

# ENLARGED MECHANICAL ROOM PLAN M1.11 SCALE: 1/4" = 1'-0"

**GENERAL NOTES** 

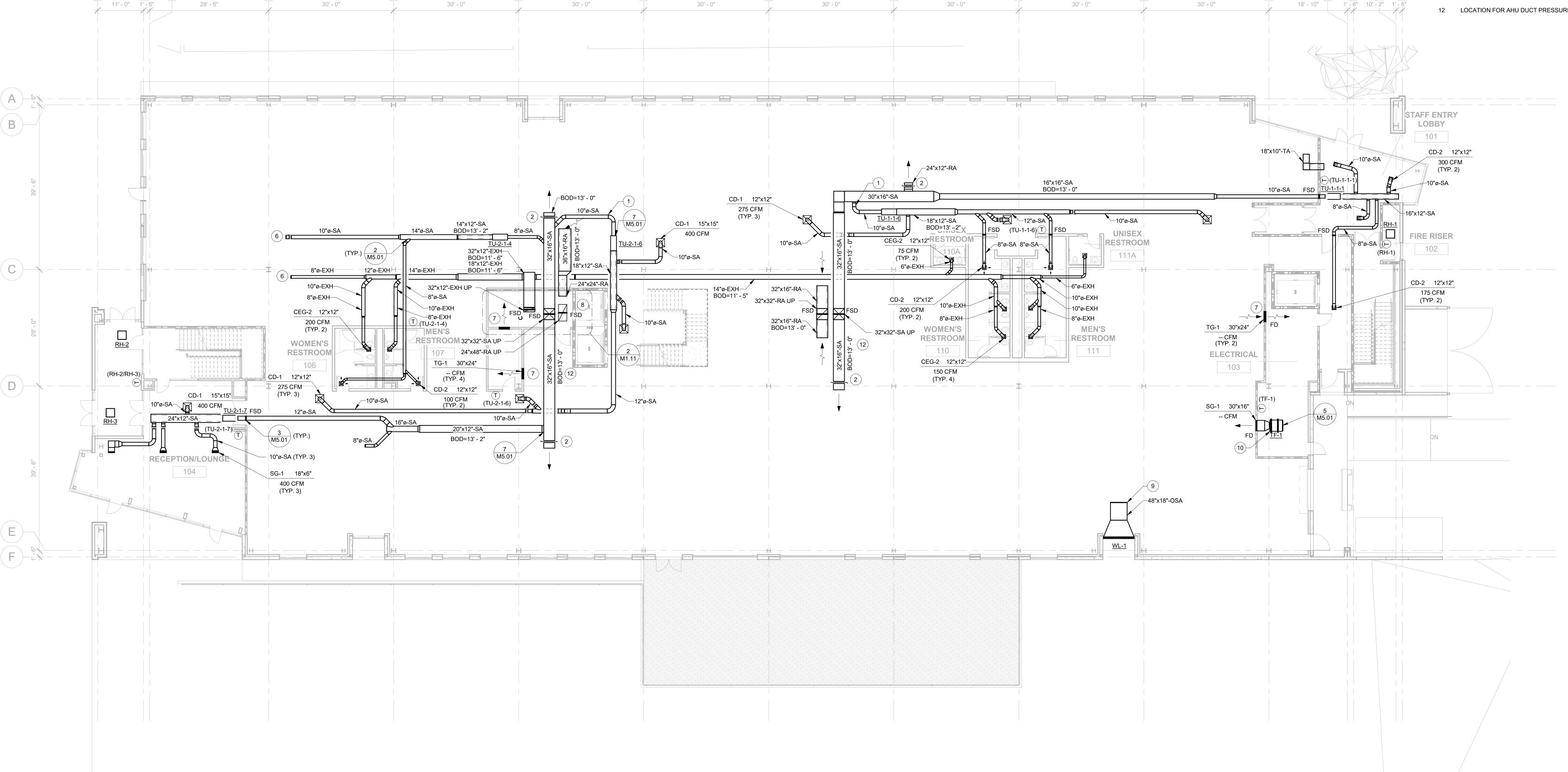
A SEE SHEET M0.01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.

TEMPORARILY HANG DIFFUSERS WITH WIRE IN AREAS WHERE THERE WILL NOT BE A CEILING UNTIL THE TENANT IMPROVEMENT PHASE. LOCATIONS CAN BE APPROXIMATE.

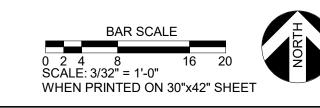
### **KEYED NOTES**

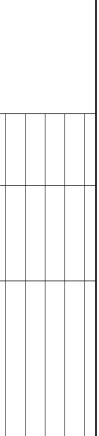
10.9 (11) 11.9 (12)

- FUTURE EXIT CORRIDOR WALL AT THIS LOCATION. FUTURE FIRE/SMOKE DAMPER WILL BE INSTALLED.
- 2 PROVIDE VOLUME DAMPER AND BALANCE TO 1,500 CFM.
- ROUTE 3"-HWS AND 3"-HWR PIPING UP IN SHAFT. PIPING CONTINUES ON SHEET M1.21.
- PLUMBING EQUIPMENT SHOWN FOR COORDINATION.
- CONNECT 1"-CW TO DOMESTIC COLD WATER PIPING IN MECHANICAL ROOM. PROVIDE SHUTOFF VALVE, REDUCED PRESSURE BACKFLOW DEVICE, AND PRESSURE REDUCING VALVE. SET PRV TO 48 PSI.
- 6 PROVIDE VOLUME DAMPER AND BALANCE TO 400 CFM.
- MOUNT TRANSFER GRILLE 12" BELOW STRUCTURE.
- EXTEND DUCT 10" DOWN BELOW CEILING. PROVIDE WIRE.
- 9 CAP DUCT FOR FUTURE EXTENSION.
- 10 MOUNT FAN 12" BELOW STRUCTURE.
- 11 CAP PIPES FOR FUTURE EXTENSION TO KITCHEN MAKEUP AIR.
- 12 LOCATION FOR AHU DUCT PRESSURE SENSOR.



MECHANICAL FIRST LEVEL PLAN M1.11 SCALE: 3/32" = 1'-0"





**CORBIN** 

Beaverton, OR (503)645-0176 Tempe, AZ (480)535-9375

LYNN STA

EXPIRES: 06/30/2024



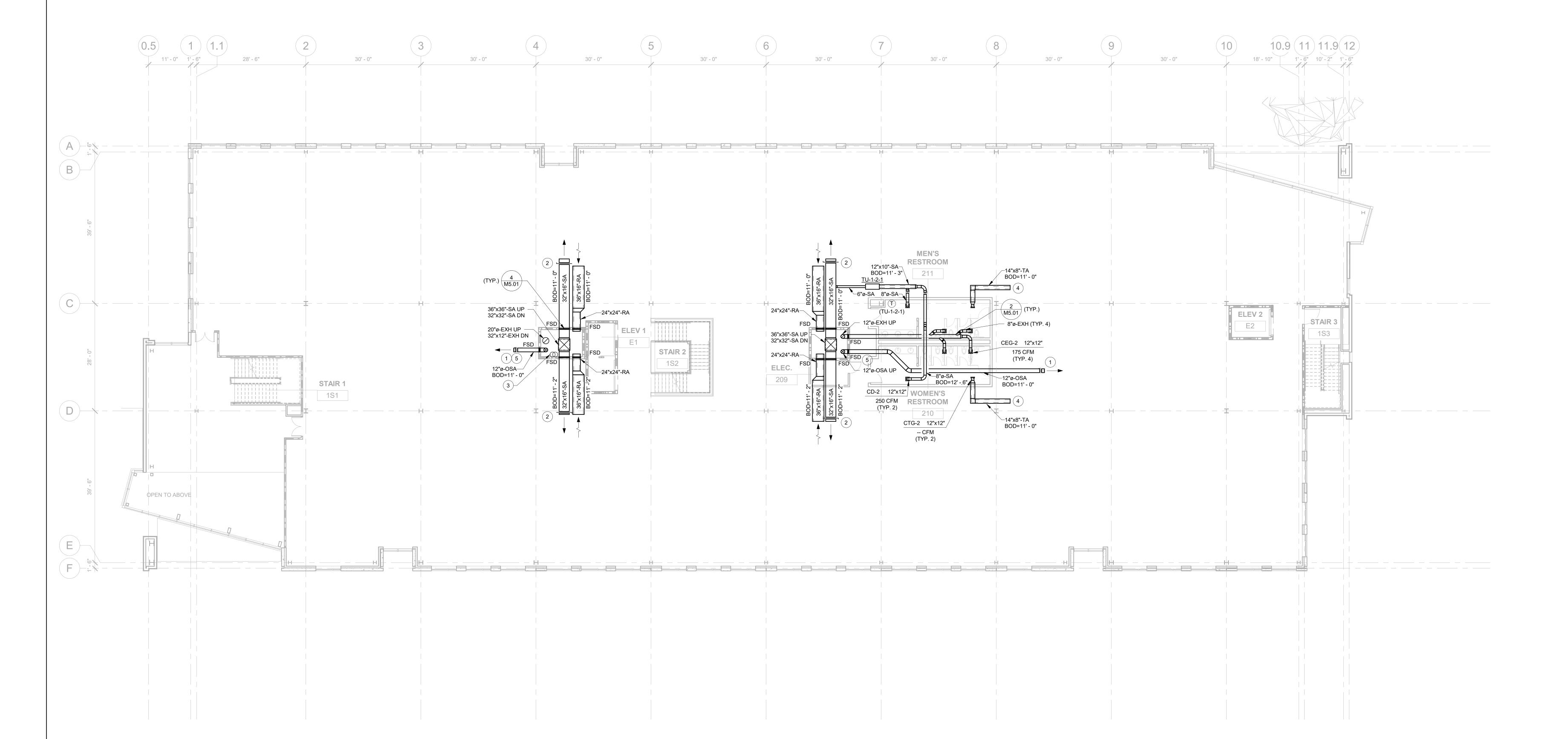
EXPIRES: 06/30/2024

### **GENERAL NOTES**

A SEE SHEET M0.01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.

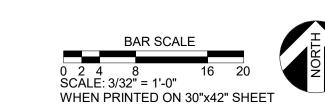
### **KEYED NOTES**

- 1 PROVIDE VOLUME DAMPER AND BALANCE TO 600 CFM.
  - PROVIDE VOLUME DAMPER AND BALANCE TO 1,500 CFM.
- ROUTE BOTH 3"-HWR PIPING UP IN SHAFT. PIPING CONTINUES ON SHEET M1.31. ROUTE BOTH 3"-HWR PIPING DOWN THROUGH BOTTOM OF SHAFT AND INTO MECHANICAL ROOM ON SHEET M1.11.
- 4 TRANSFER AIR DUCT TERMINATES 6" BELOW STRUCTURE.
- 5 LOCATION FOR DOAS DUCT PRESSURE SENSOR.



