
- 20.12 Reversing cylinders – minimum 3 in. barrel, 1½ in. shaft, 20 in. stroke approx., protected with an integral cushion valve. \_\_\_\_\_
- 20.13 Grease fittings – required on all pivot points. \_\_\_\_\_
- 20.14 Quick attach – shall be round bar attached to the end of the driveframe on the plow with the female section consisting of two (2) jaws welded to the front hitch plate. \_\_\_\_\_
- 20.15 Hydraulic connectors – quick disconnect, permanently colour coded. \_\_\_\_\_
- 20.16 Hitch – heavy duty, quick disconnect hitch capable of handling loads imposed by plowing. Hitch shall rest below the truck cab so hood can tilt forward at all times without having to remove or adjust any portion of the hitch. \_\_\_\_\_
- 20.16.1 Hitch plate – heavy duty hitch plate, 25"H x 45"W x ½"T approx. with vertical reinforcements as required. \_\_\_\_\_
- 20.16.2 Main plate shall be bolted to end of truck chassis frame rails and additional diagonal bracing from bottom of main plate to chassis frame shall be provided. \_\_\_\_\_
- 20.17 Clearance markers – flexible rod type, located at the outside edges of the plow to assist the operator in locating the plow edges while plowing. \_\_\_\_\_
- 20.18 Reflective markings – outside edges of plow shall be covered with reflective paint or Truck-Lite 98101 reflective marking tape. \_\_\_\_\_
- 21.0 ELECTRICAL & LIGHTING-**
- 21.1 All lighting to conform to C.M.V.S.S. and Manitoba Highway Traffic Act. \_\_\_\_\_
- 21.2 All supplier installed lighting and lighting equipment shall be Groté or Truck-Lite (unless otherwise specified) and shall include the following components: \_\_\_\_\_
- 21.3 Combination turn/stop and taillights , one (1) per side. \_\_\_\_\_
- 21.3.1 High mounted combination turn/stop and taillights – or oval shaped light, grommet, one (1) per side. \_\_\_\_\_
- 21.4 Back-up lights – one (1) per side. \_\_\_\_\_
- 21.5 Grommets – taillights and back-up lights to be mounted in grommets. \_\_\_\_\_
- 21.6 All rear lighting shall be fully visible when tailgate is lowered to \_\_\_\_\_

- horizontal position. \_\_\_\_\_
- 21.7 Enclosures – taillights and reverse lights shall be housed in stainless steel tubing enclosures. Diodes shall not be installed in the enclosures. \_\_\_\_\_
- 21.8 3-Light cluster – \_\_\_\_\_
- 21.9 Clearance lamps – housed in mounting grommets. \_\_\_\_\_
- 21.9.1 No clearance light shall protrude beyond the dump body. \_\_\_\_\_
- 21.10 Licence plate lamp – , complete with licence plate bracket. \_\_\_\_\_
- 21.11 Harnesses – Grote Blue Seal System, properly routed and secured. Splices not acceptable. \_\_\_\_\_
- 21.12 Junction boxes – , complete with necessary compression fittings, required for all vehicle lighting harness connections, located to be protected from damage. \_\_\_\_\_
- 21.13 All plug-in connectors and entire inside of junction boxes shall be coated with Grote dielectric compound prior to assembly. \_\_\_\_\_
- 21.14 Back-up alarm – 97 dB(A) or equivalent, installed at rear of dump body, located to be protected from damage. \_\_\_\_\_
- 21.15 Mini Light Bar – 360° visibility, mounted to top of cab guard c/w stainless steel beacon guard. \_\_\_\_\_
- 21.15 Oval warning lights – two (2) required, as high as possible in rear corner pillars of box, above high mounted taillights, one (1) per side. \_\_\_\_\_
- 21.16.1 Mini light bar and warning lights shall be actuated by separate switches located on the control panel. \_\_\_\_\_
- 21.17 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. \_\_\_\_\_
- 21.18 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. \_\_\_\_\_
- 21.18.1 Plow lights shall be operated by dash mounted multiplexed switch \_\_\_\_\_
- 21.18.2 A clearly marked switch shall be installed on the instrument panel to allow the operator to switch between plow lights and truck lights. \_\_\_\_\_
- 21.19 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. \_\_\_\_\_
- 21.20 All wiring for the back-up alarm, warning beacons/strobes and plow lights shall be colour coded, loomed and properly secured. \_\_\_\_\_

21.21 All electrical connectors shall be crimped and soldered, then sealed using heat shrink tubing.

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21.21.1 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).

