



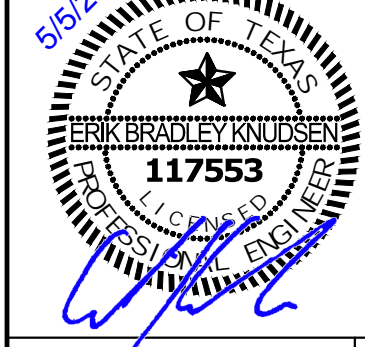
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MEP ENGINEER



STRUCTURE



PROJECT NO: 2318BR02501

PROJECT TYPE: New Construction

PROJECT ADDRESS: 3000 AL CYPRESS DR WICHITA, KS 67226

PROJECT PHONE: (620) 900-0000

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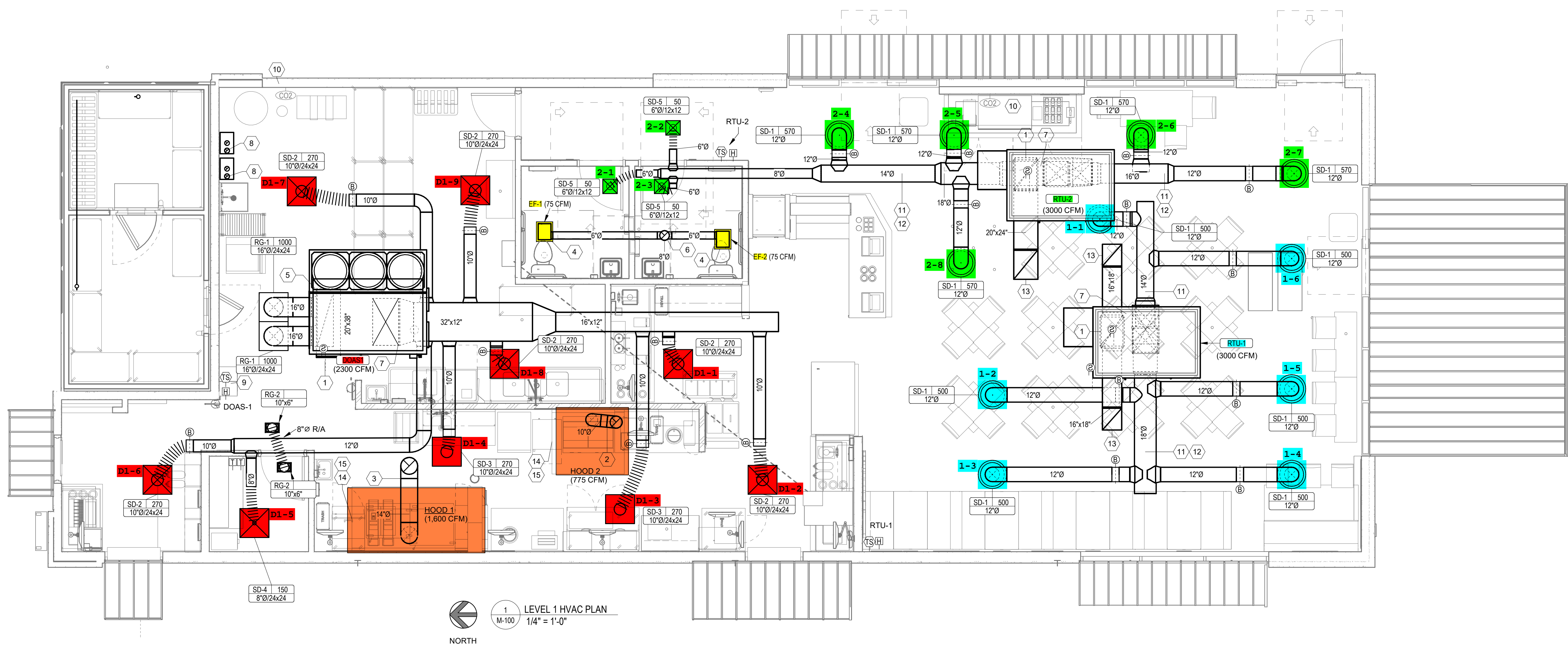
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MECHANICAL/PLUMBING SPECIFICATIONS

NO.	DESCRIPTION	NO.	DESCRIPTION
1.	GENERAL PROVISIONS: A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING AND MECHANICAL SYSTEMS OUTLINED. B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES. C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE. D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK. E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE. F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS TO MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED. G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE. 2. OPERATION AND MAINTENANCE MANUALS: A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT. B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS. C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC. 3. MANUFACTURERS: A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND OTHER CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE. 4. MOTORS: A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK. 5. TESTING, BALANCING AND CLEANING: A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION. B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 30 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS. C. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS. D. NATURAL GAS PIPING SHALL BE PNEUMATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 50 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS. E. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED INDEPENDENT BALANCING PERSONNEL WHO HAVE PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES AND ARE CERTIFIED BY THE ASSOCIATED AIR BALANCING COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). 1. BALANCING SHALL INCLUDE THE BALANCING OF THE EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE DESIGN QUANTITIES INDICATED AND VERIFICATION OF PERFORMANCE OF ALL EQUIPMENT AND AUTOMATIC CONTROLS. 2. WITH IN 30 DAYS OF THE COMPLETION OF THE TESTING AND BALANCING WORK, SUBMIT THE TEST AND BALANCING REPORTS TO THE ARCHITECT. THE REPORTS OF THE TEST AND BALANCE ENGINEER, THE REPORTS SHALL BE CERTIFIED PROOF THAT THE SYSTEMS HAVE BEEN TESTED, ADJUSTED, AND BALANCED IN ACCORDANCE WITH THE REFERENCED STANDARDS; ARE AN ACCURATE REPRESENTATION OF HOW THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING. REPORTS SHALL BE BOUND IN A VINYL BINDER AND THE BINDER LABELED OR MAY BE AN ELECTRONIC PDF SUBMITTAL. F. GREASE DUCT SHALL BE TESTED PRIOR TO USE OR CONCEALMENT AND AN PORTION OF THE GREASE DUCT SYSTEM. DUCTS SHALL BE CONSIDERED TO BE CONCEALED WHEN INSTALLED IN SHAPES OR COVERED BY DUCT WRAP INSULATION THAT PREVENTS THE DUCTWORK FROM BEING VISUALLY INSPECTED FROM ALL SIDES. THE PERMIT HOLDER SHALL BE RESPONSIBLE TO PROVIDE THE NECESSARY EQUIPMENT AND PERFORM THE GREASE DUCT LEAKAGE TEST PER NFPA 96 AND ALL LOCAL CODES. G. BEFORE DOMESTIC WATER PIPING IS PLACED IN SERVICE, ALL DOMESTIC WATER DISTRIBUTION SYSTEMS, INCLUDING THOSE FOR COLD WATER AND HOT WATER SYSTEMS, SHALL BE FLUSHED, STERILIZED AND CHLORINATED IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED OF ALL DIRT AND FOREIGN MATTER, THEN FILLED WITH WATER TREATED WITH 50 PPM OF CHLORINE. DURING THE FILLING PROCESS, VALVES AND FAUCETS SHALL BE OPENED SEVERAL TIMES TO ASSURE TREATMENT OF THE ENTIRE SYSTEM. THE TREATED WATER SHALL BE LEFT IN THE SYSTEM FOR 24 HOURS AFTER WHICH TIME THE SYSTEM SHALL BE FLUSHED. IF THE RESIDUAL CHLORINE IS NOT LESS THAN 10 PPM, THE FLUSHING SHALL BE REPEATED. AFTER STERILIZATION, SAMPLES OF WATER IN THE SYSTEM SHALL BE APPROVED BY THE BOARD OF HEALTH. 6. PLUMBING: A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER. B. ALL EXPOSED WATER PIPE SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE. C. PROVIDE CLEANOUTS AT EACH CHANGE OF DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS. D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS. E. CLEANOUTS: 1. VINYL TILE FLOOR, JR. SMITH #4410, OR EQUAL. 2. QUARRY TILE FLOOR, JR. SMITH #4220, OR EQUAL. 3. CARPETED FLOOR, JR. SMITH #4020-Y, OR EQUAL. 4. UNFINISHED FLOOR, JR. SMITH #4200, OR EQUAL. 5. WALL, JR. SMITH #4472, OR EQUAL, 2" ABOVE THE FLOOR. 6. WAREHOUSE FLOOR/FLOOR TRUCK AREAS, JR. SMITH #4110, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND ROUND ADJUSTABLE SCOTERD EXTRA HEAVY DUTY NICKEL BRONZE TOP. 7. GRADE, JR. SMITH #4258, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER. F. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTIONS TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION TANKS. G. WATER HEATERS: 1. EVERY WATER HEATER SHALL HAVE AN APPROVED MEANS INSTALLED ON THE COLD WATER SUPPLY LINE ABOVE THE EQUIPMENT TO PREVENT SPILLING OF A STORAGE WATER HEATER OR TANK. 2. BOTTOM FED WATER HEATERS AND TANKS CONNECT TO WATER HEATERS SHALL HAVE A VACUUM RELIEF VALVE INSTALLED. ANSI Z21.22. 3. STORAGE HEATERS OPERATING ABOVE ATMOSPHERIC PRESSURE SHALL HAVE AN APPROVED PRESSURE RELIEF VALVE AND/OR TEMPERATURE RELIEF VALVE. H. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES: 1. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. 2. INSTALL 2" AND LARGER PIPE AT 1/8" PER FOOT FALL. 3. INSTALL ALL GREASE WATER PIPING AT 1/4" PER FOOT FALL. I. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES: 1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. 2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE. 7. PIPING: A. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). 1. TYPE 1, HARD DRAWN COPPER TUBING, ASTM B-88. a. WROUGHT COPPER SOLDERED FITTINGS, ASTM B75 ALLOY C12200, ANSI B16.22, MSS SP-104. b. MECHANICAL PRESS COPPER FITTINGS FOR USE IN PLUMBING OR MECHANICAL APPLICATIONS, ASME B16.22, ASME B16.51, OR ASME B16.18. MECHANICAL PRESS COPPER FITTINGS SHALL CONFORM TO ANSI B16.22 OR ASME B16.51. 2. PEK, HIGH-DENSITY CROSS-LINKED POLYETHYLENE TUBING SHALL BE MANUFACTURED TO THE REQUIREMENTS OF ASTM 8918 AND MEET THE STANDARD GRADE HYDROSTATIC PRESSURE RATINGS FROM PLASTIC PIPE INSTITUTE IN ACCORDANCE WITH 41-003. (NOT BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE). a. PEVA AND PE-XB MEETING ANSISF321 AND ANSISF372 STANDARDS FOR POTABLE WATER SAFETY AND LEAD-FREE STANDARDS AND MUST BE MARKED WITH "PW-C", "NSF 61-01" OR OTHER NSF-APPROVED MARKING. ASTM F2003 FOR USE WITH CHLORINATED WATER. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE). b. PEK MECHANICAL CRIMP/INSERT OR EXPANSION FITTINGS INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE. INCREASE PEK PIPING SIZE TO EQUAL OR EXCEED COPPER PIPE INJECTION DIMETER FOR SUPPLY MAINS. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE). 3. VALVES: a. TO BE INSTALLED ON THE FIXTURE SUPPLY TO EACH PLUMBING FIXTURE. b. TO BE INSTALLED ON THE WATER SUPPLY SIDE TO EACH APPLIANCE OR MECHANICAL EQUIPMENT. C. TYPES: 1. GATE VALVE, JOMAR 718-3010 OR EQUAL, LEAD-FREE NSF 61, ANSI B1.20.1. 2. BALL VALVE, JOMAR JP100P-P OR EQUAL, COMPACT LEAD FREE BRASS BALL VALVE, UL842, CSA 3371-12 & 3371-92, FM, CALIFORNIA CODE AB193, NSF1 ANNEK G APPROVED. 4. BALL VALVE, JOMAR T-1006E OR EQUAL, UL842, FM, CSA, NSF 61.8, MSS SP-110. B. LEAD CONTENT OF WATER SUPPLY PIPE AND FITTINGS: 1. PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, UTILIZED IN THE WATER SUPPLY SYSTEM SHALL NOT HAVE MORE THAN 8% LEAD CONTENT. 2. PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS UTILIZED TO SUPPLY WATER FOR DRINKING OR COOKING PURPOSES SHALL COMPLY WITH NSF 372 AND SHALL HAVE A WEIGHTED AVERAGE LEAD CONTENT OF 0.25% OR LESS. C. STORM SEWER, SANITARY SEWER, GREASE WASTE, AND VENTS, (UNDERGROUND, INTERIOR TO THE BUILDING). 1. ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM. PIPE AND FITTINGS SHALL BE MANUFACTURED FROM ABS COMPOUND WITH A CELL CLASS OF 4222 FOR PIPE AND 3222 FOR FITTINGS AS PER ASTM D 3365 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 801. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2968. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2264. 2. PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM. PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 1244 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 801. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2968. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2264. (NOT FOR USE IN A RETURN AIR PLENUM). 3. POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT (CONDENSATE OR ROOF). 4. POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT (INDIRECT WASTE). 5. DWV, WROUGHT COPPER, ANSI B-16.22 (WATER HEATER 1/4"). 6. DWV, WROUGHT COPPER, ANSI B-16.22 (WATER HEATER 1/4"). 7. DWV, WROUGHT COPPER, ANSI B-16.22 (WATER HEATER 1/4"). 8. DWV, WROUGHT COPPER, ANSI B-16.22 (WATER HEATER 1/4"). 9. DWV, WROUGHT COPPER, ANSI B-16.22 (WATER HEATER 1/4"). 10. DWV, WROUGHT COPPER, ANSI B-16.22 (WATER HEATER 1/4"). 11. DWV, WROUGHT COPPER, ANSI B-16.22 (WATER HEATER 1/4"). 12. 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MECHANICAL KEYNOTES

- LOCATION OF FACTORY DUCT MOUNTED SMOKE DETECTOR IN RETURN OF RTU. PROVIDE REMOTE ENUNCIATOR AUDIOVISUAL. VERIFY LOCATION WITH FIRE MARSHAL PRIOR TO INSTALLATION. REFER TO SPEC SHEET M101 FOR ADDITIONAL INFORMATION.
- TRANSITION AND CONNECT 10" DIAMETER GREASE DUCT TO EXHAUST HOOD. ROUTE DUCT UP AND CONNECT TO EXHAUST FAN. OFFSET AS NECESSARY TO MISS ROOF STRUCTURE. AND TO MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES AND 5'-0" FROM PARAPET WALLS. ALL GREASE DUCT IS TO BE INSTALLED WITH DUCT WRAP AS DETAILED AND PER THE MANUFACTURERS REQUIREMENTS FOR 0' CLEARANCE TO COMBUSTIBLES. REFER TO ROOF PLAN M-101 FOR CONTINUATION.
- TRANSITION AND CONNECT 14" DIAMETER GREASE DUCT TO EXHAUST HOOD. ROUTE DUCT UP AND CONNECT TO EXHAUST FAN. OFFSET AS NECESSARY TO MISS ROOF STRUCTURE. AND TO MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES AND 5'-0" FROM PARAPET WALLS. ALL GREASE DUCT IS TO BE INSTALLED WITH DUCT WRAP AND ACCESS DOORS AS DETAILED AND PER THE MANUFACTURERS REQUIREMENTS FOR 0' CLEARANCE TO COMBUSTIBLES. REFER TO ROOF PLAN M-101 FOR CONTINUATION.
- SUPPORT EXHAUST FAN FROM STRUCTURE AS REQUIRED BY THE MANUFACTURER.
- RETURN DUCT TO BE ROUTED BETWEEN JOISTS, AS HIGH AS STRUCTURE WILL ALLOW.
- ROUTE EXHAUST DUCT UP THROUGH ROOF TO ROOF CAP. MAINTAIN 10'-0" CLEARANCE TO ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
- DUCT UP THROUGH ROOF. SEE SHEET M101 FOR CONTINUATION. OPENING TO BE CUT BETWEEN TRUSSES AS REQUIRED. FIELD VERIFY EXACT LOCATION PRIOR TO CUTTING THE ROOF. SEAL PENETRATION WEATHERTIGHT AS REQUIRED.
- PROVIDE 3" PVC FLUE AND COMBUSTION AIR INTAKE PIPE FOR HOT WATER HEATER THROUGH ROOF. PROVIDE MANUFACTURERS TERMINATION KIT. SEAL PENETRATION WEATHERTIGHT. VERIFY 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
- LOCATION OF DOAS TEMPERATURE SENSOR AND HUMIDISTAT MOUNTED AT 7' AFF.
- PROVIDE MACURCO #CD-68 CARBON DIOXIDE MONITOR AND EXTERNAL HORN STROBE AS PER REQUIREMENTS FOR AUDIBLE AND VISUAL ALARM. 24V LOW VOLTAGE, THREE ALARM LEVEL RELAYS, AMBER COLOR HORN STROBE, 0-5% BY VOLUME RANGE. SEE CARBON DIOXIDE ALARM SCHEDULE ON SHEET M-200.
- EXPOSED DUCTWORK SHALL BE OF PAINTLOCK CONSTRUCTION AND PAINTED PER THE DIRECTION OF ARCHITECT. COORDINATE DUCT ROUTING WITH LIGHTING. REFER TO SHEET E200.
- RETURN AIR DUCT LOCATED BETWEEN ROOF TRUSSES. OPEN END OF DUCTWORK TURNED UP TOWARD STRUCTURE WITH A MINIMUM 6" CLEARANCE TO DECK.
- EXHAUST HOOD PROVIDED BY OTHERS. INSTALLED BY THIS CONTRACTOR PER THE MANUFACTURERS INSTRUCTIONS.
- HOOD SHALL BE PROVIDED WITH FACTORY PRE-WIRE PACKAGE AND A PRE-ENGINEERED UL-300 FIRE SUPPRESSION SYSTEM. SEE HOOD DRAWINGS FOR DETAILS.



