ADDENDUM NO. 2

PROJECT NAME: **Wick Alumni Center Life Safety & HVAC Improvements**
UNL PROJECT NUMBER: **C120P021**
BID INVITATION NUMBER: **2222-13-7200**

CONSULTANT: Farris Engineering
ADDRESS: 818 P Street, Suite 100

DATE OF ISSUANCE: September 11, 2013
DATE OF BID OPENING: September 18, 2013

The bid documents dated August 16, 2013 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.

QUESTIONS/CLARIFICATION FROM THE PRE-BID MEETING:

1. QUESTION: Do the existing steam lines contain shut-off valves outside of the building or does the replacement/repair scope at the existing steam utilities need completed during UNL Steam Outage?
   RESPONSE: Valves do exist however it cannot be guaranteed they will function as they have not been closed for a long time. It is preferred that this work be completed in the May-2014 steam outage.

2. QUESTION: Since the floors will have separate substantial completion dates, when does the warranty period date begin for each floor?
   RESPONSE: The one (1) year warranty period(s), reference Section 00 72 13-8, Part 3.5.1 WARRANTY of the UNL General Conditions, will begin at substantial completion, due to separate substantial complete dates relative to workmanship and finishes. Equipment warranty period(s) will begin upon start up and commissioning.

3. CLARIFICATION: ALL visiting contractors and sub-contractors to the building site must notify Josh Ward (402/430-2131) 24 hours prior to visiting the site. Wick Alumni Staff/Faculty office contain sensitive documents including financial documents and Football Tickets.

4. See attached Mandatory, Pre-Bid Meeting Attendance Sheet and Agenda.

MODIFICATIONS TO THE PROJECT MANUAL:

SECTION 00 01 05 – CERTIFICATIONS PAGE:

1. Replace the existing section in its entirety with the attached section below.

SECTION 00 01 10 – TABLE OF CONTENTS:

1. Replace the existing section in its entirety with the attached section below.

SECTION 00 52 13 – Agreement Form:

1. Remove and replace the existing pages 4, 5, 6 of 17 in their entirety with the attached pages 4, 5, 6 of 17 below-which include the appropriate liquidated damages listed.

SECTION 23 05 00 – BASIC HVAC MATERIALS AND METHODS:

1. Section 2.3.C – Delete this section in its entirety.

2. Section 3.6.B – Delete this section in its entirety.

SECTION 23 07 00 – HVAC INSULATION:

1. Paragraph 2.2.A.4 – Delete this paragraph in its entirety.

2. Paragraph 2.2.A.6 – Delete this paragraph in its entirety.

SECTION 21 21 13 – HYDRONIC PIPING AND SPECIALTIES:

1. Paragraph 2.1.A.5 – Rename this paragraph to read: "5. Valve Kits and Assemblies:"

2. Section 2.3.I – Delete this section in its entirety.

3. PART 2.6 – Rename this part to read: "2.6 VALVE KITS AND ACCESSORIES"

4. Section 2.6.A – Rename this part to read: "A. Valve Kit Assembly:"

5. Paragraphs 2.6.A.1 and 2 – Replace these paragraphs in their entirety with the following:

"1.Valve Kits: Water connections shall be made using valves rated as described below. Valve kits shall be approved by State Fire Codes for use in rated return air plenums."

"2.The assemblies shall be furnished complete with a shut-off valve for connection to the supply pipe, an automatic flow limiting and shut-off valve for connection to the return water pipe."

6. Paragraph 2.6.B.4 – Replace this paragraph in its entirety with the following:

"4.Maximum pressure drop through valve assembly, including valves, automatic flow control valve and terminal box shall be 25-feet of water heat loss."

7. Section 3.3.I – Replace this paragraph in its entirety with the following:

"I.Valve Kit Assembly Piping: Connect valves to supply and return piping as indicated, with unions and shutoff valves."

SECTION 23 30 00 – AIR DISTRIBUTION:

1. Section 2.3.I – Delete this section in its entirety.

2. Add the following specification "Section 01 74 19 Construction Waste Management and Disposal," attached.

QUESTIONS AND MODIFICATIONS TO THE DRAWINGS:

MODIFICATIONS:

SHEET CS1-0 - PROJECT COVER SHEET AND PROJECT INDEX OF DRAWINGS

1. Under Index of Drawings, Part One – Life Safety, title Phasing, add Sheet PH1-0 Phasing Site Plan.

SHEET CS1-1 - PART ONE - COVER SHEET AND PROJECT INDEX OF DRAWINGS

1. Under Index of Drawings title Phasing, add Sheet PH1-0 Phasing Site Plan.

SHEET PH1-0 - PHASING SITE PLAN

1. This sheet has been newly issued in its entirety as a part of Addendum No.2.

SHEET PH1-2 PHASING PLANS

1. At Phasing Keynotes, delete keynote No. 1 and substitute the following keynote:

"1. A 1-hour temporary fire separation is required at existing windows, see Architectural Sheet AD1-2 for separation notes and detail."

SHEET AD1-1 – BASEMENT FLOOR DEMOLITION PLAN:

1. At Meter Room 028, add demolition note No. 21 as follows:

"21. Remove the existing concrete housekeeping pad (approx. 3' x 3') near the center of the north wall – floor slab below to remain."

SHEET AD1-1 – GENERAL DEMOLTION NOTES:

1. Delete General Demolition Note F and substitute the following general demolition note:

"F. At gyp. board and acoustical plaster ceilings shown to be removed, a section ceiling approximately 2'-0" wide is to remain at the room perimeter so tape and patch joints occur at ceilings in lieu of occurring at walls – existing walls are not to be painted except when walls have demolition or renovation work – coordinate size of gyp and plaster ceiling areas to remain with mech and elec work – remove and replace ceiling areas within 2'-0" of walls as needed to accommodate mechanical, fire sprinkler and electrical work, as needed at narrow rooms and as needed to hide tape joints."

SHEET AD1-2 – SECOND FLOOR DEMOLITION PLAN:

1. At the demolition note 15, at the column on column lines E and 3, change the demolition note 15 to note 21 and add the following demolition note:

"21. Patch column veneer at existing light fixture removal. Due to the existing brass railing, existing wood veneer panel must remain in place. No demolition is required at this location."

SHEET AD1-2 – SECOND FLOOR DEMOLITION PLAN:

1. At the demolition note 12, at the demolition of the projection screen vertical supports, add the following note:

"Existing brass railing is to remain in place. Coordinate demolition work with Interior Architectural Woodwork Subcontractor to facilitate patching of veneer panels."

SHEET AD1-2 – SECOND FLOOR DEMOLITION PLAN:

1. At Conference Room 211, remove and salvage the door in the northeast corner. Add a 1-hour rated temporary gyp and metal stud infill at the door opening per demolition note No. 4. Remove temporary partition and reinstall door when code official gives approval.

SHEET AD1-3 – MECHANICAL 305 DEMOLITION PLAN:

1. At the demolition note 8, at the northeast housekeeping pad, add a note that this housekeeping pad extends further west than currently shown. The pad extends to within 3' of the west wall and the entire pad is to be removed.

SHEET A1-1 – BASEMENT FLOOR RENOVATION PLAN:

1. At Meter Room 028, add renovation note No. 22 as follows:

"22. Patch existing exposed slab area with concrete patching compound at housekeeping pad demolition for smooth level floor finish – include floor sealer after patching."

SHEET A1-1 – BASEMENT FLOOR RENOVATION PLAN:

1. At Office 022, add door number 022 to the office door. At Janitor Storage, add door number 023 to the storage room door. At Tel. Rm. 024, add door number 024 to the telephone room door.

SHEET A1-2 – SECOND FLOOR RENOVATION PLAN:

1. At the renovation note 13 at the column on column lines E and 3, change the renovation note 13 to note 17 and add the following demolition note:

"17. Patch column veneer at existing light fixture removal. Due to the existing brass railing, existing wood veneer panel must remain in place. Infill the recess in the Mahogany veneer panel with a plywood panel cut to fit. Cover the north face of the wood veneer panel from reveal to reveal with a thin Mahogany veneer. Cut the veneer to fit it around the brass railing." The similar work at the column at column lines 2 and E is to remain as shown on the documents."

SHEET A1-2 – SECOND FLOOR RENOVATION PLAN:

1. At the renovation note 11 at the patching of the projection screen vertical supports, add the following note:

"Mahogany panels below the wood cap level are to remain in place. Add a thin mahogany veneer to existing panels from the reveal below the new cap to the reveal 7 5/8" below the new cap. Include mahogany veneer tape at cut edges of veneer panels and include a reveal below the new cap to match existing conditions."

SHEET A1-3 – DETAIL 2 – PLAN DETAIL AT GREAT ROOM WALL CAP:

1. At detail 2, delete the note referring to the removal of the wood panels below and substitute the following note:

"Due to the existing brass railing, the existing wood veneer panels below the new cap elevation must remain in place. Include wood tape at cut edges and include a reveal below the new cap to match existing conditions. Coordinate height of new cap with Architect."

SHEET A2-1 – DETAIL 2 – JAMB DET AT DOORS 310 AND 401:

1. At detail 2, revise the wood trim size and shape to an 'L' shaped piece of trim, so trim extends back to gyp board at outer edge – field verify trim dimensions to work with hardware.

SHEET A2-1 – DOOR AND HARDWARE SCHEDULE:

1. At the Door and Frame Schedule:

   A. Add door 022 with existing door and frame – add new hardware set No. 5.
   B. Add door 023 with existing door and frame and closer – add door gasketing Pemko-S88D.
   C. Add door 024 with existing door and frame – add new hardware set No. 5.

SHEET A3-2 – SECOND FLOOR CEILING RENOVATION PLAN:

1. At Board Room 106, delete note 15 referring to a 1-hour floor-ceiling assembly.

SHEET MD1-1, BASEMENT AND FIRST FLOOR HVAC DEMOLITION PLANS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.

2. Mechanical Keynote #7 has been added.

SHEET MD1-2, SECOND AND THIRD FLOOR HVAC DEMOLITION PLANS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.

2. Mechanical Keynotes #10 and #11 have been added.

SHEET MD2-1, BASEMENT AND FIRST FLOOR HVAC PIPING DEMOLITION PLANS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.

2. Mechanical Keynote #5 has been added.

SHEET MD2-3, LARGE-SCALE HVAC PIPING DEMOLITION PLANS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.

2. Mechanical Keynote #8 has been added.

SHEET M1-1, BASEMENT AND FIRST FLOOR HVAC PLANS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.
2. Mechanical Keynote #5 has been revised.
3. "THIRD FLOOR HVAC PLAN" has been revised to change keynote #5 to keynote #11 on the plans.
4. Mechanical Keynote #11 has been added.
5. Revised diffuser tags from "D-3" to "D-7" in Rooms 209 and 311.

SHEET M1-2, SECOND AND THIRD FLOOR HVAC PLANS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.
2. Mechanical Keynote #5 has been revised.
3. "FIRST FLOOR HVAC PLAN" has been revised to change keynote #5 to keynote #16 on the plans.
4. Mechanical Keynote #16 has been added.

SHEET M1-3, LARGE-SCALE HVAC PLANS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.
2. Mechanical Keynote #12 has been added.

SHEET M2-1, BASEMENT AND FIRST FLOOR HVAC PIPING PLANS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.
2. Mechanical Keynote #8 has been added.

SHEET M2-2, SECOND AND THIRD FLOOR HVAC PIPING PLANS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.
2. Mechanical Keynote #7 has been added.

SHEET M2-3, LARGE-SCALE HVAC PIPING AND PLUMBING PLANS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.
2. Mechanical Keynote #28 has been added.

SHEET M5-2, MECHANICAL DETAILS:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.
2. Removed detail "FLUSHING PIPING CONNECTION" and added new detail "TYPICAL VARIABLE FREQUENCY DRIVE INSTALLATION".

SHEET M6-1, MECHANICAL SCHEDULES:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.
2. "DIFFUSERS, REGISTERS & GRILLES" has been revised.

SHEET M6-2, MECHANICAL SCHEDULES:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.
2. "AIR HANDLING UNIT - CHILLED WATER COOLING/HOT WATER HEATING" has been revised.

SHEET M6-4, MECHANICAL SCHEDULES:

1. This sheet has been reissued in its entirety as a part of Addendum No.2.
2. "MECHANICAL / ELECTRICAL COORDINATION SCHEDULE" has been revised.

END OF ADDENDUM NO. *2*

MANDATORY PRE-BID MEETING SIGN-IN

University of Nebraska Lincoln

WICK Alumni Center Life Safety & HVAC Improvements
RFP #2222-13-7200
9/4/2013, 2:00 PM

NAME (please print legibly)	COMPANY/ DEPARTMENT	E-MAIL ADDRESS	WORK NUMBER / CELL NUMBER
Dustin Kohk	UNL Procurement Services	dustin.kohk@unl.edu	402 472-5881
Dan Watkins	Facilities	dwatkins5@unl.edu	472-3199
MIKE LARKINS	MC LARKINS CORP	mclarkinshvac@yahoo.com	610-2076
DAVID AUTRY	MEININGER FIRE PROT.	DAVID@MFP-INC.COM	402-466-2616
MATT MORRISSEY	FARRIS ENG.	mmorrissey@farris-usa.com	402-477-6163
Rick Hart	Rogge G.C.	rhart@roggeinc.com	470-1989
Troy Foster	Cornhusker Htg.	troy@CornhuskerHtg.com	464-3159
BARRY SCHMIDT	BOYD JONES CONST.	bschmidt@boydjones.biz	241-5077
DREW PFEIL	Hampton	dpfeil@hampton1.com	489-8858

MANDATORY PRE-BID MEETING SIGN-IN

University of Nebraska Lincoln

WICK Alumni Center Life Safety & HVAC Improvements
RFP #2222-13-7200
9/4/2013, 2:00 PM

NAME (please print legibly)	COMPANY/ DEPARTMENT	E-MAIL ADDRESS	PHONE NUMBER / CELL NUMBER
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Joe Gyhra	Falcon Htg	jgyhra@falconheatingac.com	402 466 7437
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Jill Sydik	Shanahan M+E	jills@smcval.com	402-784-2381
MARK LONG	NIFCO	MLONG@NIFCOMECH.COM	477-0666
LOAN MUIR	DICKEY & BORHAM INC	ADAM. MUIR @ DICKEY-BORHAM-INC.COM	421.6000
Jon Dybdal	Erick Broer Const	eb90138@windstream.net	402-438-2165

MANDATORY PRE-BID MEETING SIGN-IN

University of Nebraska Lincoln

WICK Alumni Center Life Safety & HVAC Improvements
RFP #2222-13-7200
9/4/2013, 2:00 PM

NAME (please print legibly)	COMPANY/ DEPARTMENT	E-MAIL ADDRESS	PHONE NUMBER / CELL NUMBER
Dave McNeal	Sampson Construction	dave.mcneal@sampson-construction.com	402 434 5453 402 416 8291
Dawn Stietz	ADA	Dawn@ADALincoln.com	402-486-3232 402-430-7565
Walt Broer	Walt Broer Const		402-435 5557 FAX 435 2605 402 770 8480
Josh Ward	UNL-Facilities	jward6@unl.edu	402/472-4800
Jake Olson	UNL-BSM		
Dave Wemhoff	UNL-BSM		
Wayne Springer	Springer Wood.		
Andy Washburn	UNL-Wick		
Carrie Myers	UNL-Wick		
Brian Semerad	Kingery Construction	brians@kccbuilders.com	(402) 465-4400
Brian Clinton	Cheever Construction	bclinton@cheeverconstruction.com	402 477-6745

PRE-BID Meeting Agenda:

Project Name:	**Wick Alumni Center Life Safety and HVAC Improvements**	**FP&C Representative:**	**Josh Ward**
		Location:	**Wick Alumni Center, Dana Board Rm**
Project Number:	**C120P021**	**Date:**	**9/4/13** **Time:** **2:00 P.M.**

ATTENDEES:
MANDATORY - Please Sign In on Sheet Distributed! Bid will not be taken at bid opening if G.C.-Rep. not listed on the Pre-Bid Meeting Attendance Sheet.

INTRODUCTIONS:

PROJECT OVERVIEW:
-UNL Frontend Summary
-Project Basis
-(3) Funding Sources
-SCHEDULE/Phasing
-Liquidated Damages -1st Floor
-Construction (Fire) Separations

PROJECT/CONSTRUCTION HIGHLIGHTS:
-Farris Engineering & ADA

CHANGE MANAGEMENT/ALTERNATES:
- Addendum #1 Issued Tuesday- 9/3, Addendum #2 will follow Pre-Bid Meeting
-Alternates:
-Unit Prices:
-Allowances:

BIDDING SCHEDULE:

-Pre-Bid:	9/4/13
-Last Day to Ask Questions:	9/9/13
-Answer Questions/Issue Final Addendum:	9/12/13
-BID DATE:	9/18/13

PROJECTED CONSTRUCTION SCHEDULE:

-Award/Contract:	10/1/13
-Shop Dwgs (SFM Review):	11/11/13
-Mobilize/Staging/Prep:	11/15/13
-Start Construction:	11/18/13
-1st FLOOR DEADLINE:	**Fri. 3/14/14**
-CONSTRUCTION DEADLINE:	**Weds. 5/7/14**

QUESTIONS / SITE VISIT: (Email to: jward6@unl.edu on or before 9/9/13)

1901 Y Street / P.O. Box 880605 / Lincoln, NE 68588-0605
(402) 472-3131 / FAX (402) 472-5908

I, John M. Morrissey am the Coordinating Professional on the WICK Alumni Center Life Safety/HVAC Improvements.

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered architect under the laws of the State of Nebraska.

John M. Morrissey
Name (Printed) Registration Number

Signature

Drawings covered by this Seal:
ALL

Sections covered by this Seal:
ALL

Date Issued:
August 16, 2013

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered engineer under the laws of the State of Nebraska.

Jay Vallicott A-1392
Name (Printed) Registration Number

Signature

Drawings covered by this Seal:
PART ONE A0-0 THRU A3-3

Sections covered by this Seal:
SECTIONS 012100, 012200, 012300,
024119 THRU DIVISION 09

Date Issued:
August 16, 2013

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered engineer under the laws of the State of Nebraska.

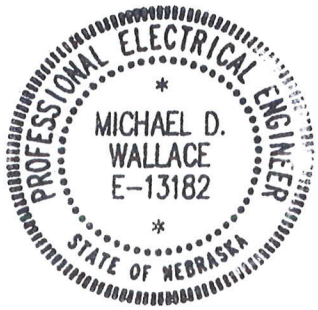
Ryan King — E-10693
Name (Printed) — Registration Number

Signature

Drawings covered by this Seal:
PART ONE PH1-0 THRU PH1-3;
PART TWO MD1-1 THRU M6-4;

Sections covered by this Seal:
DIVISION 22 THRU DIVISION 23

Date Issued:
August 16, 2013



I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered engineer under the laws of the State of Nebraska.

Michael Wallace — E-13182
Name (Printed) — Registration Number

Signature

Drawings covered by this Seal:
PART ONE ME1-1, ED1-1 THRU E4-2.
PART TWO ED1-1 THRU E4-1.

Sections covered by this Seal:
DIVISION 26 THRU DIVISION 28

Date Issued:
August 16, 2013

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered engineer under the laws of the State of Nebraska.

Donna G. Kohlan — E-12025

Name (Printed) — Registration Number

Signature

Drawings covered by this Seal:
PART ONE ME1-1, FD1-1 THRU F2-1.

Sections covered by this Seal:
DIVISION 21

Date Issued:
August 16, 2013

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Introductory Information

00 01 01 Project Title Page
00 01 05 Certifications Page
00 01 10 Table of Contents
00 01 15 List of Drawing Sheets

Procurement Requirements

00 11 16 Invitation to Bid
00 21 13 Instructions to Bidders
00 41 13 Bid Form - Stipulated Sum
00 45 13 Bidders Qualification Supplement
00 45 26 Certification as to Contribution Status
00 45 33 Non-segregated Facilities
00 45 36 Affirmative Action Clause
00 45 39 Executive Memorandum No 21-Equal Employment Opportunity

Contracting Requirements

00 52 13 Agreement Form - Stipulated Sum
00 60 00 Project Forms
00 61 13 Owners Protective Bond
00 61 14 Preparation Instructions - Owners Protective Bond
00 62 11 Submittal Transmittal Form
00 62 16 University of Nebraska Certificate of Insurance Form
00 62 17 Preparation Instructions for Contractor's Certificate of Insurance Form
00 62 76.13 Nebraska Resale of Exempt Sale Certificate Form 13
00 62 76.17 Nebraska Purchasing Agent Appointment Form 17
00 62 79 Agreement for Storing Materials Off-Site
00 62 79A Sample Stored Material Inventory
00 63 13 Request for Information
00 63 25 Substitution Request Form
00 63 46 Construction Change Directive
00 63 57 Change Proposal Request
00 63 63 Change Order Form
00 65 16 Certificate of Substantial Completion
00 65 19 Certificate of Completion & Final Acceptance
00 72 13 General Conditions - Stipulated Sum

DIVISION 01 – GENERAL REQUIREMENTS

01 10 00	Summary of Work
01 21 00	Allowances
01 22 00	Unit Prices
01 23 00	Alternates
01 25 00	Substitution Procedures
01 26 00	Contract Modification Procedures
01 29 00	Payment Procedures
01 31 13	Project Coordination
01 31 19	Project Meetings
01 32 00	Schedule Procedures
01 33 00	Submittal Procedures
01 40 00	Quality Requirements
01 42 00	Reference Standards
01 50 00	Temporary Facilities and Controls
01 60 00	Product Requirements
01 71 23	Field Engineering
01 73 29	Cutting and Patching
01 77 00	Closeout Procedures

DIVISION 2 – EXISTING CONDITIONS

02 41 19	Selective Structure Demolition

DIVISION 3 - CONCRETE

03 30 00	Cast-in-Place Concrete

DIVISION 4 - MASONRY

04 20 00	Unit Masonry

DIVISION 5 - METALS

05 50 00	Metal Fabrications

DIVISION 6 – WOOD, PLASTICS AND COMPOSITES

06 10 00	Rough Carpentry
06 40 23	Interior Architectural Woodwork
06 41 16	Plastic-Laminated-Clad Architectural Cabinets

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07 53 00	**EPDM Roofing**
07 81 00	Applied Fireproofing
07 84 13	Penetration Firestopping
07 92 00	Joint Sealants

DIVISION 8 - OPENINGS

08 11 00	Hollow Metal Doors and Frames
08 14 16	Flush Wood Doors
08 31 13	Access Doors and Frames
08 33 23	Overhead Coiling Doors
08 71 00	Door Hardware
08 81 00	Glass Glazing

DIVISION 9 - FINISHES

09 21 16	Gypsum Board Assemblies
09 23 00	Gypsum Plastering
09 51 13	Acoustical Panel Ceilings
09 65 13	Resilient Base and Accessories
09 65 19	Resilient Tile Flooring
09 68 13	Tile Carpeting
09 91 00	Painting

DIVISION 21 – FIRE PROTECTION

21 00 00	Fire Protection General Provisions
21 00 10	Fire Protection Submittals
21 12 00	Fire Suppression Systems

DIVISION 22 – PLUMBING

22 00 10	Plumbing Submittals
22 05 00	Basic Plumbing Materials and Methods
22 07 00	Plumbing Insulation
22 10 00	Plumbing Piping and Equipment
22 40 00	Plumbing Fixtures

DIVISION 23 – MECHANICAL

23 00 00	Mechanical General Provisions
23 00 10	Mechanical Submittals
23 01 31	Air Duct Cleaning
23 05 00	Basic HVAC Materials and Methods
23 05 93	Testing, Adjusting and Balancing
23 07 00	HVAC Insulation
23 09 93	Sequence of Operation
23 20 00	HVAC Pumps
23 21 13	Hydronic Piping and Specialties
23 22 13	Steam and Condensate Piping and Specialties
23 25 00	Hydronic Systems Treatment
23 30 00	Air Distribution
23 34 00	Fans and Roof Curbs
23 73 15	Central Station Modular Air Handling Units
23 81 26	Ductless Split System Air Conditioning Units
23 82 00	HVAC Equipment

DIVISION 26 – ELECTRICAL

26 05 00	General Electrical
26 05 19	Low Voltage Electrical Power Conductors and Cables
26 05 26	Grounding and Bonding for Electrical Systems
26 05 33	Raceways and Boxes for Electrical Systems
26 05 53	Identification for Electrical Systems
26 09 23	Lighting Control Devices
26 27 26	Wiring Devices
26 51 00	Interior Lighting

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

28 05 13	Conductors and Cables for Electronic Safety and Security
28 05 26	Grounding and Bonding for Electronic Safety and Security
28 05 28	Pathways for Electronic Safety and Security
28 31 11	Digital, Addressable Fire Alarm System

§ 4.2.2 The Owner's final payment to the Contractor shall be made no later than forty-five (45) days after the issuance of the Architect's final Certificate of Completion and Contractor's fulfillment of all remaining requirements of the Contract Documents.

