FORM A: BID
(See B8)

1. Contract Title — SUPPLY AND DELIVERY OF SINGLE AXLE CHASSIS WITH VARIOUS BODY CONFIGURATIONS

2. Bidder

_____
Name of Bidder

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

_____
Street

_____
City Province Postal Code

_____
Email Address of Bidder

_____
Facsimile Number

(Mailing address if different)

_____
Street or P.O. Box

_____
City Province Postal Code

_____
GST Registration Number (if applicable)

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

_____
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 AND DELIVERY OF SINGLE AXLE CHASSIS WITH VARIOUS BODY CONFIGURATIONS

UNIT PRICES

ITEM NO.	DESCRIPTION	SPEC. REF.	UNIT	QUANTITY	UNIT PRICE
1.	Single Axle Chassis (35,000 GVWR)	17012	Each	2	
1a.	13' x 8' Streets Maintenance Dump Body	17012	Each	2	
2	Single Axle Chassis (39,000 GVWR)	17012	Each	3	
2a.	13' x 8' Streets Maintenance Dump Body with Tail Chute	17012	Each	3	
2b.	Snow-Plow Mounting Equipment	17012	Each	3	
3	Single Axle Chassis (33,000 GVWR)	17013	Each	1	
3a.	13' x 8' Parks Dump Body	17013	Each	1	
4	Single Axle Chassis (33,000 GVWR)	17013	Each	3	
4a.	13' x 8' Parks Dump Body	17013	Each	3	
4b.	Water Tank, Support Bands and Stabilizers	17013	Each	3	
5	Single Axle Chassis (33,000 GVWR)	17013	Each	1	
5a.	13' x 8' Parks Dump Body	17013	Each	1	
5b.	Water Tank, Support Bands and Stabilizers	17013	Each	1	
5c.	Watering Arm	17013	Each	1	
6	Single Axle Chassis (33,000 GVWR)	17014	Each	2	
6a.	13' x 8' Landscape Development Dump Body	17014	Each	2	

FORM B: PRICES
(See B9)

SUPPLY AND DELIVERY OF SINGLE AXLE CHASSIS WITH VARIOUS BODY CONFIGURATIONS

UNIT PRICES

ITEM NO.	DESCRIPTION	SPEC. REF.	UNIT	QUANTITY	UNIT PRICE
7	Single Axle Chassis (33,000 GVWR)	17015	Each	6	
7a.	Forestry Chipper Body	17015	Each	6	
8.	Single Axle Chassis (33,000 GVWR)	17016	Each	2	
8a.	Sewer Jet Body with Single Piston Pump	17016	Each	2	
9	Single Axle Chassis with Crew Cab (33,000 GVWR)	17017	Each	1	
9a.	13’ x 8’ Sewer Dump Body	17017	Each	1	
9b.	Articulating Crane	17017	Each	1	

_____
Name of Bidder

FORM N (R1): DETAILED SPECIFICATIONS 17012

SINGLE AXLE CHASSIS WITH A 13' X 8' STREETS MAINTENANCE DUMP BODY

1.0 DESCRIPTION OF EQUIPMENT/APPLICATION

1.1 These specifications describe **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body** and other equipment and features as specified herein. These units are an integral portion of the City of Winnipeg Central Services Streets Maintenance equipment fleet as they are utilized year round for both the construction season as well as during winter maintenance season. All vehicles (qty 5) will be used for hauling rubble, broken concrete, aggregates, snow and hot asphalt in addition three (3) of the vehicles will be configured to accommodate City of Winnipeg owned Tenco/Frink Truck Plows. The utilization of the trucks is 80% Hauling and 20% snow. The truck will be used by only one operator.

1.2 The **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body** shall be new 2017 model year or newer.

1.3 The **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body** 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 **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body** shall comply with the applicable regulations:

- Highway Traffic Act
- Manitoba Motor Vehicle Act
- Canadian Motor Vehicle Safety Standards, CMVSS Transport Canada
- National Safety Mark, NSM

- Manitoba/Winnipeg 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.

2.4 The manufacturer/installer shall be a certified vehicle completer and must affix their National Safety Mark (NSM) certification sticker on each unit.

State NSM number: _____

3.0 SERVICE FACILITY

3.1 For the purpose of warranty repairs, the supplier shall have an authorized service facility located within 10 kilometres 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 B11, 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 REFERENCES

4.1 If available, please provide five (5) 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 **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body** being 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 **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body**, 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 **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body** 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 The **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body** must be fully fuelled upon delivery **(no exceptions).**

9.0 QUALIFICATIONS OF MANUFACTURER & CONTRACTOR

9.1 The manufacturer of the **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body** shall have five (5) years continuous experience manufacturing **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body**.

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 **Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body** of the type being offered.

10.0 CHASSIS SPECIFICATIONS

When used in this Specification 17012:

“Dump Body” shall be used to describe Single Axle Chassis with a 13’ x 8’ Streets Maintenance Dump Body

“Dump Body/Snow Plow” shall be used to describe Single Axle Chassis with a 13' x 8' Streets Maintenance Dump Body, Tail Chute and Snow-Plow Mounting Equipment

CHASSIS:

10.1 Weights: _____

The Trucks shall not exceed the City of Winnipeg's limit for gross vehicle weight, axle and tire loads

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) – 9100 kg (20,056 lbs.)
- Tire load – 9 kilograms for each millimeter width of tire (approximately 500 lbs. per inch of tire width).

10.2 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 two (2) operators, all attachments and full of fuel.

10.3 GVWR

Dump Body _____

- GVWR Total 35,000 lbs.
- GVWR Front 14,000 lbs.
- GVWR Rear 21,000 lbs.

Dump Body/Snow Plow _____

- GVWR Total 39,000 lbs.
- GVWR Front 16,000 lbs.
- GVWR Rear 23,000 lbs.

10.4 Dimensions: _____

All Dimensions are Approximate

Dimensions are in inches

A Shoulder Room 70.6

C Inside Height 56.8

D Steering Wheel Diameter 18.0

E Steering Wheel to Seat Back (Maximum) 18.2

F Bottom of Instrument Panel to Dash 13.9

G Engine Cover Width

H Lateral Foot Room – Driver 20.2

J Lateral Foot Room – Passenger 18.8

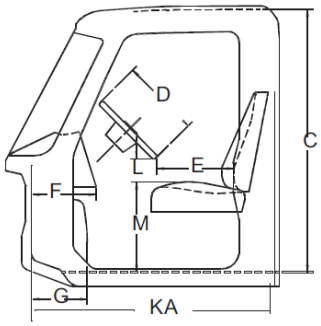
K Outside Cab Width 82.2

L Steering Wheel to Top of Seat Cushion 5.8

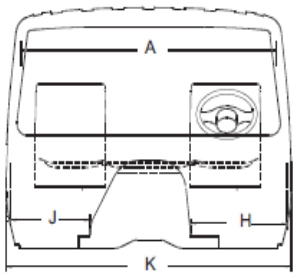
M Top of Front Seat Cushion to Floor 19.6

KA Inside Length 52.4

Driver Seat Track Travel Fixed Seat: 7.9 in. fore/aft — Air Suspension Seat: 7.4 in. fore/aft



STANDARD CAB



FRONT VIEW

10.5 Cab to Axle

As required for:
Dump Body
State: _____

Dump Body/Snow Plow
State: _____

10.6 Wheelbase

As required for:
Dump Body
State: _____

Dump Body/Snow Plow
State: _____

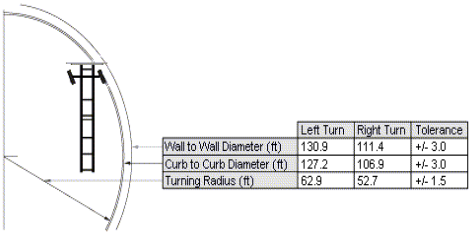
10.7 After-Frame

As required for:
Dump Body
State: _____

Dump Body/Snow Plow
State: _____

10.8 Bumper To Back Of Cab

BBC Approximately 106-110 in.
State: _____

10.9	Turning Radius	Turning Radius **State:** vehicle turning radius Example:  **a) Wall to Wall (ft.)** **b) Curb to Curb(ft.)** **c) Turning Radius (ft.)**	_____
	ENGINE:		
10.10	Type	Tier IV Final Diesel, inline 6-cylinder	_____
10.11	Horsepower	Approximately 330 HP gross	_____
10.12	Torque	Approximately 1000 lb-ft	_____
10.13	Engine Shut Down	Low oil pressure / high water temperature	_____
10.14	Air Intake Warmer	**Required:**	_____
10.15	Fuel Shut-Off	Electric solenoid type	_____
10.16	Air Intake (Dump Body, two (2) vehicles)	**Required:** Dual under-hood/outside air intake	_____
10.17	Air Intake (Dump Body/Snow Plow, three (3) vehicles)	**Required:** Dual under-hood/outside air intake provision complete with under hood air valve, dash mounted actuated, for snow plow application.	_____
10.18	Air Cleaner (Dump Body, two (2) vehicles)	Dry type – suitable for application	_____
10.19	Air Cleaner (Dump Body/Snow Plow, three (3) vehicles)	Dry type, suitable for application	_____
10.20	Air Intake Restriction	Dash mounted restriction indicator	_____
10.21	Oil Drain Plug	Magnetic type	_____
10.22	Oil Filter	Full flow, spin-on type	_____
10.23	Fuel Filter	Spin-on type	_____
10.24	Fuel/Water Separator	Heated, drainable under hood	_____
10.25	Fuel Line Primer Pump	**Required:**	_____
10.26	Block Heater	Immersion type, Approximately 1000 Watt with covered recessed male plug, located under driver's side door	_____

10.27	Radiator	Aluminum 1000 - 1200 square inch **State:** size	_____
10.28	Coolant	**Extended Life** coolant, antifreeze to -35°F (-37°C)	_____
10.29	**Coolant Filter**	**If Available**	_____
		Or	
		Coolant Maintenance Program **Extended life coolant maintenance is test strip every approximately 500 hours and fluid change at 10,000 hours.** **State: Test strip and fluid change intervals**	_____
10.30	Coolant Hoses	Silicone type or Gates Blue Stripe	_____
10.31	Fan Drive	Thermostatically controlled, automatic type with dash switch	_____
10.32	Air Compressor	Water cooled, pressure lubricated, 15-18 cfm	_____
10.33	Diesel Exhaust Fluid (DEF) Tank	Approximately 19 – 36 Litres or largest size per application. Located Driver's side **State:** size and location	_____
	ELECTRICAL SYSTEM:		
10.34	Electrical Connector's	Plug-in, sealed type	_____
10.35	Anti-Corrosion Electrical Package	Controllers and sensitive electrical components (PCM, Harnesses etc.) mounted in cab **State:** locations	_____
			
10.36	Alternator	Delco Remy 36SI Heavy Duty, Brushless type 160 -180 Amp Pad Mount Remote Sense **State:** make and model	_____ _____
10.37	**Starter**	**Delco Remy 41MT or 39MT** **Heavy Duty** **Over-Crank Protection** **State: make and model**	_____ _____
10.38	Circuit Breakers	Auto-reset, readily accessible	_____

10.39	Batteries/Battery Location	Three (3) batteries, 12-volt, group 31, approximately 2700-2850 CCA combined Batteries not to impede with the installation of the body **State:** location	_____
10.40	**Battery Disconnect**	**Required:**	_____
		For Air Brakes: **In-cab mounted outboard of driver's seat** **State: location**	_____
		For Hydraulic Brakes: **State: Method of battery disconnect**	_____
10.41	Battery Boost Terminal	Remote battery boosts terminal(s), **protected from road spray,** **State:** location **Exact location to be determined at pre- production meeting**	_____
10.42	Cab Marker Lights	LED Cab or Sun Visor Marker Lights	_____
10.43	2-Way Radio Circuit	Independent 20 Amp circuit, ignition powered, wired under dash loose, labelled	_____
10.44	Accessory Switches	**Required**: Six (6) All switches complete and wired for body installation, labeled and backlit	_____
10.45	Mega Fuse Box	Located in-cab or under-cab and shall be sealed. **State:** location and method of sealing	_____
	EXHAUST SYSTEM:		
10.46	Configuration	**Required:** Horizontal exhaust cylinder and vertical right hand tail pipe. Exhaust not to impede in the installation of the body. **State:** type and location	_____
10.47	Overall Exhaust Height	To clear dump body cab shield	_____

10.48	Exhaust Heat Shield	**Required:** 	_____
	TRANSMISSION:		
10.49	Transmission	• Allison 3000 RDS with 6-speed programming for two (2) vehicles with Dump Body • Allison 3500 RDS with 6-speed programming for three (3) vehicles with Dump Body/Snow Plow • Ratio shall be as per inter-city application. • Transmission shall come with load base Management Programming.	_____ _____
10.50	Allison SCAAN	The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator, the Allison SCAAN	_____
10.51	Transmission Fluids	Synthetic	_____
10.52	Shift Selector	Digital push-button type, dash mounted	_____
10.53	Cooling Capacity	Water to oil transmission cooler, as per manufacturer's recommendation for severe duty cycle	_____
10.54	Oil Level Dipstick	Bayonet type with high and low level markings	_____
10.55	Transmission Drain Plug	Magnetic type	_____
	FRONT AXLE:		
10.56	Front Axle	**Set back axle**, Meritor 14,000 lbs. capacity, with synthetic fluid for two (2) vehicles with **Dump Body**	_____
		Set back axle, Meritor 16,000 lbs. capacity, with synthetic fluid for three (3) vehicles with **Dump Body/Snow Plow**	_____

REAR AXLE:

10.57	Rear Axle	Meritor 21,000 lbs. capacity, with synthetic fluid for two (2) vehicles with **Dump Body**	_____
		Meritor 23,000 lbs. capacity, with synthetic fluid for three (3) vehicles with **Dump Body/Snow Plow**	_____
10.58	Ratio	For 110 km/hr **State:** ratio	_____
10.59	Inter-Axle Lock	**Required:** with dash mounted switch	_____
10.60	Differential Lock	**Required**: for drive axle with dash mounted switch	_____
10.61	Hub Seals	Oil lubricated front and rear type	_____

FRONT SUSPENSION:

10.62	Type	Multi-leaf spring suspension, 14,000 lbs. capacity for two (2) vehicles with **Dump Body**	_____
		Multi-leaf spring suspension, 16,000 lbs. capacity for three (3) vehicles with **Dump Body/Snow Plow**	_____

REAR SUSPENSION:

10.63	Rear Suspension	Air ride suspension, 21,000 lbs. capacity for two (2) vehicles with **Dump Body**	_____
		Air ride suspension, 23,000 lbs. capacity for three (3) vehicles with **Dump Body/Snow Plow**	_____
10.64	Suspension Control Valve	Manual dump valve for air suspension complete with dash mounted switch, indicator light, gauge and buzzer	_____
10.65	Auto Refill	**Required**: at 5 km/hr **Exact speed will be determined at a pre-production meeting**	_____

RIMS, WHEELS AND HUBS:

10.66	Front Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.67	Rear Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.68	Hubs	Aluminum material	_____
10.69	Wheel Nut Indicators	**Required:** on all wheel nuts	_____

TIRES:

10.70	Front Tires	**Dump Body:** 315/80R 22.5 18 ply, snow, mud and ice rated for requested GVWR and dump body application	_____
		Dump Body/Snow Plow: 385/65R 22.5 18 ply, snow, mud and ice rated for requested GVWR and dump body/snow plow application	_____
10.71	Rear Tires	11R 22.5 16 ply, snow, mud and ice rated for requested GVWR and application	_____

FRAME:

10.72	Frame	Single rail	_____
10.73	Rust Inhibitor (Frame/Cross Member)	ARMOUR-SEAL ™ FRAME & CHASSIS COMPONENT PROTECTIVE UNDERCOATING: (or equivalent) Sodium, magnesium and calcium chloride resistant. Semi-permanent, high strength rubberized polymer blended.  **RHOMAR Industries, Inc.** Tricia McKnelly-Anderson Account Manager 2107 E Rockhurst Springfield, MO 65802 1.800.688.6221 417.866.5593 (fax) www.rhomar.com www.rhomar.com/products/armour-seal.	_____
10.74	Chassis Fasteners	Grade-8 threaded hex headed frame fasteners	_____

10.75	Rear Frame Towing Provisions	Towing provisions with 7-way pin receptacle to end of frame with two (2) extra feet of wiring and air lines to for ease of body installation.	_____
	STEERING:		
10.76	Type	Tilt and telescopic, power, rated for front GVWR rating. Reservoir approximately 2 quart with see through tank.	_____
	BRAKES:		
10.77	Brakes	Air, ABS, S-cam drum brakes, front & rear	_____
10.78	Slack Adjusters	(Clearance sensing), automatic type	_____
10.79	Parking Brake	**Required:**	_____
10.80	Brake Pots	Vented type	_____
10.81	Dust Shields	**Required:** front and rear	_____
10.82	**Air Tanks**	**Shall be aluminum tanks with aluminum or stainless steel straps or nylon coated aircraft cable (3/16 dia.) with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion**	_____
10.83	Moisture Ejector	**Required:** Wabco, heated in all air tanks	_____
10.84	Drain Valves	**Required :** Manual, chain or cable operated, on each air tank	_____
10.85	Air Dryer	Wabco Heated System Saver 1200 or equivalent **State:**	_____
	FUEL TANK:		
10.86	**Fuel Tank**	**Single 40 – 50 gallon fuel tank.** **Shall not impede in the installation of the body.** **State: maximum fuel capacity**	_____
10.87	Fuel Water Separator	**Required:** heated	
10.88	Tank Straps	Aluminum or Stainless Steel straps with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion **State:**	_____
	CAB:		
10.89	Type	Conventional with corrosion inhibitor	_____
10.90	Cab Construction	Aluminum or Galvanized Steel **State:**	_____

10.91	Cab Mounts	Air suspension	_____
10.92	Hood	High visibility hood	_____
10.93	Hood Fender Extensions	2-3 in. front fender extensions	_____
10.94	Front Grille	Stationary mounted to hood	_____
10.95	Cab Interior / Trim	Extreme climate insulation including cloth or vinyl headliner on roof, door panels and rear interior of cab	_____
10.96	Cab Silencer Package	**Required**: for minimal decibel level	_____
10.97	Hood/Firewall/Engine Insulations	Insulated hood liner, engine cover and firewall	_____
10.98	Floor Covering	Rubber mat with under-padding	_____
10.99	Floor Mats	Two (2), rubber	_____
10.100	Driver's Seat	High back, air suspension foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.101	Passenger Seat	High back, air suspension with foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.102	Dashboard	Ergonomic (Wing) Design	_____

10.103	Sun Visors	Dual flip-up type	_____
10.104	Steering Wheel	Tilt and telescopic type	_____
10.105	12-Volt Power Outlet	**Required:** Two (2) with independent circuit	_____
10.106	Radio	Factory installed AM/FM/ with "hand free" Blue Tooth capability	_____
10.107	Starter Switch	Key operated complete with three (3) sets of keys	_____
10.108	Interior Light	Dome light with driver and passenger door switches	_____
10.109	Heater / Defroster	High output, capable of keeping all windows clear at an outside temperature of (-40°C)	_____
10.110	Air Conditioning	**Required:**	_____

10.111	Brake, Accelerator, Pedals	Floor or hanging type brake and accelerator pedal **State:**	_____
10.112	Horn	Dual electric	_____
10.113	Exterior Mirrors	Mirrors heated, lighted, 4-way motorized adjustment (with convex mirrors), suitable for 102 in. equipment width	_____
10.114	Down-View Mirror	**Required**: over passenger door Approximately 5 in. x 4 in.	_____
10.115	Windows & Windshield	Tinted	_____
10.116	Power Windows	Power driver and passenger side	_____
10.117	Doors	Power door locks	_____
10.118	Windshield Wipers	Electric intermittent	_____
10.119	Wiper Blades	Heavy duty with winter type boot	_____
10.120	Windshield Washers	**Required:** Electric, with spray nozzles on wiper blades	_____
10.121	Grab Handles	Dual exterior **State:** locations	_____
10.122	Grab Handles	Dual Interior	_____
10.123	Entrance Steps	Dual each side, open grate / grip type	_____
10.124	Winter Front	Heavy-duty vinyl with twist lock or snap type fasteners	_____
10.125	Exterior Sun Visor	**Required:**	_____

10.126 Strobe LED Lights (Beacons)

Qty two (2) Amber/Blue LED Beacons, Class 1 High Dome Strobe Lights complete with switch and labels. Mounted with aluminum or stainless steel brackets to B-Pillar

Note: Beacons and Mini Light Bar to be controlled by a single 3-Way switch with the following functions:
Amber – Off – Amber/Blue

Note: Need to be forward enough as not to interfere with the cab shield if equipped with one.

Whalen L31HMF

OR

SWS 22609

Location to be determined at a pre-production meeting

INSTRUMENTATION:

10.127	Instrumentation	• Oil Pressure Gauge • Coolant Temperature Gauge • Transmission Oil Temperature Gauge • Voltmeter Gauge • Air Reservoir Pressure Gauge with LAP Warning Light And Buzzer • Low Oil Pressure Warning Light and Buzzer • High Water Temperature Warning Light and Buzzer • Non-Resettable Type Engine Hour-Meter	_____

TOW HOOKS:

10.128	Location	Front mounted and Rear mounted	_____
10.129	Weigh Scale Systems	**Required:** Model Air Weigh scale system for front and rear axles. **System must be tested and calibrated prior to delivery**.	_____

COLOURS:

10.130	Exterior Colour	White	_____
10.131	Interior Colour	Grey	_____

ACCESSORIES:

10.132	Flare Kit	Three (3) triangular reflectors, CVSA approved. Kit must be mounted or secured.	_____
10.133	Fire Extinguisher	5 lbs. Fire Extinguisher ABC type installed and secured **State:** location	_____
10.134	Back-Up Camera	**Required:** Quantity two (2) Location # 1 - back of vehicle Location # 2 - top of cab shield complete with protective guard	_____

Locations to be determined at pre-production meeting

10.135	Back-Up Camera Screen	In-Dash (Ergonomic (Wing) Dashboard)	_____
		OR	
		Dash mounted if standard dashboard is specified.	_____

Back-Up Camera Screen location to be determined at a pre-production meeting.

DUMP BODY SPECIFICATIONS

10.136	Type	Double Wall Dump Body	_____
10.137	Outside Length	Nominal 13 ft.	_____
10.138	Inside Length	Approximately 12 ft. 6 in.	_____
10.139	Outside Width	To match chassis track width Nominal 8 ft. 6 in.	_____
10.140	Inside Width	Approximately 8 ft.	_____
10.141	Front Height	To match chassis cab height.	_____
10.142	Construction Material (Inside)	All material that touches the material (internal walls, floor, gate, front wall, dog house) used in construction to be 3/16 in. Hardox 450 with **exception of the cab shield.**	_____
10.143	Construction Material (Outside)	10 Gauge 44W Structural Steel	_____
	FLOOR:		
10.144	Material	3/16 in. Hardox 450	_____
10.145	Floor	1-Piece or 2-Piece maximum and pieces shall be continuously welded	_____
10.146	Width	Nominal 86 in. **State:**	_____
10.147	Long Sill Material	3/16 in. formed steel, tapered hat section design, 8 in. – 10 in. height, continuously welded to the floor	_____

10.148	Floor Slope	Approximately 60 degree slope along the joint to the side wall. Slope shall extend upwards approximately 4 - 8 in. **If required design and installation to be determined at a pre-production meeting**.	_____
	FRONT:		
10.149	Construction	3/16 in. Hardox 450 continuously welded to sides and floor.	_____
10.150	Front Section	Shall be constructed to incorporate a nominal 12 in. L x 12 in. W x 60 in. H provision (Well Front) to contain the installed hoist	_____
10.151	Cab Shield	Formed from single sheet of mild steel, 24 in. deep, sloped @ 10° or to match cab contour complete with reinforced ends.	_____
10.152	Cab Shield Clearance	Cab shield sides to provide adequate headroom and clearance for entry and egress of vehicle cab.	_____
	SIDES:		
10.153	Construction and Material	Construction – double wall Outside Material 10 Gauge 44W Inside Material 3/16 in. Hardox 450 Clean side style formed sides without vertical reinforcements, welded into a 1-piece design, including self-cleaning bottom rail and formed, self-cleaning centre horizontal rib and sloped top rail	_____
10.154	Side Height	Approximately 42 in.	_____
10.155	Rear Side Post	3/16 in. Hardox 450, one (1) per side.	_____
10.156	Top Side Rail Material	**Heavy Duty** Rectangular tubing with 3/16 in. wall **State:** size Or Fabricated from 3/16 in. Hardox 450 **State:** method of construction	_____ _____
10.157	Plank Gussets	For 2 in. x 6 in. planks with ½ in. diameter bolt holes.	_____
10.158	Planks	2 in. x 6 in. planks painted black on all sides, installed and bolted in gussets	_____

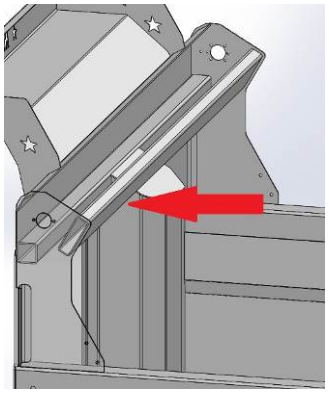
TIE DOWNS AND LADDERS:

10.159	Tie Downs Eyes	**Required:** Four (4), Located on inside of dump body. • Two (2) near top/rear of each side • Two (2) near top/front of each side Tie downs shall be D-Rings. Tie downs eyes to have a lifting capacity rated for full box weight for lifting box during installation **Exact locations to be determined at a pre-production meeting**	_____
10.160	Inside Steps	One (1) per side, located at rear of body Approximately 12 in. L x 5 in. W, located approximately 20 in. from floor.	_____
10.161	Access Ladders	**Required:** Two (2) • Bolt-on installation • Fold-Down (Retractable) Design • one (1) located curb-side corner • one (1) located driver's side corner **Design and installation to be determined at a pre-production meeting** **Refer to Appendix A**	_____
10.162	Ladder Rungs	Traction type rungs • 13-gauge steel, 2¼ in. width • 4-hole design • Traction Tread Products or equal. **Refer to Appendix A**	_____
10.163	Ladder Rungs Location	First rung to be 18-22 in. from ground level, approximately 14 in. rung spacing to top of body. **Design and location to be determined at a pre-production meeting** **Refer to Appendix A**	_____
10.164	Grab Handles	Located for ergonomic access to top of box. **Design and location to be determined at a pre-production meeting** **Refer to Appendix A**	_____

TAILGATE:

10.165	Style	Shall be a top hinge with grease-able hinge.	_____
10.166	Tailgate Height	Approximately 48 in.	_____
10.167	Tailgate Operation	Tailgate shall not protrude above floor in horizontal or full down position.	_____
10.168	Standard	There shall be no gap between tailgate and the floor and sides when tailgate is in the closed or horizontal position.	_____
10.169	Tailgate Construction	Formed construction with one or two equally spaced horizontal or vertical ribs, and a self-cleaning bottom rail. Inside liner with 3/16 in. Hardox 450 **State:** method of construction	_____
10.170	Tailgate Reinforcement	**Required:** Tailgate shall be reinforced with either heavy duty ⅜ in. end plates, or ¼ in. steel tubing.	_____
10.171	Anchor Pins	Top tailgate anchor pins 1¼ in. diameter, self-locking/storing to top of side posts. Greaseable or composite; top hinge pivot system If retainer pins are used to lock top tailgate anchor pins, then a small steel check chain is required, permanently fastened to the retainer pin.	_____
10.172	Support and Spreader Chains	⅜ in. transport Grade 70, adequately fastened complete with chain storage and two (2) removable links per chain.	_____
		Support and spreader chains shall be equipped with a protective cover.	_____
10.173	Tailgate Locking Mechanism	In-cab control, air operated with air brake pot or air cylinder operated trip. **State:** method	_____
		The locking mechanism shall be adjustable to ensure adequate lock-up with tailgate closed.	_____

TARPAULIN:

10.174	Tarpaulin Type	Electric flip tarp, operable in-cab from driver's seat with aluminum arms. Elbow to ensure arms recess as low as possible along box sides and not in the way of loading. **State:** make, model and type of material **Important:** Designed to maintain the heat for hot asphalt transport.	_____
10.175	Tarp System	Tarp system shall stow on the cab shield, i.e., shall not protrude into the box area.	_____
10.176	Tarp Protection System	**Required:** to protect the roll from shifting material in the body  **Design and location to be determined at a pre-production meeting**	_____
10.177	Tarp Operation	Tarpaulin shall not block the visibility of the mini light bar when tarpaulin is in the stowed position.	_____

HOIST:

10.178 Requirements: _____

3-Stage, front mounted telescopic hoist, nitrided, quenched and polished cylinder stages, protected against corrosion, Mailhot G3 Series

Hoist to be sold, installed and serviced by an authorized dealer

10.179	Make and Model	**State:**	_____
10.180	Bore	Approximately 5 in. **State:**	_____
10.181	Hoist Capacity	Approximately 20 – 30 tons **State:** capacity	_____

10.182	Hoist Dump Angle	45° from horizontal, cylinder must lower under its own weight with empty load in low ambient temperatures.	_____
10.183	Hoist Connection	**Required**: live swivel	_____
10.184	Hoist Grease Fittings	**Required:** on all pivot pins.	_____

IN-CAB CONTROLS:

10.185	Cab Controls	Programmed through OEM dash mounted switches	_____
10.186	Switches	All switches shall be back-lit for night time use and clearly identified with engraved style, permanent type labels.	_____
		Supply corresponding valve and solenoid necessary for operation	_____

Switches:

- PTO Engagement
- Dump Box Up/Down
- Tailgate Open/Close
- Amber Lighting
- Blue Lighting
- Tarp Open/Close

HYDRAULICS (DUMP):

10.187	PTO	Muncie or Chelsea electric/hydraulic power shift **State:** make and model	_____
10.188	Hydraulic Pump	**Required:** Transmission mounted PTO Pump to operate the dump body. Parker Dump Pump or equivalent in accordance with B6 Substitutes **State:** make and model	_____
10.189	Requirements	Shall be a 3-Line system	_____
10.190	Suction Line Valve	**Required:** easily accessible, lockable with bolts.	_____

10.191	Hydraulic Oil Reservoir	Passenger side, chassis frame mounted, **Aluminum** or **Stainless Steel** construction, baffled as required, complete with breather type filler cap with filter, filler strainer and sight gauge. **State:** material	_____
10.192	Hydraulic Oil	Univis N15 or equivalent **State:** type	_____
10.193	Capacity	Approximately 25 – 30 gallon **State:** size	_____
10.194	Drain Plug	¾ in. diameter.	_____
10.195	Fittings	**NO:** black steel or cast fittings **State:** type	_____
10.196	Labelling	Reservoir shall be clearly labelled "Hydraulic Oil" with a permanent type, engraved style label.	_____

HYDRAULIC FILTERS:

10.197	Return Filter	Serviceable without oil loss, tank mounted, complete with clogging indicator.	_____
10.198	Filter Standard	Filters shall contain a corrosion resistant coating, beta rating of 200, 10 micron particle size, and shall be ergonomically located for servicing.	_____
10.199	External Hydraulic Filter Pan	External Hydraulic filter shall have a stainless steel or aluminium pan located directly under the filter in case of a potential hydraulic leak and to avoid hydraulic fluid falling to the road. Design shall not impede the servicing of the filter. 	_____
10.200	Shut-Off Valve	Ball type, located between reservoir and pump, secured in open position with a bracket and bolt.	_____

10.201	Hydraulic Hoses	Wire braid reinforced, rated for system operating pressure with 4 to 1 safety factor for burst pressure.	_____
10.202	Protection	Hydraulic hoses to be protected at wear and scuff location.	_____
10.203	Hose Fittings	Hydraulic full flow, crimp-on (non-reusable) type.	_____

ELECTRICAL & LIGHTING:

10.204	Conformance	All lighting to conform to: • C.M.V.S.S. • Manitoba Highway Traffic Act. • City of Winnipeg Lighting Visibility Standard http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf.	_____
10.205	Lighting	Supplier installed shall be **high count** LED lighting and shall be Truck-Lite, Whelen **or equivalent**	_____
10.206	Connection System	Weather Pack Sealed Connection System	_____

10.207	Grommets	Rubber grommets unless otherwise specified	_____
10.208	Combination Turn/Stop And Taillights	One (1) per side P/N Truck-Lite 44302R with P/N 44710 mounting grommets	_____

10.209	Back-Up Lights	One (1) per side P/N Truck-Lite 44206C with P/N 44710 mounting grommets	_____

10.210 3-Light Cluster

Three (3)
P/N Truck-Lite10250R with P/N 10403 mounting grommets

_____

10.211 Clearance Lights

High count LED
P/N Truck-Lite10250R or 10250Y with P/N 10403 mounting grommets.

_____

10.212 Blue Strobe Lights

One (1) per side with mounting grommets
P/N Whelen 5GA00FBR

_____

10.213 Amber Strobe Lights

One (1) per side with mounting grommets
P/N Whelen 5GA00FAR

_____

10.214 License Plate Light

Complete with license plate bracket.
P/N Truck-Lite 36140 (Light)
P/N Truck-Lite 36710 (Bracket)

Installed on Hitch Plate – Upper Right Corner

_____

10.215 Rear Light Mounting Location (Rear Sill)

_____

- Combination Turn/Stop and Taillights, qty two (2), one per side
- Back-Up Lights, qty two (2), one per side
- 3-Light Cluster, qty three (3)
- Rear-Corner Clearance Lights, qty two (2), one per side

The lights shall be situated so that no debris contacts the lights while dumping.

Refer to Appendix A

10.216 Rear Light Mounting Location (Rear Posts) _____

- Amber Strobe Lights, qty two (2), one per side
- Blue Strobe Lights, qty two (2), one per side
- Rear-Corner Clearance Lights, qty two (2), one per side

Refer to Appendix A

10.217 Clearance Light Mounting Locations: _____
- Front – qty two (2), located one on each bottom corner
- Sides – qty two (2) per side, located on front and rear bottom corners.

10.218	Standard	No clearance light shall protrude beyond the dump body.	_____
10.219	Standard	Taillights and back-up lights shall be fully visible when tailgate is lowered to horizontal position.	_____
10.220	Harnesses	Harness system, properly routed and secured. All harnesses shall be internally grounded, no exceptions.	_____
10.221	Junction Box	Junction box complete with necessary compression fittings, required for all vehicle lighting harness connections, located inside rear of truck frame.	_____
10.222	All Plug-In Connectors	All plug-in connectors shall be coated with NYK compound prior to assembly.	_____
10.223	Back-Up Alarm	97 dB(A), installed near rear of dump body, located to be protected from damage.	_____

10.224 Mini Light Bar

- Whelen RDLPPAB Amber/Blue LED Mini Light Bar or equivalent in accordance with B6 Substitutes
- Mounted to top of cab guard
- Protected by Branch Guard
- 360° visibility when tarpaulin is in stowed position.
- Mini Light Bar shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Light Bar Amber/Blue” with a permanent type, engraved style label.

_____

Note: Beacons and Mini Light Bar to be controlled by a single 3-Way switch with the following functions:
Amber – Off – Amber/Blue

10.225 Branch Guard

Heavy duty branch guard constructed by ⅜ in. round bar or equivalent.

_____

10.226	Wiring	All LED strobe lights shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Strobes” with a permanent type, engraved style label. All wiring for back-up alarm, warning lights, strobes and trailer connector shall be colour coded, loomed and properly secured.	_____ _____
10.227	Trailer Connector	6-Way Round or SAE J560 7-Way Flat trailer receptacle. **Type to be determined at pre-production meeting**	_____
10.228	Electrical Connectors	All electrical connectors shall be crimped, soldered and then sealed using heat shrink tubing.	_____
10.229	Joining Of Wires	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).	_____
10.230	Wiring Routing	Any holes required to run wires through shall be drilled (not punched), grommeted and sealed	_____
	WELDING:		
10.231	Standard	All welds shall be continuous welds. All welding performed shall conform to CSA Standard W47.1-03 and W59-03.	_____
	INSTALLATION:		
10.232	Drilling	Any holes required in the chassis frame web must be drilled and reamed to fit bolts.	_____
10.233	Standard	Drilling on chassis frame flanges is not permitted. Welding on the chassis frame is not permitted, with the exception of installation of dump body pivot support.	_____
10.234	Tire Clearance	Three inches (3 in.) with rear suspension air bags lowered.	_____
10.235	Clearance	Clearance between dump body and back of truck cab shall be 3 in.	_____

MISCELLANEOUS

10.236 Rear Hitch Plate

¾ in. thick solid steel, (laminated plates not acceptable) installed to chassis frame. _____

Design (including overhang) and installation to be determined at pre-production meeting.

10.237 Pintle Hitch and Receiver

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

Receiver – 2 in. x 6 in. Length
State: size _____

Design and installation to be determined at pre-production meeting

10.238 D-Ring with Mounting Bracket (Required for Trailer Safety Chains)

One (1) each side of hitch
Buyers Products B48 or equal. _____

10.239 Shovel Holder

Shovel holder with handle latch to secure shovel in place _____

Buyers Products P/N SH675SS

Location to be determined at pre-production meeting

10.240 Rear Fenders

Heavy Duty rear poly half-moon fenders. Shall be installed to have sufficient clearance from body and when chassis suspension is dumped for dump body operation. _____

10.241 Mud Flaps

Required: Black rubber, no-name, front and rear of back tires complete with anti-sail bracket on each mud-flap. Rear mud flaps shall not contact the ground when the dump body is at maximum dump angle _____

10.242 Isolators

All interfaces between aluminium and steel shall be separated by an approximately 1/16 in. thick rubber or neoprene sheet and are to be bolted through with stainless steel bolts and non-conductive bushings _____

10.243 Grease Fittings

Required: on tailgate release mechanisms, pivot points and tailgate _____

GREASING SYSTEM:

10.244 Complete unit shall have Groeneveld CPL Systems Inc. or Lubecore Auto Greasing System. _____

10.245 Single Line, EP2 and automatic low level shut-off with in-cab red light indicator. _____

10.246 All grease fittings for the entire chassis and body (including cylinder mounts, pivot points, dump body prop, plow etc.), shall be readily accessible or shall be equipped with remote grease zerks as required. _____

10.247 **Grease Points:** _____
Approximately twenty-six (26) points on cab & chassis
Approximately eight (8) – twelve (12) points on body (depending on body configuration)

State: quantity of grease points on cab & chassis: _____

State: quantity of grease points on body: _____

10.248 Grease pump will pump Original Equipment Manufacturer specified EP2 grease from -40^{o}C to + 50^{o}C. _____

10.249 One way check valves on each line _____

10.250 Low temperature compatible 800 bar/12000 PSI grease line with a bending radius of ¾ inch. With a 5 year line breakage guarantee for on road trucks. _____

10.251 One piece flow dividers with manual over ride. _____

10.252 **Warranty:** three (3) years parts and labour. _____

TOOLBOXES

10.253 Tool Boxes _____

Aluminum Tool Boxes
- Mounted on driver or passenger side frame
- Approximately 24 in. x 24 in. x 48 in.
- Barn Door style doors

State: Quantity, dimensions, material, and recommended location as set by the manufacturer

SAFETY:

10.254 Dump Body Prop _____

Double Prop Design
- Steel tubing construction, to support 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
- Operating Handle to be positioned outside of chassis frame rails for operator safety (Driver's Side)
- Dump body prop to be complete with receiving bracket.
- Safety Lock Pin and Chain required to hold arms in the "Up" position (Driver Side)
- Refer to below pictures for sample designs

Design and installation to be confirmed at a pre-production meeting.

