

FORM N: DETAILED SPECIFICATIONS 26009

COMBINATION SEWER CLEANER

1. **INSTRUCTIONS FOR COMPLETION OF SPECIFICATIONS**
 - 1.1 All items in these specifications should be answered indicating compliance or non-compliance.
 - 1.2 **Bidders shall state “yes” for compliance or state “deviation”** or give a reply where requested to do so. Deviations and/or equivalents shall be clearly stated and fully detailed. Deviations and/or equivalents will be considered subject to evaluation. In every instance where a brand name or design specifications is used, the City will also consider deviations and/or equivalents.
 - 1.3 Lengthy explanations of deviations may be included in a separate document and must reference the appropriate Detailed Specification.
 - 1.4 Each Bidder is required to fill in every blank. Failure to do so may be used as a basis for rejection of bid.
 - 1.5 It will be the responsibility of the Bidder to inform the City of any errors or omissions in these Detailed Specifications, for under this Contract, the Contractor shall be held responsible to ensure that the manufacturer will be responsible for the design, performance, reliability and satisfactory operational function of the unit.
2. **DESCRIPTION OF EQUIPMENT**
 - 2.1 These specifications describe a **Combination Sewer Cleaner** and other equipment and features as specified herein.
 - 2.2 The Cab and Chassis shall be a new 2026 model year or newer conventional cab, set back axle, tandem rear axle unit.
 - 2.3 The Cab and Chassis shall be properly serviced prior to any road transportation, in accordance with the manufacturer's recommendations. A pre-delivery inspection (PDI) shall be affixed under the hood of the vehicle.
 - 2.4 The Cab and Chassis must be pre-approved by the Body manufacturer.
 - 2.5 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.
 - 2.6 The application at the City of Winnipeg Wastewater Services – Local Sewer consists of the following four (4) applications:
 - Catch Basin Vacuuming
 - WWS / LDS Cleaning
 - Hydro Excavating "Soft Digs" Vacuuming & Cleaning
 - Lift station/ Treatment plant Vacuuming
 - 2.7 Of the four (4) applications:
 - Catch Basin Vacuuming consists of 35% of our scope of Work
 - WWS / LDS Cleaning consists of 40% of our scope of Work
 - Hydro Excavating "Soft Digs" consists of 15% of our scope of Work (It should be noted that this part of our business is the fastest growing and we expect the percentage to rise).
 - Lift Station / Treatment Plant Vacuuming consists of 10% of our scope of Work.
 - Catch Basin Vacuuming, WWS/LDS Cleaning and Hydro Excavating "Soft Digs" applications are at shallow depths (ground level to 25 feet below grade).
 - 2.7.1 The equipment shall be able to perform all these applications.

2.8 The **Combination Sewer Cleaner** and all other items/components shall be the manufacturer's latest model. The equipment shall be furnished completely 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 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.

2.9 The ratings specified herein merely state the minimum values acceptable to the City, not implying that those values are sufficient for the design of the equipment being bid.

3. OTHER SPECIFICATIONS AND STANDARDS

3.1 All applicable SAE Standards form an integral part of the vehicle specifications and shall have precedence in any conflict concerning minimum acceptable standards.

3.2 Where applicable, the **Combination Sewer Cleaner** shall comply with the applicable regulations:

Standard - Specification/Regulation

Internet URL

Transport Canada, National Safety Mark, NSM:	http://www.tc.gc.ca/eng/acts-regulations/acts-road.htm
Manitoba Safety and Health Regulation, Parts 12, 16, 22:	http://web2.gov.mb.ca/laws/regs/current/217.06.pdf
Canadian Motor Vehicle Safety Standards C.M.V.S.S.:	http://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1038/section-sched3.html
Manitoba Highway Traffic Act Regulations and Requirements including, but not limited to, a Province of Manitoba Periodic Mandatory Vehicle Inspection (PMVI) with certificate:	Consolidated Regulations Periodic Mandatory Vehicle Inspection Regulation, M.R. 76/94
Canadian Standards Association CSA:	http://www.csagroup.org
Under Writers of Canada U/L:	http://www.ulc.ca
Society of Automotive Engineers SAE:	http://www.sae.org
City of Winnipeg Lighting Visibility Standard:	http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf
Manitoba Building Code:	https://web2.gov.mb.ca/laws/regs/current/pdf-regs.php?reg=31/2011

4. Periodic Mandatory Vehicle Inspection (PMVI)

4.1 Where applicable, the completed unit shall include a current Province of Manitoba Periodic Mandatory Vehicle Inspection (PMVI) with certificate.

5. National Safety Mark (NSM)

5.1 Where applicable, the manufacturer/installer shall affix their National Safety Mark (NSM) certification sticker on each unit.

State: NSM number: _____

6. **FUEL**

- 6.1 Where applicable, the equipment shall be fully fuelled upon delivery (no exceptions).

7. **REFERENCES**

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

8. **MAKE & MODEL**

- 8.1 State make, model and model year being bid:

	Vehicle	Combination Sewer Cleaner Body
Make:		
Model:		
Model Year:		

9. **PERFORMANCE RELIABILITY**

- 9.1 The responsibility for the design of the **Combination Sewer Cleaner**, its performance and reliability shall rest upon the Contractor.
- 9.2 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, 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 schedule.
- 9.3 Where the **Combination Sewer Cleaner** develops "Repeated Failures" in service, the Contractor shall make any necessary engineering changes, repairs, alterations or modifications to guarantee reliability of performance.
- 9.4 The **Combination Sewer Cleaner** shall be capable of consistent top performance for the following functions while being safely and efficiently controlled by one operator:
- 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),
 - High pressure flushing of 6 in. (152 mm) to 24 in. (610 mm) diameter sewer lines
 - High pressure flushing of sewer lines and simultaneous removal and loading of debris from the manhole while always operating within the confines of one (1) traffic lane utilizing the truck protect the operator from traffic.
- 9.5 The vehicle and 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).

10. **SERVICE FACILITY**

- 10.1 For warranty repairs, the Bidder shall have an authorized service facility. The facility, or a portion thereof, shall be dedicated to the service and maintenance of the type of equipment being offered.
- 10.2 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
- 10.3 Bidders 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.

11. **QUALIFICATIONS OF MANUFACTURER & CONTRACTOR**

- 11.1 The manufacturer of the **Combination Sewer Cleaner** shall have five (5) years continuous experience manufacturing **Combination Sewer Cleaners**.
- 11.2 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.
- 11.3 The Contractor shall have five (5) years continuous experience servicing, repairing, and maintaining **Combination Sewer Cleaners** of the type being offered.

12. **WEIGHT DISTRIBUTION**

- 12.1 Where applicable, the completed vehicle shall not exceed the City of Winnipeg's limits gross vehicle weight, axle and tire loads with the unit (including the chassis) fully fuelled and operational with two (2) operators and including a full payload.

The City of Winnipeg and the Province of Manitoba limit the gross vehicle weight and axle and tire loads to

- **Front axle (steering axle) – 7300 kg (16,094 lbs.)**
- **Rear axle (single axle) – 9100 kg (20,062 lbs.)**
- **Rear axle (tandem axle) – 16,000 kg (35,274 lbs.)**
- **Tire load – 9 kilograms for each millimetre width of tire (approx. 500 lbs. per inch of tire width)**

13. **WEIGH SCALE TICKET**

- 13.1 Where applicable, 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 fully fuelled and operational including two (2) operators.

