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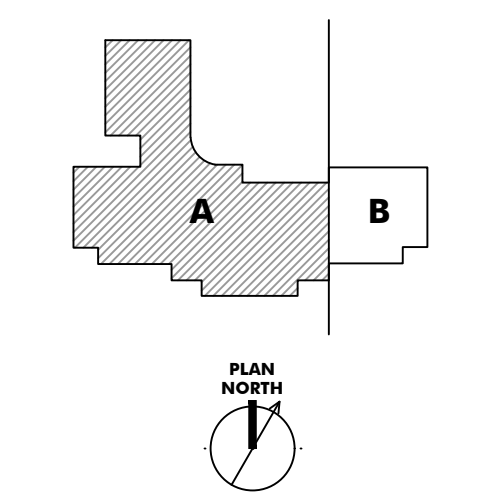
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CONSTRUCTION

KEY PLAN



ISSUE HISTORY

A	DATE	ISSUED FOR
1	2025-03-28	BID ISSUE

SHEET TITLE
**MECHANICAL DEMO
FIRST FLOOR PLAN -
SECTOR A**

DRAWING NUMBER

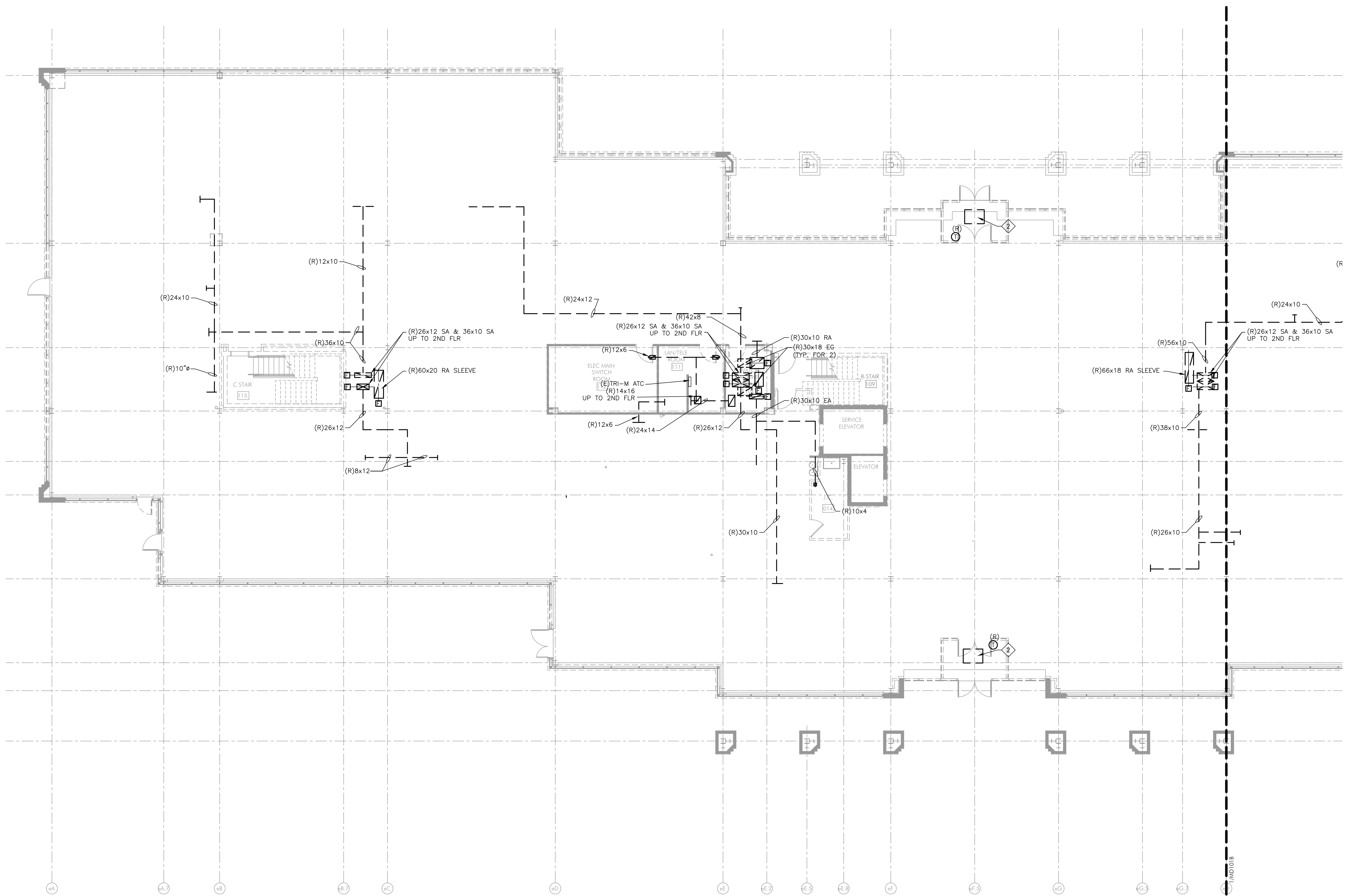
MD101A

DEMOLITION GENERAL NOTES:

1. REFER TO MD01 FOR FURTHER GENERAL DEMOLITION NOTES.
2. INFILL ALL FLOOR AND WALL PENETRATIONS WHERE DUCT, PIPING AND CONDUIT HAVE BEEN REMOVED. AT RATED FLOORS AND PARTITIONS INFILL WITH AN APPROVED 2 HOUR FIRE-RATED UL LISTED FIRE STOPPING MATERIAL. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
3. SALVAGE ALL REMOVED TRI-M SENSORS FOR REUSE.

DEMOLITION KEY NOTES:

1. REMOVE EXHAUST FAN IN ITS ENTIRETY, INCLUDING BUT NOT LIMITED TO, ASSOCIATED DUCTWORK, HANGERS, SUPPORTS AND CONTROLS.
2. REMOVE CABINET UNIT HEATER IN ITS ENTIRETY, INCLUDING BUT NOT LIMITED TO, ASSOCIATED HOT WATER PIPING PIPING, DUCTWORK, HANGERS, SUPPORTS, WALL MOUNTED THERMOSTAT AND CONTROLS. REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING OF CEILING.
3. REMOVE FAN POWERED VARIABLE AIR VOLUME BOX AND ALL ASSOCIATED HEATING COIL, CONTROLS, HANGERS AND SUPPORTS AND HOT WATER PIPING TO LIMITS SHOWN.

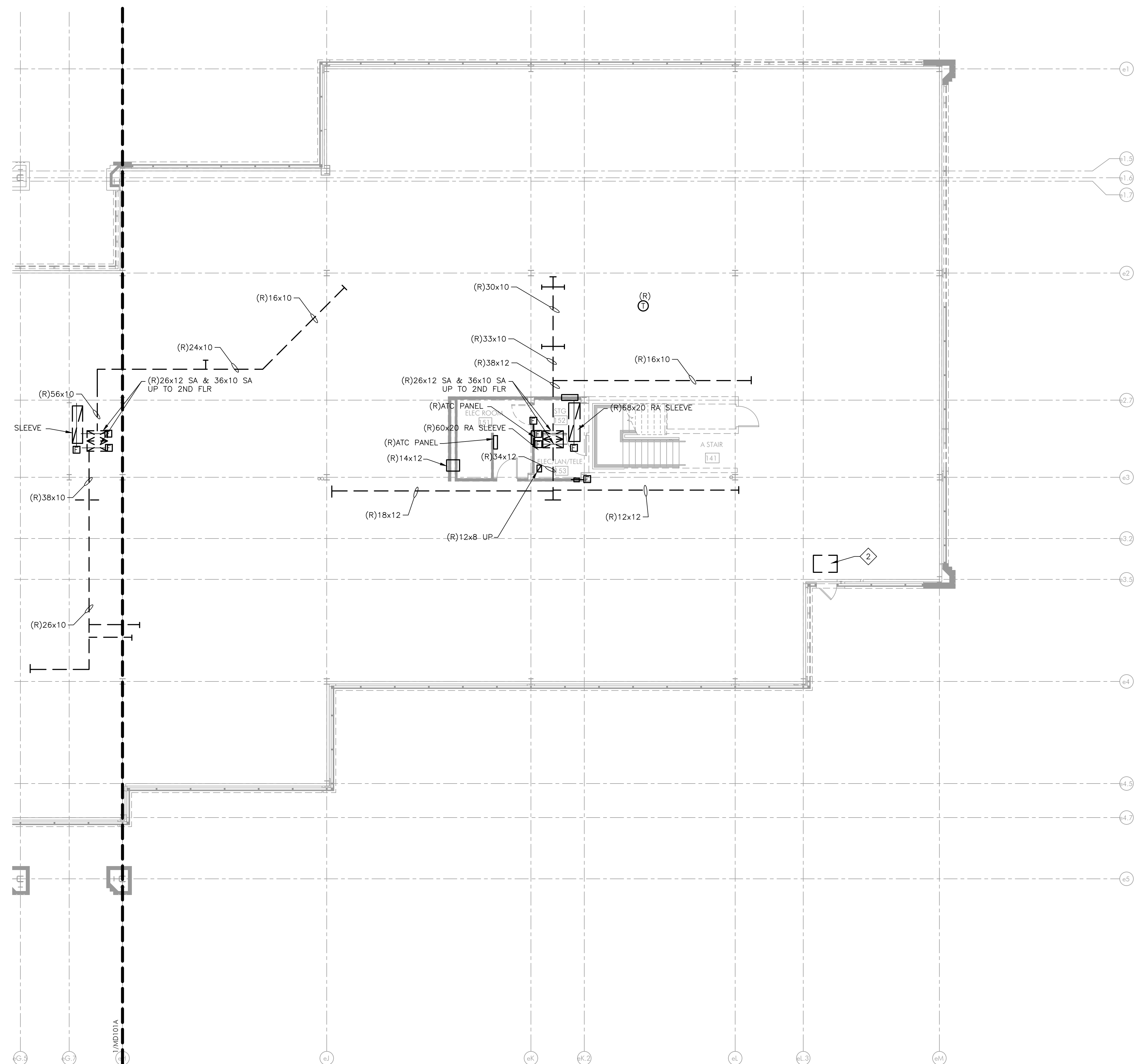


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MECHANICAL DEMO FIRST FLOOR PLAN - SECTOR B
SCALE: 1/8" = 1'-0"

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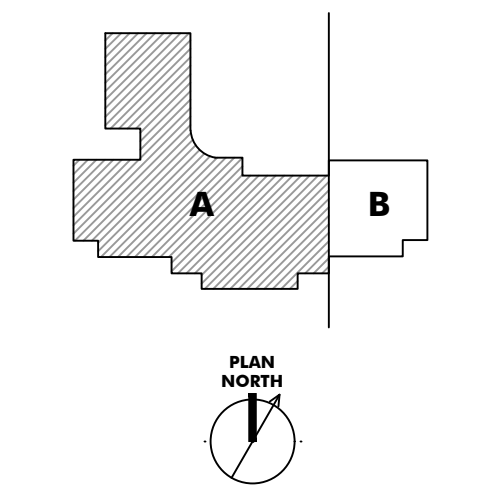
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SHEET TITLE
**MECHANICAL DEMO
SECOND FLOOR PLAN -
SECTOR A**

DRAWING NUMBER

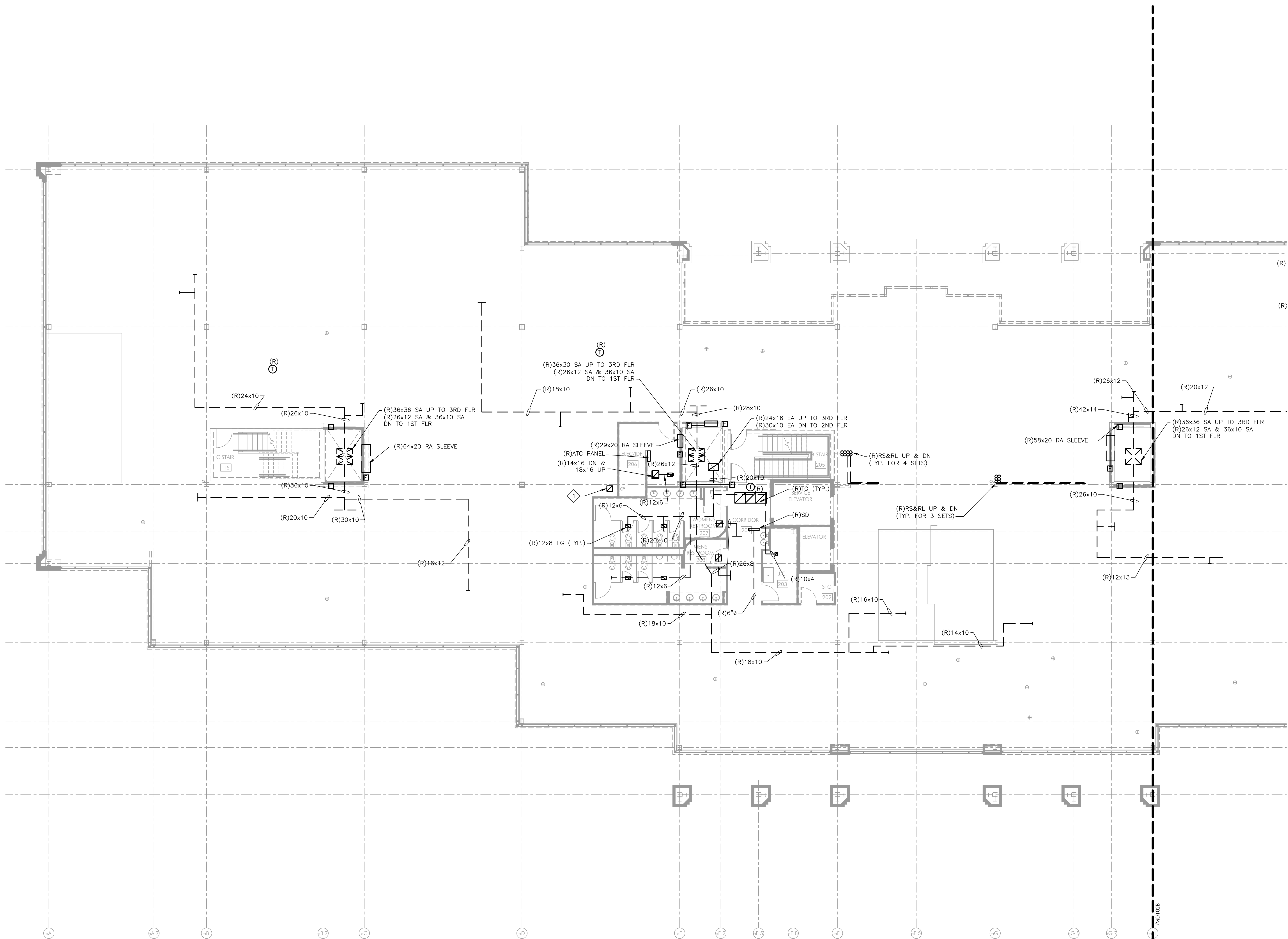
MD102A

DEMOLITION GENERAL NOTES:

1. REFER TO M001 FOR FURTHER GENERAL DEMOLITION NOTES.
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PLAN NORTH

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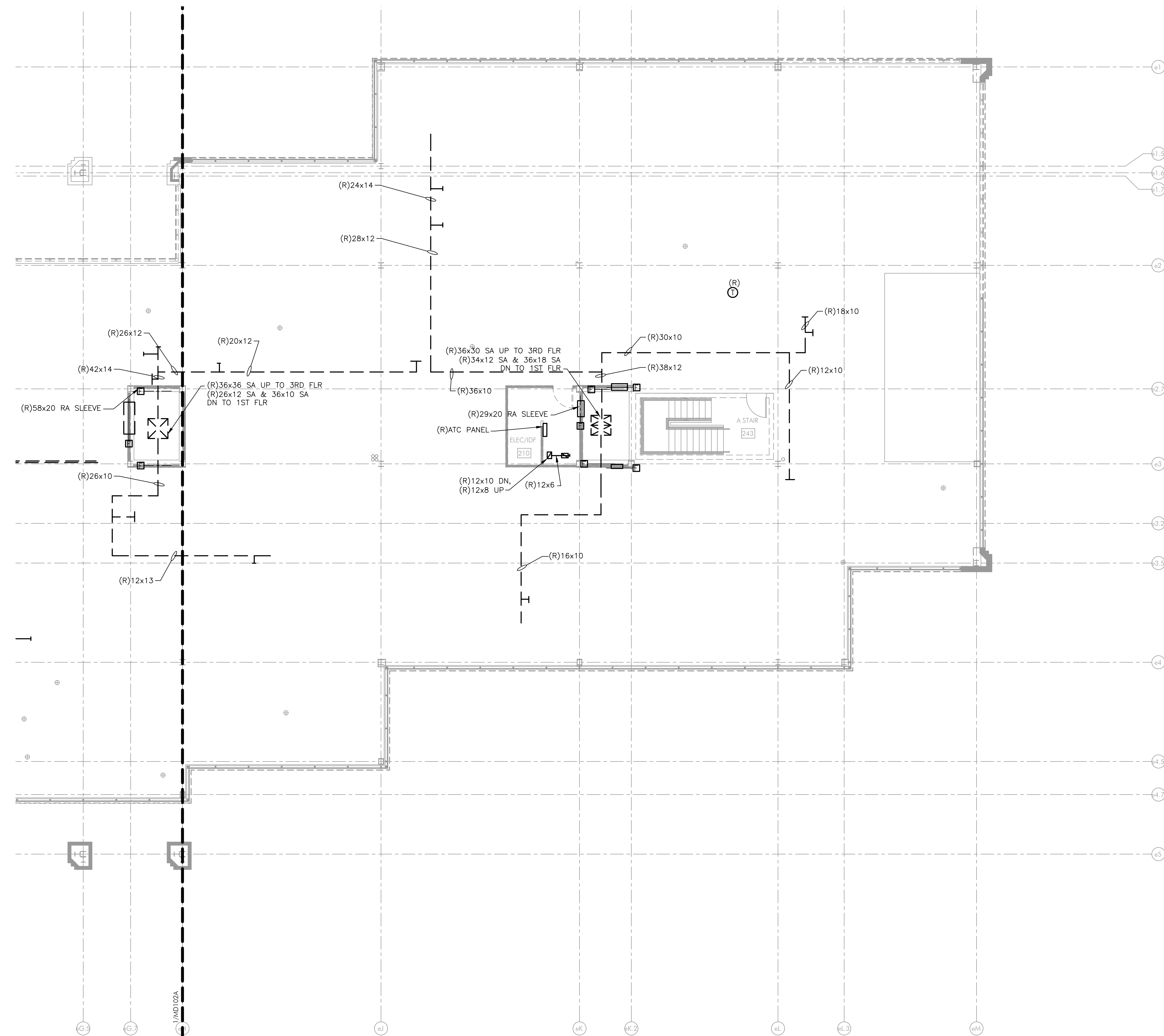
SHEET TITLE
MECHANICAL DEMO
SECOND FLOOR PLAN
SECTOR B

MD102B

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1 MECHANICAL DEMO SECOND FLOOR PLAN - SECTOR B
MD102B SCALE: 1/8" = 1'-0"

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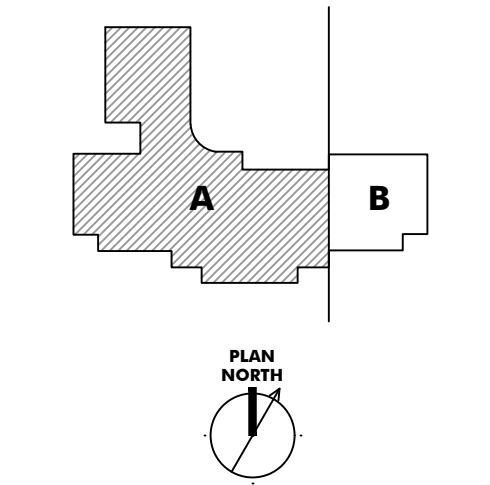
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SHEET TITLE
**MECHANICAL DEMO
THIRD FLOOR PLAN -
SECTOR A**

DRAWING NUMBER

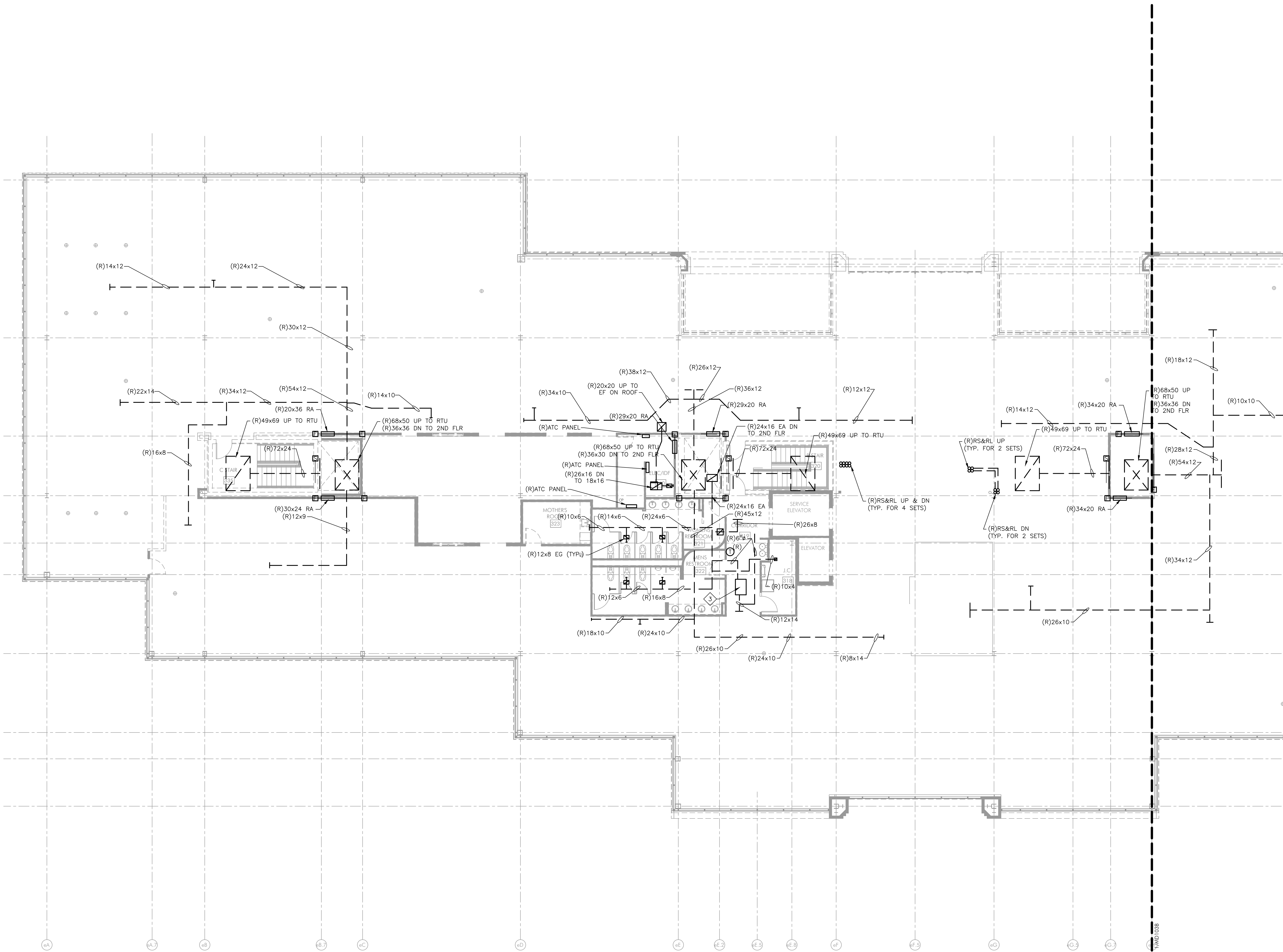
MD103A

DEMOLITION GENERAL NOTES:

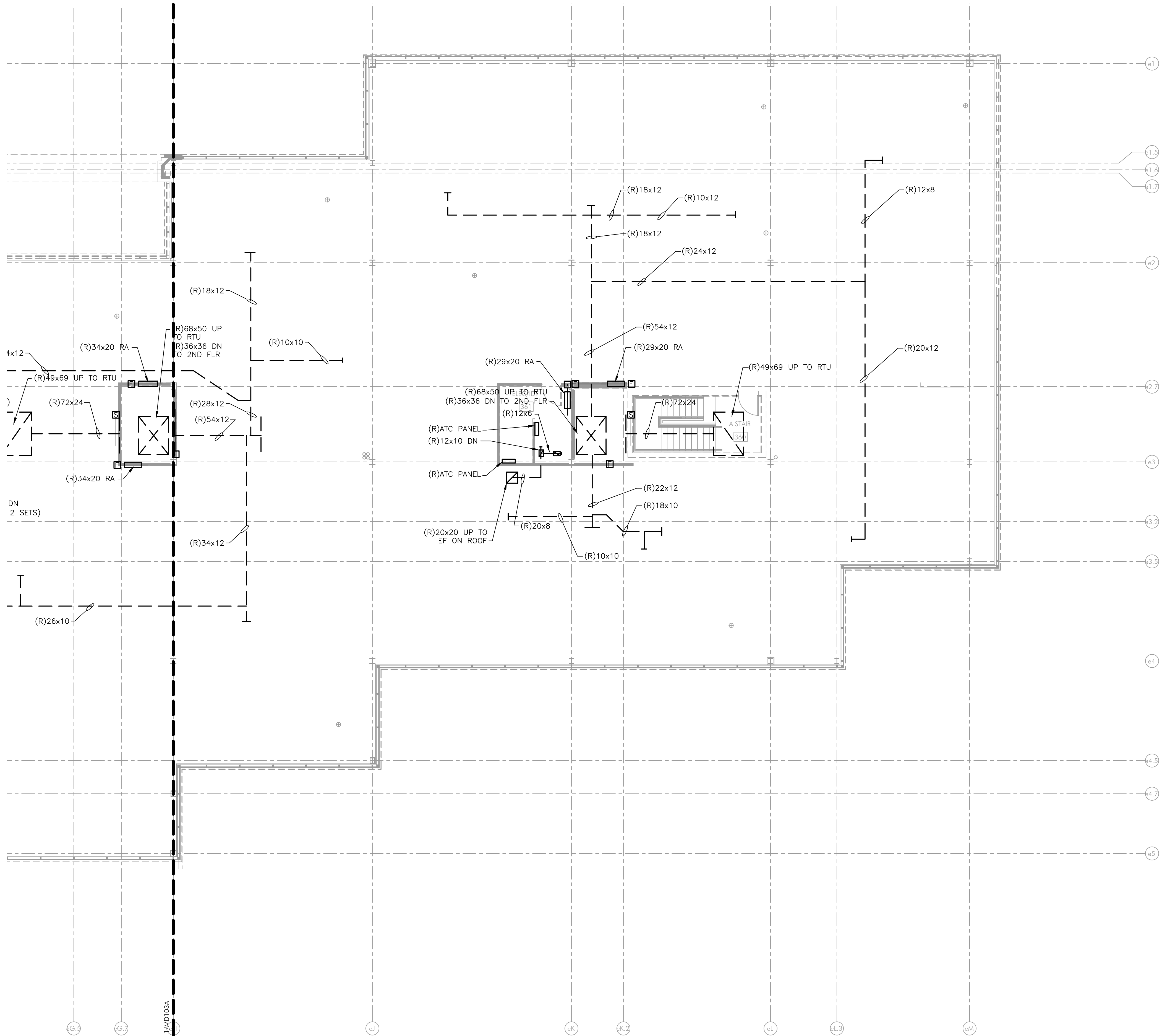
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MECHANICAL DEMO THIRD FLOOR PLAN - SECTOR B
MD103B SCALE: 1/8"=1'-0"

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HSA PROJECT # 23-037
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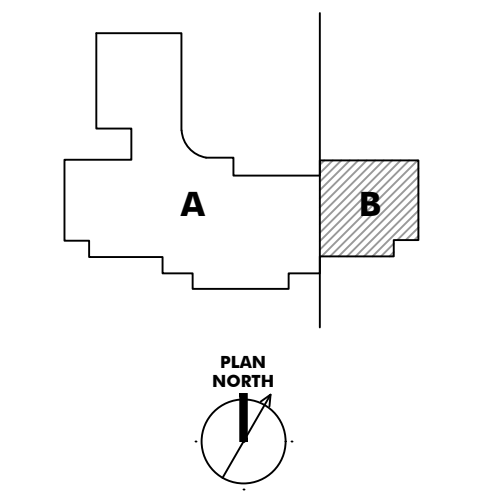
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ISSUE HISTORY

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SHEET TITLE
**MECHANICAL DEMO
THIRD FLOOR PLAN -
SECTOR B**

DRAWING NUMBER
MD103B

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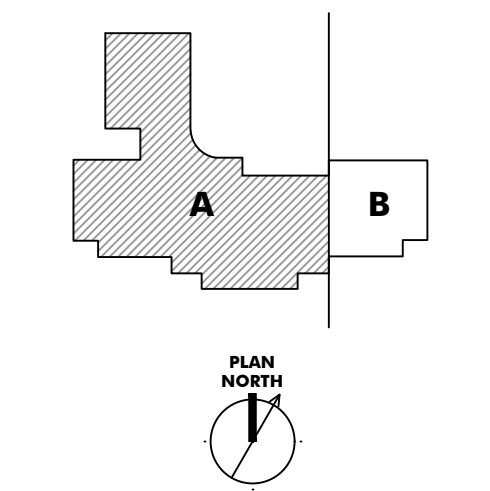
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ISSUE HISTORY

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SHEET TITLE
**MECHANICAL DEMO
ROOF PLAN -
SECTOR A**

DRAWING NUMBER

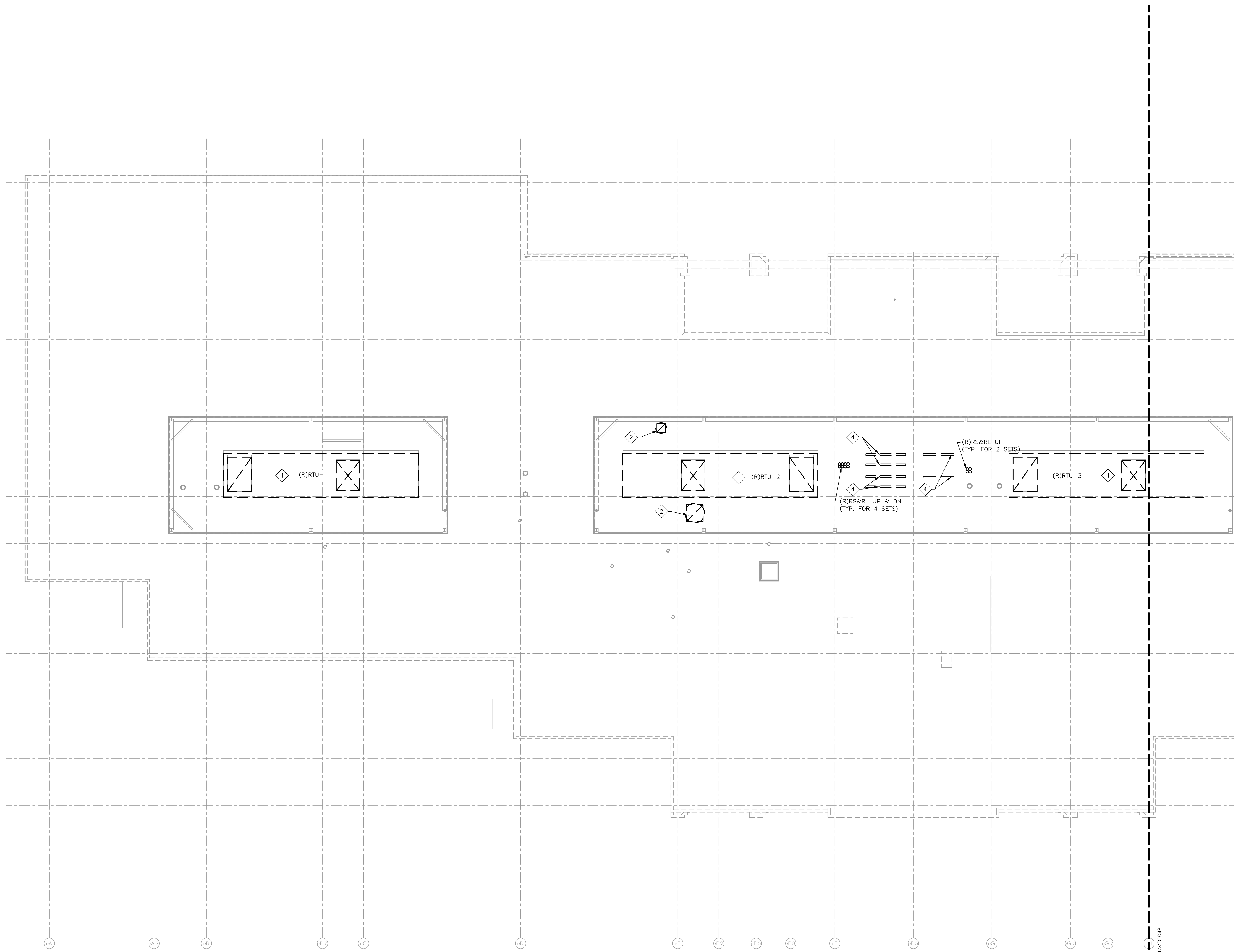
MD104A

DEMOLITION GENERAL NOTES:

1. REFER TO M001 FOR FURTHER GENERAL DEMOLITION NOTES.
2. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ROOF PATCHING & FLASHING.

DEMOLITION KEY NOTES:

1. REMOVE ROOF TOP UNIT IN ITS ENTIRETY, INCLUDING ALL DUCTWORK & CONDENSATE PIPING TO LIMITS SHOWN. VIBRATION ISOLATORS, ROOF CURB AND CONTROLS. REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING OF ROOF.
2. REMOVE EXHAUST FAN IN ITS ENTIRETY, INCLUDING DAMPER, ROOF CURB & CONTROLS. REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING OF ROOF.
3. REMOVE SPLIT SYSTEM CONDENSING UNIT IN ITS ENTIRETY, INCLUDING REFRIGERANT PIPING, PIPE PORTAL, ROOF SUPPORTS AND CONTROLS. REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING OF ROOF.
4. REMOVE EQUIPMENT RAILS. REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING OF ROOF.



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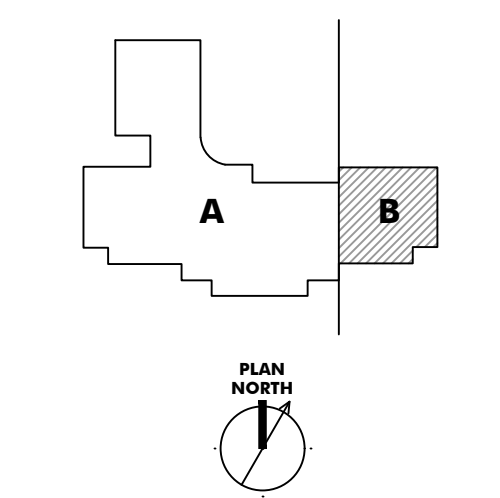
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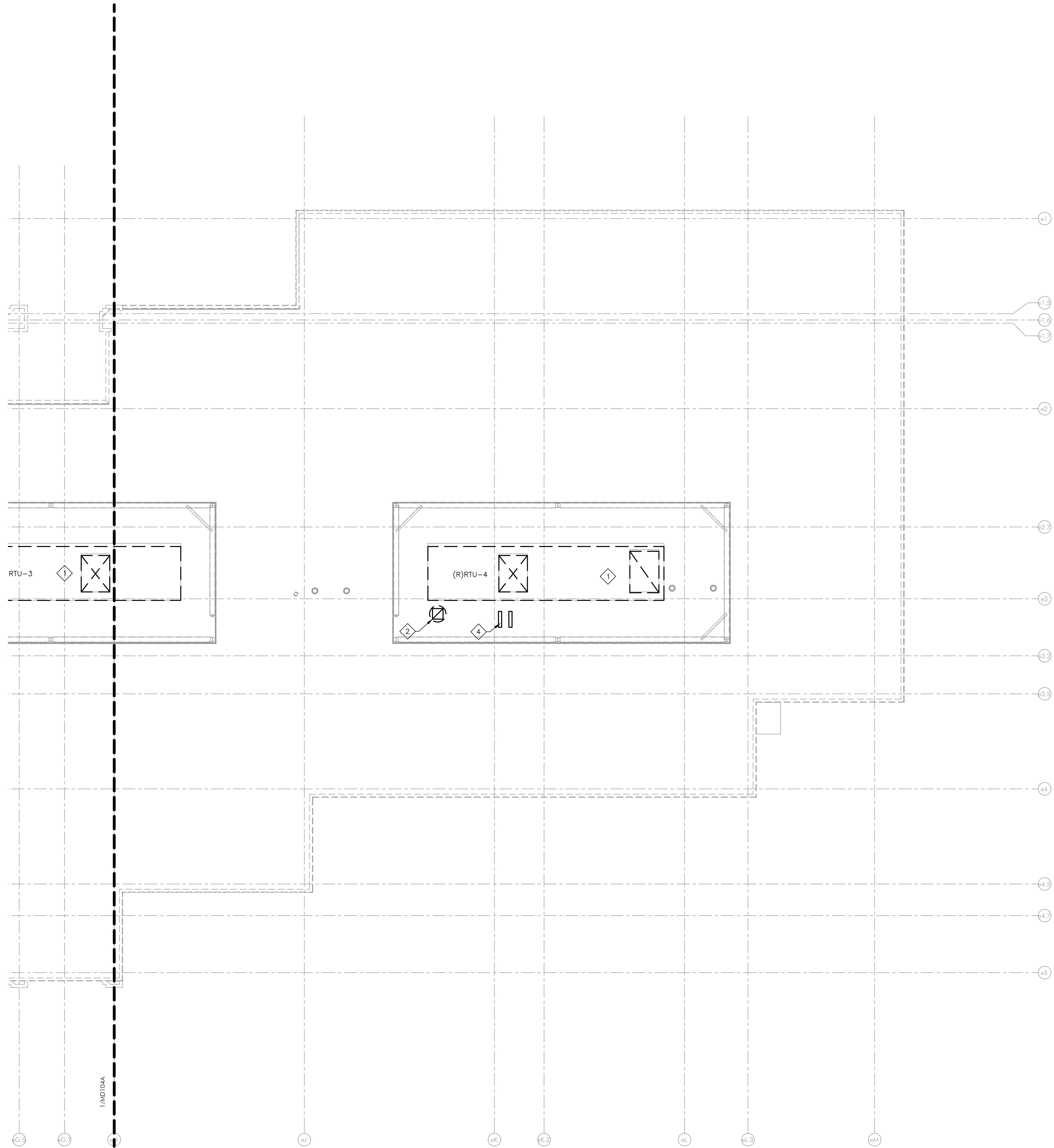
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**MECHANICAL DEMO
ROOF PLAN -
SECTOR B**

DRAWING NUMBER

MD104B

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4. REMOVE EQUIPMENT RAILS. REFER TO
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GENERAL NOTES:

- REFER TO M001 FOR FURTHER GENERAL NOTES.
- PROVIDE 1ST 30 FT OF DUCTWORK UPSTREAM AND DOWNSTREAM OF ALL BOAS & RTUS WITH 1" THICK ACOUSTICAL LINING. PROVIDE 1ST 10 FT OF EXHAUST DUCTWORK DOWNSTREAM OF ALL EF's WITH 1" THICK ACOUSTICAL LINING.

