EMERY COUNTY SCHOOL DISTRICT

CLEVELAND ELEMENTARY MECHANICAL UPGRADE

30 SOUTH 100 WEST

CLEVELAND, UTAH

PROJECT CONTACTS

OWNER
EMERY COUNTY SCHOOL DISTRICT
120 NORTH MAIN STREET
HUNTINGTON, UTAH 84528
(435) 687-9846

ARCHITECTURAL
KMA ARCHITECTS, INC.
170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
(801) 377-5062

STRUCTURAL
DYNAMIC STRUCTURES
744 SOUTH 400 EAST,
OREM, UTAH 84097
(801) 356-1140

MECHANICAL
OLSEN & PETERSON ENGINEERING
14 EAST 2700 SOUTH
SALT LAKE CITY, UTAH 84115
(801) 486-4646

ELECTRICAL
RESOLUT
181 EAST 5600 SOUTH, SUITE 200
MURRAY, UT 84107
(801) 530-3148

GRAPHIC SYMBOLS

ENGINEERED FILL
EARTH
CONCRETE
ASPHALT
BRICK VENEER
STONE VENEER
WOOD STUDS
PLYWOOD
HARDWOOD
RIGID INSULATION
BATT INSULATION
BLOCKING
GYPSUM BOARD
PROPERTY LINE
WALLTYPE TAG
DOOR NUMBER
WINDOW TYPE
CEILING HEIGHT
SHEET NOTE
BUILDING ELEVATION MARK
ROOM NUMBER
DETAIL TAG
ELEVATION MARK
SECTION MARK

PROJECT DATA

MAIN FLOOR AREA	35,411 SQ. FT.
MEZZANINE FLOOR AREA	1,472 SQ. FT.
TOTAL FLOOR AREA	36,883 SQ. FT.

PROJECT SCOPE

CLEVELAND ELEMENTARY SCHOOL MECHANICAL UPGRADE WILL CONSIST OF INSTALLING A NEW NOMINAL TON PACKAGED AIR COOLED CHILLER, REPLACING THE EXISTING FAN COIL UNITS, NEW PUMPS, HOT WATER UNIT HEATERS AND CABINET UNIT HEATER. THE ANTICIPATION FOR THIS PROJECT IS MINIMUM RE-DUCTING AND TYING THE REPLACED UNITS INTO EXISTING DUCT WORK. ELECTRICAL SYSTEMS WILL BE MODIFIED ACCORDINGLY TO MEET THE NEW BUILDINGS NEED AND ARCHITECTURAL REPLACEMENT OF AFFECTED AREAS DUE TO CONSTRUCTION.

INDEX OF DRAWINGS

ARCHITECTURAL

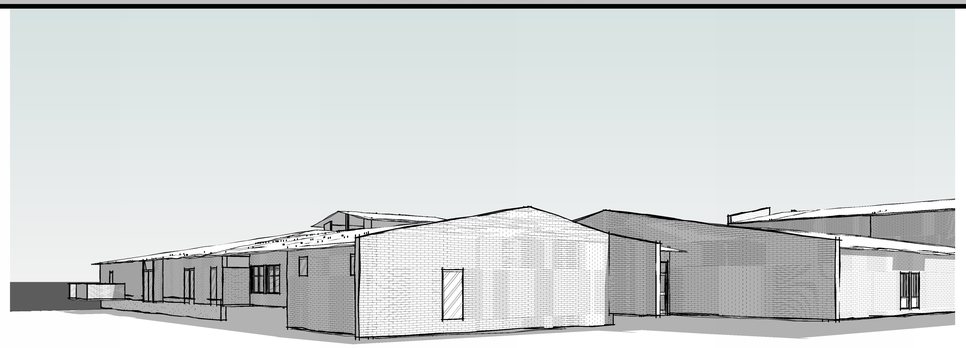
STRUCTURAL

PLUMBING

MECHANICAL

ELECTRICAL

RENDERING



VICINITY MAP

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

REVISIONS:

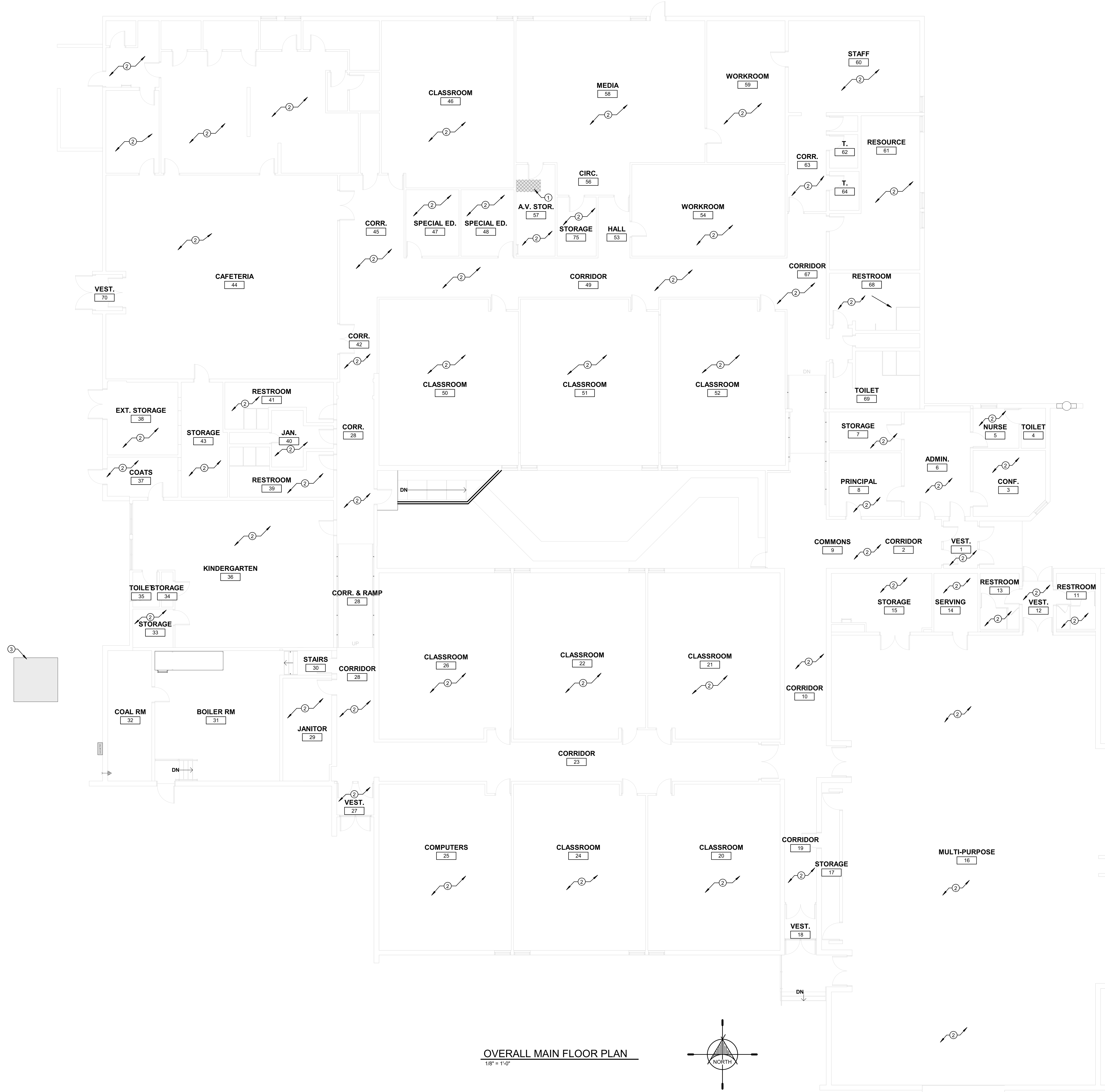
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

PROJECT TITLE

DRAWN BY: STAFF
CHECKED BY: WC
DATE: JAN. 2026
PROJECT #: 176525

TITLE

1/14/2026 2:03:44 PM As indicated



OVERALL MAIN FLOOR PLAN
1/8" = 1'-0"

SHEET NOTES

1 - EXISTING FLOOR TO BE SAW CUT AT HATCHED LOCATIONS.

2 - EXISTING CONSTRUCTION TO REMAIN. CONTRACTOR TO PATCH, REPAIR, AND CLEAN AS REQUIRED DUE TO DEMOLITION AND NEW CONSTRUCTION.

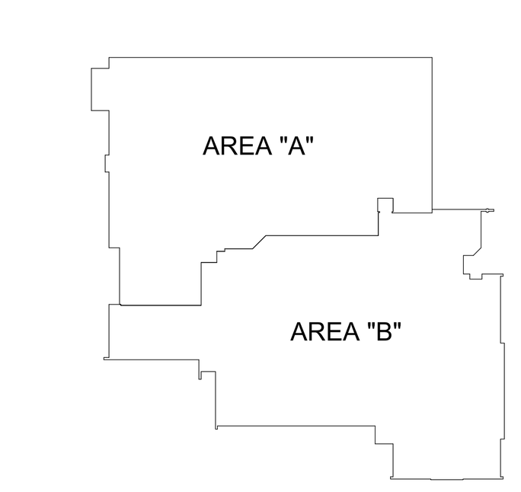
3 - NEW 4" THICK CONCRETE EQUIPMENT PAD - COORDIANTE WITH MECHANICAL SHEETS ON SIZE AND LOCATION.

GENERAL NOTES

A - COORDINATE WITH MECHANICAL PLANS FOR ADDITIONAL DEMOTION OF MECHANICAL SYSTEMS

B - ADDITIONAL CEILINGS MAY NEED TO BE DEMOLISHED THAT MAY NOT BE NOTED, TO PROVIDE ADDITIONAL ACCESS FOR THE MECHANICAL SYSTEM AND CONTROLS. CONTRACTOR IS TO PLAN ON WORKING ABOVE AND AROUND THE CEILINGS AND TO BE CAREFUL TO PROTECT THE CEILING TILES, THE GRIDS, EXISTING LIGHTING, FIRE ALARM, AND ANY GYPSUM BOARD MATERIAL FROM ANY DAMAGE. THE CONTRACTOR SHALL REPLACE ANY DAMAGED MATERIALS.

KEY PLAN



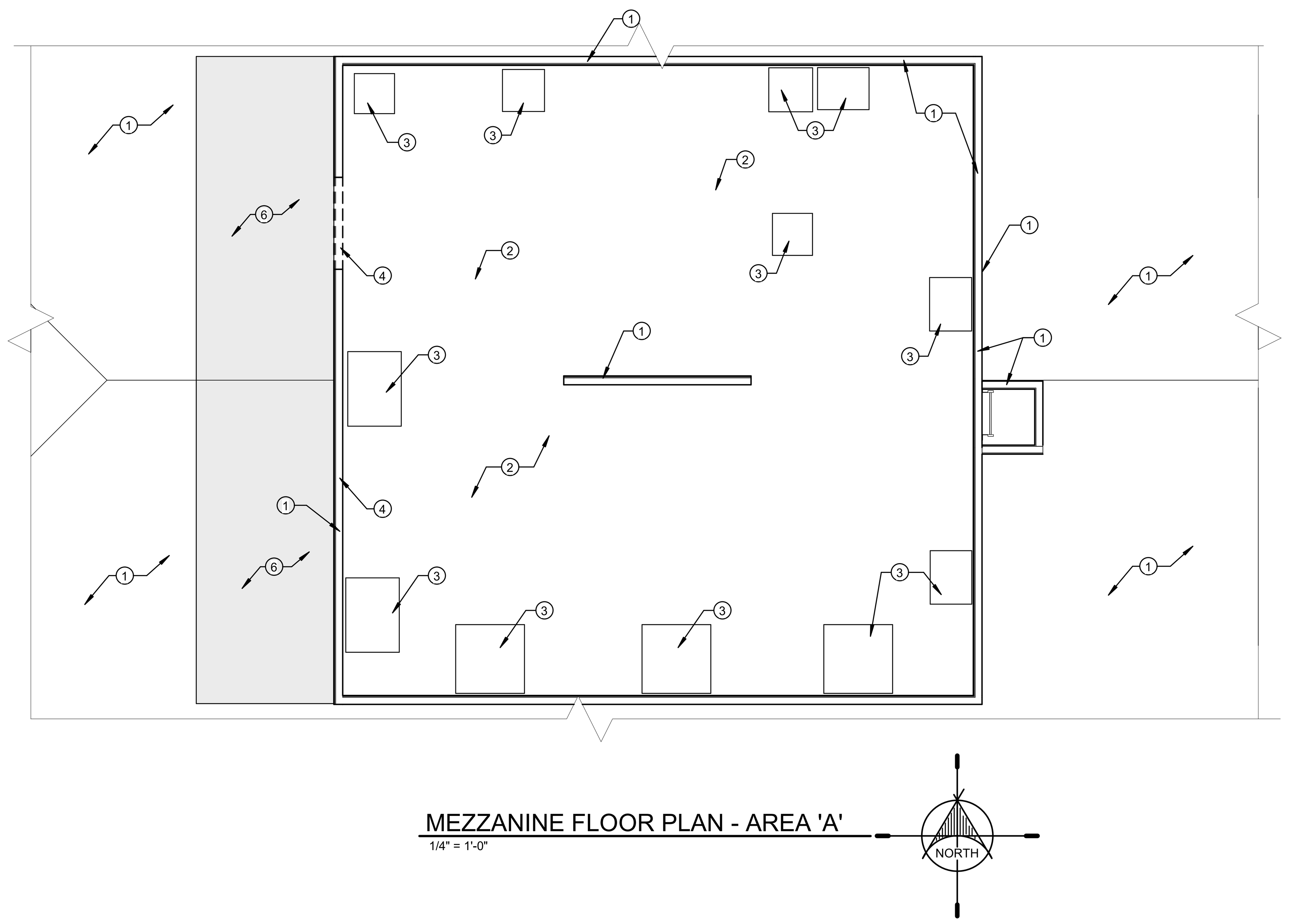
KMA ARCHITECTS
170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

REVISIONS:

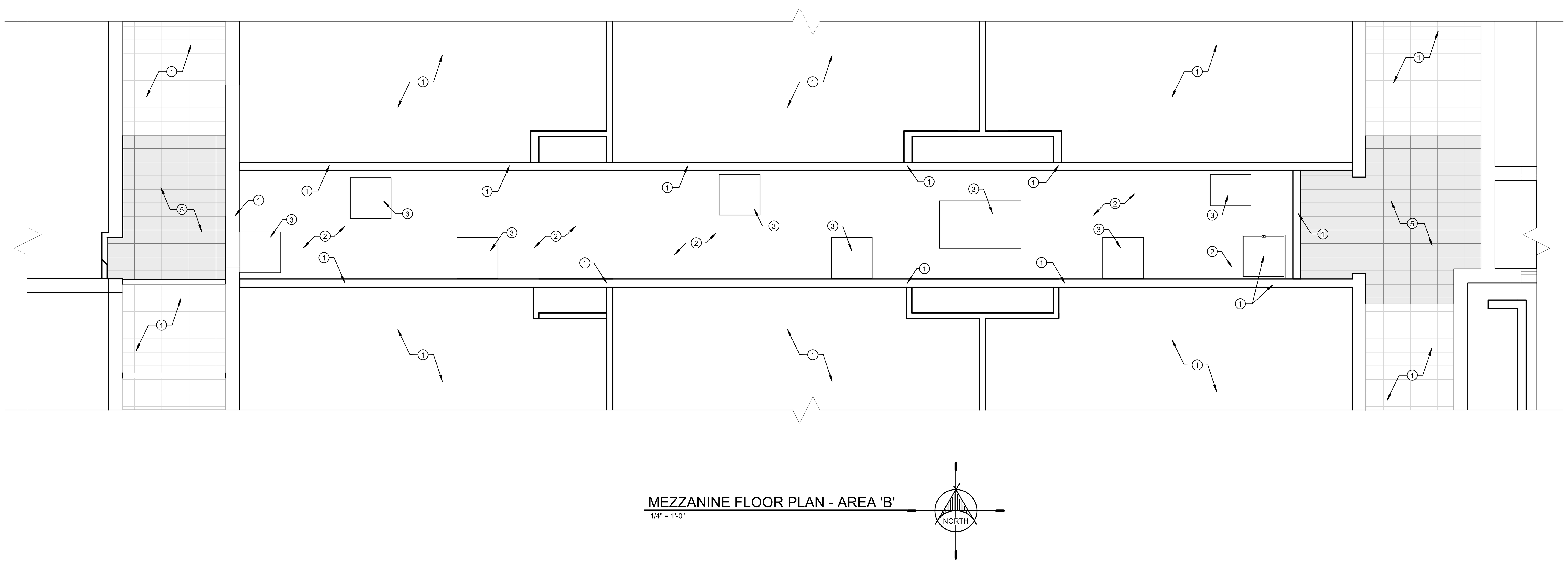
PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY:	KMA
CHECKED BY:	WC
DATE:	JAN. 2026
PROJECT #:	176525

A1.1



MEZZANINE FLOOR PLAN - AREA 'A'
1/4" = 1'-0"



MEZZANINE FLOOR PLAN - AREA 'B'
1/4" = 1'-0"

SHEET NOTES

1 - EXISTING CONSTRUCTION TO REMAIN. CONTRACTOR TO PATCH, REPAIR, AND CLEAN AS REQUIRED DUE TO DEMOLITION AND NEW CONSTRUCTION.

2 - EXISTING PLYWOOD MEZZANINE FLOOR SHEATHING TO REMAIN. CONTRACTOR TO FILL IN GAPS AND HOLES AS REQUIRED. EXISTING DAMAGED SHEATHING TO BE REPLACED WITH NEW SHEATHING (MATCH EXISTING).

3 - NEW MECHANICAL UNITS - SEE MECHANICAL SHEETS.

4 - CONTRACTOR IS TO REMOVE EXISTING EXTERIOR AIR DUCT AND INCREASE OPENING REQUIRED FOR ACCESS INTO MEZZANINE. PATCH AND REPAIR OPENING ONCE UNITS HAVE BEEN INSTALLED - COORDINATE DEMOLITION WITH MECHANICAL PLANS

5 - CONTRACTOR IS TO REMOVE THE HATCHED CEILING TO ALLOW ACCESS FOR EXISTING EQUIPMENT TO BE REMOVED AND NEW EQUIPMENT TO BE INSTALLED. CONTRACTOR IS TO REPLACE THE CEILING DUE TO CONSTRUCTION.

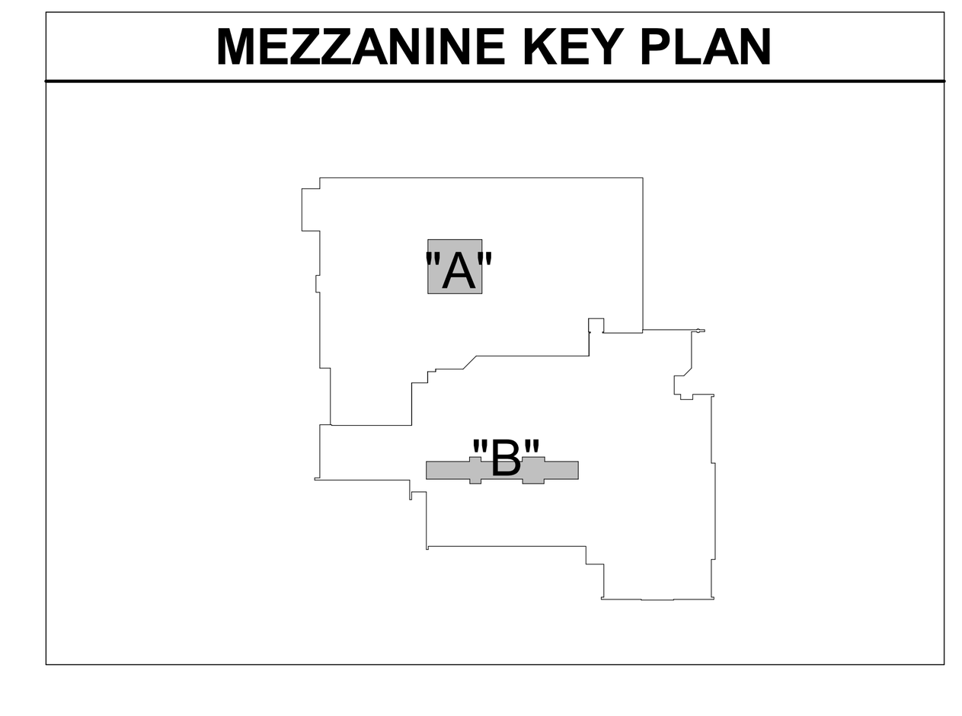
6 - EXISTING ROOF AREA - PATCH AND REPAIR AS NEEDED DUE TO CONSTRUCTION

GENERAL NOTES

A - COORDINATE WITH MECHANICAL PLANS FOR ADDITIONAL DEMOTION OF MECHANICAL SYSTEMS

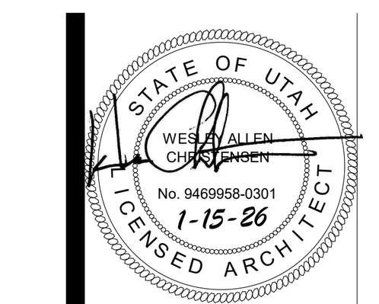
B - ADDITIONAL CEILINGS MAY NEED TO BE DEMOLISHED THAT MAY NOT BE NOTED, TO PROVIDE ADDITIONAL ACCESS FOR THE MECHANICAL SYSTEM AND CONTROLS. CONTRACTOR IS TO PLAN ON WORKING ABOVE AND AROUND THE CEILINGS AND TO BE CAREFUL TO PROTECT THE CEILING TILES, THE GRIDS, EXISTING LIGHTING, FIRE ALARM, AND ANY GYPSUM BOARD MATERIAL FROM ANY DAMAGE. THE CONTRACTOR SHALL REPLACE ANY DAMAGED MATERIALS.

MEZZANINE KEY PLAN



170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS



REVISIONS:

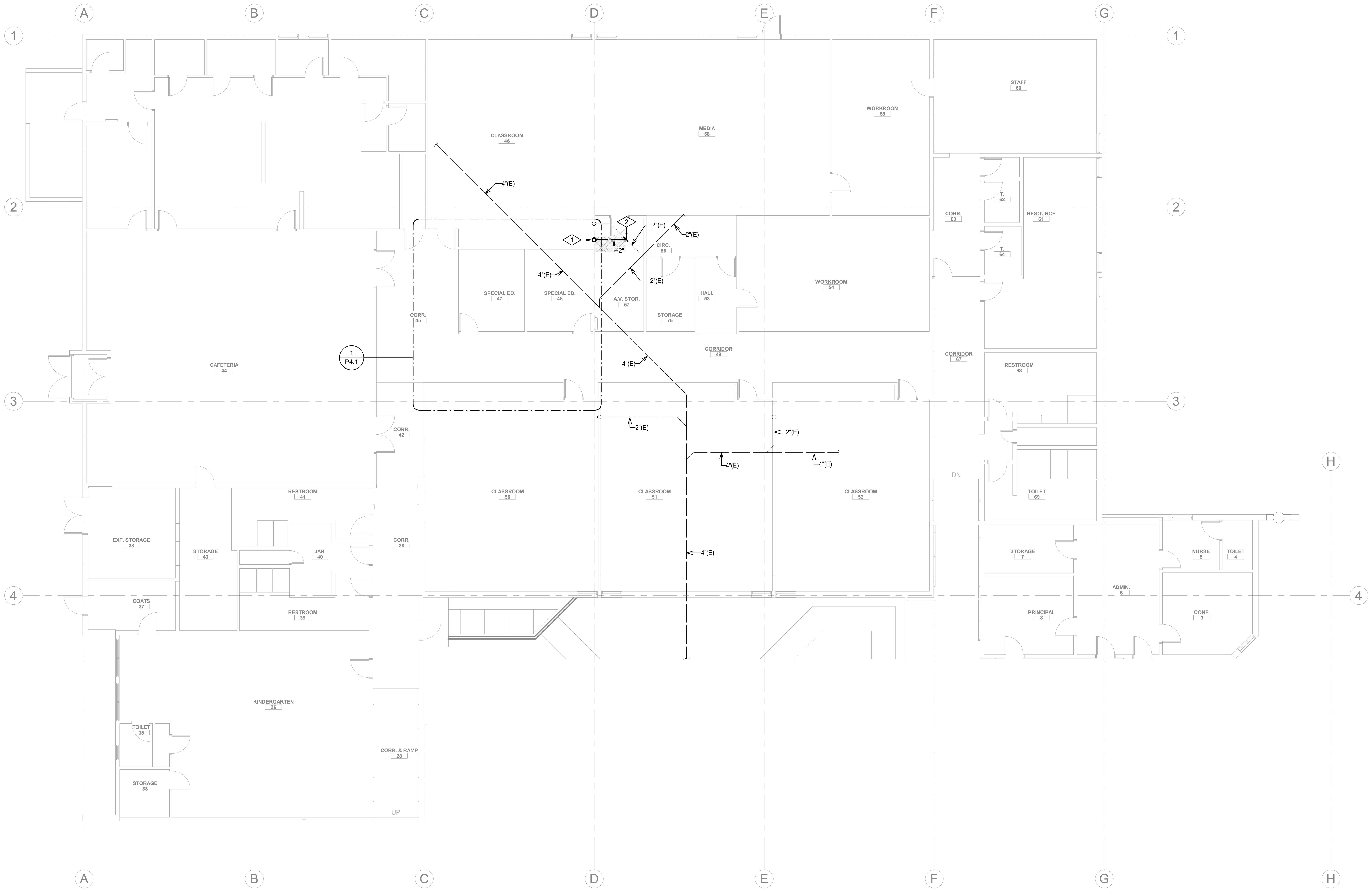
PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY:	KMA
CHECKED BY:	W.C.
DATE:	JAN. 2026
PROJECT #:	176525

A1.2

REFERENCE NOTES

1. WASTE PIPING TO DROP IN WALL FROM MEZZANINE ABOVE TO BELOW EXSITING FLOOR.
2. CONNECT TO EXISTING AT APPROXIMATELY THIS LOCATION. SAWCUT AS NEEDED, COORDIANTE WITH ARCHITECT.



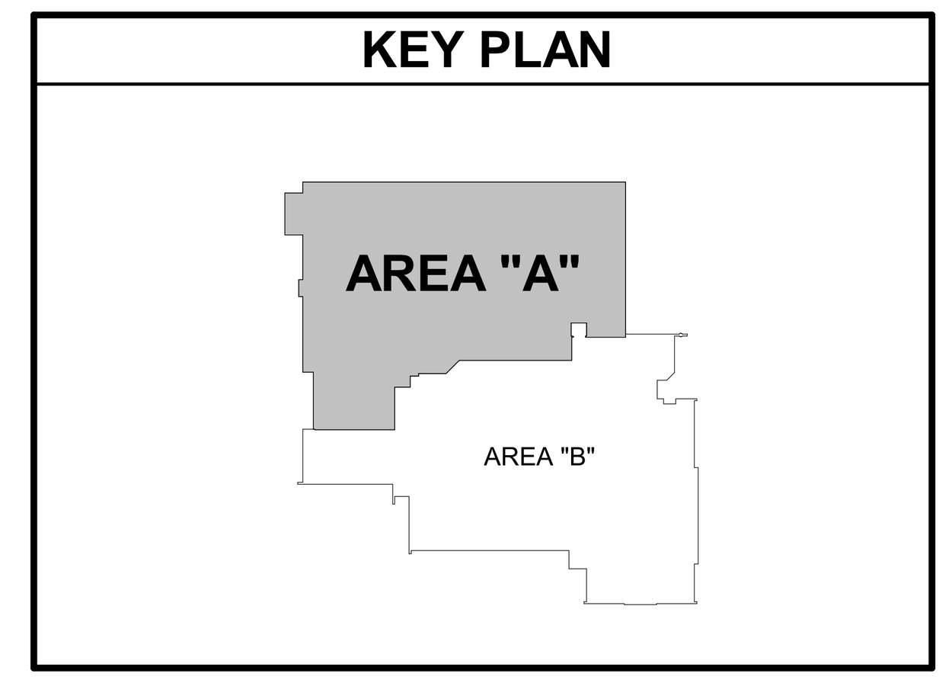
PLUMBING PLAN AREA A

0 4' - 0" 8' - 0" 16' - 0"

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

NORTH

KEY PLAN



OLSEN & PETERSON
consulting engineers, inc.

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

REVISIONS:

PROJECT TITLE

EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE

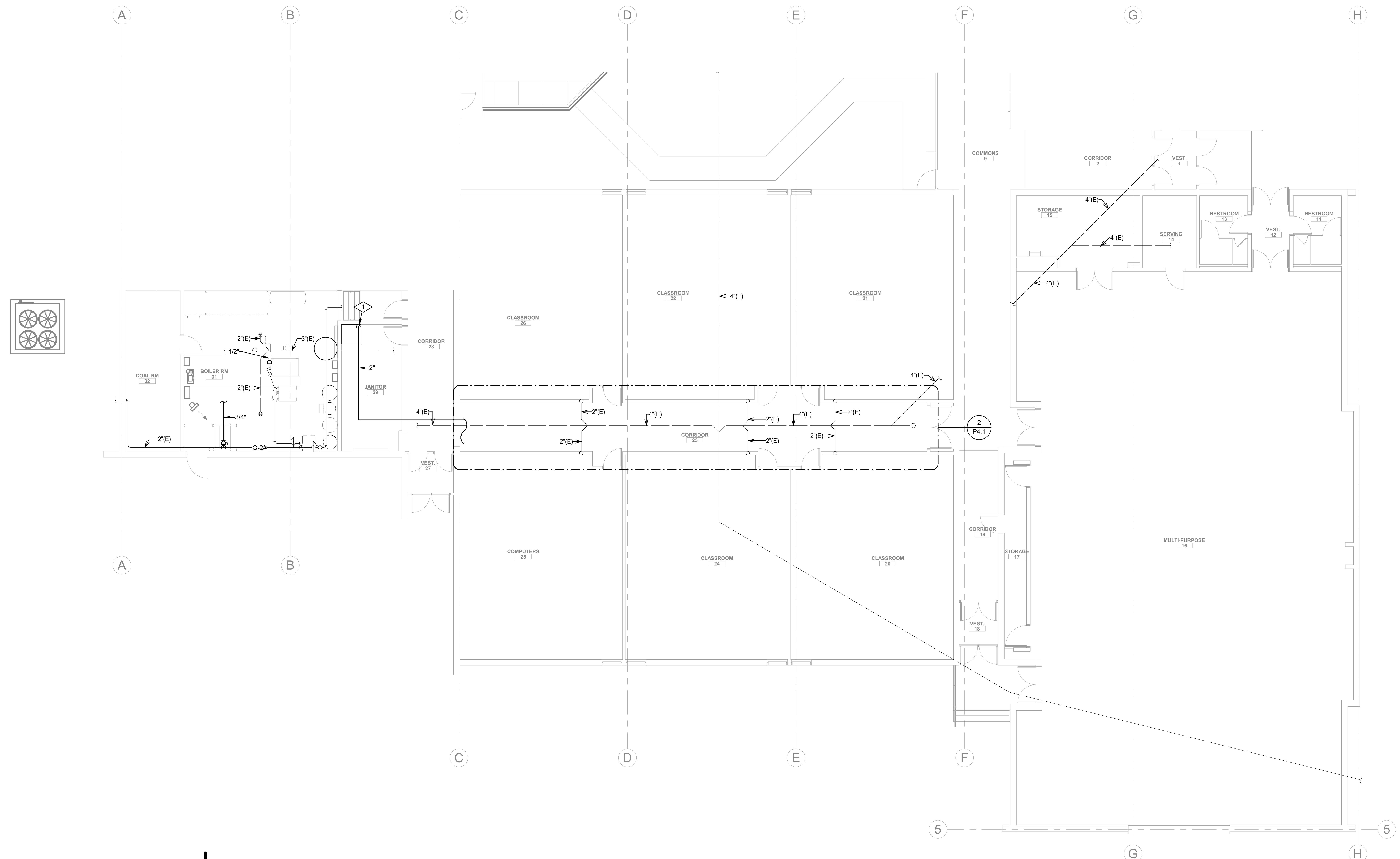
30 S 100 W
CLEVELAND, UTAH

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

P1.1A

REFERENCE NOTES

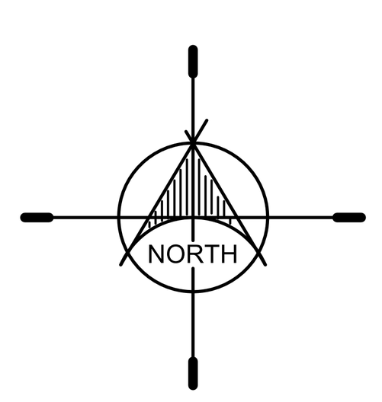
1 DROP CONDENSATE DRAIN LINE TIGHT TO WALL FROM ABOVE CEILING TO SERVICE SINK.

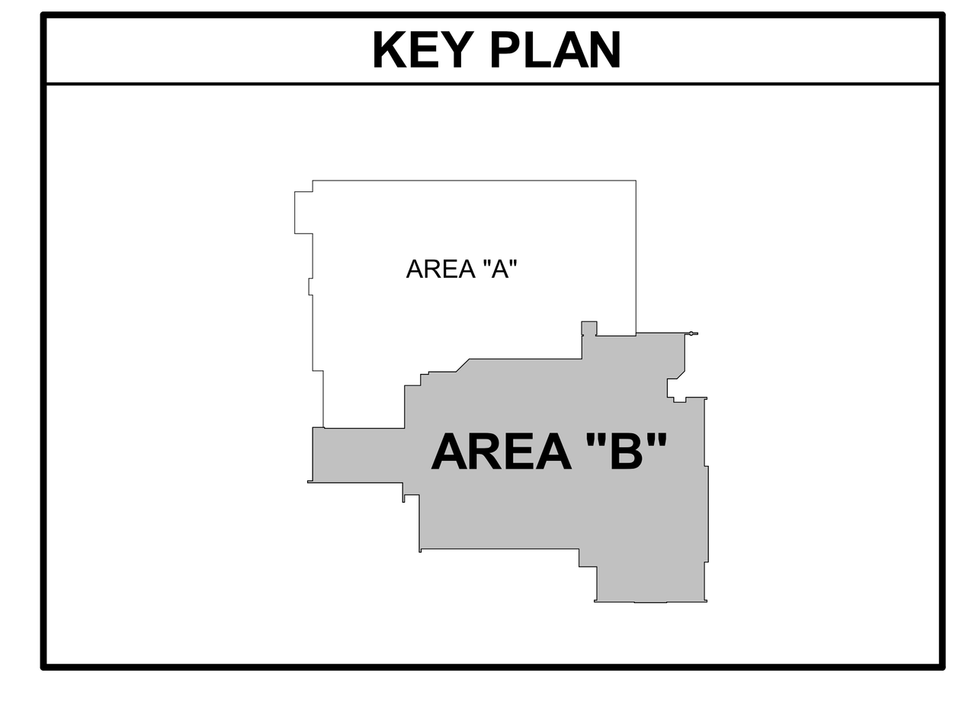


PLUMBING PLAN AREA B

0 4' - 0" 8' - 0" 16' - 0"

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





OLSEN & PETERSON
consulting engineers, inc.

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

REVISIONS:

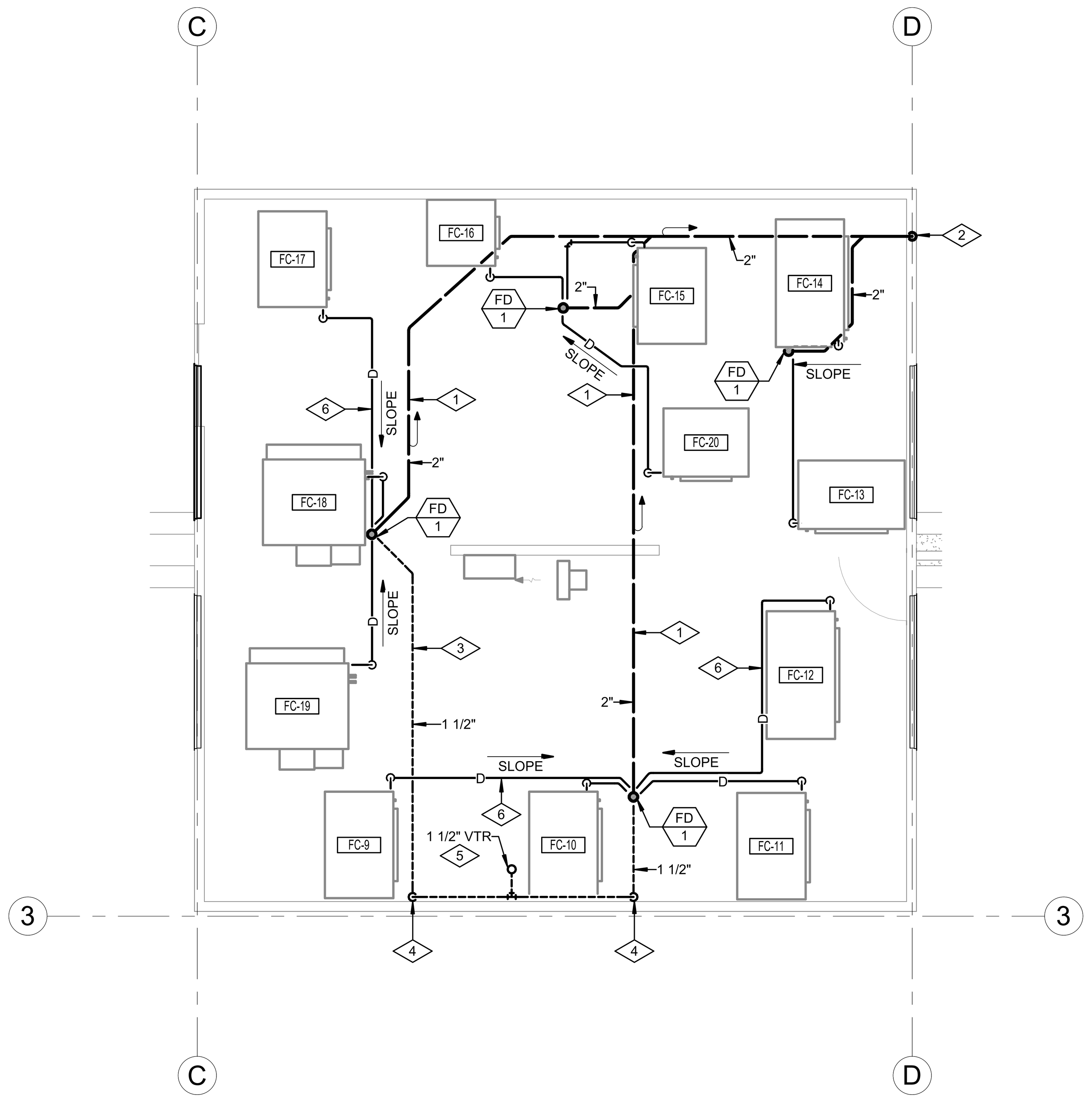
PROJECT TITLE

EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH

30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

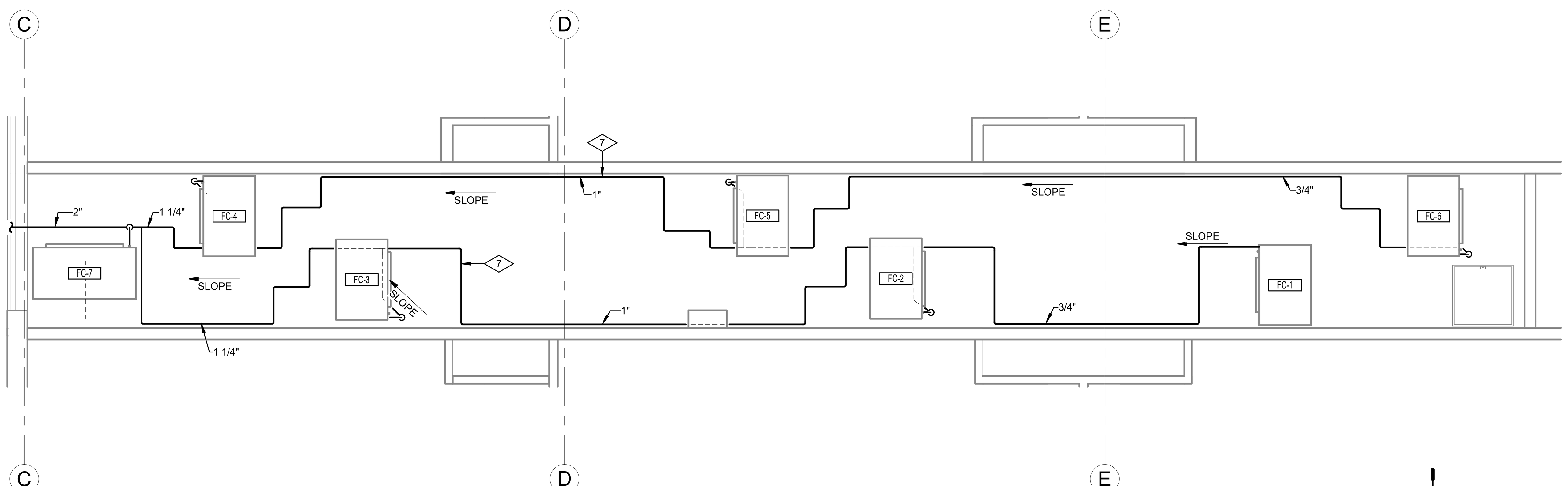
P1.1B



ENLARGED NORTH MEZZANINE PLUMBING PLAN

0 4' - 0" 8' - 0" 16' - 0"

SCALE:1/4" = 1'-0"



ENLARGED SOUTH MEZZANINE PLUMBING PLAN

0 4' - 0" 8' - 0" 16' - 0"

SCALE:1/4" = 1'-0"

REFERENCE NOTES

1 NEW WASTE PIPING TO RUN BELOW MEZZANINE FLOOR, ABOVE 1ST FLOOR CEILING.

2 WASTE PIPING TO DROP IN WALL TO FLOOR BELOW.

3 VENT PIPING TO RUN BELOW MEZZANINE FLOOR, ABOVE 1ST FLOOR CEILING.

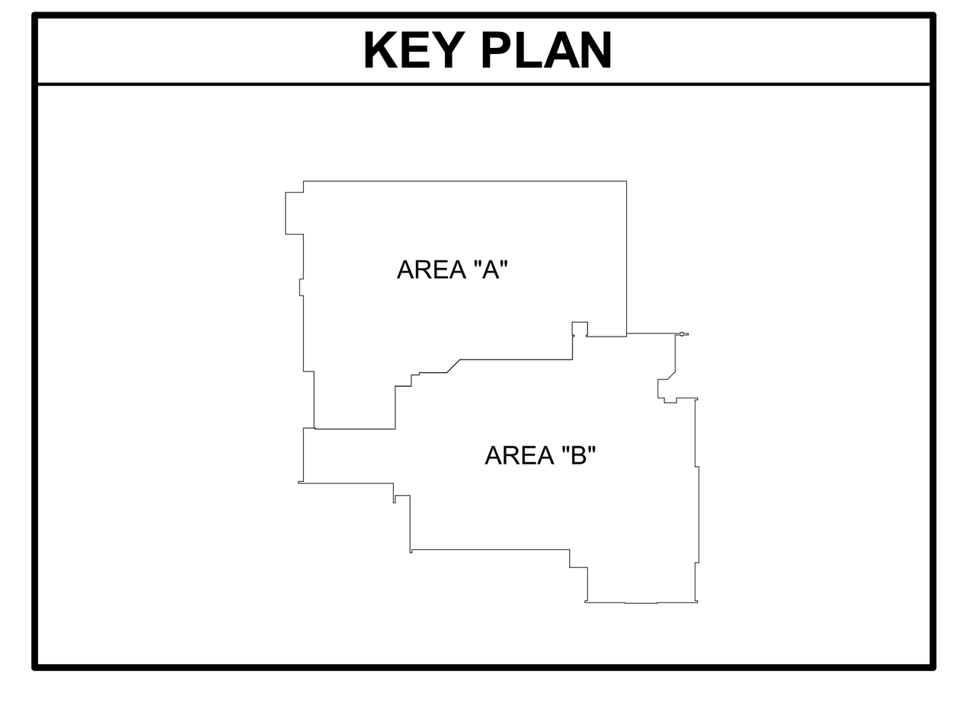
4 RISE TIGHT AT WALL & RUN HIGH IN STRUCTURE.

5 VENT THROUGH ROOF. (VTR) SEE DETAIL 3/P5.1.

6 CONDENSATE PIPE TO RUN LOW, SLOPING TOWARDS FLOOR DRAINS AS SHOWN (TYPICAL).

7 CONDENSATE DRAINS TO RACK AGAINST DUCTWORK AND WALLS TO STAY OUT OF WALK WAY (TYP).

KEY PLAN



OLSEN & PETERSON consulting engineers, inc.

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

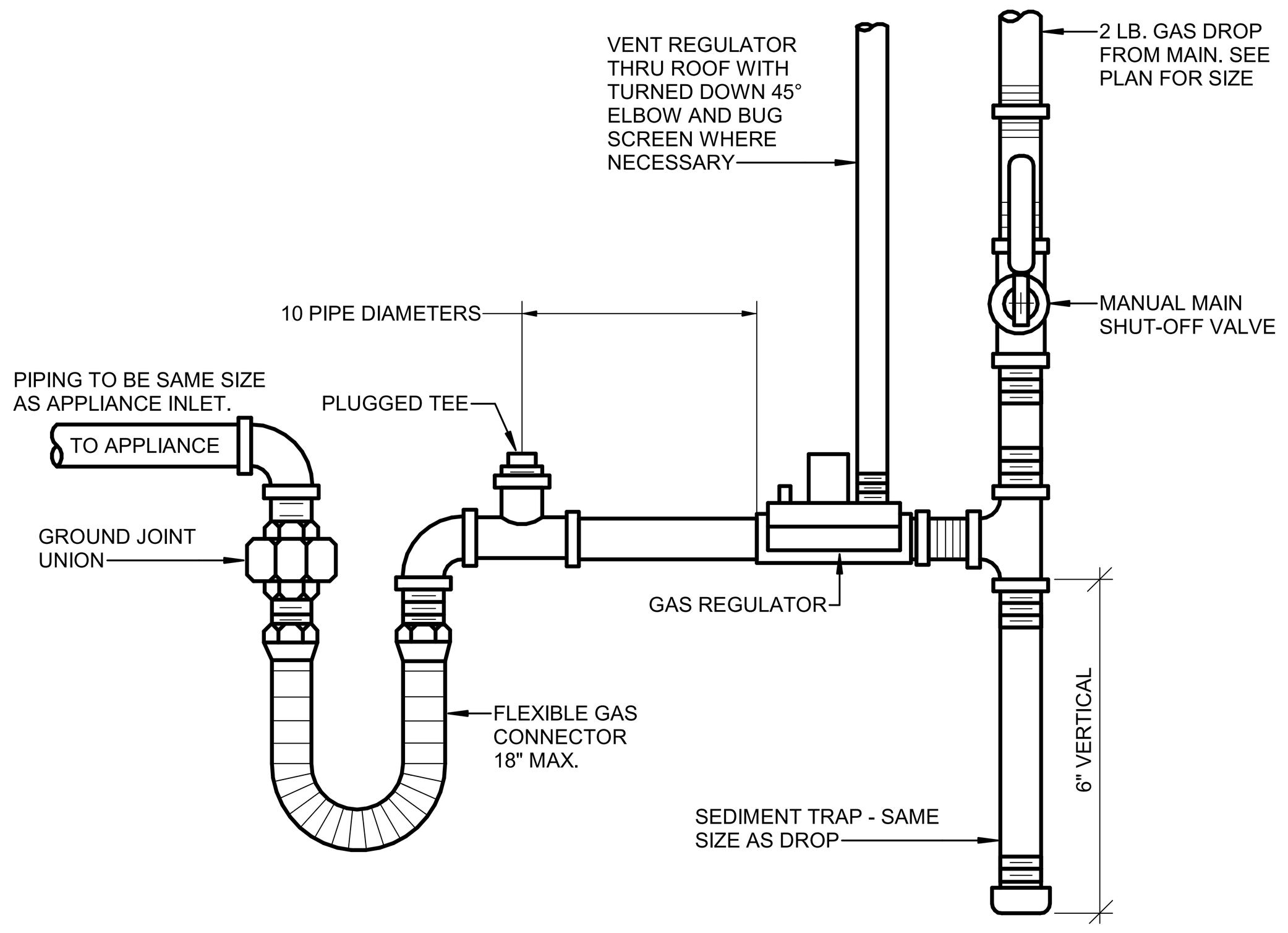
REVISIONS:

PROJECT TITLE

EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

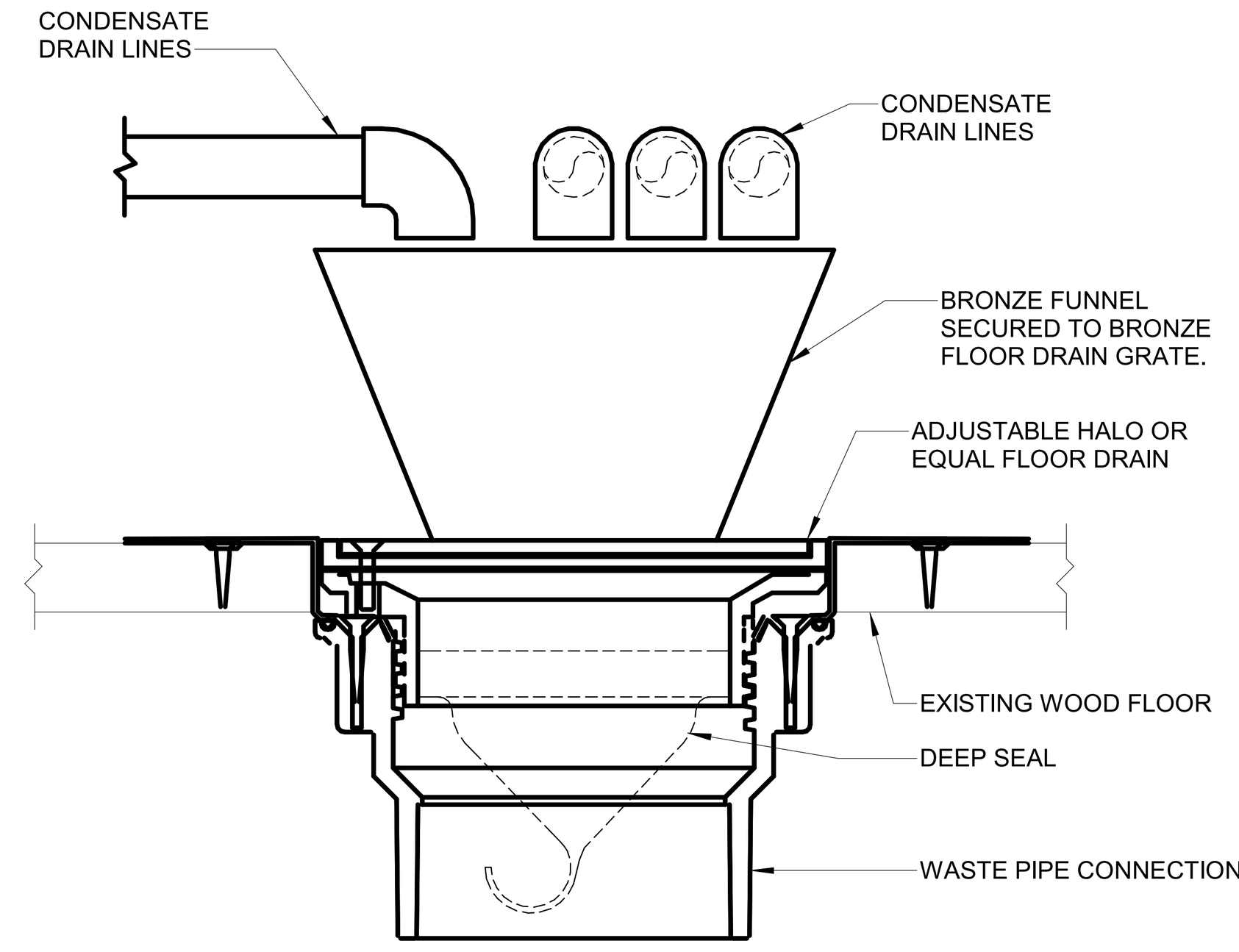
P4.1



TYPICAL GAS CONNECTION TO EQUIPMENT

7 / P5.1

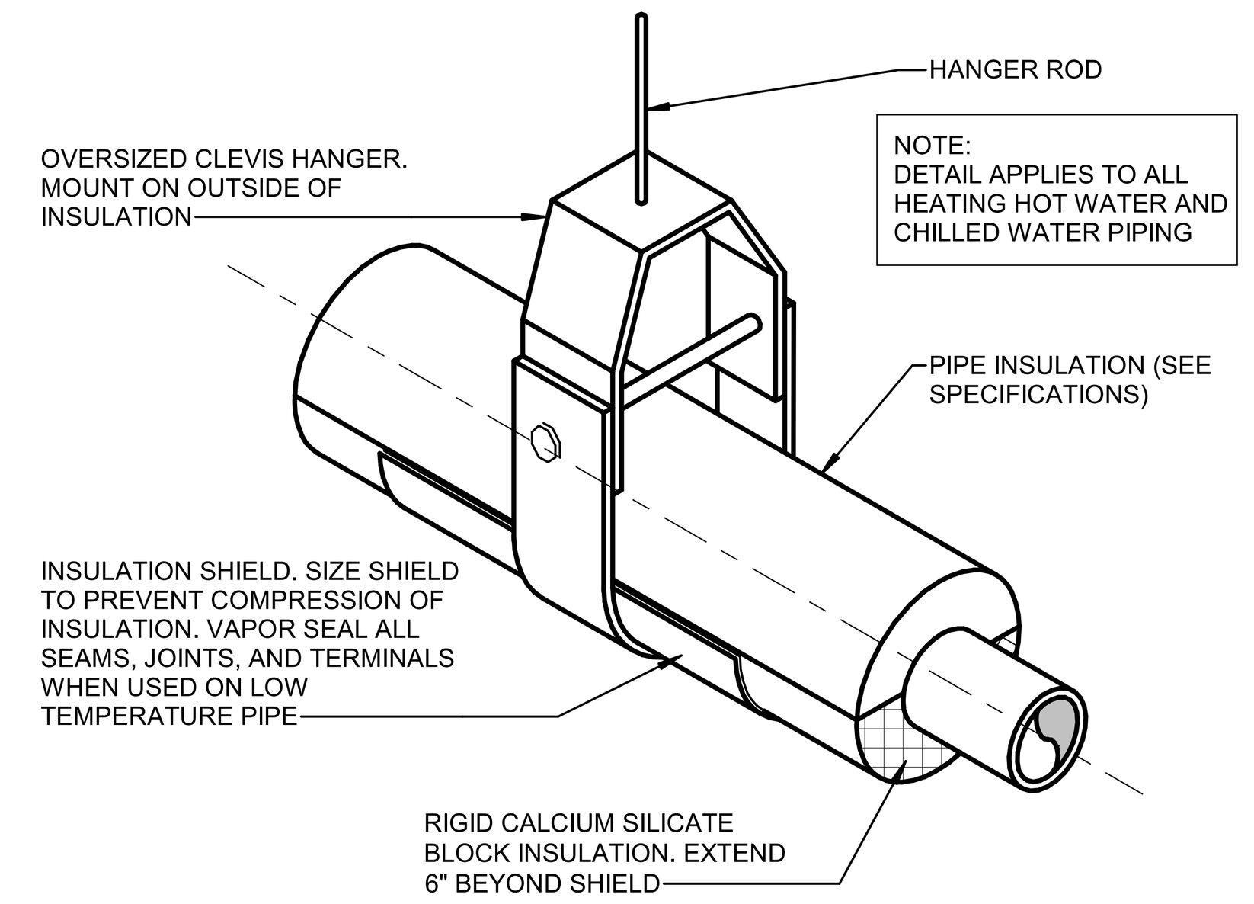
SCALE: NTS



FLOOR DRAIN FOR CONDENSATE

4 / P5.1

SCALE: NTS



PIPE SUPPORT DETAIL

1 / P5.1

SCALE: NTS

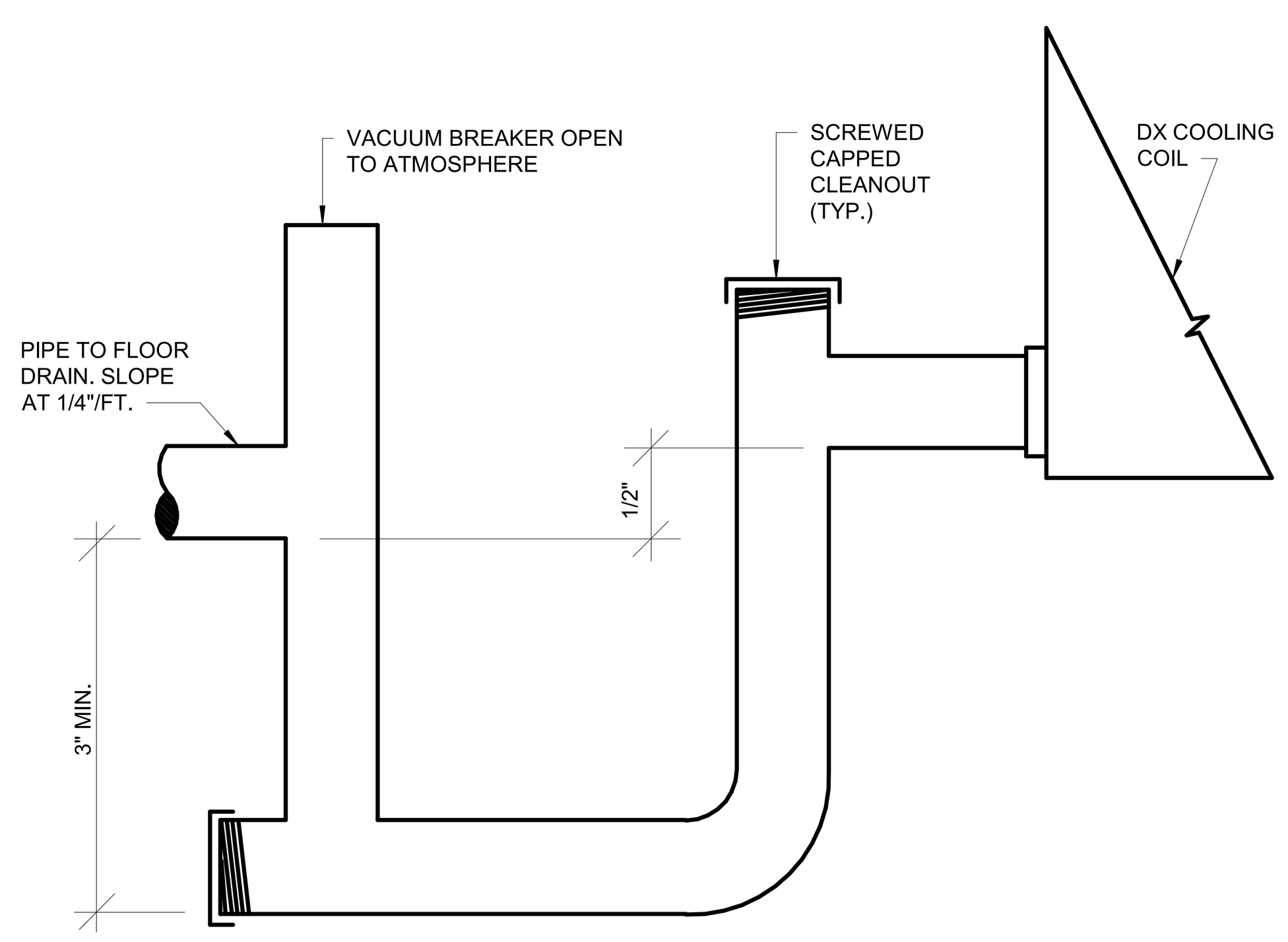
PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	WASTE	VENT	C.W.	H.W.	NOTES (1)
FD 1	FLOOR DRAIN	2"	2"	--	--	WITH DEEP SEAL TRAP & ASSE TRAP GAURD

NOTES:
(1) CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL PLUMBING FIXTURES WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN OR INSTALLATION.
(2) CONTRACTOR TO ATTACHED FACTORY FURNISHED CONDENSATE FUNNEL TO FLOOR DRAIN. MOUNT FLOOR DRAIN TO EXISTING WOOD FLOOR.

