1.0 SCOPE

1.1 Scope - Supply the quantity of trucks equipped for snow removal as noted in the request for proposal. The requirement is for one (1) new 2014/15 dump truck equipped with a front mounted snow plow, wing plow, and a fifth wheel towing configuration. The truck supplied is to be complete with all accessories customarily furnished and installed on this type of vehicle to enable the unit to function reliably and efficiently under all conditions of service. All items noted in sections 1.0 through 10.5 of this specification are to be included in the base configuration, unless noted otherwise.

SPECIFY THE ACTUAL COMPONENTS SUPPLIED, AND THEIR RATED CAPACITIES, FOR THE UNITS TENDERED. NOTE IN DETAIL ANY DEVIATIONS FROM THE SPECIFIED ITEMS. A SEPARATE ATTACHMENT MAY BE PROVIDED INDICATING THE SPECIFIED ITEM.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____
_____

2.0 GENERAL REQUIREMENTS

2.1 Standard Requirements - The equipment supplied under this specification shall be the manufacturer's latest model standard commercial product and shall have demonstrated industry acceptance by having been manufactured, and sold in significant numbers to the commercial trade and shall have been proven in service for the application specified, for at least 1 year prior to the request for proposal; or in the case of a recently introduced item, the manufacturer shall submit sufficient valid operational and test data to demonstrate the acceptability of the equipment.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____
_____

2.2 Overview - The vehicle supplied under this specification shall be a minimum 19,504 kg (43,000 lb) GVWR four wheel drive truck complete with dump body, utilizing a diesel engine and an automatic transmission. The vehicle is to be equipped with a front mounted snow plow, a wing plow and a fifth wheel.

TRUCK
MAKE/MODEL:_____

2.3 Operating Conditions - The unit is required for year-round maintenance work at airports. The unit supplied should be capable of satisfactory continuous operation when loaded to the maximum GVWR specified, in ambient temperatures ranging from 40 degrees Celsius to minus 40 degrees Celsius. It should be capable of operating at rated capacities for prolonged periods without deformation and/or failure of components on paved and gravel surfaces in all conditions including adverse weather conditions.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____
_____
_____
_____

2.4 Mandatory Items - Mandatory requirements are identified by "shall" or "must". Deviations will not be permitted.

2.5 Approved Equivalent - Requirements identified by "should" should be satisfied; however alternative means will be considered if the alternative feature or component is determined by Transport Canada to meet the requirements for form, fit function and performance, as applicable.

3.0 REGULATIONS AND STANDARDS

3.1 General - All standards and specifications referenced herein refer to the latest editions unless otherwise indicated.

3.2 Component Certification - Upon request of the project authority, the prime contractor must obtain component certification, from the component manufacturer, for any items installed on the unit. These certifications must indicate the model of the machine on which the component will be installed and the characteristics for which the component was designed.

COMPLY(Yes/No):_____
DETAILS:_____

3.3 Highway Traffic Act - The vehicle supplied shall comply in all applicable respects with the Highway Traffic Act or regulations for Newfoundland and Labrador, Canada.

COMPLY(Yes/No):_____
DETAILS:_____

3.4 Canada Motor Vehicle Safety Standards - The vehicle supplied shall comply in all applicable respects with the Canada Motor Vehicle Safety Standards.

COMPLY(Yes/No):_____
DETAILS:_____

3.5 Society of Automotive Engineers (SAE) - All notations in this specification indicating SAE refer to the most recent specification in effect or it's equivalent replacement specification in effect, by the Society of Automotive Engineers.

COMPLY(Yes/No):_____
DETAILS:_____

4.0 DELIVERY

4.1 Documentation - All necessary documentation (origin certificate, weigh ticket, etc.) required for licensing the vehicle for road use, by the issuing provincial authority, shall be provided to the consignee at the time and point of final delivery.

COMPLY(Yes/No):_____
DETAILS:_____

5.0 MANUALS

5.1 Manuals - Provide a minimum of one copy paper and include electronic, if available, in English, of the manuals requested below, for the truck and for the plows delivered. The contract will not be considered complete and final payment will not be made until all manuals noted are received in new, original, unused condition.

COMPLY(Yes/No):_____
DETAILS:_____

5.2 Maintenance Manuals - Provide a minimum of one copy of the manufacturer's overall maintenance manuals for the truck and for the plows. The manuals should indicate the proper maintenance procedures for all component installations, and should include assembly drawings for all components and accurate schematics of the electrical systems and the hydraulic systems.

