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**Place du Portage, Phase III**  
**Core 0A1 / Noyau 0A1**  
**Gatineau, Québec K1A 0S5**  
**Bid Fax: (819) 997-9776**

## SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

### Comments - Commentaires

**Vendor/Firm Name and Address**  
**Raison sociale et adresse du**  
**fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**  
**Industrial Vehicles & Machinery Products Division**  
**11 Laurier St./11, rue Laurier**  
**6B1, Place du Portage, Phase III**  
**Gatineau, Québec K1A 0S5**

<b>Title - Sujet</b> Loader Scoop Type	
<b>Solicitation No. - N° de l'invitation</b> W8476-123533/A	<b>Amendment No. - N° modif.</b> 005
<b>Client Reference No. - N° de référence du client</b> W8476-123533	<b>Date</b> 2012-03-09
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$HS-627-58238	
<b>File No. - N° de dossier</b> hs627.W8476-123533	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2012-03-16</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Standard Time EST
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Mercier, Nicolas	<b>Buyer Id - Id de l'acheteur</b> hs627
<b>Telephone No. - N° de téléphone</b> (819) 956-3481 ( )	<b>FAX No. - N° de FAX</b> (819) 956-5227
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

This amendment is raised to:

1. Provide the following questions and answers:

**QUESTION 1:**

In regards to my initial question for the hydraulic oil heater (3.17.1(a)):

Many vehicles use the heat from our cooling system to both cool and heat the hydraulic system during operation. However, some companies have changed their design to operate in a more efficient manner and use an air-to-oil cooling system. The hydraulic fluid will heat itself to appropriate levels while the machine is running; even in arctic temperatures. While the fluid heats itself, the air-to-oil cooling system will prevent the fluids from overheating during operation.

However, if you would like to be able to heat the hydraulic fluids prior to starting the machine, this can be achieved by a 120-volt system that will preheat the fluids. Many of our dealers supply this option for machines that operate in arctic temperatures. This is recommended as a cold starting aid.

**ANSWER 1:**

Paragraph 3.17.1 (a) is amended to read:

(a) **Hydraulic Oil Heater** - A hydraulic oil heater. The hydraulic oil heater *shall*<sup>(E)</sup> use heat from a system external to the hydraulic system such as the cooling system or an air to oil heater. The hydraulic oil heater *shall* have a thermostatic control system to prevent overheating of the hydraulic oil.

At this time, there is no requirement for a hydraulic fluid pre-heater in the standard cold weather starting aid package.

**QUESTION 2:**

3.18.1 – Automatic Greasing System

This section designates that the auto greasing system *shall* provide grease to the majority of the greasing points.

Our system does provide grease to the greasing points that are located throughout the machine. However, the bid does not specify that it shall provide grease to the attachment bracket. Based on the attachments and conditions that the equipment will be operated in, it is highly recommended that the greasing system provide grease to the attachment bracket. This will be an additional option to the automatic greasing system.

**ANSWER 2:**

Paragraph 3.18.1 is amended to read:

3.18.1 **Automatic Greasing System** - The vehicle *shall* be equipped with an Automatic Greasing System, which *shall* automatically provide grease to the majority of the greasing points, which *shall* include the quick coupler. The greasing system *shall* include a telltale light indicating that the system is functioning and a low grease level alarm in the operator's station.

**QUESTION 3:**

Which attachments are required to be equipped to the machine upon delivery?

**ANSWER 3:**

There is no requirement for which attachment is mounted upon delivery. It is recommended that Configuration D1 be equipped with the Snow Blower Attachment for shipping reasons. It is recommended that Configuration D2 be equipped with the general purpose bucket. All attachments must be equipped to install on the machine.

2. 1) Delete the Purchase Description for Loader, Scoop Type, 4 by 4 dated 2011-10-07
- 2) Insert the Purchase Description for Loader, Scoop Type, 4 by 4 modified 2012-03-07

Modifications are:

paragraph 3.17.1 (a) of the Purchase Description

paragraph 3.18.1 of the Purchase Description

**ALL OTHER TERMS AND CONDITIONS OF THE REQUEST FOR PROPOSAL  
REMAINS THE SAME**

**PURCHASE DESCRIPTION FOR****LOADER, SCOOP TYPE, 4 BY 4****1. SCOPE**

1.1 **Scope** - This purchase description covers the requirements for two configurations of articulated, diesel engine driven, four-wheel drive, scoop type front end loaders.