PLUMBING PIPING LEGEND

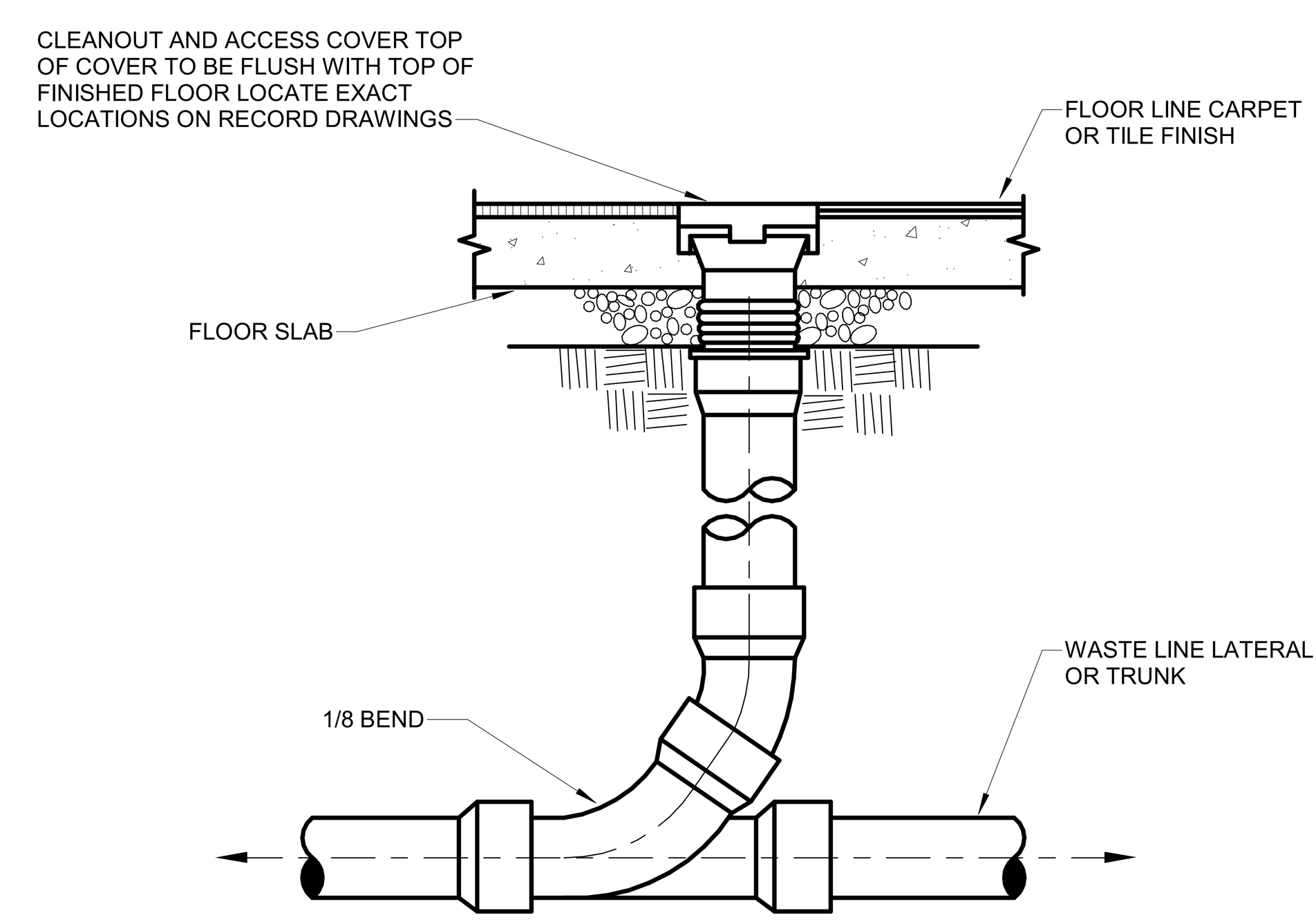
DESCRIPTION	SYMBOL
WASTE - (BELOW GRADE)	— — — — —
VENT	- - - - - - - -
CONDENSATE DRAIN	——o——



COOLING COIL CONDENSATE DRAIN DETAIL

5 / P5.1

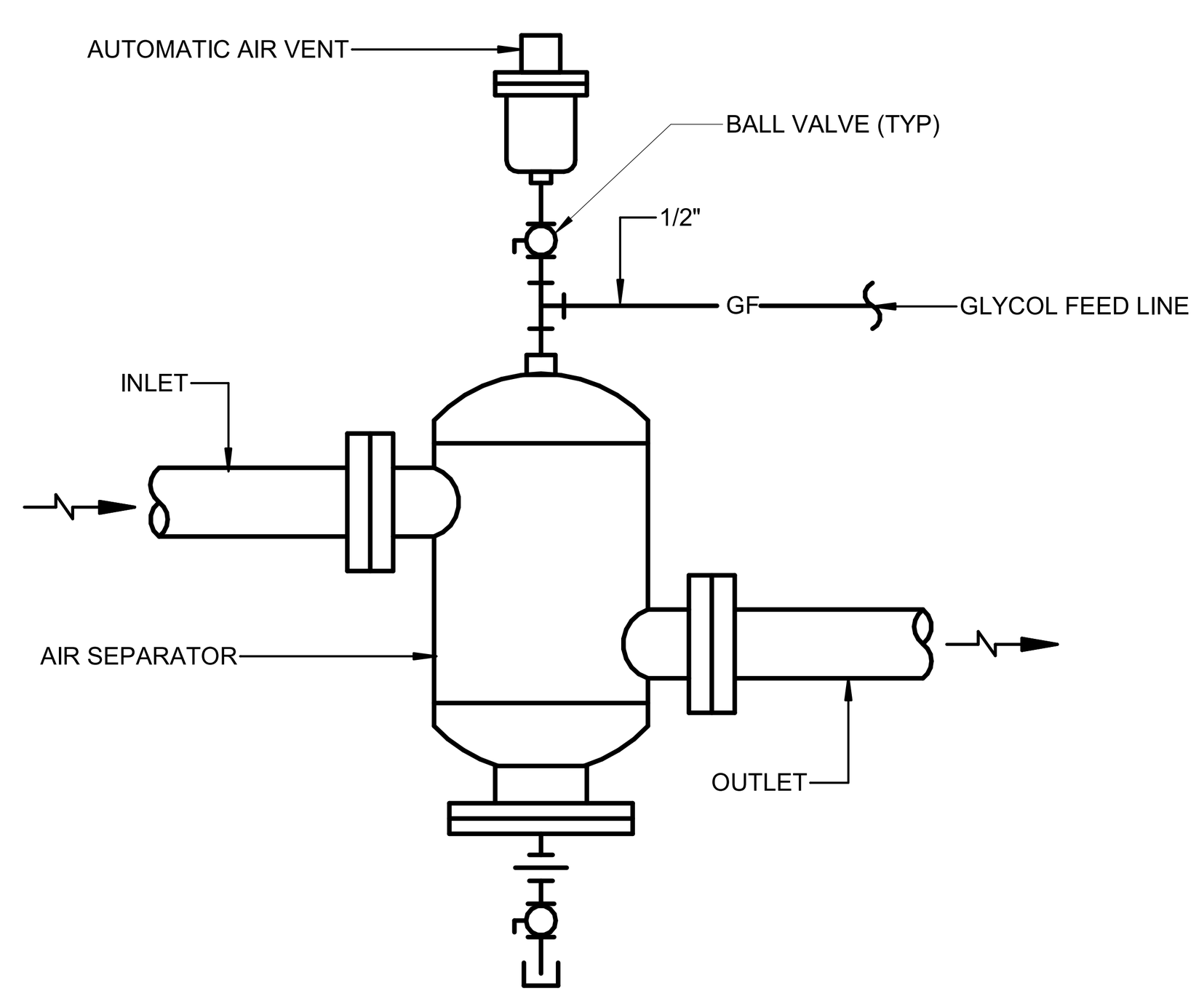
SCALE: NTS



FLOOR CLEANOUT DETAIL

2 / P5.1

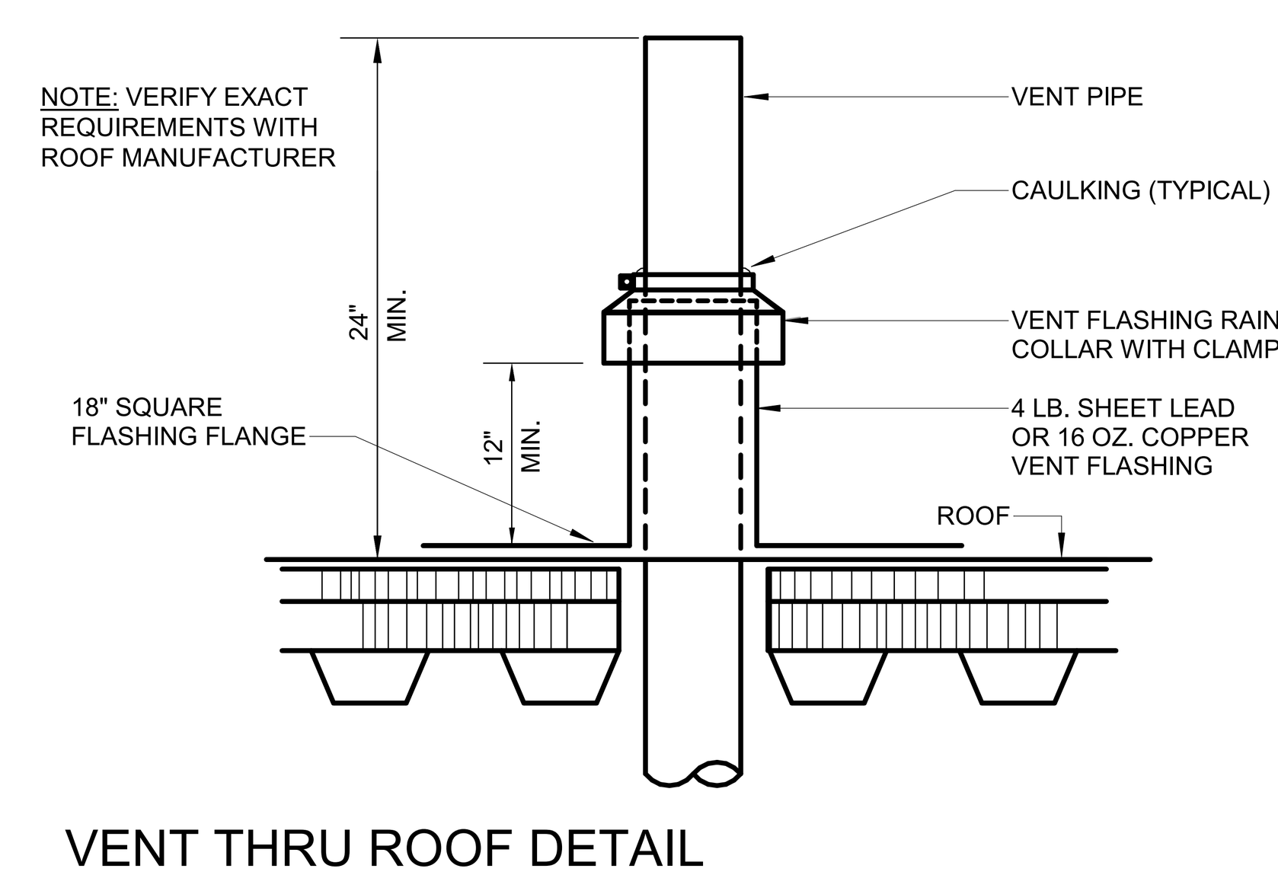
SCALE: NTS



AIR SEPARATOR DETAIL

6 / P5.1

SCALE: NTS



VENT THRU ROOF DETAIL

3 / P5.1

SCALE: NTS

OLSEN & PETERSON
consulting engineers, inc.

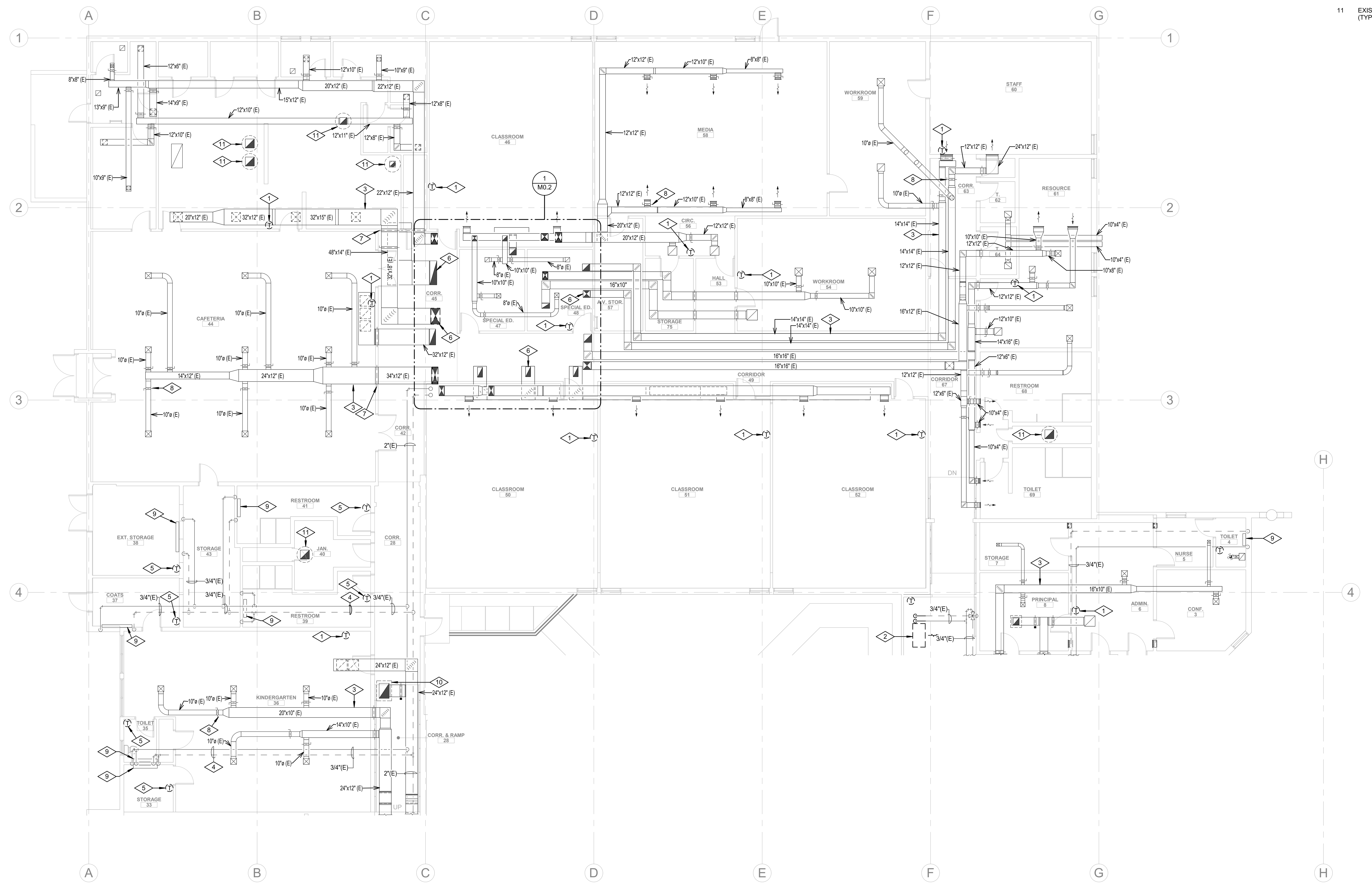
KMA ARCHITECTS
170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

P5.1



MECHANICAL DEMOLITION PLAN AREA A

0 4' - 0" 8' - 0" 16' - 0"

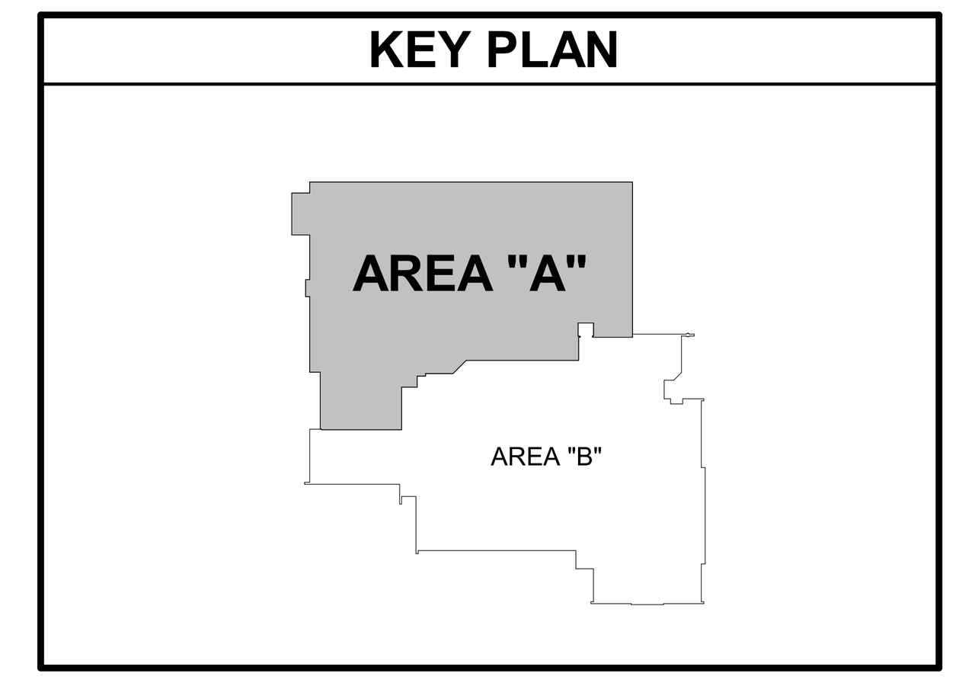
SCALE: 1/8" = 1'-0"

NORTH

REFERENCE NOTES

1. REMOVE EXISTING THERMOSTAT IN PREPARATION TO REPLACE WITH NEW HEATING/COOLING TEMPERATURE SENSOR.
2. REMOVE EXISTING CUH. DEMO PIPING BACK FAR ENOUGH TO MAKE NEW CONNECTION TO NEW CUH.
3. EXISTING DUCTWORK TO REMAIN (TYP).
4. EXISTING PIPING TO REMAIN (TYP).
5. REMOVE EXISTING THERMOSTAT IN PREPARATION FOR INSTALMENT OF NEW HEATING ONLY THERMOSTAT.
6. EXISTING DUCTWORK CONTINUES TO MEZZANINE ABOVE (TYP).
7. EXISTING FIRE DAMPER TO REMAIN (TYP).
8. EXISTING MANUAL DAMPER TO REMAIN (TYP).
9. EXISTING WALL MOUNTED CONVECTORS TO REMAIN (TYP).
10. EXISTING RELIEF AIR HOOD TO REMAIN (TYP).
11. EXISTING ROOF MOUNTED EXHAUST FAN TO REMAIN (TYP).

KEY PLAN



OLSEN & PETERSON
consulting engineers, inc.
14 East 2700 South, Salt Lake City, UT 84115
Phone: (801) 486-4646 Fax: (801) 467-2531

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

LICENSED PROFESSIONAL ENGINEER #334524-2202 JAMES AUSTIN BERRETT UTAH

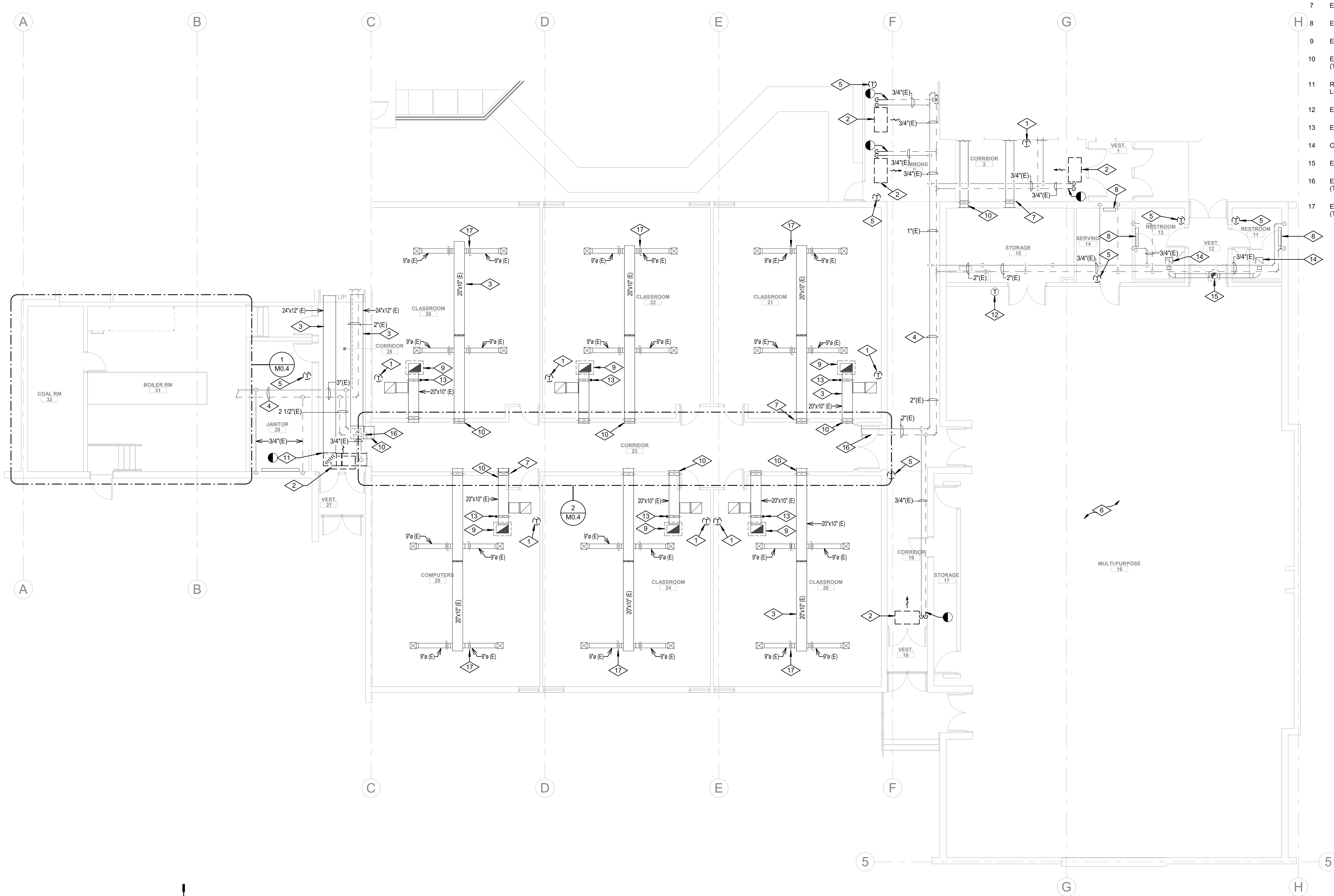
REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
30 S 100 W
CLEVELAND, UTAH

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

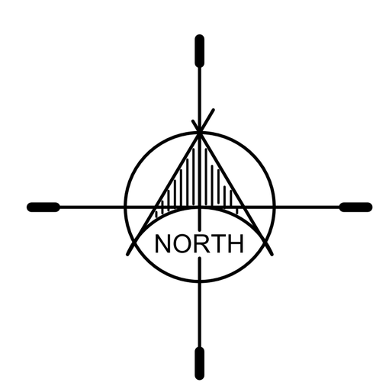
M0.1A

MECHANICAL DEMOLITION PLAN AREA B



0 4' - 0" 8' - 0" 16' - 0"

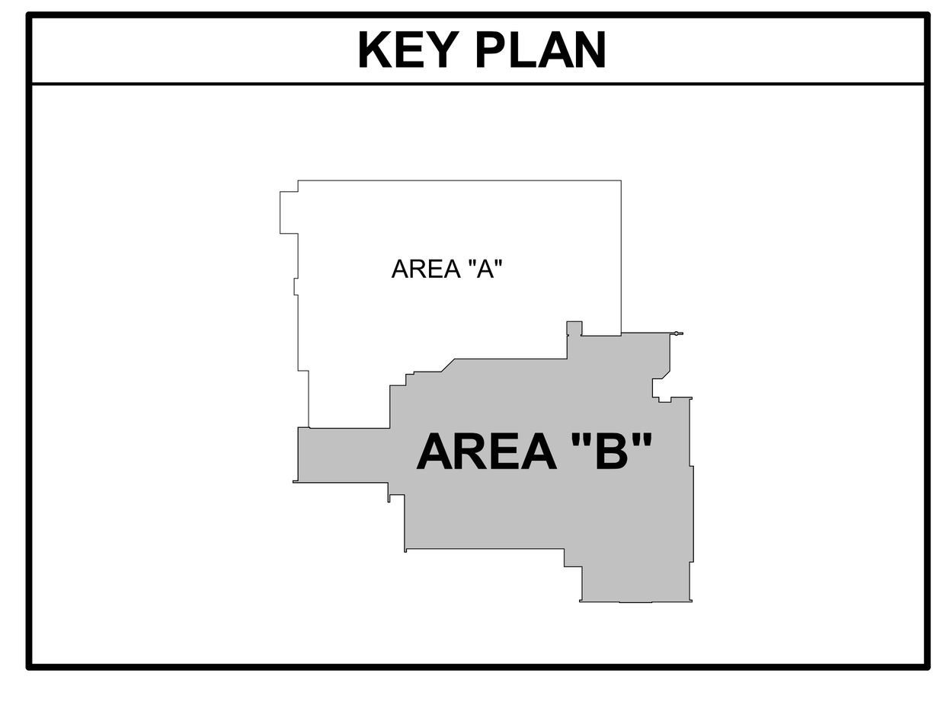
SCALE:1/8" = 1'-0"



REFERENCE NOTES

1. REMOVE EXISTING THERMOSTAT IN PREPARATION TO REPLACE WITH NEW HEATING/COOLING TEMPERATURE SENSOR.
2. REMOVE EXISTING CABINET UNIT HEATER (CUH). DEMO PIPING BACK FAR ENOUGH TO MAKE NEW CONNECTION TO NEW CUH.
3. EXISTING DUCTWORK TO REMAIN (TYP).
4. EXISTING PIPING TO REMAIN (TYP).
5. REMOVE EXISTING THERMOSTAT IN PREPARATION FOR NEW HEATING ONLY THERMOSTAT.
6. NO WORK IN THIS AREA.
7. EXISTING FIRE DAMPER TO REMAIN (TYP).
8. EXISTING WALL MOUNTED CONVECTOR TO REMAIN (TYP).
9. EXISTING RELIEF AIR HOOD TO REMAIN (TYP).
10. EXISTING DUCTWORK CONTINUES TO MEZZANINE ABOVE (TYP).
11. REMOVE EXISTING DUCTWORK TO APPROXIMATELY THIS LOCATION.
12. EXISTING THERMOSTAT TO REMAIN.
13. EXISTING MOTORIZED DAMPER TO REMAIN (TYP).
14. CEILING MOUNTED EXHAUST FAN TO REMAIN (TYP).
15. EXISTING 12" EXHAUST DUCT UP THRU ROOF TO REMAIN.
16. EXISTING PIPING CONTINUES TO MEZZANINE ABOVE (TYP).
17. EXISTING MANUAL BALANCING DAMPER TO REMAIN (TYP).

KEY PLAN



OLSEN & PETERSON
consulting engineers, inc.

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

REVISIONS:

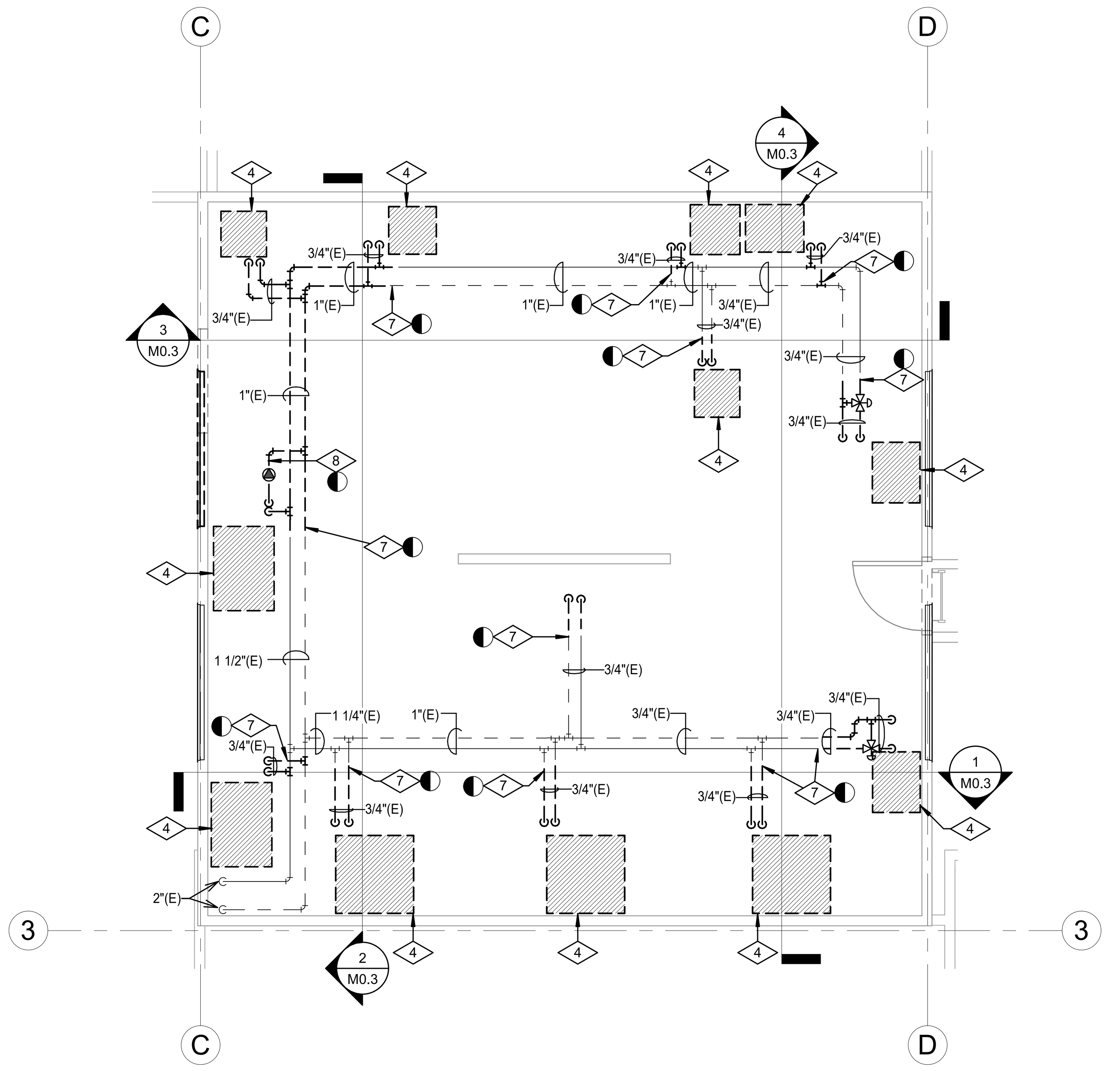
PROJECT TITLE

EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH

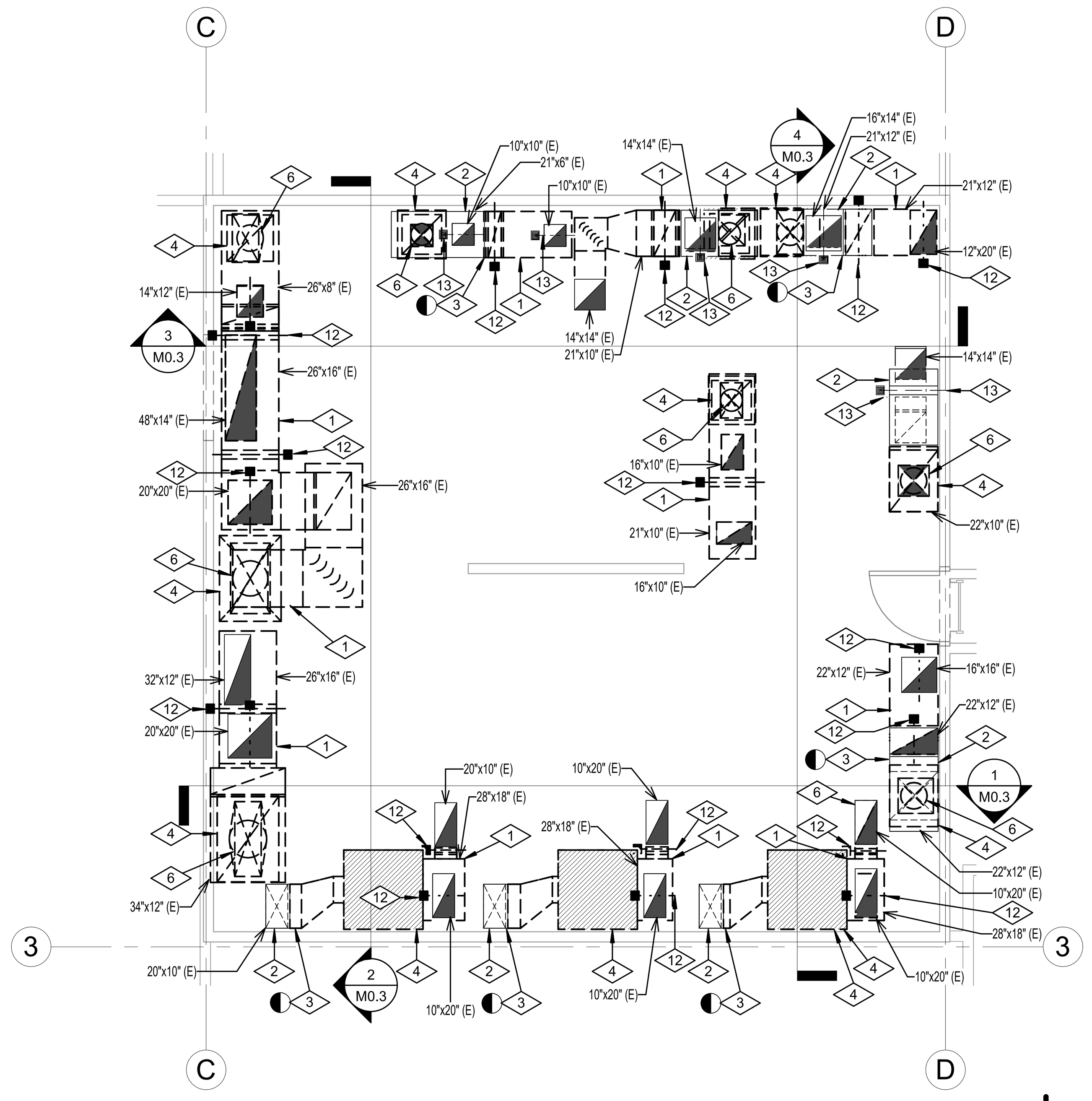
30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

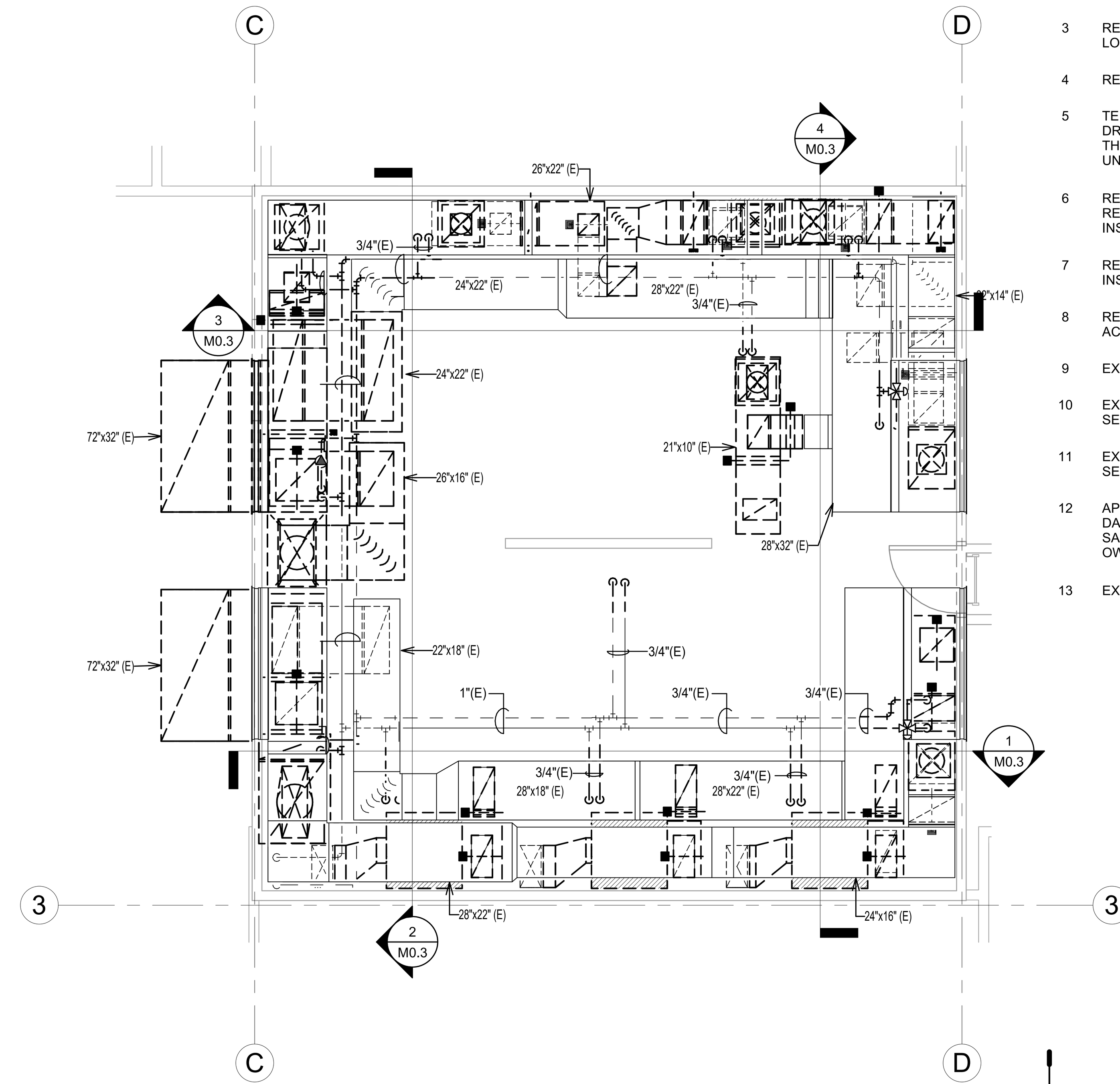
M0.1B



ENLARGED MECHANICAL DEMOLITION PLAN
NORTH MEZZANINE - MECHANICAL PIPING
5 / M0.2
SCALE: 1/4" = 1'-0"



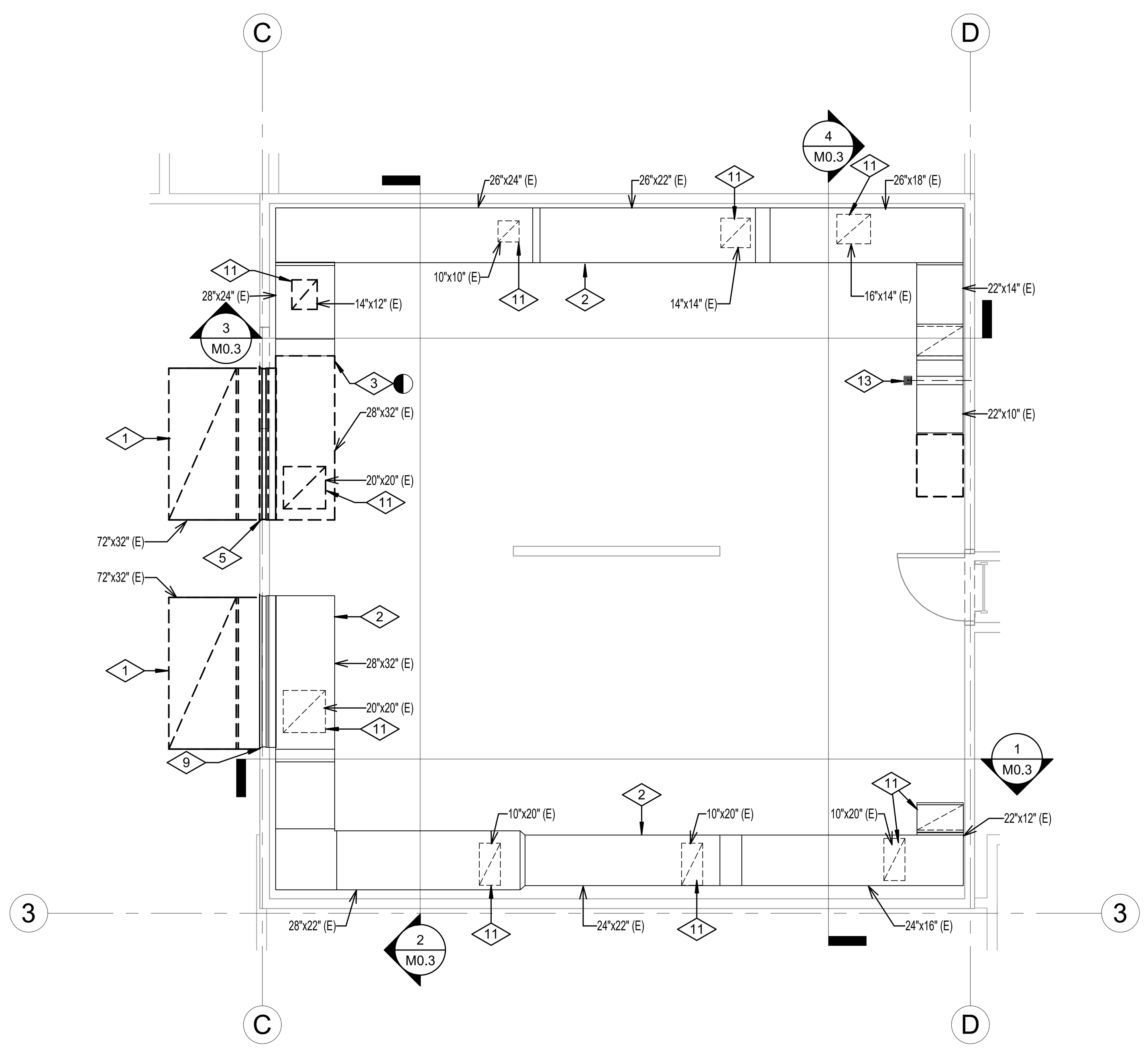
ENLARGED MECHANICAL DEMOLITION PLAN
NORTH MEZZANINE - SUPPLY & RETURN DUCT
3 / M0.2
SCALE: 1/4" = 1'-0"



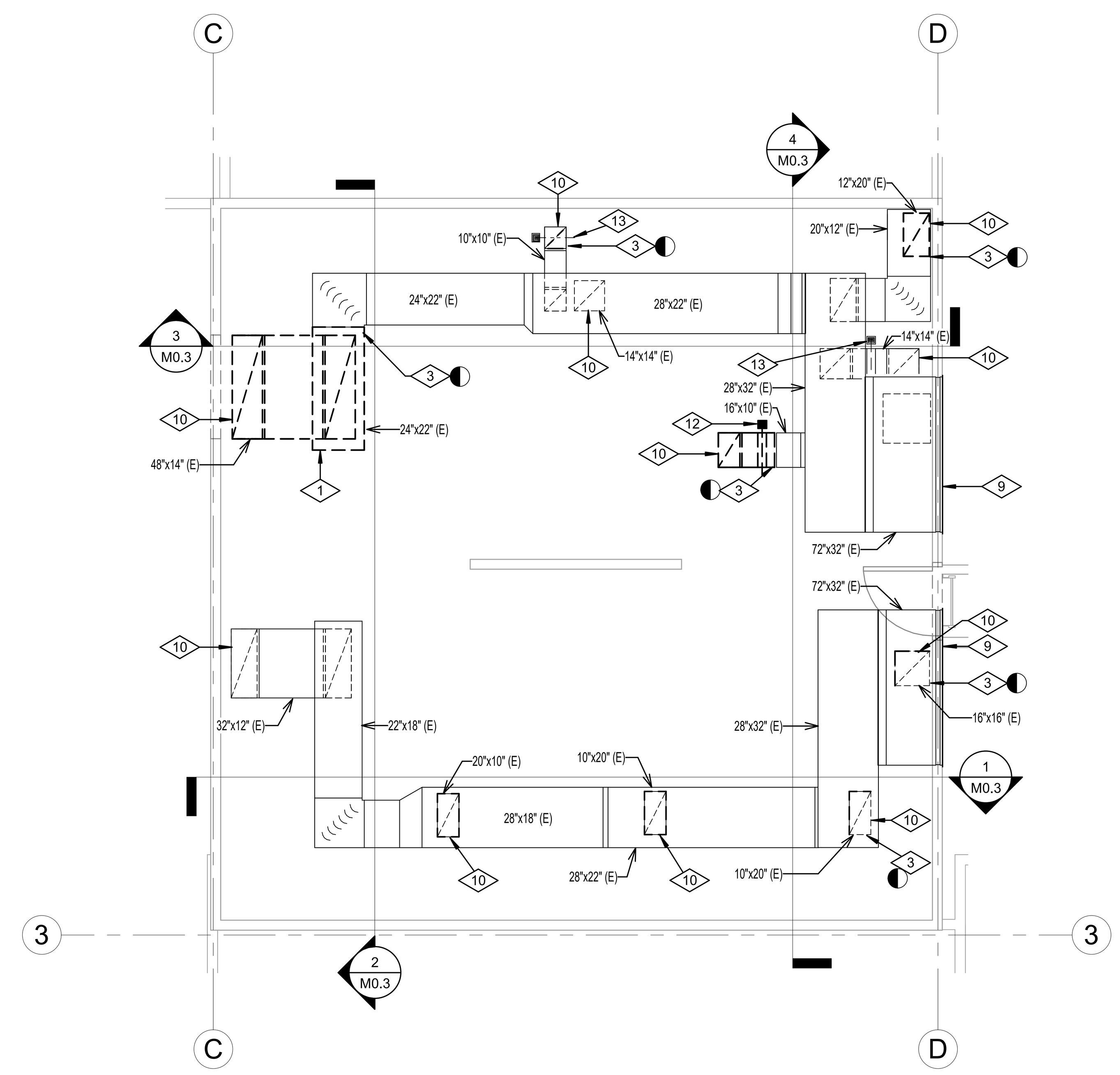
ENLARGED MECHANICAL DEMOLITION PLAN
NORTH MEZZANINE - REFERENCE
1 / M0.2
SCALE: 1/4" = 1'-0"

REFERENCE NOTES

1. REMOVE EXISTING DUCTWORK AND SUPPORTS COMPLETE (TYP).
2. EXISTING DUCTWORK TO REMAIN (TYP).
3. REMOVE EXISTING DUCTWORK TO APPROXIMATELY THIS LOCATION.
4. REMOVE EXISTING FAN COIL UNIT COMPLETE.
5. TEMPORARILY REMOVE EXISTING LOUVER, STORE IN A DRY LOCATION ON SITE UNTIL END OF PROJECT. USE THIS OPENING FOR REMOVAL OF EXISTING FAN COIL UNITS.
6. REMOVE EXISTING DUCT DROP TO FLOOR AT A MINIMUM. REMOVE DUCTWORK AS NEEDED FOR NEW FANCOIL INSTALLATION AND FITTINGS.
7. REMOVE EXISTING MECHANICAL PIPING, HANGERS, AND INSULATION TO APPROXIMATELY THIS LOCATION.
8. REMOVE EXISTING CIRCULATION PUMP AND ACCESSORIES COMPLETE.
9. EXISTING LOUVER TO REMAIN (TYP).
10. EXISTING RELIEF AIR DUCTS DROPS TO RETURN DUCT. SEE 3/M0.2 FOR CONTINUATION (TYP).
11. EXISTING OUTSIDE AIR DUCT DROPS TO RETURN DUCT. SEE 3/M0.2 FOR CONTINUATION (TYP).
12. APPROXIMATE LOCATION OF EXISTING MOTORIZED DAMPER, REMOVE DAMPER AND ACTUATOR. RETURN SALVAGED DAMPER AND ACTUATOR TO BUILDING OWNER (TYP).
13. EXISTING MOTORIZED DAMPER TO REMAIN.