ARTICLE 5 TIME OF COMMENCEMENT AND COMPLETION

§ 5.1 The date of commencement shall be as set forth in a written notice to proceed issued by the Owner. The Contractor shall commence the Work required by the Contract Documents within ten (10) consecutive calendar days after the date of issuance of written Notice to Proceed from the Owner, unless otherwise stated in such notice to proceed. The Contractor shall substantially complete all work required by the Contract Documents not later than 2:00 o'clock p.m. of the day that is <<number of days from bid form_____>> calendar days from the date of commencement.

(If a Final Completion Date is applicable to this Contract, specify here the Final Completion Date)

The Contractor shall finally complete all work required by the Contract Documents not later than 2:00 o'clock p.m. of the day that is _____ calendar days from the date established above for substantial completion, or as follows:
(Insert here any alternate method of specifying Final Completion Date if number of calendar days is not used)

_____ *(date)*

Such time period shall be the Contract Time for Final Completion.

§ 5.2 The Substantial and Final Completion dates may be changed only by issuance of change order. All change orders on this project must define any changes in the stipulated completion date which may be caused by the changes in the work authorized by the change order.

§ 5.3 The date of Substantial Completion of Work or designated portion thereof is the Date certified by the Architect and **Owner's Representative** pursuant to § 9.8 of the General Conditions. The Contract Time shall be measured from the time of commencement.

§ 5.4 Liquidated Damages. Contractor and Owner agree that the following methods of calculating and determining Owner's damages resulting from Contractor's failure to achieve completion within the Contract Time: (*Check applicable provision below)*

___ Actual damages incurred by Owner as a result of delay in achieving Substantial Completion and, if applicable, Final Completion. *(No liquidated damages apply.)*

If liquidated damages apply to this Contract, check one of the provisions, below, to specify liquidated damages amounts:

__X__ Liquidated damages for delay in achieving Substantial Completion of the 1st floor scope, as set forth in section 5.4.1 and 5.4.2 of this Agreement.

_____ Liquidated damages for delay in achieving Final Completion, as set forth in sections 5.4.1 and 5.4.3 of this Agreement.

_____ Liquidated damages for delay in achieving Substantial Completion and liquidated damages for delay in achieving Final Completion, as set forth in sections 5.4.1 and 5.4.4 of this Agreement.

§ 5.4.1 Contract Time Is of the Essence. Contractor acknowledges, recognizes, and agrees that (1) time is of the essence of this Agreement, (2) the Owner is entitled to full and beneficial occupancy and use of the completed Work following expiration of the Contract Time, and (3) if the Contractor fails to complete substantially, or cause substantial completion of any portion of the Work within the Contract Time, the Owner will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult,

if not impossible, to ascertain. Accordingly, if Contractor fails to achieve Substantial Completion or Final Completion of the Work, or both, within the Contract Time, as required by this Agreement, Contractor shall be liable to Owner for Liquidated damages for unexcused delay as provided herein.

§ 5.4.2 For Delay In Substantial Completion of the 1st Floor. If the Contractor fails to achieve Substantial Completion of the Work on the 1st Floor within the Contract Time, the Owner shall be entitled to retain or recover from the Contractor as liquidated damages and not as a penalty, the sum of *six hundred* Dollars (U.S.) ($600) per calendar day commencing upon the first day following expiration of the Contract Time, *the Tenth Day of April, Two Thousand and Fourteen* (4/10/14) and continuing until the actual date of Substantial Completion prior to, *the seventh day of May, Two Thousand and Fourteen* (5/17/14). Here after the Owner shall be entitled to retain or recover from the Contractor as liquidated damages and not as a penalty, the sum of *Twenty Five Thousand* Dollars (U.S.) ($25,000) for one calendar day, *the seventh day of May, Two Thousand and Fourteen* (5/17/14). Contractor and Owner agree that all amounts payable hereunder by Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by Owner, estimated at the time of executing this Agreement, as a result of delayed completion of the Work. When Owner reasonably believes that Substantial Completion will be inexcusably delayed, Owner shall be entitled, but not required, to withhold from any amounts otherwise due Contractor an amount then believed by Owner to be adequate to recover liquidated damages applicable to the delay in achieving Substantial Completion, or any part thereof. Any liquidated damages not so withheld shall be payable by Contractor to Owner upon demand by Owner plus interest from the date of demand at the highest legal rate.

§ 5.4.3 For Delay in Final Completion. If the Contractor fails to achieve Final Completion of the Work within the Contract Time specified in section 5.1 for Final Completion, the Owner shall be entitled to retain or recover from the Contractor as liquidated damages and not as a penalty, the sum of _____Dollars (U.S.) ($_____) per calendar day commencing upon the first day following expiration of the Contract Time specified for Final Completion and continuing until the actual date of Final Completion. Contractor and Owner agree that all amounts payable hereunder by Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by Owner, estimated at the time of executing this Agreement, as a result of delayed Final Completion of the Work. When Owner reasonably believes that Final Completion will be inexcusably delayed, Owner shall be entitled, but not required, to withhold from any amounts otherwise due Contractor an amount then believed by Owner to be adequate to recover liquidated damages applicable to the delay in achieving Final Completion, or any part thereof. Any liquidated damages not so withheld shall be payable by Contractor to Owner upon demand by Owner plus interest from the date of demand at the highest legal rate.

§ 5.4.4 For Both Delay In Substantial Completion and For Delay In Final Completion. If the Contractor fails to achieve Substantial Completion of the Work within the Contract Time for Substantial Completion, the Owner shall be entitled to retain or recover from the Contractor as liquidated damages and not as a penalty, the sum of _____ Dollars (U.S.) ($___) per calendar day commencing upon the first day following expiration of the Contract Time for achieving Substantial Completion and continuing until the actual date of Substantial Completion. In addition to any liquidated damages for delay in achieving Substantial Completion, if the Contractor fails to achieve Final Completion of the Work within the Contract Time specified for Final Completion, the Owner also shall be entitled to retain or recover from the Contractor as liquidated damages and not as a penalty, the sum of _____ Dollars (U.S.) ($___) per calendar day commencing upon the first day following expiration of the Contract Time specified for Final Completion and continuing until the actual date of Final Completion.

Contractor and Owner agree that all amounts payable hereunder by Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by Owner, estimated at the time of executing this Agreement, as a result of delayed Substantial and Final Completion of the Work. When Owner reasonably believes that Substantial or Final Completion will be inexcusably delayed, Owner shall be entitled, but not required, to withhold from any amounts otherwise due Contractor an amount then believed by Owner to be adequate to recover liquidated damages applicable to the delay in achieving Substantial and/or Final Completion, or any part thereof. Any liquidated damages not so withheld shall be payable by Contractor to Owner upon demand by Owner plus interest from the date of demand at the highest legal rate.

5.5.5 In the event any portion of the liquidated damages provisions set forth, above, are determined to be a penalty

and unenforceable under applicable law, then Owner shall be entitled to recover its actual damages for Contractor's delay in achieving Substantial Completion and/or Final Completion.

ARTICLE 6 IMMIGRATION VERIFICATION

6.1 The Contractor, on behalf of itself and any subcontractor to the Contract, agrees that it shall use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the State of Nebraska pursuant to Neb. Rev. Stat. 4-108 to 4-114 as amended.

ARTICLE 7 PARTIES BOUND

§ 7.1 The terms and conditions of this Agreement and the Contract Documents shall be binding upon and inure to the benefit of the Owner and the Contractor and their respective heirs, personal representatives, successors and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first above written.

By _____

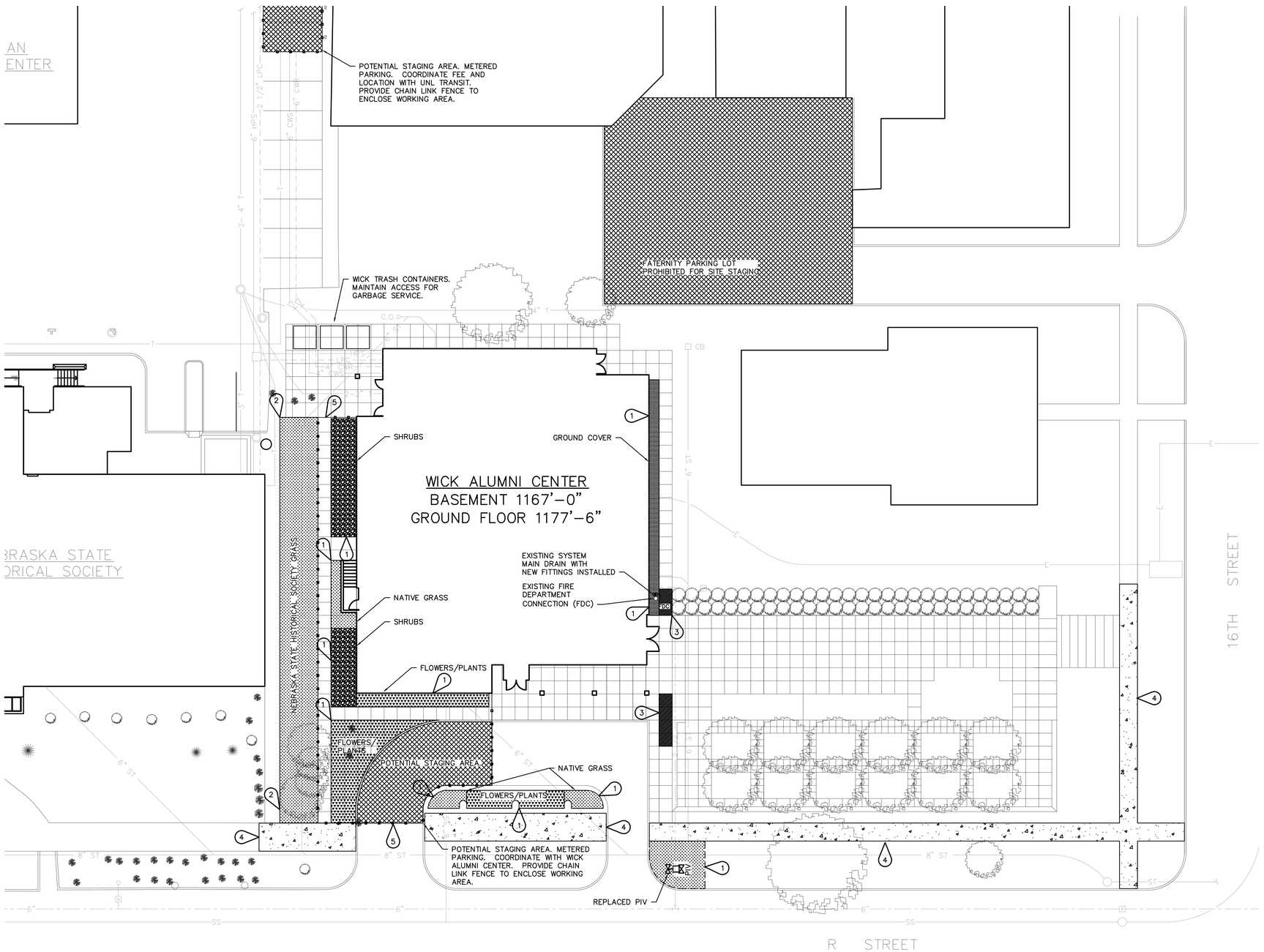
Title _____

CONTRACTOR

By _____

Title _____

THE BOARD OF REGENTS
THE UNIVERSITY OF NEBRASKA,
Owner



PHASING KEYNOTES: (◁)

1. UNL GROUNDSKEEPER TO REMOVE ALL VEGETATION IN THIS AREA PRIOR TO CONSTRUCTION AND REPLACE ALL VEGETATION FOLLOWING COMPLETION OF CONSTRUCTION.
2. CONTRACTOR TO ENSURE PROTECTION OF NEBRASKA STATE HISTORICAL SOCIETY GRASS.
3. POTENTIAL SIDEWALK REPLACEMENT REQUIRED.
4. SIDEWALK TOO REMAIN OPEN AND ACCESSIBLE FOR PUBLIC USE.
5. CONTRACTOR TO PROVIDE FENCING TO ENCLOSE EXTERIOR WORK AREAS.

DEMOLITION GENERAL NOTES

1. CONTRACTOR MUST MAINTAIN ON STAIR TOWER CLEAR FOR FIRE EXIST PURPOSES.
2. CONTRACTOR CANNOT USE ELEVATOR UNLESS PRIOR APPROVED IN WRITING FROM WICK ALUMNI CANTER.
3. OWNER REPRESENTATIVE: ANDY WASHBURN, ACCOUNTANT.

PHASING SITE PLAN

NORTH

NEW SHEET ADDED IN ADDENDUM 2 (2)

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100% CONSTRUCTION DOCUMENTS

REVISIONS
2 9/11/2013 ADDENDUM NO. 2

WICK Alumni Center
Part One - Life Safety
Lincoln, Nebraska
UNL Project No: C120P021

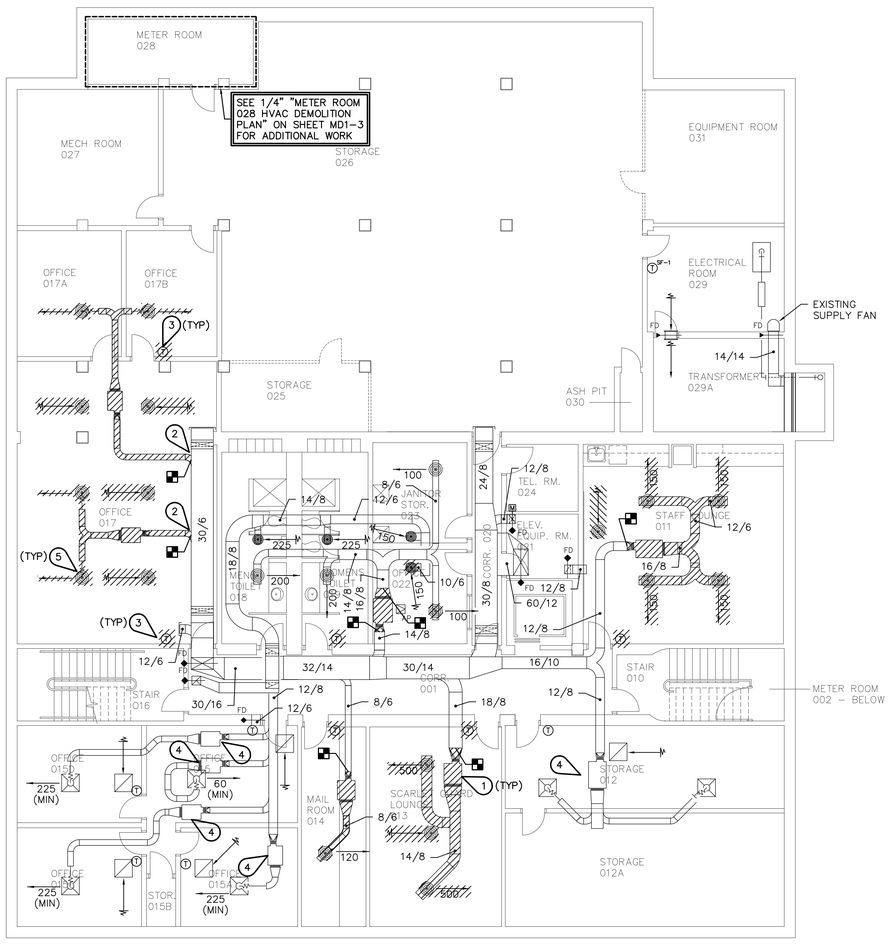
DESIGNED BY: JMM
DRAWN BY: HDS
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134002

SHEET TITLE: PHASING SITE PLAN

SHEET NO: **PH1-0**

MECHANICAL KEYNOTES: (◇)

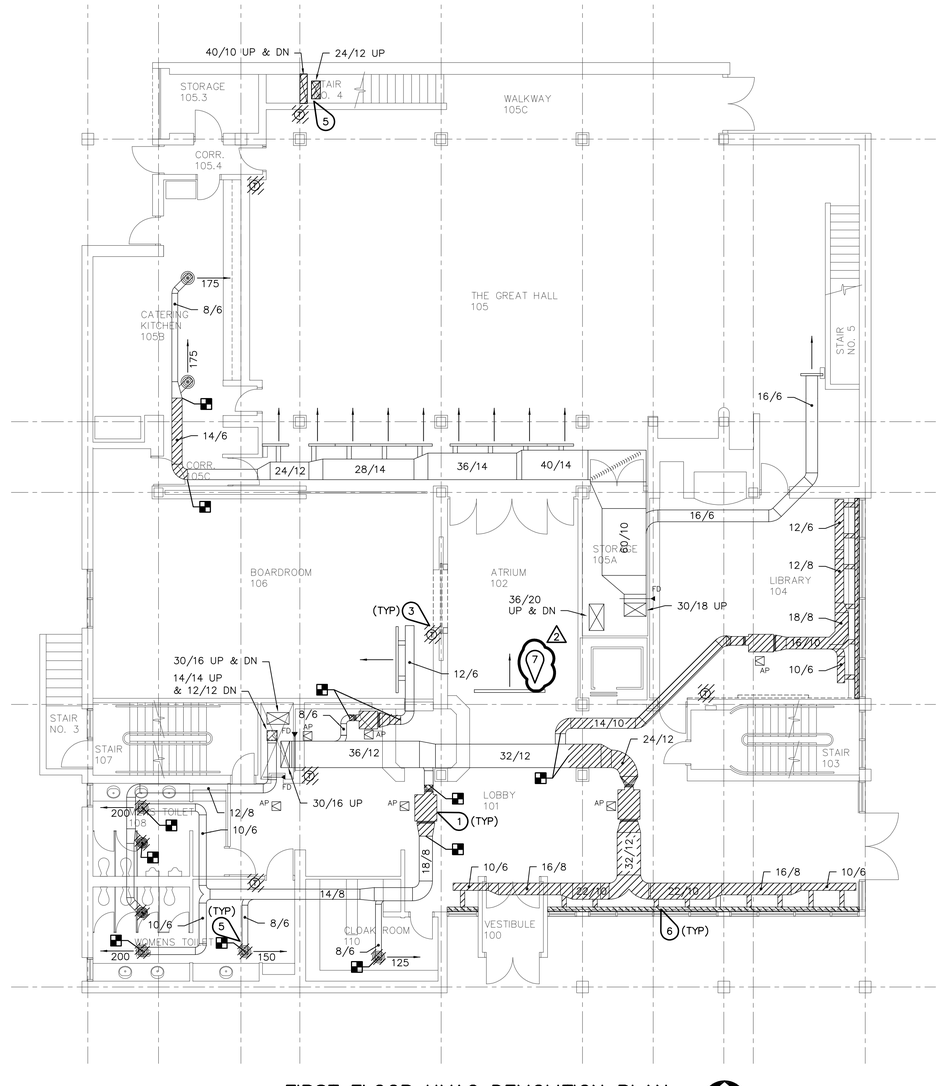
1. REMOVE EXISTING VAV BOXES, TRANSITIONS, DUCTWORK, CONTROLS, AND ASSOCIATED APPURTENANCES AS REQUIRED TO FACILITATE INSTALLATION OF NEW VAV BOXES. SEE SHEET M1–1 FOR NEW CONSTRUCTION (TYPICAL).
2. PATCH EXISTING DUCTWORK.
3. VERIFY LOCATION OF EXISTING THERMOSTATS AND REMOVE THERMOSTATS ASSOCIATED WITH REMOVED VAV BOXES AND AIR HANDLING UNITS.
4. EXISTING VAV BOXES AND CONTROLS TO REMAIN.
5. REMOVE EXISTING DIFFUSERS/GRILLES AND ASSOCIATED APPURTENANCES.
6. REMOVE EXISTING SLOTTED DIFFUSERS AND ASSOCIATED APPURTENANCES.
7. REMOVE EXISTING DECORATIVE GRILLE TO FACILITATE INSTALLATION OF SMOKE/FIRE DAMPER ASSEMBLY. GRILLE TO BE REINSTALLED. (2)



BASEMENT HVAC DEMOLITION PLAN

SCALE: 1/8 INCH = 1 FOOT

NORTH



FIRST FLOOR HVAC DEMOLITION PLAN

SCALE: 1/8 INCH = 1 FOOT

NORTH

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RYAN D. KING
E-10693
STATE OF NEBRASKA
8-16-13

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REVISIONS
2 — 9/11/2013 — ADDENDUM NO. 2

WICK Alumni Center
Part Two - HVAC Improvements
Lincoln, Nebraska
UNL Project No: C120P021

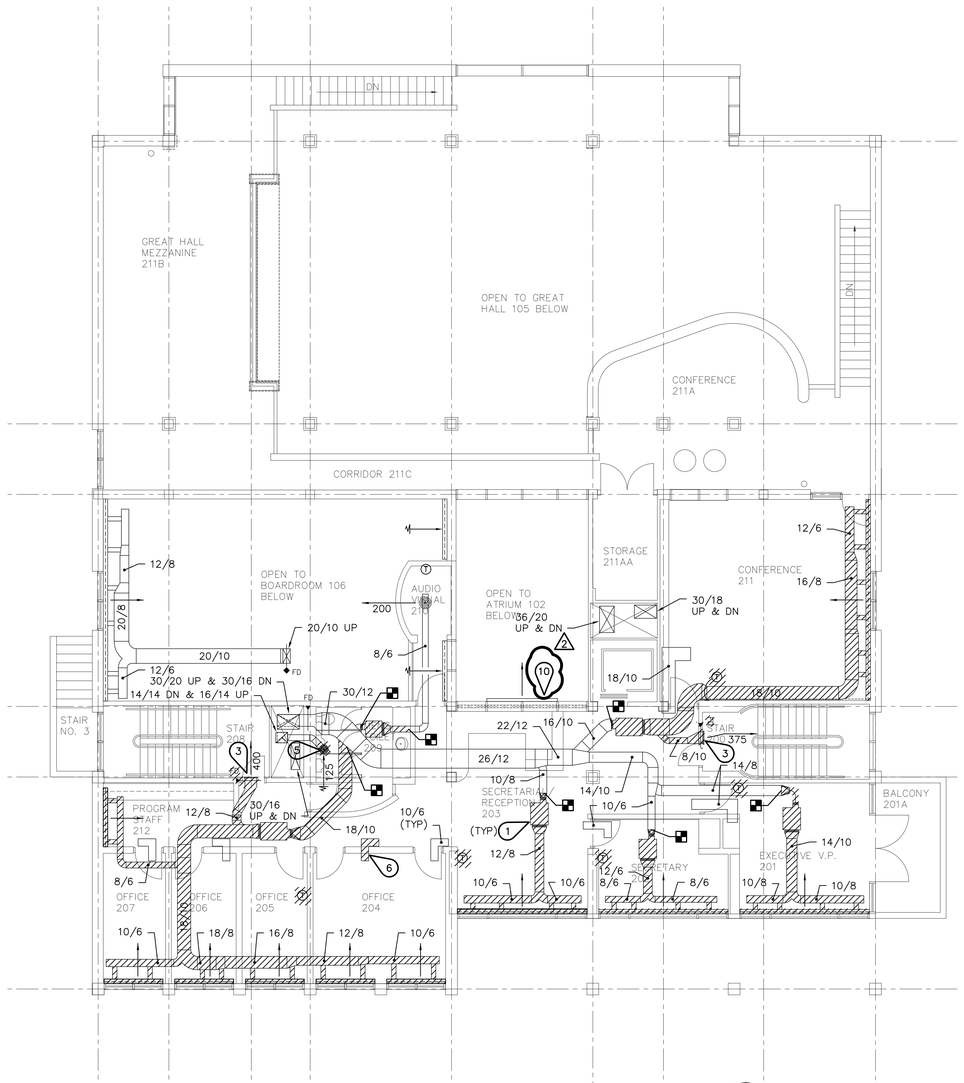
DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

SHEET TITLE
BASEMENT AND FIRST FLOOR HVAC DEMOLITION PLANS

SHEET NO
MD1–1

MECHANICAL KEYNOTES: (◇)

1. REMOVE EXISTING VAV BOXES, TRANSITIONS, DUCTWORK, CONTROLS, AND ASSOCIATED APPURTENANCES AS REQUIRED TO FACILITATE INSTALLATION OF NEW VAV BOXES. SEE SHEET M1–2 FOR NEW CONSTRUCTION (TYPICAL).
2. PATCH EXISTING DUCTWORK.
3. REMOVE EXISTING SUPPLY DUCTWORK, FIRE DAMPER, GRILLE AND ASSOCIATED APPURTENANCES AT STAIR NO. 1 AND STAIR NO. 2. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR WALL PATCHING REQUIREMENTS.
4. REMOVE EXISTING SLOTTED DIFFUSERS AS SHOWN. SEE SHEET M1–2 FOR NEW CONSTRUCTION (TYPICAL).
5. REMOVE EXISTING DIFFUSERS/GRILLES AND ASSOCIATED APPURTENANCES.
6. RELOCATE EXISTING 10/6 TRANSFER DUCT TO LOCATION SHOWN ON SHEET M1–2.
7. REMOVE EXISTING SINK AND PLUMBING AS REQUIRED. RE–INSTALL SINK IN RELOCATED CASEWORK AND RE–PLUMB AS REQUIRED. PROVIDE NEW SHUT–OFF VALVES ON HW AND CW LINES. SEE SHEET A1–2 FOR LOCATION OF RELOCATED SINK AND CASEWORK.
8. EXISTING SIDE–WALL, SLOTTED, LINEAR DIFFUSERS AND ASSOCIATED DIFFUSER PLENUMS IN THE GREAT HALL ARE TO BE ABANDONED IN PLACE. DO NOT PATCH OPENINGS IN PLENUM AFTER REMOVAL OF TAPS FROM MAIN DUCT.
9. REMOVE EXISTING DUCTWORK AND TAPS FROM MAIN DUCT TO DIFFUSER PLENUM. (2)
10. REMOVE EXISTING DECORATIVE GRILLE TO FACILITATE INSTALLATION OF SMOKE/FIRE DAMPER ASSEMBLY. GRILLE TO BE REINSTALLED.
11. MODIFY EXISTING DUCTWORK TO ACCOMODATE NEW SMOKE/FIRE DAMPER, SLEEVE, ACTUATOR AND ACCESSORIES. WHERE DAMPER CANNOT OCCUR WITHIN RATED WALL OR FLOOR, PROVIDE INSULATED SLEEVE PER UL REQUIREMENTS TO MAINTAIN ASSEMBLY RATING. EXISTING DECORATIVE GRILLE TO BE REINSTALLED AFTER INSTALLATION OF SMOKE/FIRE DAMPER ASSEMBLY. PROVIDE SERVICE ACCESS TO DAMPER PER MANUFACTURER'S RECOMMENDATIONS.

