FORM N: DETAILED SPECIFICATIONS 21012

FRONT LOADER RECYCLING TRUCK

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 **Front Loader Recycling Truck** and other equipment and features as specified herein. The truck will operate up to 7 days a week, year-round collecting 6-cubic meter front load recycling bins from six (6) City of Winnipeg Recycling Depots with an average of 2 loads per day delivered to the Materials Recovery Facility (MRF). The majority of the times the truck will travel on paved surfaces with some uneven surfaces along the way. Locations will range from 4R Winnipeg Depots, Community Recycling Depots, Brady Road Resource Management Facility and the MRF. The truck will be picking up and transporting Single Stream Recycling material which consists mainly of paper products, cardboard and empty containers, but also may include some unacceptable items including garbage as well as periodic loads of garbage collected separately.

2.2 The **Front Loader Recycling Truck** shall be a new **2022** model year or newer.

2.3 The **Front Loader Recycling Truck** and all other items/components shall be the manufacturer's latest model. The equipment shall be furnished complete and ready for operation. Any parts or accessories not specifically mentioned, but which are required to complete and place the equipment and associated attachments in successful operation shall be furnished as though specifically mentioned in these specifications. The equipment and associated 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.

2.4 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 particular 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 **Front Loader Recycling Truck** shall comply with the applicable regulations:

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:
https://www.gov.mb.ca/labour/safety/pdf/1_2016_wsh_ar_oc.pdf

Canadian Motor Vehicle Safety Standards C.M.V.S.S.
Motor Vehicle Safety Regulations (justice.gc.ca)

Manitoba Highway Traffic Act regulations and requirements including, but not limited to, a Manitoba Government Inspection with Safety Sticker.
http://web2.gov.mb.ca/laws/regs/index.php?act=h60

Canadian Standards Association, CSA:
http://www.csagroup.org/

Under Writers of Canada, U/L:
Underwriters Laboratories of Canada (ULC)

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

3.3 The completed unit shall include a Manitoba Government Inspection with Safety Sticker.

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

State NSM number: _____

4. FUEL

4.1 The equipment shall be fully fuelled upon delivery (no exceptions).

5. REFERENCES

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

_____
_____
_____
_____
_____

6. MAKE & MODEL

6.1 State year, make and model being bid:

Model Year: _____

Make: _____

Model: _____

7. PERFORMANCE RELIABILITY

7.1 Shall be capable of consistent top performance for loading, transporting and dumping during all seasons which are normal to the City of Winnipeg.

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

8. WEIGHT DISTRIBUTION

8.1 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.

Note:

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

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

9. WEIGH SCALE TICKET

9.1 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.

10. SPECIFICATIONS

Cab and Chassis Specifications

10.1	Make	**State:** make: _____	_____
10.2	Model	**State:** model: _____	_____
10.3	Model Year	**State:** model year: _____	_____
	GVWR		
10.4	Total	• 64,000 lbs. • As required for a 40 yd^3 front loader recycling truck **State:** _____	_____
10.5	Front	• 20,000 lbs. • As required for a 40 yd^3 front loader recycling truck **State:** _____	_____
10.6	Rear	• 44,000 lbs. • As required for a 40 yd^3 front loader recycling truck **State:** _____	_____
10.7	GCWR	**State:** GCWR: _____	_____
	Dimensions		
10.8	Wheelbase (WB)	As required for a 40 yd^3 front loader recycling truck **State:** WB: _____	_____

10.9	Cab to Axle (CA)	As required for a 40 yd^3 front loader recycling truck **State:** CA: _____	_____
10.10	After Frame (AF)	As required for a 40 yd^3 front loader recycling truck **State:** AF: _____	_____
	Engine		
10.11	Type	Tier IV Final Diesel, inline 6-cylinder	_____
10.12	Horsepower	Approximately 360 HP gross **State:** HP: _____	_____
10.13	Torque	Approximately 1150 - 1250 lb-ft **State:** torque: _____	_____
10.14	Radiator	• Aluminum • Approximately 1200 square inch **State:** size: _____	_____
10.15	Fan Drive	• Two-speed type • Direct drive • Residual torque device for disengaged fan speed • Complete with dash switch	_____
10.16	Air Cleaner	• Heavy-duty • Single element, dry type • Suitable for application	_____
10.17	Coolant	• Extended Life Coolant • Freeze protection to -40°C	_____
10.18	Block Heater	• Immersion type • Approximately 1000 Watt • Recessed plug with weather proof cover **State:** Location of block heater: _____	_____
10.19	Engine Shut Down	Low oil pressure / high water temperature	_____
10.20	Anti-Idling Programming	• Anti-Idle shut down to be provided • Programmed for customer preference **Note:** Programming to be determined at pre-production meeting	_____
10.21	Cold Weather Starting Aid	Air Intake Warmer	_____
10.22	Fuel Shut-Off	Electric solenoid type	_____
10.23	Air Intake	• Dual under-hood/outside air intake • Suitable for application	_____
10.24	Air Intake Restriction	Dash mounted restriction indicator	_____

