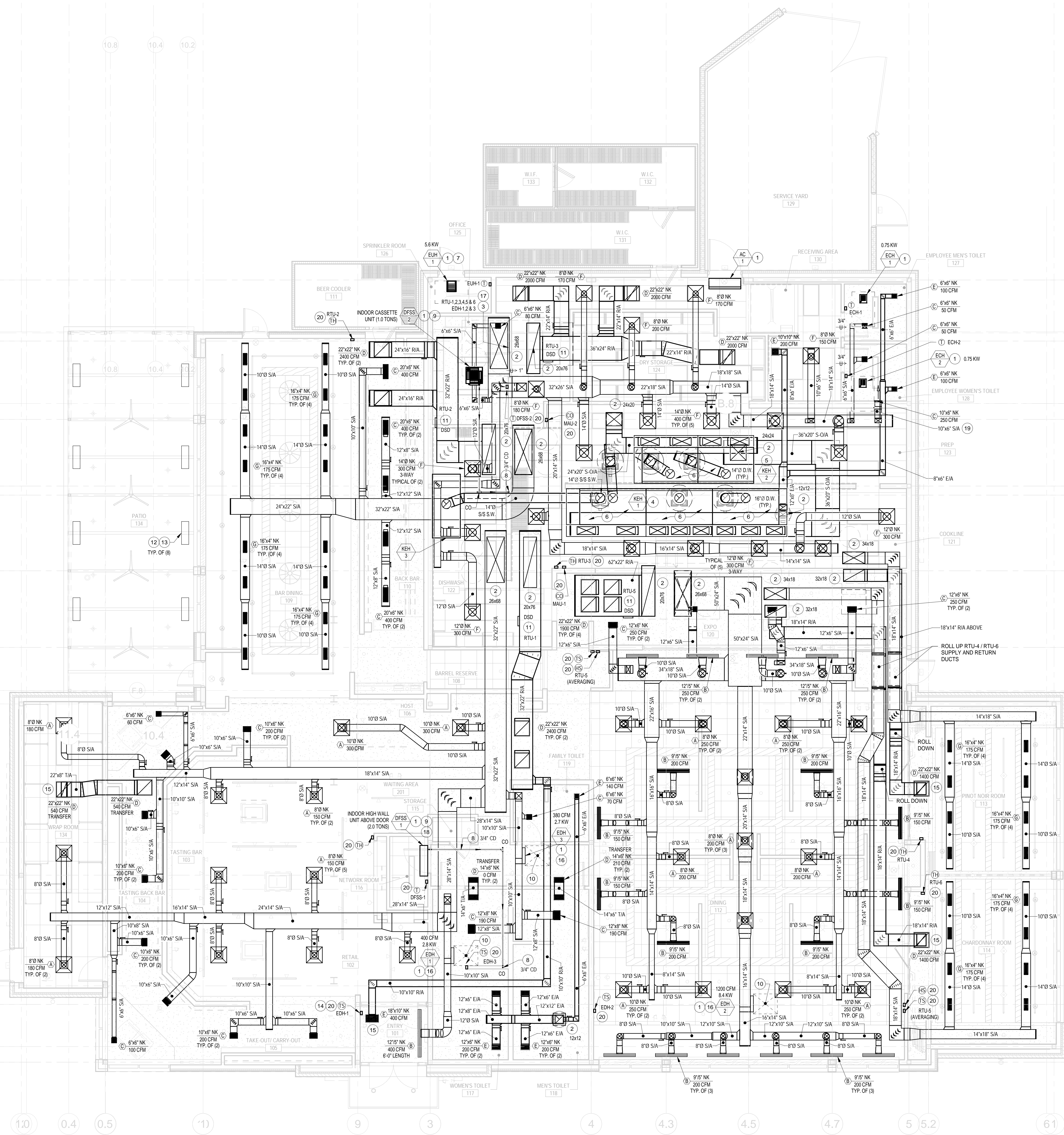


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1 HVAC - FLOOR PLAN
3/16" = 1'-0"

DRAWING NOTES: (THIS SHEET ONLY)

1. MAINTAIN CODE REQUIRED. MANUFACTURER RECOMMENDED CLEARANCE AT HVAC EQUIPMENT.
2. DUCT RISER OF SIZE INDICATED. PROVIDE FLEXIBLE CONNECTION AT BOTTOM OF ROOF CURB (EXCEPT KITCHEN EXHAUST FANS).
3. ELECTRIC DUCT HEATER THERMOSTAT. PROVIDE CONDUIT AND CONTROL WIRING BETWEEN THERMOSTAT AND ASSOCIATED REMOTE TEMPERATURE SENSOR.
4. KITCHEN EXHAUST HOOD KEH-1 DUCT RISER SIZES AND AIR FLOWS:
KEH-1L: SUPPLY - (3) 24x12 (823 CFM EA.), EXHAUST - (1) 16" (2080 CFM),
KEH-1M: SUPPLY - (3) 24x12 (576 CFM EA.), EXHAUST - (1) 16" (2080 CFM),
KEH-1R: SUPPLY - (3) 24x12 (600 CFM EA.), EXHAUST - (1) 16" (2080 CFM).
5. KITCHEN EXHAUST HOOD KEH-2 DUCT RISER SIZES AND AIR FLOWS:
KEH-2L: SUPPLY - (2) 28x12 (875 CFM EA.), EXHAUST - (1) 14" (1680 CFM),
KEH-2R: SUPPLY - (2) 28x12 (750 CFM EA.), EXHAUST - (1) 14" (1680 CFM).
6. COORDINATE ROOFTOP UNIT RTU-3 / MAU-1 / MAU-2 SUPPLY DUCTWORK INSTALLATION WITH KITCHEN EXHAUST DUCTWORK.
7. BOTTOM OF HEATER 12'-0" ABOVE FINISHED FLOOR. ROD SUSPEND FROM STRUCTURE ABOVE WITH MANUFACTURER'S MOUNTING BRACKET (INSTALL FOR VERTICAL DISCHARGE).
8. ROUTE CONDENSATE DRAIN OF SIZE INDICATED DOWN AND OVER MOP SINK / OPEN SITE DRAIN / FLOOR DRAIN.
9. ROUTE REFRIGERANT PIPING BETWEEN INDOOR UNIT AND ASSOCIATED OUTDOOR UNIT. PIPE SIZES PER MANUFACTURER'S RECOMMENDATIONS. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
10. COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE CEILING ACCESS PANEL.
11. DUCT SMOKE DETECTOR FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE DETECTOR LOCATION WITH ELECTRICAL CONTRACTOR.
12. ELECTRIC INFRARED RADIANT HEATER FURNISHED BY COOPER'S HAWK. RECEIVE UNIT FROM GENERAL CONTRACTOR. SUPPORT UNIT FROM PATIO COVER STRUCTURE. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
13. ELECTRIC RADIANT HEATER CONTROLS BY ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DRAWINGS.
14. REFER TO ARCHITECTURAL PLANS FOR EXACT ELEVATION ABOVE FINISHED FLOOR.
15. 12" HIGH AIR PLENUM ON TOP OF RETURN / TRANSFER GRILLE. AIR PLENUM WIDTH / LENGTH TO MATCH GRILLE NECK SIZES.
16. ELEVATION BOTTOM OF ELECTRIC DUCT HEATER MAXIMUM 12" ABOVE CEILING.
17. ROOFTOP UNIT THERMOSTAT.
18. INSTALL CONDENSATE DRAIN PUMP (IF REQUIRED) OUTSIDE OF NETWORK ROOM.
19. SUPPLY DUCT OF SIZE INDICATED SERVING EQUIPMENT PLATFORM MEZZANINE.
20. TEMPERATURE / HUMIDITY / CARBON MONOXIDE SENSOR AS INDICATED.

HVAC ACCESS NOTES:

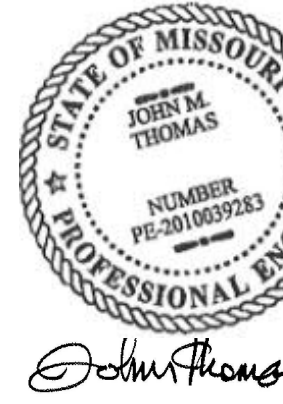
WHERE AIR DEVICE IS INSTALLED IN INACCESSIBLE CEILING WITHOUT VOLUME DAMPER ACCESS DOOR, PROVIDE REMOTE CABLE OPERATED DAMPER ASSEMBLY (METROPOLITAN AIR TECHNOLOGIES OR APPROVED EQUAL).

COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE CEILING ACCESS PANELS TO ALL HVAC EQUIPMENT INSTALLED ABOVE INACCESSIBLE CEILINGS.

FIELD VERIFICATION
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NO.	DATE	ISSUED FOR PERMIT	REMARKS
1	2021/08/19	ISSUED FOR PERMIT	
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Drawing Title

HVAC - FLOOR PLAN

Job No. 21-0064

Drawn DNK

Scale 3/16" = 1'-0"

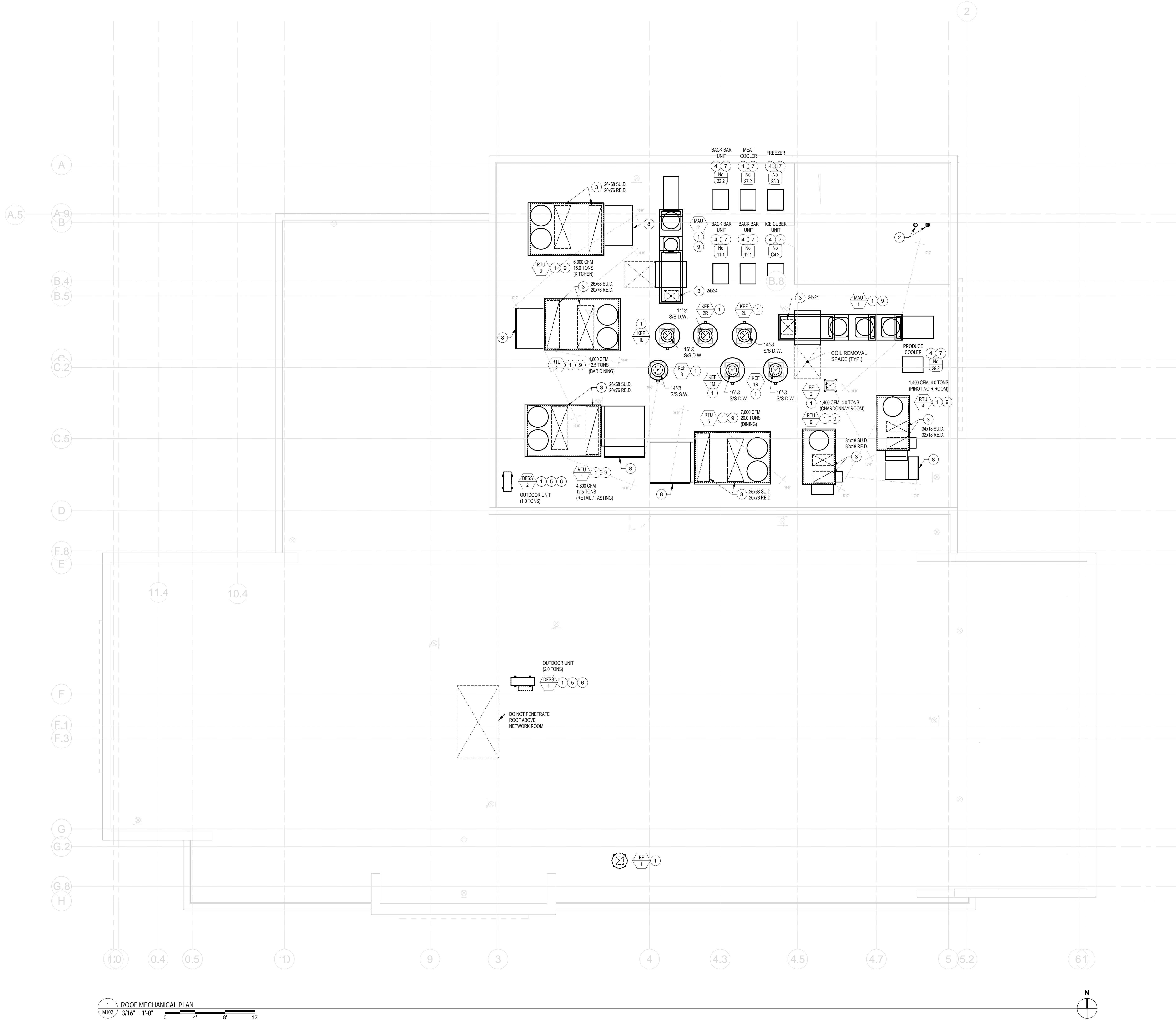
Date 08/19/2021

Sheet No.

M101

COORDINATED SHOP DRAWINGS SHALL BE PROVIDED BY EACH SUBCONTRACTOR AND SHALL CONTAIN A LAYOUT OF ALL DUCTWORK, CONDUIT, PIPING, EQUIPMENT, STRUCTURE, WALLS, CEILING, ETC. AS REQUIRED TO REFLECT FULL COORDINATION ACROSS ALL TRADES AND SHALL BE SUBMITTED FOR REVIEW. COORDINATED DRAWINGS SHALL BE SIGNED OFF BY ALL OTHER TRADES PRIOR TO BEING SUBMITTED FOR REVIEW. PLANS SHALL BE PREPARED AT A MINIMUM OF 1/8" SCALE OR THE SCALE OF THE DESIGN DRAWINGS, WHICHEVER IS LARGER. NO EQUIPMENT SHALL BE INSTALLED WITHOUT APPROVED SHOP DRAWINGS.

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DRAWING NOTES: (THIS SHEET ONLY)

- 1 MAINTAIN CODE REQUIRED, MANUFACTURER RECOMMENDED CLEARANCE AT HVAC EQUIPMENT.
- 2 FLUE VENT/COMBUSTION AIR INTAKE PIPE BY PLUMBING CONTRACTOR.
- 3 DUCT RISER OF SIZE INDICATED. PROVIDE FLEXIBLE CONNECTION AT BOTTOM OF ROOF CURB (EXCEPT KITCHEN EXHAUST FANS).
- 4 REFRIGERATED EQUIPMENT CONDENSER BY FOOD SERVICE CONTRACTOR. COORDINATE WITH FOOD SERVICE CONTRACTOR TO INSTALL CONDENSER TO DISCHARGE AIR AWAY FROM ROOFTOP/MAKEUP AIR UNIT OUTDOOR AIR INTAKE.
- 5 PROVIDE 18" HIGH FULL PERIMETER EQUIPMENT CURB SUPPORT. INSTALL UNIT ON MASON INDUSTRIES (OR APPROVED EQUAL) PREFABRICATED VIBRATION ISOLATION PAD SUITABLE FOR UNIT CAPACITY AND WEIGHT. INSTALL OUTDOOR UNIT TO DISCHARGE AIR AWAY FROM ROOFTOP/MAKEUP AIR UNIT OUTDOOR AIR INTAKE.
- 6 ROUTE REFRIGERANT PIPING BETWEEN OUTDOOR UNIT AND ASSOCIATED INDOOR UNIT. PROVIDE REFRIGERANT PIPE PORTAL INSULATED (1/2" THICK, 3.0 PCF) ROOF CURB. PIPE SIZES PER MANUFACTURER'S RECOMMENDATIONS. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
- 7 REFRIGERATED KITCHEN EQUIPMENT CONDENSER 18" HIGH EQUIPMENT RAIL SUPPORT. REFRIGERANT PIPE PORTAL ROOF CURB. COORDINATE EXACT RAIL LENGTH AND REQUIRED NUMBER OF ROOF PIPE PORTALS WITH KITCHEN EQUIPMENT CONTRACTOR.
- 8 EXTEND OUTDOOR AIR INTAKE FULL SIZE TO MAINTAIN 10'-0" FROM ANY FLUE VENT, BUILDING EXHAUST/RELIEF.
- 9 SPILL CONDENSATE OVER 12"x12"x3/4" THICK RUBBER ROOF GUARD PAD.

O.A. INTAKE NOTE:

MAINTAIN MINIMUM 10'-0" DISTANCE BETWEEN HVAC EQUIPMENT OUTDOOR AIR INTAKE AND ANY BUILDING RELIEF (EXHAUST FANS, PLUMBING VENTS, FLUE VENTS, ETC.)

EQUIPMENT TAG NOTE:

PROVIDE PERMANENT ENGRAVED LABEL WITH A MINIMUM OF 1/4" LETTERING FOR EACH PIECE OF HVAC ROOF MOUNTED EQUIPMENT.

COORDINATE WITH KITCHEN EQUIPMENT CONTRACTOR TO PROVIDE PERMANENT ENGRAVED LABEL WITH A MINIMUM OF 1/4" LETTERING FOR EACH ROOF MOUNTED REFRIGERATED KITCHEN EQUIPMENT CONDENSER.