OUTDOOR AIR CALCULATIONS

UNIT	AREA (SQFT)	OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 SQFT	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, (Rp) CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, (Ra) CFM/SQFT	BREATHING ZONE OUTDOOR AIRFLOW (Vbz)	ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	ZONE OUTDOOR AIRFLOW (CFM)
RTU-1	550	DINING ROOMS	70	7.5	0.18	388	0.8	500
								500
RTU-2	550	DINING ROOMS	70	7.5	0.18	388	0.8	485
	150	CORRIDORS	0	0	0.06	9	0.8	15
								15
								500

AIR BALANCE SCHEDULE

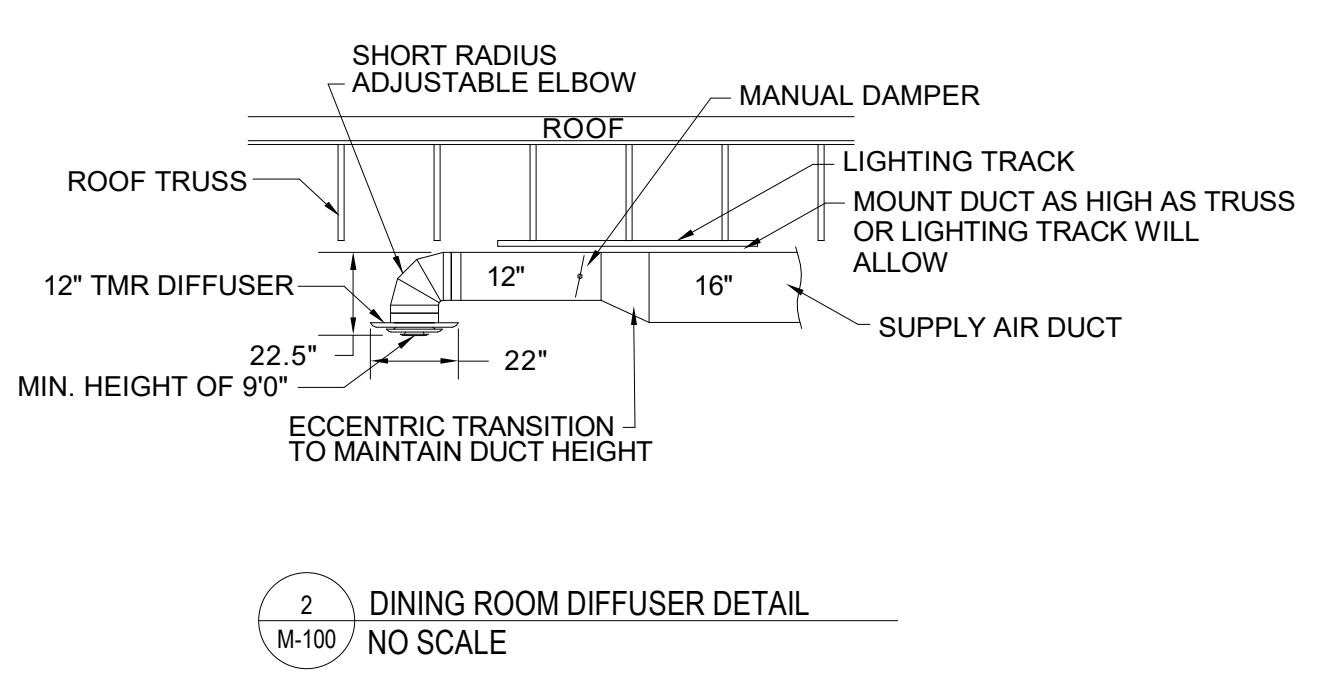
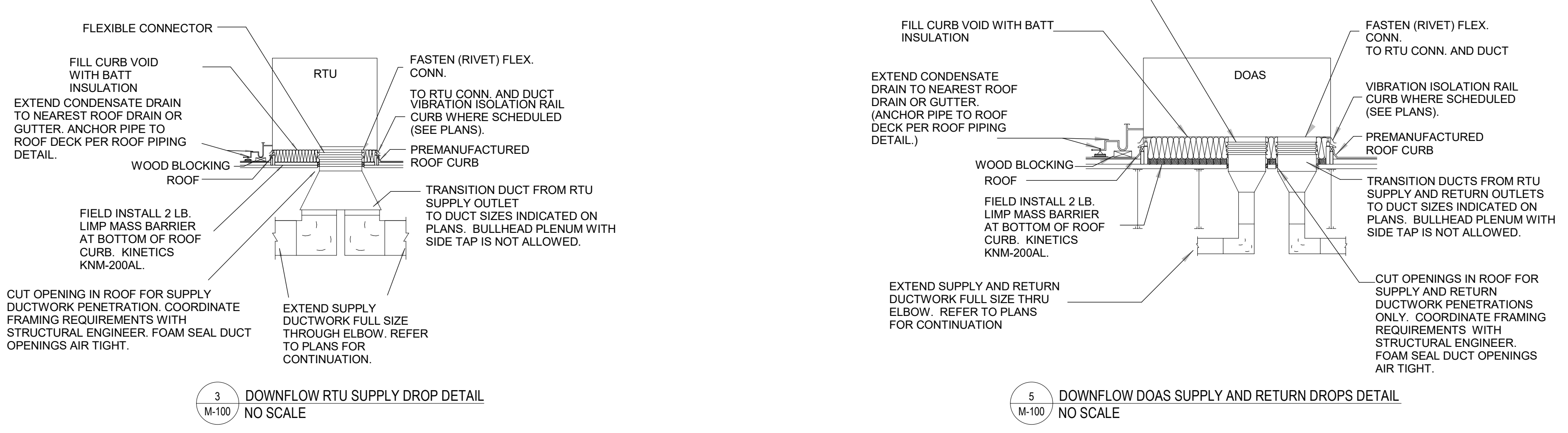
SUPPLY AIR UNIT	OUTSIDE AIRFLOW (CFM)	RETURN AIRFLOW (CFM)	SUPPLY AIRFLOW (CFM)	OA/SA (%)	EXHAUST AIR UNIT	EXHAUST AIRFLOW (CFM)
RTU-1	500	2,500	3,000	16.7%	KEF-1	1,600
RTU-2	500	2,500	3,000	16.7%	KEF-2	775
DOAS-1	2300	0	2,300	100.0%	EF-1, EF-2	150
TOTAL	3300	5,000	8,300	39.8%	TOTAL	2,525
RESULTING BUILDING PRESSURIZATION (CFM)						775

THE BUILDING HVAC SYSTEM SHALL BE BALANCED BY NATIONAL TAB HIRED BY THE OWNER. CONTACT Dan Hertenstein - National TAB at: 816-215-1593 - DAN@NATIONALTAB.COM

THE RTU SUPPLY FANS SHALL OPERATE IN SINGLE ZONE VAV MODE WITH 2 STAGES OF FAN CONTROL. LOW SPEED SHALL BE USED DURING PERIODS OF LOW COOLING LOAD AND VENTILATION ONLY OPERATION PER 2018 IECC REQUIREMENTS.

THE ECONOMIZER DAMPERS SHALL HAVE TWO POSITIONS DEPENDENT ON THE FAN SPEED TO MAINTAIN CONSTANT OUTDOOR AIR VOLUME AND BUILDING PRESSURE.

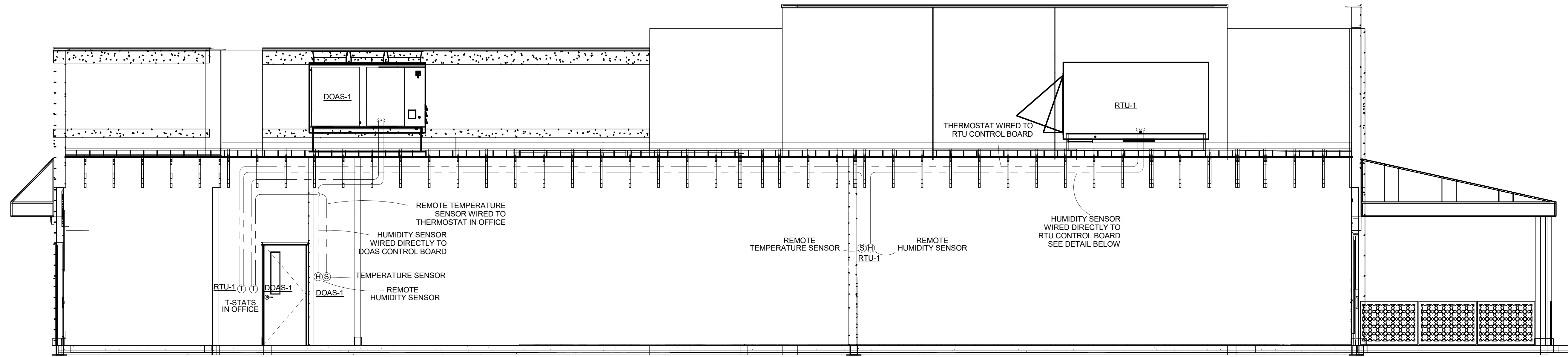
THE UNIT SHALL HAVE ITS FRESH AIR HEATING OPTIONERABLE TO HEAT VENTILATION AIR TO A NEUTRAL VALUE DURING COLD WEATHER OPERATION. REFER TO THE MANUFACTURERS PROGRAMMING DOCUMENTATION FOR SETUP INSTRUCTIONS.



BC PROJECT #: 25223
TEXAS PE COA #F-19978

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 TESSERE PROJECT: 2024052001



ENSURE ECONOMIZER
 ENABLE WIRE IS
 INSTALLED FROM
 THERMOSTAT TO
 ECONOMIZER INPUT

REMOTE TEMPERATURE AND HUMIDITY SENSOR WIRING

ALL LOW VOLTAGE WIRING FOR THE HVAC SYSTEM IS TO BE PROVIDED AND INSTALLED BY THE HVAC CONTRACTOR.

SEQUENCE OF OPERATIONS

- A. **PACKAGED ROOFTOP UNITS**
 UNIT SHALL CONSIST OF SUPPLY AIR FAN, FILTERS, DX COOLING COIL, HOT GAS REHEAT COIL, GAS-FIRED HEAT SECTION, AND A 7-DAY PROGRAMMABLE THERMOSTAT.
 1. PROVIDE AN OVERRIDE CONTROL TO OPERATE THE UNIT DURING UNOCCUPIED HOURS. THIS CONTROL SHALL BE PART OF THE PROGRAMMABLE THERMOSTAT. OVERRIDE SWITCH ALLOWS THE UNIT TO OPERATE FOR TWO HOURS (ADJUSTABLE).
 2. OCCUPIED MODE: BASED ON THE ROOFTOP UNIT'S HOURS OF OCCUPANCY, START THE UNIT AT THE BEGINNING OF OCCUPANCY AND SHUT DOWN THE UNIT AT THE END OF OCCUPANCY (NOTE: OUTSIDE AIR DAMPER WITHIN THE RTU SHALL OPEN AND THEN THE RTU SHALL START). THE UNIT SHALL START EARLIER AS DETERMINED BY THE PROGRAM FOR EARLY WARM-UP OR COOL DOWN. ON A SYSTEM STARTUP, THE RTU FAN SHALL START AND RUN CONTINUOUSLY. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL CYCLE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE 2 SPEED SUPPLY FAN SHALL REDUCE TO LOW SPEED WHEN THE UNIT IS IN FIRST STAGE HEATING OR COOLING MODE TO OPERATE THE UNIT IN SINGLE ZONE VAV MODE.
 - 2.1. ECONOMIZER MODE: WHEN THE TEMPERATURE OF THE OUTSIDE AIR IS BELOW 55° OR HAS AN ENTHALPY BELOW 26 BTU/LB, ECONOMIZER MODE SHALL BE ENABLED. ECONOMIZER MODE SHALL LINEARLY MODULATE OUTDOOR AIR CFM FROM MINIMUM OA CFM TO 100% BASED ON ENTHALPY READINGS.
 - 2.2. HUMIDITY CONTROL: UPON DETECTION OF RELATIVE HUMIDITY ABOVE 55%, THE UNIT SHALL CYCLE INTO DEHUMIDIFICATION MODE IF NOT ALREADY IN COOLING AND MODULATE THE COMPRESSORS AND HOT GAS REHEAT VALVE TO SUPPLY SPACE NEUTRAL DEHUMIDIFIED AIR UNTIL THE RELATIVE HUMIDITY DROPS BELOW 55% RH.
 3. UNOCCUPIED MODE: THE RTU INTERNAL OA DAMPERS SHALL REMAIN CLOSED WHEN THE BUILDING IS NOT OCCUPIED. THE RTU SHALL STOP HEATING/COOLING AND THE FAN SHALL STOP. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL CYCLE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE 2 SPEED SUPPLY FAN SHALL REDUCE TO LOW SPEED WHEN THE UNIT IS IN FIRST STAGE HEATING OR COOLING MODE.
 4. UPON DETECTION OF SMOKE BY UNIT SMOKE DETECTOR ALL RTUS SHALL SHUT DOWN AND AN ALARM SHALL BE SENT TO THE FIRE ALARM CONTROL PANEL (WHERE APPLICABLE). LOCAL REMOTE ANNUNCIATORS SHALL ALSO BE ACTIVATED.
- B. **KITCHEN HOOD EXHAUST FAN (KEF-1 AND KEF-2)**
 1. THE KITCHEN HOOD EXHAUST FAN SHALL BE ENABLED WHEN ANY COOKING APPLIANCE LOCATED UNDER ITS RESPECTIVE HOOD, IS IN USE.
- C. **EF-1, EF-2**
 1. EXHAUST FAN SHALL RUN WHEN THE RESTROOM IS OCCUPIED.
- D. **DOAS-1**
 1. THE MAKE UP AIR UNIT SHALL BE ENABLED WHEN THE KITCHEN HOOD EXHAUST FANS (KEF-1 AND KEF-2) ARE ENERGIZED.
 2. OCCUPIED MODE: BASED ON THE DOAS UNITS HOURS OF OCCUPANCY, START THE UNIT AT THE BEGINNING OF OCCUPANCY AND SHUT DOWN THE UNIT AT THE END OF OCCUPANCY (NOTE: OUTSIDE AIR DAMPER WITHIN THE UNIT SHALL OPEN 100% AND THEN THE FAN SHALL START). THE UNIT SHALL START EARLIER AS DETERMINED BY THE PROGRAM FOR EARLY WARM-UP OR COOL DOWN. ON A SYSTEM STARTUP, THE FAN SHALL START AND RUN CONTINUOUSLY. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL MODULATE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.
 - 2.1. HUMIDITY CONTROL: UPON DETECTION OF RELATIVE HUMIDITY ABOVE 55%, THE UNIT SHALL CYCLE INTO DEHUMIDIFICATION MODE IF NOT ALREADY IN COOLING AND MODULATE THE COMPRESSORS AND HOT GAS REHEAT VALVE TO SUPPLY SPACE NEUTRAL DEHUMIDIFIED AIR UNTIL THE RELATIVE HUMIDITY DROPS BELOW 55% RH.
 3. UNOCCUPIED MODE: THE DOAS INTERNAL OA DAMPERS SHALL REMAIN CLOSED WHEN THE BUILDING IS NOT OCCUPIED AND THE UNIT SHALL OPERATE IN RECIRCULATION MODE. THE UNIT SHALL STOP HEATING/COOLING AND THE FAN SHALL STOP. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL CYCLE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.
 4. UPON DETECTION OF SMOKE BY UNIT SMOKE DETECTOR ALL RTUS SHALL SHUT DOWN AND AN ALARM SHALL BE SENT TO THE FIRE ALARM CONTROL PANEL (WHERE APPLICABLE). LOCAL REMOTE ANNUNCIATORS SHALL ALSO BE ACTIVATED.
- E. **ANSUL SYSTEM ACTIVATION**
 1. UPON ACTIVATION OF ANSUL SYSTEM, SHUT DOWN RTU-1. PROVIDE RELAYS CONTACTS, INTERLOCKS, TRANSFORMERS AND ALL ASSOCIATED WIRING TO ACCOMPLISH SEQUENCE. DOAS-1 IS ALREADY PREWIRED TO SHUT DOWN IN HOOD CONTROL PANEL. MECHANICAL CONTRACTOR SHALL INTERLOCK RTU-1 TO ALSO SHUT DOWN.
- F. **RTU-1/2 WIRING AND CONTROL**
 1. WIRE THE REMOTE TEMPERATURE SENSOR FOR RTU-1 TO THE THERMOSTAT LOCATED IN THE OFFICE. SET THERMOSTAT FOR REMOTE SENSOR OPERATION.
 2. WIRE THE REMOTE HUMIDITY SENSOR DIRECTLY TO THE HUMIDITY TERMINALS ON THE RTU CONTROL PANEL PER THE MANUFACTURERS REQUIREMENTS.
 3. PROGRAM THE RTU TO OPERATE THE HOT GAS REHEAT CONTROLS BASED ON THE REMOTE SENSOR TO CONTROL HUMIDITY IN THE SPACE.
 4. REFER TO THE RTU SEQUENCE OF OPERATIONS FOR UNIT OPERATION.
- G. **DOAS-1 WIRING AND CONTROL**
 1. WIRE THE REMOTE TEMPERATURE SENSOR FOR DOAS-1 TO THE DOAS UNIT CONTROL PANEL. SET HMI FOR REMOTE SENSOR OPERATION.
 2. WIRE THE REMOTE HUMIDITY SENSOR DIRECTLY TO THE HUMIDITY TERMINALS ON THE DOAS UNIT CONTROL PANEL PER THE MANUFACTURERS REQUIREMENTS.
 3. PROGRAM THE DOAS UNIT TO OPERATE THE HOT GAS REHEAT CONTROLS BASED ON THE REMOTE SENSOR TO CONTROL HUMIDITY IN THE SPACE.
 4. REFER TO THE DOAS-1 SEQUENCE OF OPERATIONS FOR UNIT OPERATION.