COMPLY(Yes/No):_____
DETAILS:_____

5.3 Parts Manuals - Provide a minimum of one copy of the parts manuals for the truck. The parts manuals should list each of the individual component parts numbers, illustrated drawings and manufacturer's name, address and contact phone number.

COMPLY(Yes/No):_____
DETAILS:_____

5.4 OEM Parts & Maintenance Manuals - Provide a minimum of one copy of the maintenance and parts manuals, supplied by the respective (OEM) manufacturer, for each major component, including the plows, installed on the vehicle.

COMPLY(Yes/No):_____
DETAILS:_____

5.5 Operators Manual - Provide a minimum of one copy of the operators manual.

COMPLY(Yes/No):_____
DETAILS:_____

6.0 CAB AND CHASSIS

6.1 G.V.W.R.

.1 The minimum gross vehicle weight rating shall be 19,504 kg (43,000 lb).

ACTUAL
GVWR: _____

6.2 Dimensions

.1 The maximum turning radius should be 9.5 m (31.0 ft) to the centreline of the front tire as per SAE J695.

COMPLY(Yes/No): _____
IF NO,
EXPLAIN: _____
ACTUAL RADIUS: _____

.2 The cab to axle centre dimension should be a minimum of 2108 mm (83 inches) and a maximum of 2339 mm (92 inches).

COMPLY(Yes/No): _____
IF NO,
EXPLAIN: _____
ACTUAL: _____

.3 The bumper to back of cab dimension should be a minimum of 2565 mm (101 inches) and a maximum of 2896 mm (114 inches).

COMPLY(Yes/No): _____
IF NO,
EXPLAIN: _____
ACTUAL: _____

6.3 Engine

.1 The engine shall be a liquid cooled diesel.

COMPLY(Yes/No): _____

.2 The engine shall have a minimum 350 net horsepower rating. Manufacturer's published literature or performance tests indicating the values noted must be supplied.

COMPLY(Yes/No): _____
DETAILS: _____
ACTUAL: _____

.3 The engine shall have a minimum torque rating of 1559 Nm (1150 lb-ft).

ACTUAL: _____

.4 The engine radiator shall be a severe duty type. The cooling system should be supplied with coolant rated for protection to a minimum of minus 40 degrees Celsius.

COMPLY(Yes/No): _____
DETAILS: _____
_____
_____

.5 The engine should include a minimum 1500 watt, electric block heater, complete with a conveniently located exterior plug.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____

.6 Due to airport operational safety concerns, automatic engine shutdown systems should be avoided. Instead, the engine should be equipped to activate warning lights and audible alarms for all of the following conditions; low engine oil pressure, low coolant level and high coolant temperature.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____

.7 The vehicle should be equipped with in-cab engine oil and coolant temperature gauges, air and oil pressure gauges.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____

.8 The vehicle should be equipped with an air operated engine fast idle switch with in-cab controls, capable of maintaining a constant engine speed of 1200 rpm when engaged.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____

.9 The vehicle should be supplied with an OEM approved vinyl winter front, if offered as a recommended option by the manufacturer.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____

6.4 Transmission

.1 The vehicle shall be equipped with an automatic transmission suited for the engine provided, Allison Rugged Duty Series or equivalent, with five forward speeds, third gear hold and complete with an oil cooler.

MAKE/MODEL:_____
RATIOS:_____
OIL COOLER
TYPE:_____

.2 The transmission shall be equipped with an automatic safety device to ensure that the vehicle engine can only be started in neutral and that the shift selector cannot be inadvertently shifted into reverse.

COMPLY(Yes/No):_____
DETAILS:_____

.3 The shift quadrant control must be illuminated.

COMPLY(Yes/No):_____
DETAILS:_____

.4 The vehicle should be equipped with a dash mounted transmission oil temperature gauge and an audible alarm for high transmission temperature.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____

6.5 Suspension

.1 The front and the rear suspension shall both be progressive, heavy duty type. The minimum rating for the front shall be 9,072 kg (20,000 lb)and the rear minimum shall be 10,433 kg (23,000 lb). Also see section 10.3.1 for additional suspension requirements.

COMPLY(Yes/No):_____
FRONT
RATING:_____
REAR
RATING:_____

.2 The rear suspension shall be complete with auxiliary springs.