10.25	Oil Drain Plug	Magnetic type	_____
10.26	Oil Filter	Full flow, spin-on type	_____
10.27	Fuel Filter	Spin-on type	_____
10.28	Fuel Line Primer Pump	**Required:**	_____
10.29	Coolant Filter	If Available Or Coolant Maintenance Program Extended life coolant maintenance is test strip every approximately 500 hours and fluid change at 10,000 hours. **State:** • type: _____ • test strip and fluid change intervals: _____	_____
10.30	Coolant Hoses	Silicone type, Gates Blue Stripe or premium type hoses **State:** type: _____	_____
10.31	Air Compressor	• Water cooled • Pressure lubricated • Approximately 18 cfm **State:** cfm: _____	_____
10.32	PTO Accommodation	Supply all necessary equipment for the operation of a PTO **Future Programming:** • To disengage the PTO when 5 kph is reached • To disengage the PTO to prevent the driver from driving off • Power take-off engagement switch • OEM dash mounted switch c/w warning light, labelled • All switches and programming for body operations to be the responsibility of the chassis supplier	_____
	Transmission		
10.33	Transmission	• Allison 4500 RDS with 6-speed programming • Ratio shall be as per inter-city application. • Transmission shall come with Load Base Management Programming • Transmission to PTO to operate the body	_____
10.34	Allison SCAAN	**Required:** Provided at time of delivery	_____
10.35	Transmission Fluids	Synthetic	_____

10.36	Shift Selector	• Console mounted • Push button **State:** type: _____	_____
10.37	Cooling Capacity	• Water to oil transmission cooler • Per Manufacturer's recommendation for severe duty cycle	_____
10.38	Oil Level Dipstick	• Bayonet type • High- and low-level markings	_____
10.39	Transmission Drain Plug	Magnetic type	_____
	Front Axle		
10.40	Front Axle	• Meritor 20,000 lbs. capacity • With synthetic fluid **State:** capacity: _____	_____
	Rear Axle		
10.41	Rear Axle (Tandem)	• Meritor 44,000 lbs. capacity • With synthetic fluid **State:** capacity: _____	_____
10.42	Ratio	For 110 km/hr **State:** ratio: _____	_____
10.43	Inter-Axle Lock	**Required:** with dash mounted switch	_____
10.44	Differential Lock	• Drive axle • Dash mounted switch	_____
10.45	Rear Axle Temperature Gauge	• Gauge located in-cab visible to driver • Sensor protected from road spray or debris	_____
10.46	Hub Seals	Oil lubricated front and rear type	_____
	Front Suspension		
10.47	Type	• Taper-leaf spring • 23,000 lbs. capacity	_____
	Rear Suspension		
10.48	Rear Suspension	• Air ride suspension • Approximately 44,000 - 46,000 lbs. capacity • Suitable for application **State:** capacity: _____	_____
10.49	Suspension Control Valve	• Manual dump valve for air suspension Dash mounted switch • Indicator light • Gauge and buzzer	_____

10.50	Auto Refill	**Required**: at 5 km/hr **Exact speed will be determined at a pre-production meeting**	_____
	Weigh Scale System		
10.51	Weigh Scale System	• Rear Suspension Load Gauge • Display Message in Cluster Display • System must be tested and calibrated prior to delivery	_____
	Cab		
10.52	Type	Low Cab Forward (LCF) design suited for application	_____
10.53	Cab Construction	Aluminum or Galvanized Steel **State:** material type: _____	_____
10.54	Drive Configuration	Left Hand Drive	_____
10.55	Cab Tilt	Hydraulic tilt Approximately 65 degrees	_____
10.56	Front Windshield	Designed for maximum visibility for a front loader recycling body	_____
10.57	Look-Down Door Window	Lower right-hand door	_____
10.58	Cab Mounts	Air suspension	_____
10.59	Grab Handles	• Dual exterior • Dual Interior **State:** locations: _____	_____
10.60	Entrance Steps	• Dual each side, • Open grate / grip type	_____
10.61	Air Conditioning	**Required:**	_____
10.62	Hood	• High visibility hood • Tilting • Stationary chrome grille **State:** hood type: _____	_____
10.63	Hood Fender Extensions	• Front • Rubber	_____
10.64	Cab Interior / Trim	• Extreme climate insulation • Cloth or vinyl headliner on roof, door panels and rear interior of cab	_____
10.65	Cab Silencer Package	**Required**: for minimal decibel level	_____

10.66	Hood/Firewall/Engine Insulations	**Insulated:** • Hood liner • Engine cover • Firewall • Splash panels	_____
10.67	Floor Covering	Rubber mat with under-padding	_____
10.68	Floor Mats	• Qty two (2) • Rubber	_____
10.69	Driver's Seat	• High back • Air suspension • Foldable armrests • Seatbelt • Heavy-duty cloth upholstery	_____
10.70	Passenger Seat	• High back • Air suspension • Foldable armrests • Seatbelt • Heavy-duty cloth upholstery	_____
10.71	Dashboard	Ergonomic (Wing) Design **State:** design: _____	_____
10.72	Sun Visors	Dual flip-up type	_____
10.73	12-Volt Power Outlet	**Required:** Two (2) with independent circuit	_____
10.74	Radio	• Factory installed • AM/FM • Blue Tooth capability • USB input • Auxiliary input	_____
10.75	Radio Auxiliary Control	• Mounted in steering wheel • Radio function control • Bluetooth answer/disconnect	_____
10.76	2-Way Radio Circuit	• Independent 20 Amp circuit • Ignition powered • Wired under dash, loose • Labelled	_____
10.77	USB Ports	• Qty two (2) • Located in instrument panel	_____
10.78	Keyless Entry System	Remote with: • Panic alarm and horn beep lock confirmation • Auxiliary buttons for other functions • Include three (3) key Fobs **State:** auxiliary functions that are available: _____ _____	_____

