

FORM A: BID
(See B8)

1. Contract Title SUPPLY AND DELIVERY OF AN UNDERBRIDGE INSPECTION
DEVICE VEHICLE

2. Bidder

Name of Bidder

Usual Business Name of Bidder as it appears on Invoice (if different from above)

Street

City

Province

Postal Code

Email Address of Bidder

Facsimile Number

(Mailing address if different)

Street or P.O. Box

City

Province

Postal Code

GST Registration Number (if applicable)

The Bidder is:

(Choose one)

a sole proprietor

a partnership

a corporation

carrying on business under the above name.

3. Contact Person

The Bidder hereby authorizes the following contact person to represent
the Bidder for purposes of the Bid.

Contact Person

Title

Telephone Number

Facsimile Number

Email Address

4. Definitions

All capitalized terms used in the Contract shall have the meanings
ascribed to them in the General Conditions and D3.

5. Offer The Bidder hereby offers to perform the Work in accordance with the Contract for the price(s), in Canadian funds, set out on Form B: Prices, appended hereto.

6. Commencement of the Work The Bidder agrees that no Work shall commence until he/she is in receipt of a notice of award from the Award Authority authorizing the commencement of the Work.

7. Contract The Bidder agrees that the Bid Opportunity in its entirety shall be deemed to be incorporated in and to form a part of this offer notwithstanding that not all parts thereof are necessarily attached to or accompany this Bid.

8. Addenda The Bidder certifies that the following addenda have been received and agrees that they shall be deemed to form a part of the Contract:

| No. | Dated |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

9. Time This offer shall be open for acceptance, binding and irrevocable for a period of sixty (60) Calendar Days following the Submission Deadline.

10. Indigenous Self-Declaration The City is requesting that Bidders identify if their business is at least 51% owned by one or more Indigenous persons of Canada.

YES, 51% or more Indigenous ownership

NO, it is not

This information is being gathered for statistical purposes only and will not be used for purposes of evaluation.

11. Signatures

The Bidder or the Bidder's authorized official or officials have signed this

_____ day of _____, 20_____.

Signature of Bidder or
Bidder's Authorized Official or Officials

(Print here name and official capacity of individual whose signature appears above)

(Print here name and official capacity of individual whose signature appears above)

FORM B(R1): PRICES
(See B9)

SUPPLY AND DELIVERY OF AN UNDERBRIDGE INSPECTION DEVICE VEHICLE

UNIT PRICES

| ITEM NO. | DESCRIPTION | SPEC. REF. | UNIT | QUANTITY | UNIT PRICE |
|----------|--|------------|------|----------|------------|
| 1. | Underbridge Inspection Device | 18095 | Each | 1 | |
| 2. | 105,000 lbs. GVWR Conventional Cab & Chassis | 18096 | Each | 1 | |

Name of Bidder

FORM N(R1): DETAILED SPECIFICATIONS 18095

UNDERBRIDGE INSPECTION DEVICE

1. INTENT

- 1.1 It is the intent of these specifications to describe an underbridge inspection device and other equipment as described herein, installed on a cab and chassis to be supplied by the Contractor.
- 1.2 The underbridge inspection device shall be the manufacturer's latest model, as may be modified by these specifications. The device, 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 in 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 to ensure that the manufacturer will be 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 ANSI A92.8 (Latest Edition) Bridge Inspection Unit – Safety Requirements, Definitions and Specifications, form an integral part of these specifications and shall have precedence in any conflict concerning minimum acceptable standards.
- 2.2 All applicable SAE Standards form an integral part of the chassis specifications and shall have precedence in any conflict concerning minimum acceptable standards.
- 2.3 The completed underbridge inspection device shall comply with the Canadian Motor Vehicle Safety Act (CMVSS) and the Manitoba Highway Traffic Act and all regulations thereunder. It is understood that the completed unit's weights will not meet legal limits and will have to be permitted by the City.
- 2.4 All welding and welding designs of the load supporting elements shall conform to the requirements of the Canadian Standards Association Standard W47.1-03 and W59-03 or US standards AWS D1.1 and D1.2.

3. QUALIFICATIONS OF THE MANUFACTURER

- 3.1 The manufacturer of the underbridge inspection device shall have a minimum of five (5) years continuous experience manufacturing and installing devices 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 under bridge inspection equipment.
- 4.2 The Contractor shall have an authorized service facility located within 10 km of the boundaries of the City of Winnipeg. The facility, or a portion thereof, shall be dedicated to the service, maintenance and warranty of the bridge inspection unit being offered. Further to B9.1, Bidders shall provide a description of the service facility including, but not limited to, number of qualified service staff, years of service experience on bridge inspection units, and general service capabilities. A

description of the service facility shall be provided within 3-Calendar Days upon request of the Contract Administrator.

- 4.3 If a suitable warranty facility is not available within 10 km of the boundaries of the City of Winnipeg, the Bidder may propose that warranty work be performed by the City of Winnipeg Repair Facility. Any Work performed by the City of Winnipeg Repair Facility shall be charged to the Contractor at the Facility's shop rate in effect at the time the work is performed (for example, shop rate for 2018: \$109.⁰⁰/hour regular time, \$129.⁰⁰/hr overtime and callout.
- 4.4 The Contractor shall furnish a letter, stamped by a registered professional engineer, indicating that the completed underbridge inspection device vehicle complies with ANSI A92.8 Standards.
- 4.5 All welding and welding design of the load supporting elements shall conform to the requirements of the ANSI A92.8 Standards.

