ADDENDUM NO. 2

Nebraska State Office Building
Fans and Diffusers
301 Centennial Mall South
Lincoln, Nebraska - 2014
May 2014 / OA Project No. 012-2549

Design Professionals:
Olsson Associates – Mechanical & Electrical Engineers

DATE OF ISSUANCE: June 19, 2014

REVISED BID DATE: JULY 2, 2014 at 2:00 PM

The Project Manual and Project Drawings dated May 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

1) Refer to the Cover Sheet of the Spec Book

Change the date at the bottom of the spec book cover from May 2013 to May 2014.

2) Refer to the Notice to Bidders and Advertisement For Bids.

Change the BID DATE: Bids will be received at the State of Nebraska, AS/State Building Division, located at 1526 K Street, Suite 200 Lincoln, NE 68508, conference room number 2A, Lincoln, Nebraska until **2:00 p.m. Central Time on July 2, 2014** where all qualified bids will be opened and read aloud.

3) Refer to the Bid Form

Change in "Deduct Alternate 2" and "Deduct Alternate 3": Delete the Bid Form in its entirety and replace with the attached Bid Form. This REVISED Bid Form must be used when submitting your bid.

4) Refer to Specification Section 012300 – Alternates – 3.1 Schedule of Alternates

Delete Deduct Alternate 2 text in its entirety, replace with the following:

B. Deduct Alternate No. 2:

"Provide a Plenum Fan Array other than Huntair. Array shall be as similar to Huntair as possible, with respect to physical arrangement, operability, and controls (thru BMS logic if necessary). Motors shall have shaft grounding or ceramic bearings.

5) Refer to Specification Section 012300 – Alternates – 3.1 Schedule of Alternates

Deduct Alternate 3 (VAV diffusers): Delete the last sentence in its entirety (see below).

DELETE: "Please submit data/cut sheets (which include flow/pressure drop, sound data, throw data, and a diagram of working pieces) with bid."

6) Prior Approvals

No prior approvals have been requested to date. As required in the Special Conditions, substitute materials shall be submitted to Olsson Associates seven (7) working days prior to the bid due date. The pertinent section from the Special Conditions is copied below for convenience:

> 7. SUBSTITUTE MATERIAL SPECIFICATIONS
>
> If the Contractor desires to substitute any material for that specified in these project documents, the Contractor shall submit specifications for such substitute material to Olsson Associates for approval before bid opening. Such submittals shall be made in time to be received by Olsson Associates a minimum of seven (7) working days before the bids due date to allow for examination and notification of action to prospective bidders.

7) Pre-Bid Meeting Attendance Record

Pre-Bid Meeting was not mandatory. See attached **Pre-Bid Meeting Notes,** attendance list, and meeting agenda.

8) Refer to Sheet M3.1-1 – Mechanical Legend, Schedules, Details, and P&ID's

In reference to M3.1-1 (attached), note corrections to the AHU Fan Array Schedule remarks.

9) Refer to Sheet M3.1-2 – Mechanical Legend, Schedules, Details, and P&ID's

In reference to M3.1-2 (attached), note corrections to the Dual Duct Mixing Boxes Schedule. The RB-1 and RB-2 existing inlet dampers are actually 12" Round, not 14" Round.

END OF ADDENDUM NO. 2

BID FORM

PROJECT IDENTIFICATION: NE DAS Nebraska State Office Building
Fans and Diffusers
301 Centennial Mall South
Lincoln, Nebraska - 2014

CONTRACT IDENTIFICATION & NUMBER: OA Project No. 012-2549

THIS BID IS SUBMITTED TO THE OWNER: AS/State Building Division
P.O. Box 98940
1526 K Street, Suite 200
Lincoln, NE 68508

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid Price and within the Bid Times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

2. BIDDER accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders. This Bid will remain subject to acceptance for sixty days after the day of Bid opening. BIDDER will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen days after the date of OWNER's Notice of Award.

3. In submitting this Bid, BIDDER represents, as more fully set forth in the agreement, that:

   (a) BIDDER has examined and carefully studied the Bidding Documents and the following Addenda receipt of all which is hereby acknowledged: (List Addenda by Addendum Number and Date).

