

ADDENDUM 01

07-NOV-2024

IN088 – University Library HVAC
Improvements And LED lighting Upgrade

Mussett, Nicholas & Associates, Inc.
502 S. West St
Indianapolis, IN 46225
MNA Commission No.: 2024192

TO ALL HOLDERS OF PROCUREMENT DOCUMENTS

This Addendum forms a part of the Contract Documents and modifies the original Procurement Documents dated 28-OCT-2024 and any previously issued Addenda, as noted below. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject bidder to disqualification.

PRE-BID MEETING MINUTES

1. Sign-in sheet (See attached)
2. Introduction of project team
3. High level project overview
4. Parking overview
5. Notified contractors the building will be occupied during construction.
6. All changes will be issued by Addendum. No items reviewed verbally are official until published in writing in the Addendum.
7. All questions and requests for substitutions should be submitted by 12:00 pm EST, Friday, November 8th, 2024.
8. All Addendum questions should be addressed to Sam Winters and Andrew Wegeng.
9. Bid Due Date: 2:00 pm EST, Thursday November 14th, 2024.
10. Site Walk-Through
11. Showed contractors construction entrance and dumpster location.
12. Showed contractors ceiling heights on first and second floor.
13. Showed contractors study rooms on third floor.
14. Contractors were allowed full access to the building during the pre-bid walk.

RESPONSES TO QUESTIONS RECEIVED

- Item No. 1 Note 1 on sheet AD142 calls for tile and grid to be removed, but on all the other demo sheets it only calls for tile to be removed. Is the intent to remove and replace all ceiling grid?
- A. We will be removing and replacing the grid and tiles for all spaces outlined in the Architectural drawings. Refer to updated Architectural drawings for more information.
- Item No. 2 The existing grid appears to be 9/16. Is the new grid to match the existing, or be 15/16 grid?
- A. New design is to install 15/16 grid.
- Item No. 3 Drawings call for USG 2x2 USG Eclipse Clima Plus ceiling tiles. Is the Armstrong Cirrus HG+ an acceptable alternative?
- A. The Armstrong Cirrus HG+ is an acceptable alternative to 2x2 USG Eclipse Clima Plus Ceiling tiles.

CHANGES TO DRAWINGS

- Item No. 1 Sheet A131
- A. See note 1
- Item No. 2 Sheet A132
- A. See note 1
- Item No. 3 Sheet A141
- A. See note 1
- Item No. 4 Sheet A142
- A. See note 1
- Item No. 5 Sheet AD142
- A. See note 2
- Item No. 6 Sheet M101
- A. See note 2
- Item No. 7 Sheet M111

- A. See note 2
- Item No. 8 Sheet M112
 - A. See note 2
- Item No. 9 Sheet M121
 - A. See note 2
- Item No. 10 Sheet M131
 - A. See note 2
- Item No. 11 Sheet M141
 - A. See note 2
- Item No. 12 Sheet M142
 - A. See note 2
 - B. See note 3
- Item No. 13 Sheet M501
 - A. See Detail 'D'
- Item No. 14 Sheet MD101
 - A. See note 2
- Item No. 15 Sheet MD111
 - A. See note 2
- Item No. 16 Sheet MD112
 - A. See note 2
- Item No. 17 Sheet MD121
 - A. See note 2
- Item No. 18 Sheet MD131
 - A. See note 2
- Item No. 19 Sheet MD141
 - A. See note 2

Item No. 20 Sheet MD142

A. See note 2

Item No. 21 JCI Scope of Work(See attached)

By: _____
Andrew Wegeng

Attachments: Pre-Bid Sign in sheet, A131, A132, A142, AD142, M101, M111, M112, M121, M131, M141, M142, M501, MD101, MD111, MD112, MD121, MD131, MD141, MD142, 0.1, 0.2, 1.1, 1.2, 1.3, R.1, R.2.

END OF ADDENDUM 01



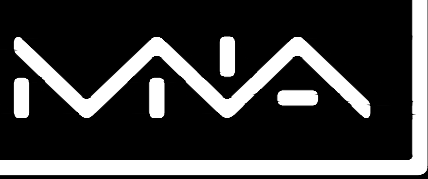
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ENGINEERS + ARCHITECTS

MEETING AGENDA

IU Project #: 20240107
Project: IN088 - University Library - HVAC Improvements and LED Lighting Upgrade
Meeting Purpose: Pre-Bid Meeting
Meeting Location: University Library
Meeting Date: November 4, 2024

Table with 4 columns: NAME, COMPANY, EMAIL, PHONE NUMBER. Contains handwritten entries for various attendees including Andrew Weyeng, Grayden Johnson, Nikolas Kolosso, Bryan Hayes, Andy Embrey, David Moran, Aaron Johnson, Brandon Foster, Sam Winters, and David Toschlog.



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919.703.4028

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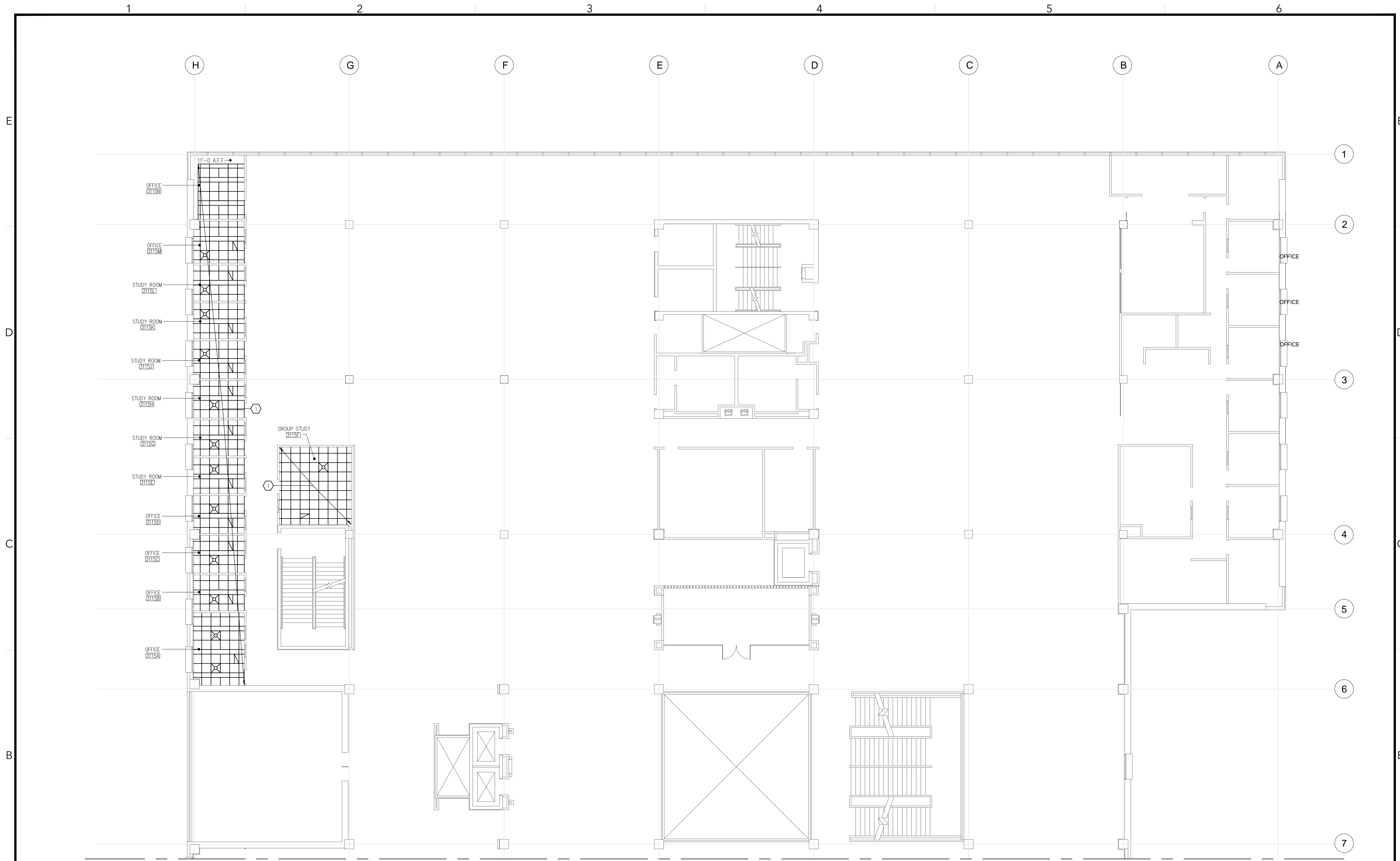
MARK	DATE	DESCRIPTION
1	11.7.24	ADDENDUM 01
0	10.28.24	ISSUED FOR BID

REVISION BLOCK

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DATE: 10.28.2024
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SHEET TITLE:
THIRD FLOOR NORTH REFLECTED CEILING PLAN

A131



FOR CONTINUATION SEE
DWG A132

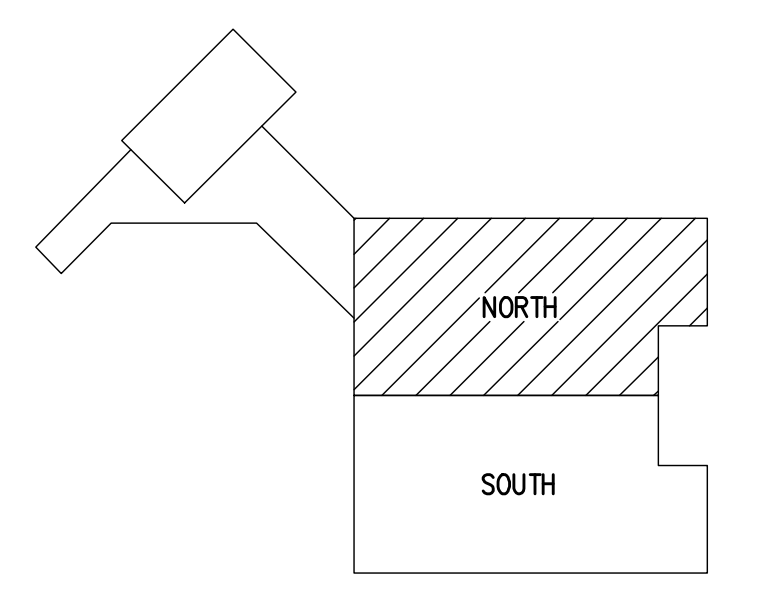
1 THIRD FLOOR NORTH REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- G1. DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
- G2. CONTRACTOR SHALL COORDINATE ANY SUPPLEMENTAL WORK WITH OTHER TRADES THAT IS REQUIRED FOR THE COMPLETION OF THEIR SCOPE OF WORK AS OUTLINED IN THE PROJECT DOCUMENTS. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO TEMPORARY REMOVAL OF CEILING GRID, TEMPORARY SUPPORT OF LIGHTING, TEMPORARY POWER, ETC.
- G3. CONTRACTOR SHALL PROTECT ALL FURNITURE, EQUIPMENT, AND FINISHES THROUGHOUT. COORDINATE WITH OWNER FOR TEMPORARY REMOVAL AND STORAGE OF FURNITURE AND EQUIPMENT IN ORDER TO PERFORM THE WORK.

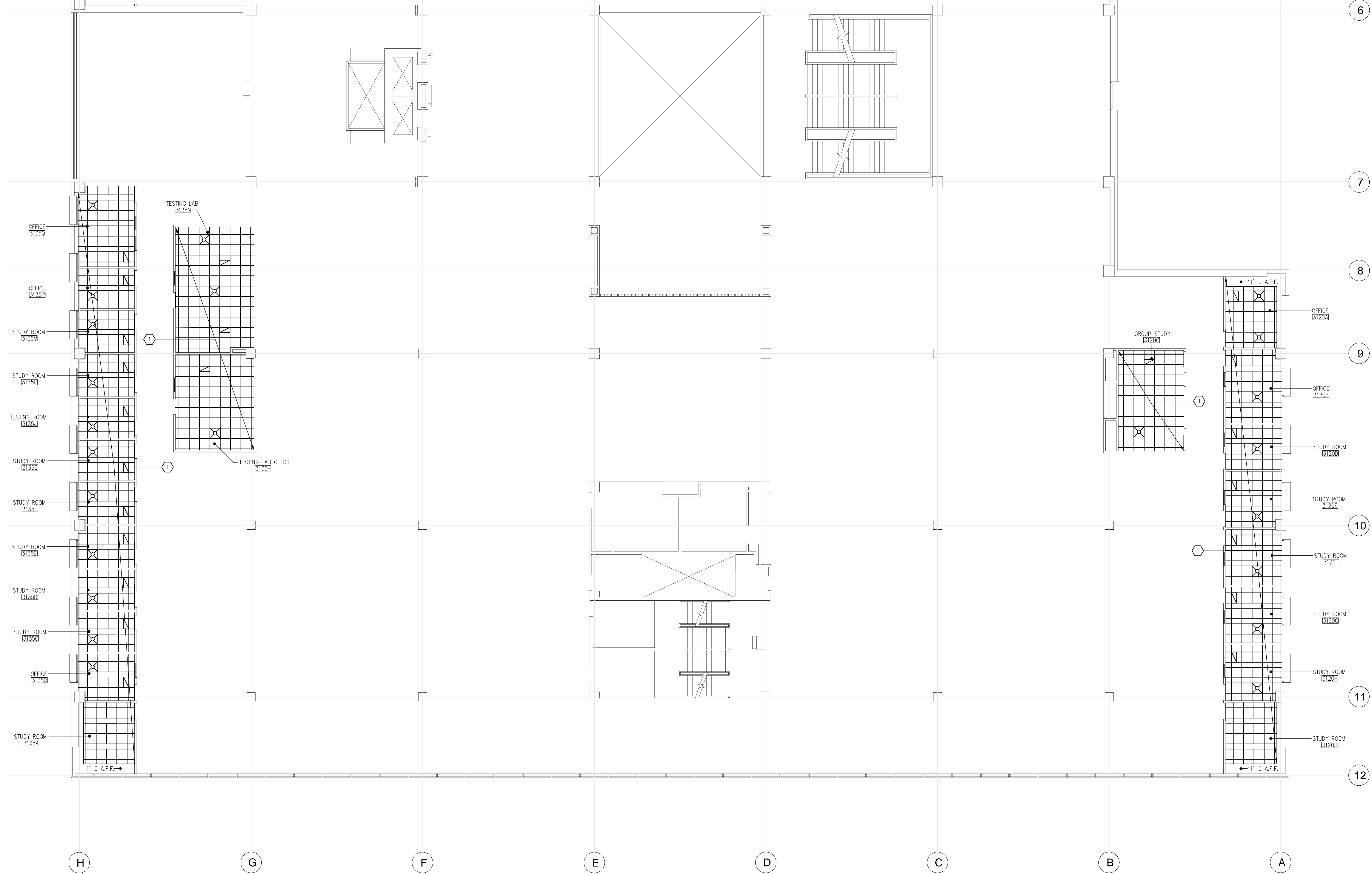
KEYED NOTES:

- 1. PROVIDE 2X2 USG ECLIPSE CLIMA PLUS CEILING TILES AND 15/16" GRID RE: ELECTRICAL & MECHANICAL DWGS FOR FIXTURE & DIFFUSER PLACEMENT



KEY PLAN
SCALE: NO SCALE

FOR CONTINUATION SEE
DWG A131



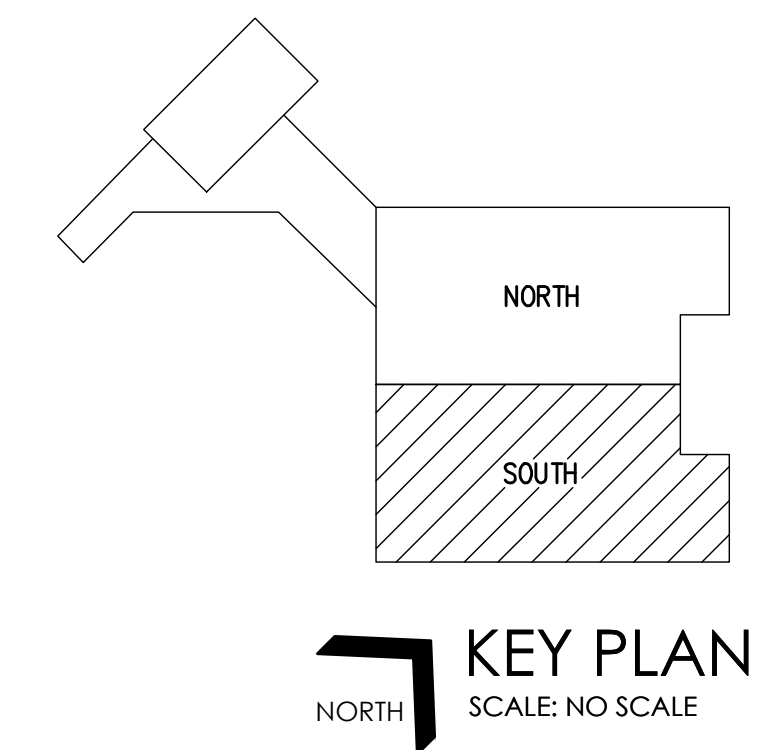
1 THIRD FLOOR SOUTH REFLECTED CEILING PLAN - DEMO
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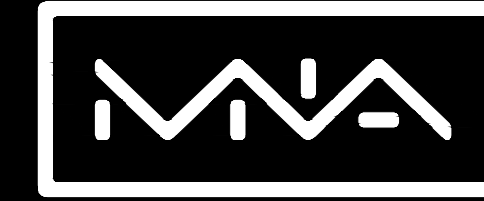
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SHEET TITLE:
THIRD FLOOR SOUTH REFLECTED CEILING PLAN

A132



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SHEET TITLE:
FOURTH FLOOR NORTH REFLECTED CEILING PLAN

A141



FOR CONTINUATION SEE
DWG A142

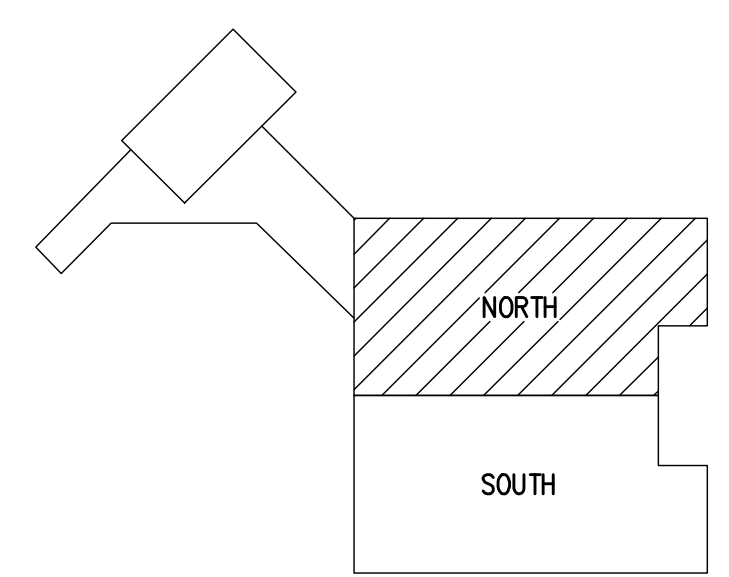
1 FOURTH FLOOR NORTH REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

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KEYED NOTES:

1. PROVIDE 2X2 USG ECLIPSE CLIMA PLUS CEILING TILES AND 15/16" GRID RE: ELECTRICAL & MECHANICAL DWGS FOR FIXTURE & DIFFUSER PLACEMENT



KEY PLAN
SCALE: NO SCALE

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SHEET TITLE:
FOURTH FLOOR SOUTH REFLECTED CEILING PLAN
A142

FOR CONTINUATION SEE
DWG A141



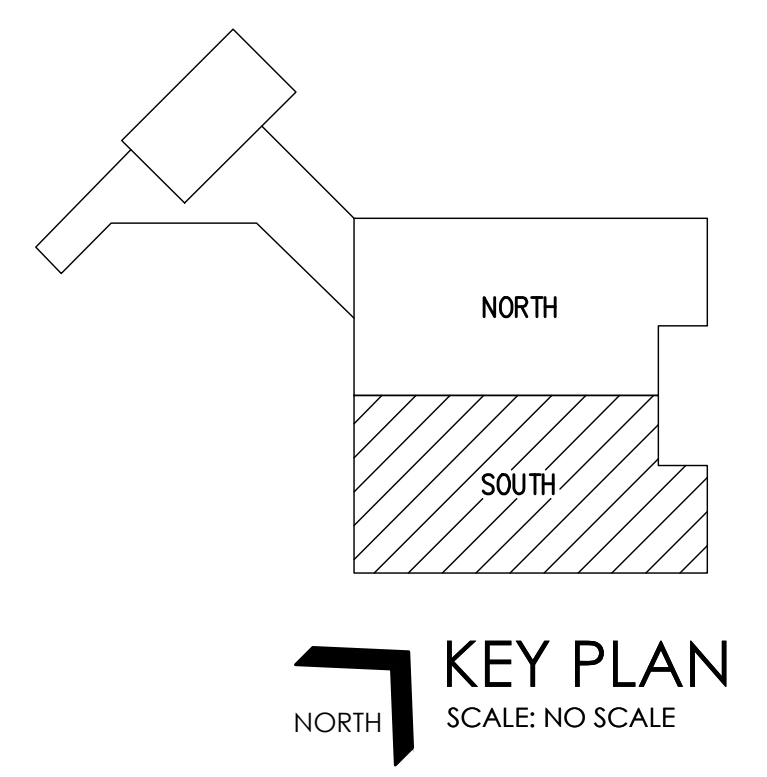
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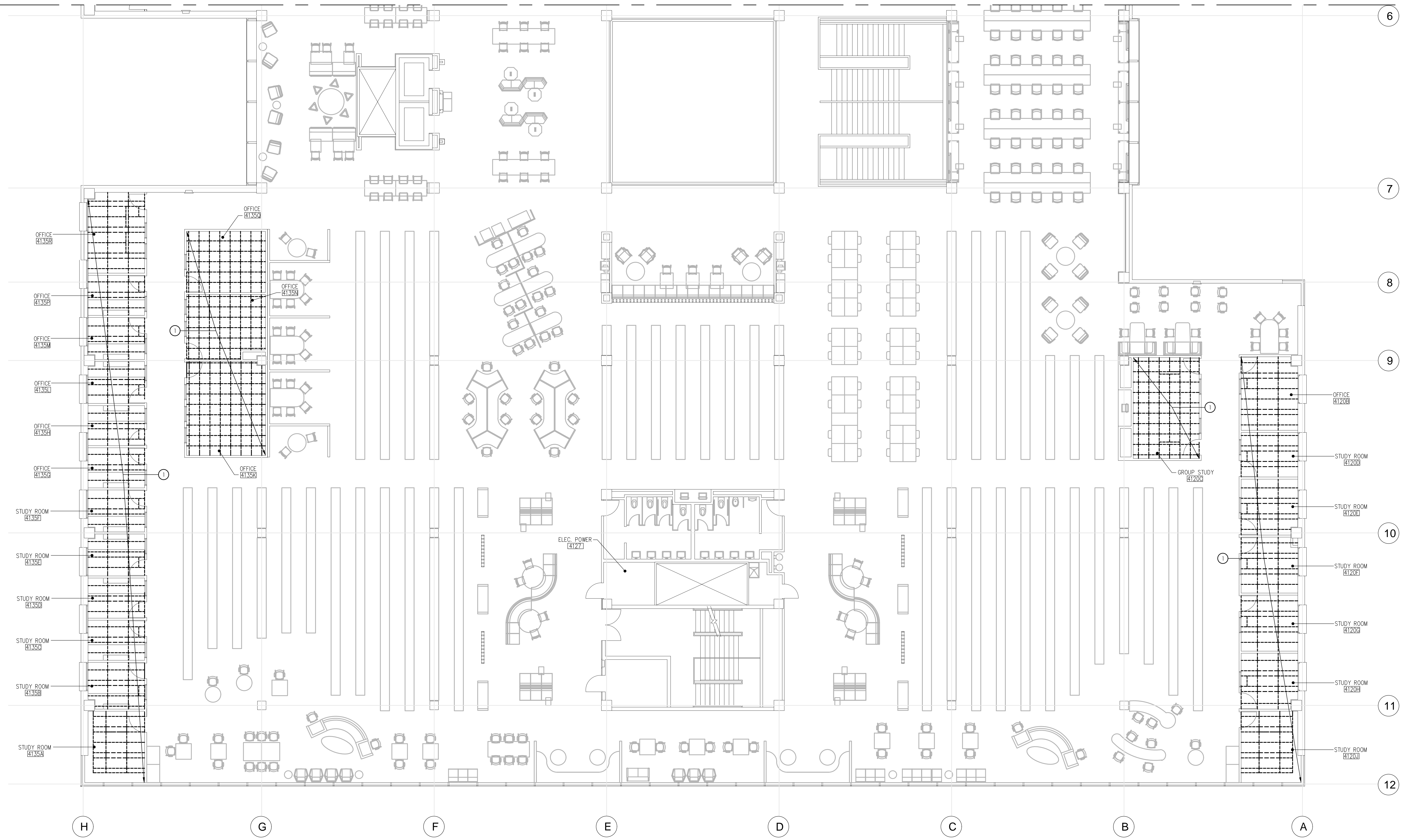
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KEY PLAN
SCALE: NO SCALE

FOR CONTINUATION SEE
DWG AD141



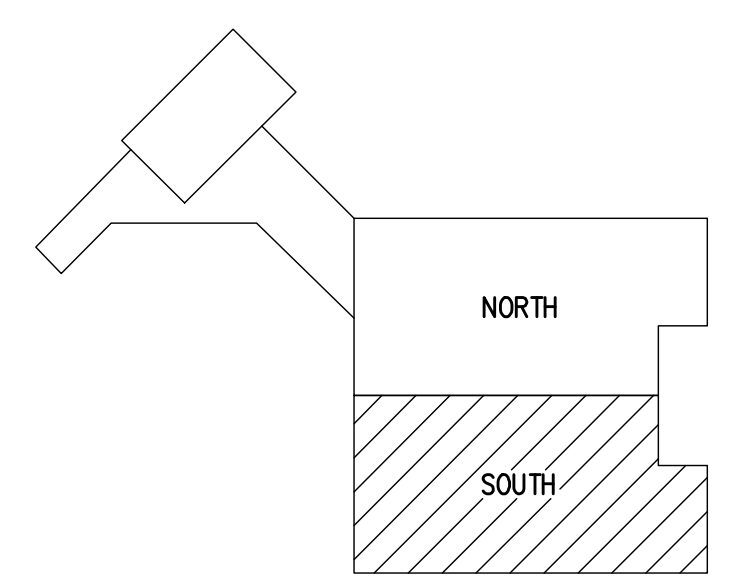
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KEYED NOTES:

- 1. REMOVE CEILING TILES, GRID AND FIXTURES IN THEIR ENTIRETY. RE: ELECTRICAL DWGS FOR FIXTURE DEMO.
- 2. REMOVE CEILING TILES, GRID AND FIXTURES IN THEIR ENTIRETY. RE: ELECTRICAL DWGS FOR FIXTURE DEMO.