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1 MECHANICAL SECOND LEVEL PLAN M1.21



Sheet Number

M1.21
Proj No: CC22450B

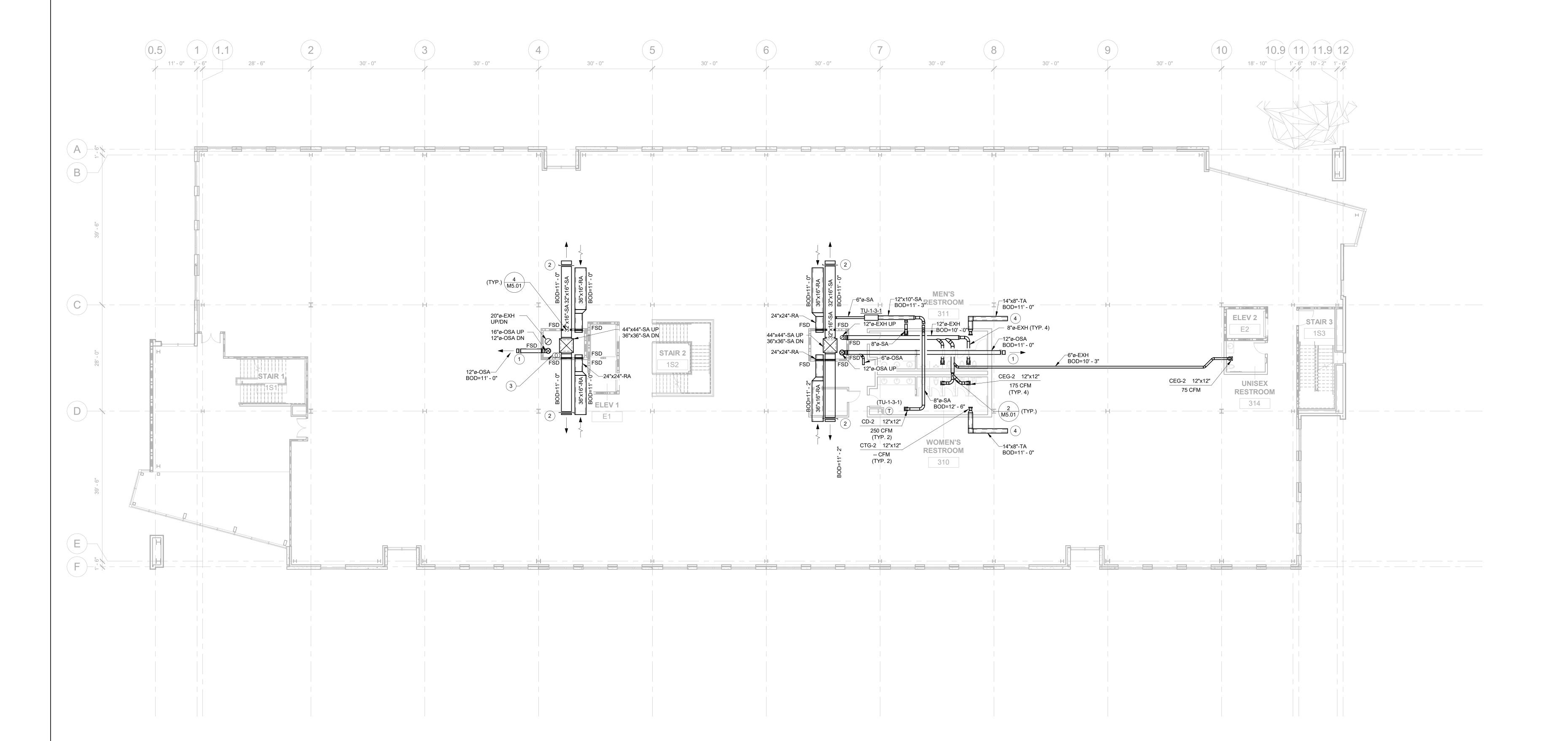


### **GENERAL NOTES**

A SEE SHEET M0.01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.

### **KEYED NOTES**

- 1 PROVIDE VOLUME DAMPER AND BALANCE TO 600 CFM.
- PROVIDE VOLUME DAMPER AND BALANCE TO 1,500 CFM.
- ROUTE BOTH 3"-HWR PIPING UP/DOWN IN SHAFT. PIPING CONTINUES ON SHEETS M1.21 AND M1.31.
- 4 TRANSFER AIR DUCT TERMINATES 6" BELOW STRUCTURE.



1 MECHANICAL THIRD LEVEL PLAN M1.31

BAR SCALE

0 2 4 8 16 20
SCALE: 3/32" = 1'-0"
WHEN PRINTED ON 30"x42" SHEET

Sheet Number

M1.31
Proj No: CC22450B

Sheet Title: MECHANICAL THIRD LEVEL PLAN



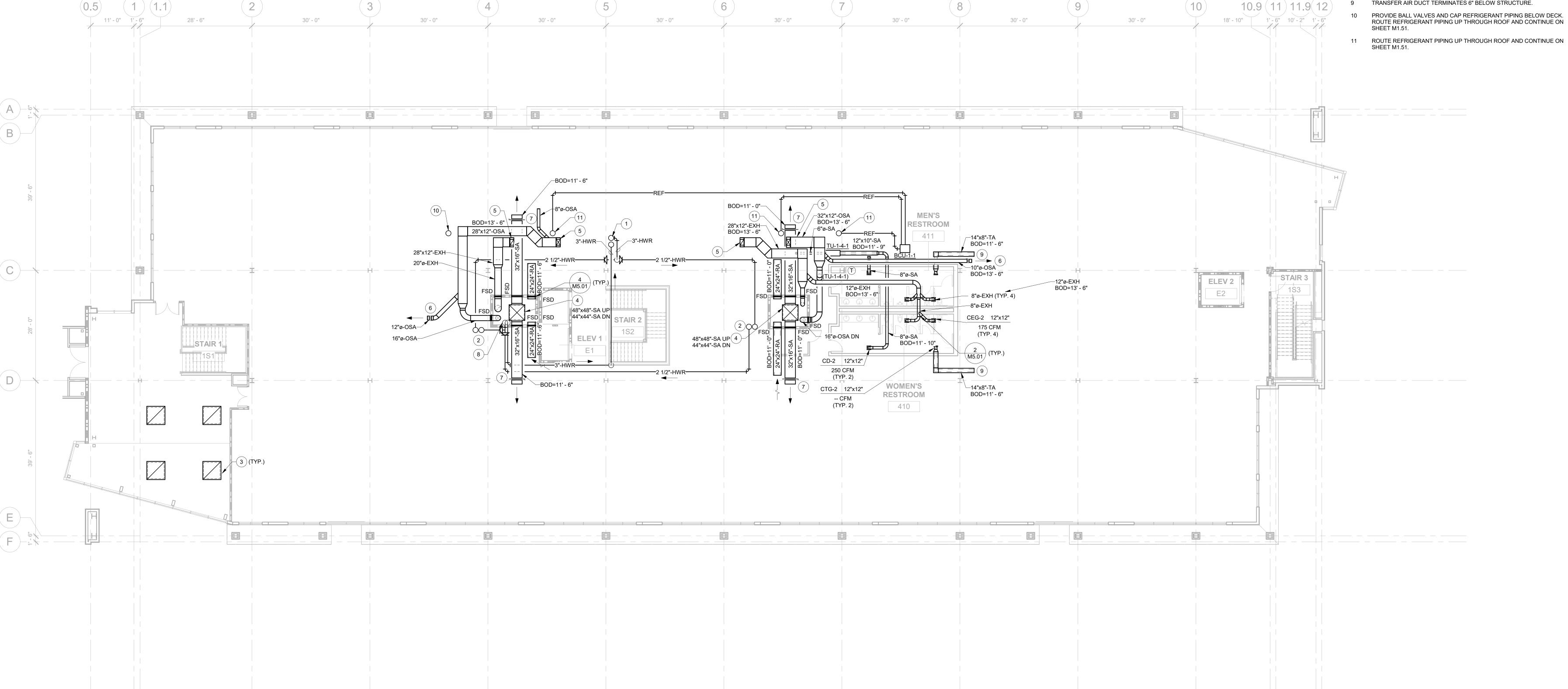


# **GENERAL NOTES**

A SEE SHEET M0.01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.

### **KEYED NOTES**

- 1 ROUTE 3"-HWS/R THROUGH ROOF. SEE SHEET M1.51 FOR CONTINUATION.
- ROUTE 2 1/2"-HWS THROUGH ROOF. SEE SHEET M1.51 FOR CONTINUATION.
- 50"x50" EXHAUST UP. TERMINATE 6" BELOW ROOF DECK. SEE ROOF PLAN FOR LOCATION.
- 4 ROUTE 48"x48" SUPPLY AIR DUCT UP THROUGH ROOF TO AHU. SEE SHEET M1.51 FOR CONTINUATION.
- ROUTE OSA AND EXHAUST DUCTS UP THROUGH ROOF TO DOAS UNIT. SEE SHEET M1.51 FOR CONTINUATION.
- 6 PROVIDE VOLUME DAMPER AND BALANCE TO 600 CFM.
- 7 PROVIDE VOLUME DAMPER AND BALANCE TO 1,500 CFM.
- ROUTE BOTH 3"-HWR PIPING DOWN IN SHAFT. PIPING CONTINUES ON SHEETS M1.31.
- 9 TRANSFER AIR DUCT TERMINATES 6" BELOW STRUCTURE.
- ROUTE REFRIGERANT PIPING UP THROUGH ROOF AND CONTINUE ON
- ROUTE REFRIGERANT PIPING UP THROUGH ROOF AND CONTINUE ON SHEET M1.51.



1 MECHANICAL FOURTH LEVEL PLAN M1.41



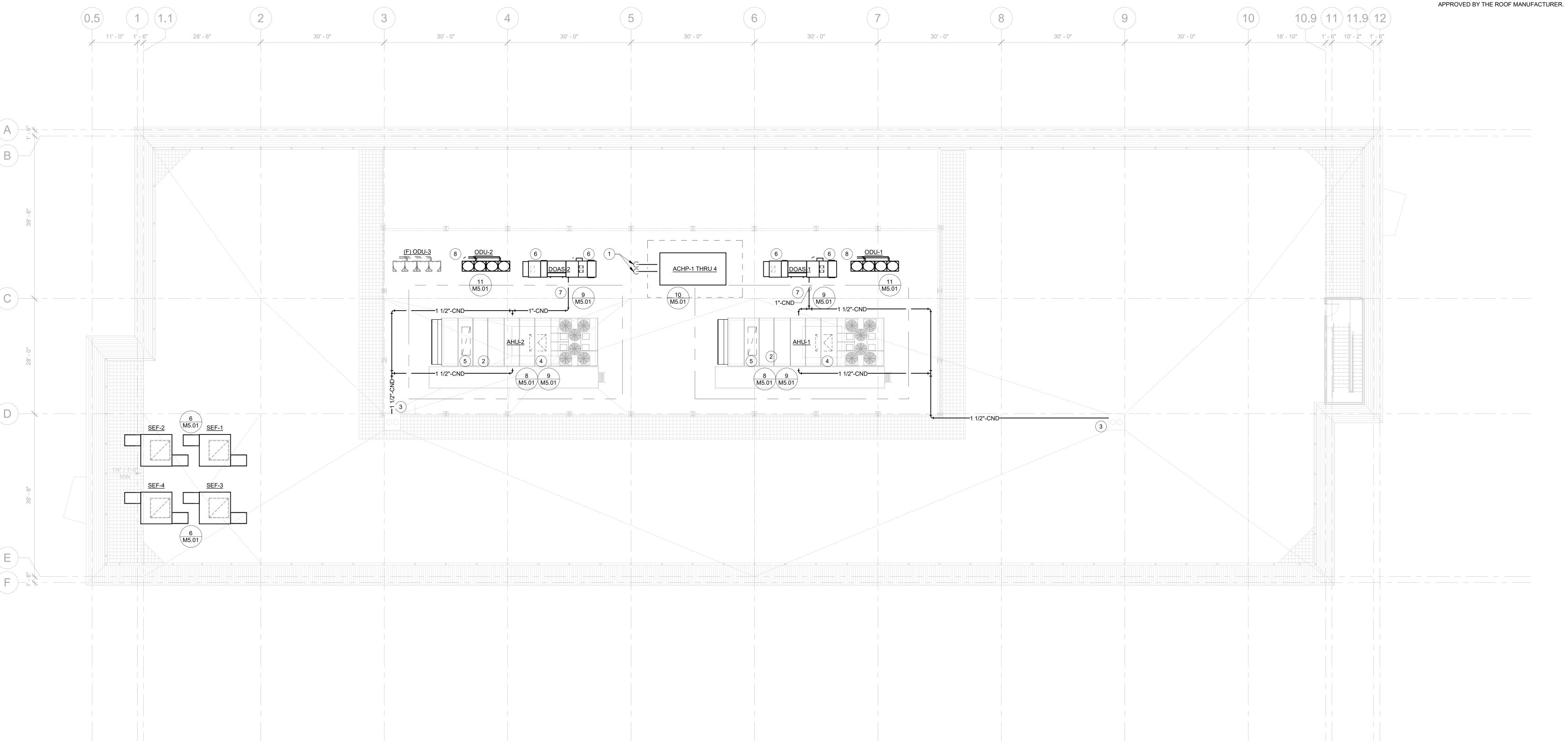
# Tempe, AZ (480)535-9375 www.corbinengineering.com SERED PROFESSO SASSIBLE PE SASSIBLE PE

### **GENERAL NOTES**

A SEE SHEET M0.01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.

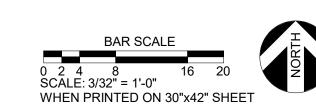
### **KEYED NOTES**

- 1 CONNECT 6"-HWS/R TO ACHP-1. TRANSITION TO 3", ELBOW DOWN, AND PENETRATE ROOF. SEE SHEET M1.41 FOR CONTINUATION.
- 2 CONNECT 1 1/2"-HWS/R TO AHU-1&2. TRANSITION TO 2 1/2", ELBOW DOWN, AND PENETRATE ROOF WITH FLASHING APPROVED BY THE ROOF MANUFACTURER. SEE SHEET M1.41 FOR CONTINUATION.
- 3 TERMINATE CONDENSATE NEAR ROOF DRAINS.
- 4 ROUTE 48"x48" SUPPLY AIR DUCT DOWN IN SHAFT AND CONTINUE ON SHEET M1.41. TRANSITION AND MAKE CONNECTION TO UNIT.
- 5 RETURN AIR CONNECTION ON UNIT OPEN TO PLENUM BENEATH UNIT.
- 6 ROUTE OSA AND EXHAUST DUCTS DOWN THROUGH ROOF AND CONTINUE ON SHEET M1.41.
- 7 CONNECT TO (3) CONDENSATE DRAINS ON THIS UNIT.
- 8 ROUTE REFRIGERANT PIPING DOWN THROUGH ROOF WITH FLASHING APPROVED BY THE ROOF MANUFACTURER.



