

**FORM A: BID**  
(See B8)

1. Contract Title SUPPLY AND DELIVERY CATCH BASIN SEWER CLEANER VEHICLES

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 CATCH BASIN SEWER CLEANER VEHICLES**

**UNIT PRICES**

<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>SPEC. REF.</b>	<b>UNIT</b>	<b>QUANTITY OF VEHICLES</b>	<b>UNIT PRICE</b>
1.	Combination Sewer and Catch Basin Cleaner Vehicle (Fan)	16014	EACH	4	
2.	Combination Sewer and Catch Basin Cleaner Vehicle (PD)	16014	EACH	1	
	<b>CITY OF WINNPEG UNITS</b>			<b>QUANTITY OF VEHICLES</b>	<b>TRADE-IN VALUE UNIT PRICE PER VEHICLE</b>
	Trade in Value for Unit 290-4221		EACH	1	
	Trade in Value for Unit 290-4222		EACH	1	
	Trade in Value for Unit 290-4223		EACH	1	
	Trade in Value for Unit 290-4224		EACH	1	
	Trade in Value for Unit 290-4225		EACH	1	

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

**FORM N: DETAILED SPECIFICATIONS 16014**  
**COMBINATION SEWER AND CATCH BASIN CLEANER**  
**(9 yd.3 DEBRIS BODY- FAN)**

**1.0 INTENT-**

1.1 The Catch Basin Sewer Cleaner Vehicles shall be the manufacturer's latest model as may be modified by these specifications. The vehicles shall be furnished complete and ready for use. Any parts not specifically mentioned but which are required to complete and place the units in successful operation shall be furnished as though specifically mentioned in these specifications. The complete units, 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 OPERATIONAL APPLICATION-**

2.1 The application at The City of Winnipeg Wastewater Services – Local Sewer consists of the following (4) applications. The equipment shall be able to perform all of these applications.

- Catch Basin Vacuuming 35 %
- WWS / LDS Cleaning 40%
- Hydro Excavating "Soft Digs" Vacuuming & Cleaning 15%
- Lift station/ Treatment plant Vacuuming 10%

2.2 Of the (4) applications, Catch Basin Vacuuming consists of 35% of our scope of work, WWS / LDS Cleaning 40%, Hydro Excavating "Soft Digs" 15% (It should be noted that this part of our business is the fastest growing and we expect the percentage to raise) and Lift station/Treatment plant Vacuuming (10% of our business). Of the (4) applications, the catch basin vacuuming, wws/lDs cleaning and Hydro Excavating "Soft Digs" applications are at shallow depths (ground level to 25' below grade). The equipment shall be able to perform all of these applications.

**3.0 PERFORMANCE-**

3.1 The responsibility for the design of the Catch Basin Sewer Cleaner Vehicles, its performance and reliability shall rest upon the Contractor. 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, or assembly. Minor items or ordinary service adjustments are not included, or considered under the scope of "repeated failures", as well as other factors, such as operational damage due to accidents, misuse or lack of proper maintenance, service and lubrication attention by not following the manufacturer's preventative maintenance schedule.

3.2 Where the Catch Basin Sewer Cleaner Vehicles develops "repeated failures" in service, the Contractor shall make any necessary engineering changes, repairs, alterations or modifications in order to guarantee reliability of performance.

- 3.3 The Catch Basin Sewer Cleaner Vehicles shall be capable of consistent top performance for the following functions while being safely and efficiently controlled by one (1) operator:
- a) Removing and simultaneously loading debris from catch basin culverts, manholes and wet wells at rates up to 25,000 lbs. (11 340 kg) per hour from depths to 60 ft. (18.3 m),
  - b) High pressure flushing of 6 in. (152 mm) to 24 in. (610 mm) diameter sewer lines
  - c) High pressure flushing of sewer lines and simultaneous removal and loading of debris from the manhole while operating within the confines of one(1) traffic lane at all times utilizing the truck protect the operator from traffic.
- 3.4 The unit shall be capable of consistent top performance for the functions during the summer and winter environments which is normal to the City of Winnipeg. **Note: The City of Winnipeg has four seasons with ambient temperatures ranging from approximately 90°F (32°C) to -40°F (-40°C).**

#### **4.0 OTHER SPECIFICATIONS AND STANDARDS-**

- 4.1 All applicable SAE standards form an integral part of these specifications and shall have precedence in any conflict concerning minimum acceptable standards.
- 4.2 The ratings specified herein state the minimum values acceptable to the City, not implying that these values are sufficient for the design of the particular unit being bid.
- 4.3 The **Catch Basin Sewer Cleaner Vehicles** and all its components and attachments shall comply with the applicable regulations:
- National Safety Mark, NSM
  - Manitoba Safety and Health Act, Parts 12, 22
  - Canadian Standards Association, CSA
  - Under Writers of Canada, U/L
  - Society of Automotive Engineers, SAE
  - City of Winnipeg Lighting Visibility Standard=<http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf>.
- 4.4 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.

#### **5.0 SERVICE FACILITY-**

- 5.1 For the purpose of warranty repairs, service support and parts availability, the Bidder 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, maintenance, parts delivery and parts stock, of the type equipment being offered. Further, 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. The service facility shall be capable of accommodating the equipment being bid. The Contract Administrator shall determine if the vendor's service facility will qualify or not.

5.2 **STATE LOCATION-** \_\_\_\_\_

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 **QUALIFICATIONS OF MANUFACTURER & CONTRACTOR-**

7.1 The manufacturer of the Catch Basin Cleaner Vehicles shall have five (5) years continuous experience manufacturing Catch Basin Sewer Cleaner Vehicles. \_\_\_\_\_

7.2 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. \_\_\_\_\_

7.3 The Contractor shall have five (5) years continuous experience servicing, repairing and maintaining Catch Basin Sewer Cleaner Vehicles. \_\_\_\_\_

7.4 The manufacture 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. \_\_\_\_\_

8.0 **REFERENCE LIST-**

8.1 The Bidder shall provide five (5) Canadian Municipal/Governmental references using the same equipment (technical specification) being bid. The references must have a minimum of five (5) years **in service experience** of type of equipment required. \_\_\_\_\_

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

9.0 **NATIONAL SAFETY MARK-**

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

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

10.0 **MANITOBA SAFETY INSPECTION-**

10.1 The vehicles shall be complete with a current Manitoba Safety Sticker affixed to the driver's side vent window. \_\_\_\_\_

**11.0 BODY TYPE-**

11.1 Shall be a combination sewer and catch basin cleaning machine equipped with a high pressure water system, a self-contained water supply, a vacuum debris loading system and a debris storage tank, and a hydro-excavation ("soft dig") system complete with a hot water boiler, mounted on a tandem rear axle, conventional cab truck chassis.