1.2 **Instructions** - The following instructions apply to this Purchase Description:

- (a) Requirements, which are identified by the word "**shall**", are mandatory. Deviations will not be permitted;
- (b) Requirements identified by "**shall**<sup>(E)</sup>" are mandatory. The Technical Authority will consider substitutes/alternatives for acceptance as an Equivalent;
- (c) Requirements identified with a "will" define actions to be performed by Canada and require no action/obligation on the Contractor's part;
- (d) Where "**shall**", "**shall**<sup>(E)</sup>", or "will" are not used, the information provided is for guidance only;
- (e) In this document "provided" **shall** mean "provided and installed";
- (f) Where technical certification is required, a copy of the certification or an acceptable proof of compliance **shall** be provided upon request;
- (g) Metric measurements **shall** be used to define the requirement. Other measurements are for reference only and may not be exact conversions; and
- (h) Dimensions stated as nominal **shall** be treated as approximate dimensions. Nominal dimensions reflect a method by which materials or products are generally identified for sale commercially, but which differ from the actual dimensions.

1.3 **Definitions** - The following definitions apply to the interpretation of this Purchase Description:

- (a) "Technical Authority" - The government official responsible for technical content of this requirement;
- (b) "Equivalent" - A standard, means, or component type, which has been accepted by the Technical Authority as meeting the specified requirements for form, fit, function and performance; and

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Issued on Authority of the Chief of the Defence Staff

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- (c) "Proof of Compliance" - A document such as a brochure, a third party test report, a report generated by third party software, or a certificate of attestation signed by a senior representative of the Original Equipment Manufacturer (such as a certified engineer) indicating the performance and/or feature specified.

**1.4 Configuration Capability Table** - Vehicles covered by this Purchase Description are represented as configurations. The following table shows required performance and dimensions by configuration with a clause reference.

			CONFIGURATION							
CHARACTERISTIC	CLAUSE	UNITS	A	B	C	D		E	F	G
						1	2			
FORWARD SPEED	3.4.1 (a)	km/h	-	-	-	35		-	-	-
		mph	-	-	-	22		-	-	-
REVERSE SPEED	3.4.1 (a)	km/h	-	-	-	23		-	-	-
		mph	-	-	-	15		-	-	-
TIPPING CAPACITY	3.4.1 (b)	kg	-	-	-	8,350		-	-	-
		lbs	-	-	-	18,500		-	-	-
OPERATING CAPACITY	3.4.2 (a)	kg	-	-	-	4,175		-	-	-
		lbs	-	-	-	9,250		-	-	-
BREAKOUT FORCE	3.4.2 (b)	kN	-	-	-	95		-	-	-
		lbs	-	-	-	21,400		-	-	-
DUMP CLEARANCE	3.4.2 (c)	mm	-	-	-	2,750		-	-	-
		in	-	-	-	109		-	-	-
BUCKET ROLLBACK ANGLE	3.5.1 (a) ii	degrees	-	-	-	37		-	-	-
BUCKET DUMP ANGLE	3.5.1 (a) iii	degrees	-	-	-	44		-	-	-
BUCKET DIGGING DEPTH	3.5.1 (a) iv	mm	-	-	-	50		-	-	-
		in	-	-	-	2		-	-	-

**1.4.1 Attachment and Option Table** - The following table indicates with "✓" for each configuration, the attachments or options which *shall* be provided.

		CONFIGURATION							
DESCRIPTION OF OPTION	CLAUSE	A	B	C	D		E	F	G
					1	2			
Integral Front End Loader	3.5.1 (a)	-	-	-	✓	✓	-	-	-
Hydraulic Quick Coupler	3.5.1 (b)	-	-	-	✓	✓	-	-	-
General Purpose Bucket (Gravel)	3.5.2 (a)	-	-	-	✓	✓	-	-	-
Snow Bucket	3.5.2 (b)	-	-	-	✓	✓	-	-	-
Reversible Snow Plow	3.5.2 (c)	-	-	-	✓	✓	-	-	-
Plow Wing	3.5.2 (d)	-	-	-	✓	✓	-	-	-
Forklift Attachment	3.5.2 (e)	-	-	-	✓	✓	-	-	-
Snow Blower Attachment	3.5.2 (f)	-	-	-	✓	-	-	-	-
Snow Blower Control Interface	3.5.2 (g)	-	-	-	✓	✓	-	-	-