BC PROJECT #: 25223
 TEXAS PE COA #F-15978

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5720 Reeder Shawnee, KS 66203 (913)262-1772



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MEP ENGINEER



STRUCTURE



DATE	DESCRIPTION

PROJECT NUMBERS:
 TESSERE # - 23188625001
 TESSERE # - 23188625001
 TESSERE # - 23188625001

CONTACT INFO:
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CONTACT INFO:
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LONE STAR CUSTARD
FREDDY'S FROZEN CUSTARD & STEAKBURGERS
 10411 HWY 6 MISSOURI CITY, TX 77459

DRAWN BY: AKFO
 CHECKED BY: DSEK

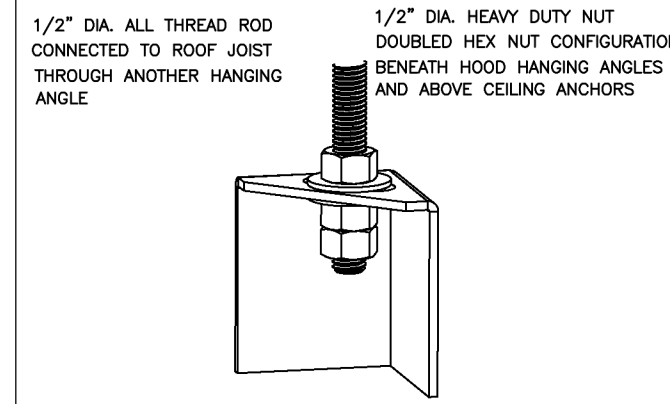
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REMOTE TEMPERATURE
 AND HUMIDITY SENSOR
 WIRING DETAILS

M-201

PERMIT

ND-2 HANGING ANGLE DETAIL



HOOD AND NUTS TO BE SUPPLIED BY INSTALLING CONTRACTOR
 HANGING ANGLE IS PRE-FABRICATED AT FACTORY

HANGING ANGLE LOCATIONS

HOOD STYLE	DIM FROM REAR	DIM FROM FRONT (24\"/>	
CANOPY ND2	4.166"	2.246"	2.246"
ND2-PSP-F	4.166"	2.246"	2.246"
BACKSHELF ND-2	4.166"	2.246"	-
VHB/VHB-G	36"x36"	42"x42"	48"x48"
FRONT/BACK DIMS BY SIZE	2.246"	2.246"	2.246"

CALCULATIONS UTILIZED

EXHAUST CAPACITY OF HOOD X (CONV. FACTOR)
 SUPPLY CFM = EXHAUST CFM X PERCENTAGE REQUIRED
 TOTAL DUCT AREA = 144 X
 DUCT LENGTH = DUCT DEPTH

BUILDING CODES

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH:
 ETL LISTED UNDER ETL FILE NUMBER 3054804-001/002
 IBC 2024
 IBC 2021
 IBC 2018
 IBC 2015
 IBC 2012
 IBC 2009

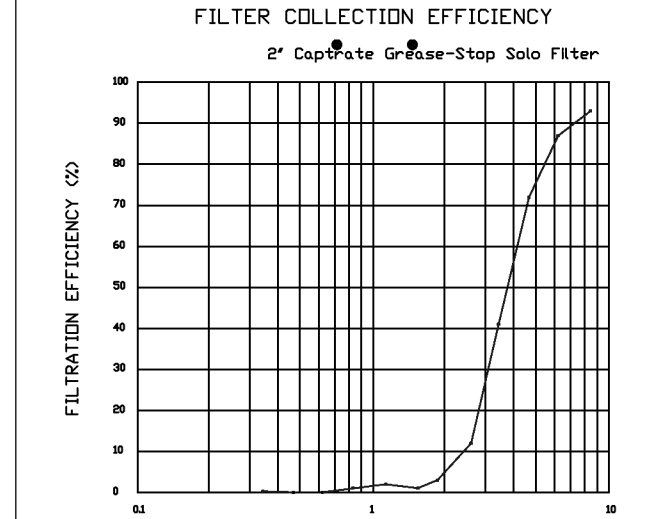
CLEARANCE TO COMBUSTIBLES

MATERIAL	CLEARANCE REDUCTION SYSTEM
NON-COMBUSTIBLE	NONE REQUIRED
LIMITED-COMBUSTIBLE	3" UNINSULATED STANDOFF
COMBUSTIBLE	1" INSULATED STANDOFF

GENERAL NOTES

1. ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
 2. ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
 3. HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.
 4. ALL CONNECTIONS FROM CAPTIVE-AIRE DUCT FOR MECHANICAL CONTRACTOR'S PLANS.
 5. COOKING EQUIPMENT TO SHUTOFF IN EVENT OF FIRE.
 6. EXHAUST FANS TO TURN ON IN EVENT OF FIRE.
 7. ALL LIGHTS FIXTURES SHOWN INSTALLED BY CAPTIVE-AIRE ARE TO BE INSTALLED BY ELECTRICAL CONTRACTORS.
 8. LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.
 9. SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
 10. INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITIES FOR COMPLIANCE WITH ALL APPLICABLE CODES CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRITY, AND RELIABILITY PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.
- BALANCE**
11. KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
 12. KITCHEN SHALL BE NEGATIVE WITH RESPECT TO AMBIENT PRESSURE.
- ADDITIONAL**
14. WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
 15. SKETCH AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE SUBMITTED TO PLUMBING CONTRACTOR PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.

FILTER DETAIL



CaptiveAire Captivate Solo Filter
 ETL Listed Grease Extracting Filter
 Made From 430 Stainless Steel

HOOD INFORMATION - JOB#7474661

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TIME	TYPE	APPLIANCE DUTY	DESIGN CFM/FIT	TOTAL EXH CFM	EXHAUST VELOCITY	EXHAUST DIA	EXHAUST VEL	SP	HOOD CONSTRUCTION	HOOD END TO END	HOOD FRONT	HOOD ALDNE	HOOD ALDNE
1	ITEM 33A	5424	ND-2	8' 0"	450	I	MEDIUM	800	1600	1600	4"	14'	1600	-0.734"	430 SS	WHERE EXPOSED	ALDNE	FRONT
2	ITEM 33B	5424	ND-2	8' 0"	450	I	MEDIUM	100	775	1421	4"	10'	775	-0.438"	430 SS	WHERE EXPOSED	ALDNE	ALDNE

HOOD INFORMATION

HOOD NO	TAG	TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY # 7	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	TYPE	SIZE	MODEL #	QUANTITY	FIRE SYSTEM	HOOD SYSTEM
1	ITEM 33A	CAPTIVATE SOLID FILTER	5	16"	16"	85% SEE FILTER SPEC.	2	RECESSED ROUND	NO	LEFT	18"x54"x24"	TANK FS	4.8/4.8/4.8	DCV-2111	1 FAN	YES	918 LBS
2	ITEM 33B	CAPTIVATE SOLID FILTER	3	16"	16"	85% SEE FILTER SPEC.	2	RECESSED ROUND	NO	RIGHT	18"x54"x24"	TANK FS	4.8/4.8/4.8	DCV-2111	1 FAN	YES	395 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	ITEM 33A	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT. LEFT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS. RIGHT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS. INSULATION FOR TOP OF HOOD. INSULATION FOR BACK OF HOOD. RISER SENSOR INSTALL 6IN PLEN.
2	ITEM 33B	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT. LEFT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS. RIGHT QUARTER END PANEL 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS. INSULATION FOR TOP OF HOOD. INSULATION FOR BACK OF HOOD. RISER SENSOR INSTALL 6IN PLEN.

SPECIFICATION CAPTIVATE GREASE-STOP SOLID FILTER

THE CAPTIVATE GREASE-STOP SOLID FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE 3-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY. FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNELS. UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED. GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 70% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GUAGE. THE CAPTIVATE GREASE-STOP SOLID WAS TESTED TO ASTM STANDARD ASTM F859-06. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER. EFFICIENCY VS. PARTICLE DIAMETER

CAPTIVATE FILTERS ARE BUILT IN COMPLIANCE WITH:
 NFPA 99E
 NSF STANDARD NO. 61
 UL STANDARD W946
 INT. MCH. CODE COCQ,
 ULC-S649.



EXHAUST VELOCITY

EXHAUST VELOCITY	EXHAUST DIA	EXHAUST VEL	SP
1600	4"	14'	1600
775	4"	10'	775

LIGHTS

LIGHTS	TYPE	SIZE	LOCATION
1	RECESSED ROUND	NO	LEFT
2	RECESSED ROUND	NO	RIGHT

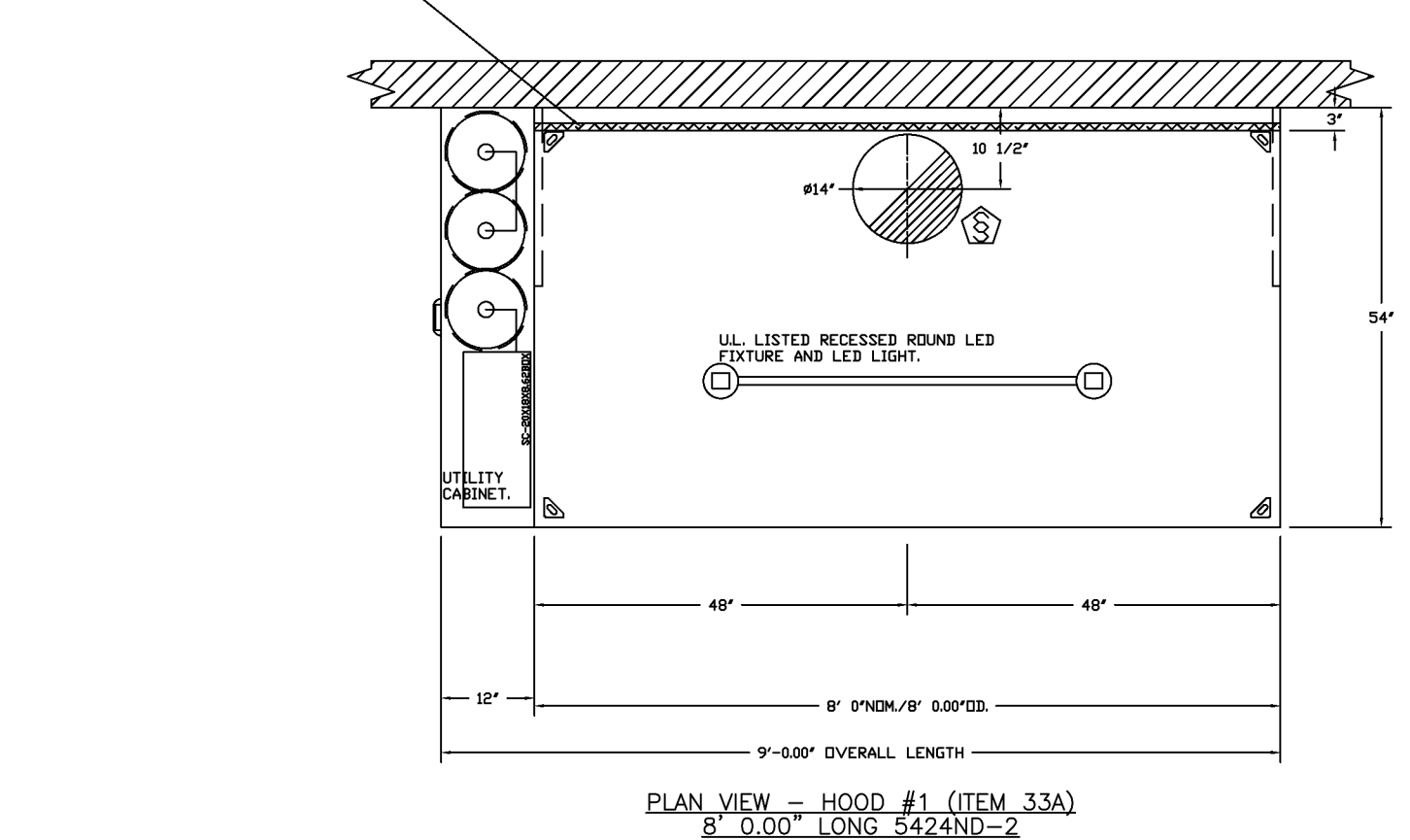
UTILITY CABINETS

UTILITY CABINETS	TYPE	SIZE	MODEL #	QUANTITY	FIRE SYSTEM	HOOD SYSTEM
1	TANK FS	4.8/4.8/4.8	DCV-2111	1 FAN	YES	918 LBS
2	TANK FS	4.8/4.8/4.8	DCV-2111	1 FAN	YES	395 LBS

PATENT NUMBERS

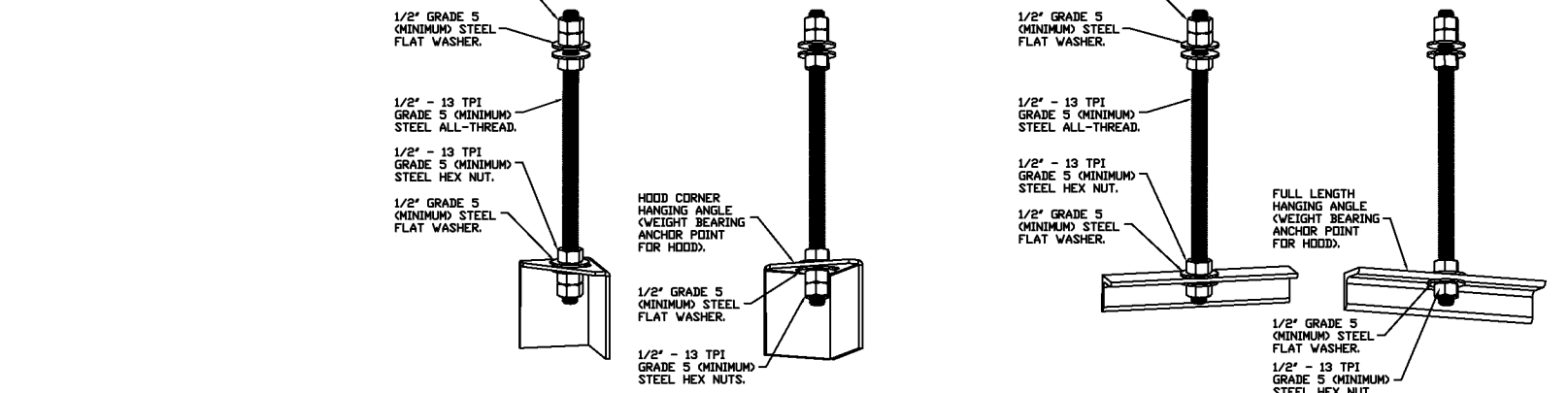
EXHAUST HOODS ND-2/ND-2/ND-2 (CANADA) - CA PATENT 2504935 C.

IF LAYER OF INSULATION FACTORY INSTALLED IN INTERNAL BACK STANDBY, MEETS 8 INCH REQUIREMENTS FOR CLEARANCE TO COMBUSTIBLE SURFACE.