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**12.0 CAB & CHASSIS-**

12.1 The cab and chassis shall be a new 2016 or 2017 conventional cab, set back axle, tandem rear axle unit supplied by a local Winnipeg Truck Dealer (**no exceptions**), **state** dealer-

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12.2 The Contractor shall ensure that the cab and chassis is properly serviced (P.D.I.) prior to any road transportation, in accordance with the manufacturer's recommendations. A pre-delivery inspection sticker shall be affixed under the hood of the vehicle.

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12.3 The Contractor shall ensure that the entire vehicle contains a current Manitoba Safety sticker in accordance with the Province of Manitoba. The Manitoba Safety sticker shall be affixed on the driver's side window .

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12.4 GVWR Total 64,000 lbs.

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12.5 Front 20,000 lbs.

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12.6 Rear 44,000 lbs.

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12.7 Wheelbase As required for body installation, **state-**

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12.8 Cab to Axle As required for body installation, **state-**

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12.9 Turning radius **State-**

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12.10 Engine Type Tier IV Diesel, inline 6-cylinder. Engines shall be warranted to use biodiesel at a B10 blend level (10% biodiesel to 90% ultra low sulphur diesel), where the biodiesel will meet product specification ASTM D 6751 to ensure fuel quality

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12.11 Horsepower 370-400 HP gross

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12.12 Torque 1250 lb-ft

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12.13 Engine shut down Low oil pressure / high water temperature

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12.14 Anti-idling programming Required

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12.15 Starting Aid Cold weather starting aid required

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12.16 Fuel Shut-off Electric solenoid type

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12.17 Air intake Dual element air cleaner

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12.18 Air cleaner Dry type, suitable for application, under hood

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12.19 Air intake restriction ind. Restriction indicator dash mounted

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12.20	Oil drain plug	Magnetic type	_____
12.21	Oil filter	Full flow, spin-on type	_____
12.22	Fuel filter	Spin-on type	_____
12.23	Fuel/water separator	Heated, drainable, mounted under hood, located to be protected from road spray	_____
12.24	Fuel line primer pump	Preferred	_____
12.25	Block heater	Immersion type, 1000 Watt with covered recessed male plug, located under driver's side door	_____
12.26	Coolant	Extended Life coolant, antifreeze to -40°F (-40°C)	_____
12.27	Coolant filter	Required	_____
12.28	Coolant hoses	Premium hoses	_____
12.29	Fan Drive	Thermostatically controlled, automatic type	_____
12.30	Air compressor	Water cooled, pressure lubricated, 18 cfm	_____
12.31	PTO Provision	LH & RH side of transmission	_____
12.32	Engine Oil Fluid	<b>State type-</b>	_____
12.33	Electrical System	Standard wiring system	_____
12.34	Alternator	Brushless 160 amp	_____
12.35	Starter	Delco Remy with thermal over crank protection	_____
12.36	Circuit breakers	Auto-reset, readily accessible	_____
12.37	Batteries	Three (3) maintenance free (12)-volt, group 31, 2775 CCA combined capacity	_____
12.38	Battery Box	Under Passenger seat vented to the outside of the cab	_____
12.39	Battery disconnect	<b>State</b> location-	_____
12.40	Remote boost terminal	Remote battery boost terminal(s), protected from road spray, covered	_____
12.41	Cab marker lights	LED located in exterior sun shade or visor	_____
12.42	2-way radio circuit	Independent 20 Amp circuit, ignition powered, wired under dash loose, labelled	_____
12.43	Exhaust Configuration	Single horizontal, after treatment frame mounted Right hand side under cab with vertical tail pipe.	_____
12.44	Heat shield	Required over exhaust next to cab door	_____
12.45	Transmission Model	Allison 3000 RDS with 6-speed programming and Load Management Programming for fuel efficiency	_____

12.46	Shift selector	Allison Digital push-button type, dash mounted	_____
12.47	Trans Fluid	Synthetic	_____
12.48	Cooling capacity	As per manufacturer's recommendation for severe duty cycle	_____
12.49	Oil level dipstick	Bayonet type with high and low level markings	_____
12.50	Trans. drain plug	Magnetic type	_____
12.51	Programming	Transmission Load Management and Economy mode programming	_____
12.52	Front Axle Type	Meritor <b>20,000 lbs.</b> capacity	_____
12.53	Front Axle Fluid	<b>State</b> type-	_____
12.54	Rear Type	Meritor 44,000 lbs. capacity	_____
12.55	Ratio	As per intended application city usage and for 110 km/hr top speed, <b>state</b> ratio-	_____
12.56	Differential lock	Required for both drive axles w/dash mtd. Switch	_____
12.57	Rear axle Fluid	Synthetic	_____
12.58	Hub seals	Oil lubricated front and rear	_____
12.59	Hubs	Aluminum front & rear hubs	_____
12.60	Front Suspension-	Spring suspension <b>20,000 lbs.</b> capacity	_____
12.61	Rear Suspension-	Air ride suspension, 44,000 lbs. capacity	_____
12.62	Susp. control valve	Manual dump valve for air suspension c/w dash mtd. switch, indicator light, gauge and buzzer	_____
12.63	Front Wheels	22.5 x 12.25 aluminum wheels, aluminum hub Piloted, wheel indicators	_____
12.64	Rear Wheels	22.5 x 8.25 aluminum wheels, aluminum hub Piloted, wheel indicators	_____
12.65	Front Tires-	Make & Model Michelin or Bridgestone (Mud & Snow). Front steer tires must be suitable for application and Province of Manitoba weather conditions,	_____
12.66	Size Front	385/65R 22.5, 18-ply Load range J	_____
12.67	Rear Tires-	Make & Model Michelin or Bridgestone (Mud & Snow). Rear Drive tires must be suitable for application and Province of Manitoba weather conditions	_____
12.68	Size	11R 22.5, 16-ply	_____
12.69	Frame	Rail, suitable for requested GVWR, application and length	_____

12.70	Application	Suitable for sewer & catch basin body	_____
12.71	Chassis fasteners	Grade-8 threaded hex headed frame fasteners	_____
12.72	Front frame extension	Integral type, 20 in.,	_____
12.73	After-frame	As required body specifications	_____
12.74	Steering-	Heavy-duty power, synthetic oil preferred	_____
12.75	Brakes	Air, ABS, S-cam drum brakes, front & rear	_____
12.76	Slack adjusters	Meritor (clearance sensing), automatic type	_____
12.77	Parking brake	Spring set, four (4) chamber system	_____
12.78	Brake pots	Vented type	_____
12.79	Dust shields	Required, front and rear	_____
12.80	Moisture ejector	Bendix DV-2, heated, required in all air tanks	_____
12.81	Drain valves	Manual, chain or cable operated, required on each air tank	_____
12.82	Air dryer	Wabco System Saver 1200, heated	_____
12.83	Air Tanks	Steel or aluminum	_____
12.84	Fuel Tank	Aluminium, fully fuelled upon delivery, <b>state maximum fuel capacity available-</b>	_____
12.85	Tank straps	Stainless steel or aluminum straps with 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion	_____
12.86	Fuel separator	Heated, drainable	_____
12.87	Cab-	Conventional w/corrosion inhibitor	_____
12.88	Cab Construction	<b>State-</b>	_____
12.89	Front axle to BBC	110" -117.9 (excluding the front frame extension)	_____
12.90	Cab mounts	Air suspension	_____
12.91	Front grille	Stationary type	_____
12.92	Cab interior / trim	Extreme climate insulation including cloth or vinyl headliner on roof, door panels and rear interior of cab	_____
12.93	Cab silencer package	Required for minimal decibel level	_____
12.94	Hood/Firewall/Engine	Insulated hood liner, engine cover and firewall	_____
12.95	Floor covering	Rubber mats with under-padding	_____
12.96	Floor mats	Two (2) heavy-duty rubber	_____