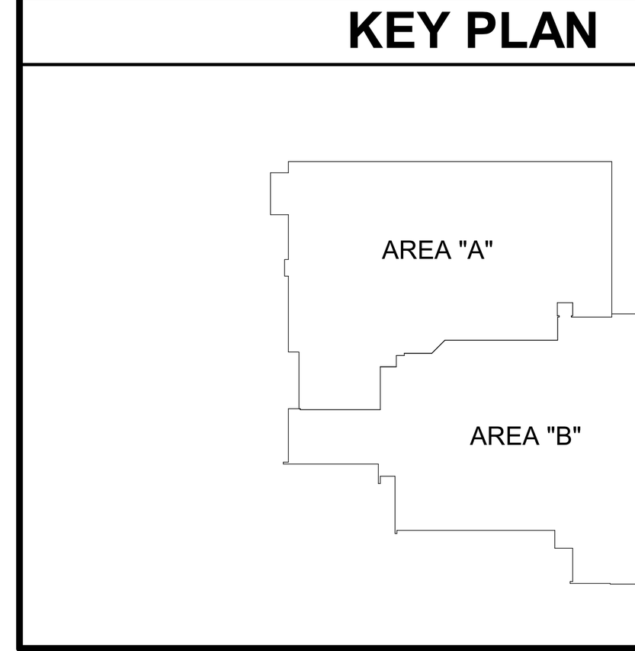


ENLARGED MECHANICAL DEMOLITION PLAN
NORTH MEZZANINE - OUTSIDE AIR DUCT
4 / M0.2
SCALE: 1/4" = 1'-0"



ENLARGED MECHANICAL DEMOLITION PLAN
NORTH MEZZANINE - RELIEF AIR DUCT
2 / M0.2
SCALE: 1/4" = 1'-0"

KEY PLAN



OLSEN & PETERSON
consulting engineers, inc.
14 East 2700 South, Salt Lake City, UT 84115
Phone: (801) 486-4640 Fax: (801) 467-2331

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

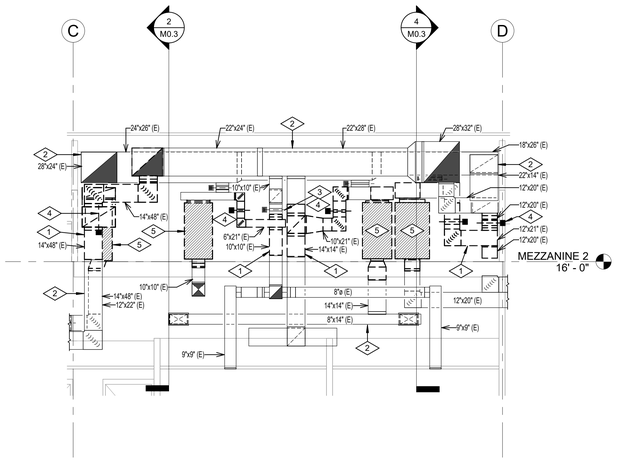
LICENSED PROFESSIONAL ENGINEER #334524-2202 JAMES AUSTIN BERRETT UTAH

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
30 S 100 W
CLEVELAND, UTAH

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

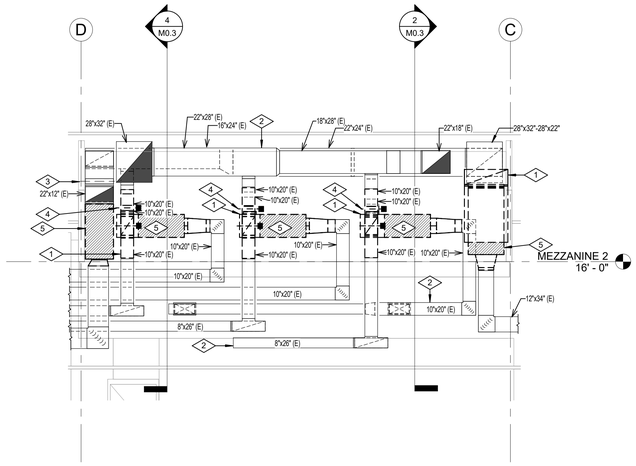
M0.2



MECHANICAL DEMOLITION SECTION VIEW
NORTH MEZZANINE NORTH WALL

SCALE: 1/4" = 1'-0"

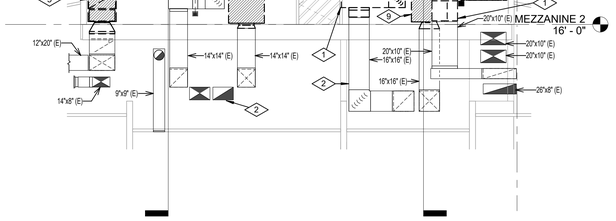
3 M0.3



MECHANICAL DEMOLITION SECTION VIEW
NORTH MEZZANINE SOUTH WALL

SCALE: 1/4" = 1'-0"

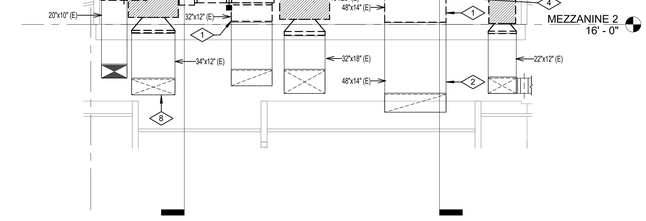
1 M0.3



MECHANICAL DEMOLITION SECTION VIEW
NORTH MEZZANINE EAST WALL

SCALE: 1/4" = 1'-0"

4 M0.3



MECHANICAL DEMOLITION SECTION VIEW
NORTH MEZZANINE WEST WALL

SCALE: 1/4" = 1'-0"

2 M0.3

REFERENCE NOTES

1. REMOVE EXISTING DUCTWORK COMPLETE (TYP).
2. EXISTING DUCTWORK TO REMAIN (TYP).
3. APPROXIMATE LOCATION OF EXISTING MOTORIZED DAMPER. DAMPER TO REMAIN (TYP).
4. APPROXIMATE LOCATION OF EXISTING MOTORIZED DAMPER. REMOVE DAMPER AND ACTUATOR. RETURN SALVAGED DAMPER AND ACTUATOR TO BUILDING OWNER (TYP).
5. REMOVE EXISTING FAN COIL UNIT COMPLETE.
6. EXISTING LOUVER TO REMAIN (TYP).
7. TEMPORARILY REMOVE EXISTING LOUVER AND PUT IN STORAGE FOR FUTURE INSTALL. THE OPENING IS TO BE USED FOR REMOVAL OF EXISTING FAN COIL UNITS AND INSTALL OF NEW UNITS.
8. EXISTING DUCTWORK TO REMAIN (TYP).
9. REMOVE EXISTING FAN COIL UNIT COMPLETE.

GENERAL NOTE: ALL EXISTING DAMPERS ARE ASSUMED TO BE FUNCTIONAL BUT ANY THAT ARE REMOVED DURING DEMOLITION ARE TO BE SALVAGED FOR THE BUILDING OWNER.

KEY PLAN

1/15/2026 9:31:06 AM As indicated

OLSEN & PETERSON
consulting engineers, inc.
14 East 7200 South, Salt Lake City, UT 84121
Phone: (801) 566-5599 Fax: (801) 566-5581

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

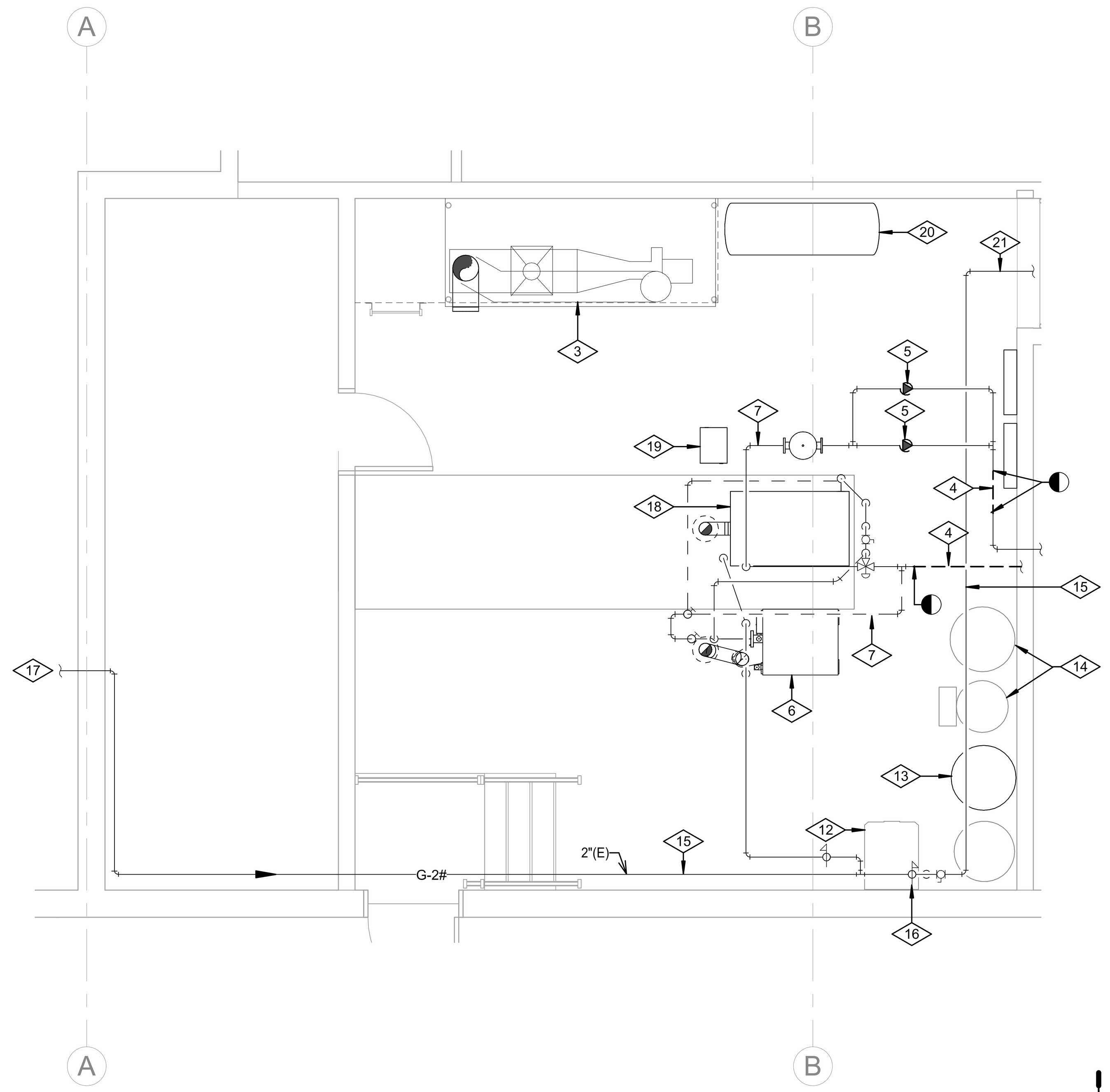
KMA ARCHITECTS

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

M0.3

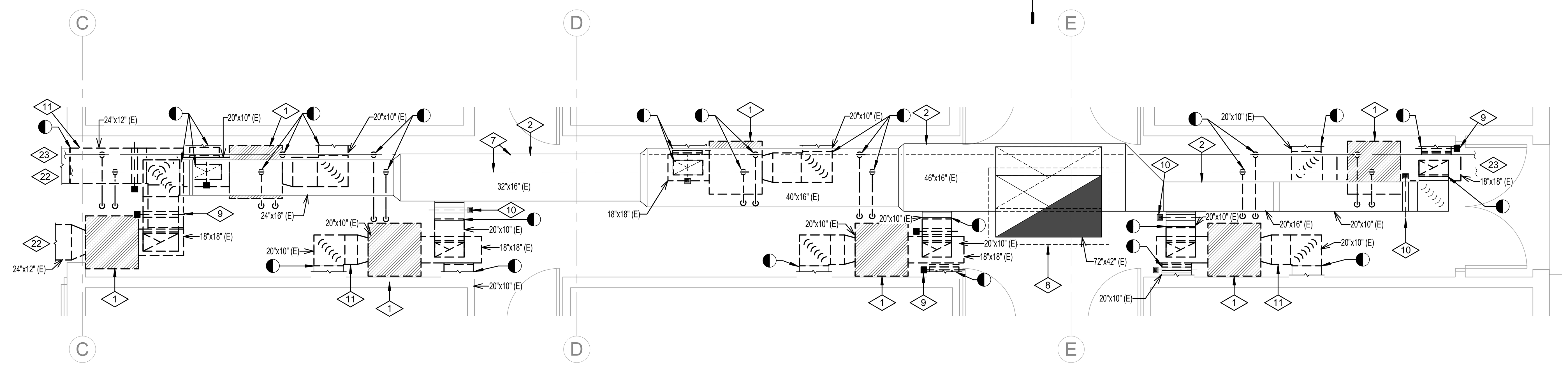


ENLARGED MECHANICAL DEMOLITION PLAN - BOILER ROOM

1 / M0.4

SCALE: 1/4" = 1'-0"

NORTH



ENLARGED MECHANICAL DEMOLITION PLAN AREA B- MEZZANINE

2 / M0.4

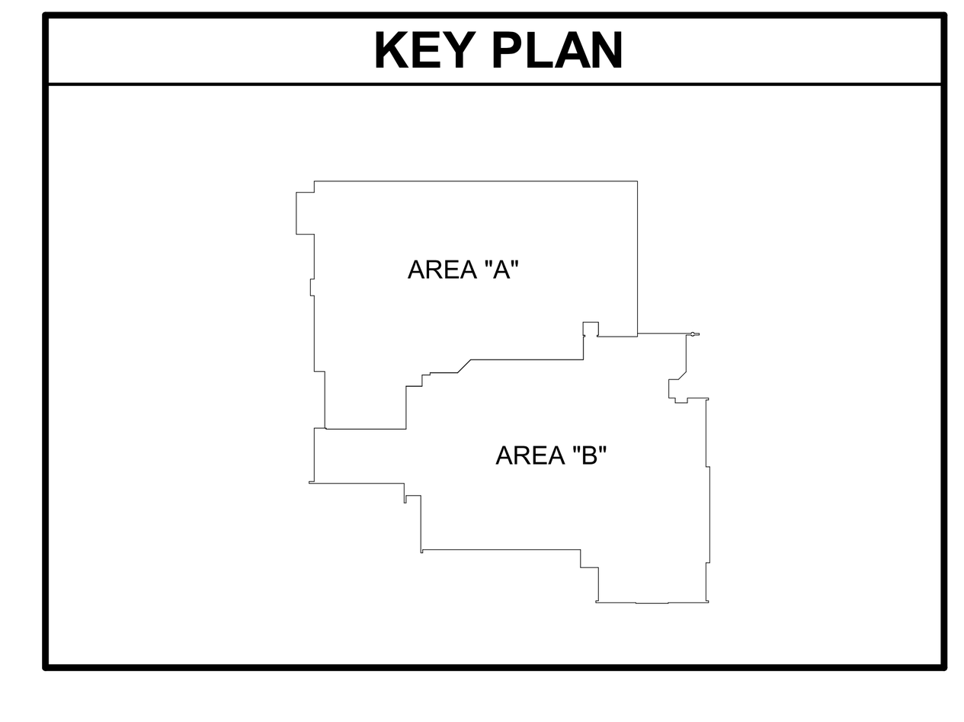
SCALE: 1/4" = 1'-0"

NORTH

REFERENCE NOTES

1. REMOVE FAN COIL UNIT, AND DEMO SUPPLY DUCTWORK, RETURN DUCTWORK, AND O/A DUCTWORK IN MEZZANINE BACK AS SHOWN. DEMO PIPING BACK TO MAIN.
2. EXISTING DUCTWORK TO REMAIN.
3. ABANDONED EXISTING OUTSIDE AIR SYSTEM TO REMAIN.
4. REMOVE EXISTING PIPING FOR FUTURE CONNECTIONS.
5. REMOVE EXISTING IN-LINE PUMPS TO REPLACE WITH NEW.
6. EXISTING BOILER RECENTLY INSTALLED BY OWNER. FIELD VERIFY PIPING LAYOUT PRIOR TO DEMOLITION.
7. EXISTING MECHANICAL PIPING TO REMAIN (TYP).
8. EXISTING OUTSIDE ROOF HOOD TO REMAIN.
9. APPROXIMATE LOCATION OF EXISTING MOTORIZED DAMPER, REMOVE DAMPER AND ACTUATOR. RETURN SALVAGED DAMPER AND ACTUATOR TO BUILDING OWNER (TYP).
10. APPROXIMATE LOCATION OF EXISTING MOTORIZED DAMPER TO REMAIN (TYP).
11. REMOVE EXISTING DUCTWORK (TYP).
12. EXISTING DOMESTIC WATER BOILER TO REMAIN.
13. EXISTING GLYCOL TANK TO REMAIN, ALL GLYCOL TO BE REMOVED FROM THE SYSTEM IN PREPARATION FOR REFILL. SEE SPECIFICATIONS.
14. EXISTING SOFT WATER SYSTEM TO REMAIN (TYP).
15. EXISTING 2# GAS PIPING TO REMAIN (TYP).
16. EXISTING VENTED GAS REGULATOR TO REMAIN (TYP).
17. EXISTING GAS PIPING CONTINUES TO METER OUTSIDE.
18. EXISTING BOILER, FLUE AND PIPING TO REMAIN.
19. EXISTING NEUTRALIZATION TANK TO REMAIN.
20. EXISTING HORIZONTAL EXPANSION TANK TO REMAIN (TYP).
21. EXISTING GAS PIPING CONTINUES TO SERVE KITCHEN.
22. SEE M0.1B FOR CONTINUATION OF DUCTWORK.
23. SEE M0.1B FOR CONTINUATION OF PIPING.

KEY PLAN



OLSEN & PETERSON
consulting engineers, inc.

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

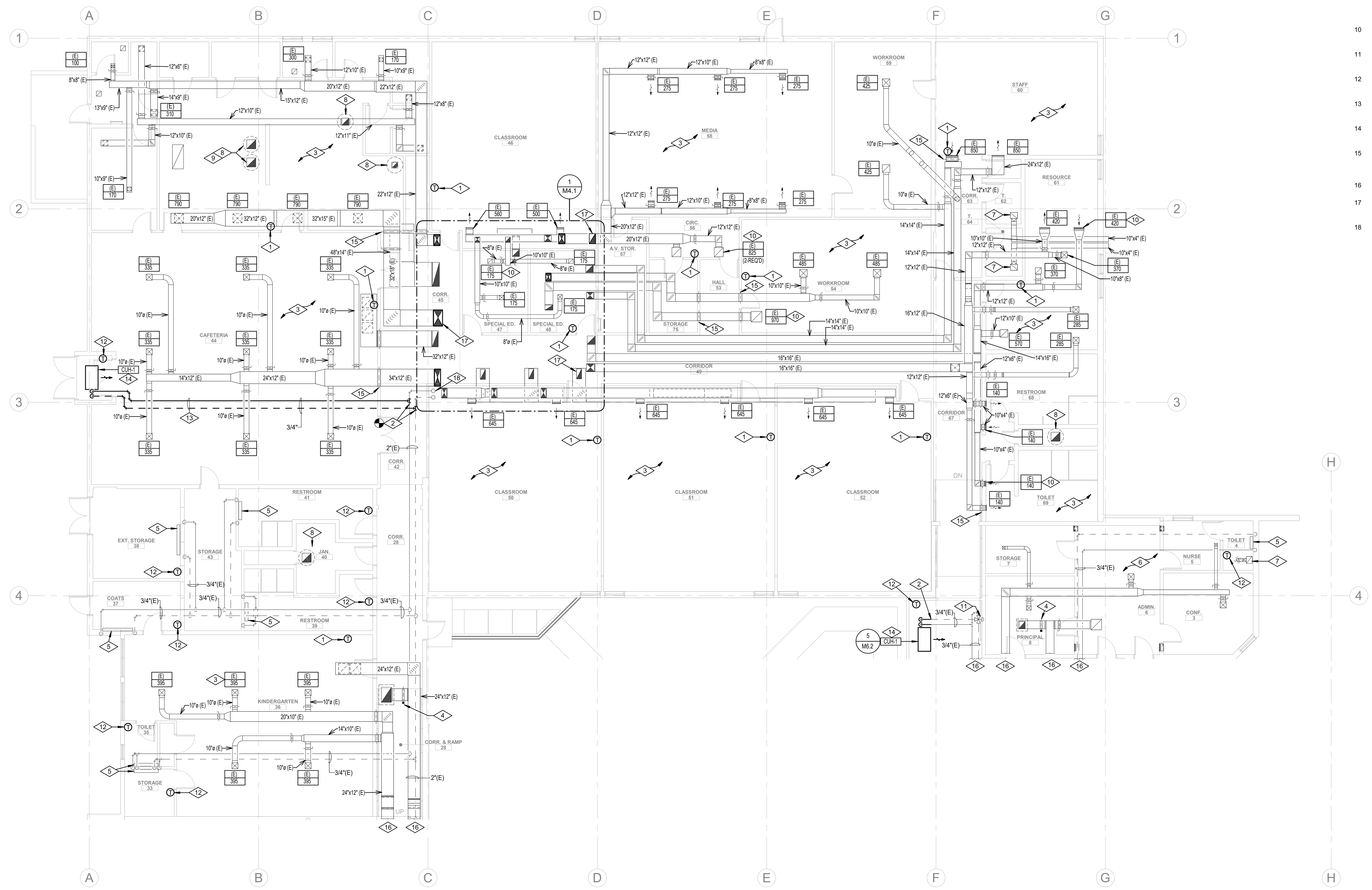
REVISIONS:

PROJECT TITLE

EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

M0.4



MECHANICAL PLAN AREA A

0 4' - 0" 8' - 0" 16' - 0"

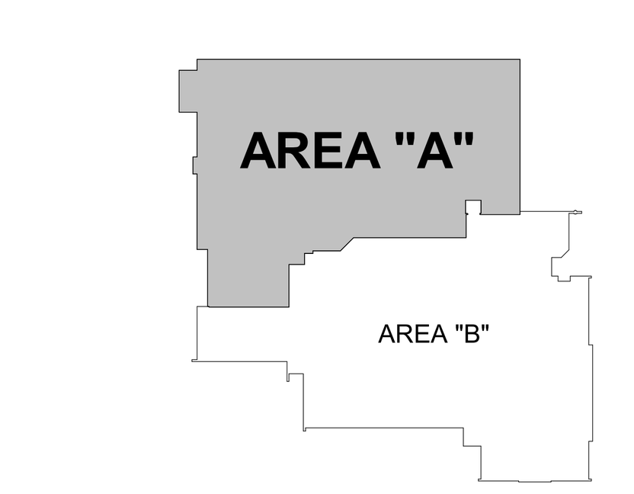
SCALE:1/8" = 1'-0"

NORTH

REFERENCE NOTES

1. NEW WALL MOUNTED HEATING/COOLING TEMPERATURE SENSOR TO BE MOUNTED 4'-0" AFF (TYP).
2. CONNECT TO EXISTING PIPING AT THIS LOCATION.
3. REBALANCE ALL EXISTING DIFFUSERS TO CFM SHOWN (TYP).
4. CONNECT EXISTING MOTORIZED RELIEF AIR DAMPER TO NEW ATC CONTROLS SYSTEM (TYP).
5. EXISTING ATC SHUT OFF VALVE TO EXISTING CONVECTORS TO TURN OFF DURING COOLING MODE (TYP).
6. DUCTWORK IN THIS AREA IS ABANDONED. EXISTING MINI SPLITS AND THERMOSTATS TO REMAIN. PROVIDE A CONTROL POINT FOR REPORTING SPACE TEMPERATURE.
7. EXISTING CEILING EXHAUST FAN TO TURN ON WITH LIGHT (TYP).
8. TIE EXISTING ROOF MOUNTED EXHAUST FAN TO NEW ATC CONTROLS (TYP).
9. EXISTING ROOF MOUNTED EXHAUST FANS SERVING THE KITCHEN HOOD TO BE INTERLOCKED WITH NEW FAN COIL FC-18.
10. REBALANCE EXISTING RETURN GRILLE TO CFM SHOWN (TYP).
11. TIE EXISTING 3-WAY VALVE TO NEW ATC CONTROLS (TYP).
12. NEW WALL MOUNTED HEATING ONLY TEMPERATURE SENSOR TO BE MOUNTED 4'-0".
13. NEW PIPING TO RUN ABOVE CEILING. COORDINATE WITH EXISTING CONDITIONS AND ALL TRADES.
14. NEW ATC VALVES INTEGRAL WITH CABINET UNIT HEATERS TO CLOSE DURING COOLING MODE (TYP).
15. ENSURE EXISTING FIRE DAMPERS ARE OPEN, COORDINATE WITH SCHOOL DISTRICT IF ANY ARE CLOSED PRIOR TO BALANCING (TYP).
16. SEE M1.1B FOR CONTINUATION.
17. DUCTWORK CONTINUES TO MEZZANINE ABOVE. SEE M4.1 FOR CONTINUATION (TYP).
18. MECHANICAL PIPING CONTINUES TO MEZZANINE ABOVE. SEE M4.1 FOR CONTINUATION.

KEY PLAN



OLSEN & PETERSON
consulting engineers, inc.
14 East 2700 South, Salt Lake City, UT 84115
Phone: (801) 486-4646 Fax: (801) 467-2531

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

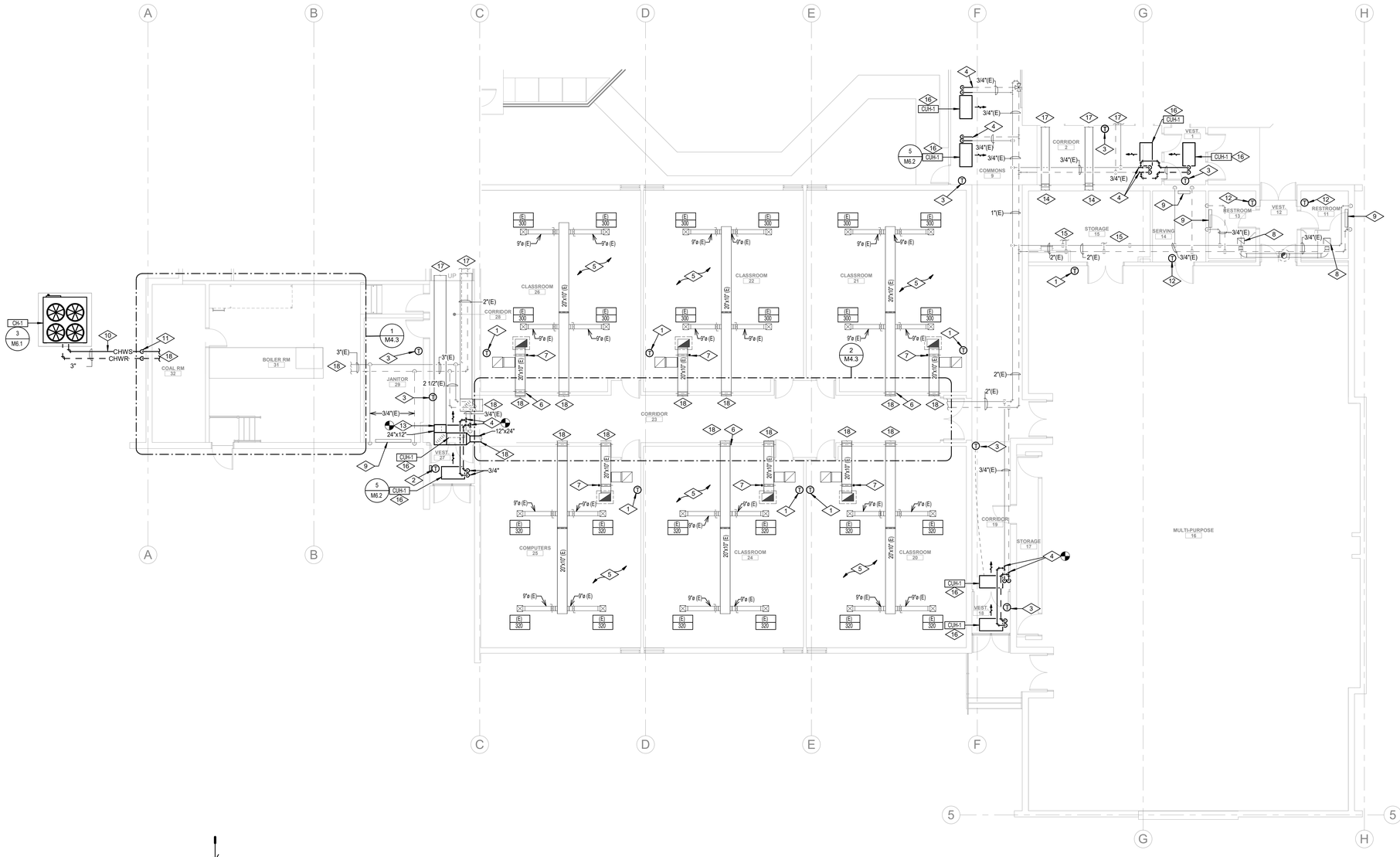
LICENSED PROFESSIONAL ENGINEER #334524-2202 JAMES AUSTIN BERRETT UTAH

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
30 S 100 W
CLEVELAND, UTAH

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

M1.1A



REFERENCE NOTES

1. NEW WALL MOUNTED HEATING/COOLING TEMPERATURE SENSOR TO BE MOUNTED 4'-0".
2. NEW WALL MOUNTED HEATING ONLY TEMPERATURE SENSOR WITH INSULATED BASE TO BE MOUNTED 4'-0".
3. NEW WALL MOUNTED HEATING ONLY TEMPERATURE SENSOR TO BE MOUNTED 4'-0".
4. CONNECT TO EXISTING PIPING AT THIS LOCATION. REPAIR PIPE INSULATION AT TIE IN.
5. REBALANCE ALL DIFFUSERS TO CFM SHOWN (TYP).
6. ENSURE EXISTING FIRE DAMPERS ARE OPEN, COORDINATE WITH SCHOOL DISTRICT IF ANY ARE CLOSED PRIOR TO BALANCING (TYP).
7. CONNECT EXISTING MOTORIZED RELIEF AIR DAMPER TO NEW ATC CONTROLS SYSTEM (TYP).
8. EXISTING CEILING EXHAUST FAN TO TURN ON WITH LIGHT (TYP).
9. EXISTING MOTORIZED SHUT OFF VALVE TO EXISTING CONVECTORS TO CLOSE DURING COOLING MODE (TYP).
10. CHILLED WATER PIPING TO RUN LOW TO THE GROUND WITH SUPPORTS AT REGULAR INTERVALS. EXTERIOR INSULATION W/ALUMINUM JACKET REQUIRED.
11. CHILLED WATER PIPING RISES UP THE SIDE OF THE BUILDING BEFORE GOING THRU WALL.
12. NEW WALL MOUNTED HEATING ONLY TEMPERATURE SENSOR TO BE MOUNTED 4'-0".
13. CONNECT TO EXISTING DUCTWORK AT APPROXIMATELY THIS LOCATION.
14. ABANDONED DUCTWORK CONTINUES TO ABANDONED EQUIPMENT IN MEZZANINE ABOVE.
15. MECHANICAL PIPING CONTINUES TO ABANDONED EQUIPMENT IN MEZZANINE ABOVE (TYP).
16. NEW ATC VALVES INTEGRAL WITH CABINET UNIT HEATERS TO CLOSE DURING COOLING MODE (TYP).
17. SEE M1.1A FOR CONTINUATION.
18. SEE M4.3 FOR CONTINUATION.

MECHANICAL PLAN AREA B

0 4' - 0" 8' - 0" 16' - 0"

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

NORTH

KEY PLAN

1/15/2026 9:31:17 AM As indicated

OLSEN & PETERSON
consulting engineers, inc.
14 East 7200 South, Salt Lake City, UT 84121
Phone: (801) 566-5599 Fax: (801) 566-5581

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

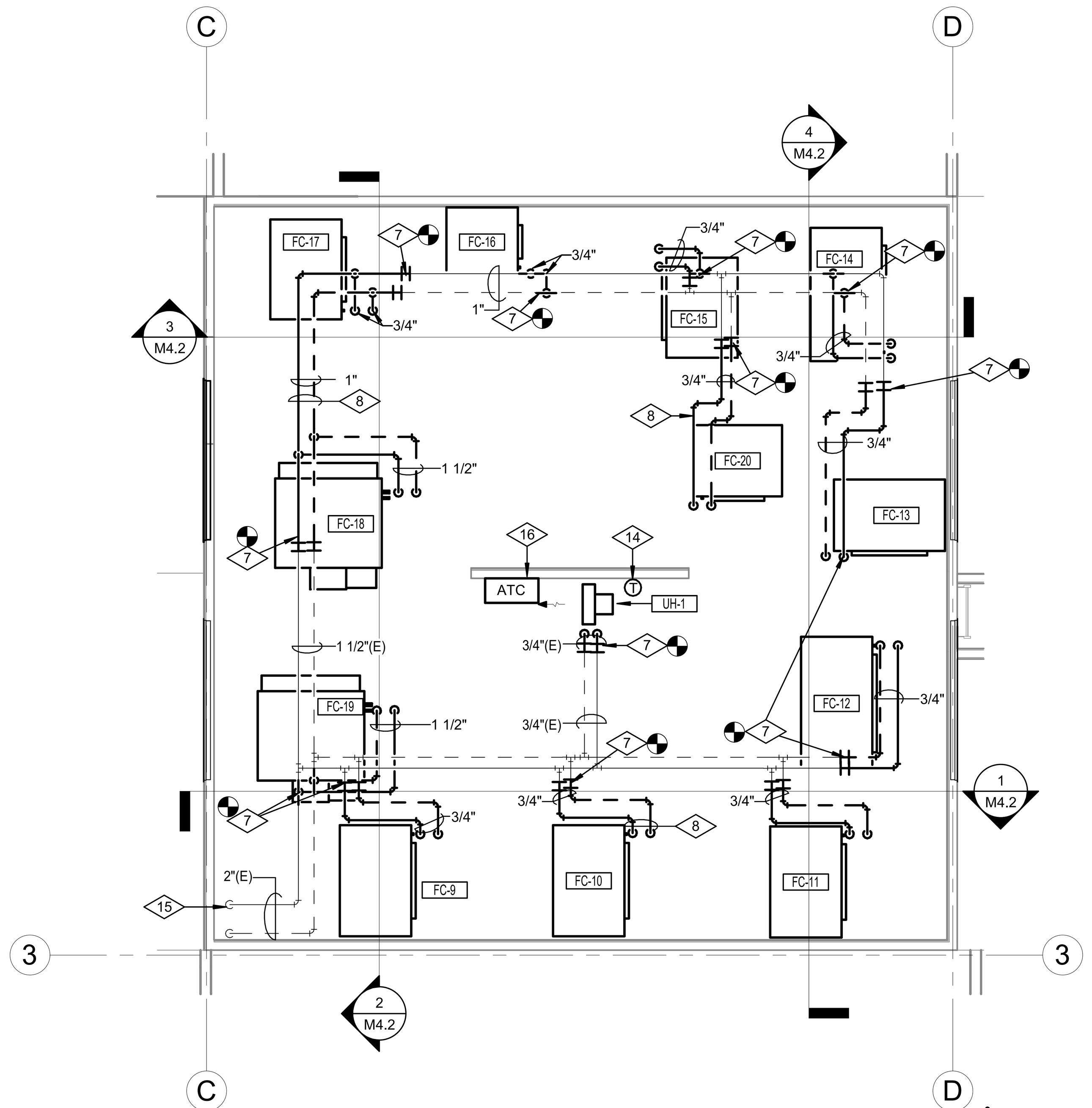
KMA ARCHITECTS

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
30 S 100 W CLEVELAND, UTAH

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

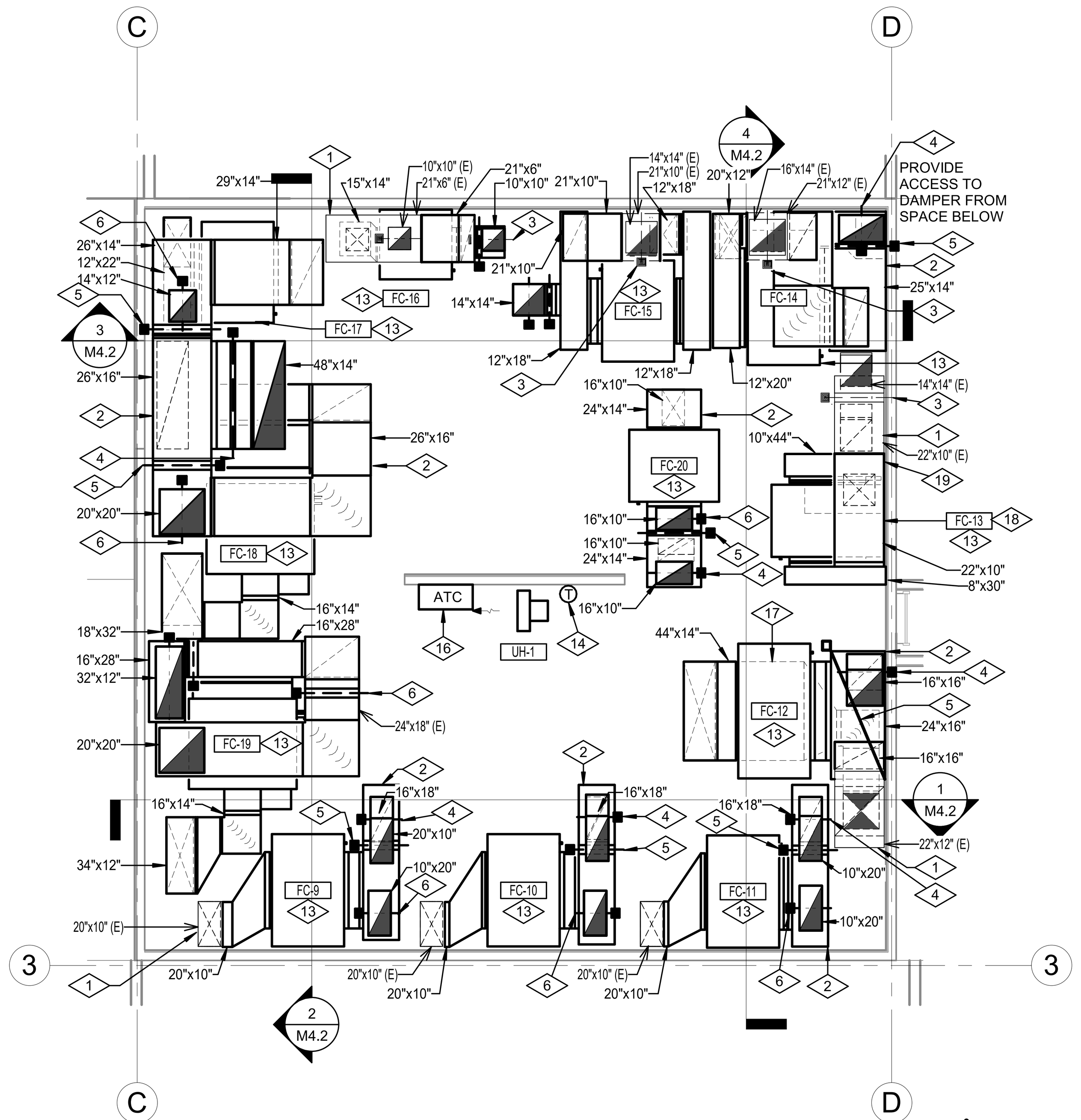
M1.1B



ENLARGED MECHANICAL PLAN
NORTH MEZZANINE - MECHANICAL PIPING

5 / M4.1

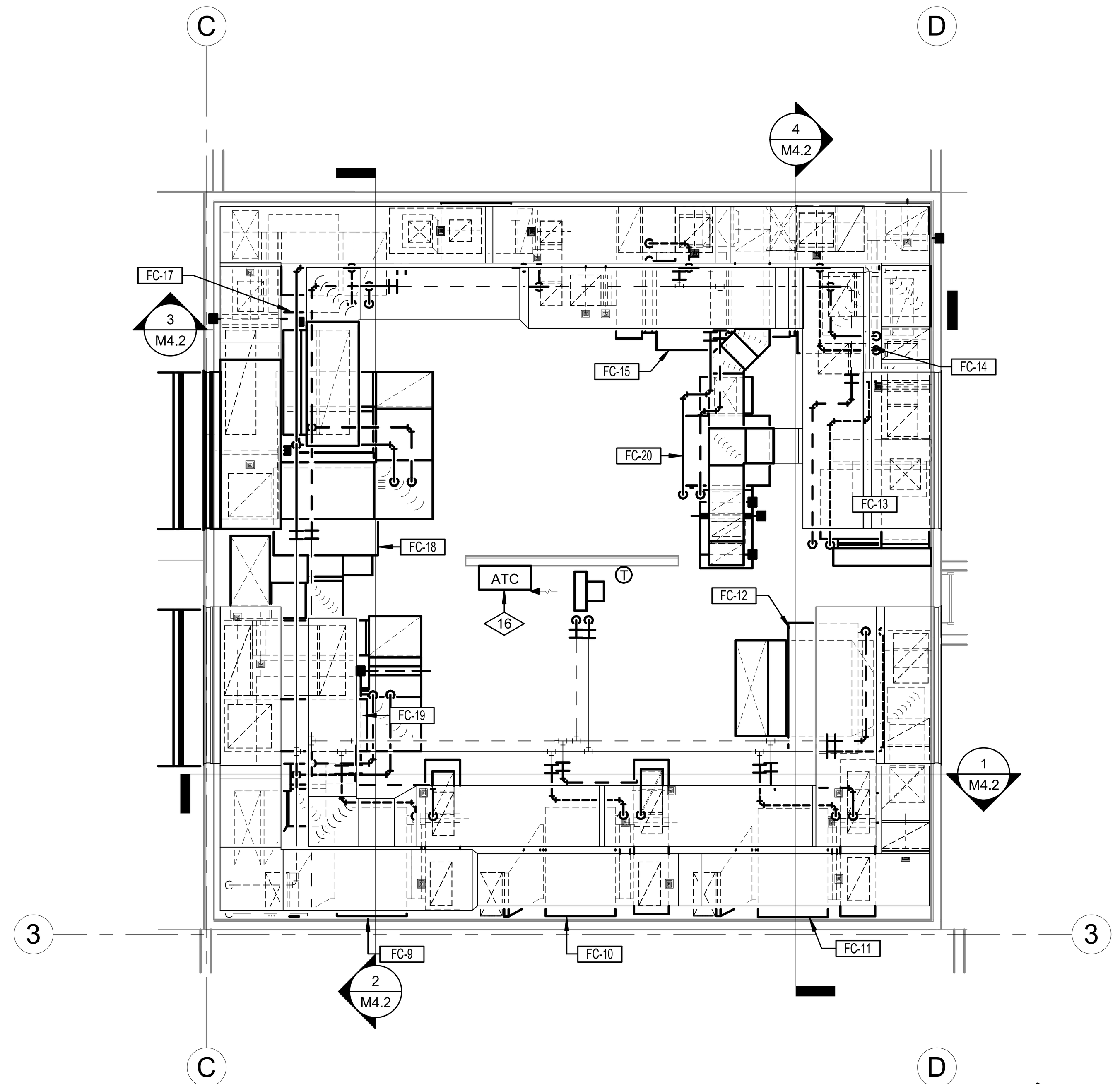
SCALE: 1/4" = 1'-0"



ENLARGED MECHANICAL PLAN
NORTH MEZZANINE - SUPPLY & RETURN DUCT

3 / M4.1

SCALE: 1/4" = 1'-0"



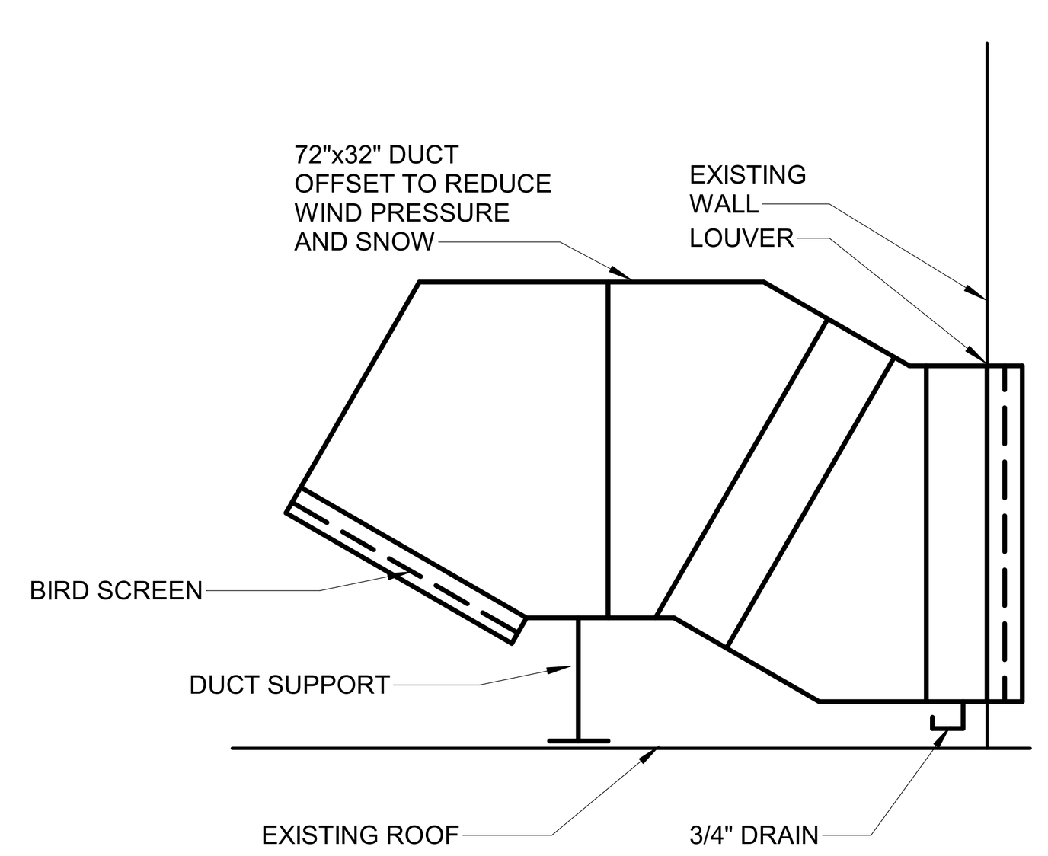
ENLARGED MECHANICAL PLAN
NORTH MEZZANINE - REFERENCE

1 / M4.1

SCALE: 1/4" = 1'-0"

REFERENCE NOTES

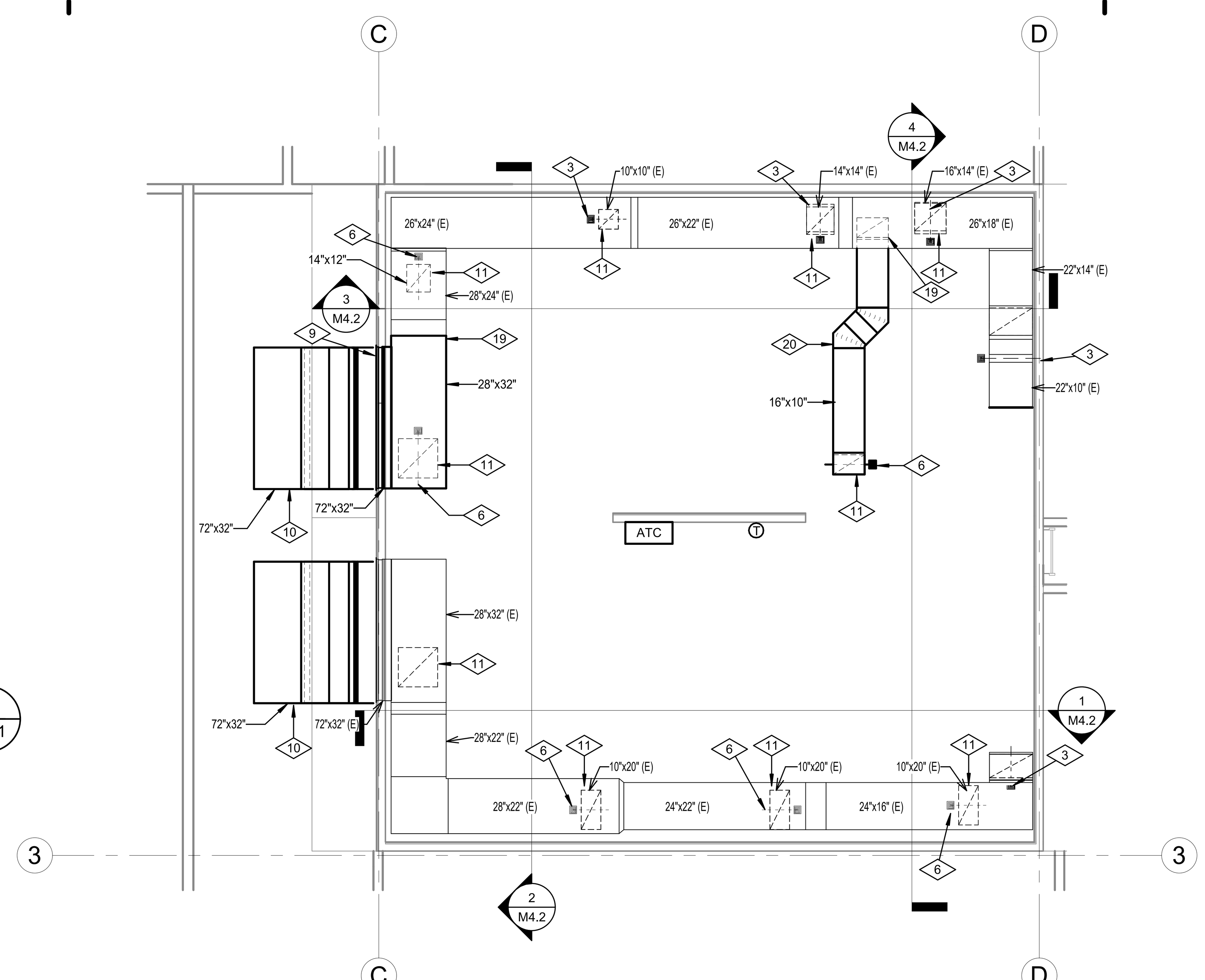
1. EXISTING DUCTWORK TO REMAIN (TYP).
2. NEW DUCTWORK, COORDINATE WITH EXISTING CONDITIONS (TYP).
3. REUSE EXISTING MOTORIZED DAMPER. MAINTAIN ACCESS TO DAMPER.
4. NEW MOTORIZED RELIEF AIR DAMPER (TYP).
5. NEW MOTORIZED RETURN AIR DAMPER (TYP).
6. NEW MOTORIZED OUTSIDE AIR DAMPER (TYP).
7. CONNECT TO EXISTING PIPING AT APPROXIMATELY THIS LOCATION. REPAIR PIPE INSULATION AT TIE-IN.
8. RUN NEW MECHANICAL PIPING AS HIGH AS POSSIBLE. COORDINATE WITH EXISTING CONDITION (TYP).
9. REINSTALL EXISTING LOUVER.
10. TIE NEW DUCTWORK TO EXISTING LOUVER OPENINGS. PROVIDE SUPPORTS ON THE ROOF. SEE DETAIL 6/M4.1.
11. OUTSIDE AIR DUCTWORK TO DROP TO RETURN AIR DUCTWORK AT APPROXIMATELY THIS LOCATION SEE 3/M4.1 (TYP).
12. RELIEF AIR DUCTWORK TO DROP TO RETURN AIR DUCTWORK AT APPROXIMATELY THIS LOCATION SEE 3/M4.1 (TYP).
13. NEW FAN COIL UNIT TO BE SUPPORTED FROM THE FLOOR WITH A MINIMUM OF 6" OF CLEARANCE (TYP).
14. NEW WALL MOUNTED HEATING ONLY THERMOSTAT.
15. EXISTING MECHANICAL PIPING DROPS TO FLOOR BELOW AT APPROXIMATELY THIS LOCATION.
16. NEW ATC PANEL. 120/1/60 POWER REQUIRED.
17. SUPPLY DUCTWORK TO DROP AND RUN BELOW FAN COIL UNIT.
18. NEW FAN COIL UNIT TO BE AS HIGH AS POSSIBLE TO MAINTAIN ACCESS TO MEZZANINE THRU EXISTING DOOR.
19. CONNECT NEW DUCT TO EXISTING, REPAIR INSULATION AT CONNECTION (TYP).
20. TURNING VANES (TYP).