PLAN VIEW - HOOD #1 (ITEM 33A)
 8' 0.00" LONG 5424ND-2

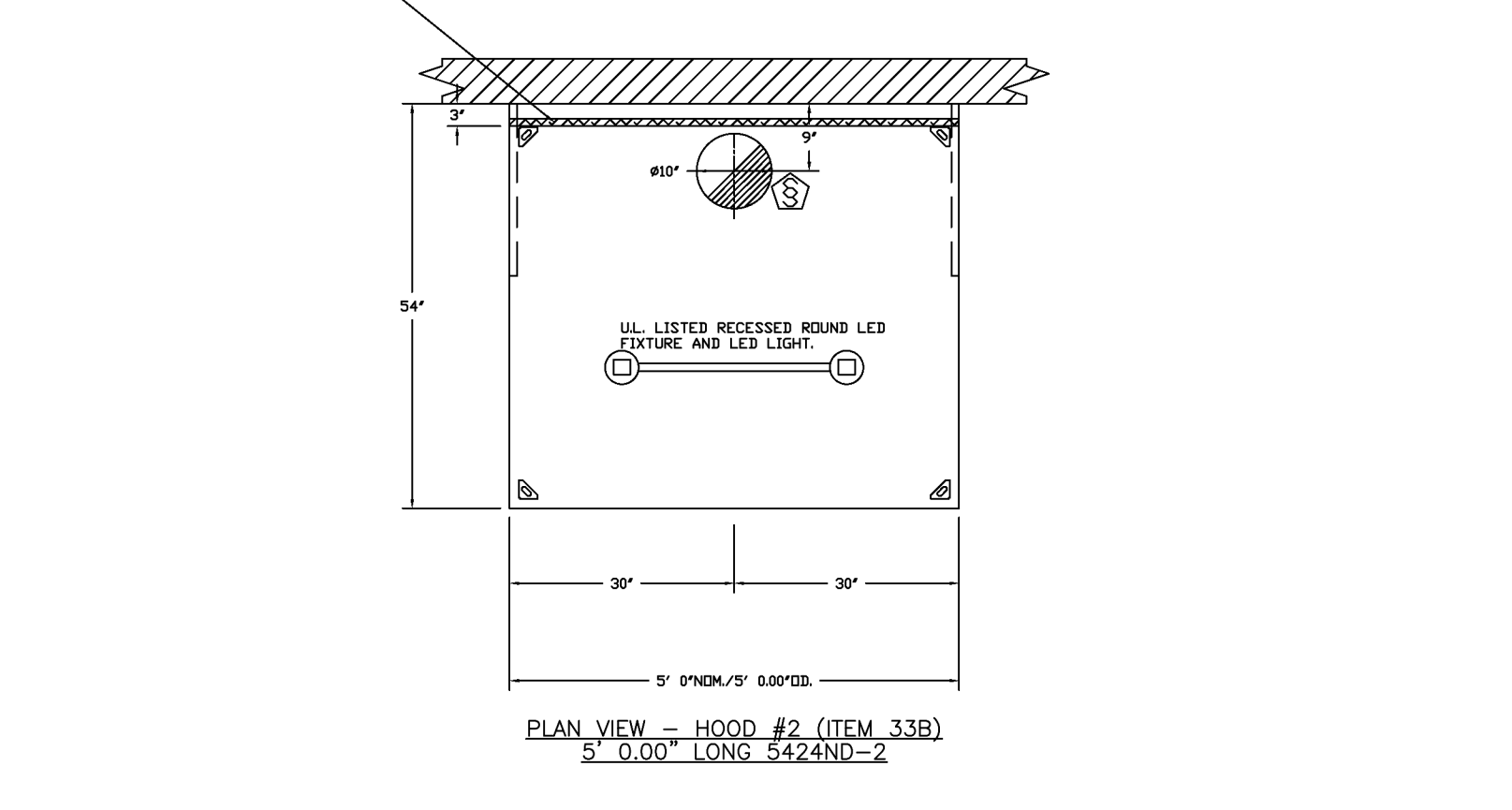
ASSEMBLY INSTRUCTIONS



ASSEMBLY INSTRUCTIONS

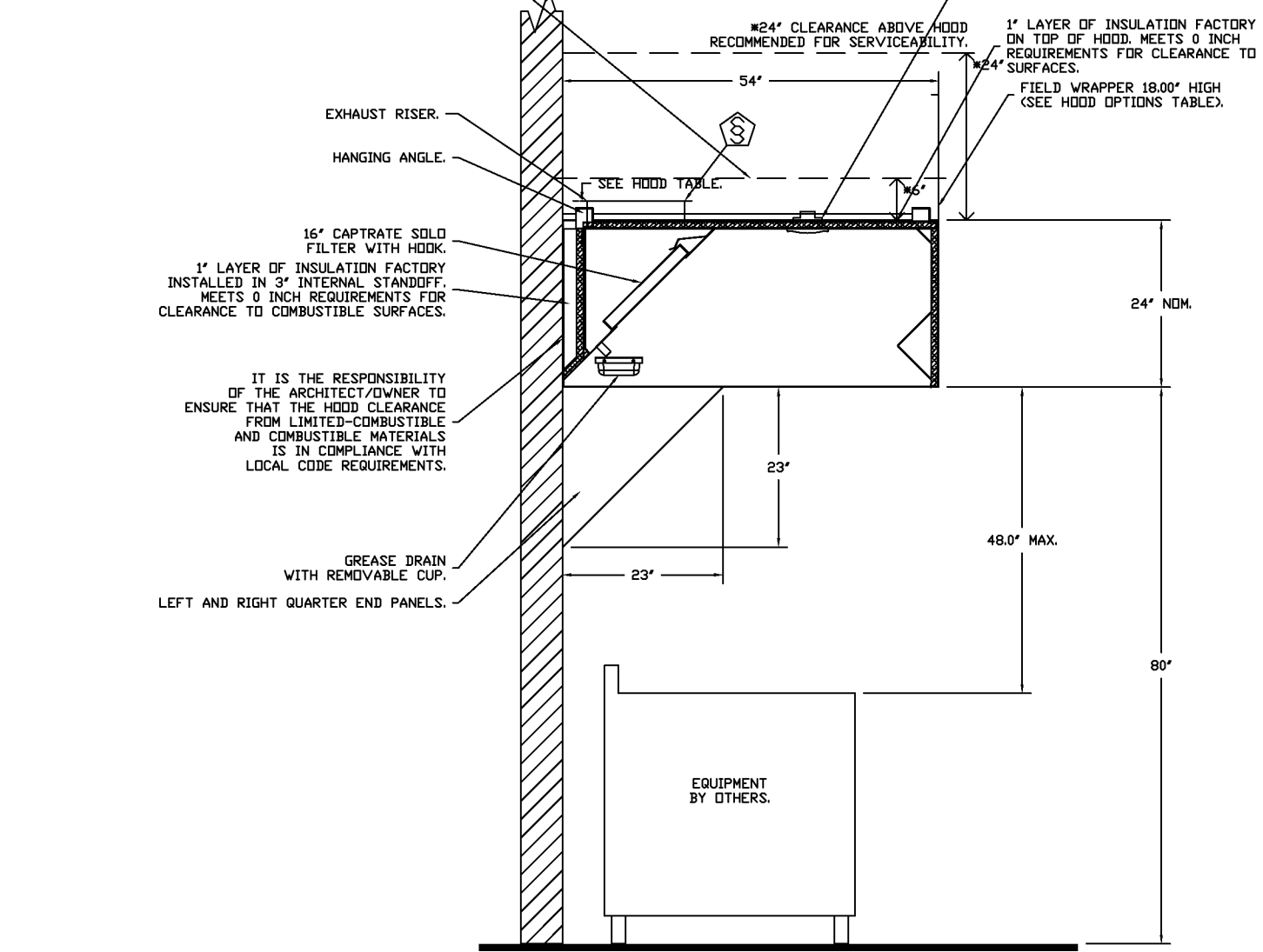
HANGING ANGLE MUST BE SUPPORTED WITH 1/2\"/>

IF LAYER OF INSULATION FACTORY INSTALLED IN INTERNAL BACK STANDBY, MEETS 8 INCH REQUIREMENTS FOR CLEARANCE TO COMBUSTIBLE SURFACE.



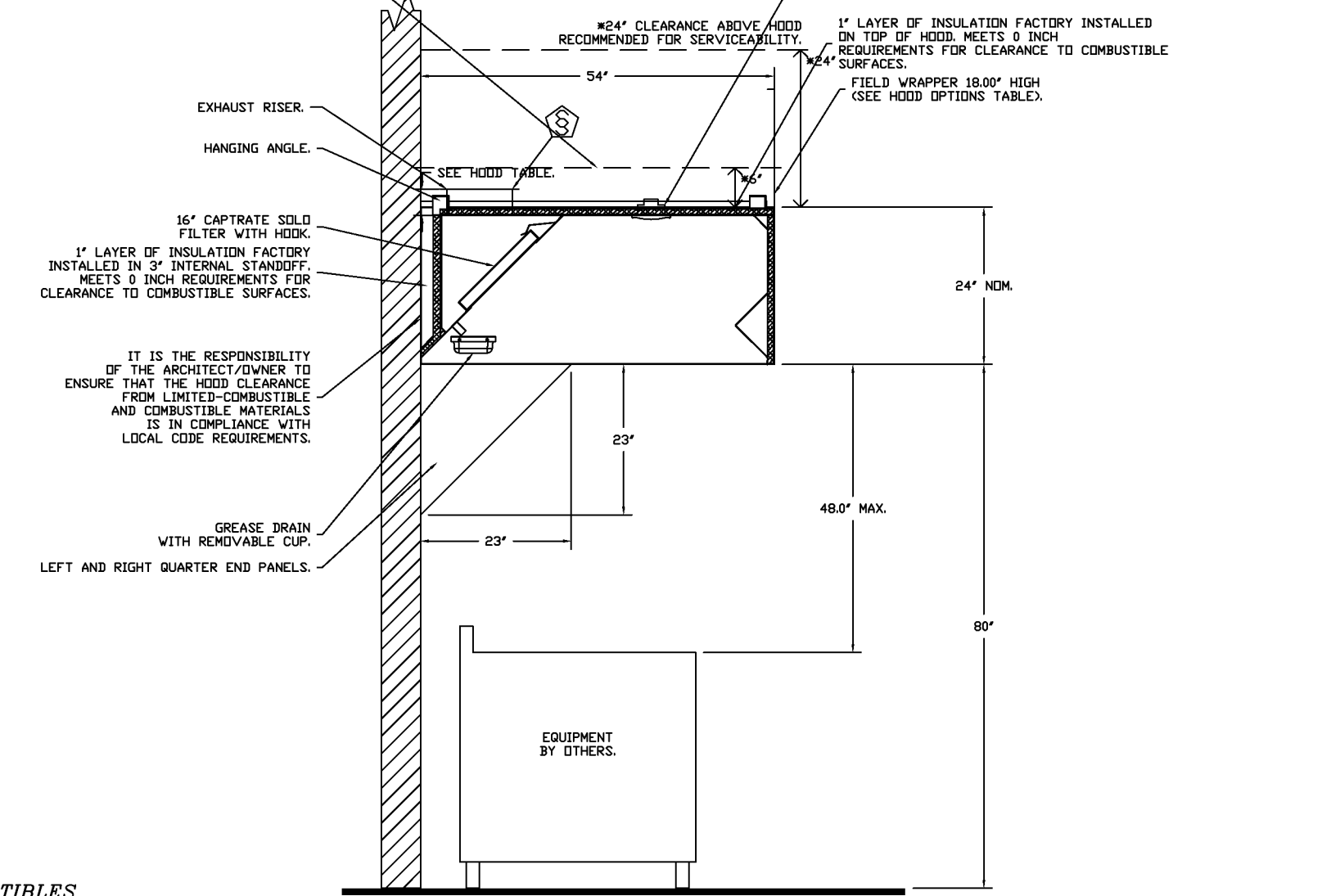
PLAN VIEW - HOOD #2 (ITEM 33B)
 8' 0.00" LONG 5424ND-2

NO CLEARANCE ABOVE HOOD REQUIRED FOR FIRE SYSTEM PIPING.



SECTION VIEW - MODEL 5424ND-2
 HOOD - #1 (ITEM 33A)

NO CLEARANCE ABOVE HOOD REQUIRED FOR FIRE SYSTEM PIPING.



SECTION VIEW - MODEL 5424ND-2
 HOOD - #2 (ITEM 33B)

CLEARANCE TO COMBUSTIBLES

HOODS #	SURFACE	CLEARANCE
1	TOP	0"
	FRONT	0"
	BACK	0"
2	RIGHT	18"
	TOP	0"
	FRONT	0"
	BACK	0"
	LEFT	18"
	RIGHT	18"

NO CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.
 HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.

FOR QUESTIONS, CALL THE:
 KANSAS CITY REGIONAL OFFICE
 1126 SWIFT STREET, KANSAS CITY, MO 64116
 PHONE: (816) 221-8575
 FAX: (816) 221-8311

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted
 Approved with ND Exception Taken
 Revised and Resubmit
 SIGNATURE: _____ DATE: _____
 TITLE: _____

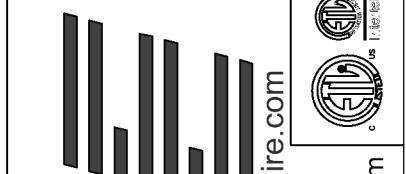
***** NOTE *****
 ALL WALLS AND STRUCTURES THAT COME WITHIN 18" OF HOOD MUST BE METAL STUDS AND SHEETROCK, WOOD STUDS OR ANY OTHER COMBUSTIBLE MATERIAL WITHIN 18" OF HOOD NOT ALLOWED.

***** NOTE *****
 HOOD MANUFACTURER RECOMMENDS NO RETURNS OR 4-WAY DIFFUSERS WITHIN 10 FEET OF HOOD IN ALL DIRECTION.

***** NOTE *****
 MAKEUP AIR SHALL BE DELIVERED INTO SPACE IN MANNER THAT WILL NOT DISRUPT HOODS ABILITY TO CAPTURE AND CONTAIN.

REVISIONS

NO.	DESCRIPTION	DATE

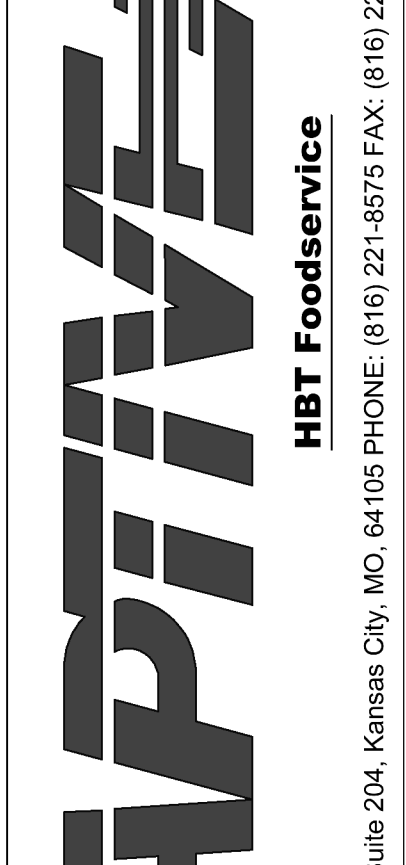


www.captiveaire.com
 reg98@captivate.com

ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2\"/>

IF LAYER OF INSULATION FACTORY INSTALLED IN INTERNAL BACK STANDBY, MEETS 8 INCH REQUIREMENTS FOR CLEARANCE TO COMBUSTIBLE SURFACE.



HBT Foodservice
 104 W 9th St, Suite 204, Kansas City, MO 64105
 PHONE: (816) 221-8575
 FAX: (816) 221-4311
 EMAIL: reg98@captivate.com

Freddy's - Missouri City, TX
 MISSOURI CITY, TX, 77459

DATE: 4/16/2025
 DWG.#: 7474661
 DRAWN BY: michael.co
 SCALE: 1/2" = 1'-0"
 MASTER DRAWING

SHEET NO. 1

BC PROJECT #: 25223
 TEXAS PE COA #F-15978

This drawing has been prepared by the Engineer or under his supervision. This drawing is prepared as a contract document for the Client and is not to be used for any other purpose. It is the responsibility of the Client to ensure that the drawing is used for the intended purpose. No representation is made by the Engineer or under his supervision. The Client shall be responsible for the accuracy of the information provided to the Engineer. The Client shall be responsible for the accuracy of the information provided to the Engineer. The Client shall be responsible for the accuracy of the information provided to the Engineer.

