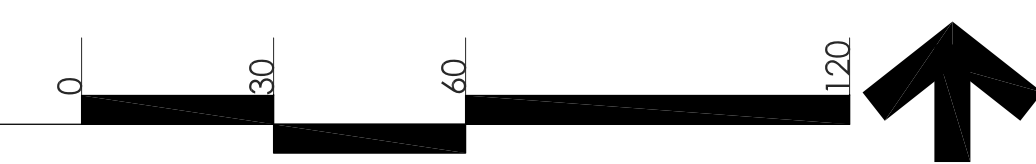


Site Plan - **Bubb Elementary School**



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1103 Juanita Avenue
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314 Center Street #220
 Healdsburg, California
 95448
 707.431.1305

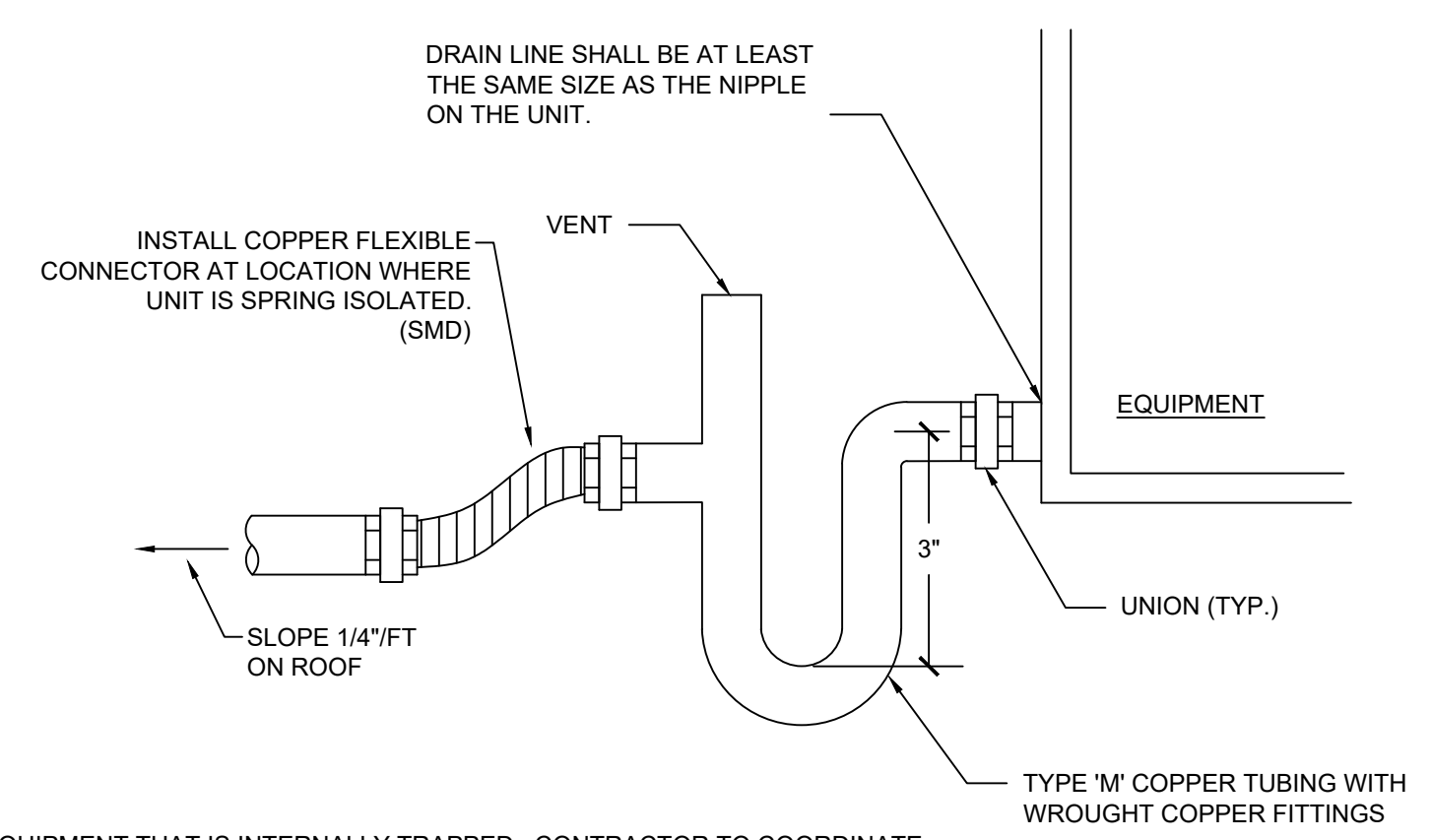
HVAC Modernization and Replacement
**Mountain View Whisman
 School District**
 Mountain View, California

Bubb Elementary School
 Site Plan

AB1.1

2024

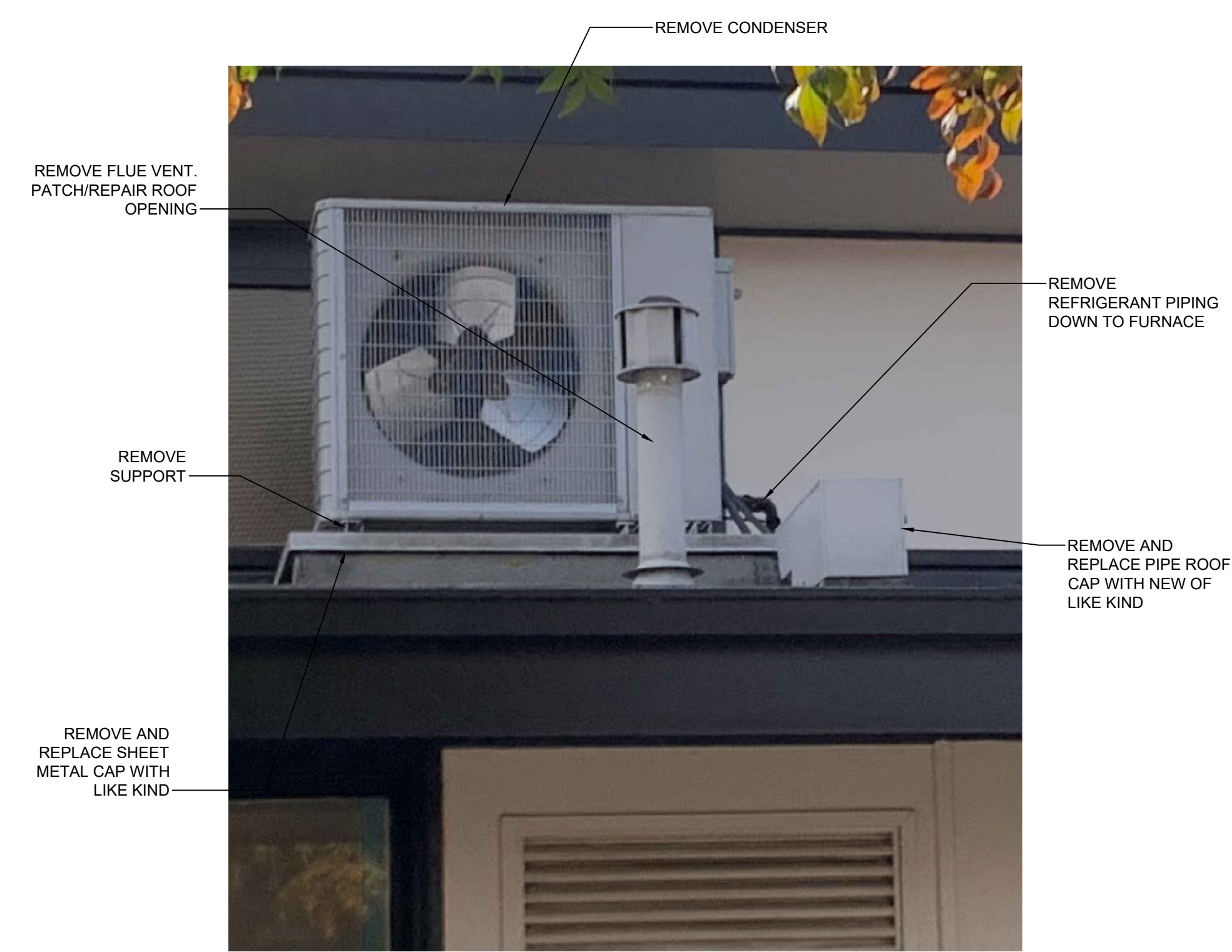
- NOTES:**
- 1 ALL CONDENSATE DRAIN LINES INSIDE BUILDING SHALL BE INSULATED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 15400, PLUMBING SPECIFICATIONS.
 - 2 SEE DRAWING FOR SIZES.
 - 3 TRAP DEPTH SHALL BE EQUAL TO THE UNIT TOTAL STATIC PRESSURE PLUS 1-INCH BUT NOT LESS THAN 2-INCHES.
 - 4 IF THE PRESSURE IN THE DRAIN PAN IS NEGATIVE, THE DISTANCE FROM THE BOTTOM OF THE AC UNIT DRAIN PAN TO THE CROWN WEIR OF THE TRAP SHALL BE GREATER THAN THE NEGATIVE PRESSURE IN THE DRAIN PAN.



*DO NOT PROVIDE ON EQUIPMENT THAT IS INTERNALLY TRAPPED. CONTRACTOR TO COORDINATE.

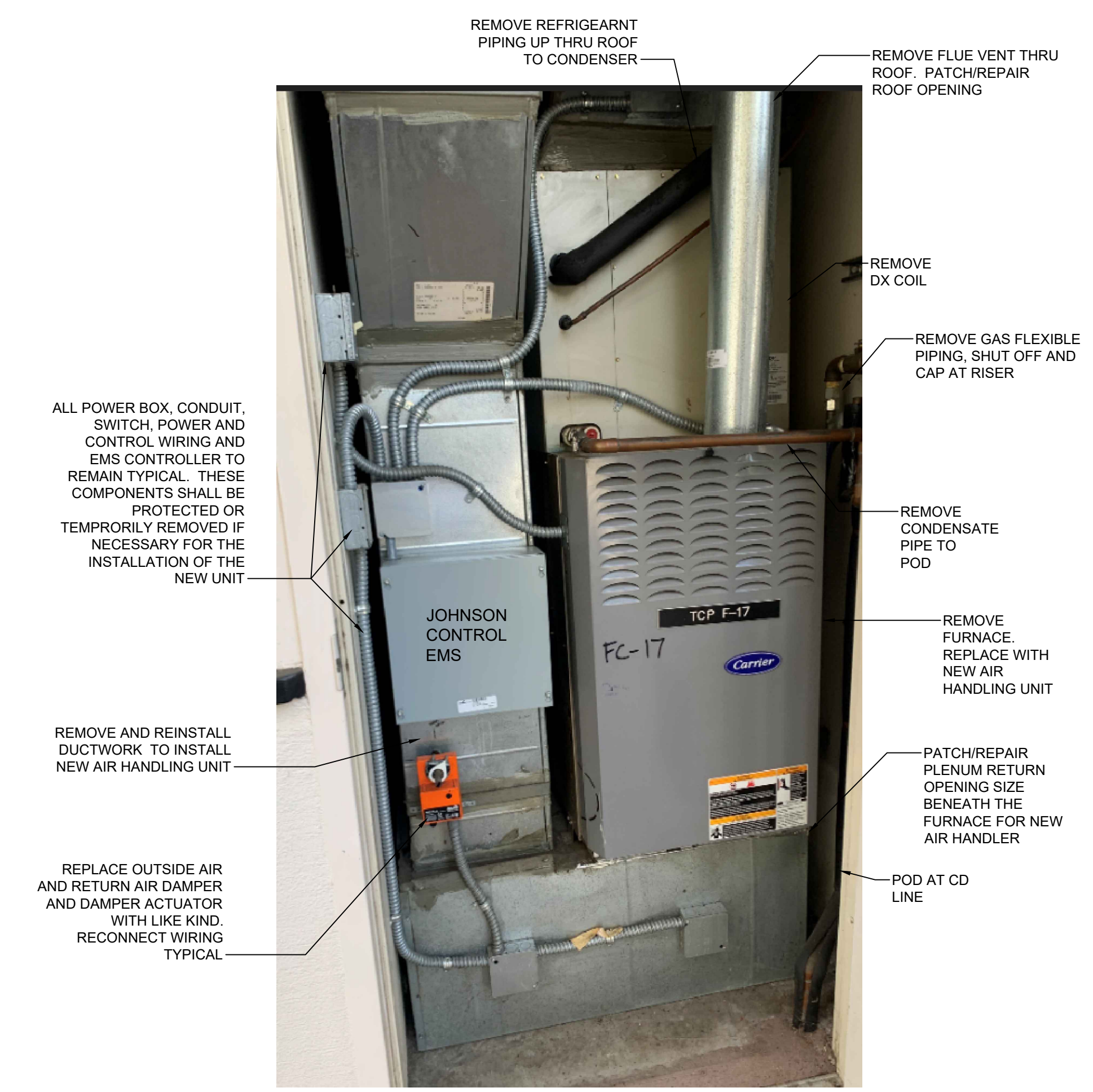
CONDENSATE PIPE CONNECTION TO MECHANICAL EQUIPMENT

SCALE: N.T.S. **6**



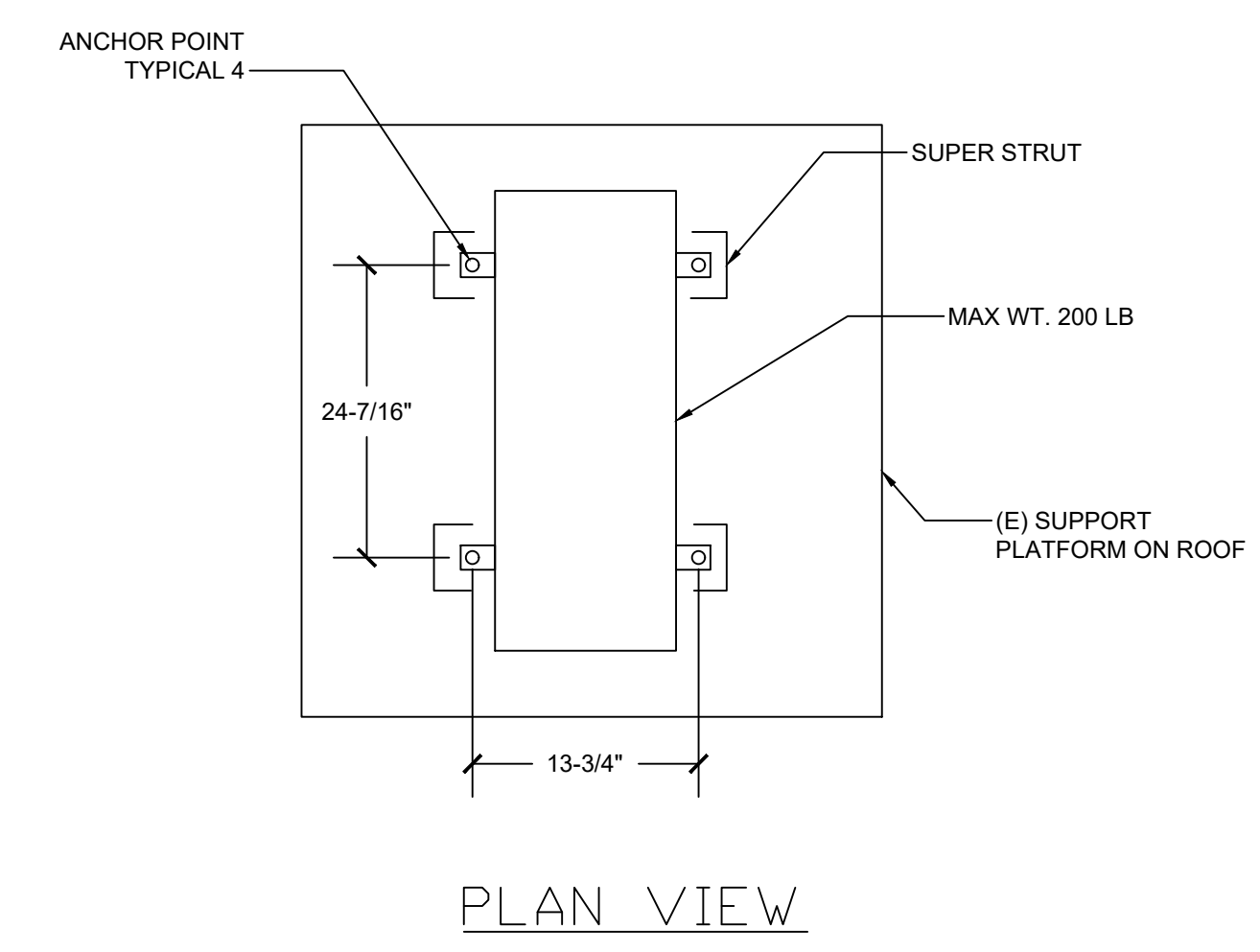
MECHANICAL DEMO ROOF PLAN

SCALE: N.T.S. **5**

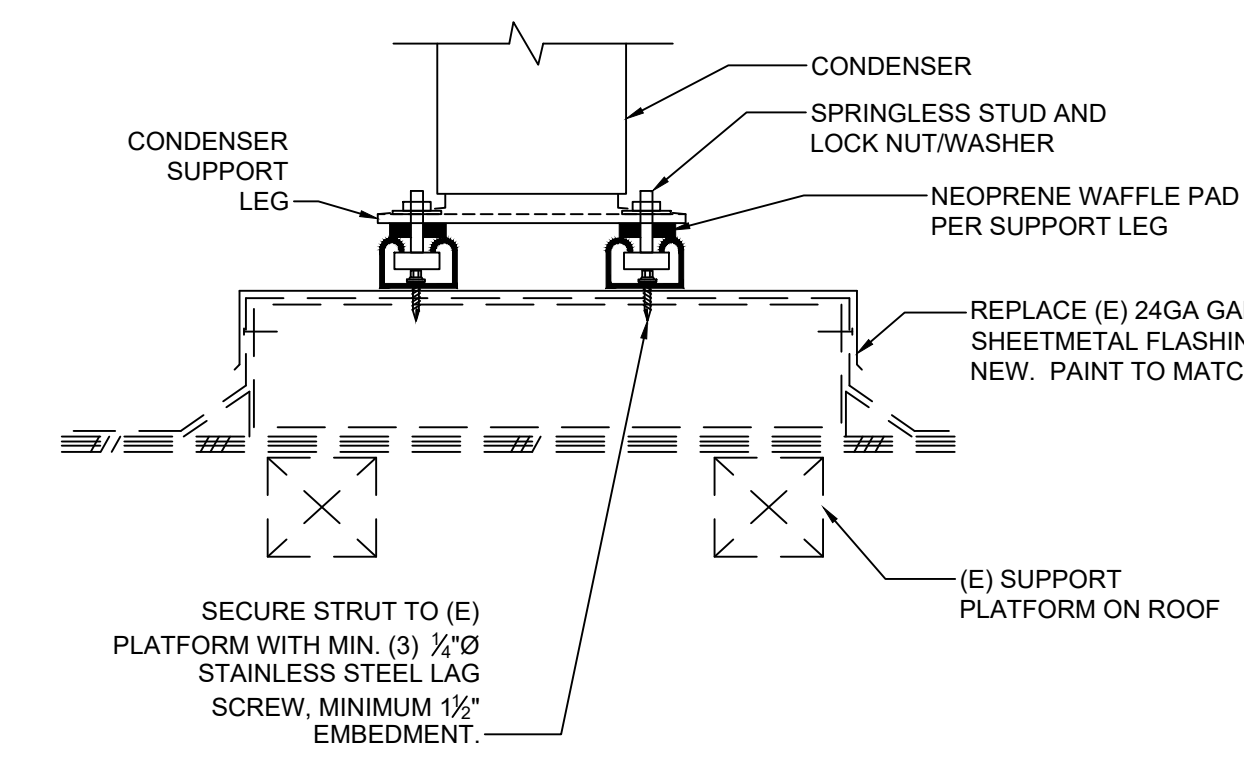


FURNACE CLOSET DEMO PLAN

SCALE: N.T.S. **4**

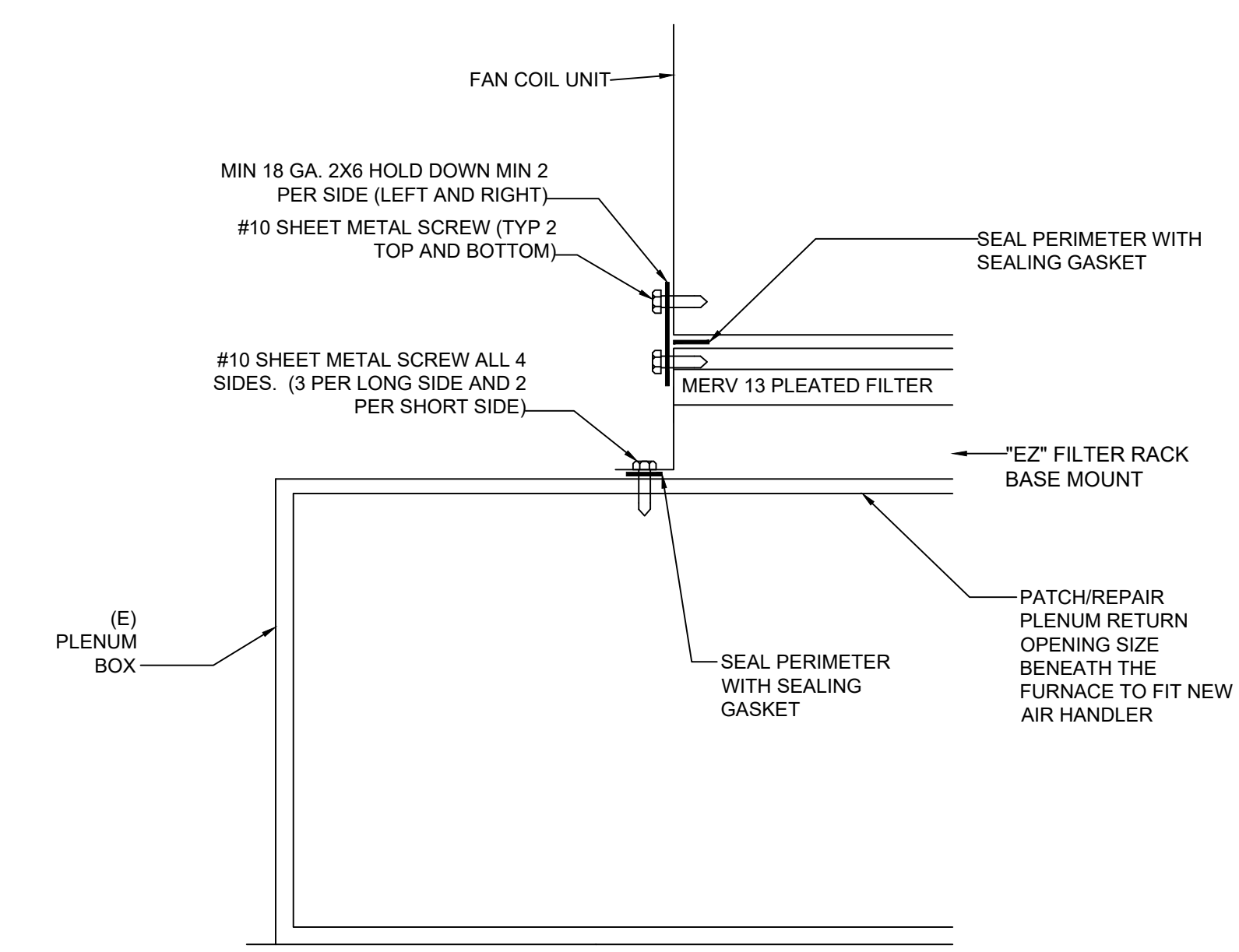


PLAN VIEW



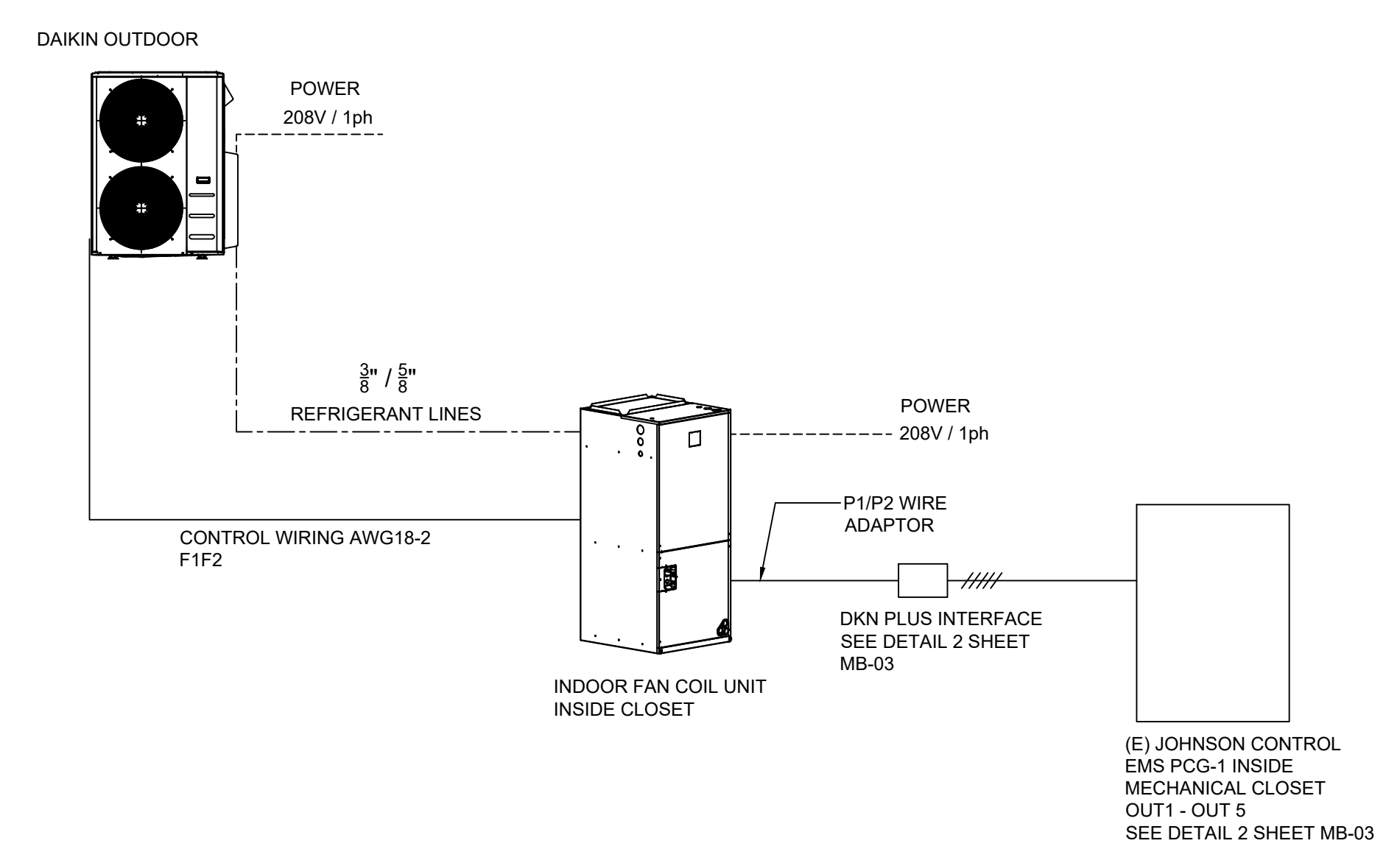
ROOF MOUNT CONDENSER SUPPORT DETAIL

SCALE: N.T.S. **1**



FAN COIL UNIT MOUNTING DETAIL IN CLOSET

SCALE: N.T.S. **2**



PIPING AND WIRING CONTROL DIAGRAM

SCALE: N.T.S. **3**

HVAC Modernization and Replacement
Mountain View Whisman School District
 Mountain View, California

Bubb Elementary School
 Mechanical:
 Details

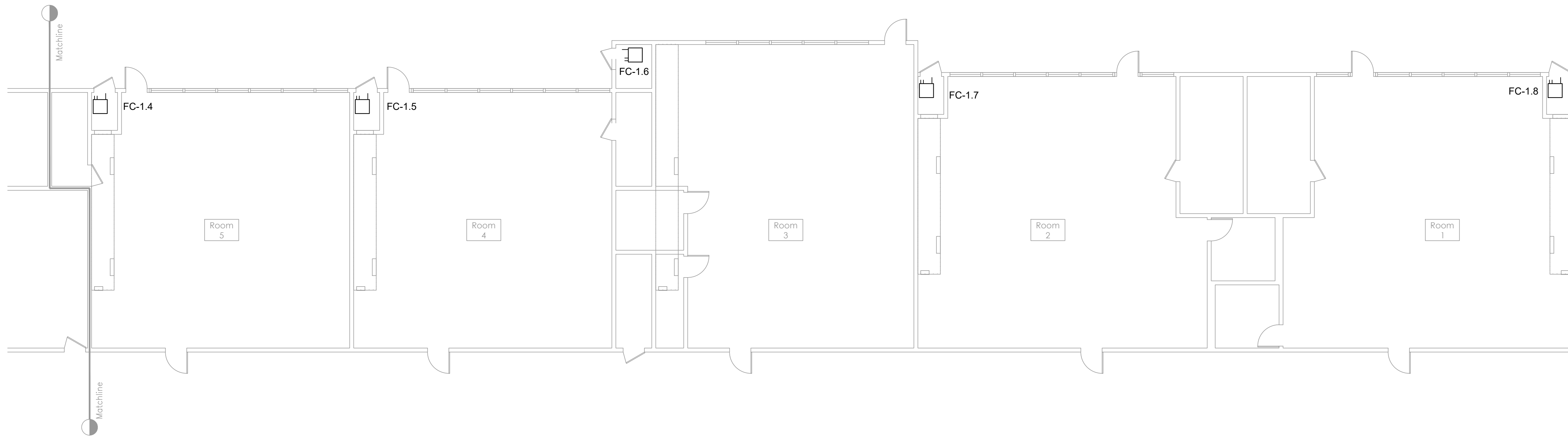
MB-03

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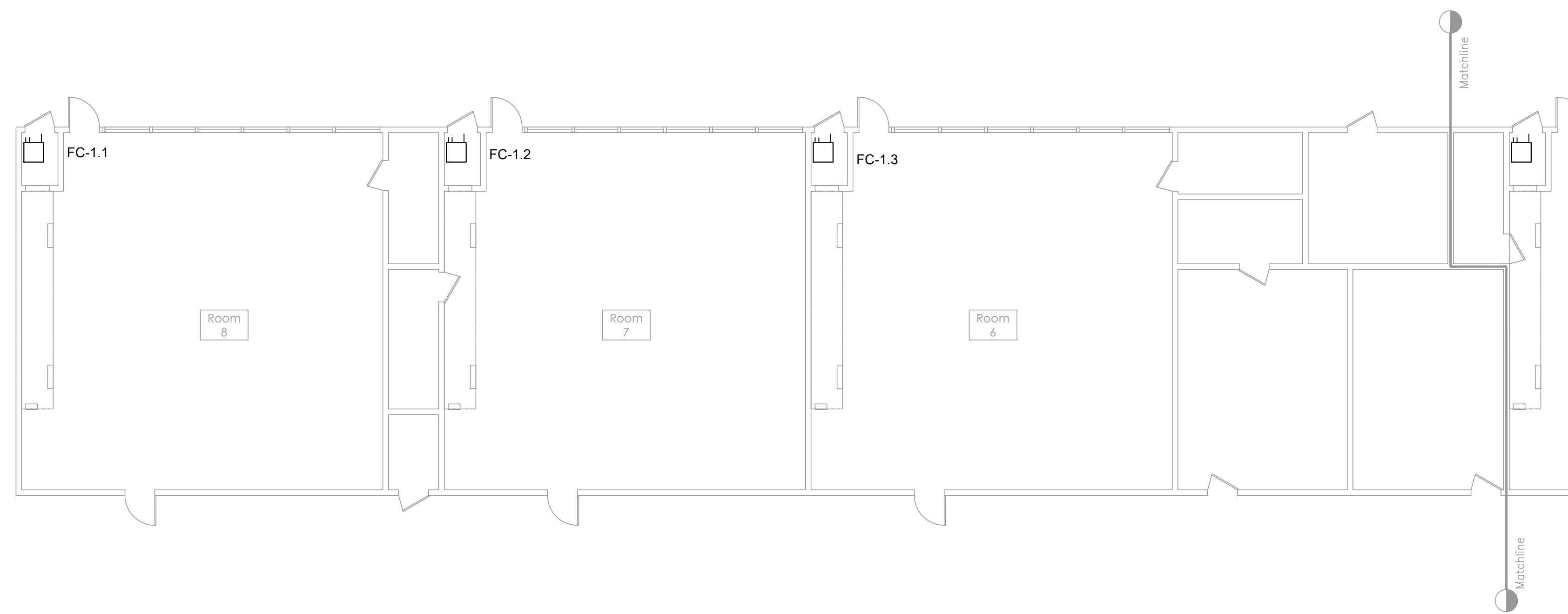
1100 Juanita Avenue
 Milpitas, California
 94010
 650 696 1200

314 Center Street #220
 Redwood City, California
 94061
 707 431 1905



1 Floor Plan - Unit 1 (East)

1/8" = 1'-0"



2 Floor Plan - Unit 1 (West)

1/8" = 1'-0"

HVAC Modernization and Replacement
**Mountain View Whisman
 School District**
 Mountain View, California

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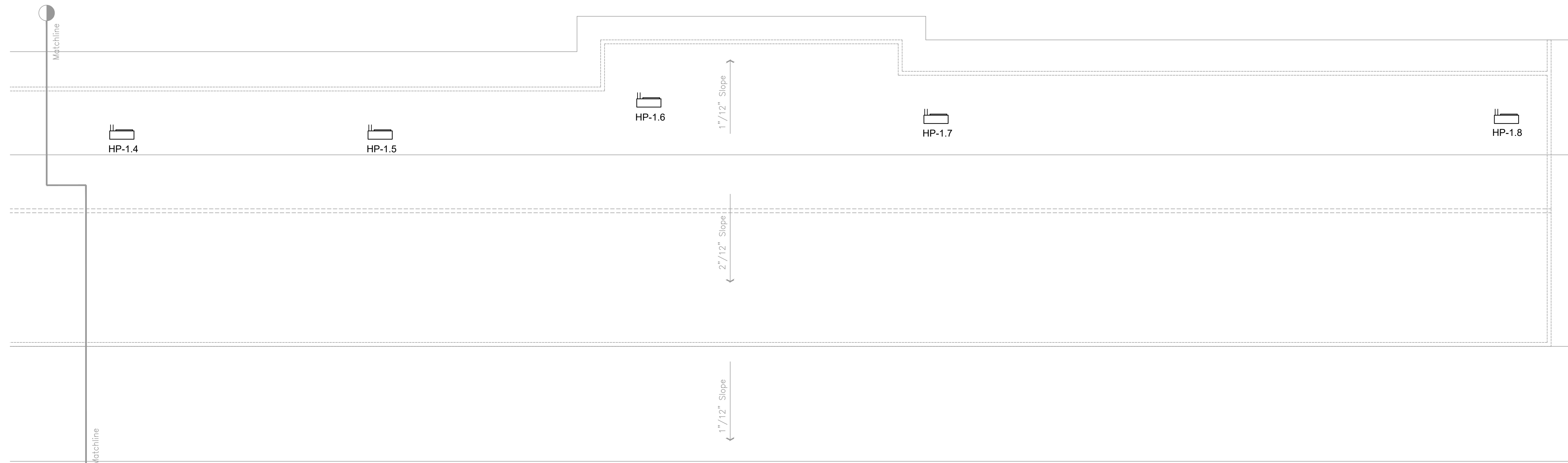
1103 Juanita Avenue
 San Jose, California
 95128
 408.696.1200

314 Center Street #220
 Redwood City, California
 94063
 650.431.1905

Bubb Elementary School
 Mechanical:
 Unit 1 Floor Plan

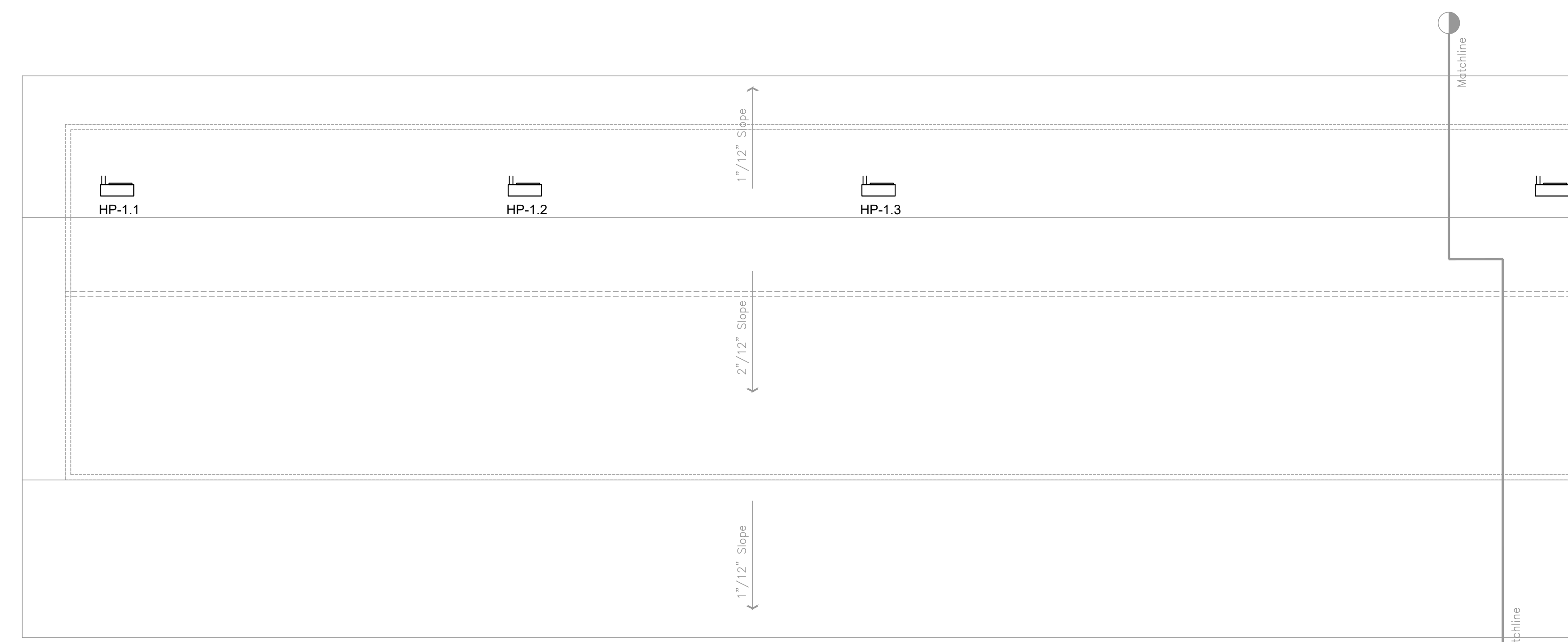
MB-2.1

2024



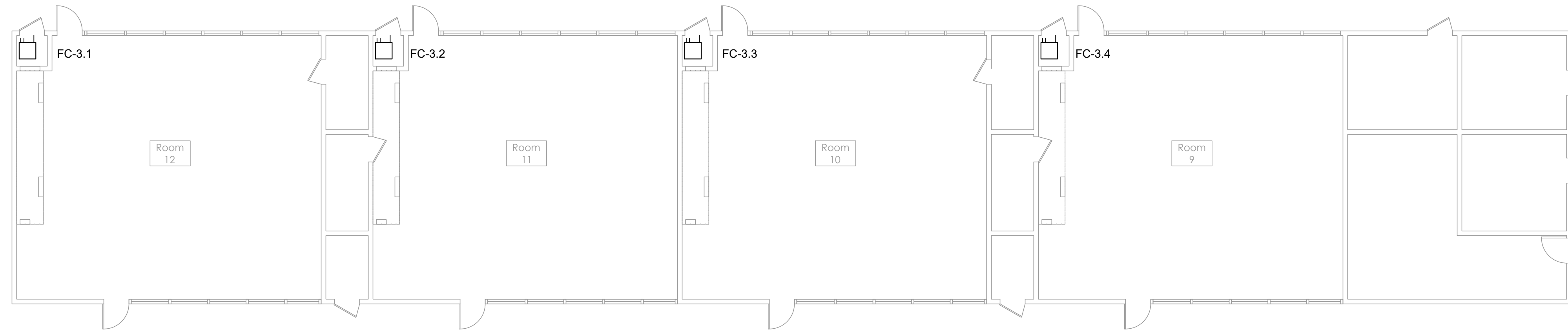
1 Roof Plan - Unit 1 (East)

1/8" = 1'-0"



2 Roof Plan - Unit 1 (West)

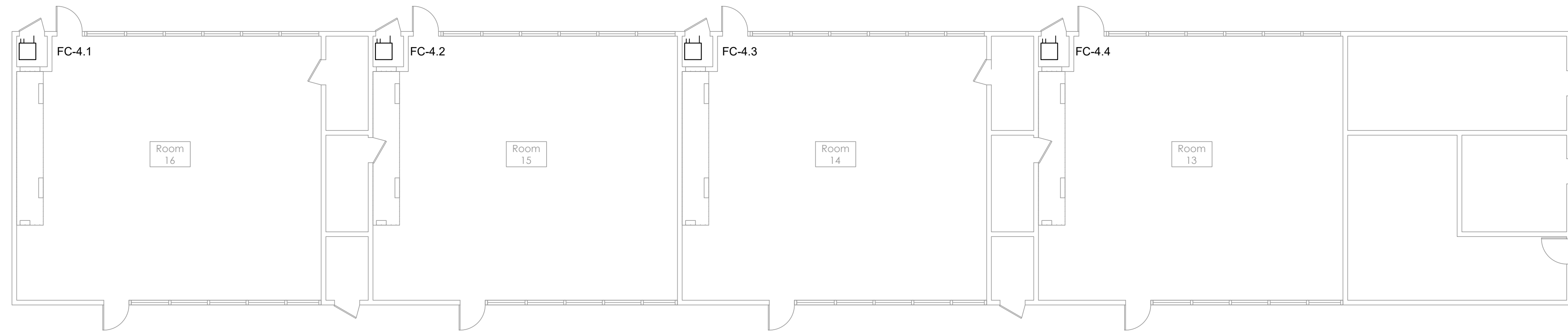
1/8" = 1'-0"



1

Floor Plan - Unit 3

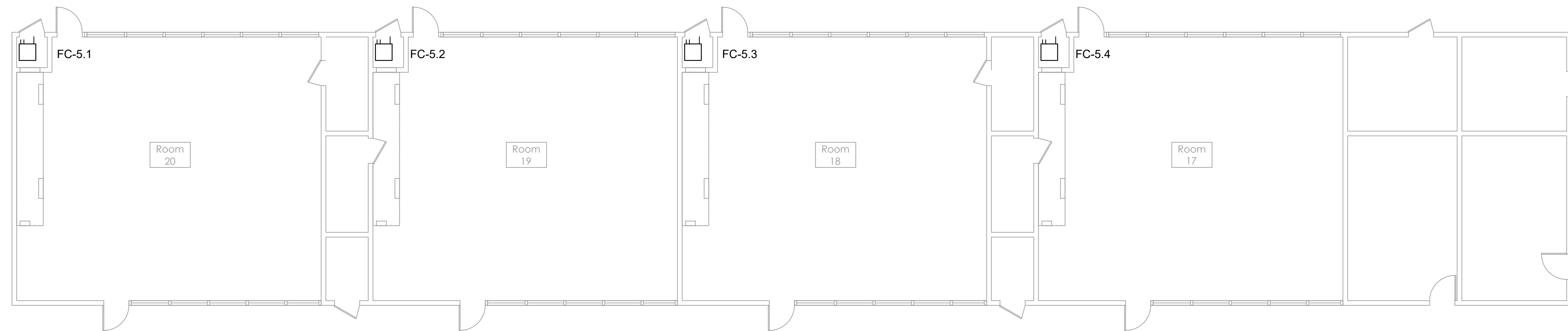
1/8" = 1'-0"



2

Floor Plan - Unit 4

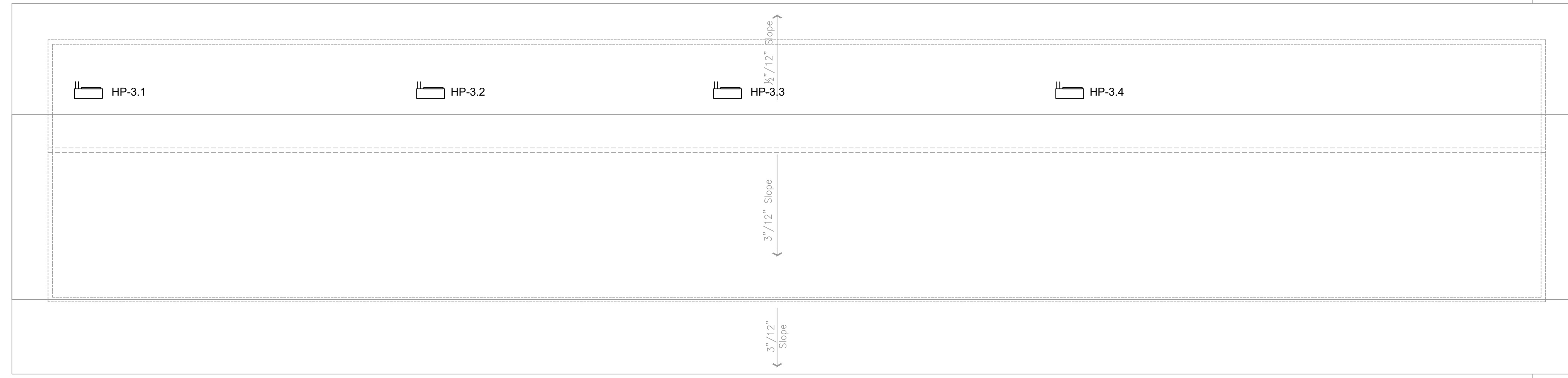
1/8" = 1'-0"



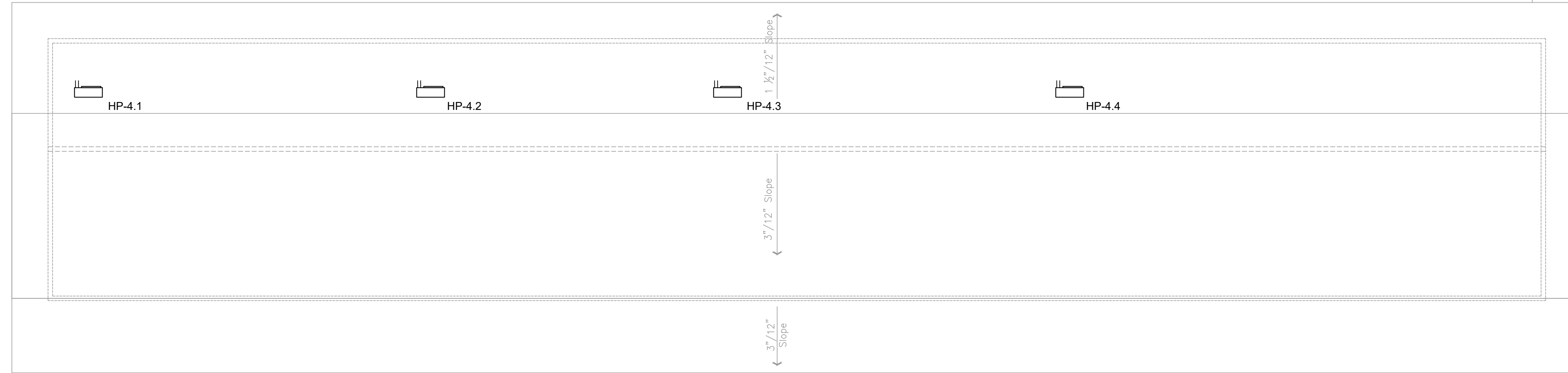
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Floor Plan - Unit 5

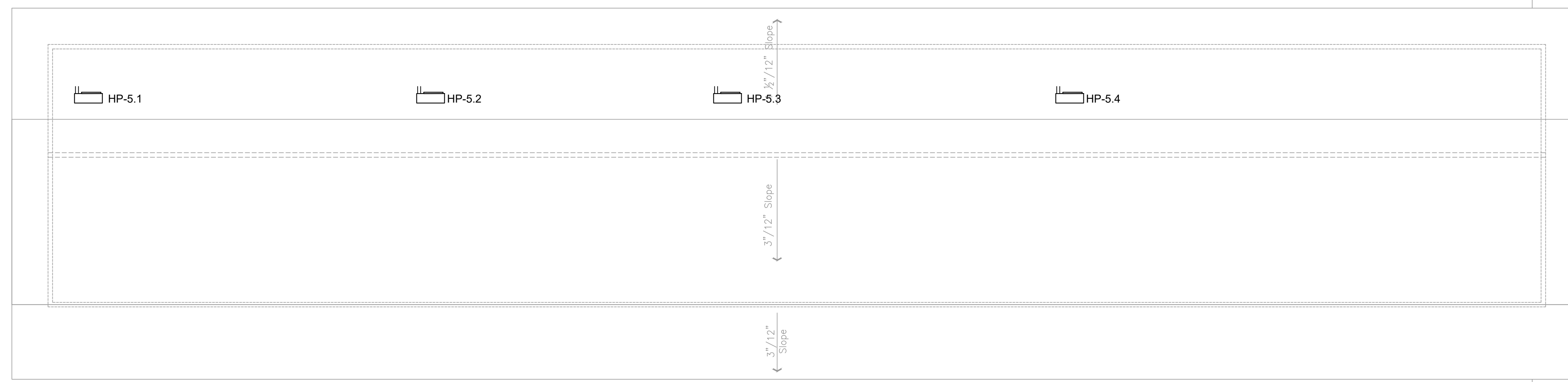
1/8" = 1'-0"



1 Roof Plan - Unit 3 1/8" = 1'-0"



2 Roof Plan - Unit 4 1/8" = 1'-0"



3 Roof Plan - Unit 5 1/8" = 1'-0"



Second Floor Plan: Bldg 200

Site Plan - Crittenden Middle School



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HVAC Modernization and Replacement