12.97	Driver's seat	High back, air suspension w/foldable armrests, lumbar support, heavy-duty cloth upholstery, complete with seat covers.	_____
12.98	Passenger seat	Stationary Passenger seat, cloth upholstery, complete with seat covers.	_____
12.99	Sun visors	Dual flip-up type	_____
12.100	Steering wheel	Tilt and telescopic type	_____
12.101	12-Volt power outlet	(2) Required	_____
12.102	Radio	Factory installed AM/FM/CD, Hands Free Blue Tooth	_____
12.103	Starter switch	Key operated c/w three (3) sets of keys	_____
12.104	Interior light	Dome light with driver and passenger door switches	_____
12.105	Heater / Defroster	High output, capable of keeping all windows clear at an outside temperature of -35°F (-37°C)	_____
12.106	Air conditioning	Required	_____
12.107	Brake & pedal	Hanging type brake pedal	_____
12.108	Horn	Single electric	_____
12.109	Exterior mirrors	Stainless Steel, heated, with convex mirrors	_____
12.110	Down view mirror	Required over passenger door	_____
12.111	Windows & windshield	Factory Tint	_____
12.112	Windows	Driver's side power, passenger side power or manual	_____
12.113	Windshield wipers	Electric, intermittent	_____
12.114	Wiper blades	Snow type	_____
12.115	Windshield washers	Required	_____
12.116	Grab handles	Dual exterior	_____
12.117	Entrance steps	Dual each side, open grate / grip type	_____
12.118	Winter front	Heavy-duty vinyl w/twist lock or snap type fasteners	_____
12.119	Fender extensions	Front Fender extensions required	_____
12.120	Exterior Visor	Exterior sun visor with LED Lights	_____
12.121	Dash	Wing type dash for operator convenience preferred	_____
12.122	Fender Mtd. Mirrors	Required	_____
12.123	Flare kit	Required with three (3) triangular reflectors, CVSA approved	_____

12.124	Fire Extinguisher	(10) lbs. fire extinguisher required	_____
12.125	First aid kit	First Aid kit to be Manitoba approved.	_____
12.126	Oil pressure	Gauge	_____
12.127	Coolant temperature	Gauge	_____
12.128	Transmission oil temp.	Gauge	_____
12.129	LOP/HWT	Warning light and buzzer	_____
12.130	Voltmeter	Gauge	_____
12.131	Air reservoir pressure	Gauge with LAP warning light and buzzer	_____
12.132	Engine hour-meter	Required, non-resetable type	_____
12.133	Tow Hooks	(2) front inside frame rail, (2) rear mounted	_____
12.134	Front Bumper	Front bumper required	_____
12.135	Exterior Color	White	_____
12.136	Interior Color	Blue or grey	_____
12.137	Frame & suspension	Primed and finished with black Imron 5000 paint	_____
12.138	Flare kit	Three (3) triangular reflectors, CVSA approved	_____
12.139	Weight Monitor-	Model- "Air Weigh Truck Scale"-Electronic weight read-out to be installed in cab.	_____

**13.0 DIMENSIONS AND TURNING RADIUS-**

- 13.1 State the following dimensions of the complete unit:
- a) Overall length, **state-** \_\_\_\_\_
  - b) Overall width – 96 in \_\_\_\_\_
  - d) Overall height, with boom in stored position – 150 in \_\_\_\_\_
- 13.2 **State** the vehicle turning radius, to curb, measured as per SAE J695- \_\_\_\_\_

**14.0 WEIGHT DISTRIBUTION-**

- 14.1 **State** the weight distribution of the vehicle with the following payloads:
- a) Water tank and debris tank empty
  - Front axle weight: \_\_\_\_\_
  - Rear axle weight: \_\_\_\_\_
  - b) Water tank filled to capacity and debris tank empty
  - Front axle weight: \_\_\_\_\_

- Rear axle weight: \_\_\_\_\_
- State** water capacity (gal)- \_\_\_\_\_
- c) Water tank filled to capacity, and 12,500 lbs.  
(5670 kg) debris in the debris tank
- Front axle weight: \_\_\_\_\_
- Rear axle weight: \_\_\_\_\_
- State** water capacity (gal) \_\_\_\_\_
- 14.2 The combination sewer and catch basin cleaner shall comply with the chassis manufacturer's recommendations for vertical and horizontal centre of gravity with the payloads listed in Detailed Specification 14.1 Proof of documentation shall be provided within this bid submission. \_\_\_\_\_
- 15.0 DEBRIS BODY-**
- 15.1 Body design – cylindrical dumping type \_\_\_\_\_
- 15.2 Body construction – 3/16 in (4.8 mm), 50,000 psi yield strength, corrosion and abrasion resistant Ex-Ten Steel \_\_\_\_\_
- 15.3 Useable capacity – 9.0 yd.3 (6.9 m3), \_\_\_\_\_
- 15.4 Level indicator – external type with internal float mechanism. \_\_\_\_\_
- 15.5 Rear door – full size, heavy duty, steel construction, continuously welded. \_\_\_\_\_
- 15.6 Rear door hinges – top mounted, heavy duty, grease-able type preferred, \_\_\_\_\_
- 15.7 Rear door seal – neoprene, full perimeter, replaceable. \_\_\_\_\_
- 15.8 Rear door controls – 2 sets of controls operated by rocker switches protected from accidental actuation, located mid-ship curbside and in cab located to right of driver and operable from a normal driving position, located adjacent to hoist controls. Must control power up, power down, lock and unlock rear door. With operators safety in mind, manual door locks not acceptable. \_\_\_\_\_
- 15.9 Safety support struts – capable of holding the rear door in a raised position to provide a 48 in. (1219 mm) opening at the bottom of the door. \_\_\_\_\_
- 15.10 Drain – required in rear door with 6 in.(150 mm) diameter manual butterfly valve. Drain shall be designed to expel excess liquid while retaining solids in debris body. \_\_\_\_\_
- 15.11 Drain hose – Approx. 10 ft. (3 m), lay-flat type, pre-connected, complete with storage bracket. \_\_\_\_\_
- 15.12 An 450 gpm submersible trash pump external mounted on the rear door with a 3" x 25' drain hose and drain storage bracket. \_\_\_\_\_
- 15.13 Debris deflector – positioned to prevent incoming debris from plugging Rear door mounted drain. \_\_\_\_\_
- 15.14 Debris washout system – high pressure system designed to undermine and free heavy material. \_\_\_\_\_