DESCRIPTION OF OPTION	CLAUSE	CONFIGURATION							
		A	B	C	D		E	F	G
					1	2			
Suspension Seat	3.6 (b)	-	-	-	✓	✓	-	-	-
Radio	3.6 (d)	-	-	-	✓	✓	-	-	-
Air Conditioning	3.6 (e)	-	-	-	✓	✓	-	-	-
Ride Control System	3.7.1(a)	-	-	-	✓	✓	-	-	-
Fuel Fired Preheat System	3.8.1(a)	-	-	-	✓	✓	-	-	-
Engine Cold Weather Starting Aids	3.8.3	-	-	-	✓	✓	-	-	-
Tire Chains	3.12.1	-	-	-	✓	✓	-	-	-
Amber Coloured Strobe Light	3.16.1(a)	-	-	-	✓	✓	-	-	-
Hydraulic Oil Heater	3.17.1(a)	-	-	-	✓	✓	-	-	-
Automatic Greasing System	3.18.1	-	-	-	✓	✓	-	-	-
Initial Parts Kit	4.1.1 (c)	-	-	-	✓	✓	-	-	-
Familiarization Training	4.2 (a)	-	-	-	✓	-	-	-	-

1.4.2 **Attachment Capability Table** - The following table shows required performance and capacity information by attachment with a clause reference.

ATTACHMENT TYPE	CHARACTERISTIC	CLAUSE	UNITS	QUANTITY
General Purpose Bucket (Gravel)	REPLACEABLE EDGE TYPE	3.5.2 (a) (ii)	-	Cutting Edge
	BUCKET CAPACITY	3.5.2 (a) (iv)	m <sup>3</sup>	2.25
			yd <sup>3</sup>	3.00
Snow Bucket	SNOW BUCKET CAPACITY	3.5.2 (b)	m <sup>3</sup>	3.80
			yd <sup>3</sup>	5.00
Reversible Snow Plow	STRAIGHT CUTTING WIDTH	3.5.2 (c)	mm	3000
			in	118
	30° CUTTING WIDTH		mm	2550
			in	102
Forklift	FORKLIFT CAPACITY	3.5.2 (e)	kg	4,750
			lbs	10,500
Snow Blower	SNOW BLOWER CAPACITY	3.5.2 (f) (xii)	kg/h	1,700
			ton/h	1,900
	CUTTING HEIGHT	3.5.2 (f) (xiii)	mm	1,250
			in	50
	SNOW PROJECTION	3.5.2 (f) (xv)	m	45
			ft	150
	CHUTE CAST HEIGHT	3.5.2 (f) (xvi)	mm	2,650
			in	105
CHUTE ROTATION	3.5.2 (f) (xvii)	degrees	280	

## 2. APPLICABLE DOCUMENTS

### 2.1 Government Furnished Documents - NOT APPLICABLE

2.2 Other Publications - The following documents form part of this Purchase Description. Web sites for the organization are given when available. Effective documents are those in effect on date of manufacture. Sources are as shown:

SAE Handbook

Society of Automotive Engineers Inc.  
400 Commonwealth Dr.,  
Warrendale, PA, 15096  
<http://www.sae.org>

Canadian Motor Vehicle Safety Standards (CMVSS)

Transport Canada,  
Road Vehicle and Motor Vehicle Regulation,  
330 Sparks Street, Tower C,  
Ottawa, Ontario K1A 0N5  
<http://www.tc.gc.ca/acts-regulations/GENERAL/M/mvsa/menu.htm>

International Organization for Standardization (ISO)

ISO Central Secretariat  
1, ch. de la Voie-Creuse  
CP 56, CH-1211 Geneva 20  
Switzerland  
<http://www.iso.org/iso/home.htm>

## 3. REQUIREMENTS

### 3.1 Standard Design - The vehicle/equipment **shall**:

- (a) Be the latest model. The manufacturer **shall** have manufactured and sold this type and size class of vehicle for at least 1 year;
- (b) Have engineering certification available, upon demand, for this application from the original manufacturers of major equipment systems and assemblies;
- (c) Conform to all applicable laws, regulations and industrial standards governing manufacture, safety, noise levels and pollution in effect in Canada at the time of manufacture; and
- (d) Have system and component capacities not greater than their published ratings (i.e. product or component brochures) or accompanied by proof of compliance.

### 3.2 Operating Conditions

3.2.1 Weather - The vehicle/equipment and all attachments **shall** operate under the extremes of weather conditions found in Canada in temperatures ranging from -35 to 37° C (-31 to 99° F).