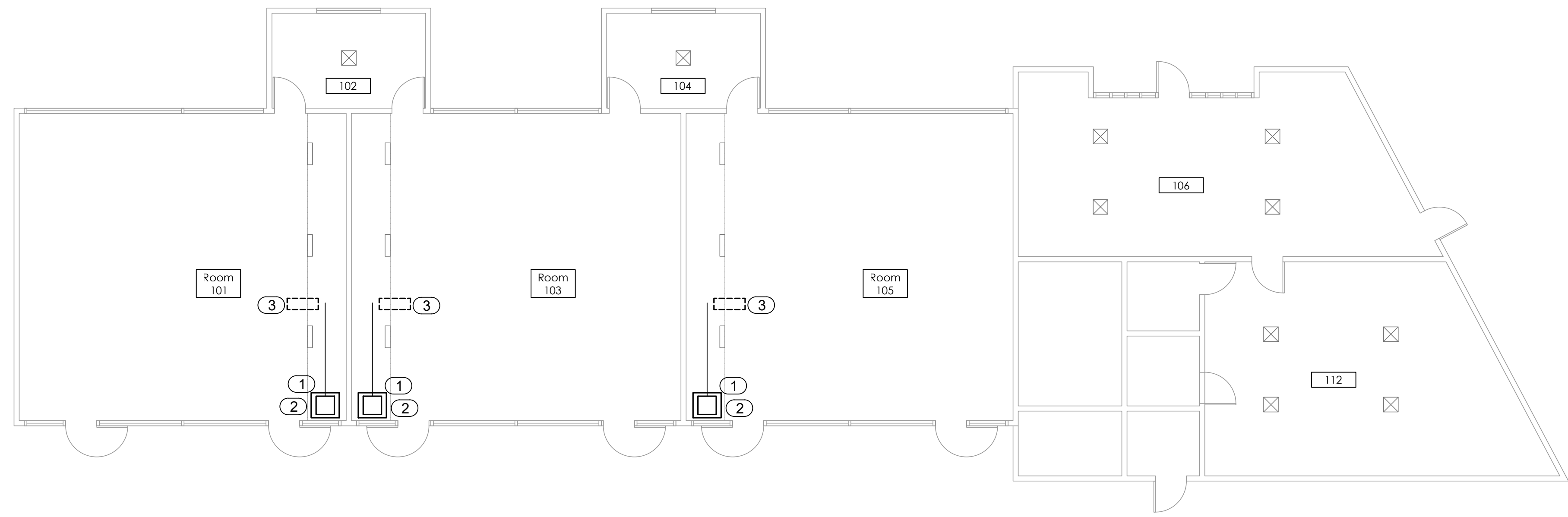
**Mountain View Whisman
 School District**

Mountain View, California

Crittenden Middle School
 Site Plan

AC1.1

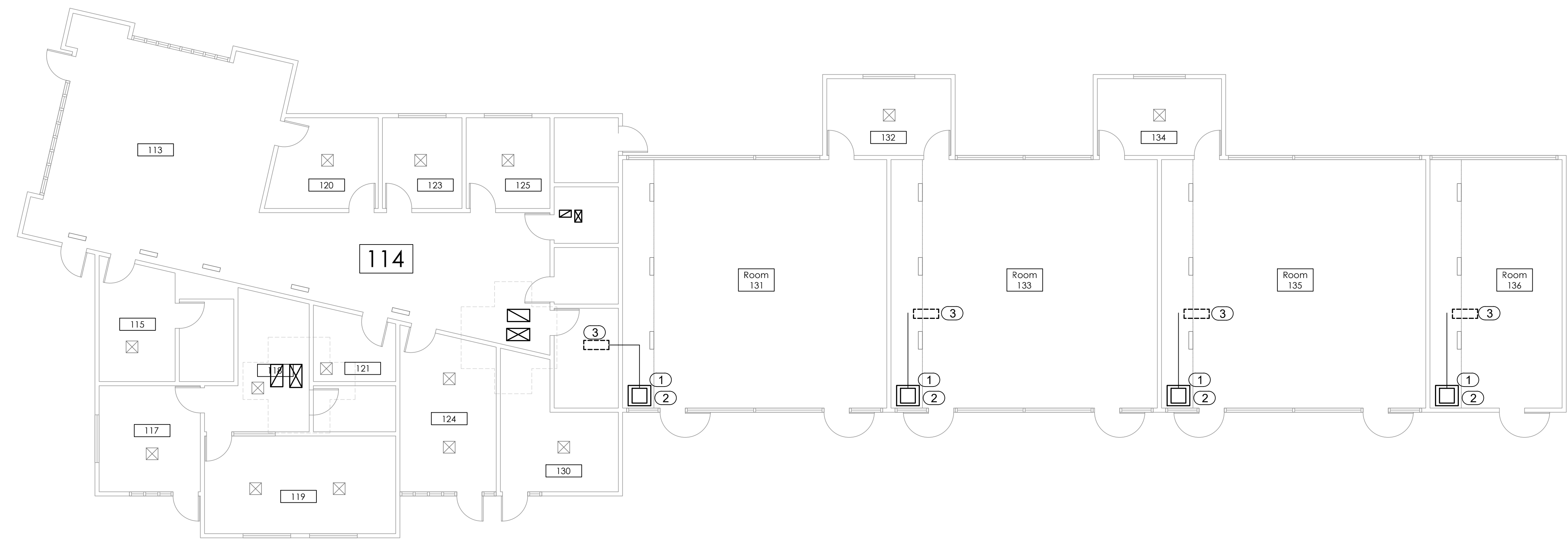
2024



- KEYNOTES**
- 1 REMOVE (E)UNITARY HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 4 OR 5 TON VERTICAL FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
 - 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC
 - 3 MOUNT HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

1 Floor Plan - Building 1 (West)

1/8" = 1'-0"



- COORDINATION NOTES**
- EXISTING SYSTEMS**
- 1 4-TON PACKAGED HEAT PUMP: FLOOR MOUNTED
- NEW SYSTEMS**
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6, 10 KW AUX ELECTRIC HEATER @208-230V, OPER WT = 167#
 - 2 HEAT PUMP: 208/230/1, MCA = 29.1, OPER WT 225#

2 Floor Plan - Building 1 (East)

1/8" = 1'-0"

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H M
MECHANICAL GROUP
 11000 Woodside Street, Suite 210
 Oakland, CA 94621
 TEL: 510-569-2000

HVAC Modernization and Replacement
Mountain View Whisman School District
 Mountain View, California

Crittenden Middle School
 Mechanical:
 Building 1 Floor Plan

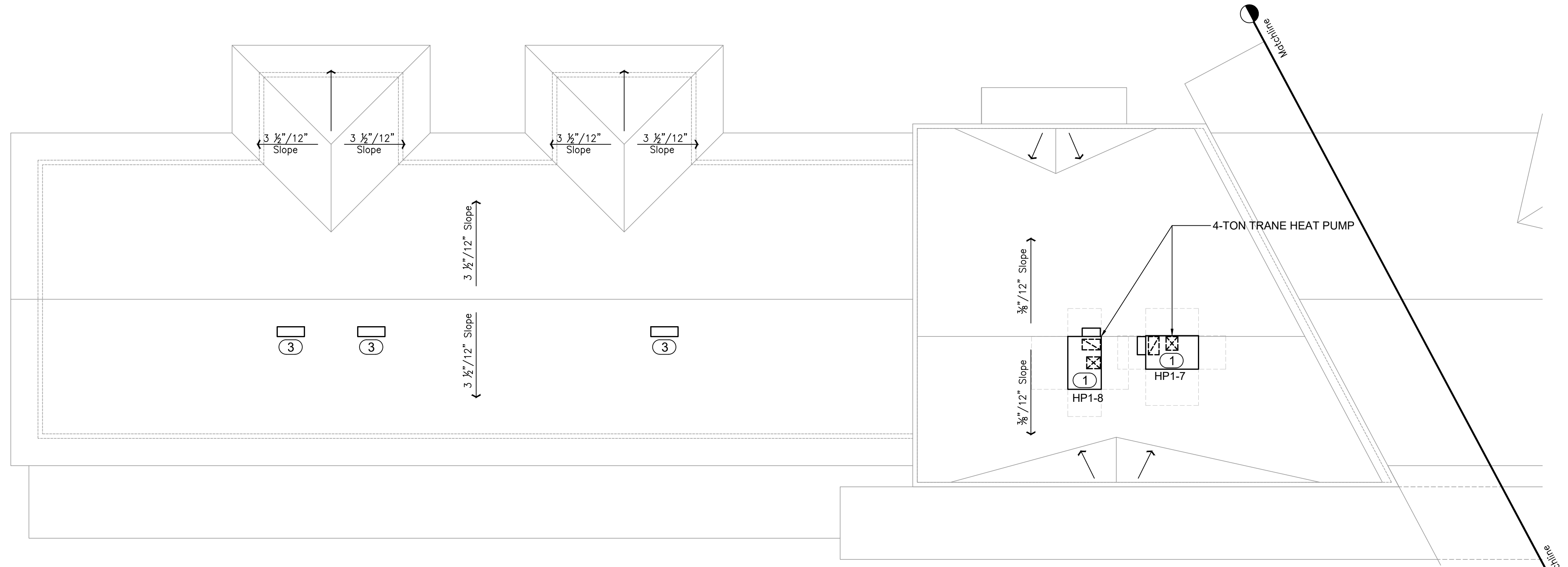
MC-2.1

2024

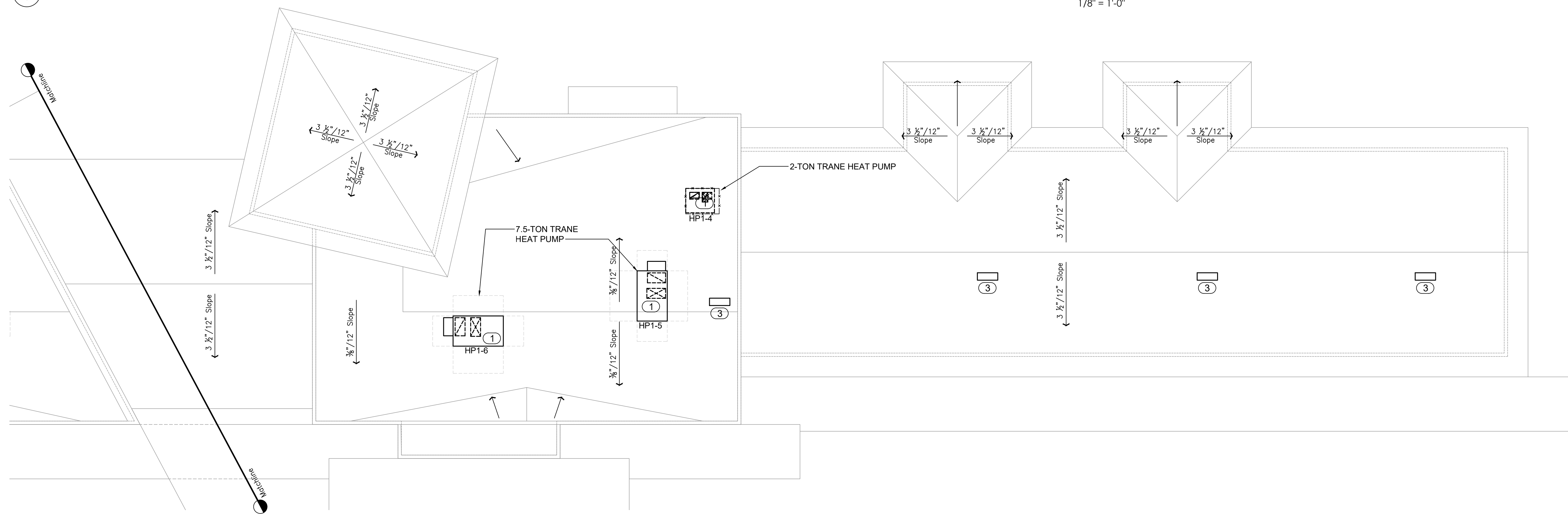
HEAT PUMP UNIT WEIGHTS												
TAG	TONNAGE	WEIGHT ON SCHEDULE	ESTIMATED ACTUAL WEIGHT OF EXISTING UNITS WITH ACCESSORIES					ESTIMATED WEIGHT OF NEW UNITS WITH ACCESSORIES				
			BASE	CURB	ISOLATION CURB	AIR ECONOMIZER	TOTAL	BASE	CURB	ISOLATION CURB	AIR ECONOMIZER	TOTAL
HP1-4	2	350	331	70	100	26	527	442	170			
HP1-7, 8	4	750	474	115	180	26	795	442	115	180	26	763
HP1-5, 6	7.5	950	744	115	140	116	1115	796	115	140	116	1167

- KEYNOTES**
- REMOVE (E)ROOFTOP HEAT PUMP INCLUDING RAIL ISOLATOR. DISCONNECT & PARTIAL REMOVAL OF EXISTING SA & RA DUCT DROPS. INSTALL NEW UNIT MATCHING (E)UNIT. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
 - (E)DUCT SA SMOKE DETECTOR SHALL BE CONNECTED TO FIRE ALARM SYSTEM FOR SIGNAL AND ALSO RECONNECTED FOR SHUT-DOWN OF UNIT.
 - MOUNT HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

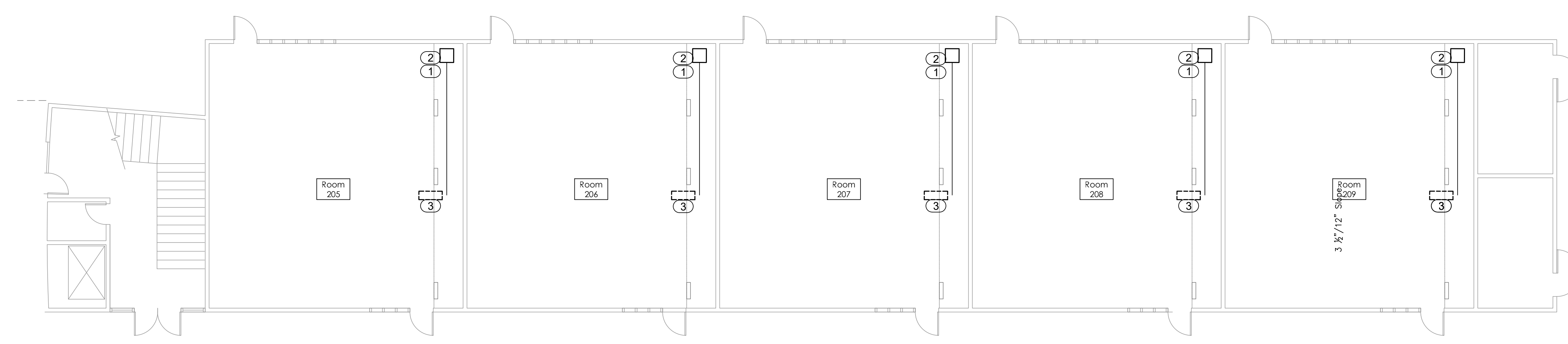
- COORDINATION NOTES**
- EXISTING SYSTEMS**
- 2-TON PACKAGED HEAT PUMP: 527#, 208/1, MCA=45
 - 4-TON PACKAGED HEAT PUMP: 795#, 460/3, MCA=21
 - 7.5 TON PACKAGED HEAT PUMP: 1115#, 460/3, MCA=32.6
- NEW SYSTEMS**
- 2-TON PACKAGED HEAT PUMP: 612#, 208/1, MCA=45
 - 4-TON PACKAGED HEAT PUMP: 763#, 460/3, MCA=22
 - 7.5 TON PACKAGED HEAT PUMP: 1167#, 460/3, MCA=34.0
- NOTE: EXISTING WEIGHTS INCLUDE SEISMIC RAIL VIBRATION ISOLATORS.
- THE 2-TON UNIT WILL BE REPLACED BUT WITHOUT VIBRATION ISOLATOR OR AIR ECONOMIZER. A DIFFERENT STYLE WILL BE REQUIRED AND WILL NEED TO HAVE AN 'ADAPT-A-CURB'.



1 Roof Plan - Building 1 (West)



2 Roof Plan - Building 1 (East)



Matchline

1 Floor Plan - Building 2 (North)

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E)PACKAGED HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 4 OR 5 TON VERTICAL FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC
- 3 MOUNT HEAT-PUMP UNIT ON (N) ROOF PLATFORM, ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

COORDINATION NOTES

EXISTING SYSTEMS

- 1 4-TON PACKAGED HEAT PUMP: FLOOR MOUNTED

NEW SYSTEMS

- 1 AIR-HANDLER: 208-230/1, MCA = 8.6
10 KW AUX ELECTRIC HEATER @208-230V
OPER WT = 167#
- 2 HEAT PUMP: 208/230/1
MCA = 29.1
OPER WT 225#



Matchline

2 Roof Plan - Building 2 (North)

1/8" = 1'-0"

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450 696 1200

314 Center Street #220
Hayward, California
94548
707 431 1905

H M
MECHANICAL GROUP
Mechanical, Electrical, & Plumbing
210
Oakland, CA 94612
Tel: 510-529-2000

HVAC Modernization and Replacement
Mountain View Whisman School District
Mountain View, California

Crittenden Middle School
Mechanical:
Building 2 Floor & Roof Plan

MC-2.3

2024



KEYNOTES

- 1 REMOVE (E)UNITARY HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 4 OR 5 TON VERTICAL FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC & VRV SYSTEM NETWORK.
- 3 MOUNT NEW VARIABLE REFRIGERANT HEAT RECOVERY UNIT ONE NEW GROUND MOUNTED PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH 1ST FLOOR CEILING TO BRANCH CIRCUIT BOXES AND EXTENDED TO FAN COILS.

COORDINATION NOTES

EXISTING SYSTEMS

- 1 4-5 TON UNITARY HEAT PUMP: 460V/3 FLOOR MOUNTED

NEW SYSTEMS

- 1 AIR-HANDLER: 208-230/1, MCA = 8.6
6 KW AUX ELECTRIC HEATER @208-230V
OPER WT = 167#
- 2 HEAT RECOVERY (32 TON & 12 TON SEGMENTS): 460V/3
(4) LEGS - 21.1, 21.1, 27.9; 27.9
OPER WT 4,400#

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Oakland, CA 94612
Tel: 510.509.2000

HVAC Modernization and Replacement
Mountain View Whisman School District
Mountain View, California

Crittenden Middle School
Mechanical:
Building 2 Floor Plan (South)

MC-2.4

2024

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Hayward, California
94546
707.431.1905

1

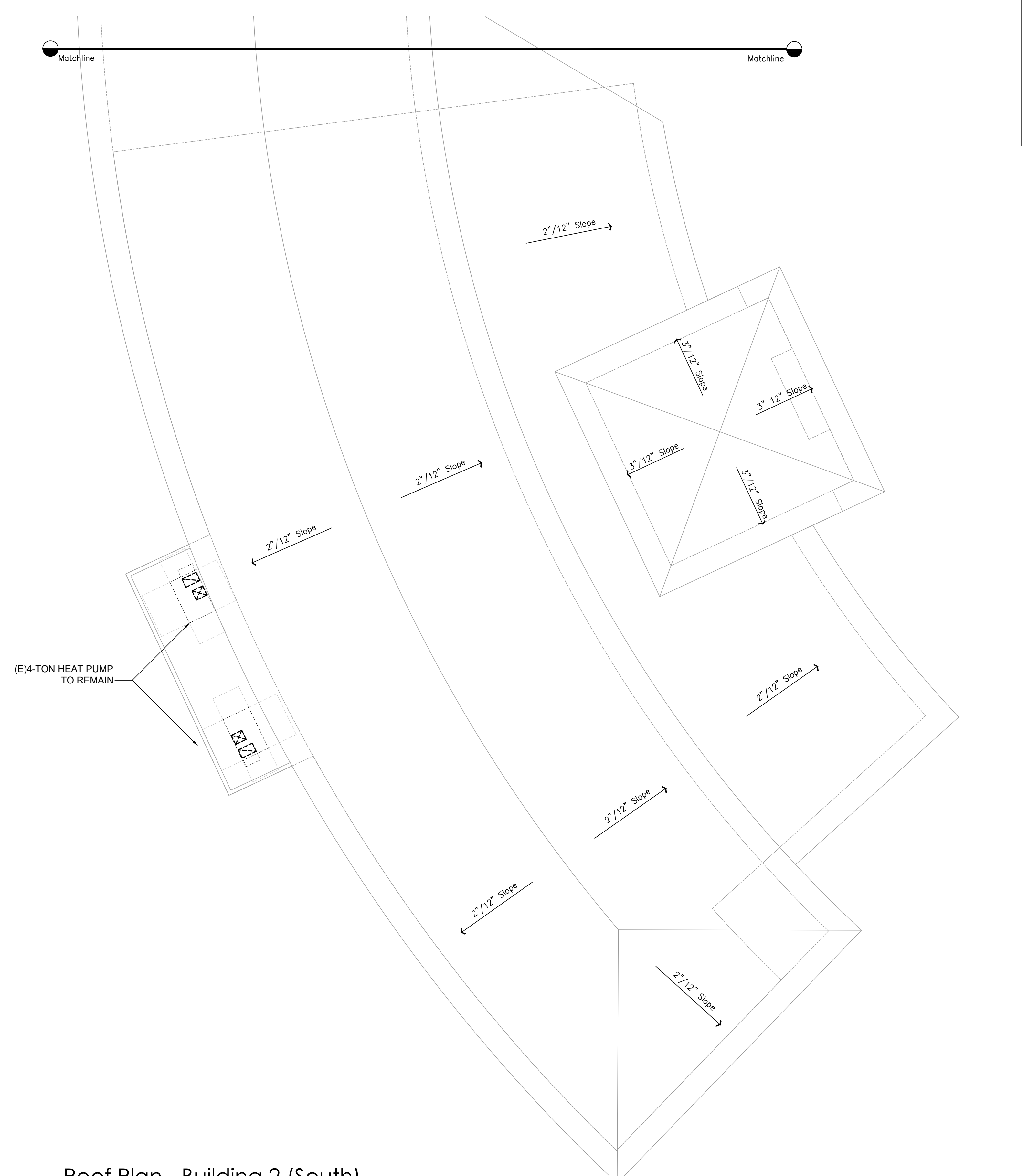
Second Floor Plan - Building 2 (South)

1/8" = 1'-0"

2

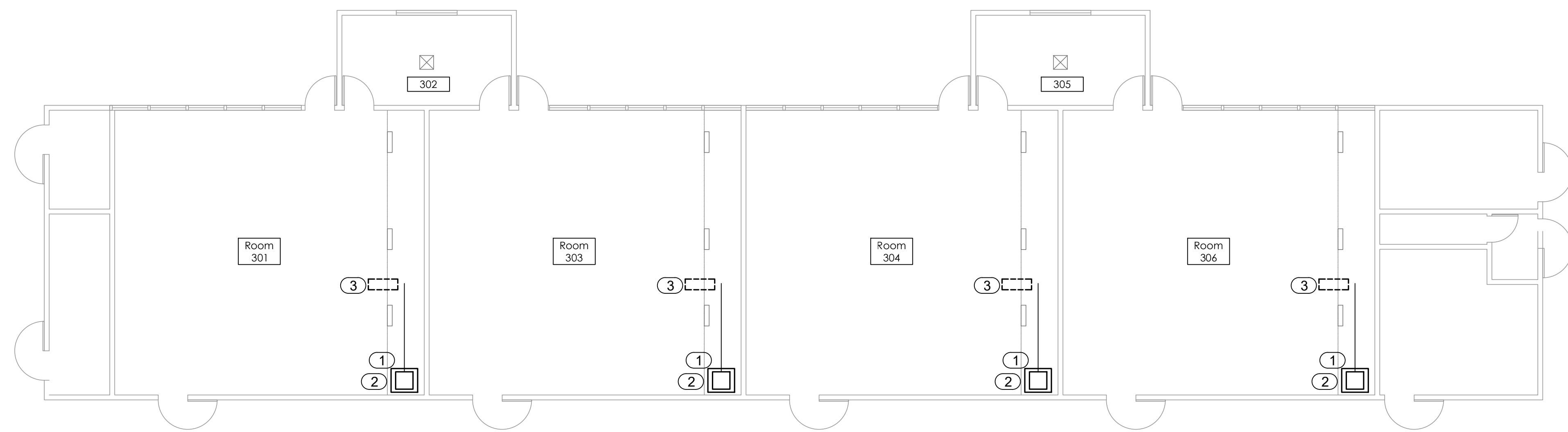
First Floor Plan - Building 2 (South)

1/8" = 1'-0"



1 Roof Plan - Building 2 (South)

1/8" = 1'-0"



KEYNOTES

- 1 REMOVE (E)PACKAGED HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 4 OR 5 TON VERTICAL FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC
- 3 MOUNT HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

1 Floor Plan - Building 3

1/8" = 1'-0"



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IRVING, CALIFORNIA
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HVAC Modernization and Replacement
**Mountain View Whisman
School District**
Mountain View, California

COORDINATION NOTES

EXISTING SYSTEMS

- 1 4-TON PACKAGED HEAT PUMP:
FLOOR MOUNTED

NEW SYSTEMS

- 1 AIR-HANDLER: 208-230/1,
MCA = 8.6
10 KW AUX ELECTRIC HEATER
@208-230V
OPER WT = 167#
- 2 HEAT PUMP: 208/230/1
MCA = 29.1
OPER WT 225#

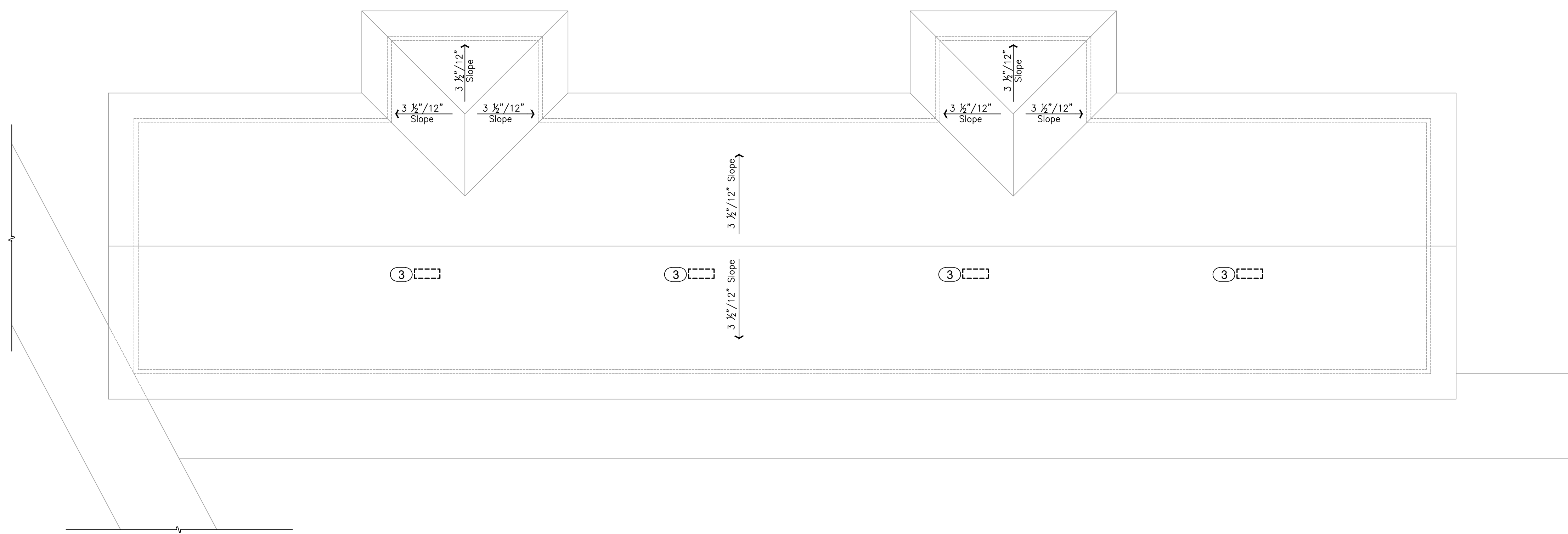
Crittenden Middle School
Mechanical:
Building 3 Floor & Roof Plan

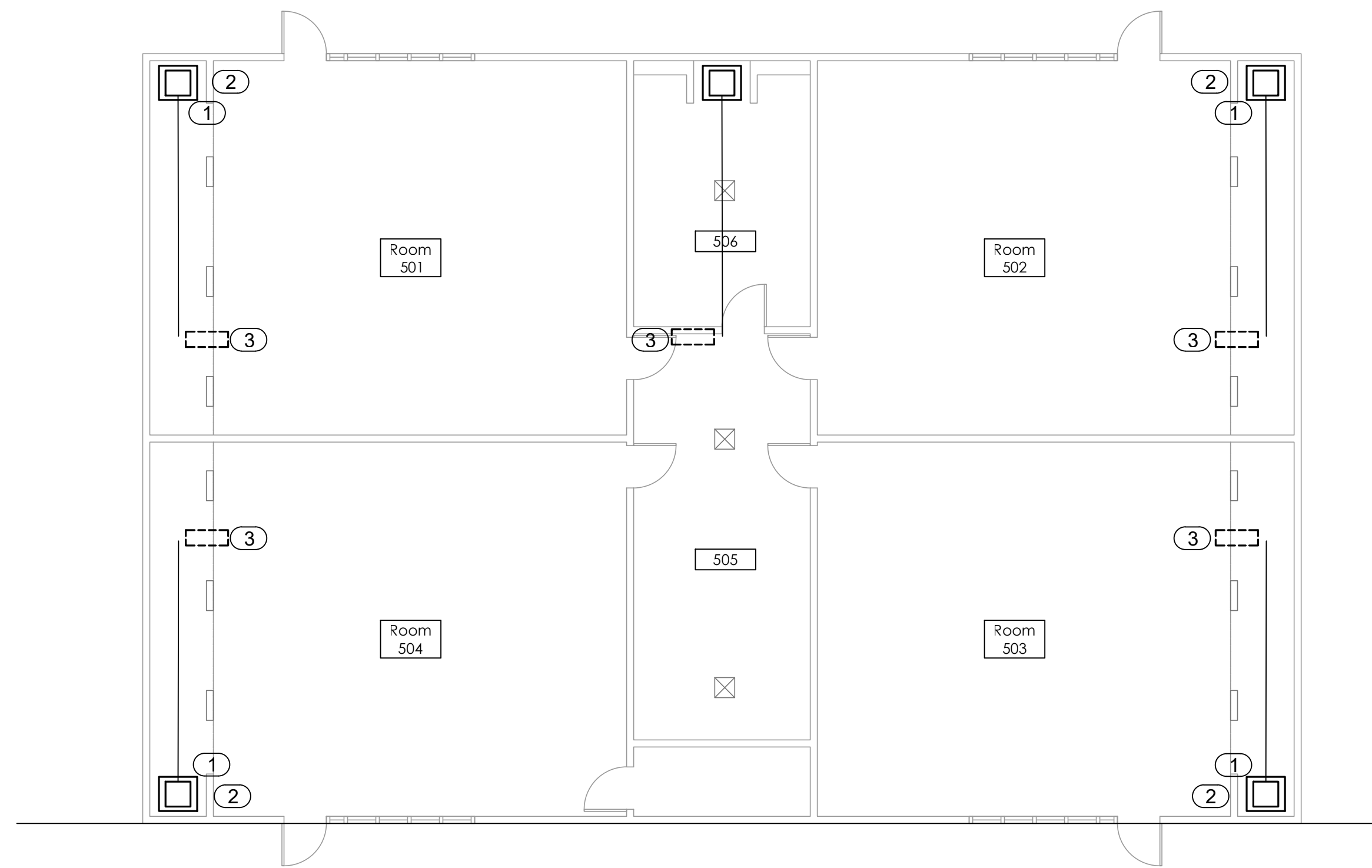
MC-2.6

2024

2 Roof Plan - Building 3

1/8" = 1'-0"





1 Floor Plan - Building 5

1/8" = 1'-0"



2 Roof Plan - Building 5

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E)PACKAGED HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 4 OR 5 TON VERTICAL FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC
- 3 MOUNT HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

COORDINATION NOTES

EXISTING SYSTEMS

- 1 3-TON PACKAGED HEAT PUMP
- 2 4-TON PACKAGED HEAT PUMP: FLOOR MOUNTED

NEW SYSTEMS

- 1 AIR-HANDLER: 208-230/1, MCA = 8.6
10 KW AUX ELECTRIC HEATER @208-230V
OPER WT = 167#
- 2 HEAT PUMP: 208/230/1
MCA = 29.1
OPER WT 225#



HVAC Modernization and Replacement
Mountain View Whisman School District
Mountain View, California



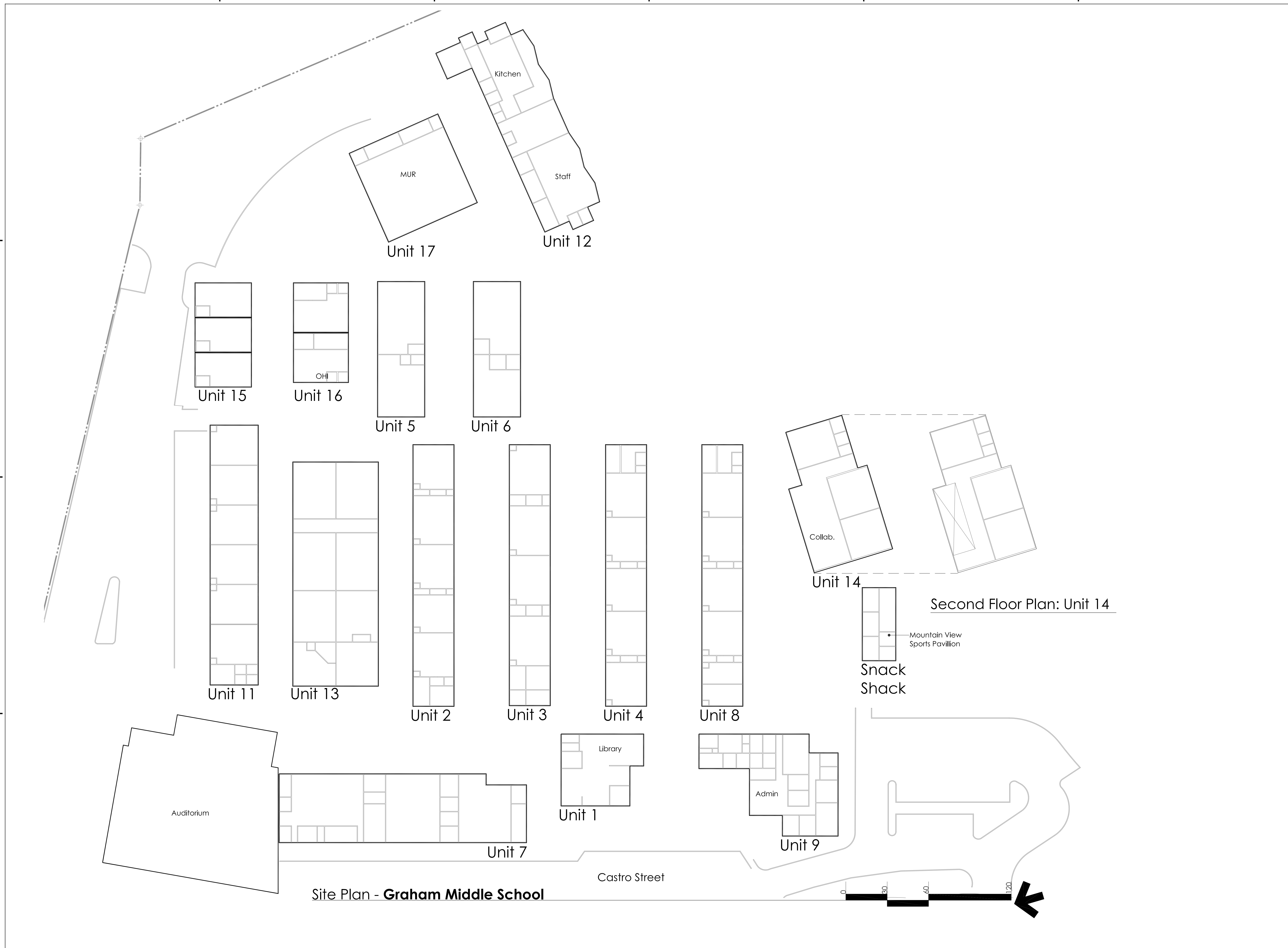
1100 Junipero Avenue
Fremont, California
94536
650.696.1200

314 Center Street #220
Fresno, California
93706
707.431.1905

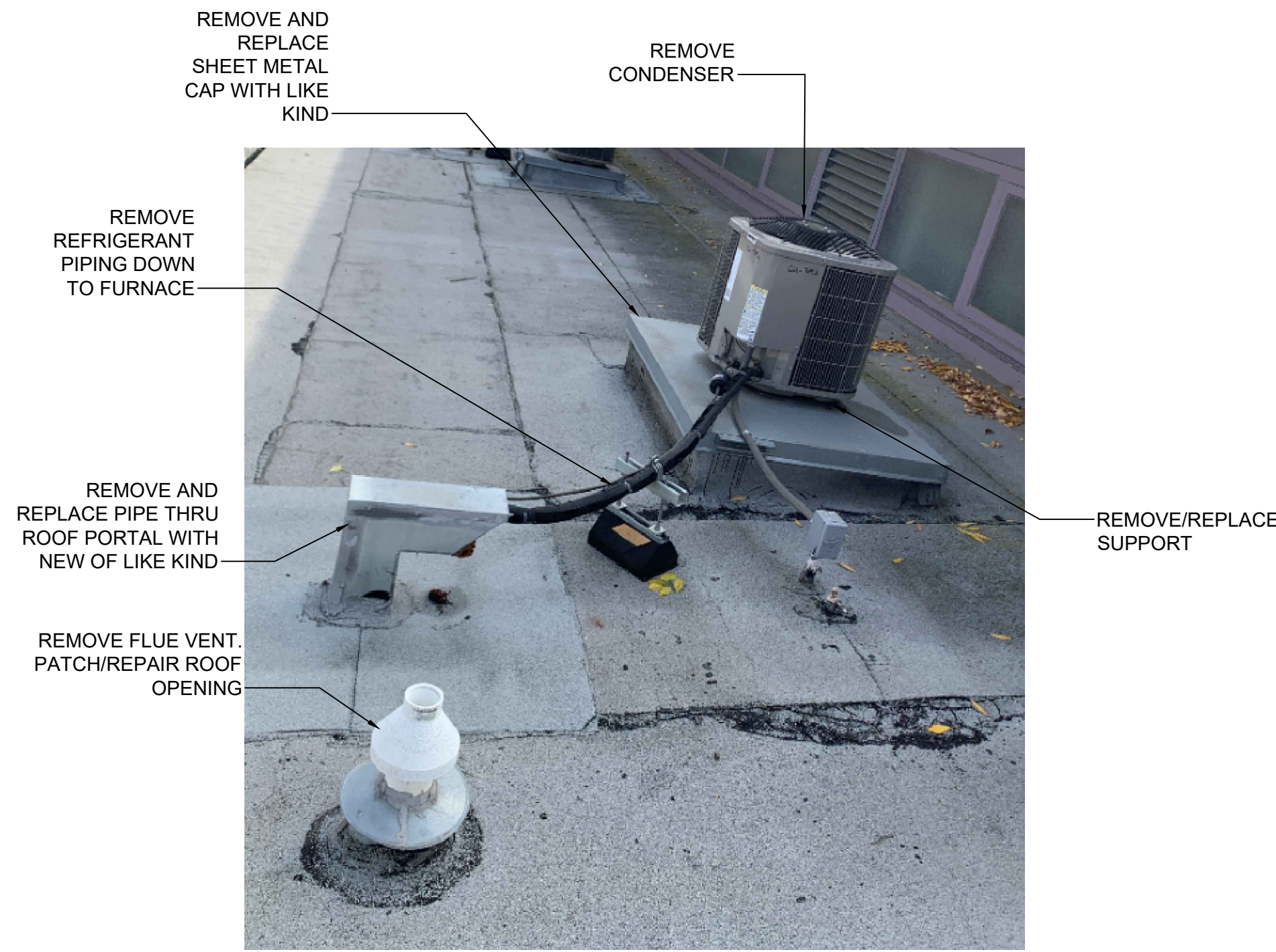
Crittenden Middle School
Mechanical:
Building 5 Floor & Roof Plan

MC-2.7

2024



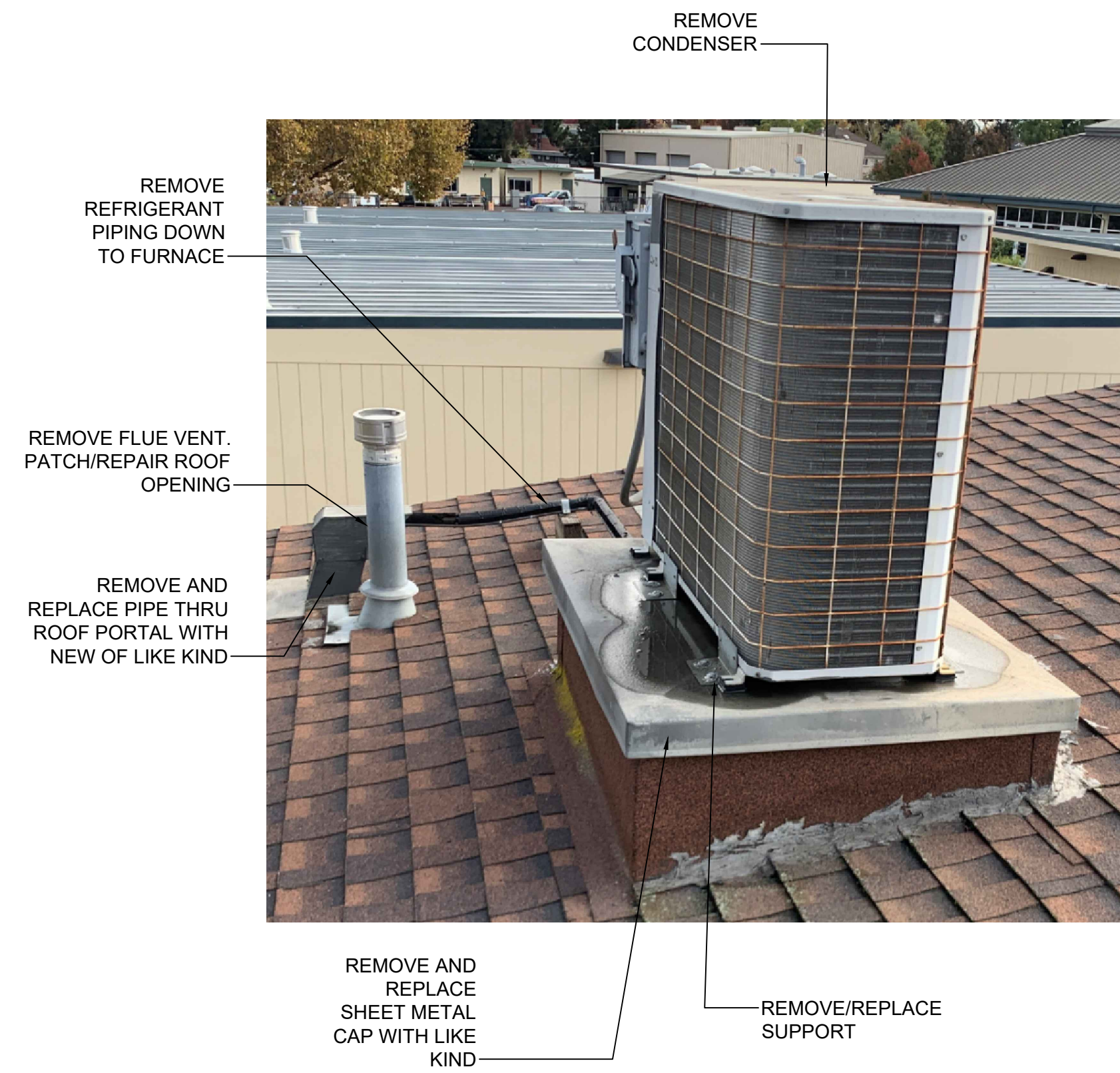
Site Plan - **Graham Middle School**



UNIT 8 - MECHANICAL DEMO ROOF PLAN

SCALE: N.T.S

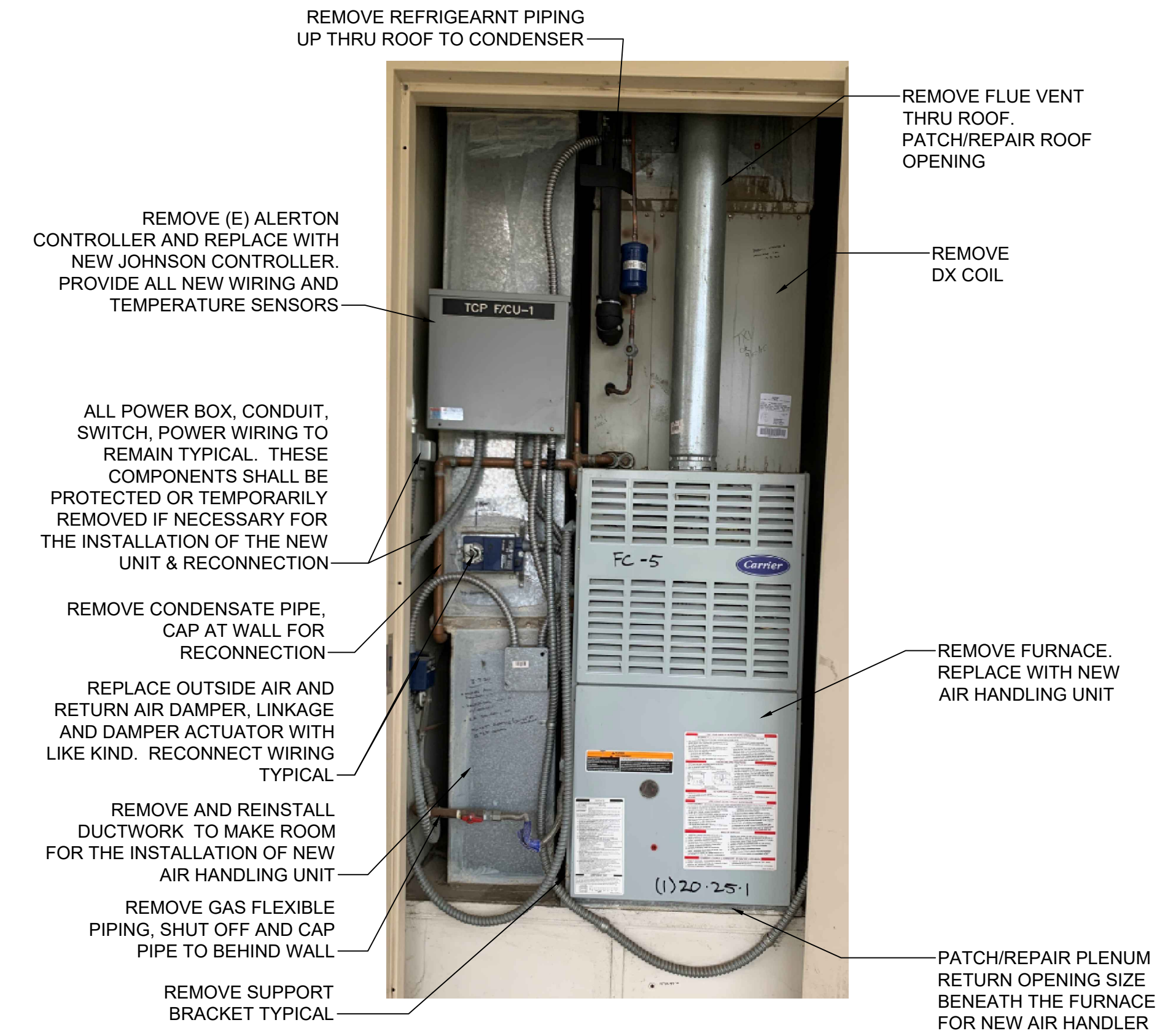
6



UNIT 11 - MECHANICAL DEMO ROOF PLAN

SCALE: N.T.S

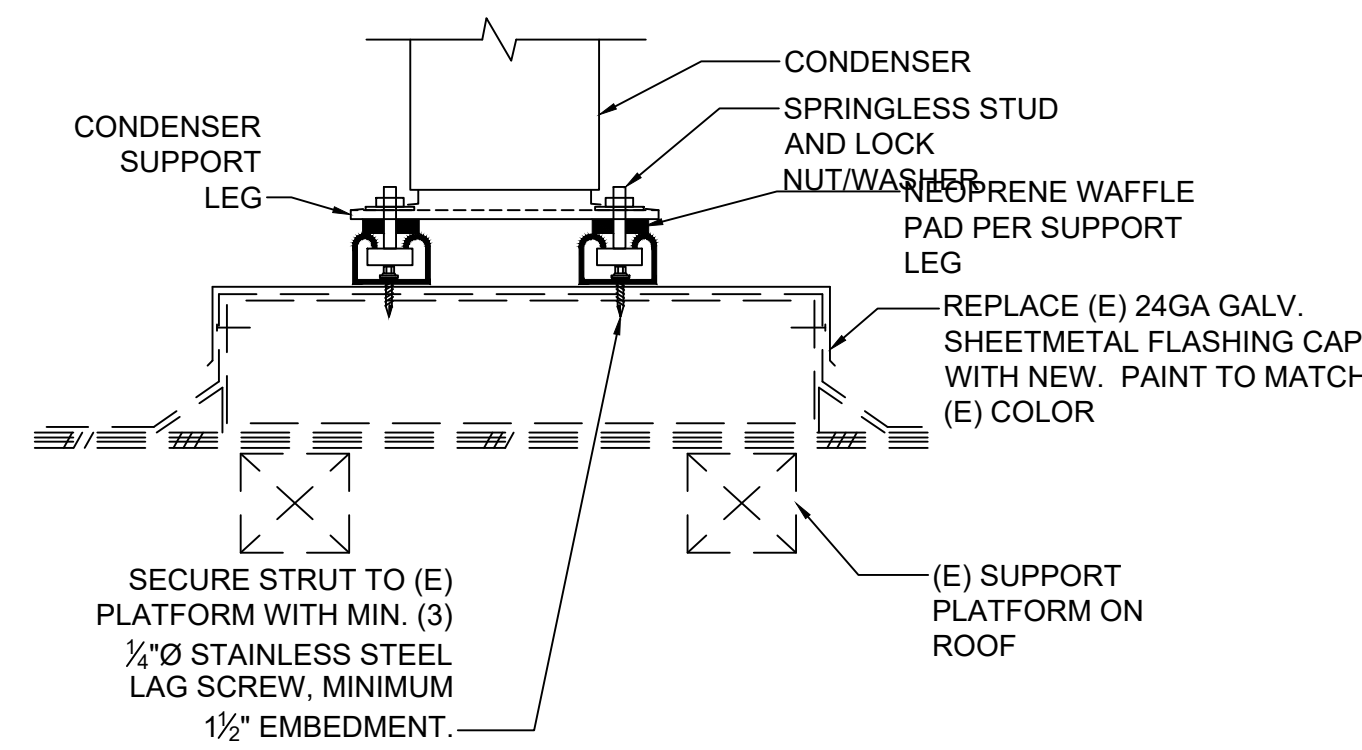
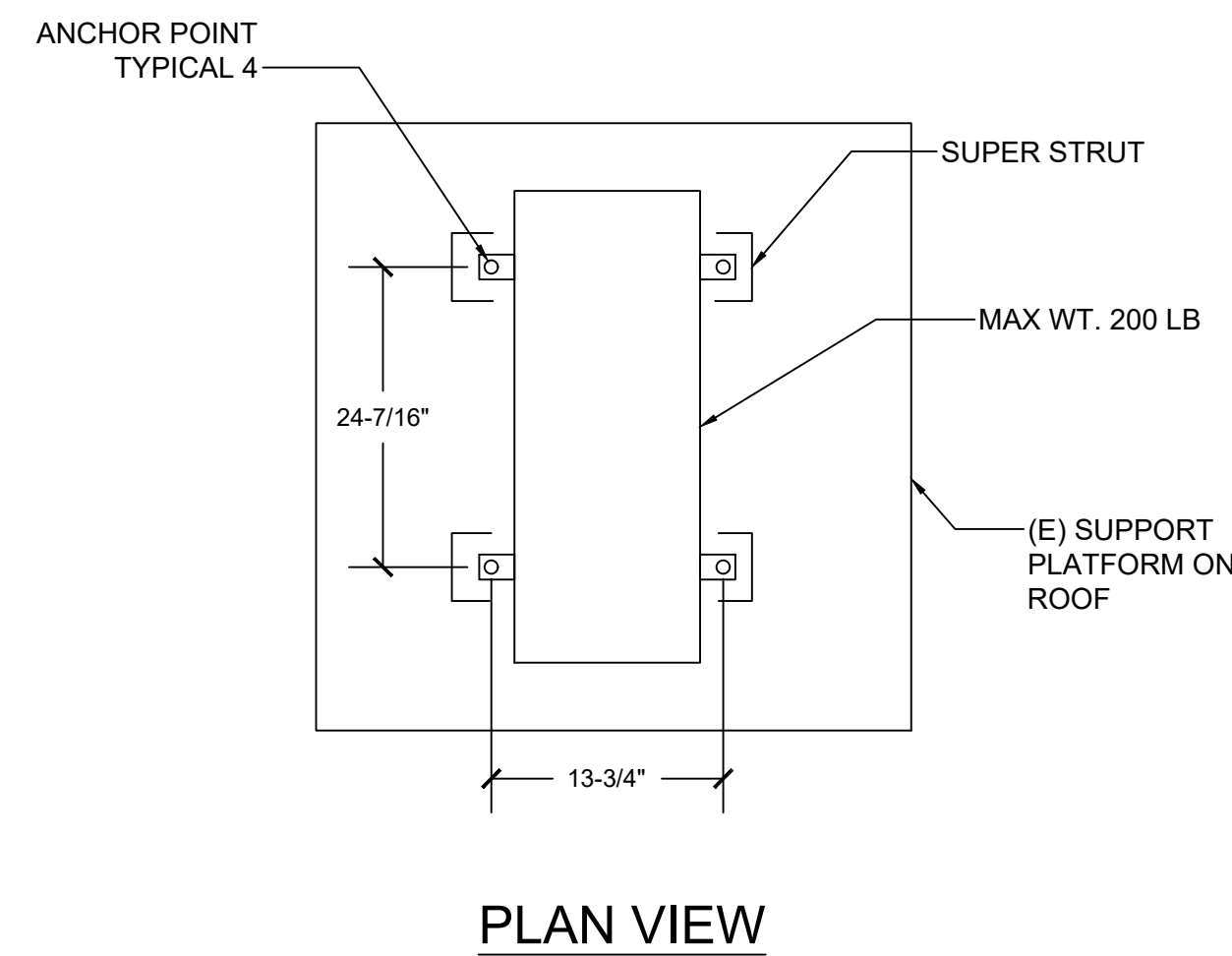
5