14. **SPECIFICATIONS**

Cab and Chassis Specifications

Make, Model and Model Year

- | | | | |
|------|------------|---|-------|
| 14.1 | Make | State: make: _____ | _____ |
| 14.2 | Model | State: model: _____ | _____ |
| 14.3 | Model Year | Model Year 2026 or newer
State: model year: _____ | _____ |

Dimensions and Specifications

- | | | | |
|------|-------------------------------|--|-------|
| 14.4 | Dimensions and Specifications | All dimensions and specifications are required to suit end application of a vehicle consisting of:
1. Conventional Cab and Chassis
2. Set-back axle
3. Tandem rear axle
4. Combination Sewer Cleaner Body

State: type of axle: _____ | _____ |
|------|-------------------------------|--|-------|

Compliance

- | | | | |
|------|------------|--|-------|
| 14.5 | Compliance | <ul style="list-style-type: none">• The Combination Sewer Cleaner shall comply with the chassis manufacturer's recommendations for vertical and horizontal centre of gravity with the payloads listed in these specifications• Proof of documentation shall be provided to the Contract Administrator | _____ |
|------|------------|--|-------|

GVWR

- | | | | |
|------|-------|------------------------------------|-------|
| 14.6 | Total | 64,000 lbs.
State: _____ | _____ |
| 14.7 | Front | 20,000 lbs.
State: _____ | _____ |
| 14.8 | Rear | 44,000 lbs.
State: _____ | _____ |

Dimensions

- | | | | |
|-------|---------------------|-------------------------|-------|
| 14.9 | Wheelbase (WB) | State: WB: _____ | _____ |
| 14.10 | Cab to Axle (CA) | State: CA: _____ | _____ |
| 14.11 | After Frame (AF) | State: AF: _____ | _____ |
| 14.12 | Overall Length (OL) | State: OL: _____ | _____ |

14.13	Overall Width (OW)	State: OW: _____	_____
14.14	Vehicle Turning Radius (VTR)	Measured per SAE J695 Turning Ability and Off Tracking – Motor Vehicles State: VTR: _____	_____
Engine			
14.15	Type	• Tier IV Final Diesel • 6-cylinder • Meets current EPA standards State: engine type: _____	_____
14.16	Horsepower (HP)	Approximately 370 – 410 HP gross State: HP: _____	_____
14.17	Torque	Approximately 1250 lb-ft State: torque: _____	_____
14.18	Radiator	• Aluminum • Approximately 1000 - 1200 square inch State: size: _____	_____
14.19	Fan Drive Hub	• Two-speed or On-Off type • Direct drive • Residual torque device for disengaged fan speed • Complete with dash switch	_____
14.20	Air Cleaner	• Single element, dry type • Suitable for application	_____
14.21	Coolant	• Extended Life Coolant • Freeze protection to -40°C	_____
14.22	Block Heater	• Immersion type • Approximately 1000 Watt • Covered with recessed plug • Mounted below Driver's door	_____
14.23	Engine Shut Down	Low oil pressure / high water temperature	_____
14.24	Air Intake Warmer	Air intake warmer	_____
14.25	Fuel Shut Off	Electric solenoid type	_____
14.26	Air Intake	• Under-hood/outside air intake • Under hood air valve • Dash mounted actuated	_____
14.27	Air Intake Restriction	Dash mounted restriction indicator	_____
14.28	Oil Drain Plug	Magnetic type	_____
14.29	Oil Filter	Full flow, spin-on type	_____
14.30	Fuel Filter	Spin-on type	_____
14.31	Fuel Line Primer Pump	Fuel line primer pump	_____

14.32	Fuel/Water Separator	• Heated • Drainable • Includes water-in-fuel sensor • Mounted under hood, on engine • Protected from road spray	_____
14.33	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: • type: _____ • test strip and fluid change intervals: _____	_____
14.34	Coolant Hoses	Premium silicone type or equivalent State: type: _____	_____
14.35	Air Compressor	• Water cooled • Pressure lubricated • Approximately 18 cfm State: cfm: _____	_____
	Transmission		
14.36	Transmission	• Allison 3000 RDS with 6-speed programming or approved equivalent • Transmission shall be suited for the intended HP and torque application • Ratio shall be as per inter-city application. • Transmission shall come with Load Base Management Programming State: Allision model no.: _____	_____
14.37	PTO Accommodation	Transmission PTO required for application	_____
14.38	Allison SCAAN	Required: Provided at time of delivery	_____
14.39	Transmission Fluids	Synthetic	_____
14.40	Shift Selector	Column mounted or push-button State: type: _____	_____
14.41	Cooling Capacity	• Water to oil transmission cooler • Per Manufacturer's recommendation for severe duty cycle	_____
14.42	Oil Level Dipstick	• Bayonet type • High- and low-level markings	_____

14.43	Transmission Drain Plug	Magnetic type	_____
	Front Axle		
14.44	Front Axle	• Meritor or equivalent • 20,000 lbs. capacity • With synthetic fluid State: Capacity: _____ Manufacturer: _____	_____
	Rear Axle		
14.45	Rear Axle (Tandem)	• Meritor or equivalent • 44,000 lbs. capacity • With synthetic fluid State: Capacity: _____ Manufacturer: _____	_____
14.46	Ratio	• City usage • 110 km/hr top speed State: ratio: _____	_____
14.47	Inter-Axle Lock	Required: with dash mounted switch	_____
14.48	Differential Lock(s)	Required: for both drive axles with separate dash mounted switches	_____
14.49	Axle Spread	Approximately 52 – 54 inches As recommended for Combination Sewer Cleaner application State: axle spread: _____	_____
14.50	Hub Seals	Oil lubricated front and rear	_____
	Front Suspension		
14.51	Type	• Multi-leaf spring • 20,000 lbs. capacity	_____
	Rear Suspension		
14.52	Rear Suspension	• Air ride suspension • 44,000 lbs. capacity	_____
14.53	Air Suspension Gauge	• Rear Suspension Load Gauge • Display Message in Cluster Display	_____
14.54	Suspension Control Valve	• Manual dump valve for air suspension • Dash mounted switch • Indicator light and/or audible warning	_____
14.55	Auto Refill	Required: at 5 km/hr	_____
		Note: Exact speed will be determined at a pre-production meeting	

Cab

14.56	Type	• Conventional • Raised roof profile	_____
14.57	Cab Construction	Aluminum or Galvanized Steel State: material type: _____	_____
14.58	Cab Mounts	Air suspension	_____
14.59	Grab Handles - Exterior	Dual exterior	_____
14.60	Grab Handles - Interior	Dual Interior	_____
14.61	Entrance Steps	• Dual each side • Open grate / grip type • Width as wide as possible – issues with operators slipping off the steps	_____
14.62	Air Conditioning	Required:	_____
14.63	Hood	• High visibility hood • Tilting State: hood type: _____	_____
14.64	Hood Fender Extensions	• If required for application • Front • Rubber State: size: _____	_____
14.65	Cab Interior / Trim	• Extreme climate insulation • Cloth or vinyl headliner on roof, door panels and rear interior of cab	_____
14.66	Cab Silencer Package	Required: for minimal decibel level	_____
14.67	Hood/Firewall/Engine Insulations	Insulated: • Hood • Firewall • Splash panels	_____
14.68	Floor Covering	Rubber mat with under-padding	_____
14.69	Floor Mats	• Qty two (2) • Heavy-duty rubber	_____
14.70	Driver's Seat	• High back • Air suspension • Foldable armrests • Lumbar support • Heavy-duty vinyl	_____
14.71	Passenger Seat	• High back • Air suspension • Foldable armrests • Lumbar support • Heavy-duty vinyl	_____

14.72	Seat Covers	• Coveralls brand or equivalent • Heavy duty • Additional storage pockets • Supplied and installed •	_____
14.73	Dashboard	Ergonomic design	_____
14.74	Sun Visors	Dual flip-up type	_____
14.75	12-Volt Power Outlet	Required: Two (2) with independent circuit	_____
14.76	Radio	• Factory installed • AM/FM • Blue Tooth capability • USB input • Auxiliary input	_____
14.77	Steering Wheel	• Power • Tilt and telescopic • Multi-function	_____
14.78	Auxiliary Control(s)	• Mounted in steering wheel • Radio function control State: auxiliary controls that are available: _____ _____	_____
14.79	USB Ports(s)	• Located in instrument panel	_____
14.80	Keyless Entry System	Include three (3) key Fobs State: auxiliary functions that are available: _____ _____	_____
14.81	Dome Light	Dome light with driver and passenger door switches	_____
14.82	Heater / Defroster	• High output • Capable of keeping all windows clear at an outside temperature of -40°C	_____
14.83	Accelerator and Brake Pedals	Floor or hanging type State: style: _____	_____
14.84	Horn	• Dual electric • Trumpet style	_____
14.85	Air Horn	• Single trumpet • Lanyard pull cord State: location: _____	_____
14.86	Exterior Mirrors	• Approximately 7.5 in. x 14 in. flat glass • Include 8 in. x 6 in. convex mirrors for 102 in. load width • Heated • 4-way motorized adjustment	_____