KEY PLAN
SCALE: NO SCALE

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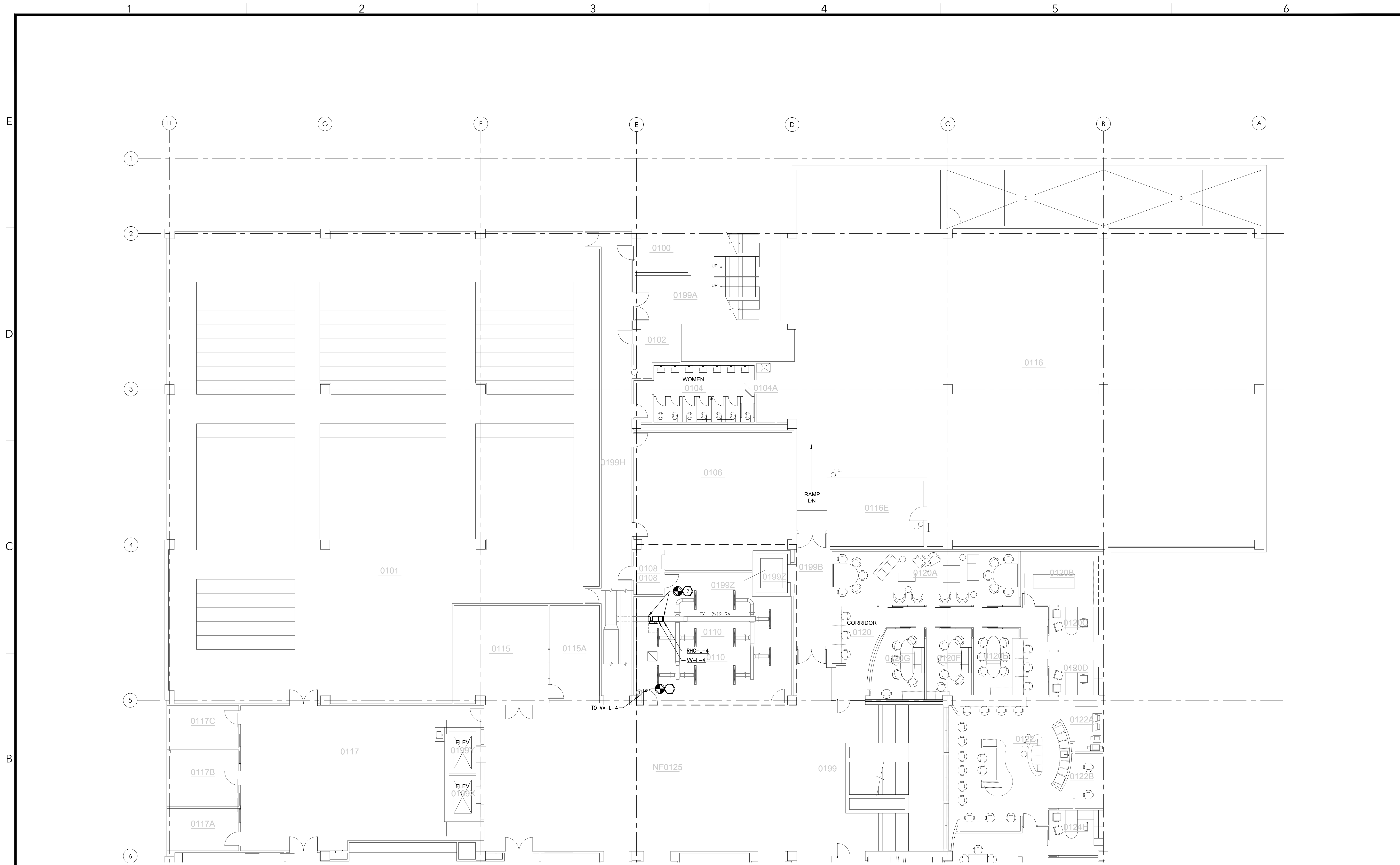
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SHEET TITLE:
FOURTH FLOOR SOUTH RCP - DEMO

AD142



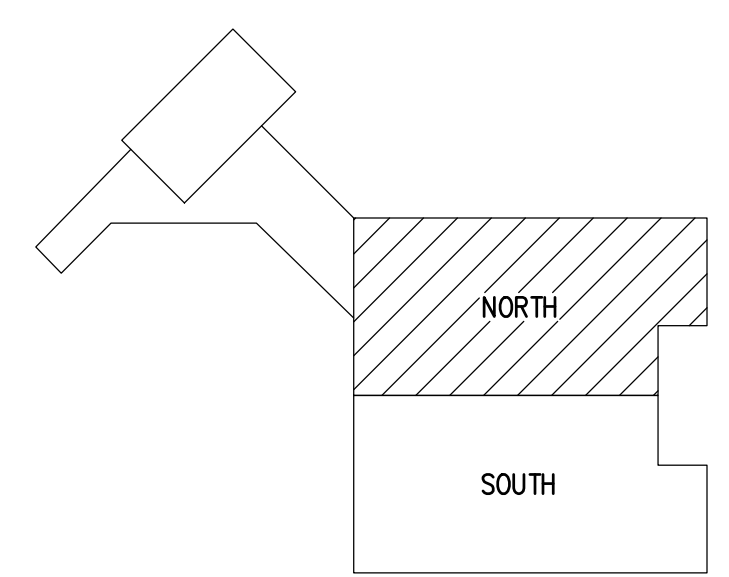
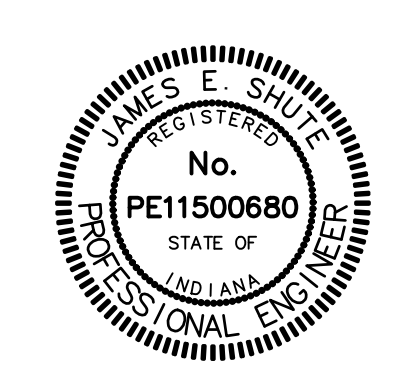
1 LOWER LEVEL NORTH MECHANICAL
SCALE: 1/8" = 1'-0"

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KEYED NOTES:

1. CIC CONTRACTOR RE-WIRE & RE-USE SALVAGED BOX CONTROLS. PROVIDE WIRING FROM BOX CONTROLS TO DISCHARGE AIR SENSOR. REWIRE CONTROLS FROM EXISTING WALL MOUNTED TEMPERATURE SENSOR BOX CONTROLLER. PROVIDE BAGNET CONNECTION TO EXISTING BMS CONTROLS NETWORK.
2. PROVIDE VAV BOX AND DUCTWORK AS NECESSARY. PROVIDE DISCHARGE AIR SENSOR 24" DOWNSTREAM OF COIL. PROVIDE CLEARANCE TO CONTROLS AS SHOWN BY DASHED LINE.



KEY PLAN
SCALE: NO SCALE

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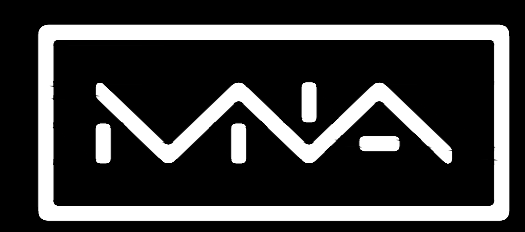
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SHEET TITLE:
LOWER LEVEL NORTH MECHANICAL

M101



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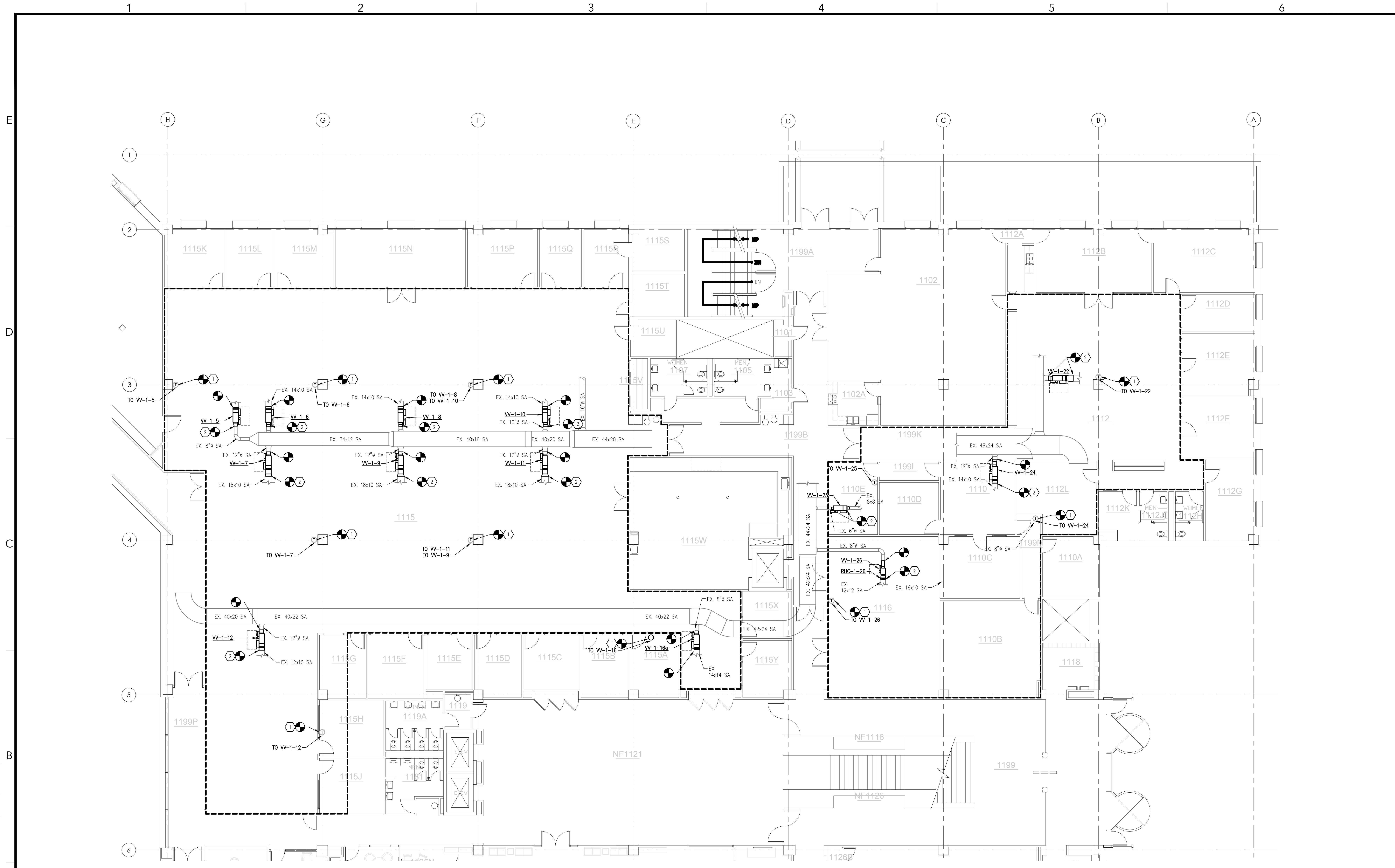
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SHEET TITLE:
FIRST FLOOR NORTH MECHANICAL

M111



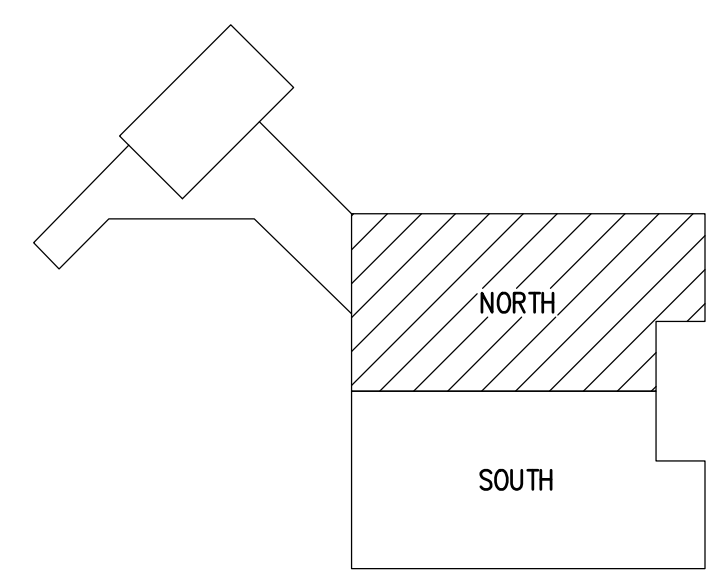
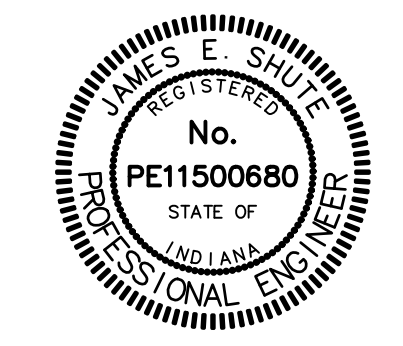
1 FIRST FLOOR NORTH MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

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KEY PLAN
SCALE: NO SCALE

11/06/2024 10:21:18 AM G:\Shared\Projects\2024\1923 - Design\3-05 - Working Files\3-05.1 - Working Drawings\M111.dwg



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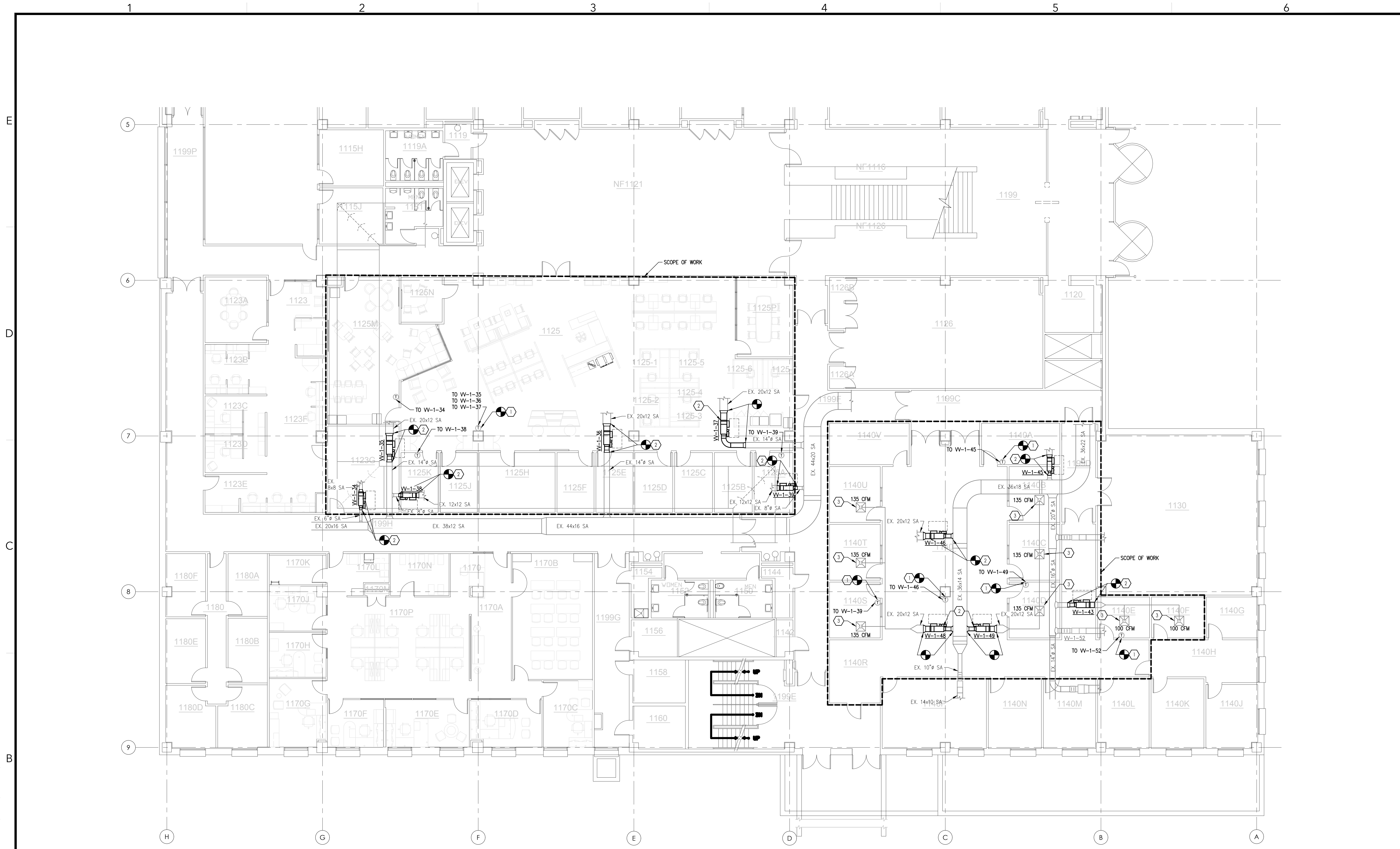
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SHEET TITLE:
FIRST FLOOR SOUTH MECHANICAL

M112



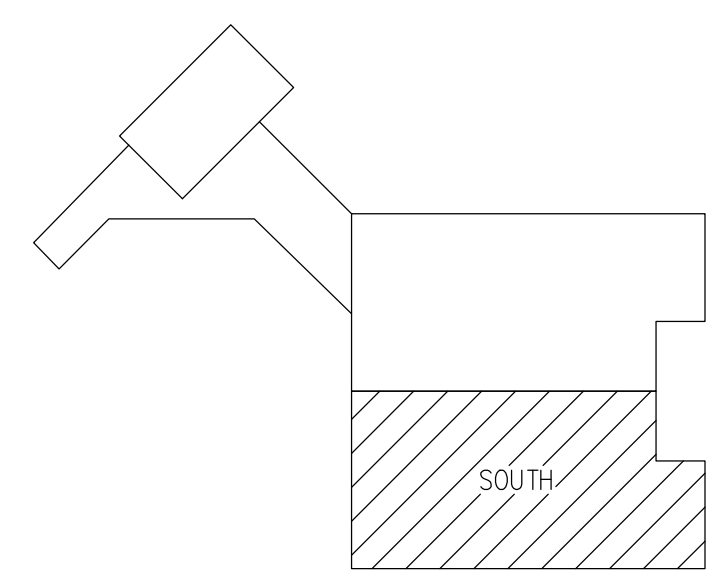
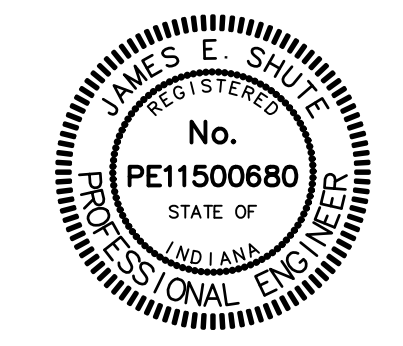
1 FIRST FLOOR SOUTH MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
- CONTRACTOR SHALL COORDINATE ANY SUPPLEMENTAL WORK WITH OTHER TRADES THAT IS REQUIRED FOR THE COMPLETION OF THEIR SCOPE OF WORK AS OUTLINED ON THE PROJECT DOCUMENTS. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO TEMPORARY REMOVAL OF CEILING GRID, TEMPORARY SUPPORT OF LIGHTING, TEMPORARY POWER, ETC.
- CONTRACTOR SHALL PROTECT ALL FURNITURE, EQUIPMENT, AND FINISHES THROUGHOUT CONSTRUCTION. COORDINATE WITH OWNER FOR TEMPORARY REMOVAL AND STORAGE OF FURNITURE AND EQUIPMENT IN ORDER TO PREFORM THE WORK.

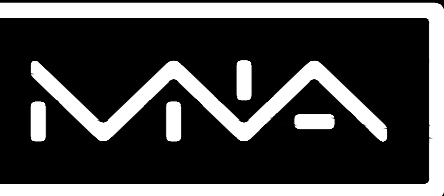
KEYED NOTES:

- CIC CONTRACTOR RE-WIRE & RE-USE SALVAGED BOX CONTROLS. PROVIDE WIRING FROM BOX CONTROLS TO DISCHARGE AIR SENSOR. REWIRE CONTROLS FROM EXISTING WALL MOUNTED TEMPERATURE SENSOR BOX CONTROLLER. PROVIDE BACNET CONNECTION TO EXISTING BMS CONTROLS NETWORK.
- PROVIDE VAV BOX AND DUCTWORK AS NECESSARY. PROVIDE DISCHARGE AIR SENSOR 24" DOWNSTREAM OF COIL. PROVIDE CLEARANCE TO CONTROLS AS SHOWN BY DASHED LINE.
- BALANCE DIFFUSERS TO INDICATED AIRFLOW.