KITCHEN EXHAUST FAN NOTES:

EXTEND TOP OF KITCHEN EXHAUST FANS TO TERMINATE ABOVE TOP OF PARAPET WALLS BY MINIMUM OF 2'-0" TO PREVENT EXHAUST BEING DRAWN INTO ROOFTOP UNITS' INTAKES.

NFPA 96-7 & 2.1.(8)

INSTALL HINGE KITS ON ALL KITCHEN EXHAUST FANS TO PREVENT FANS FROM TIPPING OVER WHEN OPENED FOR INSPECTION AND/OR CLEANING.

ROOF DUCTWORK NOTE:

DUCT SUPPORT

1. PROVIDE MIRO INDUSTRIES MODEL 10-DS DUCT SUPPORT. MAINTAIN MAXIMUM LOAD WEIGHT AND SPACING AS RECOMMENDED BY MANUFACTURER.

COORDINATED SHOP DRAWINGS SHALL BE PROVIDED BY EACH SUBCONTRACTOR AND SHALL CONTAIN A LAYOUT OF ALL DUCTWORK, CONDUIT, PIPING, EQUIPMENT, STRUCTURE, WALLS, CEILING, ETC. AS REQUIRED TO REFLECT FULL COORDINATION ACROSS ALL TRADES AND SHALL BE SUBMITTED FOR REVIEW. COORDINATED DRAWINGS SHALL BE SIGNED OFF BY ALL OTHER TRADES PRIOR TO BEING SUBMITTED FOR REVIEW. PLANS SHALL BE PREPARED AT A MINIMUM OF 1/8" SCALE OR THE SCALE OF THE DESIGN DRAWINGS, WHICHEVER IS LARGER. NO EQUIPMENT SHALL BE INSTALLED WITHOUT APPROVED SHOP DRAWINGS.



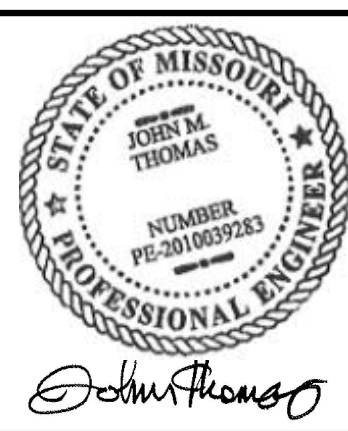
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NO.	DATE	REMARKS
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REVISIONS



Drawing Title

HVAC - ROOF PLAN

Job No. 21-0064

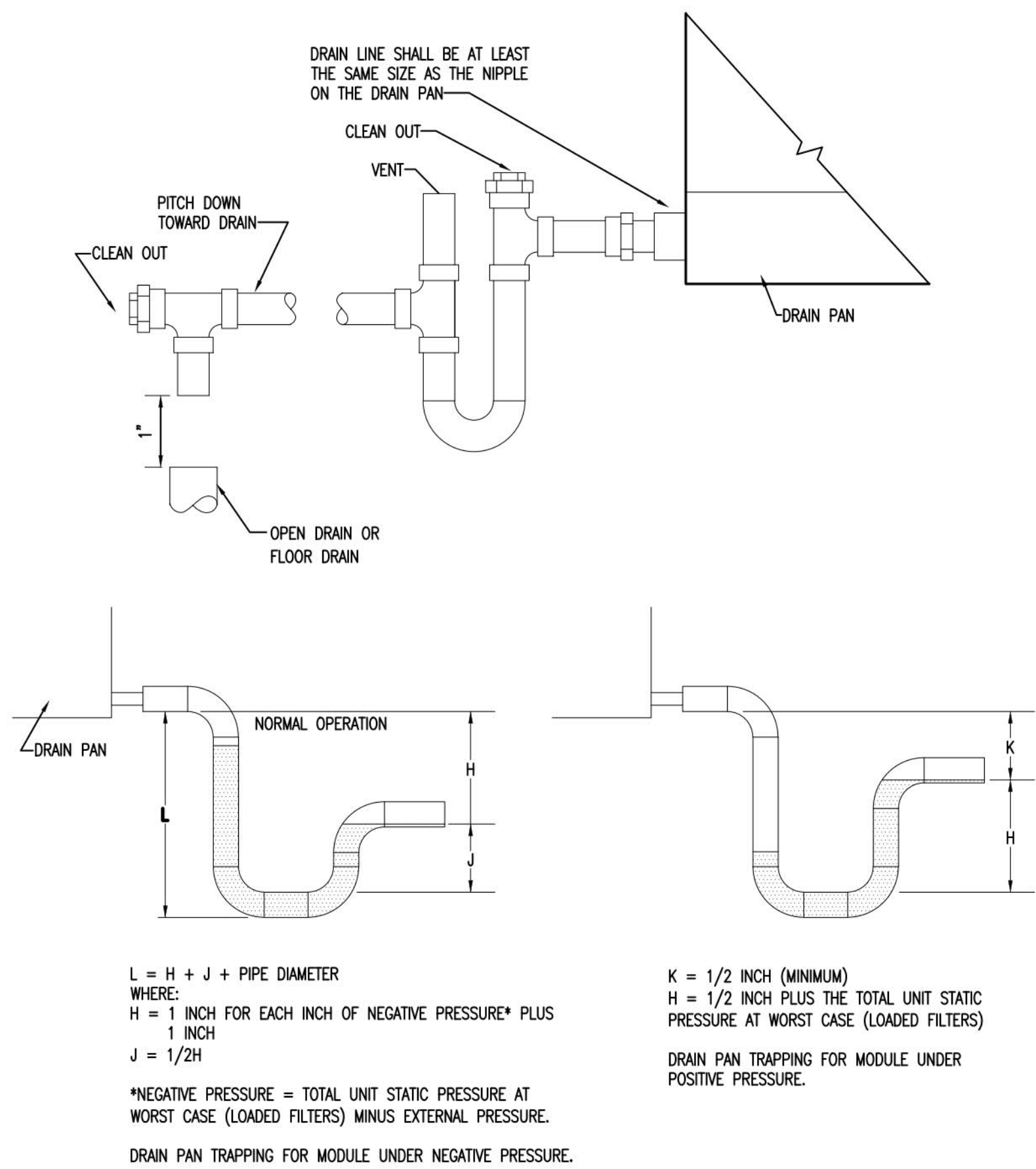
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Scale 3/16" = 1'-0"

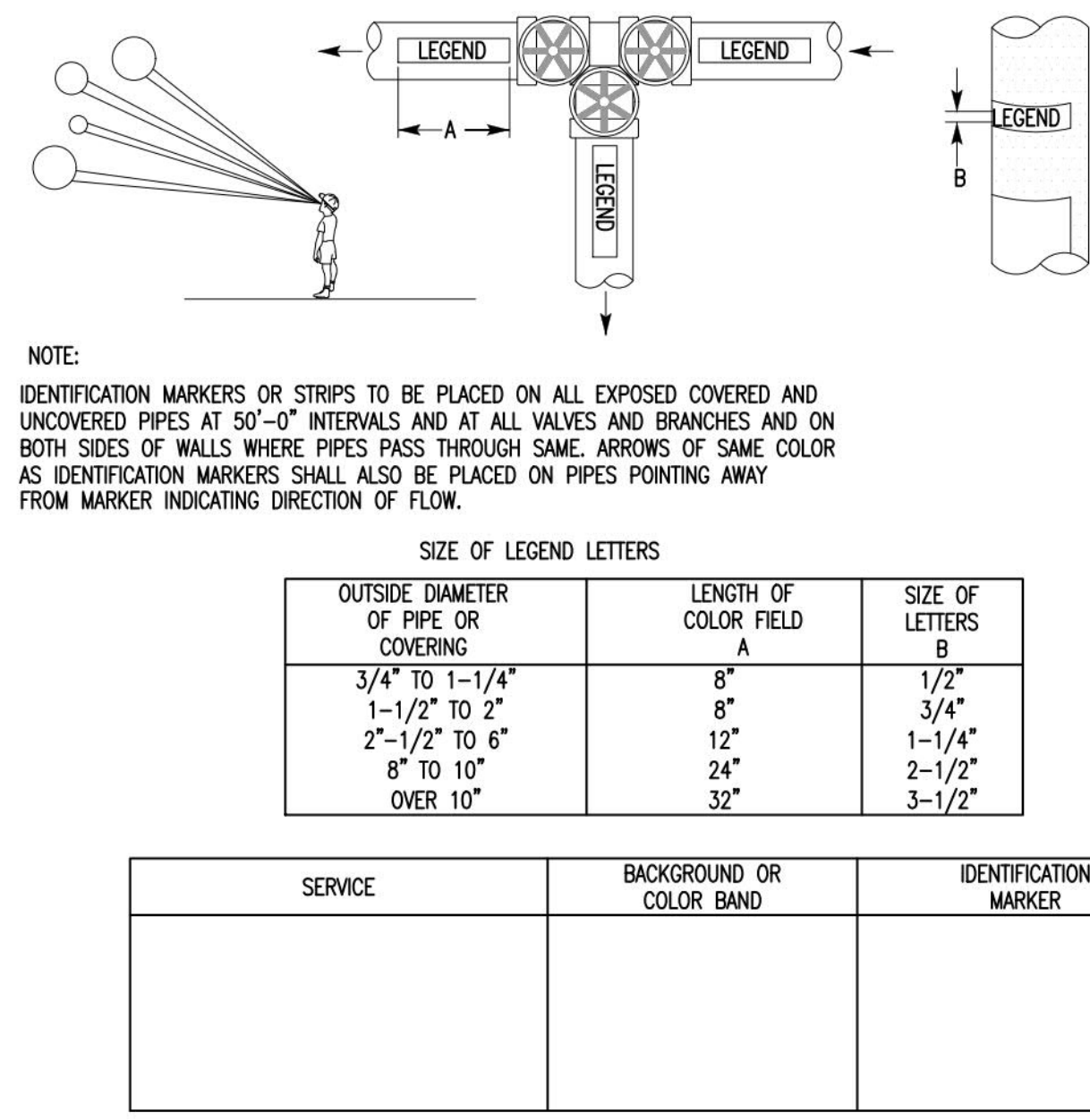
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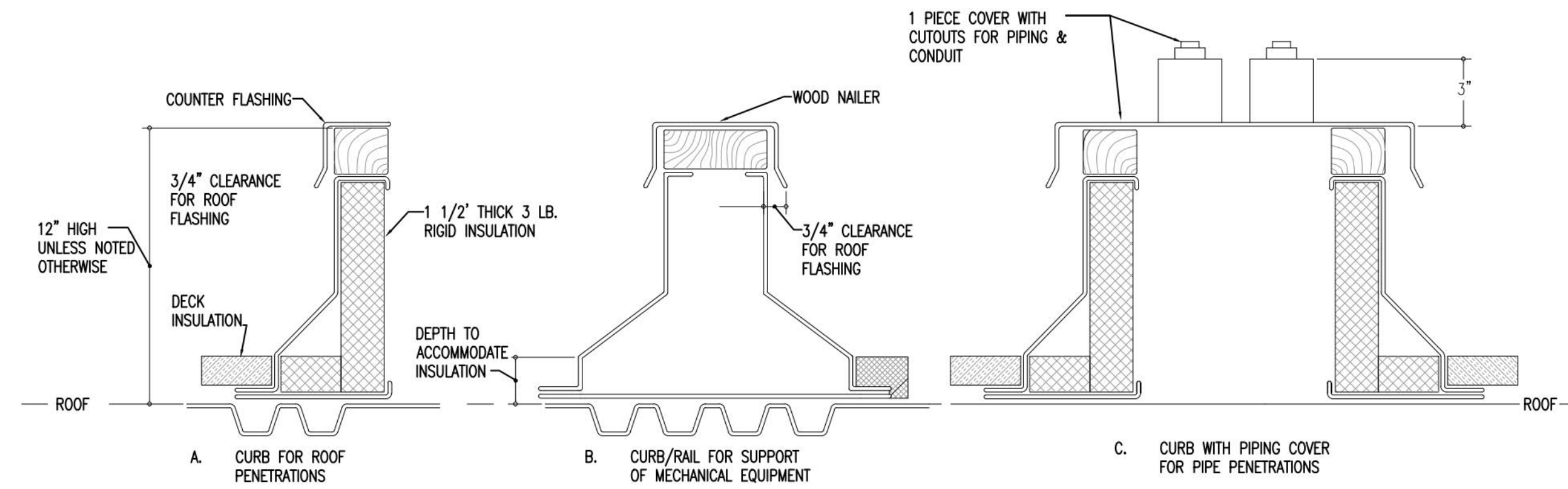
M102



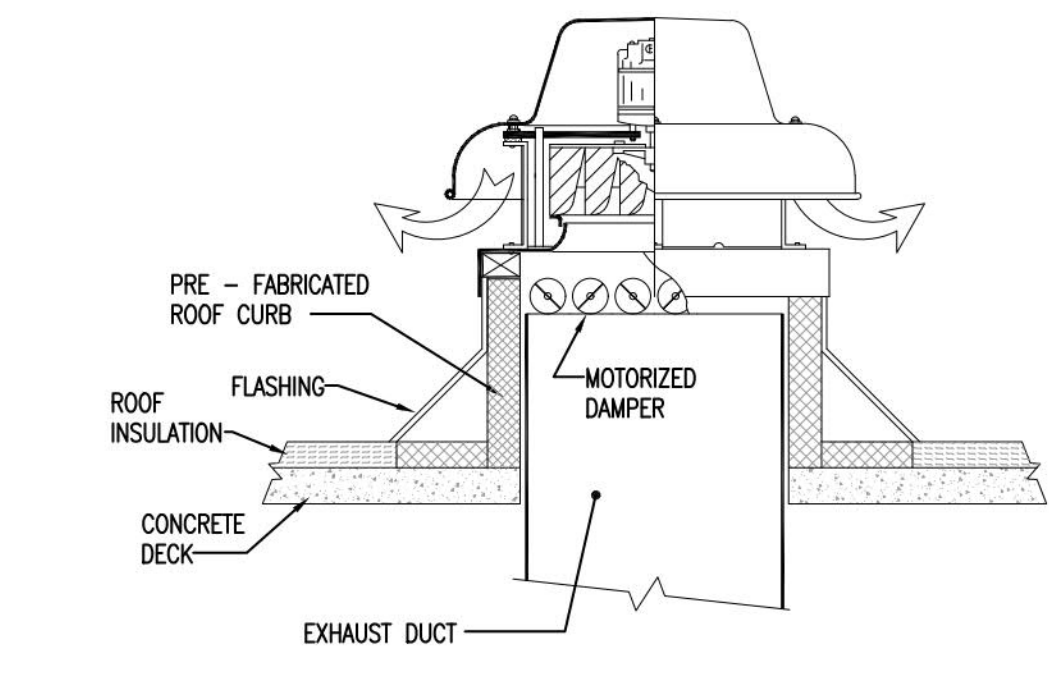
1 AIR HANDLING UNIT TRAP
SCALE: NO SCALE



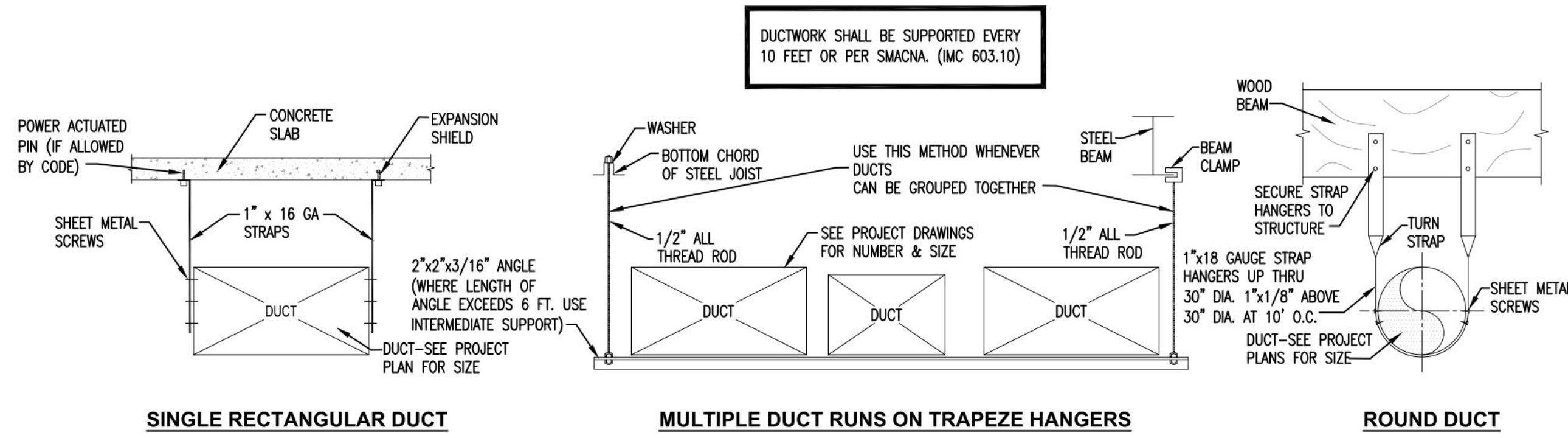
2 TYPICAL PIPE IDENTIFICATION MARKERS
SCALE: NO SCALE



