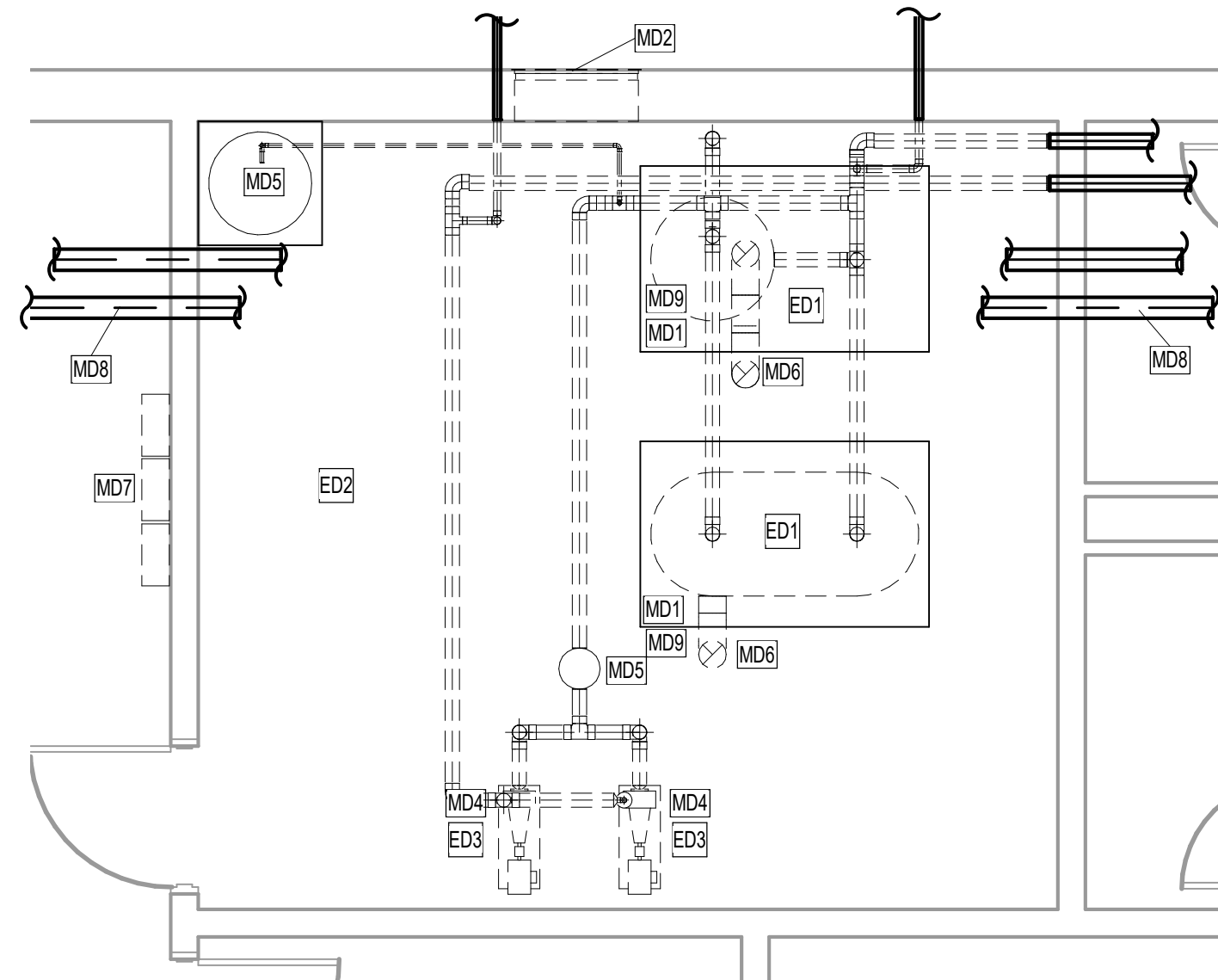
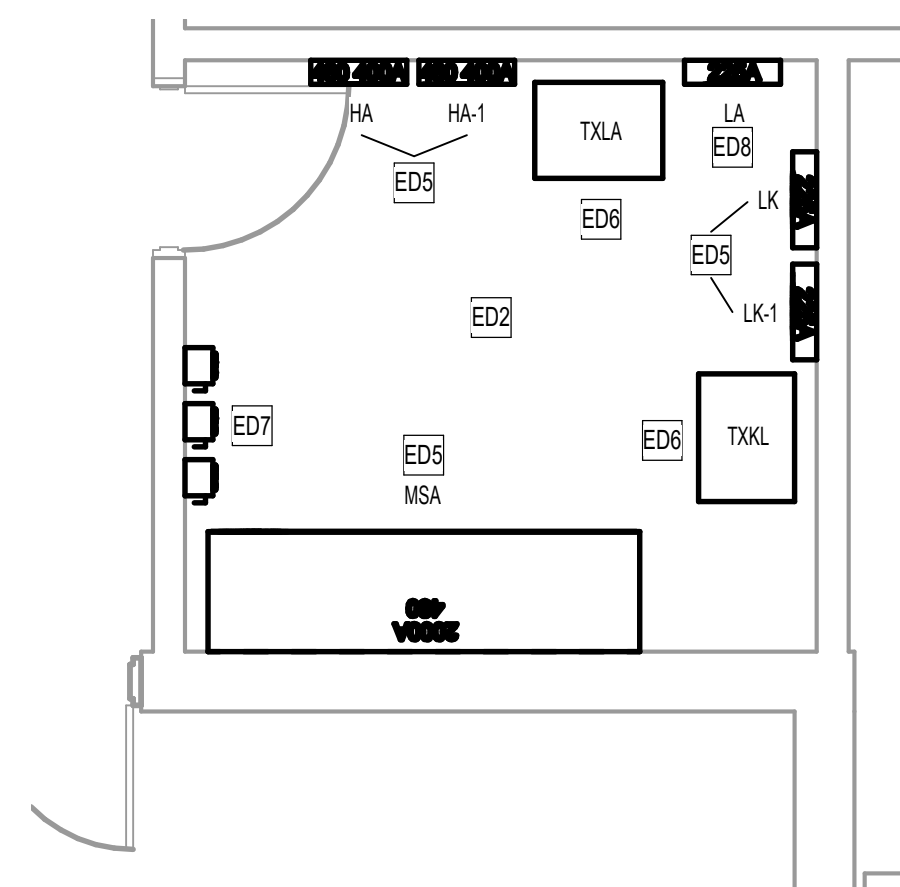


1 MECHANICAL/ELECTRICAL DEMOLITION FLOOR PLAN  
1/8" = 1'-0"

CONTROLS CONTRACTOR TO NOT DISTURB BUILDING OPERATION WHILE WORK IS BEING PERFORMED. WORK TO BE DONE AFTER HOURS IF NECESSARY.



2 DEMOLITION ENLARGED BOILER ROOM  
1/4" = 1'-0"



3 DEMOLITION ENLARGED ELECTRICAL ROOM  
1/4" = 1'-0"

**MECHANICAL DEMOLITION GENERAL NOTES**

- SEE SHEET ME7.1 FOR MECHANICAL DEMOLITION GENERAL NOTES APPLICABLE TO THE ENTIRE DRAWING SET.

**ELECTRICAL DEMOLITION GENERAL NOTES**

- SEE SHEET ME7.1 FOR ELECTRICAL DEMOLITION GENERAL NOTES APPLICABLE TO THE ENTIRE DRAWING SET.

**MECHANICAL DEMOLITION PLAN NOTES**

- MD1 REMOVE AND DISCARD BOILER. DISCARD ASSOCIATED PIPING BACK TO WALL.
- MD2 REMOVE AND DISCARD EXISTING LOUVER. REUSE EXISTING LOUVER LOCATION.
- MD4 REMOVE AND DISCARD EXISTING PUMP, PAD, MOTOR STARTER AND ASSOCIATED BRANCH PIPE.
- MD5 EXPANSION TANK, AIR AND DIRT SEPARATOR ARE TO BE REUSED. TIE NEW ASSOCIATED PIPING TO EXISTING.
- MD6 REMOVE AND DISCARD EXISTING CONCENTRIC FLUE.
- MD7 REMOVE AND DISCARD EXISTING CENTRAL PLAN CONTROLS. GO BACK IN EXISTING LOCATION.
- MD8 CHILLED WATER MAINS ARE EXISTING TO REMAIN.
- MD9 GAS PIPING TO BE DEMOED FROM BOILER CONNECTION BACK TO THE MAIN 3" GAS LINE UPSTREAM OF THE REGULATOR. ALL OTHER ACCESSORIES INCLUDING PRESSURE SENSOR, SOLENOID VALVES, ETC., TO BE REMOVED.

**ELECTRICAL DEMOLITION PLAN NOTES**

- ED1 EXISTING BOILER AND ASSOCIATED PUMPS AND CONTROLS TO BE REMOVED AND REPLACED. EXISTING CIRCUIT PROVIDING POWER TO BOILER TO REMAIN AND TO BE REUSED TO POWER TO NEW BOILER. VERIFY AND REMOVE AND REPLACE IF EXISTING CONDUIT AND WIRING IS NOT IN GOOD CONDITION.
- ED2 EXISTING RECEPTACLES AND DEVICES IN THIS SPACE TO REMAIN IN PLACE AND OPERATIONAL.
- ED3 EXISTING PUMP AND ASSOCIATED CONTROLS TO BE REMOVED AND REPLACED. EXISTING CIRCUIT PROVIDING POWER TO PUMP TO REMAIN AND TO BE REUSED TO POWER TO NEW PUMP. VERIFY AND REMOVE AND REPLACE IF EXISTING CONDUIT AND WIRING IS NOT IN GOOD CONDITION.
- ED5 EXISTING PANEL TO REMAIN IN PLACE AND OPERATIONAL.
- ED6 EXISTING TRANSFORMER TO REMAIN IN PLACE AND OPERATIONAL.
- ED7 EXISTING DISCONNECTS AND WALL-MOUNTED TRANSFORMERS TO REMAIN IN PLACE AND OPERATIONAL.
- ED8 EXISTING PANEL LA TO REMAIN. EXISTING 150A MAIN BREAKER AT PANEL LA TO BE REMOVED AND REPLACED.