   _____

   _____

   (b) BIDDER is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

   (c) BIDDER is aware of the general nature of Work to be performed by Owner and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.

   (d) BIDDER has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that BIDDER has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.

(e) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

4. BIDDER will complete the Work in accordance with the Contract Documents for the following price(s):

LUMP SUM BID PRICES

BASE BID: Replace the Air Handling Units' Fans, and Variable Air Volume Diffusers, at NE DAS Nebraska State Office Building, Lincoln, Nebraska.

Base Bid Contract Sum:

_____ ($_____)
(in words) (figures)

ADD ALTERNATE #1: Add six (6) 48 inch x 48 inch access doors in between AHU's 1 & 2, and AHU's 3 & 4.

Add Alternate #1 Sum:

_____ ($_____)
(in words) (figures)

DEDUCT ALTERNATE #2: Provide a Plenum Fan Array other than Huntair. Array shall be as similar to Huntair as possible, with respect to physical arrangement, operability, and controls (thru BMS logic if necessary). Motors shall have shaft grounding or ceramic bearings.

Deduct Alternate #2 Sum:

_____ ($_____)
(in words) (figures)

DEDUCT ALTERNATE #3: Provide VAV Diffusers other than Acutherm. Diffusers shall be thermally powered (no wiring or digital controls), with adjustable cooling setpoint (adjustable without lifting ceiling tiles), adjustable minimum flow stop, lock open capability (for balancing), 10-year workmanship and material warranty (10-years from ship date).

Deduct Alternate #3 Sum:

_____ ($_____)
(in words) (figures)

DEDUCT ALTERNATE #4: Provide controls other than JCI. Other manufacturers systems shall be compatible at a system level to the existing controls (all points programmed into existing JCI front end, with graphics matching existing JCI graphics). Contractor shall integrate points into existing building BMS, a second stand-alone system is not acceptable.

Deduct Alternate #4 Sum:

_____ ($_____)
(in words) (figures)

BREAKOUT PRICE #1: Cost of fans, AHU and related work (not including controls).

Breakout Price #1 Sum:

_____ ($_____)
(in words) (figures)

BREAKOUT PRICE #2: Cost of VAV Diffusers and related work (not including controls).

Breakout Price #2 Sum:

_____ ($_____)
(in words) (figures)

BREAKOUT PRICE #3: Cost of all controls work.

Breakout Price #3 Sum:

_____ ($_____)
(in words) (figures)

5. Estimated Substantial Completion Date: _____

6. Communications concerning this Bid shall be addressed to the BIDDER indicated below.

7. Terms used in this Bid which are defined in the General Conditions or Instructions will have the meaning indicated in the General Conditions or Instructions.

SUBMITTED on _____.

If BIDDER is:

An Individual

By _____ (SEAL)
(Individual's Name)
doing business as _____

Business Address: _____
Phone No.: _____
Federal Identification No.: _____

A Partnership

By _____ (SEAL)
(Firm Name)

_____
(General Partner)

Business Address: _____

Phone No.: _____
Federal Identification No.: _____

A Corporation

By _____ (SEAL)
(Corporation Name)

_____
(State of Incorporation)

By _____ (SEAL)
(Name of Person Authorized to Sign)

_____
(Title)

(Corporate Seal)

Attest

_____
(Secretary)

Business Address: _____

Phone No.: _____
Date of Qualification to do business is: _____
Federal Identification No.: _____

END OF SECTION

OLSSON ASSOCIATES

PRE-BID MEETING
MEETING AGENDA

NAME OF PROJECT:	Nebraska State Office Building Fans and Diffusers
PROJECT LOCATION:	Nebraska State Office Building 301 Centennial Mall South. Lincoln NE, 68508
MEETING LOCATION:	Nebraska State Office Building
DATE & TIME:	June 11, 2014 – 9:00 a.m.
OLSSON PROJECT NO:	012-2549

A. Sign-In & Introductions (ask questions at any time)

B. Notice to Bidders

- Bid Date
  - < 2:00 p.m. (Central Time), Thursday, June 26, 201 at:

    Conference Room 2A at:
    State of Nebraska
    DAS/State Building Division
    1526 K St, Suite 200
    Lincoln, NE 68508

- Plans can be obtained from A&D Technical Supply (402-474-5454), or from Submittal Exchange: https://www.submittalexchange.com/bid/NebraskaStateOffice/Planroom
- Bidding Documents may be examined at Olsson Associates in Lincoln, Omaha Builders Exchange in Omaha, and the Lincoln Builders Bureau in Lincoln.