MECHANICAL HOOD PLANS

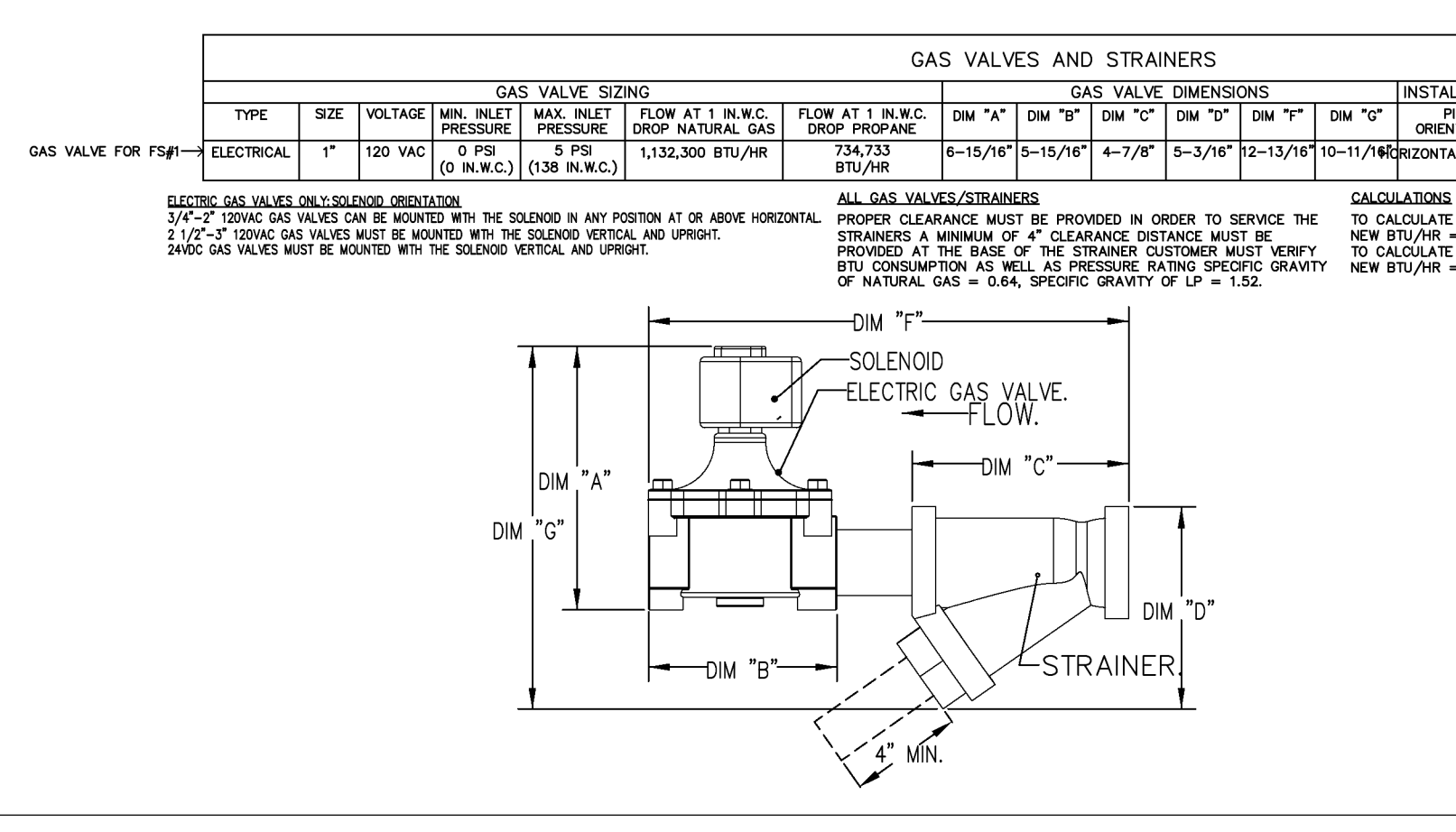
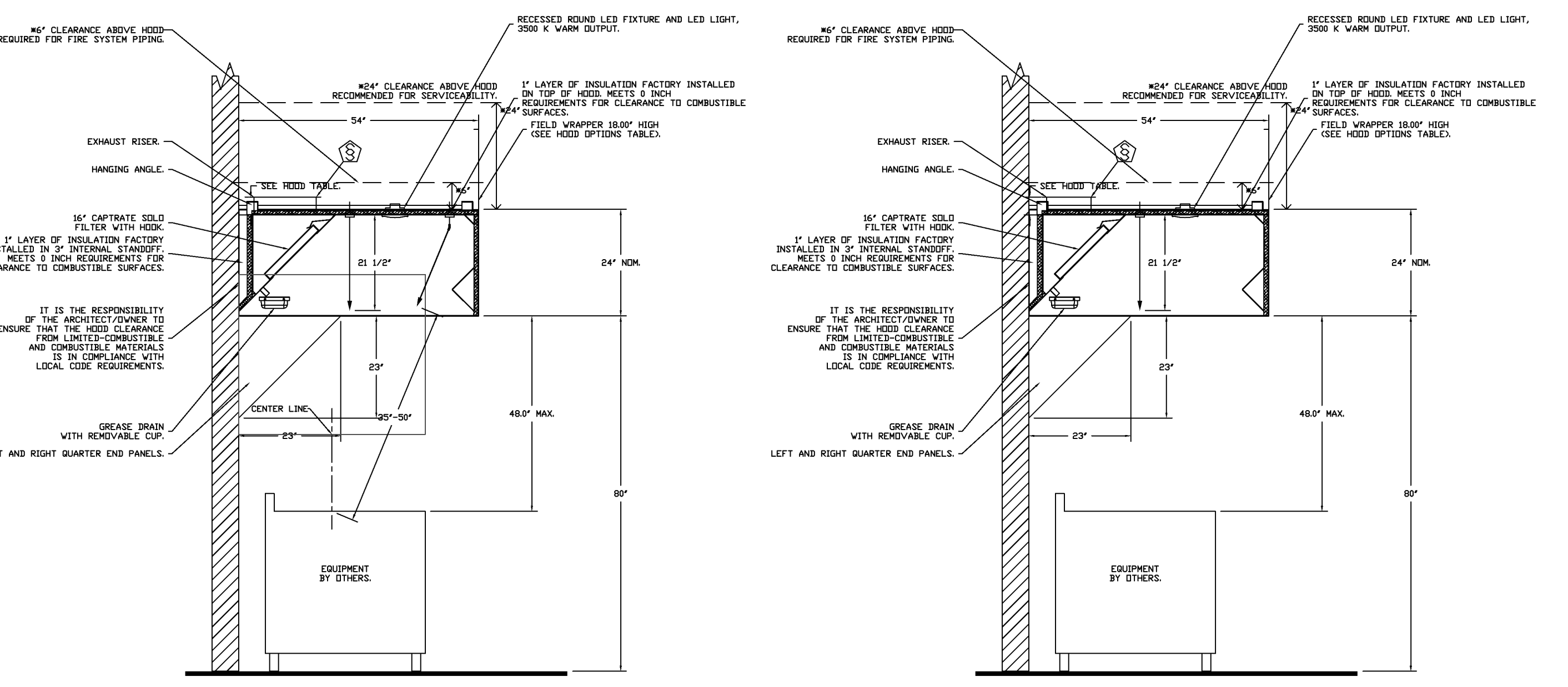
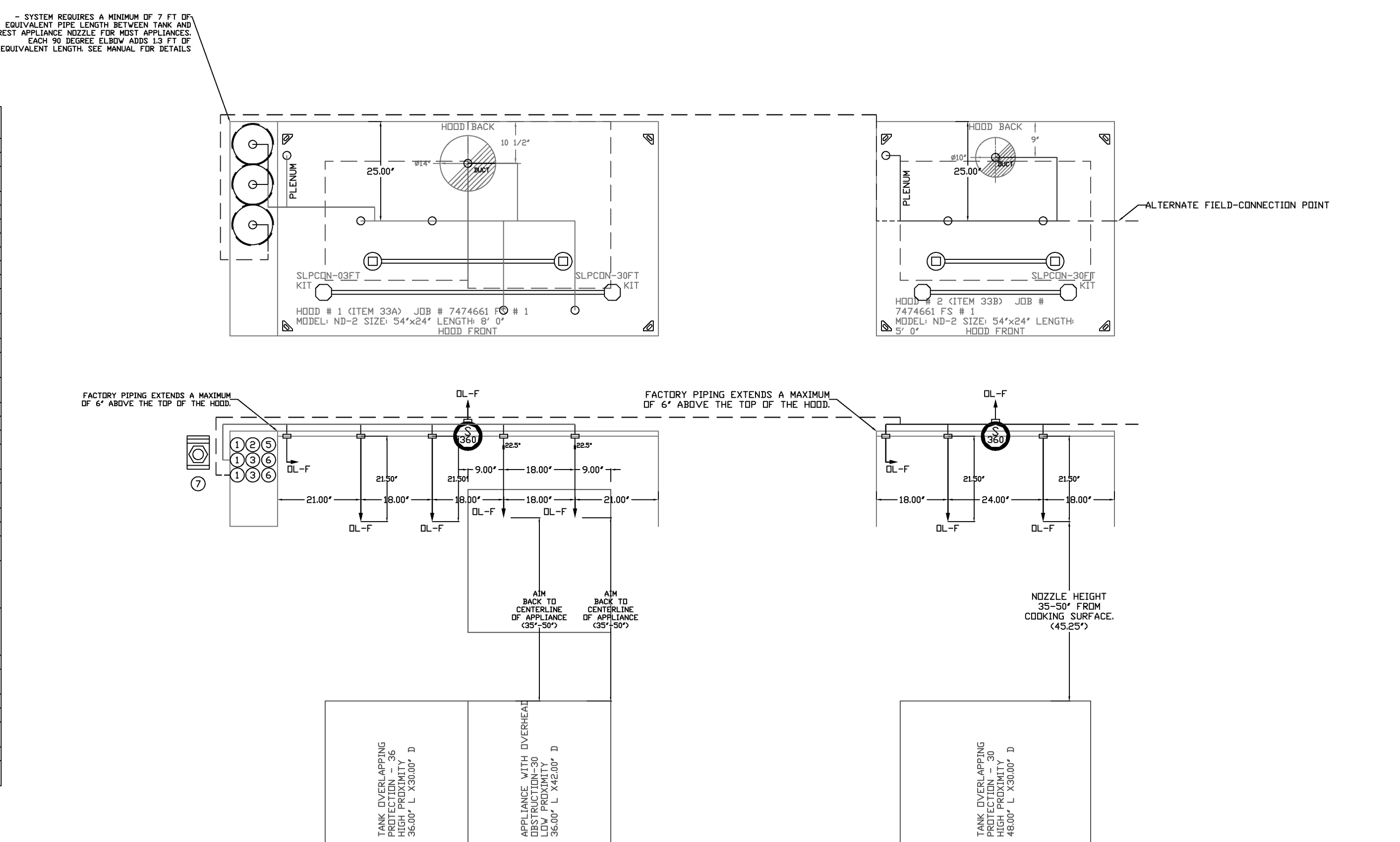
M-300

PERMIT

FIRE SYSTEM INFORMATION - JOB#7474661						
FIRE SYSTEM NO.	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION
1	FS - 33A/B	TANK FS	4.0/4.0/4.0	60	4E	FIRE CABINET LEFT, LEFT, HOOD #1

GAS VALVE(S)			
FIRE SYSTEM NO.	TAG	TYPE	SUPPLIED BY
1	FS - 33A/B	SC ELECTRICAL	1.000 CAPTIVEWARE SYSTEMS

FIRE SYSTEM PARTS LIST KEY				
FIRE SYSTEM NO.	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY REST
0	0	TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
0	0	TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
0	0	32-FR001-3244-01-360 BACT FIRE THERMOSTAT WITH 32 FEET WIRE LEADS- ND, CLOSE ON TEMP RISE AT 360°F. (A003430)	2	0
0	0	32-0002 GASK SEAL - 1/2" O.D.L.	2	0
0	0	361091 3/8" BRASS PLUG.	3	0
0	0	4429K43 1/2" X 1/4" BRASS RELIEF BUSHING.	2	0
0	0	79425 3/8" NPT FEMALE TO 1/2" MALE PROGRESS ADAPTER.	3	0
0	0	79525 1/2" 90 DEG PRESS ELBOW WITH 1/2" NPT FEMALE CONNECTION, VEGA.	2	0
0	0	79589 1/2" X 1/2" PROGRESS TEE X 1/2" NPT FEMALE CONNECTION, VEGA.	3	0
0	0	87-15045-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	2	0
0	0	87-15045-001 HOSE, SECONDARY ACTUATOR HOSE, 75' BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	2	0
0	0	87-30000-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	3	0
0	0	87-30003-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED FOR FIRE SYSTEM SUPERVISED, TANK FIRE SUPPRESSION.	1	0
0	0	87-30003-001 DIN CONNECTOR, CANFIELD PART #S1560-001-EUA, TANK FIRE SUPPRESSION.	1	0
0	0	87-30003-001 HARDWARE, SVA BELTS, TANK FIRE SUPPRESSION.	12	0
0	0	9055450PC PRO PRESS 1/2 PRESS X PRESS LB.	9	0
0	0	909700PC PRO PRESS HOSE 1/2 PRESS TEE LB.	9	0
0	0	9869415 HARDWARE, BATAKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	6	0
0	0	A003432 JUNCTION BOX FOR MANUAL PULL STATION 15" DEEP BACK BOX, RED COLOR.	1	0
0	0	A31484 1/4" NPT SCHROEDER VALVE AND CAP, JIB INDUSTRIES 1/4" FLARE X 1/4" NPT HALF INCH USED ON TANK SERVICE PORT.	2	0
0	0	B145 3/8" BLACK BRON 90 ELL.	4	0
0	0	C81-225 CHROME PLATED PIPE FITTING 3/8" NPT 90 DEGREE ELBOW.	2	0
0	0	D47601 DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
0	0	SUPCON-001 SUPERVISED LOOP CONNECTION KIT, CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 90 DEG KIT CONTAINS 5 FEET OF BLACK MG WIRE, 5 FEET OF TAN MG WIRE, 3 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
0	0	SUPCON-301 SUPERVISED LOOP CONNECTION KIT, CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UP TO 90 DEG KIT CONTAINS 30 FEET OF BLACK MG WIRE, 30 FEET OF TAN MG WIRE, 30 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	2	0
0	0	TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	9	0
0	0	T75-0101010101 TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
0	0	W-280950-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	3	0
16	16	DL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE INCLUDES METAL BLEW OFF CAP, LANTARNS USED WITH CHROME-PLATED PIPES.	10	0
26	26	SEA-3/8 SULK SEAL - 3/8" O.D.L.	10	0
34	34	A003433 BAUDUC SINGLE ACTION MANUAL ACTIVATION DEVICE (PUSH/PULL STATION WITH PROTECTIVE COVER, ONE TO NORMALLY OPEN CONTACT), RED COLOR.	1	0



NOTES

- FIELD PIPE DROPS AS SHOWN
- PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY GAS
- FIELD INSTALLED DROP FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LODGE TO BE FIELD-INSTALLED
- SHIP LODGE DROP FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LODGE TO BE FIELD-INSTALLED
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LODGE
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.
- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.
- THIS PRE-ENGINEERED FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS.
- DL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS

JOB #: 7474661
 JOB NAME: FREDDY'S - MISSOURI CITY, TX

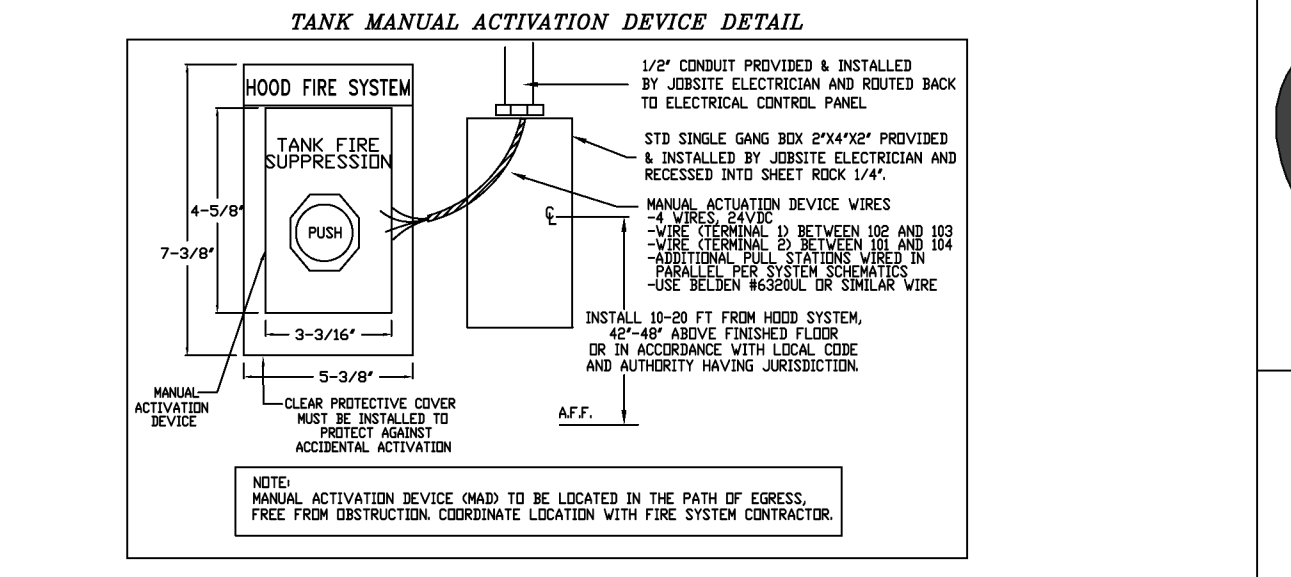
SYSTEM SIZE: TANK-SP-3 DESIGN FP: 42, MAXIMUM FP: 60.
 HOOD # 1 8" 0.00' LONG X 54" WIDE X 24" HIGH.
 RISER # 1 SIZE: 1/2" DIA.
 HOOD # 2 METAL BLEW-OFF CAPS INCLUDED.
 RISER # 2 5" 0.00' LONG X 54" WIDE X 24" HIGH.
 RISER # 2 SIZE: 1/2" DIA.
 HOOD # 2 METAL BLEW-OFF CAPS INCLUDED.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAY IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
 - MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

AGENT DISTRIBUTION PIPING LIMITATIONS		
PIPE SECTION	MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	MAX PIPE LENGTH (FT)
OVERLAPPING NOZZLE APPLIANCE BRANCH		42
DEDICATED NOZZLE APPLIANCE BRANCH		10
DEDICATED NOZZLE APPLIANCE BRANCH		10

LEGEND - FIRE CABINET TANK SYSTEM

- 4 GALLON TANK
- PRIMARY ACTUATOR RELEASE
- SECONDARY ACTUATOR RELEASE
- PRESSURE SUPERVISION SWITCH
- PRIMARY HOSE ASSEMBLY
- SECONDARY HOSE ASSEMBLY
- REMOTE MANUAL ACTIVATION DEVICE



REVISIONS	
DESCRIPTION	DATE

HBT Foodservice

104 W 9th St, Suite 204, Kansas City, MO 64105 PHONE: (816) 221-8575 FAX: (816) 221-8311 EMAIL: reg@captiveware.com www.captiveware.com

Freddy's - Missouri City, TX
 MISSOURI CITY, TX, 77459

DATE: 4/16/2025
 DWG #: 7474661
 DRAWN BY: michael.co
 SCALE: 1/2" = 1'-0"
 MASTER DRAWING

SHEET NO. 2

BC PROJECT #: 25223
 TEXAS PE COA #F-15978

BC ENGINEERS INCORPORATED
 5720 Reeder Shawnee, KS 66203 (913)262-1772

TESSERA
 www.tessera.com

BC ENGINEERS INCORPORATED
 MECHANICAL HOOD PLANS

MEP ENGINEER

MKEC STRUCTURE

PROFESSIONAL ENGINEER
 STATE OF MISSOURI
 LICENSE NO. 117553

PROJECT NO. 2018025001
 PROJECT TYPE: New Construction

CONTACT INFO:
 3030 N. CYPRESS DR
 WICHITA, KS 67226
 Tel: (316) 600-0000
 www.freddy.com

DATE: 05.05.2025
 DRAWN BY: AKFO
 CHECKED BY: DSEK

DATE: 05.05.2025

PERMIT

EXHAUST FAN INFORMATION - JOB#7474661

FAN UNIT NO.	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL.	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SDMS#
1	ITEM 741	1	CASRE18D	CAPTIVEARE	1600	1400	1105	DD/PREMIUM	1.000	0.6870	3	208	3.8	908 FPM	296	15.7
2	ITEM 742	1	DUS0FA	CAPTIVEARE	775	1250	1532	TEAD-ECH	0.500	0.3950	1	115	6.3	295 FPM	103	16.4

DOAS/RTU FAN SCHEDULE - JOB#7474661

FAN UNIT NO.	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	RETURN AIR CFM	MAX. OUTSIDE AIR CFM	TOTAL CFM	WEIGHT (LBS)	ESP	HP	PHASE	VOLT	NCA	MCCP	OUTSIDE AIR DB WB	MIXED AIR DB WB	LEAVING AIR DB WB	CAPACITY	TOTAL SENS.	SEER	ISHK	DISCHARGE		REHEAT INFORMATION		GAS HEAT INFORMATION		ASL MINIMUM ROOM VOLUME			NOTES									
																							DB	WB	DESIRED	MAX	MOISTURE REMOVAL RATE	GAS TYPE	INPUT BTUH	OUTPUT BTUH	TEMP RISE		REQUIRED INPUT GAS PRESSURE	ROOM AREA (FT ²)	AIRFLOW (CFM)	HEIGHT (FT)					
3	DOAS-1	1	CAS-HVAC3-1200-15-00T	CAPTIVEARE	15P-3	0	2300	2300	2563	0.500	2.00	3	208	77A	80A	68.5F	80.5F	80.5F	50.1F	46.1F	42.3F	256.1 MBH	94.2 MBH	18.2	6.0	76.9F	54.8F	51.5 MBH	129.6 MBH	45.6 LBS/HR	NATURAL	14787	119238	45F	7	IN. V.C. - 14	IN. V.C.	57.7	103	7.2	1.2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17

NOTES:

- INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL.
- DIRECT DRIVE BLIND BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE.
- INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER.
- REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE.
- EC MOTOR CONDENSING FANS.
- ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE.
- SUCTION LINE ACCUMULATOR.
- FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER.
- AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)
- 10" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION-MINIMUM 10000 BTU/HOUR EXTERIOR W/ 1/2" GEA. BASE
- 80% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 61 TURNDOWN WITH NG AND 5:1 TURNDOWN WITH LP
- SUPPLY CFM MONITORING - FAN SIGNAL FROM ECM/DSM PREWIRE (TELED MOTOR, CCV ROTATION)
- FULLY MODULATING HOT GAS REHEAT
- 10" DIAMETER LOW MOUNTED OPERATION
- DOWN DISCHARGE/UP RETURN
- MINIMUM ROOM AREA ASSUMED 7'2" SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60325-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER.

