

## FORM N: DETAILED SPECIFICATIONS 21053

### SPECIALIZED UTILITY VEHICLE

#### 1. INSTRUCTIONS FOR COMPLETION OF SPECIFICATIONS

- 1.1 All items in these specifications should be answered indicating compliance or non-compliance.
- 1.2 **Bidder shall state “yes” for compliance or state “deviation”**, or give a reply where requested to do so. Deviations and/or equivalents shall be clearly stated and fully detailed. Deviations and/or equivalents will be considered subject to evaluation. In every instance where a brand name or design specifications is used, the City will also consider deviations and/or equivalents.
- 1.3 Lengthy explanations of deviations may be included in a separate document and must reference the appropriate Detailed Specification.
- 1.4 Each Proponent is required to fill in every blank. Failure to do so may be used as a basis for rejection of bid.
- 1.5 It will be the responsibility of the Proponent to inform the City of any errors or omissions in these Detailed Specifications, for under this Contract, the Contractor shall be held responsible to ensure that the manufacturer will be responsible for the design, performance, reliability and satisfactory operational function of the unit.

#### 2. DESCRIPTION OF EQUIPMENT

- 2.1 These specifications describe **Specialized Utility Vehicle** and other equipment and features as specified herein.
- 2.2 The **Specialized Utility Vehicle** shall be a new **2021** model year or newer.
- 2.3 The **Specialized Utility Vehicle** and all other items/components shall be the manufacturer's latest model. The equipment shall be furnished complete and ready for operation. Any parts or accessories not specifically mentioned, but which are required to complete and place the equipment and associated attachments in successful operation shall be furnished as though specifically mentioned in these specifications. The equipment and associated attachments, and all parts thereof, shall conform in strength and quality of material and workmanship, to the best standards and engineering practice of the industry.
- 2.4 The ratings specified herein merely state the minimum values acceptable to the City, not implying that those values are sufficient for the design of the particular equipment being bid.

#### 3. OTHER SPECIFICATIONS AND STANDARDS

- 3.1 All applicable SAE Standards form an integral part of the vehicle specifications and shall have precedence in any conflict concerning minimum acceptable standards.
- 3.2 Where applicable, the **Specialized Utility Vehicle** shall comply with the applicable regulations:

Transport Canada, National Safety Mark, NSM:

<http://www.tc.gc.ca/eng/acts-regulations/acts-road.htm>

Manitoba Safety and Health Regulation, Parts 12, 16, 22:

[https://www.gov.mb.ca/labour/safety/pdf/1\\_2016\\_wsh\\_ar\\_oc.pdf](https://www.gov.mb.ca/labour/safety/pdf/1_2016_wsh_ar_oc.pdf)

Canadian Motor Vehicle Safety Standards C.M.V.S.S.

[http://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,\\_c.\\_1038/section-sched3.html](http://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1038/section-sched3.html)

Manitoba Highway Traffic Act regulations and requirements including, but not limited to, a Manitoba Government Inspection with Safety Sticker.

<http://web2.gov.mb.ca/laws/regs/index.php?act=h60>

Canadian Standards Association, CSA:

<http://www.csagroup.org/>

Under Writers of Canada, U/L:

<http://www.ulc.ca/>

Society of Automotive Engineers, SAE:  
<http://www.sae.org/>

City of Winnipeg Lighting Visibility Standard:  
<http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf>

Manitoba Building Code:  
[https://web2.gov.mb.ca/laws/regs/current/\\_pdf-regs.php?reg=31/2011](https://web2.gov.mb.ca/laws/regs/current/_pdf-regs.php?reg=31/2011)

**4. FUEL**

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

**5. REFERENCES**

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

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**6. MAKE & MODEL**

6.1 State year, make and model being bid:

Model Year: \_\_\_\_\_

Make: \_\_\_\_\_

Model: \_\_\_\_\_

**7. PERFORMANCE RELIABILITY**

7.1 The responsibility for the design of the **Specialized Utility Vehicle** its performance and reliability shall rest upon the Contractor.

7.2 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, of 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.