NEW WORK KEY NOTES:

- PROVIDE ALL EXPOSED DUCTWORK IN PAINTABLE GALVANNEAL SHEET METAL. DUCTWORK SHALL BE SHOP PRIMED AND FIELD PAINTED BY GC IN CUSTOM COLOR CHOSEN BY THE ARCHITECT. ALL EXPOSED DUCTWORK SHALL BE INTERNALLY LINED.
- PROVIDE SLOT DIFFUSER WITH HORIZONTAL THROW IN OPPOSITE DIRECTION. 2-SLOTS PER DIRECTION. PROVIDE CUSTOM HEIGHT INTERNALLY LINED PLENUM WITH DIFFUSER LEVEL WITH BOTTOM OF CEILING BAFFLE.
- MOUNT GRILLE IN 4 O'CLOCK POSITION IN DIRECTION INDICATED. PROVIDE 15" THROW IN BOTH DIRECTIONS.
- 4"Ø EXHAUST DN TO DRYER. PROVIDE DRYER COMPLETE W/ 4"Ø DRYERBOX DB-480 CLEANOUT RECEPTACLE OR SIMILAR AT BASE OF VERTICAL RISE. PROVIDE CONNECTION TO DRYER W/ FLEXIBLE ALUMINUM UL 2158A DRYER EXHAUST DUCT. ALL DRYER DUCT SHALL BE MINIMUM 0.018" THICK ALUMINUM WITH SMOOTH INTERIOR FINISH. THE ANNULAR SPACE AT ALL EXHAUST DUCT WALL PENETRATIONS SHALL BE SEALED WITH UL LISTED FIRE CAULK.
- PROVIDE ALL AHU SUPPLY AND RETURN DUCTWORK INTERNALLY LINED WITH 1" ACOUSTIC DUCT LINER.
- PROVIDE ALL DUCTWORK INTERNALLY LINED WITH 1" ACOUSTIC DUCT LINER FOR SECTION OF DUCT INDICATED.
- GC SHALL PROVIDE KILN EF AND 3" FLEXIBLE ALUMINUM DUCT FROM KILN TO KILN EXHAUST FAN & 3" DISCHARGE DUCT THRU WALL. MC SHALL PROVIDE WALL CAP ON EXTERIOR.
- PROVIDE DIFFUSER IN CUSTOM COLOR AS CHOSEN BY THE ARCHITECT.
- PROVIDE ALL NEW KITCHEN EXHAUST GREASE DUCT AS WELDED MINIMUM 18 GAUGE 316 STAINLESS STEEL. DUCTWORK, PROVIDE SMOOTH RADIUS ELBOWS AND CONTINUOUSLY SLOPE TOWARDS HOOD.
- PROVIDE ALL NEW DISHWASHER EXHAUST DUCT AS WELDED MINIMUM 18 GAUGE 316 STAINLESS STEEL. DUCTWORK, PROVIDE SMOOTH RADIUS ELBOWS AND CONTINUOUSLY SLOPE TOWARDS HOOD.
- EXPOSED GYM DUCT WORK SHALL LOCATED IN JOIST SPACE AND FOLLOW SLOPE OF ROOF.
- PROVIDE ALL LGR 234 DUCTWORK UP JOIST SPACE HIGH AS POSSIBLE WHERE NOT CONCEALED BY ATC CEILING.
- PROVIDE 4" CPVC EXHAUST AND 4" PVC INTAKE FROM HWH UP TO ROOF.

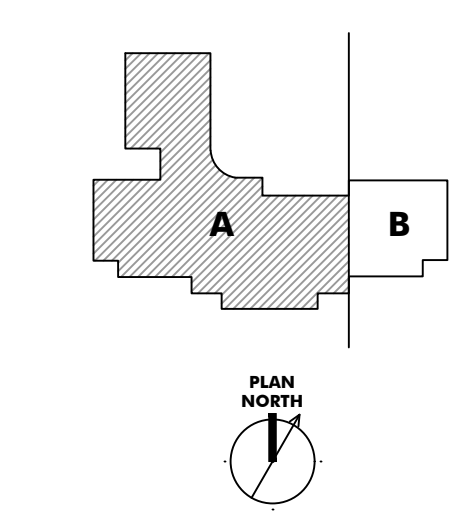
MECHANICAL DUCTWORK SECTION

M101A SCALE: 1/8"=1'-0"

MECHANICAL DUCTWORK FIRST FLOOR PLAN - SECTOR A

M101A SCALE: 1/8"=1'-0"

KEYPLAN



ISSUE HISTORY

A	DATE	ISSUED FOR
	2025-03-28	BID ISSUE

SHEET TITLE
MECHANICAL
DUCTWORK
FIRST FLOOR PLAN -
SECTOR A

DRAWING NUMBER

M101A

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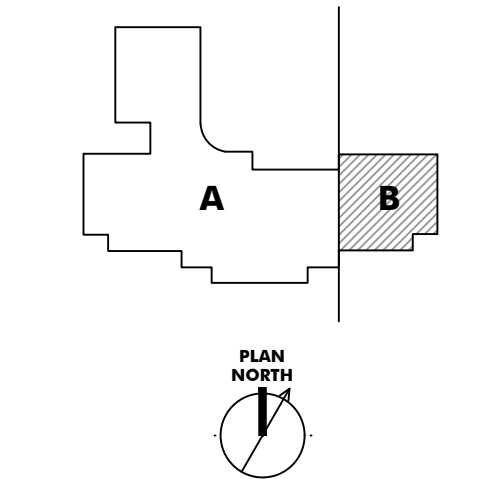
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KEYPLAN



ISSUE HISTORY

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SHEET TITLE
MECHANICAL
DUCTWORK
FIRST FLOOR PLAN -
SECTOR B

DRAWING NUMBER

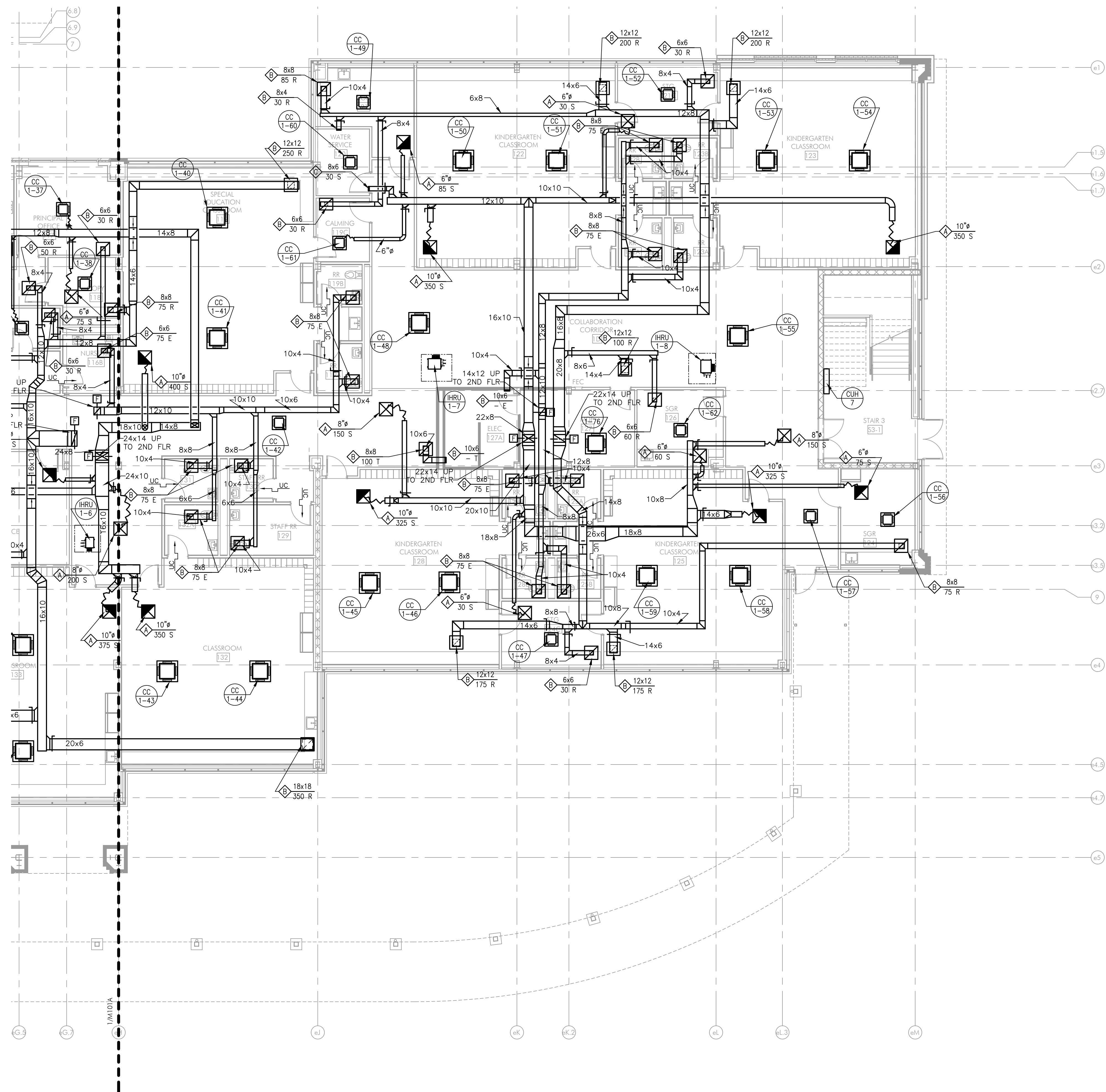
M101B

GENERAL NOTES:

1. REFER TO M001 FOR FURTHER GENERAL NOTES.
2. PROVIDE 1ST 30 FT OF DUCTWORK UPSTREAM AND DOWNSTREAM OF ALL DOAS & RTUS WITH 1" THICK ACOUSTICAL LINING. PROVIDE 1ST 10 FT OF EXHAUST DUCTWORK DOWNSTREAM OF ALL EF's WITH 1" THICK ACOUSTICAL LINING.

NEW WORK KEY NOTES:

1. PROVIDE ALL EXPOSED DUCTWORK IN PAINTABLE GALVANNEAL SHEET METAL. DUCTWORK SHALL BE SHOP PRIMED AND FIELD PAINTED BY GC IN CUSTOM COLOR CHOSEN BY THE ARCHITECT. ALL EXPOSED DUCTWORK SHALL BE INTERNALLY LINED.
2. PROVIDE SLOT DIFFUSER WITH HORIZONTAL THROW IN OPPOSITE DIRECTION. 2--SLOTS PER DIRECTION. PROVIDE CUSTOM HEIGHT INTERNALLY LINED PLENUM WITH DIFFUSER LEVEL WITH BOTTOM OF CEILING BAFFLE.
3. MOUNT GRILLE IN 4 O'CLOCK POSITION IN DIRECTION INDICATED. PROVIDE 15" THROW IN BOTH DIRECTIONS.
4. 4"Ø EXHAUST DN TO DRYER. PROVIDE DRYER COMPLETE W/ 4"Ø DRYERBOX DB-480 CLEANOUT RECEPTACLE OR SIMILAR AT BASE OF VERTICAL RISE. PROVIDE CONNECTION TO DRYER W/ FLEXIBLE ALUMINUM UL 2158A DRYER EXHAUST DUCT. ALL DRYER DUCT SHALL BE MINIMUM 0.018" THICK ALUMINUM WITH SMOOTH INTERIOR FINISH. THE ANNULAR SPACE AT ALL EXHAUST DUCT WALL PENETRATIONS SHALL BE SEALED WITH UL LISTED FIRE CAULK.
5. PROVIDE ALL AHU SUPPLY AND RETURN DUCTWORK INTERNALLY LINED WITH 1" ACOUSTIC DUCT LINER.
6. PROVIDE ALL DUCTWORK INTERNALLY LINED WITH 1" ACOUSTIC DUCT LINER FOR SECTION OF DUCT INDICATED.
7. GC SHALL PROVIDE KILN EF AND 3" FLEXIBLE ALUMINUM DUCT FROM KILN TO KILN EXHAUST FAN & 3" DISCHARGE DUCT THRU WALL. MC SHALL PROVIDE WALL CAP ON EXTERIOR.
8. PROVIDE DIFFUSER IN CUSTOM COLOR AS CHOSEN BY THE ARCHITECT.
9. PROVIDE ALL NEW KITCHEN EXHAUST GREASE DUCT AS WELDED MINIMUM 18 GAUGE 316 STAINLESS STEEL DUCTWORK. PROVIDE SMOOTH RADIUS ELBOWS AND CONTINUOUSLY SLOPE TOWARDS TOWARDS HOOD. PROVIDE FIRE-RATED ACCESS DOORS AT ALL LOCATIONS REQUIRED BY IMC 2018.
10. PROVIDE ALL NEW DISHWASHER EXHAUST DUCT AS WELDED MINIMUM 18 GAUGE 316 STAINLESS STEEL DUCTWORK. PROVIDE SMOOTH RADIUS ELBOWS AND CONTINUOUSLY SLOPE TOWARDS TOWARDS HOOD.
11. EXPOSED GYM DUCT WORK SHALL LOCATED IN JOIST SPACE AND FOLLOW SLOPE OF ROOF.
12. PROVIDE ALL LGR 234 DUCTWORK UP JOIST SPACE HIGH AS POSSIBLE WHERE NOT CONCEALED BY ATC CEILING.
13. PROVIDE 4" CPVC EXHAUST AND 4" PVC INTAKE FROM HWH UP TO ROOF.



MECHANICAL DUCTWORK FIRST FLOOR PLAN - SECTOR B
SCALE: 1/8" = 1'-0"

PROJECT TEAM

CLIENT
Tredyffrin/Easttown School District
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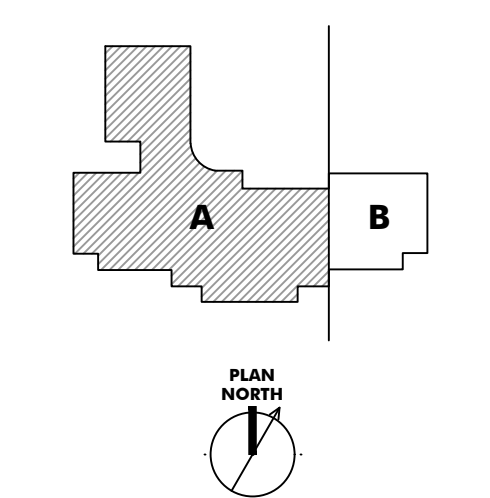
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KEYPLAN



ISSUE HISTORY

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**MECHANICAL
DUCTWORK
SECOND FLOOR PLAN -
SECTOR A**

DRAWING NUMBER

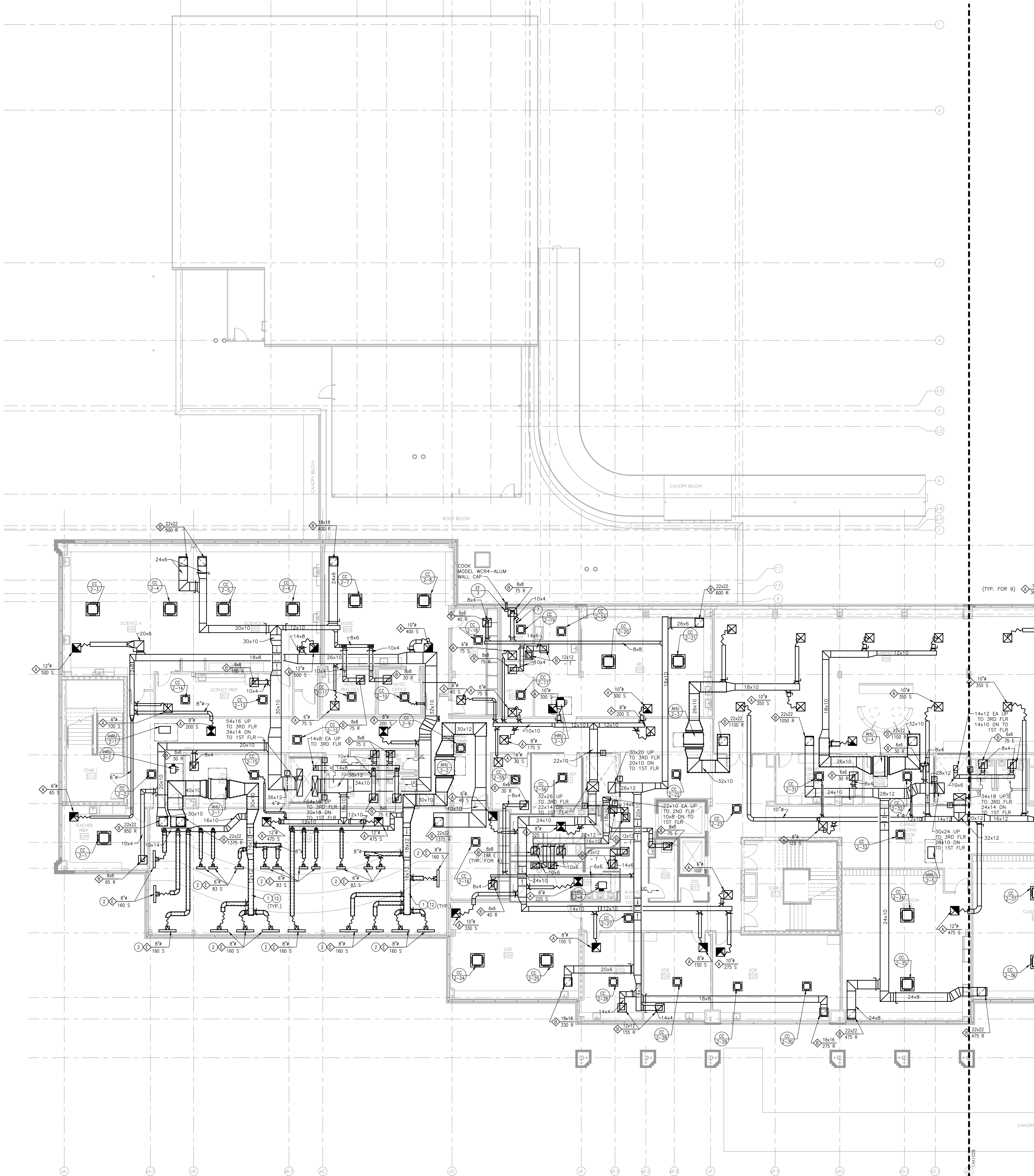
M102A

GENERAL NOTES:

1. REFER TO M001 FOR FURTHER GENERAL NOTES.
2. PROVIDE 1ST 30 FT OF DUCTWORK UPSTREAM AND DOWNSTREAM OF ALL DOAS & RTUS WITH 1" THICK ACOUSTICAL LINING. PROVIDE 1ST 10 FT OF EXHAUST DUCTWORK DOWNSTREAM OF ALL EF's WITH 1" THICK ACOUSTICAL LINING.

NEW WORK KEY NOTES:

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3. MOUNT GRILLE IN 4 O'CLOCK POSITION IN DIRECTION INDICATED. PROVIDE 15" THROW IN BOTH DIRECTIONS.
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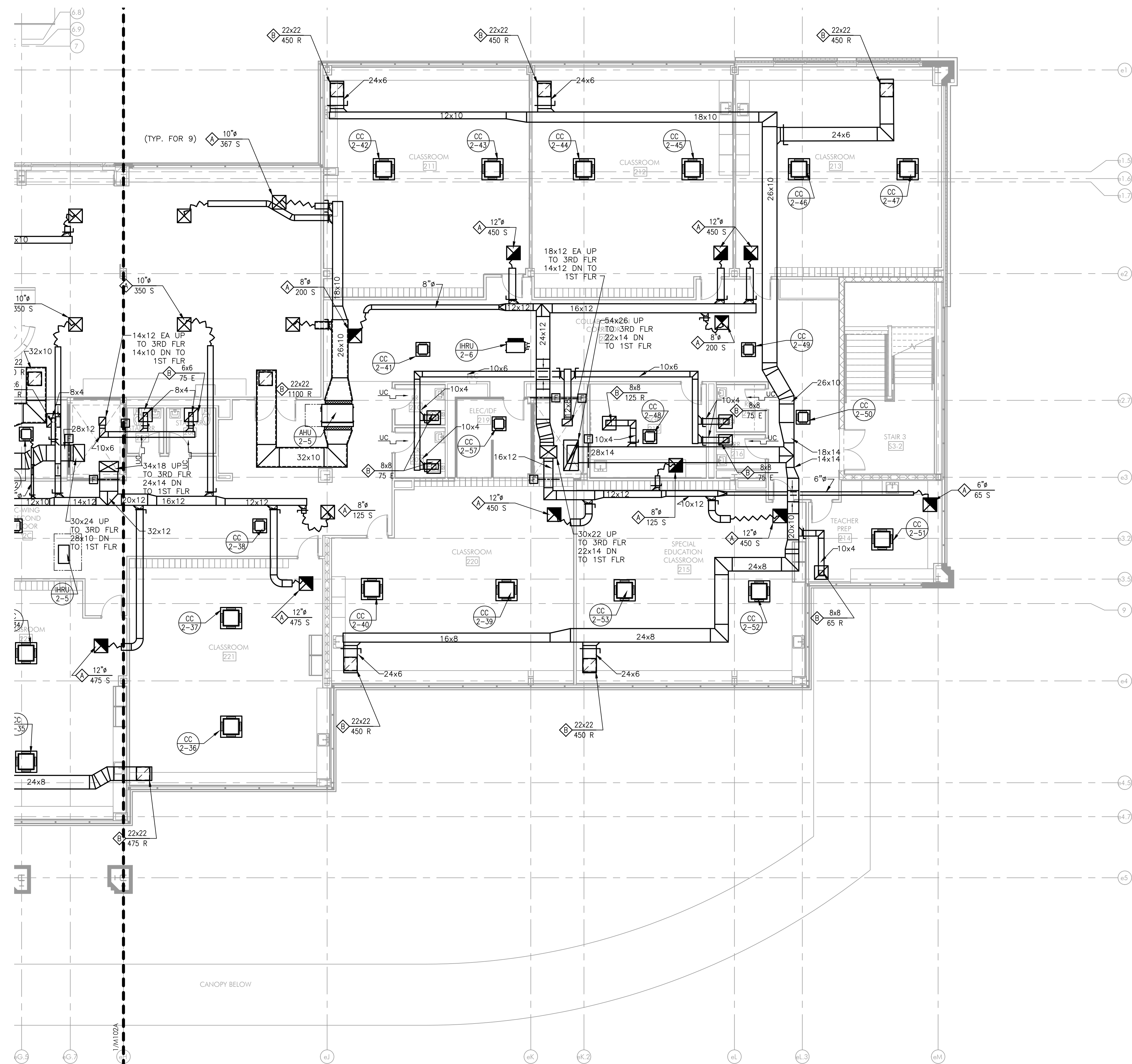
NOT FOR
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GENERAL NOTES:

1. REFER TO MD01 FOR FURTHER GENERAL NOTES.
2. PROVIDE 1ST 30 FT OF DUCTWORK UPSTREAM AND DOWNSTREAM OF ALL BOAS & RTUS WITH 1" THICK ACOUSTICAL LINING. PROVIDE 1ST 10 FT OF EXHAUST DUCTWORK DOWNSTREAM OF ALL EF's WITH 1" THICK ACOUSTICAL LINING.

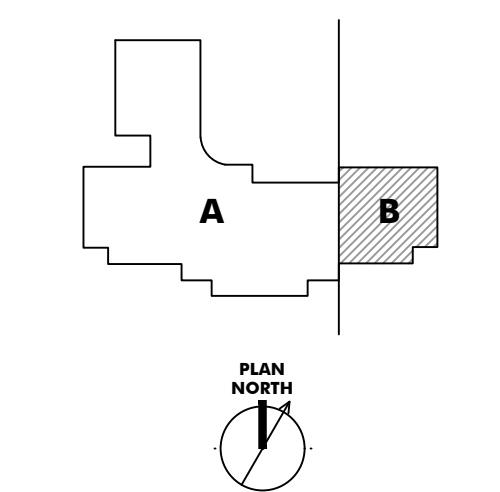
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MECHANICAL DUCTWORK SECOND FLOOR PLAN - SECTOR B
SCALE: 1/8" = 1'-0"

KEY PLAN



ISSUE HISTORY

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2025-03-28	BD	ISSUE

SHEET TITLE
MECHANICAL
DUCTWORK
SECOND FLOOR PLAN -
SECTOR B

DRAWING NUMBER
M102B

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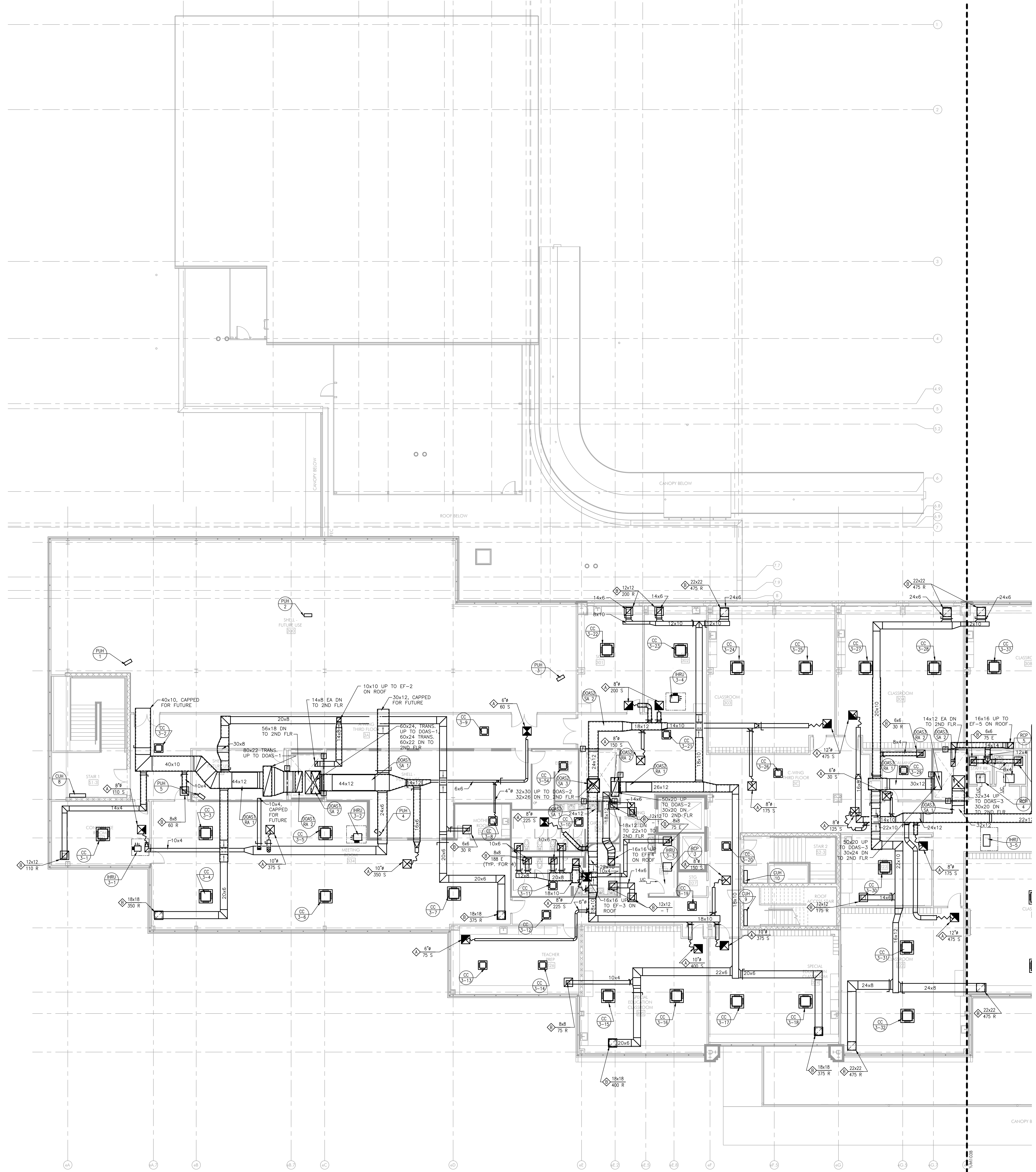
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CONSTRUCTION

GENERAL NOTES:

1. REFER TO M001 FOR FURTHER GENERAL NOTES.
2. PROVIDE 1ST 30 FT OF DUCTWORK UPSTREAM AND DOWNSTREAM OF ALL DOAS & RTUS WITH 1" THICK ACOUSTICAL LINING. PROVIDE 1ST 10 FT OF EXHAUST DUCTWORK DOWNSTREAM OF ALL EF's WITH 1" THICK ACOUSTICAL LINING.

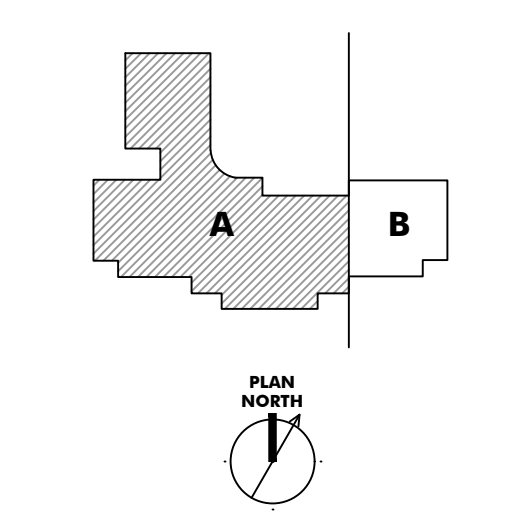
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3. MOUNT GRILLE IN 4 O'CLOCK POSITION IN DIRECTION INDICATED. PROVIDE 15" THROW IN BOTH DIRECTIONS.
4. 4"Ø EXHAUST DN TO DRYER. PROVIDE DRYER COMPLETE W/ 4"Ø DRYERBOX DB-480 CLEANOUT RECEPTACLE OR SIMILAR AT BASE OF VERTICAL RISE. PROVIDE CONNECTION TO DRYER W/ FLEXIBLE ALUMINUM UL 2158A DRYER EXHAUST DUCT. ALL DRYER DUCT SHALL BE MINIMUM 0.018" THICK ALUMINUM WITH SMOOTH INTERIOR FINISH. THE ANNULAR SPACE AT ALL EXHAUST DUCT WALL PENETRATIONS SHALL BE SEALED WITH UL LISTED FIRE CAULK.
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13. PROVIDE 4" CPVC EXHAUST AND 4" PVC INTAKE FROM HHW UP TO ROOF.



1 MECHANICAL DUCTWORK THIRD FLOOR PLAN - SECTOR A
M103A SCALE: 1/8"=1'-0"

KEYPLAN



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MECHANICAL
DUCTWORK
THIRD FLOOR PLAN -
SECTOR A

DRAWING NUMBER
M103A

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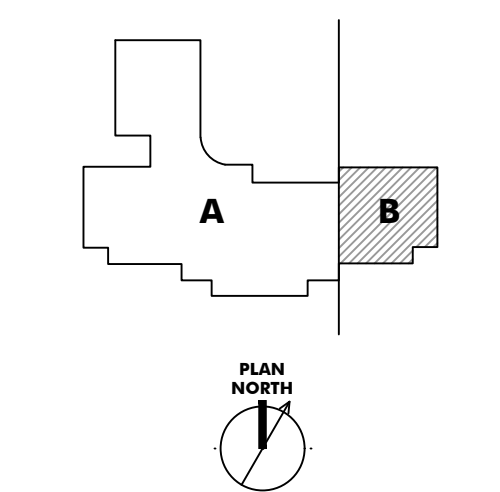
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KEYPLAN



ISSUE HISTORY

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**MECHANICAL
DUCTWORK
THIRD FLOOR PLAN -
SECTOR B**

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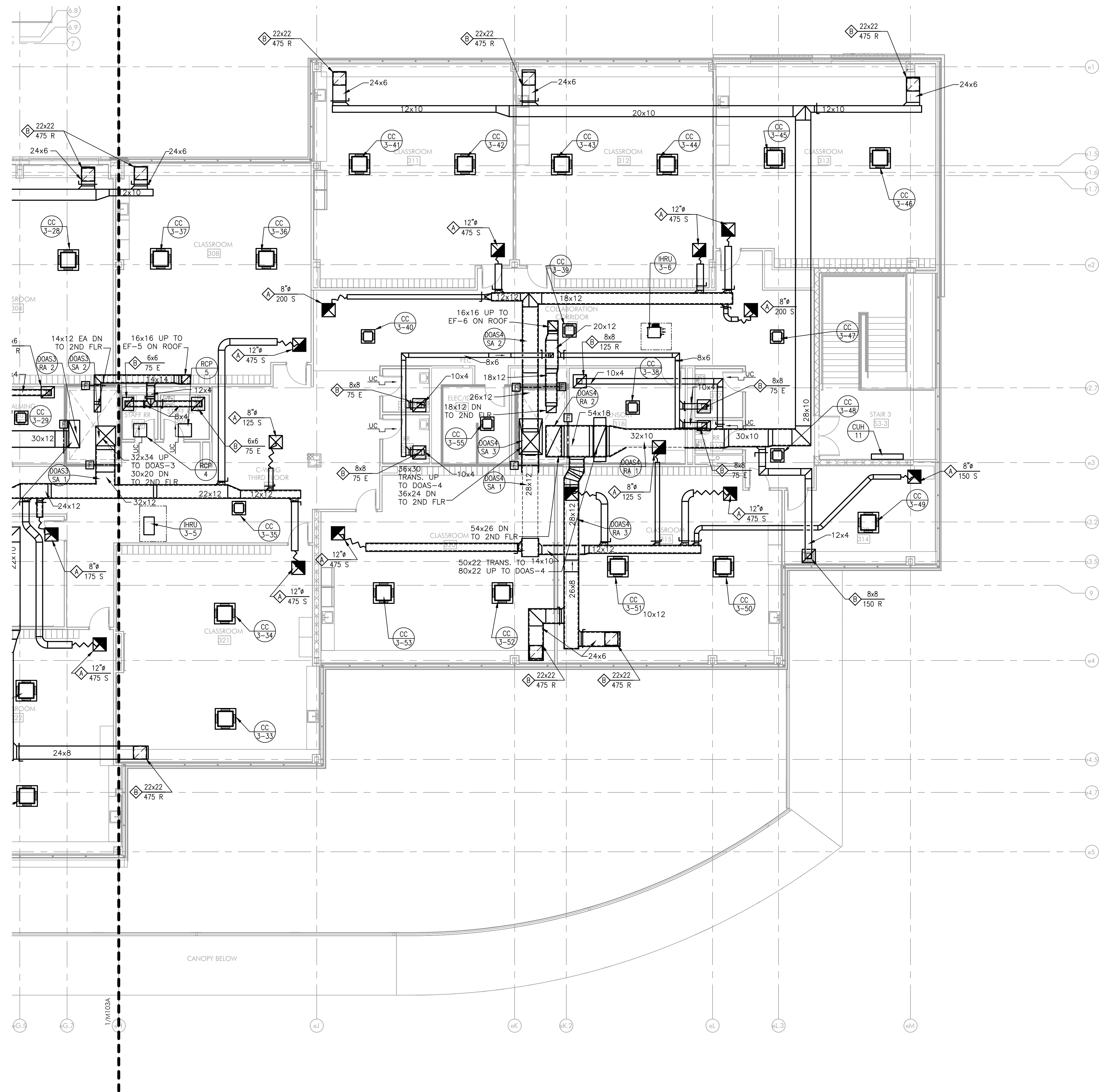
M103B

GENERAL NOTES:

1. REFER TO M001 FOR FURTHER GENERAL NOTES.
2. PROVIDE 1ST 30 FT OF DUCTWORK UPSTREAM AND DOWNSTREAM OF ALL DOAS & RTUS WITH 1" THICK ACOUSTICAL LINING. PROVIDE 1ST 10 FT OF EXHAUST DUCTWORK DOWNSTREAM OF ALL EF's WITH 1" THICK ACOUSTICAL LINING.

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3. MOUNT GRILLE IN 4 O'CLOCK POSITION IN DIRECTION INDICATED. PROVIDE 15" THROW IN BOTH DIRECTIONS.
4. 4"Ø EXHAUST DN TO DRYER. PROVIDE DRYER COMPLETE W/ 4"Ø DRYERBOX DB-480 CLEANOUT RECEPTACLE OR SIMILAR AT BASE OF VERTICAL RISE. PROVIDE CONNECTION TO DRYER W/ FLEXIBLE ALUMINUM UL 2158A DRYER EXHAUST DUCT. ALL DRYER DUCT SHALL BE MINIMUM 0.018" THICK ALUMINUM WITH SMOOTH INTERIOR FINISH THE ANNULAR SPACE AT ALL EXHAUST DUCT WALL PENETRATIONS SHALL BE SEALED WITH UL LISTED FIRE CAULK.
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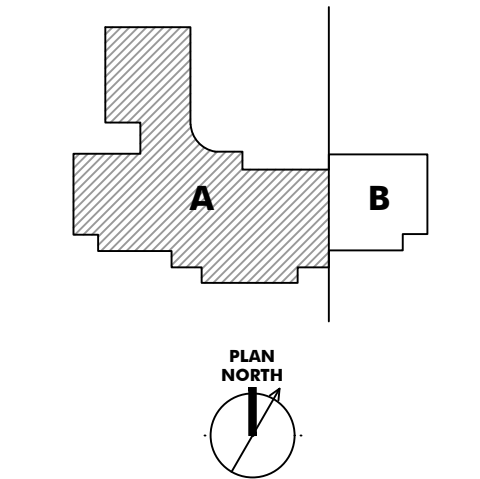
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ISSUE HISTORY

A	DATE	ISSUED FOR
1	2025-03-28	BID ISSUE

SHEET TITLE
**MECHANICAL
DUCTWORK
ROOF PLAN - SECTOR A**

DRAWING NUMBER

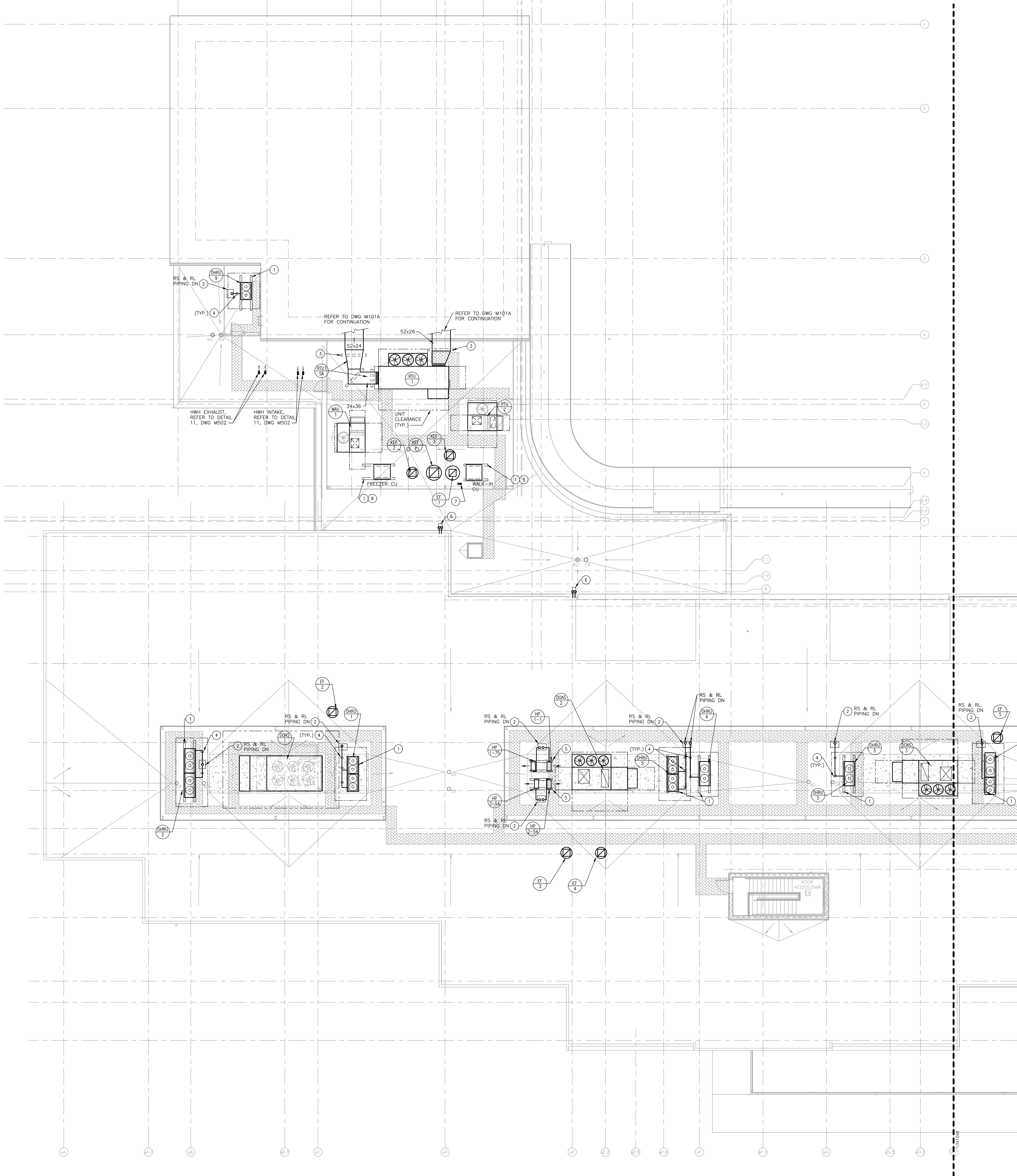
M104A

GENERAL NOTES:

1. REFER TO M001 FOR FURTHER GENERAL NOTES.
2. PROVIDE ALL NEW EXTERIOR ROOF TOP DUCTWORK AS PRE-MANUFACTURED DUAL-TECH SYSTEM.
3. REFER TO DWG M500 SERIES DRAWINGS FOR ADDITIONAL REFRIGERANT PIPING REQUIREMENTS.