LOUVER ROOF HOOD

6 / M4.1

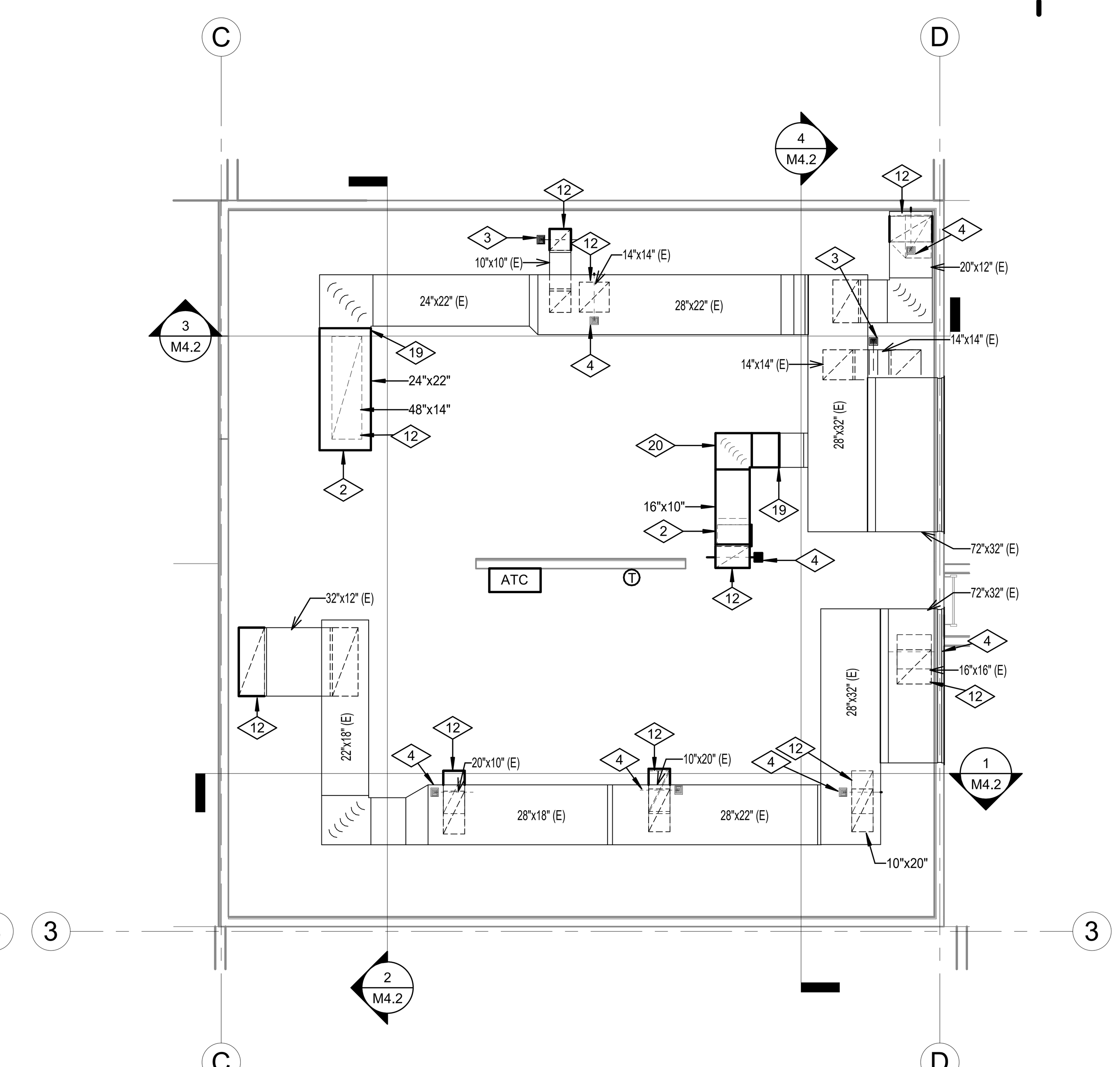
SCALE: NTS



ENLARGED MECHANICAL PLAN
NORTH MEZZANINE - OUTSIDE AIR DUCT

4 / M4.1

SCALE: 1/4" = 1'-0"

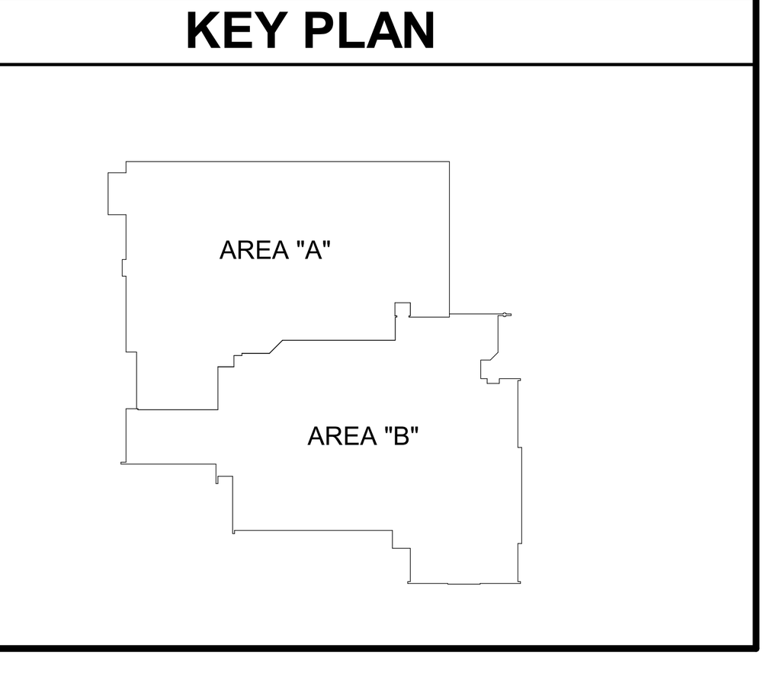


ENLARGED MECHANICAL PLAN
NORTH MEZZANINE - RELIEF AIR DUCT

2 / M4.1

SCALE: 1/4" = 1'-0"

KEY PLAN



OLSEN & PETERSON
consulting engineers, inc.

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

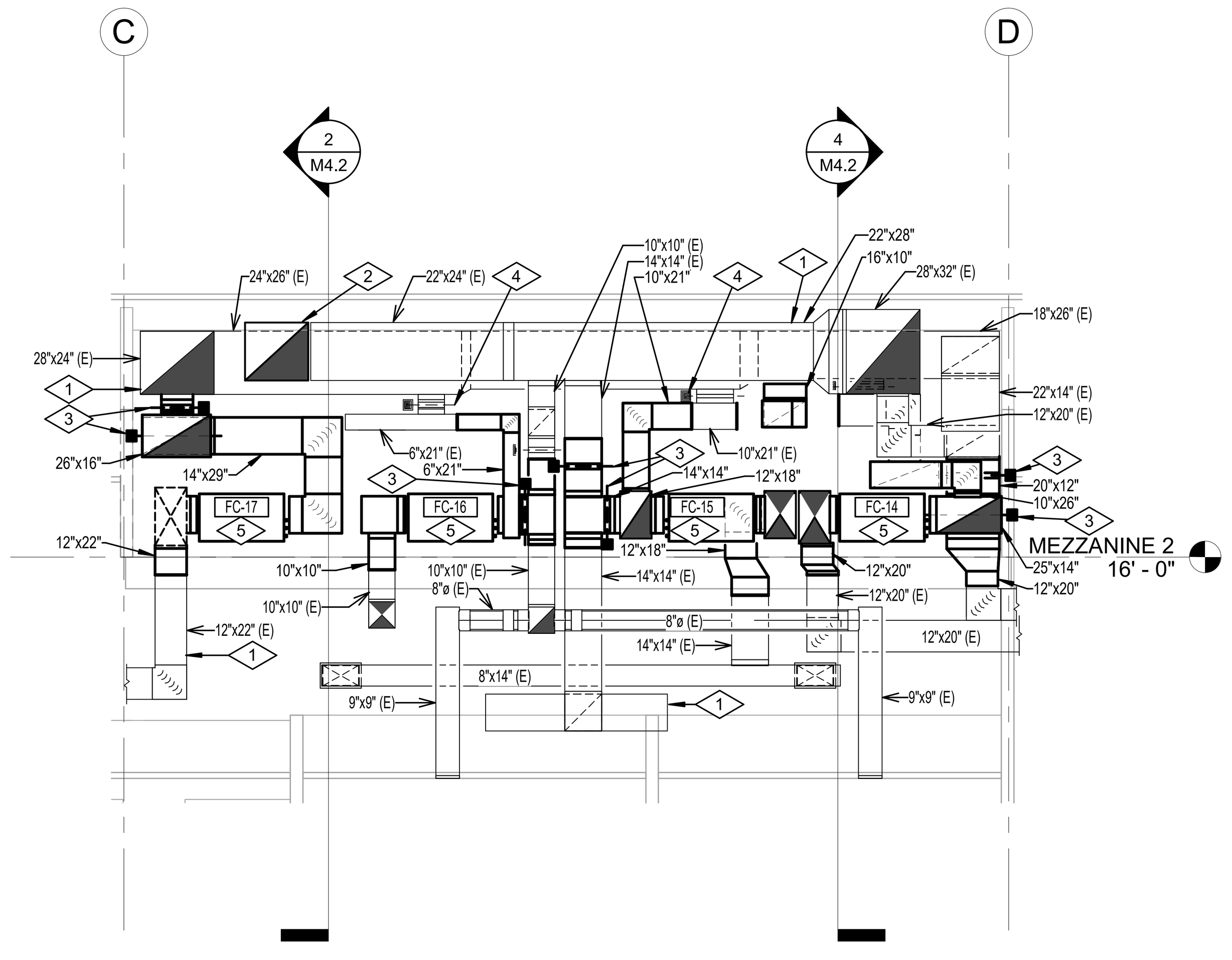
REVISIONS:

EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
CLEVELAND, UTAH
MECHANICAL UPGRADE

PROJECT TITLE
30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

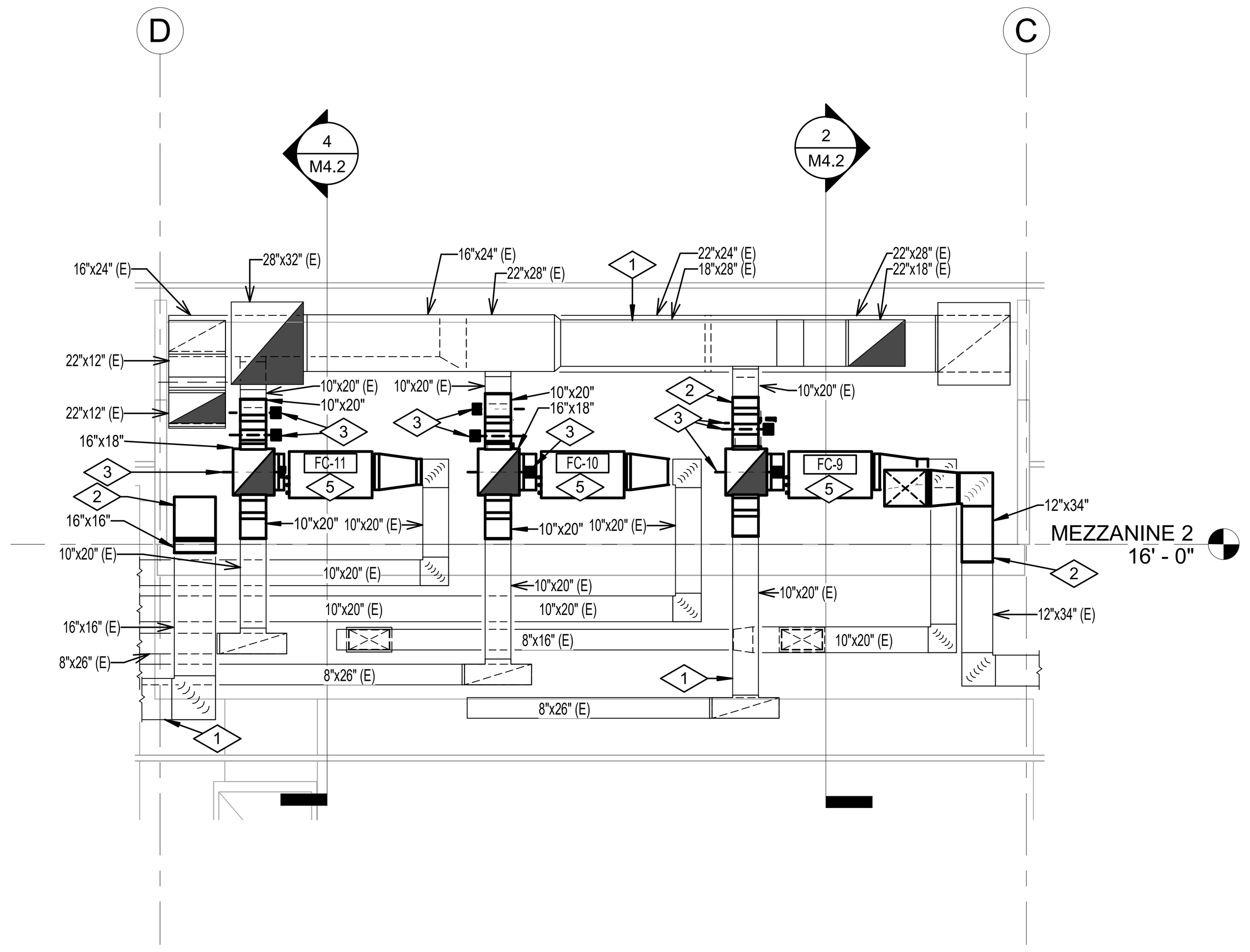
M4.1



MECHANICAL SECTION VIEW - NORTH MEZZANINE NORTH WALL

3 M4.2

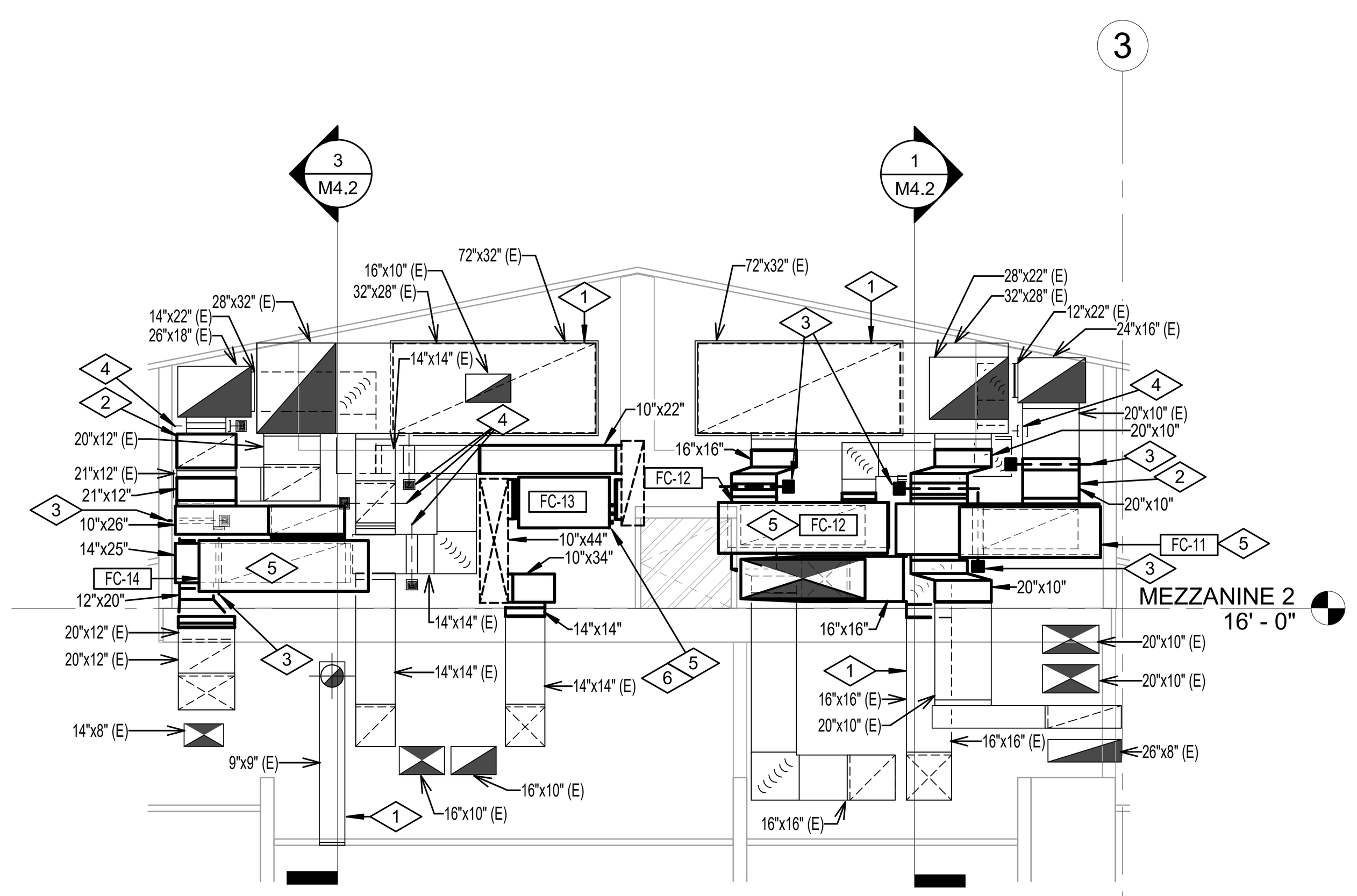
SCALE: 1/4" = 1'-0"



MECHANICAL SECTION VIEW - NORTH MEZZANINE SOUTH WALL

1 M4.2

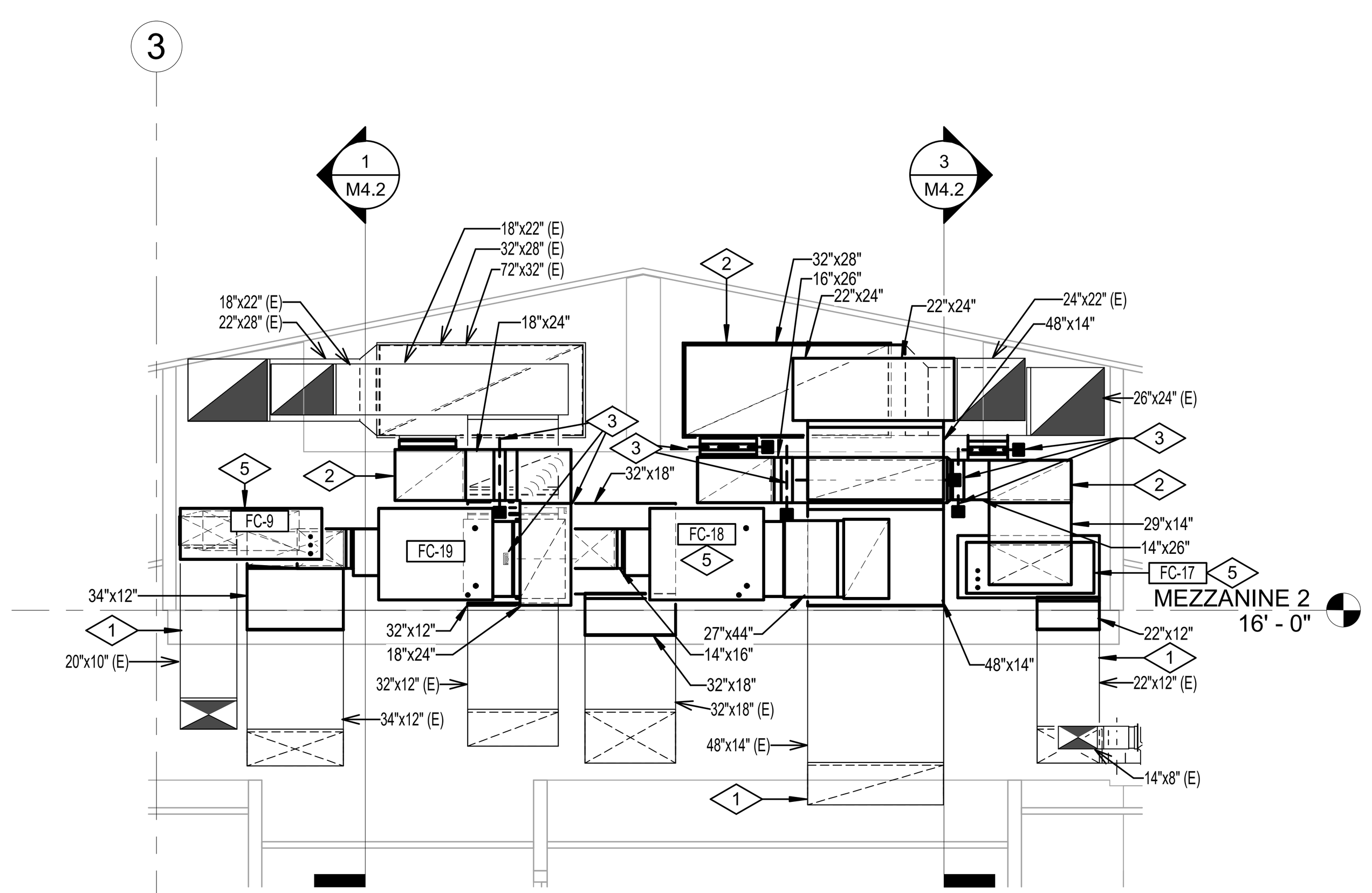
SCALE: 1/4" = 1'-0"



MECHANICAL SECTION VIEW - NORTH MEZZANINE EAST WALL

4 M4.2

SCALE: 1/4" = 1'-0"



MECHANICAL SECTION VIEW - NORTH MEZZANINE WEST WALL

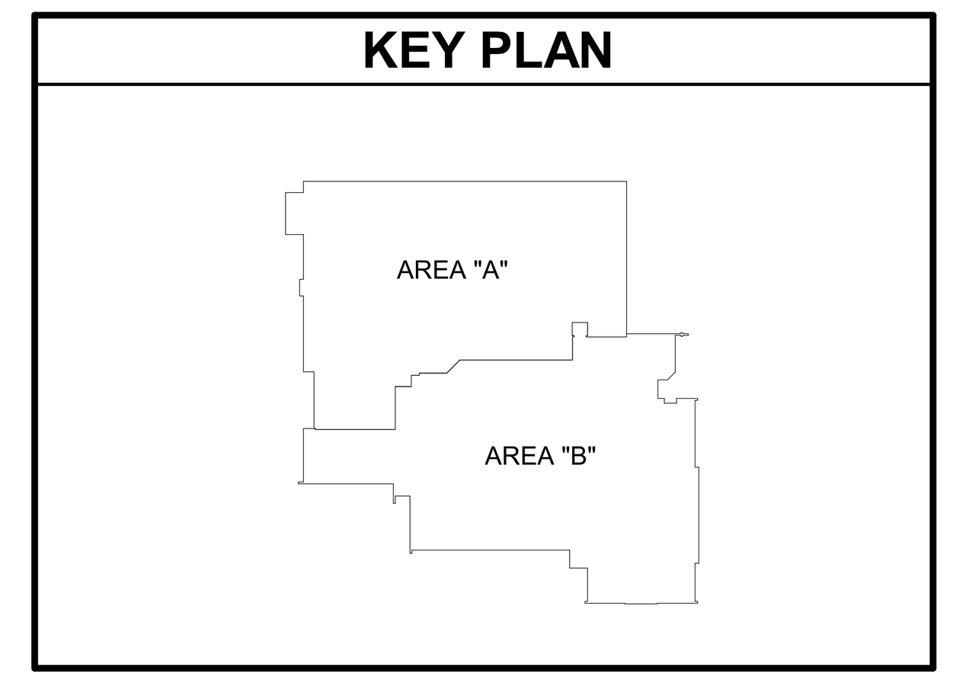
2 M4.2

SCALE: 1/4" = 1'-0"

REFERENCE NOTES

1. EXISTING DUCTWORK TO REMAIN.
2. NEW DUCTWORK, COORDINATE WITH EXISTING CONDITIONS (TYP).
3. NEW MOTORIZED DAMPER (TYP).
4. EXISTING MOTORIZED DAMPER, CONNECT TO NEW FAN COIL UNIT AND MAINTAIN ACCESS (TYP).
5. NEW FAN COIL UNIT TO BE SUPPORTED FROM THE FLOOR WITH A MINIMUM OF 6" OF CLEARANCE (TYP).
6. NEW FAN COIL UNIT TO BE AS HIGH AS POSSIBLE TO MAINTAIN ACCESS TO MEZZANINE THRU EXISTING DOOR.

KEY PLAN



OLSEN & PETERSON
consulting engineers, inc.

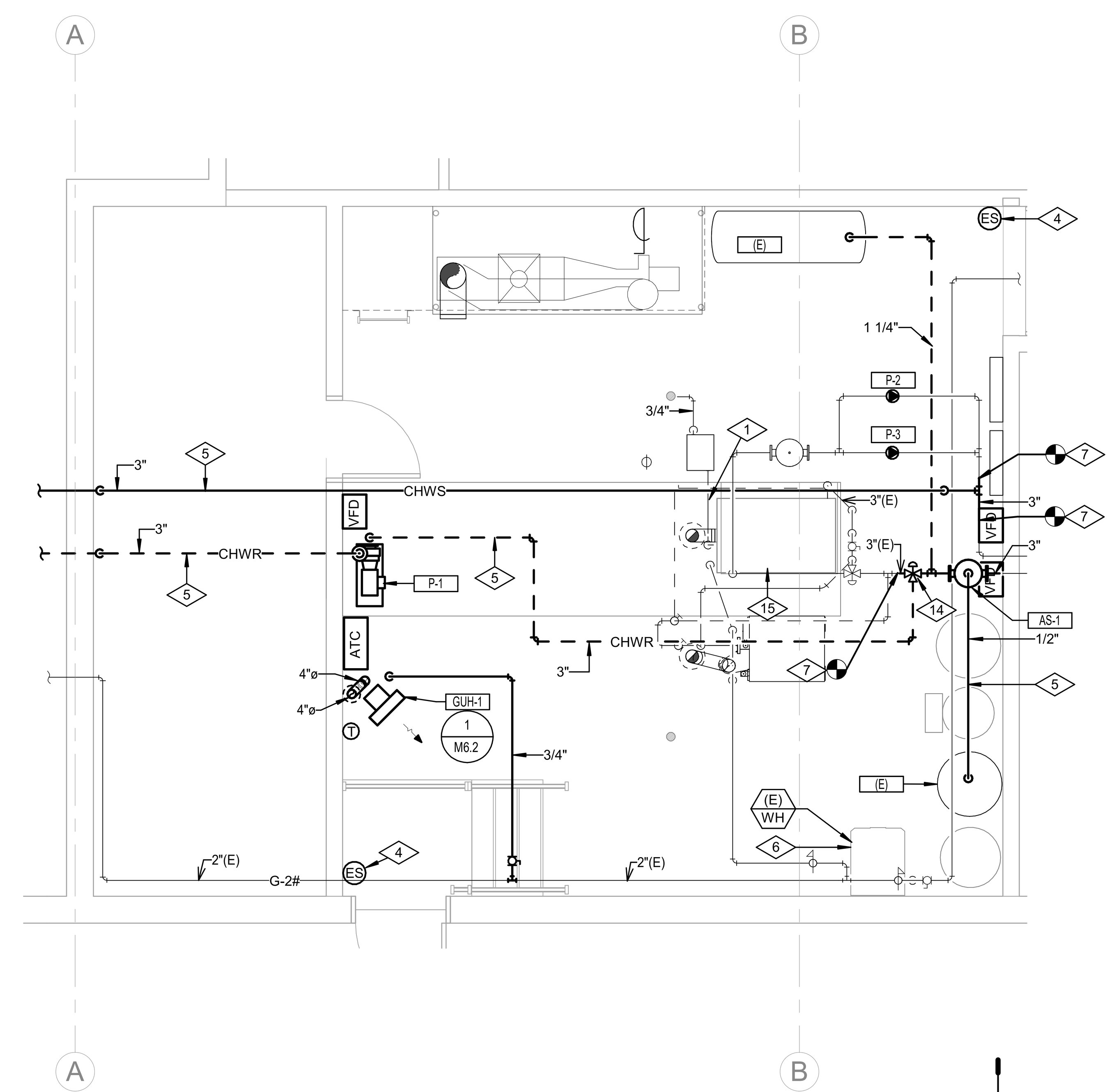
KMA ARCHITECTS
170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

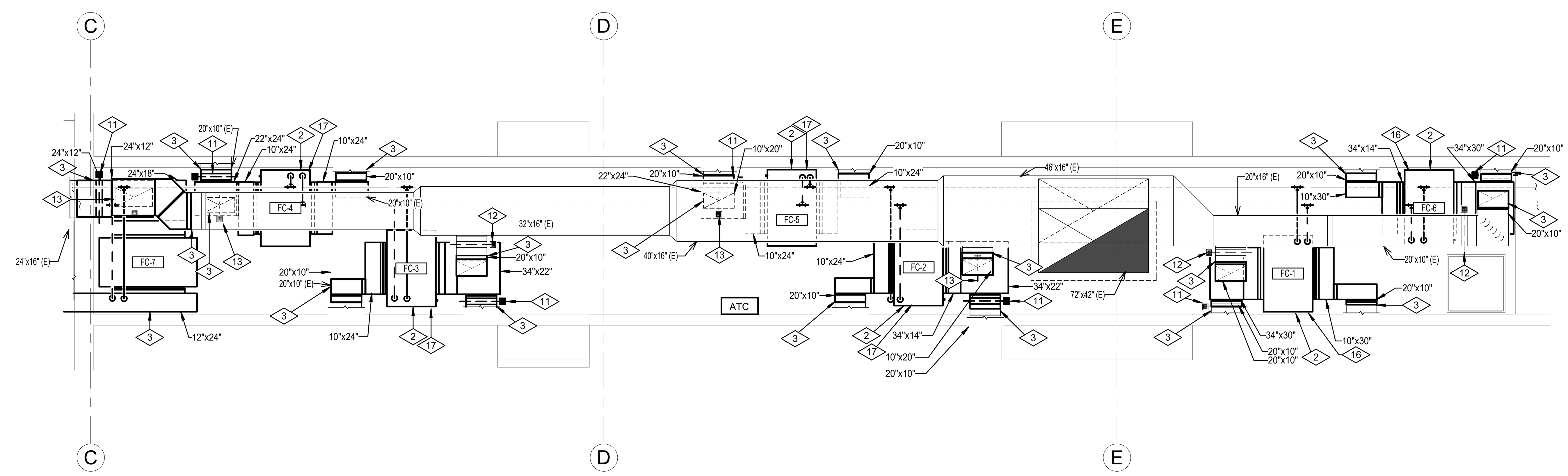
M4.2



ENLARGED BOILER ROOM

SCALE: NTS

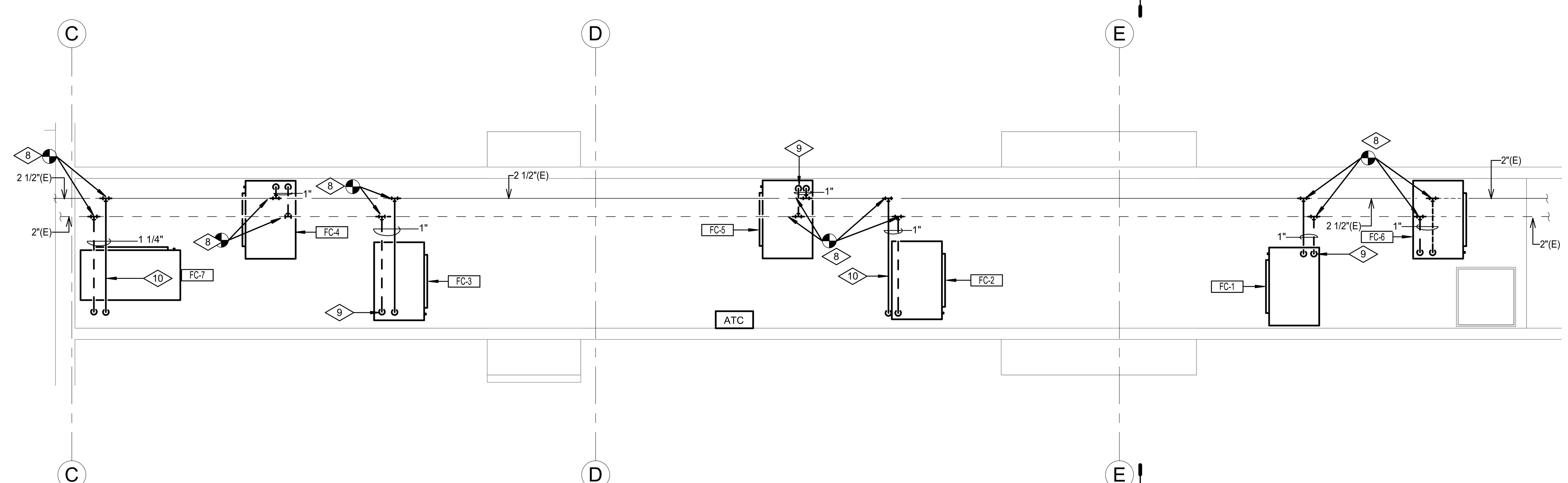
1 / M4.3



ENLARGED SOUTH MEZZANINE

SCALE: NTS

2 / M4.3



ENLARGED SOUTH MEZZANINE MECHANICAL PIPING PLAN

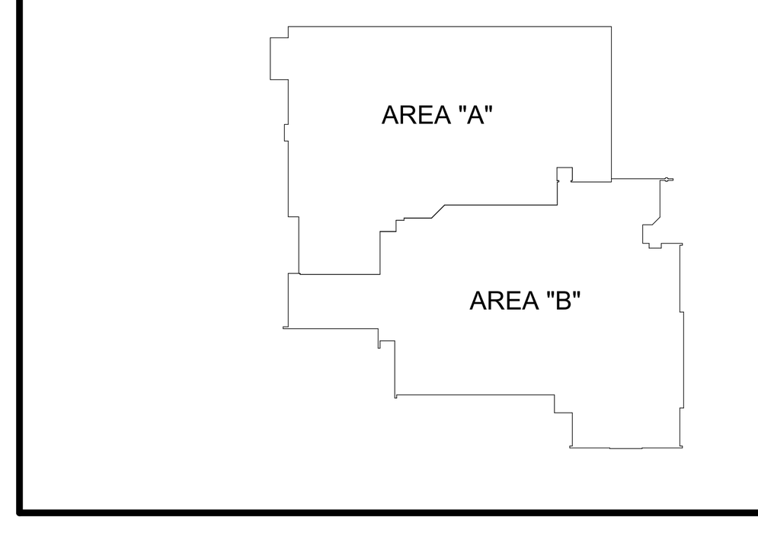
SCALE: NTS

3 / M4.3

REFERENCE NOTES

1. FACTORY CONDENSATE DRAIN TRAP.
2. CONNECT NEW SUPPLY DUCT, RETURN DUCT, AND O/A DUCT TO EXISTING. CONNECT HYDRONIC PIPING TO EXISTING.
3. CONNECT TO EXISTING AT THIS POINT.
4. EMERGENCY SHUT OFF SWITCH TO SHUT-OFFF FUEL SUPPLY TO EXISTING BOILER. SEE DETAIL 7/M6/2.
5. PIPING TO RUN AS HIGH AS POSSIBLE. COORDINATE WITH EXISTING CONDITIONS.
6. PROVIDE GAS SHUT-OFF TO BE CONTROLED BY EMERGENCY SWITCH.
7. CONNECT TO EXISTING PIPING AT APPROXIMATELY THIS LOCATION. REPAIR PIPE INSULATION AT TIE-IN.
8. CONNECT TO EXISTING AT APPROXIMATELY THIS LOCATION. REPAIR INSULATION AT TIE IN.
9. PIPING TO SERVE NEW UNIT (TYPICAL).
10. COORDINATE PIPING RUNS WITH EXISTING CONDITIONS AND ALL TRADES (TYPICAL).
11. NEW RELEIF AIR MOTORIZED DAMPER.
12. RE-USE EXISTING MOTORIZED DAMPER.
13. NEW O/A MOTORIZED DAMPER.
14. 3-WAY ATC VALVE TO SWITCH FROM HEATING TO COOLING.
15. EXISTING CONDENSING BOILER AND NEUTRALIZATION TANK.
16. FAN COIL UNIT A MINIMUM OF 24" ABOVE FLOOR.
17. FAN COIL UNIT A MINIMUM OF 16" ABOVE FLOOR.

KEY PLAN



OLSEN & PETERSON consulting engineers, inc.
14 East 2700 South, Salt Lake City, UT 84115
Phone: (801) 486-4646 Fax: (801) 467-2531

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

REVISIONS:

PROJECT TITLE

EMERY SCHOOL DISTRICT

CLEVELAND ELEMENTARY SCHOOL

MECHANICAL UPGRADE

30 S 100 W

CLEVELAND, UTAH

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

M4.3

FAN COIL UNIT SCHEDULE

SYMBOL	ARRANG.	HTG. CAP. BTUH			CFM	EXT. S.P.	CLG. CAP.			MOTOR			MAKE & MODEL (1)(2)(3)(4)
		MBH	GPM	Δ P (FT)			BTUH	GPM	Δ P (FT)	FLA	ELECT.	UNIT MCA	
FC-1	HORIZONTAL	69	7.2	4.70	1280	0.5	25	5.3	2.70	8.6	120/1/60	9.68	CARRIER 42DEA14ARNY6AYAR
FC-2	HORIZONTAL	69	7.2	4.70	1280	0.5	25	5.3	2.70	8.6	120/1/60	9.68	CARRIER 42DEA14ARNY6AYAR
FC-3	HORIZONTAL	69	7.2	4.70	1280	0.5	25	5.3	2.70	8.6	1201/60	9.68	CARRIER 42DEA14ARNY6AYAR
FC-4	HORIZONTAL	69	7.2	4.70	1200	0.5	25	5.3	2.70	8.6	120/1/60	9.68	CARRIER 42DEA14ARNY6AYAR
FC-5	HORIZONTAL	69	7.2	4.70	1200	0.5	25	5.3	2.70	8.6	120/1/60	9.68	CARRIER 42DEA14ARNY6AYAR
FC-6	HORIZONTAL	69	7.2	4.70	1200	0.5	25	5.3	2.70	8.6	120/1/60	9.68	CARRIER 42DEA14ARNY6AYAR
FC-7	HORIZONTAL	87	9.0	9.20	1975	0.75	33	7.0	6.70	11.6	120/1/60	13.05	CARRIER 42DEA20ARNY6AYAR
FC-9	HORIZONTAL	69	7.2	4.70	1290	0.5	25	5.3	2.70	8.6	120/1/60	9.68	CARRIER 42DEA14ARNY6AYAR
FC-10	HORIZONTAL	69	7.2	4.70	1290	0.5	25	5.3	2.70	8.6	120/1/60	9.68	CARRIER 42DEA14ARNY6AYAR
FC-11	HORIZONTAL	69	7.2	4.70	1290	0.5	25	5.3	2.70	8.6	120/1/60	9.68	CARRIER 42DEA14ARNY6AYAR
FC-12	HORIZONTAL	80	8.3	7.30	1640	1.0	30	6.3	4.40	11.4	120/1/60	12.83	CARRIER 42DEA18ARNY6AYAR
FC-13	HORIZONTAL	65	6.8	4.3	1400	0.7	24	5.1	2.60	8.6	120/1/60	9.68	CARRIER 42DEA14ARNY6AYAR
FC-14	HORIZONTAL	80	8.3	7.30	1650	0.75	30	6.3	4.40	11.4	120/1/60	12.83	CARRIER 42DEA18ARNY6AYAR
FC-15	HORIZONTAL	55	5.6	6.20	1120	0.5	20	4.3	3.50	6.8	120/1/60	7.65	CARRIER 42DEA12ARNY6AYAR
FC-16	HORIZONTAL	25	2.5	3.20	350	0.5	9	1.9	2.30	3.3	120/1/60	4.13	CARRIER 42DEA06ARNY6AYAR
FC-17	HORIZONTAL	106	11.4	24.00	1050	0.5	32	6.8	12.70	6.8	120/1/60	7.65	CARRIER 42DEA12ARNY6AYAR
FC-18	HORIZONTAL	343	18.3	6.80	3160	0.75	116	24.5	15.50	8.9	208/3/60	11.13	CARRIER 42DHA30LRPNYYYBMYA
FC-19	HORIZONTAL	184	19.7	7.50	3015	0.75	87	18.4	6.80	8.9	208/3/60	11.13	CARRIER 42DHA30LRPNYYYBMYA
FC-20	HORIZONTAL	38	4.0	2.90	970	0.5	14	3.0	2.10	5.2	120/1/60	6.50	CARRIER 42DEA10ARNY6AYAR

NOTES:

(1) COOLING CAPACITIES BASED ON 45°F EWT, 80°F EDB, 62°F WB, 30% PROPYLENE GLYCOL.

(2) HEATING CAPACITIES BASED ON 140°F EWT, 60°F E.A.T. / 107°F L.A.T 30% PROPYLENE GLYCOL.

(3) UNITS TO BE COMPLETE WITH FILTER RACK WITH HINGED / LATCHED ACCESS DOOR AND DUCT FLANGES.

(4) CONTRACTOR SHALL COORDINATE COIL PIPING CONFIGURATION WITH EQUIPMENT SUPPLIER PRIOR TO SUBMITTAL.

MECHANICAL EQUIPMENT SCHEDULE

CH-1 CHILLER: PACKAGED AIR COOLED, 60 NOMINAL TONS, 57 TONS ACTUAL CAPACITY, COOLING EFFICIENCY 9.91 EER (15.13 IPLV.IP, 15.02 NPLV.IP), CAPACITY AT PROJECT ELEVATION (5,700 FT) USING 30% PROPYLENE GLYCOL SOLUTION, WITH AMBIENT AIR TEMP 91°F, TO COOL 147.7 GPM FROM 55°F TO 45°F. PRESSURE DROP NOT TO EXCEED 13.4 FT W.C. SINGLE POINT ELECTRICAL CONNECTION, TWO (2) SCROLL COMPRESSORS, TWO (2) REFRIGERANT CIRCUITS, R-32 REFRIGERANT, 0.0001 HR-SQ FT-DEG F/BTU FOULING FACTOR, FLOW SWITCH, U.L. LISTED, FULL LOUVER PACKAGE WITH END PANELS, SHELL & TUBE OR BRAZED PLATE HEAT EXCHANGER WITH INTEGRAL STRAINER, UNIT MOUNTED STARTERS, SINGLE POINT POWER CONNECTION , AND ALL CONTROLS FOR AUTOMATIC OPERATION,

UNIT IS TO BE GIVEN A COMPLETE FACTORY OPERATING AND CONTROL SEQUENCE TEST UNDER LOAD CONDITIONS, AND IS TO BE SHIPPED WITH FULL OPERATING CHARGE OF REFRIGERANT AND FULL OIL CHARGE. CHARGE TO BE VERIFIED BY SUPPLIER AT TIME OF DELIVERY TO JOB SITE.

MANUFACTURER: CARRIER
MODEL: 30RC-06056-3-213
ELECTRICAL: 265 MCA @ 208-230/3/60 (MOCP = 300 A)
DIMENSIONS: 95" LENGTH, 88" WIDTH, AND 78" HEIGHT.
OPERATING WT: 2,663 LBS.

AS-1 AIR SEPARATOR: HYDRONIC PIPING WATER, IN-LINE, 148 GPM, 3" WATER INLET AND OUTLET, AIR OUTLET WITH INTEGRAL AUTOMATIC AIR VENT.

MANUFACTURER: TACO
MODEL: ACT03F-125

GUH-1 NATURAL GAS FIRED UNIT HEATER: TO DELIVER 20.9 MBH AT 5,700 FT ELEV, (25.6 MBH INPUT/20.9 MBH OUTPUT 456 CFM, HORIZONTAL AIR FLOW, 50 DEG F TEMP RISE, 4" VENT CONNECTION, CONCENTRIC VENT KIT, STEEL CASING, ADJUSTABLE AIR DEFLECTORS,DDC ROOM THERMOSTAT, AND MOUNTING HARDWARE.

MANUFACTURER: REZNOR
MODEL: UDXC 30
ELECTRICAL: 1.9 FLA @ 115/1/60 (OCP=15)
SIZE: 27"W X 35"L X 25"H
WEIGHT: 106 LBS
EFFICIENCY: 82%

PUMP SCHEDULE

SYMBOL	TYPE	SYSTEM	LOCATION	G.P.M.	FT. OF HEAD	MINIMUM EFFICIENCY	MOTOR	MAKE & MODEL
P-1	FLEX COUPLED BASE MOUNTED	CHILLER WATER SYSTEM	BOILER ROOM	148	100	68.3	7.5 H.P. 208/3/60	B&G E-1510 (1)(3)(4)
P-2	CLOSE COUPLED IN-LINE	HOT WATER SYSTEM	BOILER ROOM	47	75	49.7	3 H.P. 208/3/60	B&G E-80 (2)(3)
P-3	CLOSE COUPLE IN-LINE	HOT WATER SYSTEM	BOILER ROOM	47	75	49.7	3 H.P. 208/3/60	B&G E-80 (2)(3)

NOTES:

(1) PUMP TO BE SIZED FOR 45° F / 30% PROPYLENE GLYCOL SOLUTION.

(2) PUMP TO BE SIZED FOR 140° F / 30% PROPYLENE GLYCOL SOLUTION.

(3) PUMP MOTOR TO BE PREMIUM EFFICIENCY NON-OVERLOADING TYPE.

(4) PUMP SHALL BE COMPLETE WITH MATCHED SUCTION DIFFUSER.

HOT WATER UNIT HEATER SCHEDULE

SYMBOL	TYPE	MOUNTING	CFM	HEATING COIL			RPM	MOTOR		MAKE & MODEL (1)(2)
				MBH	GPM	Δ P.		H.P.	SERVICE	
UH-1	HOT WATER HORIZONTAL	CEILING/WALL	245	4.0	0.46	0.26	1550	16 WATT	120/1/60	VULCAN HV-108A (3)

NOTES:

(1) HEATING CAPACITY BASED ON 140°F. E.W.T., 120°F. L.W.T., 30% PROPYLENE GLYCOL.

(2) PROVIDE WALL MOUNTED THERMOSTAT.

CABINET UNIT HEATER SCHEDULE

SYMBOL	CFM	TYPE	HEATING COIL			MOTOR		MAKE & MODEL
			MBH (1) TOTAL	GPM	WPD	AMPS	VOLTAGE	
CUH-1	230	RECESSED CEILING MOUNTED	16.0	1.5	.15	0.8	120/1/60	AIRTHERM RC-1200-02 (2)

NOTES:

(1) CAPACITIES BASED ON 200 DEG. F. E.W.T., 40 DEG. F. W.T.D., 65 DEG. F. E.A.T. AND A 30% PROPYLENE GLYCOL SOLUTION.

(2) CABINET COLOR TO BE SELECTED BY ARCHITECT

OLSEN & PETERSON consulting engineers, inc.
14 East 2700 South, Salt Lake City, UT 84115
Phone: (801) 486-4646 Fax: (801) 467-2531

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

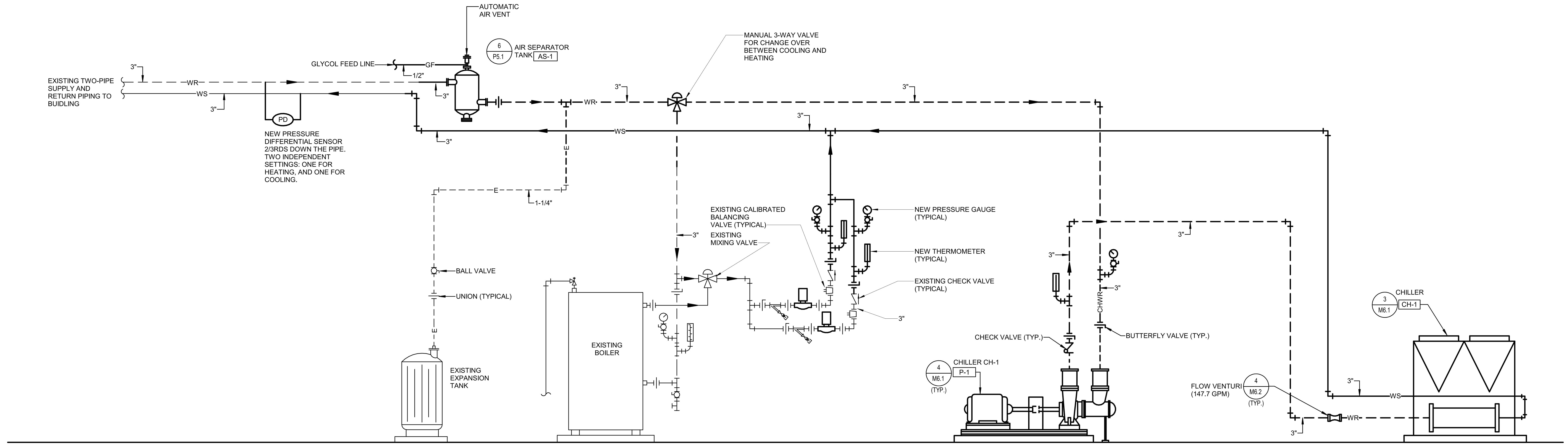
LICENSED PROFESSIONAL ENGINEER #334524-2202 JAMES AUSTIN BERRETT UTAH

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

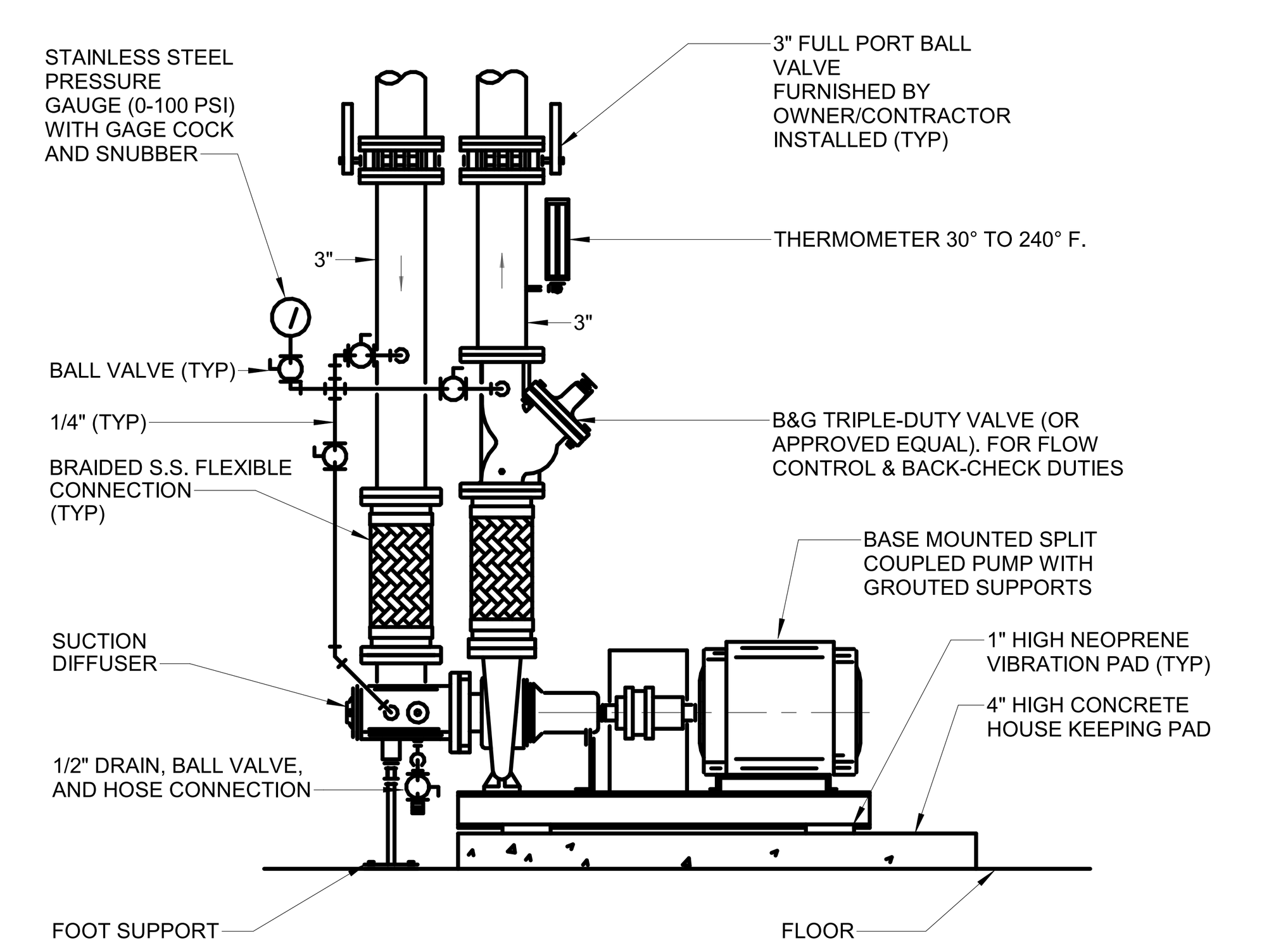
M5.1



CHILLED WATER PIPING SCHEMATIC2.0

1 M6.1

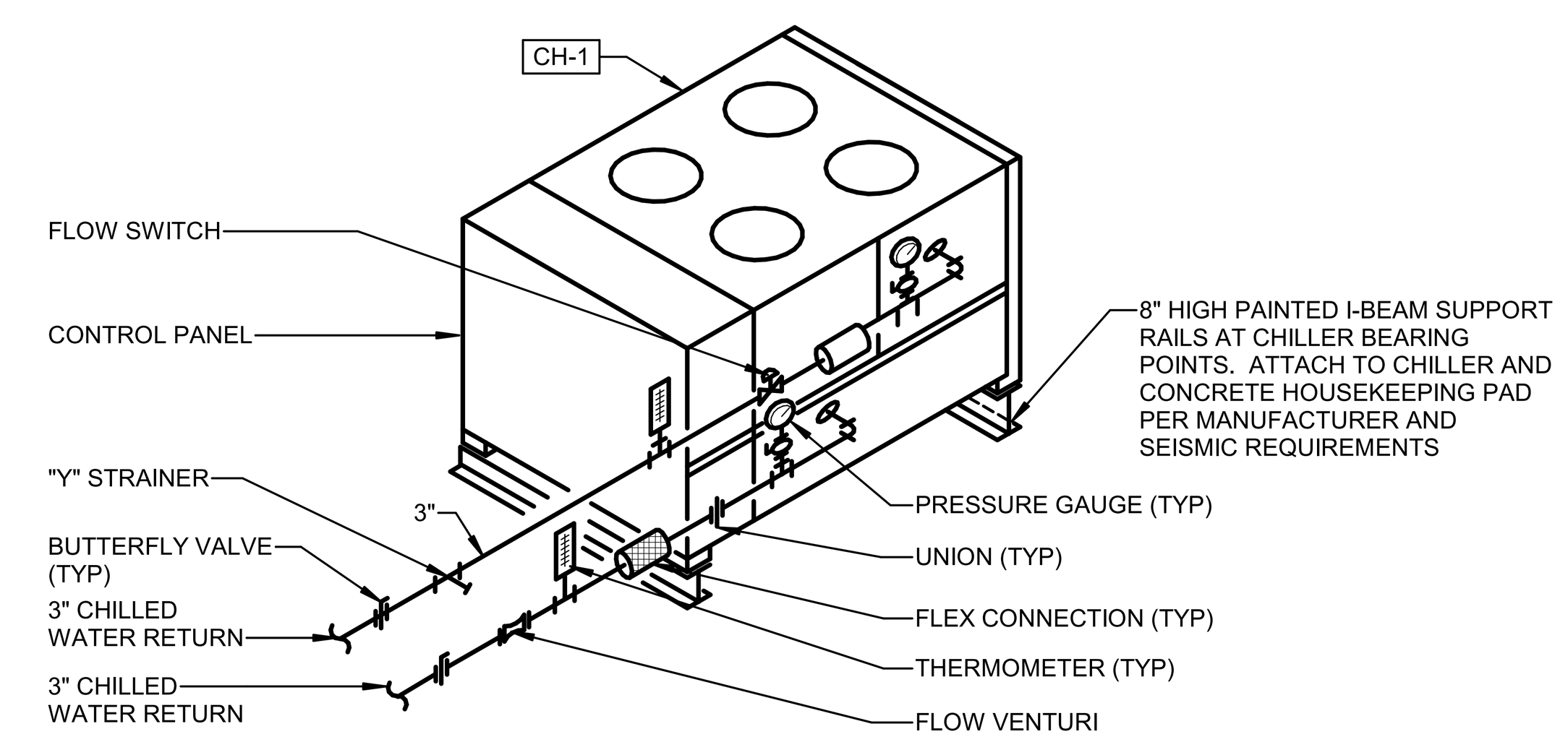
SCALE: NTS



BASE MOUNTED PUMP DETAIL

4 M6.1

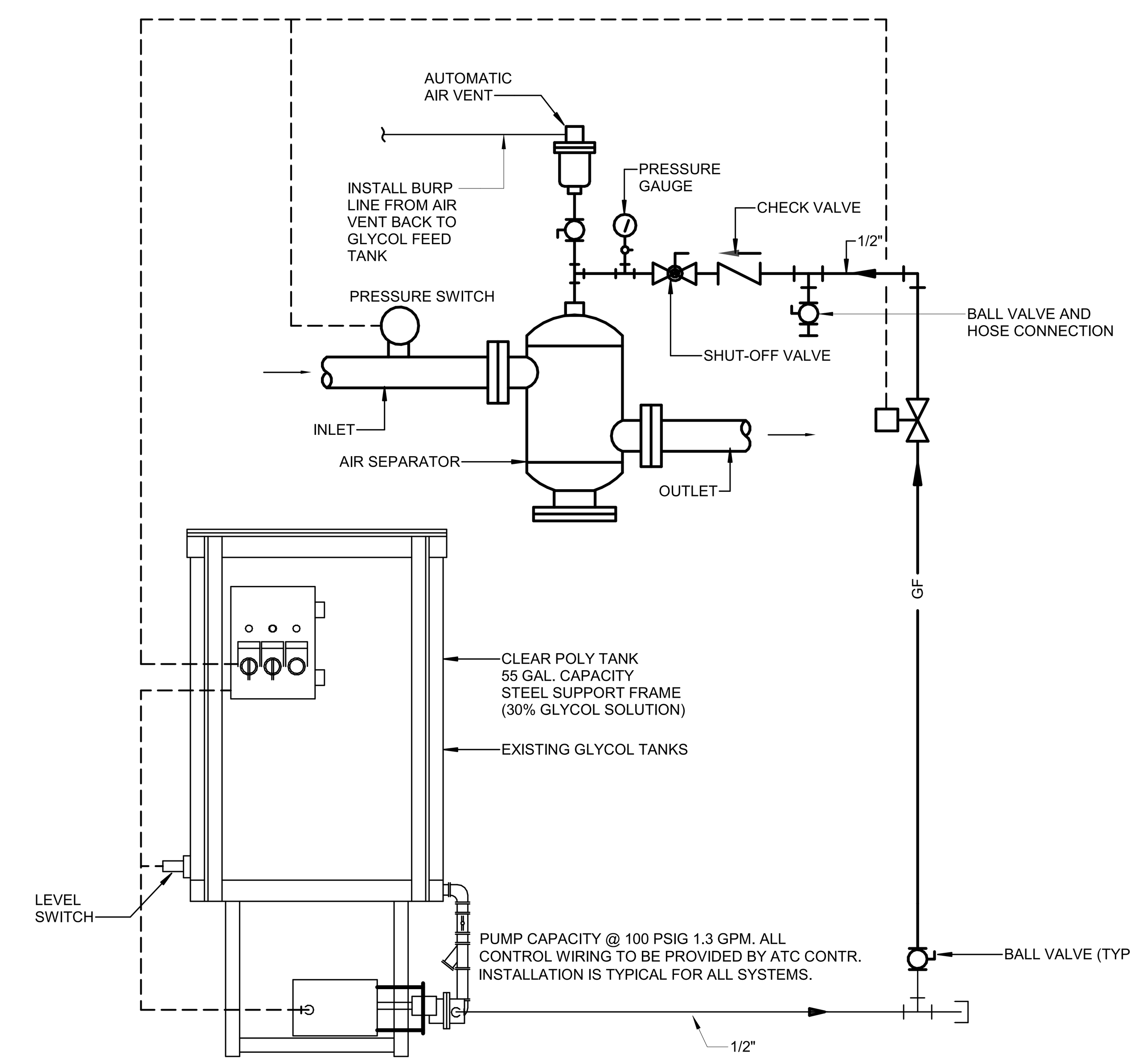
SCALE: NTS



AIR COOLED CHILLER PIPING DETAIL

3 M6.1

SCALE: NTS



GLYCOL FEED TANK DETAIL

2 M6.1

SCALE: NTS

OLSEN & PETERSON consulting engineers, inc.