Sheet Title:
MECHANICAL RO

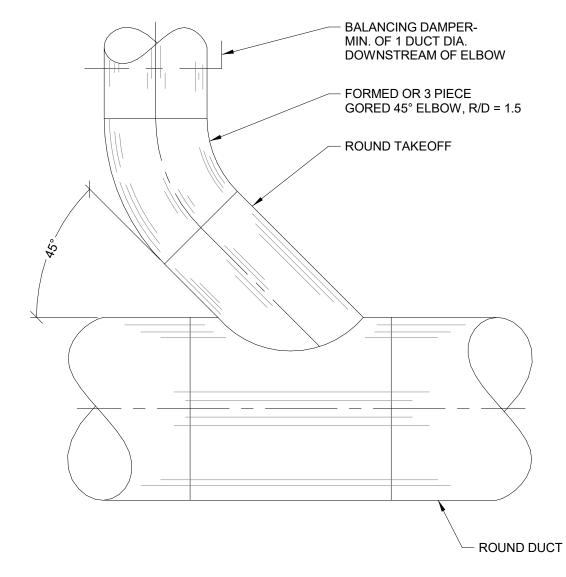
1 MECHANICAL ROOF PLAN M1.51



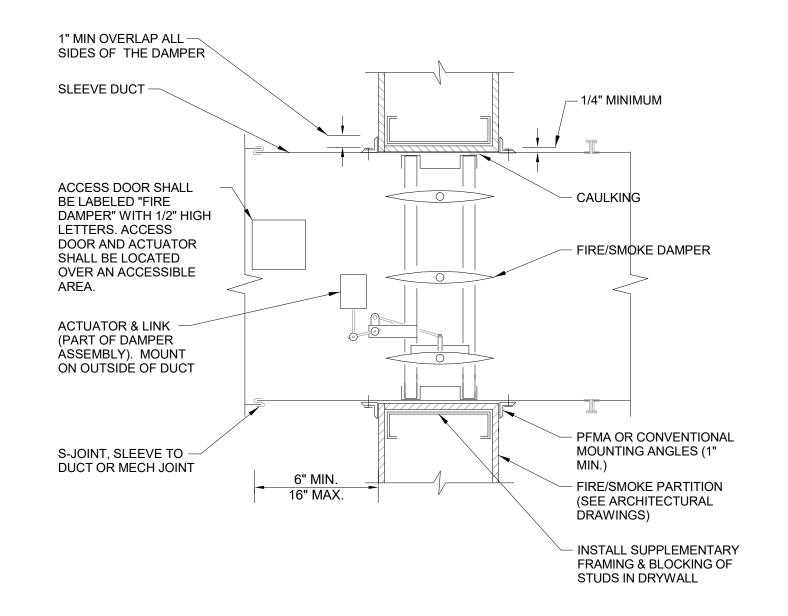
Sheet Number

M1.51
Proj No: CC22450B





SUPPLY BRANCH - ROUND TO ROUND

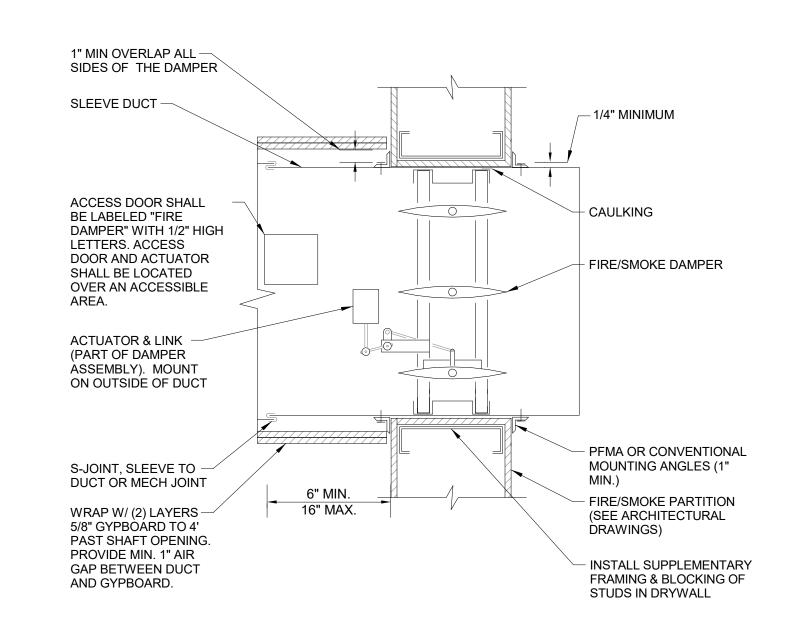


1 DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING & MANUFACTURER'S INSTALLATION INSTRUCTIONS. COMBINATION FIRE/SMOKE DAMPER



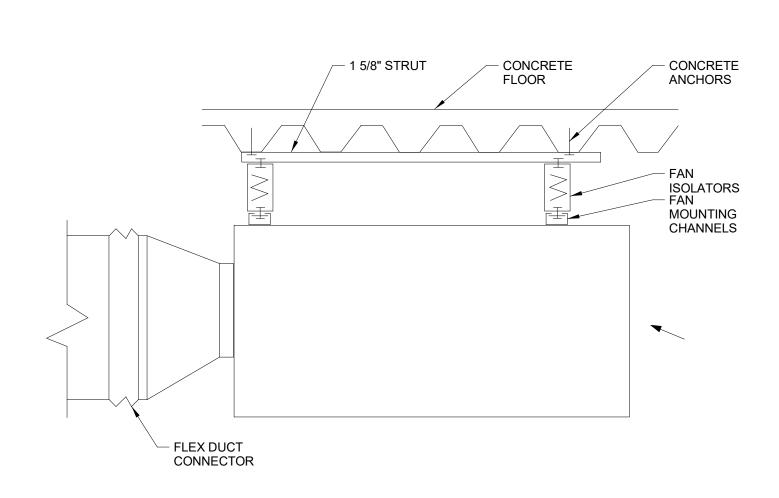




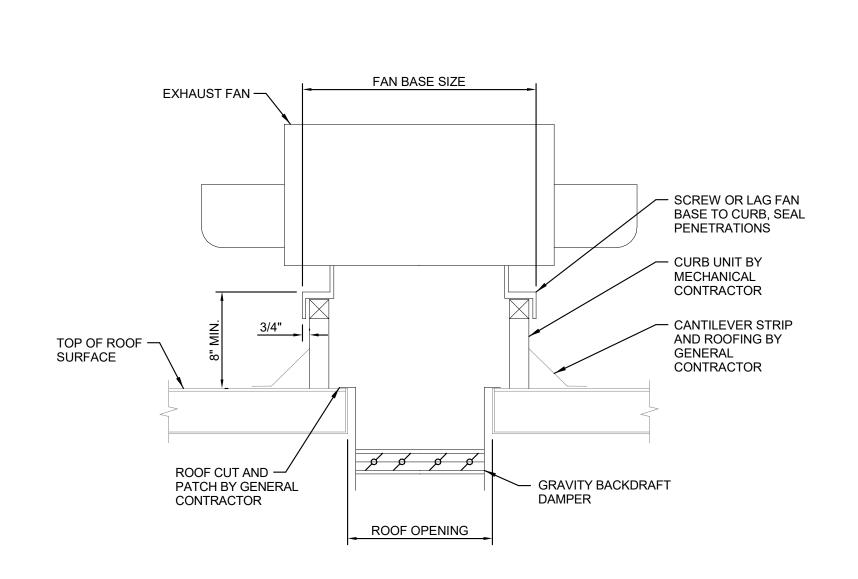


1 DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING & MANUFACTURER'S INSTALLATION INSTRUCTIONS. 2 LEAVE OPENING IN GYPBOARD FOR DUCT ACCESS AND ACTUATOR.

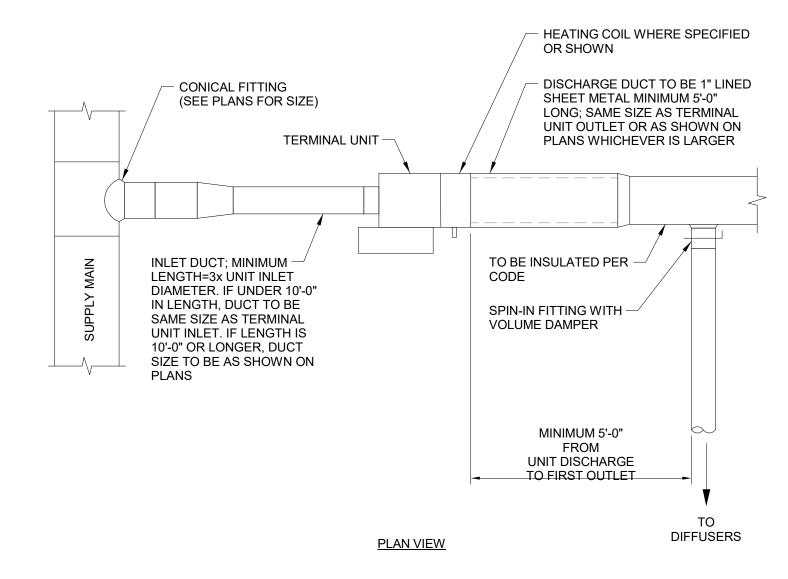
COMBINATION FIRE/SMOKE DAMPER



TRANSFER FAN

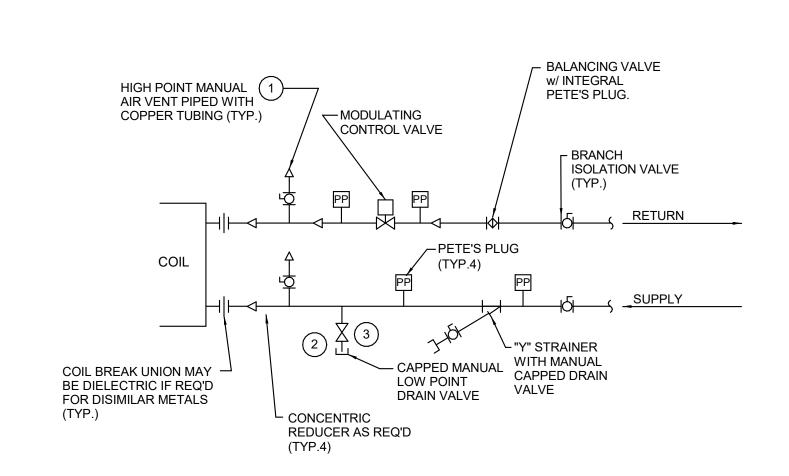


SMOKE EXHAUST FAN



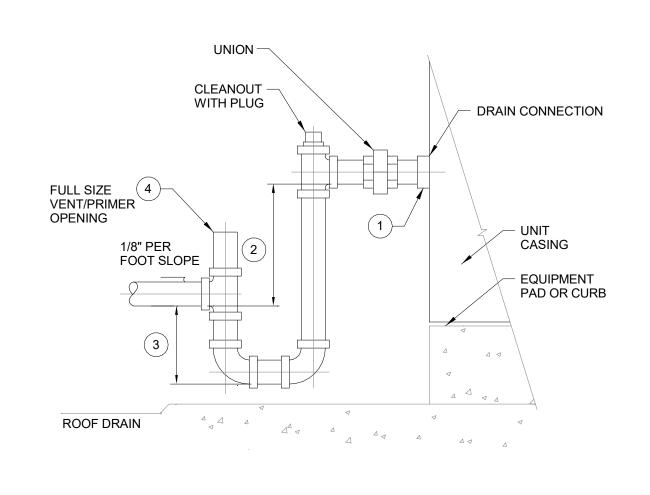
DUCTWORK SHALL BE BRACED AND GUYED DOWNSTREAM FROM TERMINAL UNIT. SWAY BRACING SHALL EXTEND AROUND PERIMETER OF DUCT AND PREVENT LATERAL AND HORIZONTAL SWING.