TYPICAL FURNACE CLOSET DEMO PLAN

SCALE: N.T.S

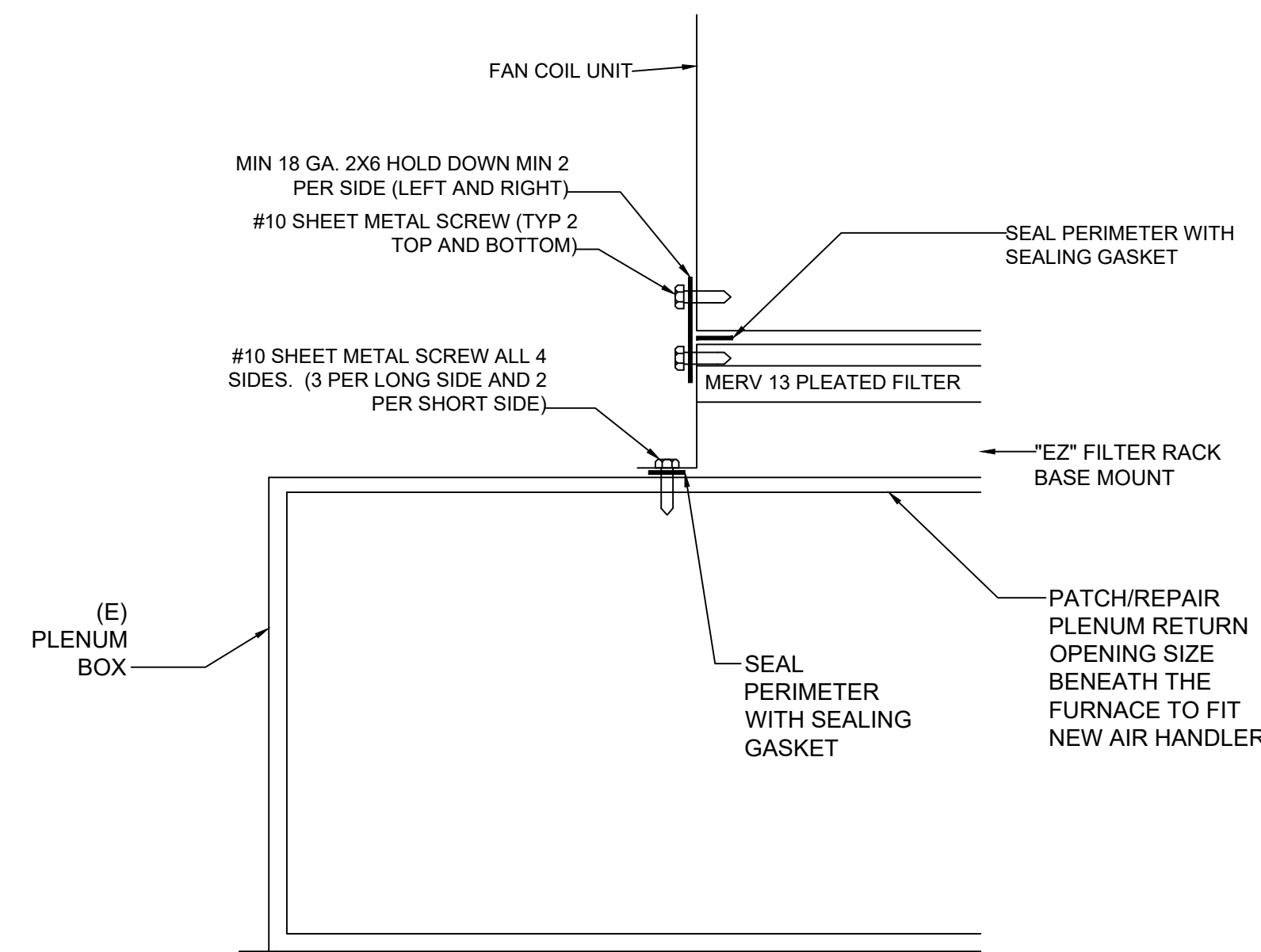
4



ROOF MOUNT CONDENSER SUPPORT DETAIL

SCALE: N.T.S

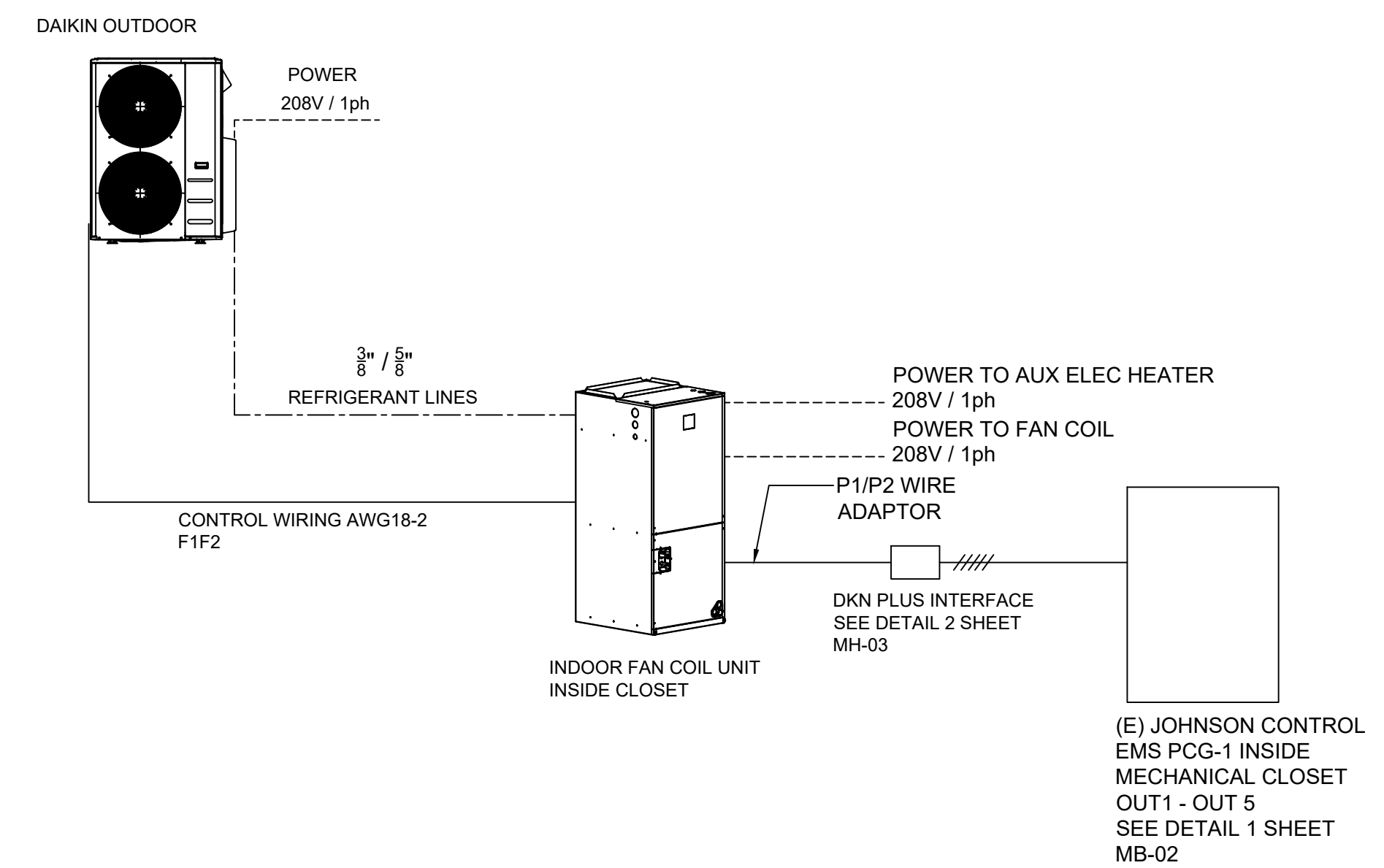
1



FAN COIL UNIT MOUNTING DETAIL IN CLOSET

SCALE: N.T.S

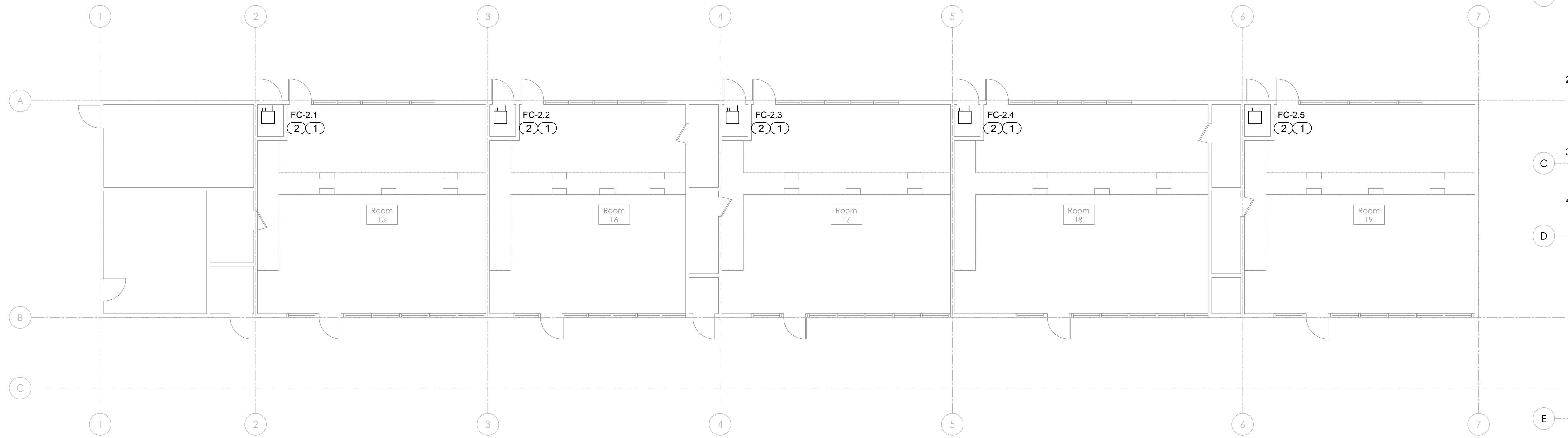
2



PIPING AND WIRING CONTROL DIAGRAM

SCALE: N.T.S

3

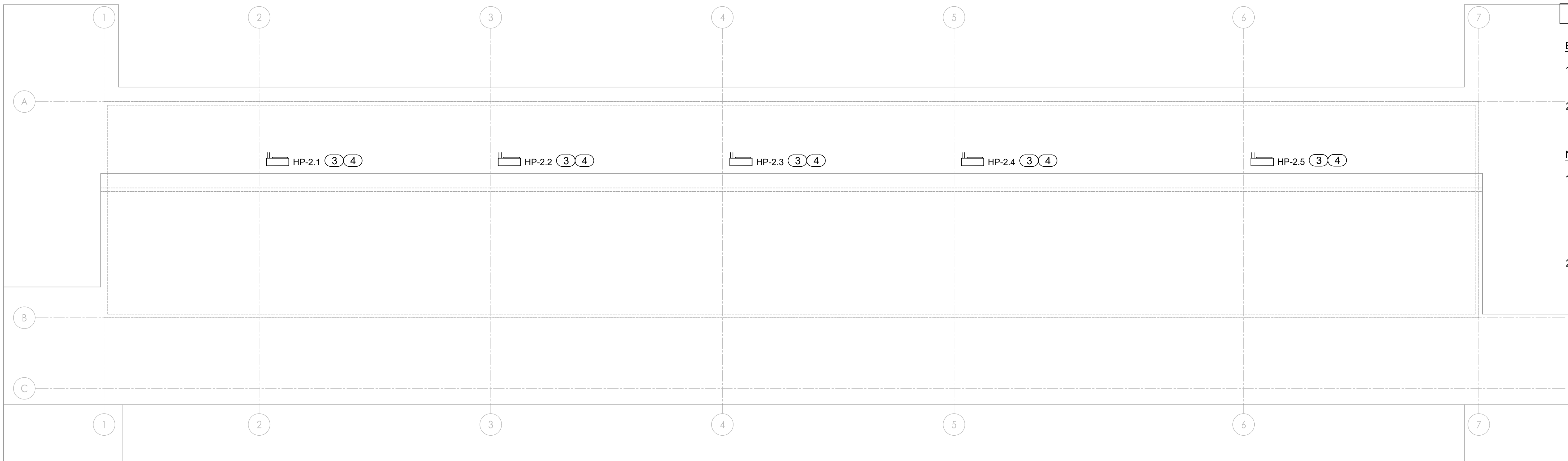


KEYNOTES

- 1 REMOVE (E) FURNACE, GAS LINE & CAP. REMOVE FLUE & (E) REFRIGERANT LINES THROUGH ROOF. INSTALL NEW FAN COIL ON (E) PLATFORM. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE. SEE DETAIL 4, 5 ON SHEET MB-03
- 2 RECONNECT JOHNSON DDC: CONTROLS SHALL BE COMMISSIONED FOR PROPER SEQUENCING AND PERFORMANCE
- 3 MOUNT HEAT PUMP UNIT ON (E) ROOF PLATFORM. SEE DETAILS ON SHEET MB-0.3
- 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION. SEE DETAILS ON SHEET MB-0.3

1 Floor Plan - Unit 2

1/8" = 1'-0"



COORDINATION NOTES

- EXISTING SYSTEMS
- 1 FURNACE: 120V/1, 3/4 HP OPER WT 150#
 - 2 HEAT PUMP: 208-230/1, MCA 34.5 OPER WT 278 #
- NEW SYSTEMS
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6 AUX 10 KW ELECTRIC HEATER @208V, 36.1 AMPS (SEPARATE POWER) OPER WT = 167#
 - 2 HEAT PUMP: 208-230/1 MCA = 30 OPER WT 225#

2 Roof Plan - Unit 2

1/8" = 1'-0"

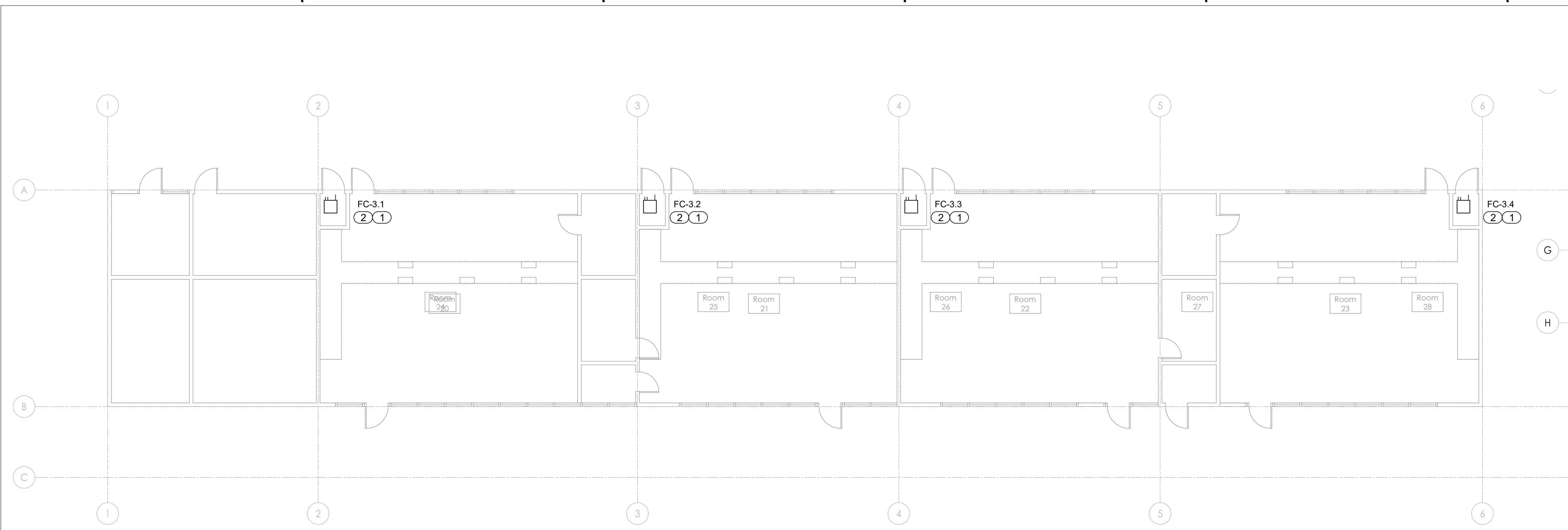
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 650 696 1200

314 Center Street #220
 Huntington, California
 95049
 707 431 1905

H M
MECHANICAL GROUP
 Mechanical, Electrical, Plumbing
 20000 E. 15th Avenue, Suite 210
 Aurora, CO 80012
 Tel: 303.699.2000

HVAC Modernization and Replacement
Mountain View Whisman School District
 Mountain View, California

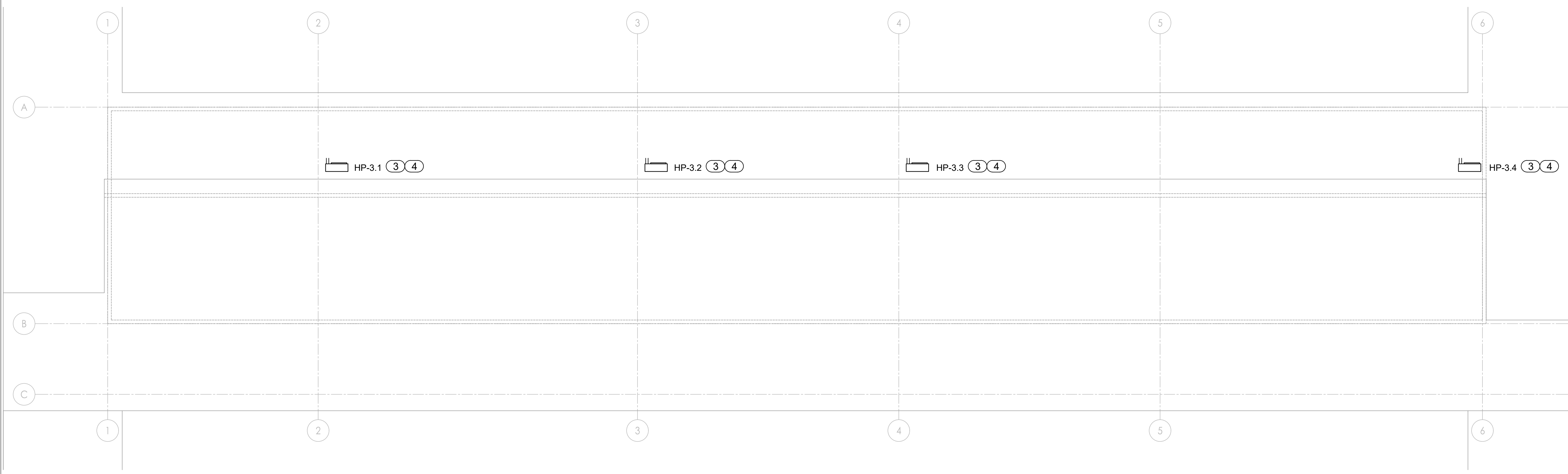


1 Floor Plan - Unit 3

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E) FURNACE, GAS LINE & CAP. REMOVE FLUE & (E) REFRIGERANT LINES THROUGH ROOF. INSTALL NEW FAN COIL ON (E) PLATFORM. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE. SEE DETAIL 4, 5 ON SHEET MB-03
- 2 RECONNECT JOHNSON DDC: CONTROLS SHALL BE COMMISSIONED FOR PROPER SEQUENCING AND PERFORMANCE
- 3 MOUNT HEAT PUMP UNIT ON (E) ROOF PLATFORM. SEE DETAILS ON SHEET MB-0.3
- 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION. SEE DETAILS ON SHEET MB-0.3



2 Roof Plan - Unit 3

1/8" = 1'-0"

COORDINATION NOTES

- EXISTING SYSTEMS**
- 1 FURNACE: 120V/1, 3/4 HP OPER WT 150#
 - 2 HEAT PUMP: 208-230/1, MCA 34.5 OPER WT 278 #
- NEW SYSTEMS**
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6 AUX 10 KW ELECTRIC HEATER @208V, 36.1 AMPS (SEPARATE POWER) OPER WT = 167#
 - 2 HEAT PUMP: 208-230/1 MCA = 30 OPER WT 225#

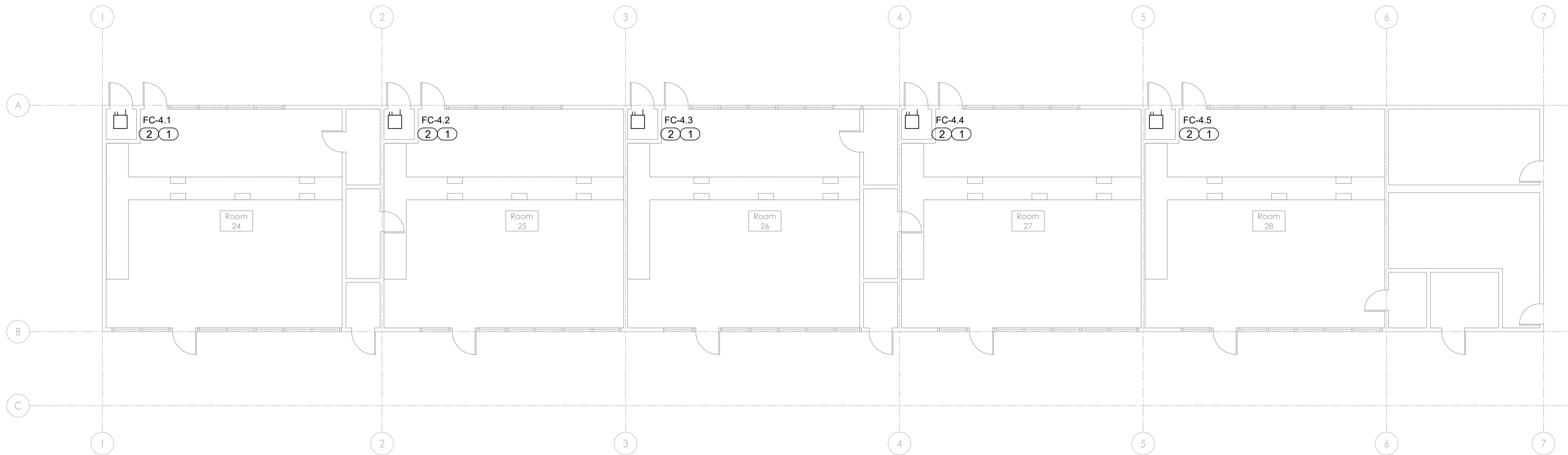
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 Architecture
 Infrastructure
 Environments

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 Milpitas, California
 94010
 650 696 1200

314 Center Street #220
 Redding, California
 96001
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Mountain View Whisman School District
 Mountain View, California

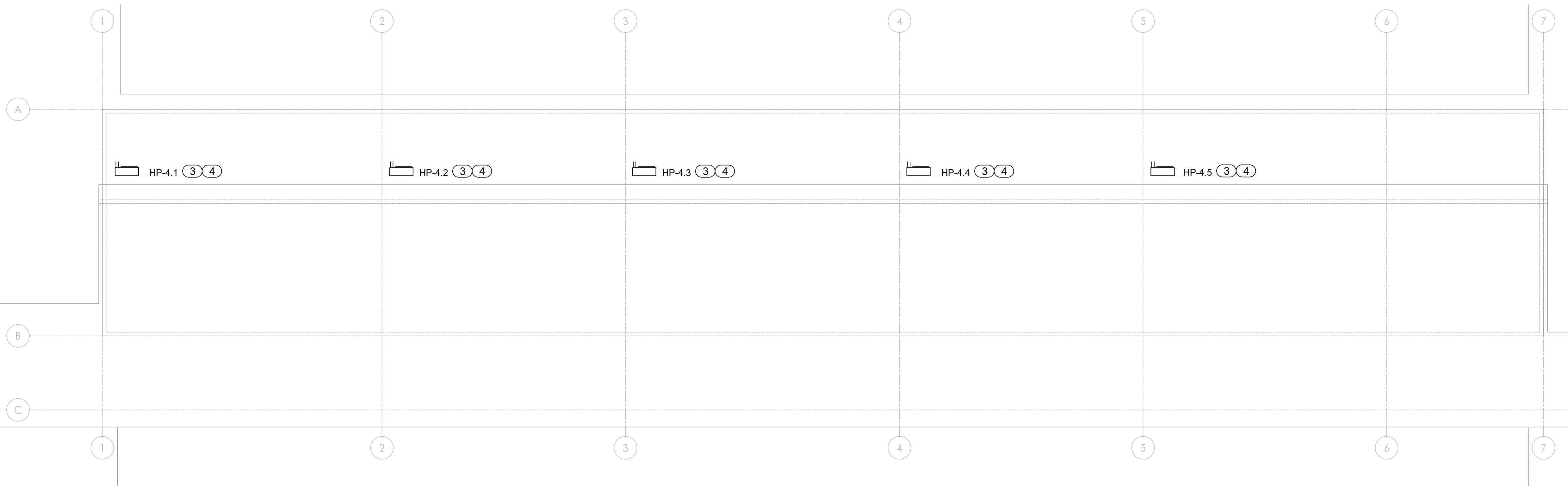


KEYNOTES

- 1 REMOVE (E)FURNACE, GAS LINE & CAP. REMOVE FLUE & (E) REFRIGERANT LINES THROUGH ROOF. INSTALL NEW FAN COIL ON (E)PLATFORM. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE. SEE DETAIL 4, 5 ON SHEET MB-03
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- 3 MOUNT HEAT PUMP UNIT ON (E) ROOF PLATFORM. SEE DETAILS ON SHEET MB-0.3
- 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION. SEE DETAILS ON SHEET MB-0.3

1 Floor Plan - Unit 4

1/8" = 1'-0"



COORDINATION NOTES

- EXISTING SYSTEMS**
- 1 FURNACE: 120V/1, 3/4 HP OPER WT 150#
 - 2 HEAT PUMP: 208-230/1, MCA 34.5 OPER WT 278 #
- NEW SYSTEMS**
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6 AUX 10 KW ELECTRIC HEATER @208V, 36.1 AMPS (SEPARATE POWER) OPER WT = 167#
 - 2 HEAT PUMP: 208-230/1 MCA = 30 OPER WT 225#

2 Roof Plan - Unit 4

1/8" = 1'-0"

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Mountain View Whisman School District
 Mountain View, California

1100 Juanito Avenue
 Irving, California 94016
 650 696 1200

314 Center Street #220
 Redding, California 96001
 707 431 1905

Graham Middle School
 Mechanical:
 Unit 4 Floor & Roof Plan

MG-2.3

2024

COORDINATION NOTES

EXISTING SYSTEMS

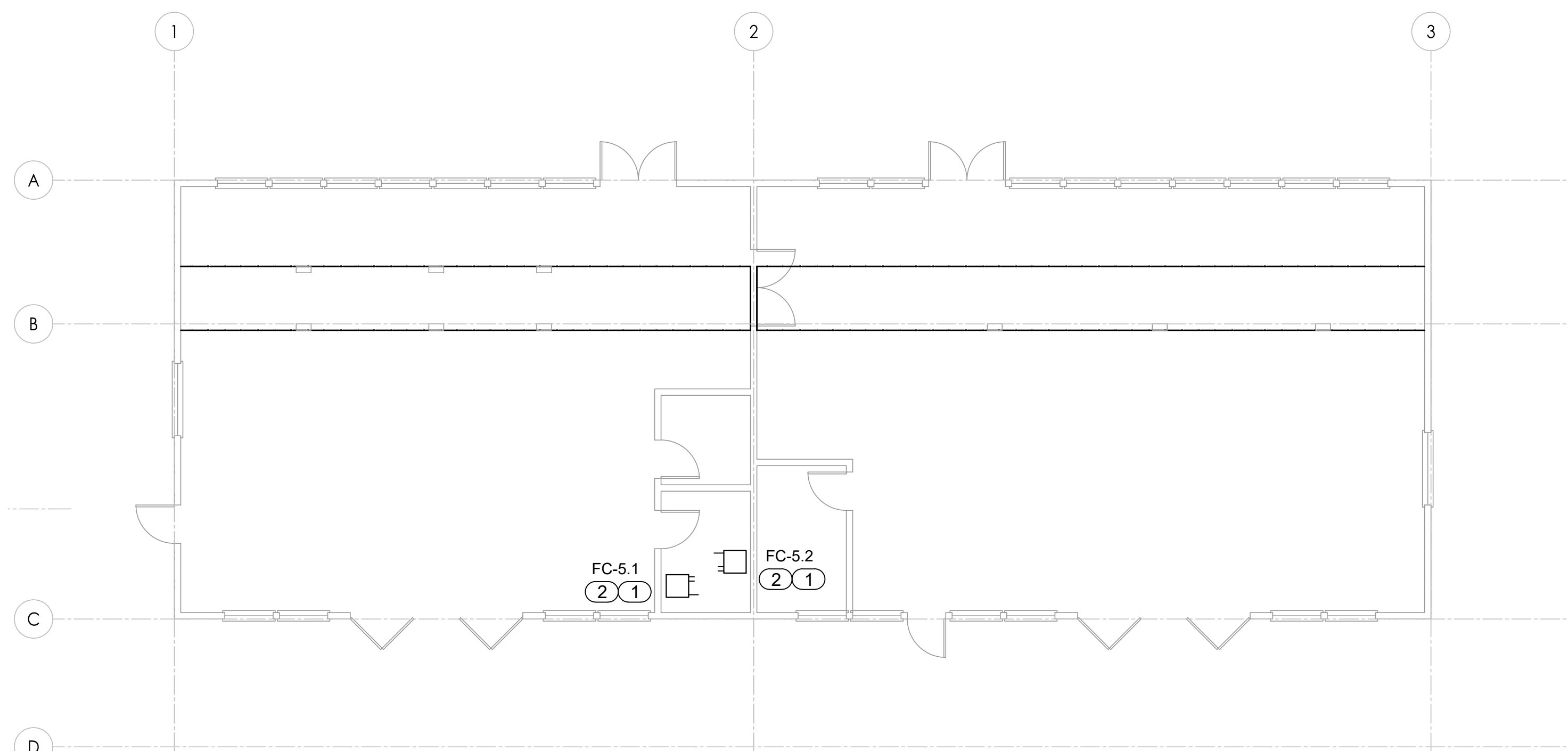
- 1 FURNACE: 120V/1, 3/4 HP
OPER WT 150#
- 2 HEAT PUMP: 208-230/1,
MCA 34.5
OPER WT 278 #

NEW SYSTEMS

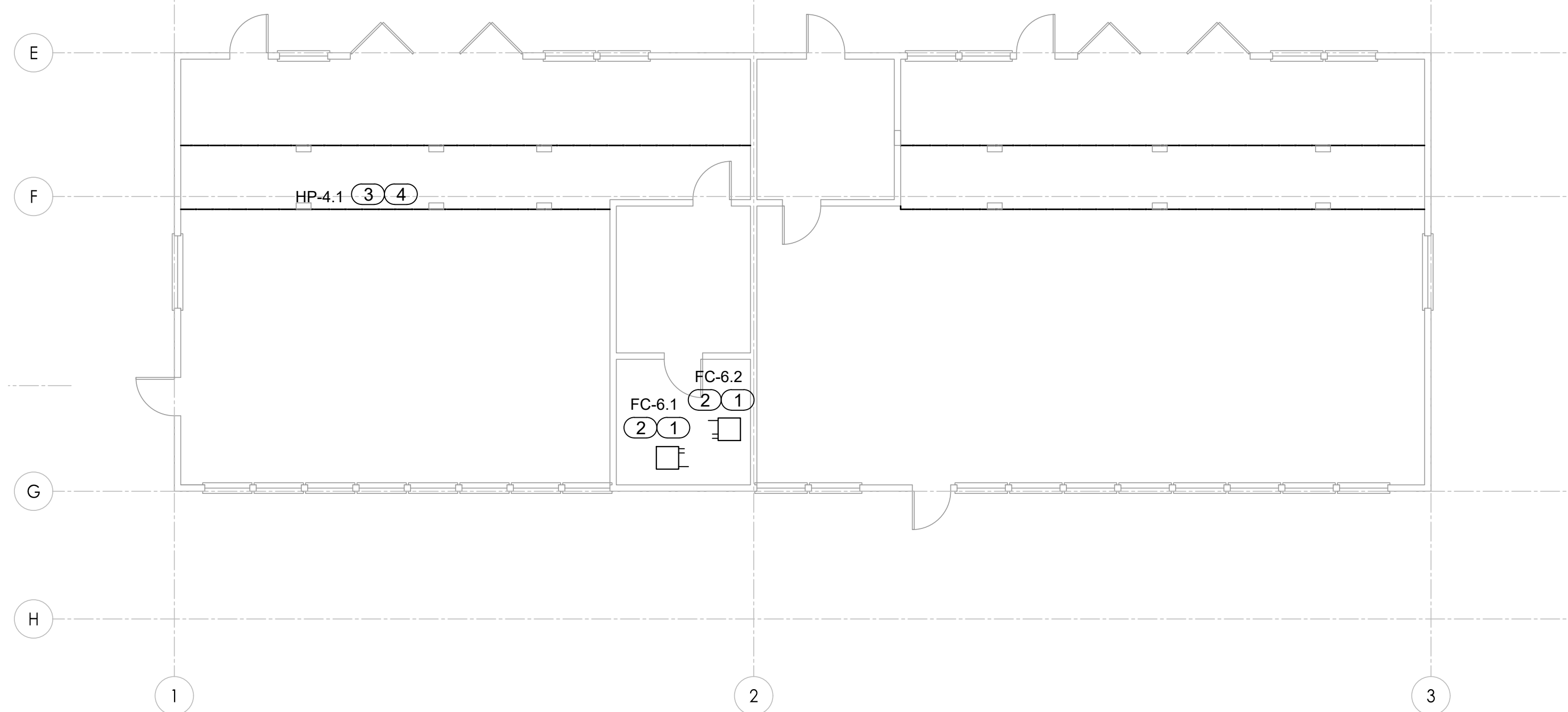
- 1 AIR-HANDLER: 208-230/1,
MCA = 8.6
AUX 10 KW ELECTRIC HEATER @208V, 36.1
AMPS (SEPARATE POWER)
OPER WT = 167#
- 2 HEAT PUMP: 208-230/1
MCA = 30
OPER WT 225#

KEYNOTES

- 1 REMOVE (E)FURNACE, GAS LINE & CAP. REMOVE FLUE & (E) REFRIGERANT LINES THROUGH ROOF. INSTALL NEW FAN COIL ON (E)PLATFORM. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE. SEE DETAIL 4, 5 ON SHEET MB-03
- 2 RECONNECT JOHNSON DDC. CONTROLS SHALL BE COMMISSIONED FOR PROPER SEQUENCING AND PERFORMANCE
- 3 MOUNT HEAT PUMP UNIT ON (E) ROOF PLATFORM. SEE DETAILS ON SHEET MB-0.3
- 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION. SEE DETAILS ON SHEET MB-0.3



1 Floor Plan - Unit 5
1/8" = 1'-0"



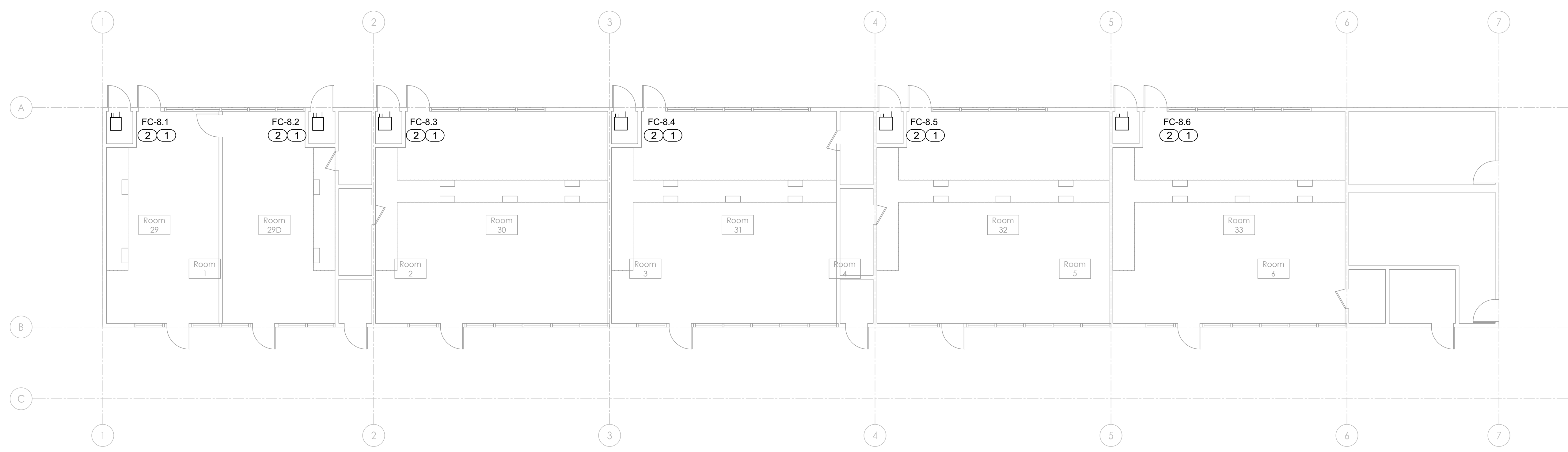
2 Floor Plan - Unit 6
1/8" = 1'-0"



3 Roof Plan - Unit 5
1/8" = 1'-0"

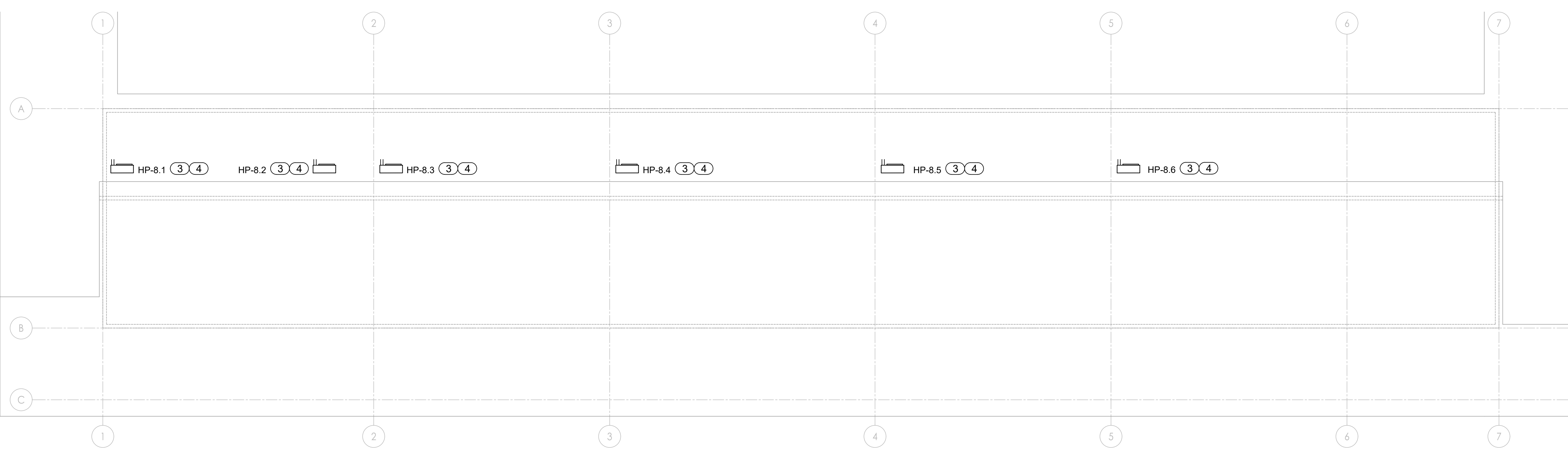


4 Roof Plan - Unit 6
1/8" = 1'-0"



1 Floor Plan - Unit 8

1/8" = 1'-0"



2 Roof Plan - Unit 8

1/8" = 1'-0"

KEYNOTES

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- 3 MOUNT HEAT PUMP UNIT ON (E) ROOF PLATFORM. SEE DETAILS ON SHEET MB-0.3
- 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION. SEE DETAILS ON SHEET MB-0.3

COORDINATION NOTES

- EXISTING SYSTEMS**
- 1 FURNACE: 120V/1, 3/4 HP OPER WT 150#
 - 2 HEAT PUMP: 208-230/1, MCA 34.5 OPER WT 278 #
- NEW SYSTEMS**
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6 AUX 10 KW ELECTRIC HEATER @208V, 36.1 AMPS (SEPARATE POWER) OPER WT = 167#
 - 2 HEAT PUMP: 208-230/1 MCA = 30 OPER WT 225#

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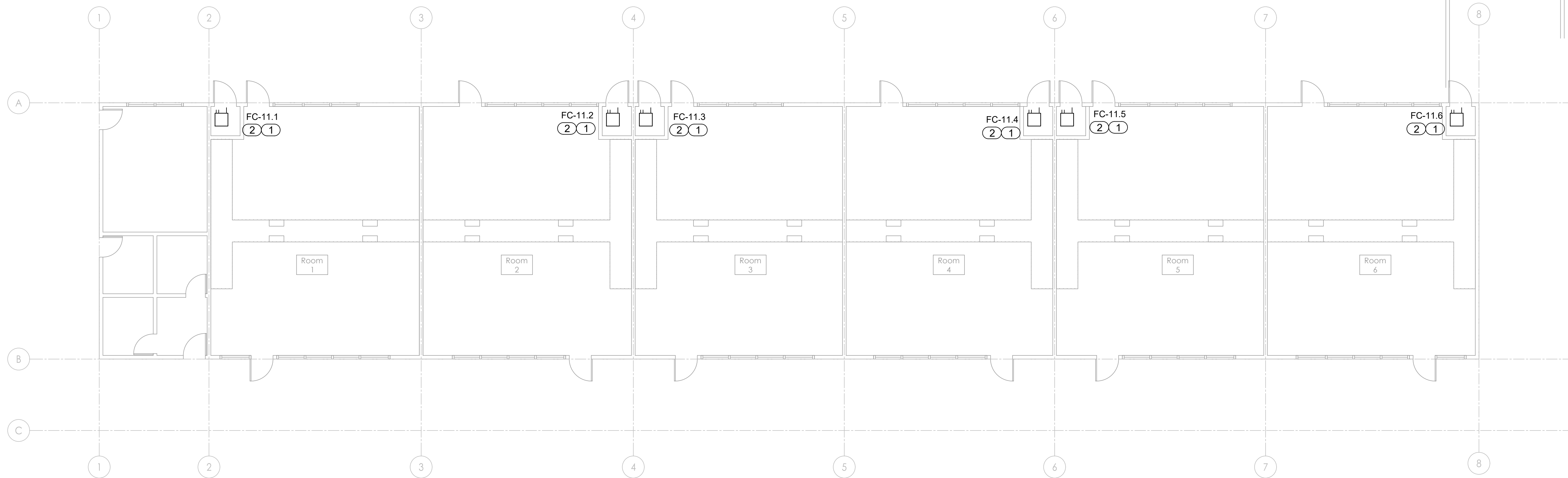
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HVAC Modernization and Replacement
Mountain View Whisman School District
 Mountain View, California

Graham Middle School
 Mechanical:
 Unit 8 Floor & Roof Plan

MG-2.5

2024

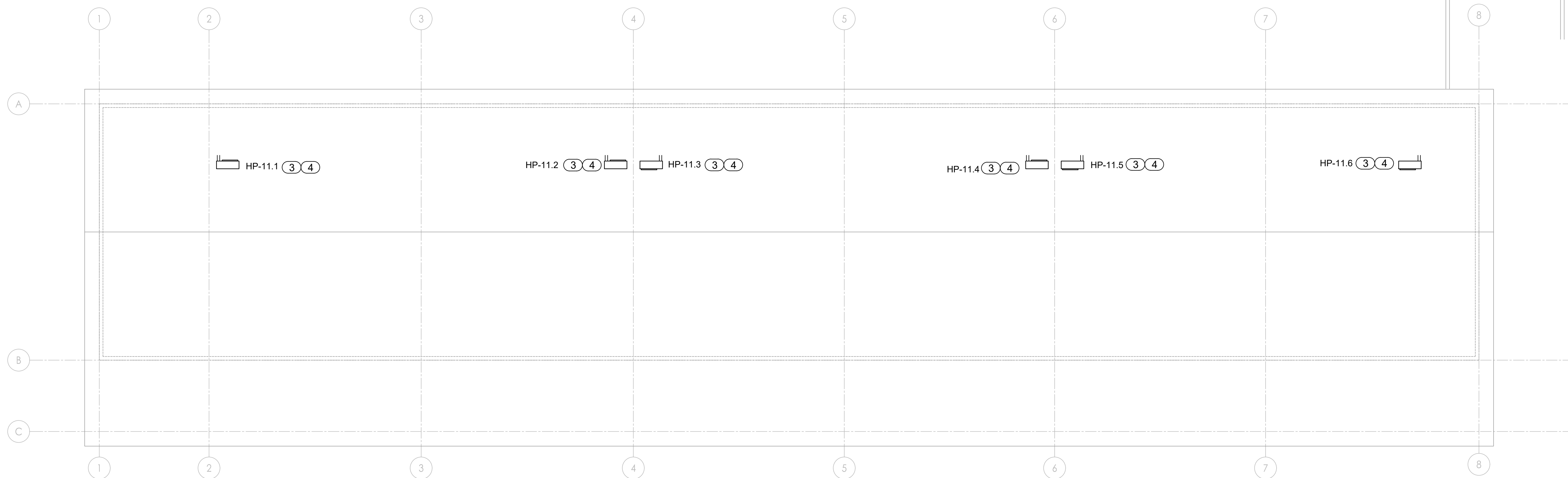


KEYNOTES

- 1 REMOVE (E)FURNACE, GAS LINE & CAP. REMOVE FLUE & (E) REFRIGERANT LINES THROUGH ROOF. INSTALL NEW FAN COIL ON (E)PLATFORM. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE. SEE DETAIL 4, 5 ON SHEET MB-03
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- 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION. SEE DETAILS ON SHEET MB-0.3

1 Floor Plan - Unit 11

1/8" = 1'-0"



COORDINATION NOTES

- EXISTING SYSTEMS**
- 1 FURNACE: 120V/1, 3/4 HP OPER WT 150#
 - 2 HEAT PUMP: 208-230/1, MCA 34.5 OPER WT 278 #
- NEW SYSTEMS**
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6 AUX 10 KW ELECTRIC HEATER @208V, 36.1 AMPS (SEPARATE POWER) OPER WT = 167#
 - 2 HEAT PUMP: 208-230/1 MCA = 30 OPER WT 225#

2 Roof Plan - Unit 11

1/8" = 1'-0"

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10000 Wilshire Blvd, Suite 210
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HVAC Modernization and Replacement
**Mountain View Whisman
School District**
Mountain View, California

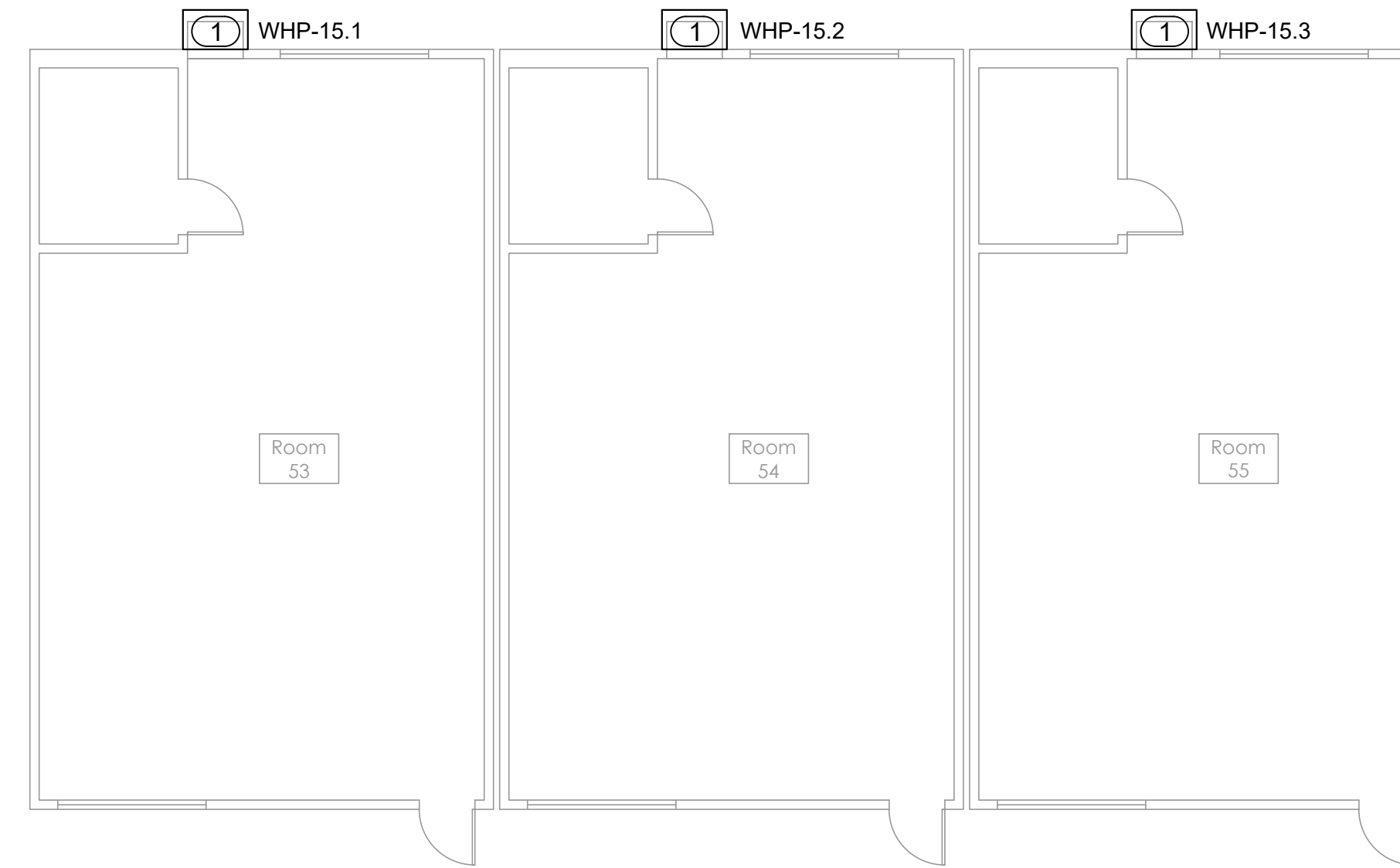
Graham Middle School
Mechanical:
Unit 11 Floor & Roof Plan

MG-2.6

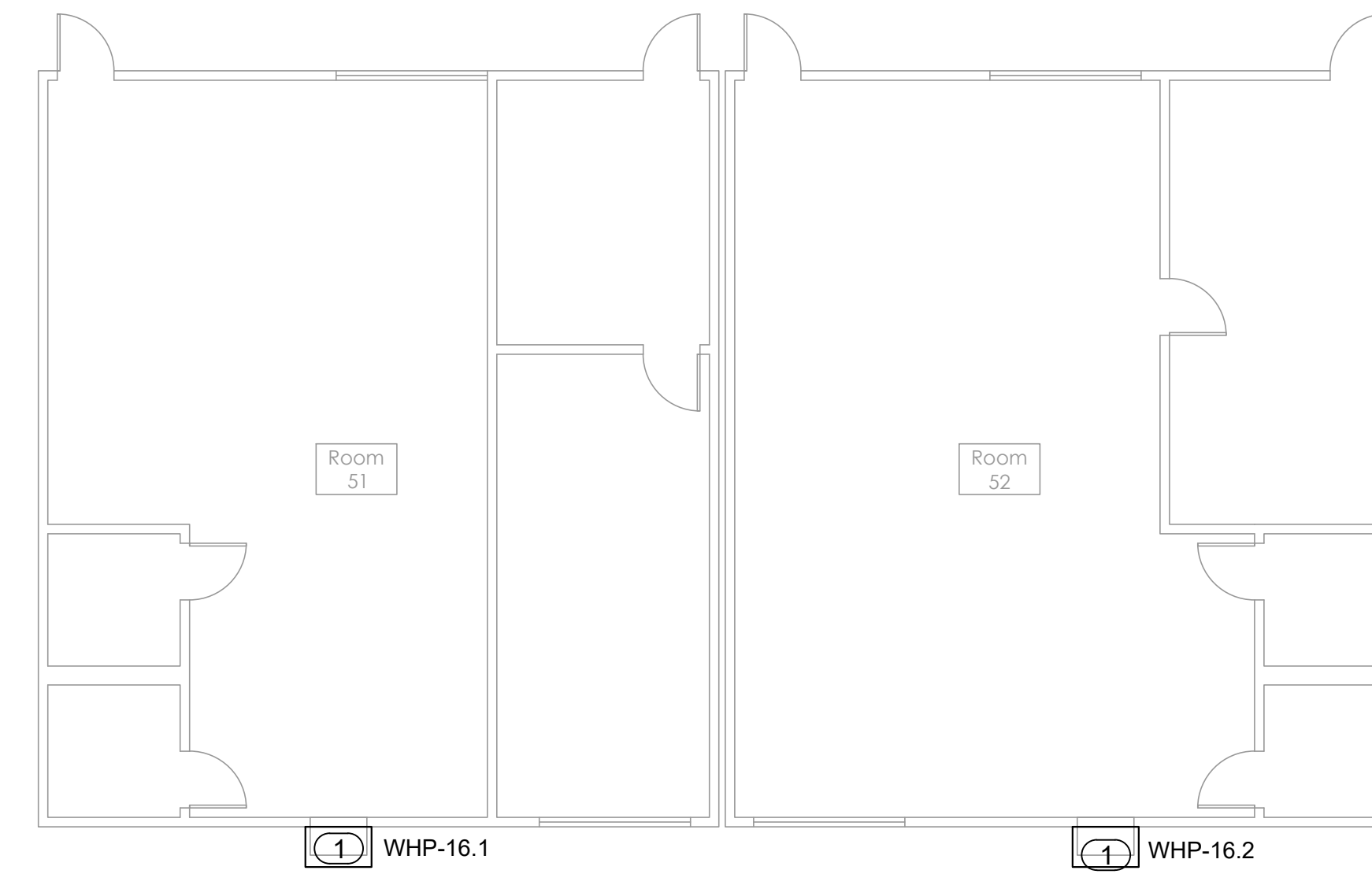
2024

KEYNOTES

- 1 REMOVE (E)WALL HEAT PUMP AND REPLACE WITH SAME SIZE AND CAPACITY.