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

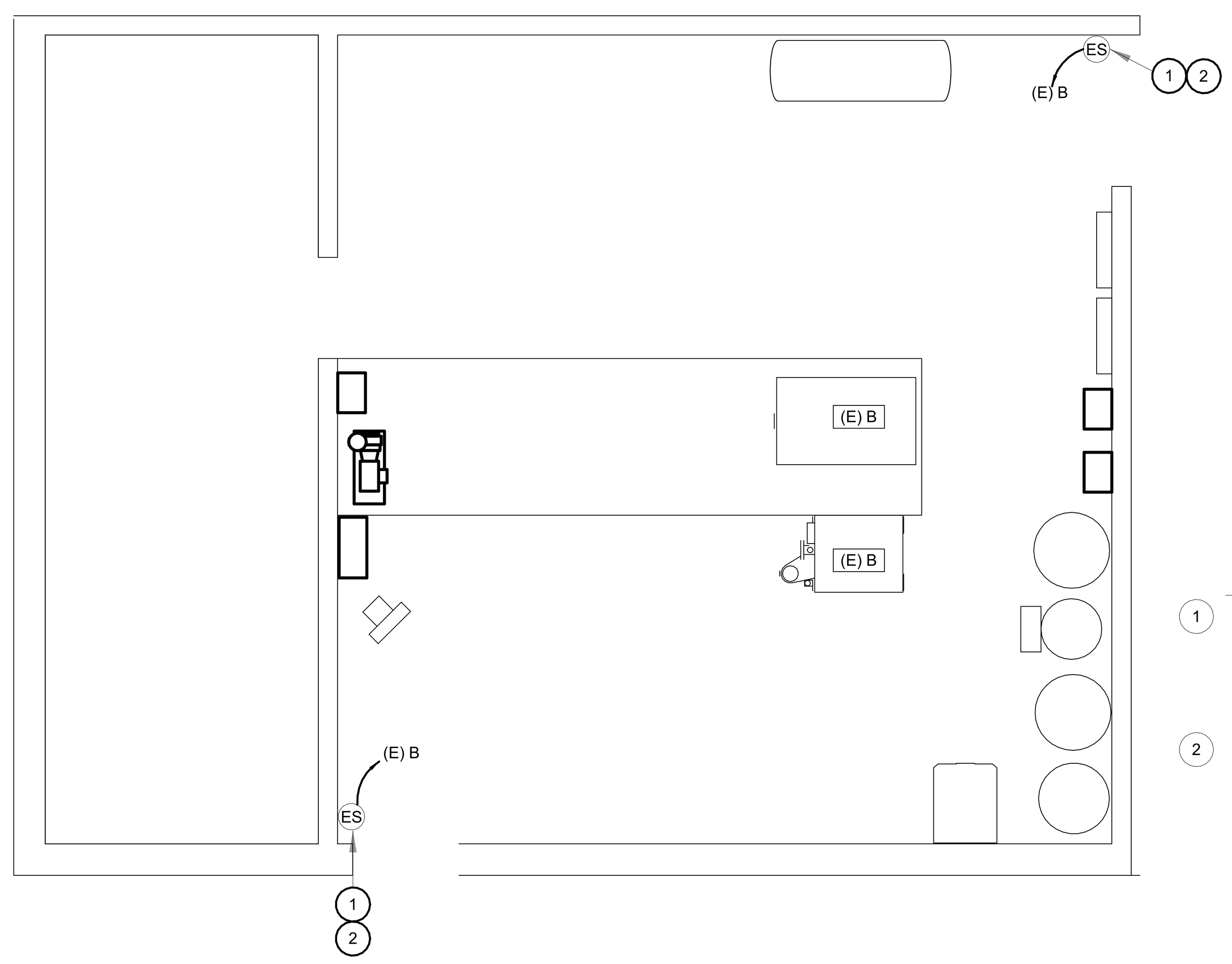
REVISIONS:

PROJECT TITLE

EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

M6.1

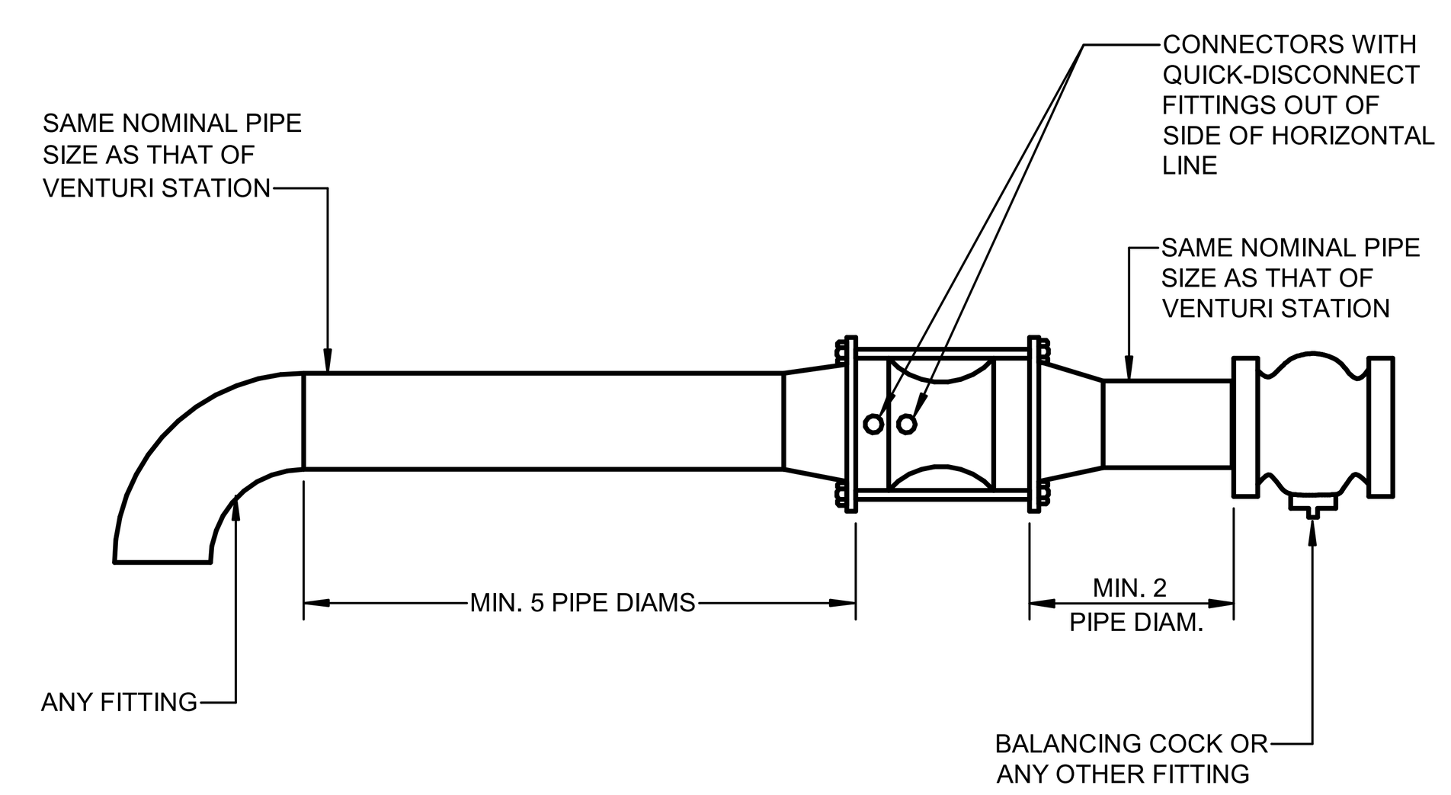


KEY NOTES:

1. PROVIDE PALM OR MUSHROOM TYPE, SINGLE ACTION SHUTDOWN SWITCH WITH MANUAL RESET. SWITCH WHEN ACTIVATED SHALL CUT POWER TO BOILER BURNER CONTROLS FOR EXISTING BOILERS. EMERGENCY SWITCH & RESET SHALL BE PREMONITORY LABELED WITH BOLD 1/2" HT. LETTERING (RED PLASTIC W/WHITE ENGRAVING) OR AS REQUIRED BY STATE BOILER INSPECTOR.
2. SHUTOFF TO BURNER CONTROLS SHALL SHUTOFF FUEL SUPPLY TO BURNERS UPON LOSS OF POWER OR UPON FAILURE OF DEVICE.

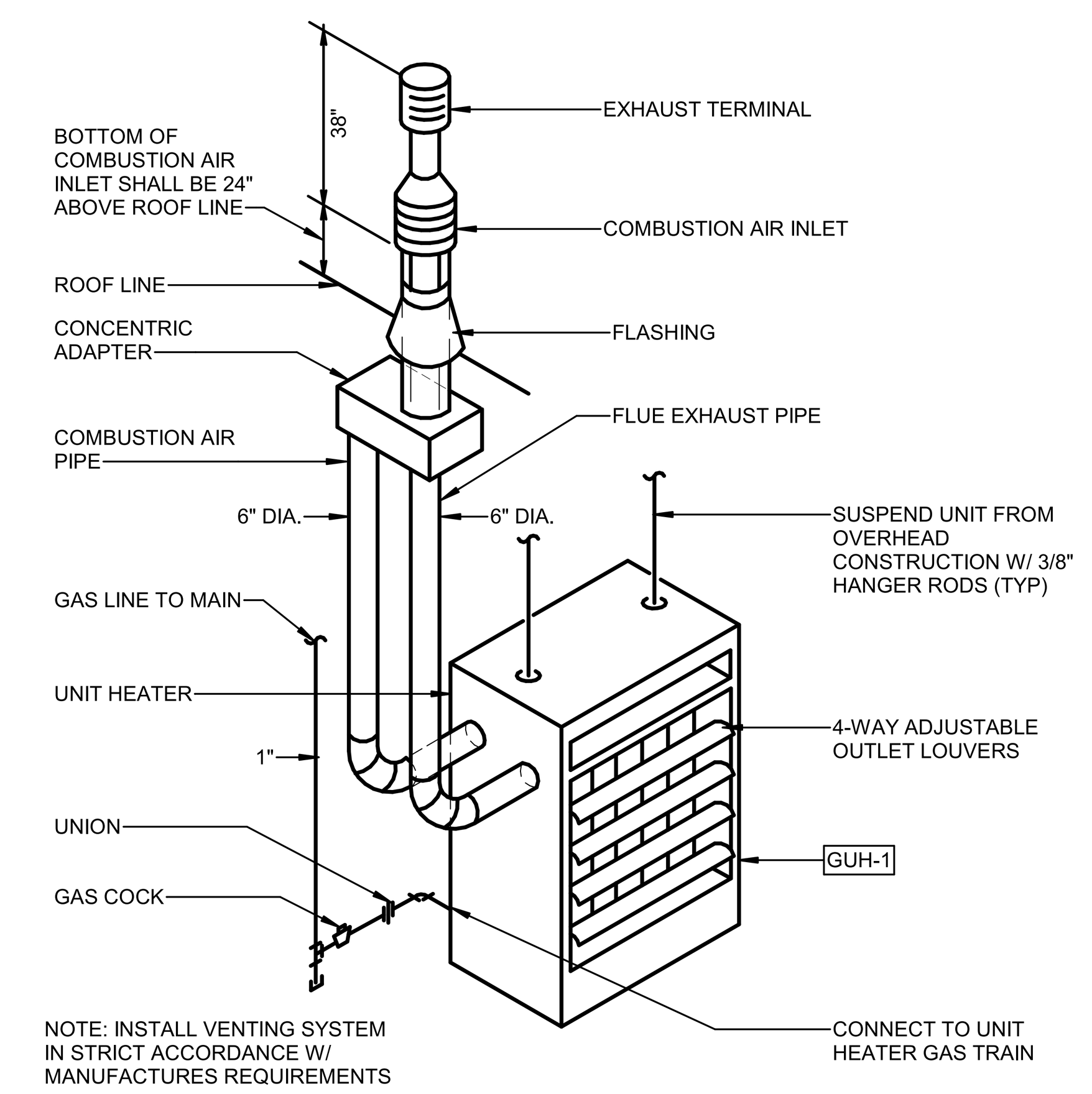
BOILER ROOM EMERGENCY SHUTDOWN SCHEMATIC 7 M6.2

SCALE: NTS



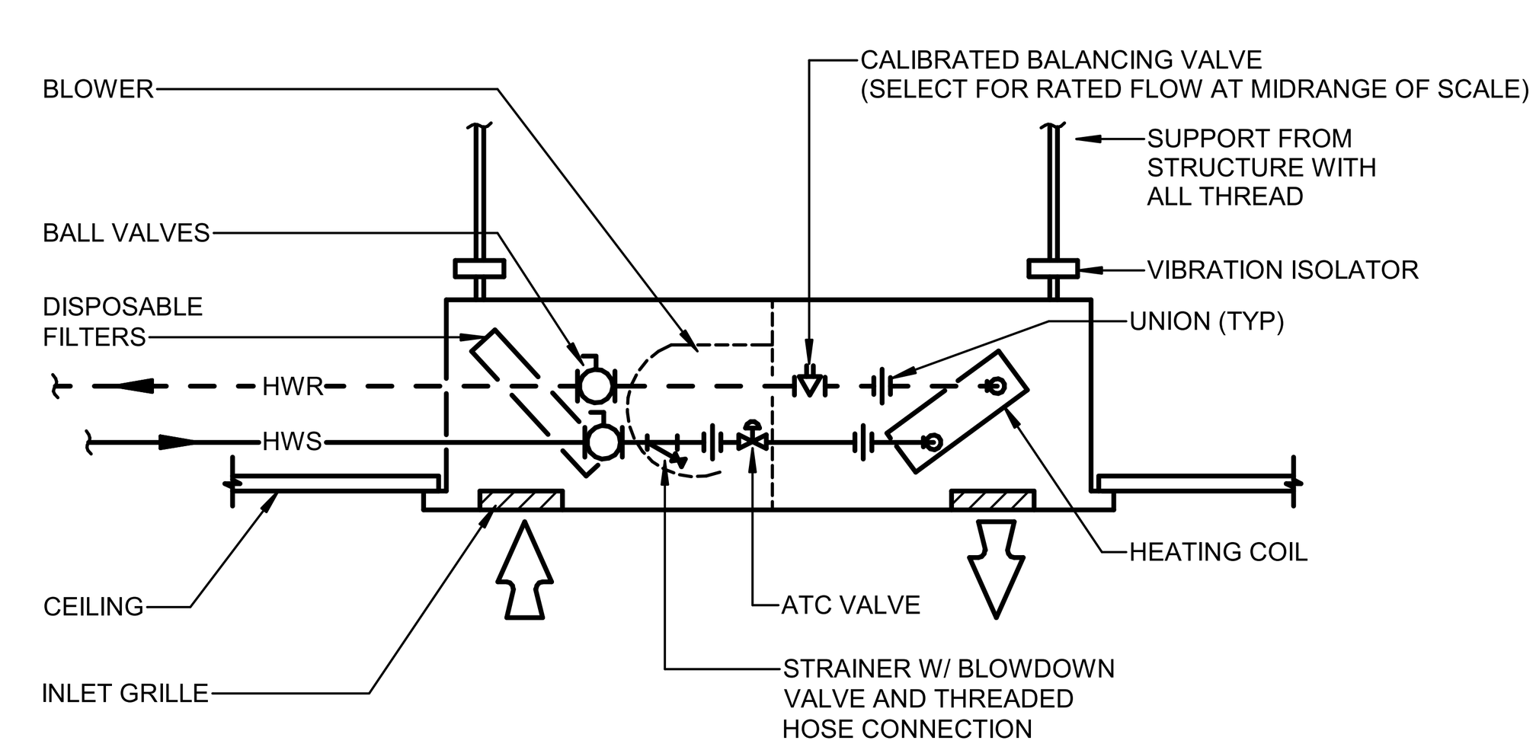
FLOW VENTURI DETAIL 4 M6.2

SCALE: NTS



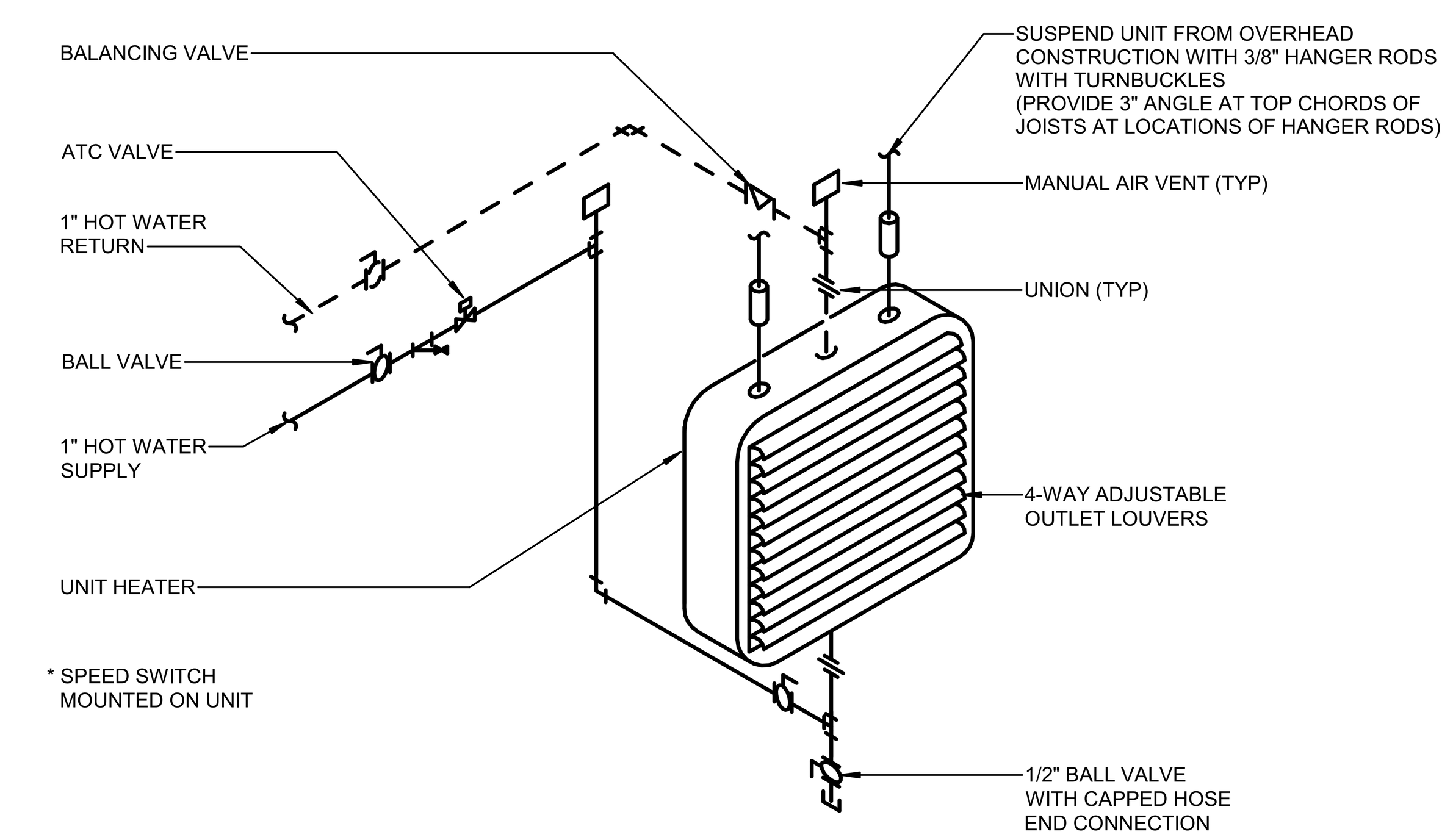
GAS FIRED UNIT HEATER PIPING SCHEMATIC 1 M6.2

SCALE: NTS



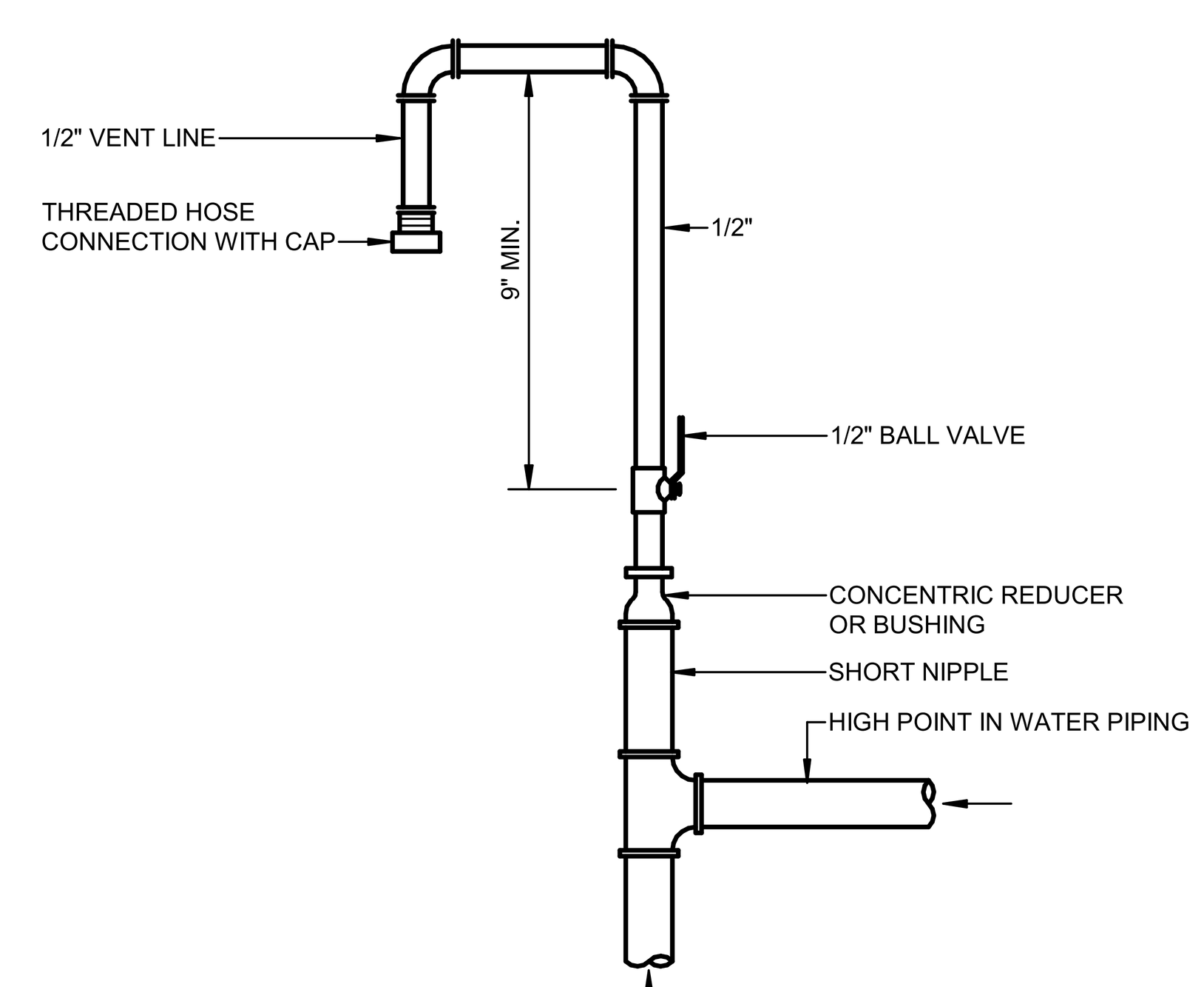
CEILING CABINET UNIT HEATER DETAIL 5 M6.2

SCALE: NTS



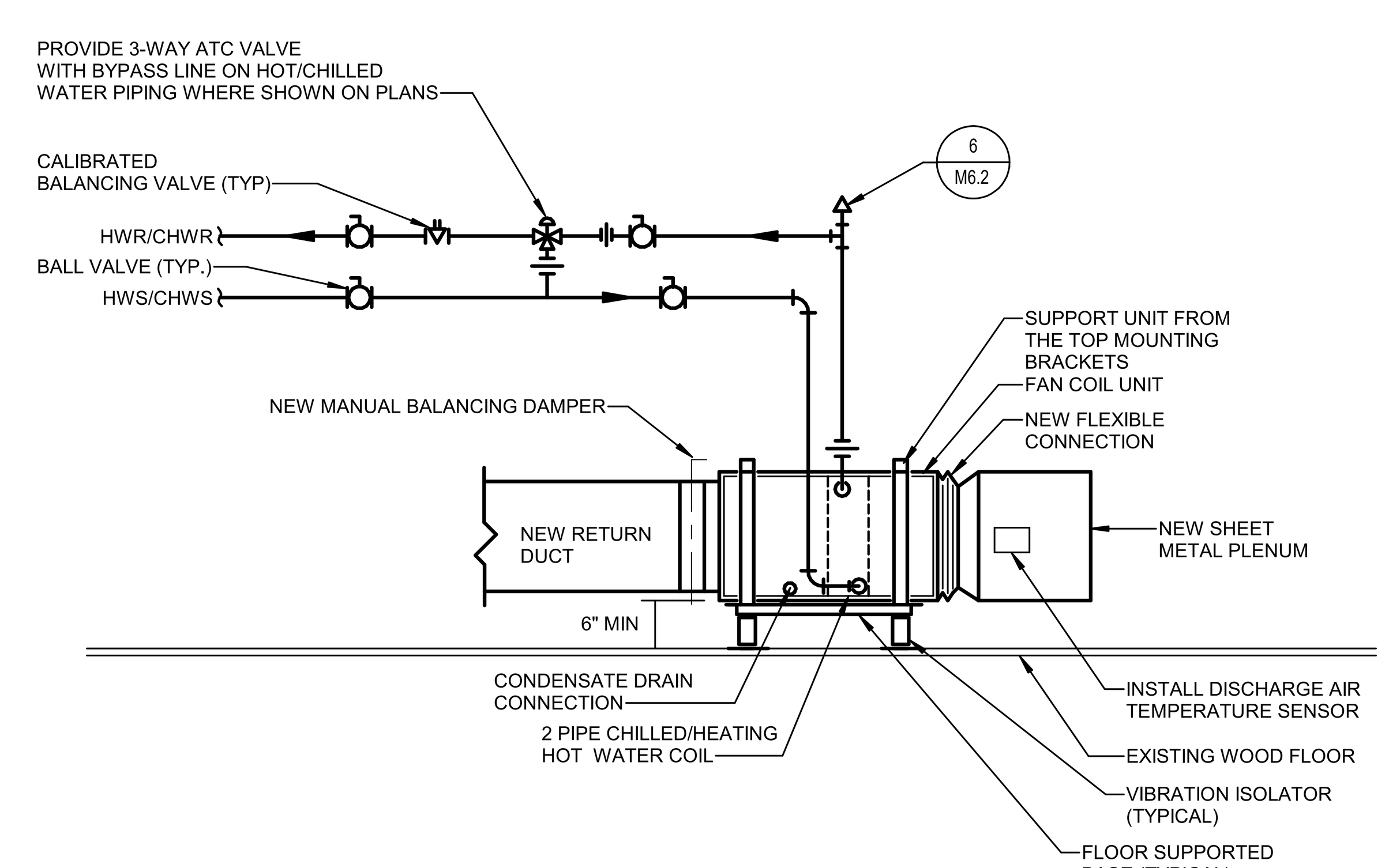
UNIT HEATER PIPING SCHEMATIC 2 M6.2

SCALE: NTS



MANUAL AIR VENT DETAIL 6 M6.2

SCALE: NTS



FAN COIL DETAIL 3 M6.2

SCALE: NTS

OLSEN & PETERSON consulting engineers, inc.

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY: STAFF
CHECKED BY: M.T.
DATE: JAN. 2026
PROJECT #: 176525

M6.2

1/15/2026 10:00:41 AM 1/8" = 1'-0"

SYMBOL LEGEND GENERAL NOTES

1. REFER TO LUMINAIRE SCHEDULE FOR FIXTURE TYPES, MOUNTING REQUIREMENTS, WATTAGE & DETAILS.
2. WIRE LIGHT FIXTURE FROM ADJACENT JUNCTION BOX.
3. CONNECT NEAREST UN-SWITCHED HOT CONDUCTOR TO EMERGENCY BALLAST.
4. LIGHT FIXTURES ARE SCALED WITHIN THE DRAWINGS BASED ON ACTUAL DIMENSIONS.
5. REFER TO DRAWINGS FOR DIRECTIONAL ARROWS.
6. SUBSCRIPT INDICATES FIXTURES TO BE CONTROLLED.
7. HEIGHT MEASURED TO CENTER LINE OF THE BOX FROM THE FINISHED FLOOR.
8. NOT USED.
9. NEMA TYPE 'ND' NON-FUSED UNLESS NOTED 'F' (FUSED). USE HEAVY DUTY (HD) DEVICE FOR 480 VOLT.
10. SIZE TO THE EQUIPMENT BEING CONTROLLED.
11. PROVIDE H.O.A. & S.S. PUSHBUTTONS AS REQUIRED.
12. DOUBLE ARROWS INDICATES A DOUBLE FACE UNIT.
13. FOR WATER COOLER LOCATION, REFER TO DIAGRAM R002. FOR ALL OTHER LOCATIONS, MOUNT AT +16" TO BOTTOM OF BOX FROM FINISHED FLOOR, OR AS NOTED.
14. ARROWS SHOWN ON DEVICE INDICATE AIMING DIRECTION.
15. COORDINATE WITH DOOR HARDWARE SUPPLIER.
16. MOUNT ON TRACK OF OVERHEAD DOOR, 6" FROM TOP OF DOOR, UNLESS OVERHEAD DOOR IS A ROLL UP DOOR, THEN MOUNT PER MANUFACTURER'S INSTRUCTIONS.
17. INSTALL DEVICES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
18. DASHED LINE INDICATES EQUIPMENT CLEARANCES. ARROW INDICATES FRONT OF RACK.
19. HEIGHT MEASURED TO BOTTOM OF THE DEVICE FROM FINISHED FLOOR.
20. PROVIDE MUD RING &/OR BOX COVER APPROPRIATE FOR DEVICE/FIXTURE SERVED.
21. REFER TO DIAGRAMS, ELEVATIONS, & SCHEDULES FOR CUSTOM ROUGH-IN REQUIREMENTS.
22. ROUGH-IN TO BE HORIZONTAL.
23. REFER TO MANUFACTURER'S RECOMMENDED CABLE REQUIREMENTS FOR EXACT CABLE REQUIRED.
24. FOLLOW BICSI STANDARDS FOR CABLE ROUTING & DISTANCES.
25. SUBSCRIPT INDICATES NEMA CONFIGURATION.
26. USE A 4" X 4" BOX WITH A MUD RING TO MATCH THE DEVICE & INSTALLATION.
27. USE WITH POWER PACK.
28. PROVIDE UL LISTED DEVICE COMPATIBLE WITH THE FIRE ALARM PANEL/SYSTEM.
29. CAMERA TYPES ARE INDICATED INSIDE THE CAMERA SYMBOL.
30. SOLID BOX AROUND DEVICE INDICATES INSTALLED IN FLOOR. DASHED BOX AROUND DEVICE INDICATES INSTALLED IN CEILING.
31. WALL DEVICES NOTED WITH A CHEVRON INDICATE THE PROPOSED INSTALLATION HEIGHT. COORDINATE WITH MILLWORK SHOP DRAWINGS & ELEVATIONS FOR HEIGHT.

GENERAL NOTES

1. CONSULT ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHTING FIXTURES.
2. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO INSURE NEC CODE CLEARANCES REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
3. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS,ETC) OF ALL EQUIPMENT FURNISHED UNDER ALL DIVISIONS, INCLUDING ALL EXISTING EQUIPMENT TO BE RE-USED. REVIEW ALL SHOP DRAWINGS AND EXISTING EQUIPMENT BEFORE BEGINNING ROUGH-IN.
4. SEE SECTION 26 5100 OF THE SPECIFICATION FOR REQUIRED COORDINATION MEETINGS WITH MECHANICAL AND CEILING CONTRACTORS.
5. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC. WHERE APPLICABLE MOUNT ALL WIRING DEVICES ABOVE BACK SPLASH EXCEPT THOSE SERVING UNDER COUNTER EQUIPMENT.
6. FINISHES OF ALL LIGHT FIXTURES SHALL BE AS SELECTED BY ARCHITECT.
7. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THRU ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN OTHER AREAS.
8. ELECTRICAL BOXES SHALL NOT BE LOCATED IN MASONRY COLUMNS IN BRICK WALLS OR IN GROUTED CELLS ADJACENT TO OPENINGS, COORDINATE LOCATION OF BOXES WITH MASONRY CONTRACTOR.
9. ALL PENETRATIONS OF FIRE RATED FLOORS, WALLS, AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL TO MAINTAIN FIRE RATING OF SURFACE PENETRATED.
10. CONTRACTOR SHALL VERIFY FURNITURE LAYOUT PRIOR TO ANY FLOORBOX OR POKE-THRU INSTALLATION. COORDINATE EXACT LOCATION OF FLOOR BOX OR POKE-THRU WITH OWNER AND FURNITURE PROVIDER PRIOR TO ROUGH-IN.
11. CIRCUITS EXTENDING OVER 70' FOR 120 VOLT AND 115' FOR 277 VOLT 20 AMP CIRCUITS SHALL BE RUN WITH CONDUCTORS PER TABLE BELOW.

20 AMP MINIMUM BRANCH CIRCUIT CONDUCTOR SIZING		
MAXIMUM LENGTH	BRANCH CIRCUIT VOLTAGE	
CONDUCTOR LENGTH (FT)	120 VOLT	277 VOLT
<70	MIN. #12 AWG	MIN. #12 AWG
70-115	MIN. #10 AWG	MIN. #12 AWG
115-170	MIN. #8 AWG	MIN. #10 AWG
170 - 270	MIN. #6 AWG	MIN. #8 AWG
271-380	NOTE B	MIN. #8 AWG
>380	NOTE B	NOTE B

A. THESE ARE BASED ON MAXIMUM LENGTH OF CIRCUIT.

B. PERFORM VOLTAGE DROP CALCULATIONS AND PROVIDE CONDUCTOR SIZE TO KEEP BRANCH CIRCUIT VOLTAGE DROP LESS THAN 3% WITH A 15 AMP LOAD.

C. CONTRACTOR SHALL ENSURE THAT THE INSTALLATION OF EACH BRANCH CIRCUIT STAYS WITHIN 3% VOLTAGE DROP FOR A 15 AMP LOAD. IF NECESSARY,CONTRACTOR SHALL INCREASE WIRE AND CONDUIT SIZE TO MEET THE STANDARD AT NO ADDITIONAL COST TO OWNER.

12. ALL CONDUIT SHALL BE INSTALLED IN STRAIGHT LINES PARALLEL TO, OR AT RIGHT ANGLES TO, THE STRUCTURE OR ADJACENT BUILDING ELEMENTS. SEPARATIONS BETWEEN CONDUITS AND FASTENINGS OF CONDUITS SHALL BE NEAT AND CONSISTENT. CONDUIT SHALL BE INSTALLED AS TIGHT TO THE BOTTOM OF STRUCTURAL ELEMENTS WHEN PARALLEL TO JOISTS AS CODE WILL ALLOW. OVERALL INSTALLATION SHALL BE ACCOMPLISHED IN AN AESTHETIC AND WORKMANLIKE MANNER. NO CONDUITS SHALL BE ALLOWED TO RUN PERPENDICULAR TO THE BOTTOM CHORD OF THE JOISTS.
13. DIVISION 26 SHALL VISIT SITE PRIOR TO BIDDING. BIDS SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS. FIELD VERIFY ALL ELECTRICAL EQUIPMENT.
14. BIDDERS SHALL EXAMINE THE SITE AND THE COMPLETE SET OF PLANS AND SPECIFICATIONS COVERING THE ENTIRE PROJECT. THEY SHALL BECOME FULLY CONVERSANT WITH THE TYPE OF GENERAL CONSTRUCTION AS WELL AS ALL PERTINENT FACTS AFFECTING THE COST OF CARRYING OUT THE WORK THEY WILL CONTRACT TO PERFORM.
15. ELECTRICAL CONTRACTOR SHALL COORDINATE PROJECT PHASING WITH GENERAL CONTRACTOR AND BID AND PERFORM RESPONSIBILITIES FOR THIS PROJECT TO GENERAL CONTRACTOR EXPECTATIONS.
16. COORDINATE ELECTRICAL DEMOLITION WITH ARCHITECTURAL DRAWINGS AND GENERAL CONTRACTOR.
17. CLOSELY COORDINATE ANY REQUIRED POWER SHUTDOWNS WITH HEAD CUSTODIAN AND OWNER.
18. WHERE JOB CONDITIONS REQUIRE CHANGES FROM THE CONTRACT DOCUMENTS THAT DO NOT CHANGE THE SCOPE OF INSTALLATION OR NATURE OF WORK REQUIRED, THE CONTRACTOR WILL MAKE SUCH CHANGES WITHOUT ADDITIONAL COST TO THE OWNER. NO OTHER CHANGES MAY BE MADE WITHOUT WRITTEN PERMISSION OF THE OWNER.
19. SEQUENCE, COORDINATE, AND INTEGRATE INSTALLATIONS OF ELECTRICAL MATERIALS AND EQUIPMENT FOR EFFICIENT FLOW OF THE WORK. GIVE PARTICULAR ATTENTION TO LARGE EQUIPMENT REQUIRING POSITIONING PRIOR TO CLOSING-IN THE BUILDING. COORDINATE THE CUTTING AND PATCHING OF BUILDING COMPONENTS TO ACCOMMODATE INSTALLATION OF ELECTRICAL EQUIPMENT AND MATERIALS.
20. DO NOT PENETRATE STRUCTURAL ELEMENTS OF FLOORS, WALLS, CEILINGS, ROOFS, ETC. DISCONNECT AND RECONNECT ANY/ALL FIXTURES, DEVICES, EQUIPMENT, ETC. REQUIRED FOR PROPER COMPLETION OF THE WORK.
21. CONTRACTOR MUST CONCEAL ALL RACEWAY THROUGHOUT THE PROJECT. SURFACE MOUNT RACEWAY IS UNACCEPTABLE EXCEPT WHERE THE USE OF PAINTED SURFACE METAL RACEWAYS (EMT) IS APPROVED SOLEY BY THE ARCHITECT. PAINT TO MATCH SURROUNDING SURFACE.
22. ALL CONCRETE CUT AND PATCH WORK REQUIRED FOR FLOOR BOXES INSTALLATION AND/OR RELOCATION OF ELECTRICAL DEVICES AND PANELS THAT REQUIRE WORK WITHIN THE FLOORS SHALL BE DONE BY ELECTRICAL CONTRACTOR. ALL CORE CUTTING FOR NEW SERVICE SHALL ALSO BE COVERED UNDER ELECTRICAL CONTRACTORS REQUIRED WORK.
23. ALL CONCRETE CUT AND PATCH WORK REQUIRED FOR FLOOR BOXES INSTALLATION AND/OR RELOCATION OF ELECTRICAL DEVICES AND PANELS THAT REQUIRE WORK WITHIN THE FLOORS SHALL BE DONE BY ELECTRICAL CONTRACTOR. ALL CORE CUTTING FOR NEW SERVICE SHALL ALSO BE COVERED UNDER ELECTRICAL CONTRACTORS REQUIRED WORK.
24. CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE OF ALL WASTE, SURPLUS MATERIALS, RUBBISH OR DEBRIS WHICH IS CAUSED BY HIS EMPLOYEES OR RESULTING FROM HIS WORK. AFTER ALL EQUIPMENT AND DEVICES HAVE BEEN INSTALLED, REMOVE ALL LABELS, STICKERS, STAINS, TEMPORARY COVERS, ETC. IDENTIFICATION PLATES ON ALL EQUIPMENT.
25. IT IS THE INTENT THAT THE FOREGOING WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT ANY MATERIAL OR WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT NECESSARY TO FULLY COMPLETE THE WORK SHALL BE FURNISHED BY ELECTRICAL CONTRACTOR.
26. PROVIDE GFCI CIRCUIT BREAKERS SERVING RECEPTACLES PROVIDING POWER TO DRINKING FOUNTAINS, REFRIGERATORS, VENDING MACHINES, DISPOSALS, AND WASHING MACHINES.
27. CAREFULLY REVIEW THE ENTIRE DRAWING PACKAGE PRIOR TO PROVIDING BID, INCLUDING THE ARCHITECTURAL AND MECHANICAL DRAWINGS. NOT REVIEWING THE ENTIRE SET IS NOT ACCEPTABLE.
28. PROVIDE CONDUIT FROM DEVICE TO DEVICE IN OPEN AND/OR EXPOSED CEILINGS. CEILINGS WITH CLOUDS ARE CONSIDERED OPEN/EXPOSED CEILING. NO EXPOSED CABLES SHALL BE SEEN FROM BELOW.
29. PROVIDE WEATHERPROOF, NEMA 3R RATED EQUIPMENT FOR ALL EXTERIOR APPLICATIONS.

