

FORM N: DETAILED SPECIFICATIONS 25003

LANE LINE PAINTING TRUCK

1. INTENT

- 1.1 It is the intent of these specifications to describe the supply and delivery of a Lane Line Painting Truck complete with a 66,000 lbs. GVWR Cab and Chassis, 25 ft. rear deck including rear operator enclosure and line painting equipment as described herein.
- 1.2 The lane line painting truck shall be the manufacturer's latest model, as may be modified by these specifications. The lane line painting truck, including all auxiliary equipment, shall be furnished complete and ready for use. All parts not specifically mentioned, but which are required for the complete unit shall conform in strength, quality of material and workmanship to the best standards and engineering practice of the industry.
- 1.3 It will be the responsibility of the bidder to inform the City of any errors or omissions in these specifications, for under this contract the contractor shall be held responsible for the design, performance, reliability and satisfactory operational function of the unit.
- 1.4 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.

2. OTHER SPECIFICATIONS AND STANDARDS

- 2.1 All applicable SAE Standards form an integral part of the vehicle specifications and shall have precedence in any conflict concerning minimum acceptable standards.
- 2.2 The complete vehicle shall comply with the applicable regulations:
 - Manitoba Highway Traffic Act <https://web2.gov.mb.ca/laws/statutes/ccsm/h060e.php>
 - Canadian Motor Vehicle Safety Standards, CMVSS Transport Canada <https://tc.canada.ca/en/road-transportation/safety-standards-vehicles-tires-child-car-seats/safety-standards-vehicles>
 - National Safety Mark, NSM <https://tc.canada.ca/en/road-transportation/safety-standards-vehicles-tires-child-car-seats/safety-standards-vehicles# National Safety Mark>
 - Manitoba/Winnipeg Safety and Health Act, Parts 12, 22 <https://www.gov.mb.ca/labour/safety/wshl.html>
 - Canadian Standards Association, CSA https://www.csagroup.org/store/?gclid=EAlaIqObChMIqK3GzYiC9wIVBQx9Ch2EmQOjEAAYASAAEglcp_D_BwE
 - Under Writers of Canada, U/L [https://canada.ul.com/#:~:text=Underwriters%20Laboratories%20of%20Canada%20\(ULC\)%20is%20an%20independent%20product%20safety,the%20Standards%20Council%20of%20Canada](https://canada.ul.com/#:~:text=Underwriters%20Laboratories%20of%20Canada%20(ULC)%20is%20an%20independent%20product%20safety,the%20Standards%20Council%20of%20Canada)
 - Society of Automotive Engineers, SAE <https://www.sae.org/>
- 2.3 All welding and welding designs of the load supporting elements shall conform to the requirements of the Canadian Standards Association Standard (CSA) W47.1-03 and W59-03.
- 2.4 The completed unit shall include a Manitoba Government Inspection with Safety Sticker on the driver's side window.
- 2.5 The completed vehicle shall be complete with a National Safety Mark, NSM.
- 2.5.1 **State NSM Number:** _____

3. QUALIFICATIONS OF MANUFACTURER

3.1 The manufacturer of the lane line painting truck shall have a minimum of five (5) years continuous experience manufacturing and installing equipment of the type being offered. The manufacturer shall have in effect a complete and documented quality control program ensuring the compliance with all applicable standards.

4. QUALIFICATIONS OF THE BIDDER

4.1 The Bidder shall be a manufacturer or authorized distributor/supplier of lane line painting trucks and related equipment.

4.2 For the purpose of warranty and mechanical repairs, the Bidder shall have an established, authorized service facility with minimum three (3) years continuous experience of maintaining and repairing lane line painting trucks of the type being offered. The facility shall be located within 10 km of the boundaries of the City of Winnipeg. The facility, or major portion thereof, shall be dedicated to the installation, service and maintenance of lane line painting trucks and equipment being offered.

4.3 Bidders shall provide a description of the facility including, but not limited to, number of qualified staff, years of service experience on specialty bodies, and general service capabilities within three (3) Business Days upon request of the Contract Administrator. The City of Winnipeg has the right to qualify the service facility prior to award.

4.4 If a Bidder does not have a local authorized service facility located with ten kilometers (10 km) of the boundaries of the City of Winnipeg, the Contractor shall provide local technical support to rectify all warranty and service related issues within twenty-four (24) hours of notification by the Contract Administrator.

5. INSTRUCTIONS FOR COMPLETION OF SPECIFICATIONS

5.1 All items in these specifications must be answered indicating compliance or non-compliance. **Bidders shall state “yes” for compliance or state deviation**, or give a reply where requested to do so. Deviations 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.