COMcheck Software Version 4.1.5.5

**Mechanical Compliance Certificate**

**Project Information**

Energy Code: 2015 IECC  
 Project Title: Galena Park ISD - Cimarron ES Boiler Replacement  
 Location: Houston, Texas  
 Climate Zone: 2a  
 Project Type: Alteration

Construction Site:  
 816 Cimarron St  
 Houston, TX 77015

Owner/Agent:  
 GPISD

Designer/Contractor:  
 Shane Parks  
 EMA  
 Houston, TX

**Mechanical Systems List**

Quantity	System Type & Description
2	Plant 1: Heating: Hot Water Boiler, Capacity 999 kBtu/h, Gas Proposed Efficiency: 90.00 % Et, Required Efficiency: 80.00 % Et

**Mechanical Compliance Statement**

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed mechanical systems have been designed to meet the 2015 IECC requirements in COMcheck version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title: Shane Parks

Signature: *Shane Parks*

Date: 07/12/2022



ISSUE DATE

07-13-2022

REVISION DATE

REVISION DATE

REVISION DATE

REVISION DATE

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ISSUE FOR PERMIT  
**BOILER REPLACEMENT**  
 GALENA PARK INDEPENDENT SCHOOL DISTRICT  
 GALENA PARK, TX

EMA JOB #: 3-001-0537-001

DRAWN BY: SP

CHECKED: QS

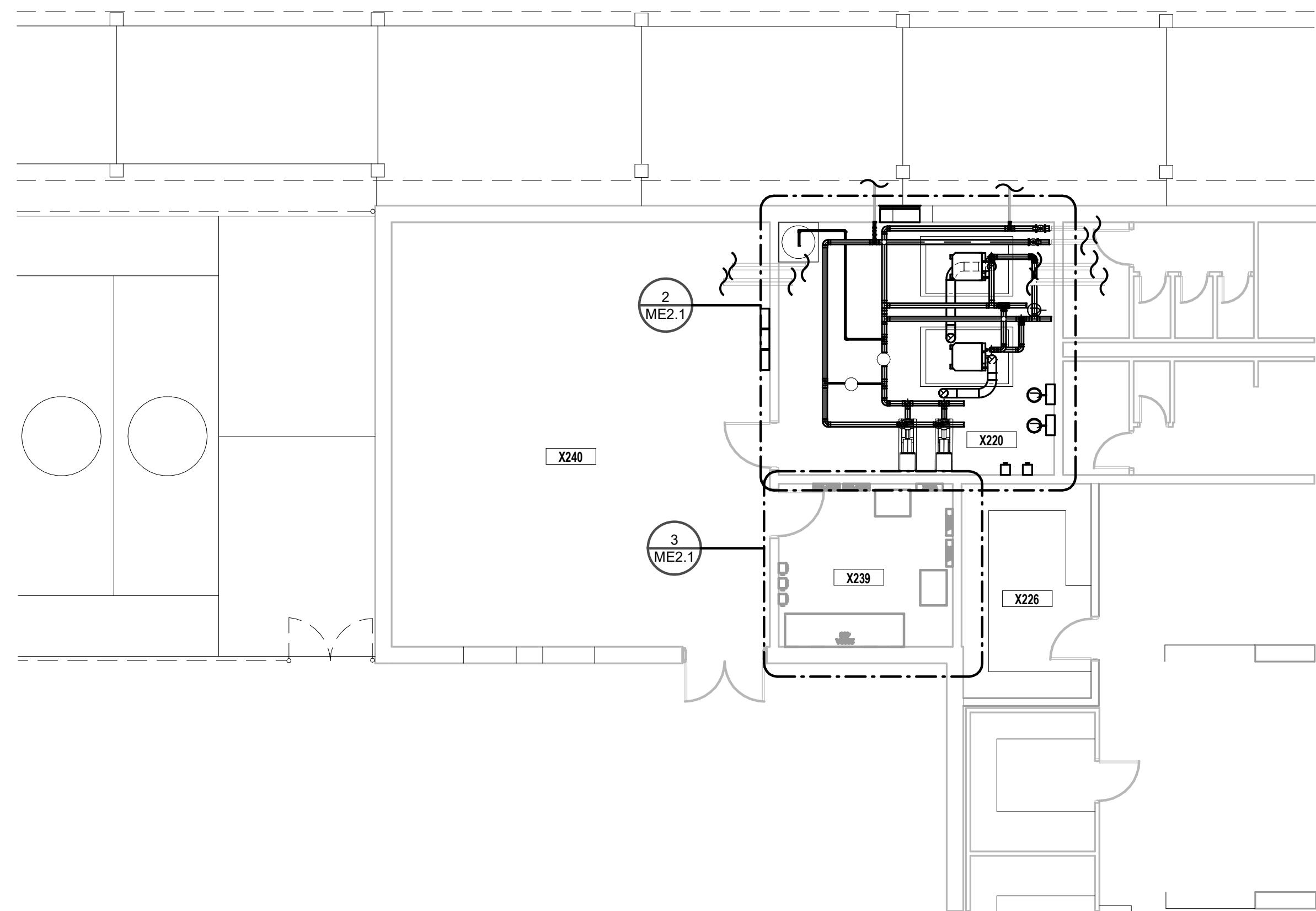
**MECHANICAL ELECTRICAL  
DEMOLITION FLOOR PLAN**

SHEET NUMBER

**ME1.1**

SHEET OF

SUBMISSION OF BID WILL BE CONSIDERED ACKNOWLEDGMENT THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS VERIFIED ALL EXISTING JOB CONDITIONS AND INCLUDED ANY NECESSARY MODIFICATION TO EXISTING AND NEW WORK REQUIRED FOR INSTALLATION OF A COMPLETE AND WORKING SYSTEM.



1 MECHANICAL/ELECTRICAL FLOOR PLAN  
1/8" = 1'-0"

**MECHANICAL GENERAL NOTES**

- SEE SHEET ME7.1 FOR MECHANICAL GENERAL NOTES APPLICABLE TO THE ENTIRE DRAWING SET.

**ELECTRICAL GENERAL NOTES**

- SEE SHEET ME7.1 FOR ELECTRICAL GENERAL NOTES APPLICABLE TO THE ENTIRE DRAWING SET.

**MECHANICAL PLAN NOTES**

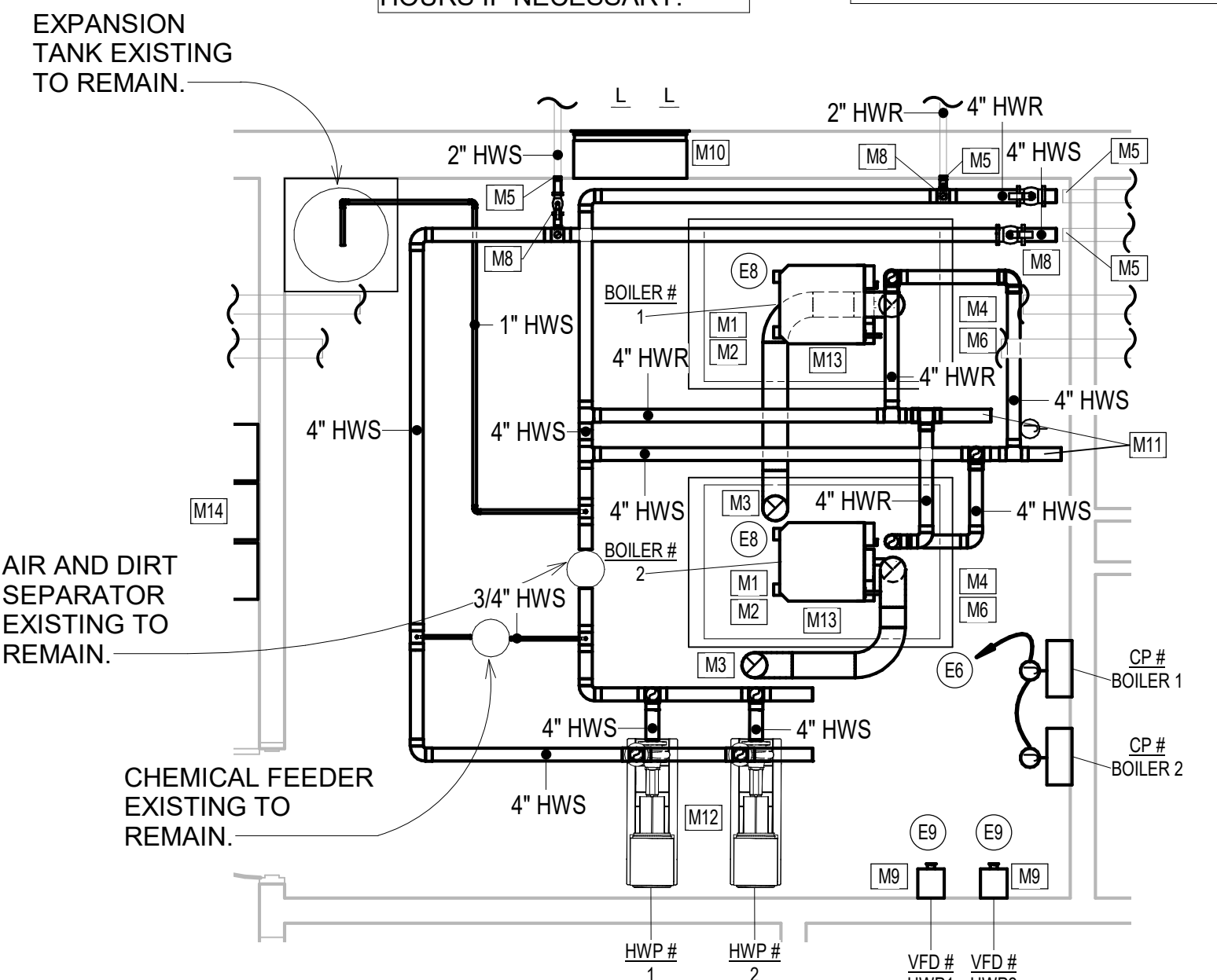
- M1 PROVIDE ALL NEW DDC AND RELATED COMPONENTS ON UNIT. COMPONENTS INCLUDE BUT NOT LIMITED TO CONTROLLERS, COMMUNICATION TRUNKS, VALVES, ACTUATORS, SENSORS AND WIRING.
- M2 CONTRACTOR TO PROVIDE AND INSTALL NEW BOILER PER MANUFACTURERS RECOMMENDATIONS. CONTRACTOR TO MODIFY AND EXTEND HOUSEKEEPING PAD AS NECESSARY TO ACCOMMODATE NEW BOILER.
- M3 PROVIDE AND INSTALL NEW DOUBLE WALL STAINLESS STEEL CONCENTRIC FLUE FOR BOILER UP THROUGH ROOF PER MANUFACTURERS RECOMMENDATIONS.
- M4 CONNECT NEW BOILER TO EXISTING GAS PIPE AND REGULATOR FOR BOILER PER MANUFACTURERS RECOMMENDATIONS. MODIFY PIPE CONNECTIONS AS NECESSARY.
- M5 PROVIDE AND INSTALL NEW HOT WATER PIPING TRANSITION AND TIE-IN TO EXISTING PIPING AS REQUIRED.
- M6 PROVIDE AND INSTALL NEW CO SENSOR. INTERLOCK CO ALARM AS NECESSARY TO SHUT DOWN BOILER EQUIPMENT.
- M8 INSTALL BRANCH ISOLATION VALVES.
- M9 PROVIDE AND INSTALL NEW VFD. CONTRACTOR TO FIELD VERIFY VFD SIZE AND PLACEMENT.
- M10 PROVIDE AND INSTALL NEW LOUVER. MODIFY EXISTING PENETRATIONS AS NECESSARY TO INSTALL NEW LOUVER. SEAL PENETRATION WEATHER TIGHT.
- M11 PROVIDE AUXILIARY PIPING CONNECTIONS IN THE CENTRAL PLANT TO FACILITATE EASY CONNECTION OF TEMPORARY HEATING EQUIPMENT TO THE HOT WATER PIPING SYSTEMS. CONNECTIONS SHOULD INCLUDE VALVES AT APPROPRIATE LOCATIONS WITH BLIND FLANGES.
- M12 PROVIDE AND INSTALL NEW HOT WATER PUMPS IN EXISTING PUMP LOCATIONS. MODIFY AS NECESSARY EXISTING PADS TO SUPPORT NEW PUMPS.
- M13 TIE EXISTING MAKEUP WATER INTO NEW HOT WATER SYSTEM.
- M14 PROVIDE AND INSTALL CENTRAL PLANT CONTROLS IN EXISTING LOCATION OF OLD CONTROL PANELS.