COMPLY(Yes/No):_____
DETAILS:_____
_____

6.6 Transfer Case

.1 The vehicle should be equipped with a single speed or two speed transfer case with a proportional differential and an air operated lock in/out switch.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____
MAKE/MODEL:_____
TORQUE RATING:_____

.2 The vehicle shall be equipped with a dash mounted light to indicate when the front axle is engaged.

COMPLY(Yes/No):_____
DETAILS:_____
_____

.3 All drive shafts shall be minimum Spicer Life Series or Spicer 10 Series or equivalent and shall be rated to be compatible with all other drive components.

COMPLY(Yes/No):_____
MAKE/MODEL:_____

6.7 Frame

.1 The vehicle frame shall be full depth, heavy duty having a minimum RBM of 350,000 Nm. The frame must meet this minimum requirement at any location for the entire frame length.

COMPLY(Yes/No):_____
FRAME
RBM:_____

.2 All frame components shall be bolted together allowing for replacement.

COMPLY(Yes/No):_____
DETAILS:_____

.3 The vehicle frame should provide for the installation of a front mounted PTO pump, driven from the engine crankshaft.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____

6.8 Axles

.1 The vehicle should be equipped with a set back front axle with a standard differential and shall have a minimum capacity of 9,072 kg (20,000 lb).

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____
SETBACK DIMENSION:_____
CAPACITY:_____

.2 The vehicle shall be equipped with a rear axle with a standard differential and a minimum capacity of 5842 kg (23,000 lb).

COMPLY(Yes/No):_____
CAPACITY_____
_____

.3 The axle gear ratios should be supplied to allow for optimal performance during snow removal and towing operations and also to allow for an approximate road speed of 90 kph.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

6.9 Wheels and Tires

.1 The front rims should be single wheel, size 12.25 x 22.5.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____
SIZE:_____

.2 The rear rims should be single or dual wheel, size 8.25 x 22.5.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____
SIZE:_____

.3 All wheels on the vehicle should be of the same type.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____

.4 All wheels shall comply with the axle manufacturer's rating for imposed loads and operating conditions.

COMPLY(Yes/No):_____
DETAILS:_____
_____

.5 The vehicle shall be equipped with new, on/off road, radial type tires, suited for the rims supplied. The tires shall have a tread pattern and be sized for optimal performance in the intended operating conditions.

COMPLY(Yes/No):_____

	FRONT	REAR
SIZE:		
MAKE:		
TYPE:		

.6 The vehicle shall be supplied with (1) one, matching spare front wheel and tire assembly and (1) one, matching spare rear wheel and tire assembly.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

6.10 Steering

.1 The vehicle shall be equipped with integral power steering and be capable of manual steering in the event of engine failure.

COMPLY(Yes/No):_____
DETAILS:_____
_____

6.11 Fuel Tank

.1 The vehicle shall be equipped with a minimum 220 litres capacity fuel tank, installed to require refuelling operations from the left side of the vehicle.

COMPLY(Yes/No):_____
DETAILS:_____
_____

6.12 Exhaust

.1 The vehicle shall be equipped with a vertically mounted exhaust complete with an elbow or rain cap. Heat shields shall be installed on exposed vertical exhaust components, where required, to eliminate the possibility of contact injury.

COMPLY(Yes/No):_____
DETAILS:_____

6.13 Brakes

.1 The vehicle shall be equipped with full air brakes and should incorporate the following:

COMPLY(Yes/No):_____

.1 minimum 16.5 CFM air compressor.

ACTUAL:_____

.2 spring applied, air release parking brakes.

DETAILS:_____

.3 minimum 16.5 x 5 "S-cam" or "Wedge" front brakes with automatic adjusters.

DETAILS:_____

.4 minimum 16.5 x 7 "S-cam" rear brakes with automatic adjusters.

DETAILS:_____

.5 Bendix AD-9, or equivalent, heated air dryer complete with moisture ejector.

DETAILS:_____

.6 dash mounted pressure gauge with low pressure warning light and buzzer.

DETAILS:_____

COMPLY(Yes/No):_____
QUANTITY:_____
MAKE/MODEL:_____
TOTAL
C.C.A:_____

6.14 Electrical

.1 The vehicle shall be equipped with maintenance free batteries. The number of batteries and the batteries rating shall be sufficient to meet the vehicle's total electrical requirements, in the operating conditions indicated in section 2.3 of this specification.