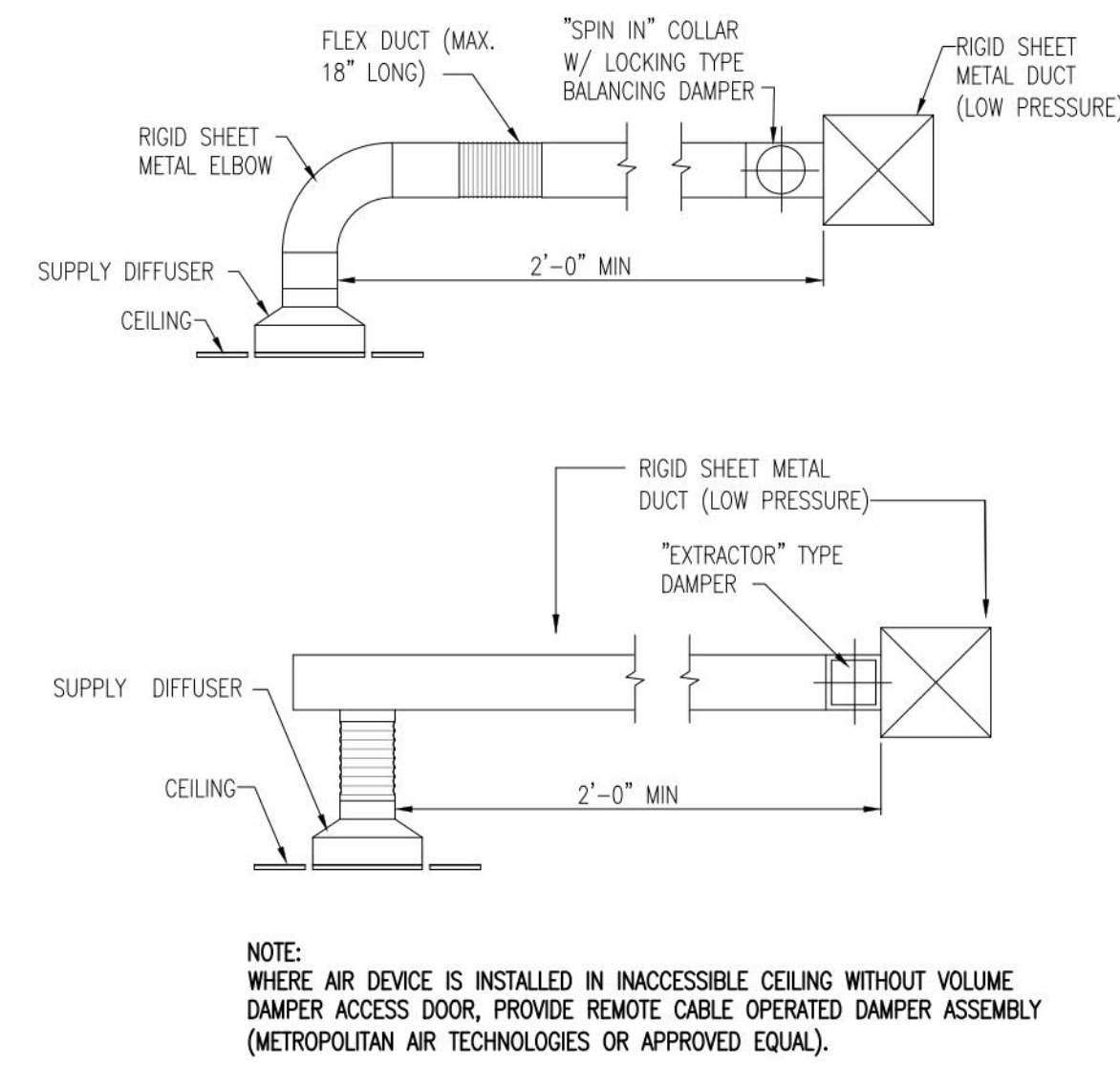
3 CURBING AIR RAIL DETAIL
SCALE: NO SCALE



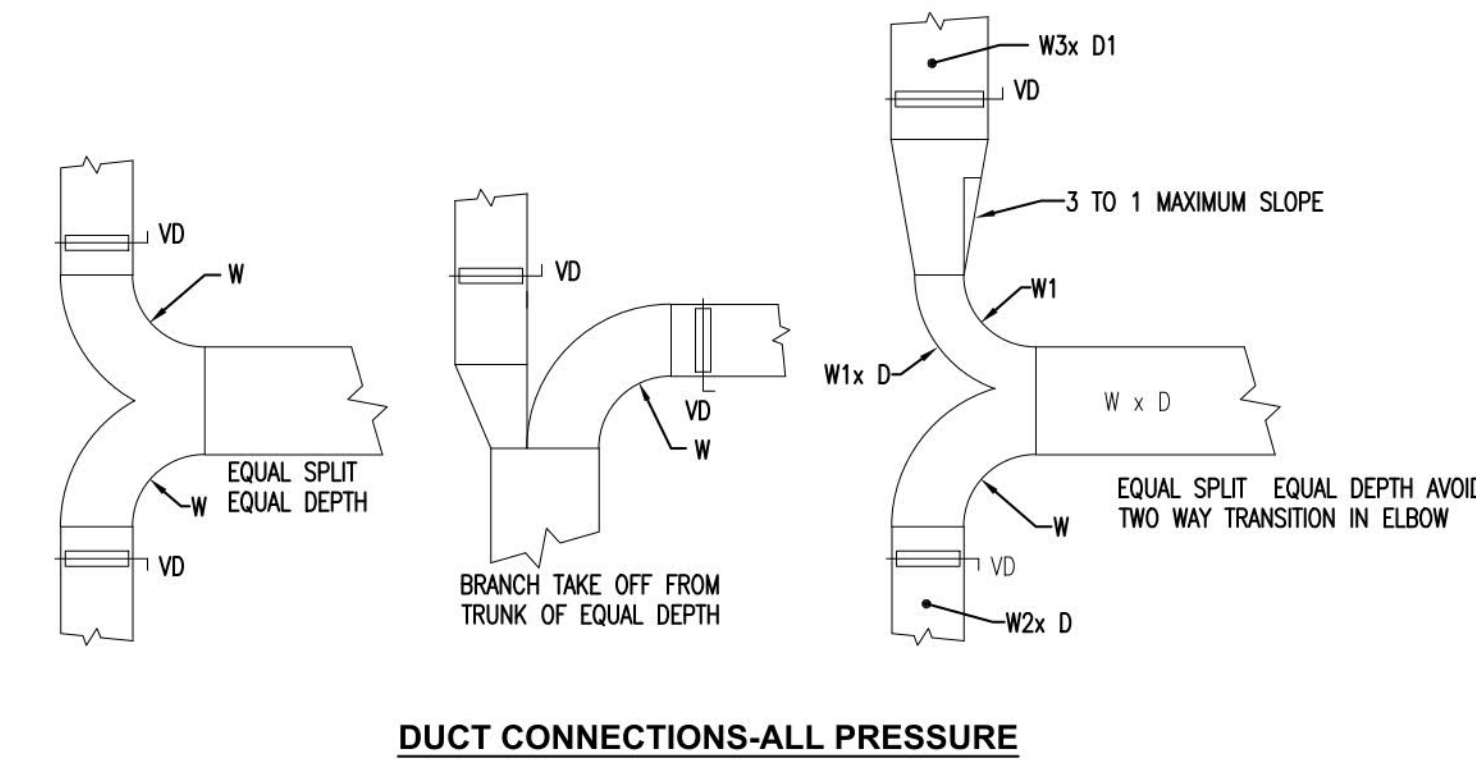
4 ROOF EXHAUST FAN DETAIL
SCALE: NO SCALE



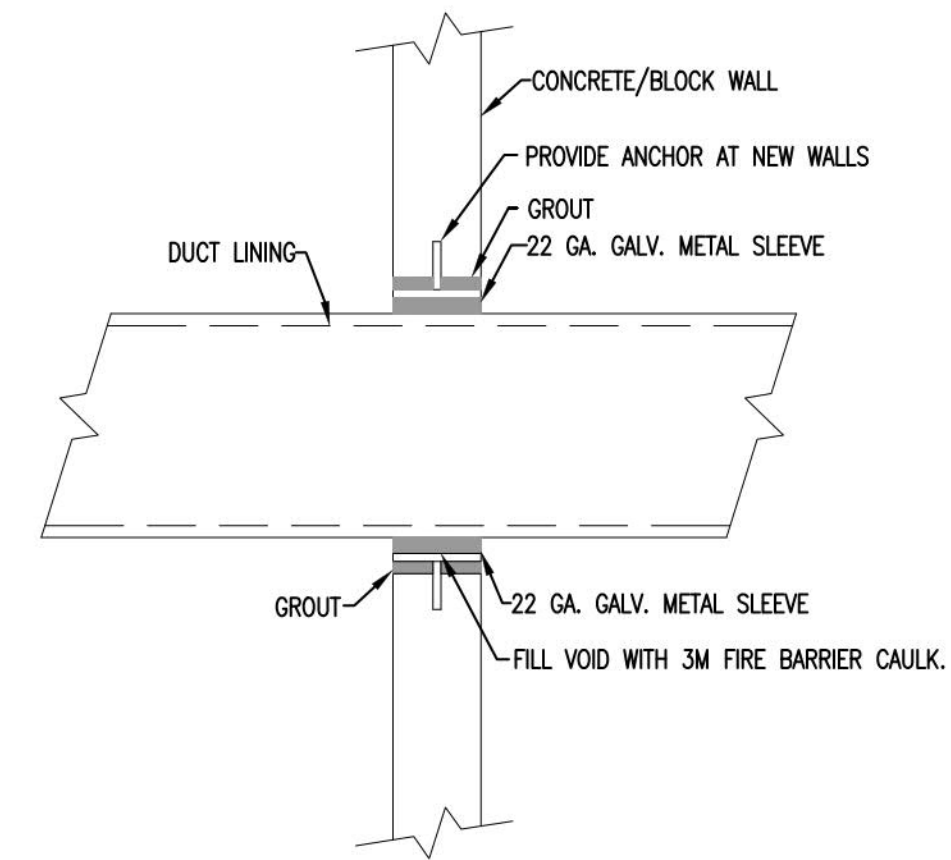
5 LOW PRESSURE DUCT SUPPORT DETAIL
SCALE: NO SCALE



6 TYPICAL SUPPLY DIFFUSER INSTALLATION
SCALE: NO SCALE



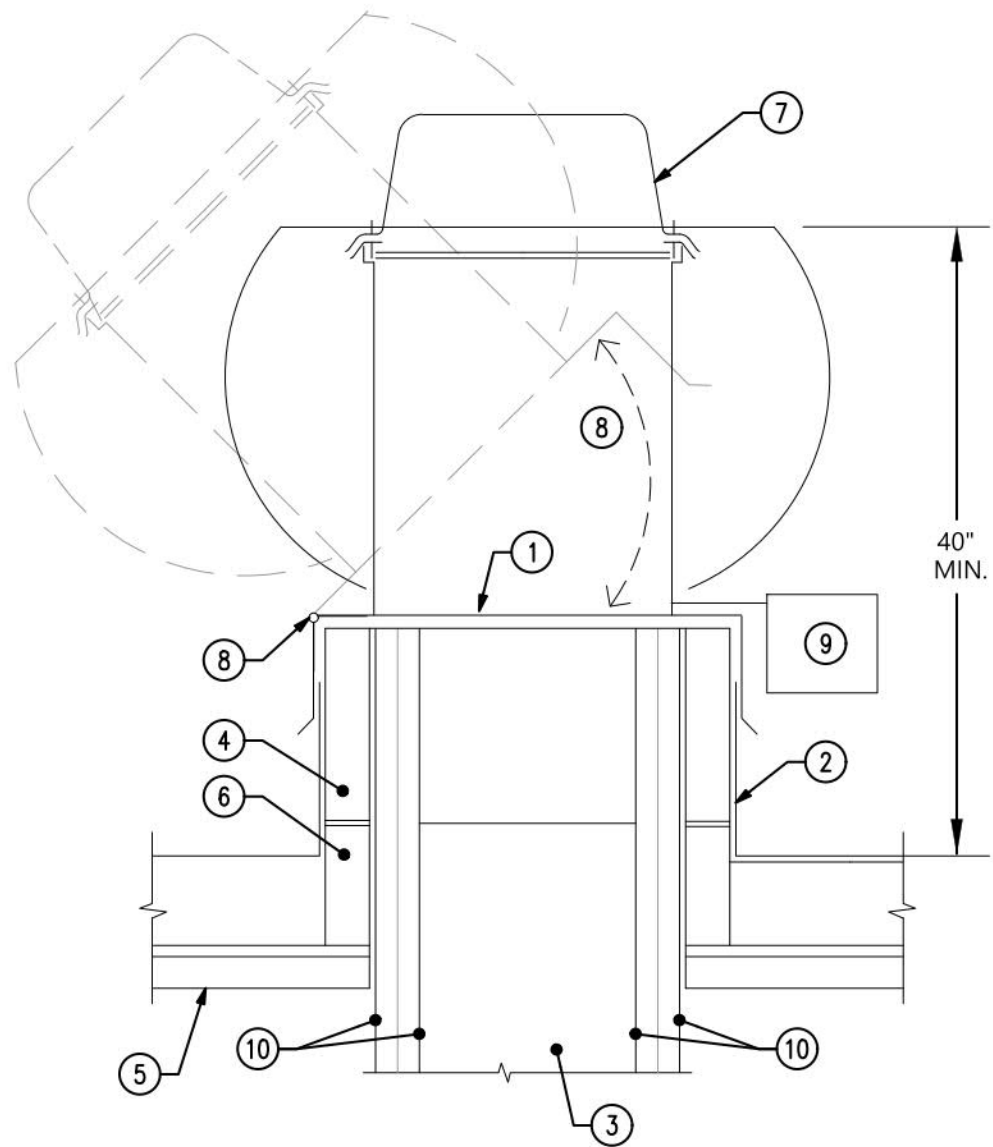
7 TYPICAL DUCT CONNECTIONS
SCALE: NO SCALE



