

FORM N: DETAILED SPECIFICATIONS 22003

USED CRANE TRUCK WITH A FELLING GRAPPLE

1. INTENT

- 1.1 It is the intent of these specifications to describe used hydraulically operated 100,000 lbf-ft 5-boom, articulating crane, with a tree limbing felling grapple and a nominal 14 ft. dump body, installed on a conventional cab truck. The vehicle shall be a 2017 model year or newer with less than 50,000 km on the entire vehicle.
- 1.2 The crane 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 dive vehicle shall comply with the applicable regulations:
 - Manitoba Highway Traffic Act
 - Canadian Motor Vehicle Safety Standards, CMVSS Transport Canada
 - National Safety Mark, NSM
 - Manitoba/Winnipeg Safety and Health Act, Parts 12, 22
 - Canadian Standards Association, CSA
 - Under Writers of Canada, U/L
 - Society of Automotive Engineers, SAE
- 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.

3. QUALIFICATIONS OF MANUFACTURER

- 3.1 The manufacturer of the aerial device and chipper body 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 truck mounted cranes, grapples and specialty equipment bodies.

- 4.2 For the purposes of Warranty and Mechanical repairs, the Bidder shall have an authorized service facility 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 customized specialty bodies and equipment being offered.
- 4.3 Further to B12, 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.

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. CONVENTIONAL CAB AND CHASSIS SPECIFICATIONS

- 7.1 **STATE YEAR, MAKE AND MODEL BEING BID:** _____
- 7.1.1 **STATE CURRENT HOURMETER:** _____

GVWR

- 7.2 Total 33,000 lbs. approx., **state** _____
- 7.3 Front 13,000 lbs. approx., **state** _____
- 7.4 Rear 21,000 lbs. approx., **state** _____

Chassis Dimensions

- 7.5 Cab-to-axle 142 in. approx., suitable for crane and dump body, **state** CA _____
- 7.6 Wheelbase 208 in. approx., suitable for crane and dump body, **state** WB _____

Engine

- 7.7 Type Diesel engine, Tier IV, **state** make, model and displacement _____
- 7.8 Horsepower 300 hp approx., **state** _____
- 7.9 Torque 660 lbf-ft approx., **state** _____
- 7.10 Engine shut down Low oil pressure / high water temperature _____
- 7.11 Air intake warmer Required _____

7.12	Fuel shut-off	Electric solenoid type	_____
7.13	Air cleaner	Dry type	_____
7.14	Oil filter	Full flow, spin-on or cartridge type	_____
7.15	Fuel filter	Spin-on or cartridge type	_____
7.16	Fuel/water separator	Heated, drainable, mounted under hood, located to be protected from road spray	_____
7.17	Block heater	Immersion type, 750 Watt with plastic, covered recessed male plug, located under driver's side door	_____
7.18	Coolant	Extended life coolant, antifreeze to -35°F (-37°C)	_____
7.19	Coolant hoses	Silicone type, Gates Blue Stripe or Premium type hoses	_____
7.20	Fan Drive	Thermostatically controlled, automatic type	_____
7.21	Air compressor	Water cooled, pressure lubricated, 13 cfm	_____
	Electrical System		
7.22	Alternator	160 Amp, state make and model	_____
7.23	Starter	Delco Remy 38MT HD or equivalent, state	_____
7.24	Batteries	Two (2) or three (3), 12-volt, group 31, 2250 CCA combined capacity	_____
7.25	Battery Box	Under cab c/w enclosure, readily accessible	_____
7.26	Battery disconnect	In-cab mounted, lockable, state location	_____
7.27	Remote boost terminal	Remote battery boost terminal(s), protected from road spray, covered, state location	_____
7.28	Cab marker lights	LED	_____
7.29	Back-up alarm	Required, 97 dBA, located on inside-rear of frame rails	_____
7.30	Accessory switches	Six (6) required, dash mounted for body installation, labelled and backlit	_____
	Exhaust System		
7.31	Configuration	Single horizontal muffler with horizontal tailpipe	_____
	Transmission		
7.32	Model	Allison 3500 RDS Series	_____
7.33	Shift selector	Rotary shift control or push button	_____
7.34	Cooling	Water to oil transmission cooler	_____
7.35	PTO provision	Required with maximum clearance from exhaust	_____
7.36	Oil level dipstick	Bayonet type with high and low level markings	_____
7.37	Trans. drain plug	Magnetic type	_____
	Front Axle		
7.38	Capacity	13,000 lbs. capacity approx., state	_____
	Rear Axle		
7.39	Capacity	21,000 lbs. capacity approx., state	_____
7.40	Ratio	For 110 km/hr top speed, state ratio	_____
7.41	Differential lock	Required for rear drive axle w/dash mtd. switch	_____