ELECTRICAL ABBREVIATIONS INDEX

ABBREV.	DESCRIPTION
A	AMPS
AC	ALTERNATING CURRENT
ACLG	ABOVE CEILING
ADC	ANALOG-TO-DIGITAL CONVERTER
AF	AMP FRAME
AFC	AVAILABLE FAULT CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF / A.F.F.	ABOVE FINISH FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
ALT	ALTERNATE
AM	AMPS METER
AMP	AMPERE
AMPL	AMPLIFIER
ANN	ANNUNCIATOR
AOE	AUDIO-OVER-ETHERNET
APPROX	APPROXIMATELY
AQ-STAT	AQUASTAT
ARCH	ARCHITECT, ARCHITECTURAL
AS	AMP SWITCH
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AUDIOVISUAL
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BC	BARE COPPER
BD	BOARD
BFC	BELOW FINISHED CEILING
BFG	BELOW FINISHED GRADE
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
BPM	BEATS-PER-MINUTE
C, CND	CONDUIT
C.O.	CONDUIT ONLY
C/W	COMPLETE WITH
CAB	CABINET
CAT	CATEGORY CABLE
CAT#	CATALOG
CATB	COMMUNITY ANTENNA TELEVISION
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CF	CREST FACTOR
CKT	CIRCUIT
CLG	CEILING
CMPR	COMPRESSOR
CNTR	CONTRACTOR
CO	CONDUIT ONLY
CODEC	CODER-DECORDER
COMB	COMBINATION
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUATION OR CONTINUOUS
CONV	CONVECTOR
CP	CIRCULATING PUMP
CRT	COMPUTER TERMINAL
CT	CURRENT TRANSFORMER
CU	COPPER
CV	CONSTANT VOLTAGE
DAC	DIGITAL-TO-ANALOG CONVERTER
DB	DECIBEL
DBFS	DB REF. FULL SCALE
DBM	DB REF. 0.001 WATT
DBU	DB REF. 0.775 V
DBV	DB REF. 1 V
DC	DIRECT CURRENT
DCP	DOMESTIC CIRCULATING PUMP
DED	DEDICATED
DEPT	DEPARTMENT
DET	DETAIL
DFA	DROP FROM ABOVE
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DN	DOWN
DPR	DAMPER
DR	DYNAMIC RANGE
DS	DISCONNECT SWITCH
DT	DOUBLE THROW
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EG	EMERGENCY GENERATOR
ELEC	ELECTRIC, ELECTRICAL
ELEV	ELEVATOR
ELU	EMERGENCY LIGHTING UNIT
EM	EMERGENCY/EGRESS BATTERY
EMI	ELECTRO-MAGNETIC INTERFERENCE
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
ENT	ELEC. NON-METAL. TUBING
EP	ELECTRIC PNEUMATIC
EQUIP	EQUIPMENT
ER	EXISTING TO BE RELOCATED
ES	SOURCE VOLTAGE
EWC	ELECTRIC WATER COOLER
FA	FIRE ALARM
FABP	FIRE ALARM BOOSTER PANEL
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT CANDLE
FCU	FAN COIL UNIT
FIR	FINITE IMPULSE RESPONSE FILTER
FIXT	FIXTURE
FLR	FLOOR
FLUOR	FLUORESCENT
FMC	FLEXIBLE METAL CONDUIT
FU	FUSE
FUDS	FUSE SAFETY DISCONNECT SWITCH
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEC	GRND. ELEC. COND. AT SES
GEN	GENERATOR
GFCI	GROUND FAULT CURRENT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GFP	GROUND FAULT PROTECTOR
GND	GROUND

ABBREV.	DESCRIPTION
GRC	GALVANIZED RIGID CONDUIT
GYP BD	GYPSUM BOARD
HOA	HAND-OFF-AUTOMATIC SWITCH
HORIZ	HORIZONTAL
HP	HORSE POWER
HPF	HIGH POWER FACTOR
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATING & AIR CONDITIONING
HZ	HERTZ
I/W	INTERLOCK WITH
IC	INTERRUPTING CAPACITY
IFC	INTERNATIONAL FIRE CODE
IG	ISOLATED GROUND
IIR	INFINITE IMPULSE RESPONSE FILTER
IMC	INTERMEDIATE METALLIC CONDUIT
INCAND	INCANDESCENT
IR	INFRARED
IT	TOTAL CURRENT
J-BOX	JUNCTION BOX
KCMIL	1000 CIRCULAR MILS (MCM)
KHZ	THOUSANDS OF HZ
KV	KILOVOLT
KVA	KILOVOLT AMPERES
KVAR	KILOVARS
KW	KILOWATT
KWH	KILOWATT HOUR
LCS	C-WEIGHTED SLOW SOUND LEVEL
LEQ	EQUIVALENT SOUND LEVEL
LFMC	LIQUID-TIGHT FLEX. METAL. COND.
LFNC	LIQUID-TIGHT FLEX. NON-METAL. COND.
LOC	LOCATE OR LOCATION
LP, SPL	SOUND PRESSURE LEVEL
LRA	LOCKED ROTOR AMPS
LT	LIGHT
LTG	LIGHTING
LTNG	LIGHTNING
LU	LOUDNESS UNIT METERING
LUFS	LOUDNESS UNIT FULL SCALE
LV	LOW VOLTAGE
M/C	MOMENTARY CONTACT
MAC	MEDIA ACCESS CONTROL
MAG.S	MAGNETIC STARTER
MAX	MAXIMUM
MB	MAIN BUS
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCM	1000 CIRCULAR MILLS
MDC	MAIN DISTRIBUTION CENTER
MDP	MAIN DISTRIBUTION PANEL
MEP	MECHANICAL, ELECTRICAL, AND PLUMBING
MFR	MANUFACTURER
MFS	MAIN FUSED DISCONNECT SWITCH
MH	MANHOLE
MIC	MICROPHONE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MMS	MANUAL MOTOR STARTER
MNF	MANUFACTURER
MOA	MULTI-OUTLET ASSEMBLY
MSBD	MAIN SWITCHBOARD
MSP	MOTOR STARTER PANELBOARD
MSS	MOTOR STARTER SWITCH
MTG	MOUNTING
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
N	NEW
N.I.C.	NOT IN CONTRACT
N/A	NOT APPLICABLE
N1	NEMA 1
N3R	NEMA 3R
NAC	NOTIFICATION APPLIANCE CIRCUIT PANEL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECT. MANUFAC. ASSOC.
NFDS	NON-FUSED SAFETY DISCONNECT SWITCH
NFPA	NATIONAL FIRE PROTECTION ASSOC.
NL	NIGHT LIGHT, BYPASS LOCAL SWITCHING
NO	NORMALLY OPENED
NPF	NORMAL POWER FACTOR
NTS	NOT TO SCALE
NVR	NETWORK VIDEO RECORDER
OC	ON CENTER
OH	OVERHEAD
OL	OVERLOADS
OS & Y	OUTSIDE SCREW & YOKE
OSI	OPEN SYSTEM INTEGRATION
PA	PASCAL
PB	PUSHBUTTON
PBB	PRIMARY BONDING BUSBAR
PC	PLUMBING CONTRACTOR
PCM	PULSE CODE MODULATION
PDU	POWER DISTRIBUTION UNIT
PE	PNEUMATIC ELECTRIC
PED	PEDESTAL
PF	POWER FACTOR
PFR	PHASE FAILURE RELAY
PIV	POST INDICATING VALVE
PLEN	PLENUM
PNL	PANEL
POC	POINT OF CONNECTION
POE	POWER OVER ETHERNET
POS	POINT OF SALE
PP	POWER POLE
PPM	PEAK PROGRAM METER
PR	PAIR
PRI	PRIMARY
PROJ	PROJECTION
PRV	POWER ROOF VENTILATOR
PSI	POUNDS-PER-SQUARE-INCH
PT	POTENTIAL TRANSFORMER
PTP	POINT TO POINT
PTZ	PAN, TILT, AND ZOOM

ABBREV.	DESCRIPTION
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
QUAN	QUANTITY
R	RESISTANCE
RECEP, RECPT	RECEPTACLE
REQ,REQD	REQUIRED
REX	REQUEST TO EXIT
RF	RADIO FREQUENCY
RFM	ROOF MOUNTED
RL	LOAD RESISTANCE
RLA	RATED LOAD AMPS
RM	ROOM
RMC	RIGID METALLIC CONDUIT
RMP	ROCKY MOUNTAIN POWER
RMS	ROOT MEAN SQUARE
RNC	RIGID NON-METALLIC COND.
RPM	ROTATIONS-PER-MINUTE
RS	SOURCE RESISTANCE
RT	TOTAL RESISTANCE
RTU	ROOF TOP UNIT
RX	RECEIVER
S/N	SOLID NEUTRAL
S/S	STOP/START PUSHBUTTONS
SBB	SECONDARY BONDING BUSBAR
SBG	SUPPLEMENTARY BONDING GRID
SBJ	SYSTEM BONDING JUMPER
SC	SURFACE CONDUIT
SCA	SHORT CIRCUIT AMPERES
SDI	SERIAL DIGITAL INTERFACE
SE	SERVICE ENTRANCE
SEC	SECONDARY
SES	SMOKE EVACUATION SYSTEM
SHT	SHEET
SIM	SIMILAR
SLD	SINGLE-LINE DIAGRAM
SNR	SIGNAL-TO-NOISE RATIO
SP	SPARE
SPDIF	SONY PHILLIPS DIGITAL INTERFACE
SPEC	SPECIFICATIONS
SPKR	LOUDSPEAKER
SPL	SOUND PRESSURE LEVEL
SPP	SINGLE-POINT POWER
SR	SURFACE RACEWAY
SS	SELECTOR SWITCH
SSW	SELECTOR SWITCH
STA	STATION
STD	STANDARD
STP	SHIELDED TWISTED PAIR
SURF	SURFACE MOUNTED
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
SYS	SYSTEM
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TBC	TELECOMMUNICATIONS BONDING CONDUCTOR
TC	TEMP. CONTROL CONTR.
TEL	TELEPHONE
TERM	TERMINAL
TL	TWIST LOCK
TR	TAMPER RESISTANT
T-STAT	THERMOSTAT
TTB	TELEPHONE TERMINAL BOARD
TTC	TELEPHONE TERMINAL CABINET
TV	TELEVISION
TVTC	TELEVISION TERMINAL
TX	TRANSMITTER
TYP	TYPICAL
UC	UNDER COUNTER
UE	UNDERGROUND ELECTRICAL
UG	UNDERGROUND
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTED POWER SUPPLY
UT	UNDERGROUND TELEPHONE
UTIL	UTILITY
UTP	UNSHIELDED TWISTED PAIR
UV	ULTRAVIOLET
V	VOLT (KV-KILOVOLT)
VA	VOLT/AMPS
VA/R, VAR	VOLT-AMPS/REACTIVE
VAC	VOLTS ALTERNATING CURRENT
VDC	VOLTS DC CURRENT
VDT	VIDEO DISPLAY TERMINAL
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VI	VOLUME INDICATOR
VIF	VERIFY IN FIELD
VM	VOLT METER
VOL	VOLUME
VU	VOLUME UNIT
W	WATTS
W/	WITH
W/O	WITHOUT
WG	WIRE GUARD
WH	WATTHOUR METER
WP	WEATHERPROOF/NEMA 3R
XFMR	TRANSFORMER
XFMR SW	SW TRANSFER SWITCH
XFR	TRANSFER
XL	X-CONNECTOR LOCKING
XLR	X-CONNECTOR LOCKING RUBBERIZED
XP	EXPLOSION PROOF
XR	EXISTING TO BE REMOVED
1P	ONE-POLE
2P	TWO-POLE
3P	THREE-POLE
4P	FOUR-POLE
∠	ANGLE
&	AND
@	AT
°	DEGREE
▲	DELTA
', FT	FOOT, FEET
", IN	INCH, INCHES
#	NUMBER
Ω, OHM	UNIT OF ELECTRICAL RESISTANCE
Ø, PH	PHASE
℄, CTR	CENTER LINE, CENTER
P	PLATE

GENERAL LEGEND

SYMBOL	DESCRIPTION	MOUNTING	NOTES
	EXISTING	-	-
	DEMO	-	-
	TEMPORARY	-	-
	NEW	-	-
	NOT IN CONTRACT	-	-
	SOLID ARCHED LINES INDICATE UNSWITCHED POWER CIRCUITING	-	-
	DASHED ARCHED LINES INDICATE SWITCHED POWER CIRCUITING	-	-
	ONE CIRCUIT, HOME RUN TO PANEL	-	-
	TWO CIRCUITS, HOME RUN TO PANEL	-	-
	THREE CIRCUITS, HOME RUN TO PANEL	-	-
	CONDUIT RUN CONCEALED IN FLOOR OR GROUND	-	-
	CONDUIT RUN CONCEALED IN WALL OR CEILING	-	-
	CONDUIT UP	-	-
	CONDUIT DOWN	-	-
	CONDUIT STUB LOCATION	-	CAP CONDUIT
	CONDUIT / CIRCUIT CONTINUATION	-	-
XX	CONDUIT OHP: OVERHEAD POWER SERVICE UGP: UNDERGROUND POWER SERVICE UGF: UNDERGROUND FIBER SERVICE TEL: TELEPHONE SERVICE	-	-
	CABLE TRAY SOLID BOTTOM LADDER BASKET	AS NOTED	19
	GROUND BUS BAR	+18"	7
CLG	EQUIPMENT CEILING RACK	CEILING	18, 25 SEE SPEC.
	EQUIPMENT CABINET/RACK	WALL / FLOOR	18, 25 SEE SPEC.
	EQUIPMENT 2-POST CABINET/RACK	FLOOR	18, 25 SEE SPEC.
	TELEPHONE DEMARCATION BOARD	+18"	25
TC	TIME CLOCK	+48"	25
TV	TV BACKBOX	FLAT PANEL HEIGHT +12"	7, 22
J	JUNCTION BOX	AS NOTED	20
FB PT	FLOOR BOX / POKE-THRU - SEE SCHEDULE FOR TYPE INFORMATION	FLOOR	
	EQUIPMENT SYSTEM PANELS ACS: ACCESS CONTROL PANEL IDS: INTRUSION DETECTION PANEL PSP: POWER SUPPLY PANEL RP#: LIGHTING PANEL DAS: DISTRIBUTED ANTENNA SYSTEM ERCCS: FIRST RESPONDERS RADIO SYSTEM CATV: CABLE TV CONTENT EQUIPMENT	+60" TO TOP	

GENERAL LEGEND

SYMBOL	DESCRIPTION	MOUNTING	NOTES
#	KEYNOTE		
Space 004	ROOM NAME & NUMBER		
Space 005 XX	ROOM NAME & NUMBER W/ ZONE I.D.		
	DIAGRAM TAG		
	MATCH LINE TAG		
X##	DEVICES WITH A CHEVRON INDICATE TO COORDINATE WITH MILLWORK PRIOR TO ROUGH-IN.		31
	ELEVATION TAG. HATCHED AREA INDICATES WHICH WALL, NUMBER INDICATES VIEW, AND CENTER NUMBER INDICATES WHICH SHEET.		
##	REVISION CLOUD DELTA. SHOWN WITH CLOUD AND INDICATES A CHANGE PER THE TITLE BLOCK.		
	TAG FOR MECHANICAL, KITCHEN, AND SHOP DEVICES. REFER TO SCHEDULES FOR INFO.		

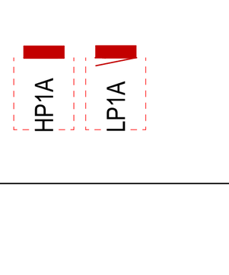
POWER DISTRIBUTION EQUIPMENT SYMBOLS

SYMBOL	DEVICE/FIXTURE DESCRIPTION	MOUNTING	NOTES
	TRANSFORMER: SEE SINGLE-LINE DIAGRAM FOR DESCRIPTION & REQUIREMENTS.	4" CONCRETE BASE	18
	POWER DISTRIBUTION PANEL	6'-6" TO TOP	18
	FLUSH PANELBOARD	6'-6" TO TOP	18
	SURFACE PANELBOARD	6'-6" TO TOP	18

POWER SYMBOLS LEGEND

SYMBOL (S D Q SP)	DEVICE/FIXTURE DESCRIPTION	MOUNTING	NOTES
S D Q SP	S: SIMPLEX D: DUPLEX Q: FOURPLEX SP: SPECIAL PURPOSE		
	WALL MOUNTED RECEPTACLE	18"	7, 25, 30
	CEILING MOUNTED RECEPTACLE	CEILING	25, 30
	SWITCHED RECEPTACLE	18"	7
	EMERGENCY RECEPTACLE	18"	7
	GROUND FAULT RECEPTACLE	18"	7
	ISOLATED GROUND RECEPTACLE	18"	7
	RECEPTACLE (SPECIFIC HEIGHT)		7, 31
	CONTROLLED RECEPTACLE	+18" OR AS NOTED	7, 31
#	RECEPTACLE MODIFIERS: ##": HEIGHT AFF O.C. WP: WEATHERPROOF W/ IN-USE COVER T: TAMPER-PROOF U: RECEPTACLE WITH USB OUTLET G: GROUND FAULT PROTECTED @ BREAKER H: HOSPITAL GRADE		7, 13, 31
	TOMBSTONE RECEPTACLE	COUNTER TOP	
	SPD PROTECTED RECEPTACLE	+18" OR AS NOTED	7
CR	CORD REEL, DEVICE VARIES	CEILING	
D	CORD DROP, DEVICE VARIES	CEILING	
	MULTI-OUTLET ASSEMBLY FILLED SQUARES INDICATE 120V OUTLET OPEN SQUARES INDICATE WITH USB	+46"OR AS NOTED	7, REFER TO SPEC
EV	SINGLE / DUAL PORT ELECTRICAL VEHICLE CHARGER	+46"	7
	POWER POLE		
$x	SWITCH MODIFIERS: K: KEYED T: TIMER M: MANUAL STARTER THERMAL OVERLOAD SWITCH	+46"	7
	EMERGENCY POWER OFF PUSH BUTTON	+46"	7
DO	DOOR OPENER PUSH PLATE	+46"	7
M	ELECTRICAL POWER METER	+72" TO TOP	
F	FUSED DISCONNECT SWITCH	+60" TO TOP	9, 10
	NON-FUSED DISCONNECT SWITCH	+60" TO TOP	9, 10
	MAGNETIC STARTER	+60" TO TOP	9, 10, 11
	MAGNETIC STARTER WITH FUSED DISCONNECT	+60" TO TOP	9, 10, 11
	MAGNETIC STARTER WITH BREAKER DISCONNECT	+60" TO TOP	9, 10, 11
VFD	VARIABLE FREQUENCY DRIVE	+60" TO TOP	9, 10, 11
	MOTOR		
	PUSHBUTTON	+46"	7

POWER TAGS LEGEND



NOTES:
1. HATCHED FILL INDICATES SWITCHBOARD OR POWER DISTRIBUTION PANEL.
2. SOLID FILL INDICATES BRANCH PANEL OR LOAD CENTER.
3. DASHED BOX INDICATES CODE-REQUIRED CLEARANCE (WIDTH & DEPTH).
4. DOOR INDICATES FRONT OF RECESSED PANEL.

FIRE ALARM SYMBOLS LEGEND

SYMBOL W	SYMBOL C	DEVICE/FIXTURE DESCRIPTION	MOUNTING	NOTES
W	C	W: WALL C: CEILING		
#	# # 0 cd	AUDIBLE ANNUNCIATION (BLANK): HORN LF: LOW FREQUENCY HORN SP: SPEAKER FB: FIRE BELL	+94" WALL / CEILING OR AS NOTED	7, 28
# 0 cd	# 0 cd	VISIBLE ANNUNCIATION, CANDELA AS INDICATED (BLANK): CLEAR STROBE B: BLUE STROBE A: AMBER STROBE	+94" WALL / CEILING OR AS NOTED	7, 28
# 0 cd	# 0 cd	AUDIBLE/VISIBLE ANNUNCIATION, CANDELA AS INDICATED (BLANK): CLEAR STROBE B: BLUE STROBE A: AMBER STROBE LF: LOW FREQUENCY HORN SP: SPEAKER	+94" WALL / CEILING OR AS NOTED	7, 28
# 0 cd	# # 0 cd	REMOTE INDICATOR w/ TEST SWITCH	+94" WALL / CEILING OR AS NOTED	7, 28
		SMOKE DETECTOR	CEILING	28
		HEAT DETECTOR	CEILING	28
		CARBON MONOXIDE DETECTOR	CEILING	28
	R T	BEAM DETECTOR T: TRANSMITTER R: RECEIVER	CEILING	28
	CO	COMBINATION DETECTOR (UP TO THREE)	CEILING	28
		DUCT SMOKE DETECTOR	CEILING	28
	FSD	FIRE/SMOKE DAMPER	DUCT	28
	DH	DOOR HOLDER	AS INDICATED	28
	DCL	DOOR CLOSER	AS INDICATED	28
		FIRE SERVICE PHONE	+46"	7, 28
	XXX	ADDRESSABLE MODULE AIM: ADDRESSABLE INPUT MODULE AOM: ADDRESSABLE OUTPUT MODULE AIO: ADDRESSABLE INPUT/OUTPUT		28
	XXXX	FIRE ALARM CONTROL UNIT EVAC: VOICE EVACUATION CONTROL PANEL FAA: FIRE ALARM ANNUNCIATOR FACP: FIRE ALARM CONTROL PANEL FATC: FIRE ALARM TERMINAL CABINET NACP: NOTIFICATION APPLIANCE CIRCUIT PANEL FAMN: FIRE ALARM MASS NOTIFICATION PANEL TW: TWO WAY COMMUNICATION INTERCOM TWZ: TWO WAY COMMUNICATION CONTROLLER	+46"	7, 21, 28
	XX	SUPERVISORY or INTERFACE DEVICE PIV: POST INDICATOR VALVE PS: PRESSURE SWITCH R: NON-ADDRESSABLE RELAY VS: VALVE SUPERVISORY SWITCH FS: FLOW SWITCH TS: TAMPER SWITCH WF: WATER FLOOD SENSOR	LOCATE AT DEVICE	28
	F	MANUAL PULL STATION	+46"	7, 28

DATA NETWORK SYMBOLS LEGEND

W	F	C	DEVICE/FIXTURE DESCRIPTION	MOUNTING	NOTES
W	F	C	W: WALL F: FLOOR C: CEILING		
			DATA OUTLET (SINGLE CABLE)	18" WALL/ FLOOR/CEILING	7, 24, 30
			DATA OUTLET (TWO CABLES)	18" WALL/ FLOOR/CEILING	7, 24, 30
			DATA OUTLET (THREE CABLES)	18" WALL/ FLOOR/CEILING	7, 24, 30
WAP		WAP	WIRELESS ACCESS POINT*	96" WALL/ CEILING	7, 24, 30
			SERIES-X COAXIAL CABLE OUTLET	18" WALL/ FLOOR/CEILING	7, 24, 30
XXX		XX	DISTRIBUTED ANTENNA SYSTEM (DAS) PUBLIC SAFETY AND/OR CELLULAR/COMMERCIAL ANT: ANTENNA BDA: BI-DIRECTIONAL AMPLIFIER SPL: SPLITTER VIA: VIA	108" WALL, CEILING, ABOVE CEILING, OR AS NOTED	7, 24, 30

AV SYMBOL LEGEND GENERAL NOTES

A. ROUGH-IN JUNCTION BOX, CONDUIT, AND MOUNTING HEIGHT ARE DEFAULT REQUIREMENTS. REFER TO PLANS FOR SPECIFIC NOTES AND REQUIREMENTS FOR A SPECIFIC INSTANCE.

B. CONDUIT STUBBED INTO ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.

C. CABLE FROM DEVICE TO BE HOMERUN TO DESTINATION WITHOUT SPLICES.

D. JUNCTION BOX INDICATED IS FOR MOST INSTALLATIONS. DEVICE WILL BE NOTED WHEN JUNCTION BOX SIZE REQUIREMENTS ARE DIFFERENT FROM INDICATED.

ELECTRICAL SHEET LIST

RESOLUT
40 W Cache Valley Blvd., Bldg 1, Suite B, Logan, UT 84341 | (435) 752-5081
info@resolutgroup.com | resolutgroup.com

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

PROFESSIONAL ENGINEER BRIAN HICKS No. 7709037-2202 01/15/26 STATE OF UTAH

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
30 S 100 W CLEVELAND, UTAH

DRAWN BY: MK
CHECKED BY: ES
DATE: JAN. 2026
PROJECT #: 176525

EG001

MECHANICAL EQUIPMENT SCHEDULE

RESPONSIBILTY LEGEND:
EC - ELECTRICAL CONTRACTOR (DIVISION 26)
MC - MECHANICAL CONTRACTOR (DIVISION 23)
CC - CONTROL CONTRACTOR

NOTES:
1. NON-FUSED DISCONNECT SWITCH
2. FUSED DISCONNECT SWITCH
3. BREAKER IN ENCLOSURE
4. MANUAL STARTER WITH THERMAL OVERLOAD
5. MAGNETIC STARTER
6. MAGNETIC STARTER/NON-FUSED DISCONNECT COMBINATION
7. MAGNETIC STARTER/FUSED DISCONNECT COMBINATION
8. MAGNETIC STARTER/BREAKER COMBINATION
9. VARIABLE FREQUENCY DRIVE
10. REDUCED VOLTAGE STARTER
11. DIRECT CONNECTION
12. RECEPTACLE/SPECIAL PURPOSE OUTLET/ETC.
13. TWO-SPEED STARTER. COORDINATE WITH MOTOR TYPE
14 SOLID STATE SOFT-STARTER

A. FURNISHED, INSTALLED AND CONNECTED UNDER DIVISION 26(16)
B. FURNISHED AND INSTALLED UNDER ANOTHER DIVISION. REQUIRED CONNECTION UNDER DIVISION 26(16)
C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIVISION 26(16)
D. FURNISHED, INSTALLED AND CONNECTED UNDER ANOTHER DIVISION

CB = CIRCUIT BREAKER
CKW = CHILLER KILOWATTS

NOTE 1: PER 250.122(A), EQUIPMENT GROUND IS NOT REQUIRED TO BE LARGER THAN THE PHASE CONDUCTOR.
NOTE 2: OVERCURRENT PROTECTION DEVICE (OCPD) SHOWN IS LOCATED AT POWER PANEL. ALL FUSING TO BE SIZED IN ACCORDANCE WITH FUSE MFR RECOMMENDATION FOR MOTOR NAM PLATE RATING.
NOTE 3: ALL EQUIPMENT TO BE RATED FOR THE ENVIRONMENT FOR WHICH IT IS INSTALLED.

GENERAL NOTES
1. PER NEC 250.122(A), EQUIPMENT GROUND IS NOT REQUIRED TO BE LARGER THAN THE PHASE CONDUCTOR
2. OVERCURRENT PROTECTION DEVICE (OCPD) SHOWN IS LOCATED AT POWER PANEL. ALL FUSING TO BE SIZED IN ACCORDANCE WITH FUSE MFR RECOMMENDATION FOR MOTOR...
3. ALL EQUIPMENT TO BE RATED FOR THE ENVIRONMENT FOR WHICH IT IS INSTALLED.
4. OVERLOAD PROTECTION SHALL BE PROVIDED FOR ALL MOTOR BRANCH CIRCUITS IN COMPLIANCE WITH NEC SECTION 430. SIZE OVERLOAD UNITS BASED ON ACTUAL RUNNING...

IDENTITY INFORMATION				ELECTRICAL		LOAD INFORMATION					EM POWER	OCPD		CIRCUIT INFORMATION										STARTER			CONTROL			DISCONNECT			INTERLOCK	NOTES
														PHASE CONDUCTORS				NEUTRAL CONDUCTOR			GROUND CONDUCTOR		CONDUIT SIZE											
TYPE ID		INSTANCE ID	DESCRIPTION	VOLTAGE	PHASE	MOTOR POWER	APPARENT POWER	REAL POWER	FLA	MCA		TYPE	OCPD	SETS	NO.	SIZE	TYPE	NEUTRAL	SIZE	TYPE	SIZE	TYPE	SIZE	TYPE	FURNISH	INSTALL	TYPE	FURNISH	INSTALL	TYPE	FURNISH	INSTALL		
CUH	-	1	CABINET UNIT HEATER	120 V	1	0.00 hp	0.1 kVA	0.1 kW	0.8 A	1 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC	4A	EC	EC		
CUH	-	1	CABINET UNIT HEATER	120 V	1	0.00 hp	0.1 kVA	0.1 kW	0.8 A	1 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC	4A	EC	EC		
CUH	-	1	CABINET UNIT HEATER	120 V	1	0.00 hp	0.1 kVA	0.1 kW	0.8 A	1 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC	4A	EC	EC		
CUH	-	1	CABINET UNIT HEATER	120 V	1	0.00 hp	0.1 kVA	0.1 kW	0.8 A	1 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC	4A	EC	EC		
CUH	-	1	CABINET UNIT HEATER	120 V	1	0.00 hp	0.1 kVA	0.1 kW	0.8 A	1 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC	4A	EC	EC		
CUH	-	1	CABINET UNIT HEATER	120 V	1	0.00 hp	0.1 kVA	0.1 kW	0.8 A	1 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC	4A	EC	EC		
CUH	-	1	CABINET UNIT HEATER	120 V	1	0.00 hp	0.1 kVA	0.1 kW	0.8 A	1 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC	4A	EC	EC		
CUH	-	1	CABINET UNIT HEATER	120 V	1	0.00 hp	0.1 kVA	0.1 kW	0.8 A	1 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC	4A	EC	EC		
CUH	-	1	CABINET UNIT HEATER	120 V	1	0.00 hp	0.1 kVA	0.1 kW	0.8 A	1 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC	4A	EC	EC		
CH	-	1	CHILLER	208 V	3	0.00 hp	76.4 kVA	68.7 kW	212 A	265 A	No	(Motor) Inverse Time Breaker	300 A	1	3	400	Cu	Yes	400	Cu	4	Cu	3"	11A	EC	EC	MC	MC	MC	11A	EC	EC		
FC	-	1	FAN COIL	120 V	1	0.00 hp	1.0 kVA	0.9 kW	8.6 A	10.8 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	2	FAN COIL	120 V	1	0.00 hp	1.0 kVA	0.9 kW	8.6 A	10.8 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	3	FAN COIL	120 V	1	0.00 hp	1.0 kVA	0.9 kW	8.6 A	10.8 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	4	FAN COIL	120 V	1	0.00 hp	1.0 kVA	0.9 kW	8.6 A	10.8 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	5	FAN COIL	208 V	1	0.00 hp	1.8 kVA	1.6 kW	8.6 A	10.8 A	No	(Motor) Inverse Time Breaker	15 A	1	2	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	6	FAN COIL	120 V	1	0.00 hp	1.0 kVA	0.9 kW	8.6 A	10.8 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	7	FAN COIL	120 V	1	0.00 hp	1.4 kVA	1.3 kW	11.6 A	14.5 A	No	(Motor) Inverse Time Breaker	20 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	9	FAN COIL	120 V	1	0.00 hp	1.0 kVA	0.9 kW	8.6 A	10.8 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	10	FAN COIL	120 V	1	0.00 hp	1.0 kVA	0.9 kW	8.6 A	10.8 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	11	FAN COIL	120 V	1	0.00 hp	1.0 kVA	0.9 kW	8.6 A	10.8 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	12	FAN COIL	120 V	1	0.00 hp	1.4 kVA	1.2 kW	11.4 A	14.3 A	No	(Motor) Inverse Time Breaker	20 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	13	FAN COIL	120 V	1	0.00 hp	1.0 kVA	0.9 kW	8.6 A	10.8 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	14	FAN COIL	120 V	1	0.00 hp	1.4 kVA	1.2 kW	11.4 A	14.3 A	No	(Motor) Inverse Time Breaker	20 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	15	FAN COIL	120 V	1	0.00 hp	0.8 kVA	0.7 kW	6.8 A	8.5 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	16	FAN COIL	120 V	1	0.00 hp	0.4 kVA	0.4 kW	3.3 A	4.1 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	17	FAN COIL	120 V	1	0.00 hp	0.8 kVA	0.7 kW	6.8 A	8.5 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	18	FAN COIL	208 V	3	0.00 hp	3.2 kVA	2.9 kW	8.9 A	11.1 A	No	(Motor) Inverse Time Breaker	15 A	1	3	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	19	FAN COIL	208 V	3	0.00 hp	3.2 kVA	2.9 kW	8.9 A	11.1 A	No	(Motor) Inverse Time Breaker	15 A	1	3	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
FC	-	20	FAN COIL	120 V	1	0.00 hp	0.6 kVA	0.6 kW	5.2 A	6.5 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
UH	-	1	HOT WATER UNIT HEATER	120 V	1	0.00 hp	0.0 kVA	0.0 kW	0.1 A	0.2 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
UH	-	2	HOT WATER UNIT HEATER	120 V	1	0.00 hp	0.0 kVA	0.0 kW	0.1 A	0.2 A	No	(Motor) Inverse Time Breaker	15 A	1	1	12	Cu	Yes	12	Cu	12	Cu	3/4"	4A	EC	EC	MC	MC	MC		EC	EC		
P	-	1	PUMP	208 V	3	7.50 hp	8.7 kVA	7.8 kW	24.2 A	30.3 A	No	(Motor) Inverse Time Breaker	40 A	1	3	8	Cu	Yes	8	Cu	10	Cu	1"	9B	MC	MC	MC	MC	MC		MC	MC		
P	-	2	PUMP	208 V	3	3.00 hp	3.8 kVA	3.4 kW	10.6 A	13.3 A	No	(Motor) Inverse Time Breaker	20 A	1	3	12	Cu	Yes	12	Cu	12	Cu	3/4"	9B	MC	MC	MC	MC	MC		MC	MC		
P	-	3	PUMP	208 V	3	3.00 hp	3.8 kVA	3.4 kW	10.6 A	13.3 A	No	(Motor) Inverse Time Breaker	20 A	1	3	12	Cu	Yes	12	Cu	12	Cu	3/4"	9B	MC	MC	MC	MC	MC		MC	MC		

RESOLUT
170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM
KMA ARCHITECTS

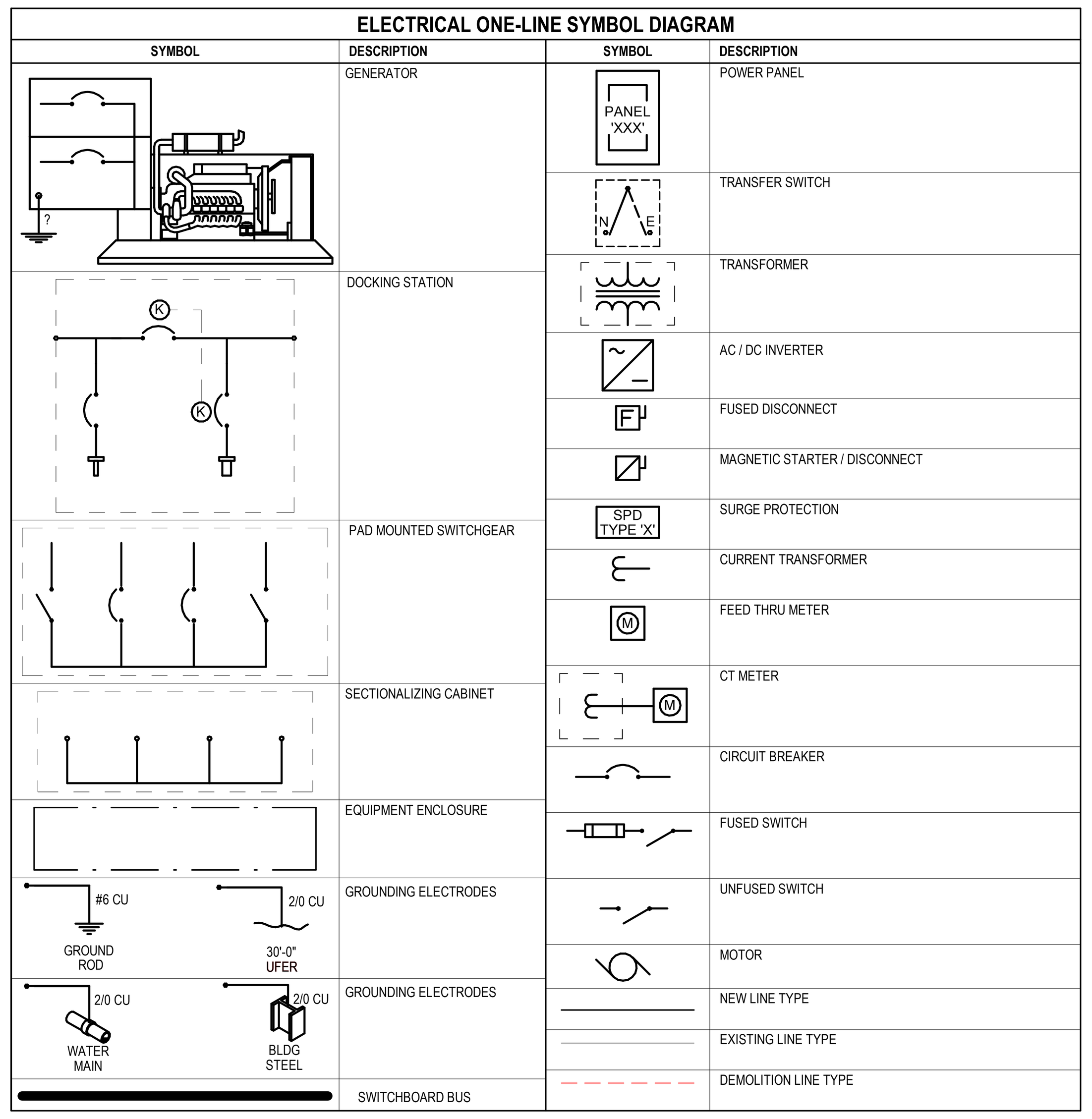
REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY: MK
CHECKED BY: ES
DATE: JAN. 2026
PROJECT #: 176525

EG002

ELECTRICAL ONE-LINE SYMBOL DIAGRAM



PANELBOARD SCHEDULE

PANEL: 'M' **TYPE:** Do Not Use; Use... **VOLTS:** 208Y/120, 3Φ, 4W **PHASE:** 3 **WIRES:** 4

LOCATION: BOILER RM 31 **MAINS/BUS AMPS:** 400 **LUGS:** Standard
FED FROM: 'MDP' **MAIN DISC. TYPE:** MLO DOOR-IN-DOOR
MOUNTING: **MAIN DISC. TRIP:** MLO 200% NEUTRAL
BUSSING: Do Not Use; Use Current Rating ISO GROUND
SPD

BRANCH BREAKERS

ITEM	AMPS	POLE	WIRE SIZE	CIR. NO.	A	B	C	A	B	C	CIR. NO.	WIRE SIZE	POLE	AMPS	ITEM
EXISTING	20 A	1	--	1	0 VA			0 VA			2	--	1	20 A	EXISTING
EXISTING	20 A	1	--	3		0 VA			0 VA		4	--	1	20 A	EXISTING
ATC	20 A	1	#10	5			500 VA			384 VA	6	#10	1	20 A	CABINET UNIT HEATER, Room 18, 19, 27...
Receptacle - General, BOILER RM 31	20 A	1	#10	7	180 VA			360 VA			8	#10	1	20 A	Power, Receptacle - General
ATC	20 A	1	#10	9		500 VA			18 VA		10	#10	1	20 A	HOT WATER UNIT HEATER, BOILER RM...
EXISTING	20 A	1	--	11			0 VA			0 VA	12	--	1	20 A	EXISTING
EXISTING	20 A	1	--	13	0 VA			0 VA			14	--	1	20 A	EXISTING
EXISTING	20 A	1	--	15		0 VA			0 VA		16	--	1	20 A	EXISTING
EXISTING	20 A	1	--	17			0 VA			0 VA	18	--	1	20 A	EXISTING
EXISTING	20 A	1	--	19	0 VA			2,906 VA			20	#6	3	40 A	PUMP, BOILER RM 31
EXISTING	20 A	1	--	21		0 VA			2,906 VA		22				
EXISTING	20 A	1	--	23			0 VA			2,906 VA	24				
PUMP	20 A	3	#10	25	1,273 VA			0 VA			26	--	1	20 A	EXISTING
				27		1,273 VA			0 VA		28	--	1	20 A	EXISTING
				29			1,273 VA			0 VA	30	--	1	20 A	EXISTING
EXISTING	20 A	1	--	31	0 VA			1,273 VA			32	#12	3	20 A	PUMP
EXISTING	20 A	1	--	33		0 VA			1,273 VA		34				
EXISTING	20 A	1	--	35			0 VA			1,273 VA	36				
EXISTING	20 A	1	--	37	0 VA			0 VA			38	--	1	20 A	EXISTING
EXISTING	20 A	1	--	39		0 VA			0 VA		40	--	1	20 A	EXISTING
EXISTING	20 A	1	--	41			0 VA			0 VA	42	--	1	20 A	EXISTING
					5943	5924	6290	TOTAL (VA)							CONNECTED LOAD TOTAL
					49.5 A	49.4 A	52.4 A	AMPS/PHASE							17,245 VA

AIC RATING: 25,614 **AMPS RMS SYSM.**

NOTES:

PANELBOARD SCHEDULE

PANEL: 'P' **TYPE:** Do Not Use; Use... **VOLTS:** 208Y/120, 3Φ, 4W **PHASE:** 3 **WIRES:** 4

LOCATION: Space 71 **MAINS/BUS AMPS:** 400 **LUGS:** Standard
FED FROM: 'MDP' **MAIN DISC. TYPE:** MLO DOOR-IN-DOOR
MOUNTING: **MAIN DISC. TRIP:** MLO 200% NEUTRAL
BUSSING: Do Not Use; Use Current Rating ISO GROUND
SPD

BRANCH BREAKERS

ITEM	AMPS	POLE	WIRE SIZE	CIR. NO.	A	B	C	A	B	C	CIR. NO.	WIRE SIZE	POLE	AMPS	ITEM
HOT WATER UNIT HEATER	20 A	1	#10	1	18 VA			0 VA			2	--	1	20 A	EXISTING
FAN COIL	20 A	1	#10	3		1,368 VA			816 VA		4	#10	1	20 A	FAN COIL
FAN COIL	20 A	1	#10	5			396 VA			816 VA	6	#10	1	20 A	FAN COIL
FAN COIL	20 A	1	#10	7	1,368 VA			1,032 VA			8	#10	1	20 A	FAN COIL
FAN COIL	20 A	1	#10	9		1,032 VA			1,032 VA		10	#10	1	20 A	FAN COIL
FAN COIL	20 A	1	#10	11			624 VA			0 VA	12	--	1	20 A	EXISTING
FAN COIL	20 A	1	#10	13	1,032 VA			0 VA			14	--	1	20 A	EXISTING
EXISTING	20 A	1	--	15		0 VA			0 VA		16	--	1	20 A	EXISTING
FAN COIL	20 A	3	#10	17			1,069 VA			0 VA	18	--	1	20 A	EXISTING
				19	1,069 VA			0 VA			20	--	1	20 A	EXISTING
				21		1,069 VA			0 VA		22	--	1	20 A	EXISTING
FAN COIL	20 A	3	#10	23			1,069 VA			0 VA	24	--	1	20 A	EXISTING
				25	1,069 VA			0 VA			26	--	1	20 A	EXISTING
				27		1,069 VA			0 VA		28	--	1	20 A	EXISTING
EXISTING	20 A	1	--	29			0 VA			0 VA	30	--	1	20 A	EXISTING
EXISTING	20 A	1	--	31	0 VA			0 VA			32	--	1	20 A	EXISTING
EXISTING	20 A	1	--	33		0 VA			0 VA		34	--	1	20 A	EXISTING
EXISTING	20 A	1	--	35			0 VA			0 VA	36	--	1	20 A	EXISTING
EXISTING	20 A	1	--	37	0 VA			0 VA			38	--	1	20 A	EXISTING
EXISTING	20 A	1	--	39		0 VA			0 VA		40	--	1	20 A	EXISTING
EXISTING	20 A	1	--	41			0 VA			500 VA	42	#10	1	20 A	ATC
					5587	6386	4429	TOTAL (VA)							CONNECTED LOAD TOTAL
					48 A	54.7 A	36.9 A	AMPS/PHASE							15,947 VA

AIC RATING: 18,728 **AMPS RMS SYSM.**

NOTES:

K13 RATED COPPER TRANSFORMER SCHEDULE

PRIMARY (LINE) SIDE 480D, 3P, 3W											SECONDARY (LOAD) SIDE 208/120Y, 3P, 5W, 200% NEUTRAL							
TRANS KVA	O.C. PROT.	TYPE COND.*	COND. AMPS	SETS	CONDUCTOR QUAN.	CONDUCTOR SIZE	GROUND COND.	CONDUIT SIZE	GEC (1)	MIN. Z%	O.C. PROT.	TYPE COND.*	COND. AMPS	SETS	CONDUCTOR QUAN.	CONDUCTOR SIZE	CONDUIT SIZE	BONDING JUMPER (2)
15	30	P015	30	1	3	10	10	3/4"	10	3	60	S015-2	68	1	5	3	2"	8
30	50	P030	50	1	3	6	8	1"	6	3	100	S030-2	120	1	5	1/0	2"	6
45	70	P045	70	1	3	4	8	1-1/4"	2	3	175	S045-2	184	1	5	4/0	3"	2
75	125	P075	125	1	3	1/0	6	2"	2	3	225	S075-2	248	1	5	350	3"	2
112.5	175	P112	175	1	3	2/0	6	2"	1/0	4	400	S112-2	408	2	5	250	3"	1/0
150	300	P150	310	1	3	350	3	3"	2/0	4	600	S150-2	608	2	5	500	4"	2/0
225	400	P225	380	1	3	500	3	4"	3/0	4	800	S225-2	804	3	5	400	4"	3/0
300	600	P300	620	2	3	350	1	3"	3/0	5	1200	S300-2	1216	4	5	500	4"	250
500	800	P500	760	2	3	500	1/0	4"	3/0	5	1600	S500-2	1608	6	5	400	4"	300
750	1200	P750	1260	4	3	350	3/0	3"	3/0	5	3000	S750-2	3040	10	5	500	4"	750

NOTES:
(1) GROUNDING ELECTRODE CONDUCTOR. (NEC 250.66)
(2) SUPPLY SIDE BONDING JUMPER. (NEC 250.102 (C)(1))

KEYNOTES

X1 EXISTING SQUARE D POWER-STYLE 1400A 208V 3P SWITCHBOARD TO REMAIN AND BE PROTECTED IN PLACE. CONTRACTOR SHALL PROVIDE NEW BREAKERS WITHIN SQUARE D POWER-STYLE EQUIPMENT. COORDINATE BREAKER REQUIREMENTS WITH SQUARE D REPRESENTATIVE.

X3 FEEDER UPSIZED FOR VOLTAGE DROP. PROVIDE ALL REQUIRED LUG ADAPTERS, PIN REDUCERS, POLARIS LUG KITS, ETC. AS REQUIRED. PROVIDE NEC SIZED JUNCTION BOX AHEAD OF PANELBOARD/GEAR AS NEEDED TO LOCATED AND TERMINATE CONDUCTORS ON POLARIS LUG ADAPTERS (<10' FROM FINAL TERMINATION AT PANELBOARD).â€¯ SIZE DOWN TO CONDUCTORS THAT FIT THE AVAILABLE LUGS AND/OR BREAKERS.

X4 PROVIDE NEW 300A 208V 3P BREAKER WITHIN EXISTING SQUARE D POWER-STYLE MDP.

PANELBOARD SCHEDULE

PANEL: 'S' **TYPE:** Do Not Use; Use... **VOLTS:** 208Y/120, 3Φ, 4W **PHASE:** 3 **WIRES:** 4

LOCATION: STORAGE 7 **MAINS/BUS AMPS:** 400 **LUGS:** Standard
FED FROM: 'MDP' **MAIN DISC. TYPE:** MLO DOOR-IN-DOOR
MOUNTING: **MAIN DISC. TRIP:** MLO 200% NEUTRAL
BUSSING: Do Not Use; Use Current Rating ISO GROUND
SPD

BRANCH BREAKERS

ITEM	AMPS	POLE	WIRE SIZE	CIR. NO.	A	B	C	A	B	C	CIR. NO.	WIRE SIZE	POLE	AMPS	ITEM
EXISTING	20 A	1	--	1	0 VA			0 VA			2	--	1	20 A	EXISTING
EXISTING	20 A	1	--	3		0 VA			0 VA		4	--	1	20 A	EXISTING
EXISTING	20 A	1	--	5			0 VA			0 VA	6	--	1	20 A	EXISTING
EXISTING	20 A	1	--	7	0 VA			0 VA			8	--	1	20 A	EXISTING
EXISTING	20 A	1	--	9		0 VA			0 VA		10	--	1	20 A	EXISTING
EXISTING	20 A	1	--	11			0 VA			0 VA	12	--	1	20 A	EXISTING
EXISTING	20 A	1	--	13	0 VA			0 VA			14	--	1	20 A	EXISTING
EXISTING	20 A	1	--	15		0 VA			0 VA		16	--	1	20 A	EXISTING
EXISTING	20 A	1	--	17			0 VA			0 VA	18	--	1	20 A	EXISTING
EXISTING	20 A	1	--	19	0 VA			0 VA			20	--	1	20 A	EXISTING
EXISTING	20 A	1	--	21		0 VA			0 VA		22	--	1	20 A	EXISTING
EXISTING	20 A	1	--	23			0 VA			0 VA	24	--	1	20 A	EXISTING
EXISTING	20 A	1	--	25	0 VA			0 VA			26	--	1	20 A	EXISTING
EXISTING	20 A	1	--	27		0 VA			0 VA		28	--	1	20 A	EXISTING
EXISTING	20 A	1	--	29			0 VA			384 VA	30	#10	1	20 A	CABINET UNIT HEATER, Room 1, 2, 9
EXISTING	20 A	1	--	31	0 VA			0 VA			32	--	1	20 A	EXISTING
EXISTING	20 A	1	--	33		0 VA			0 VA		34	--	1	20 A	EXISTING
EXISTING	20 A	1	--	35			0 VA			0 VA	36	--	1	20 A	EXISTING
EXISTING	20 A	1	--	37	0 VA			0 VA			38	--	1	20 A	EXISTING
EXISTING	20 A	1	--	39		0 VA			0 VA		40	--	1	20 A	EXISTING
EXISTING	20 A	1	--	41			0 VA			0 VA	42	--	1	20 A	SPARE
					0	0	384	TOTAL (VA)							CONNECTED LOAD TOTAL
					0 A	0 A	3.2 A	AMPS/PHASE							384 VA

AIC RATING: 16,124 **AMPS RMS SYSM.**

NOTES:

COPPER CONDUCTOR & CONDUIT SCHEDULE

TYPE	MAX. O.C. PROT.	COND. AMPS	SETS	CONDUCTOR QUAN.	CONDUCTOR SIZE	CONDUIT SIZE	EQ. GND. COND.
30-2	30	30	1	2	10	3/4"	10
30-3	30	30	1	3	10	3/4"	10
30-4	30	30	1	4	10	3/4"	10
40-2	40	40	1	2	8	1"	10
40-3	40	40	1	3	8	1"	10
40-4	40	40	1	4	8	1"	10
60-2	60	55	1	2	6	1"	8
60-3	60	55	1	3	6	1"	8
60-4	60	55	1	4	6	1"	8
70-2	70	70		2	4	1"	8
70-3	70	70	1	3	4	1-1/4"	8
70-4	70	70	1	4	4	1-1/4"	8
90-2	90	85	1	2	3	1-1/4"	8
90-3	90	85	1	3	3	1-1/4"	8
90-4	90	85	1	4	3	1-1/2"	8
90-5	90	88	1	5*	1	2"	6
100-3	100	95	1	3	2	1-1/2"	6
100-4	100	95	1	4	2	1-1/2"	6
110-3	110	110	1	3	1	1-1/2"	6
110-4	110	110	1	4	1	2"	6
125-5	125	120	1	5*	1/0	2"	6
150-3	150	150	1	3	1/0	2"	6
150-4	150	150	1	4	1/0	2"	6
150-5	150	140	1	5*	2/0	2"	6
175-3	175	175	1	3	2/0	2"	6
175-4	175	175	1	4	2/0	2"	6
175-5	175	160	1	5*	3/0	2-1/2"	6
200-3	200	200	1	3	3/0	2"	6
200-4	200	200	1	4	3/0	2"	6
200-5	200	184	1	5*	4/0	2-1/2"	4
250-3	250	230	1	3	4/0	2-1/2"	4
250-4	250	230	1	4	4/0	2-1/2"	4
250-5	250	248	1	5*	350	3"	3
300-3	300	255	1	3	250	3"	4
300-4	300	255	1	4	250	3"	4
300-5	300	268	1	4	350	3"	3
350-3	350	310	1	3	350	3"	3
350-4	350	310	1	4	350	3"	3
350-5	350	304	1	5*	500	4"	3
400-3	400	380	1	3	500	4"	3
400-4	400	380	1	4	500	4"	3
400-5	400	368	2	5*	4/0	3"	3
600-3	600	620	2	3	350	3"	1
600-4	600	620	2	4	350	3"	1
600-5	600	608	2	5*	500	3"	1
800-3	800	760	2	3	500	4"	1/0
800-4	800	760	2	4	500	4"	1/0
800-5	800	744	3	5*	350	4"	1/0
1000-3	1000	1140	3	3	500	4"	2/0
1000-4	1000	1140	3	4	500	4"	2/0
1000-5	1000	1072	4	5*	400	4"	2/0
1200-3	1200	1240	4	3	350	4"	3/0
1200-4	1200	1240	4	4	350	4"	3/0
1200-5	1200	1216	4	5*	500	4"	3/0
1600-3	1600	1675	5	3	400	4"	4/0
1600-4	1600	1675	5	4	400	4"	4/0
1600-5	1600	1608	6	5*	400	4"	4/0
2000-4	2000	2010	6	4	400	4"	250
2500-4	2500	2660	7	4	500	4"	350
3000-4	3000	3040	8	4	500	4"	400
4000-4	4000	4180	11	4	500	4"	500

NOTES:
1. FOR GROUND CONDUCTOR IN PARALLEL RUNS, SIZE IN ACCORDANCE WITH NEC PARAGRAPH 250-122.
2. GND. CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS
3. ALL COPPER CABLE TO BE THHN/THWN.

* 200% NEUTRAL, DERATED TO 80% BASED ON NEC 310.15.B(5)(C)

ALUMINUM CONDUCTOR & CONDUIT SCHEDULE

TYPE	MAX. O.C. PROT.	COND. AMPS	SETS	CONDUCTOR QUAN.	CONDUCTOR SIZE	CONDUIT SIZE	EQ. GND. COND.(AL)
100-5	100	96	1	5*	1/0	2"	4
125-3	125	120	1	3	1/0	2"	4
125-4	125	120	1	4	1/0	2"	4
125-5	125	124	1	5*	3/0	3"	4
150-3	150	135	1	3	2/0	2"	4
150-4	150	135	1	4	2/0	2"	4
150-5	150	144	1	5*	4/0	3"	2
175-3	175	155	1	3	3/0	2"	4
175-4	175	155	1	4	3/0	2"	4
175-5	175	164	1	5*	250	3"	2
200-3	200	180	1	3	4/0	2"	4
200-4	200	180	1	4	4/0	3"	4
200-5	200	184	1	5*	300	3"	2
225-3	225	205	1	3	250	2"	2
225-4	225	205	1	4	250	3"	2
225-5	225	216	1	5*	400	3"	2
250-3	250	230	1	3	300	3"	2
250-4	250	230	1	4	300	3"	2
250-5	250	248	1	5*	500	4"	1
300-3	300	270	1	3	400	3"	2
300-4	300	270	1	4	400	3"	2
300-5	300	270	1	5*	600	4"	2
350-3	350	310	1	3	500	4"	1
350-4	350	310	1	4	500	4"	1
350-5	350	308	1	5*	750	4"	1
400-3	400	410	2	3	250	2-1/2"	2/0
400-4	400	410	2	4	250	2-1/2"	2/0
400-5	400	400	2	5*	350	3"	2/0
600-3	600	620	2	3	500	3"	2/0
600-4	600	620	2	4	500	3"	2/0
600-5	600	600	3	5*	350	3"	2/0
800-3	800	810	3	3	400	2-1/2"	3/0
800-4	800	810	3	4	400	3"	3/0
800-5	800	800	4	5*	350	4"	3/0
1000-3	1000	1155	3	3	750	4"	4/0
1000-4	1000	1155	3	4	750	4"	4/0
1000-5	1000	1000	5	5*	350	4"	4/0
1200-3	1200	1240	4	3	500	4"	250
1200-4	1200	1240	4	4	500	4"	250
1200-5	1200	1240	5	5*	500	4"	250
1600-3	1600	1620	6	3	400	4"	350
1600-4	1600	1620	6	4	400	4"	350
1600-5	1600	1736	7	5*	500	4"	350
2000-4	2000	2310	6	4	750	4"	400
2500-4	2500	2695	7	4	750	5"	600
3000-4	3000	3080	8	4	750	5"	600
4000-4	4000	4235	11	4	750	5"	750

NOTES:
IN PARALLEL RUNS SIZE GND. COND. IN ACCORDANCE WITH NEC PARA. 250-122.

GND. CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS

* 200% NEUTRAL, DERATED TO 80% BASED ON NEC 310.15.B(5)(C)

** COPPER CONDUCTOR (XHHW)

PROVIDE COMPACT STRANDED ALUMINUM ASSOCIATION 8000 SERIES ALLOY CONDUCTORS.

PROVIDE TERMINATION FOR ALUMINUM ALLOY CONDUCTORS OF HYDRAULIC COMPRESSION TYPE ONLY, LISTED UNDER UL 486-B, MARKED "AL7CU" FOR 75 DEGREE RATED CIRCUITS.

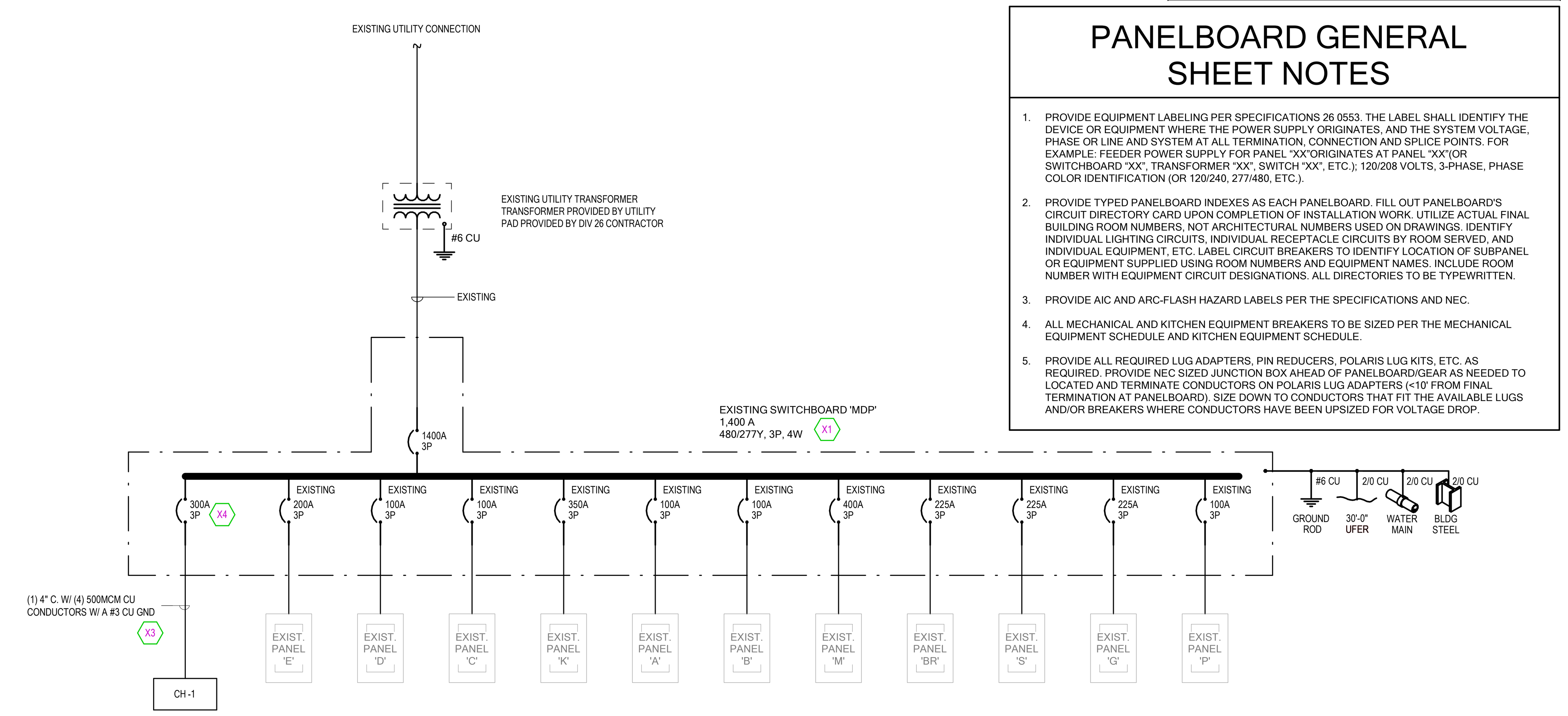
PROVIDE ALL ELECTRICAL EQUIPMENT WITH PROPER SIZING TO ACCOMMODATE ALUMINUM CONDUCTORS. COORDINATE WITH EQUIPMENT SUPPLIER.