5.2 Each bidder is required to fill in every blank. **Failure to do so may be used as a basis for rejection of bid.**

6. REFERENCES

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

7. CAB OVER CAB AND CHASSIS SPECIFICATIONS

7.1 **STATE YEAR, MAKE AND MODEL BEING BID:** _____

GVWR

7.2 Total 66,000 lbs. _____

7.3	Front	20,000 lbs.	_____
7.4	Rear	46,000 lbs.	_____

Chassis Dimensions

7.6	Wheelbase	213 in. approx., suitable for lane line painting deck and equipment, state WB	_____
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Engine

7.7	Type	Diesel engine, Tier IV, state make, model and displacement	_____
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7.8	Horsepower	430 hp approx., state	_____
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7.9	Torque	1650 lbf-ft approx., state	_____
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7.10	Engine shut down	Low oil pressure / high water temperature	_____
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7.11	Air intake warmer	Required	_____
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7.12	Fuel shut-off	Electric solenoid type	_____
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7.13	Air cleaner	Dry type	_____
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7.14	Air intake restriction ind.	Dash mounted restriction indicator	_____
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7.15	Oil drain plug	Magnetic type	_____
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7.16	Oil filter	Full flow, spin-on or cartridge type	_____
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7.17	Fuel filter	Spin-on or cartridge type	_____
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7.18	Fuel/water separator	Heated, drainable, mounted under hood, located to be protected from road spray	_____
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7.19	Block heater	Immersion type, 750 Watt with plastic, covered recessed male plug, located under driver's side door	_____
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7.20	Coolant	Extended life coolant, antifreeze to -35°F (-37°C)	_____
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7.21	Coolant hoses	Silicone type, Gates Blue Stripe or Premium type hoses	_____
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7.22	Fan Drive	Thermostatically controlled, automatic type	_____
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7.23	Air compressor	Water cooled, pressure lubricated, 25 cfm	_____
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Electrical System

7.24	Alternator	300 Amp, state make and model	_____
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7.25	Starter	Delco Remy 38MT HD or equivalent, state	_____
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7.26	Batteries	Three (3), 12-volt, group 31, 2250 CCA combined capacity	_____
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7.27	Battery Box	Aluminium enclosure, readily accessible	_____
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7.28	Battery disconnect	Lockable, state location	_____
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7.29	Remote boost terminal	Remote battery boost terminal(s), protected from road spray, covered, state location	_____
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7.30	Cab marker lights	LED	_____
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7.31	Back-up alarm	Required, 97 dBA, located on inside-rear of frame rails	_____
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7.32	Accessory switches	Six (6) required, dash mounted for body installation, labelled and backlit	_____
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7.33	Radio circuit	Independent 20 Amp, 2-way radio circuit with 3 ft. of extra cabling wrapped loose under dash or cab floor	_____
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Exhaust System