KEY PLAN
SCALE: NO SCALE

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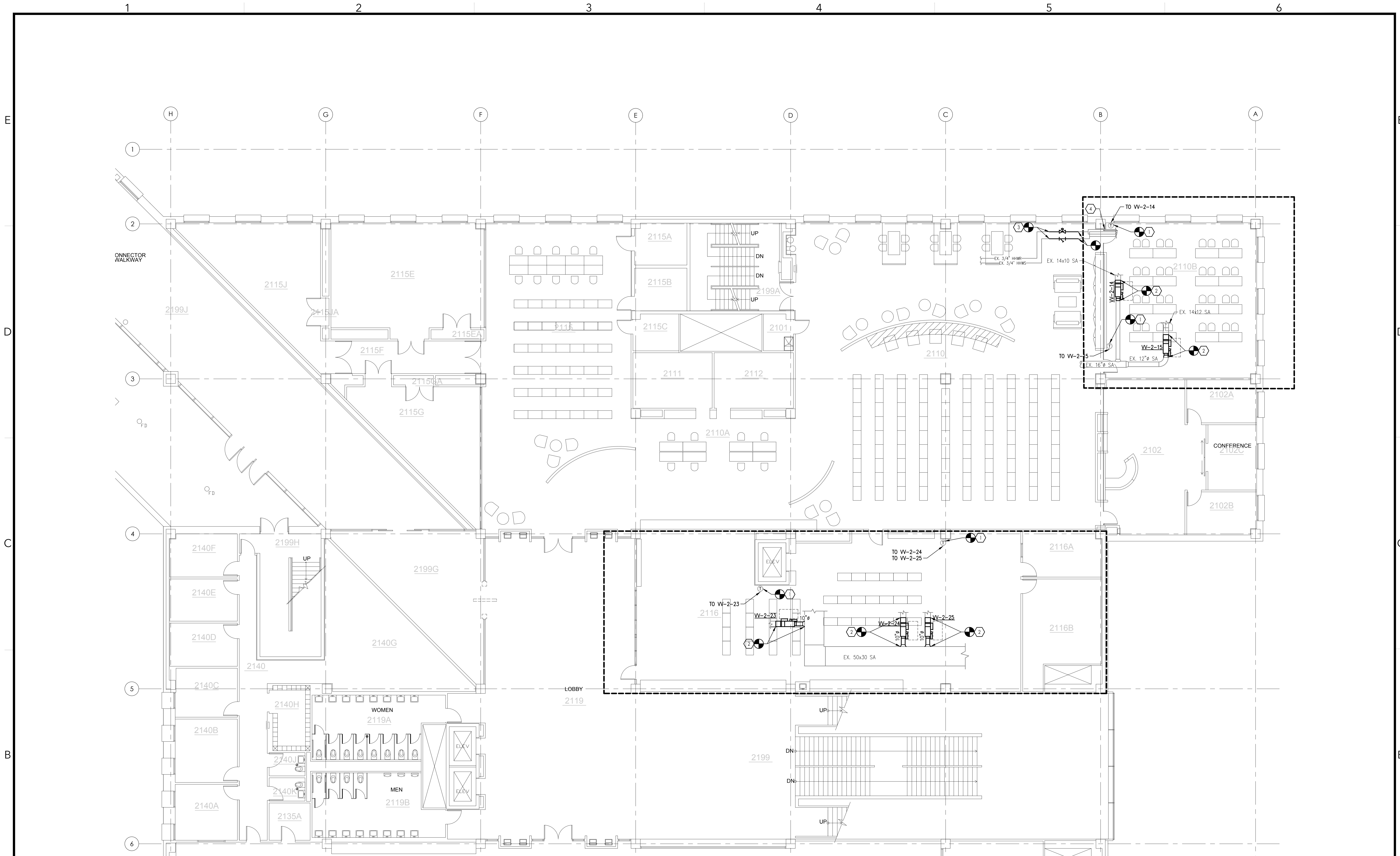
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DATE:	07.01.2024
DRAWN BY:	KPV
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SHEET TITLE:

**SECOND FLOOR
NORTH
MECHANICAL**

M121



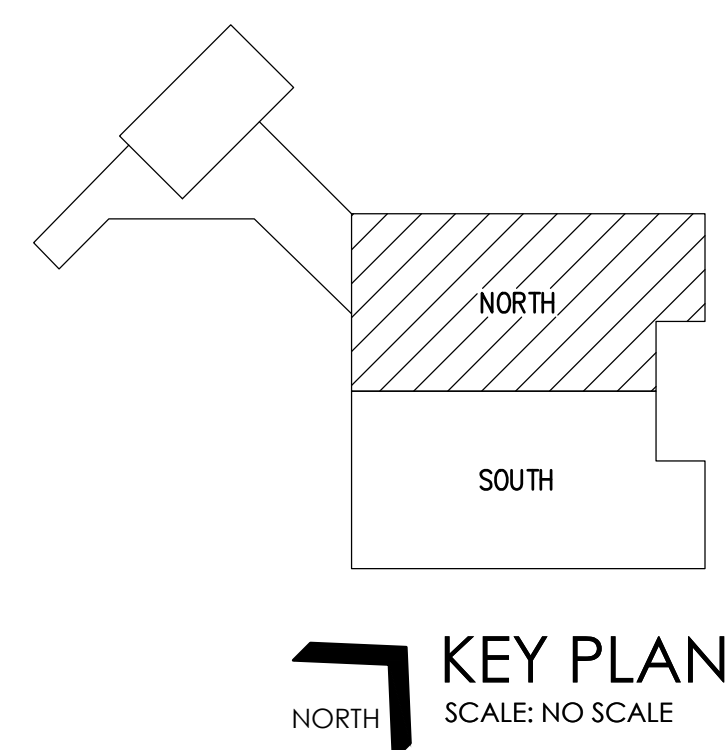
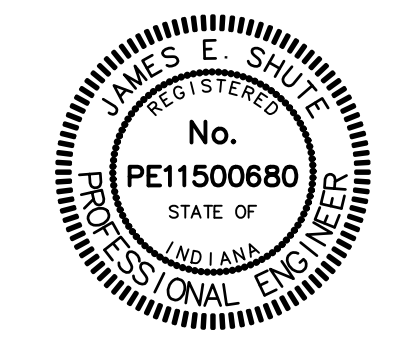
1 SECOND FLOOR NORTH MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
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- CONTRACTOR SHALL PROTECT ALL FURNITURE, EQUIPMENT, AND FINISHES THROUGHOUT CONSTRUCTION, COORDINATE WITH OWNER FOR TEMPORARY REMOVAL AND STORAGE OF FURNITURE AND EQUIPMENT IN ORDER TO PREFORM THE WORK.

KEYED NOTES:

- CIC CONTRACTOR RE-WIRE & RE-USE SALVAGED BOX CONTROLS. PROVIDE WIRING FROM BOX CONTROLS TO DISCHARGE AIR SENSOR. REWIRE CONTROLS FROM EXISTING WALL MOUNTED TEMPERATURE SENSOR BOX CONTROLLER. PROVIDE BACKET CONNECTION TO EXISTING BMS CONTROLS NETWORK.
- PROVIDE VAV BOX AND DUCTWORK AS NECESSARY. PROVIDE DISCHARGE AIR SENSOR 24" DOWNSTREAM OF COIL. PROVIDE CLEARANCE TO CONTROLS AS SHOWN BY DASHED LINE.
- PROVIDE CONTROL VALVE ASSEMBLY. REFER TO SHEET 501 DETAIL D FOR MORE INFORMATION.
- PROVIDE INSULATION TO EXISTING HHWS/R. REFER TO SCHEDULE FOR PIPING INSULATION.



KEY PLAN
SCALE: NO SCALE

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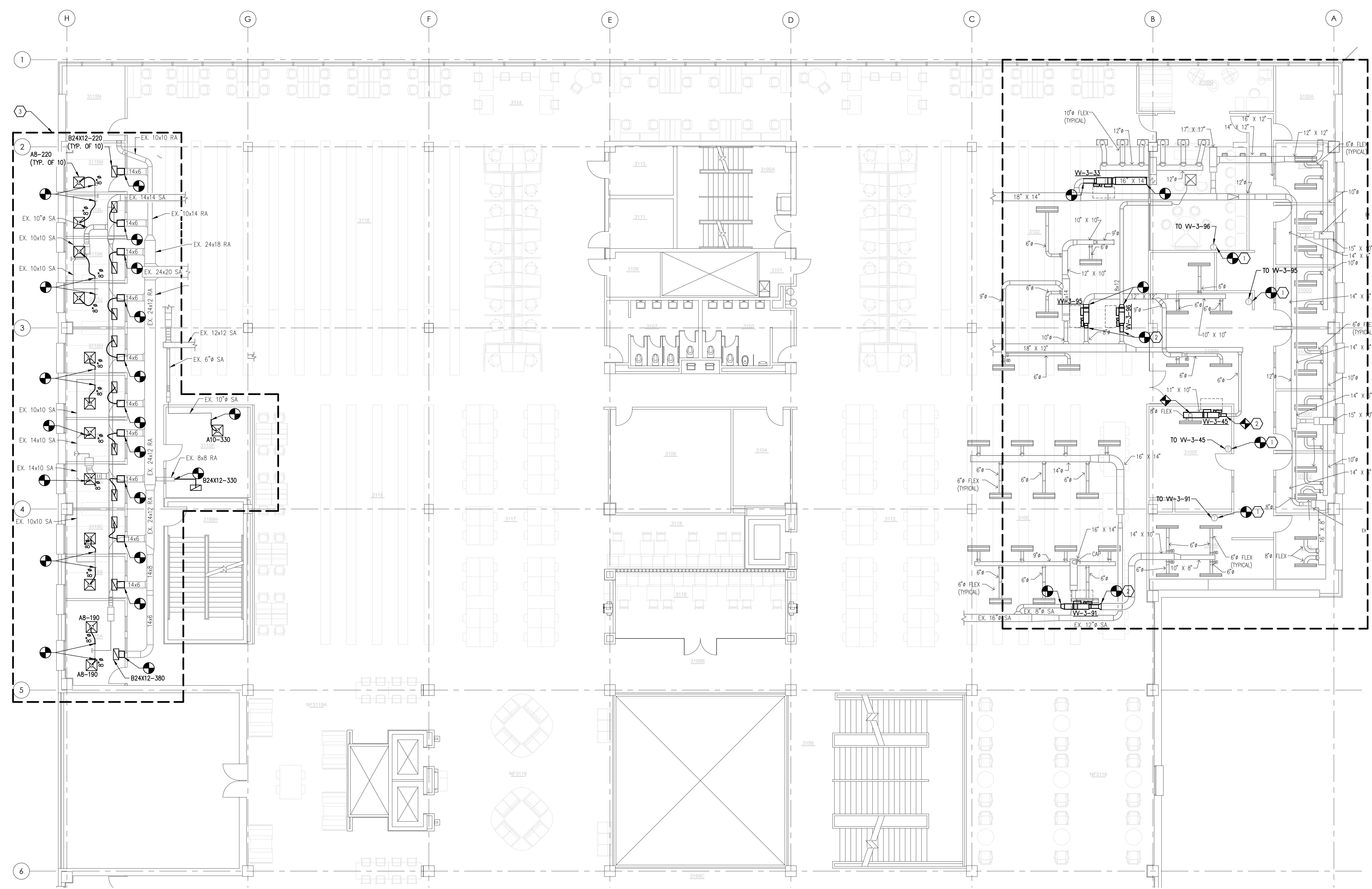
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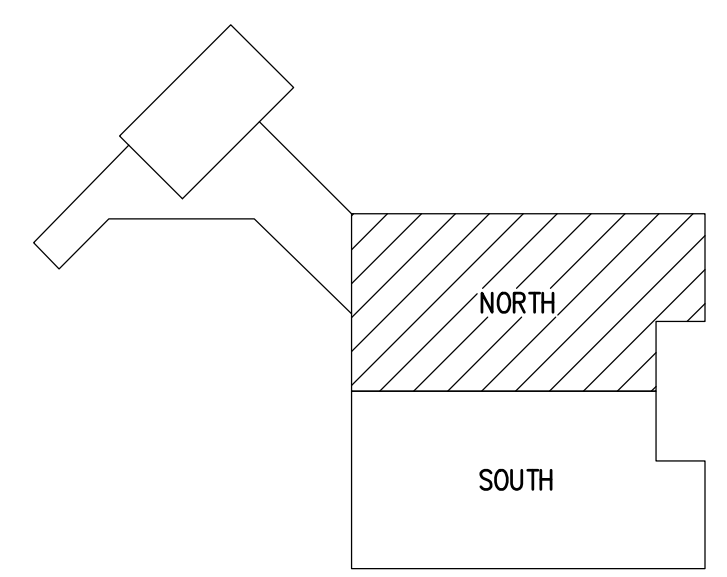
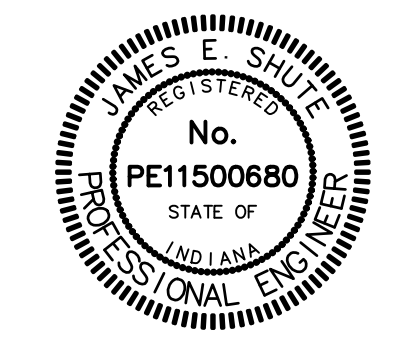
1 THIRD FLOOR NORTH MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- G1. DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
- G2. CONTRACTOR SHALL COORDINATE ANY SUPPLEMENTAL WORK WITH OTHER TRADES THAT IS REQUIRED FOR THE COMPLETION OF THEIR SCOPE OF WORK AS OUTLINED ON THE PROJECT DOCUMENTS. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO TEMPORARY REMOVAL OF CEILING GRID, TEMPORARY SUPPORT OF LIGHTING, TEMPORARY POWER, ETC.
- G3. CONTRACTOR SHALL PROTECT ALL FURNITURE, EQUIPMENT, AND FINISHES THROUGHOUT CONSTRUCTION, COORDINATE WITH OWNER FOR TEMPORARY REMOVAL AND STORAGE OF FURNITURE AND EQUIPMENT IN ORDER TO PREFORM THE WORK.

KEYED NOTES:

1. CIC CONTRACTOR RE-WIRE & RE-USE SALVAGED BOX CONTROLS. PROVIDE WIRING FROM BOX CONTROLS TO DISCHARGE AIR SENSOR. REWIRE CONTROLS FROM EXISTING WALL MOUNTED TEMPERATURE SENSOR BOX CONTROLLER. PROVIDE BAGNET CONNECTION TO EXISTING BMS CONTROLS NETWORK.
2. PROVIDE VAV BOX AND DUCTWORK AS NECESSARY. PROVIDE DISCHARGE AIR SENSOR 24" DOWNSTREAM OF COIL. PROVIDE CLEARANCE TO CONTROLS AS SHOWN BY DASHED LINE.
3. PROVIDE FLEX DUCT DOWN TO DIFFUSERS AND GRILLES. RECONNECT TO EXISTING MAINS.



KEY PLAN
SCALE: NO SCALE

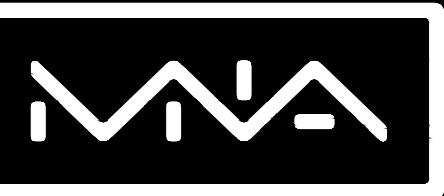
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1	11.07.24	ADDENDUM-01

PROJECT NO:	2024192
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DRAWN BY:	KPV
CHECKED BY:	N/A
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SHEET TITLE:
THIRD FLOOR NORTH MECHANICAL

M131

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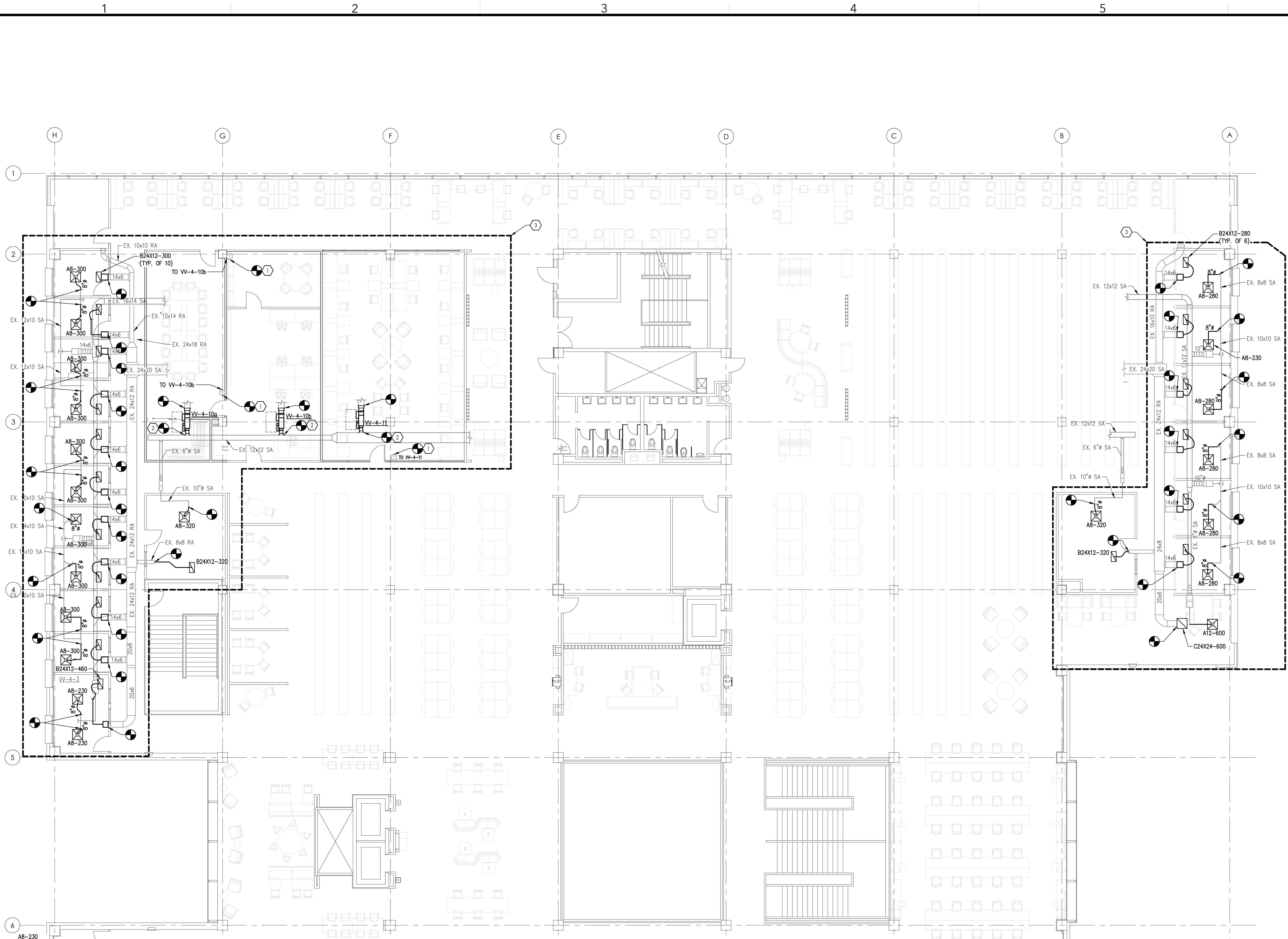
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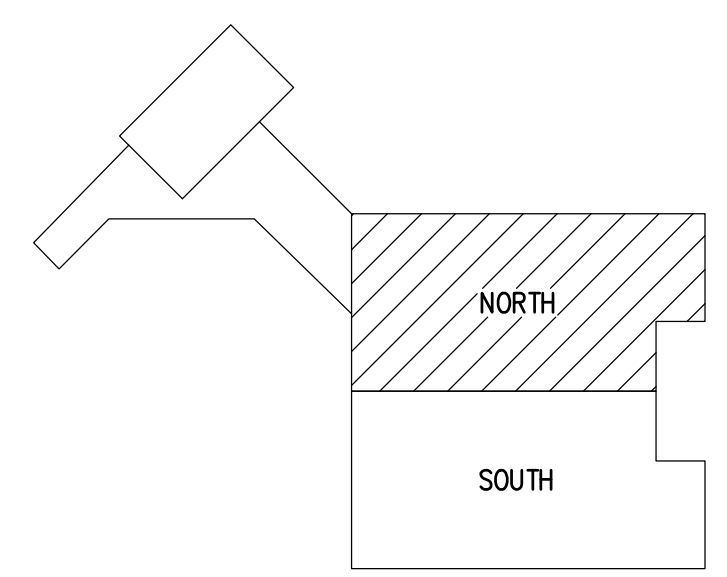
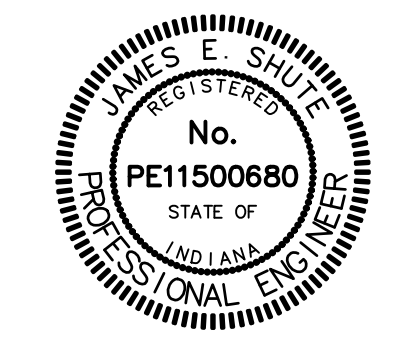
1 FOURTH FLOOR NORTH MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- G1. DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
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- G3. CONTRACTOR SHALL PROTECT ALL FURNITURE, EQUIPMENT, AND FINISHES THROUGHOUT CONSTRUCTION. COORDINATE WITH OWNER FOR TEMPORARY REMOVAL AND STORAGE OF FURNITURE AND EQUIPMENT IN ORDER TO PREFORM THE WORK.

KEYED NOTES:

1. CIC CONTRACTOR RE-WIRE & RE-USE SALVAGED BOX CONTROLS. PROVIDE WIRING FROM BOX CONTROLS TO DISCHARGE AIR SENSOR. REWIRE CONTROLS FROM EXISTING WALL MOUNTED TEMPERATURE SENSOR BOX CONTROLLER. PROVIDE BAGNET CONNECTION TO EXISTING BMS CONTROLS NETWORK.
2. PROVIDE VAV BOX AND DUCTWORK AS NECESSARY. PROVIDE DISCHARGE AIR SENSOR 24" DOWNSTREAM OF COIL. PROVIDE CLEARANCE TO CONTROLS AS SHOWN BY DASHED LINE.
3. PROVIDE FLEX DUCT DOWN TO DIFFUSERS AND GRILLES. RECONNECT TO EXISTING MAIN.