Front Suspension

7.42 Type Leaf spring suspension, 13,000 lbs. capacity approx.
state _____

Rear Suspension

7.43 Type Air ride or spring ride suspension, 21,000 lbs. capacity,
approx., **state** suspension type and capacity _____

Rims, Wheels, Hubs

7.44 Front 22.5 x 8.25, 10-bolt, hub piloted _____

7.45 Rear 22.5 x 8.25, 10-bolt, hub piloted _____

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

7.47 Hub seals Oil lubricated front and rear _____

Tires, front

7.48 Size **State** size _____

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

Tires, rear

7.50 Size 11R 22.5 _____

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

Frame

7.52 Type Single or double rail, to match GVWR, 1,000,000
in.-lbs. RBM, outside frame clear _____

7.53 Application Suitable for use with a crane and dump body _____

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

Steering

7.55 Type Power _____

Brakes

7.56 Type Air, ABS _____

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

7.58 Parking brake Dash mounted air operated parking brake knob _____

7.59 Brake chambers Front and rear, vented type _____

7.60 Dust shields Front and rear _____

7.61 Moisture ejector Bendix DV-2 or Wabco equivalent, heated, required
in wet tank _____

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

7.63 Air drier Heated, **state** make and model _____

Fuel Tank

7.64 Type 189 L capacity approx., fully fuelled upon delivery _____

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

7.66	DEF tank	Diesel exhaust fluid tank, 22-30 L approx., state size and location	_____
	Cab		
7.67	Type	Conventional type, aluminum or steel w/corrosion inhibitor	_____
7.68	Hood	Fibreglass tilt	_____
7.69	Cab mounts	Rubber cab mounts	_____
7.70	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	_____
7.71	Cab silencer package	Required for minimal decibel level	_____
7.72	Floor covering	Rubber mat with under-padding	_____
7.73	Driver seat	High back, air suspension w/foldable right hand armrest, seat belt, heavy-duty cloth upholstery, Cordura or equal, state material	_____
7.74	Passenger seat	State type and material	_____
7.75	Sun visors	Dual flip-up type	_____
7.76	Steering wheel	Tilt type	_____
7.77	12-Volt power outlet	Required	_____
7.78	Radio	Factory installed AM/FM	_____
7.79	Starter switch	Key operated c/w two (2) sets of keys	_____
7.80	Interior light	Dome light with driver and passenger door switches	_____
7.81	Heater / Defroster	High output, capable of keeping all windows clear at an outside temperature of -35°F (-37°C)	_____
7.82	Air conditioning	Required	_____
7.83	Horn	Dual electric with air horn	_____
7.84	Exterior mirrors	Dual West Coast, stainless steel or polycarbonate, 7" x 14½" approx.	_____
7.85	Convex mirrors	6 in. aux., stainless steel, mtd. below West Coast mirrors, or integral type with polycarbonate mirrors, one (1) per side	_____
7.86	Downview mirror	Located over passenger door, 5" x 4" approx.	_____
7.87	Windshield wipers	Electric, intermittent	_____
7.88	Windshield washers	Electric	_____
7.89	Grab handles	Dual exterior with rubber inserts	_____
7.90	Entrance steps	Dual each side, open grate / grip type	_____
	Instrumentation		
7.91	Oil pressure	Gauge	_____
7.92	Coolant temperature	Gauge	_____
7.93	Transmission oil temp.	Gauge	_____
7.94	LOP/HWT	Warning light and buzzer	_____
7.95	Voltmeter	Gauge	_____