14.87	Down-View Mirror	• Convex • Over passenger door • Approximately 6 in. x 10.5 in.	_____
14.88	Hood Mounted Mirrors	• Dual – LH and RH • Convex • Hood mounted • Approximately 7.5 sq. ins.	_____
14.89	Windows & Windshield	Tinted	_____
14.90	Power Windows	Driver and passenger side	_____
14.91	Doors	Power door locks	_____
14.92	Windshield Wipers	Electric intermittent	_____
14.93	Wiper Blades	Heavy duty with winter type boot	_____
14.94	Windshield Washers	• Electric • Spray nozzles on wiper blades	_____
14.95	Bug Screen	Mounted on grille	_____
14.96	Winter Front	Heavy-duty vinyl with twist lock or snap type fasteners	_____
14.97	Exterior Sunshade	Required If available, LED integral clearance/marker lights	_____
	Frame		
14.98	Frame	• Single rail (preferred) • Heat treated alloy steel • Suitable for requested GVWR and application • Frame rail must meet the RBM strength required for the requested GVWR	_____
14.99	Front Frame Extension	Note: Consult with Body Supplier if a front frame extension is required. • Integral type • Approximately 20 – 24 in. State: length: _____	_____
14.100	After Frame Extension	• Integral type • Suitable for requested GVWR and application State: length: _____	_____
14.101	Rust Inhibitor (Frame/Cross Member)	Applied prior to body installation State: type and brand: _____ _____ _____	_____
14.102	Chassis Fasteners	Grade-8 threaded hex headed frame fasteners	_____

Front Bumper

14.103 Type Front bumper delete _____

Towing

14.104 Tow Hooks

- Front and rear
- 2-front inside frame rail
- 2-rear mounted

Brakes

14.105 Brakes

- Air
- ABS
- S-cam drum brakes

14.106 Slack Adjusters

- Front and rear
- Clearance sensing
- Automatic type
- Greasable slack adjuster pins

14.107 Parking Brake **Required:** _____

14.108 Parking Brake Alarm Alarms sounds when vehicle park brake is "NOT" set, with ignition "OFF" and any door opened _____

14.109 Dust Shields Front and rear _____

Air

14.110 Air Compressor

- Water cooled
- Pressure lubricated
- Approximately 18 cfm

State: cfm: _____

14.111 Air Tanks Aluminum tanks _____

State: qty: _____

State: locations: _____

14.112 Tank Straps (Air Tanks)

- Steel, aluminum, stainless-steel or 3/16 dia. nylon coated aircraft cable
- Isolators to prevent galvanic corrosion

State: _____

Strap type: _____

Isolator type: _____

14.113 Moisture Ejector **Required:** _____

Heated in all air tanks

14.114 Drain Valves **Required:** for each tank _____

- Manual
- Chain or cable operated

14.115	Air Dryer	• Air dryer with heater • WABCO 1200 or equivalent State: make: _____ State: model: _____ State: location: _____	_____
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Exhaust System

14.116	Configuration	• Stationary extreme outboard single right hand • Chrome vertical discharge on passenger side • Under-frame routing • Vertical portion cab mounted • Discharge tip shall have a backslash type end	_____
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14.117	Overall Exhaust Height	To clear body	_____
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14.118	Exhaust Heat Shield	• Chrome • Over exhaust next to cab door	_____
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Electrical Systems

14.119	Chassis Wiring	• Multiplex wiring • Colour coded • Continuously numbered	_____
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14.120	Electrical Connectors	• Plug-in • Sealed type	_____
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14.121	Anti-Corrosion Electrical Package	• Mounted in cab • Controllers • Sensitive electrical components (PCM, Harnesses etc.) • Battery disconnects State: Modules that will be in-cab: _____ _____ _____ _____	_____
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14.122	Alternator	Heavy Duty, Brushless type 160 – 180 Amp Pad Mount Remote Sense State: make: _____ State: model: _____	_____
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14.123	Starter	Heavy Duty Thermal Over-Crank Protection State: make: _____ State: model: _____	_____
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14.124	Circuit Breakers	Readily accessible State: auto or manual reset: _____	_____
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14.125	Batteries	• Three (3) batteries • Maintenance free • 12-volt, Group 31 • Approximately 2200 - 2850 CCA combined • Exposed connectors sealed with dielectric grease State: CCA: _____	_____
14.126	Batteries Location	• Under cab, in cab or frame mounted • Complete with battery box and cover • Readily accessible State: location: _____	_____
14.127	Battery Disconnect Switch	• In-cab mounted • Lockable with padlock State: location: _____	_____
14.128	Battery Boost Terminal	• Remote battery boosts terminal(s) • Protected from road spray State: location: _____	_____
14.129	Cab Marker Lights	• Cab or Sun Visor Marker Lights • LED	_____
14.130	2-Way Radio Circuit	• Independent 10 Amp circuit • Ignition powered • Wired under dash loose • Labelled	_____
14.131	Accessory Switches	Required: Qty four (4) - six (6) • Complete and wired for body installation • Wired through the ignition and Acc circuit • Labeled • Backlit State: quantity: _____	_____
14.132	Mega Fuse Box	• Located in-cab or under-cab • Sealed, protected from road spray State: location: _____	_____
14.133	Work Lights (If Available)	• Wiring Effects for Body Installer • Toggle Switch - Lighted; on Instrument Panel • Routed to back of cab	_____
Fuel Tanks			
14.134	Fuel Tank	• Qty one (1) • Approximately 340 L capacity • Aluminum • Mounted left side State: Capacity: _____ Location: _____	_____

14.135	Diesel Exhaust Fluid (DEF) Tank	• Heated • Frame mounted • Outside left rail • Labelled "DEF ONLY" State: Capacity: _____ Location: _____	_____
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14.136	Tank Straps (Fuel Tank)	• Steel, aluminum or stainless-steel straps • Isolators to prevent galvanic corrosion State: Strap type: _____ Isolator type: _____	_____
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14.137	Fuel/Water Separator	• Heated • Drainable • Includes water-in-fuel sensor • Mounted under hood, on engine • Protected from road spray	_____
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Rims, Wheels and Hubs

14.138	Front Wheels	• Aluminum • Hub piloted • Oil lubricated • Rated for requested GVWR	_____
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14.139	Rear Wheels	• Aluminum • Hub piloted • Oil lubricated • Rated for requested GVWR	_____
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14.140	Wheel Nut Indicators	Required on all wheel nuts	_____
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Tires

14.141	Front Tires	• 425/65R22.5 20-ply • Load range L • Rated for GVWR and application • Mud and snow rated State: type: _____	_____
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14.142	Rear Tires	• 11R 22.5, 16-ply • Load range H • Rated for GVWR and application • Mud and snow rated State: type: _____	_____
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Mud Flaps

14.143	Mud Flaps, Front and Rear	• OEM • Moulded	_____
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Instrumentation

14.144	Gauge Cluster	• Speedometer • Tachometer • Engine coolant temperature • Fuel gauge • DEF gauge • Oil pressure gauge	_____
14.145	Warning System	Warning System – visual and/or audible • Low fuel • Low DEF • Low oil pressure • High engine coolant temperature • Low battery voltage • Low air pressure	_____
14.146	Engine Hour-Meter	• Non-Resettable Hobbs Engine Meter or manufacturer standard • Dedicated • Integrated into the dash • Visible to operators at all times	_____

Colours

14.147	Exterior Colour	White	_____
14.148	Interior Colour	Grey	_____
14.149	Frame and Suspension	• Primed and finished • Black	_____

Safety

14.150	Flare Kit	• Three (3) triangular reflectors • CVSA approved • Kit must be mounted or secured	_____
14.151	Fire Extinguisher	• 5 lbs. Fire Extinguisher • ABC type • Installed and secured State: location: _____	_____
14.152	Back-Up Cameras (Switches and Wiring)	Switches and Wiring only • Location # 1 - back of vehicle • Location # 2 - TBD • Programmable (chassis supplier responsibility) • Switch provided for second camera • Sufficient wiring and equipment to complete installation Cameras to be supplied and installed by Body Installers	_____
14.153	Back-Up Camera Screen	• Location per manufacturer standard • Capable of a split screen application	_____

14.154 Back-Up Alarm

- Approximately 102 dBA
- Mounted to be protected from damage

BODY SPECIFICATIONS

Weight Distribution

14.155 **State:** the weight distribution of the vehicle with the following payloads: _____

1. Water tank and debris tank empty:

a. Front axle weight: _____

b. Rear axle weight: _____

2. Water tank filled and debris tank empty:

a. Front axle weight: _____

b. Rear axle weight: _____

c. Water tank capacity: _____

3. Water tank filled and 12,500 lbs. (5670 kg) in the debris tank:

a. Front axle weight: _____

b. Rear axle weight: _____

c. Water tank capacity: _____

Overall Height

14.156 Overall Height (OH)

- **Overall Height Requirement**

The vehicle, when fully equipped as specified, shall have an overall height of **3.74 m (147 in.) maximum target**, measured from the ground to the highest point of the vehicle or installed equipment.

- Overall height shall be measured with the vehicle in normal road/travel condition, including:
 - vehicle parked on a level surface
 - tires inflated to the manufacturer's recommended operating pressure
 - suspension in normal travel position
 - all accessories, attachments, and appurtenances fully lowered, folded, retracted, and stowed in their designated travel positions.
- The overall height shall include all permanently installed components and accessories, including but not limited to beacons, warning lights, antennas, light bars, exhaust components, guards, racks, body-mounted equipment, and roof-mounted equipment.