1 Floor Plan - Unit 15 1/8" = 1'-0"



2 Floor Plan - Unit 16 1/8" = 1'-0"



HVAC Modernization and Replacement
**Mountain View Whisman
School District**
Mountain View, California

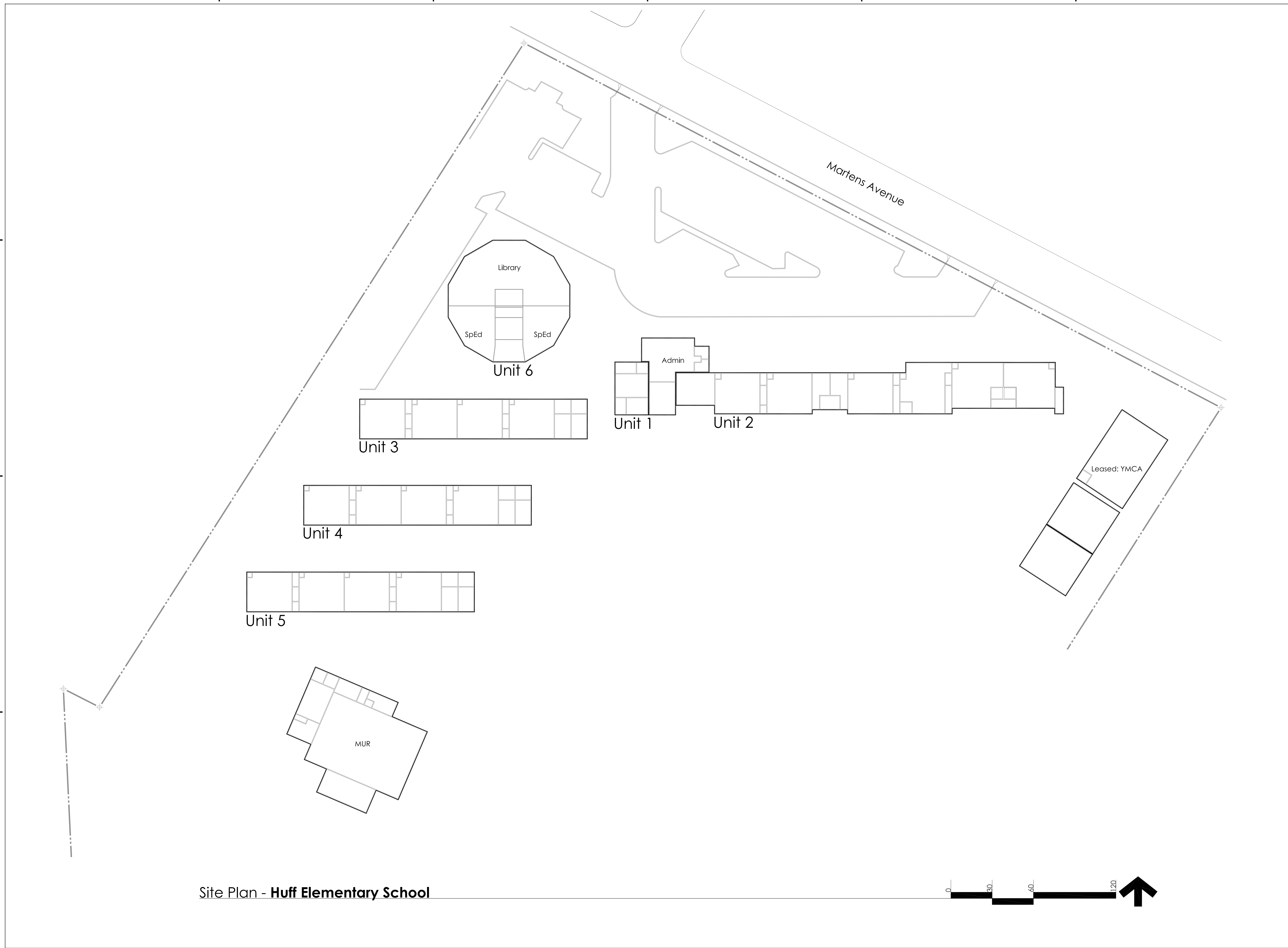


1100 Juanita Avenue
Fremont, California
94516
650.696.1200
314 Center Street #220
Hayward, California
94546
707.431.1905

Graham Middle School
Mechanical:
Unit 15 & 16 Floor Plan

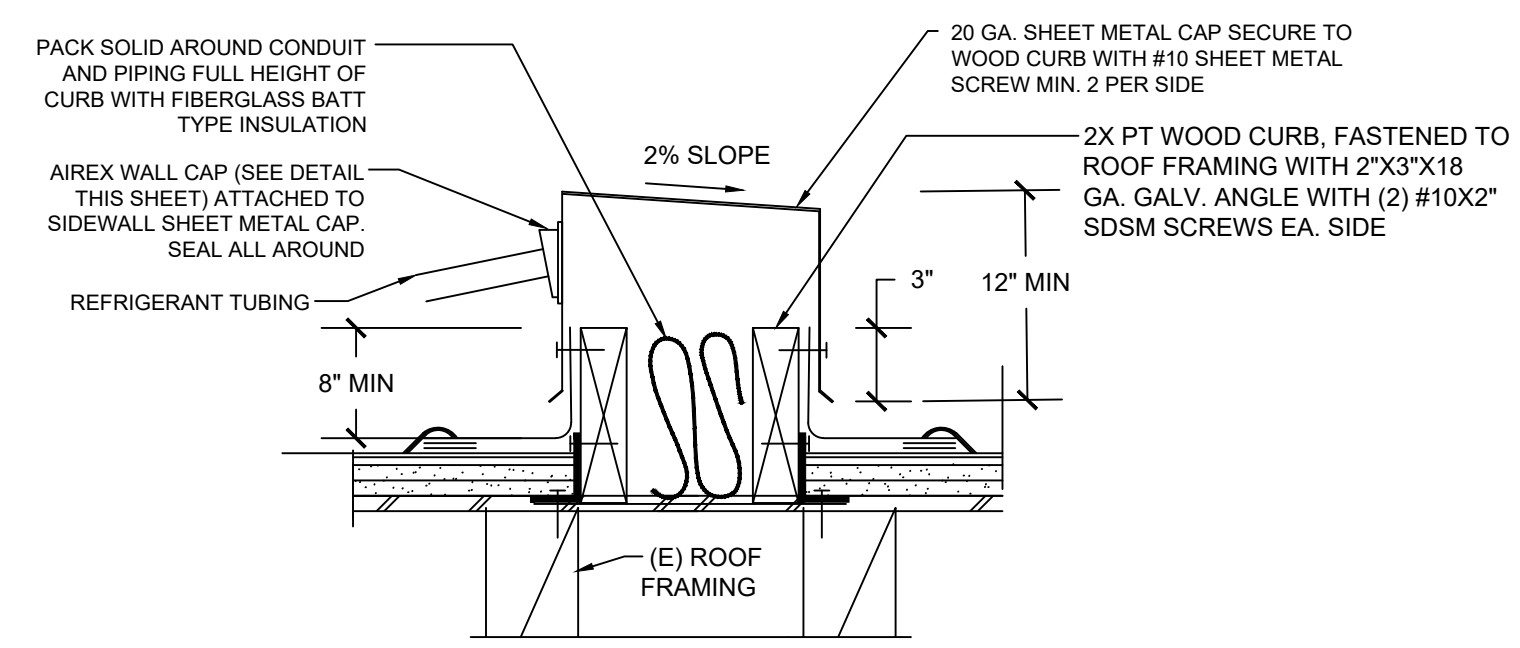
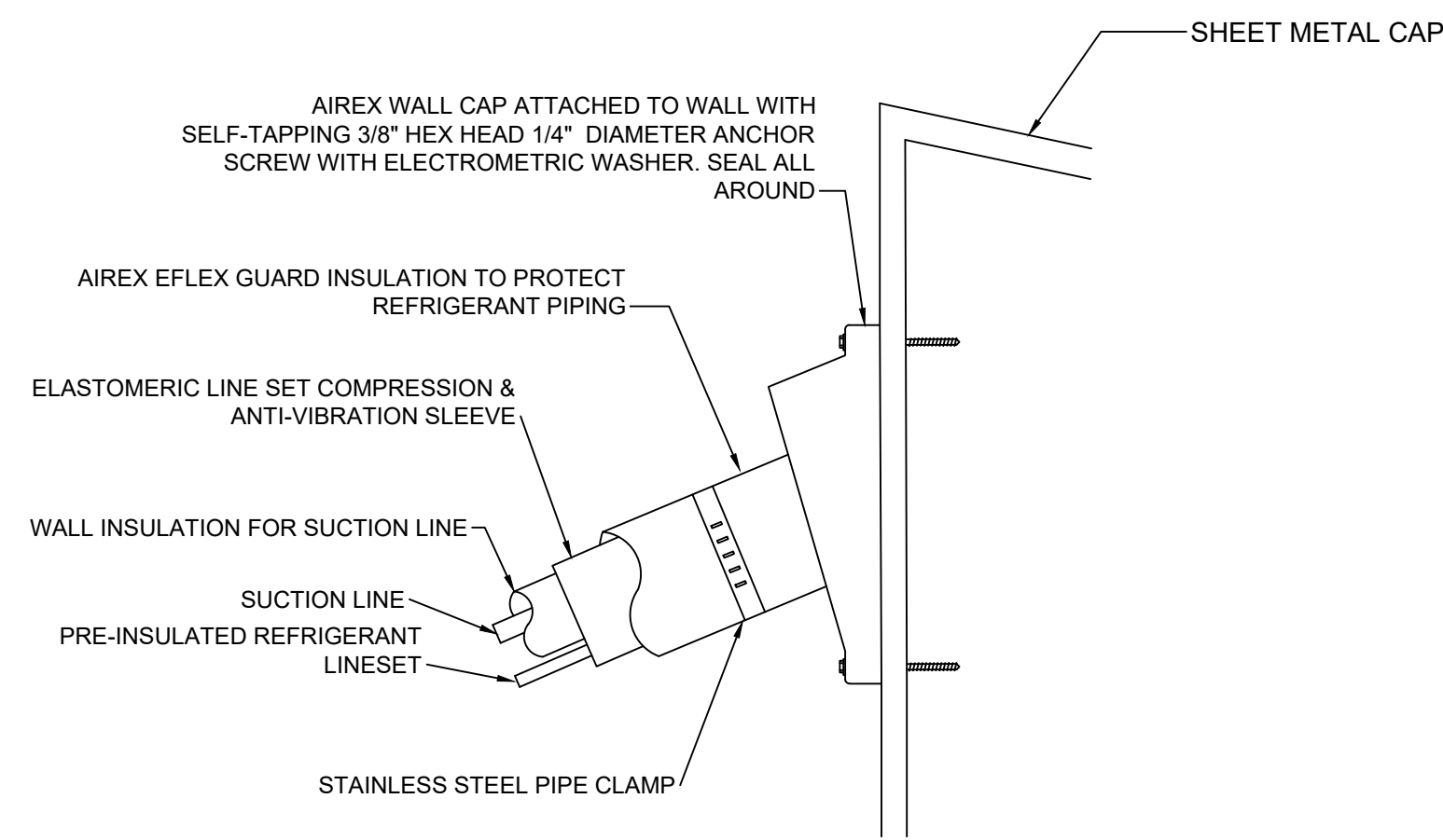
MG-2.7

2024



Site Plan - Huff Elementary School

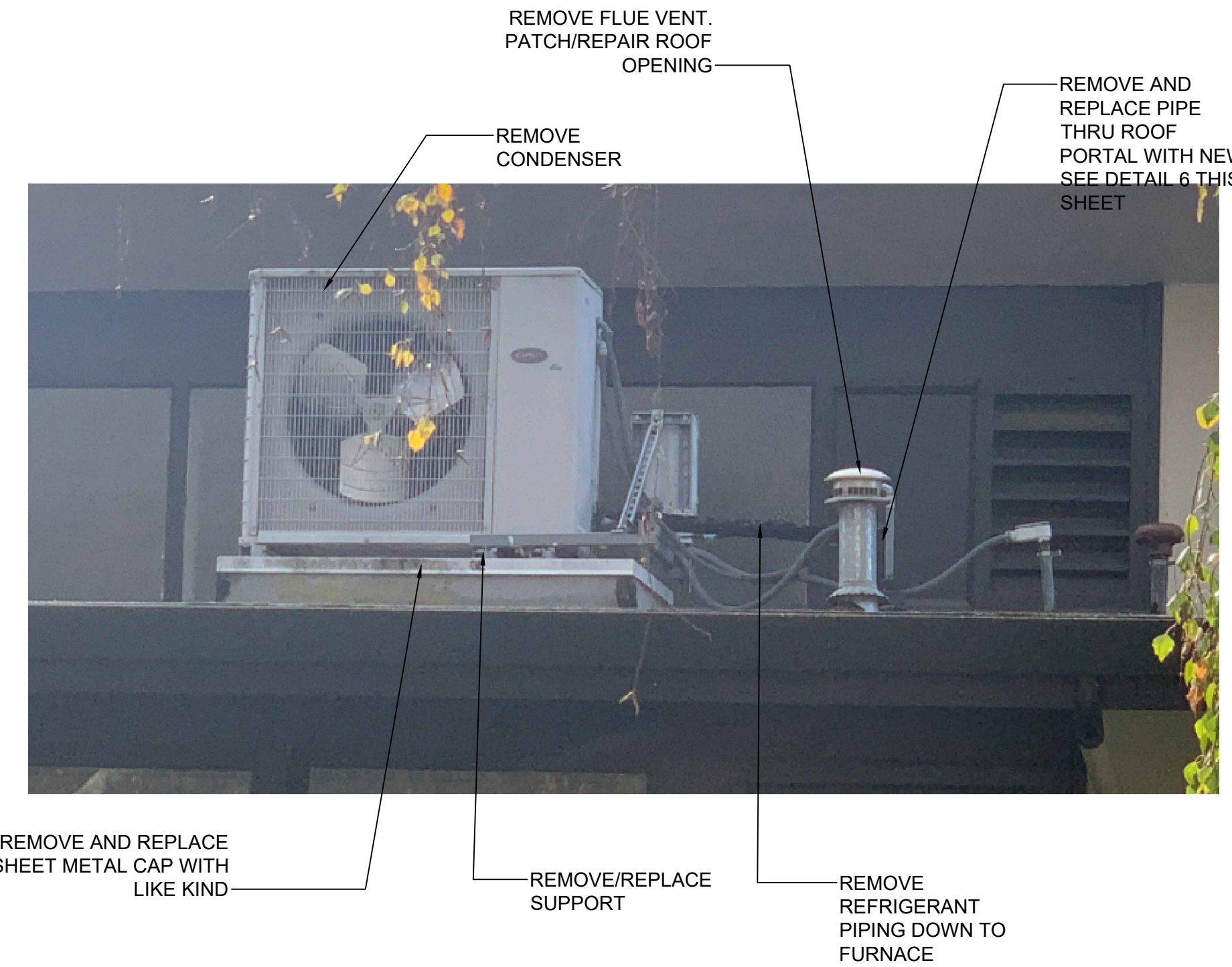




PIPE PORTAL THRU ROOF DETAIL

SCALE: N.T.S.

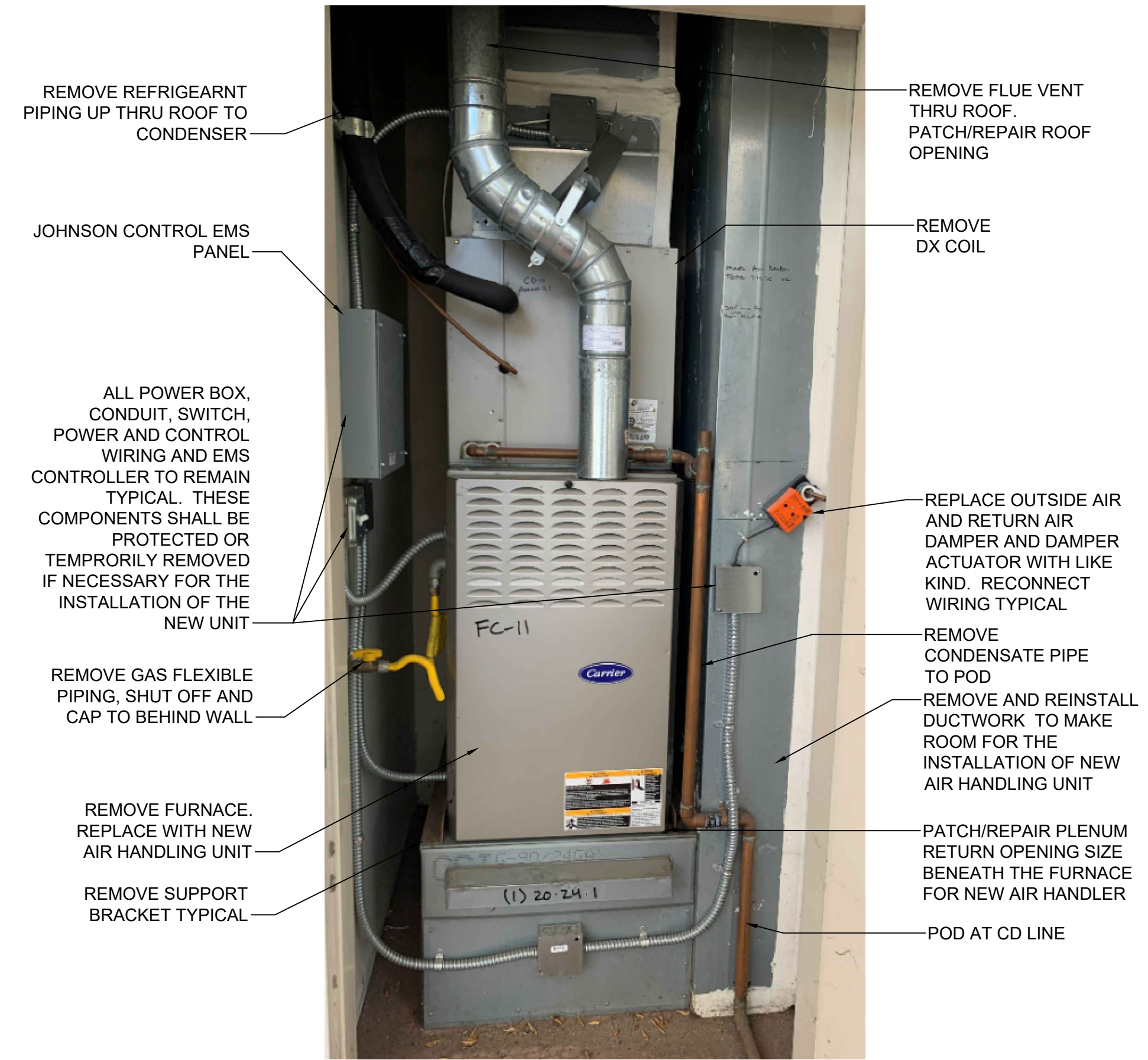
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MECHANICAL DEMO ROOF PLAN

SCALE: N.T.S.

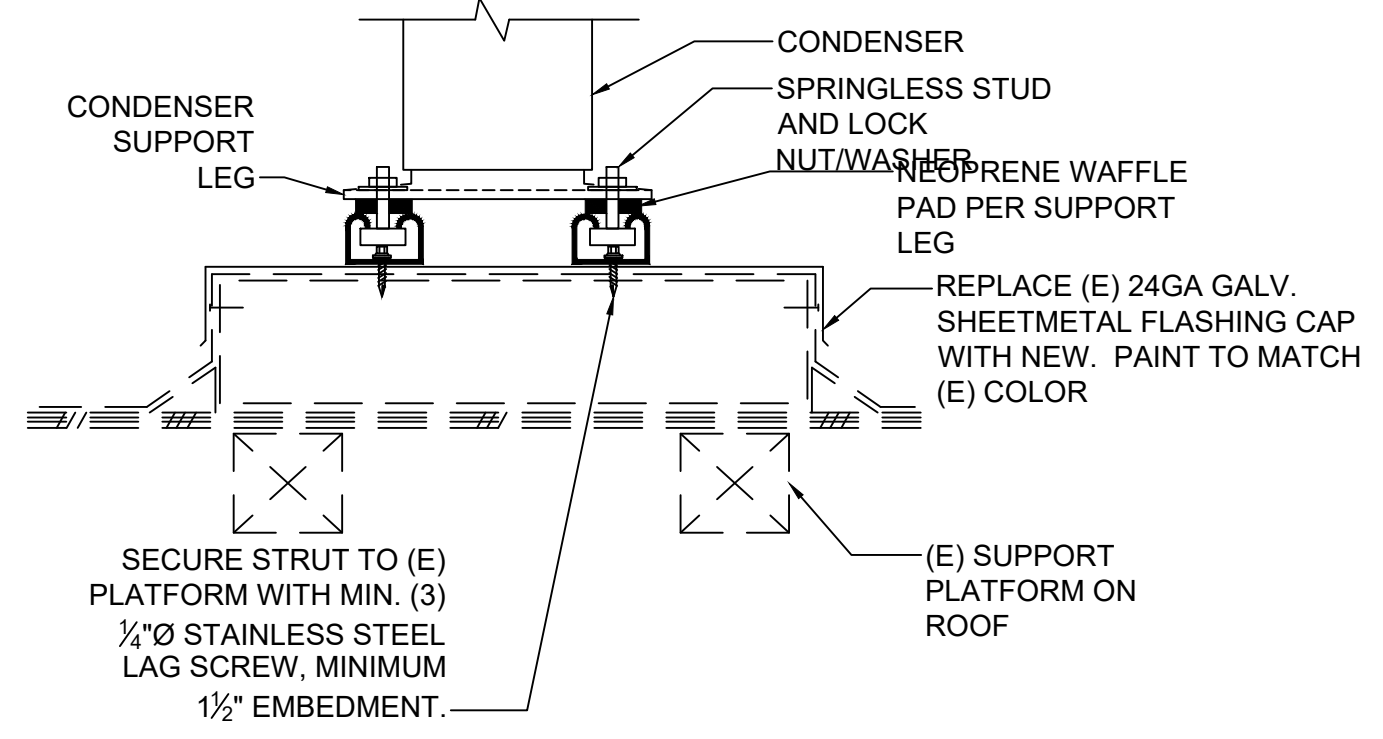
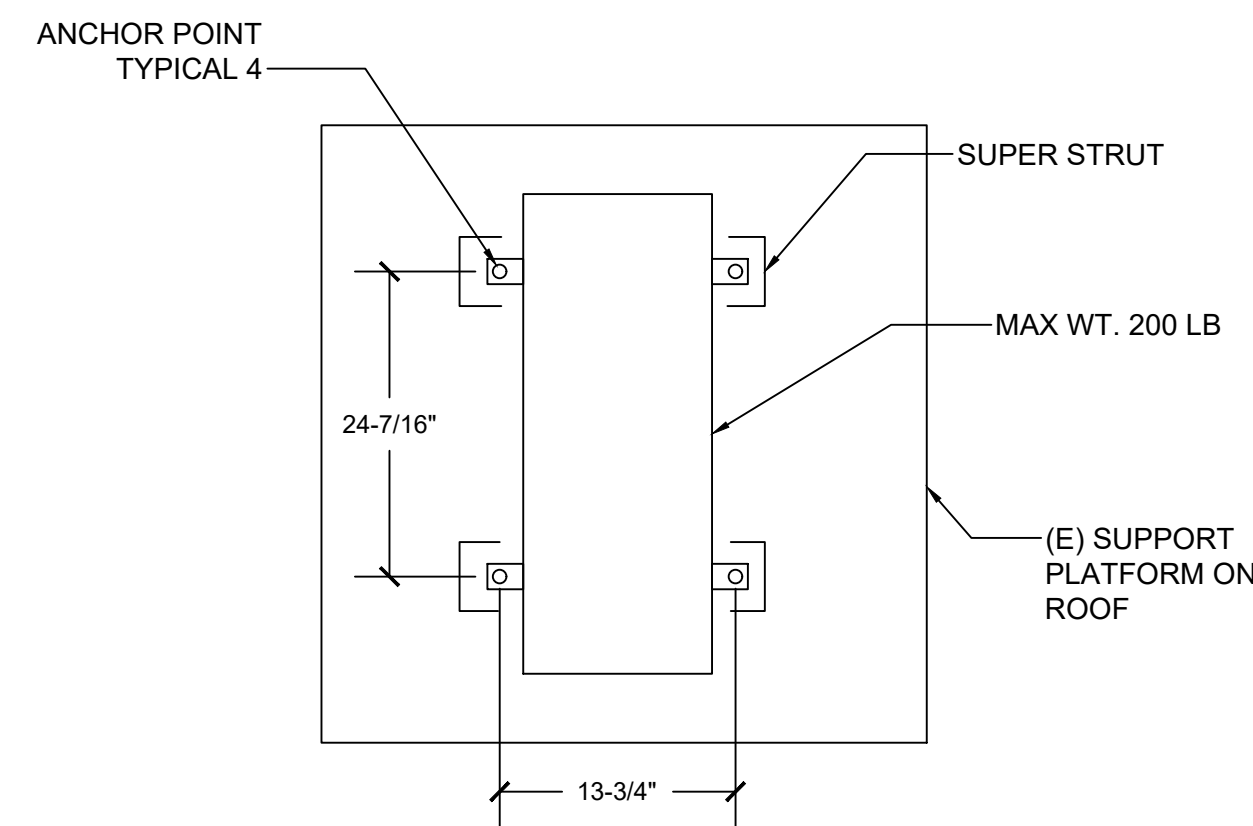
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FURNACE CLOSET DEMO PLAN

SCALE: N.T.S.

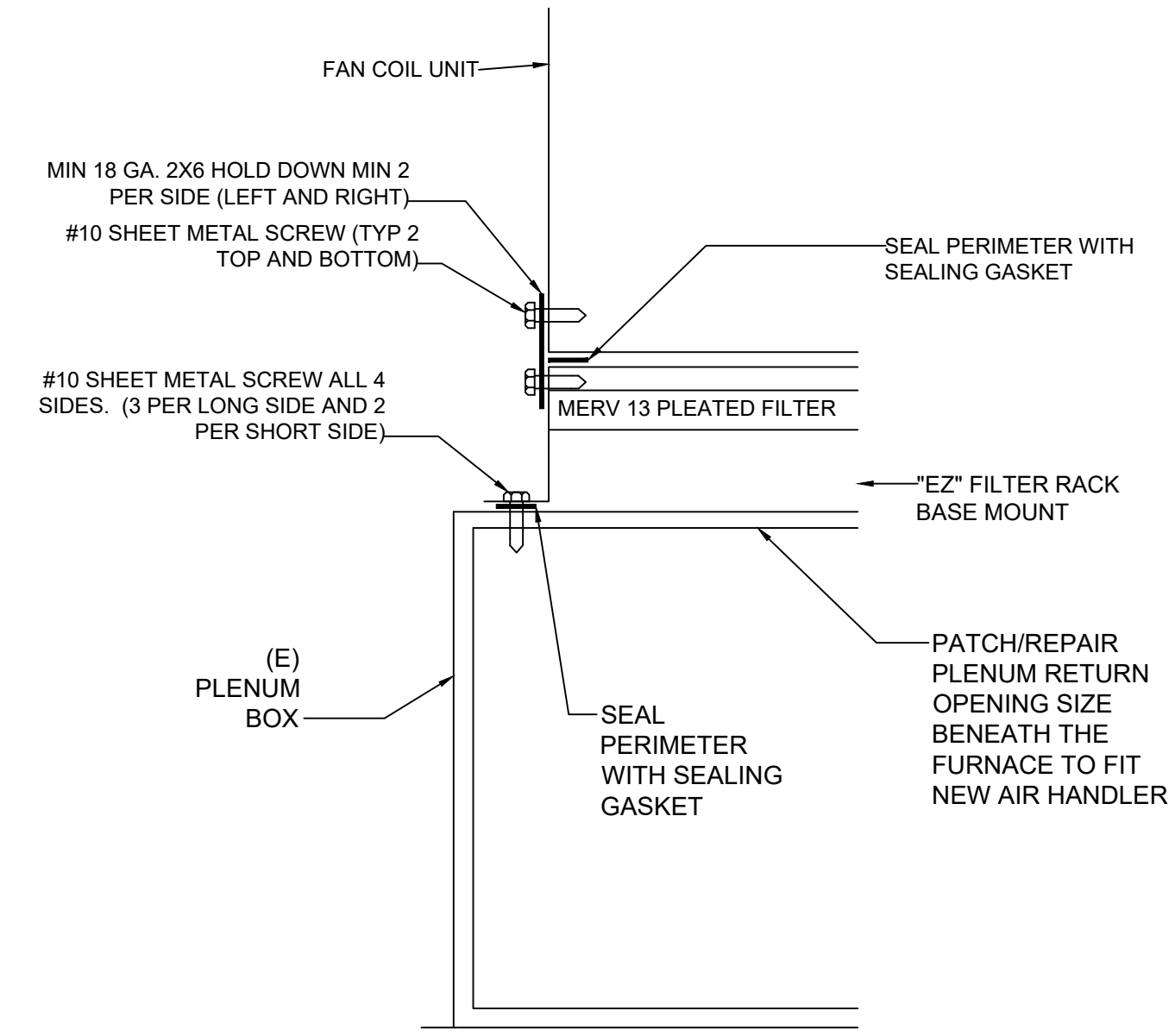
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ROOF MOUNT CONDENSER SUPPORT DETAIL

SCALE: N.T.S.

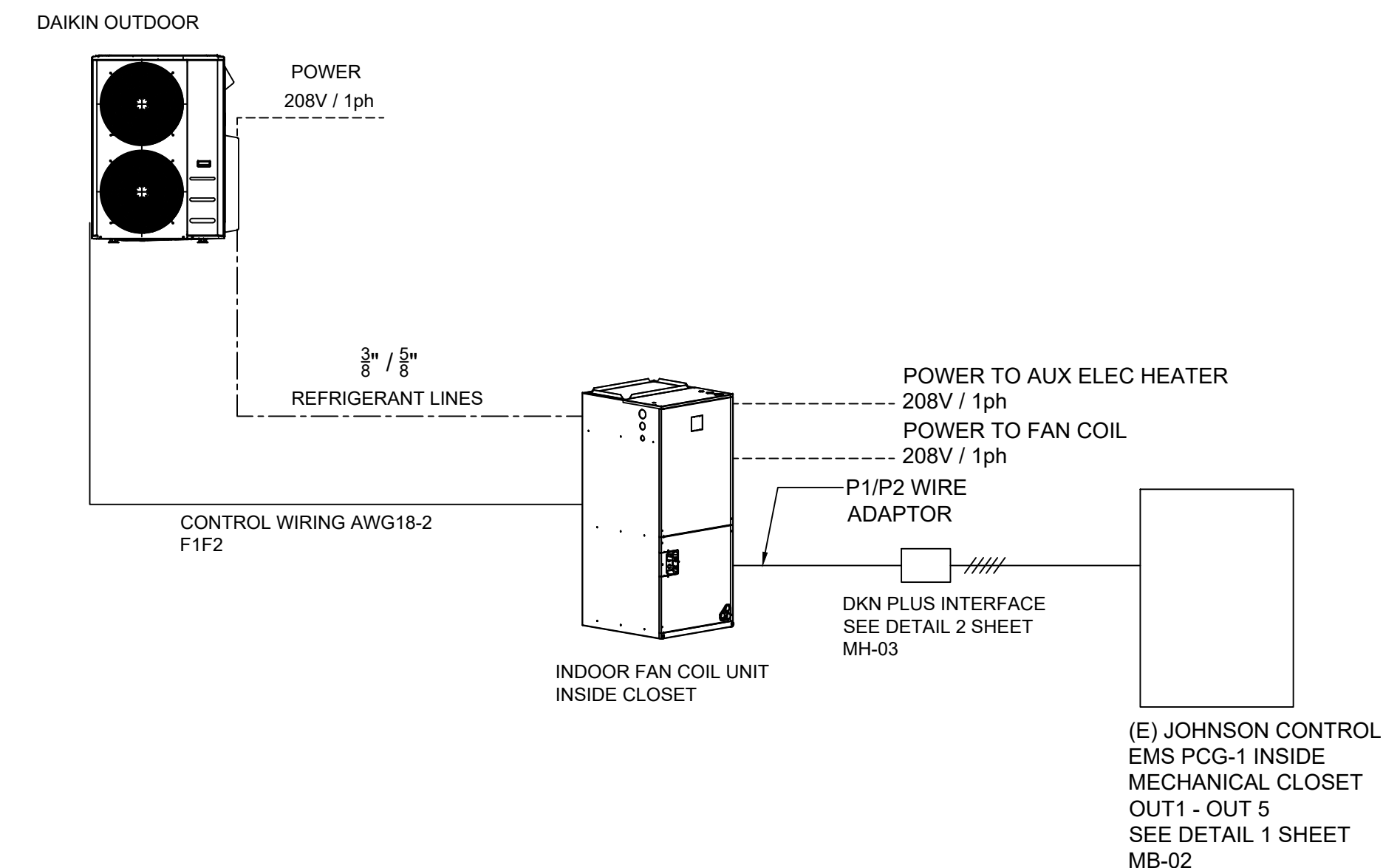
1



FAN COIL UNIT MOUNTING DETAIL IN CLOSET

SCALE: N.T.S.

2



PIPING AND WIRING CONTROL DIAGRAM

SCALE: N.T.S.

3

HVAC Modernization and Replacement
Mountain View Whisman School District
 Mountain View, California



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1100 Juanita Avenue
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 95128
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314 Center Street #220
 San Diego, California
 92109
 619.431.1905

Huff Elementary School
 Mechanical:
 Details

MH-03

2024

KEYNOTES

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DTA
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 Tel: 510-569-2000

HVAC Modernization and Replacement
Mountain View Whisman School District
 Mountain View, California

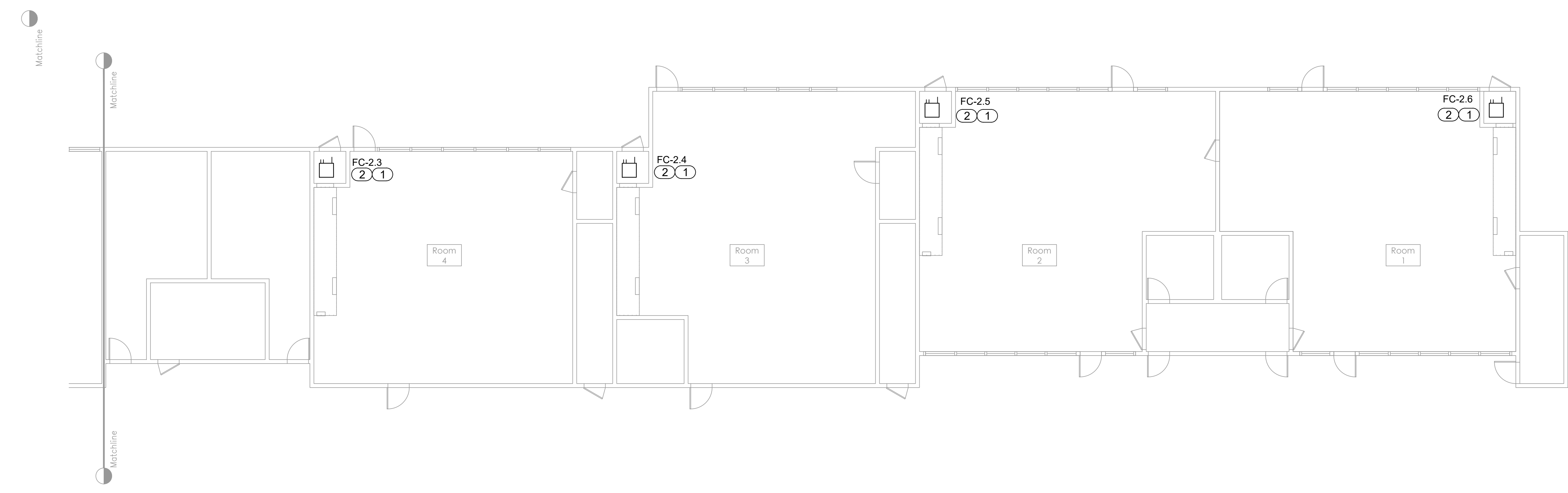
COORDINATION NOTES

- EXISTING SYSTEMS
- 1 FURNACE: 120V/1, 3/4 HP
OPER WT 150#
 - 2 HEAT PUMP: 208-230/1,
MCA 34.5
OPER WT 278 #
- NEW SYSTEMS
- 1 AIR-HANDLER: 208-230/1,
MCA = 8.6
AUX 10 KW ELECTRIC HEATER
@208V, 36.1 AMPS (SEPARATE
POWER)
OPER WT = 167#
 - 2 HEAT PUMP: 208-230/1
MCA = 30
OPER WT 225#

Huff Elementary School
 Mechanical:
 Unit 2/Admin Floor Plan

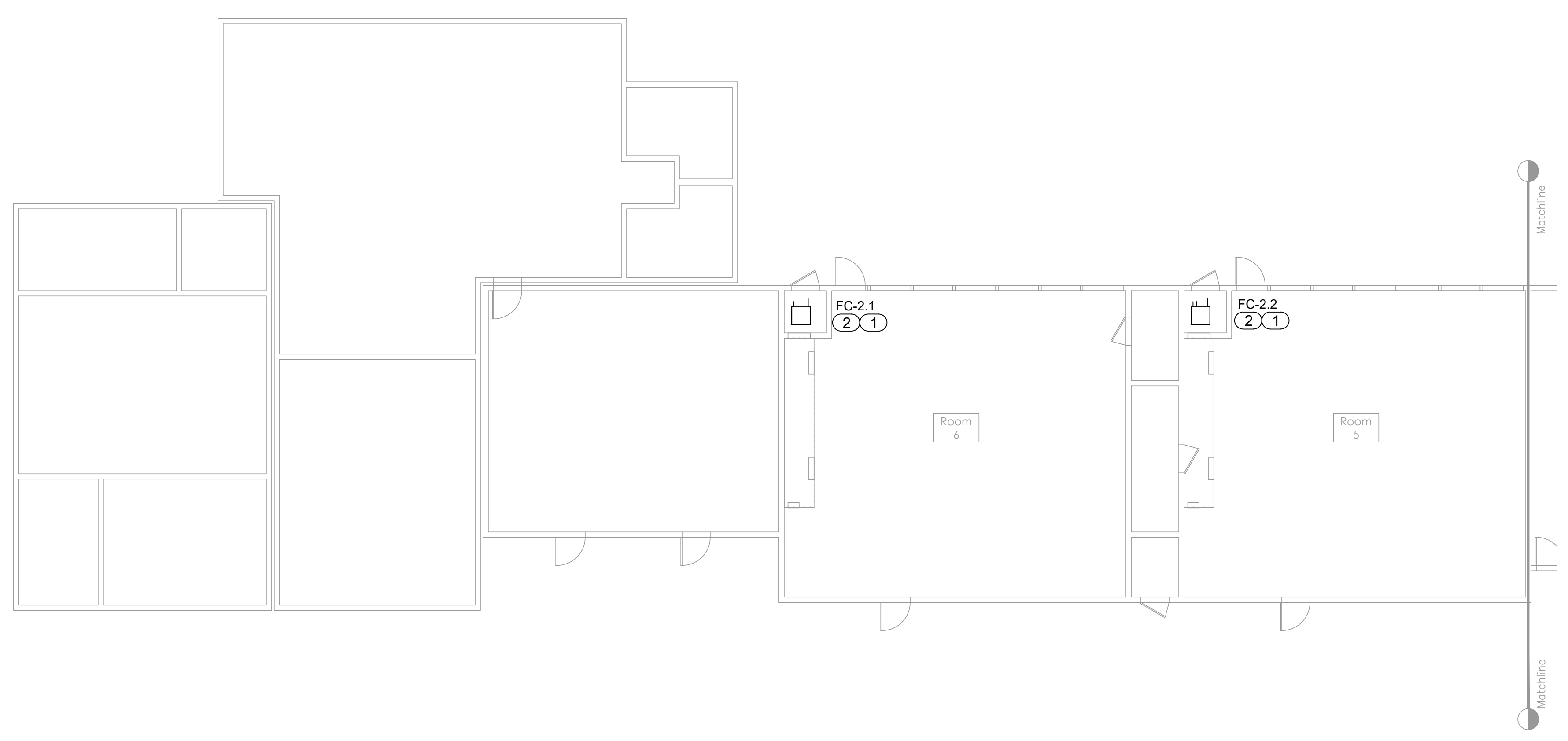
MH-2.1

2024



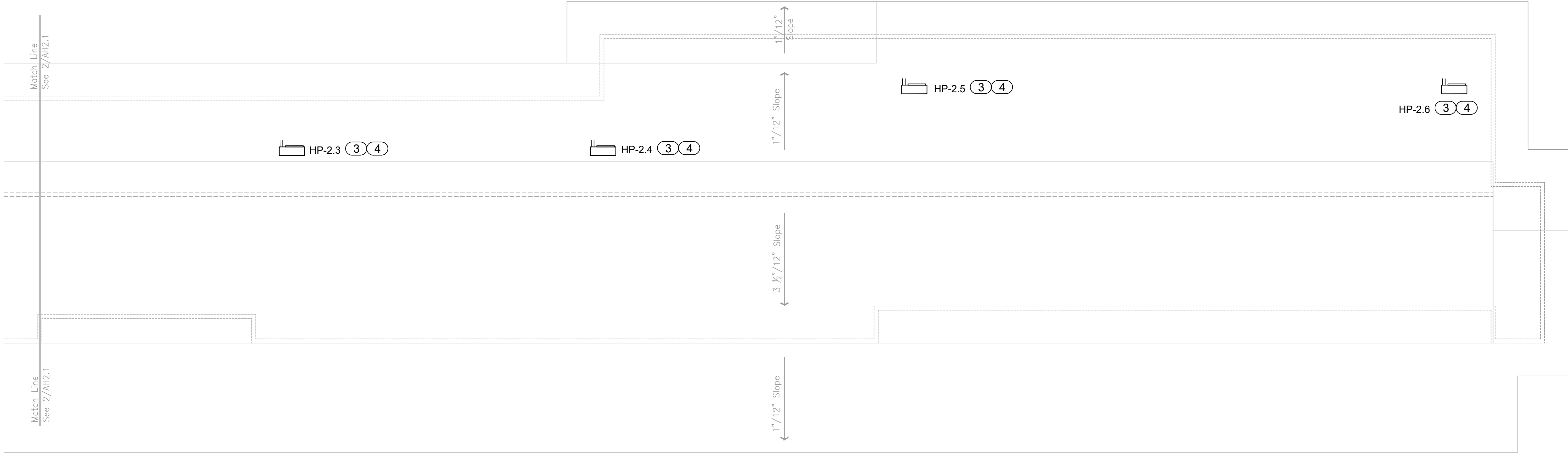
1 Floor Plan - Unit 2 (East)

1/8" = 1'-0"



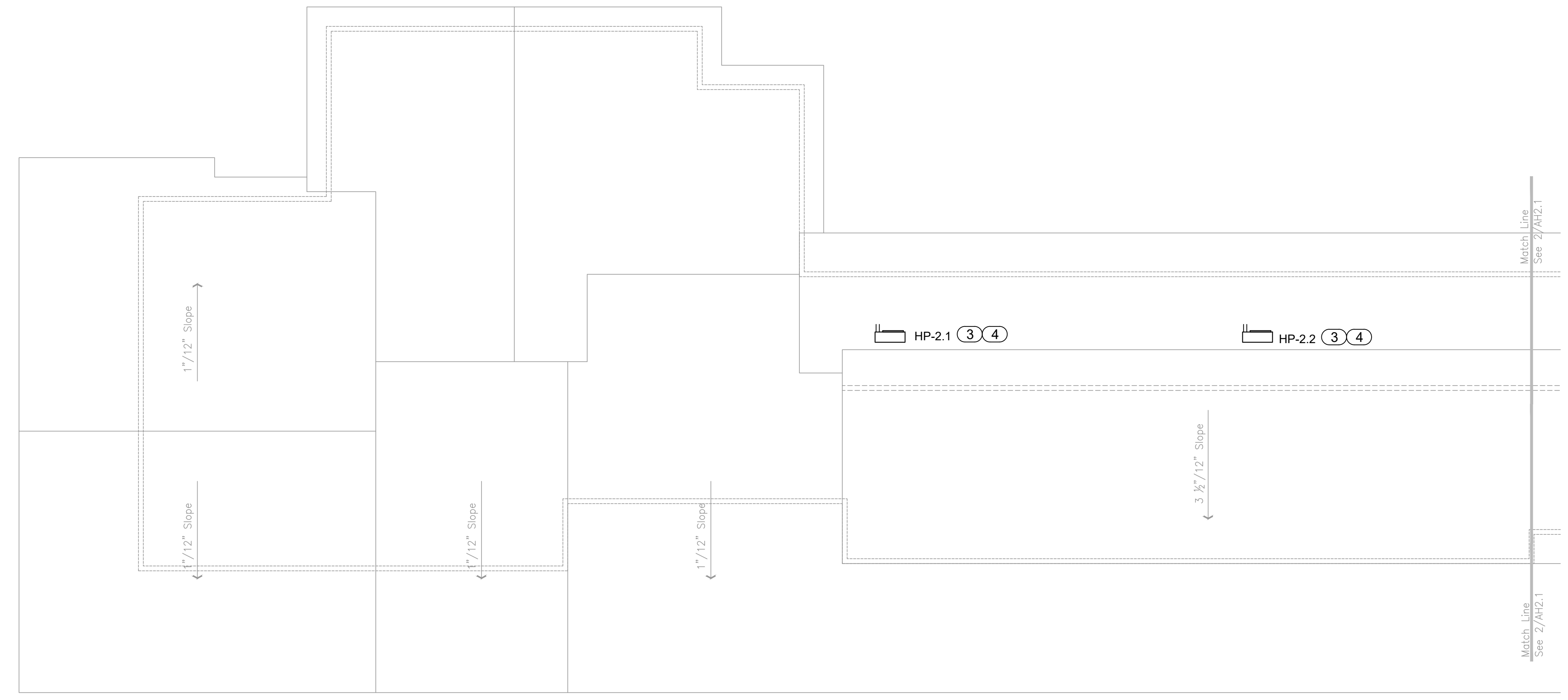
2 Floor Plan - Unit 2/Admin (West)

1/8" = 1'-0"



1 Roof Plan - Unit 2 (East)

1/8" = 1'-0"



