GENERAL NOTES:

1. REFER TO SPECIFICATIONS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. REFER TO ALL PROJECT DRAWINGS FOR DETAILS OF CONSTRUCTION AND INSTALLATION REQUIREMENTS.
3. REFER TO GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS FOR THE CONTRACT. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FULL COORDINATION OF PROJECT INCLUDING THE EQUIPMENT AND INSTALLATION OF THE MECHANICAL WORK.
4. CONTRACTOR SHALL BECOME, PRIOR TO BID, THOROUGHLY FAMILIAR WITH THE REQUIREMENTS OF THESE NOTES AS WELL AS OTHER NOTES SHOWN ON THE CONTRACT DOCUMENTS.
5. THESE DRAWINGS REFLECT A SYSTEM DESIGNED AROUND SPECIFIC REFERENCE PRODUCTS (SEE SCHEDULES). THE SELECTION OF WHICH HAS INFLUENCED THE DESIGNS OF OTHER TRADES (ELECTRICAL, STRUCTURAL, ETC.). IF SUBSTITUTE MANUFACTURERS, SIZES, OR MODEL NUMBERS ARE BID, OR SUBMITTED, IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR AND ALL HIS SUBCONTRACTORS TO COORDINATE ALL DIFFERENCES PRIOR TO BID. ALL COSTS OF ALL TRADES ASSOCIATED WITH THE SUBSTITUTION SHALL BE INCLUDED IN THE BID.
6. COORDINATION OF ALL MODIFICATIONS TO EACH DISCIPLINE WHICH RESULT FROM SUBSTITUTION OF EQUIPMENT OR MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SUBSTITUTIONS WHICH ARE INSTALLED AND SUBSEQUENTLY ARE PROVEN UNSATISFACTORY BY OWNER AND/OR ENGINEER, WITHIN THE WARRANTY PERIOD, SHALL BE REMOVED COMPLETELY BY THE CONTRACTOR AND REPLACED WITH THE ORIGINAL DESIGN OR CORRECTED AS DIRECTED BY THE ENGINEER WITHOUT ADDITIONAL COST TO THE OWNER.
7. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OR GEOMETRICAL RELATIONSHIPS OF EQUIPMENT AND SERVICES. THEY ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, SEQUENCE, DEVICE, OPTION, FITTING, OR COMPONENT.
8. INFORMATION AND COMPONENTS SHOWN ON RISER DIAGRAMS OR DETAILS, BUT NOT SHOWN ON PLANS, AND VICE VERSA, SHALL BE PROVIDED AS IF EXPRESSLY REQUIRED BY BOTH.
9. CONTRACTOR SHALL NOT SCALE DRAWINGS. DRAWINGS SPECIFIC TO THIS DISCIPLINE DO NOT LIMIT THE RESPONSIBILITY OF WORK REQUIRED BY THE CONTRACT DOCUMENTS.
10. UNLESS NOTED OTHERWISE, THE INDICATION AND/OR DESCRIPTION OF ANY ITEM, IN THE DRAWINGS OR SPECIFICATIONS CARRIES WITH IT THE INSTRUCTION TO FURNISH AND INSTALL THE ITEM.
11. EXACT LOCATIONS OF ALL EQUIPMENT, ROOF CURBS, DUCTS, DIFFUSERS, ETC. SHALL BE COORDINATED WITH OTHER TRADES. CEILING MOUNTED SPRINKLER, LIGHTING, AND ELECTRICAL REQUIREMENTS TAKE PRECEDENCE OVER CEILING MOUNTED MECHANICAL REQUIREMENTS. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING GRID AND LIGHTING LAYOUT FOR COORDINATION OF FINAL DIFFUSER LOCATIONS.
12. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING DETAILS AND DIMENSIONS.
13. COORDINATE PLACEMENT OF ALL THERMOSTATS, ROOF MOUNTED EQUIPMENT, ETC. WITH ARCHITECTURAL AND STRUCTURAL TRADES.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH THAT OF OTHER TRADES. REFER TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL, AND OTHER DRAWINGS FOR COMPLETE INFORMATION PRIOR TO BID.
15. ROUGH-IN OR INSTALLATION OF OWNER FURNISHED EQUIPMENT SHALL NOT BEGIN UNTIL APPROVED EQUIPMENT DRAWINGS ARE OBTAINED FROM OWNER OR ARCHITECT. DO NOT SUBMIT SHOP DRAWINGS FOR ANY EQUIPMENT WHICH MAY BE COORDINATED WITH OWNER FURNISHED ITEMS UNTIL THE APPROVED DRAWINGS ARE OBTAINED FROM OWNER OR ARCHITECT. VERIFY THE APPROVED EQUIPMENT HAS THE SAME ROUGH-IN AND FINAL CONNECTION REQUIREMENTS AND DESIGN CRITERIA AS THE DOCUMENTS. NOTIFY ENGINEER OF ANY CHANGES, INCOMPATIBILITY, OR UNUSUAL CONDITIONS IMMEDIATELY. SEE SPECIFICATIONS OR DRAWINGS FOR LIST OF OWNER FURNISHED EQUIPMENT (WHERE APPLICABLE).
16. ALL MECHANICAL CONSTRUCTION DETAILS SHALL BE AS SHOWN AND AS REQUIRED TO MAINTAIN "UL" ASSEMBLY RATINGS AS SHOWN ON ARCHITECTURAL SHEETS. SEAL AROUND ALL PENETRATIONS THOROUGH UL RATED ASSEMBLIES, FIRE AND SMOKE WALLS. COORDINATE WITH GENERAL CONTRACTOR.
17. NO OTHER TRADES, I.E., ELECTRICAL, CEILING, PLUMBING, ETC., SHALL BE SUSPENDED, HUNG, OR SUPPORTED FROM DUCTWORK OR PIPING.
18. ROOFING CONTRACTOR SHALL BE RESPONSIBLE FOR FLASHING AND SEALING OF ALL ROOF PENETRATIONS.
19. SPECIAL CARE SHALL BE TAKEN ON THE ROOFS TO PREVENT DAMAGE. ANY DAMAGE SHALL BE PROMPTLY REPAIRED AT NO EXPENSE TO THE OWNER. COMPLY WITH BONDING REQUIREMENTS OF EXISTING ROOF.
20. REPLACE ALL ARCHITECTURAL FEATURES REMOVED OR DAMAGED DURING THE COURSE OF THE WORK.

CONTROL NOTES:

REFER TO GENERAL NOTES ON DRAWING.

1. ALL CONTROL DEVICES SHALL BE BY ONE MANUFACTURER. ALL CONTROL SET POINTS SHALL BE ADJUSTABLE. THERMOSTATS AND WIRING FOR FANS SHALL BE INCLUDED WITH CONTROLS.
2. THE CONTROL SYSTEM SHALL BE SUITABLE FOR THE LOCATIONS SHOWN ON THE PLANS.
3. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
4. PROVIDE LOCKABLE COVERS AND GUARDS FOR ALL THERMOSTATS AND SENSORS.
5. ALL THERMOSTATS, SENSORS, AND OTHER EXPOSED CONTROL DEVICE LOCATIONS SHALL BE COORDINATED WITH THE ENGINEER AND ARCHITECT BEFORE ROUGHING IN.
6. ALL CONTROLS SHALL BE TESTED AND CALIBRATED BEFORE TESTING AND BALANCING IS PERFORMED.
7. PROVIDE LAMINATED TAGS AT ALL CONTROL DEVICES INDICATING EQUIPMENT BEING CONTROLLED.
8. INTERLOCK CONTROLS WITH THE ELECTRICAL FIRE AND SMOKE ALARM SYSTEM COORDINATE WITH THE ELECTRICAL SYSTEMS CONTRACTOR FOR INTERFACE REQUIREMENTS OF THE SYSTEMS.
9. PROVIDE AUXILIARY CONTACTORS AS REQUIRED FOR OPERATIONS OF CONTROLSEQUENCES.
10. ALL WIRING SHALL BE IN CONDUIT WHERE ROUTED IN WALLS AND INSIDE MECHANICAL AND ELECTRICAL ROOMS. REFER TO THE SPECIFICATIONS.
11. EF-2 TO BE CONTROLLED BY TIMER IN STORAGE 111. TIMER TO BE PELTEC 600 SERIES LOW-VOLTAGE TIMER WITH RIB RELAY.
12. CONTROL DEVICES AND CONTROL SEQUENCES BY CAPITVEAIRE.

HVAC NOTES:

REFER TO GENERAL NOTES ON DRAWING FOR ADDITIONAL REQUIREMENTS.

1. SEE STRUCTURAL PLANS FOR EXACT DIMENSIONS AND DETAILS OF THE BUILDING.
2. ALL ROOF MOUNTED EQUIPMENT SHALL BE PROVIDED WITH STANDARD MANUFACTURER'S FABRICATED CURBS WHICH FACILITATE LEVEL MOUNTING OF THE EQUIPMENT (I.E. FACTORY FABRICATED TO COMPENSATE FOR ROOF SLOPE). OBTAIN ROOF SLOPES AND DIRECTION-OF-SLOPE FROM ARCHITECTURAL AND/OR STRUCTURAL PLANS. ALL ROOF CURBS SHALL BE A MINIMUM OF 8" HIGH. SHIMMING OF CURBS IS NOT ACCEPTABLE. UNLESS OTHERWISE SHOWN, ALL SERVICES TO AND FROM ROOF MOUNTED EQUIPMENT SHALL BE INSIDE PERIMETER OF CURB. ALL EQUIPMENT SHALL BE SET PLUMB AND LEVEL.
3. MAINTAIN MINIMUM CLEAR DISTANCE OF 5'0" BETWEEN PARAPET WALL AND ALL ROOF MOUNTED MECHANICAL EQUIPMENT (FANS, RTU'S, CONDENSERS, ETC.). MAINTAIN A CLEAR DISTANCE OF 10'0" MINIMUM BETWEEN PARAPET WALL AND FLUES FROM GAS BURNING EQUIPMENT.
4. MAINTAIN A MINIMUM OF 10'0" BETWEEN ALL FRESH AIR INTAKES AND PLUMBING VENTS, EXHAUST FAN DISCHARGE, FLUES, ETC. COORDINATE WITH ALL OTHER CONTRACTORS ON SITE.
5. SEAL ALL ROOF AND WALL PENETRATIONS. FLASH AND COUNTERFLASH ROOF PENETRATIONS. MINIMUM HEIGHT OF FLASHING IS EIGHT (8) INCHES ABOVE ROOF.
6. ALL HVAC WORK TO BE PER SMACNA AND ALL APPLICABLE CODES.
7. ALL DUCTS SHALL BE MOUNTED HIGH AS POSSIBLE AGAINST BOTTOM OF JOISTS EXCEPT AS REQUIRED TO AVOID CONFLICTS WITH INTERSECTING DUCTS. DIAGONALLY OFFSET DUCTS IMMEDIATELY BEFORE AND AFTER PASSING UNDER INTERSECTING DUCTS OR LARGE STRUCTURAL MEMBERS TO MAINTAIN DUCT TIGHT TO STRUCTURE.
8. PROVIDE TURNING VANES AT ALL ELBOWS GREATER THAN 45DEGREES. TURNING VANES SHALL BE DOUBLE THICKNESS.
9. MAXIMUM 4'0" FLEX DUCT ON ALL DIFFUSER RUNOUTS. CONNECTIONS TO FLEX DUCT SHALL BE SMOOTH ON AIRFLOW SIDE.
10. PROVIDE INDICATED BRANCH TAKEOFF AND DAMPER AT EACH CONNECTION OF ROUND BRANCH DUCTS TO A RECTANGULAR DUCT.
11. PROVIDE FLEXIBLE CONNECTIONS AND TRANSITIONS ON DUCT INLET AND OUTLET CONNECTIONS TO ALL ROOF TOP UNITS, EXHAUST FANS, AIR BOXES, ETC. WHERE EQUIPMENT HAS ROTATING PARTS (MOTORS, ETC.).
12. SEE ARCH REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED AIR DEVICES.
13. INTERNALLY INSULATE ALL RECTANGULAR SUPPLY AND RETURN AIR DUCTS. ALL BRANCH DUCTS TO BE EXTERNALLY INSULATED WITH FIBERGLASS DUCT INSULATION WRAP.
14. THE DUCT SIZES ON THE DRAWINGS SHALL BE INCREASED IN SIZE TO ACCOMMODATE LINER THICKNESS. SIZES SHOWN ON THE DRAWINGS ARE THE REQUIRED CLEAR INSIDE DIMENSIONS OF THE LINER WHERE USED.
15. PRIOR TO WEATHER-PROOFING EXTERIOR DUCTWORK, APPLY HARD CAST SEALER AT ALL DUCT JOINTS AND SEAMS. INSULATE WITH FIBERGLASS HIGH DENSITY RIGID BOARD INSULATION, 3" THICK, EQUAL TO OWENS CORNING TYPE 705. WEATHER-PROOF EXTERIOR DUCTWORK BY COVERING ALL JOINTS, SEAMS AND HOLES WITH TWO 1/8" THICK WET COATS OF VAPOR BARRIER MASTIC REINFORCED WITH GLASS FABRIC OVER ENTIRE SURFACE. APPLY TWO 1/8" THICK COATS OF BREATHER MASTIC REINFORCED WITH GLASS FABRIC LAPPING ALL JOINTS A MINIMUM OF 2". INSTALL ALUMINUM JACKET OVER MASTIC.
16. INSTALL SCHEDULED FILTERS AT THE COMPLETION OF CONSTRUCTION. USE ONE SET OF SCHEDULED FILTERS DURING CONSTRUCTION AS INDICATED ON THE SCHEDULE. INSTALL FINAL SET PRIOR TO TEST AND BALANCE.
17. BALANCE AIR SYSTEM TO PROVIDE INDICATED AIRFLOWS. SEE SPECIFICATIONS FOR OTHER TEST AND BALANCE REQUIREMENTS. SUBMIT FINAL BALANCE OF AIR SYSTEMS (FLOW AND TEMPERATURE) FOR REVIEW.
18. MECHANICAL CONTRACTOR (MC) SHALL COORDINATE AND VERIFY THE FOLLOWING WITH THE ELECTRICAL CONTRACTOR (EC) PRIOR TO BID:
    A) ALL STARTERS: FURNISHED BY MC, INSTALLED BY EC.
    B) DUCT SMOKE DETECTORS: FURNISHED BY MC, INSTALLED BY EC.
    C) ELECTRIC DAMPER ACTUATORS: FURNISHED BY MC, INSTALLED BY MC.
    D) DISCONNECTS:
       WHERE NOT FURNISHED WITH EQUIPMENT: FURNISHED BY EC, INSTALLED BY EC.
       WHERE FURNISHED WITH EQUIPMENT: FURNISHED BY MC, INSTALLED BY EC.
19. COORDINATE FINAL PLACEMENT OF ALL THERMOSTATS WITH ARCHITECT AND ENGINEER. ANY THERMOSTAT THAT IS REQUIRED TO BE MOUNTED ON AN EXTERIOR WALL SHALL BE MOUNTED ON AN INSULATED PAD.
20. INSTALL SMOKE DETECTOR IN RETURN DUCT OF ALL INDICATED AIR HANDLERS.
21. PROVIDE HVAC CONDENSATE DRAIN. INSTALL WITH TRAP AND AIR VENT PER CODE AND IS INDICATED AND FULL SIZE OF DRAIN PAN CONNECTION.

KITCHEN HOOD NOTES:

1. EXHAUST DUCT CONSTRUCTION AND INSTALLATION SHALL COMPLY WITH NFPA 96.
2. HOOD SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH NFPA 96 AND INSTALLATION SHALL BE AS COORDINATED WITH HOOD MANUFACTURER.
3. DUCT ROUTING SHALL BE AS INDICATED AND AS DIRECT AS POSSIBLE.
4. EXHAUST DUCT SHALL BE NOT LESS THAN 16 GAUGE CARBON STEEL. ALL SEAMS AND JOINTS ARE TO HAVE A LIQUID TIGHT WELD. DUCT SHALL NOT BE RUN FLAT TO PREVENT COLLECTION OF GREASE RESIDUE. SLOPE DUCT A MINIMUM OF 1/4" PER FOOT TOWARD THE HOOD.
5. EXHAUST DUCT SHALL HAVE ONE LAYER OF 3M FIRE BARRIER DUCT WRAP 15A, OR EQUAL, TO PROVIDE 2-HOUR FIRE RESISTIVE RATING AND ZERO-CLEARANCE FROM COMBUSTIBLES.
6. THE EXHAUST DUCT SHALL HAVE A FIRE RATED ACCESS DOOR FOR CLEANING DUCT AT ALL CHANGES IN DIRECTION. ACCESS SHALL BE AT SIDES OF DUCT AND COMPLY WITH NFPA 96.
7. A SIGNAL FROM FIRE EXTINGUISHING SYSTEM SHALL STOP THE MAKEUP AIR UNIT FAN AND EXHAUST FAN.
8. INSTALLATION SHALL ALLOW FOR EXHAUST DUCT EXPANSION WITHOUT LOSS OF SYSTEM INTEGRITY DURING A FIRE.

HVAC LEGEND

ABBREVIATION OR SYMBOL	DESCRIPTION
AD	AIR DOOR
AH	AIR HANDLING UNIT
A.F.F.	ABOVE FINISHED FLOOR
AV	ATTIC VENT
B	BOILER
BHP	BRAKE HORSE POWER
BTUH	BRITISH THERMAL UNIT PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CV	CONSTANT VOLUME
CVB	CONSTANT VOLUME TERMINAL
DB	DRY BULB TEMPERATURE
DP	DIFFERENTIAL PRESSURE
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE OF THE COIL
EF	EXHAUST FAN
ERU	ENERGY RECOVERY UNIT
ESP	EXTERNAL STATIC PRESSURE
EUH	ELECTRIC UNIT HEATER
EWT	ENTERING WATER TEMPERATURE
FAS	FACILITY AUTOMATION SYSTEM
FCU	FAN COIL UNIT
FO	FLAT OVAL
FPMB	FAN POWERED MIXING TERMINAL
FPM	FEET PER MINUTE (VELOCITY)
GH	GRAVITY HOOD
GPM	GALLONS PER MINUTE
GUH	GAS UNIT HEATER
HP	HORSEPOWER
KW	KILOWATT
L	LOUVER
LAT	LEAVING AIR TEMPERATURE OF THE COIL
LBS	POUNDS
LWT	LEAVING WATER TEMPERATURE
MAU	MAKE-UP AIR UNIT
MAX.	MAXIMUM
MBH	1000 BTUH
MCA	MINIMUM CIRCUIT AMPACITY
MIN.	MINIMUM
MHP	MOTOR HORSE POWER
MOCP	MAXIMUM OVER CURRENT PROTECTION
N/A	NOT APPLICABLE
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NK.	NECK
NTS	NOT TO SCALE
OBD	OPPOSED BLADE DAMPER
OFCI	OWNER FURNISHED/CONTRACTOR INSTALLED
OSA	OUTSIDE AIR
P	PUMP
PBD	PARALLEL BLADE DAMPER
PDU	POOL DEHUMIDIFIER UNIT
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RC	REMOTE CONDENSER
RF	RELIEF FAN
RH	RELATIVE HUMIDITY
RHP	RADIANT HEATING PANEL
RPM	REVOLUTION PER MINUTE
RTH	RADIANT TUBE HEATER
RTU	ROOF TOP (AIR CONDITIONING) UNIT
SA	SUPPLY AIR
SC	SENSIBLE CAPACITY
SP	STATIC PRESSURE
SPEC.	SPECIFICATION
TC	TOTAL CAPACITY
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TYP.	TYPICAL
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VAVB	VARIABLE AIR VOLUME TERMINAL
VSD	VARIABLE SPEED (FREQUENCY) DRIVE
WB	WET BULB TEMPERATURE
WG	WATER GAUGE
'	FEET
"	INCHES
Ø	ROUND DUCT

DETAIL/SECTION NUMBER

DETAIL/SECTION DESIGNATION

SHEET NUMBER

ABBREVIATION OR SYMBOL	DESCRIPTION
	NEW EQUIPMENT
CS	CEILING SUPPLY
DG	DOOR GRILLE
CE	CEILING EXHAUST
LSD	LINEAR SLOT DIFFUSER
CR	CEILING RETURN
TR	TRANSFER GRILLE
SWE	SIDE WALL EXHAUST
SWS	SIDE WALL SUPPLY
SWR	SIDE WALL RETURN
CS-1 150	MARK AIR FLOW (CFM) — AIR DEVICE DESIGNATION
	CEILING SUPPLY DIFFUSER
	CEILING RETURN GRILLE
	CEILING EXHAUST GRILLE
	LINEAR SLOT DIFFUSER
	GRILLE OR REGISTER ON BOTTOM OF DUCTWORK
	SIDEWALL SUPPLY/RETURN
18/24	DUCT SIZE (FOR DOUBLE LINE DUCT)
	SUPPLY DUCT UP
	SUPPLY DUCT DOWN
	RETURN OR EXHAUST DUCT UP
	RETURN OR EXHAUST DUCT DOWN
	RECTANGULAR/ROUND TRANSITION (DOUBLE LINE DUCT)
	FLEXIBLE DUCT CONNECTION
F S C	(1) FIRE DAMPER, (2) COMBINATION FIRE/SMOKE DAMPER, (3) SMOKE DAMPER
D C F SD	(1) OPPOSED BLADE DAMPER, (2) PARALLEL BLADE DAMPER, (3) SMOKE DETECTOR
T S	THERMOSTAT OR SENSOR
C	CO SENSOR
2	KEYED NOTE

ABBREVIATION OR SYMBOL	DESCRIPTION
CD	CONDENSATE DRAIN
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
RS/RL	REFRIGERANT SUCTION / LIQUID
MUP	MAKE-UP WATER
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	GATE VALVE
	GLOBE VALVE
	NEEDLE VALVE
	PLUG VALVE
	PRESSURE REGULATING VALVE
	RELIEF VALVE
S	SOLENOID VALVE
	VALVE IN RISER
	PIPE UNION
	AUTO AIR VENT
	MANUAL AIR VENT
	ECCENTRIC TRANSITION
	CONCENTRIC TRANSITION
	PRESSURE GAUGE
	STEAM TRAP
	STRAINER (Y-TYPE)
	TEMPERATURE & PRESSURE PLUG
	THERMOMETER
	DIRECTION OF FLOW
	DIRECTION OF FLOW
	FLEXIBLE PIPE CONNECTION
	FLEXIBLE PIPE CONNECTION
	FLEXIBLE PIPE CONNECTION
	PIPE DOWN
	TEE DOWN
	PIPE UP
	TEE UP
	BRANCH - BOTTOM OF PIPE
	BRANCH - TOP OF PIPE
	ELBOW
	TEE
	45° ELBOW
	CAP
	END OF LINE CLEANOUT

* NOT ALL SYMBOLS MAY APPLY TO THIS PROJECT

MECHANICAL DRAWING INDEX

STATE OF ARKANSAS REGISTERED ENGINEER JOHN WESLEY BIBB No. 9119 01.31.25

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BID DOCUMENTS

ENGLISH PUB

Little Rock, Arkansas

Issue Date:
01.31.25

REVISIONS

NUMBER	DATE	DESCRIPTION
1	02.25.25	Addendum 1
3	04.03.25	Addendum 3

Contents:
MECHANICAL NOTES, LEGEND, & INDEX

M001

HOOD INFORMATION – JOB#7227216

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1	KH-FRONT	5424 ND-2	CAPTIVEAIRE	12' 0"	600 DEG	I	HEAVY	170	2040	13"	13"	4"		2040	1738	-0.948"	430 SS WHERE EXPOSED	ALONE	ALONE
2	KH-BACK	5424 ND-2	CAPTIVEAIRE	12' 0"	600 DEG	I	HEAVY	170	2040	13"	13"	4"		2040	1738	-0.948"	430 SS WHERE EXPOSED	ALONE	ALONE
3	DH-1	4224 VHB-G	CAPTIVEAIRE	3' 6"	700 DEG	II	N/A	129	450			4"	8"	450	1289	-0.077"	430 SS 100%	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	UTILITY CABINET(S) LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1	KH-FRONT	CAPTRATE SOLO FILTER	9	16"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO	LEFT	12"x54"x24"	TANK FS	4.0/4.0	SC-321110MA_MA4	1 LIGHT 1 FAN	YES	1039 LBS
2	KH-BACK	CAPTRATE SOLO FILTER	9	16"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO	RIGHT	12"x54"x24"	TANK FS	4.0/4.0			YES	1004 LBS
3	DH-1						0									NO	159 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	KH-FRONT	FIELD WRAPPER 17.00" HIGH FRONT, LEFT.
		RIGHT SIDESPLASH 122.00" HIGH X 72.00" LONG 430 SS VERTICAL.
		RIGHT END STANDOFF (FINISHED) 1" WIDE 54" LONG INSULATED.
		INSULATION FOR TOP OF HOOD.
		STRUCTURAL FRONT PANEL.
		RISER SENSOR INSTALL 6IN PLEN.
		LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
		RIGHT WALL AS END PANEL.
2	KH-BACK	FIELD WRAPPER 17.00" HIGH FRONT, RIGHT.
		LEFT SIDESPLASH 122.00" HIGH X 72.00" LONG 430 SS VERTICAL.
		LEFT END STANDOFF (FINISHED) 3" WIDE 54" LONG INSULATED.
		INSULATION FOR TOP OF HOOD.
		STRUCTURAL FRONT PANEL.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
		LEFT WALL AS END PANEL.
3	DH-1	FIELD WRAPPER 17.00" HIGH FRONT, LEFT, RIGHT.

SPECIFICATION: CAPTRATE® GREASE-STOP® SOLO FILTER

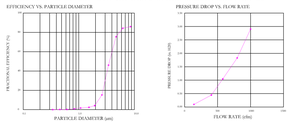
THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

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 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE AND BTR GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 10 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05.