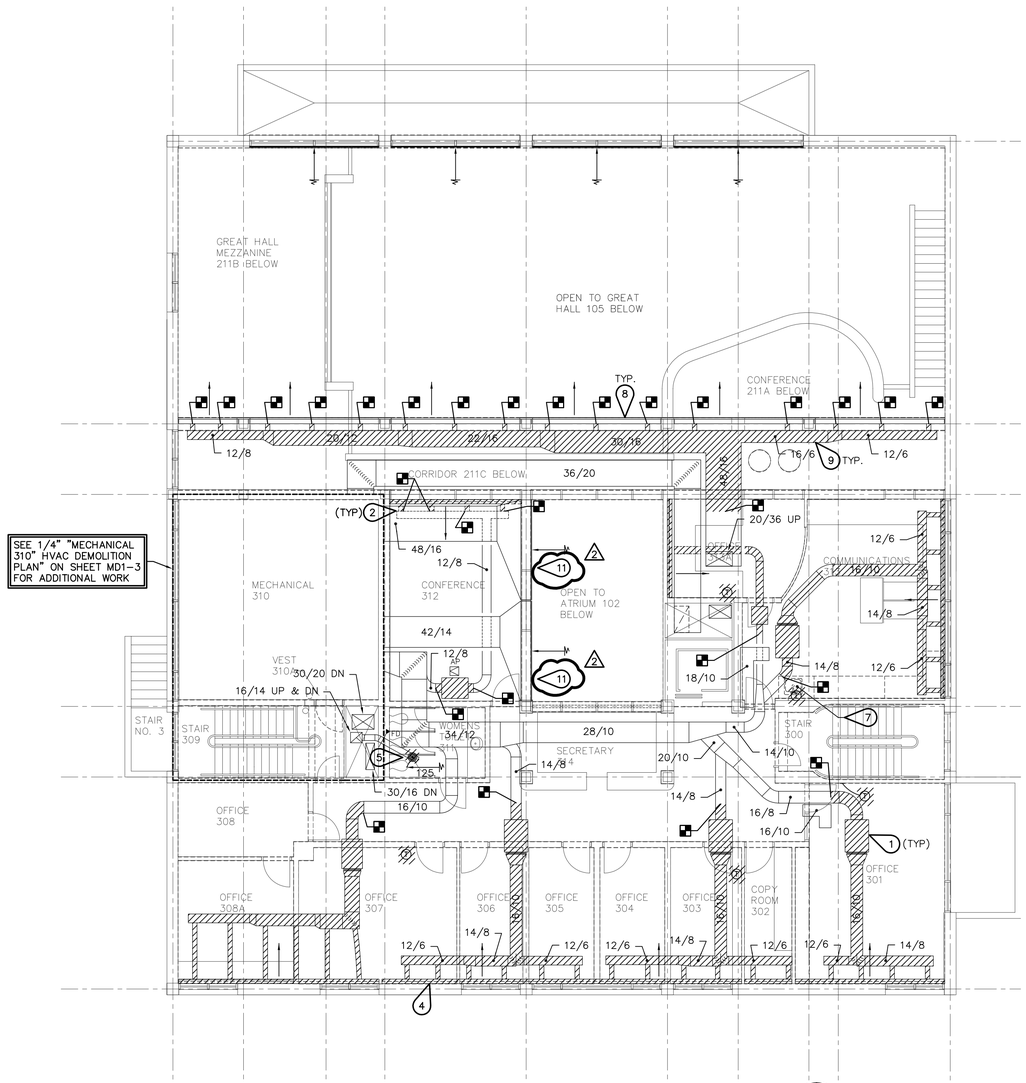


SECOND FLOOR HVAC DEMOLITION PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH



THIRD FLOOR HVAC DEMOLITION PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH

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STATE OF NEBRASKA
8-16-13

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REVISIONS
2 9/11/2013 ADDENDUM NO. 2

WICK Alumni Center
Part Two - HVAC Improvements
Lincoln, Nebraska
UNL Project No: C120P021

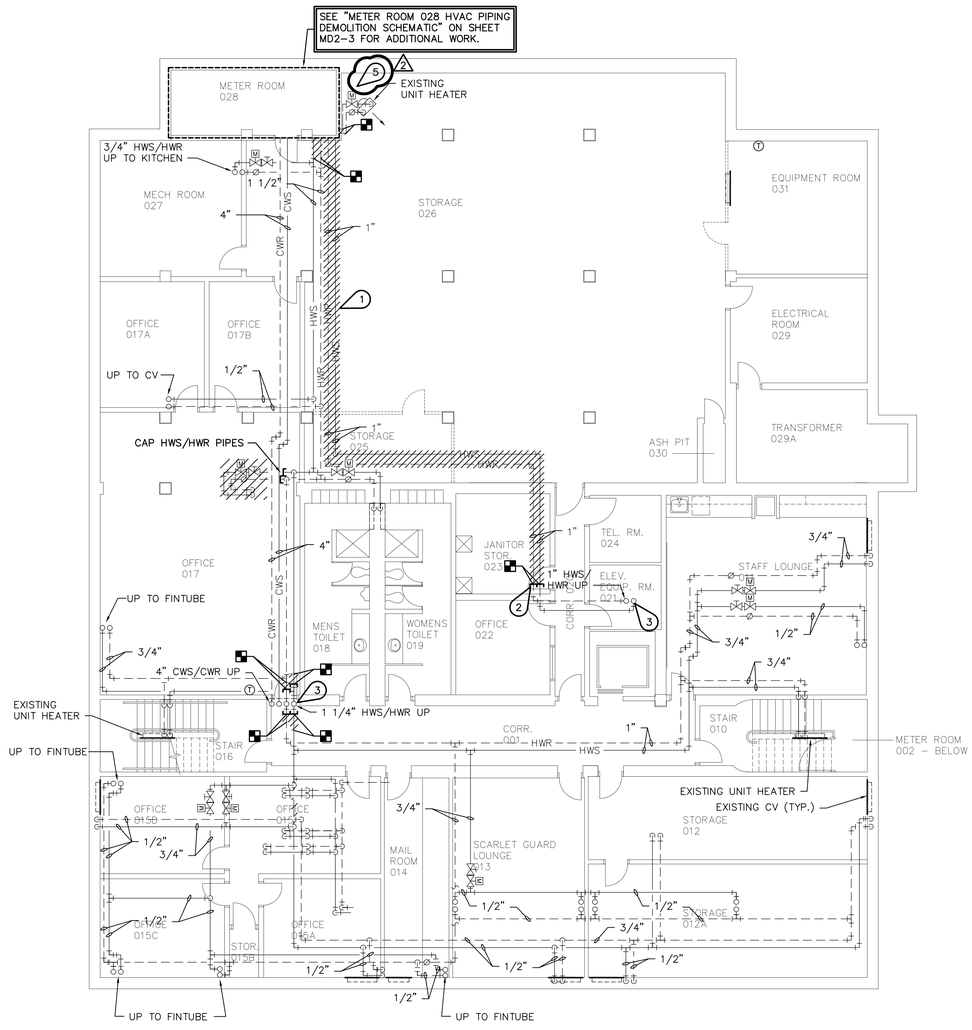
DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

SHEET TITLE
SECOND AND THIRD FLOOR HVAC DEMOLITION PLANS

SHEET NO
MD1–2

MECHANICAL KEYNOTES: (◇)

1. REMOVE PORTION OF EXISTING HWS AND HWR LINES THAT SERVE THE HEATING COIL IN EXISTING AHU IN MECHANICAL ROOM 401.
2. CAP EXISTING HWS AND HWR LINES IN JANITOR STORAGE ROOM 011.
3. ABANDON REMAINDER OF HWS AND HWR LINES IN PLACE.
4. REMOVE EXISTING CONTROL VALVE AND REPLACE WITH PIPING.
5. EXISTING PNEUMATIC CONTROL VALVES ON EXISTING UNIT HEATERS TO REMAIN SHALL BE REPLACED WITH NEW ELECTRONIC CONTROL VALVES, FURNISHED BY UNL BSM AND INSTALLED BY CONTRACTOR.

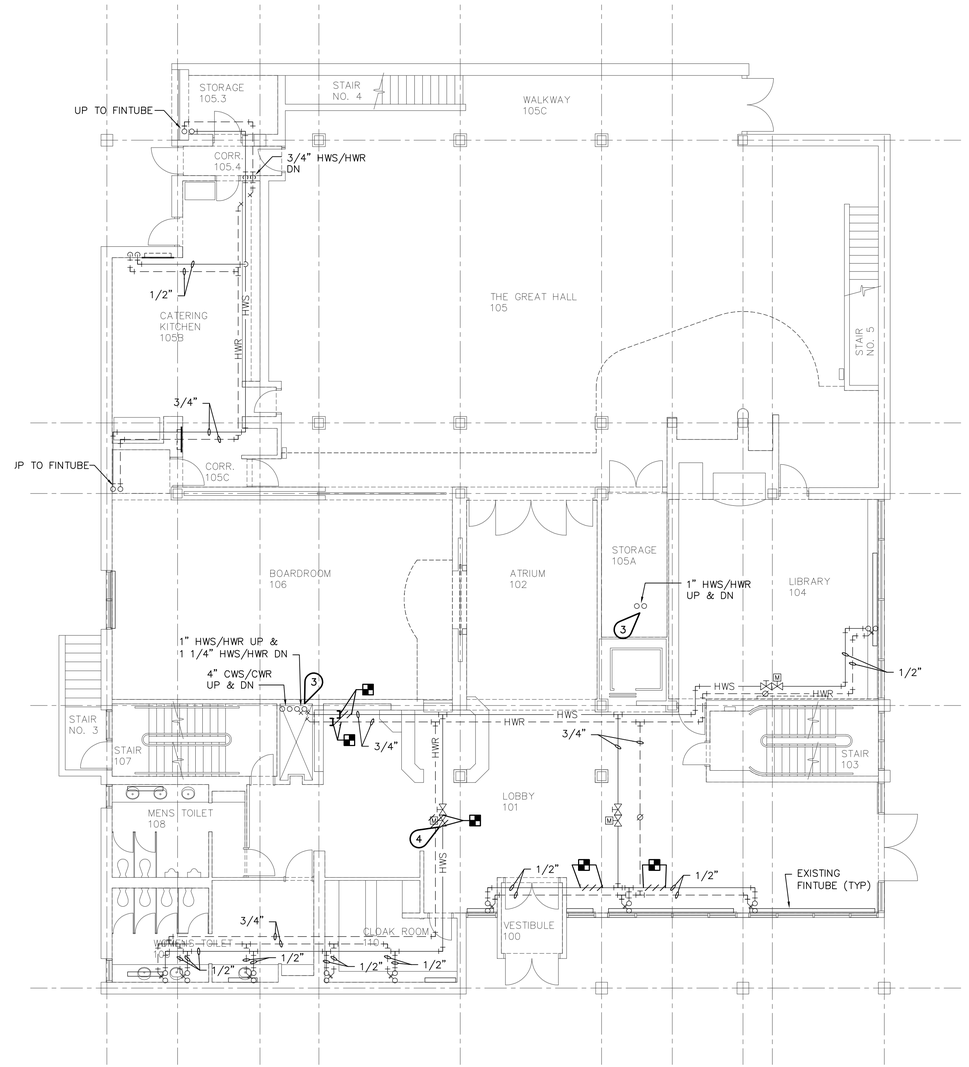


BASEMENT HVAC PIPING DEMOLITION PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH



FIRST FLOOR HVAC PIPING DEMOLITION PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH

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8-16-13

100% CONSTRUCTION DOCUMENTS

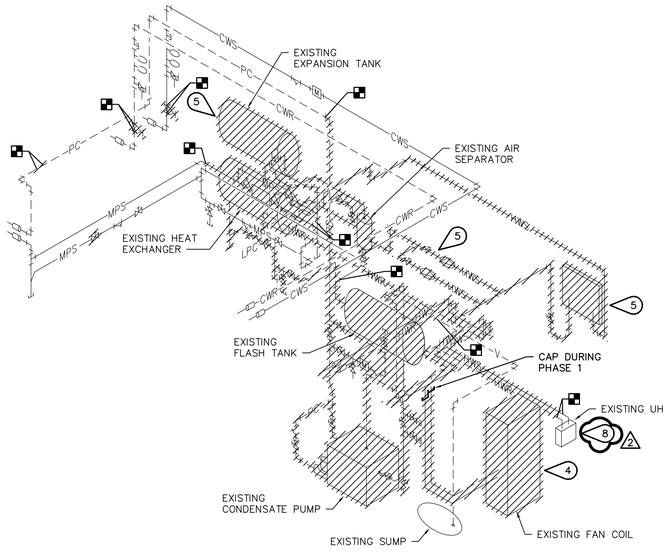
REVISIONS
2 9/11/2013 ADDENDUM NO. 2

WICK Alumni Center
Part Two - HVAC Improvements
Lincoln, Nebraska
UNL Project No: C120P021

DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

SHEET TITLE
BASEMENT AND FIRST FLOOR HVAC PIPING DEMOLITION PLANS

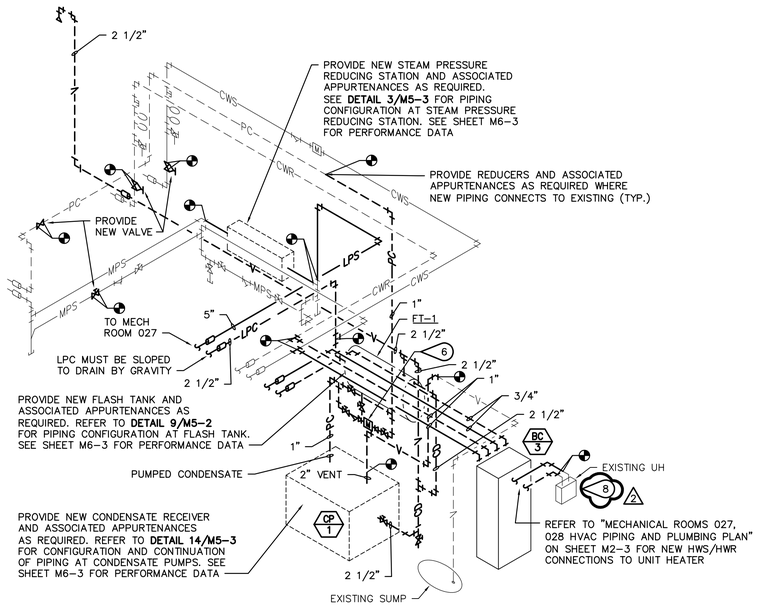
SHEET NO
MD2-1



METER ROOM 028 HVAC PIPING DEMOLITION SCHEMATIC

NO SCALE

NOTE: SEE PHASING PLAN, SHEET PH1–1 FOR SEQUENCING OF DEMOLITION AND NEW CONSTRUCTION IN ROOM 028.



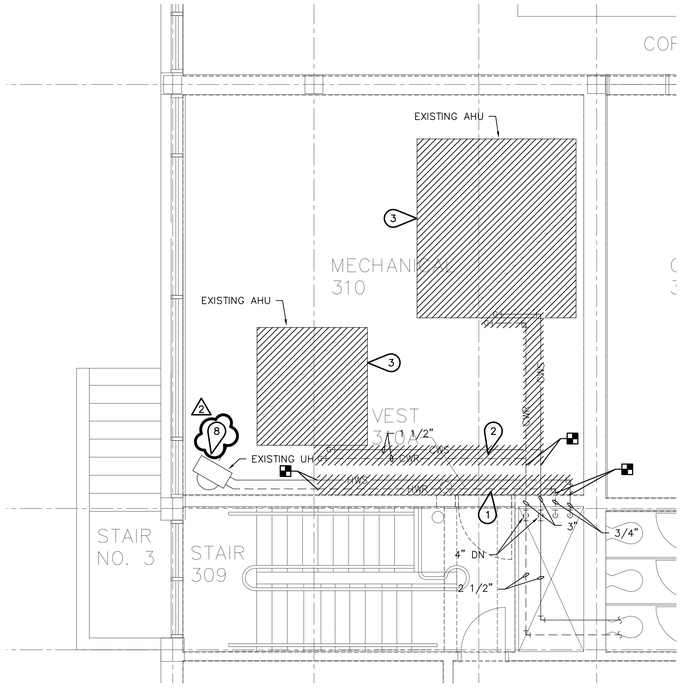
METER ROOM 028 HVAC PIPING SCHEMATIC

NO SCALE

NOTE: SEE PHASING PLAN, SHEET PH1–1 FOR SEQUENCING OF DEMOLITION AND NEW CONSTRUCTION IN ROOM 028.

MECHANICAL KEYNOTES: (◇)

1. REMOVE EXISTING HWS AND HWR PIPING AND ASSOCIATED APPURTENANCES AS SHOWN. CAP EXISTING HWS AND HWR PIPING AT FLOOR.
2. REMOVE EXISTING CWS AND CWR PIPING AND ASSOCIATED APPURTENANCES AS SHOWN.
3. SEE SHEET MD1–3 FOR HVAC EQUIPMENT REMOVAL.
4. REMOVE EXISTING FAN COIL UNIT AND ASSOCIATED HWS AND HWR PIPING AND CAP AS SHOWN DURING PHASE 1A.
5. REMOVE EXISTING HWS/HWR AND STEAM PIPING AND ASSOCIATED APPURTENANCES SHOWN HATCHED AFTER PHASES 1B THRU 5.
6. NEW CONDENSATE METER BY UNL BSM.
7. RELOCATE EXISTING UNIT HEATER TO LOCATION SHOWN ON M2–3 TO ACCOMMODATE NEW VESTIBULE. EXTEND HWS AND HWR PIPING TO NEW UNIT HEATER LOCATION AS SHOWN ON M2–3.
8. EXISTING PNEUMATIC CONTROL VALVES ON EXISTING UNIT HEATERS TO REMAIN SHALL BE REPLACED WITH NEW ELECTRONIC CONTROL VALVES, FURNISHED BY UNL BSM AND INSTALLED BY CONTRACTOR. △2

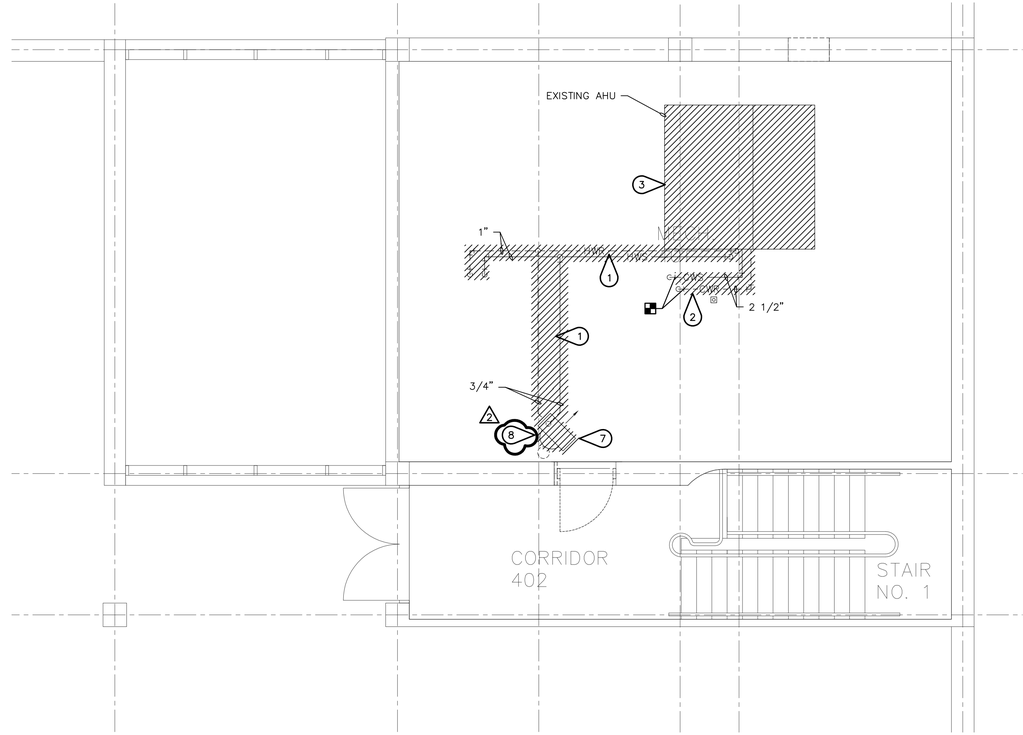


MECHANICAL 310 HVAC PIPING DEMOLITION PLAN

SCALE: 1/4 INCH = 1 FOOT

12" 0 5'

NORTH



MECHANICAL 401 HVAC PIPING DEMOLITION PLAN

SCALE: 1/4 INCH = 1 FOOT

12" 0 5'

NORTH

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STATE OF NEBRASKA
8-16-13

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REVISIONS
△1 9/3/2013 ADDENDUM NO. 1
△2 9/11/2013 ADDENDUM NO. 2

WICK Alumni Center
Part Two - HVAC Improvements
Lincoln, Nebraska
UNL Project No: C120P021

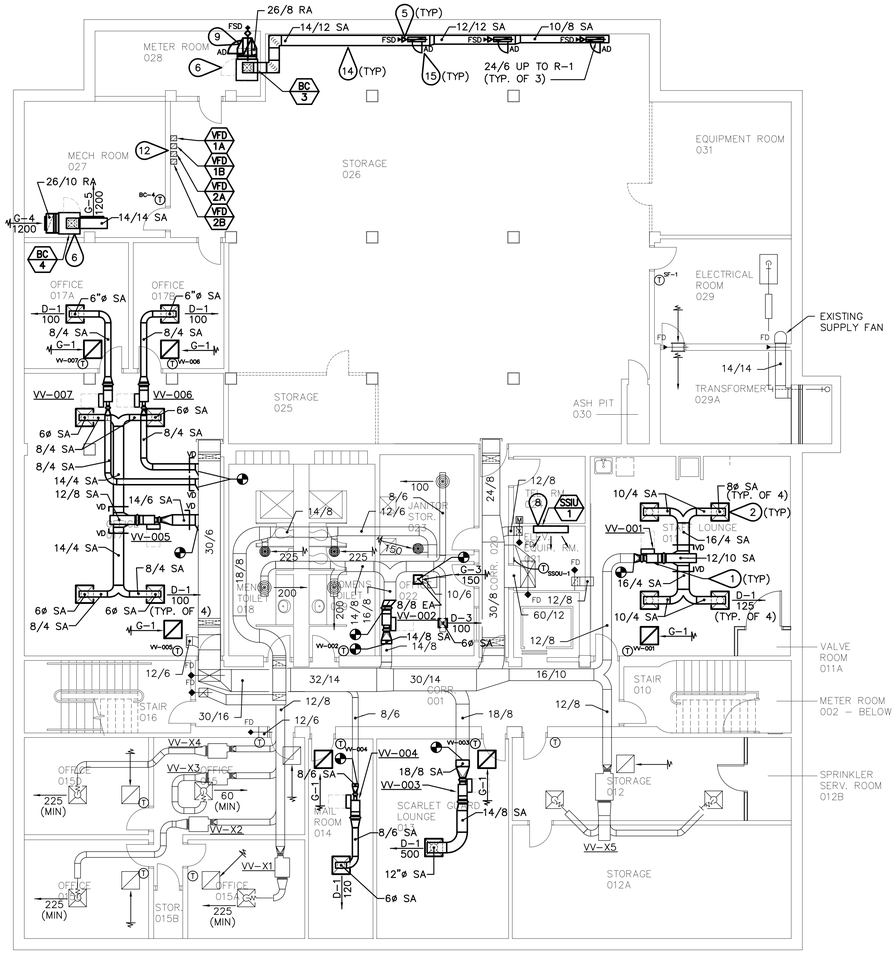
DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