KEY PLAN
SCALE: NO SCALE

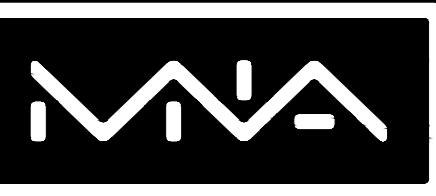
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1	11.07.24	ADDENDUM-01

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FOURTH FLOOR NORTH POWER PLAN

M141

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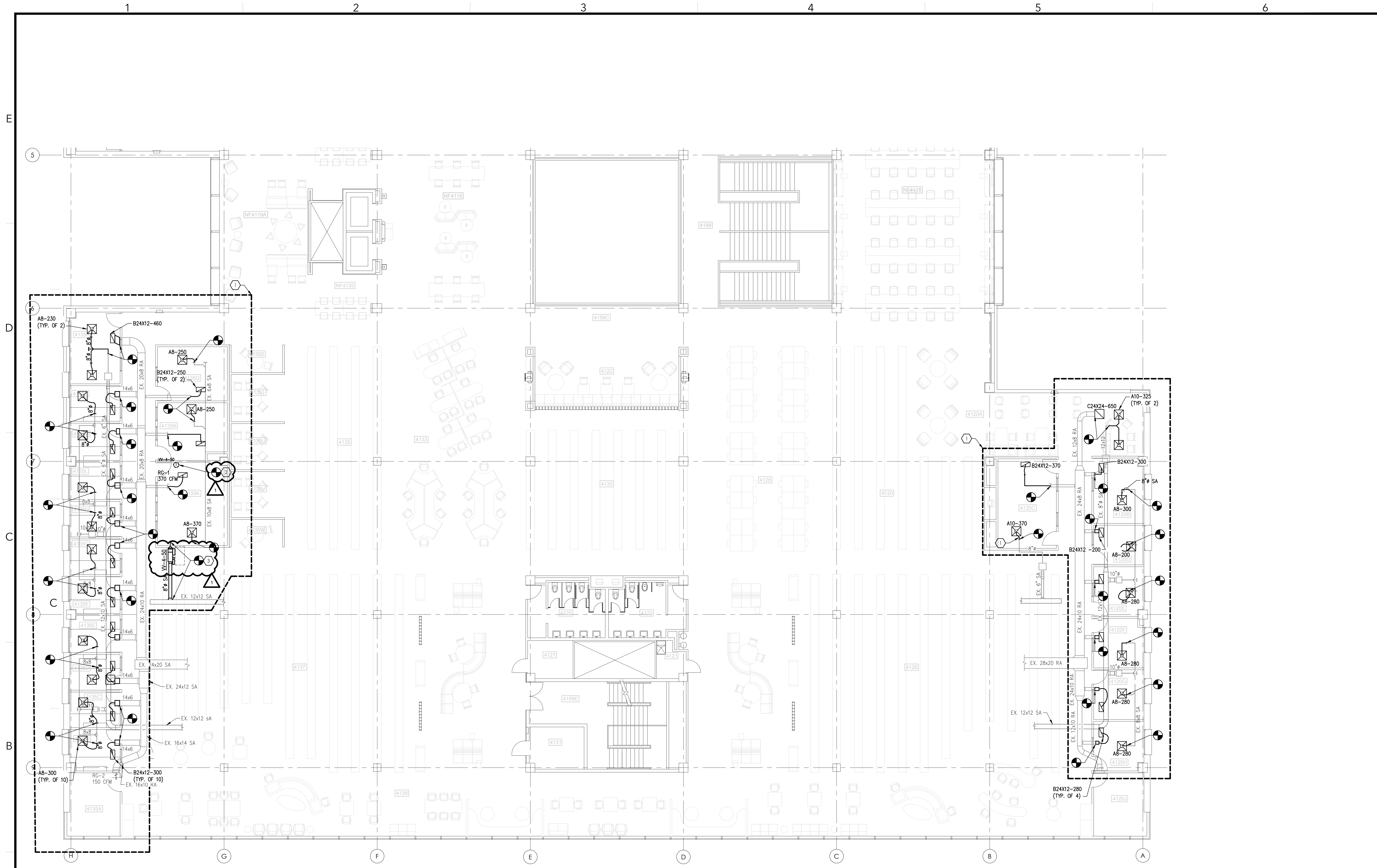
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SHEET TITLE: FOURTH FLOOR SOUTH MECHANICAL

M142



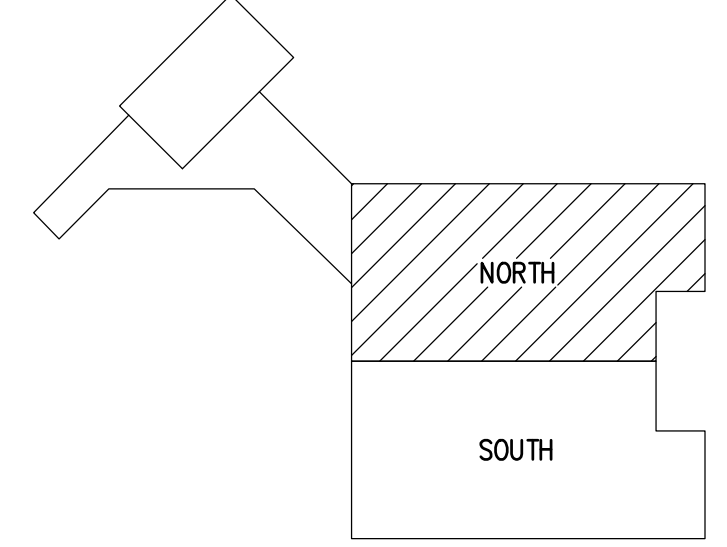
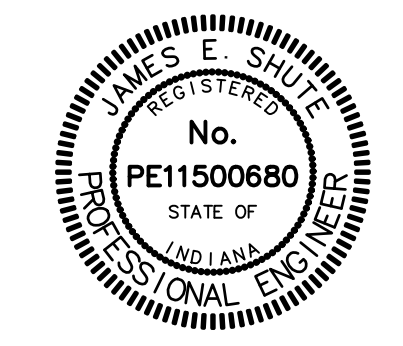
1 FOURTH FLOOR SOUTH MECHANICAL PLAN SCALE: 1/8" = 1'-0"

GENERAL NOTES:

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- CONTRACTOR SHALL PROTECT ALL FURNITURE, EQUIPMENT, AND FINISHES THROUGHOUT CONSTRUCTION, COORDINATE WITH OWNER FOR TEMPORARY REMOVAL AND STORAGE OF FURNITURE AND EQUIPMENT IN ORDER TO PREFORM THE WORK.

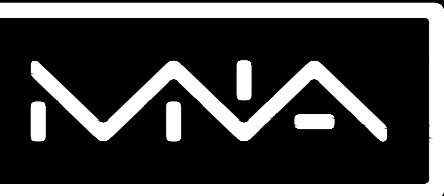
KEYED NOTES:

- PROVIDE FLEX DUCT DOWN TO DIFFUSERS AND GRILLES. RECONNECT TO EXISTING MAINS.
- CIC CONTRACTOR RE-WIRE & RE-USE SALVAGED BOX CONTROLS. PROVIDE WIRING FROM BOX CONTROLS TO DISCHARGE AIR SENSOR. REWIRE CONTROLS FROM EXISTING WALL MOUNTED TEMPERATURE SENSOR BOX CONTROLLER. PROVIDE BACKET CONNECTION TO EXISTING BMS CONTROLS NETWORK.
- PROVIDE VAV BOX AND DUCTWORK AS NECESSARY. PROVIDE DISCHARGE AIR SENSOR 24" DOWNSTREAM OF COIL. PROVIDE CLEARANCE TO CONTROLS AS SHOWN BY DASHED LINE.



KEY PLAN SCALE: NO SCALE

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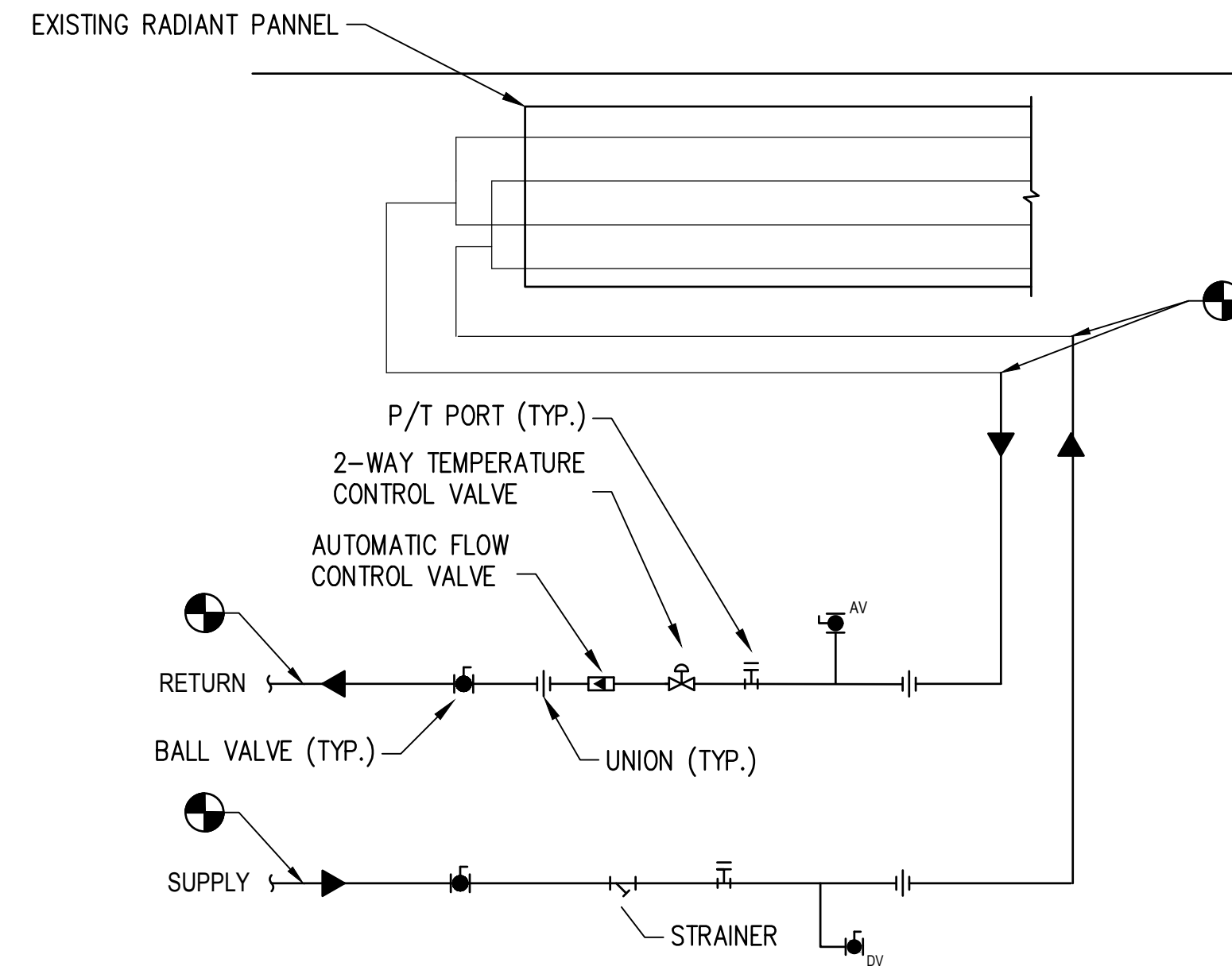
ENGINEERS + ARCHITECTS

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Indianapolis, Indiana 46225
317.631.9241
5510 Six Forks Road, Suite 270
Raleigh, North Carolina 27609
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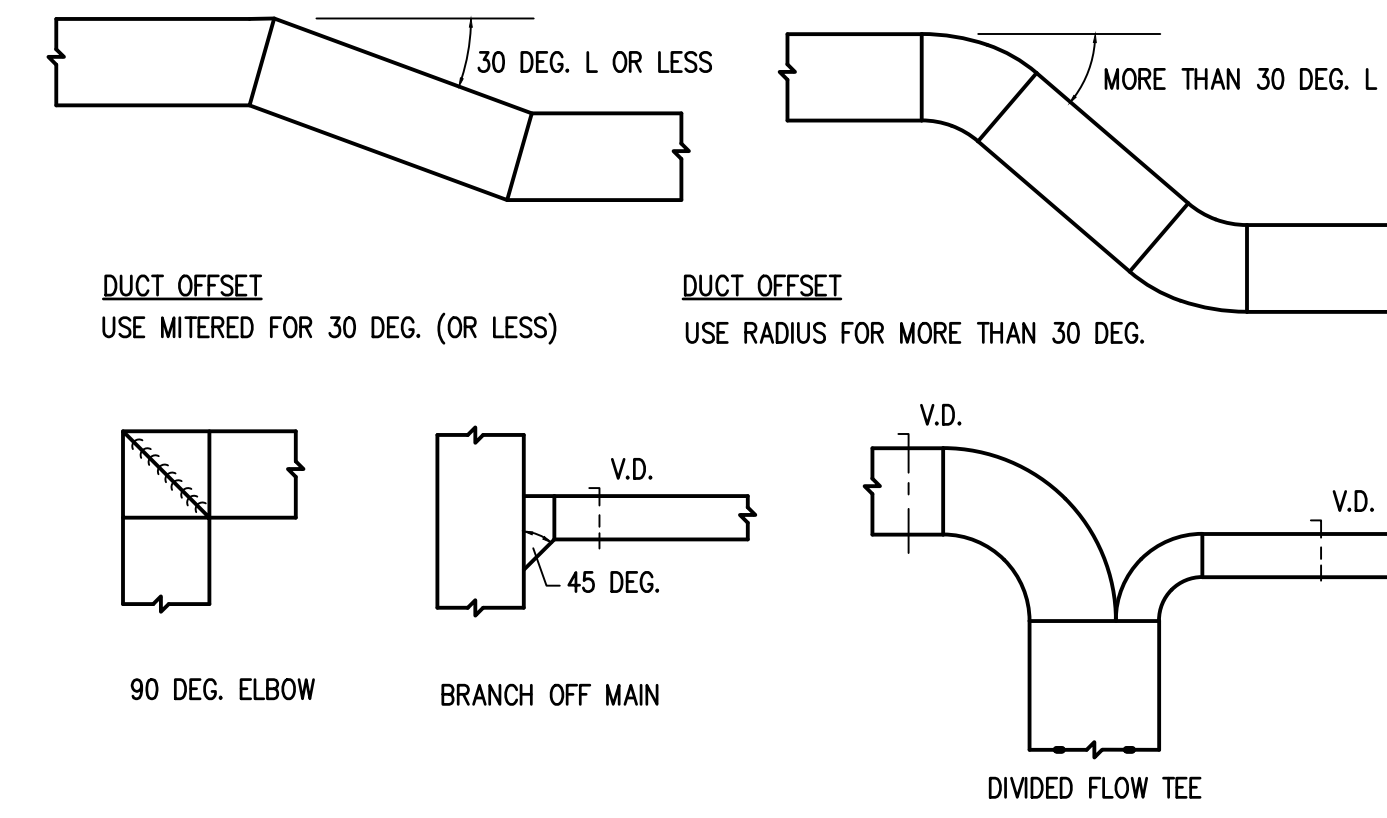
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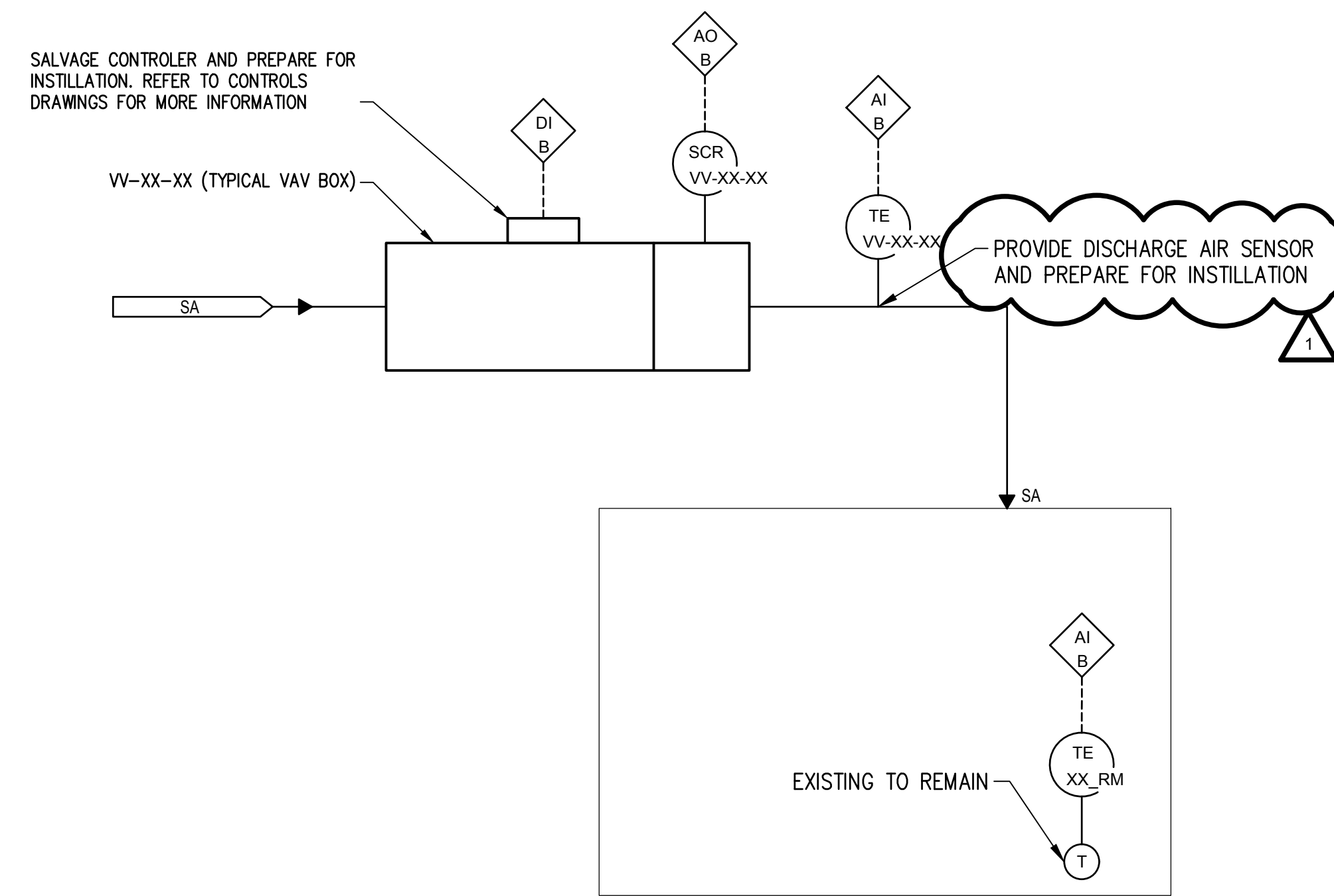
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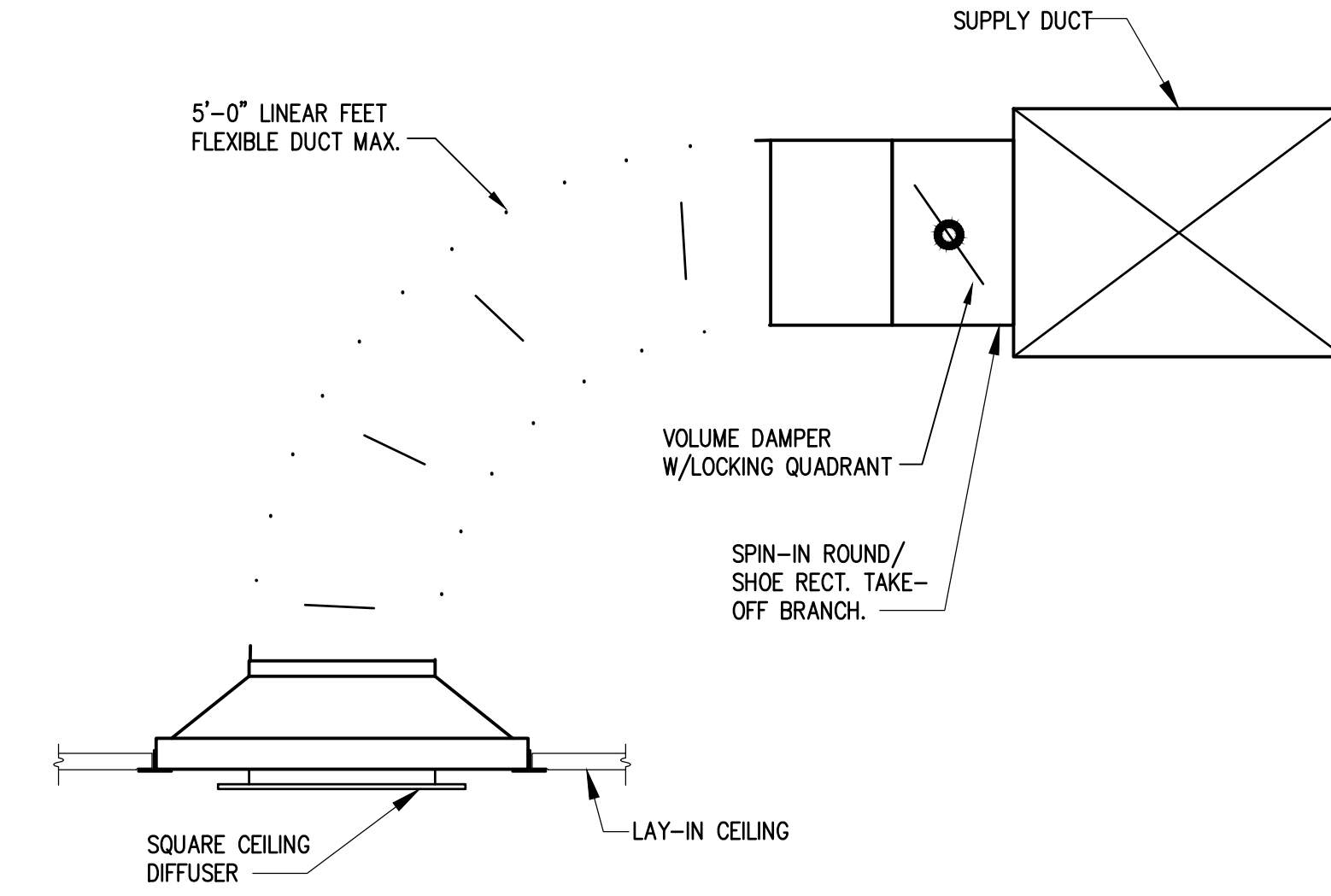
D LINER RADIANT PANEL DETAIL
SCALE: NONE



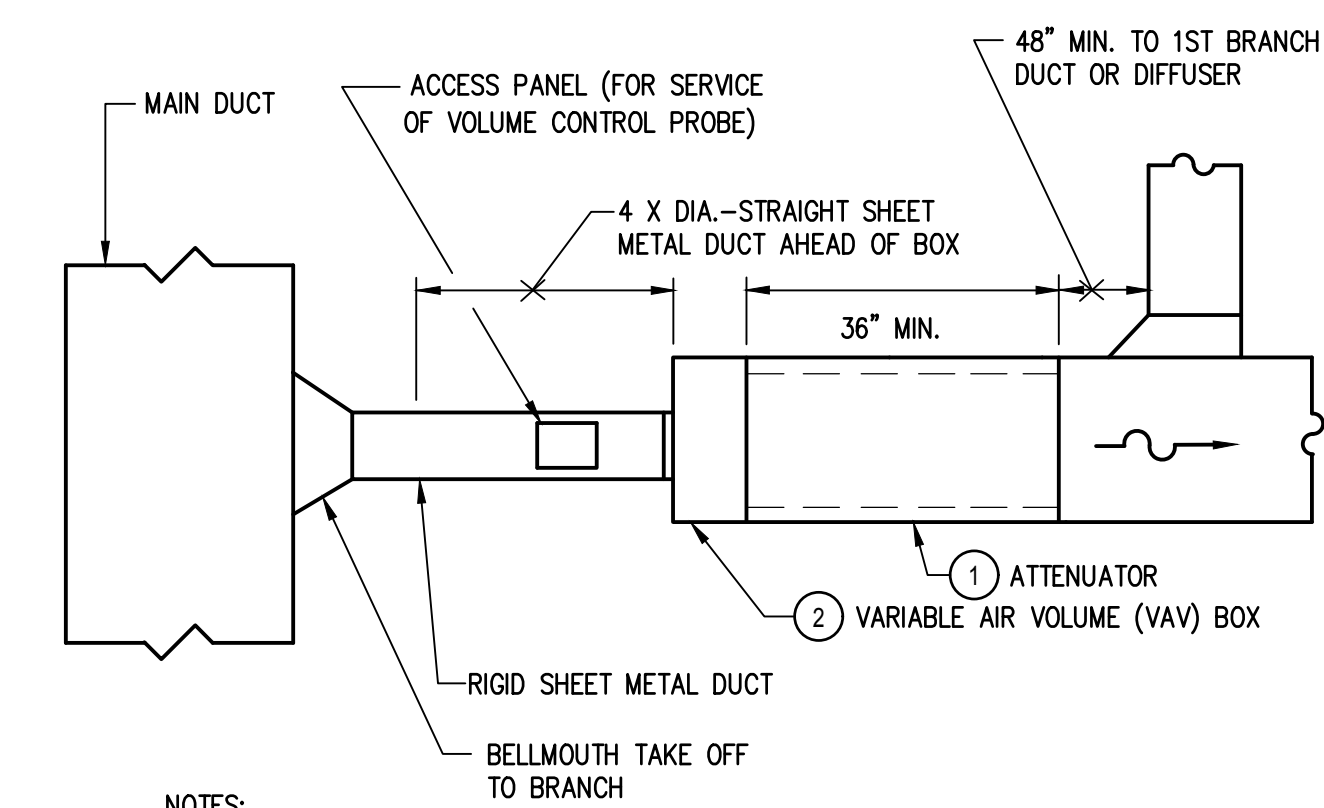
A SHEET METAL FITTINGS (LOW VELOCITY)
SCALE: NONE