COMPLY(Yes/No):_____
DETAILS:_____

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____
MAKE/MODEL:_____

.2 The vehicle should be equipped with a minimum 140 amp, 12 V alternator.

COMPLY(Yes/No):_____
DETAILS:_____

.3 The vehicle shall be equipped with a back-up alarm as per SAE J-994, type "C".

.4 The vehicle shall be equipped with a cab top mounted, minimum 8 joule strobe light complete with a dash mounted switch with appropriate identification. The light should be high profile, standing a minimum of 203 mm (8 inches) above the cab roof.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____

.5 The vehicle should be equipped with an in-cab warning light and audible alarm to indicate all of the following conditions; high coolant temperature, low coolant level, high transmission temperature and low engine oil pressure.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____

.6 The vehicle should be equipped with a dash mounted hour meter that is configured to record actual engine running hours.

COMPLY(Yes/No):_____
IF NON,
EXPLAIN:_____
_____

.7 The vehicle shall be equipped with hi/lo halogen headlights, brake lights, tail lights, backup lights, directional signal lights, four way flasher lights, side marker lights, license plate holder and interior dome lights.

COMPLY(Yes/No):_____
DETAILS:_____
_____

.8 The vehicle's entire electrical system shall be protected from the elements. All wiring connections shall be either soldered or approved connectors. All connectors shall be heavy duty, waterproof type. All wiring shall be color coded.

COMPLY(Yes/No):_____
DETAILS:_____

.9 The vehicle should be equipped with manual reset electrical circuit breakers installed in a common, easily accessible location.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____
_____

6.15 Cab

.1 The cab shall be fully insulated metal equipped with maximum capacity fresh air intake, heating, and defrosting systems. The air intake system shall be protected from the ingress of dust, rain and snow.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

.2 The cab heating and defrosting systems shall have a cold climate capacity capable of maintaining the interior cab temperature at 15 degrees Celsius.

COMPLY(Yes/No):_____
DETAILS:_____
_____

.3 The cab access handles should be stainless steel or chrome plated steel securely installed in a convenient location.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____
_____

.4 The cab shall be equipped with the heaviest duty, variable speed electric or air windshield wipers complete with wet blade type windshield washers. The wipers should be mounted below the windshield.

COMPLY(Yes/No):_____
DETAILS:_____

.5 The cab shall be equipped with a tinted front windshield.

COMPLY(Yes/No):_____
DETAILS:_____

.6 The cab shall be supplied with a maximum soundproof insulation package fitted to provide the lowest possible interior sound level. The interior sound level shall not exceed 83 dB(A) when measured in accordance with SAE J919; where the constant speed moving test would be conducted on bare asphalt with the vehicle moving at maximum governed speed in third gear.

COMPLY(Yes/No):_____
ACTUAL
LEVEL:_____

.7 In addition to instrumentation indicated in other specification sections, the cab should be equipped with a minimum of the following fully functioning instrumentation; tachometer(s), speedometer, odometer, fuel gauge, voltmeter(s) and oil pressure gauge(s).

COMPLY(Yes/No):_____
IF NON,
EXPLAIN:_____
_____
_____

.8 All instrumentation, switches, gauges and controls shall be clearly marked in English, or ISO identification. All labels shall be permanently affixed, etched metal plates or engraved (two color) plastic plates.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

.9 The cab shall be equipped with driver and passenger sun visors.

COMPLY(Yes/No):_____
DETAILS:_____

.10 The cab shall be equipped with operable windows in each side door. The windows shall be electrically powered with door mounted controls. An additional lower side window should be installed on the passenger side door.

COMPLY(Yes/No):_____
DETAILS:_____

.11 The cab shall be equipped with an AM/FM radio.

COMPLY(Yes/No):_____

.12 The cab shall be equipped with a driver's high back, air-ride suspension, cloth seat complete with armrests. The seat should have the best level of comfort and the maximum adjustments optionally available for the vehicle. The cab shall also be equipped with a single passenger cloth seat. Both seats shall be equipped with approved seatbelts.

COMPLY(Yes/No):_____
DETAILS:_____

.13 The cab shall be equipped with electrically powered and heated dual west coast type mirrors, minimum 178 x 406 mm (7 x 16 inches). Also install minimum 150 mm (6 inches) lower mounted convex mirrors on both sides. The power controls for the mirrors must be within easy reach of the driver.

