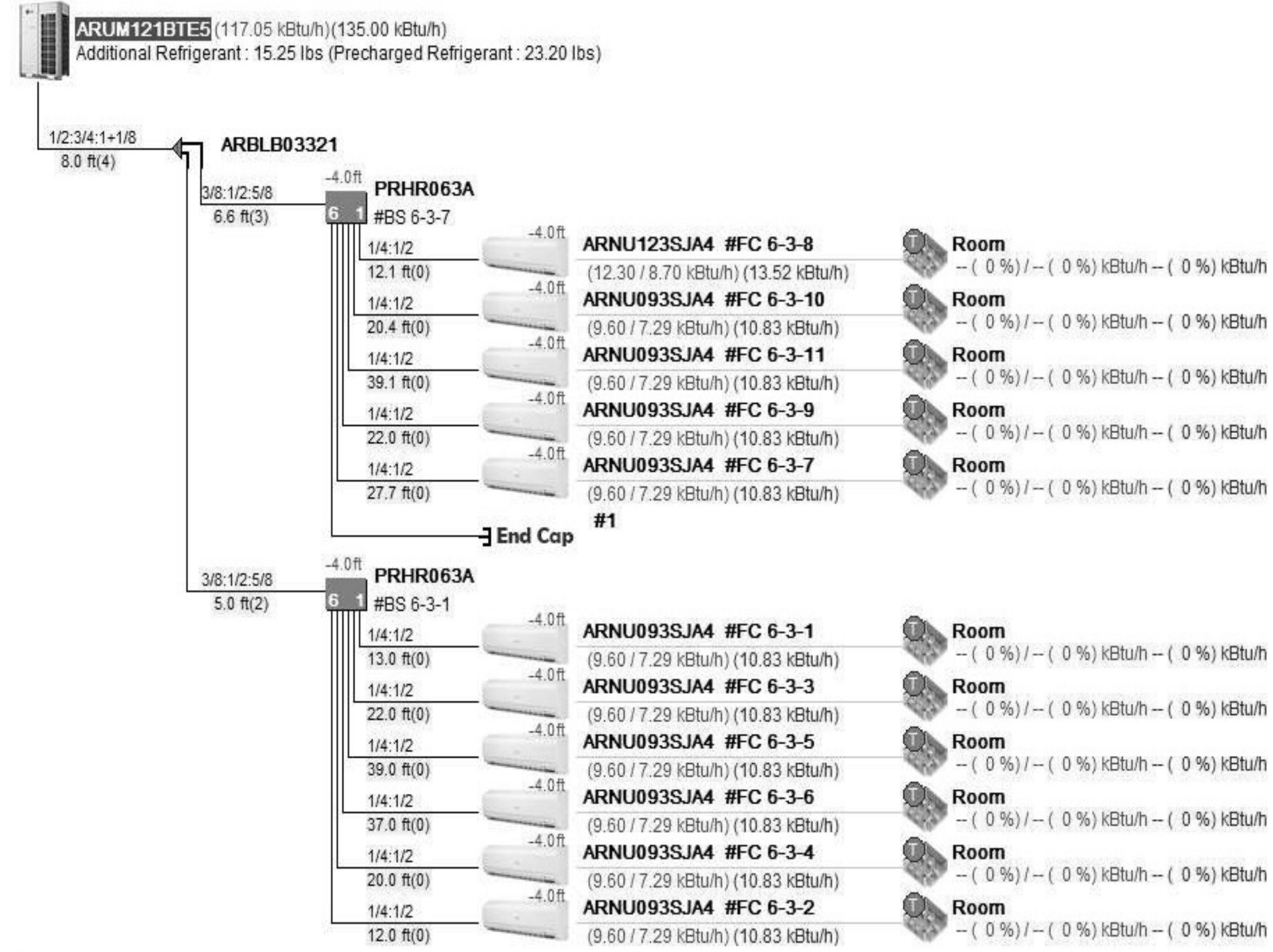


# VRF CONDENSING UNIT (CU-6)

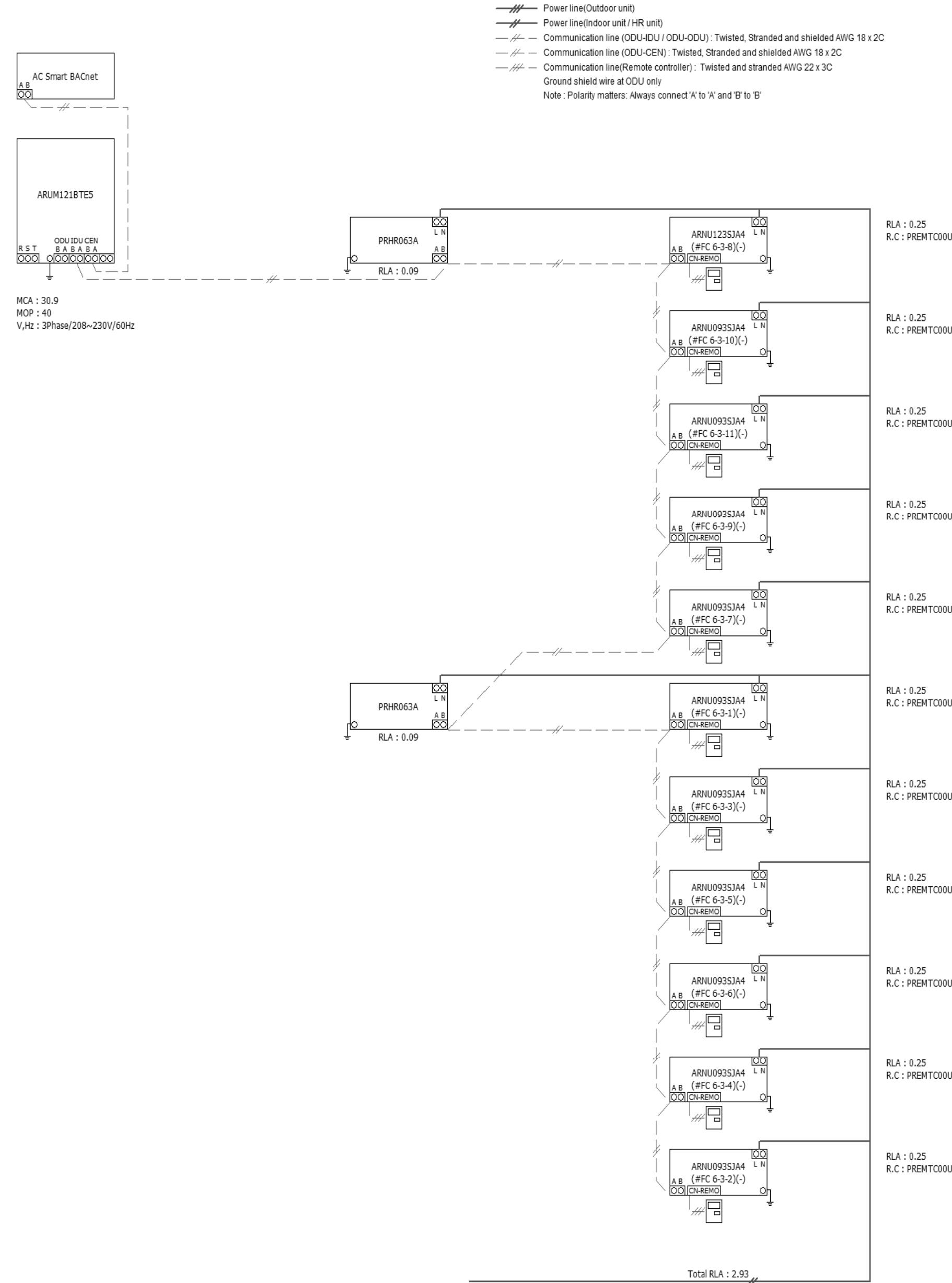
## PIPING DIAGRAM

## WIRING DIAGRAM



- \* : Main pipe upsized
- \*\* : Conditional Application
- Three pipe : Liquid : High Gas : Low Gas
- Two pipe : Liquid : Gas
- ⊖ Thermostat, ⊕ Group Control, ⊙ Dry Contact
- S AHU Comm. Kit [Discharge (supply) air], R AHU Comm. Kit [Return air]
- M AHU Comm. Kit [Main module], C AHU Comm. Kit [Communications module]

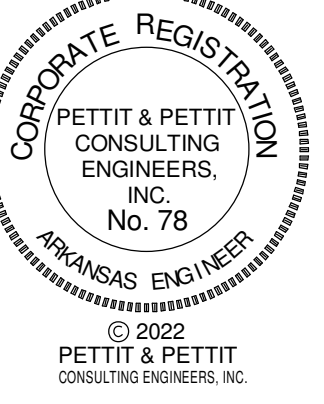
**Indoor Units** : 11 of 20  
**Combination Ratio** : 102.0 of 120.0 ( 85% )  
**Total Pipe** : 283.9 of 3280.8 ft  
**ODU factory charge** : 23.20 lbs  
**Additional Refrigerant** : 15.25 lbs  
**Total refrigerant** : 38.45 lbs  
**Minimum room volume** : 1478.71 ft<sup>3</sup>  
 (Based on 26.0 lbs / 1000.0 ft<sup>3</sup>)



# Note :  
 Power wiring, breaker size, and disconnects should follow local code and NEC.  
 Multi-frame outdoor units require a separate power connection for each frame.  
 Refer to the most up-to-date submittal sheets for applicable electrical data.

### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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1	RFP 04 11-17-22

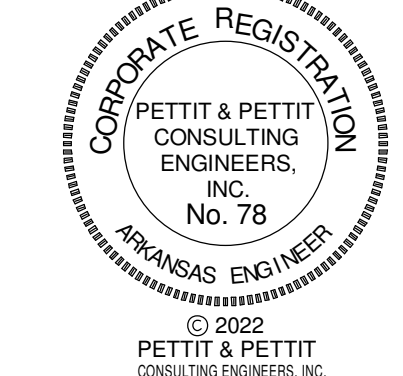
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 DATE: May 5, 2022

VRV RISER DIAGRAM - HVAC - LG

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**M4.06**





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**HVAC DEMOLITION NOTES**

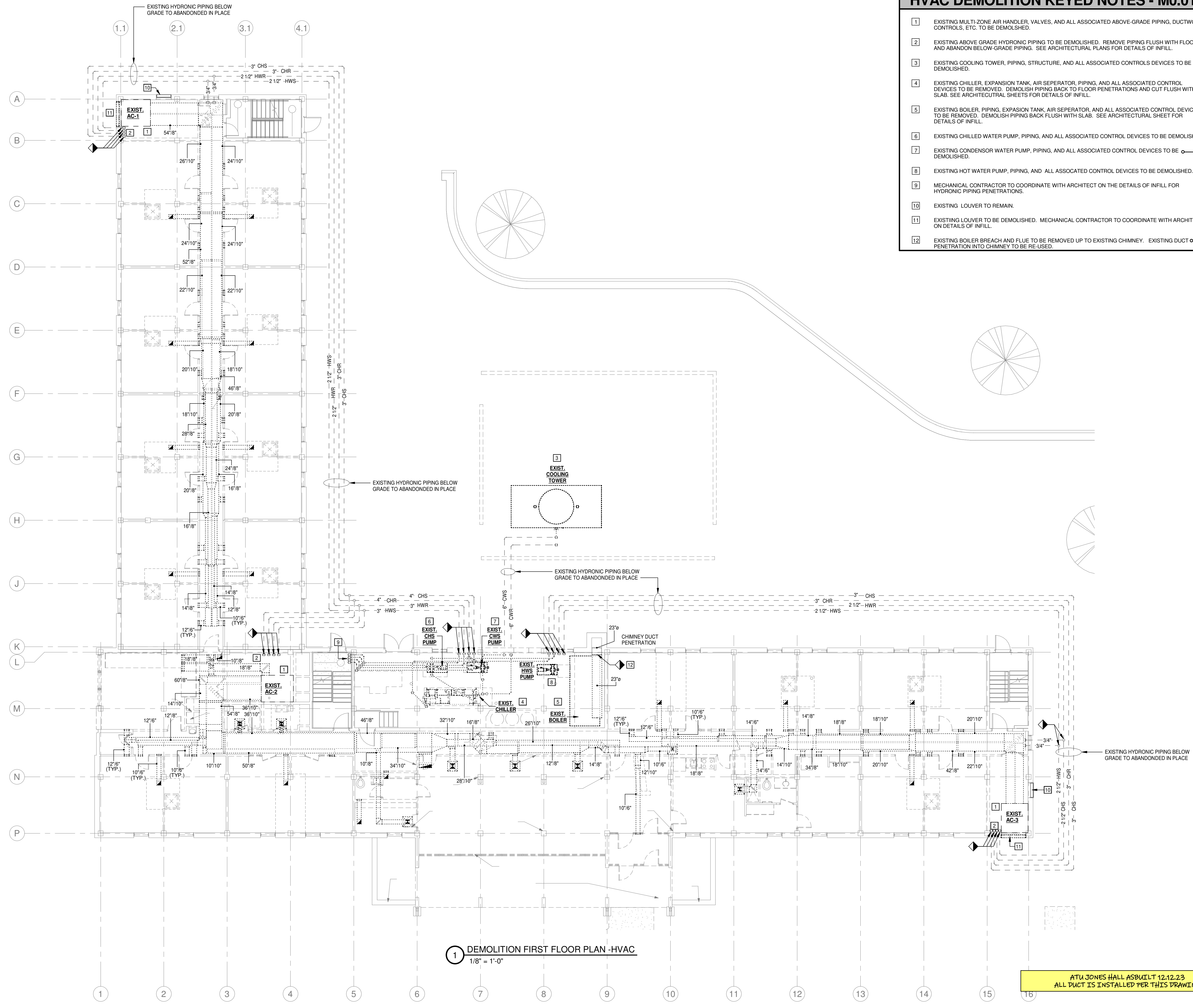
- 1 ALL WORK SHALL OCCUR IN SEPARATE ABATEMENT SCOPE, NOT IN BASE BID PRICING.

**HVAC GENERAL DEMOLITION NOTES**

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

**HVAC DEMOLITION KEYED NOTES - M0.01**

- 1 EXISTING MULTI-ZONE AIR HANDLER, VALVES, AND ALL ASSOCIATED ABOVE-GRADE PIPING, DUCTWORK, CONTROLS, ETC. TO BE DEMOLISHED.
- 2 EXISTING ABOVE GRADE HYDRONIC PIPING TO BE DEMOLISHED. REMOVE PIPING FLUSH WITH FLOOR AND ABANDON BELOW-GRADE PIPING. SEE ARCHITECTURAL PLANS FOR DETAILS OF INFILL.
- 3 EXISTING COOLING TOWER, PIPING, STRUCTURE, AND ALL ASSOCIATED CONTROLS DEVICES TO BE DEMOLISHED.
- 4 EXISTING CHILLER, EXPANSION TANK, AIR SEPARATOR, PIPING, AND ALL ASSOCIATED CONTROL DEVICES TO BE REMOVED. DEMOLISH PIPING BACK TO FLOOR PENETRATIONS AND CUT FLUSH WITH SLAB. SEE ARCHITECTURAL SHEETS FOR DETAILS OF INFILL.
- 5 EXISTING BOILER, PIPING, EXPANSION TANK, AIR SEPARATOR, AND ALL ASSOCIATED CONTROL DEVICES TO BE REMOVED. DEMOLISH PIPING BACK FLUSH WITH SLAB. SEE ARCHITECTURAL SHEET FOR DETAILS OF INFILL.
- 6 EXISTING CHILLED WATER PUMP, PIPING, AND ALL ASSOCIATED CONTROL DEVICES TO BE DEMOLISHED.
- 7 EXISTING CONDENSOR WATER PUMP, PIPING, AND ALL ASSOCIATED CONTROL DEVICES TO BE DEMOLISHED.
- 8 EXISTING HOT WATER PUMP, PIPING, AND ALL ASSOCIATED CONTROL DEVICES TO BE DEMOLISHED.
- 9 MECHANICAL CONTRACTOR TO COORDINATE WITH ARCHITECT ON THE DETAILS OF INFILL FOR HYDRONIC PIPING PENETRATIONS.
- 10 EXISTING LOUVER TO REMAIN.
- 11 EXISTING LOUVER TO BE DEMOLISHED. MECHANICAL CONTRACTOR TO COORDINATE WITH ARCHITECT ON DETAILS OF INFILL.
- 12 EXISTING BOILER BREACH AND FLUE TO BE REMOVED UP TO EXISTING CHIMNEY. EXISTING DUCT PENETRATION INTO CHIMNEY TO BE RE-USED.



**1 DEMOLITION FIRST FLOOR PLAN -HVAC**  
1/8" = 1'-0"

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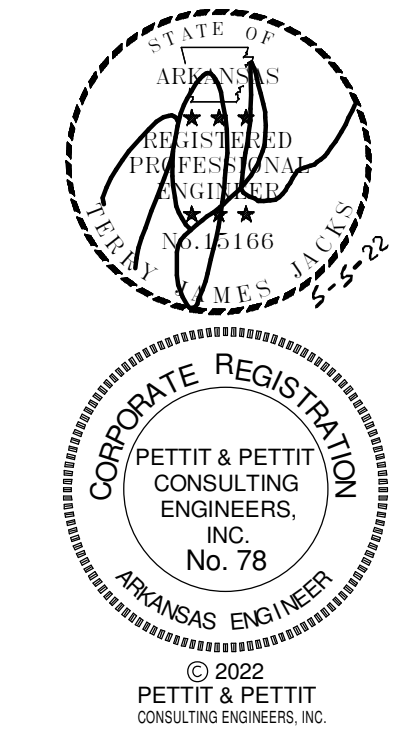
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DATE:  
May 5, 2022

FIRST FLOOR  
DEMOLITION PLAN -  
HVAC

**M0.01**  
SCM ARCHITECTS PLLC





**HVAC DEMOLITION NOTES**

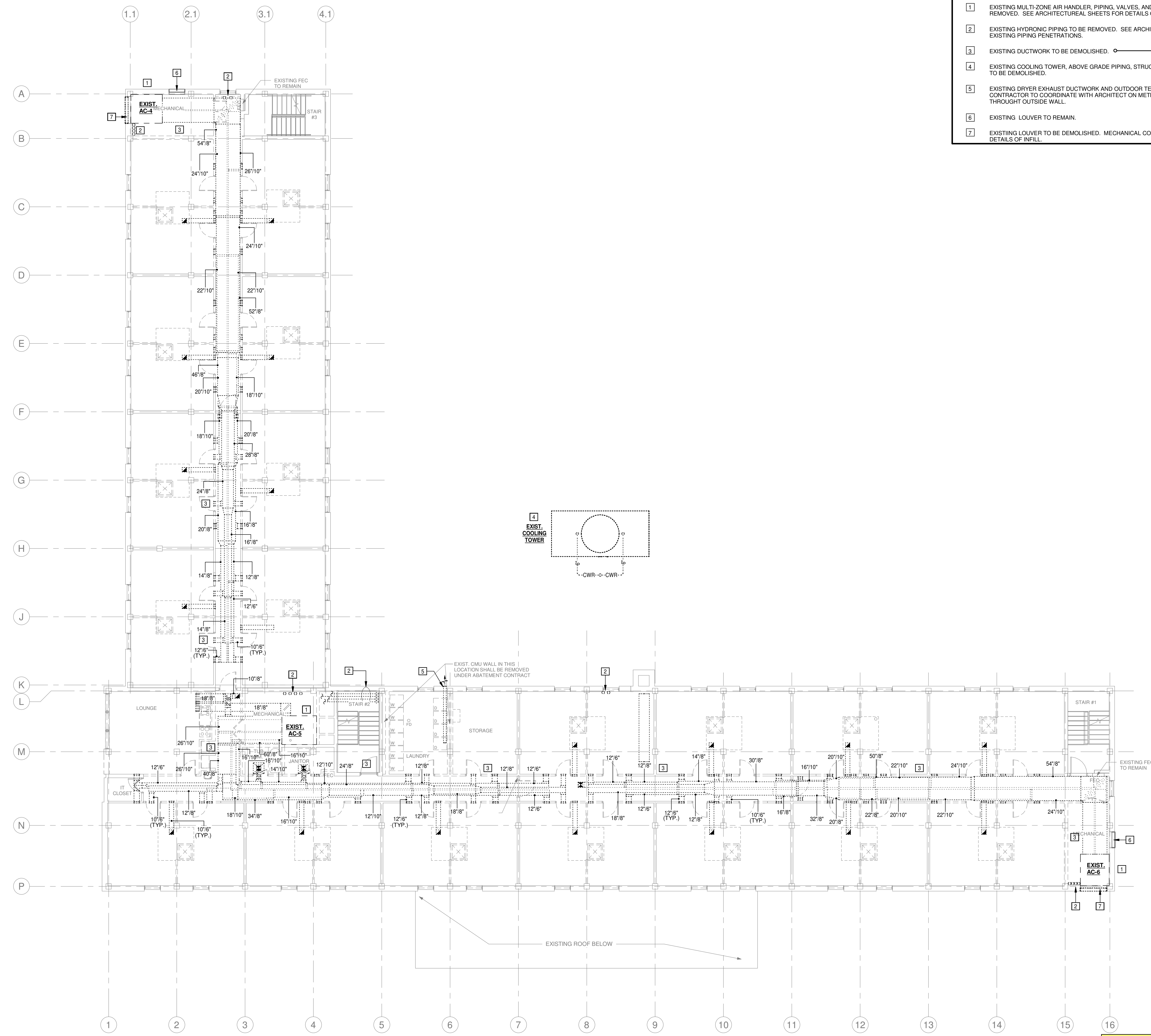
- 1 ALL WORK SHALL OCCUR IN SEPARATE ABATEMENT SCOPE, NOT IN BASE BID PRICING.

**HVAC GENERAL DEMOLITION NOTES**

- 1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
- 2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
- 3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
- 4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

**HVAC DEMOLITION KEYED NOTES - M0.02**

- 1 EXISTING MULTI-ZONE AIR HANDLER, PIPING, VALVES, AND ALL ASSOCIATED CONTROL DEVICES TO BE REMOVED. SEE ARCHITECTURAL SHEETS FOR DETAILS ON INFILL.
- 2 EXISTING HYDRONIC PIPING TO BE REMOVED. SEE ARCHITECTURAL SHEETS FOR DETAILS ON INFILL FOR EXISTING PIPING PENETRATIONS.
- 3 EXISTING DUCTWORK TO BE DEMOLISHED.
- 4 EXISTING COOLING TOWER, ABOVE GRADE PIPING, STRUCTURE, AND ALL ASSOCIATED CONTROLS DEVICES TO BE DEMOLISHED.
- 5 EXISTING DRYER EXHAUST DUCTWORK AND OUTDOOR TERMINAL DEVICES TO BE DEMOLISHED. MECHANICAL CONTRACTOR TO COORDINATE WITH ARCHITECT ON METHOD OF INFILL OF DUCTWORK PENETRATIONS THROUGHOUT OUTSIDE WALL.
- 6 EXISTING LOUVER TO REMAIN.
- 7 EXISTING LOUVER TO BE DEMOLISHED. MECHANICAL CONTRACTOR TO COORDINATE WITH ARCHITECT ON DETAILS OF INFILL.



1 DEMOLITION SECOND FLOOR PLAN - HVAC  
1/8" = 1'-0"

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ALL DUCT IS INSTALLED PER THIS DRAWING

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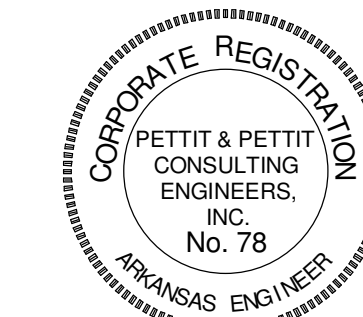
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SECOND FLOOR  
DEMOLITION PLAN -  
HVAC

**M0.02**

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**HVAC DEMOLITION NOTES**

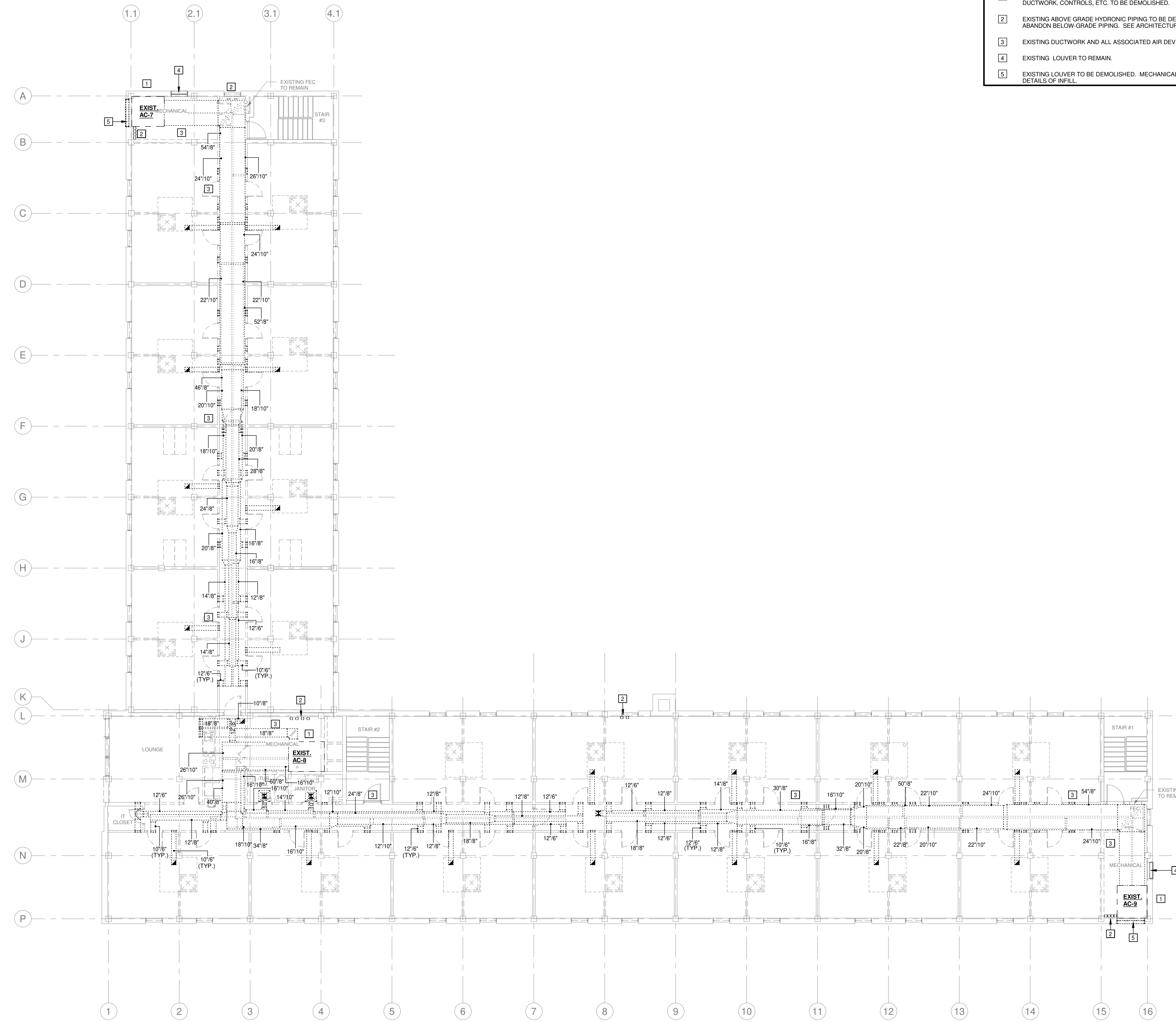
- 1 ALL WORK SHALL OCCUR IN SEPARATE ABATEMENT SCOPE, NOT IN BASE BID PRICING.

**HVAC GENERAL DEMOLITION NOTES**

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

**HVAC DEMOLITION KEYED NOTES - M0.03**

- 1 EXISTING MULTI-ZONE AIR HANDLER, VALVES, CONTROLS, AND ALL ASSOCIATED ABOVE-GRADE PIPING, DUCTWORK, CONTROLS, ETC. TO BE DEMOLISHED.
- 2 EXISTING ABOVE GRADE HYDRONIC PIPING TO BE DEMOLISHED. REMOVE PIPING FLUSH WITH FLOOR AND ABANDON BELOW-GRADE PIPING. SEE ARCHITECTURAL PLANS FOR DETAILS OF INFILL.
- 3 EXISTING DUCTWORK AND ALL ASSOCIATED AIR DEVICES TO BE DEMOLISHED.
- 4 EXISTING LOUVER TO REMAIN.
- 5 EXISTING LOUVER TO BE DEMOLISHED. MECHANICAL CONTRACTOR TO COORDINATE WITH ARCHITECT ON DETAILS OF INFILL.



**1 DEMOLITION THIRD FLOOR PLAN - HVAC**  
1/8" = 1'-0"

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THIRD FLOOR  
DEMOLITION PLAN -  
HVAC

**M0.03**



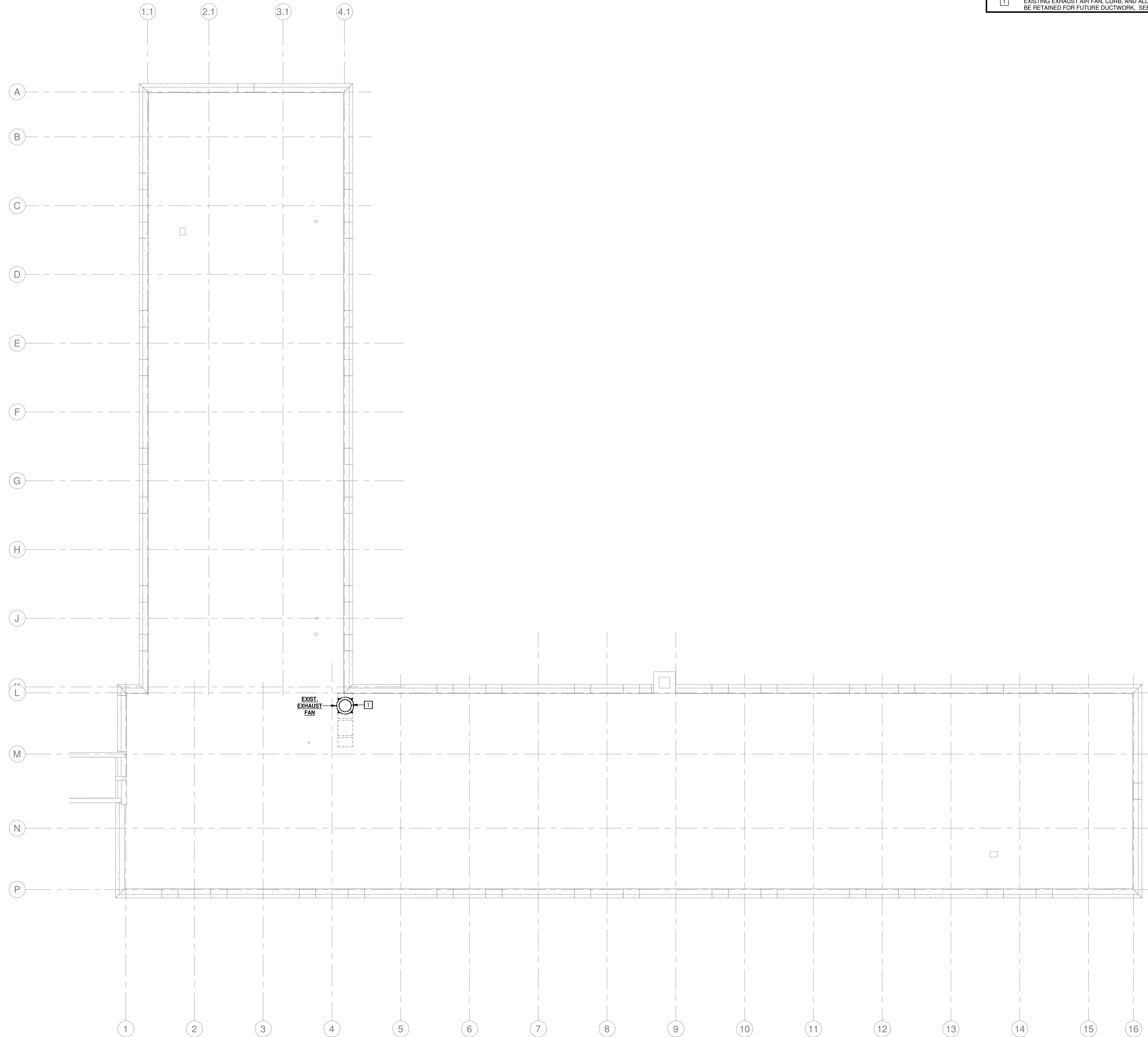


**HVAC GENERAL DEMOLITION NOTES**

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

**HVAC DEMOLITION KEYED NOTES - M0.04**

- 1 EXISTING EXHAUST AIR FAN, CURB, AND ALL ASSOCIATED CONTROL DEMOLISHED. EXISTING OPENING TO BE RETAINED FOR FUTURE DUCTWORK. SEE ROOF PLAN, SHEET M1.04.



1 DEMOLITION ROOF PLAN - HVAC  
1/8" = 1'-0"

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DATE:  
May 5, 2022

ROOF DEMOLITION  
PLAN - HVAC

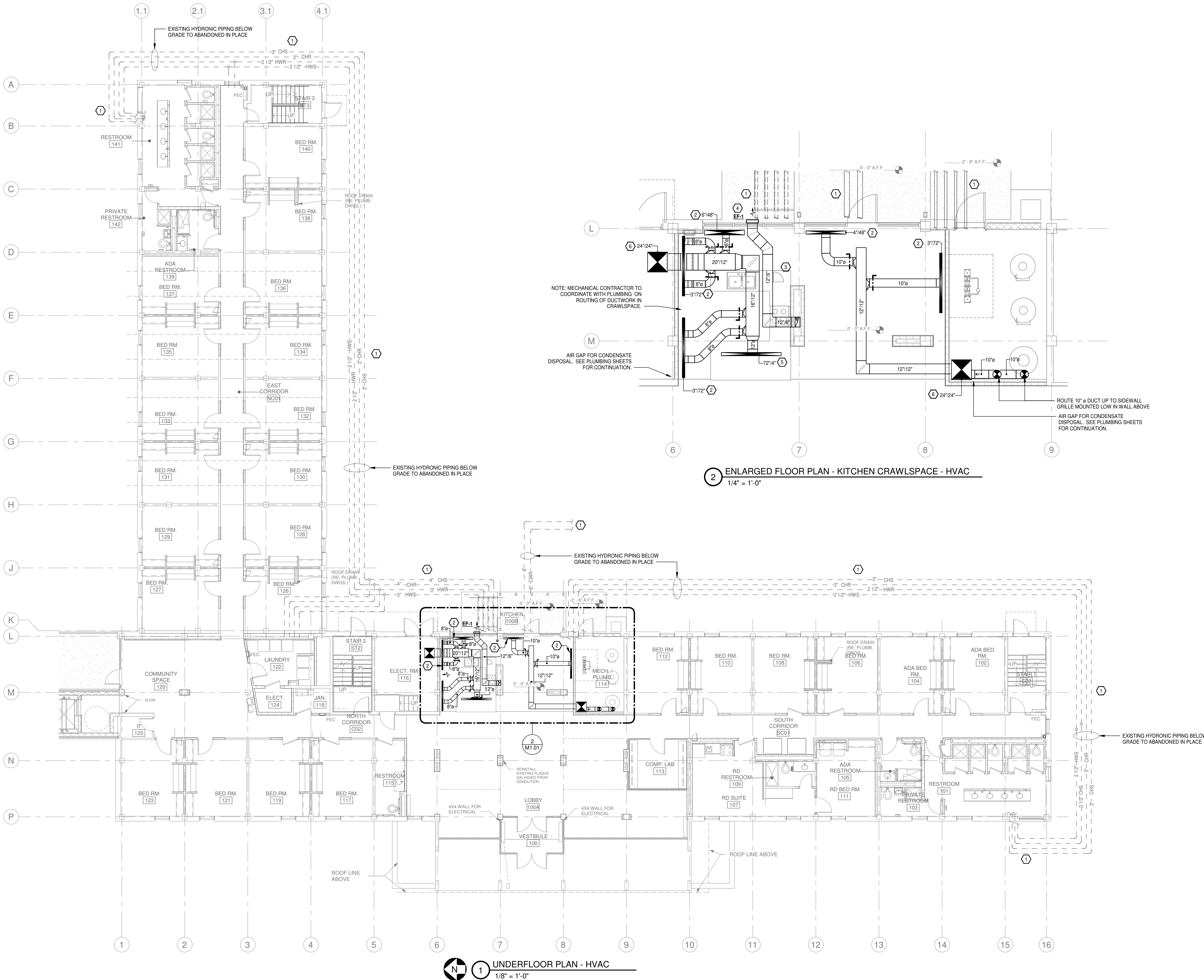
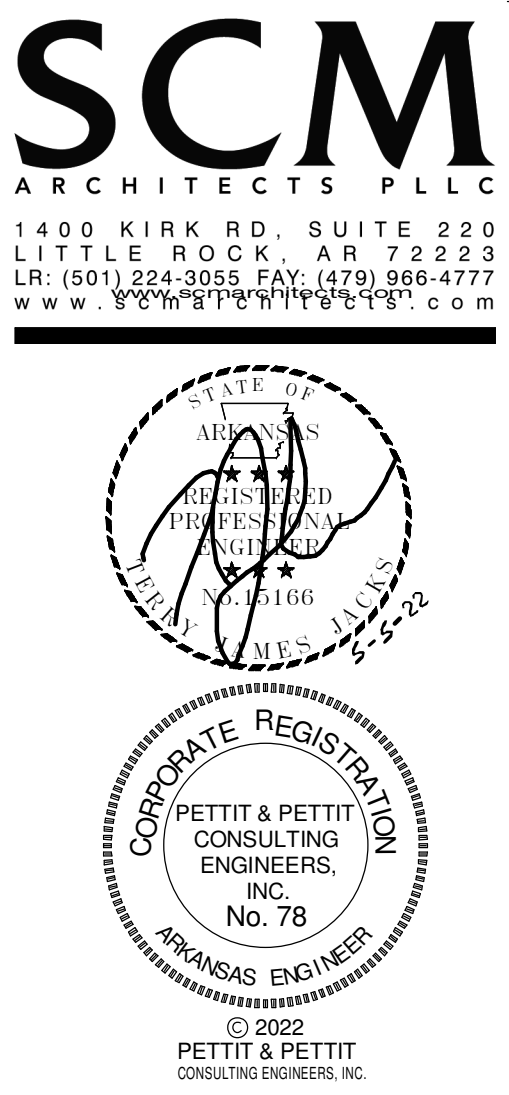
**M0.04**

### HVAC GENERAL NOTES

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.

### HVAC KEYED NOTES - M1.01

1. EXISTING BELOW GRADE HYDRONIC PIPING TO BE ABANDONED IN PLACE.
2. ROUTE DUCT UP TO FLOOR GRILLE ABOVE.
3. EXISTING BELOW GRADE HYDRONIC PIPING TO BE ABANDONED IN PLACE.
4. INSTALL KITCHEN HOOD EXHAUST FAN LOW ON OUTSIDE WALL CENTERED IN STOREFRONT. MECHANICAL CONTRACTOR TO CORE DRILL EXTERIOR WALL TO ALLOW CLEARANCE OF NEW GREASE DUCT AND SEAL ALL VOIDS.
5. ROUTE DUCT UP TO GRILLE MOUNTED IN MILLWORK ABOVE.
6. PROVIDE STRUCTURAL SUPPLY PLENUM CURB FOR THE MOUNTING AND SUPPORT OF (FC 8-1-2 & FC 9-1-1)



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UNDERFLOOR PLAN  
 - HVAC

**M1.01**

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 ALL DUCT IS INSTALLED PER THIS DRAWING



### HVAC GENERAL NOTES

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.