D TYPICAL VAV BOX AF&ID
SCALE: NONE

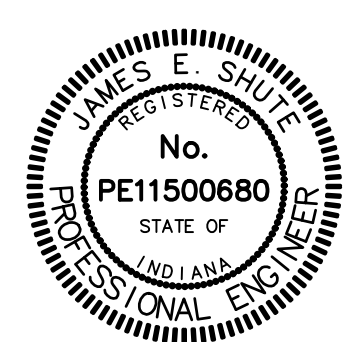


B TYPICAL LOW PRESSURE DUCT
SCALE: NONE



- NOTES:
- 1 PROVE FIBER FREE INTERNAL LINER
 - 2 ARRANGE FOR ACCESS TO CONTROLS REFER TO MECHANICAL SHEETS FOR MORE INFORMATION PROVIDE 2 FEET OF STRAIGHT DUCT UPSTREAM AND DOWNSTREAM OF REHEAT COILS.
 - 3

C VAV BOX DETAIL
SCALE: NONE

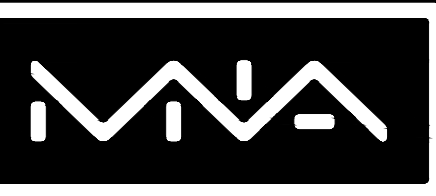


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SHEET TITLE:
MECHANICAL DETAILS

M501



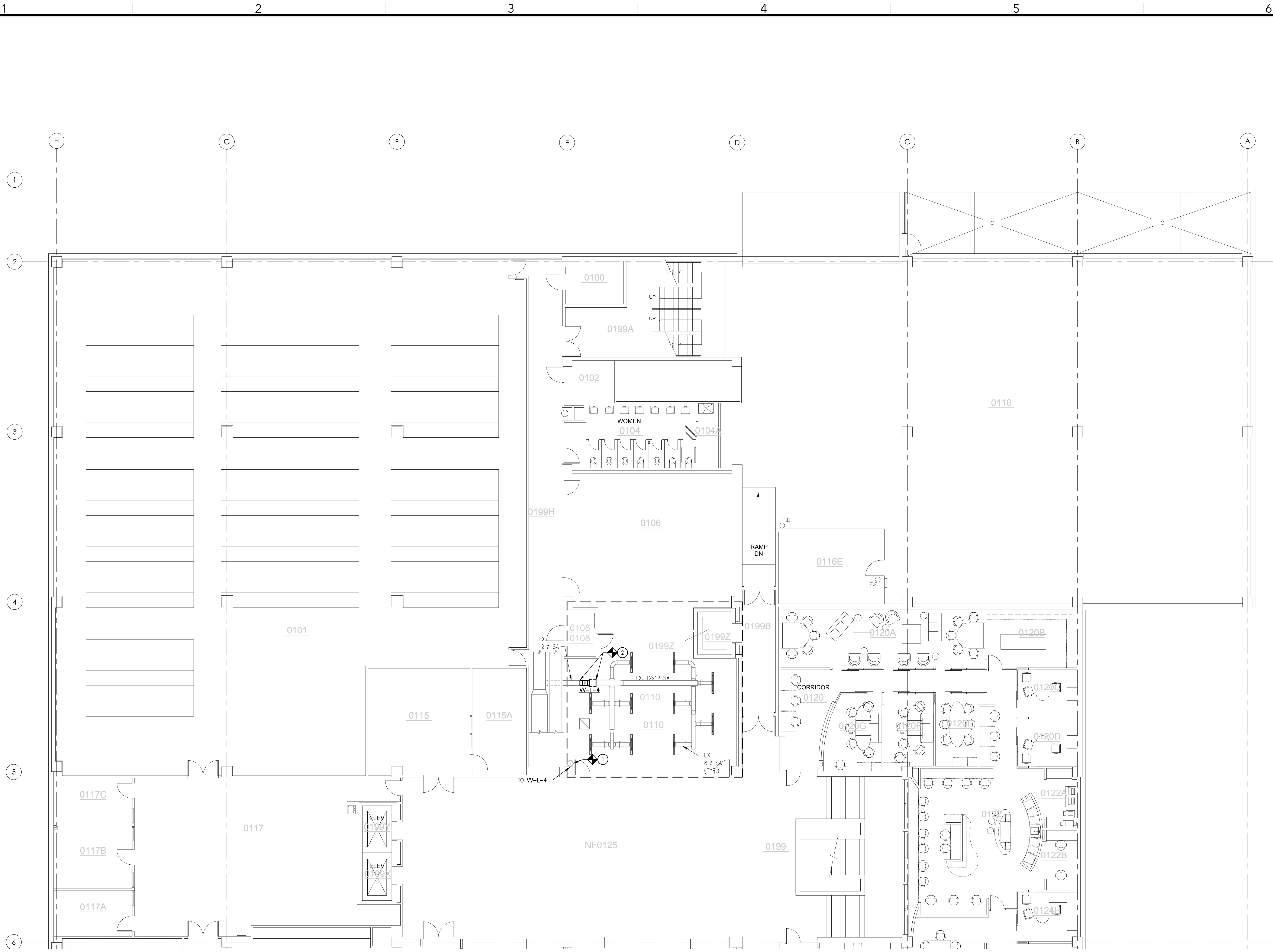
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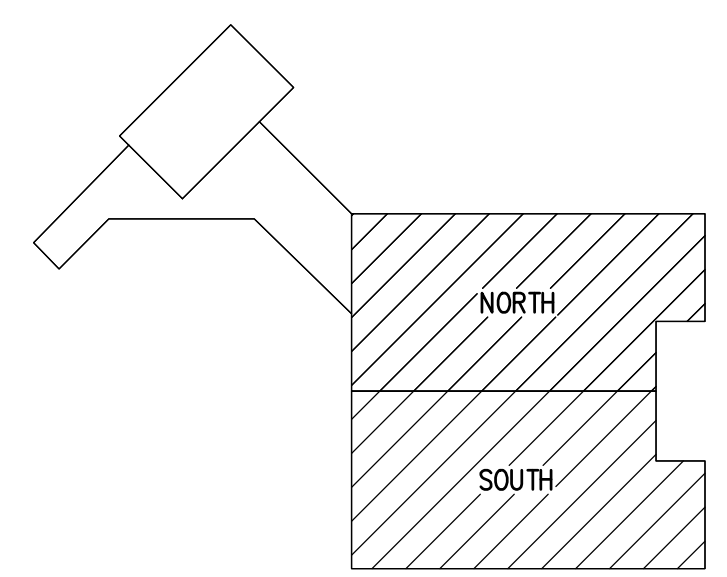
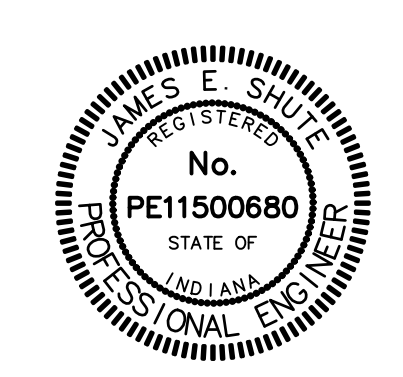
1 LOWER LEVEL NORTH MECHANICAL DEMOLITION
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- G1. DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
- G2. CONTRACTOR SHALL COORDINATE ANY SUPPLEMENTAL WORK WITH OTHER TRADES THAT IS REQUIRED FOR THE COMPLETION OF THEIR SCOPE OF WORK AS OUTLINED ON THE PROJECT DOCUMENTS. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO TEMPORARY REMOVAL OF CEILING GRID, TEMPORARY SUPPORT OF LIGHTING, TEMPORARY POWER, ETC.
- G3. CONTRACTOR SHALL PROTECT ALL FURNITURE, EQUIPMENT, AND FINISHES THROUGHOUT CONSTRUCTION, COORDINATE WITH OWNER FOR TEMPORARY REMOVAL AND STORAGE OF FURNITURE AND EQUIPMENT IN ORDER TO PREFORM THE WORK.

KEYED NOTES:

1. SALVAGE CONTROL WIRING TO VAV AND PREPARE FOR RECONNECTION.
2. REMOVE VAV AND ASSOCIATED DUCT WORK AS NECESSARY. REMOVE DISCHARGE AIR SENSOR ASSOCIATED WITH VAV.



KEY PLAN
SCALE: NO SCALE

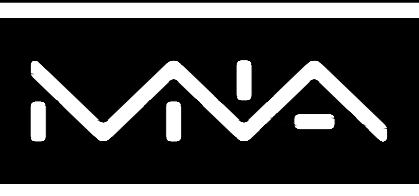
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PROJECT NO: 2024192
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LOWER LEVEL NORTH MECHANICAL DEMOLITION

MD101

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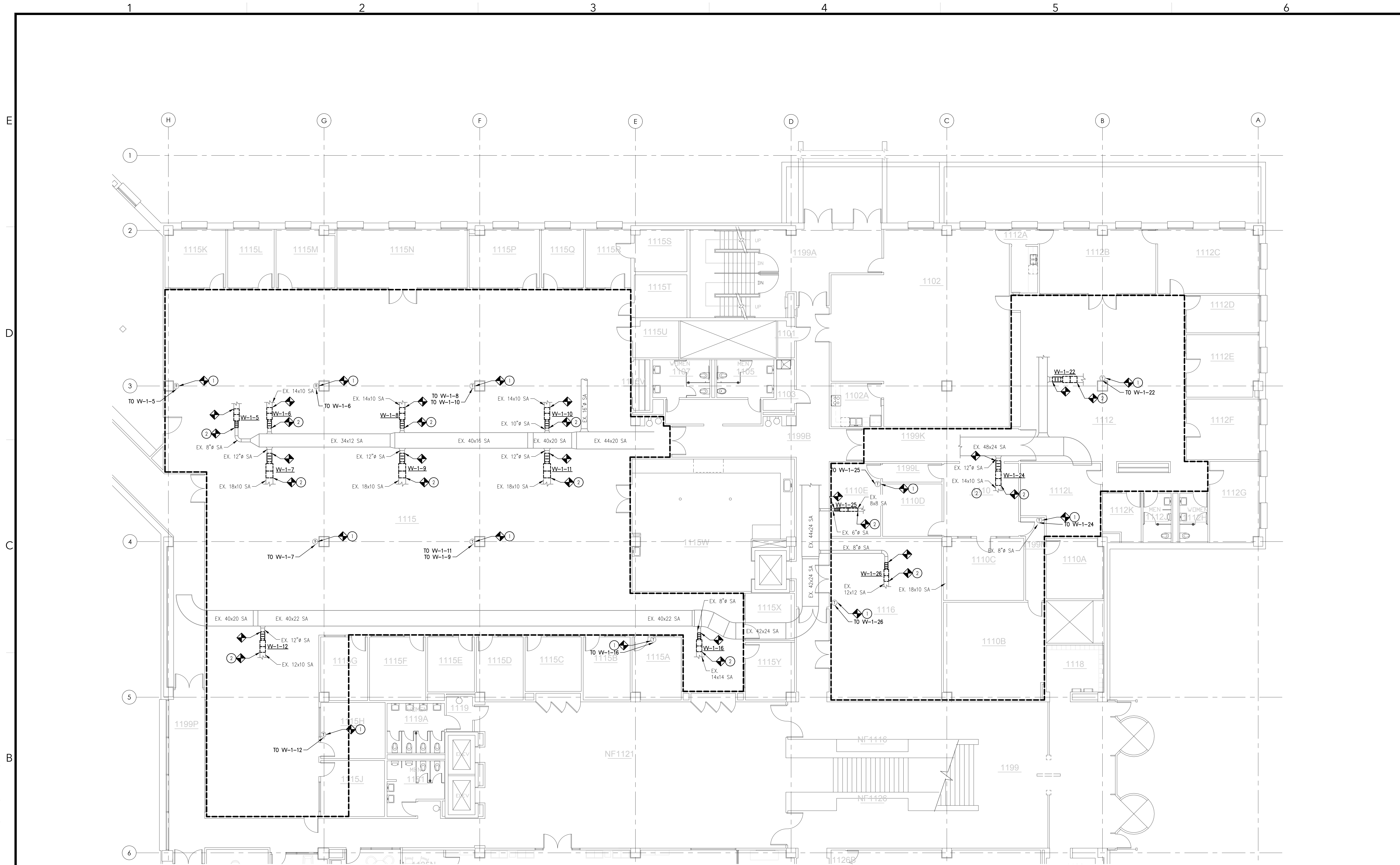
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SHEET TITLE:

**FIRST FLOOR
NORTH
MECHANICAL
DEMOLITION**

MD111



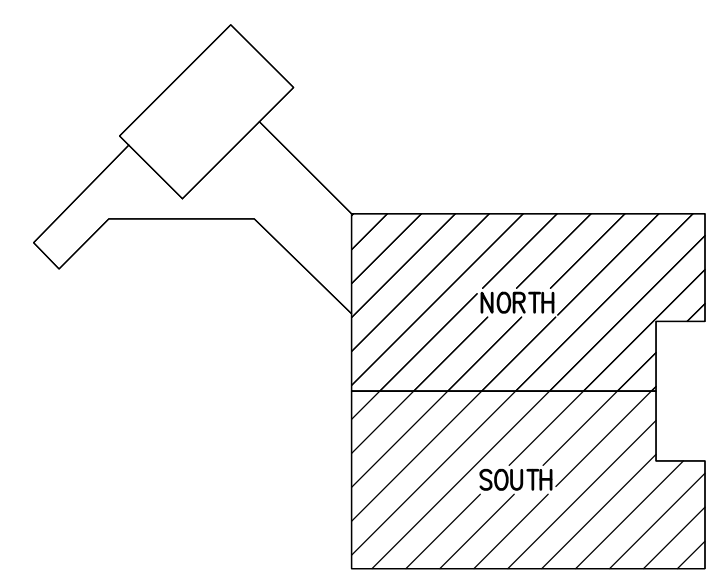
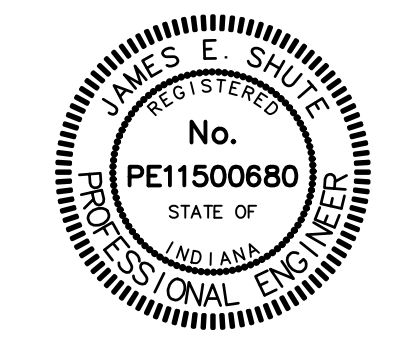
1 FIRST FLOOR NORTH MECHANICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
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- CONTRACTOR SHALL PROTECT ALL FURNITURE, EQUIPMENT, AND FINISHES THROUGHOUT CONSTRUCTION, COORDINATE WITH OWNER FOR TEMPORARY REMOVAL AND STORAGE OF FURNITURE AND EQUIPMENT IN ORDER TO PREFORM THE WORK.

KEYED NOTES:

- SALVAGE CONTROL WIRING TO VAV AND PREPARE FOR RECONNECTION.
- REMOVE VAV AND ASSOCIATED DUCT WORK AS NECESSARY. REMOVE DISCHARGE AIR SENSOR ASSOCIATED WITH VAV.



KEY PLAN
SCALE: NO SCALE

11/07/2024 8:32:07 AM G:\Shared\Projects\2024192\3 - Design\3.05 - Drawing\Files\3.05.1 - Working Drawings\MD111.dwg



MUSSETT NICHOLAS ASSOCIATES
ENGINEERS + ARCHITECTS

502 South West Street
Indianapolis, Indiana 46225
317.631.9241

5510 Six Forks Road, Suite 270
Raleigh, North Carolina 27609
919.703.4026

NOT FOR CONSTRUCTION

Certified by

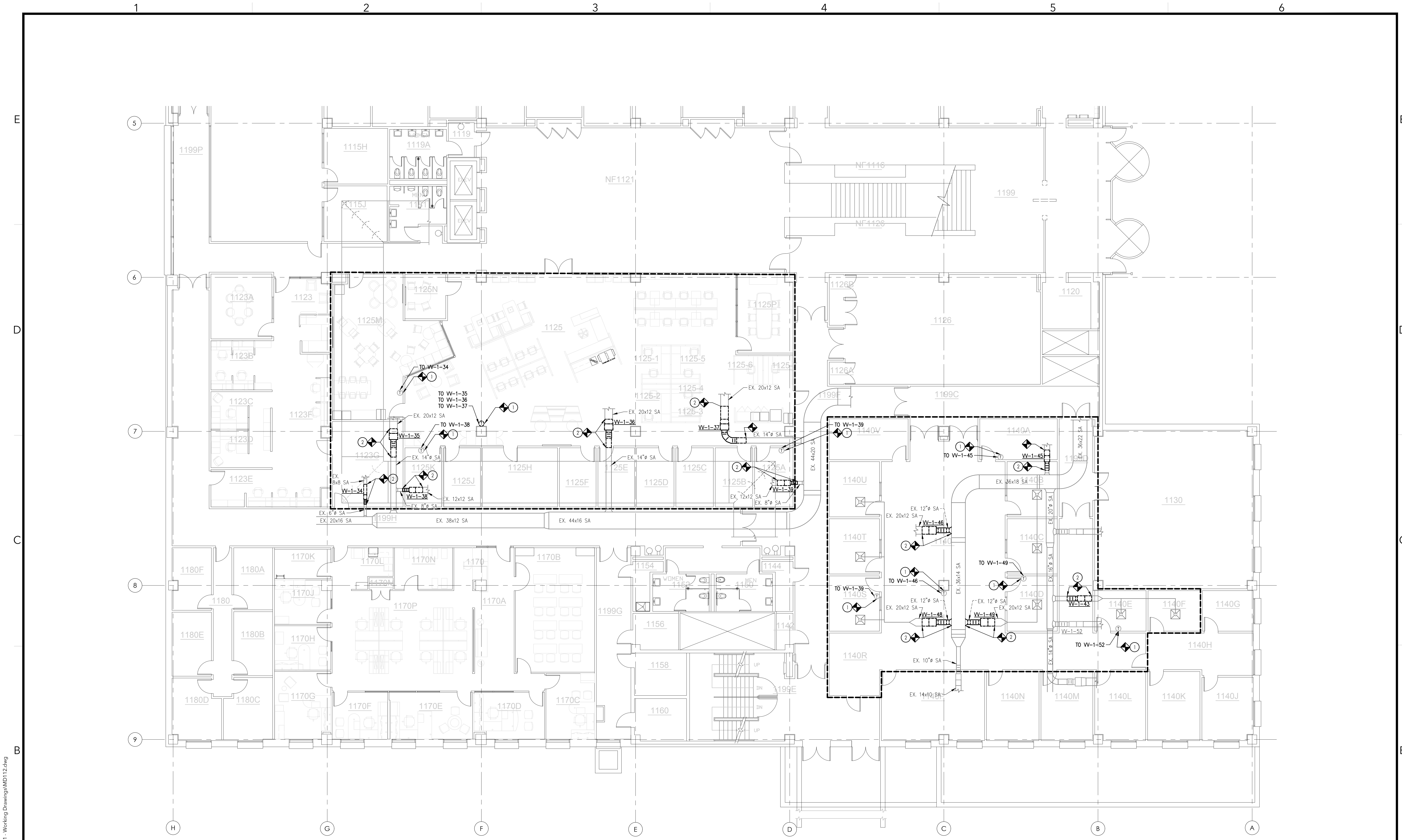
**Indiana University - University Library
HVAC Improvements and LED Lighting Upgrade
Indianapolis, IN**

MARK	DATE	DESCRIPTION
0	10.28.24	ISSUED FOR BID
1	11.07.24	ADDENDUM-01

PROJECT NO: 2024192
DATE: 07.01.2024
DRAWN BY: KPV
CHECKED BY: N/A
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SHEET TITLE:
FIRST FLOOR SOUTH MECHANICAL DEMOLITION

MD112



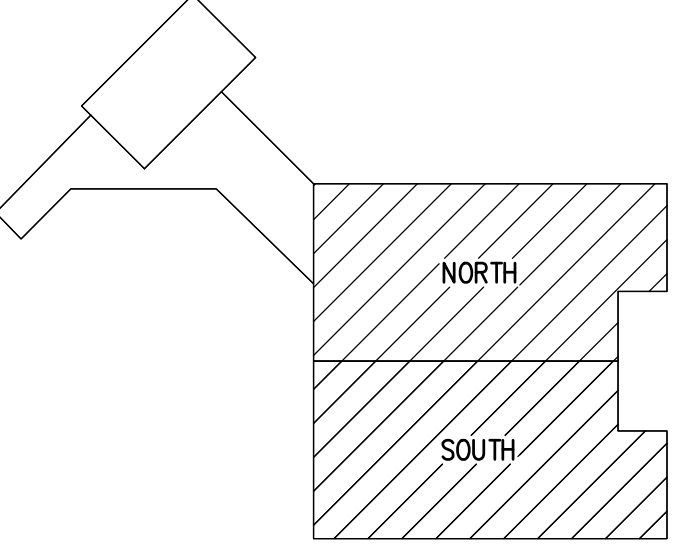
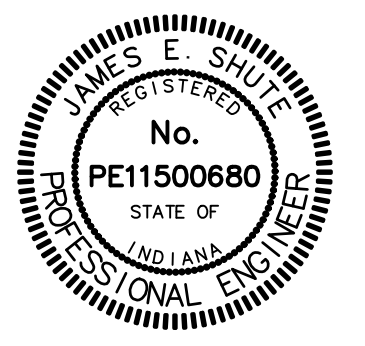
1 FIRST FLOOR SOUTH MECHANICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- G1. DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
- G2. CONTRACTOR SHALL COORDINATE ANY SUPPLEMENTAL WORK WITH OTHER TRADES THAT IS REQUIRED FOR THE COMPLETION OF THEIR SCOPE OF WORK AS OUTLINED ON THE PROJECT DOCUMENTS. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO TEMPORARY REMOVAL OF CEILING GRID, TEMPORARY SUPPORT OF LIGHTING, TEMPORARY POWER, ETC.
- G3. CONTRACTOR SHALL PROTECT ALL FURNITURE, EQUIPMENT, AND FINISHES THROUGHOUT CONSTRUCTION, COORDINATE WITH OWNER FOR TEMPORARY REMOVAL AND STORAGE OF FURNITURE AND EQUIPMENT IN ORDER TO PREFORM THE WORK.

KEYED NOTES:

- 1. SALVAGE CONTROL WIRING TO VAV AND PREPARE FOR RECONNECTION.
- 2. REMOVE VAV AND ASSOCIATED DUCT WORK AS NECESSARY. REMOVE DISCHARGE AIR SENSOR ASSOCIATED WITH VAV.



