

REFERENCE SHEET MH6.1
FOR GENERAL PLAN NOTES.

MECHANICAL PLAN NOTES

- ① CONTRACTOR TO PROVIDE NEW HOUSEKEEPING PAD TO ACCOMMODATE NEW CONDENSING UNIT. INSTALL NEW CONDENSER UNIT ON NEW SLAB.
- ② CONTRACTOR TO INSTALL NEW AIR HANDLER UNIT IN AREA ABOVE CEILING IN EXISTING LOCATION. CONNECT UNIT TO EXISTING DUCTWORK. COORDINATE ORIENTATION OF UNIT WITH EXISTING DUCTWORK. MODIFY EXISTING DUCTWORK AS REQUIRED AND PROVIDE TRANSITIONS AS NECESSARY TO ADAPT SIZE OF EXISTING DUCT FOR TIE-IN.

MECHANICAL PLAN NOTES

- ③ PROVIDE NEW P-TRAP AT UNIT AND CONNECT TO EXISTING CONDENSATE PIPING.
- ④ INSTALL NEW UNIT HEATERS #1, 2, 3, & 4 IN THE LOCATIONS OF THE PREVIOUS UNITS. CONNECT NEW UNITS TO EXISTING GAS PIPING AND REUSE EXISTING FLUE PENETRATIONS FOR NEW CONCENTRIC FLUE.
- ⑤ CONNECT EXISTING COOLER/FREEZER INTO NEW EMCS.

EMA

DESIGN SOLVE ENHANCE

EMA Engineering and Consulting
Tyler | Austin | Houston | El Paso
DFW | San Antonio | Shreveport
TBPE Firm Registration No. F-893
www.EMAengineer.com
Phone: 1 . 800 . 933 . 0538



ISSUE DATE	
11-19-2021	
REVISION	DATE
1 ADDENDUM #1	12/03/2021

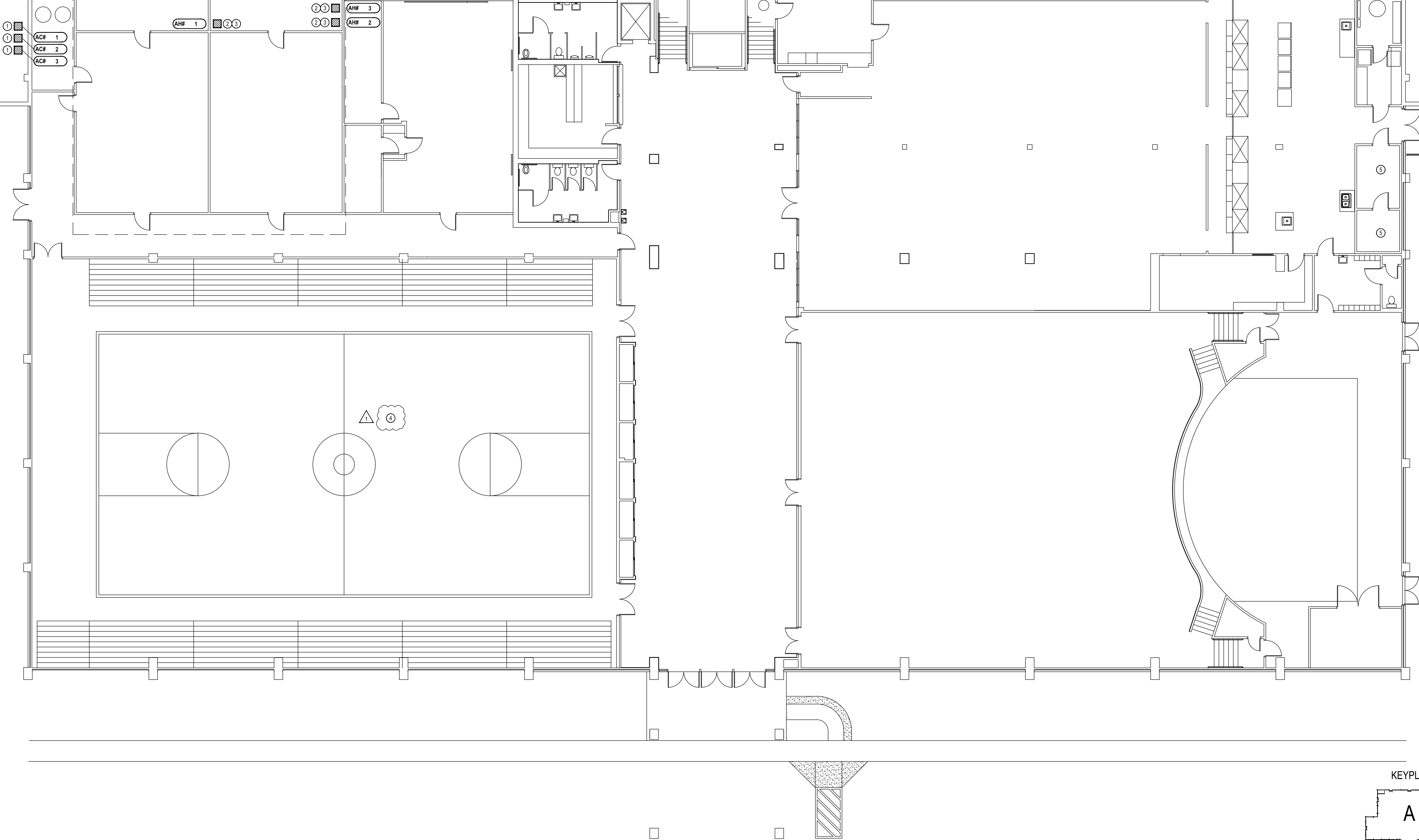
2022 ESSER HVAC RENOVATIONS
E.J. MOSS (EAST) INTERMEDIATE CAMPUS
LINDALE INDEPENDENT SCHOOL DISTRICT

EMA JOB #:	
DRAWN BY:	LRU
CHECKED:	QS

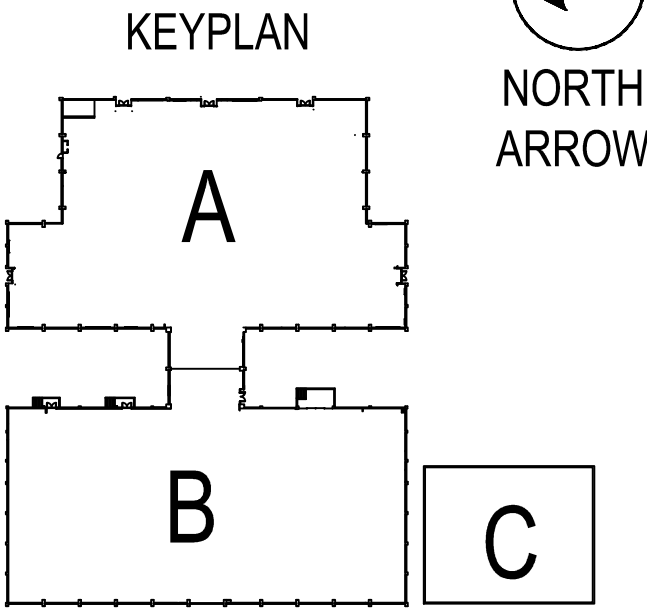
MECHANICAL
FLOOR PLAN
AREA A

SHEET NUMBER
MH1.1

ROOM LAYOUTS WITHIN THIS
AREA ARE APPROXIMATE AND
NOT DRAWN TO SCALE.