Driver Side - Up

Driver Side - Down

Driver Side – Down

Driver Side – Up

Passenger Side - Down

Safety Lock Pin and Chain

10.255 Dump Body Prop Colours

All components (prop, handle and receiving bracket) shall be painted with **Safety Orange** for ease of identification

_____

10.256	Dump Body Stowage Warning System	**Required:** Warning light and buzz system shall be installed on the dash and shall be actuated when dump body is not in the fully stowed position. **State:**	_____
10.257	PTO	**Programmed:** To disengage the PTO when 5 kph is reached to prevent the driver from driving off when the body is up. **Exact speed to be determine at pre-production meeting**	_____
10.258	Pre-Trip Exterior Light Inspection	**Programmed:** When activated, the vehicle lights repeatedly flash in a specific sequence to allow the operator to verify that the exterior lights are functioning. The light test sequence tests: • Park Lights • Headlights (low and high beams) • Right/left front/rear turn lights • Brakes Lights • Mini Light Bar • Beacon(s) • Strobe Lights • Clearance Lights	_____
10.259	Warning Light Over Ride	**Programmed:** Rear strobe lights to be programmed to allow for an over-ride for turn signals and brake lights when strobe lights are on. Other drivers will be able to determine if the truck is stopping or turning when strobe lights are on.	_____
	FINISH:		
10.260	Preparation	Complete dump body and all ladders, hitch plates, reservoirs, steel brackets, etc. shall be sandblasted, properly cleaned, primed and finished with the Endura or DuPont paint process as follows:	_____
10.261	Primer	**Required:** Epoxy or Polyurethane primer Endura EP321 Intermix Epoxy Primer or DuPont polyurethane. Two (2) coats – Dry Film Thickness 3.0 – 4.0 mils	_____

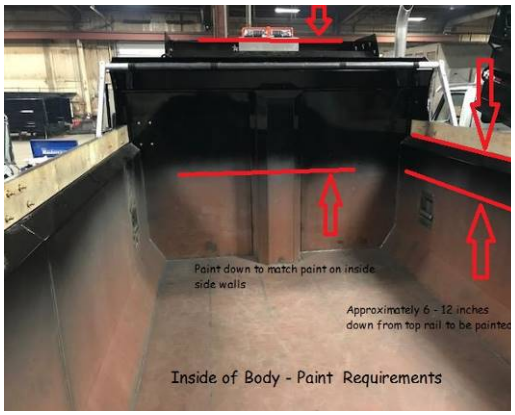
10.262 Paint

Required: Polyurethane
Colour: Black

Endura EX-2C or DuPont Polyurethane

Two (2) coats:
3 - 5 mils Wet Film Thickness with a total combined overall average Dry Film Thickness of 4 – 6 mils

Note: Vendor is not required to finish paint the entire inside of the body, but a coat of primer in accordance with primer specifications must cover the entire inside of the body. However, the top rail and approximate 6 - 12 in. (from the top rail) of all inside surfaces of the body shall be painted.
Front inside wall to match paint line of inside side wall



SNOW PLOW HITCH PLATE AND TAILGATE CHUTE CONFIGURATION:

10.263 **Three (3) Units to have the following:** _____

SNOW PLOW HITCH PLATE AND TAILGATE CHUTE

Note: Configurations to be priced only as indicated on Form B: Prices

SNOW PLOW HITCH PLATE CONFIGURATION:

10.264	Front PTO Provisions	1310 adapter flange for front PTO provision required to operate dump body and front plow	_____
10.265	Front Frame Extension	24 in. Front Frame Extension **Note:** Integral (bolt-on not acceptable)	_____

10.266 Front Hitch Plate: _____

Front hitch plate shall be installed to successfully hook-up with a City owned Tenco TCP-12T-42-E2 12 ft. snow plow with a Quik-Tach quick coupler system. In addition, the hydraulics and in-cab controls shall successfully operate the dump body and be compatible with the successful operation of the snow plow.

10.267 Type: _____

Heavy duty, quick disconnect hitch with the female section consisting of two (2) jaws welded to the plate. The hitch plate shall be capable of hooking-up and handling loads imposed by a City owned Tenco TCP-12T-42-E2 12 ft. snow plow with a Quik-Tach quick coupler system. The hitch plate shall be a "Low Mount" hitch design and 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

10.268 Construction — Heavy duty steel hitch plate, Approximately 25 in. H x 45 in. W x ½ in. T with vertical reinforcements as required. _____

10.269 Main Plate — Main plate shall be bolted to end of truck chassis frame rails with additional diagonal bracing from bottom of main plate to chassis frame. _____

10.270 Lift Arm — Telescopic lift arm shall be adjustable type, 30 in. approximately _____

10.271 Snow-Plow Lights — Front fender mounted snow-plow lights require _____

10.272 Front Bumper Extensions — Front bumper extensions – full width heavy duty steel bumper extensions. _____

PLOW CONTROL AND DUMP BOX FUNCTION:

10.273	**Functions**	**Parker, Cirus Controls Single Joystick or equivalent in accordance with B6 Substitutes control, non-proportional, dual mode for dump box and plow functions.** **State: make and model**	_____
10.274	Switch	A switch on the control panel shall actuate plow functions in one mode, dump function in the other mode.	_____
10.275	Vertical Axis	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.	_____
10.276	Horizontal Axis	The horizontal axis (side to side) shall actuate plow angle left/right in “Plow” mode, nothing in “Dump” mode	_____

HYDRAULICS (DUMP AND PLOW):

HYDRAULICS:

10.277	**Hydraulic Pump**	**Front mounted, variable displacement, load sensing axial piston pump** **Parker, Cirus Controls or equivalent in accordance with B6 Substitutes** **State: make and model**	_____
10.278	Type	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. 	_____
10.279	Grease Fittings	Hydraulic pump drive shaft shall be equipped with accessible grease fittings on U-joint crosses	_____

10.280	**Hydraulic Valve Bank**	**Electric solenoid controlled** **Parker, Cirus Controls or equivalent in accordance with B6 Substitutes** **State: make and model**	_____
10.281	Manual Override	Each section to have a manual override on the valve in case of electric control failure.	_____
10.282	Valve Enclosure	Hydraulic valve bank shall be fully enclosed in a waterproof steel box, mounted on the truck frame. The top portion shall be bolted for access to valves.	_____
10.283	Plow Hydraulic Connectors	Quick disconnect, installed in banks in convenient location, equipped with covers and plugs.	_____
10.284	Suction Line Valve	**Required:** easily accessible, lockable with bolts.	_____
10.285	Hydraulic Oil Reservoir	Passenger side, chassis frame mounted, **Aluminum** or **Stainless Steel** construction, baffled as required, complete with breather type filler cap with filter, filler strainer and sight gauge. **State:** material	_____
10.286	Hydraulic Oil	Univis N15 or equivalent **State:** type	_____
10.287	Capacity	Approximately 25 – 30 gallon **State:** size	_____
10.288	Drain Plug	¾ in. diameter.	_____
10.289	Labelling	Reservoir shall be clearly labelled "Hydraulic Oil" with a permanent type, engraved style label.	_____
	HYDRAULIC FILTERS:		
10.290	Return Filter	Serviceable without oil loss, tank mounted, complete with clogging indicator.	_____
10.291	Pressure Side Filter	Non-bypass type, absolute rated filter element, located before oil reaches the valve bank, complete with clogging indicator	_____

10.292	Standard	Both filters shall contain a corrosion resistant coating, beta rating of 200, 10 micron particle size, and shall be ergonomically located for servicing.	_____
10.293	External Hydraulic Filter Pan	External Hydraulic filter shall have a stainless steel or aluminium pan located directly under the filter in case of a potential hydraulic leak and to avoid hydraulic fluid falling to the road. Design shall not impede the servicing of the filter. 	_____
10.294	Shut-Off Valve	Ball type, located between reservoir and pump, secured in open position with a bracket and bolt.	_____
10.295	Hydraulic Hoses	Wire braid reinforced, rated for system operating pressure with 4 to 1 safety factor for burst pressure.	_____
10.296	Protection	Hydraulic hoses to be protected at wear and scuff location.	_____
10.297	Hose Fittings	Hydraulic full flow, crimp-on (non-reusable) type.	_____

TAILGATE CHUTE CONFIGURATION:

10.298	Tailgate Chute	• Installed in lower-middle section of tailgate • Approximately 19 in. Wide X 27 in. High  **Design, size and installation to be determined at a pre-production meeting.**	_____
10.299	Material	• Outside 10 Gauge 44W Structural Steel construction • All parts of tailgate chute exposed to the aggregate to be made of Hardox 450	_____
10.300	Manual Latch	Locate on passenger side	_____

11.0 **WARRANTY**

11.1 The body warranty on the complete vehicle (excluding the chassis) shall include 100% replacement parts and labour at no cost to the City and shall cover the complete equipment and all parts thereof against defects of workmanship, construction and materials for one (1) year from the date the equipment is put into service by the City of Winnipeg. _____

11.2 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 _____

BODY WARRANTY

11.3	Main Frame - Structural	**State:**	_____
11.4	Frame – Non-Structural	**State:**	_____
11.5	Components e.g. Pumps	**State:**	_____
11.6	Hydraulics	**State:**	_____
11.7	Hoist and Cylinder	**State:**	_____
11.8	Electrical	One (1) year **State:**	_____

11.9	LED Lighting	**State:**	_____
11.10	Paint	**State:**	_____
	CAB & CHASSIS WARRANTY		
11.11	Basic Vehicle - Chassis	One (1) year, unlimited km, **State:**	_____
11.12	Electrical	One (1) year **State:**	_____
11.13	LED Lighting	**State:**	_____
11.14	Batteries	One (1) year, unlimited km **State:**	_____
11.15	Drivetrain	Two (2) years, unlimited km **State:**	_____
11.16	Cab Structure/Corrosion	Five (5) years, unlimited km **State:**	_____
11.17	Frame & Cross-Members	Five (5) years, unlimited km **State:**	_____
11.18	Cab Paint	One (1) year or 160,000 km **State:**	_____
11.19	Engine	Three (3) years or 240 000 km **State:**	_____
11.20	Transmission	Two (2) years, unlimited km **State:**	_____
11.21	Axles - Front & Rear	Two (2) years or 161 000 km **State:**	_____
11.22	Components	**State:**	_____
	Other Warranties		
11.23	Joystick Control	**State:**	_____

12.0 **DELIVERY**

12.1 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 WFMA 185 Tecumseh Street, Winnipeg MB. The successful bidder shall be notified by the Contractor Administrator the delivery address prior to issuance of the purchase order _____

12.2 Delivery Time: Equipment shall be delivered between 8:00 am and 2:00 pm on Business Days
State: Delivery Date _____

12.3 Delivery Contact: The Contractor shall contact the Contract Administrator prior to delivery of the equipment. _____

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

13.0 **MANUALS**

13.1 Manuals supplied under this Contract shall cover the complete equipment including all components thereof, CD or USB flash drive is preferred where available. _____

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

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

b) Parts and service manuals – One (1) complete set including preventative maintenance schedules. CDs or USB flash drive are preferred. _____

14.0 **PARTS/LABOUR DISCOUNT**

14.1 Bidder to provide City of Winnipeg Parts Discount % Pricing from retail parts pricing. **State: percentage discount** _____%

14.2 Bidder to provide City of Winnipeg Labor Discount % Pricing from Retail shop labor rate. **State: percentage discount** _____%

15.0 **FIRST SERVICE PREVENTATIVE MAINTENANCE KIT**

15.1 In order to assure minimum downtime of the equipment in future service, the Contractor shall provide one (1) complete replacement set of new OEM filters for each unit purchased. The set of required filters shall include (if applicable to the equipment type) air, fuel, oil, cab and hydraulic, or otherwise all known necessary common replacement filters required for the first preventative maintenance servicing. _____

15.2 The Contractor shall provide a list of factory recommended lubricants to be used with the equipment, as well as a complete cross reference guide for all warranty approved lubricants and filters that can be used during preventative maintenance servicing. _____

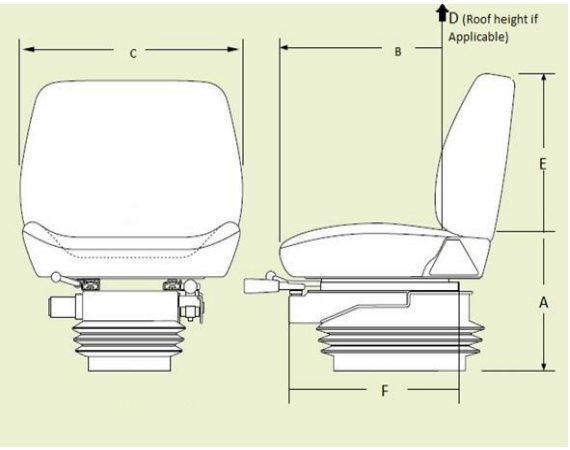
16.0 **ERGONOMIC SPECIFICATIONS**

Entry/ Exit

16.1	First step entry height	**State:** height of first step in inches	_____
16.2	First handhold entry height	**State:** first handhold entry height in inches	_____
16.3	Access to equipment	**State:** door opening height in inches	_____
16.4	Access to equipment	**State:** door opening width in inches	_____
16.5	Designed to prevent slipping	Anti-slip steps/handholds **(Y or N)?**	_____

Seat

16.6 Use diagram to answer questions.



16.7	Sitting Height Range (from floor (where feet rest) (A))	**State:** seat height range in inches	_____
16.8	Seat Length/Depth (B)	**State:** seat length/depth in inches	_____
16.9	Seat Width (C)	**State:** seat width in inches	_____
16.10	Cab Height (from seat to roof (if applicable) (D))	**State:** cab height range in inches	_____
16.11	Back Rest Height (E)	**State:** back rest height in inches	_____
16.12	Seat Travel Range (F)	**State:** seat travel in inches	_____
16.13	Lumbar Support	Is lumbar support provided **(Y or N)?**	_____
16.14	Head Rest	Is head rest provided **(Y or N)?**	_____
16.15	Seat is made of breathable material	**State:** type of seat material	_____

Operation

16.16	Reaching Distance (to usual work)	**State:** reaching distance in inches	_____
16.17	Maximum Reaching Distance	**State:** maximum reach distance in inches	_____
16.18	Adjustable Pedals (accelerator/brake/clutch)	Are pedals adjustable **(Y or N)?**	_____
16.19	Adjustable Steering Wheel	Is steering wheel adjustable **(Y or N)?**	_____
16.20	Adjustable Shoulder Belt	Is belt adjustable and anchored **(Y or N)?**	_____

Cargo Area

16.21	Lid opens to provide adequate space	Adequate space provided **(Y or N)?**	_____
16.22	Loading Height	**State:** trunk height in inches	_____

Environment

16.23	Operator compartment is insulated from equipment noise (while operating)	**State:** dB inside cab while operating	_____
16.24	Operator insulated from equipment vibration	Is operator insulated from vibration (Y or N)?	_____
16.25	Heating/Cooling Systems	**State:** cab temperature range	_____
16.26	Cab Lighting	**State:** lumens inside cab	_____

Maintenance/ Inspection

16.27	Lift Assistance (when necessary)	Is lift assistance provided **(Y or N)?**	_____
16.28	Easy Access (to compartment doors)	Is easy access provided **(Y or N)?**	_____
16.29	Include any other relevant ergonomic specifications and applicable range of adjustment		_____

FORM N (R1): DETAILED SPECIFICATIONS 17013

SINGLE AXLE CHASSIS WITH A 13' X 8' PARKS DUMP BODY

1.0 DESCRIPTION OF EQUIPMENT/APPLICATION

1.1 These specifications describe **Single Axle Chassis with a 13' x 8' Parks Dump Body** and other equipment and features as specified herein. These units are an integral portion of the City of Winnipeg Parks/Cemeteries Maintenance equipment fleet as they are utilized year round during all seasons. The Trucks will be used for hauling water tanks, soil, sand, wood chips, snow etc. The utilization of the trucks is 80% Hauling and 20% snow. The trucks will be used with up to two (2) operators.

1.2 The **Single Axle Chassis with a 13' x 8' Parks Dump Body** shall be new 2017 model year or newer.

1.3 The **Single Axle Chassis with a 13' x 8' Parks Dump Body** 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 **Single Axle Chassis with a 13' x 8' Parks Dump Body** shall comply with the applicable regulations:

- Highway Traffic Act
- Manitoba Motor Vehicle Act
- Canadian Motor Vehicle Safety Standards, CMVSS Transport Canada
- National Safety Mark, NSM
- Manitoba/Winnipeg 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.

2.4 The manufacturer/installer shall be a certified vehicle completer and must affix their National Safety Mark (NSM) certification sticker on each unit.

State NSM number: _____

3.0 SERVICE FACILITY

3.1 For the purpose of warranty repairs, the supplier shall have an authorized service facility located within 10 kilometres 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 B11, 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 REFERENCES

4.1 If available, please provide five (5) 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 **Single Axle Chassis with a 13' x 8' Parks Dump Body** body being 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 **Single Axle Chassis with a 13' x 8' Parks Dump Body**, 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 **Single Axle Chassis with a 13' x 8' Parks Dump Body** 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 The **Single Axle Chassis with a 13' x 8' Parks Dump Body** must be fully fuelled upon delivery **(no exceptions).**

9.0 QUALIFICATIONS OF MANUFACTURER & CONTRACTOR

9.1 The manufacturer of the **Single Axle Chassis with a 13' x 8' Parks Dump Body** shall have five (5) years continuous experience manufacturing **Single Axle Chassis with a 13' x 8' Parks Dump Body**

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 **Single Axle Chassis with a 13' x 8' Parks Dump Body** of the type being offered.

10.0 **SPECIFICATIONS**- _____

When used in this Specification 17013:

“Dump Body” shall be used to describe Single Axle Chassis with a 13’ x 8’ Parks Dump Body

“Dump Body/Water Tank” shall be used to describe Single Axle Chassis with a 13' x 8' Parks Dump Body with Water Tank

“Dump Body/Water Tank/Watering Arm” shall be used to describe Single Axle Chassis with a 13' x 8' Parks Dump Body with Water Tank and Watering Arm

CHASSIS:

10.1 Weights: _____

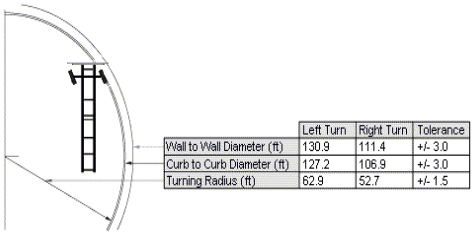
The Trucks shall not exceed the City of Winnipeg's limit for gross vehicle weight, axle and tire loads

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) – 9100 kg (20,056 lbs.)
- Tire load – 9 kilograms for each millimeter width of tire (approximately 500 lbs. per inch of tire width).

10.2 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 two (2) operators, all attachments and full of fuel.

10.3	GVWR	• GVWR Total 33,000 lbs. • GVWR Front 12,000 lbs. • GVWR Rear 21,000 lbs.	_____
10.4	Cab	Conventional with corrosion inhibitor	_____
10.5	Cab to Axle	As required for 13' x 8' Dump Body	_____
10.6	Wheelbase	As required for 13' x 8' Dump Body	_____
10.7	After-Frame	As required for 13' x 8' Dump Body	_____
10.8	Bumper to Back of Cab	BBC Approximately 106-110 in. **State:**	_____
10.9	Turning Radius	Turning Radius **State:** vehicle turning radius Example:  **a) Wall to Wall (ft.)** **b) Curb to Curb(ft.)** **c) Turning Radius (ft.)**	_____

ENGINE:

10.10	Type	Tier IV Final Diesel, inline 6-cylinder	_____
10.11	Horsepower	Approximately 300 HP gross	_____
10.12	Torque	Approximately 800 lb-ft	_____

10.13	Engine Shut Down	Low oil pressure / high water temperature	_____
10.14	Air Intake Warmer	**Required:**	_____
10.15	Fuel Shut-Off	Electric solenoid type	_____
10.16	Air Intake	Side of hood air intake	_____
10.17	Air Cleaner	Dry type, suitable as for a 13' x 8' Dump Body	_____
10.18	Air Intake Restriction	Dash mounted restriction indicator	_____
10.19	Oil Drain Plug	Magnetic type	_____
10.20	Oil Filter	Full flow, spin-on type	_____
10.21	Fuel Filter	Spin-on type	_____
10.22	Fuel/Water Separator	Heated, drainable under hood	_____
10.23	Fuel Line Primer Pump	**Required:**	_____
10.24	Block Heater	Immersion type, Approximately 1000 Watt with covered recessed male plug, located under driver's side door	_____
10.25	Radiator	Aluminum 1000 - 1200 square inch **State:** size	_____
10.26	Coolant	**Extended Life** coolant, antifreeze to -35°F (-37°C)	_____
10.27	**Coolant Filter**	**If Available** **<u>Or</u>** **Coolant Maintenance Program** **Extended life coolant maintenance is test strip every approximately 500 hours and fluid change at 10,000 hours.** **State: Test strip and fluid change intervals**	_____
10.28	Coolant Hoses	Silicone type or Gates Blue Stripe	_____
10.29	Fan Drive	Thermostatically controlled, automatic type with dash switch	_____
10.30	Air Compressor	Water cooled, pressure lubricated, 15-18 cfm	_____
10.31	Diesel Exhaust Fluid (DEF) Tank	Approximately 19 – 36 Litres or largest size per application. Located Driver's side **State:** size and location	_____

ELECTRICAL SYSTEM:

10.32	Electrical Connector's	Plug-in, sealed type	_____
10.33	Anti-Corrosion Electrical Package	Controllers and sensitive electrical components (PCM, Harnesses etc.) mounted in cab **State:** locations	_____
			
10.34	Alternator	Delco Remy 36SI Heavy Duty, Brushless type 160 -180 Amp Pad Mount Remote Sense **State:** make and model	_____ _____
10.35	**Starter**	**Delco Remy 41MT or 39MT** **Heavy Duty** **Over-Crank Protection** **State: make and model**	_____ _____
10.36	Circuit Breakers	Auto-reset, readily accessible	_____
10.37	Batteries/Battery Location	Three (3) batteries, 12-volt, group 31, approximately 2700-2850 CCA combined Batteries not to impede with the installation of the body **State:** location	_____
10.38	**Battery Disconnect**	**Required:** **For Air Brakes:** **In-cab mounted outboard of driver's seat** **State: location** **For Hydraulic Brakes:** **State: Method of battery disconnect**	_____ _____ _____
10.39	Battery Boost Terminal	Remote battery boosts terminal(s), **protected from road spray.** **State:** location **Exact location to be determined at pre- production meeting**	_____
10.40	Cab Marker Lights	LED Cab or LED Sun Visor	_____
10.41	2-Way Radio Circuit	Independent 20 Amp circuit, ignition powered, wired under dash loose, labelled	_____

10.42	Accessory Switches	Six (6) required. All switches complete and wired for body installation, labeled and backlit	_____
10.43	Mega Fuse Box	Located in-cab or under-cab and shall be sealed. **State:** location and method of sealing	_____
	EXHAUST SYSTEM:		
10.44	Exhaust	**Required:** Horizontal exhaust cylinder and vertical right hand tail pipe. Exhaust not to impede in the installation of the body. **State:** type and location	_____
10.45	Overall Exhaust Height	To clear dump body cab shield	_____
10.46	Exhaust Heat Shield	**Required:** 	_____
	TRANSMISSION:		
10.47	Transmission	• Allison 3000 RDS with 6-speed programming, • Ratio shall be as per inter-city dump body application. • Transmission shall come with load base Management Programming. • Transmission to PTO to operate the dump body.	_____
10.48	Allison SCAAN	The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator, the Allison SCAAN	_____
10.49	Transmission Fluids	Synthetic	_____
10.50	Shift Selector	Digital push-button type, dash mounted	_____
10.51	Cooling Capacity	Water to oil transmission cooler, as per manufacturer's recommendation for severe duty cycle	_____
10.52	Oil Level Dipstick	Bayonet type with high and low level markings	_____
10.53	Transmission Drain Plug	Magnetic type	_____

	FRONT AXLE:		
10.54	**Front Axle**	**Set back axle, Meritor or Detroit 12K axle 12,000 lbs. capacity, with synthetic fluid.** **State: make**	_____
	REAR AXLE:		
10.55	Rear Axle	Meritor 21,000 lbs. capacity, with synthetic fluid.	_____
10.56	Ratio	For 110 km/hr, as recommended for dump body application, **State:** ratio	_____
10.57	Inter-Axle Lock	**Required:** with dash mounted switch	_____
10.58	Differential Lock	**Required**: for drive axle with dash mounted Switch	_____
10.59	Hub Seals	Oil lubricated front and rear type	_____
	FRONT SUSPENSION:		
10.60	Front Suspension	Multi-leaf spring suspension, 12,000 lbs. capacity	_____
	REAR SUSPENSION:		
10.61	Rear Suspension	Air ride suspension, 21,000 lbs. capacity, axle, shall be as recommended for dump body application	_____
10.62	Suspension Control Valve	Manual dump valve for air suspension complete with dash mounted switch, indicator light, gauge and buzzer	_____
10.63	Auto Refill	**Required**: at 5 km/hr **Exact speed will be determined at a pre-production meeting**	_____
	RIMS, WHEELS AND HUBS:		
10.64	Front Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.65	Rear Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.66	**Hubs**	**Aluminum or Steel** **Note: Steel requires spacers**	_____
10.67	Wheel Nut Indicators	**Required:** on all wheel nuts	_____

TIRES:

10.68	Front Tires	11R 22.5 16 ply, snow, mud and ice rated for requested GVWR and application	_____
10.69	Rear Tires	11R 22.5 16 ply, snow, mud and ice rated for requested GVWR and application	_____

FRAME:

10.70	Frame	Single rail as recommended for dump body application	_____
10.71	Rust Inhibitor (Frame/Cross Member)	ARMOUR-SEAL ™ FRAME & CHASSIS COMPONENT PROTECTIVE UNDERCOATING: (or equivalent) Sodium, magnesium and calcium chloride resistant. Semi-permanent, high strength rubberized polymer blended.  **RHOMAR Industries, Inc.** Tricia McKnelly-Anderson Account Manager 2107 E Rockhurst Springfield, MO 65802 1.800.688.6221 417.866.5593 (fax) www.rhomar.com www.rhomar.com/products/armour-seal.	_____
10.72	Chassis Fasteners	Grade-8 threaded hex headed frame fasteners	_____
10.73	Rear Frame Towing Provisions	Towing provisions with 7-way pin receptacle to end of frame with two (2) extra feet of wiring to for ease of body installation.	_____

STEERING:

10.74	Steering	Tilt and telescopic, power, rated for front GVWR rating. Reservoir approximately 2 quart with see through tank.	_____

BRAKES:

10.75	Brakes	Hydraulic, ABS brakes for Class 5 Driver	_____
10.76	Parking Brake	**Required:**	_____
10.77	Dust Shields	**Required:** front and rear	_____
10.78	**Air Tanks**	**Shall be aluminum tanks with aluminum or stainless steel straps or nylon coated aircraft cable (3/16 dia.) with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion**	_____
10.79	Moisture Ejector	Required: Wabco, heated, in all air tanks	_____
10.80	Drain Valves	Required: Manual, chain or cable operated, on each air tank	_____
10.81	Air Dryer	Wabco Heated System Saver 1200 or equivalent **State:**	_____

FUEL TANK:

10.82	**Fuel Tank**	**Single 40 – 50 gallon fuel tank.** **Shall not impede in the installation of the body.** **State: maximum fuel capacity**	_____
10.83	Fuel Water Separator	**Required:** heated	_____
10.84	Tank Straps	Aluminum or Stainless Steel straps with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion **State:**	_____

CAB:

10.85	Cab	Conventional with corrosion inhibitor	_____
10.86	Cab Construction	Aluminum or Galvanized steel **State:**	_____
10.87	Cab Mounts	Air suspension	_____
10.88	Hood	High visibility hood	_____
10.89	Hood Fender Extensions	2-3 in. front fender extensions	_____
10.90	Front Grille	Stationary mounted to hood	_____

10.91	Cab Interior / Trim	Extreme climate insulation including cloth or vinyl headliner on roof, door panels and rear interior of cab	_____
10.92	Cab Silencer Package	**Required:** for minimal decibel level	_____
10.93	Hood/Firewall/Engine Insulations	Insulated hood liner, engine cover and firewall	_____
10.94	Floor Covering	Rubber mat with under-padding	_____
10.95	Floor Mats	Two (2), rubber	_____
10.96	Driver's Seat	High back, air suspension with foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.97	Passenger Seat	High back, air suspension with foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.98	Dashboard	Ergonomic (Wing) Design	_____
			
10.99	Sun Visors	Dual flip-up type	_____
10.100	Steering Wheel	Tilt and telescopic type	_____
10.101	12-Volt Power Outlet	**Required:** Two (2) with independent circuit	_____
10.102	Radio	Factory installed AM/FM/ with "hand free" Blue Tooth capability	_____
10.103	Starter Switch	Key operated complete with three (3) sets of keys	_____
10.104	Interior Light	Dome light with driver and passenger door switches	_____
10.105	Heater / Defroster	High output, capable of keeping all windows clear at an outside temperature of (-40°C)	_____
10.106	Air Conditioning	**Required:**	_____
10.107	Brake, Accelerator, Pedals	Floor or hanging type brake and accelerator pedal **State:**	_____
10.108	Horn	Dual electric	_____

10.109	Exterior Mirrors	Mirrors heated, lighted, 4-way motorized adjustment (with convex mirrors), suitable for 102 in. equipment width	_____
10.110	Down-View Mirror	**Required:** over passenger door, Approximately 5 in. x 4 in.	_____
10.111	Windows and Windshield	Tinted	_____
10.112	Power Windows	Power driver and passenger side	_____
10.113	Doors	Power door locks	_____
10.114	Windshield Wipers	Electric intermittent	_____
10.115	Wiper Blades	Heavy duty with winter type boot	_____
10.116	Windshield Washers	Electric, required with spray nozzles on wiper Blades	_____
10.117	Grab Handles	Dual exterior **State:** locations	_____
10.118	Grab Handles	Dual Interior	_____
10.119	Entrance Steps	Dual each side, open grate / grip type	_____
10.120	Winter Front	Heavy-duty vinyl with twist lock or snap type fasteners	_____
10.121	Exterior Sun Visor	**Required:**	_____

10.122 Strobe LED Lights (Beacons)

Qty two (2) Amber/Blue LED Beacons, Class 1 High Dome Strobe Lights complete with switch and labels. Mounted with aluminum or stainless steel brackets to B-Pillar

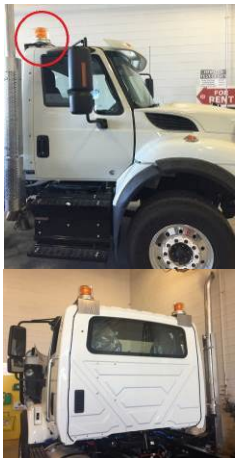
Note: Beacons and Mini Light Bar to be controlled by a single 3-Way switch with the following functions:
Amber – Off – Amber/Blue

Note: Need to be forward enough as not to interfere with the cab shield if equipped with one.

Whelen L31HMF

OR

SWS 22609



Location to be determined at a pre-production meeting

INSTRUMENTATION:

10.123	Instrumentation	• Oil Pressure Gauge • Coolant Temperature Gauge • Transmission Oil Temperature Gauge • Voltmeter Gauge • Air Reservoir Pressure Gauge with LAP Warning Light And Buzzer • Low Oil Pressure Warning Light and Buzzer • High Water Temperature Warning Light and Buzzer • Non-Resettable Type Engine Hour-Meter	_____

TOW HOOKS:

10.124	Tow Hooks	Front mounted and Rear mounted	_____
10.125	Weigh Scale Systems	**Required:** Model Air Weigh scale system for front and rear axles. **System must be tested and calibrated prior to delivery**.	_____

COLOURS:

10.126	Exterior Colour	White	_____
10.127	Interior Colour	Grey	_____

ACCESSORIES:

10.128	Flare Kit	Three (3) triangular reflectors, CVSA approved. Kit must be mounted or secured.	_____
10.129	Fire Extinguisher	5 lbs. Fire Extinguisher ABC type installed and secured **State:** location	_____
10.130	Back-Up Camera	**Required:** Quantity two (2) Location # 1 - back of vehicle Location # 2 - top of cab shield complete with protective guard	_____

Locations to be determined at pre-production meeting

10.131	Back-Up Camera Screen	In-Dash (Ergonomic (Wing) Dashboard) **OR** Dash mounted if standard dashboard is specified.  **Back-Up Camera Screen location to be determined at a pre-production meeting**.	_____ _____

DUMP BODY SPECIFICATIONS:

10.132	Type	Double Wall Dump Body The Dump Body shall be designed to accommodate a 1350 gallon water tank per below photo. This shall include all necessary anchor points. 	_____
10.133	Outside Length	Nominal 13 ft.	_____
10.134	Inside Length	Approximately 12 ft. 6 in.	_____
10.135	Outside Width	To match chassis track width Nominal 8 ft. 6 in.	_____
10.136	Inside Width	Approximately 7 ft. 3in. **To accommodate seasonal water tank installation**	_____
10.137	Front Height	To match chassis cab height.	_____

10.138	Construction Material (Inside)	All material that touches the material (internal walls, floor, gate, front wall, dog house) used in construction to be 3/16 in. Hardox 450 with **exception of the cab shield.**	_____
10.139	Construction Material (Outside)	10 Gauge 44W Structural Steel	_____
	FLOOR:		
10.140	Material	3/16 in. Hardox 450	_____
10.141	Floor	1-Piece or 2-Piece maximum and pieces shall be continuously welded	
10.142	Width	Nominal 86 in. **State:**	_____
10.143	Long Sill Material	3/16 in. formed steel, tapered hat section design, 8 in. – 10 in. height, continuously welded to the floor	_____
10.144	Floor Slope	Approximately 60 degree slope along the joint to the side wall. Slope shall extend upwards approximately 4 - 8 in. **If required design and installation to be determined at a pre-production meeting**.	_____
	FRONT:		
10.145	Front Construction	3/16 in. Hardox 450 continuously welded to sides and floor.	_____
10.146	Front Section	Shall be constructed to incorporate a nominal 12 in. L x 12 in. W x 60 in. H provision (Well Front) to contain the installed hoist	_____
10.147	Cab Shield	Formed from single sheet of mild steel, 24 in. deep, sloped @ 10° or to match cab contour complete with reinforced ends.	_____
10.148	Cab Shield Clearance	Cab shield sides to provide adequate headroom and clearance for entry and egress of vehicle cab.	_____

SIDES:

10.149	Construction and Material	Construction – double wall Outside Material 10 Gauge 44W Inside Material 3/16 in. Hardox 450 Clean side style formed sides without vertical reinforcements, welded into a 1-piece design, including self-cleaning bottom rail and formed, self-cleaning centre horizontal rib and sloped top rail	_____
10.150	Side Height	Approximately 30 in. measured from the floor without plank gussets	_____
10.151	Rear Side Post	3/16 in. Hardox 450, one (1) per side.	_____
10.152	Top Side Rail Material	**Heavy Duty** Rectangular tubing with 3/16 in. wall **State:** size Or Fabricated from 3/16 in. Hardox 450 **State:** method of construction	_____
10.153	Plank Gussets	2 in. x 6 in. planks with ½ in. diameter bolt holes.	_____
10.154	Planks	2 in. x 6 in. planks painted black on all sides, installed and bolted in gussets	_____

TIE DOWNS AND LADDERS:

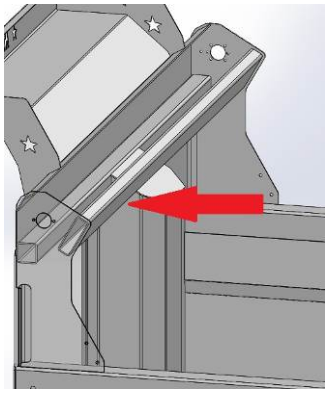
10.155	Tie Downs Eyes	**Required:** Four (4), Located on inside of dump body. • Two (2) near top/rear of each side • Two (2) near top/front of each side Tie downs shall be D-Rings. Tie downs eyes to have a lifting capacity rated for full box weight for lifting box during installation **Exact locations to be determined at a pre-production meeting**	_____
10.156	Inside Steps	One (1) per side, located at rear of body Approximately 12 in. L x 5 in. W, located approximately 20 in. from floor.	_____

10.157	Access Ladders	**Required:** Two (2) • Bolt-on installation • Fold-Down (Retractable) Design • one (1) located curb-side corner • one (1) located driver's side corner **Design and installation to be determined at a pre-production meeting** **Refer to Appendix A**	_____
10.158	Ladder Rungs	Traction type rungs • 13-gauge steel, 2¼ in. width • 4-hole design • Traction Tread Products or equal. **Refer to Appendix A** .	_____
10.159	Ladder Rungs Location	First rung to be 18-22 in. from ground level, approximately 14 in. rung spacing to top of body. **Design and location to be determined at a pre-production meeting** **Refer to Appendix A**	_____
10.160	Grab Handles	Located for ergonomic access to top of box. **Design and location to be determined at a pre-production meeting** **Refer to Appendix A**	_____
	TAILGATE:		
10.161	Style	Shall be a top hinge with greaseable fittings	_____
10.162	Tailgate Height	Approximately 38 in.	_____
10.163	Tailgate Operation	Tailgate shall not protrude above floor in horizontal or full down position.	_____
10.164	Standard	There shall be no gap between tailgate and the floor and sides when tailgate is in the closed or horizontal position.	_____
10.165	Tailgate Construction	Formed construction with one or two equally spaced horizontal or vertical ribs, and a self-cleaning bottom rail. Inside liner with 3/16 in. Hardox 450	_____
10.166	Tailgate Reinforcement	**Required:** Tailgate shall be reinforced with either heavy duty ⅜ in. end plates, or ¼ in. steel tubing.	_____

10.167	Anchor Pins	Top tailgate anchor pins 1¼ in. diameter min., self-locking/storing to top of side posts.	_____
		If retainer pin is used to lock top tailgate anchor pins, a small steel check chain is required, permanently fastened to the retainer pin.	_____
10.168	Support and Spreader Chains	⅜ in. transport Grade 70, adequately fastened complete with chain storage and two (2) removable links per chain.	_____
		Support and spreader chains shall be equipped with a protective cover.	_____
10.169	Tailgate Locking Mechanism	In-cab control, air operated with air brake pot or air cylinder operated trip.	_____
		State: method	
		The locking mechanism shall be adjustable to ensure adequate lock-up with tailgate closed.	_____

TARPAULIN:

10.170	Tarpaulin Type	Electric flip tarp, operable in-cab from driver's seat with aluminum arms. Elbow to ensure arms recess as low as possible along box sides and not in the way of loading.	_____
		State: make, model and type of material	
10.171	Tarp System	Tarp system shall stow on the cab shield, i.e., shall not protrude into the box area.	_____
10.172	Tarp Protection System	**Required:** to protect the roll from shifting material in the body	_____



Design and location to be determined at a pre-production meeting

10.173	Tarp Operation	Tarpaulin shall not block the visibility of the mini light bar when tarpaulin is in the stowed position.	_____

HOIST:

10.174 Requirements: _____

3-Stage, front mounted telescopic hoist, nitrided, quenched and polished cylinder stages, protected against corrosion, Mailhot G3 Series

Hoist to be sold, installed and serviced by an authorized dealer

10.175	Make and Model	**State:**	_____
10.176	Bore	Approximately 5 in. **State:**	_____
10.177	Hoist Capacity	Approximately 20 – 30 tons **State:** capacity	_____
10.178	Hoist Dump Angle	45° from horizontal, cylinder must lower under its own weight with empty load in low ambient temperatures.	_____
10.179	Hoist Connection	**Required**: live swivel	_____
10.180	Hoist Grease Fittings	**Required:** on all pivot pins.	_____

IN-CAB CONTROLS:

10.181	Cab Controls	Programmed through OEM dash mounted switches	_____
10.182	Switches	All switches shall be back-lit for night time use and clearly identified with engraved style, permanent type labels.	_____
		Supply corresponding valve and solenoid necessary for operation	_____

Switches:

- PTO Engagement
- Dump Box Up/Down
- Tailgate Open/Close
- Amber Lighting
- Blue Lighting
- Tarp Open/Close

HYDRAULICS:

10.183	PTO	Muncie or Chelsea electric/hydraulic power shift **State:** make and model	_____
10.184	Hydraulic Pump	**Required:** Transmission mounted PTO Pump to operate the dump body. Parker Dump Pump or equivalent in accordance with B6 Substitutes **State:** make and model	_____
10.185	Requirements	Shall be a 3-Line system	_____
10.186	Suction Line Valve	**Required:** easily accessible, lockable with bolts.	_____
10.187	Hydraulic Oil Reservoir	Passenger side, chassis frame mounted, **Aluminum** or **Stainless Steel** construction, baffled as required, complete with breather type filler cap with filter, filler strainer and sight gauge. **State:** material	_____

10.188	Hydraulic Oil	Univis N15 or equivalent **State:** type	_____
10.189	Capacity	Approximately 25 – 30 gallon **State:** size	_____
10.190	Drain Plug	¾ in. diameter.	_____
10.191	Fittings	**NO:** black steel or cast fittings **State:** type	_____
10.192	Labelling	Reservoir shall be clearly labelled "Hydraulic Oil" with a permanent type, engraved style label.	_____

HYDRAULIC FILTERS:

10.193	Return Filter	Serviceable without oil loss, tank mounted, complete with clogging indicator.	_____
10.194	Filter Standard	Filters shall contain a corrosion resistant coating, beta rating of 200, 10 micron particle size, and shall be ergonomically located for servicing.	_____
10.195	External Hydraulic Filter Pan	External Hydraulic filter shall have a stainless steel or aluminium pan located directly under the filter in case of a potential hydraulic leak and to avoid hydraulic fluid falling to the road. Design shall not impede the servicing of the filter.	_____

10.196	Shut-Off Valve	Ball type, located between reservoir and pump, secured in open position with a bracket and bolt.	_____
10.197	Hydraulic Hoses	Wire braid reinforced, rated for system operating pressure with 4 to 1 safety factor for burst pressure.	_____
10.198	Protection	Hydraulic hoses to be protected at wear and scuff location.	_____
10.199	Hose Fittings	Hydraulic full flow, crimp-on (non-reusable) type.	_____

ELECTRICAL & LIGHTING:

10.200	Conformance	All lighting to conform to: • C.M.V.S.S. • Manitoba Highway Traffic Act. • City of Winnipeg Lighting Visibility Standard http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf.	_____
10.201	Lighting	Supplier installed shall be **high count** LED lighting and shall be Truck-Lite, Whelen **or equivalent**	_____
10.202	Connection System	Weather Pack Sealed Connection System	_____
			
10.203	Grommets	Rubber grommets unless otherwise specified	_____
10.204	Combination Turn/Stop And Taillights	One (1) per side P/N Truck-Lite 44302R with P/N 44710 mounting grommets	_____
			
10.205	Back-Up Lights	One (1) per side P/N Truck-Lite 44206C with P/N 44710 mounting grommets	_____
			
10.206	3-Light Cluster	Three (3) P/N Truck-Lite10250R with P/N 10403 mounting grommets	_____
			

10.207 Clearance Lights

High count LED
P/N Truck-Lite10250R or 10250Y with P/N 10403 mounting grommets. _____

10.208 Blue Strobe Lights

One (1) per side with mounting grommets
P/N Whelen 5GA00FBR _____

10.209 Amber Strobe Lights

One (1) per side with mounting grommets
P/N Whelen 5GA00FAR _____

10.210 License Plate Light

Complete with license plate bracket.
P/N Truck-Lite 36140 (Light)
P/N Truck-Lite 36710 (Bracket) _____

Installed on Hitch Plate – Upper Right Corner

10.211 Traffic Arrow

SWS 50943 Traffic Arrow _____

- Mounted to Tailgate
- Bottom edge of the Traffic Arrow shall be 1.5 m (5 ft.) from ground level

Refer to Appendix A

10.212 Rear Light Mounting Location (Rear Sill) _____

- Combination Turn/Stop and Taillights, qty two (2), one per side
- Back-Up Lights, qty two (2), one per side
- 3-Light Cluster, qty three (3)
- Rear-Corner Clearance Lights, qty two (2), one per side

The lights shall be situated so that no debris contacts the lights while dumping.