7.96	Air reservoir pressure	Gauge with LAP warning light and buzzer	_____
7.97	Engine hourmeter	Required, non-resettable type	_____
	Tow Hooks		
7.98	Location	Front mounted	_____
	Front Bumper		
7.99	Type	Heavy duty, custom made steel bumper, integral with superstructure, full width c/w license plate provision	_____
	Colour and Finish		
7.100	Exterior	White	_____
7.101	Interior	Dark grey or black	_____
7.102	Frame & suspension	Primed and finished with black Imron 5000 paint or equivalent	_____
	Accessories		
7.103	Flare kit	Three (3) triangular reflectors, CVSA approved	_____
7.104	Fire extinguisher	5 lb. ABC type, required in cab with mounting bracket	_____
7.105	First aid kit	Required, Provincial 1 approved kit, supplied loose	_____
	Manuals		
7.106	Operator's manual	Required, one (1) per vehicle	_____
7.107	Parts/Repair/Service	Required, including preventative maintenance schedules for life of unit, USB or online manuals preferred	_____
	Warranty		
7.108	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:	_____
7.109	Basic vehicle	State	_____
7.110	Batteries	State	_____
7.111	Drivetrain	State	_____
7.112	Cab structure/corrosion	State	_____
7.113	Frame & crossmembers	State	_____
7.114	Cab paint	State	_____
7.115	Engine	State	_____
7.116	Towing coverage	State	_____
7.117	Transmission	State	_____
7.118	Axles, front & rear	State	_____
7.119	Exhaust system	State	_____

CRANE, FELLING GRAPPLE AND DUMP BODY SPECIFICATIONS

8.0 PERFORMANCE

8.1 The crane vehicle and dump body shall be capable of operating safely and efficiently in any working position and in confined areas, and shall

be suitable for use in a tree limbing vocation, during the summer and winter conditions normal to the City of Winnipeg. _____

9.0 MAKE AND MODEL

9.1 State make and model of crane unit being bid. _____

9.2 State make and model of grapple being bid. _____

9.3 State make and model of dump body 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, a 7,000 lbs. payload of tree logs, and 900 lbs. of trailer tongue weight.

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).

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

a) Vehicle with no payload:

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

b) Vehicle with 7,000 lbs. of wood chips, 300 lbs. of cargo in compartment 1, 300 lbs. of cargo in compartment 2, and 900 lbs. of trailer tongue weight.

, 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 CRANE

11.1 Type – 5-boom section crane. _____

11.2 Crane rating – 100,000 lbf-lb rating approx., 1700 lbs. @ 47 ft. horizontal approx., **state**. _____

- 11.3 Hook height, vertical – 60 ft. approx., **state**. _____
- 11.4 Horizontal reach – 49 ft. approx., **state**. _____
- 11.5 Control bank – single side, proportional compensated, five (5) function. _____
- 11.6 Radio remote control system with additional battery and charger. _____
- 11.7 Single stage extension cylinders with sequence valves, end stroke shock absorbers, and regenerating valve. _____
- 11.8 Overload safety device – to comply with applicable standards and regulations with mechanical limiting device of the slewing, torque limiter and ball-joint adaptors for stabilizer cylinders. _____
- 11.9 Rotation – 400° approx., non-continuous rotation by rack & pinion, centralized greasing. _____
- 11.10 Stabilizers – hydraulic out and hydraulic down crane base stabilizers with “swing-up” device, c/w stabilizer pads. _____
- 11.11 Holding valves – directly flanged to cylinder barrels. _____
- 11.12 Loading hook – 8-ton capacity. _____
- 12.0 FELLING GRAPPLE**
- 12.1 Opening width – 33 in. approx. _____
- 12.2 Tree cutting diameter – 16 in. approx. _____
- 12.3 Grapple saw weight – 540 lbs. approx. _____
- 12.4 Workload – 3300 lbs. _____
- 12.5 Saw blade, length – 18 in. _____
- 12.6 Saw motor – 10cc piston motor. _____
- 13.0 DUMP BODY**
- 13.1 Type – open top log style body, steel painted construction with heavy-duty rear corners, body walls re-enforced to floor. _____
- 13.2 Length – 14 ft. _____
- 13.3 Width – 8 ft. _____
- 13.4 Height of sides – 4 ft. _____
- 13.5 Hoist – underbody, 17.5-ton scissor type hoist with dual acting cylinders. _____
- 13.6 Rear doors – two (2) 36 in. height, split in the centre, heavy duty latch and corner pins. _____
- 14.0 BODY AND CHASSIS ACCESSORIES**
- 14.1 Cab Guard – 130" Length, 12 GA sheet metal with non-skid surface and

