

# **Addendum Number 1**

**Cape Girardeau Regional Airport**

**Provide Heavy Duty Multipurpose Carrier Vehicle; with Two Stage  
Loader Mounted Snow Blower**

**Project No. 13-077A-2**

**August 5, 2014**

**Cape Girardeau Regional Airport  
Provide Heavy Duty Multipurpose Carrier Vehicle  
& Two Stage Loader Mounted Snow Blower  
Project No. 13-077A-2  
Addendum Number 1  
August 5, 2014**

This Addendum is herewith made a part of the Contract Documents of the above issued project, and is issued to amend and supplement the July 14, 2014 specifications as follows:

**SPECIFICATION REVISIONS/ CLARIFICATIONS**

**Request for Bids/Invitation for Bids**

Entire Document: Delete reference to August 12, 2014 bid date.

Revise date of bid to **August 20, 2014**.

**Division 3, Technical Specifications**

Item 5: Revise 2,544 tons/hour to 2,750.

**Appendix 1, Specification for Heavy Duty Multi-Purpose Carrier Vehicle**

**Part A - Airport Operator Checklist**

**Number 2 (d).**

Delete references to 'auxiliary spill guards and latch hooks'.

**Number 8 (f).**

Replace references to Single Flash Strobe to "Equipped with a factory installed yellow rotating beacon or flashing strobe 'Vehicle Safety Identification Light'. Information on sourcing & installing the rotating beacon and/or strobe light, etc. shall be provided and approved by the owner during the submittal process."

**Number 8 (v).**

Delete reference to 'auxiliary spill guard'.

**Part B, Specification for Carrier Vehicle**

**Paragraph 18 (c) Spare Rim/Tire**

Delete this section.

**Paragraph 21 (d) Spotlight**

Delete this section.

**Paragraph 21 (h) Lighting System**

Rewrite the first sentence to read as follows: "The carrier vehicle shall be equipped with a factory installed yellow rotating beacon or flashing strobe 'Vehicle Safety Identification Light' on its upper most part."

**Paragraph 24 (a) Paint**

Delete reference to Chrome-Yellow paint.

Add: The paint color of the carrier vehicle shall be approved by the owner during the shop drawing submittal process. The color of the carrier vehicle shall qualify as a standard wheel loader equipment orange or yellow.

Paragraph 25, Miscellaneous; (c), Accessories and Tools; (5), Filters

Delete: Item 5.

### **Appendix 3 - Rotary Plow Specifications**

#### **Part A - Airport Operator Checklist**

Add to Item No. 5: "Performance Testing. The rotary plow shall be field tested in accordance with SAE ARP 5539, Rotary Plow with Carrier Vehicle for the casting distance and tonnage capacity specified by the airport owner in this section.

The manufacturer shall be responsible for conducting tests to ensure that its snow removal and ice control equipment meets the operational and performance requirements of the specification including the snow removal capacity and casting distance @ the specified snow unit weight and under the conditions specified herein.

The manufacturer/vendor of rotary plow equipment described in this specification shall furnish a certification in writing that the components constituting the whole of the rotary plow equipment being supplied to the airport operator comply with the applicable performance, design and construction requirements of the specification herein.

Certified records of these compliance tests shall be submitted by the manufacturer with each response to an invitation to bid. Equipment tests shall be conducted on standard production models and not on specifically constructed prototypes.

The purchaser may conduct its own operational and performance test on equipment prior to acceptance. In such cases, the manufacturer should have the opportunity to witness the performance of such tests, but the cost of such testing and interpretation of the results is the sole responsibility of the purchaser.

#### **Part B - Rotary Plow Specifications**

Delete: Entire Section; Pages 63 – 68.

Replace Part B - Rotary Plow Specification with the following:

1. High-speed rotary plows and carrier vehicles shall be in accordance with SAE ARP 5539, Rotary Plow with Carrier Vehicle.
2. The rotary plow unit shall be completely self-contained, two-stage design.
3. Two-Stage Rotary:
  - a. Rotary-Head Box: Fabrication shall be of heavy gauge welded alloy steel designed for the type of expected service using best engineering practices. The rotary-head box shall have provisions for vehicle mounts, shoe or caster brackets, scraper blades, drive lines, controls, augers, and impeller bearing mounts and other mechanical hardware. A scraper blade shall be fitted to the lower leading edge of the box which shall be removable and made of high carbon steel or polyurethane. The blade shall run the entire width of the box. A minimum of 6 wear shoes are required. The wear shoes, or a portion of them, on the Rotary Head Box unit must be adjustable.