C. Instructions to Bidders

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

D. Bid Form

- Note the 4 Alternates (AHU access doors, fan arrays, VAV diffusers, and controls).
- Note the 3 Break Out Prices

E. General Conditions

- Use of job site
- Trash Disposal Daily

F. Special Conditions

- Lay down area (hatched areas on lower level)
- Escorts needed on part of 1st Floor and 3rd Floor, all of 2nd Floor, and other random locked rooms (server room for example) on other floors
- Building to be occupied, furniture in place
- Dust control, trash removal and cleanup daily
- Work hours – after hours ok
- A single AHU may be shut down at 3:30pm during the week, and can be off during an extended weekend
- Employee criminal background checks required.
- Badges
- Hot Work Permit

G. Project Management

- Owner will pay for use of Submittal Exchange
- Did anyone use Submittal Exchange to obtain the bidding documents??

H. Technical Items

- Project Summary
- Various Technical Items

I. Questions/Answers

J. Today's Walk-Throughs (please stay with the group in the designated area)

- Empty 1st Floor Area
- Mechanical Rooms (North and South)
- Typical Upper Floor
- Reconvene in Empty 1st Floor Area

K. Questions/Answers

Pre-Bid Meeting Notes

NAME OF PROJECT:	NSOB Fans and Diffusers
PROJECT LOCATION:	Lincoln, Nebraska
MEETING LOCATION:	Olsson Associates, Lincoln
DATE & TIME:	June 12, 2014 9:00 AM
PROJECT #:	012-2549

1. Bidders are allowed and encouraged to further visit and investigate the project site prior to bid, contact either Pat Moran (402-458-5640) or Tom Armstrong (402-471-0437) to arrange a visit.
2. Fans and Diffusers work can be done independent of and/or concurrent to each other.
3. An air handling unit (AHU) may also be turned off for 30 minutes at a time during the day, in addition to being shut down for the day at 3:30pm, or shut down for an extended weekend.
4. The sheet and general notes on the drawings are specific to this job, and contain important information, be sure to read them thoroughly.
5. The reason for having both RCP (reflected ceiling plan) and No-RCP sheets is as follows: The RCP sheets are useful in locating items in and above the ceiling. The No-RCP sheets are useful in being able to better see the walls and duct, minus the clutter of the reflected ceiling plan. It is helpful to take a highlighter to highlight the walls on either plan to help better understand the floor plan and provide visual reference.
6. Furniture is not shown on the plans.
7. A great deal of time was spent on this project surveying the ceiling and above ceiling items. This includes locations of existing diffusers, returns, lights, duct, duct trunks, flex duct, mixing boxes, sprinkler heads, speakers, and anything hung from the ceilings (TV's, projectors, cameras, etc). We also took note of which areas were available to locate/relocate the new VAV diffusers. There is no need to relocate sprinkler heads, sprinkler lines, conduit, lights, or anything hung from the ceiling to accommodate new diffuser locations (although there could be cases where there are interferences). The duct run-outs to the diffuser will need to obviously miss various above ceiling items (sprinkler lines, conduit, other duct, wiring, hangers, etc). There are identified instances where ceiling-mounted speakers need to be relocated, but the speakers have coiled up extra wire, and when moving them it should only be a matter of recoiling the wire when done.
8. The line types of the walls do not necessarily signify anything. These were carryovers of the inconsistencies of the CAD background. The vast majority of

the walls are removable/temporary walls 5' in width, which attach into the ceiling grid. Although these walls can be moved if necessary, it could likely prove more effort than it is worth to temporarily move them, considering surrounding office furniture and occupants belongings.