**ELECTRICAL PLAN NOTES**

- E1 PROVIDE A NEW 3-POLE 175A MAIN BREAKER AT PANEL LA. ALL UNUSED BREAKERS ARE TO BE SWITCHED OFF AND MARKED AS "SPARE."
- E2 EXISTING TRANSFORMER TO REMAIN.
- E3 EXISTING PANEL TO REMAIN. ALL UNUSED BREAKERS ARE TO BE SWITCHED OFF AND MARKED AS "SPARE."
- E6 PROVIDE POWER TO CIRCUIT FOR BOILER CONTROL PANELS FROM AVAILABLE SPACE IN PANEL LA USING A 1-POLE 20A BREAKER WITH #12 WIRE. IF POSSIBLE, USE ANY AVAILABLE 20A SPARE IN PANEL LA. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR FOR LOCATION AND ADDITIONAL INFORMATION.
- E7 EXISTING DISCONNECTS AND WALL-MOUNTED TRANSFORMERS TO REMAIN.
- E8 PROVIDE POWER TO NEW CIRCULATION PUMP AND INTERNAL CONTROLS OF NEW BOILER USING EXISTING DEDICATED CIRCUIT OF DEMOLISHED BOILER. IF POSSIBLE, REUSE EXISTING CONDUIT AND WIRING. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR FOR LOCATION AND ADDITIONAL INFORMATION.
- E9 PROVIDE POWER TO NEW VFD USING EXISTING DEDICATED CIRCUIT OF DEMOLISHED PUMP. PROVIDE POWER TO NEW PUMP THRU NEW VFD USING EXISTING CONDUIT AND WIRING, IF POSSIBLE. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR FOR LOCATION AND ADDITIONAL INFORMATION.
- E11 PROVIDE AND INSTALL AN EXTERNAL 480V 3-POLE SPD AT PANEL HA-1 USING A 60A 3-POLE BREAKER WITH #4 WIRE.

CONTROLS CONTRACTOR TO NOT DISTURB BUILDING OPERATION WHILE WORK IS BEING PERFORMED. WORK TO BE DONE AFTER HOURS IF NECESSARY.

CONTRACTOR TO PROVIDE TEXAS STATE TAG NUMBER ON ALL BOILERS.



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

**CONDENSING HEATING BOILER SCHEDULE**

TAG	MANUFACTURER	MODEL	M.B.H		ELECTRICAL	MCA	REMARKS
			INPUT	OUTPUT			
BOILER #1	LOCHINVAR	FB - 1001	999	961	120V., 1 PH.	8	1,2,3,4,5,6
BOILER #2	LOCHINVAR	FB - 1001	999	961	120V., 1 PH.	8	1,2,3,4,5,6

- REMARKS:
- PROVIDE CIRCULATING PUMP AND INTERLOCK WITH BOILER. PUMP SIZED BY BOILER MANUFACTURER
  - PROVIDE NEUTRALIZATION KIT
  - PROVIDE BACNET INTERFACE
  - STAINLESS STEEL HEAT EXCHANGER
  - NATURAL GAS
  - SEQUENCING CONTROLS BY MANUFACTURER

**PUMP SCHEDULE**

TAG	MANUFACTURER	MODEL	PUMP			MOTOR		ELECTRICAL	REMARKS
			GPM	FT./HD	% EFF	HP	RPM		
HWP #1	BELL & GOSSETT	e-1510	200	50	75	5	1800	460V., 3 PH.	1,2,3,4,5
HWP #1	BELL & GOSSETT	e-1510	200	50	75	5	1800	460V., 3 PH.	1,2,3,4,5

- REMARKS:
- SUCTION DIFFUSER WITH STRAINER
  - COMBINATION CONTROL VALVE (TRIPLE DUTY)
  - REMOTE MOUNTED VFD
  - PREMIUM EFFICIENCY NON OVERLOADING TEFC MOTOR
  - PUMP TO MEET ASHRAE 90.1, MOTOR DEMAND OF NO MORE THAN 30% OF DESIGN WATTAGE AT 50% DESIGN WATER FLOW

**GRILLE SCHEDULE**

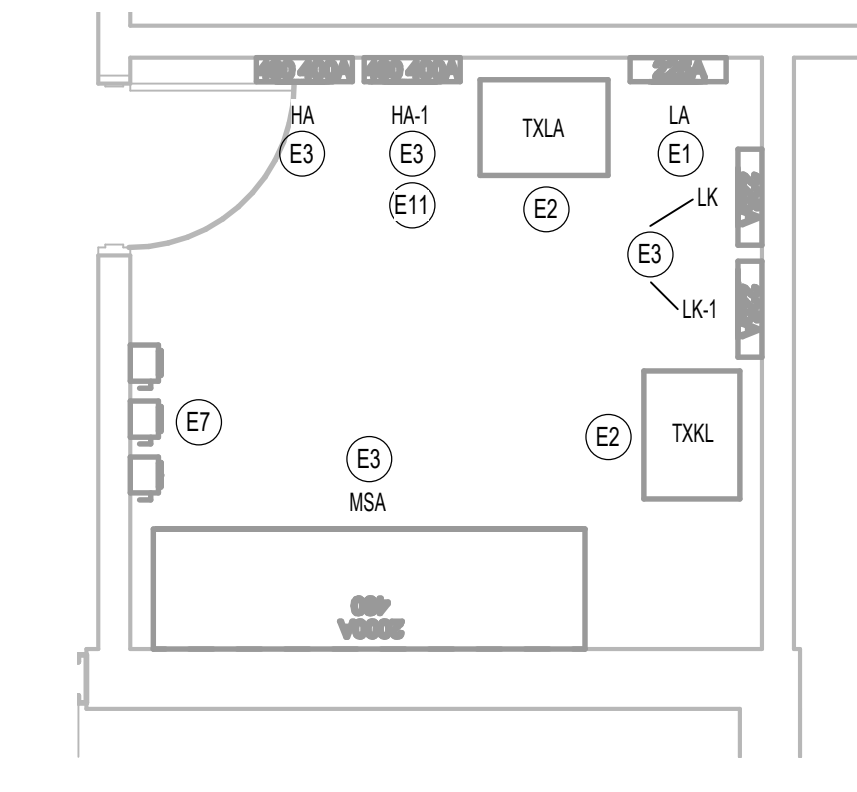
"XX" CFM	DESCRIPTION	MODEL	FINISH	NECK	REMARKS: PROVIDE
L	OUTSIDE AIR INTAKE LOUVER	POTTORFF EXD-645	BAKED ENAMEL	36"x36"	MOTORIZED DAMPER TO CLOSE WHEN UNIT IS OFF, FINISH COLOR TO BE DETERMINED BY ARCHITECT/ OWNER.

NOTE: EXACT LOCATIONS OF ALL SIDEWALL GRILLES TO BE COORDINATED WITH ARCHITECT.

**VARIABLE FREQUENCY DRIVES (VFD)**

TAG	SYSTEM	HORSEPOWER (HP)	MANUFACTURER	LOCATION
HWP #1	HOT WATER PUMP	5	ABB - ACH	MAIN MECH
HWP #2	HOT WATER PUMP	5	ABB - ACH	MAIN MECH

- REMARKS:
- PROVIDE VFDS WITH BACNET INTERFACE CARD
  - VFDS SHALL INCLUDE DISCONNECT AND INTERNAL BYPASS
  - COORDINATE WITH EQUIPMENT MANUFACTURER ON SUBMITTED MOTOR SIZE



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



ISSUE DATE

07-13-2022

REVISION DATE

EMA JOB #: 3-001-0537-001

DRAWN BY: SP

CHECKED: GS

**MECHANICAL ELECTRICAL FLOOR PLAN**

SHEET NUMBER

**ME2.1**

SHEET OF

SUBMISSION OF BID WILL BE CONSIDERED ACKNOWLEDGMENT THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS VERIFIED ALL EXISTING JOB CONDITIONS AND INCLUDED ANY NECESSARY MODIFICATION TO EXISTING AND NEW WORK REQUIRED FOR INSTALLATION OF A COMPLETE AND WORKING SYSTEM.

ISSUE FOR PERMIT  
**BOILER REPLACEMENT**  
 GALENA PARK INDEPENDENT SCHOOL DISTRICT  
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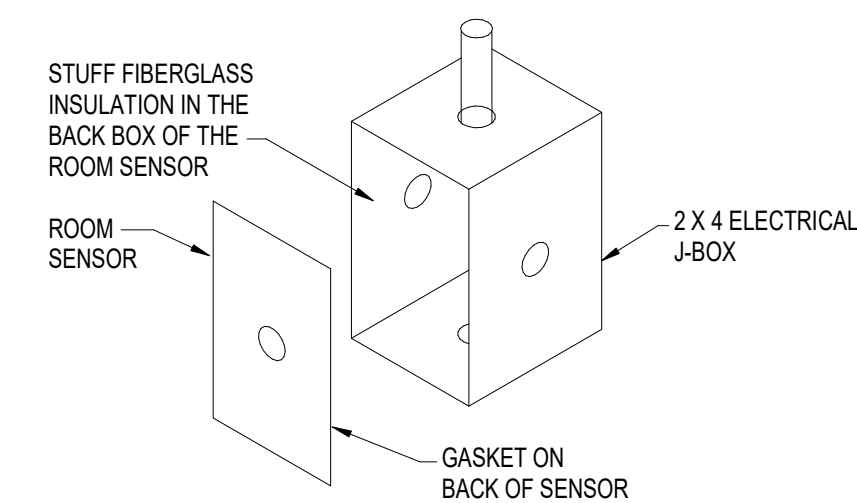
ELECTRICAL LEGEND - POWER SYMBOLS	
---	BRANCH CIRCUIT - CONDUIT IN WALL or ABOVE CEILING. INDICATES DEVICES AND EQUIPMENT ON A CIRCUIT. NOT INTENDED TO SHOW ROUTING.
---	BRANCH CIRCUIT OR FEEDER CONDUIT UNDER FLOOR or UNDERGROUND.
---	SWITCH WIRE - SWITCH CIRCUIT
2-1, 3.5	HOME RUN WITH CIRCUIT DESIGNATION(S) - LETTER DENOTES PANEL
□	PANEL BOARD or SWITCHGEAR (SEE PANEL SCHEDULES AND RISER DIAGRAM)
□	SPECIAL PANEL, EQUIPMENT RACK, CABINET, ETC. - SURFACE MOUNT, FLUSH MOUNT
□	POWER TRANSFORMER - SEE PANEL SCHEDULE, RISER, AND SPECIFICATIONS.
□	DISCONNECT / SAFETY SWITCH - SEE SCHEDULES FOR MORE INFORMATION.
□	GROUND - WEATHERHEAD
□	CONCRETE IN-GRADE PULL BOX / HAND HOLE - PROVIDE AS SHOWN OR AS REQUIRED.
□	JUNCTION BOX - @ 18" AFF OR AS NOTED; FLUSH WALLS / FLUSH CEILING or FLOOR or ELSE.
□	RECEPTACLE @ 18" AFF OR AS NOTED - DUPLEX, QUAD, SIMPLEX
□	MULTI-POLE RECEPTACLE @ 18" AFF or AS NOTED - NON-LINEAR TWISTLOCK MULTIPOLAR @ 18" AFF or AS NOTED.
□	GFCI DUPLEX RECEPTACLE @ 6" ABOVE BACKSPASH IF SHOWN ON MILLWORK or 18" AFF - WEATHERPROOF GFCI.
□	DUPLEX RECEPTACLE W/ USB @ 6" ABOVE BACKSPASH IF SHOWN AT MILLWORK or 18" AFF (LEVITON T5632 SERIES OR EQUIVALENT).
□	NON-LINEAR RECEPTACLE @ 18" AFF or AS NOTED - DUPLEX, QUAD.
□	DUPLEX RECEPTACLE @ 6" ABOVE BACKSPASH OR AS NOTED.
□	DUPLEX FLOOR W/ BRASS COVER PLATE & 3/4" C TO ACCESSIBLE ATTIC SPACE or AS NOTED.
□	FLOOR BOX - 2 GANG (RFB2/CFB2) 1/1X DUPLEX; 4 GANG (RFB4/CFB4) 1/2X DUPLEX. SEE SPECS FOR MORE INFO.
□	FLOOR BOX - 6 GANG (RFB6/CFB6) 1/3X DUPLEX; 9-10 GANG (RFB9/CFB10) 1/6X DUPLEX. SEE SPECS FOR MORE INFO.
□	FLOOR BOX - 11 GANG (RFB11) 1/7X DUPLEX; CUSTOM FLOORBOX AS NOTED. SEE SPECS FOR MORE INFO.
□	POKE-THRU FLOOR BOX - 3X RECEPTACLES & COMM. SEE SPECS FOR MORE INFO. WALKERBOX EVOLUTION 8AT or APPROVED EQUAL, OR AS NOTED.
□	POWER POLE - POWER & DATA
□	PLUGMOLD WITH RECEPTACLES AT 12" OC
□	SURFACE - MOUNT RACEWAY - SEE SPECIFICATIONS FOR MORE INFORMATION.
□	MOTOR - W / MOTOR SWITCH, OVERLOADS SQ.D. CLASS 2510, NEMA ENCL. (TYPE K) or AS NOTED. FINAL CONNECTION BY ELECTRICAL CONTRACTOR - MOTOR (GENERAL); EXHAUST FAN; SUPPLY FAN; PUMP.
□	MOTOR TOGGLE SWITCH.
□	DOOR HOLD BACK - PROVIDE POWER SHOWN TO LOW VOLTAGE TX TO SERVE DEVICE(S).
□	EMERGENCY POWER OFF (EPO) - SEE SPECIFICATIONS FOR MORE INFORMATION.
□	BUZZER - EDWARDS #158G-6G1 OR APPROVED EQUAL AT 80" AFF.
□	PUSH BUTTON - EDWARDS #666 OR APPROVED EQUAL AT 44" AFF - SIGNAL TX ABOVE CEILING.
□	WATER HEATER - SEE PLUMBING SCHEDULE FOR MORE INFORMATION.
□	PLUMBING SENSORS - PROVIDE POWER SHOWN TO LOW VOLTAGE TX TO SERVE DEVICE(S).
□	DUPLEX RAISED FLOOR RECEPTACLE.