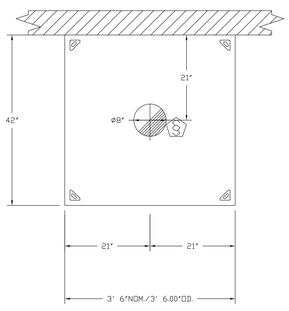
CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH.
NFPA #96
NSF STANDARD #2
UL STANDARD #1046
INT. MECH. CODE (IMC)
ULC-S649

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH

NFPA #96
UL 710 & ULC710 STANDARDS
E.T.L. LISTED 3054804-001

GENERAL NOTES :

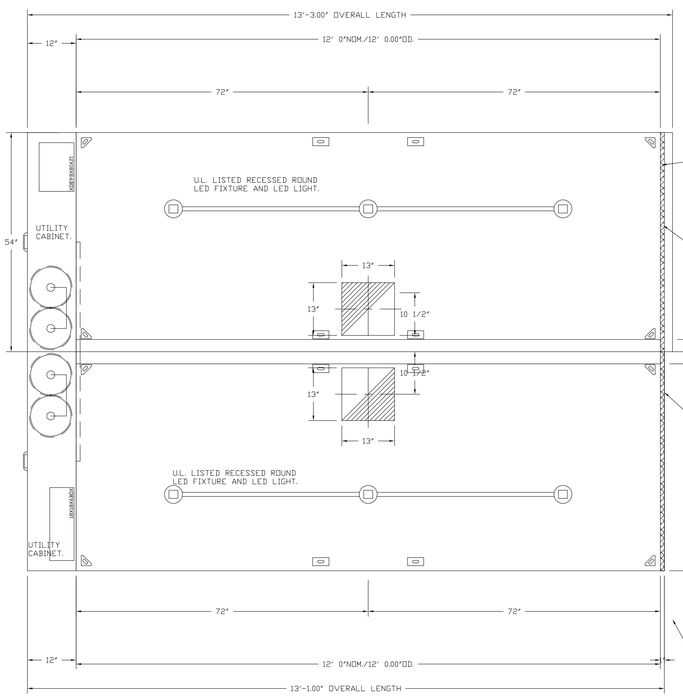
1. ELECTRICAL HOOK-UP TO CAPTIVEAIRE CONTROLS (MOTOR STARTERS, FAN SWITCHES, DUCT STATS, FAN DISCONNECTS, RELAYS, ETC.) BY OTHERS.
2. FIRE CHASE BY OTHERS, IF REQUIRED.
3. ALL PHASES OF INSTALLATION SHALL COMPLY WITH NFPA 96.
4. WRITTEN MEASUREMENTS HAVE PRECEDENCE OVER SCALE.
5. PROVIDE CLEANOUTS IN EXHAUST AIR DUCTS AS INDICATED TO ALLOW CLEANING AT ALL BENDS AND HORIZONTAL RUNS.
6. EXHAUST DUCT TO BE CAPTIVEAIRE SINGLE WALL WITH 2 LAYERS OF FIRE WRAP OR DOUBLE WALL MODEL #2,#3,OR Z3 PREFABRICATED GREASE DUCT. ALTERNATIVELY,FIELD FABRICATED WELDED GREASE DUCT WITH 2 LAYERS OF FIRE WRAP IS ACCEPTABLE AS LONG AS DUCT AS BUILT WITHOUT SHARP BENDS OR ANY FEATURES THAT CAUSE EXCESSIVE STATIC PRESSURE OR SYSTEM EFFECT.
7. FAN TO HAVE A MINIMUM OF 10 FT. OF CLEARANCE FROM THE OUTLET TO ADJACENT BUILDINGS, PROPERTY LINES, AIR INTAKES OR 3 FT. VERTICAL CLEARANCE PER NFPA96
8. HORIZONTAL EXHAUST DUCT TO SLOPE NOT LESS THAN 1/4" PER FOOT TOWARD HOOD FOR DUCT LESS THAN 75' LONG. 1" PER FOOT SLOPE FOR DUCT LONGER THAN 75'
9. HOOD TO OVERHANG COOKING EQUIPMENT 6" ON ALL OPEN SIDES.
10. EXHAUST DUCT TO BE PROTECTED FROM COMBUSTIBLES PER NFPA96 AND LOCAL CODE.
11. BUILDING PRESSURE SHALL NOT EXCEED 0.02" WATER COLUMN AT EXTERIOR DOORS.
12. KITCHEN SHALL BE BALANCED TO BE NEGATIVE WITH RESPECT TO THE DINING ROOM.



PLAN VIEW – HOOD #3 (DH-1)
3' 6.00" LONG 4224VHB-G

PLAN VIEW – HOOD #2 (KH-BACK)
12' 0.00" LONG 5424ND-2

NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12' AND LONGER.



PLAN VIEW – HOOD #1 (KH-FRONT)
12' 0.00" LONG 5424ND-2

NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12' AND LONGER.

CLEARANCE TO COMBUSTIBLES

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

- *0" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.
- HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.

ARKANSAS MECHANICAL OFFICE
PRICING or QUESTIONS
PHONE: (501) 500-5450 EMAIL: REG146@CAPTIVEAIRE.COM

** Below Work to be performed by factory trained and TAB certified servicing agent: **
- Verify that all components are installed correctly and are in accordance with as built drawings
- All equipment to be commissioned per start-up procedures in O&M documents
- Check fan rotation, belt tension, blower and motor rpm, amperage and adjust if necessary
- Hood / fans test and balance worksheet and provide to the Mechanical Engineer
- Verify and adjust equipment to assure hood captures correctly and Features perform as designed
- Consult with contractors and answer their questions or direct them to the technical support line
- Provide guidance on the proper function and maintenance of equipment to Owners or General Contractors
- Complete Manufacturers Startup and Warranty form and send copy to Mechanical Engineer for their Files

REVISIONS

	DESCRIPTION	DATE:
1		
2		
3		
4		

CAPTIVE-AIRE
Arkansas Mechanical
140 Southwinds Rd. Suite 133, Farmington, AR, 72730 PHONE: (501) 500 - 5450 FAX: 5017106670 EMAIL: reg146@captiveaire.com
www.captiveaire.com

English Pub - FARS - R1
Little Rock, AR, 72201

DATE: 1/17/2025

DWG.#: 7227216

DRAWN BY: Josh I 146

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 1

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3	04.03.25	Addendum 3

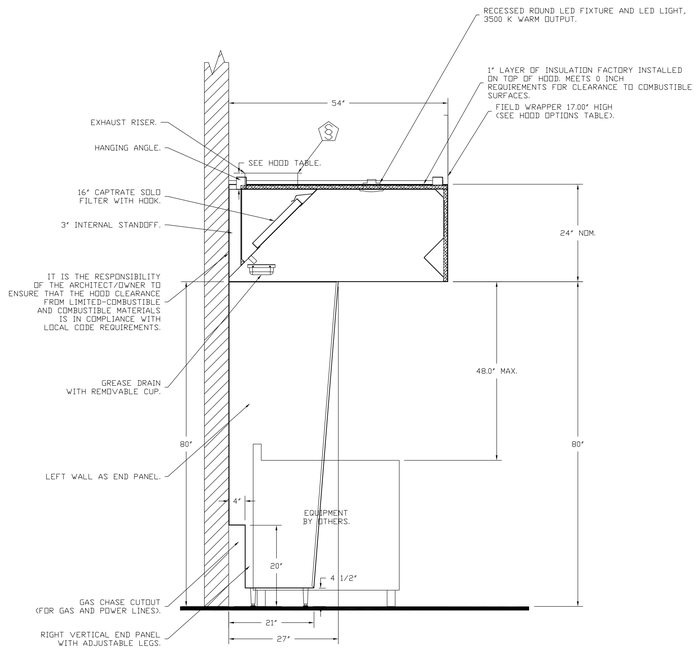
Contents:
CAPTIVEAIRE SYSTEM DETAILS

STATE OF ARKANSAS REGISTERED ENGINEER No. 9419 WESLEY WILCOX 01.31.25

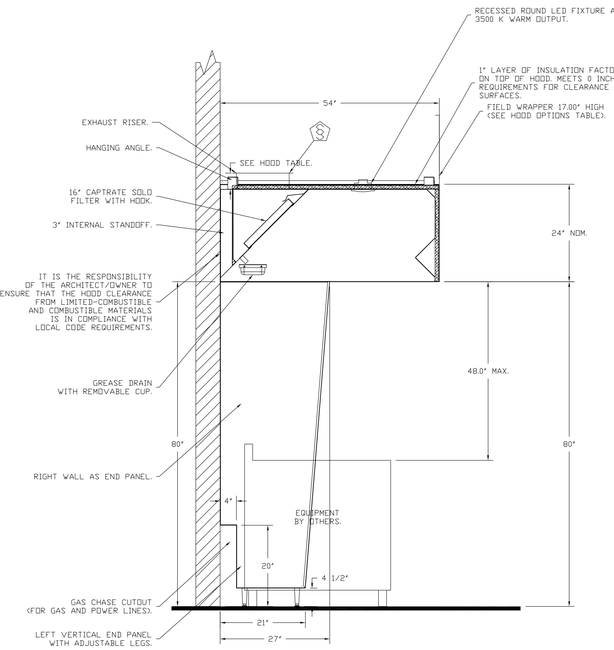
Batson Inc. ENGINEERING SOLUTIONS
1300 Brookwood Drive
Little Rock Arkansas 72202
501-664-3311 www.batson.com

CERTIFICATE OF AUTHORIZATION BATSON, INC. No. 99 ARKANSAS

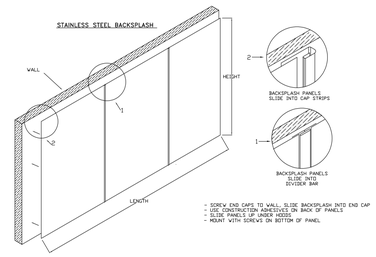
M401

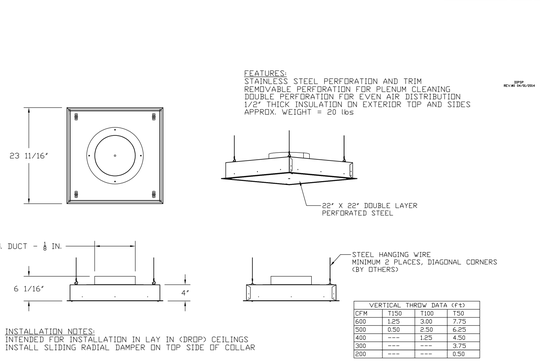


SECTION VIEW – MODEL 5424ND-2
HOOD – #2 (KH-BACK)



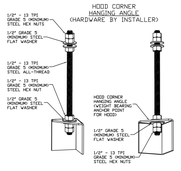
SECTION VIEW – MODEL 5424ND-2
HOOD – #1 (KH-FRONT)





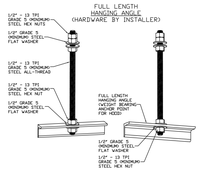
INSTALLATION NOTES:
INTENDED FOR INSTALLATION IN LAY IN (DROP) CEILINGS
INSTALL SLIDING RADIAL DAMPER ON TOP SIDE OF COLLAR

VERTICAL THROW DATA (FT)			
CFM	T150	T100	T50
600	1.25	3.00	7.75
500	0.50	2.50	6.25
400	---	1.25	4.50
300	---	---	3.75
200	---	---	0.50



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD, SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



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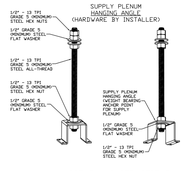

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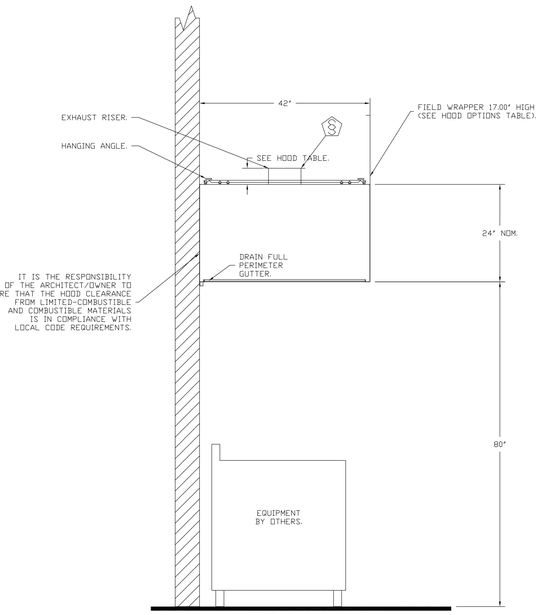

SECTION VIEW – MODEL 4224VHB-G
HOOD – #3 (DH-1)

REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
△		

CAPTIVEAIRE

Arkansas Mechanical

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STATE OF ARKANSAS — MICHAEL WESLEY WHITE — REGISTERED ENGINEER — NO. 24119 — 03.03.25

Batson Inc. ENGINEERING SOLUTIONS
1300 Brookwood Drive, Little Rock Arkansas 72202
501-664-3311 www.batson.com

CERTIFICATE OF AUTHORIZATION — BATSON INC. No. 99 — EXPIRES: DECEMBER 31, 2025

M402

POLK STANLEY WILCOX

FIRE SYSTEM INFORMATION – JOB#7227216

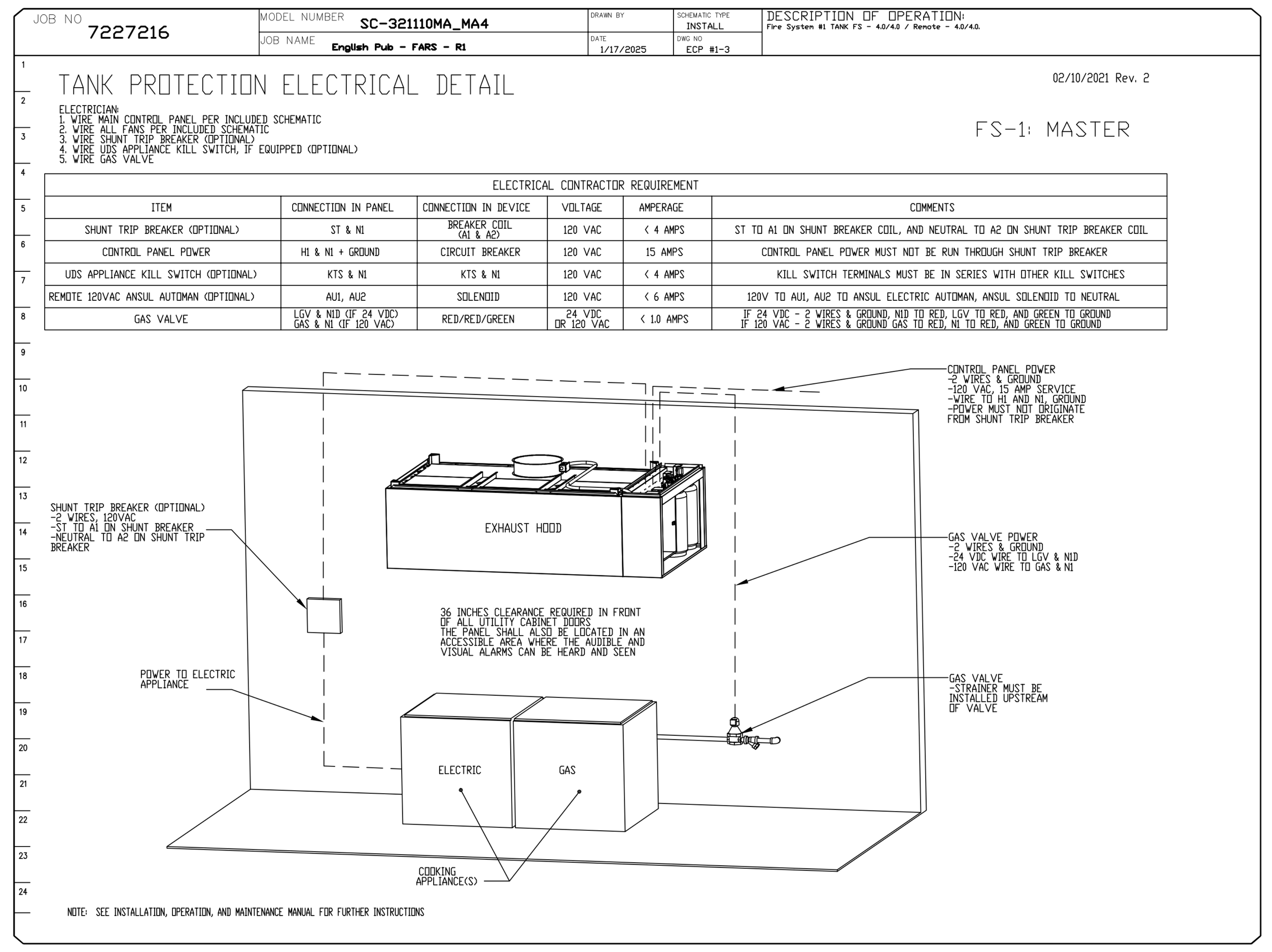
FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION SYSTEM	INSTALLATION LOCATION ON HOOD
1		TANK FS	4.0/4.0	40	74	FIRE CABINET RIGHT	RIGHT, HOOD 2
			4.0/4.0	40		FIRE CABINET LEFT	LEFT, HOOD 1

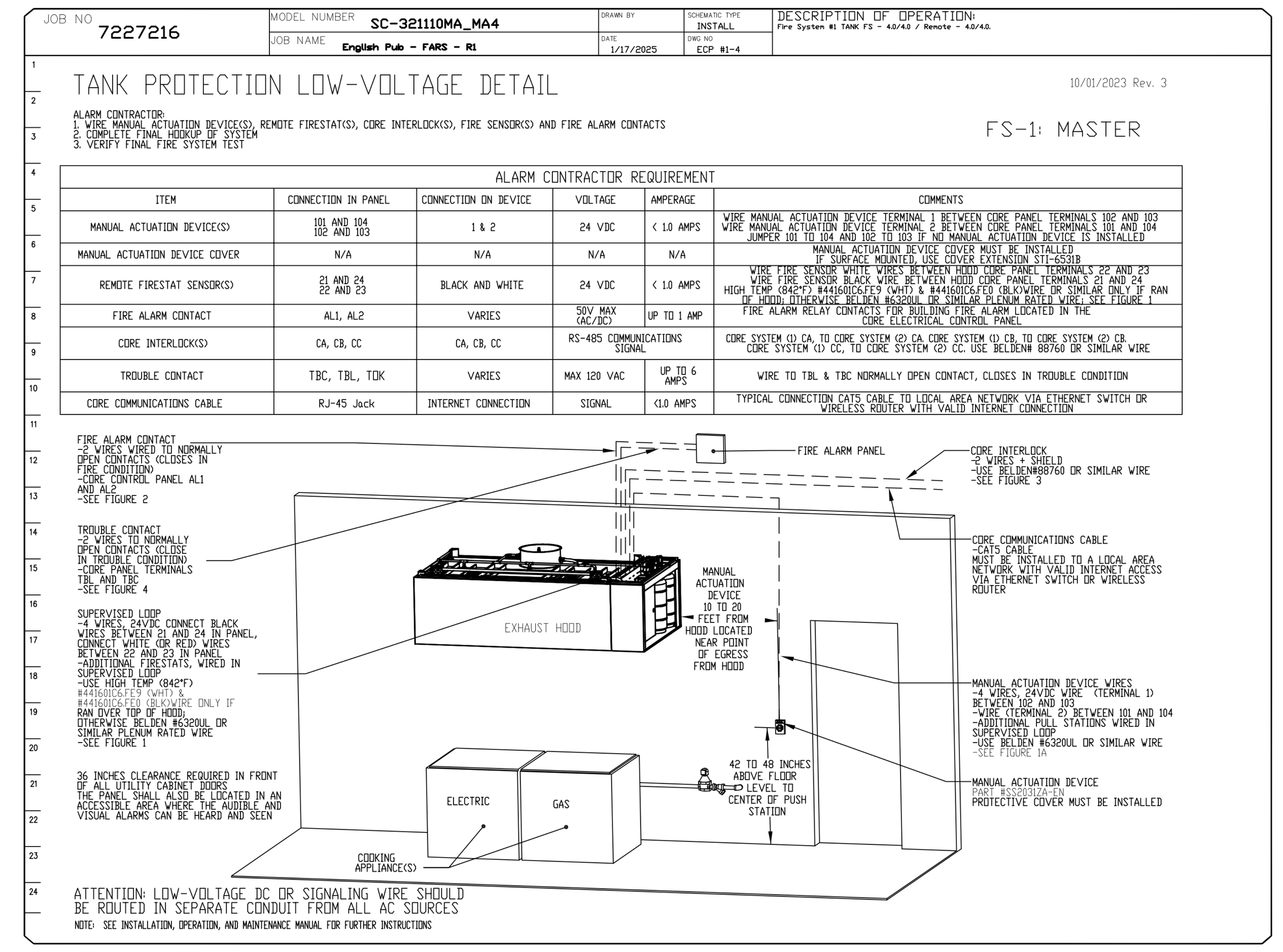
GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	2.000	CAPTIVEAIRE SYSTEMS

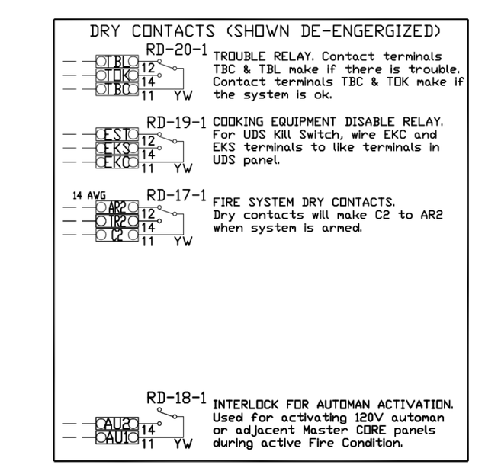
FIRE SYSTEM PARTS LIST KEY

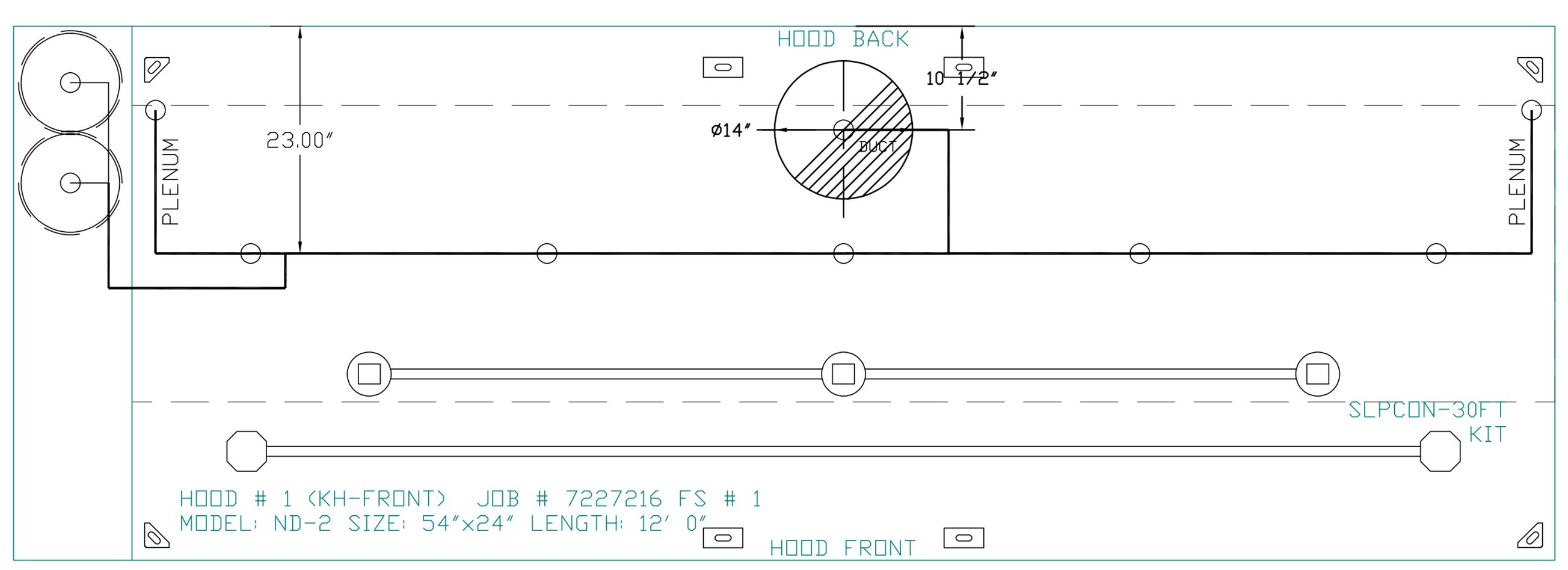
FIRE SYSTEM NO	TAG	KEY NUMBER – PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 – 0 – TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 – 0 – TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 – 0 – 12-F28021-32144-OT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F. (A0034310).	2	0
		0 – 0 – 4429K153 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	4	0
		0 – 0 – 4429K422 1/2" X 1/4" BRASS REDUCING BUSHING.	2	0
		0 – 0 – 79525 1/2" 90 PRO-PRESS ELBOW WITH 1/2"NPT FEMALE CONNECTION, VIEGA.	2	0
		0 – 0 – 79580 1/2" X 1/2" PRO-PRESS TEE X 1/2"NPT FEMALE CONNECTION, VIEGA.	4	0
		0 – 0 – 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) – SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	2	0
		0 – 0 – 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	2	0
		0 – 0 – 87-300001-001 TANK – PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	4	0
		0 – 0 – 87-300030-001 PRIMARY ACTUATOR KIT (PAK) – ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	2	0
		0 – 0 – 87-300033-001 DIN CONNECTOR, CANFIELD PART #5J560-201-EU0A, TANK FIRE SUPPRESSION, SUBMINATURE SOLENOID CONNECTION (CED VENDOR 30377).	2	0
		0 – 0 – 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	16	0
		0 – 0 – 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	8	0
		0 – 0 – A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	2	0
		0 – 0 – A31484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	2	0
		0 – 0 – DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	4	0
		0 – 0 – SLPCON-03FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 2' GAP. 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 – SLPCON-30FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UPTO 29' GAP. KIT CONTAINS 32 FEET OF BLACK MG WIRE, 32 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.	12	0
		0 – 0 – TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	4	0
		0 – 0 – WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	4	0
		34 – 34 – A0034331 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT. RED COLOR.	2	0

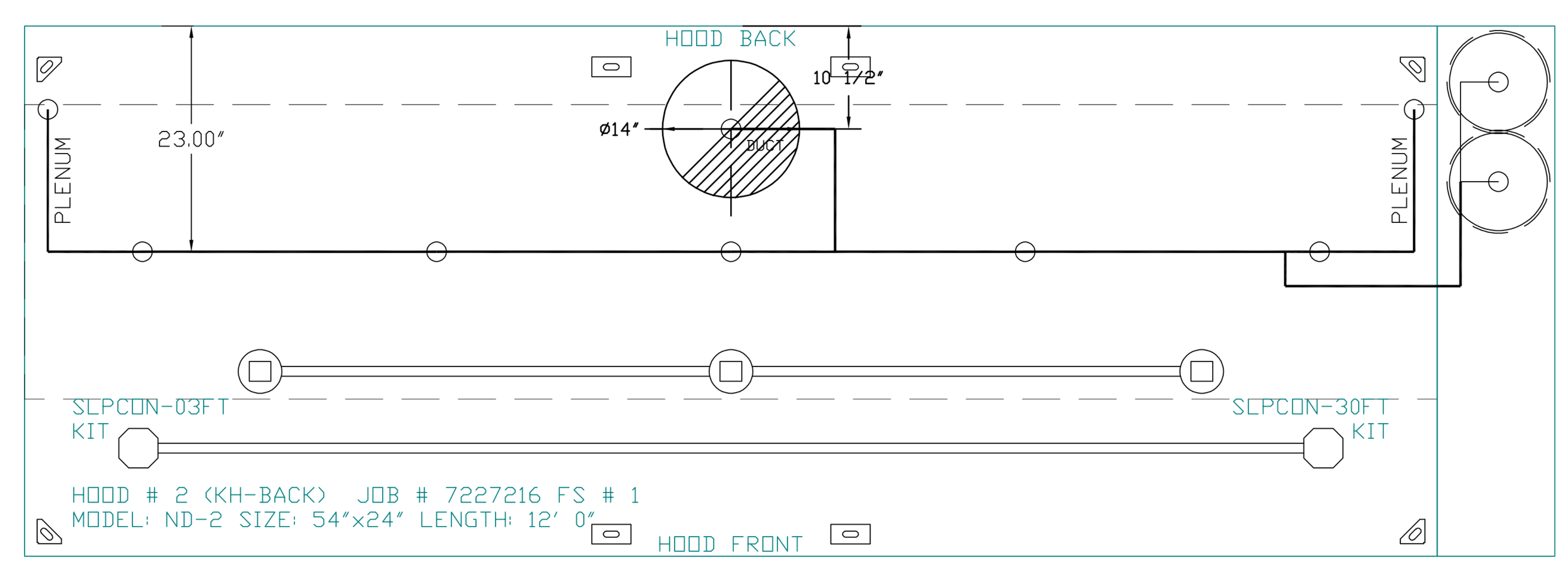


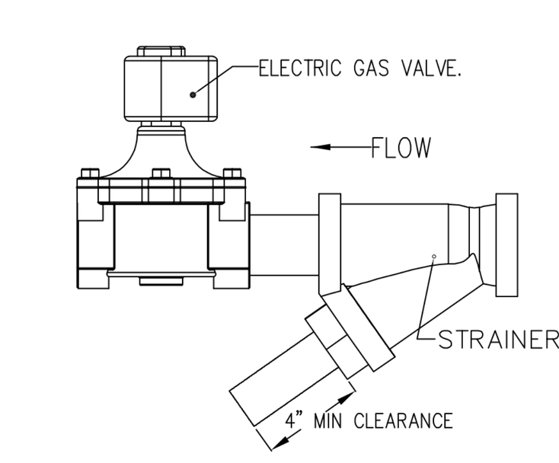


INCLUDES: FIELD INSTALLATION AND HOOKUP DURING NORMAL BUSINESS HOURS BY CERTIFIED INSTALLERS ONLY IN THE LOCATION NOTED ABOVE, TWO SITE VISITS ONLY (ONE VISIT TO SET PULL STATION & SYSTEM HOOKUP AND ONE VISIT FOR ONE TEST; ADDITIONAL VISITS WILL RESULT IN ADDITIONAL CHARGES), ONE MECHANICAL OR ELECTRICAL GAS VALVE PER SYSTEM AT A MAXIMUM SIZE OF 2", PERMIT, AND SYSTEM TEST.
EXCLUDES: UNION LABOR & PREVAILING WAGE (LABOR & WAGES WILL BE ADDED IF APPLICABLE), GAS VALVE INSTALLATION, ELECTRICAL HOOKUP AND CONNECTIONS, HANGING OF FIRE CABINET, SHUNT TRIP, HANDHELD EXTINGUISHER(S), ON-SITE RE-PIPING DUE TO EQUIPMENT LAYOUT CHANGES.