SHEET TITLE
LARGE-SCALE HVAC PIPING AND PLUMBING DEMOLITION PLANS

SHEET NO
MD2-3

MECHANICAL KEYNOTES: (◇)

1. PROVIDE NEW VAV BOXES AND ASSOCIATED APPURTENANCES AS REQUIRED. WHEN NEW VAV BOXES ARE INSTALLED IN EXISTING DUCTWORK, FIELD VERIFY EXISTING DUCTWORK SIZES AND PROVIDE TRANSITIONS AS REQUIRED. COORDINATE LOCATION OF VAV BOXES AND LOCATION OF CONTROL BOX ON VAV UNITS WITH NEW LIGHTING, NEW CEILING/ACCESS PANELS, AND EXISTING CONDITIONS ABOVE CEILING. SEE **DETAIL 5/M5-2** FOR VAV BOX DETAIL. SEE SHEET M6-1 FOR VAV BOX PERFORMANCE DATE AND SHEET M2-1 FOR HVAC PIPING TO VAV BOXES.
2. PROVIDE NEW REGISTERS, GRILLES, AND DIFFUSERS AS SHOWN. SEE **DETAILS 2/M5-2** AND **3/M5-2** FOR DIFFUSER DETAILS. SEE SHEET M6-1 FOR PERFORMANCE DATA.
3. PROVIDE NEW SLOTTED, LINEAR DIFFUSERS AS SHOWN. SET FLOW PATTERN FOR VERTICAL THROW TO WIPE WINDOWS DOORS AND WALLS. SEE SHEET M6-1 FOR PERFORMANCE DATA.
4. EXISTING SIDE-WALL LINEAR DIFFUSER TO REMAIN. RE-BALANCE TO CFM SHOWN.
5. PROVIDE DUCTWORK TO ACCOMMODATE NEW NEW SMOKE/FIRE DAMPER, SLEEVE, ACTUATOR AND ACCESSORIES. WHERE DAMPER CANNOT OCCUR WITHIN RATED WALL OR FLOOR, PROVIDE INSULATED SLEEVE PER UL REQUIREMENTS TO MAINTAIN ASSEMBLY RATING. PROVIDE SERVICE ACCESS TO DAMPER PER MANUFACTURER'S RECOMMENDATIONS. (2)
6. PROVIDE NEW BLOWER COIL (BC-3 AND BC-4) AND ASSOCIATED APPURTENANCES. PROVIDE 4" HOUSEKEEPING PAD AS REQUIRED. PROVIDE FLEXIBLE DUCT CONNECTION AND TRANSITION IN VERTICAL. SEE SHEET M6-2 FOR PERFORMANCE DATA AND SHEET M2-1 FOR HVAC PIPING TO BLOWER COILS.
7. PROVIDE NEW CABINET UNIT HEATER (CUH-1) AND ASSOCIATED APPURTENANCES. COORDINATE LOCATION OF CABINET UNIT HEATER AND LOCATION OF CONTROL BOX ON UNIT WITH NEW LIGHTING, NEW CEILING/ACCESS PANELS, AND EXISTING CONDITIONS ABOVE CEILING. SEE SHEET M6-3 FOR PERFORMANCE DATA AND SHEET M2-1 FOR HVAC PIPING TO CABINET UNIT HEATER.
8. PROVIDE WALL-MOUNTED SPLIT SYSTEM INDOOR UNIT IN EXISTING ELEVATOR EQUIPMENT ROOM. COORDINATE INSTALLATION AND LOCATION WITH EXISTING ELEVATOR EQUIPMENT. INSTALL PER MANUFACTURER'S RECOMMENDATION. SEE SHEET M2-1 FOR REFRIGERANT AND CONDENSATE PIPING LAYOUT AND SHEET M6-2 FOR SPLIT SYSTEM PERFORMANCE DATA.
9. PROVIDE TRANSITION TO EXISTING OPENING IN CEILING (24/12-FIELD VERIFY). TERMINATE DUCTWORK 6" INTO SPACE ABOVE CEILING AND TERMINATE WITH BIRDSCREEN.
10. PROVIDE NEW SUPPLY REGISTERS SUITABLE FOR IN-FLOOR INSTALLATION. FRAME AND REMOVABLE CORE TO BE EXTRUDED ALUMINUM. OPPOSED BLADE DAMPER TO BE CORROSION-RESISTANT STEEL. BARS SHALL BE SPACED AT 1/2" C/C, 1/4" THICK AND SET AT 0 DEGREE DEFLECTION. FRAME SHALL BE WELDED, REINFORCED, AND BEVELED SO AS TO BE SUITABLE FOR FOOT TRAFFIC. FINISH TO BE ANODIZED GOLD. COORDINATE FINAL COLOR SELECTION AND FINISH (STANDARD OR BRUSHED) WITH ARCHITECT. "NAILOR INDUSTRIES 49-480" OR APPROVED EQUAL. SEE SHEET M6-1 FOR PERFORMANCE DATA.
11. CONTRACTOR SHALL ADJUST EXISTING MECHANICAL SYSTEMS AS REQUIRED TO FACILITATE INSTALLATION OF NEW COFFERED CEILING.
12. NEW VFD'S BY UNL BSM. VFD'S ARE SHOWN FOR REFERENCE ONLY. COORDINATE LOCATION WITH NEW AND EXISTING OVERHEAD PIPING. SEE SHEET M6-1 FOR PERFORMANCE DATA.
13. EXISTING SIDE-WALL LINEAR DIFFUSERS TO REMAIN. RE-BALANCE APPROXIMATELY 31 L.F. OF DIFFUSERS TO 2090 CFM.
14. REFER TO DUCTWORK HANGERS **DETAIL 6/M5-2** (TYP).
15. REFER TO ACCESS DOOR **DETAIL 11/M5-2** (TYP). (2)
16. PROVIDE NEW SMOKE/FIRE DAMPER, SLEEVE, ACTUATOR AND ACCESSORIES. WHERE DAMPER CANNOT OCCUR WITHIN RATED WALL OR FLOOR, PROVIDE INSULATED SLEEVE PER UL REQUIREMENTS TO MAINTAIN ASSEMBLY RATING. EXISTING DECORATIVE GRILLE TO BE REINSTALLED AFTER INSTALLATION OF SMOKE/FIRE DAMPER ASSEMBLY. PROVIDE SERVICE ACCESS TO DAMPER PER MANUFACTURER'S RECOMMENDATIONS.

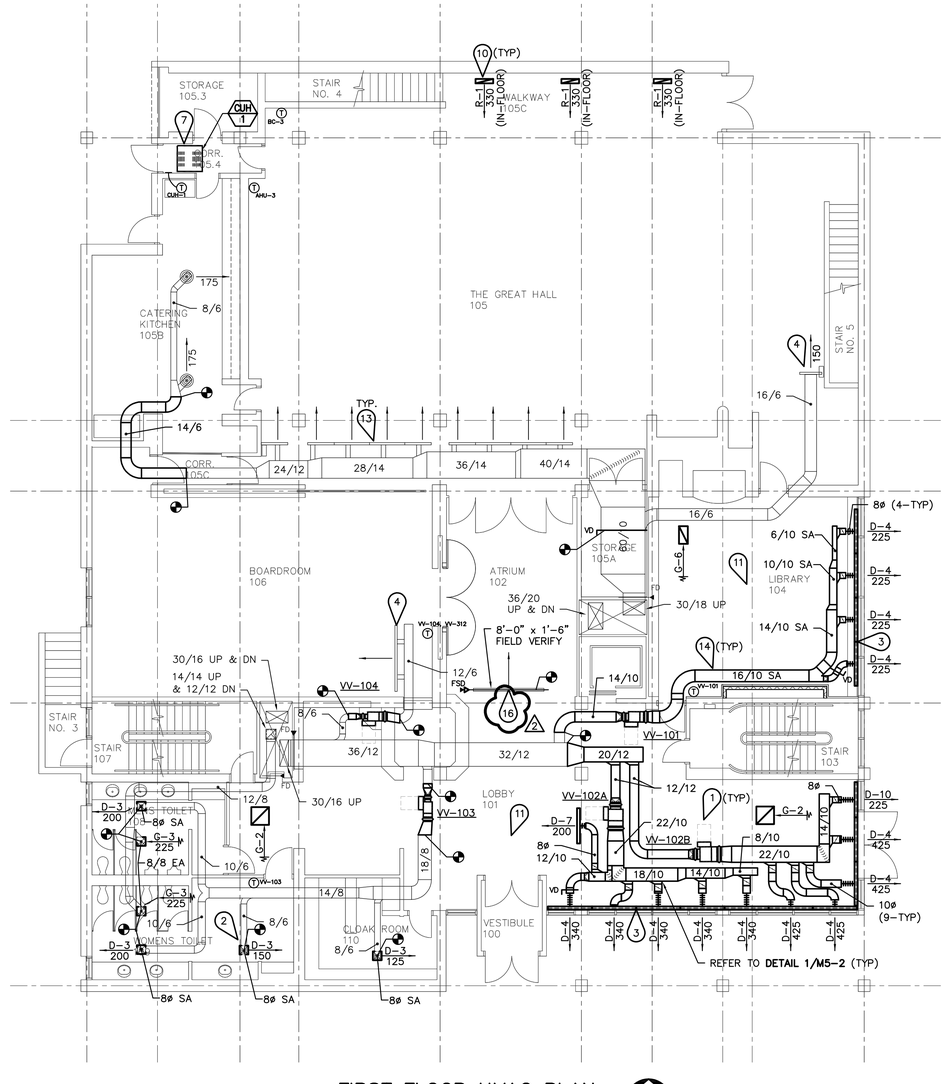


BASEMENT HVAC PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH



FIRST FLOOR HVAC PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH

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RYAN D. KING
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STATE OF NEBRASKA
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100% CONSTRUCTION DOCUMENTS

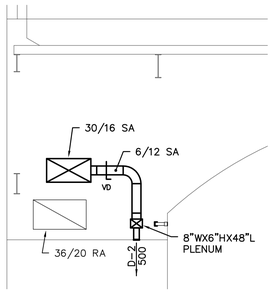
REVISIONS
1 9/11/2013 ADDENDUM NO. 2

WICK Alumni Center
Part Two - HVAC Improvements
Lincoln, Nebraska
UNL Project No: C120P021

DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

SHEET TITLE
BASEMENT AND FIRST FLOOR HVAC PLANS

SHEET NO
M1-1

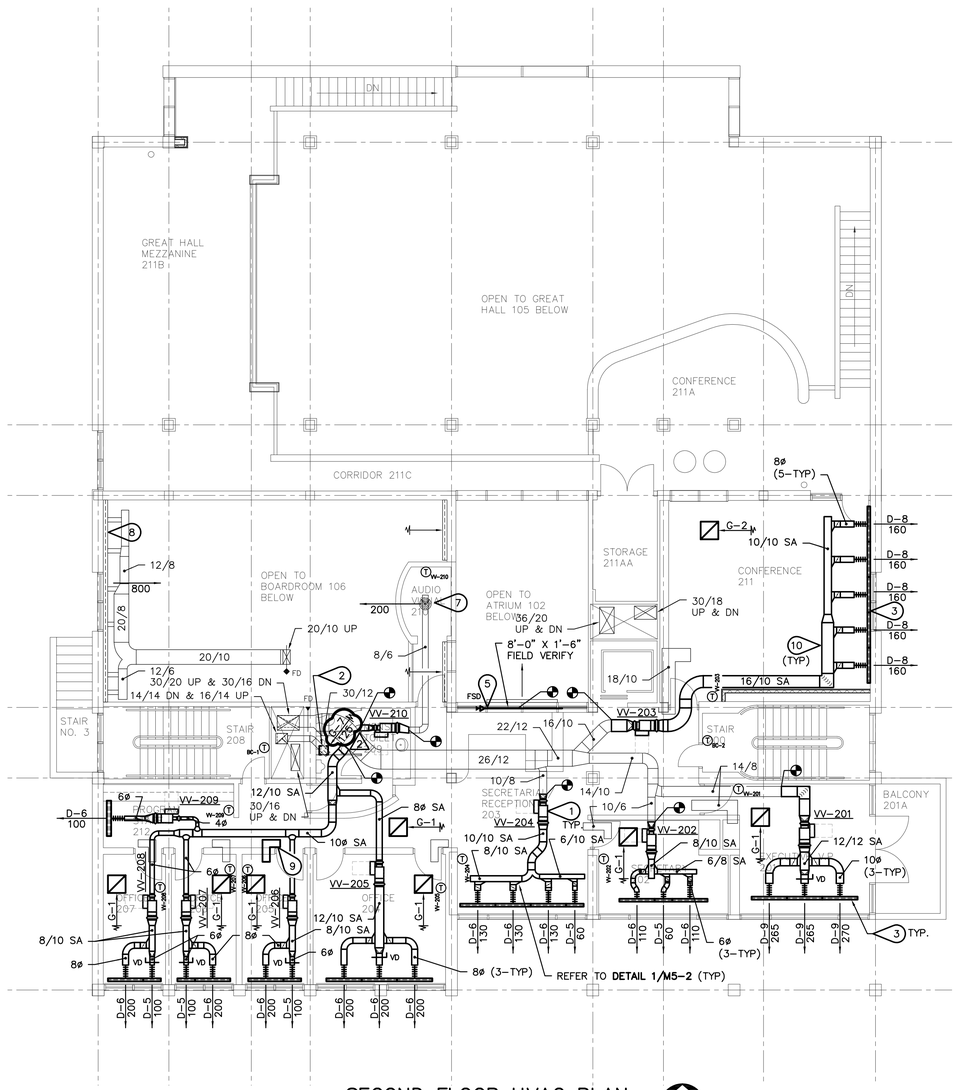


COVE SECTION A

NO SCALE

MECHANICAL KEYNOTES: (◇)

1. PROVIDE NEW VAV BOXES AND ASSOCIATED APPURTENANCES AS REQUIRED. WHEN NEW VAV BOXES ARE INSTALLED IN EXISTING DUCTWORK, FIELD VERIFY EXISTING DUCTWORK SIZES AND PROVIDE TRANSITIONS AS REQUIRED. COORDINATE LOCATION OF VAV BOXES AND LOCATION OF CONTROL BOX ON VAV UNITS WITH NEW LIGHTING, NEW CEILING/ACCESS PANELS, AND EXISTING CONDITIONS ABOVE CEILING. SEE **DETAIL 5/M5-2** FOR VAV BOX DETAIL. SEE SHEET M6-1 FOR VAV BOX PERFORMANCE DATE AND SHEET M2-1 FOR HVAC PIPING TO VAV BOXES.
2. PROVIDE NEW REGISTERS, GRILLES, AND DIFFUSERS AS SHOWN. SEE **DETAILS 2/M5-2** AND **3/M5-2** FOR DIFFUSER DETAILS. SEE SHEET M6-1 FOR PERFORMANCE DATA.
3. PROVIDE NEW SLOTTED, LINEAR DIFFUSERS AS SHOWN. SET FLOW PATTERN FOR VERTICAL THROW TO WIPE WINDOWS, DOORS AND WALLS. SEE SHEET M6-1 FOR PERFORMANCE DATA.
4. EXISTING SIDE-WALL, SLOTTED, LINEAR DIFFUSERS IN THE GREAT HALL ARE ABANDONED IN PLACE.
5. PROVIDE NEW SMOKE/FIRE DAMPER, SLEEVE, ACTUATOR AND ACCESSORIES. WHERE DAMPER CANNOT OCCUR WITHIN RATED WALL OR FLOOR, PROVIDE INSULATED SLEEVE PER UL REQUIREMENTS TO MAINTAIN ASSEMBLY RATING. EXISTING DECORATIVE GRILLE TO BE REINSTALLED AFTER INSTALLATION OF SMOKE/FIRE DAMPER ASSEMBLY. PROVIDE SERVICE ACCESS TO DAMPER PER MANUFACTURER'S RECOMMENDATIONS. (△2)
6. PROVIDE NEW CEILING-MOUNTED, SLOTTED, LINEAR DIFFUSERS IN THE GREAT HALL AS SHOWN. SET FLOW PATTERN FOR ANGLED DOWN DISCHARGE TOWARDS CENTER OF ROOM. SEE SHEET M6-1 FOR PERFORMANCE DATA.
7. EXISTING CEILING-MOUNTED, DIFFUSER TO REMAIN. RE-BALANCE TO CFM SHOWN.
8. EXISTING CEILING-MOUNTED, SLOTTED, LINEAR DIFFUSER TO REMAIN. RE-BALANCE TO CFM SHOWN.
9. RELOCATE EXISTING 10/6 TRANSFER TO THIS LOCATION.
10. REFER TO DUCTWORK HANGERS **DETAIL 6/M5-2** (TYP).
11. MODIFY EXISTING DUCTWORK TO ACCOMODATE NEW SMOKE/FIRE DAMPER, SLEEVE, ACTUATOR AND ACCESSORIES. WHERE DAMPER CANNOT OCCUR WITHIN RATED WALL OR FLOOR, PROVIDE INSULATED SLEEVE PER UL REQUIREMENTS TO MAINTAIN ASSEMBLY RATING. EXISTING DECORATIVE GRILLE TO BE REINSTALLED AFTER INSTALLATION OF SMOKE/FIRE DAMPER ASSEMBLY. PROVIDE SERVICE ACCESS TO DAMPER PER MANUFACTURER'S RECOMMENDATIONS. (△2)

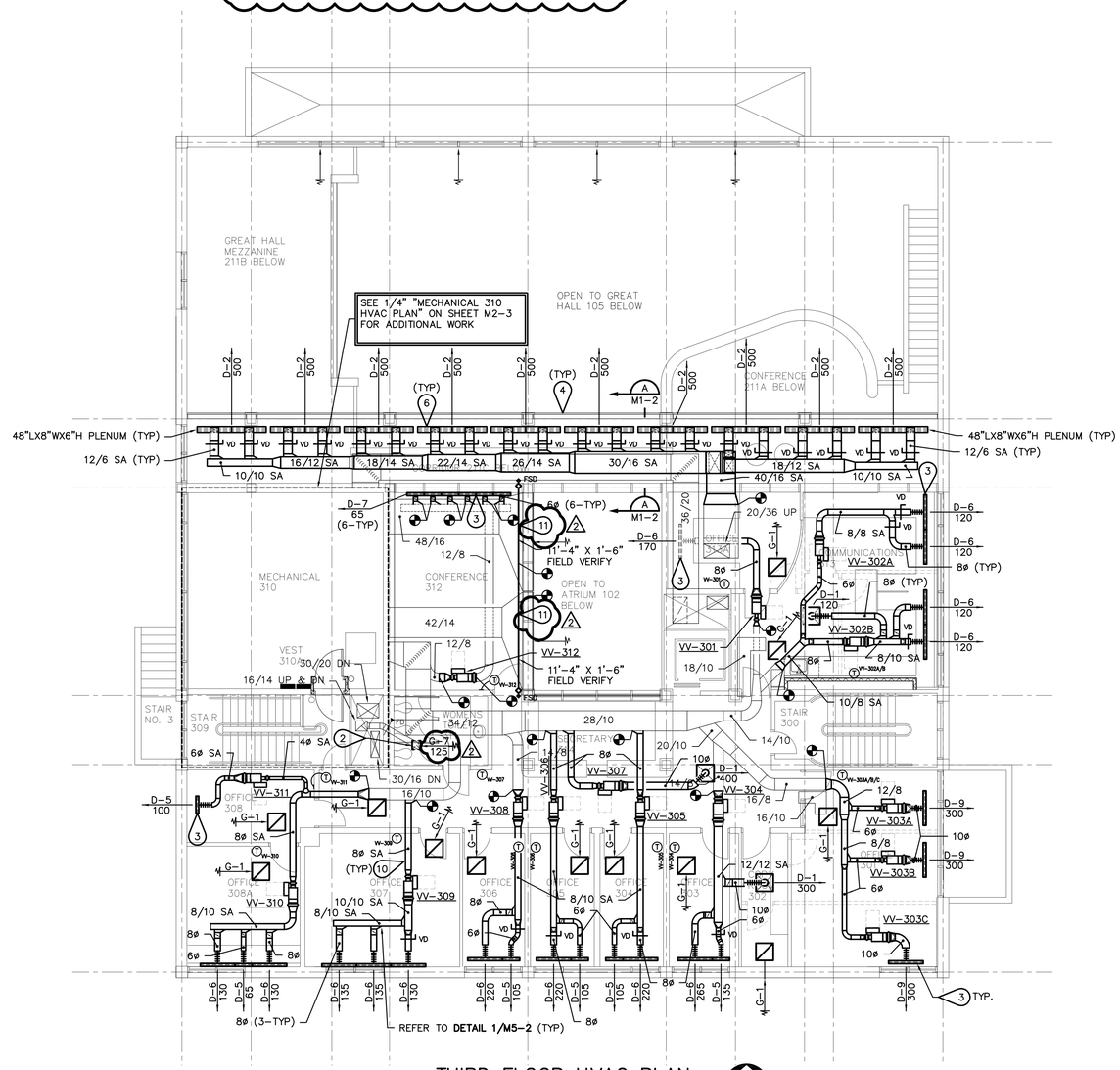


SECOND FLOOR HVAC PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH



THIRD FLOOR HVAC PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH

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PROFESSIONAL MECHANICAL ENGINEER
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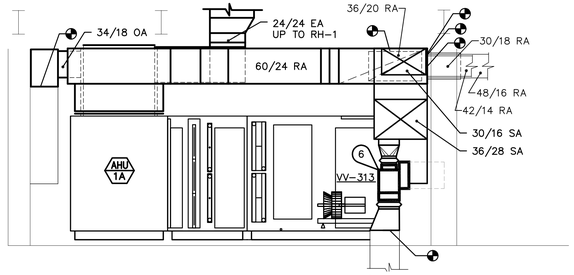
FEI PROJECT NO: 134003

SHEET TITLE
SECOND AND THIRD FLOOR HVAC PLANS

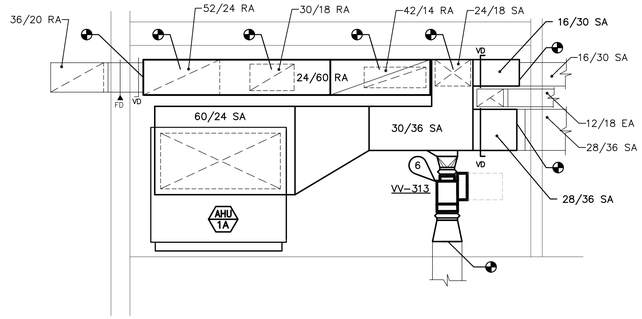
SHEET NO
M1-2



SECTION A

SCALE: 1/4 INCH = 1 FOOT

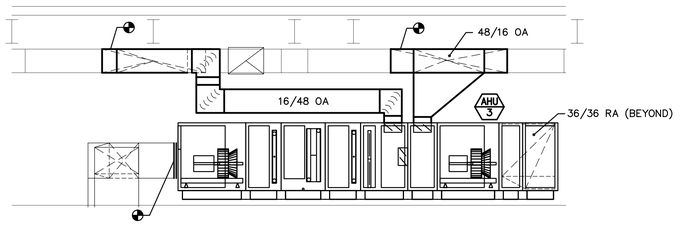
12" 0 5'



SECTION B

SCALE: 1/4 INCH = 1 FOOT

12" 0 5'



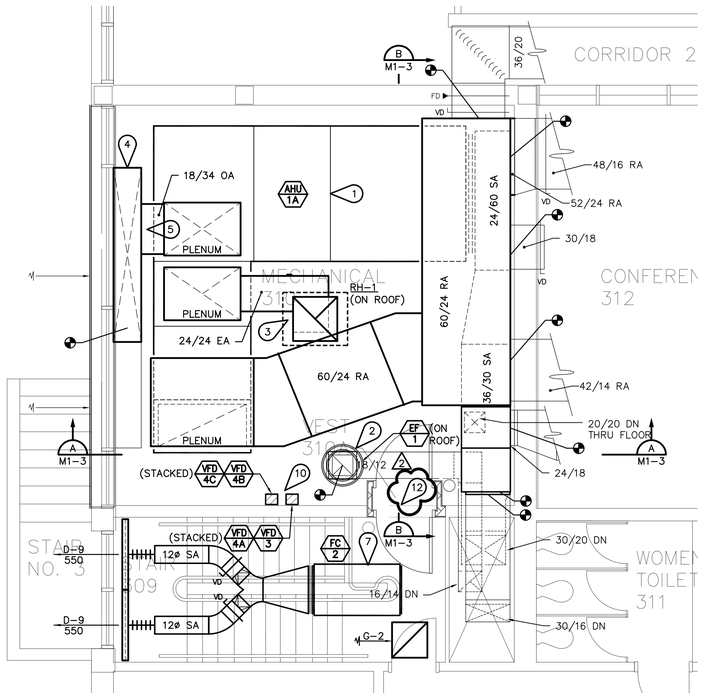
SECTION C

SCALE: 1/4 INCH = 1 FOOT

12" 0 5'