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 shall be clearly stated and fully detailed. Alternatives shall be considered subject to evaluation.
- 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. PERFORMANCE

- 6.1 The under bridge inspection device vehicle shall be capable of operating safely and efficiently without the use of outriggers in any working position and in confined areas while performing bridge inspections and maintenance functions during summer and winter conditions normal to the City of Winnipeg. Temperature ranges in the City of Winnipeg are -40°C to +40°C

7. CAB AND CHASSIS

- 7.1 The cab and chassis shall be a new, 2019 cab and chassis complying with Detailed Specifications 18096 in accordance with the instructions given.

8. UNDERBRIDGE INSPECTION UNIT (GENERAL)

- 8.1 Type – 62 ft. horizontal reach underbridge inspection device, with 4 articulating booms, two (2) rotating turrets with an aluminium work platform. _____
- 8.1.1 **State** make and model being bid. _____
- 8.2 Overall travel height – 162 in. approx., **state** height. _____
- 8.3 Booms – four (4) articulating booms, three (3) hydraulically extendable sections. _____
- 8.4 Reach of each boom stage:
 - a) Horizontal underbridge reach – 62 ft. approx., **state**. _____
 - b) Vertical reach down – 67 ft. 6 in. approx., **state**. _____
 - c) Vertical reach up – 51 ft. 6 in. approx., **state**. _____
 - d) Sidewalk clearance – 17 ft. approx., **state**. _____

- e) Boom 1 movement – +30° to -35°. _____
- f) Boom 2 movement – 0° to -105°. _____
- g) Boom 3 movement – +90° to -60°. _____
- h) Boom 4 movement – +90° to -36°. _____
- i) Vertical clearance, boom 1 to boom 3 – 24 ft. _____
- 8.5 Rotation No. 1 – 270°, ability to operate over either side of the truck. _____
- 8.6 Rotation No. 2 – 180°. _____
- 8.7 Tilt alarm system to indicate excessive slope condition. _____
- 8.8 Booms 3 and 4 to have anchor points to assist with potential rescue operations. _____
- 9. UNDERBRIDGE INSPECTION DEVICE PLATFORM**
- 9.1 Personnel platform – end-hung, continuous aluminium skin construction (i.e., expanded mesh not acceptable) with non-skid floor including telescoping and hydraulic 180° rotating features.
- 9.1.1 Platform dimensions – 40" L x 72" W x 42" H. _____
- 9.1.2 Platform capacity – 600 lbs.** _____
- 9.1.3 Safety lanyard attachments – three (3), **state** size and type. _____
- 9.2 Platform levelling system – automatic, hydraulic. _____
- 9.3 Platform folding steps – four (4) fold-down steps installed on the inside face of the front and back walls of the platform. Steps to have a serrated surface to prevent skidding, 6½" L x 6½" W, 500 lbs. capacity each. Exact locations to be discussed at time of installation. _____
- 9.4 Platform heater – permanently installed in the platform. **State** make, model and type being bid. _____
- 10. COUNTERWEIGHT, SPRING LOCKOUTS AND SUBFRAME**
- 10.1 Outrigger shall not be provided. The unit shall be capable of performing safely in all working positions without the use of outriggers from either left or right side of the truck. _____
- 10.2 Stability requirements – to meet ANSI A92.8** _____
- 10.3 Counterweight – at base of the pedestal, able to rotate with the unit. _____
- 10.4 Hydraulic sliding counterweight – installed under the truck to optimize weight and counterbalance position. _____
- 10.5 Counterweights to stay within the confines of the truck body when stowed and in operation. _____
- 10.6 Spring lockouts shall be provided on all springs, four (4) required. _____

- 10.7 Colour monitor – located at the pedestal enabling operators to constantly monitor boom and turret movements. _____
- 10.8 Interlock system – tied into the controls to maintain operation within the unit's full range of stability. _____
- 10.9 Sub-frame – plated type, full length, fastened to top of chassis frame. _____
- 10.9.1 Method of attaching sub-frame to be detailed in manufacturer's mounting plans and specifications to be supplied within forty eight (48) hours of the request of the Contract Administrator. _____
- 11. HYDRAULIC CONTROLS**
- 11.1 Controls – full metering with separate levers for each function. Control levers shall be protected to prevent accidental actuation of any boom or turret functions. _____
- 11.2 Controls to be hardwired with wireless capability, included at both operator stations. _____
- 11.3 Controls to permit for multiple, simultaneous boom movements, and to be fully featherable and meterable. _____
- 11.4 Two speed engine throttle control to be provided for use when platform controls are utilized. _____
- 11.5 Emergency stop button – red palm button, designed to shut down both the chassis and auxiliary engines. _____
- 11.6 Master control group – located at the pedestal with controls for all boom and rotation functions. _____
- 11.6.1 Controls shall be mounted in the platform, protected from the elements with a cover. _____
- 11.6.2 Lower controls shall be capable of overriding the platform controls. _____
- 11.6.3 Master control group to include the following:
 - a) Pressure gauge. _____
 - b) Spring lockout controls. _____
 - c) Override handle. _____
 - d) Emergency stop button. _____
 - e) Lower/upper control selector switch. _____
 - f) Hourmeter for underbridge crane when in use. _____
- 11.7 Throttle control – switch controlled. _____
- 11.8 Interlock override – located with the master control group, secured behind a cover.** _____
- 11.9 All controls must be clearly identified with permanent, engraved type labels. Glued labels will not be accepted. _____

11.10 Control system – microprocessor control system with graphical terminal, colour display for unit operation, individual function performance. Display to monitor unit’s parameters, hydraulics and enable troubleshooting. _____

11.11 Communication system – provided with speakers in the truck cab, at the turntable, and in the platform. Platform station to operate in hands-free mode. _____

