Prein&Newhof
Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory

Addendum No. 1

Owner:	Muskegon County Airport		
Project Title:	Rotary Snow Plow Acquisition		
Project #:	RFB 10-1716	Date of Addendum:	February 3, 2010

Notice to Prospective Bidders

In accordance with the Bid Conditions/Instructions to Bidders and General Provisions of Request for Bids, this Addendum is hereby issued as part of the Contract Documents.

Part V – General Provisions

1. Page 13, Section 1, Guarantee
   a. **Revise** third paragraph to read as follows:

   "The BIDDER must guarantee in writing that for a period of two years from the date of delivery, he will, at…"

Part VI - Technical Specifications

2. Page 27, Section 2, Prototypes and Experience:
   a. **Revise** the first (1st) paragraph to read as follows:

   "The airport sponsor requires this specified piece of equipment in order to maintain the airfield during large and small snow events. It will be a central and critical element in the fleet and in the effort to accomplish the airport's published snow plan. Experience building machines of this nature is mandatory as is a track record of recent manufacture and in-service record for machines comparable and similar to that specified. Therefore, location and contact lists are required in the bid package to enable the airport sponsor to contact at least 5 owners that have taken delivery of similar equipment from the bidder within the last five years, all to have 2007 EPA emission compliant drive engines. Bids received without including such location and contact list will be considered non responsive and will not be considered."

   b. **Revise** the third (3rd) paragraph to read as follows:

   "This vehicle shall be all wheel drive and must be designed and manufactured in the United States, for the specific purpose of snow removal, with a minimum 50,000 lb. GVW rating, and approximate wheel base of 164. The configuration shall allow for front mounted attachments, forward mounted cab design with center or near center steering, auxiliary power unit (if required for application) between operator cab and rear mounted carrier engine. This vehicle shall comply with all applicable FMCSR and FMVSS quality/safety standards, and requirements of the FAA Advisory Circular 150/5220-20"

3. Page 29, Section 4.1, Chassis
   a. **Revise** the second (2nd) paragraph to read as follows:

   "The carrier engine access cover shall be a fiberglass, steel or aluminum enclosure with lift assist. Lift assist shall be controlled from a location where the operator will not be outside of the enclosure's travel path. Lift assist shall function by means of push to operate controls. Hood lift shall include a minimum of two (2) hydraulic or pneumatic cylinders. Cylinders shall be installed under the hood in a location that will avoid deformation of engine cover during use. Lowering shall be accomplished by means of a slow and safe method lowering of the hood. Guides shall be mounted below the leading edge of the hood to self align hood during lower process. Rollers or other appendages on the hood shall lower to the outside of these guides. A comprehensive lubrication data plate shall be affixed to the rear engine enclosure."

4. Page 29, Section 4.2, Frame
   a. **Revise** the second (2nd) paragraph to read as follows:

   "A straight, full width rear bumper is required to protect the rear of the vehicle. Bumper shall be approximately 12 inches in height to offer ample protection at rear of the vehicle. For maneuverability, the unit shall have an angle of departure of no less than 20°. Bumper may be a ballast type bumper."

5. Page 29, Section 5.1, Engine
   a. **Revise** the first (1st) paragraph to read as follows:

   "The engine shall be of the four stroke diesel type, six (6) cylinder, minimum 13 liter nominal displacement, developing a minimum of 335 horsepower at 2100 RPM, and shall be equipped with latest diesel electronic control and engine management system to be 2007 EPA emission compliant for on-road engines. The engine shall be provided with full flow, replaceable oil filters, heated fuel water separator, engine manufacturer's standard fuel filtration system, and emergency (power derate) system with light and buzzer, in event of high water temperature and/or low oil pressure. Automatic measured shot ether starting aid with thermostatic control shall be provided. An engine coolant heater shall be provided, 1500 watt minimum, and also an engine oil pan heater. Starter shall be Delco or equal. Engine shall have a front engine PTO flange for mounting a front mounted hydraulic pump to be driven directly off the crankshaft or transmission PTO."

   b. **Revise** the third (3rd) paragraph to read as follows:

   "A dry type two stage air cleaner is required with provisions for modification of air intake, offering outside of hood and/or under hood air intake as required to conform to engine manufacturer's intake air temperature limitations. Chassis engine air intake filter canister (s) shall be located under the chassis engine hood on stand away brackets. The engine shall be equipped with an engine air intake particular filter. Provisions shall be included for draining all engine fluids from one location."