7.34 Configuration Single vertical muffler with vertical tailpipe c/w backslash _____

Transmission

7.35 Model Allison 4500 RDS-P Series, **state** model _____

7.36 Shift selector Push button shift control _____

7.37 Cooling Water to oil transmission cooler _____

7.38 PTO provision Required with maximum clearance from exhaust _____

7.39 Oil level dipstick Bayonet type with high and low level markings _____

7.40 Trans. drain plug Magnetic type _____

Front Axle

7.41 Capacity 20,000 lbs. capacity _____

Rear Axle

7.42 Capacity 46,000 lbs. capacity _____

7.43 Ratio For 110 km/hr top speed, **state** ratio _____

7.44 Differential lock Required for rear drive axle w/dash mtd. switch _____

Front Suspension

7.45 Type Taper leaf spring suspension, 20,000 lbs. capacity _____

Rear Suspension

7.46 Type Air ride suspension, 46,000 lbs. capacity, **state** make, model and type of suspension being bid _____

Rims, Wheels, Hubs

7.47 Front 22.5 x 8.25 aluminum, 10-bolt, hub piloted _____

7.48 Rear 22.5 x 8.25 aluminum, 10-bolt, hub piloted _____

7.49 Hubs **State** type, front and rear _____

7.50 Hub seals Oil lubricated front and rear _____

7.51 Wheel nut indicators Required on every second wheel nut, front and rear _____

Tires, front

7.52 Size 385/65 R22.5 _____

7.53 Make & model Michelin XZE, Goodyear G662 RSA or equivalent 18-ply tires, **state** tires _____

Tires, rear

7.54 Size 11R 22.5 _____

7.55 Make & model Michelin XDE M/S, Goodyear G182 or equivalent 14-ply tires, **state** tires _____

Frame

7.56 Type Single or double rail, to match GVWR, 3,000,000 in.-lbs. RBM, outside frame clear _____

7.57 Application Suitable for use with a 25 ft. steel deck and lane line painting equipment. _____

7.58 Chassis fasteners Grade-8 threaded hex headed frame fasteners or huck-spin fasteners _____

Steering

7.59 Type Power, tilt, telescopic _____

Brakes

7.60 Type Air, ABS _____

7.61 Slack adjusters Front and rear, clearance sensing, automatic type, greasable slack adjuster pins _____

7.62 Parking brake Dash mounted air operated parking brake knob _____

7.63 Brake chambers Front and rear, vented type _____

7.64 Dust shields Front and rear _____

7.65 Air tanks Aluminum tanks _____

7.66 Tank straps Aluminum or stainless-steel straps, 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion _____

7.67 Moisture ejector Bendix DV-2, heated, required in wet tank _____

7.68 Drain valves Manual, chain or cable operated, required on each air tank _____

7.69 Air drier Heated, Wabco System Saver, **state** make and model _____

Fuel Tanks

7.70 Type Aluminum, 375 L capacity approx., fully fuelled upon delivery _____

7.71 Tank straps Steel mounting straps with 1/16 in. rubber or neoprene isolators _____

7.72 Fuel separator Heated, drainable, c/w primer pump _____

7.73 DEF tank Diesel exhaust fluid tank, 22-30 L approx., **state** size and location _____

Cab

7.74 Type Cab Over type with cab tilt system, aluminum or steel w/corrosion inhibitor _____

7.75 Cab mounts **State** type _____

7.76 Cab interior/trim Extreme climate insulation including cloth or vinyl headliner on roof, door panels and rear interior of cab. Door panels to include storage pockets, front and rear _____

7.77 Cab silencer package Required for minimal decibel level _____

7.78 Floor covering Rubber mat with under-padding _____

7.79 Floor mats Two (2), rubber, fastened to floor _____

7.80 Driver seat High back, air suspension w/foldable right hand armrest, seat belt, heavy-duty cloth upholstery, Cordura or equal, **state** material _____

7.81 Passenger seat High back, air suspension w/foldable left hand armrest, seat belt, heavy-duty cloth upholstery, Cordura or equal, **state** material _____

7.82 Sun visors Dual flip-up type _____

7.83 Steering wheel Tilt and telescopic type _____

7.84 12-Volt power outlet Required _____

7.85	Radio	Factory installed AM/FM with Bluetooth® capability, auxiliary input and USB port	_____
7.86	Starter switch	Key operated c/w three (3) sets of keys	_____
7.87	Key FOBS	Two (2)	_____
7.88	Interior light	Dome light with driver and passenger door switches	_____
7.89	Heater / Defroster	High output, capable of keeping all windows clear at an outside temperature of -35°F (-37°C)	_____
7.90	Air conditioning	Required	_____
7.91	Power windows	Required	_____
7.92	Power door locks	Required	_____
7.93	Cruise control	Required at 5 km/hr	_____
7.94	Horns	Dual electric with air horn	_____
7.95	Exterior mirrors	Dual West Coast, stainless steel or polycarbonate, 7" x 14½" approx.	_____
7.96	Convex mirrors	6 in. aux., stainless steel, mtd. below West Coast mirrors, or integral type with polycarbonate mirrors, one (1) per side	_____
7.97	Downview mirror	Located over passenger door, 5" x 4" approx.	_____
7.98	Windows & windshield	Tinted	_____
7.99	Windshield wipers	Electric, intermittent	_____
7.100	Windshield washers	Electric	_____
7.101	Grab handles	Dual exterior with rubber inserts	_____
7.102	Entrance steps	Dual each side, open grate / grip type	_____
7.103	Winter front	Heavy-duty vinyl w/twist lock or snap type fasteners	_____
	Instrumentation		
7.104	Oil pressure	Gauge	_____
7.105	Coolant temperature	Gauge	_____
7.106	Transmission oil temp.	Gauge	_____
7.107	LOP/HWT	Warning light and buzzer	_____
7.108	Voltmeter	Gauge	_____
7.109	Air reservoir pressure	Gauge with Low Air Pressure warning light and buzzer	_____
7.110	Engine hourmeter	Required, non-resettable type	_____
	Tow Hooks		
7.111	Location	Front mounted	_____
	Front Bumper		
7.112	Type	Heavy duty, chrome, full width c/w license plate provision	_____
	Colour and Finish		
7.113	Exterior	White	_____
7.114	Interior	Dark grey or black	_____
7.115	Frame & suspension	Primed and finished with black Imron 5000 paint or	_____