7.3 Where the **Specialized Utility 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.

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

**8. SERVICE FACILITY**

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

**9. QUALIFICATIONS OF MANUFACTURER & CONTRACTOR**

- 9.1 The manufacturer of the **Specialized Utility Vehicle** shall have five (5) years continuous experience manufacturing **Specialized Utility Vehicle**.
- 9.2 The manufacturer shall have in effect a documented quality control program ensuring that the quality of materials and workmanship, including welding, conforms to the best standards and engineering practice of the industry.
- 9.3 The Contractor shall have five (5) years continuous experience servicing, repairing and maintaining **Specialized Utility Vehicle** of the type being offered.

## 10. SPECIFICATIONS

### Make and Model

10.1 Vehicle Make **State:** make: \_\_\_\_\_

10.2 Vehicle Model **State:** model: \_\_\_\_\_

### Engine

10.3 Engine

- Diesel rated at 60-65 HP
- Emissions Tier IV Diesel Interim or Final
- Cold engine starting aided by glow plugs

\_\_\_\_\_

### Alternator

10.4 Capacity Approximately 70 amps  
**State:** amps: \_\_\_\_\_

### Battery

10.5 Capacity Heavy Duty  
Approximately 850 CCA  
**State:** CCA: \_\_\_\_\_

### Front Loader

10.6 Front Loader

- Lift arm with double acting hydraulic cylinders
- Capable of accepting quick-attach attachments
- Loader Rated Operating Capacity of approximately 1500 lbs.
- Loader functions controlled by a single pilot-operated hydraulic joystick
- Lift-arm "float" feature provided and activated by the hydraulic joystick

\_\_\_\_\_

### Performance

10.7 Rated Operating Capacity (ROC) Approximately 1500 lbs.  
**State:** ROC: \_\_\_\_\_

10.8 Operating Weight Approximately 5600 lbs.  
**State:** Operating weight: \_\_\_\_\_

10.9 Travel Speeds

- High - Variable from 0 to 17 mph.
- Low - Variable from 0 to 8 mph.
- Reverse - Variable from 0 to 8 mph.

\_\_\_\_\_

**Operator Controls**

|       |          |   |       |
|-------|----------|---|-------|
| 10.10 | Controls | <ul style="list-style-type: none"> <li>• Selectable Joystick Control</li> <li>• Direction controlled</li> <li>• Speed controlled</li> </ul> | _____ |
|-------|----------|---|-------|

**Rear Cargo Box**

|       |                |   |       |
|-------|----------------|---|-------|
| 10.11 | Rear Cargo Box | <p>Cargo box load capacity of 2000 lbs.</p> <p>Box sides are bolt-on and can be removed to make a flat-bed</p> <p>A tailgate is provided which includes a quick-latch system, and is capable of supporting at least 300 lbs. of load in the open position</p> <p>Stake pockets to be provided on the sides and front of the cargo box</p> | _____ |
|-------|----------------|---|-------|

|       |                |   |       |
|-------|----------------|---|-------|
| 10.12 | Hydraulic Dump | <ul style="list-style-type: none"> <li>• Activated by a cab mounted control</li> <li>• Two (2) hydraulic cylinders</li> </ul> | _____ |
|-------|----------------|---|-------|

|       |                 |                    |       |
|-------|-----------------|--------------------|-------|
| 10.13 | Cargo Box Liner | Spray in box liner | _____ |
|-------|-----------------|--------------------|-------|

|       |                          |   |       |
|-------|--------------------------|---|-------|
| 10.14 | Cargo Box Support Device | Required to mechanically support the box if raised for service work | _____ |
|-------|--------------------------|---|-------|

**Drive System**

|       |            |                                   |       |
|-------|------------|-----------------------------------|-------|
| 10.15 | Drivetrain | Full-time four-wheel drive system | _____ |
|-------|------------|-----------------------------------|-------|

|       |                              |   |       |
|-------|------------------------------|---|-------|
| 10.16 | Differentials Front and Rear | Limited slip differentials for both axles | _____ |
|-------|------------------------------|---|-------|

|       |                              |  |       |
|-------|------------------------------|--|-------|
| 10.17 | Hydrostatic Traction Control | <ul style="list-style-type: none"> <li>• Automatically manages torque split at each wheel</li> <li>• On/off switch located in cab</li> </ul> | _____ |
|-------|------------------------------|--|-------|