NEW WORK KEY NOTES:

- 1 PROVIDE AND INSTALL EQUIPMENT SUPPORTS SIMILAR TO PATE MODEL ES AND ANCHOR UNIT TO CURB. REFER TO DWG M502 DETAIL 6 FOR ADDITIONAL REQUIREMENTS.
- 2 REFRIGERANT PIPING AND CO PIPING (WHERE APPLICABLE) DN TO INDOOR UNIT. PROVIDE AND INSTALL NEW PIPE CURB SIMILAR TO ROOF PENETRATION HOUSING AW SERIES WITH WITH ALL BOOTS AND CLAMPS AS REQUIRED FOR NEW REFRIGERANT PIPING AND ELECTRICAL CONDUITS. COORDINATE WITH EC FOR LOCATIONS AND QUANTITY OF CONDUITS. CUT OPENINGS AS REQUIRED. ANCHOR CURB TO STRUCTURE. REFER TO ARCHITECTURAL PLANS FOR FLASHING OF ROOF.
- 3 PROVIDE ALL NEW EXTERIOR ROOF TOP DUCTWORK AS PRE-MANUFACTURED DUAL-TECH SYSTEM. REFER TO ROOF DUCT SUPPORT DETAIL 1, DWG M502.
- 4 PROVIDE PIPE SUPPORTS SIMILAR TO MIRO INDUSTRIES MODEL BASE-STRUT-12 FOR PIPING AND CONDUIT ON ROOF. PROVIDE AND PLACE ROOF PIPING SUPPORTS ON SUPPORT PADS THAT ARE MANUFACTURED BY THE EPDM ROOF MANUFACTURER. SPACE SUPPORTS PER MANUFACTURER'S RECOMMENDATIONS.
- 5 PROVIDE AND INSTALL EQUIPMENT SUPPORTS SIMILAR TO PATE MODEL ES AND ANCHOR UNIT TO CURB. REFER TO DWG M502 DETAIL 4 FOR ADDITIONAL REQUIREMENTS.
- 6 SPILL 1" CD TO ROOF WITH SPLASH BLOCK. SPLASH BLOCK SHALL BE BLACK RUBBER TYPE SET ON PADS THAT ARE MANUFACTURED BY THE EPDM ROOF MANUFACTURER.
- 7 TERMINATE 4" ALUMINUM DRYER DUCT MINIMUM 18" ABOVE ROOF WITH GOOSENECK.
- 8 UNIT PROVIDED BY THE FOOD SERVICE CONTRACTOR. FURNISH ASSOCIATED PATE ES EQUIPMENT RAIL SUPPORTS.



1 MECHANICAL DUCTWORK ROOF PLAN - SECTOR A
M104A SCALE: 1/8"=1'-0"

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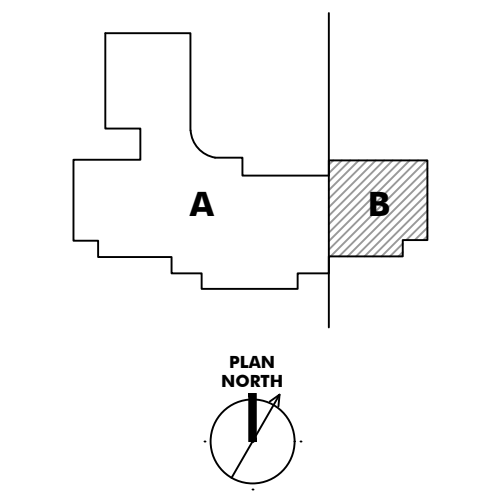
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ISSUE HISTORY

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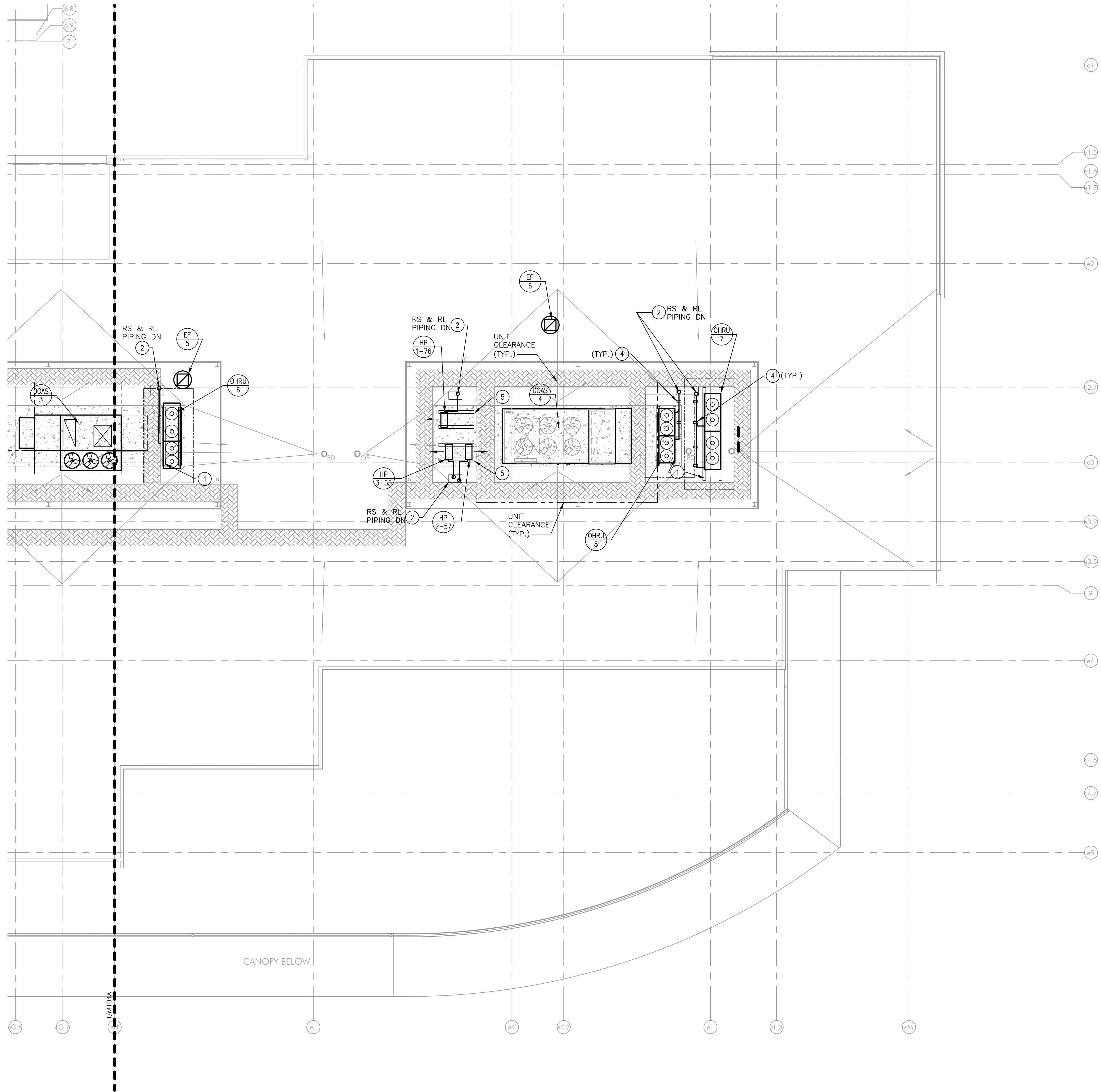
SHEET TITLE
**MECHANICAL
DUCTWORK
ROOF PLAN - SECTOR B**

DRAWING NUMBER

M104B

- GENERAL NOTES:
1. REFER TO M001 FOR FURTHER GENERAL NOTES.
 2. PROVIDE ALL NEW EXTERIOR ROOF TOP DUCTWORK AS PRE-MANUFACTURED DUAL-TECH SYSTEM.
 3. REFER TO DWG M500 SERIES DRAWINGS FOR ADDITIONAL REFRIGERANT PIPING REQUIREMENTS.

- NEW WORK KEY NOTES:
- 1 PROVIDE AND INSTALL EQUIPMENT SUPPORTS SIMILAR TO PATE MODEL ES AND ANCHOR UNIT TO CURB. REFER TO DWG M502 DETAIL 6 FOR ADDITIONAL REQUIREMENTS.
 - 2 REFRIGERANT PIPING AND CO PIPING (WHERE APPLICABLE) DN TO INDOOR UNIT. PROVIDE AND INSTALL NEW PIPE CURB SIMILAR TO ROOF PENETRATION HOUSING AW SERIES WITH WITH ALL BOOTS AND CLAMPS AS REQUIRED FOR NEW REFRIGERANT PIPING AND ELECTRICAL CONDUITS. COORDINATE WITH EC FOR LOCATIONS AND QUANTITY OF CONDUITS. CUT OPENINGS AS REQUIRED. ANCHOR CURB TO STRUCTURE. REFER TO ARCHITECTURAL PLANS FOR FLASHING OF ROOF.
 - 3 PROVIDE ALL NEW EXTERIOR ROOF TOP DUCTWORK AS PRE-MANUFACTURED DUAL-TECH SYSTEM. REFER TO ROOF DUCT SUPPORT DETAIL 1, DWG M502.
 - 4 PROVIDE PIPE SUPPORTS SIMILAR TO MRO INDUSTRIES MODEL BASE-STRUT-12 FOR PIPING AND CONDUIT ON ROOF. PROVIDE AND PLACE ROOF PIPING SUPPORTS ON SUPPORT PADS THAT ARE MANUFACTURED BY THE EPDM ROOF MANUFACTURER. SPACE SUPPORTS PER MANUFACTURER'S RECOMMENDATIONS.
 - 5 PROVIDE AND INSTALL EQUIPMENT SUPPORTS SIMILAR TO PATE MODEL ES AND ANCHOR UNIT TO CURB. REFER TO DWG M502 DETAIL 4 FOR ADDITIONAL REQUIREMENTS.
 - 6 SPILL 1" CO TO ROOF WITH SPLASH BLOCK. SPLASH BLOCK SHALL BE BLACK RUBBER TYPE SET ON PADS THAT ARE MANUFACTURED BY THE EPDM ROOF MANUFACTURER.
 - 7 TERMINATE 4" ALUMINUM DRYER DUCT MINIMUM 18" ABOVE ROOF WITH GOOSENECK.
 - 8 UNIT PROVIDED BY THE FOOD SERVICE CONTRACTOR. FURNISH ASSOCIATED PATE ES EQUIPMENT RAIL SUPPORTS.



MECHANICAL DUCTWORK ROOF PLAN - SECTOR B
M104B SCALE: 1/8"=1'-0"

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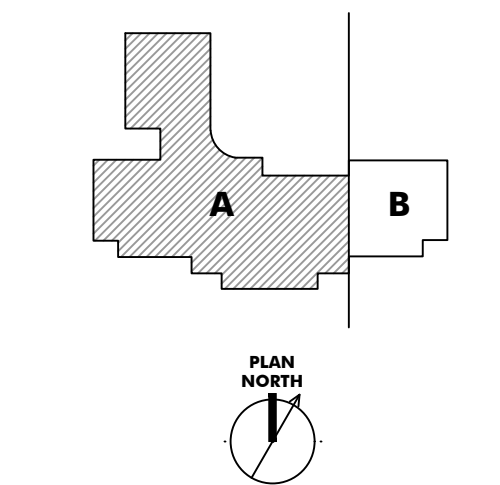
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ISSUE HISTORY

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SHEET TITLE
MECHANICAL PIPING
FIRST FLOOR PLAN -
SECTOR A

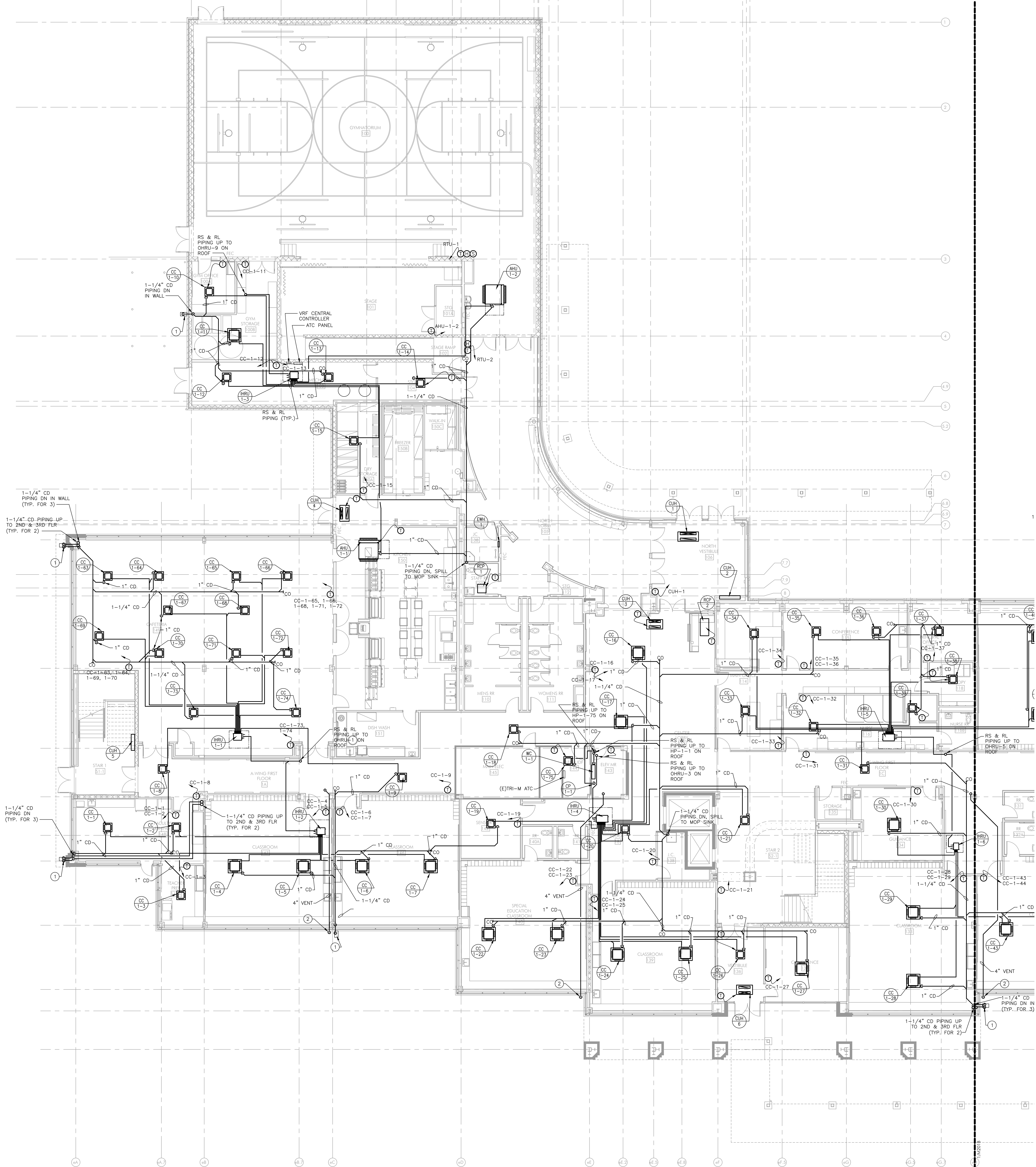
DRAWING NUMBER
M201A

NOTES:

1. FOR GENERAL NOTES, REFER TO DRAWING M001.
2. REFER TO DWG M500 SERIES DRAWINGS FOR ADDITIONAL REFRIGERANT PIPING REQUIREMENTS.

NEW WORK KEY NOTES:

- 1 RUN CONCRETE DOWN IN CHASE TO EXTERIOR, W/ ELBOW AND SPILL 4" ABOVE GRADE TO CONCRETE SLAG BLOCK. PROVIDE SEPARATE RISERS FOR EACH BLOCK. MAKE PENETRATION THROUGH WALL WITH TIGHTLY FITTING CONCRETE PIPING TO INDOR UNITS.
- 2 4" PVC VENT FROM DUCT/PIPING SHAFT FLOOR, PITCHED CONTINUOUSLY DOWNWARD TOWARDS EXTERIOR, TERMINATE W/ 45° ELBOW IN W/ BIRD SCREEN.
- 3 4" Ø EXHAUST DUCT TO BASE. PROVIDE DRYER COMPLETE W/ 4" Ø DRYERBOX DB=480 CLEANOUT RECEPTACLE OR SURF AT BASE OF VERTICAL RISE. PROVIDE CONNECTION DRYER W/ FLEXIBLE ALUMINUM UL 2158A DRYER EXHAUST RISER. PROVIDE 1/2" Ø VENT PIPE WITH 0.018" THICK ALUMINUM WITH SMOOTH INTERIOR FINISH. THE ANNULAR SPACE AT ALL EXHAUST DUCT WALL PENETRATIONS SHALL BE SEALED WITH 1/2" Ø VENT PIPE.



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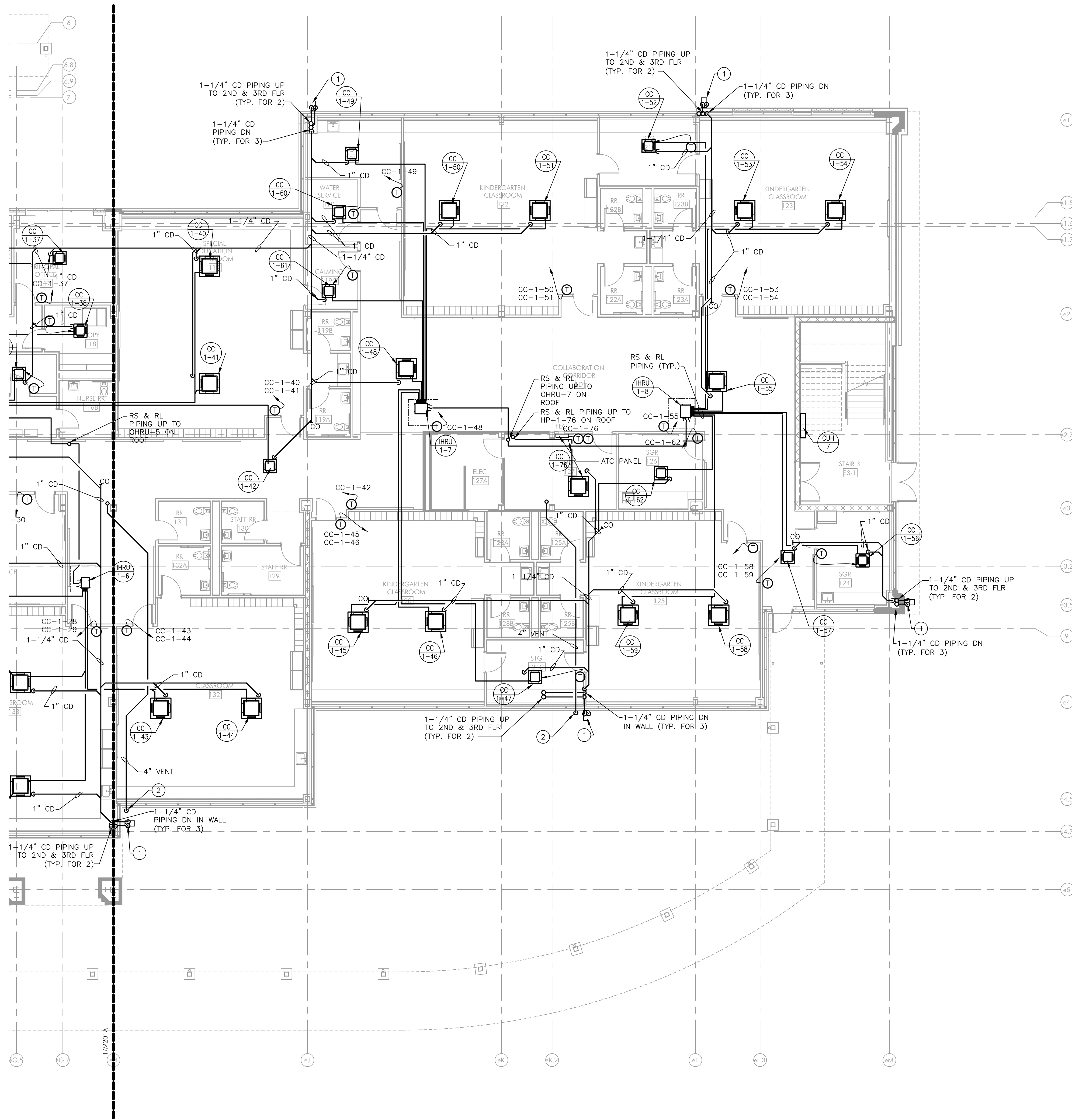
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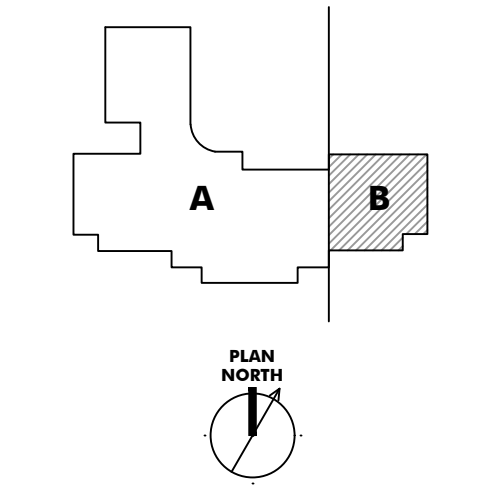
- NOTES:
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- NEW WORK KEY NOTES:
- 1 RUN CONDENSATE DOWN IN CHASE TO EXTERIOR, W/ ELBOW AND SPILL 4" ABOVE GRADE ONTO CONCRETE SPLASH BLOCK. PROVIDE SEPARATE RISERS FOR EACH FLOOR. MAKE PENETRATION THROUGH WALL WEATHER-TIGHT. CONNECT CONDENSATE PIPING TO INDOOR UNITS.
 - 2 4" PVC VENT FROM DUCT/PIPING SHAFT FLOOR, PITCHED CONTINUOUSLY DOWNWARD TOWARDS EXTERIOR, TERMINATE W/ 45° ELBOW DN W/ BIRD SCREEN.
 - 3 4"Ø EXHAUST DN TO DRYER. PROVIDE DRYER COMPLETE W/ 4"Ø DRYERBOX DB-480. CLEANOUT RECEPTACLE OR SIMILAR AT BASE OF VERTICAL RISE. PROVIDE CONNECTION TO DRYER W/ FLEXIBLE ALUMINUM UL 2158A DRYER EXHAUST DUCT. ALL DRYER DUCT SHALL BE MINIMUM 0.018" THICK ALUMINUM WITH SMOOTH INTERIOR FINISH. THE ANNULAR SPACE AT ALL EXHAUST DUCT WALL PENETRATIONS SHALL BE SEALED WITH UL LISTED FIRE CAULK.



MECHANICAL PIPING FIRST FLOOR PLAN - SECTOR B
SCALE: 1/8\"=1'-0"

KEYPLAN



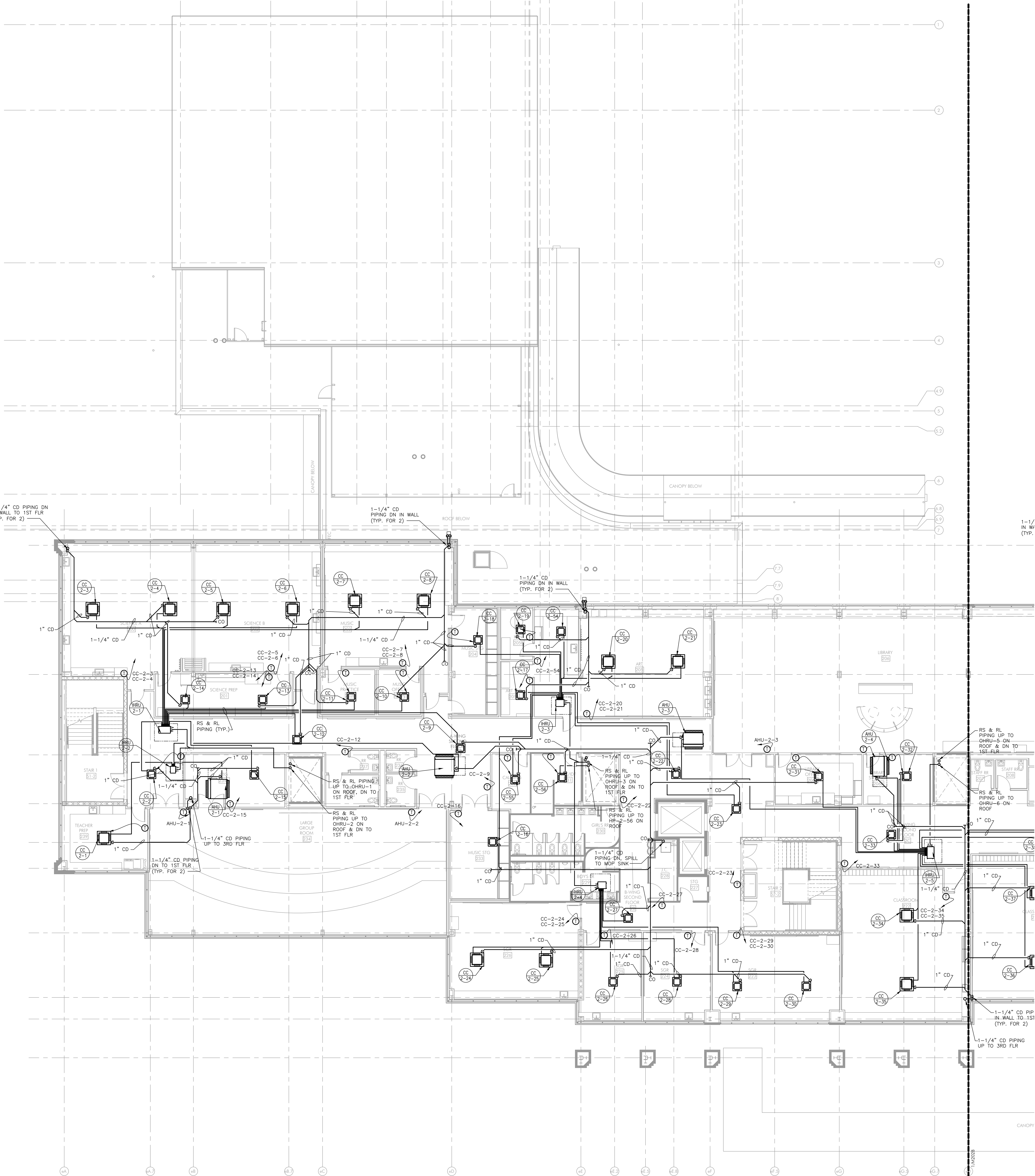
ISSUE HISTORY

A	DATE	ISSUED FOR
1	2025-03-28	BID ISSUE

SHEET TITLE
MECHANICAL PIPING
FIRST FLOOR PLAN -
SECTOR B

DRAWING NUMBER

M201B



- NOTES:
1. FOR GENERAL NOTES, REFER TO DRAWING M001.
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- NEW WORK KEY NOTES:
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**TE NEW
ELEMENTARY
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HSA PROJECT # 23-037

HSA
Heckendom Shiles Architects

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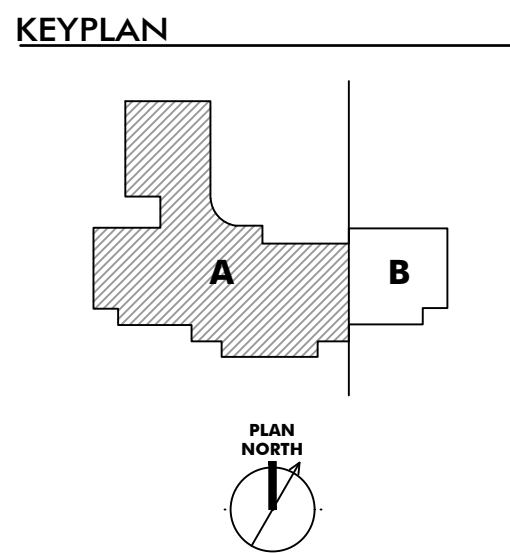
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ISSUE HISTORY

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SHEET TITLE
**MECHANICAL PIPING
SECOND FLOOR PLAN -
SECTOR A**

DRAWING NUMBER
M202A

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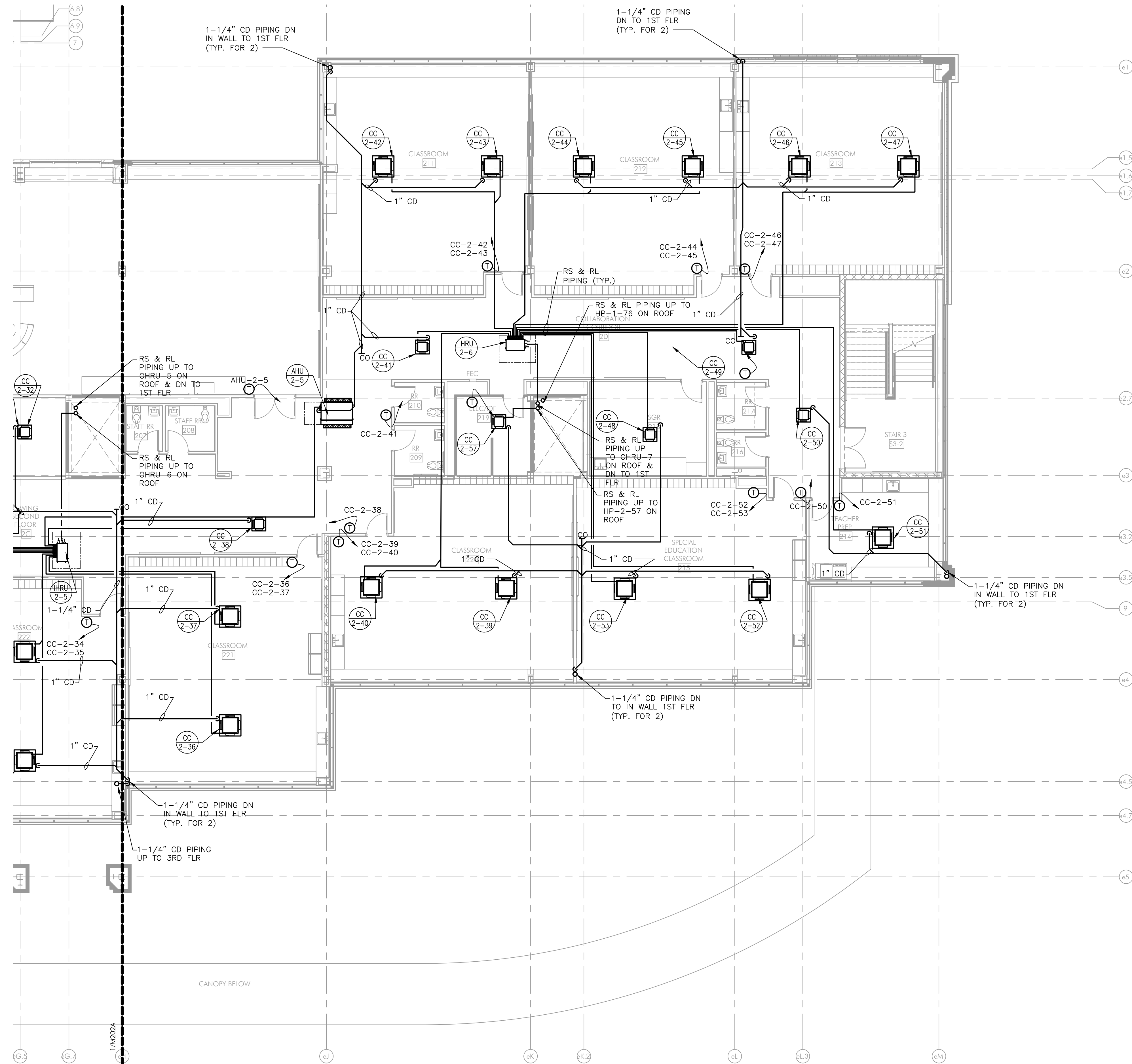
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CONSTRUCTION

- NOTES:
1. FOR GENERAL NOTES, REFER TO DRAWING M001.
 2. REFER TO DWG M500 SERIES DRAWINGS FOR ADDITIONAL REFRIGERANT PIPING REQUIREMENTS.

NEW WORK KEY NOTES:

- 1 RUN CONDENSATE DOWN IN CHASE TO EXTERIOR, W/ ELBOW AND SPILL 4" ABOVE GRADE ONTO CONCRETE SPLASH BLOCK. PROVIDE SEPARATE RISERS FOR EACH FLOOR. MAKE PENETRATION THROUGH WALL WEATHER-TIGHT. CONNECT CONDENSATE PIPING TO INDOOR UNITS.
- 2 4" PVC VENT FROM DUCT/PIPING SHAFT FLOOR, PITCHED CONTINUOUSLY DOWNWARD TOWARDS EXTERIOR, TERMINATE W/ 45° ELBOW DN W/ BIRD SCREEN.
- 3 4"Ø EXHAUST DN TO DRYER. PROVIDE DRYER COMPLETE W/ 4"Ø DRYERBOX DB-480 CLEANOUT RECEPTACLE OR SIMILAR AT BASE OF VERTICAL RISE. PROVIDE CONNECTION TO DRYER W/ FLEXIBLE ALUMINUM UL 2158A DRYER EXHAUST DUCT. ALL DRYER DUCT SHALL BE MINIMUM 0.018" THICK ALUMINUM WITH SMOOTH INTERIOR FINISH. THE ANNULAR SPACE AT ALL EXHAUST DUCT WALL PENETRATIONS SHALL BE SEALED WITH UL LISTED FIRE CAULK.



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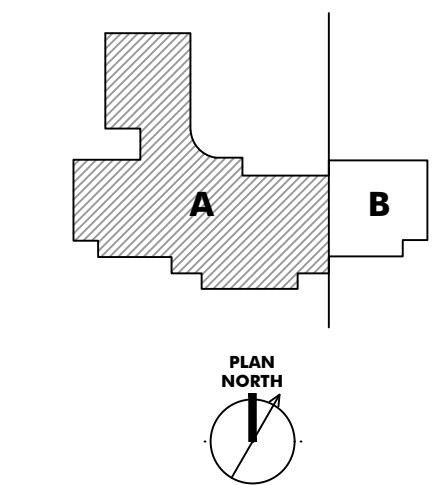
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KEYPLAN



ISSUE HISTORY

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SHEET TITLE
MECHANICAL PIPING
THIRD FLOOR PLAN -
SECTOR A

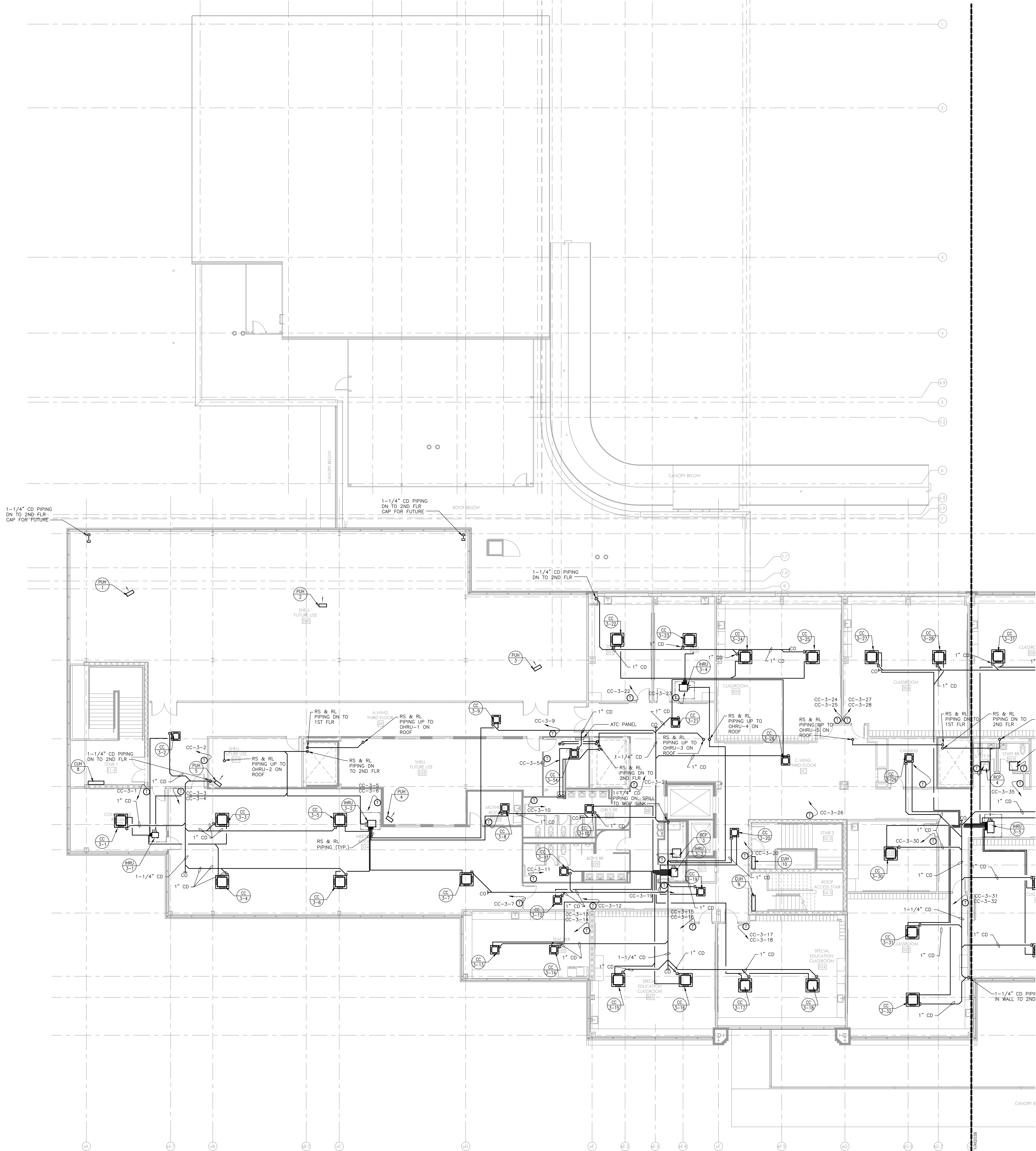
DRAWING NUMBER

M203A

- NOTES:
- FOR GENERAL NOTES, REFER TO DRAWING M001.
 - REFER TO DWG M500 SERIES DRAWINGS FOR ADDITIONAL REFRIGERANT PIPING REQUIREMENTS.

NEW WORK KEY NOTES:

- RUN CONDENSATE DOWN IN CHASE TO EXTERIOR, W/ ELBOW AND SPILL 4" ABOVE GRADE ONTO CONCRETE SPLASH BLOCK. PROVIDE SEPARATE RISERS FOR EACH FLOOR. MAKE PENETRATION THROUGH WALL WEATHER-TIGHT. CONNECT CONDENSATE PIPING TO INDOOR UNITS.
- 4" PVC VENT FROM DUCT/PIPING SHAFT FLOOR, PITCHED CONTINUOUSLY DOWNWARD TOWARDS EXTERIOR, TERMINATE W/ 45° ELBOW DN W/ BIRD SCREEN.
- 4"Ø EXHAUST DN TO DRYER. PROVIDE DRYER COMPLETE W/ 4"Ø DRYERBOX DB-480 CLEANOUT RECEPTACLE OR SIMILAR AT BASE OF VERTICAL RISE. PROVIDE CONNECTION TO DRYER W/ FLEXIBLE ALUMINUM UL 2158A DRYER EXHAUST DUCT. ALL DRYER DUCT SHALL BE MINIMUM 0.018" THICK ALUMINUM WITH SMOOTH INTERIOR FINISH. THE ANNULAR SPACE AT ALL EXHAUST DUCT WALL PENETRATIONS SHALL BE SEALED WITH UL LISTED FIRE CAULK.