- b. Input Auger: The auger(s) shall have a minimum of two bearing supports. The ribbon blades shall be easily replaceable and made of high tensile steel. They shall be bolted or otherwise attached to the auger shaft and balanced to reduce vibration using best engineering practices.
- c. Input Auger (Solid): The solid auger shall have multiple cutter blades mounted on the auger drive shaft. Input auger shall be designed to feed snow to the discharge impeller to be cast away from the vehicle. The solid auger drive shaft(s) shall be balanced and supported by bearings, one at each end of the auger shaft (some designs may be configured differently).
- d. Discharge Impeller System: The impeller capacity shall be at least equal to the capacity of the input auger(s). The impeller blades shall be made of high tensile steel using best engineering practices and be balanced to reduce vibration and shock damage.
- e. All augers shall be supported by ball bearings.
- f. Operation of the Rotary System: The operation of turbines shall be by hydraulic, hydrostatic, or mechanical means with the speed controlled by a single operator in the vehicle cab. Power shall be transmitted to these systems via mechanisms located on either side of or in the middle of the rotary head box. To ensure efficient snow flow where an auger and impeller share the same drive shaft there shall be a reduction gear system between the two to provide a proper meshing of impeller speed and auger speed.
- g. Snow Casting Assembly: The snow casting assembly shall consist of a casting chute(s) that can be directionally controlled, an impeller(s), and a control system. The casting chute(s) shall be able to rotate in either a vertical or horizontal plane, or both, as required by the purchaser. The shop drawing submittals prior to bid shall detail this information adequately for the purchasers review. Casting distances shall range from zero to the maximum cast distance as specified by the purchaser. The snow casting chute(s) shall be designed and positioned on the carrier vehicle so as to provide maximum operator visibility. Chutes shall be controllable by a single operator from within the carrier vehicle cab.
- h. Rotary Head Assembly: The rotary head assembly shall be equipped with a device that is capable of raising it a minimum of 8 inches (20 cm) from the pavement. The locking device shall be activated through the use of conveniently located controls in the vehicle cab. The drive system shall not bind, rub, or vibrate excessively when the assembly is being moved. When the vehicle is traveling, the assembly shall have a means to be locked in the raised position.
- i. Drive Protection System: All auger and impeller assemblies shall be protected against sudden stops or damage that may be caused from foreign objects. Protection may be in the form of automatic clutches, release overrides, and/or shear fasteners. Consideration shall be given to the location of protection devices to minimize the requirement to remove snow in order to gain access to and reset or replace the protection device.

The auger drive shall be protected by two (2) shear bolts, 1.750 inch alloy shaft and a flexible coupling. Shear bolts shall be located to minimize the requirements to remove snow in order to gain access to the shear bolts.

The impeller shall be protected by two (2) shear pins. The shear pins shall be located conveniently to minimize the requirement to remove snow in order to gain access to the shear pins. The purchaser will consider options other than the two (2) shear pin design if in the discretion of the owner the proposed method is equivalent or superior to the shear pin design.

The second, impeller stage shall have a 38 inch diameter, six (6) replaceable blades.

- j. Blower Head Drive Train: Drive shafts, universal joints and other mechanical components of the drive train shall continue to provide power to the head assembly under normal operating conditions through the operating range of the blower head without physical damage.
- k. Minimum Performance Requirements: Minimum Performance requirements are specified in Appendix 3 – Rotary Plow Specification; Part A - Airport Operator Checklist
- l. Hydraulics shall be provided by an engine mounted, direct drive, gear pump. The hydraulic system shall have full flow filtration.
- m. The system shall be designed to operate at a temperature of -40 degrees Fahrenheit.
- n. The snow blower unit shall be equipped with a muffler at 82 dbs.
- o. The engine must be equipped with a dual stage type air cleaner with a restriction (safety element) indicator.
- p. The engine must be equipped with a low oil pressure, high engine temperature automatic shutdown system.
- q. The engine shall be equipped with cold-weather starting aids including a 110 volt block heater, either start or a grid heater.
- r. The snow blower electrical system shall be 12-volt. Negative ground with a minimum 95 amp alternator. All electrical components must be protected against the elements in an all-weather proof sealed electrical box located with the power unit. All plugs outside the box must be weather pack type.
- s. There shall be two (2) 12 volt, 950 CCA maintenance free batteries.
- t. Wiring shall be in a special low temperature loom or cable. There shall be a circuit breaker protected and feature a disconnect plug at the control box.
- u. The engine shall be in a weather proof steel enclosure with removable doors for easy access to the engine and compartments. Removable doors can be omitted provided easy access to the engine and compartments is provided.
- v. The unit shall include a minimum 75 U.S. gallon fuel tank with a gauge mounted on the tank.
- w. The snow blower function shall be controlled by a 12-volt control valve.
- x. Snow blower In-carrier vehicle cab instrumentation shall include at a minimum:
  - i. Tachometer
  - ii. Oil pressure gauge
  - iii. Water temperature gauge
  - iv. Voltmeter
  - v. Key Switch
- y. Snow blower controls equipped inside the carrier vehicle for easy operator access:
  - i. Impeller housing rotation
  - ii. Turret loader