3.2.2 **Terrain** - The vehicle/equipment **shall** be capable of being operated on highways, secondary roads, gravel roads, and off-road (e.g. construction sites, open fields and dirt tracks). Terrain conditions **shall** include year round operations on snow, mud, sand and ice.

### 3.3 **Safety Standards**

3.3.1 **Noise Level** - The vehicle/equipment noise levels **shall** meet the requirements of legislation relative to Occupational Safety and Health both at the operator's station and exterior to the vehicle.

3.3.2 **Hazardous Materials** - The contractor **shall** minimize the use of hazardous materials, ozone depleting substances, polychlorinated biphenyls, asbestos and heavy metals used in the fabrication of the product supplied. Items considered as hazardous materials **shall** be those given in the Hazardous Products Acts. The contractor **shall** provide Material Safety Data Sheets to the Technical Authority of all the above substances used in the fabrication of the product supplied.

3.4 **Performance** - The performance of the loader **shall** be validated with a Proof of Compliance.

3.4.1 **Vehicle Performance** - The vehicle **shall** have:

- (a) A forward speed of at least that given as "FORWARD SPEED" in the Configuration Capability Table and a reverse speed of at least that given as "REVERSE SPEED" in the Configuration Capability Table. Speeds **shall** be measured with an empty bucket; and
- (b) A Tipping Capacity of at least that given as "TIPPING CAPACITY" in the Configuration Capability Table with the vehicle in a fully articulated turn in accordance with SAE J732, ISO 6165 or ISO 7131. "TIPPING CAPACITY" **shall** be determined using the bucket specified pinned directly to the loader arms. Additional counterweights may be added to provide the necessary tipping load, however, the additional counter weighting **shall** not be achieved through rear tires ballasting.

3.4.2 **Loader Performance** - The loader **shall** have the following performance. If more than one attachment is specified for a configuration, the performance is measured for the attachment that is the best case for each performance requirement.

- (a) A full height lift rated capacity of at least that given as "OPERATING CAPACITY" in the Configuration Capability Table. "OPERATING CAPACITY" **shall** be determined using the bucket pinned directly to the loader arms;
- (b) A breakout force, in accordance with SAE J732, ISO 6165 or ISO 7131 when equipped with a General Purpose Bucket, of at least that given as "BREAKOUT FORCE" in the Configuration Capability Table. "BREAKOUT FORCE" **shall** be determined using the bucket pinned directly to the loader arms; and
- (c) A bucket Dumped Clearance, in accordance with SAE J732, ISO 6165 or ISO 7131 when equipped with the bucket, of at least that given as "DUMP CLEARANCE" in the Configuration Capability Table.

3.4.3 **Vehicle Delivery Condition** - The vehicle **shall** be delivered to destination



in a fully operational condition (serviced and adjusted). Both the interior and exterior of the vehicle **shall** be cleaned. If the vehicle requires assembly at destination, the Contractor **shall** be responsible for all manpower and equipment to perform assembly. The consignee will provide the area required for assembly. For shipment verification, all items such as wheel wrenches, jacks, and all other tools, equipment and accessories which are shipped loose with the equipment, **shall** be listed on the shipping certificate or to an attached packing note.

### 3.5 Equipment

#### 3.5.1 Application Equipment - Equipment/features below **shall** be provided:

- (a) Integral Front-End Loader - An Integral Front End Loader. Dimensions **shall** be measured in accordance with SAE J732, ISO 6165 or ISO 7131 using only original manufacturer's supplied equipment and buckets. Proof of compliance **shall** be provided. The front-end loader **shall**:
  - i Have loader and mounting members integral with main frame;
  - ii Withstand continuous industrial service such as loading sand, gravel or debris;
  - iii Have a bucket rollback of at least that given as "BUCKET ROLLBACK ANGLE" in the Configuration Capability Table;
  - iv Have a bucket dump angle of at least that given as "BUCKET DUMP ANGLE" in the Configuration Capability Table;
  - v Have a digging depth below ground of at least that given as "BUCKET DIGGING DEPTH" in the Configuration Capability Table; and
  - vi Have a lift arm safety device in accordance with SAE J38 or ISO 10533.
- (b) Hydraulic Quick Coupler - The hydraulic quick coupler **shall** be compatible with all front-end loader arm mounted accessories that are supplied. The hydraulic quick coupler **shall** be compatible with existing EDF attachments;
- (c) Vehicle Tie-Down Devices - Vehicle tie-down devices. Permanent and integrally vehicle tie-down devices **shall**:
  - i Be designed to withstand stresses imposed by thrust loads (all directions) with a factor of safety of 1.5 with respect to the ultimate strength of the material;
  - ii Be designed for forward thrust of 4 G, a rearward thrust of 4 G, an upward thrust of 2 G and a side thrust of 1.5 G (1 G = shipping weight of the equipment), loads are not imposed simultaneously;
  - iii Be designed/located to prevent shifting or movement during transport on low-bed trailers, rail car and aboard ships;
  - iv Be located to permit easy attachment of cables or turnbuckles;
  - v Be identified and marked with maximum strain permitted. Markings **shall** be painted using a contrasting colour; and