8 DUCT PASSING THROUGH INTERIOR WALL DETAIL
SCALE: NO SCALE

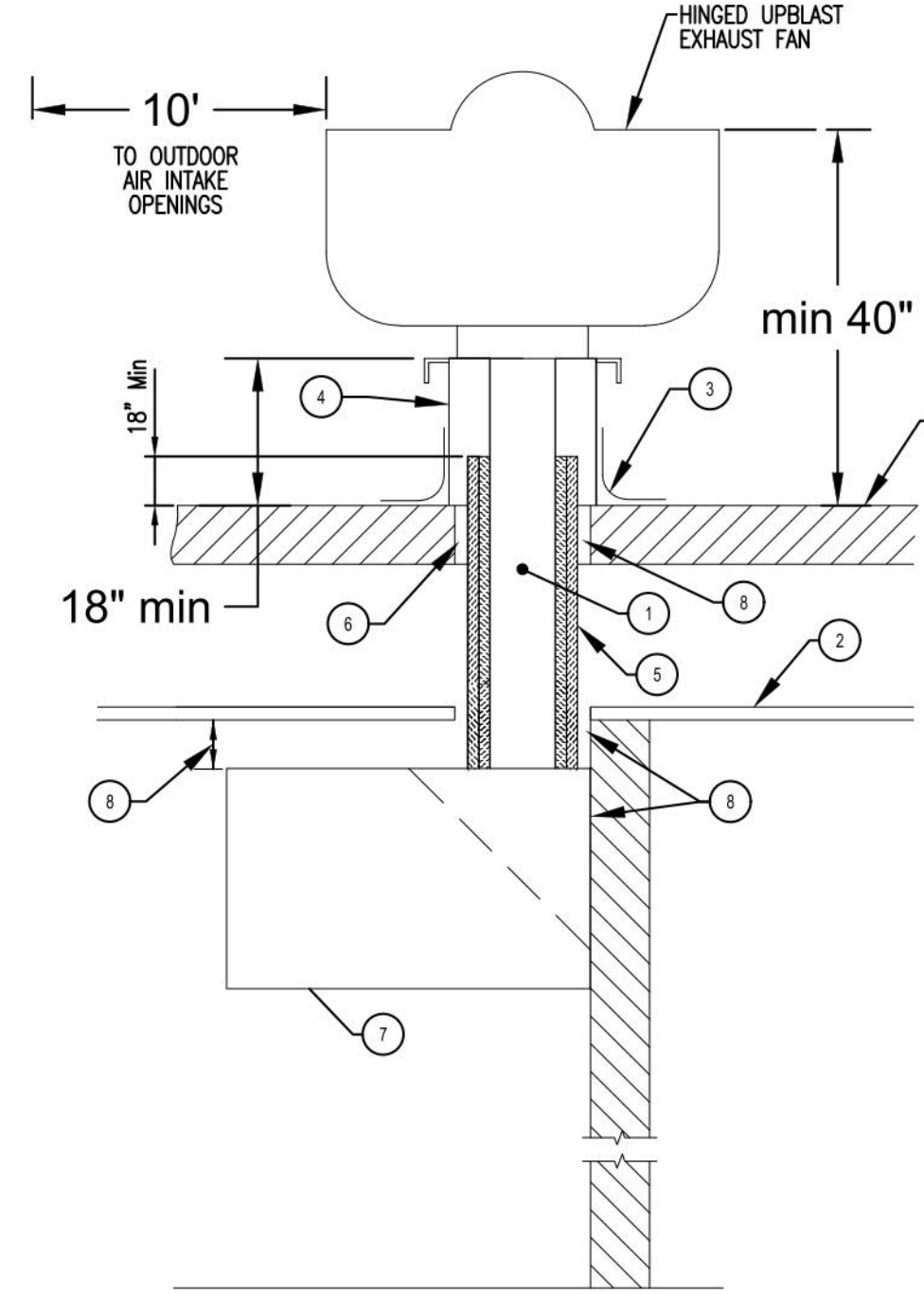
COORDINATED SHOP DRAWINGS SHALL BE PROVIDED BY EACH SUBCONTRACTOR AND SHALL CONTAIN A LAYOUT OF ALL DUCTWORK, CONDUIT, PIPING, EQUIPMENT, STRUCTURE, WALLS, CEILING, ETC. AS REQUIRED TO REFLECT FULL COORDINATION ACROSS ALL TRADES AND SHALL BE SUBMITTED FOR REVIEW. COORDINATED DRAWINGS SHALL BE SIGNED OFF BY ALL OTHER TRADES PRIOR TO BEING SUBMITTED FOR REVIEW. PLANS SHALL BE PREPARED AT A MINIMUM OF 1/8" SCALE OR THE SCALE OF THE DESIGN DRAWINGS, WHICHEVER IS LARGER. NO EQUIPMENT SHALL BE INSTALLED WITHOUT APPROVED SHOP DRAWINGS.

- 1 NEOPRENE SEAL BETWEEN CURB & BASE. ATTACH BASE TO CURB W/8 EVENLY SPACED BOLTS.
- 2 BASE FLASH
- 3 BLACK IRON WELDED TYPE 1 HOOD EXHAUST DUCT.
- 4 FACTORY SUPPLIED VENTILATED CURB EXTENSION WITH HINGE.
- 5 ROOF DECK.
- 6 FACTORY FABRICATED ROOF CURB W/FLASHING. NAIL TO ROOF PRIOR TO SEALANT APPLICATION.
- 7 UPBLAST EXHAUST FAN
- 8 COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE FLEX CONNECTION FOR HINGE OPERATION.
- 9 GREASE COLLECTOR.
- 10 FIRE RATED ENCLOSURE (TWO LAYERS OF FIRE RATED INSULATION).

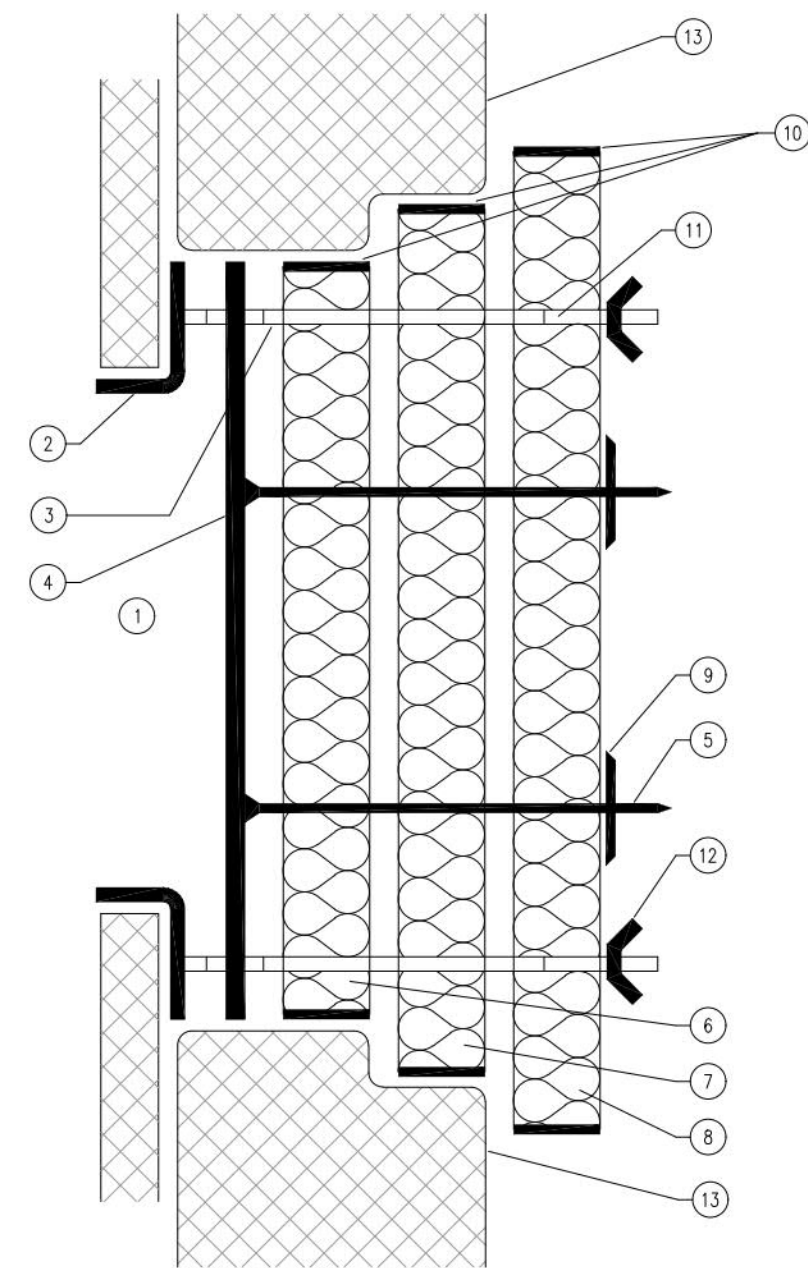


TYPE 1 HOOD HINGED EF MOUNTING DETAIL
SCALE: N.T.S.

- NOTES FOR NFPA 96 (STANDARD FOR THE INSTALLATION OF EQUIPMENT FOR THE REMOVAL OF SMOKE AND GREASE-LADEN VAPORS FROM COMMERCIAL COOKING EQUIPMENT)
- PROVIDE TWO 20X20 OPENINGS EQUALLY SPACED, FOR PERSONNEL ENTRY AT THE HORIZONTAL DUCT & ONE AT THE TOP OF THE VERTICAL RISER TO ACCOMMODATE DESCENT.
 - ACCESS PANELS SHALL BE OF THE SAME MATERIAL AND THICKNESS AS THE DUCT. ACCESS PANELS SHALL HAVE A GASKET OR SEALANT THAT IS RATED FOR 1500 DEG F AND SHALL BE GREASE TIGHT. FASTENERS USED TO SECURE THE ACCESS PANELS SHALL BE OF CARBON STEEL OR STAINLESS STEEL AND SHALL NOT PENETRATE DUCT WALLS.
 - DUCTS SHALL BE CONSTRUCTED OF AND SUPPORTED BY 14 GAUGE CARBON STEEL.
 - ALL SEAMS, JOINTS, PENETRATIONS, AND DUCT TO HOOD COLLAR CONNECTIONS SHALL HAVE A LIQUID TIGHT CONTINUOUS EXTERNAL WELD.
 - ROOF TERMINATION SHALL HAVE:
 - THE EXHAUST FLOW DIRECTED UP AND AWAY FROM THE SURFACE OF THE ROOF AND A MINIMUM OF 40 IN. ABOVE THE ROOF SURFACE.
 - THE ABILITY TO DRAIN GREASE OUT OF ANY TRAPS OR LOW POINTS FORMED IN THE FAN OR DUCT NEAR THE TERMINATION OF THE SYSTEM TO A RAINPROOF COLLECTION RAINPROOF COLLECTION CONTAINER.
 - WITH A HINGED UP-DISCHARGE FAN SUPPLIED WITH WEATHERPROOF ELECTRICAL CABLE & SERVICE HOLD-OPEN RETAINER TO PERMIT PROPER INSPECTION AND CLEANING.
 - AIR VELOCITY SHALL NOT BE LESS THAN 1,500 FT PER MIN.
 - THE OPERATION OF THE HOOD EXTINGUISHING SYSTEM SHALL AUTOMATICALLY SHUT OFF ALL SOURCES OF FUEL.
 - WHERE CONCEALED, THE DUCT SHALL HAVE A HIGH TEMPERATURE, INORGANIC FOIL ENCAPSULATED CERAMIC FIBER BLANKET DUCT WRAP, ALLOWING A ZERO INCH CLEARANCE TO COMBUSTIBLE CONSTRUCTION AND A 2 HOUR FIRE RESISTIVE RATED ENCLOSURE. INSULATION SHALL BE REMOVABLE AT CLEANOUTS. LOCATIONS TO BE TAGGED WITH A 2" BRASS TAG.



FireMaster Duct System	
1	GREASE DUCT
2	FINISHED ROOF
3	ROOF OVER-FLASHING
4	VENT FLASHING
5	TWO LAYERS FIREWRAP DUCT WRAP
6	FIREWRAP FIRESTOP SYSTEM ONLY NEEDED FOR RATED ROOFS
7	EXHAUST HOOD
8	0" CLEARANCE TO NONCOMBUSTIBLES
9	3" CLEARANCE TO LIMITED COMBUSTIBLES, UNLESS PROTECTED
10	18" CLEARANCE TO COMBUSTIBLES, UNLESS PROTECTED



LEGEND	
1	DOOR HOLE. SEE REQUIREMENTS A THRU D.
2	ACCESS FRAME WELDED TO DUCT
3	1/4" DIAMETER ALL THREAD RODS
4	ACCESS COVER - 14 GAUGE
5	INSULATION PINS - WELDED
6	FIREMASTER DUCT WRAP
7	FIREMASTER DUCT WRAP 1" OVERLAP
8	FIREMASTER DUCT WRAP 1" OVERLAP
9	SPEED CLIPS
10	ALUMINUM TAPE AT EDGES
11	SPOOL PIECES FOR THREADED RODS
12	1/4" DIAMETER WING NUTS
13	DUCT INSULATION - SEE NOTE E

NOTES:

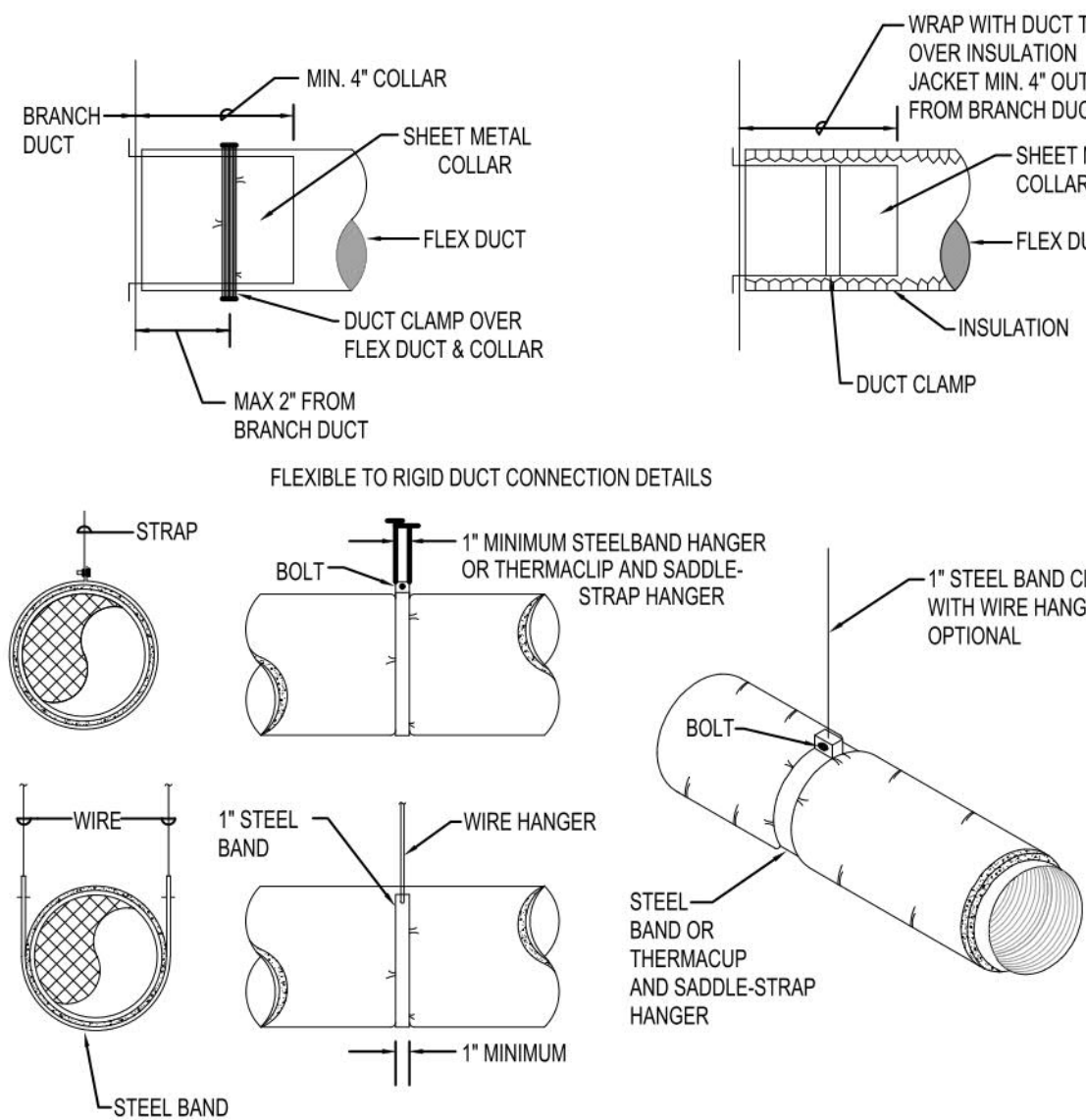
ACCESS OPENINGS SHALL CONFORM TO THE FOLLOWING:

- A. ON HORIZONTAL DUCTS AT LEAST ONE 20 IN. x 20 IN. OPENING SHALL BE PROVIDED FOR PERSONNEL ENTRY. WHERE AN OPENING OF THIS SIZE IS NOT POSSIBLE, OPENINGS LARGE ENOUGH TO PERMIT THOROUGH CLEANING SHALL BE PROVIDED AT 12-FT INTERVALS.
- B. IN HORIZONTAL SECTIONS, THE LOWER EDGE OF THE OPENING SHALL BE NOT LESS THAN 1 1/2 IN. FROM THE BOTTOM OF THE DUCT.
- C. ON VERTICAL DUCTWORK WHERE PERSONNEL ENTRY IS POSSIBLE, ACCESS SHALL BE PROVIDED AT THE TOP OF THE VERTICAL RISER TO ACCOMMODATE DESCENT. WHERE PERSONNEL ENTRY IS NOT POSSIBLE, ADEQUATE ACCESS FOR CLEANING SHALL BE PROVIDED ON EACH FLOOR.
- D. ACCESS PANELS SHALL BE OF THE SAME MATERIAL & THICKNESS AS THE DUCT. ACCESS PANELS SHALL HAVE A GASKET OR SEALANT THAT IS RATED FOR 1500°F & SHALL BE GREASETIGHT. FASTENERS USED TO SECURE THE ACCESS PANELS, SUCH AS BOLTS, WELD STUDS, LATCHES, OR WING NUTS, SHALL BE CARBON STEEL OR STAINLESS STEEL & SHALL NOT PENETRATE DUCT WALLS.
- E. INSULATION SHALL BE A HIGH TEMPERATURE, INORGANIC FOIL ENCAPSULATED CERAMIC FIBER BLANKET DUCTWRAP, ALLOWING A ZERO INCH CLEARANCE TO COMBUSTIBLE CONSTRUCTION & A TWO HOUR FIRE RESISTIVE RATED ENCLOSURE. U.L. LISTED