ALL GAS VALVES/STRAINERS

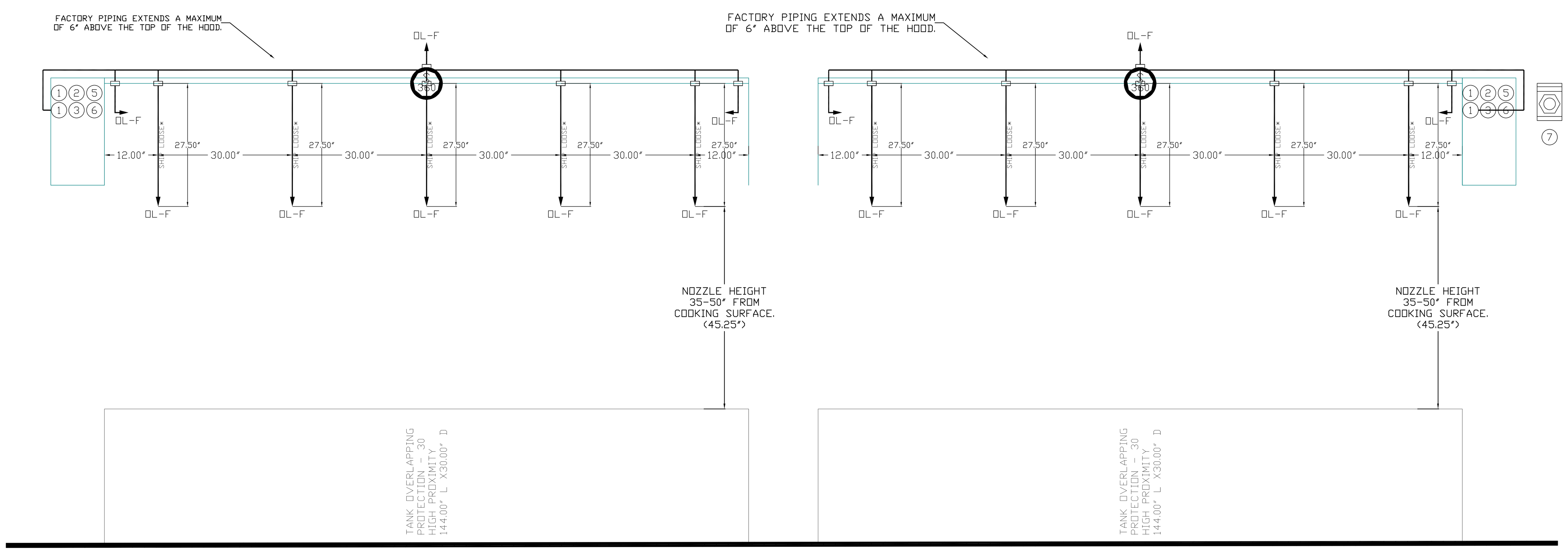
PROPER CLEARANCE MUST BE PROVIDED IN ORDER TO SERVICE THE STRAINERS A MINIMUM OF 4" CLEARANCE DISTANCE MUST BE PROVIDED AT THE BASE OF THE STRAINER CUSTOMER MUST VERIFY BTU CONSUMPTION AS WELL AS PRESSURE RATING SPECIFIC GRAVITY OF NATURAL GAS = 0.64, SPECIFIC GRAVITY OF LP = 1.52.

GAS VALVE INFO TYPE	SIZE	VOLTAGE	INSTALLATION MOUNTING ORIENTATION
ELECTRICAL	TBD	120 VAC	HORIZONTAL PIPE

PLEASE CONFIRM SIZE AND CALL 501-500-5450 TO ORDER CORRECT GAS VALVE.

REQUEST OVERNIGHT SHIPPING IF NEEDED.

GAS VALVE IS NOT SHIPPED WITH REST OF ORDER



NOTES
- FIELD PIPE DROPS AS SHOWN
  PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE 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 LOOSE.
- 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 FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

- OL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS

JOB #: 7227216.
JOB NAME: ENGLISH PUB – FARS – R1.

SYSTEM SIZE: TANK-SP-2 WITH REMOTE TANK-SP-2 DESIGN FP: 74. MAXIMUM FP: 80.
HOOD # 1 12' 0.00" LONG x 54" WIDE x 24" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 12' 0.00" LONG x 54" WIDE x 24" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT 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 PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

LEGEND – FIRE CABINET TANK SYSTEM

1 4 GALLON TANK.
2 PRIMARY ACTUATOR RELEASE.
3 SECONDARY ACTUATOR RELEASE.
4 PRESSURE SUPERVISION SWITCH.
5 PRIMARY HOSE ASSEMBLY.
6 SECONDARY HOSE ASSEMBLY.
7 REMOTE MANUAL ACTUATION DEVICE.

REVISIONS

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Arkansas Mechanical
140 Southwinds Rd. Suite 133, Farmington, AR, 72730 PHONE: (501) 500 - 5450 FAX: 5017106670 EMAIL: rsg146@captiveaire.com
www.captiveaire.com

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DATE: 1/17/2025

DWG.#: 7227216

DRAWN BY: Josh | 146

SCALE: 3/4" = 1'-0"

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ENGINEERING SOLUTIONS
1300 Brookwood Drive
Little Rock Arkansas 72202

M403

EXHAUST FAN INFORMATION – JOB#7227216

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF-1	1	DU85HFA	CAPTIVEAIRE	2040	1.250	1543	TEAO-ECM	1.000	0.6580	1	115	11.6	646 FPM	94	15.7
2	KEF-2	1	DU85HFA	CAPTIVEAIRE	2040	1.250	1543	TEAO-ECM	1.000	0.6580	1	115	11.6	646 FPM	94	15.7
3	DEF-1	1	DU12HFA	CAPTIVEAIRE	450	0.200	1495	ODP	0.180	0.0930	1	115	1.9	319 FPM	57	8.8

DOAS/RTU FAN SCHEDULE – JOB#7227216

FAN INFORMATION											ELECTRICAL INFORMATION				
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	MCA	MOCP
4	RTU-1 (KITCHEN)	1	CAS-HVAC3-I.400-20-30T	CAPTIVEAIRE	20P-3	0	3500	3500	3243	1.000	3.00	3	208	135.2A	150A
5	RTU-2 (DINING)	1	CAS-HVAC3-I.200-18-15T	CAPTIVEAIRE	18P-3	1170	1560	2730	2526	1.000	3.00	3	208	64A	70A
6	RTU-3 (UPSTAIRS BAR)	1	CAS-HVAC1-I.75-15-5T	CAPTIVEAIRE	15P-1	810	350	1160	1201	1.000	1.50	3	208	26.8A	30A
7	RTU-4 (RR)	1	CAS-HVAC1-I.100-15-7.5T	CAPTIVEAIRE	15P-1	810	700	1510	1356	1.000	2.00	3	208	36.1A	40A

FAN UNIT NO	COOLING INFORMATION										
	OUTSIDE AIR		MIXED AIR		LEAVING AIR			CAPACITY		IEER	ISMRE
	DB	WB	DB	WB	DB	WB	DP	TOTAL	SENS.		
4	91.7°F	80.0°F	91.7°F	80.0°F	51.2°F	51.2°F	51.3°F	349.0 MBH	153.9 MBH	14.9	6.0
5	91.7°F	80.0°F	84.5°F	73.1°F	49.3°F	49.3°F	49.4°F	204.3 MBH	104.4 MBH	18.8	5.7
6	91.7°F	80.0°F	80.0°F	68.2°F	49.7°F	49.7°F	49.8°F	63.8 MBH	38.2 MBH	17.9	6.1
7	91.7°F	80.0°F	82.7°F	71.2°F	50.1°F	50.0°F	50.0°F	98.7 MBH	53.5 MBH	18.6	12.2

FAN UNIT NO	REHEAT INFORMATION					GAS HEAT INFORMATION					A2L MINIMUM ROOM VOLUME			NOTES
	DISCHARGE		CAPACITY		MOISTURE REMOVAL RATE	GAS TYPE	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	ROOM AREA (FT2)	AIRFLOW (CFM)	HEIGHT (FT)	
	DB	WB	DESIRED	MAX										
4	75.0°F	60.6°F	93 MBH	204.6 MBH	168.7 LBS/HR	NATURAL	357990	289972	71°F	7 IN. W.C. - 14 IN. W.C.	763.6	1375	7.2	1,2,3,4,5,6,7,8,9,10,11,14,15,16,17,18,19,20
5	75.0°F	60.8°F	78.5 MBH	129.6 MBH	87.6 LBS/HR	NATURAL	192688	156077	51°F	7 IN. W.C. - 14 IN. W.C.	602.1	1084	7.2	1,2,3,4,5,6,7,8,9,10,12,14,15,16,17,18,19,20
6	73.0°F	60.8°F	30.2 MBH	53 MBH	22.8 LBS/HR	NATURAL	59469	48170	38°F	7 IN. W.C. - 14 IN. W.C.	220.3	396	7.2	1,2,3,4,5,6,7,8,9,13,14,15,16,17,18,20,21,22
7	75.0°F	60.3°F	42 MBH	60 MBH	40.0 LBS/HR	NATURAL	99596	80673	48°F	7 IN. W.C. - 14 IN. W.C.	293.7	529	7.2	1,2,3,4,5,6,7,8,9,13,14,15,16,17,18,20,21,22

NOTES:

1. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL
2. DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE
3. INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER
4. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
5. EC MOTOR CONDENSING FANS
6. ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE
7. SUCTION LINE ACCUMULATOR
8. FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER
9. AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)
10. 2" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION-MINIMUM 20GA EXTERIOR W/ 14GA BASE
11. 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 15:1 TURNDOWN WITH NG AND 12:1 TURNDOWN WITH LP
12. 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 16:1 TURNDOWN WITH NG AND 13:1 TURNDOWN WITH LP
13. 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 6:1 TURNDOWN WITH NG AND 5:1 TURNDOWN WITH LP
14. SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
15. FULLY MODULATING HOT GAS REHEAT
16. 15 DEGREE LOW AMBIENT OPERATION
17. HAIL GUARD FOR CONDENSING COIL
18. FACTORY INSTALLED COMPRESSOR SOUND BLANKET
19. DOWN DISCHARGE/DOWN RETURN
20. MINIMUM ROOM AREA ASSUMED 7.2' SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60335-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER.
21. 1" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-4.3 INSULATION-MINIMUM 24GA EXTERIOR W/ 18GA BASE
22. DOWN DISCHARGE/SIDE RETURN

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF-1	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPMO3 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
2	KEF-2	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPMO3 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
3	DEF-1	1	FAN BASE CERAMIC SEAL - DU/DR12HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	I 12-BDD DAMPER
		1	SCR-12 BIRD SCREEN
		1	2 YEAR PARTS WARRANTY
4	RTU-1 (KITCHEN)	1	INLET PRESSURE GAUGE, 0-35"
		1	SHIP LOOSE GAS STRAINER 1"
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	RTU BLOWER DOOR SWITCH
		1	RTU3 DOWN DISCHARGE, 400, 500 MBH
		1	2" MERV 13 FILTERS FOR RTU3 (QTY. 4)
		1	2" MERV 8 FILTERS FOR RTU3 (QTY. 4)
		1	OVERHEAT STAT
		1	TOTAL CFM MONITORING
		1	30 TON MODULATING COOLING OPTION, 208/230V. SIZE 3 CABINET, R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	R454B LEAK DETECTOR OPTION FOR RTUS
		1	LOW AMBIENT COOLING OPERATION - DOWN TO 0F AMBIENT
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED)
		1	REMOTE TEMPERATURE AND HUMIDITY SPACE SENSOR
		1	OCCUPIED SCHEDULING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	30 TON MODULATING REHEAT OPTION FOR SIZE 3 CABINET - SPACE DEWPOINT CONTROL - R454B
		1	RTU3 CURB DUCT HANGER
		1	RTU3 DOWN RETURN
		1	RTU3 HAIL GUARD
		1	RTU INTAKE/RETURN DAMPER - MANUAL CONTROL VIA HMI
		1	CLOGGED FILTER SWITCH - NOTIFICATION ON HMI
		1	RTU3 CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J-BOX
		1	HIGH TURNDOWN OPTION FOR DOAS UNITS
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 2 FURNACES
		1	RTU RETURN MOUNTED SMOKE DETECTOR AND SAMPLING TUBE - FACTORY INSTALLED
		1	24VAC FIRE INPUT
		1	RTUVZH170 COMPRESSOR SOUND BLANKET 230V - FACTORY INSTALLED
		1	UNIT MOUNTED VFD CONFIGURED FOR DCV
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET
5	RTU-2 (DINING)	1	INLET PRESSURE GAUGE, 0-35"
		1	SHIP LOOSE GAS STRAINER 3/4"
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	RTU BLOWER DOOR SWITCH
		1	RTU3 DOWN DISCHARGE
		1	2" MERV 13 FILTERS FOR RTU3 (QTY. 4)
		1	2" MERV 8 FILTERS FOR RTU3 (QTY. 4)
		1	OVERHEAT STAT
		1	TOTAL CFM MONITORING
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	15 TON MODULATING COOLING OPTION, 208/230V. R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	R454B LEAK DETECTOR OPTION FOR RTUS
		1	LOW AMBIENT COOLING OPERATION - DOWN TO 0F AMBIENT
		1	OCCUPIED SCHEDULING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	15 TON MODULATING REHEAT OPTION - SPACE DEWPOINT CONTROL - R454B
		1	RTU3 CURB DUCT HANGER
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED)
		1	REMOTE TEMPERATURE AND HUMIDITY SPACE SENSOR
		1	RTU3 DOWN RETURN
		1	RTU3 HAIL GUARD
		1	RTUVZH088 COMPRESSOR SOUND BLANKET 230V - FACTORY INSTALLED
		1	RTU INTAKE/RETURN DAMPER - MANUAL CONTROL VIA HMI
		1	RTU3 CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J-BOX

FAN UNIT NO	TAG	QTY	DESCRIPTION
		1	CLOGGED FILTER SWITCH - NOTIFICATION ON HMI
		1	HIGH TURNDOWN OPTION FOR DOAS UNITS
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 2 FURNACES
		1	24VAC FIRE INPUT
		1	RTU RETURN MOUNTED SMOKE DETECTOR AND SAMPLING TUBE - FACTORY INSTALLED
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET
6	RTU-3 (UPSTAIRS BAR)	1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE
		1	SHIP LOOSE GAS STRAINER 3/4"
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	RTU BLOWER DOOR SWITCH
		1	2" MERV 13 FILTERS FOR RTU1 (QTY. 4)
		1	2" MERV 8 FILTERS FOR RTU1 (QTY. 4)
		1	OVERHEAT STAT
		1	TOTAL CFM MONITORING
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	RTU1 DOWN DISCHARGE
		1	5 TON MODULATING COOLING OPTION, 208/230V. R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, DL ECM CONDENSING FAN
		1	R454B LEAK DETECTOR OPTION FOR RTUS
		1	OCCUPIED SCHEDULING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	5 TON MODULATING REHEAT OPTION - SPACE DEWPOINT CONTROL - R454B
		1	RTU RETURN MOUNTED SMOKE DETECTOR AND SAMPLING TUBE - FACTORY INSTALLED
		1	24VAC FIRE INPUT
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED)
		1	REMOTE TEMPERATURE AND HUMIDITY SPACE SENSOR
		1	RTU1 DOWN RETURN
		1	RTU1 HAIL GUARD
		1	RTUVZH044 COMPRESSOR SOUND BLANKET 230/460/575V - FACTORY INSTALLED
		1	RTU INTAKE/RETURN DAMPER - MANUAL CONTROL VIA HMI
		1	RTU1 CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J BOX
		1	CLOGGED FILTER SWITCH - NOTIFICATION ON HMI
		1	LOW AMBIENT COOLING OPERATION - DOWN TO 0F AMBIENT
		1	RTU1 CURB DUCT HANGER
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET
7	RTU-4 (RR)	1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE
		1	SHIP LOOSE GAS STRAINER 3/4"
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	RTU BLOWER DOOR SWITCH
		1	2" MERV 13 FILTERS FOR RTU1 (QTY. 4)
		1	2" MERV 8 FILTERS FOR RTU1 (QTY. 4)
		1	OVERHEAT STAT
		1	TOTAL CFM MONITORING
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	RTU1 DOWN DISCHARGE
		1	7.5 TON MODULATING COOLING OPTION, 208/230V. R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	R454B LEAK DETECTOR OPTION FOR RTUS
		1	OCCUPIED SCHEDULING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	7.5 TON MODULATING REHEAT OPTION - SPACE DEWPOINT CONTROL - R454B
		1	RTU1 CURB DUCT HANGER
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED)
		1	REMOTE TEMPERATURE AND HUMIDITY SPACE SENSOR
		1	RTU1 SIDE RETURN
		1	RTU1 HAIL GUARD
		1	RTUVZH044 COMPRESSOR SOUND BLANKET 230/460/575V - FACTORY INSTALLED
		1	RTU INTAKE/RETURN DAMPER - MANUAL CONTROL VIA HMI
		1	RTU1 CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J BOX
		1	CLOGGED FILTER SWITCH - NOTIFICATION ON HMI
		1	LOW AMBIENT COOLING OPERATION - DOWN TO 0F AMBIENT
		1	24VAC FIRE INPUT
		1	DUCT MOUNTED SMOKE DETECTOR - SHIPS LOOSE
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF-1	YES						
2	KEF-2	YES						
3	DEF-1		YES					

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF-1	41 LBS	CURB	23.000"W X 23.000"L X 22.000"H 0.250:12.000 PITCH ALONG LENGTH, RIGHT VENTED HINGED.
2	# 2	KEF-2	41 LBS	CURB	23.000"W X 23.000"L X 22.000"H 0.250:12.000 PITCH ALONG LENGTH, RIGHT VENTED HINGED.
3	# 3	DEF-1	22 LBS	CURB	17.500"W X 17.500"L X 16.000"H 0.250:12.000 PITCH ALONG LENGTH, RIGHT INSULATED.
4	# 4	RTU-1 (KITCHEN)	112 LBS	CURB	59.500"W X 91.000"L X 16.000"H 0.250:12.000 PITCH ALONG WIDTH, RIGHT INSULATED.
5	# 5	RTU-2 (DINING)	112 LBS	CURB	59.500"W X 91.000"L X 16.000"H 0.250:12.000 PITCH ALONG WIDTH, RIGHT INSULATED.
6	# 6	RTU-3 (UPSTAIRS BAR)	113 LBS	PLENUM CURB	41.000"W X 71.000"L X 24.000"H 0.250:12.000 PITCH ALONG WIDTH, RIGHT INSULATED.
7	# 7	RTU-4 (RR)	89 LBS	CURB	41.000"W X 71.000"L X 16.000"H 0.250:12.000 PITCH ALONG WIDTH, RIGHT INSULATED.

CONTROLS DESIGN SERVICE

BIANNUAL ANALYSIS OF EQUIPMENT PERFORMANCE REQUIRED BY THE MANUFACTURER TO OPTIMIZE SYSTEM POST INSTALL. DETAILED PERFORMANCE REPORT TO BE PRESENTED TO OWNERSHIP ON A BIANNUAL BASIS FOR THE FIRST YEAR.

HMI SCHEDULE				
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #4	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55
FAN #4	HMI #2 - SPACE	OFFICE	NOT AVERAGED	56
FAN #5	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55
FAN #5	HMI #2 - SPACE	OFFICE	AVERAGED	56
FAN #6	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55
FAN #6	HMI #2 - SPACE	OFFICE	NOT AVERAGED	56
FAN #7	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55
FAN #7	HMI #2 - SPACE		AVERAGED	56

REVISIONS	
DESCRIPTION	DATE

CAPTIVEAIRE
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English Pub - FARS - R1
Little Rock, AR, 72201

DATE: 1/17/2025
DWG.#: 7227216
DRAWN BY: Josh I 146
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 4

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BID DOCUMENTS

ENGLISH PUB
Little Rock, Arkansas

Issue Date:
01.31.25

REVISIONS		
NUMBER	DATE	DESCRIPTION
3	04.03.25	Addendum 3

Contents:
CAPTIVEAIRE SYSTEM DETAILS

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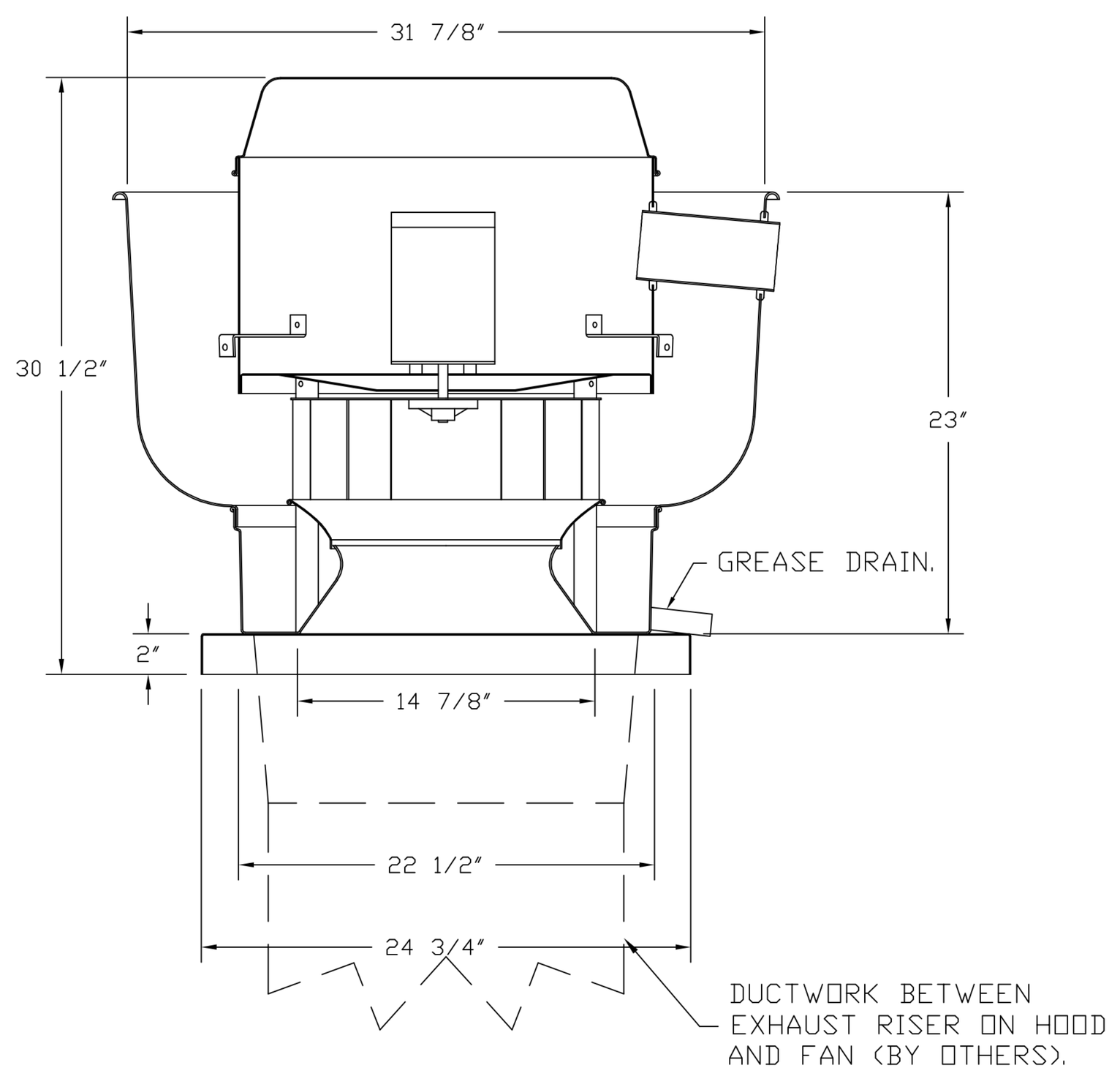
FANS #1 (KEF-1), #2 (KEF-2) - DU85HFA EXHAUST FAN



FEATURES:

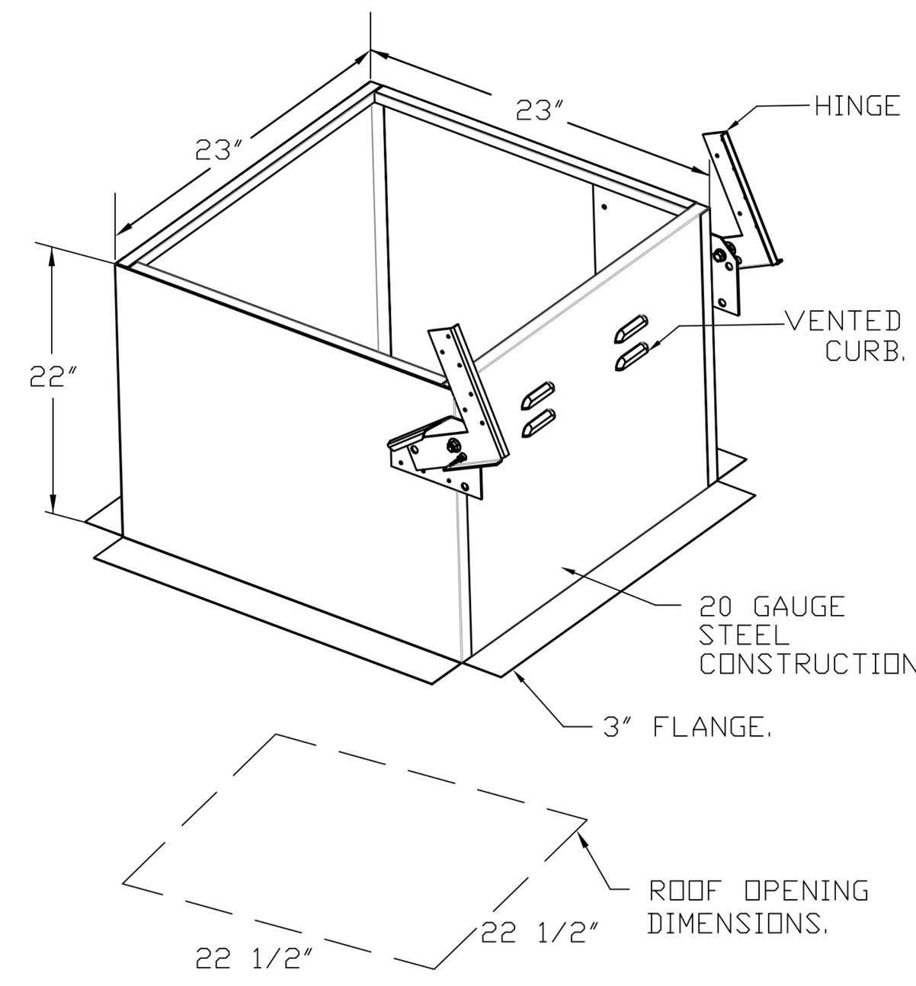
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

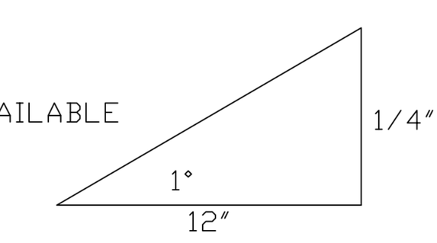
OPTIONS

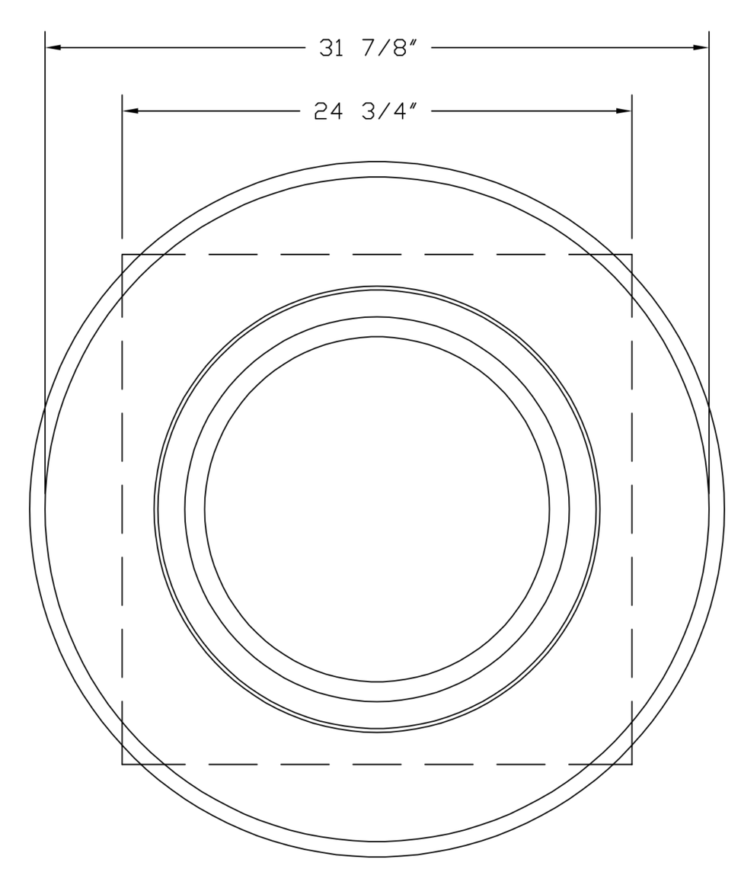
- GREASE BOX.
- FAN BASE CERAMIC SEAL - DU/DR85HFA
- INSTALLED AT PLANT - FOR GREASE DUCTS.
- ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION.
- 2 YEAR PARTS WARRANTY.



