ADDENDUM NO. 4

GMIA-Runway 7R Deice Pad

PROJECT NO. A158-12009

OFFICIAL NOTICE NO. 6919

GENERAL MITCHELL INTERNATIONAL AIRPORT
Milwaukee County, Wisconsin

Prepared By: MILWAUKEE COUNTY DEPARTMENT OF ADMINISTRATIVE SERVICES
ARCHITECTURE AND ENGINEERING DIVISION
Airport Engineers - Telephone 414-747-5320
5300 South Howell Avenue
Milwaukee, Wisconsin 53207

DATE OF ADDENDUM: July 14, 2014

BIDS CLOSE: 2:00 P.M., WEDNESDAY July 16, 2014 (REVISED)

TO ALL BIDDERS:

Each bidder shall read this Addendum in its entirety to determine to what extent his proposal and the contract conditions will be affected. This Addendum to the Contract Documents is issued to modify, explain, or correct the original documents and is hereby made part of the Contract Documents.

RECEIPT - Sign the following receipt and attach to submitted Proposal Form.

Receipt of Addendum No. 4, consisting of six (6) pages for **GMIA, Runway 7R Deice Pad**, Official Notice No. 6919, at General Mitchell International Airport, Milwaukee, Wisconsin, dated July 14, 2014 is acknowledged.

Date _____ Firm _____

Per _____ Address _____

CHANGES

SPECIFICATIONS

Notice of Reception of Bids - Page 1

Remove: "When documents are returned to the Department in their original condition within 10 days after Bid opening, that amount will be credited to the account." Insert:" No refunds for plan sets returned to the Department will be issued. Bidding document charges are non-refundable."

SECTION 15100 – Valves, Hydrants, and Appurtenances
Delete Paragraph 2.03 C. and replace with the following;

C. 480 Volt Powered Actuators for Part Turn or Multi-Turn Valve Operation:

1. General
   a. Actuators shall conform to AWWA Standard C540, insofar as applicable and as herein specified. Actuators shall be O-ring sealed, watertight to standard NEMA 4X/6, submersion to 6 feet for 30 minutes. Actuators installed in vaults below grade and elsewhere subject to submergence shall be watertight to standard NEMA 6P/IP68, 15 ft for 72 hours minimum.
   b. Valve service/operation shall be as specified herein and as indicated on the P&IDs.
   c. 480 Volt powered actuators shall be Rotork IQ/IQM; Limitorque MX; EIM TEK 2000; AUMA SA/SAR. Actuators shall be configured as required to provide for part turn or multi-turn and be coupled with gearboxes as required to obtain the speed and operating torque as required for the valve or gate it controls.

2. Operation:
   a. Capabilities shall be provided to position valve locally or remotely via Local/Off/Remote selector switch and Open/Stop/Close push buttons.
   b. When in remote, actuator shall accept one remote signal to open the valve and a second remote signal to close the valve.
   c. When in remote, the actuator shall provide a 4-20mADC position signal proportional to 0-90 degrees valve position.
   d. Unless stated otherwise in valve specifications, actuator and gearing size shall be designed to operate valve at a disc speed of one foot travel per minute of operation. For quarter turn valves, valves shall rotate from stop to stop in 30 seconds per foot of throat diameter.

3. Functional:
   a. Motor operated valve controller shall include motor, operator unit gearing, limit switch gearing, limit switches, control power transformer, position transmitter (when required), torque switches, bored and key-wayed drive sleeve for non-rising stem valves, declutch lever and auxiliary hand wheel as a self-contained unit. Valve contacts shall be capable of handling the current equivalent of a NEMA 1 size starter.
   b. Reversing starters shall be integral with actuator, and shall be solid-state starters for modulating service. Electro-mechanical reversing starters shall be acceptable for open-close service and shall be mechanically and electrically interlocked.

c. Limit switches and gearing shall be an integral part of valve control. Limit switch gearing shall be made of bronze or stainless steel and shall be fully lubricated, intermittent type and totally enclosed to prevent dirt and foreign matter from entering gear train. Limit switches shall be of adjustable type capable of being adjusted to trip at any point between fully opened valve and fully closed valve. Limit and torque switches shall be provided for stopping valve in both directions. Mid-travel switches shall be provided as required. Set position shall not be lost if over travel occurs in either manual or electric modes of operation.

