

5/13/2024 11:56:07 AM

MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

DEMOLITION NOTES

REMOVE ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, HANGERS, SUPPORTS, PIPING, AND ACCESSORIES ONLY SERVING THIS SPACE AND NOT INDICATED TO REMAIN. REFER TO DEMOLITION SHEET MD101 FOR MORE INFORMATION. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.

REMODEL NOTES

THIS DRAWING IS BASED ON BEST AVAILABLE INFORMATION AT TIME OF DESIGN AND MAY NOT REFLECT AS-BUILT CONDITIONS. ALL MECHANICAL INSTALLATIONS INDICATED ON THIS SHEET SHALL BE FIELD VERIFIED PRIOR TO BID AND DEMOLITION.

EQUIPMENT CLEARANCE NOTES

VERIFY ALL EXISTING EXHAUST OUTLETS WITHIN 10'-0" OF OUTDOOR AIR INTAKES ARE MINIMUM 3'-0" HIGHER THAN OUTDOOR AIR INTAKES. CONTACT THE ARCHITECT AND ENGINEER IMMEDIATELY IF ANY EXISTING EXHAUST OUTLETS WITHIN 10'-0" OF OUTDOOR AIR INTAKES ARE OBSERVED TO BE LESS THAN 3'-0" HIGHER THAN OUTDOOR AIR INTAKES.

HVAC COMMISSIONING

GENERAL CONTRACTOR SHALL HIRE A THIRD PARTY REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY TO DEVELOP A COMMISSIONING PLAN THAT SHALL INCLUDE THE FOLLOWING ITEMS:

1. NARRATIVE DESCRIPTION OF ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING PERSONNEL INTENDED TO ACCOMPLISH EACH OF ACTIVITY.
2. LISTING OF SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND DESCRIPTION OF TESTS TO BE PERFORMED.
3. FUNCTIONS TO BE TESTED, INCLUDING, BUT NOT LIMITED TO CALIBRATIONS AND ECONOMIZER CONTROLS.
4. CONDITIONS UNDER WHICH TEST WILL BE PERFORMED. AT MINIMUM, TESTING SHALL AFFIRM WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS.
5. MEASURABLE CRITERIA FOR PERFORMANCE.

A PRELIMINARY REPORT OF COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE COMPLETED AND CERTIFIED BY REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY IN ACCORDANCE WITH REQUIREMENTS OF SECTION C480.2 OF THE ENERGY CONSERVATION CODE AND PROVIDED TO PROJECT OWNER. A COPY OF THE REPORT SHALL BE MADE AVAILABLE TO CODE OFFICIAL IF REQUESTED.

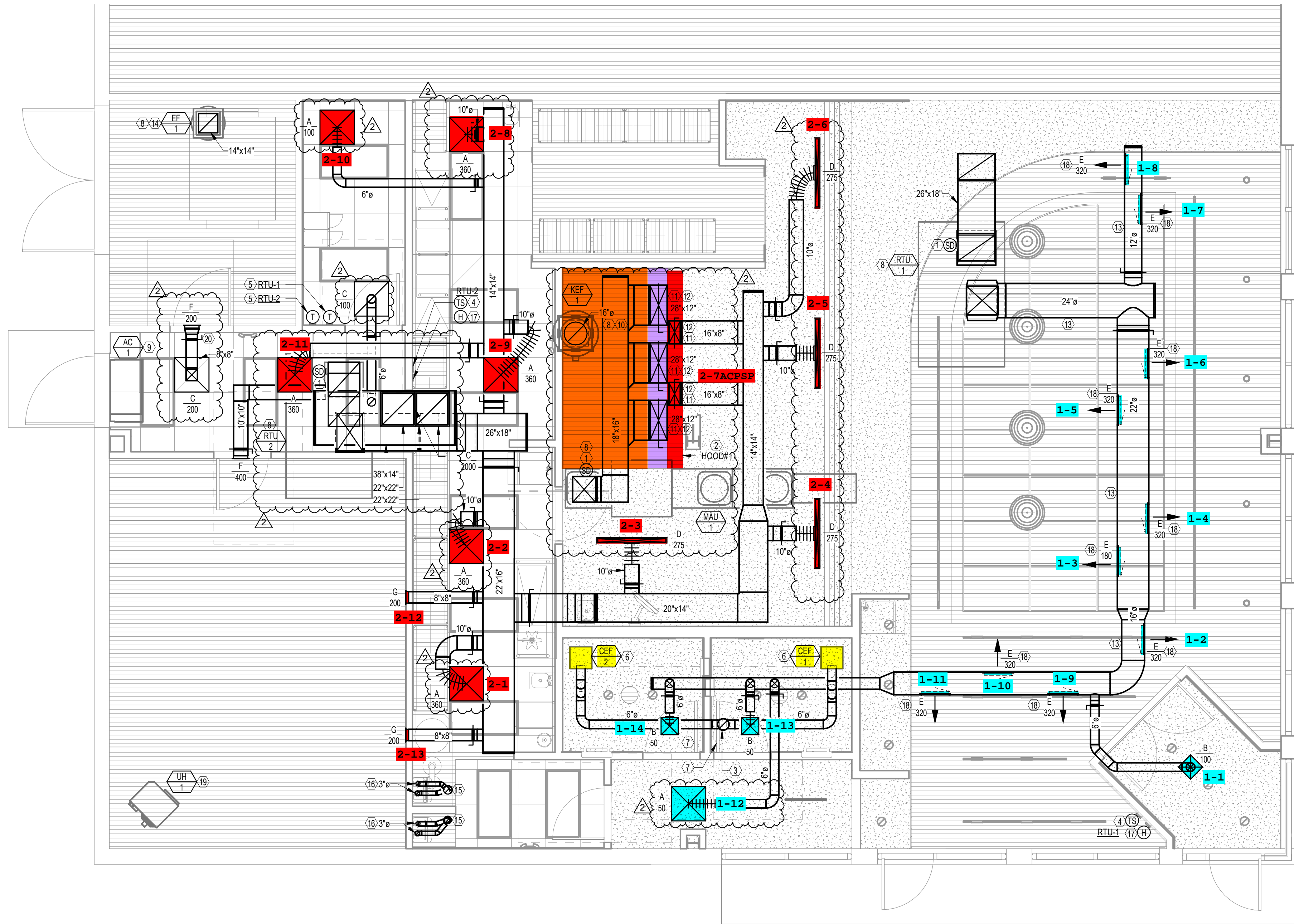
FINAL COMMISSIONING REPORT SHALL BE DUE TO PROJECT OWNER WITHIN 90 DAYS OF RECEIPT OF CERTIFICATE OF OCCUPANCY.

GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR AS REQUIRED TO INSTALL A COMPLETE AND OPERABLE HVAC SYSTEM PER THE NEW ARCHITECTURAL LAYOUT AND AS TO COMPLY WITH THE SPECIFICATION, DETAILS, THIS SCOPE OF WORK AND ALL APPLICABLE CODES.
2. ALL WORK PERFORMED SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND COORDINATE ALL NEW WORK WITH ALL TRADES PRIOR TO ANY WORK BEING DONE TO ENSURE CONFLICTS DO NOT OCCUR.
4. DISRUPTION OF ANY EXISTING SERVICE SHALL BE CLEARED WITH THE OWNER AND SHALL BE PERFORMED AT A TIME AND IN A MANNER SO AS TO CAUSE THE OWNER A MINIMUM OF INCONVENIENCE.
5. ALL DUCT SIZES INDICATED ON PLANS AND RISERS ARE CLEAR INSIDE DIMENSIONS. DUCT SIZES NOT SHOWN SHALL BE SIZED TO VELOCITIES NO GREATER THAN UPSTREAM SECTION USING SIMILAR ASPECT RATIOS.
6. ALL SUPPLY AIR TAKEOFFS FROM MAIN TRUNK DUCTS ARE TO BE INSTALLED WITH BELL MOUTH FITTINGS OR 45 DEGREE ENTRY TO PROVIDE THE SMOOTHEST AIR FLOW POSSIBLE.
7. PROVIDE TURNING VANES IN ALL LOW-PRESSURE 90-DEGREE DUCT TURNS.
8. ALL THERMOSTAT LOCATIONS SHALL BE APPROVED BY THE ARCHITECT.
9. ALL DUCTS LOCATED ABOVE INACCESSIBLE CEILINGS ARE TO BE BALANCED PRIOR TO CEILING INSTALLATIONS.
10. CONTRACTOR SHALL PROVIDE ACCESS DOORS FOR SERVICE AND MAINTENANCE OF ALL EQUIPMENT LOCATED ABOVE INACCESSIBLE CEILINGS.
11. PROVIDE GUIDES, HANGERS, EXPANSION LOOPS AND SUPPLEMENTARY STEEL SUPPORT WHERE REQUIRED FOR ALL PIPING.
12. LABEL ALL EXTERIOR AND INTERIOR MECHANICAL, FIRE PROTECTION EQUIPMENT, AND STORAGE ROOM DOORS. LETTERS SHALL BE A MINIMUM 4" INCHES HEIGHT.
13. THE SPACE AROUND DUCTS, PIPES, ELECTRICAL CONDUIT, CABLE TRAYS, AND ALL OTHER ELECTRICAL/MECHANICAL WORK PENETRATING RATED WALLS OR BETWEEN FLOORS SHALL NOT EXCEED 1/2" AND SHALL BE PACKED SOLID WITH MINERAL WOOL OR AN APPROVED EQUAL MATERIAL AND BE CLOSED OFF BY CLOSE-FITTING ESCUTCHEONS ON BOTH SIDES OF THE PENETRATIONS.
14. DUCT SMOKE DETECTORS SHALL BE REQUIRED AND INSTALLED IN ACCORDANCE WITH IMC 2018 SECTION 606. DUCT SMOKE DETECTORS SHALL RECEIVE THEIR POWER DIRECTLY FROM AN INITIATING DEVICE CIRCUIT OR SINGLE LINE CIRCUIT FROM THE BUILDING FIRE ALARM CONTROL UNIT. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND SHALL BE LOCATED WITHIN THE BUILDING SPACE IN AMBIENT CONDITIONS CONSISTENT WITH THE LISTING OF THE DUCT SMOKE DETECTOR (NOT INSIDE THE RTU LOCATED ON THE ROOF). DUCT DETECTORS ARE NOT REQUIRED WITH CEILINGS THAT ARE OPEN TO THE ROOF DECKING AND ARE NOT ABLE TO TRANSFER SMOKE FROM ONE AREA TO THE NEXT. DUCT SMOKE DETECTORS SHALL SHUTDOWN THE RTU UPON ALARM. DUCT SMOKE DETECTORS SHALL NOT SEND A TROUBLE SIGNAL TO THE FIRE ALARM CONTROL UNIT WHEN POWER IS SHUT OFF TO THE RTU. PROVIDE REMOTE LED ALARM INDICATOR/TEST SWITCHES FOR EACH DUCT SMOKE DETECTOR. PROVIDE A RED FENDER WASHER ON THE CEILING TILE THAT ACCESSES THE DUCT SMOKE DETECTOR. DUCT SMOKE DETECTORS IN ALARM CONDITION SHALL TRANSMIT A FULL FIRE SIGNAL.
15. ANY ROOF PENETRATIONS MUST BE PERFORMED BY THE LANDLORD'S CONTRACTOR AT TENANT'S SOLE COST AND EXPENSE. CONTACT PROPERTY MANAGER FOR ROOFING CONTRACTOR'S CONTACT INFORMATION.
16. TENANT'S WORK SHALL NOT IMPACT ONGOING OPERATIONS OF EXISTING TENANTS.
17. PROVIDE ACCESS PANELS IN HARD LID CEILINGS FOR ACCESS TO DUCT MOUNTED SMOKE DETECTORS, SENSOR, BALANCING DAMPERS, ETC. COORDINATE LOCATION OF ACCESS PANEL TO BE CENTERED IN LINE WITH LIGHT FIXTURES, DIFFUSERS, ETC.

KEYED NOTES

1. DUCT MOUNTED SMOKE DETECTOR FURNISHED BY FIRE ALARM CONTRACTOR AND INSTALLED IN DUCT BY MECHANICAL CONTRACTOR. INTERLOCK WIRING BETWEEN FIRE ALARM SYSTEM RELAY AND ROOFTOP UNIT SHUTDOWN CONTACT SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. ALL OTHER WIRING BY FIRE ALARM CONTRACTOR. UPON DETECTION OF SMOKE, ROOFTOP UNIT SHALL SHUT DOWN UPON SIGNAL FROM FIRE ALARM SYSTEM. COORDINATE INSTALLATION LOCATION WITH ACCESS REQUIREMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE RED FENDER WASHER ON THE CEILING TILE THAT ACCESSES THE DUCT SMOKE DETECTOR.
2. INSTALL OWNER FURNISHED TYPE I GREASE EXHAUST HOOD. SUPPORT HOOD PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE TRAPEZE HANGERS FOR ALL THREADED SUPPORT UNDER DUCTWORK AS REQUIRED. REFER TO HOOD DRAWINGS IN FOOD SERVICE SET FOR HOOD SPECIFICATION AND ADDITIONAL INFORMATION INCLUDING BALANCE OF MAKEUP AND CONDITIONED SUPPLY AIR TO HOOD.
3. 8"Ø EXHAUST DUCT VTR.
4. PROVIDE REMOTE TEMPERATURE SENSOR COMPATIBLE WITH THERMOSTAT. MOUNT SENSOR 48" ABOVE FINISHED FLOOR.
5. PROVIDE HONEYWELL Wi-Fi VISION PRO 8000 TOUCHSCREEN 7-DAY PROGRAMMABLE THERMOSTAT WITH AUTO-CHANGEOVER AND AUTOMATIC START CAPABILITY. MOUNT THERMOSTAT 48" ABOVE FINISHED FLOOR. COORDINATE FINAL INSTALLATION LOCATION OF THERMOSTAT WITH OWNER'S REPRESENTATIVE.
6. PROVIDE CEILING MOUNTED EXHAUST FAN. TRANSITION FROM FAN DISCHARGE TO DUCT SIZE SHOWN AND EXTEND UP THROUGH ROOF.
7. UNDERCUT RESTROOM DOOR 1" FOR TRANSFER AIR.
8. DUCT UP TO EQUIPMENT ON ROOF. REFER TO SHEET M201 FOR EQUIPMENT LOCATION.
9. MOUNT AIR CURTAIN DIRECTLY ABOVE THE DOOR. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
10. INSTALL OWNER FURNISHED UL-2221 LISTED DOUBLE-WALL GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL DW-3R OR 32 ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL. FROM HOOD COLLAR EXHAUST FAN ON ROOF. INSTALL EXHAUST DUCT PER MANUFACTURER'S INSTRUCTIONS. PROVIDE CLEANOUTS AT EVERY CHANGE OF DIRECTION IN THE DUCT AND/OR EVERY 10 FEET WITH A MINIMUM OF 3 FEET OF CLEARANCE IN FRONT OF CLEAN-OUT. COORDINATE ROUTING OF DUCTWORK WITH OWNER'S CAPTIVEAIRE REPRESENTATIVE.
11. REFER TO HOOD DRAWINGS FOR BALANCE OF MAKEUP AIR AND CONDITIONED SUPPLY AIR.
12. PROVIDE YOUNG REGULATOR MODEL 830ACC RECTANGULAR CABLE CONTROLLED OPPOSED BLADE BALANCING DAMPER, MODEL 270-30IEZ BOWDEN CABLE CONTROL KIT, AND BCW CONTROL WIRE AND CASINGS. COORDINATE INSTALLATION LOCATION WITH ARCHITECT AND MOUNT CABLE CONTROLLER IN CEILING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
13. MOUNT SPIRAL DUCT TIGHT TO BOTTOM OF STRUCTURE.
14. TERMINATE EXHAUST 12" BELOW DECK WITH WIRE MESH.
15. PROVIDE WITH NAVIAN GXXXX00057 CONCENTRIC VENT AT TERMINATION.
16. 3" DIA. WATER HEATER EXHAUST AND INTAKE VENT POCS. PROVIDE CONDENSATE TRAP AND SLOPE HORIZONTAL RUNS UPWARD TOWARDS THE VENT TERMINATION AT A RATE OF 1/4" PER FOOT. REFER TO PLUMBING DRAWINGS & MANUFACTURER'S INSTALLATION MANUAL FOR ADDITIONAL INFORMATION.
17. PROVIDE REMOTE HUMIDITY SENSOR COMPATIBLE WITH THERMOSTAT. MOUNT SENSOR 48" ABOVE FINISHED FLOOR.
18. MOUNT REGISTER AT 15° ANGLE ON SIDE OF DUCT. ADJUST DIFFUSER BLADES TO 45° PATTERN. BALANCE AIR SCOOP TO CFM INDICATED.
19. WALL MOUNT UNIT HEATER AT 15'-0" AFF. COORDINATE FINAL MOUNTING HEIGHT/LOCATION WITH ARCHITECT. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
20. PROVIDE A BACKDRAFT DAMPER AT TRANSFER GRILLE.