- vi Include complete tie down instructions showing locations. This information **shall** be shown in the manual and it is preferred that it is marked in the vehicle cab (in the form of decals).
  - (d) **Protection against Vandalism** - Vandal protection measures including provisions for locking the engine covers, filler caps and cab;
  - (e) **Recovery Hooks** - Towing hooks, loops, or a component with equivalent capability at the front and rear of the vehicle. Recovery hooks whose location is other than the vehicle chassis **shall** be approved by the Technical Authority;
  - (f) **Tool Compartment** - Tool compartment to hold all tools and loose equipment required for daily maintenance, which **shall**:
    - i Be protected from the elements including road splash or be of weatherproof construction with anti-return type drainage; and
    - ii Have compartment cover equipped with a means to be locked. The cover **shall** have a weatherproof seal.
- 3.5.2 **Optional Equipment** - The following equipment and features **shall** be provided, as indicated in the Attachment and Option Table:
- (a) **General Purpose Front-End Loader Buckets** - General purpose front-end loader buckets which **shall** have the following characteristics:
    - i Be constructed of general purpose heavy duty material which can withstand continuous industrial service such as loading sand, gravel or debris;
    - ii Have either a replaceable cutting edge or teeth - as specified as "**REPLACEABLE EDGE TYPE**" in the Attachment Capability Table - constructed of a wear resistant material;
    - iii Be wider than the vehicle that on which it will be installed. Buckets are specified based on capacity; where same capacity buckets are required on configurations of different widths, buckets of different widths may be used;
    - iv Have a capacity, rated in accordance with SAE J742 or ISO 14397-1 of at least that given as "**BUCKET CAPACITY**" in the Attachment Capability Table;
    - v Be capable of attaching to the quick coupler, if a quick coupler system is demanded for the configuration for which the bucket is specified; and
  - (b) **Snow Bucket** - The snow (light material) bucket with a bolt-on replaceable cutting edge. The bucket **shall** be capable of attaching to the quick coupler, if a quick coupler system is demanded for the configuration for which the bucket is specified. The bucket **shall** have a capacity of no less than that given as "**SNOW BUCKET CAPACITY**" in the Configuration Capability Table and in accordance with SAE J732, ISO 6165 or ISO 7131;
  - (c) **Reversible Snow Plow** - A hydraulically reversible snow plow, having a

straight cutting width of at least that given as "**STRAIGHT CUTTING WIDTH**" in the Attachment Capability Table. The snow plow **shall** have a cutting width when the snow plow is angled 30° of at least that given as "**30° CUTTING WIDTH**" in the Attachment Capability Table. The snow plow **shall** be capable of attaching to the quick coupler, if a quick coupler system is demanded for the configuration for which the snow plow is specified. The cutting edge of the snow plow **shall** be equipped with a resetting trip mechanism to prevent damage to the snow plow and loader;

- (d) **Plow Wing** - A front mounted Plow Wing. The Plow Wing **shall** include mounting framework and controls and have hydraulic controls in the cab. Working lights **shall** illuminate the wing mouldboard;
- (e) **Forklift Attachment** - A forklift attachment mounted on the vehicle's quick coupler with a rated forklift capacity of at least that given as "**FORKLIFT CAPACITY**" in the Configuration Capability Table at a 610 mm (24 inch) load centre when installed in place of specified bucket. The forks provided **shall** have a nominal length of 1.22 m long (48 inches);
- (f) **Snow Blower Attachment** - A snow blower attachment that connects to the loader. The snow blower **shall** be capable of handling all types of snow, including wet snow, frozen snow and hard packed snow. The snow blower **shall**:
  - i Have a weight equal to or less than the load carrying capacity of the loader;
  - ii Be diesel engine driven and have a fuel tank with sufficient capacity for at least 8 hours of continuous use;
  - iii Mount on the vehicle's quick coupling system;
  - iv Be equipped with metal skates with carbide inserts for snow blower support;
  - v Be equipped with two emergency stop buttons for the snow blower: one on the snow blower attachment and one in the cab;
  - vi Be equipped with lights mounted on the snow blower for maximum visibility for working;
  - vii Be equipped with lights mounted on the snow blower chute for visibility while loading trucks;
  - viii Be equipped with a battery heater and a hydraulic oil heater;
  - ix Be equipped with a cowl muffler for reducing engine noise;
  - x Be equipped with Arctic grade oil and fluids;
  - xi Have a snow moving capacity of at least that given as "**SNOW BLOWER CAPACITY**" in the Attachment Capability Table;
  - xii Have a cutting height of at least that given as "**CUTTING HEIGHT**" in the Attachment Capability Table;
  - xiii Have a cutting width of at least that of the overall width of the