		equivalent	_____
	Accessories		
7.116	Flare kit	Three (3) triangular reflectors, CVSA approved	_____
7.117	Fire extinguisher	5 lb. ABC type, required in cab with mounting bracket	_____
7.118	First aid kit	Required, Provincial 1 approved kit, supplied loose	_____
	Manuals		
7.119	Operator's manual	Required, one (1) per vehicle	_____
7.120	Parts/Repair/Service	Required, including preventative maintenance schedules for life of unit, USB or online manuals preferred	_____
	Warranty		
7.121	Chassis warranty	The Contractor shall provide all detailed published Warranty information (including all exclusions) at the time of delivery of the equipment. State the following:	
7.122	Basic vehicle	State	_____
7.123	Batteries	State	_____
7.124	Drivetrain	State	_____
7.125	Cab structure/corrosion	State	_____
7.126	Frame & crossmembers	State	_____
7.127	Cab paint	State	_____
7.128	Engine	State	_____
7.129	Towing coverage	State	_____
7.130	Transmission	State	_____
7.131	Axles, front & rear	State	_____
7.132	Exhaust system	State	_____

LANE LINE PAINTING DECK AND EQUIPMENT SPECIFICATIONS

8.0 PERFORMANCE

8.1 The lane line painting vehicle shall be capable of spraying paint (non-Epoxy), operating safely and efficiently during the spring, summer and fall conditions normal to the City of Winnipeg, i.e., -5°C – 40°C. _____

9.0 MAKE AND MODEL

9.1 **State make and model of lane line painting body and equipment being bid.**

10.0 WEIGHT DISTRIBUTION

10.1 The completed vehicle shall not exceed the City of Winnipeg's limit for gross vehicle weight, axle and tire loads with the unit fully fuelled and operational, two (2) operators, all tanks full.

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.);
- Tandem axle (single axle) – 17,000 kg (37,478 lbs.);
- Tire load – 9 kilograms for each millimetre width of tire (approx. 500 lbs. per inch of tire width).

10.2 State the following weight distributions: (Note: All weight distributions stated shall include two (2) operators, full paint and hydraulic tanks, and fully fuelled.)

a) Vehicle with no payload:

Front axle weight: _____ lbs.
Rear axle weight: _____ lbs.
Total: _____ lbs.

b) Vehicle with full payload:

Front axle weight: _____ lbs.
Rear axle weight: _____ lbs.
Total: _____ lbs.

10.3 Weigh scale ticket – the Contractor shall provide a certified weigh scale ticket upon delivery of the completed unit. The scale ticket shall include front and rear axle weights including two (2) operators and a full tank of fuel. _____

11.0 LINE PAINTER EQUIPMENT

11.1 Compressor – utility mount air compressor, 200 cfm approx., T4 diesel engine, **state make and model**. _____

11.2 Hydraulic pump – mounted to compressor engine to power air/hydraulic oil cooler fan, guide wheel assembly lift cylinder, paint tank agitators, rear enclosure air conditioning unit and the steering orbitals. _____

11.3 Hydraulic reservoir and air/hydraulic oil cooler with hydraulically driven fan mounted to the top of compressor enclosure. Fuel source to be the chassis fuel tank. _____

11.4 Chassis transmission mounted PTO driven hydraulic pump to provide hydraulics to the rear operator’s enclosure air-conditioning system. _____

11.5 Foldable center mount guide wheel assembly with hydraulic lift mounted to the front bumper. _____

11.6 Steel, 96" wide platform with railings, built in side and rear access steps, rear operator’s enclosure, arrow board bracket and all required ICC lights. _____

11.7 Two (2) SST paint filter assemblies with SST filter elements. Stainless steel ball valves installed in the filters to enable draining. _____

11.7.1 Two (2) bead manifolds with exhaust mufflers mounted on the gun carts. One (1) per cart. _____

- 11.8 Heavy duty, hydraulically extendable, gun carriage assemblies. Carriages to be are mounted “mid-ship” between the front and rear axles, not directly below the rear cabin. **State** extension dimensions. _____