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AOR PROJECT NUMBER: CAV022

ISSUE	DATE
PERMIT SET	01/12/2024
BID SET	02/29/2024
REVISION 2	05/13/2024

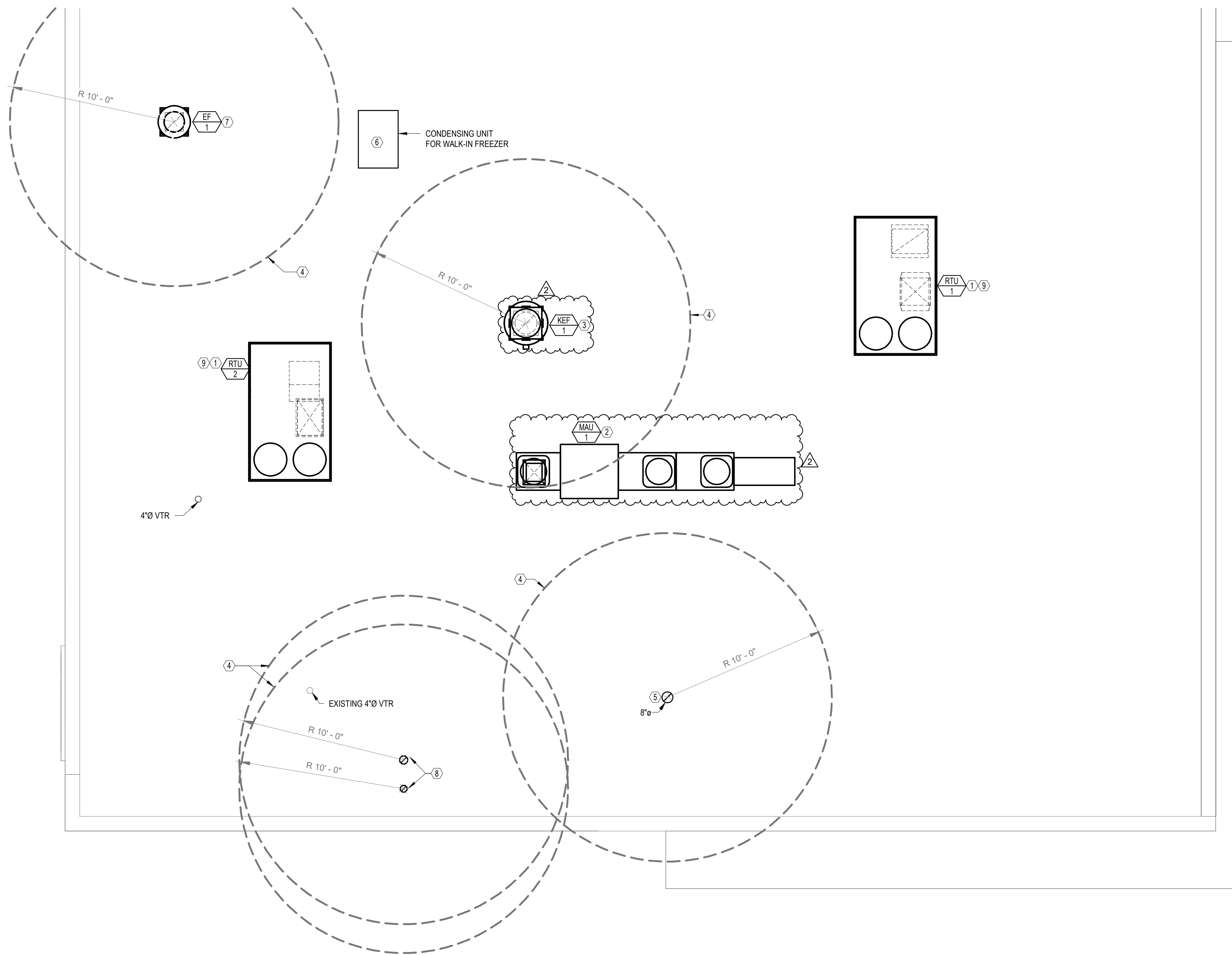
MECHANICAL PLAN

SHEET:

M101



5/13/2024 11:56:07 AM



MECHANICAL ROOF PLAN
 SCALE: 1/4" = 1'-0"

GENERAL NOTES

- ALL ROOFTOP EQUIPMENT LOCATIONS SHALL BE COORDINATED WITH ROOF DRAINS. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT LOCATIONS OF EQUIPMENT.
- THE INSTALLING CONTRACTOR SHALL PROVIDE ROOF CURBS AND LEVELING CURBS TO MATCH THE ROOF PITCH IF REQUIRED. THE ROOFING CONTRACTOR SHALL FLASH ALL CURBS INTO ROOF.
- ALL ROOFTOP EQUIPMENT SHALL BE SET ON CURBS OR RAILS. ALL PIPE AND DUCT PENETRATIONS THROUGH THE ROOF SHALL HAVE A WEATHER PROOF CURB OR FLASHING. ALL ROOF FLASHING SHALL BE PERFORMED BY THE ROOFING CONTRACTOR.
- ALL VENTS AND EXHAUSTS SHALL BE LOCATED A MINIMUM OF 10'-0" AWAY FROM FRESH AIR INTAKES PER LOCAL CODE.
- VENT TERMINATIONS PROVIDED BY THE PLUMBING CONTRACTOR SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. EXTEND TERMINATION HEIGHT TO PROVIDE 12'-0" CROSS SECTION CLEARANCE WHERE NEEDED.
- ANY PENETRATION THROUGH THE ROOF SHALL BE COORDINATED WITH THE ROOFING CONTRACTOR.
- ALL STRUCTURAL DUCT OPENINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO CUTTING. INDICATE ON 18" SHOP DRAWINGS EXACT LOCATION OF OPENINGS COORDINATED WITH STRUCTURAL TRADES. PROVIDE DUCT ROOF CURBS AT ALL DUCT PENETRATIONS THRU THE ROOF.
- ALL EQUIPMENT SHALL BE A MINIMUM OF 10'-0" AWAY FROM ROOF EDGE.
- ACCESS TO MECHANICAL APPLIANCES INSTALLED IN UNDER-FLOOR AREAS, IN ATTIC SPACES, AND ON ROOFS OR ELEVATED STRUCTURES SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE.
- EXHAUST TERMINATION OF ENVIRONMENTAL AIR DUCTS SHALL TERMINATE NOT LESS THAN 3'-0" FROM A PROPERTY LINE, 10'-0" FROM A FORCED AIR INLET, AND 3'-0" FROM OPENINGS INTO BUILDINGS.
- LABEL ALL EXTERIOR AND INTERIOR MECHANICAL, FIRE PROTECTION EQUIPMENT, AND STORAGE ROOM DOORS. LETTERS SHALL BE A MINIMUM 4" INCHES HEIGHT.
- THE SPACE AROUND DUCTS, PIPES, ELECTRICAL CONDUIT, CABLE TRAYS, AND ALL OTHER ELECTRICAL/MECHANICAL WORK PENETRATING RATED WALLS OR BETWEEN FLOORS SHALL NOT EXCEED 1/2" AND SHALL BE PACKED SOLID WITH MINERAL WOOL OR AN APPROVED EQUAL MATERIAL AND BE CLOSED OFF BY CLOSE-FITTING ESCUTCHEONS ON BOTH SIDES OF THE PENETRATIONS.
- PROVIDE GUARDS FOR ANY MECHANICAL EQUIPMENT THAT REQUIRE SERVICE ON ROOF THAT IS LOCATED WITHIN 10' OF A ROOF EDGE. THE TOP OF THE GUARD SHALL BE LOCATED NOT LESS THAN 42" ABOVE THE ELEVATED SURFACE ADJACENT TO THE GUARD.

KEYED NOTES

- INSTALL OWNER FURNISHED ROOFTOP UNIT ON ENGINEERED ADAPTIVE CURB. COORDINATE WITH STRUCTURE. SHIM UNIT AND CURB LEVEL FOR PROPER CONDENSATE DRAINAGE. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN AIR DUCT CONNECTIONS. LABEL ROOFTOP UNIT BOTH ON THE ROOF AND ON THE SUPPLY DUCT INSIDE SPACE WITH "RTU-1" AS AN EXAMPLE. USE 4" TALL HELIX MED TEXT FOR LABELS. ROOFTOP UNIT LABELING SHALL MATCH UNIT NUMBERS INDICATED ON MECHANICAL PLAN.
- INSTALL OWNER FURNISHED MAKEUP AIR UNIT AND ROOF CURB. SHIM UNIT AND CURB LEVEL. PROVIDE FLEXIBLE CONNECTORS ON THE SUPPLY AIR DUCT CONNECTION. TRANSITION TO DUCT SIZE SHOWN ON M101.
- INSTALL OWNER FURNISHED ROOF MOUNTED EXHAUST FAN AND CURB.
- MAINTAIN A MINIMUM 10'-0" CLEARANCE FROM EXHAUST DISCHARGE TO OUTSIDE AIR INTAKES.
- EXTEND 8" EXHAUST DUCT UP THROUGH ROOF. PROVIDE A ROOF JACK, STORM COLLAR, AND ALL-WEATHER CAP.
- PROVIDE ROOF MOUNTED EQUIPMENT SUPPORT RAILS AND INSTALL OWNER FURNISHED REMOTE CONDENSING UNIT FOR WALK-IN COOLER. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, CRANKCASE HEATER, LOW AMBIENT CONTROLS, AND WEATHER PROOF HOUSING. PROVIDE ROOF RAILS TO SUPPORT CONDENSING UNIT ON ROOF. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE PIPE CURB ASSEMBLY FOR ROOF PENETRATIONS. SEAL PIPING PENETRATIONS THROUGH COOLER ROOF.
- PROVIDE ROOF MOUNTED EXHAUST FAN ON EXISTING CURB. PROVIDE ADAPTIVE CURB AS NEEDED. VERIFY EXACT LOCATION WITH EXISTING CONDITIONS.
- PROVIDE WITH NAVIAN GX0000057 CONCENTRIC VENT AT TERMINATION.
- MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL POWER EXHAUST ACCESSORY (ESW4) TO ROOFTOP UNIT. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH ELECTRICAL CONTRACTOR.