Refer to Appendix A

10.213 Rear Light Mounting Location (Rear Posts) _____

- Amber Strobe Lights, qty two (2), one per side
- Blue Strobe Lights, qty two (2), one per side
- Rear-Corner Clearance Lights, qty two (2), one per side

Refer to Appendix A

10.214 Clearance Light Mounting Locations: _____
- Front – qty two (2), located one on each bottom corner
- Sides – qty two (2) per side, located on front and rear bottom corners.

10.215	Standard	No clearance light shall protrude beyond the dump body.	_____
10.216	Standard	Taillights and back-up lights shall be fully visible when tailgate is lowered to horizontal position.	_____
10.217	Harnesses	Harness system, properly routed and secured. All harnesses shall be internally grounded, no exceptions.	_____
10.218	Junction Box	Junction box complete with necessary compression fittings, required for all vehicle lighting harness connections, located inside rear of truck frame.	_____
10.219	All Plug-In Connectors	All plug-in connectors shall be coated with NYK compound prior to assembly.	_____
10.220	Back-Up Alarm	97 dB(A), installed near rear of dump body, located to be protected from damage.	_____

10.221 Mini Light Bar

- Whelen RDLPPAB Amber/Blue LED Mini Light Bar or equivalent in accordance with B6 Substitutes
- Mounted to top of cab guard
- Protected by Branch Guard
- 360° visibility when tarpaulin is in stowed position.
- Mini Light Bar shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Light Bar Amber/Blue” with a permanent type, engraved style label.

_____

Note: Beacons and Mini Light Bar to be controlled by a single 3-Way switch with the following functions:
Amber – Off – Amber/Blue

10.222 Branch Guard

Heavy duty branch guard constructed by ⅜ in. round bar or equivalent.

_____

10.223	Wiring	All LED strobe lights shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Strobes” with a permanent type, engraved style label. All wiring for back-up alarm, warning lights, strobes and trailer connector shall be colour coded, loomed and properly secured.	_____ _____
10.224	Trailer Connector	6-Way Round or SAE J560 7-Way Flat trailer receptacle. **Type to be determined at pre-production meeting** .	_____
10.225	Electrical Connectors	All electrical connectors shall be crimped, soldered and then sealed using heat shrink tubing	_____
10.226	Joining Of Wires	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)	_____
10.227	Wiring Routing	Any holes required to run wires through shall be drilled (not punched), grommeted and sealed	_____
	WELDING:		
10.228	Standard	All welds shall be continuous welds. All welding performed shall conform to CSA Standard W47.1-03 and W59-03.	_____
	INSTALLATION:		
10.229	Drilling	Any holes required in the chassis frame web must be drilled and reamed to fit bolts.	_____
10.230	Standard	Drilling on chassis frame flanges is not permitted. Welding on the chassis frame is not permitted, with the exception of installation of dump body pivot support.	_____
10.231	Tire Clearance	Three (3) inches with rear suspension air bags lowered.	_____
10.232	Clearance	Clearance between dump body and back of truck cab shall be 3 in.	_____

MISCELLANEOUS:

10.233 Rear Hitch Plate

¾ in. thick solid steel, (laminated plates not acceptable) installed to chassis frame. _____

Design (including overhang) and installation to be determined at pre-production meeting.

10.234 Pintle Hitch and Receiver

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

Receiver – 2 in. x 6 in. Length
State: size

Design and installation to be determined at pre-production meeting

10.235 D-Ring with Mounting Bracket (Required for Trailer Safety Chains)

One (1) each side of hitch
Buyers Products B48 or equal. _____

10.236 Shovel Holder

Shovel holder with handle latch to secure shovel in place _____

Buyers Products P/N SH675SS

Location to be determined at pre-production meeting

10.237 Rear Fenders

Heavy Duty rear poly half-moon fenders. Shall be installed to have sufficient clearance from body and when chassis suspension is dumped for dump body operation.

10.238 Mud Flaps

Required: Black rubber, no-name, front and rear of back tires complete with anti-sail bracket on each mud-flap. Rear mud flaps shall not contact the ground when the dump body is at maximum dump angle _____

10.239 Isolators

All interfaces between aluminium and steel shall be separated by an approximately 1/16 in. thick rubber or neoprene sheet and are to be bolted through with stainless steel bolts and non-conductive bushings _____

10.240 Grease Fittings

Required: on tailgate release mechanisms, pivot points and tailgate _____

GREASING SYSTEM:

10.241 Complete unit shall have Groeneveld CPL Systems Inc. or Lubecore Auto Greasing System. _____

10.242 Single Line, EP2 and automatic low level shut-off with in-cab red light indicator. _____

10.243 All grease fittings for the entire chassis and body (including cylinder mounts, pivot points, dump body prop, plow etc.), shall be readily accessible or shall be equipped with remote grease zerks as required. _____

10.244 **Grease Points:** _____
Approximately twenty-six (26) points on cab & chassis
Approximately eight (8) – twelve (12) points on body (depending on body configuration)

State: quantity of grease points on cab & chassis: _____

State: quantity of grease points on body: _____

10.245 Grease pump will pump Original Equipment Manufacturer specified EP2 grease from -40^{o}C to + 50^{o}C. _____

10.246 One way check valves on each line _____

10.247 Low temperature compatible 800 bar/12000 PSI grease line with a bending radius of ¾ inch. With a 5 year line breakage guarantee for on road trucks. _____

10.248 One piece flow dividers with manual over ride. _____

10.249 **Warranty:** three (3) years parts and labour. _____

TOOLBOXES:

10.250 Tool Boxes _____

Aluminum Tool Boxes

- Mounted on driver or passenger side frame
- Approximately 24 in. x 24 in. x 48 in.
- Barn Door style doors

State: quantity, dimensions, material, and recommended location as set by the manufacturer

SAFETY:

10.251 Dump Body Prop _____

Double Prop Design

- Steel tubing construction, to support 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
- Operating Handle to be positioned outside of chassis frame rails for operator safety (Driver's Side)
- Dump body prop to be complete with receiving bracket.
- Safety Lock Pin and Chain required to hold arms in the "Up" position (Driver Side)
- Refer to below pictures for sample designs

Design and installation to be confirmed at a pre-production meeting.

Driver Side - Up

Driver Side - Down

Driver Side – Down

Driver Side – Up

Passenger Side - Down

Safety Lock Pin and Chain

10.252 Dump Body Prop Colours

All components (prop, handle and receiving bracket) shall be painted with **Safety Orange** for ease of identification

_____

10.253	Dump Body Stowage Warning System	**Required:** Warning light and buzz system shall be installed on the dash and shall be actuated when dump body is not in the fully stowed position. **State:**	_____
10.254	PTO	**Programmed:** To disengage the PTO when 5 kph is reached to prevent the driver from driving off when the body is up. **Exact speed to be determine at pre-production meeting**	_____
10.255	Pre-Trip Exterior Light Inspection	**Programmed:** When activated, the vehicle lights repeatedly flash in a specific sequence to allow the operator to verify that the exterior lights are functioning. The light test sequence tests: • Park Lights • Headlights (low and high beams) • Right/left front/rear turn lights • Brakes Lights • Mini Light Bar • Beacon(s) • Strobe Lights • Clearance Lights	_____
10.256	Warning Light Over Ride	**Programmed:** Rear strobe lights to be programmed to allow for an over-ride for turn signals and brake lights when strobe lights are on. Other drivers will be able to determine if the truck is stopping or turning when strobe lights are on.	_____
	FINISH:		
10.257	Preparation	Complete dump body and all ladders, hitch plates, reservoirs, steel brackets, etc. shall be sandblasted, properly cleaned, primed and finished with the Endura or DuPont paint process as follows:	_____
10.258	Primer	**Required:** Epoxy or Polyurethane primer Endura EP321 Intermix Epoxy Primer or DuPont polyurethane. Two (2) coats – Dry Film Thickness 3.0 – 4.0 mils	_____

10.259	Paint	Required: Polyurethane Colour: Black Endura EX-2C or DuPont Polyurethane Two (2) coats: 3 - 5 mils Wet Film Thickness with a total combined overall average Dry Film Thickness of 4 – 6 mils Note: Complete body (inside and outside) shall be painted	_____

OPTIONS:

Four (4) Units to have the following:

WATER TANK

Note: Configuration to be priced only as indicated on Form B: Prices

Water Tank and Accessories to be purchased from:

Polywest Ltd.
3700B McGillivray Blvd
Winnipeg, Manitoba

Horizontal Leg Tank HD Item No. 40133
Horizontal Steel Support Band Item No. 60079
Liquid Surge Stabilizer: 15-3/4 inch Item No. 69004-LSS15

10.260	Capacity	6142 L (1350 Imperial Gallon)	_____
10.261	Type	Poly construction, semi-transparent	_____
		Horizontal Leg Tank HD Item No. 40133	
10.262	Configuration	Round or oval, complete with molded-in legs	_____
10.263	Diameter	Approximately 63 in. **State:**	_____
10.264	Length	Approximately 134 in. **State:**	_____
10.265	Lid Size	Approximately 16 in. **State:**	_____

10.266	Outlet Fitting	**Required:** at bottom of front of tank, round	_____
10.267	Support Bands	**Required:** Rated for full-load tank capacity Four (4) per Tank **Horizontal Steel Support Band** **Item No. 60079**	_____
10.268	Liquid Surge Stabilizers	**Required:** 162 per Tank **Liquid Surge Stabilizer: 15-3/4 inch** **Item No. 69004-LSS15**	_____

TAILGATE AND FALL ARREST SYSTEM

10.269	Tailgate	Fabricated and Installed per attached drawings. All dimensions are approximate **Final design and installation to be determined at pre-production meeting.** **Refer to Appendix A**	_____
10.270	Fall Protection System with Ladder and Grab Rails	Fabricated and Installed per attached drawings. All dimensions are approximate **Final design and installation to be determined at pre-production meeting.** **Refer to Appendix A**	_____

10.271 One (1) Unit to have the following:

WATERING ARM

Note: Configuration to be priced only as indicated on Form B: Prices

The multi-purpose equipment will be completely hydraulically operated and will serve as a high-pressure sidewalk washing and a low pressure watering of flowers either on the ground or suspended in the air.

MODEL: TENCO PCL- 500 WATERING ARM

10.272	Directional	The arm and its support to be mounted on a vertical pivot and entered on the bumper so as to be able to swing from left to right at a 0 degree to 180 degree angle.	_____
10.273	Extendable	Extendable arm to permit watering in any direction at a distance from 1000 mm to 4318 mm (39 in. to 170 in.) and to an approximate height of 500 mm (20 in.)	_____
10.274	Lifting	The lifting of the arm shall permit the sprinkler head to be placed at a minimum height of 5000 mm (197 in.) from the ground and at a horizontal distance from its pivot equal to 2438 mm (96 in.)	_____
10.275	Mechanism	Directional mechanism for the spray of water must possess a double joint at the end of the arm to permit rotation of the spray up to 360 degrees angle from its axis and 180 degrees from its transporting position.	_____

10.276	Obstruction	Once the arm is in a retracted position for transport, the arm shall occupy a space on either the left or right side of the bumper and it should not be wider than the width of the vehicle and not interfere with the headlights.	_____
10.277	Safety	A hydraulic safety lock shall hold the handle in a folded position on the right side.	_____
10.278	Dimensions	The height of the arm in a transport position should not to exceed approximate 3400 mm (134 in.)	_____
10.279	Transport Position	Minimum play while in a transport position must exceed 350 mm (14 in.) measured from the ground.	_____
10.280	Installation	Installation of the arm shall not affect the opening of the truck hood. A manual hydraulic pump shall do the movement and repositioning of the arm.	_____
		Installation of the directional sidewalk washer/sprinkler shall be mounted on fastening plates bolted onto the frame of the truck and will be easily removed and transferred to another vehicle.	_____
10.281	Construction	The Watering Arm shall be constructed of shaped tubular steel in order to obtain a maximum of rigidness and weight relation. Tubular steel shall be approximate (2 ½ in. X 2 ½ in. X ¼ in.)	_____
10.282	Cylinders	Two (2) hydraulic cylinders join the mechanism of the arm	_____
10.283	Arm	The watering arm shall move up and down by means of a hydraulic cylinder, motor, rolling chain and gears	_____
10.284	Hydraulics	Hydraulic system shall serve six (6) functions of which are controlled electro-hydraulically from the cab of the truck.	_____

10.285	Control Functions	Functions are: • Positioning and /or adjusting the arm • Extending the arm • Raising the arm • Directing the spray of water • Rotating the spray of water • Pivoting of the security pin	_____
10.286	Control Panel	Shall be equipped with identification labels of all different operational functions that are either engraved or in raised characters.	_____
		All controls are shall be reachable for the operator.	_____
10.287	Joystick	Shall permit smooth control without jerking	_____
10.288	Pressure Control	The hydraulic system shall be equipped with pressure regulators that will limited the speed of the lifting movements and the extending, and directional arm.	_____
10.289	Hoses and Valves	Hoses and hydraulic valves will be located outside of the cab	_____
10.290	Sidewalk Watering	Sidewalk watering device shall be high-pressure with the capacity to direct the spray of water at its angle of attack.	_____
10.291	Watering of Plants	Shall have a brass shower head for watering plants. Approximately 2 in. mounted on a ¾ in. hose that is 700 mm in length. Must be able to control the volume and water pressure for the purpose of watering plants	_____
10.292	~~**Hose**~~	~~**Shall have a hose approximately 5 cm (2 in.) in order to feed the sidewalk washer/sprinkler from a reservoir.**~~	_____

11.0 **WARRANTY**

11.1 The body warranty on the complete vehicle (excluding the chassis) shall include 100% replacement parts and labour at no cost to the City and shall cover the complete equipment and all parts thereof against defects of workmanship, construction and materials for one (1) year from the date the equipment is put into service by the City of Winnipeg. _____

11.2 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 _____

BODY WARRANTY

11.3	Main Frame - Structural	**State:**	_____
11.4	Frame – Non-Structural	**State:**	_____
11.5	Components e.g. Pumps	**State:**	_____
11.6	Hydraulics	**State:**	_____
11.7	Hoist and Cylinder	**State:**	_____
11.8	Electrical	One (1) year **State:**	_____
11.9	LED Lighting	**State:**	_____
11.10	Paint	**State:**	_____

CAB & CHASSIS WARRANTY

11.11	Basic Vehicle - Chassis	One (1) year, unlimited km, **State:**	_____
11.12	Electrical	One (1) year **State:**	_____
11.13	LED Lighting	**State:**	_____
11.14	Batteries	One (1) year, unlimited km **State:**	_____
11.15	Drivetrain	Two (2) years, unlimited km **State:**	_____
11.16	Cab Structure/Corrosion	Five (5) years, unlimited km **State:**	_____
11.17	Frame & Cross-Members	Five (5) years, unlimited km **State:**	_____
11.18	Cab Paint	One (1) year or 160,000 km **State:**	_____
11.19	Engine	Three (3) years or 240 000 km **State:**	_____

11.20	Transmission	Two (2) years, unlimited km **State:**	_____
11.21	Axles - Front & Rear	Two (2) years or 161 000 km **State:**	_____
11.22	Components	**State:**	_____
	Other Warranties		
11.23	Water Tank	**State:**	_____
11.24	Watering Arm	**State:**	_____

12.0 **DELIVERY**

12.1 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 WFMA 185 Tecumseh Street, Winnipeg MB. The successful bidder shall be notified by the Contractor Administrator the delivery address prior to issuance of the purchase order _____

12.2 Delivery Time: Equipment shall be delivered between 8:00 am and 2:00 pm on Business Days _____
State: Delivery Date

12.3 Delivery Contact: The Contractor shall contact the Contract Administrator prior to delivery of the equipment. _____

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

13.0 **MANUALS**

13.1 Manuals supplied under this Contract shall cover the complete equipment including all components thereof, CD or USB flash drive is preferred where available. _____

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

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

b) Parts and service manuals – One (1) complete set including preventative maintenance schedules. CDs or USB flash drive are preferred. _____

14.0 **PARTS/LABOUR DISCOUNT**

14.1 Bidder to provide City of Winnipeg Parts Discount % Pricing from retail parts pricing. **State: percentage discount** _____%

14.2 Bidder to provide City of Winnipeg Labor Discount % Pricing from Retail shop labor rate. **State: percentage discount** _____%

15.0 **FIRST SERVICE PREVENTATIVE MAINTENANCE KIT**

15.1 In order to assure minimum downtime of the equipment in future service, the Contractor shall provide one (1) complete replacement set of new OEM filters for each unit purchased. The set of required filters shall include (if applicable to the equipment type) air, fuel, oil, cab and hydraulic, or otherwise all known necessary common replacement filters required for the first preventative maintenance servicing. _____

15.2 The Contractor shall provide a list of factory recommended lubricants to be used with the equipment, as well as a complete cross reference guide for all warranty approved lubricants and filters that can be used during preventative maintenance servicing. _____

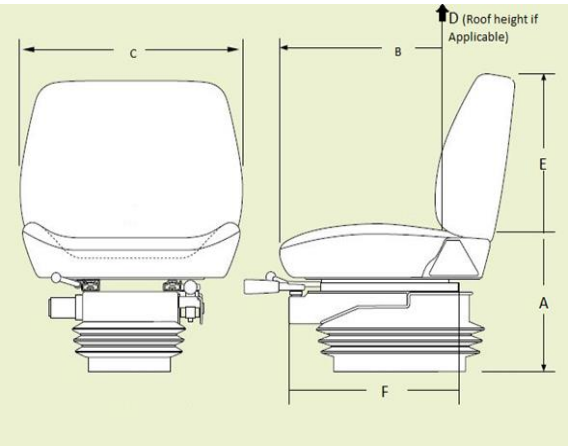
16.0 **ERGONOMIC SPECIFICATIONS**

Entry/ Exit

16.1	First step entry height	**State:** height of first step in inches	_____
16.2	First handhold entry height	**State:** first handhold entry height in inches	_____
16.3	Access to equipment	**State:** door opening height in inches	_____
16.4	Access to equipment	**State:** door opening width in inches	_____
16.5	Designed to prevent slipping	Anti-slip steps/handholds **(Y or N)?**	_____

Seat

16.6 Use diagram to answer questions.



16.7	Sitting Height Range (from floor (where feet rest) (A))	**State:** seat height range in inches	_____
16.8	Seat Length/Depth (B)	**State:** seat length/depth in inches	_____
16.9	Seat Width (C)	**State:** seat width in inches	_____
16.10	Cab Height (from seat to roof (if applicable) (D))	**State:** cab height range in inches	_____
16.11	Back Rest Height (E)	**State:** back rest height in inches	_____
16.12	Seat Travel Range (F)	**State:** seat travel in inches	_____
16.13	Lumbar Support	Is lumbar support provided **(Y or N)?**	_____
16.14	Head Rest	Is head rest provided **(Y or N)?**	_____
16.15	Seat is made of breathable material	**State:** type of seat material	_____

Operation

16.16	Reaching Distance (to usual work)	**State:** reaching distance in inches	_____
16.17	Maximum Reaching Distance	**State:** maximum reach distance in inches	_____
16.18	Adjustable Pedals (accelerator/brake/clutch)	Are pedals adjustable **(Y or N)?**	_____
16.19	Adjustable Steering Wheel	Is steering wheel adjustable **(Y or N)?**	_____
16.20	Adjustable Shoulder Belt	Is belt adjustable and anchored **(Y or N)?**	_____

Cargo Area

16.21	Lid opens to provide adequate space	Adequate space provided **(Y or N)?**	_____
16.22	Loading Height	**State:** trunk height in inches	_____

Environment

16.23	Operator compartment is insulated from equipment noise (while operating)	**State:** dB inside cab while operating	_____
16.24	Operator insulated from equipment vibration	Is operator insulated from vibration (Y or N)?	_____
16.25	Heating/Cooling Systems	**State:** cab temperature range	_____
16.26	Cab Lighting	**State:** lumens inside cab	_____

Maintenance/ Inspection

16.27	Lift Assistance (when necessary)	Is lift assistance provided **(Y or N)?**	_____
16.28	Easy Access (to compartment doors)	Is easy access provided **(Y or N)?**	_____
16.29	Include any other relevant ergonomic specifications and applicable range of adjustment		_____

FORM N (R1): DETAILED SPECIFICATIONS 17014

SINGLE AXLE CHASSIS WITH A 13' X 8' LANDSCAPE DEVELOPMENT DUMP BODY

1.0 DESCRIPTION OF EQUIPMENT/APPLICATION

1.1 These specifications describe **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body** and other equipment and features as specified herein. These units are an integral portion of the City of Winnipeg Parks Maintenance equipment fleet as they are utilized year round during all seasons. The Trucks will be used for hauling soil, sand, wood chips, snow etc. The utilization of the trucks is 80% Hauling and 20% snow. The trucks will be used by only two (2) operators.

1.2 The **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body** shall be new 2017 model year or newer.

1.3 The **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body** 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 **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body** shall comply with the applicable regulations:

- Highway Traffic Act
- Manitoba Motor Vehicle Act
- Canadian Motor Vehicle Safety Standards, CMVSS Transport Canada
- National Safety Mark, NSM
- Manitoba/Winnipeg 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.

2.4 The manufacturer/installer shall be a certified vehicle completer and must affix their National Safety Mark (NSM) certification sticker on each unit.

State NSM number: _____

3.0 SERVICE FACILITY

3.1 For the purpose of warranty repairs, the supplier shall have an authorized service facility located within 10 kilometres 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 B11, 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 REFERENCES

4.1 If available, please provide five (5) 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 **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body** body being 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 **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body**, 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 **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body** 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 The **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body** must be fully fuelled upon delivery **(no exceptions).**

9.0 QUALIFICATIONS OF MANUFACTURER & CONTRACTOR

9.1 The manufacturer of the **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body** shall have five (5) years continuous experience manufacturing **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body**

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 **Single Axle Chassis with a 13' x 8' Landscape Development Dump Body** of the type being offered.

10.0 **SPECIFICATIONS**- **(CHASSIS MUST BE SUPPLIED FROM A LOCAL WINNIPEG DEALER CHASSIS PROVIDER)** _____

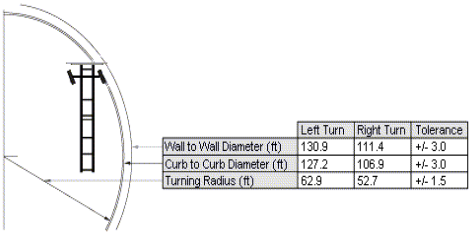
CHASSIS:

10.1 Weights: _____

The Trucks shall not exceed the City of Winnipeg’s limit for gross vehicle weight, axle and tire loads

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) – 9100 kg (20,056 lbs.)
- Tire load – 9 kilograms for each millimeter width of tire (approximately 500 lbs. per inch of tire width).

10.2	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 two (2) operators, all attachments and full of fuel.		_____
10.3	GVWR	• GVWR Total 33,000 lbs. • GVWR Front 12,000 lbs. • GVWR Rear 21,000 lbs.	_____
10.4	Cab	Conventional with corrosion inhibitor	_____
10.5	Cab to Axle	As required for 13' x 8' Dump Body	_____
10.6	Wheelbase	As required for 13' x 8' Dump Body	_____
10.7	After-Frame	As required for 13' x 8' Dump Body	_____
10.8	Bumper To Back Of Cab	BBC Approximately 106-110 in. **State:**	_____
10.9	Turning Radius	Turning Radius **State:** vehicle turning radius Example:  **a) Wall to Wall (ft.)** **b) Curb to Curb(ft.)** **c) Turning Radius (ft.)**	_____

	Left Turn	Right Turn	Tolerance
Wall to Wall Diameter (ft)	130.9	111.4	+/- 3.0
Curb to Curb Diameter (ft)	127.2	106.9	+/- 3.0
Turning Radius (ft)	62.9	52.7	+/- 1.5

ENGINE:

10.10	Type	Tier IV Final Diesel, inline 6-cylinder	_____
10.11	Horsepower	Approximately 300 HP gross	_____
10.12	Torque	Approximately 800 lb-ft	_____
10.13	Engine Shut Down	Low oil pressure / high water temperature	_____
10.14	Air Intake Warmer	**Required:**	_____
10.15	Fuel Shut-Off	Electric solenoid type	_____
10.16	Air Intake	Side of hood air intake	_____
10.17	Air Cleaner	Dry type, suitable as for a 13' x 8' Dump Body	_____
10.18	Air Intake Restriction	Dash mounted restriction indicator	_____
10.19	Oil Drain Plug	Magnetic type	_____

10.20	Oil Filter	Full flow, spin-on type	_____
10.21	Fuel Filter	Spin-on type	_____
10.22	Fuel/Water Separator	Heated, drainable under hood	_____
10.23	Fuel Line Primer Pump	**Required:**	_____
10.24	Block Heater	Immersion type, Approximately 1000 Watt with covered recessed male plug, located under driver's side door	_____
10.25	Radiator	Aluminum 1000 - 1200 square inch **State:** size	_____
10.26	Coolant	**Extended Life** coolant, antifreeze to -35°F (-37°C)	_____
10.27	**Coolant Filter**	**If Available**	_____
		Or	
		Coolant Maintenance Program **Extended life coolant maintenance is test strip every approximately 500 hours and fluid change at 10,000 hours.** **State: Test strip and fluid change intervals**	_____
10.28	Coolant Hoses	Silicone type or Gates Blue Stripe	_____
10.29	Fan Drive	Thermostatically controlled, automatic type with dash switch	_____
10.30	Air Compressor	Water cooled, pressure lubricated, 15-18 cfm	_____
10.31	Diesel Exhaust Fluid (DEF) Tank	Approximately 19 – 36 Litres or largest size per application. Located Driver's side **State:** size and location	_____
	ELECTRICAL SYSTEM:		
10.32	Electrical Connector's	Plug-in, sealed type	_____
10.33	Anti-Corrosion Electrical Package	Controllers and sensitive electrical components (PCM, Harnesses etc.) mounted in cab **State:** locations	

10.34	Alternator	Delco Remy 36SI Heavy Duty, Brushless type 160 -180 Amp Pad Mount Remote Sense **State:** make and model	_____ _____
10.35	**Starter**	**Delco Remy 41MT or 39MT** **Heavy Duty** **Over-Crank Protection** **State: make and model**	_____ _____
10.36	Circuit Breakers	Auto-reset, readily accessible	_____
10.37	Batteries/Battery Location	Three (3) batteries, 12-volt, group 31, approximately 2700-2850 CCA combined Batteries not to impede with the installation of the body **State:** location	_____
10.38	**Battery Disconnect**	**Required:** **For Air Brakes:** **In-cab mounted outboard of driver's seat** **State: location** **For Hydraulic Brakes:** **State: Method of battery disconnect**	_____ _____ _____
10.39	Battery Boost Terminal	Remote battery boosts terminal(s), **protected from road spray.** **State:** location **Exact location to be determined at pre- production meeting**	_____
10.40	Cab Marker Lights	LED Cab or LED Sun Visor	_____
10.41	2-Way Radio Circuit	Independent 20 Amp circuit, ignition powered, wired under dash loose, labelled	_____
10.42	Accessory Switches	**Required:** Six (6). All switches complete and wired for body installation, labeled and backlit	_____
10.43	Mega Fuse Box	Located in-cab or under-cab and shall be sealed. **State:** location and method of sealing	_____
	EXHAUST SYSTEM:		
10.44	Exhaust	Horizontal exhaust cylinder and vertical right hand tail pipe. Exhaust not to impede in the installation of the body. **State:** type and location	_____

10.45	Overall Exhaust Height	To clear dump body cab shield	_____
10.46	Exhaust Heat Shield	**Required:** 	_____
	TRANSMISSION:		
10.47	Transmission	• Allison 3000 RDS with 6-speed programming, • Ratio shall be as per inter-city dump body application. • Transmission shall come with load base Management Programming. • Transmission to PTO to operate the dump body.	_____
10.48	Allison SCAAN	The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator, the Allison SCAAN	_____
10.49	Transmission Fluids	Synthetic	_____
10.50	Shift Selector	Digital push-button type, dash mounted	_____
10.51	Cooling Capacity	Water to oil transmission cooler, as per manufacturer's recommendation for severe duty cycle	_____
10.52	Oil Level Dipstick	Bayonet type with high and low level markings	_____
10.53	Transmission Drain Plug	Magnetic type	_____
	FRONT AXLE:		
10.54	**Front Axle**	**Set back axle, Meritor or Detroit 12K axle 12,000 lbs. capacity, with synthetic fluid.** **State: make**	_____
	REAR AXLE:		
10.55	Rear Axle	Meritor 21,000 lbs. capacity, with synthetic fluid.	_____
10.56	Ratio	For 110 km/hr, as recommended for dump body application **State:** ratio	_____

10.57	Inter-Axle Lock	**Required**: with dash mounted switch	_____
10.58	Differential Lock	**Required**: for drive axle with dash mounted Switch	_____
10.59	Hub Seals	Oil lubricated front and rear type	_____
	FRONT SUSPENSION:		
10.60	Front Suspension	Multi-leaf spring suspension, 12,000 lbs. capacity	_____
	REAR SUSPENSION:		
10.61	Rear Suspension	Air ride suspension, 21,000 lbs. capacity, axle, shall be as recommended for dump body application	_____
10.62	Suspension Control Valve	Manual dump valve for air suspension complete with dash mounted switch, indicator light, gauge and buzzer	_____
10.63	Auto Refill	**Required**: at 5 km/hr **Exact speed will be determined at a pre-production meeting**	_____
	RIMS, WHEELS AND HUBS:		
10.64	Front Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.65	Rear Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.66	**Hubs**	**Aluminum or Steel** **Note: Steel requires spacers**	_____
10.67	Wheel Nut Indicators	**Required**: on all wheel nuts	_____
	TIRES:		
10.68	Front Tires	11R 22.5 16 ply, snow, mud and ice rated for requested GVWR and application	_____
10.69	Rear Tires	11R 22.5 16 ply, snow, mud and ice rated for requested GVWR and application	_____
	FRAME:		
10.70	Frame	Single rail as recommended for dump body application	_____

10.71	Rust Inhibitor (Frame/Cross Member)	ARMOUR-SEAL ™ FRAME & CHASSIS COMPONENT PROTECTIVE UNDERCOATING: (or equivalent) Sodium, magnesium and calcium chloride resistant. Semi-permanent, high strength rubberized polymer blended.  **RHOMAR Industries, Inc.** Tricia McKnelly-Anderson Account Manager 2107 E Rockhurst Springfield, MO 65802 1.800.688.6221 417.866.5593 (fax) www.rhomar.com www.rhomar.com/products/armour-seal.	_____
10.72	Chassis Fasteners	Grade-8 threaded hex headed frame fasteners	_____
10.73	Rear Frame Towing Provisions	Towing provisions with 7-way pin receptacle to end of frame with two (2) extra feet of wiring to for ease of body installation.	_____
	STEERING:		
10.74	Steering	Tilt and telescopic, power, rated for front GVWR rating. Reservoir approximately 2 quart with see through tank.	_____
	BRAKES:		
10.75	Brakes	Hydraulic, ABS brakes for Class 5 Driver	_____
10.76	Parking Brake	**Required:**	_____
10.77	Dust Shields	**Required**: front and rear	_____

10.78	**Air Tanks**	**Shall be aluminum tanks with aluminum or stainless steel straps or nylon coated aircraft cable (3/16 dia.) with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion**	_____
10.79	Moisture Ejector	**Required:** Wabco, heated, in all air tanks	_____
10.80	Drain Valves	**Required:** Manual, chain or cable operated, on each air tank	_____
10.81	Air Dryer	Wabco Heated System Saver 1200 or equivalent **State:**	_____
	FUEL TANK:		
10.82	**Fuel Tank**	**Single 40 – 50 gallon fuel tank.** **Shall not impede in the installation of the body.** **State: maximum fuel capacity**	_____
10.83	Fuel Water Separator	**Required:** heated	_____
10.84	Tank Straps	Aluminum or Stainless Steel straps with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion **State:**	_____
	CAB:		
10.85	Cab	Conventional with corrosion inhibitor	_____
10.86	Cab Construction	Aluminum or Galvanized steel **State:**	_____
10.87	Cab Mounts	Air suspension	_____
10.88	Hood	High visibility hood	_____
10.89	Hood Fender Extensions	2-3 in. front fender extensions	_____
10.90	Front Grille	Stationary mounted to hood	_____
10.91	Cab Interior / Trim	Extreme climate insulation including cloth or vinyl headliner on roof, door panels and rear interior of cab	_____
10.92	Cab Silencer Package	**Required**: for minimal decibel level	_____
10.93	Hood/Firewall/Engine Insulations	Insulated hood liner, engine cover and firewall	_____
10.94	Floor Covering	Rubber mat with under-padding	_____
10.95	Floor Mats	Two (2), rubber	_____

10.96	Driver's Seat	High back, air suspension with foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.97	Passenger Seat	High back, air suspension with foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.98	Dashboard	Ergonomic (Wing) Design	_____

10.99	Sun Visors	Dual flip-up type	_____
10.100	Steering Wheel	Tilt and telescopic type	_____
10.101	12-Volt Power Outlet	**Required :** Two (2) with independent circuit	_____
10.102	Radio	Factory installed AM/FM/ with "hand free" Blue Tooth capability	_____
10.103	Starter Switch	Key operated complete with three (3) sets of keys	_____
10.104	Interior Light	Dome light with driver and passenger door switches	_____
10.105	Heater / Defroster	High output, capable of keeping all windows clear at an outside temperature of (-40°C)	_____
10.106	Air Conditioning	**Required:**	_____
10.107	Brake, Accelerator, Pedals	Floor or hanging type brake and accelerator pedal **State:**	_____
10.108	Horn	Dual electric	_____
10.109	Exterior Mirrors	Mirrors heated, lighted, 4-way motorized adjustment (with convex mirrors), suitable for 102 in. equipment width	_____
10.110	Down-View Mirror	**Required**: over passenger door Approximately 5 in. x 4 in.	_____
10.111	Windows and Windshield	Tinted	_____
10.112	Power Windows	Power driver and passenger side	_____
10.113	Doors	Power door locks	_____
10.114	Windshield Wipers	Electric intermittent	_____
10.115	Wiper Blades	Heavy duty with winter type boot	_____

10.116	Windshield Washers	**Required**: Electric, with spray nozzles on wiper blades	_____
10.117	Grab Handles	Dual exterior **State:** locations	_____
10.118	Grab Handles	Dual Interior	_____
10.119	Entrance Steps	Dual each side, open grate / grip type	_____
10.120	Winter Front	Heavy-duty vinyl with twist lock or snap type fasteners	_____
10.121	Exterior Sun Visor	**Required:**	_____

10.122 Strobe LED Lights (Beacons)

Qty two (2) Amber/Blue LED Beacons, Class 1 High Dome Strobe Lights complete with switch and labels. Mounted with aluminum or stainless steel brackets to B-Pillar

Note: Beacons and Mini Light Bar to be controlled by a single 3-Way switch with the following functions:
Amber – Off – Amber/Blue

Note: Need to be forward enough as not to interfere with the cab shield if equipped with one.