- 15.15 Debris body to have a debris deflector plate below the door to prevent debris from covering the back of the truck when dumping. \_\_\_\_\_
- 15.16 Hoist – hydraulic, heavy duty, double acting. \_\_\_\_\_
- 15.17 Hoist controls –2 sets of controls operated by simple rocker switches protected from accidental actuation, located mid-ship curb-side and in cab located to right of driver and operable from a normal driving position \_\_\_\_\_
- 15.18 Dumping angle – 50° \_\_\_\_\_
- 15.19 Dumping height (ground to bottom of debris tank open)- 60 inches \_\_\_\_\_
- 15.20 Safety prop – tubular steel construction, easily accessible, designed to Support debris body in raised position and permit servicing of hoist. \_\_\_\_\_
- 15.21 Debris body to be reinforced at point of contact with prop. \_\_\_\_\_
- 15.22 Cyclones- (4) Dual vertical (cyclone) centrifugal separators shall be installed in-line between the debris body and the air mover, (2) per side for each debris body discharge port. Each dual separator shall include large fallout chamber cleanout door. \_\_\_\_\_
- 15.23 Vacuum system will automatically shut down when the debris body has reached full capacity. \_\_\_\_\_
- 16.0 VACUUM SYSTEM- FOUR (4) FAN UNITS AS PER FORM B: PRICES)-**
- 16.1 Vacuum shall be provided by compressing air within a two-stage 38" diameter centrifugal compressor. \_\_\_\_\_
- 16.2 Compressor fans to be constructed of non-corrosive material. \_\_\_\_\_
- 16.3 Each centrifugal compressor fan shall be constructed of non-corrosive, hardened 1/4" chrome blades. \_\_\_\_\_
- 16.4 Centrifugal compressor shall be warranted against corrosion for five years. \_\_\_\_\_
- 16.5 The outer housing shall be constructed of 1/4" spun steel. \_\_\_\_\_
- 16.6 Compressor housing shall be equipped with a drain not exceeding 2" diameter. \_\_\_\_\_
- 16.7 Complete compressor and housing assembly shall be warranted against materials and workmanship for five years. \_\_\_\_\_
- 16.8 Hydrostatic drive system that shall include an electronic controlled variable displacement hydrostatic pump producing up to 300 Bar. \_\_\_\_\_
- 16.9 The compressor Hydrostatic Drive system shall utilize electronic controls located at the front operator station. The system shall be controlled on/ off with a switch that may be engaged or disengaged at any operating speed. \_\_\_\_\_
- 16.10 The compressor controls will have a speed selection switch at the operator station to control compressor speed; manual levers on the hydrostatic pump to control compressor speed will not be accepted. \_\_\_\_\_
- 16.11 The centrifugal compressor should be driven direct through a helical gear type step-up transmission drive with a step-up ratio 2 to 1. \_\_\_\_\_

- 16.12 Hydraulic shut off valves shall be provided at the suction, return and filter lines to permit servicing of the hydraulic system. \_\_\_\_\_
  - 16.13 The drive shaft shall be supported via ball bearings and gears. \_\_\_\_\_
  - 16.14 Compressor shall be driven from a closed loop hydrostatic drive system utilizing available chassis power via split-shaft transfer case. The transfer case shall drive a variable displacement hydrostatic pump to energize a closed loop. \_\_\_\_\_
  - 16.15 The pump shall be mounted directly to the split shift transfer case. The pump will have a B10 life Rating of 10,000 hours continuous duty. \_\_\_\_\_
  - 16.16 The hydraulic motor powering the compressor shall be a bent axis, bi-directional motor. Motor speed shall not exceed 2,500 RPM. \_\_\_\_\_
  - 16.17 The hydrostatic drive system shall utilize electronic soft start speed control to manage ramping speed. \_\_\_\_\_
  - 16.18 The control system shall provide a mode selection switch to control the compression drive in low vacuum, combination mode and full vacuum settings. \_\_\_\_\_
  - 16.19 The gear drive should attach directly to the rotor shaft without the use of multiple stage V-belts or jack shafts. \_\_\_\_\_
  - 16.20 The gears and bearings shall be lubricates with splash lubrication system, requiring no manual greasing. \_\_\_\_\_
  - 16.21 The drive system shall not utilize pillow block bearings that require excessive daily greasing. \_\_\_\_\_
- VACUUM SYSTEM- ONE (1) POSITIVE DISPLACMENT UNIT AS PER FORM B: PRICES)-**
- 16.22 Vacuum shall be provided by a positive displacement rotary lobe type blower driven via chassis engine and heavy duty split transfer case direct to the blower. \_\_\_\_\_
  - 16.23 Interlock safety system shall prevent drive axle from engaging. \_\_\_\_\_
  - 16.24 A horizontal silencer with rain cap shall exhaust above the cab. \_\_\_\_\_
  - 16.25 A blower tachometer / hour-meter shall be provided. \_\_\_\_\_
  - 16.26 For most efficient use of horsepower and fuel consumption, full vacuum and/or combination operation shall be approximately 1750 RPM of chassis drive engine. \_\_\_\_\_
  - 16.27 Blower shall be driven by the chassis engine and shall produce inlet volume of 4500 cfm @ 0" hg @ 2250 rpm, and 3490 cfm @ 18" hg @ 2250 rpm vacuum (Roots 824RCS 18 or equal). Drive engine not to exceed 1760 RPM. \_\_\_\_\_
  - 16.28 For added protection, the vacuum system shall have three (3) relief valves set at 18" hg, heavy duty horizontal mounted noise muffler, removable and cleanable stainless steel filter screen, and shall be enclosed with a steel cage guard for safety. \_\_\_\_\_
  - 16.29 Transfer case shall be activated via air shift controls in the truck cab to engage \_\_\_\_\_