1 KITCHEN EXHAUST FAN (TYPE 1 HOOD) DETAIL
SCALE: NO SCALE (KEF-1L, KEF-1M, KEF-1R, KEF-2L, KEF-2R)

2 KITCHEN EXHAUST FAN / TYPE 1 HOOD DETAIL
SCALE: NO SCALE (KEF-1L, KEF-1M, KEF-1R, KEF-2L, KEF-2R)

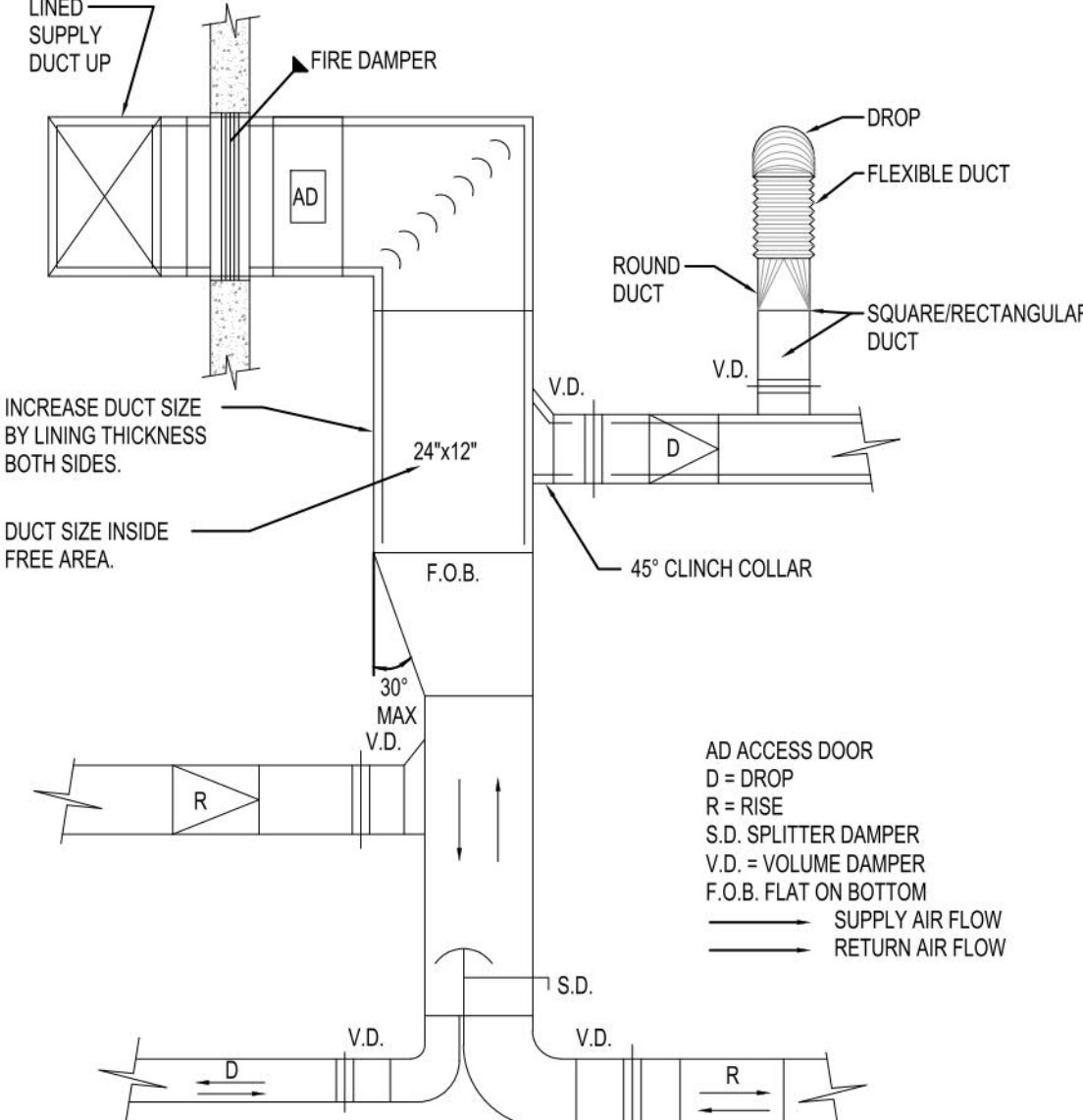
3 KITCHEN EXHAUST DUCT ACCESS DOOR REQUIREMENTS AND ENCLOSURE INSTALLATION DETAIL
SCALE: NO SCALE



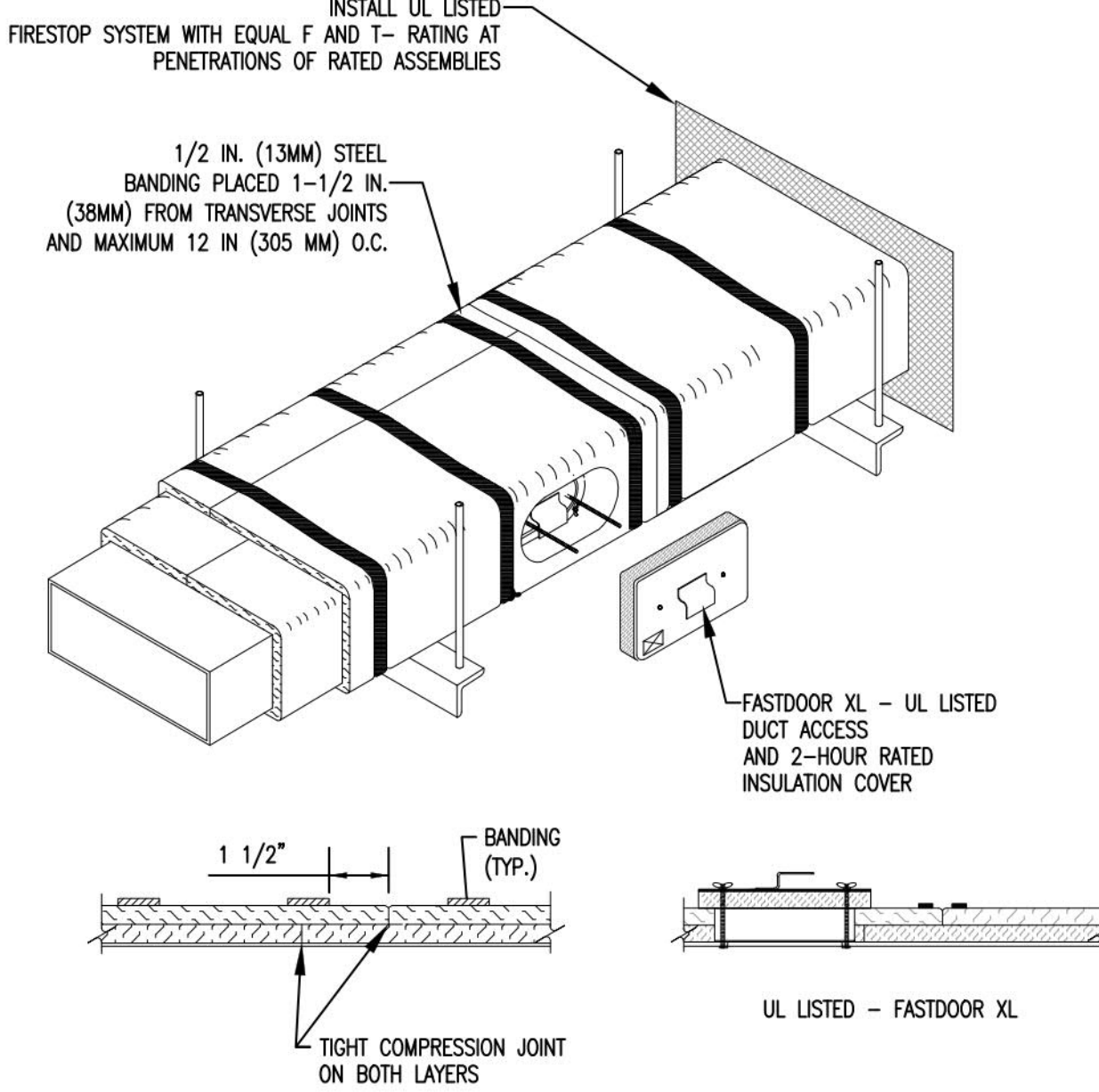
NOTE:
MAXIMUM PERMISSIBLE SAG PER FOOT=1/12" BETWEEN SUPPORTS.

NOTES:

- FLEXIBLE DUCTWORK SHALL COMPLY TO FBCM 603.5 THROUGH 603.5.6.6)
- FLEXIBLE DUCTWORK SHALL BE TESTED IN ACCORDANCE WITH UL-181. DUCTS SHALL BE LISTED AND LABELED AS CLASS 0 OR CLASS 1 FLEXIBLE DUCT AND SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 304.1 FBCM.
- HORIZONTAL DUCT SHALL BE SUPPORTED AT INTERVALS NOT GREATER THAN 5 FEET. SUPPORTS SHALL BE PROVIDED WITHIN 1.5 FEET OF INTERMEDIATE FITTINGS AND BENDS.
- HANGERS, SADDLES AND SUPPORTS SHALL MEET THE DUCT MANUFACTURERS RECOMMENDATIONS AND SHALL BE SUFFICIENT TO PREVENT RESTRICTION OF THE INTERNAL DUCT DIAMETER. IN NO CASE SHALL THE MATERIAL SUPPORTING FLEXIBLE DUCT THAT IS IN DIRECT CONTACT WITH IT BE LESS THAN 1/2" WIDE



- THERMAL CERAMICS FIREMASTER FASTWRAP XL OR PYROSCAT XL IS TESTED TO ASTM E2336 & UL LISTED PER HNTK.G18 TO PROVIDE ZERO CLEARANCE TO COMBUSTIBLES & TO PROVIDE A 1- OR 2- HOUR ENCLOSURE THROUGH PENETRATIONS FIRESTOP SYSTEMS ARE TESTED IN ACCORDANCE WITH ASTM E 814 (UL 1479). ICC-ES APPROVAL PER REPORT ESR 2213 OR ESR 2832.
- COMPLIANT TO THE FOLLOWING CODES:
NFPA 96
INTERNATIONAL MECHANICAL CODES
UNIFORM MECHANICAL CODE
CALIFORNIA MECHANICAL CODE
- INSULATION APPLIED IN TWO LAYERS WITH TIGHT COMPRESSION JOINT ON BOTH LAYERS AT ALL JOINTS.
- MINIMUM 16 GAUGE CARBON STEEL (OR 18 GAGE STAINLESS STEEL) RECTANGULAR OR ROUND GREASE EXHAUST DUCT
- INSTALL UL LISTED AND LIQUID TIGHT THERMAL CERAMICS FASTDOOR XL ACCESS DOORS AT ALL CHANGES IN DIRECTION AND AT MINIMUM EVERY 20 FT ON HORIZONTAL RUNS.
- SUPPORT HANGER SYSTEMS DO NOT NEED TO BE WRAPPED PROVIDED THE HANGER RODS ARE MINIMUM OF 3/8 IN. DIAMETER & SUPPORTS ARE MINIMUM 2 X 2 X 1/8 IN. STEEL ANGLE OR SMACNA EQUIVALENT SUPPORT SYSTEM.
- THERMAL CERAMICS DUCT WRAP SHALL BE INSTALLED DIRECTLY ONTO THE DUCT AND APPLIED FROM THE HOOD CONNECTION TO THE CONNECTION TO THE FAN.
- THERMAL CERAMICS DUCT ENCLOSURE SYSTEM SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS & UL LISTINGS.



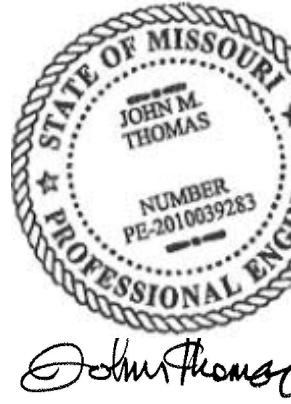
4 FLEXIBLE DUCT HANGER AND CONNECTION DETAIL
SCALE: NO SCALE

5 TYPICAL FITTINGS AND VOLUME DAMPER LOCATION IN SUPPLY OR RETURN DUCT SYSTEM
SCALE: NO SCALE

6 FIRE RATED ENCLOSURE - GREASE DUCT DETAIL
SCALE: NO SCALE

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1	2021/08/19	ISSUED FOR PERMIT



Drawing Title
HVAC - DETAILS

Job No. 21-0064	Drawn DNK
Scale N.T.S.	Date 08/19/2021

Sheet No.
M301

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AIR BALANCE SCHEDULE					
EQUIPMENT TAG	SUPPLY AIR (CFM)	RETURN AIR (CFM)	OUTDOOR AIR (CFM)	RELIEF/EXH. AIR (CFM)	PRESSURE (CFM)
BUILDING AIR BALANCE					
RETAIL / TOILETS	4,800	(3,970)	830	(940)	(110)
BAR / BAR DINING	4,800	(4,020)	780	0	780
DINING	6,600	(5,141)	1,459	0	1,459
PRIVATE ROOM I	1,400	(1,140)	260	(260)	0
PRIVATE ROOM II	1,400	(1,140)	260	(260)	0
EXPO	1,000	(779)	221	0	221
COOKLINE (A/C)	1,800	(1,500)	300	0	300
COOKLINE (MUA/EXH)	5,400	0	5,400	(6,240)	(840)
PREP (A/C)	2,000	(1,667)	333	0	333
PREP (MUA/EXH)	2,850	0	2,850	(3,600)	(750)
STOR / TOIL / EQUIP PLAT	700	(583)	117	(400)	(283)
BREAK / OFFICE / RECEIVING	600	(500)	100	0	100
DISHWASHING (A/C)	900	(750)	150	0	150
DISHWASHING (EXH) *	0	0	0	(1,125)	(1,125)
BUILDING TOTAL =	34,250	(21,190)	13,060	(11,700)	1,360
EQUIPMENT AIR BALANCE					
RTU-1	4,800	(3,970)	830	0	830
RTU-2	4,800	(4,020)	780	0	780
RTU-3	6,000	(5,000)	1,000	0	1,000
RTU-4	1,400	(1,140)	260	(260)	0
RTU-5	7,600	(5,920)	1,680	0	1,680
RTU-6	1,400	(1,140)	260	(260)	0
MAU-1	5,400	0	5,400	0	5,400
MAU-2	2,850	0	2,850	0	2,850
KEF-1L	--	--	--	(2,080)	(2,080)
KEF-1M	--	--	--	(2,080)	(2,080)
KEF-1R	--	--	--	(2,080)	(2,080)
KEF-2L	--	--	--	(1,800)	(1,800)
KEF-2R	--	--	--	(1,800)	(1,800)
KEF-3 *	--	--	--	(1,125)	(1,125)
EF-1	--	--	--	(940)	(940)
EF-2	--	--	--	(400)	(400)
BUILDING TOTAL	34,250	(21,190)	13,060	(11,700)	1,360
* - INTERMITTENT FAN OPERATION					POSITIVE PRESSURE = 4.0%

HVAC DESIGN CRITERIA			
DESIGN DATA FROM ASHRAE - 2017 FUNDAMENTALS HANDBOOK			
SUMER OUTSIDE DESIGN TEMPERATURE *		INSIDE DESIGN TEMPERATURE	
DRY BULB [°F]	WET BULB [°F]	DRY BULB [°F]	WET BULB [°F]
96	76.5	75	62.6
WINTER OUTSIDE DESIGN TEMPERATURE *		INSIDE DESIGN TEMPERATURE	
DRY BULB [°F]	WET BULB [°F]	DRY BULB [°F]	WET BULB [°F]
2.4	1.1	70	53.0
* WMO No. 724460 - KANSAS CITY INTERNATIONAL AIRPORT, MO			