d. Valve position transmitter shall be a gear actuated, two-wire device, producing 4-20 mADC signal proportional to 0-90 degree valve position or to 0-100% of valve travel. Transmitter shall be provided with easily accessible zero and span adjustment potentiometers. Each valve actuator shall be provided with a remote digital or mechanical indicator with a 0-100 percent scale at remote LCP. DC power supply shall be provided integral with operator and powered from 110 volt AC internal transformer. Positioner board shall provide repeatable accuracy to 0.25% of span. There shall be separate trim pots on positioner board for zero, span and dead band adjustment.

e. Speed of actuator shall be responsibility of the valve supplier with regards to hydraulic requirements and response compatibility with other components within control loop. Each valve controller shall be provided with a minimum of two limit switch functions, one for opening and one for closing. Each limit switch will have two normally open and two normally closed contacts. Gear limit switches shall be geared to driving mechanism and in step at all times whether in motor or manual operation. Provision shall be made for two extra sets of limit switches as described above, each to have two normally open and two normally closed contacts. Each valve controller shall be equipped with a double torque switch. Torque switch shall be adjustable and responsive to load encountered in either direction of travel. Limit and torque switch contacts shall be silver inlay type.

f. Each actuator shall include monitor relays to remotely indicate fault signal for indication of power failure, phase failure, thermal switch tripped, torque switch tripped between travel stops and Local-Off-Remote selector switch position.

4. Physical:

a. Operator shall be equipped with open-stop-close push-buttons, a local-off-remote selector switch and indicating lights mounted on operator. Where operator will not be situated between 2-ft-0-in and 7-ft-0-in above operator platform, and where shown on Drawings provide a separate remote valve operating station.

b. Motor shall operate on 460 volt, 60 hertz, 3 phase power and shall be sized by actuator manufacturer to provide the required output torque for service intended. Motor shall have Class F insulation, with a duty rating of at least 15 minutes at 40 degrees C ambient temperature. Motor shall be specifically designed and built by actuator manufacturer for electric actuator service. Commercially available motors shall not be acceptable. Actuator shall include a device to ensure that motor runs with correct rotation for required direction of valve travel regardless of connection sequence of the power supply.

c. Operators utilizing multiple reduction power gearing shall consist of spur, helical, or bevel gearing and worm of hardened alloy steel, and the worm gear shall be alloy bronze. Operators utilizing single-stage reduction shall be single-stage worm gear totally enclosed in a fully lubricated gearcase, with filling and drain plugs. Non-metallic, aluminum, or cast gearing shall not be allowed. Output shaft shall incorporate thrust bearings of the ball or roller type at the base of the actuator.

d. An operating wheel shall be provided for manual and/or emergency operation, engaged when motor is declutched by a lever or similar means, the drive being

restored to power automatically by starting the motor. Operating wheel drive shall be mechanically independent of motor drive, and any gearing shall be such as to permit emergency manual operation, using a 40 pound force in a reasonable time. Clockwise operation of handwheel shall give closing movement of valve unless otherwise stated.

e. Each actuator shall be supplied with a start-up kit including installation instructions, wiring diagrams, and spare cover screws and seals to provide for losses during commissioning.

f. Continuous mechanical dial indication of valve and position shall be provided. Mechanical dial position indicator shall be in step with actuator at all times in both hand wheel and motor operation. For modulating applications, mechanical dial position indicator shall include graduations of 0-100 percent scale.

5. Wiring and Terminals:
   a. Internal wiring shall be of tropical grade PVC insulated stranded cable of 5 amp minimum rating for control circuits and of appropriate size for the motor 3 phase power. Each wire shall be clearly identified at each end.
   b. Terminals shall be of stud type embedded in a terminal block of high tracking-resistance compound. The 3-phase power terminals shall be shrouded from control terminals by means of an insulating cover.
   c. Terminal compartment shall be separated from inner electrical components of actuator by means of a watertight seal. Terminal compartment of actuator shall be provided with three threaded cable entries.
   d. Each actuator shall be provided with a commissioning kit consisting of a wiring diagram and installation and operation manual. A separate wiring diagram shall be provided inside the terminal cover. No special tools, devices or parts shall be required for commissioning.
   e. Actuators shall have separately sealed motor and control compartments. Operators shall have space heaters in their limit switch, motor, and control compartments.