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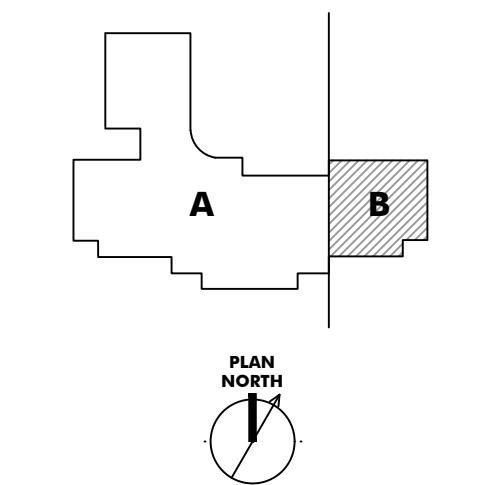
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ISSUE HISTORY

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SHEET TITLE
MECHANICAL PIPING
THIRD FLOOR PLAN -
SECTOR B

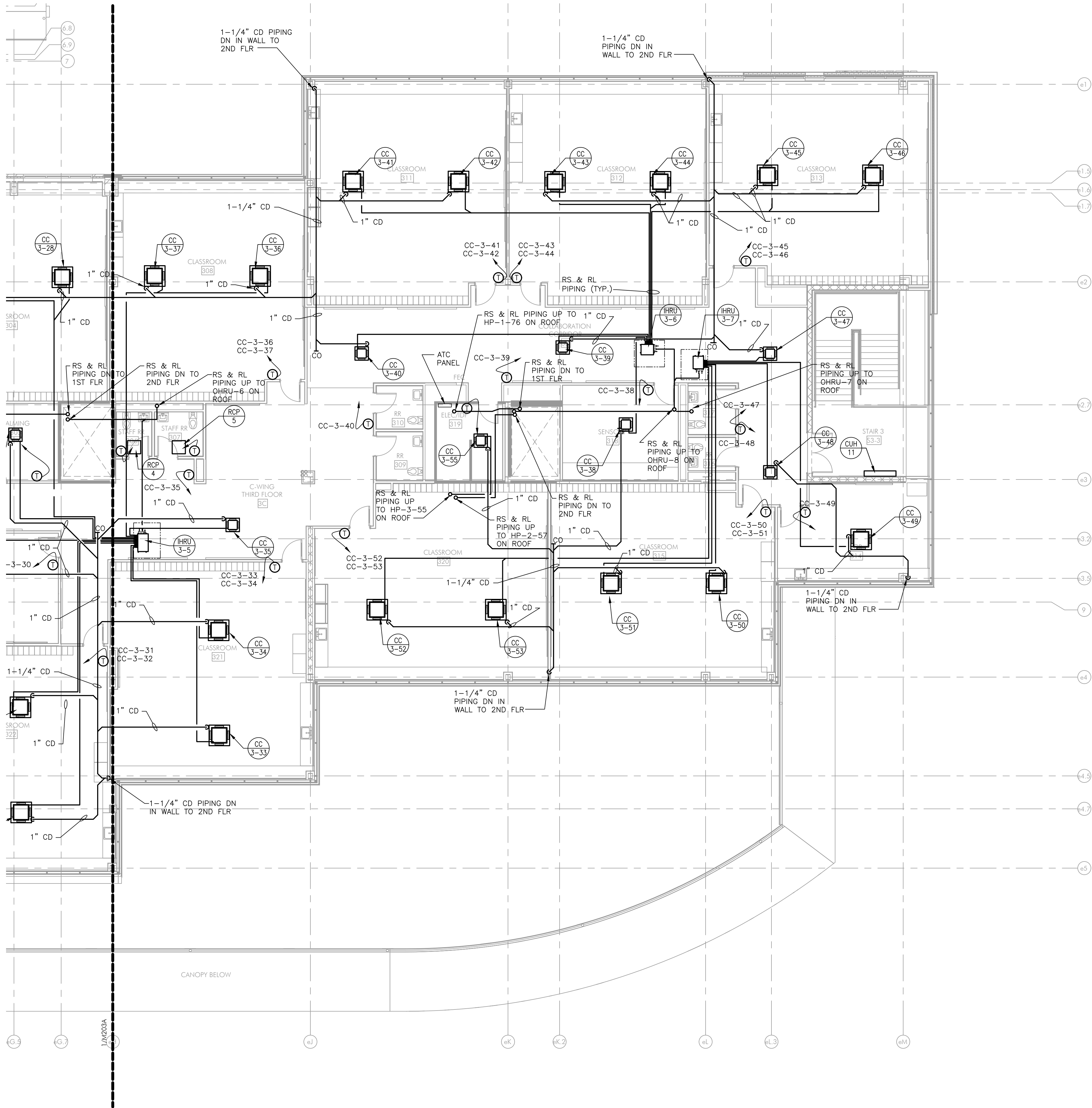
DRAWING NUMBER

M203B

- NOTES:
- FOR GENERAL NOTES, REFER TO DRAWING M001.
 - REFER TO DWG M500 SERIES DRAWINGS FOR ADDITIONAL REFRIGERANT PIPING REQUIREMENTS.

NEW WORK KEY NOTES:

- RUN CONDENSATE DOWN IN CHASE TO EXTERIOR, W/ ELBOW AND SPILL 4" ABOVE GRADE ONTO CONCRETE SPLASH BLOCK. PROVIDE SEPARATE RISERS FOR EACH FLOOR. MAKE PENETRATION THROUGH WALL WEATHER-TIGHT. CONNECT CONDENSATE PIPING TO INDOOR UNITS.
- 4" PVC VENT FROM DUCT/PIPING SHAFT FLOOR, PITCHED CONTINUOUSLY DOWNWARD TOWARDS EXTERIOR, TERMINATE W/ 45° ELBOW DN W/ BIRD SCREEN.
- 4"Ø EXHAUST DN TO DRYER. PROVIDE DRYER COMPLETE W/ 4"Ø DRYERBOX DB-480 CLEANOUT RECEPTACLE OR SIMILAR AT BASE OF VERTICAL RISE. PROVIDE CONNECTION TO DRYER W/ FLEXIBLE ALUMINUM UL 2158A DRYER EXHAUST DUCT. ALL DRYER DUCT SHALL BE MINIMUM 0.018" THICK ALUMINUM WITH SMOOTH INTERIOR FINISH. THE ANNULAR SPACE AT ALL EXHAUST DUCT WALL PENETRATIONS SHALL BE SEALED WITH UL LISTED FIRE CAULK.



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STRUCTURAL ENGINEER
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500 Fayette Street, Suite 1100
Conshohocken, PA 19428
610-825-2600

MEPP ENGINEER
Schiller & Hersh Associates
636 Skippack Pike, Suite 200
Blue Bell, PA 19422
215-886-8947

SITE/CIVIL ENGINEER
Pennoni Associates, Inc.
158 W Gay Street, Suite 300
West Chester, PA 19382
610-429-8907

FOOD SERVICE
Corsi Associates
1001 Baltimore Pike, Suite 308
Springfield, PA 19064
610-541-0822

ACOUSTICS
Metropolitan Acoustics LLC
1628 John F Kennedy Blvd #1902
Philadelphia, PA 19103
215-248-4352

IT
TERANET CONSULTING SERVICES
2 Colchester Place
Newtown, PA 18940
267-719-3307

AV
Applied Video Technology
2218 Kimberton Road
Kimberton, PA 19422
610-407-0776

NOT FOR
CONSTRUCTION

KEYPLAN

ISSUE HISTORY

A	DATE	ISSUED FOR
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2025-03-28	BD ISSUE
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SHEET TITLE
MECHANICAL
SCHEDULES

DRAWING NUMBER

M301

PACKAGED ROOFTOP UNIT WITH ENERGY RECOVERY SCHEDULE																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
UNIT TAG	AREA SERVED	MINIMUM OA CFM	SUPPLY FAN										EXHAUST FAN										ENTHALPY WHEEL SUMMER CONDITIONS										COOLING EFFECTIVENESS	ENTHALPY WHEEL WINTER CONDITIONS										ENTHALPY WHEEL MOTOR FLA	D/X COOLING @ 95°										HOT GAS REHEAT																																																																																																																																																																																																																																																																																																																																																																																																																	
			CFM	ESP IN. WC	TSP IN. WC	NO.	BHP EA	HP EA	CFM	ESP IN. WC	TSP IN. WC	NO.	BHP EA	HP EA	OA DESIGN DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F		DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F		DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F

PACKAGED ROOFTOP UNIT WITH ENERGY RECOVERY SCHEDULE (CONT'D)																	
UNIT TAG	GAS HEAT							ELECTRICAL CHARACTERISTICS					EER	MAXIMUM DIMENSIONS L x W x H	AIRFLOW ARRANGEMENT	OPERATING WEIGHT LBS.	BASIS OF DESIGN MANUFACTURER AND MODEL NO.
	HEATING CFM	AIR		HEATING MODULATION	INPUT MBH	OUTPUT MBH	MANIFOLD GAS PRESSURE IN. W.C.	VOLTS	PHASE	CYCLE	MCA	MOCP					
		ENT °F	LVG °F														
DOAS-1	9,800	42.4	88.0	10-100%	600	486	6-10.5	460	3	60	123	125	10.0	240"x101"x102"	DOWNFLOW	8,000	AAON RNA-040
DOAS-2	7,300	33.9	89.1	6-100%	540	437.4	6-10.5	460	3	60	84	100	10.6	185"x101"x60"	DOWNFLOW	4,300	AAON RNA-030
DOAS-3	6,800	38.7	83.2	6-100%	405	328.1	6-10.5	460	3	60	84	100	10.6	185"x101"x60"	DOWNFLOW	4,300	AAON RNA-030
DOAS-4	7,900	43.4	100.0	6-100%	600	486	6-10.5	460	3	60	87	100	10.5	240"x101"x102"	DOWNFLOW	7,600	AAON RNA-031
1. PROVIDE ALL UNITS WITH UNIT MOUNTED NON-FUSED DISCONNECT SWITCH. 2. PROVIDE ALL UNITS WITH TERMINAL STRIP FOR FIELD CONTROLS. 3. PROVIDE ALL UNITS WITH INSULATED BASE PAN AND DOUBLE WALL CABINET CONSTRUCTION WITH 2 INCH THICK INSULATION. 4. PROVIDE ALL UNITS WITH CONVENIENCE LIGHT AND OUTLET WIRED TO LINE SIDE OF DISCONNECT. 5. PROVIDE ALL UNITS WITH MERV 8 FILTERS. 6. PROVIDE ALL UNITS WITH 18" CURB W/ VIBRATION ISOLATION RAILS. 7. PROVIDE DOAS-1 & 4 WITH SOLID BOTTOM CURBS FOR FIELD CUT CUSTOM DUCT CONNECTIONS. 8. PROVIDE ALL UNITS WITH MODULATING STAINLESS STEEL GAS HEAT EXCHANGER. 9. PROVIDE ALL UNITS WITH MINIMUM 35KA SCOR RATING. 10. PROVIDE ALL UNITS WITH SUPPLY FANS AND EXHAUST FANS WITH VFD DRIVE & HIGH EFFICIENCY MOTOR. 11. PROVIDE ALL UNITS WITH VARIABLE SPEED CONDENSER FANS WITH HEAD PRESSURE CONTROL. 12. PROVIDE ALL UNITS WITH VARIABLE CAPACITY LEAD COMPRESSORS. 13. DOAS-1 AIRFLOW IS SIZED FOR FUTURE LOAD. REFER TO DWG M100 SERIES DWGS FOR ACTUAL AIRFLOWS FOR BALANCING PURPOSES.																	

PACKAGED ROOFTOP UNIT WITH ENERGY RECOVERY SCHEDULE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
UNIT TAG	AREA SERVED	MAX SUPPLY CFM	MIN SUPPLY CFM	MIN OA CFM	MAX OA CFM	SUPPLY FAN					EXHAUST FAN					ENTHALPY WHEEL SUMMER CONDITIONS										D/X COOLING @ 95°										HOT GAS REHEAT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
						CFM	ESP IN. WC	TSP IN. WC	NO. BHP EA	HP EA	CFM	ESP IN. WC	TSP IN. WC	NO. BHP EA	HP EA	OA DESIGN		SUPPLY AIR DB °F WHEEL		RETURN AIR DB °F WHEEL		EXHAUST AIR DB °F WHEEL		COOLING EFFECTIVENESS	OA DESIGN		SUPPLY AIR DB °F WHEEL		RETURN AIR DB °F WHEEL		EXHAUST AIR DB °F WHEEL		HEATING EFFECTIVENESS	ENTHALPY WHEEL MOTOR FLA	ENT AIR		LVG AIR		FACE VEL FPM	GROSS TOTAL MBH	GROSS SENSIBLE MBH	NET TOTAL MBH	NET SENSIBLE MBH	CONDENSER FAN MOTOR FLA		COMPRESSOR	LVG AIR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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PACKAGED ROOFTOP UNIT WITH ENERGY RECOVERY SCHEDULE (CONT'D)																		
UNIT TAG	GAS HEAT								ELECTRICAL CHARACTERISTICS					EER	MAXIMUM DIMENSIONS L x W x H	AIRFLOW ARRANGEMENT	OPERATING WEIGHT LBS.	BASIS OF DESIGN MANUFACTURER AND MODEL NO.
	MIN HEATING CFM	MAX HEATING CFM	AIR		HEATING MODULATION	INPUT MBH	OUTPUT MBH	MANIFOLD GAS PRESSURE IN. W.C.	VOLTS	PHASE	CYCLE	MCA	MOCP					
			ENT °F	LVG °F														
RTU-1	6,500	8,500	60.1	83.7	11-100%	270	218.7	6-10.5	460	3	60	86	100	10.6	199"x129"x60"	HORIZONTAL	4,400	AAON RNA-030
1. PROVIDE UNIT WITH UNIT MOUNTED NON-FUSED DISCONNECT SWITCH. 2. PROVIDE UNIT WITH TERMINAL STRIP FOR FIELD CONTROLS. 3. PROVIDE UNIT WITH INSULATED BASE PAN AND DOUBLE WALL CABINET CONSTRUCTION WITH 2 INCH THICK INSULATION. 4. PROVIDE UNIT WITH CONVENIENCE LIGHT AND OUTLET WIRED TO LINE SIDE OF DISCONNECT. 5. PROVIDE UNIT WITH MERV 13 FILTERS. 6. PROVIDE UNIT WITH 18" ROOF CURB. 7. PROVIDE UNIT WITH MODULATING STAINLESS STEEL GAS HEAT EXCHANGER. 8. PROVIDE UNIT WITH MINIMUM 35KA SCOR RATING. 9. PROVIDE UNIT WITH SUPPLY FANS AND EXHAUST FANS WITH VFD DRIVE & HIGH EFFICIENCY MOTOR. 10. PROVIDE UNIT WITH VARIABLE SPEED CONDENSER FANS WITH HEAD PRESSURE CONTROL FOR ALL FANS. 11. PROVIDE UNIT WITH VARIABLE CAPACITY LEAD COMPRESSORS.																		

PACKAGED ROOFTOP UNIT SCHEDULE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
UNIT TAG	AREA SERVED	MAX SUPPLY CFM	MIN SUPPLY CFM	MINIMUM OA CFM	SUPPLY FAN				D/X COOLING @ 95 °F										HOT GAS REHEAT						GAS HEAT								ELECTRICAL CHARACTERISTICS					EER	MAXIMUM DIMENSIONS L x W x H	AIRFLOW ARRANGEMENT	OPERATING WEIGHT LBS.	BASIS OF DESIGN MANUFACTURE AND MODEL NO.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
					ESP IN. WC	TSP IN. WC	BHP	HP	ENT AIR DB °F	WB °F	LVG AIR DB °F	WB °F	FACE VEL FPM	GROSS TOTAL MBH	GROSS SENSIBLE MBH	NET TOTAL MBH	NET SENSIBLE MBH	CONDENSER FAN MOTOR NO.	H.P. EA	FLA EA	NO.	RLA	CAPACITY MBH	LVG AIR DB °F	WB °F	°F	MIN HEATING CFM	MAX HEATING CFM	AIR ENT °F	LVG °F	HEATING MODULATION	INPUT MBH											OUTPUT MBH	MANIFOLD GAS PRESSURE IN. W.C.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
																																	DB °F	WB °F	DB °F	WB °F	DB °F								WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F

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CONSTRUCTION

KEYPLAN

ISSUE HISTORY

A	DATE	ISSUED FOR
2025-03-28	BO	ISSUE

HEAT PUMP UNIT SCHEDULE																							
UNIT TAG	TONS	COOLING CAPACITY BTUH @ 85 °F AMBIENT	HEATING CAPACITY BTUH @ 0 °F AMBIENT	HEAT RECOVERY CAPACITY BTUH	COMPRESSOR		CONDENSER FAN MOTOR		ELECTRICAL CHARACTERISTICS						MAX. AMBIENT TEMP. °F	IEER	HSPF (COP)	MAXIMUM DIMENSIONS, IN. LxWxH	MAXIMUM SOUND PRESSURE LEVEL, dB(A)	OPERATING WEIGHT LBS	BASIS OF DESIGN MANUFACTURER AND MODEL NO.		
					QTY.	H.P. EA.	RLA, SECTION 1/2/3/4	QTY.	H.P. EA.	VOLTS	PHASE	CYCLE	MCA FRAME A	MOCF FRAME A								MCA FRAME B	MOCF FRAME B
OHRU-1	28	297,075	208,807	208,807	4	-	5.7/9.1/5.7/9.1	4	-	460	3	60	24.9	30	24.9	30	95	17.3	(3.2)	100x31x66	69	1,605	DAIKEN REYQ336AAYDB
OHRU-2	32	368,458	264,561	264,561	4	-	7.5/7.6/7.5/7.6	4	-	460	3	60	28.3	35	28.3	35	95	17.3	(3.2)	140x31x66	71	1,945	DAIKEN REYQ384AAYDB
OHRU-3	28	310,641	210,969	210,969	4	-	5.7/9.1/5.7/9.1	4	-	460	3	60	24.9	30	24.9	30	95	17.3	(3.2)	100x31x66	69	1,605	DAIKEN REYQ336AAYDB
OHRU-4	20	205,252	139,688	139,688	2	-	11/11.1	2	-	460	3	60	33.4	40	-	-	95	17.2	(3.2)	69x31x66	69	975	DAIKEN REYQ240AAYDB
OHRU-5	16	180,202	131,321	131,321	2	-	7.5/7.6	2	-	460	3	60	28.3	35	-	-	95	18.1	(3.3)	69x31x66	67	975	DAIKEN REYQ192AAYDB
OHRU-6	28	339,638	239,825	239,825	4	-	7.5/7.6/5.7/9.1	4	-	460	3	60	28.3	35	24.9	30	95	18.9	(3.4)	119x31x66	70	1,775	DAIKEN REYQ360AAYDB
OHRU-7	38	422,588	275,653	275,653	4	-	11/11.1/7.5/7.6	4	-	460	3	60	33.4	40	29.9	35	95	15.6	(3.2)	140x31x66	72	1,945	DAIKEN REYQ456AAYDB
OHRU-8	22	250,698	192,544	192,544	4	-	4.5/7.2/4.8/4.8	4	-	460	3	60	21.3	25	16.6	20	95	18.0	(3.2)	100x31x66	67	1,530	DAIKEN REYQ264AAYDB
OHRU-9	12	127,583	105,603	105,603	2	-	4.5/7.2	2	-	460	3	60	21.3	25	-	-	95	18.1	(3.3)	49x31x66	65	805	DAIKEN REYQ144AAYDB

1. PROVIDE ALL UNITS WITH NON-FUSED, UNISTRUT MOUNTED DISCONNECT SWITCH FOR EACH CIRCUIT BY THE EC.
2. PROVIDE ALL UNITS WITH HEAT RECOVERY FOR SIMULTANEOUS HEATING & COOLING.
3. PROVIDE ALL UNITS COMPLETE WITH OVER/FUNDER VOLTAGE AND PHASE LOSS PROTECTION KIT.
4. PROVIDE SYSTEM COMPLETE WITH INTELLIGENT TOUCH MANAGER AND HERO SIMPLE EDGE CLOUD COMMUNICATION ADAPTOR W/ BACNET INTERFACE.

SPLIT SYSTEM WALL CASSETTE UNIT SCHEDULE																
UNIT TAG	AREA SERVED	TOTAL SUPPLY CFM	TOTAL COOLING BTU/HR	TOTAL HEATING BTU/HR	ELECTRICAL CHARACTERISTICS				MAXIMUM DIMENSIONS, IN. LxWxH	OPERATING WEIGHT LBS.	BASIS OF DESIGN MANUFACTURER & MODEL NO.	SERVED BY				
					VOLTS	PHASE	CYCLE	FLA								
WC-1-1	ELEV MR 142	605	18,100	21,600	208	1	60	-	40x11x12	31	DAIKIN FTXF18AXVJU	HP-1-1				

1. PROVIDE UNIT WITH WALL MOUNTED HARD-WIRED THERMOSTAT.
2. PROVIDE UNIT WITH NON-FUSED, UNIT MOUNTED DISCONNECT SWITCH BY THE EC.

AIR COOLED HEAT PUMP UNIT SCHEDULE																						
UNIT TAG	TONS	COMPRESSOR			CONDENSER FAN MOTOR			ELECTRICAL CHARACTERISTICS					MAX. AMBIENT TEMP. °F	SEER2	COP2	OPERATING WEIGHT, LBS	MAXIMUM DIMENSIONS, IN. LxWxH	INDOOR UNIT SERVED	BASIS OF DESIGN MANUFACTURER AND MODEL NO.			
		QTY.	H.P. EA.	RLA EA.	QTY.	H.P. EA.	FLA EA.	VOLTS	PHASE	CYCLE	MCA	MCCP										
HP-1-1	1.5	1	-	-	1	-	-	208	1	60	16.3	20	122	21.0	3.6	105	37x14x28	WC-1-1	DAIKIN RXF18AXVJU			
HP-1-75	1.5	1	-	10.8	1	-	0.6	208	1	60	11.0	15	115	18.2	3.0	100	35x13x29	CC-1-61	DAIKIN RX18RMJU9A			
HP-1-76	3.0	1	-	19.0	2	-	-	208	1	60	29.1	35	122	17.6	2.6	225	36x13x53	CC-1-62	DAIKIN RZQ36TANUJA			
HP-2-54	1.5	1	-	10.8	1	-	0.6	208	1	60	11.0	15	115	18.2	3.0	100	35x13x29	CC-2-54	DAIKIN RX18RMJU9A			
HP-2-55	1.5	1	-	10.8	1	-	0.6	208	1	60	11.0	15	115	18.2	3.0	100	35x13x29	CC-2-55	DAIKIN RX18RMJU9A			
HP-3-54	1.5	1	-	10.8	1	-	0.6	208	1	60	11.0	15	115	18.2	3.0	100	35x13x29	CC-1-61	DAIKIN RX18RMJU9A			
HP-3-55	1.5	1	-	10.8	1	-	0.6	208	1	60	11.0	15	115	18.2	3.0	100	35x13x29	CC-1-61	DAIKIN RX18RMJU9A			

1. EC TO PROVIDE NON-FUSED UNISTRUT MOUNTED DISCONNECT SWITCH.
2. PROVIDE ALL UNITS COMPLETE WITH LOW AMBIENT OPERATION DOWN TO 0°F.
3. PROVIDE ALL UNITS COMPLETE WITH DKN PLUS INTERFACE.

VRF INDOOR HEAT RECOVERY UNIT SCHEDULE																			
UNIT TAG	OUTDOOR UNIT SERVED	NO. OF PORTS	MAX PORT CAPACITY BTUH	MAX UNIT CAPACITY BTUH	ELECTRICAL CHARACTERISTICS				MAXIMUM DIMENSIONS, IN. LxWxH	OPERATING WEIGHT LBS	BASIS OF DESIGN MANUFACTURER AND MODEL NO.								
					VOLTS	PHASE	CYCLE	AMPS				MOCF							
IHRU-1-1	OHRU-1	8	162,000	290,000	208	1	60	0.8	15	24x24x10	81	DAIKIN BSF8054TVJ							
IHRU-1-2	OHRU-1	6	162,000	216,000	208	1	60	0.6	15	24x24x10	73	DAIKIN BSF8054TVJ							
IHRU-1-3	OHRU-9	8	162,000	290,000	208	1	60	0.8	15	24x24x10	81	DAIKIN BSF8054TVJ							
IHRU-1-4	OHRU-3	10	162,000	290,000	208	1	60	1.0	15	33x19x12	101	DAIKIN BS10Q54TVJ							
IHRU-1-5	OHRU-5	10	162,000	290,000	208	1	60	1.0	15	33x19x12	101	DAIKIN BS10Q54TVJ							
IHRU-1-6	OHRU-5	4	54,000	144,000	208	1	60	0.4	15	14x24x10	49	DAIKIN BS4Q54TVJ							
IHRU-1-7	OHRU-7	8	162,000	290,000	208	1	60	0.8	15	24x24x10	81	DAIKIN BSF8054TVJ							
IHRU-1-8	OHRU-7	8	162,000	290,000	208	1	60	0.8	15	24x24x10	81	DAIKIN BSF8054TVJ							
IHRU-2-1	OHRU-2	10	162,000	290,000	208	1	60	1.0	15	33x19x12	101	DAIKIN BS10Q54TVJ							
IHRU-2-2	OHRU-2	4	54,000	144,000	208	1	60	0.4	15	14x24x10	49	DAIKIN BS4Q54TVJ							
IHRU-2-3	OHRU-2	4	54,000	144,000	208	1	60	0.4	15	14x24x10	49	DAIKIN BS4Q54TVJ							
IHRU-2-4	OHRU-3	8	162,000	290,000	208	1	60	0.8	15	24x24x10	81	DAIKIN BSF8054TVJ							
IHRU-2-5	OHRU-3	6	162,000	216,000	208	1	60	0.6	15	24x24x10	73	DAIKIN BSF8054TVJ							
IHRU-2-6	OHRU-6	10	162,000	290,000	208	1	60	1.0	15	33x19x12	101	DAIKIN BS10Q54TVJ							
IHRU-2-7	OHRU-7	12	162,000	290,000	208	1	60	1.2	15	33x19x12	106	DAIKIN BS12Q54TVJ							
IHRU-3-1	OHRU-2	4	54,000	144,000	208	1	60	0.4	15	14x24x10	49	DAIKIN BS4Q54TVJ							
IHRU-3-2	OHRU-2	4	54,000	144,000	208	1	60	0.4	15	14x24x10	49	DAIKIN BS4Q54TVJ							
IHRU-3-3	OHRU-4	8	162,000	290,000	208	1	60	0.8	15	24x24x10	81	DAIKIN BSF8054TVJ							
IHRU-3-4	OHRU-4	6	162,000	216,000	208	1	60	0.6	15	24x24x10	73	DAIKIN BSF8054TVJ							
IHRU-3-5	OHRU-6	10	162,000	290,000	208	1	60	1.0	15	33x19x12	101	DAIKIN BS10Q54TVJ							
IHRU-3-6	OHRU-8	6	162,000	216,000	208	1	60	0.6	15	24x24x10	73	DAIKIN BSF8054TVJ							
IHRU-3-7	OHRU-8	6	162,000	216,000	208	1	60	0.6	15	24x24x10	73	DAIKIN BSF8054TVJ							

1. PROVIDE UNIT WITH NON-FUSED, UNIT MOUNTED DISCONNECT SWITCH BY THE EC.
2. REFER TO DWG M500 SERIES DRAWINGS FOR PIPING DIAGRAMS AND INDOOR UNITS SERVED BY IHRUS.

VRF AIR HANDLING UNIT SCHEDULE		
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KEYPLAN

ISSUE HISTORY

A	DATE	ISSUED FOR
2025-03-28	880	ISSUE

SHEET TITLE
MECHANICAL
SCHEDULES

DRAWING NUMBER

M303

SPLIT SYSTEM CEILING CASSETTE UNIT SCHEDULE																
UNIT TAG	AREA SERVED	TOTAL SUPPLY CFM MEDIUM SPEED	MINIMUM CFM	TOTAL COOLING BTU/HR	CORRECTED TOTAL COOLING BTU/HR AT 72° DB/62.5° WB	TOTAL HEATING BTU/HR (70° F)	ELECTRICAL CHARACTERISTICS					MAXIMUM DIMENSIONS, IN. LxWxH	OPERATING WEIGHT LBS.	BASIS OF DESIGN MANUFACTURER & MODEL NO.	SERVED BY	
							VOLTS	PHASE	CYCLE	MCA (FLA)	MOP					
CC-2-1	TEACHER PREP 239	618	--	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-2
CC-2-2	CORRIDOR - 2ND FLR	441	--	18,000	15,183	20,000	20,121	208	1	60	0.6	15	24x24x12	42	DAIKIN FXZQ18TBVJU	OHRU-2
CC-2-3	SCIENCE A 200	618	--	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-2
CC-2-4	SCIENCE A 200	618	--	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-2
CC-2-5	SCIENCE B 202	459	--	14,400	12,147	17,000	16,992	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ15AAVJU	OHRU-2
CC-2-6	SCIENCE B 202	459	--	14,400	12,147	17,000	16,992	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ15AAVJU	OHRU-2
CC-2-7	MUSIC 203	477	--	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-2
CC-2-8	MUSIC 203	477	--	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-2
CC-2-9	A-WING 2ND FLR - 2A	264	--	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-2
CC-2-10	MUSIC OFFICE 203A	264	30	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-2
CC-2-11	MUSIC PRACTICE 203B	282	--	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-2
CC-2-12	A-WING 2ND FLR - 2A	264	--	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-2
CC-2-13	SCIENCE PREP 201	247	--	5,800	4,947	6,500	6,483	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ05TBVJU	OHRU-2
CC-2-14	SCIENCE PREP 201	247	--	5,800	4,947	6,500	6,483	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ05TBVJU	OHRU-2
CC-2-15	STG 234A	264	30	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-2
CC-2-16	MUSIC STG 233	282	--	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-3
CC-2-17	ART STG 205A	247	--	5,800	4,947	6,500	6,483	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ05TBVJU	OHRU-3
CC-2-18	MUSIC STG 204	282	--	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-3
CC-2-19	KILN 205B	300	--	12,000	10,236	13,500	13,642	208	1	60	0.4	15	24x24x12	37	DAIKIN FXZQ12TBVJU	OHRU-3
CC-2-20	ART 205	406	--	12,000	10,100	13,500	13,512	208	1	60	0.3	15	34x34x12	42	DAIKIN FXFQ12AAVJU	OHRU-3
CC-2-21	ART 205	406	--	12,000	10,100	13,500	13,512	208	1	60	0.3	15	34x34x12	42	DAIKIN FXFQ12AAVJU	OHRU-3
CC-2-22	B-WING 2ND FLR - 2B	264	--	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-3
CC-2-23	B-WING 2ND FLR - 2B	264	--	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-3
CC-2-24	SGR 226	441	--	18,000	15,183	20,000	20,121	208	1	60	0.6	15	24x24x12	42	DAIKIN FXZQ18TBVJU	OHRU-3
CC-2-25	SGR 226	441	--	18,000	15,183	20,000	20,121	208	1	60	0.6	15	24x24x12	42	DAIKIN FXZQ18TBVJU	OHRU-3
CC-2-26	SGR 225	618	--	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-3
CC-2-27	B-WING 2ND FLR - 2B	264	--	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-3
CC-2-28	SGR 224	441	--	18,000	15,183	20,000	20,121	208	1	60	0.6	15	24x24x12	42	DAIKIN FXZQ18TBVJU	OHRU-3
CC-2-29	SGR 223	300	--	12,000	10,236	13,500	13,642	208	1	60	0.4	15	24x24x12	37	DAIKIN FXZQ12TBVJU	OHRU-3
CC-2-30	SGR 223	300	--	12,000	10,236	13,500	13,642	208	1	60	0.4	15	24x24x12	37	DAIKIN FXZQ12TBVJU	OHRU-3
CC-2-31	LIBRARY OFFICE 206A	282	30	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-6
CC-2-32	LIBRARY STORAGE 206B	247	30	5,800	4,947	6,500	6,483	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ05TBVJU	OHRU-6
CC-2-33	C-WING 2ND FLR - 2C	264	--	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-6
CC-2-34	CLASSROOM 222	618	--	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-6
CC-2-35	CLASSROOM 222	618	--	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-6
CC-2-36	CLASSROOM 221	882	--	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-6
CC-2-37	CLASSROOM 221	882	--	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-6
CC-2-38	C-WING 2ND FLR - 2C	264	--	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-6
CC-2-39	CLASSROOM 220	882	--	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-7
CC-2-40	CLASSROOM 220	618	--	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-7
CC-2-41	COLLABORATION CORR 2D	282	--	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-7
CC-2-42	CLASSROOM 211	477	--	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-7
CC-2-43	CLASSROOM 211	477	--	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-7
CC-2-44	CLASSROOM 212	477	--	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-7
CC-2-45	CLASSROOM 212	477	--	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-7
CC-2-46	CLASSROOM 213	477	--	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-7
CC-2-47	CLASSROOM 213	477	--	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-7
CC-2-48	SGR 218	282	--	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-7
CC-2-49	COLLABORATION CORR 2D	282	--	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-7
CC-2-50	COLLABORATION CORR 2D	335	--	15,000	12,795	17,000	17,057	208	1	60	0.4	15	24x24x12	37	DAIKIN FXZQ15TBVJU	OHRU-7
CC-2-51	TEACHER PREP 214	618	--	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-7
CC-2-52	SPECIAL EDUCATION 215	882	--	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-7
CC-2-53	SPECIAL EDUCATION 215	882	--	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-7
CC-2-54	ART 205	264	--	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-3
CC-2-55	ART 232	247	--	5,800	4,947	6,500	6,483	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ05TBVJU	OHRU-3
CC-2-56	ELEC/IDF 331	498	--	17,400	--	21,600	12,300	208	1	60	(0.28)	--	24x24x12	39	DAIKIN FFG18W2VJU9	HP-3-56
CC-2-57	ELEC/IDF 319	498	--	17,400	--	21,600	12,300	208	1	60	(0.28)	--	24x24x12	39	DAIKIN FFG18W2VJU9	HP-3-57

1. PROVIDE UNIT WITH WALL MOUNTED HARD-WIRED THERMOSTAT.
2. PROVIDE ALL UNITS COMPLETE WITH INTEGRAL CONDENSATE PUMP.
3. PROVIDE ALL UNITS WITH OA VALVE WITH VENTILATION KIT.
4. PROVIDE ALL UNITS WITH NON-FUSED, UNIT MOUNTED DISCONNECT SWITCH BY THE EC.

SPLIT SYSTEM CEILING CASSETTE UNIT SCHEDULE																
UNIT TAG	AREA SERVED	TOTAL SUPPLY CFM MEDIUM SPEED	MINIMUM CFM	TOTAL COOLING BTU/HR	CORRECTED TOTAL COOLING BTU/HR AT 72°F DB/ 62.5°F WB	TOTAL HEATING BTU/HR	CORRECTED HEATING BTU/HR (70° F)	VOLTS	PHASE	CYCLE	MCA (FLA)	MOP	MAXIMUM DIMENSIONS, IN.	OPERATING WEIGHT LBS.	BASIS OF DESIGN MANUFACTURER & MODEL NO.	SERVED BY
CC-3-1	CONFERENCE RM 335	918	—	36,000	30,299	40,000	39,989	208	1	60	1.6	15	34x34x12	58	DAIKIN FXFQ36AAVJU	OHRU-2
CC-3-2	A-WING 3RD FLR-3A	441	—	18,000	15,183	20,000	20,121	208	1	60	0.6	15	24x24x12	42	DAIKIN FXZQ18TBVJU	OHRU-2
CC-3-3	MEETING RM 334	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-2
CC-3-4	MEETING RM 334	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-2
CC-3-5	MEETING RM 334	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-2
CC-3-6	MEETING RM 334	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-2
CC-3-7	MEETING RM 334	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-2
CC-3-8	MOTHERS RM 334A	264	30	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-2
CC-3-9	A-WING 3RD FLR-3A	282	—	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-2
CC-3-10	GRIL'S R3 320	264	—	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-4
CC-3-11	BOY'S R3 329	264	—	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-4
CC-3-12	B-WING 3RD FLR-3B	282	—	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-4
CC-3-13	TEACHER PREP 326	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-4
CC-3-14	TEACHER PREP 326	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-4
CC-3-15	SPECIAL EDUCATION 325	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-4
CC-3-16	SPECIAL EDUCATION 325	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-4
CC-3-17	SPECIAL EDUCATION 324	477	—	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-4
CC-3-18	SPECIAL EDUCATION 324	477	—	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-4
CC-3-19	B-WING 3RD FLR-3B	282	—	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-4
CC-3-20	B-WING 3RD FLR-3B	282	—	9,500	8,018	10,500	10,574	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ09TBVJU	OHRU-4
CC-3-21	B-WING 3RD FLR-3B	300	—	12,000	10,236	13,500	13,642	208	1	60	0.4	15	24x24x12	37	DAIKIN FXZQ12TBVJU	OHRU-4
CC-3-22	SGR 301	459	—	14,400	12,147	17,000	16,992	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ15AAVJU	OHRU-4
CC-3-23	SGE 302	459	—	14,400	12,147	17,000	16,992	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ15AAVJU	OHRU-4
CC-3-24	CLASSROOM 303	459	—	14,400	12,147	17,000	16,992	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ15AAVJU	OHRU-4
CC-3-25	CLASSROOM 303	459	—	14,400	12,147	17,000	16,992	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ15AAVJU	OHRU-4
CC-3-26	C-WING 3RD FLR-3C	300	—	12,000	10,236	13,500	13,642	208	1	60	0.4	15	24x24x12	37	DAIKIN FXZQ12TBVJU	OHRU-4
CC-3-27	CLASSROOM 304	459	—	14,400	12,147	17,000	16,992	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ15AAVJU	OHRU-6
CC-3-28	CLASSROOM 304	459	—	14,400	12,147	17,000	16,992	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ15AAVJU	OHRU-6
CC-3-29	CALMING 305	264	—	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-6
CC-3-30	SGR 323	406	—	12,000	10,100	13,500	13,512	208	1	60	0.3	15	34x34x12	42	DAIKIN FXFQ12AAVJU	OHRU-6
CC-3-31	CLASSROOM 322	882	—	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-6
CC-3-32	CLASSROOM 322	882	—	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-6
CC-3-33	CLASSROOM 321	882	—	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-6
CC-3-34	CLASSROOM 321	882	—	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-6
CC-3-35	C-WING 3RD FLR-3C	335	—	15,000	12,795	17,000	17,057	208	1	60	0.4	15	24x24x12	37	DAIKIN FXZQ15TBVJU	OHRU-6
CC-3-36	CLASSROOM 308	459	—	14,400	12,147	17,000	16,992	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ15AAVJU	OHRU-6
CC-3-37	CLASSROOM 308	459	—	14,400	12,147	17,000	16,992	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ15AAVJU	OHRU-6
CC-3-38	SENSORY 318	300	—	12,000	10,236	13,500	13,642	208	1	60	0.4	15	24x24x12	37	DAIKIN FXZQ12TBVJU	OHRU-8
CC-3-39	COLLABORATION CORR 30	264	—	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-8
CC-3-40	COLLABORATION CORR 30	264	—	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-8
CC-3-41	CLASSROOM 311	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-8
CC-3-42	CLASSROOM 311	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-8
CC-3-43	CLASSROOM 312	477	—	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-8
CC-3-44	CLASSROOM 312	477	—	18,000	15,149	20,000	19,999	208	1	60	0.4	15	34x34x12	42	DAIKIN FXFQ18AAVJU	OHRU-8
CC-3-45	CLASSROOM 313	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-8
CC-3-46	CLASSROOM 313	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-8
CC-3-47	COLLABORATION CORR 30	264	—	7,500	6,483	8,500	8,527	208	1	60	0.3	15	24x24x12	36	DAIKIN FXZQ07TBVJU	OHRU-8
CC-3-48	COLLABORATION CORR 30	300	—	12,000	10,236	13,500	13,642	208	1	60	0.4	15	24x24x12	37	DAIKIN FXZQ12TBVJU	OHRU-8
CC-3-49	SGR 314	882	—	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-8
CC-3-50	CLASSROOM 315	882	—	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-8
CC-3-51	CLASSROOM 315	882	—	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-8
CC-3-52	CLASSROOM 320	618	—	23,000	19,397	27,000	26,999	208	1	60	0.5	15	34x34x12	51	DAIKIN FXFQ24AAVJU	OHRU-8
CC-3-53	CLASSROOM 320	882	—	30,000	25,249	34,000	33,999	208	1	60	1.0	15	34x34x12	58	DAIKIN FXFQ30AAVJU	OHRU-8
CC-3-54	ELEC/IDF 331	498	—	17,400	—	21,600	12,300	208	1	60	(0.28)	—	24x24x12	39	DAIKIN FFO18W2JU9	HP-3-54
CC-3-55	ELEC/IDF 339	498	—	17,400	—	21,600	12,300	208	1	60	(0.28)	—	24x24x12	39	DAIKIN FFO18W2JU9	HP-3-55

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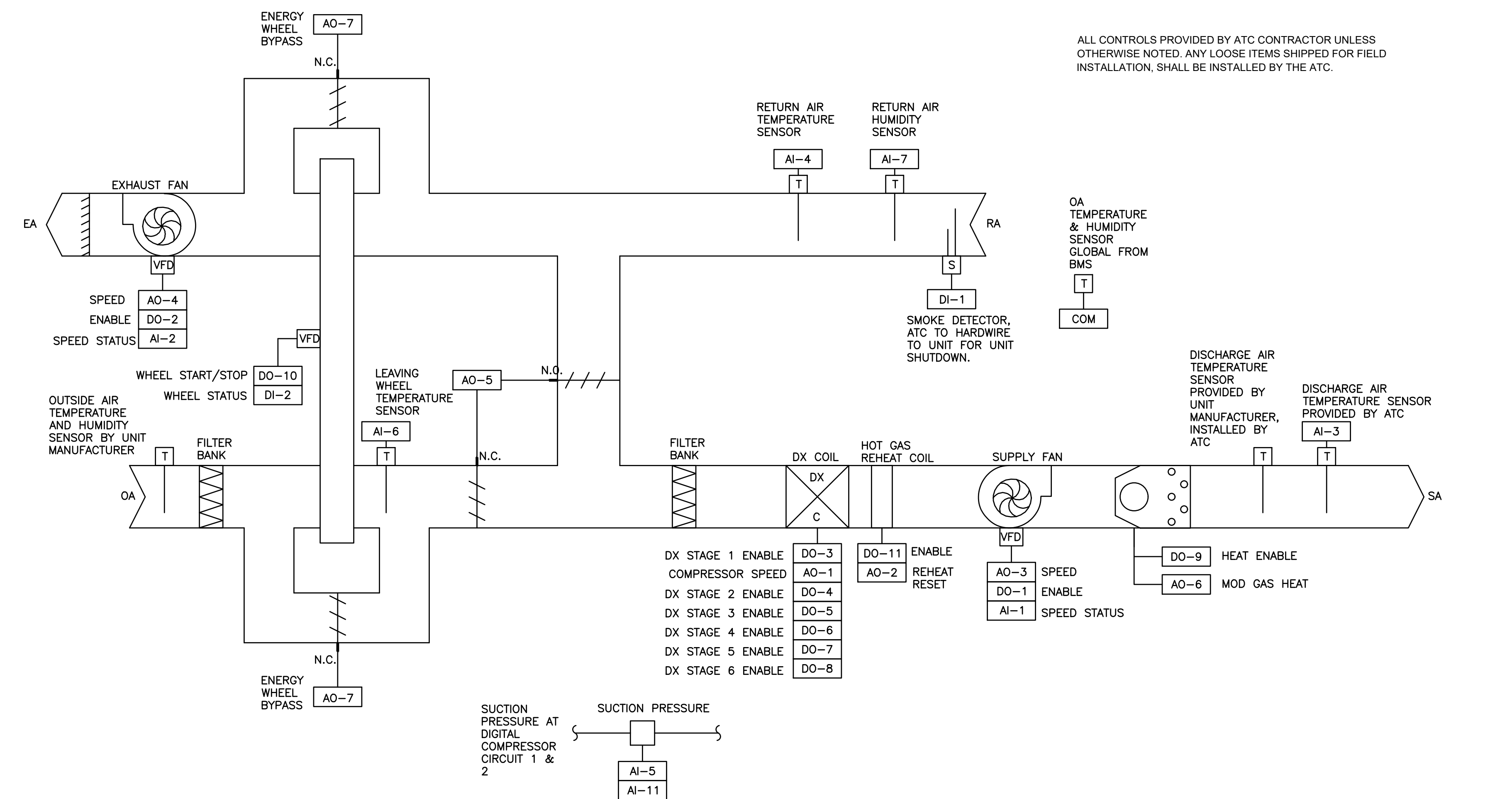
ISSUE HISTORY

A	DATE	ISSUED FOR
	2025-03-28	BID ISSUE

SHEET TITLE
MECHANICAL
CONTROLS

DRAWING NUMBER

M401



DOAS-1 - 4 UNIT SEQUENCE OF OPERATION:

NEW CONTROL REQUIREMENTS SHALL INCLUDE THE PLACEMENT OF A NEW UNIT CONTROLLER WITH I/O EXPANSION INSIDE THE UNIT CONTROLLER CABINET FOR CONTROL OF UNIT VIA MANUFACTURER PROVIDED TERMINAL STRIP. THIS UNIT SHALL BE CONNECTED TO THE BUILDING WIDE COMMUNICATION CABLING (BUS) AND SHALL INTEGRATE ALL POINTS BACK TO SUPERVISORY CONTROLLER. MOUNT NEW CONTROLLER IN UNIT ENCLOSURE AND PROVIDE 120/24V TRANSFORMER FOR POWER. THE ATC CONTRACTOR SHALL INSTALL THE DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY THE UNIT MANUFACTURER. PROVIDE COMPLETE INDIVIDUAL UNIT SCHEDULING FUNCTION THROUGH BUILDING SUPERVISORY CONTROLLER. THE OPERATOR WILL BE ABLE TO ADJUST THE UNIT START/STOP USING THE OPERATOR'S WORKSTATION.