1 MECHANICAL FLOOR PLAN - FIRST FLOOR - AREA B
1/8"=1'-0"



EMA Engineering and Consulting
Tyler | Austin | Houston | El Paso
DFW | San Antonio | Shreveport
TBPE Firm Registration No. F-893
Website: www.EMAengineer.com
Phone: 1 . 800 . 933 . 0538

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	
11-19-2021	
REVISION	DATE
1 ADDENDUM #1	12/03/2021

2022 ESSER HVAC RENOVATIONS
E.J. MOSS (EAST) INTERMEDIATE CAMPUS
LINDALE INDEPENDENT SCHOOL DISTRICT

EMA JOB #:	
DRAWN BY:	LRU
CHECKED:	QS

MECHANICAL
ROOF PLAN

SHEET NUMBER

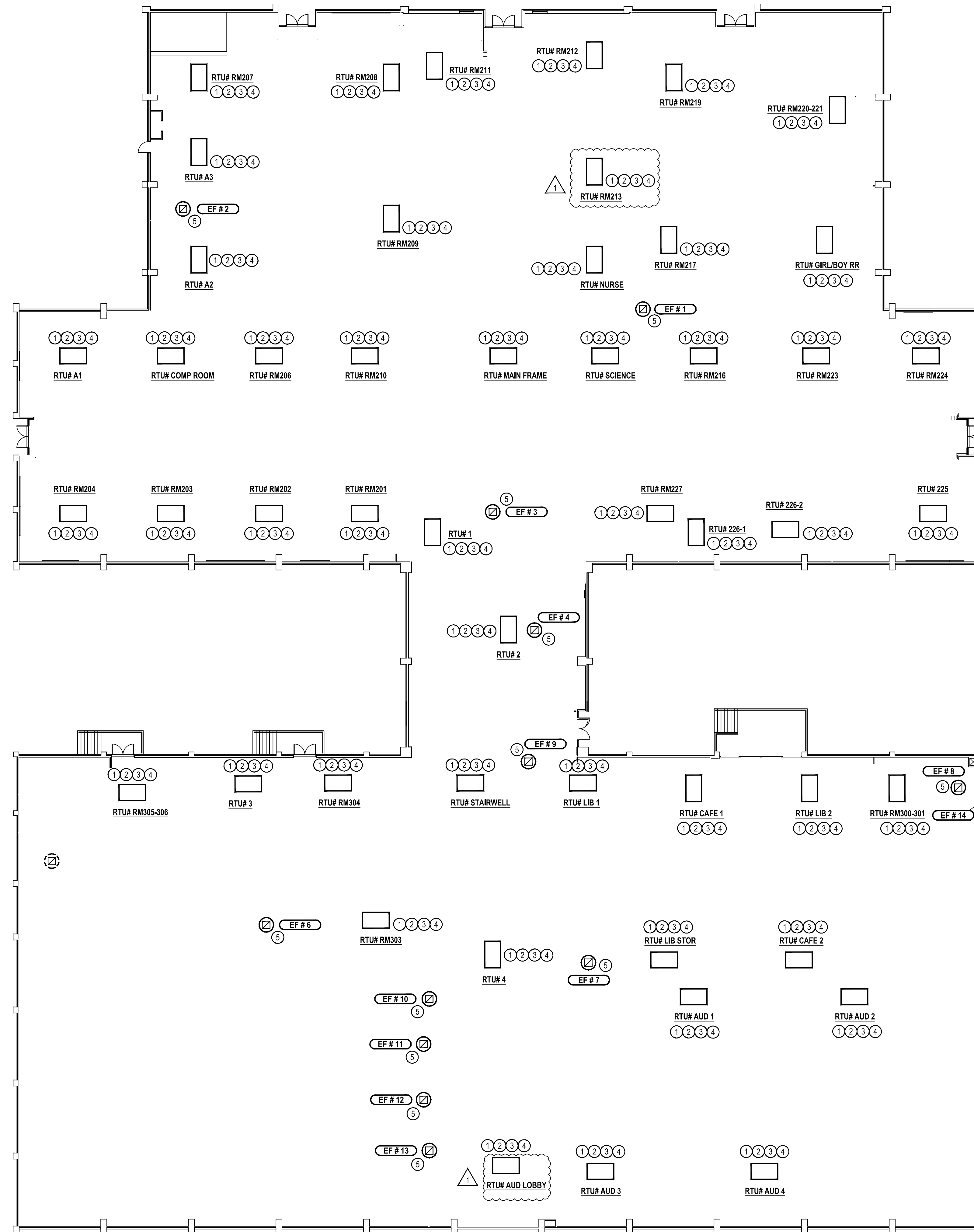
MH6.1

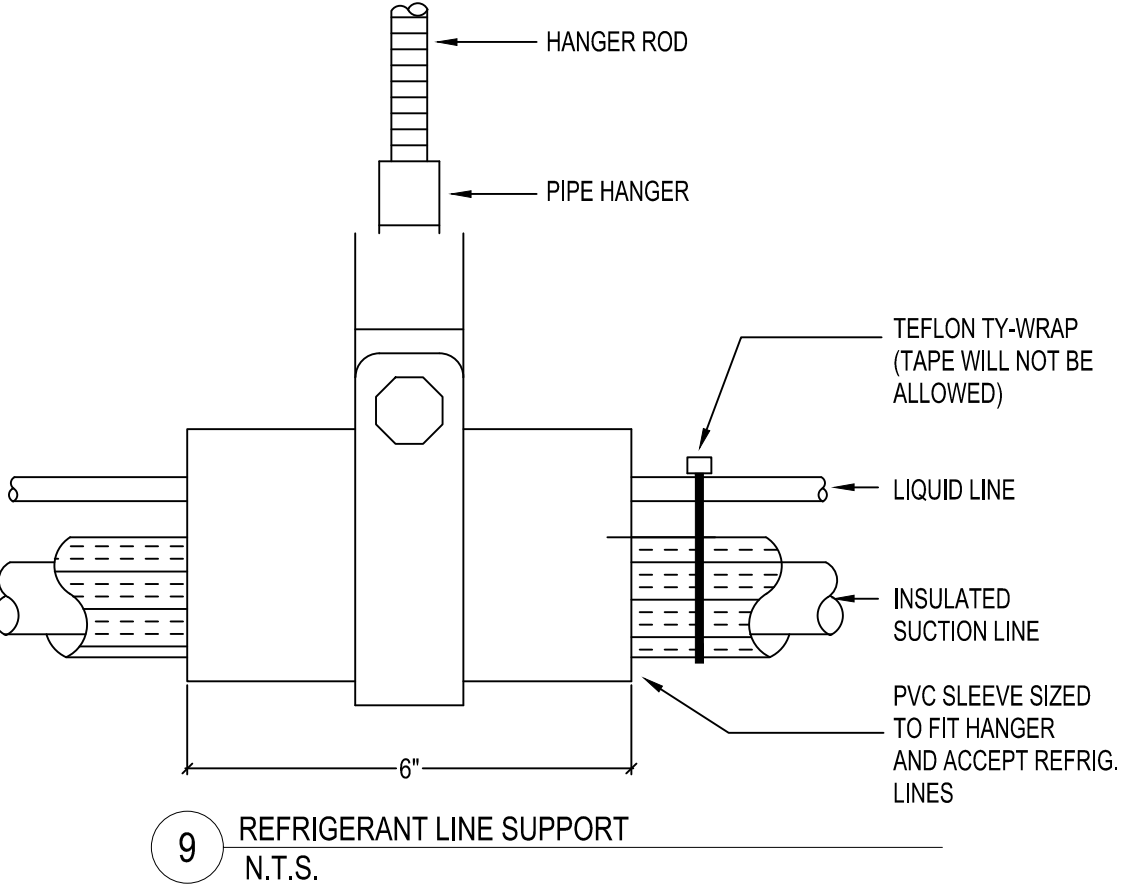
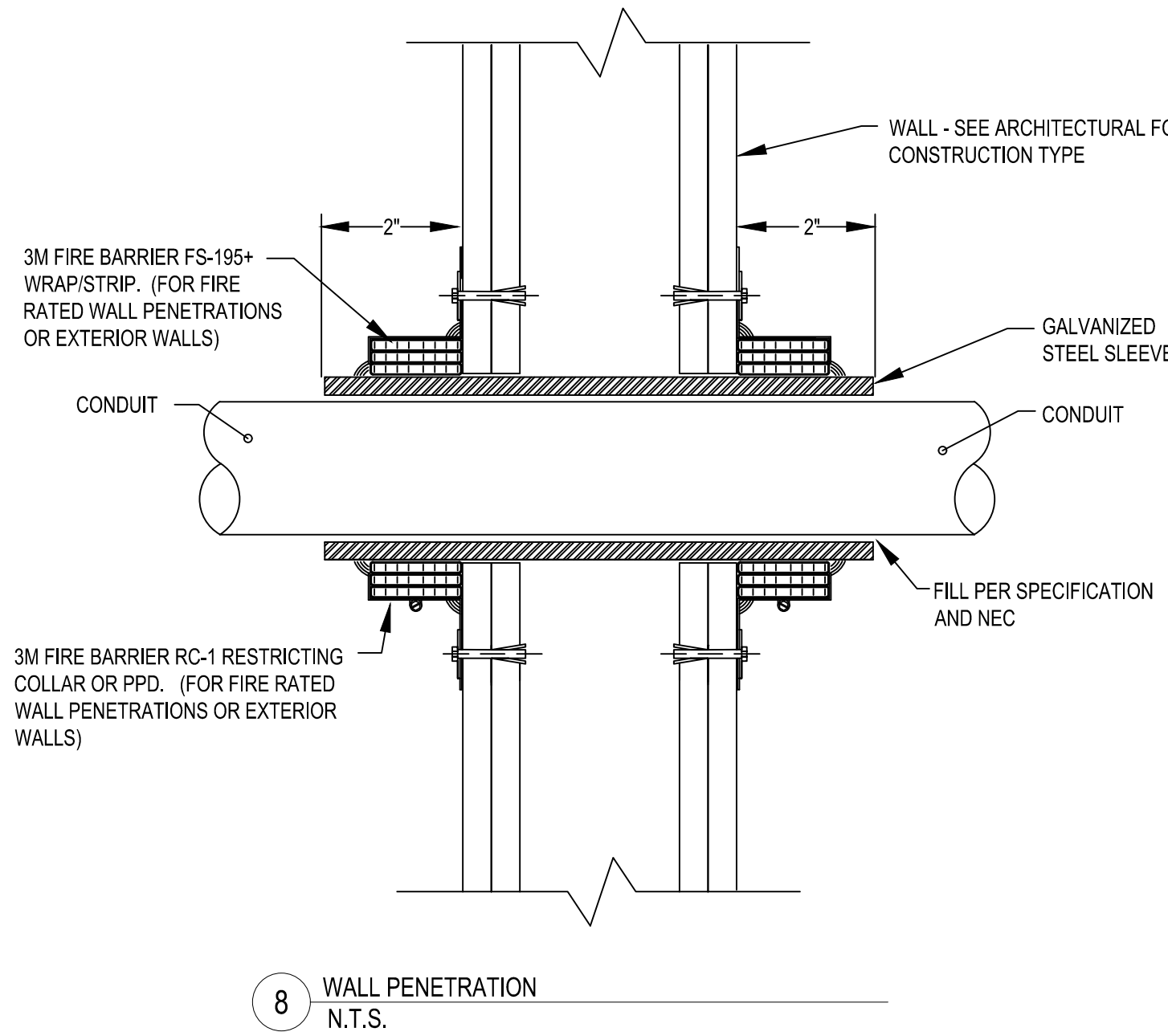
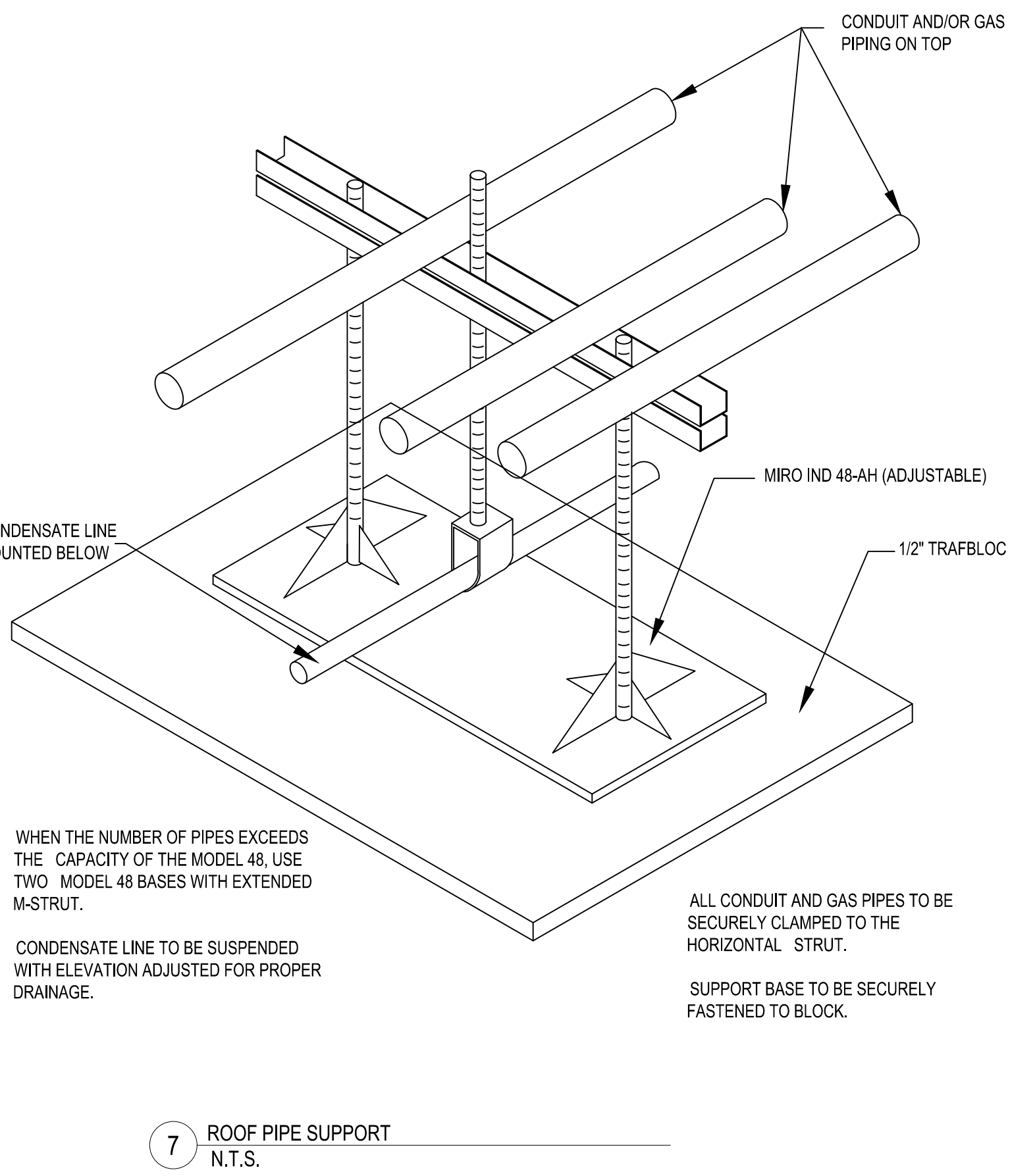
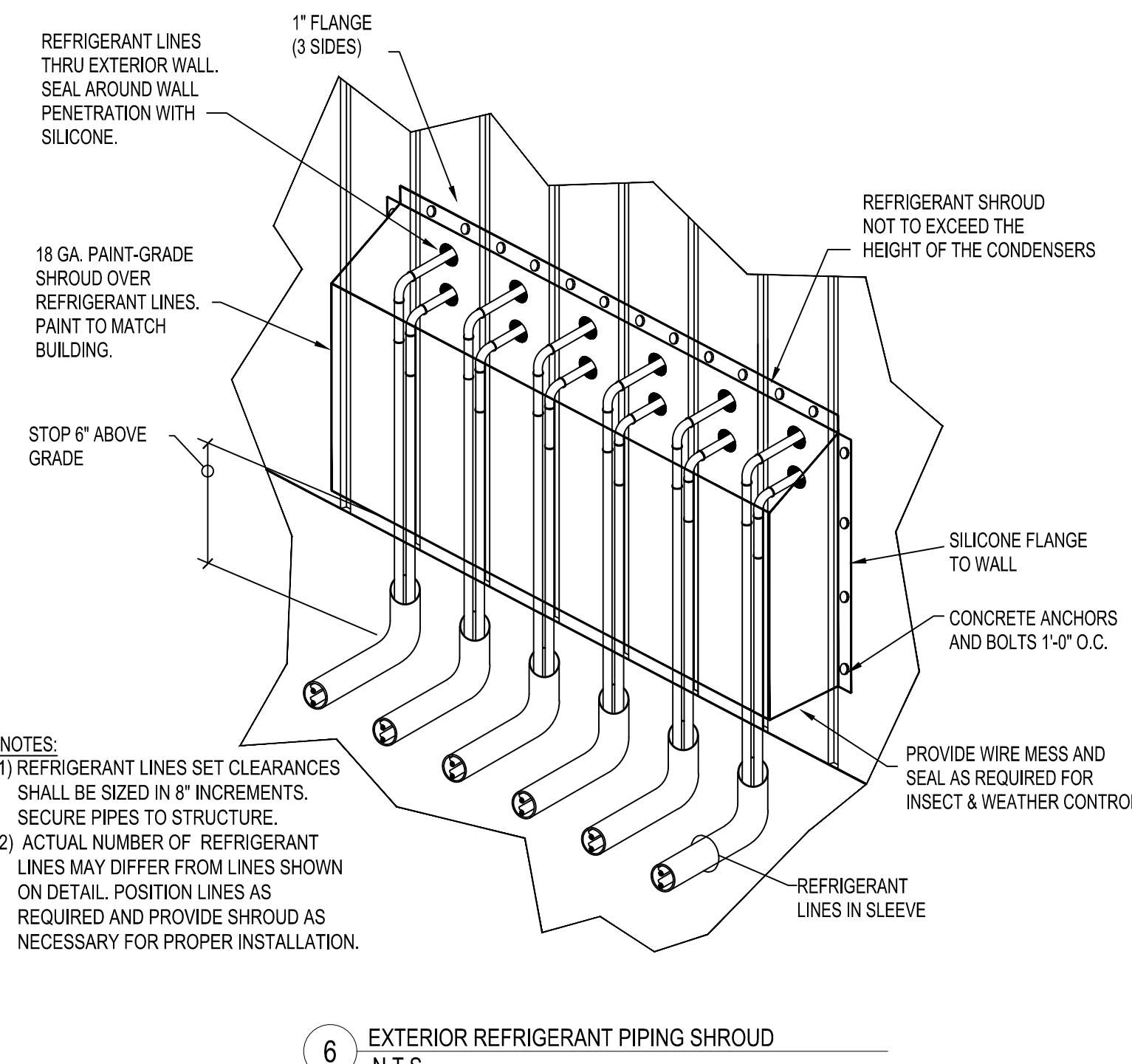
