

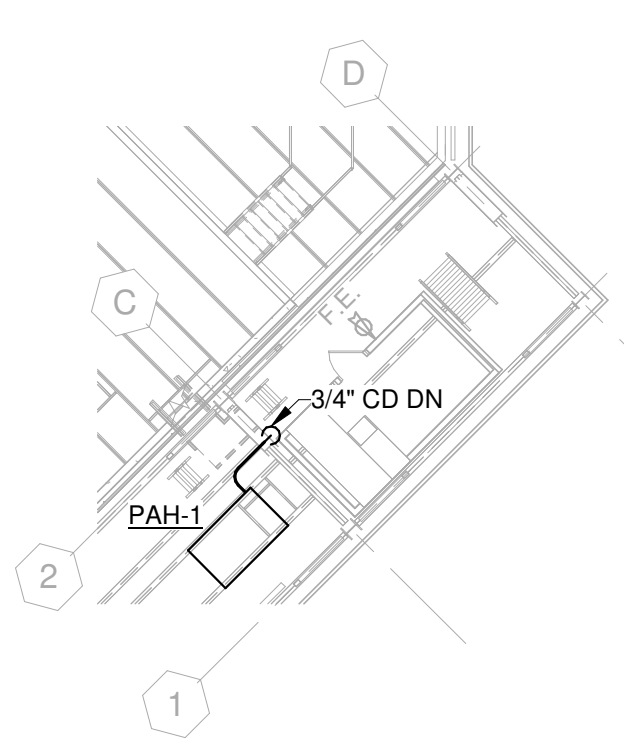
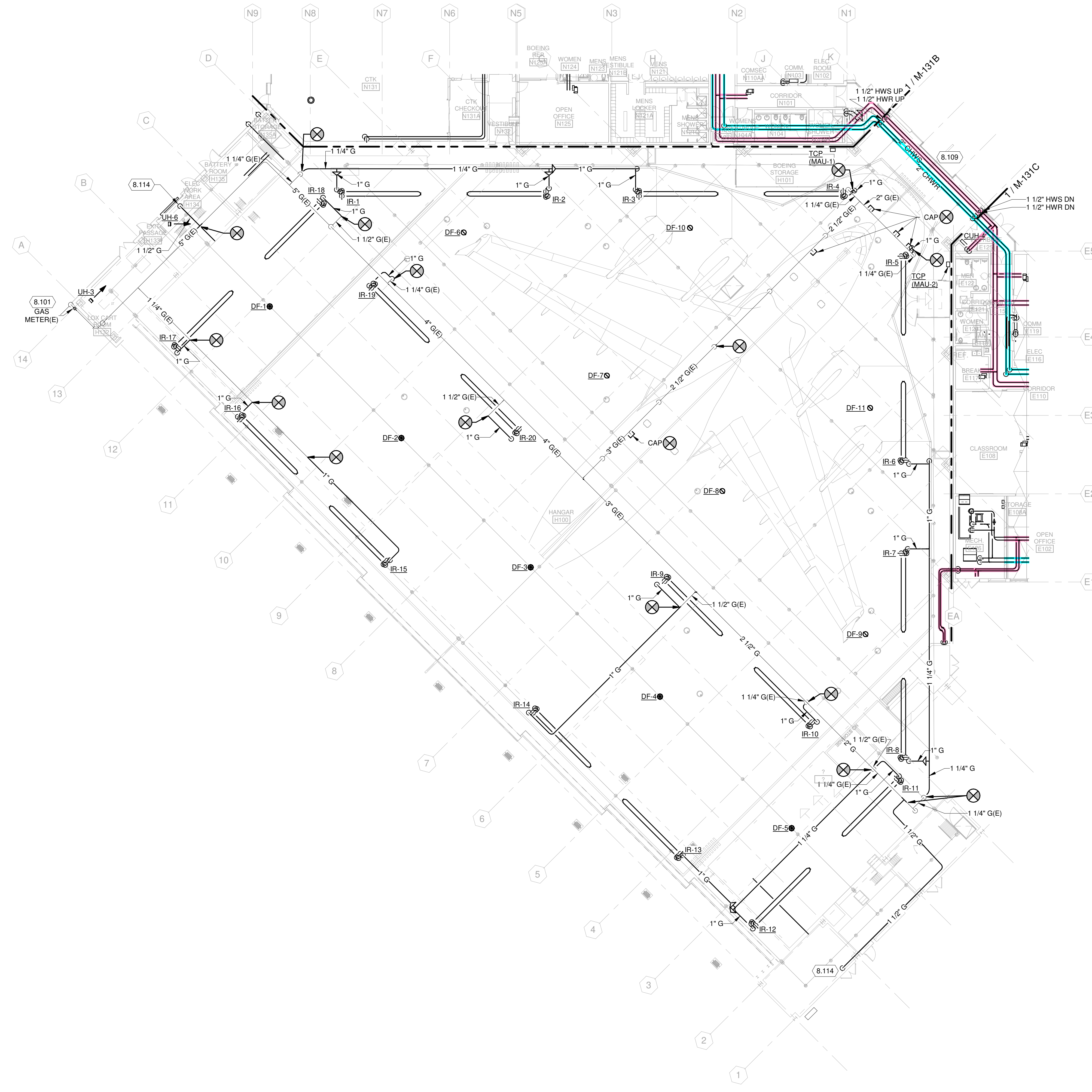
**GENERAL MECHANICAL PIPING NOTES:**

1. FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISIONS.
2. REFER TO SHEET M-001 FOR LEGENDS, ABBREVIATIONS, AND SYMBOLOLOGY.
3. COORDINATE WITH ELECTRICAL CONTRACTOR FOR EXACT LOCATIONS OF ELECTRICAL PANELS AND EQUIPMENT. DO NOT RUN PIPING/DUCTWORK OVER TOP OF OR WITHIN 3'-0" CLEAR HORIZONTALLY IN FRONT OF ALL ELECTRICAL EQUIPMENT OR PANELS.
4. CONTROL CONTRACTOR IS RESPONSIBLE FOR COORDINATING POWER FOR HIS EQUIPMENT WITH ELECTRICAL CONTRACTOR AND INSURING ALL COSTS ASSOCIATED WITH SUCH ARE INCLUDED IN THE PROJECT COST.
5. COORDINATE ALL PIPING WITH HVAC DUCTWORK ROUTING.
6. PITCH ALL CONDENSATE DRAIN PIPING TOWARDS FLOOR OR HUB DRAIN.
7. ALL REFRIGERATION PIPING TO BE HARD RIGID COPPER EXCEPT FOR DUCTLESS SPLIT UNITS WHERE LINESETS MAY BE USED.

**KEYED NOTES**

- 8.101 CONTRACTOR TO VERIFY EXISTING NATURAL GAS PRESSURE DELIVERED TO THE BUILDING IS 2 PSI. NEW TOTAL CONNECTED LOAD IS 5124 CFH.
- 8.109 ROUTE HWS/R PIPING AS HIGH AS POSSIBLE ABOVE OVERHEAD DOOR.
- 8.114 1 1/2" GAS DOWN TO MEZZANINE BELOW. SEE SHEET M-132A2 FOR CONTINUATION.

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**1 MECHANICAL FLOOR PLAN - AREA A**  
 1/16" = 1'-0"

**2 MECHANICAL FLOOR PLAN - AREA A - COMM ROOM**  
 1/16" = 1'-0"

**NCANG - 145TH AW  
 REPAIR MAINTENANCE HANGAR  
 BUILDING 51  
 CHARLOTTE DOUGLAS IAP  
 CHARLOTTE, NORTH CAROLINA**

ISSUED  
 07/20/22 B-3 SUBMITTAL

ANG PROJ. NO.: FJRP112701  
 MSH NO.: 3258000-131303.01  
 DATE: July 20, 2022  
 DESIGNED BY: AMT  
 DRAWN BY: KMK  
 CHECKED BY: SNW  
 DO NOT SCALE DRAWINGS

SHEET CONTENTS  
 MECHANICAL PIPING  
 FLOOR PLAN - AREA A

SHEET NO.:

**M-131A**

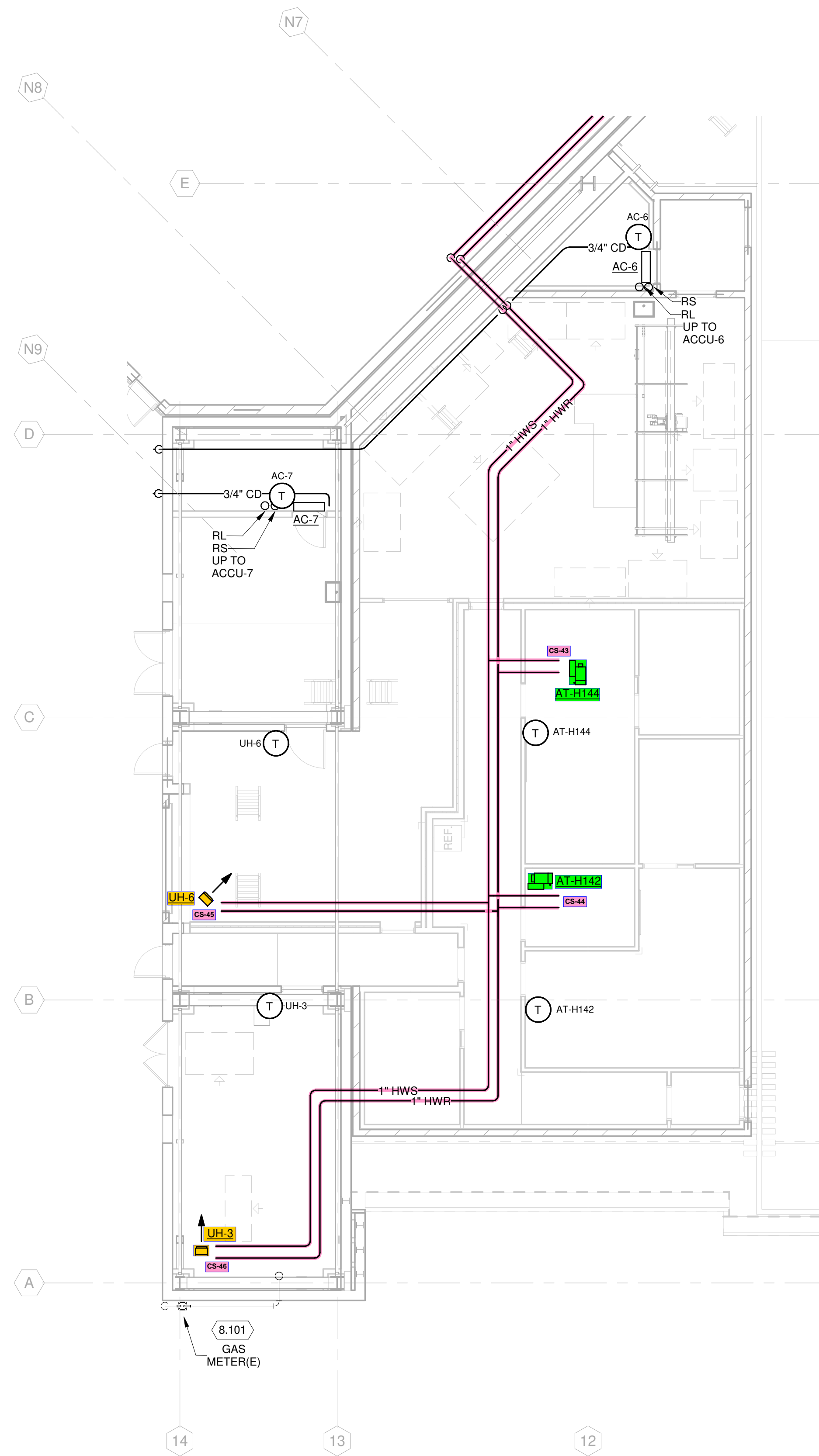
**GENERAL MECHANICAL PIPING NOTES:**

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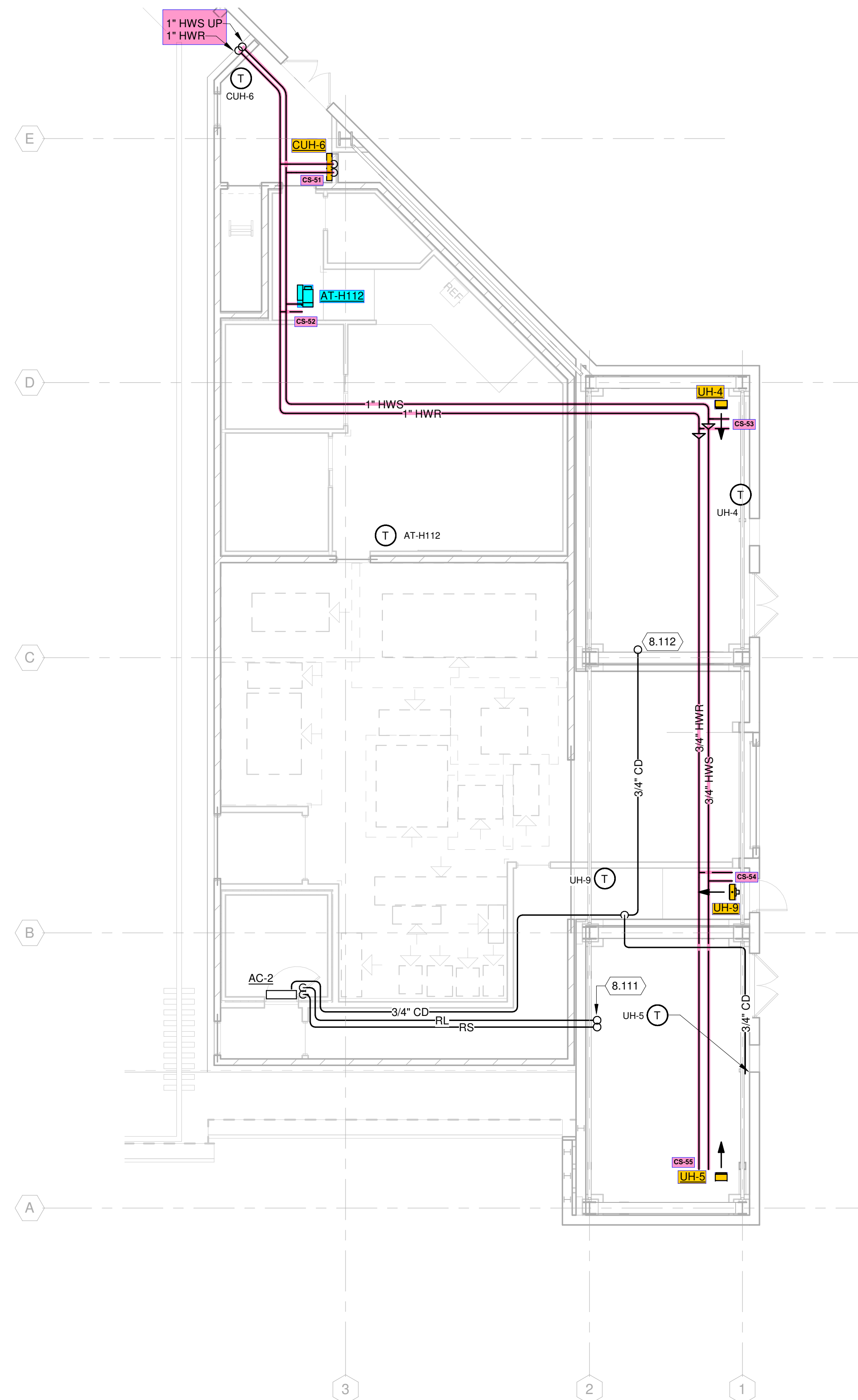
**KEYED NOTES**

- 8.101 CONTRACTOR TO VERIFY EXISTING NATURAL GAS PRESSURE DELIVERED TO THE BUILDING IS 2 PSI. NEW TOTAL CONNECTED LOAD IS 5124 CFH.
- 8.111 RS/RL THROUGH WALL. SEE SHEET M-132A2 FOR CONTINUATION.
- 8.112 3/4" COOLING CONDENSATE DOWN TO FLOOR DRAIN.

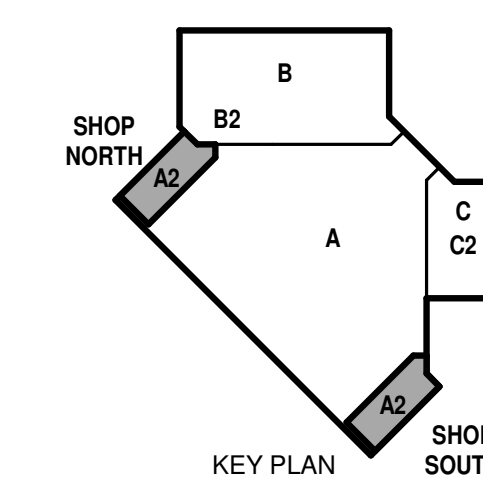
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**2 HANGAR SHOP PIPING FLOOR PLAN - NORTH**  
 1/8" = 1'-0"



**1 HANGAR SHOP PIPING FLOOR PLAN - SOUTH**  
 1/8" = 1'-0"



**NCANG - 145TH AW  
 REPAIR MAINTENANCE HANGAR  
 BUILDING 51  
 CHARLOTTE DOUGLAS IAP  
 CHARLOTTE, NORTH CAROLINA**

ISSUED  
 07/20/22 B-3 SUBMITTAL

ANG PRO. NO.: FJRP112701  
 MSH NO.: 3258000-131303.01  
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 DRAWN BY: KMK  
 CHECKED BY: SNW