- work / road mode. \_\_\_\_\_
- 16.30 Blower shall be driven from chassis engine via the transmission drive shafts and heavy duty split shaft transfer case direct to blower, engagement via air-shift clutch control at operator panel. \_\_\_\_\_
- 16.31 Blower shall be provided with a horizontal silencer with exhaust above the cab and rain cap protecting the silencer from rain water. \_\_\_\_\_
- 16.32 Blower shall draw air from two (2) separate ports in the debris body. \_\_\_\_\_
- 16.33 Hydraulic shut off valves shall be provided at the suction, return and filter lines to permit servicing of the hydraulic system. \_\_\_\_\_
- 17.0 VACUUM PICK-UP HOSE AND BOOM-**
- 17.1 Pick-up hose and boom shall be designed for front end operation. \_\_\_\_\_
- 17.2 Vacuum hose – heavy-duty, 8 in. (203 mm) diameter. \_\_\_\_\_
- 17.3 Flexible section of upper vacuum hose, with hydraulically extendable 8' boom.** \_\_\_\_\_
- 17.4 Vacuum hose and boom shall remain stationary when dumping debris body. \_\_\_\_\_
- 17.5 Hose storage – front mounted with locking clamp. \_\_\_\_\_
- 17.6 Vacuum hose extensions – aluminum construction, complete with a catch basin nozzle with a steel reinforced tip, for a working depth of 26 ft. (7.9 m) \_\_\_\_\_
- 17.7 Extensions shall utilize over centre type quick clamp connectors. \_\_\_\_\_
- 17.8 Extension storage racks shall be located on the right (curb) side of the truck and on the rear door – tubular steel construction, suitable for storage of three (3) lengths of debris tubing. Rack shall be a spring-activated, fold down design, able to facilitate convenient removal/replacement of debris tubes. **Note: Street-side located storage rack not acceptable.** \_\_\_\_\_
- 17.9 Boom rotation – hydraulic, cylinder actuated 90° to each side (180° total). \_\_\_\_\_
- 17.10 Rotation mechanism – heavy duty with self-locking feature to lock boom in any working position. \_\_\_\_\_
- 17.12 Working radius – 23 ft. (7.0 m) with boom extended, **state-** \_\_\_\_\_
- 17.13 Boom raise and lower – hydraulic. \_\_\_\_\_
- 17.14 Boom controls – electric over hydraulic with controls for left/right rotation, raise/lower, extend/retract, emergency vacuum breaker, and emergency stop. \_\_\_\_\_
- 17.15 Pendant control box – portable type with a heavy duty, water proof housing and a 25 ft. (7.6 m) control cable. Remote pendant shall include all controls specified in Detailed Specification 14.9. \_\_\_\_\_
- 17.16 Wireless remote control - portable type with a heavy duty water proof housing, and be equipped with control of the following: \_\_\_\_\_

- a) Chassis engine throttle control
- b) Water pump on/off switch
- c) Water pressure control
- d) Hose reel wind/unwind
- e) Hose reel speed control
- f) Boom elevation, rotation, and extension control
- g) Vacuum relief
- h) Electronic emergency stop

17.17 Boom support – tubular steel construction, designed to support boom in stored position.

**18.0 WATER TANKS-**

18.1 Cylindrical aluminum construction internally baffled. (under-slung frame mounted Tanks not acceptable due to off-road operations)

18.2 Certified, metered capacity – 1,000 US Gallons

18.3 Tanks shall be positioned to provide optimal weight distribution and lowest centre of gravity.

18.4 Interconnected tanks shall have aluminum piped connections with Intermediate or end mounted flexible rubber sleeves.

18.5 Water level gauge – sight type, located on right (curb) side water tank, protected from damage.

18.6 Low water level sensor – required with warning light and alarm, activated at approx. 200 Imp. Gallons (910 L), located at the front control stations and right (curb) side water tank.

18.7 Tank filler – anti-siphon, air gap type. Air gap shall be twice inlet diameter.

18.8 Strainer – “Y” type with stainless steel cartridge in tank fill line,

18.9 Spare strainer cartridge – stainless steel, one (1) per unit.

18.10 Filler hose – 25 ft. (7.6 m) long with 2½ in. (64 mm) female Western Canada thread hydrant coupling, pre-connected to tank filler line.

18.11 Hose storage – basket type, expanded metal construction, easily accessible.

**19.0 WATER PUMP-**

19.1 Single piston water pump, double acting, designed and constructed for its intended use as a high pressure sewer flusher pump.

19.2 Capable of providing a pulse (jack hammer) type action and a non-pulse (surge-free flow) type action.

19.3 Water pump output – hydraulically controlled, pressure adjustable from 250-2500 psi (1724-17 240 kPa) via a control panel mounted dial. Flow shall be adjustable from 0 to 80 gpm (5 L/sec) through the cleaning nozzle.

- 19.4 Relief valve or pressure regulator – factory set to regulate pressure  
Output of pump. \_\_\_\_\_
- 19.5 Water pump location shall be mounted low enough to allow gravity to  
provide a flooded suction inlet at all times and shall permit easy  
accessibility for pump maintenance. \_\_\_\_\_
- 19.6 The water pump location shall be certified by the pump manufacturer  
and be provided to the City of Winnipeg. Any components of the pump  
requiring regular servicing shall be serviceable from the exterior of the  
pump without removal or dismantling of the pump. \_\_\_\_\_
- 19.7 Water pump capable of purging residual water from system by pumping  
Air through entire water system. Water pump shall be designed so that  
no damage will occur if run at normal operating pressure without water  
for 20- 30 minutes. \_\_\_\_\_
- 19.8 Drive system – hydraulically driven via transmission power take-off  
(PTO) driven hydraulic pump, designed and constructed for continuous  
duty operation. \_\_\_\_\_
- 19.9 Capacity for continuous duty operation, water pump and drive system,  
80 gpm (5 L/sec) at 2500 psi (13 790 kPa) water pressure measured at  
the nozzle on the front hose reel. \_\_\_\_\_
- 20.0 HOSE REEL-**
- 20.1 Front mounted, hydraulically extendable with hose reel carrier frame bolted  
to chassis frame. \_\_\_\_\_
- 20.2 Hose reel extension – sufficient to allow full opening of tilt hood. \_\_\_\_\_
- 20.3 Hose reel shall be located to provide sufficient airflow to chassis  
radiator and engine compartment, as recommended by the chassis  
manufacturer, when stored in the fully retracted position. \_\_\_\_\_
- 20.4 Hose reel shall be capable of swivelling approximately 270° with the hose  
reel carrier in the fully extended position. For operator safety, the reel  
shall not extend beyond the chassis width in any position. \_\_\_\_\_
- 20.5 Swivel bearing – large diameter, heavy-duty ball type, grease-able. \_\_\_\_\_
- 20.6 Swivel lock – spring applied, air released. \_\_\_\_\_
- 20.7 Hydraulic drive system for wind/rewind and speed control of hose reel. \_\_\_\_\_
- 20.8 All drive components shall be readily accessible for servicing. \_\_\_\_\_
- 20.9 All hose reel controls shall be mounted at the front control stations. \_\_\_\_\_
- 20.10 Hose reel rotation bearings – heavy duty pillow block type, grease-able. \_\_\_\_\_
- 20.11 Hose reel rotation counter – required with reading in meters. \_\_\_\_\_
- 20.12 Hose – 600 ft. (183 m) long, 1 in. (25.4 mm) interior diameter sewer hose  
with 2500 psi (17 238 kPa) operating pressure and 3000 psi (20 685 kPa)  
burst pressure rating. \_\_\_\_\_