10.79	Dome Light	Dome light with driver and passenger door switches	_____
10.80	Heater / Defroster	• High output • Capable of keeping all windows clear at an outside temperature of -40°C	_____
10.81	Brake, Accelerator, Pedals	Floor or hanging type brake and accelerator pedals **State:** style: _____	_____
10.82	Horn	Dual electric	_____
10.83	Air Horn	• Single trumpet • Lanyard pull cord	_____
10.84	Exterior Mirrors	• Suited for application • Tri-Plane Mirror System • Heated • Lighted • Motorized adjustment • Mounted on doors	_____
10.85	Down-View Mirror	• Convex • Over passenger door	_____
10.86	Windows & Windshield	Tinted	_____
10.87	Power Windows	Power driver and passenger side	_____
10.88	Doors	Power door locks	_____
10.89	Windshield Wipers	Electric intermittent	_____
10.90	Wiper Blades	Heavy duty with winter type boot	_____
10.91	Windshield Washers	Electric, with spray nozzles on wiper blades	_____
10.92	Bug Screen	Mounted behind grille	_____
10.93	Winter Front	Heavy-duty vinyl with twist lock or snap type fasteners	_____
10.94	Exterior Sunshade	Includes integral clearance/marker lights	_____
	Frame		
10.95	Frame	• Single rail • Heat treated alloy steel • As required for a 40 yd^3 front loader recycling truck	_____
10.96	Rust Inhibitor (Frame/Cross Member)	Applied prior to body installation **State:** type and brand: _____ _____	_____
10.97	Chassis Fasteners	Grade-8 threaded hex headed frame fasteners	_____

Front Bumper

10.98	Type	• Heavy duty • Chrome steel • Full width • License plate bracket	_____
10.99	Bumper Markers	Suitable for a 40 yd^3 front loader recycling truck	_____

Towing

10.100	Tow Hooks	• Front and rear • Mounted	_____

Brakes

10.101	Brakes	• Air • ABS • Suitable for application	_____
10.102	Slack Adjusters	• Front and rear • Clearance sensing • Automatic type • Greasable slack adjuster pins	_____
10.103	Parking Brake	**Required:**	_____
10.104	Parking Brake Alarm	Alarms sounds when vehicle park brake is "NOT" SET, with ignition "OFF" and any door opened	_____
10.105	Brake Chambers	• Front and rear • Vented type	_____
10.106	Dust Shields	Front and rear	_____
10.107	Air Compressor	Approximately 18 cfm **State:** cfm: _____	_____
10.108	Air Tanks	Aluminum tanks **State:** qty: _____ **State:** locations: _____	_____
10.109	Tank Straps	• Aluminum, stainless-steel or 3/16 dia. nylon coated aircraft cable • 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion **State:** strap type: _____	_____
10.110	Moisture Ejector	**Required:** heated in all air tanks	_____
10.111	Drain Valves	**Required:** for each tank • Manual • Chain or cable operated	_____

10.112	Air Dryer	Air dryer with heater **State:** make: _____ **State:** model: _____ **State:** location: _____	_____
	Steering		
10.113	Type	• Power	_____
10.114	Steering Column	• Adjustable • Tilt/telescopic	_____
	Exhaust System		
10.115	Configuration	• Stationary extreme outboard • Chrome vertical discharge • Under-frame routing • Vertical portion cab mounted • Discharge tip shall have a backslash type end **State:** exhaust location: _____	_____
10.116	Overall Exhaust Height	• Approximately 12 in. higher than body • Not to impede body installation	_____
10.117	Exhaust Heat Shield	• Chrome • Over exhaust next to cab door	_____
	Electrical Systems		
10.118	Chassis Wiring	• Multiplex wiring • Colour coded • Continuously numbered	_____
10.119	Electrical Connectors	• Plug-in • Sealed type	_____
10.120	Anti-Corrosion Electrical Package	Controllers and sensitive electrical components (PCM, Harnesses etc.) mounted in cab **State:** location: _____ 	_____
10.121	Alternator	• Heavy Duty, Brushless type • 160 -180 Amp • Pad Mount • Remote Sense **State:** make: _____ **State:** model: _____	_____