9. Replacement ceiling tiles shall be Armstrong brand, Cortega 772A, as listed in spec 095113 "Acoustical Ceiling Panels". Although not mentioned at the meeting, new pieces of ceiling grid shall be locking tab, either Armstrong or USG, which are available from Lincoln Drywall supply
10. The scrap metal roll-off in the loading dock will be provided by the Owner.
11. The 18" x 24" diffusers (both new and existing) are shown on the drawings as 18" x 18", but are in reality 18" x 24". This has already been noted on the sheets and in the diffusers schedule. There are no 18" x 18" diffusers.
12. The existing office furniture will remain, and work must be done around this furniture. This could mean use of ladders, scaffolding, rolling scaffolding, etc. It would be useful to give occupants a few days' notice before working in their area so they can prepare for the work. Daily cleanup of dust, debris, ceiling tile debris is required.
13. It was brought up as a side conversation during the walk-thru, there is in-floor electrical cable raceways. This will need to be kept in consideration when placing new duct hangers in the structure above the ceiling. The raceways can be found by looking for the indent in the structure above.
14. The lower level plans show three hatched areas to be used as contractor laydown/storage area. Temporary staging areas on upper floors (especially near elevators/stairwells) is not allowed.
15. General note H (second paragraph, "Per the State Fire Marshal…") is based around being to keep the building safe while being occupied during construction. The two main concerns being unrestricted egress paths, and the number of ceiling tiles removed at any one time.
16. The dual duct mixing boxes are currently being operated via pneumatic controls, these lines will be decommissioned as part of the project.
17. The existing VAV diffusers are the original 1970's Anemostat boxes. The box portion above in-ceiling diffuser piece, is 24" x 24" x 10.5" tall, with an estimated weight of 40+ lbs.
18. Generally speaking duct trunks are run high, and run-outs to the individual diffuser require a drop in elevation. This could mean the use of a pair of elbows. These elbows were not identified on the sheets, but <u>will need to be included in the bid price</u>. Additionally, any time where a diffuser run-out crosses an existing hard duct, an elevation change (pair of elbows) by the run-out duct could be required. The necessary elbows were not identified on the sheets, but similarly <u>will need to be included in the bid price</u>.
19. There are 20 or less cases where a diffuser run-out duct passes thru a full-height dry-wall wall, and there are 20 or less cases where a diffuser run-out duct passes thru a chain-link fence above the ceiling. These instances are not identified on the drawings. In these cases, either the existing hole can be used (enlarged if needed), or a new hole be cut, and the old patched.

20. There are 20 or less cases where a diffuser run-out duct will be routed near existing in-ceiling split systems and ducting (mainly for server/computer rooms). These areas have not been identified on the drawings. This will mean less than ideal run-out duct routing to avoid the split system ducting above the ceiling.
21. Note the 12 new space temperature sensors per floor.
22. Note the phasing of the fan work (as listed in the general notes on the lower level new plans), the fans themselves can be installed with the AHU in operation. Any work with the AHU while off will need to occur in occasional 30 minute shutdowns of the AHU, or after 3:30pm (when the AHU can be shut down for the day, or on regular or extended (holiday) weekends (the AHU can be shut down for the entire weekend).
23. In the pre-bid meeting, it was incorrectly stated the AHU walls were 10" thick poured concrete, they are actually 12" thick. It is unclear if these walls contain rebar. A detail is being developed to incorporate a lintel where the new AHU doors will be cut into the concrete walls (this detail will be in the third addendum). The walls between the hot and cold side of the AHU's, and between where two AHU's butt together, are 4" galvanized construction.
24. The 'hot side' or 'hot deck' of the dual duct systems and AHU's, is a bit of a misnomer. There is no heat added to the air stream via coils in the air handler, the 'hot duct' is strictly recirculated return air.
25. Be sure to note the 4 alternates and 3 break out prices on the bid form. Note, 3 of the alternates are being revised via Addendum 2.