KEY PLAN
SCALE: NO SCALE

11/07/2024 8:32:02 AM G:\Shared\Projects\2024192\3 - Design\3.05 - Drawing Files\3.05.1 - Working Drawings\MD112.dwg



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502 South West Street Indianapolis, Indiana 46225 317.631.9241 5510 Six Forks Road, Suite 270 Raleigh, North Carolina 27609 919.703.4026

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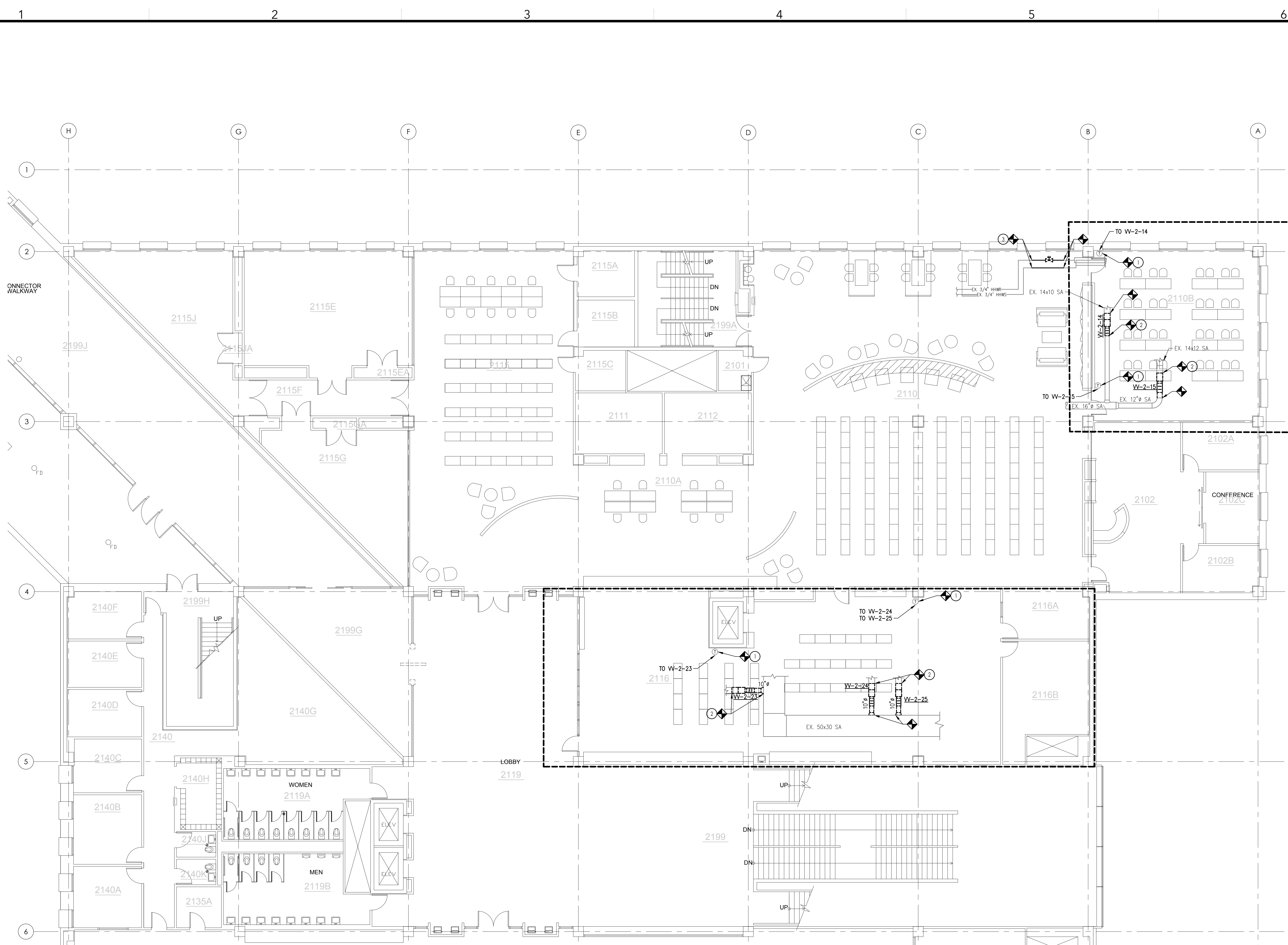
Indiana University - University Library HVAC Improvements and LED Lighting Upgrade Indianapolis, IN

MARK	DATE	DESCRIPTION
0	10.28.24	ISSUED FOR BID
1	11.07.24	ADDENDUM-01

PROJECT NO: 2024192
 DATE: 07.01.2024
 DRAWN BY: KPV
 CHECKED BY: N/A
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SECOND FLOOR NORTH MECHANICAL DEMOLITION

MD121



GENERAL NOTES:

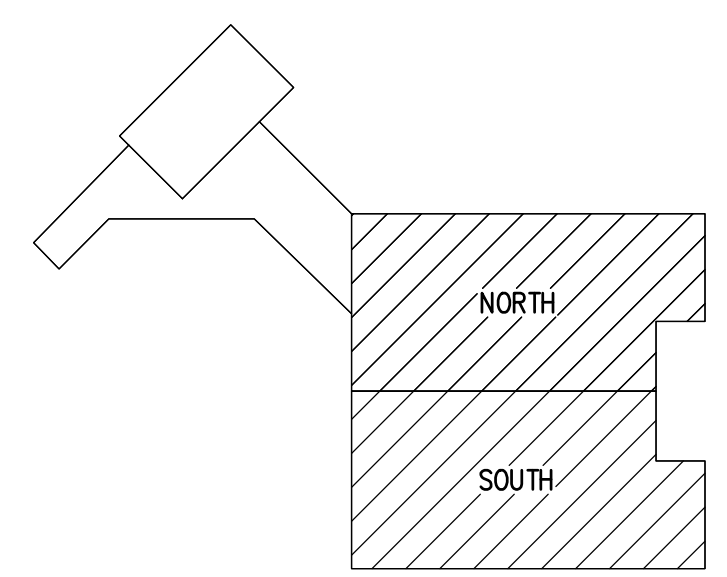
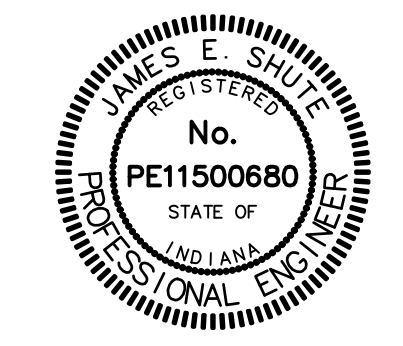
- DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
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KEYED NOTES:

- SALVAGE CONTROL WIRING TO VAV AND PREPARE FOR RECONNECTION.
- REMOVE VAV AND ASSOCIATED DUCT WORK AS NECESSARY. REMOVE DISCHARGE AIR SENSOR ASSOCIATED WITH VAV.
- REMOVE CONTROL VALVE ASSEMBLY; REMOVE ASSOCIATED WIRING AS NECESSARY. PREPARING PIPING FOR RECONNECTION.

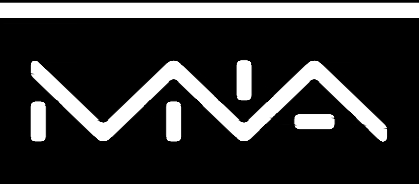


1 SECOND FLOOR NORTH MECHANICAL DEMOLITION PLAN SCALE: 1/8" = 1'-0"



KEY PLAN SCALE: NO SCALE

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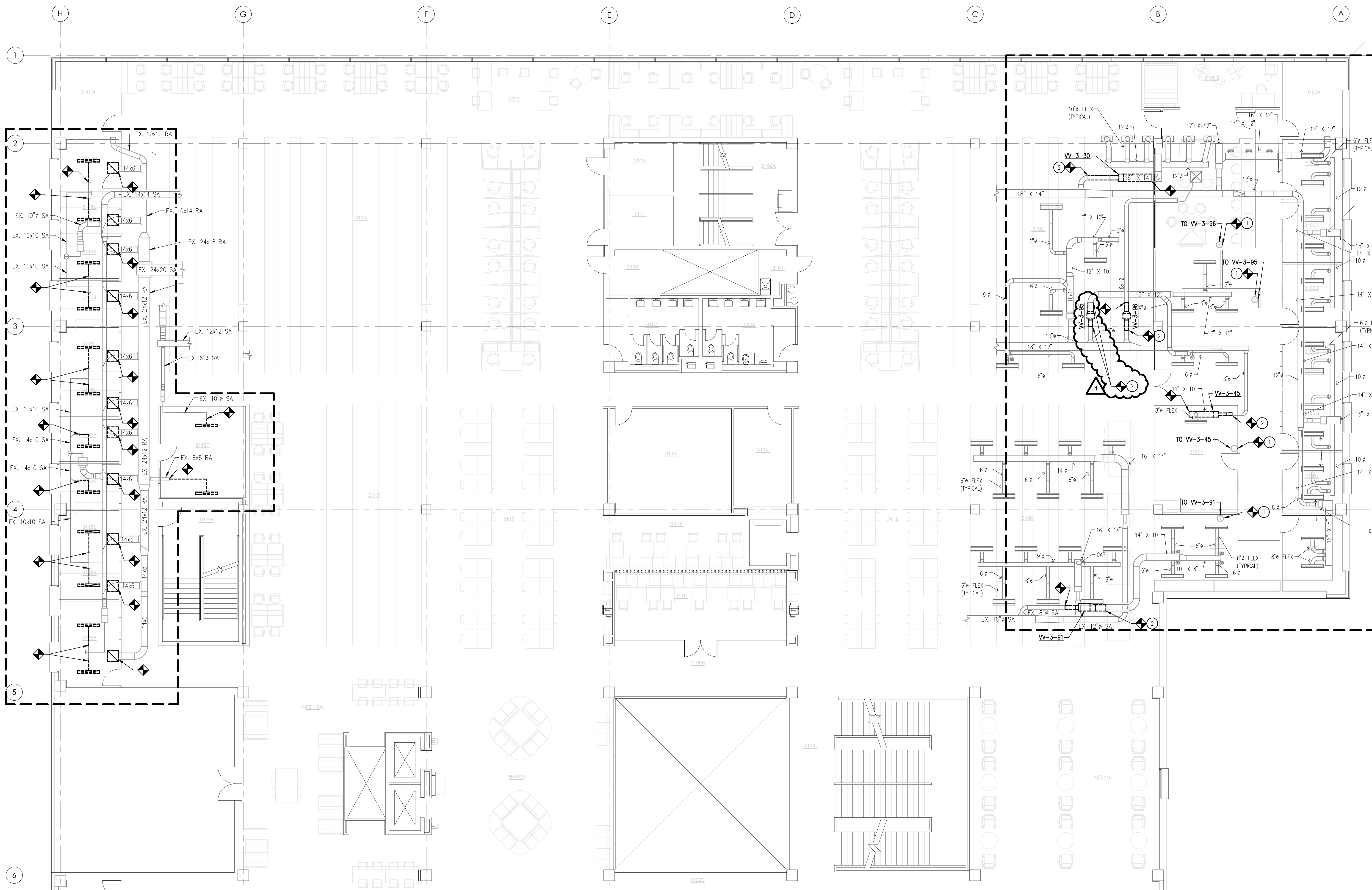
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317.631.9241

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Indianapolis, IN**



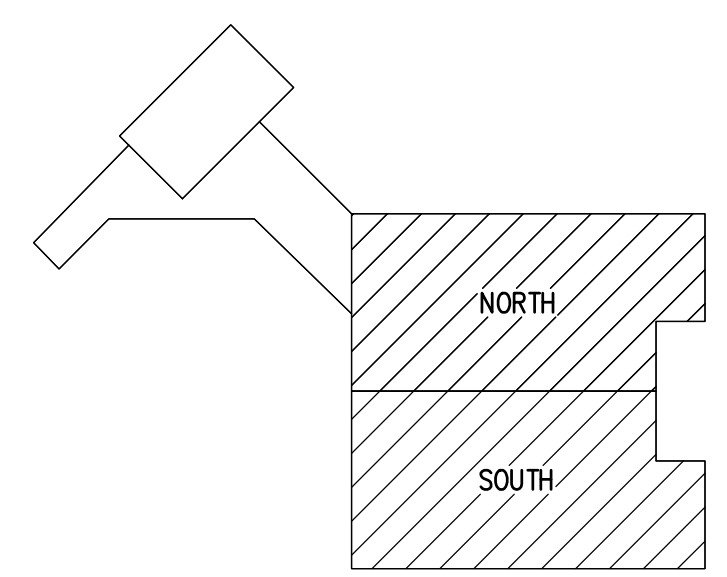
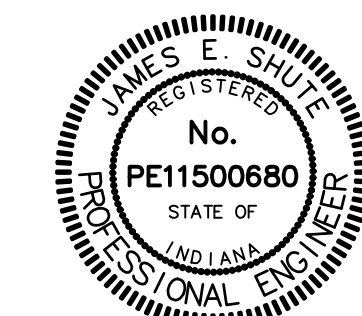
1 THIRD FLOOR NORTH MECHANICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- G1. DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
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KEYED NOTES:

1. SALVAGE CONTROL WIRING TO VAV AND PREPARE FOR RECONNECTION.
2. REMOVE VAV AND ASSOCIATED DUCT WORK AS NECESSARY. REMOVE DISCHARGE AIR SENSOR ASSOCIATED WITH VAV.



KEY PLAN
SCALE: NO SCALE

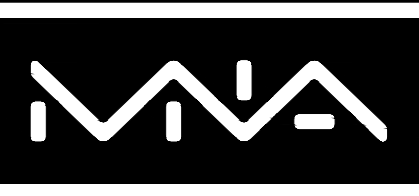
MARK	DATE	DESCRIPTION
0	10.28.24	ISSUED FOR BID
1	11.07.24	ADDENDUM-01

PROJECT NO:	2024192
DATE:	07.01.2024
DRAWN BY:	KPV
CHECKED BY:	N/A
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SHEET TITLE:
THIRD FLOOR NORTH MECHANICAL DEMOLITION

MD131

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HVAC Improvements and LED Lighting Upgrade
Indianapolis, IN

MARK	DATE	DESCRIPTION
0	10.28.24	ISSUED FOR BID
1	11.07.24	ADDENDUM-01

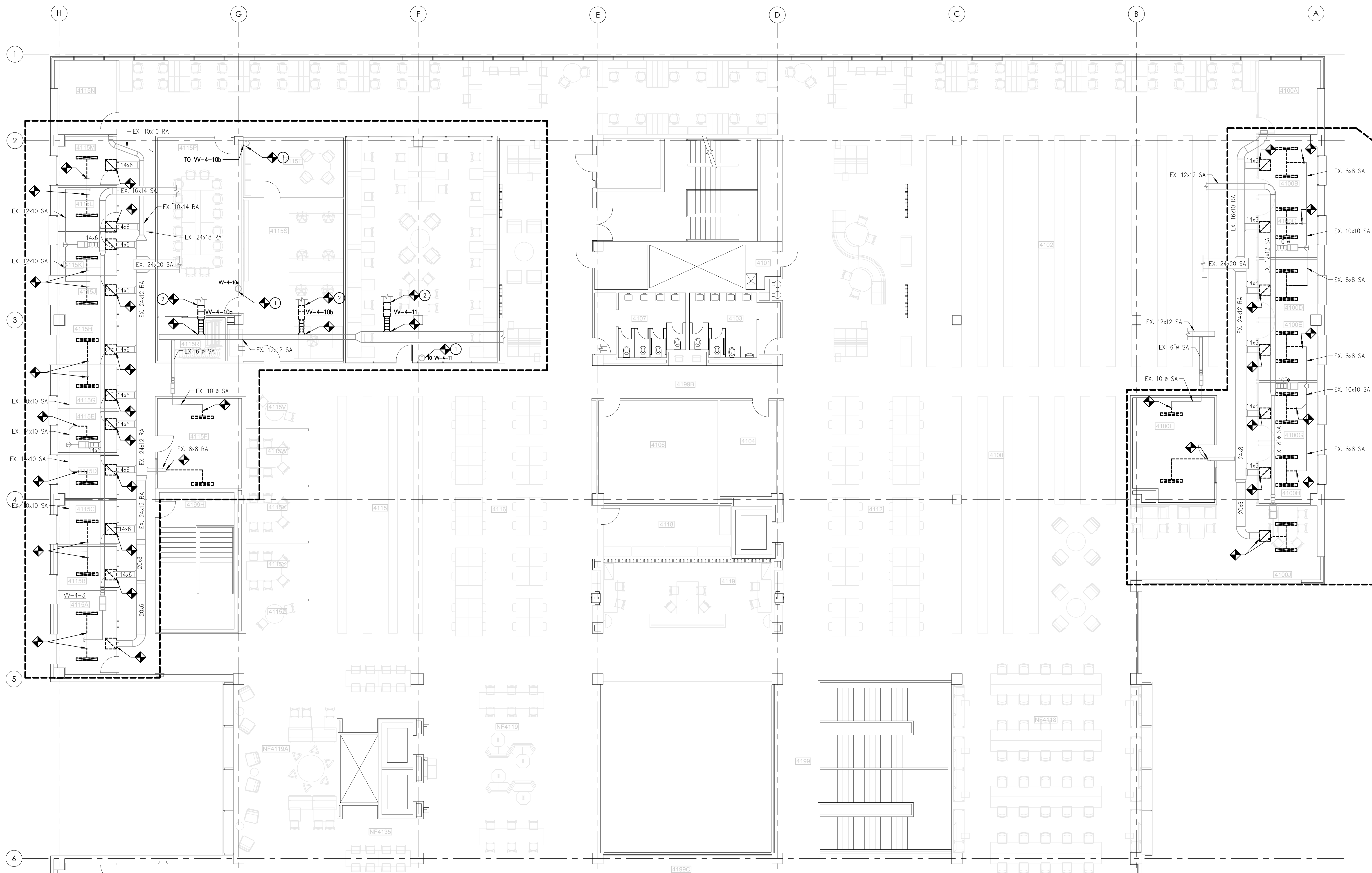
REVISION BLOCK

PROJECT NO:	2024192
DATE:	07.01.2024
DRAWN BY:	KPV
CHECKED BY:	N/A
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SHEET TITLE:

FOURTH FLOOR NORTH MECHANICAL DEMOLITION

M141



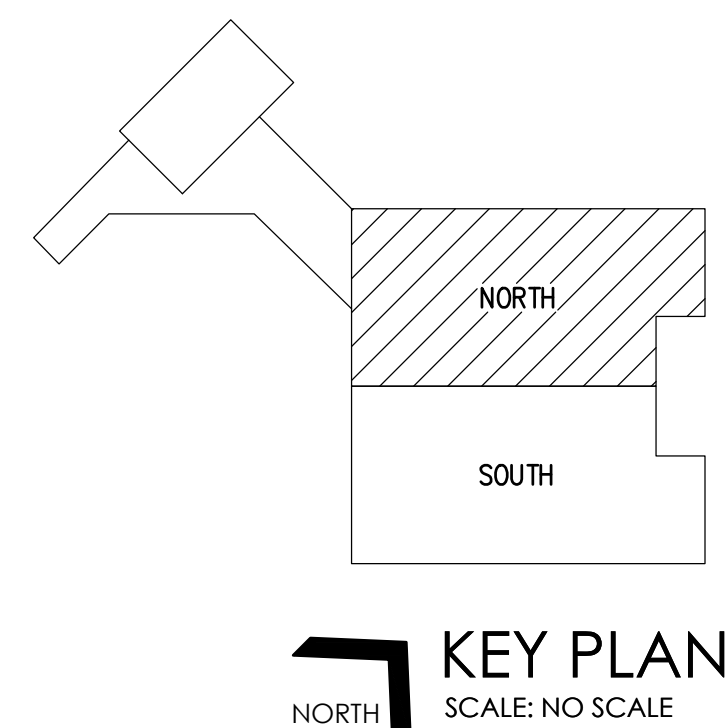
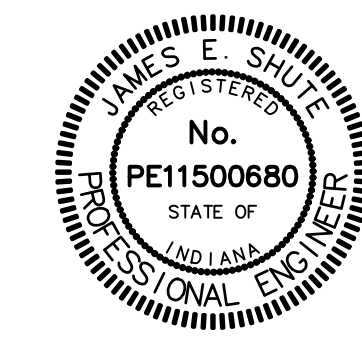
FOURTH FLOOR NORTH MECHANICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

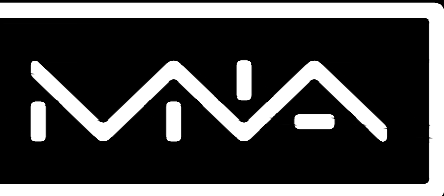
- G1. DRAWINGS DEPICT GENERAL LAYOUT AND DO NOT SHOW ALL REQUIRED FITTINGS AND OFFSETS THAT MAY BE NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS BASED ON FIELD MEASUREMENTS AND COORDINATION WITH OTHER TRADES AND EXISTING UTILITIES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. MODIFICATIONS TO SIZING OF PIPE AND DUCTWORK TO AVOID INTERFERENCE AND MEET CLEARANCES SHALL BE CALLED OUT ON SHOP DRAWINGS FOR APPROVAL BY OWNER AND ENGINEER PRIOR TO FABRICATION.
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11/07/2024 8:31:38 AM G:\Shared\Projects\2024192\3 - Design\3.05 - Drawing Files\3.05.1 - Working Drawings\M141.dwg



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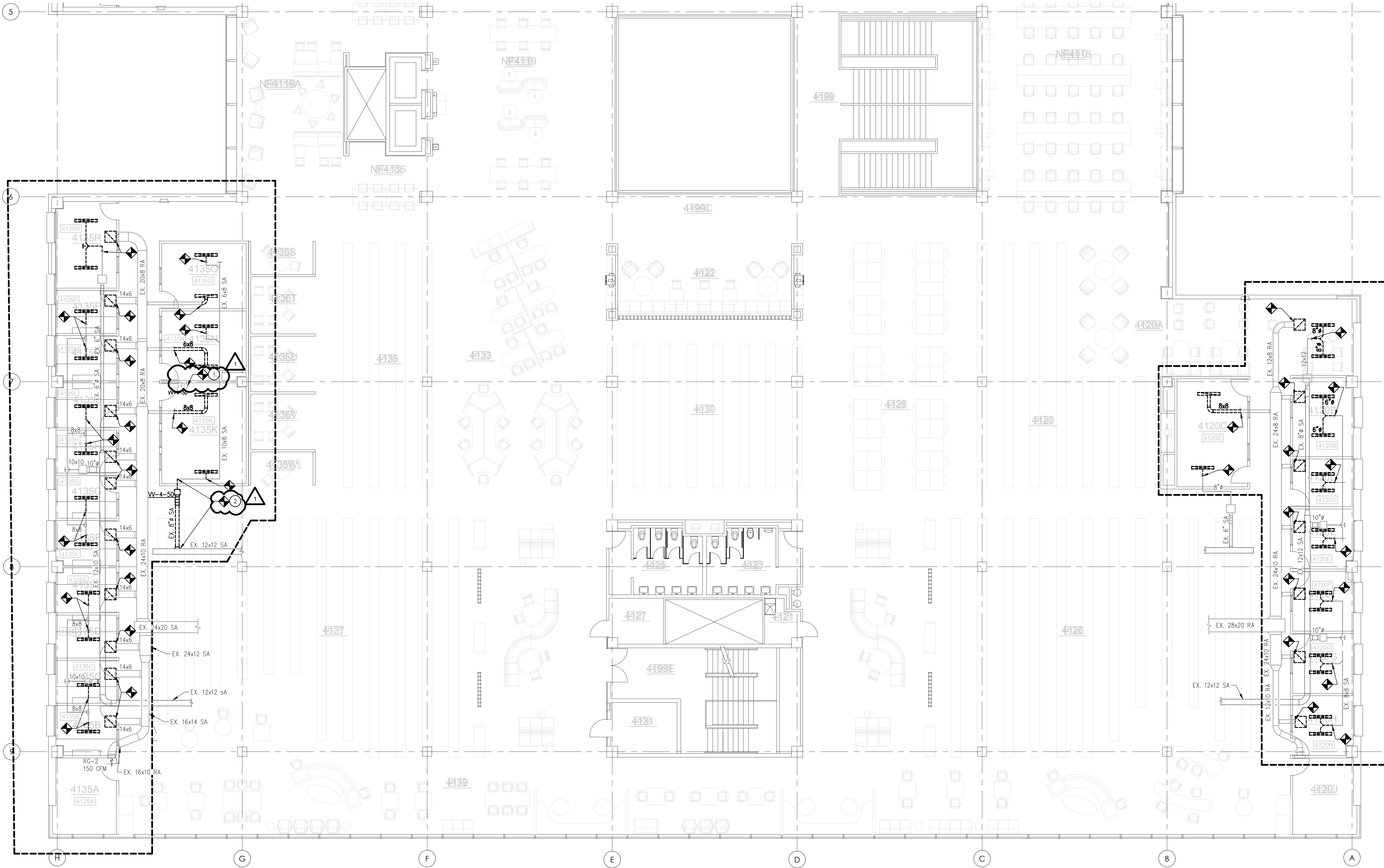
Indiana University - University Library HVAC Improvements and LED Lighting Upgrade Indianapolis, IN

MARK	DATE	DESCRIPTION
0	10.28.24	ISSUED FOR BID
1	11.07.24	ADDENDUM-01

PROJECT NO: 2024192
 DATE: 07.01.2024
 DRAWN BY: KPV
 CHECKED BY: N/A
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SHEET TITLE: FOURTH FLOOR SOUTH MECHANICAL DEMOLITION

MD142



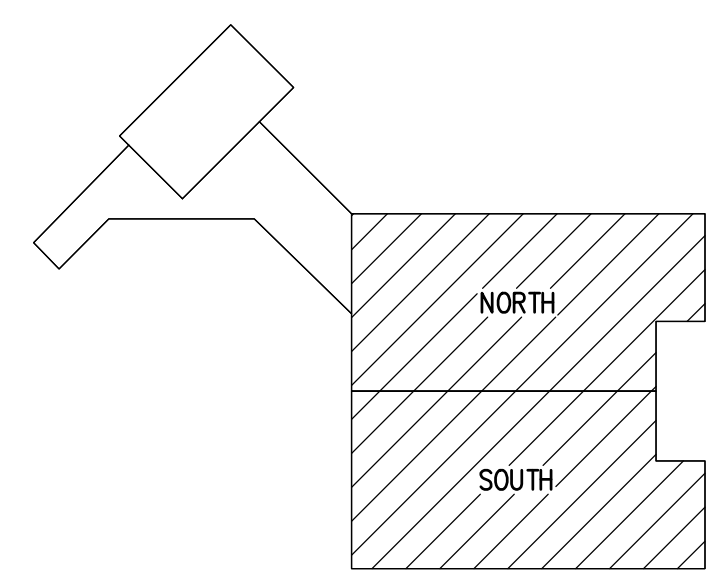
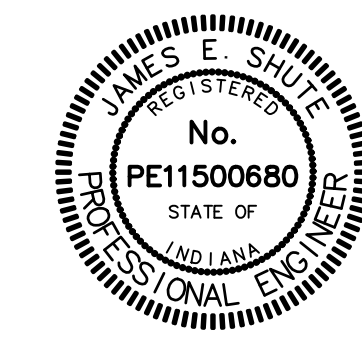
1 FOURTH FLOOR SOUTH MECHANICAL DEMOLITION PLAN SCALE: 1/8" = 1'-0"

GENERAL NOTES:

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KEY PLAN SCALE: NO SCALE

11/07/2024 8:30:54 AM G:\Shared\Projects\2024192\3 - Design\3.05 - Drawing Files\3.05.1 - Working Drawings\MD142.dwg

IUPUI University Library VAV

4N20-0210



Creating a better climate for business.