20.13 Hose guide –A manual hose level wind scroll device shall be supplied. \_\_\_\_\_

20.14 Hose area to be free of any obstructions which may damage hose. \_\_\_\_\_

**21.0 SEWER FLUSHING ACCESSORIES-**

21.1 One (1) each rubber covered, steel braid leader hose, approximately 4' x 1" ID (1.2 m x 25.4 mm ID). \_\_\_\_\_

21.2 One (1) each rigid finned guide assembly for leader hose, designed to stabilize nozzle and absorb impact of debris immediately behind nozzle. \_\_\_\_\_

21.3 One (1) each flexible hose guide with retaining rope. \_\_\_\_\_

21.4 One (1) each 15° sand nozzle with 6 rearward jets, 2 forward jets and tungsten carbide orifices. \_\_\_\_\_

21.5 One (1) each 30° sanitary nozzle with 6 rearward jets and tungsten carbide orifices. \_\_\_\_\_

21.6 One “warthog” grease cutting nozzle per Catch Basin Sewer Cleaner vehicle. \_\_\_\_\_

**22.0 FRONT CONTROL STATIONS-**

22.1 A complete control station shall be supplied. \_\_\_\_\_

22.2 The station shall be equipped with a complete set of controls and gauges including the following:

- a) Chassis engine throttle control.
- b) Water pump on/off switch.
- c) Water pressure control
- d) Water pressure gauge – oil dampened 0-3000 psi display.
- e) Low water level warning
- f) Hose reel wind/unwind control.
- g) Hose reel speed control.
- h) Hose reel telescopic extension control.
- i) Boom elevation, rotation and extension controls.
- j) Electronic emergency stop
- k) Digital flow meter
- l) Digital colour diagnostic control panel
- m) Weather proof plug-in for remote pendant control

To permit operator control from both sides of the hose reel, a second control station shall be located on the back of the hose reel with the following controls:

- a) Chassis engine throttle control.
- b) Water pump on/off switch.
- c) Water pressure control
- d) Hose reel wind/unwind control.

- e) Hose reel speed control.
  - f) Electronic emergency stop
- 22.3 All controls shall be identified with permanent, engraved type labels.
- 22.4 All controls shall be protected from damage or accidental actuation.
- 22.5 Remote spotlight – LED hand held type with impact resistant, water proof Housing and 25 ft. (7.6 m) cord. Spotlight storage provision required at front control station.
- 22.6 Cord reel – spring return type, installed adjacent to spotlight.
- 23.0 WASH DOWN GUN CLEANING SYSTEM-**
- 23.1 Water supply to handgun from high pressure water pump.
- 23.2 Factory set relief valve to protect wash down system – operating pressure not to exceed 1,000 psi
- 23.3 Quick connect couplers – located mid-ship on right (curb) side.
- 23.4 Handgun – pistol grip type with 25 ft. (7.6 m) of ½ in. (13 mm) diameter, wire braid reinforced hose with quick connect coupler.
- 23.5 Spray pattern – trigger controlled, adjustable from fine mist to steady stream.
- 24.0 HYDRO EXCAVATION SYSTEM-**
- 24.1 Boiler – 400,000 btu boiler system. System shall be approved by the Manitoba Department of Labour. State make model and details of Hydro excavation system.
- 24.2 Hose reel – retractable hose reel with 50 ft. of ¼ in. ID high pressure hose and hydro excavation lance.
- 25.0 COLD WEATHER OPERATING SYSTEM-**
- 25.1 Water lines – insulated, including, but not limited to, pump suction line, pressure line to hose reel, and hand-held gun line.
- 25.2. 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.
- 25.3 Cold Water to circulate through entire system including hose reel and pump (Not through boiler)
- 25.4 Air purge system – required to remove water from pump and water lines.
- 25.5 Ball valves or drain valves shall be provided in the bottom section of the water pump for cold weather draining and daily flushing.
- 26.0 HYDRAULIC SYSTEM-**

- 26.1 Hydraulic oil reservoir – steel reservoir with internal baffles, sized to meet system requirements. \_\_\_\_\_
- 26.2 Oil level gauge – sight type. \_\_\_\_\_
- 26.3 Drain plug – required at bottom of tank. \_\_\_\_\_
- 26.4 Reservoir filler – top mounted filler with strainer and breather cap with filter. \_\_\_\_\_
- 26.5 Sealed clean-out/inspection cover. \_\_\_\_\_
- 26.6 The oil reservoir shall be clearly labelled “Hydraulic Oil”. \_\_\_\_\_
- 26.7 Suction filter – nominal 100 micron filter, located in the oil reservoir, serviceable. \_\_\_\_\_
- 26.8 Shut-off valve – ball type, located between the oil reservoir and the pump, fastened in open position with a bracket and bolt. \_\_\_\_\_
- 26.9 Return line filter – nominal 10 micron, spin-on type, serviceable without oil loss. \_\_\_\_\_
- 26.10 High pressure relief valve(s) – located to protect the entire hydraulic system. \_\_\_\_\_
- 26.11 Hydraulic lines – plated seamless steel tubing wherever possible and high pressure hydraulic hose where flexibility is required. \_\_\_\_\_
- 26.12 Hydraulic hoses – wire braid reinforced hoses rated for system operating pressure with 4 to 1 safety factor for burst pressure. \_\_\_\_\_
- 26.13 Hose fittings – full flow, crimp-on (non-reusable) type. \_\_\_\_\_
- 26.14 Hoses and tubing shall be properly routed and secured, and protected at wear and scuff locations. Tubing shall be shock-mounted. \_\_\_\_\_
- 26.15 Hydraulic valves – sized to meet system flow requirements without causing restrictions. All valves shall be individually serviceable and shall be located for easy accessibility for servicing. \_\_\_\_\_
- 26.16 The hydraulic system shall be designed for cold weather operation. \_\_\_\_\_

**27.0 MONITORING SYTEM-**

- 27.1 Remote information monitoring system that monitors and reviews sewer cleaning operations on the combination sewer cleaner. The system shall collect and transmit comprehensive, operational data from the combination sewer cleaner to a secure hosted website where the data can be accessed 24/7 from a internet-connected device such as a smartphone, tablet or laptop. The system shall report near real-time on sewer cleaning operations and track hours of operation, location of cleaning, water consumption, water pressure, water flow rate, distances of lines cleaned, vacuum utilization, and fuel consumption. \_\_\_\_\_

**28.0 DIGITAL FOOTAGE COUNTER-**

- 28.1 Digital footage counter displaying absolute and relative footage values shall be provided. System must be capable of resetting relative value to \_\_\_\_\_

ensure operator safety, accuracy to within one percent of actual distance. \_\_\_\_\_

**29.0 ELECTRICAL SYSTEMS-**

29.1 Electrical wiring shall be vapour sealed to eliminate moisture damage and shall be in accordance to NEMA 4 (National Electrical Manufacturing Association) standards. \_\_\_\_\_

29.2 All wiring shall be in pre-engineered harnesses with weather proof, guided pin snap-together connectors. Each circuit shall be colour coded and marked the entire length of the wire with easily read numbers and/or letters for identification. \_\_\_\_\_