EQUIPMENT CLEARANCE NOTE

VERIFY ALL EXISTING EXHAUST OUTLETS WITH IN 10'-0" OF OUTDOOR AIR INTAKES ARE MINIMUM 3'-0" HIGHER THAN OUTDOOR AIR INTAKES. CONTACT THE ARCHITECT AND ENGINEER IMMEDIATELY IF ANY EXISTING EXHAUST OUTLETS WITH IN 10'-0" OF OUTDOOR AIR INTAKES ARE OBSERVED TO BE LESS THAN 3'-0" HIGHER THAN OUTDOOR AIR INTAKES.

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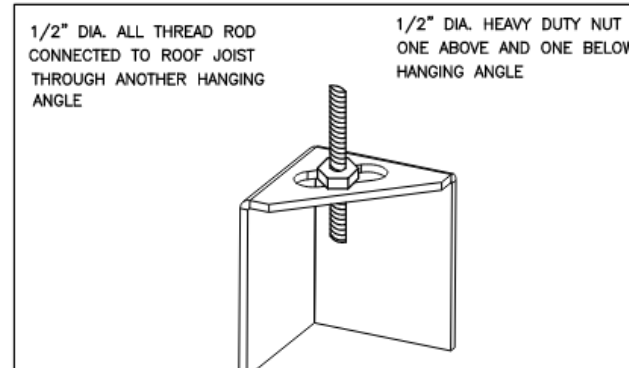
ADR PROJECT NUMBER:
CAV022

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MECHANICAL ROOF PLAN

SHEET:
M201





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

HANGING ANGLE DETAILS

HOOD STYLE / MODEL	450 DEGREES cfm/ft.	600 DEGREES cfm/ft.	700 DEGREES cfm/ft.
CANOPY ND2	150	200	250
WITH END PANELS (15% REDUCTION)	127.5	170	212.5
SLOPED SND-2	228	294	-
ISLAND ND-2WI	269	300	350
NDI	346	422	475

ETL HOOD LISTING DETAIL

EXHAUST CFM=LENGTH OF HOOD X CFM/IN.FT. (LOAD)
SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED
TOTAL DUCT AREA=44 X _____
DUCT LENGTH= _____ TOTAL DUCT AREA

*CAPTIVE-AIRE VENTILATOR DUCT SIZES ARE CALCULATED USING AN EXHAUST VELOCITY OF 1500-1800 FPM AND A SUPPLY VELOCITY OF 1000 FPM.

CALCULATIONS UTILIZED

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH:



3054804-001 STANDARDS 719
3054804-002 ETL File number 3054804-001/002

BUILDING CODES

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

CLEARANCE TO COMBUSTIBLES

INSTALLATION

- ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
- ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
- HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.
- ALL CONNECTIONS FROM CAPTIVE-AIRE DUCT PER MECHANICAL CONTRACTOR'S PLANS.
- COOKING EQUIPMENT TO SHUT-OFF IN EVENT OF FIRE.
- EXHAUST FANS TO TURN ON IN EVENT OF FIRE.
- ALL LIGHTS/FIXTURE SHOWN INSTALLED BY CAPTIVE-AIRE ARE FACTORY PREWIRED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES BY ELECTRICAL CONTRACTORS.
- LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.
- SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
- INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.

BALANCE

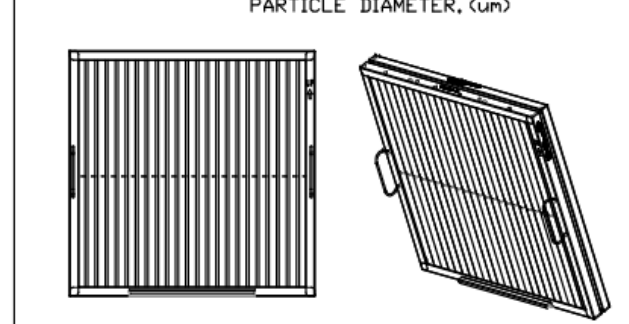
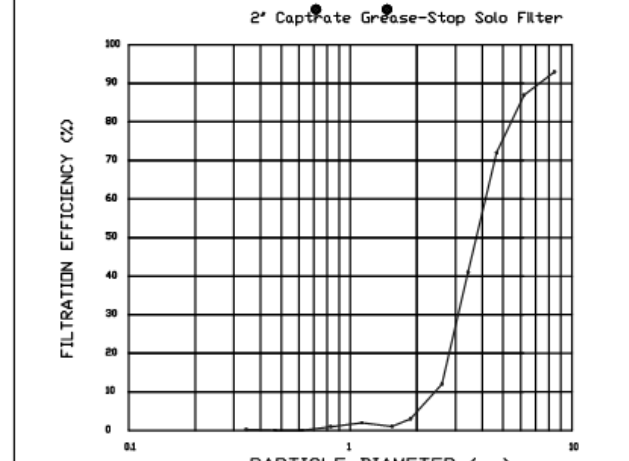
- KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
- KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DINING AREA.
- RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.

ADDITIONAL

- WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
- SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT OF FABRICATION.

GENERAL NOTES

FILTER COLLECTION EFFICIENCY



CaptiveAir Captrate Solo Filter
ETL Listed Grease Extracting Filters
Made From 430 Stainless Steel

FILTER DETAIL

FOR QUESTIONS, CALL THE
Maryland Office
REGION 32
PHONE: (800) 988 - 0881
EMAIL: reg32@captiveaire.com

PATENT NUMBERS
AC-PSP (UNITED STATES) - US PATENT 7963830 B2.
AC-PSP WALL (CANADA) - CA PATENT 2820509.
AC-PSP ISLAND (CANADA) - CA PATENT 2520330.

HOOD INFORMATION - JOB#6740652

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)					MUA CFM	AC CFM	HOOD CONSTRUCTION	HOOD CONFIG		
										WIDTH	LENG	HEIGHT	DIA	CFM				VEL	SP	END TO END
1	33	6030 ND-2-ACPSF-F	CAPTIVEAIRE	10' 7"	600 DEG	I	HEAVY	225	2381		4'	16'	2381	1705	-0.825'	1965	600	430 SS WHERE EXPOSED	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	TYPE	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT	
			QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM	SIZE	ELECTRICAL MODEL #			SWITCHES QUANTITY
1	33	CAPTRATE SOLO FILTER	7	20"	16"	85% SEE FILTER SPEC	6	L55 SERIES E26	ND	LEFT	12"x60"x30"	TANK FS	4.0/4.0	DCV-1111	1 LIGHT 1 FAN	YES	1191 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	33	FIELD WRAPPER 18.00" HIGH FRONT, LEFT. RIGHT END STANDOFF (FINISHED) 1" WIDE 60" LONG INSULATED. LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 84" HIGH INSULATED 430 SS. RIGHT WALL AS END PANEL.