12. HYDRAULICS

12.1 PTO – Constant mesh, Muncie Powerclutch, Chelsea or equivalent in accordance with B6 Substitutes. **State** make and model. _____

12.1.1 Electric shift with in-cab controls, operable from a normal driving position. _____

12.2 Pump – to meet underbridge inspection device requirements. **State** make and model. _____

12.3 Hydraulic oil reservoir – steel construction, baffled as required, complete with breather type filler cap with filter, filler strainer, sight gauge (or dipstick) and drain plug. _____

12.4 Suction strainer – 100 micron with magnetic suction separator, in tank mounted, flow capacity of 2-times pump capacity. _____

12.5 Shut-off valve – located between reservoir and pump, secured in open position with bracket and bolt. _____

12.6 Return line filter – 10 micron, spin-on type, serviceable without oil loss. _____

12.7 Relief valve(s) – provided to adequately protect the system and provide hydraulic, overload protection to all functions of the underbridge inspection device. _____

12.8 Hydraulic oil – suitable for climatic conditions normal to the City of Winnipeg, MIL spec 5606A. **State** recommended oil and Petro-Canada equivalent. _____

12.8.1 Tank label – hydraulic tank to be labeled with a permanent type, engraved style label stating the manufacturer and type of oil being used. _____

12.9 Hydraulic tubing shall be guarded as necessary. _____

12.10 Hydraulic hoses – burst rated at 4 times working pressure, protected at all wear and scuff locations. _____

12.11 Hydraulic cylinders – double acting type, equipped with integral holding valves. _____

12.12 Emergency override – shall allow hydraulic control of boom functions in the event of engine failure. _____

13. BODY COMPARTMENTS

13.1 For the purpose of this specification:
L – Length, along or parallel to chassis frame rails.
H – Height or vertical.
D – Depth on horizontal plane across chassis.

- 13.2 **Compartment layout, general – one (1) underdeck compartment, three (3) deck mounted compartments.** _____
- 13.2.1 **State make and model of compartments being bid.** _____
- 13.3 **Compartment layout, right (curb) side:**
- 13.3.1 **Horizontal compartment 1 – under deck mounted at front of deck, bottom hinged door, 30"L x 24"H x 24"D approx.** _____
- 13.4 **Compartment layout left (street) side:**
- 13.4.1 **Horizontal compartments 2-4 – three (3) deck-mounted compartments, top hinged door, 48"L x 18"H X 24"D approx.** _____
- 13.5 Compartment door handles – stainless steel paddle type, with locks that are keyed alike. _____
- 13.6 Door hinges and latches – stainless steel with adjustable striker plates. _____
- 13.7 All compartment door openings shall be sealed using automotive, bulb type, rubber gaskets. _____
- 13.8 Vertical doors shall have rigid type door springs. Horizontal doors shall be equipped with check chains or heavy duty gas struts. _____
- 13.9 Drip moulding – installed along the full length of the body above the door openings. _____
- 13.10 All body seams shall be caulked with an automotive grade elastomeric sealant. _____
- 14. **MAIN DECK ASSEMBLY**
- 14.1 Deck – ¼ in. steel checker-plate, full width, full length. _____
- 14.2 Deck sides – 4"x 1½" x ⅛" rectangular steel tubing. _____
- 14.3 Tire/deck clearance – bumper pad clearance plus 3 in. minimum.
- 15. **ACCESSORIES**
- 15.1 Auxiliary engine – 20 hp auxiliary diesel engine installed under deck in steel compartment, engine fuel run from chassis fuel tank, auxiliary engine c/w a non-resetable hourmeter. Exhaust pipe to run horizontal under the chassis and vertical up the passenger side adjacent to the main exhaust discharge and mounted to main exhaust discharge. **State** make and model of auxiliary engine being bid. _____
- 15.1.1 Generator – 5 kW generator installed, direct mounted to auxiliary engine. _____
- 15.1.2 Outlets – one (1) 120 V duplex and one (1) 240 V outlet provided in platform. _____
- 15.2 Intercom system – 12 V provided in the cab, at the pedestal and in the platform. _____
- 15.3 Floodlights – two (2) 12 V removable LED floodlights provided in the platform. _____
- 15.4 **High pressure wash line – ½ in. OD provided in platform, routed to rear of**

truck c/w quick coupler connectors on both ends.

15.5 Video monitoring system – cameras suitable to withstand -40°C to +40°C temperatures, mounted to Turret 2 and Boom 3 with exact installation locations to be verified prior to installation. Cameras to allow for constant monitoring of personnel in the platform c/w multi-view monitor mounted in the cab, visible to the driver.

16. REAR BUMPER AND HITCH

16.1 Rear bumper – heavy duty bumper, full width with fold down step.

16.2 Rear hitch plate – ½ in. thick solid steel, (laminated plates unacceptable) installed to chassis frame.

16.3 Hitch reinforcement – “A” frame hitch reinforcement including 3"x3"x³/₈" angle iron welded to back of hitch plate and bolted to chassis frame web *OR* integrally welded into back of truck frame.

16.4 Combination hitch – Premier 150 with 2 in. ball or equivalent hitch, adjustable hitch heights, initially installed on hitch plate at a 24 in. height.

16.5 Lunette eyes for trailer safety chains – one (1) each side of hitch, Buyers Products B56730 or equivalent in accordance with B6.

17. ELECTRICAL & LIGHTING

17.1 All vehicle lighting shall conform to C.M.V.S.S. (latest revision) and Manitoba Highway Traffic Act requirements.

17.2 Supplier installed lighting shall be LED Truck-Lite, Grote or equivalent in accordance with B6 and shall include the following components:

17.2.1 Combination stop/turn/tail lights – P/N 44302R, one (1) per side with P/N 40700 mounting grommets, flush or recess mounted in rear kick plate.

