

Nanuet 5 Year Capital Planning 2020 Upgrade Projects

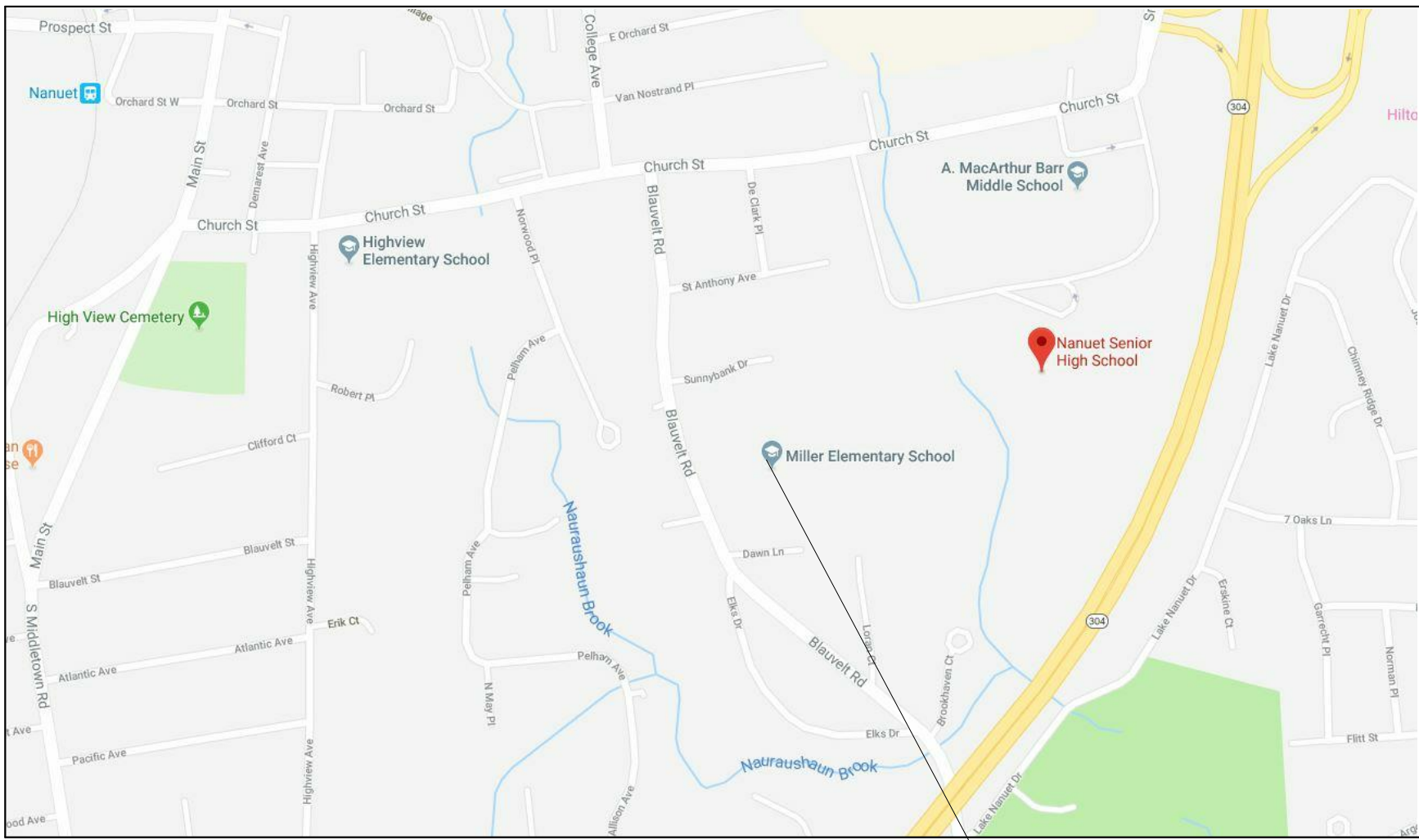
Nanuet Union Free School District

50 Blauvelt Rd. Nanuet, NY 10954

BID ISSUANCE
March 15, 2021

MILLER ELEMENTARY SCHOOL HYDRONIC CONVERSION 2020 - S.E.D. #: 50-01-08-03-0-001-022

LOCATION MAP



MILLER ELEMENTARY
50 BLAUVELT RD #1,
NANUET, NY 10954

Drawing List

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MES-M119	HVAC PLAN
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MES-E101	FIRST FLOOR POER & SYSTEMS PLAN
MES-E600	POWER RISER DIAGRAM, SCHEDULE & DIAGRAMS

ARCHITECT:

ksqdesign

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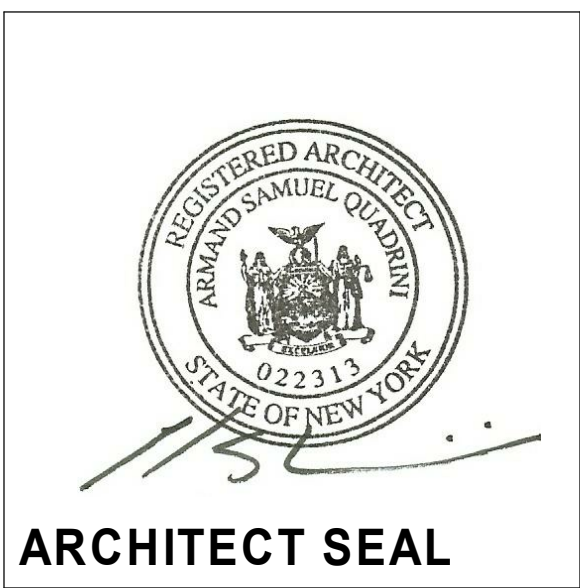
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MEP ENGINEER:
Delta Engineers

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Nanuet 5 Year Capital Planning 2020 Upgrade Projects
Nanuet Union Free School District

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SEI CONTROL NUMBERS
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Nanuet 5 Year Capital Planning 2020 Upgrade Projects

50 Blauvelt Rd. Nanuet, NY 10954

KEY PLAN

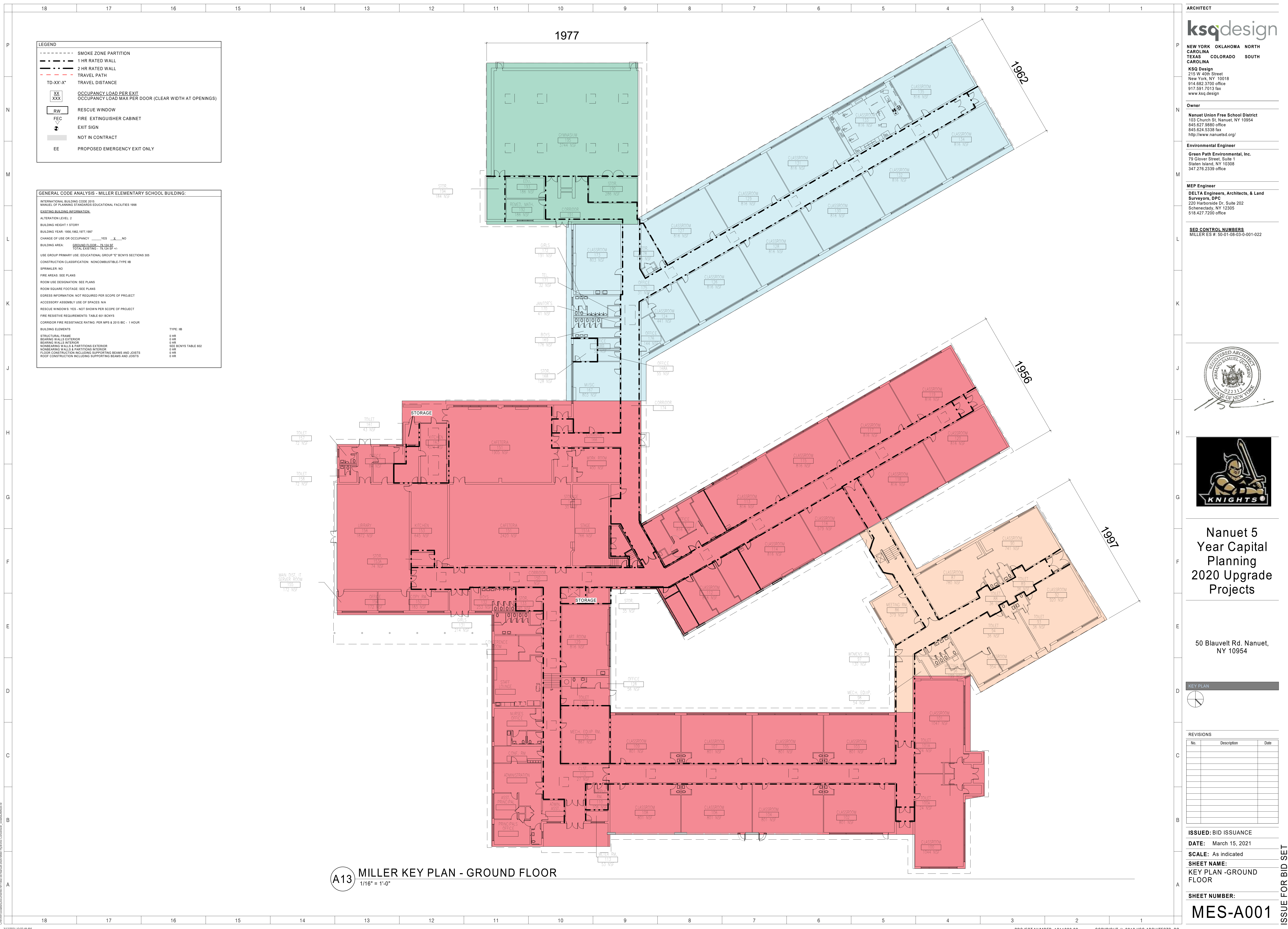
ISSUED: BID ISSUANCE
DATE: March 15, 2021

SCALE: As indicated

SHEET NAME:
GENERAL NOTES /
ABBREVIATIONS /
LEGENDS AND SYMBOLS

SHEET NUMBER:
A001

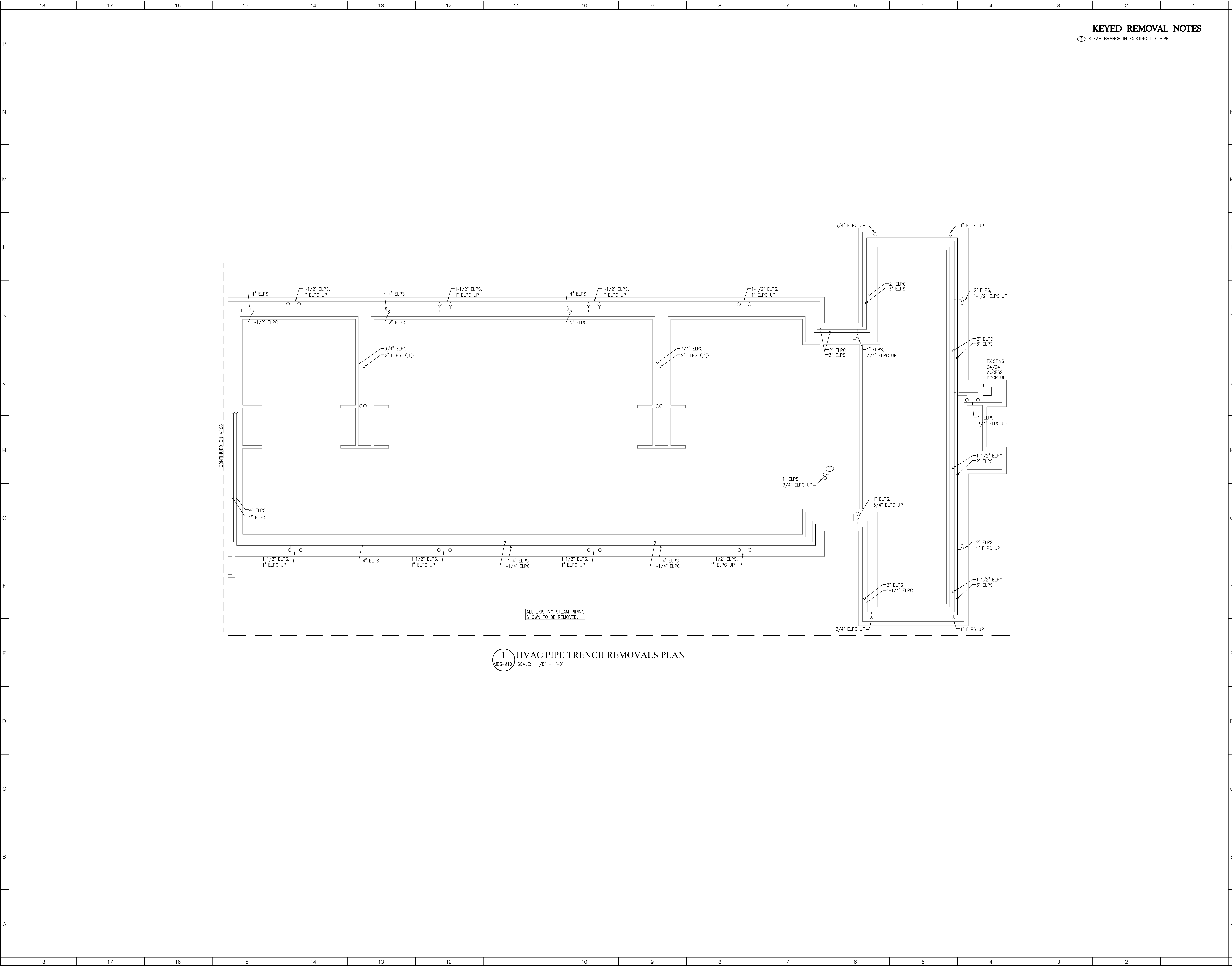
ISSUE FOR BID SET







ISSUE FOR BID SET



KEYED REMOVAL NOTES

① STEAM BRANCH IN EXISTING TILE PIPE.



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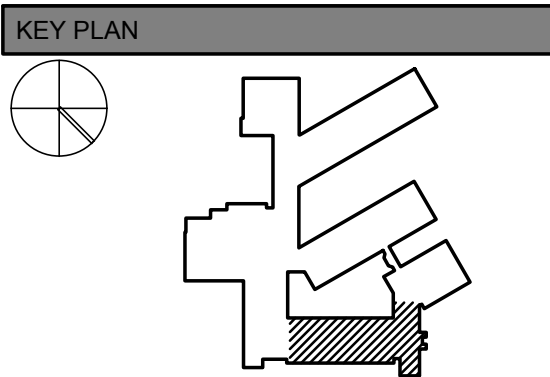
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SED CONTROL NUMBERS
MILLER ES # 50-01-08-03-0-001-022



NANUET
MILLER ES
HYDRONIC
CONVERSION
2020

103 Church St, Nanuet,
NY 10954



REVISIONS		
No.	Description	Date

ISSUED: ISSUE FOR BID
DATE: MARCH 15, 2021
SCALE: As indicated
SHEET NAME:
HVAC PIPE TRENCH
REMOVALS PLAN
SHEET NUMBER:

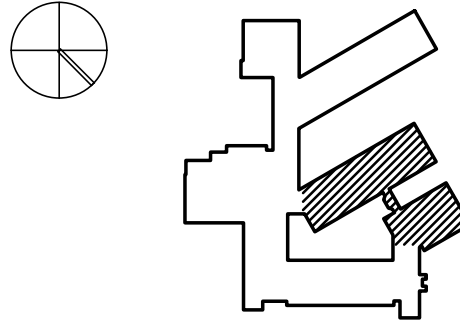
MES-M101



NANUET
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103 Church St, Nanuet,
NY 10954

KEY PLAN



REVISIONS

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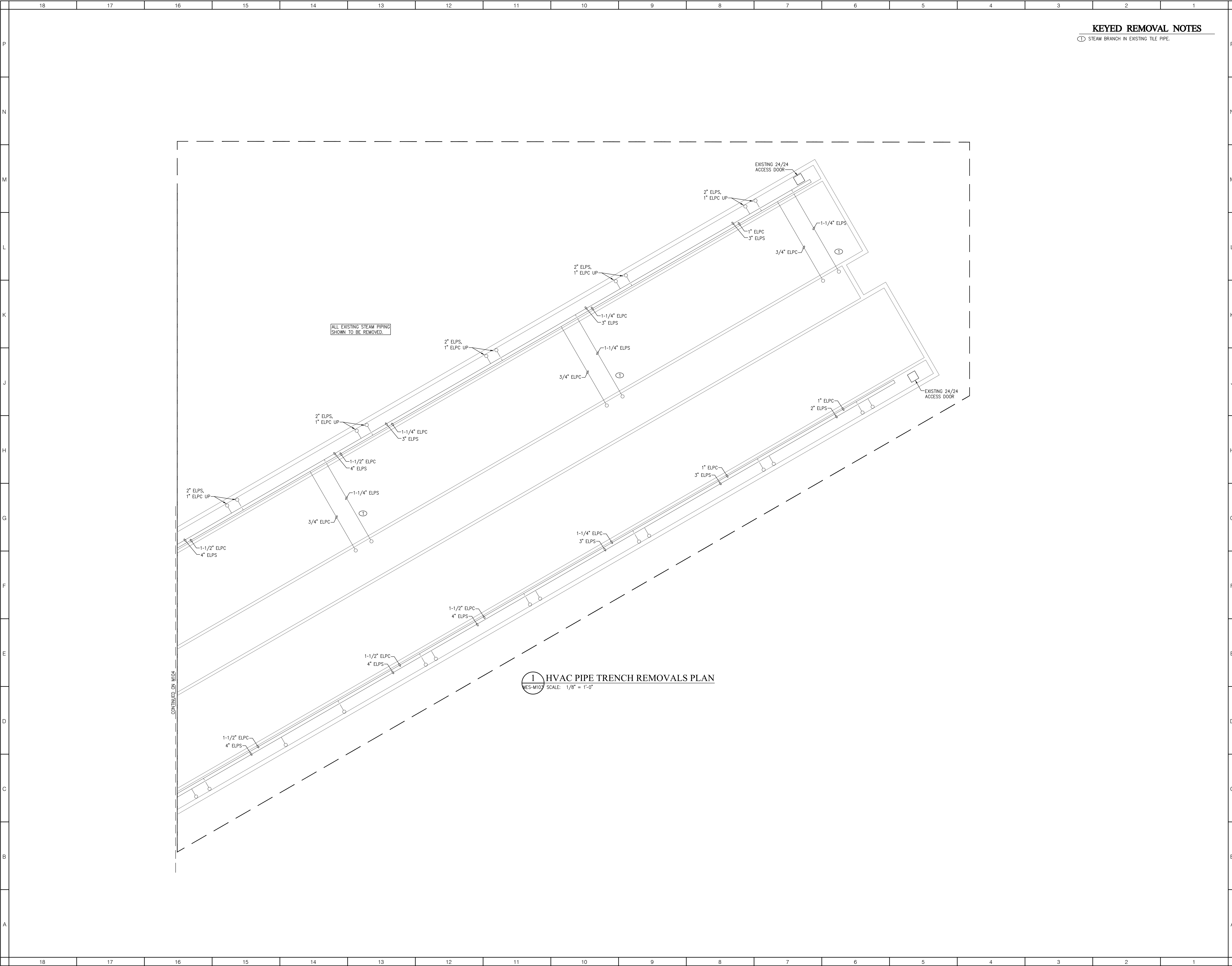
SCALE: As indicated

SHEET NAME:
HVAC PIPE TRENCH
REMOVALS PLAN

SHEET NUMBER:

MES-M102

ISSUE FOR BID SET



KEYED REMOVAL NOTES

① STEAM BRANCH IN EXISTING TILE PIPE.

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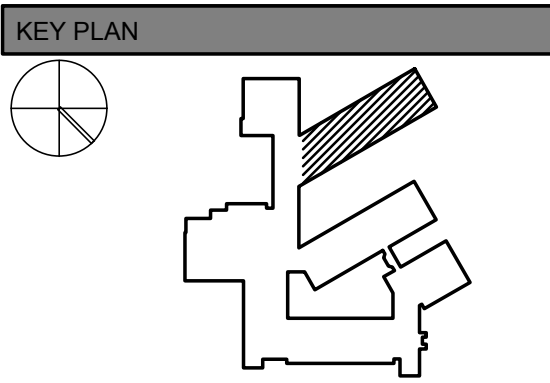
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2020

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REVISIONS		
No.	Description	Date

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SHEET NAME:
HVAC PIPE TRENCH
REMOVALS PLAN
SHEET NUMBER:

MES-M103

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KEYED REMOVAL NOTES
① STEAM BRANCH IN EXISTING TILE PIPE.

ALL EXISTING STEAM PIPING SHOWN TO BE REMOVED.

CONTINUED ON M103

CONTINUED ON M105

HVAC PIPE TRENCH REMOVALS PLAN
MES-M104 SCALE: 1/8" = 1'-0"

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MILLER ES #: 50-01-08-03-0-001-022

STATE OF NEW YORK
RONNEY F. LONG
072097
REGISTERED PROFESSIONAL ENGINEER

NANUET MILLER ES HYDRONIC CONVERSION 2020

103 Church St, Nanuet, NY 10954

KEY PLAN

REVISIONS

No.	Description	Date

ISSUED: ISSUE FOR BID
DATE: MARCH 15, 2021
SCALE: As indicated
SHEET NAME: HVAC PIPE TRENCH REMOVALS PLAN
SHEET NUMBER: MES-M104

FOR BID SET



1
MES-M105

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

① STEAM BRANCH IN EXISTING TILE PIPE.