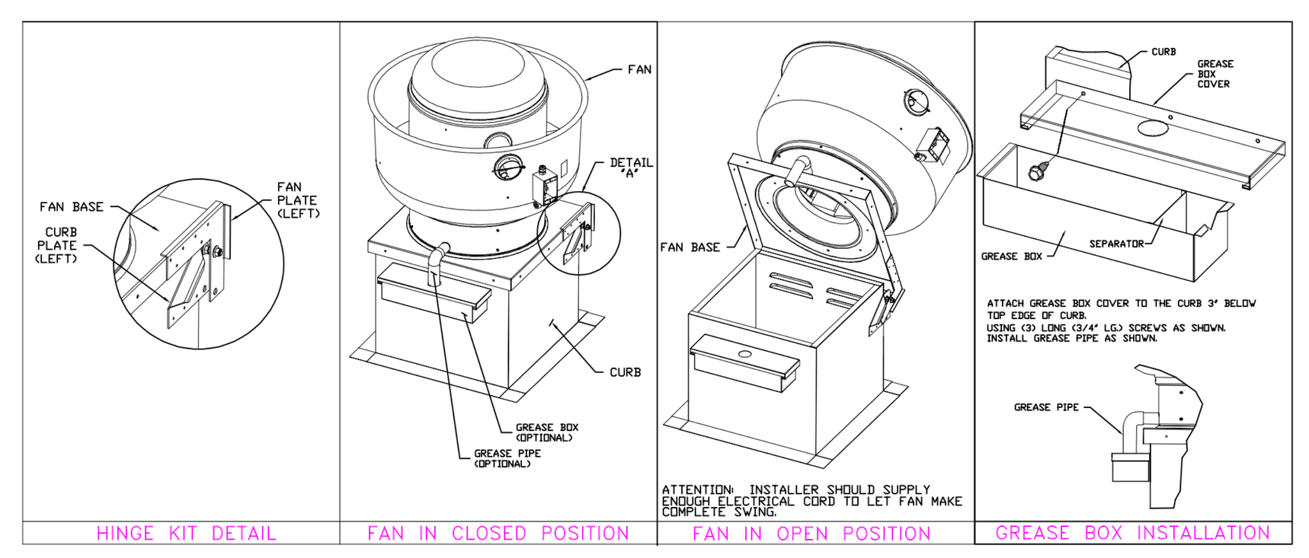
PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE.

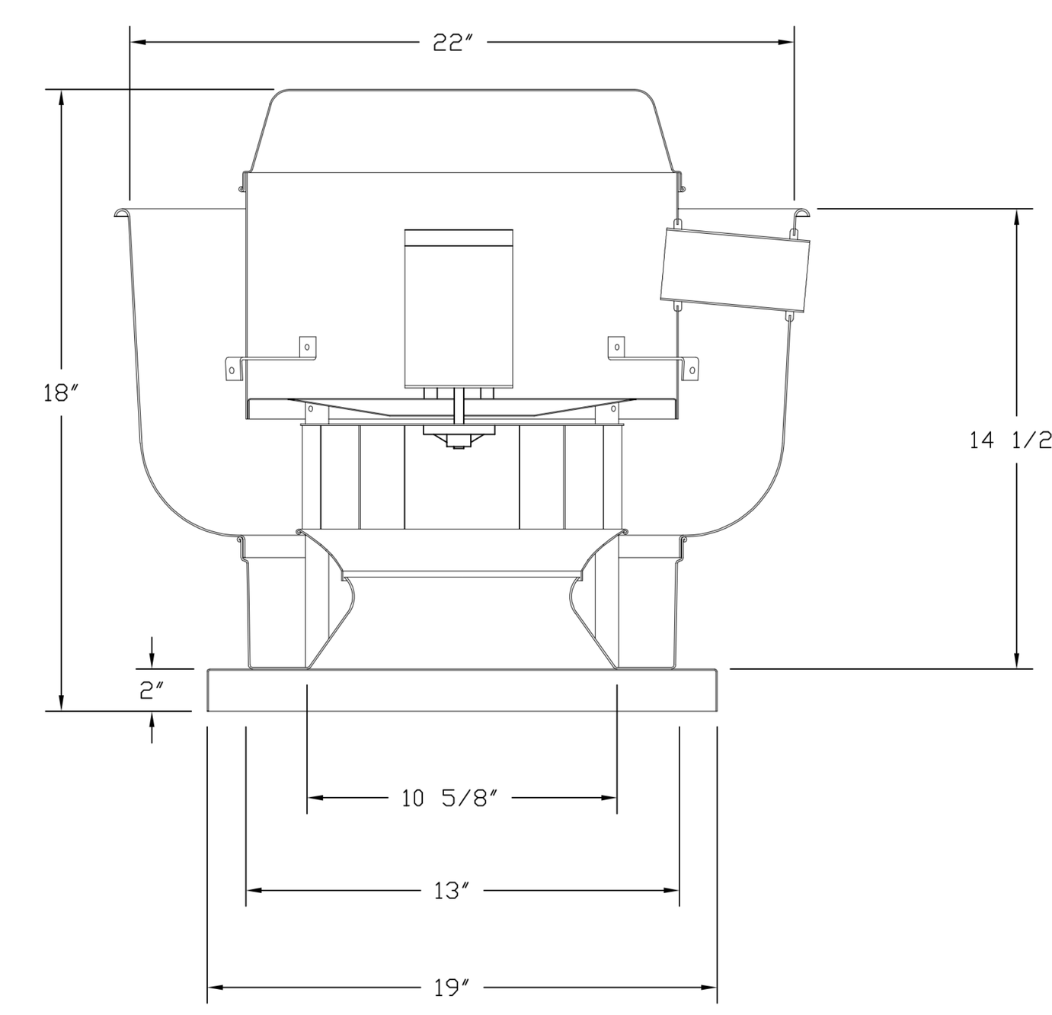




TOP VIEW



FAN #3 DU12HFA - EXHAUST FAN (DEF-1)

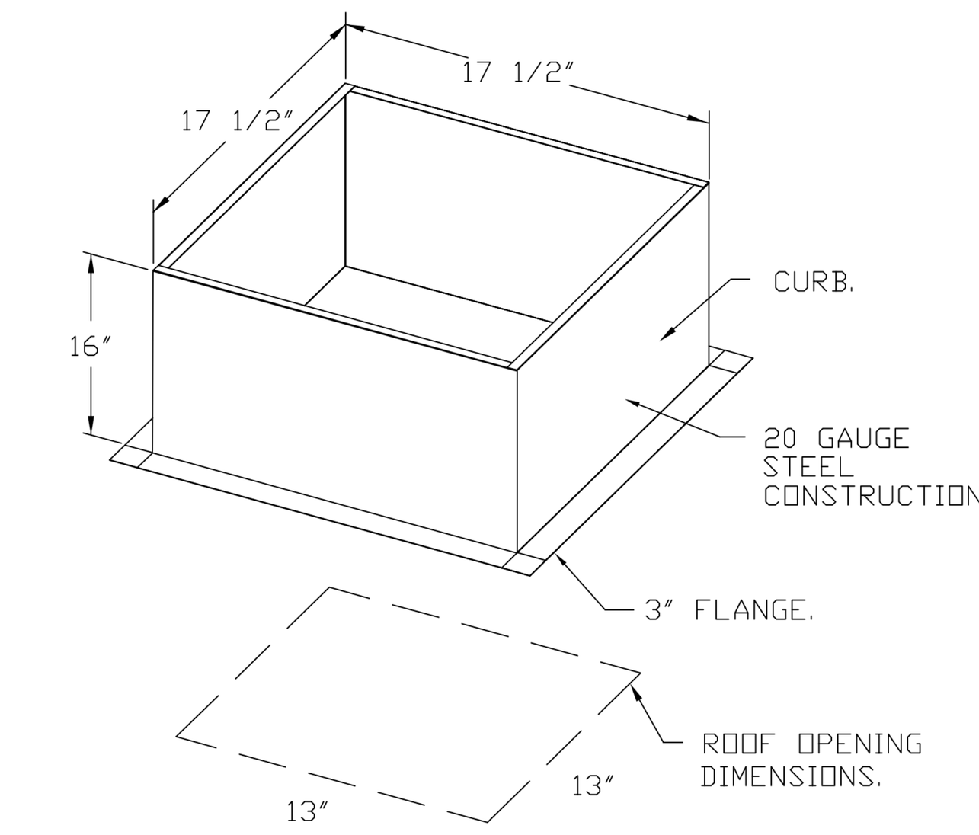


FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- UL705.
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- NEMA 3R SAFETY DISCONNECT SWITCH.

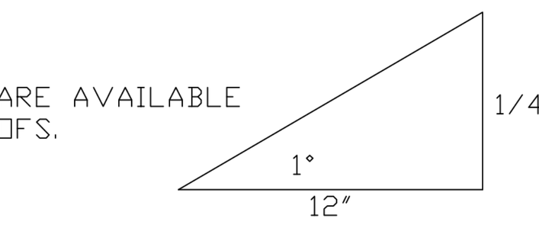
OPTIONS

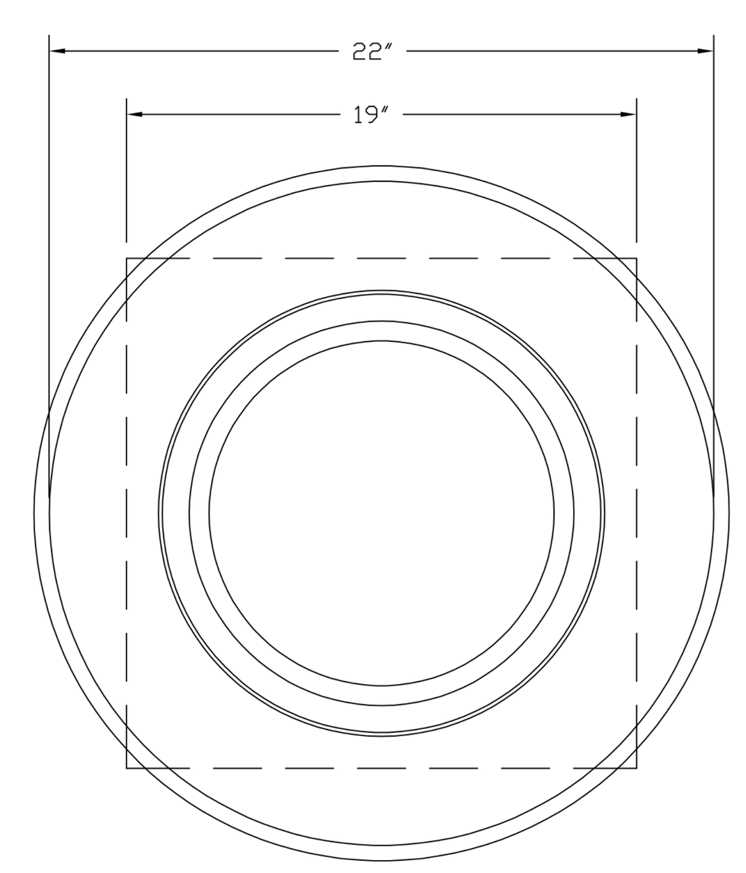
- FAN BASE CERAMIC SEAL - DU/DR12HFA
- INSTALLED AT PLANT - FOR GREASE DUCTS.
- 1 12-BDD DAMPER.
- SCR-12 BIRD SCREEN.
- 2 YEAR PARTS WARRANTY.



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

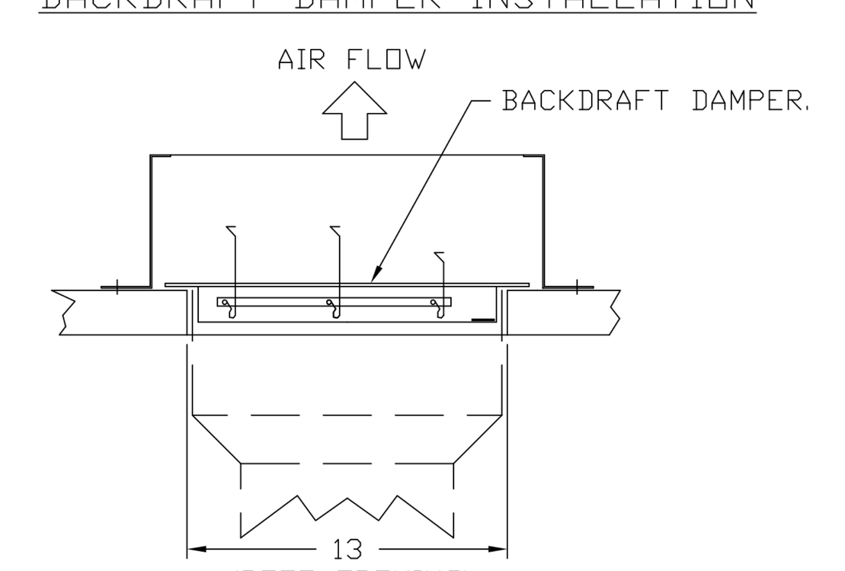
SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE.

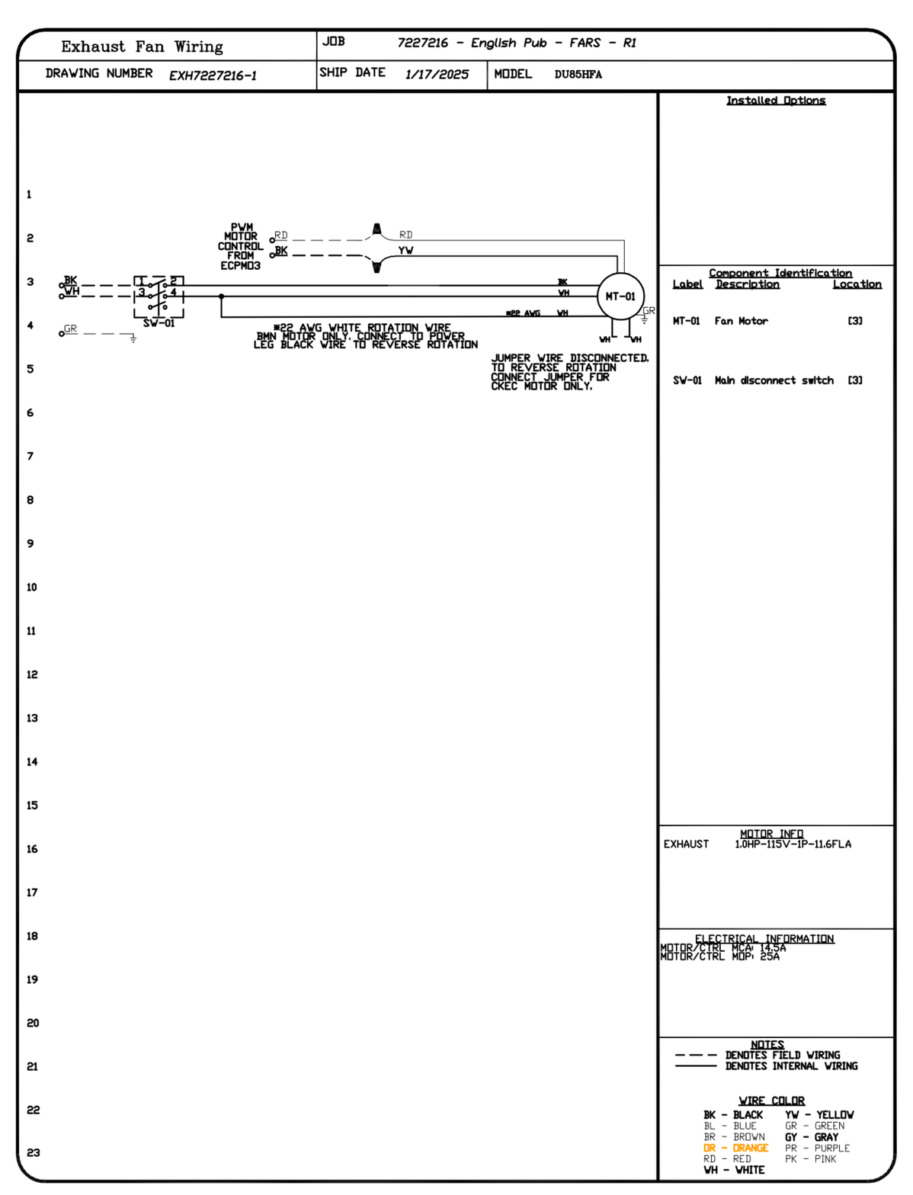


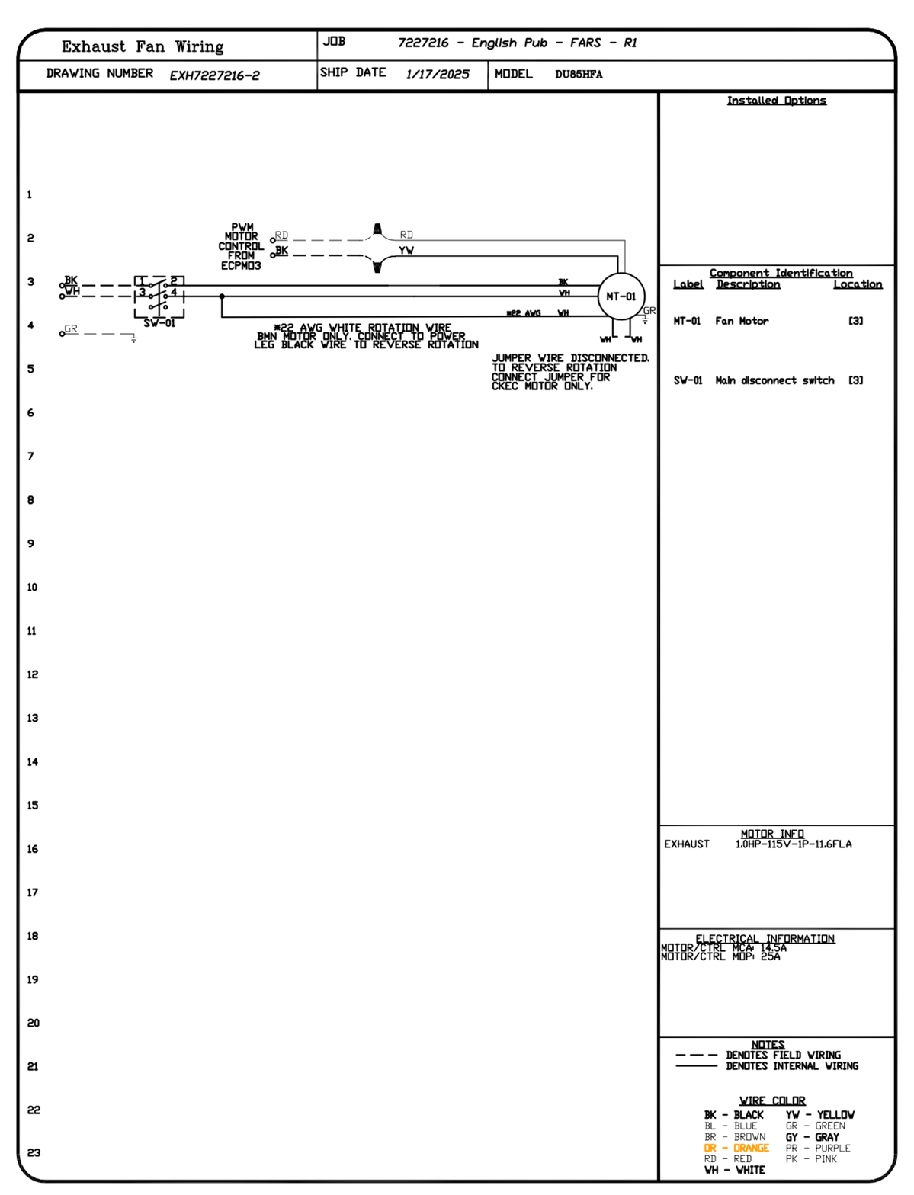


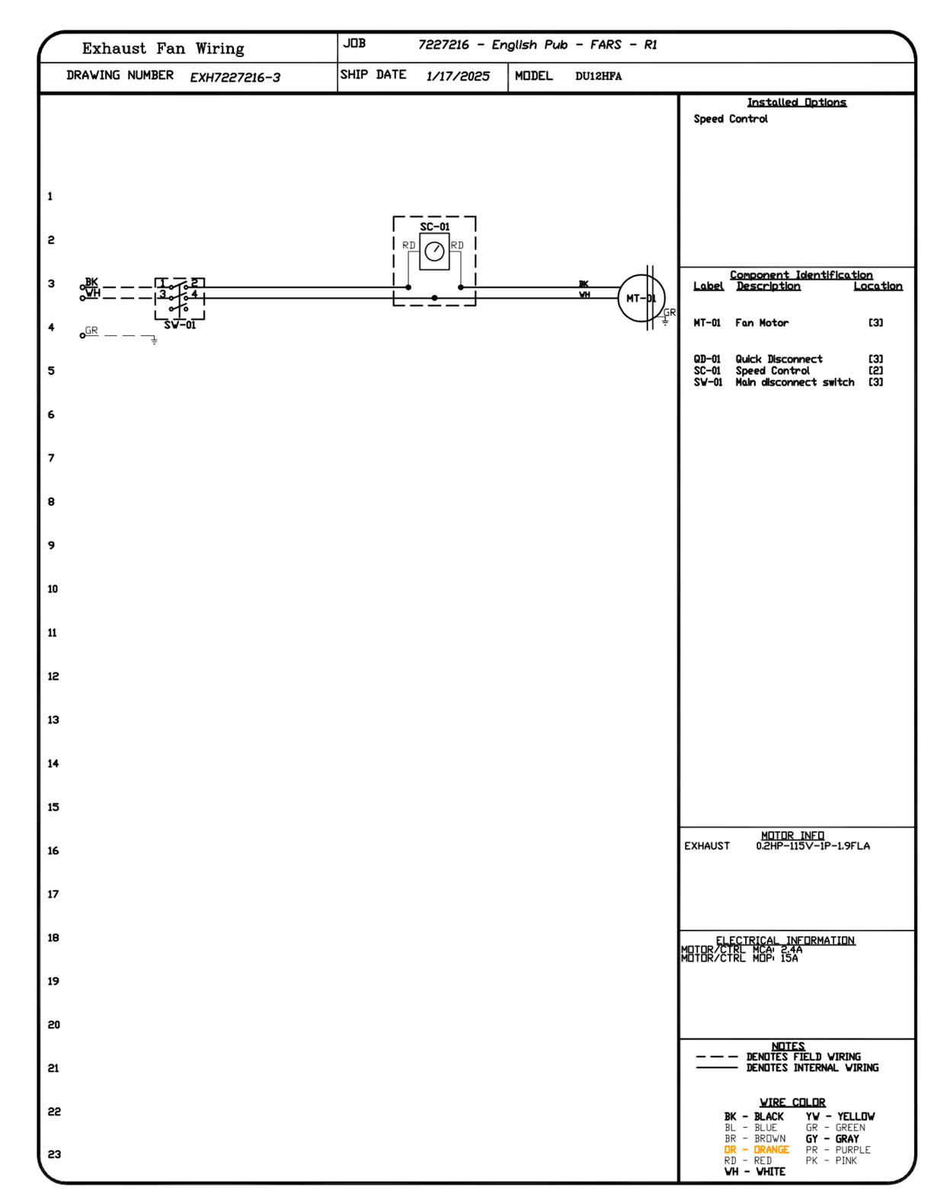
TOP VIEW

BACKDRAFT DAMPER INSTALLATION









REVISIONS	
DESCRIPTION	DATE:
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CAPTIVEAIRE
www.captiveaire.com
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140 Southwinds Rd. Suite 133, Farmington, AR, 72730 PHONE: (501) 500 - 5450 FAX: 5017106670 EMAIL: reg146@captiveaire.com

English Pub - FARS - R1
Little Rock, AR, 72201

DATE: 1/17/2025

DWG.#: 7227216

DRAWN BY: Josh | 146

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 5

PSW Job Number:
1001B

BID DOCUMENTS

ENGLISH PUB

Little Rock, Arkansas

Issue Date:
01.31.25

REVISIONS		
NUMBER	DATE	DESCRIPTION
3	04.03.25	Addendum 3

Contents:
CAPTIVEAIRE SYSTEM DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
MARC WESLEY WHITE
NO. 9419
01.31.25

Batson Inc.
ENGINEERING SOLUTIONS
1300 Brookwood Drive
Little Rock Arkansas 72202
501-664-3311 www.batson.com

CERTIFICATE OF AUTHORIZATION
BATSON INC.
No. 99

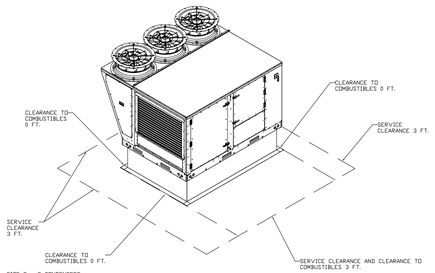
M405

FAN #4 CAS-HVAC3-I.400-20-30T - HEATER (RTU-1 (KITCHEN))

NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) 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.