17.2.2 Turn signal flash rate – 70-90 flashes per minute.

17.2.3 Back-up lights – P/N 44206C, one (1) per side with 40700 mounting grommets.

17.2.4 3-light cluster – three (3) P/N 10250R with P/N 10700 mounting grommets.

17.2.5 Clearance lights – P/N 10250R and 10250Y with P/N 10700 mounting grommets.

17.2.6 Licence plate lamp – P/N 36140, complete with license plate bracket.

17.2.7 Lighting harnesses – Truck-Lite 50 Series Harness system or equivalent in accordance with B6, properly routed and secured, protected from damage. The lighting harness shall not be spliced into the main truck harness.

17.3 Junction box – P/N 50400 or equivalent in accordance with B6, complete with necessary compression fittings, necessary for all vehicle lighting harness connections, located inside rear of truck frame, readily accessible, protected from elements.

17.4 All plug in connectors to be coated with Truck-Lite NYK Compound or equivalent in accordance with B6 prior to assembly.

- 17.5 Back-up alarm – STAR 62-097 or equivalent in accordance with B6 , 97 dB(A) rating, installed at rear of body, located to be protected from damage and road spray. _____
- 17.6 Back-up camera – 2½" camera light, mounted in centre 3-light cluster light housing, PRO Series or equivalent in accordance with B6, c/w 7" in-cab colour monitor. _____
- 17.7 Mini Light Bars – two (2), Whelen R2LPPA or equivalent in accordance with B6, top-mounted for 360° visibility. _____
- 17.7.1 Branch guard – heavy duty branch guard constructed by 3/8 in. roundbar. _____
- 17.7.2 Oval LED warning lights – ten (10) Whelen 5GA00FAR or equivalent in accordance with B6, three (3) per side, two (2) front and two (2) rear. Exact locations to be determined at time of installation. _____
- 17.7.3 Mini light bars and oval LED warning lights shall be wired through the ignition, wired through a single OEM dash mounted fused switch, labelled with a permanent type, engraved style label.
- 17.8 Power take-off engaged warning light – O.E.M. warning light.
- 17.9 Boom stow warning light – red lens mounted on the instrument panel, normally on when the boom is not in fully stored position. A micro switch is required to trigger the light. _____
- 17.10 All warning lights (except PTO) shall be double contact, wired so that switch is on the ground side of the lamp. _____
- Note:** Pre-wired systems such as Wired Rite or truck OEM dash mounted switches are acceptable in lieu of dash mounted warning lights specified in 17.7, 17.8 and 17.9.
- 17.11 All wiring for locally installed accessories, lights and back-up alarm shall be colour coded, loomed and properly secured and protected from damage. _____
- 17.12 All joining wires shall be soldered and sealed using heat shrink tubing (crimp-on electrical connectors for joining wires are not acceptable). _____
- 17.13 Any holes required to run wires through shall be drilled (not punched), grommited and sealed as necessary. _____
- 17.14 Hourmeter – dash mounted, non-resetable, energized by engagement of PTO. _____
- 17.15 All switches and warning lights shall be identified with permanent engraved type labels. No labels allowed on upper surface of dash. _____
- 17.16 Duplex receptacles – four (4) required, GFI, CSA approved, weatherproof type with hinged covers. _____
- 17.16.1 Mounting locations – one (1) curb side below deck, one (1) passenger side below deck, one (1) at rear of unit, one (1) in the platform. Lower deck mounted outlets to be located for prevention of road spray. _____

17.17 The complete 120 V electrical system installation shall be certified by the Manitoba Department of Labour and the necessary approval sticker shall be supplied.

18. INSTALLATION

18.1 The Contractor shall install the underbridge inspection device on the chassis specified in attached tandem-tandem cab & chassis Detailed Specifications 18096.

18.2 Bridge Inspection Unit shall be installed in accordance with ANSI A92.8 and in accordance with the bridge crane manufacturer's guidelines.

18.3 Mounting of the deck shall be in accordance with the chassis manufacturer's guidelines for body mounting including, but not limited to, guidelines for tire and suspension clearance.

18.3.1 Bidders shall supply within forty eight (48) hours of the request of the Contract Administrator, a diagram and description showing the manufacturer's recommended body and deck to chassis mount.

18.4 Welding to truck chassis frame is not permitted.

18.5 Mounting brackets to be bolted to chassis frame using grade-8 fasteners.

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

18.7 All non-continuous body seams (joints) shall be caulked with an automotive grade elastomeric sealant.

18.8 Departure angle of completed unit – 12° or higher. **State** angle.

18.9 Overall height decal – engraved type, installed in chassis cab.

18.10 Isolators – all interfaces between aluminium and steel are to be separated by $\frac{1}{16}$ in. thick rubber or neoprene sheet to prevent galvanic corrosion. Bolts used on aluminium or between aluminium and steel shall be bolted through with stainless steel bolts and non-conductive bushings.

19. MISCELLANEOUS

19.1 Mudflaps – no name, fabric reinforced, black rubber with anti-sail brackets installed fore and aft of and rear tires. Mudflaps required aft of front tires, both axles.

19.2 Grab handles – supplied to provide safe access on and off deck.

19.3 Grease fittings – readily accessible, with remote fittings where applicable.

19.4 Anchor points – for safety and rescue purposes, six (6) anchor points/ eye bolts are to be provided, three (3) per side of the truck, 5,000 lbs. capacity each. The steel eye bolts must have a 2½ in. ID or higher, evenly spaced either along the frame rails or the sides of the flat deck.