6. Page 30, Section 5.2, Cooling System
   a. **Revise** the first (1st) paragraph to read as follows:

"A transmission cooler shall be located integral to the radiator. A thermostatically controlled, air operated disconnect type suction fan shall be provided. Air flow shall be parallel type with charge air cooling system mounted above liquid coolant system. Radiator shroud is required to properly direct air flow through cooling system. A fan ring is also required, made of flexible rubber material and mounted to brackets attached to the engine itself. Normal operational engine movement shall carry both the fan and the flexible fan ring with it. The engine cooling system shall be filled with permanent type antifreeze protecting the system to -40° F. A 1500 watt AC coolant heater shall be provided."

7. Page 30, Section 5.4, Fuel System
   a. **Revise** to read as follows:

"Twin fuel tanks shall have a minimum total capacity of 250 gallons. The tanks shall be constructed of heavy gauge steel and be properly fastened to the frame. A four inch diameter filler neck with chain connected cap and brass tank drain plugs shall be provided. Fuel tanks shall be interconnected to allow equalized fuel level in both tanks. Provisions shall be included for filling both fuel tanks from one side of the truck. A Racor 3250 heated fuel/water separator (or equal) shall be installed in the supply line to the engine fuel injectors."

8. Page 30, Add Section 5.5, Filters to read as follows:

"One (1) extra set of filters for all engine, transmission, cooling, lubrication and exhaust systems shall be provided."

9. Page 30, Section 6.2, Transfer Case
   a. **Revise** to read as follows:

"The transfer case shall proportion torque to both front and rear axles without need for driver intervention. Transfer case shall be the two-speed type. Hi-low range selection shall be electric over air actuated and operated from the cab and equipped with Smart Shift® (or equal) to eliminate range shifting at excessive speeds. Switch shall be stage bump type, moving the shift from low to high or high to low. For vehicle and equipment protection, if the shift is not completed by the electric/air system within one minute, the system shall cease attempts at range shift and notify the operator of the failure by flashing light at the control switch. Operating range of the transfer case shall be displayed on the main dash LCD screen. The transfer case shall have a torque transmission capacity exceeding the maximum torque developed by the engine and transmission, and shall be approved for the application and be manufactured by the chassis builder.'

10. Page 30, Section 6.3, Ales
    a. **Revise** third (3rd) paragraph to read as follows:

"For extended life, the steering-drive wheel ends shall be bolted to and removable from the center section of the axle housing. The Cardan drive type joints shall be totally enclosed within a sealed system to protect the moving parts of the axle and steering joints from dirt and slush. The trunnion pins shall be supported by pre-loaded tapered roller bearings to insure long life and smooth steering at all cramp angles."

b. **Delete** fourth paragraph (double reduction axles).

11. Page 32, Section 7.2, Coordinated Steer
    a. **Revise** to read as follows:

    "This mode gives the operator the tightest turning radius of any of the available modes. When the front axle is steered, the rear axle turns in the opposite direction of the front, which reduces the turning radius and enhances maneuverability. This mode also has a deadband feature. Deadband allows the vehicle front axle to be turned a predetermined number of degrees in either direction before the rear axle steers. The deadband varies according to the speed of the vehicle. The rear axle lock remains engaged (locked) when the front axle is within the deadband range. The diameter of the turning radius measured at the front axle tire can not exceed 50 feet."

12. Page 33, Section 9, Brakes
    a. **Revise** to read as follows:

    "The service brakes shall be fully air actuated, drum and shoe type with a minimum 15 CFM air compressor and documented to conform to FMVSS 121, S-cam or wedge type front and rear. The parking brakes shall be spring actuated, air released at the rear service brake air chambers with the air switch mounted within the cab and in easy reach of the operator. An electronic anti-lock brake system is required, 4S-4M. The air system for this unit shall be equipped with frame mounted, heated Bendix AD-9, or approved equal, air drier system. A quick disconnect coupler on the right side of the vehicle shall allow introduction of shop air into air system upstream of the air dryer for filling on board truck system with air. Remote cable drains shall be provided for each air tank. DISC BRAKES AND DRIVELINE BRAKES ARE NOT ACCEPTABLE."

13. Page 33, Section 10, Wheels & Tires
    a. **Revise** to read as follows

    "This unit shall be equipped with proper sized wheels and tires for the GVW rating of the unit being bid. Single wheels shall be furnished for the front and rear axles. The wheels shall be of the steel disc type with axle manufacture's standard bolt circle. The tires shall be Michelin 395/85R20 XZL or equal. One spare tire and wheel assembly shall be provided with the new chassis for each axle, two assemblies total."