- PROVIDE COMPLETE INDIVIDUAL UNIT SCHEDULING FUNCTION THROUGH UNIT CONTROLLER. THE OPERATOR WILL BE ABLE TO ADJUST THE UNIT START/STOP USING THE CONTROLLER.
- OCCUPIED MODE: THE CONTROLLER SHALL INDEX THE SUPPLY FAN, EXHAUST FAN AND ENERGY WHEEL ON TO RUN CONTINUOUSLY WHILE IN OCCUPIED MODE. UNIT VFDs SHALL BE FOR BALANCING PURPOSES ONLY. THE CONTROLLER WILL MONITOR THE STATUS OF THE FAN AND GENERATE AN ALARM IF THE FAN FAILS TO A START/STOP COMMAND.
- UNOCCUPIED MODE: WHEN THE UNIT IS IN UNOCCUPIED MODE OR THE UNIT IS SHUT DOWN BY SYSTEM SAFETY, THE UNIT WILL BE SET AS FOLLOWS: SUPPLY & EXHAUST FAN WILL BE OFF, OUTDOOR AIR DAMPER CLOSED, RETURN AIR DAMPER OPEN, GAS HEAT OFF & DX COOLING OFF.
- ECONOMIZER OPERATION
 - ENABLED WHEN OUTDOOR AIR (OA) DEWPOINT TEMPERATURE FALLS BELOW THE ECONOMIZER ENABLE SETPOINT BY 1°.
 - ECONOMIZER OPERATION IS DISABLED WHEN THE OA TEMPERATURE RISES 1° ABOVE THE ECONOMIZER ENABLE SETPOINT.
 - ECONOMIZER ACTS AS 1ST STAGE OF COOLING AND CONTROLS TO THE ACTIVE SUPPLY AIR COOLING SETPOINT. DURING ECONOMIZER MODE THE ENERGY WHEEL BYPASS DAMPERS SHALL OPEN.
 - ECONOMIZER DAMPER IS CLOSED DURING UNOCCUPIED MODE.
- OUTSIDE AIR DAMPER: OCCUPIED PERIODS: OPEN TO MAXIMUM POSITION. RA DAMPER SHALL MODULATE CLOSED.

- DX COOLING: MODULATION OF COOLING SHALL BE CONFIGURED SUBJECT TO USER ADJUSTABLE MINIMUM RUN TIMES, MINIMUM OFF TIMES, MAXIMUM UP AND MODULATING DOWN DELAYS. COOLING IS ENABLED WHEN THE TEMPERATURE AT THE MODE ENABLE DISCHARGE AIR SENSOR RISES ONE DEGREE DEADBAND ABOVE THE COOLING SETPOINT. COOLING IS DISABLED WHEN THE MODE ENABLE TEMPERATURE FALLS ONE DEGREE DEAD BAND BELOW THE COOLING SETPOINT. SUPPLY AIR TEMPERATURE RESET: THE SUPPLY TEMPERATURE SETPOINT IS CALCULATED BASED ON THE CURRENT OUTSIDE AIR TEMPERATURE. THE CALCULATED SETPOINT IS SCALED BETWEEN THE SUPPLY TEMPERATURE MINIMUM AND MAXIMUM SETPOINTS DETERMINED BY THE CURRENT MODE OF OPERATION.
 - WHEN THE OUTSIDE AIR TEMPERATURE IS LESS THAN 60°F (ADJ.), THE MINIMUM SUPPLY TEMPERATURE FOR THE DOAS UNIT SHALL BE 70°F (ADJ.) AND THE MAXIMUM SUPPLY TEMPERATURE FOR THE DOAS UNIT SHALL BE 75°F (ADJ.).
 - WHEN THE OUTSIDE AIR TEMPERATURE IS GREATER THAN 65°F (ADJ.), THE MINIMUM SUPPLY TEMPERATURE FOR THE DOAS UNIT SHALL BE 60°F (ADJ.) AND THE MAXIMUM SUPPLY TEMPERATURE FOR THE DOAS UNIT SHALL BE 70°F (ADJ.).

- DX COOLING STAGING:
 - EACH STAGE MUST MEET ITS MINIMUM OFF TIME (ADJ.) BEFORE IT IS ALLOWED TO ENERGIZE AND SUCCESSIVE STAGES CAN ENERGIZE IF THE SAT RISES ABOVE THE ACTIVE SUPPLY AIR COOLING SETPOINT FOR THE COOLING STAGE UP DELAY PERIOD (ADJ.).
 - FOR COMPRESSORS TO STAGE DOWN MINIMUM RUN TIMES (ADJ.) MUST BE SATISFIED, AND THE SAT NEEDS TO BE BELOW THE ACTIVE SUPPLY AIR COOLING SETPOINT MINUS THE COOLING STAGE CONTROL FOR A PERIOD OF TIME EQUAL TO THE STAGE DOWN DELAY.
 - MECHANICAL COOLING IS DISABLED IF THE OUTDOOR AIR TEMPERATURE (OAT) FALLS 1° BELOW THE COOLING LOOKOUT SETPOINT AND WILL REMAIN DISABLED UNTIL THE OAT RISES 1° ABOVE THE COOLING LOOKOUT SETPOINT. IF THE OAT DISABLES MECHANICAL COOLING WHILE IT IS CURRENTLY OPERATING, MECHANICAL COOLING WILL STAGE OFF AS MINIMUM RUN TIMES AND STAGE DOWN DELAYS ARE SATISFIED.
 - IF ECONOMIZER IS ENABLED IT WILL FUNCTION AS THE FIRST STAGE OF COOLING.
 - DEHUMIDIFICATION: WHEN THE RETURN HUMIDITY SENSOR RISES ABOVE 55% RH (ADJ.), BAS SHALL ENABLE HOT GAS RE-HEAT AND MODULATE DIGITAL COMPRESSOR TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETTING (ADJ.) LOGIC MUST BE SET TO MAKE DEHUMIDIFICATION THE PRIORITY.
 - ONCE IN DEHUMIDIFICATION, THE UNIT WILL MAINTAIN THE EVAPORATOR COIL SUCTON TEMPERATURE AT THE COIL SUCTON TEMPERATURE SETPOINT BY MODULATING THE DIGITAL COMPRESSOR (1.5 -5.0 VDC OPERATION).
 - REHEAT IS ALWAYS CONTROLLED TO THE ACTIVE SUPPLY AIR TEMPERATURE SETPOINT.

- COIL SUCTON TEMPERATURE SETPOINT RESET: DURING DEHUMIDIFICATION THE SYSTEM WILL AUTOMATICALLY RESET THE COIL SUCTON TEMPERATURE SETPOINT WITHIN A ± 5 DEG RANGE BASED ON THE RETURN AIR HUMIDITY SENSOR CONDITION CHANGING ± 5 % FROM THE HUMIDITY SETPOINT.

- MORNING WARM-UP: THE DOAS UNIT WILL REMAIN OFF DURING MORNING WARM-UP MODE AND THE ZONE UNITS WILL PERFORM ALL MORNING WARM-UP.

- HEATING DEMAND: ON A FALL IN DISCHARGE AIR TEMPERATURE BELOW THE HEATING SETPOINT (ADJ.), THE GAS VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE TARGET OF 70° F (ADJ.). DURING HEATING MODE, COOLING SHALL BE DISABLED. HEATING MODE IS AVAILABLE WHEN THE OAT IS BELOW THE OAT HEATING UPPER LIMIT OF 65°F (ADJ.). SUPPLY AIR TEMPERATURE RESET: THE SUPPLY TEMPERATURE SETPOINT IS CALCULATED BASED ON THE ACTIVE SETPOINT AND THE CURRENT OUTSIDE AIR TEMPERATURE. THE CALCULATED SETPOINT IS SCALED BETWEEN THE SUPPLY TEMPERATURE MINIMUM AND MAXIMUM SETPOINTS DETERMINED BY THE CURRENT MODE OF OPERATION.

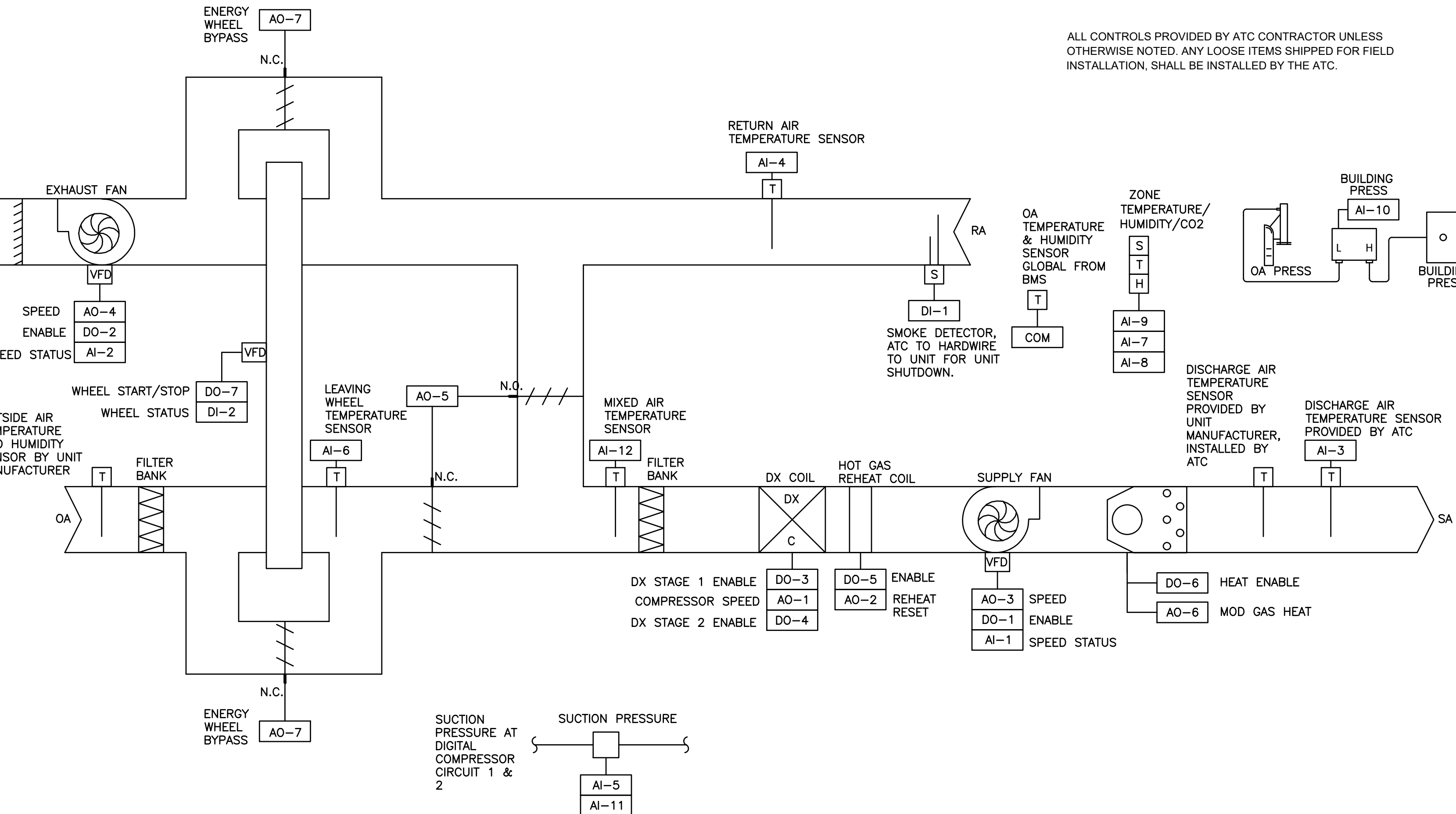
- LOW TEMPERATURE PROTECTION: AN SUPPLY AIR TEMPERATURE SENSOR DIRECTLY AFTER THE HEATING COIL DE-ENERGIZES THE SUPPLY & EXHAUST FAN WHEN TEMPERATURES BELOW 40 DEGREES F ARE SENSED. ALL DAMPERS (OA DAMPER SHALL CLOSED/RA DAMPER SHALL OPEN). AFTER THE TEMPERATURE RISES 5 DEGREES ABOVE THE LOW TEMPERATURE SETTING, THE UNIT WILL RESET AND THE UNIT WILL RESUME ITS NORMAL CONTROL SEQUENCE.

- ACTIVE HEAD PRESSURE CONTROL: TO MAINTAIN A CONSISTENT CONDENSING TEMPERATURE IN COOLING AND DEHUMIDIFICATION MODE, THE CONTROLLER SHALL ENABLE AND MODULATE ALL CONDENSING FANS WITH EC MOTORS AT THE SAME SPEED TO MAINTAIN A CONDENSING TEMPERATURE OF 110°F.

- DUCT SMOKE DETECTOR: DUCT MOUNTED SMOKE DETECTORS SHALL BE INTEGRATED TO THE MICROPROCESSOR CONTROLLER AS FOLLOWS: THE MC SHALL WIRE THE DUAL POLE DETECTOR TO THE UNIT CONTROLLER FOR SYSTEM SHUTDOWN AND ALARM.

DOAS-1 - DOAS-4 CONTROLS

M401 NO SCALE



RTU-1 SEQUENCE OF OPERATION:

NEW CONTROL REQUIREMENTS SHALL INCLUDE THE PLACEMENT OF A NEW UNIT CONTROLLER WITH I/O EXPANSION INSIDE THE UNIT CONTROLLER CABINET FOR CONTROL OF UNIT VIA MANUFACTURER PROVIDED TERMINAL STRIP. THIS UNIT SHALL BE CONNECTED TO THE BUILDING WIDE COMMUNICATION CABLING (BUS) AND SHALL INTEGRATE ALL POINTS BACK TO SUPERVISORY CONTROLLER. MOUNT NEW CONTROLLER IN UNIT ENCLOSURE AND PROVIDE 120/24V TRANSFORMER FOR POWER. PROVIDE DUCT MOUNTED AND SPACE MOUNTED PRESSURE SENSORS FOR FULL UNIT CONTROL. THE ATC CONTRACTOR SHALL INSTALL THE DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY THE UNIT MANUFACTURER. PROVIDE COMPLETE INDIVIDUAL UNIT SCHEDULING FUNCTION THROUGH BUILDING SUPERVISORY CONTROLLER. THE OPERATOR WILL BE ABLE TO ADJUST THE UNIT START/STOP USING THE OPERATOR'S WORKSTATION. SPACE MOUNTED TEMPERATURE SENSOR SHALL BE PROVIDED FOR OCCUPANCY OVERRIDE WITHOUT TEMPERATURE OVERRIDE OR LCD DISPLAY. THE SENSOR SHALL BE ENCLOSED IN A CLEAR PLASTIC ENCLOSURE. THE ATC SHALL PROVIDE ALL ASSOCIATED PROGRAMMING AS REQUIRED FOR SINGLE-ZONE VAV UNIT OPERATION.

- MORNING WARM-UP AND COOL-DOWN: ON OCCUPIED DAYS THE SYSTEM WILL INITIATE MORNING WARM-UP AND COOL-DOWN CYCLE ½ HOUR BEFORE SCHEDULED OCCUPANCY. THE PROCESS WILL INITIATE SUPPLY FAN WITH OUTSIDE AIR DAMPER CLOSED AND RETURN AIR DAMPER OPEN.
- OCCUPIED MODE: THE CONTROLLER SHALL INDEX THE SUPPLY FAN, EXHAUST FAN AND ENERGY WHEEL ON TO RUN CONTINUOUSLY WHILE IN OCCUPIED MODE. PROVIDE WHEEL ROTATION SENSOR. THE CONTROLLER WILL MONITOR THE STATUS OF THE FAN AND GENERATE AN ALARM IF THE FAN FAILS TO A START/STOP COMMAND.
- BUILDING PRESSURE CONTROL: WHENEVER THE BUILDING PRESSURE RISES ABOVE THE BUILDING PRESSURE SETPOINT BY THE DEADBAND AMOUNT, THE EXHAUST FAN RELAY WILL ENERGIZE AND THE MODULATING SIGNAL WILL ACTIVATE TO CONTROL TO THE BUILDING PRESSURE SETPOINT. IF THE BUILDING PRESSURE FALLS BELOW THE BUILDING PRESSURE SETPOINT BY THE DEADBAND AMOUNT, THE MODULATING SIGNAL WILL MODULATE TOWARDS 0% AS IT ATTEMPTS TO MAINTAIN THE BUILDING PRESSURE SETPOINT. THE EXHAUST FAN RELAY IS ENERGIZED WHENEVER THE MODULATING SIGNAL IS ABOVE 0%. THE EXHAUST FAN SHALL HAVE AN ADJUSTABLE MINIMUM SPEED SETPOINT IN OCCUPIED MODE TO MAINTAIN AIRFLOW.
- UNOCCUPIED MODE: WHEN THE UNIT IS IN UNOCCUPIED MODE OR THE UNIT IS SHUT DOWN BY SYSTEM SAFETY, THE UNIT WILL BE SET AS FOLLOWS: SUPPLY & EXHAUST FAN WILL BE OFF, OUTDOOR AIR DAMPER CLOSED, RETURN AIR DAMPER OPEN. THE UNIT SHALL INDEX ON AS REQUIRED TO MEET UNOCCUPIED HEATING AND COOLING SETPOINTS.

- OUTSIDE AIR DAMPER: OCCUPIED PERIODS: UNIT SHALL HAVE ACTIVATE THE CO2 DEMAND CONTROL VENTILATION CYCLE. THIS CYCLE SHALL MODULATE THE OUTSIDE AIR DAMPER BETWEEN MINIMUM AND MAXIMUM SETPOINTS TO MAINTAIN A MAXIMUM CO2 SETPOINT OF 1800 PPM (ADJ.). AS THE LEVEL OF CO2 INCREASES ABOVE THE MINIMUM CO2 LEVEL SETPOINT OF 500 PPM (ADJ.), THE ECONOMIZER MINIMUM POSITION WILL BEGIN TO BE RESET HIGHER. THE ECONOMIZER MINIMUM POSITION WILL BE PROPORTIONALLY RESET HIGHER AS THE CO2 RISES WITHIN THE RANGE SET BY THE MINIMUM CO2 LEVEL SETPOINT AND THE MAXIMUM CO2 LEVEL SETPOINT. IF THE CO2 LEVEL REACHES THE HIGH CO2 LEVEL SETPOINT, THE ECONOMIZER MINIMUM POSITION WILL BE RESET TO THE MAXIMUM RESET POSITION SET BY BALANCER. THE MAXIMUM RESET POSITION SETPOINT IS THE HIGHEST THE SUPPLY MINIMUM POSITION CAN BE RESET TO DURING CO2 CONTROL OPERATION. THIS SETPOINT IS USER-ADJUSTABLE AND DOES NOT KEEP THE ECONOMIZER FROM OPENING FURTHER DURING ECONOMIZER OPERATION.

- ECONOMIZER: PROVIDE INTEGRATED ENTHALPY BASED ECONOMIZER ON THIS UNIT TO OPERATE BETWEEN AMBIENT TEMPERATURES OF 50 TO 65 DEGREES F (30 TO 50% RH). OPERATE AS FOLLOWS:
 - INPUT DEVICE: DDC SYSTEM ENABLE FUNCTION.
 - INPUT DEVICE: OUTDOOR- AND RETURN-AIR, DUCT-MOUNTED ELECTRONIC TEMPERATURE SENSORS.
 - OUTPUT DEVICE: DDC SYSTEM ANALOG OUTPUT TO MODULATING DAMPER ACTUATOR(S).
 - ACTION: PROVIDE OUTDOOR AIR ECONOMIZER (MODULATE OA DAMPER BETWEEN ITS MINIMUM POSITION AND FULL OPEN) WHEN OUTSIDE AIR IS BETWEEN 50 DEGREES F AND 65 DEGREES F WITH AMBIENT HUMIDITY LEVELS BETWEEN 40% AND 50% RELATIVE HUMIDITY. DURING ECONOMIZER OPERATION, THE ENERGY RECOVERY WHEEL BYPASS DAMPERS SHALL OPEN AND MECHANICAL COOLING SHALL BE AVAILABLE TO AID THE ECONOMIZER MODE.
 - ACTION: UPON THE AMBIENT FALLING OUT OF THE ABOVE NOTED RANGES THEN THE ECONOMIZER CYCLE SHALL END AND THE OUTSIDE AIR DAMPER SHALL MOVE BACK TO THE MINIMUM POSITION.

- DX COOLING: ON A RISE IN SPACE TEMPERATURE ABOVE THE COOLING SETPOINT OF 75°F (ADJ.), THE FIRST STAGE OF COOLING SHALL BE ACTIVATED. THE UNIT CONTROLLER SHALL MODULATE THE COMPRESSOR TO MAINTAIN THE UNIT DISCHARGE TARGET TEMPERATURE. THE DISCHARGE TARGET TEMPERATURE SHALL BE RESET BASED ON SPACE TEMPERATURE SETPOINT BEING MAINTAINED BY INCREASING OR DECREASING DISCHARGE TEMPERATURE. MODULATION OF COOLING SHALL BE CONFIGURED SUBJECT TO USER ADJUSTABLE MINIMUM RUN TIMES, MINIMUM OFF TIMES, MAXIMUM UP AND MODULATING DOWN DELAYS.
 - FIRST STAGE - COOLING DAT RESET: THE UNIT CONTROLLER SHALL FIRST RESET THE DAT FROM MAX 70°F (ADJ.) TO MIN OF 55°F (ADJ.) WHILE SUPPLY AIR FLOW STAYS AT MIN FAN SPEED SETPOINT OF 60% (ADJ.). THE UNIT CONTROLLER SHALL MODULATE THE DIGITAL COMPRESSOR TO MAINTAIN THE DAT SETPOINT.
 - SECOND STAGE - INCREASE AIRFLOW: UPON CONTINUED ZONE TEMPERATURE ABOVE SETPOINT (COOLING PID OUTPUT INCREASING FROM 60-100%(ADJ)), INCREASE SUPPLY AIRFLOW SETPOINT FROM MIN TO MAX BALANCED VFD SPEED SETPOINT.
 - REVERSE SHALL OCCUR AS ZONE TEMPERATURE DROPS BELOW COOLING SETPOINT.
 - THE DIGITAL COMPRESSOR CONTINUES TO MODULATE DURING THE ENTIRE COOLING OPERATION.
 - AS ADDITIONAL COOLING IS REQUIRED, FIXED COMPRESSOR STAGES CAN BE STAGED ON WHILE THE DIGITAL COMPRESSOR CONTINUES TO MODULATE. TO STAGE UP THE EXTRA COMPRESSORS, THE SUPPLY AIR TEMPERATURE NEEDS TO BE ABOVE THE ACTIVE SUPPLY AIR SETPOINT AND THE DIGITAL COMPRESSOR NEEDS TO BE AT 100% FOR A PERIOD OF TIME EQUAL TO THE STAGING DOWN DELAY. TO STAGE DOWN THE EXTRA COMPRESSORS, THE SUPPLY AIR TEMPERATURE NEEDS TO BE BELOW THE ACTIVE SUPPLY AIR SETPOINT AND THE DIGITAL COMPRESSOR NEEDS TO BE AT 0% FOR A PERIOD OF TIME EQUAL TO THE STAGING DOWN DELAY.
 - IF THE ECONOMIZER IS ENABLED IT WILL FUNCTION AS THE FIRST STAGE OF COOLING.

- DEHUMIDIFICATION: WHEN SPACE HUMIDITY SENSOR GOES ABOVE 57% RH (+-2% DEADBAND), THE SUPPLY FAN SHALL MAINTAIN A CONSTANT 50% (ADJ.) SPEED AND AND THE BAS SHALL ENABLE HOT GAS RE-HEAT AND MODULATE DIGITAL COMPRESSOR TO MAINTAIN DISCHARGE AIR TEMPERATURE SETTING (ADJ.) LOGIC MUST BE SET TO MAKE COOLING THE PRIORITY.
 - ONCE IN DEHUMIDIFICATION, THE UNIT WILL MAINTAIN THE EVAPORATOR COIL SUCTON TEMPERATURE AT THE COIL SUCTON TEMPERATURE SETPOINT BY MODULATING THE DIGITAL COMPRESSOR (1.5 -5.0 VDC OPERATION).
 - IF ADDITIONAL DEHUMIDIFICATION IS REQUIRED, FIXED COMPRESSOR STAGES SHALL BE STAGED ON WHILE THE DIGITAL COMPRESSOR CONTINUES TO MODULATE. TO STAGE UP THE EXTRA COMPRESSORS, THE EVAPORATOR COIL SUCTON TEMPERATURE NEEDS TO BE ABOVE THE EVAPORATOR COIL SUCTON TEMPERATURE SETPOINT AND THE DIGITAL COMPRESSOR NEEDS TO BE AT 100% FOR A PERIOD OF TIME EQUAL TO THE STAGING DOWN DELAY.
 - TO STAGE DOWN THE EXTRA COMPRESSORS, THE EVAPORATOR COIL SUCTON TEMPERATURE NEEDS TO BE BELOW THE EVAPORATOR COIL SUCTON TEMPERATURE SETPOINT AND THE DIGITAL COMPRESSOR NEEDS TO BE AT 0% FOR A PERIOD OF TIME EQUAL TO THE STAGING DOWN DELAY.
 - REHEAT IS ALWAYS CONTROLLED TO THE ACTIVE SUPPLY AIR TEMPERATURE SETPOINT.
 - COIL SUCTON TEMPERATURE SETPOINT RESET: DURING DEHUMIDIFICATION THE SYSTEM WILL AUTOMATICALLY RESET THE COIL SUCTON TEMPERATURE SETPOINT WITHIN A ± 5 DEG RANGE BASED ON THE SPACE OR RETURN AIR HUMIDITY SENSOR CONDITION CHANGING ±5% FROM THE HUMIDITY SETPOINT.

- HEATING DEMAND: WHEN ZONE TEMPERATURE DROPS BELOW HEATING SETPOINT 70° F (ADJ.), UNIT CONTROL SHALL BE INDEXED TO HEATING MODE AND COOLING SHALL BE DISABLED. ON A FALL IN DISCHARGE AIR TEMPERATURE BELOW THE HEATING SETPOINT (ADJ.), THE HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE TARGET.
 - FIRST STAGE - HEATING DAT RESET: THE UNIT CONTROLLER SHALL FIRST RESET DAT FROM MIN 70°F (ADJ.) TO MAX OF 85°F (ADJ.) WHILE SUPPLY AIR FLOW STAYS AT MIN FAN SPEED SETPOINT OF 75% (ADJ.). THE UNIT CONTROLLER SHALL MODULATE THE HOT WATER VALVE TO MAINTAIN ITS DAT SETPOINT.
 - SECOND STAGE - INCREASE AIRFLOW: UPON CONTINUED ZONE TEMPERATURE BELOW SETPOINT, HEATING PID OUTPUT INCREASING FROM 75-100% (ADJ.), SHALL INCREASE SUPPLY AIRFLOW SETPOINT FROM MIN TO MAX BALANCED VFD SPEED.
 - REVERSE SHALL OCCUR AS ZONE TEMPERATURE RISES ABOVE HEATING SETPOINT.

- SAFETIES:
 - LOW TEMPERATURE PROTECTION: AN AUTOMATIC RESET FREEZESTAT DIRECTLY AFTER THE HEATING COIL DE-ENERGIZES THE SUPPLY & EXHAUST FAN WHEN TEMPERATURES BELOW 38 DEGREES F ARE SENSED. ALL DAMPERS (OA DAMPER SHALL CLOSED/RA DAMPER SHALL OPEN) AND HOT WATER COIL SHALL OPEN TO FULL COIL FLOW WHEN FREEZESTAT SENSES 38 DEGREES F. AFTER THE TEMPERATURE RISES 5 DEGREES ABOVE THE FREEZESTAT SETTING, THE FREEZESTAT WILL RESET AND THE UNIT VENTILATOR WILL RESUME ITS NORMAL CONTROL SEQUENCE.
 - SMOKE DETECTION: THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A RETURN AIR SMOKE DETECTOR STATUS.

- SUPERVISORY GRAPHICAL DISPLAY/INTERFACE REQUIREMENTS:
 - FULL GRAPHICAL REPRESENTATION OF UNIT AND ALL ASSOCIATED POINTS:

RTU-1 CONTROLS

M401 NO SCALE

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KEYPLAN

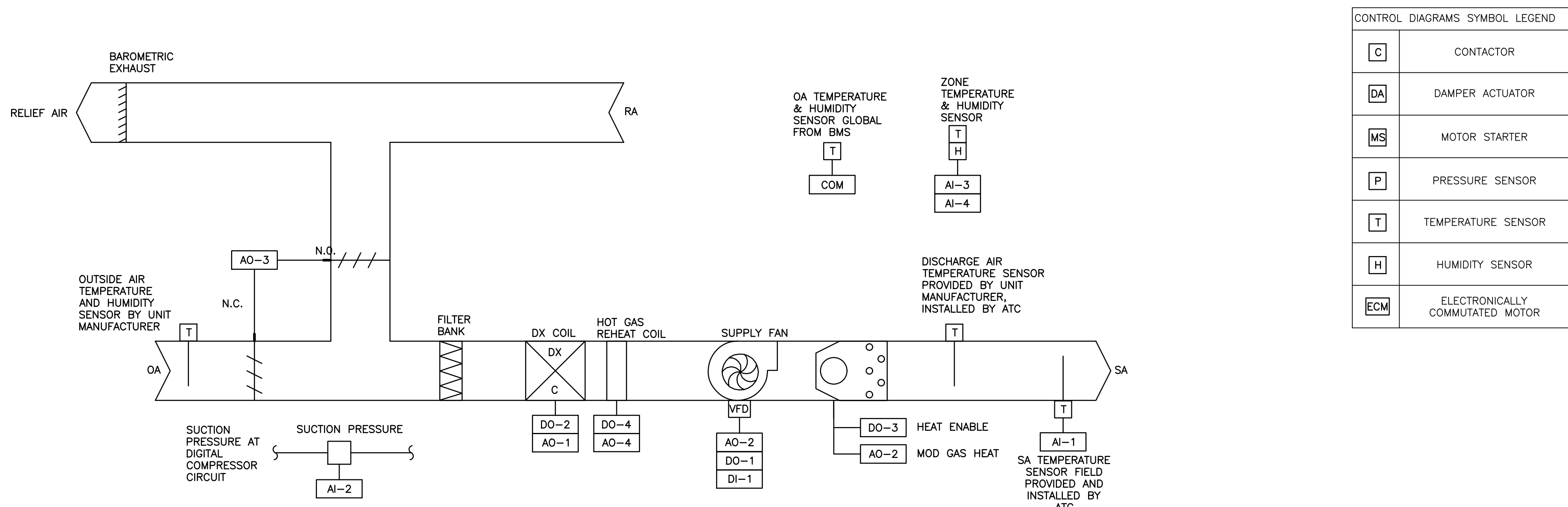
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MECHANICAL
CONTROLS

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M402



SEQUENCE OF OPERATION: RTU-1-2

NEW CONTROL REQUIREMENTS SHALL INCLUDE THE PLACEMENT OF A NEW UNIT CONTROLLER WITH I/O EXPANSION INSIDE THE UNIT CONTROLLER CABINET FOR CONTROL OF UNIT VIA MANUFACTURER PROVIDED TERMINAL STRIP. THIS UNIT SHALL BE CONNECTED TO THE BUILDING WIDE COMMUNICATION CABLE (BUS) AND SHALL INTEGRATE ALL POINTS BACK TO SUPERVISORY CONTROLLER. MOUNT NEW CONTROLLER IN UNIT ENCLOSURE AND PROVIDE 120/24V TRANSFORMER FOR POWER. THE ATC CONTRACTOR SHALL INSTALL THE DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY THE UNIT MANUFACTURER. PROVIDE COMPLETE INDIVIDUAL UNIT SCHEDULING FUNCTION THROUGH BUILDING SUPERVISORY CONTROLLER. THE BAS WILL EARLY START THE UNIT TO ACHIEVE SPACE TEMPERATURE SETPOINT FOR OCCUPANCY. THE OPERATOR WILL BE ABLE TO ADJUST THE UNIT START/STOP USING THE OPERATOR'S WORKSTATION.

- SINGLE ZONE VAV: THE UNIT SHALL BE CONFIGURED FOR SINGLE ZONE VAV OPERATION AND SHALL BE PROVIDED WITH VFD DRIVES. ZONE TEMPERATURE SHALL BE CONTROLLED VIA A SEQUENCED DAT RESET AND FAN SPEED CONTROL. THE UNIT CONTROLLER SHALL USE ZONE TEMPERATURE TO AUTOMATICALLY SELECT HEATING OR COOLING MODE. HEATING AND COOLING DEMAND SHALL BE CALCULATED THROUGH INDEPENDENT HEATING AND COOLING PID OUTPUTS. THESE PIDS SHALL HAVE INDIVIDUALLY ADJUSTABLE INTERVAL, BAS, AND PROPORTIONAL, INTEGRAL AND, DERIVATIVE PARAMETERS CAREFULLY TUNED IN EACH APPLICATION FOR SLOW ACTION TO AVOID HUNTING OF FAN SPEED DRIVES. THE DISCHARGE AIR TEMPERATURE SHALL FIRST BE RESET DEPENDING ON ZONE HEATING OR COOLING DEMAND WITH FAN OPERATING AT MIN AIRFLOW/SPEED, THEN SUPPLY AIR FAN WILL MODULATE THROUGH ITS MIN AND MAX SPEED RANGE TO MAINTAIN THE ZONE TEMPERATURE SETPOINT AS DESCRIBED BELOW.
- OCCUPIED MODE: SUPPLY FAN SHALL RUN CONTINUOUSLY WITH OA DAMPER IN ITS MINIMUM POSITION. THE UNIT CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING AND COOLING TO MAINTAIN ITS HEATING AND COOLING SPACE SETPOINT. THE OPERATOR WILL BE ABLE TO ADJUST THE UNIT START/STOP TIMES USING THE OPERATOR'S WORKSTATION. THE BAS WILL MONITOR THE STATUS OF THE FAN AND GENERATE AN ALARM IF THE FAN FAILS TO A START/STOP COMMAND. THE OUTDOOR AIR DAMPER SHALL HAVE PROPORTIONAL CONTROL WHICH SHALL MODULATE THE DAMPER PROPORTIONALLY WITH FAN SPEED TO MAINTAIN MINIMUM OUTSIDE AIRFLOW THROUGHOUT THE RANGE OF FAN AIRFLOW.
- ECONOMIZER MODE: BAS CONTROLLER SHALL PERMIT AIR SIDE-ECONOMIZER OPERATION WHEN OUTDOOR AIR IS LESS THAN 65 DEG F BUT GREATER THAN 55 DEG F. ECONOMIZER SHALL ONLY OPERATE WHEN THE ROOM IS IN THE COOLING MODE WITH OUTSIDE RELATIVE HUMIDITY BETWEEN 40% AND 60%. WHEN CONDITIONS FOR ECONOMIZER COOLING ARE SATISFIED THE OUTDOOR AIR DAMPER WILL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE TO ITS TARGET. ON A RISE IN DISCHARGE AIR TEMPERATURE ABOVE TARGET THE OUTDOOR AIR DAMPER WILL MODULATE OPEN. THE REVERSE WILL OCCUR ON A FALL IN DISCHARGE AIR TEMPERATURE BELOW TARGET.
- OCCUPANCY OVERRIDE: THE SPACE TEMPERATURE SENSOR WILL HAVE A PUSHBUTTON THE WHEN PRESSED DURING THE UNOCCUPIED MODE, WILL INDEX THE EQUIPMENT TO AN OCCUPIED MODE FOR A PERIOD OF 2-HOURS (ADJUSTABLE).
- UNOCCUPIED MODE: WHEN THE UNIT IS SHUT DOWN BY EITHER A STOP COMMAND OR SYSTEM SAFETY THE UNIT WILL BE SET AS FOLLOWS: SUPPLY FAN WILL BE OFF, OUTDOOR AIR DAMPER CLOSED, RETURN AIR DAMPER OPEN, DX COOLING OFF. UNIT SHALL CYCLE IF SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED SETPOINT IN HEATING MODE (ADJ.) AND ABOVE UNOCCUPIED COOLING MODE (ADJ.) WITH OUTSIDE AIR DAMPER CLOSED. THE UNIT WILL DE-ENERGIZE WHEN THE SPACE TEMPERATURE IS AT LEAST 4 DEGREE F ABOVE THE UNOCCUPIED HEATING SETPOINT. UNOCCUPIED COOLING IS THE ACTIVE STAGE.
- DX COOLING: ON A RISE IN SPACE TEMPERATURE ABOVE THE COOLING SETPOINT (ADJ.), THE FIRST STAGE OF COOLING SHALL BE ACTIVATED. THE UNIT CONTROLLER SHALL MODULATE THE COMPRESSOR TO MAINTAIN THE UNIT DISCHARGE TARGET TEMPERATURE. THE DISCHARGE TARGET TEMPERATURE SHALL BE RESET BASED ON SPACE TEMPERATURE SETPOINT BEING MAINTAINED BY INCREASING OR DECREASING DISCHARGE TEMPERATURE. MODULATION OF COOLING SHALL BE CONFIGURED SUBJECT TO USER ADJUSTABLE MINIMUM RUN TIMES, MINIMUM OFF TIMES, MODULATING UP AND MODULATING DOWN DELAYS.