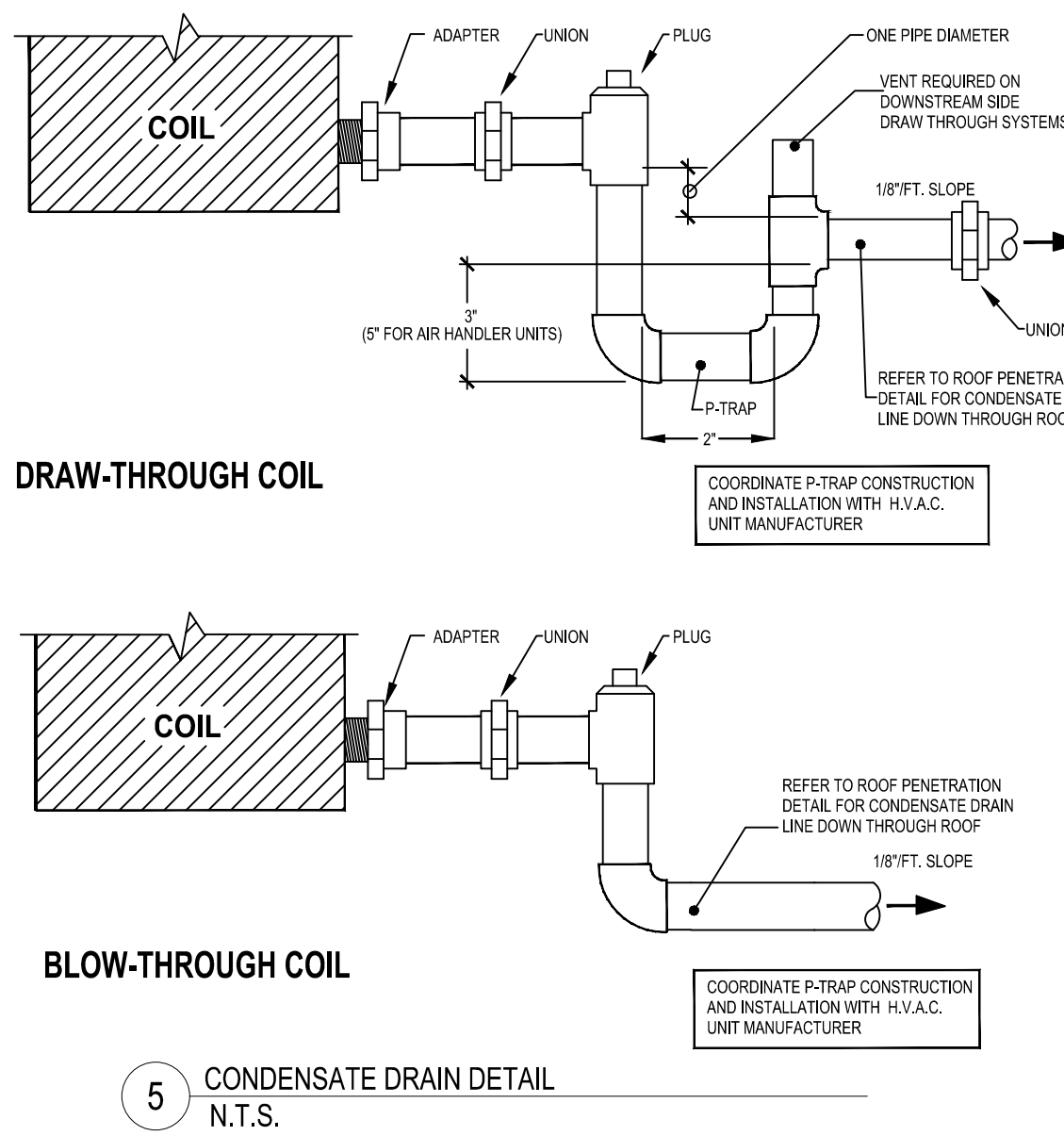
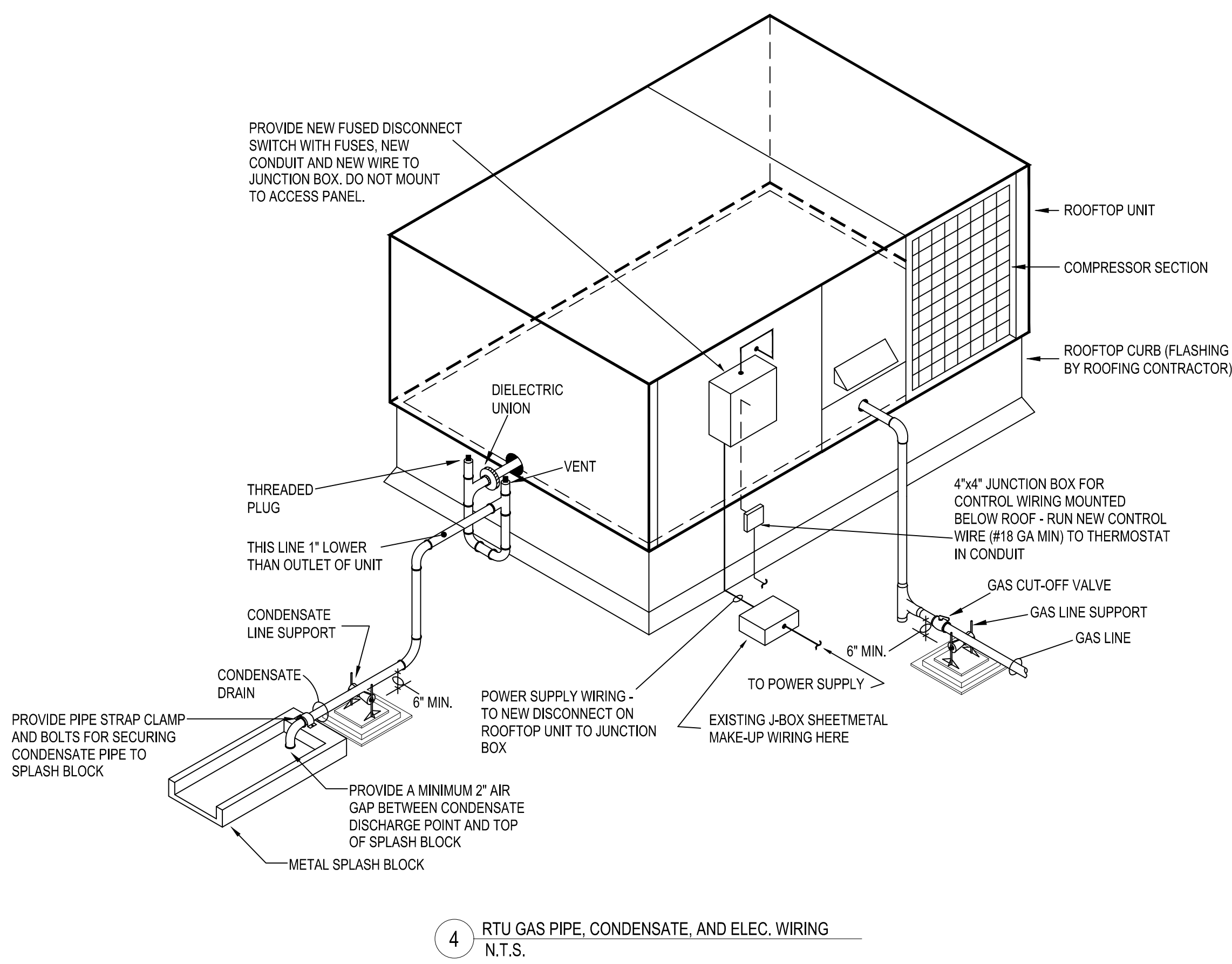
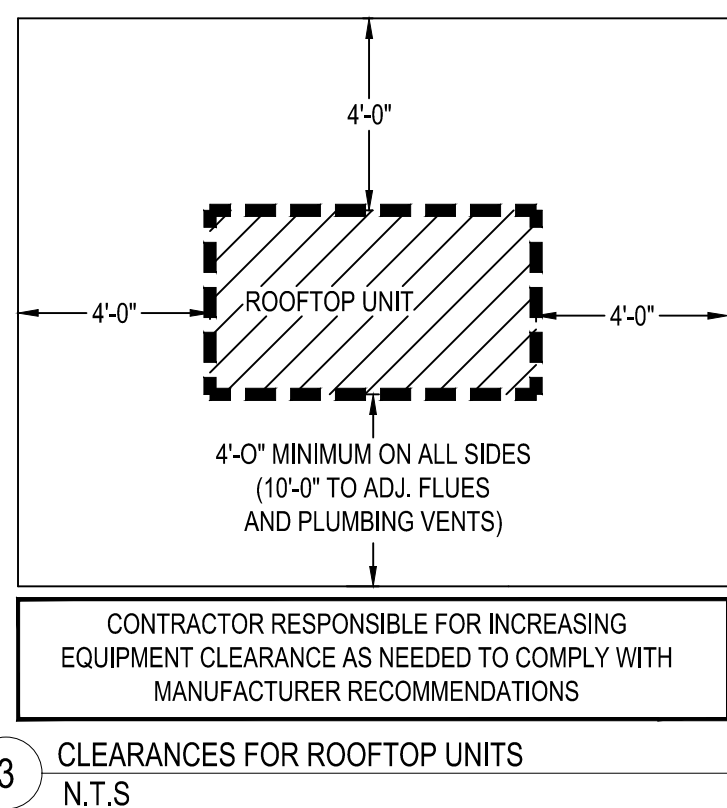
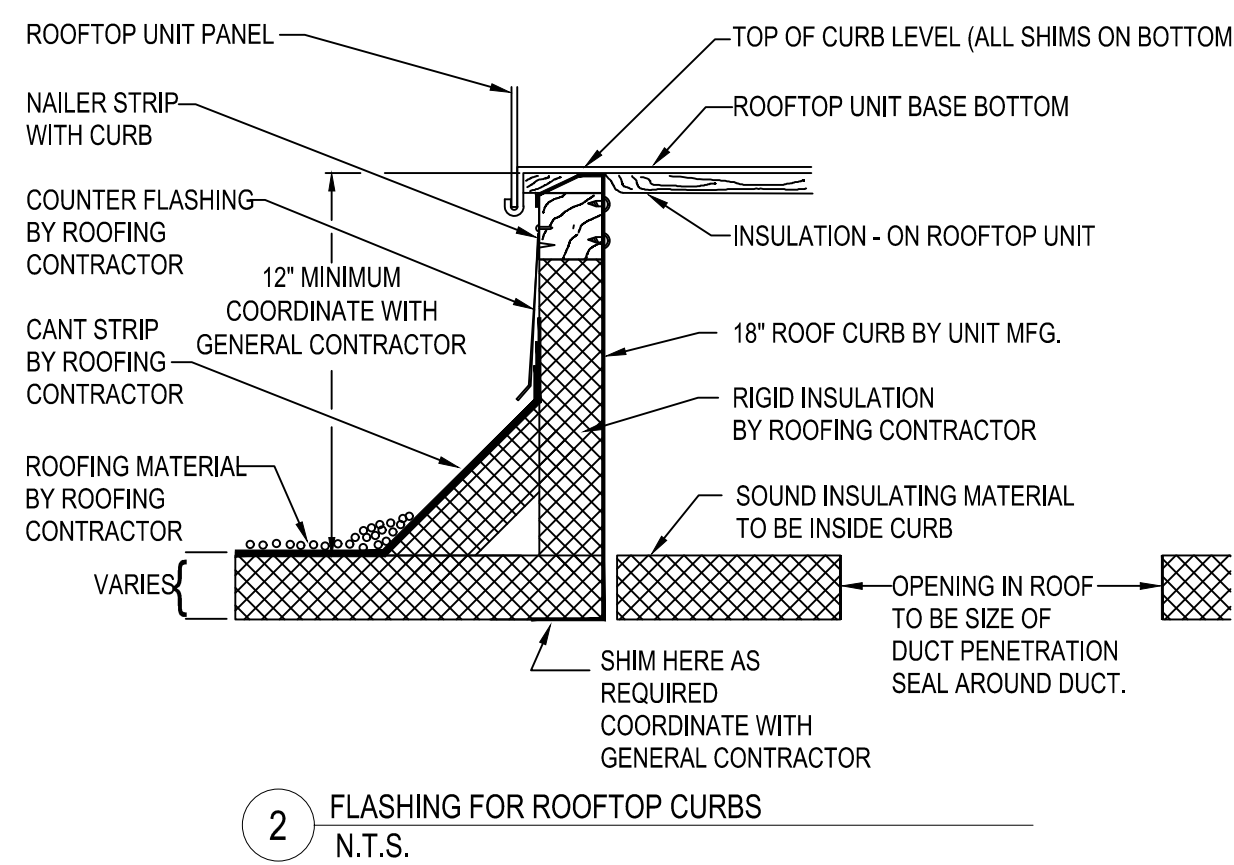
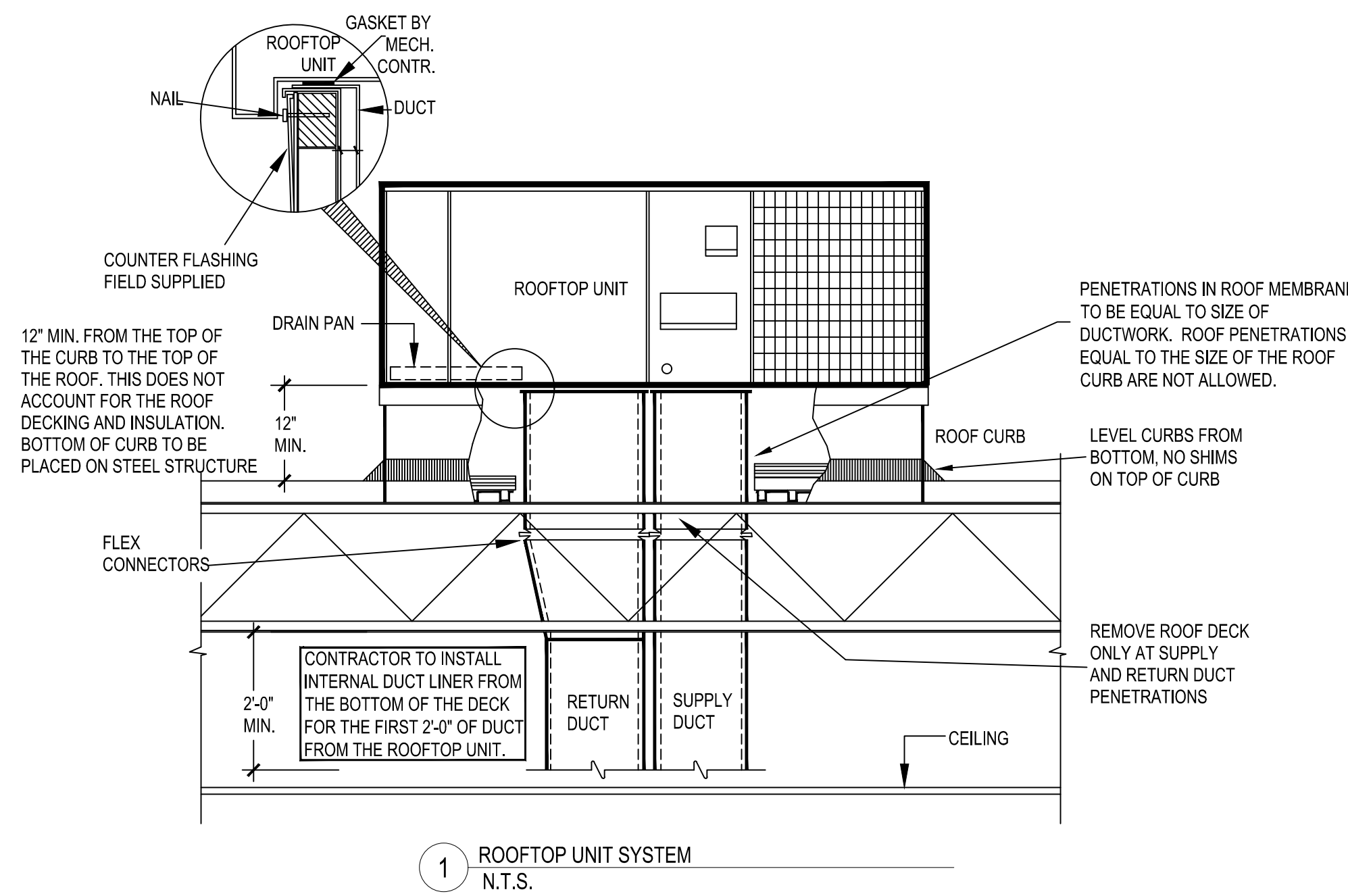
MECHANICAL GENERAL NOTES

