# ADDENDUM NO. 1
**AS STATE BUILDING DIVISION**
**501 Building CRAH Replacement**
**501 South 14th Street**
**Lincoln, Nebraska - 2014**
**August 2014 / OA Project No. 014-1641**

**Design Professionals:**
Olsson Associates – Mechanical & Electrical Engineers

**DATE OF ISSUANCE: September 11, 2014**

The Project Manual and Project Drawings dated August 2014, for the above referenced project, are amended by this addendum.

**NOTICE:** This Addendum is issued to all interested prospective bidders as an amendment to the project manual or other parts of the bidding (contract) documents for the above named project. Reference to this Addendum must be included in the Bid proposal. The information contained herein shall be fully incorporated into the contract documents as though originally included therein.

**PROJECT CHANGES**

**NOTE: No physical work in the Data Center shall start until AFTER the General Election (November 4, 2014). Shop drawings and equipment can be ordered for delivery prior to this date.**

**1)** Refer to Section 011000 - SUMMARY

1.4 A: Delete Item 1 in its entirety and replace with the following Item 1:

1. Replace the Computer Room Air Conditioning Units at Nebraska State Office of the Chief Information Officer; Lincoln, Nebraska

1.7 B: Delete Item 1 in its entirety and replace with the following Item 1:

1. Hours for Utility Shutdown: None. Must coordinate with Owner.

**2)** Refer to Section 230500 – COMMON WORK RESULTS FOR HVAC
3.1 C: Add sub-paragraph: 3) Where wet core drilling is required for cutting openings in concrete and masonry, contract shall utilize portable water sprayers. The use of hoses is not allowed. Contractor shall also use wet vacuums to contain any excess water. Additional requirements for wet core drilling of concrete and masonry construction include:

1. Cover lower level equipment from overhead work to protect from water from drilling and from core slugs falling from overhead.
2. A temporary water dam shall be installed around all core drilled holes.
3. All areas in the data center space where wet core drilling and ceiling removal/modification is performed shall be separated by a plastic envelope.
4. Damage to any piece of equipment, as a result of performing work, shall be repaired to “like new” condition at the sole expense of the contractor.

**3)** Refer to Section 231100 – HYDRONIC PIPING
2.2 A: Sub-paragraph 1 shall be revised to allow Victaulic grooved joints on chilled water piping 3” in size and larger. An approved equivalent manufacturer for grooved fittings include Anvil International or engineer approved equal.
2.2 A: Sub-Paragraph 6 shall be omitted in its entirety. No pressed fittings shall be allowed. Piping 2-1/2” and smaller shall be per piping material schedule shown on drawings.

**4)** Refer to Section 232500 – MECHANICAL WATER TREATMENT

1. Specification section shall be added to the project manual.

**5)** Refer to Sheet M6.0 – Mechanical Details

Detail #3: Valve to be used for hot tapping shall be a gate valve, or as required by hot tap machine manufacturer.

**6)** General Clarifications

1. No cutting, welding, grinding, or dust creation is allowed in the data center area.
2. Closed loop chemical treatment shall be the responsibility of the contractor. Owner will provide the chemical treatment supplier that will be used at this facility. Requirements for chemical treatment are contained within added specification section 232500.
3. Materials are allowed to be brought into the facility thru the loading dock. Piping will allowed to be stored in the basement of the facility. CRAH units will need to be delivered to the building as they are to be installed. No on-site storage for CRAH units is available.
4. Demountable walls will be removed and re-installed by the Owner as required to perform work.
5. Raised floor tile are believed to be rated to 2500 lb. Contractor shall utilize minimum 3/4" thick plywood for protection of existing floor during transportation of CRAH units through facility.
6. Schedule 40 solid wall PVC may be used for condensate drainage from each CRAH unit. Piping must be drainage pattern fittings with solvent welded joints. Piping must be rated for 25/50 flame spread & smoke index.
7. CRAH units shall be fed with new conduit and wiring as specified on plans. Existing feeders are not adequately sized to serve new CRAH units.
8. Contractor shall be responsible for adjusting the location of items conflicting with new CRAH location. These items shall include, but not be limited to (the quantities listed below are associated with CRAH-4 :
    a. Sprinkler heads (1)
    b. Air Inlets and/or Outlets (1)
    c. Lighting Fixtures (2)

**7)** Pre-Bid Walk-Through

Pre-Bid Walk-Through was not mandatory. See attached attendance list and meeting agenda.