### RANGE HOOD EXHAUST NOTES

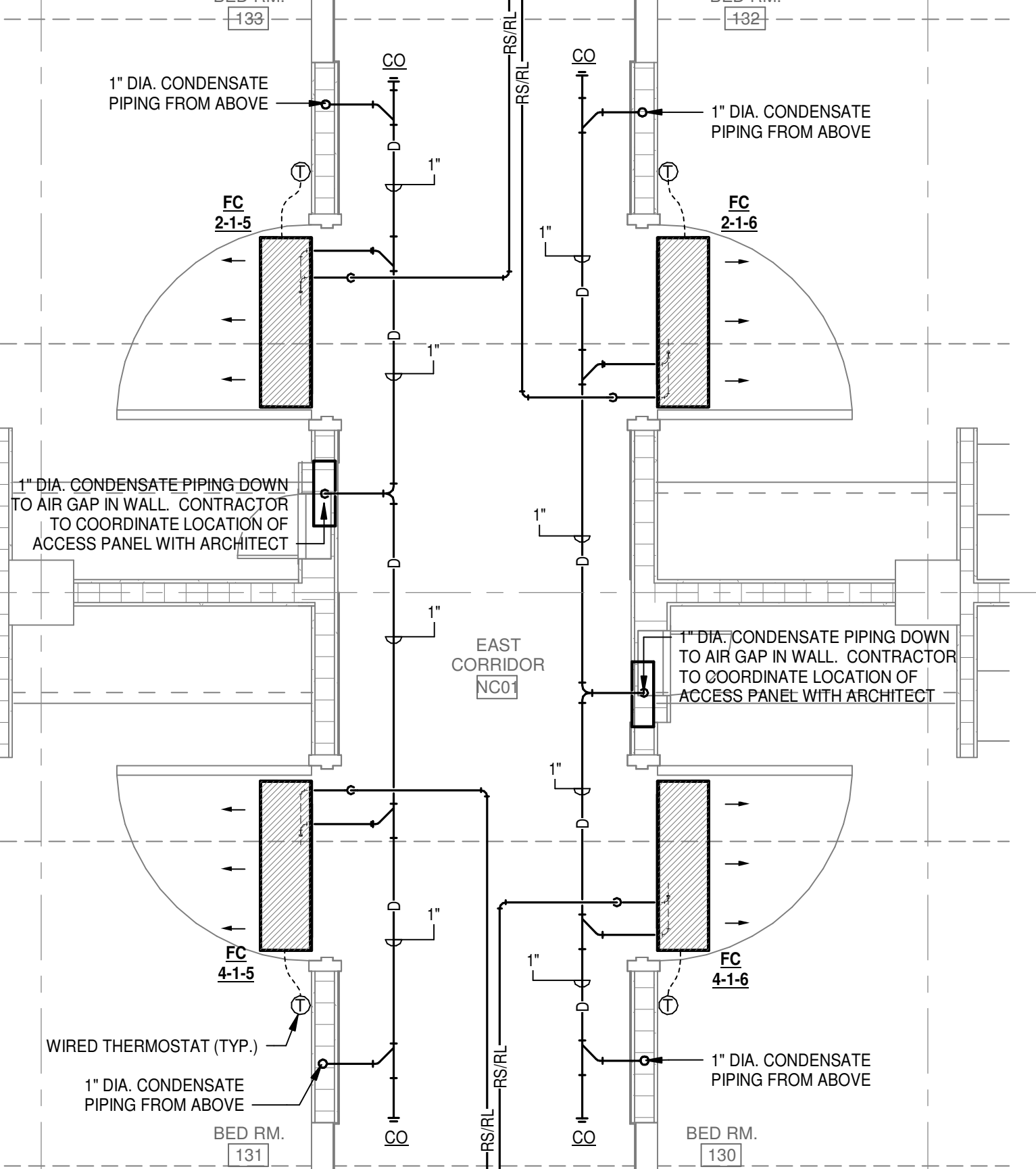
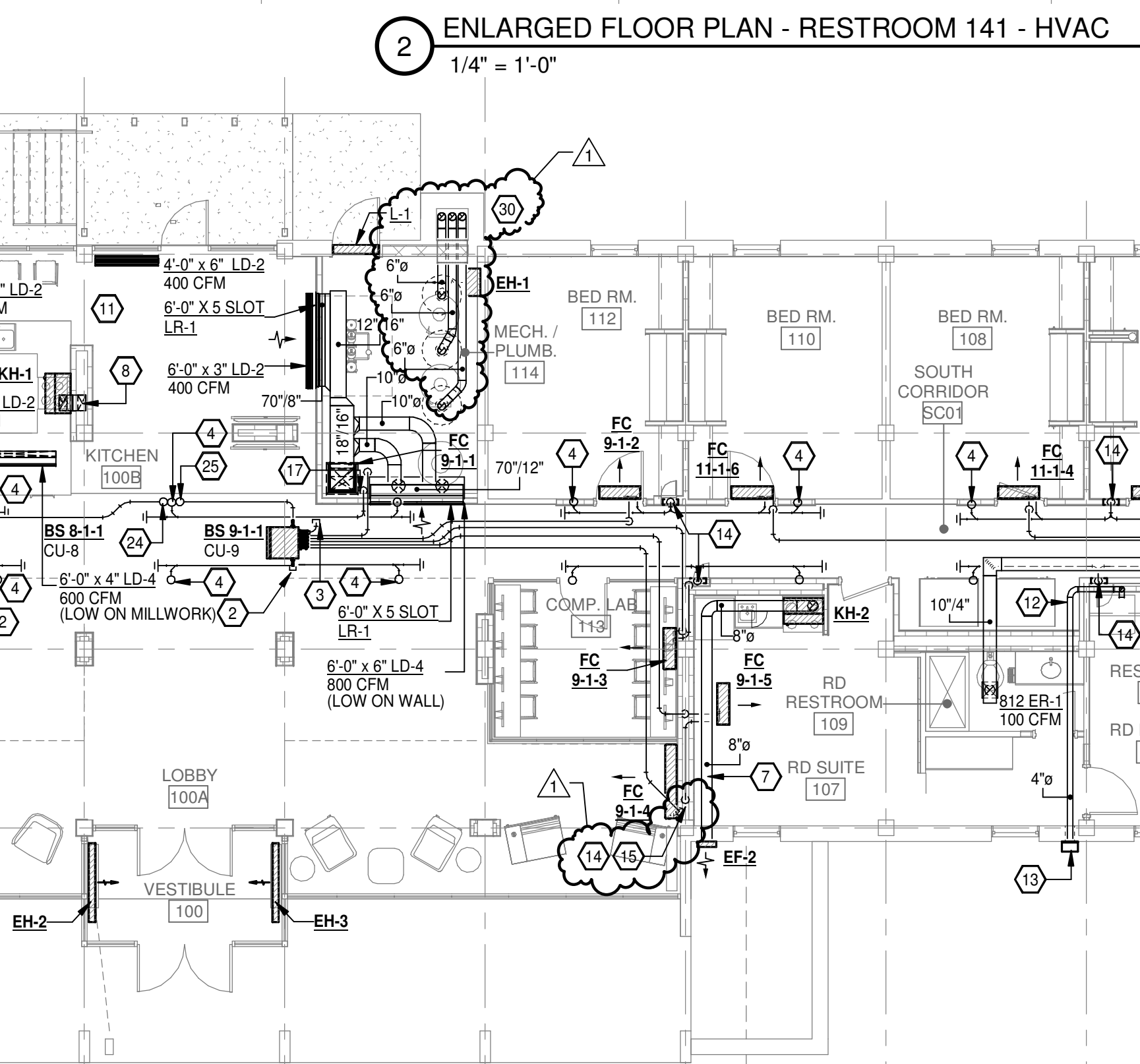
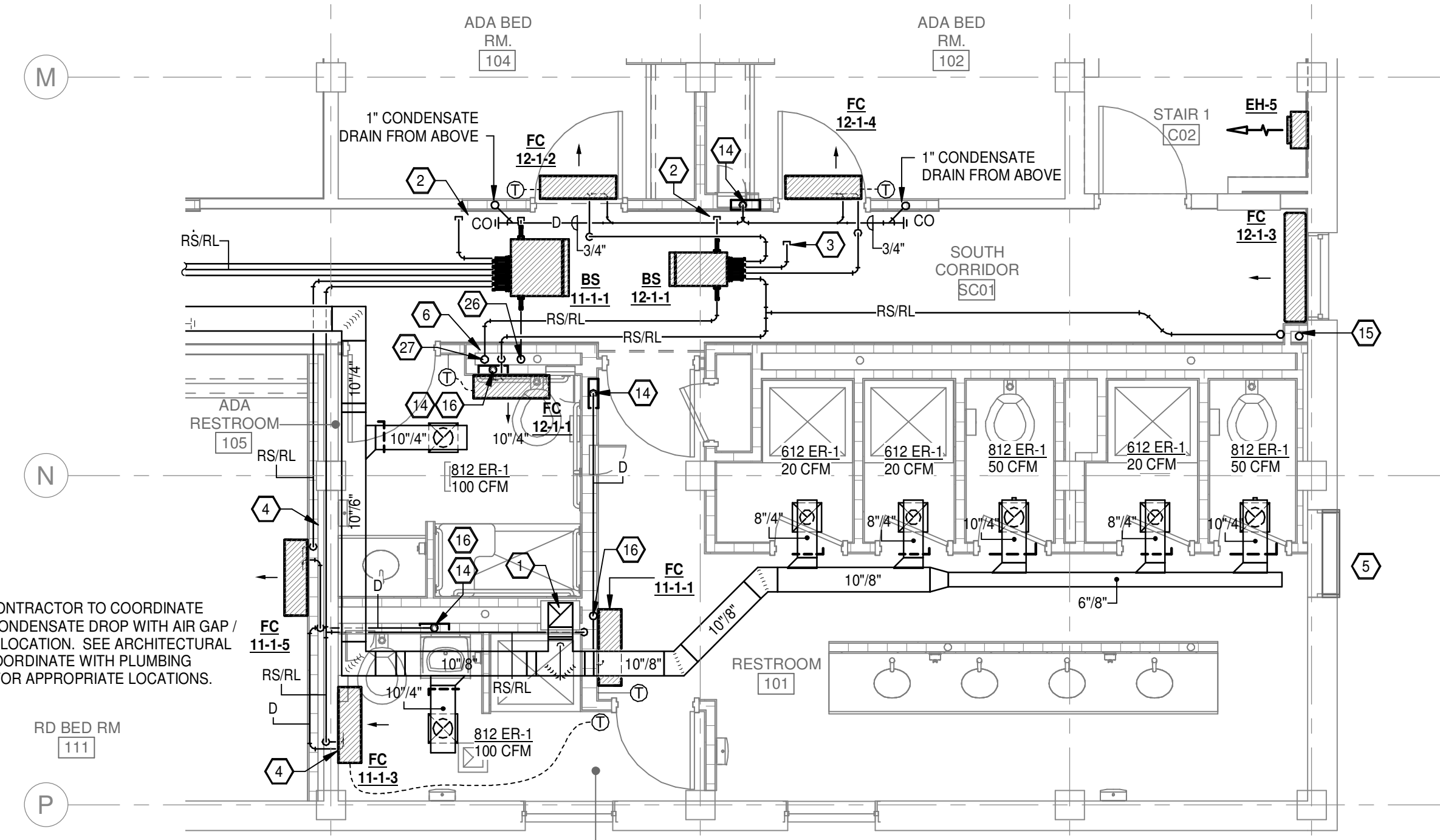
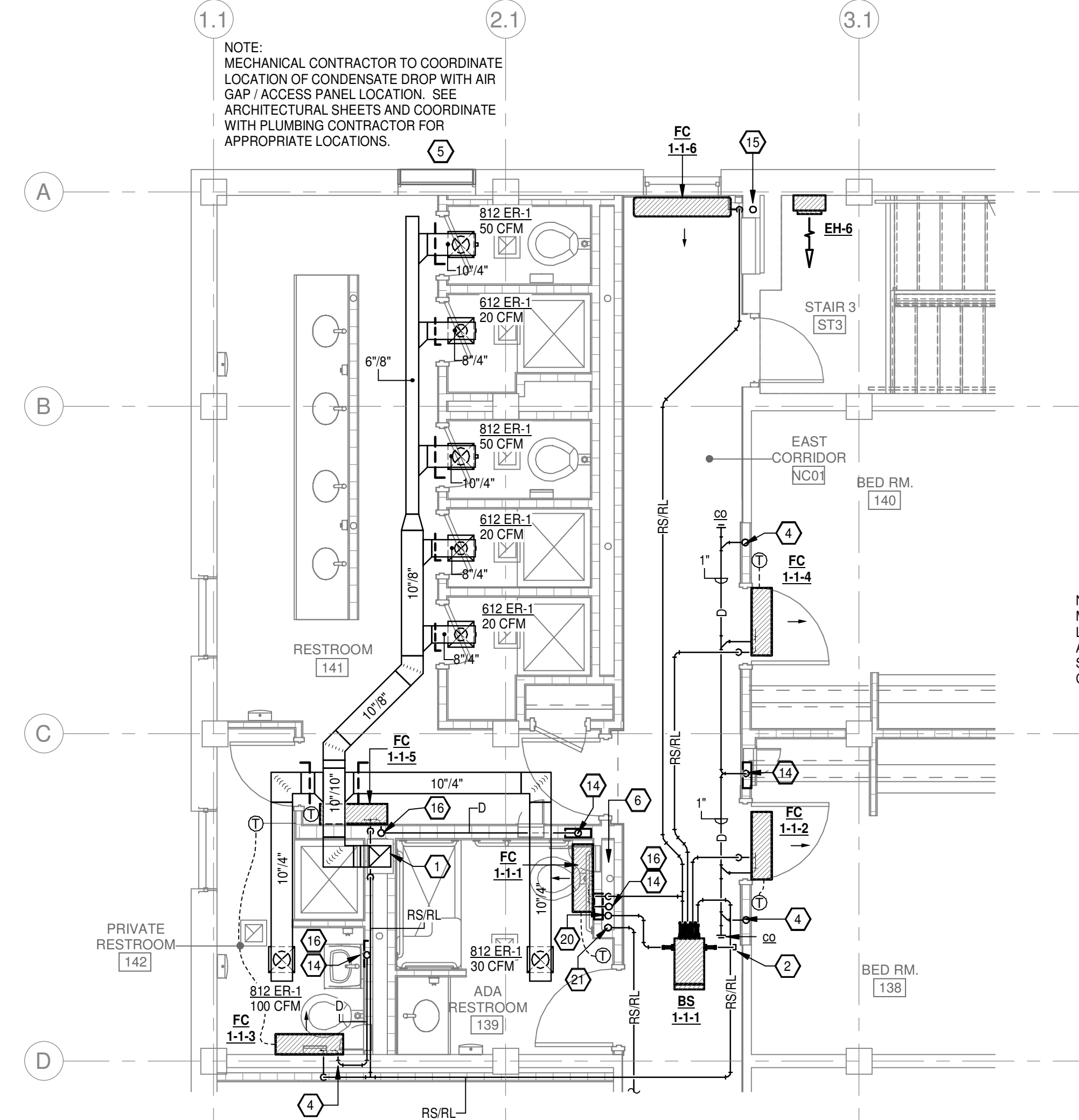
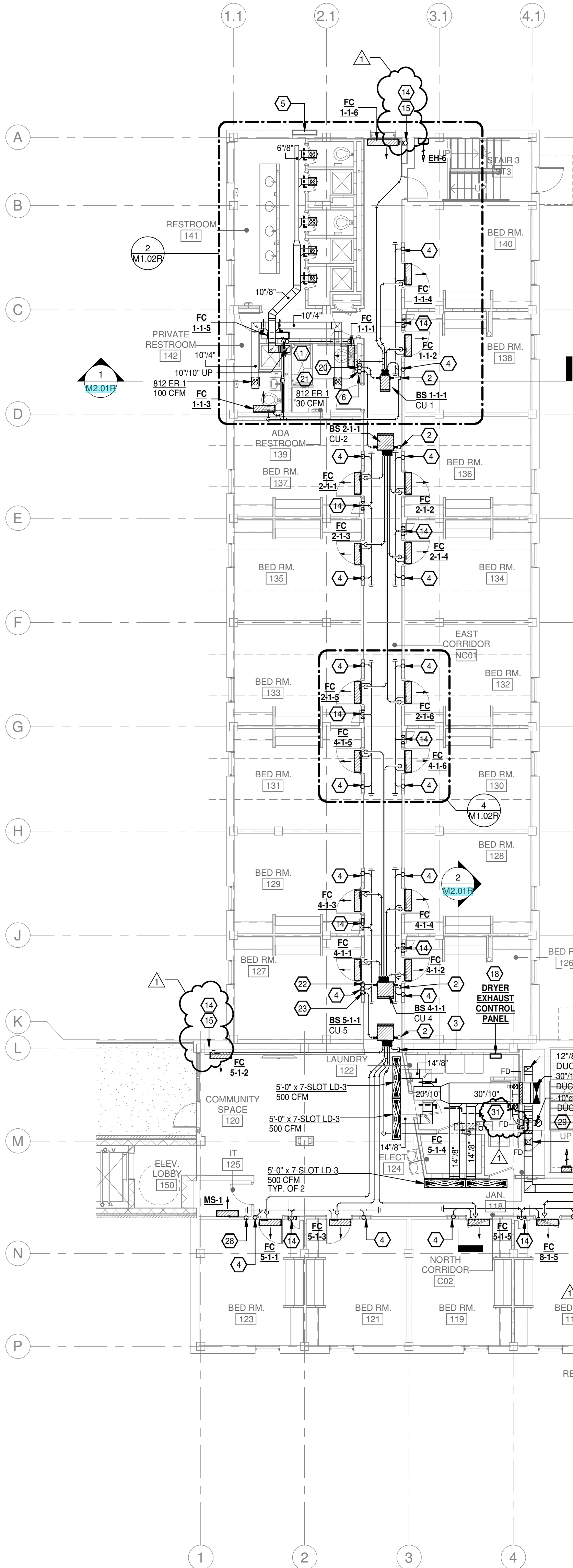
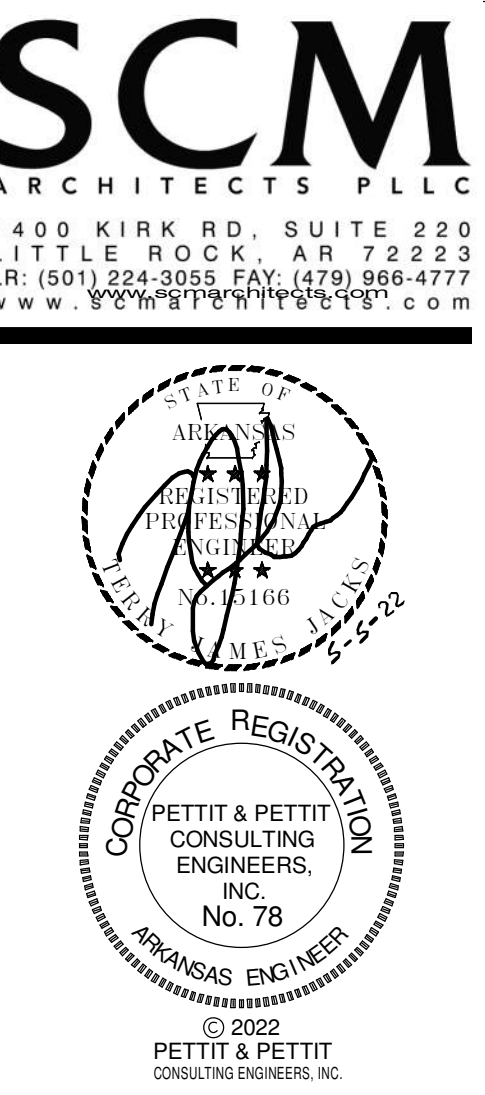
1. ALL RANGE HOOD EXHAUST DUCTWORK CONSTRUCTED OF MINIMUM .0625" THICK, 16 GAUGE, WELDED BLACK STEEL. ALL SEAMS & JOINTS LOCATED WITH A CONTINUOUS EXTERNAL WELD. WRAP ALL HOOD EXHAUST DUCTWORK WITH (2) 1/2" THICK LAYERS OF "FyreWrap" DUCT INSULATION.
2. ALL DUCTWORK AND ACCESSORIES SERVING THE RANGE HOOD EXHAUST HOOD SHALL COMPLY WITH NFPA 96, STANDARD FOR VENTILATION CONTROL AND FIRE PROTECTION OF COMMERCIAL COOKING OPERATIONS.

### HVAC KEYED NOTES - M1.02

1. ROUTE NEW 10"10" EXHAUST AIR DUCT UP TO 2ND FLOOR ABOVE. SAW CUT FLOOR AS REQUIRED TO PROVIDE PATHWAY OF NEW EXHAUST AIR DUCTWORK. CONTRACTOR TO CAREFULLY COORDINATE LOCATION OF PENETRATION WITH EXISTING STRUCTURE. PROVIDE GREENHECK MODEL# ODFD-150 OR APPROVED EQUAL AT ALL FLOOR PENETRATIONS.
2. CAP UN-USED OUTDOOR PIPING PORT.
3. CAP UN-USED INDOOR BRANCH PIPING PORT.
4. ROUTE FULL SIZE CONDENSATE DRAIN DOWN IN NEW WALL. PROVIDE CLEANOUT FOR MAINTENANCE IN CORRIDOR.
5. EXISTING LOUVER TO REMAIN. MECHANICAL CONTRACTOR TO COORDINATE DETAILS OF INFILL WITH ARCHITECT.
6. PIPE SPACING SHOWN FOR CLARITY. ROUTE ALL REFRIGERANT PIPING IN PROVIDED CHASE. MECHANICAL CONTRACTOR TO CAREFULLY COORDINATE ROUTING OF PIPING IN CHASE WITH PLUMBING CONTRACTOR.
7. ROUTE GREASE DUCT FROM KITCHEN HOOD (KH-2) TO EXHAUST FAN (EF-2), MOUNTED ON THE OUTSIDE WALL. IN CHASE PROVIDED BY ARCHITECT. CORE DRILL WALLS AS REQUIRED. SEAL ALL VOIDS AROUND SIDEWALL OUTLET. PROVIDE ACCESS DOORS IN DUCTWORK AS SHOWN ON PLANS FOR MAINTENANCE.
8. ROUTE 12"6" GREASE DUCT FROM KITCHEN HOOD (KH-1) TO EXHAUST FAN (EF-1), MOUNTED ON OUTSIDE WALL, IN CHASE PROVIDED BY ARCHITECT. CORE DRILL WALLS AS REQUIRED. SEAL ALL VOIDS AROUND SIDEWALL OUTLET. PROVIDE ACCESS DOORS IN DUCTWORK IN CRAWLSPACE AS SHOWN ON PLANS FOR MAINTENANCE.
9. ROUTE NEW 12"18" EXHAUST AIR DUCT UP TO 2ND FLOOR ABOVE IN EXISTING CHASE. PROVIDE GREENHECK MODEL# ODFD-150 OR APPROVED EQUAL AT EACH CHASE PENETRATION.
10. ROUTE NEW 30"10" SUPPLY AIR DUCT UP TO 2ND FLOOR ABOVE IN EXISTING CHASE. PROVIDE GREENHECK MODEL# ODFD-150 OR APPROVED EQUAL AT EACH CHASE PENETRATION.
11. SEE UNDERFLOOR PLAN FOR ALL DUCTWORK LOCATED BENEATH CRAWLSPACE IN THIS AREA.
12. ROUTE 4" DRYER DUCT FROM DRYER TO OUTSIDE WALL IN FURR OUT PROVIDED BY ARCHITECT. CORE DRILL WALL AS REQUIRED TO PROVIDE ADEQUATE CLEARANCE FOR BOTH EXHAUST DUCT AND AIR DEVICE. SEAL ALL VOIDS AS REQUIRED.
13. PROVIDE 4" MANUFACTURER'S APPROVED DRYER OUTLET WITH BACKDRAFT DAMPER.
14. ROUTE 1" DIA. CONDENSATE PIPING DOWN TO AIR GAP BELOW. MECHANICAL CONTRACTOR TO COORDINATE EXACT LOCATION OF ACCESS PANEL WITH ARCHITECT.

### HVAC KEYED NOTES - M1.02

15. ROUTE FULL SIZE CONDENSATE FROM FLOOR UNIT IN CORRIDOR TO 1" DIA. CONDENSATE MAIN. ROUTE CONDENSATE TO OUTSIDE AND TERMINATE AT FRENCH DRAIN.
16. ROUTE 1" DIA. CONDENSATE PIPING UP IN ALLOWABLE PENETRATION ZONE TO SERVE UNITS ABOVE.
17. ROUTE 1" DIA. CONDENSATE PIPING EXPOSED IN MECHANICAL / ELECTRICAL ROOM TO AIR GAP BELOW.
18. INSTALL NEW DRYER EXHAUST SYSTEM CONTROL PANEL IN FIRST FLOOR LAUNDRY ROOM (122) AS SHOWN. MECHANICAL CONTRACTOR TO INCLUDE ROUTING OF CONTROL WIRING IN CONDUIT UP TO EXHAUST FAN (EF-3) ON ROOF IN SCOPE.
19. PROVIDE CLEANOUT AT BASE OF DRYER EXHAUST COLLECTOR DUCT FOR MAINTENANCE. COORDINATE WITH ARCHITECT FOR LOCATION OF FIRE RATED ACCESS DOOR IN JANITOR'S CLOSET (118).
20. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-1)
21. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-2)
22. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-4)
23. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-5)
24. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-8)
25. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-9)
26. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-11)
27. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-12)
28. REFRIGERATION PIPING SERVING MINI SPLIT INDOOR UNIT (MS-1) ON FIRST FLOOR UP TO MINI SPLIT CONDENSING UNIT (MSCU-1) ON ROOF.
29. PROVIDE 2" x 34" FIRE RATED ACCESS DOOR IN JANITOR'S CLOSET FOR MAINTENANCE OF DRYER EXHAUST DUCT.
30. EXISTING FLUE DUCT PENETRATION INTO CHIMNEY TO REMAIN. MECHANICAL CONTRACTOR TO ROUTE (3 EA) NEW 6" DIA. FLUES FROM WATER HEATER UP TO ROOF THROUGH EXISTING CLAY LINED BOILER FLUE.
31. PROVIDE 14"14" TRANSFER DUCT AND FIRE DAMPER IN FIRE RATED CHASE TO PROVIDE MAKE-UP AIR TO CLOTHES DRYERS.



1 FIRST FLOOR PLAN - HVAC  
1/8" = 1'-0"

3 ENLARGED FLOOR PLAN - RESTROOM 101 - HVAC  
1/4" = 1'-0"

2 ENLARGED FLOOR PLAN - RESTROOM 141 - HVAC  
1/4" = 1'-0"

4 FIRST FLOOR PLAN - TYP. BEDROOM CONDENSATE ROUTING - HVAC  
1/2" = 1'-0"

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REVISIONS  
1 Addendum No. 2 06-02-22  
PROJECT NO. 21054  
DATE: May 5, 2022

REVISED FIRST FLOOR PLAN - HVAC

M1.02R

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**HVAC GENERAL NOTES**

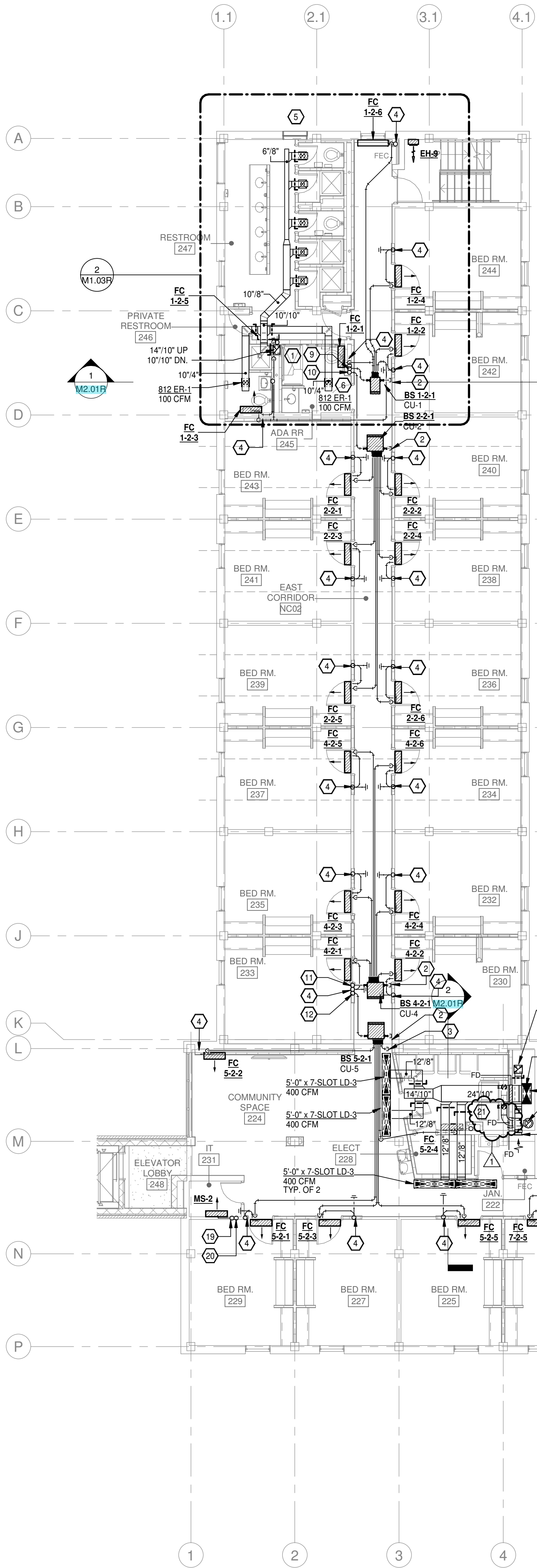
1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.

**HVAC KEYED NOTES - M1.03**

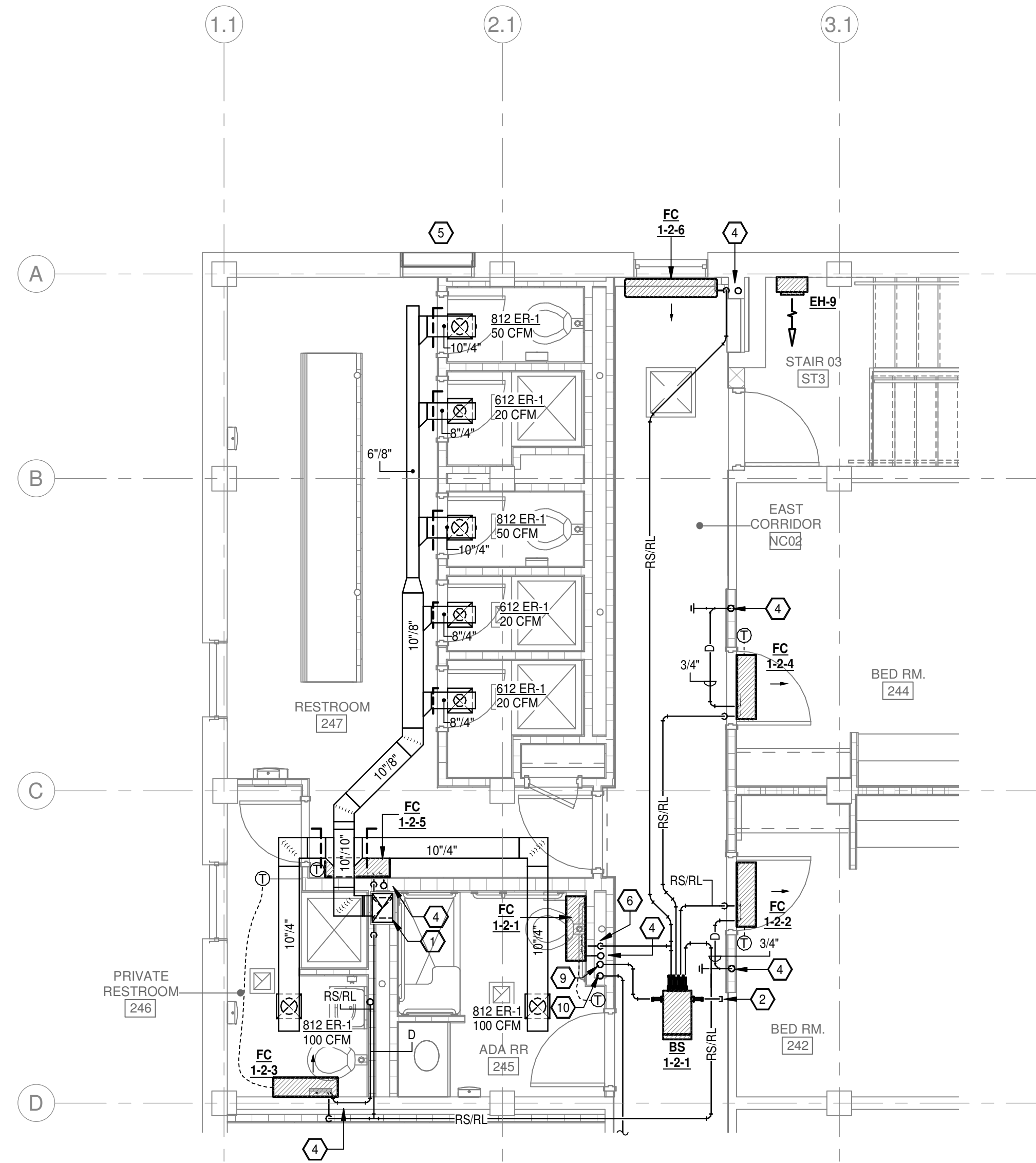
1. ROUTE NEW 10" EXHAUST AIR DUCT DOWN TO 1ST FLOOR BELOW. SAW CUT FLOOR AS REQUIRED TO PROVIDE PATHWAY OF NEW EXHAUST AIR DUCTWORK. CONTRACTOR TO CAREFULLY COORDINATE LOCATION OF PENETRATION WITH EXISTING STRUCTURE. PROVIDE GREENHECK MODEL# ODFD-150 OR APPROVED EQUAL FIRE DAMPER AT FLOOR PENETRATIONS.
2. CAP UN-USED OUTDOOR PIPING PORT.
3. CAP UN-USED INDOOR BRANCH PIPING PORT.
4. ROUTE FULL SIZE CONDENSATE DRAIN DOWN IN NEW WALL. PROVIDE CLEANOUT FOR MAINTENANCE IN CORRIDOR.
5. EXISTING LOUVER TO REMAIN. MECHANICAL CONTRACTOR TO COORDINATE DETAILS OF INFILL WITH ARCHITECT.
6. PIPE SPACING SHOWN FOR CLARITY. ROUTE ALL REFRIGERANT PIPING IN PROVIDED CHASE. MECHANICAL CONTRACTOR TO CAREFULLY COORDINATE ROUTING OF PIPING IN CHASE WITH PLUMBING CONTRACTOR.
7. ROUTE NEW 12" EXHAUST AIR DUCT DOWN TO 1ST FLOOR AND 12" TO THIRD FLOOR ABOVE IN EXISTING CHASE. PROVIDE GREENHECK MODEL# ODFD-150 OR APPROVED EQUAL AT EACH CHASE PENETRATION.
8. ROUTE NEW 30" SUPPLY AIR DUCT DOWN TO FIRST FLOOR AND 30" UP TO THIRD FLOOR IN EXISTING CHASE. PROVIDE GREENHECK MODEL# ODFD-150 OR APPROVED EQUAL AT EACH CHASE PENETRATION.

**HVAC KEYED NOTES - M1.03**

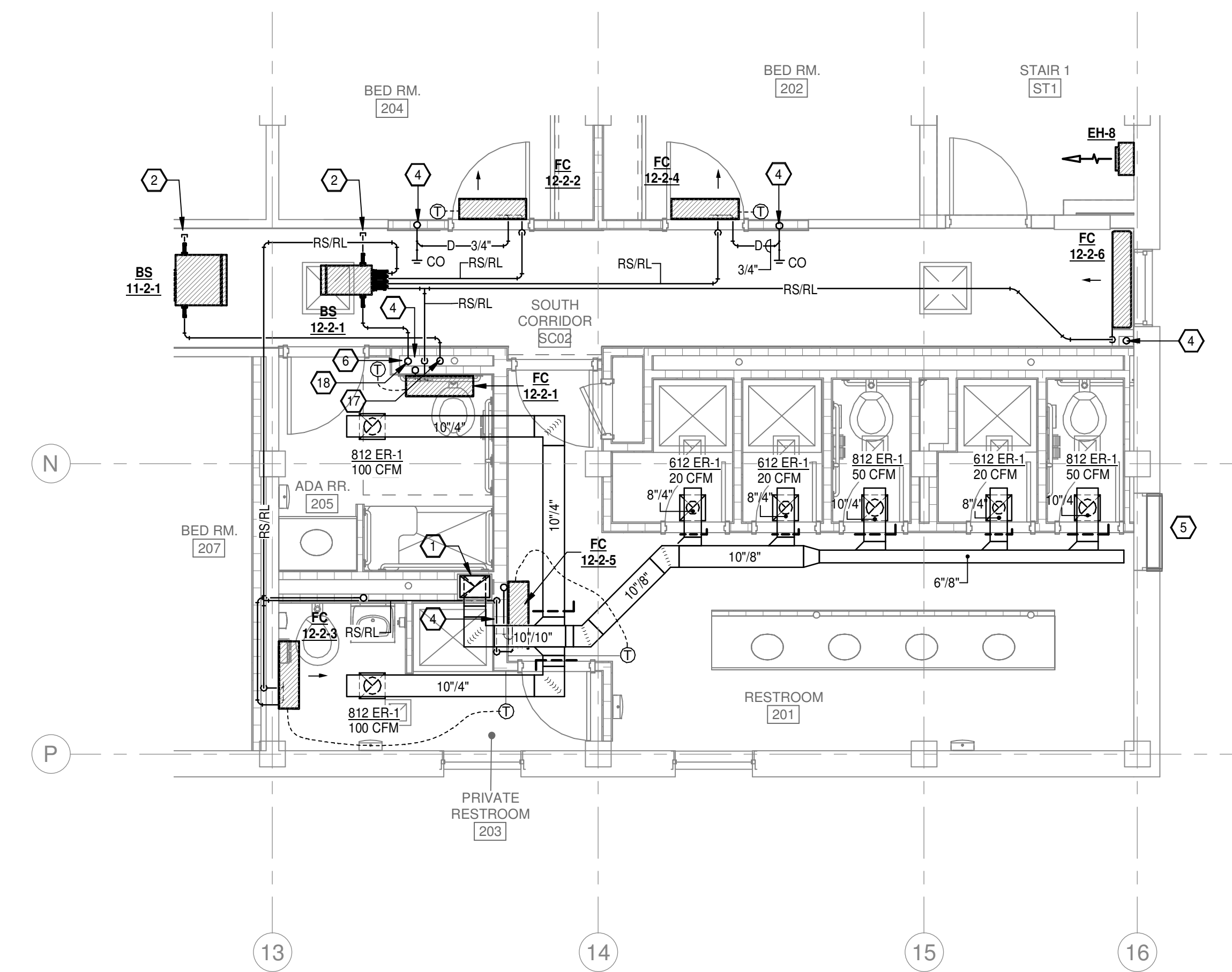
9. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-1)
10. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-2)
11. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-4)
12. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-5)
13. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-7)
14. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-10)
15. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-8)
16. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-9)
17. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-11)
18. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-12)
19. REFRIGERATION PIPING SERVING MINI SPLIT INDOOR UNIT (MS-2) ON SECOND FLOOR UP TO MINI SPLIT CONDENSING UNIT (MSCU-1) ON ROOF.
20. REFRIGERATION PIPING SERVING MINI SPLIT INDOOR UNIT (MS-1) ON FIRST FLOOR UP TO MINI SPLIT CONDENSING UNIT (MSCU-1) ON ROOF.
21. PROVIDE 14" X 14" TRANSFER DUCT AND FIRE DAMPER IN FIRE RATED CHASE TO PROVIDE MAKE-UP AIR TO CLOTHES DRYERS.
22. (3) - 6" DIA. WATER HEATER FLUE UP IN EXISTING CLAY LINED BOILER FLUE.