VENTILATION SCHEDULE – LEE'S SUMMIT, MO CITY MECHANICAL CODE – (INTERNATIONAL MECHANICAL CODE – 2018)																				
ROOM NUMBER	ROOM NAME	OCCUPANCY CLASSIFICATION	ROOM DATA			NATURAL VENTILATION (SECTION 402)		MECHANICAL VENTILATION (SECTION 403)										NOTES		
			FOOR AREA	HEIGHT	VOLUME	MIN. OPERBL. AREA	ACTUAL OPERBL. AREA	ESTIM. MAX. LOAD PERS./PLUMB. FIXTURES		REQUIRED OUTSIDE AIR / EXHAUST					ACTUAL ROOM VENTILATION					
										CFM/ PERSON	O.A. CFM/SQ.FT.	EXHAUST CFM/SQ.FT. CFM/WC (UR)	TOTAL O.A.	EXHAUST CFM	SUPPLY CFM				EXHAUST CFM	
			SQ.FT.	FT.	CU.FT.	SQ.FT.	SQ.FT.	PER 1000 SQ.FT.	ACTUAL						TOTAL	% O.A.	TOTAL O.A.			
ROOFTOP UNIT RTU-1 (RETAIL / TASTING BAR)																				
101	ENTRY	CORRIDORS & UTILITIES	57	10.5	599	3	SEE NOTE 1	--	0	0	0.06	--	4	--	400	17.3	69	--	1.2	
102	RETAIL	RETAIL STORES / SALES FLOORS	674	11.9	7,953	27	SEE NOTE 1	15	12	7.5	0.12	--	171	--	1,050	17.3	182	--	1.2	
103	TASTING BAR	BARS / COCKTAIL LOUNGES	146	11.9	1,723	6	SEE NOTE 1	100	24	7.5	0.18	--	207	--	0	17.3	0	--	1.2,3	
104	TASTING BAR BACK	BARS / COCKTAIL LOUNGES	502	11.5	5,773	21	SEE NOTE 1	100	4	7.5	0.18	--	121	--	1,360	17.3	235	--	1.2	
105	TAKE-OUT / CARY-OUT	RETAIL STORES / SALES FLOORS	132	11.5	1,518	6	SEE NOTE 1	15	10	7.5	0.12	--	91	--	400	17.3	69	--	1.2	
106	HOST	LOBBIES / PREFUNCTION	165	11.5	1,898	7	SEE NOTE 1	30	10	7.5	0.06	--	85	--	300	17.3	52	--	1.2,3	
107	WAITING AREA	LOBBIES / PREFUNCTION	133	12.0	1,596	6	SEE NOTE 1	30	10	7.5	0.06	--	83	--	0	17.3	0	--	1.2,3	
108	BARREL RESERVE	LOBBIES / PREFUNCTION	132	11.5	1,518	6	SEE NOTE 1	30	0	7.5	0.06	--	8	--	300	17.3	52	--	1.2	
--	TOILET HALL	CORRIDORS & UTILITIES	118	10.0	1,180	5	SEE NOTE 1	--	0	0	0.06	--	8	--	0	17.3	0	--	1.2,3	
115	STORAGE	STORAGE ROOMS	16	9.0	144	1	SEE NOTE 1	--	0	--	0.12	--	2	--	0	17.3	0	--	1.2,4	
117	WOMEN'S TOILET	TOILET ROOMS - PUBLIC	201	9.0	1,809	9	SEE NOTE 1	--	3	--	--	50	--	(150)	190	17.3	33	(400)	1.2	
118	MEN'S TOILET	TOILET ROOMS - PUBLIC	201	9.0	1,809	9	SEE NOTE 1	--	4	--	--	50	--	(200)	190	17.3	33	(400)	1.2	
119	FAMILY TOILET	TOILET ROOMS - PUBLIC	67	9.0	603	3	SEE NOTE 1	--	1	--	--	50	--	(50)	70	17.3	12	(140)	1.2	
135	WRAPPING ROOM	STORAGE ROOMS	380	9.0	3,420	16	SEE NOTE 1	--	0	--	0.12	--	46	--	540	17.3	93	--	1.2	
TOTAL =			2,924						70				826	(400)	4,800		830	(940)		
ROOFTOP UNIT RTU-2 (BAR DINING)																				
109	BAR DINING	DINING ROOMS	755	10.5	7,928	31	SEE NOTE 1	70	53	7.5	0.18	--	534	--	2,800	16.3	455	--	1.2,3	
110	BAR	BARS / COCKTAIL LOUNGES	103	10.5	1,082	5	SEE NOTE 1	100	16	7.5	0.18	--	139	--	0	16.3	0	--	1.2,3	
110	BAR BACK	BARS / COCKTAIL LOUNGES	437	11.5	5,026	18	SEE NOTE 1	100	3	7.5	0.18	--	102	--	2,000	16.3	325	--	1.2	
TOTAL =			1,295						72				775	0	4,800		780			
ROOFTOP UNIT RTU-3 (KITCHEN)																				
121	COOKLINE	KITCHENS (COOKING)	445	9.0	4,005	18	SEE NOTE 1	--	4	--	--	0.7	--	(312)	1,800	16.7	300	(6,240)	1.2	
122	DISHWASH	KITCHENS (COOKING)	264	9.0	2,376	11	SEE NOTE 1	--	2	--	--	0.7	--	(185)	900	16.7	150	(1,125)	1.2	
123	PREP	KITCHENS (COOKING)	445	9.0	4,005	18	SEE NOTE 1	--	6	--	--	0.7	--	(312)	2,000	16.7	333	(3,600)	1.2	
124	DRY STORAGE	STORAGE ROOMS	198	9.0	1,782	8	SEE NOTE 1	--	0	--	0.12	--	24	--	200	16.7	33	--	1.2	
--	KITCHEN HALLWAY	KITCHENS (COOKING)	233	9.0	2,097	10	SEE NOTE 1	--	0	--	--	0.7	--	(164)	180	16.7	30	--	1.2,3	
130	RECEIVING AREA	KITCHENS (COOKING)	196	9.0	1,764	8	SEE NOTE 1	--	2	--	--	0.7	--	(138)	340	16.7	57	--	1.2,3	
125	EMPLOYEE BREAK AREA	KITCHENS (COOKING)	150	9.0	1,350	6	SEE NOTE 1	--	2	--	--	0.7	--	(105)	150	16.7	25	(200)	1.2	
127	EMPLOYEE MEN'S TOILET	TOILET ROOM	56	9.0	504	3	SEE NOTE 1	0	1	0	--	50	--	(50)	50	16.7	8	(100)	1.2	
128	EMPLOYEE WOMEN'S TOILET	TOILET ROOM	56	9.0	504	3	SEE NOTE 1	0	1	0	--	50	--	(50)	50	16.7	8	(100)	1.2	
200	EQUIPMENT PLATFORM	CORRIDORS & UTILITIES	300	10.0	3,000	12	SEE NOTE 1	--	0	--	0.06	--	18	--	250	16.7	42	--	1.2	
TOTAL =			2,343						16				42	(1316)	6,000		1,000	(11,365)		
ROOFTOP UNIT RTU-4 (PINO NOIR ROOM)																				
113	PINO NOIR ROOM	DINING ROOMS	350	11.0	3,850	14	SEE NOTE 1	70	26	7.5	0.18	--	258	--	1,400	18.6	260	--	1.2	
TOTAL =			350			20			26				258	0	1,400		260			
ROOFTOP UNIT RTU-5 (DINING)																				
112	DINING	DINING ROOMS	2122	11.5	24,403	85	SEE NOTE 1	70	155	7.5	0.18	--	1,545	--	6,600	22.1	1,459	--	1.2,3	
120	EXPO	DINING ROOMS	397	9.0	3,573	16	SEE NOTE 1	70	6	7.5	0.18	--	117	--	1,000	22.1	221	--	1.2	
TOTAL =			2,519						161				1,675	0	7,600		1,680			
ROOFTOP UNIT RTU-6 (CHARDONNAY ROOM)																				
114	CHARDONNAY ROOM	DINING ROOMS	361	11.0	3,971	15	SEE NOTE 1	70	26	7.5	0.18	--	260	--	1,400	18.6	260	--	1.2	
TOTAL =			361			20			26				260	0	1,400		260			
DUCT FREE SPLIT SYSTEM DFSS-1																				
116	NETWORK ROOM	CORRIDORS & UTILITIES	42	9.0	378	2	SEE NOTE 1	0	0	0	0.06	--	3	--	0	0.0	0	--	1.2,4	
TOTAL =			42										3	0	0		0			
DUCT FREE SPLIT SYSTEM DFSS-2																				
125	OFFICE	OFFICE SPACES	129	9.0	1,161	6	SEE NOTE 1	5	1	5	0.06	--	13	--	80	16.7	13	--	1.2,6	
TOTAL =			129						1				13	0	80		13			
MISCELLANEOUS																				
111	BEER COOLER	NOT APPLICABLE	121	0.0	0	0	--	0	0	0	0	--	0	--	0	0.0	0	--	--	
130	WALK-IN COOLER I	NOT APPLICABLE	180	0.0	0	0	--	0	0	0	0	--	0	--	0	0.0	0	--	--	
131	WALK-IN COOLER II	NOT APPLICABLE	134	0.0	0	0	--	0	0	0	0	--	0	--	0	0.0	0	--	--	
132	WALK-IN FREEZER	NOT APPLICABLE	67	0.0	0	0	--	0	0	0	0	--	0	--	0	0.0	0	--	--	
126	SPRINKLER ROOM	CORRIDOR & UTILITY	36	15.5	558	2	SEE NOTE 1	0	0	0	0.06	--	3	--	0	0.0	0	--	1.2,5	
129	TRASH ENCLOSURE	NOT APPLICABLE	537	0.0	0	0	--	0	0	0	0	--	0	--	0	0.0	0	--	--	
133	PATIO	NOT APPLICABLE	755	0.0	0	0	--	0	0	0	0	--	0	--	0	0.0	0	--	--	
NOTES:																				
1.) SEE ARCHITECTURAL DRAWINGS FOR MINIMUM / ACTUAL OPERABLE AREA.																				
2.) COORDINATED WITH TABLE 403.3.																				
3.) OPEN TO ADJACENT AREA.																				
4.) OPEN TO ADJACENT AREA WHEN IN USE.																				
5.) OPEN TO OUTDOORS WHEN IN USE.																				
6.) OUTDOOR AIR PROVIDED BY ROOFTOP UNIT RTU-3.																				

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ROOFTOP UNIT SCHEDULE (RTU)

TAG	SERVICE	NOMINAL TONS	TOTAL CFM	MIN O.A. CFM	% OA CFM	COOLING (CONDENSER FAN EAT=95 oF)					GAS HEATING				FAN MOTOR			POWER EXHAUST (HP)	ELECTRIC						FILTERS		OPERATING WEIGHT (LBS.)	SYSTEM	MANUFACTURER MODEL NUMBER	NOTES
						TOTAL MBH	SENSIBLE MBH	EAT DB / WB	LAT DB / WB	R-410A (lbs.)	INPUT/OUTPUT MBH	EAT / LAT (oF)	STAGES	MIN / MAX GAS PRESSURE (IN.)	BHP	HP	ESP (IN. WC)		MCA	MOCP	VOLT	PH	HZ	EER / IEER / SEER	SIZES	TYPE				
RTU-1	RETAIL	12.5	4,800	830	17.3	145.1	100.5	78.3 / 65.7	58.9 / 55.8	12.7 + 6.8	250 / 200	58.3 / 96.7	2	2.5 - 14	2.69	3.0	1.0	NONE	66	80	208	3	60	12.1 EER	(4) 20x20 (4) 20x25	2" T.A.	2,790	CAV VERTICAL	TRANE YHD 150	1 THRU 7
RTU-2	BAR DINING AREA	12.5	4,800	780	16.3	140.5	103.5	76.7 / 63.4	56.7 / 53.3	12.7 + 6.8	250 / 200	59.0 / 97.4	2	2.5 - 14	2.7	3.0	1.0	NONE	66	80	208	3	60	12.1 EER	(4) 20x20 (4) 20x25	2" T.A.	2,790	CAV VERTICAL	TRANE YHD 150	1 THRU 7
RTU-3	KITCHEN	15.0	6,000	1,000	16.7	184.8	144.9	82.2 / 66.8	59.8 / 56.9	13.0 + 8.5	250 / 200	57.9 / 88.6	2	2.5 - 14	3.35	3.0	1.0	NONE	72	90	208	3	60	12.1 EER	(8) 20x20 (4) 20x16	2" T.A.	2,840	CAV VERTICAL	TRANE YHD 180	1 THRU 7
RTU-4	PINOT NOIR ROOM	4.0	1,400	260	18.6	45.9	35.2	76.4 / 63.1	53.2 / 53.2	12.5	60 / 49	57.4 / 90.1	1	4.5 - 14	0.72	1.0	1.0	NONE	30	40	208	3	60	17.5 SEER	(4) 16x25	2" T.A.	1,025	CAV VERTICAL	TRANE YHC 047	1 THRU 7
RTU-5	DINING AREA	20.0	7,600	1,680	22.1	244.7	167.9	78.7 / 65.4	58.2 / 54.7	15.5 + 7.5	400 / 320	55.1 / 93.9	2	2.5 - 14	5.17	5.0	1.0	NONE	115	150	208	3	60	11.0 EER	(8) 20x20 (4) 20x16	2" T.A.	3,000	CAV VERTICAL	TRANE YHD 240	1 THRU 7
RTU-6	CHARDONNAY ROOM	4.0	1,400	260	18.6	45.9	35.2	76.4 / 63.1	53.2 / 53.2	12.5	60 / 49	57.4 / 90.1	1	4.5 - 14	0.72	1.0	1.0	NONE	30	40	208	3	60	17.5 SEER	(4) 16x25	2" T.A.	1,025	CAV VERTICAL	TRANE YHC 047	1 THRU 7

NOTES:
1.) ROOF CURB: 24" HIGH, 1.5" THICK, 3.0 PCF INSULATION.
2.) CLOGGED FILTER SWITCH.
3.) 10-YEAR HEAT EXCHANGER WARRANTY, 5-YEAR COMPRESSOR WARRANTY.

4.) FACTORY INSTALLED OPTIONS: HINGED ACCESS PANELS, CONDENSER COIL HAIL GUARD, 100% SINGLE ENTHALPY ECONOMIZER, BAROMETRIC RELIEF, INDOOR FAN HIGH STATIC MOTOR AND BELT DRIVE PACKAGE, IAQ DRAIN PAN, UNPOWERED CONVENIENCE OUTLET, STAGED AIR VOLUME WITH VFD CONTROLLER, DEHUMIDIFICATION WITH HOT GAS REHEAT.
FIELD INSTALLED OPTIONS: FLUE DISCHARGE DEFLECTOR.

5.) TRANE RELATEL CONTROLS WITH REMOTE MOUNTED TEMPERATURE / HUMIDITY SENSOR. SENSOR TO BE AVERAGING TYPE FOR DINING AREA ROOFTOP UNIT RTU-5 ONLY.
6.) BI-POLAR IONIZATION UNIT PHENOMENAL AIR® COLD PLASMA GENERATOR SERIES C6.0 (FOR AIRFLOW UP TO 6,000 CFM) OR C10.0 (FOR AIRFLOW 6,000 TO 10,000 CFM) .

7.) COOPER'S HAWK HAS AN EXCLUSIVE NATIONAL ACCOUNT WITH TRANE.
FOR QUESTIONS, QUOTATIONS OR GENERAL ACCOUNT NEEDS CONTACT TRANE (Cooper'sHawk@Trane.com).

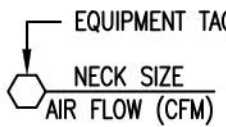
DIFFUSER, GRILLE, AND REGISTER SCHEDULE

TYPE	SERVICE	MANUFACTURER	MODEL NO.	DESCRIPTION	MATERIAL	NC LEVEL	NOTES
A	SUPPLY	TITUS	TMSA	SQUARE CEILING DIFFUSER ADJUSTABLE	STEEL	30	1,3,4,5
B	SUPPLY	TITUS	ML-39	LINEAR SLOT DIFFUSER - TWO (2) 1" WIDE 48" LONG SLOTS	ALUMINUM	30	1,3,4,5
C	SUPPLY	TITUS	300R	DOUBLE DEFLECTION	STEEL	30	1,2,3,4,6
D	RETURN/ TRANSFER	TITUS	350ZR	0° DEFLECTION EXHAUST GRILLE	STEEL	30	1,2,3,4,6
E	RETURN/ EXHAUST	TITUS	350R	35° DEFLECTION EXHAUST GRILLE	STEEL	30	1,2,3,4,6
F	SUPPLY	TITUS	PCS-AA	PERFORATED CEILING DIFFUSER, FLUSH FACE, CURVED BLADE 4-WAY ADJUSTABLE	ALUMINUM	30	1,3,4,5,7
G	TRANSFER	TITUS	CT-700	DOOR GRILLE	ALUMINUM	30	1,4,6

NOTES:
1.) CUSTOM FINISH AND COLOR AS SELECTED BY ARCHITECT.
2.) PAINT INSIDE OF DUCT BLACK WHERE LINE OF SIGHT OF INSIDE OF DUCT IS VISIBLE.
3.) OPPOSED BLADE DAMPER IF NOT SHOWN ON PLANS.
4.) COORDINATE FRAME TYPE WITH REFLECTED CEILING PLAN / WALL TYPE AND ARCHITECT.
5.) INSULATED PLENUM / BACKPAN.

6.) BLADES PARALLEL TO FLOOR IF IN WALL, PARALLEL TO LONG DIMENSION IF IN CEILING.
7.) SEE FLOOR PLAN FOR DISCHARGE PATTERN CONTROLLER TYPE (3-WAY, 4-WAY).