- FIRST STAGE - COOLING DAT RESET: THE UNIT CONTROLLER SHALL FIRST RESET THE DAT FROM MAX 70F (ADJ.) TO MIN OF 55F (ADJ.) WHILE SUPPLY AIR FLOW STAYS AT MIN FAN SPEED SETPOINT OF 60% (ADJ.). THE UNIT CONTROLLER SHALL MODULATE THE DIGITAL COMPRESSOR TO MAINTAIN THE DAT SETPOINT.
 - SECOND STAGE - INCREASE AIRFLOW: UPON CONTINUED ZONE TEMPERATURE ABOVE SETPOINT (COOLING PID OUTPUT INCREASING FROM 60-100%(ADJ.)), INCREASE SUPPLY AIRFLOW SETPOINT FROM MIN TO MAX BALANCED VFD SPEED SETPOINT.
 - REVERSE SHALL OCCUR AS ZONE TEMPERATURE DROPS BELOW COOLING SETPOINT.
 - THE DIGITAL COMPRESSOR CONTINUES TO MODULATE DURING THE ENTIRE COOLING OPERATION.
 - IF THE ECONOMIZER IS ENABLED IT WILL FUNCTION AS THE FIRST STAGE OF COOLING.
- G. DEHUMIDIFICATION: WHEN SPACE HUMIDITY SENSOR GOES ABOVE 55% RH (ADJ.), THE SUPPLY FAN SHALL MAINTAIN A CONSTANT 60% (ADJ.) SPEED AND AND THE BAS SHALL ENABLE HOT GAS RE-HEAT AND MODULATE DIGITAL COMPRESSOR TO MAINTAIN DISCHARGE AIR TEMPERATURE SETTING (ADJ.) LOGIC MUST BE SET TO MAKE COOLING OR DEHUMIDIFICATION THE PRIORITY.
- ONCE IN DEHUMIDIFICATION, THE UNIT WILL MAINTAIN THE EVAPORATOR COIL SUCTION TEMPERATURE AT THE COIL SUCTION TEMPERATURE SETPOINT BY MODULATING THE DIGITAL COMPRESSOR (1.5 - 5.0 VDC OPERATION).
 - TO STAGE DOWN THE EXTRA COMPRESSORS, THE EVAPORATOR COIL SUCTION TEMPERATURE NEEDS TO BE BELOW THE EVAPORATOR COIL SUCTION TEMPERATURE SETPOINT AND THE DIGITAL COMPRESSOR NEEDS TO BE AT 0% FOR A PERIOD OF TIME EQUAL TO THE STAGING DOWN DELAY.
 - REHEAT IS ALWAYS CONTROLLED TO THE ACTIVE SUPPLY AIR TEMPERATURE SETPOINT.
- H. COIL SUCTION TEMPERATURE SETPOINT RESET: DURING DEHUMIDIFICATION THE SYSTEM WILL AUTOMATICALLY RESET THE COIL SUCTION TEMPERATURE SETPOINT WITHIN A \pm 5 DEG RANGE BASED ON THE SPACE HUMIDITY SENSOR CONDITION SETPOINT WITHOUT OUTDOOR AIR DAMPER OPEN. FREEZE PROTECTION WILL BE ACTIVE DURING THIS OPERATION.
- I. MORNING WARM-UP: ON OCCUPIED DAYS THE SYSTEM WILL INITIATE MORNING WARM-UP CYCLE 1/2 HOUR BEFORE SCHEDULED OCCUPANCY. THE PROCESS WILL INITIATE SUPPLY FAN AND HOT WATER HEAT TO REACH OCCUPIED SETPOINT WITHOUT OUTDOOR AIR DAMPER OPEN. FREEZE PROTECTION WILL BE ACTIVE DURING THIS OPERATION.
- J. GAS HEATING DEMAND: WHEN ZONE TEMPERATURE DROPS BELOW HEATING DEADBAND SETPOINT, UNIT CONTROL SHALL BE INDEXED TO HEATING MODE AND COOLING SHALL BE DISABLED.
- FIRST STAGE - HEATING DAT RESET: THE UNIT CONTROLLER SHALL FIRST RESET DAT FROM MIN 70F (ADJ.) TO MAX OF 85F (ADJ.) WHILE SUPPLY AIR FLOW STAYS AT MIN FAN SPEED SETPOINT OF 80% (ADJ.). THE UNIT CONTROLLER SHALL MODULATE THE GAS HEATING VALVE TO MAINTAIN ITS DAT SETPOINT.
 - SECOND STAGE - INCREASE AIRFLOW: UPON CONTINUED ZONE TEMPERATURE BELOW SETPOINT, HEATING PID OUTPUT INCREASING FROM 80-100% (ADJ.) SHALL INCREASE SUPPLY AIRFLOW SETPOINT FROM MIN TO MAX BALANCED VFD SPEED.
 - REVERSE SHALL OCCUR AS ZONE TEMPERATURE RISES ABOVE HEATING SETPOINT.

ROOFTOP UNIT POINTS LIST									
POINT TAG	POINT DESCRIPTION	INPUTS				OUTPUTS			
		DIGITAL	ANALOG	DIGITAL	ANALOG	DIGITAL	ANALOG		REMARKS
DI-1	SUPPLY FAN STATUS	X						X	1
DO-1	SUPPLY FAN ENABLE					X			1
DO-2	DX COOLING ENABLE					X			1
AO-1	COMPRESSOR SPEED						X		1
DO-4	HOT GAS REHEAT ENABLE					X			1
AI-1	SUPPLY AIR TEMPERATURE	X	X					X	1
AO-2	SUPPLY FAN SPEED					X			1
AO-3	ECONOMIZER						X		1
COM	OUTSIDE AIR TEMPERATURE		X						
AI-2	SUCTION PRESSURE		X						1
COM	OUTSIDE AIR HUMIDITY		X						
AO-2	MOD GAS HEAT					X			1
DO-3	GAS HEAT ENABLE					X			1
AO-4	HOT GAS REHEAT RESET SIGNAL						X		1
AI-3	ZONE TEMPERATURE		X						
AI-4	ZONE HUMIDITY		X						

1. POINT PROVIDED ON RTU TERMINAL STRIP

RTU-1 CONTROLS

1/4" = 1" NO SCALE

VRF & SPLIT SYSTEM SEQUENCE OF OPERATION:

- DUCTLESS SPLIT SYSTEM HEAT PUMP AND VRF SYSTEMS SHALL BE OPERATED BY MANUFACTURER CONTROLS & WALL MOUNTED THERMOSTAT. THE ATC CONTRACTOR SHALL INTEGRATE ALL UNITS THROUGH BACNET IP THROUGH BUILDING SUPERVISORY CONTROLLER. ALARMS AND DIAGNOSTICS SHALL BE AVAILABLE THROUGH THE BAS GRAPHICS.
- THERMOSTATS SHALL HAVE OCCUPANT TEMPERATURE OVERRIDE WITH \pm 2 DEGREE F ADJUSTMENT RANGE. PROVIDE ALL CALLING ROOM THERMOSTATS IN CLEAR PLASTIC LOCKABLE ENCLOSURES: CC-1-61, CC-2-55, CC-2-29.
- THE CONDENSATE PUMP SAFETY SWITCH FOR CP-1 SHALL BE WIRED TO ASSOCIATED UNIT. UPON CONDENSATE PUMP FAILURE VIA PUMP SAFETY SWITCH, UNIT SHALL BE DISABLED.
- PROVIDE ROOM MCF 127 WITH A TEMPERATURE SENSOR PROVIDED BY THE ATC CONTRACTOR IN ADDITION TO MANUFACTURER'S THERMOSTAT FOR REDUNDANCY.
- DISPLAY/INTERFACE REQUIREMENTS:
 - ROOM #
 - ZONE TEMPERATURE STATUS AND SETPOINT
 - UNIT OPERATION
 - FAN SPEED

SPLIT SYSTEM HEAT PUMP & VRF CONTROLS

1/4" = 1" NO SCALE

HW-1-1&2 AND PIPING BY PC. HW-1-1&2 SUPPLY TEMPERATURE SENSOR IN PC PROVIDED THERMOWELL. HW SOLENOID VALVE, TEMPERATURE SENSOR AND ALL ASSOCIATED WIRING AND DEVICES PROVIDED AND INSTALLED BY ATC. REFER TO HW-1-1&2 PIPING DETAIL, DWG P-302.

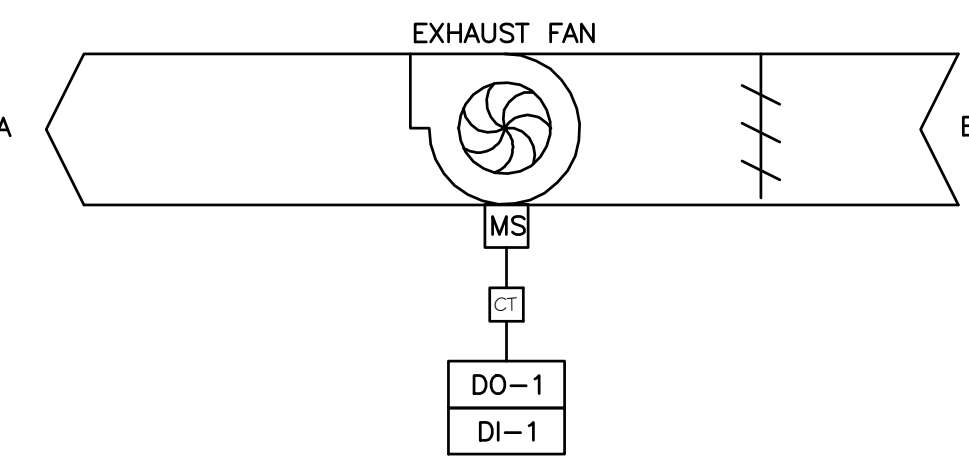
HW-1 SEQUENCE OF OPERATION:

- A. HW-1: ATC TO FURNISH A NEW "ANTI-SCALD" SOLENOID VALVE, SENSOR AND ACTUATOR FOR THE 120 DEGREE F DOMESTIC HOT WATER SUPPLY AS SHOWN ON CONTRACT DRAWINGS. VALVE AND SENSORS SHALL BE INSTALLED BY THE PC AND WIRED BY THE ATC CONTRACTOR. THE SOLENOID VALVE SHALL CLOSE WHEN THE WATER TEMPERATURE RISES ABOVE 125 DEGREES F (ADJ.) AND OPEN WHEN THE WATER TEMPERATURE FALLS BELOW 115 DEGREES F (ADJ.) THIS VALVE SHALL BE VIEWABLE IN BOTH VALVE POSITION AND TEMPERATURES (SET POINT AND ACTUAL) ON SYSTEM FRONT END GRAPHIC PACKAGE.

DOMESTIC HOT WATER SYSTEM POINTS LIST									
POINT TAG	POINT DESCRIPTION	INPUTS				OUTPUTS			
		DIGITAL	ANALOG	DIGITAL	ANALOG	DIGITAL	ANALOG		REMARKS
DO-1	HW-1 SOLENOID VALVE								
AI-1	HW-1 SUPPLY WATER TEMP		X						X

HW-1 CONTROLS

1/4" = 1" NO SCALE



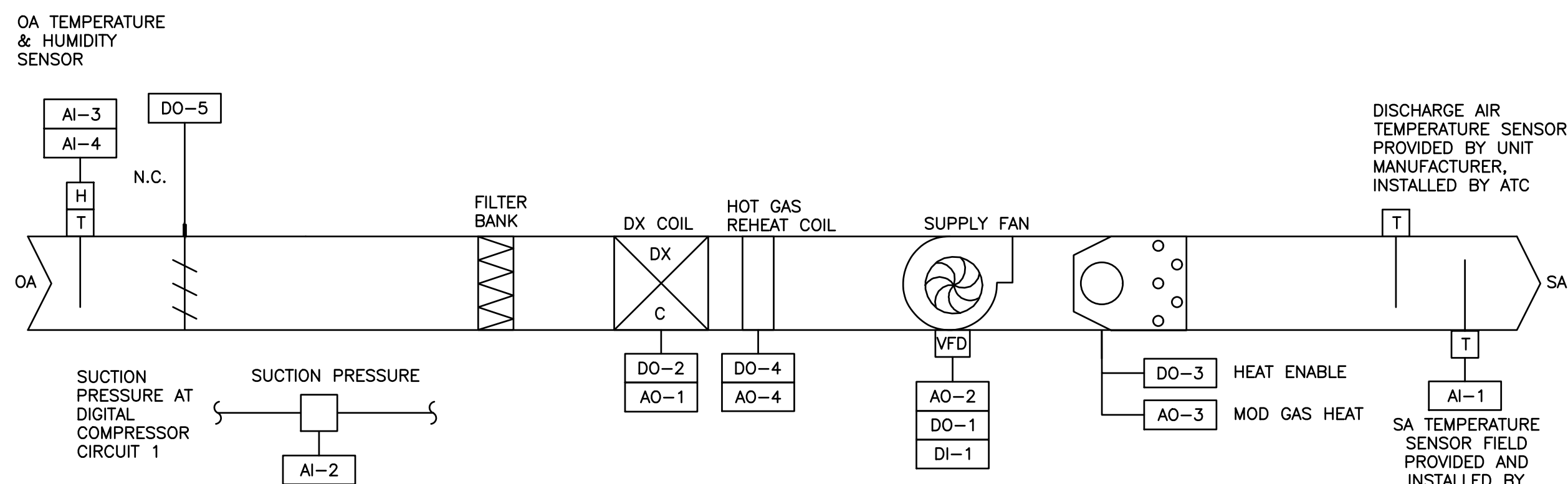
EXHAUST FAN POINTS LIST									
POINT TAG	POINT DESCRIPTION	INPUTS				OUTPUTS			
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DI-1	EXHAUST FAN STATUS	X						X	
DO-1	EXHAUST FAN START/STOP					X			

EXHAUST FAN (EF-1-6) SEQUENCE OF OPERATION:

- A. THE EXHAUST FAN SHALL OPERATE ON BUILDING OCCUPANCY SCHEDULE WITH ASSOCIATED DOAS UNIT AS FOLLOWS:
- EF-1, 3 & 4: DOAS-2
 - EF-2: DOAS-1
 - EF-5: DOAS-3
 - EF-6: DOAS-4
- B. OCCUPIED MODE: THE EXHAUST FAN SHALL START.
- C. UNOCCUPIED MODE: THE FAN SHALL STOP. THE FAN SHALL STOP WHEN THE BUILDING DOAS-1 IS IN OCCUPIED MODE. IF KITCHEN HOOD FAN KEF-1 IS ON, THEN KEF-3 SHALL DEENERGIZE.
- D. THE BMS SHALL MONITOR THE STATUS OF THE EXHAUST FAN (VIA CS) AND GENERATE AN ALARM IF THE FAN FAILS TO RESPOND TO A START/STOP COMMAND.

GENERAL EXHAUST FAN CONTROL DIAGRAM

1/4" = 1" NO SCALE



SEQUENCE OF OPERATION: MAU-1

NEW CONTROL REQUIREMENTS SHALL INCLUDE THE PLACEMENT OF A NEW UNIT CONTROLLER WITH I/O EXPANSION INSIDE THE UNIT CONTROLLER CABINET FOR CONTROL OF UNIT VIA MANUFACTURER PROVIDED TERMINAL STRIP. THIS UNIT SHALL BE CONNECTED TO THE BUILDING WIDE COMMUNICATION CABLE (BUS) AND SHALL INTEGRATE ALL POINTS BACK TO SUPERVISORY CONTROLLER. MOUNT NEW CONTROLLER IN UNIT ENCLOSURE AND PROVIDE 120/24V TRANSFORMER FOR POWER. PROVIDE DUCT MOUNTED TEMPERATURE SENSORS FOR FULL UNIT CONTROL. THE ATC CONTRACTOR SHALL INSTALL THE DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY THE UNIT MANUFACTURER. UNIT SHALL BE ENERGIZED VIA HOOD MANUFACTURER STAND-ALONE CONTROLS PROVIDED BY THE FOOD SERVICE CONTRACTOR. REFER TO FOOD SERVICE DRAWINGS FOR ADDITIONAL REQUIREMENTS.

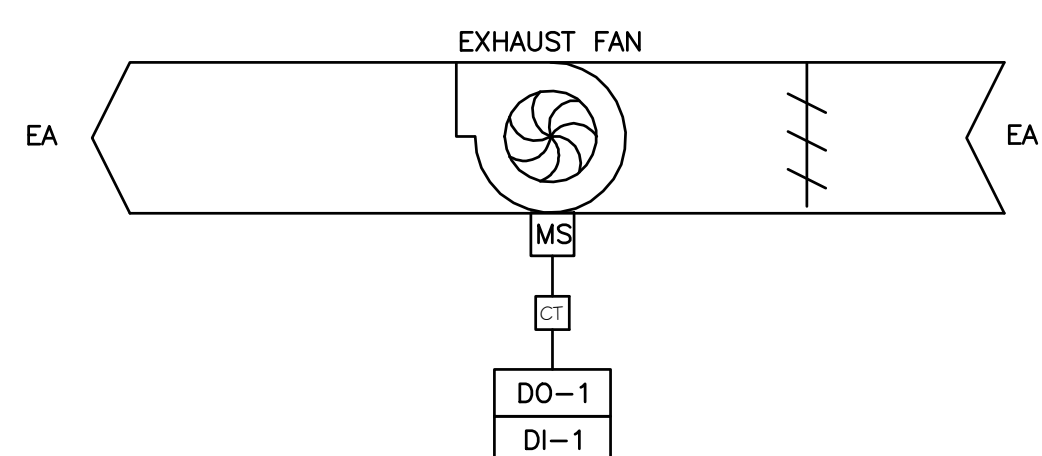
- THE UNIT SHALL BE CONFIGURED FOR CONSTANT VOLUME OPERATION AND SHALL BE PROVIDED WITH VFD DRIVES FOR BALANCING ONLY. ZONE TEMPERATURE SHALL BE CONTROLLED VIA A SEQUENCED DAT RESET. THE CONTROLLER SHALL USE OUTSIDE AIR TEMPERATURE TO AUTOMATICALLY SELECT HEATING OR COOLING MODE. HEATING AND COOLING DEMAND SHALL BE CALCULATED THROUGH INDEPENDENT HEATING AND COOLING PID OUTPUTS.
- ON MODE: SUPPLY FAN SHALL RUN CONTINUOUSLY WITH OA DAMPER IN ITS OPEN POSITION WHENEVER THE KITCHEN EXHAUST HOOD FAN (KEF-1) ASSOCIATED WITH THE SYSTEM IS ENERGIZED. THE UNIT CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING AND COOLING TO MAINTAIN ITS HEATING AND COOLING SETPOINT. THE OPERATOR WILL BE ABLE TO ADJUST THE UNIT START/STOP TIMES USING THE OPERATOR'S WORKSTATION. THE BAS WILL MONITOR THE STATUS OF THE FAN AND GENERATE AN ALARM IF THE FAN FAILS TO A START/STOP COMMAND.
- OFF MODE: WHEN THE UNIT IS IN OFF MODE OR IS SHUT DOWN BY SYSTEM SAFETY THE UNIT WILL BE SET AS FOLLOWS: SUPPLY FAN WILL BE OFF, OUTDOOR AIR DAMPER CLOSED, AND DX COOLING OFF.
- DX COOLING: MODULATION OF COOLING SHALL BE CONFIGURED SUBJECT TO USER ADJUSTABLE MINIMUM RUN TIMES, MINIMUM OFF TIMES, MODULATING UP AND MODULATING DOWN DELAYS. COOLING IS ENABLED WHEN THE TEMPERATURE AT THE MODE ENABLE DISCHARGE AIR SENSOR RISES ONE DEGREE DEADBAND ABOVE THE COOLING SETPOINT. COOLING IS DISABLED WHEN THE MODE ENABLE TEMPERATURE FALLS ONE WHEN THE OUTSIDE AIR TEMPERATURE IS GREATER THAN 60F (ADJ.), AND DEGREE DEAD BAND BELOW THE COOLING SETPOINT. MAINTAIN A DISCHARGE AIR TEMPERATURE OF 60 DEG F (ADJ.).
 - ONCE IN THE COOLING MODE THE UNIT WILL MAINTAIN THE SUPPLY AIR TEMPERATURE AT THE ACTIVE SUPPLY AIR COOLING SETPOINT BY MODULATING THE DIGITAL COMPRESSOR (1.5 - 5.0 VDC OPERATION). A COOLING RELAY MUST BE CONFIGURED.
 - THE DIGITAL COMPRESSOR CONTINUES TO MODULATE DURING THE ENTIRE COOLING OPERATION.
- DEHUMIDIFICATION: DEHUMIDIFICATION IS ENABLED BASED ON AN OUTDOOR AIR DEWPOINT SETPOINT.
 - ONCE IN DEHUMIDIFICATION, THE UNIT WILL MODULATE AND STAGE COMPRESSORS BASED ON THE UNIT CONFIGURATION IN
 - ORDER MAINTAIN THE EVAPORATOR COIL SUCTION (SATURATION) TEMPERATURE AT THE COIL SUCTION (SATURATION) TEMPERATURE SETPOINT.
 - DEHUMIDIFICATION REHEAT IS ALWAYS CONTROLLED TO THE APPROPRIATE ACTIVE SUPPLY AIR TEMPERATURE SETPOINT.
 - REHEAT IS VIA MODULATING HOT GAS.
- COIL SUCTION TEMPERATURE SETPOINT RESET: DURING DEHUMIDIFICATION THE SYSTEM WILL AUTOMATICALLY RESET THE COIL SUCTION TEMPERATURE SETPOINT.
- GAS HEATING DEMAND: WHEN THE OUTSIDE AIR TEMPERATURE IS LESS THAN 50F (ADJ.) AND LEAVING AIR TEMPERATURE DROPS BELOW HEATING DEADBAND SETPOINT, UNIT CONTROL SHALL BE INDEXED TO HEATING MODE AND COOLING SHALL BE DISABLED. THE UNIT CONTROLLER SHALL MODULATE THE GAS HEATING VALVE TO MAINTAIN ITS DAT SETPOINT OF 55 DEG F (ADJ.).
- LOW TEMPERATURE PROTECTION: A SUPPLY AIR TEMPERATURE SENSOR DIRECTLY AFTER THE HEATING COIL DE-ENERGIZES THE SUPPLY FAN WHEN TEMPERATURES BELOW 38 DEGREES F ARE SENSED. ALL DAMPERS (OA DAMPER SHUT CLOSED) WHEN SENSOR DETECTS 38 DEGREES F. THIS SEQUENCE SHALL SEND AN OPERATIONAL ALARM RESET SHALL BE MANUAL.

MAU-1 POINTS LIST									
POINT TAG	POINT DESCRIPTION	INPUTS				OUTPUTS			
		DIGITAL	ANALOG	DIGITAL	ANALOG	DIGITAL	ANALOG		REMARKS
DI-1	SUPPLY FAN STATUS							X	1
DO-1	SUPPLY FAN ENABLE	X						X	1
DO-2	DX COOLING ENABLE							X	1
AO-1	COMPRESSOR SPEED						X		1
DO-3	GAS HEAT ENABLE					X			1
DO-4	HOT GAS REHEAT ENABLE					X			1
AI-1	SUPPLY AIR TEMPERATURE	X	X					X	
AO-2	SUPPLY FAN SPEED						X		1
AO-4	HOT GAS REHEAT RESET SIGNAL						X		1
AI-2	SUCTION PRESSURE 1		X						1
AI-3	OUTSIDE AIR TEMPERATURE		X						
AI-4	OUTSIDE AIR HUMIDITY		X						
AO-3	MOD GAS HEAT						X		1
DO-5	OA DAMPER						X		1