- 11.9 Pneumatically raised and lowered heavy duty scissors style gun carts. _____
- 11.10 Tilting and telescoping mounted hydraulic steering orbitals with steering wheels or joystick to control the lateral movement of the gun carriages. _____
- 11.11 Rear operator’s control console mounted between the rear operator’s stations. _____
- 11.12 Two (2) lockable toolboxes mounted on the rear of the deck area in the operator’s enclosure with two (2) high back air suspension bucket seats with armrests and seat belts mounted on top of the toolboxes. _____
- 11.13 Four (4) additional lockable toolboxes mounted on the unit. Aluminum tread plate to cover some surfaces. Two (2) mounting brackets for the timer switch boxes in the rear enclosure. _____
- 11.14 Steel glycol expansion tank for the paint heating system mounted to the striper bed. Two (2) heat exchanger mounting brackets. _____
- 11.15 Hydraulic reservoir with sight gauge, magnetic particle separator, interior baffles and removable lid. _____
- 11.16 Heated and air-conditioned rear operator’s enclosure mounted above the chassis rear axles. _____

- 12. MARKING MATERIAL SYSTEM**
- 12.1 One (1) Stainless steel 4,542 liter/1,200-gallon total capacity two-compartment paint tank with internal baffles, sloped bottoms, 18” square access ports/lids and breather ports. The tank shall be divided to accommodate approx. 3,028 Liters (800 gallons) white and 1,514 Liters (400-gallons) yellow. _____
- 12.2 One (1) A.S.M.E. certified 20-gallon/72-liter capacity stainless steel solvent tank. _____
- 12.3 Two (2) stainless steel surge chambers, 1 each for the yellow and white paint systems. _____
- 12.4 Solvent plumbing to be compatible with solvents for low VOC oil-based paints. _____
- 12.5 Two (2) Wilden XPS820 SST/Teflon diaphragm type load/paint pumps mounted on the unit. Load hoses with SST couplers and caps mounted to the pumps and stored under the striper bed. Dip tubes installed on the load hoses. Additional air valves located near the top of the paint tanks plumbed in series to control the load pumps to enable turning the pumps on/off. Low VOC paint load hoses. Crossover plumbing to enable loading both tanks from one side. Grounding cable on an auto-retractable reel mounted near the load/paint pumps. _____
- 12.6 All paint plumbing including all fittings will have stainless steel wetted parts. The main plumbing shall be 2" NPT 304 SST pipe with SST flex

couplers and 2" chemical hose. Heat exchanger bypass plumbing installed.

12.7 Electrically controlled paint re-circulation system to enable circulating paint from the paint manifolds back to the paint tanks. The switches for the re-circulation system located in the rear operator's control console.

12.8 Paint hoses to be 3/4" i.d., Teflon lined for compatibility with fast dry water base and low VOC paints. Two (2) stainless steel paint filter assemblies with removable SST filter elements. Stainless steel ball valves installed to isolate filters.

12.9 Two (2) stainless steel paint manifolds (1 yellow and 1 white).

12.10 Two (2) outlets with SST ball valves provided, one at each rear corner of the unit to enable paint supply for a handgun.

13. MARKING MATERIAL HEAT SYSTEM

13.1 Thermostatically controlled paint heating system to be installed on the unit.

13.2 System to include "scavenger heat" drawn off the air compressor diesel engine, one (1) heat exchanger for glycol glycol circulation pump.

13.3 Two (2) insulated heat exchangers with stainless steel tubes, one for yellow paint and one for white paint. Controls mounted in the rear control console. Heat exchanger by-pass plumbing installed.

14. CENTERLINE GUN CARRIAGE

14.1 Manually adjustable width dual wheel assembly for striping C/L rumble strips.

14.2 Two (2) yellow guns and two (2) white guns on centre line with adjustable beads/linear actuators as needed.
indicated

14.3 One (1) bead manifold.

14.4 Blow air nozzles directly in front of the spray guns.

15. EDGE LINE GUN CARRIAGE

15.1 Edgeline gun carriage to be complete with reverse auto lift feature and dual wheels.

15.2 Three (3) white guns one the edge line and adjustable beads, linear actuators and blow air nozzles as needed.

15.3 One (1) bead manifold.

15.4 Two (2) blow air nozzles directly in front of the spray guns.

16. GLASS BEAD SYSTEM

16.1 One (1) 2,722 kilogram/6,000 lbs. capacity 46" diameter approx., A.S.M.E. certified bead tank with hinged lid and 3" suction inlet.

16.2 Venturi vacuum load system on tank. Venturi exhausted below the deck

through muffler. Ground load bead system. All controls to load to be accessible from ground level.