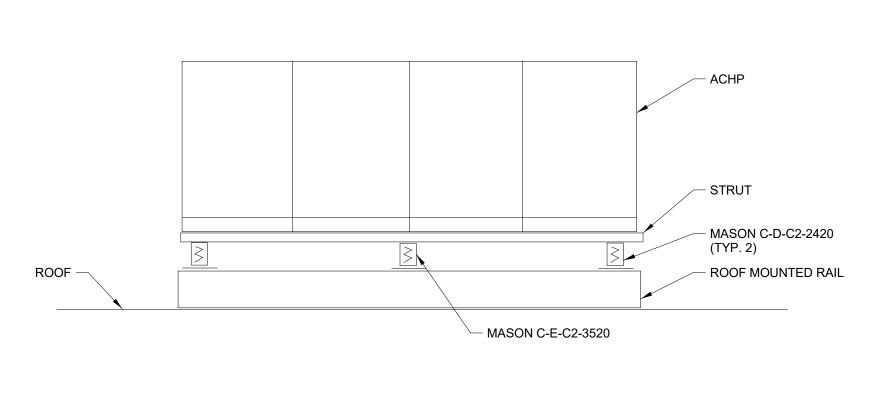
1 CAN REPLACE WITH COIL HIGH POINT VENT AND BALL VALVE. AIR VENTS TO BE READILY ACCESSIBLE (ACCESS REQUIRES NO MORE THAN A LADDER). 2 CAN REPLACE WITH COLL LOW POINT DRAIN AND BALL VALVE.3 INCLUDE CAP AND CHAIN.



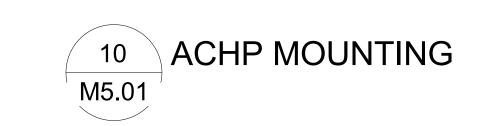


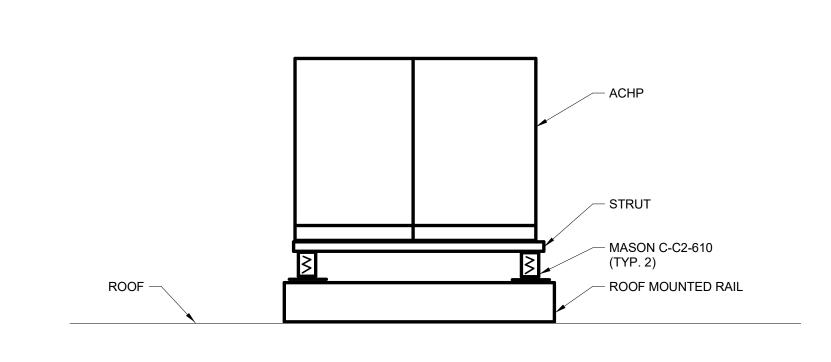
MINIMUM DRAIN PIPE SIZE EQUAL TO CONNECTION PROVIDED WITH EQUIPMENT.
MINIMUM DISTANCE EQUAL TO NEGATIVE STATIC PRESSURE (IN. W.C.)+1" OR 1/2 POSITIVE STATIC PRESSURE (IN. W.C.) +1". DISTANCE EQUAL TO 1/2 NEGATIVE STATIC PRESSURE (IN. W.C.)+1" OR POSITIVE STATIC PRESSURE (IN. WC.) +1". SEE MECH. SCHEDULES FOR STATIC PRESSURE INFORMATION. TRAP PRIMÈR NOT REQUIRED FOR AHU'S OR NON-CLEAN MAU'S.





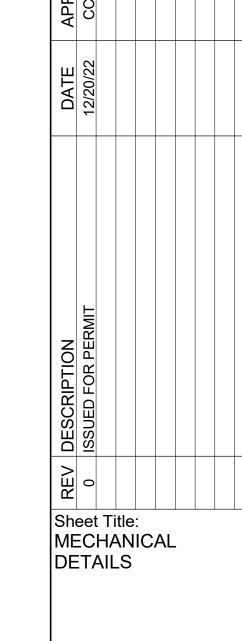
1 SEE STRUCTURAL DRAWINGS FOR ATTACHMENT DETAILS.





1 SEE STRUCTURAL DRAWINGS FOR ATTACHMENT DETAILS.





Sheet Number: M5.01Proj No: CC22450B 3. PROVIDE WITH LOW AMBIENT CONTROL.

4. PROVIDE WITH 1 1/4" MODULATING HOT WATER VALVE.

5. EWT = 120F, LWT = 100F, 30% GLYCOL MIX.

6. PROVIDE WITH HIGH CAPACITY EVAPORATIVE COIL. 7. PROVIDE WITH HIGH SCCR. SEE SCHEDULE FOR VALUE. 8. PROVIDE WITH SPINGLE POINT CONNECTION WITH UNIT DISCONNECT.

9. PROVIDE 2" INSULATED DOUBLE WALL CABINET. 11. PROVIDE HIGHED ACCESS PANELS.

12. PROVIDE ENTROPY ECONOMIZER WITH FAULT DETECTION.

13. PROVIDE WITH BUILDING PRESSURIZATION CONTROL ON RETURN/EXHAUST FAN. 14. PROVIDE WITH FACTORY MOUNTED CONVENIENCE OUTLET.

|        |             |               |         |        |            |        |             |                  |                   |              |                              |                 |                         |                   |              | DOAS                              | UNIT S                    | CHE           | DULE  |      |           |      |          |        |               |                    |       |              |           |         |                                   |
|--------|-------------|---------------|---------|--------|------------|--------|-------------|------------------|-------------------|--------------|------------------------------|-----------------|-------------------------|-------------------|--------------|-----------------------------------|---------------------------|---------------|-------|------|-----------|------|----------|--------|---------------|--------------------|-------|--------------|-----------|---------|-----------------------------------|
| TAG    | SERVICE     | AIR           |         |        | SUPPLY FAN | 1      |             |                  | - 1               | DX COIL (F   | EAT PUMP) COC                | LING            |                         |                   | DX CO        | IL (HEAT PUM                      | P) HEATING                |               |       |      | ELECTRICA | L    |          | FII    | LTER          |                    |       | BASIS        | OF DESIGN |         | REMARKS                           |
|        |             | FLOW<br>(CFM) | ESP QTY | Y TYPE | SIZE DF    | RIVE   | RPM BHP H   | P TOTAL<br>(MBH) | SENSIBLE<br>(MBH) | REF.<br>TYPE | EAT LAT (°F) (°F) DB/WB DB/W | VELOCITY<br>FPM | SEER /<br>EER<br>RATING | SENSIBLE<br>(MBH) | REF.<br>TYPE | EAT LA'<br>(°F) (°F<br>DB/WB DB/V | T VELOCITY<br>) FPM<br>VB | COP<br>RATING | VOLTS | Ø FL | A MCA     | MOCP | SCCR QTY | H (IN) | W D (IN) (IN) | DIMENSION H W (IN) |       | EIGHT<br>LBS | MFG       | MODEL   |                                   |
| DOAS-1 | VENTILATION | 2,000         | 1 1     |        | 12.25 DIF  |        |             | 69.2             | 69.2              | R410a        | 86/56.3 55/42.               | 1 443           | -                       | 69.2              | R410a        | 87/56.4 55/42                     | 2.1 443                   | -             | 460   | 3 6. | 1 7.3     | 15   | 5KA 4    | 16     | 20 2          | 75 44              | 194 3 | ,450         | TRANE     | CSAA004 | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 |
| DOAS-2 | VENTILATION | 2,000         | 1 1     | PLENUM | 12.25 DIF  | RECT : | 3600 2.14 3 | 69.2             | 69.2              | R410a        | 86/56.3 55/42.               | 1 443           | -                       | 69.2              | R410a        | 87/56.4 55/42                     | 2.1 443                   | -             | 460   | 3 6. | 7.3       | 15   | 5KA 4    | 16     | 20 2          | 75 44              | 194 3 | ,450         | TRANE     | CSAA004 | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 |

NOTES: 1. PROVIDE WITH MULTIPLE POINT ELECTRICAL CONNECTION.

2. DEDICATED 115V/1PH, 15A CIRCUIT FOR MOUNTED RECEPTACLE. 3. VFD MOUNTED IN CONTROL CABINET.

4. PROVIDE WITH SUPPLY FAN AND EXHAUST FAN.

5. PROVIDE WITH 2" FOAM INSULATED CABINET.

6. PROVIDE WITH FLAT PLAT HEAT EXCHANGER. 7. PROVIDE WITH FIELD SUPPLIED TRANE/MITSUBISHI VRF LEV KIT PAC-LV96AC-1.

8. PROVIDE WITH DDC CONTROLLER FOR INTERFACE WITH TRANE TRACER SC+ DDC SYSTEM.

9. PROVIDE WITH STANDARD 14" ROOF CURB.

10. PROVIDE WITH PREMINUM EFFICENCY MOTORS. 11. SEE ODU SCHEDULES FOR SEER/EER/COP EFFICIENCY DATA.

|        |                        |                   |      |            |           |        |        |        |       |                            |         |           | All    | R CO     | OLEI | D LIC | QUID | СН     | ILLE    | R/HE              | EAT I                   | PUM    | P S         | CHEDU         | JLE             |          |                                   |
|--------|------------------------|-------------------|------|------------|-----------|--------|--------|--------|-------|----------------------------|---------|-----------|--------|----------|------|-------|------|--------|---------|-------------------|-------------------------|--------|-------------|---------------|-----------------|----------|-----------------------------------|
| TAG    | SERVICE                | LOCATION          |      | REFRIGERAN | IT        |        | EVAPO  | DRATOR |       |                            |         | COMP      | RESSOR |          |      |       | ELEC | TRICAL |         |                   |                         |        |             |               | BASIS OF DESIGN |          | REMARKS                           |
|        |                        |                   | TONS | TYPE       | EWT<br>°F | LWT GF | PM WP  |        |       | AP. Q <sup>-</sup><br>1BH) | TY TYPE | STEP<br>% | S KW   | OAT (°F) | HP   | V Ø   | FLA  | MCA I  | MOCP SC | CR [<br>H<br>(IN) | DIMENSIC<br>W<br>) (IN) | D (IN) | EFF.<br>COP | WEIGHT<br>LBS | MFG             | MODEL    |                                   |
| ACHP-1 | AHU-1, AHU-2           | ROOF              | 30   | R410a      | 100       | 120 11 | 17 3.9 | .0001  | 10 27 | 78.5 2                     | 2 SCROL | L 4       | 142    | 2 105    | - 4  | 460 3 | 63.2 | 72.0   | 100 65  | KA 88             | 95                      | 48     | 2.11        | 3,000         | TRANE           | AXM030   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 |
| CHP-2  | AHU-1, AHU-2           | ROOF              | 30   | R410a      | 100       | 120 11 | 17 3.9 | .0001  | 10 27 | 78.5 2                     | 2 SCROL | L 4       | 142    | 2 105    | - 4  | 460 3 | 63.2 | 72.0   | 100 65  | KA 88             | 95                      | 48     | 2.11        | 3,000         | TRANE           | AXM030   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10     |
| CHP-3  | AHU-1, AHU-2           | ROOF              | 30   | R410a      | 100       | 120 11 | 17 3.9 | .0001  | 10 27 | 78.5 2                     | 2 SCROL | L 4       | 142    | 2 105    | - 4  | 460 3 | 63.2 | 72.0   | 100 65  | KA 88             | 95                      | 48     | 2.11        | 3,000         | TRANE           | AXM030   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10     |
| CHP-4  | AHU-1, AHU-2           | ROOF              | 30   | R410a      | 100       | 120 11 | 17 3.9 | .0001  | 10 27 | 78.5 2                     | 2 SCROL | L 4       | 142    | 2 105    | - 4  | 460 3 | 63.2 | 72.0   | 100 65  | KA 88             | 95                      | 48     | 2.11        | 3,000         | TRANE           | AXM030   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10     |
| WH-1   | DOMESTIC WATER HEATING | 1ST FLOOR MECH RM | 10   | R-134a     | 110       | 120 4  | 0 3.0  | 6      | 20    | 06.4                       | 1 SCROL | 1 1       |        | 70       |      | 460 3 | 26.5 | 45     | 50 5    | /Λ /2             | 45                      | 72     |             | 1,400         | AO SMITH        | AHPA-185 | 12, 13, 14                        |

NOTES: 1. PROVIDE MODULAR 30 NOMINAL TON AIR SOURCE HEAT PUMP.

2. PROVIDE FORMED GALVANIZED SHEET METAL FRAME POWDER COATED WITH AN OVEN BAKED FINISH.

3. PROVIDE WITH POWDER COATED STEEL SHEET METAL CABINET PANELS THAT ARE EASILY REMOVABLE.

4. PROVIDE 15 HP SCROLL COMPRESSOR ON EACH REFRIGERATION CIRCUIT EACH WITH SERVICE VALVES, CRANKCASE HEATER, SOLID STATE OVERLOAD PROTECTION AND IN-LINE CIRCUIT BREAKER. 5. PROVIDE DUAL CIRCUIT, BRAZED PLATE HEAT EXCHANGER IN EACH HEAT PUMP MODULE FOR USE AS AN EVAPORATOR OR CONDENSER DEPENDING ON THE OPERATING MODE.