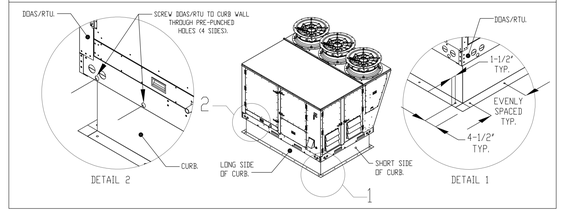
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE 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".

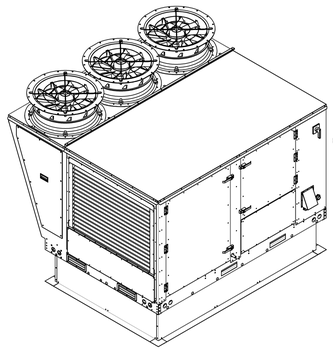


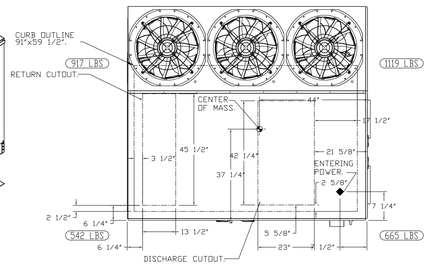
SIZE 3 - 3 CONDENSERS

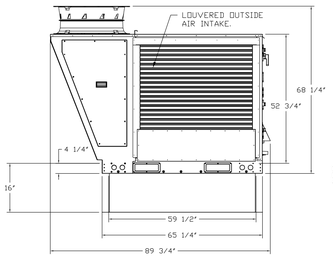
TYPICAL DOAS/RTU ROOF MOUNTING INSTALLATION INSTRUCTIONS

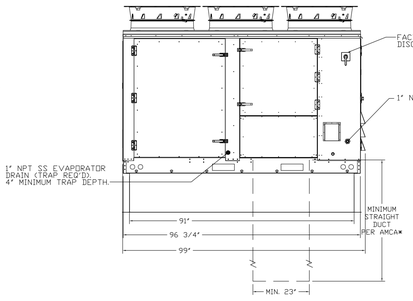
1. SECURE THE CURB TO THE ROOF FRAMING MEMBERS BY DRILLING 1/4" PILOT HOLES IN THE CURB FLANGES AT LOCATIONS SHOWN IN THE DIAGRAM BELOW USING 3/8" X 2" ZINC PLATED STEEL LAG BOLTS, AND ZINC PLATED WASHERS, SCREW THROUGH THE CURB FLANGES AND INTO THE ROOF FRAMING MEMBERS. A MINIMUM OF (5) LAG BOLTS ON EACH SHORT SIDE, AND (7) LAG BOLTS ON EACH LONG SIDE IS REQUIRED.
2. SECURE THE UNIT BASE TO THE SIDE WALLS OF THE CURB USING (24) 1/4"-14 X 2" SELF-DRILLING, STEEL ZINC PLATED SCREWS. PRE-PUNCHED HOLES HAVE BEEN PROVIDED FOR EACH SCREW LOCATION.

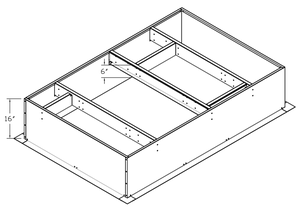


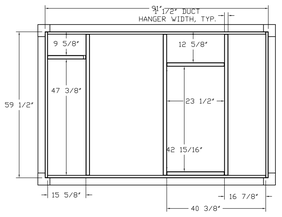


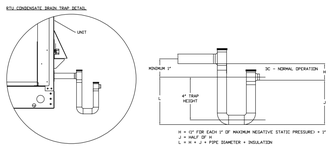


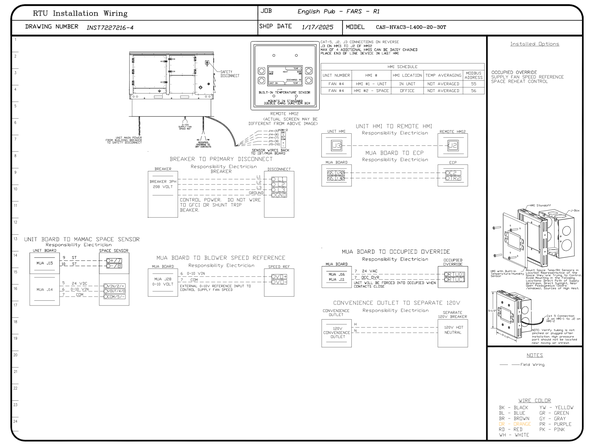


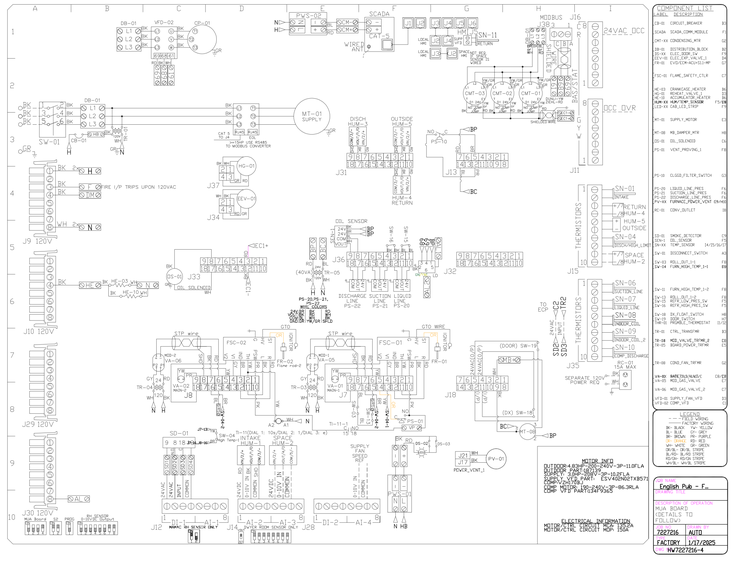












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509 W. Spring St. | Suite 150
Fayetteville, AR 72701
479.444.0473 office

polkstanleywilcox.com

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PH: 704.301.4961

PSW Job Number:
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BID DOCUMENTS

ENGLISH PUB

Little Rock, Arkansas

Issue Date:
01.31.25

REVISIONS

NUMBER	DATE	DESCRIPTION
3	04.03.25	Addendum 3

Contents:
CAPTIVEAIRE SYSTEM DETAILS

REVISIONS

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CAPTIVEAIRE
www.captiveaire.com
Arkansas Mechanical
140 Southwinds Rd. Suite 133, Farmington, AR, 72730 PHONE: (501) 500 - 5450 FAX: 5017106670 EMAIL: reg146@captiveaire.com

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DATE: 1/17/2025

DWG.#: 7227216

DRAWN BY: Josh I 146

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 6

M406

FAN #5 CAS-HVAC3-I.200-18-15T - HEATER (RTU-2 (DINING))

NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. (⬭) 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.

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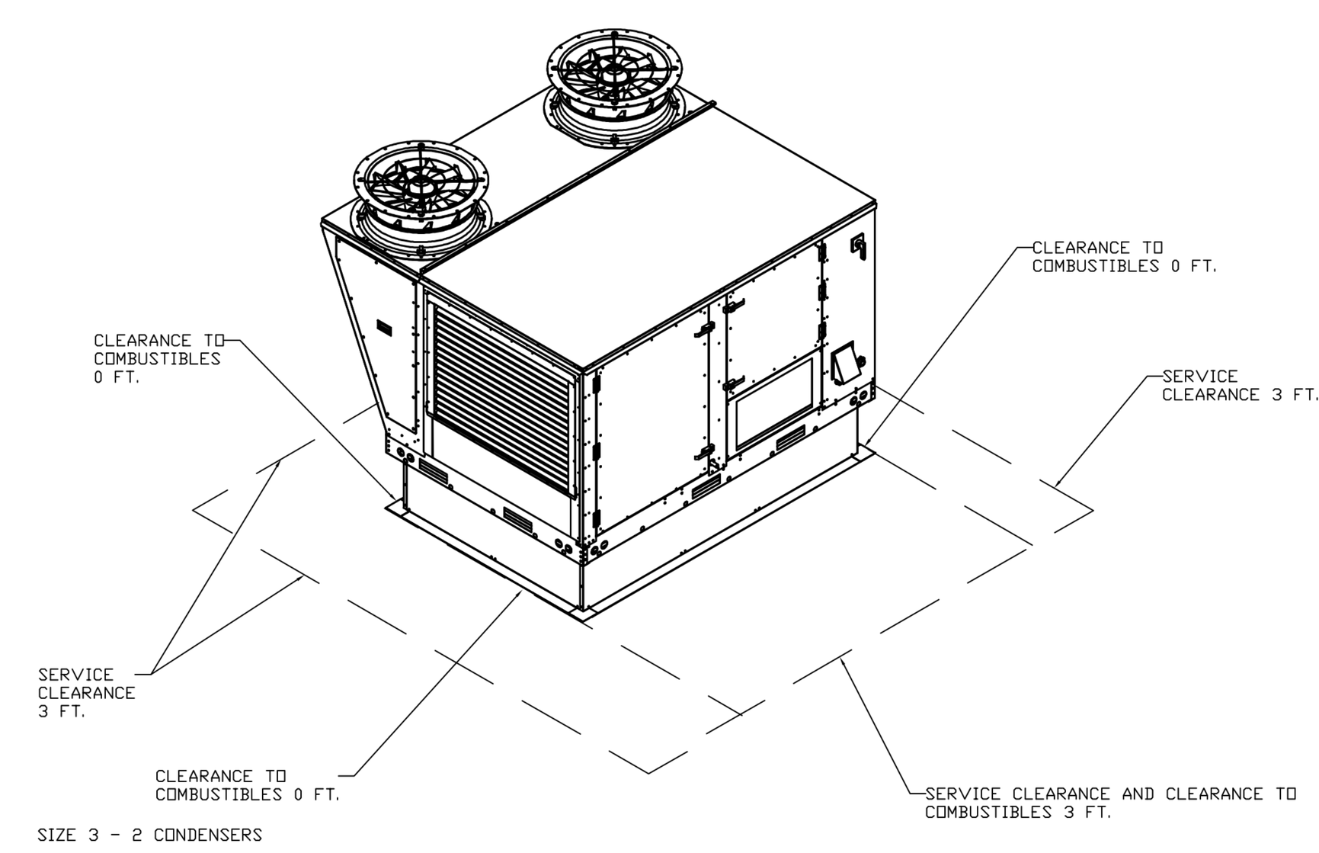
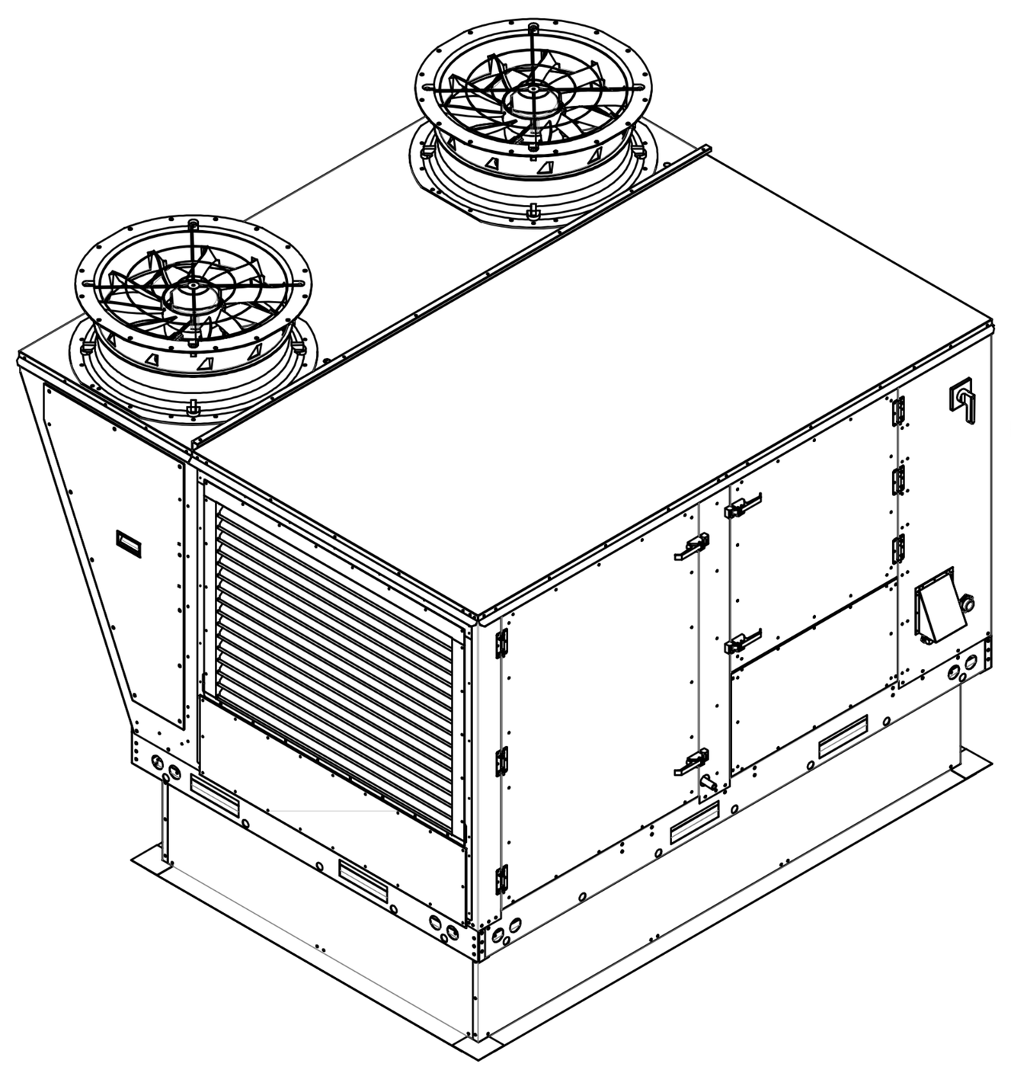
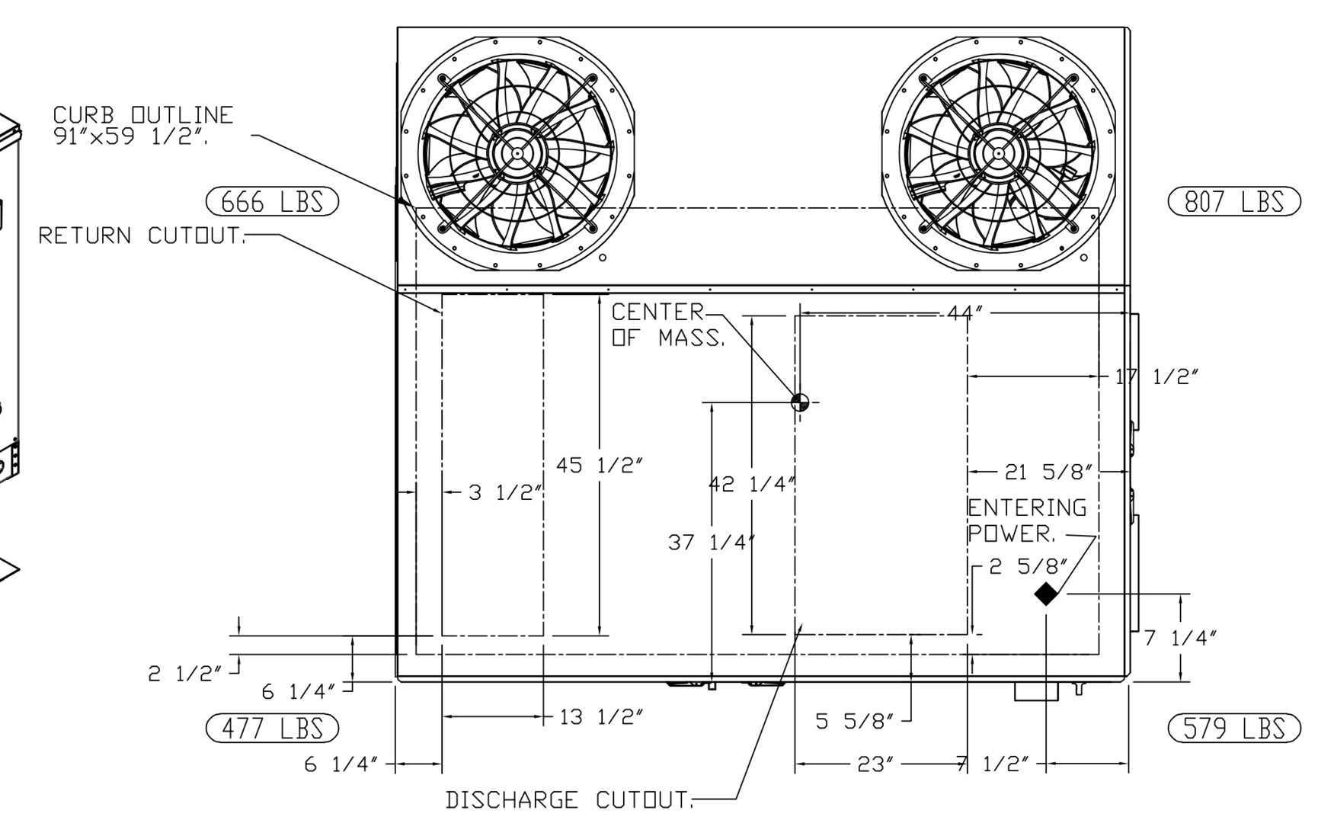
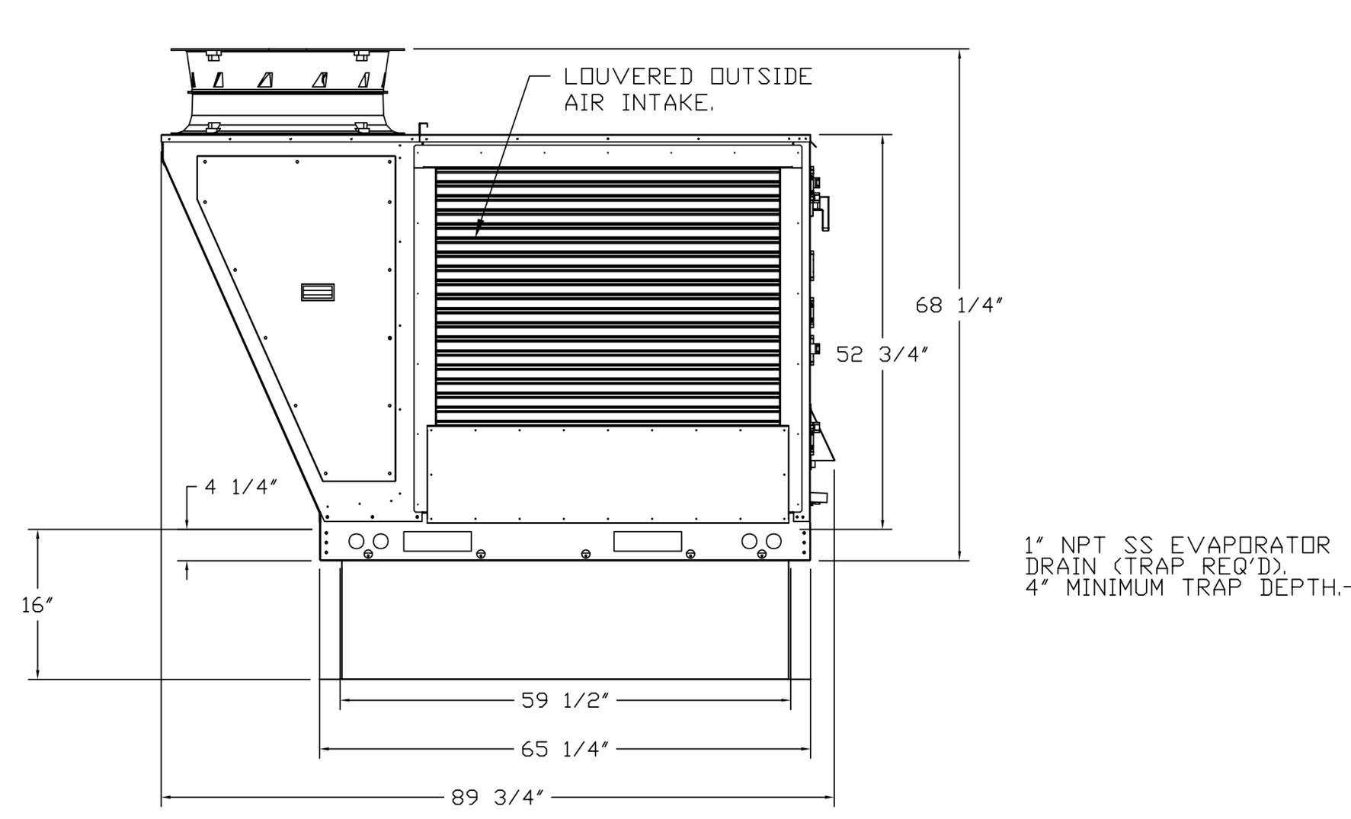
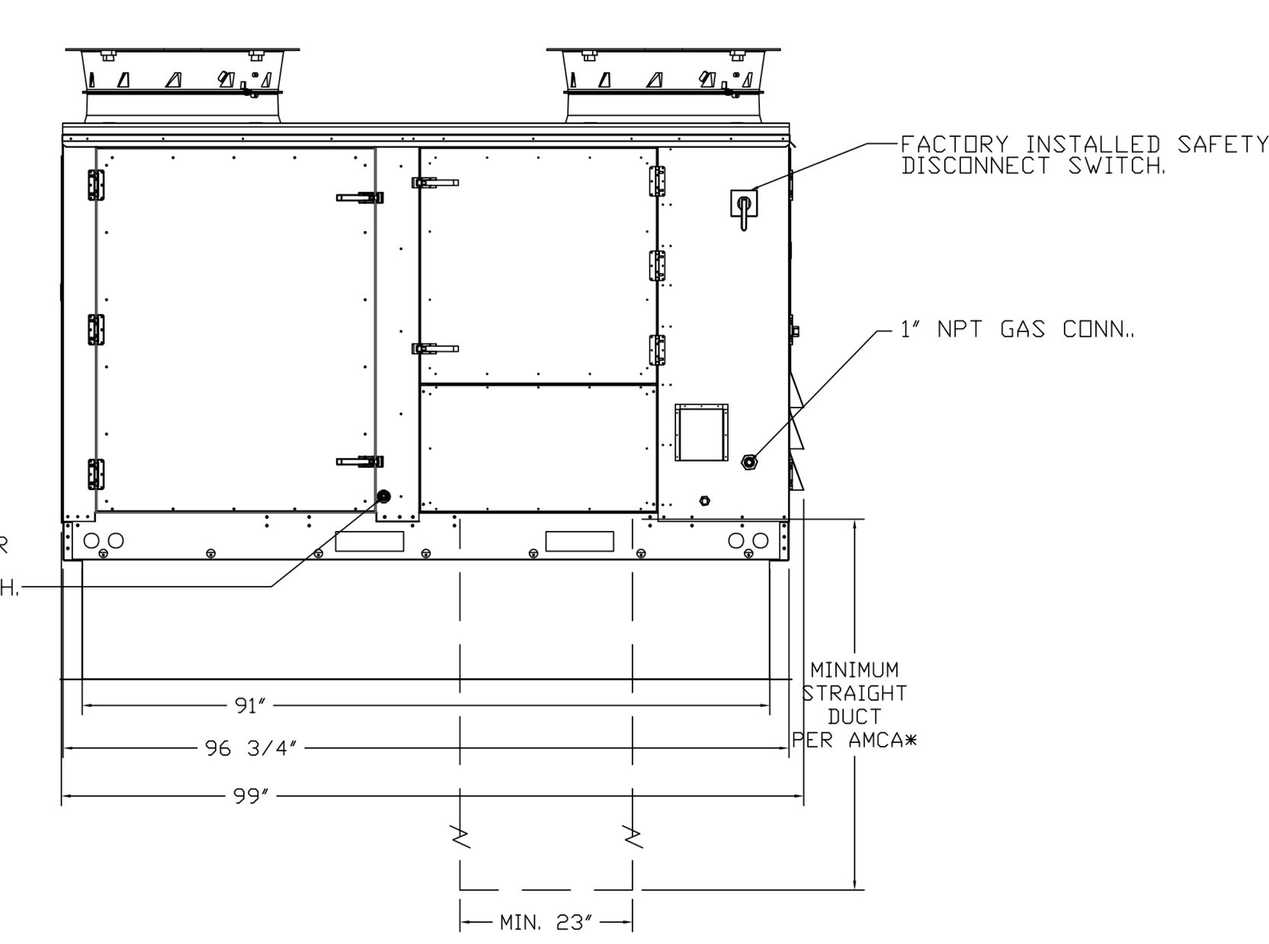
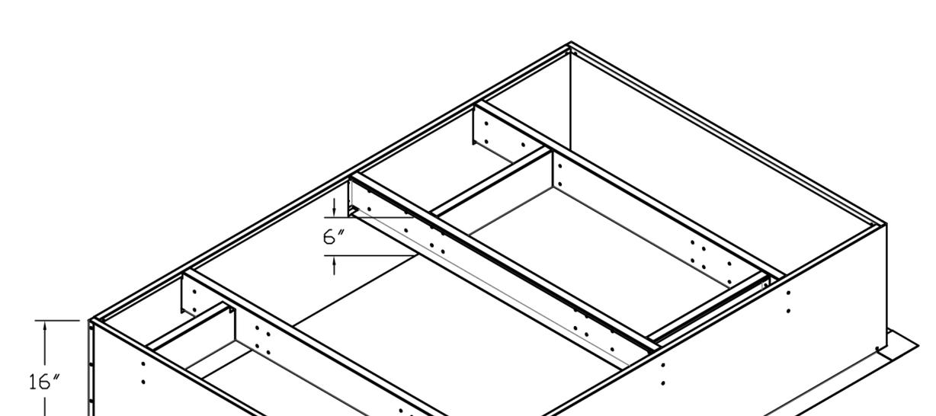


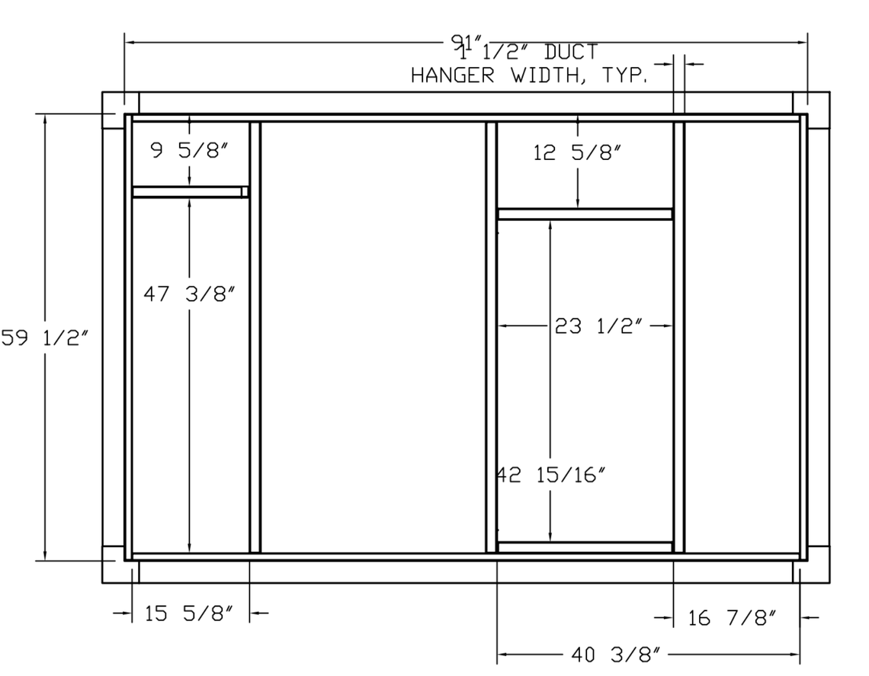




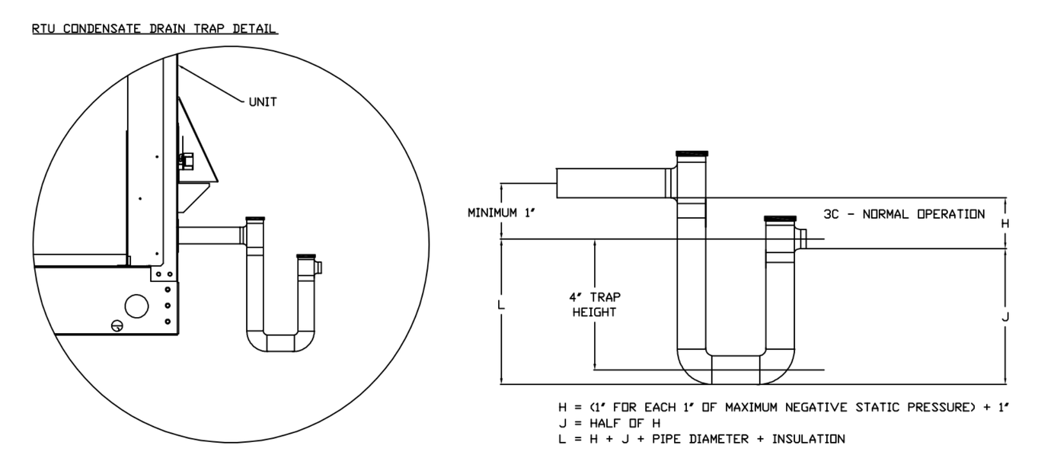








RTU CONDENSATE DRAIN TRAP DETAIL



TYPICAL DOAS/RTU ROOF MOUNTING INSTALLATION INSTRUCTIONS

1. SECURE THE CURB TO THE ROOF FRAMING MEMBERS BY DRILLING 1/4" PILOT HOLES IN THE CURB FLANGES AT LOCATIONS SHOWN IN THE DIAGRAM BELOW. USING 3/8" X 2" ZINC PLATED STEEL LAG BOLTS, AND ZINC PLATED WASHERS, SCREW THROUGH THE CURB FLANGES AND INTO THE ROOF FRAMING MEMBERS. A MINIMUM OF (5) LAG BOLTS ON EACH SHORT SIDE, AND (7) LAG BOLTS ON EACH LONG SIDE IS REQUIRED.