|       |              |             |       |
|-------|--------------|-------------|-------|
| 10.18 | Transmission | Hydrostatic | _____ |
|-------|--------------|-------------|-------|

|       |                         |   |       |
|-------|-------------------------|---|-------|
| 10.19 | Engine and Travel Speed | Equipped with separate controls for engine speed and travel speed | _____ |
|-------|-------------------------|---|-------|

|       |             |                              |       |
|-------|-------------|------------------------------|-------|
| 10.20 | Drive Speed | Controlled by a single pedal | _____ |
|-------|-------------|------------------------------|-------|

|       |                    |                          |       |
|-------|--------------------|--------------------------|-------|
| 10.21 | Engine RPM Control | Controlled by hand lever | _____ |
|-------|--------------------|--------------------------|-------|

|       |               |   |       |
|-------|---------------|---|-------|
| 10.22 | Neutral Start | Neutral Start which requires machine be in the "Park" position (parking brake applied) before engine can be started | _____ |
|-------|---------------|---|-------|

|       |                  |   |       |
|-------|------------------|---|-------|
| 10.23 | Shift On-The-Fly | Ability to shift between travel speed ranges while moving | _____ |
|-------|------------------|---|-------|

|       |                |                            |       |
|-------|----------------|----------------------------|-------|
| 10.24 | Cruise Control | For constant working speed | _____ |
|-------|----------------|----------------------------|-------|

|       |               |                  |       |
|-------|---------------|------------------|-------|
| 10.25 | Crab Steering | 4-wheel steering | _____ |
|-------|---------------|------------------|-------|

**Cab**

|       |                                      |  |       |
|-------|--------------------------------------|--|-------|
| 10.26 | Cab Structure                        | <ul style="list-style-type: none"><li>• 4-post design</li><li>• ROPS and FOPS approved per SAE and ISO standards</li></ul>   | _____ |
| 10.27 | Cab Enclosure                        | Consists of two steel frame doors with windows complete with locking handles   | _____ |
| 10.28 | Seats                                | Forward facing—operator and passenger  | _____ |
| 10.29 | Seat Belts                           | <ul style="list-style-type: none"><li>• Retractable seat belts for the operator and passenger</li><li>• Incorporates a 3-point design which includes a shoulder restraint per SAE J2292</li></ul>  | _____ |
| 10.30 | Windows                              | <ul style="list-style-type: none"><li>• Front and rear</li><li>• Tempered safety glass</li></ul>   | _____ |
| 10.31 | Windshield Washer System with Wipers | Windshield washer system with dual-arm front windshield wipers   | _____ |
| 10.32 | 12-Volt Power Outlet                 | For accessories provided in the cab  | _____ |
| 10.33 | Climate Control                      | <ul style="list-style-type: none"><li>• Heating system with ventilation and defrosting capabilities</li><li>• Air conditioning</li></ul>   | _____ |
| 10.34 | Beverage Holders                     | Beverage holders   | _____ |
| 10.35 | Radio                                | AM/FM Complete with:<br>Bluetooth® Technology - For use with cellular phones, “hands-free” capable, voice command activated through vehicle’s radio circuit<br><b>State:</b> radio type: _____   | _____ |
| 10.36 | <b>Brakes</b>                        |  |       |
| 10.37 | Brakes Loading                       | <ul style="list-style-type: none"><li>• Shared by all wheels</li><li>• The machine automatically brings itself to a stop when the drive pedal is released</li></ul>  | _____ |
| 10.38 | Parking Brake                        | <ul style="list-style-type: none"><li>• Parking brakes equipped in each axle. Drive controls automatically deactivate when the parking brake is applied</li><li>• The parking brake to engage automatically when the engine is not running</li></ul> | _____ |