State:

certified overall height: _____

14.157 Warning Label

Cab Warning Label

A permanent warning label shall be installed in the cab in a location clearly visible to the operator from the normal seated driving position.

- The warning label shall identify the overall vehicle height in travel configuration.
- The label shall be permanently affixed and manufactured of durable material suitable for the vehicle operating environment.
- The label shall be resistant to wear, cleaning, moisture, and fading, and shall remain legible for the service life of the vehicle under normal operating conditions.
- The warning label shall use high-contrast lettering and shall contain, at minimum, the following wording:

Note: If the actual verified height of the delivered vehicle differs from 147 in. (3,734 mm), the warning label shall be revised to reflect the actual measured overall height of the delivered vehicle.

Example: 1

WARNING – VEHICLE HEIGHT
OVERALL VEHICLE HEIGHT WITH ALL ACCESSORIES STOWED: 3.74 m (147 in.)
VERIFY CLEARANCE BEFORE ENTERING STRUCTURES OR PASSING UNDER OVERHEAD OBSTRUCTIONS.

Example 2:



Debris Body

14.158	Body Design	Cylindrical dumping type	_____
14.159	Construction	• 3/16 in (4.8 mm) • 50,000 psi yield strength • Corrosion and abrasion resistant Ex-Ten Steel	_____
14.160	Capacity	Approximately 9.0 cu yd. (6.9 m3)	_____
14.161	Level Indicator	• External type with internal float mechanism • Located on each side of tank (Allows operators to view levels when working from either side of the vehicle)	_____
14.162	Rear Door	• Full size • Heavy duty • Steel construction • Continuously welded State: rear door size: _____	_____
14.163	Rear Door Hinges	• Top mounted • Heavy duty • Greaseable type	_____
14.164	Rear Door Seal	• Neoprene • Full perimeter • Replaceable	_____
14.165	Rear Door Controls	• Two (2) sets of controls located conveniently and safely for the operator to engage in opening the rear door • Mid-ship curbside • Hand-held wireless remote • Must control power up, power down, lock and unlock rear door • With operators' safety in mind, manual door locks not acceptable	_____
14.166	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 State: opening size: _____	_____
14.167	Drain	• Required in rear door with 6 in. (150 mm) diameter manual butterfly valve • Mounted as high as possible to prevent plugging • Designed to expel excess liquid while retaining solids in debris body • Include a high-pressure handgun coupler used to flush out debris from the butterfly valve for cleaning purposes	_____

14.168	Drain Hose	• Approximately 10 ft. (3 m) • Lay-flat type • Pre-connected • Complete with storage bracket	_____
14.169	Submersible Trash Pump (Rear)	• Approximately 450 gpm • External mounted on the rear door • 3" x 25' drain hose • Drain hose storage bracket	_____
14.170	Debris Deflector	Positioned to prevent incoming debris from plugging rear door mounted drain	_____
14.171	Debris Deflector Plate	Debris body to have a debris deflector plate below the door to prevent debris from covering the back of the truck when dumping	_____
14.172	Debris Washout System	High pressure system designed to undermine and free heavy material	_____
		State: gpm: _____	
14.173	Hoist	• Hydraulic • Heavy duty • Double acting	_____
14.174	Hoist Controls	• Two (2) sets of controls located conveniently and safely for the operator to engage in lifting the body • Mid-ship curbside • Hand-held wireless remote	_____
14.175	Dumping Angle	Approximately 50 deg	_____
14.176	Dumping Height	• Approximately 60 in. • Ground to bottom of debris tank open	_____
14.177	Safety Prop	• Tubular steel construction • Easily accessible • Support debris body in raised position • Permit servicing of hoist • Debris body to be reinforced at point of contact with safety prop	_____
14.178	Cyclones	• Four (4) Dual vertical (cyclone) centrifugal separators shall be installed • In-line between the debris body and the air mover • Two (2) per side for each debris body discharge port • Each dual separator shall include large fallout chamber cleanout door	_____
14.179	Shut Down	Vacuum system will automatically shut down when the debris body has reached full capacity	_____

Vacuum System – Positive Displacement

14.180	Vacuum	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	_____
14.181	Interlock Safety System	Interlock safety system shall prevent drive axle from engaging	_____
14.182	Horizontal Silencer	A horizontal silencer with rain cap shall exhaust above the cab	_____
14.183	Hour Meter	Blower tachometer / hour-meter	_____
14.184	Efficiency	For most efficient use of horsepower and fuel consumption, full vacuum and/or combination operation shall be approximately 1750 RPM of chassis drive engine	_____
14.185	Blower - Operation	Blower shall be driven from chassis engine via the transmission drive shafts and heavy duty split shaft transfer case direct to blower, engagement via airshift clutch control at operator panel	_____
14.186	Blower – Inlet Volume	• Shall produce inlet volume of: • 4500 cfm @ 0" hg @ 2250 rpm • 3490 cfm @ 18" hg @ 2250 rpm vacuum • Roots 824RCS 18 or equal) • Drive engine not to exceed 1760 RPM	_____
14.187	Blower - Horizontal Silencer	Shall be provided with a horizontal silencer with exhaust above the cab	_____
14.188	Blower - Protection	Shall be provided with a rain cap protecting the silencer from rainwater	_____
14.189	Blower	Blower shall draw air from two (2) separate ports in the debris body	_____
14.190	Protection – Vacuum System	Vacuum system shall have: • Three (3) relief valves set at 18" height • Heavy duty horizontal mounted noise muffler • Removable and cleanable stainless-steel filter screen • Enclosed with a steel cage guard for safety	_____
14.191	Transfer Case	Transfer case shall be activated via air shift controls in the truck cab to engage work / road mode	_____

14.192	Hydraulic Shut-Off Valves	Hydraulic shut off valves shall be provided at the following lines to permit serving of the hydraulic system:	_____
		• Suction • Return • Filter	

Vacuum Pick-Up Hose and Boom

14.193	Design	Pick-up hose and boom shall be designed for front end operation	_____
14.194	Vacuum Hose	• Heavy-duty • 8 in. (203 mm) diameter	_____
14.195	Vacuum Hose and Boom	Vacuum hose and boom shall remain stationary when dumping debris body	_____
14.196	Hose Storage	Front mounted bumper post	_____
14.197	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) • Extensions shall utilize over centre type quick clamp connectors	_____
14.198	Extension Storage Racks	• Extension storage racks shall be located on: • Curb side of the truck • Rear door • Street side of the truck • 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	_____
14.199	Boom - Telescopic	Ten (10) foot hydraulic telescopic rotating boom providing: • in/out (extension) • up/down (raise/lower) • left/right (hydraulic rotation) • 180° rotation	_____
14.200	Boom Support	• Tubular steel construction • Designed to support boom in stored position	_____

14.201	Boom - Extension	• Hydraulic • Telescopic 4" X 6" rectangular beam shall extend under a telescopic boom tube for additional support at any extended position The following concepts and design to be discussed at a pre-production meeting: • Designed so that at full extension, vacuum tube to be level with the street • Point first rollers system or hose cradle required to keep boom hose in vertical state when extended • A system designed to prevent freezing, ice build-up, or cold-weather seizure of the telescopic cylinders and associated components during winter operation	_____
14.202	Boom - Rotation	• Hydraulic • Cylinder actuated • 180° total swing (90° left + 90° right from centerline)	_____
14.203	Boom - Raise and Lower	Hydraulic	_____
14.204	Working Radius	Approximately 23 ft. (7.0 m) with boom extended State: working radius: _____	_____
14.205	Boom Controls	Electric over hydraulic controls for: • Left/right rotation • Raise/lower • Extend/retract • Emergency vacuum breaker • Emergency stop	_____
14.206	Wireless Remote Control	• Portable type • Heavy duty waterproof housing • Include 25 ft. cable as backup for control • Equipped with control of the following • Chassis engine throttle control • Water pump on/off switch • Water pressure control • Hose reel wind/unwind • Hose reel speed control • Boom elevation, rotation and extension control • Vacuum relief • Electronic emergency stop • Rear door up/down • Tank hoist up/down	_____