6. Remote Control Stations:
   a. Where shown on Drawings, or where specified in Equipment Specifications, the valve actuator manufacturer shall be furnish control stations suitable for mounting remotely from the actuator. Remote mount control station shall include a Local - Off - Remote selector switch, Open - Stop - Close pushbuttons and Open - Close indicating lights. Control station operators shall be heavy duty devices mounted in a cast iron, cast aluminum, or stainless steel NEMA 4X enclosure suitable for wall mounting.
   b. Local - Off - Remote selector switch shall have auxiliary contacts for remote indication of switch position. Local - Off - Remote selector switch shall have provisions for padlocking in the "Off" position.
   c. Refer to Instrumentation P&ID Drawings for confirmation of scope of the Remote Control Stations and additional functionality and/or devices to those specified above.

7. Performance Test:
   a. Each actuator shall be shop performance tested, and individual test certificates shall be supplied without additional charge to Owner. Test certificates shall be submitted prior to shipment of valve actuators. Test equipment shall simulate a typical valve load, and the following parameters shall be recorded:
      1) No load current.
      2) Current at maximum torque setting.
      3) Stall current.
      4) Torque at maximum torque setting.

5) Stall torque.
6) Test voltage and frequency.
7) Flash test voltage.
8) Actuator output speed.

ADDITIONAL INFORMATION

1 Batching/Crushing Operations

If requested concrete batch plant, concrete crushing operations or other similar operations, shall have arrangements made with owner. Batch plant, crushing operations or other similar operations shall be used for this project only and shall be promptly removed within 30 days of owner directing to do so. If contractor does not completely remove batch plant, concrete crushing operations or similar operations within 30 days, the owner will impose liquidated damages of $5000 per day.

It will be the responsibility of the contractor to keep all haul routes clean and dust free. The Contractor shall utilize equipment having vacuum or water spray mechanisms to eliminate the dispersion of particulate matter into the atmosphere. If vacuum equipment is employed, it must have suitable, self-contained particulate collectors to prevent discharge from the collection bin into the atmosphere.

If, in the opinion of the Engineer, the Contractor is remiss in his responsibility for keeping the paved areas clean, the Engineer will have them cleaned by County forces and will back-charge the cost against payment otherwise due to the Contractor at the rate of $150.00 per hour, with a minimum charge per occurrence of $500.00.

The batch plant location will be in the designated construction laydown area shown on page G-002. Do to the location of the site the contractor has to file a 7460 with the FAA a minimum of 90 days prior to erecting the batch plant. The area is extremely close to the Runway Protection Zone (RPZ) for 7R which will remain open for aircraft landings and departures. **Due to the wide configuration of batch plants there is no guarantee that the site can be used for batching or crushing. The final determination will rest with the FAA and GMIA.**

No concrete batching or concrete crushing from outside projects will be allowed.

The site must be restored to the original state prior to the batching or crushing operations.

2. Trench drain surface area will be deducted from the quantity of pavement placed. Trench drain installation is paid under a separate bid item.

3. Base Bid Item #36 covers backfill of the pipe trenches and around structures in the deicing pad vicinity, above the pipe bedding.

Alternate Bid #2 Item #15 covers the required fill to replace unsuitable materials at the storage tank site and build up the grade to support the storage tank, and to backfill the pipe trenches influenced by paved surfaces and backfill around structures, including the lift station wet-well and manholes.

CLARIFICATION

1. Clarification to Addendum 2 Question 1. Electrical Distribution Equipment, Subquestion 3:

LCP-100 is to be provided by the valve actuator manufacturer as described in the modifications to **SECTION 15100 – Valves, Hydrants, and Appurtenances** included in Addendum 4.

Clarification to Drawing E-105, DIAGRAM 3

LCP-100 shall consist of an appropriately sized NEMA 4X terminal junction box with terminal strips for terminating the underground cables shown on the riser. Mount the valve control stations above the box using ¾"C, 14#12, 1#12G and ¾"C, (2)-2/C#16 SH to each control station. Provide wiring connections per manufacturers shop drawings.

2. **Question:** Regarding your type 1 manholes. Are you asking for 60" and 72" cones, or can we use a reduction cover to accommodate a 48" cone?

Response: The cones shown in the contract documents are 60" and 72" diameter at the bottom to match the diameters of the various bases point of connection to the bases. Reduction covers (flat slab tops) accommodating 48-inch cones are acceptable substitutes. Suppliers must provide signed and sealed shop drawings from a Structural Engineer licensed in Wisconsin for each structure design in accordance with the contract documents, using the appropriate design criteria and loading.