FAN OPTIONS

FAN UNIT NO.	TAG	QTY	DESCRIPTION
1	ITEM 741	1	UTILITY SET GREASE CUP
			REB18 - DISCHARGE EXTENSION ASSEMBLY WITH HARDWARE
			FAN BASE CERAMIC SEAL - CASRE18 - INSTALLED AT PLANT - FOR GREASE DUCTS
2	ITEM 742	1	UNIT MOUNTED VFD FOR USE WITH ECM/DSM
			VFD MOUNTING BRACKET FOR CASRE18D
			2 YEAR PARTS WARRANTY
3	DOAS-1	1	GREASE BOX
			LPLAST FAN WHEEL ACCESS PORT
			18" TALL STRAIGHT WIND BAND EXTENSION (3 SHIPS LOOSE)
			3/4" LINE EYE BELTS - USED FOR 3 GUY LINE TIE OFF POINTS
			FAN BASE CERAMIC SEAL - DUS0FA - INSTALLED AT PLANT - FOR GREASE DUCTS
			ECM WINDING PACKAGE - FAN SIGNAL FROM ECM/DSM PREWIRE (TELED MOTOR, CCV ROTATION)
			5 YEAR PARTS WARRANTY
			INLET PRESSURE GAUGE, 0-30"
			MANIFOLD PRESSURE GAUGE, 0 TO 10" W.C. 1 FURNACE
			COOLING OVERRIDE
			SINGLE POINT ELECTRICAL CONNECTION FOR RTU, 750VA TRANSFORMER USED IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE 400, 447, 700V OR 120V PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE
			RTU BLOWER DOOR SWITCH
			RTU DOWN DISCHARGE
			2" MERV 8 FILTERS FOR RTU (QTY: 4)
			2" MERV 8 FILTERS FOR RTU (QTY: 4)
			OVERHEAT STAT
			TOTAL CFM MONITORING
			VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
			LDV AMBIENT COOLING OPERATION - DOWN TO 60° AMBIENT
			UNOCCUPIED SCHEDULING
			INTAKE FORESTAT SET TO 135F
			FREEZESTAT
			DISCHARGE FORESTAT SET TO 84F
			CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
			RTU CURB DUCT HANGER
			RTU INTAKE/RETURN DAMPER - MANUAL CONTROL VIA HMI
			RTU HAL GUARD
			RTU DOWN RETURN
			2" METAL MESH FILTERS FOR RTU OUTDOOR INTAKE
			24VAC FIRE INPUT
RTU RETURN MOUNTED SMOKE DETECTOR AND SAMPLING TUBE - FACTORY INSTALLED			
CLOGGED FILTER SWITCH - NOTIFICATION ON HMI			
80 TON MODULATING COOLING OPTION, R408/R22/R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS			
R454B LEAK DETECTOR OPTION FOR RTU			
80 TON MODULATING REHEAT OPTION - SPACE SETPOINT CONTROL - R454B			
NAVY PACKAGE W/ 0-10VDC INPUT CONTROL (QTY: 1) INCLUDED			
5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEARE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)			
EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET			

FAN ACCESSORIES

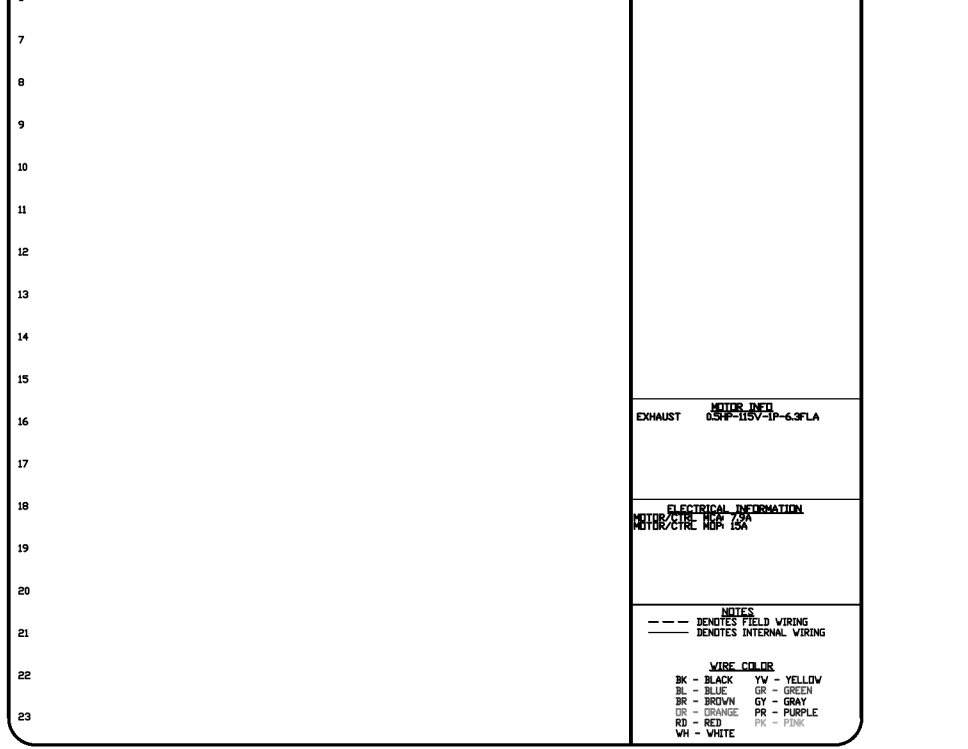
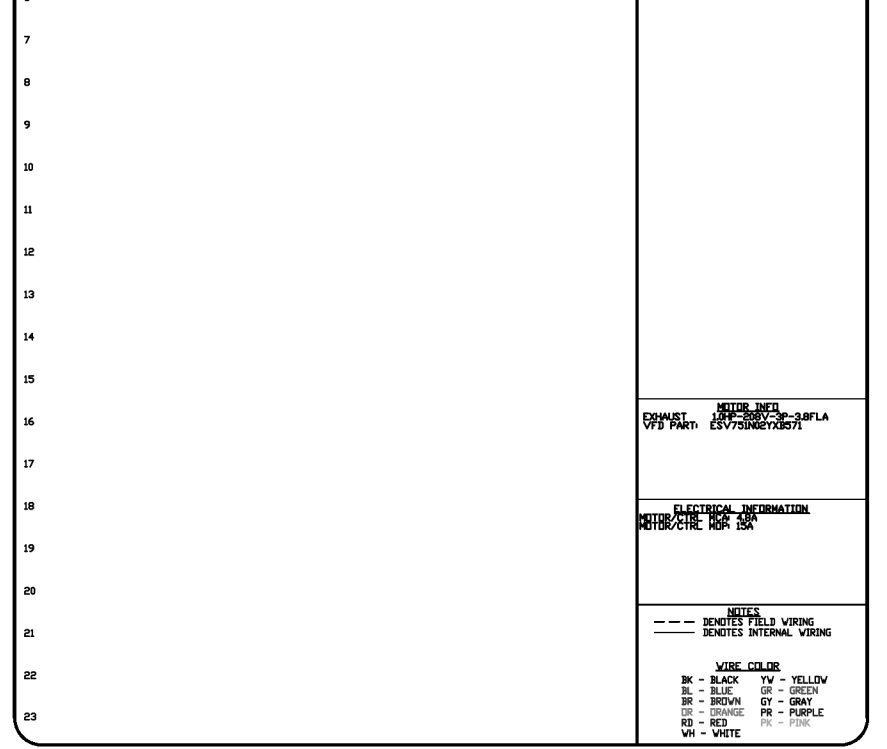
FAN UNIT NO.	TAG	EXHAUST	SUPPLY
1	ITEM 741	YES	NO
2	ITEM 742	YES	NO

CURB ASSEMBLIES

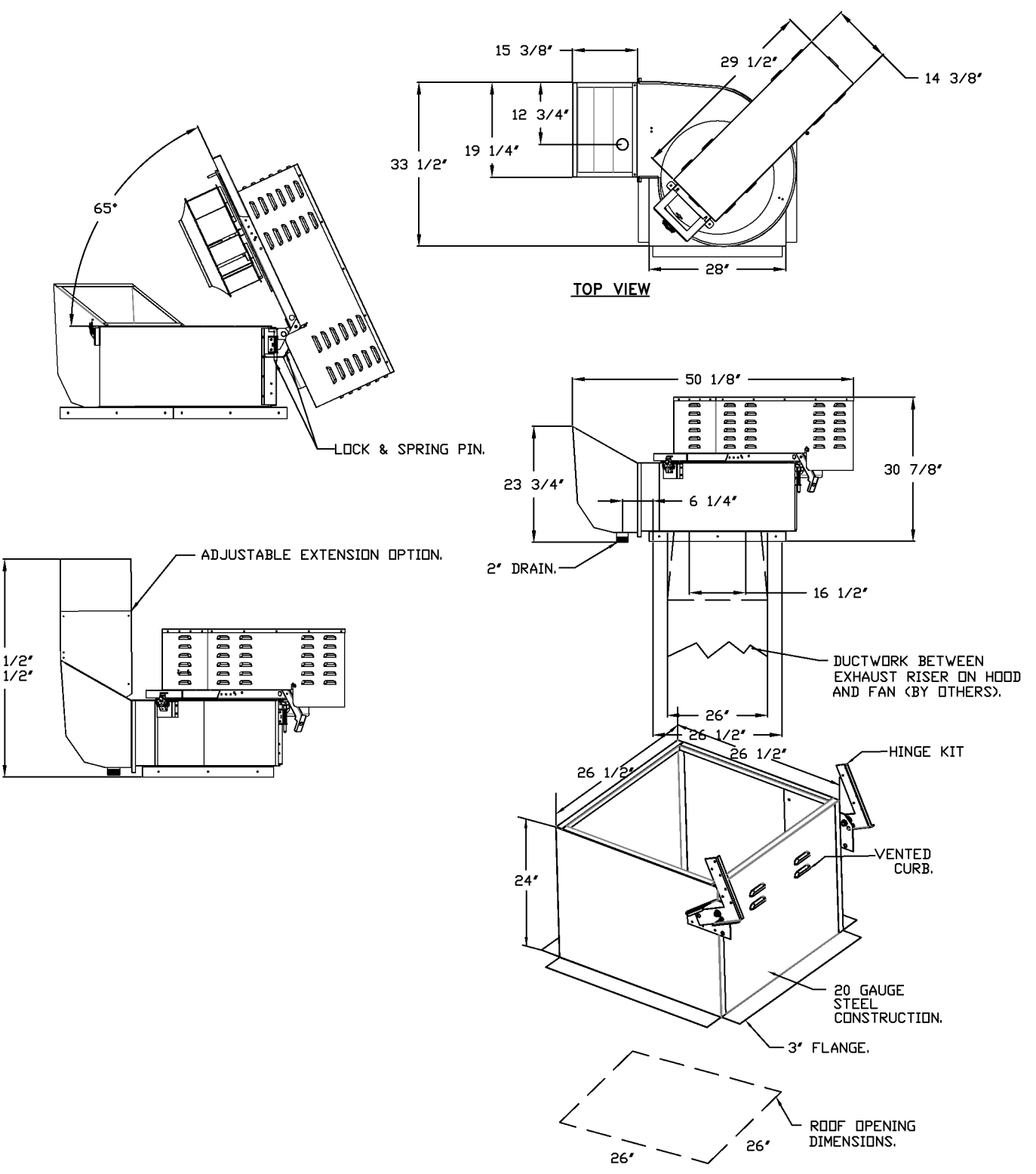
NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	ITEM 741	52 LBS	CURB	26.500" W X 26.500" L X 24.000" H VENTED HINGED
2	# 2	ITEM 742	31 LBS	CURB	19.500" W X 19.500" L X 20.000" H VENTED HINGED
3	# 3	DOAS-1	304 LBS	CURB	29.500" W X 29.000" L X 14.000" H INSULATED

HMI SCHEDULE

UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #3	HMI #1 - UNIT	IN UNIT	NET AVERAGED	50
FAN #3	HMI #2 - SPACE	AVERAGED		56
FAN #3	HMI #3 - SPACE	NET AVERAGED		57



FAN #1 CASRE18D - EXHAUST FAN (ITEM 741)

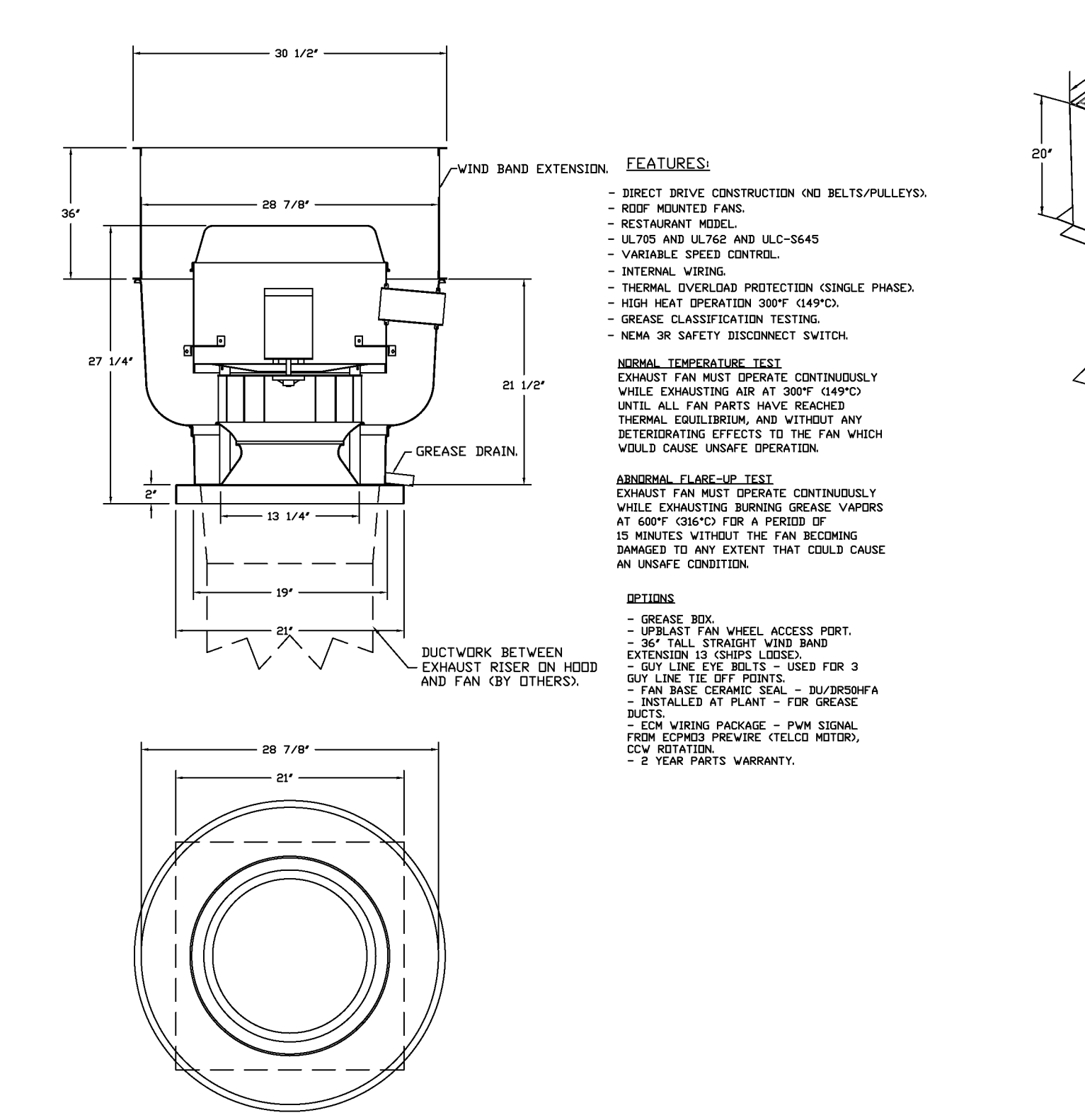


- FEATURES:**
- ROOF MOUNTED FANS.
 - RESTAURANT MODEL.
 - UL746 AND UL12-2645.
 - HIGH HEAT OPERATION DIRECT DRIVE 300° (149°C).
 - HEAT SLINGER.
 - GREASE CLASSIFICATION TESTING.
 - TILT OUT WHEEL.
 - LOCKING PIN FOR POWER PAD.
 - MOTOR WEATHER COVER.
 - INTERLOCKED DISCONNECT SWITCH.
 - NEMA 4X SAFETY DISCONNECT SWITCH.