2 Roof Plan - Unit 2/Admin (West)

1/8" = 1'-0"

KEYNOTES

- 3 MOUNT HEAT PUMP UNIT ON (E) ROOF PLATFORM. SEE DETAILS ON SHEET MB-0.3
- 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION. SEE DETAILS ON SHEET MB-0.3

COORDINATION NOTES

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OPER WT 150#
 - 2 HEAT PUMP: 208-230/1,
MCA 34.5
OPER WT 278 #
- NEW SYSTEMS**
- 1 AIR-HANDLER: 208-230/1,
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OPER WT = 167#
 - 2 HEAT PUMP: 208-230/1
MCA = 30
OPER WT 225#

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HVAC Modernization and Replacement
**Mountain View Whisman
School District**
Mountain View, California

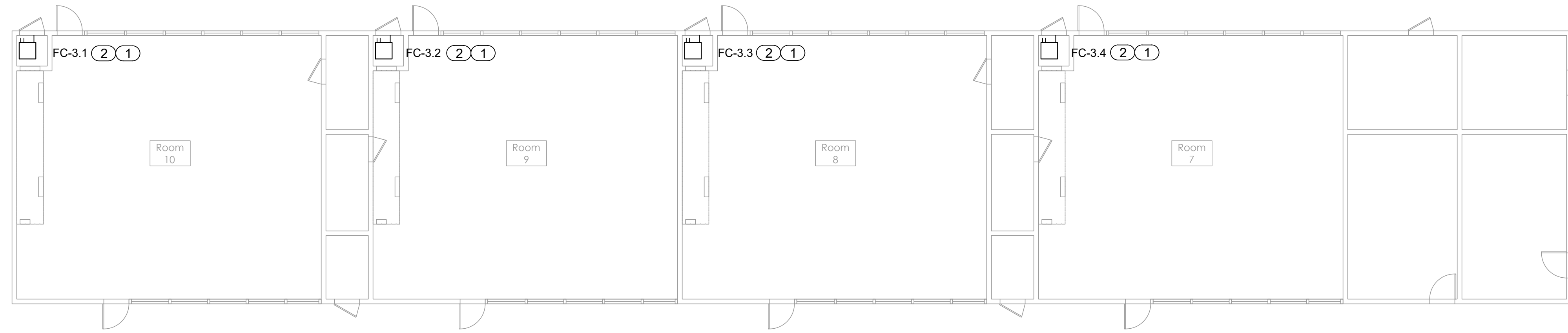
1100 Juanita Avenue
Fremont, California
94618
650 696 1200

314 Center Street #220
Fresno, California
93706
707 431 1905

Huff Elementary School
Mechanical:
Unit 2/Admin Roof Plan

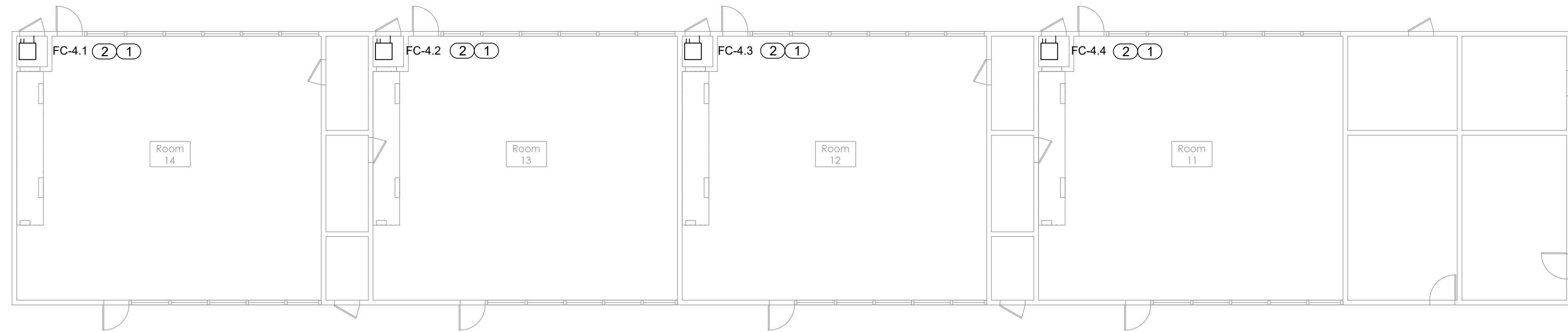
MH-2.2

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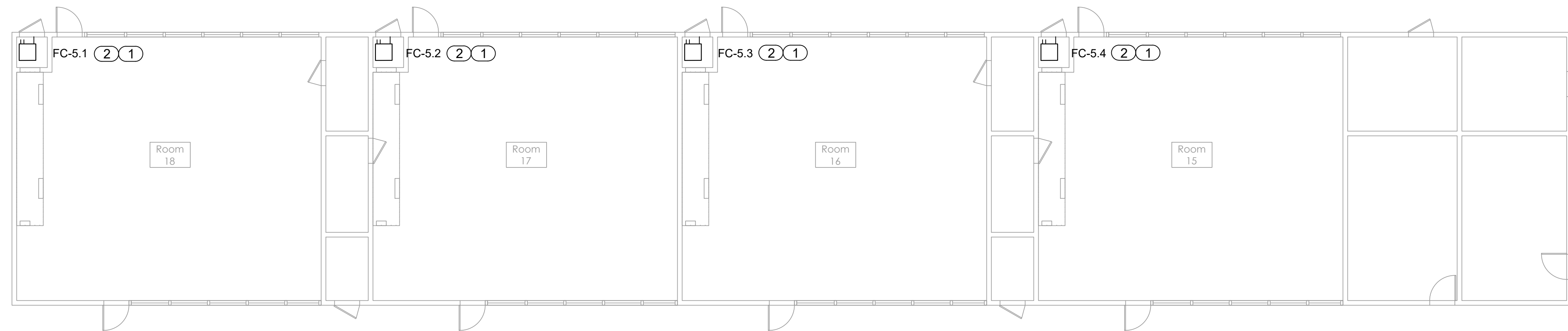
1 Floor Plan - Unit 3

1/8" = 1'-0"



2 Floor Plan - Unit 4

1/8" = 1'-0"



3 Floor Plan - Unit 5

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E)FURNACE, GAS LINE & CAP. REMOVE FLUE & (E) REFRIGERANT LINES THROUGH ROOF. INSTALL NEW FAN COIL ON (E)PLATFORM. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE. SEE DETAIL 4, 5 ON SHEET MB-03
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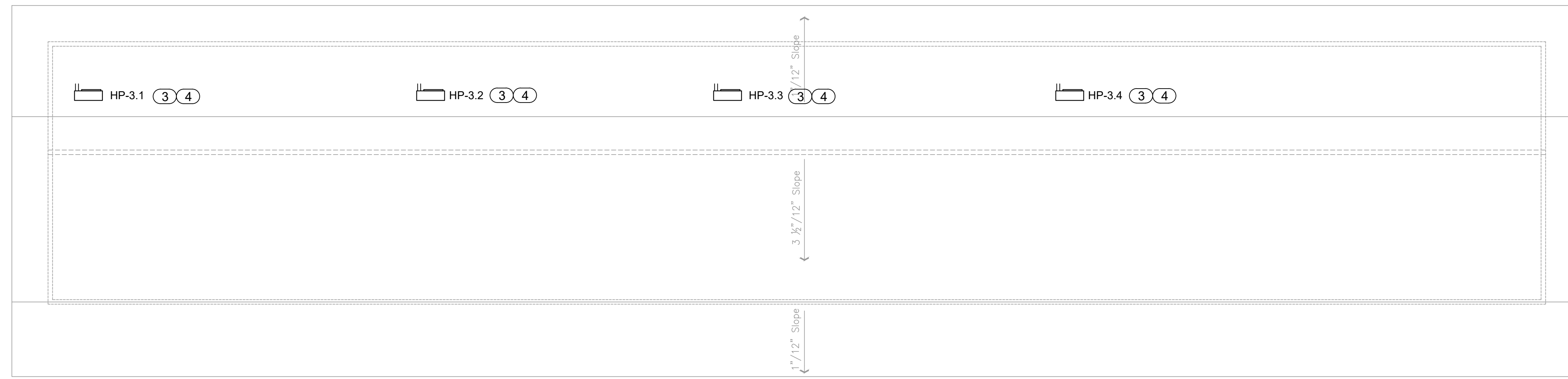
COORDINATION NOTES

EXISTING SYSTEMS

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OPER WT 150#
- 2 HEAT PUMP: 208-230/1,
MCA 34.5
OPER WT 278 #

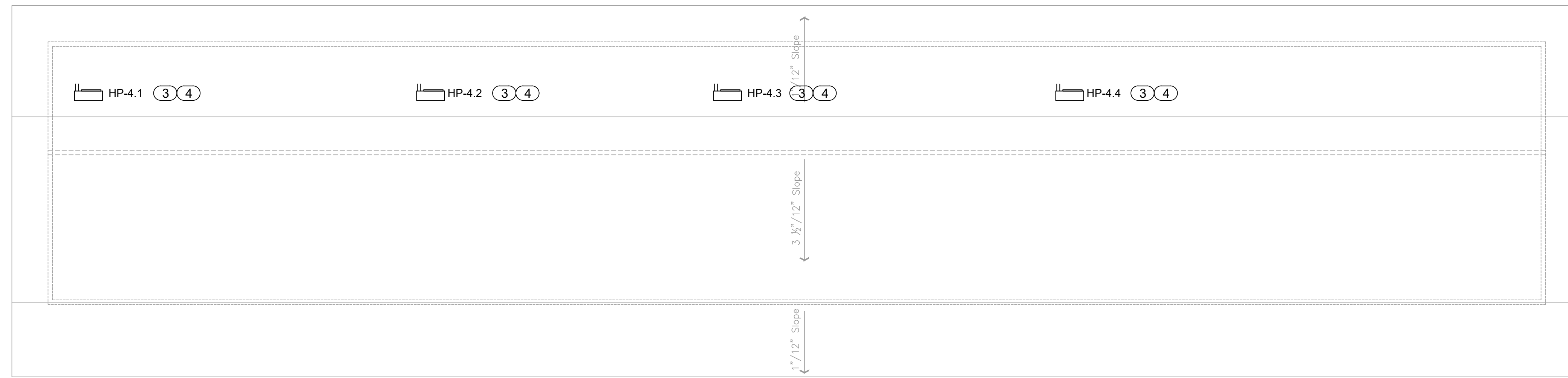
NEW SYSTEMS

- 1 AIR-HANDLER: 208-230/1,
MCA = 8.6
AUX 10 KW ELECTRIC HEATER
@208V, 36.1 AMPS (SEPARATE
POWER)
OPER WT = 167#
- 2 HEAT PUMP: 208-230/1
MCA = 30
OPER WT 225#



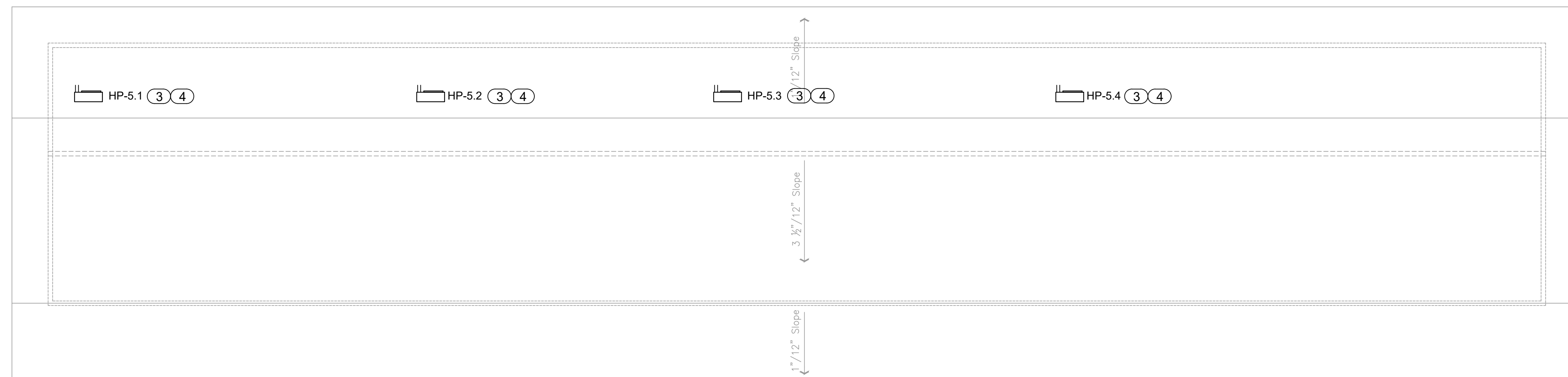
1 Floor Plan - Unit 3

1/8" = 1'-0"



2 Floor Plan - Unit 4

1/8" = 1'-0"



3 Floor Plan - Unit 5

1/8" = 1'-0"

KEYNOTES

- 3 MOUNT HEAT PUMP UNIT ON (E) ROOF PLATFORM. SEE DETAILS ON SHEET MB-0.3
- 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION. SEE DETAILS ON SHEET MB-0.3

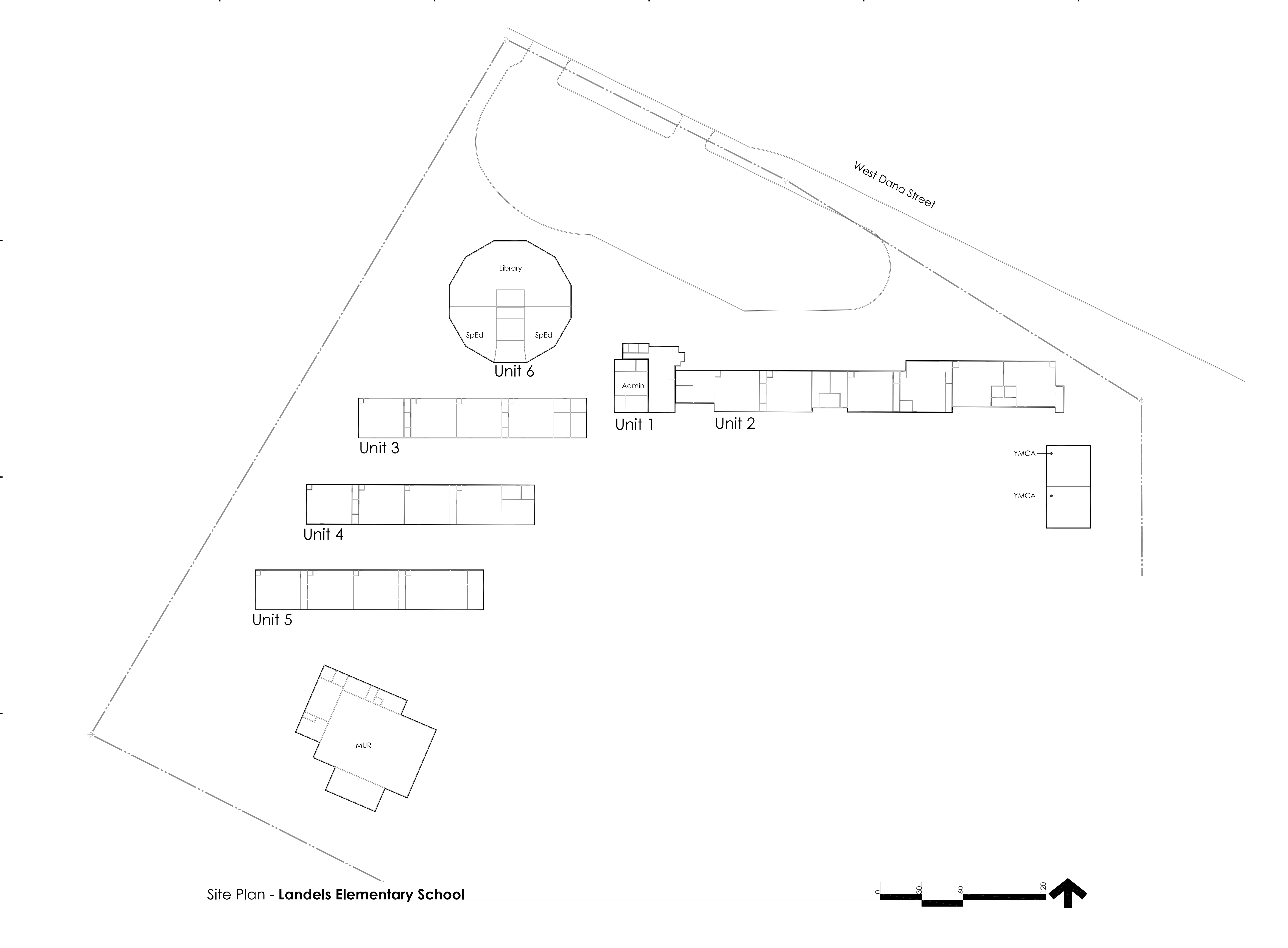
COORDINATION NOTES

EXISTING SYSTEMS

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- 2 HEAT PUMP: 208-230/1, MCA 34.5 OPER WT 278 #

NEW SYSTEMS

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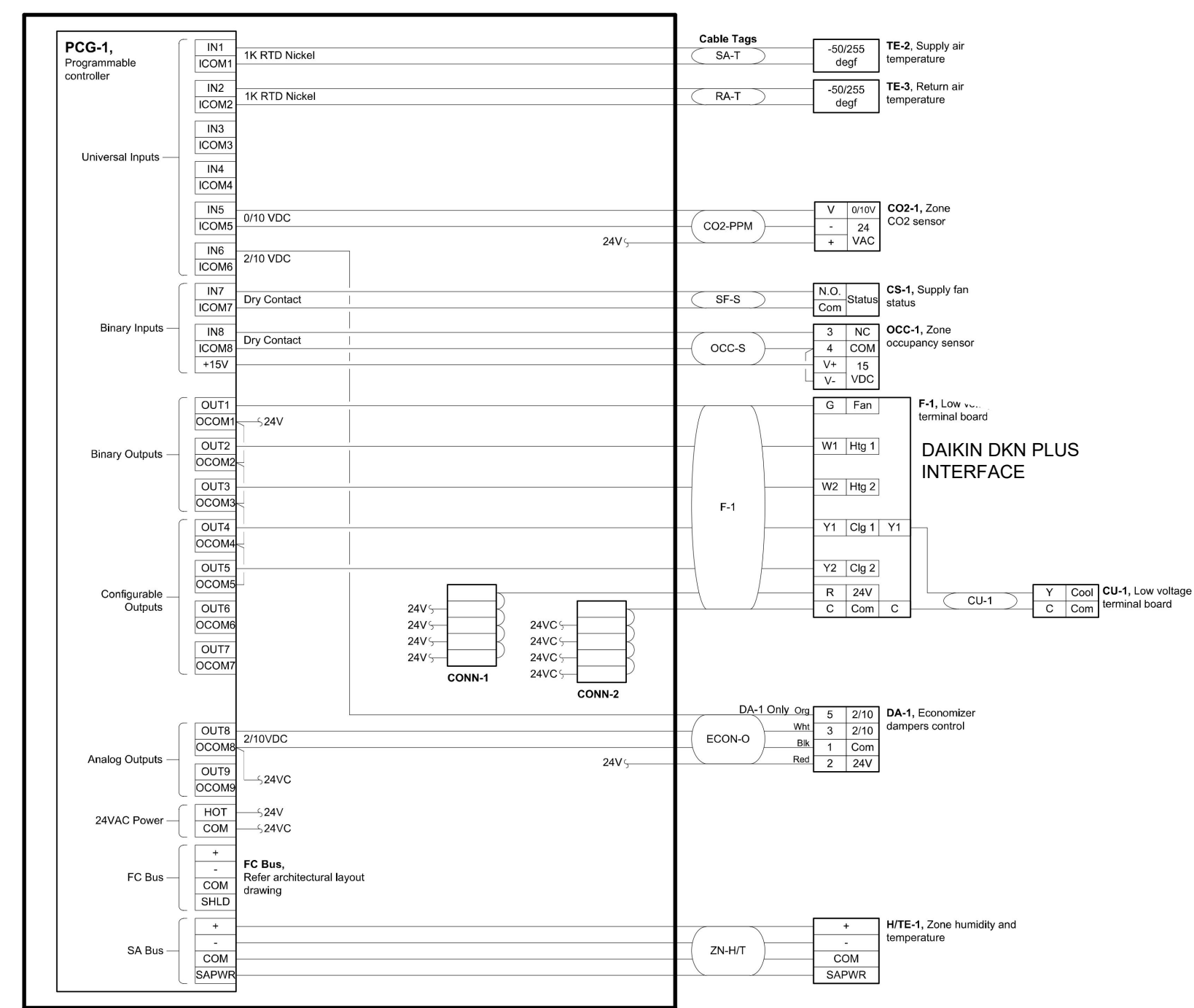


Site Plan - Landels Elementary School

SPLIT SYSTEM HEAT PUMP

INDOOR UNIT										OUTDOOR UNIT								
TAG	MANUF & MODEL NO	MCA / MOP	ELECT V/φ/HZ	CFM @ 0.7" SP	NCC (KBTUH @ARI)	NHC (KBTUH @ARI)	RATED AUX ELECTRIC HEATER (Kw)	AMPS @ 208V/1φ	OPER WEIGHT (LBS)	TAG	MANUF & MODEL NO	NCC (KBTUH @ARI)	NHC (KBTUH @ARI)	SEER	HSPF	MCA / MOP	ELECT V/φ/HZ	OPER WEIGHT (LBS)
FC-2.1 TO FC-2.6	DAIKIN FXTQ48TAVJUA	6.5 / 15	208/1	1,400	48.0	54.0	6	21.7	158	HP-2.1 TO HP-2.6	DAIKIN RXTQ48TAVJU	45.5	49.5	18.0	10.0	29.1 / 35	208/1/60	176
FC-3.1 TO FC-3.4	DAIKIN FXTQ48TAVJUA	6.5 / 15	208/1	1,400	48.0	54.0	6	21.7	158	HP-3.1 TO HP-3.4	DAIKIN RXTQ48TAVJU	45.5	49.5	18.0	10.0	29.1 / 35	208/1/60	176
FC-4.1 TO FC-4.4	DAIKIN FXTQ48TAVJUA	6.5 / 15	208/1	1,400	48.0	54.0	6	21.7	158	HP-4.1 TO HP-4.4	DAIKIN RXTQ48TAVJU	45.5	49.5	18.0	10.0	29.1 / 35	208/1/60	176
FC-5.1 TO FC-5.4	DAIKIN FXTQ48TAVJUA	6.5 / 15	208/1	1,400	48.0	54.0	6	21.7	158	HP-5.1 TO HP-5.4	DAIKIN RXTQ48TAVJU	45.5	49.5	18.0	10.0	29.1 / 35	208/1/60	176

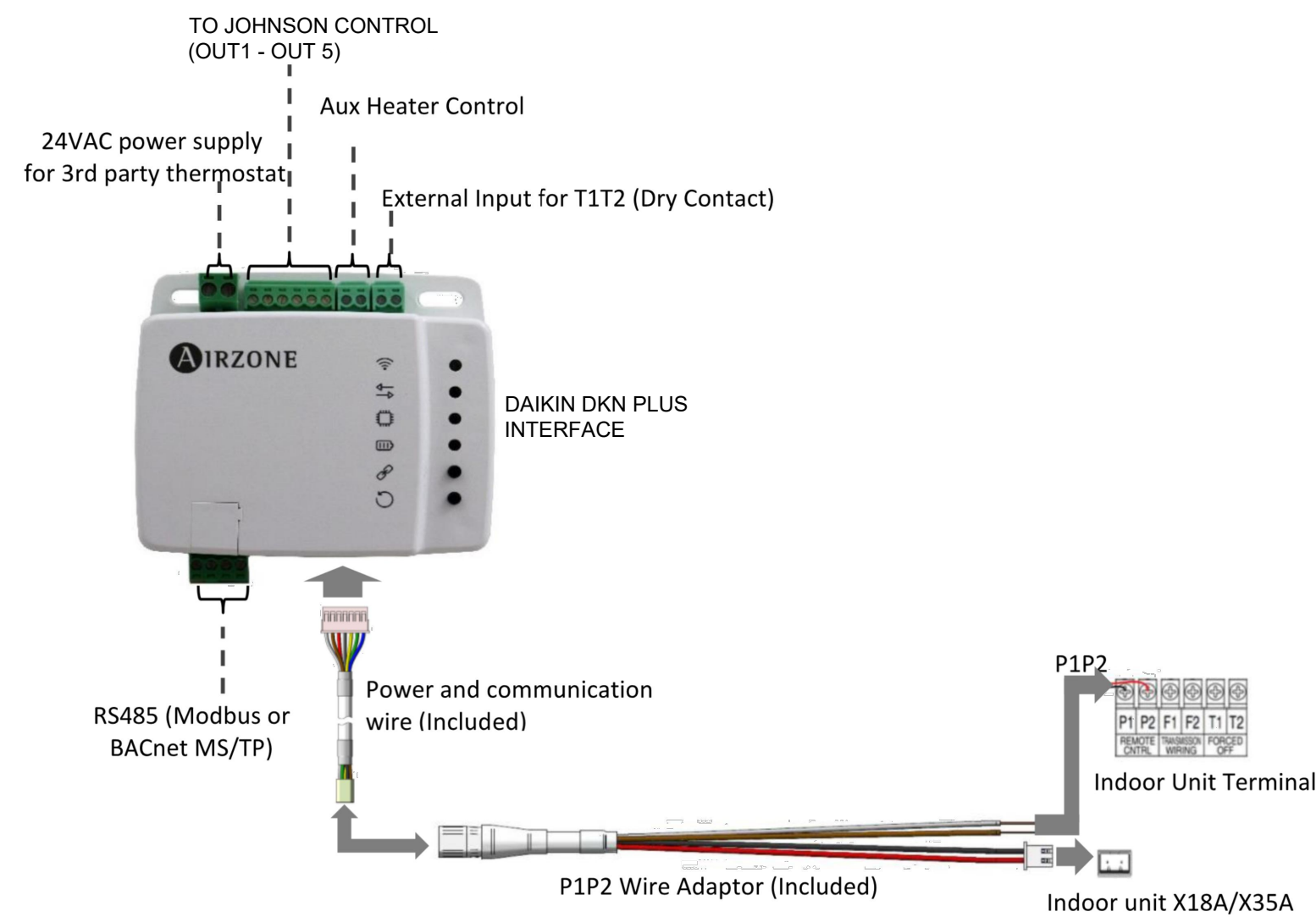
ACCESSORIES:
 - MOUNTING BASE FILTER RACK WITH MERV 13 FILTER
 - PRE-CHARGED & PRE-INSULATED REFRIGERANT TUBING
 - DAIKIN DKN PLUS INTERFACE CONTROL MODULE TO ALLOW THIRD PARTY EMS THERMOSTAT CONNECTION.
 - DRAIN PAN LEVEL SENSOR



EMS CONTROL DIAGRAM

SCALE: N.T.S

1



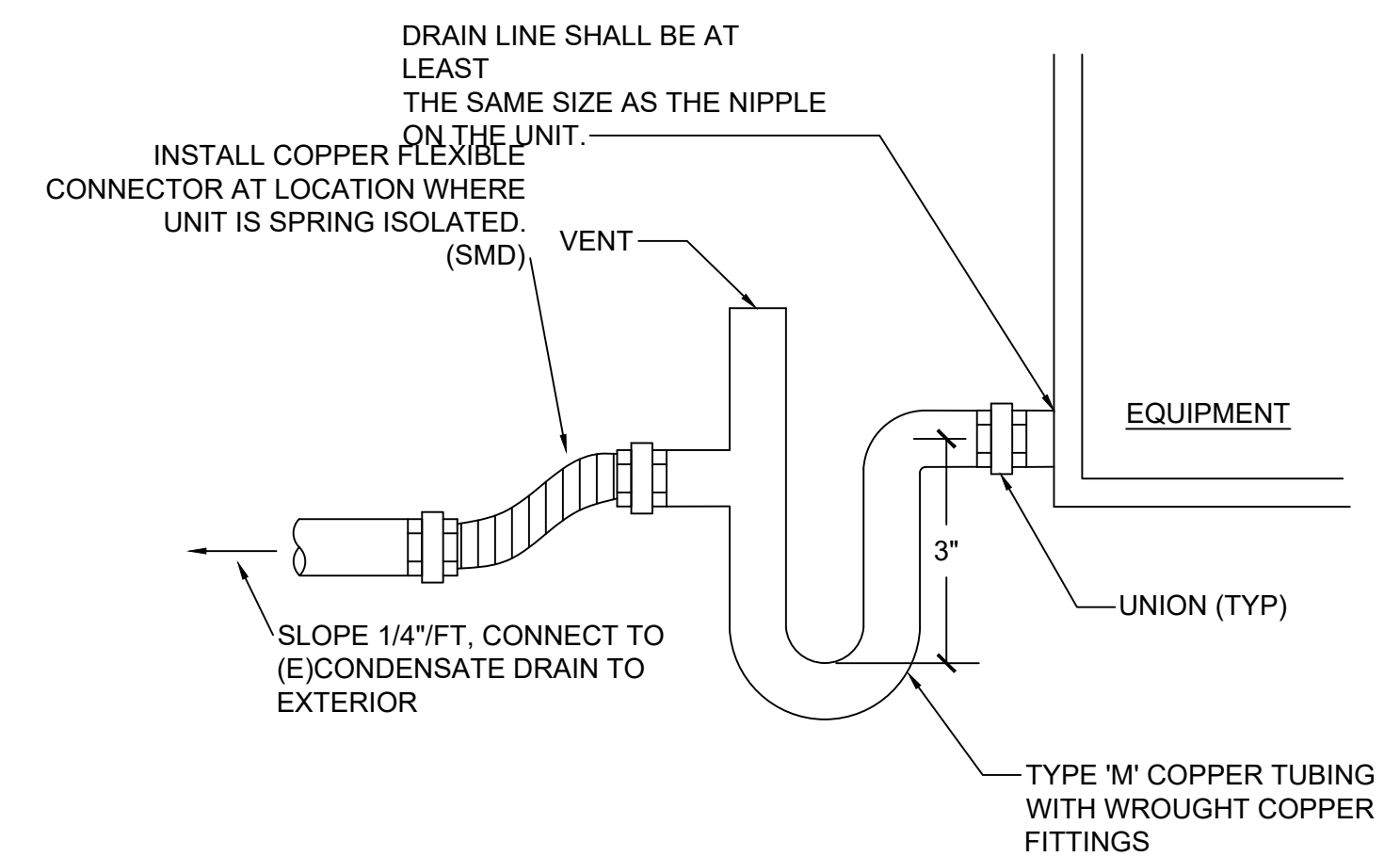
DAIKIN THIRD PARTY EMS INTERFACE CONTROLLER

SCALE: N.T.S

2

NOTES:

- 1 ALL CONDENSATE DRAIN LINES INSIDE BUILDING SHALL BE INSULATED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 15400, PLUMBING SPECIFICATIONS.
- 2 SEE DRAWING FOR SIZES.
- 3 TRAP DEPTH SHALL BE EQUAL TO THE UNIT TOTAL STATIC PRESSURE PLUS 1-INCH BUT NOT LESS THAN 2-INCHES.
- 4 IF THE PRESSURE IN THE DRAIN PAN IS NEGATIVE, THE DISTANCE FROM THE BOTTOM OF THE AC UNIT DRAIN PAN TO THE CROWN WEIR OF THE TRAP SHALL BE GREATER THAN THE NEGATIVE PRESSURE IN THE DRAIN PAN.



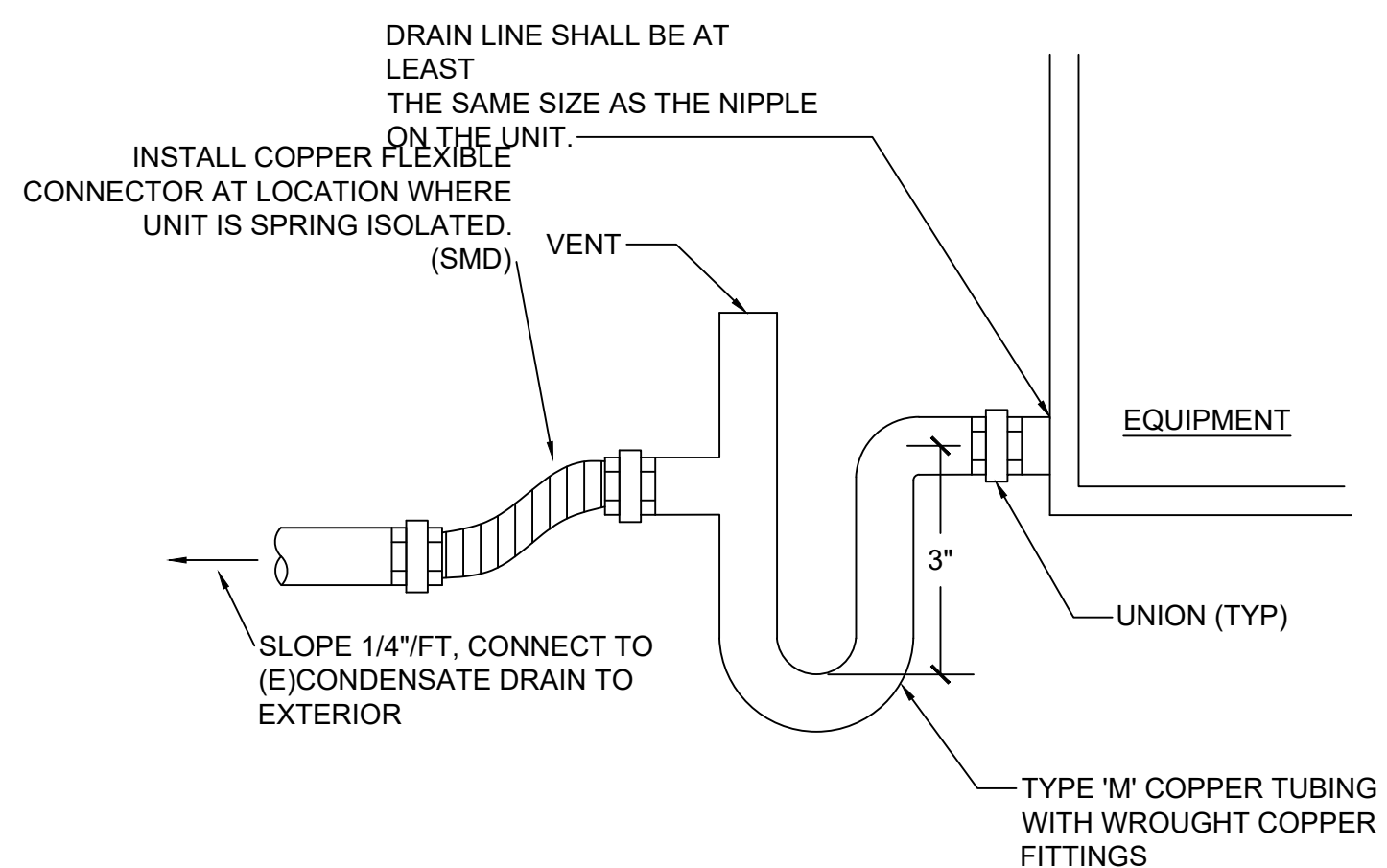
CONDENSATE PIPE CONNECTION TO MECHANICAL EQUIPMENT

SCALE: N.T.S

3

NOTES:

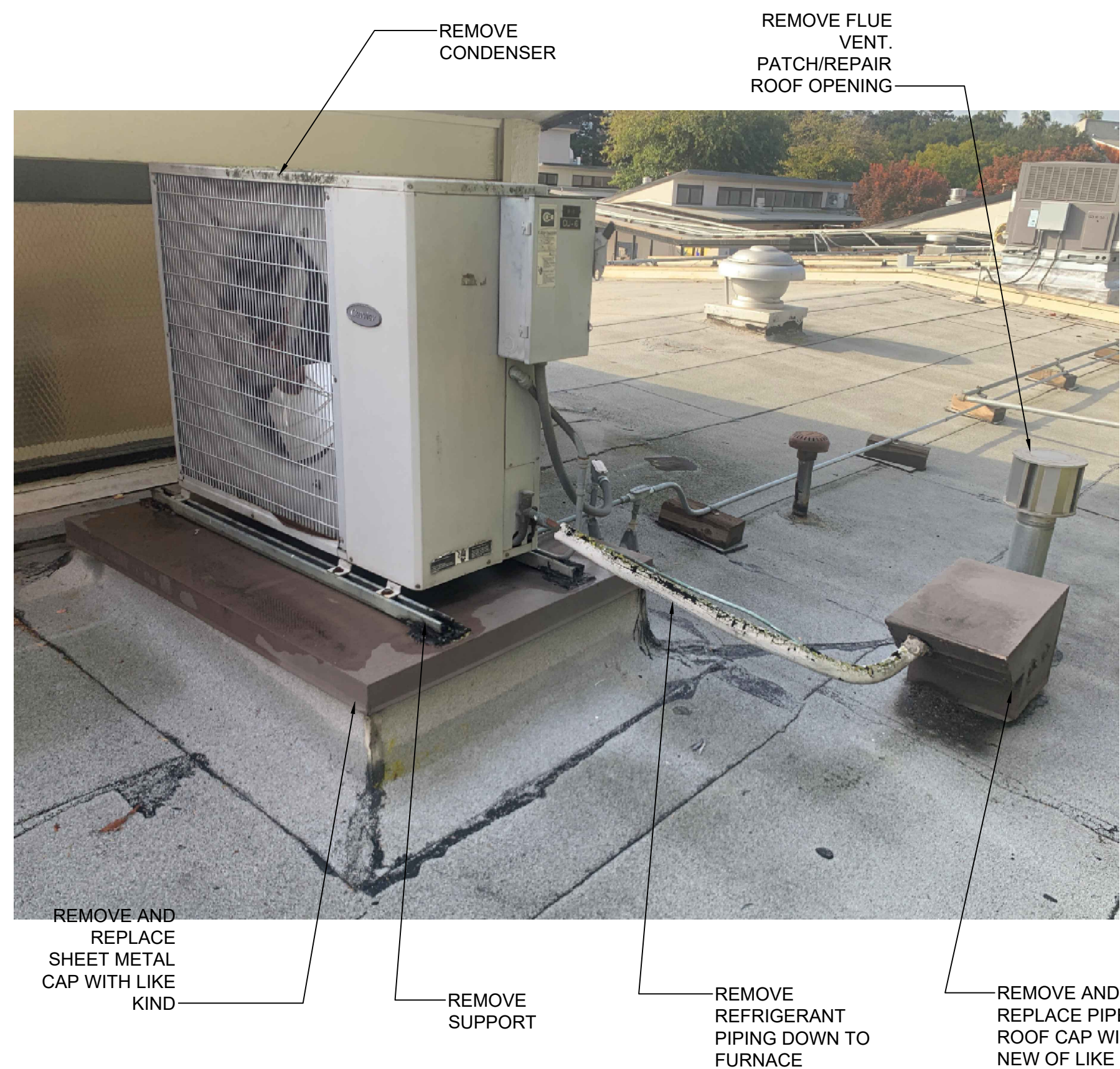
- 1 ALL CONDENSATE DRAIN LINES INSIDE BUILDING SHALL BE INSULATED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 15400, PLUMBING SPECIFICATIONS.
- 2 SEE DRAWING FOR SIZES.
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CONDENSATE PIPE CONNECTION TO MECHANICAL EQUIPMENT

SCALE: N.T.S

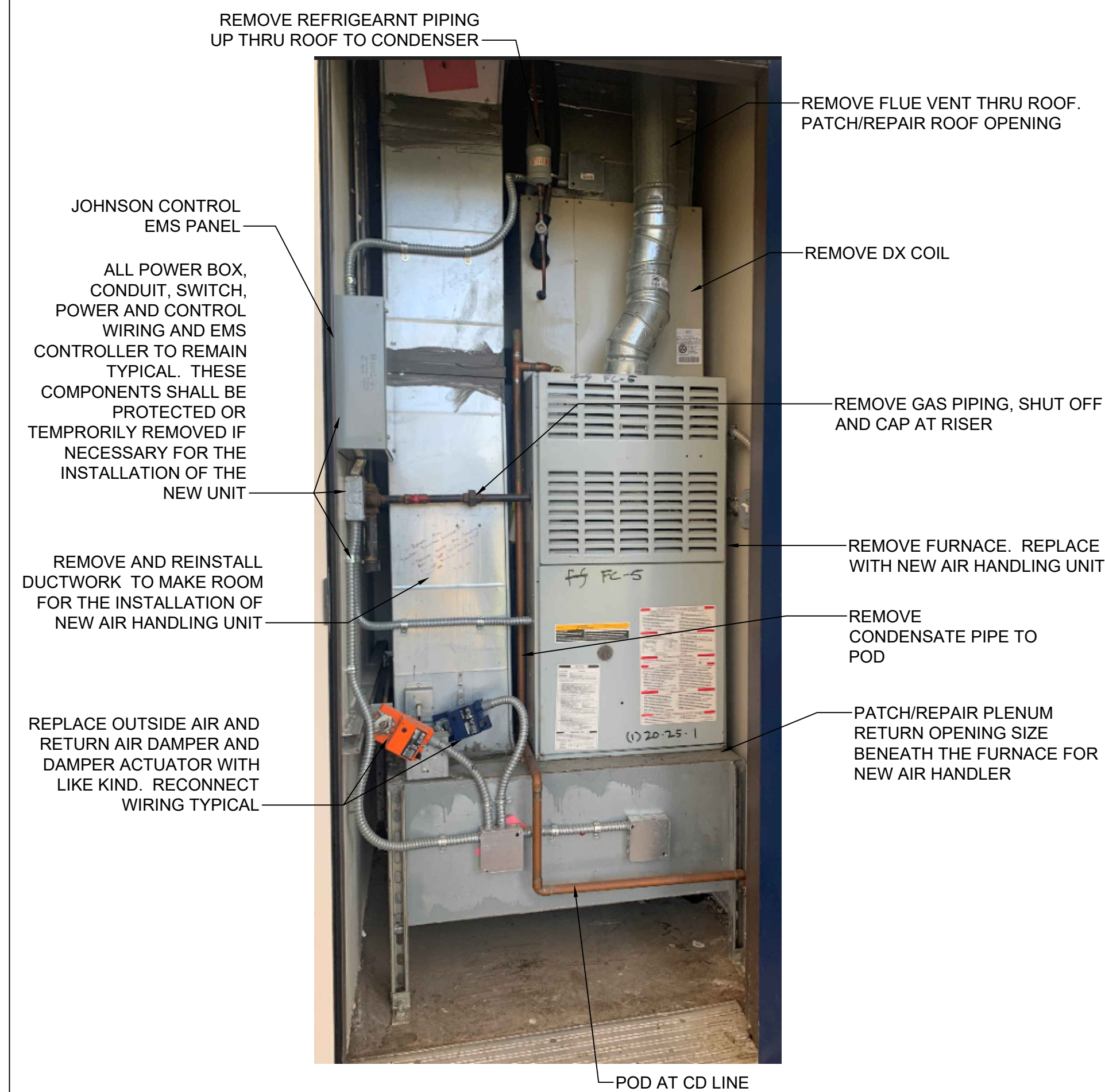
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MECHANICAL DEMO ROOF PLAN

SCALE: N.T.S

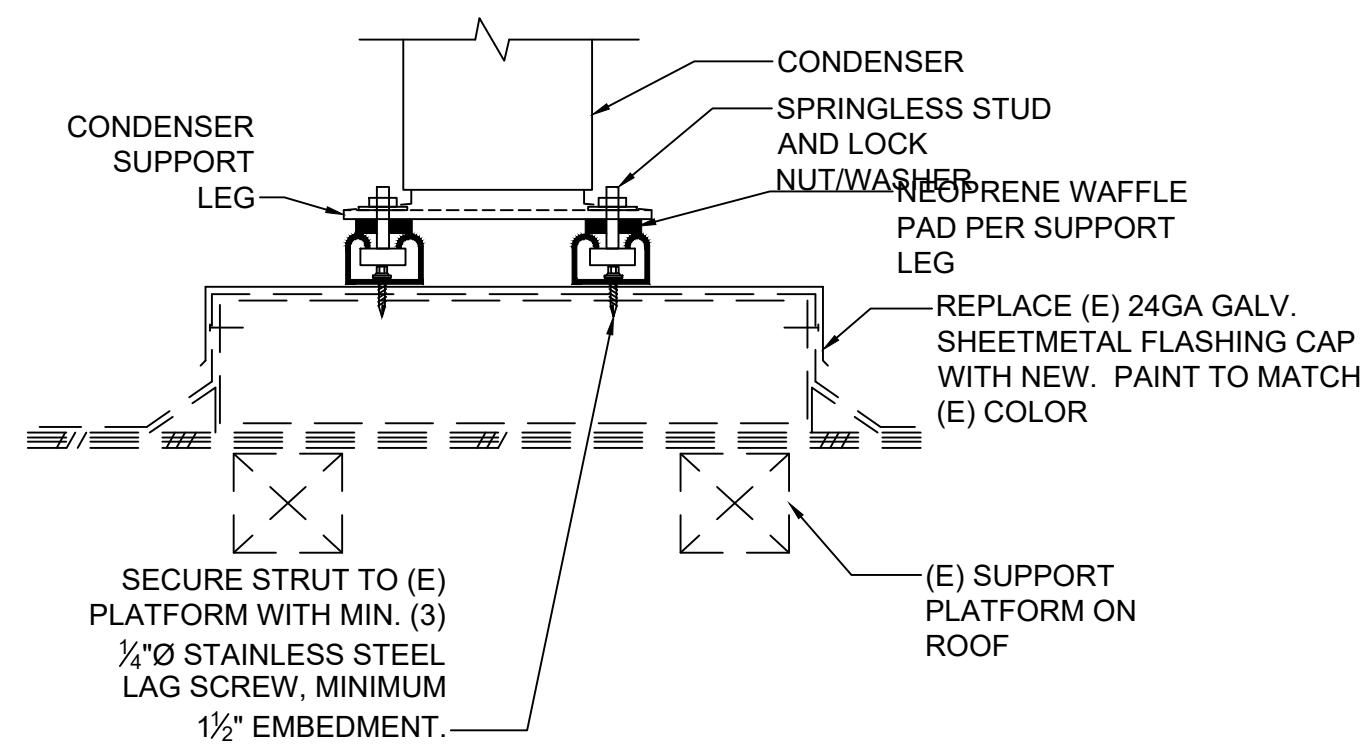
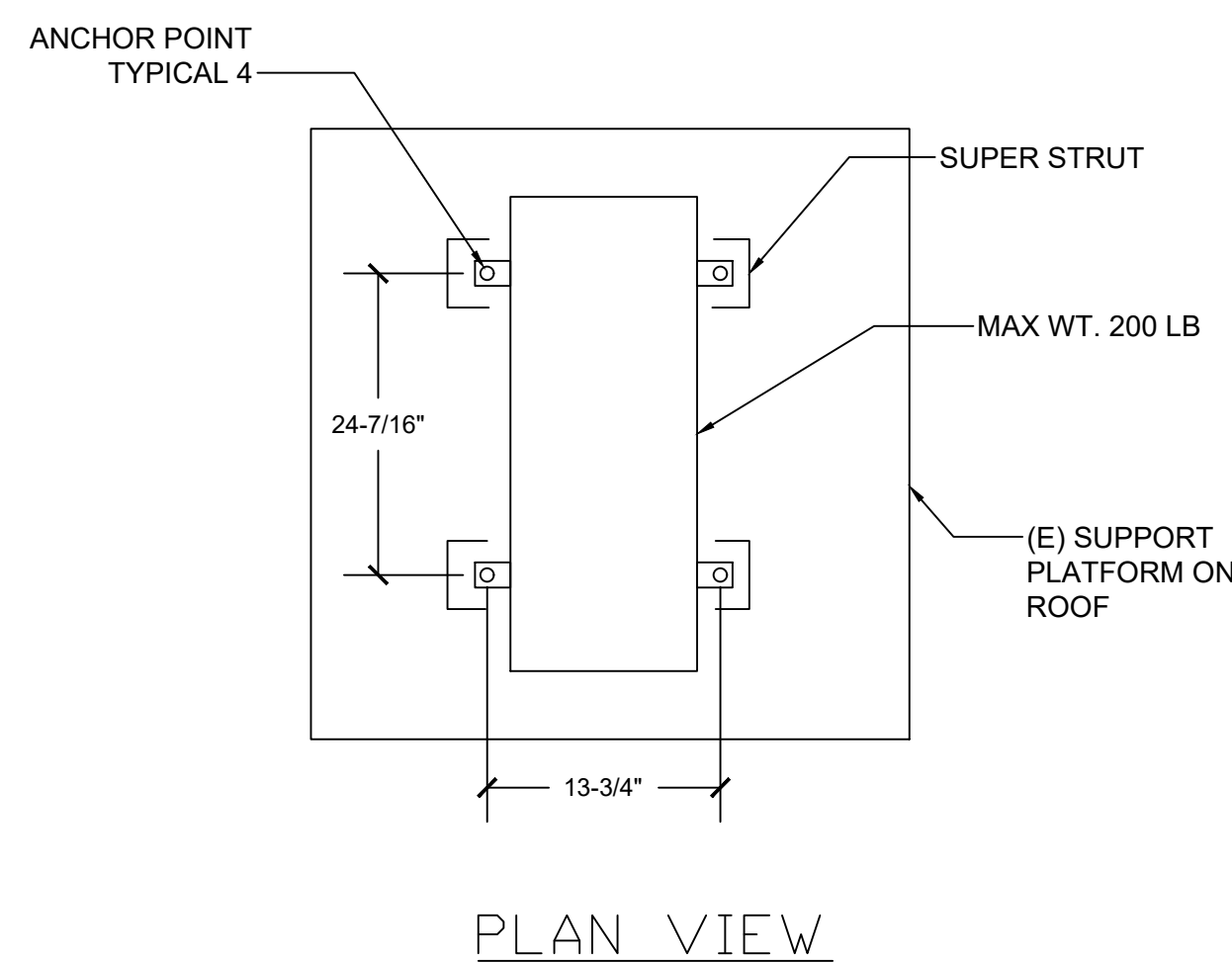
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FURNACE CLOSET DEMO PLAN