DO NOT SCALE DRAWINGS  
 SHEET CONTENTS  
 MECHANICAL FIRST  
 FLOOR PLAN - AREA  
 A2

SHEET NO.:

**M-131A2**

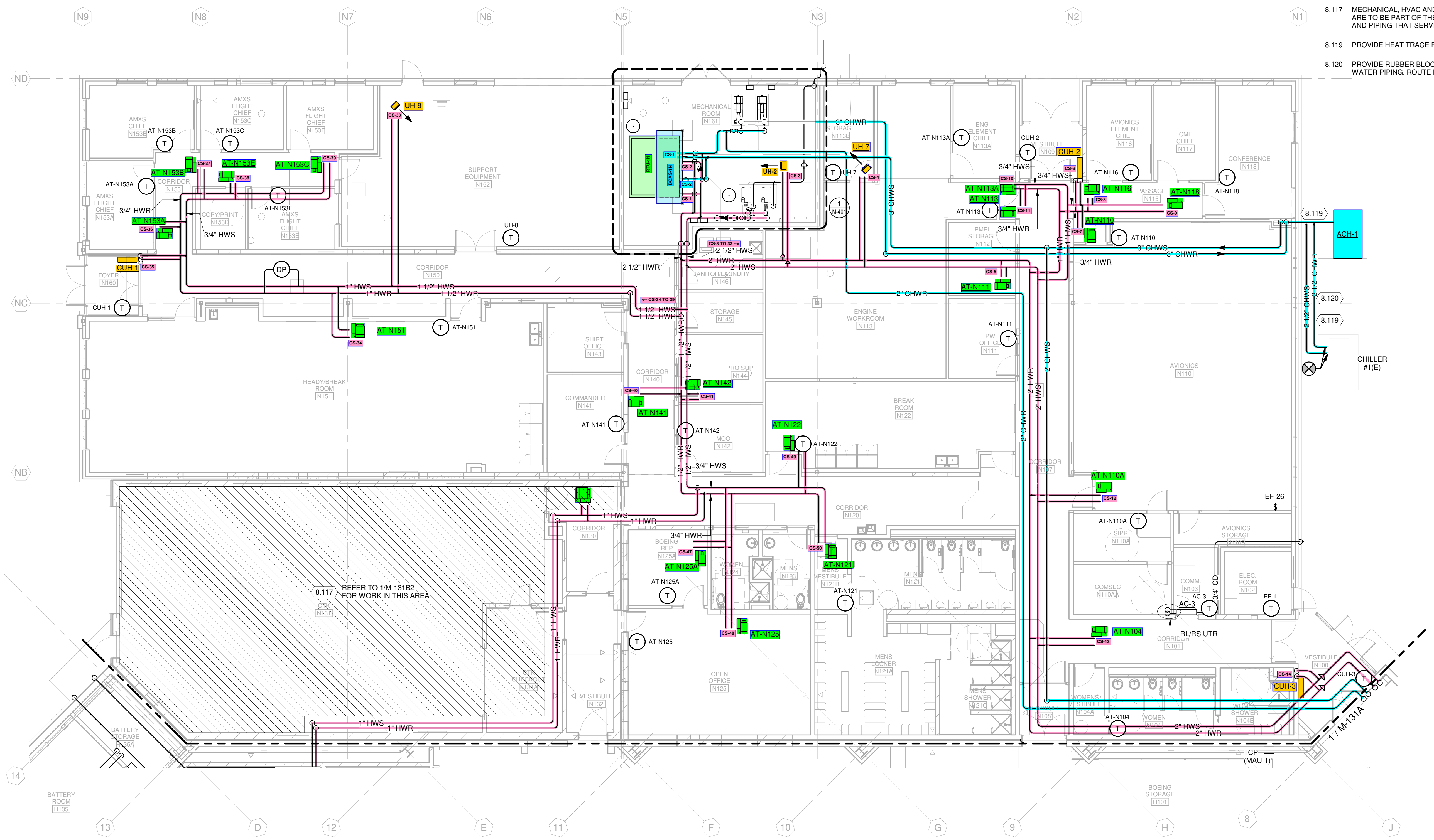
**GENERAL MECHANICAL PIPING NOTES:**

1. FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISIONS.
2. REFER TO SHEET M-001 FOR LEGENDS, ABBREVIATIONS, AND SYMBOLOLOGY.
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7. ALL REFRIGERATION PIPING TO BE HARD RIGID COPPER EXCEPT FOR DUCTLESS SPLIT UNITS WHERE LINESETS MAY BE USED.

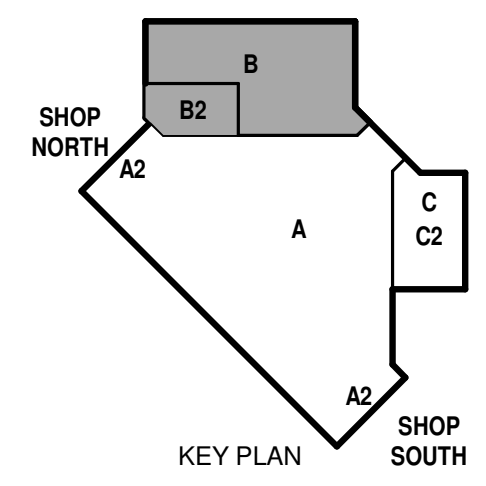
**KEYED NOTES**

- 8.117 MECHANICAL HVAC AND CONTROLS WORK WITHIN THE HATCHED REGION ARE TO BE PART OF THE MINOR CONSTRUCTION. THIS INCLUDES DEVICES AND PIPING THAT SERVE ROOM CTK N131.
- 8.119 PROVIDE HEAT TRACE FOR ALL EXTERIOR CHILLED WATER PIPING.
- 8.120 PROVIDE RUBBER BLOCK PIPE SUPPORT SYSTEM FOR EXTERIOR CHILLED WATER PIPING. ROUTE PIPING APPROXIMATELY 12" ABOVE GRADE.

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**MECHANICAL PIPING FLOOR PLAN - AREA B**  
 1/8" = 1'-0"



**NCANG - 145TH AW  
 REPAIR MAINTENANCE HANGAR  
 BUILDING 51  
 CHARLOTTE DOUGLAS IAP  
 CHARLOTTE, NORTH CAROLINA**

ISSUED  
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SHEET CONTENTS  
 MECHANICAL PIPING  
 FLOOR PLAN - AREA B

SHEET NO.:

**M-131B**

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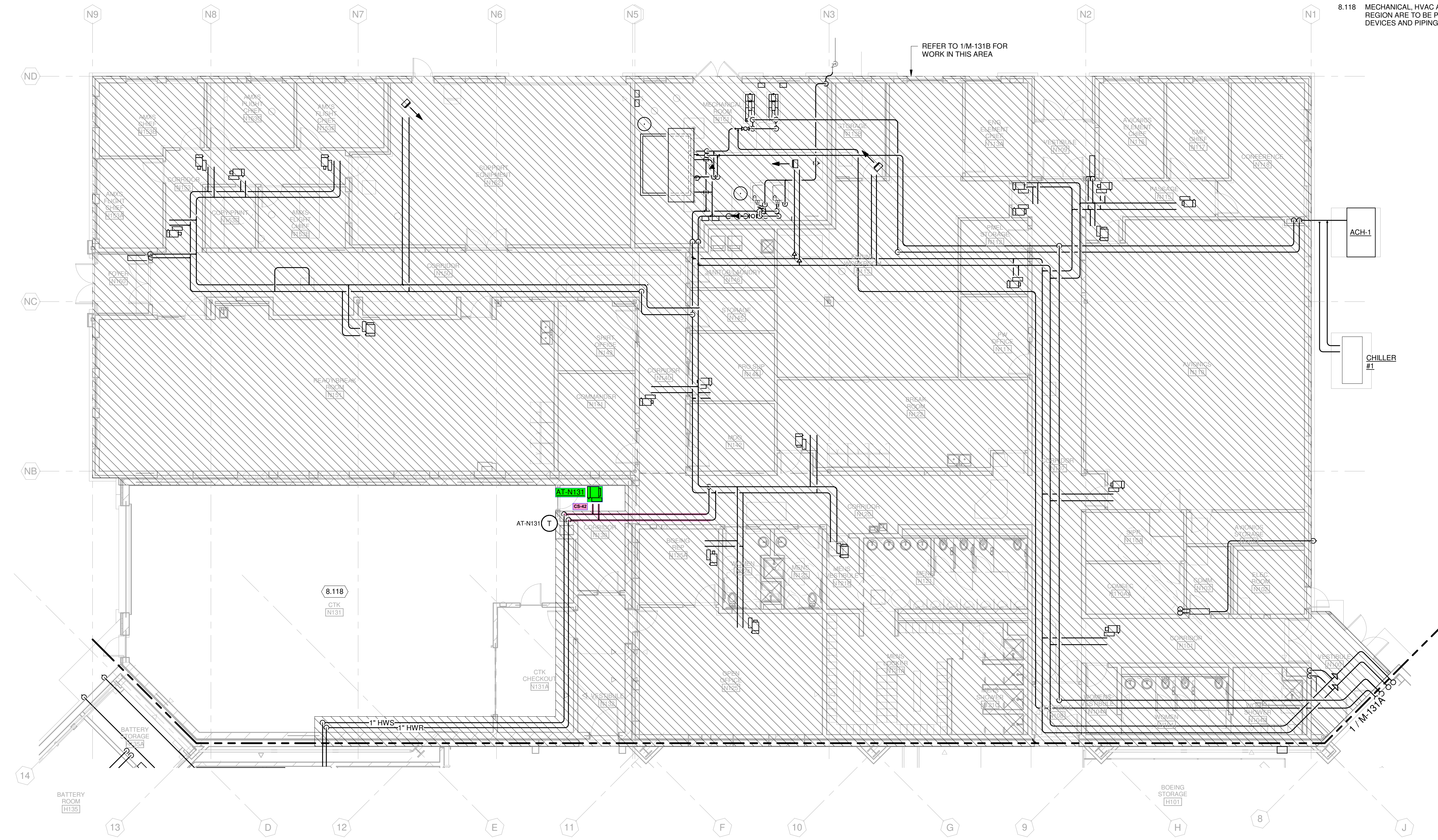
**GENERAL MECHANICAL PIPING NOTES:**