- NOTES:
- SOME SYMBOLS MAY NOT BE USED.
  - ACCESSIBLE DEVICES HIGHEST OPERABLE PART TO BE 46" MAXIMUM/18" MINIMUM A.F.F. - REFER TO ARCHITECTURAL DRAWINGS.
  - DIMENSIONS GIVEN A.F.F. ARE TO BOTTOM OF BOX.

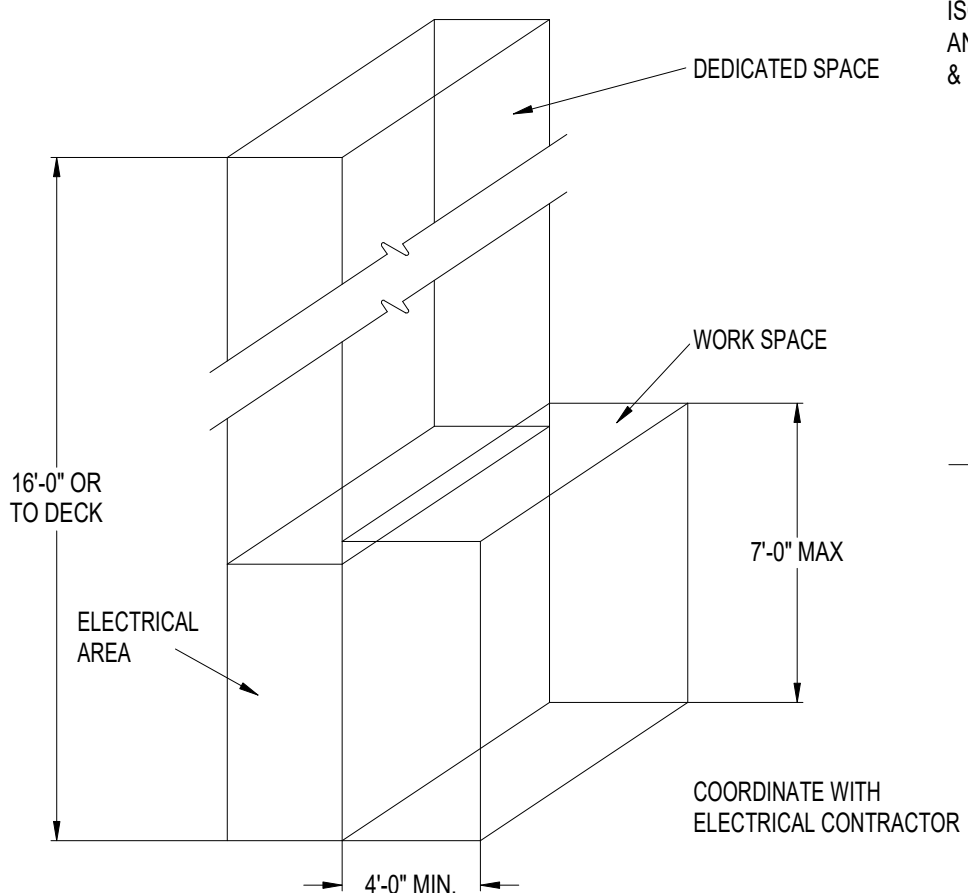
□	EMERGENCY RECEPTACLE (RED) - @6" ABOVE COUNTER - @18" AFF
□	POWER GROUND MODULE WITH 4X DUPLEX RECEPTACLES AND 4X GROUNDING JACKS.
□	JUNCTION BOX FOR EMERGENCY POWER - @ 18" AFF OR AS NOTED.

EXISTING MECHANICAL SYMBOLS	
EXISTING THERMOSTAT/SENSOR	Ⓧ
CFM (CUBIT FT. PER MIN.)	○
EXISTING RETURN AIR GRILLE	⊠
EXISTING SUPPLY GRILLE	⊠
EXISTING DUCT	▬
EXISTING UNIT	▭
EXISTING EXHAUST / FAN / RELIEF	⊠
CAP	⊠

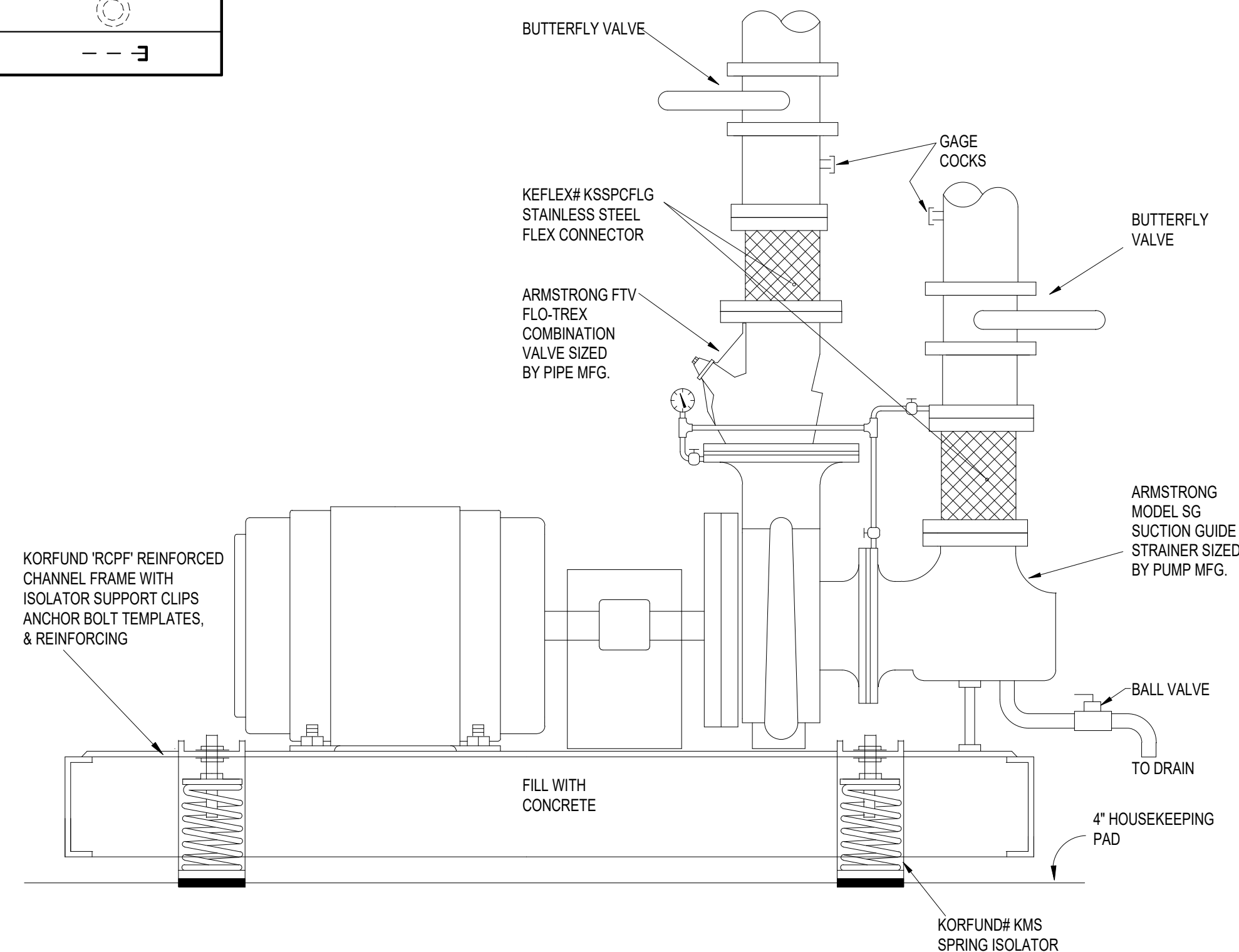
NOTE: SOME SYMBOLS MAY NOT BE USED.



1 ROOM SENSOR INSULATION  
N.T.S.



2 INSTALLATION CLEARANCES AROUND ELECTRICAL EQUIPMENT  
N.T.S.



3 BASE MOUNTED END SUCTION PUMP  
N.T.S.

MECHANICAL SYMBOLS		
THERMOSTAT/SENSOR (PER SPEC.)	Ⓧ	
CO2 SENSOR	Ⓧ	
HUMIDISTAT	Ⓧ	
THERMOSTAT/HUMIDISTAT	Ⓧ	
DUCT DETECTOR WITH CONTROL RELAY	D	
CFM (CUBIC FT. PER MIN.)	###	
GRILLE TYPE	XX	
DUCT TYPE TAG DENOTATION	RECTANGULAR	XX" x XX"
	FLAT OVAL	XX"/XX"
	ROUND	XX"Ø
RETURN AIR GRILLE	⊠	
SUPPLY GRILLE	⊠	
MANUAL VOLUME DAMPER	⊠	
BALANCING DAMPER*	⊠	
MOTORIZED DAMPER	⊠	
FIRE DAMPER/SMOKE FIRE DAMPER	RECTANGULAR	FD ⊠ SFD
	ROUND	FD ⊠ SFD
CAP	⊠	
SPIRAL DUCT	▬	
FLEX DUCT	▬	
MEDIUM PRESSURE DUCT	▬	

NOTE: SOME SYMBOLS MAY NOT BE USED.  
\*BALANCING DAMPER SHALL BE NAILER SERIES 1021 OR EQUAL FOR AIR BALANCING

## ELECTRICAL GENERAL NOTES

(SOME NOTES MAY NOT BE USED)