COMPLY(Yes/No):_____
DETAILS:_____

.14 The engine hood shall be top or side opening and must permit easy access to the engine. The vehicle may be supplied with a tilt-forward type hood, but should also be supplied with side opening hoods to allow full access to the engine with the plows in working position.

COMPLY(Yes/No):_____
DETAILS:_____

6.16 Mud Flaps

.1 The vehicle shall be equipped with full mud flaps behind the rear wheels. The mud flaps should be mounted to the vehicle frame with spring-loaded hangers.

COMPLY(Yes/No):_____

6.17 Painting

.1 The vehicle cab shall be painted to the vehicle manufacturer's methods and standards. The plows, frame, etc. should be painted with epoxy type paint, Dupont Imron or equivalent. All major components including the cab, dump box, and plows shall be standard paint colour, orange, to CGSB 1-GP-12, shade 508-101 or equivalent. The frame, brackets, axles, underbody, fenders, etc. may be colour black. Paint shall be applied according to the paint manufacturer's specification.

COMPLY(Yes/No):_____
TYPE:_____
MANUFACTURER:_____
CODE:_____

6.18 Instruction Identification

.1 The unit shall be supplied with permanently installed ISO or written instructions, diagrams and warning plates, where required to ensure maximum safety and efficient operation and servicing.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

7.0 DUMP BODY

7.1 Body and Hoist

.1 The vehicle shall be equipped with a heavy duty steel dump body. The dump body should be approximately 4.6 cu m (6 cu yds) capacity, 3048 mm (120 inches) long x 2438 mm (96 inches) wide, with 813 mm (32 inches) high sides.

COMPLY(Yes/No):_____
DETAILS:_____
CAPACITY:_____

LENGTH(m)_____WIDTH(m)_____HEIGHT(m)_____

.2 The inside walls of the dump body shall be vertical and 90 degrees to the floor.

COMPLY(Yes/No):_____

.3 The dump body tailgate should be a minimum of 1067 mm (42 inches) high.

COMPLY(Yes/No):_____
SI NON,
EXPLAIN:_____

.4 The dump body shall be equipped for the installation of a minimum of one six inch side board.

COMPLY(Yes/No):____

.5 The dump body sides, tailgate and header shall be constructed utilizing minimum 10 gauge steel. The floor shall be a minimum of 3/16 inch steel.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

.6 The dump body shall be designed to include deep section rub rails and tailgate braces. The rub rails and braces must be tapered to prevent the accumulation of material.

COMPLY(Yes/No :_____

.7 The dump body shall incorporate a double locking tailgate with combined spreader and drop chains. Ladders shall be provided on both sides of the box.

COMPLY(Yes/No):_____
DETAILS:_____
_____

.8 The dump body header shall incorporate a cab shield which extends forward a minimum of 330 mm (13 inches).

COMPLY(Yes/No):_____

.9 The vehicle shall be equipped with a heavy duty, telescopic, front mounted, hydraulic dump body lift hoist. The hoist shall be a minimum 18,200 kg (20 tons) capacity and the tipping angle shall be 50 degrees, minimum.

COMPLY(Yes/No):_____
ACTUAL: _____
TYPE:_____
CAPACITY:_____
ANGLE:_____

.10 The hoist controls shall be mounted in the cab allowing easy access for operation by the driver. The control switch shall be detent type with protective shield to prevent unintentional operation.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

.11 The dump body shall be equipped with a self-storing locking bar which is capable of safely supporting the dump box, allowing the hoist to be serviced.

COMPLY(Yes/No):_____

.12 All dump body mounted lights shall be recessed and protected from damage. All wiring shall be installed inside of a loom and securely fastened to the body.

COMPLY(Yes/No):_____

7.2 Welding

.1 All welding on the dump body shall be continuous. The surfaces of parts to be welded shall be free from corrosion, paint, grease and other foreign matter. The welds shall be neat and smooth and weld penetration shall provide for maximum design strength without failure through the base metal junction.

COMPLY(Yes/No):_____

8.0 HYDRAULICS

8.1 Hydraulic System

.1 The hydraulic system of the vehicle shall include adequate oil capacity, filtration (with replaceable filters), pressure control devices, relief devices and all other equipment necessary to ensure the safe and satisfactory operation of the vehicle complete with attached snowplow equipment indicated in this specification.