10.122	Starter	• Heavy Duty • Thermal Over-Crank Protection **State:** make: _____ **State:** model: _____	_____
10.123	Circuit Breakers	• Auto-reset • Readily accessible	_____
10.124	Batteries	• Three (3) batteries • Maintenance free • 12-volt, Group 31 • Approximately 2200 CCA combined • Exposed connectors sealed with dielectric grease	_____
10.125	Batteries Location	• Under cab or frame mounted • Complete with battery box – steel with cover • Readily accessible Note: Batteries not to impede with the installation of the Body **State:** location: _____	_____
10.126	Battery Disconnect Switch	• In-cab mounted • Lockable with padlock **State:** location: _____	_____
10.127	Battery Boost Terminal	• Remote battery boosts terminal(s) • Protected from road spray **State:** location: _____	_____
10.128	Cab Marker Lights	• Cab or Sun Visor Marker Lights • LED	_____
10.129	2-Way Radio Circuit	• Independent 20 Amp circuit • Ignition powered • Wired under dash loose • Labelled	_____
10.130	Accessory Switches	**As Required for body installation** • Complete and wired for body installation • Wired through the ignition and Acc circuit • PTO, Beacon and Auxiliary • Labeled • Backlit	_____
10.131	Mega Fuse Box	• Located in-cab or under-cab • Sealed, protected from road spray **State:** location: _____	_____
10.132	Work Lights	• Toggle Switch - Lighted; on Instrument Panel • Wiring Effects for Body Installer • Furnished Back of Cab Light	_____

	Fuel Tanks		
10.133	Fuel Tank	• Aluminum • Largest capacity available • Shall not impede in the installation of the body **State:** capacity: _____ location: _____	_____
10.134	Diesel Exhaust Fluid (DEF) Tank	• Approximately 28 L (7.3 US gal) capacity • Heated • Labelled “DEF ONLY” **State:** capacity: _____ location: _____	_____
10.135	Tank Straps	• Aluminum, stainless-steel or 3/16 dia. nylon coated aircraft cable • 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion **State:** strap type: _____	_____
10.136	Fuel/Water Separator	• Heated • Drainable • Includes water-in-fuel sensor • Mounted under hood, on engine • Protected from road spray	_____
	Rims, Wheels and Hubs		
10.137	Front Wheels	• Aluminum • Hub piloted • Rated for requested GVWR and application	_____
10.138	Rear Wheels	• Aluminum • Hub piloted • Rated for requested GVWR and application	_____
10.139	Hub Seals	Oil lubricated	_____
10.140	Wheel Nut Indicators	**Required:** on all wheel nuts	_____
	Tires		
10.141	Front Tires	• Waste Haul • Goodyear G296 WHA DuraSeal • 425/65R22.5 • 20-ply • Load Range L • Puncture Sealing Technology • Snow, mud and ice rated	_____

10.142	Rear Tires	• Waste Haul • Goodyear Armor Max Pro Grade MSD DuraSeal • 11R 22.5 16-ply • Load Range H • Puncture Sealing Technology • Snow, mud and ice rated	_____
	Mud Flaps		
10.143	Mud Flaps	• Front and rear • OEM • Moulded	_____
	Instrumentation		
10.144	Instrumentation	• Oil Pressure Gauge • Coolant Temperature Gauge • Transmission Oil Temperature Gauge • Voltmeter Gauge • Air Reservoir Pressure Gauge with LAP Warning Light and Buzzer • Low Oil Pressure Warning Light and Buzzer • High Water Temperature Warning Light and Buzzer • Speedometer and odometer	_____
10.145	Engine Hour-Meter	• Non-Resettable Hobbs Engine Meter • Dedicated • Integrated into the dash • Visible to operators at all times	_____
	Colours		
10.146	Exterior Colour	White	_____
10.147	Interior Colour	Grey	_____
10.148	Frame and Suspension	Primed and finished with Black Imron 5000	_____
	Safety		
10.149	Flare Kit	• Three (3) triangular reflectors • CVSA approved. • Kit must be mounted or secured	_____
10.150	Fire Extinguisher	• 5 lbs. Fire Extinguisher ABC type • Installed and secured **State:** location: _____	_____

10.151	Back-Up Cameras	**Required:** Quantity two (2) • Location # 1 - back of vehicle • Location # 2 - top of cab complete with protective guard • Wiring and switches only – body installer to provide cameras • Switch provided for second camera 	_____
10.152	Back-Up Camera Screen	In-Dash (Ergonomic (Wing) Dashboard)	_____
10.153	Back-Up Alarm	• Approximately 102 dBA • Mounted to be protected from damage	_____
10.154	Pre-Trip Exterior Light Inspection	**Programmed:** When activated, the vehicle lights repeatedly flash in a specific sequence to allow the operator to verify that the exterior lights are functioning. The light test sequence tests: • Park Lights • Headlights (low and high beams) • Right/left front/rear turn lights • Brakes Lights • Beacon(s) • Strobe Lights • Clearance Lights	_____
10.155	Warning Light Over Ride	**Programmed:** Rear strobe lights to be programmed to allow for an over-ride for turn signals and brake lights when strobe lights are on. Other drivers will be able to determine if the truck is stopping or turning when strobe lights are on.	_____