Whelen L31HMF

OR

SWS 22609

Location to be determined at a pre-production meeting

INSTRUMENTATION:

10.123	Instrumentation	• Oil Pressure Gauge • Coolant Temperature Gauge • Transmission Oil Temperature Gauge • Voltmeter Gauge • Air Reservoir Pressure Gauge with LAP Warning Light And Buzzer • Low Oil Pressure Warning Light and Buzzer • High Water Temperature Warning Light and Buzzer • Non-Resettable Type Engine Hour-Meter	_____

TOW HOOKS:

10.124	Tow Hooks	Front mounted and Rear mounted	_____
10.125	Weigh Scale Systems	**Required:** Model Air Weigh scale system for front and rear axles. **System must be tested and calibrated prior to delivery**	_____

COLOURS:

10.126	Exterior Colour	White	_____
10.127	Interior Colour	Grey	_____

ACCESSORIES:

10.128	Flare Kit	Three (3) triangular reflectors, CVSA approved. Kit must be mounted or secured.	_____
10.129	Fire Extinguisher	5 lbs. Fire Extinguisher ABC type installed and secured **State:** location	_____
10.130	Back-Up Camera	**Required:** Quantity two (2) Location # 1 - back of vehicle Location # 2 - top of cab shield complete with protective guard	_____

Locations to be determined at pre-production meeting

10.131	Back-Up Camera Screen	In-Dash (Ergonomic (Wing) Dashboard) **OR** Dash mounted if standard dashboard is specified.  **Back-Up Camera Screen location to be determined at a pre-production meeting**.	_____ _____
	DUMP BODY SPECIFICATIONS:	Landscape Development Branch	
10.132	Type	Double Wall Dump Body	_____
10.133	Outside Length	Nominal 13 ft.	_____
10.134	Inside Length	Approximately 12 ft. 6 in.	_____
10.135	Outside Width	To match chassis track width Nominal 8 ft. 6 in.	_____
10.136	Inside Width	Approximately 8 ft.	_____
10.137	Front Height	To match chassis cab height.	_____
10.138	Construction Material (Inside)	All material that touches the material (internal walls, floor, gate, front wall, dog house) used in construction to be 3/16 in. Hardox 450 with **exception of the cab shield.**	_____
10.139	Construction Material (Outside)	10 Gauge 44W Structural Steel	_____
	FLOOR:		
10.140	Material	3/16 in. Hardox 450	_____
10.141	Floor	1-Piece or 2-Piece maximum and pieces shall be continuously welded	_____
10.142	Width	Nominal 86 in. **State:**	_____
10.143	Long Sill Material	3/16 in. formed steel, tapered hat section design, 8 in. – 10 in. height, continuously welded to the floor	_____

10.144	Floor Slope	Approximately 60 degree slope along the joint to the side wall. Slope shall extend upwards approximately 4 - 8 in. **If required design and installation to be determined at a pre-production meeting**.	_____
	FRONT:		
10.145	Front Construction	3/16 in. Hardox 450 continuously welded to sides and floor.	_____
10.146	Front Section	Shall be constructed to incorporate a nominal 12 in. L x 12 in. W x 60 in. H provision (Well Front) to contain the installed hoist	_____
10.147	Cab Shield	Formed from single sheet of mild steel, 24 in. deep, sloped @ 10° or to match cab contour complete with reinforced ends.	_____
10.148	Cab Shield Clearance	Cab shield sides to provide adequate headroom and clearance for entry and egress of vehicle cab.	_____
	SIDES:		
10.149	Construction and Material	Construction – double wall Outside Material 10 Gauge 44W Inside Material 3/16 in. Hardox 450 Clean side style formed sides without vertical reinforcements, welded into a 1-piece design, including self-cleaning bottom rail and formed, self-cleaning centre horizontal rib and sloped top rail	_____
10.150	Side Height	Approximately 42 in. measured from the floor without plank gussets	_____
10.151	Rear Side Post	3/16 in. Hardox 450, one (1) per side.	_____
10.152	Top Side Rail Material	**Heavy Duty** Rectangular tubing with 3/16 in. wall **State:** size Or Fabricated from 3/16 in. Hardox 450 **State:** method of construction	_____
10.153	Plank Gussets	2 in. x 8 in. planks with ½ in. diameter bolt holes.	_____
10.154	Planks	2 in. x 8 in. planks painted black on all sides, installed and bolted in gussets	_____

TIE DOWNS AND LADDERS:

10.155	Tie Downs Eyes	**Required:** Four (4), Located on inside of dump body. • Two (2) near top/rear of each side • Two (2) near top/front of each side Tie downs shall be D-Rings. Tie downs eyes to have a lifting capacity rated for full box weight for lifting box during installation **Exact locations to be determined at a pre-production meeting**	_____
10.156	Inside Steps	One (1) per side, located at rear of body Approximately 12 in. L x 5 in. W, located approximately 20 in. from floor.	_____
10.157	Access Ladders	**Required:** Two (2) • Bolt-on installation • Fold-Down (Retractable) Design • one (1) located curb-side corner • one (1) located driver's side corner **Design and installation to be determined at a pre-production meeting** **Refer to Appendix A**	_____
10.158	Ladder Rungs	Traction type rungs • 13-gauge steel, 2¼ in. width • 4-hole design • Traction Tread Products or equal. **Refer to Appendix A**	_____
10.159	Ladder Rungs Location	First rung to be 18-22 in. from ground level, approximately 14 in. rung spacing to top of body. **Design and location to be determined at a pre-production meeting** **Refer to Appendix A**	_____
10.160	Grab Handles	Located for ergonomic access to top of box. **Design and location to be determined at a pre-production meeting** **Refer to Appendix A**	_____

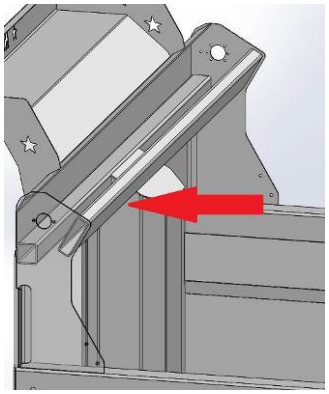
TAILGATE:

10.161	Style	Shall be a top hinge with grease-able hinge.	_____
10.162	Tailgate Height	Approximately **54 in.**	_____
10.163	Tailgate Operation	Tailgate shall not protrude above floor in horizontal or full down position.	_____
10.164	Standard	There shall be no gap between tailgate and the floor and sides when tailgate is in the closed or horizontal position.	_____
10.165	Tailgate Construction	Formed construction with one or two equally spaced horizontal or vertical ribs, and a self-cleaning bottom rail. Inside liner with 3/16 in. Hardox 450	_____
10.166	Tailgate Reinforcement	**Required:** Tailgate shall be reinforced with either heavy duty (⅜ in.) end plates, or ¼ in. steel tubing.	_____
10.167	Anchor Pins	Top tailgate anchor pins 1¼ in. diameter, self-locking/storing to top of side posts. Greaseable or composite; top hinge pivot system	_____
		If retainer pins are used to lock top tailgate anchor pins, then a small steel check chain is required, permanently fastened to the retainer pin.	
10.168	Support and Spreader Chains	⅜ in. transport Grade 70, adequately fastened complete with chain storage and two (2) removable links per chain.	_____
		Support and spreader chains shall be equipped with a protective cover.	_____
10.169	Tailgate Locking Mechanism	In-cab control, air operated with air brake pot or air cylinder operated trip.	_____
		State: method	
		The locking mechanism shall be adjustable to ensure adequate lock-up with tailgate closed.	_____

TARPAULIN:

10.170	Tarpaulin Type	Electric flip tarp, operable in-cab from driver's seat with aluminum arms. Elbow to ensure arms recess as low as possible along box sides and not in the way of loading.	_____
		State: make, model and type of material	

10.171	Tarp System	Tarp system shall stow on the cab shield, i.e., shall not protrude into the box area.	_____
10.172	Tarp Protection System	**Required:** to protect the roll from shifting material in the body	_____



Design and location to be determined at a pre-production meeting

10.173	Tarp Operation	Tarpaulin shall not block the visibility of the mini light bar when tarpaulin is in the stowed position.	_____

HOIST:

10.174	Requirements:		_____

3-Stage, front mounted telescopic hoist, nitrided, quenched and polished cylinder stages, protected against corrosion, Mailhot G3 Series

Hoist to be sold, installed and serviced by an authorized dealer

10.175	Make and Model	**State:**	_____
10.176	Bore	Approximately 5 in. **State:**	_____
10.177	Hoist Capacity	Approximately 20 – 30 tons **State:** capacity	_____
10.178	Hoist Dump Angle	45° from horizontal, cylinder must lower under its own weight with empty load in low ambient temperatures.	_____
10.179	Hoist Connection	**Required**: live swivel	_____
10.180	Hoist Grease Fittings	**Required**: on all pivot pins.	_____

IN-CAB CONTROLS:

10.181	Cab Controls	Programmed through OEM dash mounted switches	_____
10.182	Switches	All switches shall be back-lit for night time use and clearly identified with engraved style, permanent type labels.	_____
		Supply corresponding valve and solenoid necessary for operation	_____

Switches:

- PTO Engagement
- Dump Box Up/Down
- Tailgate Open/Close
- Amber Lighting
- Blue Lighting
- Tarp Open/Close

HYDRAULICS:

10.183	PTO	Muncie or Chelsea electric/hydraulic power shift **State:** make and model	_____
10.184	Hydraulic Pump	**Required:** Transmission mounted PTO Pump to operate the dump body. Parker Dump Pump or equivalent in accordance with B6 Substitutes **State:** make and model	_____
10.185	Requirements	Shall be a 3-Line system	_____
10.186	Suction Line Valve	**Required:** easily accessible, lockable with bolts.	_____
10.187	Hydraulic Oil Reservoir	Passenger side, chassis frame mounted, **Aluminum** or **Stainless Steel** construction, baffled as required, complete with breather type filler cap with filter, filler strainer and sight gauge. **State:** material	_____

10.188	Capacity	Approximately 25 – 30 gallon **State:** size	_____
10.189	Drain Plug	¾ in. diameter.	_____
10.190	Fittings	**NO:** black steel or cast fittings **State:** type	_____
10.191	Labelling	Reservoir shall be clearly labelled "Hydraulic Oil" with a permanent type, engraved style label.	_____

HYDRAULIC FILTERS:

10.192	Return Filter	Serviceable without oil loss, tank mounted, complete with clogging indicator.	_____
10.193	Filter Standard	Filters shall contain a corrosion resistant coating, beta rating of 200, 10 micron particle size, and shall be ergonomically located for servicing.	_____
10.194	External Hydraulic Filter Pan	External Hydraulic filter shall have a stainless steel or aluminium pan located directly under the filter in case of a potential hydraulic leak and to avoid hydraulic fluid falling to the road. Design shall not impede the servicing of the filter.	_____

10.195	Shut-Off Valve	Ball type, located between reservoir and pump, secured in open position with a bracket and bolt.	_____
10.196	Hydraulic Hoses	Wire braid reinforced, rated for system operating pressure with 4 to 1 safety factor for burst pressure.	_____
10.197	Protection	Hydraulic hoses to be protected at wear and scuff location.	_____
10.198	Hose Fittings	Hydraulic full flow, crimp-on (non-reusable) type.	_____

ELECTRICAL & LIGHTING:

10.199	Conformance	All lighting to conform to: • C.M.V.S.S. • Manitoba Highway Traffic Act. • City of Winnipeg Lighting Visibility Standard http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf.	_____
10.200	Lighting	Supplier installed shall be **high count** LED lighting and shall be Truck-Lite, Whelen **or equivalent**	_____
10.201	Connection System	Weather Pack Sealed Connection System	_____
			
10.202	Grommets	Rubber grommets unless otherwise specified	_____
10.203	Combination Turn/Stop And Taillights	One (1) per side P/N Truck-Lite 44302R with P/N 44710 mounting grommets	_____
			
10.204	Back-Up Lights	One (1) per side P/N Truck-Lite 44206C with P/N 44710 mounting grommets	_____
			
10.205	3-Light Cluster	Three (3) P/N Truck-Lite10250R with P/N 10403 mounting grommets	_____
			

10.206 Clearance Lights

High count LED
P/N Truck-Lite10250R or 10250Y with P/N 10403 mounting grommets. _____

10.207 Blue Strobe Lights

One (1) per side with mounting grommets
P/N Whelen 5GA00FBR _____

10.208 Amber Strobe Lights

One (1) per side with mounting grommets
P/N Whelen 5GA00FAR _____

10.209 License Plate Light

Complete with license plate bracket.
P/N Truck-Lite 36140 (Light)
P/N Truck-Lite 36710 (Bracket) _____

Installed on Hitch Plate – Upper Right Corner

10.210 Rear Light Mounting Location (Rear Sill) _____

- Combination Turn/Stop and Taillights, qty two (2), one per side
- Back-Up Lights, qty two (2), one per side
- 3-Light Cluster, qty three (3)
- Rear-Corner Clearance Lights, qty two (2), one per side

The lights shall be situated so that no debris contacts the lights while dumping.

Refer to Appendix A

10.211 Rear Light Mounting Location (Rear Posts) _____

- Amber Strobe Lights, qty two (2), one per side
- Blue Strobe Lights, qty two (2), one per side
- Rear-Corner Clearance Lights, qty two (2), one per side

Refer to Appendix A

10.212 Clearance Light Mounting Locations: _____

- Front – qty two (2), located one on each bottom corner
- Sides – qty two (2) per side, located on front and rear bottom corners.

10.213	Standard	No clearance light shall protrude beyond the dump body.	_____
10.214	Standard	Taillights and back-up lights shall be fully visible when tailgate is lowered to horizontal position.	_____
10.215	Harnesses	Harness system, properly routed and secured. All harnesses shall be internally grounded, no exceptions.	_____
10.216	Junction box	Junction box complete with necessary compression fittings, required for all vehicle lighting harness connections, located inside rear of truck frame.	_____
10.217	All Plug-In Connectors	All plug-in connectors shall be coated with NYK compound prior to assembly.	_____
10.218	Back-Up Alarm	97 dB (A), installed near rear of dump body, located to be protected from damage.	_____

10.219 Mini Light Bar

- Whelen RDLPPAB Amber/Blue LED Mini Light Bar or equivalent in accordance with B6 Substitutes
- Mounted to top of cab guard
- Protected by Branch Guard
- 360° visibility when tarpaulin is in stowed position.
- Mini Light Bar shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Light Bar Amber/Blue” with a permanent type, engraved style label.

_____

Note: Beacons and Mini Light Bar to be controlled by a single 3-Way switch with the following functions:
Amber – Off – Amber/Blue

10.220 Branch Guard

Heavy duty branch guard constructed by ⅜ in. round bar or equivalent.

_____

10.221	Wiring	All LED strobe lights shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Strobes” with a permanent type, engraved style label. All wiring for back-up alarm, warning lights, strobes and trailer connector shall be colour coded, loomed and properly secured.	_____ _____
10.222	Trailer Connector	6-Way Round or SAE J560 7-Way Flat trailer receptacle. **Type to be determined at pre-production meeting** .	_____
10.223	Electrical Connectors	All electrical connectors shall be crimped and soldered, and then sealed using heat shrink tubing.	_____
10.224	Joining Of Wires	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).	_____
10.225	Wiring Routing	**Required:** Any holes to run wires through shall be drilled (not punched), grommeted and sealed	_____
	WELDING:		
10.226	Standard	All welds shall be continuous welds. All welding performed shall conform to CSA Standard W47.1-03 and W59-03.	_____
	INSTALLATION:		
10.227	Drilling	Any holes required in the chassis frame web must be drilled and reamed to fit bolts.	_____
10.228	Standard	Drilling on chassis frame flanges is not permitted. Welding on the chassis frame is not permitted, with the exception of installation of dump body pivot support.	_____
10.229	Tire Clearance	Three inches (3 in.) with rear suspension air bags lowered.	_____
10.230	Clearance	Clearance between dump body and back of truck cab shall be 3 in.	_____

MISCELLANEOUS:

10.231 Rear Hitch Plate

¾ in. thick solid steel, (laminated plates not acceptable) installed to chassis frame. _____

Design (including overhang) and installation to be determined at pre-production meeting.

10.232 Pintle Hitch and Receiver

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

Receiver – 2 in. x 6 in. Length
State: size

Design and installation to be determined at pre-production meeting

10.233 D-Ring with Mounting Bracket (Required for Trailer Safety Chains)

One (1) each side of hitch
Buyers Products B48 or equal. _____

10.234	Shovel Holder	Shovel holder with handle latch to secure shovel in place Buyers Products P/N SH675SS   **Location to be determined at pre-production meeting**	_____
10.235	Rear Fenders	Heavy Duty rear poly half-moon fenders. Shall be installed to have sufficient clearance from body and when chassis suspension is dumped for dump body operation. 	_____

10.236 Mud Flaps

Required: Black rubber, no-name, front and rear of back tires complete with anti-sail bracket on each mud-flap. Rear mud flaps shall not contact the ground when the dump body is at maximum dump angle _____

10.237 Isolators

All interfaces between aluminium and steel shall be separated by an approximately 1/16 in. thick rubber or neoprene sheet and are to be bolted through with stainless steel bolts and non-conductive bushings _____

10.238 Grease Fittings

Required: on tailgate release mechanisms, pivot points and tailgate _____

GREASING SYSTEM:

10.239 Complete unit shall have Groeneveld CPL Systems Inc. or Lubecore Auto Greasing System. _____

10.240 Single Line, EP2 and automatic low level shut-off with in-cab red light indicator. _____

10.241 All grease fittings for the entire chassis and body (including cylinder mounts, pivot points, dump body prop, plow etc.), shall be readily accessible or shall be equipped with remote grease zerks as required. _____

10.242 **Grease Points:** _____
Approximately twenty-six (26) points on cab & chassis
Approximately eight (8) – twelve (12) points on body (depending on body configuration)

State: quantity of grease points on cab & chassis: _____

State: quantity of grease points on body: _____

10.243 Grease pump will pump Original Equipment Manufacturer specified EP2 grease from -40^{o}C to + 50^{o}C. _____

10.244 One way check valves on each line _____

10.245 Low temperature compatible 800 bar/12000 PSI grease line with a bending radius of ¾ inch. With a 5 year line breakage guarantee for on road trucks. _____

10.246 One piece flow dividers with manual over ride. _____

10.247 **Warranty:** three (3) years parts and labour. _____

TOOLBOXES:

10.248 Tool Boxes _____

Aluminum Tool Boxes
- Mounted on driver or passenger side frame
- Approximately 24 in. x 24 in. x 48 in.
- Barn Door style doors

State: quantity, dimensions, material, and recommended location as set by the manufacturer

SAFETY:

10.249 Dump Body Prop _____

Double Prop Design
- Steel tubing construction, to support 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
- Operating Handle to be positioned outside of chassis frame rails for operator safety (Driver's Side)
- Dump body prop to be complete with receiving bracket.
- Safety Lock Pin and Chain required to hold arms in the "Up" position (Driver Side)
- Refer to below pictures for sample designs

Design and installation to be confirmed at a pre-production meeting.

Driver Side - Up

Driver Side - Down

Driver Side – Down

Driver Side – Up

Passenger Side - Down

Safety Lock Pin and Chain

10.250 Dump Body Prop Colours

All components (prop, handle and receiving bracket) shall be painted with **Safety Orange** for ease of identification

_____

10.251	Dump Body Stowage Warning System	**Required:** Warning light and buzz system shall be installed on the dash and shall be actuated when dump body is not in the fully stowed position. **State:**	_____
10.252	PTO	**Programmed:** To disengage the PTO when 5 kph is reached to prevent the driver from driving off when the body is up. **Exact speed to be determine at pre-production meeting**	_____
10.253	Pre-Trip Exterior Light Inspection	**Programmed:** When activated, the vehicle lights repeatedly flash in a specific sequence to allow the operator to verify that the exterior lights are functioning. The light test sequence tests: • Park Lights • Headlights (low and high beams) • Right/left front/rear turn lights • Brakes Lights • Mini Light Bar • Beacon(s) • Strobe Lights • Clearance Lights	_____
10.254	Warning Light Over Ride	**Programmed:** Rear strobe lights to be programmed to allow for an over-ride for turn signals and brake lights when strobe lights are on. Other drivers will be able to determine if the truck is stopping or turning when strobe lights are on.	_____
	FINISH:		
10.255	Preparation	Complete dump body and all ladders, hitch plates, reservoirs, steel brackets, etc. shall be sandblasted, properly cleaned, primed and finished with the Endura or DuPont paint process as follows:	_____
10.256	Primer	**Required:** Epoxy or Polyurethane primer Endura EP321 Intermix Epoxy Primer or DuPont polyurethane. Two (2) coats – Dry Film Thickness 3.0 – 4.0 mils	_____

10.257	Paint	Required: Polyurethane Colour: Black Endura EX-2C or DuPont Polyurethane Two (2) coats: 3 - 5 mils Wet Film Thickness with a total combined overall average Dry Film Thickness of 4 – 6 mils Note: Complete body (inside and outside) shall be painted	_____

11.0 **WARRANTY**

11.1 The body warranty on the complete vehicle (excluding the chassis) shall include 100% replacement parts and labour at no cost to the City and shall cover the complete equipment and all parts thereof against defects of workmanship, construction and materials for one (1) year from the date the equipment is put into service by the City of Winnipeg. _____

11.2 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 _____

BODY WARRANTY

11.3	Main Frame - Structural	**State:**	_____
11.4	Frame – Non-Structural	**State:**	_____
11.5	Components e.g. Pumps	**State:**	_____
11.6	Hydraulics	**State:**	_____
11.7	Hoist and Cylinder	**State:**	_____
11.8	Electrical	One (1) year **State:**	_____
11.9	LED Lighting	**State:**	_____
11.10	Paint	**State:**	_____

CAB & CHASSIS WARRANTY

11.11	Basic Vehicle - Chassis	One (1) year, unlimited km, **State:**	_____
11.12	Electrical	One (1) year **State:**	_____
11.13	LED Lighting	**State:**	_____
11.14	Batteries	One (1) year, unlimited km **State:**	_____

11.15	Drivetrain	Two (2) years, unlimited km **State:**	_____
11.16	Cab Structure/Corrosion	Five (5) years, unlimited km **State:**	_____
11.17	Frame & Cross-Members	Five (5) years, unlimited km **State:**	_____
11.18	Cab Paint	One (1) year or 160,000 km **State:**	_____
11.19	Engine	Three (3) years or 240 000 km **State:**	_____
11.20	Transmission	Two (2) years, unlimited km **State:**	_____
11.21	Axles - Front & Rear	Two (2) years or 161 000 km **State:**	_____
11.22	Components	**State:**	_____

12.0 **DELIVERY**

12.1 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 WFMA 185 Tecumseh Street, Winnipeg MB. The successful bidder shall be notified by the Contractor Administrator the delivery address prior to issuance of the purchase order _____

12.2 Delivery Time: Equipment shall be delivered between 8:00 am and 2:00 pm on Business Days _____
State: Delivery Date

12.3 Delivery Contact: The Contractor shall contact the Contract Administrator prior to delivery of the equipment. _____

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

13.0 **MANUALS**

13.1 Manuals supplied under this Contract shall cover the complete equipment including all components thereof, CD or USB flash drive is preferred where available. _____

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

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

b) Parts and Service Manuals – One (1) complete set including preventative maintenance schedules. CDs or USB flash drive are preferred. _____

14.0 PARTS/LABOUR DISCOUNT

14.1 Bidder to provide City of Winnipeg Parts Discount % Pricing from retail parts pricing. **State: percentage discount** _____%

14.2 Bidder to provide City of Winnipeg Labor Discount % Pricing from Retail shop labor rate. **State: percentage discount** _____%

15.0 FIRST SERVICE PREVENTATIVE MAINTENANCE KIT

15.1 In order to assure minimum downtime of the equipment in future service, the Contractor shall provide one (1) complete replacement set of new OEM filters for each unit purchased. The set of required filters shall include (if applicable to the equipment type) air, fuel, oil, cab and hydraulic, or otherwise all known necessary common replacement filters required for the first preventative maintenance servicing. _____

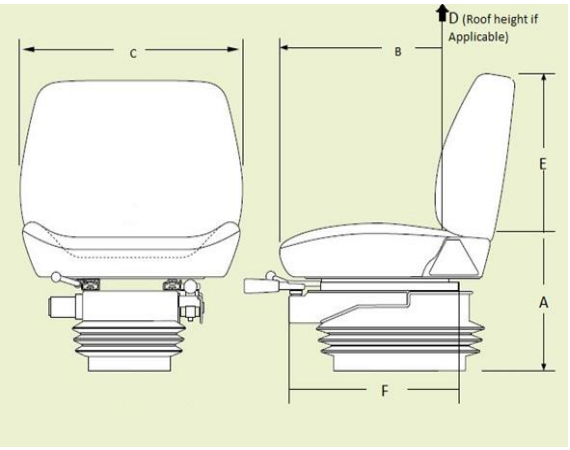
15.2 The Contractor shall provide a list of factory recommended lubricants to be used with the equipment, as well as a complete cross reference guide for all warranty approved lubricants and filters that can be used during preventative maintenance servicing. _____

16.0 ERGONOMIC SPECIFICATIONS

Entry/ Exit

16.1	First step entry height	**State:** height of first step in inches	_____
16.2	First handhold entry height	**State:** first handhold entry height in inches	_____
16.3	Access to equipment	**State:** door opening height in inches	_____
16.4	Access to equipment	**State:** door opening width in inches	_____
16.5	Designed to prevent slipping	Anti-slip steps/handholds **(Y or N)?**	_____

Seat

16.6	Use diagram to answer questions.		
16.7	Sitting Height Range (from floor (where feet rest) (A))	**State:** seat height range in inches	_____
16.8	Seat Length/Depth (B)	**State:** seat length/depth in inches	_____
16.9	Seat Width (C)	**State:** seat width in inches	_____
16.10	Cab Height (from seat to roof (if applicable) (D))	**State:** cab height range in inches	_____
16.11	Back Rest Height (E)	**State:** back rest height in inches	_____
16.12	Seat Travel Range (F)	**State:** seat travel in inches	_____
16.13	Lumbar Support	Is lumbar support provided **(Y or N)?**	_____
16.14	Head Rest	Is head rest provided **(Y or N)?**	_____
16.15	Seat Material	Breathable **State:** type of seat material	_____

Operation

16.16	Reaching Distance (to usual work)	**State:** reaching distance in inches	_____
16.17	Maximum Reaching Distance	**State:** maximum reach distance in inches	_____
16.18	Adjustable Pedals (accelerator/brake/clutch)	Are pedals adjustable **(Y or N)?**	_____
16.19	Adjustable Steering Wheel	Is steering wheel adjustable **(Y or N)?**	_____
16.20	Adjustable Shoulder Belt	Is belt adjustable and anchored **(Y or N)?**	_____

Cargo Area

16.21	Lid opens to provide adequate space	Adequate space provided **(Y or N)?**	_____
16.22	Loading Height	**State:** trunk height in inches	_____

Environment

16.23	Operator compartment is insulated from equipment noise (while operating)	**State:** dB inside cab while operating	_____
16.24	Operator insulated from equipment vibration	Is operator insulated from vibration (Y or N)?	_____
16.25	Heating/Cooling Systems	**State:** cab temperature range	_____
16.26	Cab Lighting	**State:** lumens inside cab	_____

Maintenance/ Inspection

16.27	Lift Assistance (when necessary)	Is lift assistance provided **(Y or N)?**	_____
16.28	Easy Access (to compartment doors)	Is easy access provided **(Y or N)?**	_____
16.29	Include any other relevant ergonomic specifications and applicable range of adjustment		_____

FORM N (R1): DETAILED SPECIFICATIONS 17015

SINGLE AXLE CHASSIS WITH A 14’ FORESTRY CHIPPER DUMP BODY

1.0 DESCRIPTION OF EQUIPMENT/APPLICATION

1.1 These specifications describe **Single Axle Chassis with a 14' x 8' Forestry Chipper Body** and other equipment and features as specified herein. These units are an integral portion of the City of Winnipeg Forestry Maintenance Equipment Fleet as they are utilized year round during all seasons. The Trucks will be used for hauling wood chips. The trucks will be used with up to two (2) operators.

1.2 The **Single Axle Chassis with a 14' x 8' Forestry Chipper Body** shall be new 2017 model year or newer.

1.3 The **Single Axle Chassis with a 14' x 8' Forestry Chipper Body** 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 **Single Axle Chassis with a 14' x 8' Forestry Chipper Body** shall comply with the applicable regulations:

- Highway Traffic Act
- Manitoba Motor Vehicle Act
- Canadian Motor Vehicle Safety Standards, CMVSS Transport Canada
- National Safety Mark, NSM
- Manitoba/Winnipeg 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.

2.4 The manufacturer/installer shall be a certified vehicle completer and must affix their National Safety Mark (NSM) certification sticker on each unit.

State NSM number: _____

3.0 SERVICE FACILITY

3.1 For the purpose of warranty repairs, the supplier shall have an authorized service facility located within 10 kilometres 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 B11, 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 REFERENCES

4.1 If available, please provide five (5) 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 **Single Axle Chassis with a 14' x 8' Forestry Chipper Body** being 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 **Single Axle Chassis with a 14' x 8' Forestry Chipper Body**, 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 **Single Axle Chassis with a 14' x 8' Forestry Chipper Body** 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 The **Single Axle Chassis with a 14' x 8' Forestry Chipper Body** must be fully fuelled upon delivery **(no exceptions).**

9.0 QUALIFICATIONS OF MANUFACTURER & CONTRACTOR

9.1 The manufacturer of the **Single Axle Chassis with a 14' x 8' Forestry Chipper Body** shall have five (5) years continuous experience manufacturing **Single Axle Chassis with a 14' x 8' Forestry Chipper Bodies**

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 **Single Axle Chassis with a 14' x 8' Forestry Chipper Body** of the type being offered.

10.0 SPECIFICATIONS

(CHASSIS MUST BE SUPPLIED FROM A LOCAL WINNIPEG DEALER CHASSIS PROVIDER) _____

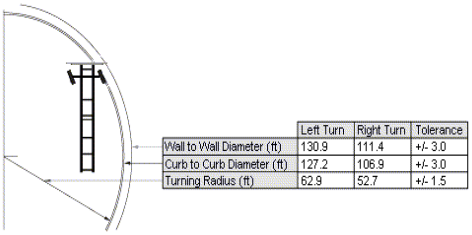
CHASSIS

10.1 Weights _____

The Trucks shall not exceed the City of Winnipeg’s limit for gross vehicle weight, axle and tire loads

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) – 9100 kg (20,056 lbs.)
- Tire load – 9 kilograms for each millimeter width of tire (approximately 500 lbs. per inch of tire width).

10.2	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 two (2) operators, all attachments and full of fuel.		
10.3	GVWR	• GVWR Total 33,000 lbs. • GVWR Front 12,000 lbs. • GVWR Rear 21,000 lbs.	_____
10.4	Cab	**Conventional** with corrosion inhibitor	_____
10.5	Cab to Axle	As required for **a 14' x 8' Forestry Chipper Body** **State:**	_____
10.6	Wheelbase	As required for **a 14' x 8' Forestry Chipper Body** **State:**	_____
10.7	After-Frame	As required for **a 14' x 8' Forestry Chipper Body** **State:**	_____
10.8	Bumper To Back Of Cab	BBC Approximately 106 - 110 in. **State:**	_____
10.9	Turning Radius	Turning Radius **State:** vehicle turning radius Example:  **a) Wall to Wall (ft.)** **b) Curb to Curb(ft.)** **c) Turning Radius (ft.)**	_____
	ENGINE:		
10.10	Engine	Tier IV Final Diesel, inline 6-cylinder	_____
10.11	Horsepower	Approximately 275 HP gross	_____
10.12	Torque	Approximately 660 lb-ft	_____
10.13	Engine Shut Down	Low oil pressure / high water temperature	_____
10.14	Air Intake Warmer	**Required:**	_____
10.15	Fuel Shut-Off	Electric solenoid type	_____
10.16	Air Intake	Side of hood air intake	_____

10.17	Air Cleaner	Dry type, suitable as for a **Single Axle Chassis with a 14' x 8' Forestry Chipper Body.** **IMPORTANT** **Air cleaner shall be suitable for high dust environment due to brush chipper work site.** **State:**	_____
10.18	Air Intake Restriction	Dash mounted restriction indicator	_____
10.19	Oil Drain Plug	Magnetic type	_____
10.20	Oil Filter	Full flow, spin-on type	_____
10.21	Fuel Filter	Spin-on type	_____
10.22	Fuel/Water Separator	Heated, drainable under hood	_____
10.23	Fuel Line Primer Pump	Manual or Electric **State:**	_____
10.24	Block Heater	Immersion type, 1000 Watt with covered recessed male plug, located under driver's side door	_____
10.25	Radiator	Aluminum 1000 - 1200 square inch **State:** size	_____
10.26	Coolant	**Extended Life** coolant, antifreeze to -35°F (-37°C	_____
10.27	**Coolant Filter**	**If Available** **Or** **Coolant Maintenance Program** **Extended life coolant maintenance is test strip every approximately 500 hours and fluid change at 10,000 hours.** **State: Test strip and fluid change intervals**	_____ _____
10.28	Coolant Hoses	Silicone type or Gates Blue Stripe	_____
10.29	Fan Drive	Thermostatically controlled, automatic type with dash switch	_____
10.30	Air Compressor	Water cooled, pressure lubricated, 15-18 cfm	_____
10.31	Diesel Exhaust Fluid (DEF) Tank	Approximately 19 – 36 Litres or largest size per application. Located Driver's side **State:** size and location	_____

ELECTRICAL SYSTEM:

10.32	Electrical Connector's	Plug-in, sealed type	_____
10.33	Anti-Corrosion Electrical Package	Controllers and sensitive electrical components (PCM, Harnesses etc.) mounted in cab**.** **State:** locations	
			
10.34	Alternator	Delco Remy 36SI Heavy Duty, Brushless type 160 -180 Amp Pad Mount Remote Sense	_____
		State: make and model	_____
10.35	**Starter**	**Delco Remy 41MT or 39MT** **Heavy Duty** **Over-Crank Protection**	_____
		State: make and model	_____
10.36	Circuit Breakers	Auto-reset, readily accessible	_____
10.37	Batteries/Battery Location	Three (3) batteries, 12-volt, group 31, approximately 2700-2850 CCA combined	_____
		Batteries not to impede with the installation of the body **State:** location	
10.38	**Battery Disconnect**	**Required:**	_____
		For Air Brakes: **In-cab mounted outboard of driver's seat** **State: location**	_____
		For Hydraulic Brakes: **State: Method of battery disconnect**	_____
10.39	Battery Boost Terminal(s)	Remote battery boosts terminal(s), **Located to protect from road spray.** **State:** location	_____
		Exact location to be determined at pre- production meeting	
10.40	Cab Marker Lights	LED Cab or LED Sun Visor Marker lights	_____
10.41	2-Way Radio Circuit	Independent 20 Amp circuit, ignition powered, wired under dash loose, labelled	_____

10.42	Accessory Switches	**Required:** Six (6) All switches complete and wired for body installation, labeled and backlit	_____
10.43	Mega Fuse Box	Located in-cab or under-cab and shall be sealed. **State:** location and method of sealing	_____

EXHAUST SYSTEM:

10.44	Exhaust	Horizontal exhaust cylinder and vertical right hand tail pipe. Exhaust not to impede in the installation of the body. **State:** type and location	_____
10.45	DPF 3-Way Inhibit Switch - **Required:**		_____

Automatic Active Regeneration Enabled
The switch remains in the standard mid-position during normal operations. This means DPF active regeneration is enabled and allows the DPF to clear any build-up of soot in the filter by initiating an active regeneration

Start Manual Active Regen
Pressing the switch into the top position starts a manual (parked) active regeneration. This is required on rare occasions due to very unusual duty cycle conditions

Inhibit ON (Stop Active Regen) Function
Pressing the switch into the Bottom Position prevents active regeneration from occurring. Stopping the active regeneration function is required only for safety reasons to avoid higher than normal exhaust temperatures

10.46	Overall Exhaust Height	To clear **14' x 8' Forestry Chipper Body**	_____
10.47	Exhaust Heat Shield	**Required:** 	_____

TRANSMISSION:

10.48	Transmission	• Allison 2500 RDS with 6-speed programming • Ratio shall be as per inter-city chipper body application. • Transmission shall come with load base Management Programming. • Transmission to PTO to operate the dump body.	_____

10.49	Allison SCAAN	The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator, the Allison SCAAN	_____
10.50	Transmission Fluids	Synthetic	_____
10.51	**Shift Selector**	**Digital push-button or stick type, dash mounted** **State: type and location**	_____
10.52	Cooling Capacity	Water to oil transmission cooler, as per manufacturer's recommendation for severe duty cycle	_____
10.53	Oil Level Dipstick	Bayonet type with high and low level markings	_____
10.54	Transmission Drain Plug	Magnetic type	_____
	FRONT AXLE:		
10.55	**Front Axle**	**Set back axle, Meritor or Detroit 12K axle 12,000 lbs. capacity, with synthetic fluid.** **State: make**	_____
	REAR AXLE:		
10.56	Rear Axle	Meritor 21,000 lbs. capacity, with synthetic fluid.	_____
10.57	Ratio	For 110 km/hr **State:** ratio	_____
10.58	Inter-Axle Lock	**Required:** with dash mounted switch	_____
10.59	Differential Lock	**Required:** for drive axle with dash mounted Switch	_____
10.60	Hub Seals	Oil lubricated front and rear type	_____
	FRONT SUSPENSION:		
10.61	Front Suspension	Multi-leaf spring suspension, 12,000 lbs. capacity	_____
	REAR SUSPENSION:		
10.62	Rear Suspension	Air ride suspension, 21,000 lbs. capacity, axle, shall be as recommended for dump body application	_____
10.63	Suspension Control Valve	Manual dump valve for air suspension complete with dash mounted switch, indicator light, gauge and buzzer	_____

10.64	Auto Refill	**Required**: at 5 km/hr **Exact speed will be determined at a pre-production meeting**	_____
	RIMS, WHEELS AND HUBS:		
10.65	Front Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.66	Rear Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.67	Hubs	Aluminum material	_____
10.68	Wheel Nut Indicators	**Required:** on all wheel nuts	_____
	TIRES:		
10.69	Front Tires	11R 22.5 16 ply, snow, mud and ice rated for requested GVWR and application	_____
10.70	Rear Tires	11R 22.5 16 ply, snow, mud and ice rated for requested GVWR and application	_____
	FRAME:		
10.71	Frame	Single rail as recommended for **14' x 8' Forestry Chipper Body**	_____

10.72	Rust Inhibitor (Frame/Cross Member)	ARMOUR-SEAL ™ FRAME & CHASSIS COMPONENT PROTECTIVE UNDERCOATING: (or equivalent) Sodium, magnesium and calcium chloride resistant. Semi-permanent, high strength rubberized polymer blended.  **RHOMAR Industries, Inc.** Tricia McKnelly-Anderson Account Manager 2107 E Rockhurst Springfield, MO 65802 1.800.688.6221 417.866.5593 (fax) www.rhomar.com www.rhomar.com/products/armour-seal.	_____
10.73	Chassis Fasteners	Grade-8 threaded hex headed frame fasteners	_____
10.74	Rear Frame Towing Provisions	Towing provisions with 7-way pin receptacle to end of frame with two (2) extra feet of wiring to for ease of body installation.	_____
	STEERING:		
10.75	Type	Tilt and telescopic, power, rated for front GVWR rating. Reservoir approximately 2 quart with see through tank.	_____
	BRAKES:		
10.76	Brakes	Air, ABS, S-cam drum brakes, front & rear	_____
10.77	Slack Adjusters	(Clearance sensing), automatic type	_____
10.78	Parking Brake	**Required:**	_____
10.79	Brake Pots	Vented type	_____
10.80	Dust Shields	**Required:** front and rear	_____

10.81	**Air Tanks**	**Shall be aluminum tanks with aluminum or stainless steel straps or nylon coated aircraft cable (3/16 dia.) with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion**	_____
10.82	Moisture Ejector	**Required:** Wabco, heated, in all air tanks	_____
10.83	Drain Valves	**Required:** Manual, chain or cable operated, on each air tank	_____
10.84	Air Dryer	Wabco Heated System Saver 1200 or equivalent **State:**	_____
	FUEL TANK:		
10.85	Fuel Tank	Single 50 US gallon (190 L) fuel tank Shall not impede in the installation of a 14' x 8' Forestry Chipper Body **State:** fuel capacity	_____
10.86	Tank Straps	Aluminum or Stainless Steel straps with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion **State:**	_____
	CAB:		
10.87	Cab Construction	Aluminum or Galvanized steel **State:**	_____
10.88	Cab Mounts	Air suspension	_____
10.89	Hood	High visibility hood	_____
10.90	Hood Fender Extensions	2 – 3 in. front fender extensions	_____
10.91	Front Grille	Stationary mounted to hood	_____
10.92	Cab Interior / Trim	Extreme climate insulation including cloth or vinyl headliner on roof, door panels and rear interior of cab	_____
10.93	Cab Silencer Package	**Required:** for minimal decibel level	_____
10.94	Hood/Firewall/Engine Insulations	Insulated hood liner, engine cover and firewall	_____
10.95	Floor Covering	Rubber mat with under-padding	_____
10.96	Floor Mats	Two (2), rubber	_____
10.97	Driver’s Seat	High back, air suspension with foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____

10.98	Passenger Seat	High back, air suspension with foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.99	Dashboard	Ergonomic (Wing) Design	_____

10.100	Sun Visors	Dual flip-up type	_____
10.101	12-Volt Power Outlet	**Required:** Two (2) with independent circuit	_____
10.102	Radio	Factory installed AM/FM/ with “hand free” Blue Tooth capability	_____
10.103	Starter Switch	Key operated complete with three (3) sets of keys	_____
10.104	Interior Light	Dome light with driver and passenger door switches	_____
10.105	Heater / Defroster	High output, capable of keeping all windows clear at an outside temperature of (-40°C)	_____
10.106	Air Conditioning	**Required:**	_____
10.107	Brake, Accelerator, Pedals	Floor or hanging type brake and accelerator pedal **State:**	_____
10.108	Horn	Dual electric	_____
10.109	Exterior Mirrors	Mirrors heated, lighted, 4-way motorized adjustment (with convex mirrors), suitable for 102 in. equipment width	_____
10.110	Down-View Mirror	**Required**: over passenger door Approximately 5 in. x 4 in.	_____
10.111	Windows & Windshield	Tinted	_____
10.112	Power Windows	Power driver and passenger side	_____
10.113	Doors	Power door locks	_____
10.114	Windshield Wipers	Electric intermittent	_____
10.115	Wiper Blades	Heavy duty with winter type boot	_____
10.116	Windshield Washers	**Required:** Electric, with spray nozzles on wiper blades	_____

10.117	Grab Handles	Dual exterior **State:** locations	_____
10.118	Grab Handles	Dual Interior	_____
10.119	Entrance Steps	Dual each side, open grate / grip type	_____
10.120	Winter Front	Heavy-duty vinyl with twist lock or snap type fasteners	_____
10.121	Exterior Sun Visor	**Required:**	_____
10.122	Strobe LED Lights (Beacons)	Qty two (2) Amber LED Beacon, Class 1 High Dome Strobe Lights with aluminum or stainless steel brackets mounted to B-Pillar Note: Need to be forward enough as not to interfere with the cab shield if equipped with one. Whelen L31HAF    **Location to be determined at a pre-production meeting**	_____

INSTRUMENTATION:

10.123	Instrumentation	• Oil Pressure Gauge • Coolant Temperature Gauge • Transmission Oil Temperature Gauge • Voltmeter Gauge • Air Reservoir Pressure Gauge with LAP Warning Light And Buzzer • Low Oil Pressure Warning Light and Buzzer • High Water Temperature Warning Light and Buzzer • Non-Resettable Type Engine Hour-Meter	_____

TOW HOOKS:

10.124	Tow Hooks	Front and Rear mounted	_____

COLOURS:

10.125	Exterior Colour	White	_____
10.126	Interior Colour	Grey	_____

ACCESSORIES:

10.127	Flare kit	Three (3) triangular reflectors, CVSA approved. Kit must be mounted or secured.	_____
10.128	Fire Extinguisher	5 lbs. Fire Extinguisher ABC type installed and secured **State:** location	_____
10.129	Back-Up Camera	**Required:**	_____
10.130	Back-Up Camera Screen	In-Dash (Ergonomic (Wing) Dashboard)	_____
		OR	
		Dash mounted if standard dashboard is specified.	_____

Back-Up Camera Screen location to be determined at a pre-production meeting.