14.207	Wireless Remote Control Display Screen	Display screen showing the following: • Chassis engine information (RPM, temp, oil pressure etc.) • Fuel level • Water and debris levels • Water pump gpm and psi • Hose reel footage and speed	_____
Water Tanks			
14.208	Construction	• Cylindrical aluminum construction • Internally baffled State: material type: _____ Note: Under-slung frame mounted tanks not acceptable due to off-road operations	_____
14.209	Capacity	• Certified • Metered capacity • 1,000 US Gallons	_____
14.210	Tank Position	Positioned to provide optimal weight distribution and lowest centre of gravity	_____
14.211	Interconnected Tanks	Shall have aluminum piped connections with intermediate or end mounted flexible rubber sleeves	_____
14.212	Water Level Gauge	• Sight type • Located on right (curb) side water tank • Protected from damage	_____
14.213	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	_____
14.214	Tank Filler	• Anti-siphon, air gap type • Air gap shall be twice inlet diameter	_____
14.215	Strainer	"Y" type with stainless steel cartridge in tank fill line	_____
14.216	Spare Strainer Cartridge	• Stainless steel • One (1) per unit	_____
14.217	Filler Hose	• 25 ft. (7.6 m) long • 3-inch camlock Part C type fitting • Pre-connected to tank filler line	_____
14.218	Hose Storage	• Basket type • Metal construction • Open and drainable • Easily accessible	_____

Water Pump

14.219	Water Pump	Single piston water pump, double acting, designed and constructed for its intended use as a high-pressure sewer flusher pump	_____
14.220	Location	- Water pump location shall be mounted low enough to allow gravity to always provide a flooded suction inlet - Shall permit easy accessibility for pump maintenance	_____
14.221	Certification	- The water pump location shall be certified by the pump manufacturer - Certification to be provided to the City of Winnipeg	_____
14.222	Servicing	Any components of the pump requiring regular servicing shall be serviceable from the exterior of the pump without removal or dismantling of the pump	_____
14.223	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	_____
14.224	Capabilities	- Capable of providing a: - Pulse (jack hammer) type action - Non-pulse (surge-free flow) type action - Capable of purging residual water from system by pumping air through entire water system - Designed so that no damage will occur if run at normal operating pressure without water for 20 - 30 minutes	_____
14.225	Capacity	- 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	_____
14.226	Relief Valve or Pressure Regulator	Factory set to regulate pressure output of pump	_____
14.227	Drive System	- Hydraulically driven via transmission power take-off (PTO) driven hydraulic pump - Designed and constructed for continuous duty operation	_____

Hose Reel

14.228	Hose Reel Location	• Front mounted, hydraulically extendable with hose reel carrier frame bolted to chassis frame • Located to provide sufficient airflow to chassis radiator and engine compartment, as recommended by the chassis manufacturer, when stored in the fully retracted position	_____
14.229	Hose Reel Extension	Sufficient to allow full opening of hood	_____
14.230	Capabilities	• 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	_____
14.231	Swivel Bearing	• Large diameter • Heavy-duty ball type • Grease-able	_____
14.232	Swivel Lock	• Spring applied • Air released	_____
14.233	Wind/Rewind	Hydraulic drive system for: • Wind/rewind • Speed control of hose reel	_____
14.234	Drive Components	Readily accessible for servicing	_____
14.235	Controls	All hose reel controls shall be mounted at the front control stations	_____
14.236	Rotation Bearings	Hose reel rotation bearings: • Heavy duty pillow block type • Grease-able	_____
14.237	Rotation Counter	Hose reel rotation counter – required with reading in meters	_____
14.238	Hose	• 1 in. (25.4 mm) interior diameter sewer hose • 600 ft. (183 m) long • 2500 psi (17 238 kPa) operating pressure • 3000 psi (20 685 kPa) burst pressure rating	_____
14.239	Rodder Hose	Equipped with pinch roller	_____
14.240	Hose Guide	Manual hose level wind scroll device shall be supplied	_____
14.241	Obstructions	Hose area to be free of any obstructions which may damage hose	_____

Sewer Flushing Accessories
(Required for each vehicle)

14.242	Leader Hose	• Quantity One (1) • Rubber covered, steel braid leader hose • Approximately 4' x 1" ID (1.2 m x 25.4 mm ID)	_____
14.243	Rigid Finned Guide Assembly	• Quantity One (1) • Rigid finned guide assembly for leader hose • Designed to stabilize nozzle and absorb impact of debris immediately behind nozzle	_____
14.244	Flexible Hose Guide	• Quantity One (1) • Flexible hose guide with retaining rope	_____
14.245	Sand Nozzle	• Quantity One (1) • 15° sand nozzle with: • 6 rearward jets • 2 forward jets • Tungsten carbide orifices	_____
14.246	Sanitary Nozzle	• Quantity One (1) • 30° sanitary nozzle with • 6 rearward jets • tungsten carbide orifices	_____
14.247	Grease Cutting Nozzle	• Quantity One (1) • "Warthog or Aqua power Clean" grease cutting nozzle	_____

Front Control Stations

14.248	The Front Control station shall be equipped with a complete set of controls and gauges including the following:		_____
	• Chassis engine throttle control • Water pump on/off switch • Water pressure control • Water levels • Debris levels • Digital water pressure gauge • Water pressure gauge – oil dampened 0-3000 psi display • Low water level warning • Hose reel wind/unwind control • Hose reel speed control • Hose reel telescopic extension control • Boom elevation, rotation and extension controls • Electronic emergency stop • Digital flow meter • Digital colour diagnostic control panel • Weatherproof plug-in for remote pendant control		
14.249	Control Panel	• Pivot independently of the front hose reel • Height adjustable	_____
14.250	Display Screen	• Digital • 7-inch • Touch enabled	_____
14.251	Identification	All controls shall be identified with permanent, engraved type labels	_____
14.252	Protection	All controls shall be protected from damage or accidental actuation	_____
14.253	Remote Spotlight	• LED handheld type with impact resistant, waterproof housing • Cordless / rechargeable • Storage provision required at front control station	_____

In-Cab Control Station

- 14.254 The In-Cab Control station shall be equipped with the following options: _____
- Wash mode
 - Combo mode
 - Strobe light controls
 - Arrow board controls
 - Work lights
 - Water level
 - Debris level
 - Road / Work mode
 - Job reports
 - Lifetime reports
 - Trip reports

Wash Down Gun Cleaning System

- 14.255 Water Supply Water supply to handgun from high pressure water pump _____
- 14.256 Relief Valve
- Factory set relief valve to protect wash down system
 - Operating pressure not to exceed 1,000 psi
- 14.257 Hose
- 100 ft of ¼-inch I.D. hose
 - Mounted mid-ship in heated cabinet
- 14.258 Handgun
- Pistol grip type with 25 ft. (7.6 m) of ½ in. (13 mm) diameter
 - Wire braid reinforced hose with quick connect coupler
- 14.259 Spray Pattern
- Trigger controlled
 - Adjustable from fine mist to steady stream

Hydro Excavation System

- 14.260 Boiler
- 400,000 BTU boiler system
 - System shall be approved by the Manitoba Department of Labour
- State: _____
- Make: _____
- Model: _____
- Details of Hydro Excavation system: _____
- _____
- _____
- _____
- 14.261 Hose Reel
- Retractable hose reel with: _____
- 50 ft. x ¼ in. ID high pressure hose
 - Located in heated illuminated toolbox
 - Hydro excavation lance

Cold Weather Operating System

14.262	Water Lines	Insulated, including, but not limited to, pump suction line, pressure line to hose reel, and hand-held gun line	_____
14.263	Cold Water Re-Circulation System	• Approximately 20 gpm • Designed to prevent freeze-up while driving to and from work sights • Operable at all vehicle road speeds	_____
14.264	Circulation	Cold Water to circulate through entire system including hose reels and pump	_____
14.265	Heat Traced	All water lines shall be heat traced to prevent freezing in up to -40 deg C	_____
14.266	Heat Tape	Heat tape around pipe upstream of pump and around control valve	_____
14.267	Air Purge System	• Required to remove water from pump and water lines • Include quick coupler easily accessible for shop air	_____
14.268	Ball Valves or Drain Valves	Shall be provided in the bottom section of the water pump for cold weather draining and daily flushing	_____

Hydraulic System

14.269	System	Designed for cold weather operation	_____
14.270	Hydraulic Oil Reservoir	• Steel reservoir with internal baffles • Sized to meet system requirements	_____
14.271	Oil Level Gauge	Sight type	_____
14.272	Drain Plug	Required at bottom of tank	_____
14.273	Reservoir Filler	Top mounted filler with strainer and breather cap with filter	_____
14.274	Inspection Cover	Sealed clean-out/inspection cover	_____
14.275	Identification	The oil reservoir shall be clearly labelled "Hydraulic Oil"	_____
14.276	Suction Filter	• Nominal 10-micron filter • Located in the oil reservoir • Serviceable	_____
14.277	Shutoff Valve	• Ball type • Located between the oil reservoir and the pump • Fastened in open position with a bracket and bolt	_____