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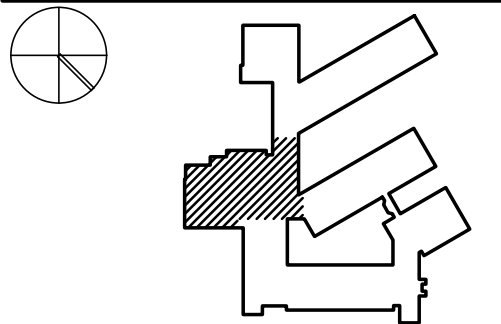
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MILLER ES #: 50-01-08-03-0-001-022



HYDRONIC CONVERSION 2020

103 Church St, Nanuet,
NY 10954

KEY PLAN



REVISIONS

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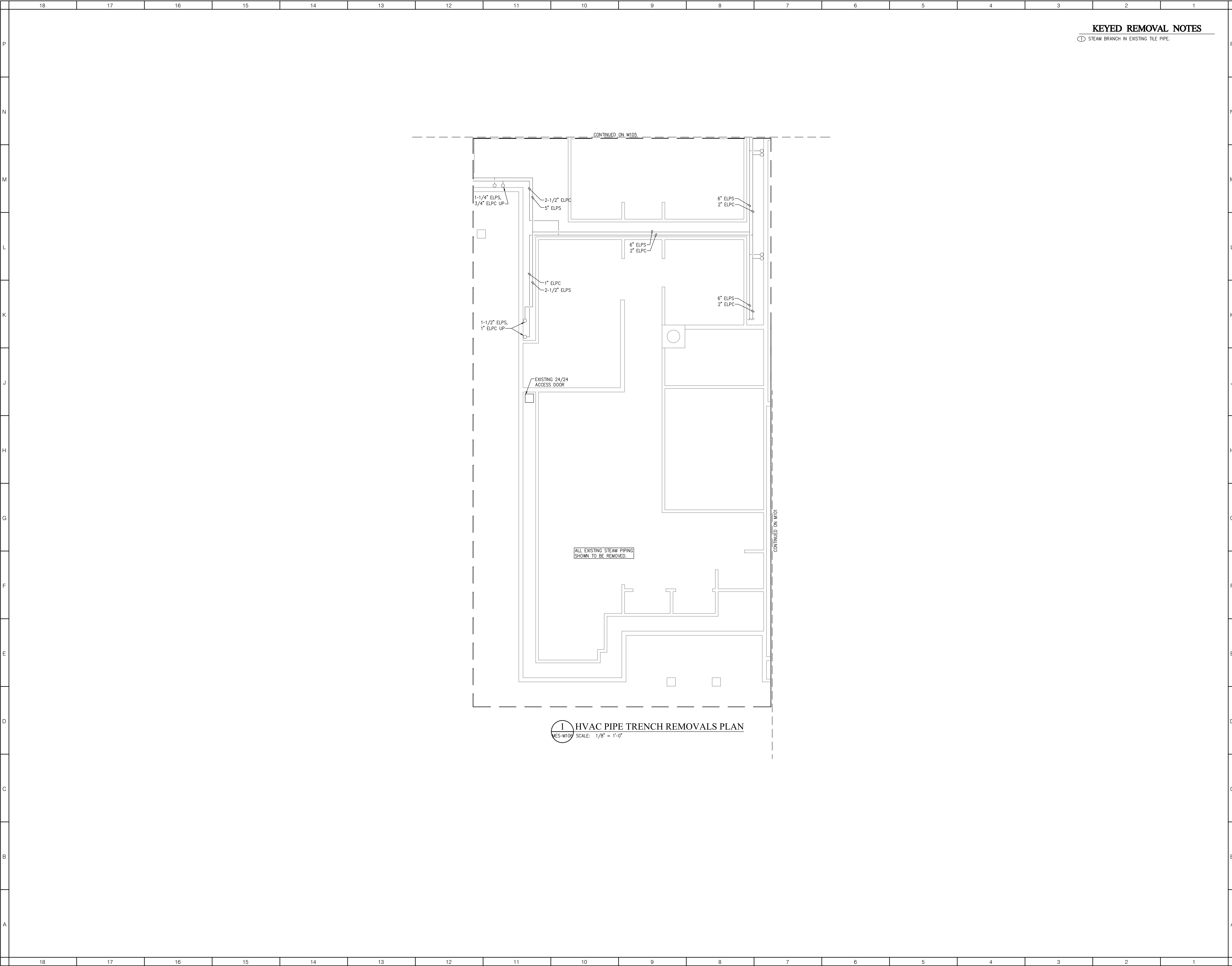
SCALE: As indicated

SHEET NAME:
HVAC PIPE TRENCH
REMOVALS PLAN

SHEET NUMBER:

MES-M105

ISSUE FOR BID SET



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2020

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KEY PLAN

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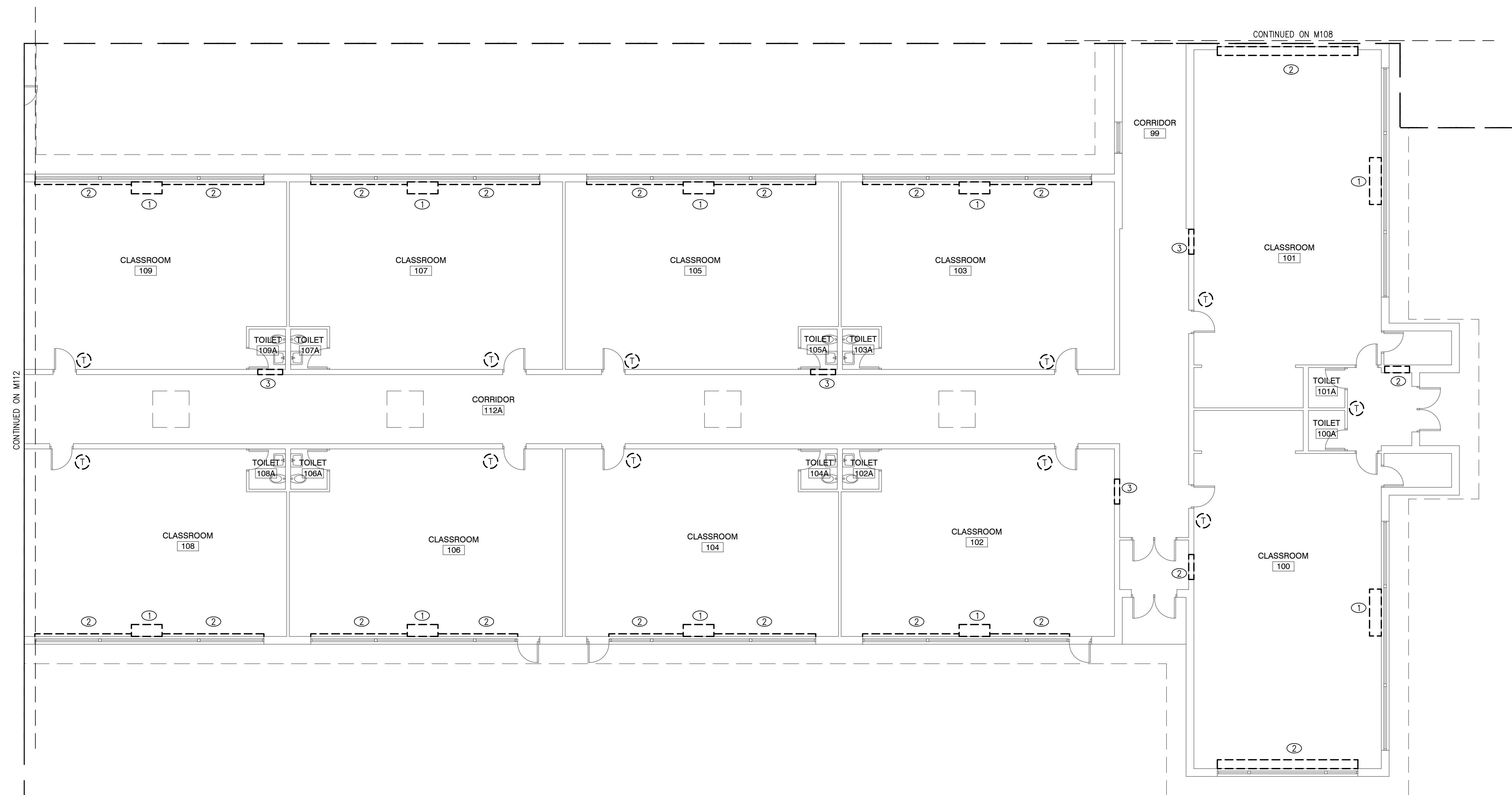
SHEET NAME:
HVAC PIPE TRENCH
REMOVALS PLAN

SHEET NUMBER:

MES-M106

ISSUE FOR BID SET

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1 HVAC PIPE TRENCH REMOVALS PLAN
MES-M107 SCALE: 1/8" = 1'-0"

KEYED REMOVAL NOTES

- ① REMOVE EXISTING UNIT HEATER AND ALL ASSOCIATED STEAM VALVES AND PIPING.
- ② CUT AND REMOVE RADIATION ELEMENT AND ASSOCIATED STEAM/CONDENSATE PIPING. PREPARE PENETRATIONS FOR REUSE.
- ③ REMOVE EXISTING STEAM PIPING TO RADIATOR. CAP RADIATOR.

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CAROLINA		

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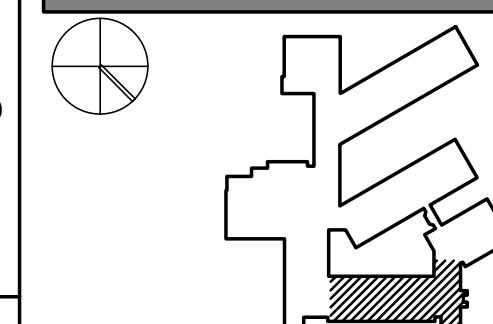
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103 Church St, Nanuet,
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KEY PLAN



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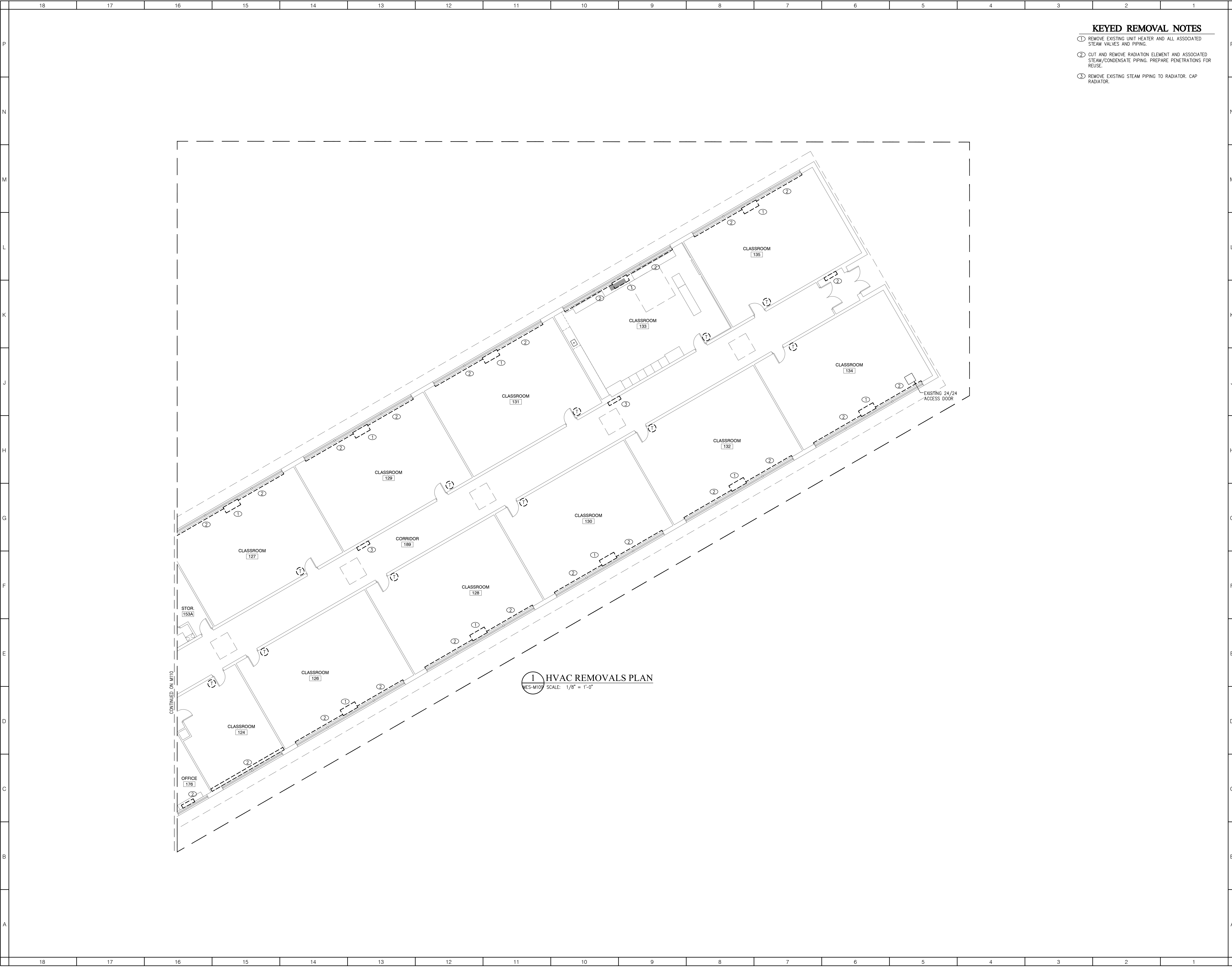
DATE: MARCH 15, 2021

SCALE: As indicated

SHEET NAME:
HVAC PIPE TRENCH
REMOVALS PLAN

SHEET NUMBER:

MES-M107



KEYED REMOVAL NOTES

- 1 REMOVE EXISTING UNIT HEATER AND ALL ASSOCIATED STEAM VALVES AND PIPING.
- 2 CUT AND REMOVE RADIATION ELEMENT AND ASSOCIATED STEAM/CONDENSATE PIPING. PREPARE PENETRATIONS FOR REUSE.
- 3 REMOVE EXISTING STEAM PIPING TO RADIATOR. CAP RADIATOR.



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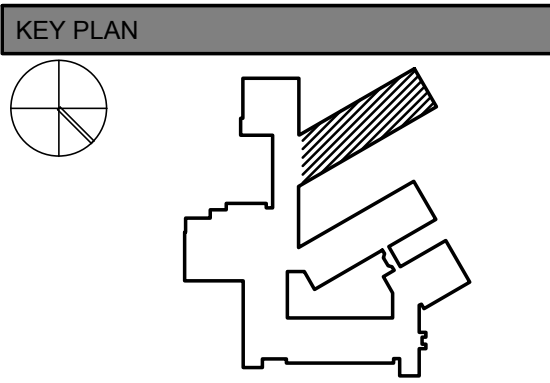
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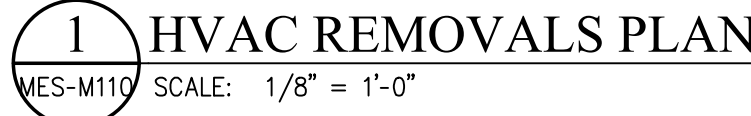
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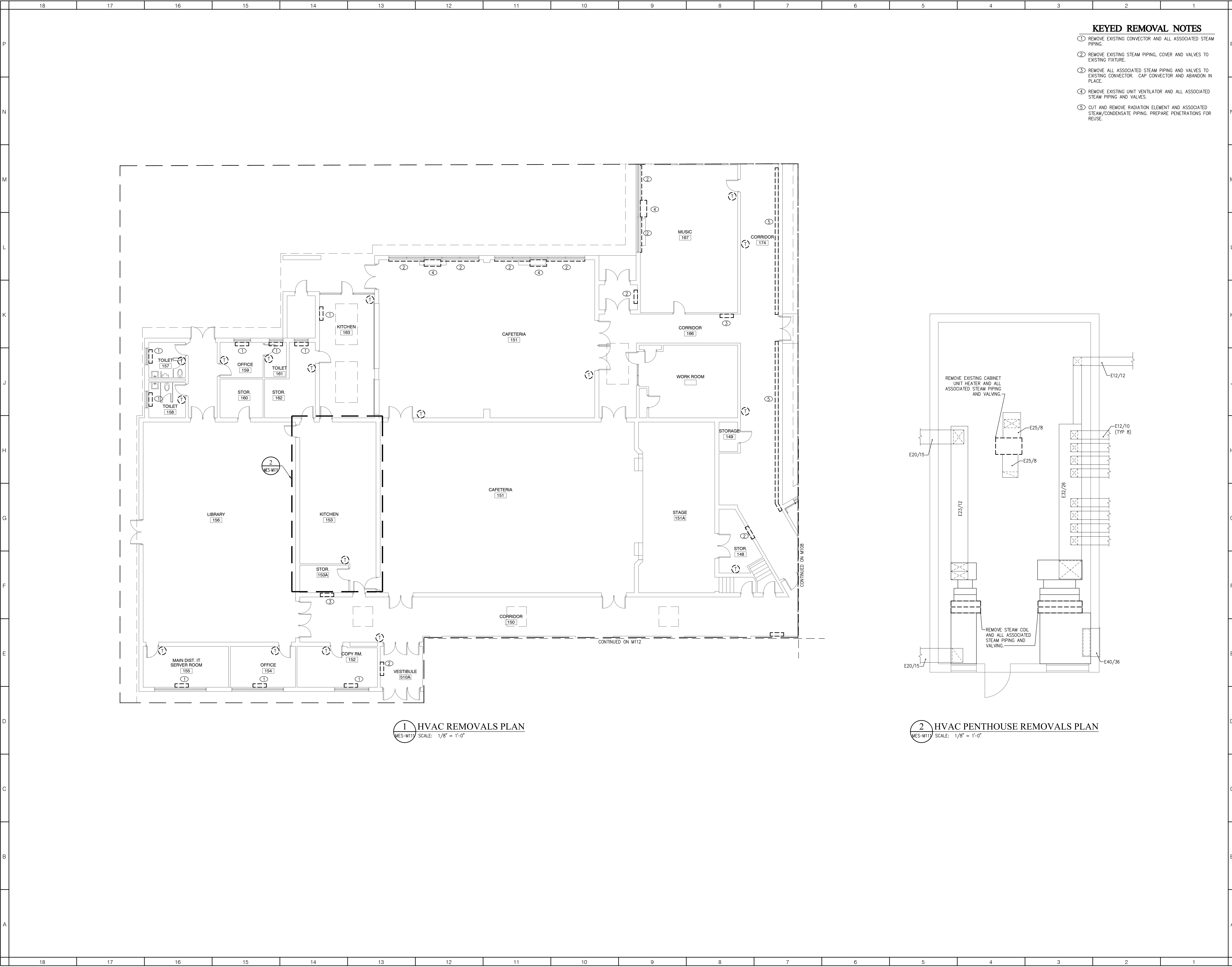
MES-M109



- ① REMOVE EXISTING AHU. REMOVE ASSOCIATED STEAM PIPING AND VALVES. RETAIN AO LOUVER AND SUPPLY FOR DUCTWORK REUSE.
- ② REMOVE EXISTING CONVECTOR. REMOVE ALL ASSOCIATED STEAM PIPING AND VALVES.
- ③ REMOVE EXISTING UNIT VENTILATOR AND ALL ASSOCIATED STEAM VALVES AND PIPING.
- ④ ABANDON CONVECTOR IN PLACE. CUT STEAM PIPING AT FLOOR.
- ⑤ CUT AND REMOVE RADIATION ELEMENT, COVER AND ASSOCIATED STEAM/CONDENSATE PIPING. PREPARE PENETRATIONS FOR REUSE.
- ⑥ CLEAN INTERIOR OF EXISTING DUCTWORK TO REMAIN PRIOR TO INSTALLATION OF AHU.

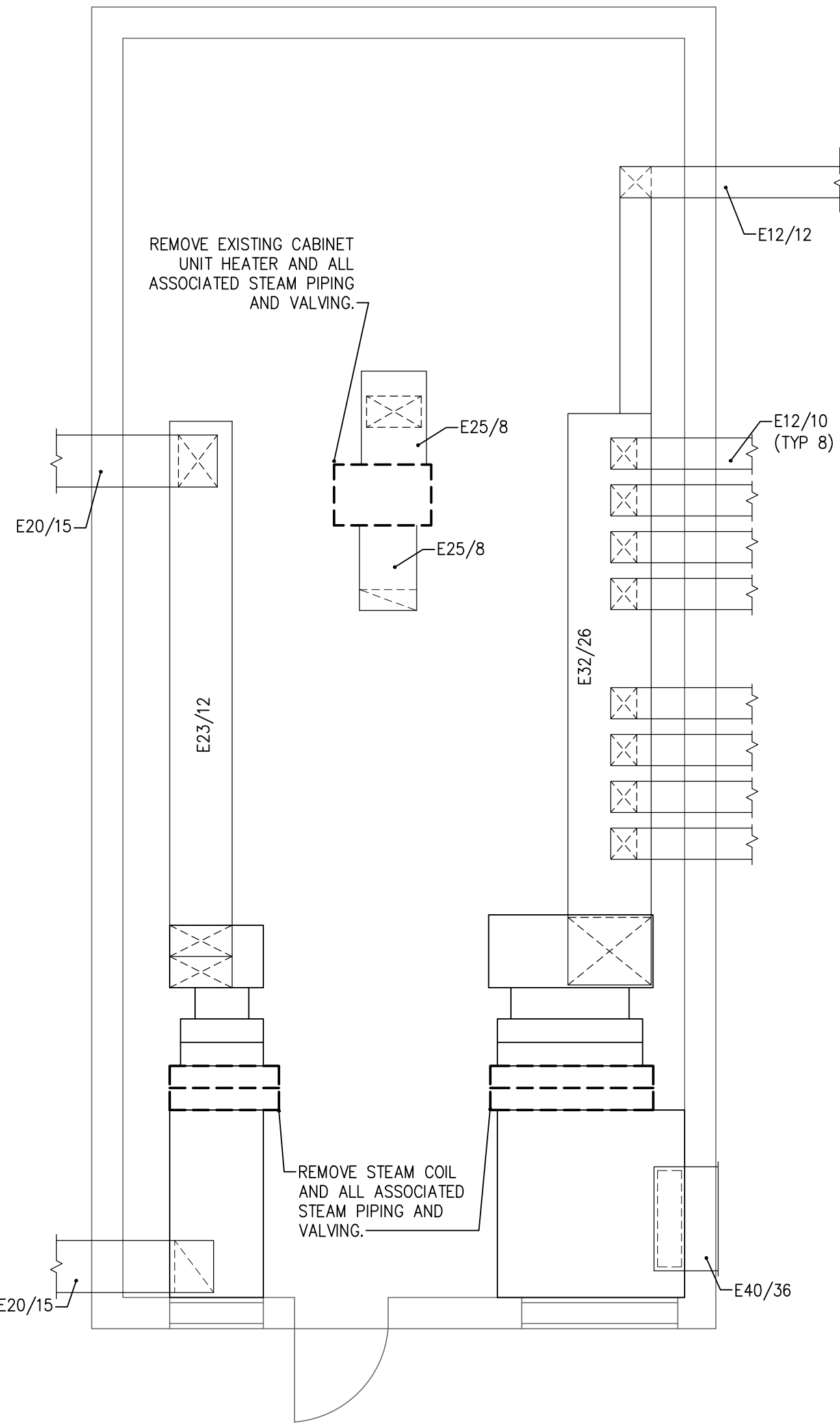
MES-M110

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KEYED REMOVAL NOTES

- 1 REMOVE EXISTING CONVECTOR AND ALL ASSOCIATED STEAM PIPING.
- 2 REMOVE EXISTING STEAM PIPING, COVER AND VALVES TO EXISTING FIXTURE.
- 3 REMOVE ALL ASSOCIATED STEAM PIPING AND VALVES TO EXISTING CONVECTOR. CAP CONVECTOR AND ABANDON IN PLACE.
- 4 REMOVE EXISTING UNIT VENTILATOR AND ALL ASSOCIATED STEAM PIPING AND VALVES.
- 5 CUT AND REMOVE RADIATION ELEMENT AND ASSOCIATED STEAM/CONDENSATE PIPING. PREPARE PENETRATIONS FOR REUSE.