MECHANICAL KEYNOTES: (▷)

1. PROVIDE NEW AIR HANDLING UNITS (AHU-1A AND AHU-3) AND ASSOCIATED APPURTENANCES AS REQUIRED. PROVIDE SUPPLY AIR, RETURN AIR, EXHAUST AIR, AND OUTSIDE AIR PLENUMS AT UNITS AS REQUIRED/SHOWN. PROVIDE NEW DUCTWORK FROM PLENUMS TO NEW DUCTWORK, EXISTING DUCTWORK/PLENUMS, EXISTING LOUVERS, NEW RELIEF HOOD, EXHAUST FAN, AND VAV BOW AS SHOWN. COORDINATE LOCATION OF NEW AIR HANDLING UNITS AND DUCTWORK WITH EXISTING ELECTRICAL AND MECHANICAL SYSTEMS. MODIFY/EXTEND EXISTING CONCRETE HOUSEKEEPING PADS AS REQUIRED. SEE **DETAIL 8/M5-3** AND **9/M5-3**. SEE SHEET M6-3 FOR CHILLED WATER AND HOT WATER COIL PERFORMANCE DATA AND SHEET M6-2 FOR AIR HANDLING UNIT (AHU-1A AND AHU-3) PERFORMANCE. DATA SEE SHEET M2-3 FOR HVAC PIPING TO AIR HANDLING UNITS.
2. PROVIDE NEW ROOF-MOUNTED EXHAUST FAN (EF-1), ROOF CURB, AND ASSOCIATED APPURTENANCES AS REQUIRED. COORDINATE ANCHORING OF ROOF CURB WITH ROOF CONSTRUCTION AND SEAL WATER-TIGHT AROUND ALL ROOF PENETRATION TO MATCH EXISTING CONDITIONS. PROVIDE NEW DUCTWORK AND TRANSITION IN VERTICAL FOR CONNECTION TO EXISTING DUCTWORK AS REQUIRED. SEE SHEET M6-1 FOR EXHAUST FAN PERFORMANCE DATA.
3. PROVIDE NEW ROOF-MOUNTED RELIEF HOOD (RH-1), ROOF CURB, AND ASSOCIATED APPURTENANCES AS REQUIRED. COORDINATE ANCHORING OF ROOF CURB WITH ROOF CONSTRUCTION AND SEAL WATER-TIGHT AROUND ALL ROOF PENETRATION TO MATCH EXISTING CONDITIONS. PROVIDE NEW DUCTWORK AND TRANSITION IN VERTICAL AS REQUIRED FOR CONNECTION TO NEW EXHAUST AIR PLENUM AT AHU-1A. LOCATE TRANSITION SO THAT 24/24 DUCT CLEARS NEW 60/24 RETURN DUCT. COORDINATE LOCATION OF NEW AIR HANDLING UNITS AND DUCTWORK WITH EXISTING ELECTRICAL AND MECHANICAL SYSTEMS. SEE SHEET M6-3 FOR EXHAUST FAN PERFORMANCE DATA.
4. EXTEND EXISTING OUTDOOR AIR PLENUM AS REQUIRED TO ACCOMMODATE NEW 34X18 DUCT.
5. NOT USED.
6. PROVIDE NEW VAV BOX AND ASSOCIATED APPURTENANCES AS REQUIRED. FIELD VERIFY EXISTING DUCTWORK SIZE AND PROVIDE TRANSITION AS REQUIRED. COORDINATE LOCATION OF VAV BOX AND LOCATION OF CONTROL BOX ON VAV UNIT WITH EXISTING CONDITIONS. SEE **DETAIL 5/M5-2** FOR VAV BOX DETAIL. SEE SHEET M6-1 FOR VAV BOX PERFORMANCE DATE AND SHEET M2-3 FOR HVAC PIPING TO VAV BOX.
7. PROVIDE NEW FAN COILS (FC-1 AND FC-2) AND ASSOCIATED APPURTENANCES. COORDINATE LOCATION OF FAN COIL AND LOCATION OF CONTROL BOX ON UNIT WITH NEW LIGHTING, NEW CEILING/ACCESS PANELS, AND EXISTING CONDITIONS ABOVE CEILING. SEE **DETAIL 7/M5-3**. SEE SHEET M6-2 FOR PERFORMANCE DATA AND SHEET M2-3 FOR HVAC PIPING TO FAN COILS.
8. PROVIDE SPLIT SYSTEM OUTDOOR UNIT (SSOU-1) ON ROOFTOP EQUIPMENT MOUNTING RAILS, PER SPECIFICATIONS. COORDINATE ANCHORING OF RAILS WITH ROOF CONSTRUCTION AND SEAL AROUND ALL ROOF PENETRATIONS TO MATCH EXISTING CONDITIONS. SEE SHEET M3-1 FOR REFRIGERANT PIPING LAYOUT AND SHEET M6-2 FOR SPLIT SYSTEM PERFORMANCE DATA.
9. PROVIDE FIRE/SMOKE DAMPER.
10. PER UNL, EXISTING TEMPERATURE CONTROL PANELS ARE TO BE REMOVED BY UNL BSM. NEW VFD'S BY UNL BSM. VFD'S ARE SHOWN FOR REFERENCE ONLY. COORDINATE LOCATION WITH NEW AND EXISTING OVERHEAD PIPING AND ELECTRICAL PANELS. SEE SHEET M6-1 FOR PERFORMANCE DATA.
11. NEW VFD'S BY UNL BSM. VFD'S ARE SHOWN FOR REFERENCE ONLY. COORDINATE LOCATION WITH NEW AND EXISTING OVERHEAD PIPING. SEE SHEET M6-1 FOR PERFORMANCE DATA.
12. CONTRACTOR SHALL VERIFY ACCESS INTO ROOM FOR NEW AIR HANDLING UNIT AND PROVIDE UNIT CAPABLE OF FITTING THROUGH DOOR IN SECTIONS FOR FIELD ASSEMBLY. SEE AIR HANDLING UNIT SCHEDULE SHEET M6-2.

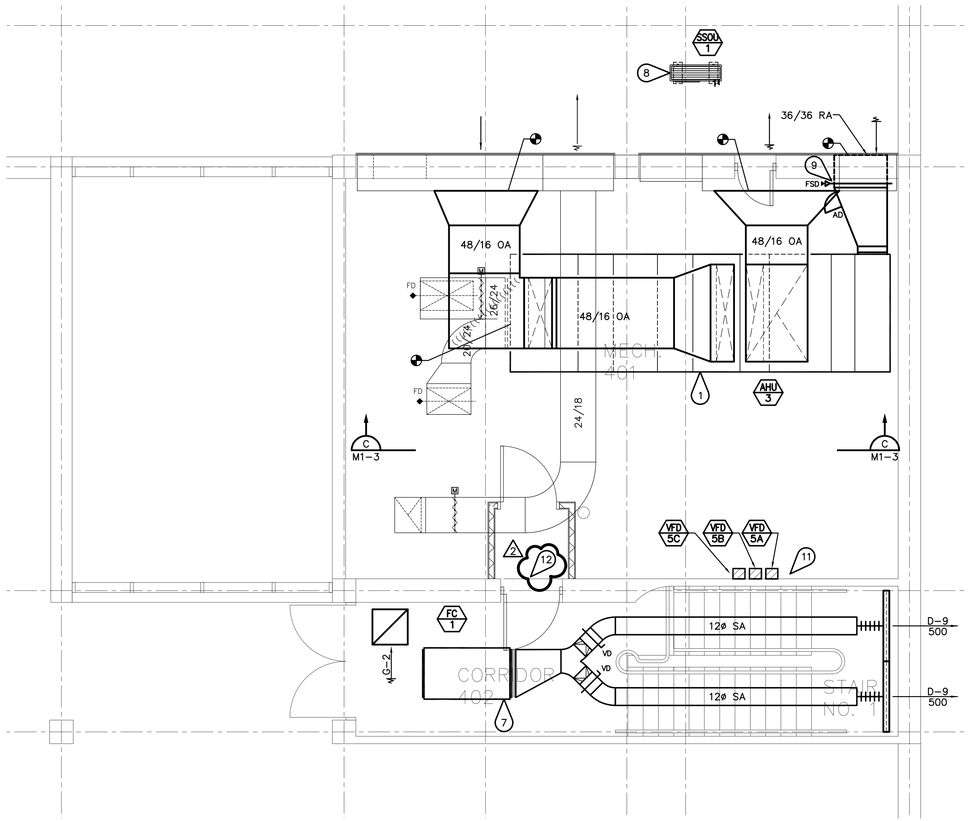


MECHANICAL 310 HVAC PLAN

SCALE: 1/4 INCH = 1 FOOT

12" 0 5'

NORTH



MECHANICAL 401 HVAC PLAN

SCALE: 1/4 INCH = 1 FOOT

12" 0 5'

NORTH

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Lincoln, Nebraska
UNL Project No: C120P021

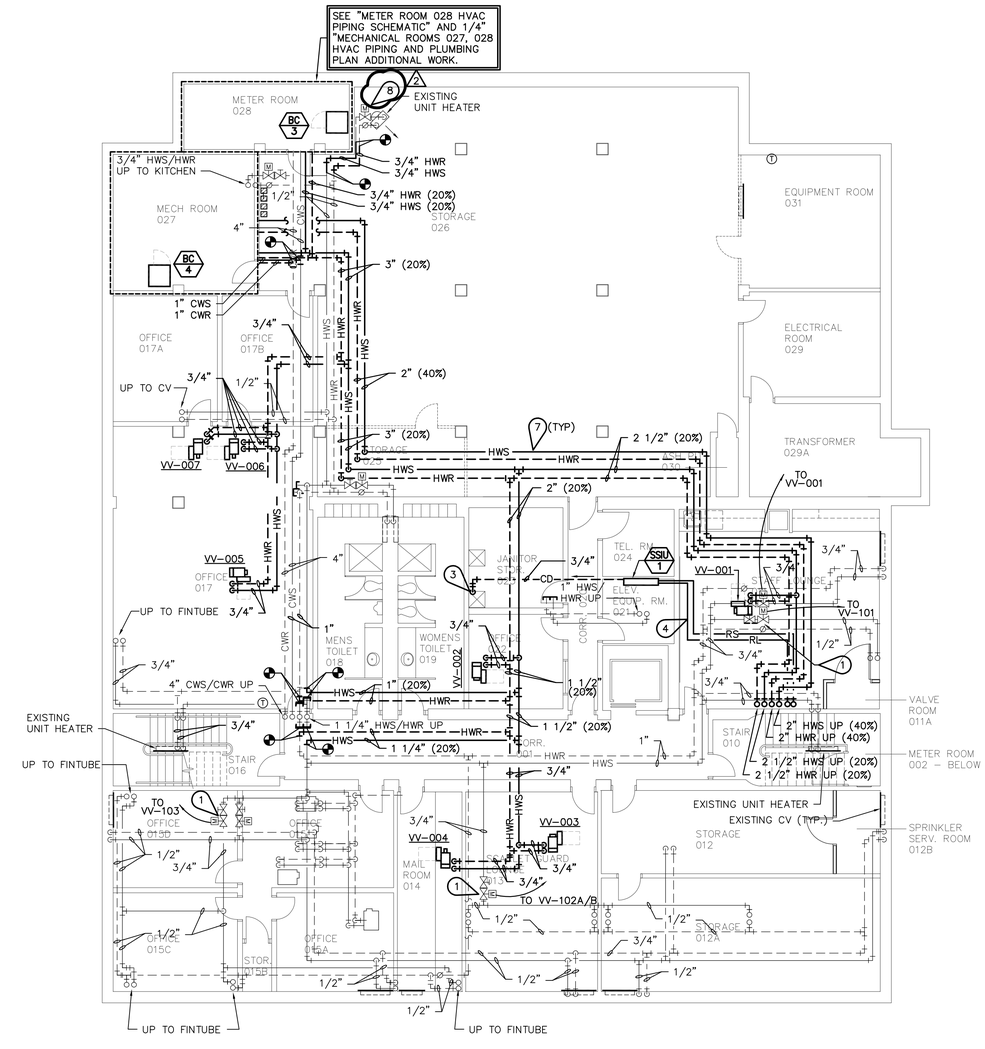
DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

SHEET TITLE: LARGE-SCALE HVAC PLANS

SHEET NO: **M1-3**

MECHANICAL KEYNOTES: (◇)

1. CONTROL VALVE FOR EXISTING HEATING DEVICE (FINTUBE, CABINET VENTILATOR, CABINET UNIT HEATER) SHALL BE INTERLOCKED WITH THE VARIABLE AIR TERMINAL UNIT AND ASSOCIATED SPACE SENSOR INDICATED, PER UNL CONTROL SEQUENCE. IN THE OCCUPIED CONDITION, VALVE SHALL ONLY OPEN ON A CALL FOR HEAT FROM THE SPACE SENSOR, AND WORK IN UNISON WITH THE VAV BOX REHEAT COIL. IN THE UNOCCUPIED CONDITION (AHU-1A OFF) THE VALVE SHALL OPEN AS REQUIRED TO MEET UNOCCUPIED HEATING SETPOINT. COORDINATE WITH UNL.
2. PROVIDE NEW CONTROL VALVES TO CONTROL EXISTING HEATING DEVICE PER KEYNOTE #1, THIS SHEET.
3. 3/4" CONDENSATE DRAIN DOWN TO MOP SINK.
4. PROVIDE REFRIGERANT LINES AND WIRING BETWEEN SPLIT SYSTEM INDOOR AND OUTDOOR UNITS PER MANUFACTURER RECOMMENDATIONS AND SPECIFICATIONS.
5. CONTRACTOR SHALL ADJUST EXISTING MECHANICAL SYSTEMS AS REQUIRED TO FACILITATE INSTALLATION OF NEW COFFERED CEILING.
6. NEW PIPING CHASE IS NOT FIRE-RATED. CONTRACTOR TO CORE DRILL FLOOR FOR INSTALLATION OF NEW PIPING AND PROVIDE FIRE SEALANT IN ACCORDANCE WITH ARCHITECTURAL PLANS AND SPECIFICATIONS.
7. REFER TO PIPE INSULATION **DETAIL 4/M5-2** (TYP).
8. EXISTING PNEUMATIC CONTROL VALVES ON EXISTING UNIT HEATERS TO REMAIN SHALL BE REPLACED WITH NEW ELECTRONIC CONTROL VALVES, FURNISHED BY UNL BSM AND INSTALLED BY CONTRACTOR.

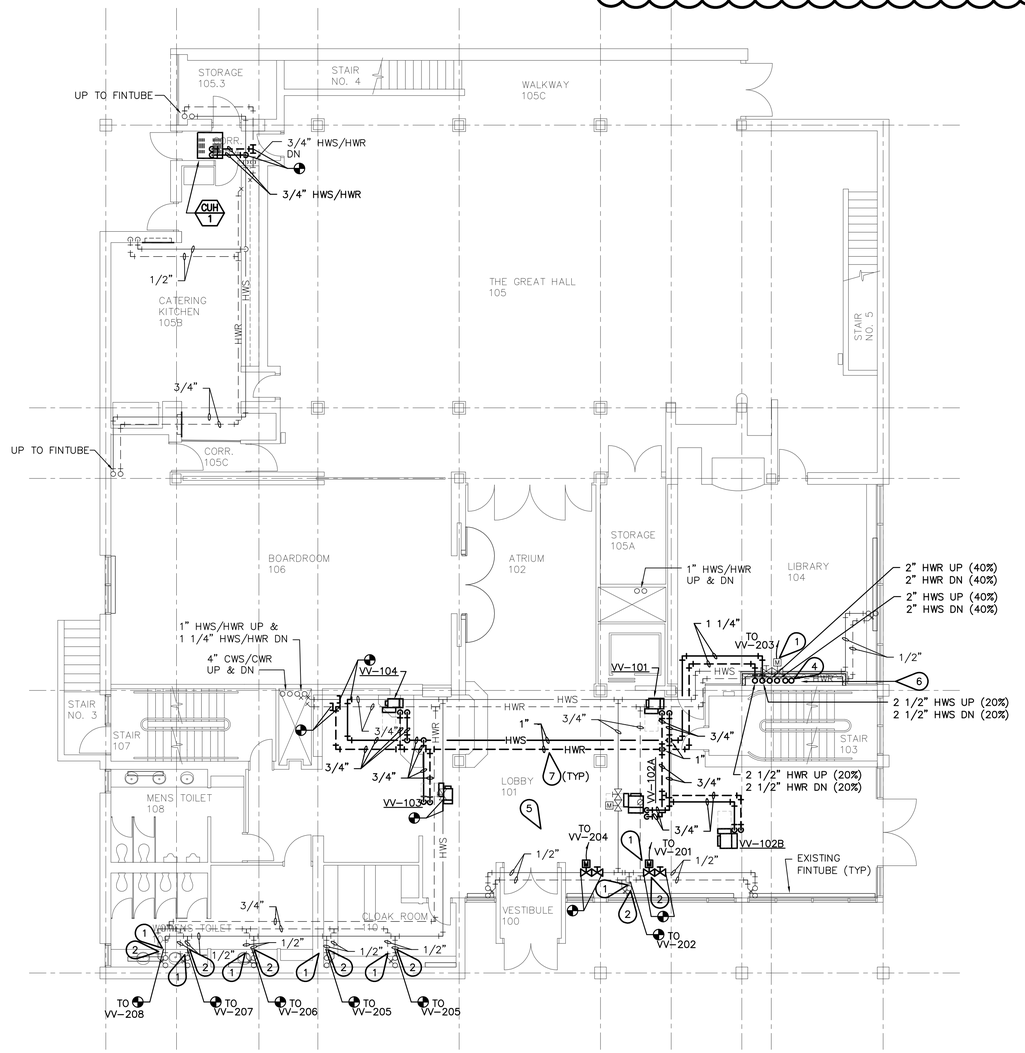


BASEMENT HVAC PIPING PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH



FIRST FLOOR HVAC PIPING PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH

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UNL Project No: C120P021

DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

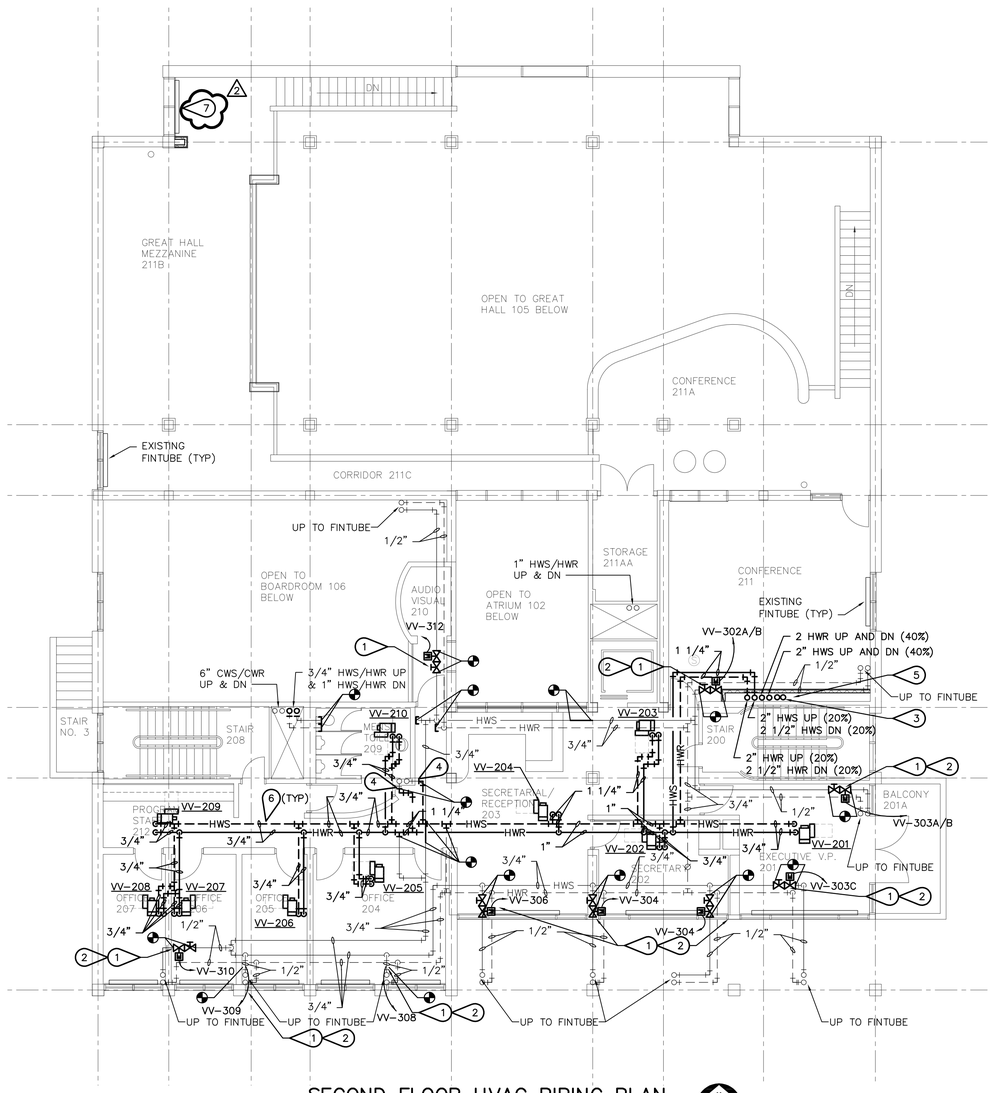
SHEET TITLE
BASEMENT AND FIRST FLOOR HVAC PIPING PLANS

SHEET NO
M2-1

G:\2013\134003\CAD\Mechanical\134003_M2-1.dwg M2-1 9/11/13 9:22am amm

MECHANICAL KEYNOTES: (◇)

1. CONTROL VALVE FOR EXISTING HEATING DEVICE (FINTUBE, CABINET VENTILATOR, CABINET UNIT HEATER) SHALL BE INTERLOCKED WITH THE VARIABLE AIR TERMINAL UNIT AND ASSOCIATED SPACE SENSOR INDICATED, PER UNL CONTROL SEQUENCE. IN THE OCCUPIED CONDITION, VALVE SHALL ONLY OPEN ON A CALL FOR HEAT FROM THE SPACE SENSOR, AND WORK IN UNISON WITH THE VAV BOX REHEAT COIL. IN THE UNOCCUPIED CONDITION (AHU-1A OFF) THE VALVE SHALL OPEN AS REQUIRED TO MEET UNOCCUPIED HEATING SETPOINT. COORDINATE WITH UNL.
2. PROVIDE NEW CONTROL VALVES TO CONTROL EXISTING HEATING DEVICE PER KEYNOTE #1, THIS SHEET.
3. PROVIDE REFRIGERANT LINES AND WIRING BETWEEN SPLIT SYSTEM INDOOR AND OUTDOOR UNITS PER MANUFACTURER RECOMMENDATIONS AND SPECIFICATIONS.
4. CONNECT NEW 1 1/2" HWS, HWR LINES TO EXISTING PIPING SERVING FINTUBE IN WOMENS TOILET ROOM 311 ABOVE.
5. NEW PIPING CHASE IS NOT FIRE-RATED. CONTRACTOR TO CORE DRILL FLOOR FOR INSTALLATION OF NEW PIPING AND PROVIDE FIRE SEALANT IN ACCORDANCE WITH ARCHITECTURAL PLANS AND SPECIFICATIONS.
6. REFER TO PIPE INSULATION **DETAIL 4/M5-2** (TYP).
7. REMOVE AND REINSTALL THE RADIATOR UNDER THE WINDOW AT THE NORTH END OF THE GREAT HALL MEZZANINE 211B-COORDINATE TIMING WITH ARCHITECTURAL WOODWORK TRADE.