19.5 Access steps/ladder – for safety and rescue purposes, traction type ladder rungs to be attached to Boom No. 4 to access the bucket when in the vertical or near vertical position. The boom must also contain anchor points for

lanyard attachments. Specific design to be discussed at pre-production meeting.

20. AUTO GREASING SYSTEM

- 20.1 Greasing system – to be incorporated into cab & chassis and underbridge unit (where applicable), Parallel NLGI-0 or equivalent in accordance with B6, 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.
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- 20.2 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.
-
- 20.3 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.
-
- 20.4 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 ¼ in. DOT approved airline must be applied and fitted with an air system protection check valve into the system secondary tank.
-
- 20.5 Grease lines, main – extreme low temperature type (e.g. Parker Blue Stripe) steel braided rubber hose with compatibility to accommodate working pressure of 5000 psi. System mainline must be outfitted with #4 JIC crimped ends.
-
- 20.5.1 Grease lines, secondary – 3/16 in. nylon heavy wall secondary grease line or equivalent in accordance with B6, and must be installed and protected from extreme environments such as heat sources and components producing vibration.
-
- 20.6 Thread sealant – applied to main and secondary grease lines of each fitting.
-
- 20.7 Colour coded lines – all secondary grease lines must use colour coded line from the injector to the conned component.
-
- 20.8 Greasing points – **state** quantity of greasing points.
-
- 20.8.1 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.
-
- 20.9 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.
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- 20.10 Environmental impact, overgreasing – the system layout and grease injector delivery shall not overgrease 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.
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21. COLOUR AND FINISH

- 21.1 Underbridge inspection device steel boom sections – sandblasted and painted using primer and paint process, applied to components prior to assembly so that all surfaces are coated. _____
- 21.2 Bumper, boom rests, shall be sandblasted, primed, then painted black using polyurethane enamel. _____
- 21.3 Deck surface – properly cleaned and coated with Davis Frost LX-00097 Black Sure Foot Enamel or equivalent in accordance with B6. _____
- 21.4 All metal surfaces to be painted shall be free of oil, dirt, rust etc.. Chemical pre-treatment such as multistage cleaners are acceptable. _____

22. TECHNICAL DOCUMENTS AND MANUALS

- 22.1 Bidders shall include the following, within forty-eight hours of the request of the Contract Administrator:
 - 22.1.1 Two (2) sets of three (3) view drawings showing complete unit including chassis, underbridge inspection device, compartments, etc. _____
 - 22.1.2 Estimated front and rear axle weights of the complete unit (chassis, device, compartments, etc. fully fuelled, full hydraulic tanks). _____
 - 22.1.3 Service facility description (see section 4.2). _____
 - 22.1.4 Subframe mounting plans (see section 10.9.1). _____
 - 22.1.5 Body and deck mounting plans. _____
- 22.2 Prior to final inspection the Contractor shall provide the following;
 - a) Scale weight ticket of the completed unit. _____
 - b) Certification letter (see section 4.4). _____
 - c) Operator’s manuals for underbridge inspection device – three (3) sets. _____
 - d) Parts, repair and technical maintenance manuals – USB or online format with the following comprising a set:
 - i) Underbridge inspection device lubrication chart. _____
 - ii) Maintenance manual. _____
 - iii) Unit parts book/list. _____
 - iv) Electric wiring diagram (as built) of the completed unit. _____
 - v) Hydraulic circuit diagram (as built) of the completed unit. _____
 - vi) Parts, repair and service manual for auxiliary engine. _____

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

Bidder shall provide information on any manuals that are available in an electronic format.

23. PERFORMANCE RELIABILITY

23.1 The Contractor shall assure the City of Winnipeg that the manufacturer shall be responsible for the design of the complete underbridge inspection device vehicle, its performance, and reliability. _____

23.2 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 schedule. _____

23.2.1 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. _____

24. WARRANTY (Underbridge Device)

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

24.2 Body, exterior – **state**. _____

24.3 Underbridge device – **state**. _____

24.4 Electrical, lighting, etc. – **state**. _____

24.5 Generator – **state**. _____

24.6 Provide details on any extended Warranty coverage available. _____

25. FIRST SERVICE PREVENTATIVE MAINTENANCE KIT

25.1 In order to assure minimum downtime of the equipment in future service, the Contractor shall provide one (1) complete replacement set of new OEM filters for the unit purchased (chassis and body). The set or required filters shall include air, fuel, oil, cabin and hydraulic filters, or otherwise all known

necessary common replacement filters for the first preventative maintenance service.

- 25.2 The Contractor shall provide a list of OEM 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 (Chassis and body).

26. DISCOUNT FOR PARTS AND LABOUR

- 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.

FORM N(R1): DETAILED SPECIFICATIONS 18096

105,000 LBS. GVWR CONVENTIONAL CAB & CHASSIS
(Underbridge Inspection Device Chassis)

1.0 TYPE

1.1 Shall be a **105,000 lbs. GVWR tri-axle, tandem steer** conventional cab & chassis suitable for use as an underbridge inspection device truck. The vehicle shall be furnished complete and ready for use with all features and equipment as described herein.

1.2 **STATE MAKE AND MODEL BEING BID: 2019** _____

2.0 OTHER SPECIFICATIONS AND STANDARDS

2.1 All applicable SAE standards form an integral part of these specifications and shall have precedence in any conflict concerning minimum acceptable standards.