2 HVAC PENTHOUSE REMOVALS PLAN

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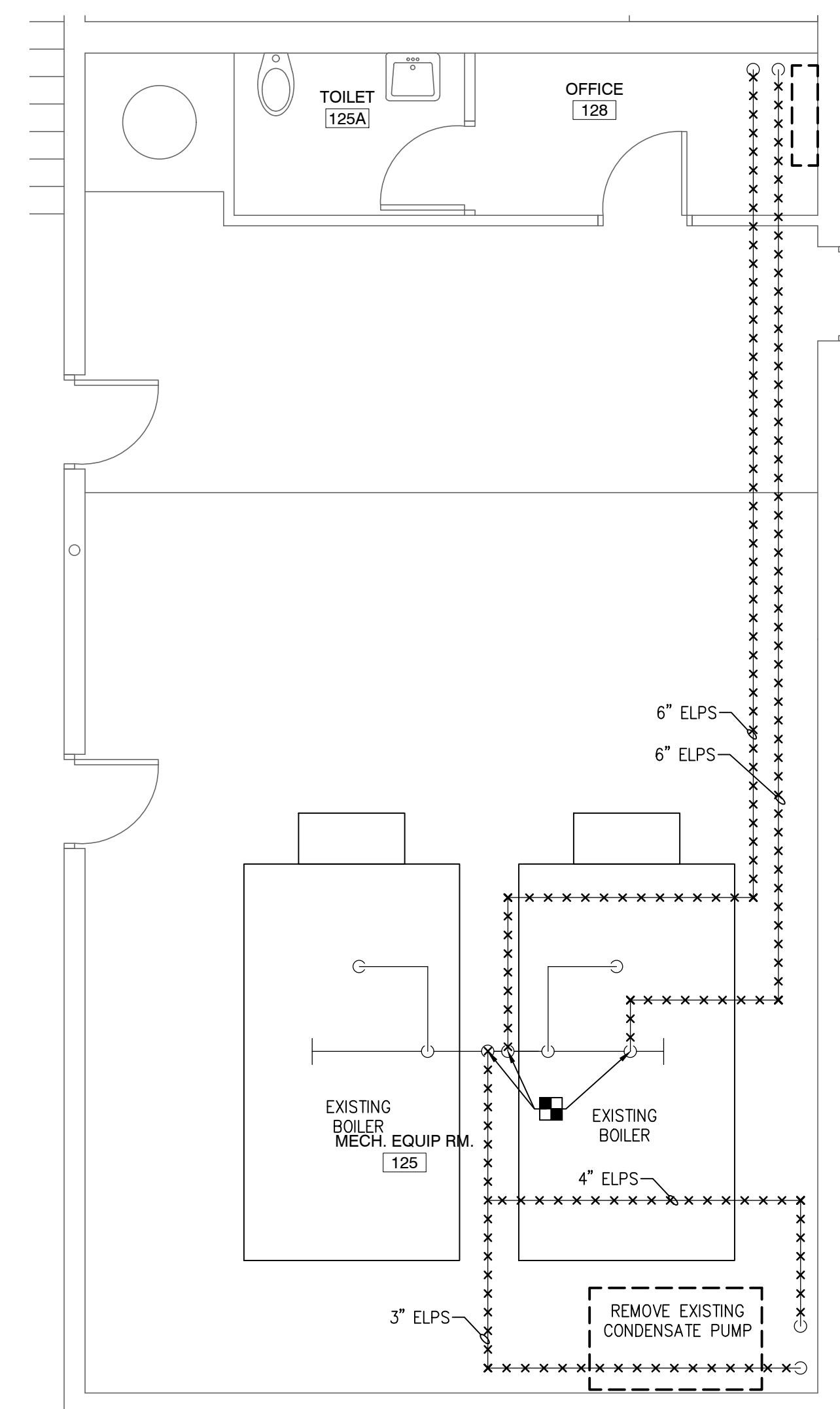
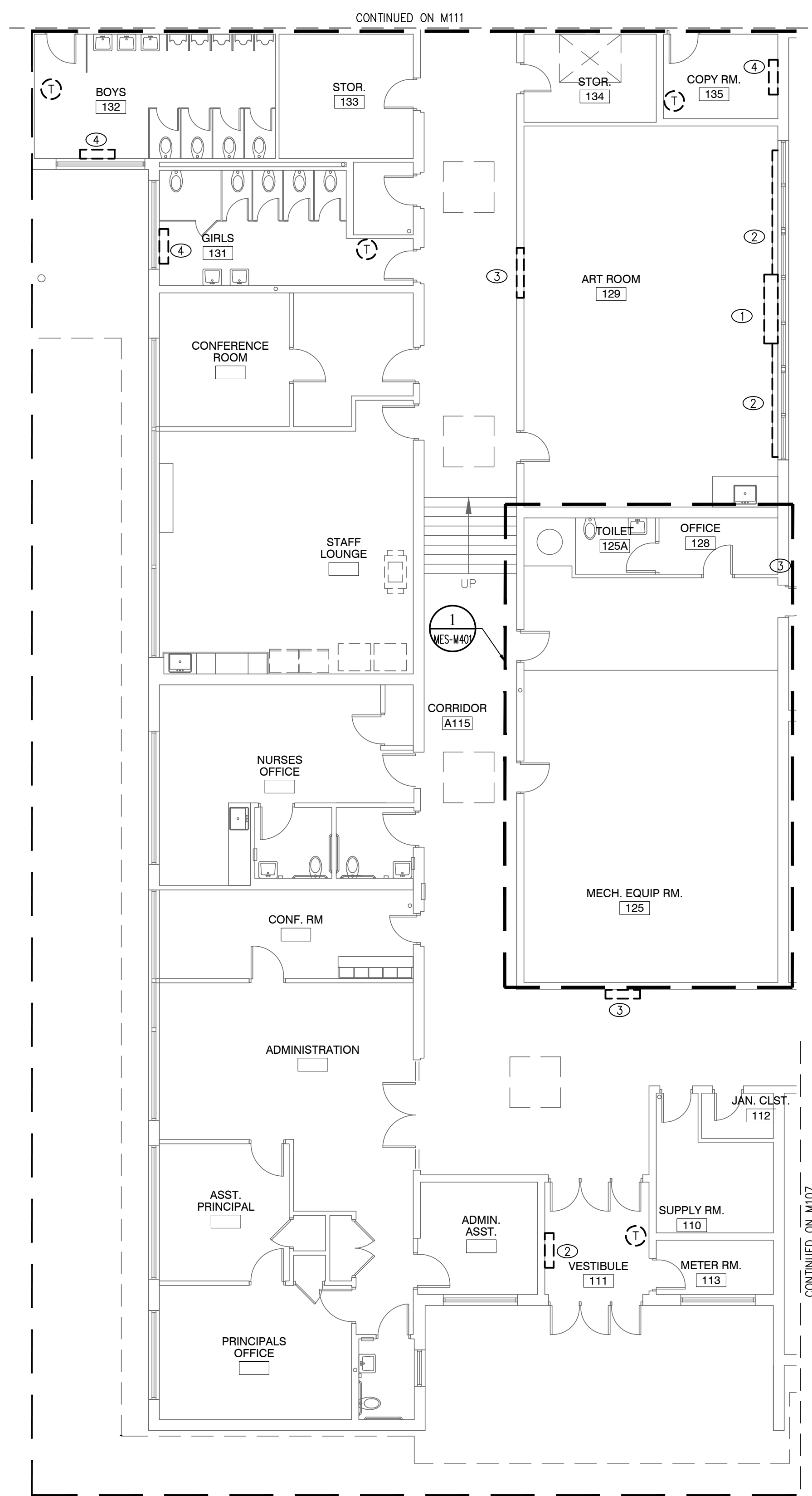
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SHEET NUMBER:

MES-M111



- ## KEYED REMOVAL NOTES
- ① REMOVE EXISTING UNIT VENTILATOR AND ALL ASSOCIATED STEAM VALVES AND PIPING.
 - ② REMOVE ALL ASSOCIATED STEAM PIPING, COVER AND VALVES BACK TO FIXTURES.
 - ③ REMOVE ALL ASSOCIATED STEAM PIPING AND VALVES BACK TO FIXTURE AND CAP. ABANDON FIXTURE IN PLACE.
 - ④ REMOVE EXISTING CONVECTOR AND ALL ASSOCIATED STEAM PIPING AND VALVES.

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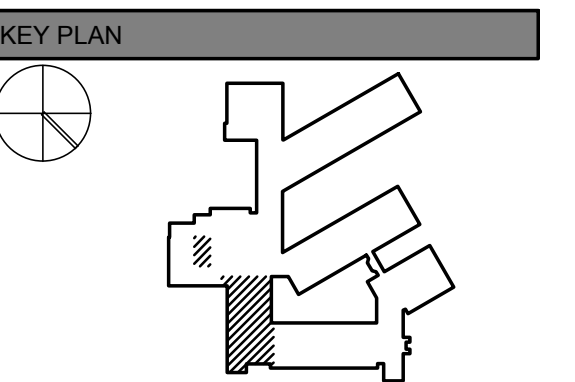
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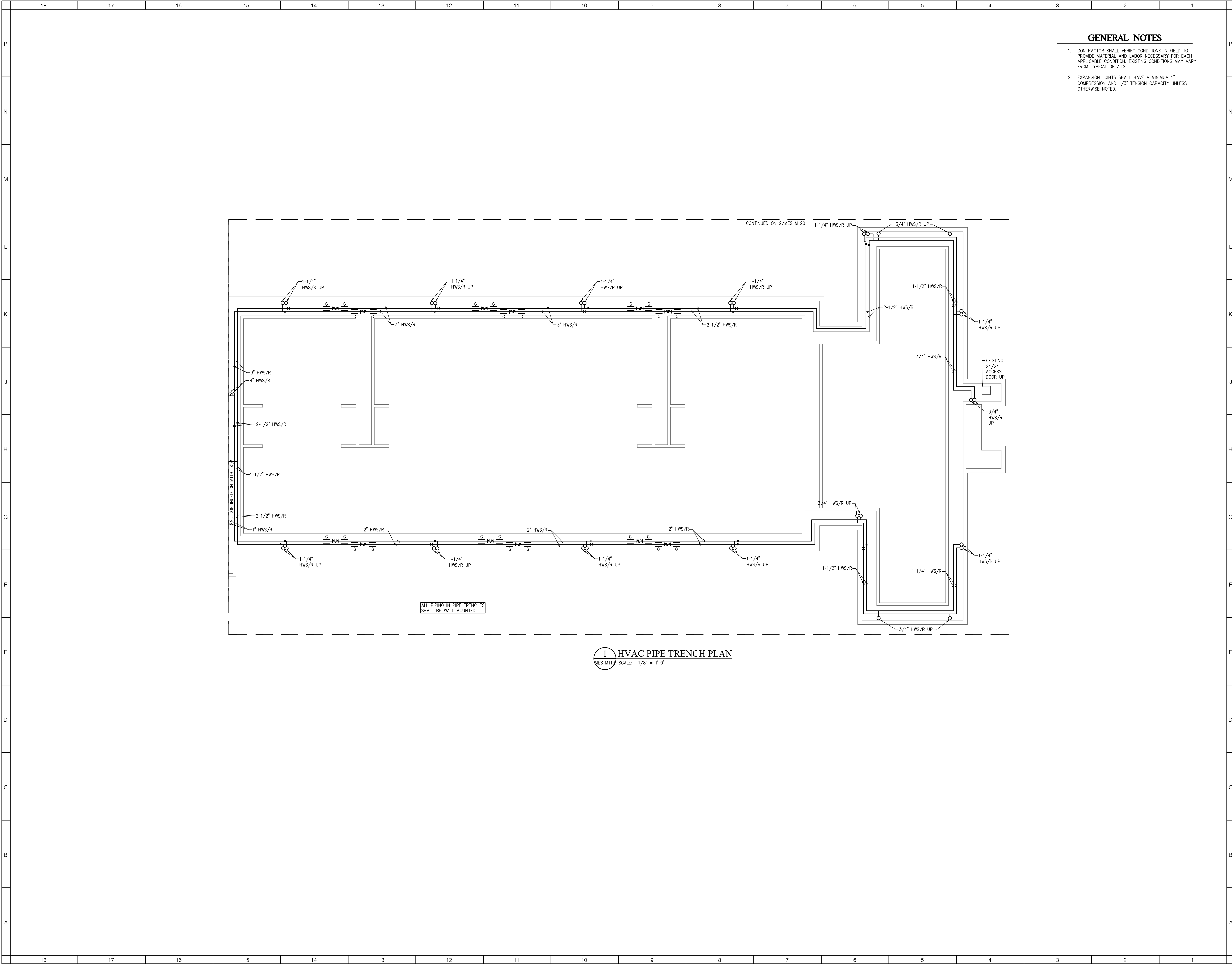
SCALE: As indicated

SHEET NAME:

HVAC REMOVALS
PLANS

SHEET NUMBER:

MES-M112



GENERAL NOTES

1. CONTRACTOR SHALL VERIFY CONDITIONS IN FIELD TO PROVIDE MATERIAL AND LABOR NECESSARY FOR EACH APPLICABLE CONDITION. EXISTING CONDITIONS MAY VARY FROM TYPICAL DETAILS.
2. EXPANSION JOINTS SHALL HAVE A MINIMUM 1" COMPRESSION AND 1/3" TENSION CAPACITY UNLESS OTHERWISE NOTED.

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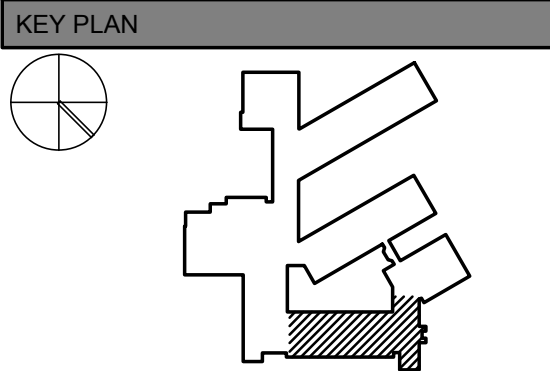
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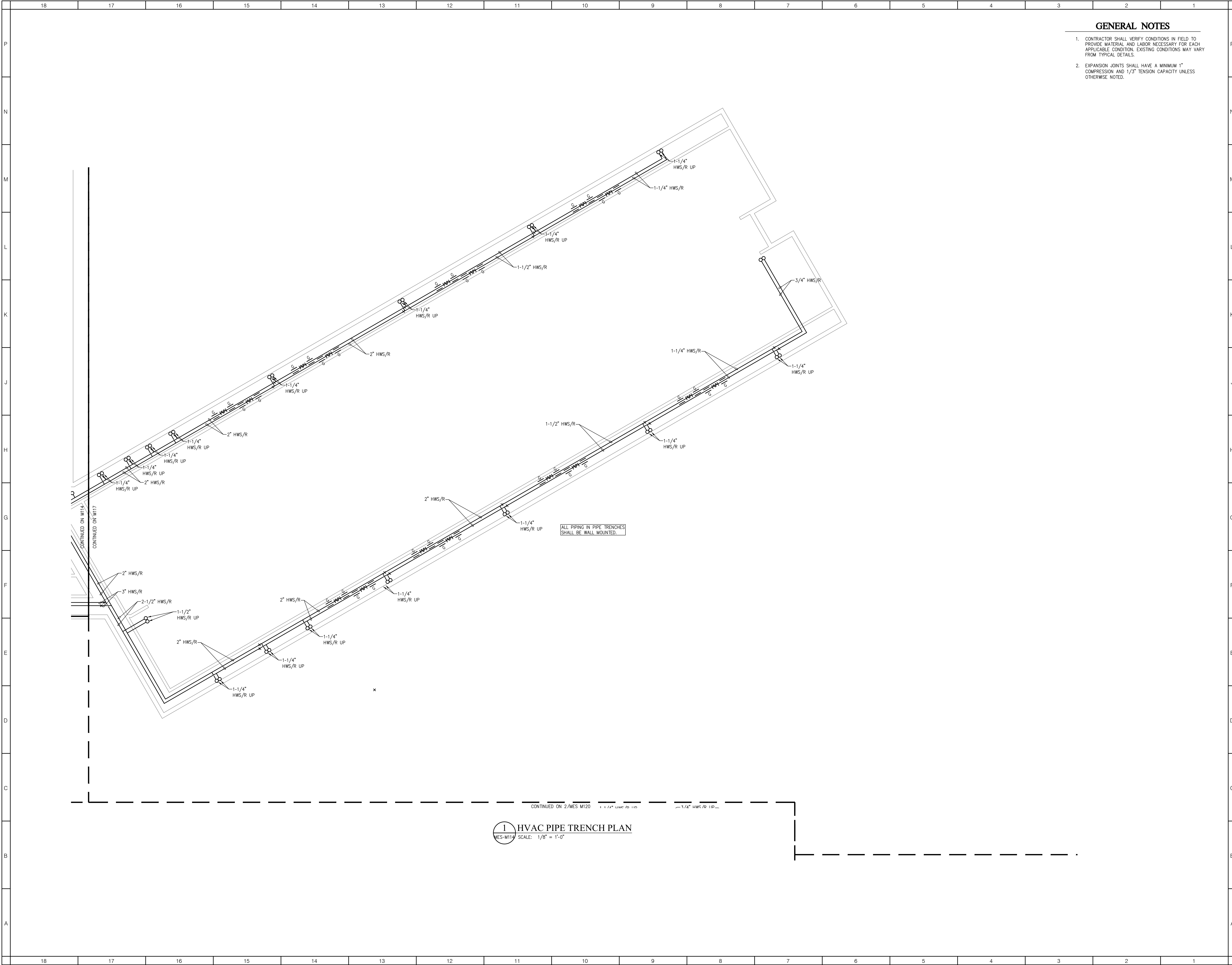
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PLAN
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MES-M113



GENERAL NOTES

- 1. CONTRACTOR SHALL VERIFY CONDITIONS IN FIELD TO PROVIDE MATERIAL AND LABOR NECESSARY FOR EACH APPLICABLE CONDITION. EXISTING CONDITIONS MAY VARY FROM TYPICAL DETAILS.
- 2. EXPANSION JOINTS SHALL HAVE A MINIMUM 1" COMPRESSION AND 1/3" TENSION CAPACITY UNLESS OTHERWISE NOTED.



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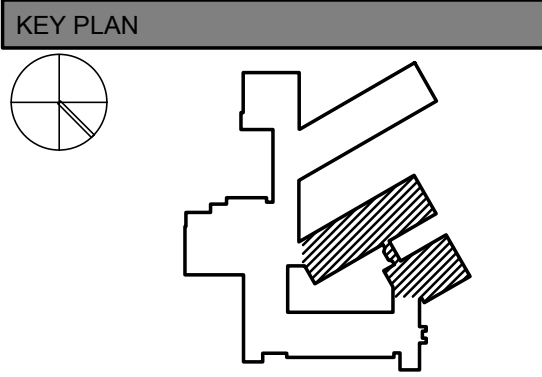
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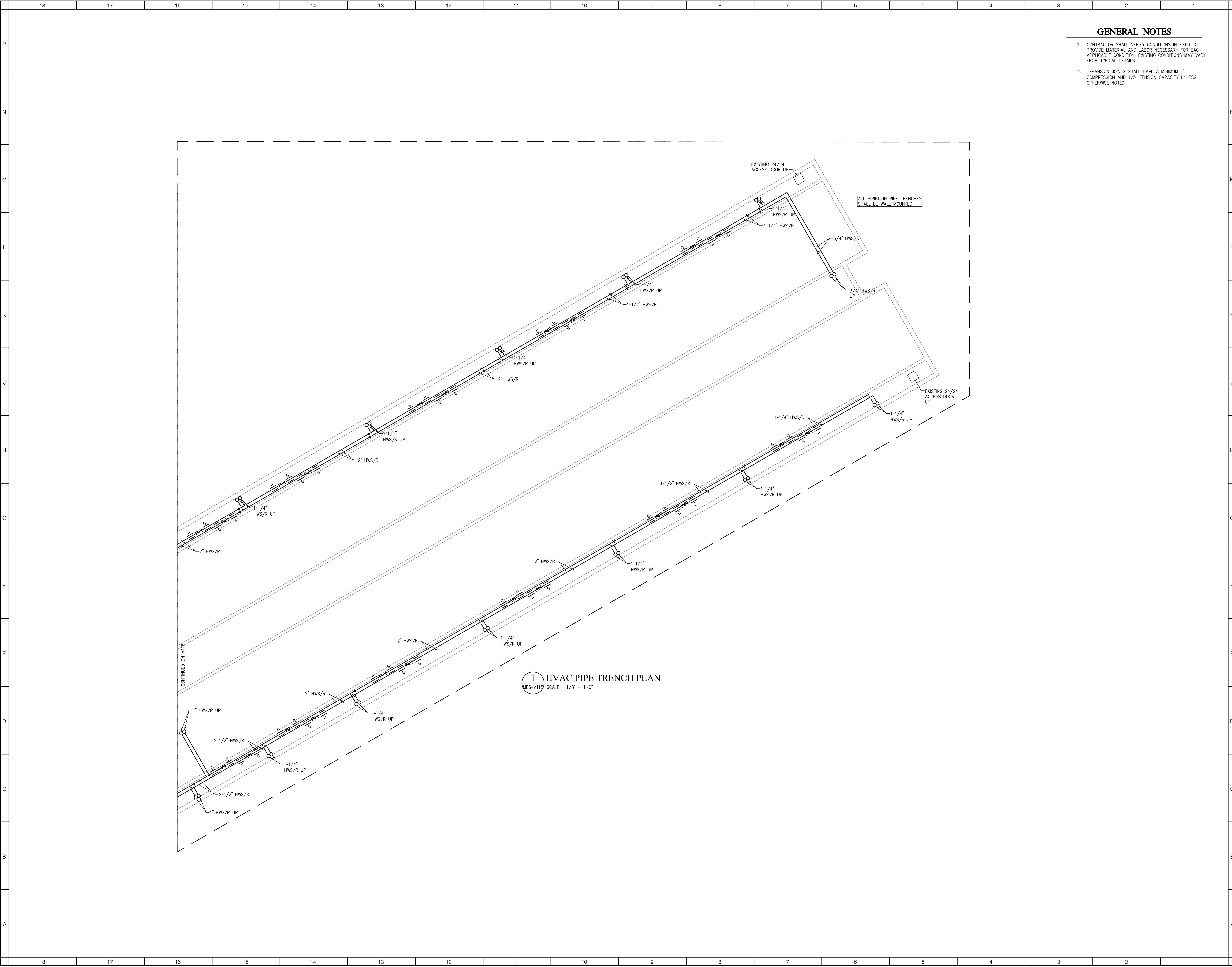
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HVAC PIPE TRENCH
PLAN
SHEET NUMBER:

MES-M114



GENERAL NOTES

1. CONTRACTOR SHALL VERIFY CONDITIONS IN FIELD TO PROVIDE MATERIAL AND LABOR NECESSARY FOR EACH APPLICABLE CONDITION. EXISTING CONDITIONS MAY VARY FROM TYPICAL DETAILS.
2. EXPANSION JOINTS SHALL HAVE A MINIMUM 1" COMPRESSION AND 1/3" TENSION CAPACITY UNLESS OTHERWISE NOTED.

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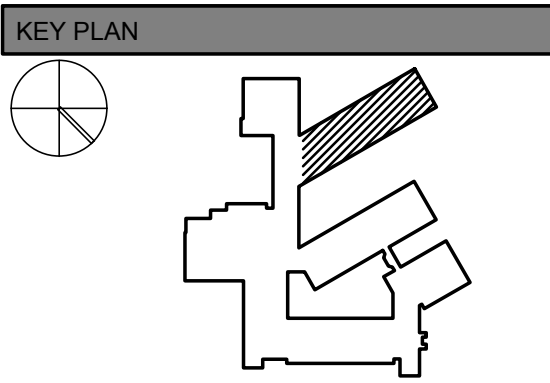
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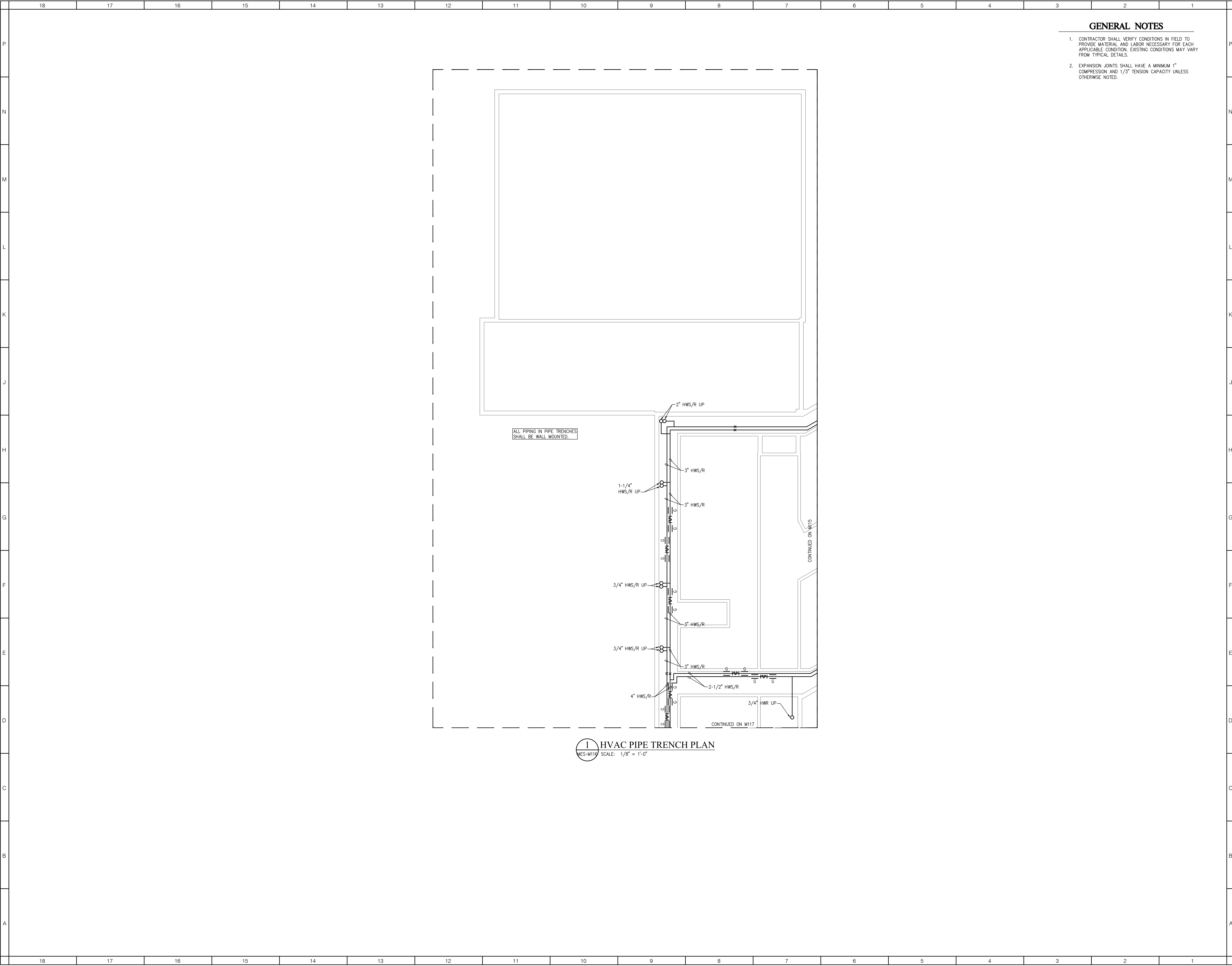
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HVAC PIPE TRENCH
PLAN

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MES-M115



GENERAL NOTES

1. CONTRACTOR SHALL VERIFY CONDITIONS IN FIELD TO PROVIDE MATERIAL AND LABOR NECESSARY FOR EACH APPLICABLE CONDITION. EXISTING CONDITIONS MAY VARY FROM TYPICAL DETAILS.
2. EXPANSION JOINTS SHALL HAVE A MINIMUM 1" COMPRESSION AND 1/3" TENSION CAPACITY UNLESS OTHERWISE NOTED.