7. PROVIDE REFRIGERATION REVERSING VALVE ON EACH REFRIGERATION CIRCUIT. 8. PROVIDE WITH DDC CONTROLLER FOR INTERFACE WITH TRANE TRACER SC+ DDC SYSTEM.

9. PROVIDE A SMART OPERATOR 7" TOUCH SCREEN GRAPHICAL INTERFACE DISPLAY.

10. PROVIDE ELECTRONIC MODULATING VALVE AND MANUAL ISOLATION VALVE ON EACH HEAT EXCHANGER. 11. SINGLE POINT CONNECTION FOR SYSTEM BANK: 253.0 FLA, 261.0 MCA, 300 MOCP.

12. PROVIDE WITH MULTI-PASS CONFIGURATION. 13. PROVIDE WITH DOUBLE WALL HEAT EXCHANGER FOR USE WITH POTABLE WATER SYSTEM. 14. PROVIDE WITH 24VDC CONTROLS.

|         |               |                         |        |       |                               |              |                      |                      |     |             |             | INDO | OOR VRF I  | FAN C                 | OIL S                  | SCHED           | JLE                            |                 |                  |                |              |         |
|---------|---------------|-------------------------|--------|-------|-------------------------------|--------------|----------------------|----------------------|-----|-------------|-------------|------|------------|-----------------------|------------------------|-----------------|--------------------------------|-----------------|------------------|----------------|--------------|---------|
| TAG     | SERVICE       | TYPE                    | MAX C  | SA    |                               | COOLING      |                      |                      |     | HEATING     |             |      | ELECTRICAL | REFRIG                | ERANT                  | SOUND           |                                |                 | BASIS OF DESIGN  |                | SERVED BY    | REMARKS |
|         |               |                         | CFM (C | FM) T | TOTAL SENSIBLE<br>(MBH) (MBH) | REF.<br>TYPE | EAT<br>(°F)<br>DB/WB | LAT<br>(°F)<br>DB/WB | MBH | EAT<br>(°F) | LAT<br>(°F) | V    | Ø MCA MOCP | LIQUID<br>DIA<br>(IN) | SUCTION<br>DIA<br>(IN) | MAXIMUM<br>(DB) | DIMENSIONS H W D (IN) (IN) (IN | WEIGHT<br>(LBS) | r MFG            | MODEL          | OUTDOOR UNIT |         |
| BCU-1-1 | DOAS-1/DOAS-2 | CONTROLLER/SELECTOR BOX | -      | -     | 336 -                         | R410A        | -                    | -                    | 336 | -           | -           | 208  | 1 1.3 -    | 1/2                   | 1 1/8                  | 50              | 12 45 14                       | 200             | MITSUBISHI/TRANE | TCMBM108JA11N4 | ODU-1        | 1, 2, 3 |

1. PROVIDE WITH PIPE JOINT KITS. 2. PROVIDE WITH FULL PORT BALL VALVES.

3. PROVIDE WITH 5kA SCCR.

3. CONNECTED RATED CAPACITY

| TAG    | LOCATION |                  | COOLING               |                         | HE               | EATING                |     | RE                    | FRIGERAN               | Т            | El | LECTF | RICAL |     | SOUND |    |                     |    | ВА              | SIS OF DESIGN |                 | REMARKS |
|--------|----------|------------------|-----------------------|-------------------------|------------------|-----------------------|-----|-----------------------|------------------------|--------------|----|-------|-------|-----|-------|----|---------------------|----|-----------------|---------------|-----------------|---------|
|        |          | NOMINAL<br>(MBH) | MIN<br>OSA<br>(°F DB) | IEER /<br>EER<br>RATING | NOMINAL<br>(MBH) | MIN<br>OSA<br>(°F DB) | СОР | LIQUID<br>DIA<br>(IN) | SUCTION<br>DIA<br>(IN) | REF.<br>TYPE | V  | Ø MC  | CA MC | DCP | (DBA) | Н  | MENSIC<br>W<br>(IN) | D  | WEIGHT<br>(LBS) | MFG           | MODEL           |         |
| DDU-01 | ROOF     | 336              | 105                   | 22.5/10.5               | 378              | 19                    | 3.2 | 7/8                   | 1 1/8                  | R410A        | s  | EE NC | OTE 1 |     | 84    | 72 | 138                 | 30 | 1650            | TRANE         | TURYE3364BN40AN | 1, 2, 3 |
| ODU-02 | ROOF     | 336              | 105                   | 22.5/10.5               | 378              | 19                    | 3.2 | 7/8                   | 1 1/8                  | R410A        | S  | EE NC | OTE 1 |     | 84    | 72 | 138                 | 30 | 1650            | TRANE         | TURYE3364BN40AN | 1, 2, 3 |

|          |                        |       |      | 7   | ΓERM | IINAL | _ UN   | IT S | CH   | <b>EDUL</b> | .E    |      |     |       |         |        |
|----------|------------------------|-------|------|-----|------|-------|--------|------|------|-------------|-------|------|-----|-------|---------|--------|
| TAG      | AREA SERVED            | INLET | MAX  | HTG | MIN  | WATE  | R COIL |      |      | ELECTRIC    | COIL  |      | LAT | DESIG | N BASIS | REMARK |
| NUMBER   |                        | (IN)  | CFM  | CFM | CFM  | MBH   | GPM    | KW   | VOLT | PHASE       | STEPS | SCCR | °F  | MFG   | MODEL   |        |
| TU-1-1-1 | EAST LOBBY             | 10    | 950  | 400 | 300  | -     | -      | 5    | 277  | 1           | 3     | 5K   | 95  | TRANE | VCEF    | 1, 2   |
| TU-1-1-6 | CORRIDOR/TOILET ROOMS  | 10    | 1225 | -   | 375  | -     | -      | -    | -    | -           | -     | -    | -   | TRANE | VCCF    | 1, 2   |
|          |                        |       |      |     |      |       |        |      |      |             |       |      |     |       |         |        |
| TU-2-1-4 | TOILET/SHOWER          | 8     | 800  | 325 | 250  | -     | -      | 2    | 277  | 1           | 3     | 5K   | 74  | TRANE | VCCF    | 1, 2   |
| TU-2-1-6 | CORRIDOR               | 10    | 1225 | -   | 375  | -     | -      | -    | -    | -           | -     | -    | -   | TRANE | VCCF    | 1, 2   |
| TU-2-1-7 | WEST LOBBY             | 12    | 1600 | 650 | 500  | -     | -      | 8    | 277  | 1           | 3     | 5K   | 94  | TRANE | VCEF    | 1, 2   |
| TU-1-2-1 | 2ND FLOOR TOILET ROOMS | 6     | 500  | _   | 150  | -     | -      | -    | -    | -           | -     | -    | -   | TRANE | VCCF    | 1, 2   |
| TU-1-3-1 | 3RD FLOOR TOILET ROOMS | 6     | 500  | -   | 150  | -     | -      | -    | -    | -           | -     | -    | -   | TRANE | VCCF    | 1, 2   |
| ΓU-1-4-1 | 4TH FLOOR TOILET ROOMS | 6     | 500  | -   | 150  | -     | -      | -    | -    | -           | -     | -    | -   | TRANE | VCCF    | 1, 2   |

|      |          |         |               |                |              |         | LOUV     | <b>ER SCI</b> | HED  | ULE       |           |           |              |        |            |
|------|----------|---------|---------------|----------------|--------------|---------|----------|---------------|------|-----------|-----------|-----------|--------------|--------|------------|
| AG   | LOCATION | SERVICE | AIR           | FACE           | FREE         | P.D.    | MATERIAL | FINISH        | QTY. |           |           |           | DESIGN BASIS |        | REMARKS    |
|      |          |         | FLOW<br>(CFM) | VELOCITY (FPM) | AREA<br>(SF) | (IN.WG) |          |               |      | DIN       | MENSION   | NS        | MFG          | MODEL  |            |
|      |          |         |               |                | ( )          |         |          |               |      | H<br>(IN) | W<br>(IN) | D<br>(IN) |              |        |            |
| /L-1 | KITCHEN  | OSA     | 8000          | 988            | 8.1          | 0.12    | ALUMINUM | 70% PVDF      | 1    | 36        | 88        | 2         | RUSKIN       | ELF211 | 1, 2, 3, 4 |

1. COORDINATE WITH ARCHITECT FOR FINAL COLOR SELECTION. 2. PROVIDE WITH INSECT SCREEN. 3. PROVIDE WITH STANDARD FRAME 4. PROVIDE CUSTOM SIZE. DIMENSIONS ARE APPROXIMATE. FIELD MEASURE BEFORE ORDERING.

1. PROVIDE WITH FACTORY INTEGRATED DDC CONTROLS.

2. PROVIDE WITH 110 VOLT TRANSFORMER FOR CONTROLS.

|            |            |               |        |       |        |         |      | <b>FAN</b>  | SCH                 | EDI | IJL | E     |           |              |                 |            |             |        |                     |
|------------|------------|---------------|--------|-------|--------|---------|------|-------------|---------------------|-----|-----|-------|-----------|--------------|-----------------|------------|-------------|--------|---------------------|
| TAG NUMBER | LOCATION   | SERVICE       | TYPE   | FAN   | CFM    | TSP     | FAN  | E           | LECTRICA            | \L  |     | DRIVE | VIB. ISOL | ATION        |                 | С          | ESIGN BASIS |        | REMARKS             |
|            |            |               |        | CLASS |        | (IN WG) | RPM  | MOTOR<br>HP | MAX<br>MOTOR<br>BHP | V   | Ø   |       | TYPE      | DEF.<br>(IN) | WEIGHT<br>(LBS) | MAX<br>dBA | MFG.        | MODEL  |                     |
| SEF-1      | ATRIUM     | SMOKE CONTROL | ROOF   | 1     | 30,000 | 0.50    | 1725 | 7.50        | 7.43                | 460 | 3   | BELT  | -         | -            | 1,600           | 75         | COOK        | 490LPB | 1, 2, 3, 4, 5, 6, 7 |
| SEF-2      | ATRIUM     | SMOKE CONTROL | ROOF   | 1     | 30,000 | 0.50    | 1725 | 7.50        | 7.43                | 460 | 3   | BELT  | -         | -            | 1,600           | 75         | COOK        | 490LPB | 1, 2, 3, 4, 5, 6, 7 |
| SEF-3      | ATRIUM     | SMOKE CONTROL | ROOF   | 1     | 30,000 | 0.50    | 1725 | 7.50        | 7.43                | 460 | 3   | BELT  | -         | -            | 1,600           | 75         | COOK        | 490LPB | 1, 2, 3, 4, 5, 6, 7 |
| SEF-4      | ATRIUM     | SMOKE CONTROL | ROOF   | 1     | 30,000 | 0.50    | 1725 | 7.50        | 7.43                | 460 | 3   | BELT  | -         | -            | 1,600           | 75         | СООК        | 490LPB | 1, 2, 3, 4, 5, 6, 7 |
| TF-1       | ELECTRICAL | COOLING       | INLINE | 0     | 3,000  | 0.25    | 476  | 0.50        | 0.46                | 115 | 1   | BELT  | SPRING    | 2.0          | 150             | 59         | COOK        | 15DB   | 8, 9                |

2. PROVIDE WITH GRAVITY BACKDRAFT DAMPER.

3. PROVIDE WITH HINGED WHEEL AND REMOVABLE HOOD. 4 PROVIDE ULLISTED SMOKE EXHAUST FAN PROVIDE 1.5 SERVICE FACTOR. 6. PROVIDE WITH PREMIUM EFFICIENCY MOTOR. 7 PROVIDE WITH UPBLAST DIVERTERS.