- expanded metal section at front, black non-skid coating and access ladder. _____
- 14.2 Rear pintle style hitch – **state** capacity. _____
- 14.3 Safety chain provision – two (2) D-rings, one on each side of hitch. _____
- 14.4 Outrigger pads – two (2), plastic outrigger pads, 24" x 24" x 2". _____
- 14.5 Outrigger pad storage – complete with wash out provision. _____
- 14.6 Rear mudflaps – required. _____
- 14.7 Wheel chocks – rubber, 9.75" L x 7.75" W x 5.00" H with storage provisions. _____
- 14.8 Traffic cone holder – front bumper mounted, suitable for transporting up to four (4) 15" x 15" cones. _____
- 14.9 Underbody storage box 1 – steel, 30" L x 24" W x 24" H, single door with T-handle latch and cable stops. _____
- 14.9.1 Underbody storage box 2 – steel, 60" L x 24" W x 24" H, single door, with two (2) T-handle latches and cable stops. _____

15.0 ELECTRICAL AND LIGHTING

- 15.1 All vehicle lighting shall conform to CMVSS and Manitoba Highway Traffic Act requirements. _____
- 15.2 Supplier installed lighting and lighting equipment shall be LED and shall include the following components:
 - 15.3 Combination stop, turn and taillights – two (2). _____
 - 15.4 Back-up lights – two (2). _____
 - 15.5 Light cluster – three (3), mounted at rear of body, protected to avoid damage. _____
 - 15.6 Clearance lights – as per CMVSS and the Manitoba Highway Traffic Act. _____
 - 15.7 License plate lamp – complete with license plate bracket. _____
 - 15.8 Trailer connector – 6-pole, Pollak 11-614 or equal, wired to code, installed near rear hitch. _____
 - 15.9 Electric brake controller – required. _____
 - 15.10 Warning light package – warning lights and strobes mounted around the body and truck for 360° visibility. _____
 - 15.11 PTO hourmeter – required. _____

16.0 INSTALLATION

- 16.1 Mounting of the dump body shall be in accordance with the chassis manufacturer's guidelines for body mounting, including, but not limited to, guidelines for tire and suspension clearance and fuel filler installation. _____

16.2 Tire/body clearance – 76 mm (3 in.) plus full suspension travel. _____

16.3 Welding to truck chassis frame is not permitted (with the exception of hitch plate installation). _____

16.4 Mounting brackets shall be bolted to chassis frame using grade-8 fasteners. _____

16.5 Any holes required in chassis frame web must be drilled and reamed to fit bolts. _____

17.0 MISCELLANEOUS

17.1 Hydraulic system components – all components shall be free of leaks including, but not limited to, hoses, cylinders, valves, pumps, etc. _____

17.2 Electrical system components – electrical components including, but not limited to, headlights, taillights, reverse lights, clearance lights, warning lights, vehicle electrical systems, etc. _____

17.3 Service records – upon request of the Contract Administrator, service records shall be provided within three (3) Business Days. _____

18.0 TECHNICAL DOCUMENTS AND MANUALS

18.1 Bidders shall supply the following within five (5) working days of request of the Contract Administrator:

18.1.1 Front and rear axle weights of the complete unit, full hydraulic oil tank, fully fuelled and two operators. _____

18.1.2 Service facility description. _____

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

18.2.1 Certified weigh scale ticket of completed unit, fully fuelled. _____

18.2.2 Stability certificate. _____

18.2.3 Operator’s manuals for the entire vehicle – two (2) required. _____

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

- i) 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.

19. DELIVERY

19.1 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 **four (4) calendar weeks** from the date of award. 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.

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

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

20. WARRANTY

20.1 The warranty on the cab & chassis is listed above in 7.108 – 7.119.

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

20.3 Crane – **state**.

20.4 Felling grapple – **state**.

20.5 Dump body – **state**.

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

20.7 Provide details on any extended Warranty coverage available.