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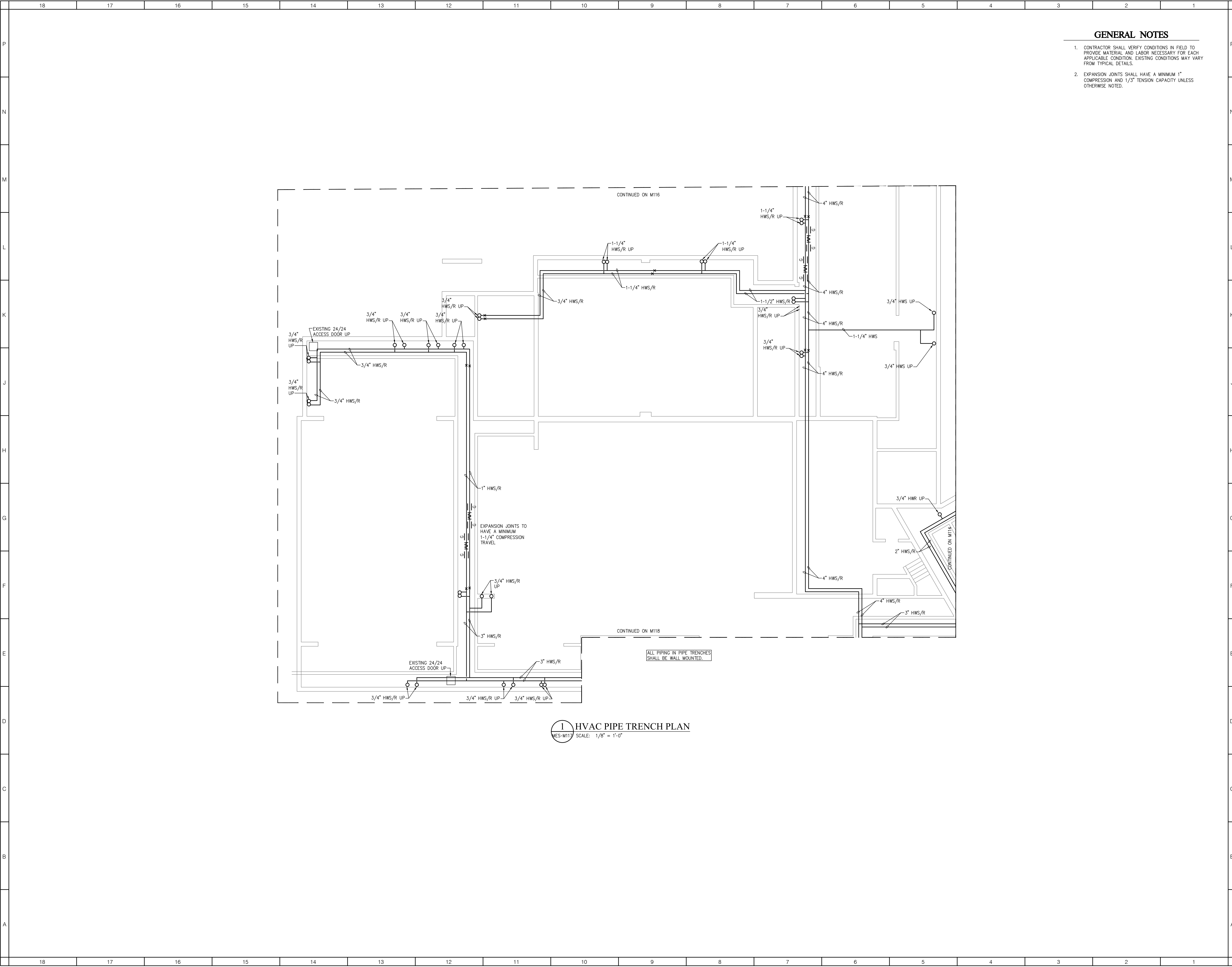
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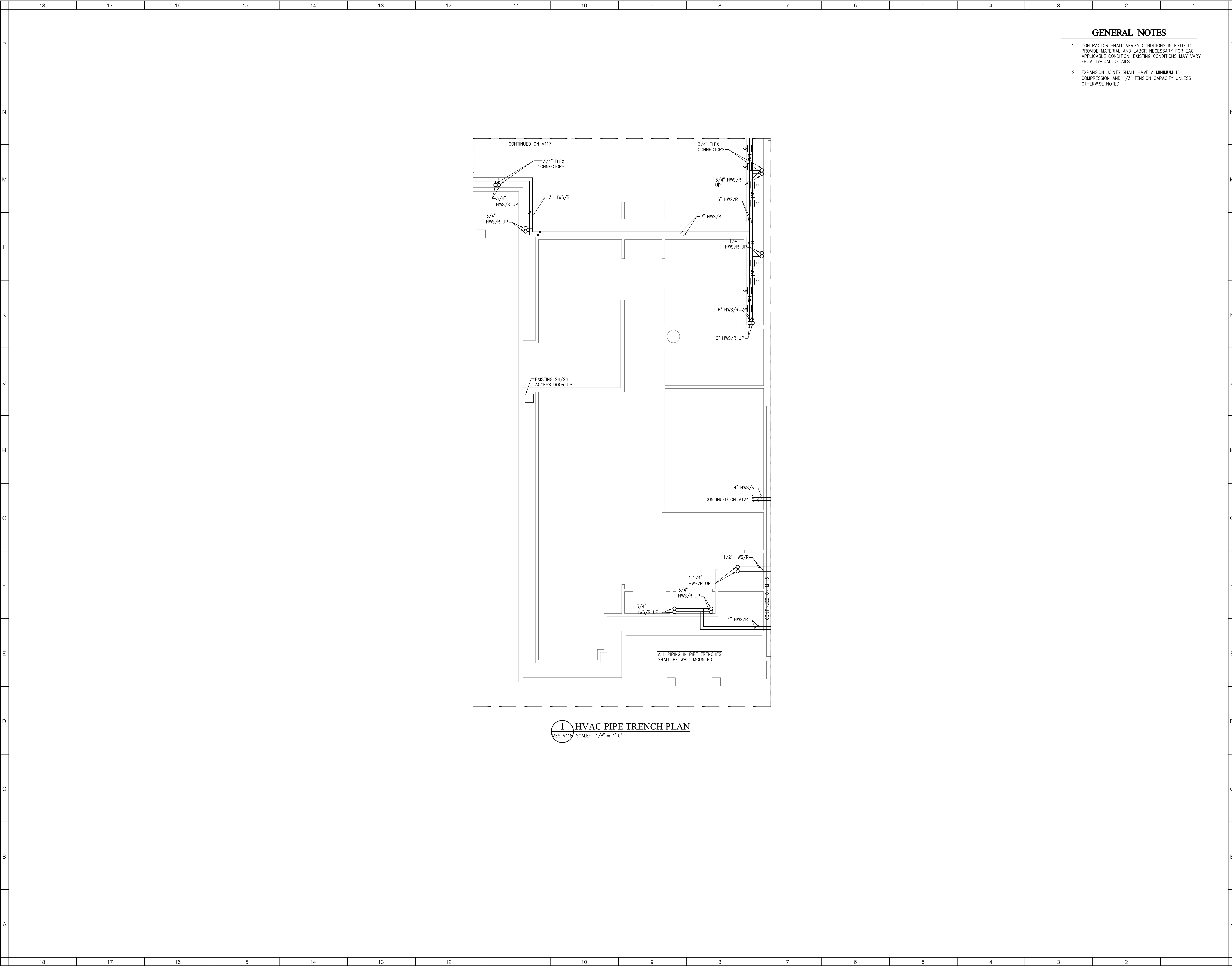
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GENERAL NOTES

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2. EXPANSION JOINTS SHALL HAVE A MINIMUM 1" COMPRESSION AND 1/3" TENSION CAPACITY UNLESS OTHERWISE NOTED.



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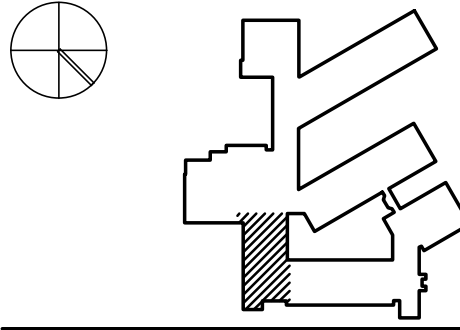




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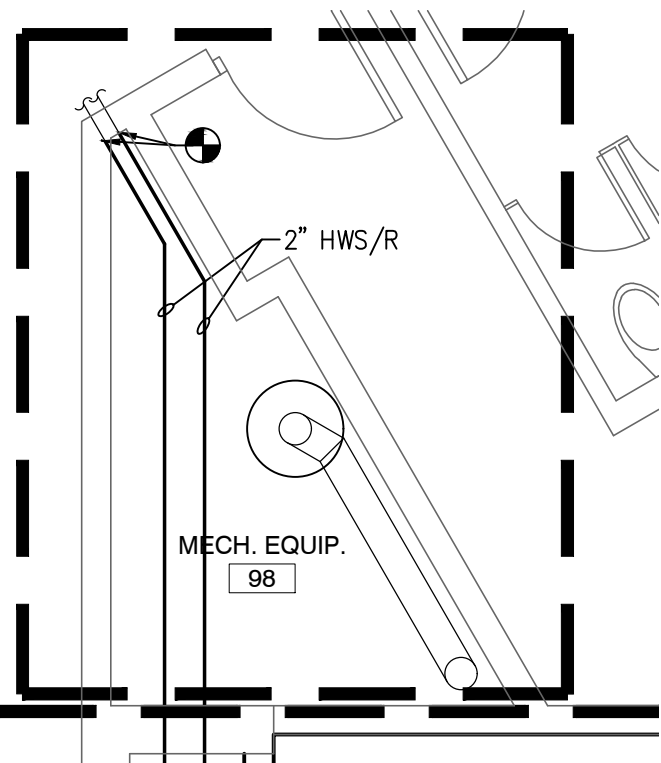
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2 HVAC PLAN
MES-M120 SCALE: 1/4" = 1'-0"

1 HVAC PLAN
MES-M120 SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. UNLESS OTHERWISE NOTED, UV'S SHALL REUSE EXISTING ON LOUVER/GRILLE. PROVIDE AN AIRTIGHT ADAPTER TO FIT THE UV'S ON INLET.
2. EXISTING FLOOR TILES CONTAIN ASBESTOS MATERIALS. IF THE ACM MUST BE DISTURBED TO PENETRATE FLOOR OR ANY OTHER REASON, COORDINATE WORK WITH OWNER AND ENGINEER. OWNER SHALL PROVIDE THE ABATEMENT BY CERTIFIED PERSONNEL.
3. WHEN SETTING UV'S OR CASEWORK LEVEL FLOOR AS NECESSARY WITH NON ACM FLOOR TILES.
4. CONTRACTOR SHALL VERIFY CONDITIONS IN FIELD TO PROVIDE MATERIAL AND LABOR NECESSARY FOR EACH APPLICABLE CONDITION. EXISTING CONDITIONS MAY VARY FROM TYPICAL DETAILS.
5. EXPANSION JOINTS SHALL HAVE A MINIMUM 1" COMPRESSION AND 1/3" TENSION CAPACITY UNLESS OTHERWISE NOTED.

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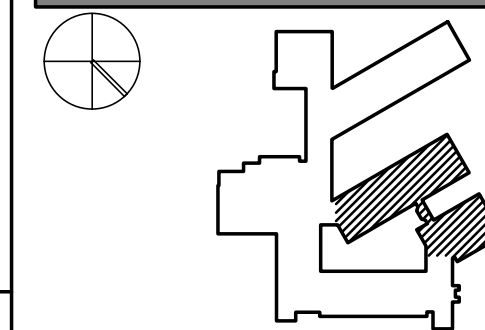
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HVAC PLAN

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- ① EXISTING CONVECTOR TO REMAIN ABANDONED IN PLACE.
- ② EXISTING CONVECTOR HOUSING TO REMAIN. REPLACE ALL STEAM PIPING AND HEATING ELEMENTS WITH HYDRONIC. PROVIDE LINE SIZE MODULATING THERMOSTATIC VALVE WITH DDC ACTUATOR.
- ③ PROVIDE FINNED TUBE RADIATION (FTR-2) WITHOUT ENCLOSURE TO BE INSTALLED BEHIND EXISTING CASEWORK. SEE DETAIL 9/MES-M501. FIELD VERIFY DIMENSION TO RUN LENGTH OF THE CASEWORK LESS U BEND AND VALVING.
- ④ PROVIDE WITH UNIT VENTILATOR. PIPING TO BE SUPPLIED FROM PIPE TUNNEL BELOW. CONNECT TO EXISTING LOUVER.
- ⑤ REMOVE EXISTING CASEWORK AS REQUIRED TO INSTALL NEW UNIT VENTILATOR. COORDINATE WORK WITH GC AND ABATEMENT CONTRACTORS.
- ⑥ PROVIDE LOUVER AND OPENING.
- ⑦ 2.75" MINIMUM EXPANSION/COMPRESSION

1. UNLESS OTHERWISE NOTED, UV'S SHALL REUSE EXISTING OA LOUVER/GRILLE. PROVIDE AN AIRTIGHT ADAPTER TO FIT THE UV'S OA INLET.
2. EXISTING FLOOR TILES CONTAIN ASBESTOS MATERIALS. IF THE ACM MUST BE DISTURBED TO PENETRATE FLOOR OR ABOVE, FOR ANY REASON, COORDINATE WORK WITH OWNER AND ENGINEER. OWNER SHALL PROVIDE THE ABATEMENT BY CERTIFIED PERSONNEL.
3. WHEN SETTING UV'S OR CASEWORK LEVEL FLOOR AS NECESSARY WITH NON ACM FLOOR TILES.
4. CONTRACTOR SHALL VERIFY CONDITIONS IN FIELD TO PROVIDE MATERIAL AND LABOR NECESSARY FOR EACH APPLICATION CONDITION. EXISTING CONDITIONS MAY VARY FROM TYPICAL DETAILS.
5. EXPANSION JOINTS SHALL HAVE A MINIMUM 1" COMPRESSION AND 1/3" TENSION CAPACITY UNLESS OTHERWISE NOTED.



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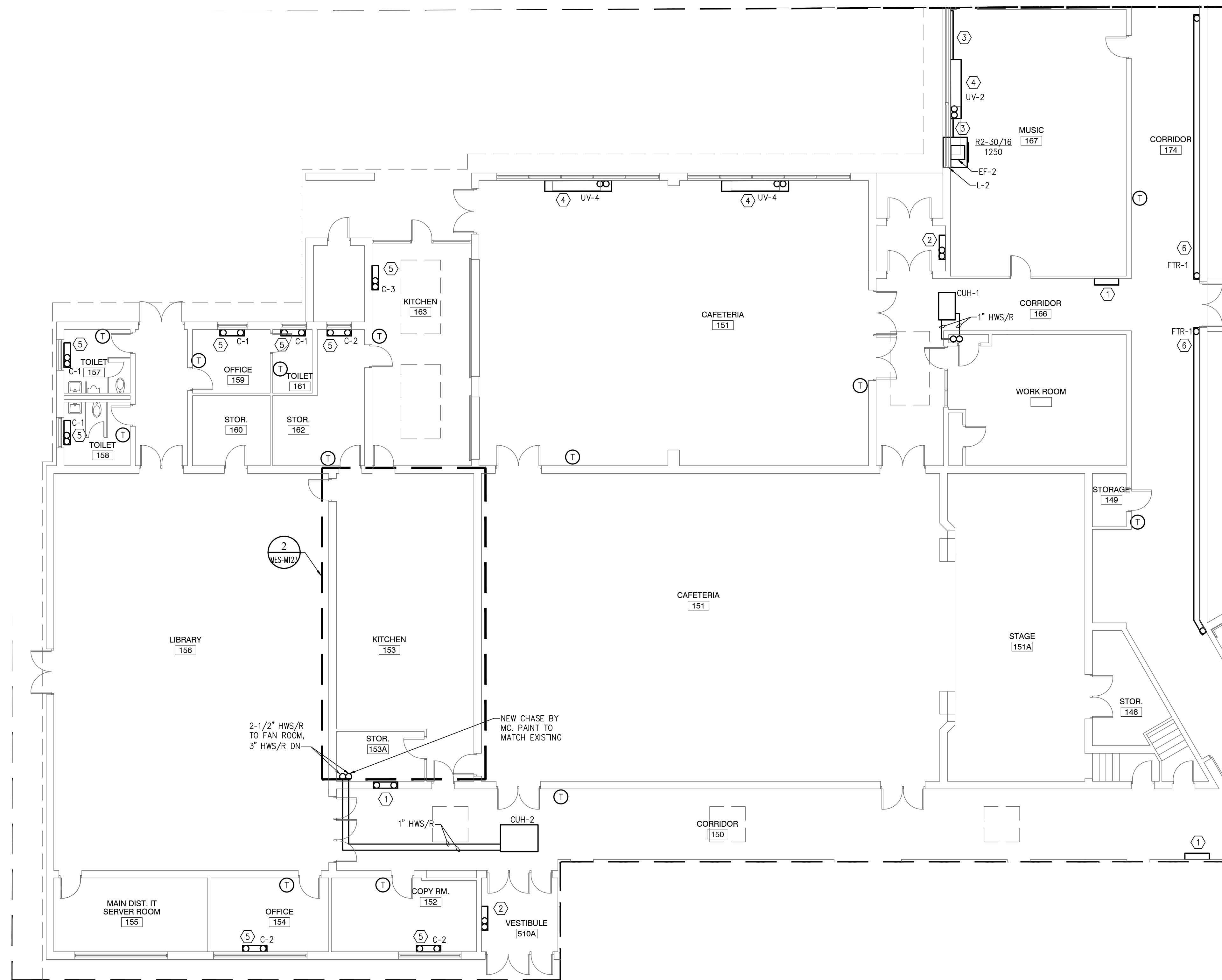
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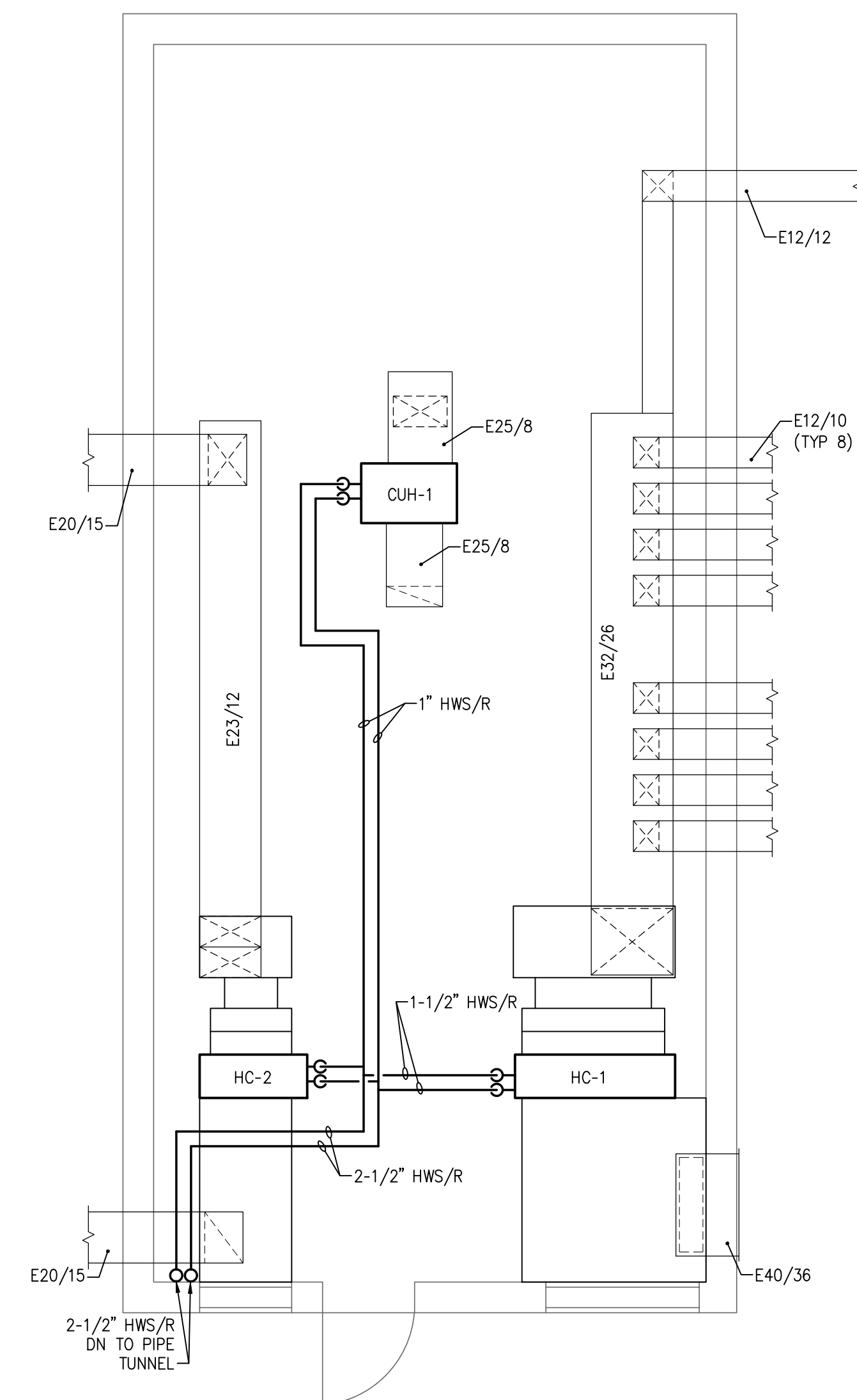


MES-M122

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1 HVAC PLAN
MES-M123 SCALE: 1/8" = 1'-0"



1 HVAC PENTHOUSE PLAN
MES-M123 SCALE: 1/8" = 1'-0"

KEYED NOTES

- ① EXISTING CONVECTOR TO REMAIN ABANDONED IN PLACE.
- ② EXISTING CONVECTOR HOUSING TO REMAIN. REPLACE ALL STEAM PIPING AND HEATING ELEMENTS WITH HYDRONIC. PROVIDE LINE SIZE MODULATING THERMOSTATIC VALVE WITH DDC ACTUATOR.
- ③ PROVIDE FINNED TUBE RADIATION (FTR-1) AND ENCLOSURE. SEE DETAIL 6/MES-M501. ENCLOSURE TO GO FROM LIV TO WALL. ACTIVE FIN TO COME WITHIN 12" OF EACH END. FIELD VERY DIMENSION.
- ④ PROVIDE WITH UNIT VENTILATOR. PIPING TO BE SUPPLIED FROM PIPE TUNNEL BELOW. CONNECT TO EXISTING LOUVER. PROVIDE UNIT VENTILATOR WITH FALSE BACK AND INSULATED PIPE ENCLOSURE.
- ⑤ PROVIDE CONVECTOR. PIPING TO BE SUPPLIED FROM PIPE TUNNEL BELOW.
- ⑥ PROVIDE FINNED TUBE RADIATION (FTR-1) AND ENCLOSURE. SEE DETAIL 6/MES-M501.

GENERAL NOTES

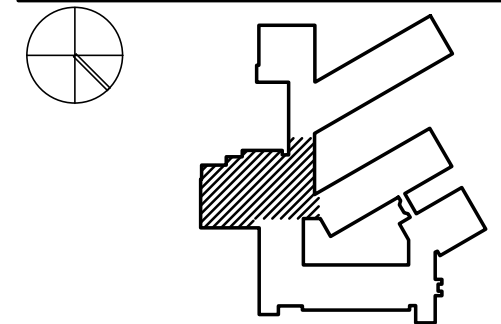
1. UNLESS OTHERWISE NOTED, U/V'S SHALL REUSE EXISTING O/A LOUVER/GRIFFLE. PROVIDE AN AIRIGHT ADAPTER TO FIT THE U/O AS INLET.
2. EXISTING FLOOR TILES CONTAIN ASBESTOS MATERIALS. IF THE ACM MUST BE DISTURBED TO PENETRATE FLOOR OR AIR HANDLERS, COORDINATE WORK WITH OWNER AND ENGINEER. OWNER SHALL PROVIDE THE ABATEMENT BY CERTIFIED PERSONNEL.
3. WHEN SETTING U/V'S OR CASEWORK LEVEL FLOOR AS NECESSARY WITH NON ACM FLOOR TILES.
4. CONTRACTOR SHALL VERIFY CONDITIONS IN FIELD TO PROVIDE MATERIAL AND LABOR NECESSARY FOR EACH APPLICABLE CONDITION. EXISTING CONDITIONS MAY VARY FROM TYPICAL DETAILS.
5. EXPANSION JOINTS SHALL HAVE A MINIMUM 1" COMPRESSION AND 1/3" TENSION CAPACITY UNLESS OTHERWISE NOTED.