8 PROVIDE WITH VARI-FLOW COMPATIBLE MOTOR. PROVIDE WITH VARI-FLOW CONTROLLER WITH THERMOSTAT.

| TAG  | LOCATION       | HEAT |     |   | E  | LECTRIC | AL   |      |        |           |           |           | DESIGN BASIS |                    | REMARKS |
|------|----------------|------|-----|---|----|---------|------|------|--------|-----------|-----------|-----------|--------------|--------------------|---------|
|      |                | MBH  | V   | Ø | HZ | MCA     | MOCP | MIN  | WEIGHT | D         | IMENSION  | S         | MFG          | MODEL              | 1       |
|      |                |      |     |   |    |         |      | SCCR | LBS    | H<br>(IN) | W<br>(IN) | D<br>(IN) |              |                    |         |
| RH-1 | RISER ROOM     | 1.28 | 277 | 1 | 60 | 4.60    | -    | 5K   | 25     | 1         | 24        | 24        | QMARK        | ATM24247A (CP3757) | 1       |
| RH-2 | WEST VESTIBULE | 1.28 | 277 | 1 | 60 | 4.60    | -    | 5K   | 25     | 1         | 24        | 24        | QMARK        | ATM24247A (CP3757) | 1       |
| RH-3 | WEST VESTIBULE | 1.28 | 277 | 1 | 60 | 4.60    | -    | 5K   | 25     | 1         | 24        | 24        | QMARK        | ATM24247A (CP3757) | 1       |

|            |                       |              |             |       | AIR S          | EPARA    | TOR           | SCH              | IEDL        | JLE            |                 |               |        |       |         |
|------------|-----------------------|--------------|-------------|-------|----------------|----------|---------------|------------------|-------------|----------------|-----------------|---------------|--------|-------|---------|
| TAG NUMBER | LOCATION              | SERVICE      | TYPE        | FLOW  | PRESSURE       | MATERIAL | MAX           | MAX              |             |                |                 | ESIGN BA      | SIS    |       | REMARKS |
|            |                       |              |             | (GPM) | DROP<br>(FTWC) |          | TEMP.<br>(°F) | PRESS.<br>(PSIG) | DIA<br>(IN) | LENGTH<br>(IN) | WEIGHT<br>(LBS) | SYST.<br>CON. | MFG.   | MODEL |         |
| AS-1       | MECHANICAL ROOM       | ACHP         | TANGENTIAL  | 105   | 0.7            | STEEL    | 140           | 125              | 10          | 23             | 60              | 3             | AMTROL | 3-ASL | 1, 2    |
| NOTES:     |                       |              |             |       |                | ·        |               |                  |             |                |                 |               |        |       |         |
| 1.         | PROVIDE ASME RATED VI | ESSEL.       |             |       |                |          |               |                  |             |                |                 |               |        |       |         |
| 2.         | INSTALL PER MANUFACTI | JRER'S RECOM | MENDATIONS. |       |                |          |               |                  |             |                |                 |               |        |       |         |

|            |                       |              |             |                 | <b>EXPA</b> | NSION   | TAN           | IK S   | CHE         | DULE           |                 |               |        |       |         |
|------------|-----------------------|--------------|-------------|-----------------|-------------|---------|---------------|--------|-------------|----------------|-----------------|---------------|--------|-------|---------|
| TAG NUMBER | LOCATION              | SERVICE      | CAPACITY    | ACCEPTANCE      | MATE        | ERIAL   | MAX           | MAX    |             |                |                 | ESIGN BA      | SIS    |       | REMARKS |
|            |                       |              | (GAL)       | VOLUME<br>(GAL) | SHELL       | BLADDER | TEMP.<br>(°F) | (PSIG) | DIA<br>(IN) | LENGTH<br>(IN) | WEIGHT<br>(LBS) | SYST.<br>CON. | MFG.   | MODEL |         |
| ET-2       | MECHANICAL ROOM       | ACHP         | 10          | 10              | STEEL       | BUTYL   | 140           | 50     | 10          | 37             | 70              | 3"            | AMTROL | 35BLC | 1, 2, 3 |
| NOTES:     |                       |              |             |                 |             |         |               |        |             |                |                 |               |        |       |         |
| 1.         | PROVIDE WITH SCHRADE  | R VALVE.     |             |                 |             |         |               |        |             |                |                 |               |        |       |         |
| 2.         | PROVIDE ASME RATED M  | ODEL.        |             |                 |             |         |               |        |             |                |                 |               |        |       |         |
| 3.         | INSTALL PER MANUFACTI | JRER'S RECOM | MENDATIONS. |                 |             |         |               |        |             |                |                 |               |        |       |         |

|        |                        |                      |            |           |          | PUI      | MP S     | SCHE  | ΞDl | JL  | E    |      |        |          |                  |            |
|--------|------------------------|----------------------|------------|-----------|----------|----------|----------|-------|-----|-----|------|------|--------|----------|------------------|------------|
| TAG    | LOCATION               | SERVICE              | FLOW       | TDH       | MIN      | NPSH     | МО       | TOR   |     | ELE | CTRI | CAL  |        | DESIGN E | BASIS            | REMARKS    |
|        |                        |                      | (GPM)      | (FT)      | EFF %    | REQ      | HP       | RPM   | V   | Ø   | HZ   | SCCR | WEIGHT | MFG      | MODEL            |            |
| HWP-1  | MECHANICAL ROOM        | ACHP-1 THRU 4        | 105        | 45        | 73       | 2        | 3        | 1760  | 460 | 3   | 60   | 10K  | 175    | TACO     | SCI2007D-A-4P-PD | 1, 2, 3, 4 |
| HWP-2  | MECHANICAL ROOM        | ACHP-1 THRU 4        | 105        | 45        | 73       | 2        | 3        | 1760  | 460 | 3   | 60   | 10K  | 175    | TACO     | SCI2007D-A-4P-PD | 1, 2, 3, 4 |
| NOTES: |                        |                      |            |           |          |          |          |       |     |     |      |      |        |          |                  |            |
| 1.     | PROVIDE WITH TEFC MOT  | OR.                  |            |           |          |          |          |       |     |     |      |      |        |          |                  |            |
| 2.     | PROVIDE WITH STANDARD  | O ANSI CLASS 125.    |            |           |          |          |          |       |     |     |      |      |        |          |                  |            |
| 3.     | PROVIDE CAST IRON CASI | NG, BRONZE IMPELLER, | STEEL SHAP | T, BRONZE | SLEEVE A | ND CERAM | IC/EPT S | SEAL. |     |     |      |      |        |          |                  |            |
| 4.     | PROVIDE WITH VFD WITH  | OPTIONAL DISCONNECT  |            |           |          |          |          |       |     |     |      |      |        |          |                  |            |

|        |                  |           | DIF     | FUSER, F | REGISTE | R AND G    | RILLE S   | CHEDU  | ILE        |        |         |
|--------|------------------|-----------|---------|----------|---------|------------|-----------|--------|------------|--------|---------|
| SYMBOL | TYPE             | MATERIAL  | FRAME   | FINISH   | DAMPER  | BLOW       | NECK      |        | DESIGN BAS | IS     | REMARKS |
|        |                  |           |         |          |         | PATTERN    | SIZE      | MAX NC | MFG        | MODEL  |         |
| CD-1   | CEILING DIFFUSER | ALUMINIUM | T-BAR   | WHITE    | NONE    | HORIZONTAL | SEE PLANS | 25     | TITUS      | TDCA-A | 1       |
| CD-2   | CEILING DIFFUSER | ALUMINIUM | SURFACE | WHITE    | OBD     | HORIZONTAL | SEE PLANS | 25     | TITUS      | TDCA-A | 1       |
| SG-1   | SUPPLY REGISTER  | ALUMINIUM | SURFACE | WHITE    | NONE    | NONE       | SEE PLANS | 25     | TITUS      | 300FL  |         |
| TG-1   | SUPPLY REGISTER  | ALUMINIUM | SURFACE | WHITE    | NONE    | NONE       | SEE PLANS | 25     | TITUS      | 300FL  |         |
| CEG-2  | CEILING EXHAUST  | ALUMINIUM | SURFACE | WHITE    | OBD     | NONE       | SEE PLANS | 25     | TITUS      | 50F    |         |
| CTG-2  | CEILING TRANSFER | ALUMINIUM | SURFACE | WHITE    | NONE    | NONE       | SEE PLANS | 25     | TITUS      | 50F    |         |

| TANK SCHEDULE                                    |                          |                     |                     |          |                 |                  |          |              |          |         |  |
|--|--------------------------|---------------------|---------------------|----------|-----------------|------------------|----------|--------------|----------|---------|--|
| TAG  | SERVICE                  | TANK                | WORKING             | DIAMETER | PRESSURE        | VACUUM           | MATERIAL | DESIGN BASIS |          | REMARKS |  |
|  |                          | VOLUME<br>(GALLONS) | VOLUME<br>(GALLONS) | (IN)     | RATING<br>(PSI) | RATING<br>(INWC) |          | MFG          | MODEL    |         |  |
| ST-2   | HYDRONIC HEATING         | 350                 | 350                 | 42       | 160             | -                | STEEL    | AO SMITH     | TJV-350A | 1, 2, 3 |  |
| NOTES:   |                          |                     |                     |          |                 |                  |          |              |          |         |  |
| 1.   | PROVIDE ASME RATED TANK. |                     |                     |          |                 |                  |          |              |          |         |  |
| 2. PROVIDE R12.5 INSULATION TO MEET ASHRAE 90.1. |                          |                     |                     |          |                 |                  |          |              |          |         |  |
| 3. PROVIDE GLASS LINED WITH CATHOIC PROTECTION.  |                          |                     |                     |          |                 |                  |          |              |          |         |  |

1. PROVIDE WITH SQUARE TO ROUND COLLAR.



A SEE SHEET M0.01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.

### **SEQUENCE OF OPERATIONS**

AHUS FOR VAV OPERATION (AHU-1, AHU-2)

MULTIPLE ZONE AIR HANDLING UNIT OPERATES AT VARIABLE VOLUME. DX COOLING SYSTEM CONTROLLED BY AIR HANDLING UNIT MANUFACTURER PROVIDED CONTROLS.

SCHEDULE OF OPERATION: --24 HOURS A DAY, 7 DAYS A WEEK

--OCCUPIED SETPOINTS: COOLING=68F; HEATING =60F (OR HEATING DISABLED IF AN OPTION) --SETBACK SETPOINTS: COOLING=85F; HEATING=55F (OR HTG DISABLED IF AN OPTION) --OCCUPIED FAN: FAN=ON

--SETBACK SETPOINTS: COOLING=85F; HEATING=55F (OR HTG DISABLED IF AN OPTION) --UNOCCUPIED FAN: FAN=AUTO

THE FINAL SCHEDULE AND SETPOINTS FOR THE AHU UNITS ARE TO BE COORDINATED WITH AND APPROVED BY LAM. STAGING OF INTERNAL COMPRESSOR/CONDENSER FANS ARE TO BE VIA THE FACTORY CONTROLS. NO THERMOSTAT OR AHU NETWORKING IS REQUIRED. EACH AHU IS TO ENABLE ECONOMIZER WHEN THEN OUTSIDE TEMPERATURE IS LESS THAN 60F AND WHEN THERE IS COOLING DEMAND. POWER EXHAUST IS TO BE INTERLOCKED WITH ECONOMIZER OPERATION. FACTORY CONTROLS ARE TO BE UTILIZED FOR ECONOMIZER AND POWER EXHAUST CONTROL. REVIEW FACTORY ECONOMIZER CONTROLS TO VERIFY COOLING STAGES ARE NOT ENTIRELY LOCKED OUT DURING ECONOMIZER MODE. SOME FACTORY CONTROLS ALLOW ECONOMIZER MODE WITH SOME COMPRESSOR OPERATION TO DELIVER THE NEEDED 55F SAT. IF THE FACTORY ECONOMIZER CONTROLS LOCK OUT ALL COOLING STAGES DURING ECONOMIZER MODE, SET THE ECONOMIZER ENABLE SETPOINT AT 55F.

AIR COOLED HEAT PUMPS (ACHP-1, ACHP-2, ACHP-3, ACHP-4)

ACHPs MODULATE TO MAINTAIN LOOP SUPPLY TEMPERATURE SETPOINT. OPERATE 24 HOURS A DAY, 7 DAYS A WEEK. OPERATES WHEN COMMANDED BY CONTROL SYSTEM.

STARTUP IN OCCUPIED MODE WITH LEAD ACHP ISOLATION VALVE OPEN. LEAD PUMP OPERATES AT MINIMUM SPEED.

### HYDRONIC PUMPS (HWP-1, HWP-2)

PUMPS DISABLED WHEN OUTDOOR AIR TEMPERATURE IS ABOVE 70 DEGREES F.

SYSTEM DIFFERENTIAL PRESSURE SETPOINT IS ESTABLISHED AS PART OF THE TESTING. ADJUSTING, AND BALANCING OF THE SYSTEM TO ACHIEVE THE DESIGN FLOW RATE OF THE CRITICAL BRANCH. DIFFERENTIAL PRESSURE SETPOINT RESET PROVIDED BY TRIM AND RESPOND LOGIC TO THE LOWEST POSSIBLE VALUE WHILE MAINTAINING THE MOST OPEN CONTROL VALVE AT TERMINAL EQUIPMENT 90%

PUMP SPEED MODULATES TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE SETPOINT. HOLD PUMP SPEED CONSTANT WHEN ACHPS STAGING ON/OFF.