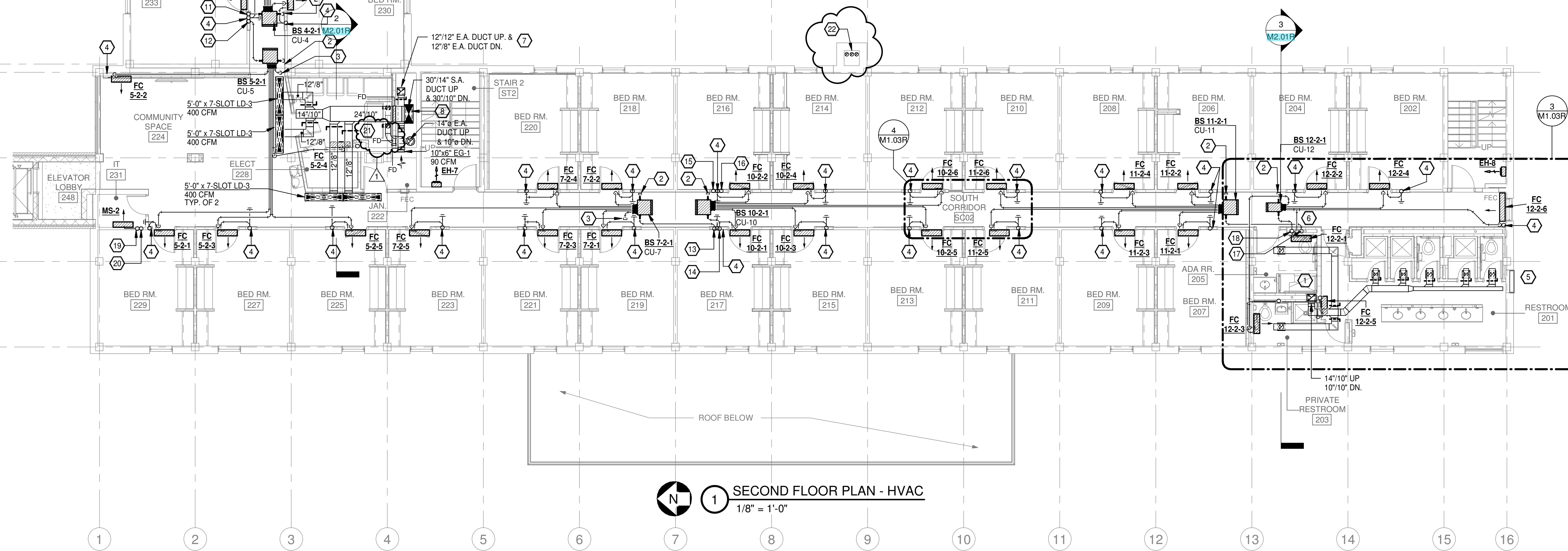
2 ENLARGED FLOOR PLAN - RESTROOM 247 - HVAC  
1/4" = 1'-0"



3 ENLARGED FLOOR PLAN - RESTROOM 201 - HVAC  
1/4" = 1'-0"



4 SECOND FLOOR PLAN - TYP. BEDROOM CONDENSATE ROUTING - HVAC  
1/2" = 1'-0"



1 SECOND FLOOR PLAN - HVAC  
1/8" = 1'-0"

ATU JONES HALL ASBUILT 12.12.23  
ALL DUCT IS INSTALLED PER THIS DRAWING

Jones Residence Hall  
Arkansas Tech University  
1804 N Boulder Ave.  
Russellville, AR 72801

REVISIONS  
1 Addendum No. 2 06-02-22  
PROJECT NO. 21054  
DATE: May 5, 2022  
REVISED SECOND FLOOR PLAN - HVAC

M1.03R



**HVAC GENERAL NOTES**

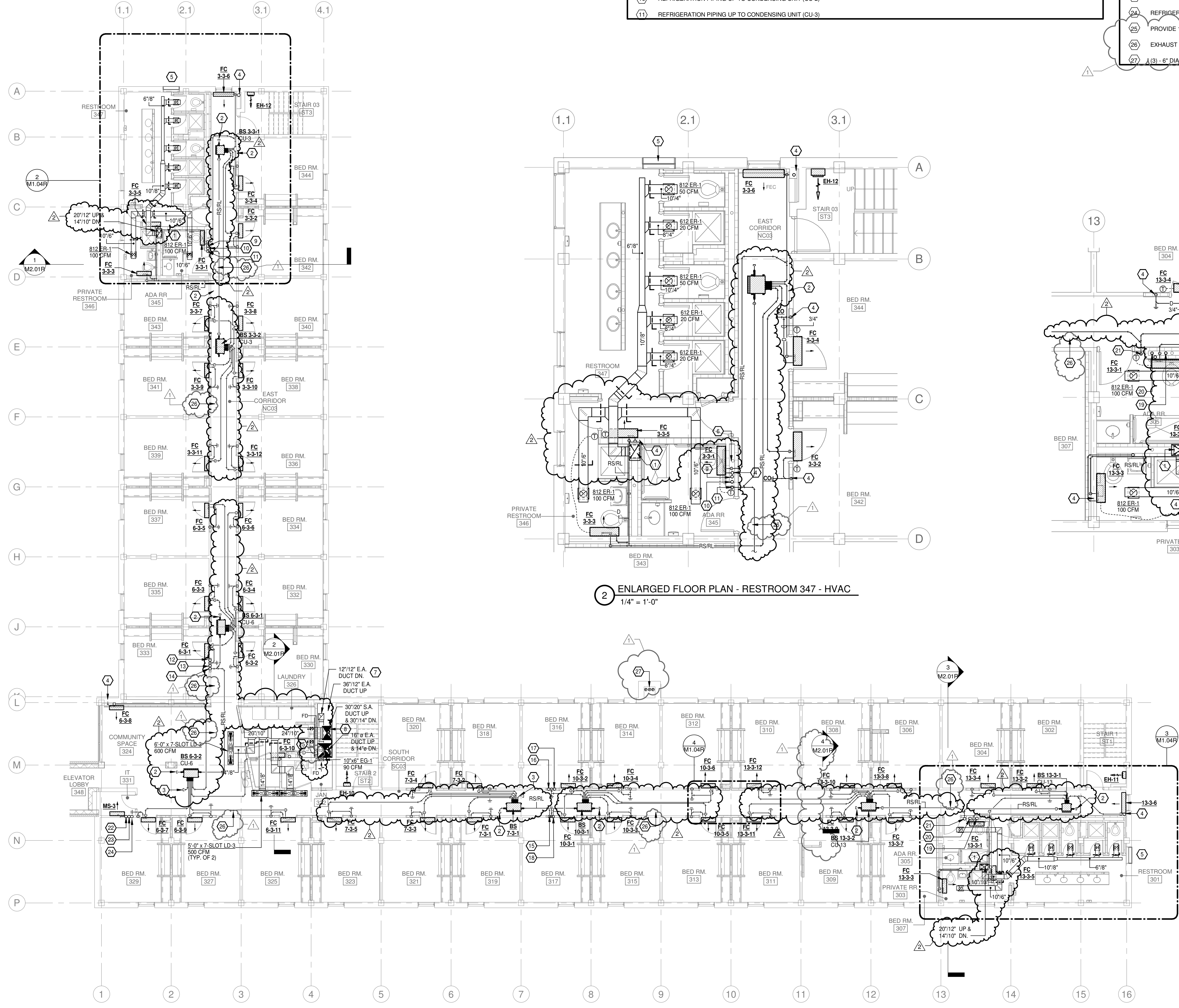
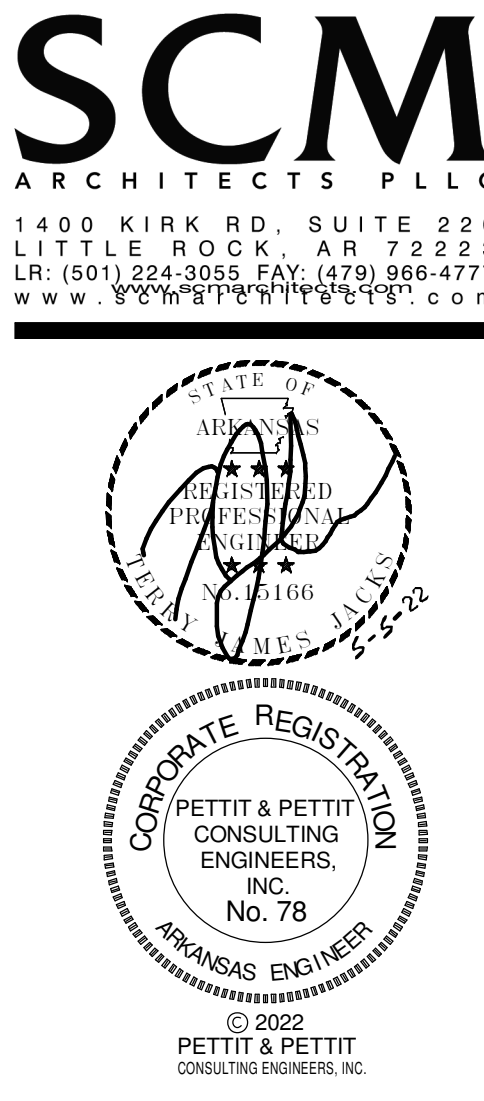
1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.

**HVAC KEYED NOTES - M1.04**

1. ROUTE NEW 14"110" EXHAUST AIR DUCT DOWN TO 2ND FLOOR BELOW. SAW CUT FLOOR AS REQUIRED TO PROVIDE PATHWAY OF NEW EXHAUST AIR DUCTWORK. CONTRACTOR TO CAREFULLY COORDINATE LOCATION OF PENETRATION WITH EXISTING STRUCTURE. PROVIDE GREENHECK MODEL# ODFD-150 OR APPROVED EQUAL FIRE DAMPER AT FLOOR PENETRATIONS.
2. CAP UN-USED OUTDOOR PIPING PORT.
- 3.
4. ROUTE FULL SIZE CONDENSATE DRAIN DOWN IN NEW WALL. PROVIDE CLEANOUT FOR MAINTENANCE IN CORRIDOR.
5. EXISTING LOUVER TO REMAIN. MECHANICAL CONTRACTOR TO COORDINATE DETAILS OF INFILL WITH ARCHITECT.
6. PIPE SPACING SHOWN FOR CLARITY. ROUTE ALL REFRIGERANT PIPING IN PROVIDED CHASE. MECHANICAL CONTRACTOR TO CAREFULLY COORDINATE ROUTING OF PIPING IN CHASE WITH PLUMBING CONTRACTOR
7. ROUTE NEW 12"112" DOWN TO SECOND FLOOR AND 36"12" UP TO VENTILATION AIR UNIT (VALU-1) ON ROOF. ROUTE ALL DUCT WORK IN EXISTING CHASE. PROVIDE GREENHECK MODEL# ODFD-150 OR APPROVED EQUAL AT EACH CHASE PENETRATION.
8. ROUTE NEW 30"114" SUPPLY AIR DUCT DOWN SECOND FLOOR AND 30"20" UP TO VENTILATION AIR UNIT (VALU-1) ON ROOF. ROUTE ALL DUCTWORK IN EXISTING CHASE. PROVIDE GREENHECK MODEL# ODFD-150 OR APPROVED EQUAL AT EACH CHASE PENETRATION.
9. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-1)
10. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-2)
11. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-3)

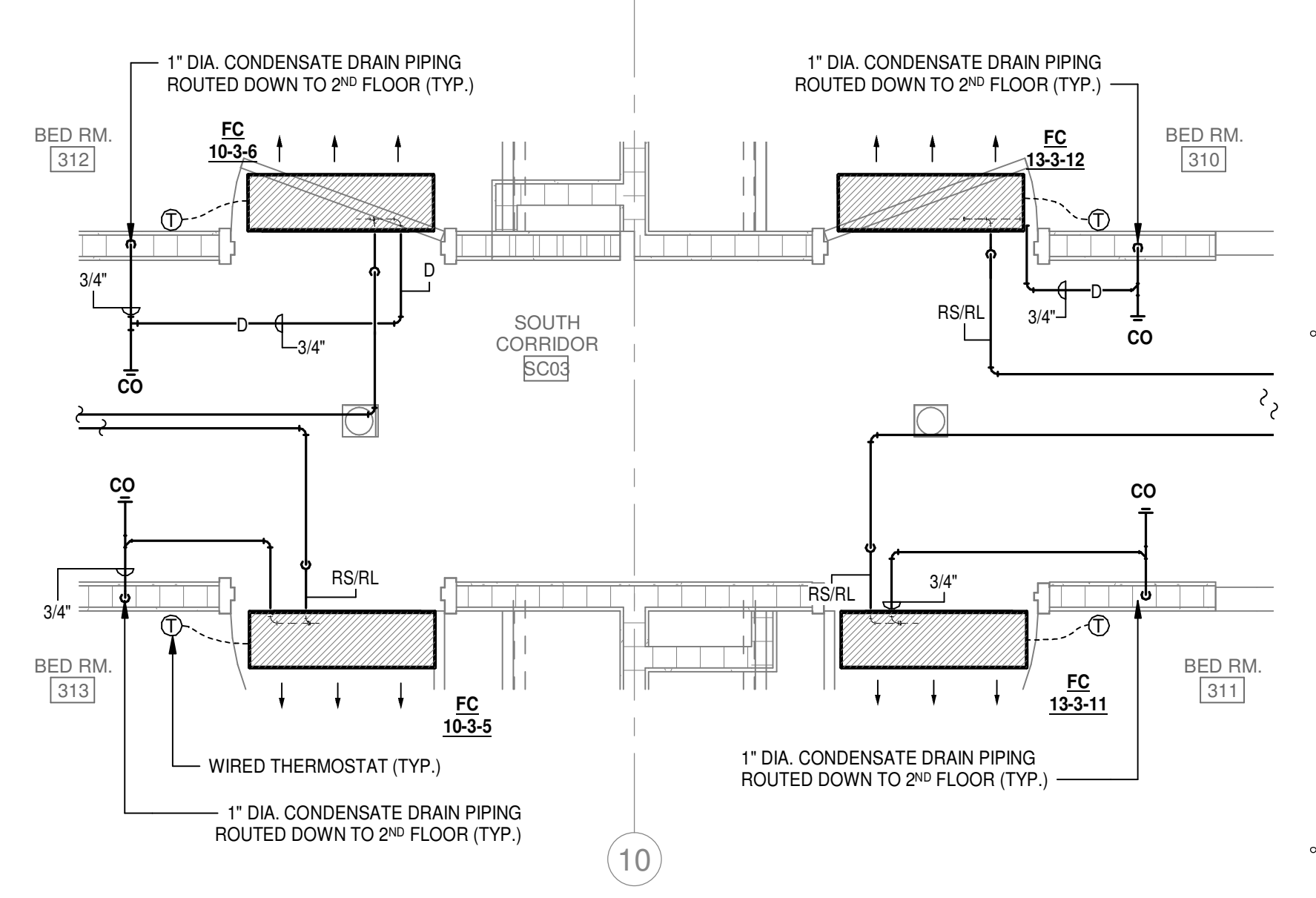
**HVAC KEYED NOTES - M1.04**

12. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-4)
13. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-5)
14. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-6)
15. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-7)
16. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-8)
17. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-9)
18. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-10)
19. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-11)
20. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-12)
21. REFRIGERATION PIPING UP TO CONDENSING UNIT (CU-13)
22. REFRIGERATION PIPING SERVING MINI SPLIT INDOOR UNIT (MS-3) ON THIRD FLOOR UP TO MINI SPLIT CONDENSING UNIT (MSCU-1) ON ROOF.
23. REFRIGERATION PIPING SERVING MINI SPLIT INDOOR UNIT (MS-2) ON SECOND FLOOR UP TO MINI SPLIT CONDENSING UNIT (MSCU-1) ON ROOF.
24. REFRIGERATION PIPING SERVING MINI SPLIT INDOOR UNIT (MS-1) ON FIRST FLOOR UP TO MINI SPLIT CONDENSING UNIT (MSCU-1) ON ROOF.
25. PROVIDE 14"114" TRANSFER DUCT AND FIRE DAMPER IN FIRE RATED CHASE TO PROVIDE MAKE-UP AIR TO CLOTHES DRYERS.
26. EXHAUST DUCT IN THIRD FLOOR CORRIDOR TO BE INTERNALLY INSULATED.
27. 6" DIA WATER HEATER FLUE UP IN EXISTING CLAY LINED BOILER FLUE.



2 ENLARGED FLOOR PLAN - RESTROOM 347 - HVAC  
1/4" = 1'-0"

3 ENLARGED FLOOR PLAN - RESTROOM 301 - HVAC  
1/4" = 1'-0"



4 THIRD FLOOR PLAN - TYP. BEDROOM CONDENSATE ROUTING - HVAC  
1/2" = 1'-0"

1 THIRD FLOOR PLAN - HVAC  
1/8" = 1'-0"

ATU JONES HALL AS BUILT 12.12.23  
ALL DUCT IS INSTALLED PER THIS DRAWING

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1804 N Boulder Ave.  
Russellville, AR 72801

REVISIONS		
1	Addendum No. 2	06-02-22
2	RFP 04	11-17-22
PROJECT NO. 21054		
DATE: May 5, 2022		

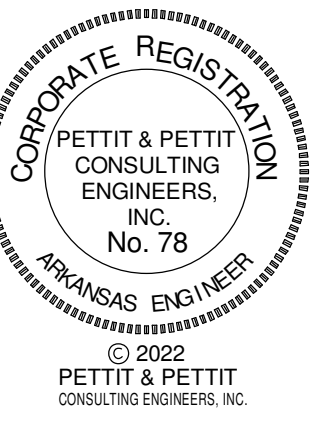
REVISED THIRD FLOOR PLAN - HVAC

M1.04R



### HVAC GENERAL NOTES

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.



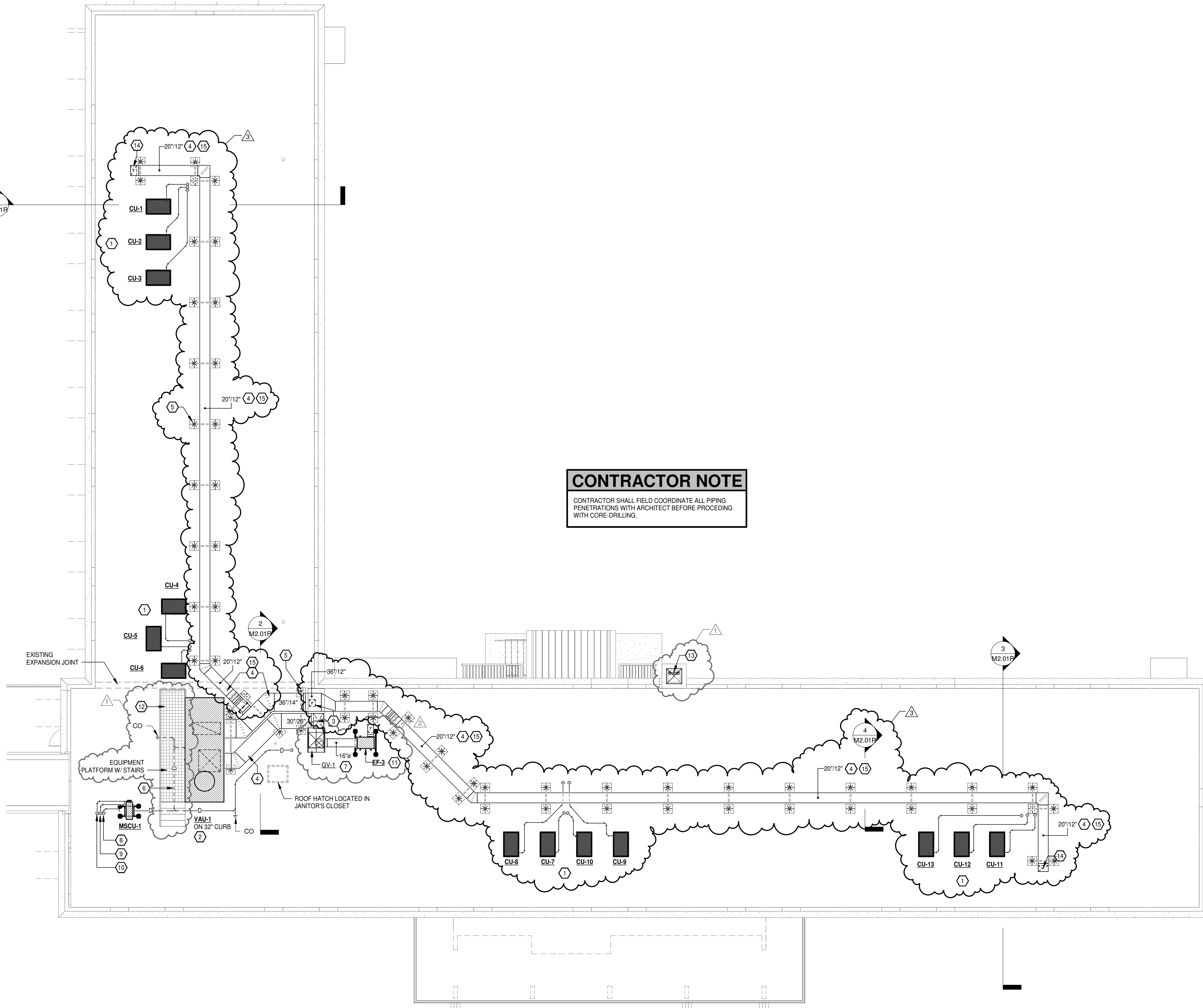
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### HVAC KEYED NOTES - M1.05

1. PROVIDE ROOF SUPPORT SYSTEM FOR VRV OUTSIDE UNITS. SEE ARCHITECTURAL SHEETS FOR DETAILS OF EQUIPMENT RAILS.
2. INSTALL NEW VENTILATION AIR UNIT (VAL-1) ON 32" STRUCTURAL PLENUM CURB. CONTRACTOR TO COORDINATE UNIT PLACEMENT TO MAINTAIN ALL SERVICE AND EDGE CLEARANCES. SEE PLUMBING SHEETS FOR EXACT ROUTING OF NATURAL GAS PIPING.
3. ROUTE NEW 14"X12" EXHAUST AIR & 30"X20" SUPPLY AIR DUCT DOWN THROUGH EXISTING ROOF PENETRATIONS.
4. EXPOSED DUCT ON ROOF SHALL BE INSULATED WITH RIGID FIBERGLASS FINISHED WITH ALUMAGUARD WEATHERPROOF JACKET FOR PROTECTION OF THE OUTDOOR ENVIRONMENT. SLOPE TOP OF DUCT AT ALL HORIZONTAL RUNS TO PREVENT WATER FROM PONDING. SEE ARCHITECT FOR COLOR OF OUTER JACKET.
5. PROVIDE DUCT SUPPORTS ON ROOF. MECHANICAL CONTRACTOR TO INSTALL SUPPORTS TO ADHERE TO ALL SMACNA AND MANUFACTURER'S SPECIFICATIONS.
6. ROUTE FULL SIZE CONDENSATE DRAIN TO NEAREST ROOF DRAIN. PROVIDE CLEANOUTS FOR MAINTENANCE AS SHOWN ON DRAWINGS.
7. INSTALL NEW GRAVITY VENTILATOR (GV-1) AT TOP OF SHAFT FOR DRYER MAKE-UP AIR. ROUTE 30"X30" MAKE-UP AIR DUCT DOWN TO JUST BELOW ROOF DUCT. MECHANICAL CONTRACTOR TO FIELD COORDINATE LOCATION OF THE NEW MAKE-UP AIR DUCT WITH NEW FRAMING FOR FIRE RATED CHASE. MECHANICAL CONTRACTOR TO ALSO MAINTAIN AN EXHAUST FAN SERVICE CLEARANCE OF 10FT TO EDGE OF ROOF. SEE ARCHITECTURAL SHEETS FOR DETAILS OF DUCT PENETRATION.
8. REFRIGERATION PIPING DOWN TO SERVE MINI SPLIT INDOOR UNIT (MS-1) ON FIRST FLOOR.
9. REFRIGERATION PIPING DOWN TO SERVE MINI SPLIT INDOOR UNIT (MS-2) ON SECOND FLOOR.
10. REFRIGERATION PIPING DOWN TO SERVE MINI SPLIT INDOOR UNIT (MS-3) ON THIRD FLOOR.
11. INSTALL NEW DRYER EXHAUST FAN (EF-3) ON ROOF. ROUTE 16" DIA. DRYER EXHAUST COLLECTOR DUCT DOWN THROUGH SAME OPENING FOR DRYER MAKE-UP AIR SHAFT. PROVIDE MANUFACTURE APPROVED ROOF STAND AND EXHAUST AIRS AT TERMINATION. MECHANICAL CONTRACTOR TO INCLUDE ROUTING OF FAN CONTROL WIRING IN CONDUIT DOWN TO DRYER EXHAUST CONTROL PANEL IN FIRST FLOOR LAUNDRY ROOM.
12. PREFABRICATED SERVICE PLATFORM WITH RAILINGS AND STAIRS. CONTRACTOR TO COORDINATE W/ BOTH EQUIPMENT AND PLATFORM MANUFACTURER SO THAT THE FINISH PRODUCT COMPLYS WITH ALL MANUFACTURER'S CLEARANCES, DOOR SWING, AND SAFETY REGULATIONS GOVERNING INSTALLATION. CONTRACTOR TO ONLY USE PREFABRICATED PRODUCTS THAT MEET OSHA 1910 SUBPART D FOR WALKING /WORKING SURFACES. SERVICE PLATFORM FOOTINGS ARE NOT TO PENETRATE AND/OR BE ATTACHED TO ROOF SURFACE. CONTRACTOR TO MECHANICALLY ATTACH SERVICE PLATFORM TO EXISTING EQUIPMENT SUPPORT FRAME TO SECURE PLATFORM. DO NOT ATTACH PLATFORM TO HVAC UNIT.
13. (3) - 6" DIA. WATER HEATER FLUE UP IN EXISTING CLAY LINED BOILER FLUE. CONTRACTOR TO PROVIDE MANUFACTURE APPROVED ROOF STAND AND EXHAUST AIRS AT TERMINATION.
14. 20"X12" EXHAUST DUCT DOWN. CONTRACTOR TO COORDINATE ROOF PENETRATION WITH PHASE PROVIDED BELOW. SEE DETAIL 4, SHEET M3.01.
15. DUCT SHALL BE ROUTED SUCH THAT NO EQUIPMENT ACCESS IS BLOCKED AND MAINTENANCE PERSONEL WILL HAVE TO CROSS THE DUCTWORK.

### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE ALL PIPING PENETRATIONS WITH ARCHITECT BEFORE PROCEEDING WITH CORE-DRILLING.



**1** ROOF PLAN - HVAC  
1/8" = 1'-0"

**Jones Residence Hall**  
**Arkansas Tech University**  
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Russellville, AR 72801

#### REVISIONS

1	Addendum No. 2	06-02-22
2	Addendum No. 3	06-03-22
3	RFP 04	11-17-22

#### PROJECT NO.

21054

#### DATE:

May 5, 2022

REVISED ROOF  
PLAN - HVAC

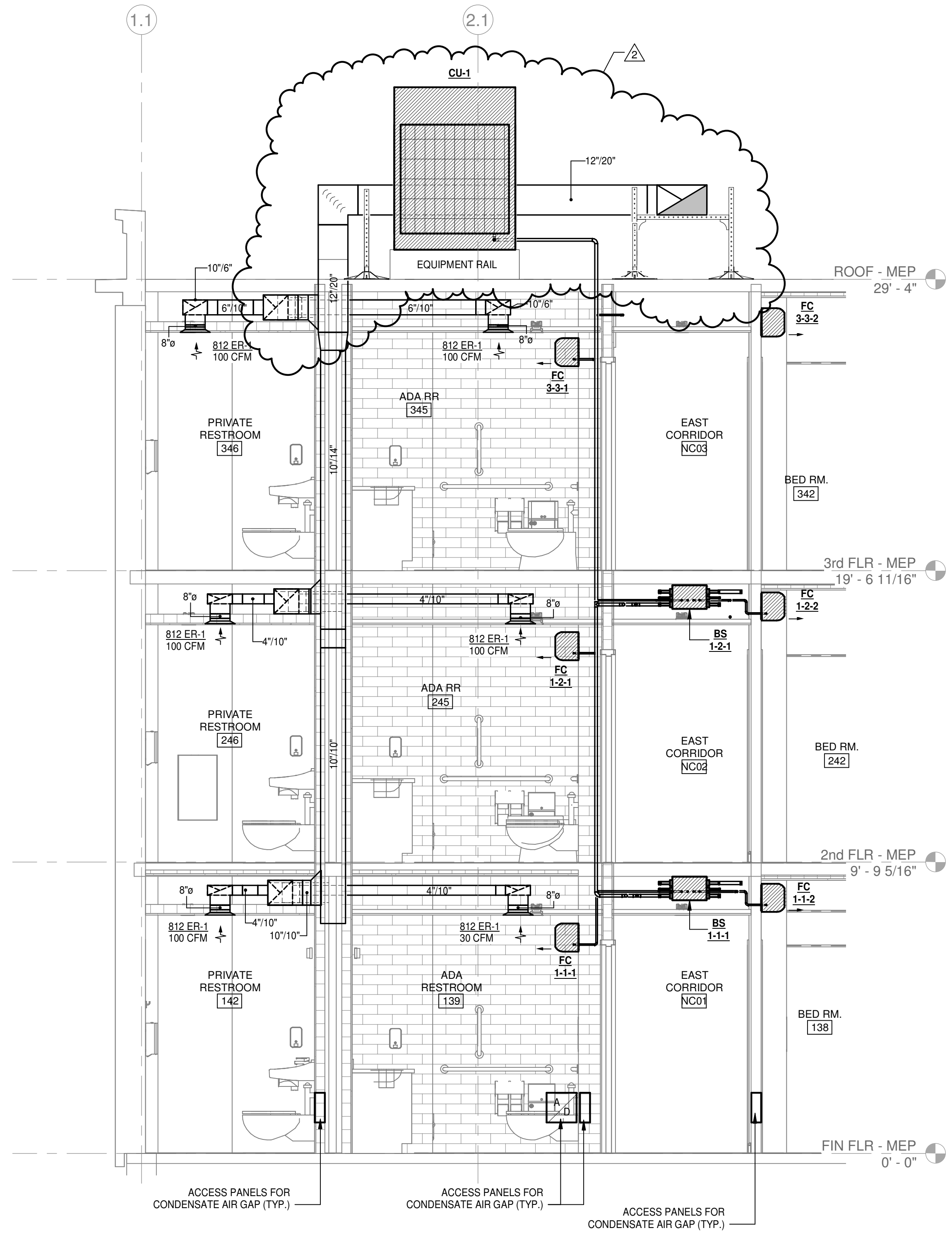
**M1.05R**

ATU JONES HALL ASBUILT 12.12.23  
ALL DUCT IS INSTALLED PER THIS DRAWING

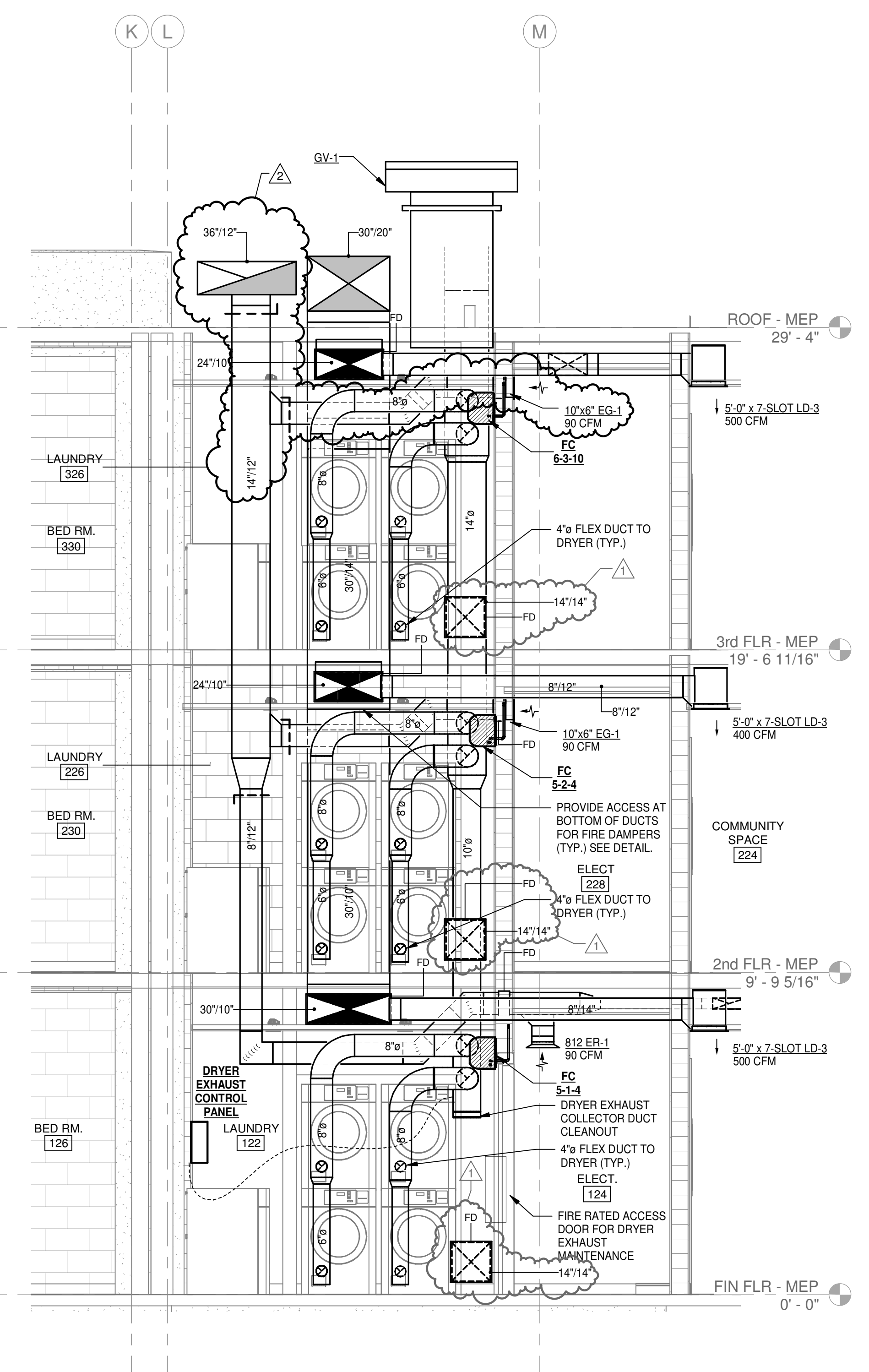




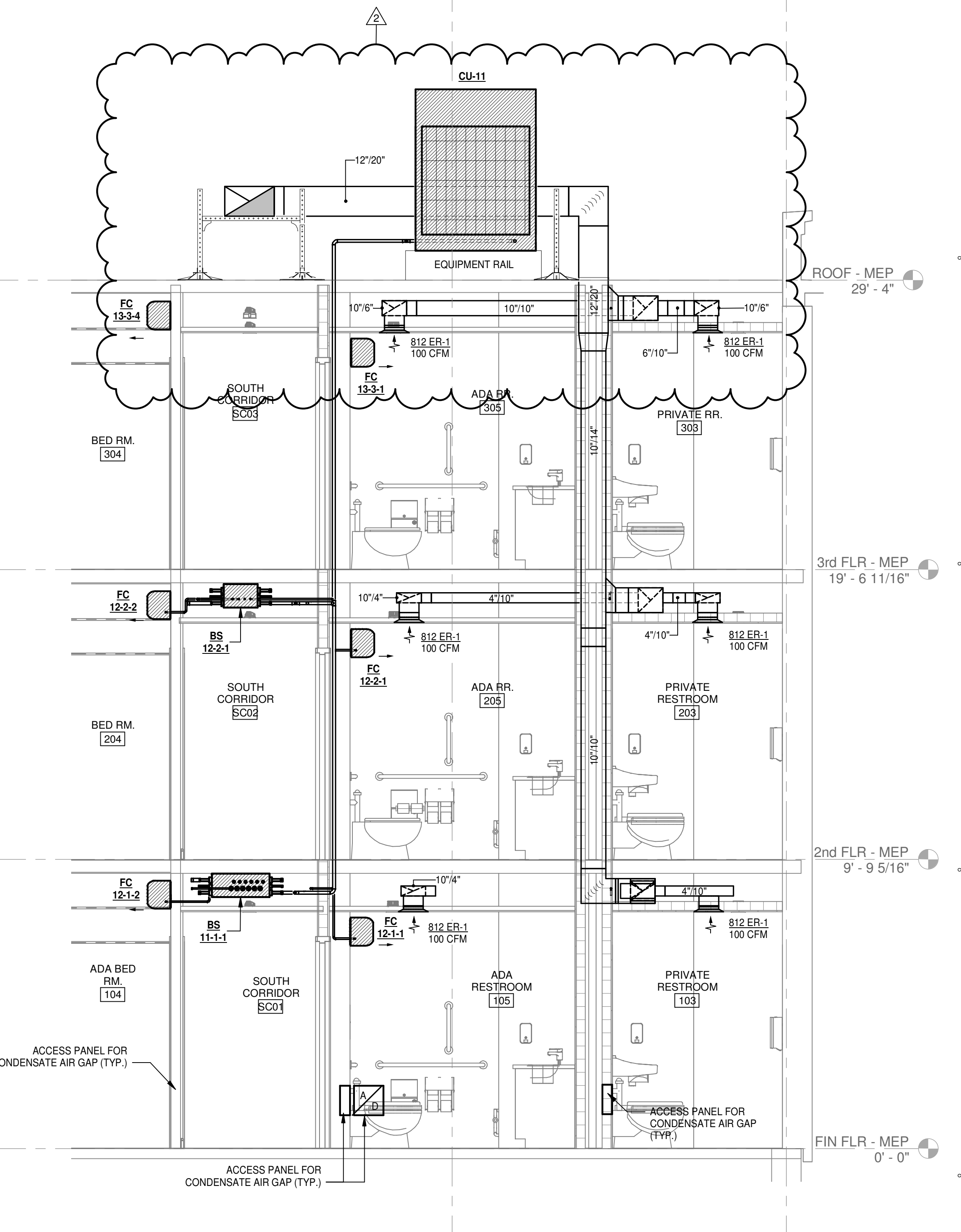
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CONSULTING ENGINEERS, INC.  
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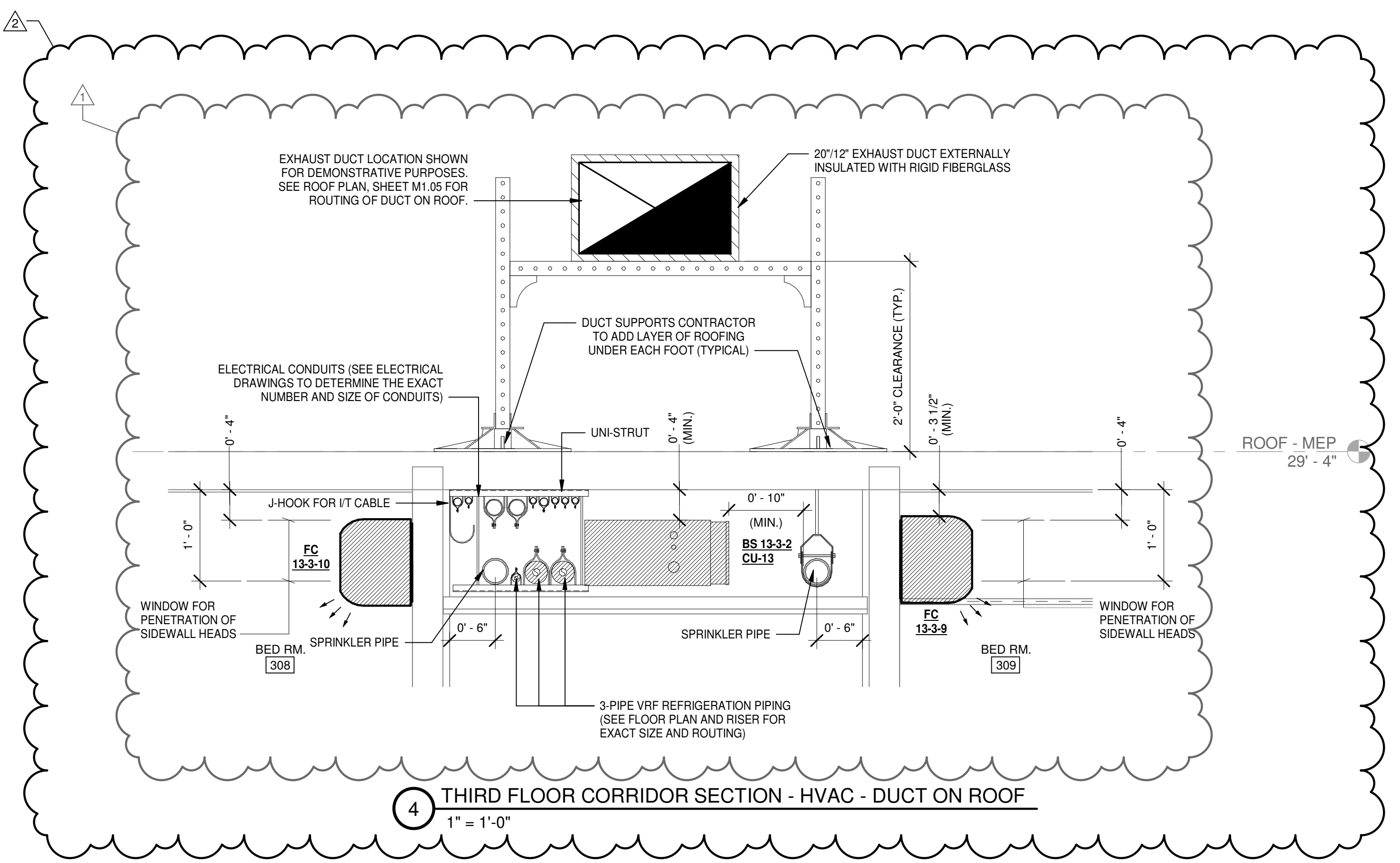
1 RESTROOM 142, 247, & 347 EXHAUST RISER - HVAC  
3/8" = 1'-0"