16.3 Butterfly valves installed at the bead manifolds and at the outlet of the bead tank.

16.4 Detachable 2" diameter 15' long bead suction hose.

16.5 Detachable 3" diameter 8" long bead suction hose.

17. AIR SYSTEM

17.1 Blow air system plumbed to the gun carts. The system shall have on, off and auto functions.

17.2 Air cooler installed on the compressed air system to cool the compressed air.

17.3 One (1) LaMan 111 dryer/extractor installed in the air line to the bead tank.

17.4 One (1) LaMan 120 dryer/extractor installed in the main cooled air circuit.

17.5 Self-expelling moisture traps on main airline and bead tank supply.

17.6 Oiler installed on the main airlines to the gun carriage solenoids.

17.7 Four (4) quick couplers to the air system, two (2) at the rear of the unit and one (1) each mounted on the left and right side near the carriages to facilitate the use of air tools.

17.8 Air pressure regulators and gauges installed in the control console to control the bead and solvent tank pressures.

18. ELECTRONICS

18.1 Communication timing system – adjustable electronic Skipline SC12 or equivalent serial communication timing system.

18.2 The serial communication timing system shall consist of two (2) switchboxes located at the rear operator's stations and "driver" boxes mounted in the gun carriage solenoid boxes. Each switchbox has individual control of skip cycles, footage counters, digital speedometers, bead lead/lag controls etc.

18.3 Single LCD display in each switchbox to skip cycle, footage counter and digital speedometer display functions. Switchboxes shall be fully interchangeable and enable simultaneous application of different skip cycles.

18.4 System to incorporate metric conversion capability. Digital speedometer installed in the chassis cab. Two remote switches to activate the guns.

18.5 System to track paint application via GPS, including where each skip line starts and ends.

18.6 Three (3) station aviation type intercom system with three (3) "ultra light" type headsets. System to interface with a customer supplied business band radio. The rear operator stations shall be able to communicate through the radio interface.

18.7 45" wide FSC LED amber light bar mounted on the cab and chassis.

- 18.8 Two (2) dual flashing FS DOT LED oval amber strobe lights mounted on the rear of the truck. _____
- 18.9 Two (2) 360-degree LED amber strobe lights mounted on the arrow board mount. _____
- 18.10 Wanco 2 Line message board – WVMBM-2LP on fixed mount at the rear of the unit. Controller mounted in the cab. _____
- 18.11 Linear actuator to raise and lower the arrow board. Switch for the actuator located in the chassis cab. _____
- 18.12 Two (2) amber LED strobe lights mounted on the front of the chassis, one per side. One switch for the lights located in the chassis cab. _____
- 18.13 Seven (7) linear actuators with dust covers to raise and lower the paint guns. _____
- 18.14 Two (2) Rigid LED driving lights (046371) mounted on the front of the chassis cab. _____
- 18.15 Eight (8) mounted FS 2,200 lumens LED 12-volt lights for night use, two mounted to illuminate each gun cart, one mounted to illuminate the control console, two mounted on the top front of the rear operator’s enclosure front corners to illuminate the material tanks, one light to illuminate the Wilden pumps. Switch for the Wildens light located in a junction box located near the pumps. _____
- 18.16 Four (4) FS LED scene/flood lights. Two per side. One mounted per side mounted on an extendable bracket on the top rear corner of the air compressor and one per side mounted on an extendable bracket on the top front corner at the rear control console. _____
- 18.17 Two (2) weather resistant boxes, one per gun cart, installed on the gun carriages to house the paint and bead gun actuating and atomized air solenoids. _____
- 18.18 One (1) Laserline GL 3000P laser guidance system. System shall include a laser mounted on top of the chassis cab and a touch pad controller in the chassis cab that controls the location of the “dot” on the road. _____
- 18.19 Two camera colour video guidance system. System shall include an LCD monitor, a video crosshair generator with controller, two colour cameras with auto iris 18mm lenses mounted inside weather-resistant self-leveling housings, an A/B camera position selection switch and electrically actuated camera mounting brackets. _____
- 18.20 Rear view/back up camera system – system to include a monitor mounted in the chassis cab, a monitor mounted in the rear operator’s enclosure and camera located on the rear of the unit. The system shall have a continuous mode of operation and/or turns on when the chassis transmission is shifted into reverse. _____
- 18.21 Supplier to supply and install a low-speed cruise control installed in the chassis cab, as low as 5 km/hr. _____

19. REAR OPERATOR'S ENCLOSURE

- 19.1 To be insulated with heat and air conditioning. _____
- 19.2 Enclosure to be 8 ft. wide with windows on each side. _____
- 19.3 Dome lights – interior white/red dome lights mounted in the ceiling above the operator stations. _____
- 19.4 Two (2) LED reading/map lights installed. _____
- 19.5 Two (2) cup holders installed; one for each operator. _____
- 19.6 Heavy duty black rubber floor mat for sound suppression installed. _____
- 19.7 All windows tinted safety glass. 35% tint. _____
- 19.8 Two (2) non-opening windows installed in the front corners of the enclosure at 45-degree angle (one per side), capable of viewing paint guns. _____
- 19.9 Two (2) non-opening windows in the rear of the enclosure. _____
- 19.10 Two (2) slide opening side windows (one per side) installed. _____
- 19.11 Two (2) locking doors with windows, one at the rear of the enclosure and one at the front of the enclosure. _____