COPPER CONDUCTOR & CONDUIT SCHEDULE

TYPE	MAX. O.C. PROT.	COND. AMPS	SETS	CONDUCTOR QUAN.	CONDUCTOR SIZE	CONDUIT SIZE	EQ. GND. COND.(CU)
30-2	30	30	1	2	10	3/4"	10
30-3	30	30	1	3	10	3/4"	10
30-4	30	30	1	4	10	3/4"	10
40-2	40	40	1	2	8	1"	10
40-3	40	40	1	3	8	1"	10
40-4	40	40	1	4	8	1"	10
60-2	60	55	1	2	6	1"	8
60-3	60	55	1	3	6	1"	8
60-4	60	55	1	4	6	1"	8
70-2	70	70	1	2	4	1"	8
70-3	70	70	1	3	4	1-1/4"	8
70-4	70	70	1	4	4	1-1/4"	8
90-2	90	85	1	2	3	1-1/4"	8
90-3	90	85	1	3	3	1-1/4"	8
90-4	90	85	1	4	3	1-1/2"	8
100-3	100	95	1	3	2	1-1/2"	6
100-4	100	95	1	4	2	1-1/2"	6

PANELBOARD GENERAL SHEET NOTES

1. PROVIDE EQUIPMENT LABELING PER SPECIFICATIONS 26 0553. THE LABEL SHALL IDENTIFY THE DEVICE OR EQUIPMENT WHERE THE POWER SUPPLY ORIGINATES, AND THE SYSTEM VOLTAGE, PHASE OR LINE AND SYSTEM AT ALL TERMINATION, CONNECTION AND SPLICE POINTS. FOR EXAMPLE: FEEDER POWER SUPPLY FOR PANEL "XX"ORIGINATES AT PANEL "XX"(OR SWITCHBOARD "XX", TRANSFORMER "XX", SWITCH "XX", ETC.); 120/208 VOLTS, 3-PHASE, PHASE COLOR IDENTIFICATION (OR 120/240, 277/480, ETC.).
2. PROVIDE TYPED PANELBOARD INDEXES AS EACH PANELBOARD. FILL OUT PANELBOARD'S CIRCUIT DIRECTORY CARD UPON COMPLETION OF INSTALLATION WORK. UTILIZE ACTUAL FINAL BUILDING ROOM NUMBERS, NOT ARCHITECTURAL NUMBERS USED ON DRAWINGS. IDENTIFY INDIVIDUAL LIGHTING CIRCUITS, INDIVIDUAL RECEPTACLE CIRCUITS BY ROOM SERVED, AND INDIVIDUAL EQUIPMENT, ETC. LABEL CIRCUIT BREAKERS TO IDENTIFY LOCATION OF SUBPANEL OR EQUIPMENT SUPPLIED USING ROOM NUMBERS AND EQUIPMENT NAMES. INCLUDE ROOM NUMBER WITH EQUIPMENT CIRCUIT DESIGNATIONS. ALL DIRECTORIES TO BE TYPEWRITTEN.
3. PROVIDE AIC AND ARC-FLASH HAZARD LABELS PER THE SPECIFICATIONS AND NEC.
4. ALL MECHANICAL AND KITCHEN EQUIPMENT BREAKERS TO BE SIZED PER THE MECHANICAL EQUIPMENT SCHEDULE AND KITCHEN EQUIPMENT SCHEDULE.
5. PROVIDE ALL REQUIRED LUG ADAPTERS, PIN REDUCERS, POLARIS LUG KITS, ETC. AS REQUIRED. PROVIDE NEC SIZED JUNCTION BOX AHEAD OF PANELBOARD/GEAR AS NEEDED TO LOCATED AND TERMINATE CONDUCTORS ON POLARIS LUG ADAPTERS (<10' FROM FINAL TERMINATION AT PANELBOARD). SIZE DOWN TO CONDUCTORS THAT FIT THE AVAILABLE LUGS AND/OR BREAKERS WHERE CONDUCTORS HAVE BEEN UPSIZED FOR VOLTAGE DROP.



1 Electrical One-Line Diagram
12" = 1'-0"

RESOLUT

KMA ARCHITECTS
170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY:	MK
CHECKED BY:	ES
DATE:	JAN. 2026
PROJECT #:	176525

EG003

NOTES:

TMGB - TELECOMMUNICATIONS MAIN GROUNDING BUS.

IBT - INTERSYSTEM BONDING TERMINAL.

BC - BONDING CONDUCTOR.

MBJ - MAIN BONDING JUMPER.

EGB - EQUIPMENT GROUNDING BUS.

NOTES:

1. SIZE PER NEC 250.66.
2. PROVIDE GROUNDING/BONDING SYSTEM CONNECTIONS TO MAIN ELECTRICAL SERVICE AT THE LOCATION OF THE THE MAIN SERVICE DISCONNECT.

BC CONDUCTOR SIZE

D 25'-#4 CU
D 50'-#1 CU
D 75'-#2/0 CU
> 75'-#3/0 CU

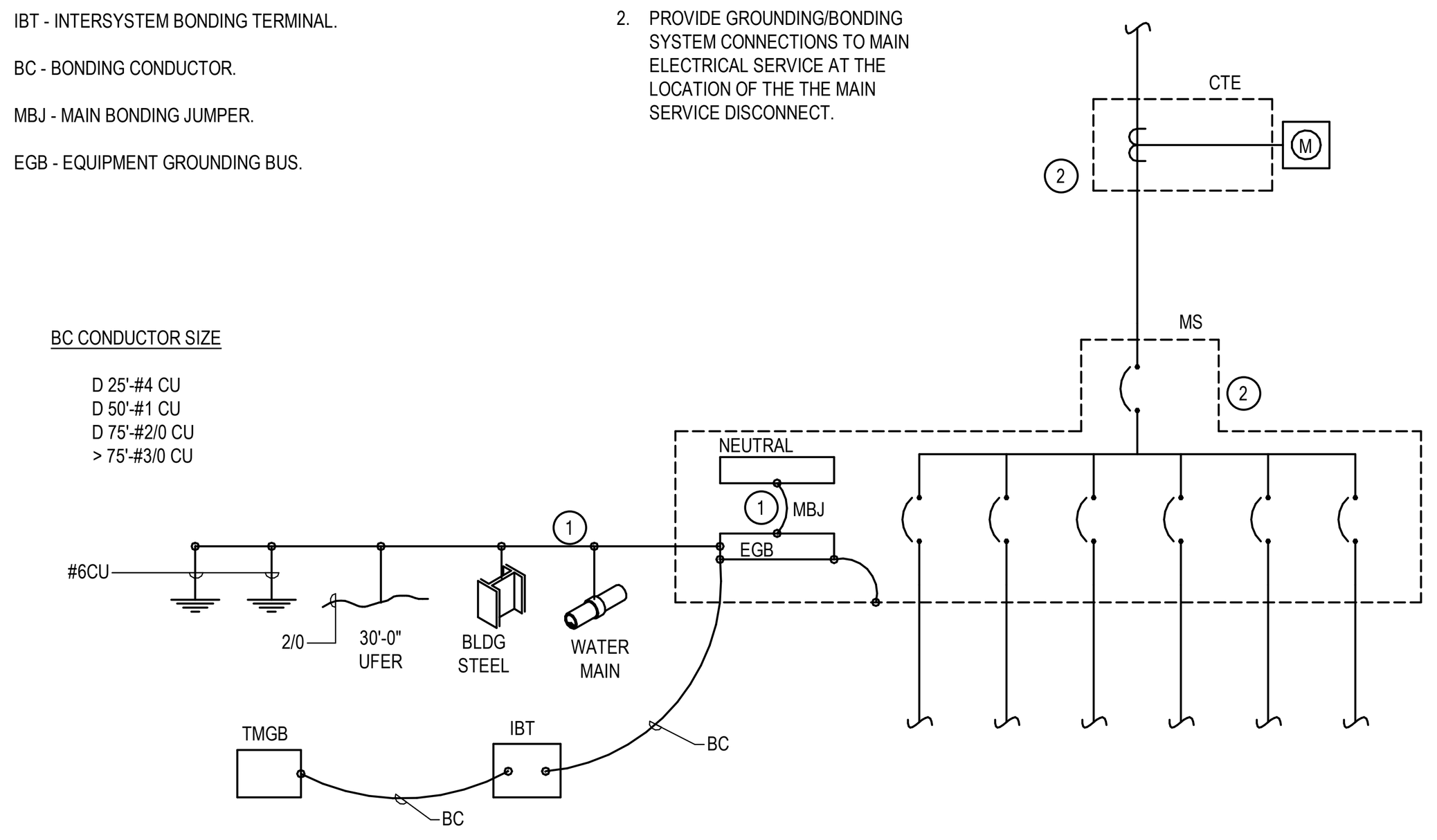


DIAGRAM (F023) ELECTRICAL SERVICES GROUNDING/BONDING
NTS

NOTES:

1. PROVIDE PULL CORD IN ALL EMPTY RACEWAYS.
2. BOND ALL RACEWAYS (SIZED PER NEC REQUIREMENTS) TO ELECTRICAL SERVICE GROUND

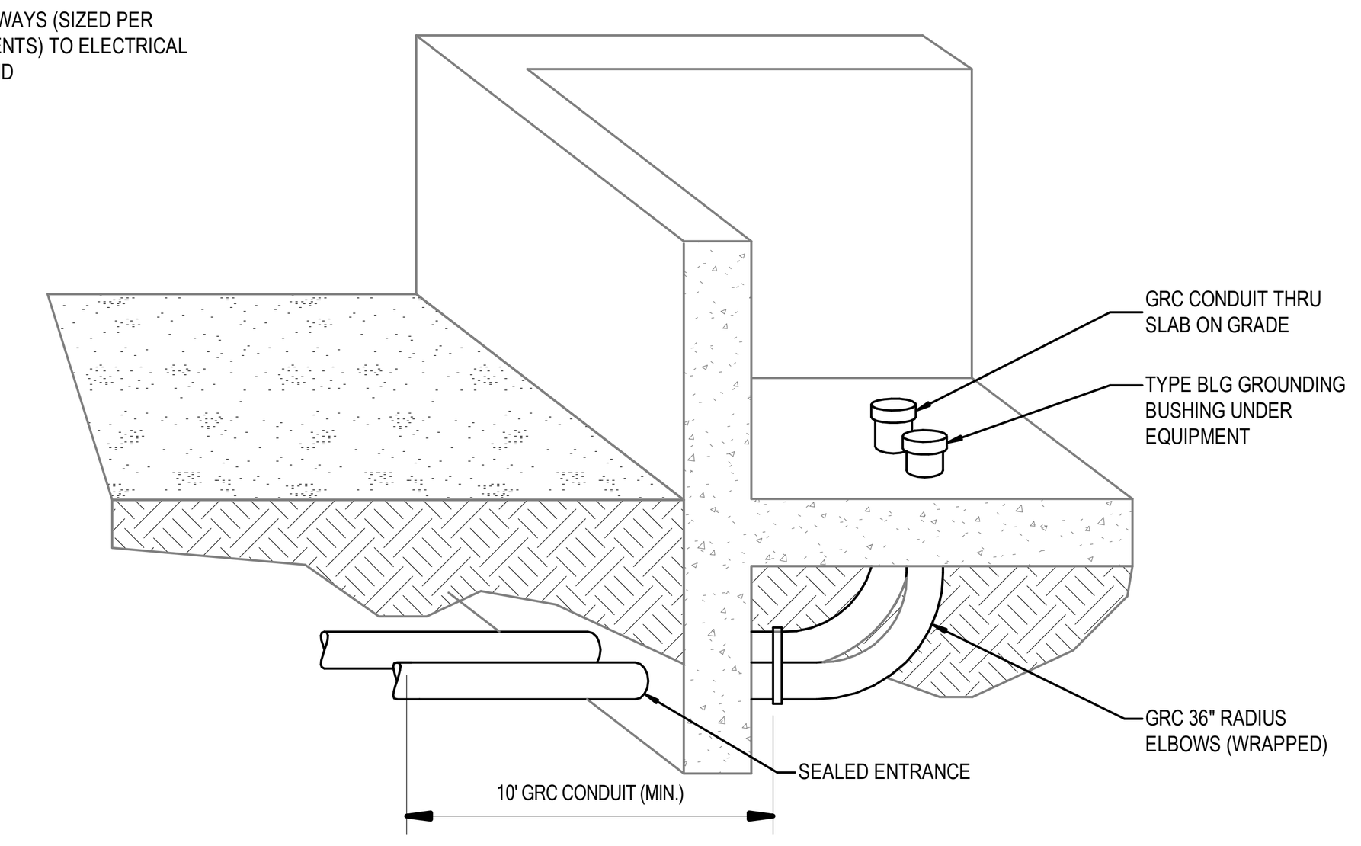


DIAGRAM (F002) BUILDING ENTRANCE CONDUITS
NTS

TYPICAL INSTALLATION FOR ELECTRICAL SYSTEMS

NOTES:

1. FREE AIR CABLE SHALL BE CLASSIFIED PLENUM RATED 2 UNSHIELDED CABLE NEC TYPE CMP AND CEC TYPE CMP FT6.SPECIAL COLOR CODE SPECIFIC TO LOW VOLTAGE BALLAST/DRIVER 0-10V WIRING PROTOCOL. PRODUCT SHALL BE MANUFACTURED TO BE IN COMPLIANT WITH THE REQUIREMENTS OF UL444 FOR INSTALLATIONS AND APPLICATIONS IN ACCORDANCE WITH NEC ARTICLES 725 AND 800.
2. FREE AIR CABLE SHALL BE INSTALLED IN A CLEAN AND CRAFTMANSHIP-LIKE MANNER. SUPPORT AT 5'-0" INTERVALS ALONG THE PATH OF THE ACCOMPANYING BRANCH CIRCUIT LIGHTING RACEWAY. PULLING WIRE DIAGONALLY ACROSS ROOMS IS NOT ALLOWED. USING CEILING SYSTEM OR LIGHT FIXTURE SUPPORT/SEISMIC WIRES FOR SUPPORT IS NOT ALLOWED
3. UTILIZE 18 AWG GAUGE WIRE FOR DISTANCES UP TO 300' AND 16 AWG FOR DISTANCES UP TO 400'.
4. SUPPORT RACEWAYS RIGIDLY ATTACHED TO THE STRUCTURE AT INTERVALS NOT TO EXCEED 8' ON CENTER. PROVIDE A MINIMUM OF 2 SUPPORTS PER 10' OF RACEWAY. SUPPORT RACEWAY WITHIN 12" OF JUNCTION BOX, COUPLING, OUTLET, OR FITTING. PROVIDE RACEWAY SUPPORTS AT EACH 90 DEGREE BEND. REFER TO SPECIFICATION FOR MARE DETAILS.
5. LOCATE LIGHTING JUNCTION BOX WITHIN 3' OF LAY IN FIXTURE.
6. MAKE SPLICES OF 0-10V CABLES INSIDE OF JUNCTION BOXES

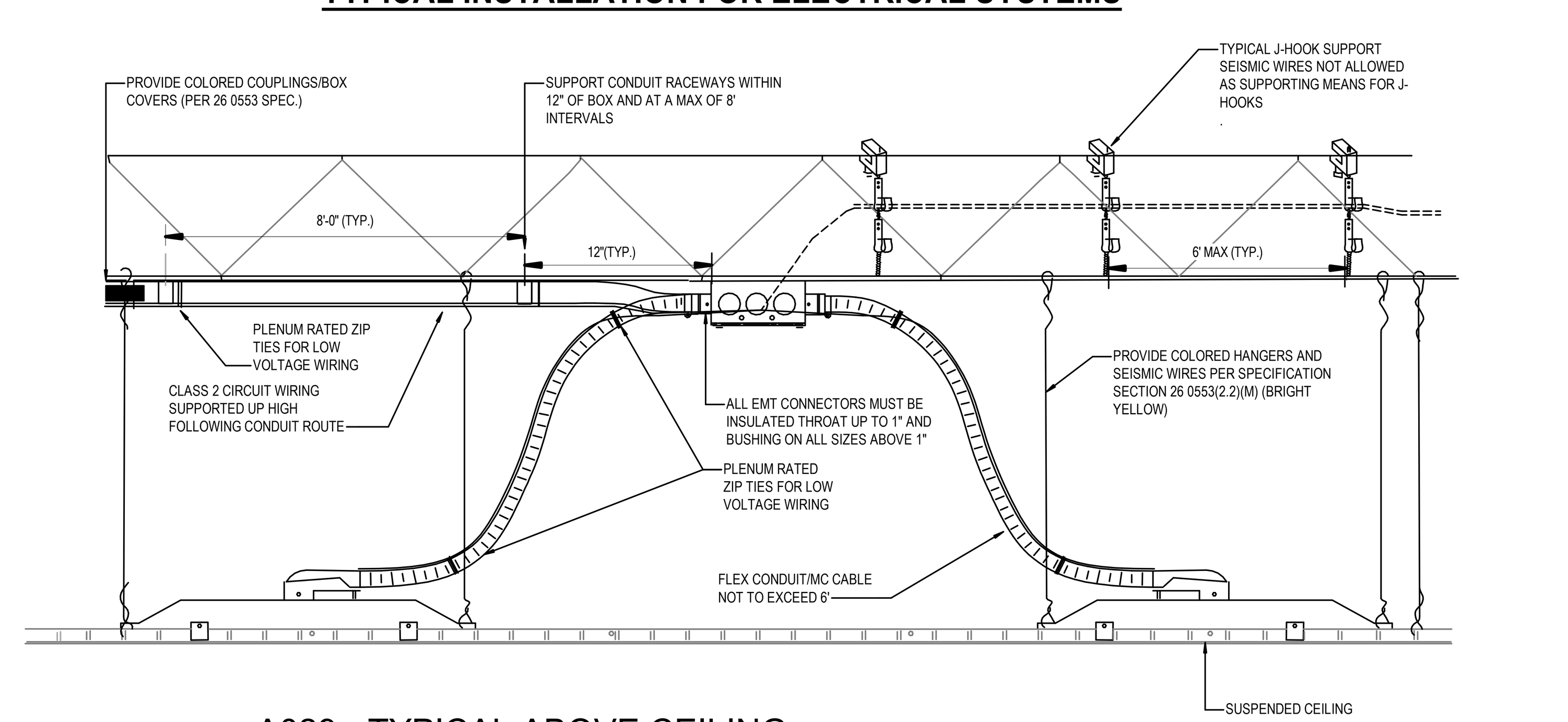
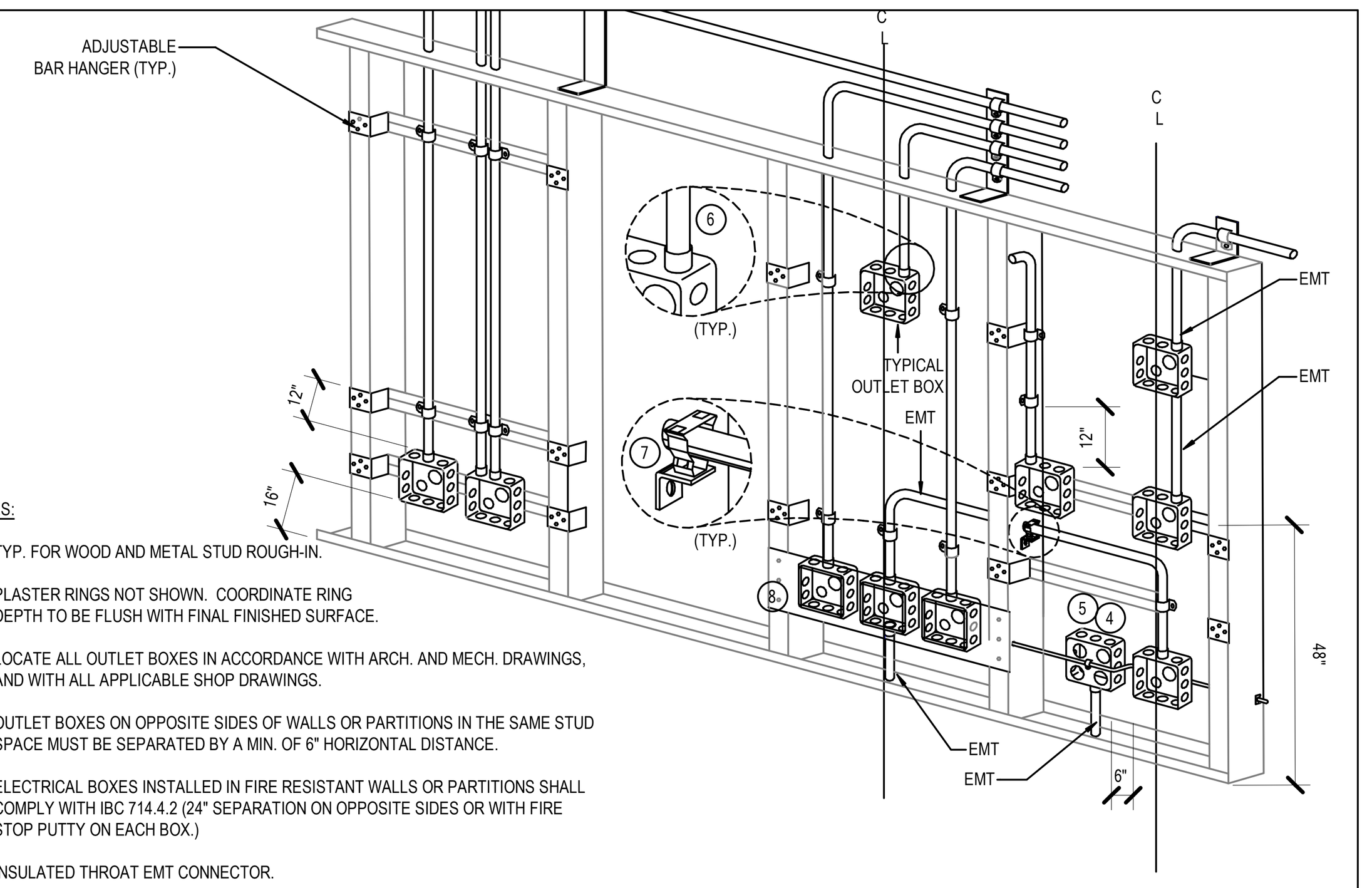


DIAGRAM (A029) A029 - TYPICAL ABOVE CEILING ROUGH-IN
NTS



NOTES:

1. TYP. FOR WOOD AND METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOWN. COORDINATE RING DEPTH TO BE FLUSH WITH FINAL FINISHED SURFACE.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCH. AND MECH. DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPARATED BY A MIN. OF 6" HORIZONTAL DISTANCE.
5. ELECTRICAL BOXES INSTALLED IN FIRE RESISTANT WALLS OR PARTITIONS SHALL COMPLY WITH IBC 714.4.2 (24" SEPARATION ON OPPOSITE SIDES OR WITH FIRE STOP PUTTY ON EACH BOX.)
6. INSULATED THROAT EMT CONNECTOR.
7. CADDY FASTENER, THROUGH STUD CABLE/CONDUIT SUPPORT .
8. CADDY BOX MOUNTING BRACKET .

DIAGRAM (H004) TYPICAL ROUGH IN REQUIREMENTS - CONDUIT
NTS

NOTES:

1. PROVIDE PULL CORD IN ALL EMPTY RACEWAYS.
2. BOND ALL RACEWAYS (SIZED PER NEC REQUIREMENTS) TO ELECTRICAL SERVICE GROUND

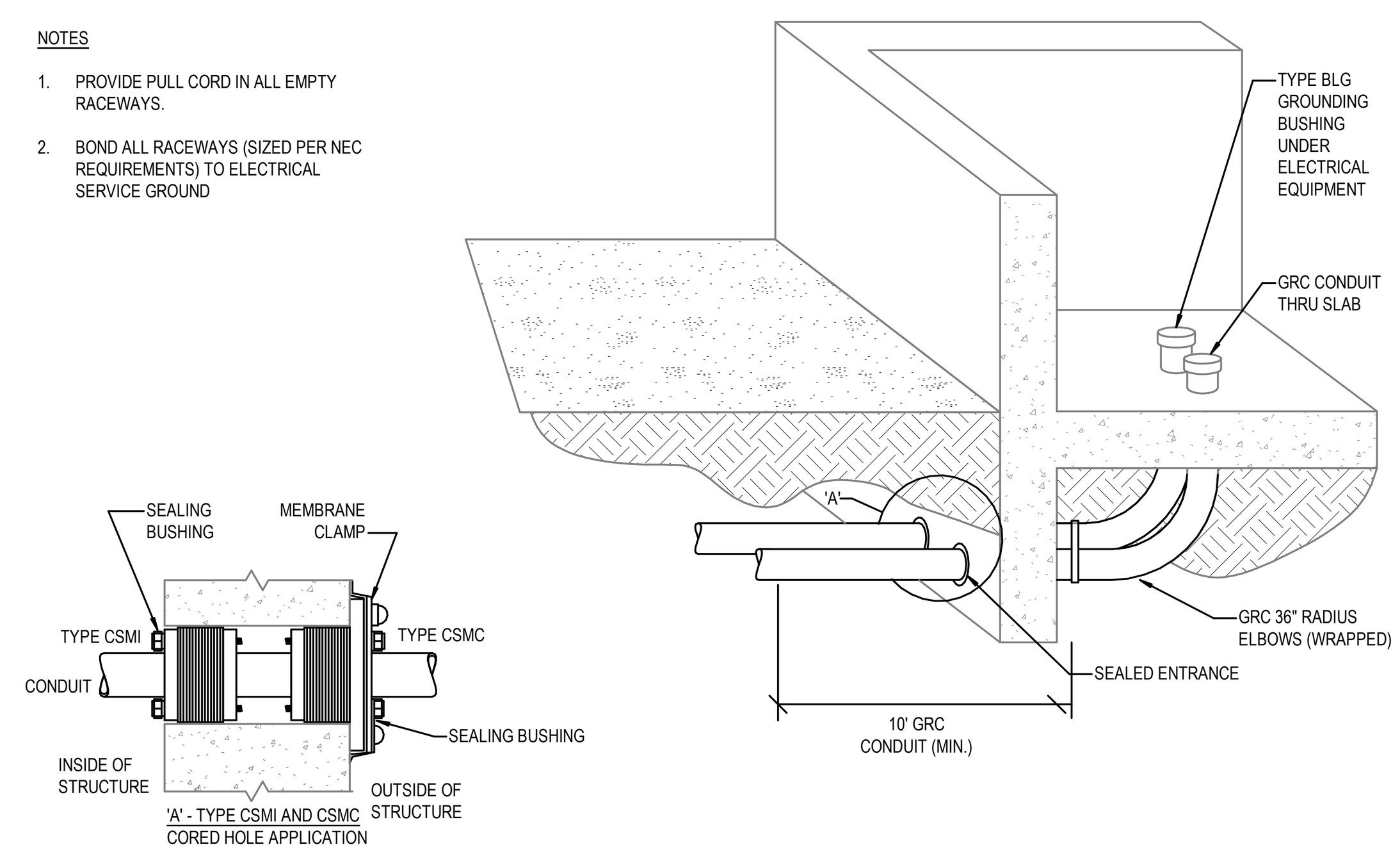


DIAGRAM (F003) BUILDING ENTRANCE CONDUITS (CORE DRILLED WALL BELOW GRADE)
NTS

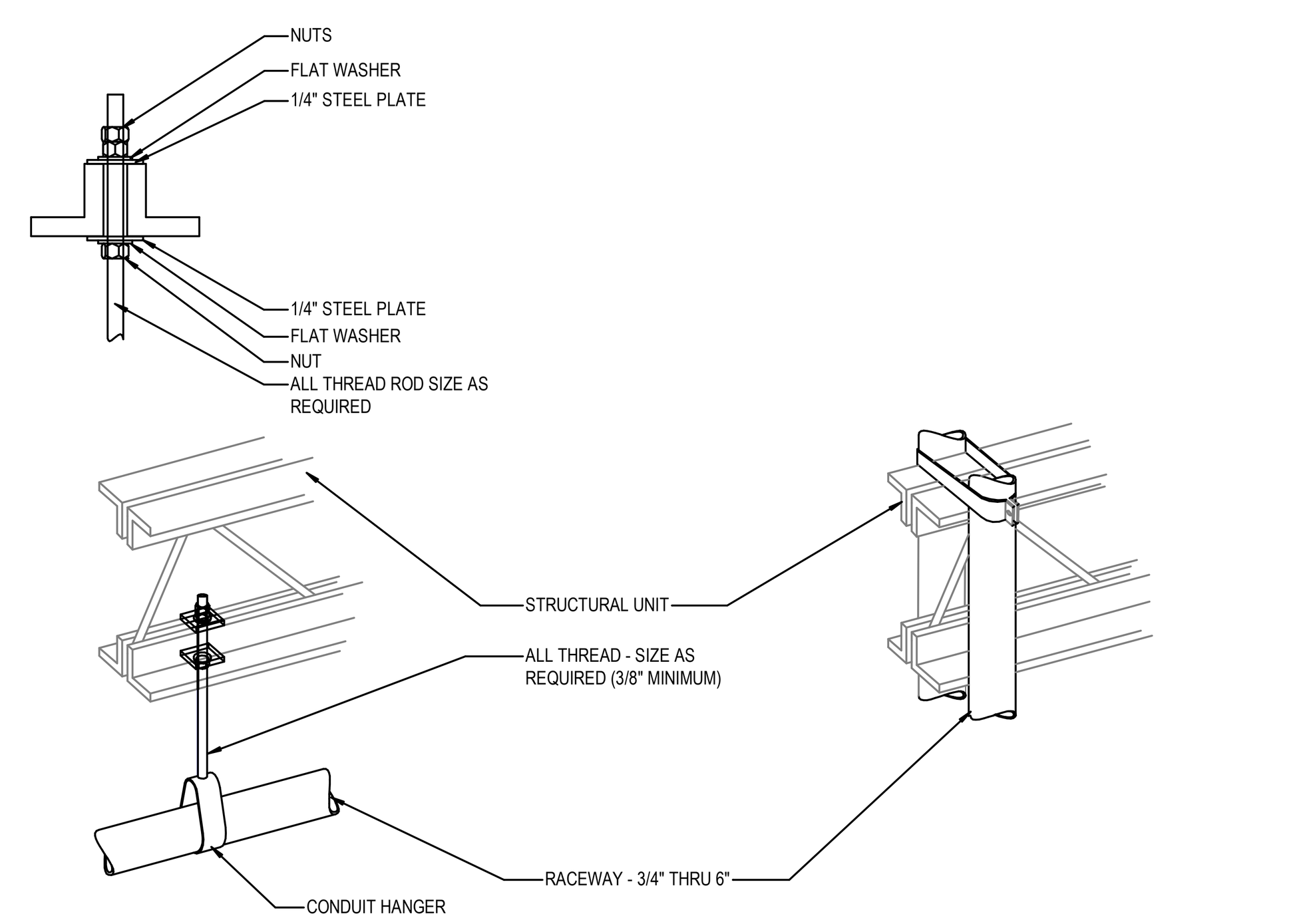
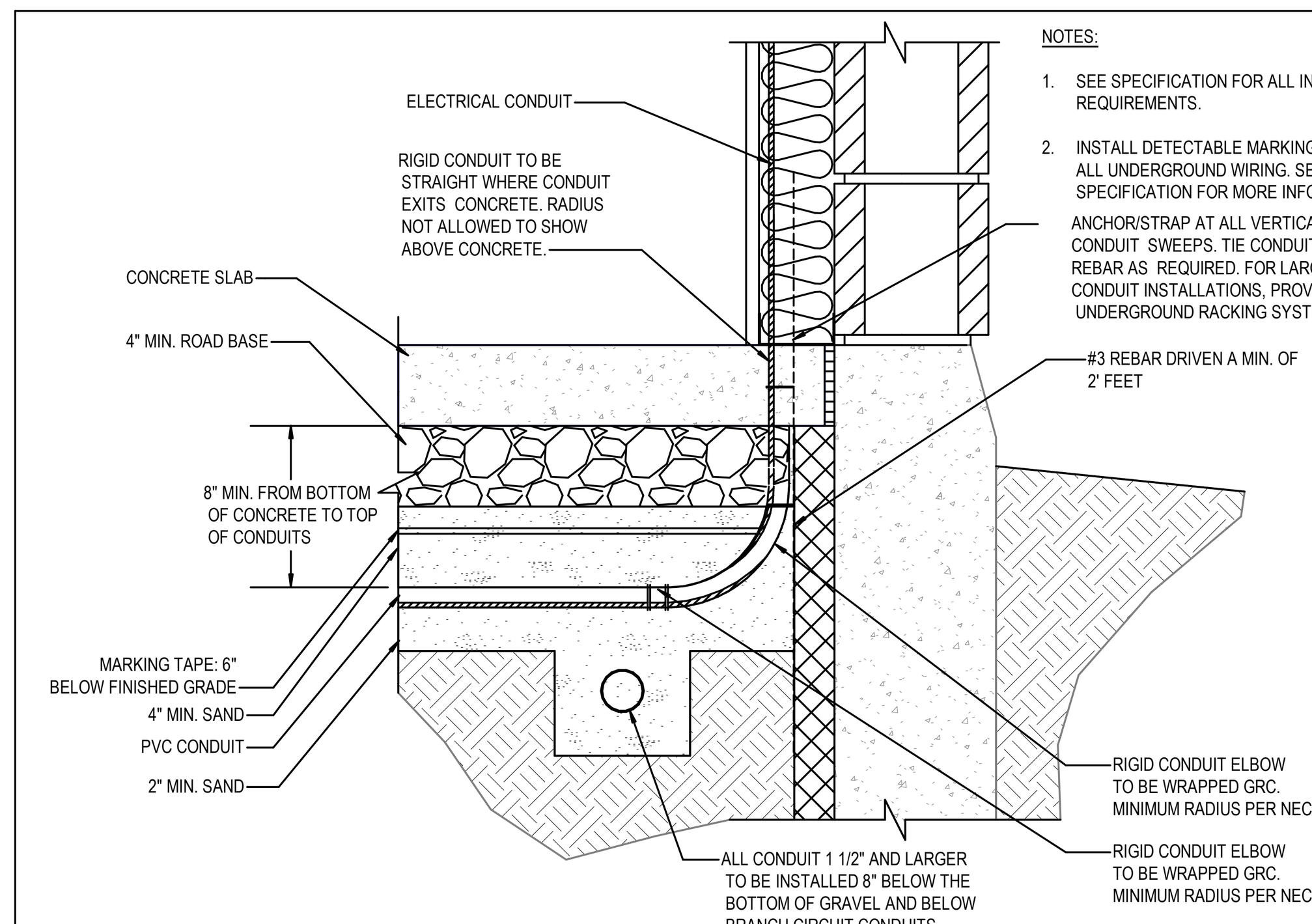


DIAGRAM (H003) TYPICAL RACEWAY SUPPORT METHODS
NTS



NOTES:

1. SEE SPECIFICATION FOR ALL INSTALLATION REQUIREMENTS.
2. INSTALL DETECTABLE MARKING TAPE FOR ALL UNDERGROUND WIRING. SEE SPECIFICATION FOR MORE INFORMATION.

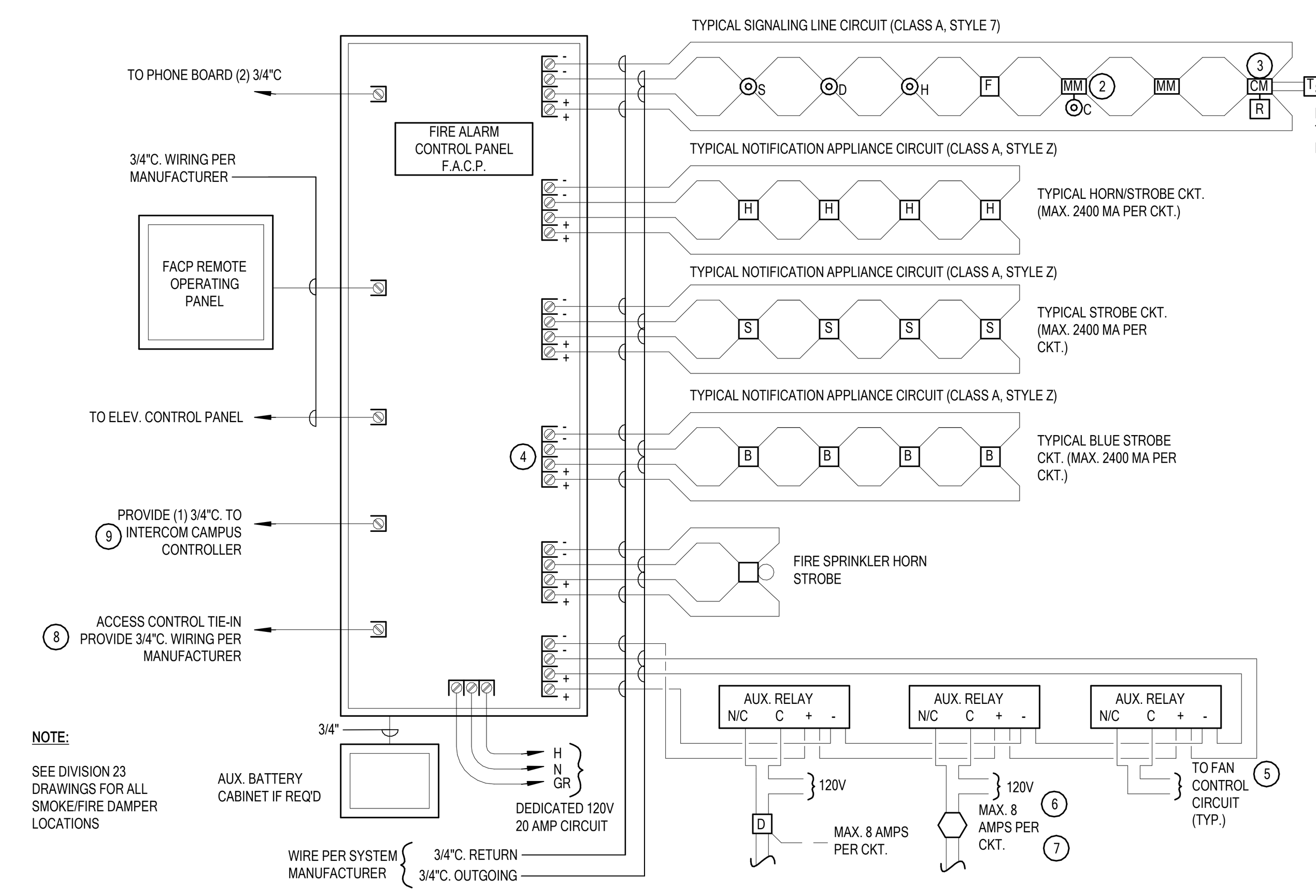
ANCHOR/STRAP AT ALL VERTICAL CONDUIT SWEEPS. TIE CONDUIT TO REBAR AS REQUIRED. FOR LARGER CONDUIT INSTALLATIONS, PROVIDE UNDERGROUND RACKING SYSTEM.

#3 REBAR DRIVEN A MIN. OF 2' FEET

DIAGRAM (F016) TYPICAL CONDUIT INSTALLATION
NTS

NOTE:

1. PROVIDE ADDRESSABLE INITIATION LOOP(S) AND POWER CIRCUIT FOR THE CARBON MONOXIDE DETECTORS.
2. PROVIDE CARBON MONOXIDE DETECTOR WITH ASSOCIATED MONITOR MODULE. SEE PLANS FOR QUANTITY AND LOCATION.
3. PROVIDE CONTROL MODULE WITH FAN SHUTDOWN RELAY TO SHUTDOWN MECHANICAL UNIT ON LOCAL CARBON MONOXIDE DETECTOR ACTIVATION.
4. PROVIDE FIRE ALARM BLUE STROBE(S). SEE PLANS FOR QUANTITY AND LOCATIONS.
5. PROVIDE DUCT SMOKE DETECTORS AND FAN RELAYS AT ALL FAN UNITS 2000 CFM AND OVER. SHUT DOWN ALL SUPPLY AND RETURN FANS UPON A GENERAL ALARM SIGNAL.
6. PROVIDE KEY OVERRIDE SWITCH FOR EVERY PAIR OF ELECTROMAGNETIC DOOR HOLDERS/RELEASES.
7. PROVIDE KEY OVERRIDE SWITCH IN MAIN ADMINISTRATION OFFICE THAT WILL RELEASE ALL ELECTROMAGNETIC DOOR HOLDER/RELEASES THROUGHOUT THE BUILDING.
8. COORDINATE WITH THE ACCESS CONTROL PROVIDER TO PROVIDE INPUT POINT THAT WILL ALLOW THE ACCESS CONTROL SYSTEM TO RELEASE ALL ELECTROMAGNETIC DOOR HOLDER/RELEASES THROUGHOUT THE BUILDING DURING A LOCK DOWN EVENT OR PER THE OWNERS REQUIREMENTS.
9. COORDINATE WITH THE INTERCOM PROVIDER TO PROVIDE INPUT POINT THAT WILL ALLOW THE INTERCOM SYSTEM TO RELEASE ALL ELECTROMAGNETIC DOOR HOLDER/RELEASES THROUGHOUT THE BUILDING DURING A LOCK DOWN EVENT OR PER THE OWNERS REQUIREMENTS.



NOTE:

SEE DIVISION 23 DRAWINGS FOR ALL SMOKE/FIRE DAMPER LOCATIONS

DIAGRAM (D002) TYPICAL FIRE ALARM RISER
NTS

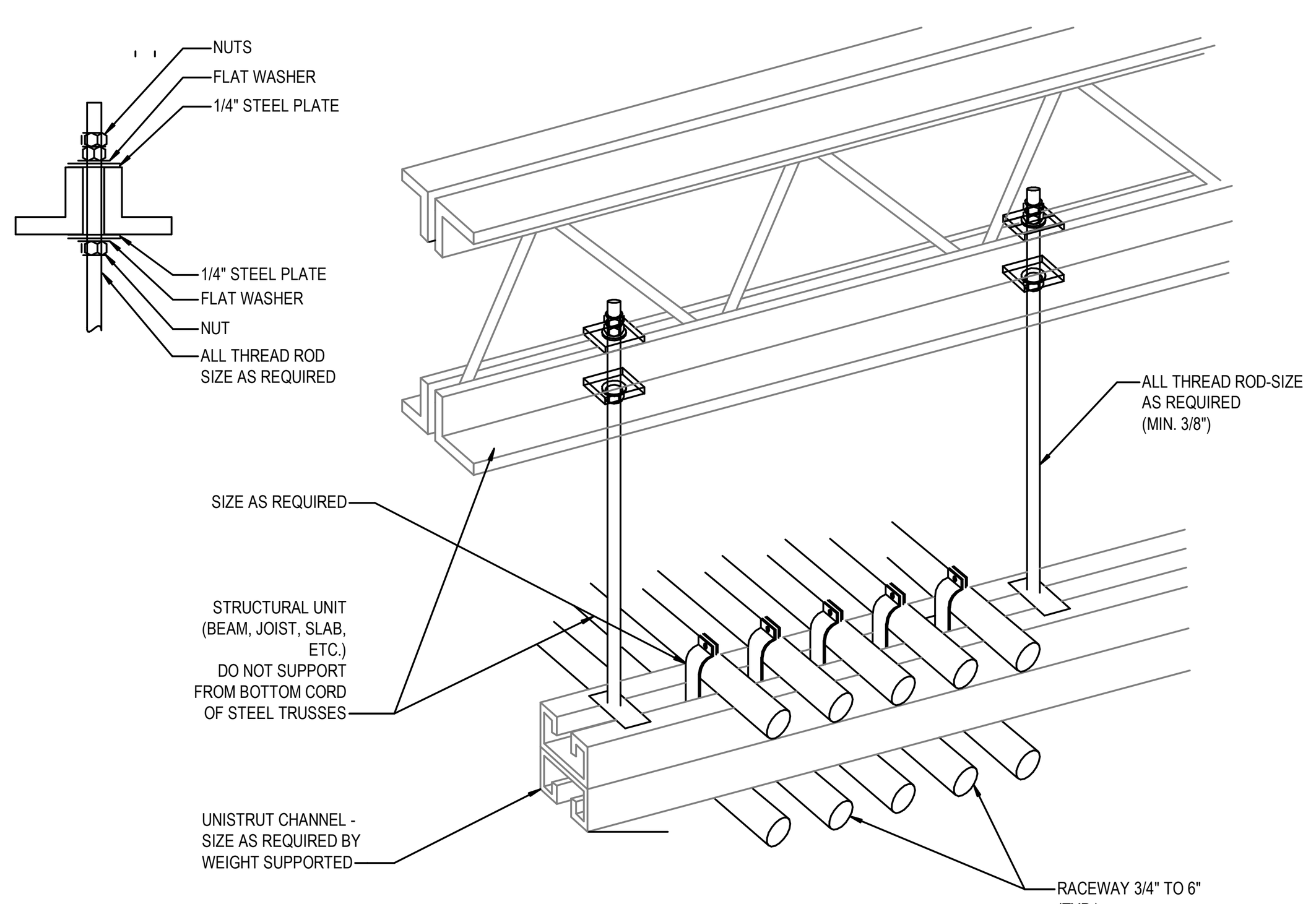
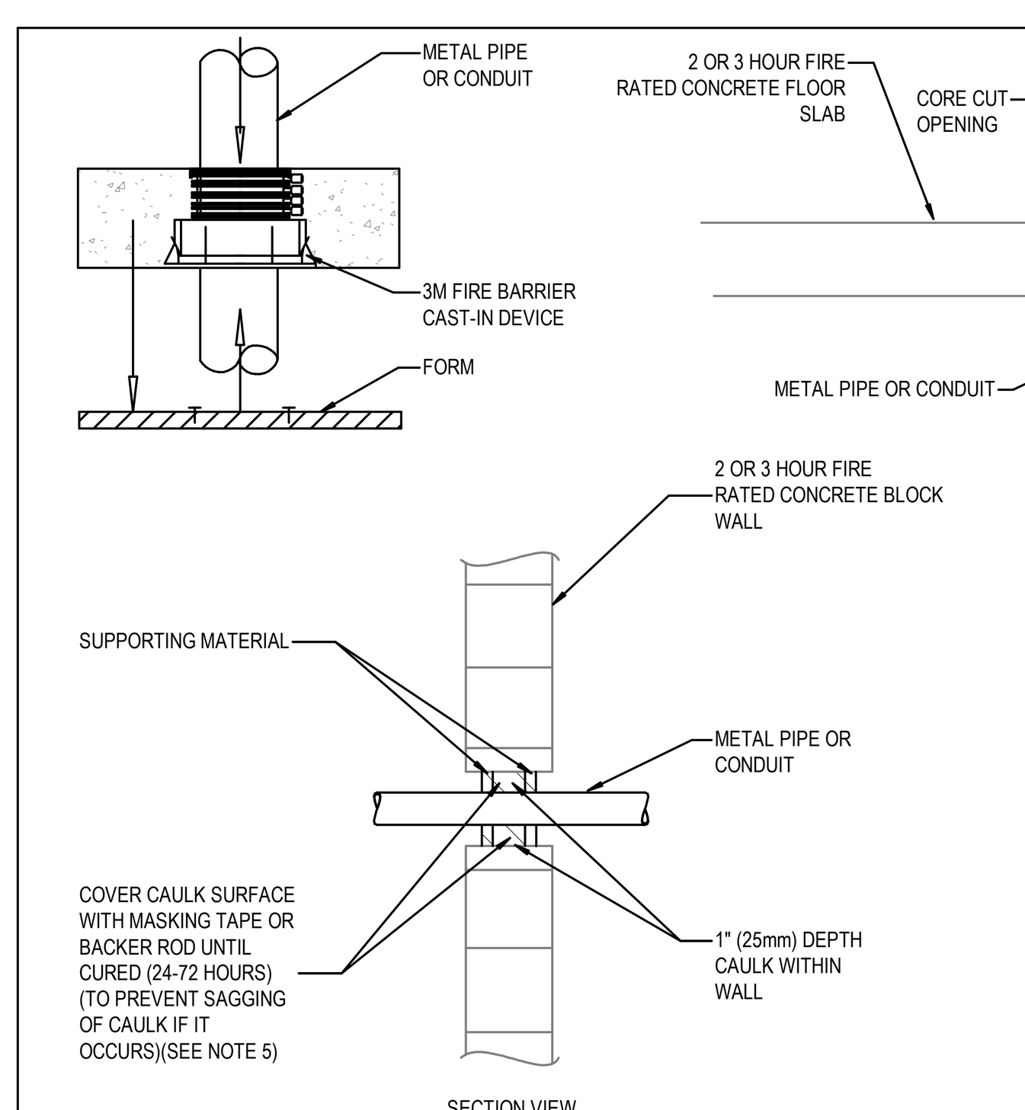
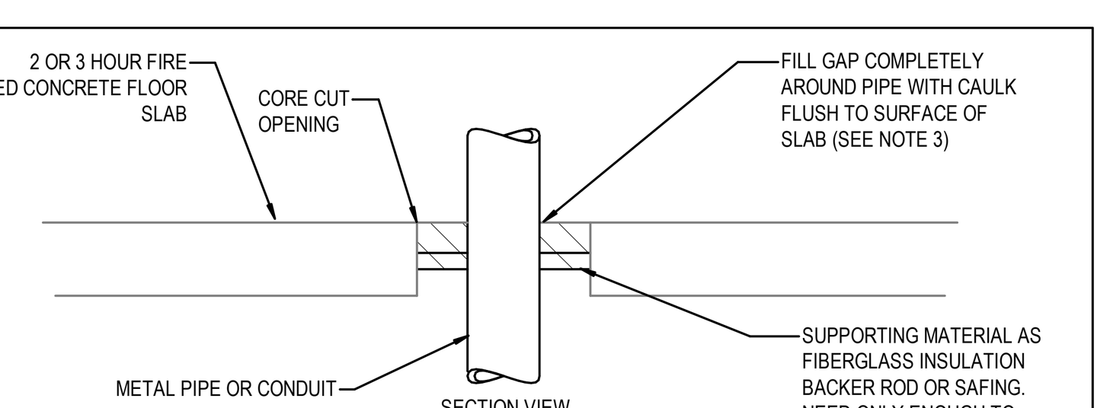


DIAGRAM (H001) TYPICAL TRAPEZE CONDUIT RACK
NTS





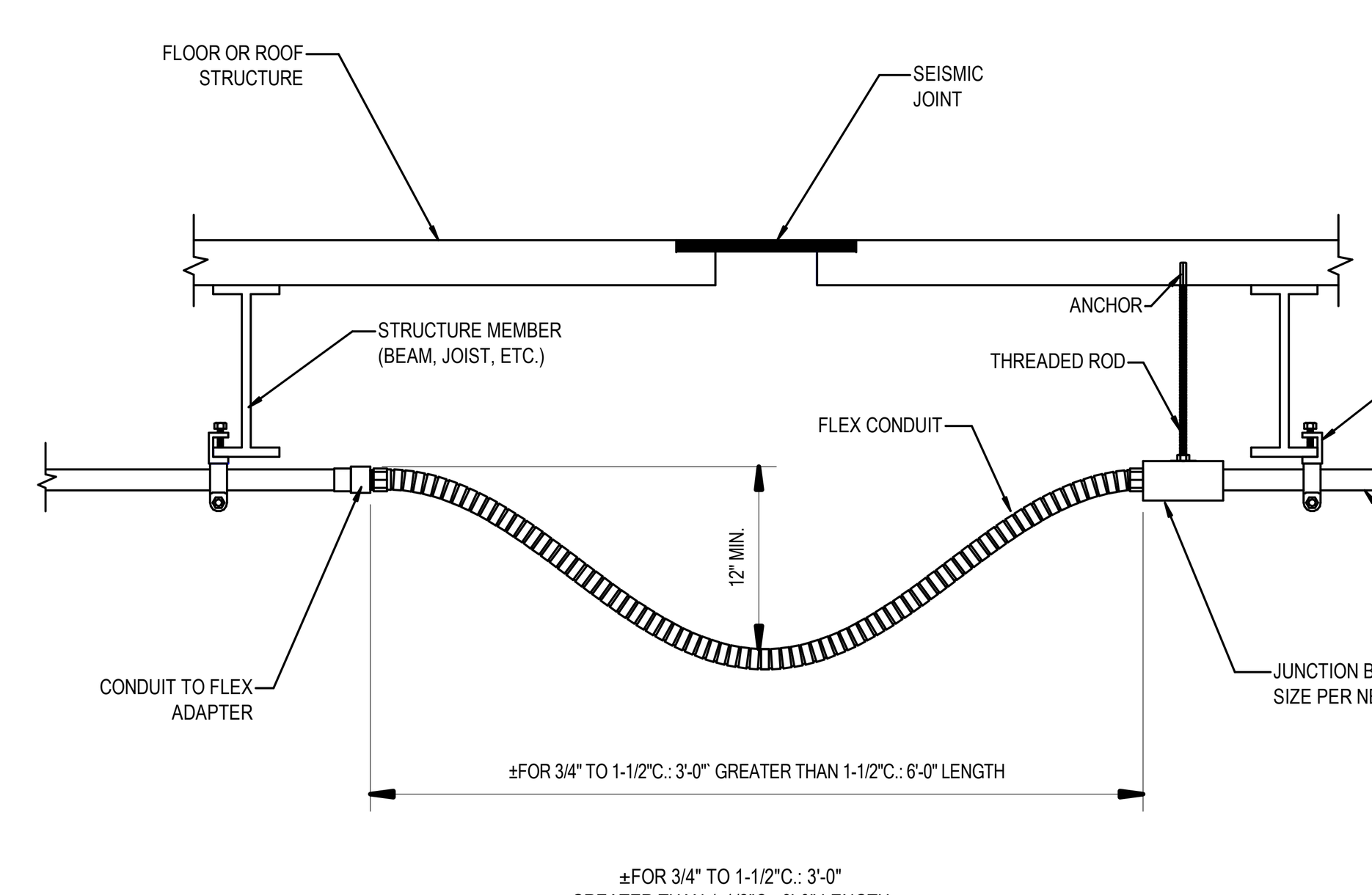
NOTES:

1. FOR CONCRETE BLOCK WALLS, CENTER CAULK CP-25 OR PUTTY 303 WITHIN WALL WITH DAMMING ON BOTH SIDES.
2. RECOMMENDATIONS BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) FIRE TEST AND UL CLASSIFICATION FIRE STOP SYSTEMS 49, 33 AND 91.
3. WET INSTALLED DEPTH OF CAULK CP-25 OR PUTTY 303 DEPENDS ON TYPE AND SIZE OF PIPE:

WET DEPTH	PIPE SIZE	FIRE RATING
-1/2" (13mm)	MAX. 8" (203mm)	2 HRS.
- 2" (25mm)	MAX. 6" (152mm)	3 HRS.