vehicle provided for the configuration;

- xiv Cast snow up to a distance of at least that given as "**SNOW PROJECTION**" in the Attachment Capability Table;
  - xv Load snow over the side of a dump truck with a side height of at least that given as "**CHUTE CAST HEIGHT**" in the Attachment Capability Table; and
  - xvi Rotate the loading chute through at least the rotation angle given as "**CHUTE ROTATION**" in the Attachment Capability Table.
- (g) **Snow Blower Control Interface** - The vehicle **shall** be fitted with the controls and interface required to start, monitor and control the snow blower when it is attached to the vehicle. The interface **shall** include, as a minimum:
- i Controls for all snow blower functions. The controls **shall** be accessible from the operator's station;
  - ii A display for all warning lights, indicators and gauges related to the snow blower attachment; and
  - iii The emergency stop button for the snow blower that is mounted in the cab.
- 3.6 **Operator Station** - The operator station **shall** include:
- (a) **ROPS Cab** - A weatherproof pressurized, insulated cab incorporating Roll Over Protective Structure, which **shall**<sup>(8)</sup> conform to SAE J1040 or ISO 3471. The cab **shall**:
- i Have a ventilation and defrosting system capable of keeping windows free from frost and moisture and include a heater conforming to SAE J1503 and SAE J169 or conforming to ISO 10263-4;
  - ii Have safety glass in windows. It is preferred the glass be tinted to reduce solar heating load;
  - iii Have windshield wipers conforming to SAE J198 having at least 2 speeds preferably with an intermittent setting, including a windshield washer for each wiper; and
  - iv Have two lockable doors, or one door and at least visibly labelled one window as an emergency operator escape route.
- (b) **Suspension Seat** - An operator's suspension seat and backrest in conformance with SAE J899 or in conformance with ISO 11112:1995 and ISO 7096. The seat **shall** be selected to be comfortable for an operator who may be operating the vehicle for extremely long periods and have seat material being a breathable fabric or a mesh surface. The seat **shall**:
- i Be equipped with seat belts, conforming to with SAE J386 , Type 1 or ISO 6683; and
  - ii Be horizontally and vertically adjustable without having to move from

a seated position.

- (c) **Mirrors** - Adjustable rear-view mirrors positioned for safe reverse operation. If exterior mirrors are used, they **shall** be heated with separate dashboard switch. It is preferred that the non-reflective surface of the mirror be flat black. It is preferred that mirrors be a split type with at least 25 percent convex or fully convex.
- (d) **Radio** - A radio which turns off automatically when the vehicle is not in service. It is preferred that the radio system includes a CD player and an auxiliary input connection;
- (e) **Air Conditioner** - An air conditioning system conforming to SAE J1503 and SAE J169 or conforming to ISO 10263-4. Air conditioning units **shall** not use ozone depleting refrigerants such as CFCs (ChloroFluoroCarbons) but preferably use HFCs (Hydro FluoroCarbons).

3.7 **Chassis** - The vehicle chassis **shall** be the manufacturers standard for a vehicle of this type and size.

3.7.1 **Chassis Options** - The following options **shall** be provided when specified in the Attachment and Option Table:

- (a) **Ride Control System** - An automatic ride control system for the cushioning of the carried load and vehicle while operating at higher speed **shall** be installed.

3.8 **Engine** - The engine **shall** be diesel powered.

3.8.1 **Engine Components** - Engine components **shall** be the manufacturer's standard.

3.8.2 **Fuel Tank(s)** - The fuel tank(s) **shall** be the manufacturer's standard. The fuel tank(s) **shall** be at least half full when delivered.