14 x 8' FORESTRY CHIPPER BODY SPECIFICATIONS

BODY:

10.131	Outside Length	Nominal 13 ft. 6 in.	_____
10.132	Inside Length	Approximately 13 ft.	_____
10.133	Outside Width	To match chassis track width Nominal 8 ft. 6 in.	_____
10.134	Inside Width	Approximately 8 ft.	_____

	MATERIAL:		
10.135	Construction Material	All material used in construction to be 3/16 in. Marine Quality Aluminum Grade 5083-H321 except where otherwise noted. 5083-H321 Provides Superior: • Strength • Corrosion resistance • Weight savings	_____
	FRONT:		
10.136	Front Construction	3/16 in. Aluminum 5083-H321 with formed vertical or horizontal reinforcements as required	_____
	SIDES:		
10.137	Material	3/16 in Aluminum 5083-H321 complete with formed or structural reinforcement ribs.	_____
10.138	Side Height	Approximately 72 in.	_____
	FLOOR:		
10.139	Material	1/4 in. Aluminum 5083-H321 with formed vertical or horizontal reinforcements as required.	_____
	TAILGATE:		
10.140	Style	3/16 in. Aluminum 5083-H321 single door design with a formed reinforced frame.	_____
10.141	Tailgate Height	Approximately 30 in.	_____
10.142	Swing	270° minimum. Complete with latch system to hold door fully open while dumping	_____
10.143	Hinges	**Required**: Minimum two (2) right hand side mounted hinges, reinforced for heavy duty, long term use complete with grease fittings.	_____
10.144	Latch	Heavy duty, single lever latch.	_____
	TOP:		
10.145	Material	Full length x full width, 3/16 in. complete with minimum six (6) reinforcement ribs.	_____
10.146	Air Exhaust Vents	Seven (7) per side, equally spaced, top mounted Approximately 6 in. L x 2 in. H each	_____

TOOL BOXES AND COMPARTMENTS:

10.147	Under Body Tool Boxes	**Required:** Two (2) • 3/16 in. Aluminum construction • Barn Door Style • Driver's Side: Approximately 48 in. W x 20 in. H x 20 in. Deep • Passenger Side: Approximately 72 in. W x 20 in. H x 20 in. D or two (2) 36 in. W x 20 in. H x 20 in. D • Boxes shall be equipped with lockable doors, drain holes, vents and lined with dry deck material or equivalent.	_____
10.148	Inside Ladder/Pruner Compartment	• 3/16 in. Aluminum construction • Approximately 168 in. L x 17 in. W x 12 in. H • Lockable door •	_____
10.149	Side Door Access to Inside Ladder/Pruner Compartment	**Required:**	_____
10.150	Tool Box Keys	All tool boxes and compartments shall be keyed alike complete with three (3) sets of keys.	_____
10.151	Tool Box Gaskets	All tool boxes and compartment door openings shall be sealed using automotive, bulb type rubber gaskets.	_____
10.152	Door stays or hold-open devices.	Under body tool box doors shall be complete with heavy duty door stays or hold-open devices.	_____

HOIST:

10.153 Requirements: _____

3-Stage, front mounted telescopic hoist, nitrided, quenched and polished cylinder stages, protected against corrosion, Mailhot G3 Series

Hoist to be sold, installed and serviced by an authorized dealer

10.154	Make and Model	**State:**	_____
10.155	Bore	Approximately 5 in. **State:**	_____
10.156	Hoist Capacity	Approximately 20 – 30 tons **State:** capacity	_____
10.157	Hoist Dump Angle	45° from horizontal, cylinder must lower under its own weight with empty load in low ambient temperatures	_____
10.158	Hoist Connection	**Required**: live swivel	_____

10.159	Hoist Grease Fittings	**Required:** Grease fittings – on all pivot pins	_____

IN-CAB SWITCHES:

10.160	Cab Controls	Programmed through OEM dash mounted switches	_____
10.161	Switches	All switches shall be back-lit for night time use and clearly identified with engraved style, permanent type labels.	_____
		Supply corresponding valve and solenoid necessary for operation	_____

Switches:

- PTO Engagement
- Chipper Dump Box Up/Down
- Amber Lighting
- Blue Lighting

HYDRAULICS:

10.162	PTO	Muncie or Chelsea electric/hydraulic power shift **State:** make and model	_____
10.163	Hydraulic Pump	**Required:** Transmission mounted PTO Pump to operate the dump body. Parker Dump Pump or equivalent in accordance with B6 Substitutes **State:** make and model	_____
10.164	Requirements	Shall be a 3-Line system	_____
10.165	Suction Line Valve	**Required:** Easily accessible, lockable with bolts.	_____
10.166	Hydraulic Oil Reservoir	Passenger side, chassis frame mounted, **Aluminum** or **Stainless Steel** construction, baffled as required, complete with breather type filler cap with filter, filler strainer and sight gauge. **State:** material	_____

10.167	Hydraulic Oil	Univis N15 or equivalent **State:** type	_____
10.168	Capacity	Approximately 25 – 30 gallon **State:** size	_____
10.169	Drain Plug	¾ in. diameter.	_____
10.170	Fittings	**NO:** black steel or cast fittings **State:** type	_____
10.171	Labelling	Reservoir shall be clearly labelled "Hydraulic Oil" with a permanent type, engraved style label.	_____
	HYDRAULIC FILTERS:		
10.172	Return Filter	Serviceable without oil loss, tank mounted, complete with clogging indicator.	_____
10.173	Filter Standard	Filters shall contain a corrosion resistant coating, beta rating of 200, 10 micron particle size, and shall be ergonomically located for servicing.	_____
10.174	External Hydraulic Filter Pan	External Hydraulic filter shall have a stainless steel or aluminium pan located directly under the filter in case of a potential hydraulic leak and to avoid hydraulic fluid falling to the road. Design shall not impede the servicing of the filter.	_____

10.175	Shut-Off Valve	Ball type, located between reservoir and pump, secured in open position with a bracket and bolt.	_____
10.176	Hydraulic Hoses	Wire braid reinforced, rated for system operating pressure with 4 to 1 safety factor for burst pressure.	_____
10.177	Protection	Hydraulic hoses to be protected at wear and scuff location.	_____

10.178	Hose fittings	Hydraulic full flow, crimp-on (non-reusable) type.	_____
	ELECTRICAL & LIGHTING:		
10.179	Conformance	All lighting to conform to: • C.M.V.S.S. • Manitoba Highway Traffic Act. • City of Winnipeg Lighting Visibility Standard http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf.	_____
10.180	Lighting	Supplier installed shall be **high count** LED lighting and shall be Truck-Lite, Whelen **or equivalent**	_____
10.181	Connection System	Weather Pack Sealed Connection System 	_____
10.182	Grommets	Rubber grommets unless otherwise specified	_____
10.183	Combination Turn/Stop And Taillights	Top Mounted - One (1) per side Bottom Mounted - One (1) per side P/N Truck-Lite 44302R with P/N 44710 mounting grommets 	_____
10.184	Back-Up Lights	One (1) per side P/N Truck-Lite 44206C with P/N 44710 mounting grommets 	_____
10.185	3-Light Cluster	Three (3) P/N Truck-Lite10250R with P/N 10403 mounting grommets 	_____

10.186 Clearance Lights

High count LED
P/N Truck-Lite10250R or 10250Y with P/N 10403 mounting grommets. _____

10.187 Amber Strobe Lights

One (1) per side with mounting grommets
P/N Whelen 5GA00FAR _____

10.188 License Plate Light

Complete with license plate bracket.
P/N Truck-Lite 36140 (Light)
P/N Truck-Lite 36710 (Bracket) _____

Installed on Top-Rear of Body

Refer to Appendix A

10.189 Rear Light Mounting Location (Rear Sill) _____

- Rear-Corner Clearance Lights, qty two (2), one per side
- Combination Turn/Stop and Taillights, qty two (2), one per side
- Back-Up Lights, qty two (2), one per side

The lights shall be situated so that no debris contacts the lights while dumping.

Refer to Appendix A

10.190 Rear Light Mounting Location (Top-Rear of Body) _____

- Combination Turn/Stop and Taillights, qty two (2), one per side
- Amber Strobe Lights, qty two (2), one per side
- 3-Light Cluster, qty three (3)

Refer to Appendix A

10.191 Clearance Light Mounting Locations: _____

- Front – qty two (2), located one on each top corner of body
- Sides – qty four (4) per side, located on front and rear bottom and top corners

Refer to Appendix A

10.192 Standard

No clearance light shall protrude beyond the dump body. _____

10.193	Harnesses	Harness system, properly routed and secured. All harnesses shall be internally grounded, no exceptions.	_____
10.194	Junction Box	Junction box complete with necessary compression fittings, required for all vehicle lighting harness connections, located inside rear of truck frame.	_____
10.195	All Plug-In Connectors	All plug-in connectors shall be coated with NYK compound prior to assembly.	_____
10.196	Back-Up Alarm	97 dB(A), installed near rear of body, located to be protected from damage.	_____
10.197	Mini Light Bar	• Whelen R2LPPA Series Amber LED Mini Light Bar or equivalent in accordance with B6 Substitutes • Mounted to top of cab • Protected by Branch Guard • Mini Light Bar shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Light Bar ” with a permanent type, engraved style label. • Switch shall be capable of high/low mode.	_____

10.198	Branch Guard	Heavy duty branch guard constructed by ⅜ in. round bar or equivalent.	_____

10.199	Wiring	All LED strobe lights shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Strobes” with a permanent type, engraved style label. All wiring for back-up alarm, warning lights, strobes and trailer connector shall be colour coded, loomed and properly secured.	_____ _____
10.200	Trailer Connector	6-Way Round or SAE J560 7-Way Flat trailer receptacle. **Type to be determined at pre-production meeting**	_____
10.201	Electric Trailer Brake Controller	**Required:**	_____
10.202	Electrical Connectors	All electrical connectors shall be crimped and soldered, and then sealed using heat shrink tubing.	_____
10.203	Joining of Wires	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).	_____
10.204	Wiring Routing	**Required:** Any holes to run wires through shall be drilled (not punched), grommeted and sealed	_____
	WELDING:		
10.205	Standard	All welds shall be continuous welds. All welding performed shall conform to CSA Standard W47.1-03 and W59-03.	_____
	INSTALLATION:		
10.206	Drilling	**Required:** Any holes in the chassis frame web must be drilled and reamed to fit bolts.	_____
10.207	Standard	Drilling on chassis frame flanges is not permitted. Welding on the chassis frame is not permitted, with the exception of installation of dump body pivot support.	_____
10.208	Tire Clearance	Three inches (3 in.) with rear suspension air bags lowered.	_____
10.209	Clearance	Clearance between dump body and back of truck cab shall be 3 in..	_____

MISCELLANEOUS:

10.210 Rear Hitch Plate

¾ in. thick solid steel, (laminated plates not acceptable) installed to chassis frame. _____

Design (including overhang) and installation to be determined at pre-production meeting.

10.211 Pintle Hitch and Receiver

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

Receiver – 2 in. x 6 in. Length
State: size

Design and installation to be determined at pre-production meeting

10.212 D-Ring with Mounting Bracket (Required for Trailer Safety Chains)

One (1) each side of hitch
Buyers Products B48 or equal. _____

10.213	Rear Fenders	Heavy Duty rear poly half-moon fenders. Shall be installed to have sufficient clearance from body and when chassis suspension is dumped for dump body operation. 	_____
10.214	Mud Flaps	**Required:** Black rubber, no-name, front and rear of back tires complete with anti-sail bracket on each mud-flap. Rear mud flaps shall not contact the ground when the dump body is at maximum dump angle  	_____
10.215	Isolators	All interfaces between aluminium and steel shall be separated by an approximately 1/16 in. thick rubber or neoprene sheet and are to be bolted through with stainless steel bolts and non-conductive bushings	_____
10.216	Grease Fittings	**Required:** on tailgate release mechanisms, pivot points and tailgate	_____

GREASING SYSTEM:

10.217 Complete unit shall have Groeneveld CPL Systems Inc. or Lubecore Auto Greasing System. _____

10.218 Single Line, EP2 and automatic low level shut-off with in-cab red light indicator. _____

10.219 All grease fittings for the entire chassis and body (including cylinder mounts, pivot points, dump body prop, plow etc.), shall be readily accessible or shall be equipped with remote grease zerks as required. _____

10.220 **Grease Points:** _____
Approximately twenty-six (26) points on cab & chassis
Approximately eight (8) – twelve (12) points on body (depending on body configuration)

State: quantity of grease points on cab & chassis: _____

State: quantity of grease points on body: _____

10.221 Grease pump will pump Original Equipment Manufacturer specified EP2 grease from -40°C to + 50°C. _____

10.222 One way check valves on each line _____

10.223 Low temperature compatible 800 bar/12000 PSI grease line with a bending radius of ¾ inch. With a 5 year line breakage guarantee for on road trucks. _____

10.224 One piece flow dividers with manual over ride. _____

10.225 **Warranty:** three (3) years parts and labour. _____

SAFETY:

10.226 Dump Body Prop _____

Double Prop Design

- Steel tubing construction, to support 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
- Operating Handle to be positioned outside of chassis frame rails for operator safety (Driver's Side)
- Dump body prop to be complete with receiving bracket.
- Safety Lock Pin and Chain required to hold arms in the "Up" position (Driver Side)
- Refer to below pictures for sample designs

Design and installation to be confirmed at a pre-production meeting.

Driver Side - Up

Driver Side - Down

Driver Side – Down

Driver Side – Up

Passenger Side - Down

Safety Lock Pin and Chain

10.227 Dump Body Prop Colours

All components (prop, handle and receiving bracket) shall be painted with **Safety Orange** for ease of identification

_____

10.228	Dump Body Stowage Warning System	**Required:** Warning light and buzz system shall be installed on the dash and shall be actuated when dump body is not in the fully stowed position. **State:**	_____
10.229	PTO	**Programmed:** To disengage the PTO when 5 kph is reached to prevent the driver from driving off when the body is up. **Exact speed to be determine at pre-production meeting**	_____
10.230	Pre-Trip Exterior Light Inspection	**Programmed:** When activated, the vehicle lights repeatedly flash in a specific sequence to allow the operator to verify that the exterior lights are functioning. The light test sequence tests: • Park Lights • Headlights (low and high beams) • Right/left front/rear turn lights • Brakes Lights • Mini Light Bar • Strobe Lights • Clearance Lights	_____
10.231	Warning Light Over Ride	**Programmed:** Rear strobe lights to be programmed to allow for an over-ride for turn signals and brake lights when strobe lights are on. Other drivers will be able to determine if the truck is stopping or turning when strobe lights are on.	_____
10.232	Conspicuity Tape	Truck-Lite 98127 or equal, affixed 360° around unit. **Refer to Appendix A**	_____

FINISH:

10.233	Preparation	All ladders, hitch plates, reservoirs, steel brackets, etc. shall be sandblasted, properly cleaned, primed and finished with the Endura or DuPont paint process as follows: **Note:** Aluminum components are exempt from finish	_____
10.234	Primer	**Required:** Epoxy or Polyurethane primer Endura EP321 Intermix Epoxy Primer or DuPont polyurethane. Two (2) coats – Dry Film Thickness 3.0 – 4.0 mils	_____
10.235	Paint	Required: Polyurethane Colour: Black Endura EX-2C or DuPont Polyurethane Two (2) coats: 3 - 5 mils Wet Film Thickness with a total combined overall average Dry Film Thickness of 4 – 6 mils	_____

OPTIONAL EQUIPMENT

OPTIONAL: AUXILIARY POWER UNIT

10.236 The intent of the **APU** is to provide vehicle heat and electrical power with reducing chassis idling by turning the chassis engine off. The APU shall be located at exterior incorporated into the body design. _____

Thermo King TriPac Evolution Part Number 902485M or equivalent

Programming start-up and shut-off time shall be determined at a pre-production meeting

State: Make and Model: _____

State: Location and required dimensions for the APU: _____

State: Optional Price for A.P.U. $_____

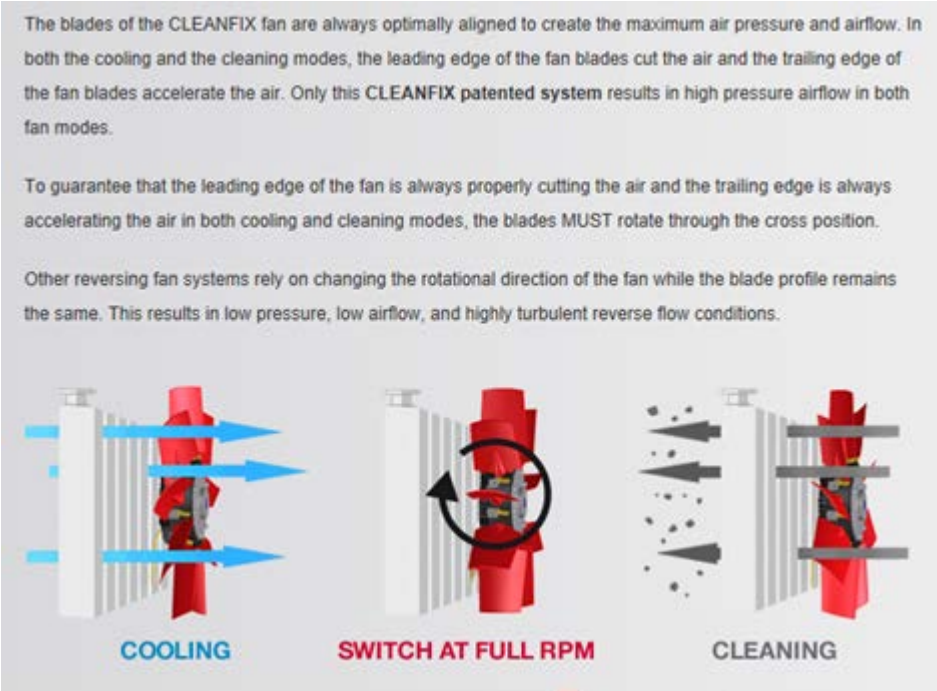
APU to be sold, installed and serviced by an authorized dealer

OPTIONAL: REVERSING FAN

10.237 The intent of the **Reversing Fan** is to provide radiator clean-out by automating the cleaning process which will then take place at selected intervals. The process also allows the operator to initiate the cleaning process with an in-cab button. _____

State: Make and Model: _____

State: Optional Price for Reversing Fan $_____



http://www.cleanfix.org/home

http://www.equipmentworld.com/aftermarket-options-cooling-fans/

High-Lights of the Process

The Cleanfix reversible fan, however, changes airflow direction not by reversing rotation, but by rotating each of its nine blades 180 degrees, thus changing the pitch of the blades and reversing airflow. According to Cleanfix, changing blade pitch, instead of reversing direction of rotation, ensures that the reverse airflow stream is as powerful as the cooling blast, thus optimizing both cooling and cleaning performance.

Cleanfix fans use a patented pneumatic cylinder, working through eccentric linkage within the fan's hub, to rotate each blade on its individual axis. A small 12/24-volt air compressor supplies the required actuating air, and the blades return to their cooling position via spring force. Blade pitch can be changed at any engine speed.

An optional electronic control module allows automating the cleaning process, which will then take place at selected intervals. The standard system requires the machine operator to initiate the cleaning process with an in-cab button, but in either instance, the operator can cancel the process with the touch of a button.

The kit includes a Standard reversing fan, adaptor flange and spacer, a valve/timer control set for 15 minute intervals. Also included is a cab mounted push button which can be used to override the timer if desired.

If the truck will be spending any amount of time on the road we recommend connecting the power supply to the PTO so that the reversing cycles only happen when the PTO is engaged and not while roading.

Another option is to use just a push button control to activate a cleanout cycle instead of the quoted timer control.

The VP (Variable Pitch) option will change the operating pitch of the blades based on the temperature of the air flowing through them. When the engine is not requiring all that air flow to remain cool, the blade pitch decreases. As the air temperature increases, the blade pitch then increases, which increases cooling. This is accomplished with the use of a Thermo Cell installed on the fan hub at each blade. There is no electronics required to accomplish this function. The radiator clean-out mode continues to operate exactly as with the Standard reversing fan, independent of the Variable Pitch function. The advantage of this option is when operating at cooler temperatures, there is increased horsepower available, less fuel consumption and reduced fan noise.

11.0 **WARRANTY**

11.1	The Chipper body warranty on the complete vehicle (excluding the chassis) shall include 100% replacement parts and labour at no cost to the City and shall cover the complete equipment and all parts thereof against defects of workmanship, construction and materials for one (1) years from the date the equipment is put into service by the City of Winnipeg.		_____
11.2	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		_____
	BODY WARRANTY		
11.3	Main Frame - Structural	**State:**	_____
11.4	Frame – Non-Structural	**State:**	_____
11.5	Components e.g. Pumps	**State:**	_____
11.6	Hydraulics	**State:**	_____
11.7	Hoist and Cylinder	**State:**	_____
11.8	Electrical	One (1) year **State:**	_____
11.9	LED Lighting	**State:**	_____
11.10	Paint	**State:**	_____
	CAB & CHASSIS WARRANTY		
11.11	Basic Vehicle - Chassis	One (1) year, unlimited km, **State:**	_____
11.12	Electrical	One (1) year **State:**	_____
11.13	LED Lighting	**State:**	_____

11.14	Batteries	One (1) year, unlimited km **State:**	_____
11.15	Drivetrain	Two (2) years, unlimited km **State:**	_____
11.16	Cab Structure/Corrosion	Five (5) years, unlimited km **State:**	_____
11.17	Frame & Cross-Members	Five (5) years, unlimited km **State:**	_____
11.18	Cab Paint	One (1) year or 160,000 km **State:**	_____
11.19	Engine	Three (3) years or 240 000 km **State:**	_____
11.20	Transmission	Two (2) years, unlimited km **State:**	_____
11.21	Axles - Front & Rear	Two (2) years or 161 000 km **State:**	_____
11.22	Components	**State:**	_____

OTHER WARRANTIES

11.23	APU	**State:**	_____
11.24	Reversing Fan	**State:**	_____

12.0 **DELIVERY**

12.1	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 WFMA 185 Tecumseh Street, Winnipeg MB. The successful bidder shall be notified by the Contractor Administrator the delivery address prior to issuance of the purchase order	_____
12.2	Delivery Time: Equipment shall be delivered between 8:00 am and 2:00 pm on Business Days **State:** Delivery Date	_____
12.3	Delivery Contact: The Contractor shall contact the Contract Administrator prior to delivery of the equipment.	_____
12.4	P.D.I: A pre-delivery inspection shall be performed by the Contractor on the equipment. Proof upon inspection including completed check list	_____

13.0 **MANUALS**

13.1 Manuals supplied under this Contract shall cover the complete equipment including all components thereof, CD or USB flash drive is preferred where available. _____

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

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

b) Parts and service manuals – One (1) complete set including preventative maintenance schedules. CDs or USB flash drive are preferred. _____

14.0 **PARTS/LABOUR DISCOUNT**

14.1 Bidder to provide City of Winnipeg Parts Discount % Pricing from retail parts pricing. **State: percentage discount** _____*%*

14.2 Bidder to provide City of Winnipeg Labor Discount % Pricing from Retail shop labor rate. **State: percentage discount** _____*%*

15.0 **FIRST SERVICE PREVENTATIVE MAINTENANCE KIT**

15.1 In order to assure minimum downtime of the equipment in future service, the Contractor shall provide one (1) complete replacement set of new OEM filters for each unit purchased. The set of required filters shall include (if applicable to the equipment type) air, fuel, oil, cab and hydraulic, or otherwise all known necessary common replacement filters required for the first preventative maintenance servicing. _____

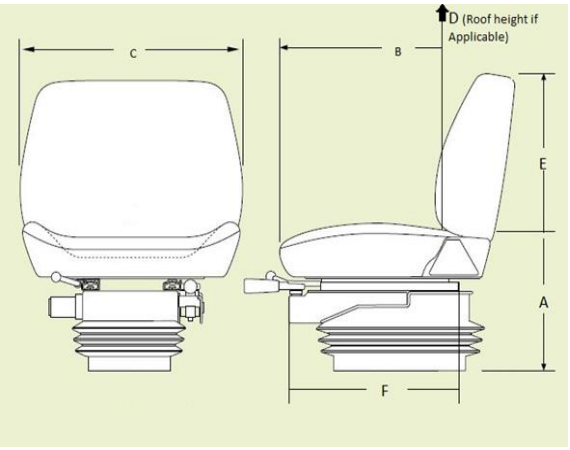
15.2 The Contractor shall provide a list of factory recommended lubricants to be used with the equipment, as well as a complete cross reference guide for all warranty approved lubricants and filters that can be used during preventative maintenance servicing. _____

16.0 ERGONOMIC SPECIFICATIONS

Entry/ Exit

16.1	First step entry height	**State:** height of first step in inches	_____
16.2	First handhold entry height	**State:** first handhold entry height in inches	_____
16.3	Access to equipment	**State:** door opening height in inches	_____
16.4	Access to equipment	**State:** door opening width in inches	_____
16.5	Designed to prevent slipping	Anti-slip steps/handholds **(Y or N)?**	_____

Seat

16.6	Use diagram to answer questions.		
16.7	Sitting Height Range (from floor (where feet rest) (A))	**State:** seat height range in inches	_____
16.8	Seat Length/Depth (B)	**State:** seat length/depth in inches	_____
16.9	Seat Width (C)	**State:** seat width in inches	_____
16.10	Cab Height (from seat to roof (if applicable) (D))	**State:** cab height range in inches	_____
16.11	Back Rest Height (E)	**State:** back rest height in inches	_____
16.12	Seat Travel Range (F)	**State:** seat travel in inches	_____
16.13	Lumbar Support	Is lumbar support provided **(Y or N)?**	_____
16.14	Head Rest	Is head rest provided **(Y or N)?**	_____
16.15	Seat Material	Breathable **State:** type of seat material	_____

Operation

16.16	Reaching Distance (to usual work)	**State:** reaching distance in inches	_____
16.17	Maximum Reaching Distance	**State:** maximum reach distance in inches	_____
16.18	Adjustable Pedals (accelerator/brake/clutch)	Are pedals adjustable **(Y or N)?**	_____
16.19	Adjustable Steering Wheel	Is steering wheel adjustable **(Y or N)?**	_____
16.20	Adjustable Shoulder Belt	Is belt adjustable and anchored **(Y or N)?**	_____

Cargo Area

16.21	Lid opens to provide adequate space	Adequate space provided **(Y or N)?**	_____
16.22	Loading Height	**State:** trunk height in inches	_____

Environment

16.23	Operator compartment is insulated from equipment noise (while operating)	**State:** dB inside cab while operating	_____
16.24	Operator insulated from equipment vibration	Is operator insulated from vibration (Y or N)?	_____
16.25	Heating/Cooling Systems	**State:** cab temperature range	_____
16.26	Cab Lighting	**State:** lumens inside cab	_____

Maintenance/ Inspection

16.27	Lift Assistance (when necessary)	Is lift assistance provided **(Y or N)?**	_____
16.28	Easy Access (to compartment doors)	Is easy access provided **(Y or N)?**	_____
16.29	Include any other relevant ergonomic specifications and applicable range of adjustment		_____

FORM N (R1): DETAILED SPECIFICATIONS 17016

SINGLE AXLE CHASSIS WITH A SEWER JET BODY

1.0 DESCRIPTION OF EQUIPMENT/APPLICATION

1.1 These specifications describe **Single Axle Chassis with a Sewer Jet Body** and other equipment and features as specified herein. These units are an integral portion of the City of Winnipeg Water and Waste equipment fleet as they are utilized year round during all seasons. The Trucks will be used for the removal of sand, dirt, grease, detergents, and materials normally found in storm drain and sanitary pipes. The equipment described will be designed to deliver high performance capabilities and provide maximum operator safety and convenience.

1.2 The **Single Axle Chassis with a Sewer Jet Body** shall be new 2017 model year or newer.

1.3 The **Single Axle Chassis with a Sewer Jet Body** 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 **Single Axle Chassis with a Sewer Jet Body** shall comply with the applicable regulations:

- Highway Traffic Act
- Manitoba Motor Vehicle Act
- Canadian Motor Vehicle Safety Standards, CMVSS Transport Canada
- National Safety Mark, NSM
- Manitoba/Winnipeg 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.

2.4 The manufacturer/installer shall be a certified vehicle completer and must affix their National Safety Mark (NSM) certification sticker on each unit.

State NSM number: _____

3.0 SERVICE FACILITY

3.1 For the purpose of warranty repairs, the supplier shall have an authorized service facility located within 10 kilometres 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 B11, 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 REFERENCES

4.1 If available, please provide five (5) 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 Eligible models are: **SECA 800-HPR Series III** or **Vactor RamJet 850**, or equivalent in accordance with B6 Substitutes.

5.2 **State** make and model of equipment being 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 **Single Axle Chassis with a Sewer Jet Body**, 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 **Single Axle Chassis with a Sewer Jet Body** 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 The **Single Axle Chassis with a Sewer Jet Body** must be fully fuelled upon delivery **(no exceptions).**

9.0 QUALIFICATIONS OF MANUFACTURER & CONTRACTOR

9.1 The manufacturer of the **Single Axle Chassis with a Sewer Jet Body** shall have five (5) years continuous experience manufacturing **Single Axle Chassis with a Sewer Jet Body.**

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 **Single Axle Chassis with a Sewer Jet Body** of the type being offered.

10.0 **SPECIFICATIONS**- _____

CHASSIS:

10.1 Weights: _____

The Trucks shall not exceed the City of Winnipeg's limit for gross vehicle weight, axle and tire loads

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) – 9100 kg (20,056 lbs.)
- Tire load – 9 kilograms for each millimeter width of tire (approximately 500 lbs. per inch of tire width).

10.2 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 two (2) operators, all attachments and full of fuel.

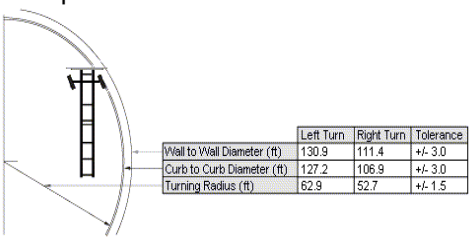
10.3 GVWR
- GVWR Total 33,000 lbs.
- GVWR Front 12,000 lbs.
- GVWR Rear 21,000 lbs.

_____

10.4 Cab Conventional with corrosion inhibitor _____

10.5	Cab to Axle	As required for Sewer Jet Body	_____
10.6	Wheelbase	As required for Sewer Jet Body	_____
10.7	After-Frame	As required for Sewer Jet Body	_____
10.8	Turning Radius	Turning Radius **State:** vehicle turning radius	_____

Example:



a) Wall to Wall (ft.)
b) Curb to Curb(ft.)
c) Turning Radius (ft.)