Body Specifications

Body Certification

10.156	Body Certification	Body manufacturer is: • ISO9001 Certified • ANZI 245.1 Safety Standard Compliant	_____

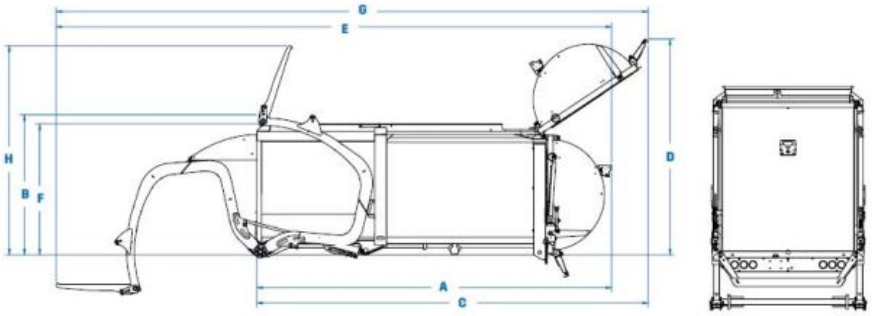
Body Capacity

10.157	Total Body Capacity	Approximately 40 cu yd. (including hopper and tailgate) **State:** total body capacity: _____	_____
10.158	Body Capacity	Approximately 22 cu yd. **State:** body capacity: _____	_____
10.159	Tailgate Capacity	Approximately 6 cu yd. **State:** tailgate capacity: _____	_____
10.160	Hopper Capacity	Approximately 12 cu yd. **State:** hopper capacity: _____	_____

Body Dimensions

Use the following line drawings for specifications 10.161 to 10.169

Note: Line drawings are for illustrative purposes only and may not be exact representation of unit



10.161	A. Overall Length with Arms Stowed, Tailgate Closed	Approximately 299 in. **State:** overall length: _____	_____
10.162	Overall Width	Approximately 102 in. **State:** overall width: _____	_____
10.163	B. Overall Height above Frame with Arms Stowed, Tailgate Closed	Approximately 118 in. **State:** overall height: _____	_____
10.164	C. Overall Length with Arms Stowed, Tailgate Open	Approximately 329 in. **State:** overall length: _____	_____
10.165	D. Overall Height above Frame with Arms Stowed, Tailgate Open	Approximately 181 in. **State:** overall height: _____	_____

10.166	E. Overall Length with Arms/Forks Down, Tailgate Closed	Approximately 468 in. **State:** overall length: _____	_____
10.167	F. Overall Height above Frame with Arms/Forks Down, Tailgate Closed	Approximately 110 in. **State:** overall length: _____	_____
10.168	G. Overall Length with Arms/Forks Down, Tailgate Open	Approximately 498 in. **State:** overall length: _____	_____
10.169	H. Overall Height above Frame with Arms Stowed/Forks Up, Tailgate Closed	Approximately 175 in. **State:** overall height: _____	_____
10.170	Empty Body Weight	Approximately 15,500 lbs. **State:** body weight: _____	_____
	Controls		
10.171	Tailgate	• In-cab electric rocker switch • Tailgate up / tailgate down **State:** control method: _____	_____
10.172	Top Hopper Door	In-cab electric rocker switch **State:** control method: _____	_____
10.173	Packer	• In-cab electric push buttons • Protected to prevent accidental activation • Stop, Pack, Retract, Eject • Auto Pack - engaged when arms drop below windshield with on/off switch • Emergency stop provided to stop packer ram movement at any time **State:** control method: _____	_____
10.174	Arms and Forks	Drive Position Main Control Pneumatic Joystick, one (1) handle - arm & fork actuation **State:** control method: _____	_____
	Hopper		
10.175	Container Loading	• The City of Winnipeg will use a front-load container system for its recycling operation • Bins sizes up to 8 cu yd. meeting WASTEC standards	_____
10.176	Hopper Design	Hopper will have a useable capacity to accommodate container sizes up to 8 cu yd.	_____

10.177	Dimensions	All dimensions are approximate: • Depth 93.25 in. **State:** _____ • Length 91.0 in. **State:** _____ • Width 80.0 in. **State:** _____	_____
10.178	Hopper Walls	0,156" (4.0 mm) (Hardox AR450, 175,000 psi. or equivalent). **State:** material gauge thickness: _____	_____
10.179	Hopper Floor	3/16" (4.8 mm) (Hardox AR450, 175,000 psi or equivalent). **State:** material gauge thickness: _____	_____
10.180	Hopper Access Door	• Hinge type • Installed on curb side for safety • Includes ladder • Allows access to hopper • A proximity switch must be installed outside the hopper and all hydraulic functions are cancelled if the access door is open • Approximate size 36.75 x 26.25 in. • 0.156" (4.0 mm) (Hardox AR450) 175,000 psi or equivalent. **State:** material gauge thickness: _____	_____
10.181	Hopper Top Door	• Horizontal sliding • Approximate 91 x 80 in. opening • 14-gauge thickness **State:** opening size: _____ material gauge thickness: _____	_____
10.182	Protective Mesh	Mesh/screen in front of Packer blade to prevent material overflow	_____
10.183	Hopper Clean Out Sump	With door (street side)	_____
10.184	Hopper Wind Flanges	Extended Hopper Wind Flanges (6" high)	_____
	Body Construction		
10.185	Body Roof	1/8" (3.2 mm) (Hardox AR450, 175,000 psi or equivalent) **State:** material gauge thickness: _____	_____
10.186	Body Sides	1/8" (3.2mm) (Hardox AR450, 175,000 psi or equivalent). **State:** material gauge thickness: _____	_____
10.187	Body Floor	3/16" (4.8 mm) (Hardox AR450, 175,000 psi or equivalent). **State:** material gauge thickness: _____	_____
10.188	Rear Underside Guard	Body is equipped with a rear underside guard	_____