OLSSON ASSOCIATES

ATTENDANCE RECORD
Pre-Bid Meeting
Nebraska State Office Building – Fans and Diffusers

State Office Building – Lincoln, NE
301 Centennial Mall South
Lincoln, Nebraska
June 12, 2014 9:00 a.m.
OA Project No. 012-2549

Present	Name of Attendees (Please Print)	Company Representing/Address	Email Address	Phone No.
Yes	Patrick Moran	Olsson Associates, PM, Mech. Engr.	pmoran@olssonassociates.com	402-458-5640
No	Corry Jones	Olsson Associates, Elec. Engr.	cjones@olssonassociates.com	402-458-5933
No	Tom Schuerman	AS / State Building Division	tom.schuerman@nebraska.gov	402-471-0409

Name of Attendees (Please Print)	Organization & City	Phone No.
Brandon Boosalis	Olsson Associates, Lincoln	402-570-3433
DAVID ROBERTS	"	402-450-3226
Jill Sydik	Shanahan Mech-Elec	402-610-5436
CRAIG JAKUB	Shanahan M & E	402-610-5453
AL RICHARDS	JOHNSON CONTROLS	402-891-5834
RICHARD COX	JOHNSON CONTROLS	402-891-5040
PERRY FRANK	DAS/SBD	402-471-0440

Name of Attendees (Please Print)	Organization & City	Phone No.
Dave Brooks	As Building Division	402-471-0458
Tom Haener	Mechanical Sales	402-450-7700.
Mike Shandera	Johnson Controls	402-540-1636
Julie Ollman	CHA	402-464-3159
Troy Foster	CHA	402-464-3159
Gene Benes	Benes HVAC	402-610-6550
Erin Opp	Benes HVAC	402 450-4412
Shane Brown	Falcon HVAC	402-525-4669
Kurt Sander	Valdinger	402-616-4221
Chad Francisco	Vision	402-466-0087
Michael Cook	Vision Mech	402.466-0087
Tony Dush	Gregg Electric Co.	402-476-6463

AHU FAN ARRAYS

DESIGNATION	CFW–1, –2, –3, –4	HFW–2, –3, –4 (NOT –1)	RFW–1, –2, –3, –4
DESCRIPTION	COLD SUPPLY FAN ARRAY	HOT SUPPLY FAN ARRAY	RETURN FAN ARRAY
LOCATION	AHU–1, 2, 3, 4	AHU–2, 3, 4 (NOT –1)	AHU–1, 2, 3, 4
SERVICE	SUPPLY FAN	SUPPLY FAN	RETURN FAN
AIR TEMPERATURE	55 – 78 DEG F	70 – 78 DEG F	70 – 78 DEG F
TYPE	FAN ARRAY	FAN ARRAY	FAN ARRAY
AIR FLOW RATE, CFM / AHU	100,000 PER AHU	62,500 PER AHU	90,000 PER AHU
FAN QUANTITY / AHU	16 PER AHU	16 PER AHU	12 PER AHU
CONFIGURATION	8 WIDE, 2 TALL	4 WIDE, 4 TALL	6 WIDE, 2 TALL
MAXIMUM DIMENSIONS (INCLUDES HOUSEKEEPING PAD)	274" WIDE, 133" TALL	142" WIDE, 133" TALL	274" WIDE, 132" TALL
ACTUAL DIMENSIONS	264" WIDE, 80" TALL	136" WIDE, 128" TALL	264" WIDE, 88" TALL
EXTERNAL STATIC PRESSURE, IN. W.C.	5.75" ESP	5.25" ESP	2.00" ESP
FAN WHEEL DIAMETER, CUT	18", 100%	16", 70%	22", 105%
FAN SPEED, RPM	2,908	3,247	1,617
FAN SPEED, HZ	99.1	56.0	27.9
POWER, HP	8.3	4.7	3.8
FAN SPEED, RPM (ONE FAN FAILED)	2,995	3,362	1,706
FAN SPEED, HZ (ONE FAN FAILED)	102.1	57.0	29.5
POWER, HP (ONE FAN FAILED)	8.9	5.1	4.3
MOTOR NAMEPLATE HP	9.0	5.5	4.5
VOLTS/PHASE/HZ	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60
DRIVE	DIRECT	DIRECT	DIRECT
VARIABLE CONTROL	1 MICRO VFD DRIVE PER FAN	1 MICRO VFD DRIVE PER FAN	1 MICRO VFD DRIVE PER FAN
GRAVITY INLET DAMPERS	YES	YES	YES
MAXIMUM INLET SOUND @ 63 HZ, DB	104	97	96
MANUFACTURER	HUNTAIR	HUNTAIR	HUNTAIR
MODEL	–	–	–
REMARKS	ALL BUT #12	ALL REMARKS	ALL BUT #12