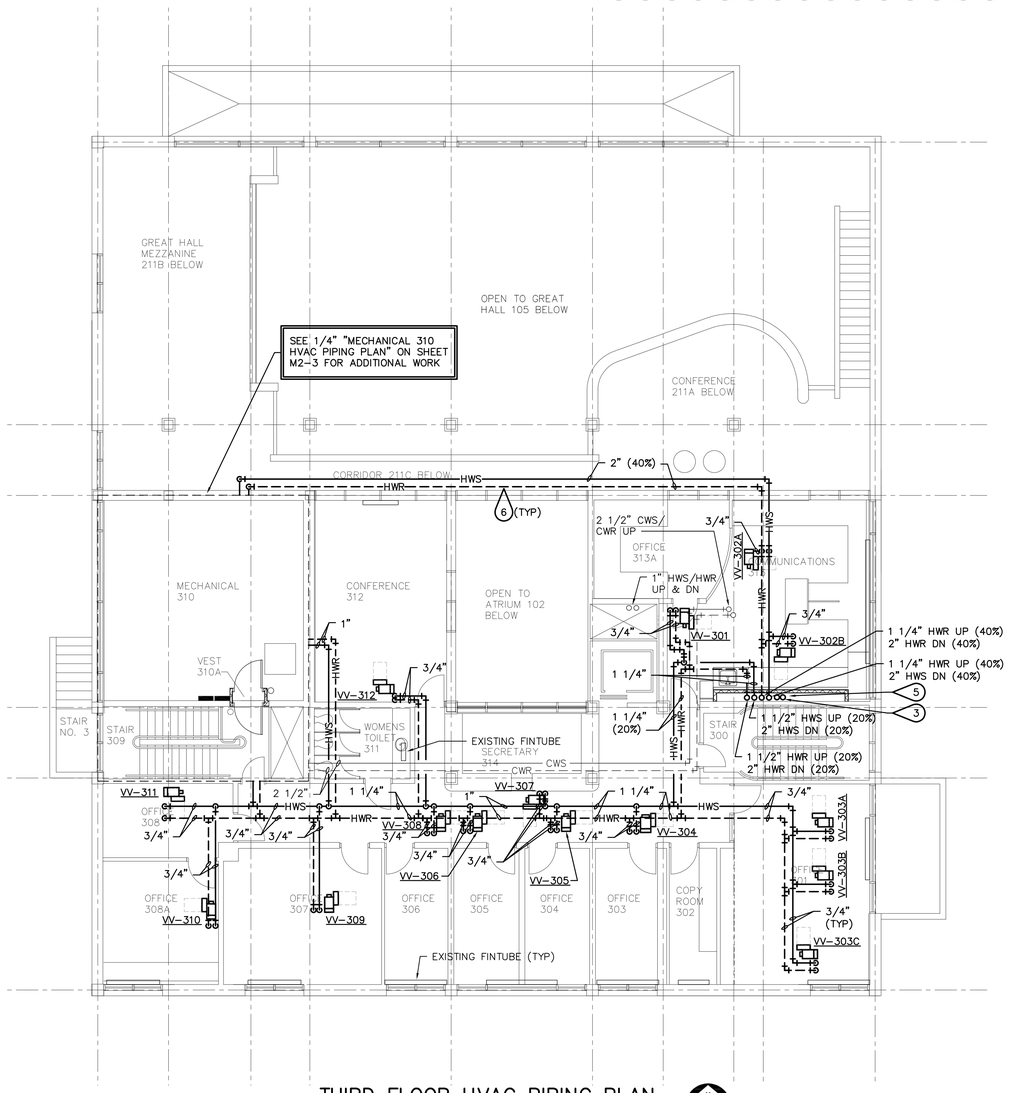


SECOND FLOOR HVAC PIPING PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH



THIRD FLOOR HVAC PIPING PLAN

SCALE: 1/8 INCH = 1 FOOT

12" 0 5' 10' 15'

NORTH

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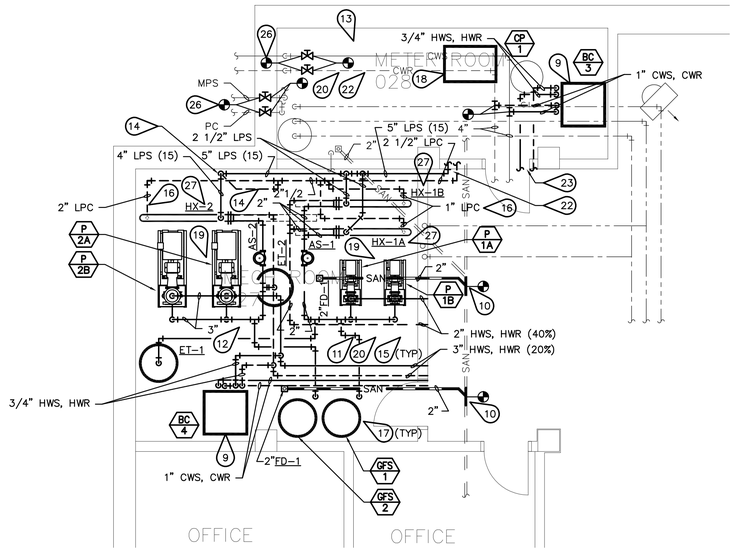
SHEET TITLE
SECOND AND THIRD FLOOR HVAC PIPING PLANS

SHEET NO
M2-2

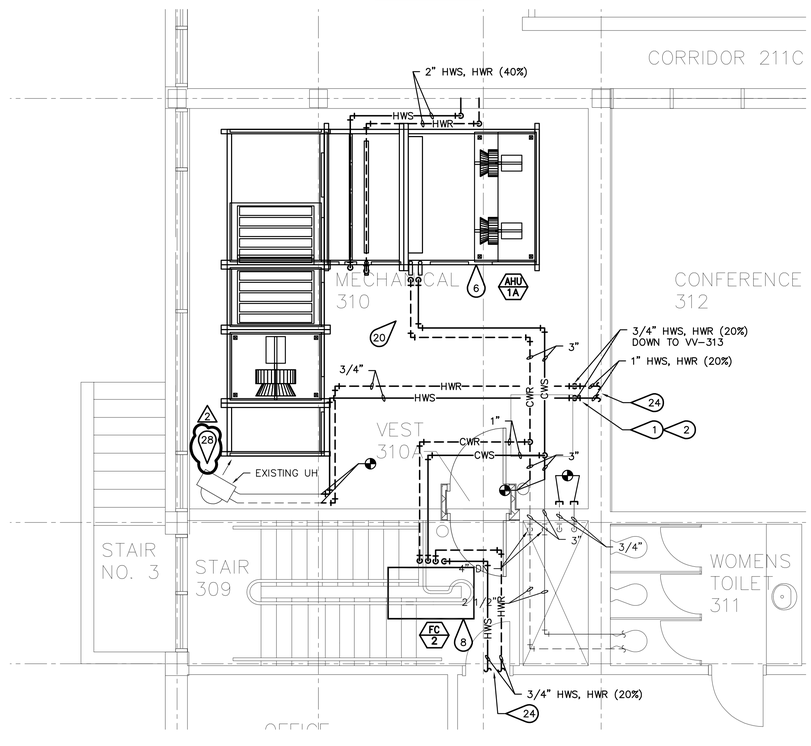


MECHANICAL ROOMS 027, 028
HVAC PIPING AND PLUMBING PLAN

SCALE: 1/4 INCH = 1 FOOT

12" 0 5'

NORTH

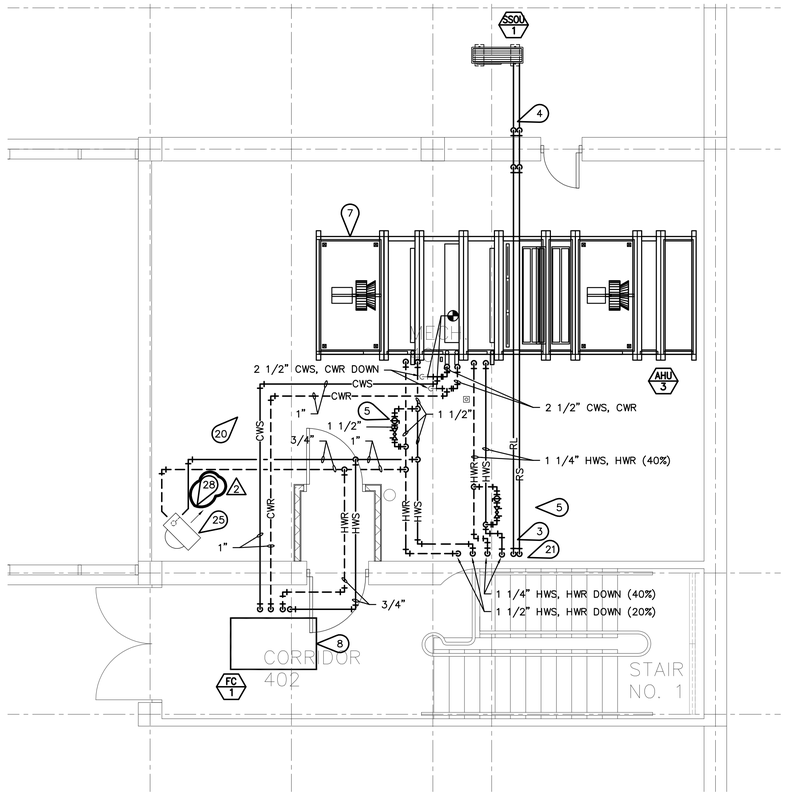


MECHANICAL 310 HVAC PIPING PLAN

SCALE: 1/4 INCH = 1 FOOT

12" 0 5'

NORTH



MECHANICAL 401 HVAC PIPING PLAN

SCALE: 1/4 INCH = 1 FOOT

12" 0 5'

NORTH

MECHANICAL KEYNOTES: (◇)

1. CONTROL VALVE FOR EXISTING HEATING DEVICE (FINTUBE, CABINET VENTILATOR, CABINET UNIT HEATER) SHALL BE INTERLOCKED WITH THE VARIABLE AIR TERMINAL UNIT AND ASSOCIATED SPACE SENSOR INDICATED, PER UNL CONTROL SEQUENCE. IN THE OCCUPIED CONDITION, VALVE SHALL ONLY OPEN ON A CALL FOR HEAT FROM THE SPACE SENSOR, AND WORK IN UNISON WITH THE VAV BOX REHEAT COIL. IN THE UNOCCUPIED CONDITION (AHU-1A OFF) THE VALVE SHALL OPEN AS REQUIRED TO MEET UNOCCUPIED HEATING SETPOINT. COORDINATE WITH UNL.
2. PROVIDE NEW CONTROL VALVES TO CONTROL EXISTING HEATING DEVICE PER KEYNOTE #1, THIS SHEET.
3. PROVIDE REFRIGERANT LINES AND WIRING BETWEEN SPLIT SYSTEM INDOOR AND OUTDOOR UNITS PER MANUFACTURER RECOMMENDATIONS AND SPECIFICATIONS.
4. ROUTE REFRIGERANT LINES THROUGH EXTERIOR WALL ABOVE EXISTING LOUVER, AND ROUTE EXPOSED DOWN EXTERIOR WALL TO ROOF. SUPPORT PER SPECIFICATIONS.
5. PROVIDE BY-PASS AS SHOWN TO ALLOW FOR MINIMUM SYSTEM PUMP FLOW (VFD OPERATION) WHEN COILS DO NOT CALL FOR FLOW.
6. CONNECT NEW 40% GLYCOL HWS/HWR PIPING AND CWS/CWR PIPING TO NEW AHU-1A. ROUTE CONDENSATE DRAIN TO NEAREST FLOOR DRAIN. SEE **DETAILS 5/M5-3, 8/M5-3** AND **9/M5-3**.
7. CONNECT NEW 20% GLYCOL HWS/HWR PIPING, 40% GLYCOL HWS/HWR PIPING, AND CWS/CWR PIPING TO NEW AHU-3. ROUTE CONDENSATE DRAIN TO NEAREST FLOOR DRAIN. SEE **DETAILS 5/M5-3, 8/M5-3** AND **9/M5-3**.
8. CONNECT NEW 20% GLYCOL HWS/HWR PIPING AND CWS/CWR PIPING TO NEW FC-1 AND FC-2. ROUTE CONDENSATE DRAIN TO NEAREST FLOOR DRAIN. SEE **DETAIL 7/M5-3**.
9. CONNECT NEW 20% GLYCOL HWS/HWR PIPING AND CWS/CWR PIPING TO NEW BC-3 AND BC-4. ROUTE CONDENSATE DRAIN TO NEAREST FLOOR DRAIN. SIMILAR TO **DETAIL 7/M5-3**.
10. PROVIDE NEW 2" SANITARY LINE AND NEW 2" FLOOR DRAIN. INSTALL PER LOCAL CODES. PATCH FLOOR TO MATCH EXISTING.
11. PROVIDE NEW 40% GLYCOL HOT WATER SYSTEM AND ASSOCIATED APPURTENANCES AS REQUIRED. SEE **DETAIL 1/M5-3** FOR PIPING SCHEMATIC.
12. PROVIDE NEW 20% GLYCOL HOT WATER SYSTEM AND ASSOCIATED APPURTENANCES AS REQUIRED. SEE **DETAIL 2/M5-3** FOR PIPING SCHEMATIC.
13. PROVIDE NEW STEAM PRESSURE REDUCING STATION AND ASSOCIATED APPURTENANCES AS REQUIRED. SEE **DETAIL 3/M5-3** AND SHEET MD2-3.
14. PROVIDE END OF STEAM MAIN DRIP AND ASSOCIATED APPURTENANCES AS REQUIRED. SEE **DETAILS 6/M5-3**, AND **12/M5-3**.
15. PROVIDE NEW CHEMICAL POT FEEDER AND ASSOCIATED APPURTENANCES AS REQUIRED FOR EACH HOT WATER SYSTEM. SEE **DETAIL 10/M5-3**.
16. PROVIDE NEW STEAM TRAP ASSEMBLY AND ASSOCIATED APPURTENANCES AS REQUIRED. SEE **DETAIL 11/M5-3** AND **12/M5-3**.
17. PROVIDE NEW 20% GLYCOL FEED SYSTEM, NEW 40% GLYCOL FEED SYSTEM AND ASSOCIATED APPURTENANCES AS REQUIRED. SEE **DETAIL 13/M5-3**.
18. PROVIDE DUPLEX CONDENSATE PUMP SYSTEM AND ASSOCIATED APPURTENANCES AS REQUIRED. SEE **DETAIL 14/M5-3**.
19. PROVIDE BASE-MOUNTED HOT WATER PUMPS AND ASSOCIATED APPURTENANCES AS REQUIRED. SEE **DETAIL 15/M5-3**.
20. ROUTE PIPING IN MECHANICAL ROOMS AS HIGH AS POSSIBLE. COORDINATE ROUTING WITH EXISTING AND NEW MECHANICAL, ELECTRICAL, AND STRUCTURAL ELEMENTS.
21. FOR PIPING FLOOR PENETRATIONS INTO MECHANICAL ROOM, SEE **DETAIL 8/M5-2**.
22. FOR CONTINUATION AND ADDITIONAL PIPING WORK IN METER ROOM 028, SEE SHEET MD2-3.
23. FOR CONTINUATION, SEE SHEET M2-1.
24. FOR CONTINUATION, SEE SHEET M2-2.
25. RELOCATE EXISTING UNIT HEATER TO THIS LOCATION.
26. PROVIDE NEW VALVES.
27. STEAM TO HOT WATER CONVERTER INSTALLATION: HEAT EXCHANGERS SHALL BE ARRANGED AS SHOWN ON **DETAILS 1 AND 2/SHEET M5-3**, AND MOUNTED ON FIELD-FABRICATED SUPPORTS, ANCHORED TO THE FLOOR. THE MOUNTING HEIGHT OF HEAT EXCHANGERS SHALL BE DETERMINED IN FIELD, BASED ON ACTUAL MOUNTING HEIGHT OF NEW FLASH TANK (WHICH RECEIVES CONDENSATE FROM HEAT EXCHANGER VIA GRAVITY DRAIN), AND OUTLET ELEVATION OF CONDENSATE DRAIN FROM HEAT EXCHANGER. NEW FLASH TANK DRAINS VIA GRAVITY TO NEW CONDENSATE RECEIVER. CONFIGURE SUPPORTS SUCH THAT RECOMMENDED SERVICE CLEARANCES TO HEAT EXCHANGERS ARE PROVIDED, AND ACCESS TO OTHER EQUIPMENT IN ROOM 027 IS COORDINATED. FIELD-ROUTE LOW PRESSURE CONDENSATE DRAIN TO FLASH TANK. △2
28. EXISTING PNEUMATIC CONTROL VALVES ON EXISTING UNIT HEATERS TO REMAIN SHALL BE REPLACED WITH NEW ELECTRONIC CONTROL VALVES, FURNISHED BY UNL BSM AND INSTALLED BY CONTRACTOR.

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PROFESSIONAL MECHANICAL ENGINEER
RYAN D. KING
E-10693
STATE OF NEBRASKA
8-16-13

100% CONSTRUCTION DOCUMENTS

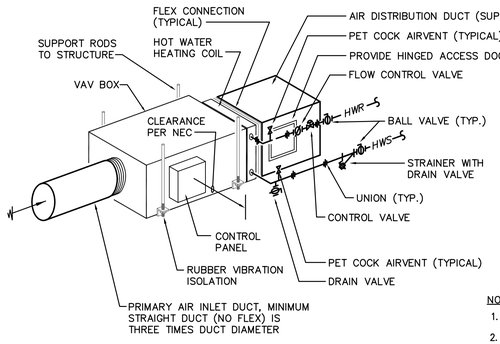
REVISIONS
△1 9/3/2013 ADDENDUM NO. 1
△2 9/11/2013 ADDENDUM NO. 2

WICK Alumni Center
Part Two - HVAC Improvements
Lincoln, Nebraska
UNL Project No: C120P021

DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

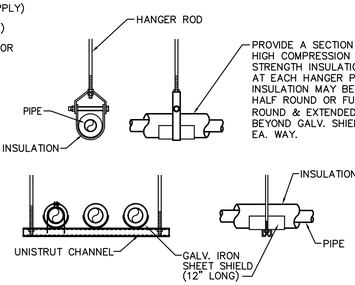
SHEET TITLE
LARGE-SCALE HVAC PIPING AND PLUMBING PLANS

SHEET NO
M2-3



VAV BOX DETAIL 5

NO SCALE

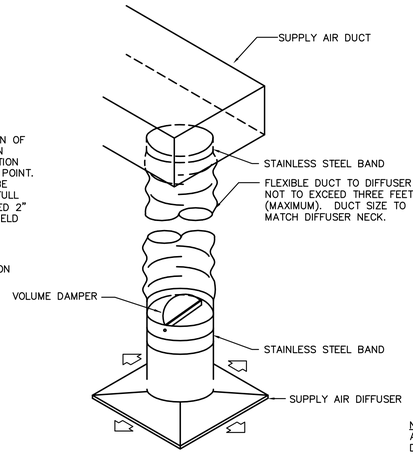


NOTES

1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CORD OF JOISTS OR BEAMS.
2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE.

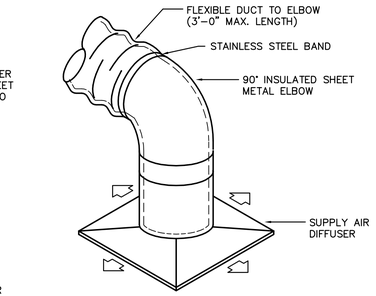
PIPE INSULATION DETAIL 4

NO SCALE



DIFFUSER CONNECTION DETAIL 3

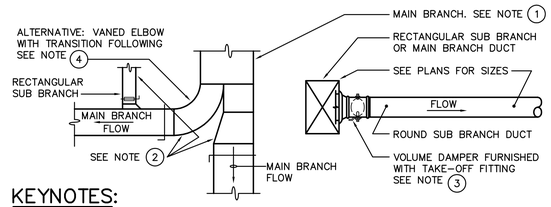
NO SCALE



NOTE:
ALL DUCTWORK TO BE INSULATED DOWN TO AND INCLUDING DIFFUSER NECK AND BACK OF DIFFUSER.

DIFFUSER CONNECTION DETAIL 2

NO SCALE

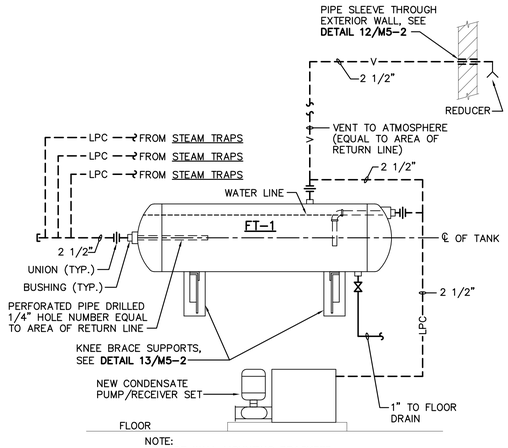


KEYNOTES:

1. DUCT SPLITS TO DIVIDE FLOW SHALL BE PROPORTIONATE TO SUM TOTAL OF BRANCH DUCT CFM SHOWN ON FLOOR PLANS.
2. ELBOW RADIUS, TAKE-OFF ANGLE AND TRANSITION ANGLE SHALL BE PER SMACNA RECOMMENDATIONS.
3. ROUND DUCT TAKE-OFFS FROM RECTANGULAR DUCTS SHALL BE MADE WITH A HIGH EFFICIENCY FLANGED AND GASKETED FITTING. THE MOUNTING GROOVE SHALL BE SO CONSTRUCTED AS TO ENSURE CONSTANT FIT CONTROL. BALANCING DAMPERS SHALL BE FACTORY INSTALLED WITH SPRING LOADED RETRACTABLE BEARINGS AND A POSITIVE LOCKING WING NUT FOR EASY READJUSTMENT WHEN NEEDED. FITTING SHALL BE FULLY GASKETED ON ALL FLANGES AND CORNERS FOR HIGH EFFICIENCY TAKE-OFF FITTINGS.
4. ALL ELBOWS SHALL BE RADIUS TYPE, EXCEPT WHERE SPACE RESTRICTIONS NECESSITATE USING 90° MITERED VANED ELBOWS.
5. VOLUME DAMPERS SHALL BE PROVIDED ON ALL LOW PRESSURE SUPPLY DUCT BRANCHES AND ON ALL RETURN AND EXHAUST DUCT BRANCHES.

TYPICAL LOW PRESSURE DUCT DETAIL 1

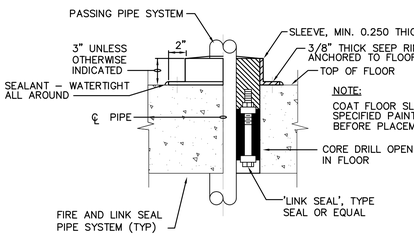
NO SCALE



NOTE:
PROVIDE WALL MOUNTING BRACKETS OR SUSPEND FROM CEILING.

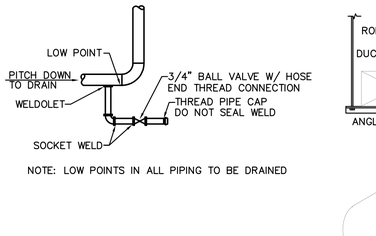
FLASH TANK DETAIL 9

NO SCALE



PIPE FLOOR SLEEVE DETAIL 8

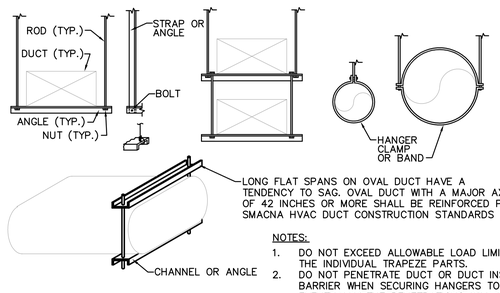
NO SCALE



NOTE: LOW POINTS IN ALL PIPING TO BE DRAINED

HVAC PIPING DRAIN 7

NO SCALE

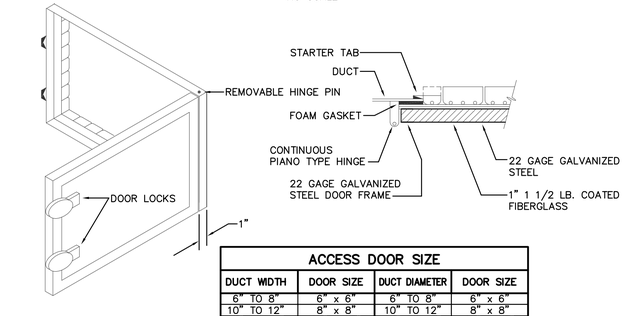


NOTES:

1. DO NOT EXCEED ALLOWABLE LOAD LIMITS OF ANY OR ALL OF THE INDIVIDUAL TRAPEZE PARTS.
2. DO NOT PENETRATE DUCT OR DUCT INSULATION VAPOR BARRIER WHEN SECURING HANGERS TO DUCTWORK. EVENTUALLY THE PENETRATIONS WILL LEAK.
3. USE HANGER CLAMPS OR BANDS FOR ROUND DUCT AS ROUND DUCT TENDS TO DEFORM ON TRAPEZE HANGERS.
4. TEARS, PUNCTURES, ETC. SHALL BE REPAIRED WITH TAPE OR MASTIC TO MAINTAIN THE INTEGRITY OF THE VAPOR BARRIER.
5. DO NOT USE ANY STRAP HANGERS WITH SCREWS ON ANY DUCTWORK THAT IS EXTERNALLY WRAPPED.

DUCTWORK HANGERS 6

NO SCALE



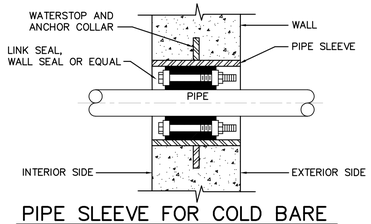
ACCESS DOOR SIZE			
DUCT WIDTH	DOOR SIZE	DUCT DIAMETER	DOOR SIZE
6" TO 8"	6" x 6"	6" TO 8"	6" x 6"
10" TO 12"	8" x 8"	10" TO 12"	8" x 8"
14" TO 16"	10" x 10"	14" TO 16"	10" x 10"
18" TO 22"	14" x 14"	18" TO 22"	14" x 14"
22" AND UP	18" x 18"	22" AND UP	18" x 18"

NOTE:
1. PROVIDE RUSKIN MODEL ADH22 (OR EQUAL) AT ALL FIRE, SMOKE AND FIRE/SMOKE DAMPER LOCATIONS, SEE SPECIFICATIONS. MINIMUM SIZE IS 6"x6".