14.278	Return Line Filter	- Nominal 10-micron - Spin-on type - Serviceable without oil loss	_____
14.279	Relief Valves	- High pressure relief valve(s) - Located to protect the entire hydraulic system	_____
14.280	Hydraulic Lines	- Plated seamless steel tubing wherever possible - High pressure hydraulic hose where flexibility is required	_____
14.281	Hydraulic Hoses	Wire braid reinforced hoses rated for system operating pressure with 4 to 1 safety factor for burst pressure	_____
14.282	Hose Fittings	Full flow, crimp-on (non-reusable) type	_____
14.283	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	_____
14.284	Hoses and Tubing	- Hoses and tubing shall be properly routed and secured - Protected at wear and scuff locations - Tubing shall be shock-mounted	_____

Digital Footage Counter

14.285	Digital Footage Counter	- Displays absolute and relative footage values - System must be capable of resetting relative value to ensure operator safety, accuracy to within one percent of actual distance	_____
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Miscellaneous Equipment

14.286	Mud Flaps	- Black rubber - Mounted fore and aft of rear wheels - Complete with anti-sail brackets	_____
14.287	Storage Compartment	- Qty two (2) - Aluminum - Combined storage capacity of approximately 15 ft.3 (425 L)	_____
14.288	Storage Compartment	- Aluminum - Rear of front bumper on curb side - Storage for nozzle and skid	_____
14.289	Traffic Cone Storage	Heavy-duty, durable material	_____

14.290	Inverter	• CSA approved • 110 Volt, 5000 Watts • Two (2) GFCI plugs • At front control station • Inside storage compartment	_____
	Safety		
14.291	Fire Extinguisher	• 20 lbs. • High volume ABC type • Securely mounted with quick release	_____
14.292	Spill Kit	Environmental spill kit installed on body	_____
14.293	Cameras	Required: • Location # 1 - back of vehicle • Location # 2 – on front hose reel • Wiring and switches provided by Chassis manufacturer	_____
14.294	Cameras (Front and Rear)	• The unit shall be equipped with an integrated camera system providing forward and rear viewing to enhance operator visibility and safety during sewer cleaning operations, maneuvering, and site setup • Camera system shall be factory-installed, weather-resistant, and suitable for continuous outdoor operation in typical sewer cleaning environments	_____
14.295	Back Up Alarm	• Approximately 95 – 112 dB • Installed at rear of vehicle • Protected from damage State: dB(A): _____	_____
14.296	dB(A) Rating	Desirability of low noise levels under normal operation of the equipment is requested • Front workstation jetting sewer line approximately 78 dB(A) State: dB(A): _____ • Rear of vehicle approximately 78 dB(A) State: dB(A): _____	_____
14.297	Grab Handles	Supplied as required	_____
14.298	Conspicuity Tape	Truck-Lite 98127 or equal, affixed	_____

Lighting Equipment

- 14.299 Regulations:
The vehicles shall be equipped with all vehicle lighting equipment required under the Canada Motor Vehicle Safety Standards (CMVSS) and the Manitoba Highway Traffic Act _____
- 14.300 • Supplier installed lighting shall include the following components: _____
- All lighting shall be LED
 - Combination stop, turn and taillights
 - Back-up lights
 - Light cluster – three (3) lights protected to avoid damage
 - Work lights – qty (2) at rear of debris body and long curb side of vehicle
 - Clearance lights
 - License plate lamp complete with license plate bracket, located to be protected from damage
 - Warning lights – qty two (2) side B-pillar mounted for 360° visibility, complete with in-cab switch wired through chassis ignition circuit
 - Mini light bar
 - qty (3) per truck
 - Pinnacle 7000 or equivalent
 - 14" mini light bar-amber/clear lens
 - Class 1
 - Permanent mount
 - Rail lighting
 - Mid Ship on body
 - Qty two (2) each vehicle
 - Rear mount outboard in existing cut outs on rear bumper
 - 6" oval flashing amber with grommet
 - 8-flash pattern
 - Exceeds J595 REG
 - Rear Body Mounted Traffic indicating arrow, SWS Part No. 58084 or equivalent
 - All safety lighting including traffic arrow board and cameras to be controlled in cab via digital body control screen
 - Boom mounted work light, self leveling
 - Front control station work light
 - Work area drop light that can be lowered into a manhole to illuminate the bottom of the manhole
 - Hands-Free Accessory Light Option (H.A.L.O.)
 - 50 ft. corded rope reel
 - Hands-free operation
 - Water and explosion proof

Automatic Lubrication System

14.301 Contractor Responsibility: _____

It is the responsibility of the Contractor to ensure the awarded greasing system company (Sub-Contractor) receives a copy of this Automated Lubrication System specification as outlined below to follow as part of their installation plan

State Make & Model: _____

14.302 Application: _____

- Greasing system to supply both chassis and Combination Sewer Cleaner body.

14.303 Greasing System: _____

- NLGI-0 automatic lubrication system
- System layout shall perform under the operating principles of a Parallel injection system
- Progressive systems not acceptable
- Grease system connected to all grease points where applicable
- Outfitted with automatic low level shut off
- In-cab monitor showing system status such as low level, low pressure and/or fault code display

14.304 Lubrication Chart: _____

- A permanent lubrication chart showing lube points and intervals shall be installed in a visible location

14.305 Pump Reservoir:

- Grease pump - Pneumatic, using an electric solenoid for cycle activation **or** an electric driven only, any other pump supplied will not be accepted
- 4 kg or larger pump with clear reservoir (appropriate for the size of the machine)
- Preprogrammed parameters required to accommodate 500-hour service intervals
- Pump must have correct fill adapter fitting for the City of Winnipeg staff to refill reservoir
- Adapter fitting - Parker # H2-63
- In the event the pump needs to be mounted higher than chassis frame level, for safety reasons, access to refill the pump reservoir shall be via remote fill line of minimum 3/8 in. hydraulic steel hose to accommodate a refill procedure at ground level
- The refill adaptor must be secured with a bulkhead and angle bracket free from being snagged on anything or sharp edges
- All connected components must be prefilled with grease prior to connection of the automatic lubrication system

14.306 Power Input

- System power connection 12-Volt to an OEM approved ignition source with an accessible fuse protection and for automatic lubrication system to shut down when the engine is turned off
- No part of the automatic lubrication system electrical components shall be on when the ignition switch is off (LED lights supplied by a battery source power not acceptable)
- The required Compressed air connection for pneumatic pumps for Parallel NLGI-0 automatic lubrication system must be connected to a secondary air tank supply of the chassis compressed air system
- Pump air supply must not be supplied by an external aftermarket air compressor
- Red 1/4" DOT approved airline must be applied and fitted with an air system protection check valve into the system secondary tank

14.307 Grease Lines – Main

- Extreme Low temperature (example: Parker Blue Stripe) steel braided rubber hose with compatibility to accommodate maximum working pressure of 5000 psi.
- Hose must be outfitted with #4 JIC crimped
- Thread sealant for grease lines of each fitting must be applied

14.308 Grease Lines – Secondary

- Minimum 3/16" nylon heavy wall grease line or approved functionality of a product that is deemed equivalent
- Each hose on all connected points must be outfitted with #4 JIC crimped or reusable ends required for the entire automatic lubrication system
- Installed and protected from extreme environments such as heat sources and components producing vibration
- Protected from tree and or branch impact on any body components higher than 6 feet from ground level
- For diagnostic purposes, all secondary grease lines must use color coded line from the injector to the connected component
- Thread sealant for grease lines of each fitting must be applied

14.309 Greasing Points

State: quantity of greasing points: _____

14.310 Greasing Points Not Connected to Automatic Lubrication System

- Grease points that cannot be connected to the automatic lubrication system must be connected with remote grease lines – considered for extreme environments areas such as internal packer panels or doors
- Where remote lines are used, decals must be applied stating manual greasing is required with recommended grease application intervals
- Grease points connected with remote lines shall be labeled for manual greasing by operator/inspection.

State: quantity of grease points that cannot be connected to the automatic lubrication system but will be connected with remote lines only:

14.311 Injector Manifold

- All manifolds and injectors shall be brass construction
- All manifolds must be fitted with a nylon lock nut hardware and mounted secure in an area away from debris impact and extreme heat sources
- Special guards should be fitted for injector manifolds and hoses in areas of consistent debris impact – snow, ice, etc.