2 LAUNDRY ROOM EXHAUST / VENTILATION AIR RISER - HVAC  
3/8" = 1'-0"



3 RESTROOM 101, 201, & 301 EXHAUST RISER - HVAC  
3/8" = 1'-0"



4 THIRD FLOOR CORRIDOR SECTION - HVAC - DUCT ON ROOF  
1" = 1'-0"

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Arkansas Tech University  
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REVISIONS		
1	Addendum No. 2	06-02-22
2	RFP 04	11-17-22

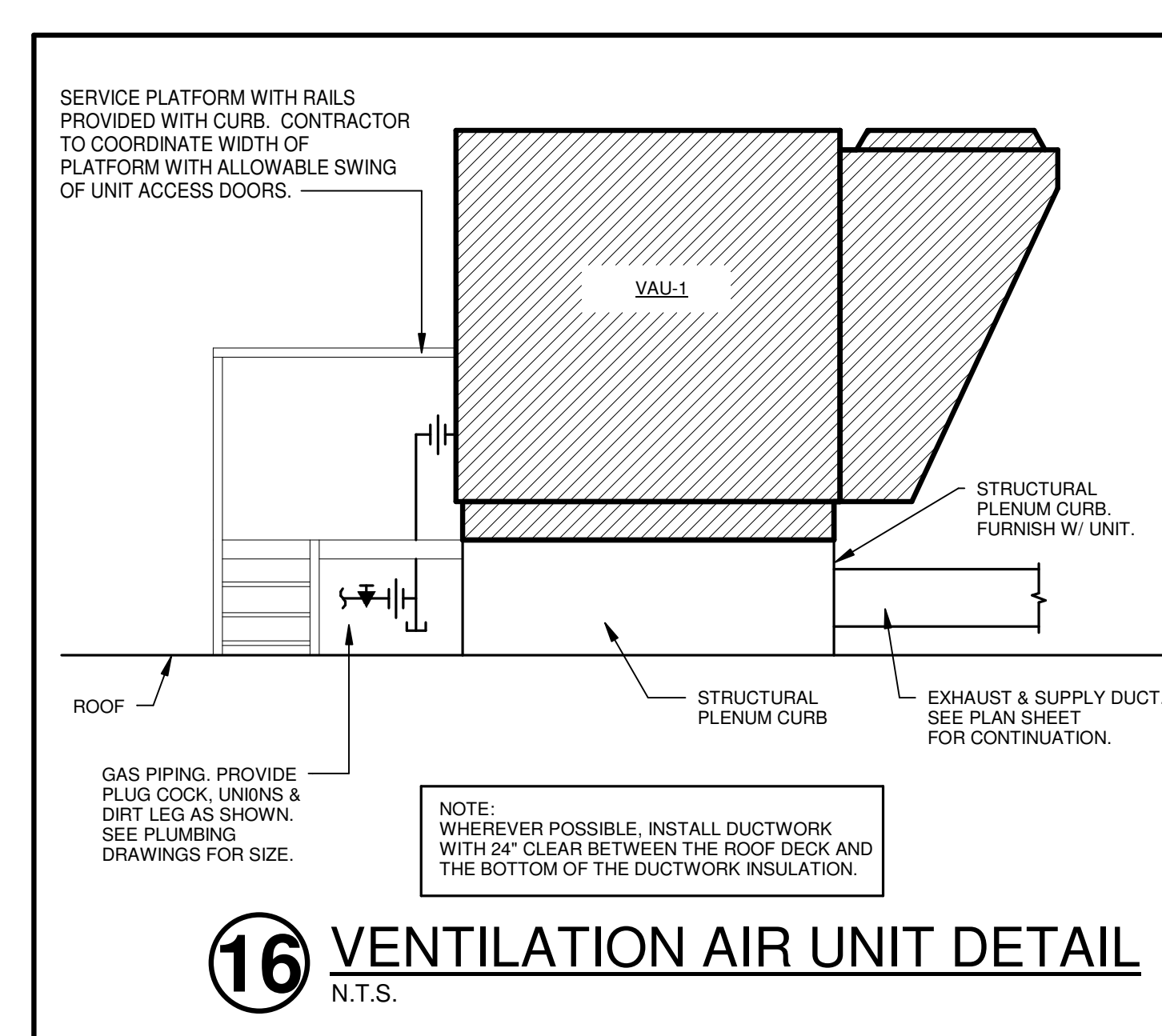
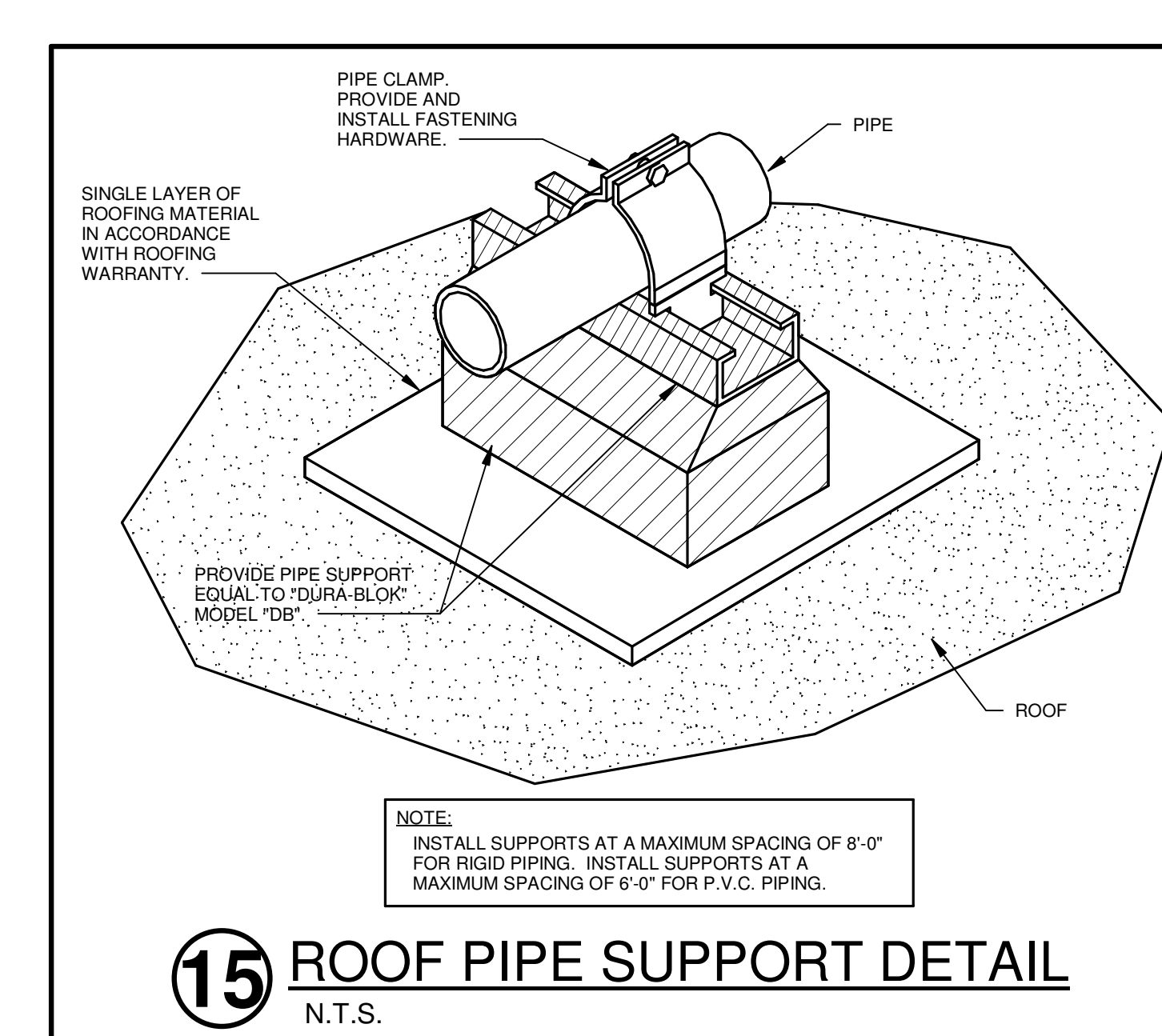
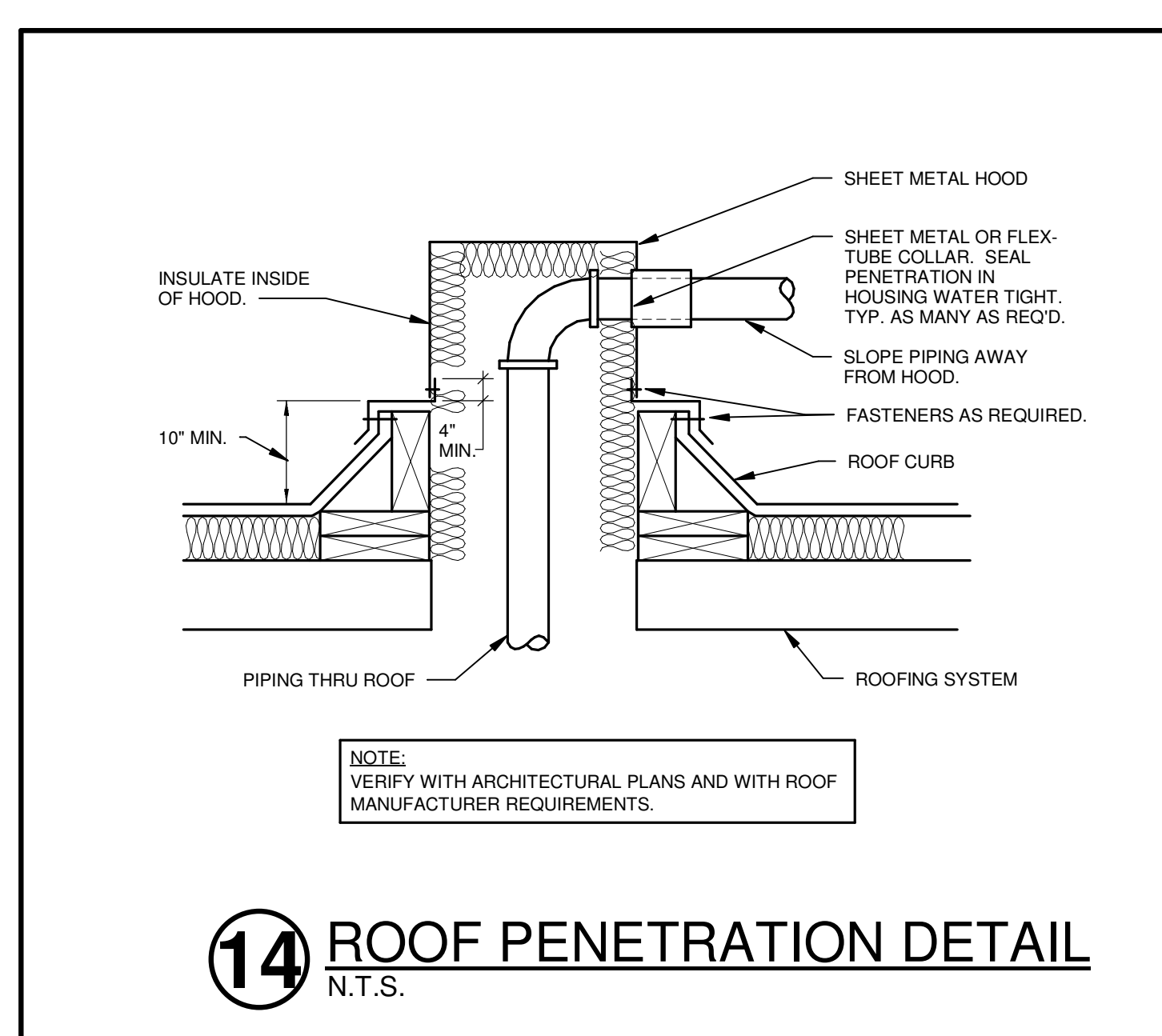
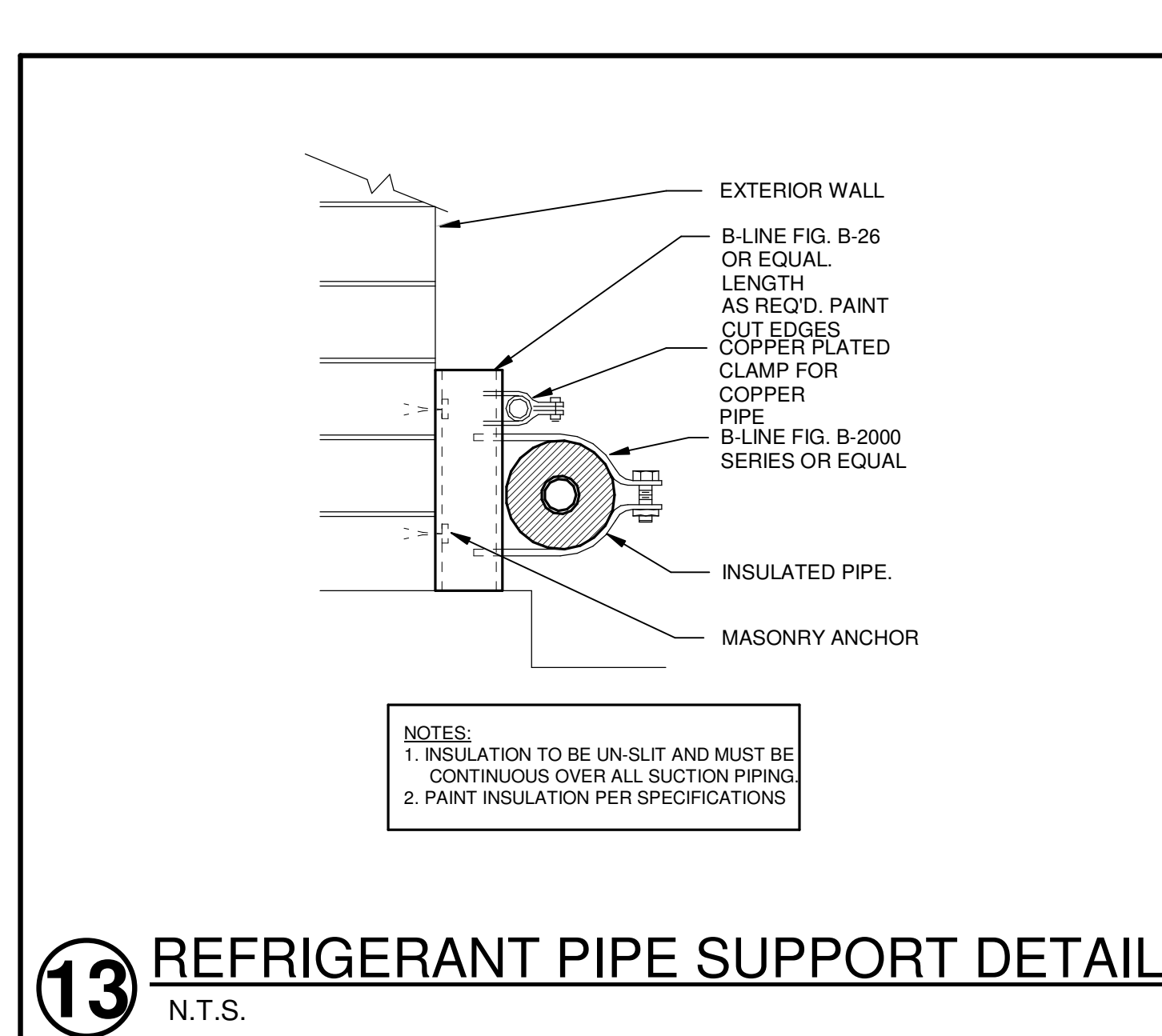
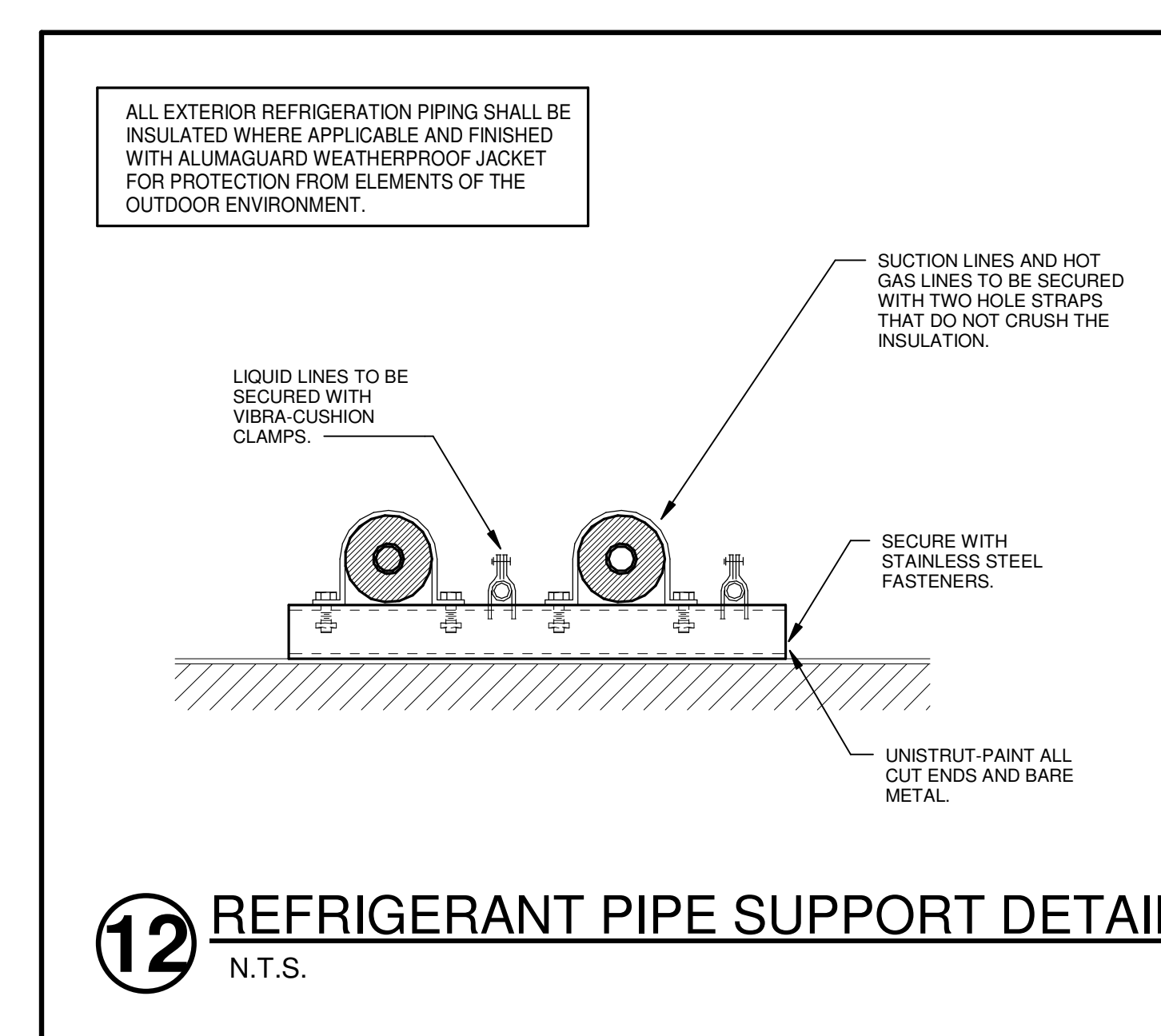
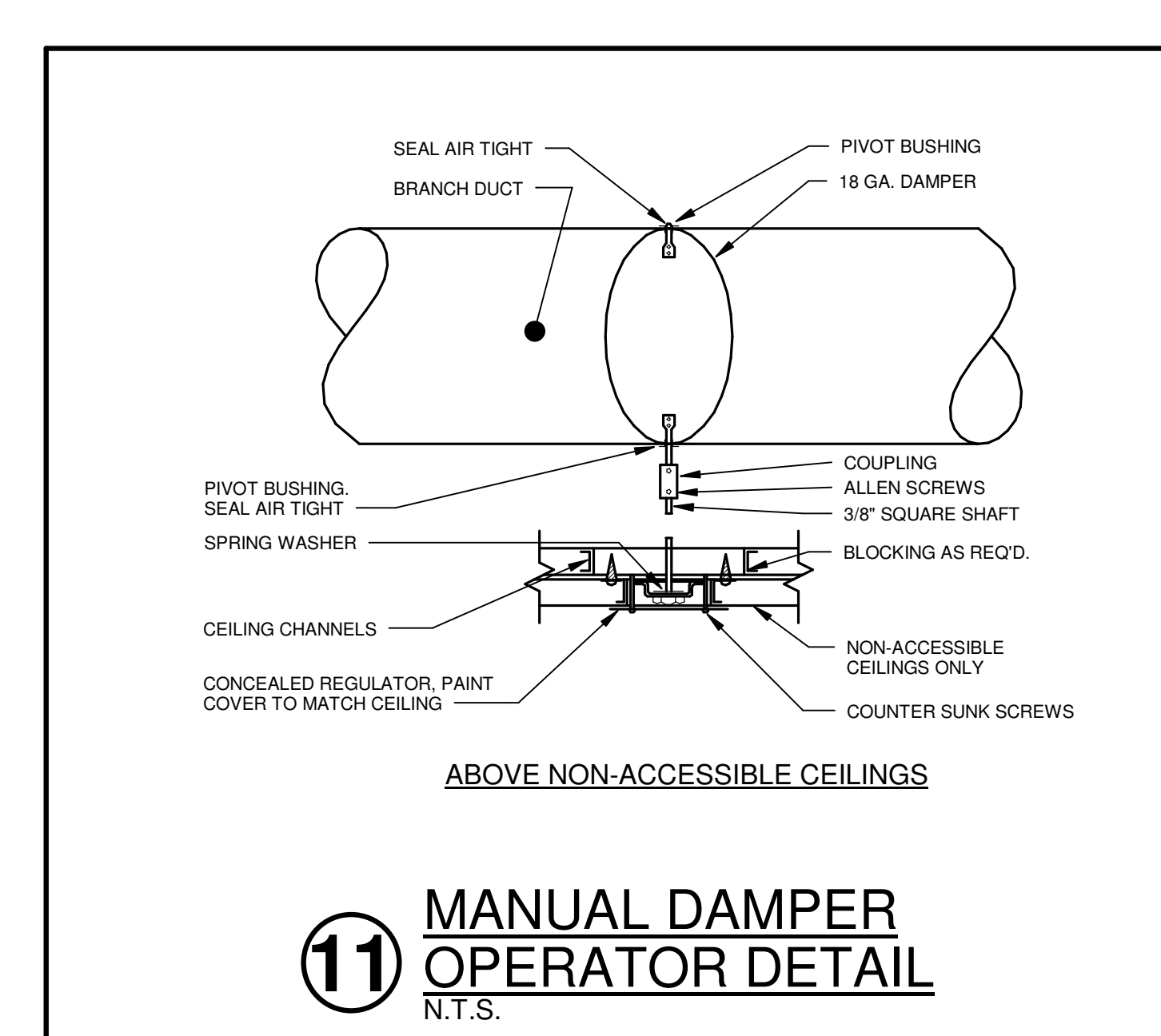
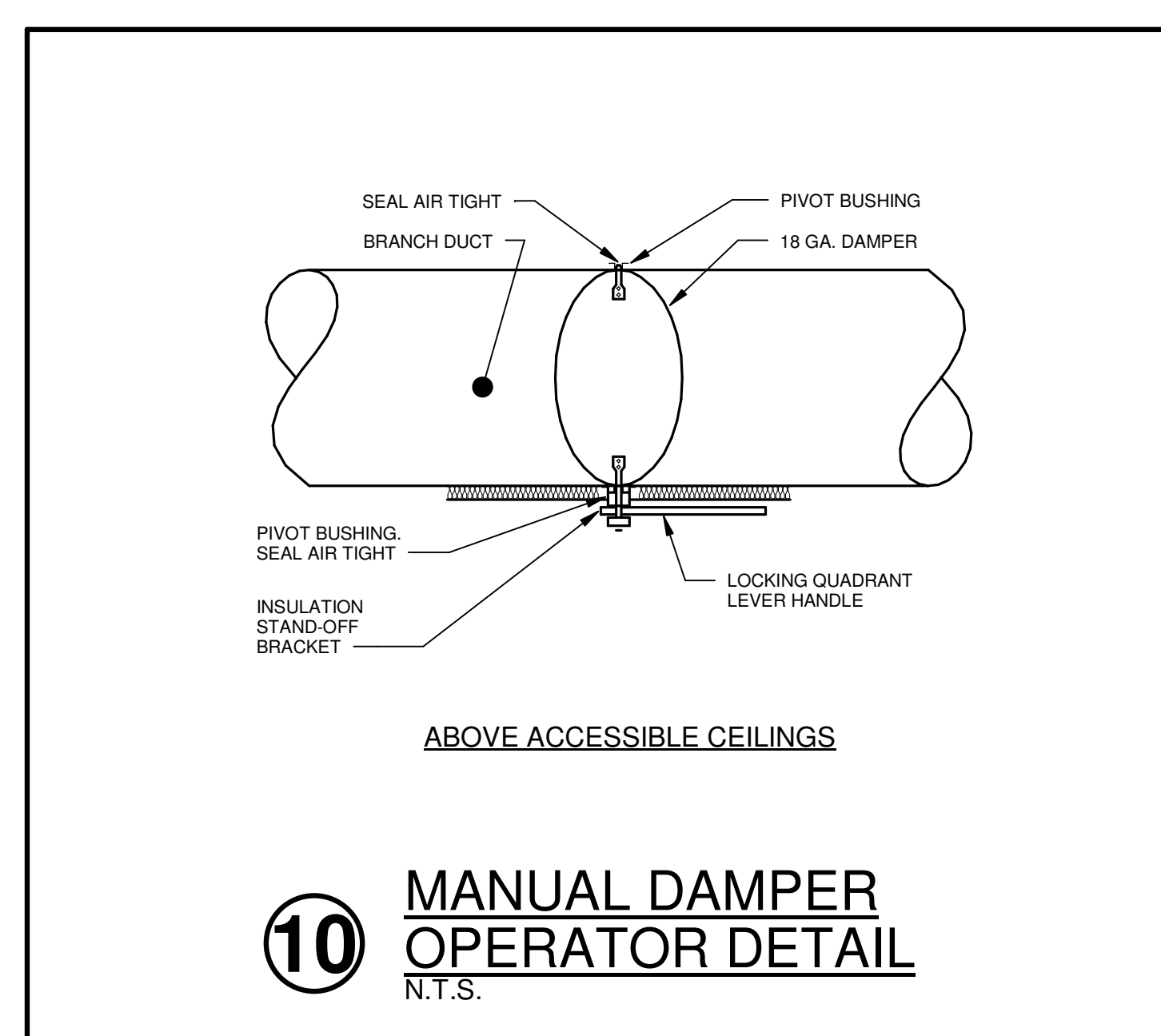
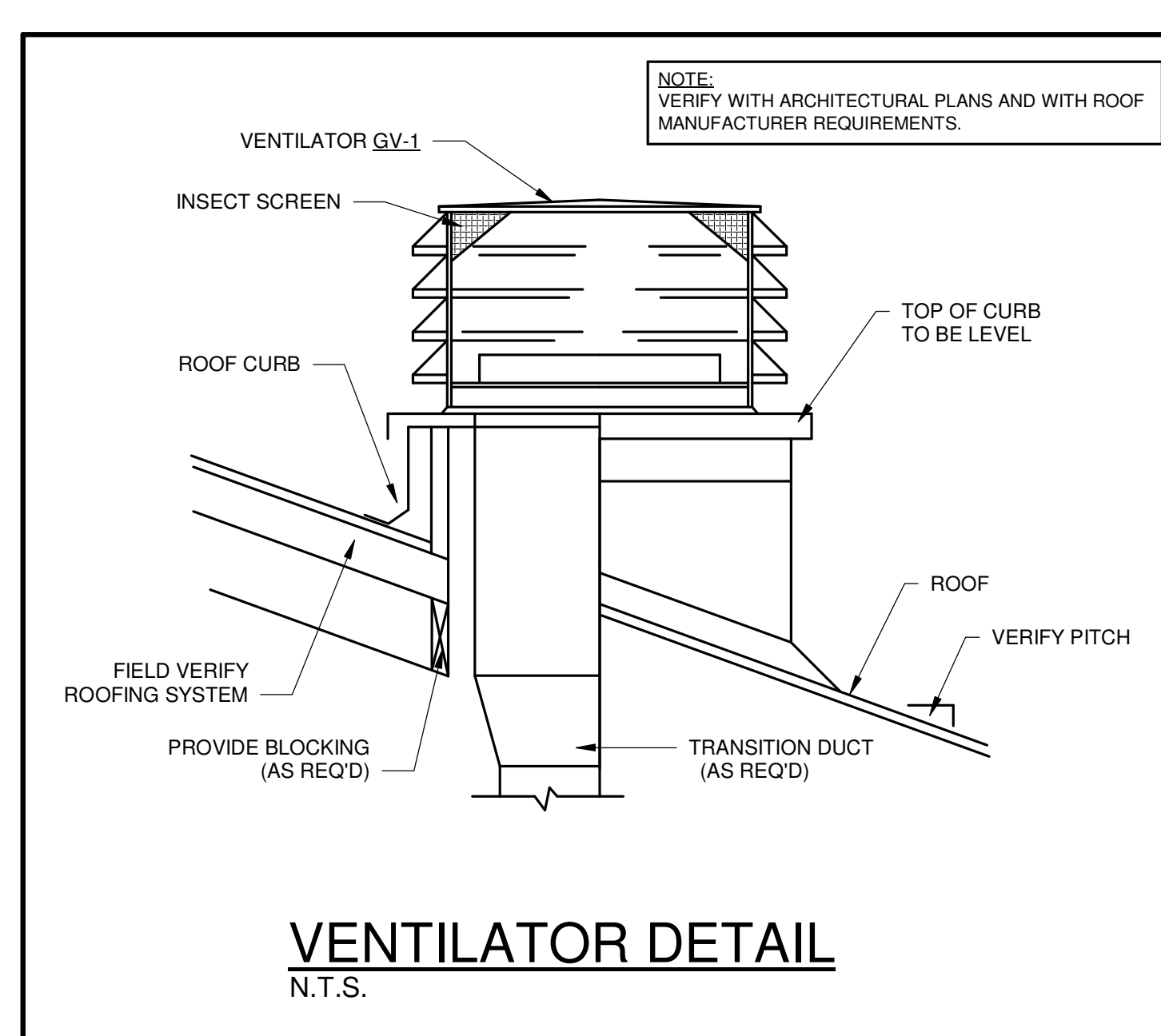
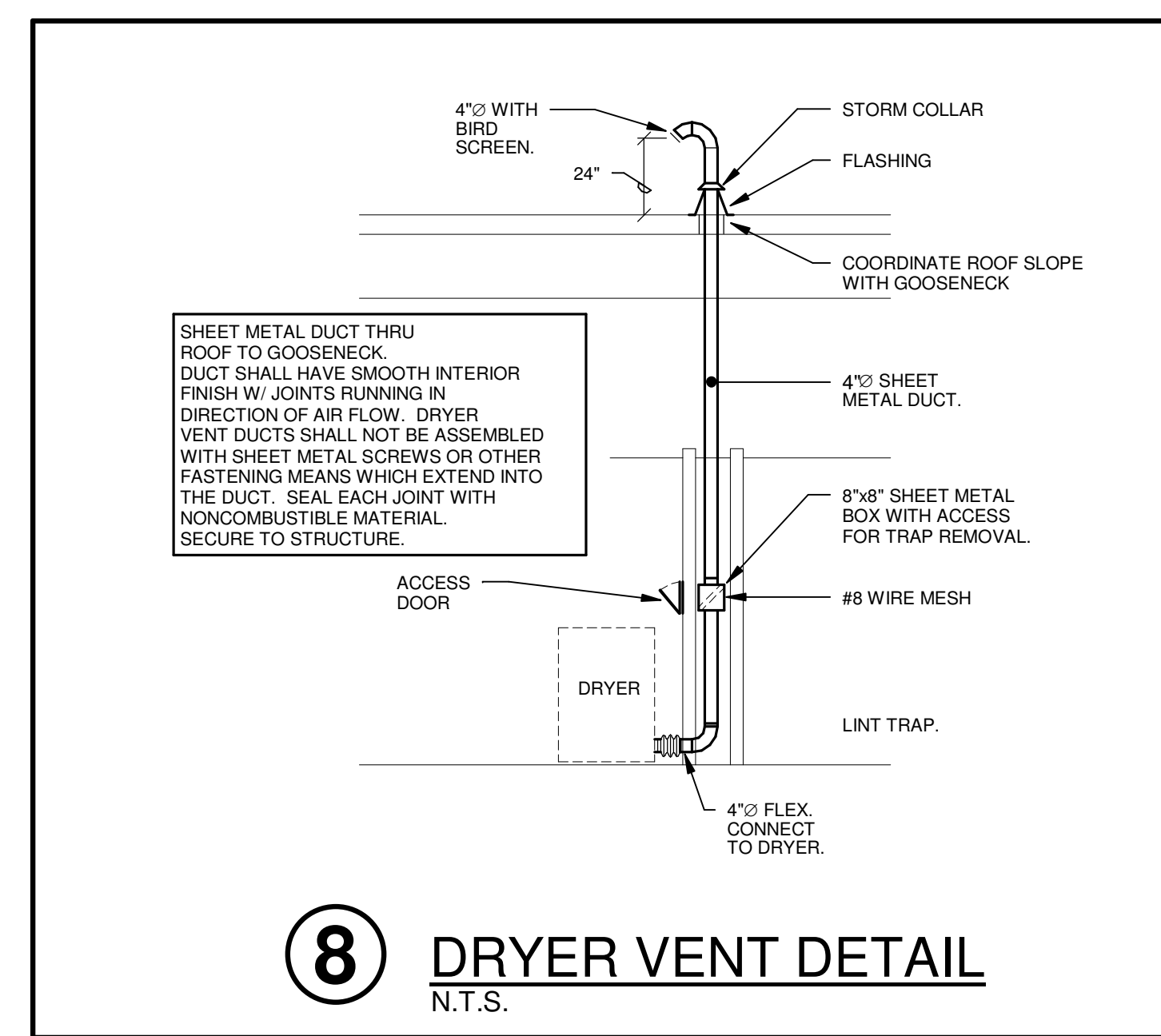
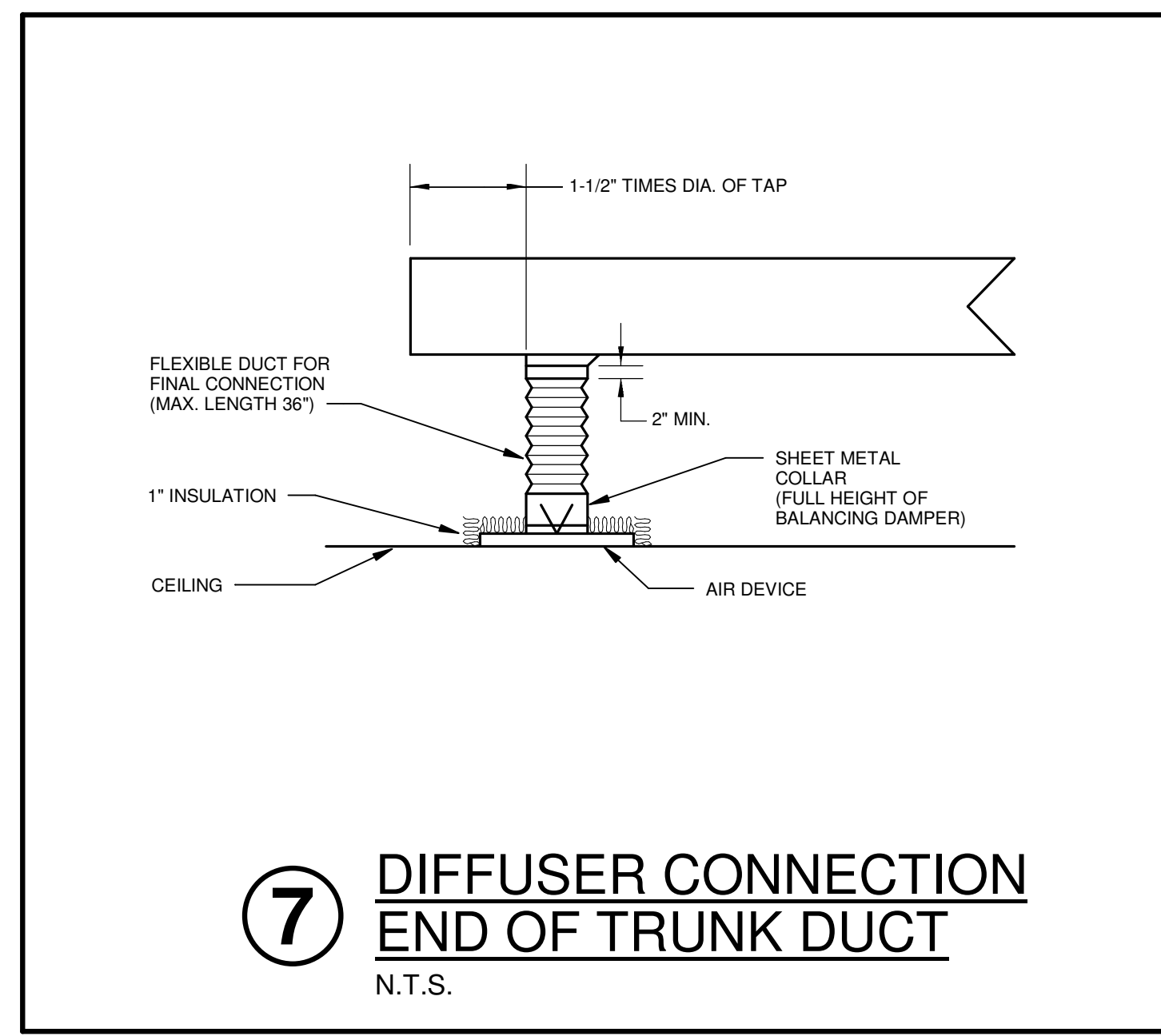
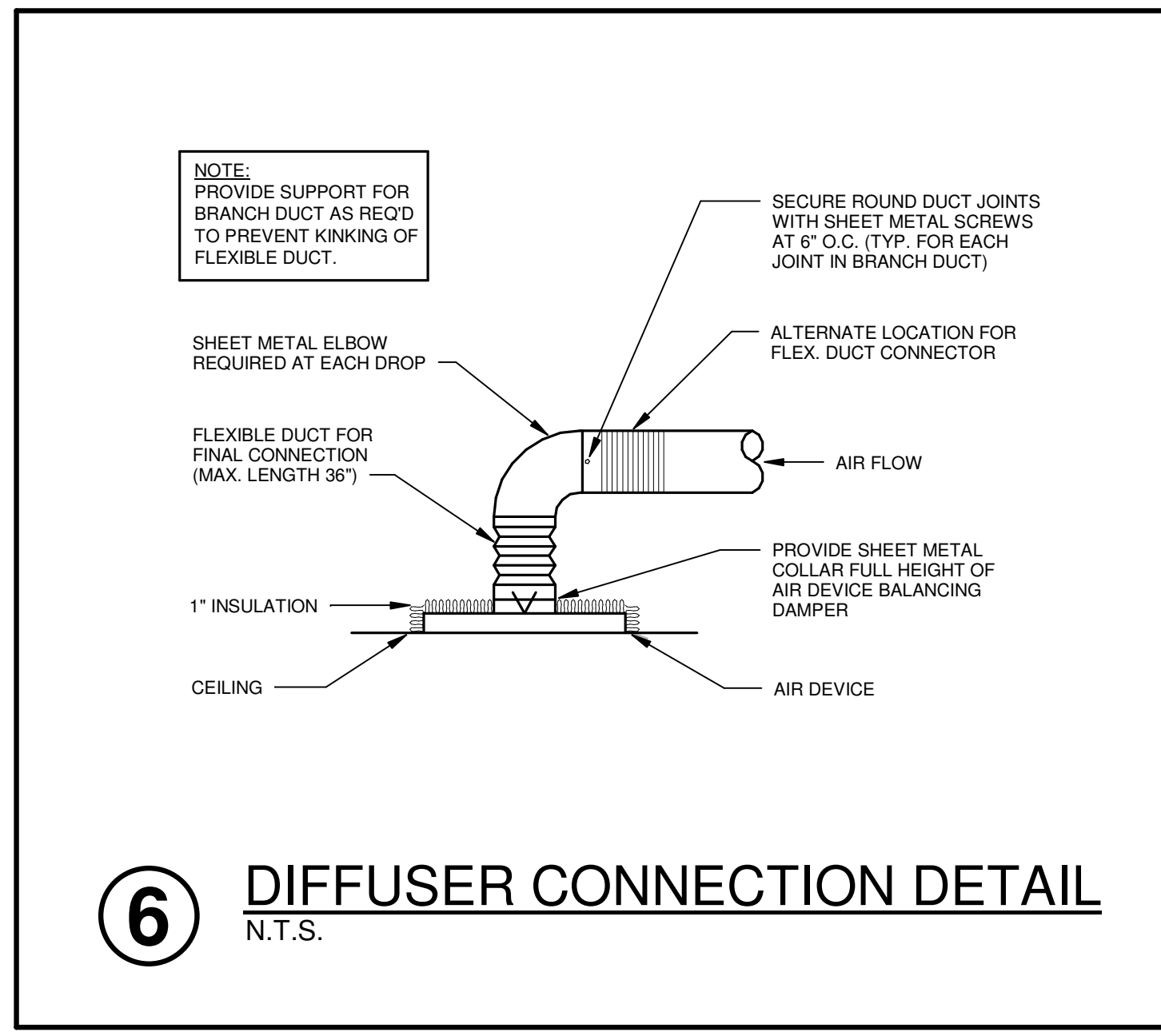
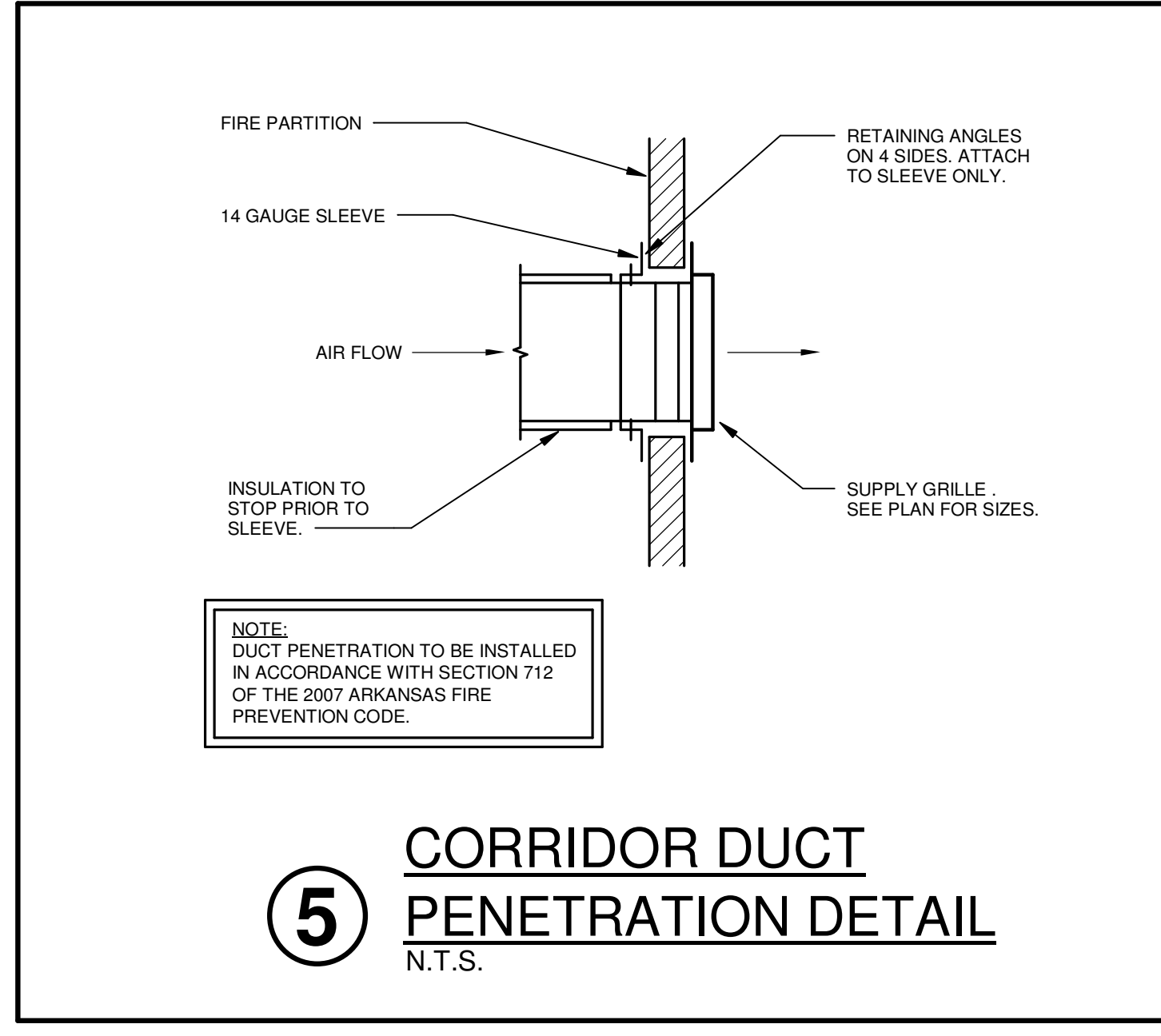
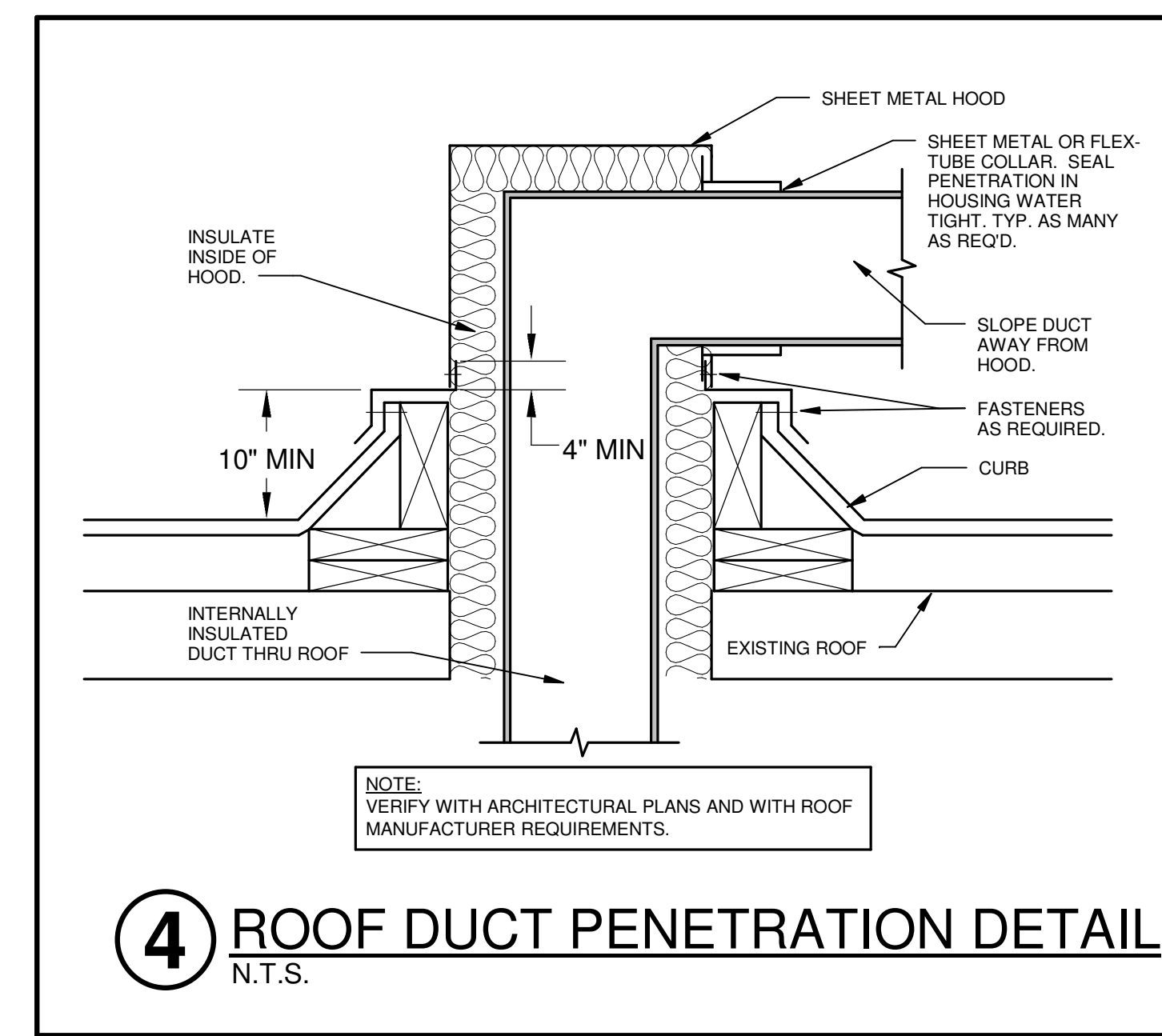
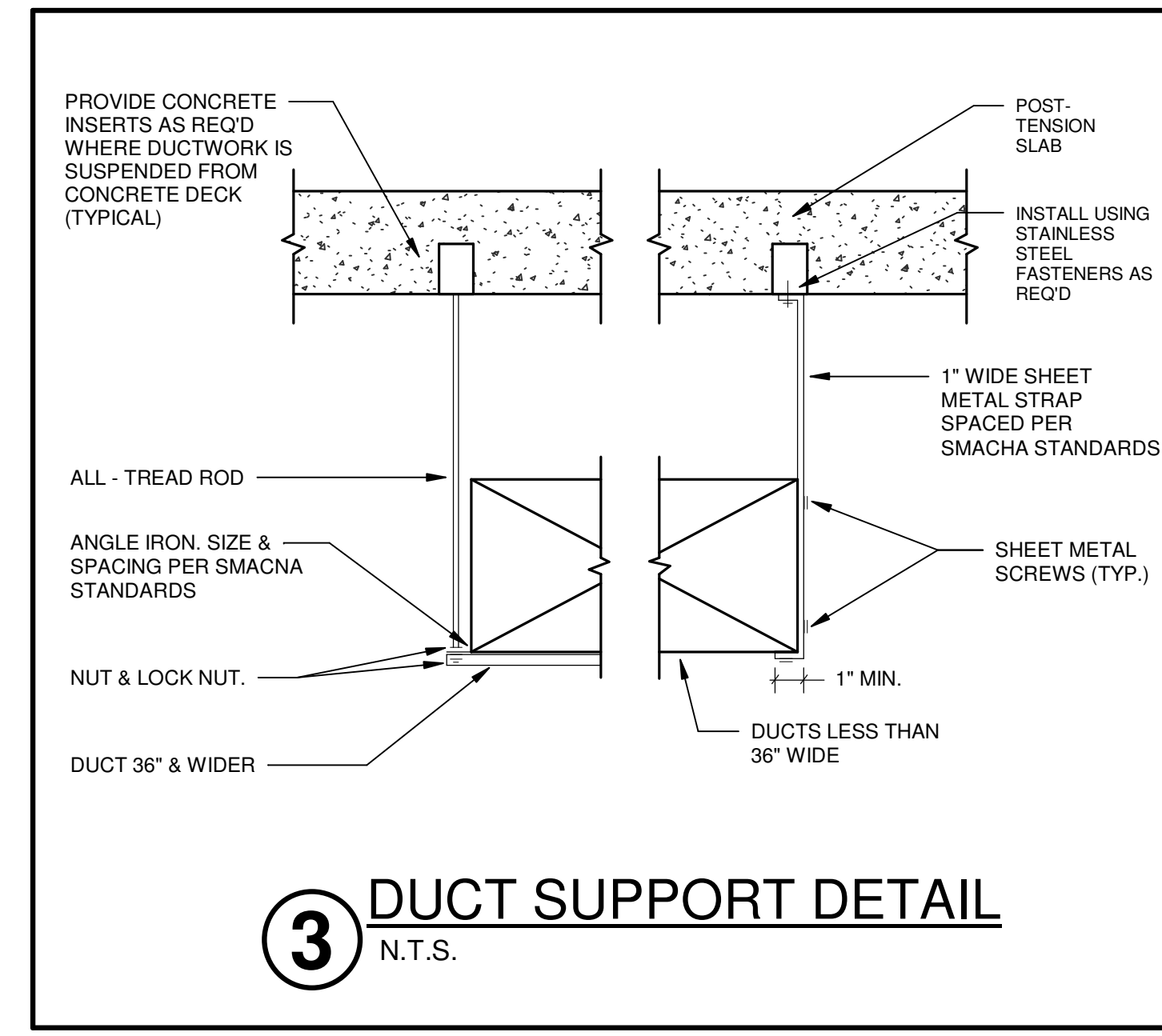
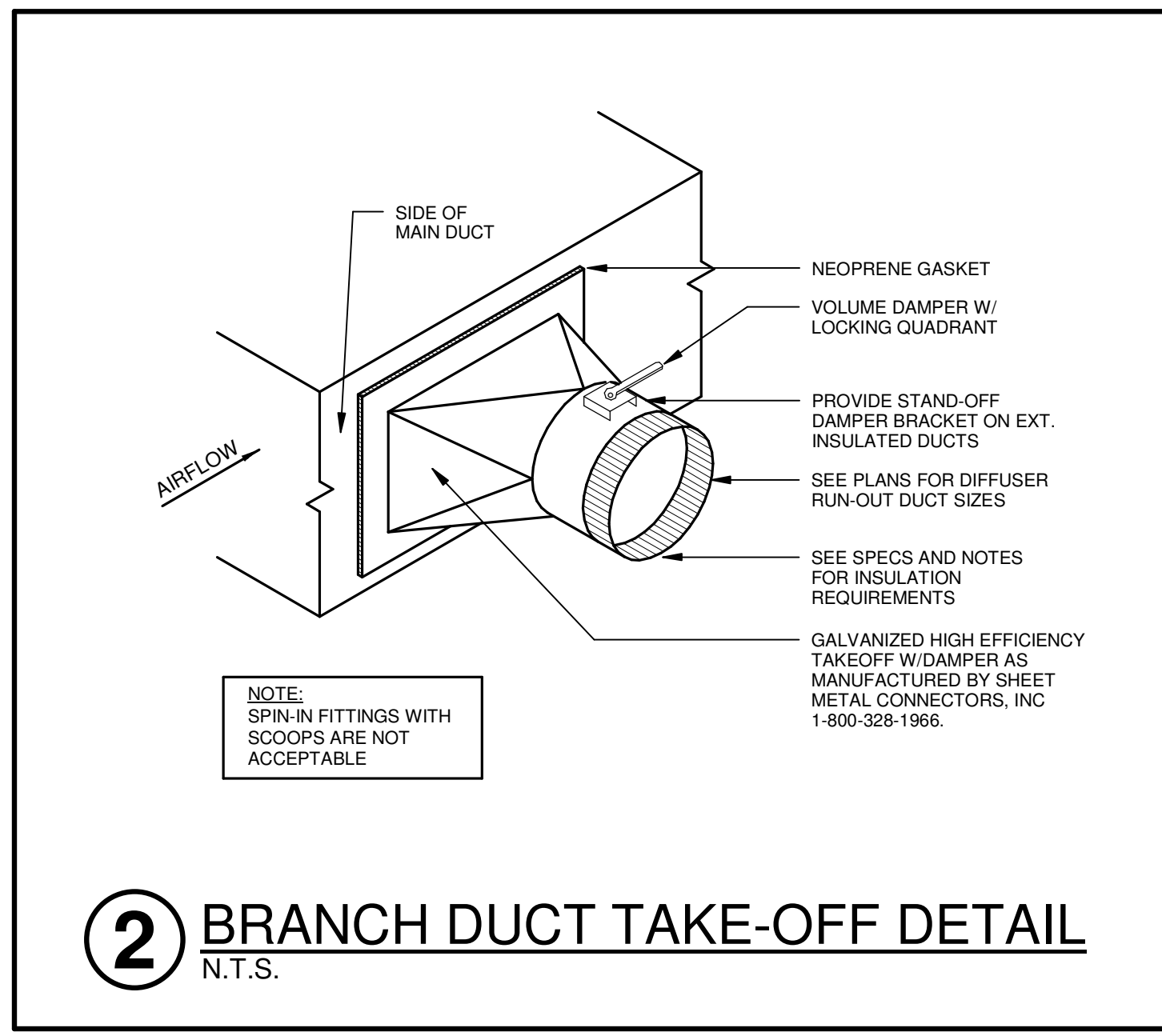
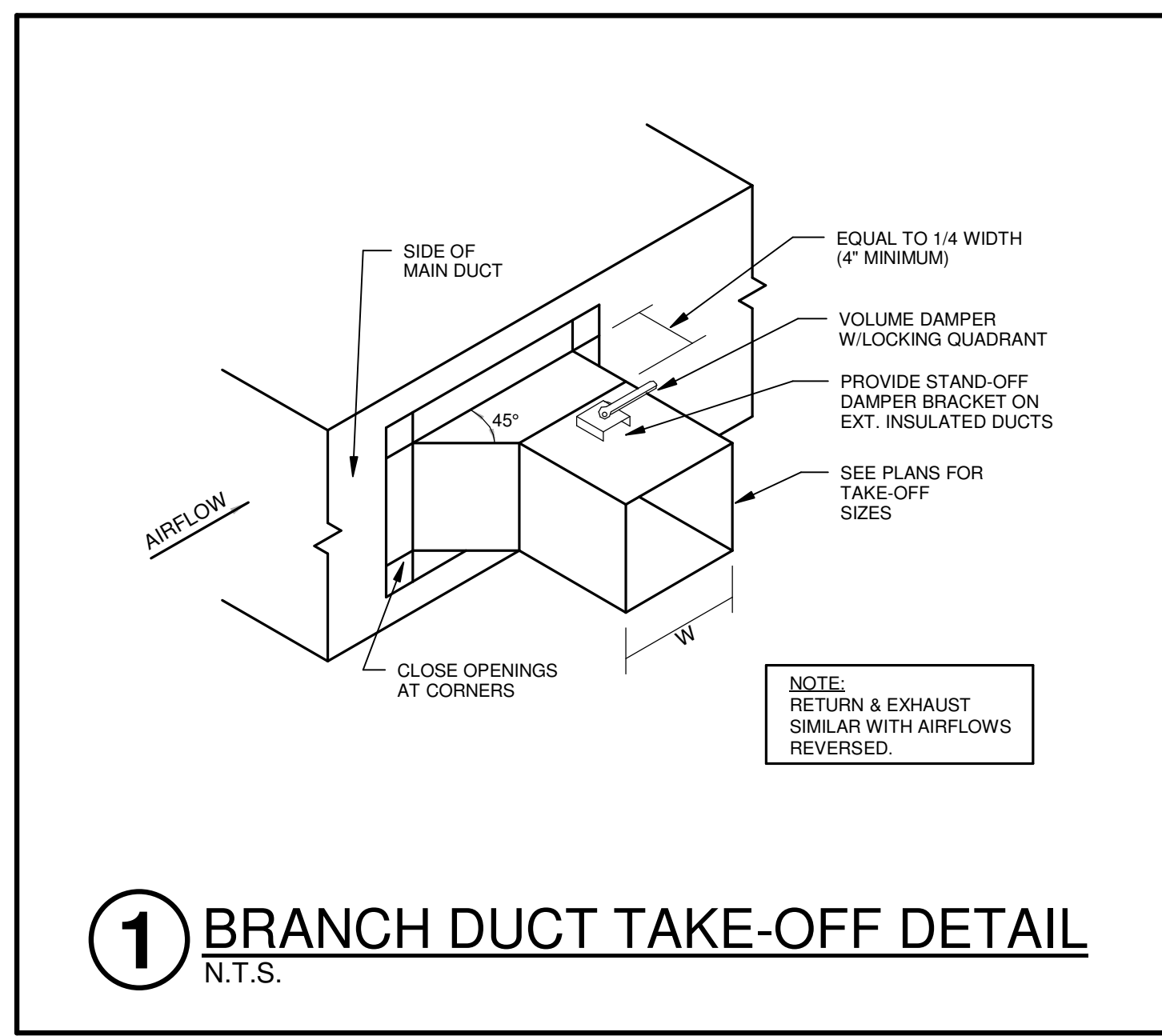
PROJECT NO.  
21054  
DATE:  
May 5, 2022