3.8.3 **Engine Cold Weather Aids** - Cold weather aids to enable the engine (operating with winter grade fuels/oils) to be started at temperatures down to -40° C **shall** be provided. External electrical power for engine and battery heaters **shall** be a single cover-protected plug that is accessible without lifting engine covers. The following **shall** be included:

- (a) 110-volt engine heater(s) with a capacity as recommended by the engine manufacturer or conforming to SAE Information Sheet J1310;
- (b) 110-volt battery heater(s) having wattage matched to battery size to prevent battery damage due to overheating. The battery **shall** be housed in an insulated battery box or in a heated cab; and
- (c) A low temperature starting aid. The engine **shall** have an ether injection system, glow plug or intake air preheat system.

3.8.4 **Engine Options** - The following options **shall** be provided when specified in the Attachment and Option Table:

- (a) **Fuel-Fired Pre-Heater** - A fuel-fired preheat system. The fuel-fired pre-heater **shall** be the size recommended by the heater manufacturer. The model

**shall** be subject to Technical Authority approval.

3.9 **Transmission** - The vehicle **shall** have 4-wheel drive and **shall** be equipped with a continuous power transmission, such as:

- (a) A power shift or power shuttle, or;
- (b) An infinitely variable forward and reverse hydrostatic, servo-controlled drive incorporating automatic controls to compensate for speed and load.

3.10 **Brake System** - The brake system **shall** be manufacturer's standard and **shall**<sup>(B)</sup> conform with SAE Vehicle Standard J/ISO 3450.

3.11 **Steering** - The vehicle steering system **shall** be the manufacturer's standard steering which **shall**<sup>(B)</sup> conform to SAE J1511 or ISO 5010. The vehicle **shall** have a powered frame articulation right and left a minimum of at least 33 degrees.

3.12 **Wheels, Rims and Tires** - The vehicle **shall** be equipped with wheels, rims and tires. The tires **shall** have L-3 treads. The tires **shall** be radial ply and tubeless.

3.12.1 **Tire Options** - The following tire options **shall** be provided when specified in the Attachment and Option Table:

- (a) **Tire Chains** - A set of galvanized steel tire chains for all four tires;

3.13 **Controls** - Controls **shall** be manufacturer's standard including a safety device ensuring that engine can only be started with the transmission in a neutral position and a throttle control positioned for convenient operation.

3.14 **Instruments** - Instruments **shall** be manufacturer's standard including a numeric read-out hour-meter, which displays accumulated running time up to 9,999 hours.

3.15 **Electrical System** - The vehicle electrical system **shall** be the manufacturer's standard.

3.16 **Lighting** - The vehicle **shall** have the manufacturer's standard lights, LED where the manufacturer offers the option commercially.

3.16.1 **Optional Lighting Equipment** - The following Lighting **shall** be provided as indicated in the Attachment and Option Table:

- (a) **Amber Coloured Strobe Light** - Amber coloured omni-directional strobe light(s) either on continuously or with a dash mounted control switch. The strobe light(s) **shall** provide maximum vehicle visibility;

3.17 **Hydraulic System** - The hydraulic system **shall** be the manufacturer's standard complete with all components required for the operation of the hydraulic equipment specified.

3.17.1 **Hydraulic System Options** - When specified in the Attachment and Option Table, the following hydraulic system options **shall** be provided:

- (a) **Hydraulic Oil Heater** - A hydraulic oil heater. The hydraulic oil heater **shall**<sup>(B)</sup> use heat from a system external to the hydraulic system such as the cooling system or an air to oil heater. The hydraulic oil heater **shall** have a thermostatic control system to prevent overheating of the hydraulic oil.

3.18 **Lubricants and Hydraulic Fluids** - The vehicle **shall** be serviced with the manufacturer's non-proprietary standard lubricants and hydraulic fluids.

3.18.1 **Automatic Greasing System** - The vehicle **shall** be equipped with an Automatic Greasing System, which **shall** automatically provide grease to the majority of the greasing points, which **shall** include the quick coupler. The greasing system **shall** include a telltale light indicating that the system is functioning and a low grease level alarm in the operator's station.

3.19 **Paint** - The vehicle **shall** be painted using manufacturer's standard commercial colours. The prime coating **shall** be a high-durability, corrosion-resistant type. The prime coating **shall**<sup>(B)</sup> be epoxy type or baked powder coat.

3.20 **Identification** - The following information **shall** be permanently marked in a conspicuous and protected location:

- (a) Manufacturer's name, model and serial number; and
- (b) Manufacturer's Vehicle Identification Number (VIN), where applicable.