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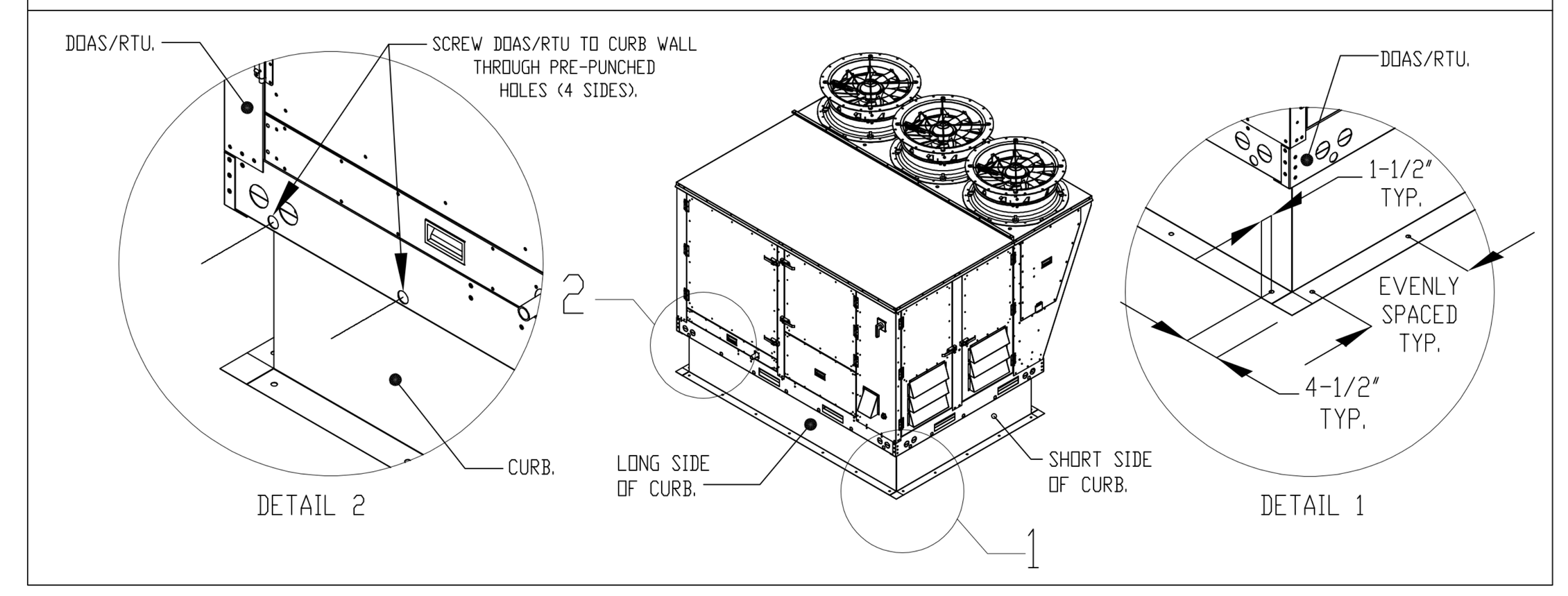

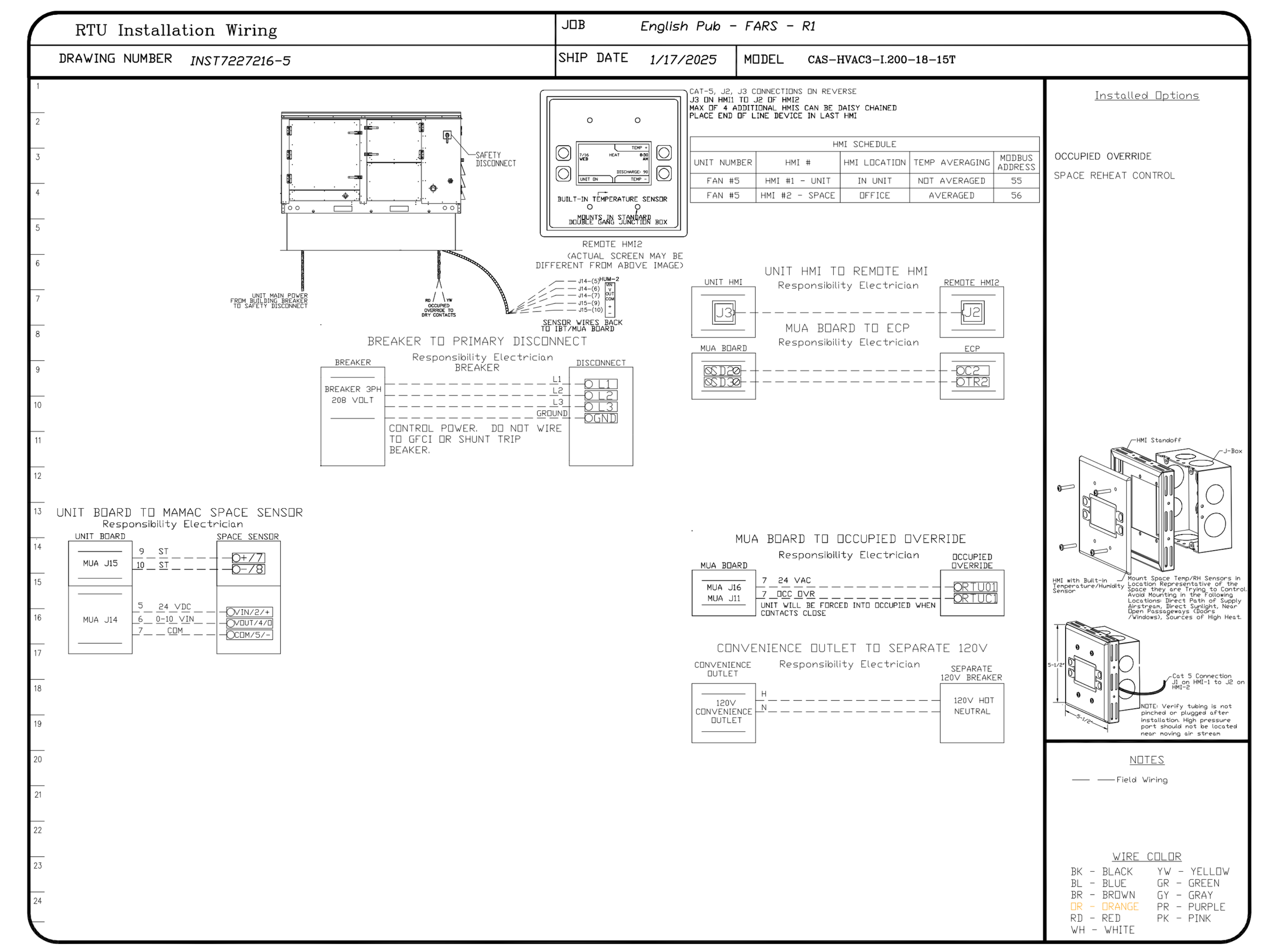

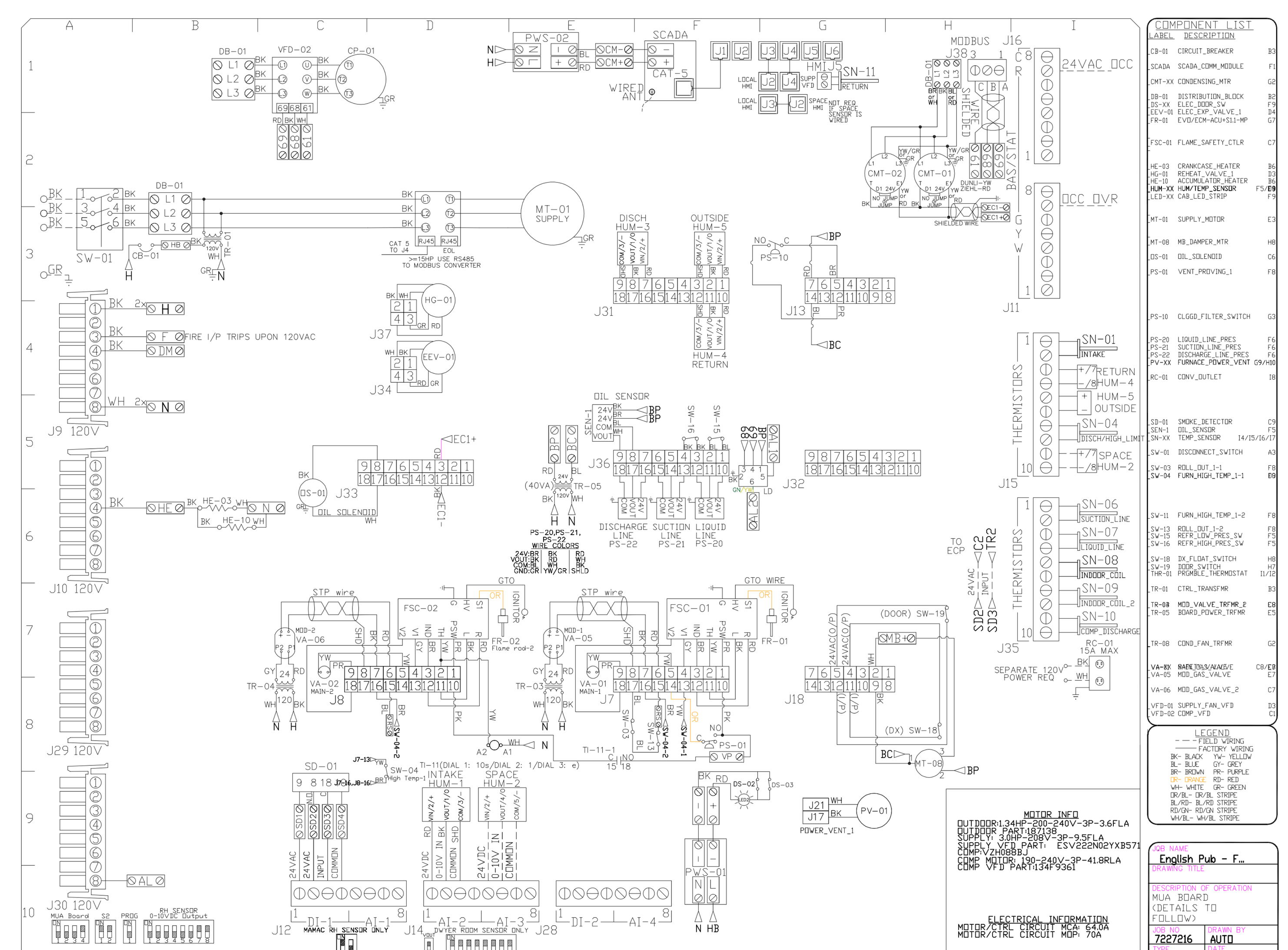

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DATE: 1/17/2025
DWG.#: 7227216
DRAWN BY: Josh I 146
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 7

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M407

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INTERIOR DESIGN
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PH: 704.301.4961

FAN #6 CAS-HVAC1-I.75-15-5T - HEATER (RTU-3 (UPSTAIRS BAR))

NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) 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.
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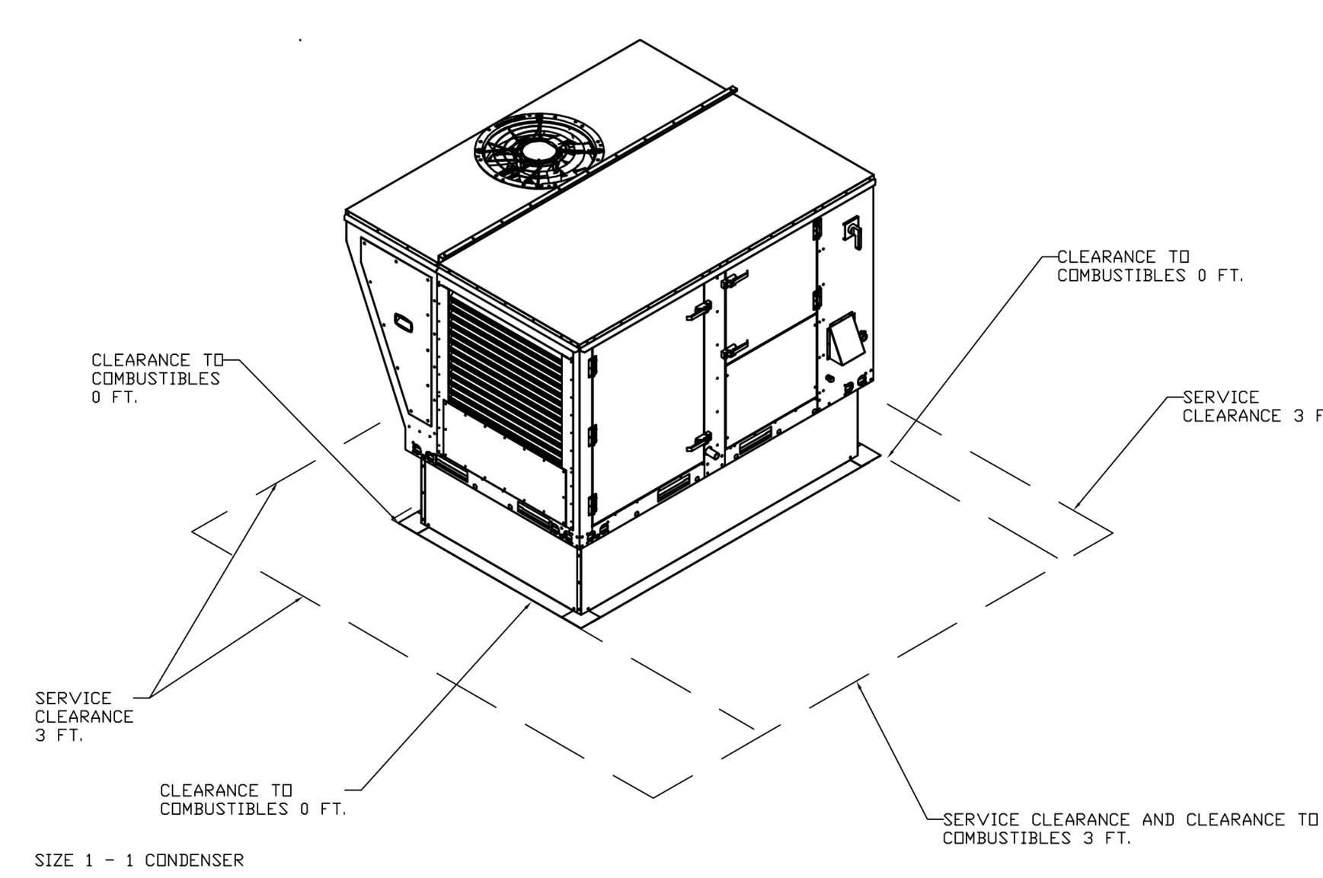

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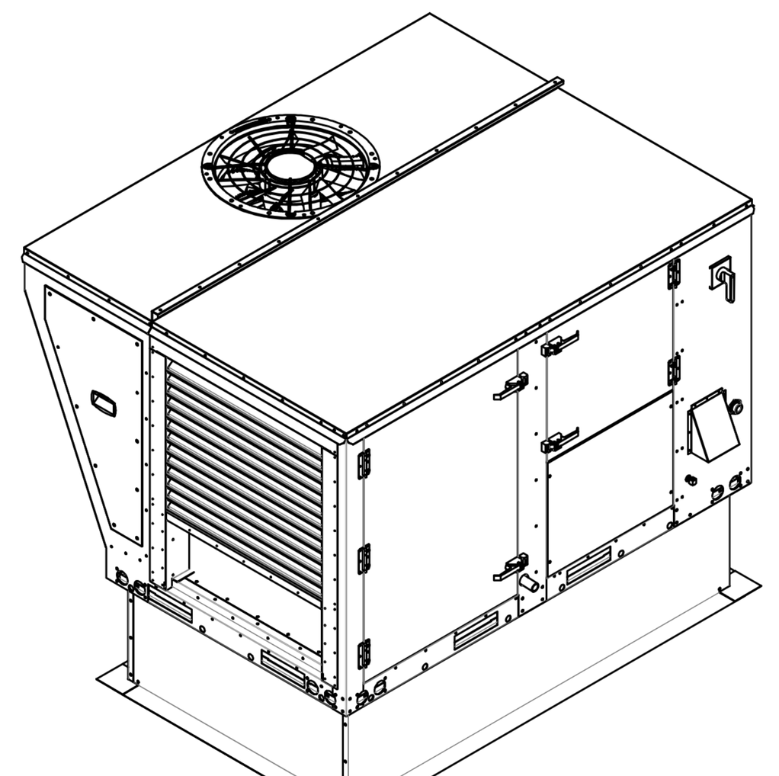