2.2 The completed unit and all its components shall comply with all C.M.V.S.S. and Manitoba Highway Traffic Act regulations and requirements including, but not limited to, a Manitoba Government Inspection with Safety Sticker on the driver's side window.

3.0 SERVICE FACILITY

3.1 For the purpose of warranty repairs, the cab & chassis supplier shall have an authorized service facility located within 10 km of the boundaries of the City of Winnipeg. The facility, or a portion thereof, shall be dedicated to the service and maintenance of the type equipment being offered. Further to B9.1, Bidders shall provide a description of the service facility including, but not limited to, number of qualified service staff, years of service experience, and general service capabilities within three (3) Business Days upon request of the Contract Administrator.

4.0 INSTRUCTIONS FOR COMPLETION OF SPECIFICATIONS

4.1 All items in these specifications must be answered indicating compliance or non-compliance. **Bidders shall state "yes" for compliance or state deviation**, or give reply where requested to do so. Deviations shall be clearly stated and fully detailed. Alternatives will be considered subject to evaluation.

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

| ITEM | SPECIFICATION | BIDDER TO STATE "YES" OR STATE DEVIATION |
|-------------|----------------------|---|
| 5.0 | | |
| | GVWR | |
| 5.1 | Total | 105,000 lbs. approx., state _____ |
| 5.2 | Front tandem | 36,000 lbs. approx., state _____ |
| 5.3 | Rear tri-axle | 69,000 lbs. approx., state _____ |
| | Dimensions | |
| 5.4 | Cab to Axle | 236 in. effective approx., state _____ |
| 5.5 | Wheelbase | Suitable for Underbridge unit, state _____ |

DETAILED SPECIFICATIONS 18096 (continued)

| | | | |
|------------|-----------------------------|--|-------|
| 5.6 | Turning radius | State | _____ |
| | Engine | | |
| 5.7 | Type | Tier IV Final Diesel, inline 6-cylinder, state make and model being bid | _____ |
| 5.8 | Horsepower | 410 HP gross, state | _____ |
| 5.9 | Torque | 1550 lbf-ft, state | _____ |
| 5.10 | Engine shut down | Low oil pressure / high water temperature | _____ |
| 5.11 | Air cleaner | Dry type | _____ |
| 5.12 | Air intake restriction ind. | Dash mounted indicator | _____ |
| 5.13 | Oil drain plug | Magnetic type | _____ |
| 5.14 | Oil filter | Full flow, spin-on type | _____ |
| 5.15 | Fuel filter | Spin-on type | _____ |
| 5.16 | Fuel/water separator | Heated, drainable, mounted under hood, located to be protected from road spray | _____ |
| 5.17 | Fuel line primer pump | Required | _____ |
| 5.18 | Block heater | Immersion type, 1200 Watt with covered recessed male plug, located under driver's side door | _____ |
| 5.19 | Coolant | Extended Life coolant, antifreeze to -35°C | _____ |
| 5.20 | Coolant filter | Spin on type | _____ |
| 5.21 | Coolant hoses | Silicone type, Gates Blue Stripe or equivalent in accordance with B6 | _____ |
| 5.22 | Fan Drive | Thermostatically controlled, automatic type | _____ |
| 5.23 | Air compressor | Water cooled, pressure lubricated, 13-18 cfm | _____ |
| | Electrical system | | |
| 5.24 | Electrical type | Point to point or Multiplex | _____ |
| 5.25 | Electrical connectors | Plug-in, sealed type | _____ |
| 5.26 | Alternator | 130 Amp Delco Remy 35-SI or equivalent in accordance with B6 | _____ |
| 5.27 | Starter | Delco Remy 41-MT/OCP 450 Series with thermal protection | _____ |
| 5.28 | Circuit breakers | Auto-reset, readily accessible | _____ |
| 5.29 | Batteries | Three (3), 12-Volt, group 31, 2250 CCA combined capacity | _____ |
| 5.30 | Battery Box | Under cab or frame mounted c/w enclosure | _____ |
| 5.31 | Battery disconnect | In-cab mounted outboard of driver's seat, lockable with pad lock | _____ |
| 5.32 | Battery boost terminal | Remote battery boost terminal(s), protected from road spray, covered, state location | _____ |
| 5.33 | Cab marker lights | LED | _____ |

DETAILED SPECIFICATIONS 18096 (continued)

| | | | |
|-----------------------|------------------------|---|--|
| 5.34 | 2-way radio circuit | Independent 20 Amp circuit, ignition powered, wired under dash loose, labelled | |
| 5.35 | Accessory switches | As necessary for body installation, dash-mounted for "PTO", "Warning Lights" "Boom Stow" etc. and additional two (2) switches labelled "Aux". All switches complete and wired for body installation, labeled and backlit. State quantity | |
| Exhaust system | | | |
| 5.36 | Configuration | Stationary extreme outboard single right hand, horizontal muffler under cab, passenger side, chrome vertical discharge on passenger side, underframe routing, vertical portion cab mounted. Discharge tip shall have a backslash type end | |
| 5.37 | Overall exhaust height | Approx. 18 in. higher than cab roof line | |
| 5.38 | Heat shield | Necessary over exhaust next to cab door | |
| Transmission | | | |
| 5.39 | Model | Allison 4500 RDS with 6-speed programming or equivalent in accordance with B6. Transmission to come with load base management programming. Bidder to provide a performance SCAAN within three (3) days of a request of the Contract Administrator | |
| 5.40 | Shift selector | Digital push-button type, dash mounted | |
| 5.41 | Cooling capacity | Water to oil transmission cooler, as per manufacturer's recommendation for severe duty cycle | |
| 5.42 | Oil level dipstick | Bayonet type with high and low level markings | |
| 5.43 | Fluid | Synthetic type | |
| 5.44 | Trans. drain plug | Magnetic type | |
| Front axle | | | |
| 5.45 | Type | Tandem axle, 36,000 lbs. capacity or higher, state make, model and capacity | |
| 5.46 | Axle spacing | To meet the Manitoba Highway Traffic Act, 64-72 in. approx., state | |
| Rear axle | | | |
| 5.47 | Type | Meritor or equivalent in accordance with B6, 69,000 lbs. capacity approx. | |
| 5.48 | Ratio | For 110 km/hr top speed, state ratio | |
| 5.49 | Inter-axle lock | Complete with dash mounted switch | |
| 5.50 | Differential lock | For both drive axles w/dash mounted switch | |
| 5.51 | Fluid | Synthetic | |
| Hubs/Hub seals | | | |
| 5.52 | Hubs | Steel or iron hubs, front and rear | |