14.312 Environmental Impact Features:

- Ensure the system does not grease while parked or leave excessive grease on roadways, streets etc.
- System layout and grease injector delivery shall not over grease any component to the extent where OEM warranties are voided

14.313 Modifications:

- Any modification to mount the system that requires drilling, cross drilling, enlargement of existing fitting sizes by drilling and tapping or welding must be preapproved by the contractor administrator prior to installation
- Such activities can and will void warranty thereby holding the automatic lubrication system company liable for any costs and damages involved with the equipment

**Standards
(Where Applicable)**

Finish

14.314	Preparation	All steel components unless otherwise noted in these specifications shall be sandblasted, thoroughly cleaned and primed.	_____
14.315	Primer	Epoxy or Polyurethane	_____
14.316	Paint	Epoxy or Polyurethane	_____
14.317	Welding		
14.318	Welds	Continuous welds	_____
14.319	Standard	CSA Standard W47.1-30 and W59-03	_____
14.320	Weld Quality Inspection	• Straight and uniform • Consistent thickness • No spatter drops • No slag, cracking or holes • No dips or craters in the bead • No holes, breaks or cracks in the bead/fillet	_____

Not Acceptable – cause for rejection.

- Lack of uniformity and straightness
- Visible spatter
- Cracking, undercutting or breaks in the bead
- Bead width inconsistent

14.321	Weld Spatter	Weld spatter to be removed prior to finish.	_____
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Installation

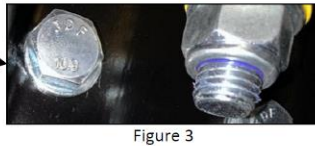
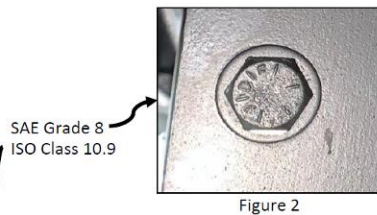
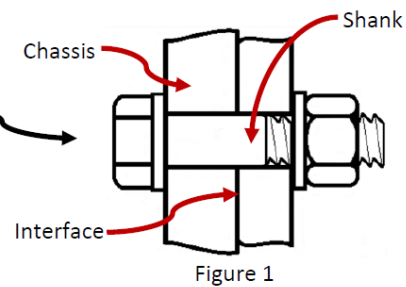
14.322	Not Permitted	• Drilling on chassis frame flanges • Welding on the chassis frame	_____
14.323	Mounting Brackets	Shall be bolted to frame using Grade-8 fasteners.	_____

Grade Marking	Specification	Material	Bolt and Screw Size in.	Proof Load, psi	Tensile Strength, min. psi
	SAE-Grade 8	Medium Carbon Alloy Steel, Quenched and Tempered	1/4 thru 1-1/2	126,000	150,000
	ASTM-A 354 Grade BD	Alloy Steel, Quenched and Tempered			

14.324 Bolt Requirements

- All bolts must be high tensile
- Hardened or equivalent strength washers must be installed under both the bolt head and under the nut
- All nuts need to be high tensile and self locking (Nyloc, Conelock or other suitable self-locking variation)
- At least two bolt threads must protrude from all nuts
- Any suspension component bolts must be ISO Class 10.9 or SAE Grade 8
- All bolts that have been installed to replace OEM bolts must be at least an equivalent class/grade

When mounting tow couplings (towbars, fifth wheels etc.) the bolt shank needs to protrude through the entire interface of the material. This avoids stress concentration on the threaded portion and maximises the available bolt cross-section that is subject to shearing forces.



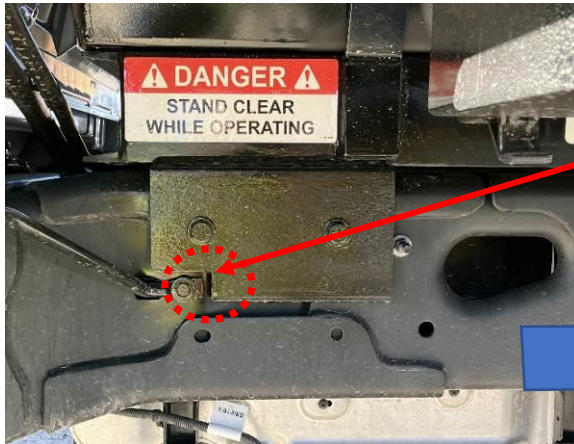
ISO Class 8.8 bolts should not be confused with SAE Grade 8 bolts.

- ISO Class 10.9 bolts are equivalent to SAE Grade 8 bolts (6 radial embossed on the bolt head – Figure 2).
- ISO Class 8.8 bolts are equivalent to SAE Grade 5 bolts (3 radial embossed on the bolt head).

Figure 3 shows an ISO Class 10.9 bolt head and a Nylock nut securing a separate bolt. Notice that both the bolt head and nut are installed with hardened washers and there are more than two threads protruding from the nut.

14.325 Mounting Plates

Mounting plates utilized or created for the installation or assembly of the service body must feature chamfered corners and avoid sharp right angles

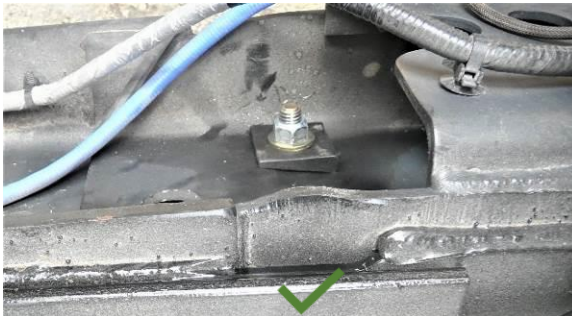


The mounting plate on the truck frame, which is affixed to a service body, has a sharp corner highlighted by a red circle. It is not advisable to have this sharp corner, as it should be rounded to alleviate any stress concentrations. Failure to do so may result in the early development of fatigue cracks.



14.326 Bolted Connections to Chassis Frame

- Mounting to the chassis frame is permitted however the bolt/nut assembly must have no gap or skewed connections are allowed; bolt/nut connection must be perpendicular to the clamping surface.
- **Not Recommended**, However, if hole is to be drilled to accommodate bolt/nut assembly, ensure hole is drilled far enough away from any seams, splices or overlays in the chassis frame to ensure bolted and nut/washer connection will be flat, ensure total contact with chassis frame



Bolt/nut assembly through chassis frame. If hole is where a transition occurs or on a curved surface in the frame the hole should not be used as a mounting location. However, if the hole location is to be used as a mounting location the following must be followed:

Levelling washer must be used so that the bolt clamping force is fully applied and perpendicular to the frame; no gaps allowed.

Not acceptable bolt/nut assembly, on seam

14.327 Holes

- Holes in the frame shall be drilled and reamed to fit bolts
- Holes required to run wires through shall be drilled (not punched), grommeted and sealed as required

14.328	Isolators	• All interfaces between aluminium and steel are to be separated by an approximately $\frac{1}{16}$ in. thick rubber or neoprene sheet. • Shall be bolted through with stainless steel bolts and non-conductive bushings.	_____
14.329	Mounting Brackets	Shall be bolted to frame using Grade-8 fasteners.	_____
14.330	Mounting Standards	Any holes required in frame must be drilled and reamed to fit bolts.	_____
14.331	Mounting Standards	All non-continuous body seams (joints) shall be caulked with an automotive grade elastomeric sealant.	_____
14.332	Grab Handles/Handholds	Any safety compliance grab handles or handhold should be bolted.	_____

Lighting and Electrical

14.333	Conformance:	• LED Lighting • C.M.V.S.S. • Manitoba Highway Traffic Act. • City of Winnipeg Lighting Visibility Standard http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf	_____
14.334	Lighting:	• Supplier installed • High count LED	_____
14.335	Visibility:	• No clearance light shall protrude beyond the body	_____
14.336	Identification:	• All warning lights and switches to be identified with permanent, engraved type labels • Mounting of labels with 3M VHB Tape or equivalent. To ensure adhesion to interior surfaces 3M Adhesion Promoter 06396 is a convenient liquid primer for enhancing the adhesion of 3M™ Acrylic Foam Tapes in automotive applications. This adhesion promoter works with most LSE plastics used for interior and exterior automotive trim and parts • Each circuit shall be colour coded and marked the entire length of the wire with easily read numbers and/or letters for identification	_____



Not Acceptable – Not Permanently Label



Picture above shows example of permanent engraved label switches

14.337 LED Strobe Lights:

- Shall be wired "Hot" (i.e. able to use without the key on), wired through a single OEM dash mounted switch or on the control panel enclosure, labelled "Strobes" with a permanent type, engraved style label.