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103 Church St, Nanuet,
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KEY PLAN



REVISIONS

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DATE: MARCH 15, 2021

SCALE: As indicated

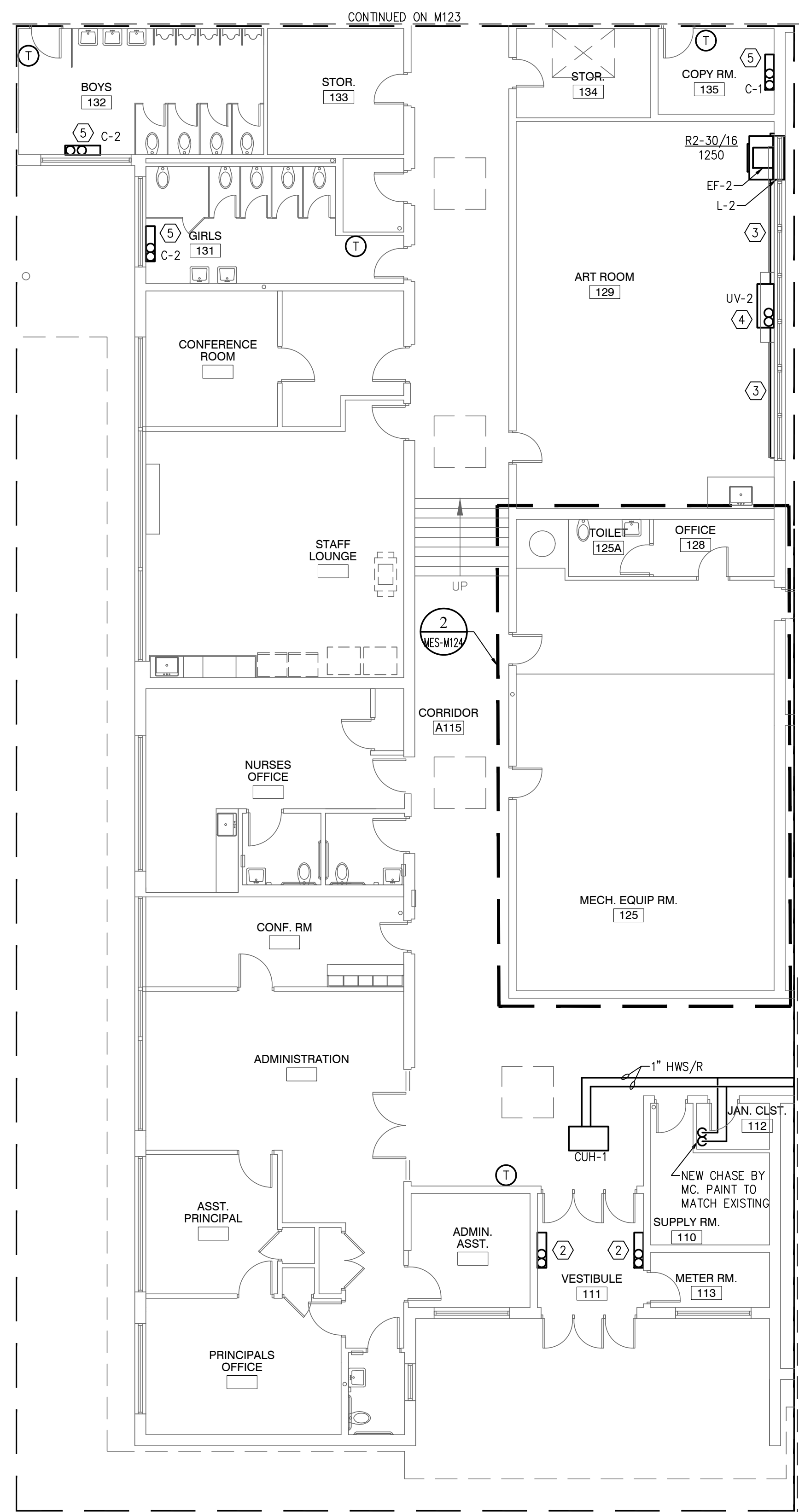
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HVAC PLAN

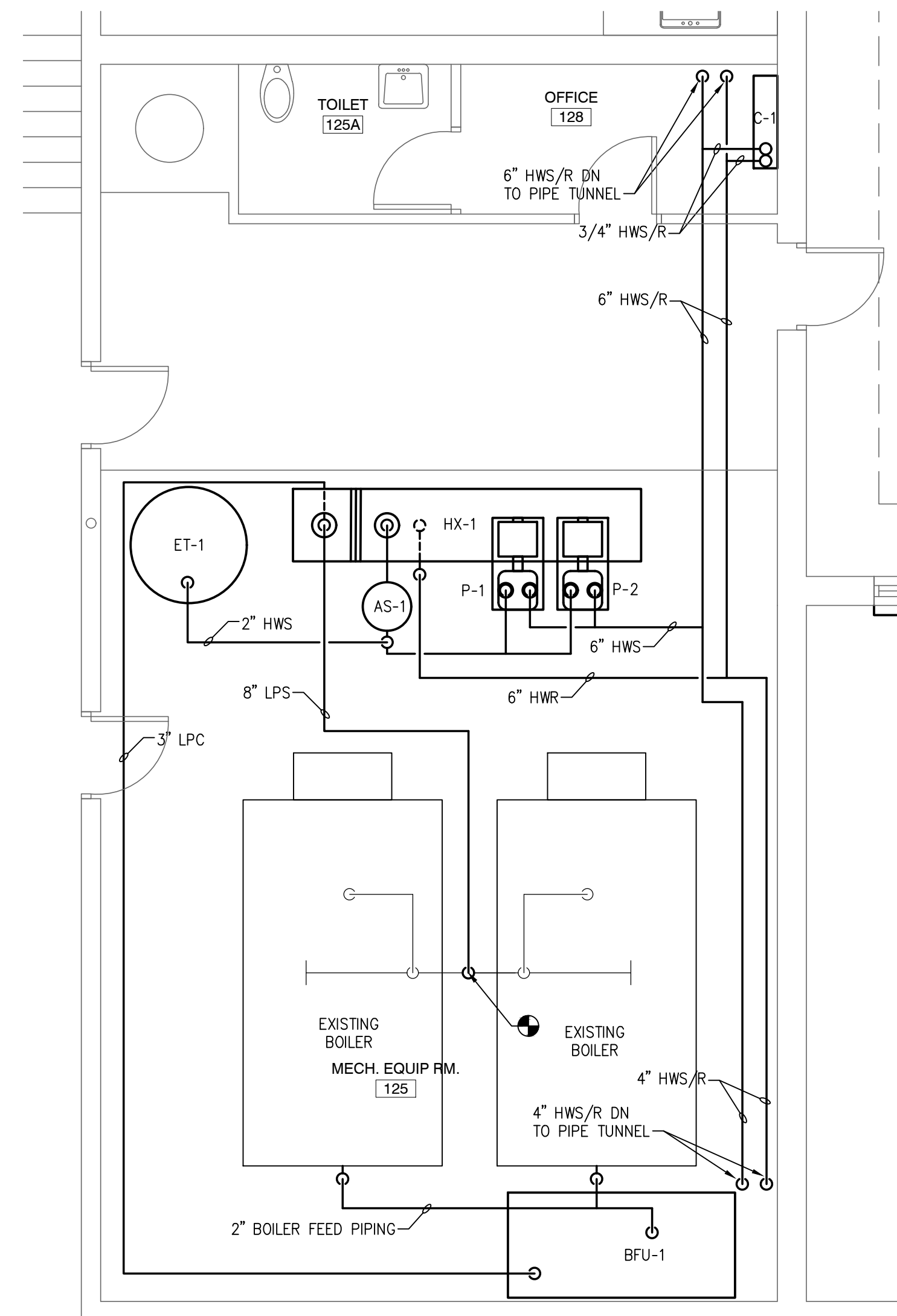
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SHEET NUMBER: _____

MES-M123



1 HVAC PLAN
MES-M124 SCALE: 1/8" = 1'-0"



2 HVAC MECH. EQUIP. RM. PLAN
MES-M124 SCALE: 1/4" = 1'-0"

KEYED NOTES

- ① NOT USED.
- ② EXISTING CONVECTOR HOUSING TO REMAIN. REPLACE ALL STEAM PIPING AND HEATING ELEMENTS WITH HYDRONIC. PROVIDE LINE SIZE MODULATING THERMOSTATIC VALVE WITH DDC ACTUATOR.
- ③ PROVIDE FINNED TUBE RADIATOR (FTR-1) AND ENCLOSURE. SEE DETAIL 9/YES-M501. ENCLOSURE TO GO FROM FLOOR TO WALL. ACTIVE FIN TO COME WITHIN 12 INCHES OF EACH END. FIELD VERIFY DIMENSIONS.
- ④ PROVIDE WITH UNIT VENTILATOR. PIPING TO BE SUPPLIED FROM PIPE TUNNEL BELOW. CONNECT TO EXISTING LOUVER. PROVIDE UNIT VENTILATOR WITH FALSE BACK AND INSULATED PIPE ENCLOSURE.
- ⑤ PROVIDE CONVECTOR. PIPING TO BE SUPPLIED FROM PIPE TUNNEL BELOW.

GENERAL NOTES

1. UNLESS OTHERWISE NOTED, UNITS SHALL REQUIRE EXISTING O/LR/GLOVER/GRIP. PROVIDE A AIR/SHALL ADAPTER TO FIT THE O/LR O/LR INLET.
2. EXISTING FLOOR TILES CONTAIN ASBESTOS MATERIALS. IF THE ACM MUST BE DISTURBED TO PENETRATE FLOOR OR ANY OTHER REASON, COORDINATE WORK WITH OWNER AND ENGINEER. OWNER SHALL PROVIDE THE ABATEMENT BY CERTIFIED PERSONNEL.
3. WHEN SETTING UNITS OR CASEWORK LEVEL FLOOR AS NECESSARY WITH NON ACM FLOOR TILES.
4. CONTRACTOR SHALL VERIFY CONDITIONS IN FIELD TO PROVIDE MATERIAL AND LABOR NECESSARY FOR EACH APPLICATION. EXISTING CONDITIONS MAY VARY FROM TYPICAL DETAILS.
5. EXPANSION JOINTS SHALL HAVE A MINIMUM 1" COMPRESSION AND 1/3" TENSION CAPACITY UNLESS OTHERWISE NOTED.

ARCHITECT

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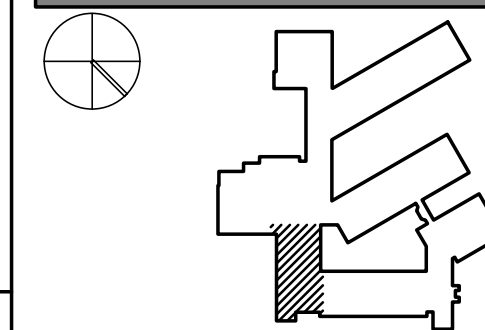
SED CONTROL NUMBERS
MILLER ES #: 50-01-08-03-0-001-022



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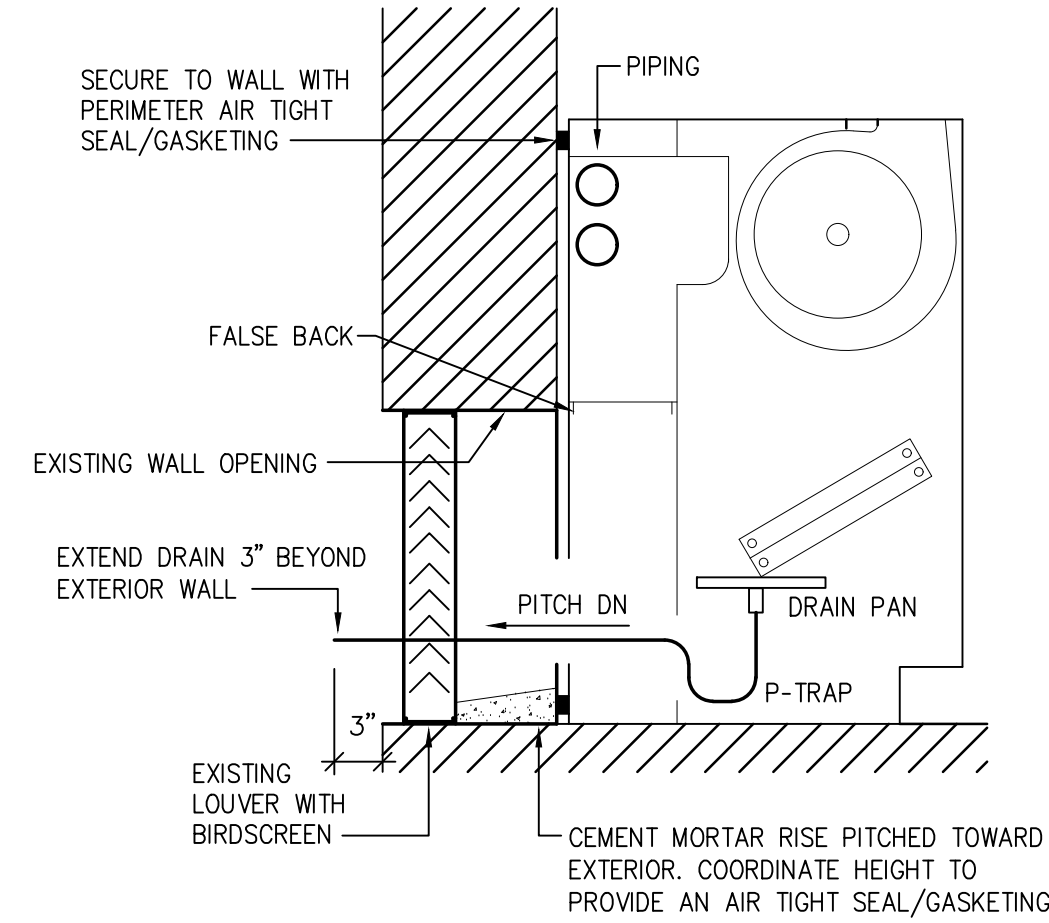
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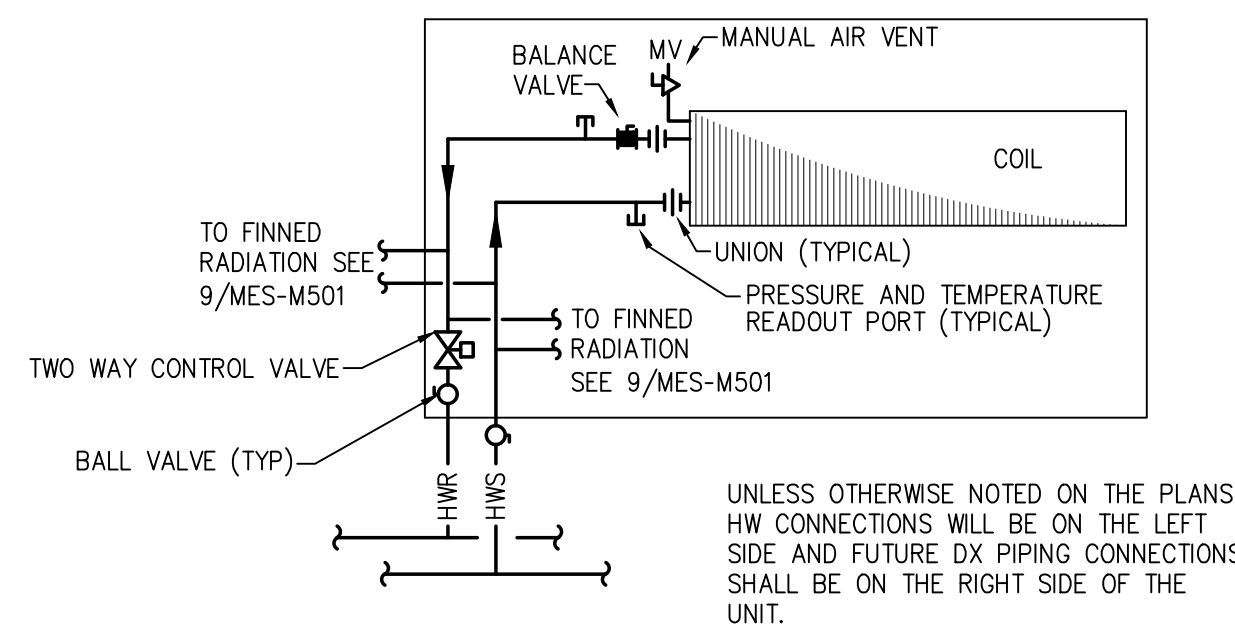
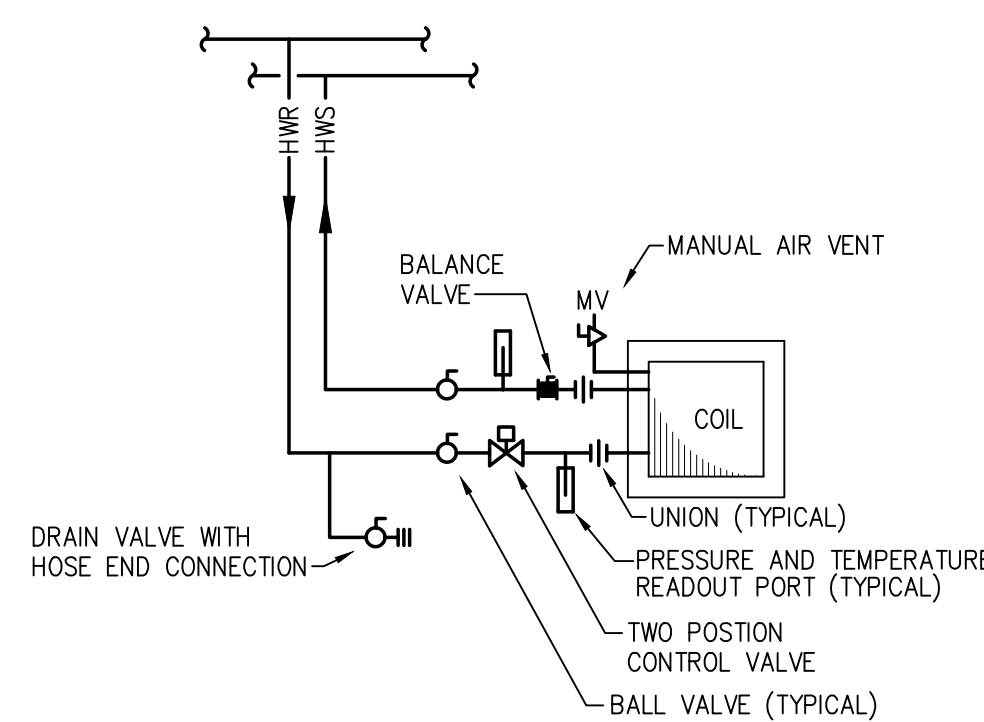
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MES-M124

SSUE FOR BID SET

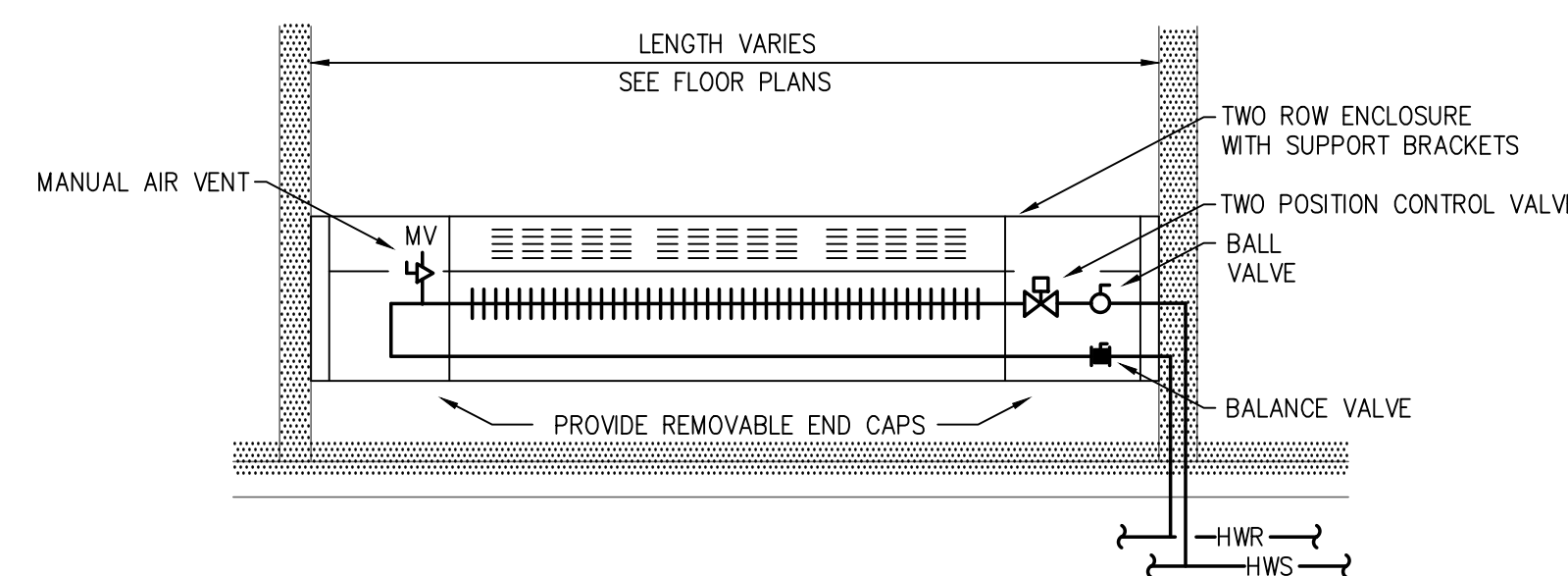


RUNOUT SCHEDULE	
GPM	PIPE & VALVE SIZE
0 - 3.5	3/4"
3.6 - 7	1"
7.1 - 12	1-1/4"
13 - 20	1-1/2"
20.1 - 40	2"

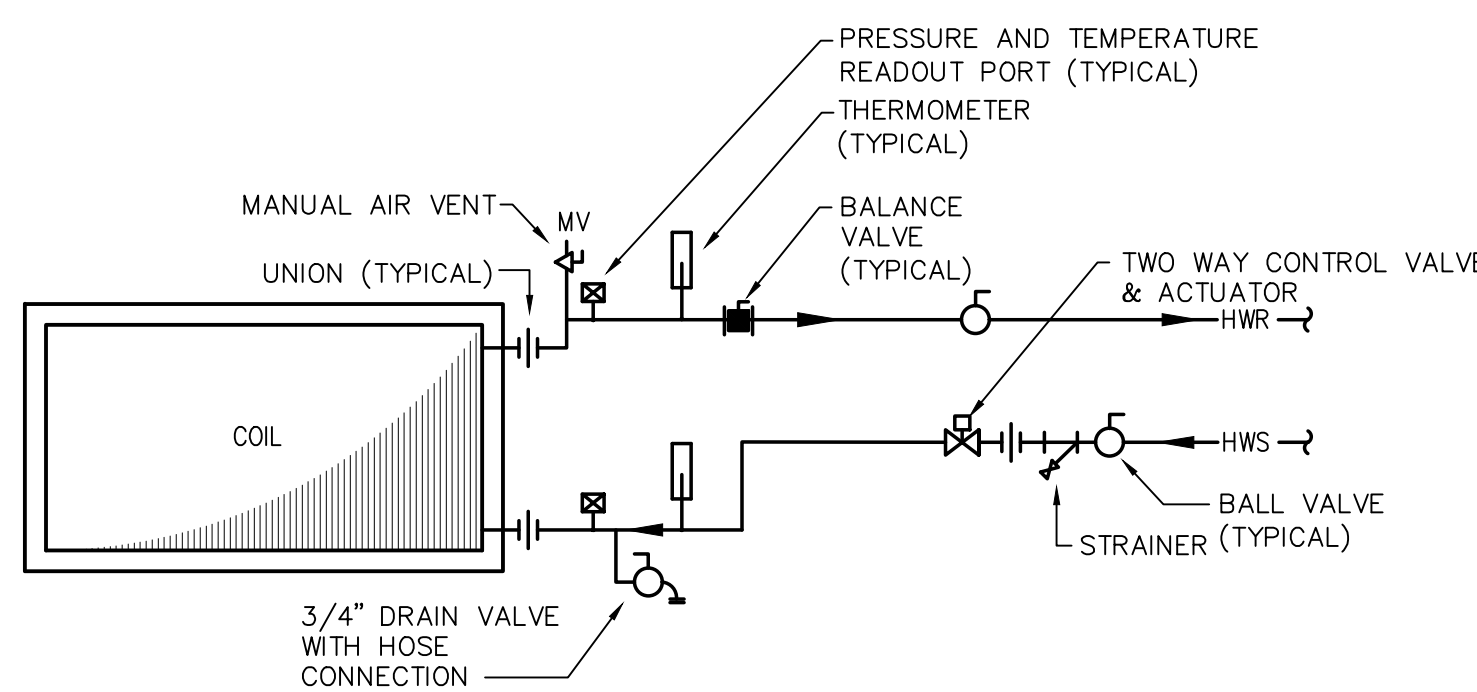


2 UNIT VENTILATOR DETAIL
MES-M501 SCALE: NTS

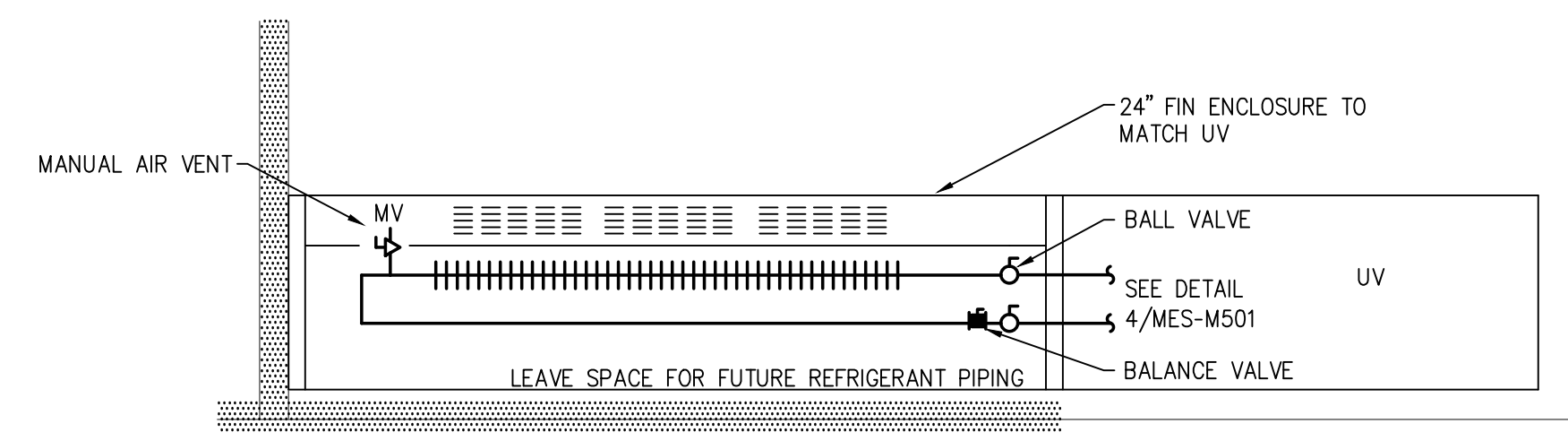
4 UNIT VENTILATOR PIPING DETAIL
MES-M501 SCALE: NTS