REVISED HVAC SECTIONS

M2.01R

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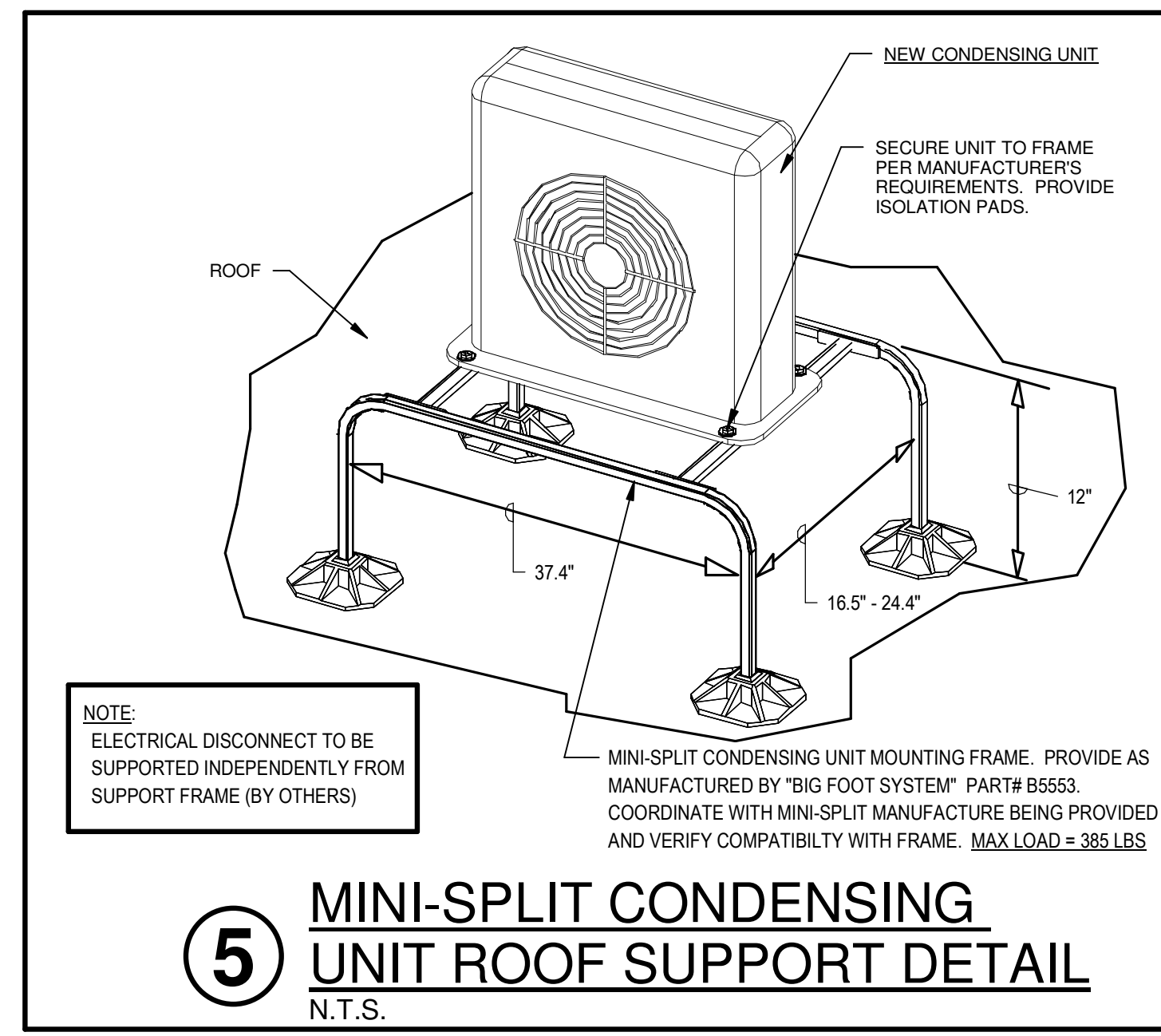
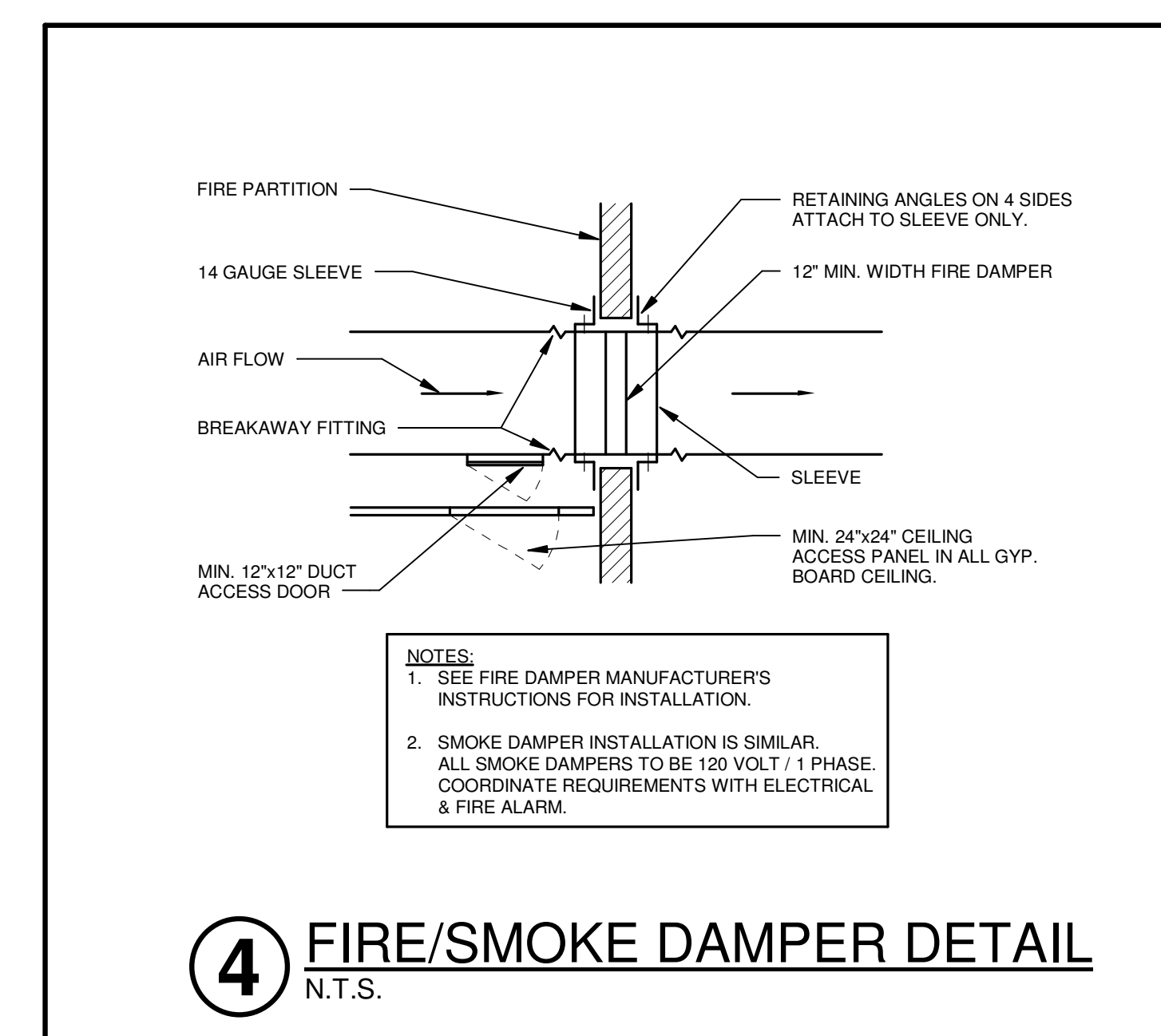
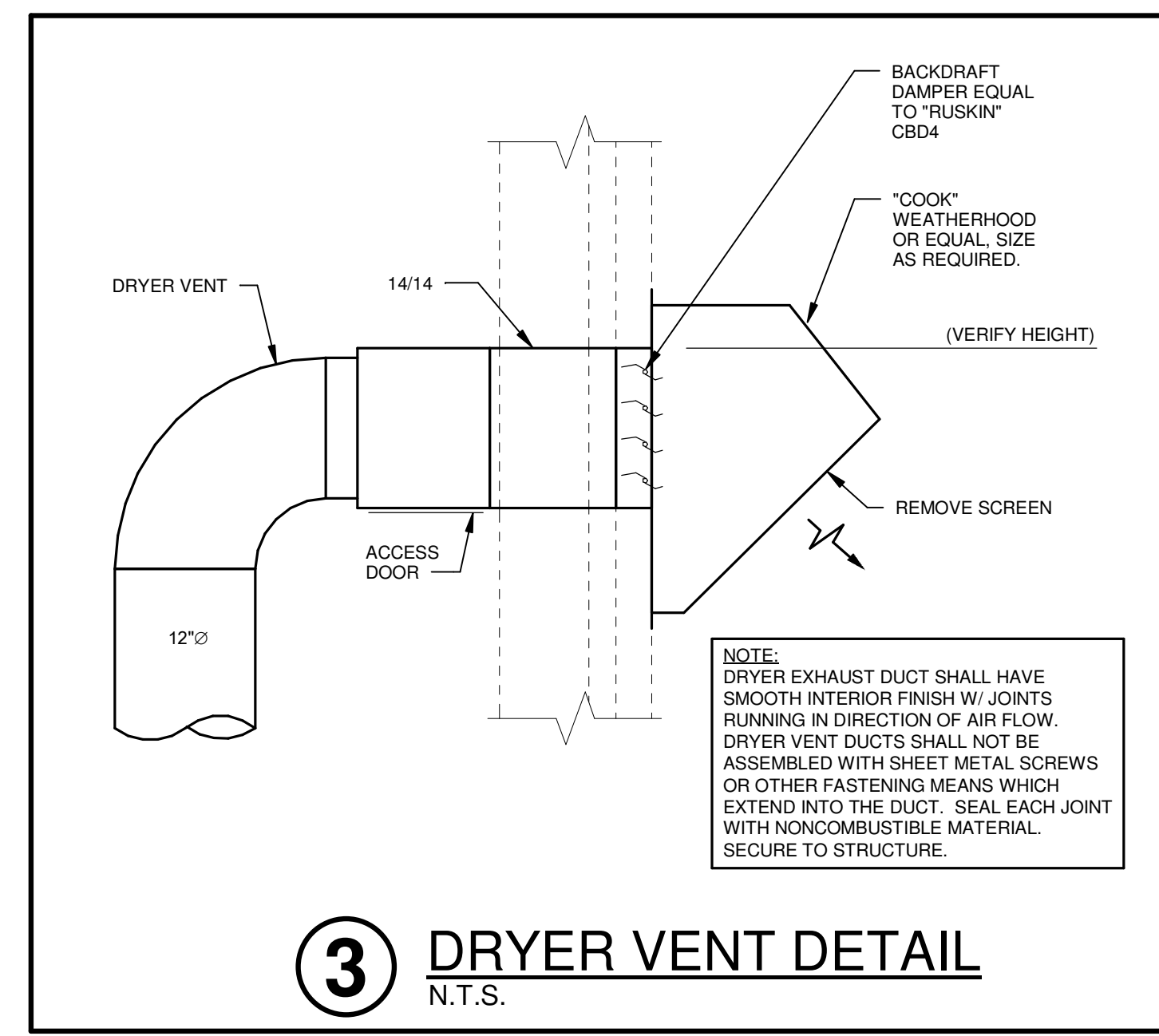
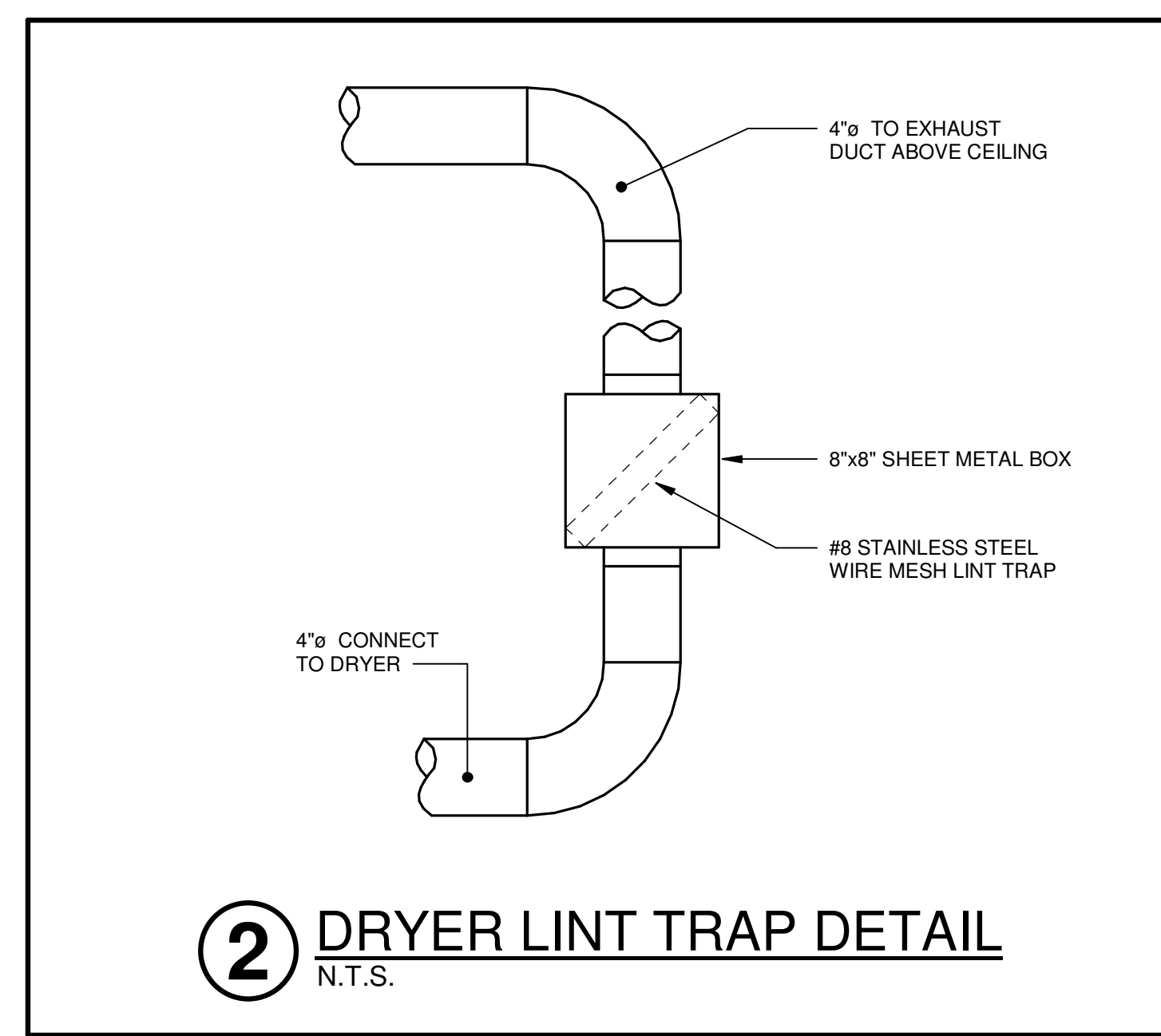
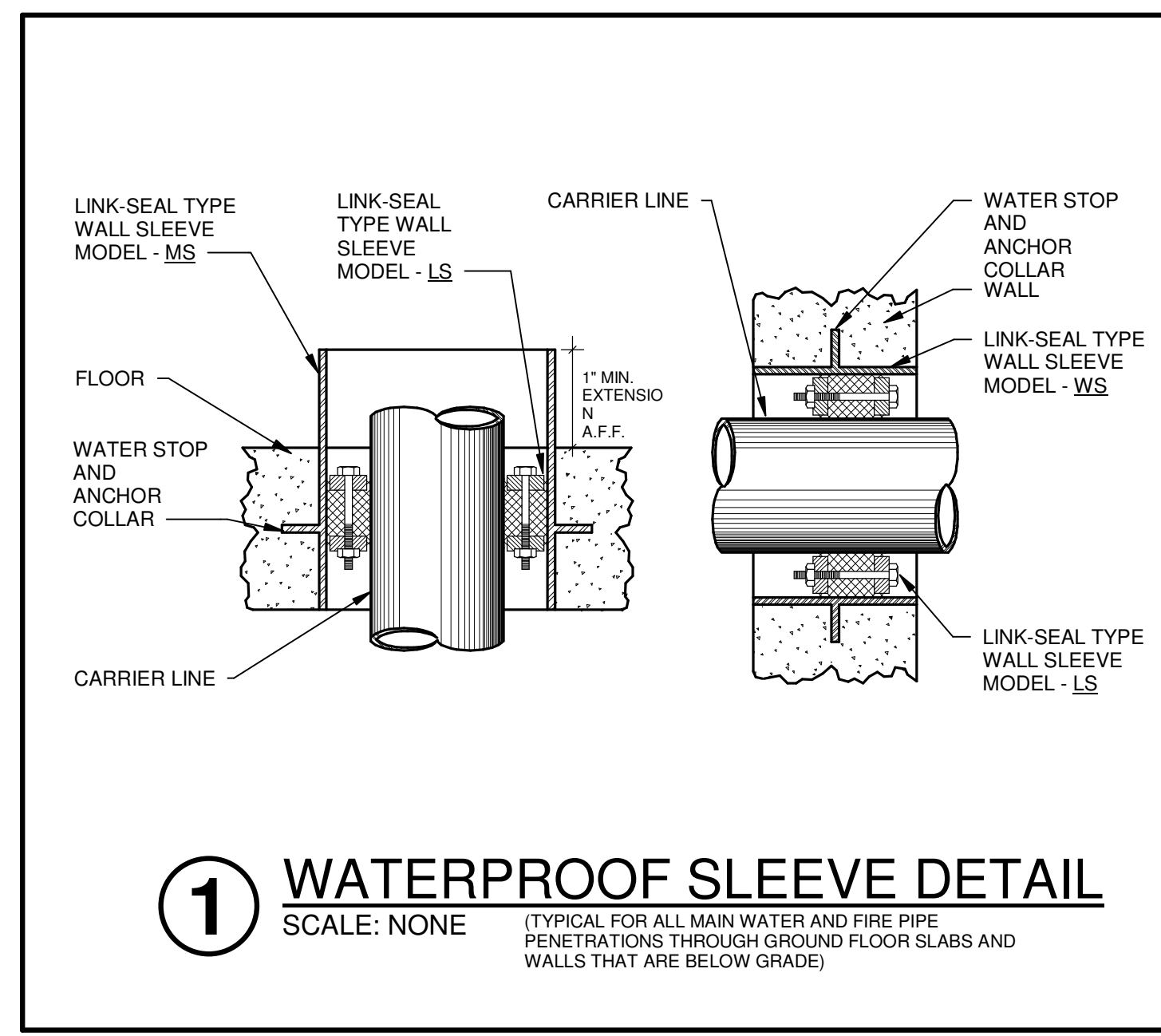
Jones Residence Hall  
Arkansas Tech University  
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REVISIONS  
PROJECT NO. 21054  
DATE: May 5, 2022