ABNORMAL FLAME-UP TEST: EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 300° (149°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

- DESIGNS:**
- UTILITY SET GREASE CUP.
 - REB18 - DISCHARGE EXTENSION ASSEMBLY WITH HARDWARE.
 - FAN BASE CERAMIC SEAL - CASRE18 - INSTALLED AT PLANT - FOR GREASE DUCTS.
 - VFD MOUNTING BRACKET FOR CASRE18D - 2 YEAR PARTS WARRANTY.

FAN #2 DUS0FA - EXHAUST FAN (ITEM 742)



- FEATURES:**
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
 - RESTAURANT MODEL.
 - UL746 AND UL12-2645.
 - VARIABLE SPEED CONTROL.
 - INTERNAL WIRING.
 - THERMAL OVERLOAD PROTECTION (SENSE PHASE).
 - HIGH HEAT OPERATION 300° (149°C).
 - GREASE CLASSIFICATION TESTING.
 - NEMA 4X SAFETY DISCONNECT SWITCH.

ABNORMAL FLAME-UP TEST: EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 300° (149°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

- DESIGNS:**
- GREASE BOX.
 - LPLAST FAN WHEEL ACCESS PORT.
 - 18" TALL STRAIGHT WIND BAND EXTENSION (3 SHIPS LOOSE) FOR 3/4" GUY LINE TIE OFF POINTS.
 - FAN BASE CERAMIC SEAL - DUS0FA - INSTALLED AT PLANT - FOR GREASE DUCTS.
 - ECM WINDING PACKAGE - FAN SIGNAL FROM ECM/DSM PREWIRE (TELED MOTOR, CCV ROTATION).
 - 2 YEAR PARTS WARRANTY.

REVISIONS

NO.	DESCRIPTION	DATE

CAPTIVEARE
 HBT Foodservice
 www.captiveare.com
 104 W 9th St Suite 204, Kansas City, MO 64108 PHONE: (816) 221-8875 FAX: (816) 221-8311 EMAIL: reg@hbt.com

Freddy's - Missouri City, TX
 MISSOURI CITY, TX, 77459

DATE: 4/16/2025
 DWG.#: 7474661
 DRAWN BY: michael.co
 SCALE: 1/2" = 1'-0"
 MASTER DRAWING
 SHEET NO. 3

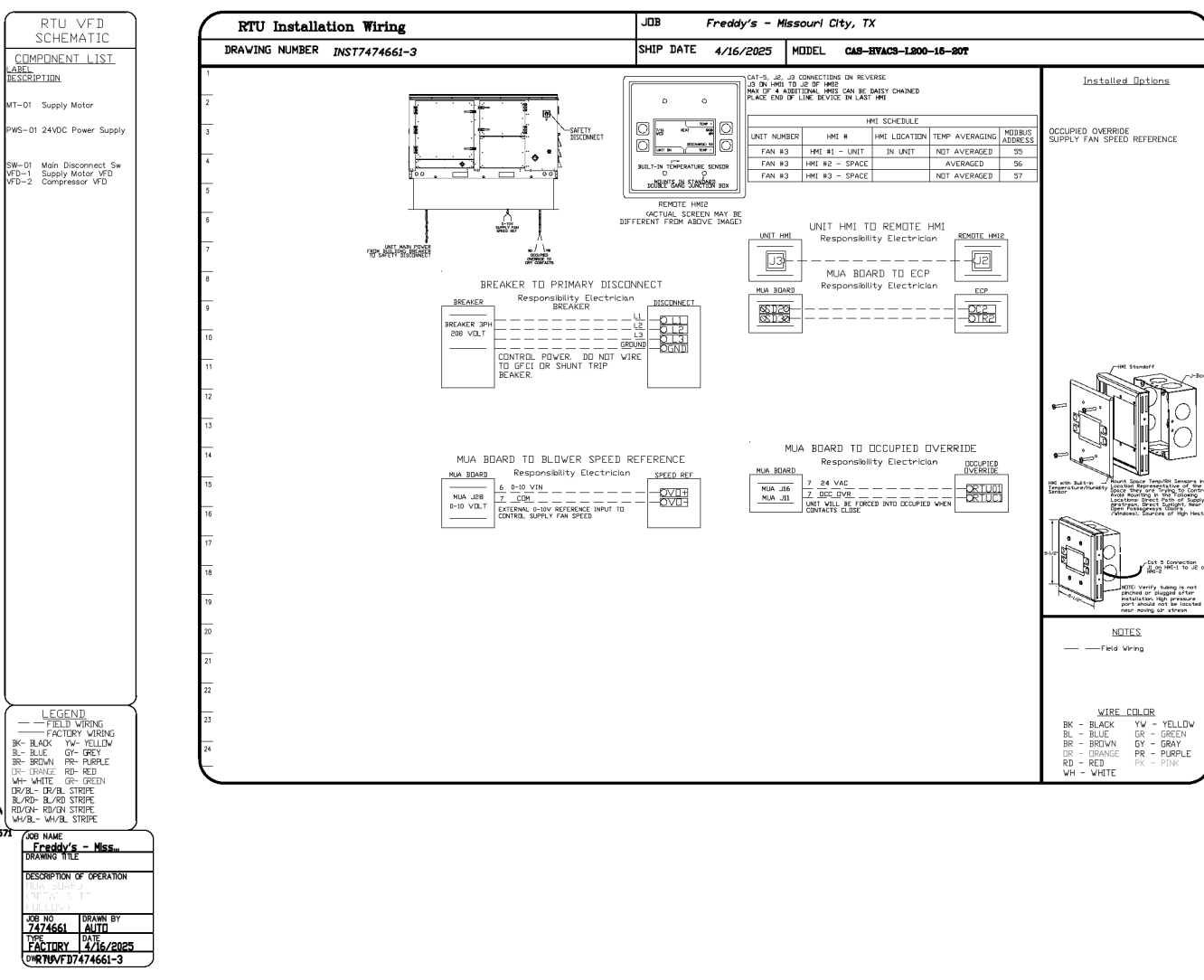
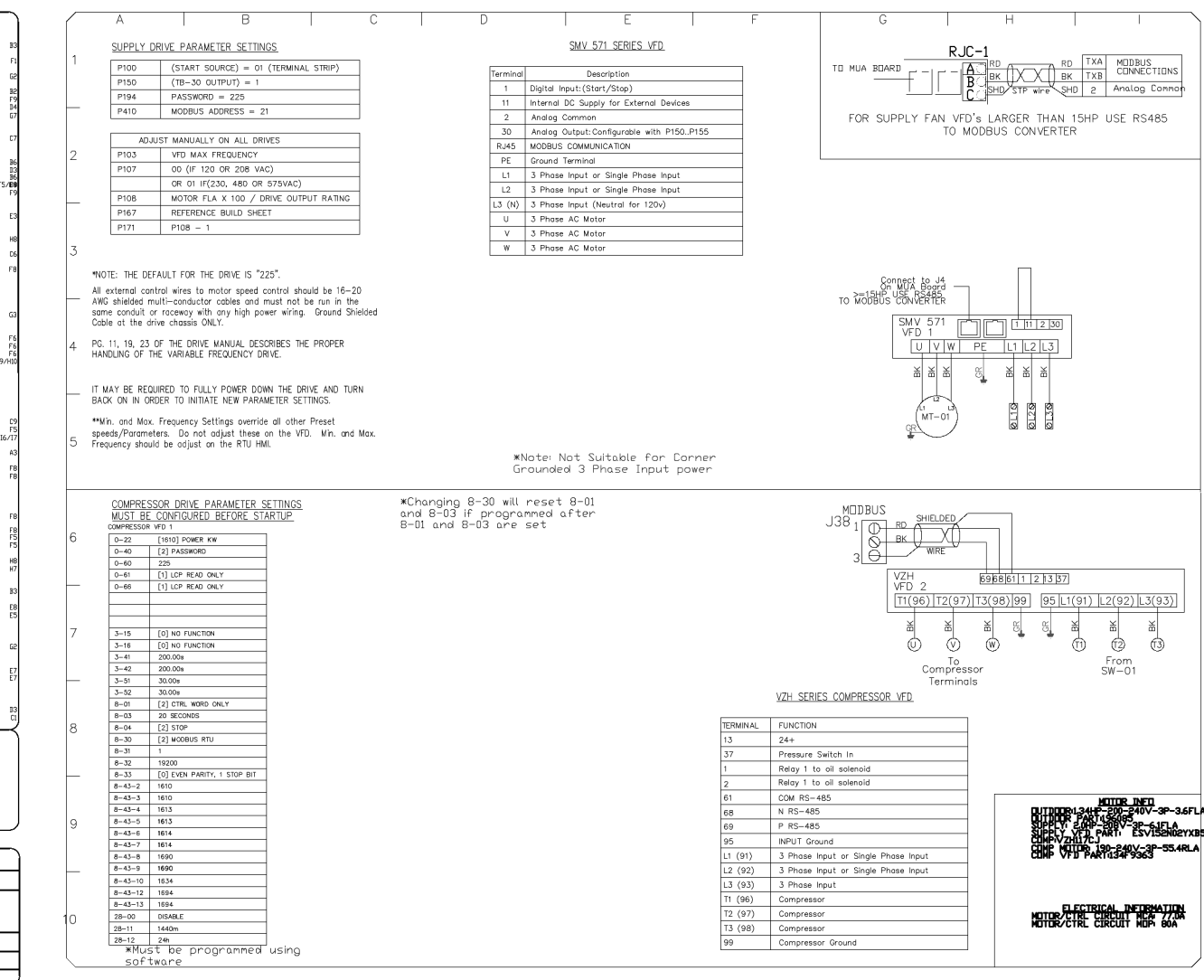
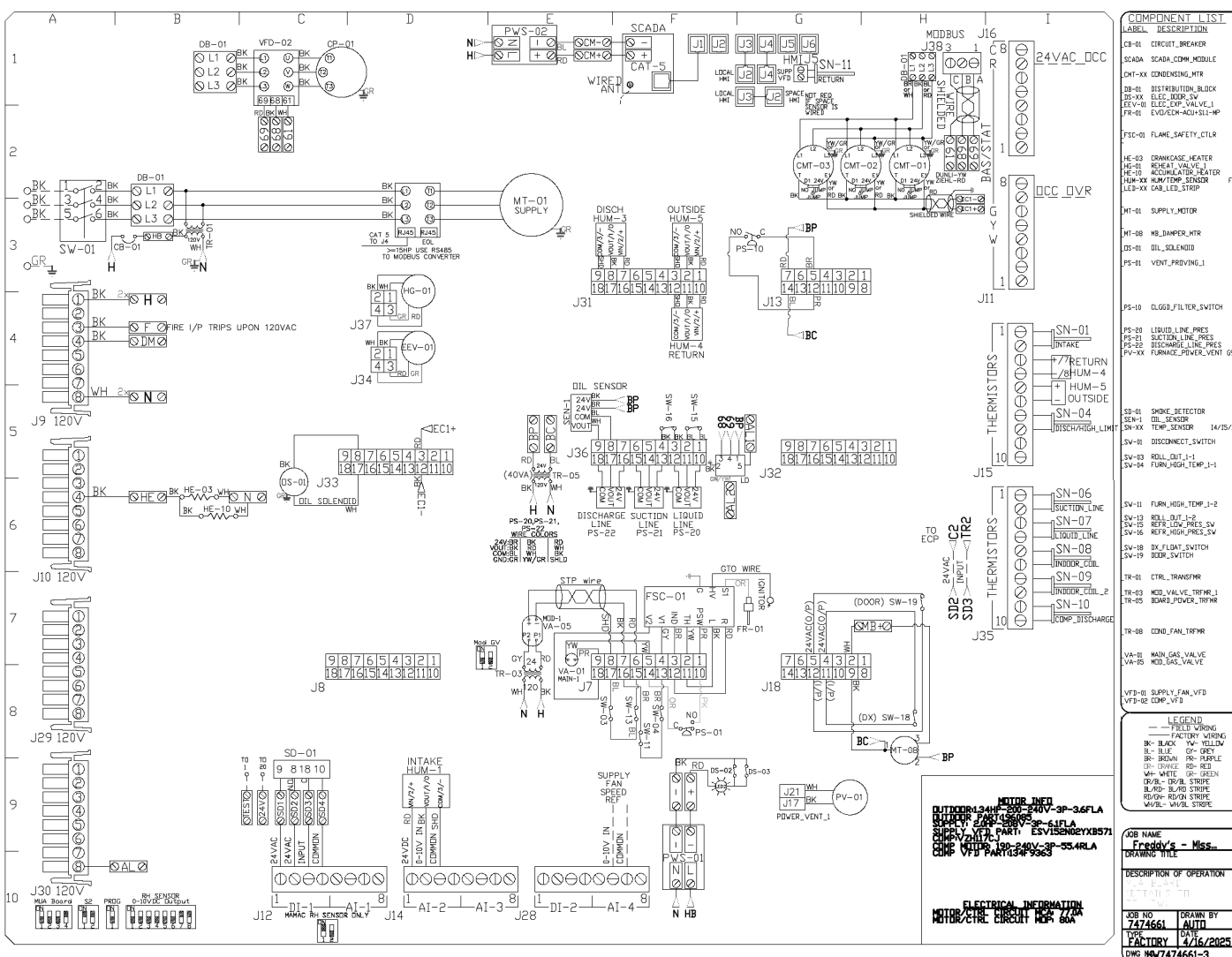
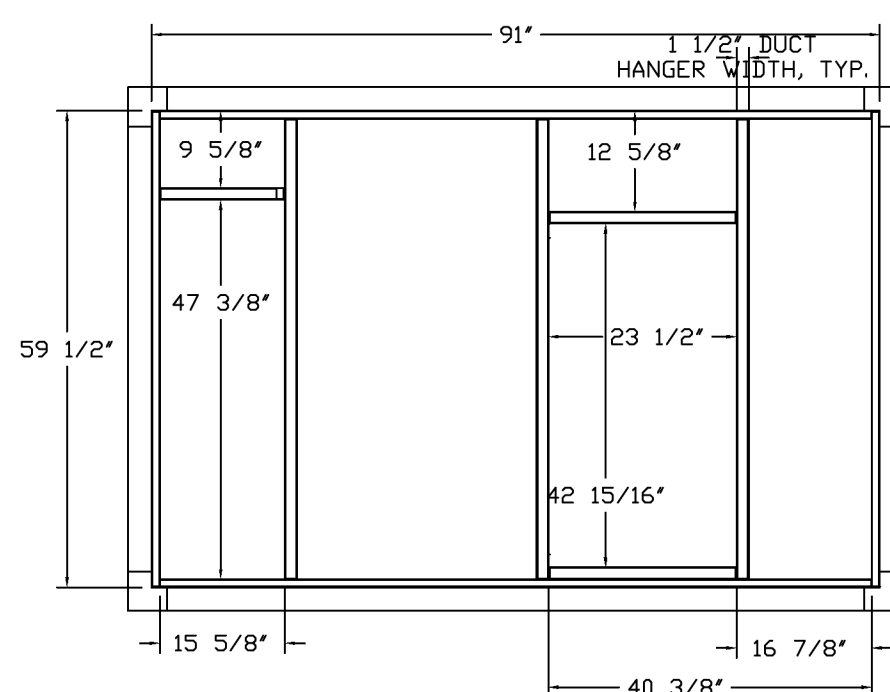
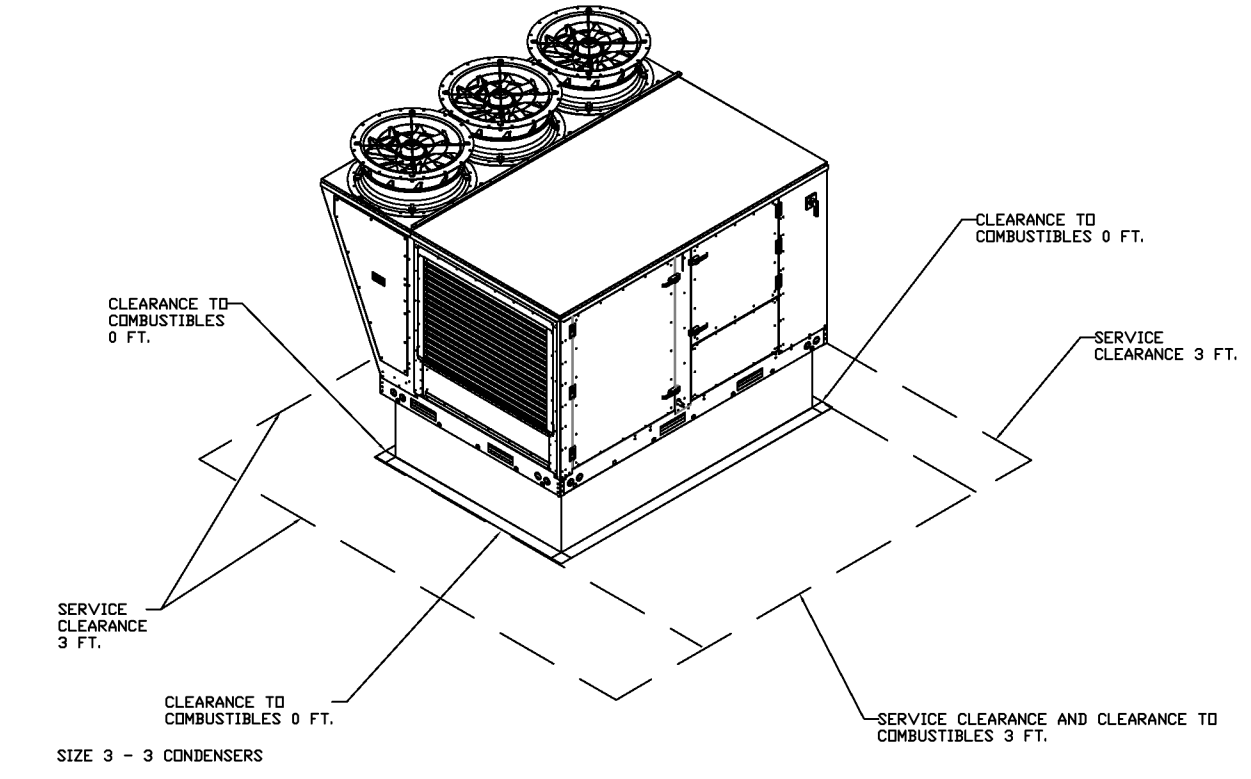
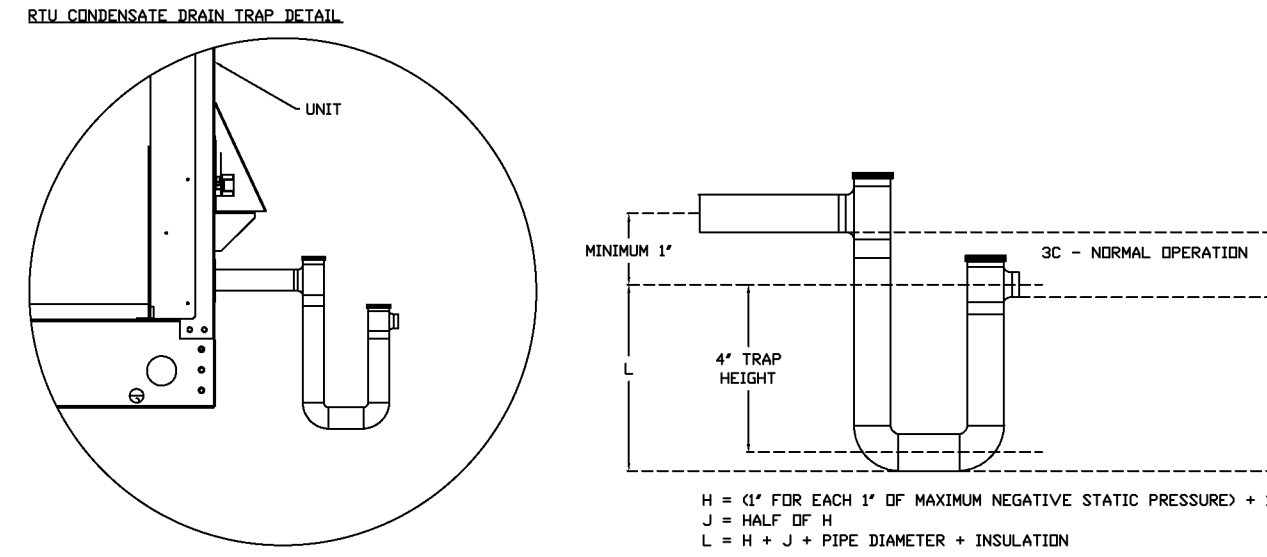
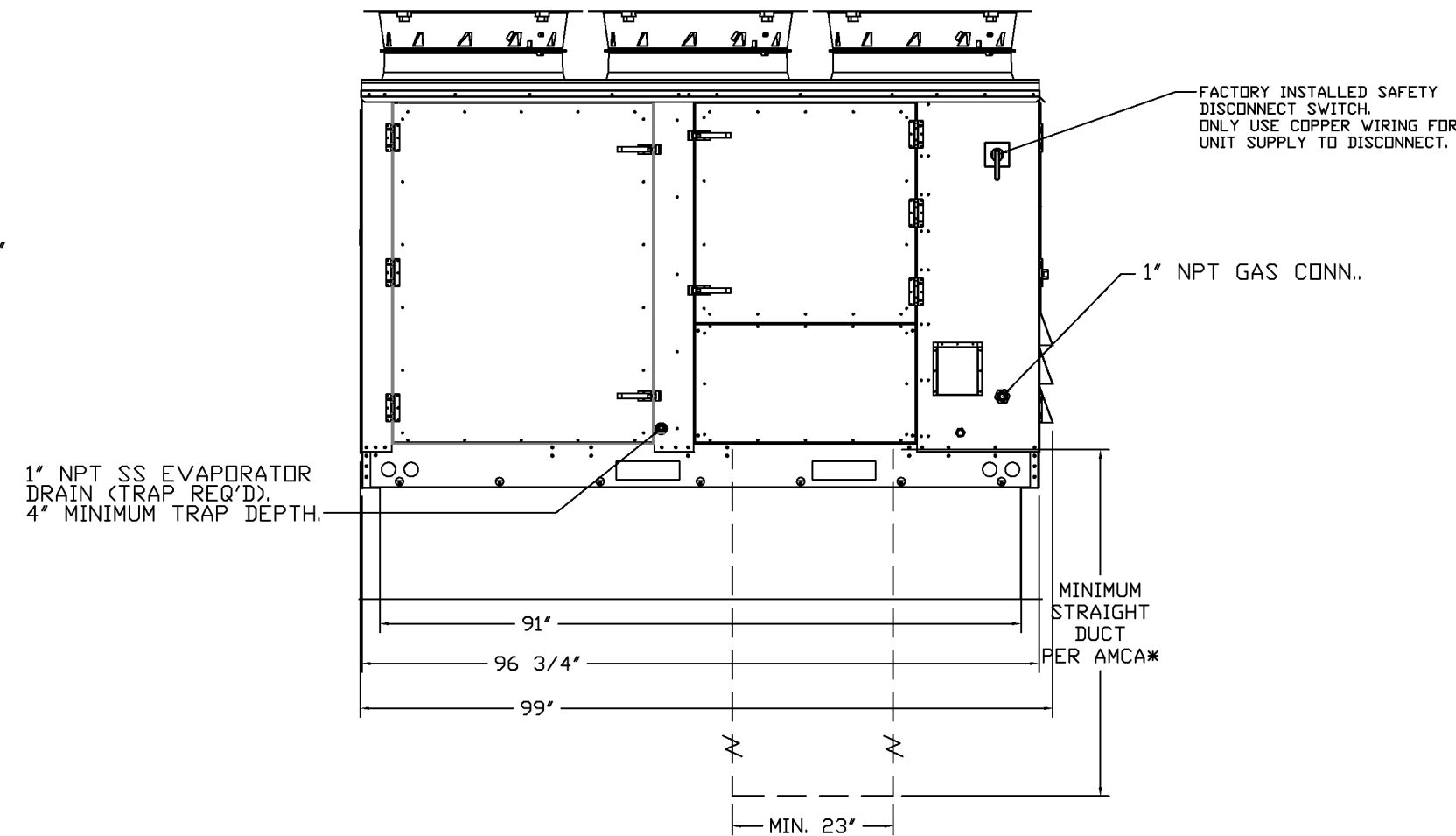
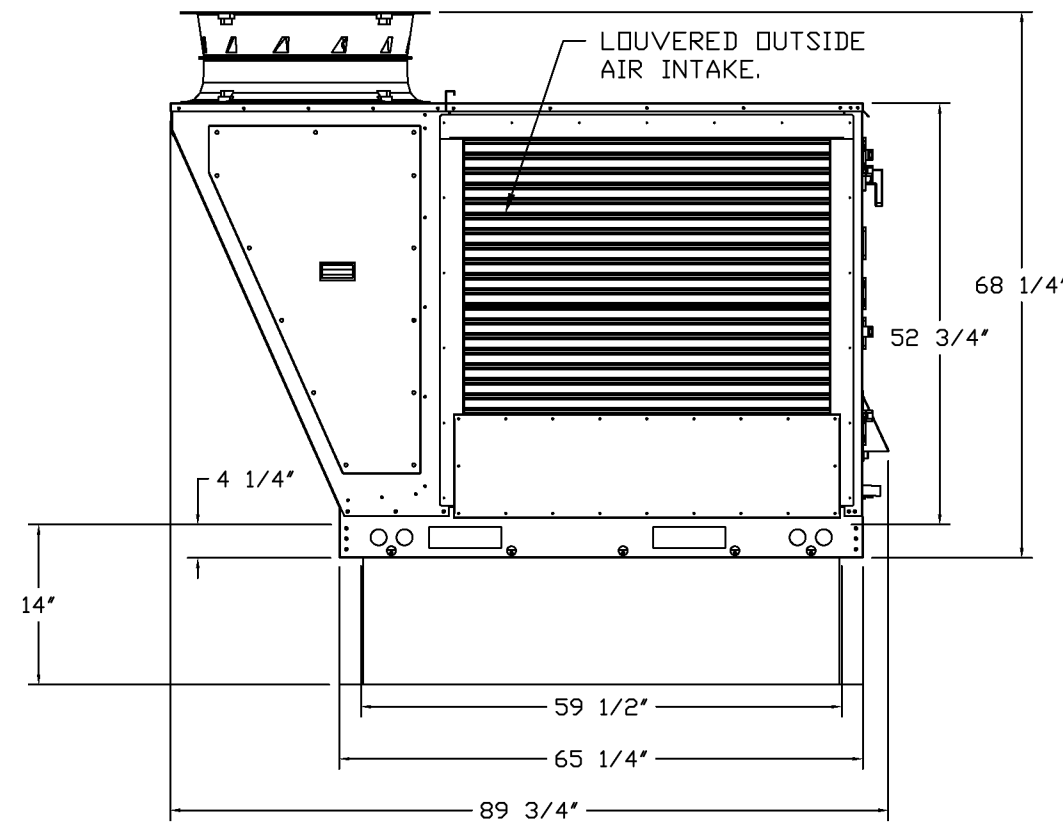
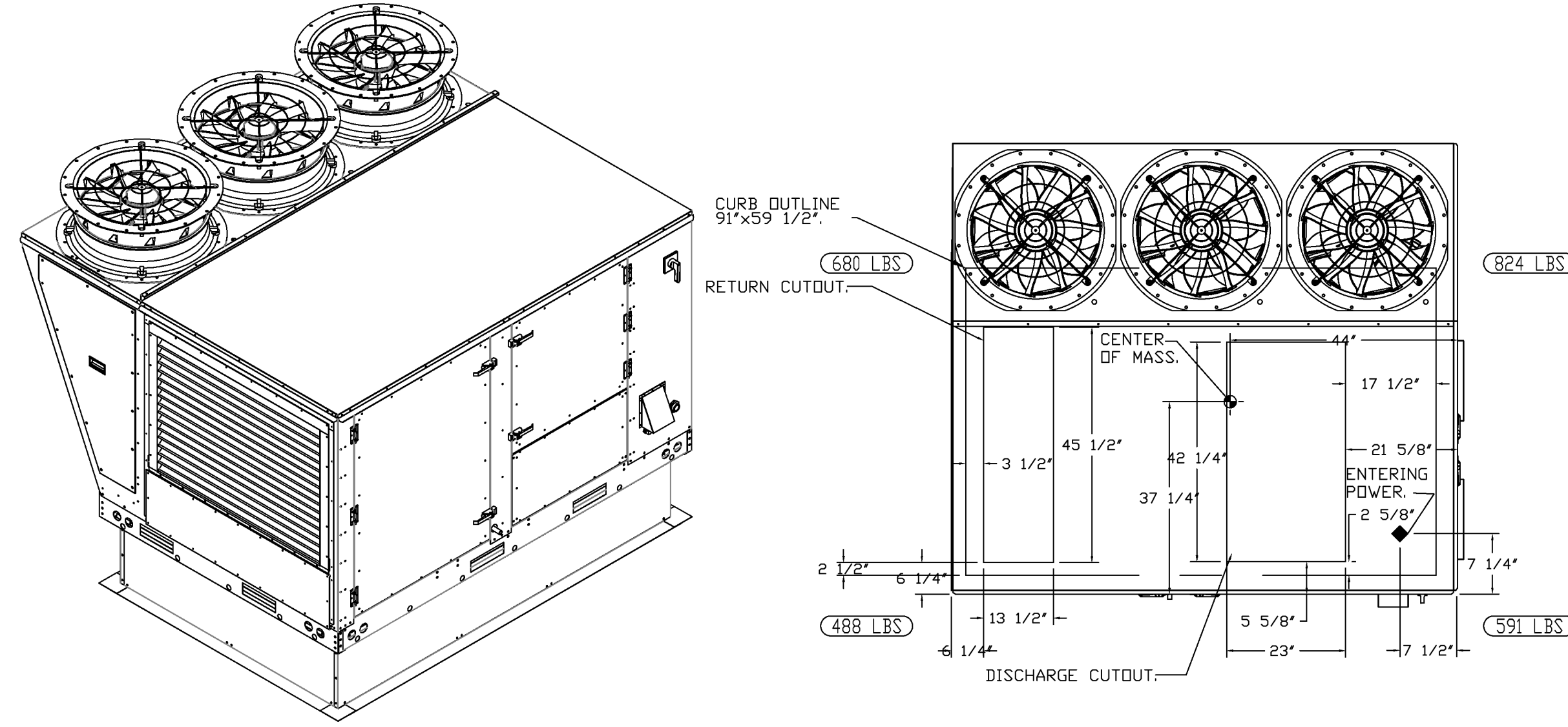
BC PROJECT #: 25223
 TEXAS PE COA #F-15978