LEAD LAG SEQUENCE: WHEN LEAD PUMP REACHES 60% SPEED FOR 2 MINUTES THE LAG PUMP STARTS. LEAD AND LAG PUMP OPERATE IN UNISON TO MAINTAIN SYSTEM DIFFERENTIAL SETPOINT, WHEN LEAD PUMP FAILS THE LAG PUMP OPERATES TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE SETPOINT. FAILED PUMP IS DISABLED UNTIL RE-ENABLED BY CONTROL SYSTEM USER.

DOAS WITH HEAT RECOVERY (DOAS-1, DOAS-2)

SCHEDULE OF OPERATION:

--24 HOURS A DAY, 7 DAYS A WEEK --OCCUPIED SETPOINTS: COOLING=68F; HEATING =60F (OR HEATING DISABLED IF AN OPTION) --SETBACK SETPOINTS: COOLING=85F; HEATING=55F (OR HTG DISABLED IF AN OPTION)

--OCCUPIED FAN: FAN=ON --SETBACK SETPOINTS: COOLING=85F; HEATING=55F (OR HTG DISABLED IF AN OPTION) --UNOCCUPIED FAN: FAN=AUTO

THE FINAL SCHEDULE AND SETPOINTS FOR THE A/C UNITS ARE TO BE COORDINATED WITH AND APPROVED BY LAM. STAGING OF INTERNAL COMPRESSOR/CONDENSER FANS ARE TO BE VIA THE FACTORY CONTROLS. NO THERMOSTAT OR A/C UNIT NETWORKING IS REQUIRED.

# VRF SYSTEM (ODU-1, ODU-2)

OUTDOOR UNITS ACTIVATE IN RESPONSE TO SYSTEM DEMAND AT FCU ZONES. THERMOSTATS LOCATED AT APPROPRIATE LOCATIONS WITHIN ZONES ACCORDING TO LAM STANDARDS.

# TERMINAL UNITS WITH REHEAT

TERMINAL UNIT OPERATES AS VARIABLE VOLUME TO MAINTAIN ZONE TEMPERATURE AND CARBON DIOXIDE SETPOINTS. TERMINAL UNIT SCHEDULE MATCHES ASSOCIATED AIR HANDLER SEQUENCE OF OPERATION.

IN OCCUPIED MODE: --WHEN ZONE TEMPERATURE IS BELOW THE HEATING SETPOINT: THE FIRST STAGE OF HEATING INCREASES SUPPLY AIR TEMPERATURE, SECOND STAGE OF HEATING INCREASES SUPPLY AIRFLOW. LEAVING AIR TEMPERATURE SETPOINT SET TO MAXIMUM VALUE. HEATING COIL MODULATES TO MAINTAIN LEAVING AIR TEMPERATURE SETPOINT. DAMPER MODULATES TO MAINTAIN MINIMUM AIRFLOW RATE. IF ZONE TEMPERATURE BELOW HEATING SETPOINT FOR 5 MINUTES, DAMPER MODULATES CLEARLY BETWEEN MINIMUM AIRFLOW RATE AND HEATING AIRFLOW RATE TO MAINTAIN ZONE HEATING SETPOINT. WHEN ZONE TEMPERATURE IS EQUAL TO HEATING SETPOINT, REVERSE AFOREMENTIONED SEQUENCE. --WHEN ZONE TEMPERATURE IS BETWEEN HEATING AND COOLING SETPOINTS: LEAVING AIR TEMPERATURE SETPOINT SET TO ASSOCIATED AIR HANDLER LEAVING AIR TEMPERATURE. HEATING COIL TURNED OFF. DAMPER MODULATES TO MAINTAIN LOW MINIMUM AIRFLOW RATE. --WHEN ZONE TEMPERATURE IS ABOVE THE COOLING SETPOINT, LEAVING AIR TEMPERATURE SETPOINT SET TO ASSOCIATED AIR HANDLER LEAVING AIR TEMPERATURE. HEATING COIL TURNED OFF. DAMPER MODULATES LINEARLY BETWEEN MINIMUM AIRFLOW RATE AND MAXIMUM AIRFLOW RATE TO MAINTAIN ZONE COOLING SETPOINT. WHEN ZONE TEMPERATURE IS EQUAL TO COOLING SETPOINT, REVERSE

AFOREMENTIONED SEQUENCE. --ZONE CARBON DIOXIDE CONTROL: DAMPER MODULATES LINEARLY BASED ON CARBON DIOXIDE LEVEL. WHEN LEVEL FALLS TO 400 PPM OR LESS, DAMPER MODULATES TO MAINTAIN LOW MINIMUM AIRFLOW RATE. WHEN CARBON DIOXIDE LEVEL AT SETPOINT OR HIGH, DAMPER MODULATES TO MAINTAIN MINIMUM AIRFLOW RATE.

### IN UNOCCUPIED MODE: HEATING COIL OFF. DAMPER OPEN.

LOW AIRFLOW ALARM WHEN AIRFLOW RATE IS LESS THAN 50% OF SETPOINT FOR 5 MINUTES. LOW LEAVING AIR TEMPERATURE ALARM WHEN LEAVING AIR TEMPERATURE IS MORE THAN 10 DEGREES ABOVE

MONITORING POINTS INCLUDE DAMPER POSITION AND HEATING COIL VALVE POSITION.

SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM GRAPHICAL USER INTERFACE.

# TERMINAL UNITS WITHOUT REHEAT

TERMINAL UNIT OPERATES AS VARIABLE VOLUME TO MAINTAIN ZONE TEMPERATURE AND CARBON DIOXIDE SETPOINTS. TERMINAL UNIT SCHEDULE MATCHES ASSOCIATED AIR HANDLER SEQUENCE OF OPERATION.

--WHEN ZONE TEMPERATURE IS BELOW THE HEATING SETPOINT: DAMPER MODULATED TO MAINTAIN LOW MINIMUM AIRFLOW RATE. --WHEN ZONE TEMPERATURE IS BETWEEN HEATING AND COOLING SETPOINTS: DAMPER MODULATES TO MAINTAIN LOW MINIMUM AIRFLOW RATE. --WHEN ZONE TEMPERATURE IS ABOVE THE COOLING SETPOINT, LEAVING AIR TEMPERATURE SETPOINT SET TO ASSOCIATED AIR HANDLER LEAVING AIR TEMPERATURE. HEATING COIL TURNED OFF. DAMPER MODULATES LINEARLY BETWEEN MINIMUM AIRFLOW RATE AND MAXIMUM AIRFLOW RATE TO MAINTAIN

AFOREMENTIONED SEQUENCE. --ZONE CARBON DIOXIDE CONTROL: DAMPER MODULATES LINEARLY BASED ON CARBON DIOXIDE LEVEL. WHEN LEVEL FALLS TO 400 PPM OR LESS, DAMPER MODULATES TO MAINTAIN LOW MINIMUM AIRFLOW RATE. WHEN CARBON DIOXIDE LEVEL AT SETPOINT OR HIGH, DAMPER MODULATES TO MAINTAIN MINIMUM AIRFLOW RATE.

### IN UNOCCUPIED MODE: DAMPER OPEN.

LOW AIRFLOW ALARM WHEN AIRFLOW RATE IS LESS THAN 50% OF SETPOINT FOR 5 MINUTES.

MONITORING POINTS INCLUDE DAMPER POSITION AND HEATING COIL VALVE POSITION. SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM

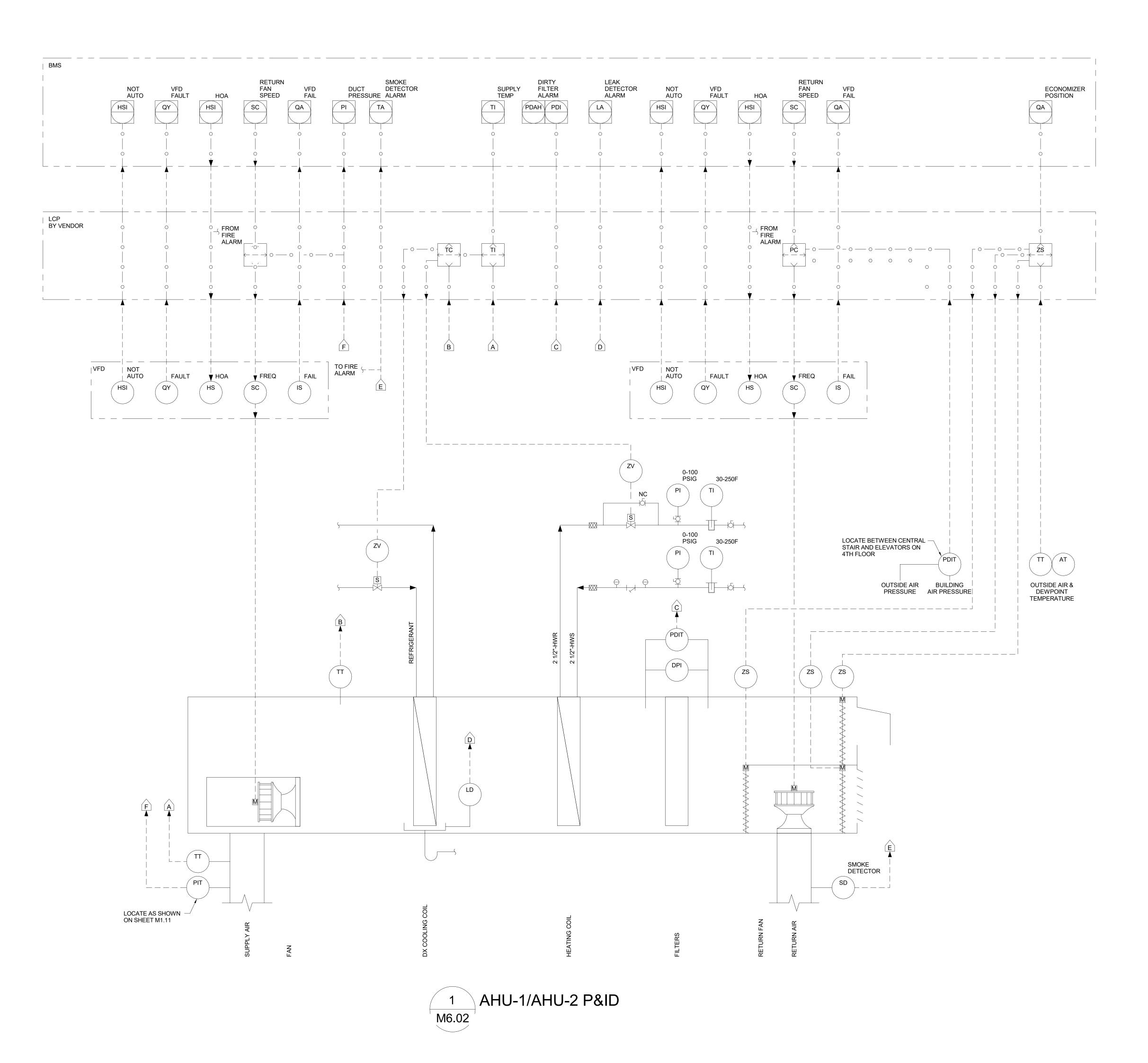
GRAPHICAL USER INTERFACE.