1. FIELD VERIFY ALL DIMENSIONS, BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR FINAL DECISIONS.
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7. ALL REFRIGERATION PIPING TO BE HARD RIGID COPPER EXCEPT FOR DUCTLESS SPLIT UNITS WHERE LINESETS MAY BE USED.

**KEYED NOTES**

- 8.118 MECHANICAL, HVAC AND CONTROLS WORK WITHIN THE UN-HATCHED REGION ARE TO BE PART OF THE MINOR CONSTRUCTION. THIS INCLUDES DEVICES AND PIPING THAT SERVE ROOM CTK N131.

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REFER TO 1M-131B FOR WORK IN THIS AREA

8.118  
 CTK  
 N131

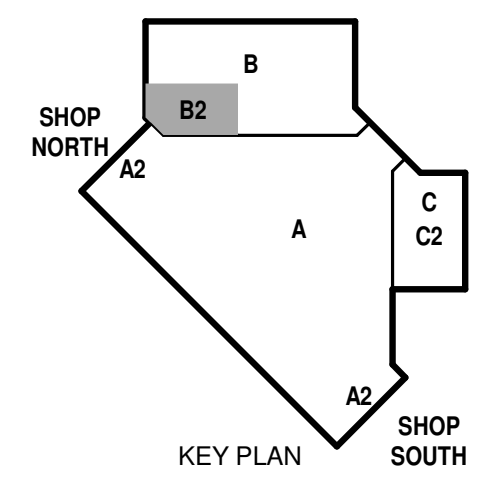
AT-N131

CR-4

1" HWS 1" HWR

1" M-131A

**1** MECHANICAL FLOOR PLAN - MINOR CONSTRUCTION AREA B2  
 1/8" = 1'-0"



**NCANG - 145TH AW  
 REPAIR MAINTENANCE HANGAR  
 BUILDING 51  
 CHARLOTTE DOUGLAS IAP  
 CHARLOTTE, NORTH CAROLINA**

ISSUED  
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SHEET CONTENTS  
 MECHANICAL FLOOR PLAN - MINOR CONSTRUCTION AREA B2

SHEET NO.:

**M-131B2**

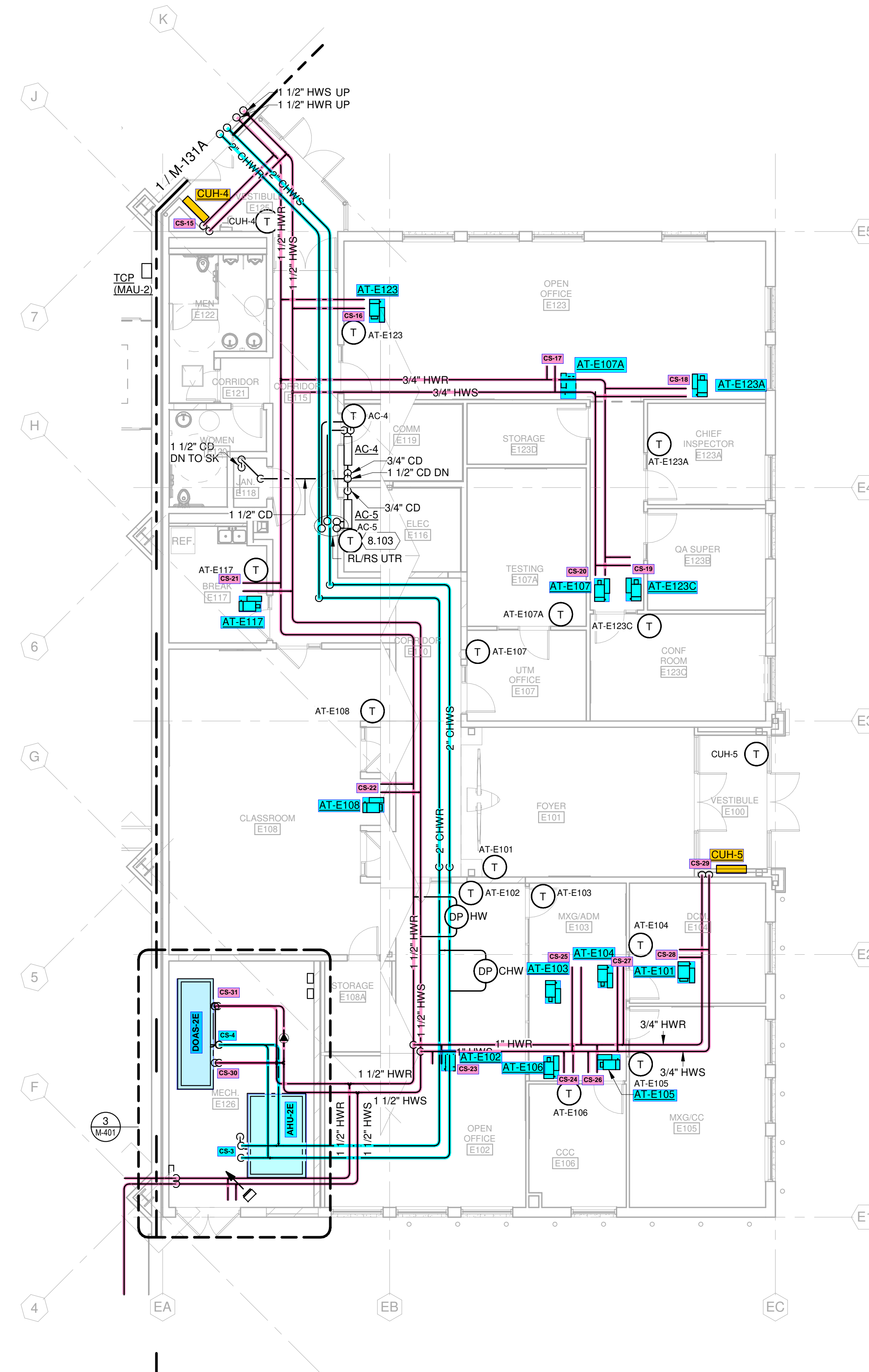
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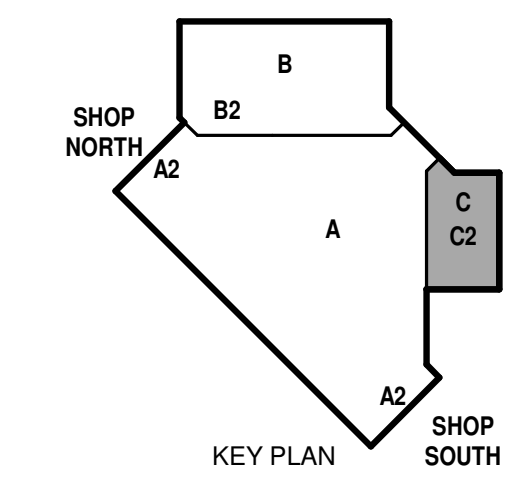
**KEYED NOTES**

- 8.103 REFRIGERANT PIPING SHALL BE SIZED PER EQUIPMENT MANUFACTURERS RECOMMENDATIONS.