ENGINE:

10.9	Type	Tier IV Final Diesel, inline 6-cylinder	_____
10.10	Horsepower	Approximately 300 HP gross	_____
10.11	Torque	Approximately 800 lb-ft.	_____
10.12	Engine Shut Down	Low oil pressure / high water temperature	_____
10.13	Air Intake Warmer	**Required:**	_____
10.14	Fuel Shut-Off	Electric solenoid type	_____
10.15	Air Intake	Side of hood air intake	_____
10.16	Air Cleaner	Dry type	_____
10.17	Air Intake Restriction	Dash mounted restriction indicator	_____
10.18	Oil Drain Plug	Magnetic type	_____
10.19	Oil Filter	Full flow, spin-on type	_____
10.20	Fuel Filter	Spin-on type	_____
10.21	Fuel/Water Separator	Heated, drainable under hood	_____
10.22	Fuel Line Primer Pump	**Required:**	_____
10.23	Block Heater	Immersion type, Approximately 1000 Watt with covered recessed male plug, located under driver's side door	_____
10.24	Radiator	Aluminum 1000 - 1200 square inch **State:** size	_____
10.25	Coolant	**Extended Life** coolant, antifreeze to -35°F (-37°C)	_____

10.26	**Coolant Filter**	**If Available** **Or** **Coolant Maintenance Program** **Extended life coolant maintenance is test strip every approximately 500 hours and fluid change at 10,000 hours.** **State: Test strip and fluid change intervals**	_____ _____
10.27	Coolant Hoses	Silicone type or Gates Blue Stripe	_____
10.28	Fan Drive	Thermostatically controlled, automatic type with dash switch	_____
10.29	Air Compressor	Water cooled, pressure lubricated, 15-18 cfm	_____
10.30	Diesel Exhaust Fluid (DEF) Tank	Approximately 19 – 36 Litres or largest size per application. Located Driver's side **State:** size and location	_____
	ELECTRICAL SYSTEM:		
10.31	Electrical Connector's	Plug-in, sealed type	_____
10.32	Anti-Corrosion Electrical Package	Controllers and sensitive electrical components (PCM, Harnesses etc.) mounted in cab **State:** locations 	
10.33	Alternator	Delco Remy 36SI Heavy Duty, Brushless type 160 -180 Amp Pad Mount Remote Sense **State:** make and model	_____ _____
10.34	**Starter**	**Delco Remy 41MT or 39MT** **Heavy Duty** **Over-Crank Protection** **State: make and model**	_____ _____
10.35	Circuit Breakers	Auto-reset, readily accessible	_____

10.36	**Batteries/Battery Location**	**Three (3) batteries, 12-volt, group 31, approximately 2700-2850 CCA combined** **Or** **Two (2) batteries, 12-volt, group 31, approximately 2250 CCA combined** **Batteries not to impede with the installation of the body** **State: Quantity, location and CCA**	_____ _____ _____
10.37	**Battery Disconnect**	**Required:** **For Air Brakes:** **In-cab mounted outboard of driver's seat** **State: location** **For Hydraulic Brakes:** **State: Method of battery disconnect**	_____ _____ _____
10.38	Battery Boost Terminal	Remote battery boosts terminal(s), **protected from road spray.** **State:** location **Exact location to be determined at pre- production meeting**	_____
10.39	Cab Marker Lights	LED Cab or LED Sun Visor	_____
10.40	2-Way Radio Circuit	Independent 20 Amp circuit, ignition powered, wired under dash loose, labelled	_____
10.41	Accessory Switches	**Required:** Six (6). All switches complete and wired for body installation, labeled and backlit	_____
10.42	Mega Fuse Box	Located in-cab or under-cab and shall be sealed. **State:** location and method of sealing	_____
	EXHAUST SYSTEM:		
10.43	Exhaust	Horizontal exhaust cylinder and vertical right hand tail pipe. Exhaust not to impede in the installation of the body. **State:** type and location	_____
10.44	Overall Exhaust Height	To clear dump body cab shield	_____

10.45	Exhaust Heat Shield	**Required:** 	_____
	TRANSMISSION:		
10.46	Transmission	• Allison 3000 RDS with 6-speed programming, • Ratio shall be as per inter-city application. • Transmission shall come with load base Management Programming.	_____
10.47	Allison SCAAN	The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator, the Allison SCAAN	_____
10.48	Transmission Fluids	Synthetic	_____
10.49	Shift Selector	Digital push-button type, dash mounted	_____
10.50	Cooling Capacity	Water to oil transmission cooler, as per manufacturer's recommendation for severe duty cycle	_____
10.51	Oil Level Dipstick	Bayonet type with high and low level markings	_____
10.52	Transmission Drain Plug	Magnetic type	_____
	FRONT AXLE:		
10.53	**Front Axle**	**Set back axle, Meritor or Detroit 12K axle 12,000 lbs. capacity, with synthetic fluid.** **State: make**	_____
	REAR AXLE:		
10.54	Rear Axle	Meritor 21,000 lbs. capacity, with synthetic fluid.	_____
10.55	Ratio	For 110 km/hr **State:** ratio	_____
10.56	Inter-Axle Lock	**Required**: with dash mounted switch	_____
10.57	Differential Lock	**Required**: for drive axle with dash mounted switch	_____

10.58	Hub Seals	Oil lubricated front and rear type	_____
	FRONT SUSPENSION:		
10.59	Front Suspension	Multi-leaf spring suspension, 12,000 lbs. capacity	_____
	REAR SUSPENSION:		
10.60	Rear Suspension	Air ride suspension, 21,000 lbs. capacity, axle, shall be as recommended for Sewer Body application	_____
10.61	Suspension Control Valve	Manual dump valve for air suspension complete with dash mounted switch, indicator light, gauge and buzzer	_____
10.62	Auto Refill	**Required**: at 5 km/hr **Exact speed will be determined at a pre-production meeting**	_____
	RIMS, WHEELS AND HUBS:		
10.63	Front Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.64	Rear Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.65	Hubs	Aluminum material	_____
10.66	Wheel Nut Indicators	**Required**: on all wheel nuts	_____
	TIRES:		
10.67	Front Tires	11R 22.5 16 ply, snow, mud and ice rated for requested GVWR and application	_____
10.68	Rear Tires	11R 22.5 16 ply, snow, mud and ice rated for requested GVWR and application	_____
	FRAME:		
10.69	Frame	Single rail as recommended for dump body application	_____

10.70	Rust Inhibitor (Frame/Cross Member)	ARMOUR-SEAL ™ FRAME & CHASSIS COMPONENT PROTECTIVE UNDERCOATING: (or equivalent) Sodium, magnesium and calcium chloride resistant. Semi-permanent, high strength rubberized polymer blended.  **RHOMAR Industries, Inc.** Tricia McKnelly-Anderson Account Manager 2107 E Rockhurst Springfield, MO 65802 1.800.688.6221 417.866.5593 (fax) www.rhomar.com www.rhomar.com/products/armour-seal.	_____
10.71	Chassis Fasteners	Grade-8 threaded hex headed frame fasteners	_____
10.72	Rear Frame Towing Provisions	Towing provisions with 7-way pin receptacle to end of frame with two (2) extra feet of wiring to for ease of body installation.	_____
	STEERING:		
10.73	Steering	Tilt and telescopic, power, rated for front GVWR rating. Reservoir approximately 2 quart with see through tank.	_____
	BRAKES:		
10.74	Brakes	Air, ABS, S-cam drum brakes, front & rear	_____
10.75	Slack Adjusters	(Clearance sensing), automatic type	_____
10.76	Parking Brake	**Required:**	_____
10.77	Brake Pots	Vented type	_____
10.78	Dust Shields	**Required**: front and rear	_____

10.79	**Air Tanks**	**Shall be aluminum tanks with aluminum or stainless steel straps or nylon coated aircraft cable (3/16 dia.) with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion**	_____
10.80	Moisture Ejector	**Required:** Wabco, heated, in all air tanks	_____
10.81	Drain Valves	**Required:** Manual, chain or cable operated, on each air tank	_____
10.82	Air Dryer	Wabco Heated System Saver 1200 or equivalent **State:**	_____
	FUEL TANK:		
10.83	**Fuel Tank**	**Single 40 – 50 gallon fuel tank.** **Shall not impede in the installation of the body.** **State: maximum fuel capacity**	_____
10.84	Fuel Water Separator	**Required:** heated	_____
10.85	Tank Straps	Aluminum or Stainless Steel straps with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion **State:**	_____
	CAB:		
10.86	Cab	Conventional with corrosion inhibitor	_____
10.87	Cab Construction	Aluminum or Galvanized steel **State:**	_____
10.88	Bumper To Back Of Cab	BBC Approximately 106-110 in. **State:**	_____
10.89	Cab Mounts	Air suspension	_____
10.90	Hood	High visibility hood	_____
10.91	Front Grille	Stationary mounted to hood	_____
10.92	Cab Interior / Trim	Extreme climate insulation including cloth or vinyl headliner on roof, door panels and rear interior of cab	_____
10.93	Cab Silencer Package	**Required**: for minimal decibel level	_____
10.94	Hood/Firewall/Engine Insulations	Insulated hood liner, engine cover and firewall	_____
10.95	Floor Covering	Rubber mat with under-padding	_____
10.96	Floor Mats	Two (2), rubber	_____

10.97	Driver's Seat	High back, air suspension with foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.98	Passenger Seat	High back, air suspension with foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.99	Dashboard	Ergonomic (Wing) Design	_____

10.100	Sun Visors	Dual flip-up type	_____
10.101	Steering Wheel	Tilt and telescopic type	_____
10.102	12-Volt Power Outlet	**Required :** Two (2) with independent circuit	_____
10.103	Radio	Factory installed AM/FM/ with "hand free" Blue Tooth capability	_____
10.104	Starter Switch	Key operated complete with three (3) sets of keys	_____
10.105	Interior Light	Dome light with driver and passenger door switches	_____
10.106	Heater / Defroster	High output, capable of keeping all windows clear at an outside temperature of (-40°C)	_____
10.107	Air Conditioning	**Required:**	_____
10.108	Brake, Accelerator, Pedals	Floor or hanging type brake and accelerator pedal **State:**	_____
10.109	Horn	Dual electric	_____
10.110	Exterior Mirrors	Mirrors heated, lighted, 4-way motorized adjustment (with convex mirrors), suitable for 102 in. equipment width	_____
10.111	Down-View Mirror	**Required**: over passenger door Approximately 5 in. x 4 in.	_____
10.112	Windows and Windshield	Tinted	_____
10.113	Power Windows	Power driver and passenger side	_____
10.114	Doors	Power door locks	_____
10.115	Windshield Wipers	Electric intermittent	_____
10.116	Wiper Blades	Heavy duty with winter type boot	_____

10.117	Windshield Washers	**Required**: Electric, with spray nozzles on wiper blades	_____
10.118	Grab Handles	Dual exterior **State:** locations	_____
10.119	Grab Handles	Dual Interior	_____
10.120	Entrance Steps	Dual each side, open grate / grip type	_____
10.121	Winter Front	Heavy-duty vinyl with twist lock or snap type fasteners	_____
10.122	Exterior Sun Visor	**Required:**	_____
10.123	Strobe LED Lights (Beacons)	Qty two (2) Amber LED Beacon, Class 1 High Dome Strobe Lights with aluminum or stainless steel brackets mounted to B-Pillar Note: Need to be forward enough as not to interfere with the cab shield if equipped with one. Whelen L31HAF    **Location to be determined at a pre-production meeting**	_____

INSTRUMENTATION:

10.124	Instrumentation	• Oil Pressure Gauge • Coolant Temperature Gauge • Transmission Oil Temperature Gauge • Voltmeter Gauge • Air Reservoir Pressure Gauge with LAP Warning Light And Buzzer • Low Oil Pressure Warning Light and Buzzer • High Water Temperature Warning Light and Buzzer • Non-Resettable Type Engine Hour-Meter	_____

TOW HOOKS:

10.125	Tow Hooks	Front mounted and Rear mounted	_____
10.126	Weigh Scale Systems	**Not Required for these Vehicles:**	_____

COLOURS:

10.127	Exterior Colour	White	_____
10.128	Interior Colour	Grey	_____

ACCESSORIES:

10.129	Flare Kit	Three (3) triangular reflectors, CVSA approved. Kit must be mounted or secured.	_____
10.130	Fire Extinguisher	5 lbs. Fire Extinguisher ABC type installed and secured **State:** location	_____
10.131	Back-Up Camera	**Required:**	_____
10.132	Back-Up Camera Screen	In-Dash (Ergonomic (Wing) Dashboard)	_____
		OR	
		Dash mounted if standard dashboard is specified.	_____

Back-Up Camera Screen location to be determined at a pre-production meeting.

SEWER JET BODY SPECIFICATIONS:

Sewer Jet Bodies to have similar Specifications and Capabilities as current City of Winnipeg Equipment. These specifications were developed using the SECA 800-HPR Series III Truck Mounted Sewer Jetter and Vactor RamJet 850 Truck Series Jetters. Use these as a reference in developing and submitting your bid submission.

WATER TANK:

10.133	Capacity	Approximately 1500 Gallons	_____
10.134	Construction	Welded/repairable approximately .750 in. U.V. stabilized Duraprolene	_____
		OR	
		Stainless Steel ;Type 304	_____
10.135	Baffles	Approximately .750 in. Duraprolene	_____
		OR	
		Stainless Steel ;Type 304	_____
		These baffles will reduce sloshing and distortion	
10.136	Ladder	Access to top of tank	_____
10.137	Tank Bottom	Flat bottom type **State:**	_____
10.138	Tank Top	Shall be completely removable for safe access of personnel entry during maintenance	_____
		OR	
		Sixteen (16) in. manway for safe access of personnel entry	_____
10.139	Pump Intake	Located to allow sediment to settle at tank bottom rather than entering and damaging pump	_____
		OR	
		Sumps in bottom of water tank to completely drain tank of water and sediment. *Note:* *Water is filtered before it enters the water pump to prevent sediment from entering the pump.*	_____

10.140	Strainer	Located at tank top for elimination of foreign objects into tank	_____
		OR	
		Located within the water fill system	_____
10.141	Drain Valves	Two (2) in. drain valves located at both curb side and street side	_____
		OR	
		Two (2) in. drain valves located inside water pump cabinet	_____
	FILL SYSTEM:		
10.142	Tank Filling	Ability to fill from both curb side and street side	_____
10.143	Tank Filling and Fill Hose	Located between the cab and water tank of the unit with a fill point on both sides of the truck	_____
		OR	
		Located at the rear of unit next to rear operator work station	_____
10.144	Tank Fill System	Incorporate a quick disconnect cam lock fitting for 2-1/2” fill hose	_____
10.145	Water Level Indicator	Shall have a LED Level Indicator that uses pressure transducers. **Note:** Water Level Indicators that use float sensors will not be acceptable.	_____
10.146	Features	**Required:** Low water indicator and alarm	_____
10.147	Protection	The Indicator case shall be waterproof, manufactured of aluminum or stainless, and have a distinctive label	_____
10.148	Programming	Shall be programmable from the display and shall support self-diagnostics capabilities, self-calibration, and a data-link to connect remote indicators **State:** method of programming	_____
10.149	Water Level Sight Gauge	Located on both curb side and street side	_____
10.150	Air Gap	A four-inch (4") air gap will be utilized between fill pipe and tank fill opening	_____
10.151	Material	Integral stainless steel ball float/seating system to eliminate water discharge due to movement of the vehicle	_____

10.152	Float System	Rust proof and provides the needed space between the inlet and the tank to protect from siphoning and back flow during hard stops by the vehicle	_____
10.153	Fill Hose Storage Rack	**Required:**	_____
	WATER PIPING SYSTEM:		
10.154	Piping Systems	All piping systems subjected to high pressure shall use zinc chromate plated steel fittings with minimum burst pressure of 4 times the system pressure.	_____
10.155	Hoses	Working pressure ratings shall exceed the maximum system pressure	_____
10.156	Strainer	Approximate range of 40 to 80 mesh screen shall be installed in the suction line at a location accessible for cleaning **State:** mesh screen size	_____
10.157	Piping	To be installed to drain by gravity through suitable openings equipped with plugs, drain cocks, or ball valves	_____
10.158	Pressure to the Cleaning Nozzle	Regulated by an overload relief valve	_____
10.159	Water Supply for Jetting	Directly controlled by the water pump No water diverter or directional valves are allowed due to significant wear issues at said valves.	_____
10.160	Recirculation System	Include a recirculation system that controls a proportional pump control with the ability to circulate a minimum of 10 gallons per minute of water This system allows for use of unit in sub-freezing temperatures	_____
10.161	Control for the Recirculation System	Shall be located in the cab	_____
10.162	Water Delivery to Hose Reel	Shall pass through one (1) or two (2) repairable/greaseable swivel rotary coupling **State:**	_____

WATER PUMP (SINGLE PISTON):

10.163 Single Piston Pump: _____

- The single piston pump will be rated for 106 GPM at 2840 PSI and powered to produce **80 GPM at 2500 PSI**.
- It shall be a double action pump that is hydraulically driven to provide specific pressures and flows.
- The pump is to operate with an oil to water ratio of 1:1. This cycle will provide jack hammer pulsation action to assist in clearing obstructions.
- The water end blocks as well as the oil end blocks shall be manufactured from an anodized high tensile alloy for reduced wear as well as reducing corrosion implications found on single piston pumps utilizing steel end block material.
- The water head and the oil channels shall have big bore channels to reduce back pressure and guarantee a high efficiency operation.
- The design of the pump shall allow the pump to run dry for long periods without damage.
- There shall be a hydraulic oil temperature sensor with auto stop to protect hydraulic components.
- The pump must have a LED light indicating pump status for easy trouble shooting and an hour meter for service intervals.
- The pump will have two access covers for easy inspection of the water valves and two drains to facilitate draining the water end(s).
- In addition the pump shifting action shall be controlled via non-contacting sensors.
- Pumps utilizing any type of mechanical switch to accomplish this shifting action are not acceptable.

OR

10.164 *Single Piston Pump:* _____

- *The high pressure dual acting single piston water pump shall be hydraulically driven that directly converts hydraulic oil pressure into water pressure*
- *The hydraulic pump(s) used to power the water pump shall be engaged / disengaged independently from the water pump eliminating unnecessary high pressure ball valve bypass and to help reduce water pump wear.*
- *The hydraulic system shall contain a direct acting relief valve. For added safety protection, the high pressure water system shall also contain a direct acting relief valve.*
- *The high pressure water pump shall have a maximum rated flow capacity of 100 GPM and a maximum rated output pressure of 2500 PSI.*
- *The high pressure water pump system shall be certified to deliver 0 to 80 GPM at a variable pressure up to 2500 PSI at the hose reel. Full flow and pressure ranges shall be achieved without diverting high pressure water back to the water tank.*
- *The water system shall be power demand matched to chassis to optimize performance and fuel economy. The high pressure water system shall have hose reel mounted controls for operation of two modes: (1) Low flow range of 0 to 40 GPM at variable pressure up to 2500 PSI at the hose reel, (2) High flow range of 20 to 80 GPM up to 2500 PSI at the hose reel.*
- *An oil filled water pressure gauge shall be provided at the primary work station on the rear hose reel.*
- *The water pump and associated water suction plumbing shall be located below the water storage tank.*
- *The water pump shall perform one complete cycle approximately every 4.5 seconds (80 GPM) or longer depending on flow output. This water pump cycle shall provide a pulsation action to assist the nozzle in navigating difficult lines or breaking through obstructions/blockages. Pulsation surge wave shall allow nozzle to punch forward 2" to 18" depending on flow dynamics and length of hose in sewer pipe. There shall be no interruption in the system water flow at the nozzle when this event occurs.*
- *The water pump shall use a single water piston that provides a relatively slow pump stroke that provides minimal wear and allows the pump to run at normal operating conditions or speed without water for thirty minutes.*
- *In order to maintain an optimized oil temperature for the hydraulic oil system, an oil to water shell and tube type oil cooler shall be provided in the water pump suction plumbing.*
- *A three inch "Y" strainer with 80 mesh stainless steel filter screen shall be located in the water pump suction between the water tank and water pump. A three inch gate valve shall be provide in the water pump suction to isolate the water tank and provide the ability to inspect/clean the 80 mesh stainless steel filter screen with water in the water tank*.
- *A compliment of drain valves and drain plugs shall be provided that allows the water pump and water tank system to be easily drained at ground level*.
- A mid-ship quick disconnect with shut off valve shall be provided.

10.165 Accumulator (Pump Pulsation Reducer) for Single Piston Pump: _____

- This device will be a nitrogen charged 200 Liter accumulator and be mounted directly to the pump for optimum performance.
- This system will also incorporate a ball valve which will allow the operator to turn this device on or off.

OR

- *A 2.5 gallon capacity, nitrogen charged bladder type accumulator shall be supplied to eliminate the cycle pulsation action and provide smooth operation at the nozzle when desired.* _____
- *The accumulator system shall have a 1" ball valve shut off to allow the water pump system to operate with pulsation action or smooth flow operation at the nozzle.*

10.166	Location	Located in the rear / side compartment, which is shrouded and heated to protect the pump from the dangers of any damage caused by freezing.	_____
10.167	Servicing	The water pump must be located to allow servicing of the pump at ground level.	_____
10.168	Drain Valves	Pump to be fitted with drain valves for complete draining of water pump.	_____

10.169 **HYDROSTATIC OR HYDRAULIC DRIVE SYSTEM:**

10.170	Engine Speed	The chassis engine speed will operate in a range of 1400 to 2000 RPMs depending on pump configuration to power the hydrostatic transmission.	_____

10.171 Hydraulic Oil Reserve Capacity:

- The hydraulic oil reserve capacity seventy-five (75) to eighty (80) U.S. gallons with oil temperature indicator.
- This unit will also be equipped with low hydraulic oil indicator light located at the operator's station to signal loss of hydraulic oil.
- The return in line filters will not be in the reservoir.

10.172	Cooling	The hydraulic oil shall be cooled by a high efficiency shell and tube heat exchange system. **Note:** Any oil cooling system that employs devices with moving parts shall not be acceptable.	_____
10.173	Shut-Off Valves	Shut-off valves will be installed on the suction lines of facilitate servicing of the hydraulic pump without the need of draining.	_____

10.174 Emergency Shut-Down:

- The hydraulic system shall have an emergency shut-down that automatically reduces the engine speed to idle eliminating the potential for damaging the PTO.
- When the shut-down switch is disengaged, the PTO will re-engage and operator can ramp back up to operating speed.

10.175	Location	The water pump and rear hydraulic motor are to be mounted above the chassis frame rails in the enclosed, heated pump compartment(s) located at the rear or side of the water tank. **State:** location of: Water Pump Rear Hydraulic Motor	_____ _____ _____
10.176	Location of Hydraulic Reservoir	Mounted under the body frame **OR** *Mounted to street side of chassis frame rail*	_____ _____
10.177	Hydraulic Oil	Non-toxic and biodegradable **State:**	_____

HIGH PRESSURE HAND GUN SYSTEM:

10.178	Standard	The High-Pressure Hand Gun piping shall be provided with quick-disconnect fitting located at curb side and 25' of ½" HP hose with fittings.	_____
10.179	Relief Valve Capabilities	High-pressure handgun circuit shall utilize an adjustable relief valve capable of 500 PSI capacity.	_____
10.180	Operation	The high-pressure handgun will be adjustable and repairable.	_____

ROTATING SAFETY HOSE REEL AND CONTROLS:

10.181	Capacity	700' x 1" high pressure sewer hose.	_____
10.182	Self-Levelling	The narrow designed reels shall be self-levelling type for operator safety .	_____
10.183	Construction	The hose reel will be constructed of 1/4" steel, designed to withstand maximum working pressure without distortion.	_____
10.184	Reel Flanges	Reel flanges shall be 1-1/2" and shall be designed to prevent hose damage from contact during all normal working conditions. **State:** if reel flanges are tapered	_____ _____

10.185	Reel Design	**State:** Reel Design _____ _____	_____
10.186	Hoses	• All hoses used to supply the hose reel or its hydraulic system shall be flexible and shall be fully enclosed in a shroud and routed underneath the reel structure below the reel drum. • The hoses shall be fully secured and protected against chafing and rubbing. • Protected from outside elements for winter operation **OR** • *Run hoses through heated cabinet system and over top of hose reel in heated compartment* • *The hoses shall be fully secured and protected against chafing and rubbing*	_____ _____
10.187	Baffles	The center of the reel shall include structures that reinforce the center of the drum.	_____
10.188	Loads	The reel shall be specially designed to handle all the loads that have been measured during cleaning operations, including the pull force from the operation of the nozzle, and the compressive forces from the pressurization of the hose.	_____
10.189	Hydraulic Drive	The reel shall be driven with hydraulic power for pay out and retrieve, either with or without the water pump in operation. The hydraulic drive shall have sufficient power to retract the hose when fully extended into the pipe with the cleaning nozzle in operation.	_____
10.190	Location	The hose reel assembly shall be mounted in the rear center of the rear compartment.	_____

10.191	Extension of Hose Reel	The hose reel shall have the ability to extend out from the rear compartment via a hydraulically powered cylinder. The cylinder shall extend the hose reels 48" from the fully retracted position in the heated rear compartment after the rear roll-up door has been completely opened. **OR** *The hose reel shall be located in a heated enclosure protected from the elements that rotates with the hose reel.*	_____ _____
10.192	Safety Reels	The safety reel will rotate a full 180 to190 degrees providing direct alignment to manholes. The rotation will enable the operator to position the machine operator out of the traffic pattern and provide protection while operating the machine. The rotating ability of the hose reel allows the operator to manipulate the hose reel into various positions depending on location of manhole. This allows for proper positioning of the hose reel without backing up or repositioning sewer machine. The hose reel is mounted on an industrial greaseable swivel bearing that is sealed and eliminates contamination from dirt. The industrial swivel bearing shall have an approximate load bearing weight of 5,000 Ft.-lbs. The bearing design shall have no wear points except the greaseable ball bearings and the races, which are constructed of hardened steel to minimize wear. The rotating hose reel will lock into position using a spring-loaded safety pin	_____
10.193	Rotating Reels Material	**Not Acceptable:** Using plastic material and/or sliding contact or other wear surfaces for swivel action will not be accepted.	_____
10.194	Control Panel	A single, right hand side control panel mounted on the rotating hose reel shall provide access to all necessary operating controls. The control panel shall rotate with the reel.	_____

10.195	Controls	Controls mounted on the rotating hose reel control panel will consist of: • Engine throttle control • Water pressure gauge • Tachometer • Hour meter • 12-volt plug for spotlight • Light switches • Low water warning light. • Digital Water Flow Gauge in GPM	_____
10.196	Hydraulic Controls	The hydraulic controls for the rotating hose reel will consist of: • variable speed control • forward-neutral-reverse directional control.	_____

10.197 Automatic Level Wind: _____

- The Sewer Hose Reel shall be equipped with an Automatic Level Wind, which allows for “hands-free” winding of sewer hose onto the hose reel without operator touching sewer hose.

10.198	Footage Meter	**Required:** Ability to read in meters **State:** location	_____

10.199 Digital Distance Counter: _____

- The unit will be supplied with a Digital Distance Counter that includes a digital screen with LCD display.
- The Digital Distance Counter measures the rotation of the hose reel and takes into account the diameter of the hose, the length of the hose, and the diameter of the hose reel drum.
- The Digital Distance Counter should be capable of displaying in either feet or meters.

HOSE REEL DRIVE SYSTEM:

10.200	System	The hose reels shall be chain driven by hydraulic power in both directions, either with or without the water pump in operation. The hydraulic drive shall have sufficient power to retract the hose when fully extended into the sewer with the cleaning nozzles in operation.	_____

SEWER HOSE:

10.201	Size	Hose will be 1” ID by 600’ with an operating pressure of 2500 PSI and a minimum burst pressure of 7500 PSI.	_____
10.202	Material	The unit will be supplied with an abrasion resistant plastic **(Armor Belt)** cleaner hose capable of cleaning sanitary service lines, storm lines, culverts, drainage tiles and other open conducts. The hose outer cover will contain an integral belting of high tensile polymer reinforcement for cut and abrasion resistance.	_____

PENDANT CONTROL:

10.203 CORDLESS Remote Control: _____

- The unit will be supplied with a CORDLESS remote control.
- The wireless remote RF unit will operate in the frequency range of 902-928 MHz.
- The wireless remote will have a range of approximately 300' with an obstructed view and approximately 1,000' with an unobstructed view.
- The wireless remote will have an operating time of 130 hours of continuous use and will have a temperature range of -40° to 70°C (-40° to 160° F).
- The remote control will come supplied with a lanyard to allow the operator to wear remote around his neck and have free use of both hands.
- The pendant control will include controls for the hose reel pay out and retrieve, throttle up/down, water on/off, and kill switch.

REAR COMPARTMENT(S):

10.204	Rear Compartment	Rear compartment shall be designed for total enclosure of major components including the water pump, hydrostatic motor, hose reel and associated plumbing and sewer hose.	_____
		OR	
		The rear hose reel enclosure shall consist of a rotating cylindrical enclosure with fixed top cover for the hose reel, an enclosure for the water pump and a storage cabinet that connects the two.	_____

10.205 Construction

Rear compartment(s) will be constructed of **aluminum** for corrosion resistance and to protect all components located at the rear of the tank.
Rear compartment(s) must be of a one-piece construction including sides and top to allow for easy removal for service _____

OR

*The rear hose reel enclosure shall be constructed of **aluminum** for corrosion resistance.*
The cylindrical enclosure shall have two access panels on either side for easy access for service.
The water pump enclosure shall have aluminum doors with stainless steel hinges that provide access to the water pump and plumbing _____

10.206 Insulation - **Required:** _____

All rear compartments housing major components shall be insulated with P2000 Insulation (nominal thickness TBD)

FTC Fact Sheet:

- Expanded polystyrene (EPS) core with reflective plastic facers
- Semi-rigid board with self-adhesive overlap flaps on front & back
- Functions as an air, moisture, and thermal barrier
- Class A fire rating
- Addresses all three types of heat transfer: conduction, convection, & radiation
- Available with reflective and/or durable white facers
- Commercial, institutional, agricultural and residential applications

http://p2000insulation.com/

P2000 Insulation System to be sold, installed and serviced by an authorized dealer

State: method of insulation

Application of insulation to be determined at a pre-production meeting

10.207	Floor Decking	Floor decking of rear body will be constructed of 11-gauge steel or aluminum Flooring shall also be treated with a non-skid coating for maximum protection from slipping. For winter time operation, floor decking to be completely enclosed and insulated	_____

10.208 Compartment Doors: _____

- Rear compartment shall utilize three (3) "upward acting" compartment doors which incorporate a header/counter balance design.
- Made of anodized aluminum panels, which maximize manoeuvrability, minimize vehicle width and eliminate the safety hazard of open-hinged doors.
- Panels will have no rollers or cables, will resist rust and will be virtually maintenance free.
- Doors will include stainless steel, lockable and keyed alike heavy duty handles.
- Top and side seals will prevent dust, dirt and moisture from entry compartment.
- Hinged doors that protrude into work area, invite accident or personal injury, and could result in severe structural damage if vehicle is moved with hinged doors open, cannot be accepted.

OR

- *All compartment doors shall be easy to operate from ground level, provide access to all sewer jetting components (hose reel, controls, and water pump) and be made of aluminum or stainless steel to provide corrosion protection.* _____
- *Doors shall be lockable and keyed alike with heavy duty handles.*
- *Doors to include seals that will prevent dust, dirt and moisture from entry to the compartments*.

10.209	Roll-Up Doors - Sides	The rear compartment will utilize two deluxe roll-up doors on either side. These doors will measure 48” W x 52” H. These doors allow for complete access to rear compartment.	_____
10.210	Roll-Up Doors - Rear	The rear compartment will utilize a deluxe roll-up door on the rear of unit that will measure 91” W x 70” H. This door will protect components when closed and allow telescoping extension of hose reel when opened.	_____
10.211	Automatic Safety Switch	The rear roll-up door will be equipped with an automatic safety switch, which will not allow hydraulic extension of hose reel unless roll-up door is opened completely.	_____
10.212	Bumper - Rear	Heavy-Duty rear bumper	_____

10.213 Mud Flaps

Required: Black rubber, no-name, front and rear of back tires complete with anti-sail bracket on each mud-flap. Rear mud flaps shall not contact the ground when the dump body is at maximum dump angle

_____

TOOL STORAGE:

10.214 Toolboxes

Aluminum toolboxes

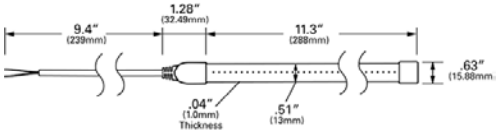
_____

The toolboxes will be protected from the effects of water and road dust by a thick, automotive "bulb type" neoprene door seal.

A heavy duty handle (locking style) will be provided on toolboxes.

Toolbox Lights:
LED continuous “strip” style lighting, properly secured to prevent damage, wired through chassis manufacturers OEM dash mounted switch labelled “Bin Lights”.

Grote LED Light Strips
http://www.grote.com/products/l11162001-xtl-led-technology-extreme-white-led-light-strip-288-mm/



State: qty and dimensions

10.215	Storage Tubes / Trays	Two (2) 4" PVC storage tubes for long handled tool storage.	_____
		OR	
		Driver's side tool tray	_____
	ALL WEATHER SAFETY SYSTEM:		
10.216	Enclosure(s)	The rear compartment(s) shall be totally enclosed and heated with an **80,000 BTU heater**. The heating of the compartment(s) will prevent accidents and mechanical damage caused by ice build-up in hose (which can lead to hose bursts) and freezing of the high-pressure piping and/or water pump and will enhance overall ease of operations.	_____
10.217	Retraction	When not in the extended position, the hose reels shall be able to be retracted and housed within the heated rear compartment.	_____
10.218	Recirculation	A recirculation fitting will be installed at the Operator's Station to allow for recirculation of water. Recirculation will be possible at all times, including instances when truck is in motion.	_____
10.219	Air Purge System	A self-contained air purge system powered by the truck chassis will be installed which allows high-pressure air to force water from applicable systems. The air purge system consists of an isolation valve and purge valve with a pressure gauge to monitor the air pressure in the auxiliary air reservoir.	_____
	COLD WEATHER OPERATING PACKAGE		
10.220	Water Lines	Insulated, including, but not limited to, pump suction line, pressure line to hose reel, and hand-held gun line.	_____
10.221	Cold Water Re-Circulation System	20 gpm, designed to prevent freeze-up while driving to and from work sights, operable at all vehicle road speeds.	_____
10.222	Circulation	Cold Water to circulate through entire system including hose reel and pump (Not through boiler)	_____
10.223	Air Purge System	**Required**: To remove water from pump and water lines	_____

10.224	Ball Valves or Drain Valves	Shall be provided in the bottom section of the water pump for cold weather draining and daily flushing.	_____

CONTROL PANEL:

10.225	Location	The Jetter control panel will be located at the rear of the truck on the curb side of the hose reel.	_____
10.226	Mounting	All controls shall be mounted in a weather tight NEMA 4 control panel.	_____
10.227	Control Panel	This control panel will include: • Throttle • Low Hydraulic Oil Warning Light • Variable Reel Speed Control • Control Panel Light • Water Level Indicator • Tachometer / Hour Meter • Forward/Reverse hose reel control • Water Pressure Gauge (glycerine filled) • Pump Power Control • Hydraulic Pressure Gauge • Digital Water Flow Gauge in gpm **List:** any other gauges or controls	_____

10.228 Rear Gauge Cluster System (Chassis Engine Monitoring): _____

- The Jetter shall include a Rear Gauge Cluster (chassis engine monitoring) system.
- The system will consist of a single screen LCD monitor that will display engine Oil Pressure, Volts, Temperature, and RPM's.
- In addition it shall also be capable of monitoring various engine fault codes and service reminders.
- This option requires chassis to be provided with an SAE J1939 Interface (multiplex system).

10.229	PTO Activation	PTO activation must be at the Operator Control Panel.	_____

MOUNTING:

10.230	Material	Unit will be mounted using a base frame **State:** mounting details.	_____

PAINTING:

10.231	Preparation	Before painting, all metal shall be cleaned and etched with a phosphoric material to insure permanent bond of primer and paint.	_____

10.232	Sequence	All components of the unit whether purchased or manufactured shall be BOTH primed and painted prior to assembly in order to assure maximum resistance to corrosion. **Note:** Painting after the assembly process is NOT acceptable.	_____
10.233	Colour Specification	The unit to have the frame painted black and the hose reel and shroud assemblies to be painted standard white.	_____
		State: any deviations to colour specification	_____

ACCESSORIES:

10.234	Additional Accessories	• (25') Fill Hose • Leader Hose • BB Hose Guide • Finned Nozzle Extension • Penetrator Nozzle with Replaceable Inserts • General Purpose Nozzle with Replaceable inserts • Nozzle Rack • Upstream Pulley Guide • Wash down gun with 25' x ½" hose with quick disconnect and retractable hose reel.	_____

OPTIONAL EQUIPMENT:

TRIPLEX PUMP CONFIGURATION:

State: Optional Price for **Triplex Pump Configuration**. $_____

TRIPLEX POSITIVE DISPLACEMENT PUMP

WATER PUMP (TRIPLEX):

10.235	Pump	Triplex positive displacement pump rated at and powered to produce 75 GPM at 2500 PSI.	_____
10.236	Location	Located in the rear compartment, which is shrouded and heated to protect the pump from the dangers of any damage caused by freezing. The water pump and associated water suction plumbing to be located below the water storage tank	_____
10.237	Servicing	The water pump must be located with liquid end facing out. This prevents the mechanic from getting in unit to do pump service work. This allows servicing the pump at ground level.	_____
10.238	Drain Valves	Pump to be fitted with drain valves for complete draining of water pump.	_____
10.239	Coupling Method	The water pump shall be direct coupled to a hydraulic motor. **Note:** Drive systems incorporating any type of flexible coupling or belt drive system are not deemed acceptable due to maintenance related issues.	_____

HYDROSTATIC DRIVE SYSTEM (TRIPLEX PUMP):

10.240 Operation: _____

- The water pump will be driven by a Hydrostatic system, which is powered by the truck engine via a PTO mounted to the transmission.
- The PTO drives a shaft, which powers a hydrostatic transmission pump.
- This hydrostatic transmission pump is responsible for driving a hydraulic motor, which drives the water pump.
- Mounted to the hydrostatic pump is a hydraulic pump, which is responsible for supplying power to all hydraulic functions including the hydraulic motor that drives the hose reel.

10.241 Control: _____

- The hydrostatic pump control must use a proportional spool type control. Proportional pump control must be electronically controlled by two separate signals.
- One signal to be used to stroke hydrostat to full capacity.
- The second signal to be used for recirculation mode.
- Cable or manual pump controls are not allowed.

10.242	Engine Speed	The chassis engine speed will operate in a range of 1400 to 2000 RPMs depending on pump configuration to power the hydrostatic transmission.	_____

10.243 Hydraulic Oil Reserve Capacity: _____

- The hydraulic oil reserve capacity will be at least thirty (30) U.S. gallons with oil temperature indicator.
- This unit will also be equipped with low hydraulic oil indicator light located at the operator's station to signal loss of hydraulic oil.
- The return line hydraulic filter shall be cartridge style and integral to the reservoir.

10.244	Cooling	The hydraulic oil shall be cooled by a high efficiency shell and tube heat exchange system. **Note:** Any oil cooling system that employs devices with moving parts shall not be acceptable.	_____
10.245	Shut-Off Valves	Shut-off valves will be installed on the suction lines of facilitate servicing of the hydraulic pump without the need of draining.	_____

10.246 Emergency Shut-Down: _____

- The hydraulic system shall have an emergency shut-down that automatically reduces the engine speed to idle eliminating the potential for damaging the PTO.
- When the shut-down switch is disengaged, the PTO will re-engage and operator can ramp back up to operating speed.

10.247	Location	The hydraulic oil reservoir, water pump, and rear hydraulic motor are to be mounted above the chassis frame rails in the enclosed, heated pump compartment located at the rear of the water tank.	_____
10.248	Hydraulic Oil	Non-toxic and biodegradable	_____

10.249 **F.O.G. System:**

- Fats, oil and grease, also known as FOG, causes sewer blockages, leading to spills and overflows that are hazardous to the health of the community, homes, local waterways and ground water.
- The F.O.G. System is an effective way to break through fat, oil and grease clogs, and is less costly and more efficient than conventional mechanical methods to eliminating these clogs.
- Using the F.O.G. solution actually cleans the pipe wall surface, emulsifies the grease so it flows downstream, and slows future build-up.
- The degreasing solution is blended with water and dispensed during jetting operations

The system consists of:

- Metering unit
- Solution tank
- Water line
- Sight Gauge
- Shut-Off valve
- Misc. hardware to ensure operation of the unit

Operation

- A toggle switch on the metering unit activates the system when needed and a sight gauge indicates the mixing ratio.
- The metering unit blends solution and water for the jetting hose, before being dispensed into the sewer line where the build-up has occurred.
- The solution penetrates, softens and emulsifies fat, oil and grease clogs.
- The dis-solved build-up does not re-solidify, flowing with wastewater as it travels through the sewer.
- The metering unit is only switched on when cleaning grease-clogged pipes. It does not need to be running during normal sewer cleaning operations.
- The operator determines actual application after camera inspection, work-order instructions or knowledge of local conditions.

Design and function shall be determined at a pre-production meeting

State: Optional Price for **F.O.G. System** $_____

10.250 **Anti-Bacterial Disinfectant System:**

System Sprays Anti-Viral and Anti-Bacterial agents formulated to reduce sewage contaminates from equipment that is handled by workers.

Vanguard Systems: http://www.vanguard-systems.us/home
Video: https://www.youtube.com/watch?v=KF3gKL3doPQ

The system consists of:

- Main control unit
- Hose reel
- Hose reel swivel
- Five (5) gallon ant-bacterial tank
- Collar
- Spray gun with changeable nozzles
- All required misc. hardware to ensure proper operation

Design and function shall be determined at a pre-production meeting

State: Optional Price for **Anti-Bacterial Disinfectant System**. $_____

10.251 **Lateral Line Cleaning Cart:** _____

Designed to be a one man operation and work with the truck jet when cleaning smaller lines (2" – 4" pipe) and lines which have difficult turns and bends or are difficult to access with the vehicle.

Storage provisions to be included in the design where unit can be safely attached to the vehicle during transport.

Components:
Heavy duty 2-wheel or 4–wheel cart
150' x ½" jet hose
½ in. hose reel swivel
Hose reel with hand crank handle
Cleaning nozzle
On/Off ball valve

Suggested Design:

Design and function shall be determined at a pre-production meeting

State: Optional Price for **Lateral Line Cleaning Cart**. $_____

IN-CAB CONTROLS:

10.252 Cab Controls

Programmed through OEM dash mounted switches _____

10.253 Switches

All switches shall be back-lit for night time use and clearly identified with engraved style, permanent type labels. _____

Supply corresponding valve and solenoid necessary for operation _____

Switches:

- PTO Engagement
- Amber Lighting

Additional switches to be determined at a pre-production meeting

HYDRAULIC SYSYEM:

10.254 System Design: _____
Briefly describe the operation of the hydraulic system.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

10.255 Components: _____
List major components of the hydraulic system

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

ELECTRICAL & LIGHTING:

10.256 Conformance

All lighting to conform to: _____
- C.M.V.S.S.
- Manitoba Highway Traffic Act.
- City of Winnipeg Lighting Visibility Standard http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf.