BC ENGINEERS INCORPORATED
 5720 Reeder Shawnee, KS 66203 (913)262-1772

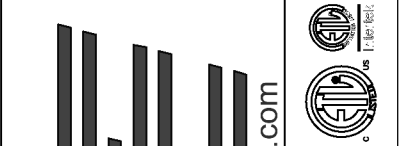
FAN #3 CAS-HVAC3-1200-15-20T - HEATER (DOAS-1)

- NOTES:
 1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
 2. (C) DENOTES CORNER WEIGHT.
 3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
 4. CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
 5. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.
 *NOTE: INTEGRAL CO2 MONITORING AND CONTROL CAPABILITIES FOR ALL SPACE MOUNTED THERMOSTATS.

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 23" x 39".



REVISIONS	
NO.	DESCRIPTION



www.captivehvac.com
 HBT Foodservice
 104 W 9th St Suite 204, Kansas City, MO, 64105 PHONE: (816) 221-8575 FAX: (816) 221-8311 EMAIL: reg@hbtfoodservice.com

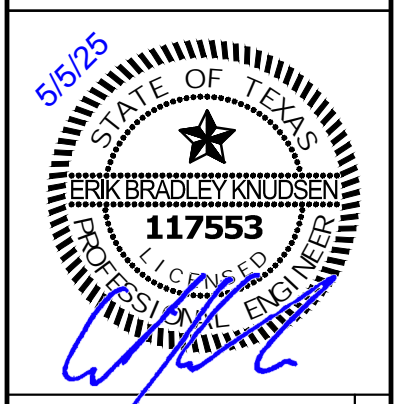
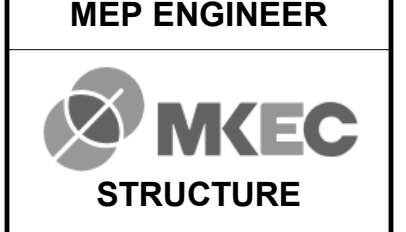
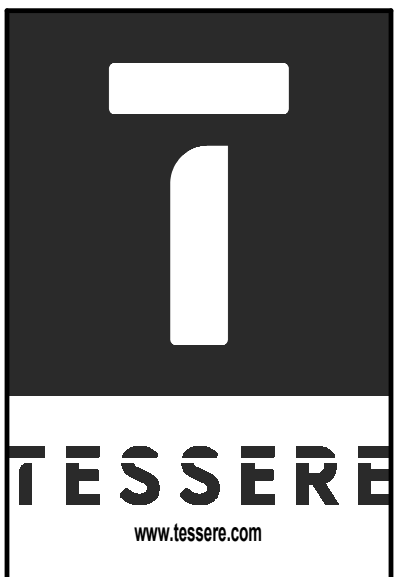
CAPTIVE

Freddy's - Missouri City, TX
 MISSOURI CITY, TX, 77459

DATE: 4/16/2025
 DWG.#: 7474661
 DRAWN BY: michael.co
 SCALE: 1/2" = 1'-0"
 MASTER DRAWING
 SHEET NO. 4

BC PROJECT #: 25223
 TEXAS PE COA #F-15978

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PROJECT NUMBERS:
 FREDDY'S PROJECT # - TMS2025010273
 TESSERA # - 2310025001
 PROJECT TYPE:
 New Construction

Freddy's
 CONTACT INFO:
 9000 N. CYPRESS DR
 WICHITA, KS 67226
 Tel: (316) 600-0000
 www.freddys.com

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FREDDY'S FROZEN CUSTARD & STEAKBURGERS
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