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**MECHANICAL PIPING FLOOR PLAN - AREA C**  
 1/8" = 1'-0"



**NCANG - 145TH AW  
 REPAIR MAINTENANCE HANGAR  
 BUILDING 51  
 CHARLOTTE DOUGLAS IAP  
 CHARLOTTE, NORTH CAROLINA**

ISSUED  
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SHEET CONTENTS  
 MECHANICAL PIPING  
 FLOOR PLAN - AREA C

SHEET NO.:

**M-131C**

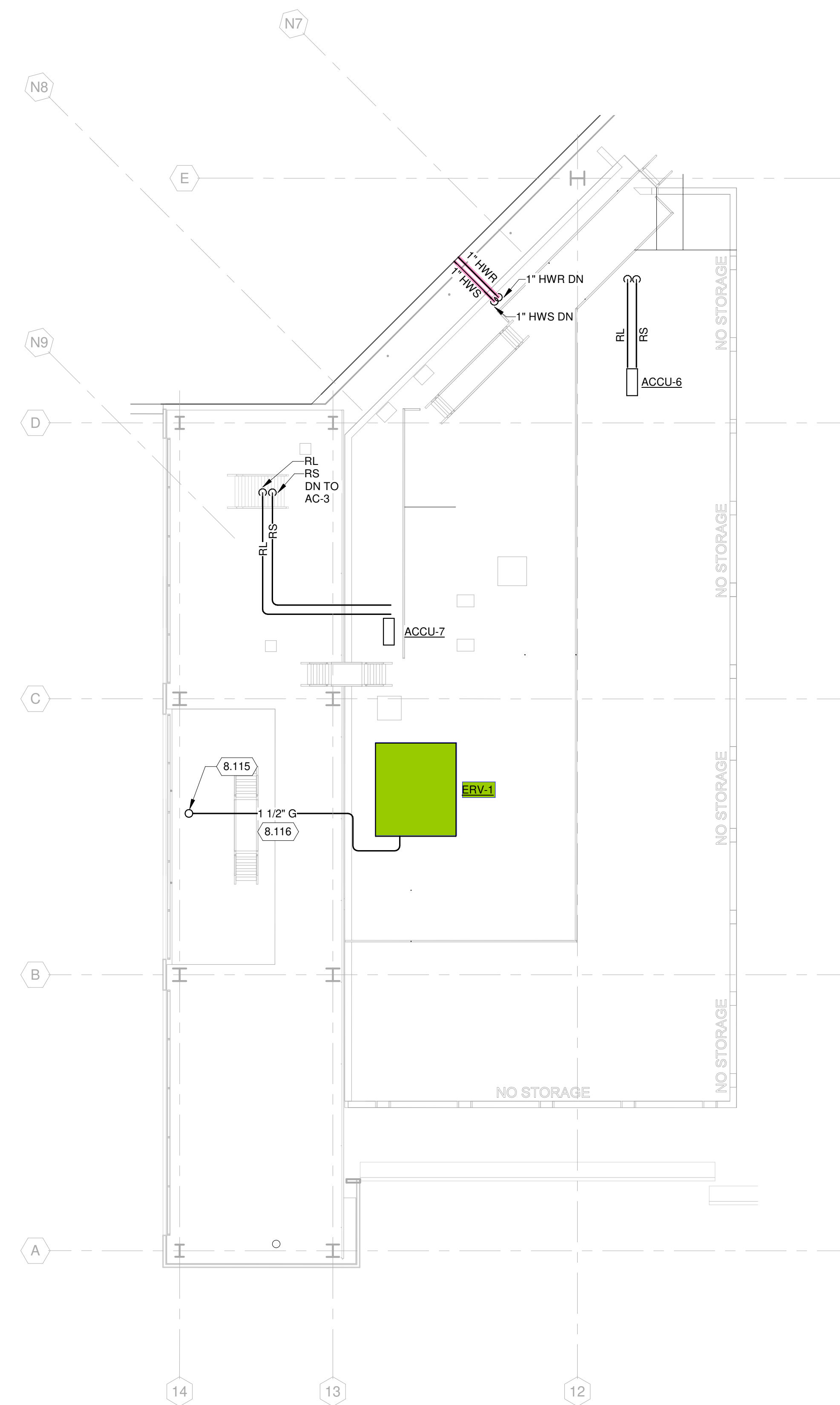
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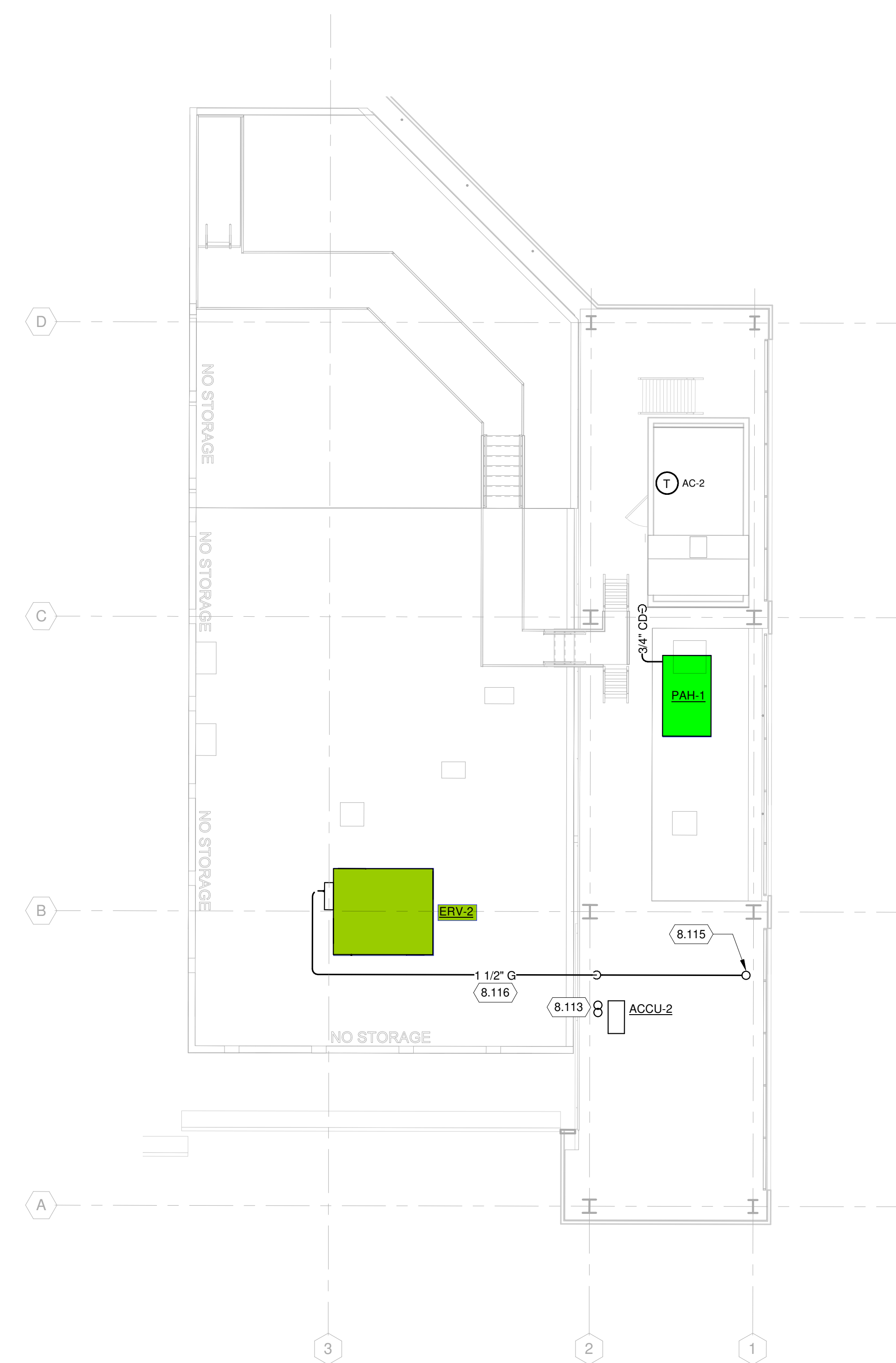
**KEYED NOTES**

- 8.113 RS/RL THROUGH WALL. SEE SHEET M-131A2 FOR CONTINUATION.
- 8.115 1 1/2" GAS UP. SEE SHEET M-131A FOR CONTINUATION.
- 8.116 PROVIDE RUBBER OR POLYCARBONATE PIPE SUPPORTS FOR GAS LINE TO SUPPORT PIPING AT 4'-0" ABOVE THE MEZZANINE LEVEL.