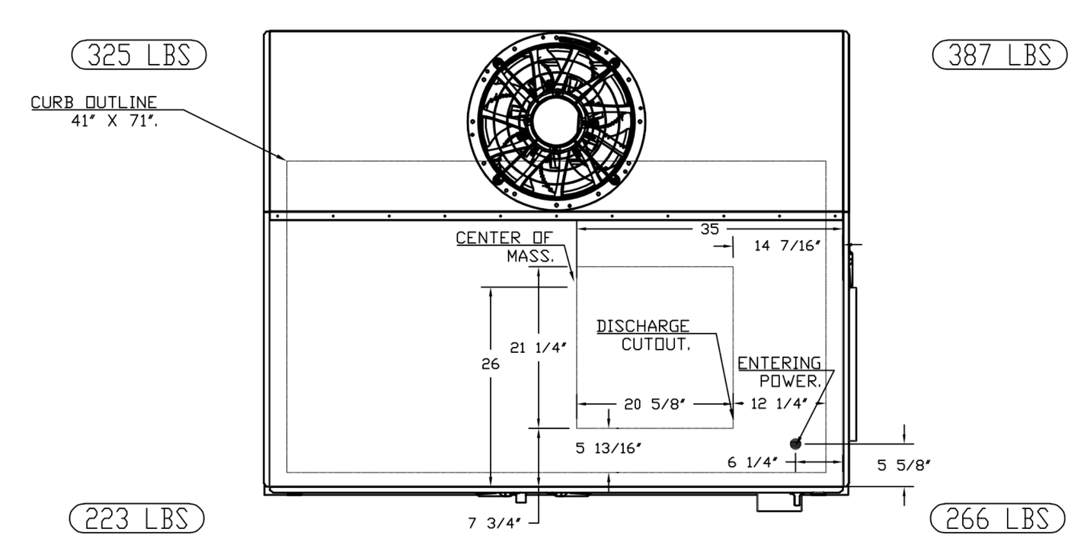

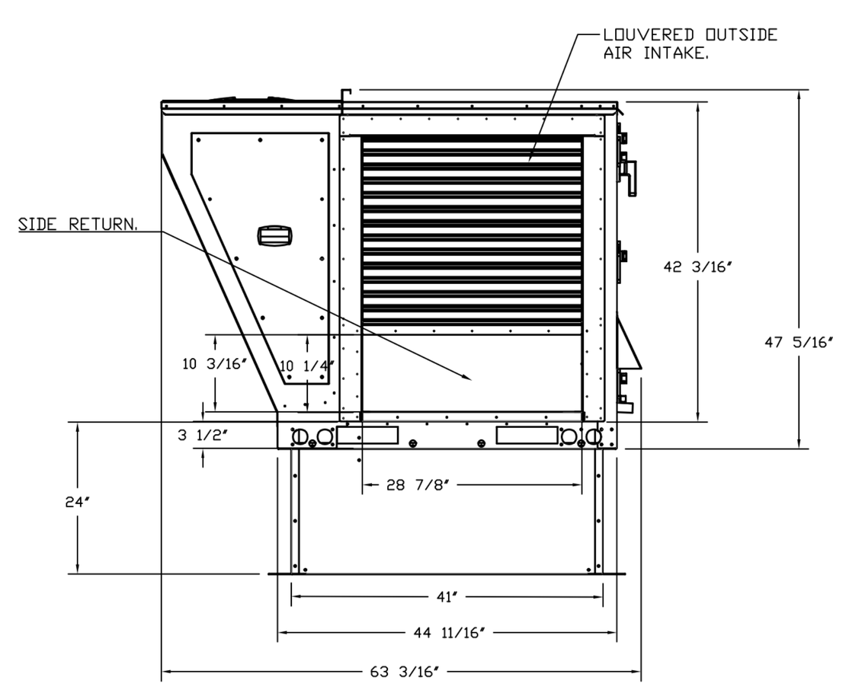

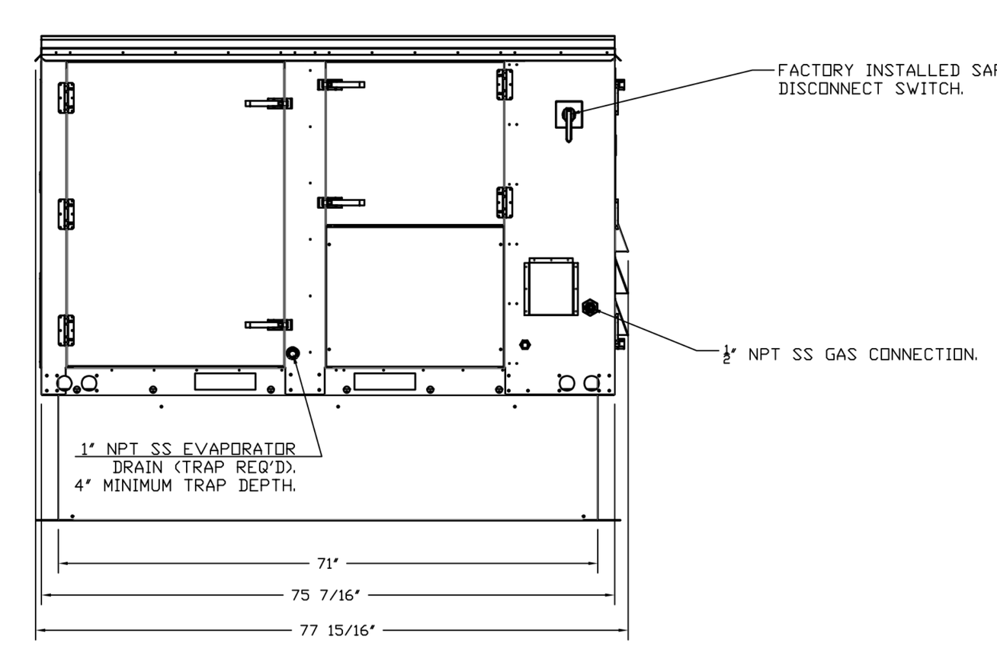

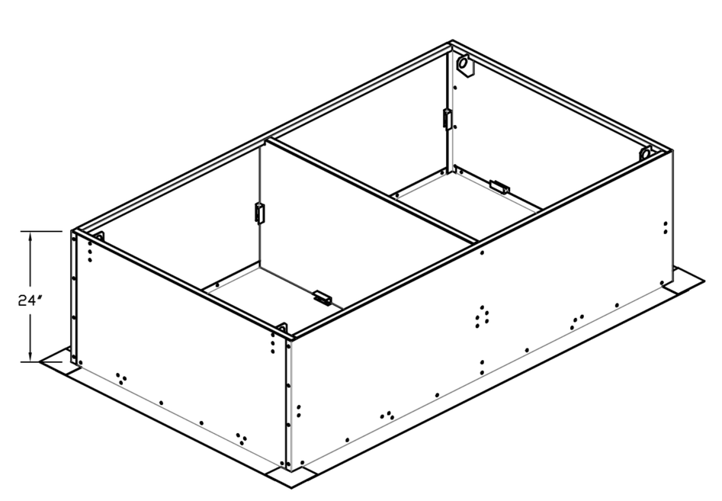

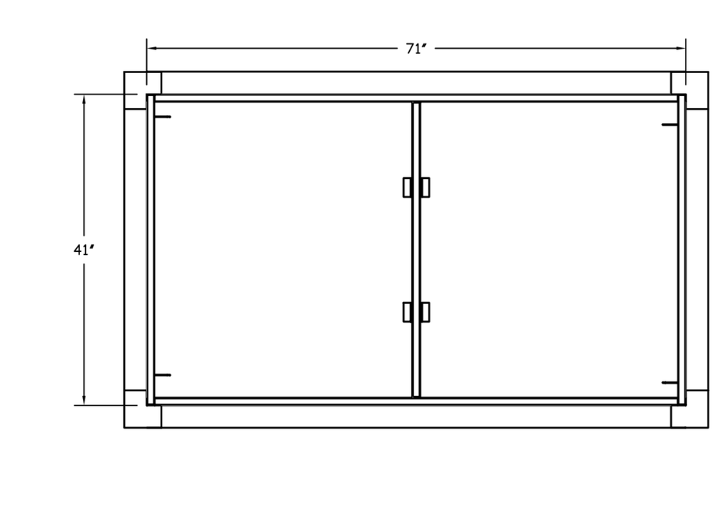

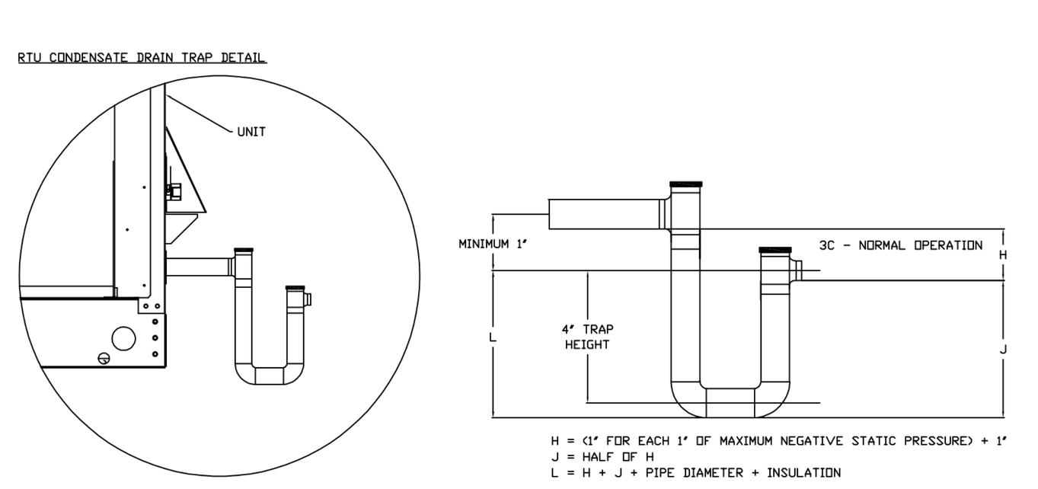

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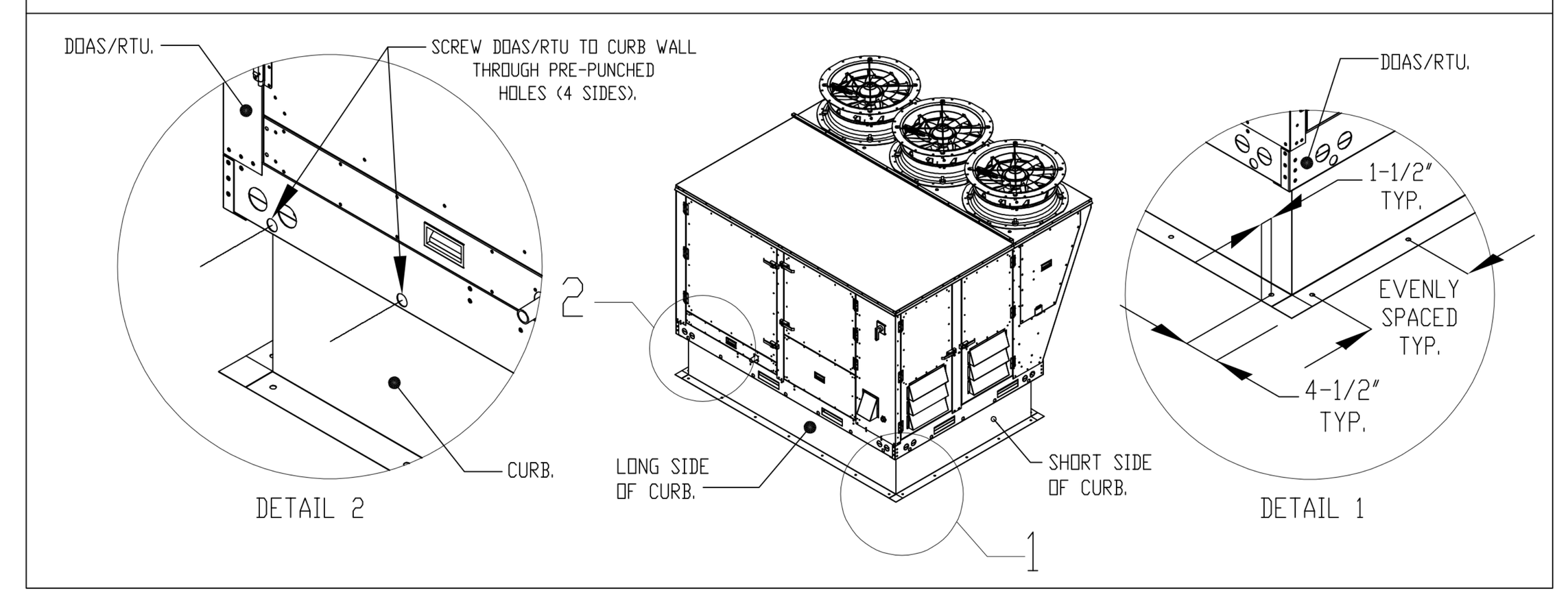
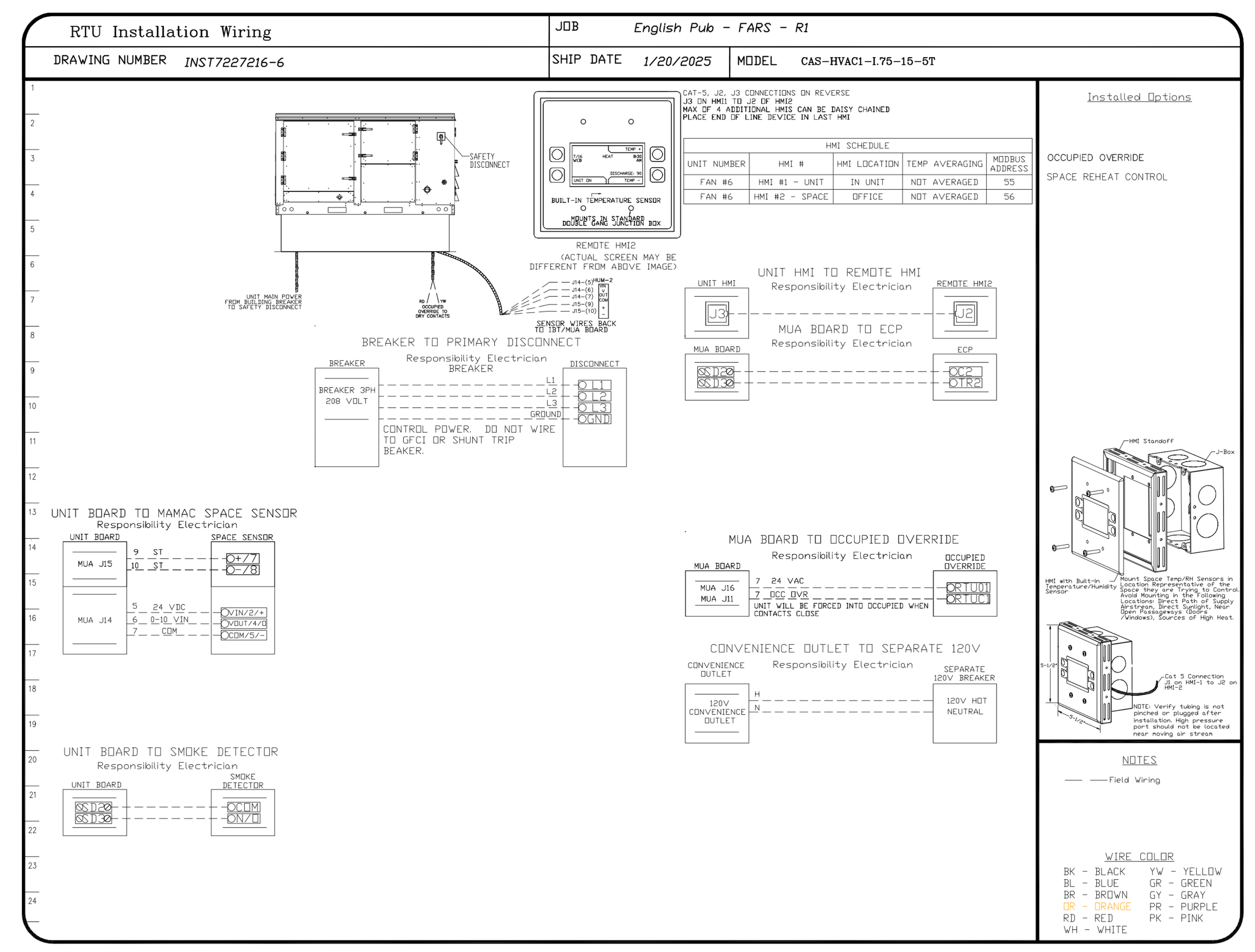
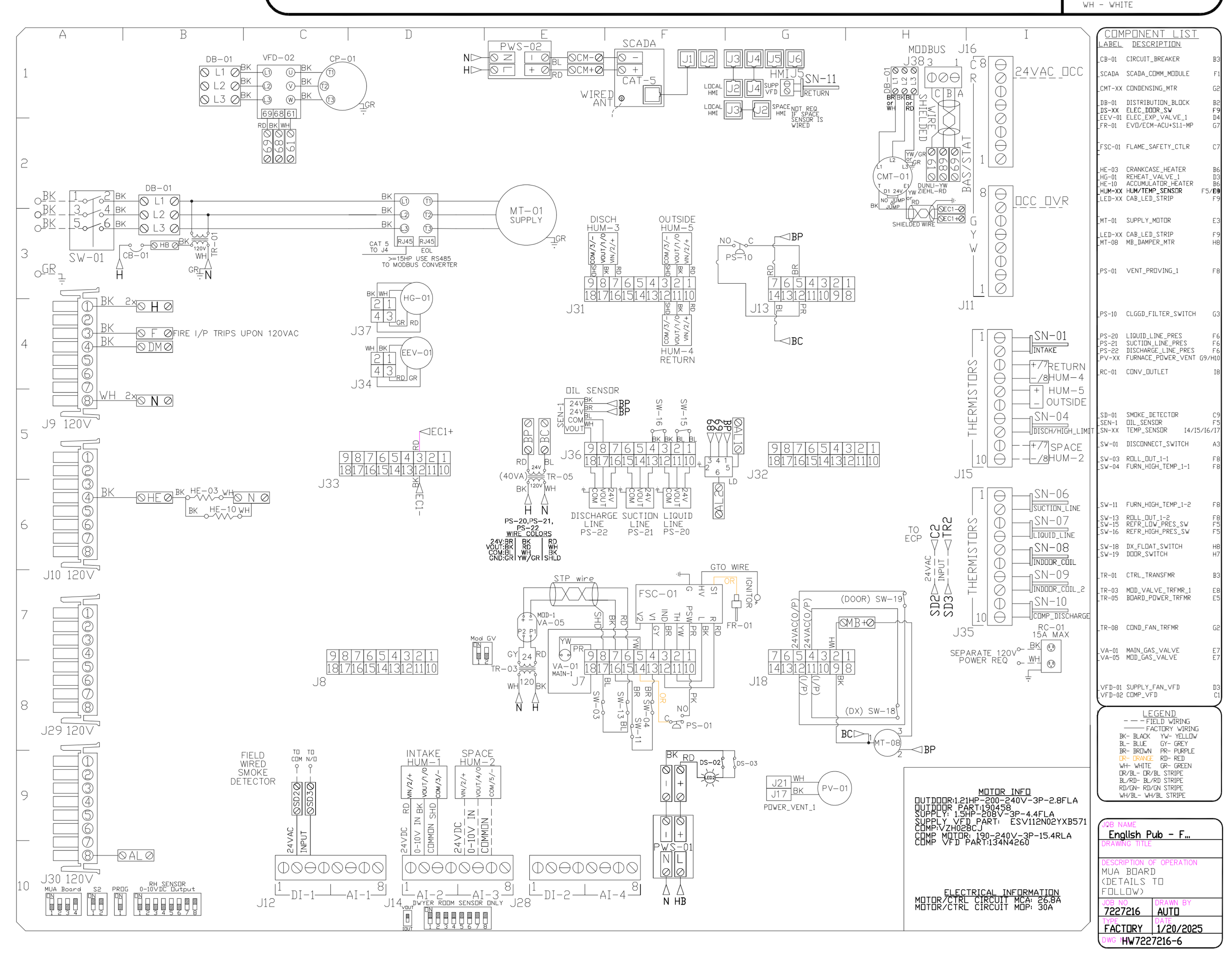
2. SECURE THE UNIT BASE TO THE SIDE WALLS OF THE CURB USING (24) 1/4"-14 X 2" SELF-DRILLING, STEEL ZINC PLATED SCREWS. PRE-PUNCHED HOLES HAVE BEEN PROVIDED FOR EACH SCREW LOCATION.







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DESCRIPTION	DATE

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www.captiveaire.com

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Little Rock, AR, 72201

DATE: 1/17/2025

DWG.#: 7227216

DRAWN BY: Josh | 146

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 8

PSW Job Number:
1001B

BID DOCUMENTS

ENGLISH PUB

Little Rock, Arkansas

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Contents:
CAPTIVEAIRE SYSTEM DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 9419
MARC WESLEY WHITE
01.31.25

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ENGINEERING SOLUTIONS
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Little Rock Arkansas 72202
501-664-3311 www.batson.com

CERTIFICATE OF AUTHORIZATION
BATSON INC.
No. 99

M408

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| STANLEY
| WILCOX

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CIVIL ENGINEERING
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PH: 501.371.0272

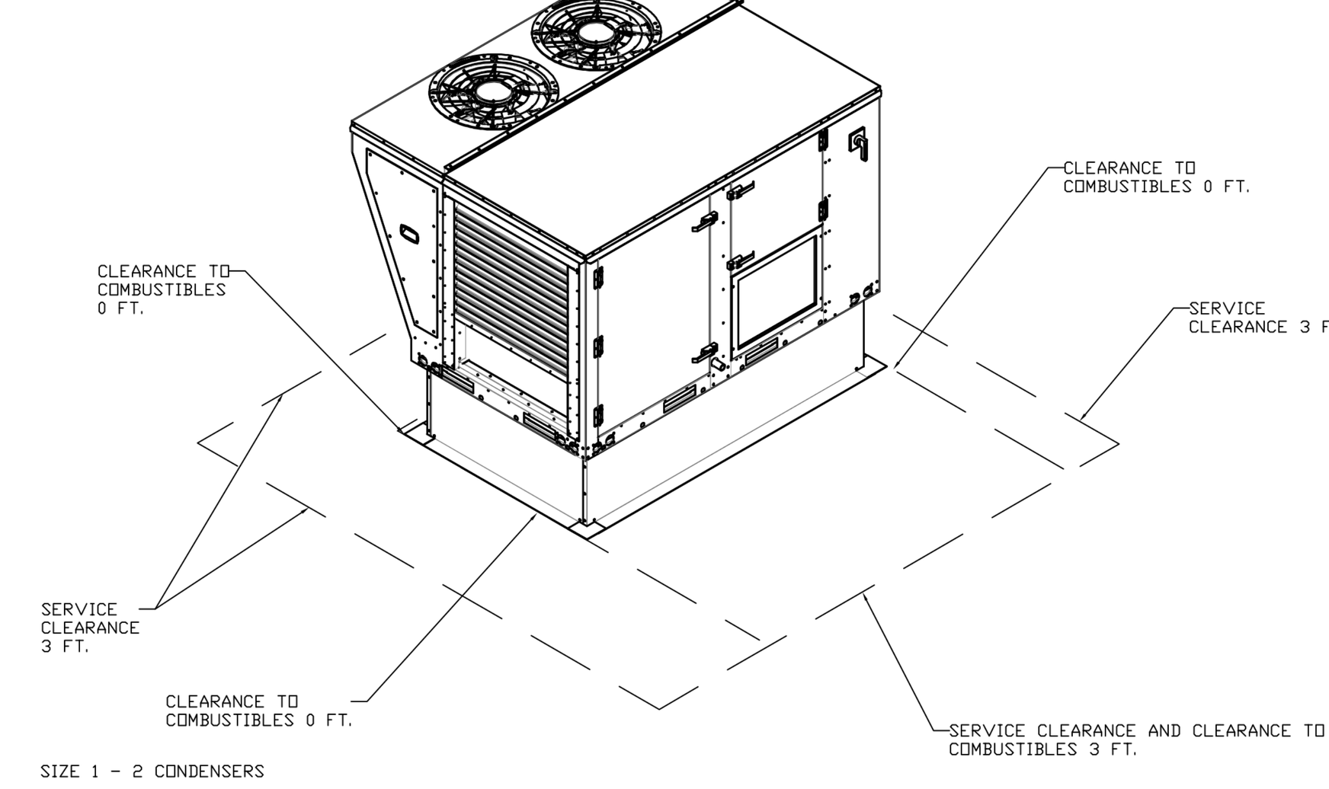
INTERIOR DESIGN
Rebecca Callis
840 Cherokee Rd
Charlotte, NC 28207
PH: 704.301.4961

FAN #7 CAS-HVAC1-I.100-15-7.5T - HEATER (RTU-4 (RR))

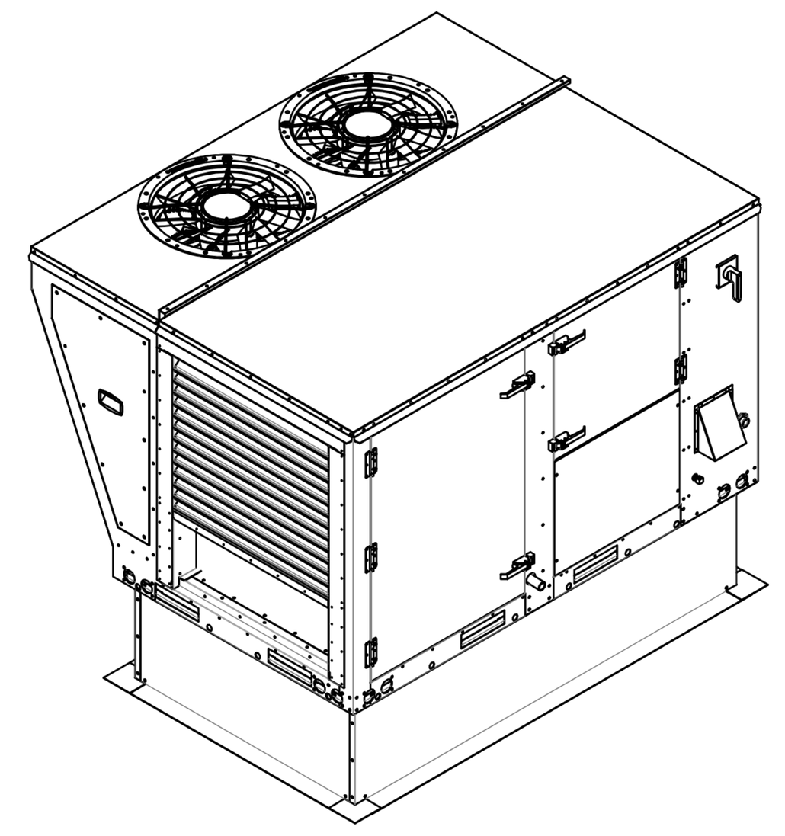
NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
4. CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
5. EXTERIOR GAS CONNECTION PROVIDED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

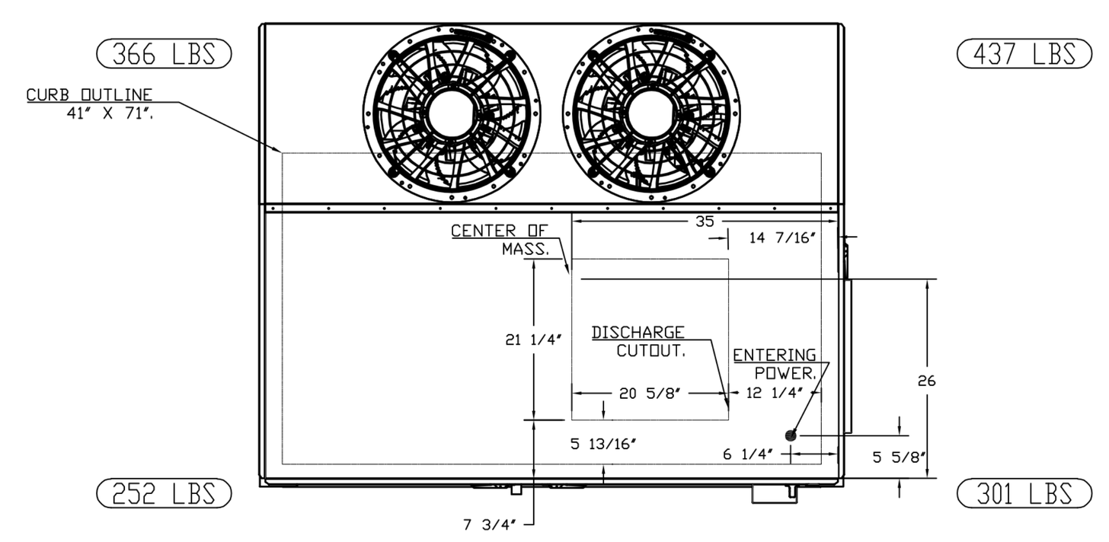
*NOTE: INTEGRAL CO2 MONITORING AND CONTROL CAPABILITIES FOR ALL SPACE MOUNTED THERMOSTATS.

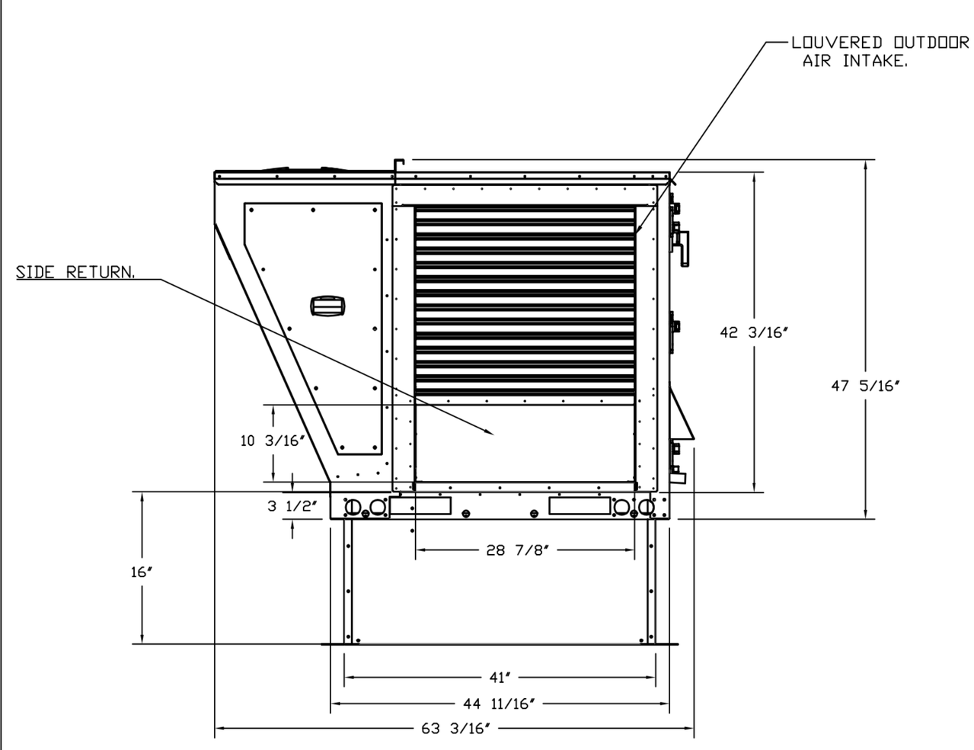
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE 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 20.75" x 21.5".