20. PAINT AND GLASS BEAD MONITORING SYSTEM

- 20.1 System to consist of weigh bar/scales for glass beads and flow meters feeding real time data to a laptop computer located in the rear operator's enclosure. _____
- 20.2 The laptop shall display gallons used per colour, footage applied, various patterns striped, distance traveled, mils applied, material temperature, road surface temperature, ambient temperature and humidity and dew point. _____
- 20.3 Glass bead monitoring is weight based. Three load cells mounted on the bead tank. _____
- 20.4 Paint usage based on 3/4 in. flow meters installed in the individual hoses to the spray guns. _____
- 20.5 GPS automatic vehicle logging and positioning including where paint is placed, flowrate and speed. _____
- 20.6 Ambient temperature, surface temperature, humidity and dew point sensors. _____
- 20.7 Paint temperature sensors provided, 1 per colour. Temperature to be sensed at the outlets of the heat exchangers. _____
- 20.8 Printer for 8 1/2" x 11" paper located in the rear operator's enclosure. _____

21. ADDITIONAL EQUIPMENT

- 21.1 First aid kit. _____
- 21.2 Warning triangle kit. _____

- 21.3 Two (2) mounted fire extinguishers. _____
- 21.4 Aluminum fenders with mudflaps installed over the rear chassis tires and wheels. _____
- 21.5 Outlet in solvent plumbing and a hose for striper cleanup. Automatic hose reel installed to hold hose. _____
- 21.6 Reflective red and white conspicuity tape installed around the equipment bed and rear bumper. _____
- 21.7 City of Winnipeg supplied business band radio and antenna installed in the chassis cab. _____
- 21.8 Grab handles/railings – located as required for ergonomic access to deck area. _____
- 21.9 Interfaces – any contact between aluminum and steel shall be separated by a $1/16$ in. rubber or neoprene sheet to prevent galvanic corrosion. Bolts between aluminum and steel shall be stainless steel. _____

22.0 GREASING SYSTEM

- 22.1 Greasing system – system layout shall be designed to function under the operating principles of a parallel injection system, progressive systems will not be accepted. Greasing system to be incorporated into the cab & chassis where applicable, Parallel NLGI-0 or equivalent, automatic lubrication system, connected to all grease points. System outfitted with automatic low level shut-off, an in-cab monitor showing system status such as low level, low pressure and/or fault code display. _____
- 22.2 Pump reservoir – 6 kg or larger pump reservoir, readily accessible for refill, parameters preprogrammed to accommodate 500-hour service intervals. Pump must have correct fill adapter fitting for the City of Winnipeg maintenance staff to refill reservoir. Parker #H2-63 refill adapter fitting. _____
- 22.3 Power input – system power connection 12-Volt to ignition source with an accessible fuse protection. Greasing system to shut-down when engine is turned off. LED indicator lights connected to the truck batteries are not acceptable. _____
- 22.4 Air connection – compressed air connection for the automatic lubrication system pump must be connected to a secondary air tank supply of the chassis compressed air system. Red $1/4$ in. DOT approved airline must be applied and fitted with an air system protection check valve into the system secondary tank. _____
- 22.5 Grease lines, main – extreme low temperature type (e.g. Eaton Aeroquip SAE 100R16 Matchmate Global Ice) steel braided rubber hose with compatibility to accommodate working pressure of 6000 psi. System mainline must be outfitted with #04 JIC crimped ends. _____
- 22.5.1 Grease lines, secondary – $3/16$ in. nylon heavy wall secondary grease line or equivalent, and must be installed and protected from extreme environments such as heat sources and components producing vibration. _____
- 22.6 Prefill – all components connected to the automatic greasing system must be prefilled with OEM approved grease prior to installation of the greasing system. _____