DETAILED SPECIFICATIONS 18096 (continued)

| | | | |
|------|-------------------------|---|-------|
| 5.53 | Hub seals | Oil lubricated front and rear | _____ |
| | Front suspension | | |
| 5.54 | Type | Multi-leaf spring suspension, 36,000 lbs. capacity | _____ |
| | Rear suspension | | |
| 5.55 | Type | Air ride suspension with 69,000 lbs. capacity, approx., state make and model being bid | _____ |
| | Rims, wheels | | |
| 5.56 | Front | 22.5 x 12.25 steel disk, hub piloted | _____ |
| 5.57 | Rear | 22.5 x 8.25 steel disk, hub piloted | _____ |
| | Tires, front | | |
| 5.58 | Make & Model | Mud & Snow, state make and model being bid | _____ |
| 5.59 | Size | 385/65R 22.5, 18-ply | _____ |
| | Tires, rear | | |
| 5.60 | Make & Model | Mud & Snow, state make and model being bid | _____ |
| 5.61 | Size | 11R 22.5, 16-ply | _____ |
| | Frame | | |
| 5.62 | Type | 110,000 psi, 3,500,000 in-lb RBM | _____ |
| 5.63 | Application | Suitable for underbridge crane installation | _____ |
| 5.64 | Chassis fasteners | Grade-8 threaded hex headed frame fasteners | _____ |
| 5.65 | Afterframe | As required for underbridge crane, 130 in. approx. | _____ |
| | Steering | | |
| 5.66 | Type | Power | _____ |
| | Brakes | | |
| 5.67 | Type | Air, ABS, S-cam drum brakes, front & rear | _____ |
| 5.68 | Slack adjusters | Clearance sensing, automatic type, Meritor or equivalent in accordance with B6 | _____ |
| 5.69 | Parking brake | Spring set, four (4) chamber system | _____ |
| 5.70 | Brake pots | Vented type | _____ |
| 5.71 | Dust shields | Front and rear | _____ |
| 5.72 | Moisture ejector | Heated, required in all air tanks Bendix DV-2 or equivalent in accordance with B6 | _____ |
| 5.73 | Drain valves | Manual, chain or cable operated, required on each air tank | _____ |
| 5.74 | Air drier | Heated, Wabco System Saver 1200 or equivalent in accordance with B6, | _____ |
| | Fuel tank | | |
| 5.75 | Type | Aluminium, 300 L capacity approx., fully fuelled upon delivery | _____ |

DETAILED SPECIFICATIONS 18096 (continued)

| | | | |
|--------|-----------------------|---|-------|
| 5.76 | Tank straps | Steel straps with 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion | _____ |
| 5.77 | Fuel separator | Heated, drainable | _____ |
| | Cab | | |
| 5.78 | Type | Conventional w/corrosion inhibitor | _____ |
| 5.79 | Construction | Aluminium or galvanized steel construction | _____ |
| 5.80 | Cab mounts | Air suspension | _____ |
| 5.81 | Cab interior / trim | Extreme climate insulation including cloth or vinyl headliner on roof, door panels and rear interior of cab | _____ |
| 5.82 | Cab silencer package | For minimal decibel level | _____ |
| 5.83 | Interior door storage | Driver and passenger door map pockets | _____ |
| 5.84 | Overhead storage | Overhead console storage pocket | _____ |
| 5.85 | Hood/Firewall/Engine | Insulated hood liner, engine cover and firewall | _____ |
| 5.86 | Floor covering | Rubber mat with under-padding | _____ |
| 5.87 | Floor mats | Two (2), rubber | _____ |
| 5.88 | Driver's seat | High back, air suspension w/foldable armrests, heavy-duty cloth upholstery, state material | _____ |
| 5.89 | Passenger seat | High back, air suspension w/foldable armrests, heavy-duty cloth upholstery, state material | _____ |
| 5.90 | Sun visors | Dual flip-up type | _____ |
| 5.91 | Steering wheel | Tilt and telescopic type | _____ |
| 5.92 | 12-Volt power outlet | Socket type with independent circuit | _____ |
| 5.93 | Radio | Factory installed AM/FM with "hands free" Bluetooth [®] capability | _____ |
| 5.94 | Starter switch | Key operated c/w three (3) sets of keys | _____ |
| 5.95 | Interior light | Dome light with driver and passenger door switches | _____ |
| 5.96 | Heater/Defroster | High output, capable of keeping all windows clear at an outside temperature of -35°F (-37°C) | _____ |
| 5.97 | Air conditioning | Factory OEM, in-cab | _____ |
| 5.98 | Brake & accel. pedals | Hanging type brake and accelerator pedals | _____ |
| 5.99 | Horn, electric | Dual electric | _____ |
| 5.99.1 | Horn, air | Single or dual trumpet greater than 100 dBA | _____ |
| 5.100 | Exterior mirrors | Dual polycarbonate unpainted aerodynamic mirrors with integral convex mirrors, 16" x 7", heated, 4-way motorized adjustment, suitable for 102 in. equipment width | _____ |
| 5.101 | Downview mirror | Located over passenger door, 5" x 4" approx. | _____ |
| 5.102 | Windshield wipers | Electric, intermittent | _____ |