PERFORATED SUPPLY PLENUM(S)

HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							WIDTH	LENG	DIA	CFM	SP
1	33	Front	140'	24'	6'	MUA	12"	28"		655	0.164'
						MUA	12"	28"		655	0.164'
						AC	8"	16"		300	0.082'
						AC	8"	16"		300	0.082'

GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURERS INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURERS LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT

HVAC DISTRIBUTION NOTE
HIGH VELOCITY DIFFUSERS OR HVAC RETURNS SHOULD NOT BE PLACED WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

VERIFY CEILING HEIGHT
____' - ____"

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

CUSTOMER APPROVAL TO MANUFACTURE:

APPROVED AS NOTED	<input type="checkbox"/>
APPROVED WITH NO EXCEPTION TAKEN	<input type="checkbox"/>
REVISE AND RESUBMIT	<input type="checkbox"/>
SIGNATURE _____	
YOUR TITLE _____	DATE _____

REVISIONS

DESCRIPTION	DATE

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7122 Lake Street,
River Forest, IL, 60305

DATE:
6740652

DWG.#:
6740652

DRAWN BY: EG-32

SCALE:
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7211 LAKE STREET
RIVER FOREST, IL 60305
FOR CAVA
14 Ridge Square NW #500, WASHINGTON, DC 20016

ISSUE	DATE
PERMIT SET	01/12/2024
BID SET	02/29/2024
REVISION 2	05/13/2024

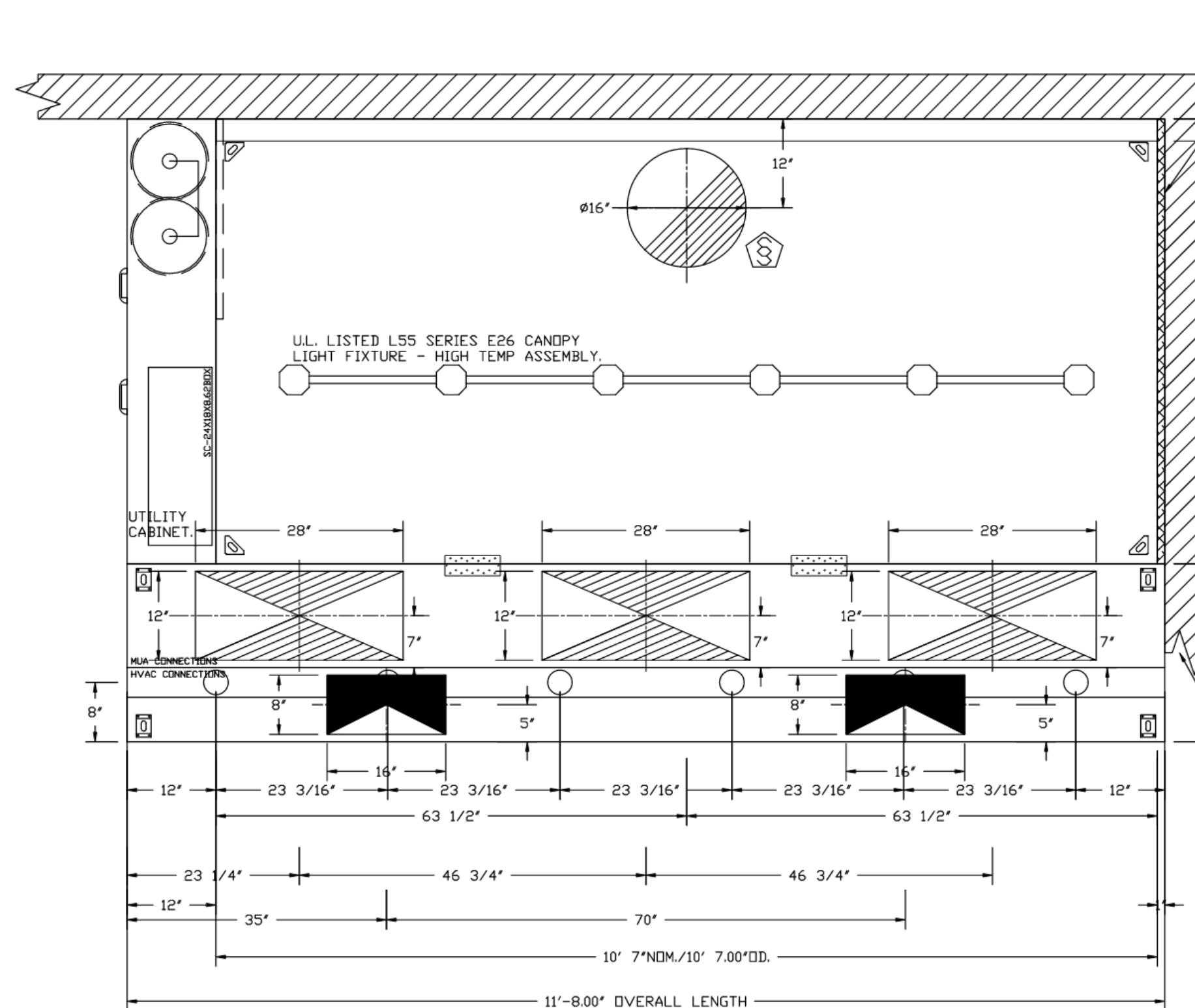
MECHANICAL HOOD DETAIL PLAN

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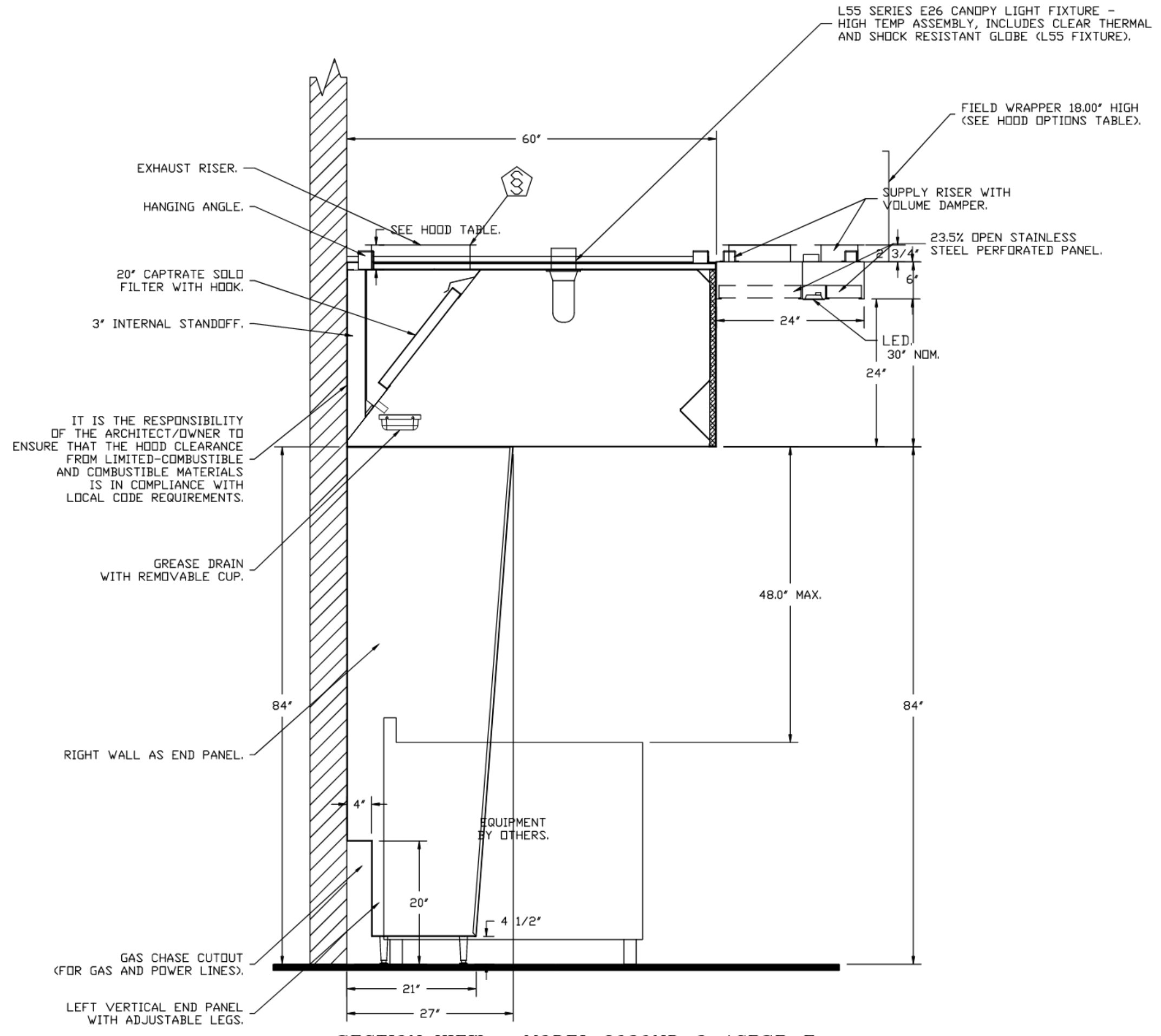
PLAN VIEW - HOOD #1 (33)
10' 7.00\"/>

ACPSP SHIPS LOOSE FOR FIELD INSTALLATION

1\"/>

IT IS THE RESPONSIBILITY OF THE ARCHITECT/OWNER TO ENSURE THAT THE HOOD CLEARANCE FROM LIMITED-COMBUSTIBLE AND COMBUSTIBLE MATERIALS IS IN COMPLIANCE WITH LOCAL CODE REQUIREMENTS.