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21.22 All electrical cable supplied shall be shielded, low temperature rated, anti-scuff, industrial type cables, Tectran 742A2 Articflex or equal.

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21.23 Any holes required to run wires through shall be drilled (not punched), grommetted and sealed as required.

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**22.0 MISCELLANEOUS-**

22.1 Rear hitch plate – ¾ in. thick solid steel, (laminated plates unacceptable) installed to chassis frame.

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22.1.1 "A" frame hitch reinforcement – 3" x 3" x ¼" angle iron, welded to back of hitch plate and bolted to chassis frame web.

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22.2 Pintle hitch – Premier 240 or approved equal, installed on hitch plate at a 24 in. height.

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22.3 Lunette eyes for trailer safety chains – one (1) each side of hitch, Buyers Products B48 or equal.

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22.4 Rear fenders – poly construction, frame mounted, 1-piece, Fenderco TRF-3 or equal, state make and model.

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22.5 Mudflaps – black rubber, no-name, required front and rear of back tires c/w anti-sail brackets. Required rear of front tires.

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22.5.1 Rear mud flaps shall not contact the ground when the sander-dump body is at maximum dump angle.

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22.6 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 .

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22.6.1 Dump body prop to be complete with receiving bracket.

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22.7 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.

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22.8 Front bumper extensions – full width heavy duty steel bumper extensions.

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22.9 Side planks – 2" x 6", painted black on all sides, installed and bolted into gussets.

---

22.10 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. \_\_\_\_\_
- 22.11 Complete unit shall have Groeneveld CPL Systems Inc. Auto Greasing system. State quantity of grease points- \_\_\_\_\_
- 22.12 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- \_\_\_\_\_
- 22.13 Quick attachments shall be capable of fitting both manufacturer's Tenco and Viking plows currently owned by the City of Winnipeg \_\_\_\_\_
- 22.14 Plumbing of hydraulic hoses at spinner to ensure all are identical to prevent left right errors when switched. \_\_\_\_\_
- 22.15 The puck board/frame cover should be full length of spreader to prevent material build up in frame. \_\_\_\_\_
- 22.16 The drop chute designed or extended to reach within 2 inches of conveyor to prevent spillage into frame. \_\_\_\_\_
- 22.17 Driveshaft cover cut to minimum requirements to prevent chute plugging. \_\_\_\_\_
- 22.18 Conveyor designed or modified to prevent material spillage when unit stopped. \_\_\_\_\_
- 22.19 Calcium tanks with an ignition shut off valve on tanks, exact type to be Determined upon pre-production meet- \_\_\_\_\_
- 23.0 WELDING-**
- 23.1 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. \_\_\_\_\_
- 23.2 All welds shall be continuous welds where applicable. \_\_\_\_\_
- 23.3 The combo body manufacturer shall have a documented quality control program in effect including inspection of welds by a qualified inspector. \_\_\_\_\_
- 23.4 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. \_\_\_\_\_
- 24.0 INSTALLATION-**
- 24.1 Any holes required in the chassis frame web must be drilled and reamed to fit bolts. \_\_\_\_\_
- 24.1.1 Drilling on chassis frame flanges is not permitted. \_\_\_\_\_
- 24.1.2 Welding on the chassis frame is not permitted with the exception of \_\_\_\_\_

installation of dump body pivot support. \_\_\_\_\_

24.2 Tire clearance – min. 4 in. plus full suspension deflection. \_\_\_\_\_

**25.0 FINISH-**

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

25.1.1 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). \_\_\_\_\_

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

**26.0 WEIGHT DISTRIBUTION-**

26.1 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).

26.2 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: \_\_\_\_\_

26.2.1 U-body dump/sander body, aluminium.

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

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

26.3 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: \_\_\_\_\_

**27.0 HYDRAULIC COMMISSIONING-**

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

27.1 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 is proper.

\_\_\_\_\_

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

\_\_\_\_\_

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

\_\_\_\_\_

27.4 Verify performance and pump adjustments – maximum and standby pressure adjustments.

\_\_\_\_\_

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

\_\_\_\_\_

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

\_\_\_\_\_

**28.0 MANUALS-**

28.1 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.

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

i) Operator's manual – one (1) per unit plus one (1) additional manual.

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ii) Parts, repair and service technical manuals – three (3) complete sets including preventative maintenance schedules. CDs are preferred.

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iii) Detailed wiring schematics – three (3) complete sets, including trouble shooting guide.

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**29.0 DELIVERY -**

29.1 **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. to the WFMA 185 Tecumseh Street, Winnipeg MB.