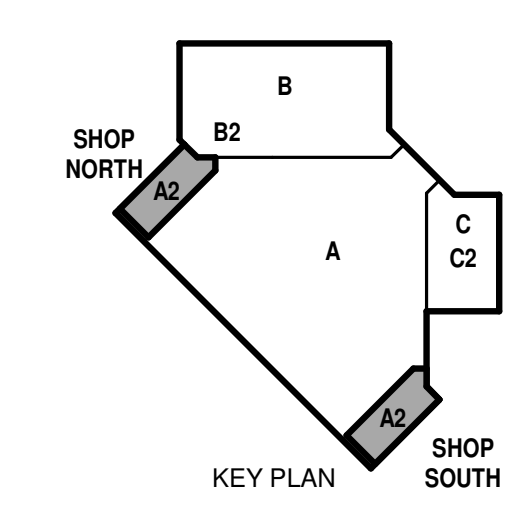
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**2 MEZZANINE MECHANICAL PLAN - NORTH MEZZANINE**  
 1/8" = 1'-0"



**1 MEZZANINE MECHANICAL PLAN - SOUTH MEZZANINE**  
 1/8" = 1'-0"



**NCANG - 145TH AW  
 REPAIR MAINTENANCE HANGAR  
 BUILDING 51  
 CHARLOTTE DOUGLAS IAP  
 CHARLOTTE, NORTH CAROLINA**

ISSUED  
 07/20/22 B-3 SUBMITTAL

ANG PROJ. NO.: FJRP112701  
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SHEET CONTENTS  
 MECHANICAL  
 MEZZANINE PLANS -  
 AREA A2

SHEET NO.:

**M-132A2**

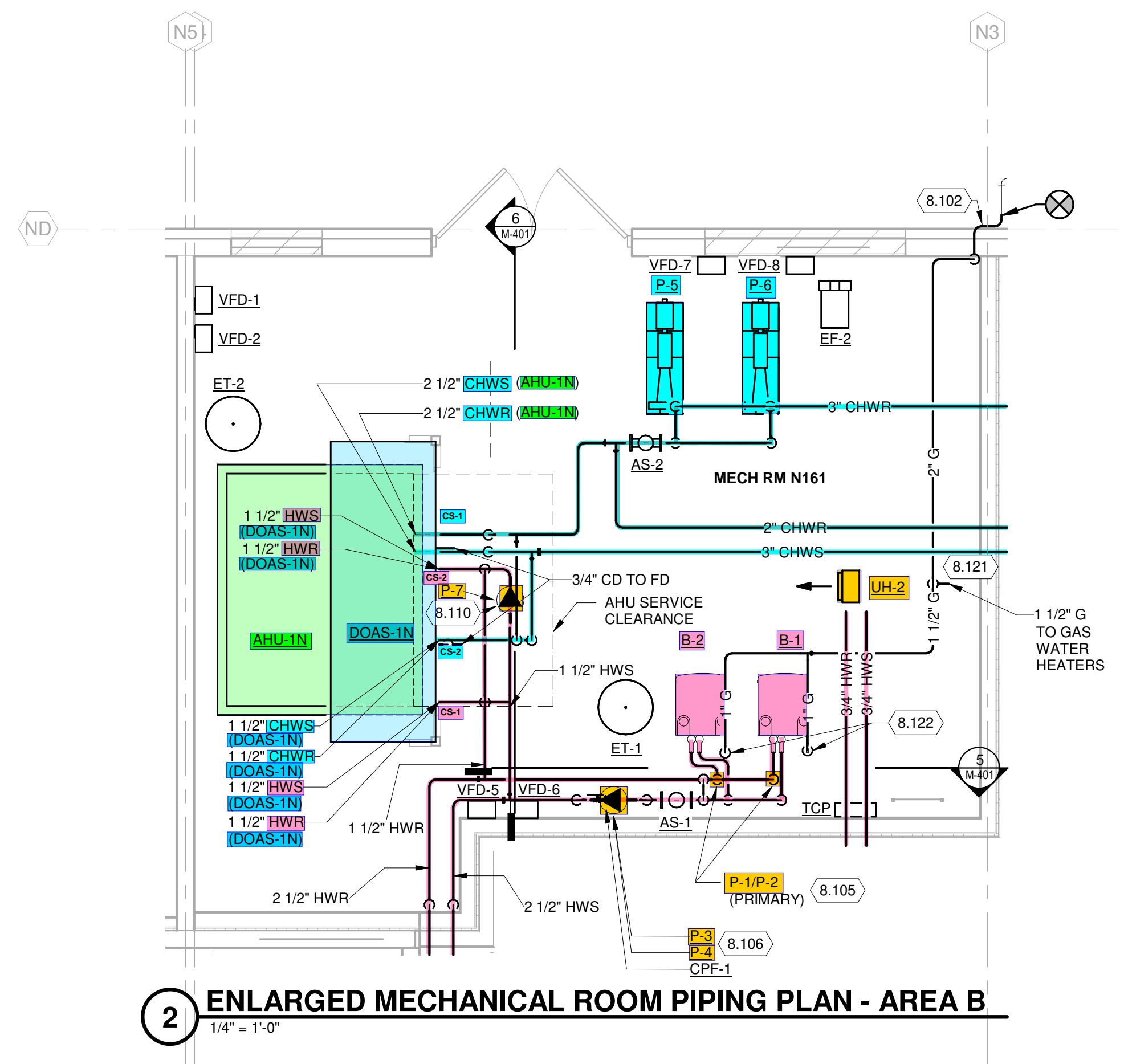
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**GENERAL HVAC NOTES:**

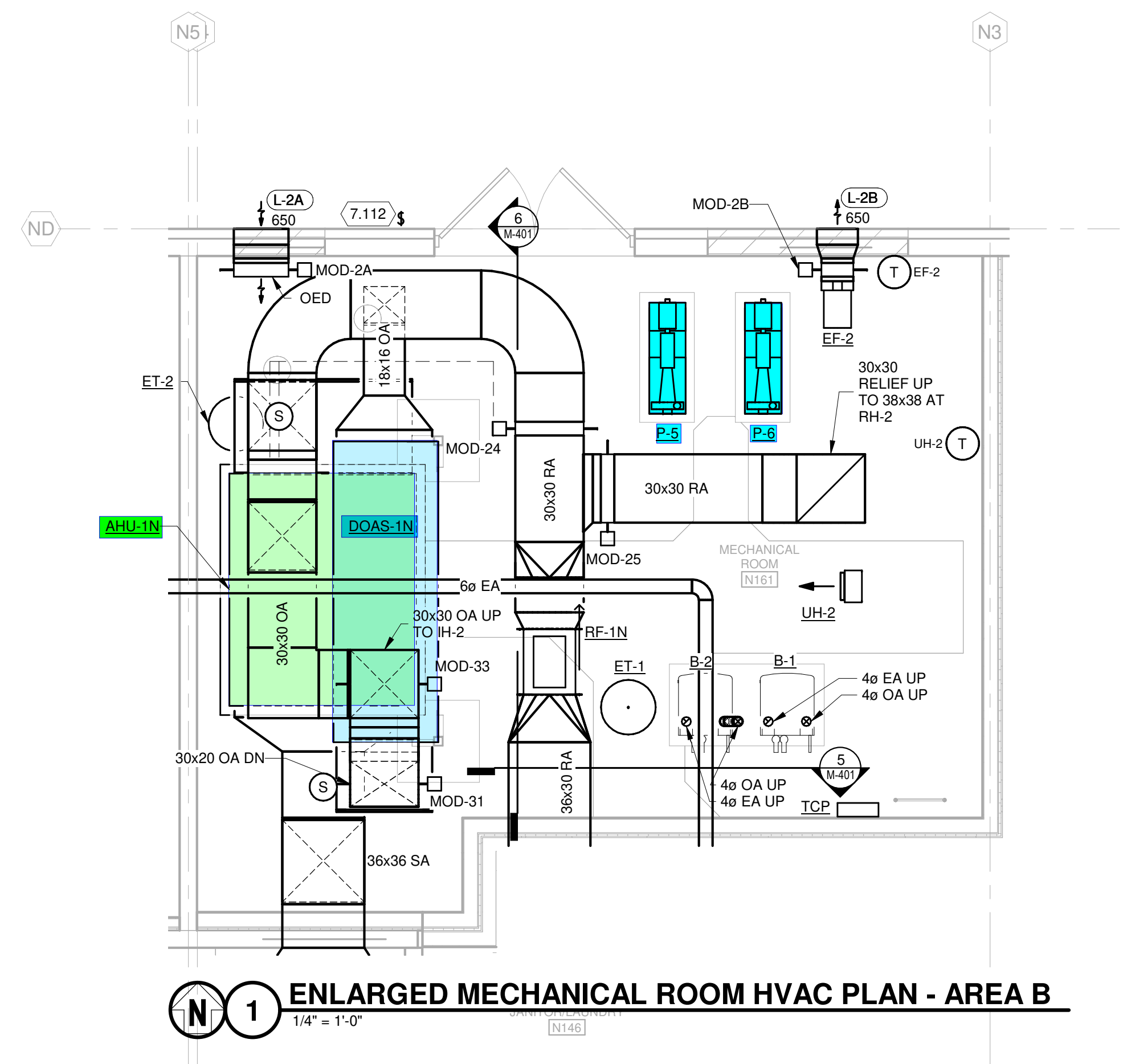
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- CONTROL CONTRACTOR IS RESPONSIBLE FOR COORDINATING POWER FOR HIS EQUIPMENT WITH ELECTRICAL CONTRACTOR AND INSURING ALL COSTS ASSOCIATED WITH SUCH ARE INCLUDED IN THE PROJECT COST.
- DUCT RUN-OUTS TO EACH DIFFUSER TO BE THE SAME AS DIFFUSER NECK SIZE UNLESS NOTED OTHERWISE.
- PROVIDE MANUAL BALANCING DAMPER AT EACH DIFFUSER, GRILLE, AND BRANCH TAKE-OFF IN ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK. LOCATE BALANCING DAMPER AS CLOSE TO BRANCH TAKE-OFF AS POSSIBLE.
- COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH REFLECTED CEILING PLAN.
- PROVIDE FLEXIBLE DUCTWORK FOR FINAL CONNECTIONS TO SUPPLY AIR DIFFUSERS UNLESS NOTED OTHERWISE IN SPECIFICATIONS.
- PROVIDE MINIMUM 5 FEET OF STRAIGHT DUCT ON OUTLET OF ALL VRF UNITS PRIOR TO ANY TRANSITION, ELBOW, OR TAKE-OFF.
- VERIFY FINAL LOCATIONS OF ROOM THERMOSTATS / SENSORS / CONTROLS WITH OWNER PRIOR TO INSTALLATION.
- PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES ON ALL EQUIPMENT.