10.189	Body Reinforcing	**State complete details of body reinforcing design:** _____ _____ _____ _____ _____ _____	_____
	Rear Tailgate		
10.190	Rear Tail Gate Design	The rear tailgate: • Hydraulically operated • Double acting cylinders • Bustle type complete with an automatic lock mechanism including a roller on lock pins to avoid wear due to friction • A reinforced tubing is welded at the bottom of tailgate to ensure maximum resistance	_____
10.191	Tailgate Construction	1/8" (3.2mm) (Hardox AR450, 175,000 psi or equivalent) **State:** material gauge thickness: _____	_____
10.192	Auto-Latch Mechanism	**State complete details of the auto-latch mechanism:** _____ _____ _____	_____
10.193	Rubber Seal	A rubber seal is installed on the tailgate to prevent liquid leakage and banging on back of body	_____
10.194	Safety Prop	Provided for tailgate	_____
10.195	Tailgate Dimensions	**State dimensions of tailgate:** _____ _____ _____	_____
10.196	Tailgate Operation	**State complete details of tailgate operation and design:** _____ _____ _____ _____ _____ _____	_____

	Packer		
10.197	Packer Design	• Plow shape to improve material compaction, to direct debris into the body, away from the back area of the packer and reduces daily clean out time • Unitized, integral with body • Blade is full-eject type • Guided by 2 rails made of steel grade	_____
10.198	Cylinders	• Double-acting telescopic hydraulic cylinders • Cylinder rods – nitrated • Equipped with steel shavers	_____
10.199	Upper Face Plate	0.156" (4.0 mm) (Hardox AR450, 175,000 psi or equivalent) **State:** material gauge thickness: _____	_____
10.200	Lower Face Plate	1/4" (6.4 mm) (Hardox AR450, 175,000 psi or equivalent) **State:** material gauge thickness: _____	_____
10.201	Packer Panel Wear Shoes and Tracks	Chromium overlay	_____
10.202	Load Discharge	**State complete details of load discharge operation and design:** _____ _____ _____ _____ _____ _____	_____
	Canopy Sweeper		
10.203	Canopy Sweeper	Debris swept back into the hopper and not allowed to fall on the ground	_____
	Load Management		
10.204	System	Measure the weight of the load with a load management software **State complete details of the load management system:** _____ _____ _____ _____ _____ _____	_____

Hydraulics

10.205	Hydraulic System	• Front gear pump • Approximately 60 gpm • Directional valve has 5 sections with air actuator • Hydraulic deceleration valve • Return line filter (7 micron) • Suction line strainer (100 mesh)	_____
10.206	Hydraulic Tank	• Aluminum • Capacity approximately 60 gallons • Equipped with: o Magnetic drain plug o Oil level sight gauge o Shut-off valves in suction line o Check valve on return	_____
10.207	Top Cover	Hydraulic front pump top cover	_____
10.208	Hoses and Pipes	• 4-wire braided hose • High burst capacity • Reinforced with nylon wrap to prevent chafing • Hydraulic tubing is used where flexibility is not needed • All hydraulic tubing is securely clamped to prevent vibration, abrasion and excessive noise • All pipes are zinc coated to prevent corrosion	_____
10.209	Auto Throttle	• Throttle Advance Toggle Switch • ON / OFF / Auto	_____
10.210	Cycle Times	**State complete cycle times:** Arms up: _____ Arms down: _____ Forks up: _____ Forks down: _____ Packer extend: _____ Packer retract: _____ Top door complete cycle: _____ Tailgate open: _____ Tailgate close: _____	_____
10.211	Alarms	• Low hydraulic oil level • Hydraulic oil temperature	_____

Forks

10.212	Dimensions	• Meets Waste Equipment Technology Association (WASTEC) recommendations • All dimensions are approximate: • Thickness 1.0 in. **State:** _____ • Length 70.0 in. **State:** _____ • Usable height 52.5 in. **State:** _____ • Inside width 75.5 in. **State:** _____	_____

Lift Arms

10.213	Design	• Variable arm sections increase strength where needed, improve visibility and reduce weight • The body is protected from arm impact during container dumping with two rubber "dock" type bumpers bolted to the body midpoint frame posts • Equipped with a hydraulic deceleration valve which is activated by the arm pivot shaft to cushion lift cylinder action at the dump position	_____
10.214	Arms – Load Rating	Approximately 10,000 lbs. **State:** load rating: _____	_____
10.215	Arm Lifting Capacity	Approximately 8,000 lbs. **State:** arm lifting capacity: _____	_____

Lighting

10.216	Stop, Directional, Tail, Back-Up and Clearance	• LED • Conform to C.M.V.S.S. • Additional mid-body turn signals	_____
10.217	Back Up Lights - Additional	• LED • Qty two (2) (one per side) - Mid-body • Qty two (2) on tailgate	_____
10.218	High Visibility Lighting	• All lighting to be LED. • Oval 6-in. red central brake light on tailgate. Qty 1 • Round 4-in. red stop lights in upper tailgate light bar. Qty 2 • Round 4-in. amber turn signals in upper tailgate light bar. Qty 2 • Replacement of the STD red turn-tail lights by amber turn signals on tailgate	_____