2. WHERE DUCT ACCESS DOORS OCCUR ABOVE GYP BOARD CEILINGS, MECHANICAL CONTRACTOR SHALL PROVIDE A CEILING ACCESS DOOR OF ADEQUATE SIZE TO ACCESS THE DUCT ACCESS DOOR. SEE 230500 FOR CEILING ACCESS DOORS.

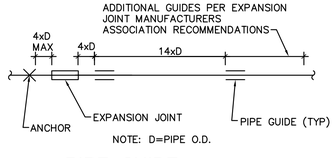
ACCESS DOOR DETAIL 14

NO SCALE



PIPE SLEEVE FOR COLD BARE PIPE BELOW GRADE DETAIL 12

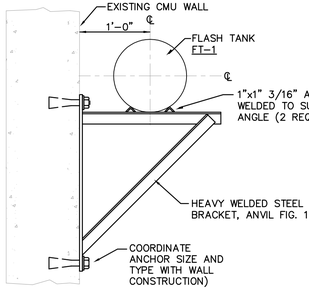
NO SCALE



NOTE: D=PIPE O.D.

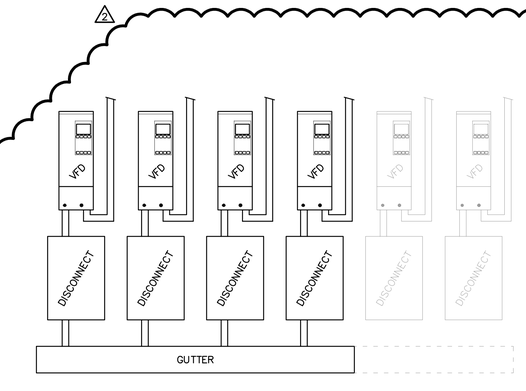
PIPE GUIDE INSTALLATION DETAIL 11

NO SCALE



KNEE BRACE DETAIL 13

NO SCALE



NOTES:

1. VFDs AND SEPARATE FUSED DISCONNECTS SHALL BE PROVIDED BY UNL BSM AND INSTALLED BY ELECTRICAL CONTRACTOR. ADDITIONAL LOCAL SERVICE DISCONNECTS, WHEN REQUIRED, ARE TO BE PROVIDED BY ELECTRICAL CONTRACTOR.
2. EACH MOTOR MUST BE WIRED IN SEPARATE ELECTRICAL RACEWAYS. (ONE CONDUIT PER MOTOR)
3. VFDs MUST BE INSTALLED PER MANUFACTURER'S INSTRUCTION PROVIDING APPROPRIATE FREE-AIR SPACE BETWEEN DRIVES.
4. ALL VFD MANUALS AND ADDITIONAL PARTS/CONNECTORS ARE TO BE TURNED OVER TO UNL BSM.

TYPICAL VARIABLE FREQUENCY DRIVE INSTALLATION 10

NO SCALE

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8-16-13

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REVISIONS

1	9/3/2013	ADDENDUM NO. 1
2	9/11/2013	ADDENDUM NO. 2

WICK Alumni Center
Part Two - HVAC Improvements
Lincoln, Nebraska
UNL Project No: C120P021

DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

SHEET TITLE
MECHANICAL DETAILS

SHEET NO
M5-2

VAV TERMINAL UNIT - HOT WATER REHEAT

MARK	LOCATION	SERVES	PRIMARY AIR SOURCE	UNIT SIZE	INLET DIA (IN)	PRIMARY CFM			NOISE RATING		HOT WATER COIL DATA								BASIS OF DESIGN	REMARKS
						MAX	MIN	HEATING CFM	INLET (IN WG)	MAX NC	CAP (MBH)	GPM	APD (IN WG)	WPD (FT WG)	ROWS	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	
VV-001	ABOVE RM 011	RM 011 - STAFF LOUNGE	AHU-1A	08	08	500	150	300	1.50	22	13.9	0.8	0.24	0.1	2	55	90	180	141.1	TITUS DESV	1,2,3,4,5,6
VV-002	ABOVE RM 022	RMS 018, 019, 022, 023 - TOILETS, DARK ROOM, JANITORS	AHU-1A	08	08	600	180	360	1.50	24	16.7	1.0	0.32	0.2	2	55	90	180	144.9	TITUS DESV	1,2,3,4,5,6
VV-003	ABOVE RM 013	RM 013 - SCARLET LOUNGE	AHU-1A	08	08	500	150	300	1.50	22	13.9	0.8	0.24	0.1	2	55	90	180	141.1	TITUS DESV	1,2,3,4,5,6
VV-004	ABOVE RM 014	RM 014 - MAIL ROOM	AHU-1A	04	04	120	40	80	1.50	20	5.9	0.5	0.04	0.0	2	55	90	180	155.0	TITUS DESV	1,2,3,4,5,6
VV-005	ABOVE RM 017	RM 017 - OFFICE	AHU-1A	06	06	400	120	240	1.50	24	11.2	0.8	0.26	0.1	2	55	90	180	148.5	TITUS DESV	1,2,3,4,5,6
VV-006	ABOVE RM 017	RM 017B - OFFICE	AHU-1A	04	04	100	30	60	1.50	19	5.0	0.5	0.03	0.0	2	55	90	180	158.9	TITUS DESV	1,2,3,4,5,6
VV-007	ABOVE RM 017	RM 017A - OFFICE	AHU-1A	04	04	100	30	60	1.50	19	5.0	0.5	0.03	0.0	2	55	90	180	158.9	TITUS DESV	1,2,3,4,5
VV-101	ABOVE RM 101	RM 104 - LIBRARY	AHU-1A	10	10	900	270	540	1.50	22	23.0	1.3	0.33	0.2	2	55	90	180	141.3	TITUS DESV	1,2,3,4,5,6
VV-102A	ABOVE RM 101	RM 101 - LOBBY	AHU-1A	14	14	1900	570	1140	1.50	20	50.0	2.5	0.36	0.8	2	55	90	180	138.0	TITUS DESV	1,2,3,4,5,6
VV-102B	ABOVE RM 101	RM 101 - LOBBY	AHU-1A	14	14	1900	570	1140	1.50	20	50.0	2.5	0.36	0.8	2	55	90	180	138.0	TITUS DESV	1,2,3,4,5,6
VV-103	ABOVE RM 101	RMS 108, 109, 110 - CLOAK ROOM, TOILETS	AHU-1A	08	08	675	200	405	1.50	24	17.5	1.0	0.39	0.2	2	55	90	180	143.3	TITUS DESV	1,2,3,4,5,6
VV-104	ABOVE RM 101	RM 106 - BOARDROOM (LOWER)	AHU-1A	06	06	265	80	160	1.50	20	8.3	0.5	0.13	0.0	2	55	90	180	145.2	TITUS DESV	1,2,3,4,5,6
VV-201	ABOVE RM 201	RM 201 - EXECUTIVE V.P.	AHU-1A	10	10	800	240	480	1.50	21	22.0	1.3	0.27	0.2	2	55	90	180	143.0	TITUS DESV	1,2,3,4,5,6
VV-202	ABOVE RM 202	RM 202 - SECRETARY	AHU-1A	06	06	280	85	170	1.50	21	8.5	0.5	0.14	0.0	2	55	90	180	144.3	TITUS DESV	1,2,3,4,5,6
VV-203	ABOVE RM 203	RM 211 - CONFERENCE	AHU-1A	10	10	800	240	480	1.50	21	22.0	1.3	0.27	0.2	2	55	90	180	143.0	TITUS DESV	1,2,3,4,5,6
VV-204	ABOVE RM 203	RMS 203, 209 - SECRETERIAL / RECEPTION / MENS	AHU-1A	08	08	450	135	270	1.50	21	13.3	0.8	0.20	0.1	2	55	90	180	142.7	TITUS DESV	1,2,3,4,5,6
VV-205	ABOVE RM 204	RM 204 - OFFICE	AHU-1A	08	08	600	180	360	1.50	24	16.7	1.0	0.32	0.2	2	55	90	180	144.9	TITUS DESV	1,2,3,4,5
VV-206	ABOVE RM 205	RM 205 - OFFICE	AHU-1A	06	06	300	90	180	1.50	21	8.7	0.5	0.16	0.0	2	55	90	180	143.5	TITUS DESV	1,2,3,4,5
VV-207	ABOVE RM 206	RM 206 - OFFICE	AHU-1A	06	06	300	90	180	1.50	21	8.7	0.5	0.16	0.0	2	55	90	180	143.5	TITUS DESV	1,2,3,4,5
VV-208	ABOVE RM 207	RM 207 - OFFICE	AHU-1A	06	06	300	90	180	1.50	21	8.7	0.5	0.16	0.0	2	55	90	180	143.5	TITUS DESV	1,2,3,4,5
VV-209	ABOVE RM 212	RM 212 - PROGRAM STAFF	AHU-1A	04	04	100	30	60	1.50	19	5.0	0.5	0.03	0.0	2	55	90	180	158.9	TITUS DESV	1,2,3,4,5
VV-210	ABOVE RM 209	RM 210 - AUDIO VISUAL	AHU-1A	06	06	200	60	120	1.50	16	7.3	0.5	0.08	0.0	2	55	90	180	149.3	TITUS DESV	1,2,3,4,5,6
VV-301	ABOVE RM 313	RM 313A - OFFICE	AHU-1A	04	04	170	50	100	1.50	24	6.7	0.5	0.06	0.0	2	55	90	180	151.9	TITUS DESV	1,2,3,4,5
VV-302A	ABOVE RM 313	RM 313 - COMMUNICATIONS	AHU-1A	06	06	400	120	240	1.50	24	11.2	0.8	0.26	0.1	2	55	90	180	148.5	TITUS DESV	1,2,3,4,5,6
VV-302B	ABOVE RM 313	RM 313 - COMMUNICATIONS	AHU-1A	08	08	600	180	360	1.50	24	16.7	1.0	0.32	0.2	2	55	90	180	144.9	TITUS DESV	1,2,3,4,5
VV-303A	ABOVE RM 301	RM 301 - OFFICE	AHU-1A	08	08	500	150	300	1.50	22	13.9	0.8	0.24	0.1	2	55	90	180	141.1	TITUS DESV	1,2,3,4,5,6
VV-303B	ABOVE RM 301	RM 301 - OFFICE	AHU-1A	08	08	500	150	300	1.50	22	13.9	0.8	0.24	0.1	2	55	90	180	141.1	TITUS DESV	1,2,3,4,5,6
VV-303C	ABOVE RM 301	RM 301 - OFFICE	AHU-1A	08	08	500	150	300	1.50	22	13.9	0.8	0.24	0.1	2	55	90	180	141.1	TITUS DESV	1,2,3,4,5,6
VV-304	ABOVE RM 314	RMS 302, 303 - COPY ROOM, OFFICE	AHU-1A	10	10	800	240	480	1.50	21	22.0	1.3	0.27	0.2	2	55	90	180	143.0	TITUS DESV	1,2,3,4,5,6
VV-305	ABOVE RM 314	RM 304 - OFFICE	AHU-1A	06	06	325	100	200	1.50	22	9.0	0.5	0.19	0.0	2	55	90	180	142.0	TITUS DESV	1,2,3,4,5
VV-306	ABOVE RM 314	RM 305 - OFFICE	AHU-1A	06	06	325	100	200	1.50	22	9.0	0.5	0.19	0.0	2	55	90	180	142.0	TITUS DESV	1,2,3,4,5
VV-307	ABOVE RM 314	RMS 311, 314 - SECRETARY, WOMENS	AHU-1A	06	06	400	120	240	1.50	24	11.2	0.8	0.26	0.1	2	55	90	180	148.5	TITUS DESV	1,2,3,4,5
VV-308	ABOVE RM 314	RM 306 - OFFICE	AHU-1A	06	06	325	100	200	1.50	22	9.0	0.5	0.19	0.0	2	55	90	180	142.0	TITUS DESV	1,2,3,4,5,6
VV-309	ABOVE RM 307	RM 307 - OFFICE	AHU-1A	06	06	400	120	240	1.50	24	11.2	0.8	0.26	0.1	2	55	90	180	148.5	TITUS DESV	1,2,3,4,5
VV-310	ABOVE RM 308A	RM 308A - OFFICE	AHU-1A	06	06	325	100	200	1.50	22	9.0	0.5	0.19	0.0	2	55	90	180	142.0	TITUS DESV	1,2,3,4,5
VV-311	ABOVE RM 308	RM 308 - OFFICE	AHU-1A	04	04	100	30	60	1.50	19	5.0	0.5	0.03	0.0	2	55	90	180	158.9	TITUS DESV	1,2,3,4,5
VV-312	ABOVE RM 312	RM 312 - CONFERENCE ROOM	AHU-1A	06	06	400	120	240	1.50	24	11.2	0.8	0.26	0.1	2	55	90	180	148.5	TITUS DESV	1,2,3,4,5
VV-313	MECH RM 310	RM 106 - BOARDROOM (UPPER)	AHU-1A	10	10	800	240	480	1.50	21	22.0	1.3	0.27	0.2	2	55	90	180	143.0	TITUS DESV	1,2,3,4,5,6

REMARKS:
1. SCHEDULED AIR PRESSURE DROP (IN H20) INCLUDES VAV BOX, CONTROL DAMPER, AND HEATING COIL.
2. PROVIDE EQUIPMENT WITH 1-INCH INSULATED (FIBER-FREE LINER PER UNL DESIGN GUIDELINES) CASING AND BOTTOM ACCESS PANEL.
3. HEATING AND COOLING AIRFLOW SHALL NOT DROP BELOW MINIMUM VALUE SCHEDULED ABOVE, UNLESS ALLOWED BY CONTROL SEQUENCE. SEE OWNER CONTROL SPECIFICATIONS. HEATING CFM IS NOMINALLY 60% OF MAX AIRFLOW.
4. SOUND DATA RATINGS SCHEDULED ARE BASED UPON FACTORS FOUND IN ARI STANDARD 885 (APPENDIX E). THE DATA SHOWN ONLY INCLUDES NOISE REDUCTION FOR CEILING / SPACE EFFECTS BASED UPON FACTORS FOUND IN ARI STANDARD 885 (APPENDIX E).
5. HEATING COIL CAPACITY (REHEAT) BASED ON A 20% PROPYLENE GLYCOL/80% WATER MIXTURE, PER UNL STANDARDS.
6. TERMINAL BOX REPLACES EXISTING EQUIPMENT.

FANS

MARK	SERVES	TYPE	FAN DATA			ELECTRICAL DATA				MAX dBA	MOTORIZED DAMPERS	UNIT WEIGHT (LBS)	BASIS OF DESIGN	MECH NOTES
			CFM	ESP (IN WG)	FAN RPM	DRIVE TYPE	HP (WATTS)	V	PH					
EF-1	ALL BUILDING EXHAUST	CENTRIFUGAL ROOFTOP DOWNBLAST	1730	1.00	1635	DIRECT	1/2	115	1	65	TWO-POSITION	94	GREENHECK G-133-A	1,2,3,4,5

MECHANICAL NOTES:
1. PROVIDE 16-INCH HIGH INSULATED ROOF CURB.
2. PROVIDE WITH 115V MOTORIZED DAMPER.
3. PROVIDE FACTORY DISCONNECT SWITCH IN NEMA-1 ENCLOSURE.
4. PROVIDE WITH VARIABLE SPEED CONTROLLER FOR FAN BALANCING.
5. PROVIDE MOTOR SUITABLE FOR VARIABLE SPEED OPERATION VIA AN ASSOCIATED VFD (PROVIDED BY UNL BSM, INSTALLED BY CONTRACTOR).

DIFFUSERS, REGISTERS & GRILLES

MARK	SERVES	MAX STATIC PD (IN WG)	MAX NC @ PD SHOWN (DECIBELS)	OPPOSED BLADE DAMPER (YES/NO)	FRAME TYPE	PANEL SIZE (IN)	FACE SIZE (IN)	FINISH	MATERIAL	BASIS OF DESIGN	MECH NOTES
D-1	SUPPLY AIR	0.1	30	NO	LAY-IN	24x24	24x24	WHITE	ALUMINUM	TITUS OMNI	1,2
D-2	SUPPLY AIR	0.08	20	NO	SURFACE	96"	96x2-3/4	WHITE	ALUMINUM	TITUS FL-10-JT	1,2,6
D-3	SUPPLY AIR	0.1	30	YES	SURFACE	12x12	24x24	WHITE	ALUMINUM	TITUS OMNI	1,2,3
D-4	SUPPLY AIR	0.1	19	NO	SURFACE LINEAR SLOT	60" LONG	60x3-3/4	WHITE	ALUMINUM	TITUS FL-15-JT	1,2,5
D-5	SUPPLY AIR	0.08	16	NO	LAY-IN LINEAR SLOT	24" LONG	24x2-3/4	WHITE	ALUMINUM	TITUS FL-10-JT	1,2,5
D-6	SUPPLY AIR	0.07	18	NO	LAY-IN LINEAR SLOT	48" LONG	48x2-3/4	WHITE	ALUMINUM	TITUS FL-10-JT	1,2,5
D-7	SUPPLY AIR	0.07	18	NO	SURFACE LINEAR SLOT	48" LONG	48x2-3/4	WHITE	ALUMINUM	TITUS FL-10-JT	1,2,5
D-8	SUPPLY AIR	0.11	16	NO	LAY-IN LINEAR SLOT	48" LONG	48x3-3/4	WHITE	ALUMINUM	TITUS FL-15-JT	1,2,5
D-9	SUPPLY AIR	0.10	24	NO	SURFACE LINEAR SLOT	48" LONG	48x4-3/4	WHITE	ALUMINUM	TITUS FL-20-JT	1,2,5
D-10	SUPPLY AIR	0.03	10	NO	SURFACE LINEAR SLOT	48" LONG	48x3-3/4	WHITE	ALUMINUM	TITUS FL-15-JT	1,2,5
G-1	RETURN/EXHAUST	0.08	30	NO	LAY-IN	24x24	24x24	WHITE	ALUMINUM	TITUS PAR	1,2
G-2	RETURN/EXHAUST	0.08	30	NO	SURFACE	24x24	24x24	WHITE	ALUMINUM	TITUS PAR	1,2
G-3	RETURN/EXHAUST	0.08	30	YES	SURFACE	12x12	12x12	WHITE	ALUMINUM	TITUS 350FL	1,2
G-4	RETURN/EXHAUST	0.08	30	NO	DUCT	18x18	18x18	WHITE	ALUMINUM	TITUS 350FL	1,2
G-5	SUPPLY AIR	0.08	30	NO	DUCT	30x12	30x12	WHITE	ALUMINUM	TITUS 350FL	1,2
G-6	RETURN/EXHAUST	0.08	30	NO	SURFACE	12x24	24x24	WHITE	ALUMINUM	TITUS PAR	1,2
G-7	RETURN/EXHAUST	0.08	30	YES	LAY-IN	12x12	12x12	WHITE	ALUMINUM	TITUS 350FL	1,2
R-1	SUPPLY AIR	0.08	30	YES	SURFACE (FLOOR)	24X6	24x6	ANODIZED GOLD	ALUMINUM	NAILOR INDUSTRIES 49-480	1,2,4

MECHANICAL NOTES:
1. NC VALUES ARE BASED ON A ROOM ABSORPTION OF 10 db, re 10^{-12} WATTS
2. SEE PLANS FOR NECK SIZE AND CFM
3. PROVIDE WITH COMBINATION DAMPER AND EQUALIZING GRID. BASIS OF DESIGN: TITUS AG-65 OR EQUAL.
4. PROVIDE WITH EXTRACTOR. SET DISCHARGE BLADE DEFLECTION TO 0 DEGREES (VERTICAL).
5. PROVIDE "JET THROW" TYPE, SET FOR VERTICAL DISCHARGE. PROVIDE WITH INSULATED PLENUM BOX (TITUS TYPE FBPI OR EQUAL) WITH NECK SIZE INDICATED ON THE DRAWINGS. LINEAR DIFFUSER SHALL BE TITUS BORDER TYPE "11", STRAIGHT END TYPE TITUS "SXX". PROVIDE BORDER FRAME PRIMED FOR FIELD PAINTING.
6. PROVIDE FIELD-FABRICATED PLENUM W/ BOTTOM OUTLET. COORDINATE FINAL PLENUM SIZE W/ SLOTTED DIFFUSER.

VARIABLE FREQUENCY DRIVE SCHEDULE

MARK	SERVES	LOCATED	MOTOR DATA HP	VOLTAGE	BASIS OF DESIGN	MECH NOTES
VFD-1A	P-1A (PREHEAT HOT WATER (40% GLYCOL))	MECH RM 027	3/4	208/3	ABB ACH550	1,2,3,4
VFD-1B	P-1B (PREHEAT HOT WATER (40% GLYCOL))	MECH RM 027	3/4	208/3	ABB ACH550	1,2,3,4
VFD-2A	P-2A (REHEAT HOT WATER (20% GLYCOL))	MECH RM 027	5	208/3	ABB ACH550	1,2,3,4
VFD-2B	P-2B (REHEAT HOT WATER (20% GLYCOL))	MECH RM 027	5	208/3	ABB ACH550	1,2,3,4
VFD-3	EF-1 (BUILDING EXHAUST FAN)	MECH RM 310	1/2	208/3	ABB ACH550	1,2,3,4
VFD-4A	AHU-1A (SUPPLY FAN)	MECH RM 310	15	208/3	ABB ACH550	1,2,3,4
VFD-4B	AHU-1A (SUPPLY FAN)	MECH RM 310	15	208/3	ABB ACH550	1,2,3,4
VFD-4C	AHU-1A (RETURN FAN)	MECH RM 310	15	208/3	ABB ACH550	1,2,3,4
VFD-5A	AHU-3 (SUPPLY FAN)	MECH RM 401	7.5	208/3	ABB ACH550	1,2,3,4
VFD-5B	AHU-3 (SUPPLY FAN)	MECH RM 401	7.5	208/3	ABB ACH550	1,2,3,4
VFD-5C	AHU-3 (RETURN FAN)	MECH RM 401	5	208/3	ABB ACH550	1,2,3,4

MECHANICAL NOTES:
1. ALL VFDS AND ASSOCIATED DISCONNECTS ARE PROVIDED BY UNL BSM, AND INSTALLED BY CONTRACTOR, SCHEDULE IS FOR REF. ONLY.
2. DRIVE SHALL BE DESIGNED FOR VARIABLE TORQUE LOADING.
3. PROVIDE WITH MAIN FUSE DISCONNECT SWITCH.
4. PROVIDE 4 TO 20 MA CIRCUIT FOR DDC INTERFACE.

SHELL AND TUBE HEAT EXCHANGER SCHEDULE

MARK	SERVES	TYPE	HEATING CAPACITY	WATER SIDE (TUBES)				STEAM SIDE (SHELL)		MANUFACTURER & MODEL NO.	REMARKS
				GPM	E.W.T.	L.W.T.	P.D. (FT.)	PSIG	LB/HR		
HX-1A	PREHEATING HOT WATER (40% GLYCOL)	STEAM TO HOT WATER	530 MBH	38	160° F	190° F	0.4	15	561	TACO E06208-S	1,2
HX-1B	PREHEATING HOT WATER (40% GLYCOL)	STEAM TO HOT WATER	530 MBH	38	160° F	190° F	0.4	15	561	TACO E06208-S	1,2
HX-2	REHEATING HOT WATER (20% GLYCOL)	STEAM TO HOT WATER	1901 MBH	98	140° F	180° F	0.8	15	2011	TACO E8210S	1,3

REMARKS:
1. HEAT EXCHANGER SHALL BE MOUNTED ON STEEL FRAME.
2. TUBESIDE WORKING FLUID IS 40% PROPYLENE GLYCOL.
3. TUBESIDE WORKING FLUID IS 20% PROPYLENE GLYCOL.