**END OF ADDENDUM NO. 1**

**SPECIFICATIONS**
**501 BUILDING CRAH UNIT REPLACEMENT**

SECTION 232500 - WATER TREATMENT (MECHANICAL PIPING)

PART 1. GENERAL

1.1 DESCRIPTION OF WORK

A. This section specifies cleaning and treatment of circulating HVAC water systems, including the following.

1) Cleaning compounds.

2) Chemical treatment for closed loop heat transfer systems (chilled and hot water).

3) Chemical Pot feeder (where required to be installed).

B. The contractor shall be responsible for the initial treatment for chilled, hot, and condenser water systems during drain-down or initial fill charging. No extras will be paid for filling and treating of systems.

C. The current chemical treatment service provider for this building is as determined by the owner. Owner shall provide contractor with contact information of chemical treatment service provider. Obtain all required sub-consultant fees for all associated work with this 3rd party vendor.

1.2 RELATED DOCUMENTS

A. Test requirements and instructions on use of equipment/system: Section 230500, GENERAL PROVISIONS.

B. General mechanical requirements and items, which are common to more than one section of Division 15: Section 230593, TESTING BALANCING AND START-UP.

C. Piping and valves: Section 231100, HYDRONIC PIPING and section 230523. HVAC VALVES.

1.3 QUALITY ASSURANCE

A. Technical Services: Provide the services of an experienced water treatment chemical engineer or technical representative to direct flushing, cleaning, pre-treatment, training, debugging, and acceptance testing operations; direct and perform chemical limit control during construction period and monitor systems for a period of 12 months after acceptance, including not less than 4 service calls and written status reports. During this period perform monthly tests of the closed circuit evaporative coolers for Legionella pneumophila and submit reports stating Legionella bacteria count per millimeter. These tests shall be conducted in a certified laboratory and not by a technician in the field. Minimum service during construction/start-up shall be 4 hours.

B. Field Quality Control and Certified Laboratory Reports: During the one year guarantee period, the water treatment laboratory shall provide not less than 12 reports based on on-site periodic visits, as stated in paragraph 1.3.B, sample taking and testing, and review with VA personnel, of water treatment control for the previous period. In addition to field tests, the water treatment laboratory shall provide certified laboratory test reports. These monitoring reports shall assess chemical treatment accuracy, scale formation, fouling and corrosion control, and shall contain instructions for the correction of any out-of-control condition.

C. Log Forms: Provide one year supply of preprinted water treatment test log forms.

1.4 SUBMITTALS

A. Shop drawings, project data and samples furnished by the manufacturer shall illustrate materials, equipment or workmanship, and establish standards by which the work will be judged. Submit in accordance with Division 1, Section 01300.

B. Manufacturer's Literature and Data:

1) Cleaning compounds and recommended procedures for their use.

2) Chemical treatment for closed systems, including installation and operating instructions.

C. Water analysis verification.

D. Materials Safety Data Sheet for all proposed chemical compounds, based on U.S. Department of Labor Form No. L5B-005-4.

PART 2. EQUIPMENT

2.1 CLEANING COMPOUNDS

A. Alkaline phosphate or non-phosphate detergent/surfactant/specific to remove organic soil, hydrocarbons, flux, pipe mill varnish, pipe compounds, iron oxide, and like deleterious substances, with or without inhibitor, suitable for system wetted metals without deleterious effects.

B. Refer to Section 231100, HYDRONIC PIPING, PART 3, for flushing and cleaning procedures.

2.2 CHEMICAL TREATMENT FOR CLOSED LOOP SYSTEMS

A. Inhibitor: Provide sodium nitrite/borate, molybdate-based inhibitor or other approved compound suitable for make-up quality and make-up rate and which will cause or enhance bacteria/corrosion problems or mechanical seal failure due to excessive total dissolved solids. Shot feed manually. Maintain inhibitor residual as determined by water treatment laboratory, taking into consideration residual and temperature effect on pump mechanical seals.