14. Page 34, Section 11, Cab
    a. **Revise** first paragraph to read as follows:

    "This unit shall have a fully enclosed, thermally and acoustically insulated (85 db as measured 6" from the drivers ear at full engine RPM), aluminum and glass cab. Fiberglass components shall be used where shaping will assist in snow and air flow around the vehicle to avoid snow build up on the unit during operation. This shall include the roof and front cowling. A visor above the windshield outside the cab is required to shield from falling snow and to assist in shading the operator from sun glare. The cab shall be mounted center frame and as far forward as good engineering practices will permit. The operator shall be positioned to be in the center or near of center of the cab. Minimum cab height shall be 132" as measured from the ground to the top of the cab."

    b. **Revise** item 4 to read as follows:

"Two peep windows, 340 square inches each, required in cab front fascia below windshield to assist operator in monitoring working head and casters. Front windshield may be extended downward to a point that permits an unobstructed view of the working head and casters."

c. **Revise** item 6 to read as follows:

"Minimum two (2) electric variable speed wiper(s), heated type wipers, providing operator absolute, clear line of vision, providing a minimum of 80% swept surface of the windshield. Wipers shall be mounted above the windshield to assist in snow shedding. If parking in a vertical position, wipers shall park within 3 inches of windshield corner posts, or outside of a 90° arc centered on the operator's eye position looking forward. Side window wipers shall be provided with individual controls."

d. **Revise** item 8 to read as follows:

"A windshield deluge system is required to maintain operator visibility during snow removal operations. As a minimum, the system shall consist of a 4 gpm pump, a minimum 15 gallon reservoir, two (2) discharge nozzles for the front windshield, discharge nozzle for each side window (1 per side), discharge nozzle for left and right rear view mirrors, and the associated plumbing to make a functional system. The reservoir shall include a site glass near the fill point. Fill point shall be conveniently located below cab door height for easy refill. Discharge shall be controlled by a dash mounted switch in conjunction with wiper controls."

e. **Revise** item 18 to read as follows:

"The operator seat shall be National Standard Plus (or equal), heated, air ride, fully adjustable in the horizontal and vertical positions with high back, air assist, arm rests, lumbar support, cloth covered, load adjustable and furnished with 3 point type safety belts. Adjustable arm rest shall contain joystick for implement control. Arm rest control shall include a vertical stow feature to facilitate easy egress/ingress of operator. A detent shall lock arm rest in the stowed position, with release control provided for operator."

f. **Revise** item 19 to read as follows:

"A second National Standard Plus (or equal) seat shall be provided to the left of the driver. It shall also be equipped with three point type safety belts. It shall not have arm rests."

15. Page 37, Section 11, Cab
    a. **Revise** the paragraph after item 27 (digital clock) to read as follows:

"Instrumentation shall be centered on a color liquid crystal display mounted in a location where it is in full view of the operator when in the seated position. In general and to provide clear information, chassis engine information shall be grouped at top of screen with blower engine information displayed grouped at bottom of screen. Available information shall include:"

16. Page 37, Section 12.1, Electrical and Lighting
    a. **Revise** item 14 to read as follows:

"Master electrical disconnect switch shall be located adjacent to battery box and clearly labeled."

17. Page 37, Section 12.2, Radios
    a. **Revise** second (2nd) paragraph to read as follows:

    "ICOM IC-A110-05 VHF Air Band Transceiver, including microphone and exterior (cab roof) mounted antenna."

18. Page 37, Section 13.1, Auxiliary Engine
    a. **Revise** first (1st) paragraph to read as follows:

    "The auxiliary engine shall be of the four stroke diesel type, six (6) cylinder, developing a minimum of 700 horsepower at 2100 RPM. The engine shall be a Tier 3 class engine for EPA emission levels. A doghouse or other protective enclosure of fiberglass construction shall be provided for the engine installation. Doors for maintenance access to the auxiliary engine shall be removable and held in place by rubber retainers to avoid rattling of the doors. When removed, full access to the sides of the engine shall be provided from the required catwalks on both sides of the engine. The auxiliary engine shall have an electronic control system, and have the same protection (power derate) systems and instrumentation as required for the vehicle engine, plus an intake air warning system for high intake vacuum. The engine shall have a 1500 watt minimum coolant block heater and an engine oil pan heater. The engine installation shall also include 12 volt start (Delco 50MT or equal), automatic shot, thermally locked ether starting aid, muffler(s) approved for the application by the engine manufacturer, an air restriction indicator, and an automatic air intake system as required to conform to engine manufacturer's intake air temperature limitations."

19. Page 39, Section 15.2, Helical Ribbon
    a. **Add** the following to the end of the first paragraph

    "Mechanically driven helical ribbon systems of equivalent capacity may be considered if documentation of system components, operations and capacity is submitted with bid package."