COMPLY(Yes/No):_____
DETAILS:_____

.2 The vehicle shall be equipped with a front crankshaft direct driven "Tyrone dry mode" or equivalent hydraulic pump. The pump should have an air operated engage/disengage switch.

COMPLY(Yes/No):_____
DETAILS:_____

.3 The pump drive shaft shall be heavy duty type, having needle roller bearing universal joints and a splined slip joint.

COMPLY(Yes/No):_____
DETAILS:_____

.4 The front mounted pump shall be installed independently from the front push frame and must remain with the chassis.

COMPLY(Yes/No):_____
DETAILS:_____

.5 The hydraulic hoses between the vehicle and the plows systems shall be equipped with self-sealing quick connect/disconnect couplings.

COMPLY(Yes/No):_____
DETAILS:_____

.6 The vehicle shall be equipped with in cab mounted air controls. The controls shall be feathering proportional type allowing the operator to easily raise or lower the plows to any desired position. The controls shall be located to allow easy access for operation by the driver.

COMPLY(Yes/No):_____
DETAILS:_____

.7 All air control lines shall be colour tagged for easy identification.

COMPLY(Yes/No):_____
DETAILS:_____

.8 The exterior air/hydraulic control valves shall be mounted in a box to protect them from the elements.

COMPLY(Yes/No):_____
DETAILS:_____

.9 The supplied hydraulic oil shall be "Dextron II" or approved equivalent.

COMPLY(Yes/No):_____
DETAILS:_____

.10 All hydraulic hoses shall be secured and be protected from damage as a result of vibration and chaffing. The hydraulic hoses must be able to remain flexible to minus 40 degrees Celsius.

COMPLY(Yes/No):_____
DETAILS:_____
_____

.11 The hydraulic system shall be fitted with a relief valve to prevent any damage to any components through improper system operation.

COMPLY(Yes/No):_____
DETAILS:_____
_____

9.0 SNOW PLOWS

9.1 Overview

.1 The snow plows supplied and installed under this specification shall be ruggedly built from new material, hydraulically operated, one way type front plow and wing plow combination. The plows shall be capable of high volume, high speed snowplowing without blowover, or spillover between plow blades, at speeds up to 65 kph on airport runways and applied snow removal operations.

FRONT PLOW
MAKE/MODEL:_____

WING PLOW
MAKE/MODEL:_____

.2 The snowplows design and operation shall incorporate all devices and attachments necessary to ensure a maximum level of safety.

COMPLY(Yes/No):_____
DETAILS:_____

9.2 Dimensions

.1 The overall dimensions of the front plow should be a minimum of 3658 mm (144 inches)wide at the ground line, with an intake height of 610 mm (24 inches) and a discharge height of 1524 mm (60 inches).

COMPLY(Yes/No):_____
IF NON,
EXPLAIN:_____
ACTUAL:_____

.2 The overall dimensions of the wing plow should be a minimum of 3353 mm (132 inches) wide at the ground line, with an intake height of 762 mm (30 inches) and a discharge height of 1219 mm (48 inches).

COMPLY(Yes/No):_____
IF NON,
EXPLAIN:_____
ACTUAL:_____

9.3 Front Plow

.1 The front plow shall be pivoted at the drive frame, and equipped with heavy duty lift chains and hooks and with adjustable steady bars to provide for regulating the pitch angle of the cutting edge with the ground. The plow assembly must be readily detachable from the drive frame.

COMPLY(Yes/No):_____
DETAILS:_____

.2 The moldboard shall be formed sheet steel, one piece construction, minimum 10 gauge (3.4 mm) thickness, supported by a minimum of five vertical and two horizontal continuous reinforcements. Additional reinforcing must be provided at the moldboard top and bottom edges, the intake (landslide plate) and discharge edges, the drive frame attachment points and the cutting edge attachment points.

COMPLY(Yes/No):_____
DETAILS:_____

.3 The plow shall be equipped with a replaceable steel cutting edge, complete with a tungsten-carbide insert, hole punched at 102 mm (4 inches) on center and attached with plow head bolts.

COMPLY(Yes/No):_____
DETAILS:_____

.4 The fixed angle drive frame shall be oscillating type with stabilizing drive bars to permit the plow to follow surface contours without constraint.