**KEYED NOTES**

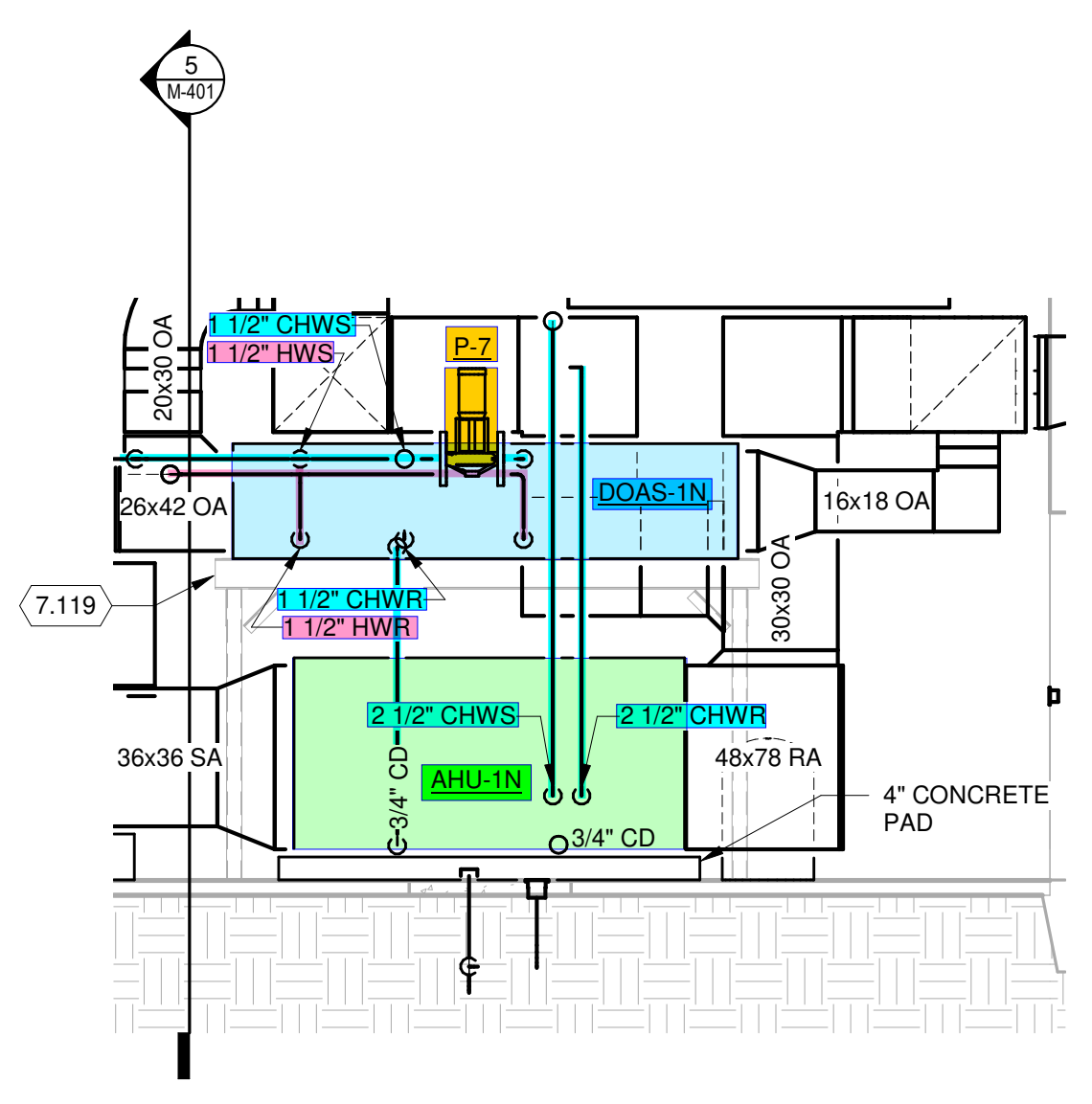
- 7.112 BOILER EMERGENCY SHUTOFF SWITCH. PROVIDE OUTDOOR RATED SWITCH WITH WEATHER COVER.
- 7.119 STRUCTURAL SUPPORT FOR AIR HANDLER. SEE STRUCTURAL PLANS FOR DETAILS.
- 8.102 EXISTING GAS METER LOCATED ACROSS DRIVE. CONNECT NEW GAS PIPE AT EXTERIOR OF BUILDING AND ROUTE PIPE SO THAT IT PENETRATES EXTERIOR WALL AT MECHANICAL EQUIPMENT ROOM. CONTRACTOR TO VERIFY EXISTING NATURAL GAS PRESSURE DELIVERED TO BUILDING IS 2 PSI. NEW TOTAL CONNECTED LOAD IS 2200 CFH.
- 8.105 **BOILER PRIMARY PUMPS P-1 AND P-2 IN VERTICAL DROPS TO BOILERS.** SEE HYDRONIC PUMP SCHEDULE AND BOILER SCHEDULE FOR EQUIPMENT.
- 8.106 HW SECONDARY PUMPS P-3 AND P-4 STACKED ON WALL. SEE SECTION 5M-401.
- 8.110 SEE MECHANICAL DETAILS FOR PIPE SIZING AT PUMPED PREHEAT COILS.
- 8.121 PROVIDE A NATURAL GAS PRESSURE REGULATOR IN BRANCH TO WATER HEATERS TO REDUCE INCOMING PRESSURE FROM 2 PSIG TO 14"WC. ROUTE A 1-1/2" GAS LINE FROM THE REGULATOR TO THE WATER HEATER BANK. PROVIDE A 3/4" GAS DROP FROM MAIN TO EACH OF THE 6 WATER HEATERS.
- 8.122 PROVIDE A NATURAL GAS PRESSURE REGULATOR FOR EACH BOILER TO REDUCE INCOMING PRESSURE FROM 2 PSIG TO 14"WC.



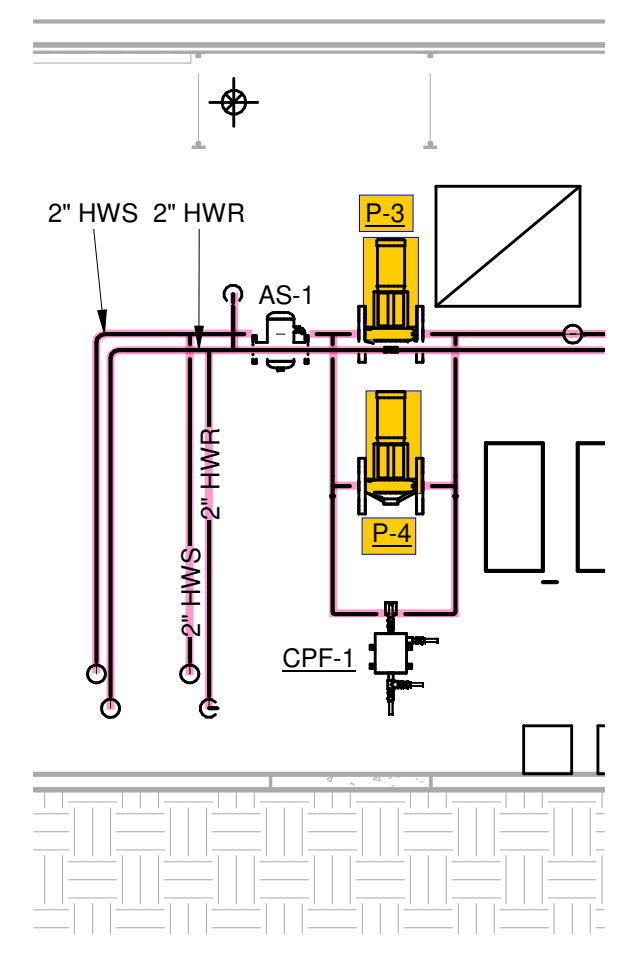
**2 ENLARGED MECHANICAL ROOM PIPING PLAN - AREA B**  
 1/4" = 1'-0"