GENERAL NOTES:
1.) WHERE AIR DEVICE IS INSTALLED IN INACCESSIBLE CEILING WITHOUT VOLUME DAMPER ACCESS DOOR, PROVIDE REMOTE CABLE OPERATED DAMPER ASSEMBLY (METROPOLITAN AIR TECHNOLOGIES OR APPROVED EQUAL).



FAN SCHEDULE (EF, KEF)

TAG	LOCATION	SERVICE	CFM	ESP (IN. W.C.)	FAN DATA			MOTOR DATA				WT. (LBS.)	MANUFACTURER (GREENHECK) MODEL NO.	CONTROLS	NOTES
					FAN TYPE	RPM	SONES	DRIVE	MAX. BHP	HP	VOLT	PH	HZ		
KEF-1L	ROOF	KITCHEN EXHAUST HOOD KEH-1	2,080	--	CENTRIFUGAL ROOF UPBLAST	--	--	--	--	1.5	208	3	60	--	--
KEF-1M	ROOF	KITCHEN EXHAUST HOOD KEH-1	2,080	--	CENTRIFUGAL ROOF UPBLAST	--	--	--	--	1.5	208	3	60	--	--
KEF-1R	ROOF	KITCHEN EXHAUST HOOD KEH-1	2,080	--	CENTRIFUGAL ROOF UPBLAST	--	--	--	--	1.5	208	3	60	--	--
KEF-2L	ROOF	KITCHEN EXHAUST HOOD KEH-2	1,800	--	CENTRIFUGAL ROOF UPBLAST	--	--	--	--	1.5	208	3	60	--	--
KEF-2R	ROOF	KITCHEN EXHAUST HOOD KEH-2	1,800	--	CENTRIFUGAL ROOF UPBLAST	--	--	--	--	1.5	208	3	60	--	--
KEF-3	ROOF	KITCHEN EXHAUST HOOD KEH-3	1,125	--	CENTRIFUGAL ROOF UPBLAST	--	--	--	--	0.5	120	1	60	--	--
EF-1	ROOF	TOILET ROOMS 117,118,119	940	0.50	CENTRIFUGAL ROOF DOWNBLAST	1,540	8.3	BELT	0.25	1/3	120	1	60	100	GB-100-3
EF-2	ROOF	MOP SINK/TOILETS 127,128	400	0.50	CENTRIFUGAL ROOF DOWNBLAST	1,307	6.9	BELT	0.11	1/4	120	1	60	100	GB-998-4

NOTES:
1.) OTHER ACCEPTABLE MANUFACTURERS: LOREN COOK, TWIN CITY FANS, CAPTIVE-AIRE.
2.) MOTORIZED BACKDRAFT DAMPER.
3.) FACTORY MOUNTED DISCONNECT SWITCH.
4.) 18" HIGH, INSULATED (1.5" THICK, 3.0 PCF) ROOF CURB WITH CURB SEAL.
5.) ALUMINUM BIRDSCREEN.

6.) SEE KITCHEN EQUIPMENT REFERENCE DRAWINGS FOR ADDITIONAL INFORMATION.

CONTROLS LEGEND:
BAS = BUILDING AUTOMATION SYSTEM
OS = OCCUPANCY SENSOR
EM = EMERGENCY POWER

FAS = FIRE ALARM SYSTEM
PL = PILOT LIGHT

R = RELAY, INTERLOCKED WITH HVAC/ ELECTRICAL EQUIPMENT
S = WALL SWITCH

SL = INTERLOCKED WITH SPACE LIGHTS
T = REVERSE ACTING THERMOSTAT
TD = TIME DELAY OFF

ELECTRIC CEILING / UNIT HEATER SCHEDULE (ECH, EUH)

TAG	LOCATION	TYPE	CFM	HEATING DATA		PHYSICAL DATA		ELECTRICAL DATA						MARKEL MODEL NO.	NOTES
				BTUH	EAT	LAT	DIMENSIONS	WEIGHT	HEATER KW	AMPS	VOLT	PH	HZ		
					(°F)	(°F)	WxHxD	(LBS.)							
ECH-1	EMPLOYEE MEN'S TOILET 127	ELECTRIC CEILING HEATER	100	2,559	60	83.6	9.25 x 12.2 x 3.625	6	0.75	13	120	1	60	3000 SERIES	1,2
ECH-2	EMPLOYEE WOMEN'S TOILET 128	ELECTRIC CEILING HEATER	100	2,559	60	83.6	9.25 x 12.2 x 3.625	6	0.75	13	120	1	60	3000 SERIES	1,2
EUH-1	SPRINKLER ROOM 126	ELECTRIC UNIT HEATER	700	19,107	60	85.2	21.5 x 24.5 x 6.5	54	5.6	27.1	208	3	60	5100 SERIES	3,4,5

NOTES:
1.) FRONT DISCHARGE, INTAKE.
2.) WALL MOUNTED HEATING THERMOSTAT.

3.) WALL MOUNTED HEAT STRATIFICATION THERMOSTAT.
4.) WALL / CEILING MOUNTING BRACKET.

5.) VERTICAL DISCHARGE.

ELECTRIC DUCT HEATER SCHEDULE (EDH)

TAG	SERVING	LOCATION	CFM	TEMP RISE °F	HTG. CAP. BTUH	SIZE (IN) W x H	COIL VEL. (FPM)	NO. OF STAGES	ELECTRIC				CONTROL VOLTAGE	MANUFACTURER & MODEL NUMBER	NOTES
									KW	VOLT	PH	HZ			
EDH-1	ENTRY 101	WOMEN'S 117	400	22.0	9,554	10 x 10	576	SCR	2.8	208	3	60	24	INDEECO AQUA	1,2,3,4,5,6
EDH-2	DINING 112	DINING 112	1,200	22.0	28,661	16 x 14	771	SCR	8.4	208	3	60	24	INDEECO AQUA	1,2,3,4,5,6
EDH-3	MENS WOMENS	TOILET HALLWAY	380	22.3	9,212	10 x 10	547	SCR	2.7	208	3	60	24	INDEECO AQUA	1,2,3,4,5,6

NOTES:
1.) PROVIDE THERMOSTAT WITH REMOTE SENSOR FOR EACH HEATER - STAGES OF CONTROL TO MATCH STAGES OF HEATER AND PER SEQUENCE OF OPERATION

2.) ACCEPTABLE MANUFACTURERS: MARKEL.
3.) PROVIDE FACTORY INSTALLED DISCONNECT SWITCH FOR EACH HEATER.
4.) PROVIDE AIR FLOW SWITCH - INSTALLATION OF HEATER SHALL MEET MANUFACTURER'S REQUIREMENTS FOR SWITCH.

5.) PROVIDE ADEQUATE ACCESS TO PROPERLY MAINTAIN COMPONENTS.
6.) PROVIDE MAGNETIC CONTACTORS (MERCURY NOT ACCEPTABLE).

DUCT FREE SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE (DFSS)

TAG	DFSS INDOOR UNIT												DFSS OUTDOOR UNIT												EER	SEER	NOTES			
	LOCATION	FAN CFM TURBO-HI -MED-LOW	TOTAL CLG CAP. BTUH	HEATING CAPACITY BTUH	MOTOR DATA				SOUND LEVEL dB AT HIGH	UNIT SIZE WxDxH (IN)	WEIGHT (LBS)	MANUFACTURER TRANE/ MITSUBISHI MODEL NO.	LOCATION	COMPRESSOR				ELECTRICAL DATA				UNIT SIZE WxDxH (IN)	WEIGHT (LBS)	MANUFACTURER TRANE/ MITSUBISHI MODEL NO.						
					FLA	VOLTS	PH	HZ						QTY	TYPE	RLA	LRA	REFRIGERANT		MCA	MOCP							VOLTS	PH	HZ
																		TYPE	LBS.											
DFSS-1	NETWORK RM 116	775 - 705 - 635	24,000	N/A	0.36	208	1	60	45	46 x 12 x 14.5	46	TPKA0A0241KA70A	ROOF	1	INVERTER	7	11	R-410A	7.9	19	26	208	1	60	37.5 x 14 x 37	151	TRUYA0241HA70NA	12.2	21.4	1 THRU 8
DFSS-2	OFFICE 125	0 - 335 - 265 - 230	12,000	12,000	0.24	208	1	60	34	22.5 x 22.5 x 9.75	31	NTXCKS12A112AA	ROOF	1	INVERTER	6.6	8.2	R-410A	2.75	9	16	208	1	60	31.5 x 11.25 x 22	81	NTXSKS12A112AA	13.3	22	1 THRU 7, 9

NOTES:
1.) ACCEPTABLE MANUFACTURERS: LG, CARRIER.
2.) LOW AMBIENT OPERATION (- 4.0 deg F).

3.) WIRED WALL MOUNTED CONTROLLER (7 DAY PROGRAMMABLE) WITH LCD DISPLAY

4.) PROVIDE REFRIGERANT PIPING AND ACCESSORIES AS PER MANUFACTURERS INSTRUCTIONS.

5.) OPERATING RANGE COOLING: - 40 deg ~ 115 deg F DB.
6.) CONDENSATE PUMP AS REQUIRED.

7.) OUTDOOR UNIT HAIL GUARDS.
8.) WIND BAFFLE.

9.) CEILING CASSETTE GRILLE.

KITCHEN MAKEUP AIR UNIT SCHEDULE (MAU)

GENERAL			SUPPLY FAN										GAS HEATING SECTION - DIRECT FIRED						FILTERS			ELECTRICAL DATA					OPERATING WEIGHT (LBS.)	SYSTEM	MANUFACTURER MODEL NUMBER	NOTES
TAG	LOCATION	SERVICE	CFM TOTAL	O.A. CFM	TYPE	ESP (IN)	RPM	BHP	HP	PHASE	VOLT	INPUT (MBH)	OUTPUT (MBH)	STAGES	EAT (°F)	LAT (°F)	FACE AREA (SQ.FT.)	FACE VELOCITY (FPM)	TYPE	FLA	V / PH / HZ	MCA	MOCp							
MAU-1	ROOF	KEH-1	5,400	5,400	--	--	--	--	10.0	3	208	399	--	--	--	--	--	--	--	--	27	208 / 3 / 60	(3) @ 21.4	(3) @ 30	2,660	--	--	1.2		
MAU-2	ROOF	KEH-2	2,850	2,850	--	--	--	--	2.0	3	208	211	--	--	--	--	--	--	--	--	6.1	208 / 3 / 60	11.2 + 21.4	20 + 30	1,700	--	--	1.3		

NOTES:
1.) SEE KITCHEN EQUIPMENT REFERENCE DRAWINGS FOR ADDITIONAL INFORMATION.

2.) DX COOLING AIR COOLED CONDENSERS (TOTAL OF 3) REQUIRE SEPARATE POWER.

3.) DX COOLING AIR COOLED CONDENSERS (TOTAL OF 2) REQUIRE SEPARATE POWER.

AIR CURTAIN SCHEDULE (AC) - NO HEAT

TAG	LOCATION	AREA SERVED	AIR VOLUME (CFM)	AVG. OUTLET VELOCITY (FPM)	GENERAL				FAN MOTOR				FILTER
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ROOM TEMPERATURE SENSOR

Provides room override based on temperature differential between the room and duct. Installed by electrician, set and SCED off the finished floor in the room, but not after the panel has been set close to an appliance including the electrical control panel on the ceiling to accurately fit space.

TOUCH-SCREEN USER INTERFACE

HOOD/FAN CONTROLS
FACTORY INSTALLED

PLAN VIEW - HOOD #1 (Item #585)
8' 0.00" LONG 4324ND-1-PSF-E

PLAN VIEW - HOOD #4 (Item #591)
7' 0.00" LONG 4324ND-4-PSF-E

PLAN VIEW - HOOD #1 (Item #581)
8' 4.00" LONG 5424ND-2-PSF-E

PLAN VIEW - HOOD #2 (Item #58M)
8' 4.00" LONG 5424ND-2-PSF-E

PLAN VIEW - HOOD #3 (Item #58B)
8' 4.00" LONG 5424ND-2-PSF-E

VERIFY CEILING HEIGHT

Height required to verify that the hood will fit and to size the enclosure panels

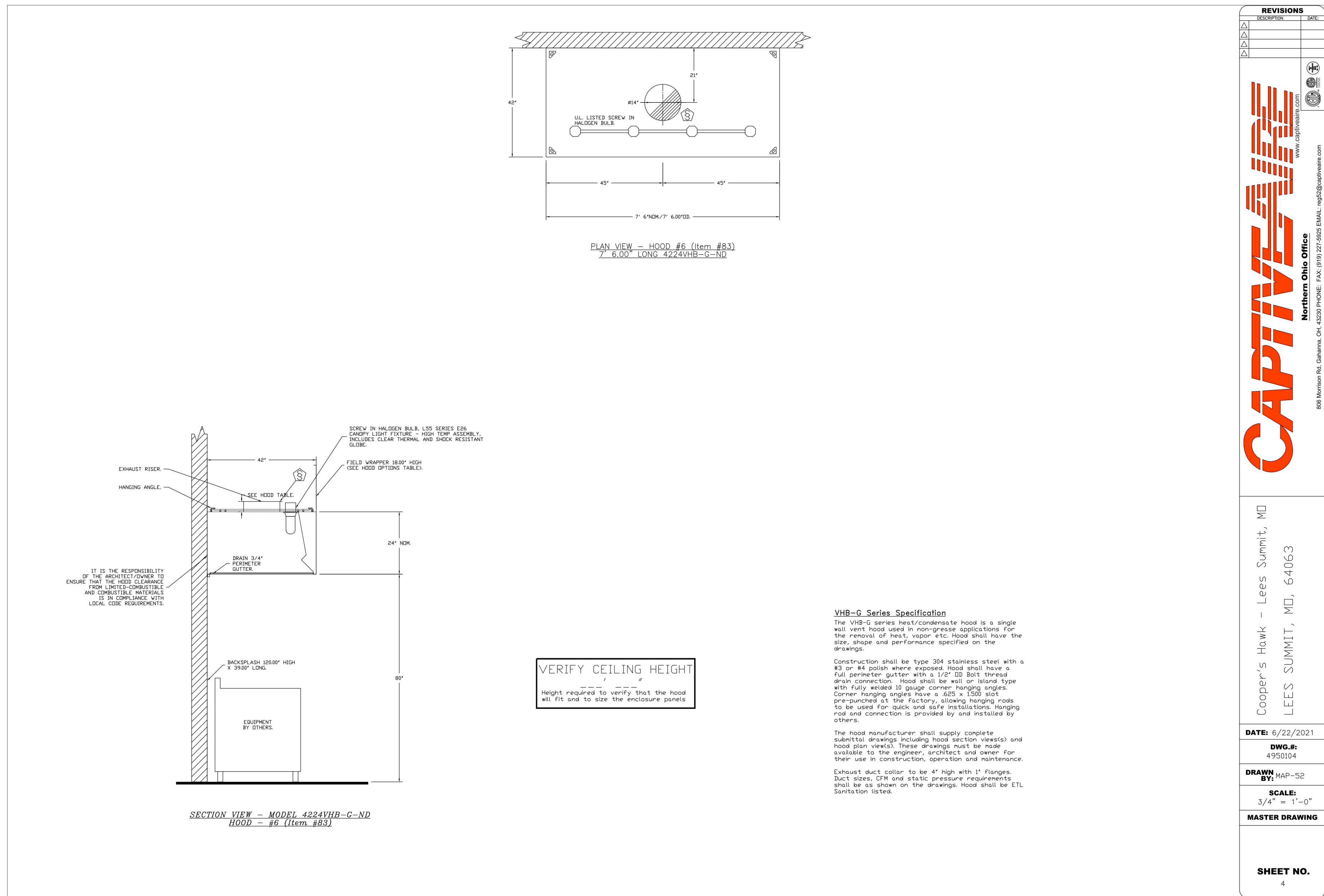
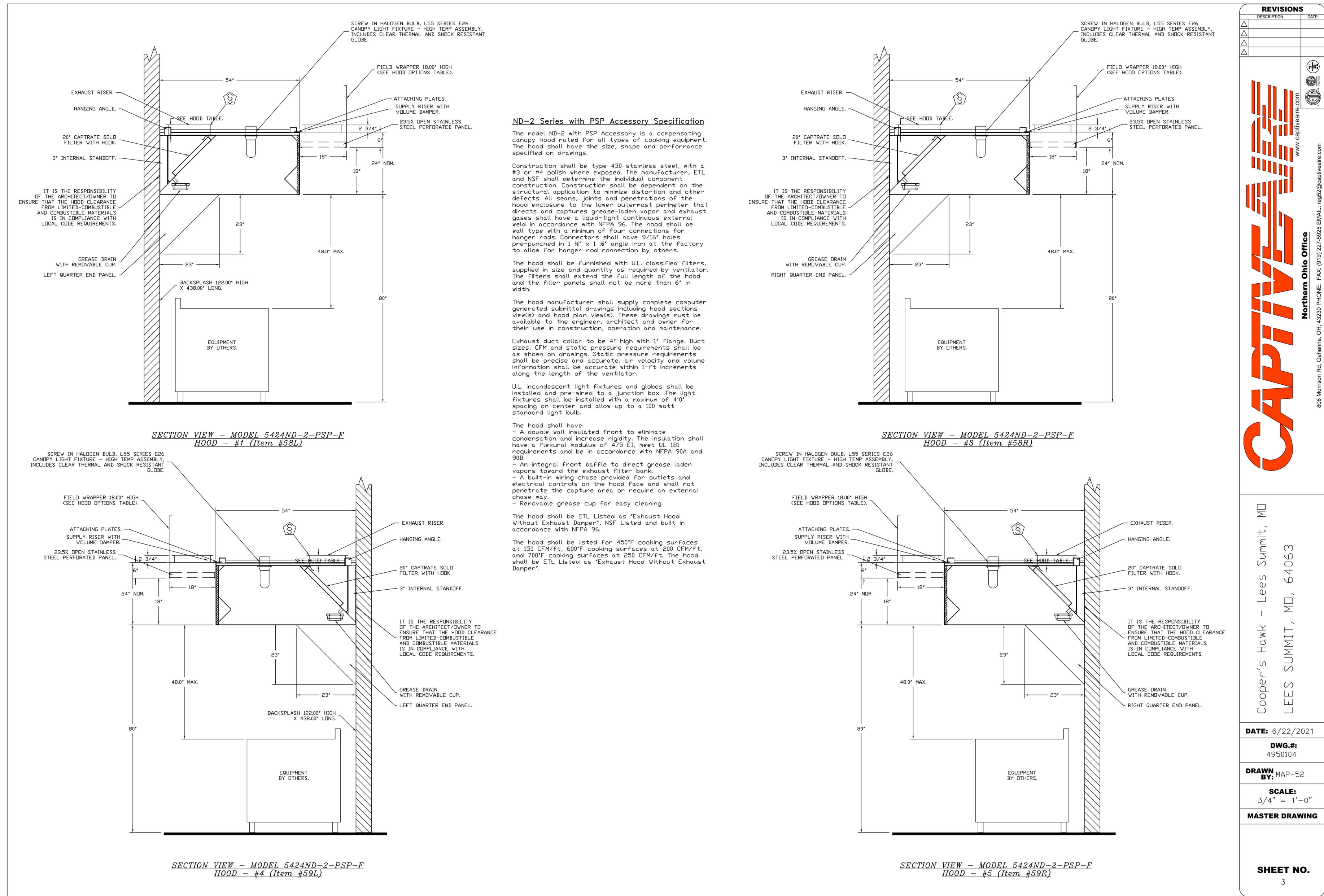
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TOUCH-SCREEN USER INTERFACE