- Environmental Control System
- Facility Management System
- Air and Water System Balancing
- Fire Management System
- Security System
- Lighting Services
- Instrumentation System Installation
- Building Operations Management
- Energy Conservation Control
- Training Programs
- Performance Contracting
- Planned Service Agreements

Air Conditioning
 Heating
 Diagnostic Services
 Coil Cleaning
 Refrigeration
 Automatic Temperature Controls
 Facility Management Systems
 Fire Management
 Security Management
 Building Operations and Management
 Water Treatment
 Electrical Equipment
 Emergency Generator / Lighting Equipment
 Industrial Controls / Recording / Indication Equipment

<u>Page</u>	<u>Description</u>
0.0	Title Page Drawing
0.1	Communication Riser 1
0.2	Communication Riser 2
1.1	VAV - Flow Layout (SER)
1.2	VAV - Flow Layout (CLG)
1.3	VAV - Power Layout
R.1	Room Schedule 1
R.2	Room Schedule 2

PROJECT TITLE
IUPUI University Library VAV

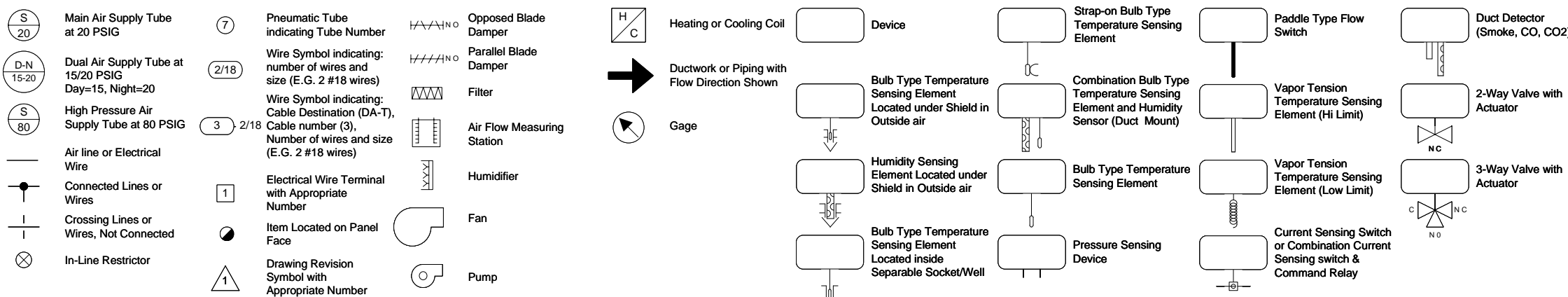
ARCHITECT	ENGINEER
Phone:	Phone:

MECHANICAL CONTRACTOR	ELECTRICAL CONTRACTOR
Phone:	Phone:

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY

			Branch Information BSNA - INDIANAPOLIS, IN 5920 Castleway West Dr, Indianapolis, Indiana 46250 Phone: 3176387611	
SALES ENGINEER JG	PROJECT MANAGER BS	APPLICATION ENGINEER DG	DATE 10/25/2024	CONTRACT NUMBER 4N20-0210

LEGEND

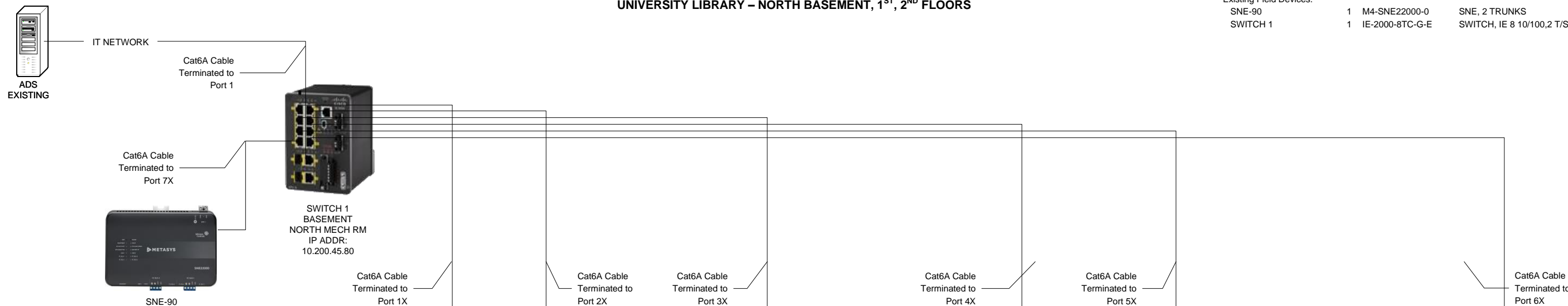


COMMUNICATION RISER DIAGRAM

UNIVERSITY LIBRARY – NORTH BASEMENT, 1ST, 2ND FLOORS

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Existing Field Devices:			
SNE-90	1	M4-SNE22000-0	SNE, 2 TRUNKS
SWITCH 1	1	IE-2000-8TC-G-E	SWITCH, IE 8 10/100,2 T/SFP



BASEMENT NORTH RING		
Tag	Address	Instance #
EN-01 / AHU-1/2A	162	881101
EN-09 / HWS	164	881102
EN-05 / AHU-2B, CHWS	159	881103
EN-AHU9 / AHU-9	170	881104
VV-L-1	125	881105
VV-L-2	126	881106
VV-L-3	127	881107
VV-L-4	128	881108
VV-L-5	129	881109
VV-L-11	130	881110
VV-L-12	131	881111
VV-L-13	132	881112
VV-L-16	133	881113
VAV-1	134	881114
VAV-2	135	881115
VAV-3	136	881116
VAV-4	137	881117
VAV-5	138	881118
VAV-6	139	881119
VAV-7	140	881120
VAV-8	141	881121
VAV-9	142	881122
VAV-10	143	881123
VAV-11	144	881124
VV-L-14	145	881125
VV-L-15	146	881126
VV-L-17	147	881127
VV-L-18	148	881128
VV-L-19	Field Verify	881129
VV-L-20	143	881130
VV-L-21	151	881131
VV-L-22	152	881132
VV-L-23	153	881133
VV-L-24	154	881134
VV-L-25	155	881135
VV-L-26	156	881136
VV-L-27	157	881137

1ST FLR NORTH RING			1ST FLR SOUTH RING		
Tag	Address	Instance #	Tag	Address	Instance #
VV-1-1	122	881201	VV-1-27	83	881234
VV-1-2	23	881202	VV-1-28	84	881235
VV-1-3	124	881203	VV-1-29	85	881236
VV-1-4	59	881204	VV-1-30	86	881237
VV-1-5	60	881205	VV-1-31	87	881238
VV-1-6	61	881206	VV-1-32A	88	881239
VV-1-7	62	881207	VV-1-32B	89	881240
VV-1-8	63	881208	VV-1-33	90	881241
VV-1-9	64	881209	VV-1-34	91	881242
VV-1-10	65	881210	VV-1-35	92	881243
VV-1-11	66	881211	VV-1-36	93	881244
VV-1-12	67	881212	VV-1-37	94	881245
VV-1-13	68	881213	VV-1-38	Field Verify	881246
VV-1-14	69	881214	VV-1-39	96	881247
VV-1-15	Field Verify	881215	VV-1-40	97	881248
VAV-1-16A	Field Verify	881216	VV-1-41	98	881249
VAV-1-16B	Field Verify	881217	VV-1-42	99	881250
VV-1-17	73	881218	VV-1-43	100	881251
VV-1-19	Field Verify	881219	VV-1-44	101	881252
VV-1-20	70	881220	VV-1-45	102	881253
VAV-1112-1	76	881221	VV-1-46	103	881254
VV-1-21	77	881222	VV-1-47	104	881255
VV-1-22	78	881223	VV-1-48	105	881256
VV-1-23	79	881224	VV-1-49	106	881257
VV-1-24	80	881225	VV-1-50	Field Verify	881258
VV-1-25	81	881226	VV-1-51	108	881259
VV-1-26	82	881227	VV-1-52	109	881260
VV-1-54	116	881228	VV-1-53	110	881261
VV-1-55	117	881229	TB-01	111	881262
VV-1-56	118	881230	TB-02	112	881263
VV-1-57	119	881231	TB-03	113	881264
VV-1-58	120	881232	TB-04	114	881265
VV-1-59	121	881233	TB-05	115	881266

2ND FLR NORTH RING		
Tag	Address	Instance #
VV-2-1	4	881301
VV-2-2	5	881302
VV-2-3	6	881303
VV-2-4	7	881304
VV-2-5	8	881305
VV-2-6	9	881306
VV-2-7	10	881307
VV-2-9	11	881308
VV-2-10	12	881309
VV-2-11	13	881310
VV-2-12	14	881311
VV-2-13	15	881312
VV-2-14	16	881313
VV-2-16	17	881314
VAV-2-16D	18	881315
VAV-2-16A	19	881316
VAV-2-16C	20	881317
VAV-2-16B	21	881318
VV-2-17	22	881319
VV-2-18	23	881320
VV-2-19	Field Verify	881321
VV-2-20	25	881322
VV-2-21	26	881323
VV-2-22	27	881324
VV-2-23	28	881325
VV-2-24	29	881326
VV-2-25	30	881327
VV-2-26	31	881328
VV-2-40	97	881329
VV-2-45	50	881330
VV-2-46	51	881331

2ND FLR SOUTH RING		
Tag	Address	Instance #
VV-2-27	Field Verify	881332
VV-2-28	33	881333
VV-2-29	34	881334
VV-2-30	35	881335
VV-2-31	36	881336
VV-2-32	37	881337
VV-2-33	38	881338
VV-2-34	39	881339
VV-2-35	40	881340
VV-2-36	41	881341
VV-2-37	42	881342
VV-2-38	43	881343
VV-2-39	44	881344
VV-2-41	46	881345
VV-2-42	47	881346
VV-2-43	48	881347
VV-2-44	49	881348
VV-2-47	52	881349
VV-2-48	53	881350
VV-2-49	54	881351
VV-2-50	55	881352
VV-2-51	56	881353
VV-2-52	57	881354

RISER REFLECTS ALL EXISTING CONTROLLERS IN UNIVERSITY LIBRARY. SEE ROOM SCHEDULE FOR A LIST OF BOXES BEING REPLACED.

Drawing Title		Riser Drawing 1									
Project Title		IUPUI University Library VAV		Branch Information		BSNA - INDIANAPOLIS, IN		5920 Castleway West Dr, Indianapolis, Indiana 46250		Phone: 3176387611	
Sales Engineer		Project Manager		Application Engineer		DRAWN		ECN		DATE	
JG		BS		DG		BY DRG DATE 10/25/2024		APPROVED		DATE	
								CONTRACT NUMBER		4N20-0210	
								DRAWING NUMBER		0.1	

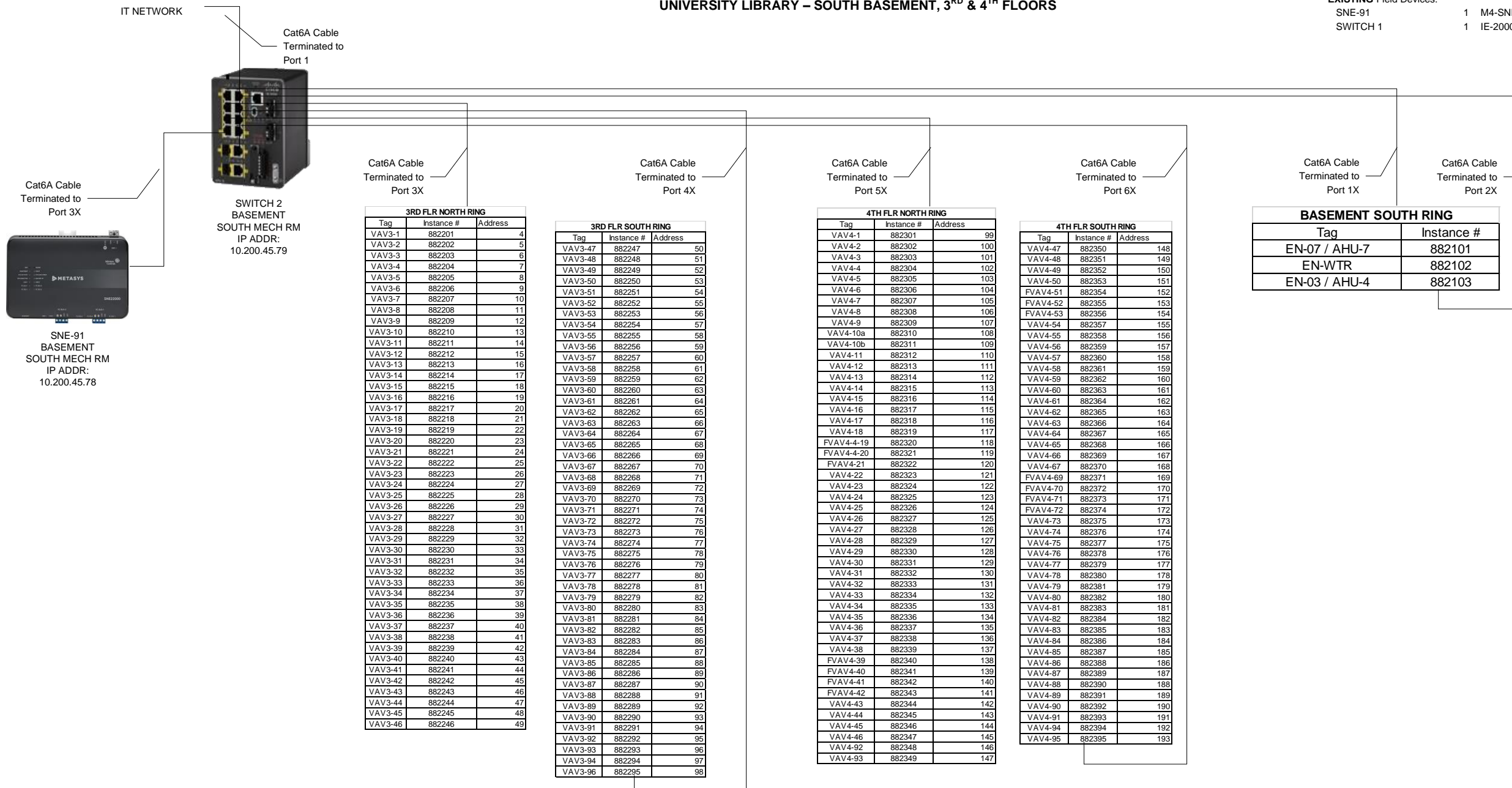


COMMUNICATION RISER DIAGRAM

UNIVERSITY LIBRARY – SOUTH BASEMENT, 3RD & 4TH FLOORS

BILL OF MATERIALS

Designation	Qty	Part Number	Description
EXISTING Field Devices:			
SNE-91	1	M4-SNE22000-0	SNE, 2 TRUNKS
SWITCH 1	1	IE-2000-8TC-G-E	SWITCH, IE 8 10/100,2 T/SFP

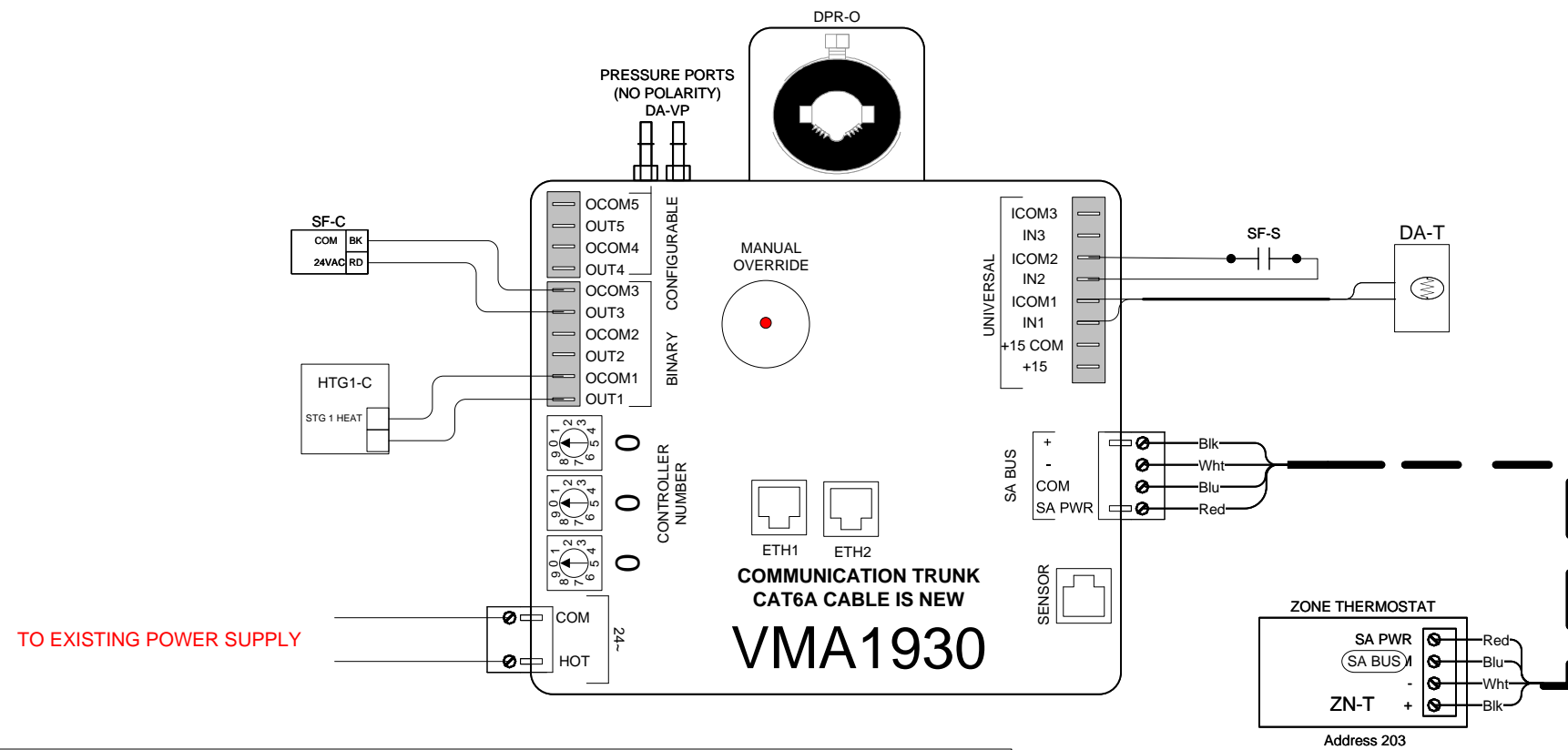
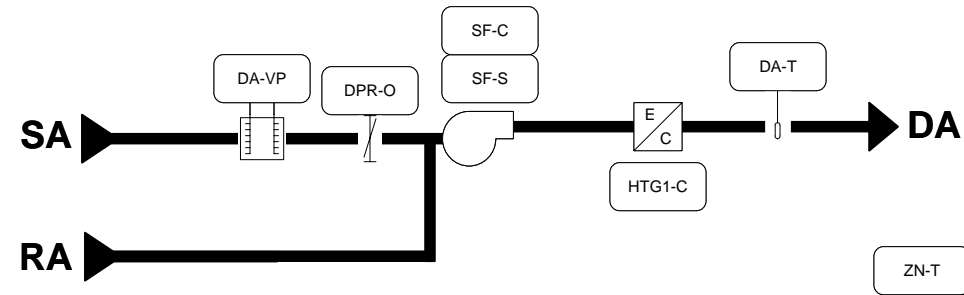


RISER REFLECTS ALL EXISTING CONTROLLERS IN UNIVERSITY LIBRARY. SEE ROOM SCHEDULE FOR A LIST OF BOXES BEING REPLACED.

Drawing Title Riser Drawing 2												
REFERENCE DRAWING			NO.			REVISION-LOCATION			ECN		DATE	
Sales Engineer	Project Manager	Application Engineer	DRAWN			APPROVED						
JG	BS	DG	BY	DRG	DATE	10/25/2024	BY	DATE				
Project Title IUPUI University Library VAV								Branch Information BSNA - INDIANAPOLIS, IN 5920 Castlewary West Dr, Indianapolis, Indiana 46250 Phone: 3176387611			CONTRACT NUMBER 4N20-0210	
Johnson Controls								DRAWING NUMBER 0.2				

VV-L-4 FLOW LAYOUT & WIRING DETAILS

LOCATED IN RM 0110
SERVING RM 0110



EXISTING CONTROL WIRING TO REMAIN EXCEPT FOR DA-T SENSOR. EXISTING POWER WIRING TO REMAIN.

EXISTING CONTROLLERS TO BE MOUNTED ON NEW BOX. EXISTING THERMOSTAT TO REMAIN. EXISTING POWER SUPPLY TO BE USED.

NEW DA-T SENSOR TO BE INSTALLED.