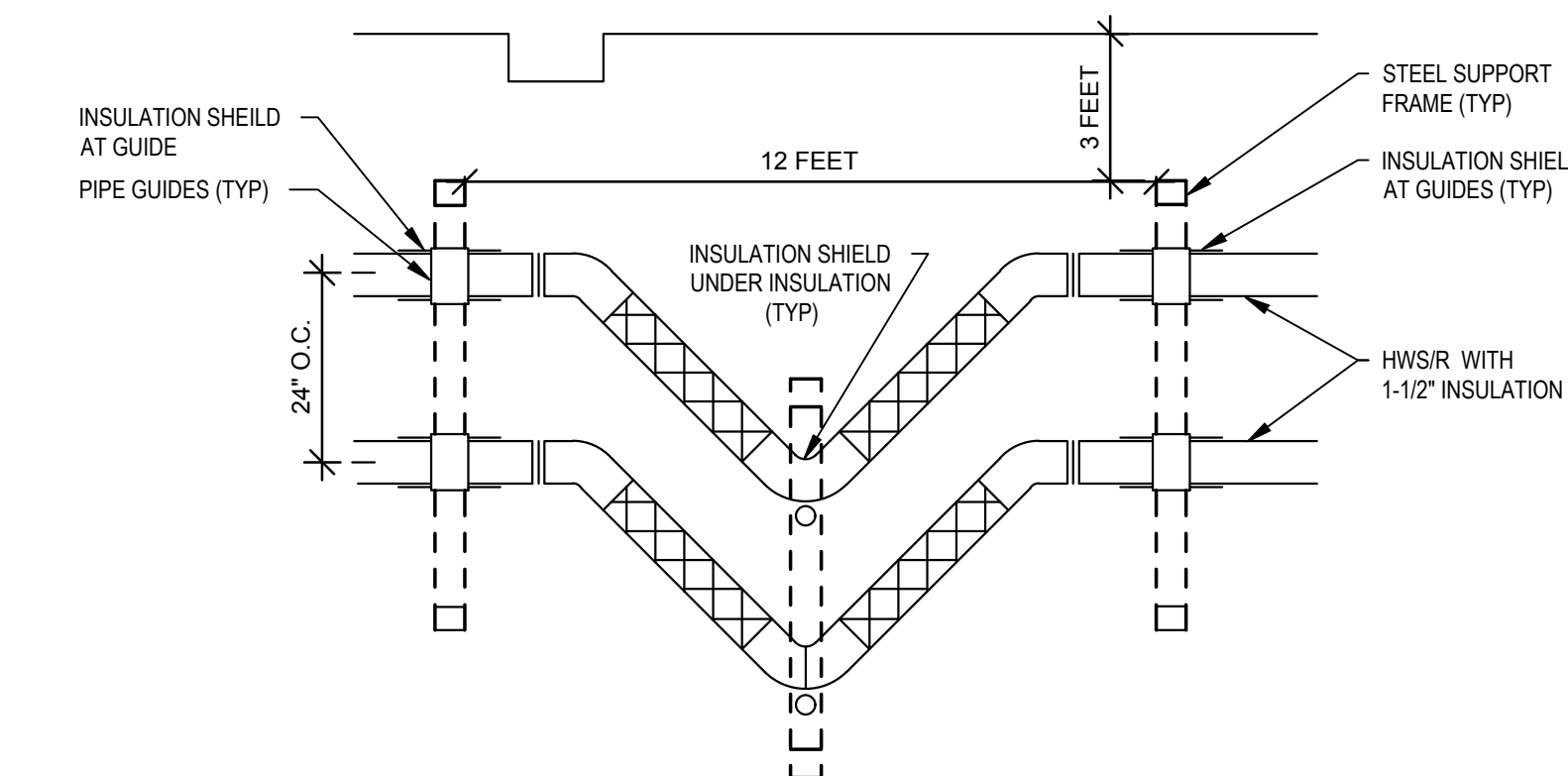
6 FINNED TUBE PIPING DETAIL
MES-M50 SCALE: NTS



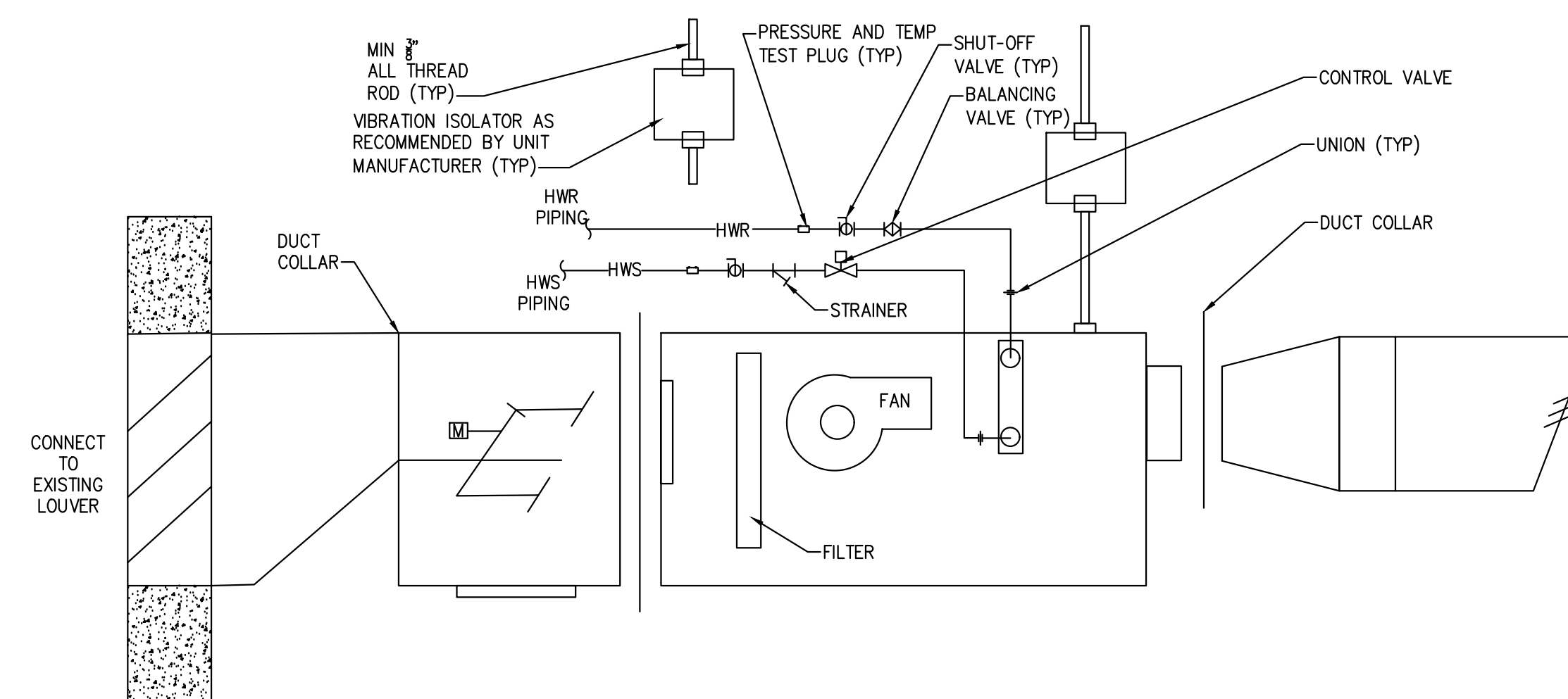
5 HOT WATER COIL DETAIL
MES-M50 SCALE: NTS



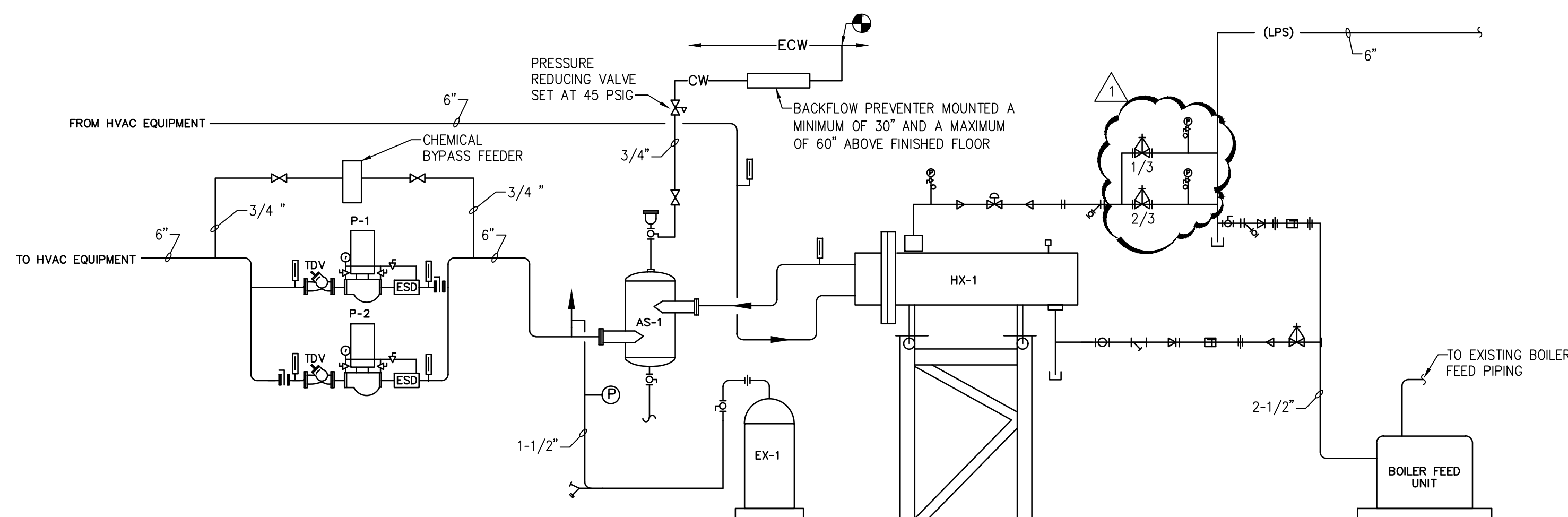
7 FINNED RADIATION WITH
UNIT VENTILATOR PIPING DETAIL
MES-M507 SCALE: NTS



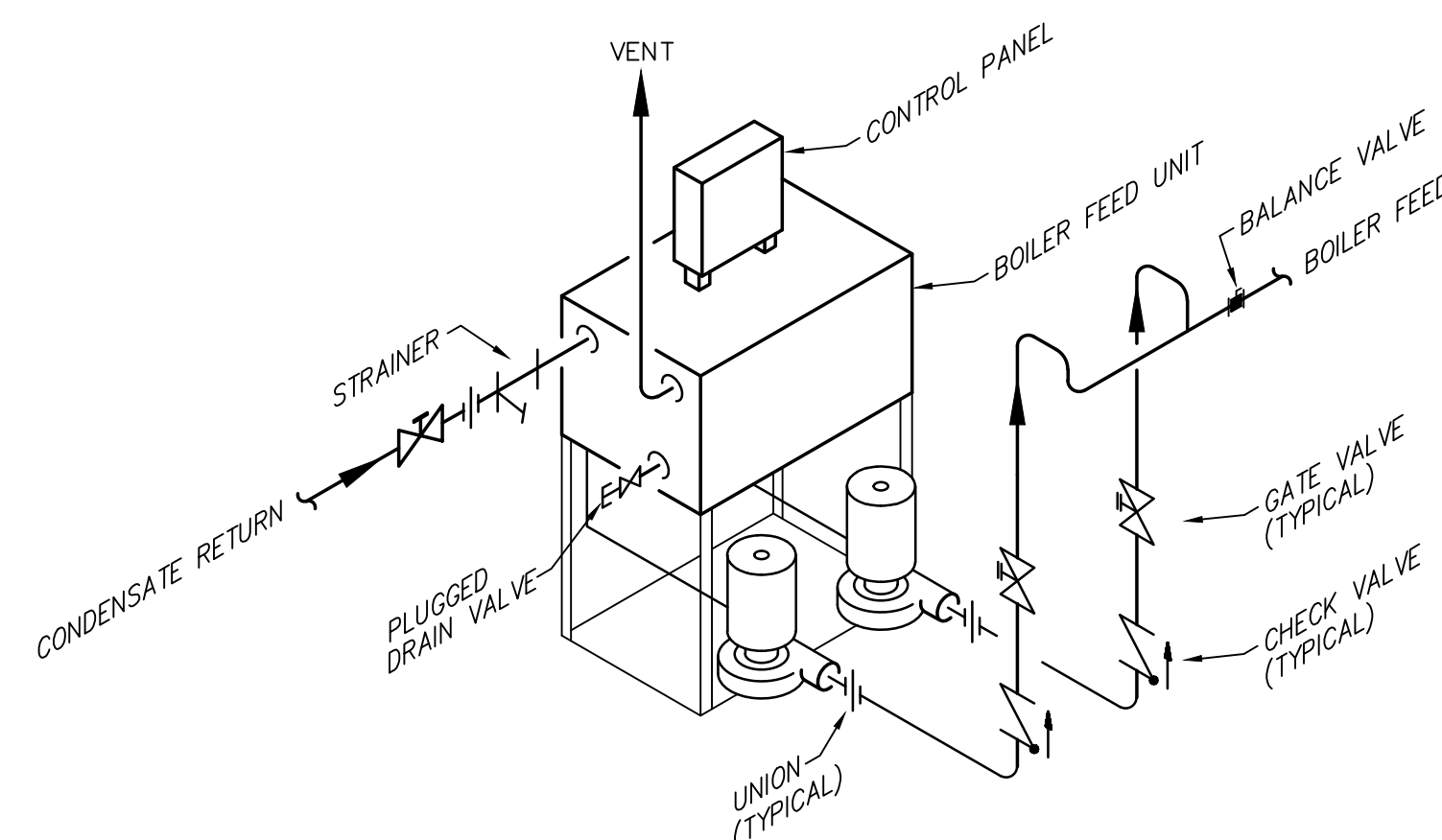
8 HWS & R PIPE EXPANSION LOOP
MES-M50 SCALE: NTS



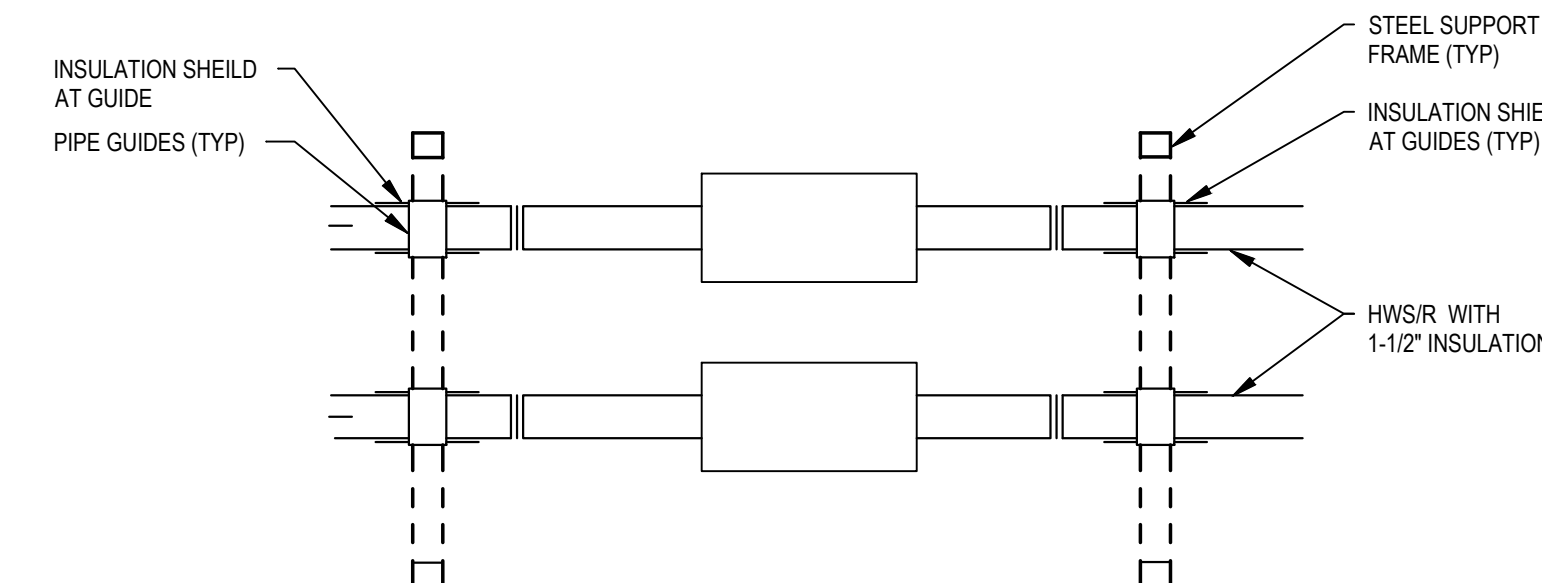
9 HVAC TWO PIPE FAN COIL UNIT HANGING DETAIL
MES-M50 SCALE: NTS



10 STEAM TO HOT WATER HEAT EXCHANGER DETAIL
WES-M507 SCALE: NTS



11 BOILER FEED UNIT DETAIL
MES-M50 SCALE: NTS

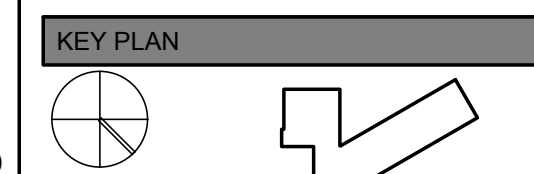


12 BELLOWS STYLE EXPANSION COMPENSATOR
MES-M50 SCALE: NTS



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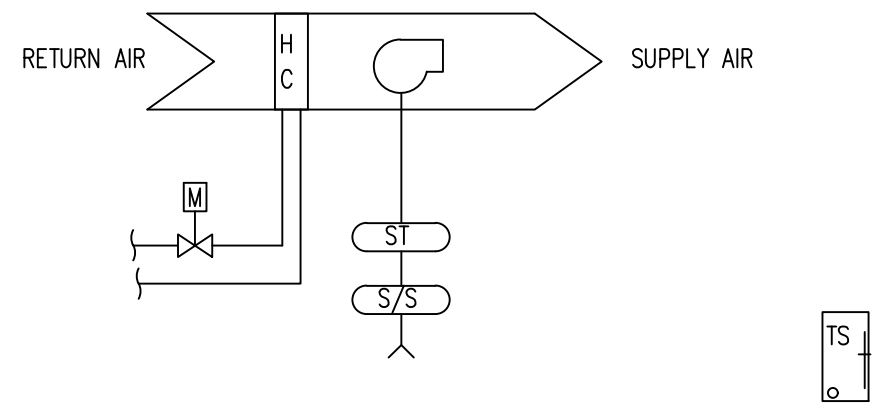
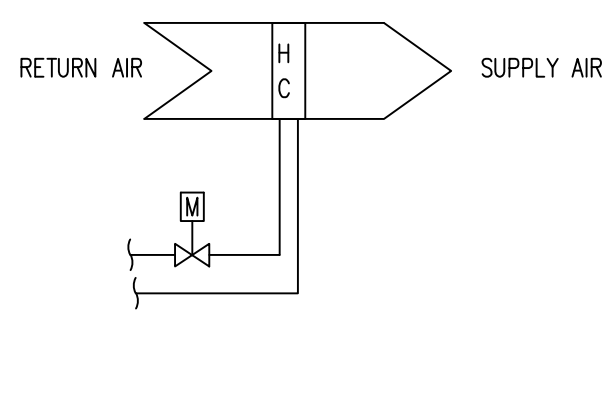
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DATE: MARCH 15, 2021
SCALE: As indicated
SHEET NAME: HVAC DETAILS

SHEET NUMBER:
MES-M501

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GENERAL NOTES

ALL NEW CONTROLS SHALL BE DDC AND COMMUNICATE EITHER DIRECTLY OR VIA BACNET TO THE EXISTING SIEMENS HEAD END PROVIDE FULL GRAPHICS INTERFACE.

- A. PROVIDE FIELD MOUNTED DIRECT DIGITAL CONTROL (DDC) WITH LOW VOLTAGE ACTUATION.
- B. LOCAL SPACE TEMPERATURE SENSOR SHALL BE CAPABLE OF SETPOINT ADJUSTMENT WITHIN A EMS DEFINED ADJUSTABLE RANGE. THE LOCAL SENSOR SHALL ALSO BE CAPABLE OF OVERRIDING THE EMS UNOCCUPIED SCHEDULE TO ALLOW THE UNIT TO OPERATE TEMPORARILY IN THE OCCUPIED MODE FOR A EMS DEFINED ADJUSTABLE PERIOD (0.5 TO 12 HOURS).
- C. OCCUPIED MODE:
 1. THE EMS MANAGEMENT SYSTEM (EMS) SHALL INITIATE THE OCCUPIED / UNOCCUPIED MODE BASED ON TIME OF DAY SCHEDULE OR PROGRAMMED START / STOP.
 2. EMON A CALL FOR HEAT AS SENSED BY ROOM TEMPERATURE SENSOR, MODULATE HEATING COIL 2-WAY VALVE TO MAINTAIN SPACE TEMP SETPOINT (70F ADJUSTABLE).

A. PROVIDE FIELD MOUNTED DIRECT DIGITAL CONTROL (DDC) WITH LOW VOLTAGE ACTUATION.

B. LOCAL SPACE TEMPERATURE SENSOR SHALL BE CAPABLE OF SETPOINT ADJUSTMENT WITHIN A EMS DEFINED ADJUSTABLE RANGE. THE LOCAL SENSOR SHALL ALSO BE CAPABLE OF OVERRIDING THE EMS UNOCCUPIED SCHEDULE TO ALLOW THE UNIT TO OPERATE TEMPORARILY IN THE OCCUPIED MODE FOR A EMS DEFINED ADJUSTABLE PERIOD (0.5 TO 12 HOURS).