1. POINT PROVIDED ON RTU TERMINAL STRIP

MAU-1 CONTROLS

1/4" = 1" NO SCALE



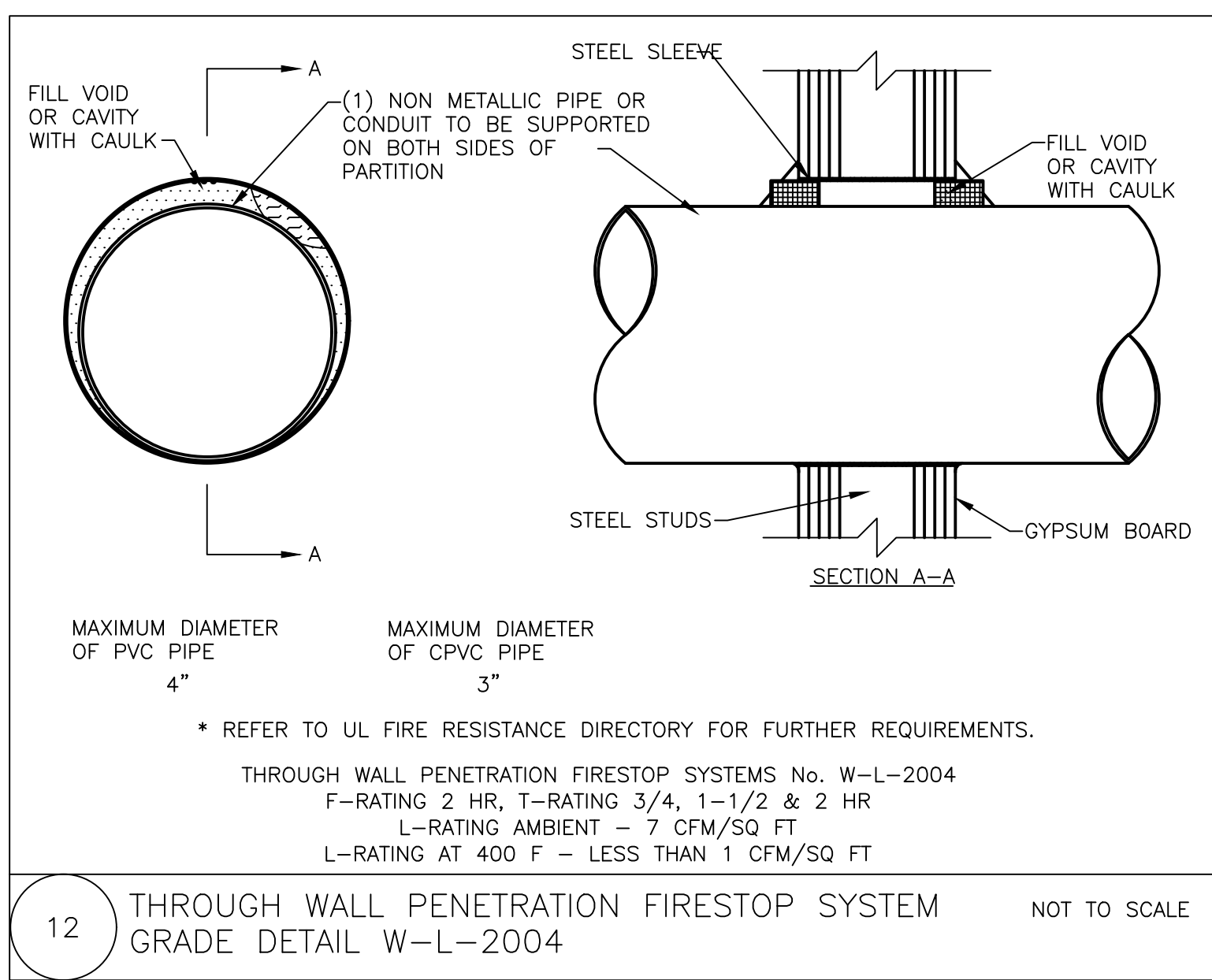
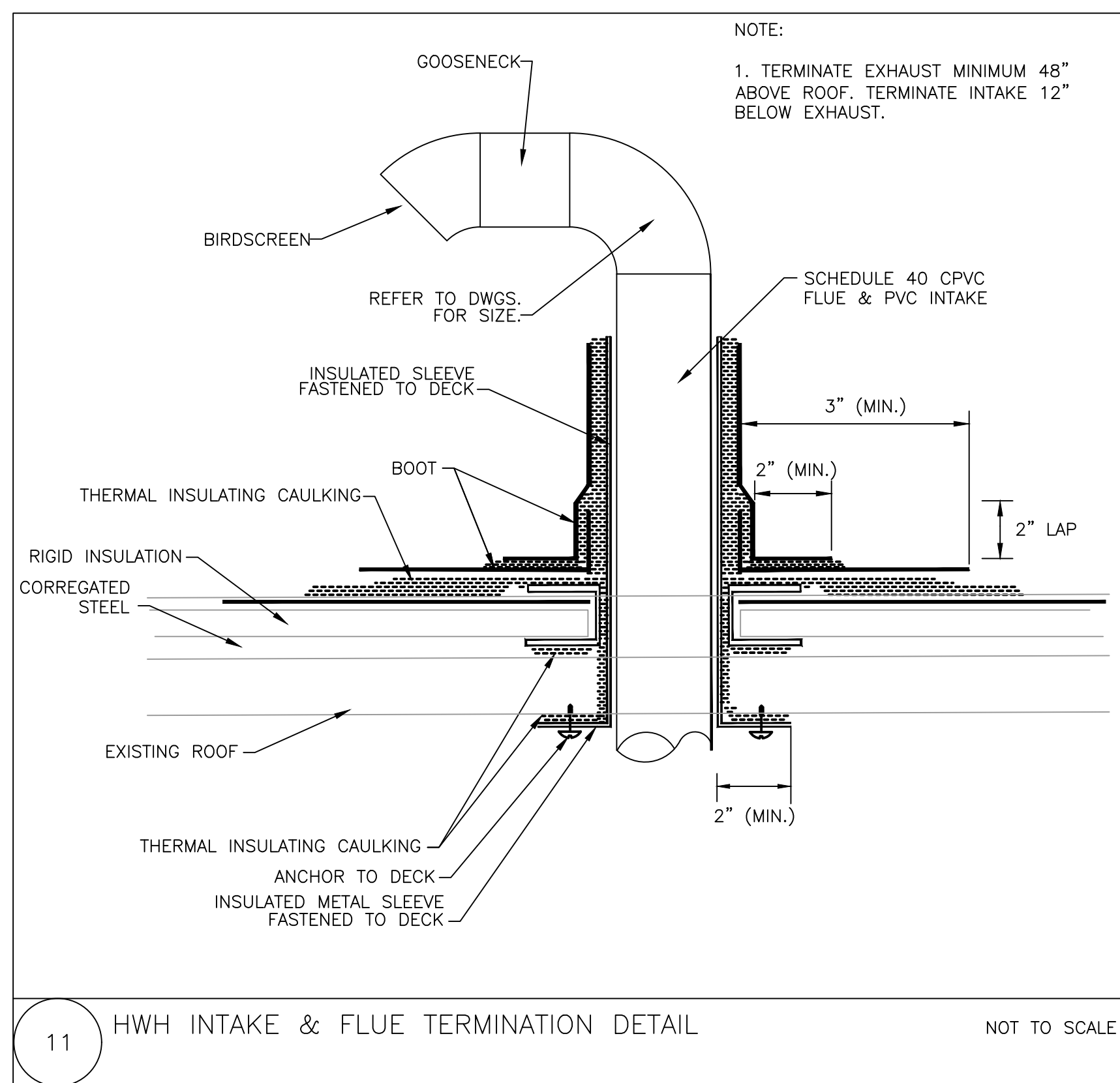
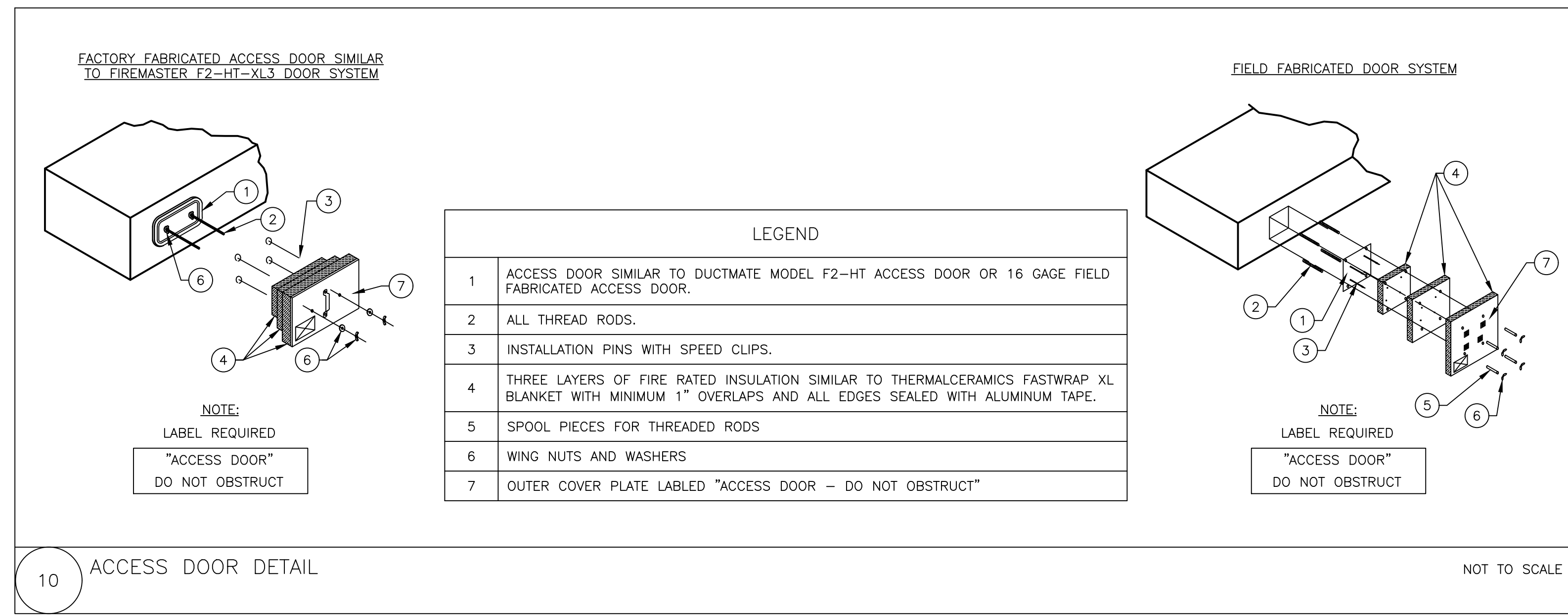
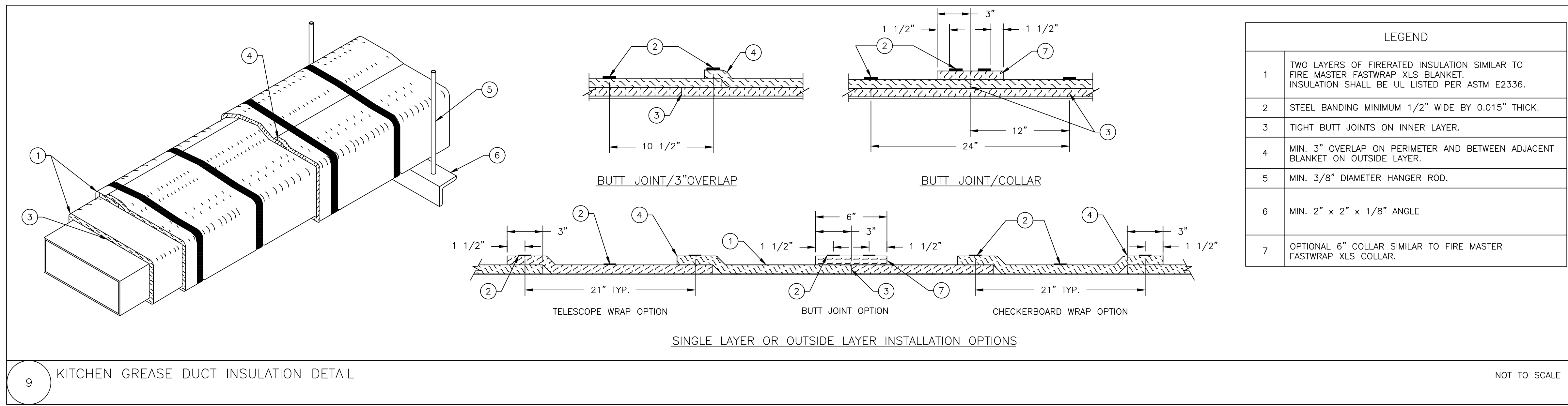
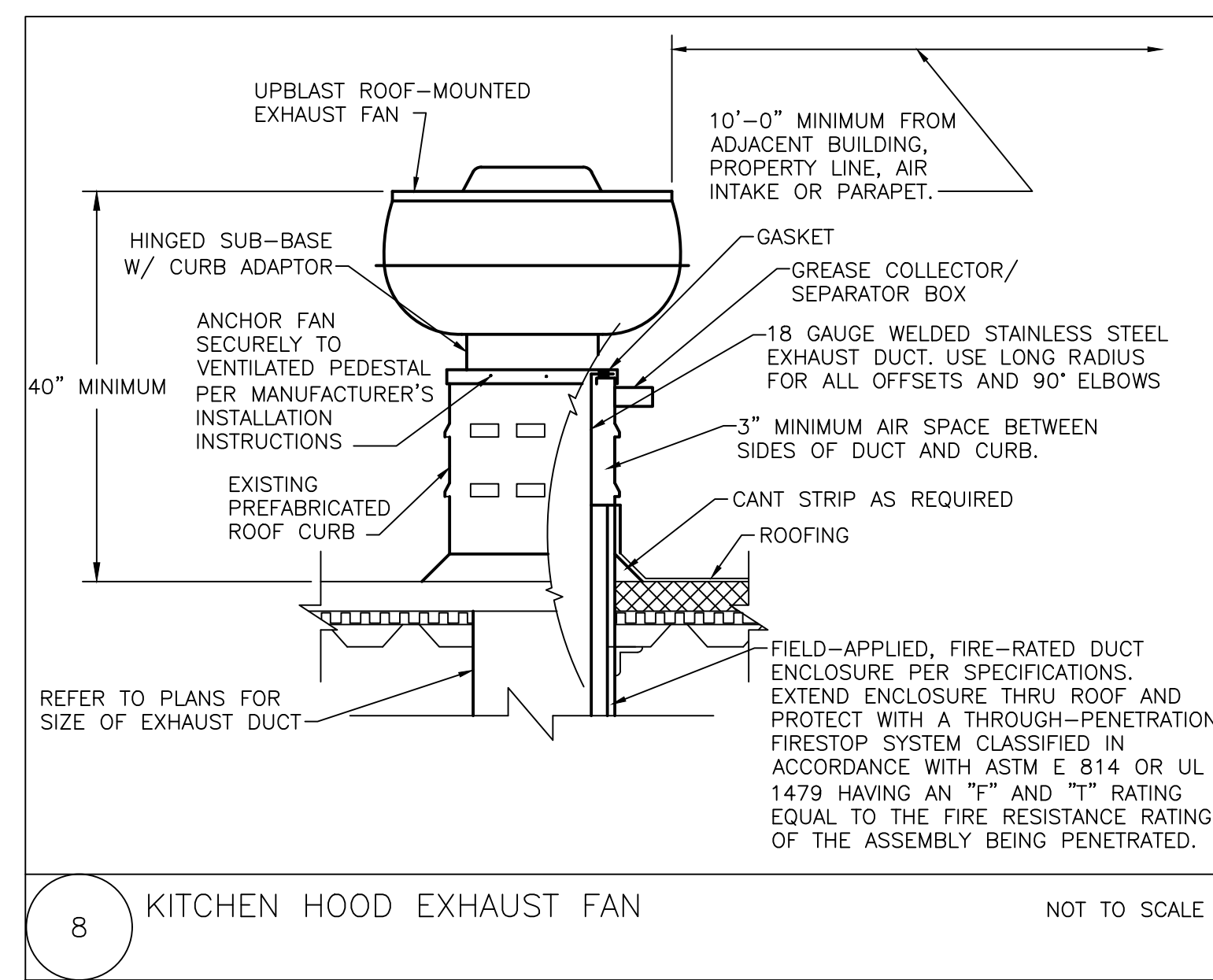
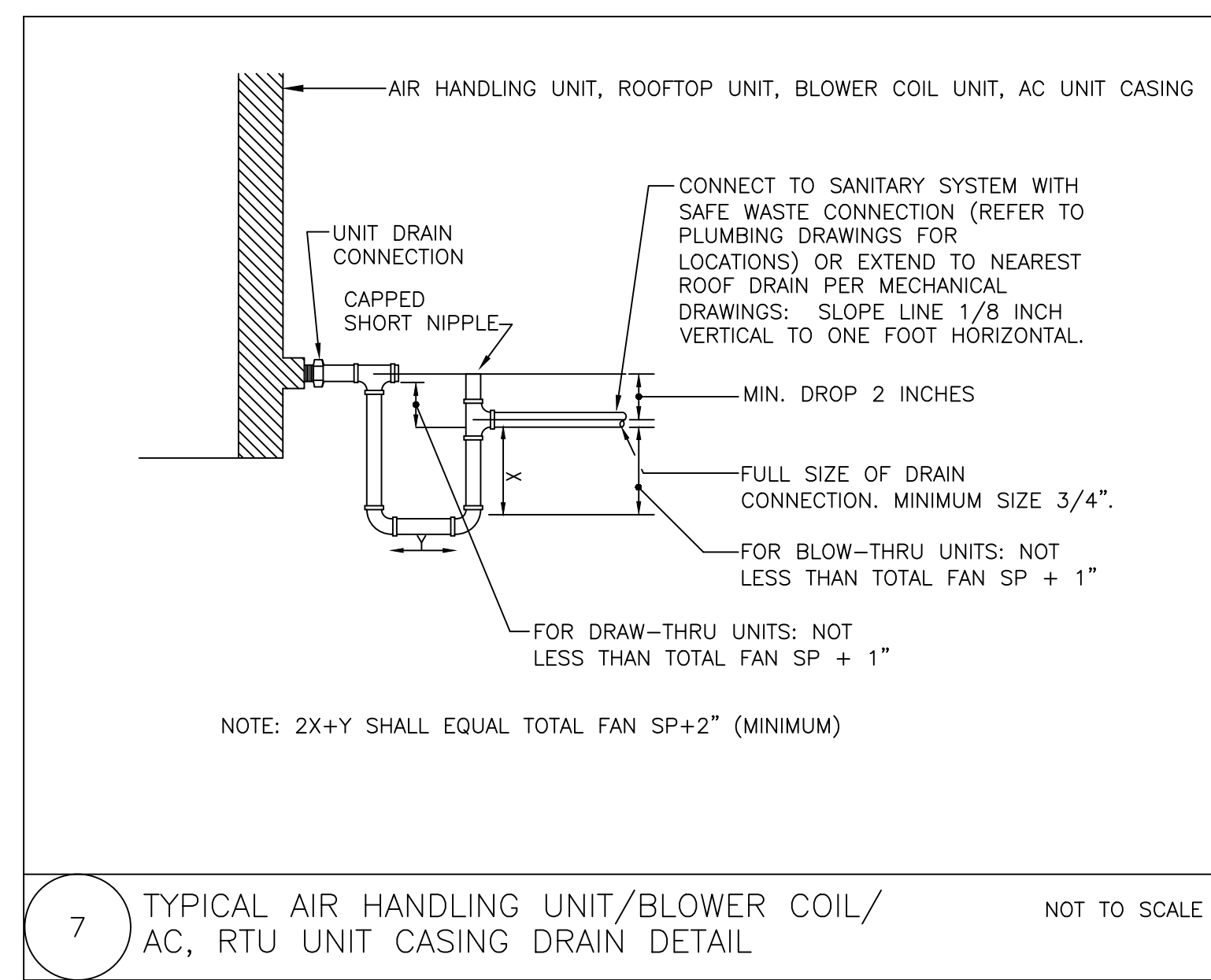
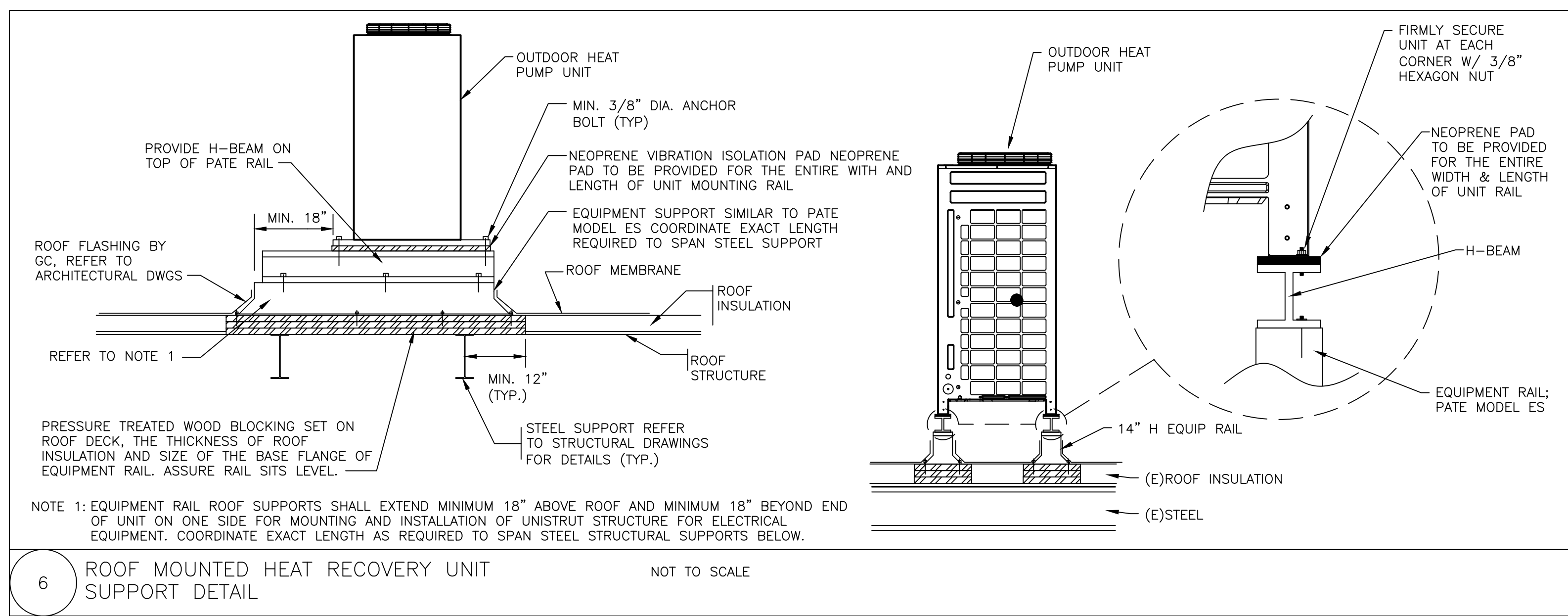
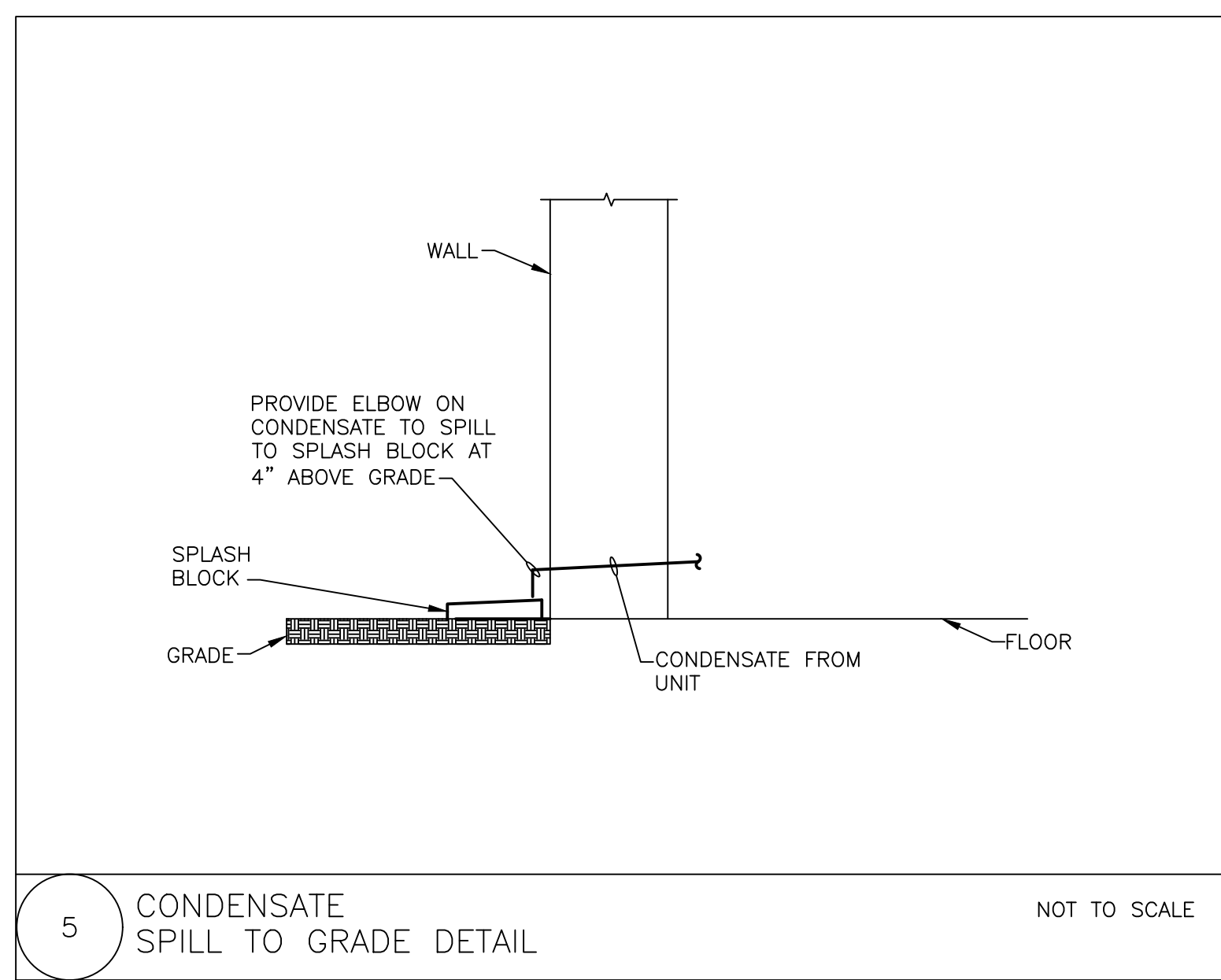
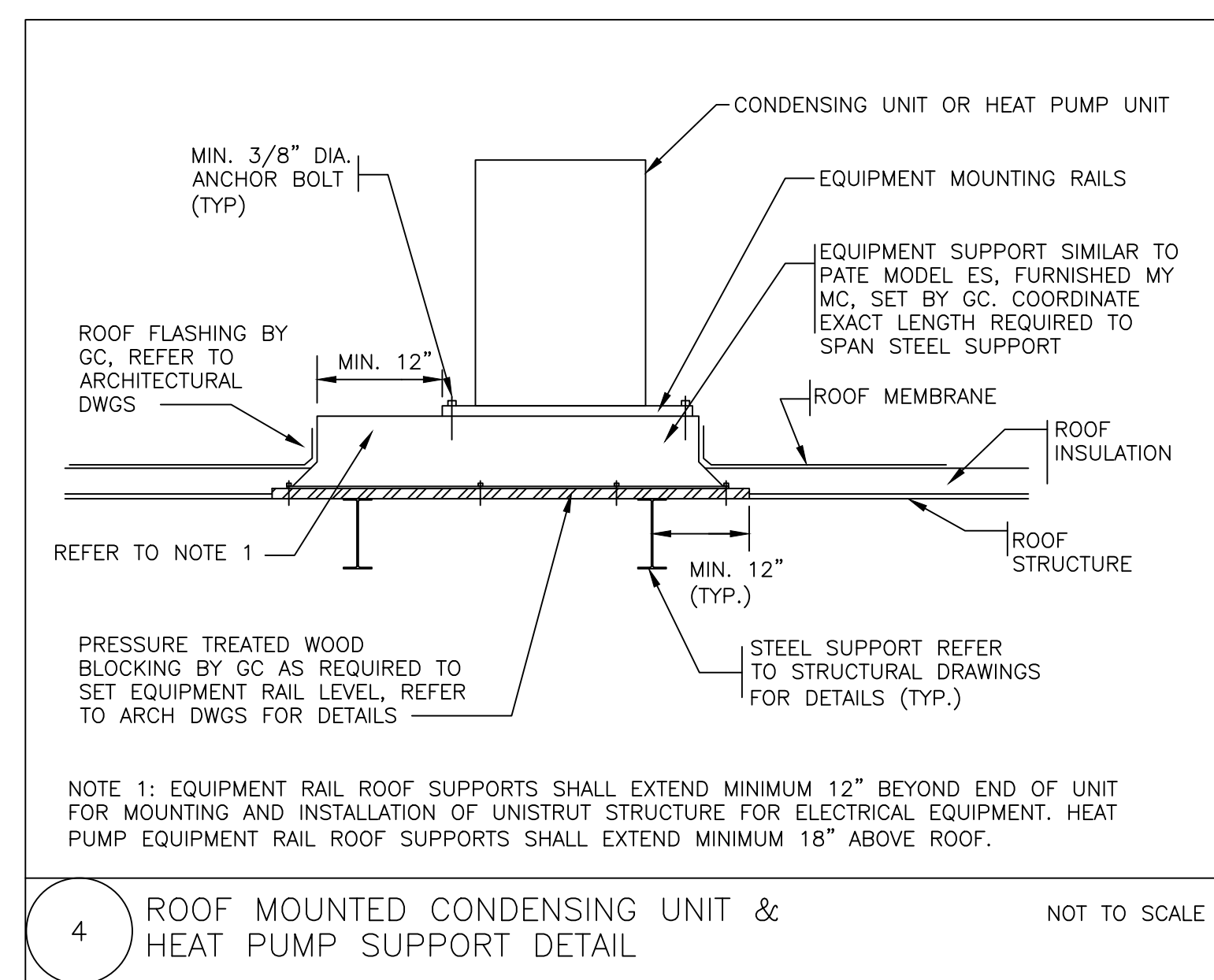
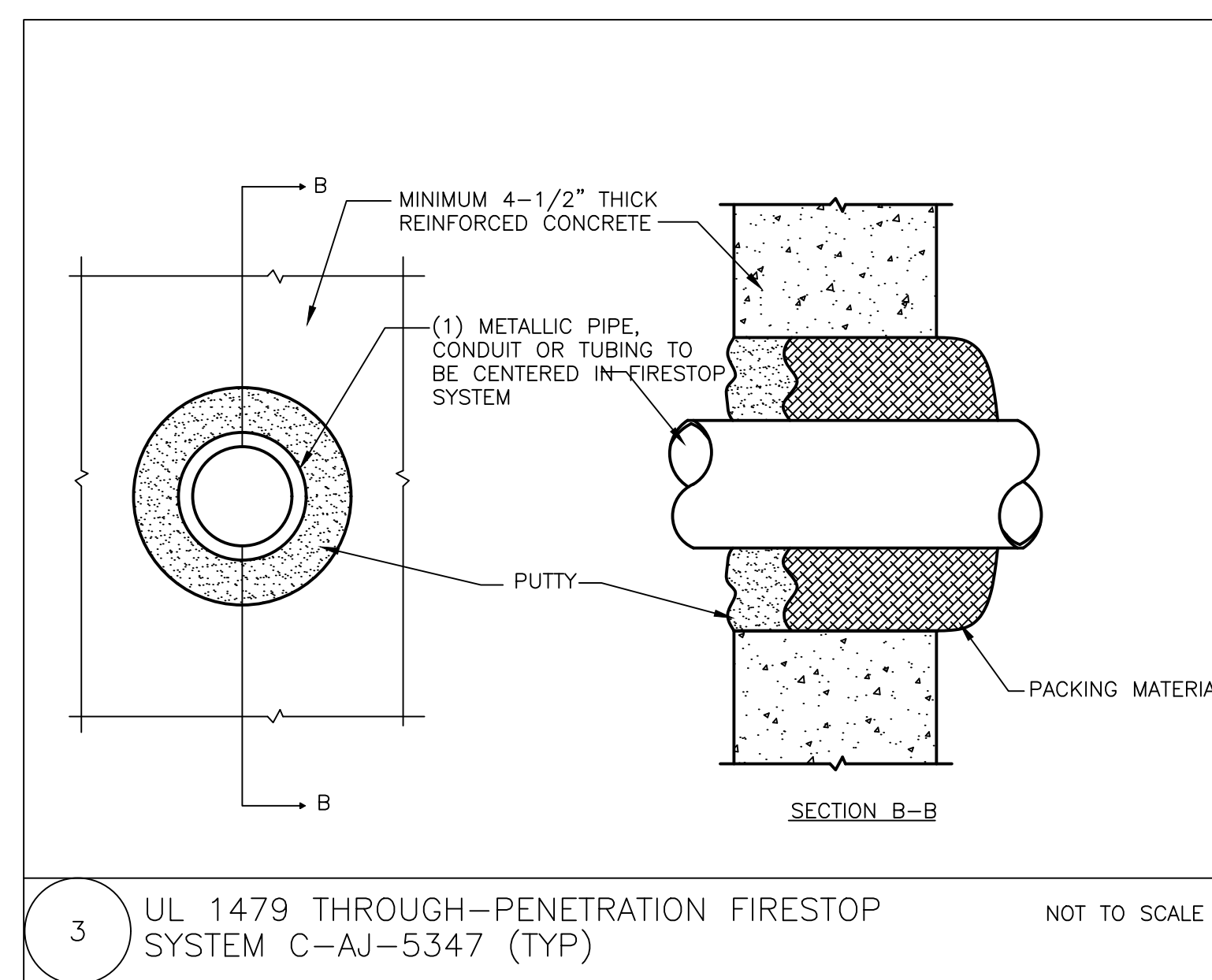
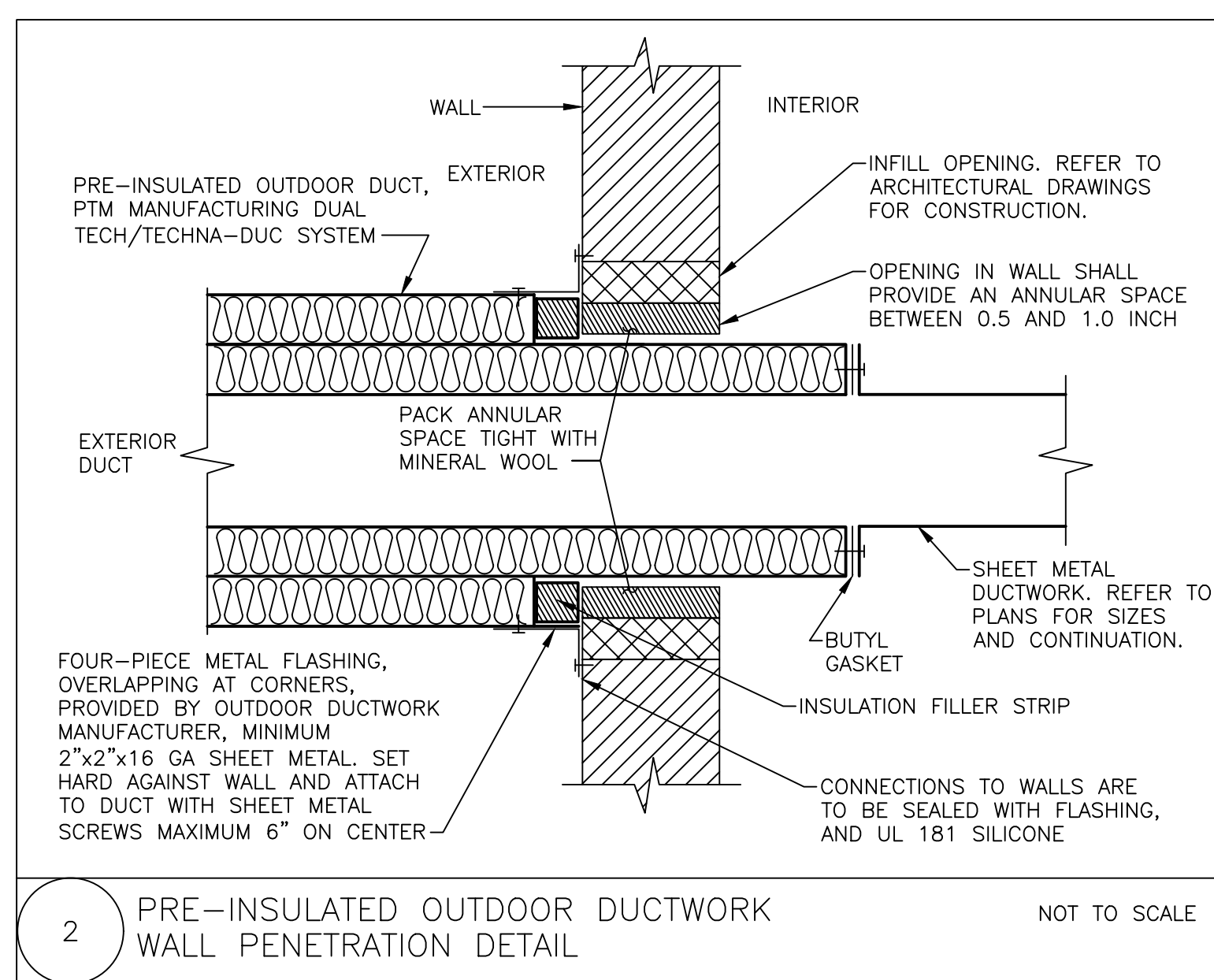
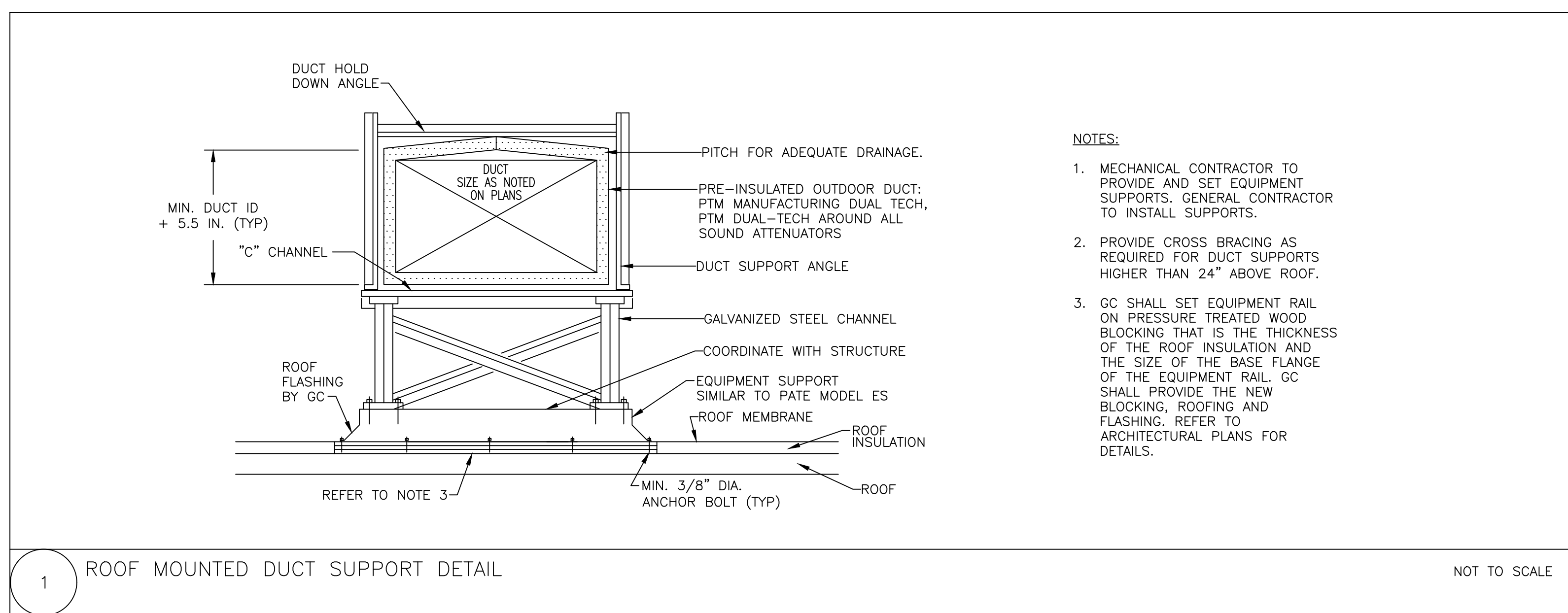
EXHAUST FAN POINTS LIST									
POINT TAG	POINT DESCRIPTION	INPUTS				OUTPUTS			
		DIGITAL	ANALOG	DIGITAL	ANALOG	DIGITAL	ANALOG		REMARKS
DI-1	EXHAUST FAN STATUS	X						X	
DO-1	EXHAUST FAN START/STOP					X			

KEF-1, KEF-2 AND KEF-3

- A. KEF-1: THE HOOD EXHAUST FAN KEF-1 SHALL BE CONTROLLED BY THE HOOD MANUFACTURER'S STAND-ALONE CONTROLS PROVIDED BY THE FOOD SERVICE CONTRACTOR. THE ATC CONTRACTOR SHALL INSTALL ALL FIELD MOUNTED CONTROL DEVICES AND ASSOCIATED CONTROLS WIRING. REFER TO FOOD SERVICE DRAWINGS FOR ADDITIONAL REQUIREMENTS.
- B. KEF-2 SHALL BE INTERLOCKED WITH THE DISHWASHER TO RUN WHENEVER THE DISHWASHER IS IN OPERATION. PROVIDE ALL ASSOCIATED RELAYS AND INTERLOCK WIRING FROM FAN TO DRY CONTACT ON DISHWASHER.
- C. KEF-3: THE GENERAL KITCHEN EXHAUST FAN KEF-3 SHALL BE ENERGIZED WHENEVER THE BUILDING DOAS-1 IS IN OCCUPIED MODE. IF KITCHEN HOOD FAN KEF-1 IS ON, THEN KEF-3 SHALL DEENERGIZE.
- D. THE BMS SHALL MONITOR THE STATUS OF THE EXHAUST FAN (VIA CS) AND GENERATE AN ALARM IF THE FAN FAILS TO RESPOND TO A START/STOP COMMAND.

KEF CONTROLS

1/4" = 1" NO SCALE



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KEYPLAN

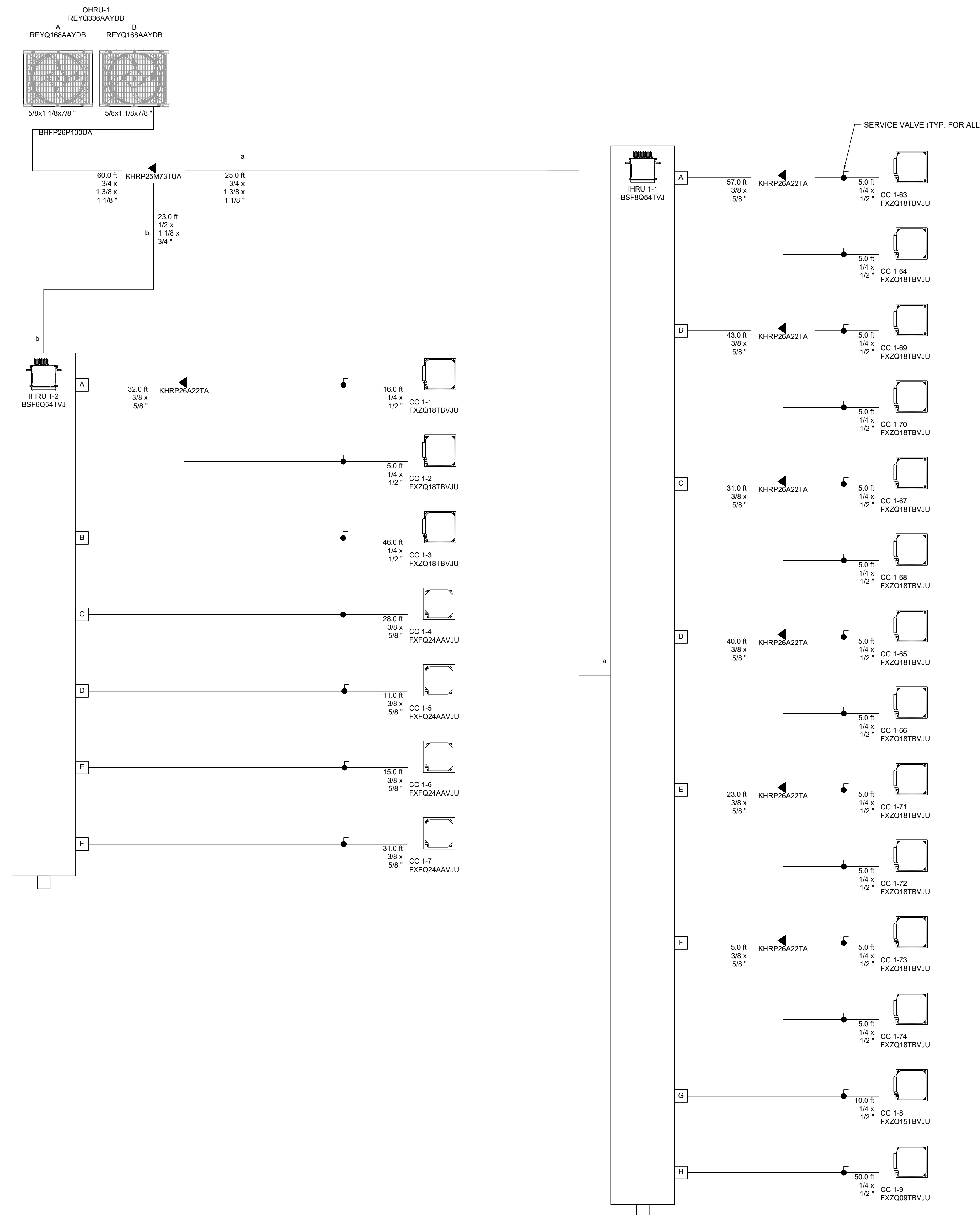
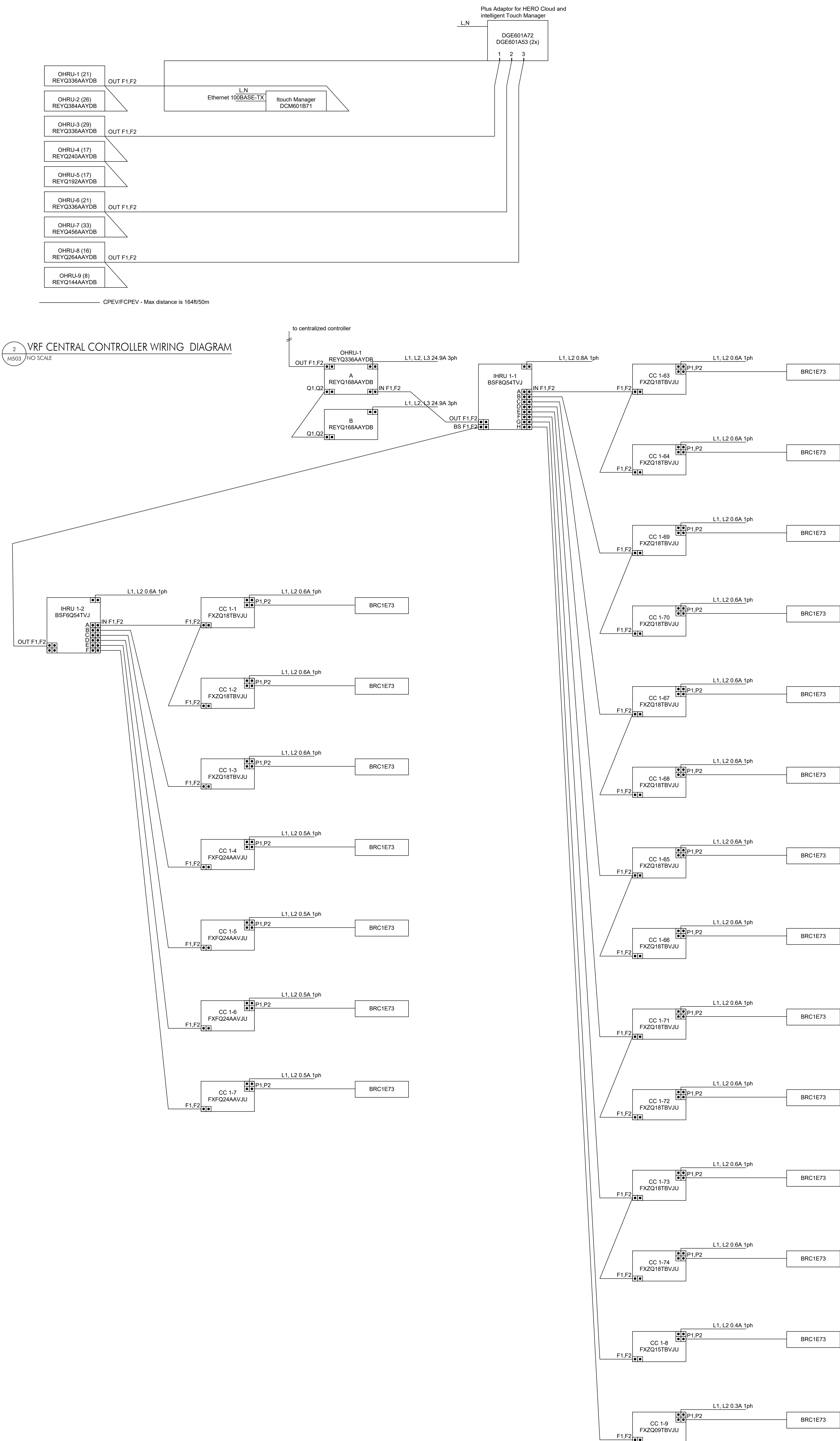
ISSUE HISTORY

A	DATE	ISSUED FOR
	2025-03-28	BID ISSUE

SHEET TITLE
MECHANICAL
DETAILS

DRAWING NUMBER

M503



OHRU-1 SYSTEM WIRING AND PIPING DIAGRAMS

M503 / NO SCALE

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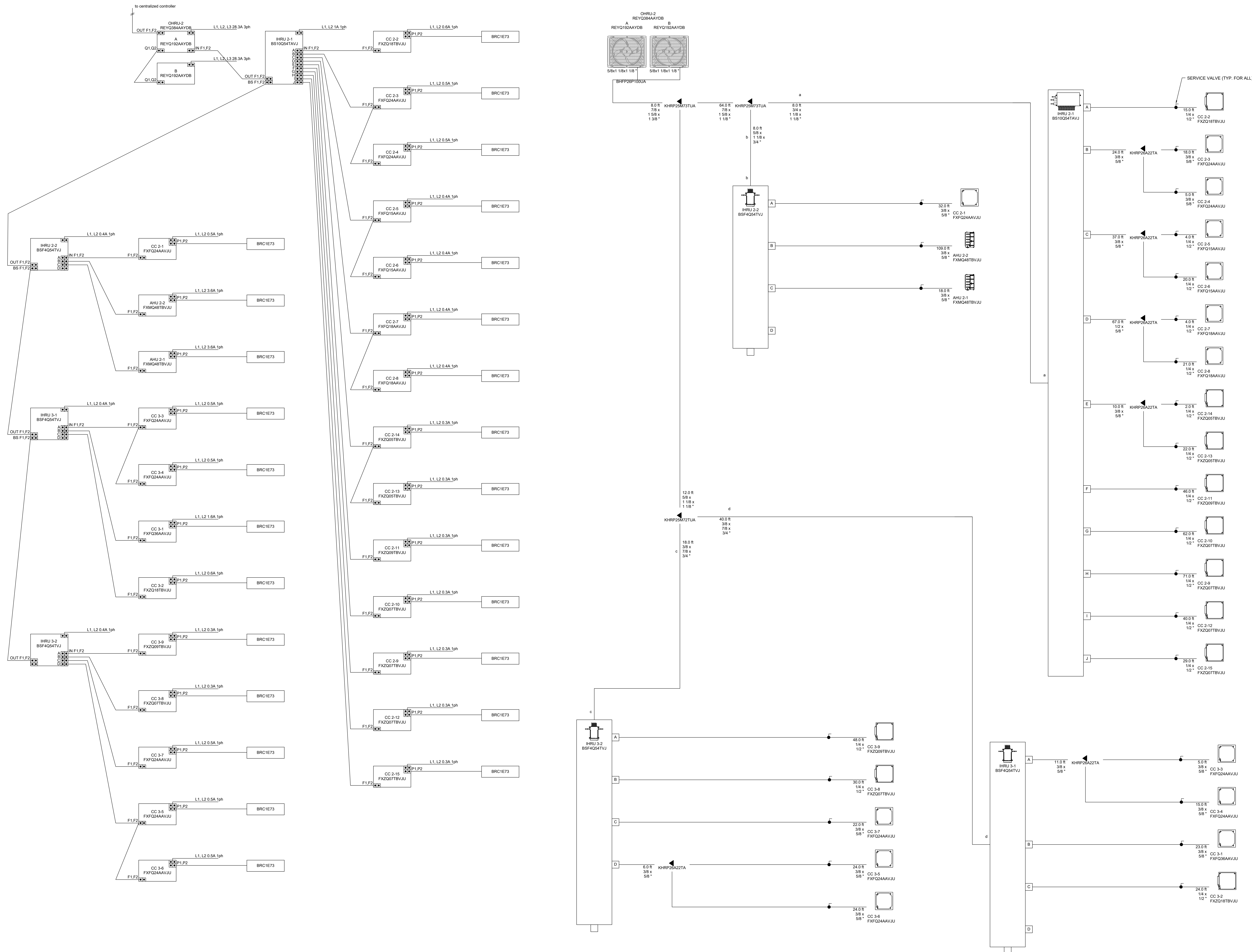
ISSUE HISTORY