29.3 Where crimp-on type electrical connectors are necessary, the connectors shall be crimped and soldered to the wiring, then sealed using heat shrink tubing. \_\_\_\_\_

29.4 All wiring shall be properly secured, routed and protected. All holes Required for routing shall be drilled, grommetted and sealed as required. \_\_\_\_\_

29.5 Circuit breakers shall be used in lieu of fuses for all circuits requiring overload protection (reset type circuit breakers are preferred). \_\_\_\_\_

29.6 All circuit breakers and relays shall be located behind quick removable panels, located to be readily accessible for servicing. All circuit breakers and relays shall be permanently labelled to indicate their function. \_\_\_\_\_

**30.0 LIGHTING EQUIPMENT-**

30.1 The vehicles shall be equipped with all vehicle lighting equipment required under the Canada Motor Vehicle Safety Act and the Manitoba Highway Traffic Act. \_\_\_\_\_

30.2 Supplier installed lighting shall include the following components:  
(All lighting shall be LED including spot lights)

- a) Combination stop, turn and taillights – LED.
- b) Back-up lights – LED.
- c) Light cluster – three (3) lights LED protected to avoid damage.
- d) Clearance lights – LED.
- e) License plate lamp – LED, complete with license plate bracket, located to be protected from damage.
- f) Lighting harnesses – properly routed and secured.
- g) All plug-in connectors shall be coated with di-electric silicone prior to assembly.
- h) Warning lights – LED two (2) side B-pillar mounted for 360°visibility, complete with in-cab switch wired through chassis ignition circuit.
- i) 15 ea light mini light bar, 3 per truck. Pinnacle 7000 14” mini light bar-amber/clear lens – class 1, permanent mount.
- j) Rail lighting Mid Ship on boy 10 ea 6’ oval flashing amber LED W/grommet – 8 flash pattern- 5 year warranty, exceeds J595 REG, 2 per truck rear mount outboard in existing cut outs on rear bumper.
- k) Rear Body Mounted Traffic indicating arrow, Part No. 58084, SWS.

**31.0 MISCELLANEOUS EQUIPMENT-** \_\_\_\_\_

31.1 Back-up alarm – Grote 73040-5 or equivalent, installed at the rear of the unit, located to be protected from damage. \_\_\_\_\_

31.2 Mud-flaps – black rubber mud-flaps mounted fore and aft of rear \_\_\_\_\_

- wheels with anti-sail brackets. \_\_\_\_\_
- 31.3 Aluminum storage compartments – Two (2) required with a combined storage capacity of approx. 15 ft.3 (425 L). \_\_\_\_\_
- 31.4 Access step(s) – grip strut construction, located on right (curb) side adjacent to the auxiliary engine to permit safe access to auxiliary engine, hoist, boom etc. by operator, or mechanical personnel. \_\_\_\_\_
- 31.5 Grab handles – supplied as required. \_\_\_\_\_
- 31.6 Whelen LED Sequential rear-mounted horizontal arrow board. \_\_\_\_\_
- 31.7 Arrow board control console – mounted in chassis cab, accessible from a normal driving position, wired through the chassis ignition circuit. \_\_\_\_\_
- 31.8 LED Boom-mounted work light, and front control station work light. \_\_\_\_\_
- 31.9 Reflective safety tape where applicable \_\_\_\_\_
- 32.0 LUBRICATION AND SERVICE-**
- 32.1 Groeneveld, **state** quantity of grease points- \_\_\_\_\_
- 32.2 All components of the combination sewer and catch basin cleaner requiring regular scheduled servicing or lubrication shall be easily accessible. \_\_\_\_\_
- 32.3 All pivot and friction points requiring lubrication including, but not limited to, all hydraulic cylinder pivot pins and tailgate hinge pins, shall have high pressure zerk fittings for lubrication. \_\_\_\_\_
- 32.4 Zerk fittings shall be easily accessible with a standard hand held grease gun. \_\_\_\_\_
- 32.5 Remote grease lines with zerk fittings shall be provided for grease points that are not accessible from ground level. Prefer Grease lines to be protected. \_\_\_\_\_
- 32.6 A permanent lubrication chart showing lube points and intervals shall be installed in a visible location. \_\_\_\_\_
- 32.7 Back-up camera to be installed with monitor in cab \_\_\_\_\_
- 32.8 Fan wash-down system, tied in with Debris washout system, for fan clean-out. \_\_\_\_\_
- 33.0 INSTALLATION-**
- 33.1 Installation of the combination sewer and catch basin cleaning machine on the cab and chassis shall be in accordance with the chassis manufacturer's recommendations. \_\_\_\_\_
- 33.2 The installation shall allow for proper access to all chassis components requiring regular scheduled maintenance. \_\_\_\_\_
- 33.3 Any holes required in the chassis frame web shall be drilled to fit the bolts. Drilling on chassis frame flanges is not permitted. \_\_\_\_\_
- 33.4 Welding on the chassis frame is not permitted. \_\_\_\_\_



290-4221	Waste Water Services- Local Sewer	2014	Western Star with Vactor 2100 Bodies	4700	5KKHAXCY8EPFN8589 (Chassis) 13-07V-13996 ( Body )	Hours 4794 (Chassis) Hours 899 (Body)
290-4222	Waste Water Services- Local Sewer	2014	Western Star with Vactor 2100 Bodies	4700	5KKHAXCY4EPFN8590 (Chassis) 13-07V-13999 ( Body )	Hours 4715 (Chassis) Hours 500 (Body)
290-4223	Waste Water Services- Local Sewer	2014	Western Star with Vactor 2100 Bodies	4700	5KKHAXCY6EPFN8591 (Chassis) 13-07V-14000 ( Body )	Hours 4105 (Chassis) Hours 860 (Body)
290-4224	Waste Water Services- Local Sewer	2014	Western Star with Vactor 2100 Bodies	4700	5KKHAXCY6EPFN8588 (Chassis) 13-07V-14003 ( Body )	Hours 4936 (Chassis) Hours 936 (Body)
290-4225	Waste Water Services- Local Sewer	2014	Western Star with Vactor 2100 Bodies	4700	5KKHAXCY8EPFN8592 (Chassis) 13-07V-14007 ( Body )	Hours 4713 (Chassis) Hours 976 (Body)

**37.0 FULL MAINTENANCE PACKAGE (OPTION)-**

37.1 Bidder to provide full maintenance package option per unit

- Full Maintenance Package (based on 150 hours per month for 3 years) \$ \_\_\_\_\_
- Full Maintenance Package (based on 150 hours per month for 4 years) \$ \_\_\_\_\_
- Full Maintenance Package (based on 150 hours per month for 5 years) \$ \_\_\_\_\_
- Full Maintenance Package (based on 150 hours per month for 6 years) \$ \_\_\_\_\_

37.2 **City Responsibility-** Under the Full Maintenance Proposal the City shall be responsible for the following items for equipment under this Contract:

- *Licensing and insurance coverage for the equipment;*
- Repair of damage to the equipment where damage has proven to have been caused by negligence on the part of the City;
- Repair or replacement of tires damaged due to road hazards;
- Fuel and other normal operating and maintenance supplies including daily and weekly maintenance such as greasing, cleaning, drainage of water.
- Replacement of high pressure water hose;
- Vacuum hose
- Nozzle replacement
- Aluminum vacuum extensions
- Windshield wipers
- **Daily greasing**

37.3 **Contractor Responsibility-** Under the Full Maintenance Package Option the Contractor shall be responsible for the following items for equipment under this Contract:

- All scheduled maintenance including (but not limited to) oil and filter changes, and regular service adjustments as recommended by the equipment and chassis manufacturers;
- **All preventative and predictive maintenance**
- All repairs due to mechanical failure or malfunction;
- Towing costs (if unit is immobile);
- All parts and labour costs
- Tires due to normal wear;

**38.0 ALTERNATIVE FUELS-**

38.1 Please **state** if there are any alternative fuels offered in your product to assist in The City of Winnipeg Green Fleet Initiatives. If available, please state, type description, benefit, fuel savings, environmental benefits and the cost of the option.

- CNG Compressed Natural Gas
- Diesel Bio Blends
- Other Alternative Fuels

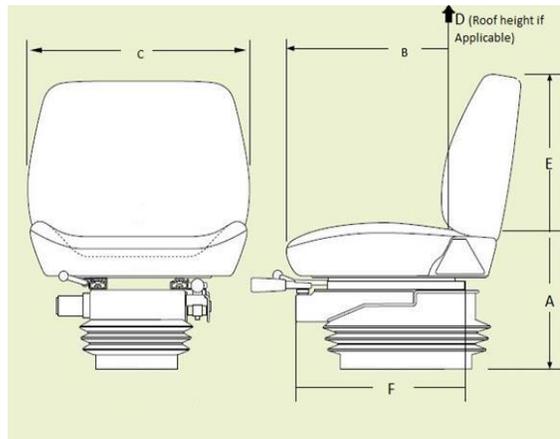
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**39.0 ERGONOMIC SPECIFICATIONS FOR VEHICLES/ POWERED MOBILE EQUIPMENT**

**Entry/ Exit**

- |      |                              |  |       |
|------|------------------------------|--|-------|
| 39.1 | First step entry height      | <b>State</b> , height of first step in inches        | _____ |
| 39.2 | First handhold entry height  | <b>State</b> , first handhold entry height in inches | _____ |
| 39.3 | Access to equipment          | <b>State</b> , door opening height in inches         | _____ |
| 39.4 | Access to equipment          | <b>State</b> , door opening width in inches          | _____ |
| 39.5 | Designed to prevent slipping | Anti-slip steps/handholds <b>(Y or N)</b> ?          | _____ |

**Seat (use below diagram to answer questions)**



- |       |   |  |       |
|-------|---|--|-------|
| 39.6  | Sitting height range from floor (where feet rest) (A) | <b>State</b> , seat height range in inches   | _____ |
| 39.7  | Seat length/depth (B)                                 | <b>State</b> , seat length/depth in inches   | _____ |
| 39.8  | Seat width (C)  | <b>State</b> , seat width in inches          | _____ |
| 39.9  | Cab height from seat to roof (if applicable) (D)      | <b>State</b> , cab height range in inches    | _____ |
| 39.10 | Back rest height (E)                                  | <b>State</b> , back rest height in inches    | _____ |
| 39.11 | Seat travel range (F)                                 | <b>State</b> , seat travel in inches         | _____ |
| 39.12 | Lumbar support  | Is lumbar support provided <b>(Y or N)</b> ? | _____ |

39.13 Head rest Is head rest provided **(Y or N)**? \_\_\_\_\_

39.14 Seat is made of breathable material **State**, type of seat material \_\_\_\_\_

### Operation

39.15 a) Reaching distance to usual work **State**, reaching distance in inches \_\_\_\_\_

39.16 b) Maximum reaching distance **State**, maximum reach distance in inches \_\_\_\_\_

39.17 Adjustable pedals (accelerator/brake/clutch) Are pedals adjustable **(Y or N)**? \_\_\_\_\_

39.18 Adjustable steering wheel Is steering wheel adjustable **(Y or N)**? \_\_\_\_\_

39.19 Adjustable shoulder belt Is belt adjustable and anchored **(Y or N)**? \_\_\_\_\_

### Cargo Area

39.20 Lid opens to provide adequate space Adequate space provided **(Y or N)**? \_\_\_\_\_

39.21 Loading height **State**, trunk height in inches \_\_\_\_\_

### Environment

39.22 Operator compartment is insulated from equipment noise (while operating) **State**, dBA inside cab while operating \_\_\_\_\_

39.23 Operator insulated from equipment vibration Is operator insulated from vibration **(Y or N)**? \_\_\_\_\_

39.24 Heating/cooling systems **State**, cab temperature range \_\_\_\_\_

39.25 Cab lighting **State**, lumens inside cab \_\_\_\_\_

### Maintenance/ Inspection

39.26 Lift assistance provided (when necessary) Is lift assistance provided **(Y or N)**? \_\_\_\_\_

39.27 Easy access to compartment doors Is easy access provided **(Y or N)**? \_\_\_\_\_

39.28 Include any other relevant ergonomic specifications and applicable range of adjustment \_\_\_\_\_

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**40.0**      **WARRANTY**

40.1      All warranty information shall be detailed and include all exclusions. The successful Bidder will provide all published warranty information upon delivery of the equipment. \_\_\_\_\_

**41.0**      **DELIVERY**

41.1      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 \_\_\_\_\_

41.2      Delivery Time: **Between April 15<sup>th</sup>, 2017 and May 15<sup>th</sup>, 2017.** Equipment shall be delivered between 8:00 am and 3:00 pm on Business Days. \_\_\_\_\_

41.3      Delivery Contact: The Contractor shall contact the Contract Administrator (2) weeks prior to delivery of the equipment. \_\_\_\_\_

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

**42.0**      **MANUALS-**

42.1      Manuals shall be supplied under this contract. The manuals shall cover the complete equipment including all components thereof, CD is preferred where available. \_\_\_\_\_

42.2      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 sets including preventative maintenance schedules. Memory Sticks are preferred. \_\_\_\_\_

**43.0**      **GUARANTEED BUYBACK OPTION-**

43.1      Guaranteed Buyback (based on 150 hours per month for 3 years)      \$ \_\_\_\_\_

43.2      Guaranteed Buyback (based on 150 hours per month for 4 years)      \$ \_\_\_\_\_

43.3      Guaranteed Buyback (based on 150 hours per month for 5 years)      \$ \_\_\_\_\_

43.4      Guaranteed Buyback (based on 150 hours per month for 6 years)      \$ \_\_\_\_\_