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Existing Field Devices:			
DA-T	1	TE-631GV-2	NICKEL DUCT PROB, 4 INCHES
SF-C	1	RIBU1C	SPDT, 10A, HC=10-30 VAC/DC, W/LED
SF-S	1	CSDSCM-C01050	CURR SW SELF CAL CLMP
VMA	1	MS-VMA1930-0	8 PT IP VAV; RTC
ZN-T	1	NS-BTN7003-0	3X4.5.T.TB.ADDRESSABLE
New Devices:			
DA-T	1	TE-631GV-2	NICKEL DUCT PROB, 4 INCHES

OCCUPIED MODE:

During this mode the series fan (SF-C) runs continuously. When the zone temperature (ZN-T) is between the occupied heating (EFFHTG-SP) and cooling (EFFCLG-SP) setpoints (inside of the bias), the primary air damper (DPR-O) will be at the minimum CFM (MINFLOW-SP) and there will be no mechanical heating. On a rise in zone temperature (ZN-T) above the cooling setpoint (EFFCLG-SP), the primary air damper (DPR-O) will increase the CFM (SA-F) up to the maximum flow (CLG-MAXFLOW) and there will be no mechanical heating. On a drop in zone temperature (ZN-T) below the heating setpoint (EFFHTG-SP), the reheat coil will stage the discharge air temperature (DA-T) up to the maximum delta T (MAX-DT) over heating setpoint (EFFHTG-SP) while the damper (DPR-O) is controlled to provide the minimum heating CFM (HTG-MINFLOW). Upon a continued decrease in zone temperature the damper modulates to the heating maximum flow (HTG-MAXFLOW) while maintaining discharge air temperature at the maximum delta T (MAX-DT) over the heating setpoint (EFFHTG-SP).

UNOCCUPIED MODE:

When in this mode, while the zone temperature (ZN-T) is between the unoccupied heating (EFFHTG-SP) and cooling (EFFCLG-SP) setpoints (inside of the bias), the primary air damper (DPR-O) will be at the minimum CFM (MINFLOW-SP) and there will be no mechanical heating, and the series fan (SF-C) will be off. On a rise in zone temperature (ZN-T) above the unoccupied cooling setpoint (EFFCLG-SP), the series fan (SF-C) will cycle on, the primary air damper (DPR-O) will increase the CFM (SA-F) up to the

maximum flow (CLG-MAXFLOW) and there will be no mechanical heating. On a drop in zone temperature (ZN-T) below the unoccupied heating setpoint (EFFHTG-SP), the series fan (SF-C) will cycle on, the reheat coil will stage the discharge air temperature (DA-T) up to the maximum delta T (MAX-DT) over heating setpoint (EFFHTG-SP) while the damper (DPR-O) is fully closed.

DISCHARGE AIR TEMP SENSOR:

A discharge air temp (DA-T) sensor is provided on each box for monitoring purposes.

UNIT ENABLE:

A network unit enable (UNITEN-MODE) signal will control the mode of the box.

All setpoints are adjustable.

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Drawing Title									
VV-L-4 - Flow Layout									
Project Title		IUPUI University Library VAV							
REFERENCE DRAWING	NO.	REVISION-LOCATION		ECN	DATE	BY			
Sales Engineer JG	Project Manager BS	Application Engineer DG	DRAWN	BY DRG	DATE 10/25/2024	BY	DATE		
Branch Information		BSNA - INDIANAPOLIS, IN		5920 Castleway West Dr, Indianapolis, Indiana 46250 Phone: 3176387611		CONTRACT NUMBER		4N20-0210	
Johnson Controls						DRAWING NUMBER		1.1	

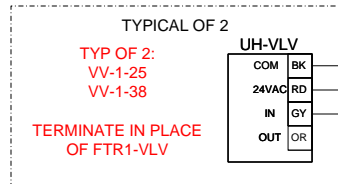
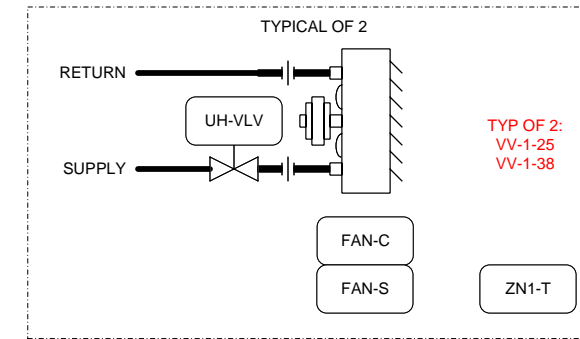
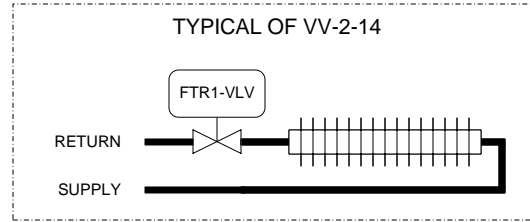
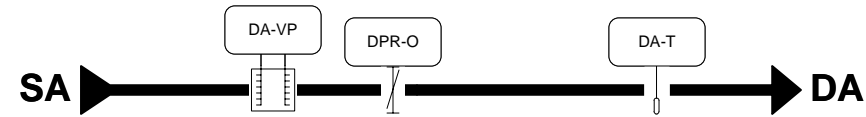
CLG VAV FLOW LAYOUT & WIRING DETAILS

LOCATED: SEE ROOM SCHEDULES
SERVING: SEE ROOM SCHEDULES

TYP OF 37

BILL OF MATERIALS

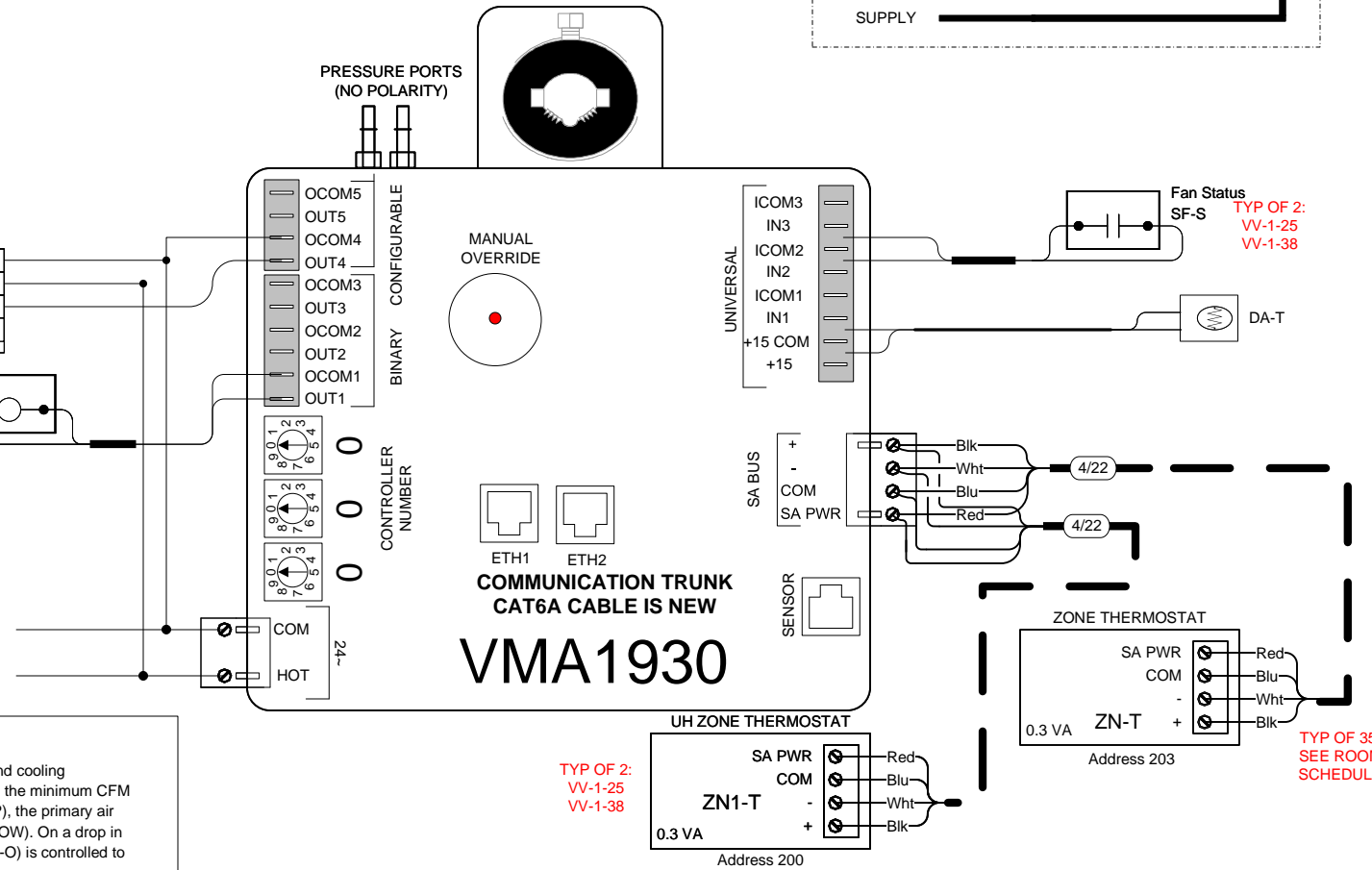
Designation	Qty	Part Number	Description
Existing Field Devices:			
DA-T	38	TE-631GV-2	NICKEL DUCT PROB,4 INCHES
FAN-C	2	RIBU1C	SPDT,10A,HC=10-30 VAC/DC,W/LED
FAN-S	2	CSDSCM-C01050	CURR SW SELF CAL CLMP
VMA	38	MS-VMA1930-0	8 PT IP VAV; RTC
ZN-T	28	NS-BTN7003-0	3X4.5.T.TB.ADDRESSABLE
	7	NSB8BTN040-0	NETWORK SENSOR, 3"X4.5" NO DISPLAY
ZN1-T	2	NS-BTN7003-0	3X4.5.T.TB.ADDRESSABLE
FTR1-VLV	1	VALVE	
New Devices:			
DA-T	38	TE-631GV-2	NICKEL DUCT PROB,4 INCHES



TYP OF 1:
VV-2-14

TYP OF 2:
VV-1-25
VV-1-38

TO EXISTING POWER SUPPLY



EXISTING CONTROL WIRING TO REMAIN EXCEPT FOR DA-T SENSORS. EXISTING POWER WIRING TO REMAIN

EXISTING CONTROLLERS TO BE MOUNTED ON NEW BOXES. EXISTING THERMOSTATS TO REMAIN. EXISTING POWER SUPPLY TO BE USED.

NEW DA-T SENSORS TO BE INSTALLED

FIELD VERIFY WIRING FOR VV-2-15

OCCUPIED MODE:

When the zone temperature (ZN-T) is between the occupied heating (EFFHTG-SP) and cooling (EFFCLG-SP) setpoints (inside of the bias), the primary air damper (DPR-O) will be at the minimum CFM (SA-F). On a rise in zone temperature (ZN-T) above the cooling setpoint (EFFCLG-SP), the primary air damper (DPR-O) will increase the CFM (SA-F) up to the maximum flow (CLG-MAXFLOW). On a drop in zone temperature (ZN-T) below the heating setpoint (EFFHTG-SP), the damper (DPR-O) is controlled to provide a minimum CFM (SA-F).

UNOCCUPIED MODE:

When in this mode, while the zone temperature (ZN-T) is between the unoccupied heating (EFFHTG-SP) and cooling (EFFCLG-SP) setpoints (inside of the bias), the primary air damper (DPR-O) will be at the minimum CFM (MINFLOW-SP). On a rise in zone temperature (ZN-T) above the unoccupied cooling setpoint (EFFCLG-SP), the primary air damper (DPR-O) will increase the CFM (SA-F) (if available) up to the maximum flow (CLG-MAXFLOW). On a drop in zone temperature (ZN-T) below the unoccupied heating setpoint (EFFHTG-SP), the primary air damper (DPR-O) will be at the minimum CFM (MINFLOW-SP).

DISCHARGE AIR TEMP SENSOR:

A discharge air temp (DA-T) sensor is provided on each box for monitoring purposes.

UNIT ENABLE:

A network unit enable (UNITEN-MODE) signal will control the mode of the box.

FIN TUBE RADIANT (RAD):

RAD systems will share the ZN-T with the VAV. The radiant heating coil will open whenever the outside air temperature is below 65°F. When ZN-T rises 2°F above the heating setpoint (EFFHTG-SP), the radiant heating coil valve (RADHTG-O) will modulate closed. Valve will be fully closed on zone temperature 3°F above the heating setpoint (EFFHTG-SP).

All setpoints are adjustable.

TYP OF 2:
VV-1-25
VV-1-38


TYP OF 35:
SEE ROOM SCHEDULE

Copyright Johnson Controls, 2024. All rights reserved. Reuse, copying, modification or alteration of the drawings and other information contained herein is strictly prohibited.		Drawing Title			
		VAV - Flow Layout			
Project Title		IUPUI University Library VAV			
REFERENCE DRAWING NO. REVISION-LOCATION ECN DATE BY Sales Engineer JG Project Manager BS Application Engineer DG DRAWN BY DRG DATE 10/25/2024 BY DATE		Branch Information BSNA - INDIANAPOLIS, IN 5920 Castleway West Dr, Indianapolis, Indiana 46250 Phone: 3176387611		CONTRACT NUMBER 4N20-0210 DRAWING NUMBER 1.2	
Johnson Controls					

VAV POWER LAYOUT

**EXISTING POWER SUPPLIES TO
BE USED.**

**FIELD VERIFY EXISTING POWER
WIRING.**

<p><small>Copyright Johnson Controls, 2024. All rights reserved. Reuse, copying, modification or alteration of the drawings and other information contained herein is strictly prohibited.</small></p>	<p>Drawing Title VAV - Power Layout</p>																		
	<p>Project Title IUPUI University Library VAV</p>		<p><small>Branch Information</small> BSNA - INDIANAPOLIS, IN 5920 Castleway West Dr, Indianapolis, Indiana 46250 Phone: 3176387611</p>		<p><small>CONTRACT NUMBER</small> 4N20-0210</p>														
	<p><small>REFERENCE DRAWING</small></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">NO.</th> <th style="width: 10%;">REVISION-LOCATION</th> <th style="width: 10%;">ECN</th> <th style="width: 10%;">DATE</th> <th style="width: 10%;">BY</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>		NO.	REVISION-LOCATION	ECN	DATE	BY						<p><small>APPROVED</small></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">DATE</th> <th style="width: 10%;">BY</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>		DATE	BY			
	NO.	REVISION-LOCATION	ECN	DATE	BY														
DATE	BY																		
<p><small>DRAWN</small></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">SALES ENGINEER</th> <th style="width: 10%;">PROJECT MANAGER</th> <th style="width: 10%;">APPLICATION ENGINEER</th> <th style="width: 10%;">BY</th> <th style="width: 10%;">DRG</th> <th style="width: 10%;">DATE</th> <th style="width: 10%;">BY</th> <th style="width: 10%;">DATE</th> </tr> <tr> <td>JG</td> <td>BS</td> <td>DG</td> <td> </td> <td> </td> <td>10/25/2024</td> <td> </td> <td> </td> </tr> </table>		SALES ENGINEER	PROJECT MANAGER	APPLICATION ENGINEER	BY	DRG	DATE	BY	DATE	JG	BS	DG			10/25/2024			<p><small>DRAWING NUMBER</small> 1.3</p>	
SALES ENGINEER	PROJECT MANAGER	APPLICATION ENGINEER	BY	DRG	DATE	BY	DATE												
JG	BS	DG			10/25/2024														

ROOM SCHEDULE

Box Location					Controller Information			Box Information							Comments	
Bldg./Flr.	Room No.	System Name	System Serving this Bldg	JCI Ctrl Dwg No.	Controller	Sensor	Box Heat	Supplemental Heat	Box Config							Required (N2)
									Config File Name	Inlet Size (Inches)	Inlet Area (Sq. Ft)	K Fact	Clg Min Flow	Clg Max Flow		Htg Max Flow
														Required		
UL-BAS NORTH	0110,	FVAVL-4		1.1	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	650	1300	720	SER FAN VAV
UL-1ST FLOOR NORTH	1109	VAV1-5		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	400	800	400	CLG VAV
UL-1ST FLOOR NORTH	1109	VAV1-6		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	555	1110	555	CLG VAV
UL-1ST FLOOR NORTH	1109	VAV1-7		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	750	1480	740	CLG VAV
UL-1ST FLOOR NORTH	1109	VAV1-8		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	555	1110	555	CLG VAV
UL-1ST FLOOR NORTH	1109	VAV1-9		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	740	1480	740	CLG VAV
UL-1ST FLOOR NORTH	1109	VAV1-10		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	555	1110	555	CLG VAV
UL-1ST FLOOR NORTH	1109	VAV1-11		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	740	1480	740	CLG VAV
UL-1ST FLOOR NORTH	1109	VAV1-12		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	495	990	495	CLG VAV
UL-1ST FLOOR NORTH	1109A	VAV1-16A		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	225	450	225	CLG VAV
UL-1ST FLOOR NORTH	1112	VAV1-22		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	750	1500	750	CLG VAV
UL-1ST FLOOR NORTH	1110, 1110A, B, C	VAV1-24		1.2	MS-VMA1930-0	NS-BTN7003-0		Yes		10	0.55	1.96	670	1340	670	CLG VAV
UL-1ST FLOOR NORTH	1110D, E	VAV1-25		1.2	MS-VMA1930-0	NS-BTN7003-0		No		6	0.2	2.8	130	260	130	CLG VAV w/ UH
UL-1ST FLOOR NORTH	1116	VAV1-26		1.2	MS-VMA1930-0	NS-BTN7003-0		No		8	0.35	2.24	380	760	380	CLG VAV
UL-1ST FLOOR SOUTH	1125J	VAV1-34		1.2	MS-VMA1930-0	NS-BTN7003-0		No		7	0.27	2.34	300	600	300	CLG VAV
UL-1ST FLOOR SOUTH	1125	VAV1-35		1.2	MS-VMA1930-0	NS-BTN7003-0		No		12	0.79	2.03	850	1700	850	CLG VAV
UL-1ST FLOOR SOUTH	1125	VAV1-36		1.2	MS-VMA1930-0	NS-BTN7003-0		No		12	0.79	2.03	935	1870	935	CLG VAV
UL-1ST FLOOR SOUTH	1125	VAV1-37		1.2	MS-VMA1930-0	NS-BTN7003-0		No		12	0.79	2.03	850	1700	850	CLG VAV
UL-1ST FLOOR SOUTH	1125F, G, H, J, K	VAV1-38		1.2	MS-VMA1930-0	NS-BTN7003-0		No		8	0.35	2.24	350	700	350	CLG VAV w/ UH
UL-1ST FLOOR SOUTH	1125A, B, C, D, E	VAV1-39		1.2	MS-VMA1930-0	NS-BTN7003-0		No		8	0.35	2.24	350	700	350	CLG VAV
UL-1ST FLOOR SOUTH	1126A, C, D	VAV1-43		1.2	MS-VMA1930-0	NS-BTN7003-0		No		8	0.35	2.24	180	360	180	
UL-1ST FLOOR SOUTH	1140A, B, C, D, 1199C	VAV1-45		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	250	500	250	CLG VAV
UL-1ST FLOOR SOUTH	1140	VAV1-46		1.2	MS-VMA1930-0	NS-BTN7003-0		No		8	0.35	2.24	720	1440	720	CLG VAV
UL-1ST FLOOR SOUTH	1140	VAV1-48		1.2	MS-VMA1930-0	NS-BTN7003-0		No		8	0.35	2.24	205	405	205	CLG VAV
UL-1ST FLOOR SOUTH	1140	VAV1-49		1.2	MS-VMA1930-0	NS-BTN7003-0		No		8	0.35	2.24	205	405	205	CLG VAV
UL-2ND FLOOR NORTH	2110B	VAV2-14		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	495	990	495	CLG VAV w/ RAD
UL-2ND FLOOR NORTH	2110B	VAV2-15		1.2	MS-VMA1930-0	Field Verify		No		10	0.55	1.96	440	880	440	Field Verify
UL-2ND FLOOR NORTH	2116	VAV2-23		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	480	960	480	CLG VAV
UL-2ND FLOOR NORTH	2116	VAV2-24		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	600	1200	600	CLG VAV
UL-2ND FLOOR NORTH	2116	VAV2-25		1.2	MS-VMA1930-0	NS-BTN7003-0		No		10	0.55	1.96	600	1200	900	CLG VAV

**BOXES TO BE REPLACED.
EXISTING CONTROLLERS AND
WIRING TO REMAIN.**

Drawing Title										
Room Schedule 1										
REFERENCE DRAWING		NO.		REVISION-LOCATION		ECN		DATE		
Sales Engineer	Project Manager	Application Engineer	DRAWN		APPROVED					
JG	BS	DG	BY DRG	DATE 10/25/2024	BY	DATE				
Project Title		Branch Information		CONTRACT NUMBER						
IUPUI University Library VAV		BSNA - INDIANAPOLIS, IN 5920 Castleway West Dr, Indianapolis, Indiana 46250 Phone: 3176387611		4N20-0210		DRAWING NUMBER		R.1		

ROOM SCHEDULE

Box Location				Controller Information											
Bldg./Flr.	Room No.	System Name	BAS TAG	System Serving this Bc	JCI Ctrl Dwg No.	Controller	Sensor	Box Heat	Supplemental Heat	Required					Comments
						Controller Part No.	Code No.			Inlet Size (Inche	Inlet Area (Sq. F	K Fact	Clg Max Flow	Htg Max Flow	
UL-3RD FLOOR NORTH	3102, 3100P	VAV3-33	088_AHU5_VAV-3102	AHU-5	1.2	MS-VMA1930-0		No	No	10	0.55	1.96	1,120	900	CLG VAV
UL-3RD FLOOR NORTH	3100L	VAV3-45	088_AHU5_VAV_3100F	AHU-5	1.2	MS-VMA1930-0	NSB8BTN040-0	No	No	8	0.35	2.24	325	165	CLG VAV
UL-3RD FLOOR SOUTH	3100P	VAV3-96	088_AHU4_VAV_3100P	AHU-4	1.2	MS-VMA1930-0	NSB8BTN040-0	No	No	8	0.35	2.24	500	250	CLG VAV
UL-3RD FLOOR SOUTH	3102	VAV3-91		AHU-5	1.2	MS-VMA1930-0		No	No	8	0.35	2.24	520	260	CLG VAV
UL-3RD FLOOR SOUTH	3102	VAV3-95		AHU-5	1.2	MS-VMA1930-0	NSB8BTN040-0	No	No	8	0.35	2.24	700	350	CLG VAV
UL-4TH FLOOR NORTH	4115R, P	VAV4-10a	088_AHU4_VAV_4115P	AHU-4	1.2	MS-VMA1930-0	NSB8BTN040-0	No	No	8	0.35	2.24	730	365	CLG VAV
UL-4TH FLOOR NORTH	4115S, T	VAV4-10b	088_AHU4_VAV_4115T	AHU-4	1.2	MS-VMA1930-0	NSB8BTN040-0	No	No	8	0.35	2.24	475	240	CLG VAV
UL-4TH FLOOR NORTH	4115U, 4199D	VAV4-11	088_AHU4_VAV_4115U	AHU-4	1.2	MS-VMA1930-0	NSB8BTN040-0	No	No	8	0.35	2.24	840	420	CLG VAV
UL-4TH FLOOR SOUTH	4135K, N, Q	VAV4-50	088_AHU7_VAV_4135K	AHU-8	1.2	MS-VMA1930-0	NSB8BTN040-0	No	No	8	0.35	2.24	870	435	CLG VAV

**BOXES TO BE REPLACED.
EXISTING CONTROLLERS AND
WIRING TO REMAIN.**

Drawing Title									
Room Schedule 2									
Project Title		IUPUI University Library VAV		Branch Information		BSNA - INDIANAPOLIS, IN 5920 Castleway West Dr, Indianapolis, Indiana 46250 Phone: 3176387611		CONTRACT NUMBER 4N20-0210	
Sales Engineer		Project Manager		Application Engineer		DRAWN		APPROVED	
JG		BS		DG		BY DRG DATE 10/25/2024		BY DATE	
				Johnson Controls				DRAWING NUMBER R.2	