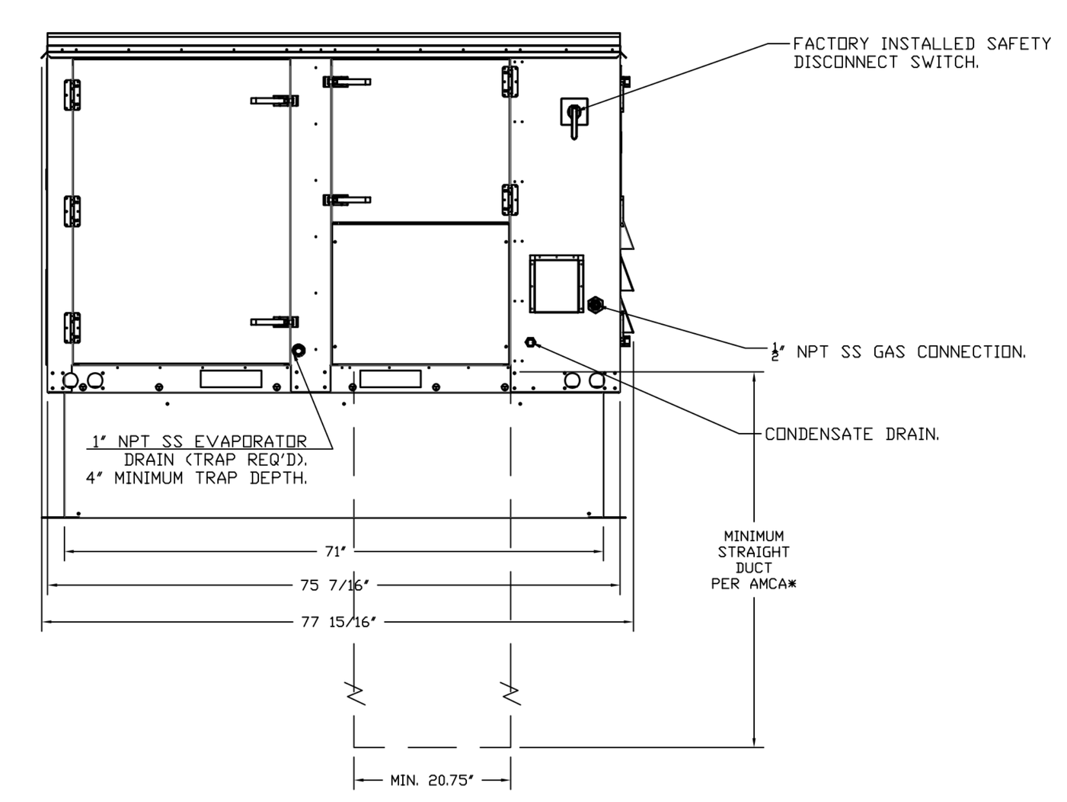


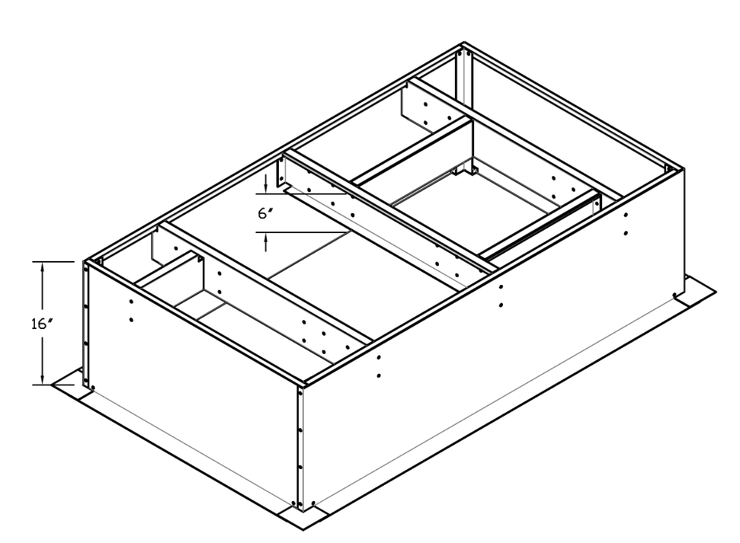
SIZE 1 - 2 CONDENSERS

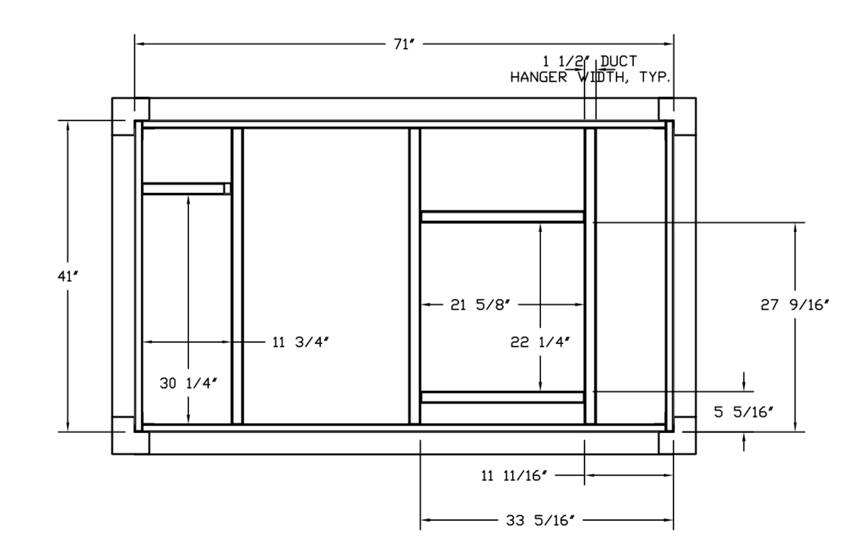




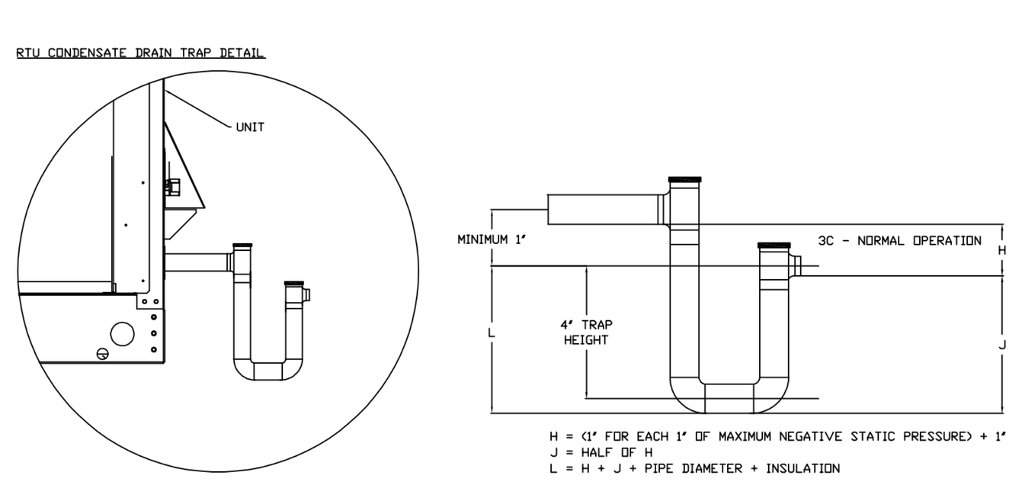








RTU CONDENSATE DRAIN TRAP DETAIL



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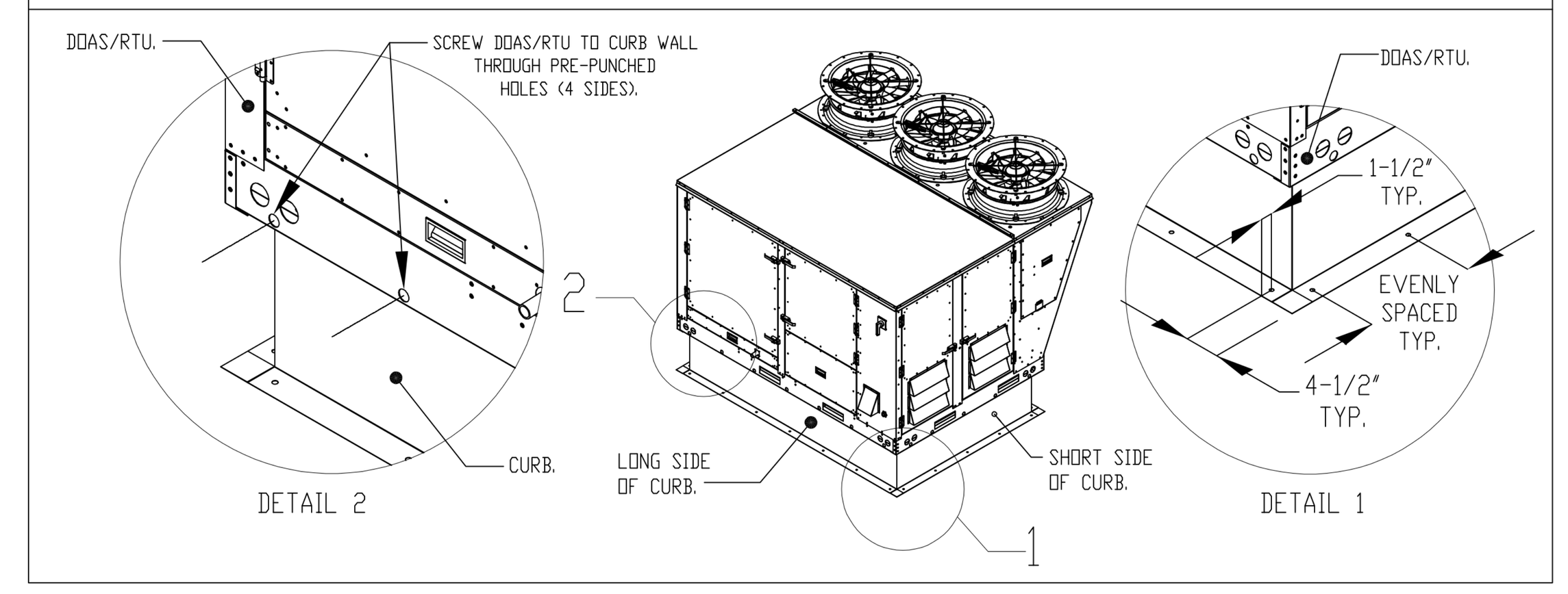

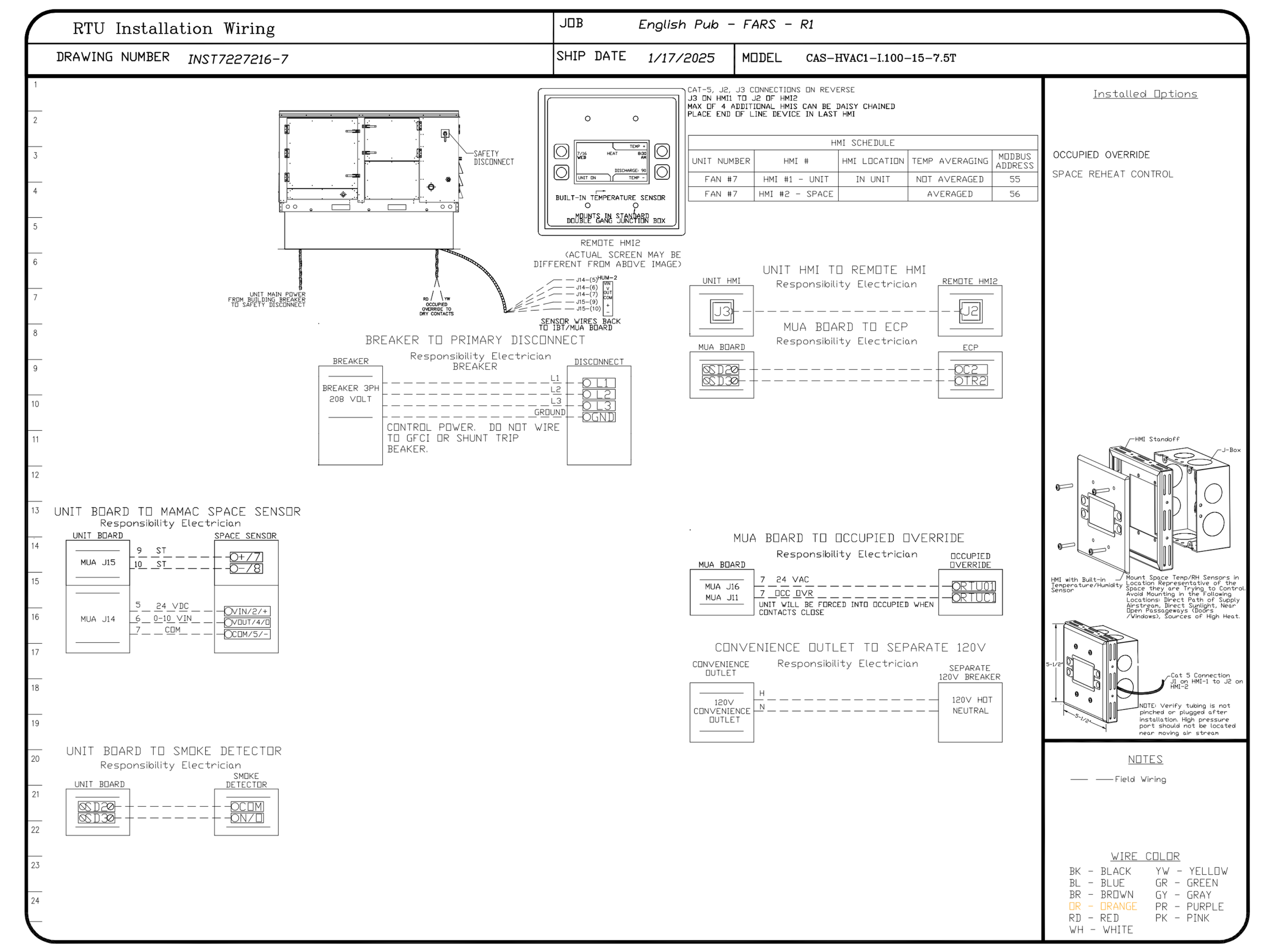

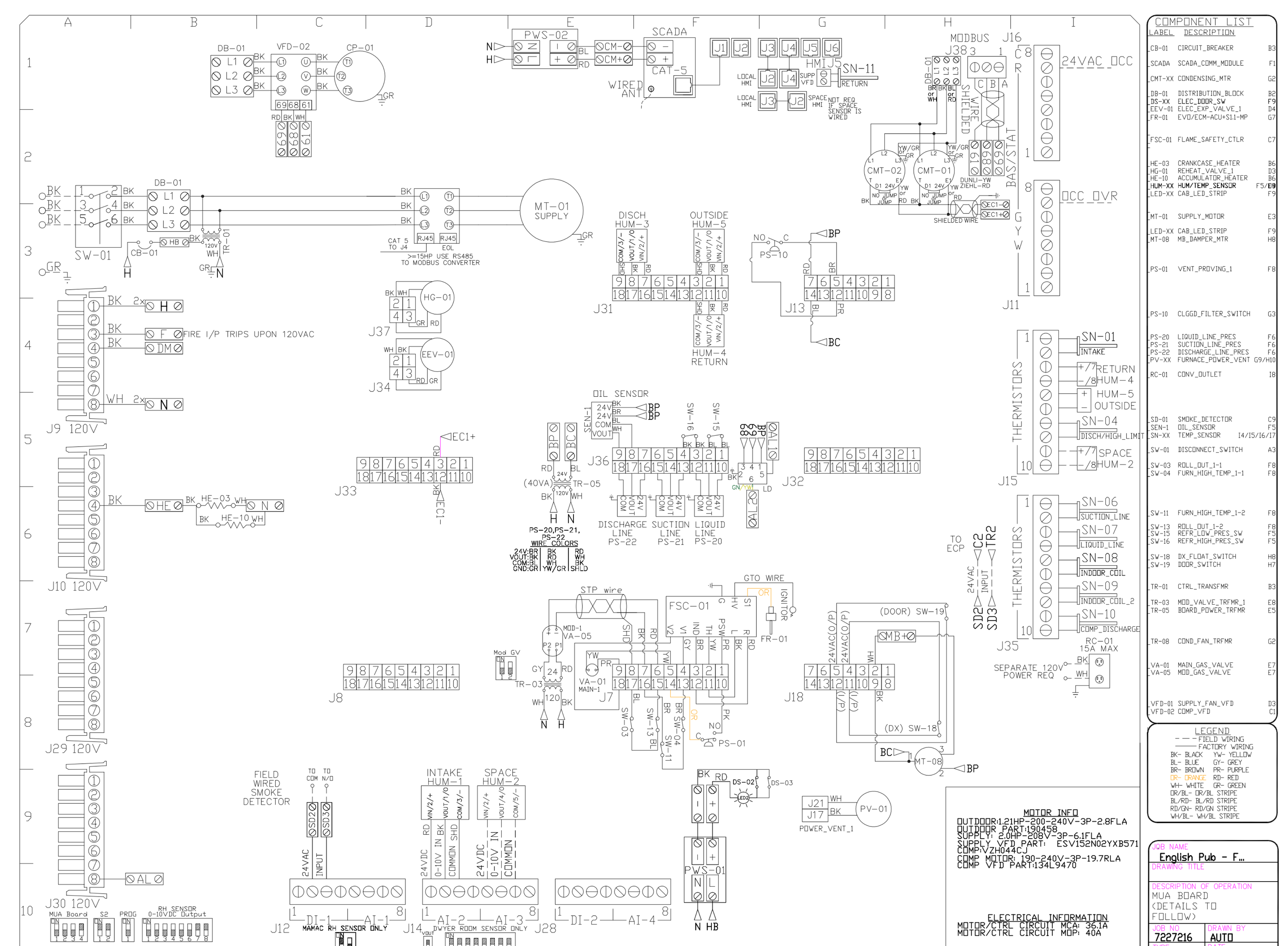

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DRAWN BY: Josh | 146

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SHEET NO. 9

PSW Job Number:
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Batson Inc.
ENGINEERING SOLUTIONS
1300 Brookwood Drive
Little Rock Arkansas 72202
501-664-3311 www.batson.com

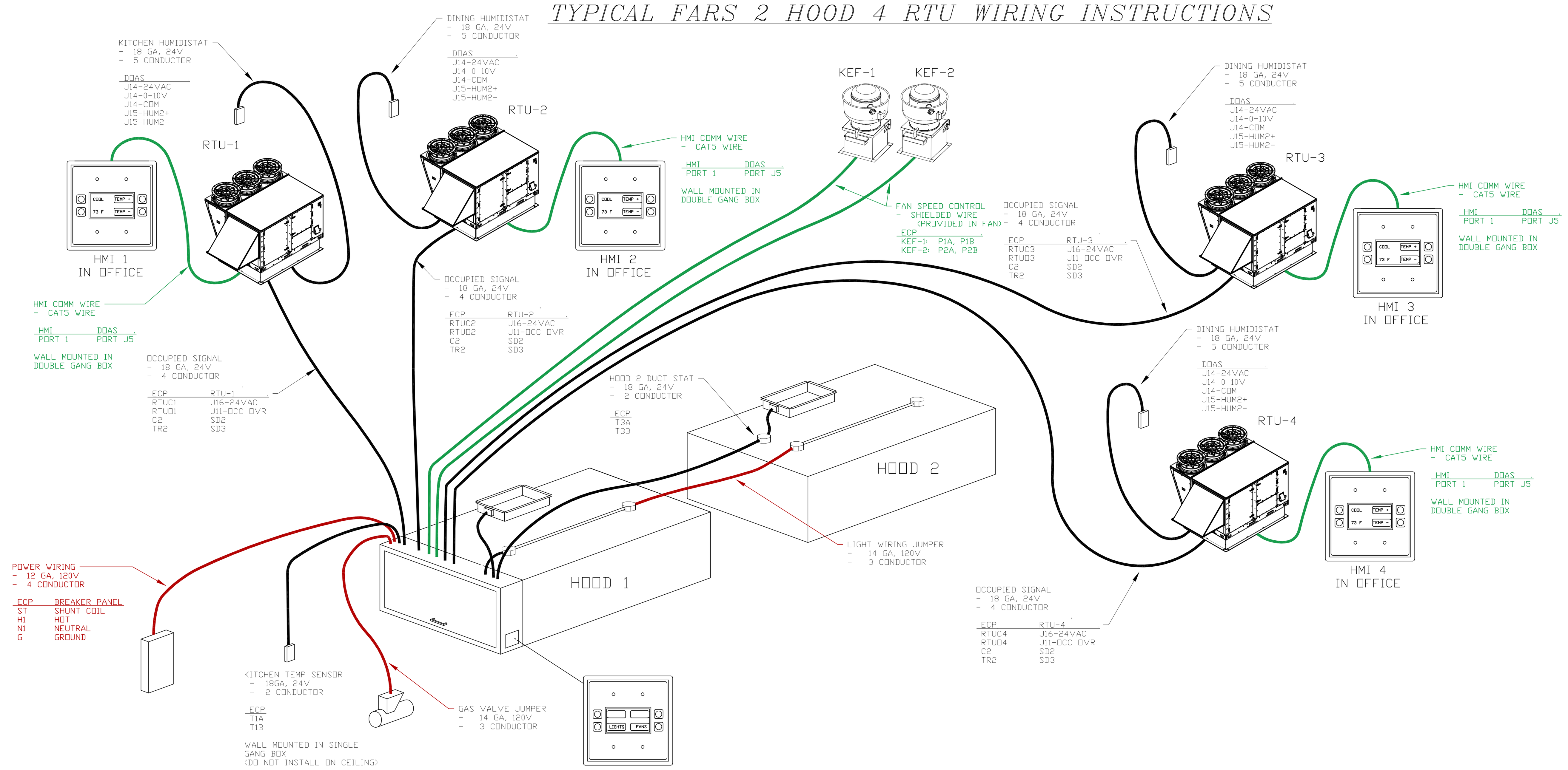
CERTIFICATE OF AUTHORIZATION BATSON INC. No. 99

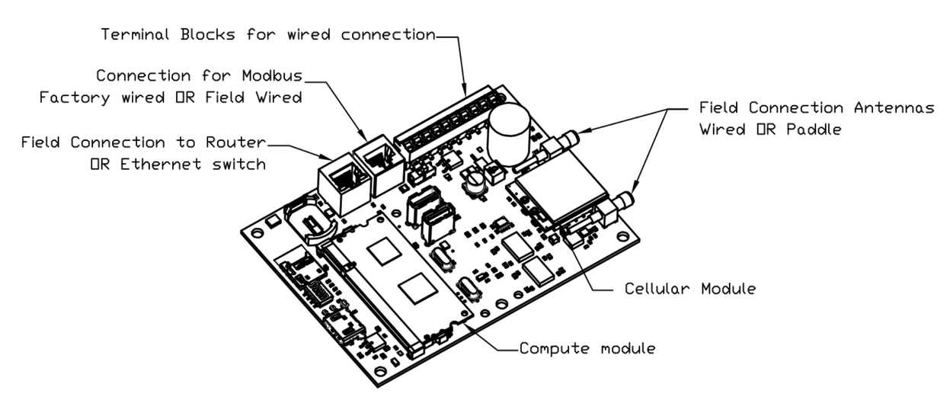
M409

ELECTRICAL PACKAGE – JOB#7227216

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
1		SC-321110MA_MA4	UTILITY CABINET LEFT	UTILITY CABINET LEFT	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ 2 RELAYS ON/OFF WITH SUPPLY	KEF-1	EXHAUST	1	1.000	115	11.6
				HOOD # 1	1 FAN		KEF-2	EXHAUST	1	1.000	115	11.6
							RTU-1 (Kitchen)	SUPPLY	3	3.000	208	10.2

TYPICAL FARS 2 HOOD 4 RTU WIRING INSTRUCTIONS





CASlink Monitor and Control

- *Hood control panel to support communications to cloud-based Building Management System.*
- *Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.*
- *Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.*
- *Hood Control Panel to allow cloud-based Building Management System to implement SYSTEM ECONOMIZER control strategies for fully integrated Building Management.*

MONITORING AND CONTROL POINTS LIST

DCV Packages	Function
Room Temperature	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR
Fan Amperage	MONITOR
Fan Power	MONITOR
VFD Faults	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Prep Time Button	MONITOR & CONTROL
Fans Button	MONITOR & CONTROL
Lights Button	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

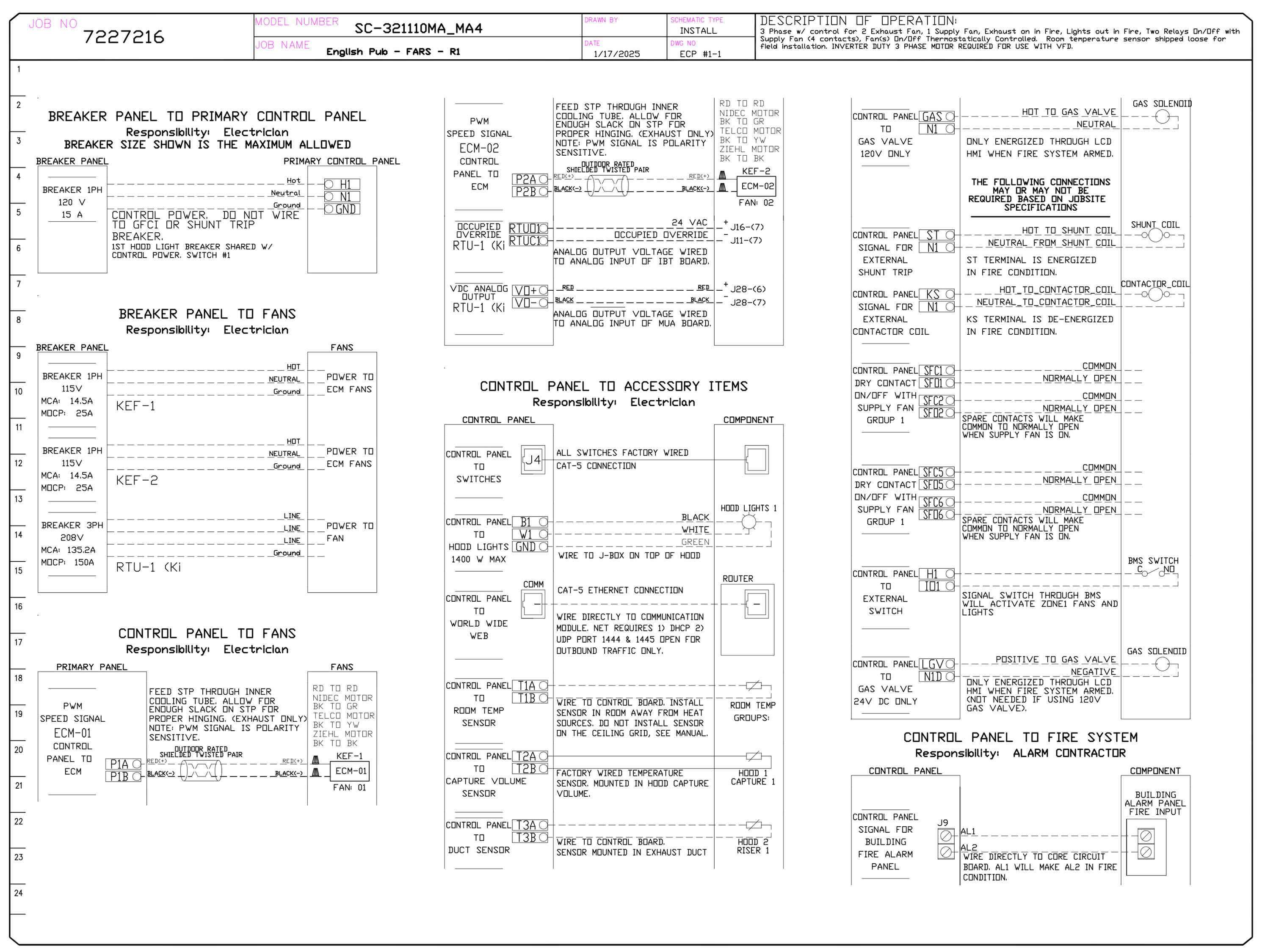
SC Packages	Function
Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR
MUA DIscharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Fans Button(s)	MONITOR & CONTROL
Lights Button(s)	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

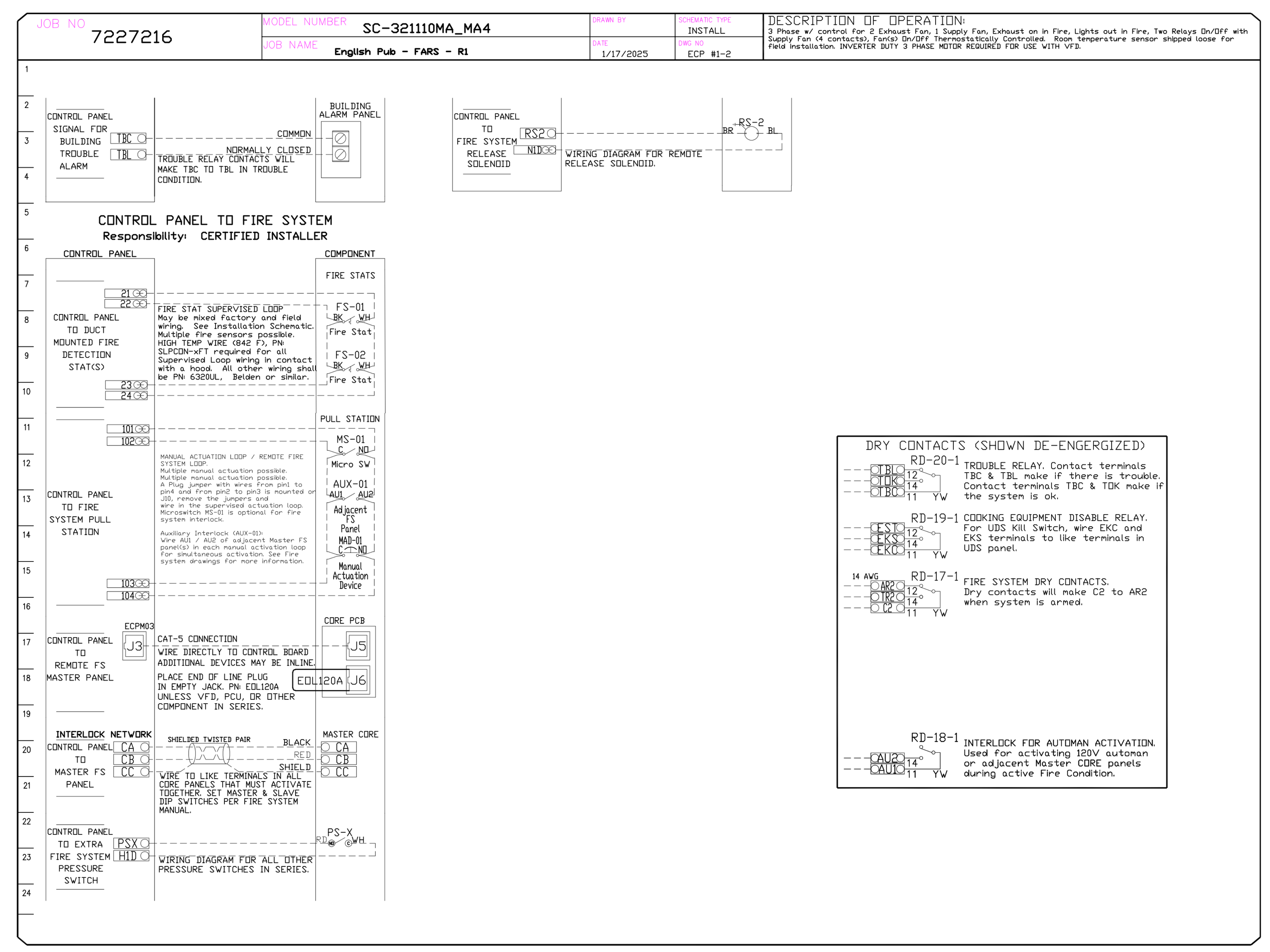
CONTROLS DESIGN SERVICE

BIANNUAL ANALYSIS OF EQUIPMENT PERFORMANCE REQUIRED BY THE MANUFACTURER TO OPTIMIZE SYSTEM POST INSTALL. DETAILED PERFORMANCE REPORT TO BE PRESENTED TO OWNERSHIP ON A BIANNUAL BASIS FOR THE FIRST YEAR.

ELECTRICIAN NOTES :

All Hood/Fan/DCV/UDS/PCU electrical connections and interconnections to be provided and installed by Electrician. Electrician to provide, install, and land wiring between hood lights, hood temp sensors, remote Ansul system microswitches, and any other component requiring an electrical connection to the Captive-Aire electrical package. Failure by the Electrician to make ALL required electrical connections and interconnections will result in the electrical controls not working properly. Any loss or failed test as a result of electrical controls not working properly is the responsibility of the Electrician. Light bulbs for kitchen hoods to be provided and installed by electrician.





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