10.219	Body LED Strobe Lighting	• Whelen TIR 3 or equivalent Class 1 LED mini strobe lights • Mounted in all four (4) corners of the body and mid ship for 360-degree visibility • Qty ten (10) in total	_____
10.220	Hopper Work Light	• Qty one (1) LED work light • Mounted in hopper • Equipped with switch for manual operation	_____
10.221	Rear Work Lights	• Qty two (2) mid-body LED work light • Mounted at the rear of the body • Both lights equipped with switches for manual operation	_____
10.222	Driver Side Work Light	• Qty one (1) LED work light • Mounted on the driver side mirror • Pointing up to the hopper	_____
10.223	**Exact lighting locations to be determined during a preproduction meeting.** Photo for illustration purposes only		_____

Cameras

10.224	Hopper Camera	One (1) camera mounted at the backside of the hopper on the driver side of the truck	_____
10.225	Packer Camera	One (1) camera mounted behind the packer	_____
10.226	Dash Mounted Camera (Magnetic Mount)	One (1) camera magnetically mounted on dash that allows the operator to change the direction of the camera	_____

10.227	Tailgate Cameras (Back-Up/Rear Visibility)	• Total three (3) high mounted cameras • One (1) camera to be facing backwards mounted mid tailgate • One (1) camera facing to the left and one (1) facing to the right • Both mounted at the top corners of the tailgate to allow the operator to see what is behind the truck as well as what may be coming down either side of the street.	_____
10.228	Guarding for Cameras	Protection cages on all cameras.	_____
10.229	Monitor	• Colour 9" LCD with swivel • Split screen capable • Sound, night vision and high electromagnetic noise resistance • Capable of recording videos in loops for continuous monitoring while the vehicle is in operation • Cameras to automatically start recording as soon as the ignition to the chassis is turned	_____
	Miscellaneous		
10.230	Broom & Shovel Mounting Brackets	• Mounting Brackets for: o Push Broom o Grain Shovel	_____
10.231	Roof Access Ladder	Installed on the right side with non-skid steps	_____
10.232	Roof Anchor Points	• Roof anchorage connectors • Required for when technicians need to be on top of the body for service/repairs • Suitable for personal fall arrest systems	_____
10.233	Mud Guards/Flaps	• Mud guards are supplied in front of rear axle. • Mud flaps are supplied at rear of rear axle with anti-sail bars on rear mud flaps	_____
10.234	Tool Box	• Aluminum – sealed • Chassis mounted • Approximately 24" x 24" x 24"	_____
	Safety Interlock		
10.235	Loader Arms	• There are no arms up movement when the top door is not completely opened • No arms up movement above canopy when the packer panel is not in the home position	_____
10.236	Eject System	Eject system in operation only if the tailgate is opened and if the operator holds the button on the console	_____

10.237	Access Door	All functions disable when the access door is open	_____
10.238	Hydraulic Over Pressure Protection	Pressure switch on hydraulic system for over pressure protection	_____
	Warning Light and Buzzer		
10.239	Tailgate	Warning light and buzzer when the tailgate is open or unlocked	_____
10.240	Hopper door	Warning light when the top hopper door is open	_____
10.241	Access door	Warning light when the access door is open	_____
10.242	Packer panel	Warning light when the packer panel is not in the home position	_____
10.243	Arms and forks	Warning light indicates arm and forks not stowed	_____
	Safety		
10.244	Fire Extinguisher	• 20 lbs. • High volume ABC type • Securely mounted with quick release	_____
10.245	Spill Kit	Environmental spill kit installed on body	_____
10.246	Back Up Alarm	• Approximately 95 – 112 dB • Protected from damage • When transmission is in reverse and when tailgate opens or is unlocked **State:** dB(A): _____	_____

10.247	Safety Decal	• CAUTION THIS VEHICLE STOPS AND BACKS FREQUENTLY • Approximately 74.5 in x 23.5 in • Black on yellow background  	_____
10.248	Conspicuity Tape	Truck-Lite 98127 or equal, affixed	_____

Automatic Lubrication System

10.249 Greasing System: _____

- Parallel 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

10.250 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
- 6 kg or larger pump with clear reservoir
- Parameters preprogrammed required to accommodate 500-hour service intervals
- Pump must have correct fill adapter fitting for the City of Winnipeg maintenance 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

10.251 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
- Red 1/4" DOT approved airline must be applied and fitted with an air system protection check valve into the system secondary tank
- Pump air supply must not be supplied by an external aftermarket air compressor

10.252 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 or reusable ends
- Thread sealant for grease lines of each fitting must be applied

10.253 Grease Lines – Secondary _____

- 3/16" nylon heavy wall grease line or 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

10.254 Greasing Points _____
State: quantity of greasing points: _____

10.255 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

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

_____

10.256 Miscellaneous Greasing Points _____

- All grease points on top of the body that pertain to the rear tailgate, must be outfitted as remote greased points using ¼" steel braided hose and #4 JIC fittings
- Remote Bank shall be secured to side of body on both sides easily accessible at 5 feet from the ground for an operator to service as part of their pre-trip inspection
- All grease points related to front loader assembly arms - six (6) grease points, must not be connected to any remote or automated lubrication system – to be determined at pre-production meeting
- Centralized Grease Block - Cylinders Pins on Body Front Wall – Body Side Door Access: 2 points
- Centralized Grease Block - Cylinders Pins on Packer- Body Side Door Access: 2 points

10.257 Injector Manifold _____

- 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, garbage etc.