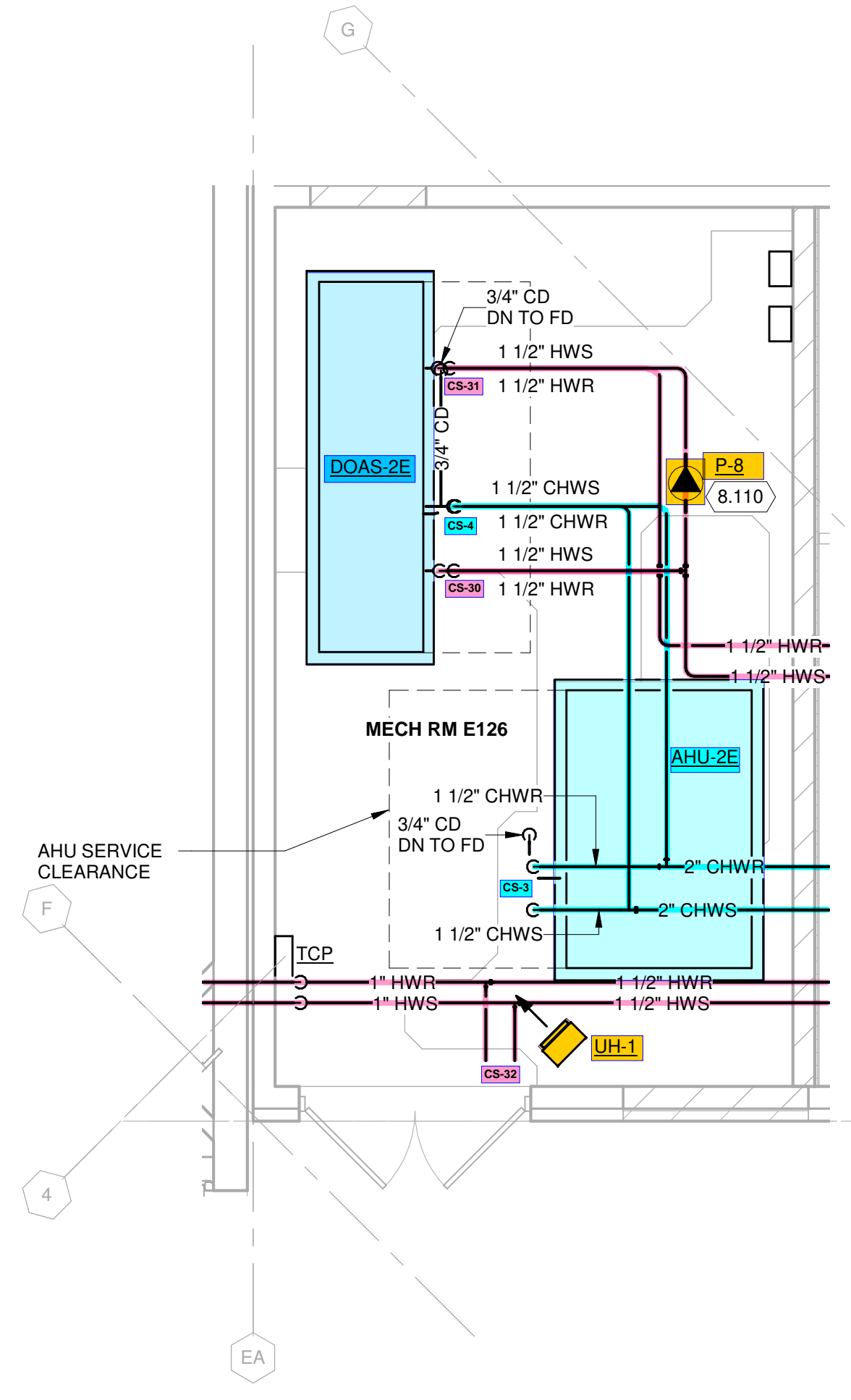
**1 ENLARGED MECHANICAL ROOM HVAC PLAN - AREA B**  
 1/4" = 1'-0"



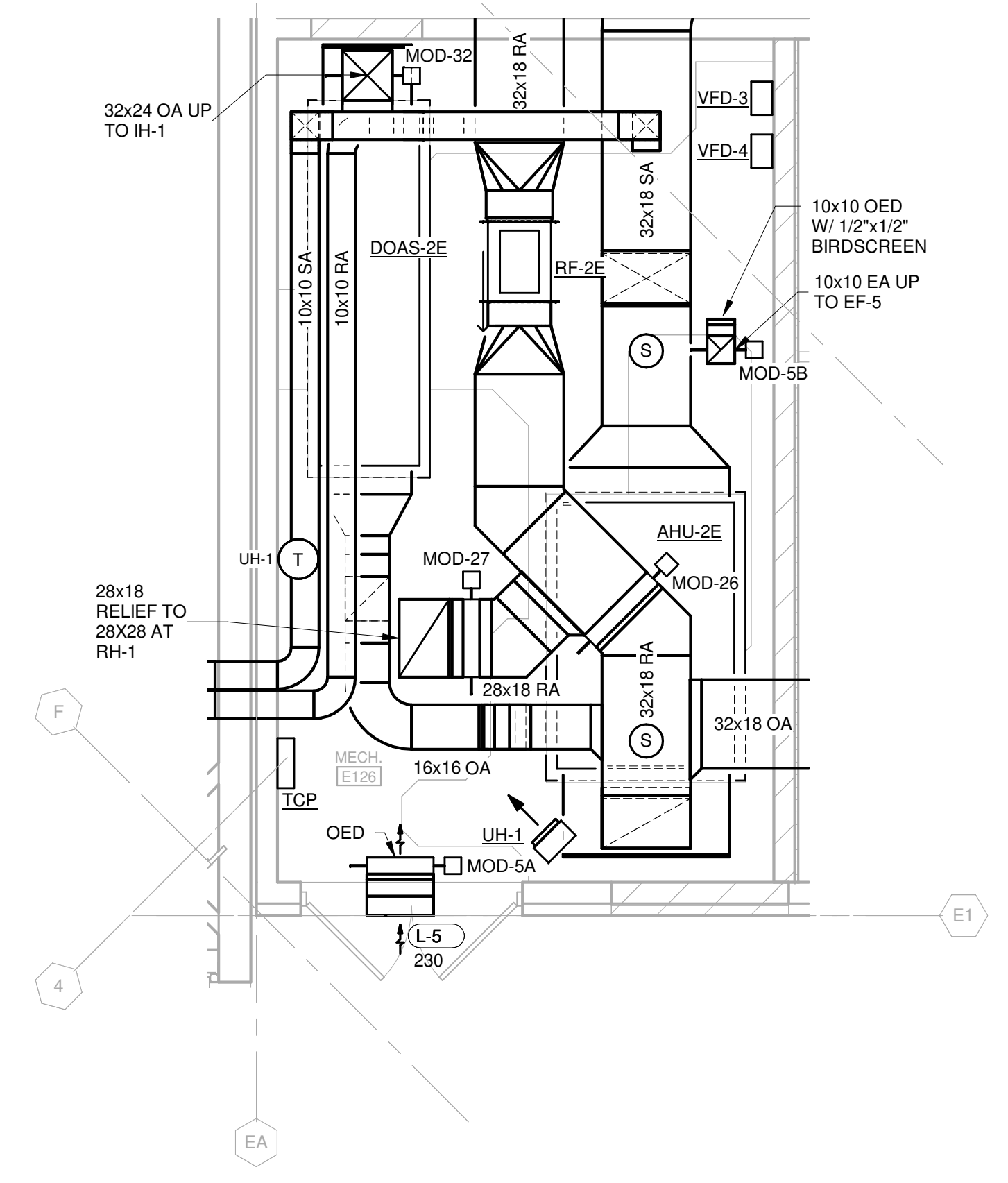
**6 ELEVATION VIEW AHU-1N & DOAS-1N**  
 1/4" = 1'-0"



**5 ELEVATION VIEW HWS/R PUMPS AND PIPING**  
 1/4" = 1'-0"



**4 ENLARGED MECHANICAL ROOM PIPING PLAN - AREA C**  
 1/4" = 1'-0"



**3 ENLARGED MECHANICAL ROOM HVAC PLAN - AREA C**  
 1/4" = 1'-0"

**NCANG - 145TH AW**  
**REPAIR MAINTENANCE HANGAR**  
**BUILDING 51**  
 CHARLOTTE DOUGLAS IAP  
 CHARLOTTE, NORTH CAROLINA

ISSUED  
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SHEET CONTENTS  
 ENLARGED PLANS -  
 AREA B, AREA C AND  
 AREA D

SHEET NO.:

**M-401**