- BRANCH CIRCUIT - PROVIDE A SEPARATE NEUTRAL CONDUCTOR FOR EACH CIRCUIT. MULTIPLE CIRCUITS SHALL NOT SHARE A COMMON NEUTRAL. NEUTRAL CONDUCTORS SHALL BE SIZED AS LARGE AS THE PHASE CONDUCTORS. NEUTRAL CONDUCTORS SHALL NOT BE OF A REDUCED SIZE.
- CONDUIT - WHERE POSSIBLE, ALL CONDUIT AND/OR CABLING SHALL BE INSTALLED BETWEEN THE BOTTOM AND TOP CHORD OF JOIST. WHERE NO CEILINGS ARE SCHEDULED, ALL CONDUIT SHALL BE UP AGAINST BOTTOM OF THE TOP CHORD. DO NOT SUPPORT OR REST CONDUITS ON BOTTOM CHORD OF THE JOISTS.
- CONDUIT - ROUTE CONDUIT IN EXPOSED AREAS PERPENDICULAR OR PARALLEL TO WALLS. ROUTE CONDUIT AS HIGH AS POSSIBLE AND ROUTE CONDUIT RUNS ADJACENT TO EACH OTHER. CONDUITS SHALL BE ORDERLY AND NEAT.
- DEVICES - VERIFY ALL INSTALLATION HEIGHTS OF RECEPTACLES WITH ARCHITECTURAL CASEWORK DETAILS BEFORE ROUGH-IN.
- EQUIPMENT - DURING THE SUBMITTAL PHASE, THIS CONTRACTOR SHALL SUBMIT LAYOUT OF ALL PANELS, SWITCHGEAR, TRANSFORMERS, CONTACTORS, ETC. IN EACH EQUIPMENT ROOM WHERE THIS EQUIPMENT IS LOCATED. ALL LAYOUTS MUST BE DRAWN TO SCALE AND DIMENSIONED.
- MECHANICAL - EXACT MECHANICAL EQUIPMENT LOCATIONS AND TYPE SHALL BE COORDINATED WITH MECHANICAL PLANS AND MECHANICAL CONTRACTOR. DO NOT INSTALL CONDUIT/CABLING WITHIN 3'-0" OF ANY HVAC UNIT UNLESS THE CONDUIT AND/OR CABLING SERVES THAT UNIT.
- MECHANICAL - UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS, PROVIDE A LISTED MANUAL MOTOR-CIRCUIT SWITCH AS A DISCONNECTING MEANS AT EACH MOTOR. FOR MOTORS SHOWN WITH "MS" PROVIDE A LISTED MANUAL MOTOR -CIRCUIT SWITCH WITH OVERLOAD PROTECTION AS A DISCONNECTING MEANS AT EACH MOTOR.
- CONDUIT - COORDINATE CONDUIT ROOF PENETRATIONS WITH MECHANICAL ROOF TOP UNITS AND/OR THRU HOODED PLUMBING PENETRATIONS TO CONDENSING UNITS.
- MECHANICAL - REFER TO THE MECHANICAL SHEETS FOR ALL SENSOR LOCATIONS (THERMOSTAT, HUMIDISTAT, CO2, etc.), DUCT DETECTORS, CONTROL RELAYS, MOTORIZED DAMPERS, SFDs, etc. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONDUIT, BACK BOXES AND LINE VOLTAGE WIRING TO SENSORS, DEVICES, etc. AS REQUIRED TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM. FOR MORE INFORMATION, REFER TO SPECIFICATIONS AND SENSOR INSTALLATION DETAIL.
- MECHANICAL - ALL VARIABLE FREQUENCY DRIVES (VFD'S) ARE TO BE PROVIDED BY THE MECHANICAL CONTRACTOR, INSTALLED AND POWERED BY THE ELECTRICAL CONTRACTOR, AND CONTROLLED BY THE CONTROLS CONTRACTOR. THIS CONTRACTOR TO PROVIDE ALL NECESSARY POWER WIRING FROM PANEL TO VFDs AND FROM VFDs TO EACH MOTOR.
- MECHANICAL - FOR ALL UNITS WITH PLASMA AIR IONIZATION DEVICE. PROVIDE CONTROL WIRING AS REQUIRED BY MANUFACTURER FROM LOW VOLTAGE FAN CONTROL TERMINALS TO POWER INPUT TERMINALS ON IONIZATION DEVICE. PROVIDE STEP-DOWN TRANSFORMERS AS REQUIRED TO PROVIDE LOW VOTAGE POWER FROM UTILIZING THE CIRCUIT POWERING THE UNIT. COORDINATE EXACT ELECTRICAL REQUIREMENTS WITH MECHANICAL INSTALLER. LOCATE EACH TRANSFORMER IN A NEMA 3R ENCLOSURE MOUNTED AT THE UNIT.

## ELECTRICAL DEMOLITION GENERAL NOTES

(SOME NOTES MAY NOT BE USED)

- UNLESS NOTED ON DRAWINGS, ALL LIGHTING, SWITCHES, OUTLETS AND OTHER ELECTRICAL DEVICES ARE TO REMAIN.
- REFER TO SPECIFICATION SECTION 26 05 11, ELECTRICAL DEMOLITION REMODELING, FOR GENERAL DEMOLITION REQUIREMENTS.
- ALL MATERIAL REMOVED AND NOT RETAINED BY THE OWNER SHALL BE DISPOSED OF OFF SITE IN A LAWFUL MANNER.
- BEFORE DEMOLISHING PANELS, TRACE ALL BRANCH CIRCUITS TO CONFIRM THAT EXISTING LOADS HAVE BEEN RELOCATED TO NEW PANELS. IF A LOAD EXISTS THAT HAS NOT BEEN RELOCATED TO NEW PANELS, CONTACT THE ENGINEER FOR INSTRUCTIONS.

## MECHANICAL DEMOLITION GENERAL NOTES

- CONTRACTOR TO VISIT SITE AND BE FAMILIAR WITH BUILDING MECHANICAL AND ELECTRICAL LAYOUTS.
- IF ASBESTOS IS FOUND CONTACT OWNER IMMEDIATELY. DO NOT WORK IN ANY AREA SUSPECTED TO CONTAIN ASBESTOS.
- ALL EXISTING EQUIPMENT SHOWN IN APPROXIMATE LOCATION. FIELD VERIFY.
- DO NOT RELEASE ANY REFRIGERANT TO ATMOSPHERE. DISPOSE OF IN A LAWFUL MANNER.
- ALL REUSED EXISTING MECHANICAL EQUIPMENT SHALL BE INSPECTED AND CLEANED FOR PROPER OPERATION. CHANGE ALL BELTS.
- PROVIDE AND INSTALL A FIRE DAMPER WHERE NEW DUCTWORK CROSSES AN EXISTING FIRE RATED WALL. IF ANY EXISTING DUCTWORK CROSSES A NEW FIRE RATED WALL A FIRE DAMPER IS TO BE PROVIDED AND INSTALLED.
- ALL MATERIAL, EQUIPMENT, DUCTS, PIPE, ETC. TO BE REMOVED SHALL BE DISPOSED OF OFF SITE IN A LEGAL AND LAWFUL MANNER.
- ALL EXISTING FIRE DAMPERS OR SMOKE DAMPERS BEING REUSED SHALL REMAIN IN PLACE AND OPERATIONAL.
- REMOVE ONLY CEILING TILE NECESSARY TO ACCOMPLISH DEMOLITION AND NEW WORK, DUCT, ELECTRICAL, ETC. REPLACE ALL BROKEN TILES WITH NEW TILES TO MATCH EXISTING WHERE REQUIRED. REUSE EXISTING TILES.
- CAP ANY UNUSED PIPE AT FLOOR, WALL, CEILING. REMOVE MATERIAL NOT BEING REUSED.
- WHERE REMOVING HVAC AND PIPING, PATCH ALL WALLS WITH 5/8 SHEET ROCK ON EACH SIDE OF WALL, PAINT TO MATCH.
- LEAVE ANY DOMESTIC WATER HEATER IN PLACE AND OPERATIONAL.
- LEAVE ALL EXISTING EXHAUST FANS IN PLACE AND OPERATIONAL UNLESS DRAWINGS SHOW TO REPLACE OR ADD EXHAUST FANS.
- LEAVE ALL GAS TO EXISTING RTU THAT HAVE GAS IN PLACE AND OPERATIONAL UNLESS REPLACING UNIT.
- REMOVE ALL CONDENSATE DRAIN PIPING FROM UNITS THAT ARE TO BE REPLACED. EACH ROOFTOP UNIT HAS CONDENSATE PIPING.
- AIR HANDLER(S) BEING REINSTALLED MUST MAINTAIN FILTER ACCESS. COORDINATE FILTER ACCESS DOORS WITH STRUCTURE, PIPING, ETC.

## MECHANICAL GENERAL NOTES

- MECHANICAL CONTRACTOR TO PROVIDE TO THE PLUMBING CONTRACTOR THE RECOMMENDED AC MANUFACTURER'S DATA FOR CONDENSATE TRAPS PER EACH TYPE OF UNIT.
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OR ADJUSTMENT OF ALL HOLD DOWN BOLTS ON COMPRESSORS AT HVAC EQUIPMENT TO ALLOW FOR PROPER VIBRATION ISOLATION.
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL ABANDONED SCREWS, PIPING, TAPE, PAPERS, PACKING PRODUCTS, ETC.
- ALL EQUIPMENT SHALL BE PROPERLY LABELED PER SPECIFICATIONS.
- CLOSE ALL OUTSIDE AIR DAMPERS UPON INSTALLATION AND KEEP ALL OUTSIDE AIR DAMPERS CLOSED UNTIL THE "TEST AND BALANCE" IS PERFORMED.
- COORDINATE WITH THE PLUMBING CONTRACTOR LOCATION OF ALL SUPPLY FANS WITH PLUMBING VENTS. MAINTAIN 10'-0" MINIMUM SEPARATION.
- ALL VARIABLE FREQUENCY DRIVES (VFD'S) ARE TO BE PROVIDED BY THE MECHANICAL CONTRACTOR, INSTALLED AND POWERED BY THE ELECTRICAL CONTRACTOR, AND CONTROLLED BY THE CONTROL CONTRACTOR.
- INSTALL PETE'S PLUG BOTH SIDES OF BALANCING VALVES.
- INSTALL MANUAL AIR VENTS AT ALL HIGH POINTS OF SYSTEM.
- INSTALL AIR SEPARATOR AS WHERE SHOWN WITH ISOLATION VALVES ON BOTH SIDES.
- INSTALL BALANCING VALVES AT MAJOR BRANCHES AND AS SHOWN.
- INSTALL UP TO 6 ADDITIONAL TEST PORTS FOR EACH BUILDING LOCATED BY TEST AND BALANCE CO.

**EMA**  
DESIGN SOLVE ENHANCE

EMA Engineering & Consulting, Inc.  
Tyler | Austin | Houston | El Paso  
DFW | San Antonio | Shreveport  
Texas Firm Registration No. F-893  
Louisiana Firm Registration No. EF-5818  
www.EMAengineer.com



07-13-2022

ISSUE DATE

07-13-2022

REVISION DATE

ISSUE FOR PERMIT  
**BOILER REPLACEMENT**  
 GALENA PARK INDEPENDENT SCHOOL DISTRICT  
 GALENA PARK, TX

EMA JOB #: 3-001-0537-001

DRAWN BY: SP

CHECKED: QS

MECHANICAL ELECTRICAL  
DETAILS, GENERAL NOTES  
& SYMBOLS

SHEET NUMBER

**ME7.1**

SHEET OF

SUBMISSION OF BID WILL BE CONSIDERED ACKNOWLEDGMENT THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS VERIFIED ALL EXISTING JOB CONDITIONS AND INCLUDED ANY NECESSARY MODIFICATION TO EXISTING AND NEW WORK REQUIRED FOR INSTALLATION OF A COMPLETE AND WORKING SYSTEM.