COMPLY(Yes/No):_____
DETAILS:_____

.5 The drive frame shall be heavy duty, steel construction and shall be designed to distribute plowing stresses evenly across the moldboard reinforcements.

COMPLY(Yes/No):_____
DETAILS:_____

.6 The drive frame shall be equipped with a safety trip device to cushion the tripping action at all plow speeds. The device should be spring action and easily adjustable with infinite settings.

COMPLY(Yes/No):_____
DETAILS:_____

.7 The drive frame shall be equipped with a minimum of two, vertically adjustable wear shoes. Each shoe shall be a minimum of 3226 sq mm (50 sq in) contact area, constructed from cold rolled steel or cast steel minimum SAE grade 0105. Cast iron shoes are not acceptable. The shoes shall be complete with replaceable wear plates with carbide inserts.

COMPLY(Yes/No):_____
DETAILS:_____

.8 The drive frame shall be readily detachable from the push frame.

COMPLY(Yes/No):_____
DETAILS:_____

9.4 Wing Plow

.1 The wing plow shall be pivoted at the front post and at the rear braces. The rear support braces shall be adjustable to provide for regulating the pitch angle of the cutting edge with the ground. The plow assembly must be readily detachable from the vehicle mounting points.

COMPLY(Yes/No):_____
DETAILS:_____

.2 The moldboard shall be formed sheet steel, one piece construction, minimum 10 gauge (3.4 mm) thickness, supported by a minimum of five vertical and two horizontal continuous reinforcements. Additional reinforcing must be provided at the moldboard top and bottom edges, the intake and discharge edges, the vehicle attachment points and the cutting edge attachment points.

COMPLY(Yes/No):_____
DETAILS:_____

.3 The plow shall be equipped with a replaceable steel cutting edge, complete with a tungsten-carbide insert, hole punched at 102 mm (4 inches) on center and attached with plow head bolts.

COMPLY(Yes/No):_____
DETAILS:_____

.4 The front of the wing plow shall be supported on a minimum 44 mm (1.75 inch) diameter, heavy duty pivot bolt attached to an adjustable vertical post assembly. The post assembly shall be affixed to the push frame, with horizontal heavy duty steel support, braced as necessary. The post assembly shall be heavy duty steel construction, should be operated by a chain/slide plate mechanism and shall be capable of raising the front of the wing a minimum of 152 mm (6 inches) off the ground.

COMPLY(Yes/No):_____
DETAILS:_____

.5 The rear of the wing plow shall be supported on a hydraulically operated, pivoted assembly of steel braces capable of raising the rear of the plow a minimum of 1930 mm (76 inches) off the ground.

COMPLY(Yes/No):_____
DETAILS:_____

.6 The rear of the wing plow shall be equipped with a heavy duty, fabricated, steel boxed section affixed to a minimum of two of the horizontal wing reinforcements.

COMPLY(Yes/No):_____
DETAILS:_____

.7 Two heavy duty steel, parallel wing braces shall attach, one to the top and one to the bottom of the boxed section at the wing. The opposite ends of the braces shall be attached to a support frame at the vehicle.

COMPLY(Yes/No):_____
DETAILS:_____

.8 The support frame at the vehicle shall be heavy duty steel construction, located behind the cab and be affixed to the chassis frame rails. Install additional cross members and reinforcing, as required, at the chassis rails to evenly distribute the loads from the wing plow.

COMPLY(Yes/No):_____
DETAILS:_____

9.5 Push Frame

.1 The vehicle shall be equipped with a custom fabricated push frame mounted on the front of the vehicle chassis rails and designed to transmit plowing forces directly to the rails.

COMPLY(Yes/No):_____
MAKE/MODEL:_____

.2 The push frame shall be designed to fit as close to the vehicle grill as possible to minimize the overall length of the vehicle/plow configuration.

COMPLY(Yes/No):_____
DETAILS:_____

.3 The push frame shall be a hydraulically locked/unlocked, tilt forward design to allow for front access to the engine compartment.

COMPLY(Yes/No):_____
DETAILS:_____

.4 Side plates, gussets, and other major reinforcing components shall be fabricated from minimum 12.7 mm (0.5 inch) steel plate of proper grade, size, design and construction for heavy duty service and shall provide for adequate clearance for steering and suspension components.