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8-16-13

100% CONSTRUCTION DOCUMENTS

REVISIONS
2 9/11/2013 ADDENDUM NO. 2

WICK Alumni Center
Part Two - HVAC Improvements
Lincoln, Nebraska
UNL Project No: C120P021

DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

SHEET TITLE
MECHANICAL SCHEDULES

SHEET NO
M6-1

BLOWER COILS - CHILLED WATER COOLING/HOT WATER HEATING

MARK	LOCATION	SERVES	TYPE	ARRANGMENT	SUPPLY CFM	OA CFM	E.S.P. (IN WG)	FAN MOTOR DATA				ELEC DATA	CHILLED WATER COIL DATA								HOT WATER COIL DATA							BASIS OF DESIGN	REMARKS
								HP [WATTS]	V	PH	HZ	MCA	CAP (MBH)	GPM	WPD (FT WG)	ROWS	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	CAP (MBH)	GPM	WPD (FT WG)	ROWS	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)		
FC-1	ABOVE STAIR NO. 1	STAIR NO. 1	HORIZONTAL BLOWER COIL	CONCEALED ABOVE-CEILING	1100	0	0.50	1.5	208	60	3	4.8 FLA	23.1	4.0	1.2	6	75	56.8	44	56.0	25.7	1.7	0.4	1	70	91.4	180	147.9	DAIKIN MCQUAY LAH003A	1,2,3
FC-2	ABOVE STAIR NO. 2	STAIR NO. 2	HORIZONTAL BLOWER COIL	CONCEALED ABOVE-CEILING	1000	0	0.50	1.5	208	60	3	4.8 FLA	19.7	3.5	2.8	6	75	57.6	44	56.0	20.7	1.5	0.4	1	70	89	180	151.5	DAIKIN MCQUAY LAH002A	1,2,3
BC-3	METER ROOM 028	NORTH WALL OF GREAT HALL 105	VERTICAL BLOWER COIL	EXPOSED IN MECH ROOM	1000	0	0.50	1.5	208	60	3	4.8 FLA	19.7	3.5	2.8	6	75	57.6	44	56.0	32.9	1.5	0.2	2	70	100	180	135.0	DAIKIN MCQUAY LAH002	1,2,3
BC-4	MECH RM 027	MECH RM 027	VERTICAL BLOWER COIL	EXPOSED IN MECH ROOM	1200	0	0.50	1.0	208	60	3	3.1 FLA	23.8	4.0	1.2	6	75	57.5	44	56.0	46.5	2.0	0.4	2	70	105	180	131.8	DAIKIN MCQUAY LAH003A	1,2,3

REMARKS:
1. PROVIDE EQUIPMENT WITH 1" THROWAWAY PLEATED FILTERS, AND HANGERS WITH VIBRATION ISOLATION FOR SUSPENDED HORIZONTAL UNITS.
2. HEATING COIL CAPACITY BASED ON A 20% PROPYLENE GLYCOL/80% WATER MIXTURE, PER UNL STANDARDS.
3. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ADDITIONAL ELECTRICAL DATA.

AIR HANDLING UNIT - CHILLED WATER COOLING/HOT WATER HEATING

MARK	LOCATION	SERVES	TYPE	SUPPLY CFM	MIN VAV BOX CFM	MINIMUM OA CFM	SUPPLY FAN SECTION DATA										RETURN FAN SECTION DATA										PREHEAT COIL MARK	COOLING COIL MARK	REHEAT COIL MARK	BASIS OF DESIGN	REMARKS
							NO. FANS	CFM / FAN	FAN TYPE	WHEEL DIA (IN)	RPM	E.S.P. (IN WG)	T.S.P. (IN WG)	HP	V	PH	HZ	NO. FANS	CFM / FAN	FAN TYPE	WHEEL DIA (IN)	RPM	E.S.P. (IN WG)	T.S.P. (IN WG)	HP	V	PH	HZ					
AHU-1A	MECH RM 310	BASEMENT, 1ST, 2ND, 3RD LEVEL (VAV UNITS)	MODULAR AHU	18800	5665	1508	2	9400	PLENUM - DIRECT DRIVE	18.25	3213	2.00	3.32	15	208	60	3	1	17220	PLENUM - DIRECT DRIVE	27.00	1710	1.50	1.67	15	208	60	3	PHC-1A	CC-1A	-	DAIKIN MCQUAY CAH038GDGM + CAC026GVGM	1,3,4,5,6,7,8, 9,11,12,13
AHU-3	MECH MEZZ 401	GREAT HALL, KITCHEN	MODULAR AHU	7600	-	1326	2	3800	PLENUM - DIRECT DRIVE	15.75	2696	2.00	3.84	7.5	208	60	3	1	7600	DWDI - DIRECT DRIVE	22.25	1614	2.00	2.15	5	208	60	3	PHC-3	CC-3	RHC-3	DAIKIN MCQUAY CAH017GDGC	2,3,4,5,6,7,8 ,9,10,11,12,1 3

REMARKS:
1. UNIT CONSISTS OF TWO SECTIONS AND IS ARRANGED IN AN "L" SHAPE AS SHOWN ON THE PLANS. EACH SECTION CONSISTS OF MODULES AS FOLLOWS:
   SUPPLY SECTION: RETURN AIR END CONN. /MIN. 8-IN DEEP ACCESS SECTION, FILTER SECTION (MERV 8), PREHEAT COIL SECTION, COOLING COIL SECTION, SUPPLY FAN SECTION WITH TOP CONN.
   RETURN SECTION: RETURN AIR TOP CONN. SECTION, RETURN FAN SECTION, EXHAUST TOP CONN. SECTION, OUTDOOR AIR INLET TOP CONN. SECTION, WITH RIGHT SIDE DISCHARGE OPENING (CONNECTS TO SUPPLY CONNECTION)
2. UNIT CONSISTS OF THE FOLLOWING MODULES:
   RETURN SECTION WITH TOP CONN., EXHAUST SECTION WITH TOP CONN. SECTION, OUTDOOR AIR INLET TOP CONN. SECTION, FILTER SECTION (MERV 8), PREHEAT COIL SECTION, COOLING COIL SECTION, SUPPLY FAN SECTION WITH TOP CONN.
3. EXTERNAL STATIC PRESSURE AS SHOWN IS EXTERNAL TO THE UNIT AND IS THE STATIC PRESSURE AVAILABLE FOR DUCTWORK AND ACCESSORIES. DESIGN FOR MID-LIFE PRESSURE DROP FOR FILTER LOADING, IN ADDITION TO CLEAN FILTER PRESSURE DROP.
4. ALL SECTIONS OF THE AIR HANDLING UNIT SHALL BE DOUBLE WALL INSULATED, AS PER THE SPECIFICATIONS.
5. PROVIDE ACCESS DOORS IN ALL FILTER, ACCESS AND FAN MODULES, AND BETWEEN COILS FOR SERVICE. SERVICE ACCESS FOR AIR-HANDLER SHALL BE SINGLE-SIDE, AS INDICATED ON THE DRAWINGS.
6. PROVIDE DOUBLE WALL DRAIN PANS UNDER ALL COIL MODULES OR SECTIONS.
7. DAMPERS LOCATED IN THE MIXING BOX / ECONOMIZER MODULE SHALL BE PROVIDED BY THE AHU MANUFACTURER. SEE SPECIFICATIONS.
8. PROVIDE FILTER MEDIA PAD HOLDING FRAME(S) FOR OWNERS USE AFTER CONSTRUCTION PERIOD. FILTER MEDIA PAD HOLDING FRAMES SHALL BE AIRGUARD "SERVICE FRAME" OR AMER-FRAME BY AMERICAN AIR FILTER, OR APPROVED EQUAL.
9. PREHEATING COIL CAPACITY BASED ON A 40% PROPYLENE GLYCOL/60% WATER MIXTURE, PER UNL STANDARDS. SEE COIL SCHEDULE.
10. REHEATING COIL CAPACITY BASED ON A 40% PROPYLENE GLYCOL/60% WATER MIXTURE, PER UNL STANDARDS. SEE COIL SCHEDULE.
11. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE FOR ADDITIONAL ELECTRICAL DATA.
12. ALL SUPPLY AND RETURN FANS SHALL BE SERVED BY VFDS. VFDS WILL BE PROVIDED BY UNL BSM AND FIELD-INSTALLED BY CONTRACTOR.
13. ACCESS TO MECHANICAL ROOMS: UNIT SHALL BE MODULAR AND CAPABLE OF BEING DISSEMBLED ENOUGH TO ENTER MECHANICAL ROOMS VIA EXISTING OR NEW DOORS (SEE ARCH. PLANS). PRIOR TO SUBMITTING EQUIPMENT, CONTRACTOR SHALL FIELD-VERIFY DELIVERY ROUTE OF EQUIPMENT AND CONFIRM THAT UNIT WILL BE ABLE TO ACCESS ROOMS VIA STAIRWELLS AND EXISTING ACCESS. CONTRACTOR SHALL PROTECT EXISTING FINISHES DURING DELIVERY AND COORDINATE WITH PROJECT PHASING.

SPLIT SYSTEM INDOOR UNIT

MARK	LOCATION	CONFIGURATION	OUTDOOR UNIT	COIL DATA			FAN DATA		MOTOR DATA			ELECTRICAL DATA			BASIS OF DESIGN	CONDENSATE DRAIN SIZE (INCHES)	REMARKS
				TOT CAP (MBH)	SENS CAP (MBH)	EAT DB/WB (°F)	CFM	ESP (IN WG)	HP	V	PH	FLA	MCA	MOP			
SSIU-1	ELEV EQUIP RM 021	WALL-MOUNTED	SSOU-1	36.0	22.9	75.0/62.5	770	N/A	56 W	208	1	0.3	0	0	DAIKIN FTXS36LVJU	3/4"	1,2,3

REMARKS:
1. DUCTLESS SYSTEM, COOLING ONLY. MOUNT PER MANUFACTURER'S INSTRUCTIONS.
2. MOUNT UNIT AS HIGH AS POSSIBLE, TO FACILITATE CONDENSATE DRAINAGE. ADJUST LOCATION TO ACCOMMODATE CLEARANCES OR FACILITATE ATTACHMENT TO STRUCTURE.
3. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT.

SPLIT SYSTEM CONDENSING UNIT

MARK	LOCATION	SERVES	TOTAL CAPACITY (MBH)	COMPRESSOR DATA			CONDENSER DATA			ELECTRICAL DATA				BASIS OF DESIGN	REMARKS
				NO	STEPS (EACH)	REFRIG (TYPE)	FAN NO	NO CIRC	AMB TEMP (°F)	V	PH	MCA	MOP		
SSOU-1	ON ROOF	SSIU-1	36.0	1	1	R-410A	1	1	95	208	1	19.5	20	DAIKIN RKS36LVJU	1,2,3,4

REMARKS:
1. REFRIGERANT PIPE QUANTITIES AND SIZE TO BE PER MANUFACTURER'S PIPING RECOMMENDATIONS AND SPECIFICATION SECTION 238125. PROVIDE ADEQUATE REFRIGERANT PIPING FOR A MINIMUM 95' TOTAL LENGTH.
2. MCA IS FOR INDOOR AND OUTDOOR UNITS COMBINED.
3. PROVIDE LOW AMBIENT WIND BAFFLE FOR COOLING OPERATION DOWN TO 0 DEG F
4. UNITS ARE COOLING ONLY.

MISCELLANEOUS MECHANICAL EQUIPMENT

MARK	ITEMS	SERVES	LOCATION ROOM #	DESCRIPTION	BASIS OF DESIGN	MECH NOTES
AS-1	AIR SEPARATOR	PREHEAT HOT WATER (40% GLYCOL)	MECH RM 027	38 GPM @ 1.6 FT HD	SPIROVENT VDN200FA	1
AS-2	AIR SEPARATOR	REHEAT HOT WATER (20% GLYCOL)	MECH RM 027	98 GPM @ 2.0 FT HD	SPIROVENT VDN400FA	1
GFS-1	GLYCOL FEED SYSTEM	PREHEAT HOT WATER (40% GLYCOL)	MECH RM 027	50 GAL TANK, SINGLE 1/3 HP PUMP	JL WINGERT GL-50-E1	
GFS-2	GLYCOL FEED SYSTEM	REHEAT HOT WATER (20% GLYCOL)	MECH RM 027	50 GAL TANK, SINGLE 1/3 HP PUMP	JL WINGERT GL-50-E1	

MECHANICAL NOTES:
1. PROVIDE FLOOR MOUNTED SUPPORTS. DO NOT SUPPORT FROM CEILING.

EXPANSION TANKS

MARK	SERVES	LOCATION	OPERATING TEMP (°F)	SYSTEM VOLUME (GAL)	MAX. ALLOWABLE PRESSURE (PSI)	EXP. TANK VOLUME (GAL)	BASIS OF DESIGN	MECH NOTES
ET-1	PREHEATING HOT WATER (40% GLYCOL)	MECH RM 027	140-200	120	20	53.0	AMTROL EXTROL 200-L	1,2
ET-2	REHEATING HOT WATER (20% GLYCOL)	MECH RM 027	140-200	350	40	53.0	AMTROL EXTROL 200-L	1,3

MECHANICAL NOTES:
1. ASME CONSTRUCTION.
2. ASME RATED AT 125 PSIG, WITH A MINIMUM PRESSURE OF 12 PSIG. BASED ON A 60% WATER / 40% PROPYLENE GLYCOL SOLUTION.
3. ASME RATED AT 125 PSIG, WITH A MINIMUM PRESSURE OF 12 PSIG. BASED ON A 80% WATER / 20% PROPYLENE GLYCOL SOLUTION.

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REVISIONS
2 9/11/2013 ADDENDUM NO. 2

WICK Alumni Center
Part Two - HVAC Improvements
Lincoln, Nebraska
UNL Project No: C120P021

DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

SHEET TITLE
MECHANICAL SCHEDULES

SHEET NO
M6-2

MECHANICAL / ELECTRICAL COORDINATION SCHEDULE

ABBREVIATION:

E	ELECTRICAL CONTRACTOR	HP	HORSEPOWER	4X	NEMA 4X	V	VOLTAGE
M	MECHANICAL CONTRACTOR	KW	KILOWATTS	PH	PHASE	VFD	VARIABLE FREQUENCY
I	INTEGRAL WITH EQUIPMENT	MR	PER MANUFACTURER'S	RE	REVERSING		DRIVE
C	COMBINATION STARTER AND		RECOMMENDATION	RV	REDUCED VOLTAGE	2S	TWO SPEED
	SAFETY SWITCH	NF	NON-FUSED	SF	FUSE HOLDER WITH SWITCH	3S	THREE SPEED
CB	CIRCUIT BREAKER	NR	NON-REVERSING	SS	SAFETY SWITCH		
FV	FULL VOLTAGE	N1	NEMA 1	SH	HP RATED SWITCH		
FLA	FULL LOAD AMPS	3R	NEMA 3R	ST	THERMAL ELEM. SWITCH		

REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

MARK	DESCRIPTION	RATING			DISCONNECT					MOTOR STARTER			NAMEPLATE	REMARKS
		LOAD	V	PH	FURNISH/ INSTALL BY	TYPE	RATING (AMPS)	FUSE SIZE	ENCL.	FURNISH/ INSTALL BY	TYPE/ NEMA SIZE	ENCL.	MINIMUM SCCR (AMPS)	
AHU-1 A	AIR-HANDLING UNIT	15HP	208	3	I	-	60	-	N1	UNL BSM/E	VFD	N1	-	
AHU-1 A	AIR-HANDLING UNIT	15HP	208	3	I	-	60	-	N1	UNL BSM/E	VFD	N1	-	
RAF-1A	RETURN AIR FAN	15HP	208	3	I	-	60	-	N1	UNL BSM/E	VFD	N1	-	
AHU-3	AIR-HANDLING UNIT	7.5HP	208	3	I	-	30	-	N1	UNL BSM/E	VFD	N1	-	
AHU-3	AIR-HANDLING UNIT	7.5HP	208	3	I	-	30	-	N1	UNL BSM/E	VFD	N1	-	
RAF-3	AIR-HANDLING UNIT	5HP	208	3	I	-	30	-	N1	UNL BSM/E	VFD	N1	-	
EF-1	EXHAUST FAN	1/2 HP	115	1	I	-	-	-	-	UNL BSM/E	VFD	N1	-	1
P-1A	PREHEATING HOT WATER (40% GLYCOL) SYSTEM PUMP	3/4 HP	208	3	-	-	-	-	-	UNL BSM/E	VFD	N1	-	2
P-1B	PREHEATING HOT WATER (40% GLYCOL) SYSTEM PUMP	3/4 HP	208	3	-	-	-	-	-	UNL BSM/E	VFD	N1	-	2
P-2A	REHEATING HOT WATER (20% GLYCOL) SYSTEM PUMP	5 HP	208	3	-	-	-	-	-	UNL BSM/E	VFD	N1	-	2
P-2B	REHEATING HOT WATER (20% GLYCOL) SYSTEM PUMP	5 HP	208	3	-	-	-	-	-	UNL BSM/E	VFD	N1	-	2
CP-1	PACKAGED DUPLEX STEAM CONDENSATE PUMPS	1/3 HP (EA)	115	1	E/E	SH	20	-	N1	I	2	-	-	
FC-1	FAN COIL UNIT	1.5 HP	208	3	E/E	SS	30	MR	N1	M/M	NR/1	N1	-	
FC-2	FAN COIL UNIT	1.5 HP	208	3	E/E	SS	30	MR	N1	M/M	NR/1	N1	-	
BC-3	FAN COIL UNIT	1.5 HP	208	3	E/E	SS	30	MR	N1	M/M	NR/1	N1	-	
BC-4	FAN COIL UNIT	1 HP	208	3	E/E	SS	30	MR	N1	M/M	NR/1	N1	-	
GFS-1	GLYCOL FEED SYSTEM (PREHEATING HOT WATER)	1/3 HP	115	1	E/E	SH	20	-	N1	I	-	-	-	
GFS-2	GLYCOL FEED SYSTEM (REHEATING HOT WATER)	1/3 HP	115	1	E/E	SH	20	-	N1	I	-	-	-	
SSIU-1, SSOU-1	SPLIT SYSTEM INDOOR / OUTDOOR UNITS (INDOOR UNIT IS POWERED FROM OUTDOOR UNIT)	19.5 A	208	1	E/E	SS	30	MR	3R	I	-	-	-	
CUH-1	HORIZONTAL UNIT HEATER	0.8 A	115	1	E/E	SH	20	-	N1	-	-	-	-	

GENERAL NOTES:

A. VERIFY/COORDINATE ALL RATINGS FOR EQUIPMENT. WHERE SUCH RATINGS ARE OTHER THAN THAT INDICATED ON MECHANICAL/ELECTRICAL COORDINATION SCHEDULE, PROVIDE DISCONNECTS, MOTOR STARTERS, OVERCURRENT DEVICES AND RELATED REVISIONS ACCORDINGLY. WHERE EQUIPMENT IS PROVIDED WITH RATINGS OTHER THAN THAT INDICATED, CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND ASSOCIATED COSTS FOR REVISIONS.

B. PROVIDE FRACTIONAL HORSEPOWER MOTORS WITH INTEGRAL OVERLOAD PROTECTION.

C. EQUIPMENT LISTED IN SCHEDULE MAY APPEAR IN NUMEROUS LOCATIONS. EQUIPMENT MARKS ARE DESIGNATED BY UNIQUE IDENTIFIERS ON THE PLANS; I.E., HP-1.1, HP-1.2. IN THESE INSTANCES, THE ELECTRICAL REQUIREMENTS DO NOT CHANGE FROM ONE MARK TO THE NEXT, ONLY THE UNIQUE IDENTIFIER CHANGES.

D. HORSEPOWER RATED SWITCHES (SH): FOR 120 V MOTORS LESS THAN 1/2 HP, PROVIDE FUSEHOLDER WITH SWITCH, FUSED PER MANUFACTURER'S RECOMMENDATION AND NEC REQUIREMENTS. FOR 120 V MOTORS RATED 1/2 HP OR 3/4 HP, PROVIDE HP RATED TOGGLE SWITCH (WHERE BRANCH CIRCUIT OVERCURRENT DEVICE MEETS NEC REQUIREMENTS FOR SHORT-CIRCUIT PROTECTION) OR FUSED SAFETY SWITCH.

E. INDUSTRIAL CONTROL PANELS AS DEFINED BY NEC ARTICLE 409, MOTOR CONTROLLERS, HERMETIC REFRIGERANT MOTOR COMPRESSORS AND EQUIPMENT SHALL BE MARKED WITH INFORMATION AS REQUIRED BY THE NATIONAL ELECTRICAL CODE (NEC). MARK IN ACCORDANCE WITH NEC ARTICLE 409.110 FOR INDUSTRIAL CONTROL PANELS, NEC ARTICLE 430.8 FOR CONTROLLERS AND NEC ARTICLE 440.4(B) FOR HERMETIC REFRIGERANT MOTOR COMPRESSORS AND EQUIPMENT. THE MARKED SHORT CIRCUIT CURRENT RATING (SCCR) SHALL BE NO LESS THAN THE VALUE INDICATED ABOVE.

REMARKS:

1. PROVIDE EXHAUST FAN MOTOR FACTORY-WIRED TO WEATHERPROOF JUNCTION BOX INTEGRAL WITH FAN. ELECTRICAL CONTRACTOR TO PROVIDE WEATHERPROOF HORSEPOWER RATED SWITCH (SEE GENERAL NOTES ABOVE).
2. PROVIDE LOCKABLE DISCONNECT INTEGRAL WITH VFD.
3. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECT AND STARTER INTEGRAL WITH MOTOR CONTROL CENTER.

COORDINATION OF RESPONSIBILITIES FOR MECHANICAL, ELECTRICAL AND UNL FURNISHED SYSTEMS

NOTES:
GC = GENERAL CONTRACTOR
MC = MECHANICAL CONTRACTOR
EC = ELECTRICAL CONTRACTOR
UNL BSM = UNIV. OF NEBR-LINCOLN BUILDING SYSTEMS MANAGEMENT
UNL UTIL = UNIV. OF NEBR-LINCOLN UTILITIES

ITEM	FURNISHED BY	SET BY	POWER WIRING	CONTROL WIRING
EQUIPMENT MOTORS	MC	MC	EC	UNL BSM
UNIT MOUNTED MOTOR STARTERS, CONTACTORS, DISCONNECT SWITCHES, THERMAL OVERLOADS AND HEATERS	MC	MC	EC	UNL BSM
LOOSE MOTOR STARTERS, CONTACTORS, DISCONNECT SWITCHES, THERMAL OVERLOADS AND HEATERS	MC	MC	EC	UNL BSM
PUSHBUTTON STATIONS AND SAFETY STOP SWITCHES - AIR HANDLING SYSTEMS AND HYDRONIC SYSTEMS	EC	EC	NA	UNL BSM
VARIABLE SPEED DRIVES AND ASSOCIATED SAFETY DISCONNECTS	UNL BSM	EC	EC	UNL BSM
TEMPORARY HEATING/COOLING AND CONNECTIONS	GC	MC/EC	EC	MC/EC
THERMOSTATS AND TERMINAL CONTROLS - LINE VOLTAGE	UNL BSM	EC	EC	EC
ROOM CONTROLS TRANSFORMER PANELS	UNL BSM	EC	EC	UNL BSM
THERMOSTATS AND TERMINAL UNIT CONTROLS - LOW VOLTAGE	UNL BSM	UNL BSM	UNL BSM	UNL BSM
AIR TERMINAL UNITS AND HYDRONIC REHEAT COILS	MC	MC	EC	NA
AUTOMATIC FLOW CONTROL DEVICES	MC	MC	NA	NA
SYSTEM CONTROLS TEMPERATURE CONTROL PANELS	UNL BSM	UNL BSM	EC	UNL BSM
AIR HANDLING AND HYDRONIC SYSTEMS CONTROLS	UNL BSM	UNL BSM	NA	UNL BSM
AIR HANDLING SYSTEMS PRESSURE SENSORS	UNL BSM	UNL BSM	NA	UNL BSM
AUTOMATIC CONTROL DAMPER ACTUATORS	UNL BSM	UNL BSM	NA	UNL BSM
SMOKE/FIRE DAMPERS	MC	MC	EC	UNL BSM
AUTOMATIC CONTROL VALVE ACTUATORS	UNL BSM	MC	NA	UNL BSM
AIR HANDLING AIR FLOW STATIONS	UNL BSM	UNL BSM	NA	UNL BSM
HYDRONIC SYSTEMS TEMPERATURE SENSOR WELLS	UNL BSM	MC	NA	UNL BSM
HYDRONIC AND STEAM SYSTEMS PRESSURE TAPS	MC	MC	NA	NA
HYDRONIC AND STEAM SYSTEMS PRESSURE SENSORS	UNL BSM	MC	NA	UNL BSM
HEATING WATER FLOW METERS	UNL BSM	MC	NA	UNL BSM
STEAM CONDENSATE METERS	UNL UTIL	MC	EC	UNL UTIL
STEAM CONDENSATE LEVEL ALARM	MC	MC	NA	UNL BSM
FIRE ALARM PANELS	UNL BSM	UNL BSM	EC	UNL BSM
FIRE ALARM COMMUNICATIONS CIRCUITS	NA	NA	NA	NA
FIRE ALARM DETECTORS, PULL STATIONS, HORNS & STROBES	UNL BSM	UNL BSM	EC	UNL BSM
FIRE ALARM CABLING AND CONDUIT	UNL BSM	UNL BSM	EC	UNL BSM
FIRE ALARM RELAYS	UNL BSM	UNL BSM	EC	UNL BSM

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PROFESSIONAL MECHANICAL ENGINEER
RYAN D. KING
E-10693
STATE OF NEBRASKA
8-16-13

100% CONSTRUCTION DOCUMENTS

REVISIONS
2 9/11/2013 ADDENDUM NO. 2

WICK Alumni Center
Part Two - HVAC Improvements
Lincoln, Nebraska
UNL Project No: C120P021

DESIGNED BY: RDK
DRAWN BY: LMB
CHECKED BY: JMM
DATE: 08/16/13
FEI PROJECT NO: 134003

SHEET TITLE: MECHANICAL SCHEDULES

SHEET NO: M6-4