2

REMARKS:

1. VFD RATED MOTOR, MOTOR SHAFT GROUNDING KIT OR CERAMIC BEARINGS.
2. PLC CABINET MAY HOUSE VFD'S, AND HAVE A COOLING FAN & INLET AIR FILTERS. VFD'S MAY ALSO BE LOCATED IN AHU AIRSTEAM.
3. ZERO DROP (0.05" WC) GRAVITY INLET BACKDRAFT DAMPERS, STANDARD COPLANER SOUND ATTENUATOR (NON–EXTENDED).
4. AIR FLOW MEASUREMENT RING ON EACH FAN.
5. PLC–CONTROLLED ARRAY OPTIMIZATION, COLOR DISPLAY, BACNET MSTP COMMUNICATION (ALL CAPABILITES AVAILABLE AT THE BMS).
6. ARRAY SHALL BE CAPABLE OF TURNING OFF INDIVIDUAL FANS, AND HAVE ONE VFD PER MOTOR (NOT ONE OR TWO VFD PER ARRAY).
7. ARRAY SHALL DUTY CYCLE FANS.
8. CLASS III FAN.
9. ARRAYS SHALL BE CAPABLE OF MANTAINING FLOW AND STATIC PRESSURE IN A ONE–FAN–FAILED CONDITION.
10. FAN MOTORS SHALL HAVE 10% SPARE HP CAPACITY (NAMEPLATE) AT NO–FANS–FAILED CONDITION (FOR EXAMPLE, FAN DESIGN OPERATING POINT OF 6.8 HP ON A 7.5 HP NAMEPLATE MOTOR HP IS OK, 6.9 HP OPERATING HP IS NOT OK).
11. EACH FAN/MOTOR ASSEMBLY (CUBE) SHALL BE REMOVABLE WHOLE THROUGH A 36 INCH WIDE OPENING (AFTER REMOVING VFD AND/OR BACKDRAFT DAMPER IF NEEDED), AND A 48 INCH X 48 INCH ACCESS DOOR LOCATED ON THE DISCHARGE SIDE OF THE FAN ARRAY.
12. AHU–1 HOT SUPPLY FAN ARRAY PREVIOUSLY INSTALLED.

OLSSON ASSOCIATES
1111 Lincoln Mall, Suite 111
P.O. Box 84608
Lincoln, NE 68501-4608
TEL 402.474.6311
FAX 402.474.5160
www.olssonassociates.com