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29.2 **DELIVERY TIME- No later than November 15<sup>th</sup>, 2009.** Equipment shall be delivered between 8:00 am and 3:00 pm on Business Days.

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29.3 **DELIVERY CONTACT-** The Contractor shall contact the Contract Administrator prior to delivery of the equipment.

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

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**30.0 TRAINING-**

30.1 The Contractor shall be required to provide training (at the Contractor's expense) for the City of Winnipeg maintenance and operating personnel. The training shall be divided into two separate sessions, one for maintenance personnel and one for operating personnel. The training shall be conducted in separate or combined sessions for each group of personnel.

The duration of the sessions shall be as long as required for adequate familiarization and orientation of the equipment to the satisfaction of the Contract Administrator.

The training shall be conducted within two (2) calendar weeks from the date of delivery and shall be coordinated through the Contract Administrator.

The training shall be conducted in Winnipeg at a time and location designated by the Contract Administrator.

Pricing should be based on four (4) business days for maintenance personnel and four (4) business days for operating personnel.

Note: The first payment of the contract on the equipment will not be issued until successful completion of training has been conducted to the satisfaction of the Contract Administrator.

30.2 **Training Aides:**

30.2.1 Training aids to be included.

a) On the type of equipment being offered, state if VHS videotape or CD Rom training aides are available-

30.2.2 State if other training aides are available and state type.

30.3 What is the recommended minimum training duration for:

Primary unit:

For major attachments (if applicable):

30.4 State what other training aids are available (videos, CDs).

For the primary unit:

For major attachments (if applicable):

30.5 Training Materials and applicable manuals or on-line training material information must be provided to the Operator Training Branch of Public Works at the earliest possible opportunity, no later than (4) weeks prior to delivery, when supplying vehicles, equipment and related attachments. Send these materials, preferably in both electronic format and hard copy (training videos are to be supplied on either CD or DVD) to:

**Public Works Safety and Operator Training Division**

**Operator Training Branch  
2nd Floor, Building "B", 1500 Plessis Road  
R2C 5G6**

E-mail: [pwd-opertrain@winnipeg.ca](mailto:pwd-opertrain@winnipeg.ca)

**Attn: Equipment Training Coordinator - Pending Equipment Delivery**

30.6 State acknowledgement of item 30.5- \_\_\_\_\_

30.7 State manufacturer's accreditation or certification for training \_\_\_\_\_

**31.0 PERFORMANCE RELIABILITY-**

31.1 The responsibility for the design of the complete unit, its performance and reliability shall rest upon the Contractor. \_\_\_\_\_

31.2 The term "repeat failures" as used herein is defined to mean that the same component, subassembly, or assembly develops repeated defects, breakdowns and/or malfunctions rendering the unit inoperative, or requiring repeated shop correction, service and/or replacement during the warranty period applicable for said component, sub-assembly, or 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 schedules. \_\_\_\_\_

31.3 Where the unit develops "repeated failures" in service, the Contractor shall make any necessary engineering changes, repairs, alterations or modifications in order to guarantee reliability of performance. \_\_\_\_\_

**32.0 WARRANTY- (13' X 8' ALUMINUM COMBINATION DUMP/SPREADER BODY W/SNOW PLOW**

32.1 The warranty for the entire unit including (but not limited to) dump body, plow, sand spreader control system, pre-wetting system, etc. shall cover the complete equipment, and all parts thereof against any defects of workmanship, construction and materials, for a period of not less than **two (2) years**. Any article that has become defective during said warranty period and has not proven to have been caused by negligence on the part of the user shall be repaired or replaced at no cost to the City. The warranty shall be effective from the date the equipment is put into service by the City of Winnipeg. \_\_\_\_\_

32.1.1 A new **two (2) year** warranty period shall be provided for any article that is repaired or replaced under the terms of the "repeat failures" clause (Section 31.0 Performance Reliability). The new warranty period shall be effective from the date of acceptance of the repaired or replaced article. \_\_\_\_\_

32.2 The warranty for all hydraulic cylinders shall cover the complete equipment, and all parts thereof against any defects of workmanship, construction and materials, for a period of not less than **two (2) years**. Any article that has become defective during said warranty period and has not proven to have been caused by negligence on the part of the

user shall be repaired or replaced at no cost to the City. The warranty shall be effective from the date the equipment is put into service by the City of Winnipeg.

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**33.0** **STANDARD REPAIR TIMES**- (SRT) - Please provide Standard Repair Times for the equipment being bid if available-

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