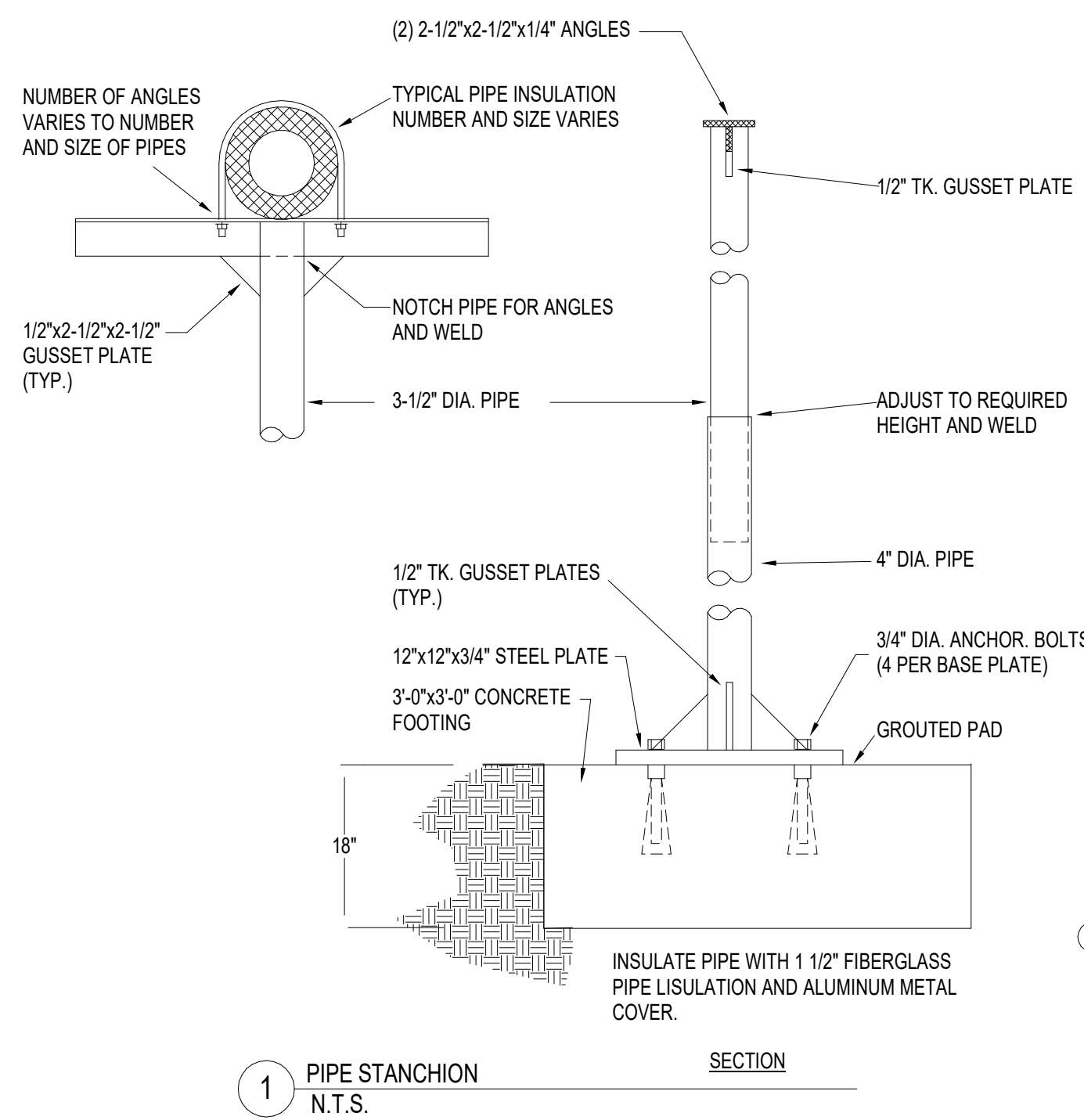




ISSUE DATE

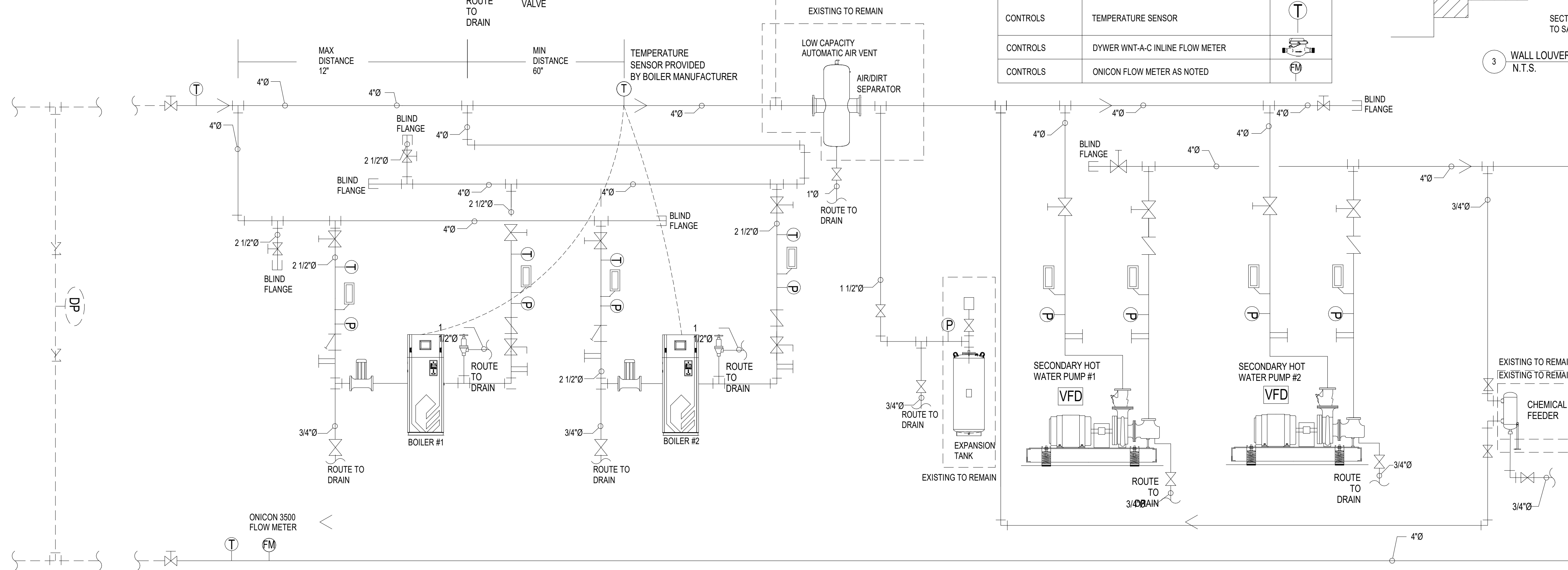
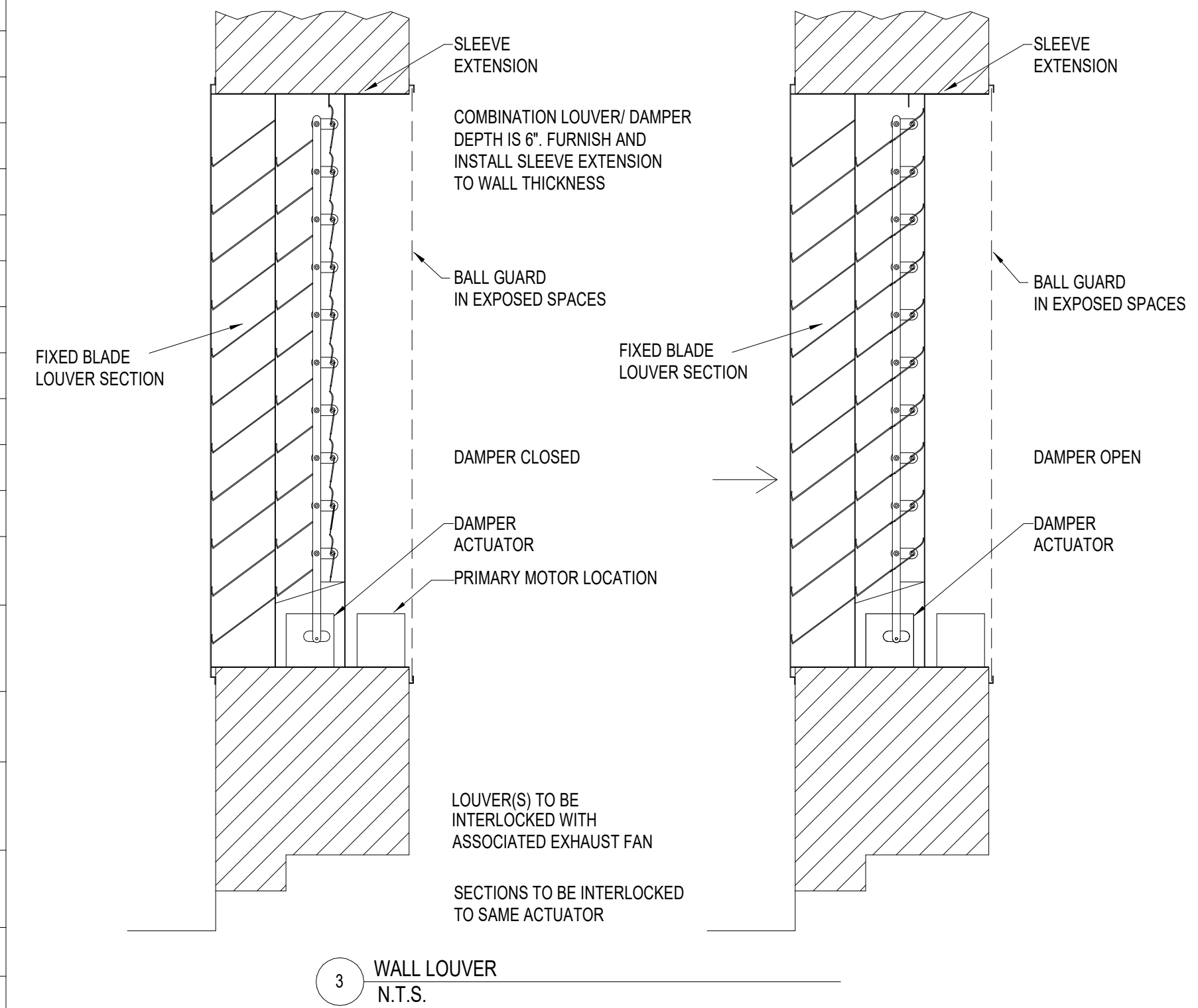
07-13-2022

REVISION DATE



A HOT WATER DIFFERENTIAL PRESSURE SENSOR SHALL BE PROVIDED AND INSTALLED IN THE BUILDING. MECHANICAL CONTRACTOR AND CONTROLS CONTRACTOR SHALL COORDINATE WITH DESIGN ENGINEER ON THE EXACT LOCATION.