## Diagnostic and Displays

|               |                                 |   |       |
|---------------|---------------------------------|---|-------|
| 10.39         | Instrument Panel                | <p>Gauges:</p> <ul style="list-style-type: none"><li>• Engine temperature and fuel level</li></ul> <p>Digital display required to display the following:</p> <ul style="list-style-type: none"><li>• Travel Speed</li><li>• Engine RPM</li><li>• Engine Hours</li><li>• Job Hours (resettable)</li></ul> <p>Display to be back-lit when front lights are on</p> <p>Warning lights to indicate the following:</p> <ul style="list-style-type: none"><li>• Low engine oil pressure</li><li>• Low fuel level</li><li>• Low battery voltage</li><li>• High hydraulic temperature</li><li>• High engine temperature.</li></ul> <p>An engine and hydraulic systems monitor will be provided to monitor vital machine conditions</p> | _____ |
| 10.40         | Service Diagnostic Capabilities | <p>The systems monitor will also display a code when warning conditions are encountered, and store these codes for later access</p>   | _____ |
| <b>Lights</b> |                                 |   |       |
| 10.41         | Lighting                        | <ul style="list-style-type: none"><li>• Headlights</li><li>• Turn signals</li><li>• Tail lights</li><li>• Brake lights</li><li>• Hazards</li><li>• Interior dome light</li></ul> <p><b>State:</b> type of headlights – LED or Halogen</p>   | _____ |
| 10.42         | Safety Lighting                 | <ul style="list-style-type: none"><li>• Whelen Responder LP (RDLPPAB) Amber/Blue DUO Permanent Mount (LED Mini Light bar)</li><li>• Mounted on top of the cab driver's side</li><li>• Wired through ignition</li><li>• Lights shall be wired for separate amber and separate blue labelled independently "winter", "off", "summer".</li><li>• The winter mode will turn on both blue and amber,</li><li>• the summer will only turn on the amber lights</li></ul>   | _____ |

- 10.43 Work Lights \_\_\_\_\_
- Four (4) LED work lights on the front which can be positioned independently of each other
  - Two (2) LED work lights on the back which can be positioned independently of each other

**Tires**

- 10.44 Tires, 2 sets \_\_\_\_\_
- One (1) set (mounted on their own rims) of:
- Standard duty
  - Turf

One (1) spare on rim for each type

**Note:** Each unit to be delivered with turf tires installed.

Standard Duty Tire:

**State:** Size \_\_\_\_\_

Turf Tire:

**State:** Size \_\_\_\_\_

**Hydraulics**

- 10.45 Hydraulic Supply \_\_\_\_\_
- “High Flow” approximately of 25-30 gpm
- State:**  
Std. flow: \_\_\_\_\_  
High flow: \_\_\_\_\_

- 10.46 Quick Hitch \_\_\_\_\_
- Activation of quick-hitch provided by two over-center locking levers with wear

- 10.47 Hydraulic Connections \_\_\_\_\_
- Supplied via hydraulic quick-couplers with a flush-face design

- 10.48 Hydraulic Pressure Release System \_\_\_\_\_
- To relieve residual pressure trapped in the attachment hydraulics for safe attachment changes.

- 10.49 Primary Attachment Hydraulics \_\_\_\_\_
- Primary attachment hydraulics activated by switches integrated into the loader joystick
  - Ability to lock into continuous flow (detent) in both forward and reverse directions

- 10.50 Rear Remote Hydraulics \_\_\_\_\_
- Supplied via hydraulic quick-couplers with a flush-face design



### **Towing**

10.51 Towing Capacity

- Capable of withstanding 500 lbs. of tongue load
- Capable of pulling and stopping tow loads of 4,000 lbs.

\_\_\_\_\_

10.52 Rear Receiver Hitch

A rear receiver hitch system capable of accepting a 2-inch receiver-style hitches with wiring harness for trailer (7 pin flat)

\_\_\_\_\_

### **Lubrication**

10.54 Grease Zerks

\_\_\_\_\_

Due to operator safety requirements and convenience:

- All manual grease zerks shall be accessible to the operator (Excluding driveline)
- Hard to access and/or near a heat sources, a remote block with hydraulic lines shall be mounted to accommodate manual lubrication
- Remote block to be fitted with hydraulic lines with an approximately maximum working pressure of 5000 psi using #4 JIC fittings

### **Safety Equipment**

10.56 Interlock Control System

Automatically disables the:

- Loader lift
- Loader tilt
- Attachment hydraulics
- Drive control

and engages the parking brake when the operator exits the machine

\_\_\_\_\_

10.57 Automatic Engine Shutdown

- The engine automatically shuts-down in the event vital conditions exceed acceptable limits
- The engine needs the ability to restart in 30 second intervals to move the machine after shut-down occurs