- 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.
- DUCT MOUNTED SMOKE DETECTORS SHALL BE FURNISHED BY THE FIRE ALARM CONTRACTOR, INSTALLED BY THE MECHANICAL CONTRACTOR, AND FINAL TIE-IN BY THE FIRE ALARM CONTRACTOR.
- SEAL WITH FIRE RETARDING SEALANT AROUND PIPE THROUGH ANY PENETRATION OF FIRE WALLS. REFER TO ARCHITECTURAL SHEETS FOR FIRE WALLS.
- THE SPACE AROUND DUCTS AND PENETRATING ITEMS OF SMOKE PARTITION WALLS SHALL BE FILLED WITH AN IBC APPROVED MATERIAL LIMITING THE FREE PASSAGE OF SMOKE.
- ALL FAN CURBS TO BE INSTALLED LEVEL. PROVIDE SEAL BETWEEN CURB AND ROOF.
- ALL ROOFTOP UNITS AND CURBS TO BE INSTALLED LEVEL. ROOFTOP UNIT MFG. TO PROVIDE SEAL BETWEEN UNIT AND CURB.
- INSTALL CONDENSERS PER MANUFACTURER CLEARANCES.
- MECHANICAL CONTRACTOR SHALL SUBMIT TO ARCHITECT / ENGINEER REFRIGERANT LINE SET DESIGN AND ROUTING PER MANUFACTURER FOR REVIEW BEFORE INSTALLATION BEGINS.
- THE MECHANICAL CONTRACTOR SHALL APPLY ULTRA-VIOLET PROTECTIVE COATING OVER REFRIGERANT INSULATION PER MANUFACTURER.
- COORDINATE ALL UNITS, DUCTWORK, GRILLES, AND NEW REFRIGERANT LINES WITH ALL TRADES BEFORE INSTALLING.
- ALL HORIZONTAL AIR HANDLERS ABOVE CORRIDOR CEILINGS SHALL BE LOCATED TO POSITION SERVICE ACCESS PANEL TO FACE TOWARD CENTER OF CORRIDOR.
- ALL AIR HANDLERS: NO PIPING, CONDUITS, DUCTS, WIRING, DISCONNECTS, ETC. WILL BE ALLOWED TO BE INSTALLED CLOSER THAN 3'-0" (THREE FEET) IN FRONT OF THE SERVICE ACCESS PANEL.
- PROVIDE AND INSTALL 18 GAUGE 2" DEEP GALVANIZED DRAIN PAN UNDER EACH AIR HANDLER (PER DETAIL).
- ALL THERMOSTAT WIRING TO A/C UNITS SHALL BE SECURED TO REFRIGERANT LINES UTILIZING TEFLON TY-WRAPS.