COMPLY(Yes/No):_____
DETAILS:_____

.5 Where the push frame attaches to the vehicle frame, the vehicle frame shall be reinforced with additional steel plate and/or steel sections, as required. This additional reinforcing is intended to reduce the stress of loads on the vehicle frame imposed by the push frame and attached plows.

COMPLY(Yes/No):_____
DETAILS:_____

.6 The push frame shall be equipped with a positive locking mechanism utilizing minimum 32 mm (1.25 inch) steel plow connection pins, to make the connection with the front plow drive frame. The design shall allow for a minimum of two pin heights.

COMPLY(Yes/No):_____
DETAILS:_____

.7 The push frame shall be equipped with square or rectangular steel sections extending out towards the sides to act as a vehicle front bumper. The right side extensions can be utilized as the support framework for the wing plow front post assembly. If used for wing support, the extensions must be designed to carry the loads imposed by the wing plow.

COMPLY(Yes/No):_____
WING SUPPORT
DETAILS:_____

.8 The front plow lifting mechanism shall be an integral component of the push frame. The lifting mechanism shall be a heavy duty steel fabrication, hydraulically operated and capable of lifting the front plow a minimum of 305 mm (12 inches) off the ground.

COMPLY(Yes/No):_____
DETAILS:_____

9.6 Lights

.1 The vehicle shall be equipped with two, hi/lo sealed beam, double filament or hi/lo halogen plowing lights mounted on and located above the push frame utilizing pedestal type brackets. The lights must be capable of illuminating the work area ahead of the vehicle with the plow in the raised or the lowered position.

COMPLY(Yes/No):_____
DETAILS:_____

.2 The vehicle shall also be equipped with two high intensity lights having a minimum of 5000 candle power. The lights shall be mounted on pedestal brackets and located to illuminate the plowing area when the plow is in the working position. The lights shall be mounted so as not to interfere with the driver's visibility.

COMPLY(Yes/No):_____
DETAILS:_____

.3 The vehicle shall be equipped with separate breakers for each set of plow lights and separate dash mounted switches to control each set of plow lights.

COMPLY(Yes/No):_____
DETAILS:_____

.4 The vehicle shall be equipped with turn signals mounted to be visible from the front of the vehicle with the plow in the raised or the lowered position.

COMPLY(Yes/No):_____
DETAILS:_____

10.0 EXTRA EQUIPMENT

10.1 Fifth Wheel

.1 The vehicle shall be equipped with a fifth wheel, Holland # FW 6000 or equivalent to be compatible with a two inch kingpin, Holland # KPT 807, or equivalent.

COMPLY(Yes/No):_____
MAKE/MODEL:_____

.2 To minimize the overall length of the vehicle configuration, the fifth wheel shall be located to fit as close to the back of the vehicle as possible, without impeding other vehicle functions.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

.3 The fifth wheel assembly shall be bolted to the vehicle frame to allow for removal, if required. Provide additional frame reinforcement, as required at the area of attachment.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

.4 The centreline of the fifth wheel shall be in line with the centreline of the rear axle.

COMPLY(Yes/No):_____
DETAILS:_____

.5 The vehicle shall be equipped with full, standard trailer connections, including air and electrical connections mounted in the vicinity of the fifth wheel.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

10.2 Cold Start

.1 The vehicle should be equipped with an electronically controlled air intake heater system if available.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____
_____

10.3 Helper Spring(s)

.1 The vehicle shall be equipped with Aeon type rubber helper spring(s) on the vehicle's right side, as required to offset the added weight of the wing plow. The added capacity shall be a minimum of 907 kg (2000 lb) and the added capacity is not to be added to the vehicle's GVWR. With the helper spring(s) installed, the vehicle must sit level when the wing is raised.

COMPLY(Yes/No):_____
TYPE/BRAND:_____

10.4 Shutdown Switch

.1 To guard against unnecessary drain on the vehicle's batteries, the vehicle shall be equipped with a electrical system master shutdown switch, conveniently located in the vehicle cab. With the exception of essential electronic and computer systems, the switch shall be capable of complete shutdown of all of the vehicle's electrical systems.

COMPLY(Yes/No):_____
DETAILS:_____
_____
_____

10.5 Diagnostics

.1 The vehicle should be supplied with any diagnostic peripherals associated with the vehicle engine, including any documentation, cartridges, CDs and cables available that work with diagnostic engine scan equipment.

COMPLY(Yes/No):_____
IF NO,
EXPLAIN:_____