\_\_\_\_\_

10.58 Battery Disconnect Switch

- Connected to battery
- Prevents low-draw accessories from draining battery in long-term storage
- Protected from the elements
- Lockable with a pad lock

\_\_\_\_\_

10.59 Mirrors

- Interior rear view
- Exterior side
- Provide full view for safe reverse operation

\_\_\_\_\_

10.60 Fire Extinguisher

- 2.5 lbs.
- High volume ABC type
- Securely mounted with quick release

\_\_\_\_\_

- 10.61 Slow Moving Vehicle Sign Mounted to rear of vehicle \_\_\_\_\_  
**Note:** Exact location to be determined prior to delivery
- 10.62 Back-Up Alarm \_\_\_\_\_  
• Approximately 97 – 112 dB  
• Protected from damage  
**State:** dB(A): \_\_\_\_\_

### Attachments

Note: Attachments to be priced only as indicated on Form B: Prices.

- 10.63 Compatibility \_\_\_\_\_  
• All attachments shall be compatible with equipment being offered  
• Additional components such as wire harnesses to ensure compatibility shall be included with the attachments
- 10.64 Quick Attach System \_\_\_\_\_  
• Equipped with a universal quick attach system  
• Hydraulic control  
• Controlled from within the cab  
• Compatible with all attachments
- 10.65 Fittings \_\_\_\_\_  
• Includes all fittings for connection of hydraulic power required for operation of all attachment and accessories  
• Flat face hydraulic quick disconnects
- 10.66 Attachments \_\_\_\_\_  
• Front mounted  
• Connections for all attachments to be Quick Attach compatible  
• Meet SAE J2513 for coupling of attachments
- 10.67 Heavy Duty Bucket \_\_\_\_\_  
• Approximately 62-inch width  
• Reversible, bolt-on, replaceable steel cutting edge(s)
- 10.68 4 in 1 Combination Bucket \_\_\_\_\_  
• Approximately 62-inch width  
• Replaceable Bolt-on cutting edges  
• Interlocking, serrated grapple edges for clamping materials in a variety of applications
- 10.69 Rotary Broom \_\_\_\_\_  
• Approximately 68-inch width  
• Hydraulically Driven  
• Angles up to 30 degrees left or right

|       |                           |   |       |
|-------|---------------------------|---|-------|
| 10.70 | Snowblower                | <ul style="list-style-type: none"><li>• Commercial grade</li><li>• Two-stage operation</li><li>• Shall operate with high flow hydraulics</li><li>• Snow blower swath of approximately 60 in.</li><li>• Throwing distance of approximately 25 – 45 ft.</li><li>• Equipped with a rotary chute and deflector controlled from within the cab</li><li>• Replaceable steel cutting edge(s)</li><li>• Adjustable skid shoes</li></ul> | _____ |
| 10.71 | Pallet Forks – Heavy Duty | Approximately 45-inch width x 48-inch length  | _____ |
| 10.72 | Auger                     | <ul style="list-style-type: none"><li>• Hydraulically driven</li><li>• Approximately torque range of 1300 to 2400 ft-lb.</li><li>• Dig depth approximately 62 inches without extensions.</li><li>• Supplied with 6-inch and 10-inch bits</li></ul>  | _____ |

11.0 **WARRANTY:**

11.1 All warranty information shall be detailed and **include all exclusions.** \_\_\_\_\_

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

Bidder shall state all warranty information.

11.2 The warranty for the **Specialized Utility Vehicle** shall cover the complete equipment, and all parts thereof against any defects of workmanship, construction and materials. \_\_\_\_\_