10.257 Lighting

Supplier installed shall be **high count** LED lighting and shall be Truck-Lite, Whelen **or equivalent** _____

10.258 Connection System

Weather Pack Sealed Connection System _____

10.259 Grommets

Rubber grommets unless otherwise specified _____

10.260 Combination Turn/Stop And Taillights

One (1) per side
P/N Truck-Lite 44302R with P/N 44710 mounting grommets _____

10.261	Back-Up Lights	One (1) per side P/N Truck-Lite 44206C with P/N 44710 mounting grommets	_____

10.262	3-Light Cluster	Three (3) P/N Truck-Lite10250R with P/N 10403 mounting grommets	_____

10.263	Clearance Lights	High count LED P/N Truck-Lite10250R or 10250Y with P/N 10403 mounting grommets.	_____

10.264	Amber Strobe Lights	One (1) per side with mounting grommets P/N Whelen 5GA00FAR	_____

10.265	License Plate Light	Complete with license plate bracket. P/N Truck-Lite 36140 (Light) P/N Truck-Lite 36710 (Bracket) **Refer to Appendix A**	_____

10.266 Traffic Arrow

SWS 58084 Traffic Arrow
Bottom edge of the Traffic Arrow shall be 1.5 m (5 ft.) from ground level _____

Refer to Appendix A

10.267 Floodlights

Qty two (2) _____

7 In. Round LED Flood Light
Truck-Lite P/N 81704 or equal

Or

4x6 inch Rectangular Halogen Work Light
Truck-Lite P/N 80394 or equal _____

Mounted at rear of vehicle to provide optimum visibility at Operator's station

Type and location to be determined at pre-production meeting

10.268 Handheld LED Spotlight _____

Nova Tech Lighting
http://www.novatechlighting.com/product/series-2000l-led-nitehawk-patrol-light/

Specifications

Dimensions	8.5 x 4.5 x 4.5 in
Housing	Single piece unibody UV treated black neoprene.
Switch	Momentary rocker switch, Heavy-duty ON/OFF switch
Lamp	1,040 Lumens, 18.5 Watts, 12 +/- 1.2 Volts, 1.54 Amps, GaN-on-GaN 4000K Color Temp, 9° Beam Angle, 35,000 hour lamp life
Cord	36" retracted – 12' extended, 54" retracted – 24' extended
Plug	Additional outlet at Operator work station

10.269 Compartment Light Mounted inside _____
State: location, make and model number

10.270 Rear Light Mounting Location (Rear Bumper) _____

- Combination Turn/Stop and Taillights, qty two (2), one per side
- Back-Up Lights, qty two (2), one per side
- Rear-Corner Clearance Lights, qty two (2), one per side
- License Plate Light and Bracket

Refer to Appendix A

10.271 Rear Light Mounting Location (Rear Compartment) _____

- Amber Strobe Lights, qty two (2), one per side
- 3-Light Cluster, qty three (3)
- Rear-Corner Clearance Lights, qty two (2), one per side (top corners)
- Traffic Arrow, Qty one (1)

Refer to Appendix A

10.272 Clearance Light Mounting Locations: _____

- Sides – qty two (2) per side, located on front and rear top corners
- Sides – qty two (2) per side, located on front and rear bottom corners.

10.273	Standard	No clearance light shall protrude beyond the body.	_____
10.274	Standard	Taillights and back-up lights shall be fully visible when/if hose reel is extended.	_____
10.275	Harnesses	Harness system, properly routed and secured. All harnesses shall be internally grounded, no exceptions.	_____
10.276	Junction box	Junction box complete with necessary compression fittings, required for all vehicle lighting harness connections, located inside rear of truck frame.	_____
10.277	All Plug-In Connectors	All plug-in connectors shall be coated with NYK compound prior to assembly.	_____
10.278	Back-Up Alarm	97 dB (A), installed near rear of body, located to be protected from damage.	_____

10.279 Mini Light Bar

- Whelen R2LPPA Series Amber LED Mini Light Bar or equivalent in accordance with B6 Substitutes
- Mounted to top of cab
- Protected by Branch Guard
- Mini Light Bar shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Light Bar” with a permanent type, engraved style label.
- Switch shall be capable of high/low mode.

_____

10.280 Branch Guard

Heavy duty branch guard constructed by ⅜ in. round bar or equivalent.

_____

10.281 Wiring

All LED strobe lights shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Strobes” with a permanent type, engraved style label.

_____

All wiring for back-up alarm, warning lights, strobes and trailer connector shall be colour coded, loomed and properly secured.

_____

10.282 Trailer Connector

6-Way Round or SAE J560 7-Way Flat trailer receptacle.

Type to be determined at pre-production meeting

.

_____

10.283	Electrical Connectors	All electrical connectors shall be crimped and soldered, and then sealed using heat shrink tubing.	_____
10.284	Joining Of Wires	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).	_____
10.285	Wiring Routing	**Required:** Any holes to run wires through shall be drilled (not punched), grommeted and sealed	_____
	WELDING:		
10.286	Standard	All welds shall be continuous welds. All welding performed shall conform to CSA Standard W47.1-03 and W59-03.	_____
	INSTALLATION:		
10.287	Drilling	Any holes required in the chassis frame web must be drilled and reamed to fit bolts.	_____
10.288	Standard	Drilling on chassis frame flanges is not permitted. Welding on the chassis frame is not permitted, with the exception of installation of dump body pivot support.	_____
10.289	Tire Clearance	Three inches (3 in.) with rear suspension air bags lowered.	_____
10.290	Clearance	Clearance between dump body and back of truck cab shall be 3 in.	_____
	MISCELLANEOUS:		
10.291	Rear Fenders	Heavy Duty rear poly half-moon fenders. Shall be installed to have sufficient clearance from body and when chassis suspension is dumped for dump body operation.	_____

10.292 Mud Flaps

Required: Black rubber, no-name, front and rear of back tires complete with anti-sail bracket on each mud-flap. Rear mud flaps shall not contact the ground when the dump body is at maximum dump angle _____

10.293 Isolators

All interfaces between aluminium and steel shall be separated by an approximately 1/16 in. thick rubber or neoprene sheet and are to be bolted through with stainless steel bolts and non-conductive bushings _____

GREASING SYSTEM:

10.294 Complete unit shall have Groeneveld CPL Systems Inc. or Lubecore Auto Greasing System. _____

10.295 Single Line, EP2 and automatic low level shut-off with in-cab red light indicator. _____

10.296 All grease fittings for the entire chassis and body (including cylinder mounts, pivot points, dump body prop, plow etc.), shall be readily accessible or shall be equipped with remote grease zerks as required. _____

10.297 **Grease Points:** _____
Approximately twenty-six (26) points on cab & chassis
Approximately eight (8) – twelve (12) points on body (depending on body configuration)

State: quantity of grease points on cab & chassis: _____

State: quantity of grease points on body: _____

10.298 Grease pump will pump Original Equipment Manufacturer specified EP2 grease from -40^{o}C to + 50^{o}C. _____

10.299 One way check valves on each line _____

10.300	Low temperature compatible 800 bar/12000 PSI grease line with a bending radius of ¾ inch. With a 5 year line breakage guarantee for on road trucks.		_____
10.301	One piece flow dividers with manual over ride.		_____
10.302	**Warranty:** three (3) years parts and labour.		_____
	SAFETY:		
10.303	Pre-Trip Exterior Light Inspection	**Programmed:** When activated, the vehicle lights repeatedly flash in a specific sequence to allow the operator to verify that the exterior lights are functioning. The light test sequence tests: • Park Lights • Headlights (low and high beams) • Right/left front/rear turn lights • Brakes Lights • Mini Light Bar • Beacon(s) • Strobe Lights • Clearance Lights	_____
10.304	Warning Light Over Ride	**Programmed:** Rear strobe lights to be programmed to allow for an over-ride for turn signals and brake lights when strobe lights are on. Other drivers will be able to determine if the truck is stopping or turning when strobe lights are on.	_____
	FINISH:		
10.305	Preparation	All ladders, hitch plates, reservoirs, steel brackets, etc. shall be sandblasted, properly cleaned, primed and finished with the Endura or DuPont paint process as follows: **Note:** Aluminum components are exempt from finish	_____
10.306	Primer	**Required:** Epoxy or Polyurethane primer Endura EP321 Intermix Epoxy Primer or DuPont polyurethane. Two (2) coats – Dry Film Thickness 3.0 – 4.0 mils	_____

10.307	Paint	Required: Polyurethane Colour: Black Endura EX-2C or DuPont Polyurethane Two (2) coats: 3 - 5 mils Wet Film Thickness with a total combined overall average Dry Film Thickness of 4 – 6 mils Note: Complete body (inside and outside) shall be painted where applicable.	_____

11.0 **WARRANTY**

11.1	The body warranty on the complete vehicle (excluding the chassis) shall include 100% replacement parts and labour at no cost to the City and shall cover the complete equipment and all parts thereof against defects of workmanship, construction and materials for one (1) year from the date the equipment is put into service by the City of Winnipeg.		_____
11.2	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		_____
	BODY WARRANTY		
11.3	Main Frame - Structural	**State:**	_____
11.4	Frame – Non-Structural	**State:**	_____
11.5	Components e.g. Pumps	**State:**	_____
11.6	Hydraulics	**State:**	_____
11.7	Electrical	One (1) year **State:**	_____
11.8	LED Lighting	**State:**	_____
11.9	Paint	**State:**	_____
	CAB & CHASSIS WARRANTY	**State:**	_____
11.10	Basic Vehicle - Chassis	One (1) year, unlimited km, **State:**	_____
11.11	Electrical	One (1) year **State:**	_____
11.12	LED Lighting	**State:**	_____
11.13	Batteries	One (1) year, unlimited km **State:**	_____
11.14	Drivetrain	Two (2) years, unlimited km **State:**	_____

11.15	Cab Structure/Corrosion	Five (5) years, unlimited km **State:**	_____
11.16	Frame & Cross-Members	Five (5) years, unlimited km **State:**	_____
11.17	Cab Paint	One (1) year or 160,000 km **State:**	_____
11.18	Engine	Three (3) years or 240 000 km **State:**	_____
11.19	Transmission	Two (2) years, unlimited km **State:**	_____
11.20	Axles - Front & Rear	Two (2) years or 161 000 km **State:**	_____
11.21	Components	**State:**	_____

OTHER WARRANTIES

11.22	Water Tank	Ten (10) years	_____
11.23	F.O.G. System:	**State:**	_____
11.24	Anti-Bacterial Disinfectant System:	**State:**	_____
11.25	Lateral Line Cleaning Cart:	**State:**	_____

12.0 **DELIVERY**

12.1	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 WFMA 185 Tecumseh Street, Winnipeg MB. The successful bidder shall be notified by the Contractor Administrator the delivery address prior to issuance of the purchase order	_____
12.2	Delivery Time: Equipment shall be delivered between 8:00 am and 2:00 pm on Business Days **State:** Delivery Date	_____
12.3	Delivery Contact: The Contractor shall contact the Contract Administrator prior to delivery of the equipment.	_____
12.4	P.D.I: A pre-delivery inspection shall be performed by the Contractor on the equipment. Proof upon inspection including completed check list	_____

13.0 **MANUALS**

13.1 Manuals supplied under this Contract shall cover the complete equipment including all components thereof, CD or USB flash drive is preferred where available. _____

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

a) Operator's Manual – Two (2) per unit (one (1) Operator's Manual shall be sent to the Equipment Operator Training Branch _____

b) Parts and Service Manuals – One (1) complete set including preventative maintenance schedules. _____

Paper Copy for the department plus CDs or USB flash drive for others.

14.0 **PARTS/LABOUR DISCOUNT**

14.1 Bidder to provide City of Winnipeg Parts Discount % Pricing from retail parts pricing. **State: percentage discount** _____*%*

14.2 Bidder to provide City of Winnipeg Labor Discount % Pricing from Retail shop labor rate. **State: percentage discount** _____*%*

15.0 **FIRST SERVICE PREVENTATIVE MAINTENANCE KIT**

15.1 In order to assure minimum downtime of the equipment in future service, the Contractor shall provide one (1) complete replacement set of new OEM filters for each unit purchased. The set of required filters shall include (if applicable to the equipment type) air, fuel, oil, cab and hydraulic, or otherwise all known necessary common replacement filters required for the first preventative maintenance servicing. _____

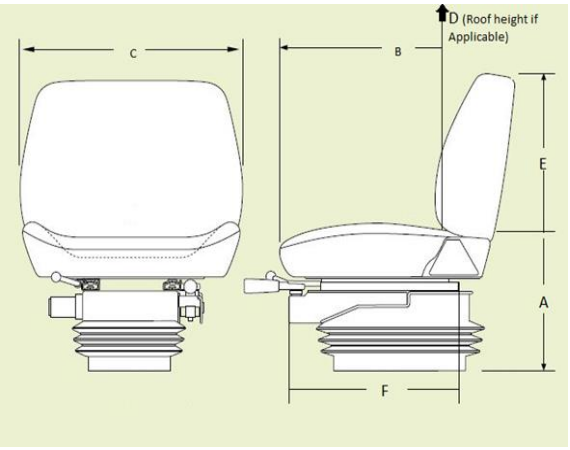
15.2 The Contractor shall provide a list of factory recommended lubricants to be used with the equipment, as well as a complete cross reference guide for all warranty approved lubricants and filters that can be used during preventative maintenance servicing. _____

16.0 ERGONOMIC SPECIFICATIONS

Entry/ Exit

16.1	First step entry height	**State:** height of first step in inches	_____
16.2	First handhold entry height	**State:** first handhold entry height in inches	_____
16.3	Access to equipment	**State:** door opening height in inches	_____
16.4	Access to equipment	**State:** door opening width in inches	_____
16.5	Designed to prevent slipping	Anti-slip steps/handholds **(Y or N)?**	_____

Seat

16.6	Use diagram to answer questions.		
16.7	Sitting Height Range (from floor (where feet rest) (A))	**State:** seat height range in inches	_____
16.8	Seat Length/Depth (B)	**State:** seat length/depth in inches	_____
16.9	Seat Width (C)	**State:** seat width in inches	_____
16.10	Cab Height (from seat to roof (if applicable) (D))	**State:** cab height range in inches	_____
16.11	Back Rest Height (E)	**State:** back rest height in inches	_____
16.12	Seat Travel Range (F)	**State:** seat travel in inches	_____
16.13	Lumbar Support	Is lumbar support provided **(Y or N)?**	_____
16.14	Head Rest	Is head rest provided **(Y or N)?**	_____
16.15	Seat Material	Breathable **State:** type of seat material	_____

Operation

16.16	Reaching Distance (to usual work)	**State:** reaching distance in inches	_____
16.17	Maximum Reaching Distance	**State:** maximum reach distance in inches	_____
16.18	Adjustable Pedals (accelerator/brake/clutch)	Are pedals adjustable **(Y or N)?**	_____
16.19	Adjustable Steering Wheel	Is steering wheel adjustable **(Y or N)?**	_____
16.20	Adjustable Shoulder Belt	Is belt adjustable and anchored **(Y or N)?**	_____

Cargo Area

16.21	Lid opens to provide adequate space	Adequate space provided **(Y or N)?**	_____
16.22	Loading Height	**State:** trunk height in inches	_____

Environment

16.23	Operator compartment is insulated from equipment noise (while operating)	**State:** dB inside cab while operating	_____
16.24	Operator insulated from equipment vibration	Is operator insulated from vibration (Y or N)?	_____
16.25	Heating/Cooling Systems	**State:** cab temperature range	_____
16.26	Cab Lighting	**State:** lumens inside cab	_____

Maintenance/ Inspection

16.27	Lift Assistance (when necessary)	Is lift assistance provided **(Y or N)?**	_____
16.28	Easy Access (to compartment doors)	Is easy access provided **(Y or N)?**	_____
16.29	Include any other relevant ergonomic specifications and applicable range of adjustment		_____

FORM N (R1): DETAILED SPECIFICATIONS 17017

SINGLE AXLE CHASSIS WITH CREW CAB, 13' X 8' SEWER DUMP BODY AND ARTICULATING CRANE

1.0 DESCRIPTION OF EQUIPMENT/APPLICATION

1.1 These specifications describe a **Single Axle Chassis with Crew Cab, 13' x 8 Sewer Dump Body and Articulating Crane**. This unit is an integral portion of the City of Winnipeg's Water and Waste Department. This vehicle is will be tasked with responsibilities of transporting, hauling and lifting of equipment, pump motors, shafts, pipes, gates and valves, within the City of Winnipeg.

1.2 The **Single Axle Chassis with Crew Cab, 13' x 8 Sewer Dump Body and Articulating Crane** and all other items/components shall be new 2017 model year or newer.

1.3 The **Single Axle Chassis with Crew Cab, 13' x 8 Sewer Dump Body and Articulating Crane** 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 **Single Axle Chassis with Crew Cab, 13' x 8 Sewer Dump Body and Articulating Crane** shall comply with the applicable regulations:

- Highway Traffic Act
- Manitoba Motor Vehicle Act
- Canadian Motor Vehicle Safety Standards, CMVSS Transport Canada
- National Safety Mark, NSM
- Manitoba/Winnipeg 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.

2.4 The manufacturer/installer shall be a certified vehicle completer and must affix their National Safety Mark (NSM) certification sticker on each unit.

State: NSM number: _____

3.0 SERVICE FACILITY

3.1 For the purpose of warranty repairs, the supplier shall have an authorized service facility located within 10 kilometres 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 B11, 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 REFERENCES

4.1 If available, please provide five (5) 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 **Single Axle Chassis with Crew Cab, 13' x 8 Sewer Dump Body and Articulating Crane** being 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 **Single Axle Chassis with Crew Cab, 13' x 8 Sewer Dump Body and Articulating Crane**, 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 **Single Axle Chassis with Crew Cab, 13' x 8 Sewer Dump Body and Articulating Crane** 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 The **Single Axle Chassis with Crew Cab, 13' x 8 Sewer Dump Body and Articulating Crane** must be fully fuelled upon delivery **(no exceptions).**

9.0 QUALIFICATIONS OF MANUFACTURER & CONTRACTOR

9.1 The manufacturer shall have five (5) years continuous experience manufacturing **Trucks** of the type being offered.

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 **Single Axle Chassis with Crew Cab, 13' x 8 Sewer Dump Body and Articulating Crane** of the type being offered.

10.0 SPECIFICATIONS:

CHASSIS: _____

10.1 Weights: _____

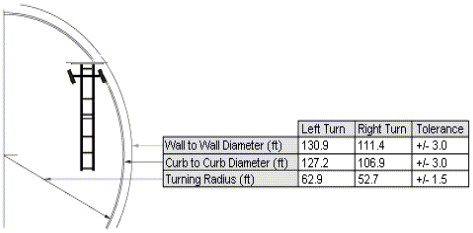
The Trucks shall not exceed the City of Winnipeg's limit for gross vehicle weight, axle and tire loads

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) – 9100 kg (20,056 lbs.)
- Tire load – 9 kilograms for each millimeter width of tire (approximately 500 lbs. per inch of tire width).

10.2 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 two (2) operators, and all attachments and full of fuel.

10.3	GVWR	• GVWR Total 33,000 lbs. • GVWR Front 12,000 lbs. • GVWR Rear 21,000 lbs.	_____
10.4	Cab	**Crew Cab** w/corrosion inhibitor	_____
10.5	Cab to Axle	Approximately 144 in. As required for a 13' x 8' Dump Body and a HIAB 055 CLX crane **State:**	_____
10.6	Wheelbase.	Approximately 265 in. As required for a 13' x 8' Dump Body and a HIAB 055 CLX crane **State:**	_____
10.7	After-Frame	As required for a 13’ x 8' Dump Body and a HIAB 055 CLX crane **State:**	_____
10.8	Bumper to Back of Cab	BBC: Approximately 150 in. **State:**	_____
10.9	Turning Radius	Turning Radius. **State:** vehicle turning radius Example:  **a) Wall to Wall (ft.)** **b) Curb to Curb(ft.)-** **c) Turning Radius (ft.)-**	_____

ENGINE:

10.10	Type	Tier IV Final Diesel, inline 6-cylinder	_____
10.11	Horsepower	Approximately 300 HP gross	_____
10.12	Torque	Approximately 860 lb-ft	_____
10.13	Engine Shut Down	Low oil pressure / high water temperature	_____
10.14	Air Intake Warmer / Glow Plugs	**Required:**	_____
10.15	Fuel Shut-off	Electric solenoid type	_____
10.16	Air Intake	Dual Stage type	_____
10.17	Air Cleaner	Dual stage air cleaner	_____
10.18	Air Intake Restriction	Dash mounted restriction indicator	_____
10.19	Oil Drain Plug	Magnetic type	_____

10.20	Oil Filter	Full flow, spin-on type	_____
10.21	Fuel Filter	Spin-on type	_____
10.22	Fuel/Water Separator	Heated, drainable under hood located to be protected from road spray	_____
10.23	Fuel Line Primer Pump	**Required:**	_____
10.24	Block Heater	Immersion type, 1000 Watt with covered recessed male plug, located under driver's side door	_____
10.25	Radiator	Aluminum 1000 - 1200 square inch **State:** size	_____
10.26	Coolant	**Extended Life** coolant, antifreeze to -35°F (-37°C)	_____
10.27	**Coolant Filter**	**If Available**	_____
		Or	
		Coolant Maintenance Program **Extended life coolant maintenance is test strip every approximately 500 hours and fluid change at 10,000 hours.** **State: Test strip and fluid change intervals**	_____
10.28	Coolant Hoses	Silicone type or Gates Blue Stripe	_____
10.29	Fan Drive	Thermostatically controlled, automatic type with dash switch	_____
10.30	Air Compressor	Water cooled, pressure lubricated, 15-18 cfm	_____
10.31	Diesel Exhaust Fluid (DEF) Tank	Approximately 19 – 36 Litres or largest size per application. Located Driver's side **State:** size and location	_____
	ELECTRICAL SYSTEM:		
10.32	Electrical Connectors	Plug-in, sealed type	_____
10.33	Anti-Corrosion Electrical Package	Controllers and sensitive electrical components (PCM, Harnesses etc.) mounted in cab **State:** locations	_____

10.34	Alternator	Delco Remy 36SI Heavy Duty, Brushless type 160 -180 Amp Pad Mount Remote Sense **State:** make and model	_____ _____
10.35	**Starter**	**Delco Remy 41MT or 39MT** **Heavy Duty** **Over-Crank Protection** **State: make and model**	_____ _____
10.36	Circuit Breakers	Auto-reset, readily accessible	_____
10.37	Batteries/Battery Location	Three (3) batteries, 12-volt, group 31, approx. 2700-2850 CCA combined Batteries not to impede with the installation of the body and crane **State:** location	_____
10.38	**Battery Disconnect**	**Required:** **For Air Brakes:** **In-cab mounted outboard of driver's seat** **State: location** **For Hydraulic Brakes:** **State: Method of battery disconnect**	_____ _____ _____
10.39	Battery Boost Terminal	Remote battery boosts terminal(s) **Protected from road spray.** **State:** location **Exact location to be determined at pre- production meeting**	_____
10.40	Cab Marker Lights	LED Cab or Sun Visor Marker Lights	_____
10.41	2-Way Radio Circuit	Independent 20 Amp circuit, ignition powered, wired under dash loose, labelled	_____
10.42	Accessory Switches	**Required**: Six (6) All switches complete and wired for body installation, labeled and backlit	_____
10.43	Mega Fuse Box	Located in-cab or under-cab and shall be sealed. **State:** location and method of sealing	_____

EXHAUST SYSTEM:

10.44	Configuration	**Required:** • Single horizontal muffler with chrome vertical discharge on passenger side, under frame routing. • Vertical portion shall be rubber mounted, attached to cab. • Vertical portion shall not protrude past rear of the cab • Not to impede with the HIAB functionality • Configuration as required for a 13’ x 8' Dump Body and a HIAB 055 CLX Crane. **State:** type and location	_____
10.45	Discharge Tip	Chrome backslash type end	_____
10.46	Overall Exhaust Height	Approximately 16 in. higher than cab roof	_____
10.47	Heat Shield	Chrome, covering vertical portion of exhaust complete with grab handle	_____

TRANSMISSION:

10.48	Transmission	• Allison 3500 RDS with 6-speed programming • Ratio shall be as per inter-city transport application. • Transmission shall come with load base Management Programming. • Transmission to PTO to operate the dump body.	_____
10.49	Allison SCAAN	The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator, the Allison SCAAN	_____
10.50	Transmission Fluids	Synthetic	_____
10.51	Shift Selector	Digital push-button type, dash mounted	_____
10.52	Cooling Capacity	Water to oil transmission cooler, as per manufacturer’s recommendation for severe duty cycle	_____
10.53	PTO Provision	**Required:** With maximum clearance from exhaust	_____
10.54	Oil Level Dipstick	Bayonet type with high and low level markings	_____
10.55	Transmission Drain Plug	Magnetic type	_____

	FRONT AXLE:		
10.56	**Front Axle**	**Set back axle, Meritor or Detroit 12K axle 12,000 lbs. capacity, with synthetic fluid.** **State: make**	_____
	REAR AXLE:		
10.57	Rear Axle	Meritor 21,000 lbs. capacity, with synthetic fluid.	_____
10.58	Ratio	For 110 km/hr **State:** ratio	_____
10.59	Inter-Axle Lock	Required with dash mounted switch	_____
10.60	Differential Lock	Required for drive axle with dash mounted switch	_____
10.61	Hub Seals	Oil lubricated front and rear type	_____
	FRONT SUSPENSION:		
10.62	Front Suspension	Multi-leaf spring suspension, 12,000 lbs. capacity	_____
	REAR SUSPENSION:		
10.63	Rear Suspension	Air ride suspension, 21,000 lbs. capacity, axle, shall be as recommended for a 13' x 8' Dump Body and HIAB 055 CLX crane application	_____
10.64	Suspension Control Valve	Manual dump valve for air suspension complete with dash mounted switch, indicator light, gauge and buzzer	_____
10.65	Auto Refill	**Required**: at 5 km/hr **Exact speed will be determined at a pre-production meeting**	_____
	RIMS, WHEELS AND HUBS:		
10.66	Front Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.67	Rear Wheels	Aluminum, hub piloted, rated for requested GVWR	_____
10.68	**Hubs**	**Aluminum or Steel** **Note: Steel requires spacers**	_____
10.69	Wheel Nut Indicators	**Required:** on all wheel nuts	_____

TIRES:

10.70	Front Tires	Low Profile 295/75 22.5 Michelin or Goodyear For requested GVWR and application **State:** make, model and size	_____
10.71	Rear Tires	Low Profile 295/75 22.5 Michelin or Goodyear For requested GVWR and application **State:** make, model and size	_____

FRAME:

10.72	Frame	Single rail	_____
10.73	Rust Inhibitor (Frame/Cross Member)	ARMOUR-SEAL ™ FRAME & CHASSIS COMPONENT PROTECTIVE UNDERCOATING: (or equivalent) Sodium, magnesium and calcium chloride resistant. Semi-permanent, high strength rubberized polymer blended.  **RHOMAR Industries, Inc.** Tricia McKnelly-Anderson Account Manager 2107 E Rockhurst Springfield, MO 65802 1.800.688.6221 417.866.5593 (fax) www.rhomar.com www.rhomar.com/products/armour-seal.	_____
10.74	Chassis Fasteners	Grade-8 threaded hex headed frame fasteners	_____
10.75	Rear Frame Towing Provisions	Towing provisions with 7-way pin receptacle to end of frame with two (2) extra feet of wiring to for ease of body installation.	_____

	STEERING:		
10.76	Type	Tilt and telescopic, power, rated for front GVWR rating. Reservoir approx. 2 quart with see through tank.	_____
	BRAKES:		
10.77	Brakes	Hydraulic, ABS brakes for Class 5 Driver	_____
10.78	Slack Adjusters	(Clearance sensing), automatic type	_____
10.79	Parking Brake	**Required:**	_____
10.80	Brake Pots	Vented type	_____
10.81	Dust Shields	**Required:** front and rear	_____
10.82	**Air Tanks**	**Shall be aluminum tanks with aluminum or stainless steel straps or nylon coated aircraft cable (3/16 dia.) with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion**	_____
10.83	Moisture Ejector	**Required:** Wabco, heated in all air tanks	_____
10.84	Drain Valves	**Required :** Manual, chain or cable operated, on each air tank	_____
10.85	Air Dryer	Wabco Heated System Saver 1200 or equivalent **State:**	_____
	FUEL TANK:		
10.86	Fuel Tank	Single 50 US gallon (190 L) fuel tank. Shall not impede in the installation of a 13’ x 8' Dump Body and a HIAB 055 CLX crane **State:** fuel capacity	_____
10.87	Fuel Water Separator	**Required:** heated	_____
10.88	Tank Straps	Aluminum or Stainless Steel straps with approximately 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion **State:**	_____
	CAB:		
10.89	Type	4-Door Crew Cab with corrosion inhibitor	_____
10.90	Cab Construction	Aluminum or Galvanized steel **State:**	_____
10.91	Cab Mounts	Air suspension	_____
10.92	Hood	High visibility hood	_____
10.93	Hood Fender Extensions	2 – 3 in. front fender extensions	_____

10.94	Front Grille	Stationary mounted to hood	_____
10.95	Cab Interior / Trim	Extreme climate insulation including cloth or vinyl headliner on roof, door panels and rear interior of cab	_____
10.96	Cab Silencer Package	**Required**: for minimal decibel level	_____
10.97	Hood/Firewall/Engine Insulations	Insulated hood liner, engine cover and firewall	_____
10.98	Floor Covering	Rubber mat with under-padding	_____
10.99	Floor Mats	Winter, heavy duty floor mats for front and back seats	_____
10.100	Driver's Seat	High back, air suspension w/foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.101	Passenger Seat	High back, air suspension w/foldable armrests, heavy-duty cloth upholstery, Cordura or equal	_____
10.102	Dashboard	Ergonomic (Wing) Design	_____
			
10.103	Rear Seat	Bench	_____
10.104	Sun Visors	Dual flip-up type	_____
10.105	12-Volt Power Outlet	**Required:** Two (2) with independent circuit	_____
10.106	Radio	Factory installed AM/FM/ with "hand free" Blue Tooth capability	_____
10.107	Starter Switch	Key operated complete with three (3) sets of keys	_____
10.108	Interior Light	Dome light with driver and passenger door switches	_____
10.109	Heater / Defroster	High output, capable of keeping all windows clear at an outside temperature of (-40°C)	_____
10.110	Air Conditioning	**Required:**	_____
10.111	Brake, Accelerator, Pedals	Floor or hanging type brake and accelerator pedal. **State:**	_____

10.112	Horn	Dual electric	_____
10.113	Exterior Mirrors	Mirrors heated, lighted, 4-way motorized adjustment (with convex mirrors), suitable for 102 in. equipment width	_____
10.114	Down-View Mirror	**Required**: over passenger door Approximately 5 in. x 4 in.	_____
10.115	Windows & Windshield	Tinted	_____
10.116	Power Windows	Power driver and passenger side	_____
10.117	Doors	Power door locks	_____
10.118	Windshield Wipers	Electric intermittent	_____
10.119	Wiper Blades	Heavy duty with winter type boot	_____
10.120	Windshield Washers	**Required:** Electric, with spray nozzles on wiper blades	_____
10.121	Grab Handles	Dual exterior **State:** locations	_____
10.122	Grab Handles	Dual Interior	_____
10.123	Entrance Steps	Dual each side, open grate / grip type	_____
10.124	Winter Front	Heavy-duty vinyl with twist lock or snap type fasteners	_____
10.125	Exterior Sun Visor	**Required:**	_____
10.126	Strobe LED Lights (Beacons)	Qty two (2) Amber LED Beacon, Class 1 High Dome Strobe Lights with aluminum or stainless steel brackets mounted to B-Pillar Note: Need to be forward enough as not to interfere with the cab shield if equipped with one.	_____

Whelen L31HAF

Location to be determined at a pre-production meeting

INSTRUMENTATION:

10.127	Instrumentation	• Oil Pressure Gauge • Coolant Temperature Gauge • Transmission Oil Temperature Gauge • Voltmeter Gauge • Air Reservoir Pressure Gauge with LAP Warning Light And Buzzer • Low Oil Pressure Warning Light and Buzzer • High Water Temperature Warning Light and Buzzer • Non-Resettable Type Engine Hour-Meter	_____

TOW HOOKS:

10.128	Tow Hooks	Front and Rear mounted	_____
10.129	Weigh Scale Systems	**Required:** Model Air Weigh scale system for front and rear axles. **System must be tested and calibrated prior to delivery**	_____
10.130	**COLOURS:**		
10.131	Exterior Colour	White	_____
10.132	Interior Colour	Grey	_____
10.133	**ACCESSORIES:**		
10.134	Flare Kit	Three (3) triangular reflectors, CVSA approved. Kit must be mounted or secured.	_____
10.135	Fire Extinguisher	5 lbs. Fire Extinguisher ABC type installed and secured. **State:** location	_____
10.136	Back-Up Camera	**Required:** Quantity two (2) Location # 1 - back of vehicle Location # 2 - top of cab shield complete with protective guard	_____

Locations to be determined at pre-production meeting

10.137	Back-Up Camera Screen	In-Dash (Ergonomic (Wing) Dashboard) **OR** Dash mounted if standard dashboard is specified.  **Back-Up Camera Screen location to be determined at a pre-production meeting**.	_____ _____

DUMP BODY SPECIFICATIONS

10.138	Outside Length	Nominal 13 ft.	_____
10.139	Inside Length	Approximately 12 ft. 6 in.	_____
10.140	Outside Width	To match chassis track width Nominal 8 ft. 6 in.	_____
10.141	Inside Width	Approximately 8 ft.	_____
10.142	Front Height	To match chassis cab height. Approximately 42 in. measured from the frame **State:**	_____
10.143	Construction Material (Inside)	All material that touches the material (internal walls, floor, gate, front wall, dog house) used in construction to be 3/16 in. Hardox 450 with **exception of the cab shield.**	_____
10.144	Construction Material (Outside)	10 Gauge 44W Structural Steel	_____

FLOOR:

10.145	Standard: 7 in. structural channel on long sills 4 in. I-Beam Cross-members on approximately12 in. - 16 in. centres 3/16 in. Smooth Steel Floor		_____
10.146	Front and Side Rails	5 in. x 3 in. x ¼ in. Angle Iron	_____
10.147	Rear Rail	7 in. C-Channel inverted to protect lights	_____
10.148	Mounting Beams	8 in. C-Channel	_____
10.149	Rear Corner Posts	Formed 10 Gauge	_____

10.150	Floor Slope	Approximately 60 degree slope along the joint to the side wall. Slope shall extend upwards approximately 4 - 8 in. **If required design and installation to be determined at a pre-production meeting**.	_____
	FRONT:		
10.151	Construction	Heavy duty steel front with angled corners with 3/16 in. sheeting on 3 in x 3 in x .150 tubular frames.	_____
10.152	Front Section	Constructed without a cab shield and shall have vertical and/or horizontal reinforcement ribs	_____
10.153	Top Rail	Structural or formed top reinforcement rail	_____
10.154	Front Wall Height	Approximately 106 cm (42 in.) measured from the frame Not to impede with crane operation. **State:**	_____
	SIDES:		
10.155	Type	Two (2) fold-down sides per side, 12 gauge steel c/w front, middle and rear heavy duty corner pillars	
10.156	Sides	Fold-down for ease of access to payload from the side of the body operated by a single lever per section	
10.157	Construction and Material	Sides shall have vertical or horizontal formed reinforcement ribs	_____
10.158	Side Height	Approximately 18 in. measured from the floor without plank gussets	_____
10.159	Rear Side Post	3/16 in. Hardox 450, one (1) per side.	_____
10.160	Top Side Rail Material	**Heavy Duty** Approximately 4 in. x 6 in. x 3/16 in	_____
10.161	Bottom Rail	Self-cleaning	_____
10.162	Corner Pillars	Approximately 15 cm x 10 cm (6 in. x 4 in.) min., heavy duty formed or structural steel	_____
10.163	Latches	Each side section shall have a double latch design, latching on each side of the section	_____

10.164	Plank Gussets	2 in. x 6 in. planks with ½ in. diameter bolt holes.	_____
10.165	Planks	2 in. x 6 in. planks painted black on all sides, installed and bolted in gussets	_____
	TIE DOWNS AND LADDERS:		
10.166	Tie Downs Eyes	**Required:** Four (4), Located on inside of dump body. • Two (2) near top/rear of each side • Two (2) near top/front of each side Tie downs shall be D-Rings. Tie downs eyes to have a lifting capacity rated for full box weight for lifting box during installation **Exact locations to be determined at a pre-production meeting**	_____
10.167	Inside Steps	One (1) per side, located at rear of body Approximately 12 in. L x 5 in. W, located approximately 20 in. from floor.	_____
10.168	Access Ladders	**Required:** Two (2) • Bolt-on installation • Fold-Down (Retractable) Design • one (1) located curb-side corner • one (1) located driver's side corner **Design and installation to be determined at a pre-production meeting** **Refer to Appendix A**	_____
10.169	Ladder Rungs	Traction type rungs • 13-gauge steel, 2¼ in. width • 4-hole design • Traction Tread Products or equal. **Refer to Appendix A**	_____
10.170	Ladder Rungs Location	First rung to be 18-22 in. from ground level, approximately 14 in. rung spacing to top of body. **Design and location to be determined at a pre-production meeting** **Refer to Appendix A**	_____

10.171	Grab Handles	Located for ergonomic access to top of box. **Design and location to be determined at a pre-production meeting** **Refer to Appendix A**	_____
	TAILGATE:		
10.172	Style	Shall be a top hinge with grease-able hinge.	_____
10.173	Tailgate Height	Approximately 24 in.	_____
10.174	Tailgate Operation	Tailgate shall not protrude above floor in horizontal or full down position.	_____
10.175	Standard	There shall be no gap between tailgate and the floor and sides when tailgate is in the closed or horizontal position.	_____
10.176	Tailgate Construction	Formed construction with one or two equally spaced horizontal or vertical ribs, and a self-cleaning bottom rail. Inside liner with 3/16 in. Hardox 450	_____
10.177	Tailgate Reinforcement	**Required:** Tailgate shall be reinforced with either heavy duty (⅜ in.) end plates, or ¼ in. steel tubing.	_____
10.178	Anchor Pins	Top tailgate anchor pins 1¼ in. diameter, self-locking/storing to top of side posts. Greaseable or composite; top hinge pivot system If retainer pins are used to lock top tailgate anchor pins, then a small steel check chain is required, permanently fastened to the retainer pin.	_____ _____
10.179	Top Tailgate Anchor Pin Release	One (1) manually actuated release lever releasing both upper pins	_____
10.180	Support and Spreader Chains	⅜ in. transport Grade 70, adequately fastened complete with chain storage and two (2) removable links per chain. Support and spreader chains shall be equipped with a protective cover.	_____ _____

10.181	Tailgate Locking Mechanism	In-cab control, air operated with air brake pot or air cylinder operated trip. **State:** method	_____
		The locking mechanism shall be adjustable to ensure adequate lock-up with tailgate closed.	_____

HOIST:

10.182 Requirements: _____

Double acting, hydraulic scissor lift hoist, capable of dumping a payload of approximately 9100 kg (20,000 lbs.)

Hoist to be sold, installed and serviced by an authorized dealer

10.183	Make and Model	**State:**	_____
10.184	Hoist Dump Angle	45° from horizontal	_____
10.185	Hoist Grease Fittings	**Required**: on all pivot pins.	_____

CRANE

10.186 Requirements: _____

HIAB 055 CLX
All Dimensions are approximate
Lifting capacities
- 8'2" – 4280 lbs.
- 12'10" – 2780 lbs.
- 17'9" - 1940 lbs.
- 23'7" - 1460 lbs.