MECHANICAL PLAN NOTES

- CONTRACTOR TO INSTALL NEW ROOFTOP UNIT ON ROOF. CONNECT UNIT TO EXISTING DUCTWORK. COORDINATE ORIENTATION OF UNIT WITH EXISTING DUCTWORK. MODIFY EXISTING DUCTWORK AS REQUIRED AND PROVIDE TRANSITIONS AS NECESSARY TO ADAPT SIZE OF EXISTING DUCT FOR TIE-IN.
- ROUTE NEW GAS PIPING WITH NEW CUTOFF VALVE FROM EXISTING GAS COCK.
- NEW 1" CONDENSATE P-TRAP TO TIE-IN TO NEW ROOFTOP UNIT. CONDENSATE TO DISCHARGE ON ROOF ONTO A 6"x18" STAINLESS STEEL SPLASH PAD.
- INSTALL NEW SENSOR. UTILIZE PREVIOUS LOCATION OF THERMOSTAT.
- CONTRACTOR TO INSTALL NEW EXHAUST FAN ON ROOF. CONNECT FAN TO EXISTING EXHAUST DUCTWORK. MODIFY EXISTING DUCTWORK AS REQUIRED AND PROVIDE TRANSITIONS AS NECESSARY TO ADAPT SIZE OF EXISTING DUCT FOR TIE-IN.
- CONTRACTOR TO INSTALL NEW KITCHEN EXHAUST FAN NEXT TO BUILDING. CONNECT FAN TO EXISTING EXHAUST DUCTWORK. MODIFY EXISTING DUCTWORK AS REQUIRED AND PROVIDE TRANSITIONS AS NECESSARY TO ADAPT SIZE OF EXISTING DUCT FOR TIE-IN.





UNIT HEATER SCHEDULE (NATURAL GAS)								
MARK	HEAT INPUT (BTUH)	SYSTEM CFM	MANUFACTURER USED IN DESIGN: REZNOR MODEL NO.	MOTOR (HP)	ELECTRICAL DATA	MOCP	UNIT WEIGHT (LB.)	REMARKS:
A	175,000	2250	UDZ - 175	1/4	120V., 1Ø	15	200	SUMMER/ WINTER SWITCH, CONCENTRIC FLUE/ INTAKE, THERMOSTAT GUARD WITH LOCKING COVER, MOUNT AT 9' 0" A.E.F. MINIMUM
A UH #1, 2, 3, 4								

HEAT PUMP SPLIT SYSTEM UNITS																		
Mark	NOM. TONS	HIGH SPEED CFM	LOW SPEED CFM	OA CFM MAX	OA CFM MIN	MANUFACTURER USED IN DESIGN: LENNOX MODEL NO.	External Static Pressure (In. w.c.)	SEER/ EER	Electrical				DX Cooling		Heat Pump Heating		Unit Weights	
									AH VOLTAGE/ PHASE	AC VOLTAGE/ PHASE	AH MOCP	AC MOCP	Total Capacity (MBTUH)	Sensible Capacity (MBTUH)	Heat Output @ 18.8°F	Aux. Electric Heat (KW)	AH (LB.)	AC (LB.)
A	3.0	1200	800	350	0	CBA27UHE - AIR HANDLER SPB036H4 - CONDENSER	0.5	16.0/ 12.5	208V., 1Ø	208V., 3Ø	15	25	35.5	27.7	23.4 MBH	N/A	200	300
Remarks: 1. 2" FILTER RACK W/ MERV 8 FILTERS 2. THERMAL EXPANSION VALVE 3. HAIL COIL GUARD 4. MOTORIZED OUTSIDE AIR DAMPER 5. R410-A REFRIGERANT 6. TWO STAGE COMPRESSOR 7. MULTIPLE COMPRESSORS 8. ECONOMIZER WITH F.D.D. 9. BIPOLAR IONIZATION																		

A AH/ACF 1, 2, 3


PACKAGED HVAC EQUIPMENT										(DX COOLING/ GAS HEATING)							
MARK	NOM. TONS	HIGH SPEED CFM	LOW SPEED CFM	OA CFM MAX	OA CFM MIN	MANUFACTURER USED IN DESIGN: LENNOX MODEL NO.	EXTERNAL STATIC PRESSURE (IN. W.C.)	SEER/ EER	Electrical		DX Cooling		Gas Heating		UNIT WEIGHT (LB.)	REMARKS:	HEAT RECLAIM
									VOLTAGE/ PHASE	MCA/ MOCP	TOTAL CAPACITY (MBTUH)	SENSIBLE CAPACITY (MBTUH)	HEAT INPUT (MBTUH)				
A	2.0	800	480	200	0	KGB 024 S4E	0.5	14.0/ -	208V., 1Ø	19/25	23.1	18.0	65.0	800	1, 2, 3, 4, 5, 6, 7, 10, 13	N/A	
B	3.0	1200	800	350	200	LGH 036 H4E	0.5	18.0/ 12.8	208V., 3Ø	20/25	34.0	27.2	60.0	1000	1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13	N/A	
C	4.0	1600	1100	350	200	LGH 048 H4E	0.5	17.6/ 12.8	208V., 3Ø	25/35	47.2	36.8	60.0	1000	1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13	N/A	
D	5.0	1990	1300	400	200	LGH 060 H4E	0.5	17.1/ 12.7	208V., 3Ø	29/40	60.1	46.3	60.0	1000	1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13	N/A	
E	7.5	3000	2000	800	400	LGH 092 H4M	0.5	-/12.5	208V., 3Ø	42/50	88.2	67.0	130.0	1500	1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 13	N/A	
F	10.0	4000	2700	1000	400	LGH 120 H4M	0.5	-/12.0	208V., 3Ø	54/60	118.1	88.6	130.0	1500	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13	N/A	
Remarks:																	
1. 2" MERV 8 FILTERS						5. CRANKCASE HEATER			9. MULTIPLE COMPRESSORS			13. BIPOLAR IONIZATION					
2. ROOF CURB						6. FREEZE THERMOSTAT			10. STAINLESS STEEL HEAT EXCHANGER								
3. HAIL COIL GUARD						7. R-410A REFRIGERANT			11. POWER EXHAUSTER								
4. MOTORIZED MODULATING OUTSIDE AIR DAMPER						8. TWO STAGE COMPRESSOR			12. ECM OR VFD ON SUPPLY FAN								

A RTU# 220-1
B RTU# 211, 212, 213, NURSE, 217, 219, 224, 223, 216, SCIENCE, MAIN FRAME, 210, 206, COMP ROOM, A1, A2, A3, 207, 208, 209, 204, 203, 202, 201, 227, 226-2, 225, 304, 303, LIB STORAGE, LOBBY
C RTU# STAIRWELL OFFICE
D RTU# 220-221, 1, 2, 3, 4, AUD LOBBY, HALL 2 #1
E RTU# GIRL/BOY RR, 305-306, 300-301, UB 1, HALL 1 #1, HALL 1 #2, HALL 2 #2
F RTU# AUD 1 CAFE 2, AUD 2, UB 2 CAFE 1, AUD 3, AUD 4