SYMBOLS		
PROVIDER	DESCRIPTION	SYMBOL
MECHANICAL	THERMOMETER	
MECHANICAL	BALANCE VALVE	
MECHANICAL	CHECK VALVE	
MECHANICAL	PETE'S PLUG	
MECHANICAL	STRAINER	
MECHANICAL	PRESSURE RELIEF VALVE	
MECHANICAL	WATTS LF909QT-S BACKFLOW PREVENTER	
MECHANICAL	AIR GAP FITTING	
MECHANICAL	ISOLATION VALVE	
MECHANICAL	PRESSURE GAUGE	
MECHANICAL	BALL VALVE	
MECHANICAL	PRESSURE REDUCING VALVE	
MECHANICAL	SUCTION GUIDE WITH STRAINER	
MECHANICAL	COMBINATION CONTROL VALVE	
CONTROLS	ROSEMOUNT DIFFERENTIAL PRESSURE SENSOR	
CONTROLS	MOTORIZED VALVE AS NOTED	
CONTROLS	TEMPERATURE SENSOR	
CONTROLS	DYWID WNT-A-C INLINE FLOW METER	
CONTROLS	ONICON FLOW METER AS NOTED	



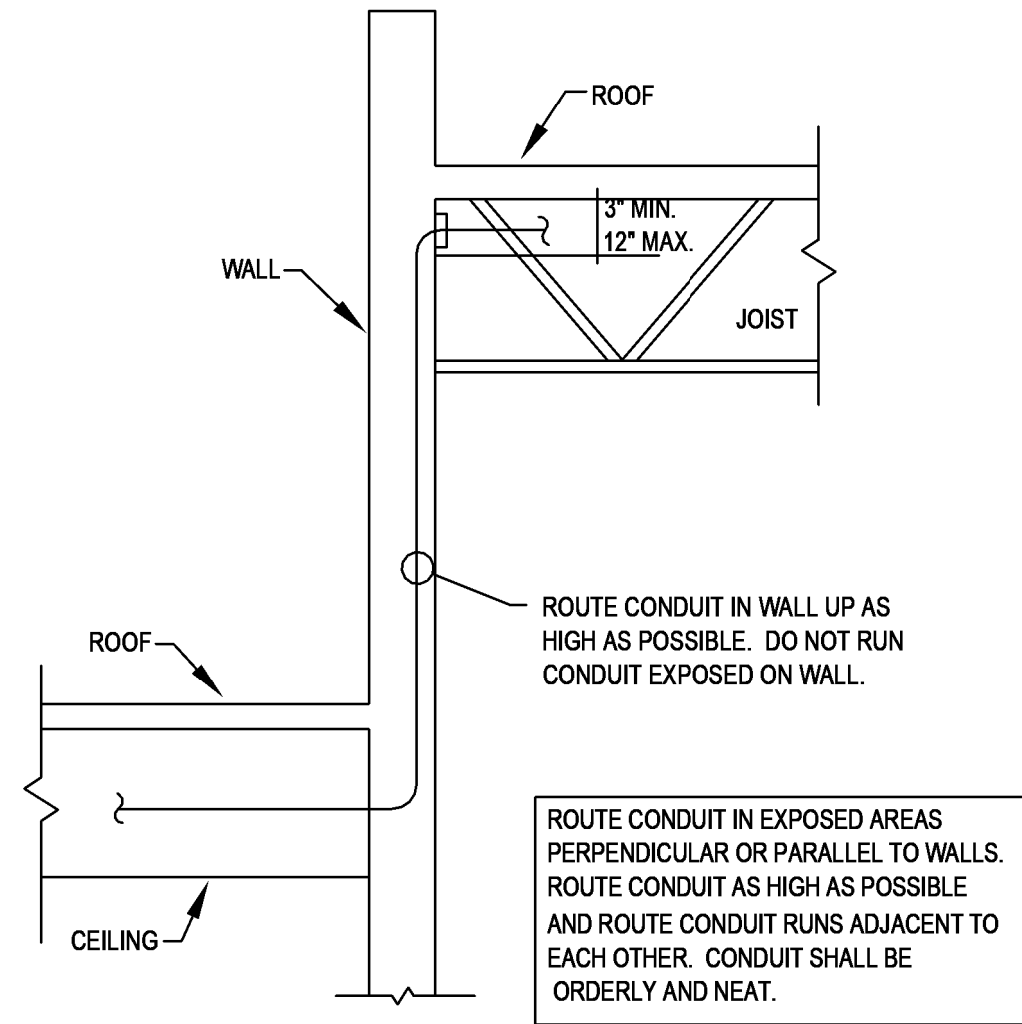
2 MULTIPLE HEATING CONDENSING BOILERS PIPING SCHEMATIC  
N.T.S.

SUBMISSION OF BID WILL BE CONSIDERED ACKNOWLEDGMENT THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS VERIFIED ALL EXISTING JOB CONDITIONS AND INCLUDED ANY NECESSARY MODIFICATION TO EXISTING AND NEW WORK REQUIRED FOR INSTALLATION OF A COMPLETE AND WORKING SYSTEM.

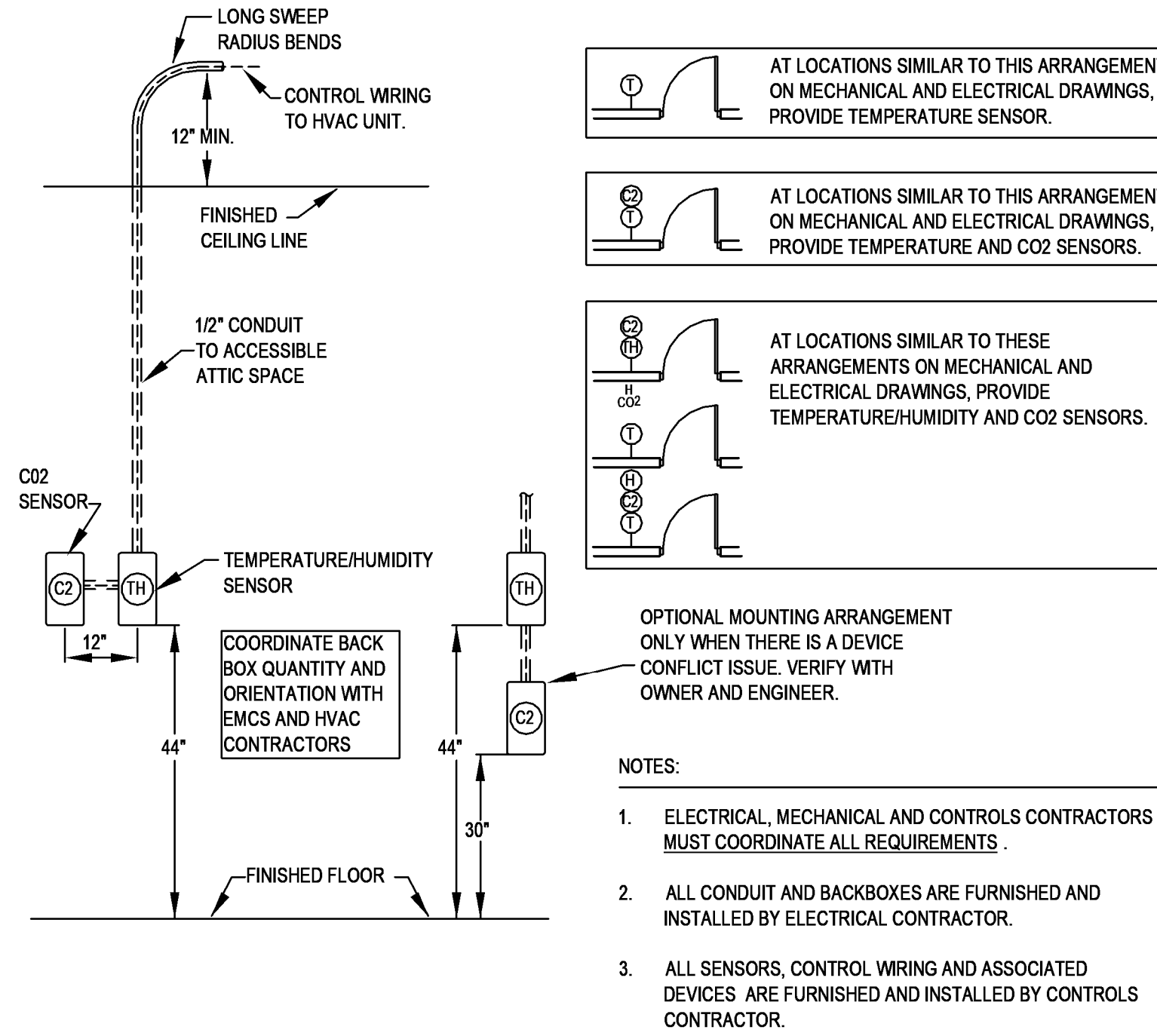
SHEET NUMBER

ME7.2

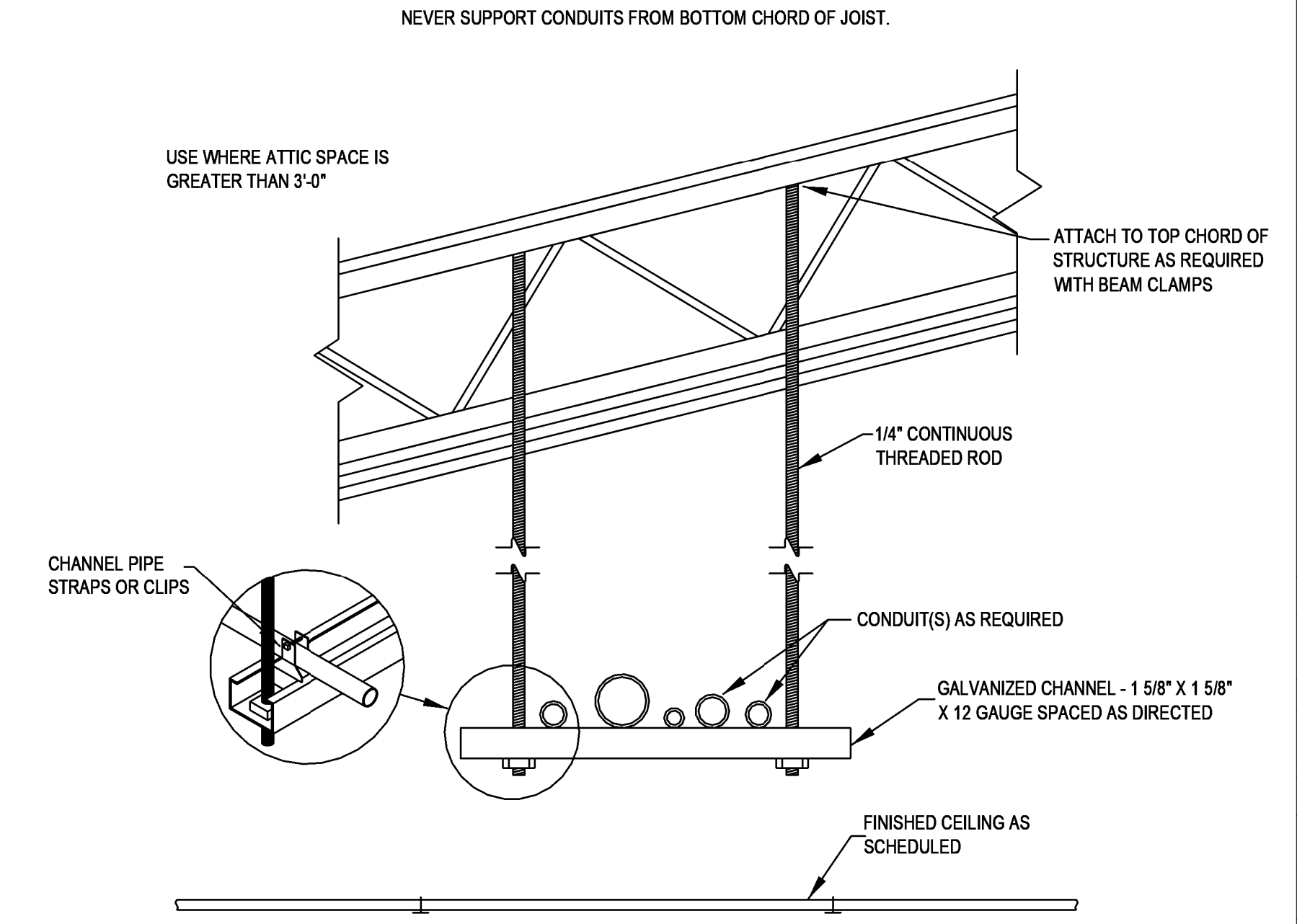
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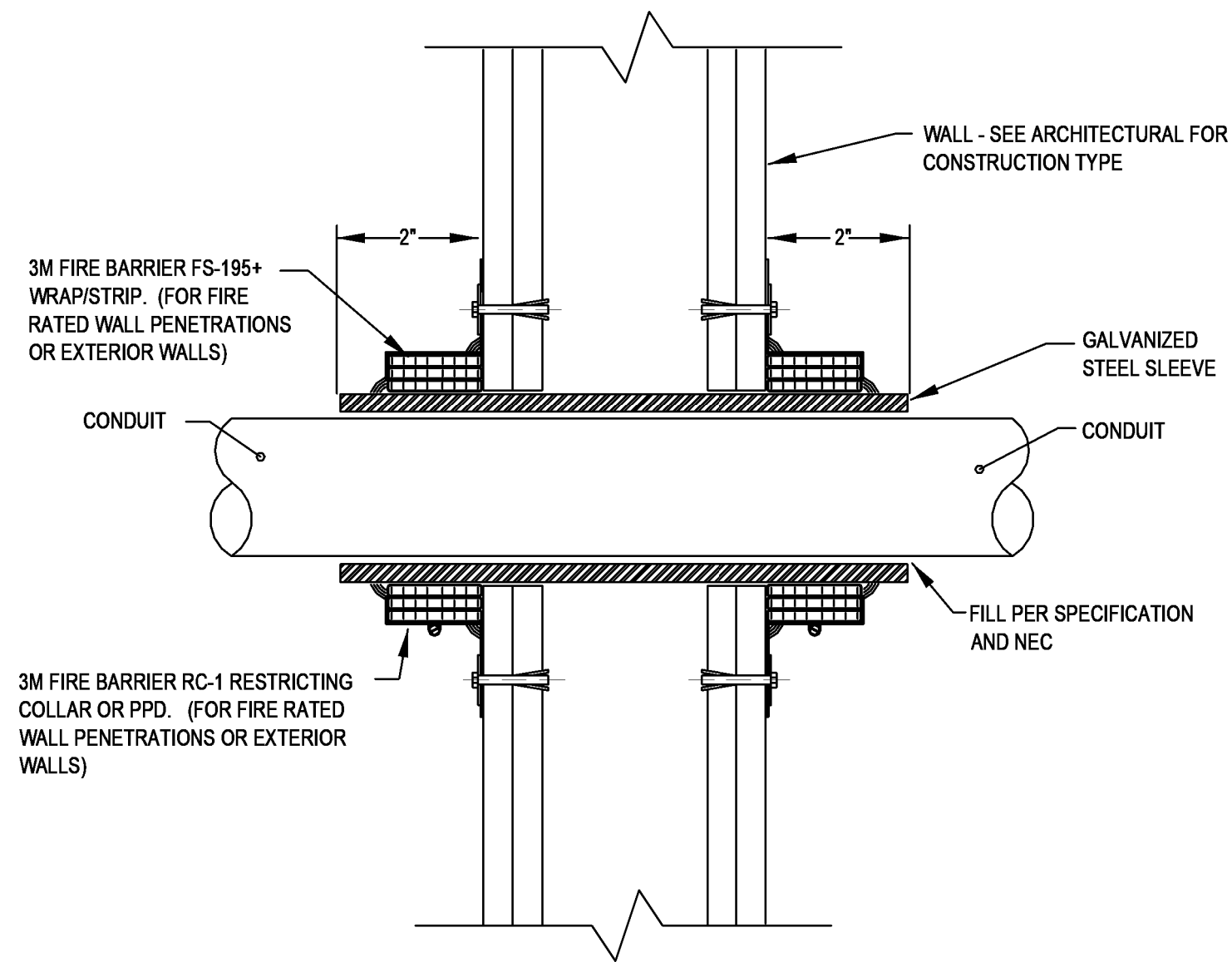
1 EXPOSED CONDUIT ROUTING  
N.T.S.