20. Page 39, Section 15.3, Impeller System
    a. **Revise** first (1st) paragraph to read as follows:

    "The impeller system shall have a minimum diameter of 59 inches with a minimum depth of 21 inches. It shall be designed to be consistent with the capacity of the in-putting reel. The opening, blade diameter and speed ratio shall ensure proper snow flow and discharge to the casting chute. The impeller blades (minimum four blades) must be replaceable and be attached with countersunk fasteners. All blades shall be constructed and balanced to be resistant to vibration and shock damage caused by high speed ingestion of foreign objects. The impeller shall be driven by direct mechanical means and shall have bolts designed to facilitate efficient attachment/detachment with the carrier vehicle."

    b. **Revise** third (3rd) paragraph to read as follows:

"A hydraulic pressure relief block shall be provided to relieve system pressure allowing safe, easy connection of ribbon and chute hydraulic hoses."

c. **Revise** fifth (5th) paragraph to read as follows:

"The gear box shall include helical gears with pressurized lubrication system. CHAIN TYPE DROP BOXES ARE NOT ACCEPTABLE. Driveline shall be Spicer 1710 Series or equal. Shear bolts shall be provided in the impeller drive train to minimize damage should ingestion of foreign objects occur. The shear bolts shall be accessible and replaceable from behind the intake face of the blower to eliminate removing snow from the blower intake to replace the bolts."

21. Page 41, Section 16, On-Board Diagnostics And Electronic Control System
a. **Revise** first (1st) paragraph to read as follows:

"Functional control of vehicle shall be centered on an electronic control system utilizing J1939 data bus. Reliability and precision operation of the unit requires heavy reliance on solid state circuitry and components and minimized reliance on traditional multi-pin "physical switch" type relays. Electronic control systems shall include on board diagnostic assistance and other features to simplify the operation, troubleshooting, and repair of the unit. Proprietary engine and Allison transmission data and troubleshooting readout not required. A laptop computer shall be provided with compatible and appropriate software loaded and a cable and key system."

22. Page 42, Section 16.1, 16.1. ECU's, VIMS, Power Modules and Direct Current Controllers
a. **Revise** to read as follows:

"A timer module shall serve to keep electronic modules live for 15 minutes after last cycle of door switches indicating egress from vehicle. This unit shall maintain heartbeats and power indicators at modules and their function without the key switch on. After 15 minute period without a change of status in door switches, unit shall automatically shut down completely."

23. Page 43, Section 17.6, EPA Emissions Standards
a. **Revise** to read as follows:

"Because of the critical nature of this machinery, it is essential that the complete unit and all components be manufactured and with engine components that comply with the most recent United States Environmental Protection Agency standards for heavy duty highway type diesel engines. These EPA standards were published in 2007. The engine must be new and unused. To this end, the purchaser reserves the right to compare serial numbers of engines with the current production records of the component manufacturers. Any engine found to be non-compliant with these highway standards will be rejected and delivery will be rejected. Experience building and distributing machines with engines meeting these standards is mandatory as is a track record of recent manufacture and in-service record for machines comparable and similar to that specified. Therefore, location and contact lists are required in the bid package to enable the airport sponsor to contact at least 5 airports that have taken delivery of similar equipment from the bidder within the last three years. Bids received without including such location and contact list will be considered non responsive and will not be considered."

24. Page 45, Section 17.9, Alignment
    a. **Revise** to read as follows:

    ”The vehicle is to be delivered with a wheel alignment report verifying proper alignment and set up of all steering axles, both left and right side. The alignment procedure shall be done at a location where manufacturer can control adjustment on the newly built chassis necessary for proper alignment. Report shall show camber, caster and toe-in before and after adjustment against acceptable product limits. A sample of such alignment report is to be provided in the bid package. This sample shall verify that such testing is part of the manufacture’s standard practice for quality control.”

25. Page 45, Section 19.2, Name Plates and Instruction Plates
    a. **Revise** to read as follows:

    “All nameplates and instruction plates shall be metal or plastic, which weathering will not degrade. The information shall be engraved, stamped or etched on each plate. If metal, they shall be made of non-corrosive material, chrome plated or nickel silvered. Metal plates shall be attached with screws, bolts or rivets. Plastic plates shall be attached with screws, bolts, rivets or permanent adhesive. Each plate shall be mounted in a conspicuous place. Nameplates shall show make, model, serial number and other such data as to positively identify the item. Information plates shall be in English and provide important instructions to be followed in operating or servicing the vehicle or equipment. The information plate shall include warnings or cautions and shall be so located and be of sufficient size to be readily seen under normal operating and/or servicing conditions.”

John Stroo, P.E.