SCALE: N.T.S

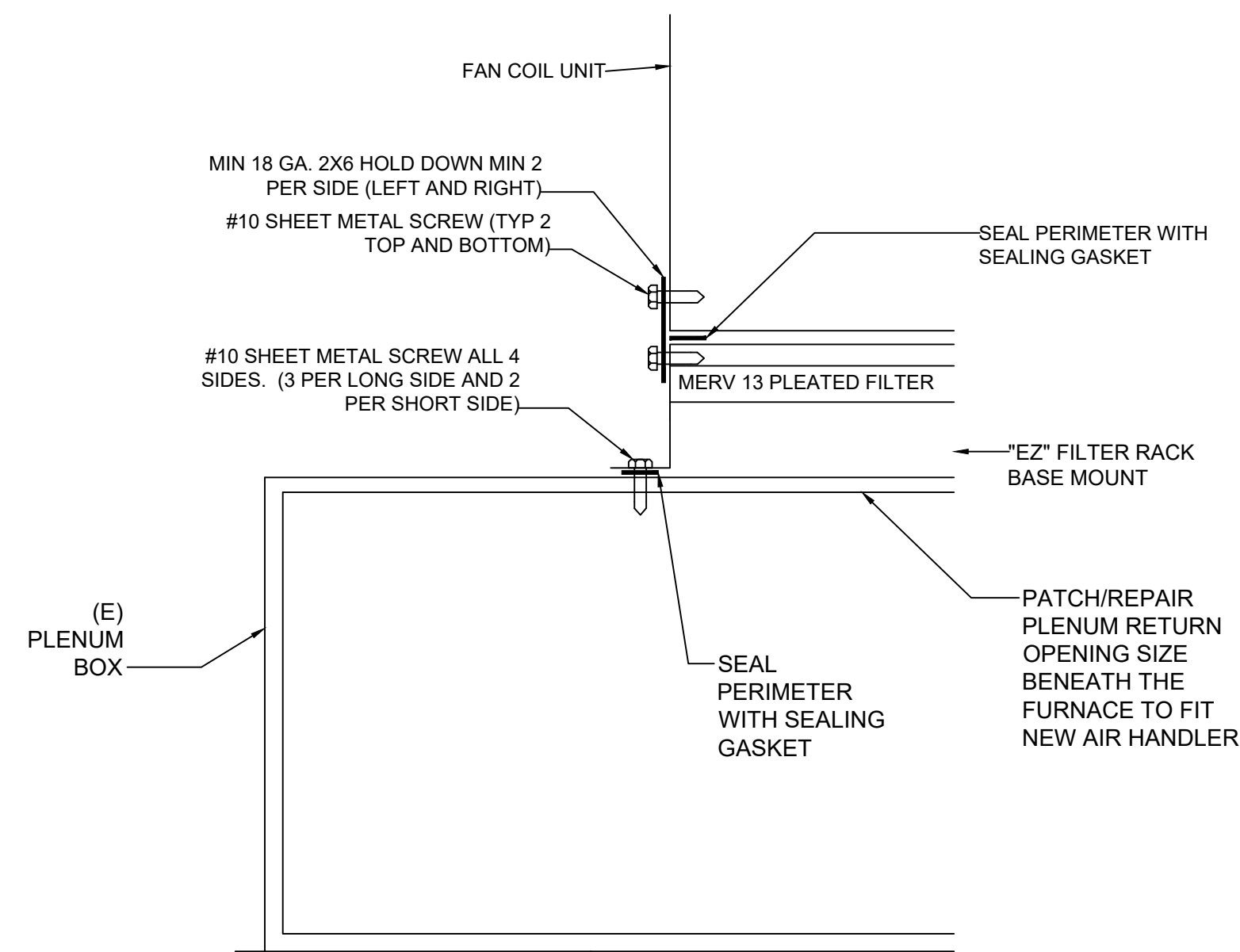
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ROOF MOUNT CONDENSER SUPPORT DETAIL

SCALE: N.T.S

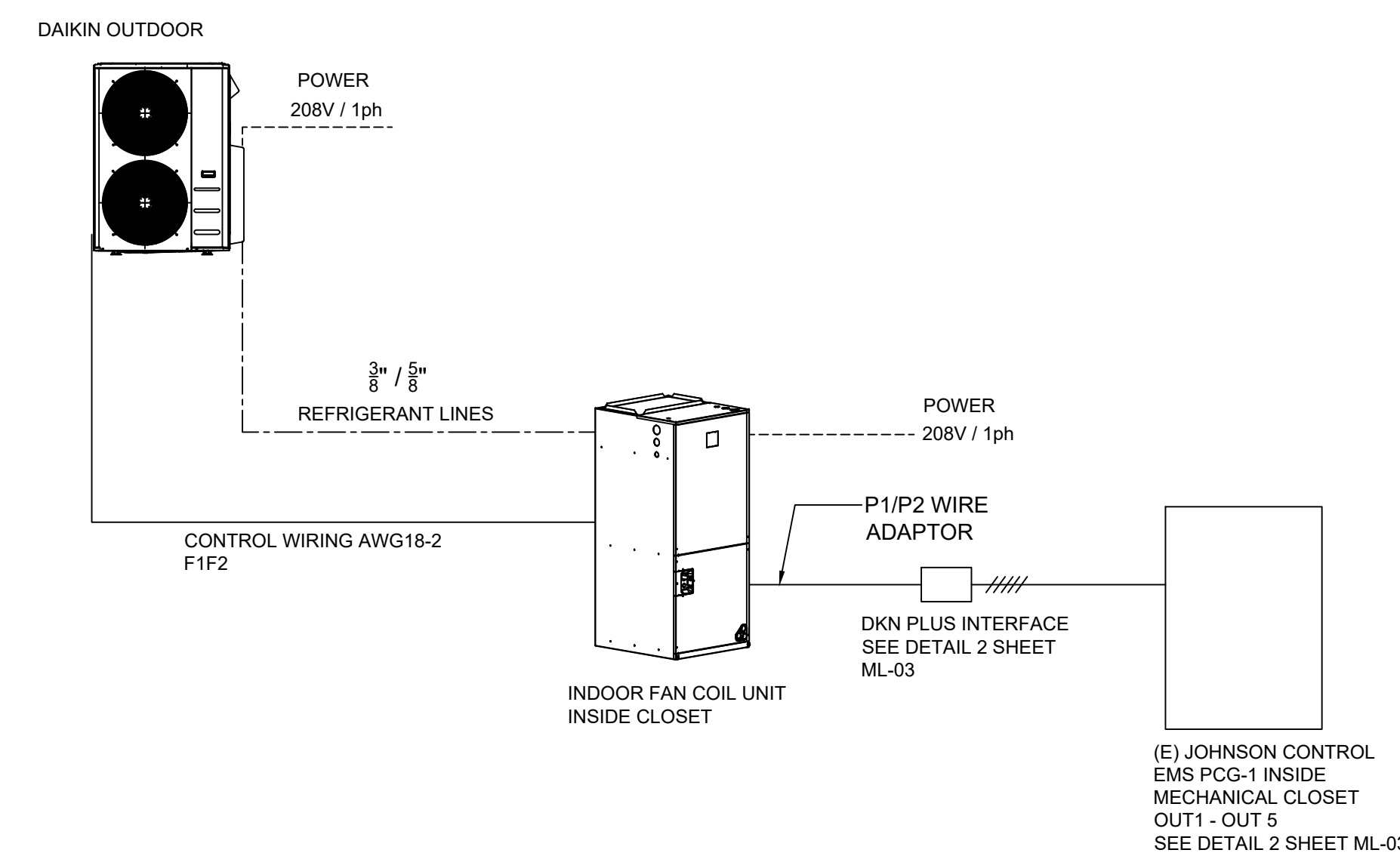
1



FAN COIL UNIT MOUNTING DETAIL IN CLOSET

SCALE: N.T.S

2



PIPING AND WIRING CONTROL DIAGRAM

SCALE: N.T.S

3

HVAC Modernization and Replacement
Mountain View Whisman
School District

Mountain View, California



MECHANICAL GROUP
11000
Oakland, CA 94621
Tel: 510-592-0000



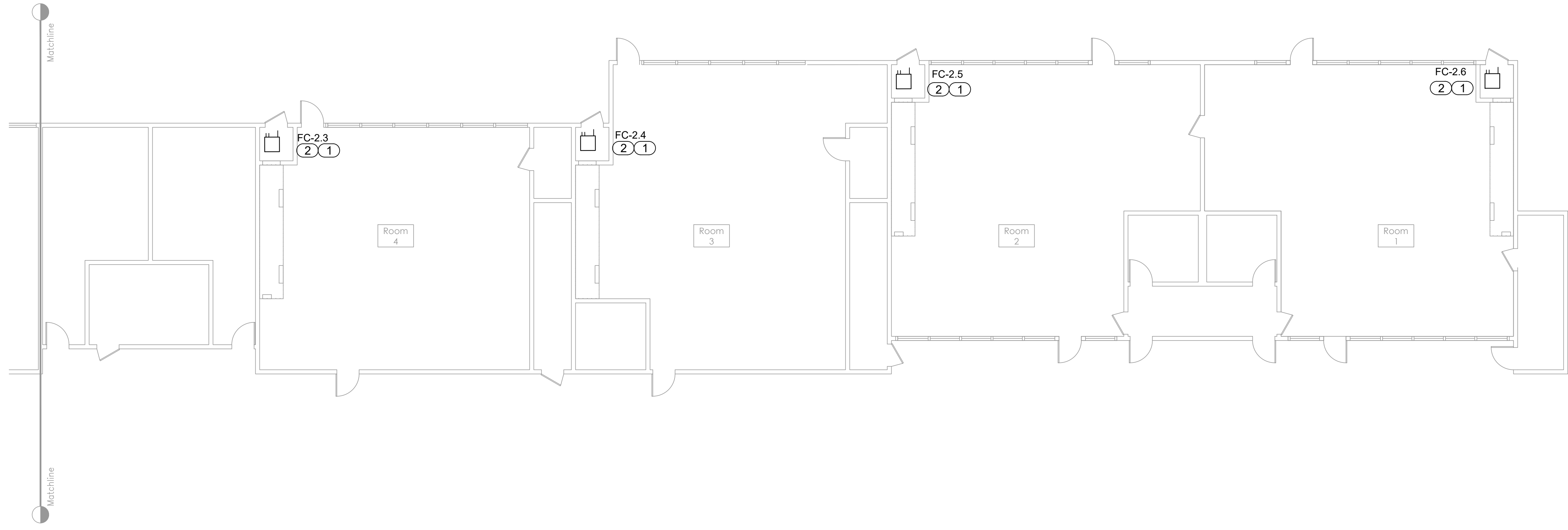
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Infrastructure
Environments

1100 Juanita Avenue
Fremont, California
94516
650 696 1200
314 Center Street #220
Hayward, California
94542
707 431 1905

Landels Elementary School
Mechanical:
Details

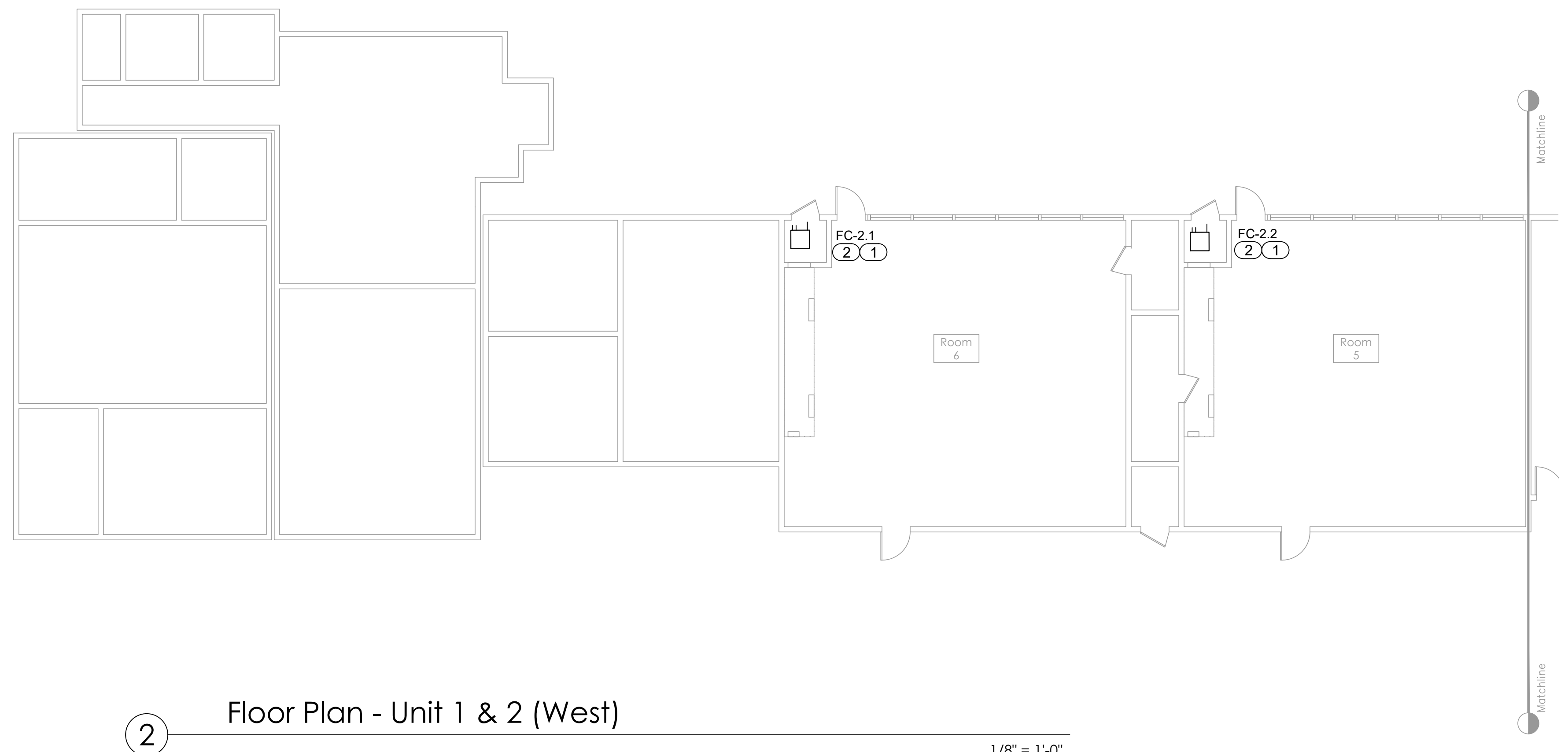
ML-03

2024



1 Floor Plan - Unit 2 (East)

1/8" = 1'-0"



2 Floor Plan - Unit 1 & 2 (West)

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E) FURNACE, GAS LINE & CAP. REMOVE FLUE & (E) REFRIGERANT LINES THROUGH ROOF. INSTALL NEW FAN COIL ON (E) PLATFORM. RECONNECT SUPPLY AIR DUCT. CONTROLS AND CONDENSATE LINE. SEE DETAIL 4, 5 ON SHEET MB-03
- 2 RECONNECT JOHNSON DDC: CONTROLS SHALL BE COMMISSIONED FOR PROPER SEQUENCING AND PERFORMANCE

COORDINATION NOTES

EXISTING SYSTEMS

- 1 FURNACE: 120V/1, 3/4 HP
OPER WT 150#
- 2 HEAT PUMP: 208-230/1,
MCA 34.5
OPER WT 278 #

NEW SYSTEMS

- 1 AIR-HANDLER: 208-230/1,
MCA = 8.6
AUX 10 KW ELECTRIC HEATER
@208V, 36.1 AMPS (SEPARATE
POWER)
OPER WT = 167#
- 2 HEAT PUMP: 208-230/1
MCA = 30
OPER WT 225#



HM MECHANICAL GROUP
Mechanical, Electrical, Plumbing, Fire Protection, Energy
Oakland, CA 94612
Tel: 510.569.2000

HVAC Modernization and Replacement
**Mountain View Whisman
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Mountain View, California

Landels Elementary School
Mechanical:
Units 1 & 2 Floor Plan

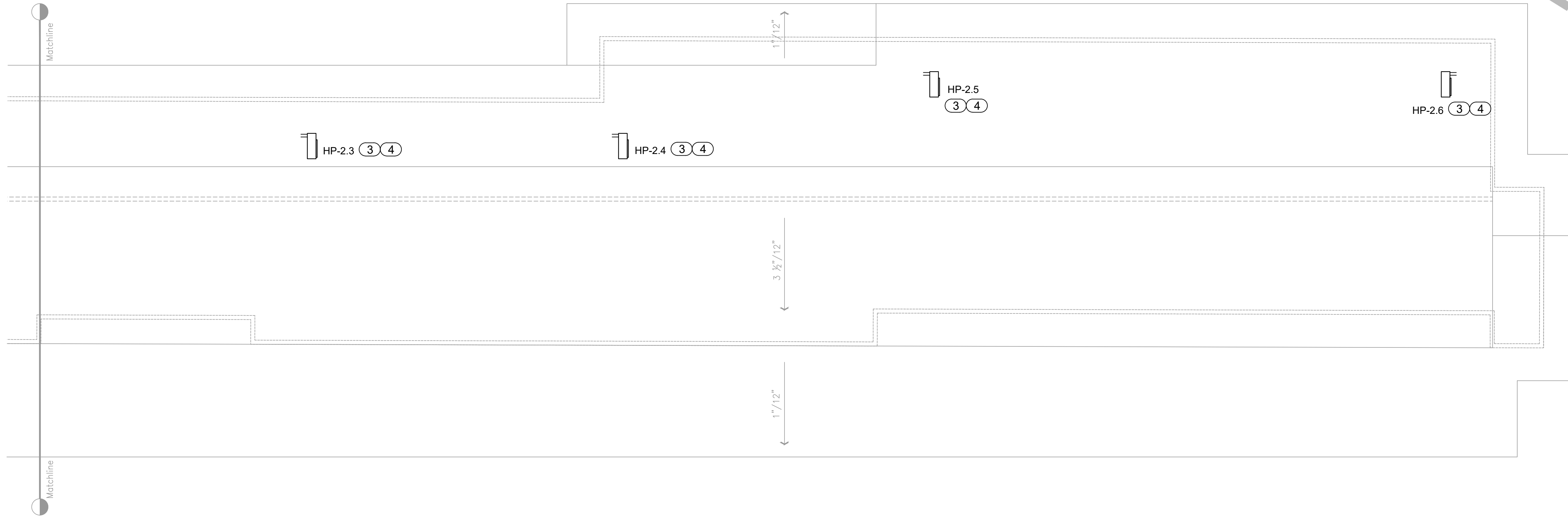
ML-2.1

2024

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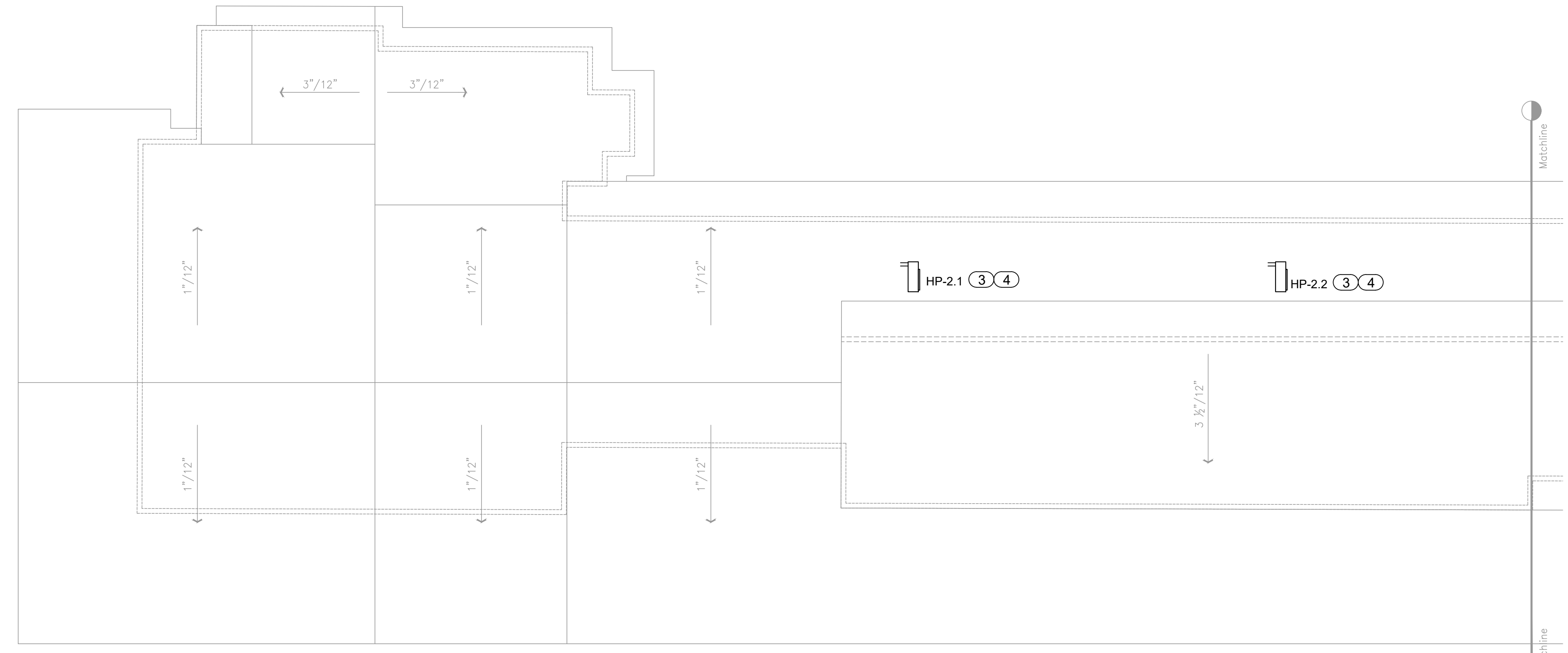
314 Center Street #220
Hayward, California
94548
707.431.1905



- KEYNOTES**
- 3 MOUNT HEAT PUMP UNIT ON (E) ROOF PLATFORM. SEE DETAILS ON SHEET MB-0.3
 - 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION. SEE DETAILS ON SHEET MB-0.3

1 Roof Plan - Unit 2 (East)

1/8" = 1'-0"



2 Roof Plan - Unit 1 & 2 (West)

1/8" = 1'-0"

COORDINATION NOTES

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HVAC Modernization and Replacement
**Mountain View Whisman
School District**
Mountain View, California

Landels Elementary School
Mechanical:
Units 1 & 2 Roof Plan

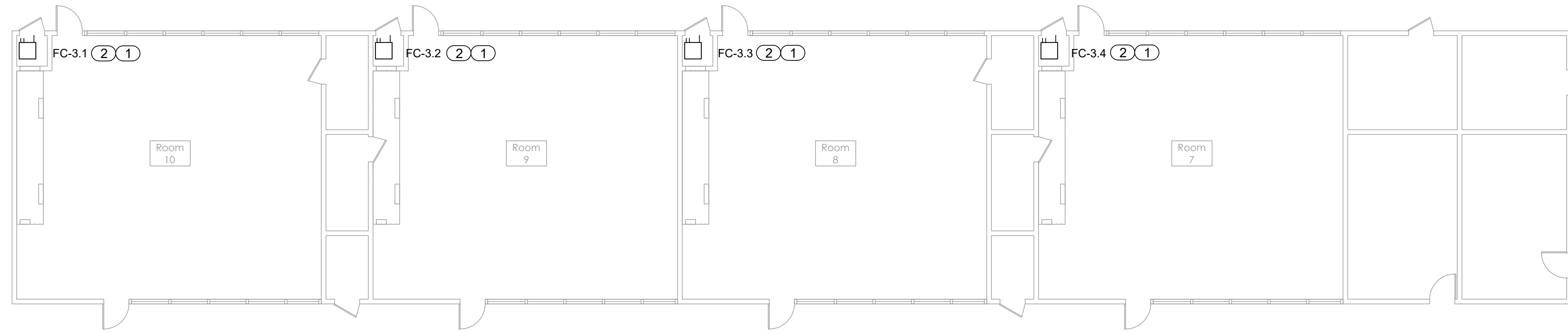
ML-2.2

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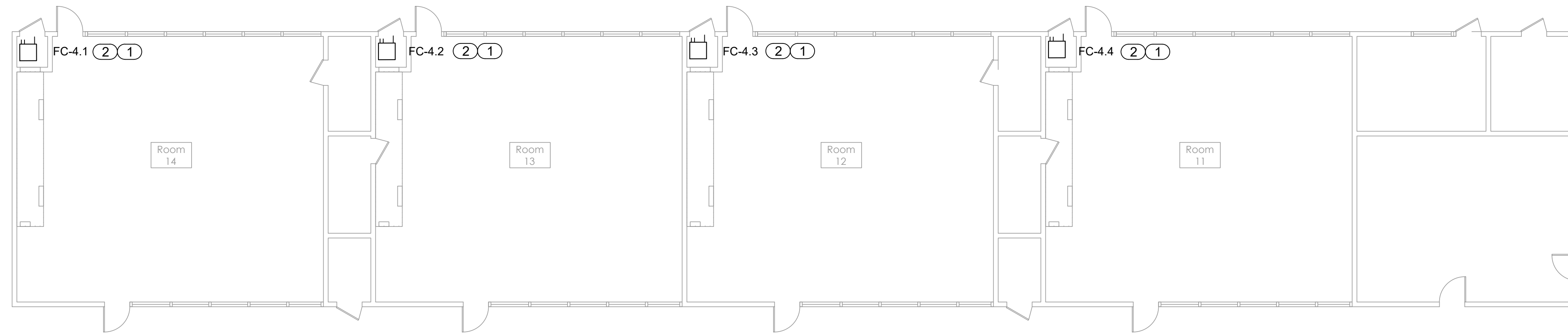
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650 696 1200

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94546
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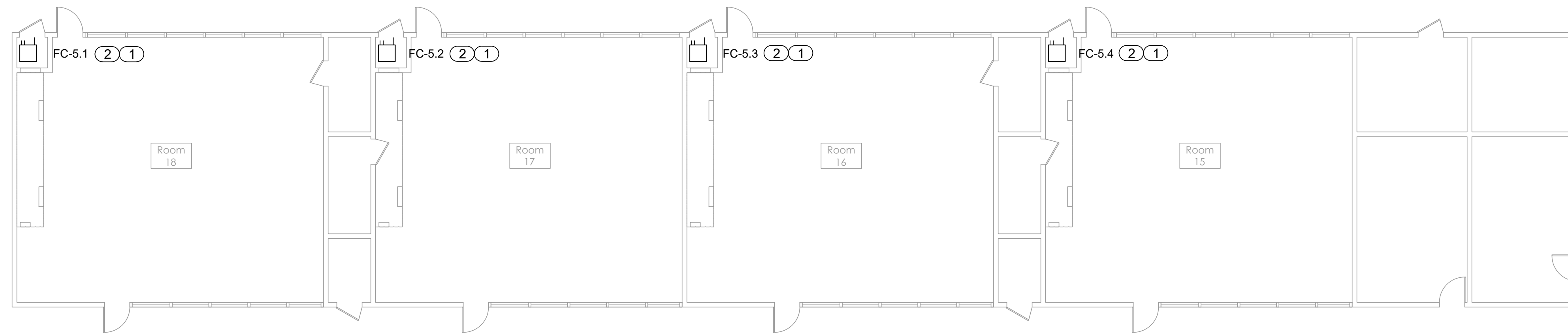
1 Floor Plan - Unit 3

1/8" = 1'-0"



2 Floor Plan - Unit 4

1/8" = 1'-0"



3 Floor Plan - Unit 5

1/8" = 1'-0"

KEYNOTES

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- 2 RECONNECT JOHNSON DDC: CONTROLS SHALL BE COMMISSIONED FOR PROPER SEQUENCING AND PERFORMANCE

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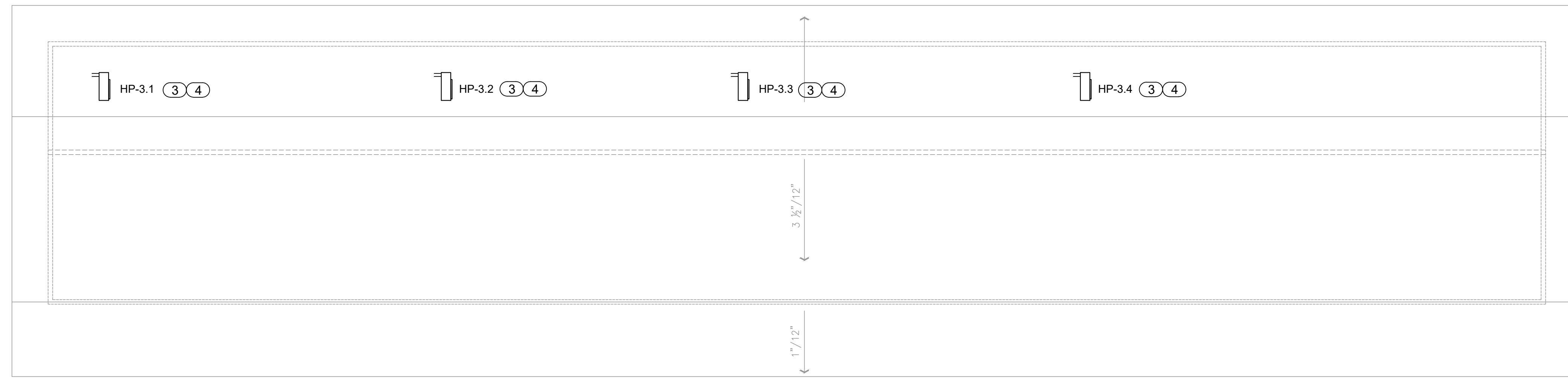
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HVAC Modernization and Replacement
**Mountain View Whisman
School District**
Mountain View, California

Landels Elementary School
Mechanical:
Units 3-5 Floor Plans

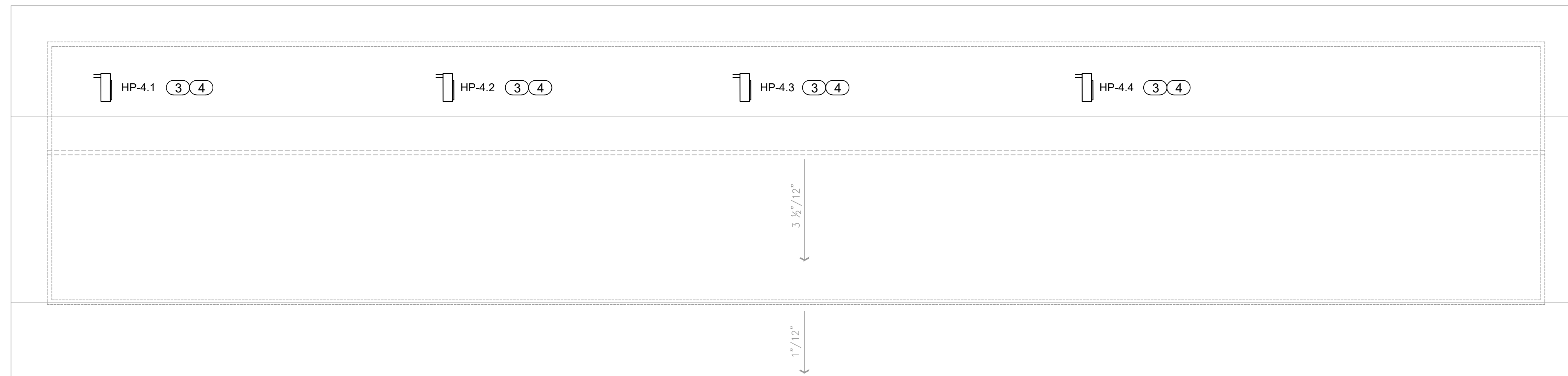
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2024



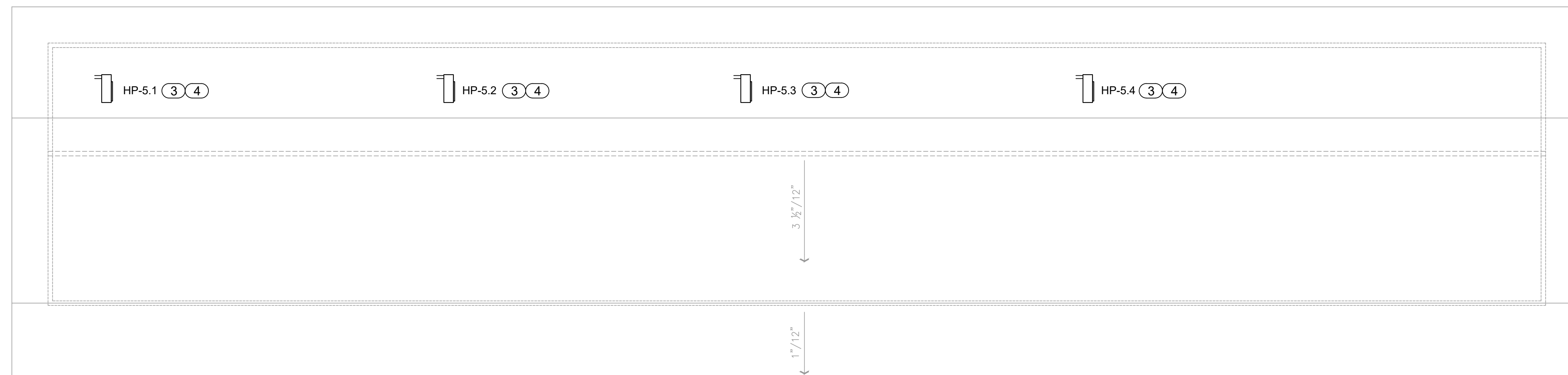
1 Roof Plan - Unit 3

1/8" = 1'-0"



2 Roof Plan - Unit 4

1/8" = 1'-0"



3 Roof Plan - Unit 5

1/8" = 1'-0"

KEYNOTES

- 3 MOUNT HEAT PUMP UNIT ON (E) ROOF PLATFORM. SEE DETAILS ON SHEET MB-0.3
- 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION. SEE DETAILS ON SHEET MB-0.3

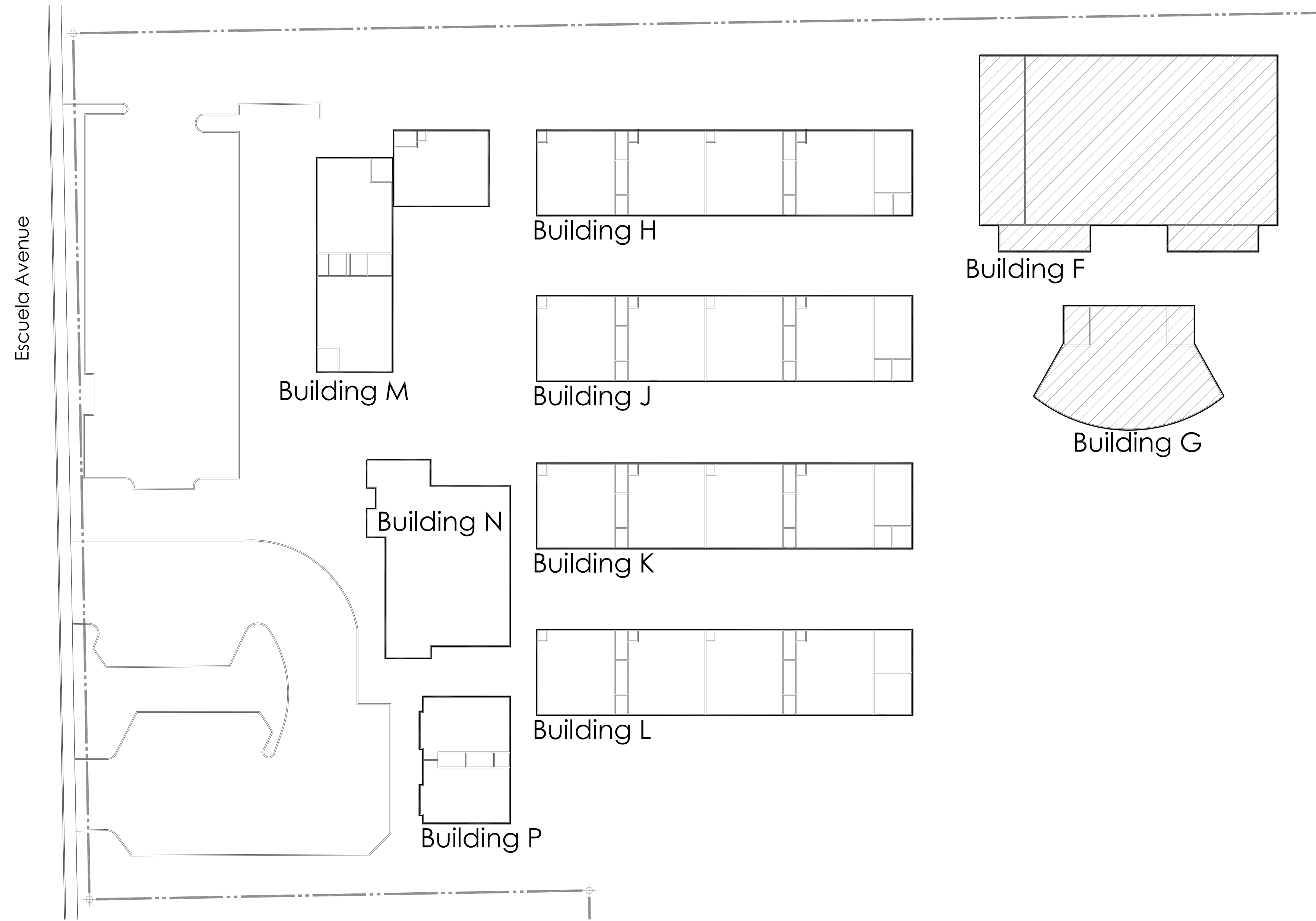
COORDINATION NOTES

EXISTING SYSTEMS

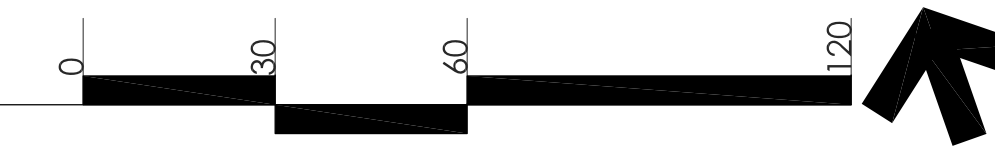
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OPER WT 278 #

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AUX 10 KW ELECTRIC HEATER
@208V, 36.1 AMPS (SEPARATE
POWER)
OPER WT = 167#
- 2 HEAT PUMP: 208-230/1
MCA = 30
OPER WT 225#



Site Plan - **Mistral Elementary School**



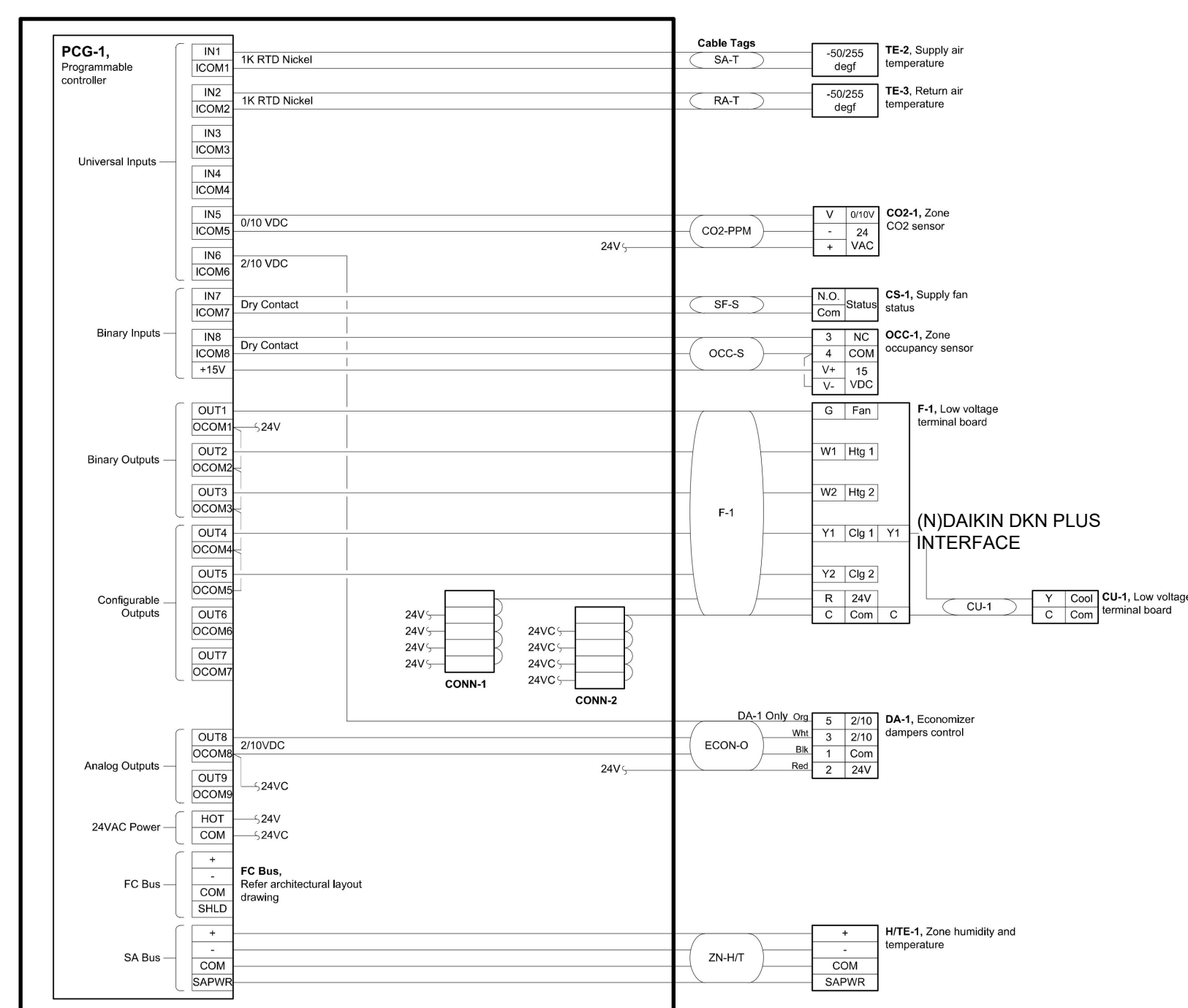
SPLIT SYSTEM HEAT PUMP

INDOOR UNIT													OUTDOOR UNIT									
TAG PREFIX	TAG (AREA SERVED)	MANUF & MODEL NO	MCA / MOP	ELECT V/φ/HZ	CFM @ 0.7" SP	NCC (KBTUH @ARI)	NHC (KBTUH @ARI)	RATED AUX ELECT HEATER (Kw) @240V/1	AMPS @ 208V/1φ	OPER WEIGHT (LBS)	FLOOR AREA SQFT	MIN OA	TAG PREFIX	TAG (AREA SERVED)	MANUF & MODEL NO	NCC (KBTUH @ARI)	NHC (KBTUH @ARI)	SEER	HSPF	MCA / MOP	ELECT V/φ/HZ	OPER WEIGHT (LBS)
SFC	H101, H103, H106, H108, J101, J103, J106, J108, K101, K103, K106, K108, L101, L103, L106, L108	DAIKIN FXTQ60TAVJU	8.6 / 15	208/1	1,620	60.0	66.0	10	36.1	175	1,100	418	SHP	H101, H103, H106, H108, J101, J103, J106, J108, K101, K103, K106, K108, L101, L103, L106, L108	DAIKIN RXTQ60TAVJU	57.7	57	16.0	10.5	27 / 30	208/1/60	225

ACCESSORIES:
 - PRE-CHARGED & PRE-INSULATED REFRIGERANT TUBING
 - REFRIGERANT LOCK CAP ON SERVICE VALVES
 - AUX HEATER REQUIRES SEPARATE ELECTRICAL DISCONNECT AND FEEDER

HEAT PUMP SYSTEM WITH ECONOMIZER, DEMAND CONTROL VENTILATION & ZONE OCCUPANCY MONITORING

1. SYSTEM OVERVIEW
 - a. EACH HEAT PUMP WILL BE DIRECTLY CONTROLLED BY ITS OWN DEDICATED EMS (ENERGY MANAGEMENT SYSTEM) UNITARY CONTROLLER.
 - b. EMS UNITARY CONTROLLER WILL BE CONNECTED TO A WALL MOUNTED ELECTRONIC ZONE TEMPERATURE SENSOR, WITH INTEGRAL RELATIVE HUMIDITY SENSOR, AND SUPPLEMENTARY CO2 SENSOR.
 - c. ELECTRONIC ZONE TEMPERATURE SENSOR SHALL HAVE A TOUCH SCREEN LCD INTERFACE WHICH INCLUDES: 1) DIGITAL PUSHBUTTONS FOR WARMER/COOLER SETPOINT CONTROL; 2) VISUAL DISPLAY OF ROOM TEMPERATURE AND ROOM HUMIDITY; AND 3) DIGITAL PUSHBUTTON AFTER-HOURS OVERRIDE TIMER CONTROL, WITH USER ADJUSTABLE DURATION. THE AFTER-HOURS OVERRIDE DURATION SHALL HAVE THE ABILITY TO BE LIMITED FROM THE FRONT-END.
2. OCCUPANCY/VACANCY MONITORING
 - a. ZONE OCCUPANCY AND VACANCY WILL BE ACTIVELY MONITORED BY EXISTING OCCUPANCY SENSOR(S)
3. UNIT FAN OPERATION
 - a. WHEN THE ZONE IS IN OCCUPIED MODE OR IN AFTERHOURS MODE, THE FAN SHALL RUN CONTINUOUSLY, UNLESS VACANT MODE HAS BEEN TRIGGERED.
 - b. DURING THE UNOCCUPIED MODE AS DETERMINED BY EMS TIME SCHEDULE, THE UNIT FAN CYCLES WITH DEMAND AND THE TEMPERATURE IS CONTROLLED BY THE UNOCCUPIED SPACE TEMPERATURE HEATING AND COOLING SETPOINTS.
4. MINIMUM OUTDOOR AIR VENTILATION
 - a. DURING OCCUPIED MODE OR AFTERHOURS MODE, THE ECONOMIZER DAMPER SHALL BE COMMANDED BY THE EMS UNITARY CONTROLLER TO MAINTAIN A POSITION WHICH SATISFIES THE MINIMUM OUTDOOR AIR VENTILATION REQUIREMENTS FOR THE ZONE. DAMPER POSITION(S) DETERMINED BY AIR BALANCING CONTRACTOR.
5. DEMAND CONTROL VENTILATION
 - a. EMS UNITARY CONTROLLER WILL BE CONNECTED TO A WALL MOUNTED CO2 SENSOR TO MONITOR ZONE CO2 CONCENTRATION.
 - b. DURING OCCUPIED MODE OR AFTERHOURS MODE, THE EMS UNITARY CONTROLLER SHALL RESET THE OUTSIDE AIR DAMPER MINIMUM POSITION TO MAINTAIN THE CO2 CONCENTRATION BELOW 1,000 PPM.
6. AUTOMATIC DEMAND REDUCTION CONTROLS
 - a. EMS SHALL BE PROGRAMMED WITH CAPABILITY TO IMPLEMENT CENTRALIZED DEMAND SHED FOR ALL NON-CRITICAL ZONES UPON CALL FOR AUTOMATIC DEMAND REDUCTION. CRITICAL ZONES SHALL NOT BE IMPACTED BY DEMAND SHED CONSERVATION MEASURES.
7. VACANT MODE CONTROL
 - a. WHEN THE ZONE HAS BEEN SCHEDULED FOR OCCUPANCY FOR AT LEAST ONE HOUR AND THE OCCUPANCY SENSOR HAS CONFIRMED THAT ZONE HAS BEEN VACANT FOR 5 MINUTES (ADJUSTABLE: MAXIMUM 30 MINUTES), ZONE SHALL BE PLACED INTO VACANT MODE.
 - b. RESET COOLING AND HEATING SETPOINTS UP AND DOWN BY 2°F (ADJUSTABLE) OR MORE.
 - c. MINIMUM OUTDOOR AIR VENTILATION REQUIREMENTS IN THE ZONE NEED ONLY BE MAINTAINED 15 MINUTES OUT OF EVERY 60 MINUTES WHILE THE ZONE IS IN VACANT MODE.
 - d. UPON DETECTION OF OCCUPANCY, VACANT MODE SHALL BE CLEARED.
8. ZONE PRE-OCCUPANCY PURGE
 - a. THE EMS SHALL SCHEDULE THE ZONE TO BE IN OCCUPIED MODE ONE HOUR PRIOR TO THE ACTUAL TIME OF ANTICIPATED OCCUPANCY.
9. HEATING OPERATION
 - a. THE CONTROLLER COMPARES THE HEATING SETPOINT WITH THE SPACE TEMPERATURE AND DETERMINES A NEED-HEATING CONTROL SIGNAL TO ENGAGE THE COMPRESSOR(S) AND REVERSING VALVE (ACCORDING TO HEAT PUMP MANUFACTURER'S INSTRUCTION FOR HEATING CYCLE) TO MAINTAIN ROOM SETPOINT.
 - b. IF FURTHER HEATING IS REQUIRED AFTER COMPRESSOR(S)/REVERSING VALVE HEATING IS ACTIVATE FOR 15 MINUTES (ADJUSTABLE), ENGAGE AUXILIARY ELECTRIC HEAT.
 - c. ECONOMIZER TO BE COMMANDED TO MIN CFM SETPOINT DURING HEATING MODE.
 - d. MECHANICAL HEATING OPERATION NOT ALLOWED IF DOOR/WINDOW SWITCHES INDICATE OPEN FOR MORE THAN 5 MINUTES (ADJUSTABLE).
10. COOLING OPERATION
 - a. THE CONTROLLER COMPARES THE COOLING SETPOINT WITH THE SPACE TEMPERATURE AND DETERMINES A NEED-COOLING SIGNAL.
 - b. THE FIRST STAGE OF COOLING WILL ENABLE THE ECONOMIZER TO PROVIDE FREE COOLING FOR AS LONG AS POSSIBLE.
 - c. THE SECOND STAGE OF COOLING WILL ENABLE THE COMPRESSOR(S) AND REVERSING VALVE (ACCORDING TO HEAT PUMP MANUFACTURER'S INSTRUCTION FOR COOLING CYCLE) TO MAINTAIN THE ROOM SET POINT.
 - d. MECHANICAL COOLING OPERATION NOT ALLOWED IF DOOR/WINDOW SWITCHES INDICATE OPEN FOR MORE THAN 5 MINUTES (ADJUSTABLE).
11. FAULT DETECTION DIAGNOSTICS
 - a. THE EMS DDC CONTROLLER SHALL MONITOR THE FOLLOWING ECONOMIZER ACTUATOR FAULT DETECTION DIAGNOSTIC CONDITIONS AND BROADCAST RESULTS VIA EMS NETWORK:
 - i. TEMPERATURE SENSOR FAILURE/FAULT
 - ii. ECONOMIZER NOT ECONOMIZING WHEN ENABLED
 - iii. ECONOMIZER ECONOMIZING WHEN DISABLED
 - iv. ECONOMIZER DAMPER MODULATION FAILURE
 - v. EXCESS OUTDOOR AIR
12. MONITORING - THE FOLLOWING CONDITIONS SHALL BE MONITORED AND DISPLAYED AT EMS OPERATOR WORKSTATION/GRAPHICAL USER INTERFACE:
 - a. SUPPLY AIR TEMPERATURE.
 - b. ROOM TEMPERATURE.
 - c. ROOM HUMIDITY.
 - d. ROOM CO2 CONCENTRATION.
 - e. ROOM OCCUPANCY STATUS.
 - f. CURRENT MODE (HEATING/COOLING/FAN).
 - g. SUPPLY AIR TEMPERATURE ATTAINED LAST TIME UNIT WAS IN HEATING OR COOLING.
 - h. CURRENT COMMAND STATUS OF FAN, COMPRESSOR, REVERSING VALVE AND AUX HEAT.
 - i. RUN TIME METERS ON FAN, COMPRESSOR, REVERSING VALVE AND AUX HEAT.
 - j. FAN STATUS THRU CURRENT SWITCH.
 - k. ECONOMIZER ACTUATOR FEEDBACK STATUS.
 - l. DOOR/WINDOW STATUS