ROOF MOUNT EXHAUST FAN SCHEDULE										
MARK	CFM	TOTAL E.S.P.	MOTOR HP	MANUFACTURER MODEL	ELECTRICAL DATA	SONES	DBA	WEIGHT LBS.	CONTROL	ACCESSORIES- PROVIDE
A	400	0.5	1/8	ACRUD-101-R15D COOK	120V., 1Ø	3.9	45.0	71.0	EMCS	ECM, FACTORY INSTALLED FSC, DAMPER, ROOF CURB, BIRDSCREEN
B	800	0.5	1/4	ACRUD-120-R13D COOK	120V., 1Ø	7.5	55.0	76.0	EMCS	ECM, FACTORY INSTALLED FSC, DAMPER, ROOF CURB, BIRDSCREEN
C	1200	0.5	1/3	ACRUD-120-R17D COOK	120V., 1Ø	13.5	65.0	76.0	EMCS	ECM, FACTORY INSTALLED FSC, DAMPER, ROOF CURB, BIRDSCREEN
D	1500	0.5	1/2	ACRUD-135-R13D COOK	120V., 1Ø	13.3	64.0	81.0	EMCS	ECM, FACTORY INSTALLED FSC, DAMPER, ROOF CURB, BIRDSCREEN
E	2500	0.5	1	ACRUD-150-R16DEC COOK	120V., 1Ø	7.8	56.0	87.0	EMCS	ECM, FACTORY INSTALLED FSC, DAMPER, ROOF CURB, BIRDSCREEN
F	3500	0.5	1 1/2	ACRUD-165-R17D COOK	120V., 1Ø	12.9	63.0	95.0	EMCS	ECM, FACTORY INSTALLED FSC, DAMPER, ROOF CURB, BIRDSCREEN
G	5000	0.5	3	ACRUD-225-R11D COOK	120V., 1Ø	15.9	67.0	146.0	EMCS	ECM, FACTORY INSTALLED FSC, DAMPER, ROOF CURB, BIRDSCREEN
NOTE: FOR ALL FANS, TOTAL E.S.P. INCLUDES LOSSES FROM BACKDRAFT DAMPER										
A	EF# 3, 4									
B	EF# 2									
C	EF# 1, 7									
D	EF# 9									
E	EF# 6, 14									
F	EF# 10, 13, 8									
G	EF# 11, 12									

AIR IONIZER SCHEDULE			
SYSTEM CFM	MANUFACTURER	MODEL	REMARKS
0 - 1400	BIOCUMATIC	IGDN-1	BULB-LESS DESIGN, 24V POWER
1400 - 2800	BIOCUMATIC	IGDN-2	BULB-LESS DESIGN, 24V POWER
2800 - 4200	BIOCUMATIC	IGDN-3	BULB-LESS DESIGN, 24V POWER

NOTE: UNITS RECEIVING IONIZERS SHALL HAVE 2 POSITION DAMPERS (OPEN AND CLOSED)

**COMcheck Software Version 4.1.5.1**
Mechanical Compliance Certificate

Project Information

Energy Code: 2015 IECC
Project Title: Lindale ESSER III HVAC Renovations
Location: Lindale, Texas
Climate Zone: 3a
Project Type: Alteration

Construction Site: 505 Pierce St, Lindale, TX 75771
Owner/Agent: Lindale ISD
Designer/Contractor: EMA Engineering & Consulting, 328 S Broadway, Tyler, TX 75702

Mechanical Systems List

Quantity	System Type & Description
1	RTU - 2 TON (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 85 kBtu/h Proposed Efficiency = 80.00% E1, Required Efficiency: 80.00 % E1 or 78% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 88 kBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 14.00 SEER, Required Efficiency: 14.00 SEER Fan System: RTU FAN - 2 TON -- Compliance (Motor nameplate HP method) : Passes Fans: SUPPLY FAN Supply, Constant Volume, 800 CFM, 1.0 motor nameplate hp, 0.0 fan efficiency grade
1	RTU - 3 TON (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 60 kBtu/h Proposed Efficiency = 80.00% E1, Required Efficiency: 80.00 % E1 or 78% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 34 kBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 16.00 SEER, Required Efficiency: 14.00 SEER Fan System: RTU FAN - 3 TON -- Compliance (Motor nameplate HP method) : Passes Fans: SUPPLY FAN Supply, Constant Volume, 1200 CFM, 1.0 motor nameplate hp, 0.0 fan efficiency grade
1	RTU - 4 TON (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 60 kBtu/h Proposed Efficiency = 80.00% E1, Required Efficiency: 80.00 % E1 or 78% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 47 kBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 17.00 SEER, Required Efficiency: 14.00 SEER Fan System: RTU FAN - 4 TON -- Compliance (Motor nameplate HP method) : Passes Fans: SUPPLY FAN Supply, Constant Volume, 1600 CFM, 1.0 motor nameplate hp, 0.0 fan efficiency grade
1	RTU - 5 TON (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 60 kBtu/h Proposed Efficiency = 80.00% E1, Required Efficiency: 80.00 % E1 or 78% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 60 kBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 17.10 SEER, Required Efficiency: 14.00 SEER Fan System: RTU FAN - 5 TON -- Compliance (Motor nameplate HP method) : Passes Fans: SUPPLY FAN Supply, Constant Volume, 1990 CFM, 1.0 motor nameplate hp, 0.0 fan efficiency grade

Project Title: Lindale ESSER III HVAC Renovations
Data filename: Z:\EMA\LINDALE\1 001 0741 003 ESSER III HVAC RENOV\COMcheck 1 001 0741 003\LINDALE ESSER COMCHECK.cck

Report date: 11/18/21

Quantity System Type & Description

1 RTU - 7.5 TON (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 130 kBtu/h
Proposed Efficiency = 80.00% E1, Required Efficiency: 80.00 % E1 or 78% AFUE
Cooling: 1 each - Single Package DX Unit, Capacity = 88 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.50 EER, Required Efficiency: 11.00 EER + 12.6 IEER
Fan System: RTU FAN - 7.5 TON -- Compliance (Motor nameplate HP method) : Passes

Fans:
SUPPLY FAN Supply, Constant Volume, 3000 CFM, 1.0 motor nameplate hp, 0.0 fan efficiency grade

1 RTU - 10 TON (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 130 kBtu/h
Proposed Efficiency = 80.00% E1, Required Efficiency: 80.00 % E1 or 78% AFUE
Cooling: 1 each - Single Package DX Unit, Capacity = 118 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.00 EER, Required Efficiency: 11.00 EER + 12.6 IEER
Fan System: RTU FAN - 10 TON -- Compliance (Motor nameplate HP method) : Passes

Fans:
SUPPLY FAN Supply, Constant Volume, 4000 CFM, 1.0 motor nameplate hp, 0.0 fan efficiency grade

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 this permit application. The proposed mechanical systems have been designed to meet the 2015 IECC requirements in COMcheck Version 4.1.5.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Liam Urwiller - Mechanical Designer
Name - Title Signature Date 07/10/2020

Project Title: Lindale ESSER III HVAC Renovations
Data filename: Z:\EMA\LINDALE\1 001 0741 003 ESSER III HVAC RENOV\COMcheck 1 001 0741 003\LINDALE ESSER COMCHECK.cck

Report date: 11/18/21



ISSUE DATE	
11-19-2021	
REVISION	DATE
1 ADDENDUM #1	12/03/2021