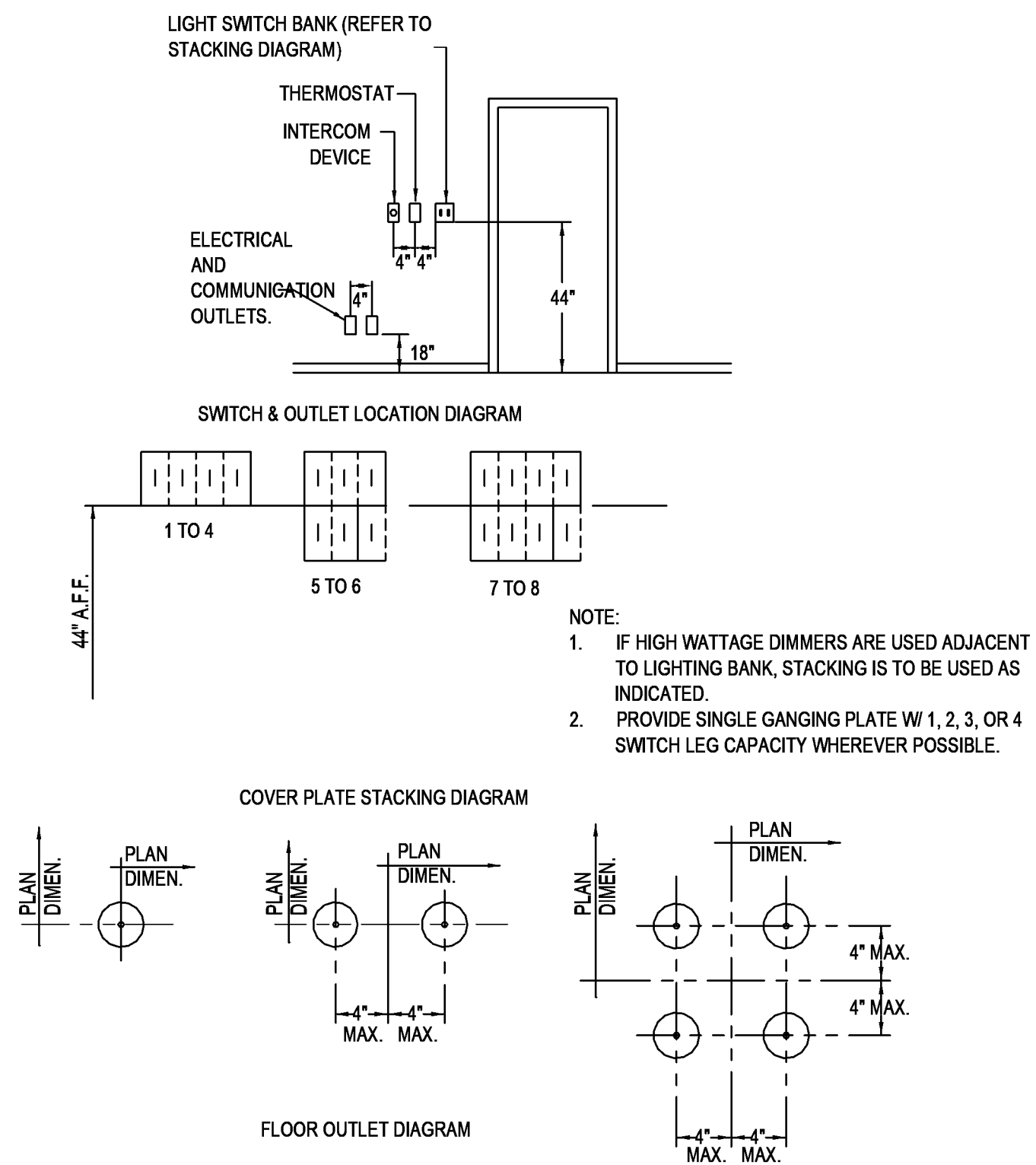
3 SENSOR MOUNTING DETAIL  
N.T.S.



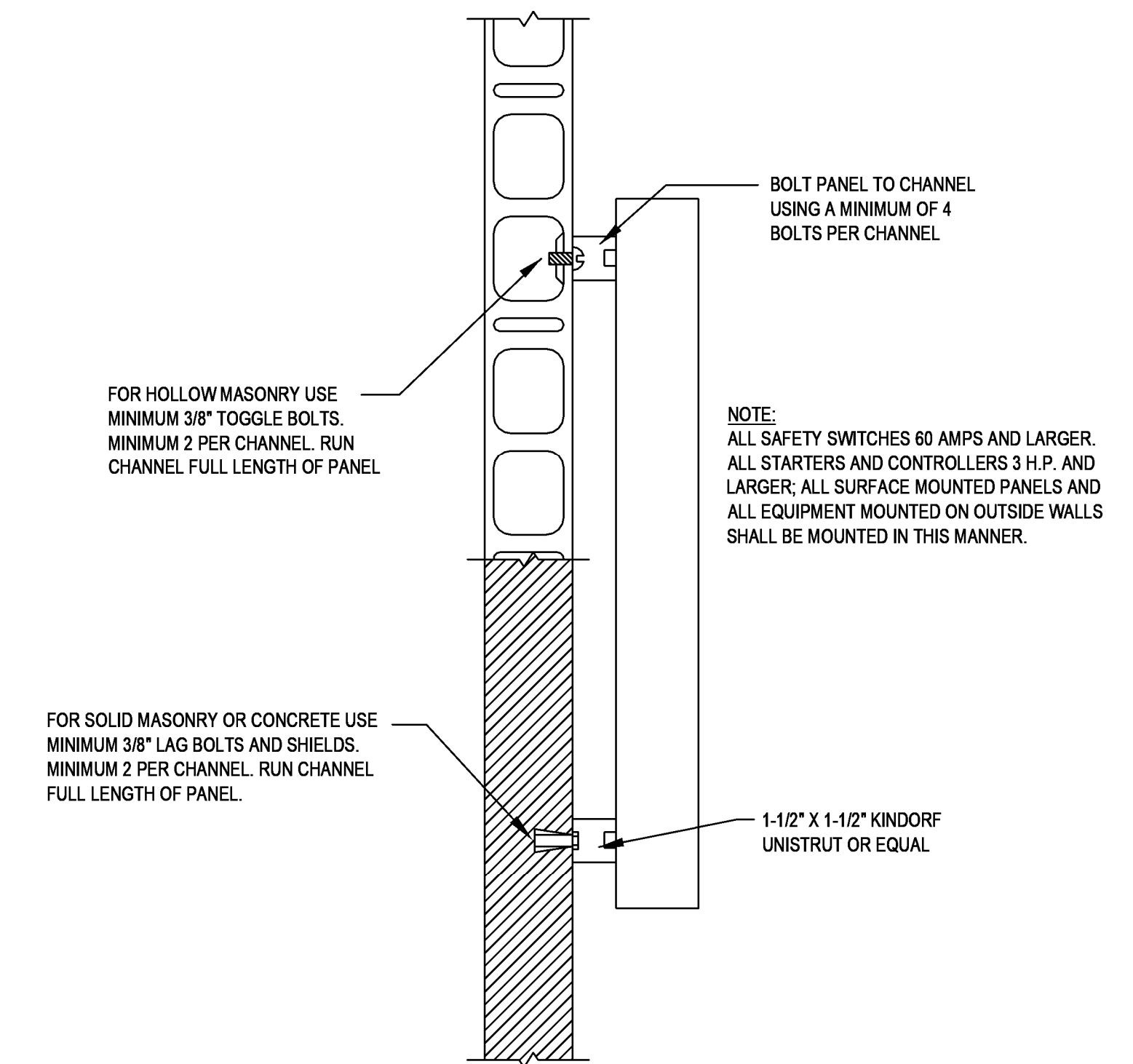
5 CONDUIT SUPPORT  
N.T.S.



2 WALL PENETRATION  
N.T.S.



4 OUTLET DIAGRAM  
N.T.S.



6 SURFACE EQUIPMENT MOUNTING DETAIL (VERTICAL)  
N.T.S.

ISSUE FOR PERMIT  
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GALENA PARK, TX