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

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

11.3 Basic Vehicle (Comprehensive) **State:** Terms: \_\_\_\_\_

11.4 Batteries **State:** Terms: \_\_\_\_\_

11.5 Powertrain **State:** Terms: \_\_\_\_\_

11.6 Hydraulics **State:** Terms: \_\_\_\_\_

11.7 Electrical **State:** Terms: \_\_\_\_\_

11.8 Tires **State:** Terms: \_\_\_\_\_

12.0 **DELIVERY:**

12.1 **Delivery Point:** \_\_\_\_\_

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

12.2 **Delivery Time:** \_\_\_\_\_

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

**State:** earliest delivery time from date of award: \_\_\_\_\_

12.3 **Delivery Contact:** \_\_\_\_\_

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

12.4 **P.D.I.:** \_\_\_\_\_

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

13.0 **MANUALS:**

13.1 **Manuals:** \_\_\_\_\_

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

**Operator** – Two (2) Copies

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

**Parts and Service**

- One (1) complete set including preventative maintenance schedules

**Note:** CD or USB flash drive is preferred where available.

14.0 **PARTS/LABOUR PRICING:**

14.1 Bidder to provide City of Winnipeg Parts Discount % Pricing from retail parts pricing. \_\_\_\_\_

**State: percentage discount:** \_\_\_\_\_

14.2 Bidder to provide City of Winnipeg Labor Discount % Pricing from retail shop labor rate. \_\_\_\_\_

**State: percentage discount:** \_\_\_\_\_

15.0 **FIRST SERVICE PREVENTATIVE MAINTENANCE KIT:**

15.1 If applicable, in order to assure minimum downtime of the Equipment in future service, the Contractor must provide one (1) complete replacement set of new OEM filters for each unit purchased. The set of required filters shall include (if applicable to the equipment type) air, fuel, oil, transmission, cab and hydraulic, or otherwise all known necessary common replacement filters required for the first preventative maintenance servicing and first transmission service. \_\_\_\_\_

15.2 The Contractor must provide a list of Factory recommended lubricants to be used with the equipment, as well as a complete cross reference guide for all warranty approved lubricants and filters that can be used during Preventative Maintenance servicing. \_\_\_\_\_

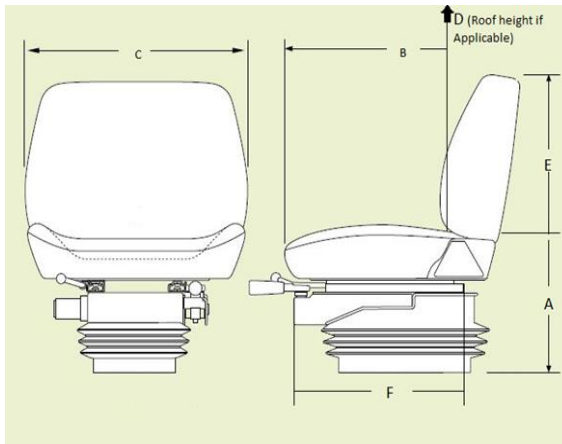
16.0 **ERGONOMIC SPECIFICATIONS**

**Entry/ Exit**

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

**Seat**

16.6 Use diagram to answer questions.



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

16.14 Head Rest Is head rest provided (**Y or N**)? \_\_\_\_\_

16.15 Seat is made of breathable material  
material **State:** type of seat material: \_\_\_\_\_

**Operation**

16.16 Reaching Distance (to usual work) **State:** reaching distance in inches: \_\_\_\_\_

16.17 Maximum Reaching Distance **State:** maximum reach distance in inches: \_\_\_\_\_

16.18 Adjustable Pedals (accelerator/brake/clutch) Are pedals adjustable (**Y or N**)? \_\_\_\_\_

16.19 Adjustable Steering Wheel Is steering wheel adjustable (**Y or N**)? \_\_\_\_\_

16.20 Adjustable Shoulder Belt Is belt adjustable and anchored (**Y or N**)? \_\_\_\_\_

**Cargo Area**

16.21 Lid opens to provide adequate space Adequate space provided (**Y or N**)? \_\_\_\_\_

16.22 Loading Height **State:** trunk height in inches: \_\_\_\_\_

**Environment**

16.23 Operator compartment is insulated from equipment noise (while operating) **State:** dB inside cab while operating: \_\_\_\_\_

16.24 Operator insulated from equipment vibration Is operator insulated from vibration (**Y or N**)? \_\_\_\_\_

16.25 Heating/Cooling Systems **State:** cab temperature range: \_\_\_\_\_

16.26 Cab Lighting **State:** lumens inside cab: \_\_\_\_\_

**Maintenance/ Inspection**

16.27 Lift Assistance (when necessary) Is lift assistance provided (**Y or N**)? \_\_\_\_\_

16.28 Easy Access (to compartment doors) Is easy access provided (**Y or N**)? \_\_\_\_\_

16.29 Include any other relevant ergonomic specifications and applicable range of adjustment: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_