INSTALLER MUST CONFIRM HOOD IS INSTALLED SUCH THAT THE SPECIFIED WALL, ACTING AS AN END PANEL, IS MATED TIGHT TO THE CORRECT END OF HOOD TO ACHIEVE A REDUCED MINIMUM EXHAUST CFM LISTING. NON-COMPLIANCE WILL NULLIFY THE ETL LISTING, VOID THE MANUFACTURER'S WARRANTY, AND HOLD THE CONTRACTOR LIABLE FOR ANY AND ALL LOSSES, COSTS, AND EXPENSES RELATED TO THE NON-COMFORMANCE OF THE MANUFACTURER'S SPECIFIED INSTRUCTION. THE WALL ACTING AS AN END PANEL MUST EXTEND NO LESS THAN 20\"/>



SECTION VIEW - MODEL 6030ND-2-ACPSP-F
HOOD - #1 (33)

REVISIONS	
DESCRIPTION	DATE

www.captiveaire.com
www.captiveaire.com
8120 Woodmont Avenue, Suite 720, Bethesda, MD, 20814 PHONE: (800) 988-0881 FAX: 9192279931 EMAIL: rep32@captiveaire.com

CAPTIVE AIR

Maryland Office

Cava - River Forest, IL_R1
7122 Lake Street,
River Forest, IL, 60305

DATE: **DWG.#:**
 6740652

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100 N. Howard Street, Suite 458, Spokane, WA 99201

PROFESSIONAL ENGINEER
JESSICA IVENSEN
062-068559
STATE OF ILLINOIS

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RIVER FOREST, IL 60305
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MECHANICAL HOOD DETAIL
PLAN

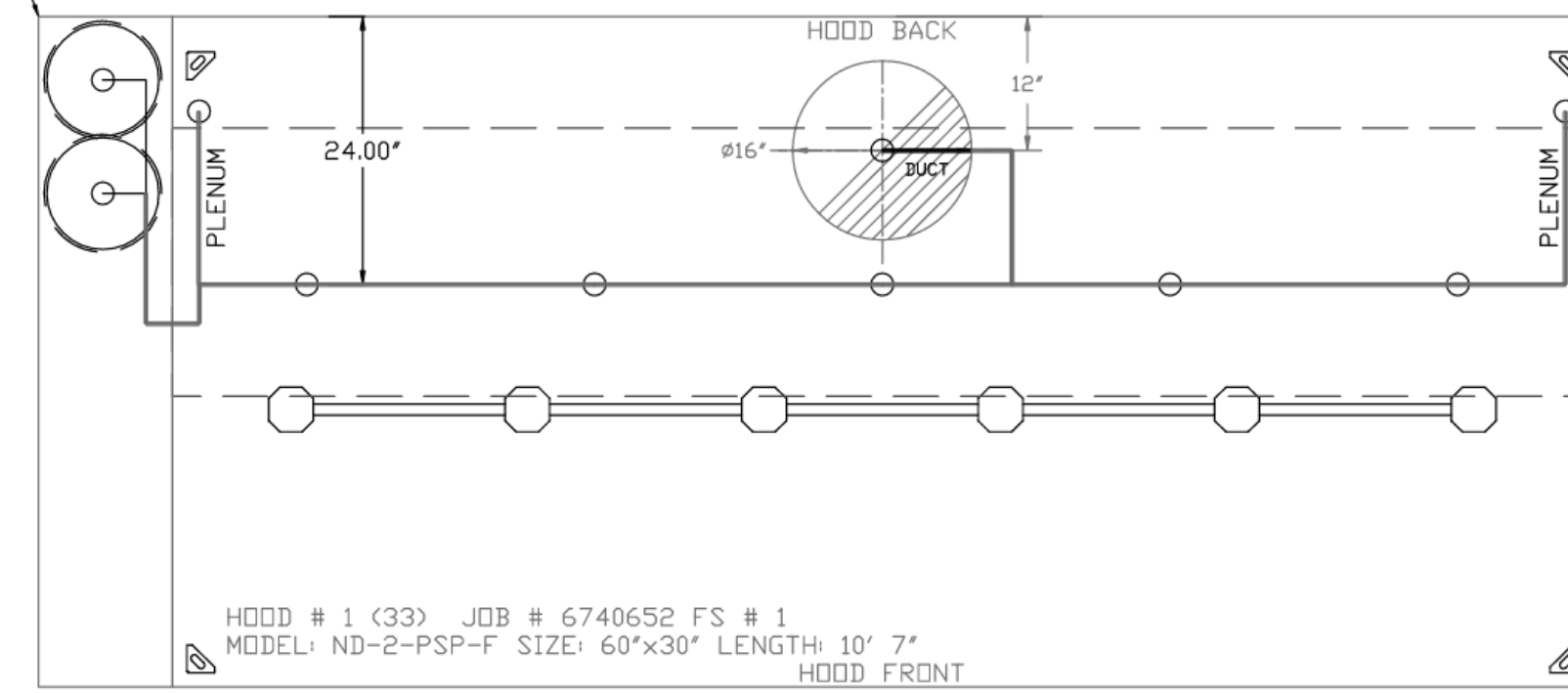
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engineering consultants
2800 156th Ave SE | Suite 115
Bellevue, WA 98007
rtmec.com | 847.756.4180

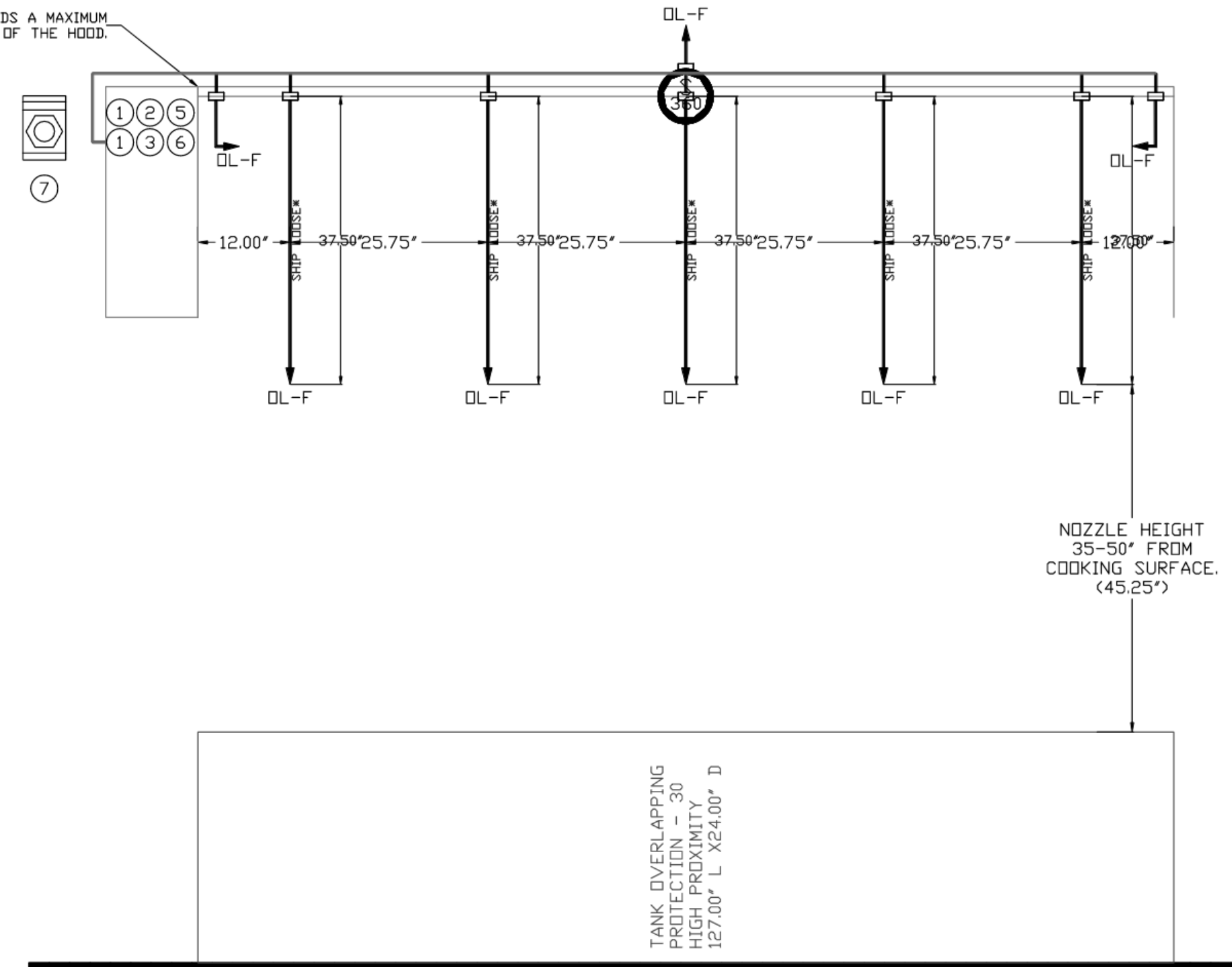
FIRE SYSTEM INFORMATION - JOB#6740652

FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION	
						SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	40	37	FIRE CABINET LEFT	LEFT, HOOD 1

- SYSTEM REQUIRES A MINIMUM OF 7 FT OF EQUIVALENT PIPE LENGTH BETWEEN TANK AND NEAREST APPLIANCE NOZZLE FOR MOST APPLIANCES. EACH 90 DEGREE ELBOW ADDS 1.3 FT OF EQUIVALENT LENGTH. SEE MANUAL FOR DETAILS



FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.