B. pH Control: Inhibitor formulation shall include adequate buffer to maintain pH range of 8.0 to 10.5.

C. Performance: Protect various wetted, coupled, materials of construction including ferrous, and red and yellow metals. Maintain system essentially free of scale, corrosion, and fouling. Corrosion rate of following metals shall not exceed specified mills per year penetration; ferrous, 0-2; brass, 0-1; copper, 0-1. Inhibitor shall be stable at equipment skin surface temperatures and bulk water temperatures of not less than 121 degrees C (250 degrees F) and 52 degrees C (125 degrees Fahrenheit) respectively. Heat exchanger fouling and capacity reduction shall not exceed that allowed by fouling factor 0.0005.

PART 3. EXECUTION

3.1 INSTALLATION

A. Delivery and Storage: Deliver all chemicals in manufacturer's sealed shipping containers. Store in designated space and protect from deleterious exposure and hazardous spills.

B. Install equipment furnished by the chemical treatment supplier and charge systems according to the manufacturer's instructions and as directed by the Technical Representative.

C. Before adding cleaning chemical to the closed systems, all air handling coils and fan coil units should be isolated by closing the inlet and outlet valves and opening the bypass valves. This is done to prevent dirt and solids from lodging the coils. Provide additional valves and connections as necessary to properly isolate, flush and clean new pieces of piping and equipment in the existing systems and new systems.

D. After chemical cleaning is satisfactorily completed, open the inlet and outlet valves to each coil and close the by-pass valves. Also, clean all strainers.

END OF SECTION

# MEETING AGENDA

**PRE-BID MEETING**

| | |
|---|---|
| **NAME OF PROJECT:** | 501 Building CRAH Unit Replacement |
| **PROJECT LOCATION:** | 501 Building CRAH Unit Replacement<br>501 South 14th Street<br>Lincoln, Nebraska |
| **MEETING LOCATION:** | 501 Building |
| **DATE & TIME:** | September 9, 2014 – 10:00 a.m. |
| **OLSSON PROJECT NO:** | 014-1641 |

**A. Sign-In & Introductions**

**B. Notice to Bidders**

- Bid Date
  - < 2:00 p.m. (Central Time), Tuesday, September 16, 2014 at:

    AS/State Building Division
    1526 K Street, Suite 200
    Lincoln, NE 68508

- Plans can be obtained from A&D Technical Supply (402-474-5454)

**C. Instructions to Bidders**

- Drug free work place policy
- Nebraska sales/use tax exempt
- Background Check Requirement

**D. Bid Form**

**E. General Conditions**

- Use of job site

**G. Summary**

- Owner's Representative:
- Work Restrictions

**I. Questions/Answers**

**J. Building Walk-Thru**

OLSSON ASSOCIATES

**ATTENDANCE RECORD**
**Pre-Bid Meeting**
**501 Building CRAH Unit Replacement**
**Lincoln, Nebraska**
**September 9, 2014 10:00 a.m.**
**OA Project No. 014-1641**

| Name of Attendees (Please Print) | Company Representing/Address | Fax No. | Phone No. |
|---|---|---|---|
| TYLER BROWN | WILLMAR ELECTRIC SERVICE | 402-464-1887 | 402-464-1877 |
| Gabe Ronk | Midlands Mechanical | 402.466.2778 | 402.466.2772 |
| KEN HUGHES | " " | " | " |
| Greg Carstens | State of NE OC 10 | | 4024710690 |
| Tom Schwerman | SBD | | 471.0409 |
| Kathy Wemyl | OC10 | | 471-8225 |
| Jeff Jensen | SBD | 471.0409 | 471-0422 |
| Tom Armstrong | SBD | 471-~~0437~~ 0979 | 471-0437 |
| Perry FRANK | SBD | 471-0440 | 471-0440 |
| John Schuler | Nifco | | 477-0666 |
| JOHN EIRICH | KIDWELL | 402-475-9156 | 402-475-9151 |
| DAVID ROBERTS | OA | ~~402-450-3226~~ | 402-450-3224 |
| Env Opp | Barnes H/A | 402 783 3263 | 402 785 2050 |