HVAC DETAILS  
M3.01

ATU JONES HALL ASBUILT 12.12.23  
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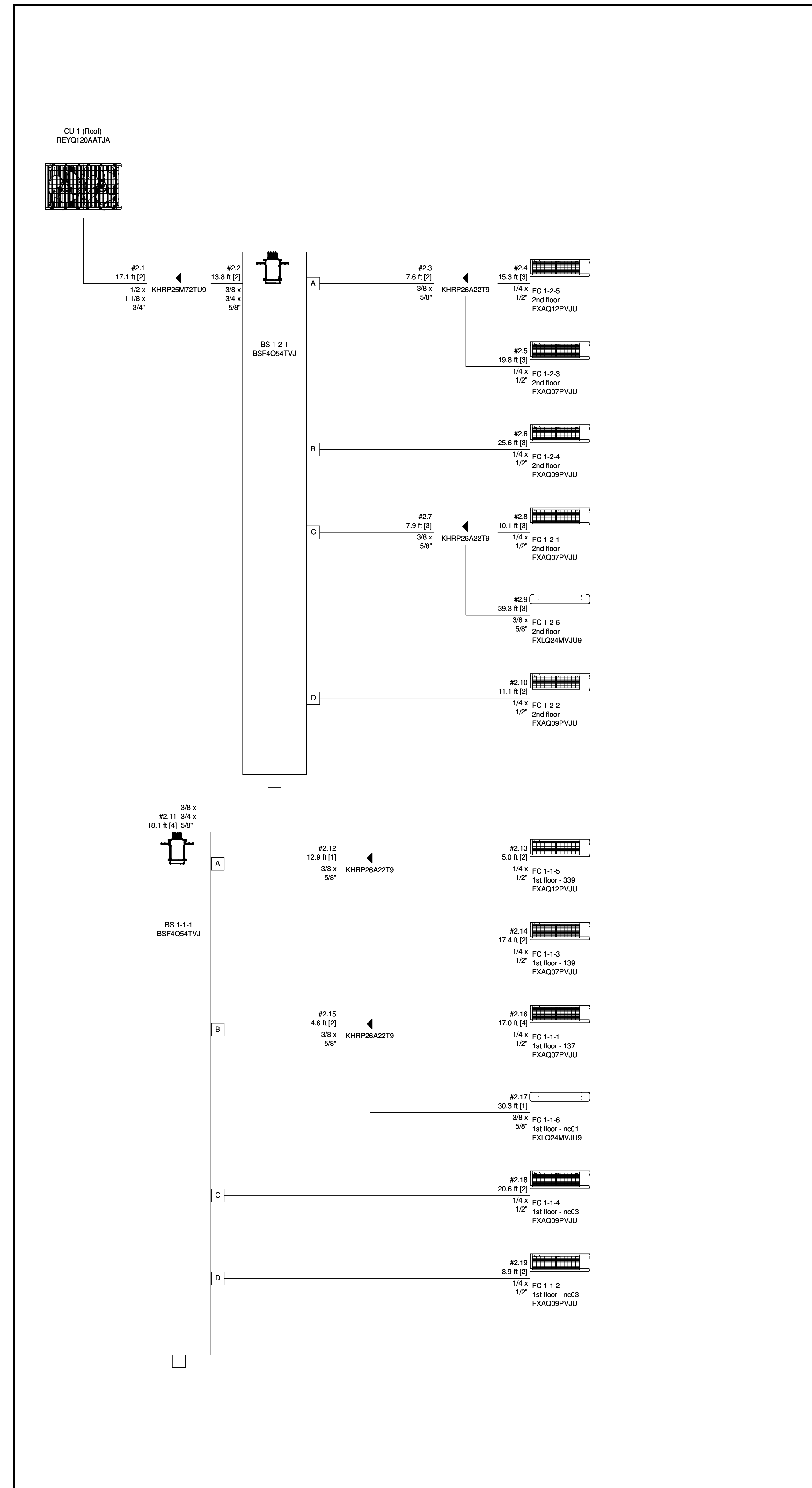


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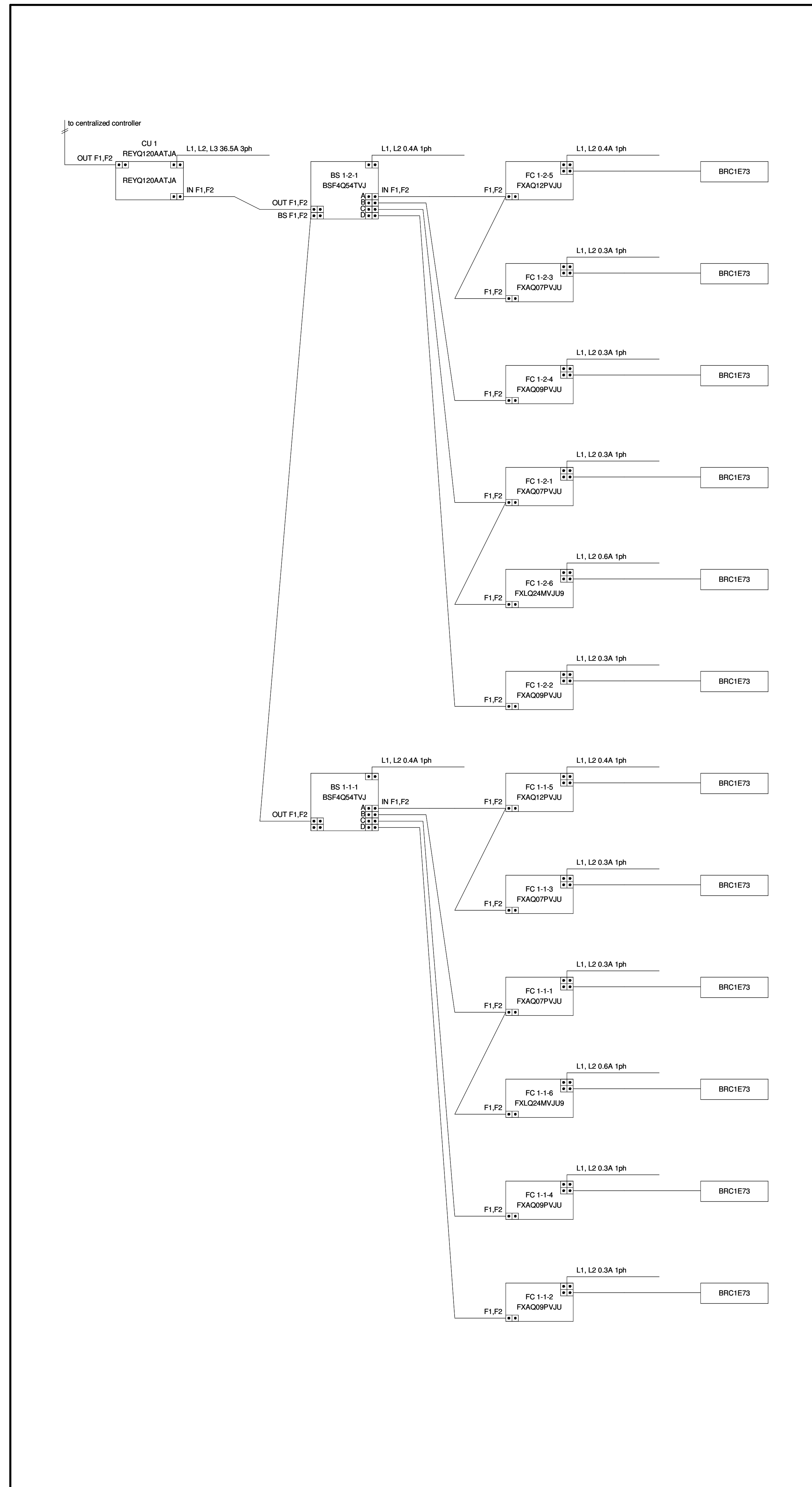


# VRF CONDENSING UNIT (CU-1)

## PIPING DIAGRAM

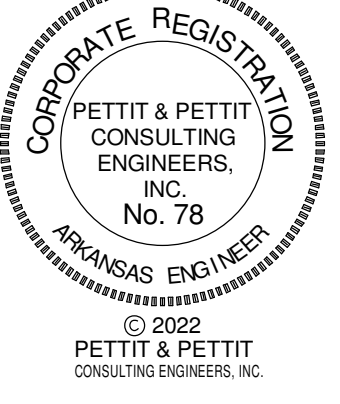


## WIRING DIAGRAM



### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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May 5, 2022

VRV RISER  
DIAGRAM - HVAC

**M4.01**

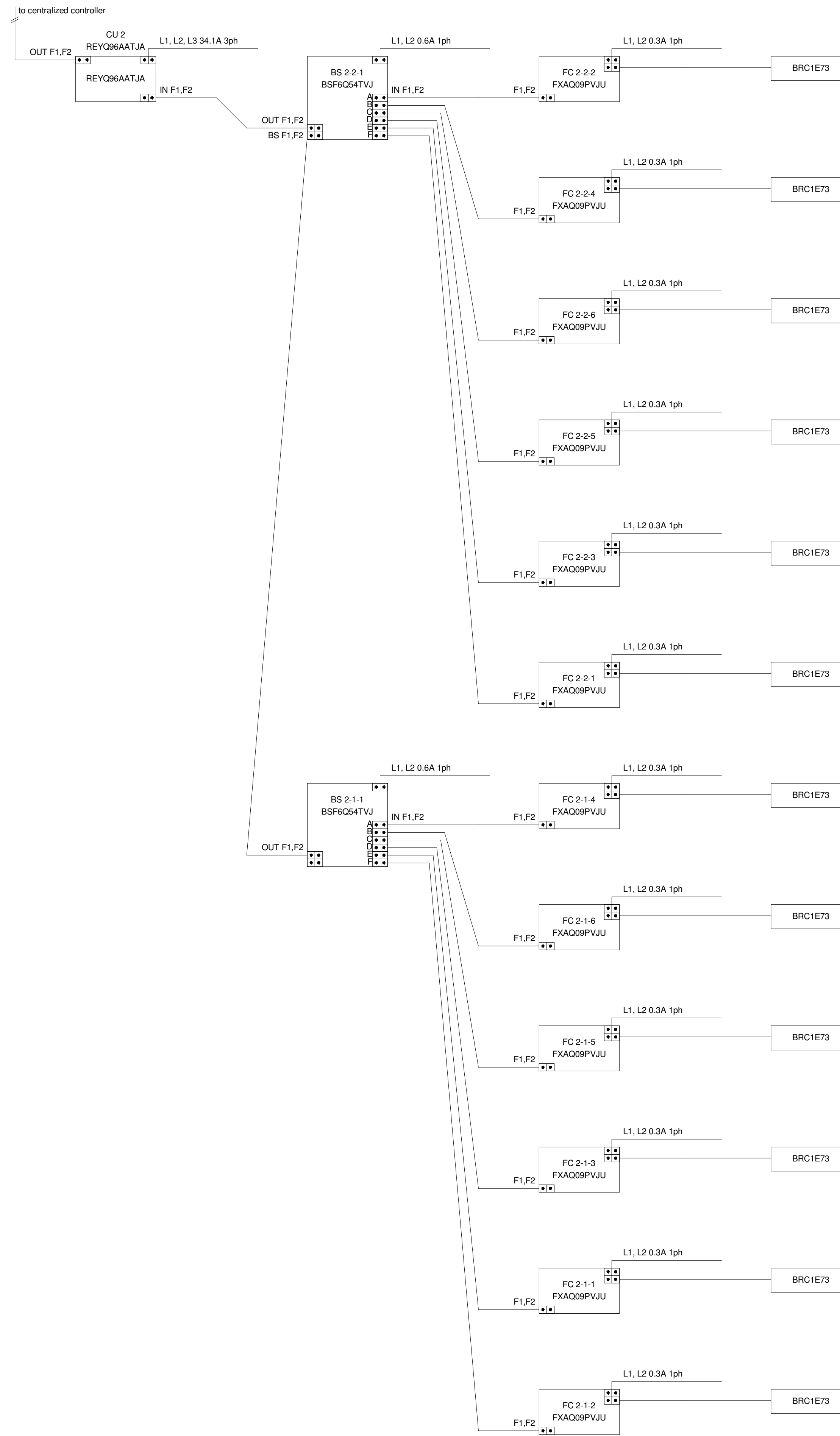
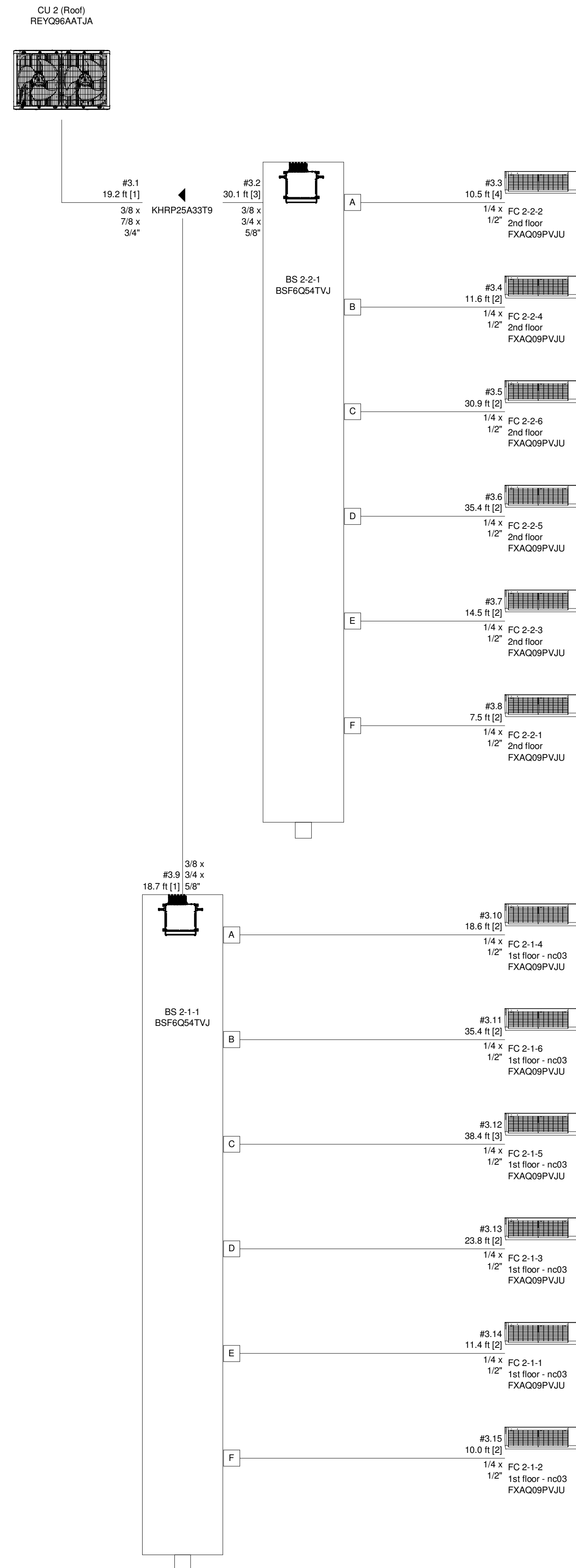
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ALL DUCT IS INSTALLED PER THIS DRAWING



# VRF CONDENSING UNIT (CU-2)

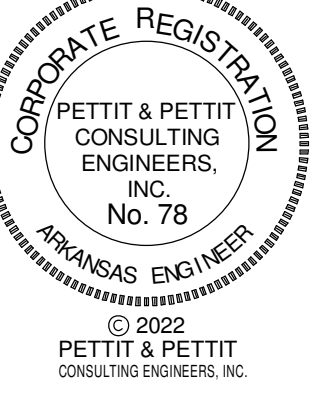
## PIPING DIAGRAM

## WIRING DIAGRAM



### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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**Arkansas Tech University**  
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### REVISIONS

PROJECT NO.  
21054  
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May 5, 2022

VRV RISER  
DIAGRAM - HVAC

**M4.02**

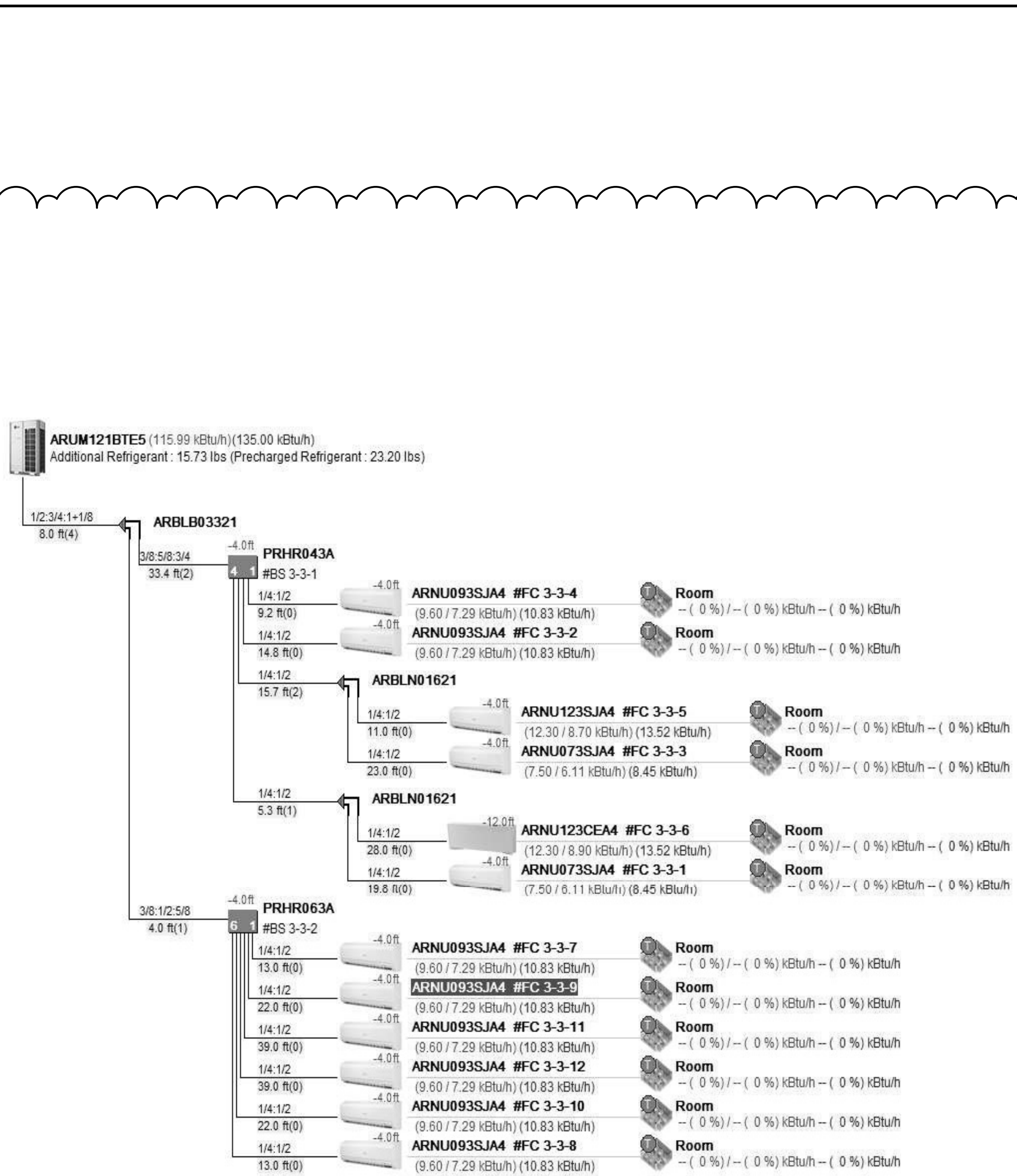
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ALL DUCT IS INSTALLED PER THIS DRAWING



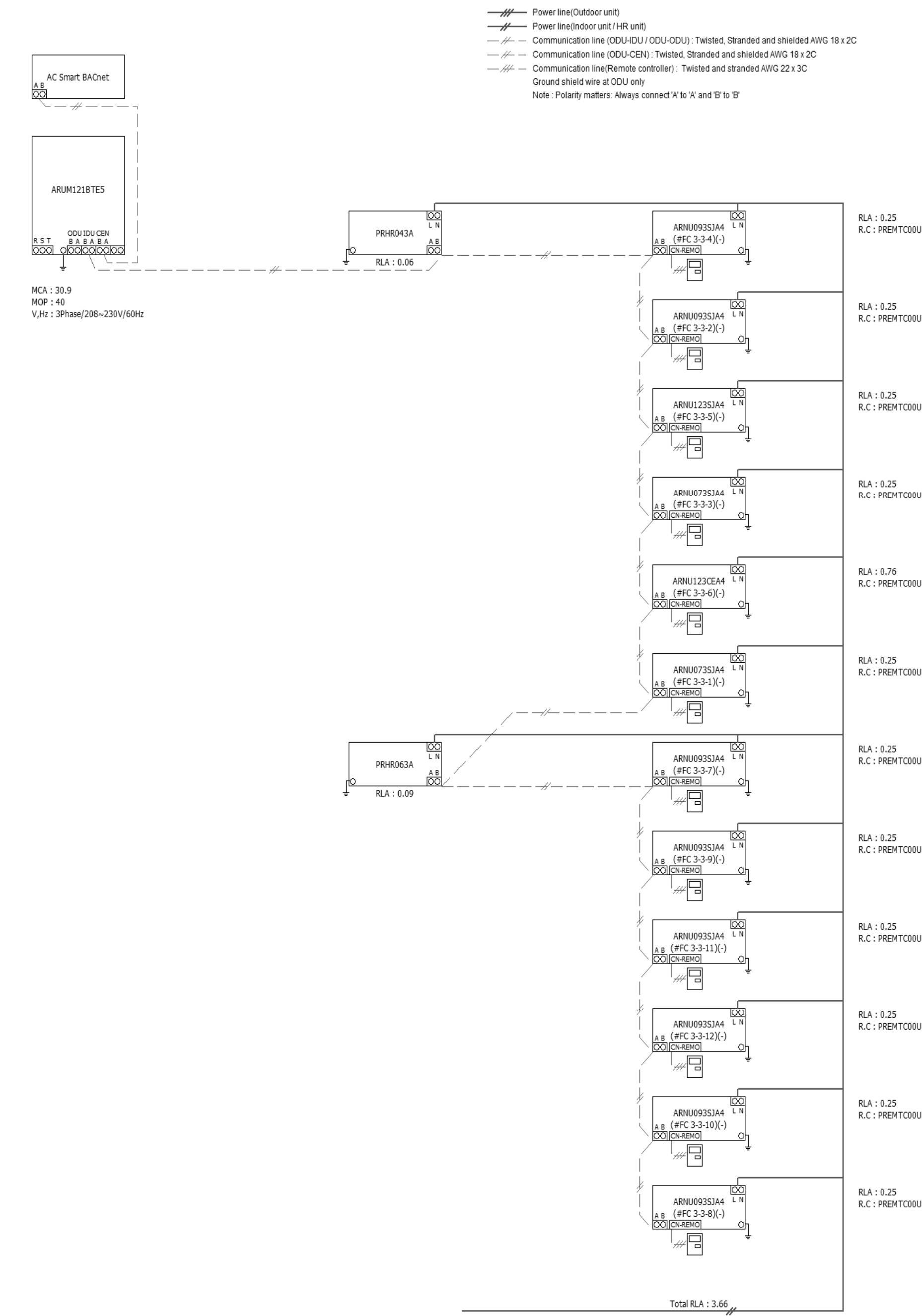
# VRF CONDENSING UNIT (CU-3)

## PIPING DIAGRAM

## WIRING DIAGRAM



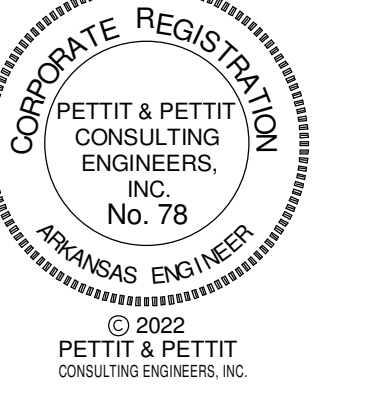
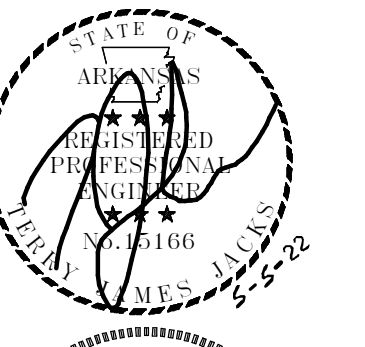
- ⦿ Main pipe upsized
  - ⦿ Conditional Application
  - Three pipe : Liquid - High Gas : Low Gas
  - Two pipe : Liquid - Gas
  - ⦿ Thermostat, ⦿ Group Control, ⦿ Dry Contact
  - ⦿ AHU Comm. Kit [Discharge (supply) air], ⦿ AHU Comm. Kit [Return air]
  - ⦿ AHU Comm. Kit [Main module], ⦿ AHU Comm. Kit [Communications module]
- |                                  |                         |
|----------------------------------|-------------------------|
| Indoor Units                     | : 12 of 20              |
| Combination Ratio                | : 110.0 of 120.0 ( 92%) |
| Total Pipe                       | : 320.2 of 3280.8 ft    |
| ODU factory charge               | : 23.20 lbs             |
| Additional Refrigerant           | : 15.73 lbs             |
| Total refrigerant                | : 38.93 lbs             |
| Minimum room volume              | : 1497.38 ft³           |
| (Based on 26.0 lbs / 1000.0 ft³) |                         |



# Note:  
Power wiring, breaker size, and disconnects should follow local code and NEC.  
Multi-frame outdoor units require a separate power connection for each frame.  
Refer to the most up-to-date submittal sheets for applicable electrical data.

### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURE. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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21054  
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May 5, 2022

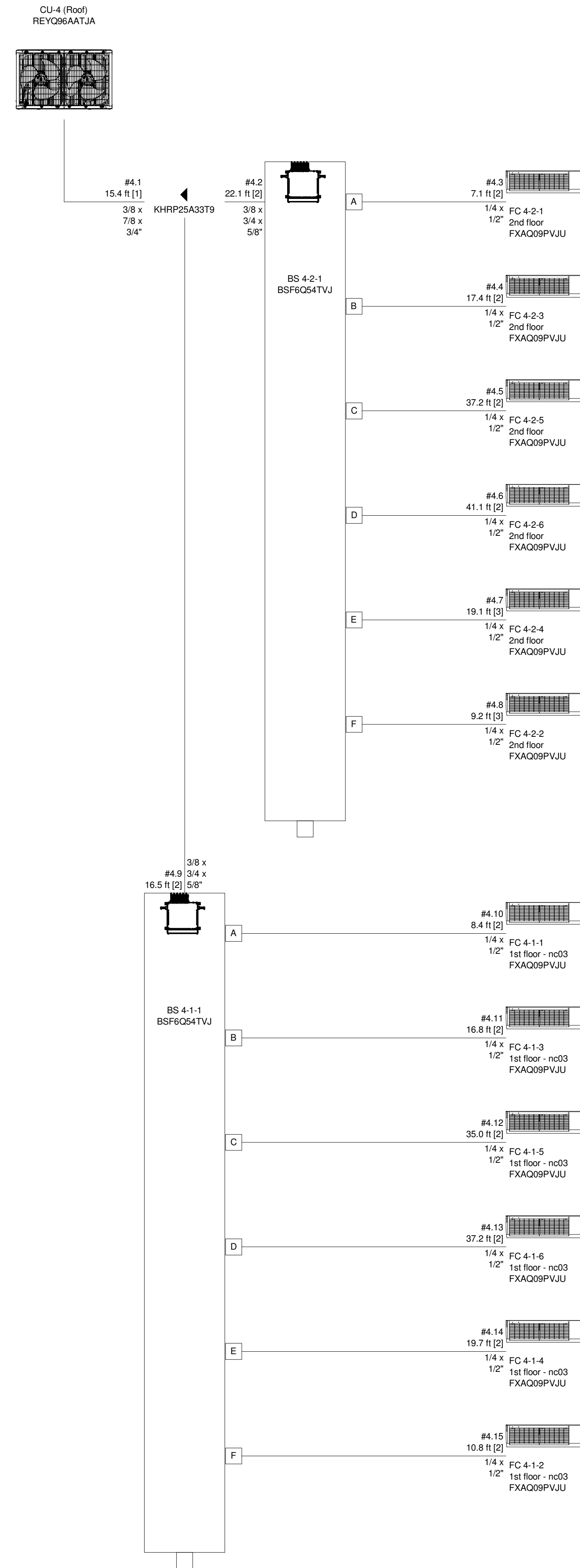
VRV RISER  
DIAGRAM - HVAC -  
LG

ATU JONES HALL ASBUILT 12.12.23  
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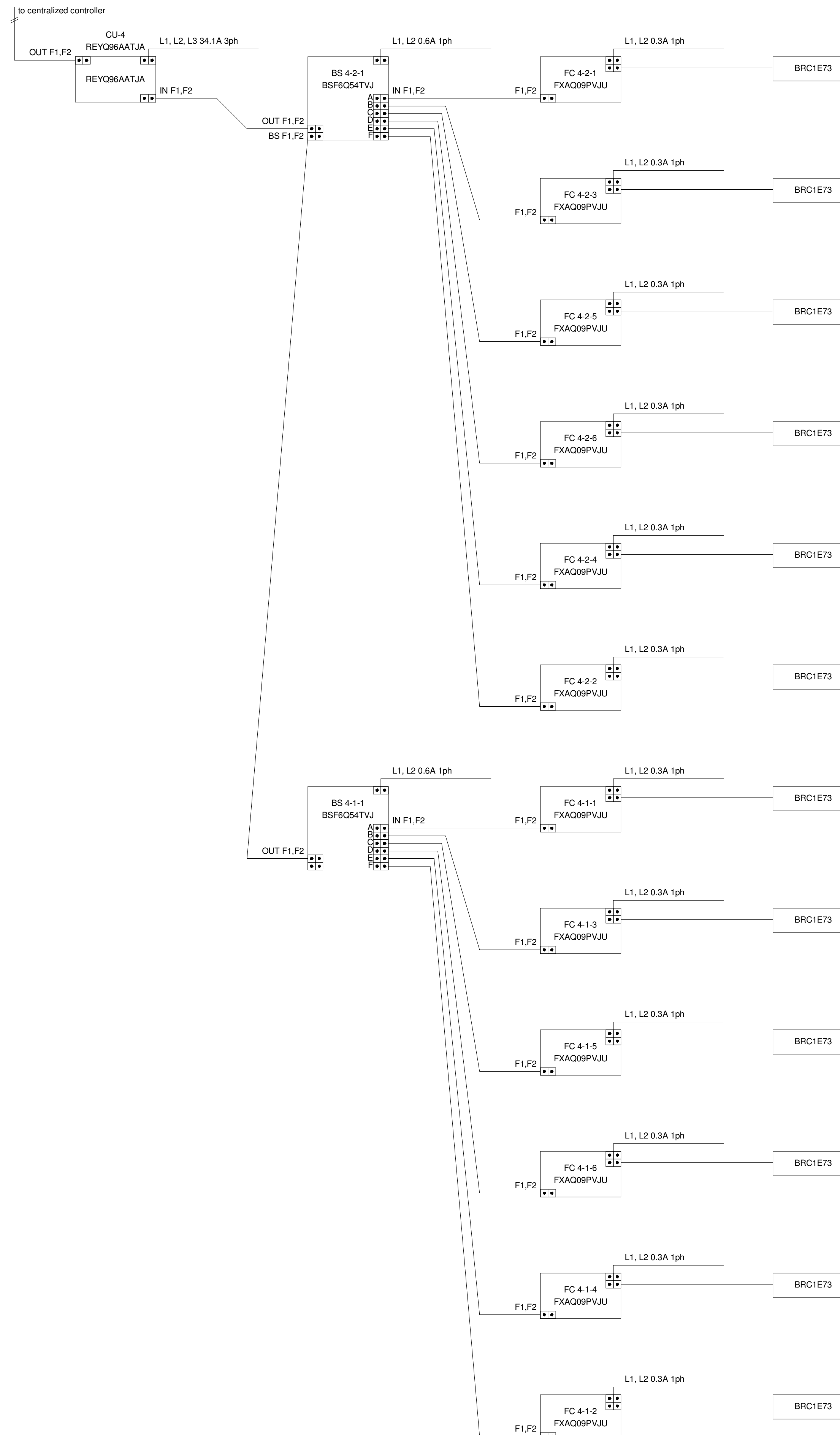


# VRF CONDENSING UNIT (CU-4)

## PIPING DIAGRAM



## WIRING DIAGRAM



### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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VRV RISER  
DIAGRAM - HVAC

M4.04

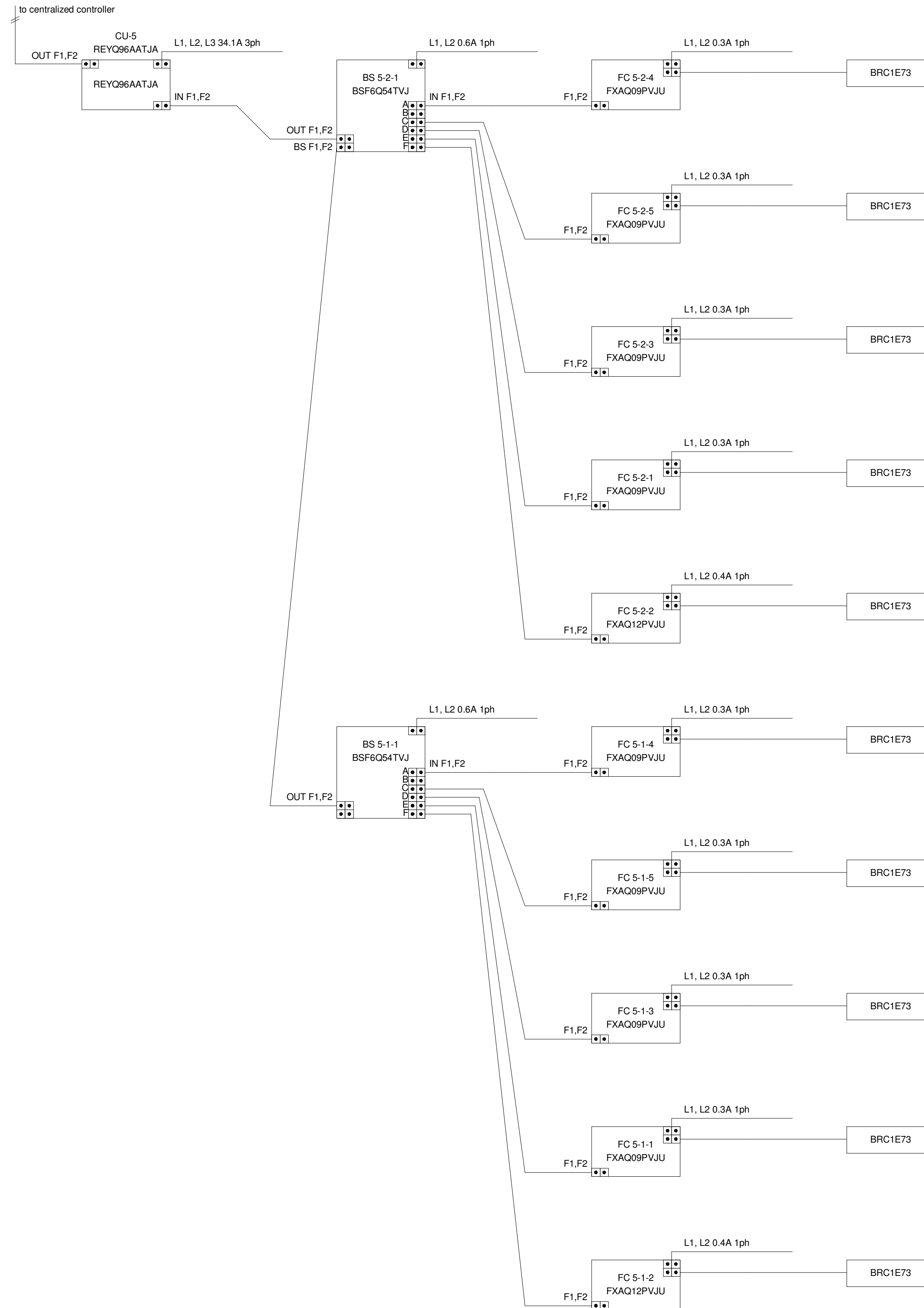
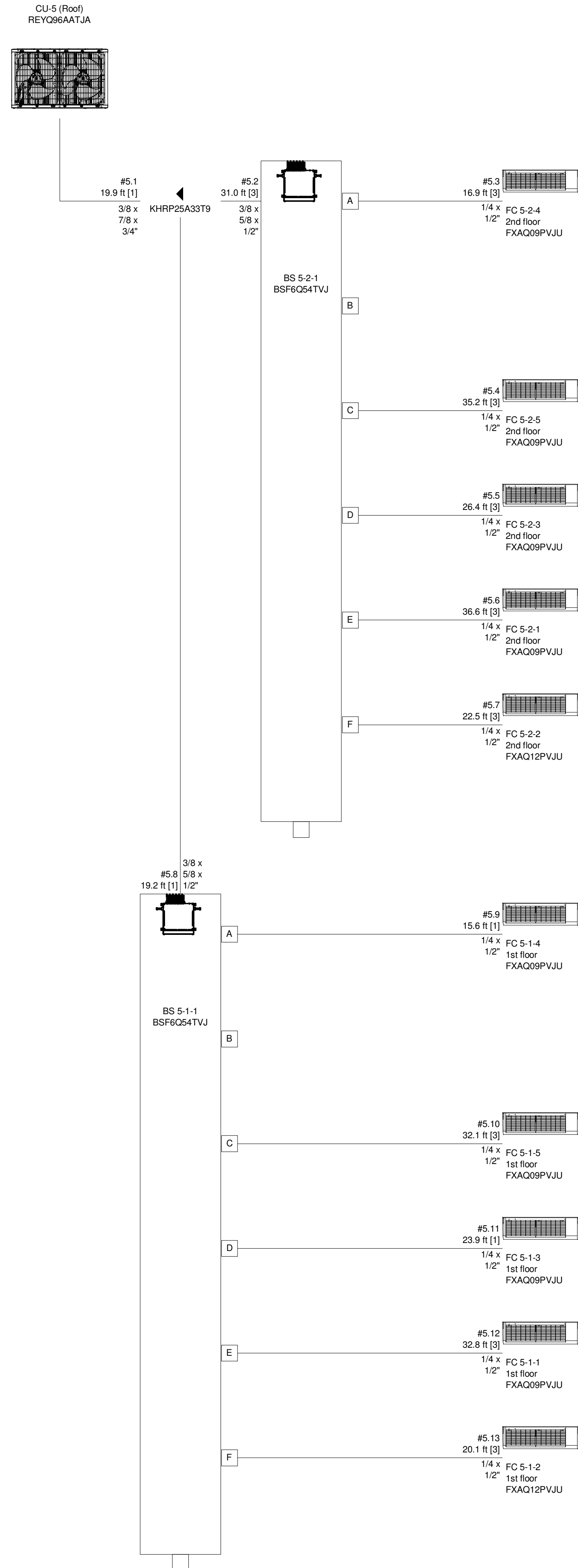
ATU JONES HALL ASBUILT 12.12.23  
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# VRF CONDENSING UNIT (CU-5)

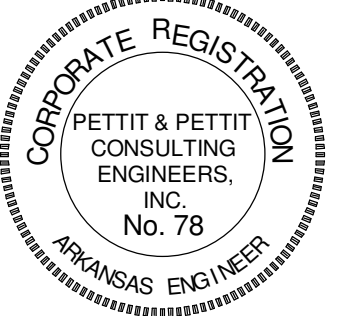
## PIPING DIAGRAM

## WIRING DIAGRAM



### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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VRV RISER  
DIAGRAM - HVAC