- 22.7 Thread sealant – applied to main and secondary grease lines of each fitting. _____
- 22.8 Colour coded lines – all secondary grease lines must use colour coded line from the injector to the connected component. _____
- 22.9 Greasing points – **state** quantity of greasing points. _____
- 22.9.1 Grease points that cannot be connected to the automatic lubrication system must be connected with remote grease lines. Where remote lines are utilized, decals must be applied stating manual greasing is required with recommended grease application intervals. _____
- 22.10 Injector manifolds – all manifolds must be fitted with nylon lock nut hardware and securely mounted in an area away from debris impact. Special guards should be fitted for injector manifolds and hoses in areas of consistent debris impact, i.e., snow, ice, road spray, etc. _____
- 22.11 Environmental impact, over-greasing – the system layout and grease injector delivery shall not over-grease any component to the extent where OEM warranties are voided. In addition, environmental impact features shall be incorporated in the automatic lubrication system, i.e., no grease pumped while parked or leaving excessive grease on roadways. _____
- 22.12 Any modification to install the greasing system that requires drilling, cross-drilling, enlargement of existing zerk fitting sizes by drilling and tapping or welding, must be pre-approved by the Contract Administrator prior to installation. Such activities can and will void warranty, thereby holding the Contractor liable for any costs and damages involved with the equipment and components connected to the greasing system. _____
- 22.13 Interfaces – any contact between aluminum and steel shall be separated by a $\frac{1}{16}$ in. rubber or neoprene sheet to prevent galvanic corrosion. Bolts between aluminum and steel shall be stainless steel. _____
- 23.0 PAINT AND FINISH**
- 23.1 Steel components – any steel components, steel brackets, etc. shall be sandblasted, properly cleaned, primed and finished with the Endura EP32 Intermix Epoxy Primer and 3-5 mils of Endura EX-2C Topcoat, or equivalent paint process. **State** paint details. _____
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- 23.2 Access steps – shall be coated with black Line-X heavy duty abrasive coating or equivalent, 120 mil thickness. _____
- 23.3 Aluminum checkerplate – unfinished. _____
- 24.0 TECHNICAL DOCUMENTS AND MANUALS**
- 24.1 Bidders shall supply the following within five (5) working days of request of the Contract Administrator:
- 24.1.1 Three view drawings showing complete unit including chassis, line painter equipment, etc. _____

24.1.2 Front and rear axle weights of the complete unit (chassis, deck, line painting equipment, etc.) full hydraulic oil tank, fully fuelled and two operators.

24.1.3 Service facility description (see 4.3).

24.2 Prior to final inspection of the unit, the Contractor shall provide the following:

24.2.1 Certified weigh scale ticket of completed unit, fully fuelled (see 7.70).

24.3 Operator's manuals – three (3) required.

24.3.1 Parts, repair and maintenance manuals – USB format preferred, required with the following comprising a set:

- i) Line Painter unit lubrication chart;
 - ii) Maintenance manual;
 - iii) Unit parts book;
 - iv) Electric wiring diagram; and
 - v) Hydraulic circuit diagram.
-

Note: The manuals supplied with this contract must be in English and shall be specifically for the unit supplied. General purpose manuals will not be acceptable. The Contract will not be considered complete until these have been delivered. Manuals must be supplied at the time the unit is delivered.

25. DELIVERY

25.1 The completed unit shall be serviced, ready for operation and delivered F.O.B with the freight prepaid to the City of Winnipeg, Winnipeg Fleet Management Agency, 185 Tecumseh Street, Winnipeg, Manitoba within **sixteen (16) calendar months** from the date of award. Additional points will be applied to the Bidder that can deliver prior to by April 1, 2027 (see B21.1). The Contractor shall contact the Contract Administrator prior to delivery of the equipment. Equipment shall be delivered within 8:00 am and 3:00 pm on Business Days.

25.2 A pre-delivery inspection shall be performed by the Contractor on all equipment.

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

26. PARTS/LABOUR PRICING

26.1 Bidder to provide City of Winnipeg parts discount % pricing from retail parts pricing. **State** percentage discount.

26.2 Bidder to provide City of Winnipeg labour discount % pricing from retail shop labour rate. **State** percentage discount.

27. PERFORMANCE RELIABILITY

27.1 The responsibility for the design of the complete line painter vehicle, its performance, and reliability shall rest upon the Contractor.

27.2 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 maintenance schedules.

27.2.1 Where the vehicle develops “repeated failures” in service, the Contractor shall make any necessary engineering changes, repairs, alterations or modifications in order to guarantee reliability of performance.

28. WARRANTY

28.1 The warranty on the cab & chassis is listed above in 7.122 – 7.132.

28.2 The Contractor shall provide all detailed published warranty information (including all exclusions) at the time of delivery of the equipment. **State** the following warranties:

28.3 Line painter equipment – **state**.

28.4 Electrical, lighting, etc. – **state**.

28.5 Finish, i.e., paint, gelcoat, powder coat, etc. – **state**.

28.6 Provide details on any extended Warranty coverage available.