Hydraulic outreach – 23'11"
Working pressure – 3480 psi
Slewing speed – 15 degrees / second
Lift speed at hydraulic outreach – 4'3" ft. / second
Height in folded position – 75"
Width in folded position – 79"

Crane to be sold, installed and serviced by an authorized dealer

10.187	Make and Model	**State:**	_____
10.188	Crane Rating	**State:**	_____
10.189	Mounting Space	Approximately 86 cm (34 in) **State:**	_____
10.190	Overall Width Outriggers Retracted	**State:**	_____
10.191	Overall Width Outriggers Extended	**State:**	_____
10.192	Installed Weight	**State:**	_____
10.193	Stowed Height Above Truck Frame	**State:**	

10.194	Horizontal Reach – From Centreline of Rotation	Hydraulically extendable to approximately 7.0 m (23 ft.) **State:**	_____
10.195	Vertical Lift Above Ground	**State:**	_____
10.196	Rotation	Power, 360 degrees	_____
10.197	Outriggers	Hydraulically controlled extendable out and down	_____
10.198	Outrigger Controls	**Required:** outrigger control station on each side of vehicle	_____
10.199	Crane Controls	Complete control station on driver's side of vehicle with wireless remote including the cable attachment for the remote	_____
10.200	Overload Protection System	Required: To monitor and control the electronic functions of the crane, ppreventing any movement which increases load moments on the crane and prevents loads from dropping.	_____
10.201	Crane Control Labels	All crane controls to labelled with permanent labels	_____
10.202	Control Levers	Horizontally positioned, self-centering, mounted at truck frame height	_____
10.203	Boom Hook	Required at boom tip Capacity to meet or exceed maximum lifting capacity of crane, complete with safety latch	_____
10.204	Crane Hydraulic Cylinders	Equipped with holding and/or counterbalance valves	_____
10.205	The crane shall be installed with frame spacers and additional cross members as required		_____

IN-CAB CONTROLS:

10.206	Cab Controls	Programmed through OEM dash mounted switches	_____
10.207	Switches	All switches shall be back-lit for night time use and clearly identified with engraved style, permanent type labels.	_____
		Supply corresponding valve and solenoid necessary for operation	_____

Switches:

- PTO Engagement
- Dump Box Up/Down
- Tailgate Open/Close
- Amber Lighting

HYDRAULICS

10.208	Hydraulic System	Shall be designed to accommodate the crane, dump body and auxiliary tool circuit	_____
10.209	PTO	Chelsea or Muncie electric/hydraulic power shift	_____
10.210	Electric/Hydraulic Power Shift	Operable from a normal driving position	_____
10.211	Warning Light	Shall show PTO engaged	_____
10.212	Hydraulic Pump	Sufficient capacity to operate all crane functions, dump body hoist and the auxiliary tool circuit (not simultaneously)	_____
10.213	Hydraulic Pump	**State:** Make and Model	_____
10.214	Hydraulic Pump	**State:** GPM and Pressure Rating	_____
10.215	Pump Drive	Close coupled or drive shaft driven **State:**	_____
10.216	Hoist Control Valve	4-way, 3-position, spring centred	_____
10.217	Dump Body/Crane Selector Valve	**Required:** to divert oil from crane to dump body	_____

10.218	Selector Valve Control	Located adjacent to driver's side crane controls, labelled for crane and dump with permanent type, engraved style labels	_____
10.219	Circuit Return Line	Dump body and crane circuit return line to be connected with a high pressure T-fitting, ahead of return line filter	_____
10.220	Hydraulic Oil Reservoir	Passenger side, chassis frame mounted, **Aluminum** or **Stainless Steel** construction, baffled as required, complete with breather type filler cap with filter, filler strainer and sight gauge. **State:** material	_____
10.221	Location	Chassis frame mounted, **State:** Location	_____
10.222	Capacity	Approximately 20 Gallon or sufficient capacity to operate all crane functions, dump body hoist and the auxiliary tool circuit (not simultaneously) **State:**	_____
10.223	Sight (Level) Gauge	Glass sight type, mounted in readily visible location	_____
10.224	Suction Strainer	100 micron, replaceable, in tank mounted	_____
10.225	Oil Filler	Top mounted with steel strainer and snap-ring retainer	_____
10.226	Filler Cap	Breather type with filter	_____
10.227	Drain Plug	13 mm (½ in.) diameter min	_____
10.228	Labelling	Reservoir shall be clearly labelled "Hydraulic Oil" with a permanent type, engraved style label	_____
10.229	Relief Valve	**State:** Pressure setting	_____
	HYDRAULIC FILTERS:		
10.230	Return Oil Filter	10 micron, spin-on type return line filter, serviceable without oil loss, sized to match hydraulic requirements of crane and dump body	_____
10.231	Filter Standard	Filters shall contain a corrosion resistant coating, beta rating of 200, 10 micron particle size, and shall be ergonomically located for servicing.	_____

10.232	External Hydraulic Filter Pan	External Hydraulic filter shall have a stainless steel or aluminium pan located directly under the filter in case of a potential hydraulic leak and to avoid hydraulic fluid falling to the road. Design shall not impede the servicing of the filter. 	_____
10.233	Shut-Off Valve	Ball type, located between reservoir and pump, secured in open position with a bracket and bolt	_____
10.234	Hydraulic Hoses	Wire braid reinforced, rated for system operating pressure with 4 to 1 safety factor for burst pressure	_____
10.235	Protection	To be protected at wear and scuff location	_____
10.236	Hose Fittings	Hydraulic full flow, crimp-on (non-reusable) type	_____
10.237	Hydraulic Oil	Supplied in accordance with crane and hoist manufacturer's recommendations and requirements	_____
	AUXILIARY TOOL CIRCUIT		
10.238	Hydraulic Flow Range	Approximately 7 – 9 gpm	_____
10.239	Operating Pressure	Approximately 1500 – 2000 psi	_____
10.240	Outlets	**Required:** Two (2), one (1) each side of the body	_____
10.241	Location	Directly underneath floor at centre posts	_____
10.242	Hydraulic Lines	**Required:** steel	_____
10.243	Connections	Quick couplers	_____

ELECTRICAL & LIGHTING

10.244	Conformance	All lighting to conform to: • C.M.V.S.S. • Manitoba Highway Traffic Act. • City of Winnipeg Lighting Visibility Standard http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf	_____
10.245	Lighting	Supplier installed shall be **high count** LED lighting and shall be Truck-Lite, Whelen **or equivalent**	_____
10.246	Grommets	Rubber grommets unless otherwise specified	_____
10.247	Combination Turn/Stop And Taillights	One (1) per side P/N Truck-Lite 44302R with P/N 44710 mounting grommets 	_____
10.248	Back-Up Lights	One (1) per side P/N Truck-Lite 44206C with P/N 44710 mounting grommets 	_____
10.249	3-Light Cluster	Three (3) P/N Truck-Lite10250R with P/N 10403 mounting grommets 	_____
10.250	Clearance Lights	High count LED P/N Truck-Lite10250R or 10250Y with P/N 10403 mounting grommets. 	_____

10.251 Amber Strobe Lights

One (1) per side with mounting grommets
P/N Whelen 5GA00FAR _____

10.252 License Plate Light

Complete with license plate bracket.
P/N Truck-Lite 36140 (Light)
P/N Truck-Lite 36710 (Bracket) _____

Installed on Hitch Plate – Upper Right Corner

10.253 Rear Light Mounting Location (Rear Sill) _____

- Combination Turn/Stop and Taillights, qty two (2), one per side
- Back-Up Lights, qty two (2), one per side
- 3-Light Cluster, qty three (3)
- Rear-Corner Clearance Lights, qty two (2), one per side

The lights shall be situated so that no debris contacts the lights while dumping.

Refer to Appendix A

10.254 Rear Light Mounting Location (Rear Posts) _____

- Amber Strobe Lights, qty two (2), one per side
- Rear-Corner Clearance Lights, qty two (2), one per side

Refer to Appendix A

10.255 Clearance Light Mounting Locations: _____

- Front – qty two (2), located one on each bottom corner
- Sides – qty two (2) per side, located on front and rear bottom corners.

10.256 Standard

No clearance light shall protrude beyond the body. _____

10.257 Standard

Taillights and back-up lights shall be fully visible when tailgate is lowered to horizontal position. _____

10.258 Harnesses

Harness system, properly routed and secured. All harnesses shall be internally grounded, no exceptions. _____

10.259	Junction box	Junction box complete with necessary compression fittings, required for all vehicle lighting harness connections, located inside rear of truck frame.	_____
10.260	All Plug-In Connectors	All plug-in connectors shall be coated with NYK compound prior to assembly.	_____
10.261	Back-Up Alarm	97 dB (A) installed near rear of dump body, located to be protected from damage.	_____
10.262	Mini Light Bar	• Whelen R2LPPA Series Amber LED Mini Light Bar or equivalent in accordance with B6 Substitutes • Mounted to top of cab • Protected by Branch Guard • Mini Light Bar shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Light Bar” with a permanent type, engraved style label. • Switch shall be capable of high/low mode.	_____

10.263	Branch Guard	Heavy duty branch guard constructed by ⅜ in. round bar or equivalent.	_____

10.264	Wiring	All LED strobe lights shall be wired through the ignition, wired through a single OEM dash mounted switch or on the control panel enclosure, labelled “Strobes” with a permanent type, engraved style label. All wiring for back-up alarm, warning lights, strobes and trailer connector shall be colour coded, loomed and properly secured.	_____ _____
10.265	Trailer Connector	6-Way Round or SAE J560 7-Way Flat trailer receptacle. **Type to be determined at pre-production meeting**	_____
10.266	Electrical Connectors	All electrical connectors shall be crimped and soldered, and then sealed using heat shrink tubing.	_____
10.267	Joining of Wires	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).	_____
10.268	Wiring Routing	**Required:** Any holes required to run wires through shall be drilled (not punched), grommeted and sealed as required.	_____
	WELDING		
10.269	Standard	All welds shall be continuous welds. All welding performed shall conform to CSA Standard W47.1-03 and W59-03.	_____
	INSTALLATION		
10.270	Drilling	Any holes required in the chassis frame web must be drilled and reamed to fit bolts.	_____
10.271	Standard	Drilling on chassis frame flanges is not permitted. Welding on the chassis frame is not permitted, with the exception of installation of dump body pivot support.	_____ _____
10.272	Tire Clearance	Three (3) inches with rear suspension air bags lowered.	_____
10.273	Clearance	Clearance between back of cab to crane and crane to front of dump body shall be 3 in.	_____

MISCELLANEOUS

10.274 Rear Hitch Plate

¾ in. thick solid steel, (laminated plates not acceptable) installed to chassis frame. _____

Design (including overhang) and installation to be determined at pre-production meeting.

10.275 Pintle Hitch and Receiver

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

Receiver – 2 in. x 6 in. Length
State: size

Design and installation to be determined at pre-production meeting

10.276 D-Ring with Mounting Bracket (Required for Trailer Safety Chains)

One (1) each side of hitch
Buyers Products B48 or equal. _____

10.277 Shovel Holder

Shovel holder with handle latch to secure shovel in place _____

Buyers Products P/N SH675SS

Location to be determined at pre-production meeting

10.278 Rear Fenders

Heavy Duty rear poly half-moon fenders. Shall be installed to have sufficient clearance from body and when chassis suspension is dumped for dump body operation. _____

10.279 Mud Flaps

Required: Black rubber, no-name, front and rear of back tires complete with anti-sail bracket on each mud-flap. Rear mud flaps shall not contact the ground when the dump body is at maximum dump angle _____

10.280 Isolators

All interfaces between aluminium and steel shall be separated by an approximately 1/16 in. thick rubber or neoprene sheet and are to be bolted through with stainless steel bolts and non-conductive bushings _____

10.281 Grease Fittings

Required on side and tailgate hinge pins, side and tailgate release mechanisms and pivot points _____

GREASING SYSTEM:

10.282 Complete unit shall have Groeneveld CPL Systems Inc. or Lubecore Auto Greasing System. _____

10.283 Single Line, EP2 and automatic low level shut-off with in-cab red light indicator. _____

10.284 All grease fittings for the entire chassis and body (including cylinder mounts, pivot points, dump body prop, plow etc.), shall be readily accessible or shall be equipped with remote grease zerks as required. _____

10.285 **Grease Points:** _____

Approximately twenty-six (26) points on cab & chassis
Approximately eight (8) – twelve (12) points on body (depending on body configuration)

State: quantity of grease points on cab & chassis: _____

State: quantity of grease points on body: _____

10.286 Grease pump will pump Original Equipment Manufacturer specified EP2 grease from -40°C to + 50°C. _____

10.287 One way check valves on each line _____

10.288 Low temperature compatible 800 bar/12000 PSI grease line with a bending radius of ¾ inch. With a 5 year line breakage guarantee for on road trucks. _____

10.289 One piece flow dividers with manual over ride. _____

10.290 **Warranty:** three (3) years parts and labour. _____

TOOLBOXES

10.291 Tool Boxes

Aluminum Tool Boxes – qty two (2) _____
- Mounted on driver and passenger side frame
- Approximately 60 in. W x 20 in. H x 20 in. D
- Barn Door style doors

State: quantity, dimensions, material, and recommended location as set by the manufacturer

SAFETY:

10.292 Dump Body Prop

Double Prop Design _____
- Steel tubing construction, to support 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
- Operating Handle to be positioned outside of chassis frame rails for operator safety (Driver's Side)
- Dump body prop to be complete with receiving bracket.
- Safety Lock Pin and Chain required to hold arms in the "Up" position (Driver Side)
- Refer to below pictures for sample designs

Design and installation to be confirmed at a pre-production meeting.

Driver Side - Up

Driver Side - Down

Driver Side – Down

Driver Side – Up

Passenger Side - Down

Safety Lock Pin and Chain

10.293 Dump Body Prop Colours

All components (prop, handle and receiving bracket) shall be painted with **Safety Orange** for ease of identification

_____

10.294	Dump Body Stowage Warning System	**Required:** Warning light and buzz system shall be installed on the dash and shall be actuated when dump body is not in the fully stowed position. **State:**	_____
10.295	PTO	**Programmed:** To disengage the PTO when 5 kph is reached to prevent the driver from driving off when the body is up. **Exact speed to be determine at pre-production meeting**	_____
10.296	Pre-Trip Exterior Light Inspection	**Programmed:** When activated, the vehicle lights repeatedly flash in a specific sequence to allow the operator to verify that the exterior lights are functioning. The light test sequence tests: • Park Lights • Headlights (low and high beams) • Right/left front/rear turn lights • Brakes Lights • Mini Light Bar • Beacon(s) • Strobe Lights • Clearance Lights	_____
10.297	Warning Light Over Ride	**Programmed:** Rear strobe lights to be programmed to allow for an over-ride for turn signals and brake lights when strobe lights are on. Other drivers will be able to determine if the truck is stopping or turning when strobe lights are on.	_____
	FINISH:		
10.298	Preparation	Complete dump body and all ladders, hitch plates, reservoirs, steel brackets, etc. shall be sandblasted, properly cleaned, primed and finished with the Endura or DuPont paint process as follows:	_____
10.299	Primer	**Required:** Epoxy or Polyurethane primer Endura EP321 Intermix Epoxy Primer or DuPont polyurethane. Two (2) coats – Dry Film Thickness 3.0 – 4.0 mils	_____

10.300	Paint	Required: Polyurethane Colour: Black Endura EX-2C or DuPont Polyurethane Two (2) coats: 3 - 5 mils Wet Film Thickness with a total combined overall average Dry Film Thickness of 4 – 6 mils Note: Complete body (inside and outside) shall be painted	_____

11.0 **WARRANTY**

11.1	The body warranty on the complete vehicle (excluding the chassis) shall include 100% replacement parts and labour at no cost to the City and shall cover the complete equipment and all parts thereof against defects of workmanship, construction and materials for one (1) year from the date the equipment is put into service by the City of Winnipeg.		_____
11.2	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		_____

BODY WARRANTY

11.3	Main Frame - Structural	**State:**	_____
11.4	Frame – Non-Structural	**State:**	_____
11.5	Components e.g. Pumps	**State:**	_____
11.6	Hydraulics	**State:**	_____
11.7	Hoist and Cylinder	**State:**	_____
11.8	Electrical	One (1) year **State:**	_____
11.9	LED Lighting	**State:**	_____
11.10	Paint	**State:**	_____

CAB & CHASSIS WARRANTY

11.11	Basic Vehicle - Chassis	One (1) year, unlimited km, **State:**	_____
11.12	Electrical	One (1) year **State:**	_____
11.13	LED Lighting	**State:**	_____
11.14	Batteries	One (1) year, unlimited km **State:**	_____

11.15	Drivetrain	Two (2) years, unlimited km **State:**	_____
11.16	Cab Structure/Corrosion	Five (5) years, unlimited km **State:**	_____
11.17	Frame & Cross-Members	Five (5) years, unlimited km **State:**	_____
11.18	Cab Paint	One (1) year or 160,000 km **State:**	_____
11.19	Engine	Three (3) years or 240 000 km **State:**	_____
11.20	Transmission	Two (2) years, unlimited km **State:**	_____
11.21	Axles - Front & Rear	Two (2) years or 161 000 km **State:**	_____
11.22	Components	**State:**	_____

OTHER WARRANTIES

11.23	Auxiliary Tool Circuit	**State:**	_____

12.0 **DELIVERY**

12.1 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 WFMA 185 Tecumseh Street, Winnipeg MB. The successful bidder shall be notified by the Contractor Administrator the delivery address prior to issuance of the purchase order _____

12.2 Delivery Time: Equipment shall be delivered between 8:00 am and 2:00 pm on Business Days _____
State: Delivery Date

12.3 Delivery Contact: The Contractor shall contact the Contract Administrator prior to delivery of the equipment. _____

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

13.0 **MANUALS**

13.1 Manuals supplied under this Contract shall cover the complete equipment including all components thereof, CD or USB flash drive is preferred where available. _____

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

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

b) Parts and Service Manuals – One (1) complete set including preventative maintenance schedules. CDs or USB flash drive are preferred. _____

14.0 **PARTS/LABOUR DISCOUNT**

14.1 Bidder to provide City of Winnipeg Parts Discount % Pricing from retail parts pricing. **State: percentage discount** _____*%*

14.2 Bidder to provide City of Winnipeg Labor Discount % Pricing from Retail shop labor rate. **State: percentage discount** _____*%*

15.0 **FIRST SERVICE PREVENTATIVE MAINTENANCE KIT**

15.1 In order to assure minimum downtime of the equipment in future service, the Contractor shall provide for **the chassis only** one (1) complete replacement set of new OEM filters for each unit purchased. The set of required filters shall include (if applicable to the equipment type) air, fuel, oil, cab and hydraulic, or otherwise all known necessary common replacement filters required for the first preventative maintenance servicing. _____

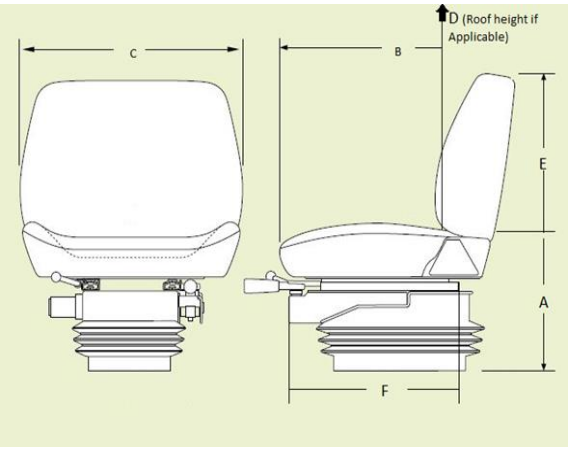
15.2 The Contractor shall provide a list of factory recommended lubricants to be used with the equipment, as well as a complete cross reference guide for all warranty approved lubricants and filters that can be used during preventative maintenance servicing. _____

16.0 **ERGONOMIC SPECIFICATIONS**

Entry/ Exit

16.1	First step entry height	**State:** height of first step in inches	_____
16.2	First handhold entry height	**State:** first handhold entry height in inches	_____
16.3	Access to equipment	**State:** door opening height in inches	_____
16.4	Access to equipment	**State:** door opening width in inches	_____
16.5	Designed to prevent slipping	Anti-slip steps/handholds **(Y or N)?**	_____

Seat

16.6	Use diagram to answer questions.		
16.7	Sitting Height Range (from floor (where feet rest) (A))	**State:** seat height range in inches	_____
16.8	Seat Length/Depth (B)	**State:** seat length/depth in inches	_____
16.9	Seat Width (C)	**State:** seat width in inches	_____
16.10	Cab Height (from seat to roof (if applicable) (D))	**State:** cab height range in inches	_____
16.11	Back Rest Height (E)	**State:** back rest height in inches	_____
16.12	Seat Travel Range (F)	**State:** seat travel in inches	_____
16.13	Lumbar Support	Is lumbar support provided **(Y or N)?**	_____
16.14	Head Rest	Is head rest provided **(Y or N)?**	_____
16.15	Seat is made of breathable material	**State:** type of seat material	_____

Operation

16.16	Reaching Distance (to usual work)	**State:** reaching distance in inches	_____
16.17	Maximum Reaching Distance	**State:** maximum reach distance in inches	_____
16.18	Adjustable Pedals (accelerator/brake/clutch)	Are pedals adjustable **(Y or N)?**	_____
16.19	Adjustable Steering Wheel	Is steering wheel adjustable **(Y or N)?**	_____
16.20	Adjustable Shoulder Belt	Is belt adjustable and anchored **(Y or N)?**	_____

Cargo Area

16.21	Lid opens to provide adequate space	Adequate space provided **(Y or N)?**	_____
16.22	Loading Height	**State:** trunk height in inches	_____

Environment

16.23	Operator compartment is insulated from equipment noise (while operating)	**State:** dB inside cab while operating	_____
16.24	Operator insulated from equipment vibration	Is operator insulated from vibration (Y or N)?	_____
16.25	Heating/Cooling Systems	**State:** cab temperature range	_____
16.26	Cab Lighting	**State:** lumens inside cab	_____

Maintenance/ Inspection

16.27	Lift Assistance (when necessary)	Is lift assistance provided **(Y or N)?**	_____
16.28	Easy Access (to compartment doors)	Is easy access provided **(Y or N)?**	_____
16.29	Include any other relevant ergonomic specifications and applicable range of adjustment		_____

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 SUPPLY AND DELIVERY OF SINGLE AXLE CHASSIS WITH VARIOUS BODY CONFIGURATIONS

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, January 29, 2018.

B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. ENQUIRIES

B3.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

B3.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall promptly notify the Contract Administrator of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.

B3.3 If the Bidder is unsure of the meaning or intent of any provision therein, the Bidder should request clarification as to the meaning or intent prior to the Submission Deadline.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.5 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B3.6 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B4. CONFIDENTIALITY

B4.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:

(a) was known to the Bidder before receipt hereof; or

(b) becomes publicly known other than through the Bidder; or

(c) is disclosed pursuant to the requirements of a governmental authority or judicial order.

B4.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Bid Opportunity to the media or any member of the public without the prior written authorization of the Contract Administrator.

B5. ADDENDA

B5.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/bidopp.asp

B5.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

B6.1 The Work is based on the materials, equipment, methods and products specified in the Bid Opportunity.

B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.

B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least seven (7) Business Days prior to the Submission Deadline.

B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:

(a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the material, equipment, method or product as either an approved equal or alternative;

(b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;

(c) identify any anticipated cost or time savings that may be associated with the substitute;

(d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract;

(e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract.

B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.

B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.

B6.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and

obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.

B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.

B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.

B6.9 No later claim by the Contractor for an addition to the price(s) because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B7. BID SUBMISSION

B7.1 The Bid shall consist of the following components:

(a) Form A: Bid;

(b) Form B: Prices;

(c) Form N Detailed Specifications;

B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.

B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely.

B7.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.

B7.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:

The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B7.5.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder’s Bid Submission.

B7.6 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.

B7.7 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B15.1(a).

B7.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to 204-949-1178.

B7.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.

B7.9 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B8. BID

B8.1 The Bidder shall complete Form A: Bid, making all required entries.

B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

(a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;

(b) if the Bidder is a partnership, the full name of the partnership shall be inserted;

(c) if the Bidder is a corporation, the full name of the corporation shall be inserted;

(d) if the Bidder is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.

B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

B8.4 Paragraph 10 of Form A: Bid shall be signed in accordance with the following requirements:

(a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;

(b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;

(c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;

(d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B8.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B8.4.2 All signatures shall be original.

B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B9. PRICES

B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B9.1.1 Prices on Form B: Prices shall include:

(a) duty;

(b) freight and cartage;

(c) Provincial and Federal taxes [except the Goods and Services Tax (GST) and Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable] and all charges governmental or otherwise paid;

(d) profit and all compensation which shall be due to the Contractor for the Work and all risks and contingencies connected therewith.

B9.1.2 Prices on Form B: Prices shall **not** include the Manitoba Tire Stewardship Board New Tire Levy (tire tax) which shall be extra where applicable.

B9.1.3 Prices on Form B: Prices shall not include Environmental Handling Charges (EHC) or fees, which shall be extra where applicable.

B9.2 The City will use the quantities for the purpose of comparing Bids.

B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B10. DISCLOSURE

B10.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B10.2 The Persons are:

(a) Maxim Truck & Trailer

(b) Freightliner

(c) Grainmaster Manufacturing Ltd.

(d) Fort Garry Industries Ltd.

(e) Neustar Manufacturing

(f) Joe Johnson Equipment

(g) Westvac Industrial Ltd.

(h) Thermo King

(i) Polywest

B11. QUALIFICATION

B11.1 The Bidder shall:

(a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Bidder does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business; and

(b) be financially capable of carrying out the terms of the Contract; and

(c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

B11.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

(a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/debar.stm

B11.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

(a) have successfully carried out work similar in nature, scope and value to the Work; and

(b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and

(c) have a written workplace safety and health program, if required, pursuant to The Workplace Safety and Health Act (Manitoba);

B11.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B11.5 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

B12.1 Bids will not be opened publicly.

B12.2 Following the Submission Deadline, the names of the Bidders and their Bid Prices (unevaluated, and pending review and verification of conformance with requirements or evaluated prices) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt

B12.3 After award of Contract, the name(s) of the successful Bidder(s), their address(es) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt

B12.4 The Bidder is advised that any information contained in any Bid may be released if required by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).

B13. IRREVOCABLE BID

B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B13.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

B14. WITHDRAWAL OF BIDS

B14.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B14.1.1 Notwithstanding C21, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

(a) retain the Bid until after the Submission Deadline has elapsed;

(b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and

(c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Bid withdrawn.

B14.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B13.2 shall be liable for such damages as are

imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B15. EVALUATION OF BIDS

B15.1 Award of the Contract shall be based on the following bid evaluation criteria:

(a) compliance by the Bidder with the requirements of the Bid Opportunity or acceptable deviation there from (pass/fail);

(b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B11 (pass/fail);

(c) Bid Price;

(d) economic analysis of any approved alternative pursuant to B6;

(e) costs to the City of administering multiple contracts.

B15.2 Further to B15.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities if the interests of the City so require.

B15.3 Further to B15.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.

B15.4 Further to B15.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B15.5 This Contract may be awarded as a whole or separately by item.

B15.5.1 Notwithstanding B9.1, the Bidder may, but is not required to bid on all items.

B15.5.2 Notwithstanding B16.3, the City shall not be obligated to award any item to the responsible Bidder submitting the lowest evaluated responsive Bid for the item and shall have the right to choose the alternative which is in its best interests. If the Bidder has not bid on all items, he/she shall have no claim against the City if his/her partial Bid is rejected in favour of an award of the Contract as a whole.

B16. AWARD OF CONTRACT

B16.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B16.2.1 Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:

(a) the prices exceed the available City funds for the Work;

(b) the prices are materially in excess of the prices received for similar work in the past;

(c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;

(d) only one Bid is received; or

(e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B16.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B15.

B16.3.1 Following the award of Contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

B16.4 Notwithstanding C4 and Paragraph 6 of Form A: Bid, the City may issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.

B16.5 The Contract, as defined in C1.1(n)(ii) in their entirety shall be deemed to be incorporated in and to form a part of the purchase order notwithstanding that they are not necessarily attached to or accompany said purchase order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

C0.1 The *General Conditions for the Supply of Goods* (Revision 2008 05 26) are applicable to the Work of the Contract.

C0.1.1 The *General Conditions for the Supply of Goods* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm

C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix "**C**" designates a section, clause or subclause in the *General Conditions for Supply of Goods*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

D1.1 In addition to the *General Conditions for the Supply of Goods*, these Supplemental Conditions are applicable to the Work of the Contract.

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of Supply and Delivery of Single Axle Chassis with Various Body Configurations in accordance with Detailed Specifications 17012 – 17017 and Appendix A.

D2.2 Any material, labour or components not specifically mentioned or included herein, but may be required to complete, perfect and place the equipment in successful operation, shall be furnished by the Contractor as though specifically mentioned in these Contract Documents. The Contractor shall supply the equipment and all components and all features that are normally considered to be standard on that equipment, unless specifically excluded in the Form N: Detailed Specifications.

D2.3 Unless specifically stated otherwise in the Form N: Detailed Specifications, only new, unused equipment of current manufacture shall be accepted.

D2.4 Further to C7, if at any time during the 12 (twelve) month period following the award of the Contract, the City requires additional quantities of the Items, the City may request the Contractor to supply up to one hundred percent (100%) additional quantities as extra Work at the unit prices set out in the Contract. The Contractor may decline to supply the additional quantities without penalty.

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

(a) "**Equipment**" or "**Vehicle**" shall be used to describe Single Axle Chassis with Various Body Configurations in these Contract Documents

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is:

Richard Schwarz, C.E.T.
Contract Administrator (Equipment Specifications)

Telephone No. 204-391-5418

Email Address: rschwarz@winnipeg.ca

D5. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

D5.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.

D5.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D5.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;

(a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;

(b) the Contract, all deliverables produced or developed; and

(c) any statement of fact or opinion regarding any aspect of the Contract.

D5.4 A Contractor who violates any provision of D4 may be determined to be in breach of Contract.

D6. NOTICES

D6.1 Notwithstanding C21.3, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following:

The City of Winnipeg
Attn: Chief Financial Officer
Office of the Chief Administrative Officer
Susan A. Thompson Building
2nd Floor, 510 Main Street
Winnipeg MB R3B 1B9

D6.2 Bid Submissions must not be submitted to this address. Bids must be submitted in accordance with B7.

D7. DATA COLLECTION SHEETS

D7.1 Upon award of Contract, the Contract Administrator will send the Contractor an electronic copy of Data Collection Sheets.

D7.2 The sheets shall include:

(a) full details of the data collection requirements specific to the Equipment being offered (including attachments) and shall include service intervals of all components, part numbers on regular maintenance items including belts, filters, oils/fluid types and capacities, engine, transmission, axle, etc., model and serial numbers. The data collection sheet shall be submitted prior or upon delivery of supplied Equipment; and

(b) comprehensive details of all Equipment including attachments, components, engine, transmission, axle, etc.

D7.3 All information, documents or other communications required to be submitted for the data collection sheets shall be sent to the Contract Administrator in D4.1. The communications shall be sent electronically in Word Format only (no exceptions). The form shall be sent to the Contractor at the time of award.

D7.4 If the data collection sheets have not been submitted by the Contractor to the City, the City will perform the work and acquire the information at its own expense. The costs incurred (up to and including $500.00 per unit) will be deducted from the Contractor's final invoice.

D8. INSPECTION

D8.1 Further to C9, inspection of the equipment shall be conducted as promptly as practicable. Thorough examination of the equipment and successful completion of a continuous eight-hour full-performance test by the City shall be required as part of the inspection process. At its option, the City may discontinue the process upon finding a lack of conformance to the specifications. The deficiency shall then be rectified by the Contractor and the inspection process shall then commence anew.

D8.1.1 The cost of the initial inspection of the equipment shall be borne by the City. The cost of subsequent inspections required, attributable to deficiencies identified in the initial inspection, shall be the responsibility of the Contractor and charged at the prevailing shop rate for Winnipeg Fleet Management Agency.

D8.1.2 The City may deduct the amount owing, related to subsequent inspections in accordance with D8.1.1, from any payment required to be made by the City to the Contractor.

D8.2 Equipment that fails to successfully complete the inspection process shall be rejected by the City and shall be removed from City property by and at the expense of the Contractor, promptly after notification by the Contract Administrator or the equipment inspector.

D8.3 Notwithstanding D8.1, where multiple quantities of like equipment are being supplied, the City reserves the right, at its discretion, to waive the requirement for a continuous eight-hour full-performance test as part of the inspection process for the remaining pieces of equipment following a successful completion of the test by one or more pieces of equipment.

D8.4 Total Performance will not be achieved until successful completion of the inspection process.

SUBMISSIONS

D9. AUTHORITY TO CARRY ON BUSINESS

D9.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

SCHEDULE OF WORK

D10. COMMENCEMENT

D10.1 The Contractor shall not commence any Work until he/she is in receipt of a notice of award from the City authorizing the commencement of the Work.

D10.2 The Contractor shall not commence any Work until:

(a) the Contract Administrator has confirmed receipt and approval of:

(i) evidence of authority to carry on business specified in D9.

D11. PARTS AVAILABILITY

D11.1 In order to assure minimum downtime of the Equipment, the Contractor shall maintain a stock of all replacement parts in North America, either in his/her own inventory or in that of an agency that normally supplies parts to the Contractor, for a period of seven (7).years.

D11.1.1 Further to D11.1, if replacement parts are not available within the seven (7) .years, and the City is required to build or acquire parts by their own means, the Contractor may be charged back 100% of the parts replacement costs.

D11.2 Parts shall be made available to the Winnipeg Fleet Management Agency, by the Contractor, within three (3) Business Days from a request by the Contract Administrator or designate.

D11.3 Where Equipment is not available for use due to the Contractor's failure to supply parts in accordance with D11.2, the failure to supply parts may be determined to be an Event of Default in accordance with C16.

D12. TRAINING

D12.1 The Contractor shall be responsible for providing operational and mechanical training for City of Winnipeg personnel. The training will be at the Contractor’s expense.

D12.2 The training sessions shall be used for familiarization and orientation of the equipment to the satisfaction of the Equipment Operator Training Branch and the WFMA Mechanical Operations Staff. Training may include power point presentations, class room training, and “walk around” hands on training. Specifics to the training sessions may vary depending on the equipment and/or goods.

D12.3 The training shall be divided into two (2) separate sessions, one for operating personnel and one for mechanical personnel. Training sessions should be based on two (2) Business days for operating personnel and two (2) Business days for mechanical personnel.

OPERATOR TRAINING

D12.4 The Contract Administrator or the Equipment Operator Training Branch will contact the Contractor to organize training.

D12.5 The training for operating personnel shall include the following:

(a) Daily pre-trip inspection items and basic operator maintenance requirements;

(b) Familiarization of all controls and their functions;

(c) New technologies and differences between current models vs. previous models;

(d) Basic demonstration of vehicle/equipment operation with all applicable attachments;

(e) Inherent operating errors; and

(f) Any other training/familiarization requirements that is specific to the unit.

D12.6 All operator training materials shall be provided to the Equipment Operator Training Branch no later than (4) Calendar weeks prior to delivery of the vehicles, equipment and/or related attachments.

Equipment Operator Training Branch
960 Thomas Avenue
Winnipeg, MB
R2L 2E1
E-mail – mailto:lguertin@winnipeg.ca

MECHANICAL TRAINING

D12.7 The Contract Administrator or the Winnipeg Fleet Management Equipment Inspector will contact the Contractor to arrange mechanical equipment training and familiarization.

D12.8 The training for mechanical personnel shall include the following:

(a) Product knowledge trainer with at least one year repair and service experience on the equipment as stated in Form N:Specifications;

(b) All Preventative Maintenance Service Points and adjustments required while in service;

(c) All diagnostic port locations and basic operations; and

(d) Safe movement of the equipment (including lift and or tow points).

D12.9 All mechanical training materials including service and parts manuals (paper or electronic versions) shall be provided no later than (4) calendar weeks prior to delivery of the vehicles, equipment and/or related attachments to the attention of the Contract Administrator identified in D4.

D12.10 Facility Locations and hours are as follows:

(a) 195 Tecumseh St. Repair Facility 6:30 am to 10:30 pm M-F (3 work shifts). Midnight shift is Sunday at 10:30 to 6:30 Thursday morning, each day (4 ten hour shifts);

(b) 960 Thomas Avenue Repair Facility 6:30 am-10:30 pm M-F (2 work shifts);

(c) 1539 Waverly St Repair Facility 6:30 am-10:30 pm M-F (2 work shifts);

(d) 215 Tecumseh St Manufacturing Repair Facility – 7:00 am – 5:00 pm M-F (1 work shift).

MEASUREMENT AND PAYMENT

D13. PAYMENT

D13.1 Further to C10, payment shall be in Canadian funds net thirty (30) Calendar Days after the Contractor receives written notification of successful completion of the inspection process or of the equipment being successfully placed into operation.

D13.2 Notwithstanding that the City will license and insure equipment upon receipt, payment will be made in accordance with D13.1. Licensing and insuring equipment upon receipt does not mean that the inspection process has been successfully completed or that the equipment has been successfully placed into operation.

D14. INVOICES

D14.1 Further to C10, and upon initial delivery of the equipment, the Contractor shall submit an accurate invoice for the supply and delivery of each piece of equipment specified in the Contract to:

The City of Winnipeg
Corporate Finance - Accounts Payable
4th Floor, Administration Building, 510 Main Street
Winnipeg MB R3B 1B9

Facsimile No.: 204 949-0864
Email: CityWpgAP@winnipeg.ca

D14.1.1 A copy of the original invoice for each piece of Equipment shall accompany the Equipment upon delivery.

D14.2 Invoices must clearly indicate, as a minimum:

(a) The City's order (Purchase Order or Standing Purchase Order Release Authorization) number;

(b) Date of delivery;

(c) Delivery address;

(d) Type and quantity of goods delivered;

(e) the amount payable with GST, MRST, and any applicable environmental handling charges/fees identified and shown as separate amounts;

(f) The Contractor's GST registration number.

(g) The complete breakdown of all large individual components on the completed unit based on the following examples:

(i) Refuse truck - truck chassis cost and packer unit cost.

(ii) Service body truck - truck chassis cost and service body cost.

(iii) Agricultural tractors – base tractor cost and attachment cost for each individual attachment

(iv) Other equipment – base equipment unit cost and modification cost for each individual modification.

(h) Any additional work or modifications requiring an additional purchase order shall be billed on a separate invoice.

D14.3 The City will bear no responsibility for delays in approval of invoices that are improperly submitted.

D14.4 **Bid Submissions must not be submitted to the above facsimile number. Bids must be submitted in accordance with B7**.

WARRANTY

D15. WARRANTY

D15.1 Notwithstanding C11, and the warranties specified in the Form N: Detailed Specifications applicable to the unit, the warranty period for each piece of Equipment supplied shall begin on the date of successful completion of the inspection process or when the equipment has been successfully placed into operation.

D15.2 The Contractor shall make available a service truck to provide and maintain the following at no cost to the City:

(a) Repair work – for repeated failures outlined in Form N: Detailed Specifications section under Performance Reliability.

(b) Warranty work – for all items covered under the warranty clauses, outlined in Form N: Detailed Specifications section under Warranty.

D15.3 All incidental warranty related costs (including, but not limited to, Contractor's travel, mileage, deductibles, towing costs, etc.) in executing any part of the warranty shall be the sole responsibility of the Contractor.

D15.4 Equipment that is not available for use due to warranty related issues shall be rectified within three (3) Business Days from the time of notification of failure. If the warranty related failure is not rectified within the three (3) Business Day period, the failure will be considered an Event of Default in accordance with C16.

APPENDIX A