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-F-28021-32144-DT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F.	1	0
		0 - 0 - 32-00002 QUIK SEAL - 1/2" (UL).	1	0
		0 - 0 - 4429K153 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	2	0
		0 - 0 - 4429K422 1/2" X 1/4" BRASS REDUCING BUSHING.	1	0
		0 - 0 - 79525 1/2" 90 PRO-PRESS ELBOW WITH 1/2" NPT FEMALE CONNECTION, VIEGA.	1	0
		0 - 0 - 79580 1/2" X 1/2" PRO-PRESS TEE X 1/2" NPT FEMALE CONNECTION, VIEGA.	2	0
		0 - 0 - 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5' BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-300030-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	8	0
		0 - 0 - 9055455PC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	6	0
		0 - 0 - 9097200PC PRO PRESS PC611 1/2 PRESS TEE LD.	7	0
		0 - 0 - 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLDR.	1	0
		0 - 0 - A31484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNID. USED ON TANK SERVICE PORT.	1	0
		0 - 0 - B1145 3/8" BLACK IRON 90 ELL.	3	0
		0 - 0 - DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	6	0
		0 - 0 - TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	2	0
		16 - 16 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	8	0
		16 - 16 - DL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	8	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	8	0
		34 - 34 - A0034331 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT. RED COLDR.	1	0

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 SHELVEING, 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.

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

JOB #: 6740652.
JOB NAME: CAVA - RIVER FOREST, IL_R1.

SYSTEM SIZE: TANK-SP-2 DESIGN FP: 37, MAXIMUM FP: 40.
HOOD # 1 10' 7.00" LONG X 60" WIDE X 30" HIGH.
RISER # 1 SIZE: 16" DIA.
HOOD # 1 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.

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 ACTUATION DEVICE.

REVISIONS

DESCRIPTION	DATE

CAPTIVE FIRE

Maryland Office
8120 Woodmont Avenue, Suite 720, Bethesda, MD, 20814 PHONE: (800) 988-0881 FAX: (301) 922-7591 EMAIL: reg32@captivewire.com

Cava - River Forest, IL_R1
7122 Lake Street,
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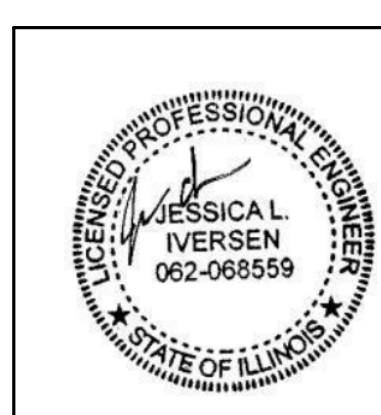
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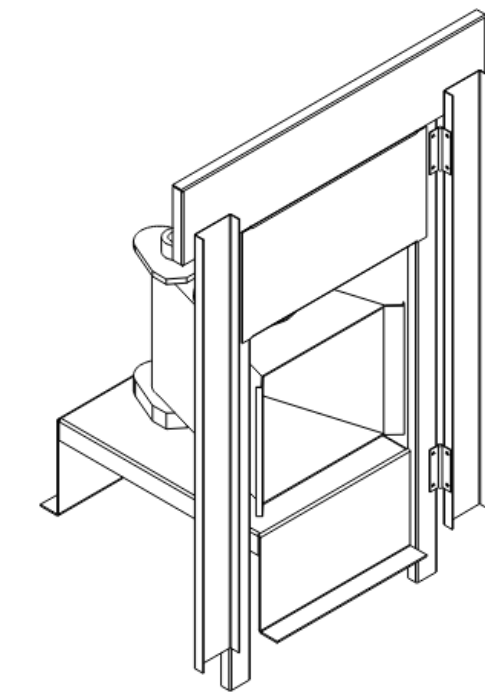
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- FAN #2 A1-D250-1SD-MPU - HEATER (MAU)
- DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 15' MIXED FLOW DIRECT DRIVE FAN.
 - INTAKE HOOD WITH EZ FILTERS.
 - DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
 - GAS PRESSURE GAUGE, 0-85", 2.5" DIAMETER, 1/4" THREAD SIZE.
 - GAS PRESSURE GAUGE, -5 TO +15 INCHES VC, 2.5" DIAMETER, 1/4" THREAD SIZE.
 - LOW FIRE START - ALLIWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
 - SHIP LOOSE GAS STRAINER TO BE INSTALLED UPSTREAM OF UNIT CONNECTION. 3/4" CONNECTION.
 - MOTORIZED BACK DRAFT DAMPER 16" X 18" FOR SIZE 1 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, TFB20S ACTUATOR INCLUDED.
 - FREESTAT FACTORY SET AT 35% AND 10 MINUTES.
 - 5 TON, DUAL CIRCUIT (2.5/2.5) MODULAR PACKAGED COOLING OPTION FOR SIZE 1 DF/EH MODULAR PACKAGED UNIT. INCLUDES CONDENSER, DX COIL, FILTER/DRYER KIT, THERMAL EXPANSION VALVE, R410A REFRIGERANT, AND REFRIGERANT PIPING (1,800 TO 3,000 CFM WHEN ORDERED WITH OPPOSITE AIRFLOW CONDENSERS ACCESS AND COIL PIPING WILL REMAIN IN STANDARD POSITION. DRAIN AND SLEDS WILL MOVE TO THE OPPOSITE SIDE. ANY OTHER CHANGE WILL REQUIRE CLI. CONDENSERS REQUIRE SEPARATE 208V, 3 PHASE POWER SUPPLY UNLESS ORDERED WITH SINGLE POINT CONNECTION. COIL = 2C209DME.
 - DOWNTURN PLENUM FOR SIZE 1 COOLING COIL MODULE - REQUIRED FOR DOWN DISCHARGE COOLING COIL APPLICATIONS.
 - SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREVIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
 - HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER/MPU SECTION).
 - 2 YEAR PARTS WARRANTY.

*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 PRACTICALLY 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 14" x 14".

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 27°F. TEMP. RISE = 48°F.
 BTUs CALCULATED OFF ACTUAL AIR DENSITY.
 OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 100766.
 INPUT BTUs AT ALTITUDE OF 0.0 FT. = 109508.
 OUTPUT BTUs AT ALTITUDE OF 673 FT. = 98359.
 INPUT BTUs AT ALTITUDE OF 673 FT. = 106890.