DETAILED SPECIFICATIONS 18096 (continued)

| | | | |
|-------|------------------------|--|-------|
| 5.103 | Windshield washers | Electric | _____ |
| 5.104 | Grab handles | Dual exterior | _____ |
| 5.105 | Entrance steps | Dual each side, open grate / grip type | _____ |
| 5.106 | Winter front | Heavy-duty vinyl w/twist lock or snap type fasteners | _____ |
| | Instrumentation | | |
| 5.107 | Oil pressure | Gauge | _____ |
| 5.108 | Coolant temperature | Gauge | _____ |
| 5.109 | Transmission oil temp. | Gauge | _____ |
| 5.110 | LOP/HWT | Warning light and buzzer for low oil pressure and high water temperature | _____ |
| 5.111 | Voltmeter | Gauge | _____ |
| 5.112 | Air reservoir pressure | Gauge with low air pressure warning light and buzzer | _____ |
| 5.113 | Engine hourmeter | Non-resetable type | _____ |
| | Tow hooks | | |
| 5.114 | Location | Front mounted | _____ |
| | Front bumper | | |
| 5.115 | Type | Steel, full width | _____ |
| | Colour | | |
| 5.116 | Exterior | White | _____ |
| 5.117 | Interior | Black or grey | _____ |
| 5.118 | Frame & suspension | Primed and finished with black Imron 5000 paint | _____ |
| 5.119 | Wheels | Powder coated white | _____ |
| | Accessories | | |
| 5.120 | Flare kit | Three (3) triangular reflectors, CVSA approved | _____ |
| 5.121 | Fire extinguisher | 5 lb. ABC type, required in cab with mounting bracket | _____ |
| | Warranty | | |
| 5.122 | 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 warranties: | _____ |
| 5.123 | Basic vehicle | State | _____ |
| 5.124 | Batteries | State | _____ |
| 5.125 | Drivetrain | State | _____ |
| 5.126 | Cab structure | State | _____ |
| 5.127 | Cab corrosion | State | _____ |
| 5.128 | Frame & crossmembers | State | _____ |
| 5.129 | Cab paint | State | _____ |

DETAILED SPECIFICATIONS 18096 (continued)

| | | | |
|-------|------------------------|---|-------|
| 5.130 | Engine | State | _____ |
| 5.131 | Towing coverage | State | _____ |
| 5.132 | Transmission | State | _____ |
| 5.133 | Axles, front and rear | State | _____ |
| 5.134 | Exhaust system | State | _____ |
| | Manuals | | |
| 5.135 | Operator's | Three (3) | _____ |
| 5.136 | Parts, repair, service | Three (3) sets, for complete cab & chassis being bid including front tandem axle, CDs, USB or online preferred | _____ |
| | Delivery | | |
| 5.137 | Delivery point | Completed vehicle shall be serviced, ready for operation and delivered F.O.B. with the freight prepaid, including invoice and N.I.V.S. to the WFMA 185 Tecumseh Street, Winnipeg MB | _____ |
| 5.138 | Delivery time | Within 52-calendar weeks from the date of award. Equipment shall be delivered within 8:00 am and 2:00 pm on Business Days | _____ |
| 5.139 | Delivery contact | The Contractor shall contact the Contract Administrator prior to delivery of the equipment | _____ |
| 5.140 | PDI | A pre-delivery inspection shall be performed By the Contractor on the equipment. Proof upon Inspection including completed check list | _____ |

FORM N: TRADE-IN OPTION

1. TRADE-IN OPTION

- 1.1 This Bid Opportunity includes the provision of a “trade-in” option of one (1) used 2007 Aspen Aerials A-62 Underbridge Inspection Device Vehicle. The Bidder may include a price amount as listed on Form B: PRICES. The 2007 Aspen A-62 was purchased new, and used solely by The City of Winnipeg. A brief description of the equipment is as follows:

City of Winnipeg Unit #2997851

Cab & Chassis;

- 2007 Freightliner M2 112 Tandem-Tandem
- 3873 Hours (as of October 19, 2018)
- 28 000 km
- Cat C11, 335 HP, 1250 lbf-ft torque
- Allison 4500 RDS transmission
- 36,000 lbs. front tandem axle
- 46,000 lbs. Hendrickson RT-463 rear axle, 54 in spacing
- Air ride seats and cab mounts

Underbridge Crane Inspection Device;

- 2007 Aspen Aerials A-62
- 2227 Hours (as of October 19, 2018)
- 4-articulating booms
- 40"x60"x42" personnel platform, 600 lbs. capacity
- Auxiliary engine with 5Kw generator
- Intercom system
- High pressure wash line
- Flat deck body with underbody compartments
- Rear trailer hitch
- Digital display
- Warning light package
- Video camera system
- Platform steps

- 1.2 Bidders are encouraged to view the vehicle to evaluate the condition prior to submitting a bid price. Viewing of the 2007 A-62 Underbridge Inspection Device Vehicle can be arranged one (1) calendar week prior to the Submission Deadline of the Bid Opportunity by contacting the Contract Administrator in D4.



TRADE-IN PRICE, CDN FUNDS (Optional): \$ _____