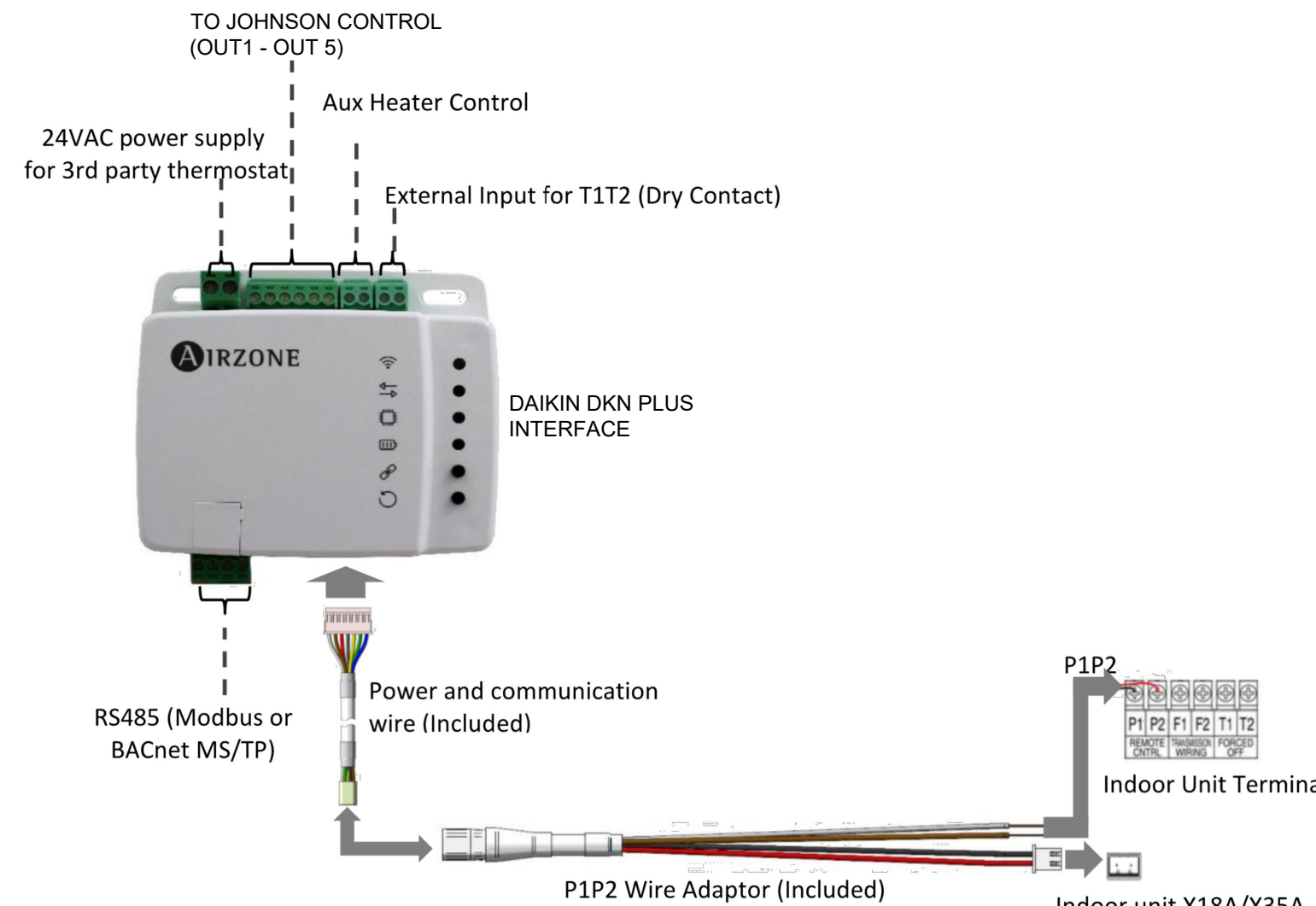


(E) JOHNSON CONTROL EMS CONTROLLER

EMS CONTROL DIAGRAM

SCALE: N.T.S

1



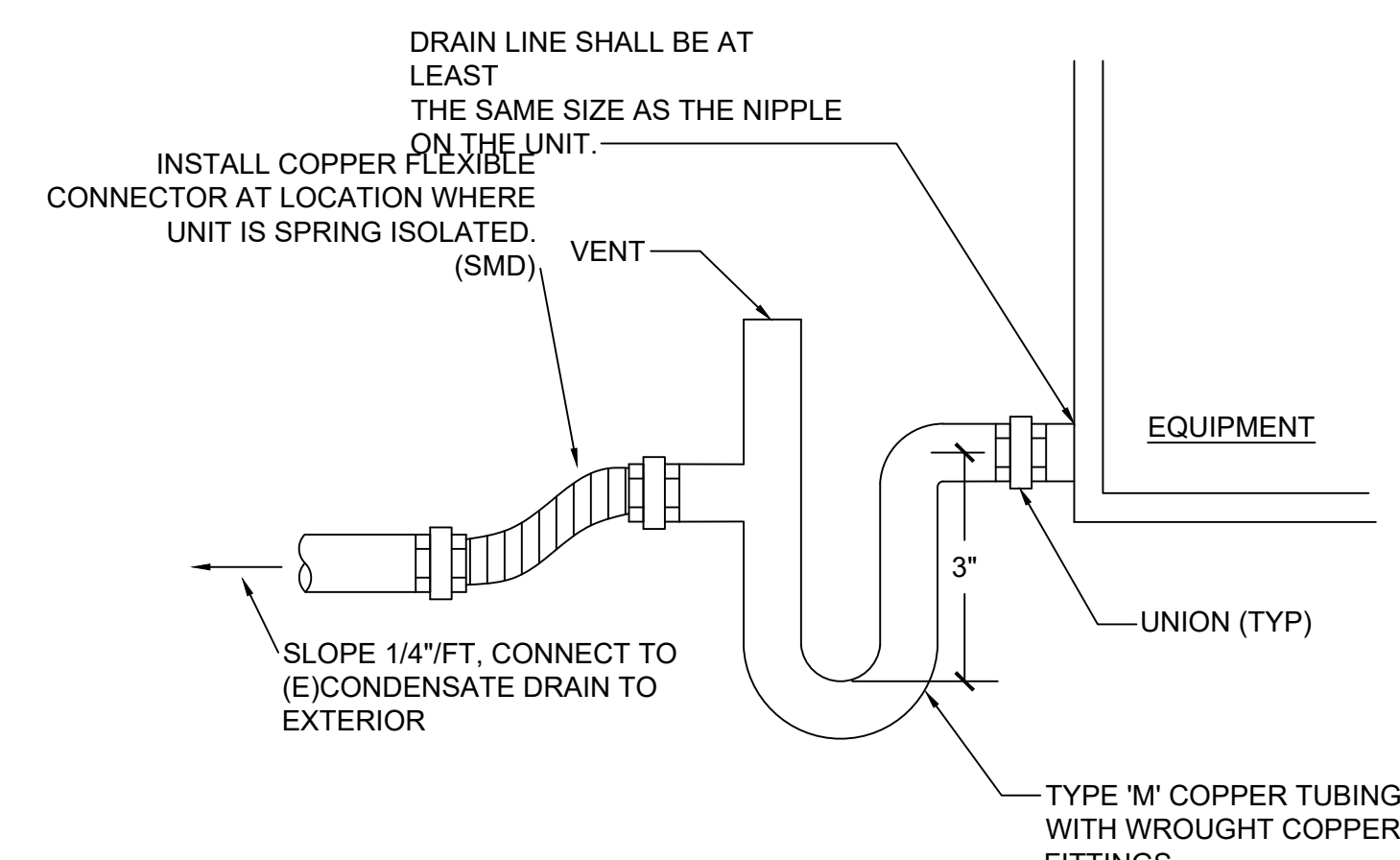
INTERFACE MODULE ADDED TO JOHNSON EMS CONTROLS CONNECTING TO NEW DAIKIN HEAT PUMP SYSTEM

DAIKIN THIRD PARTY EMS INTERFACE CONTROLLER

SCALE: N.T.S

2

- NOTES:**
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CONDENSATE P-TRAP @ MECHANICAL EQUIPMENT

SCALE: N.T.S

3

HVAC Modernization and Replacement
Mountain View Whisman School District
 Mountain View, California



HM MECHANICAL GROUP
 230 Redwood Street
 Oakland, CA 94612
 Tel: 510.669.2000

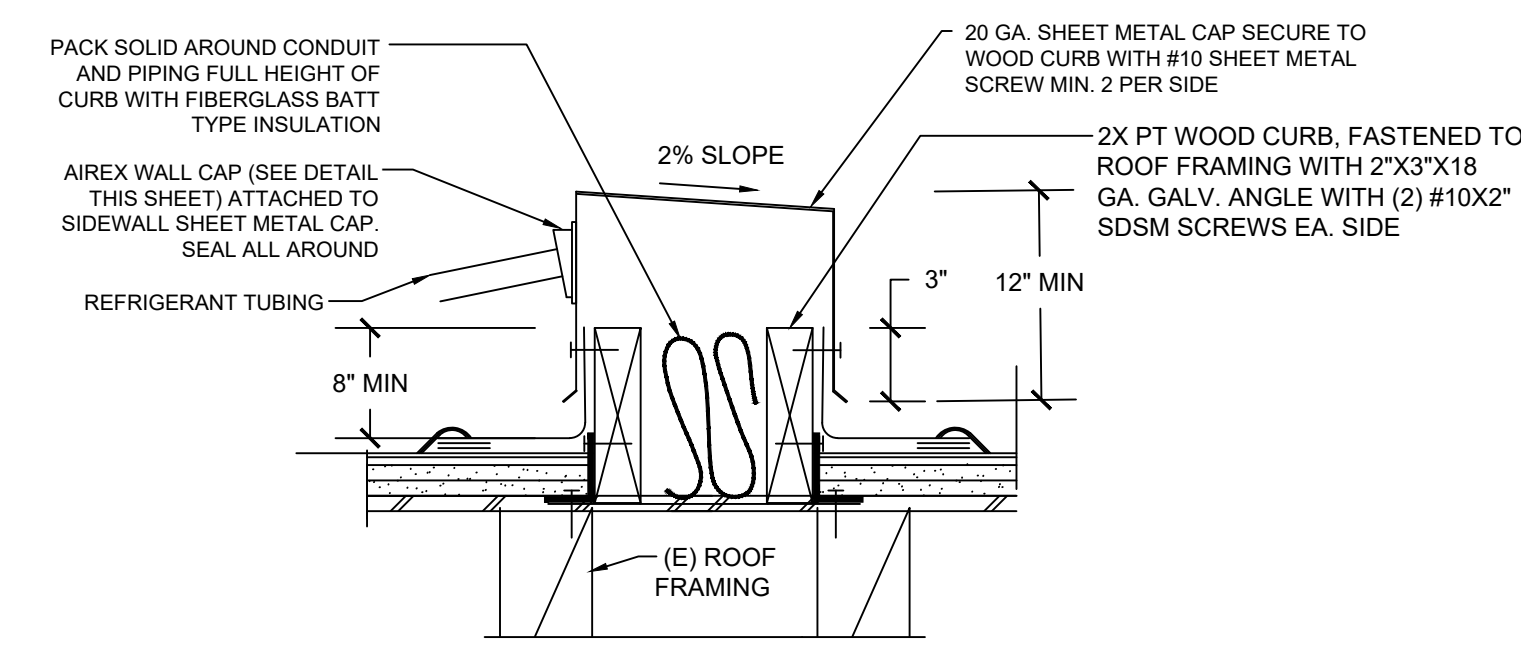
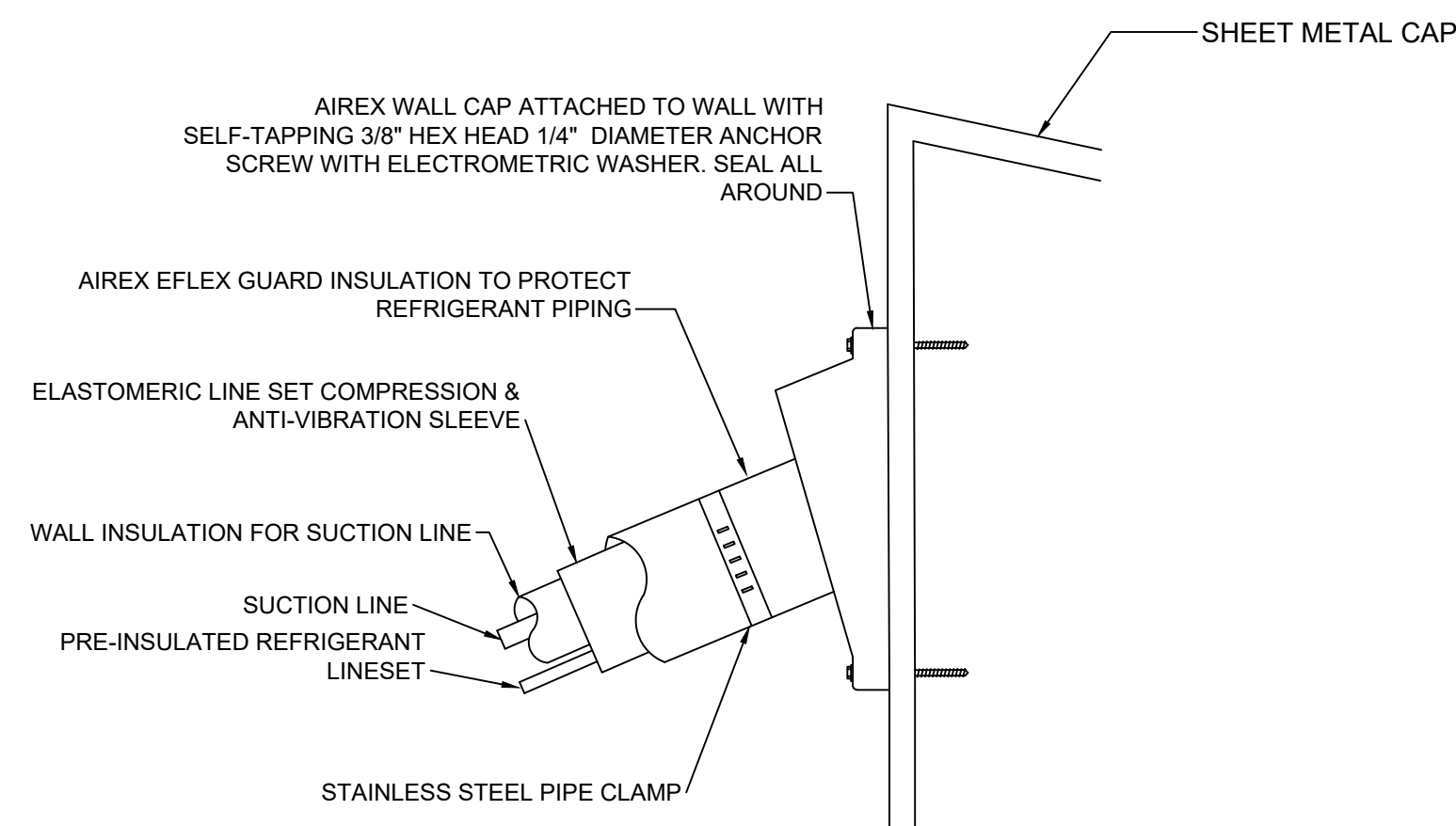


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 Redwood City, California
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 707.431.1305

Mistral Elementary School
 Mechanical:
 Schedules and Details

MM-02

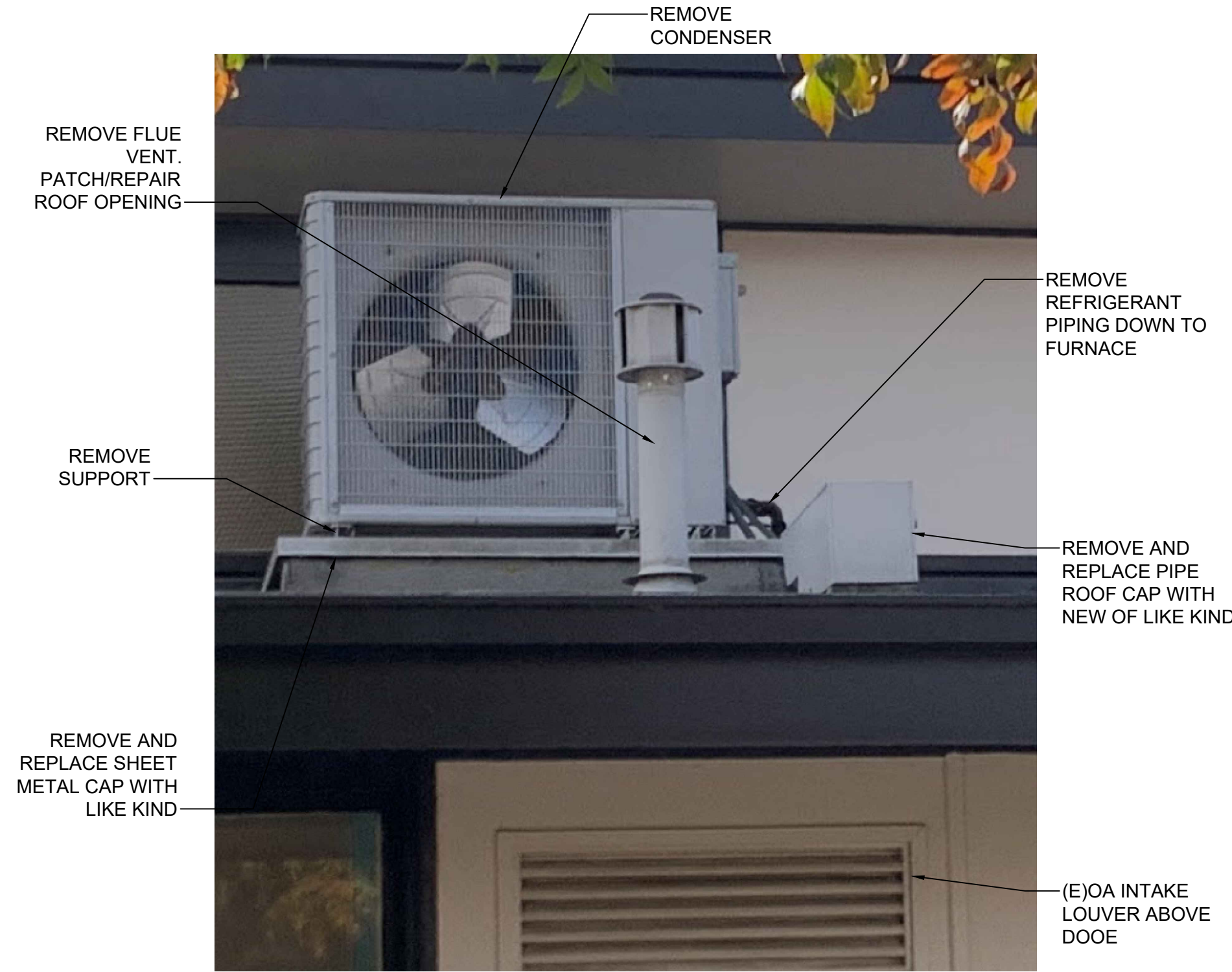
2024



PIPE PORTAL THRU ROOF DETAIL

SCALE: N.T.S.

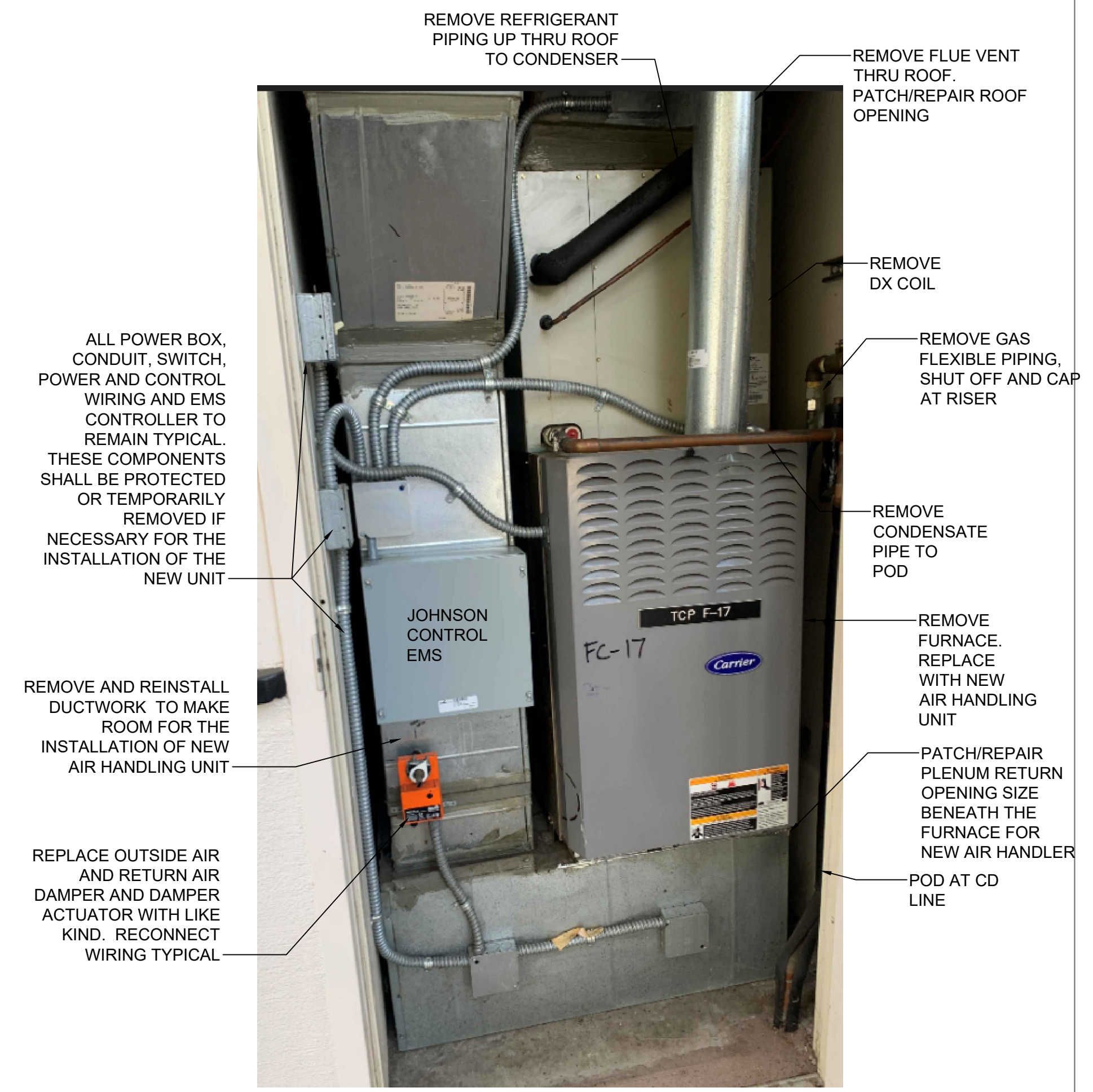
6



MECHANICAL DEMO ROOF PLAN

SCALE: N.T.S.

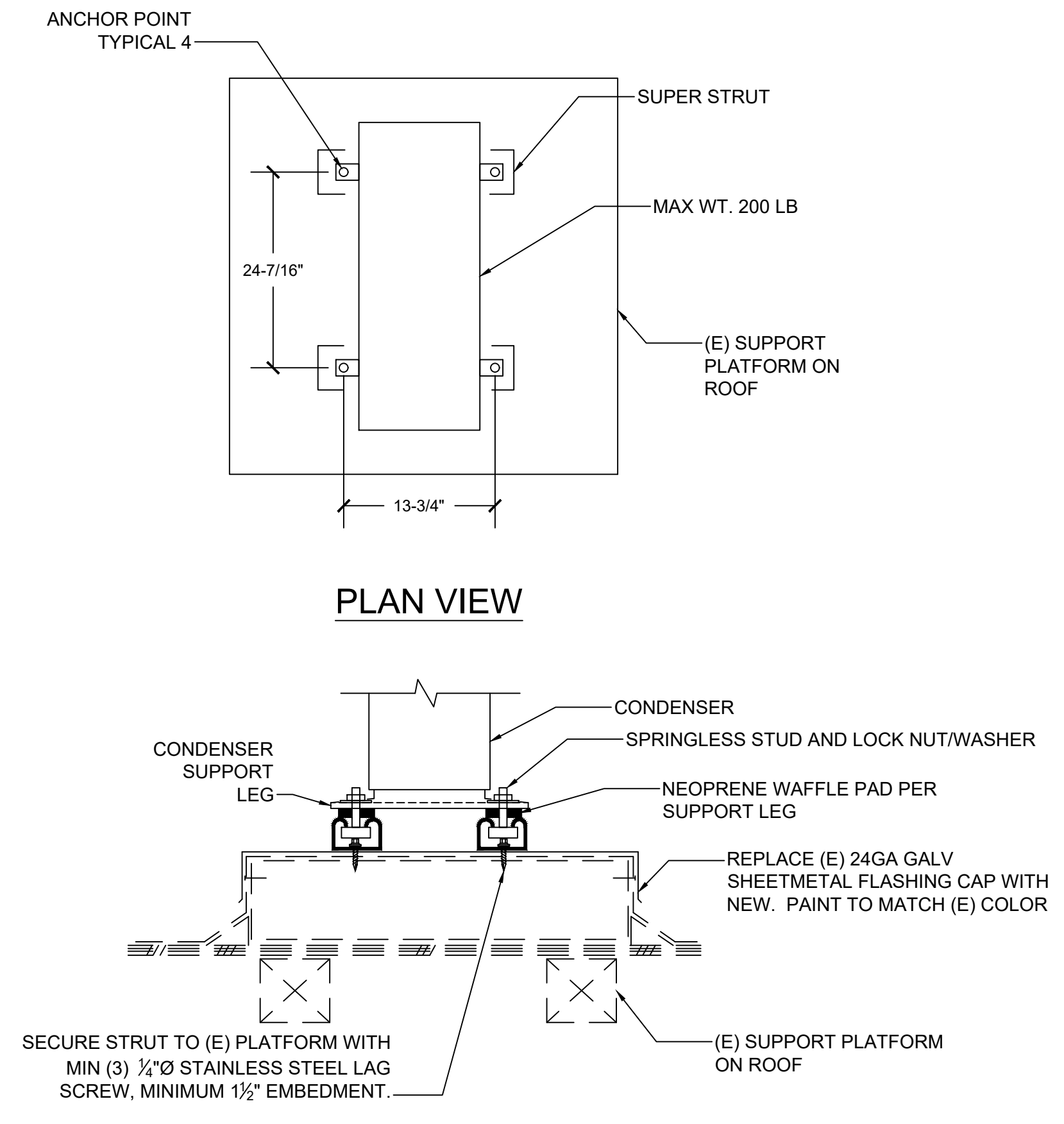
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FURNACE CLOSET DEMO PLAN

SCALE: N.T.S.

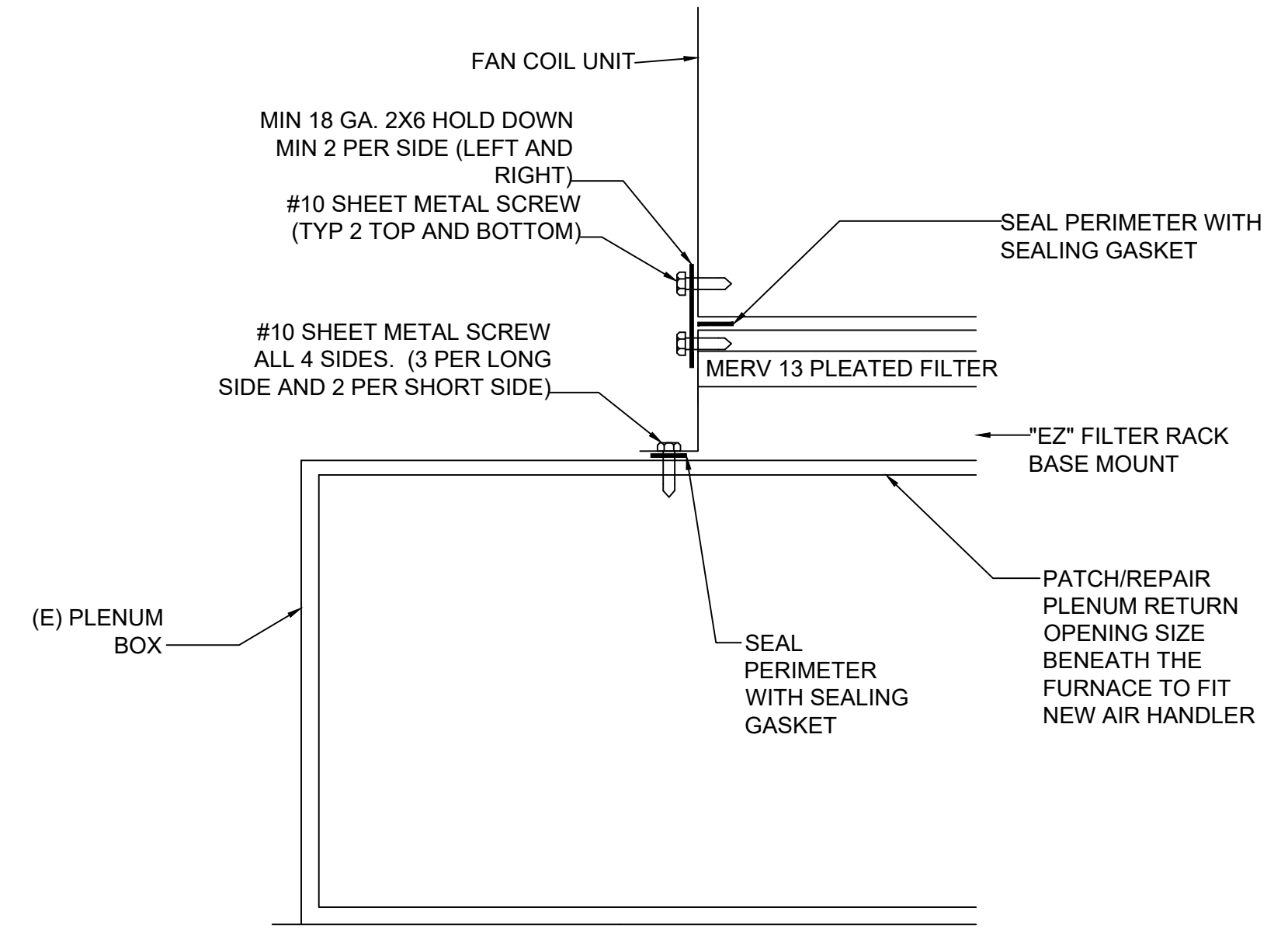
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ROOF MOUNT CONDENSER SUPPORT DETAIL

SCALE: N.T.S.

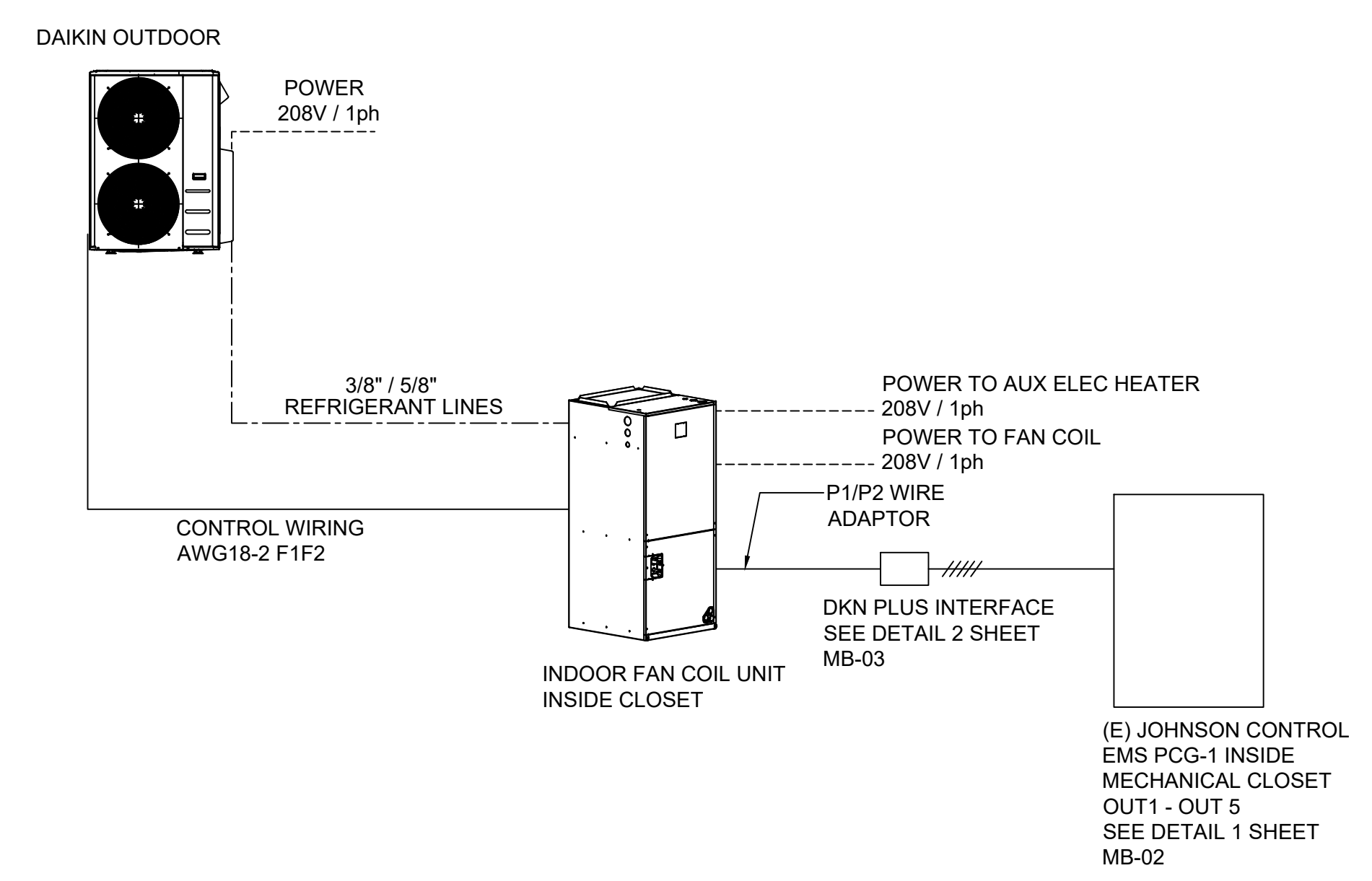
1



FAN COIL UNIT MOUNTING DETAIL IN CLOSET

SCALE: N.T.S.

2



PIPING AND WIRING CONTROL DIAGRAM

SCALE: N.T.S.

3

HVAC Modernization and Replacement
**Mountain View Whisman
 School District**
 Mountain View, California

Mistral Elementary School
 Mechanical:
 Details

MM-03

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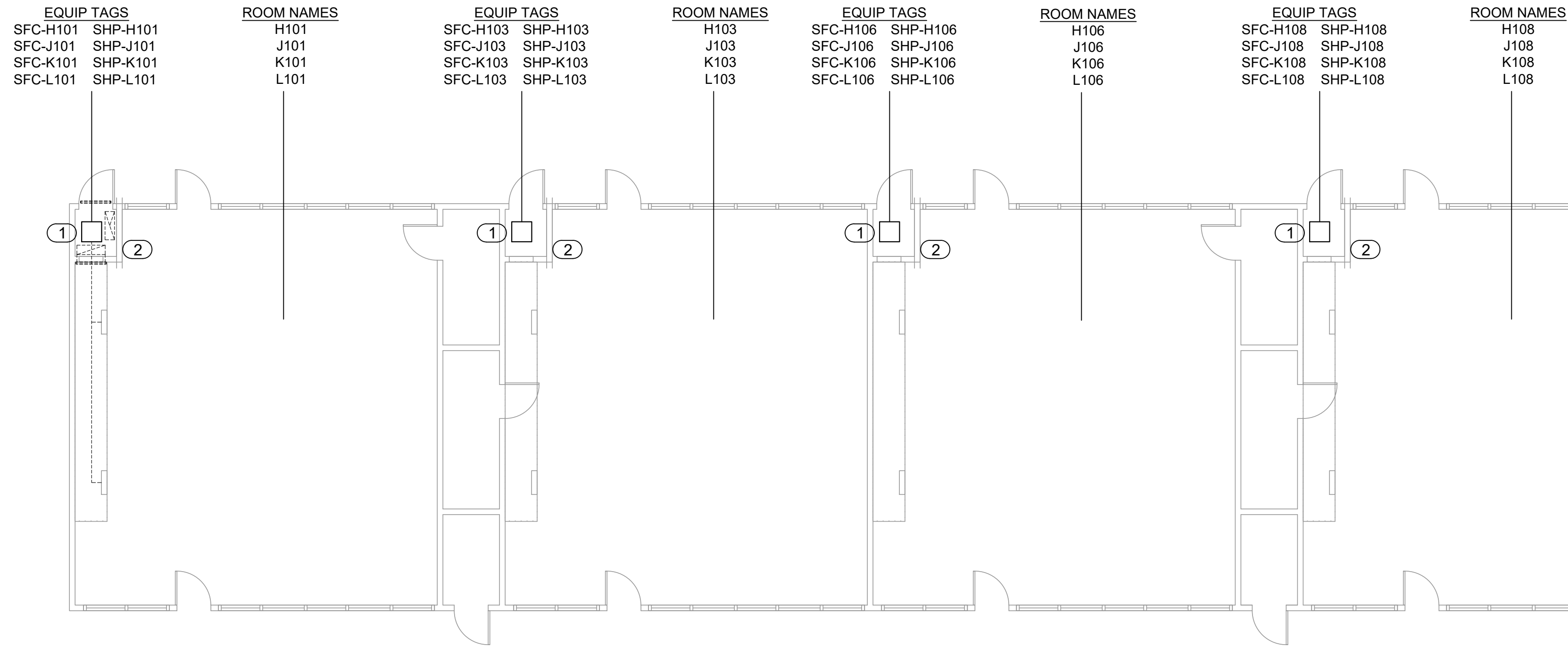
MECHANICAL GROUP
 11000 JUANITO AVENUE
 OAKLAND, CA 94621
 TEL: 510-562-2000



DTA
 Drilling Terrones
 Architecture Inc.
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 OAKLAND, CALIFORNIA
 94621
 510-562-2000

314 CENTER STREET #220
 SAN JOSE, CALIFORNIA
 95048
 408-431-1905



1 Floor Plan - Building H (Bldg J-L similar)

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E)FURNACE, GAS LINE & CAP. REMOVE FLUE & (E) REFRIGERANT LINES THROUGH ROOF. INSTALL NEW FAN COIL ON (E)PLATFORM. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 RECONNECT JOHNSON DDC: CONTROLS SHALL BE COMMISSIONED FOR PROPER SEQUENCING AND PERFORMANCE
- 3 MOUNT HEAT PUMP UNIT ON (E) ROOF PLATFORM.
- 4 ROUTE NEW REFRIGERANT TUBING THROUGH NEW ROOF JACK, SEAL PENETRATION

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 1100 Juanita Avenue
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 Hayward, California
 94546
 707 431 1905

HM
MECHANICAL GROUP
 1100 Juanita Avenue, Suite 210
 Oakland, CA 94612
 Tel: 510-569-2000



2 Roof Plan - Building H (Bldg J-L similar)

1/8" = 1'-0"

COORDINATION NOTES

EXISTING SYSTEMS

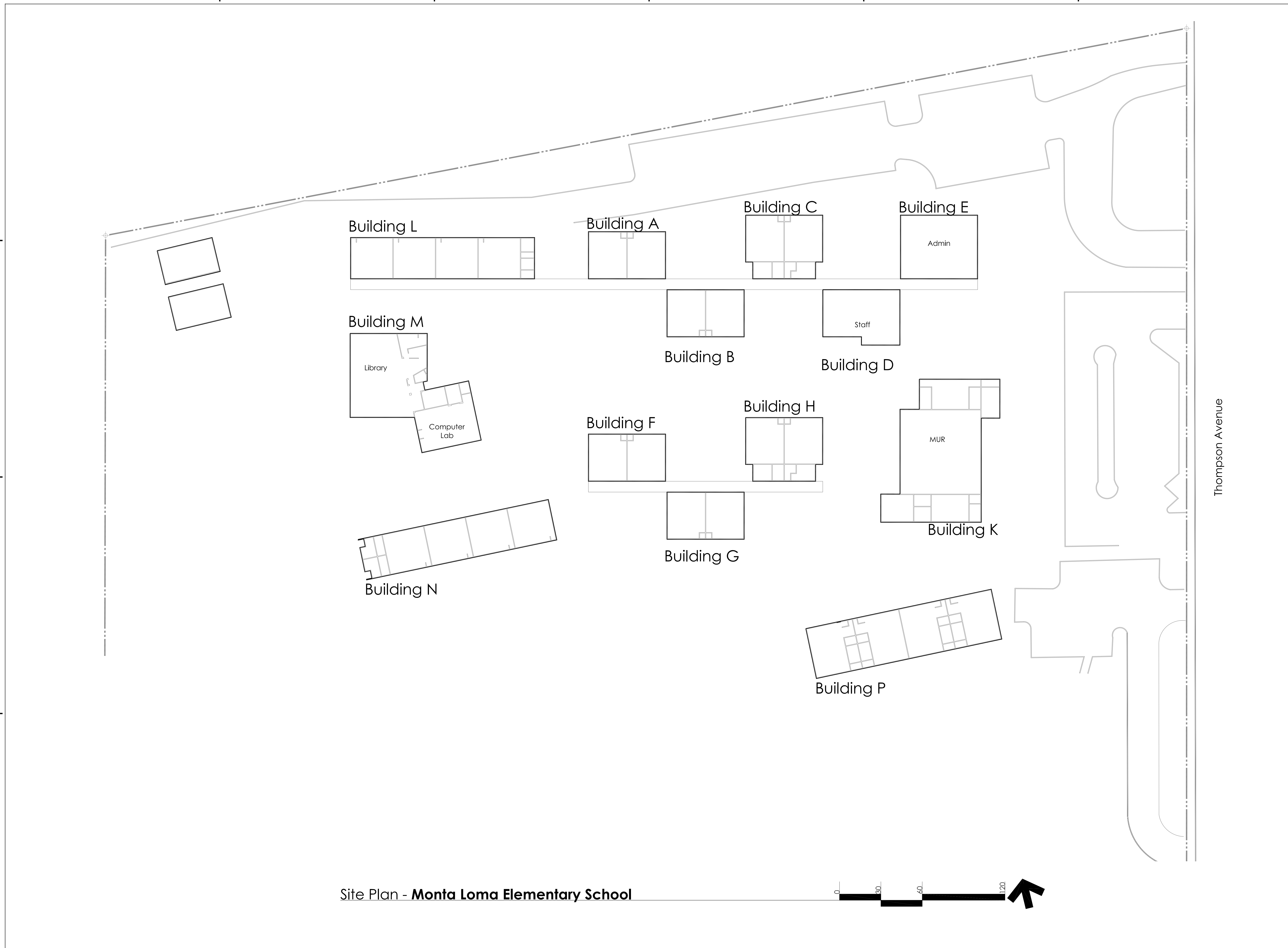
- 1 FURNACE: 120V/1, 3/4 HP
OPER WT 150#
- 2 HEAT PUMP: 208-230/1,
MCA 34.5
OPER WT 278 #

NEW SYSTEMS

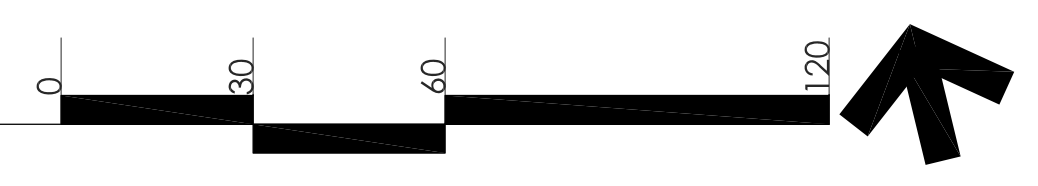
- 1 AIR-HANDLER: 208-230/1,
MCA = 8.6
AUX 10 KW ELECTRIC HEATER
@208V, 36.1 AMPS (SEPARATE
POWER)
OPER WT = 167#
- 2 HEAT PUMP: 208-230/1
MCA = 30
OPER WT 225#

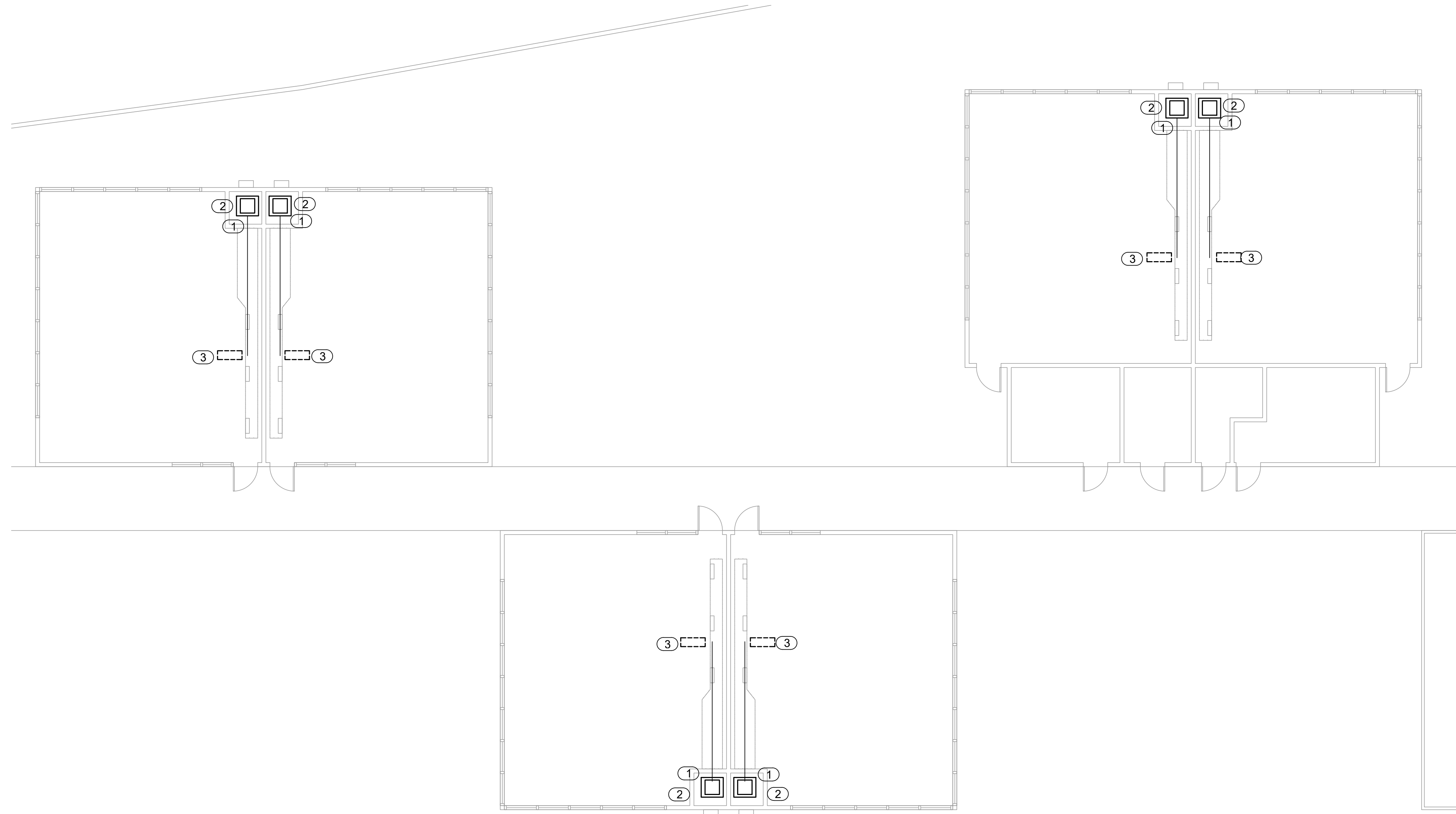
HVAC Modernization and Replacement
**Mountain View Whisman
 School District**
 Mountain View, California

Mistral Elementary School
 Mechanical:
 Building H Floor & Roof Plan



Site Plan - **Monta Loma Elementary School**





KEYNOTES

- 1 REMOVE (E)UNITARY HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 5 TON FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC.
- 3 INSTALL NEW HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

COORDINATION NOTES

- EXISTING SYSTEMS
- 1 4-TON UNITARY HEAT PUMP: FLOOR MOUNTED
- NEW SYSTEMS
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6, 10 KW AUX ELECTRIC HEATER @208-230V, OPER WT = 167#
 - 2 5-TON HEAT PUMP: 208/230/1, MCA = 29.1, OPER WT 225#

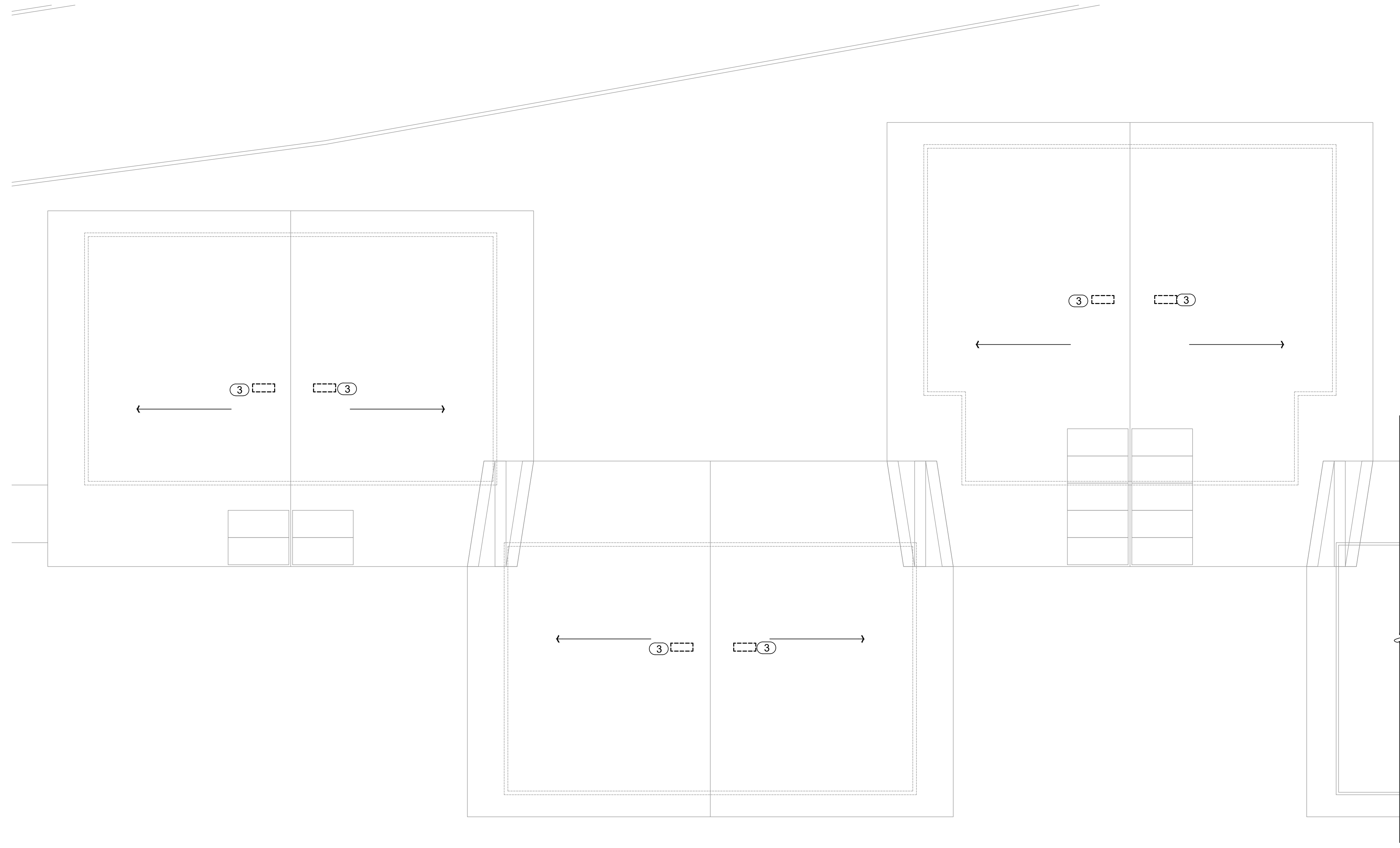
1 Floor Plan - Building A, B, & C (Bldg. F, G, & H sim.)