(Sheet Number)
M3.1
(Project Number)
012-2549
(Drawing Number)
(Date)
05.28.2014

MECHANICAL SCHEDULES
NEBRASKA STATE OFFICE BUILDING FANS AND DIFFUSERS

2 Attachment No. M3.1-1 to ADDENDUM NO. 2 Dated: June 19, 2014

DUAL DUCT MIXING BOXES

EXISTING CONDITIONS					NEW CONDITIONS					
MIXING BOX TAG	HOT DAMPER WIDTH (INCHES)	COLD DAMPER WIDTH (INCHES)	DAMPER HEIGHT (INCHES)	DAMPER LENGTH (INCHES)	MIX BOX FLOW (CFM)	DISCHAGE TEMPERATURE (DEG F)	MAX BOX FLOW (CFM)	CORRESPONDING MAX VELOCITY (HOT) (FMP)	CORRESPONDING MAX VELOCITY (COLD) (FMP)	MAX STATIC
MU-1	9.5	18.5	10	4.25	10% OF MAX FLOW	55 – 60	2,725	1,050	2,125	
MU-2	12.5	24.5	10	4.25	10% OF MAX FLOW	55 – 60	3,700	1,075	2,175	
MU-3	6.5	6.5	10	4.25	10% OF MAX FLOW	55 – 60	900	500	2,000	
MU-4	6.5	12.5	10	4.25	10% OF MAX FLOW	55 – 60	2,250	1,250	2,600	
MU-5	6.5	9.5	10	4.25	10% OF MAX FLOW	55 – 60	1,500	850	2,275	
MU-6	18.5	24.5	14	4.25	10% OF MAX FLOW	55 – 60	4,950	700	2,100	
RB-1	12 ROUND	12 ROUND	2 NA	10	0, OR 10% OF MAX FLOW	55 – 95	1,180	1,525	1,525	2
RB-2	12 ROUND	12 ROUND	NA	10	0, OR 10% OF MAX FLOW	55 – 95	1,500	1,925	1,925	
RB-3	14 ROUND	14 ROUND	NA	10	0, OR 10% OF MAX FLOW	55 – 95	1,875	1,775	1,775	
RB-4	14 ROUND	14 ROUND	NA	10	0, OR 10% OF MAX FLOW	55 – 95	2,250	2,125	2,125	
RB-5	14 ROUND	14 ROUND	NA	10	0, OR 10% OF MAX FLOW	55 – 95	2,500	2,350	2,350	
RB-6	14 ROUND	14 ROUND	NA	10	0, OR 10% OF MAX FLOW	55 – 95	2,750	2,575	2,575	

REMARKS:

1. EXISTING DAMPER WIDTH AND HEIGHT DIMENSIONS ARE ACTUAL DAMPER OUTSIDE DIMENSIONS, AND DO NOT INCLUDE THE FLANGES (FLANGES ARE IN ADDITION TO THESE DIMENSIONS).
2. EXISTING ROUND DAMPER INLETS ARE SLIP ON FITTINGS, DAMPER OUTLETS ARE FLANGED.
3. RECTANGULAR DAMPERS ARE FLANGED ON INLETS AND OUTLETS.
4. OFTEN, FLEX DUCT IS CONNECTED TO THE DAMPER INLETS AND MAKES A TIGHT TURN LEADING INTO AND JUST PRIOR TO THE DAMPER. DAMPER LENGTHS GREATER THAN LENGTHS LISTED MAY NOT FIT.
5. REHEAT DESIGN TEMPERATURE IS 200 DEG F, 100% WATER (NO GLYCOL).
6. NEW DAMPERS SHALL BE 24V.
7. DAMPERS SHALL BE SINGLE OR OPPOSED BLADE, AIR FOIL TYPE BLADE (GALVANZIED OR ALUMINUM CONSTRUCTION).
8. CONTROL WIRING RUNS FROM MIXING BOXES TO BUILDING BMS MAY BE REUSED IF COMPATIBLE WITH NEW CONTROLLERS.
9. EXISTING DAMPERS ARE CURRENTLY ONLY ATTACHED TO THE MIXING BOXES, AND DO NOT OTHERWISE NEED TO BE SUPPORTED.
10. DAMPERS SHALL BE FAIL IN PLACE (NO SPRINGS).
11. IF DISCHARGE TEMPERATURE NEEDS TO DROP BELOW 57.5 DEG F, HOT DAMPER WILL CLOSE COMPLETELY, TO AVOID EXCESSIVE PINCHING OF DAMPER AND RESULTING LOSS OF CONTROL (POSSIBLE DAMPER INCREASED NOISE. SIMILAR ACTION WILL OCCUR ONCE DISCHARGE TEMPERATURE APPROACHES THE HOT AIR DUCT TEMPERATURE.
12. NEW DAMPERS TO BE SAME DIMENSIONS AS OLD DAMPERS.

Attachment No. M3.1-2
to ADDENDUM NO. 2
Dated: June 19, 2014
2

MECHANICAL SCHEDULES
NEBRASKA STATE OFFICE
BUILDING FANS AND DIFFUSERS

(Sheet Number) M3.1
(Project Number) 012-2049
(Drawing Number)
(Date) 05.28.2014

OLSSON ASSOCIATES
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