A	DATE	ISSUED FOR
	2025-03-28	BID ISSUE

SHEET TITLE
MECHANICAL
DETAILS

DRAWING NUMBER

M504



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KEYPLAN

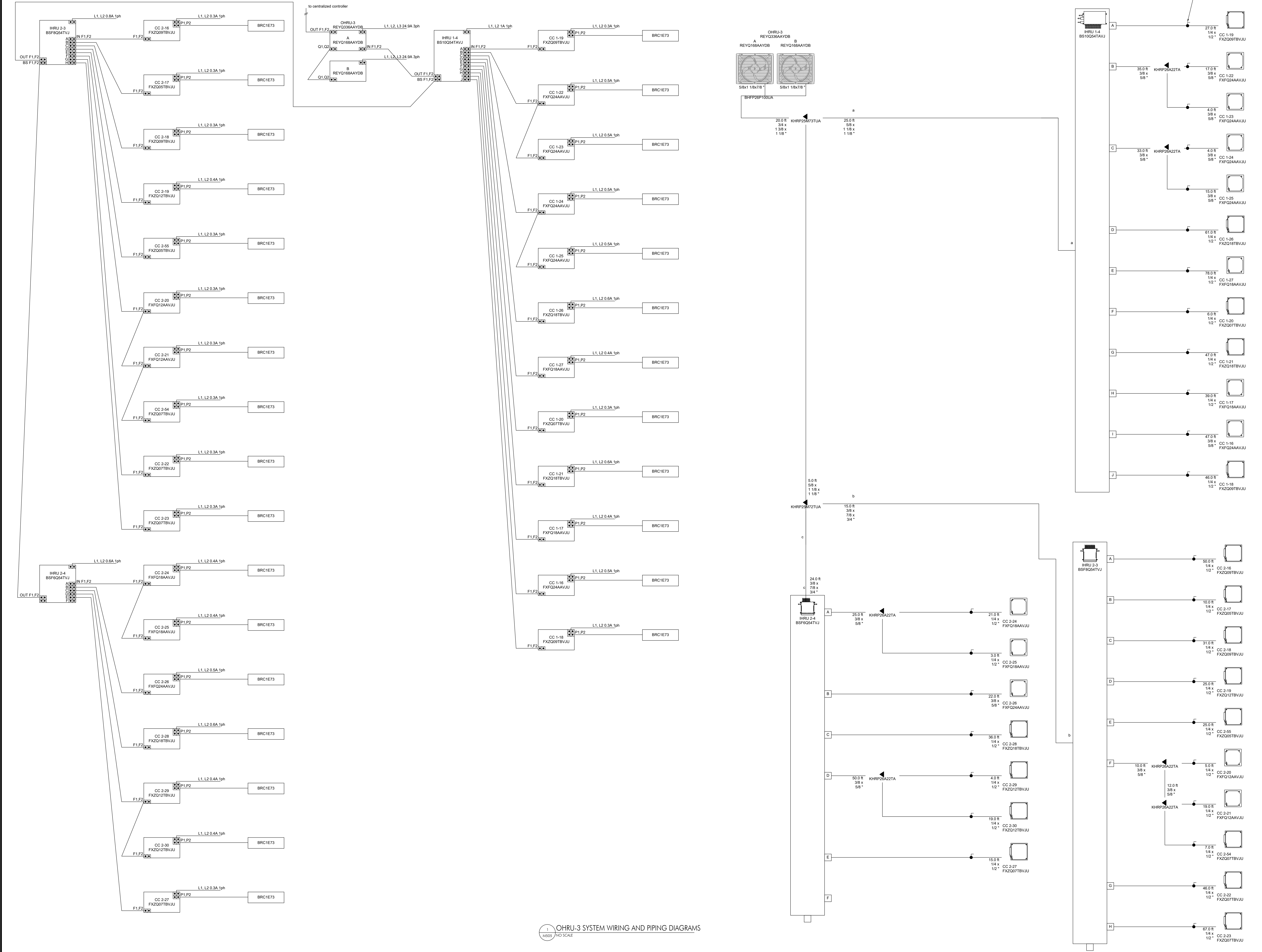
ISSUE HISTORY

A	DATE	ISSUED FOR
	2025-03-28	BD ISSUE

SHEET TITLE
MECHANICAL
DETAILS

DRAWING NUMBER

M505



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CONSTRUCTION

KEYPLAN

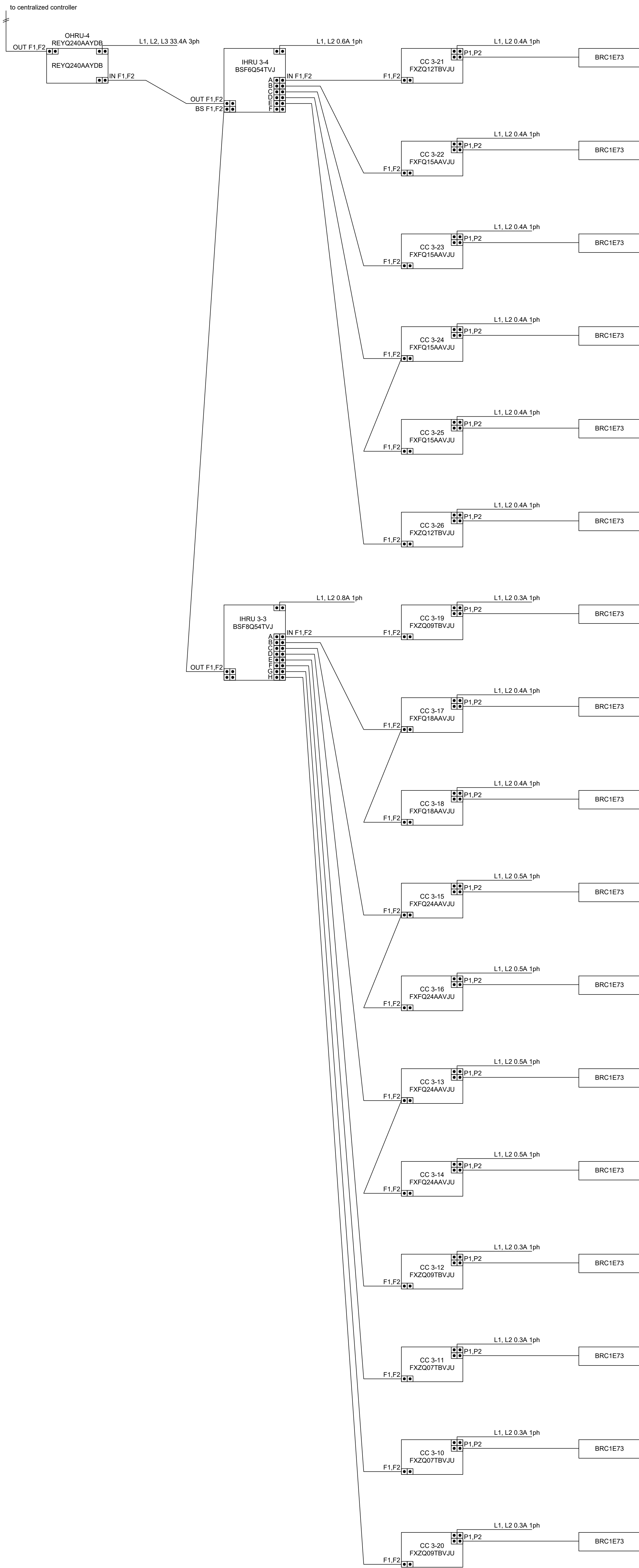
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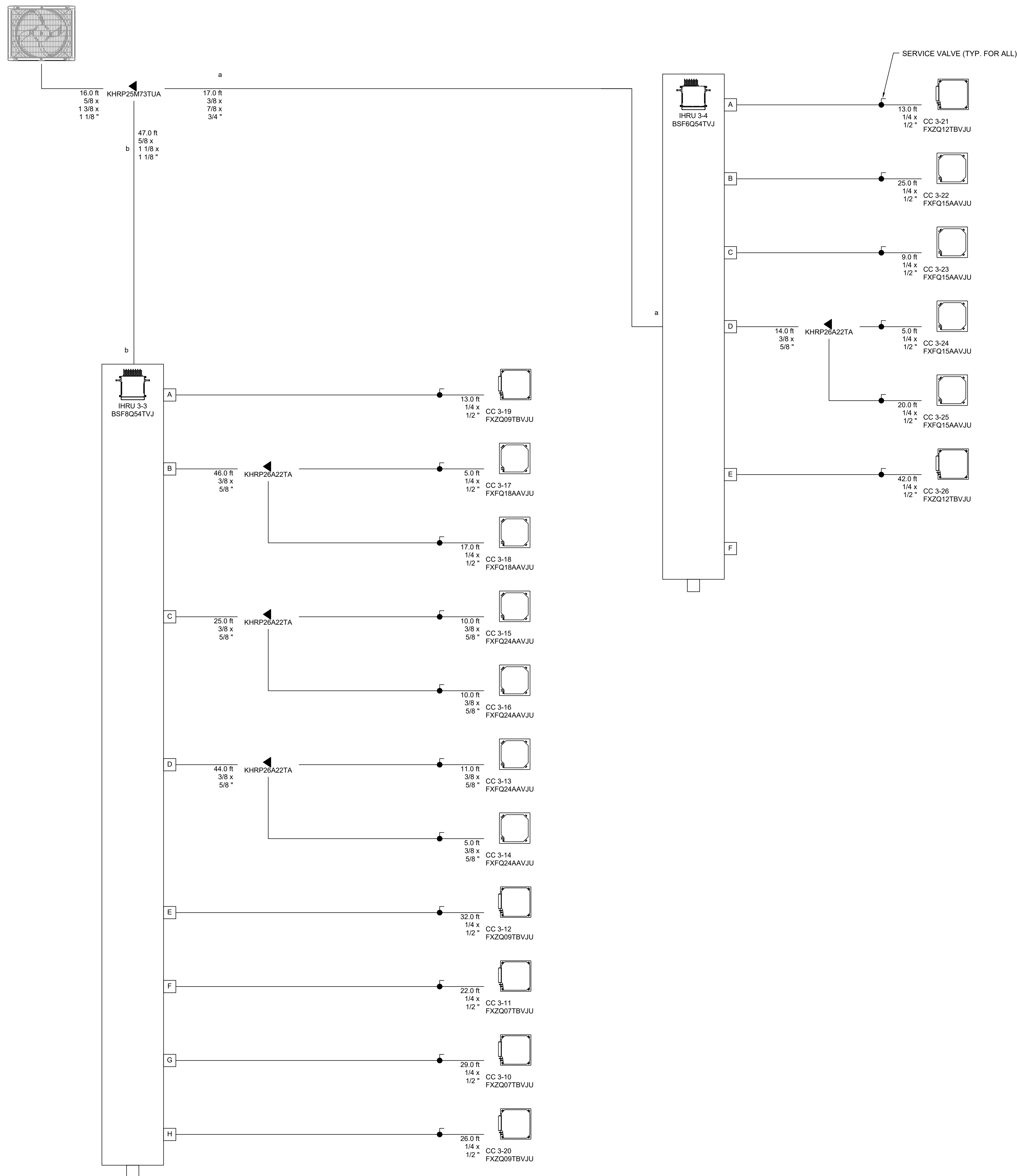
SHEET TITLE
MECHANICAL
DETAILS

DRAWING NUMBER

M506



1 OHRU-4 SYSTEM WIRING AND PIPING DIAGRAMS
N506 NO SCALE



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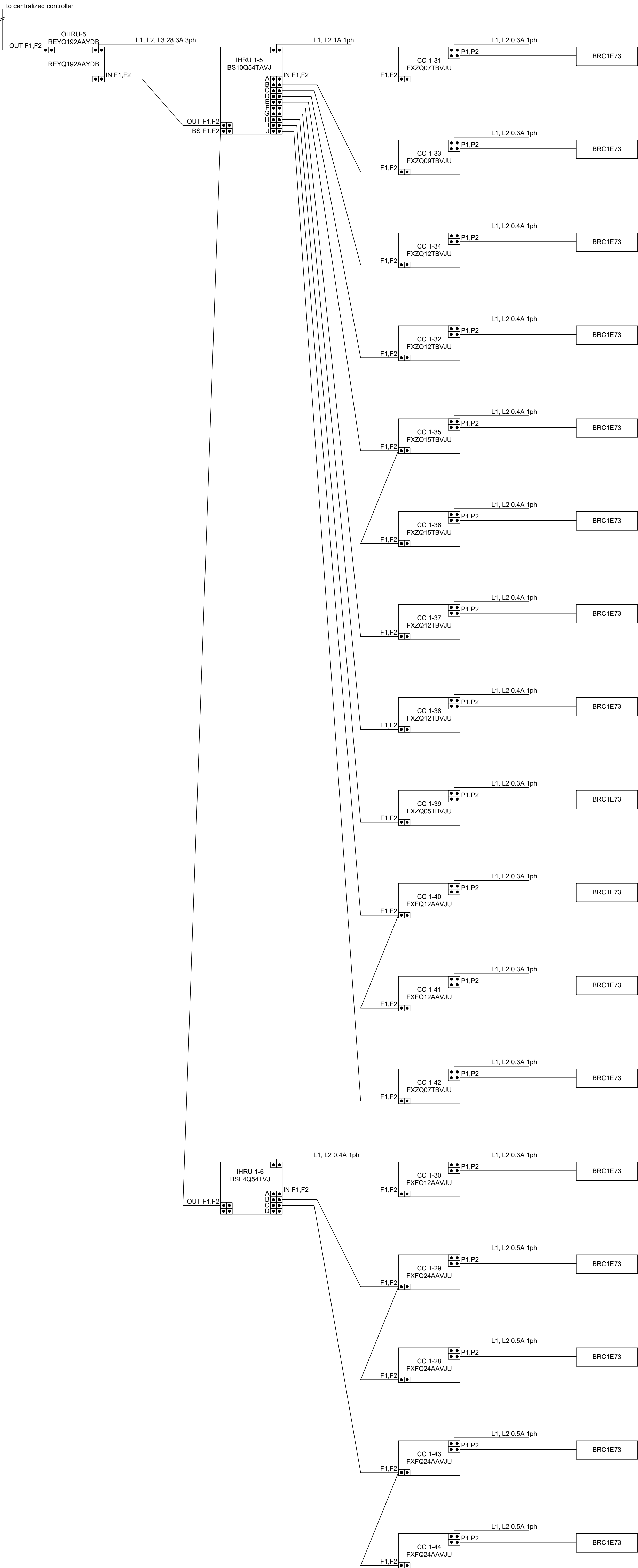
ISSUE HISTORY

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SHEET TITLE
MECHANICAL
DETAILS

DRAWING NUMBER

M507



OHRU-5 SYSTEM WIRING AND PIPING DIAGRAMS

M507

NO SCALE

NO SCALE

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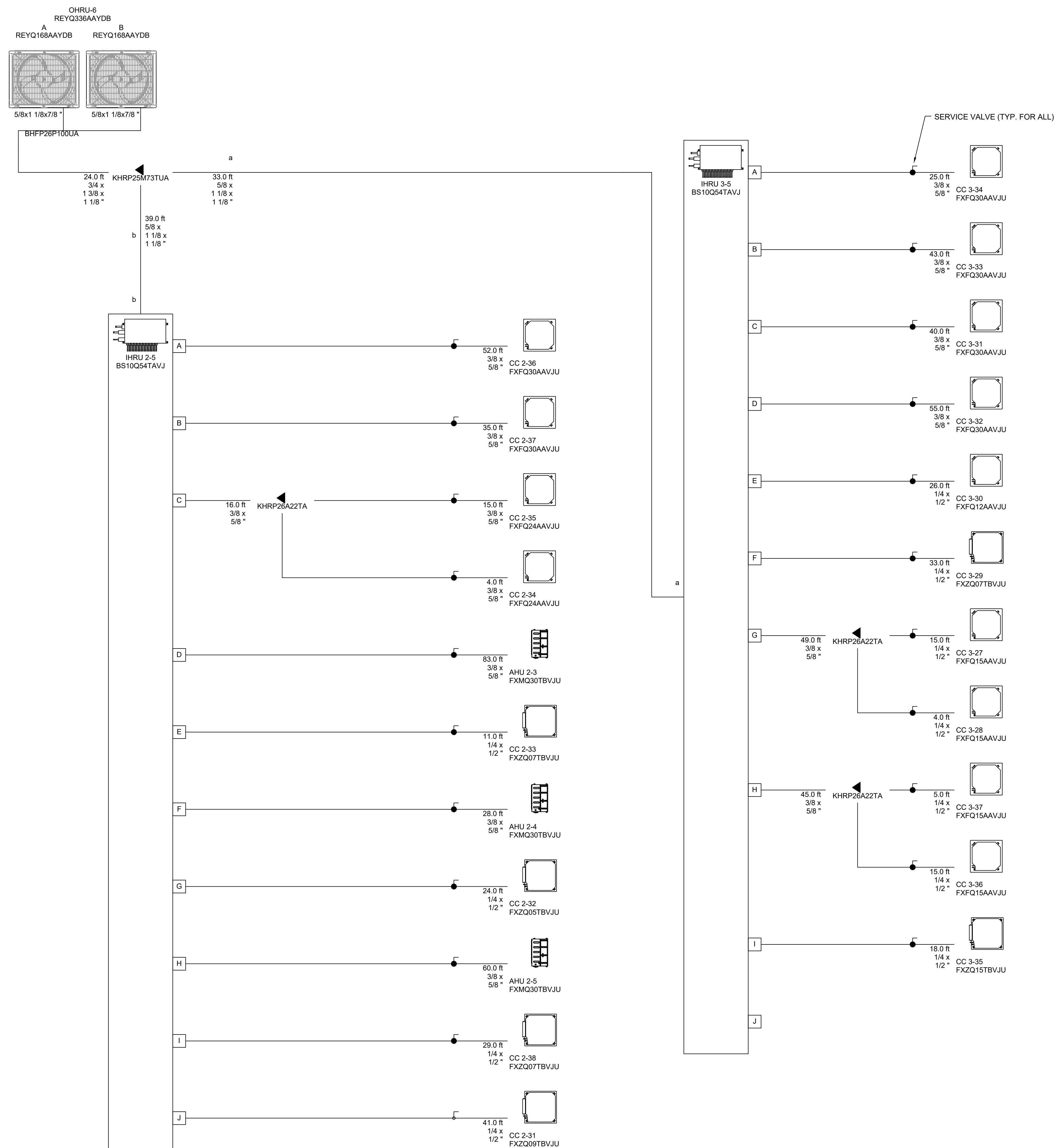
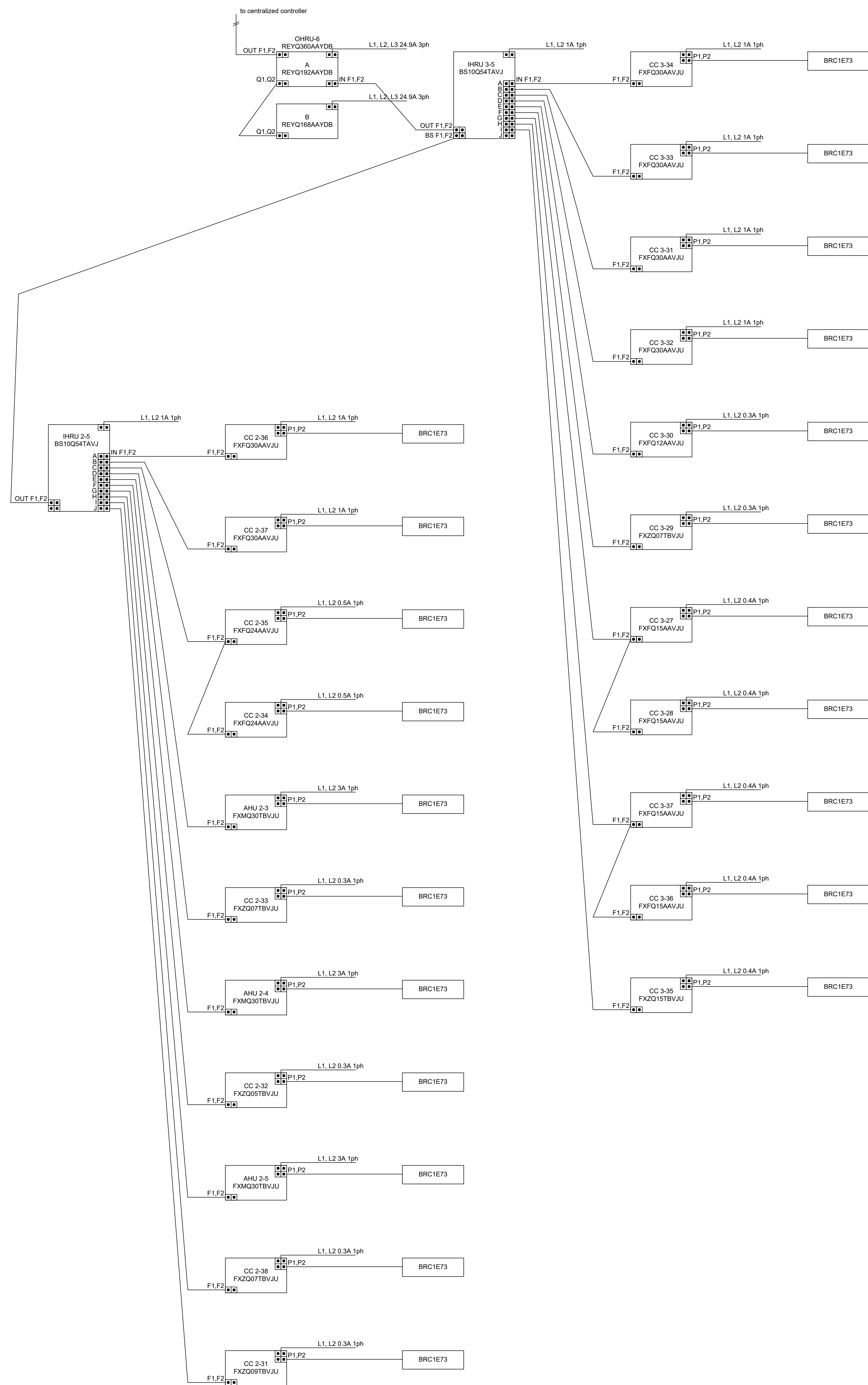
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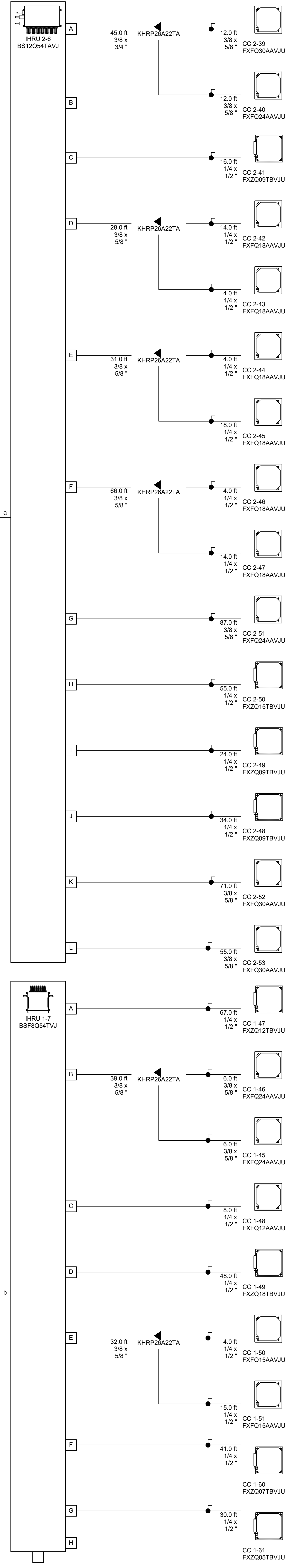
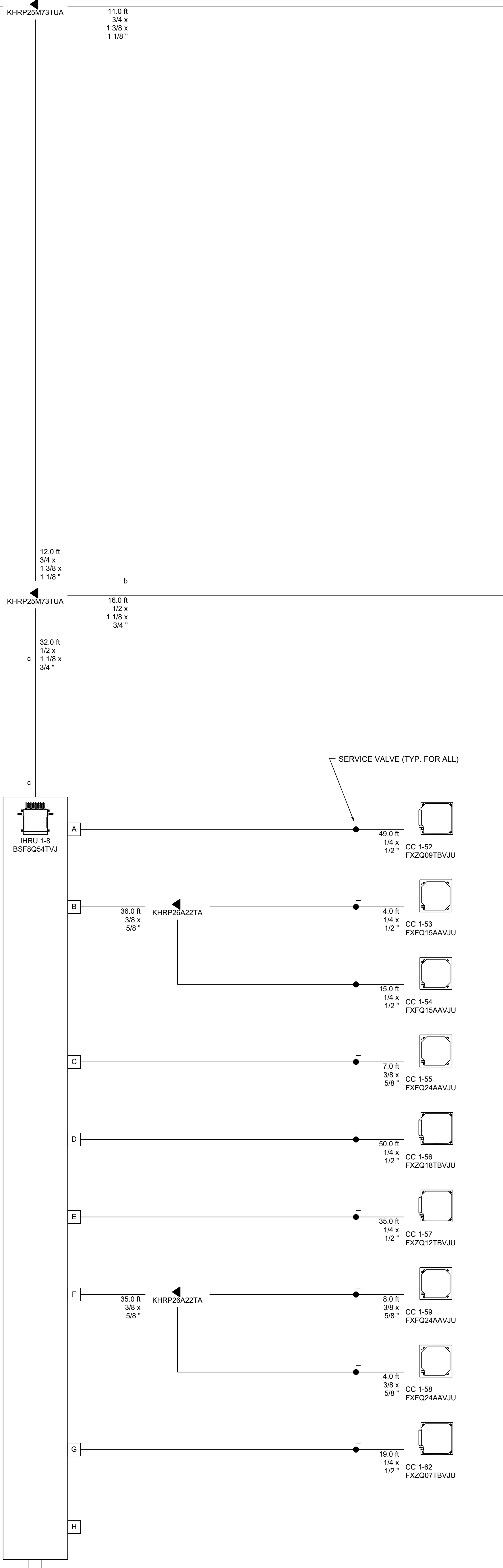
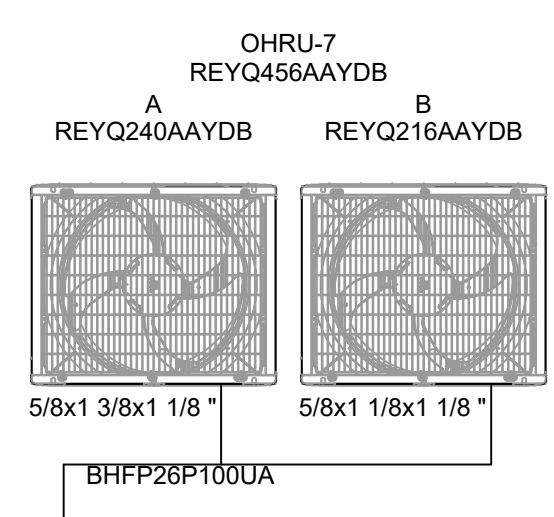
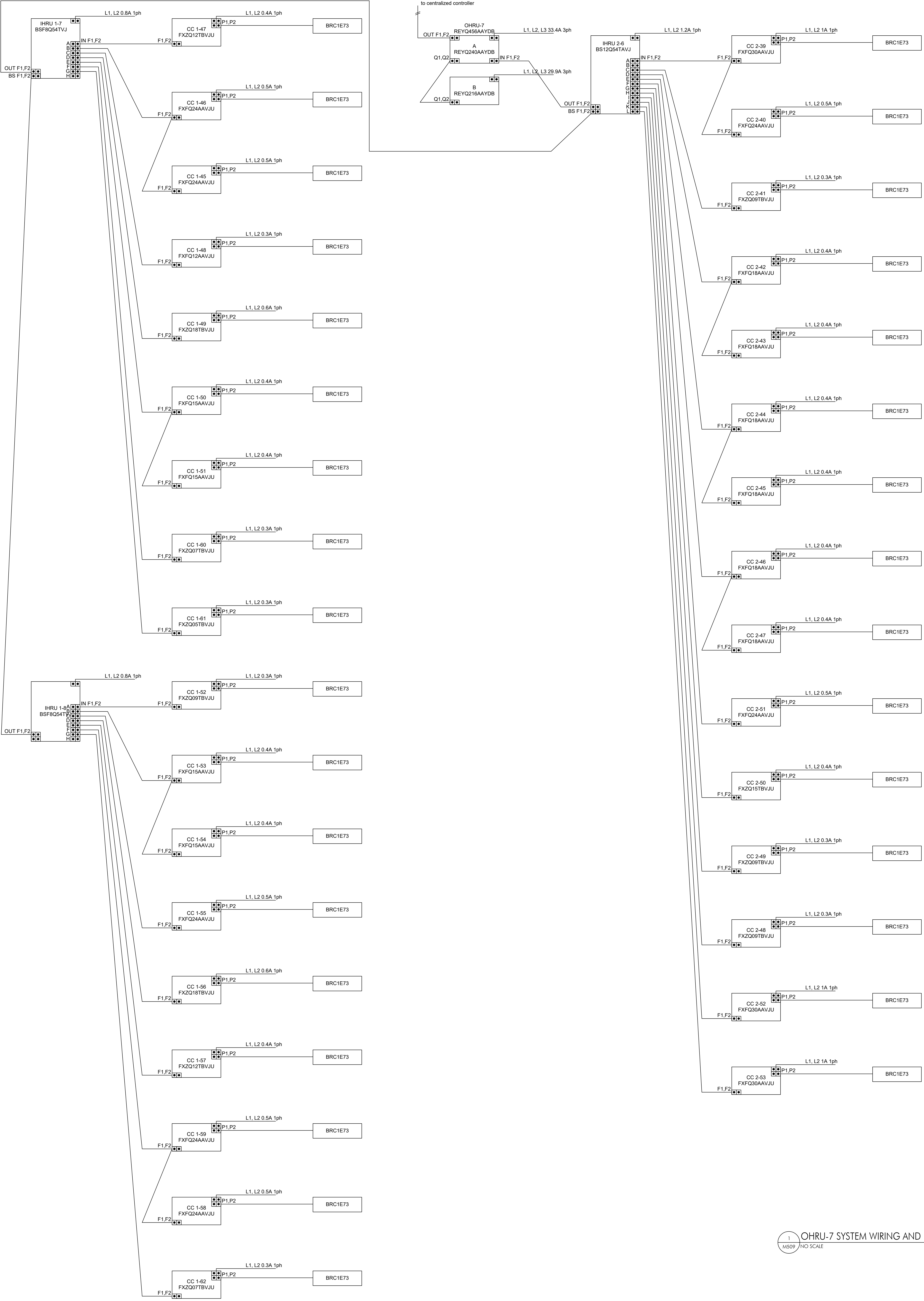
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SHEET TITLE
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DRAWING NUMBER

M509



1 OHRU-7 SYSTEM WIRING AND PIPING DIAGRAMS
M509 N/A SCALE

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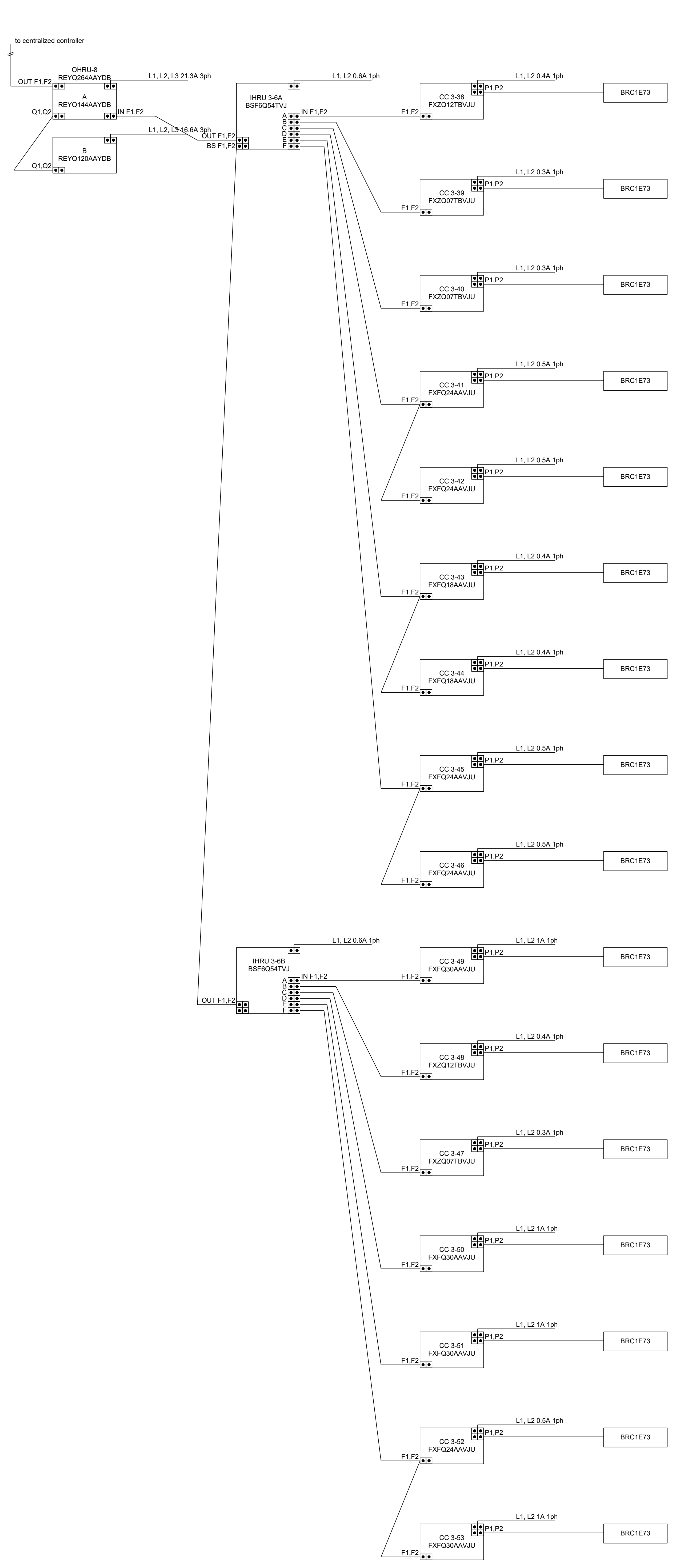
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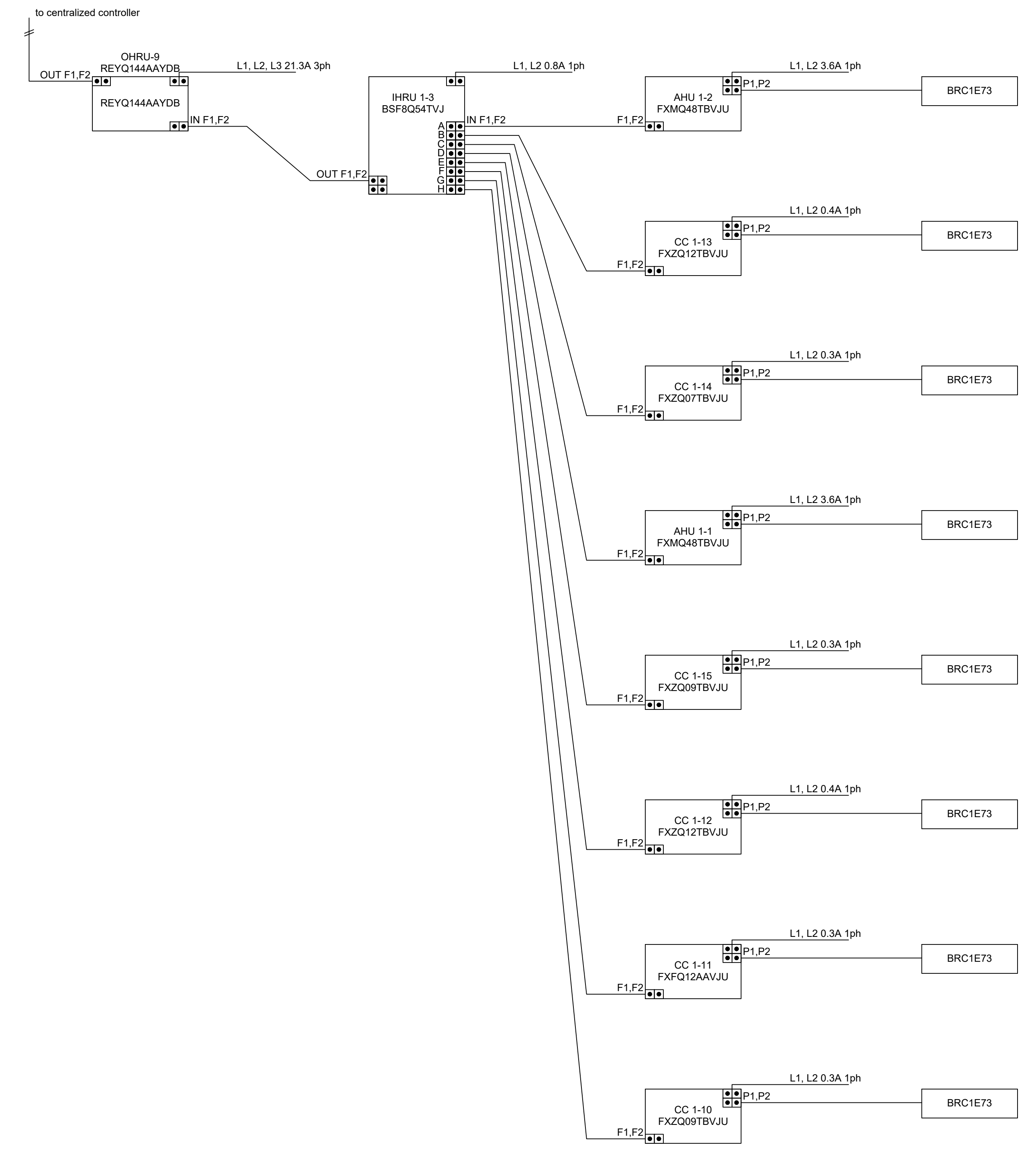
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MECHANICAL
DETAILS

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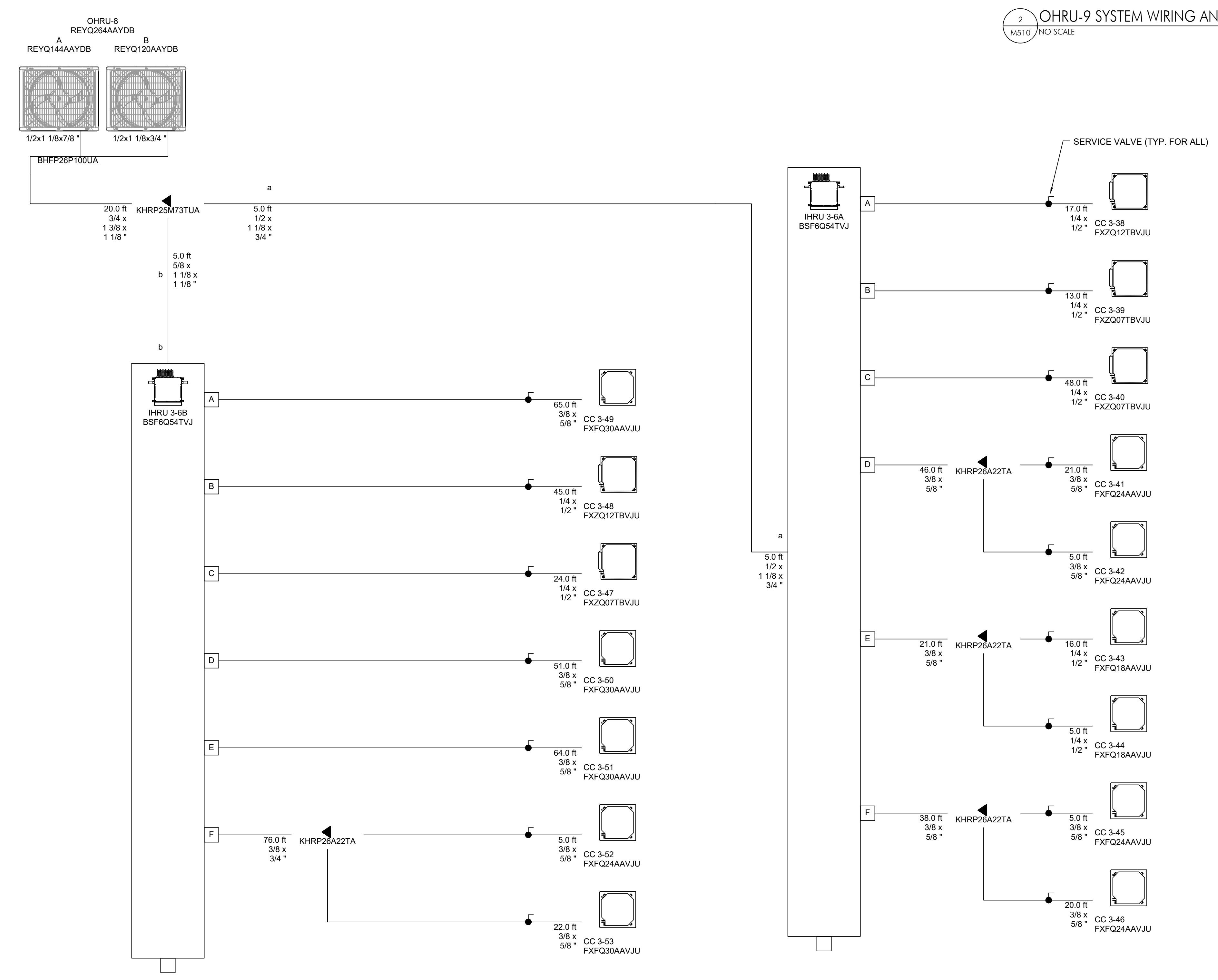
M510



1 OHRU-8 SYSTEM WIRING AND PIPING DIAGRAMS
M510 NO SCALE



2 OHRU-9 SYSTEM WIRING AND PIPING DIAGRAMS
M510 NO SCALE



1 OHRU-8 SYSTEM WIRING AND PIPING DIAGRAMS
M510 NO SCALE