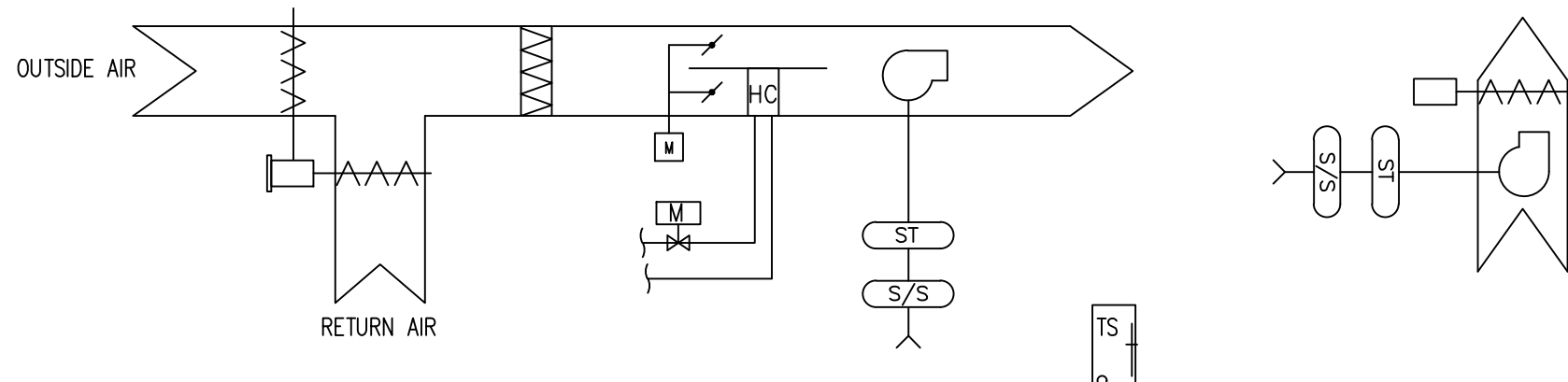
C. OCCUPIED MODE:

1. THE ENERGY MANAGEMENT SYSTEM (EMS) SHALL INITIATE THE OCCUPIED / UNOCCUPIED MODE BASED ON TIME OF DAY SCHEDULE OR PROGRAMMED START.

2. UPON A CALL FOR HEAT AS SENSED BY ROOM TEMPERATURE SENSOR, ENERGIZE SUPPLY FAN AND MODULE HEATING COIL 2-WAY VALVE TO MAINTAIN SPACE TEMP SETPOINT (TOD ADJUSTABLE).

D. EMERGENCY SHUT-DOWN:

1. UPON ACTIVATION OF THE BUILDING FIRE DETECTION SYSTEM, DISABLE FAN.

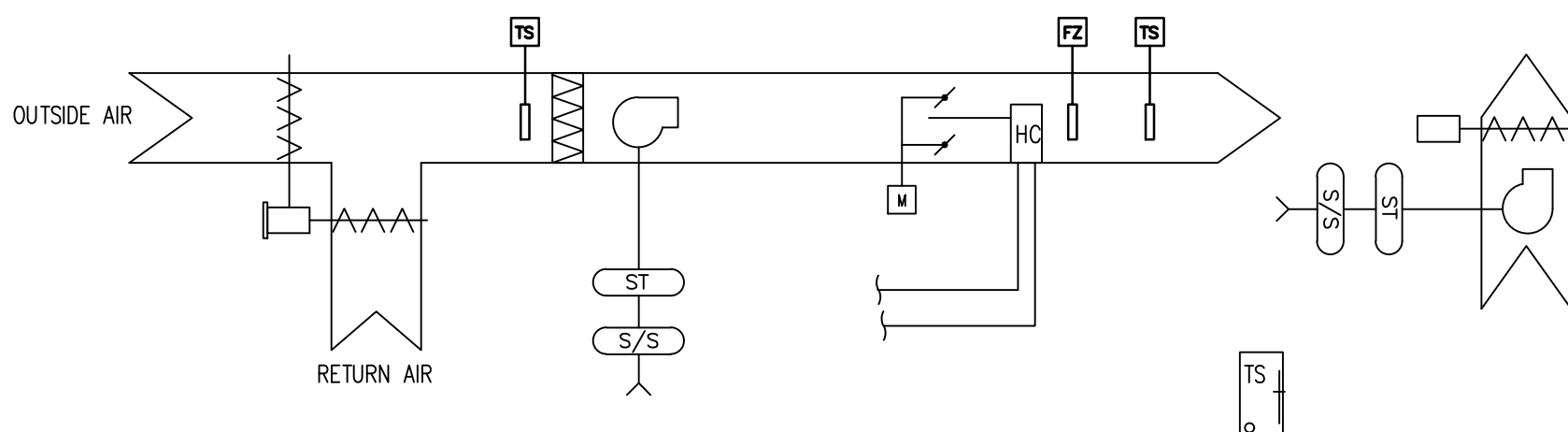


3 FINNED TUBE, CONVECTOR SEQUENCE OF OPERATION

MES-M701 SCALE: NTS

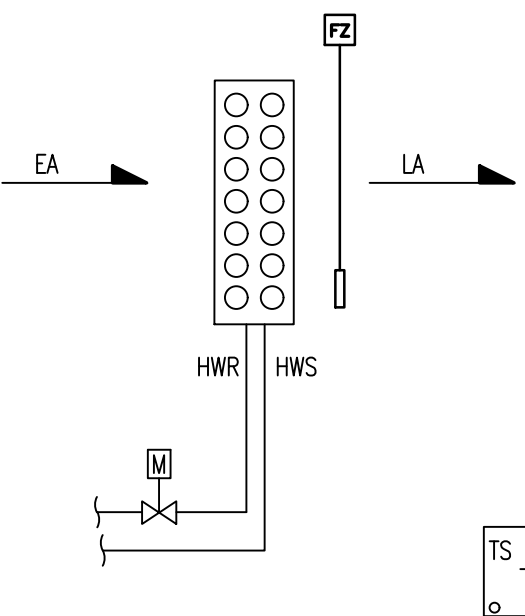
2 CABINET UNIT HEATER SEQUENCE OF OPERATION

MES-M701 SCALE: NTS



AIR HANDLING UNIT SEQUENCE OF OPERATION

- PROVIDE FIELD MOUNTED DIRECT DIGITAL CONTROL (DDC) WITH LOW VOLTAGE ACTUATION.
2. THE ENERGY MANAGEMENT SYSTEM (EMS) SHALL DEFINE THE OCCUPIED / UNOCCUPIED SCHEDULE:
- A. ALL EMS EVENTS ARE ADJUSTABLE.
 - B. THE EMS OPERATOR SHALL BE ABLE TO SCHEDULE SPECIAL EVENTS IN ADVANCE. EVENTS MAY BE SINGLE OR MULTIPLE OCCURRENCE. ONCE DEFINED THE AHU SHALL RUN THROUGH ITS NORMAL OCCUPANCY CYCLE FOR THE DATE AND TIME SCHEDULED.
3. LOCAL SPACE TEMPERATURE SENSOR SHALL BE CAPABLE OF SETPOINT ADJUSTMENT WITHIN AN EMS DEFINED RANGE. LOCAL SENSOR SHALL ALSO BE CAPABLE OF 2 HOUR OVERLAP OF THE EMS DEFINED UNOCCUPIED SCHEDULE.
4. WARM UP MODE: 30 MINUTES BEFORE THE START OF THE OCCUPIED SCHEDULE THE AIR HANDLING UNIT (AHU) SHALL START WITH THE FOLLOWING PARAMETERS:
- A. THE SPACE SETPOINT TEMPERATURE SHALL GO TO THE OCCUPIED VALUE.
 - B. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED
 - C. THE 2-WAY CONTROL VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE.
5. OCCUPYED MODE:
- A. THE AHU FAN SHALL RUN CONTINUOUSLY.
 - B. THE ASSOCIATED EXHAUST FAN DAMPER SHALL OPEN AND UPON PROOF THE EXHAUST FAN SHALL RUN CONTINUOUSLY.
 - C. THE SETPOINT TEMPERATURE SHALL RESET TO THE OCCUPIED VALUE.
 - D. THE OUTSIDE AIR DAMPER SHALL SET TO THE MINIMUM POSITION.
 - E. THE 2-WAY CONTROL VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE.
 - F. IF THE OUTSIDE AIR TEMPERATURE IS GREATER THAN 65° BUT LESS THAN THE SPACE TEMPERATURE AND THE SPACE TEMPERATURE IS GREATER THAN THE SETPOINT THE OUTSIDE AIR DAMPER SHALL MODULATE TO FULL OPEN.
6. UNOCCUPIED CYCLE:
- A. POST OCCUPANCY PURGE:
 - i. THE SETPOINT TEMPERATURE SHALL REVERT TO THE UNOCCUPIED VALUE.
 - ii. FOR 30 MINUTES THE EXHAUST FAN AND AHU FAN SHALL CONTINUE TO RUN.
 - iii. THE 2-WAY CONTROL VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE.
 - B. AT THE END OF THE POST OCCUPANCY PURGE:
 - i. THE OUTSIDE AIR DAMPER SHALL CLOSE, AND THE AHU FAN SHUT DOWN.
 - ii. THE EXHAUST FAN SHALL SHUT DOWN AND THE ASSOCIATED CONTROL DAMPER CLOSE.
 - iii. IF THE OUTSIDE TEMPERATURE IS ABOVE 40°F, THE HEATING CONTROL VALVE SHALL CLOSE.
 - iv. IF THE OUTSIDE TEMPERATURE IS LESS THAN 40°F, THE HEATING CONTROL VALVE SHALL OPEN.
 - v. IF THE SPACE TEMPERATURE DROPS BELOW THE SETPOINT FOR 10 MINUTES THE AHU FAN SHALL START, AND THE FACE AND BYPASS DAMPERS SHALL DIVERT THE ENTIRE AIRSTREAM ACROSS THE COIL. THE AHU FAN SHALL SHUT DOWN ONCE THE SPACE TEMPERATURE IS ACHIEVED.
7. SAFETIES AND ALARMS:
- A. THE FOLLOWING SAFETIES, EACH WITH INDIVIDUAL RESSETS, SHALL INITIATE AN ALARM AT THE EMS:
 - i. IF THE FAN FAILS TO START OR RUN UPON COMMAND AN ALARM SHALL BE GENERATED.
 - ii. IF THE ASSOCIATED EXHAUST FAN FAILS TO START OR RUN UPON COMMAND AN ALARM SHALL BE GENERATED.
 - iii. FREEZE/ANTI-FREEZE – IF ANY POINT ON THE FREEZE STAT IS LOWER THAN 36°F AN ALARM SHALL BE GENERATED. THE OUTSIDE AIR DAMPER SHALL CLOSE, THE 2-WAY CONTROL VALVE SHALL SHUT DOWN, THE EXHAUST FAN AND EXHAUST FANS SHALL SHUT DOWN UNTIL THE ALARM IS CLEARED.
 - iv. HIGH SPACE TEMPERATURE ALARM – IF THE SPACE TEMPERATURE RISES 5°F ABOVE THE SETPOINT FOR A PERIOD OF FIVE MINUTES OR LONGER WHILE HOT WATER IS CIRCULATING AN ALARM SHALL BE GENERATED.
 - v. LOW SPACE TEMPERATURE ALARM – IF THE SPACE TEMPERATURE DROPS 3°F BELOW THE SETPOINT FOR A PERIOD OF FIVE MINUTES OR LONGER AND HOT WATER IS CIRCULATING AN ALARM SHALL BE GENERATED.
 - vi. IF THE FIRE ALARM SYSTEM SHALL DISABLE ALL FANS AND SHUT DOWN THE AHU. THE AHU SHALL REMAIN DISABLED AWHILE THE FIRE ALARM IS CLEARED AND RESET.



HOT WATER COIL SEQUENCE OF OPERATION

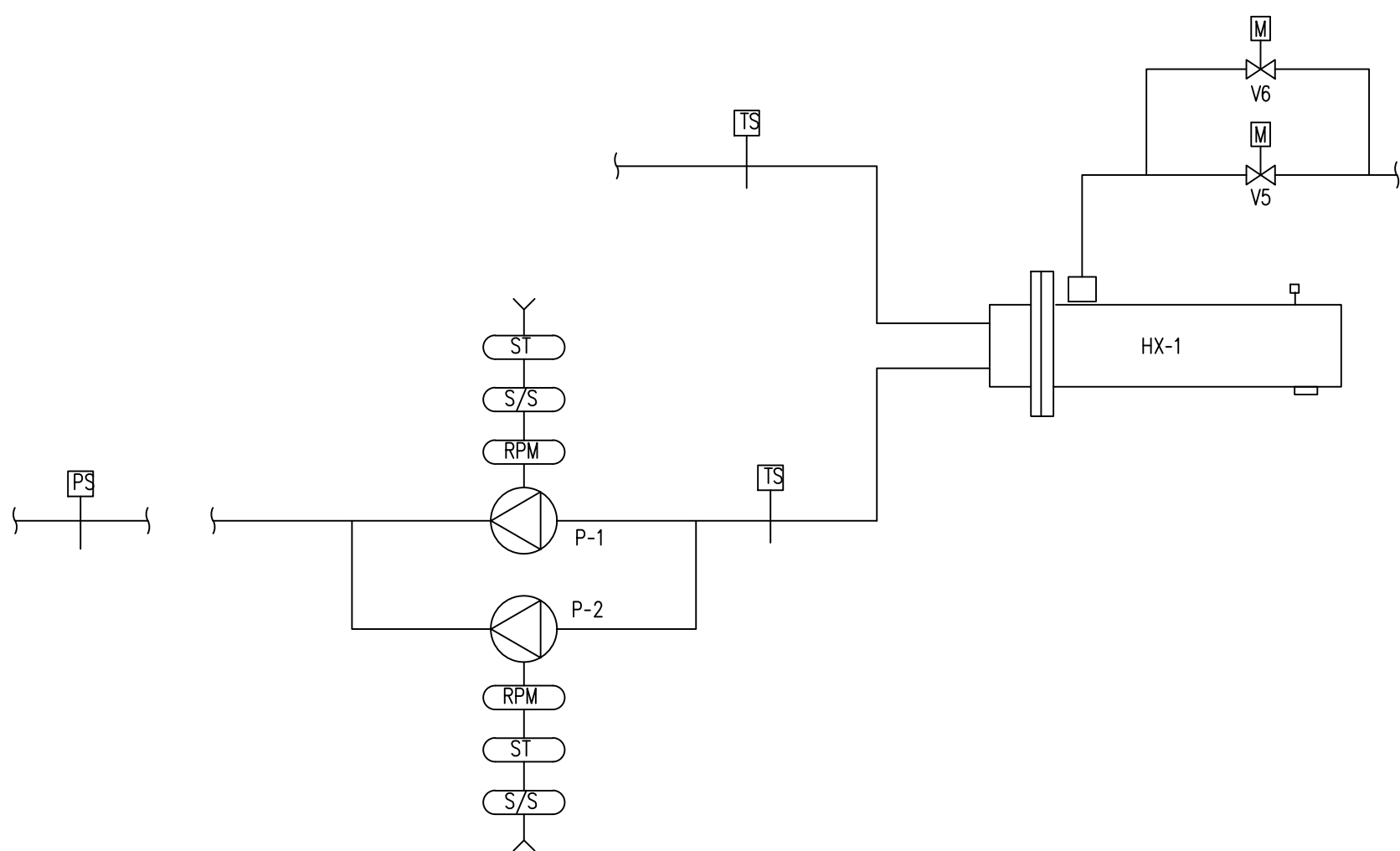
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|--|---|
| <p>A. THE HOT WATER COIL IS TO OPERATE AS PART OF AN EXISTING HWU UNIT. THE CONTROL SEQUENCE OF THE EXISTING UNIT IS TO REMAIN ESSENTIALLY UNCHANGED.</p> <p>B. LOCAL SPACE TEMPERATURE SENSORS SHALL BE CAPABLE OF SETPOINT ADJUSTMENT WITH AN EMS DEFINED ADJUSTABLE RANGE.</p> <p>C. UPON A CALL FOR HEAT THE 2-WAY CONTROL VALVE SHALL MODULATE OPEN.</p> <p>D. UNOCCUPIED SETPOINT 62°F (ADJUSTABLE)</p> <p>E. OCCUPIED SETPOINT 68°F (ADJUSTABLE)</p> <p>F. FREEZE PROTECTION IF THE OA TEMPERATURE IS LESS THAN 38°F (ADJUSTABLE) THE CONTROL VALVE SHALL OPEN TO A MINIMUM OF 10% REGARDLESS OF THE SPACE TEMPERATURE.</p> <p>G. SAFETIES AND ALARMS:</p> <p>A. THE FOLLOWING SAFETIES, EACH WITH INDIVIDUAL RESETS, SHALL SHUTDOWN THE UHV AND I INITIATE A SPECIFIC ALARM AT THE EMS:</p> <p>1. PREHEAT - IF ANY POINT ON THE FREEZE/STAST SENSOR IS AT 30°F OR LOWER AND AN ALARM SHALL BE GENERATED.</p> <p>2. HIGH SPACE TEMPERATURE ALARM - IF THE SPACE TEMPERATURE RISES 5 DEGREES ABOVE THE SETPOINT (ADJUSTABLE) FOR FIVE MINUTES OR LONGER WHILE HOT WATER IS CIRCULATING AN ALARM SHALL BE GENERATED.</p> <p>3. LOW SPACE TEMPERATURE ALARM - IF THE SPACE TEMPERATURE DROPS 3 DEGREES BELOW THE SETPOINT (ADJUSTABLE) FOR FIVE MINUTES OR LONGER WHILE HOT WATER IS CIRCULATING AN ALARM SHALL BE GENERATED.</p> <p>4. UPON ACTIVATION OF THE BUILDING FIRE DETECTION SYSTEM, DISABLE FANS AND OUTSIDE AIR DAMPERS SHALL CLOSE.</p> | <p>III. IF THE OA TEMPERATURE IS ABOVE 40°F, THE HEATING CONTROL VALVE SHALL CLOSE.</p> <p>IV. IF THE OA TEMPERATURE IS LESS THAN 40°F, THE HEATING CONTROL VALVE SHALL OPEN.</p> <p>V. IF THE SPACE TEMPERATURE DROPS BELOW THE SETPOINT FOR 10 MINUTES THE UNIT VENTILATOR FAN SHALL START, AND THE FACE AND BYPASS DAMPERS SHALL INVERT THE ENTIRE AIRSTREAM ACROSS THE COIL. THE UNIT VENTILATOR FAN SHALL SHUT DOWN ONCE THE SPACE TEMPERATURE IS ACHIEVED.</p> <p>7. SAFETIES AND ALARMS:</p> <p>A. THE FOLLOWING SAFETIES, EACH WITH INDIVIDUAL RESETS, SHALL INITIATE AN ALARM AT THE EMS:</p> <p>I. IF THE FAN FAULTS TO START OR RUN UPON COMMAND AN ALARM SHALL BE GENERATED.</p> <p>II. IF THE ASSOCIATED EXHAUST FAN FAILS TO START OR RUN UPON COMMAND AN ALARM SHALL BE GENERATED.</p> <p>III. FREEZE - IF ANY POINT ON THE FREEZE STAST IS LOWER THAN 38°F AN ALARM SHALL BE GENERATED. THE OUTSIDE AIR DAMPER CLOSE, THE FACE AND BYPASS DAMPER SHALL GO TO FULL-HEAT POSITION. THE UNIT VENTILATOR AND EXHAUST FANS SHALL SHUT DOWN UNTIL THE ALARM IS CLEARED.</p> <p>IV. HIGH SPACE TEMPERATURE ALARM - IF THE SPACE TEMPERATURE RISES 5°F ABOVE THE SETPOINT FOR A PERIOD OF FIVE MINUTES OR LONGER WHILE HOT WATER IS CIRCULATING AN ALARM SHALL BE GENERATED.</p> <p>V. LOW SPACE TEMPERATURE ALARM - IF THE SPACE TEMPERATURE DROPS 3°F BELOW THE SETPOINT FOR A PERIOD OF FIVE MINUTES OR LONGER AND ALARM SHALL BE GENERATED.</p> <p>VI. THE FIRE ALARM SYSTEM SHALL DISABLE ALL FANS AND SHUT DOWN THE UNIT VENTILATOR. THE UNIT VENTILATOR SHALL REMAIN</p> |
|--|---|

6 HOT WATER COIL SEQUENCE OF OPERATION

MES-M701 SCALE: NTS

UNIT VENTILATOR WITH SEQUENCE OF OPERATION

MES-M701 SCALE: NTS



1 AIR HANDLING UNIT SEQUENCE OF OPERATION

MES-M701 SCALE: NTS

- CONTROLS
1. THE HEAT EXCHANGER (HX-1) CONTROL VALVE OPERATION SHALL BE SCHEDULED, THE CONTROL VALVES 5 & 6 SHALL MODULATE TO MAINTAIN THE HOT WATER SUPPLY TEMPERATURE SETPOINT BASED ON THE FOLLOWING SCHEDULE. VALVE 5 SHALL BE RATED FOR 1 OF FULL LOAD AND 2 OF 2/3. THE VALVES SHALL BE OPERATED SEQUENTIALLY AS THE DEMAND INCREASES. IF THE DEMAND IS GREATER THAN 2/3 FULL LOAD THEN VALVE 6 SHALL BE FULL OPEN AND VALVE 5 SHALL MODULATE TO MEET THE LOAD.

OUTSIDE AIR TEMPERATURE	BOILER SUPPLY TEMPERATURE
35F AND ABOVE	160F
OF AND BELOW	150F
 2. WHENEVER THE OUTSIDE AIR TEMPERATURE DROPS BELOW 65F(ADJ.) THE LEAD DISTRIBUTION PUMP(1) SHALL START AND RUN CONTINUOUSLY. IF THE LEAD PUMP FAILS TO PROVE OPERATING THE STANDBY PUMP(2) SHALL BECOME THE LEAD PUMP AND AN ALARM SHALL BE GENERATED. THE LEAD AND STANDBY PUMPS SHALL BE ALTERNATED WEEKLY TO EQUALIZE RUN TIME.
 3. THE LEAD DISTRIBUTION PUMP SHALL BE MODULATED BY THE RESPECTIVE VARIABLE FREQUENCY DRIVE TO MAINTAIN THE DISTRIBUTION SYSTEM DIFFERENTIAL PRESSURE SETPOINT(ADJ.), THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE RESET BY THE BALANCING CONTRACTOR TO MAINTAIN SETPOINT AT ANY CRITICAL ZONES.
 4. THE DISTRIBUTION SYSTEM HOT WATER SUPPLY TEMPERATURE VARIES BY MORE THAN 10F (ADJ.) FROM ITS SCHEDULED SETPOINT, AND ALARM SHALL BE GENERATED.

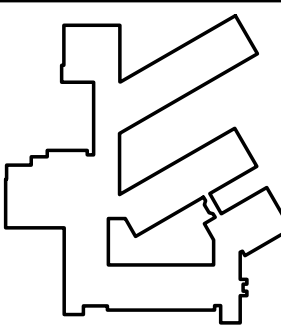
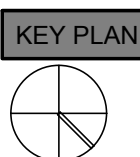
HEAT EXCHANGER SEQUENCE OF OPERATION

MES-M701 SCALE: NTS



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MES-M701

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B																			
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	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

GENERAL INSTALLATION NOTES

1. NEW BRANCH CIRCUITRY SHALL BE INSTALLED ABOVE CEILING WHERE POSSIBLE, AS HIGH AS POSSIBLE.

2. ALL EQUIPMENT SHOWN ON REMOVALS PLANS SHALL BE REMOVED, UNLESS OTHERWISE NOTED. ALL BRANCH CIRCUIT WIRING CONDUCTORS/CONDUIT SHALL BE REMOVED BACK TO SOURCE, UON.

3. COORDINATE ALL CONDUIT RUNS WITH OTHER TRADES PRIOR TO ROUGH-IN. RELOCATE ANY CONDUITS AS NECESSARY TO PERMIT INSTALLATION OF DUCTWORK OR PIPING.

4. INSTALL ALL CIRCUITING CONCEALED INSIDE WALL CAVITY WHERE EVER POSSIBLE. PROVIDE SURFACE MOUNTED BACKBOXES AND RACEWAY FOR WIRING DEVICES LOCATED ON EXISTING SOLID WALL CONSTRUCTION. PROVIDE SHALLOW TYPE BACKBOXES FOR SURFACE MOUNTED POWER AND SWITCHING APPLICATIONS. REFER TO ARCHITECTURAL PLANS FOR WALL TYPES.

5. FIRESTOP ALL LOW VOLTAGE SLEEVES AND PENETRATIONS AFTER INSTALLATION OF CABLE.

6. PROVIDE OPEN TOP CABLE HANGERS 4' ON CENTER SUPPORTED TO SUPPORT ALL LOW VOLTAGE CABLING ABOVE ACCESSIBLE CEILINGS. PROVIDE SEPARATE CABLE HANGERS FOR BACKBONE CABLING, HORIZONTAL CABLING, PUBLIC ADDRESS & SECURITY CABLING, AND FIRE ALARM CABLING. INSTALL ALL EXPOSED CABLES IN EMT CONDUIT OR SURFACE RACEWAY IN FINISHED AREAS.

7. ALL LOW VOLTAGE CABLING SHALL BE PLENUM RATED.

8. OBTAIN WIRING AND INSTALLATION DIAGRAMS FOR ALL ELECTRICAL CONNECTIONS TO EQUIPMENT PROVIDED BY THE GENERAL, MECHANICAL OR PLUMBING CONTRACTORS PRIOR TO ROUGHING. WORK THAT IS NOT PROPERLY COORDINATED WILL BE RELOCATED AT NO COST TO THE OWNER.