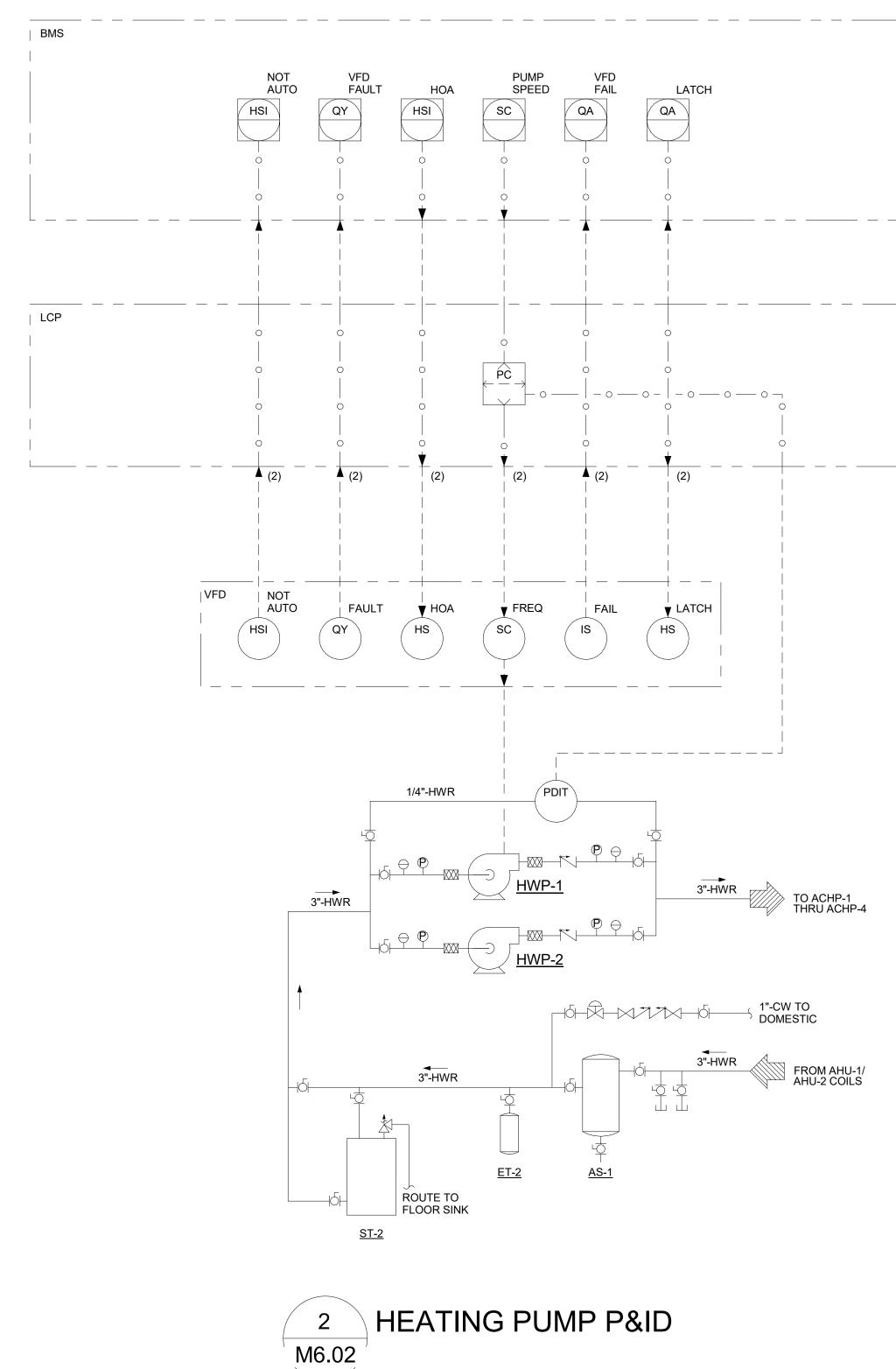
Beaverton, OR (503)645-0176 Tempe, AZ (480)535-9375 www.corbinengineering.com

EXPIRES: 06/30/2024

| DATE            | 12/20/22          |          |                 |          |         |  |
|-----------------|-------------------|----------|-----------------|----------|---------|--|
| REV DESCRIPTION | ISSUED FOR PERMIT |          |                 |          |         |  |
| REV             | 0                 |          |                 |          |         |  |
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Sheet Number:





ECT TITLE: LAM GREENFIELD OFFICE BUILDING
T: LAM RESEARCH
11155 SW LEVETON DR.
TUALATIN, OR 97062

Beaverton, OR (503)645-0176 Tempe, AZ (480)535-9375

EXPIRES: 06/30/2024

PROJECT TITLE: L

EV DESCRIPTION

DATE APF

12/20/22 CC

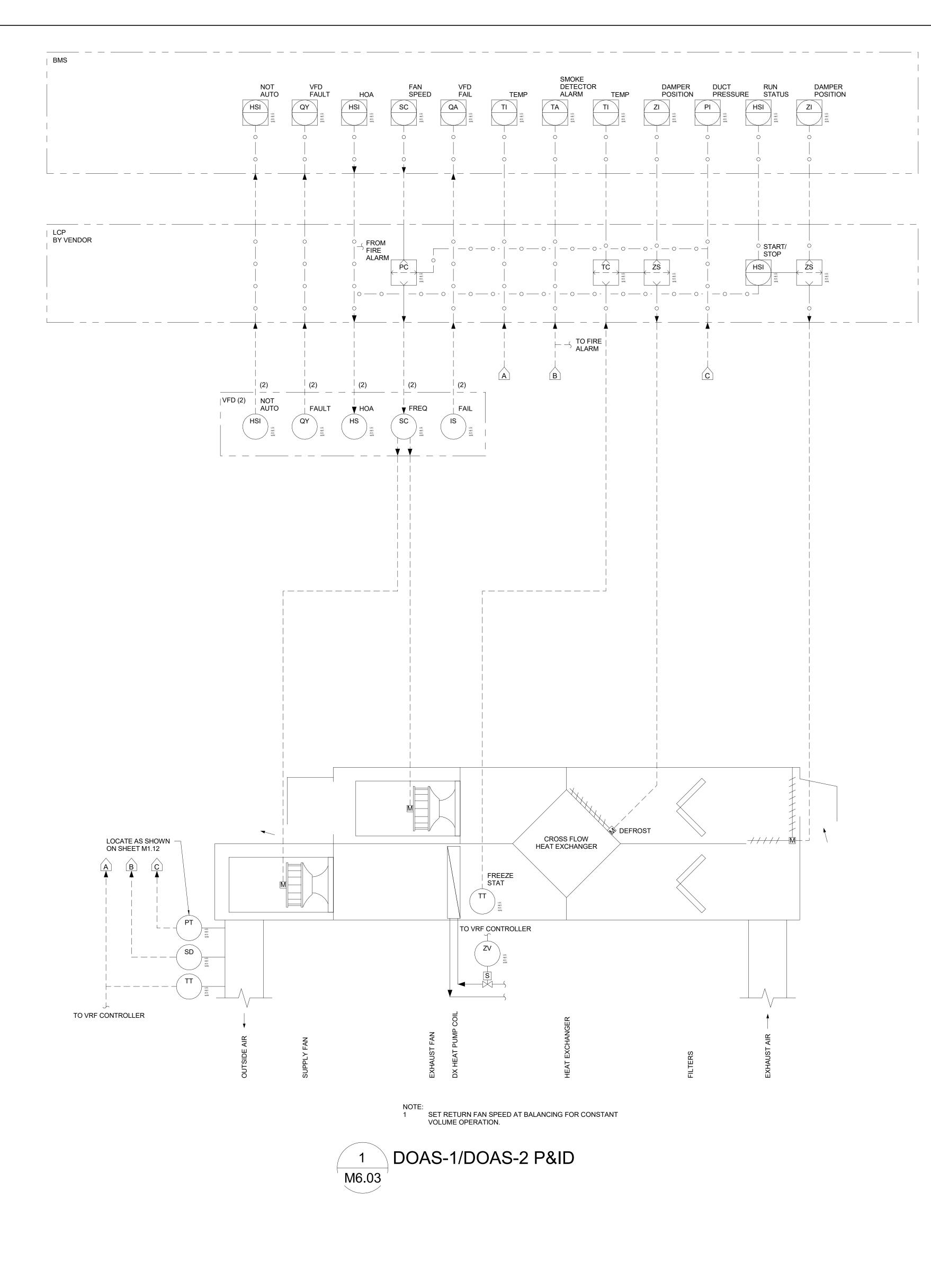
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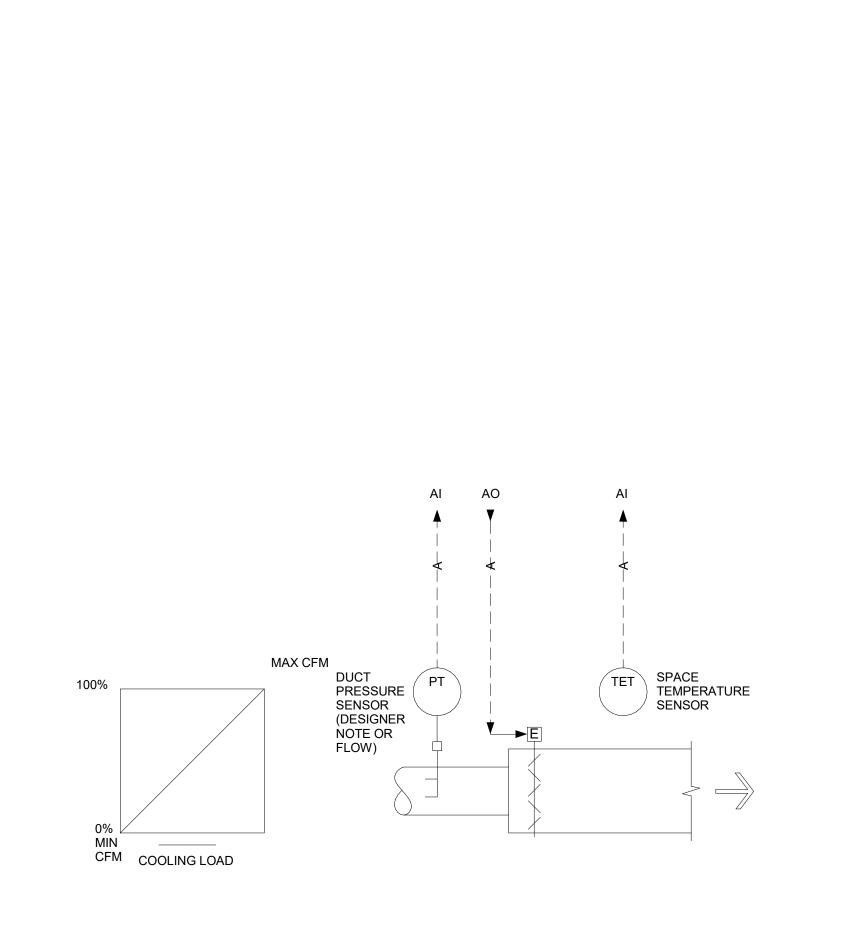
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Sheet Title: MECHANICAL P&ID

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M6.02
Proj No: CC22450B





BY VENDOR (4)

LCP

LCP

GRISWOLD 10 GPM -FLOW LIMITING VALVE

→ 3"-HWR

2 ACHP-1 THRU ACHP-4 P&ID M6.03

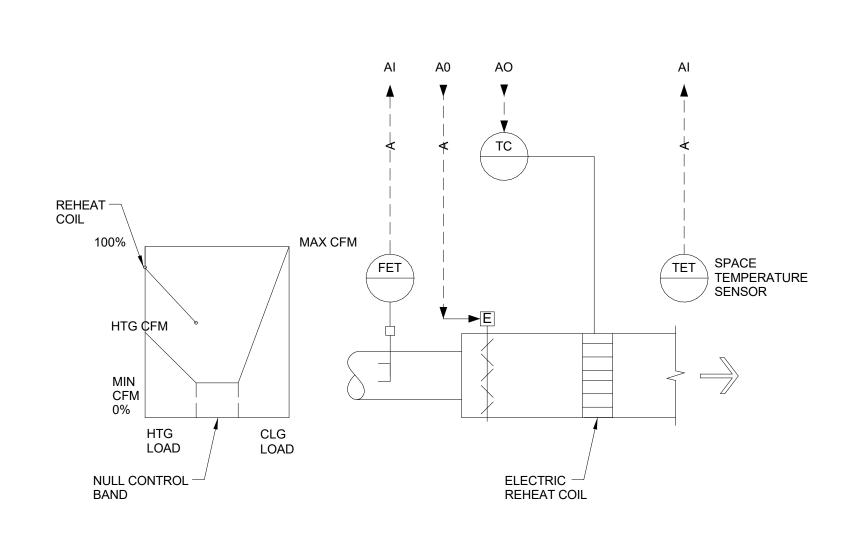
AHU-1 HEATING COIL

AHU-2 HEATING COIL

ACHP-2

ACHP-3

ACHP-4



— GRISWOLD 10 GPM FLOW LIMITING VALVE

NOTE:
1 REFER TO DRAWING M6.01 FOR TERMINAL UNIT SCHEDULE.

3 TYPICAL VAV TERMINAL CONTROL
M6.03

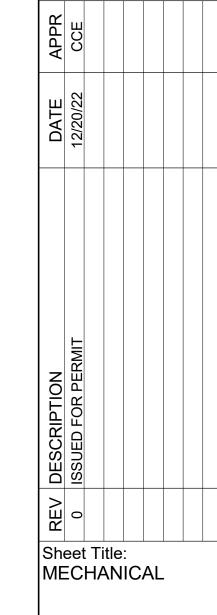
A TYPICAL VAV TERMINAL REHEAT CONTROL
M6.03



GREENFIELD OFFICE BUILDING LAM RESEARCH 11155 SW LEVETON DR. TUALATIN, OR 97062

PROJECT TITLE: LAM GREENFIELD OF CLIENT:

11155 SW LE



Sheet Number: M6.03

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Proj No: CC22450B