10.258 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

10.259 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

10.260	Preparation	All steel components unless otherwise noted in these specifications shall be sandblasted, properly cleaned and primed	_____
10.261	Primer	Epoxy or Polyurethane	_____
10.262	Paint	Epoxy or Polyurethane	_____

Welding

10.263	Welds	Continuous welds	_____
10.264	Standard	CSA Standard W47.1-30 and W59-03	_____
10.265	Weld Spatter	Weld spatter to be removed prior to finish	_____

Installation

10.266	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	_____
10.267	Isolators	• All interfaces between aluminium and steel are to be separated by an approximately $^{1}/_{16}$ in. thick rubber or neoprene sheet • Shall be bolted through with stainless steel bolts and non-conductive bushings	_____
10.268	Mounting Brackets	Shall be bolted to frame using Grade-8 fasteners.	_____
10.269	Mounting Standards	Any holes required in frame must be drilled and reamed to fit bolts	_____
10.270	Mounting Standards	All non-continuous body seams (joints) shall be caulked with an automotive grade elastomeric sealant	_____

Lighting and Electrical

10.271 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

10.272 Lighting: _____
- Supplier installed
- High count LED

10.273 Visibility: _____
- No clearance light shall protrude beyond the trailer body

10.274 Identification: _____
- All warning lights and switches to be identified with permanent, engraved type labels

10.275 Connection System: _____
- Weather Pack Sealed Connection System

10.276 Grommets: _____
- Rubber grommets unless otherwise specified

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

10.278 Junction box: _____
- Complete with necessary compression fittings, required for all vehicle lighting harness connections
- Securely located
- Readily accessible for servicing
- Protected from road spray

10.279 All Plug-In Connectors: _____
- All plug-in connectors shall be coated with Truck-Lite NYK Corrosion Preventive Compound prior to assembly

10.280 Wiring: _____
- All wiring to be colour coded, loomed and properly secured.

10.281 Electrical Connectors: _____
- All electrical connectors to be crimped, soldered and then sealed using heat shrink tubing

10.282 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

10.283 Wiring Routing: _____
- Any holes required to run wires through shall be drilled (not punched), grommeted and sealed

11.0 **WARRANTY:**

11.1 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.

11.2 The warranty for the **Front Loader Recycling Truck** 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

Chassis Cab Warranty

11.3	Basic Coverage	**State:** Terms: _____	_____
11.4	Engine Coverage	**State:** Terms: _____	_____
11.5	Axles – Front and Rear	**State:** Terms: _____	_____
11.6	Cab Structure / Corrosion	**State:** Terms: _____	_____
11.7	Drivetrain	**State:** Terms: _____	_____
11.8	Batteries	**State:** Terms: _____	_____
11.9	Frame and Cross Members	**State:** Terms: _____	_____
11.10	Cab Paint	**State:** Terms: _____	_____
11.11	Electrical	**State:** Terms: _____	_____
11.12	Transmission	**State:** Terms: _____	_____

Body Warranty

11.13	Body	**State:** Terms: _____	_____
11.14	Hydraulics	**State:** Terms: _____	_____
11.15	Electrical, lighting etc.	**State:** Terms: _____	_____
11.16	Components - example pumps	**State:** Terms: _____	_____
11.17	Paint	**State:** Terms: _____	_____

12.0 **DELIVERY:**

12.1 **Delivery Point:** _____

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

12.2 **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: _____

12.3 **Delivery Contact:** _____

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

12.4 **P.D.I:** _____

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

13.0 **MANUALS:**

13.1 **Manuals:** _____

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

14.0 **PARTS/LABOUR PRICING:**

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

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

15.0 **FIRST SERVICE PREVENTATIVE MAINTENANCE KIT:**

15.1 If applicable, in order 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. _____

15.2 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. _____

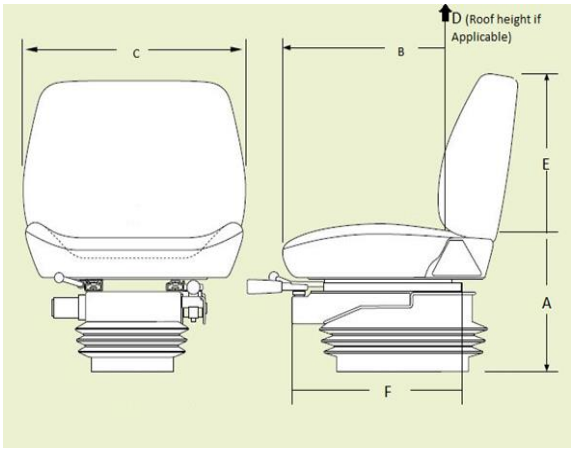
16.0 ERGONOMIC SPECIFICATIONS

Entry/ Exit

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

Seat

16.6 Use diagram to answer questions.



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

16.14	Head Rest	Is head rest provided **(Y or N)?** _____	_____
16.15	Seat is made of breathable material	**State:** type of seat material: _____	_____

Operation

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

Cargo Area

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

Environment

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

Maintenance/ Inspection

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