14.338 Connection System:

- Weather Pack Sealed Connection System or equivalent system having same industry specifications.
- Genuine OEM connectors, terminals, and wire seals are used to guarantee quality and 100% fitment. ("J-Box" and shrink tube acceptable)



14.339 Grommets:

- Rubber grommets are to be used for passing or running wiring through holes in the chassis of panels, unless stated otherwise.



14.340 Harnesses:

- Harness system properly routed and secured.
- All harnesses shall be internally grounded, no exceptions.
- Colour coded or numbered.

14.341 Junction box:

- Complete with necessary compression fittings, required for all vehicle lighting harness connections.
- Securely located
- Readily accessible for servicing
- Protected from road spray

14.342 All Plug-In Connectors:

- All plug-in connectors shall be coated with Truck-Lite NYK Corrosion Preventive Compound prior to assembly.

14.343 Wiring:

- All wiring to be colour coded, loomed, and properly secured.
- Genuine OEM connectors, terminals, and wire seals are used to guarantee quality and 100% fitment
- 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.

14.344 Electrical Connectors:

- All electrical connectors to be crimped, soldered and then sealed using adhesive-sealant-lined shrink tubing must be used to guarantee joint integrity, waterproofing and strain relief, or rubber fittings.



Pictures above showing acceptable crimping and sealant using adhesive-sealant-lined shrink tubing must be used to guarantee joint integrity, waterproofing

14.345 Joining of Wires:

- All joining of wires to be soldered and sealed using heat shrink tubing or approved OEM weather tight connections.

Note: Crimp on electrical connectors for joining wires are not acceptable

14.346 Wiring Routing:

- Any holes required to run wires through shall be drilled (not punched), grommited and sealed.

14.347 Circuit Breakers:

- Shall be used in lieu of fuses for all circuits requiring overload protection (reset type circuit breakers are preferred)

14.348 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

14.349 Vapour Sealed:

- Electrical wiring shall be vapour sealed to eliminate moisture damage and shall be in accordance with NEMA 4 (National Electrical Manufacturing Association) standards

Trade-In Option

Optional Pricing:

- Bidders may, at their sole discretion, provide optional pricing for informational purposes only.
- Submission of such pricing is strictly optional, and it will not be considered or evaluated as part of the bid assessment or award determination.

14.350 This Tender includes the provision of a “trade-in” of five (5) used Combination Sewer Cleaner Vehicles. _____

All machines listed below were purchased new and used solely by The City of Winnipeg.

To view the units, Bidders may contact the Contract Administrator one (1) week prior to the Submission Deadline

A brief description of the equipment is as follows:

14.351 All prices submitted should be listed on Form B: PRICES (Options Page) _____

Vehicle Unit Number	Department	Year	Make	Model	Vin	Operating Hours as of 20-Feb-2026
2907201	WW-WSTWTR-SEWER	2016	Western Star Vactor 2100 Dual Stage Fan	4700	5KKHAXCY0GPHG8330 17-04V-16706	20,000 (Chassis) ??? (Body)
2907202	WW-WSTWTR-SEWER	2016	Western Star Vactor 2100 Dual Stage Fan	4700	5KKHAXCY6GPHG8333 17-04V-16710	343 (Chassis) ??? (Body)
2907203	WW-WSTWTR-SEWER	2016	Western Star Vactor 2100 Dual Stage Fan	4700	5KKHAXCY2GPHG8331 17-04V-16708	10,865 (Chassis) ??? (Body)
2907204	WW-WSTWTR-SEWER	2016	Western Star Vactor 2100 Dual Stage Fan	4700	5KKHAXCY4GPHG8332 17-0V4-16709	58 (Chassis) ??? (Body)
2907205	WW-WSTWTR-SEWER	2016	Western Star Vactor 2100 Positive Displacement (PD)	4700	5KKHAXCY9GPHR4073 17-04V-16707	1514 (chassis) ??? (Body)

Full Maintenance Package

Optional Pricing:

- Bidders may, at their sole discretion, provide optional pricing for informational purposes only.
- Submission of such pricing is strictly optional, and it will not be considered or evaluated as part of the bid assessment or award determination.

- 14.352 All prices submitted should be listed on Form B: PRICES (Options Page) _____
- 14.353 Please provide quotation on a **Full Maintenance Package** as per manufactures maintenance guidelines for the following: _____
- 14.354 Option 1: Full Maintenance Package (based on 150 hours per month for 5 years) _____
- 14.355 Option 2: Full Maintenance Package (based on 150 hours per month for 6 years) _____
- 14.356 Option 3: Full Maintenance Package (based on 150 hours per month for 7 years) _____
- 14.357 **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.
- Consumables
 - Air filters
 - Cab or engine filters
 - Auxiliary fuel / exhaust filters
 - Engine dampeners
 - Engine coolant
- Replacement of high-pressure water hose;
- Vacuum hose
- Nozzle replacement
- Aluminum vacuum extensions
- Windshield wipers
- Daily greasing

14.358 **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

Alternative Fuels

Optional Pricing:

- Bidders may, at their sole discretion, provide optional pricing for informational purposes only.
- Submission of such pricing is strictly optional, and it will not be considered or evaluated as part of the bid assessment or award determination.

14.359 All prices submitted should be listed on Form B: PRICES (Options Page) _____

- 14.360
- 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 _____

Guaranteed Buyback Option

Optional Pricing:

- Bidders may, at their sole discretion, provide optional pricing for informational purposes only.
- Submission of such pricing is strictly optional, and it will not be considered or evaluated as part of the bid assessment or award determination.

14.361 All prices submitted should be listed on Form B: PRICES (Options Page) _____

14.362 Option 1: Guaranteed Buyback (based on 150 hours per month for 5 years) _____

14.363 Option 2: Guaranteed Buyback (based on 150 hours per month for 6 years) _____

14.364 Option 3: Guaranteed Buyback (based on 150 hours per month for 7 years) _____

WARRANTY:

15.1 All warranty information shall be detailed and **include all exclusions.** _____

The Contractor shall provide all published warranty information upon delivery of the equipment.

Bidder shall state all warranty information.

15.2 The warranty for the **Cab & Chassis and Body** shall cover the complete equipment, and all parts thereof against any defects of workmanship, construction and materials. _____

Any equipment that has become defective during said warranty period and has not proven to have been caused by negligence on the part of the user shall be repaired or replaced at no cost to the City.

The warranty shall be effective from the date the equipment is put into service by the City of Winnipeg

Cab & Chassis Warranty

15.3 Basic Coverage **State:** Terms: _____

15.4 Engine Coverage **State:** Terms: _____

15.5 Axles – Front and Rear **State:** Terms: _____

15.6 Cab Structure / Corrosion **State:** Terms: _____

15.7 Drivetrain **State:** Terms: _____

15.8 Batteries **State:** Terms: _____

15.9 Frame and Cross Members **State:** Terms: _____

15.10 Cab Paint **State:** Terms: _____

15.11 Electrical **State:** Terms: _____

15.12 Transmission **State:** Terms: _____

Body Warranty

15.13 Manufacturer's Warranty **State:** Terms: _____

DELIVERY:

16.1 **Delivery Point:** _____

The complete unit shall be serviced, ready for operation and delivered F.O.B. with the freight prepaid, including invoice and N.V.I.S. (if applicable) to the Winnipeg Fleet Management Agency (WFMA) 185 Tecumseh Street, Winnipeg MB.

16.2 **Delivery Time:** _____

Equipment shall be delivered between 8:00 am and 2:00 pm on Business Days.

State: earliest delivery time from date of award: _____

16.3 **Delivery Contact:** _____

The Contractor shall contact the Contract Administrator prior to delivery of the equipment.

16.4 **P.D.I.:** _____

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

MANUALS:

17.1 **Manuals:** _____

The following manuals shall be supplied with the equipment when delivered:

Operator – Two (2) Copies

- One (1) copy shall be sent to the Equipment Operator Training Branch
- One (1) copy to be left with the equipment

Parts and Service

- One (1) complete set including preventative maintenance schedules

Note: CD or USB flash drive is preferred where available

PARTS/LABOUR PRICING:

18.1 Bidder to provide City of Winnipeg Parts Discount % Pricing from retail parts pricing. _____

State: percentage discount: _____

18.2 Bidder to provide City of Winnipeg Labor Discount % Pricing from Retail shop labor rate. _____

State: percentage discount: _____

FIRST SERVICE PREVENTATIVE MAINTENANCE KIT:

- 19.1 If applicable, to assure minimum downtime of the Equipment in future service, the Contractor must 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, transmission, cab and hydraulic, or otherwise all known necessary common replacement filters required for the first preventative maintenance servicing and first transmission service. _____
- 19.2 The Contractor must 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. _____