HOOD/FAN CONTROLS
FACTORY INSTALLED

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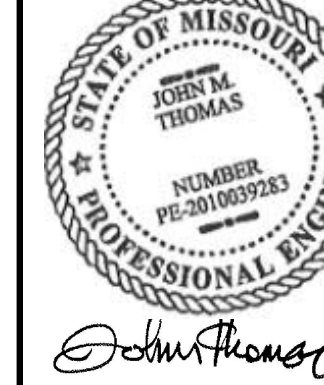
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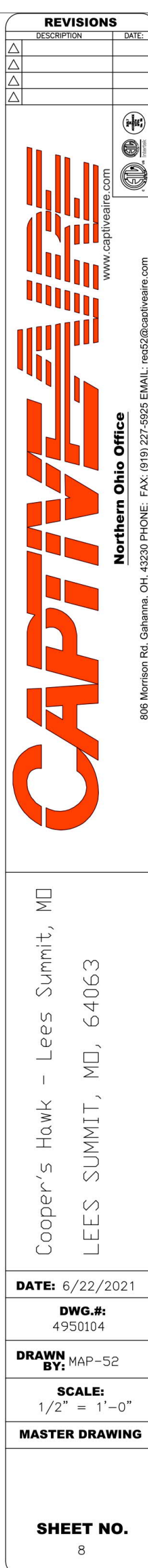
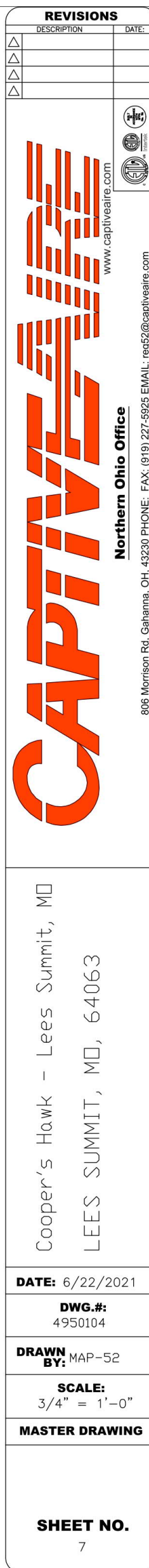
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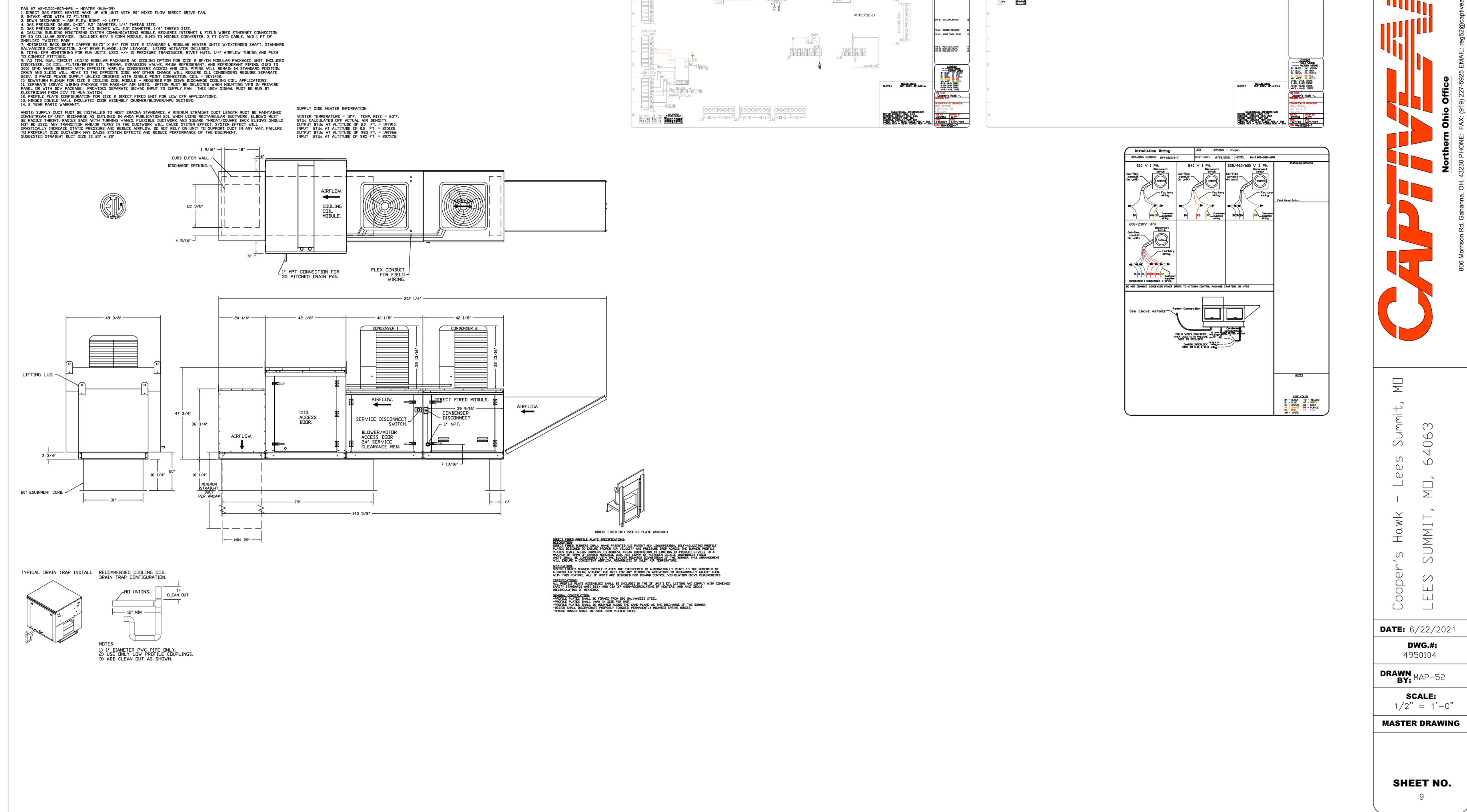
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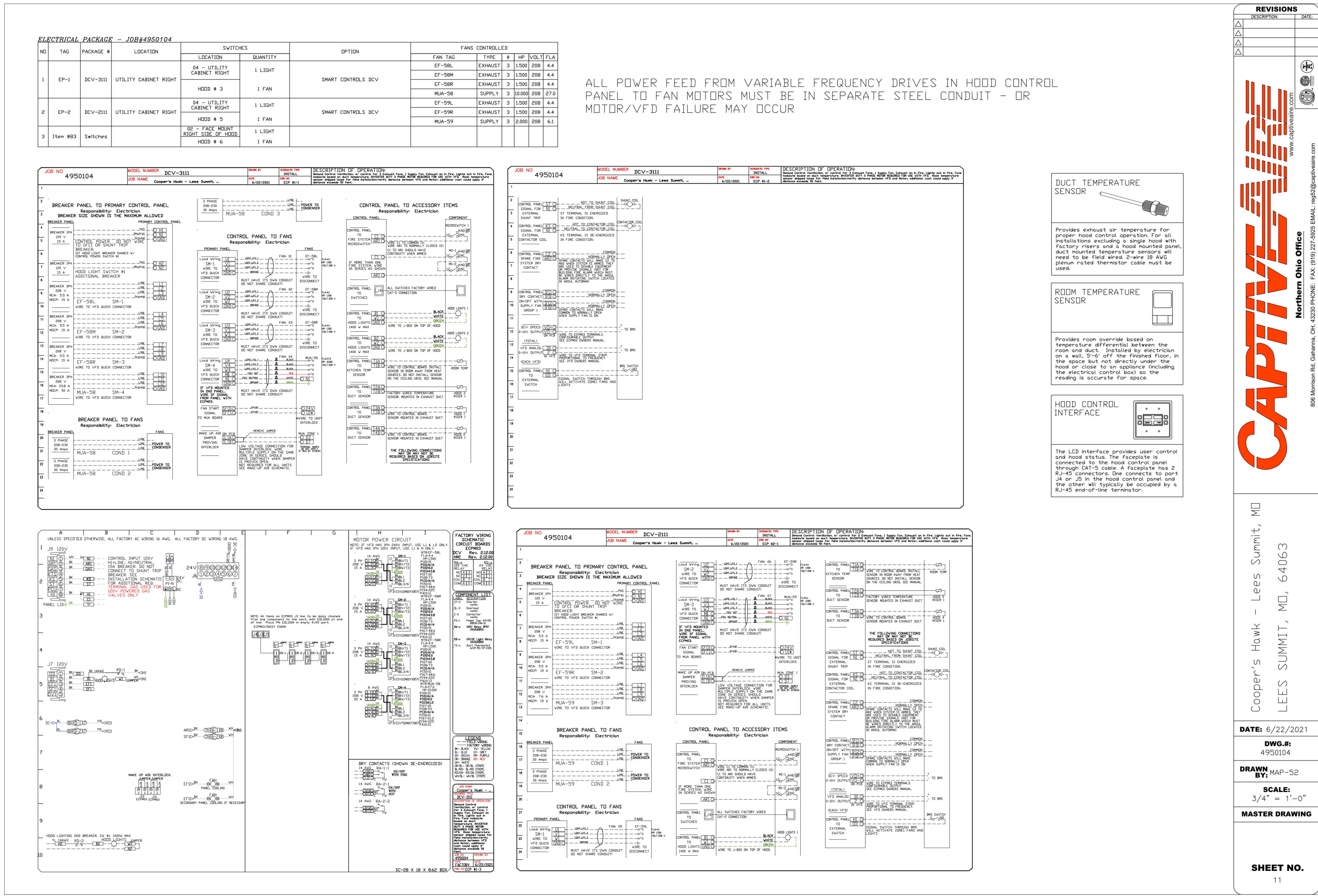
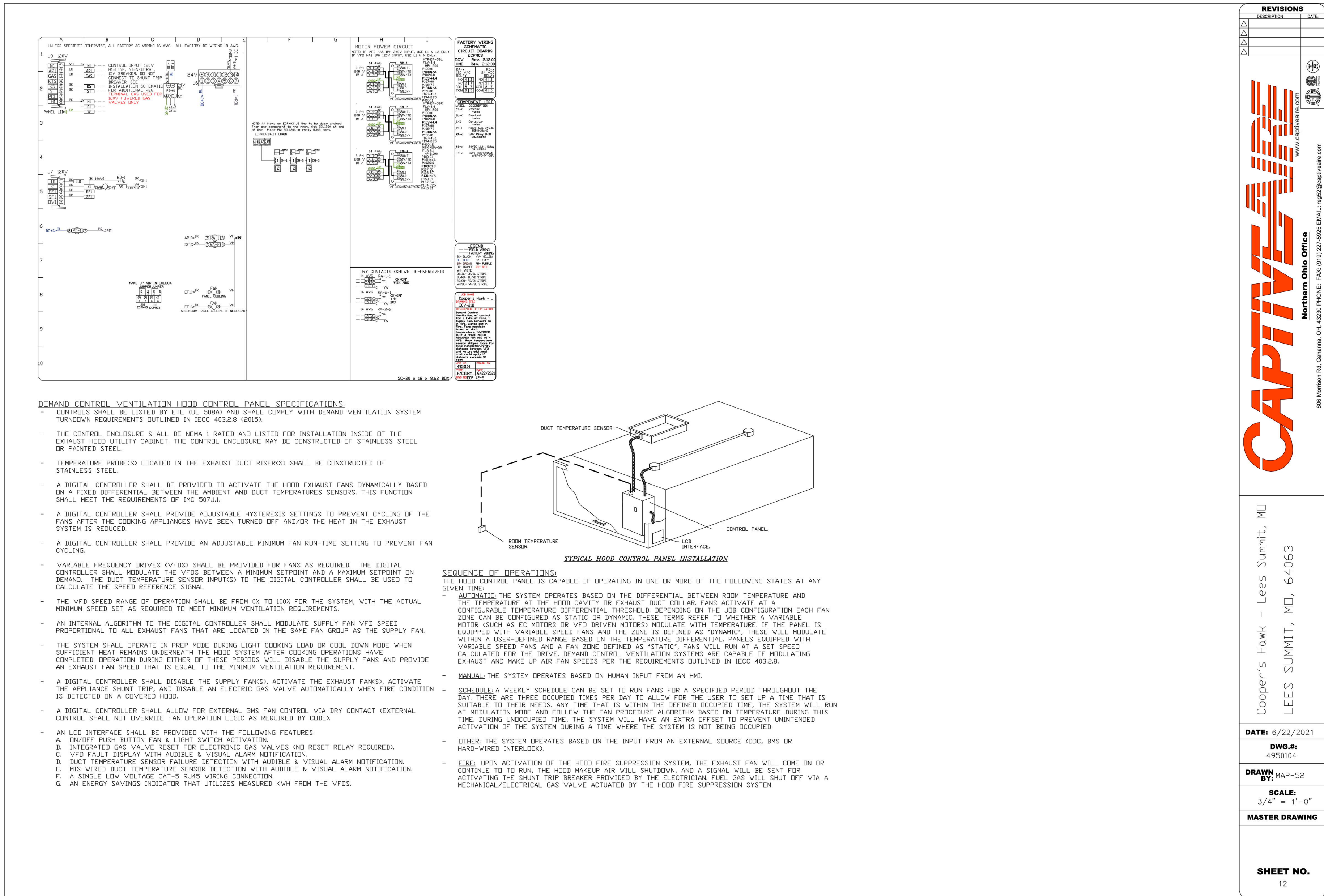
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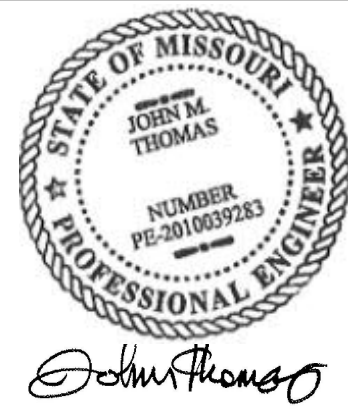


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