1/8" = 1'-0"

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Dreiling Terrones Architecture Inc.
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 1100 Juanita Avenue
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 314 Center Street #220
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 96001
 707 431 1905

H M
MECHANICAL GROUP
 10000
 Oakland, CA 94612
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HVAC Modernization and Replacement
Mountain View Whisman School District
 Mountain View, California



KEYNOTES

3 INSTALL NEW HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

COORDINATION NOTES

NEW SYSTEMS
 1 5-TON HEAT PUMP: 208/230/1
 MCA = 29.1
 OPER WT 225#

1 Roof Plan - Buildings A, B, & C (Bldg. F, G, & H sim.)

1/8" = 1'-0"



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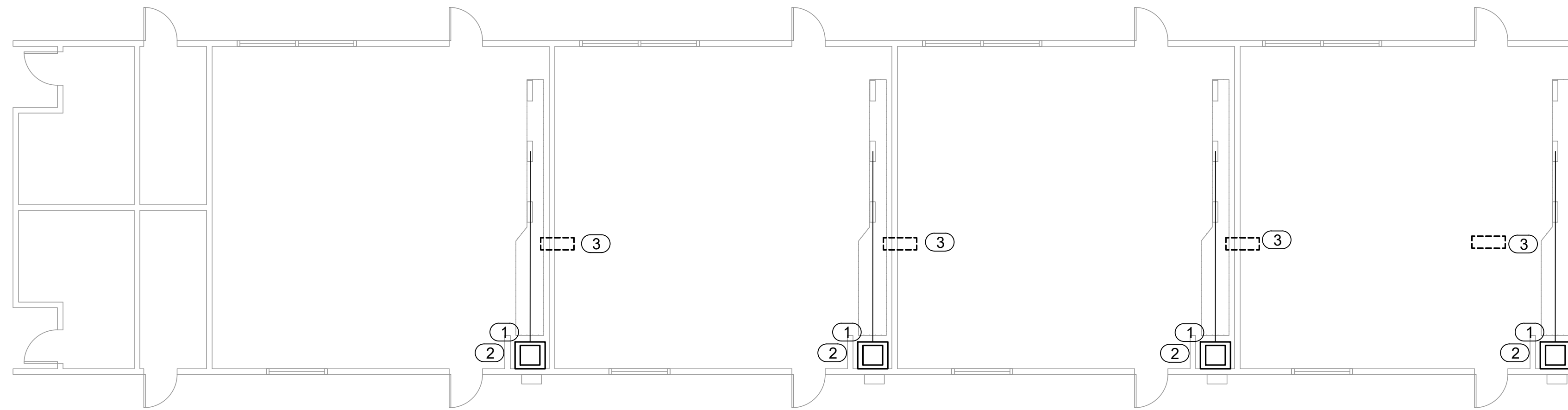
1100 Juanita Avenue
 Fremont, California
 94618
 450 696 1200

314 Center Street #220
 Redding, California
 96001
 707 431 1905

Monta Loma ES
 Mechanical:
 Roof Plans: Bldg. A, B & C

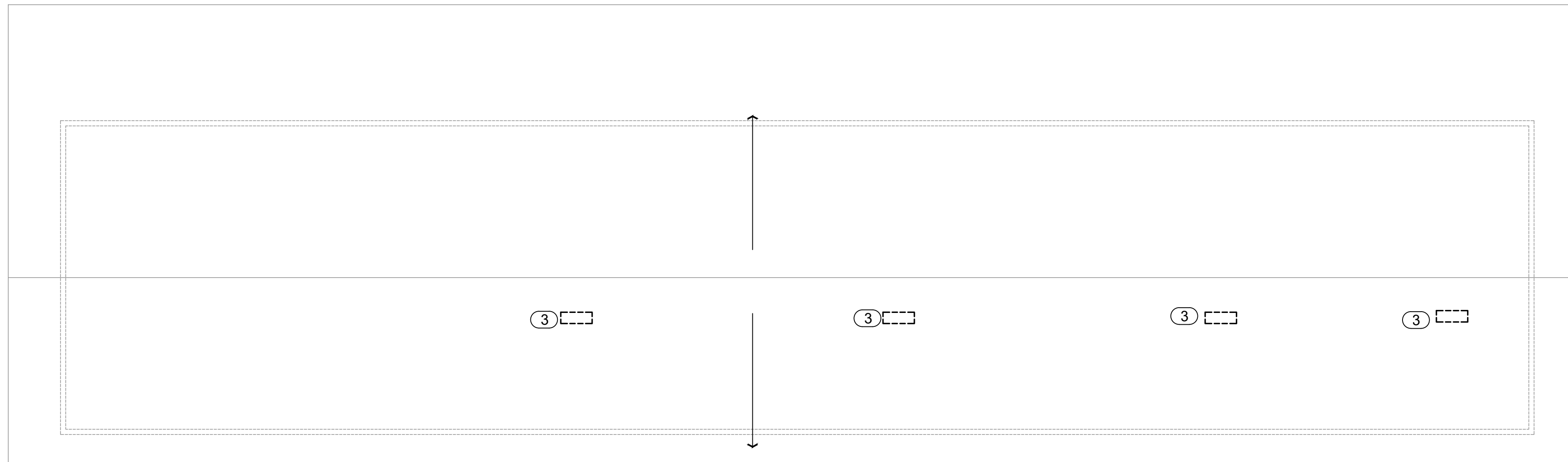
MML-2.2

2024



1 Floor Plan - Building N

1/8" = 1'-0"



2 Roof Plan - Building N

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E)UNITARY HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 5 TON FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC.
- 3 INSTALL NEW HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.
3A OPTION A: INSTALL 5 TON HEAT PUMP ON GROUND

COORDINATION NOTES

EXISTING SYSTEMS

- 1 4-TON UNITARY HEAT PUMP: FLOOR MOUNTED

NEW SYSTEMS

- 1 AIR-HANDLER: 208-230/1, MCA = 8.6
10 KW AUX ELECTRIC HEATER @208-230V
OPER WT = 167#
- 2 HEAT PUMP: 208/230/1
MCA = 29.1
OPER WT 225#



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Mountain View Whisman School District
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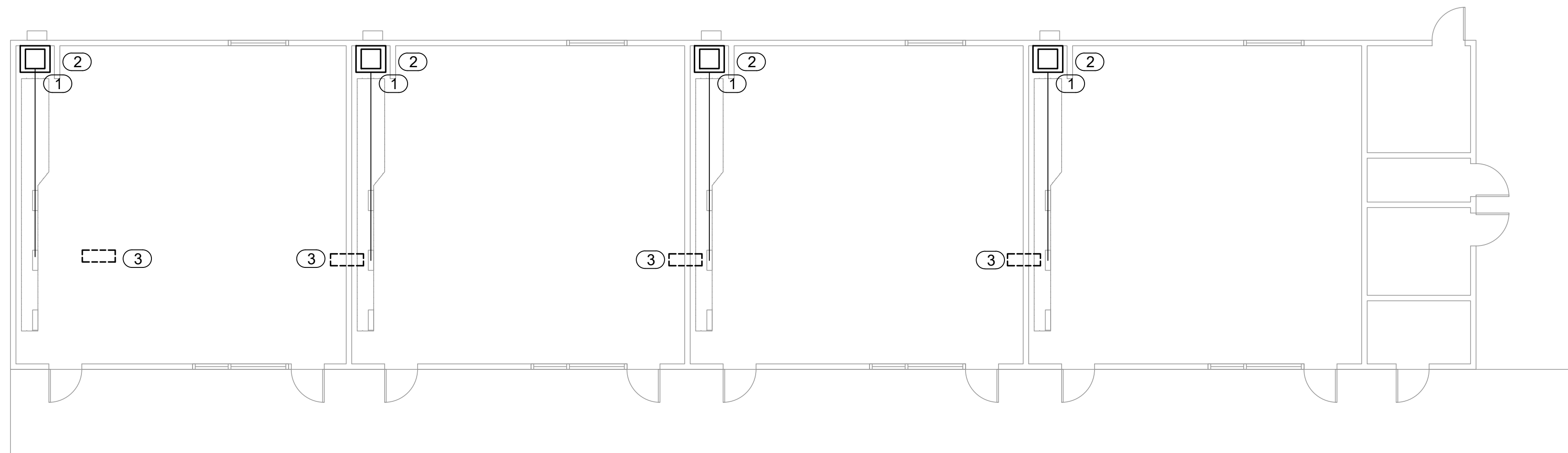


1103 Juanita Avenue
Huntingame, California
94010
650 696 1200
314 Center Street #220
Hayward, California
94546
707 431 1905

Monta Loma ES
Mechanical:
Floor & Roof Plan: Bldg. N

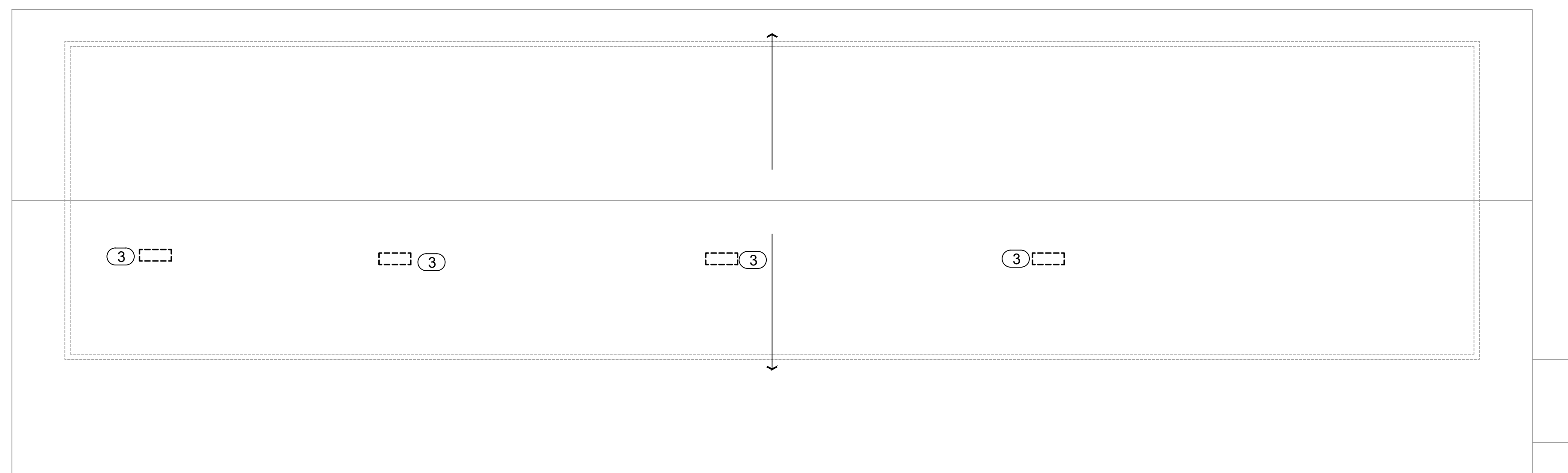
MML-2.3

2024



1 Floor Plan - Building L

1/8" = 1'-0"



2 Roof Plan - Building L

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E)UNITARY HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 5 TON FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC.
- 3 INSTALL NEW HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

COORDINATION NOTES

- EXISTING SYSTEMS
- 1 4-TON UNITARY HEAT PUMP: FLOOR MOUNTED
- NEW SYSTEMS
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6
10 KW AUX ELECTRIC HEATER @208-230V
OPER WT = 167#
 - 2 HEAT PUMP: 208/230/1
MCA = 29.1
OPER WT 225#

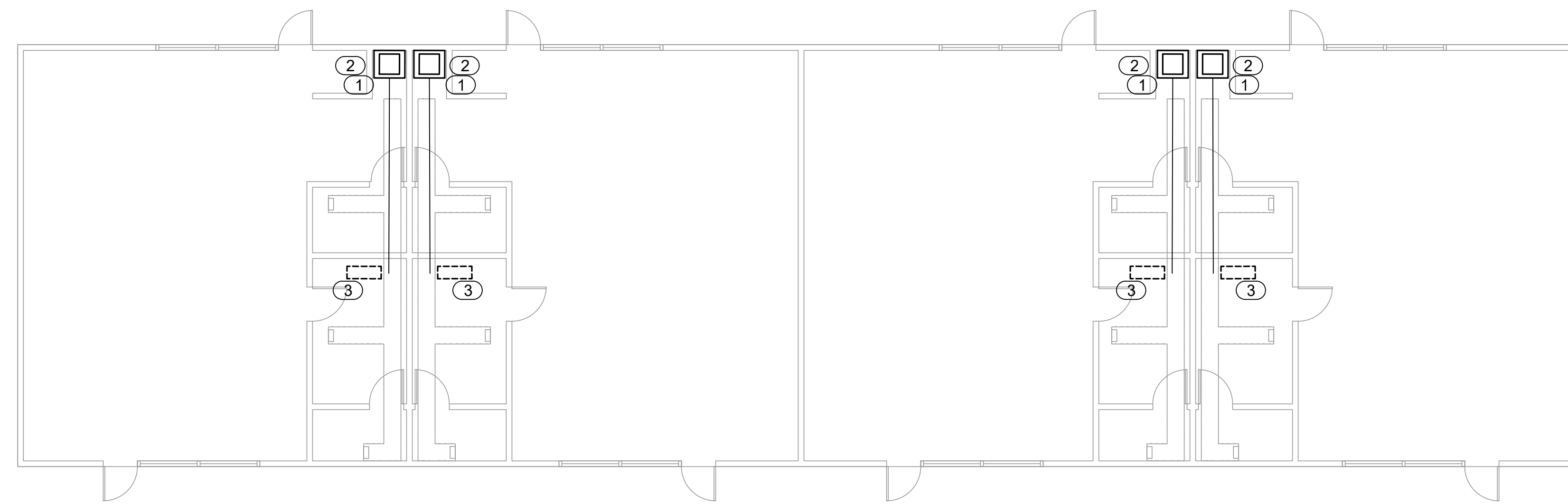


HVAC Modernization and Replacement
Mountain View Whisman School District
Mountain View, California



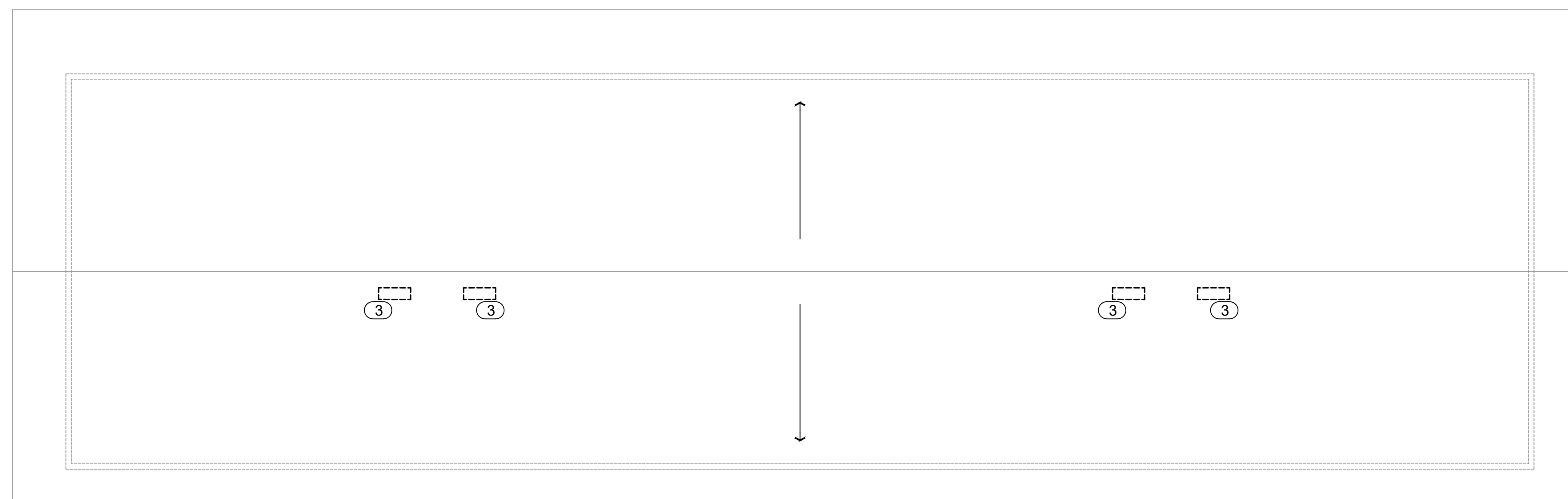
1103 Juanita Avenue
Fremont, CA 94536
949.610.6500
650.696.1200

314 Center Street #220
Hayward, CA 94542
925.486.7070
707.431.1905



1 Floor Plan - Building P

1/8" = 1'-0"



2 Roof Plan - Building P

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E)UNITARY HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 5 TON FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC.
- 3 INSTALL NEW HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

COORDINATION NOTES

EXISTING SYSTEMS

- 1 4-TON UNITARY HEAT PUMP: FLOOR MOUNTED

NEW SYSTEMS

- 1 AIR-HANDLER: 208-230/1, MCA = 8.6
10 KW AUX ELECTRIC HEATER @208-230V
OPER WT = 167#
- 2 5-TON HEAT PUMP: 208/230/1
MCA = 29.1
OPER WT 225#



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Mountain View, California



1100 Juanita Avenue
Fremont, California
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650 696 1200


314 Center Street #220
Fresno, California
95406
707 431 1905

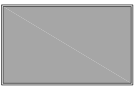
Monta Loma ES
Mechanical:
Floor & Roof Plan: Bldg. P

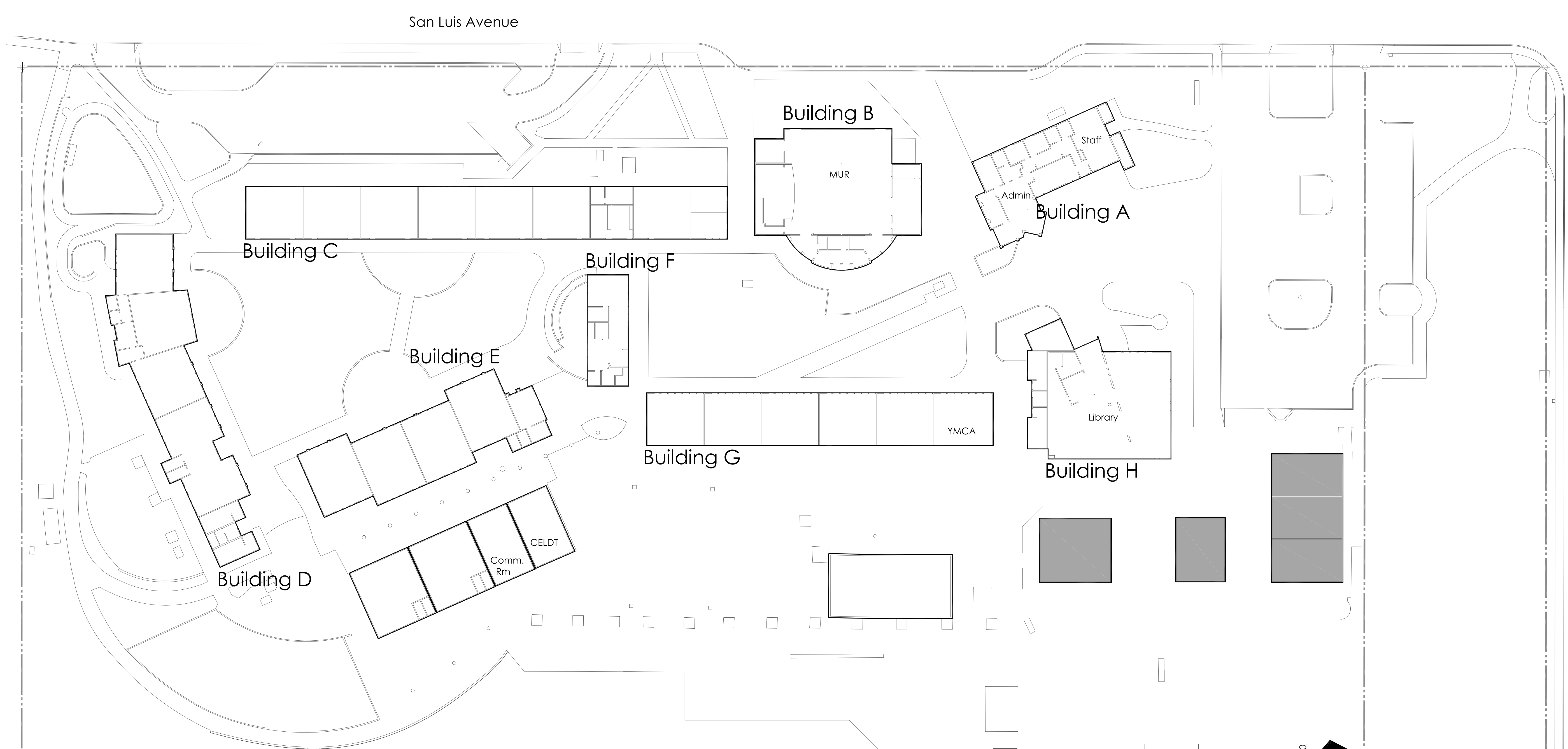
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2024

Legend

Theuerkauf ES 

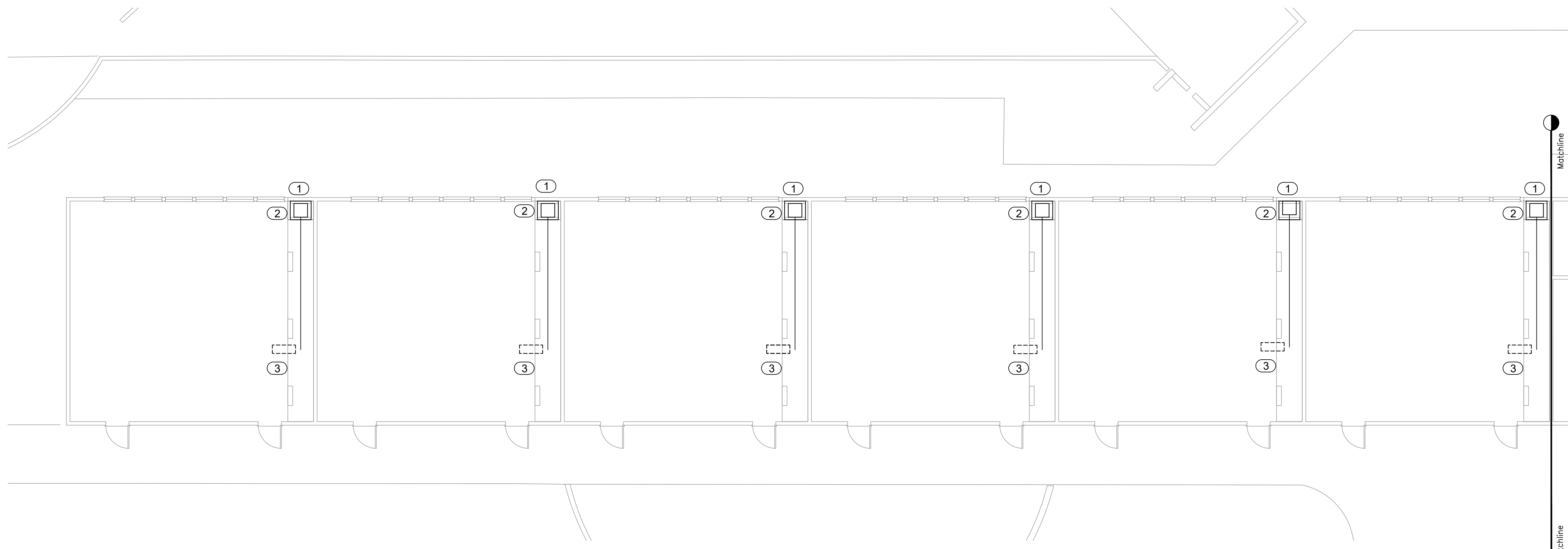
Google Children's Center at The Fields² 



Site Plan - Theuerkauf Elementary School

San Pierre Way

HVAC Modernization and Replacement
**Mountain View Whisman
 School District**
 Mountain View, California



1 Floor Plan - Building C

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E)UNITARY HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 4 OR 5 TON VERTICAL FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC
- 3 MOUNT HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

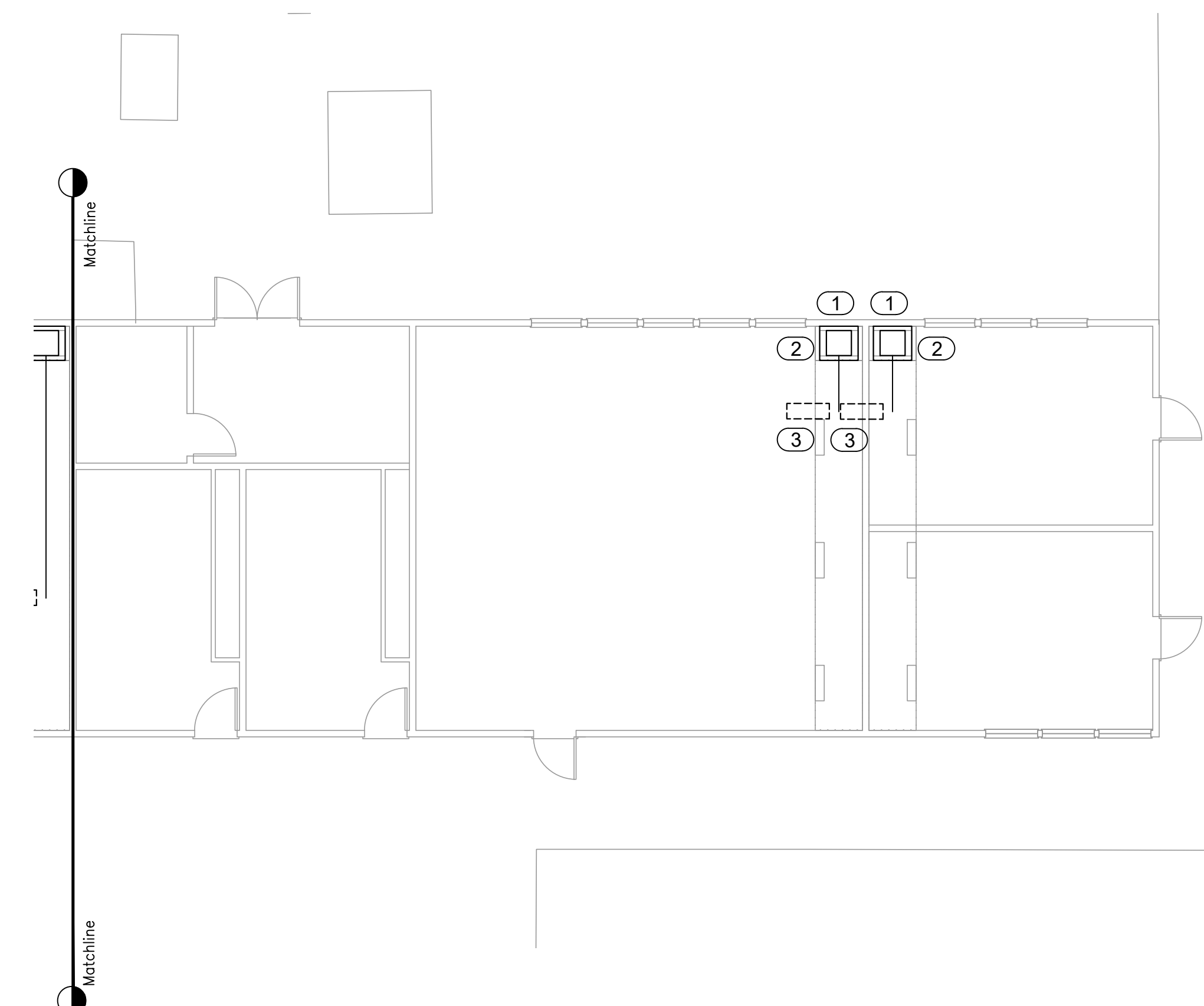
COORDINATION NOTES

EXISTING SYSTEMS

- 1 4-TON UNITARY HEAT PUMP: FLOOR MOUNTED

NEW SYSTEMS

- 1 AIR-HANDLER: 208-230/1, MCA = 8.6
10 KW AUX ELECTRIC HEATER @208-230V
OPER WT = 167#
- 2 HEAT PUMP: 208/230/1
MCA = 29.1
OPER WT 225#



2 Floor Plan - Building C

1/8" = 1'-0"



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10000 Woodland Street, Suite 210
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Mountain View, California



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1100 Junipero Avenue
Fremont, California
94538
650.696.1200

314 Center Street #220
Berkeley, California
94704
707.431.1905

KEYNOTES

- 1 MOUNT HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.



1 Floor Plan - Building C

1/8" = 1'-0"



2 Floor Plan - Building C

1/8" = 1'-0"



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 Mountain View, California

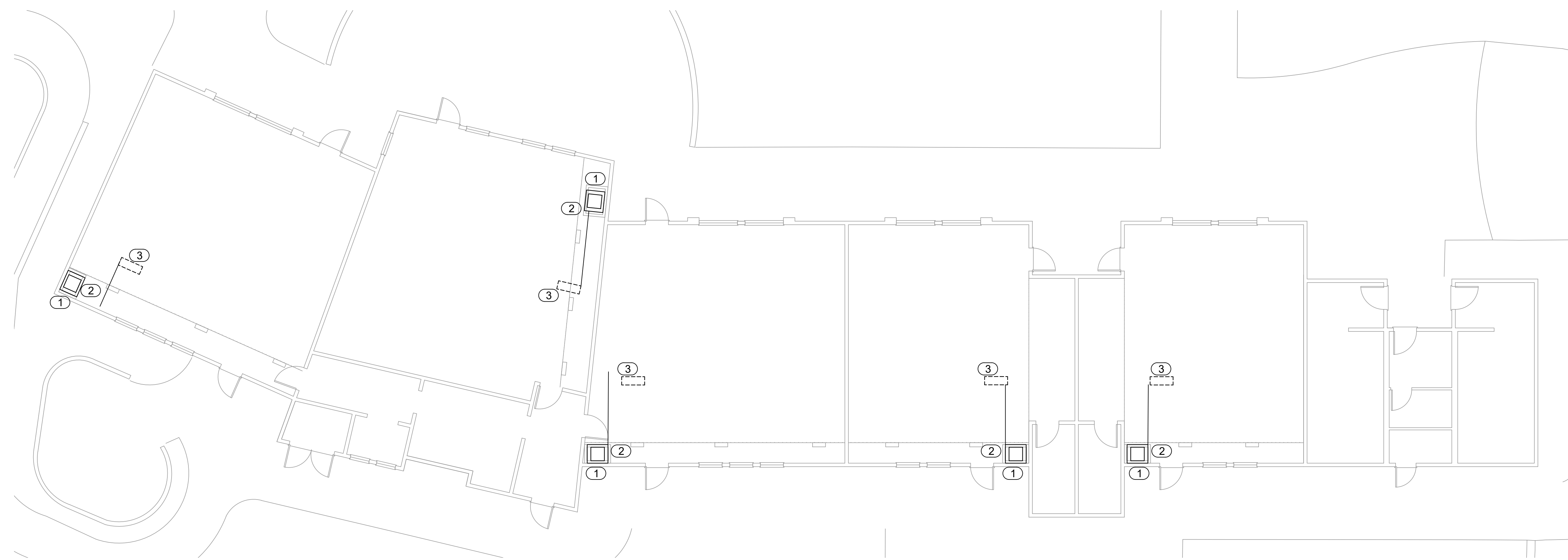
1100 Junipero Avenue
 Fremont, California
 94516
 650.696.1200

314 Center Street #220
 San Francisco, California
 94102
 707.431.1905

Theuerkauf ES
 Mechanical:
 Building C Roof Plan

MT-2.2

2024

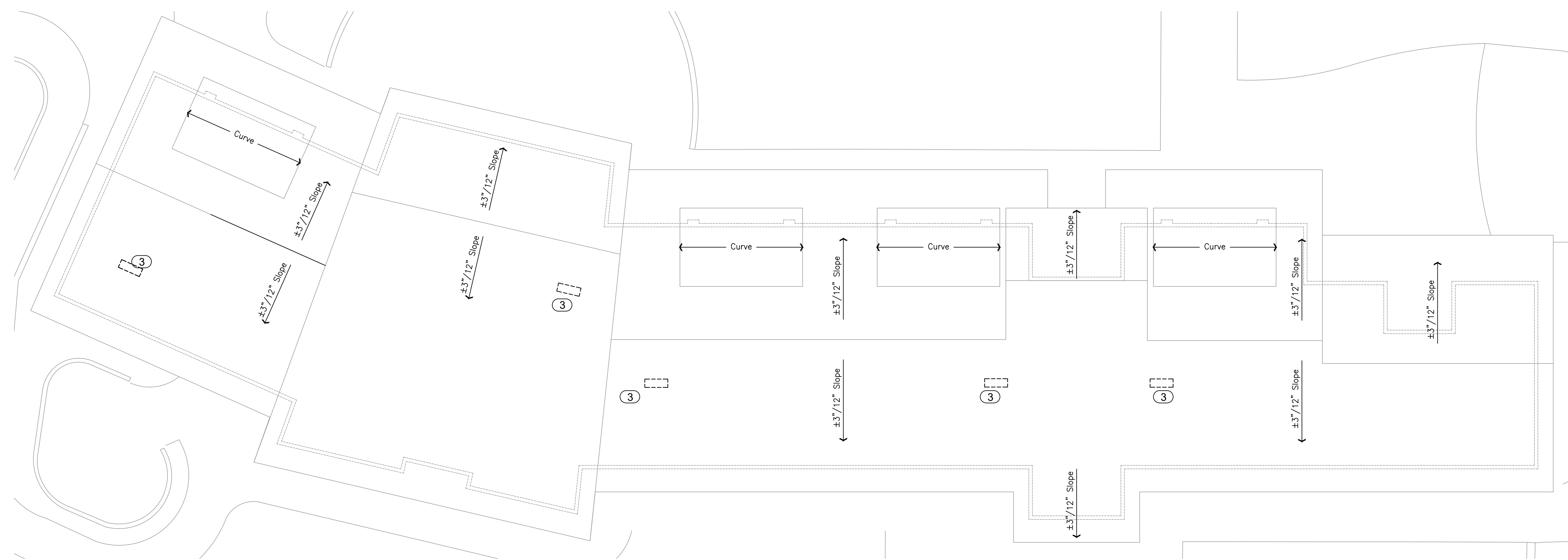


1 Floor Plan - Building D

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E)UNITARY HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 4 OR 5 TON FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC
- 3 MOUNT HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.



2 Roof Plan - Building D

1/8" = 1'-0"

COORDINATION NOTES

- EXISTING SYSTEMS**
- 1 4-TON UNITARY HEAT PUMP: FLOOR MOUNTED
- NEW SYSTEMS**
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6
10 KW AUX ELECTRIC HEATER @208-230V
OPER WT = 167#
 - 2 HEAT PUMP: 208/230/1
MCA = 29.1
OPER WT 225#

HVAC Modernization and Replacement
Mountain View Whisman School District
 Mountain View, California



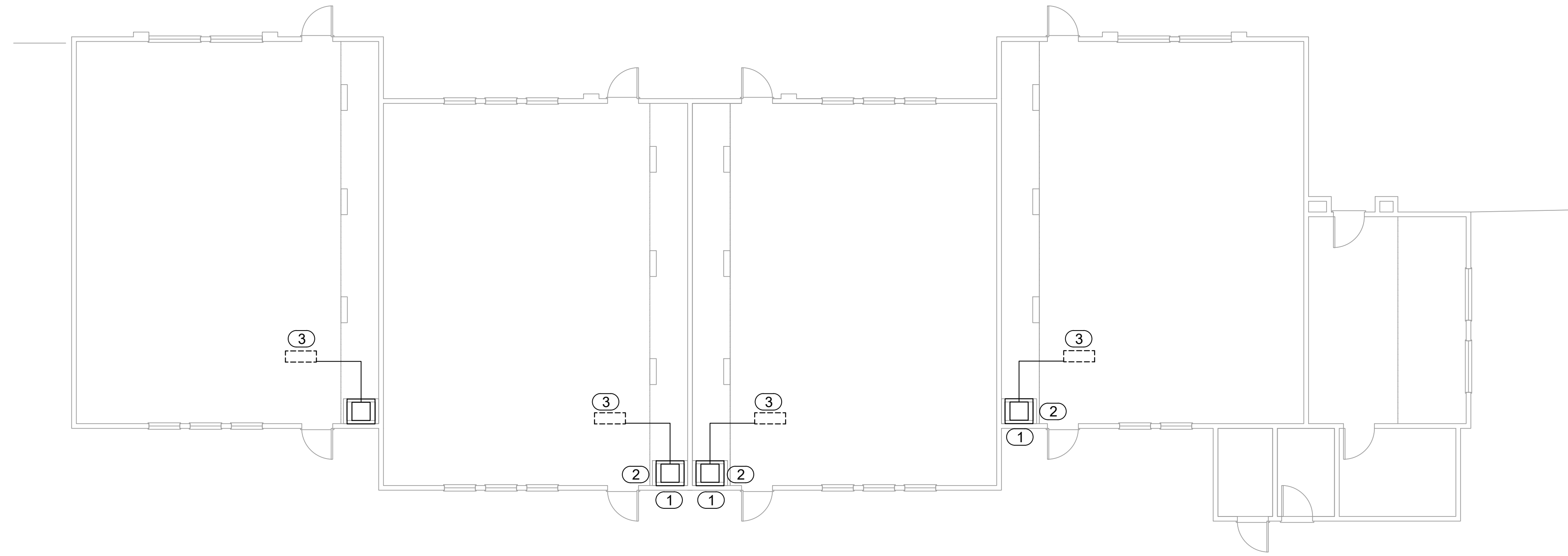
1100 Juanita Avenue
 Fremont, California
 94618
 650 696 1200

314 Center Street #220
 Hayward, California
 94548
 707 431 1905

Theuerkauf ES
 Mechanical:
 Building D Floor & Roof Plan

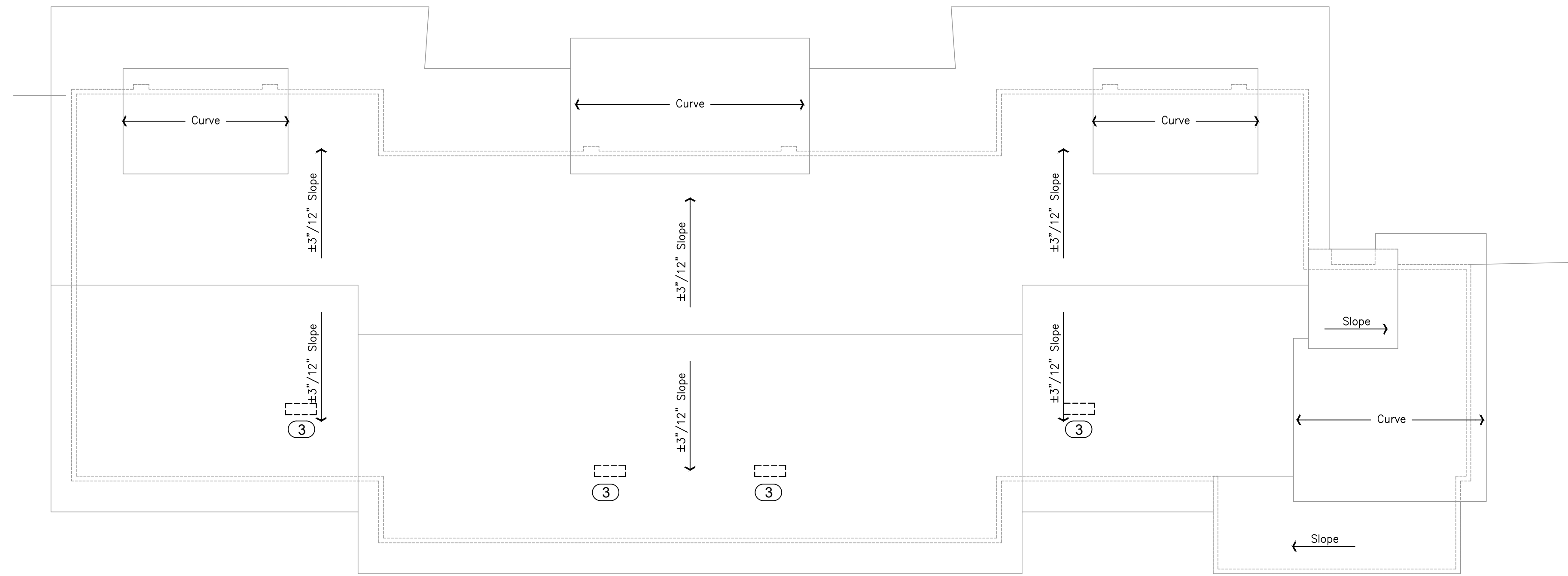
MT-2.3

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1 Floor Plan - Building E

1/8"=1'-0"



2 Roof Plan - Building E

1/8"=1'-0"

KEYNOTES

- 1 REMOVE (E)UNITARY HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 4 OR 5 TON FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC
- 3 MOUNT HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

COORDINATION NOTES

- EXISTING SYSTEMS**
- 1 4-TON UNITARY HEAT PUMP: FLOOR MOUNTED
- NEW SYSTEMS**
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6
10 KW AUX ELECTRIC HEATER @208-230V
OPER WT = 167#
 - 2 HEAT PUMP: 208/230/1
MCA = 29.1
OPER WT 225#



HVAC Modernization and Replacement
Mountain View Whisman School District
 Mountain View, California



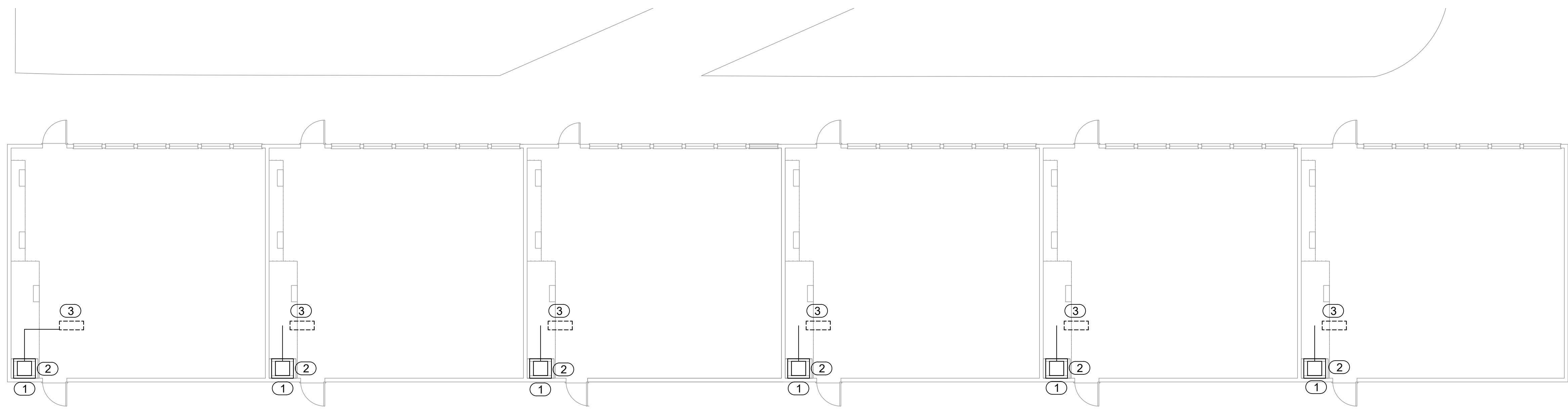
1100 Juanita Avenue
 Fremont, California
 94618
 650 696 1200

314 Center Street #220
 Redding, California
 96001
 707 431 1905

Theuerkauf ES
 Mechanical:
 Building E Floor & Roof Plan

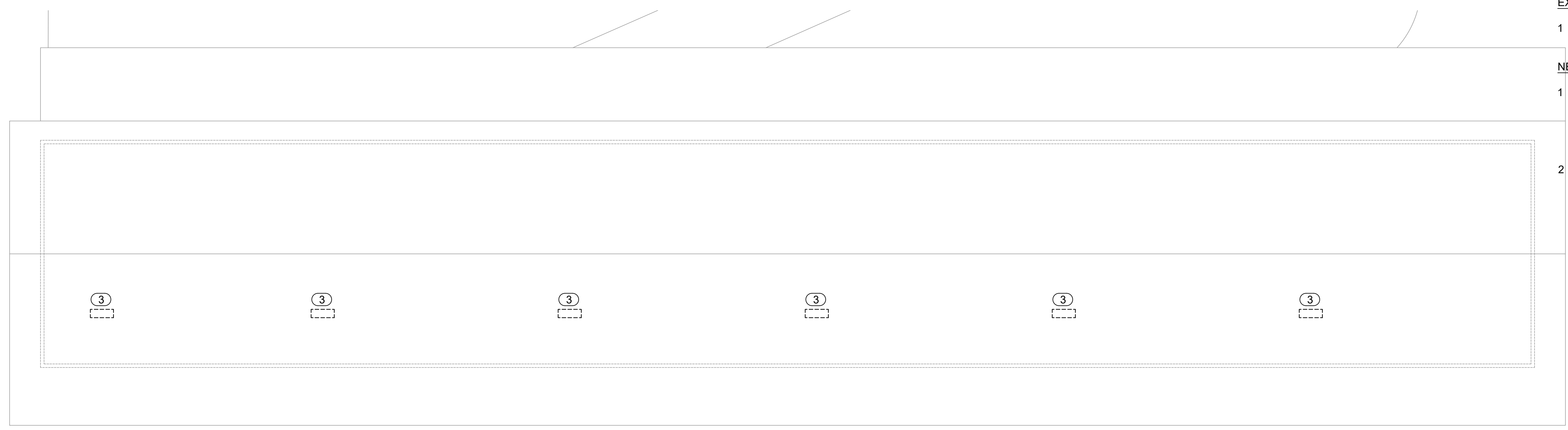
MT-2.4

2024



1 Floor Plan - Building G

1/8" = 1'-0"



2 Roof Plan - Building G

1/8" = 1'-0"

KEYNOTES

- 1 REMOVE (E)UNITARY HEAT PUMP. DISCONNECT SUPPLY AIR DUCT. INSTALL NEW TEAM MANUFACTURING ENCLOSURE WITH NEW 4 OR 5 TON FAN COIL. RECONNECT SUPPLY AIR DUCT, CONTROLS AND CONDENSATE LINE.
- 2 NEW CONTROLS SHALL INCLUDE CO2 SENSOR FOR REVISED SEQUENCE OF CONTROL FROM JOHNSON DDC
- 3 MOUNT HEAT-PUMP UNIT ON (N) ROOF PLATFORM. ROUTE (N) REFRIGERANT TUBING THROUGH (N) ROOF JACK.

COORDINATION NOTES

- EXISTING SYSTEMS
- 1 4-TON UNITARY HEAT PUMP: FLOOR MOUNTED
- NEW SYSTEMS
- 1 AIR-HANDLER: 208-230/1, MCA = 8.6
10 KW AUX ELECTRIC HEATER @208-230V
OPER WT = 167#
 - 2 HEAT PUMP: 208/230/1
MCA = 29.1
OPER WT 225#

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HVAC Modernization and Replacement
**Mountain View Whisman
School District**
Mountain View, California

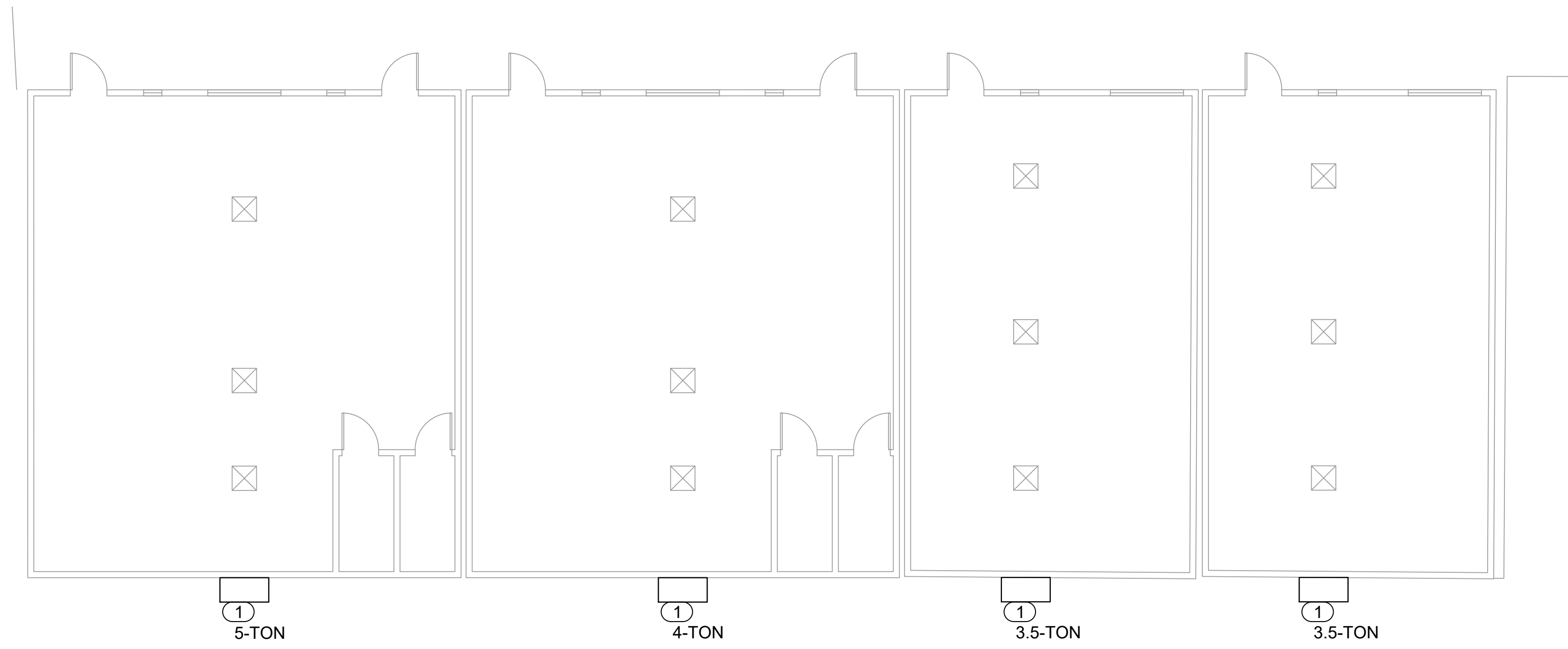
Theuerkauf ES
Mechanical:
Building G Floor & Roof Plan

MT-2.5

2024

KEYNOTES

- 1 REMOVE (E)BARD UNIT AND REPLACE WITH LIKE KIND AND SIZE



1 Floor Plan - Portables

1/8" = 1'-0"



HVAC Modernization and Replacement
**Mountain View Whisman
 School District**
 Mountain View, California



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 Redwood City, California
 94061
 707 431 1905

Theuerkauf ES
 Mechanical:
 Portables Floor Plan

MT-2.6

2024