MOUNTING HEIGHTS

UNLESS OTHERWISE NOTED, MOUNT DEVICES AND EQUIPMENT AT HEIGHTS MEASURED FROM FINISHED FLOOR TO DEVICE/ EQUIPMENT CENTERLINE AS LISTED BELOW.
COORDINATE DEVICE LOCATIONS WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
WHERE STRUCTURAL OR OTHER INTERFERENCE'S PREVENT COMPLIANCE WITH MOUNTING HEIGHTS LISTED BELOW, CONSULT OWNER'S REPRESENTATIVE FOR APPROVAL TO CHANGE LOCATION BEFORE INSTALLATION.

DISCONNECT SWITCH HANDLE, UON

48"

VARIABLE FREQUENCY DRIVE, UON

48" Ⓢ

DUPLEX RECEPTACLE, UON

18"

POWER & SYSTEMS

DISCONNECT SWITCH, RATINGS AND FUSING AS INDICATED ON FLOOR PLANS

VARIABLE FREQUENCY DRIVE CONTROLLER (FURNISHED BY HVAC, INSTALLED AND LINE VOLTAGE WRING BY EC)

MOTOR, UON.

MOTOR RATED SNAP SWITCH (1 HP SIZE)

UNIT VENTILATOR (FURNISHED AND INSTALLED BY HVAC, EC TO PROVIDE LINE VOLTAGE POWER CONNECTIONS). UNIT HAS INTEGRAL DISCONNECT.

EXHAUST FAN (FURNISHED AND INSTALLED BY HVAC, EC TO PROVIDE LINE VOLTAGE POWER CONNECTIONS).

CABINET UNIT HEATER (FURNISHED AND INSTALLED BY HVAC, EC TO PROVIDE LINE VOLTAGE POWER CONNECTIONS). UNIT HAS INTEGRAL DISCONNECT.

CABINET UNIT HEATER (FURNISHED AND INSTALLED BY HVAC, EC TO PROVIDE LINE VOLTAGE POWER CONNECTIONS) UNIT HAS INTEGRAL DISCONNECT.

HVAC ENERGY RECOVERY VENTILATOR UNIT, (FURNISH AND INSTALLED BY HVAC, EC TO PROVIDE RECEPTACLE FOR LINE POWER CORD CONNECTIONS) UNIT HAS INTEGRAL DISCONNECT SWITCH.

HVAC AIR HANDLING UNIT, FURNISHED AND INSTALLED BY HVAC, EC TO PROVIDE POWER CONNECTION.

HOMERUN BRANCH CIRCUIT WIRING INDICATED BACK TO PANELBOARD. NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. CAPITAL LETTER AND NUMERALS INDICATE PANEL DESIGNATION AND SUB LETTER TEXT INDICATES PANEL CIRCUIT NUMBER.

STEEL SURFACE CHANNEL RACEWAY MOUNTED TO WALL 3" BELOW CEILING OUT TO CORRIDOR ACCESSIBLE CEILING AREA UNLESS OTHERWISE NOTED. FOLLOW CONTOURS OF ROOM WALLS AND PROVIDE ALL FITTINGS. DO NOT MOUNT TO CEILING IN CLASSROOMS.

SURFACE MOUNTED PANELBOARD

EXISTING SURFACE MOUNTED PANELBOARD

EXISTING RECESS MOUNTED PANELBOARD

JUNCTION BOX. SIZE PER NEC.

DUPLEX RECEPTACLE

GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE

FIRE ALARM FAN SHUT-DOWN RELAY. Ⓛ

EXISTING FIRE ALARM SYSTEM CONTROL PANEL Ⓛ

FIRE ALARM DUCT DETECTOR. Ⓛ
S=SUPPLY, R=RETURN

FIRE ALARM CONTROL MODULE. Ⓛ

DEMOLITION

JUNCTION BOX

MOTOR CONTROLLER

EXISTING SURFACE MOUNTED PANELBOARD

EXISTING RECESS MOUNTED PANELBOARD

120 VOLT TIME CLOCK

EXISTING FIRE ALARM SYSTEM CONTROL PANEL

SINGLE POLE EMERGENCY OFF SWITCH

EUV

UNIT VENTILATOR

MOTOR

AHU

AIR HANDLING UNIT

ABBREVIATIONS

ABBREVIATIONDESCRIPTION

AFFABOVE FINISHED FLOOR

AFGABOVE FINISHED GRADE

AWGAMERICAN WIRE GAUGE

BFGBELOW FINISHED GRADE

CCONDUIT

EC-ELECTRICAL CONTRACTOR

ECHCABINET HEATER

EGCEQUIPMENT GROUNDING CONDUCTOR

ABBREVIATIONDESCRIPTION

EXISTEXISTING (TO REMAIN)

EXREXISTING TO REMAIN

FBOFURNISHED BY OTHERS

FIBOFURNISHED AND INSTALLED BY OTHERS

G VANDAL GUARD

GFI GROUND FAULT CIRCUIT INTERRUPTER

ABBREVIATIONDESCRIPTION

MCMECHANICAL CONTRACTOR

NTSNOT TO SCALE

TYP TYPICAL

UONUNLESS OTHERWISE NOTED

UVUNIT VENTILATOR

WPWEATHERPROOF WHILE IN USE COVER

KEYED NOTES

Ⓛ

FOR CABLE REQUIREMENTS SEE FIRE ALARM ONE-LINE DIAGRAM DETAIL 2/MES-E500.

GENERAL NOTES

1.

PANEL:	PP-1	VOLTS, PHASE, WIRE:	208/120V, 3PH, 4W
MOUNTING:	SURFACE	MAINS:	400A MCB
LOCATION:	MECH. EQUIP 98	SHORT CIRCUIT RATING:	22 KAIC

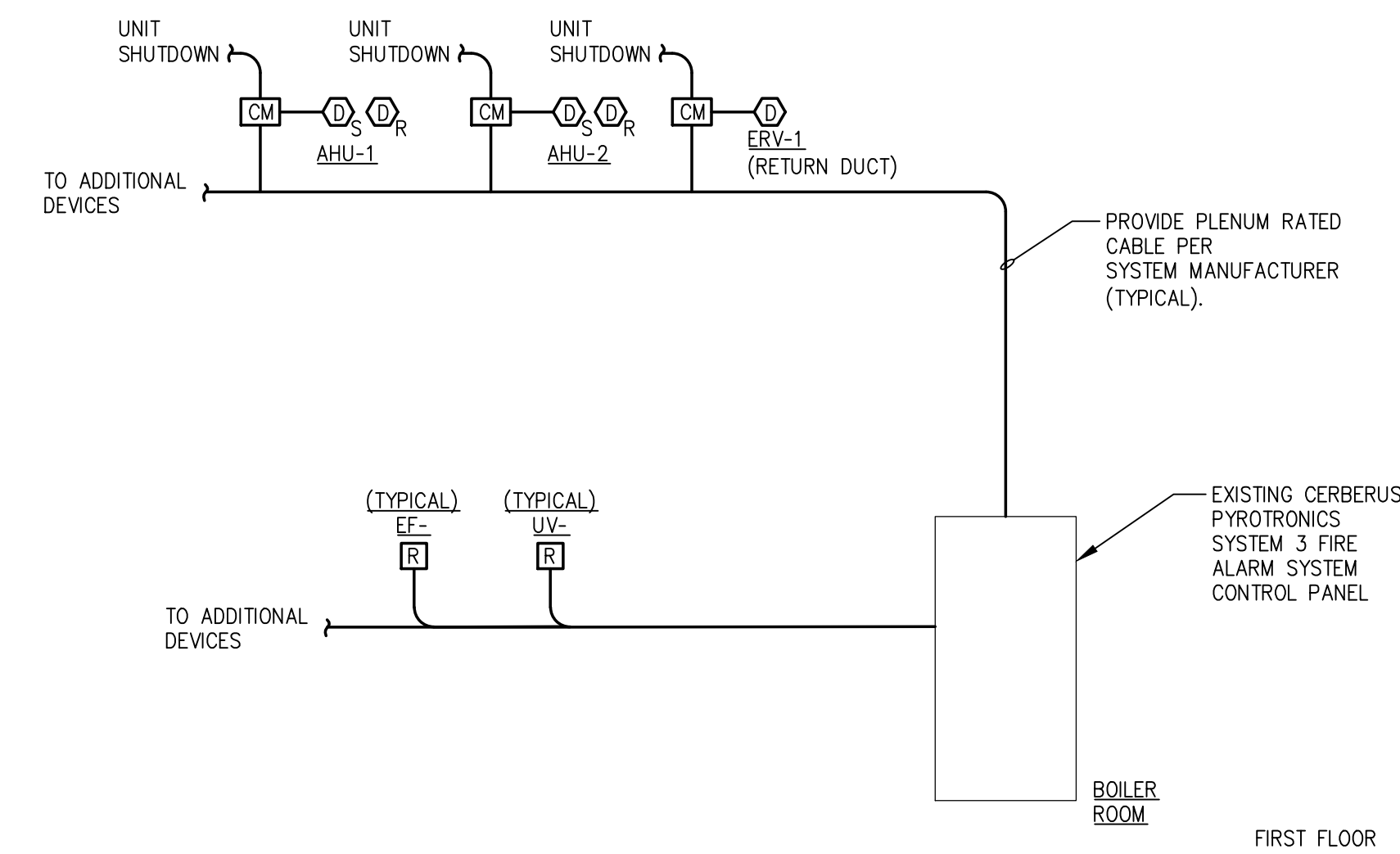
CKT	LOAD DESCRIPTION	WIRE SIZE	CB AMPS/POLE	PHASE	CB AMPS/POLE	WIRE SIZE	LOAD DESCRIPTION	CKT
1	EF-2 CLASSROOM 101	#12	20/1	A	20/1	#12	EF-1 CLASSROOM 102	2
3	EF-1 CLASSROOM 103	#12	20/1	B	20/1	#12	EF-1 CLASSROOM 104	6
5	EF-1 CLASSROOM 105	#12	20/1	C	20/1	#10	EF-1 CLASSROOM 106	6
7	EF-1 CLASSROOM 107	#10	20/1	A	20/1	#12	EF-1 CLASSROOM 108	10
9	EF-1 CLASSROOM 109	#10	20/1	B	#12	#12	EF-1 CLASSROOM 100	10
11	CUH'S CORRIDOR 99 & 112A	#10	20/1	C	20/1	#10	EF-1 CLASSROOM 144	12
13	CUH'S CORRIDOR 141	#12	20/1	A	20/1	#10	EF-1 CLASSROOM 146	14
15	EF-1 CLASSROOM 145	#10	20/1	B	20/1	#10	EF-1 CLASSROOM 142	16
17	EF-1 CLASSROOM 143	#10	20/1	C	20/1	#10	EF-1 CLASSROOM 140	18
19	EF-3 CLASSROOM 141	#12	20/1	A	20/1	#10	EF-1 CLASSROOM 138	20
21	EF-1 CLASSROOM 139	#12	20/1	B	20/1	#12	EF-1 CLASSROOM 136	22
23	EF-1 CLASSROOM 137	#12	20/1	C	20/1	-	SPARE	24
25	SPARE	-	20/1	A	20/1	-	SPARE	26
27	SPARE	-	20/1	B	20/1	-	SPARE	28
29	SPARE	-	20/1	C	20/1	-	SPARE	30
31	SPARE	-	20/1	A	20/1	-	SPARE	32
33	SPARE	-	20/1	B	20/1	-	SPARE	34
35	SPARE	-	15/2	C	20/1	-	SPARE	36
37	PANEL PP-2	-	150/3	A	20/1	-	SPARE	38
39				B	20/1	-	SPARE	40
41				C	20/1	-	SPARE	42

PANEL:	PP-2	VOLTS, PHASE, WIRE:	208/120V, 3PH, 4W
MOUNTING:	SURFACE	MAINS:	150A MCB
LOCATION:	STOR. 168	SHORT CIRCUIT RATING:	22 KAIC

CKT	LOAD DESCRIPTION	WIRE SIZE	CB AMPS/POLE	PHASE	CB AMPS/POLE	WIRE SIZE	LOAD DESCRIPTION	CKT
1	CUH-5 CORRIDOR 189	#12	20/1	A	20/1	#12	CUH-2 CORRIDOR 191	2
3	ERV-1, CUH-1 CORRIDOR 166	#12	20/1	B	20/1	#12	E-2 MUSIC 167	4
5	EF-1 OFFICE 175	#12	20/1	C	20/1	#12	EF-1 CLASSROOM 180	6
7	EF-3 CLASSROOM 177	#12	20/1	A	20/1	#12	EF-1 CLASSROOM 182	8
9	EF-3 CLASSROOM 177	#12	20/1	B	20/1	#12	EF-1 CLASSROOM 184	10
11	EF-1 CLASSROOM 179	#12	20/1	C	20/1	#10	EF-1 CLASSROOM 186	12
13	EF-1 CLASSROOM 181	#10	20/1	A	20/1	#10	EF-1 CLASSROOM 188	14
15	EF-1 CLASSROOM 183	#10	20/1	B	20/1	#12	GFC RECEPT AT ACQU-1	16
17	EF-1 CLASSROOM 185	#10	20/1	C	20/2	#12	ACQU-1	18
19	EF-1 CLASSROOM 187	#10	20/1	A	↓	↓	↓	20
21	UV-5 PRINT 173	#12	20/1	B	20/1	#12	UV-1	22
23	SPARE	-	20/1	C	20/1	-	SPARE	24
25	SPARE	-	20/1	A	20/1	-	SPARE	26
27	SPARE	-	20/1	B	20/1	-	SPARE	28
29	SPARE	-	20/1	C	20/1	-	SPARE	30
31	SPARE	-	20/1	A	20/1	-	SPARE	32
33	SPARE	-	20/1	B	20/1	-	SPARE	34
35	SPARE	-	15/2	C	20/1	-	SPARE	36
37	SPARE	-	20/1	A	20/1	-	SPARE	38
39	SPARE	-	20/1	B	20/1	-	SPARE	40
41	SPARE	-	20/1	C	20/1	-	SPARE	42

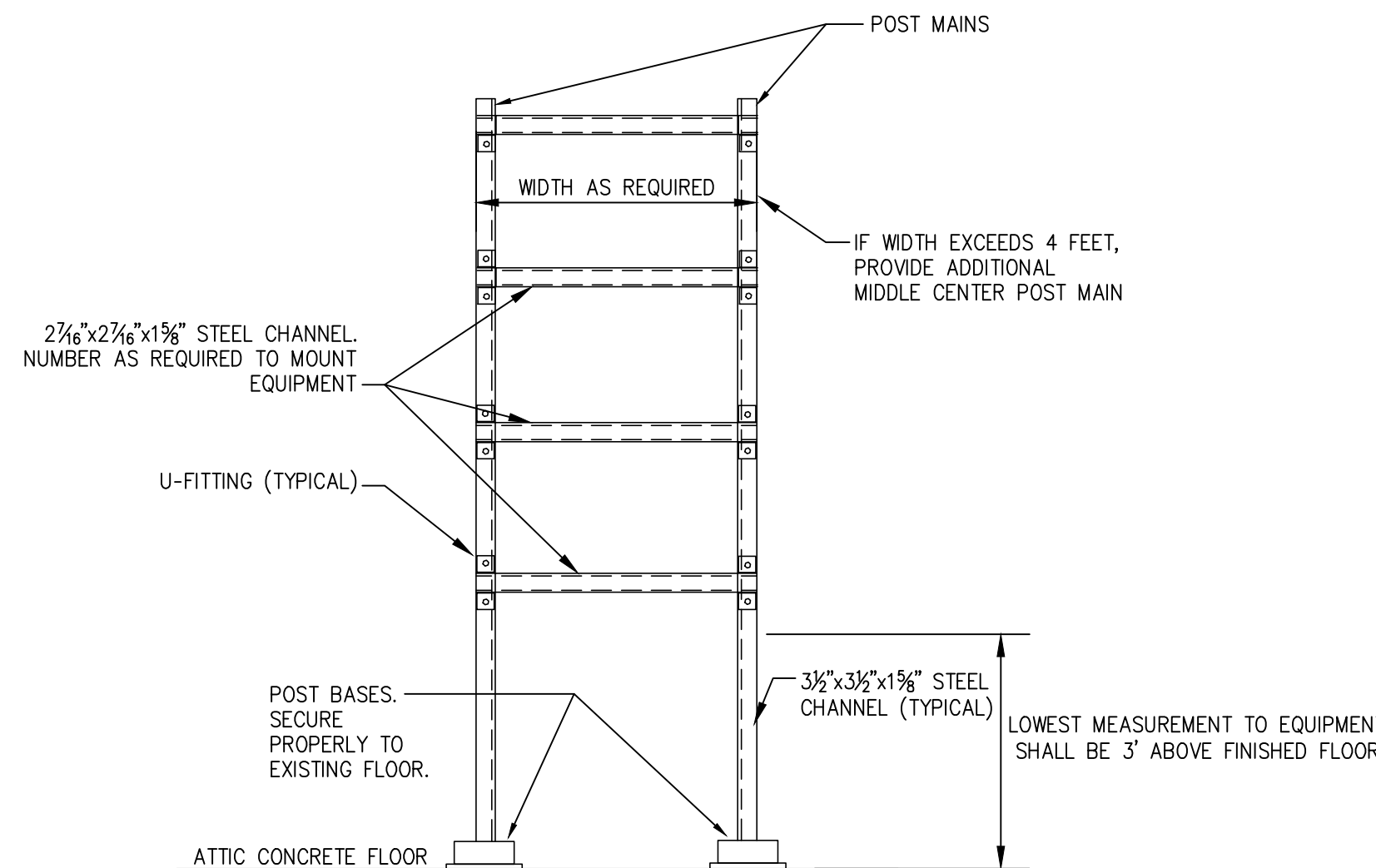
3 PANELBOARD SCHEDULES

(MES-E500) SCALE: NONE



2 FIRE ALARM RISER DIAGRAM

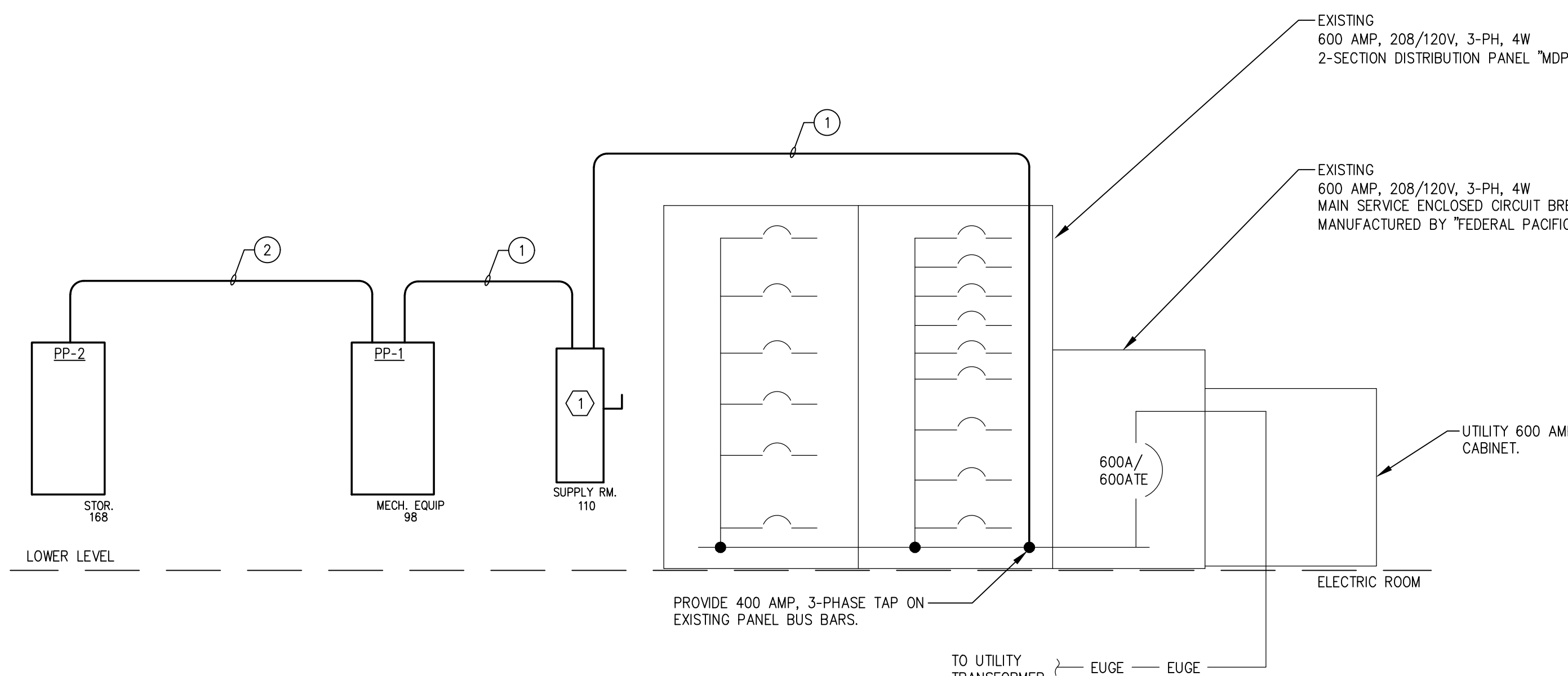
MES-E500 SCALE: NTS



NOTE:
ALL STEEL CHANNEL &
FITTINGS SHALL BE HOT
DIPPED GALVANIZED STEEL

4 STANCHION EQUIPMENT MOUNTING RACK DETAIL

MES-E500 SCALE: NONE



1 POWER RISER DIAGRAM

MES-E500 SCALE: NTS

FEEDER SCHEDULE	
FEEDER DESIGNATION	CONDUCTORS / CONDUIT
①	4-500 KCMIL, 1-#3 AWG EGC IN 3".
②	4-3/0 AWG, 1-#4 AWG EGC IN 2".

KEYED NOTES

- 1 PROVIDE NEMA 1, 400 AMP, 3-POLE 208 VOLT, FUSED HEAVY DUTY DISCONNECT SWITCH.

GENERAL NOTES

1. PROVIDE 200 AC CEILING TILES OF EACH SIZE; 2'X2' AND 2'X4' TILES TO MATCH EXISTING WITHIN THE BUILDING. COORDINATE WITH OWNER FOR EXACT TYPE. REPLACE MISSING TILES FROM EXISTING STOCK OR ORDER ABOVE CEILING WORK. IF TILE IS NOT ACCEPTABLE FOR MOUNTING, PROVIDE REPLACEMENT FROM QUANTITY ABOVE.
2. ALL DEVICES AND EQUIPMENT SHOWN ON DEMOLITION PLANS SHALL BE REMOVED, INCLUDING WIRING AND CONDUIT BACK TO SOURCE, UNLESS OTHERWISE NOTED.
3. EC IS RESPONSIBLE TO PATCH AND PAINT AS NECESSARY TO MATCH FINISHED SPACE MATERIALS AND PAINT AROUND ALL FIRE ALARM WALL MOUNTED DEVICE BOXES. IF NEWLY INSTALLED WALL MOUNTED DEVICES ARE LOCATED, COORDINATE WITH OWNER FOR PAINT TYPES.
4. PATCH AND PAINT ANY REMOVED WALL MOUNTED DEVICES AND CONDUIT LOCATIONS TO MATCH FINISHED SPACE MATERIALS AND PAINT. PROVIDE BLANK COVERPLATES AND PAINT TO MATCH FINISHED SPACE WHERE DEVICES WERE REMOVED OR ON CHASE WALLS. COORDINATE WITH OWNER FOR PAINT TYPES.
5. REMOVE AND REINSTALL EXISTING ACoustICAL CEILING SYSTEM TILES AS REQUIRED TO INSTALL ELECTRICAL WORK. REPLACE ANY DAMAGED TILES AS A RESULT OF WORK.



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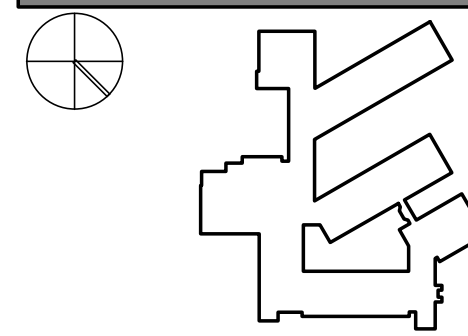
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NANUET
MILLER ES
HYDRONIC
CONVERSION
2020

103 Church St, Nanuet,
NY 10954

[illegible]

ISSUED: ISSUE FOR BID

DATE: MARCH 15, 2021

SCALE: As indicated

SHEET NAME:
POWER RISER DIAGRAM,
SCHEDULE & DIAGRAMS

SHEET NUMBER:

MES-E500

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