**M4.05**

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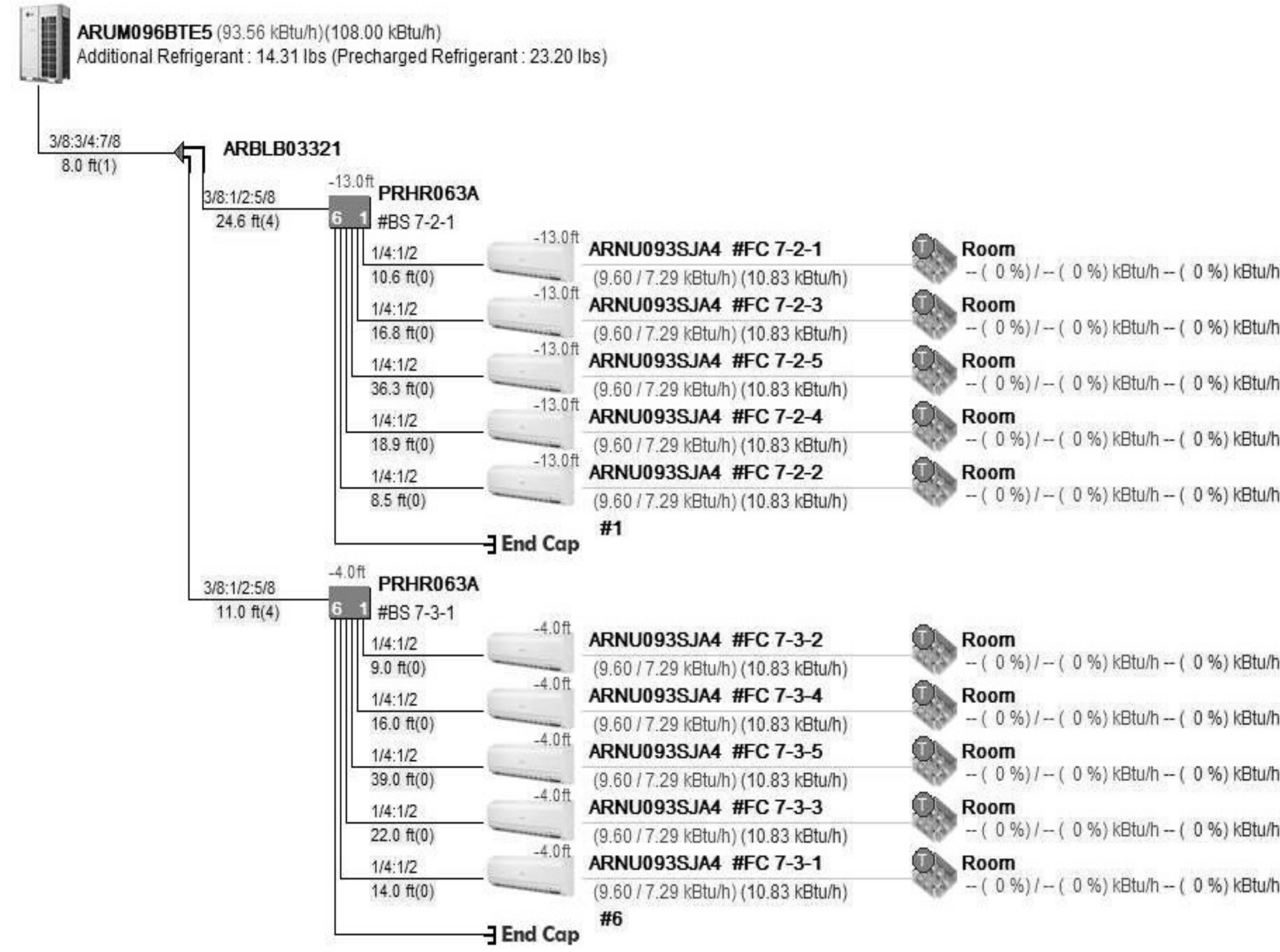




# VRF CONDENSING UNIT (CU-7)

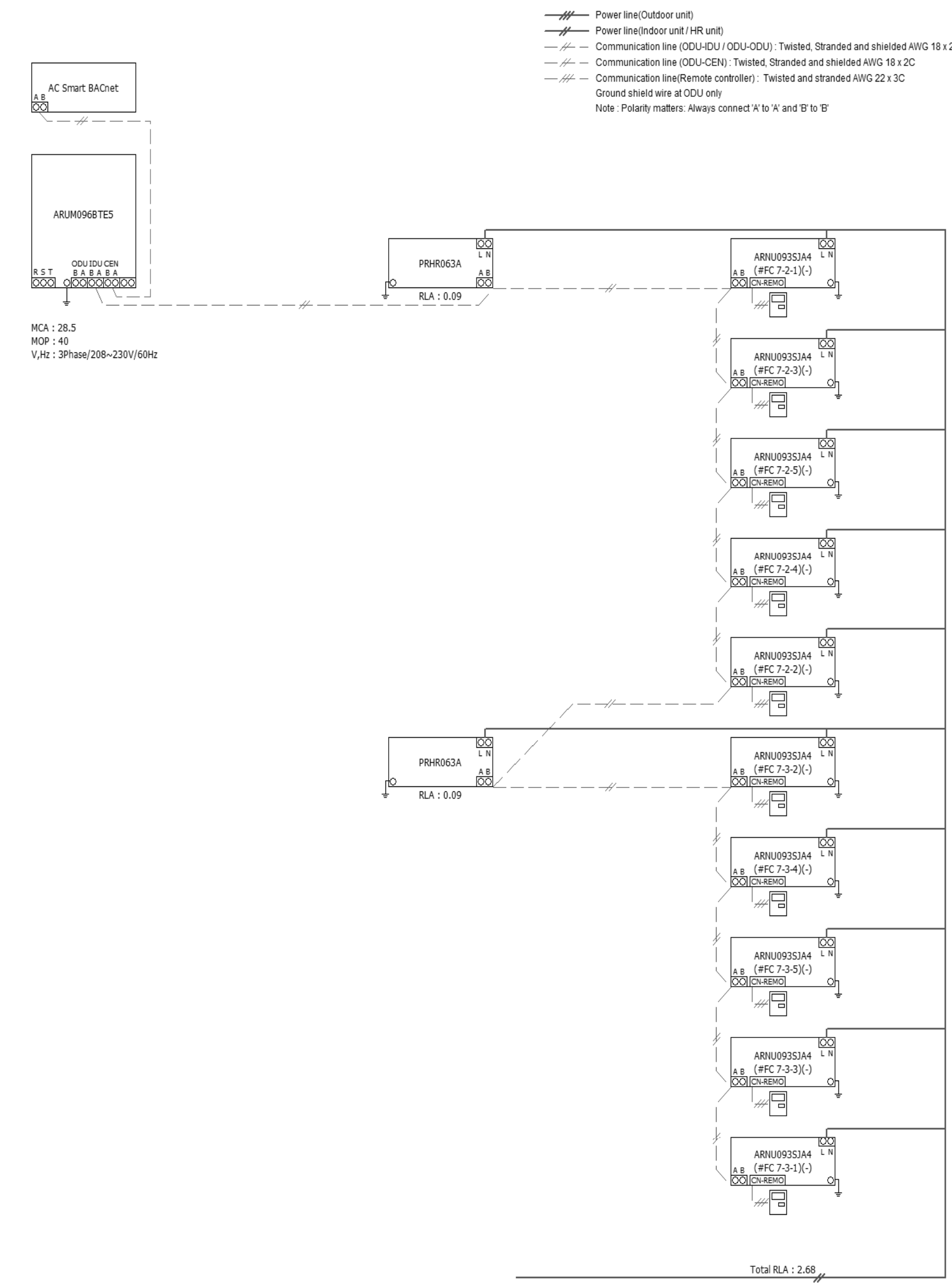
## PIPING DIAGRAM

## WIRING DIAGRAM



- Main pipe upsized
- Conditional Application
- Three pipe : Liquid : High Gas : Low Gas
- Two pipe : Liquid : Gas
- ⊖ Thermostat, ⊕ Group Control, ⊕ Dry Contact
- S AHU Comm. Kit [Discharge (supply) air], R AHU Comm. Kit [Return air]
- M AHU Comm. Kit [Main module], C AHU Comm. Kit [Communications module]

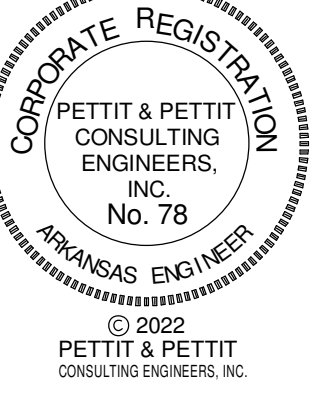
Indoor Units	: 10 of 16
Combination Ratio	: 90.0 of 96.0 ( 94%)
Total Pipe	: 234.7 of 3280.8 ft
ODU factory charge	: 23.20 lbs
Additional Refrigerant	: 14.31 lbs
Total refrigerant	: 37.51 lbs
Minimum room volume	: 1442.79 ft³
(Based on 26.0 lbs / 1000.0 ft³)	



# Note  
Power wiring, breaker size, and disconnects should follow local code and NEC.  
Multi-frame outdoor units require a separate power connection for each frame.  
Refer to the most up-to-date submittal sheets for applicable electrical data.

### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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VRV RISER  
DIAGRAM - HVAC -  
LG

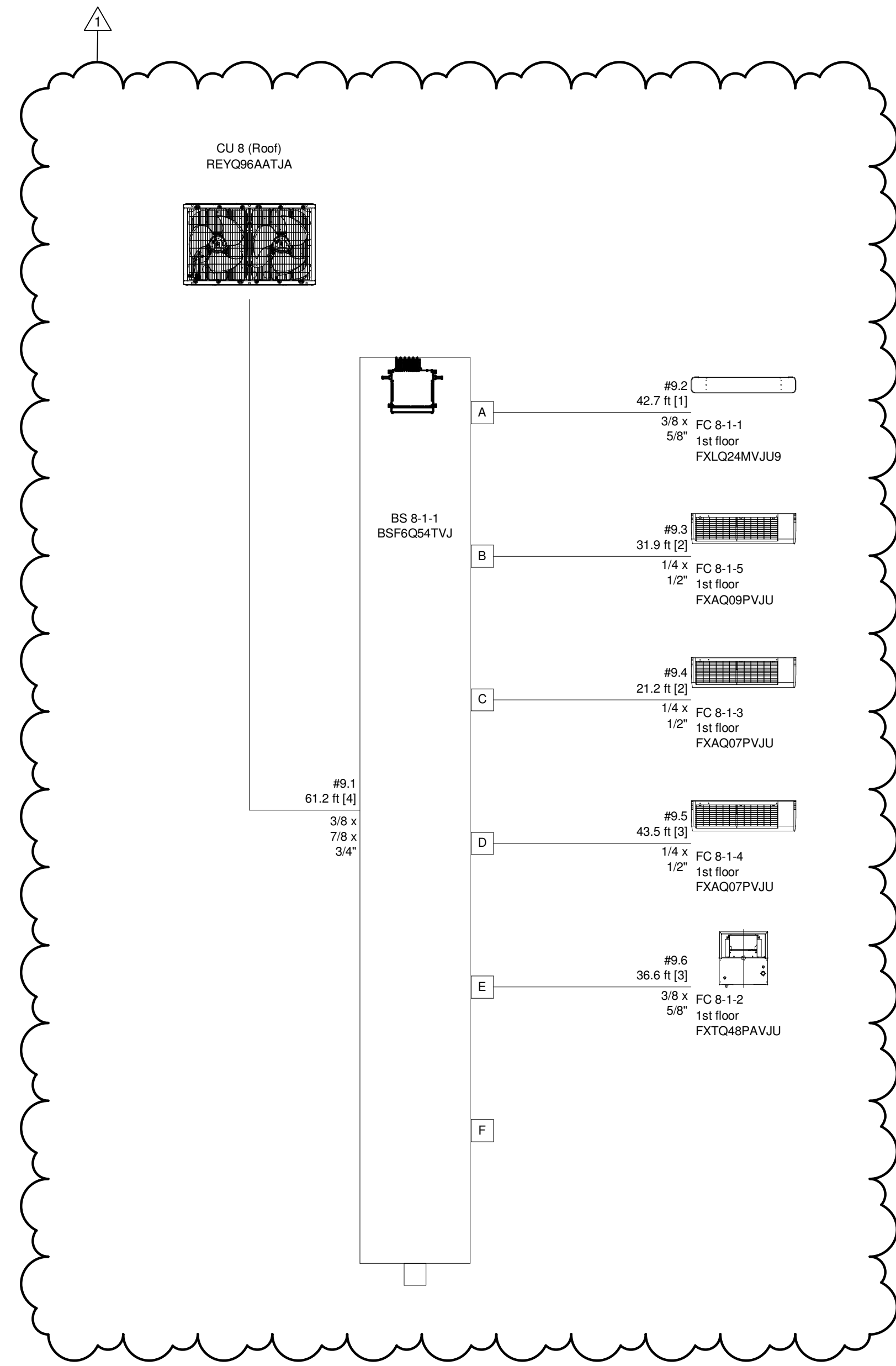
**M4.07**

ATU JONES HALL ASBUILT 12.12.23  
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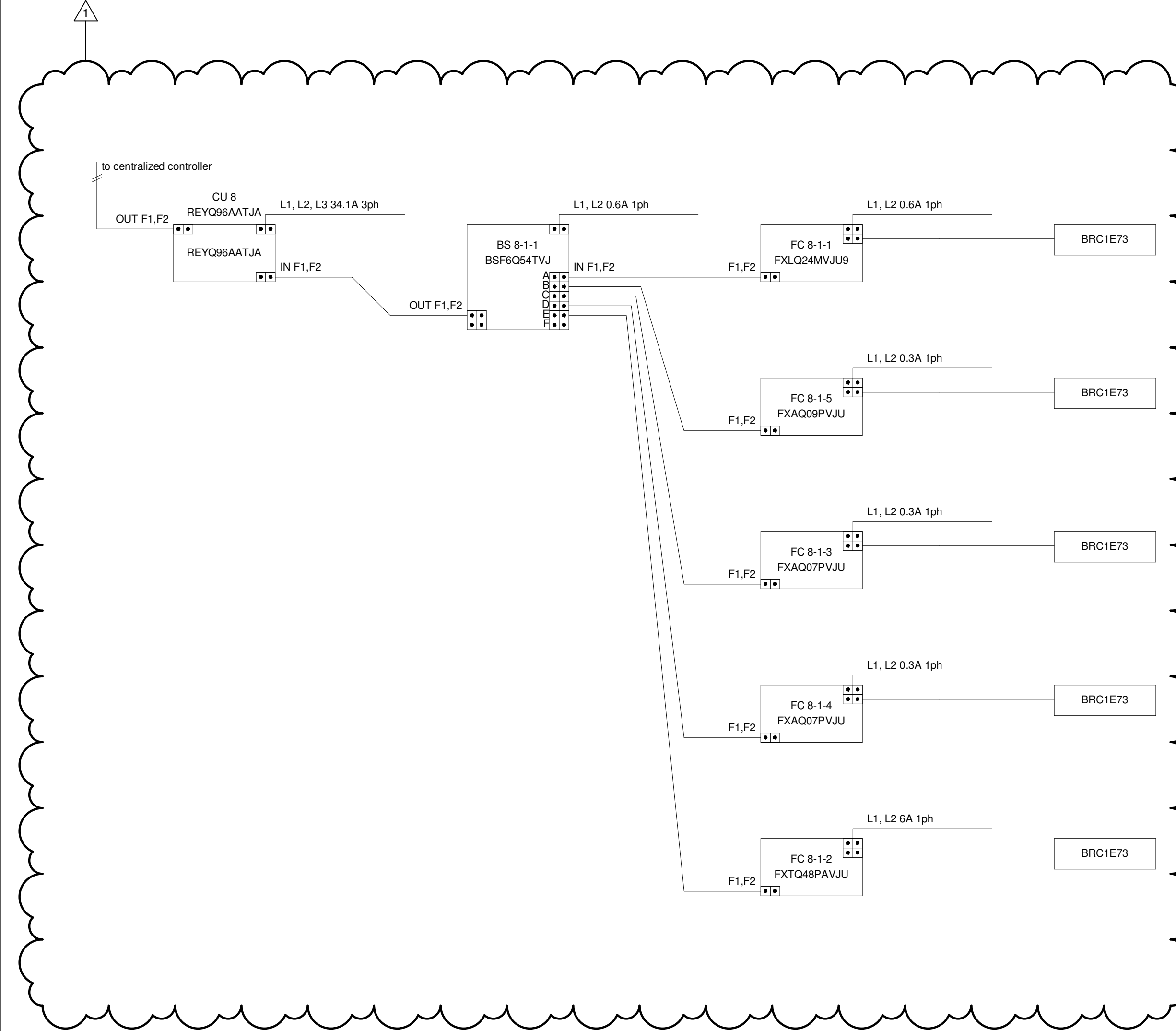


# VRF CONDENSING UNIT (CU-8)

## PIPING DIAGRAM



## WIRING DIAGRAM



### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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REVISED VRF  
RISER DIAGRAM -  
HVAC

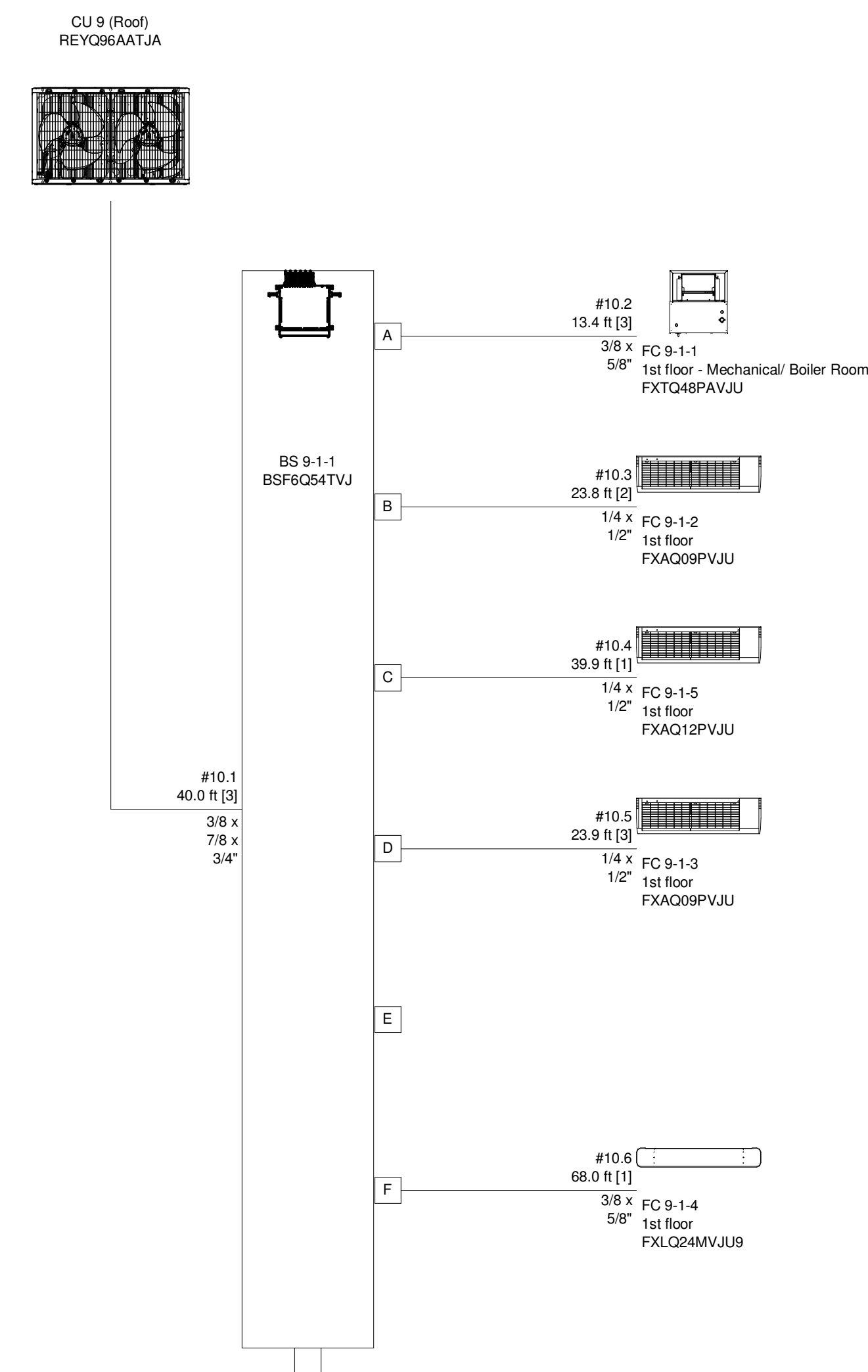
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**M4.08R**

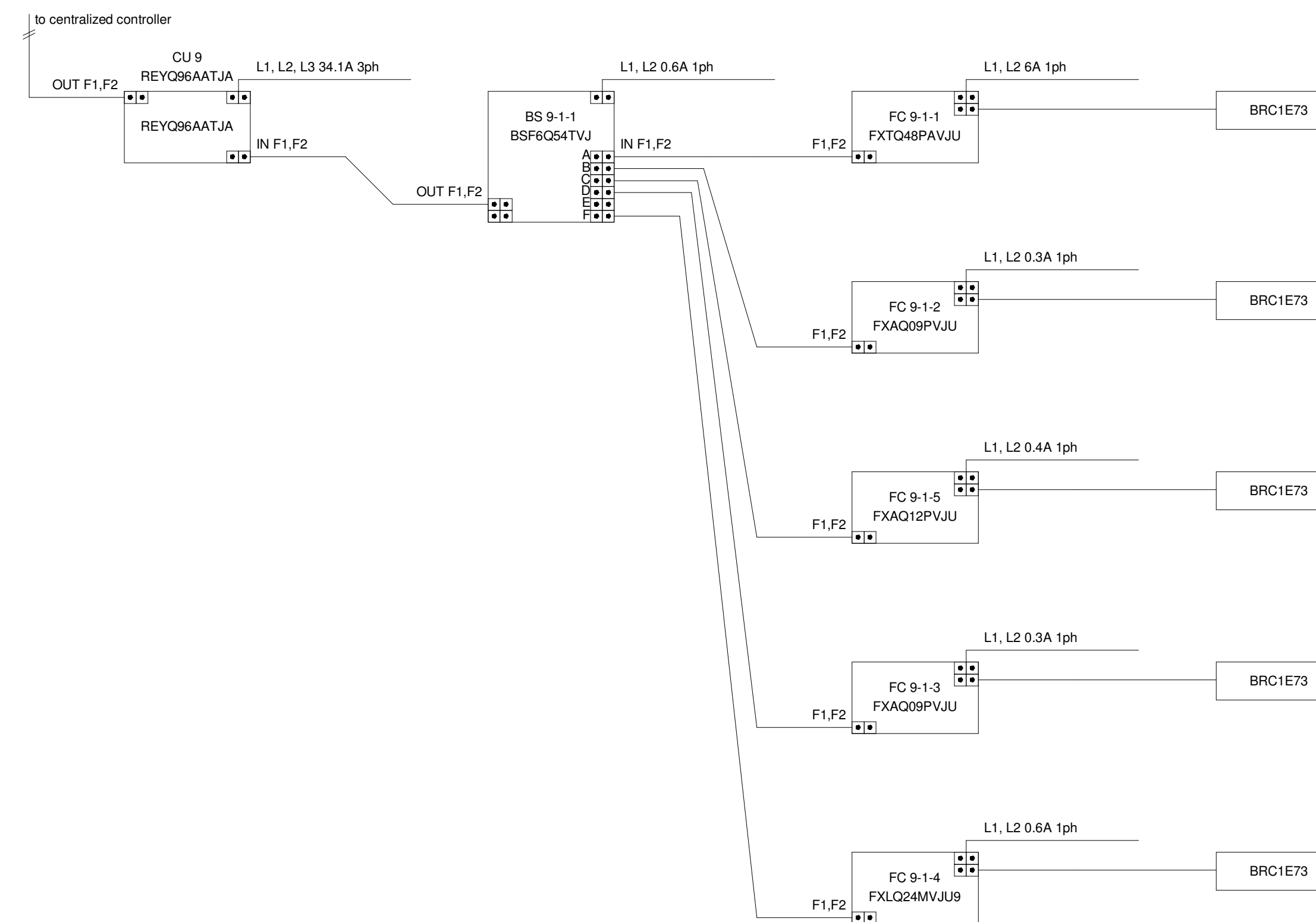


# VRF CONDENSING UNIT (CU-9)

## PIPING DIAGRAM



## WIRING DIAGRAM



### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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VRV RISER  
DIAGRAM - HVAC

**M4.09**

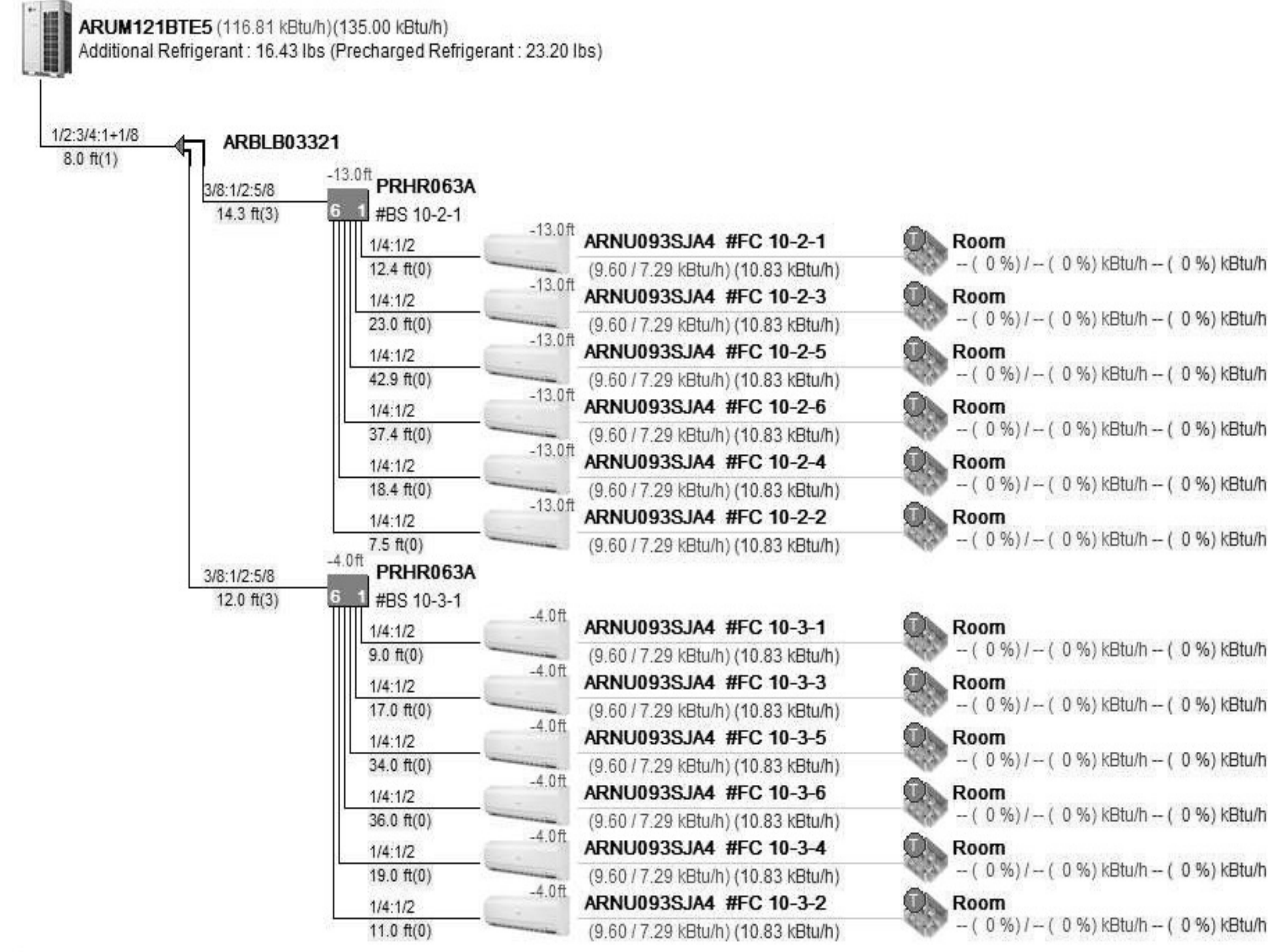
ATU JONES HALL ASBUILT 12.12.23  
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# VRF CONDENSING UNIT (CU-10)

## PIPING DIAGRAM

## WIRING DIAGRAM

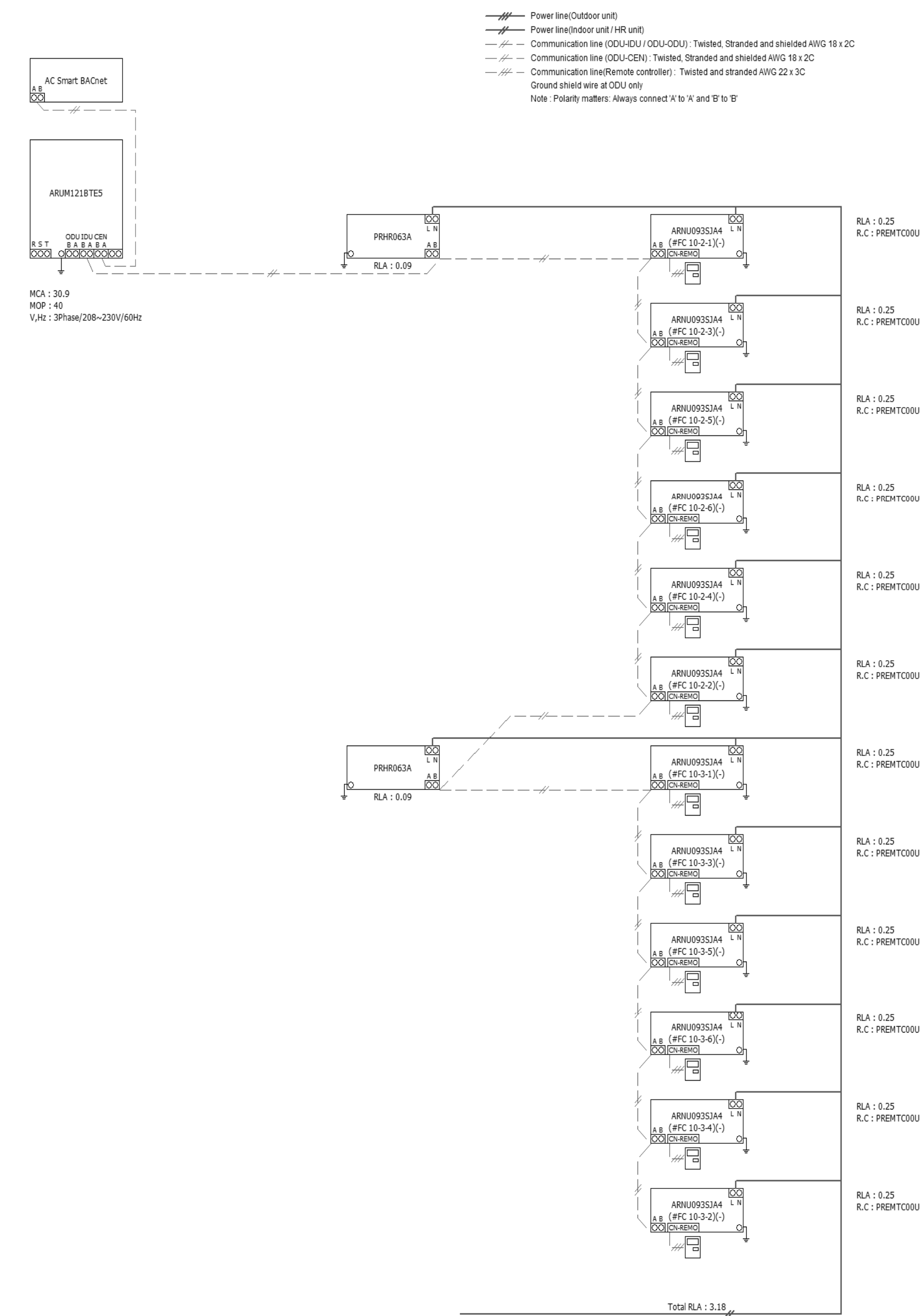


\* : Main pipe upsized  
\*\* : Conditional Application  
Three pipe : Liquid : High Gas : Low Gas  
Two pipe : Liquid : Gas

⊖ Thermostat, ⊕ Group Control, ⊙ Dry Contact  
S AHU Comm. Kit [Discharge (supply) air], R AHU Comm. Kit [Return air]  
M AHU Comm. Kit [Main module], C AHU Comm. Kit [Communications module]

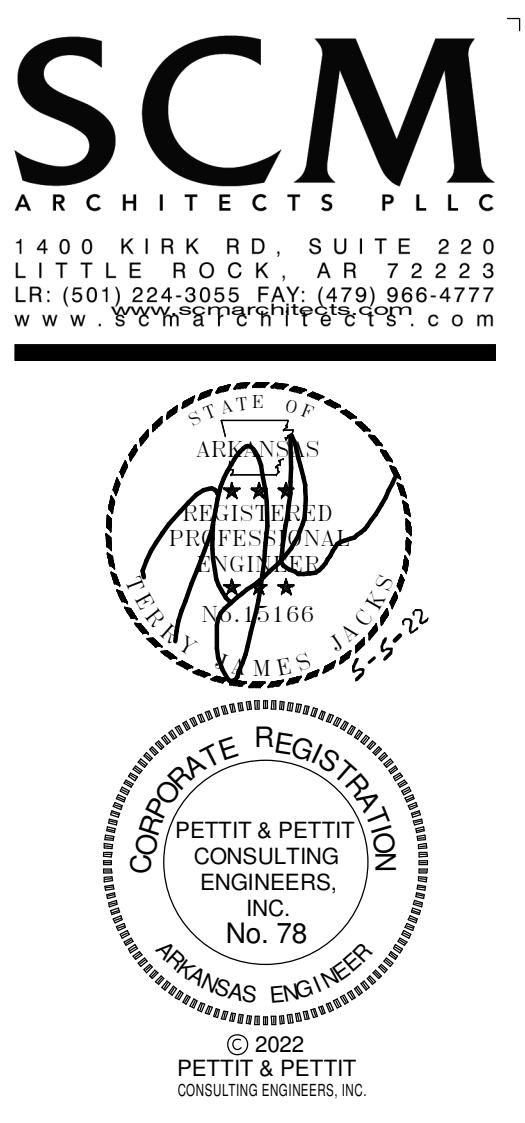
Indoor Units : 12 of 20  
Combination Ratio : 108.0 of 120.0 ( 90%)  
Total Pipe : 301.9 of 3280.8 ft

ODU factory charge : 23.20 lbs  
Additional Refrigerant : 16.43 lbs  
Total refrigerant : 39.63 lbs  
Minimum room volume : 1524.11 ft³  
(Based on 26.0 lbs / 1000.0 ft³)



# Note:  
Power wiring, breaker size, and disconnects should follow local code and NEC.  
Multi-frame outdoor units require a separate power connection for each frame.  
Refer to the most up-to-date submittal sheets for applicable electrical data.

**CONTRACTOR NOTE**  
CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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DATE: May 5, 2022

VRV RISER DIAGRAM - HVAC - LG

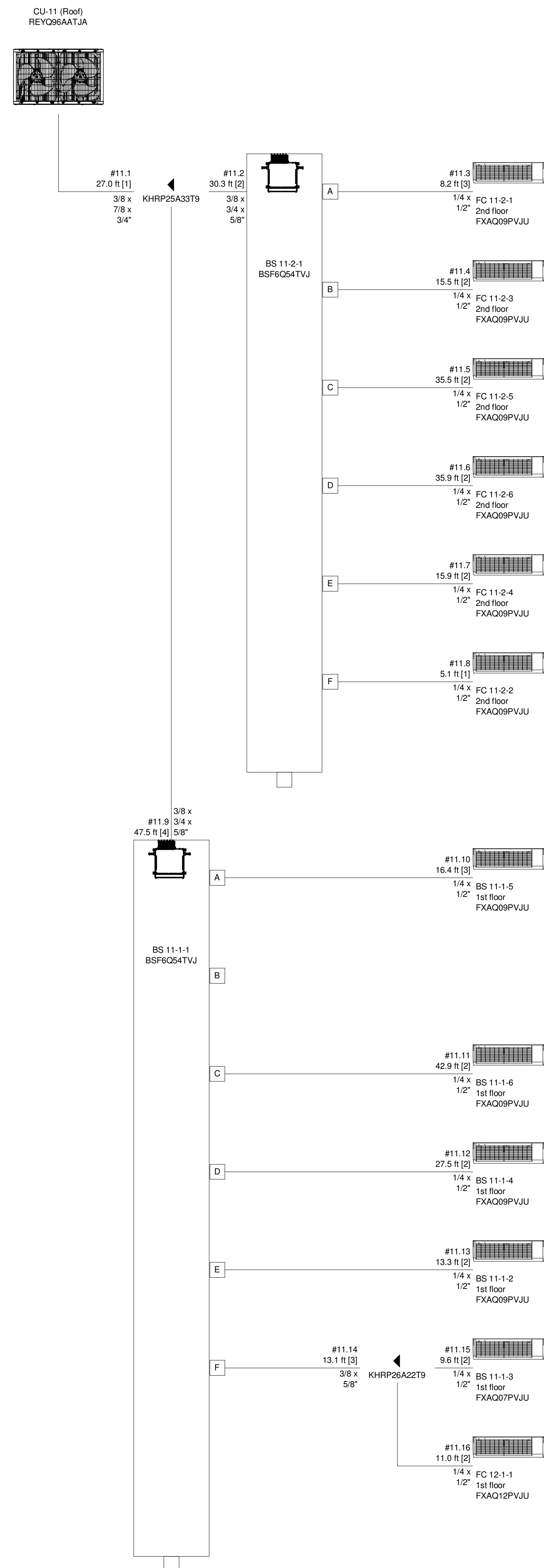
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**M4.10**

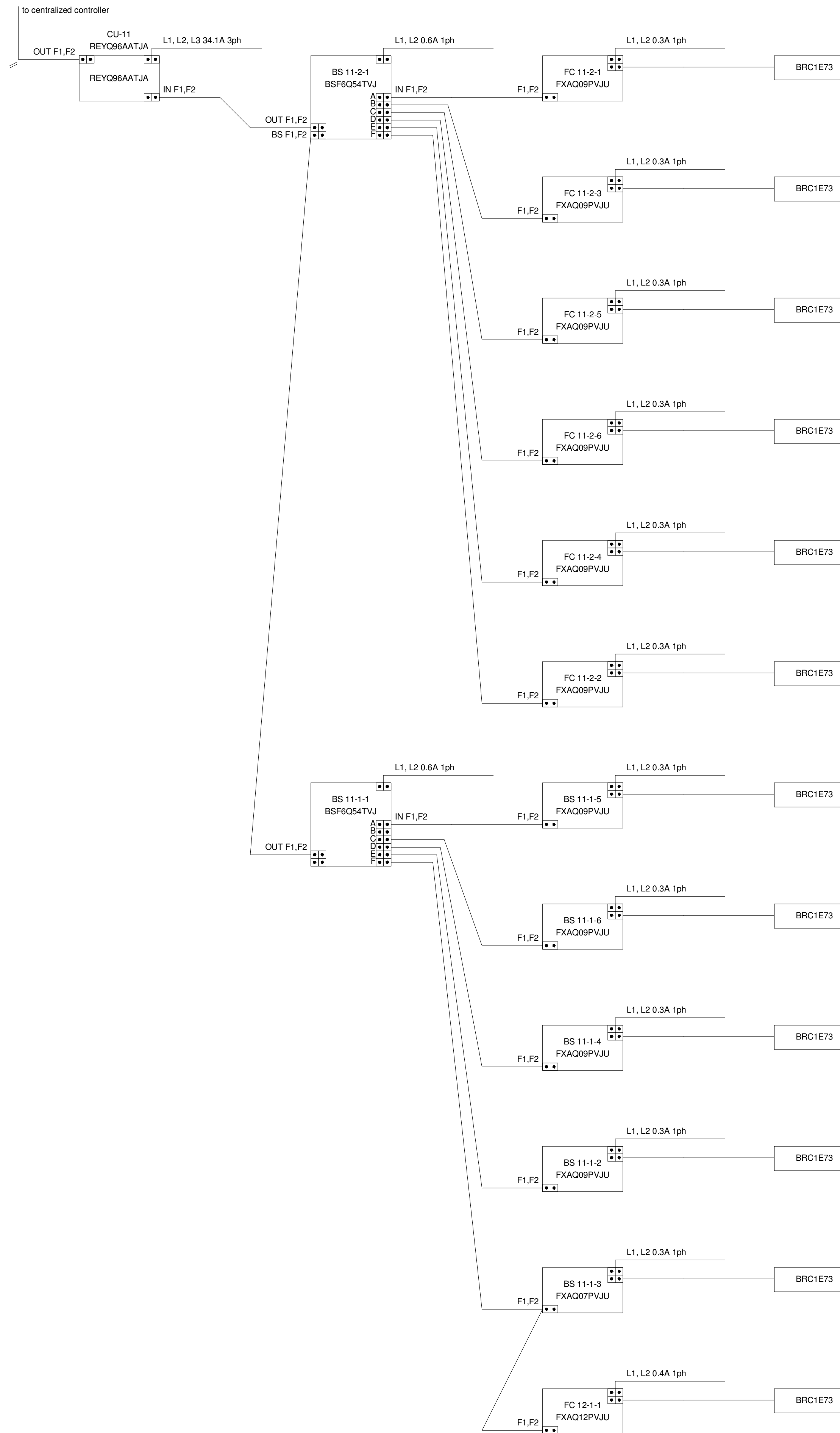


# VRF CONDENSING UNIT (CU-11)

## PIPING DIAGRAM



## WIRING DIAGRAM



### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.