4. **Integrated Logistic Support** - The Contractor is required to ensure that spare parts required to properly maintain and repair vehicles are available for purchase for a period of 10 years.

4.1 **Documentation and Support Items** - The Contractor **shall** provide the following documentation and support items.

4.1.1 **Items with Each Vehicle** - The Contractor **shall** provide the following items with each vehicle:

- (a) **Vehicle Manuals** - Manuals required for safe operation, maintenance and repair of the vehicle. It is preferred that complete sets of manuals are provided on CD/DVD-ROM (without password(s), installation requirements or requiring an Internet connection). An Operator's Manuals in paper format **shall** always be provided with each vehicle. The Vehicle Manuals **shall** include:
  - i **Operator's Manuals** - Operator's manuals in a bilingual format or as 2 manuals in a single binder (one English, and one French);
  - ii **Parts Manuals** - The Parts Manuals in English (French translation is desirable);
  - iii **Maintenance (Shop Repair) Manuals** - The Maintenance (Shop Repair) Manual in English (French translation is desirable); and

- (b) **Warranty Letter** - A paper copy of the completed bilingual Warranty Letter in the approved format provided with each vehicle shipped. Designated warranty providers **shall** honour the warranty letter.
- (c) **Initial Parts Kit** - One Initial Parts Kit accompanying each vehicle/equipment. Each Initial Parts Kit **shall** include the set of filters and filter elements from the Original Equipment Manufacturer required for the first 6 months of regular maintenance.

4.1.2 **Documents Provided to Technical Authority** - The Contractor **shall** provide the following documents to the Technical Authority:

- (a) **Data Summary** - A bilingual Data Summary for each make/model/ configuration in accordance with the requirements of CFTO D-01-100-200/SF-002: "Preparation of Data Summaries for Commercial Vehicles & Equipment" with data and a vehicle picture. The Contractor **shall** provide a Data Summary before shipment of vehicles;
- (b) **Sample Manuals** - A set of Sample Manuals in digital format, including the Operator, Parts and Maintenance Manuals. The sample manuals **shall** be delivered to the Technical Authority 30 working days before delivery of vehicles. Sample manuals will not be returned. The Technical Authority will provide manual approval or comments within 30 days;
- (c) **Warranty Letter Technical Authority Copy** - The Contractor **shall** send a copy of the Warranty Letter, in electronic format, to the Technical Authority for each vehicle, at shipment;
- (d) **Photographs** - Two (2) digital pictures, one left-front three-quarter view, and one right-rear three-quarter view of each make/model/ configuration. It is preferred that pictures have an uncluttered background. Pictures **shall** have a size of at least four (4) Mega pixels.
- (e) **Preventive Maintenance Replacement Parts Kit List** - A list of parts needed to perform preventive maintenance on a vehicle/equipment during the first scheduled preventive maintenance. The list **shall** include the parts provided in the Initial Parts Kit and additional items recommended by the Original Equipment Manufacturer for review and acceptance by the Technical Authority. The list should be no more than 50 items. The list **shall** include the following elements:
  - i Part description;
  - ii Original Equipment Manufacturer Part number; and
  - iii Suggested quantity.
- (f) **Material Safety Data Sheets** - The contractor **shall** provide a listing of all hazardous materials used in the fabrication of the product supplied to the Technical Authority, if there are no hazardous materials used, this **shall** be noted on the listing. The contractor **shall** provide Material Safety Data Sheets for all the hazardous materials used in the fabrication of the product supplied.



- (g) **Sample training plan** - A sample training plan in digital format **shall** be delivered to the Technical Authority for approval at least 30 working days before delivery of vehicles. Sample training plan will not be returned. The Technical Authority will provide training plan approval or comments within 30 days.
- 4.2 **Training** - The Contractor **shall** perform the following training:
  - (a) **Familiarization** - At least 1-day (8 hours) familiarization instruction at each destination, for a maximum of 8 personnel, no later than one month after delivery of each vehicle. The instruction **shall** include the detailed operation and normal servicing of the vehicle/equipment and **shall** be split into two - four (4) hour segments for operator familiarization and maintainer familiarization. Familiarization instructions **shall** be available in both official languages for destinations in the province of Quebec or as requested by the Technical Authority. The training dates **shall** be arranged in conjunction with the Technical Authority. After completion of the familiarization session, the Contractor **shall** have a "**PROOF OF FAMILIARIZATION INSTRUCTION**" certificate signed by the consignee. The Technical Authority will supply this document in an electronic format, when requested.