- iii. Clutch control
  - iv. Throttle control
  - v. Fuel gauge
  - vi. Engine diagnostic display with hour meter.
- z. The loading chute shall consist of not less than two (2) sections and be all welded construction. The chute shall be controlled hydraulically.

The loading chute shall rotate in a horizontal arc of 145 degrees to either side of center. Chute rotation shall be accomplished by a cast steel rack and pinion with a minimum 3-inch O.D. cylinder tube. The rack and pinion shall turn a cast wheel engaged in the chutes first section drive ring.

**End of Addendum 1**

Cape Girardeau Regional Airport  
Provide Heavy Duty Multipurpose Carrier Vehicle and  
Two Stage Loader Mounted Snow Blower

August 5, 2014

**Insert list of plan holders**

**CAPE GIRARDEAU REGIONAL AIRPORT  
PROVIDE HEAVY DUTY MULTI-PURPOSE CARRIER VEHICLE  
WITH TWO STAGE LOADER MOUNTED SNOW BLOWER  
PLAN HOLDERS LIST**

CMT Job No. 14405-02-00

Fee = \$15

PROJECT NO. 13-077A-2

Last Updated: 7/31/2014

	Company	Contact Name	Qty Plans & Specs	Date Sent
1	Cape Girardeau Regional Airport Airport Road Cape Girardeau, MO 63701	Bruce Loy	1	7/14/2014
2	Missouri AGC Construction News (Eplan) 4115 S. Providence Road, Suite 105 Columbia, MO 65203 (P) 573-634-5574 Email: eplan@eplanbidding.com	Plan /Room	1	7/15/2014
3	McGraw-Hill Construction Dodge 1995 Nonconnah Blvd. Memphis, TN 38132	Plan /Room	1	7/15/2014
4	McGraw-Hill Construction Dodge 3315 Central Avenue Hot Springs, AR 71913 <a href="http://www.construction.com/projectcenter/">www.construction.com/projectcenter/</a>	Plan Room	1	7/15/2014
5	MoDOT Multimodal Operations Aviation 105 Capital Drive Jefferson City, MO 65102 (P) 573-526-3619 (F) 573-526-4709	Darrell Goth	1	7/14/2014
6	Luby Equipment Services 2300 Cassens Drive Fenton, MO 63026 (P) 636-343-9970 Email: tschaedler@lubyequipment.com	Tom Schaedler	1	7/16/2014
7	Kodiak America 1350 Pomerelle Ave. Burley, Idaho 83318 (P) 208-650-8498 Email: Kent@kodiakamerica.us	Kent Philling	1	7/17/2014
8	ERB Equipment Company 1421 South Weest End Blvd. Cape Girardeau, MO 63703 (P) 636-349-4426 Email: RonNichols@Erbequipment.com	Ron Nichols	1	7/21/2014
9	M-B Companies, Inc. 1200 Park Street Chilton, WI 53014 (P) 920-898-1077 Email: smueller@m-bco.com	Steve Mueller	1	7/21/2014
10	Rudd Equipment Company 4679 Baumgartner St. Louis, MO 63129 (P) 314-707-3894 Email: wgmerck@ruddequipment.com	Will Gmerck	1	7/22/2014
11	Elliott Equipment Company 2602 Sadie Court Joplin, MO 64801 (P) 417-540-3327 Email: brett@elliottequipco.com	Brett Parker	1	7/31/2014
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