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VRV RISER  
DIAGRAM - HVAC

**M4.11**

ATU JONES HALL ASBUILT 12.12.23  
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# VRF CONDENSING UNIT (CU-12)

## PIPING DIAGRAM

## WIRING DIAGRAM

### CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.

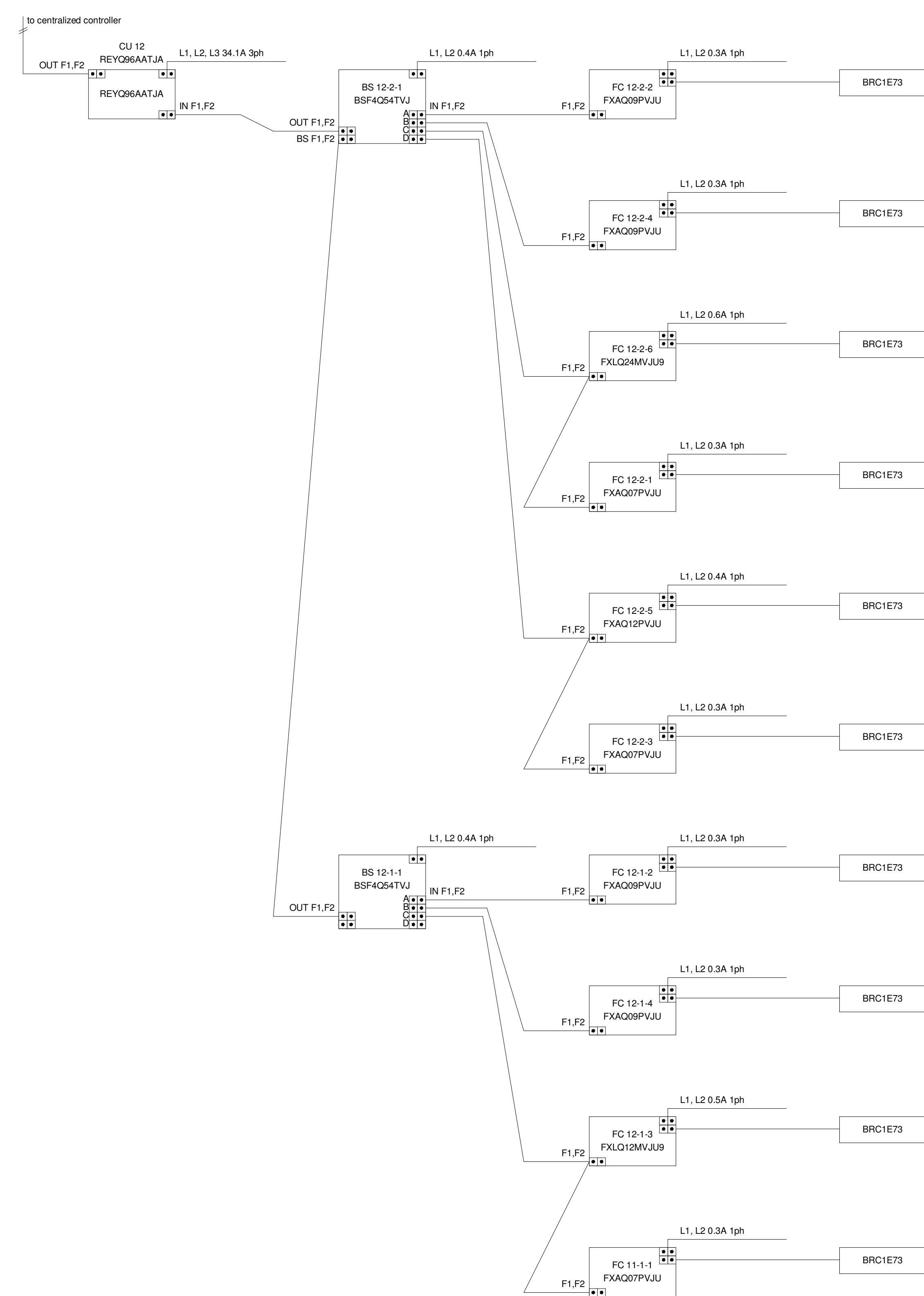
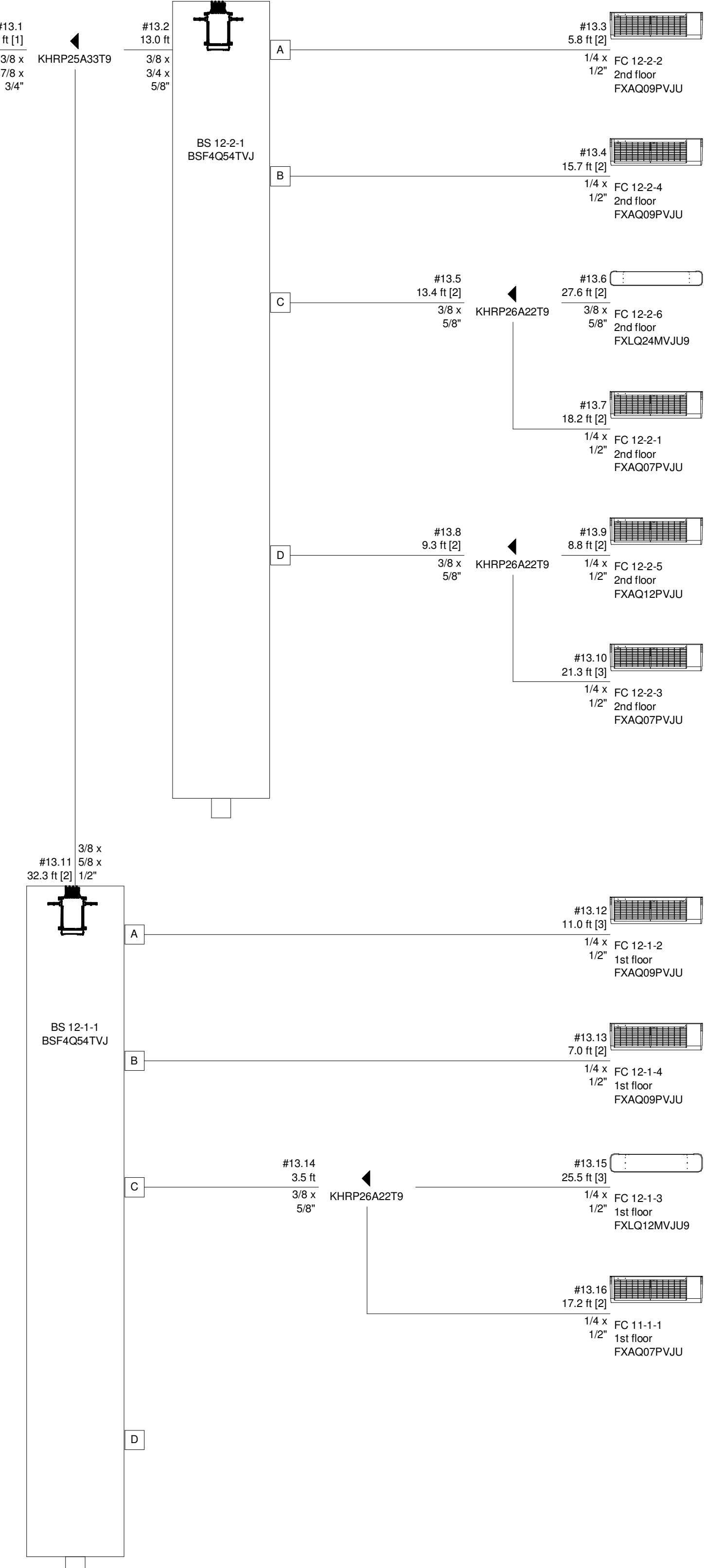
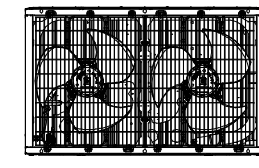
**SCM**  
ARCHITECTS P.L.L.C.  
1400 KIRK RD., SUITE 220  
LITTLE ROCK, AR 72223  
PH: (501) 224-3055 FAX: (501) 368-4777  
www.scm-architects.com



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0.1  
0.2  
0.3  
0.4  
0.5  
0.6  
0.7

CU 12 (Roof)  
REY06AATJA



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VRV RISER  
DIAGRAM - HVAC

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**M4.12**

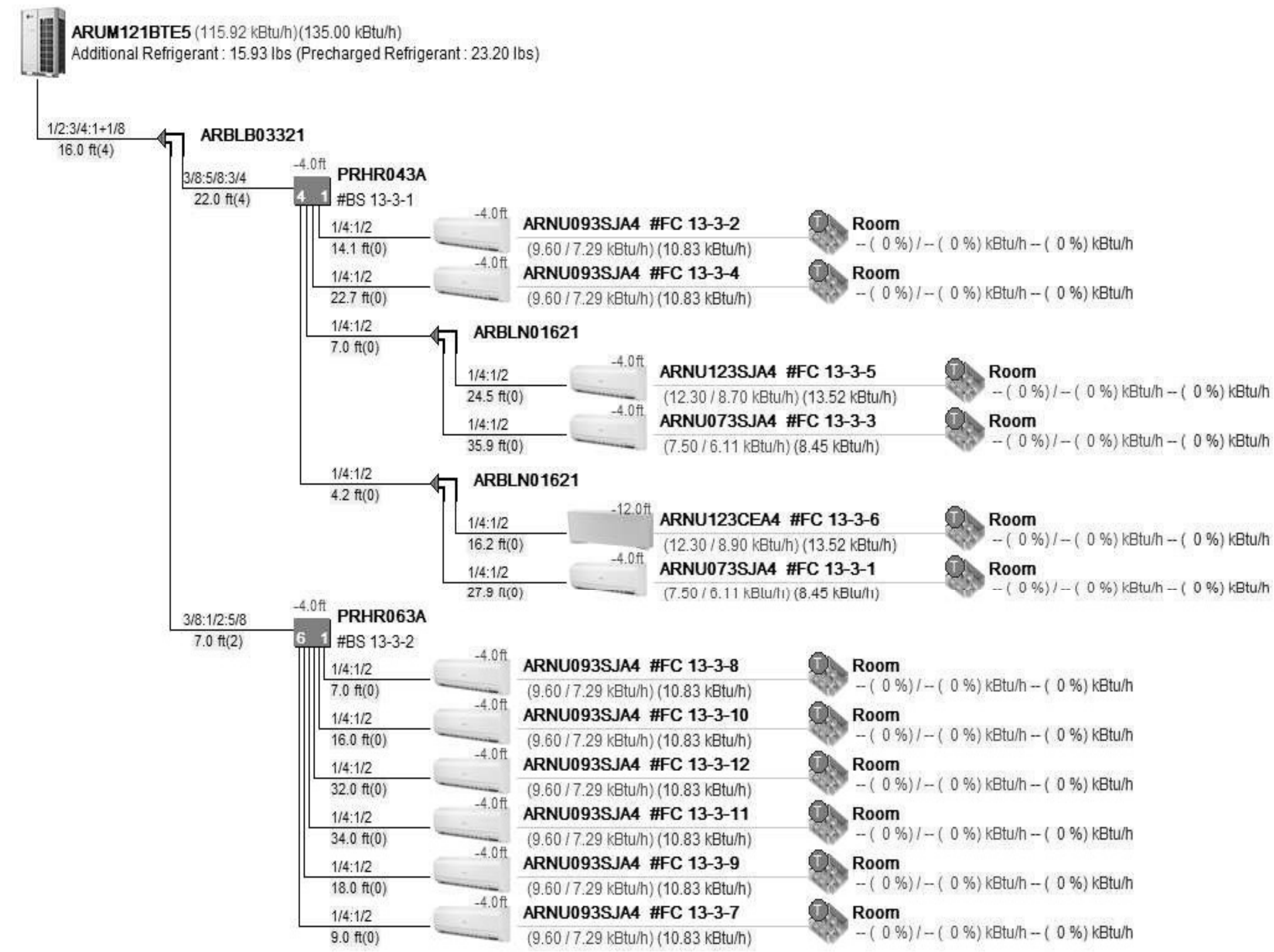
SCM ARCHITECTS P.L.L.C.



# VRF CONDENSING UNIT (CU-13)

## PIPING DIAGRAM

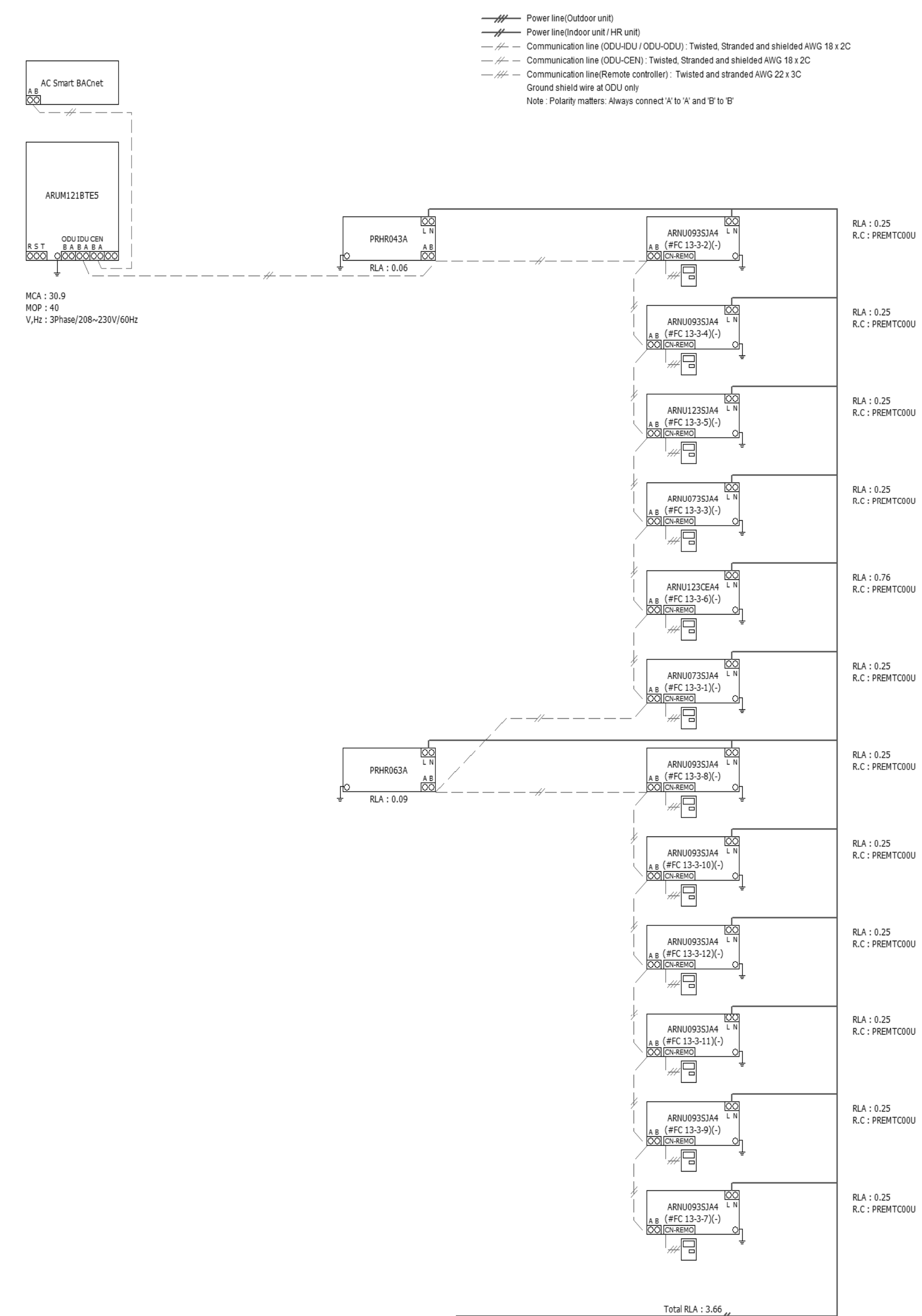
## WIRING DIAGRAM



\* : Main pipe upsized  
 \*\* : Conditional Application  
 Three pipe : Liquid : High Gas : Low Gas  
 Two pipe : Liquid : Gas

Thermostat, 
 Group Control, 
 Dry Contact  
 AHU Comm. Kit [Discharge (supply) air], 
 AHU Comm. Kit [Return air]  
 AHU Comm. Kit [Main module], 
 AHU Comm. Kit [Communications module]

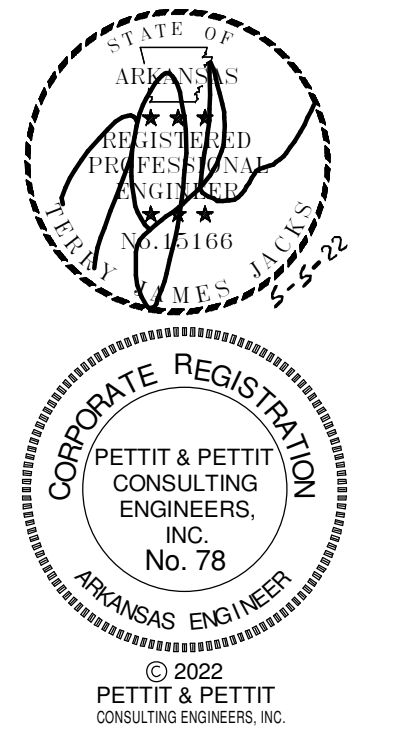
**Indoor Units** : 12 of 20  
**Combination Ratio** : 110.0 of 120.0 ( 92%)  
**Total Pipe** : 313.5 of 3280.8 ft  
**ODU factory charge** : 23.20 lbs  
**Additional Refrigerant** : 15.93 lbs  
**Total refrigerant** : 39.13 lbs  
**Minimum room volume** : 1504.95 ft<sup>3</sup>  
 (Based on 26.0 lbs / 1000.0 ft<sup>3</sup>)



# Note  
 Power wiring, breaker size, and disconnects should follow local code and NEC.  
 Multi-frame outdoor units require a separate power connection for each frame.  
 Refer to the most up-to-date submittal sheets for applicable electrical data.

**CONTRACTOR NOTE**  
 CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.

**SCM ARCHITECTS PLLC**  
 1400 KIRK RD, SUITE 220  
 LITTLE ROCK, AR 72223  
 LR: (501) 224-3055 FAX: (501) 968-4777  
 www.scmarchitects.com



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 DATE: May 5, 2022

VRV RISER DIAGRAM - HVAC - LG

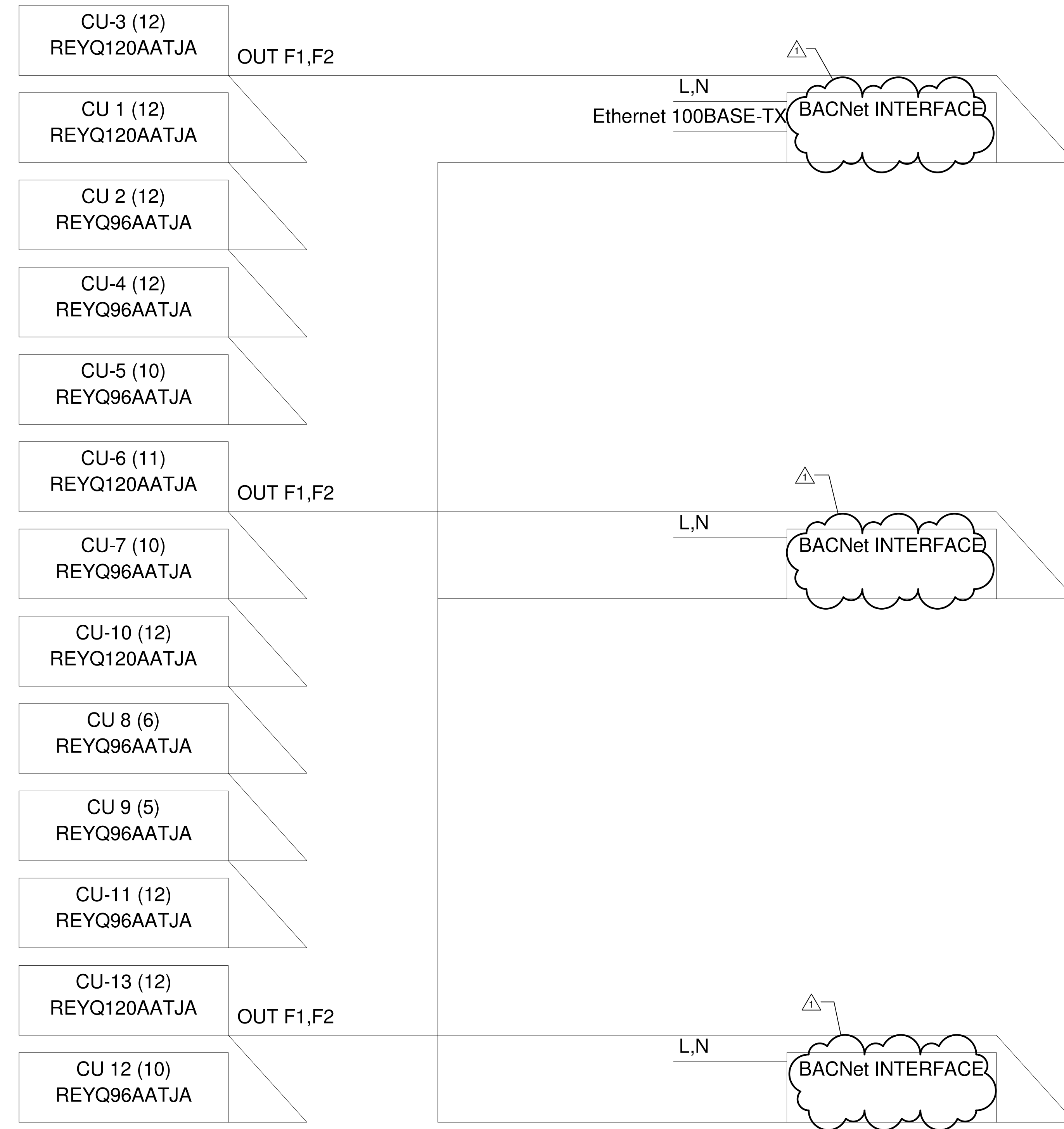
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**M4.13**

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# VRF CONDENSOR CONTROLLER WIRING



## CONTRACTOR NOTE

CONTRACTOR SHALL FIELD COORDINATE EXACT PIPING SIZES REQUIRED WITH THE EQUIPMENT MANUFACTURER. VERIFY EXACT PIPING LENGTHS AND ROUTING REQUIRED.

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1	Addendum No. 2 06-02-22

PROJECT NO.  
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REVISED VRV  
RISER DIAGRAM -  
HVAC

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**M4.14R**



VENTILATION AIR UNIT SCHEDULE

Table with columns for DESIG., MFR/MDL, TYPE, CFM, OSA, ESP/TSP, NET COOLING, HEATING, H.G. REHEAT, COMPRESSOR, MOTOR DATA, CONDENSER DATA, FAN DATA, ELECTRICAL DATA, and REMARKS.

VRV BRANCH SELECTOR SCHEDULE

Table with columns for DESIG., MFR/MDL, TYPE, CU #, LBS, NO. OF PORTS, DIMENSIONS, CAPACITY, SOUND, ELECTRICAL DATA, and REMARKS. Includes sections for FIRST FLOOR, SECOND FLOOR, and THIRD FLOOR.

VRV CONDENSING UNIT SCHEDULE

Table with columns for DESIG., MFR/MDL, TYPE, SERVES, DIMENSIONS, WEIGHT, COOLING, HEATING, FAN DATA, COMPRESSOR, ELECTRICAL DATA, and REMARKS.

UNIT HEATER SCHEDULE

Table with columns for DESIG., MFR/MDL, SERVES, TYPE, CFM, FINNED LENGTH, CONTROLLER LENGTH, CABINET LENGTH, CABINET HEIGHT, CABINET DEPTH, HEATING, BLOWER, ELECTRICAL, and REMARKS.

KITCHEN HOOD SCHEDULE

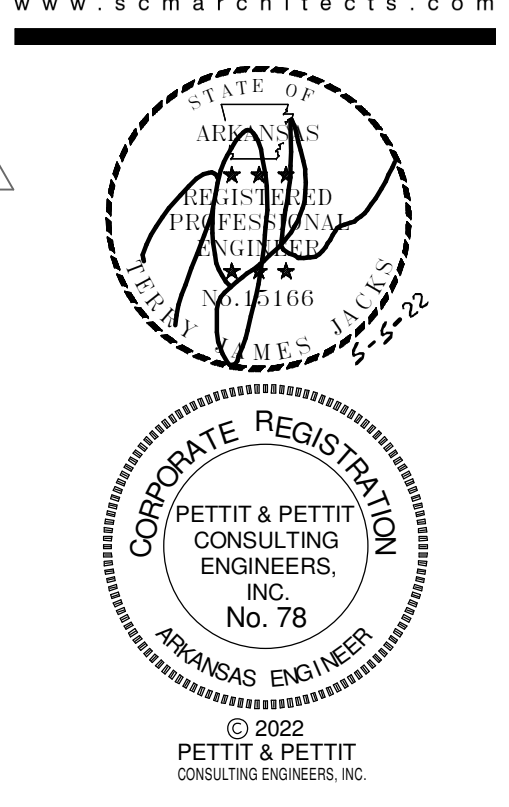
Table with columns for DESIG., MFR/MDL, SERVES, TYPE, HOOD DIMENSIONS, EXHAUST, FAN DATA, ELECTRICAL DATA, and REMARKS.

EXHAUST FAN SCHEDULE

Table with columns for DESIG., MFR/MDL, SERVES, LOCAT., TYPE, FAN DATA, MOTOR DATA, and REMARKS.

AIR DEVICE SCHEDULE

Table with columns for DESIG., MFR./MDL., TYPE, FACE SIZE, FINISH, FREE AREA, ACCESS., and REMARKS.



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REVISIONS table with columns for revision number, description, and date.

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REVISED HVAC SCHEDULES

M5.01R SCM ARCHITECTS PLLC

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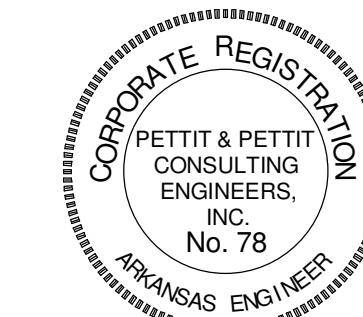












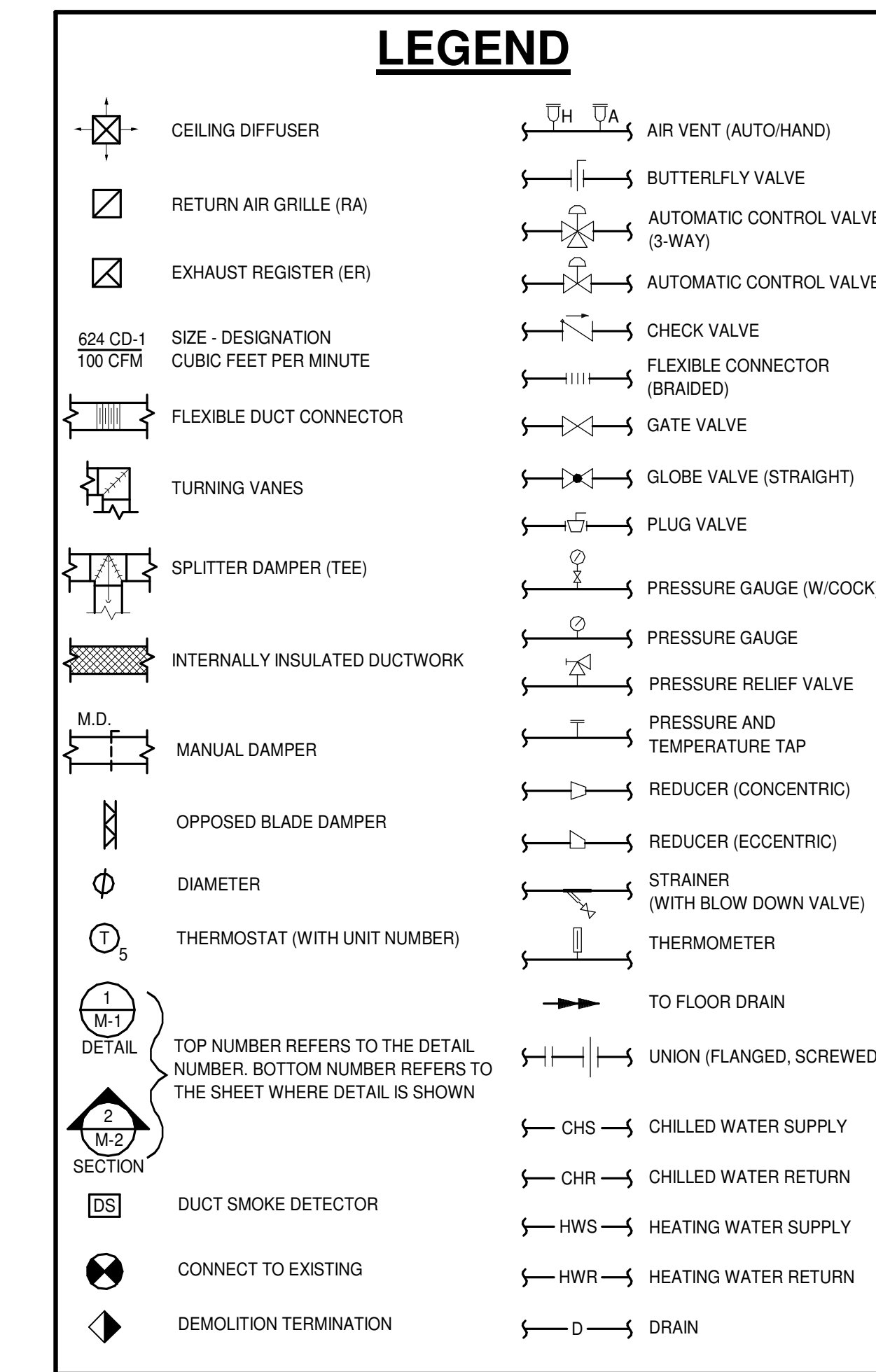
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MINI-SPLIT INDOOR HEAT PUMP UNIT SCHEDULE																						
DESIG.	MFR/MDL	TYPE	LOCATION	CFM (WET)	OSA	ESP	DIMENSIONS (H x W x D)	WEIGHT	COOLING			HEATING			REFRIGERANT PIPE SIZE		ELECTRICAL DATA			REMARKS		
									CAPACITY	INDOOR	OUTDOOR	SEER	CAPACITY	INDOOR	OUTDOOR	HSPF	GAS	LIQUID	MCA		MOCP	VOLT/PHASE
MS-1	DAIKIN / FTXS09LVJU	WALL MOUNTED HEAT PUMP	L.T. (125)	381 - HIGH 279 - MED 194 - LOW 145 - LOW	--	0"	11 5/8" x 31 1/2" x 8 7/16"	20 LBS.	9.8 MBH	80° d.b. 67° w.b.	95° d.b. 75° w.b.	18	11.3 MBH	70° d.b. 60° w.b.	47° d.b. 43° w.b.	12.5	3/8"	1/4"	--	--	208v / 230v, 1ϕ	CONDENSATE PUMP, WIRED T-STAT. PROVIDE CONDENSATE OVERFLOW SAFETY CUT-OFF SWITCH. UNIT POWERED FROM OUTDOOR UNIT.
MS-2	DAIKIN / FTXS09LVJU	WALL MOUNTED HEAT PUMP	L.T. (231)	279 - MED 194 - LOW 145 - LOW	--	0"	11 5/8" x 31 1/2" x 8 7/16"	20 LBS.	9.8 MBH	80° d.b. 67° w.b.	95° d.b. 75° w.b.	18	11.3 MBH	70° d.b. 60° w.b.	47° d.b. 43° w.b.	12.5	3/8"	1/4"	--	--	208v / 230v, 1ϕ	CONDENSATE PUMP, WIRED T-STAT. PROVIDE CONDENSATE OVERFLOW SAFETY CUT-OFF SWITCH. UNIT POWERED FROM OUTDOOR UNIT.
MS-3	DAIKIN / FTXS09LVJU	WALL MOUNTED HEAT PUMP	L.T. (125)	279 - MED 194 - LOW 145 - LOW	--	0"	11 5/8" x 31 1/2" x 8 7/16"	20 LBS.	9.8 MBH	80° d.b. 67° w.b.	95° d.b. 75° w.b.	18	11.3 MBH	70° d.b. 60° w.b.	47° d.b. 43° w.b.	12.5	3/8"	1/4"	--	--	208v / 230v, 1ϕ	CONDENSATE PUMP, WIRED T-STAT. PROVIDE CONDENSATE OVERFLOW SAFETY CUT-OFF SWITCH. UNIT POWERED FROM OUTDOOR UNIT.

MINI-SPLIT CONDENSING UNIT SCHEDULE																					
DESIG.	MFR/MDL	TYPE	SERVES	DIMENSIONS (H x W x D)	WEIGHT	COOLING			HEATING			FAN DATA			COMPRESSOR DATA			ELECTRICAL DATA			REMARKS
						CAPACITY	INDOOR	OUTDOOR	CAPACITY	INDOOR	OUTDOOR	CFM / QUANTITY	FLA	KW	TYPE	RANGE	HEATER KW	MCA	MOCP	VOLT/PHASE	
MSCU-1	DAIKIN / 3MXS24RMVJUA	AIR COOLED	MS-1, 2, & 3	28 15/16" x 34 1/4" x 12 5/8"	137 LBS.	24 MBH	80° d.b. 67° w.b.	95° d.b. 75° w.b.	24.0 MBH	70° d.b. 60° w.b.	47° d.b. 43° w.b.	2,004 / 1	0.25	73	INVERTER	35-100%	--	21.9	25	208v / 230v, 1ϕ	0-115 DEGREE OPERATING RANGE. PROVIDE WITH UNIT DISCONNECT.

LOUVER / VENTILATOR SCHEDULE									
DESIG.	MFR./MDL.	TYPE	SERVES	CFM	S.P.	SIZE	VELOCITY FPM	REMARKS	
L-1	GREENHECK / EHR-701	FIXED DRAINABLE	MECH. / PLUMB. (114)	600	0.044	36" W X 20" H	404	PROVIDE W/ BIRD SCREEN. COLOR BY ARCHITECT.	
QV-1	GREENHECK / FGI	GRAVITY VENTILATOR	DRYER EXHAUST MAKEUP	2,640	0.046	24" W X 36" L	440	PROVIDE ROOF CURB, GRAVITY BACKDRAFT DAMPER, & BIRDSCREEN	

- ### HVAC GENERAL NOTES
1. DUE TO THE SMALL SCALE OF THIS DRAWING, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL INVESTIGATE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING THE WORK AND SHALL COORDINATE AND ARRANGE HIS WORK ACCORDINGLY.
  2. ROUND BRANCH DUCT RUNOUTS SHALL BE SAME SIZE AS DIFFUSER THROAT UNLESS OTHERWISE NOTED.
  3. FLEXIBLE DUCT MAY BE USED FOR FINAL CONNECTIONS TO DIFFUSERS. A MAXIMUM LENGTH OF THREE FEET (3') SHALL BE USED. A HARD 90° ELBOW MUST BE USED WHERE DUCT TURNS DOWN ABOVE DIFFUSER.
  4. ALL CEILING-MOUNTED SUPPLY DIFFUSERS SHALL HAVE FOUR-WAY (4-WAY) PATTERN UNLESS OTHERWISE INDICATED.
  5. WHERE MANUAL DAMPERS ARE INSTALLED IN EXTERNALLY INSULATED DUCTWORK, PROVIDE STAND-OFF BRACKET TO PREVENT COMPRESSION OF INSULATION BY DAMPER OPERATOR HANDLE.
  6. PROVIDE TURNING VANES IN ALL 90-DEGREE MITERED ELBOWS.
  7. PROVIDE SLEEVES THROUGH WALLS AND FLOORS. SEAL EXCESS OPENING WITH WATER-PROOF SEALANT. COORDINATE LOCATIONS AND SIZES OF SLEEVES WITH GENERAL CONTRACTOR. SLEEVES SHALL PROVIDE A MAXIMUM OF 1" CLEARANCE BETWEEN DUCT OR PIPE AND SLEEVE. SEAL PENETRATION IN FIRE-SMOKE RATED WALLS AND FLOOR WITH AN APPROVED FIRE-SMOKE BLOCK SEALANT.
  8. EXTERNALLY INSULATE SUPPLY, RETURN, RELIEF, AND OUTSIDE AIR DUCTWORK UNLESS NOTED OTHERWISE.
  9. EXHAUST DUCTWORK SHALL BE UN-INSULATED, UNLESS NOTED OTHERWISE.
  10. EXTERNALLY INSULATE LOW-VELOCITY ROUND RUNOUT DUCTWORK.
  11. DUAL WALL DUCTWORK SHALL BE 1" THICK WITH INSULATION BETWEEN WALLS.
  12. INSULATE THE TOP OF ALL SUPPLY AIR DIFFUSERS WITH A MINIMUM OF 1/2" THICK FIBERGLASS DUCT WRAP.
  13. RUN COOLING COIL CONDENSATE DRAINS FULL SIZE TO NEAREST FLOOR OR ROOF DRAIN.
  14. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE AND SMOKE RATED PARTITIONS.
  15. COORDINATE LOCATION OF DUCTS AND DIFFUSERS WITH STRUCTURAL FRAMING MEMBERS. OFFSET DUCTS AS REQUIRED TO CLEAR STRUCTURAL MEMBERS.
  16. COORDINATE LOCATIONS AND ELEVATION OF DUCT RUNS WITH PLUMBING, SPRINKLER, AND ELECTRICAL CONTRACTORS.
  17. COORDINATE MAKE-UP WATER AND GAS REQUIREMENTS WITH PLUMBING CONTRACTOR.
  18. PROVIDE ACCESS DOORS FOR ALL FIRE DAMPERS. PROVIDE CEILING ACCESS DOORS FOR DAMPERS ABOVE GYPSUM BOARD CEILINGS.
  19. PAINT DUCTWORK BLACK THAT MAY BE VISIBLE ABOVE PARTIAL CEILINGS. COORDINATE PAINTING OF DUCTWORK WITH ARCHITECT.
  20. COORDINATE CEILING DIFFUSER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.



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NO.	REVISIONS

ATU JONES HALL ASBUILT 12.12.23  
ALL DUCT IS INSTALLED PER THIS DRAWING