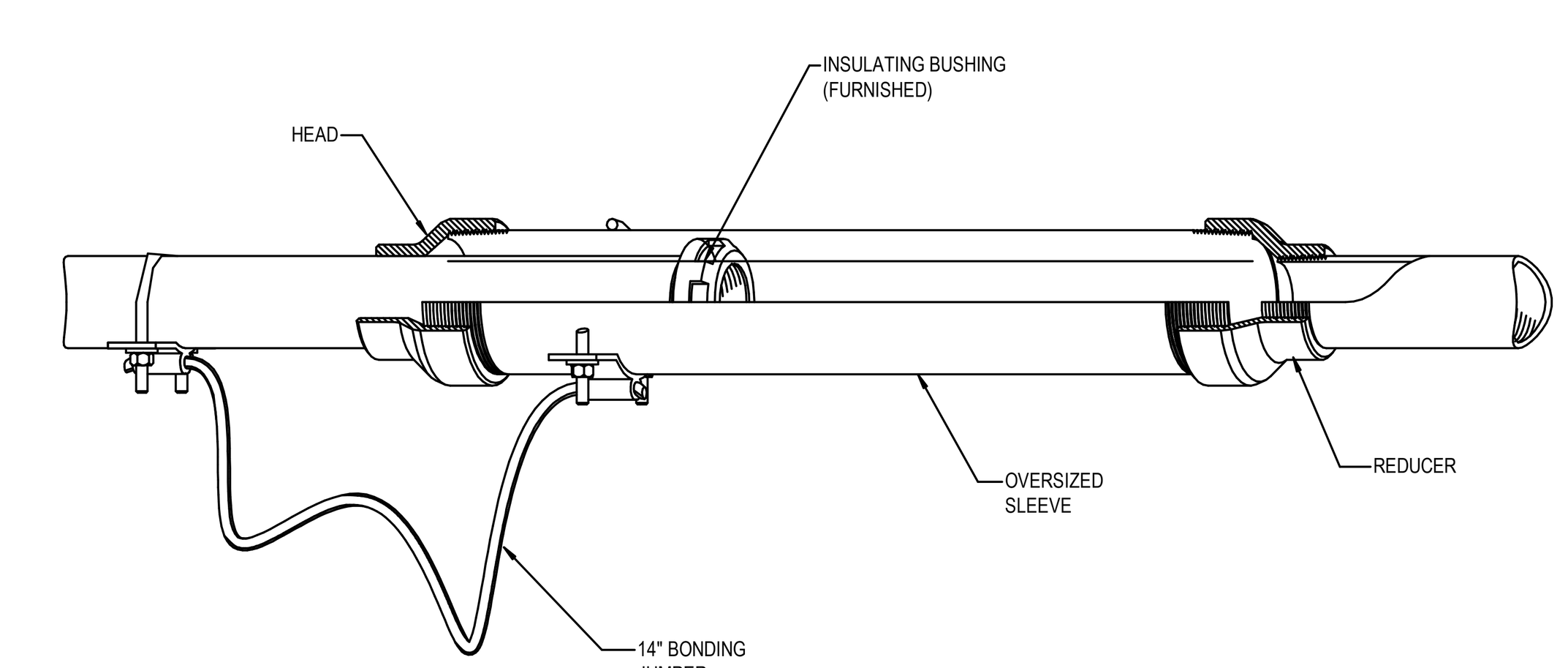
4. UP TO 40% SHRINKAGE OF IS ACCEPTABLE AFTER WET DEPTH INSTALLATION.
5. OPTIONS TO MASKING TAPE TO PREVENT SAGGING:
   A. INSTALL ADDITIONAL DAMMING MATERIAL OVER PRODUCT TO HOLD WITHIN OPENING.
   B. REMOVE PRODUCT FROM CONTAINER AND ALLOW TO AIR CURE IN SMALL BATCHES FOR 12 HRS. THEN HAND FORM INTO OPENING.
6. WHEN ANNULAR SPACE EXCEEDS 3/4" (19mm). A 28 AWG METAL COVER PLATE MUST BE MECHANICALLY SECURED ATOP THE 3M FIRE BARRIER APPLICATION, OR TIGHTLY PACK A NON-COMBUSTIBLE DAMMING MATERIAL ATOP INSTALLED CAULK OR PUTTY.

DIAGRAM (H012) FIRE STOP
NTS



±FOR 3/4" TO 1-1/2C.: 3'-0" GREATER THAN 1-1/2"C.: 6'-0" LENGTH

DIAGRAM (H010) CONDUIT CROSSING SEISMIC JOINT
NTS



NOTE:

1. INSTALL CONDUIT TO ALLOW FOR 2" MOVEMENT IN EITHER DIRECTION FOR A TOTAL MOVEMENT OF 4".

O-Z/GEDNEY 'TYPE EXPB' FOR RIGID METAL CONDUIT & IMC

DIAGRAM (H009) EXPANSION & PULL BOX FITTING
NTS

RESOLUT

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

REVISIONS:

PROJECT TITLE

EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY: MK
CHECKED BY: ES
DATE: JAN. 2026
PROJECT #: 176525

EG004

GENERAL NOTES

1. COORDINATE WITH THE ROOFING CONTRACTOR TO PROVIDE APPROPRIATE ROOF JACK. THE JACK SHALL BE SIZED TO FIT TIGHTLY TO RACEWAY FOR WEATHER-TIGHT SEAL. COORDINATE WORK AND REQUIREMENTS UNDER ROOFING SECTION OF SPECIFICATIONS.
2. CONTRACTOR SHALL NOT INSTALL ELECTRICAL CONDUIT(S) THROUGH THE NEW MECHANICAL CURB AND/OR DUCTWORK. LOCATE ELECTRICAL CONDUITS A MINIMUM OF 12" AWAY FROM MECHANICAL CURB ALONG WITH MAINTAINING A MINIMUM OF 12" BETWEEN ANY OTHER CONDUIT AND ANY OTHER ROOF PENETRATION.
3. NO ELECTRICAL WIRES OF EITHER HIGH OR LOW VOLTAGE TO RUN INSIDE ANY CURBS.

NOTES:

(1) PROVIDE SERVICE RECEPTACLE WITHIN 25' OF MECHANICAL UNIT.PROVIDE WEATHER RESISTANT GFCI DUPLEX AND INTERMATIC 1010MXD WEATHERPROOF COVER.

(2) PROVIDE NEMA 3R DISCONNECT/STARTER REQUIRED. REFER TO SPECIFICATIONS FOR COORDINATION REQUIREMENTS WITH MECHANICALSHOP DRAWINGS PRIOR TO RELEASING EQUIPMENT AND PERFORMING ROUGN-IN.

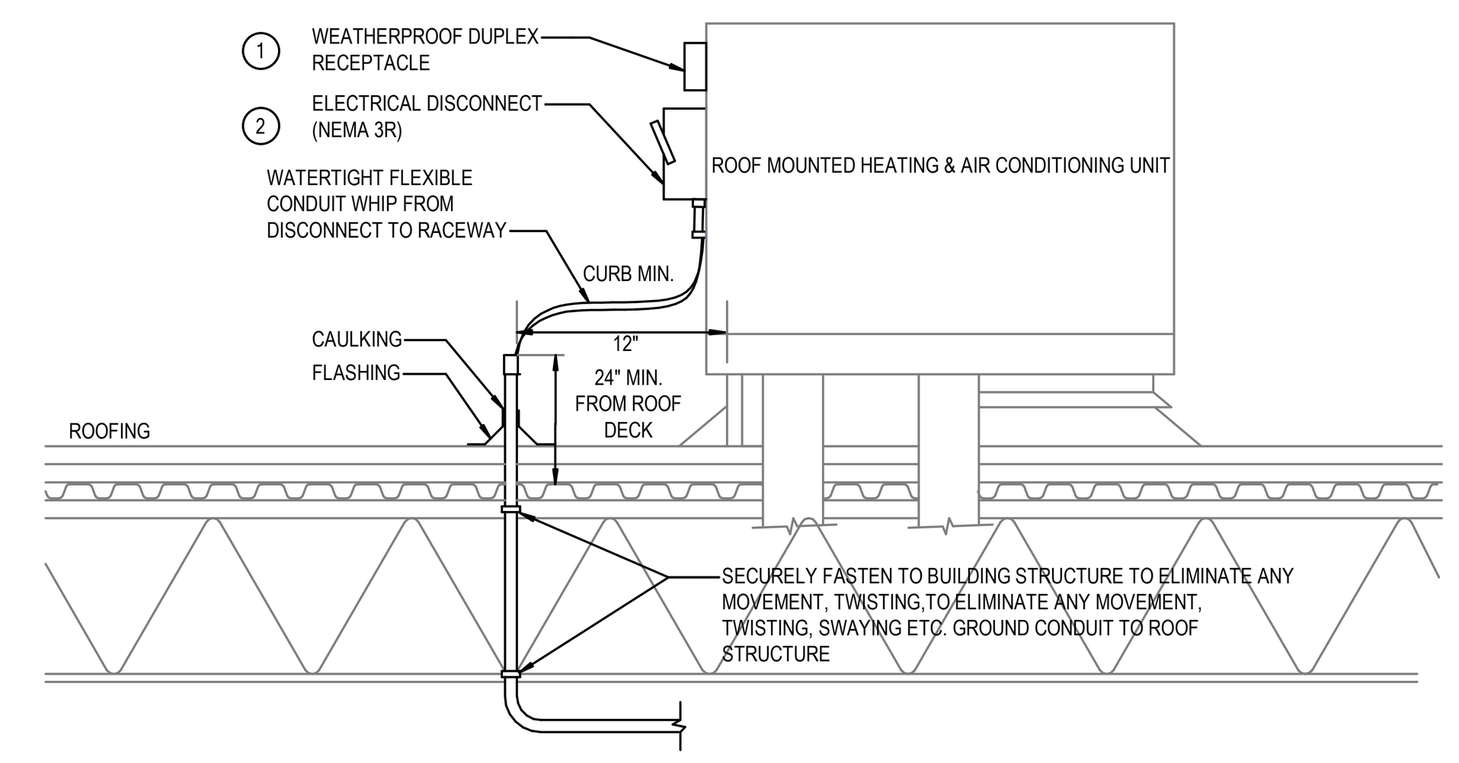


DIAGRAM (G008) G008 - ROOF MOUNTED MECHANICAL EQUIPMENT ROUGH-IN REQUIREMENTS

NTS

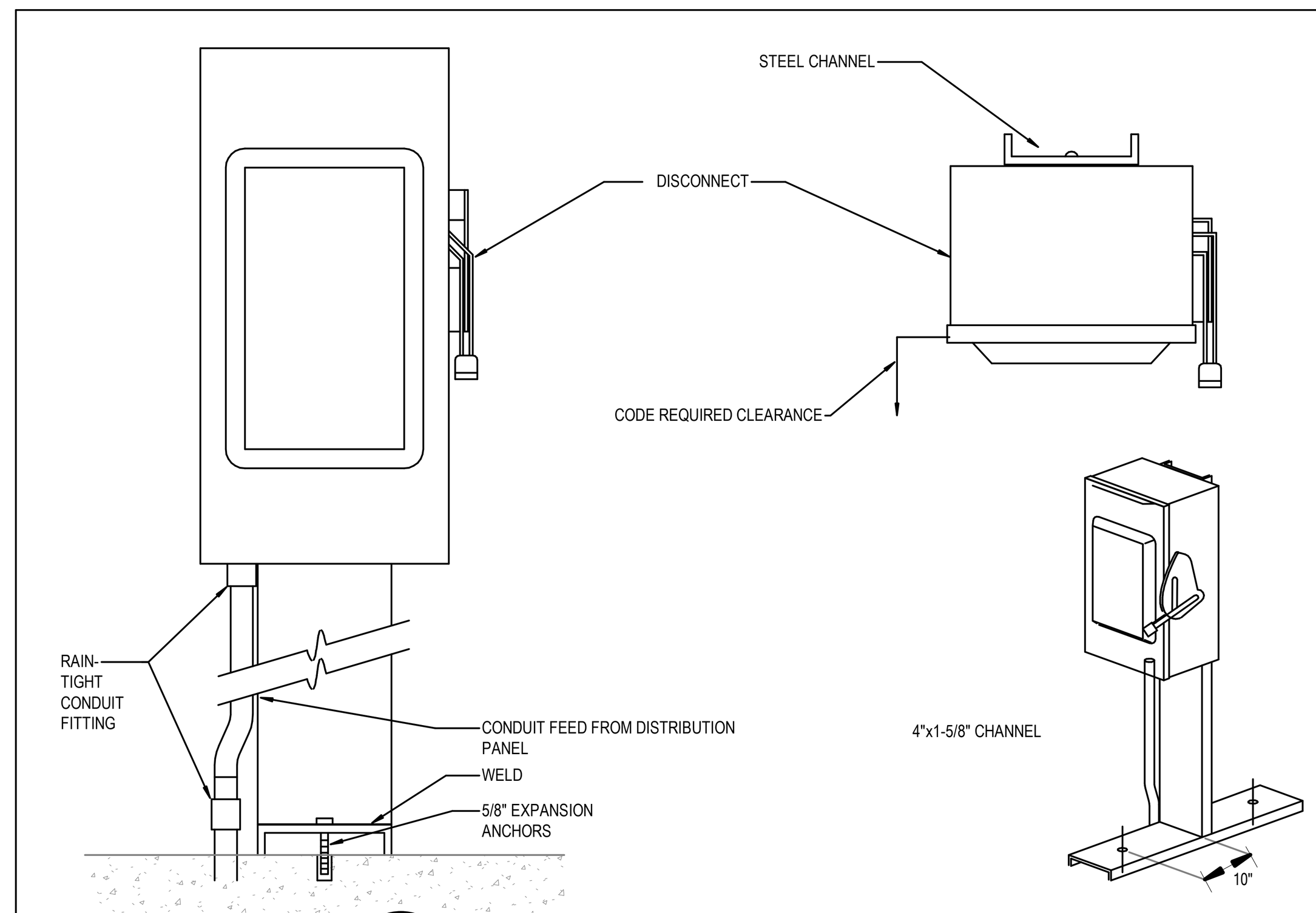


DIAGRAM (M001) REMOTE DISCONNECT

NTS

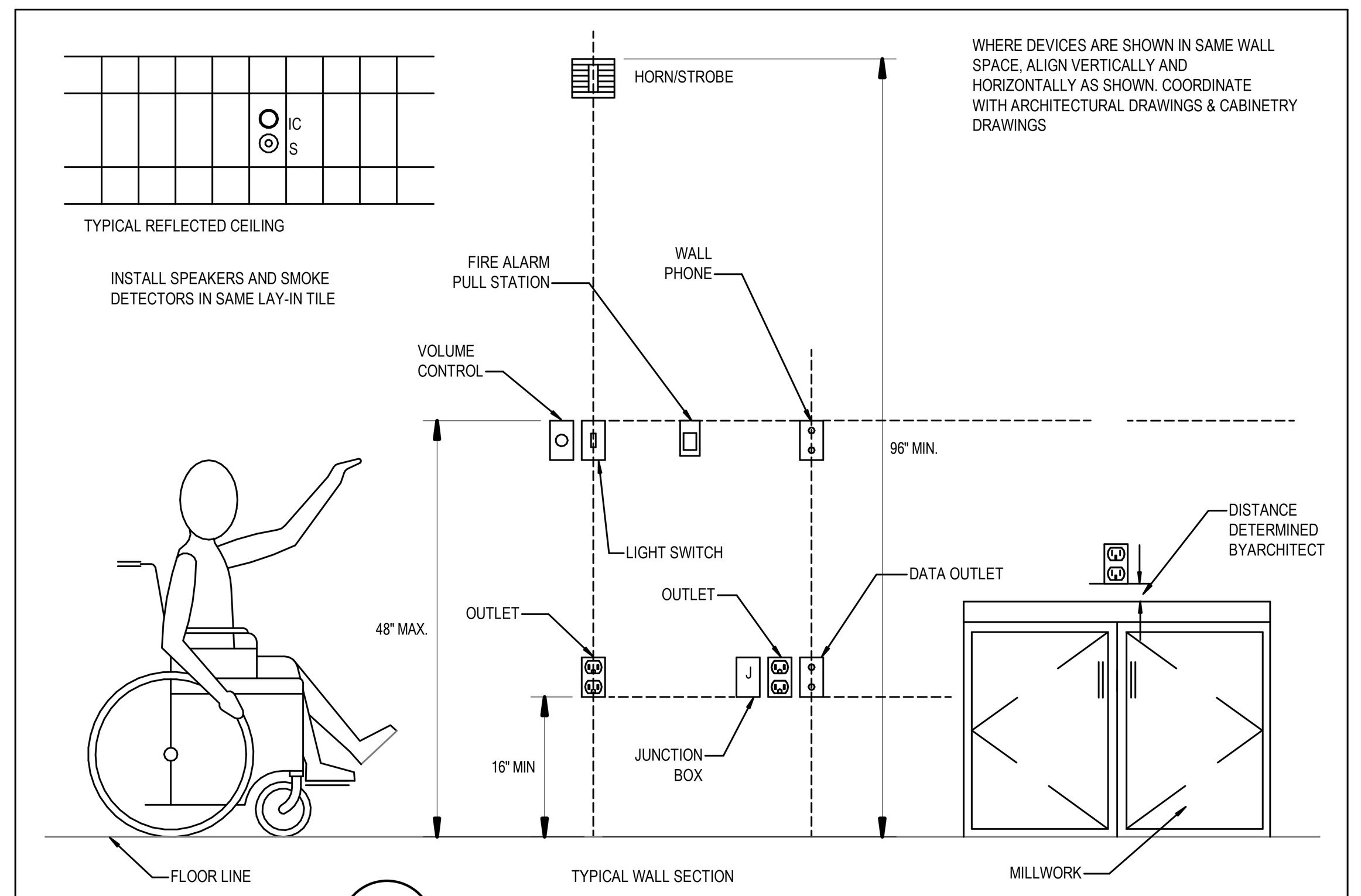


DIAGRAM (R001) DEVICE MOUNTING HEIGHTS

NTS

RESOLUT

170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

KMA ARCHITECTS

REVISIONS:

PROJECT TITLE

EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
30 S 100 W
CLEVELAND, UTAH

DRAWN BY:	MK
CHECKED BY:	ES
DATE:	JAN. 2026
PROJECT #:	176525

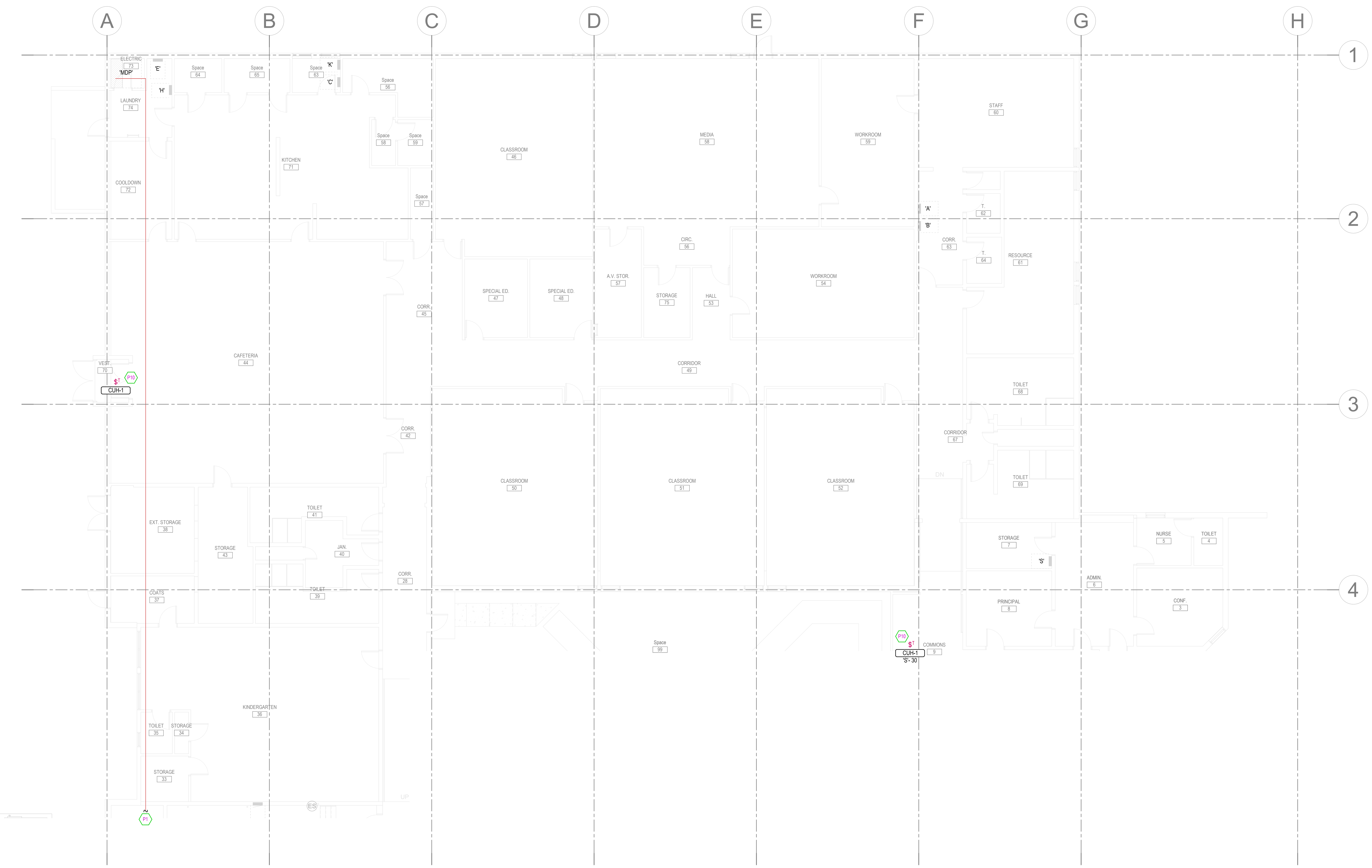
EG005

KEYNOTES

P1	FACTORY PROVIDED OUTLET. CONTRACTOR TO EXTEND 120V POWER FROM NEAREST AVAILABLE CIRCUIT.
P10	EXTEND NEAREST AVAILABLE 120V CIRCUIT TO MECHANICAL UNIT.

POWER GENERAL SHEET NOTES

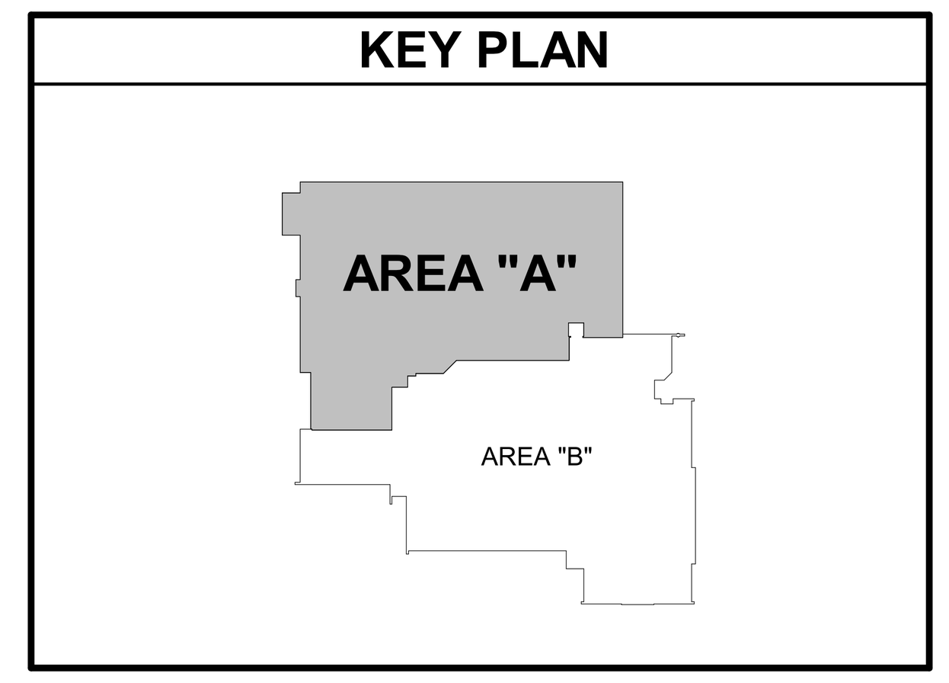
1. COORDINATE PLACEMENT OF ELECTRICAL DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN. WHERE DEVICES ARE SHOWN IN SAME WALL SPACE, ALIGN VERTICALLY AND HORIZONTALLY. COORDINATE WITH ARCHITECTURAL DRAWINGS, ATHLETIC SAFETY WALL PADDING AND CABINETRY DRAWINGS.
2. ALL THE LOW VOLTAGE WIRE/CABLE FOR LIGHTING SENSORS, AUDIO/VISUAL EQUIPMENT, SOUND AMPLIFICATION, ETC. TO BE ROUTED THROUGH CONDUIT IN EXPOSED AND CLOUDED CEILING AREAS.
3. ALL LOW VOLTAGE WIRE/CABLE FOR LIGHTING SENSORS, AUDIO/VISUAL EQUIPMENT, CLASSROOM SOUND AMPLIFICATION, ETC. TO BE PROPERLY SUPPORTED PER THE TELE/DATA SPEC. AND AT 5'-0" INTERVALS AND TO FOLLOW BUILDING STRUCTURAL LINES. PULLING WIRE DIAGONALLY ACROSS ROOMS IS NOT ALLOWED. USING CEILING SYSTEM OR LIGHT FIXTURE SUPPORT/SEISMIC WIRES FOR SUPPORT IS NOT ALLOWED.
4. PROVIDE GFCI PROTECTION ON ALL DEVICES AND EQUIPMENT PER THE NEC REQUIREMENTS. DEVICES SHALL BE READILY ACCESSIBLE. IF ANY OUTLET IS INSTALLED WITHIN 6 FEET OF OUTSIDE EDGE OF SINK, CONTRACTOR SHALL PROVIDE GFCI RECEPTACLE PER NEC, WHETHER SHOWN OR NOT.
5. ALL RECEPTACLES LOCATED THROUGHOUT THE BUILDING SHALL BE TAMPER RESISTANT PER NEC 406.12.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL MECHANICAL UNITS WITH MECHANICAL CONTRACTOR. CIRCUITS TO ALL MECHANICAL EQUIPMENT SHALL BE DEDICATED UNLESS NOTED OTHERWISE.
7. FOR VAV POWER, PROVIDE A DEDICATED 120V/20A CIRCUIT FROM A PANEL LOCATED IN THE ELECTRICAL ROOM OF THE ASSOCIATED QUADRANT. COORDINATE EXACT LOCATION OF ALL VAV BOXES WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
8. PROVIDE 120V CIRCUIT FROM NEAREST PROVIDED CIRCUIT FOR FIRE/SMOKE DAMPER RELAYS. PROVIDE FIRE ALARM MODULES AND RELAYS AS NECESSARY FOR ALL FIRE/SMOKE DAMPERS SHOWN ON DIVISION 23 DRAWINGS. ALL FIRE/SMOKE DAMPERS SHALL HAVE A MANUAL OVERRIDE SWITCH. PROVIDE DUCT DETECTOR WITHIN 5 FEET OF EACH FIRE/SMOKE DAMPER.
9. CONTRACTOR TO COORDINATE ALL LOCATIONS OF FIRE/SMOKE AND SMOKE DAMPERS WITH MECHANICAL CONTRACTOR, CONTRACTOR TO PROVIDE POWER, MONITOR MODULES, AND RELAYS AS REQUIRED FOR A COMPLETE SYSTEM.
10. DIVISION-26 IS RESPONSIBLE TO PROVIDE CONDUIT AND ROUGH-IN FOR ALL THERMOSTAT CONTROLS LOCATED WITHIN WALLS. COORDINATE WITH THE CONTROLS CONTRACTOR AND VERIFY EXACT LOCATION OF ALL THERMOSTATS.



AREA A MAIN FLOOR POWER PLAN

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

KEY PLAN



RESOLUT

KMA ARCHITECTS
170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY:	MK
CHECKED BY:	ES
DATE:	JAN. 2026
PROJECT #:	176525

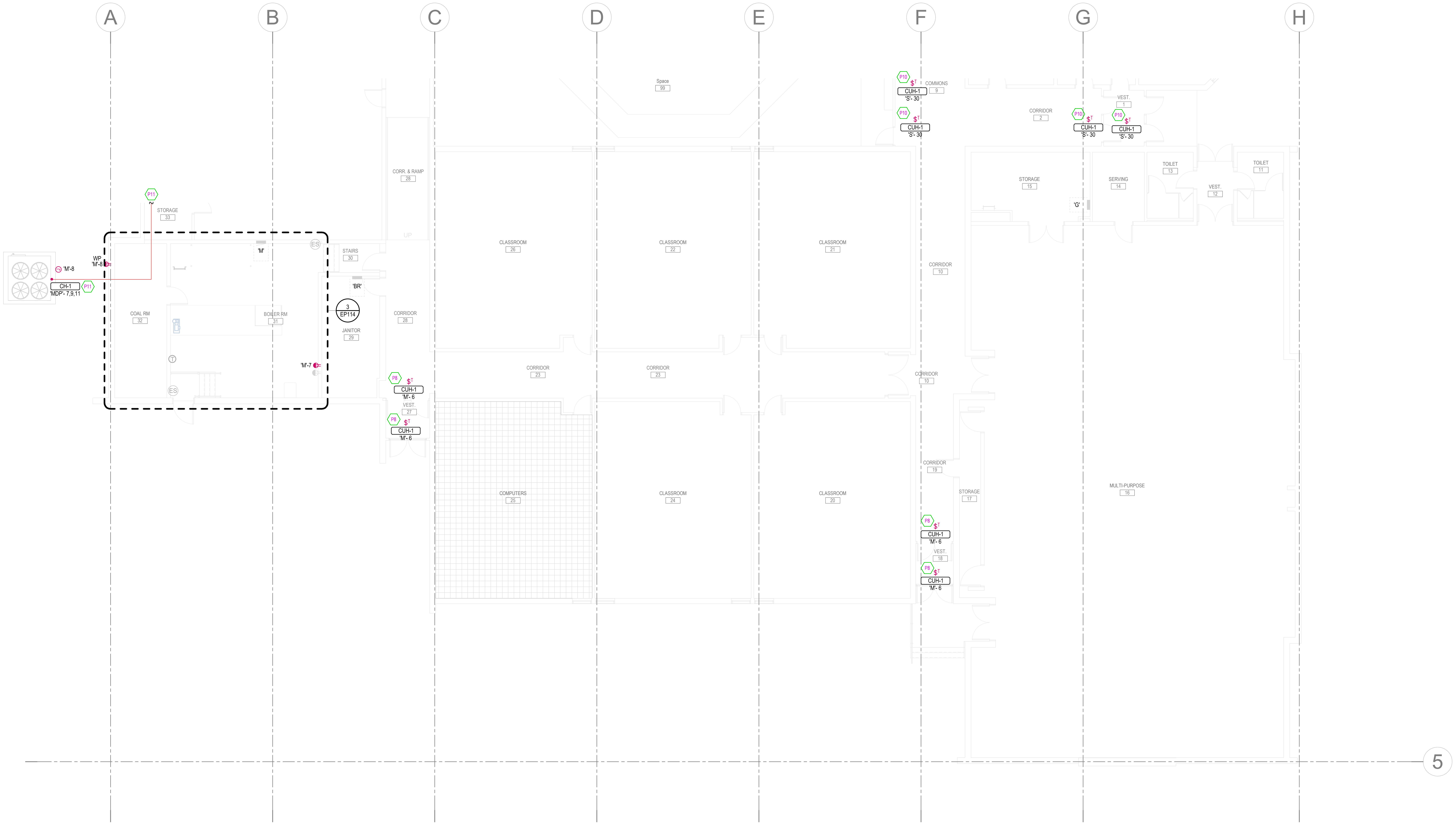
EP112

KEYNOTES

P8	UTILIZE SPARE 20A 1P BREAKER WITHIN PANELBOARD.
P10	EXTEND NEAREST AVAILABLE 120V CIRCUIT TO MECHANICAL UNIT.
P11	ROUTE CONDUIT FROM CHILLER UNDERGROUND TO BUILDING WALL BEFORE STUBBING UP

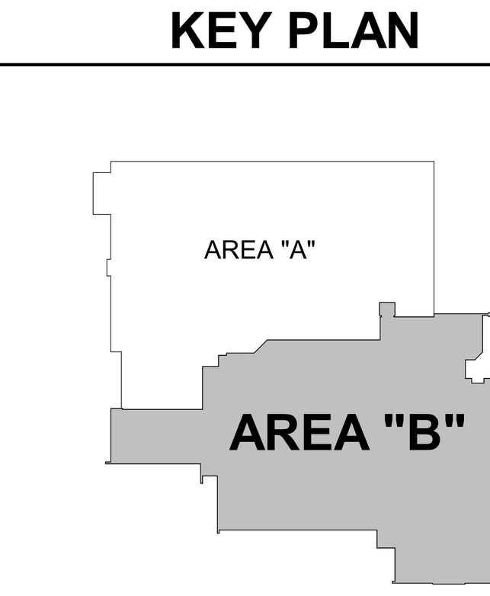
POWER GENERAL SHEET NOTES

1. COORDINATE PLACEMENT OF ELECTRICAL DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN. WHERE DEVICES ARE SHOWN IN SAME WALL SPACE, ALIGN VERTICALLY AND HORIZONTALLY. COORDINATE WITH ARCHITECTURAL DRAWINGS, ATHLETIC SAFETY WALL PADDING AND CABINETRY DRAWINGS.
2. ALL THE LOW VOLTAGE WIRE/CABLE FOR LIGHTING SENSORS, AUDIO/VISUAL EQUIPMENT, SOUND AMPLIFICATION, ETC. TO BE ROUTED THROUGH CONDUIT IN EXPOSED AND CLOUDED CEILING AREAS.
3. ALL LOW VOLTAGE WIRE/CABLE FOR LIGHTING SENSORS, AUDIO/VISUAL EQUIPMENT, CLASSROOM SOUND AMPLIFICATION, ETC. TO BE PROPERLY SUPPORTED PER THE TELE/DATA SPEC. AND AT 5'-0" INTERVALS AND TO FOLLOW BUILDING STRUCTURAL LINES. PULLING WIRE DIAGONALLY ACROSS ROOMS IS NOT ALLOWED. USING CEILING SYSTEM OR LIGHT FIXTURE SUPPORT/SEISMIC WIRES FOR SUPPORT IS NOT ALLOWED.
4. PROVIDE GFCI PROTECTION ON ALL DEVICES AND EQUIPMENT PER THE NEC REQUIREMENTS. DEVICES SHALL BE READILY ACCESSIBLE. IF ANY OUTLET IS INSTALLED WITHIN 6 FEET OF OUTSIDE EDGE OF SINK, CONTRACTOR SHALL PROVIDE GFCI RECEPTACLE PER NEC, WHETHER SHOWN OR NOT.
5. ALL RECEPTACLES LOCATED THROUGHOUT THE BUILDING SHALL BE TAMPER RESISTANT PER NEC 406.12.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL MECHANICAL UNITS WITH MECHANICAL CONTRACTOR. CIRCUITS TO ALL MECHANICAL EQUIPMENT SHALL BE DEDICATED UNLESS NOTED OTHERWISE.
7. FOR VAV POWER, PROVIDE A DEDICATED 120V/20A CIRCUIT FROM A PANEL LOCATED IN THE ELECTRICAL ROOM OF THE ASSOCIATED QUADRANT. COORDINATE EXACT LOCATION OF ALL VAV BOXES WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
8. PROVIDE 120V CIRCUIT FROM NEAREST PROVIDED CIRCUIT FOR FIRE/SMOKE DAMPER RELAYS. PROVIDE FIRE ALARM MODULES AND RELAYS AS NECESSARY FOR ALL FIRE/SMOKE DAMPERS SHOWN ON DIVISION 23 DRAWINGS. ALL FIRE/SMOKE DAMPERS SHALL HAVE A MANUAL OVERRIDE SWITCH. PROVIDE DUCT DETECTOR WITHIN 5 FEET OF EACH FIRE/SMOKE DAMPER.
9. CONTRACTOR TO COORDINATE ALL LOCATIONS OF FIRE/SMOKE AND SMOKE DAMPERS WITH MECHANICAL CONTRACTOR, CONTRACTOR TO PROVIDE POWER, MONITOR MODULES, AND RELAYS AS REQUIRED FOR A COMPLETE SYSTEM.
10. DIVISION-26 IS RESPONSIBLE TO PROVIDE CONDUIT AND ROUGH-IN FOR ALL THERMOSTAT CONTROLS LOCATED WITHIN WALLS. COORDINATE WITH THE CONTROLS CONTRACTOR AND VERIFY EXACT LOCATION OF ALL THERMOSTATS.



AREA B MAIN FLOOR POWER PLAN
SCALE = 1/8" = 1'-0"

KEY PLAN



RESOLUT

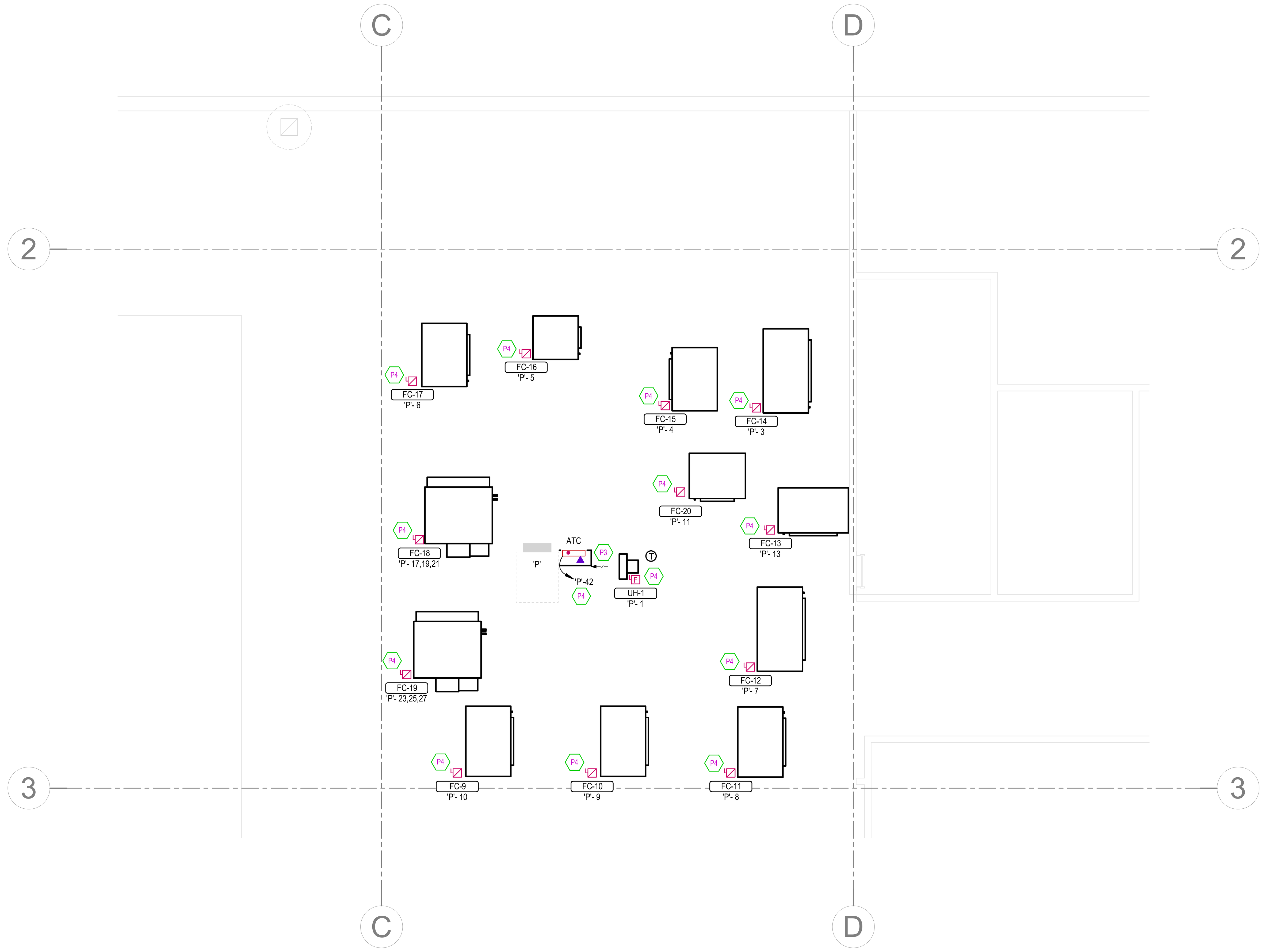
KMA ARCHITECTS
170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

REVISIONS:

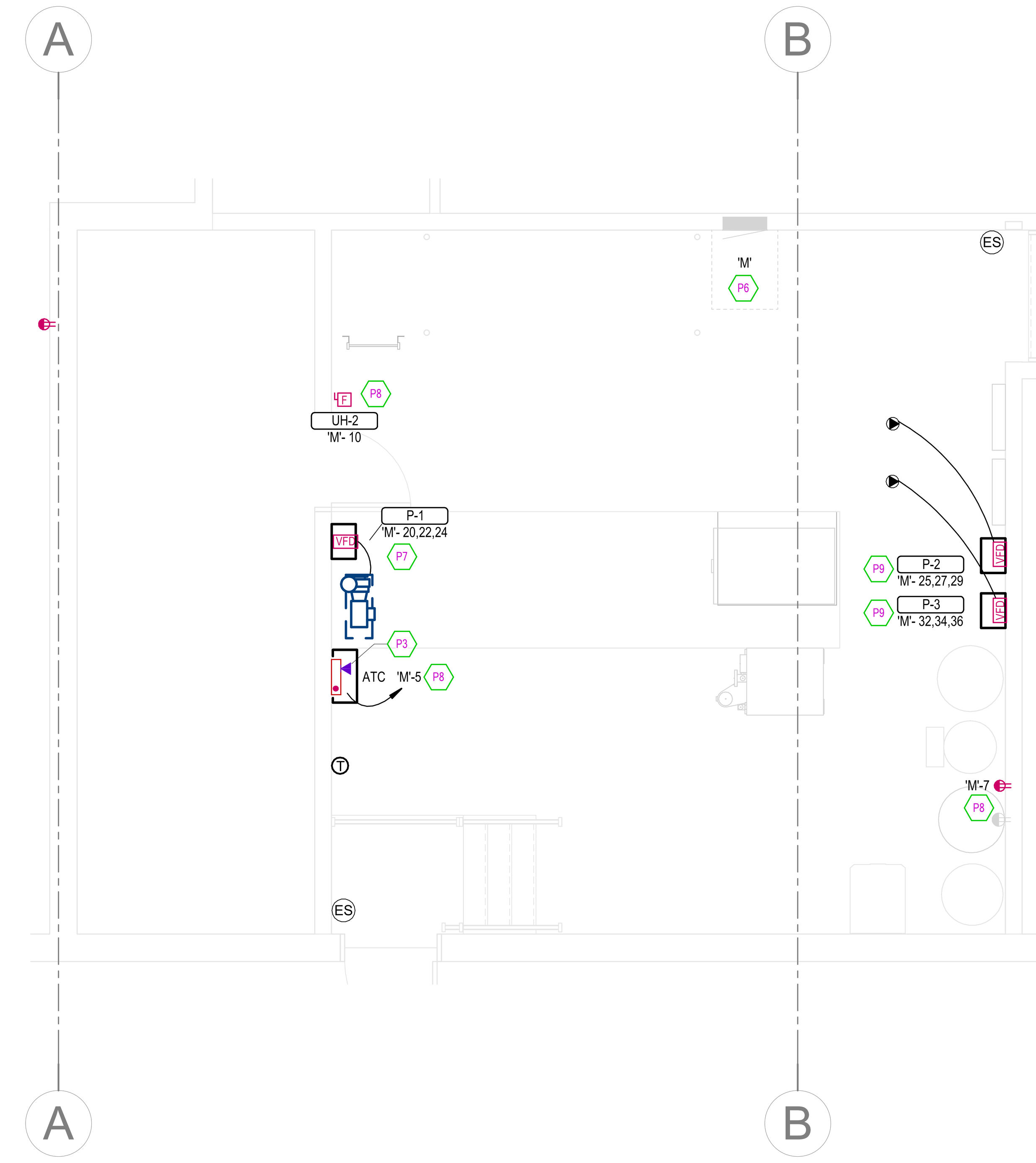
PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
CLEVELAND, UTAH
30 S 100 W

DRAWN BY:	MK
CHECKED BY:	ES
DATE:	JAN. 2026
PROJECT #:	176525

EP113



1 ENLARGED NORTH MEZZANINE - POWER FLOOR PLAN
1/4" = 1'-0"



3 ENLARGED BOILER ROOM
1/4" = 1'-0"

2 ENLARGED SOUTH MEZZANINE - POWER FLOOR PLAN
1/4" = 1'-0"

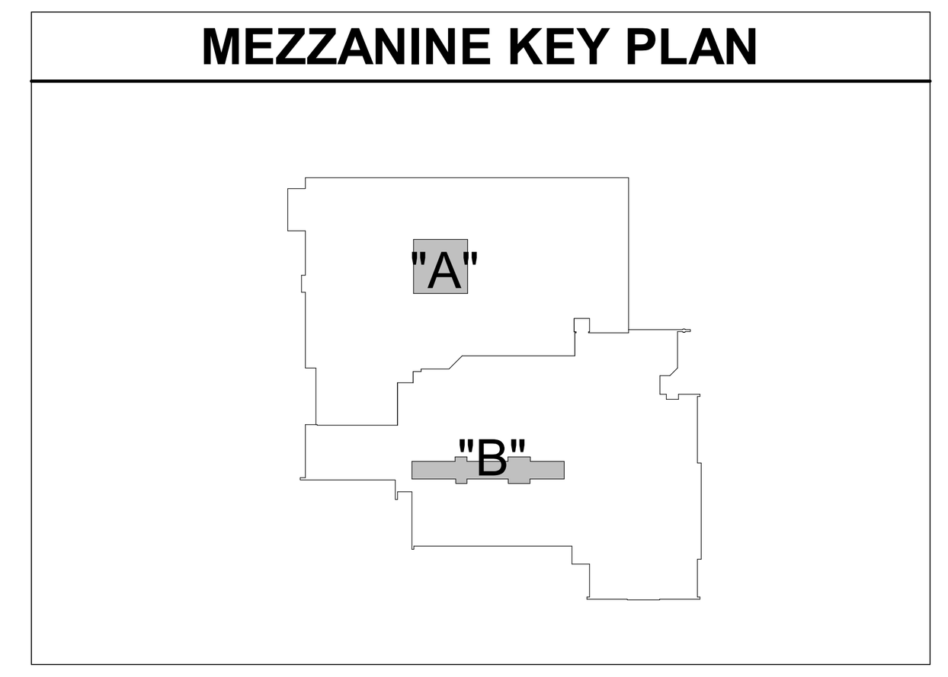
KEYNOTES

P3	PROVIDE (1) CAT6 DROP TO NEAREST DATA ROOM/RACK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ROUTING AND DATA ROOM/RACK LOCATION.
P4	DISCONNECT EXISTING FAN COIL UNIT. RE-USE CIRCUIT FOR NEW FAN COIL UNIT. COORDINATE FINAL CONNECTION LOCATION WITH MECHANICAL CONTRACTOR AND REWORK EXISTING CIRCUIT AS REQUIRED.
P6	EXISTING 400A 208V 3P SQUARE D TYPE NQOD PANELBOARD. CONTRACTOR TO PROVIDE NEW BREAKERS WITHIN AS INDICATED.
P7	REMOVE EXISTING 50A 3P SPARE BREAKER AND RETURN TO OWNER. PROVIDE NEW 40A 3P BREAKER FOR P-1.
P8	UTILIZE SPARE 20A 1P BREAKER WITHIN PANELBOARD.
P9	REMOVE EXISTING 50A 3P AND 100A 3P SPARE BREAKERS ON 25,27,29 AND 32,34,36 AND RETURN TO OWNER. PROVIDE NEW 30A 3P BREAKERS FOR P-2 AND P-3.

POWER GENERAL SHEET NOTES

1. COORDINATE PLACEMENT OF ELECTRICAL DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN. WHERE DEVICES ARE SHOWN IN SAME WALL SPACE, ALIGN VERTICALLY AND HORIZONTALLY. COORDINATE WITH ARCHITECTURAL DRAWINGS, ATHLETIC SAFETY WALL PADDING AND CABINETRY DRAWINGS.
2. ALL THE LOW VOLTAGE WIRE/CABLE FOR LIGHTING SENSORS, AUDIO/VISUAL EQUIPMENT, SOUND AMPLIFICATION, ETC. TO BE ROUTED THROUGH CONDUIT IN EXPOSED AND CLOUDED CEILING AREAS.
3. ALL LOW VOLTAGE WIRE/CABLE FOR LIGHTING SENSORS, AUDIO/VISUAL EQUIPMENT, CLASSROOM SOUND AMPLIFICATION, ETC. TO BE PROPERLY SUPPORTED PER THE TELE/DATA SPEC. AND AT 5'-0" INTERVALS AND TO FOLLOW BUILDING STRUCTURAL LINES. PULLING WIRE DIAGONALLY ACROSS ROOMS IS NOT ALLOWED. USING CEILING SYSTEM OR LIGHT FIXTURE SUPPORT/SEISMIC WIRES FOR SUPPORT IS NOT ALLOWED.
4. PROVIDE GFCI PROTECTION ON ALL DEVICES AND EQUIPMENT PER THE NEC REQUIREMENTS. DEVICES SHALL BE READILY ACCESSIBLE. IF ANY OUTLET IS INSTALLED WITHIN 6 FEET OF OUTSIDE EDGE OF SINK, CONTRACTOR SHALL PROVIDE GFCI RECEPTACLE PER NEC, WHETHER SHOWN OR NOT.
5. ALL RECEPTACLES LOCATED THROUGHOUT THE BUILDING SHALL BE TAMPER RESISTANT PER NEC 406.12.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL MECHANICAL UNITS WITH MECHANICAL CONTRACTOR. CIRCUITS TO ALL MECHANICAL EQUIPMENT SHALL BE DEDICATED UNLESS NOTED OTHERWISE.
7. FOR VAV POWER, PROVIDE A DEDICATED 120V/20A CIRCUIT FROM A PANEL LOCATED IN THE ELECTRICAL ROOM OF THE ASSOCIATED QUADRANT. COORDINATE EXACT LOCATION OF ALL VAV BOXES WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
8. PROVIDE 120V CIRCUIT FROM NEAREST PROVIDED CIRCUIT FOR FIRE/SMOKE DAMPER RELAYS. PROVIDE FIRE ALARM MODULES AND RELAYS AS NECESSARY FOR ALL FIRE/SMOKE DAMPERS SHOWN ON DIVISION 23 DRAWINGS. ALL FIRE/SMOKE DAMPERS SHALL HAVE A MANUAL OVERRIDE SWITCH. PROVIDE DUCT DETECTOR WITHIN 5 FEET OF EACH FIRE/SMOKE DAMPER.
9. CONTRACTOR TO COORDINATE ALL LOCATIONS OF FIRE/SMOKE AND SMOKE DAMPERS WITH MECHANICAL CONTRACTOR, CONTRACTOR TO PROVIDE POWER, MONITOR MODULES, AND RELAYS AS REQUIRED FOR A COMPLETE SYSTEM.
10. DIVISION-26 IS RESPONSIBLE TO PROVIDE CONDUIT AND ROUGH-IN FOR ALL THERMOSTAT CONTROLS LOCATED WITHIN WALLS. COORDINATE WITH THE CONTROLS CONTRACTOR AND VERIFY EXACT LOCATION OF ALL THERMOSTATS.

MEZZANINE KEY PLAN



RESOLUT
40 W Cache Valley Blvd., Bldg 1, Suite B,
Logan, UT 84341 | (435) 752-5081
info@resolutgroup.com | resolutgroup.com

KMA ARCHITECTS
170 NORTH MAIN STREET
SPANISH FORK, UTAH 84660
WWW.KMAARCHITECTS.COM

REVISIONS:

PROJECT TITLE
EMERY SCHOOL DISTRICT
CLEVELAND ELEMENTARY SCHOOL
MECHANICAL UPGRADE
30 S 100 W
CLEVELAND, UTAH

DRAWN BY:	MK
CHECKED BY:	ES
DATE:	JAN. 2026
PROJECT #:	176525

EP114