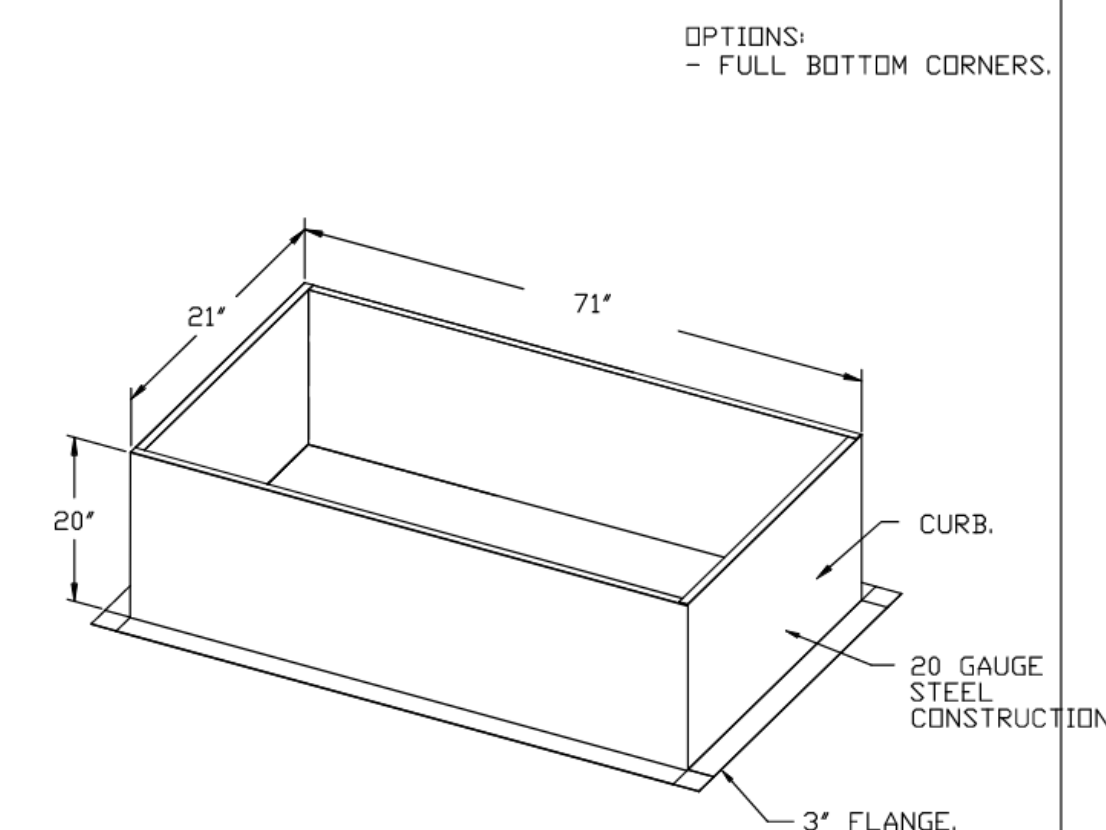
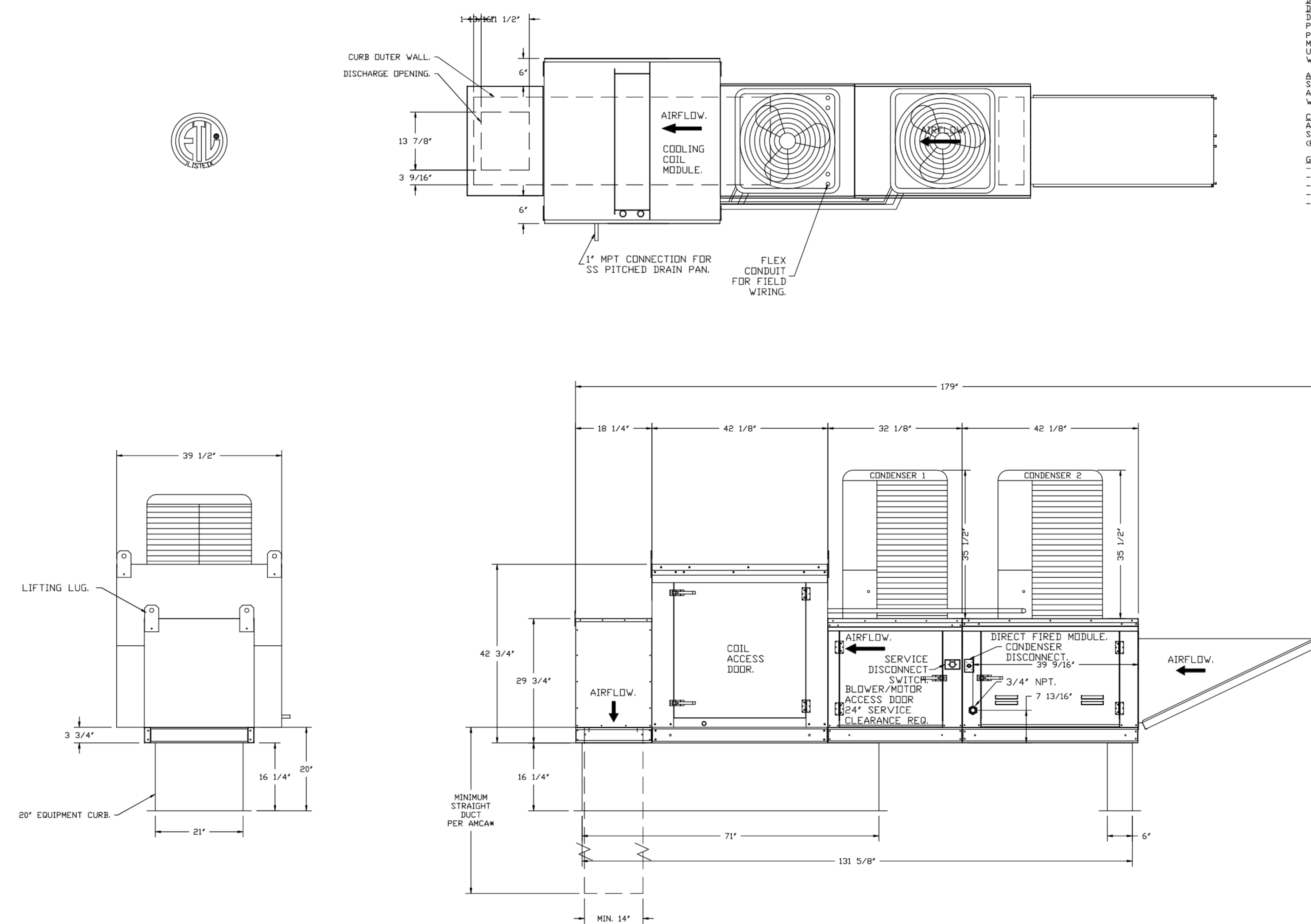
DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

DIRECT FIRED PROFILE PLATE SPECIFICATIONS:
DESCRIPTION:
 DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO. US6629523B2) SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ALLOW BURNERS TO ACHIEVE CLEAN COMBUSTION BY LIMITING BY-PRODUCT LEVELS TO A MAXIMUM OF 5PPM OF CARBON MONOXIDE (CO), AND 0.5PPM OF NITROGEN DIOXIDE (NO2). DIRECT FIRED UNITS SHALL BE CONFIGURED WITH THE BLOWER MOUNTED DOWNSTREAM OF THE BURNER. THIS ARRANGEMENT WILL ENSURE A CONSISTENT AIRFLOW, REGARDLESS OF INLET AIR TEMPERATURE.

APPLICATION:
 SPRING-LOADED BURNER PROFILE PLATES ARE ENGINEERED TO AUTOMATICALLY REACT TO THE MOMENTUM OF A FRESH AIR STREAM, WITHOUT THE NEED FOR ANY MOTORS OR ACTUATORS TO MECHANICALLY ADJUST THEM. WITH THIS FEATURE, ALL DF UNITS ARE DESIGNED FOR DEMAND CONTROL VENTILATION (DCV) REQUIREMENTS.

CERTIFICATIONS:
 ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNIT'S ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.18 (RECIRCULATING DF HEATERS).

GENERAL CONSTRUCTION:
 -PROFILE PLATES SHALL BE FORMED FROM G90 GALVANIZED STEEL.
 -PROFILE PLATES SHALL VARY IN SIZE PER UNIT.
 -PROFILE PLATES SHALL BE MOUNTED ALONG THE SAME PLANE AS THE DISCHARGE OF THE BURNER.
 -DESIGN SHALL INCORPORATE PROPERLY TORQUED, PERMANENTLY MOUNTED SPRING HINGES.
 -SPRING HINGES SHALL BE MADE FROM PLATED STEEL.



REVISIONS	
DESCRIPTION	DATE

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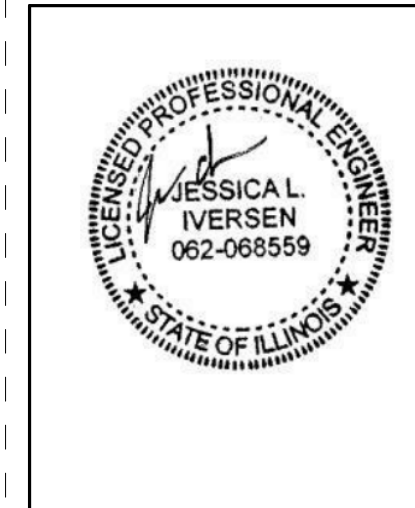
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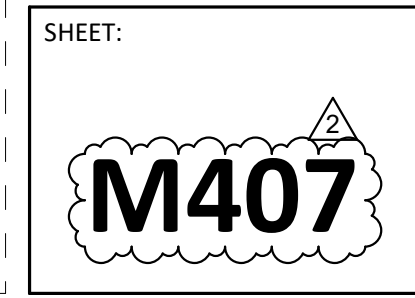
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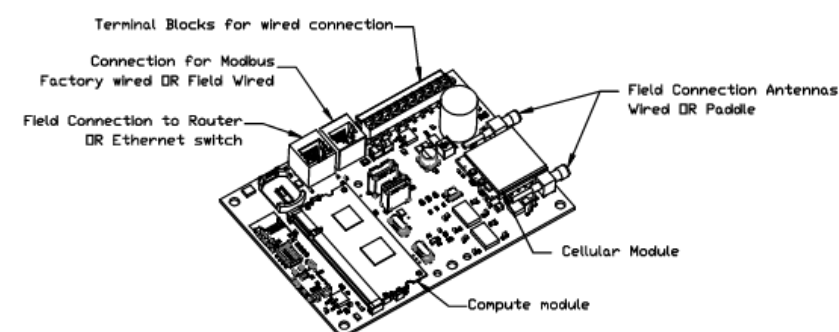
MECHANICAL HOOD DETAIL PLAN



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ELECTRICAL PACKAGE -- JOB#6740652

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	#	HP	VOLT	FLA
1		DCV-1111	UTILITY CABINET LEFT	WALL UTILITY CAB ON LEFT END	1 LIGHT	SMART CONTROLS DCV	KEF	EXHAUST	1	1,000	115	11.6
				HOOD # 1	1 FAN		MAU	SUPPLY	3	2,000	208	6.1

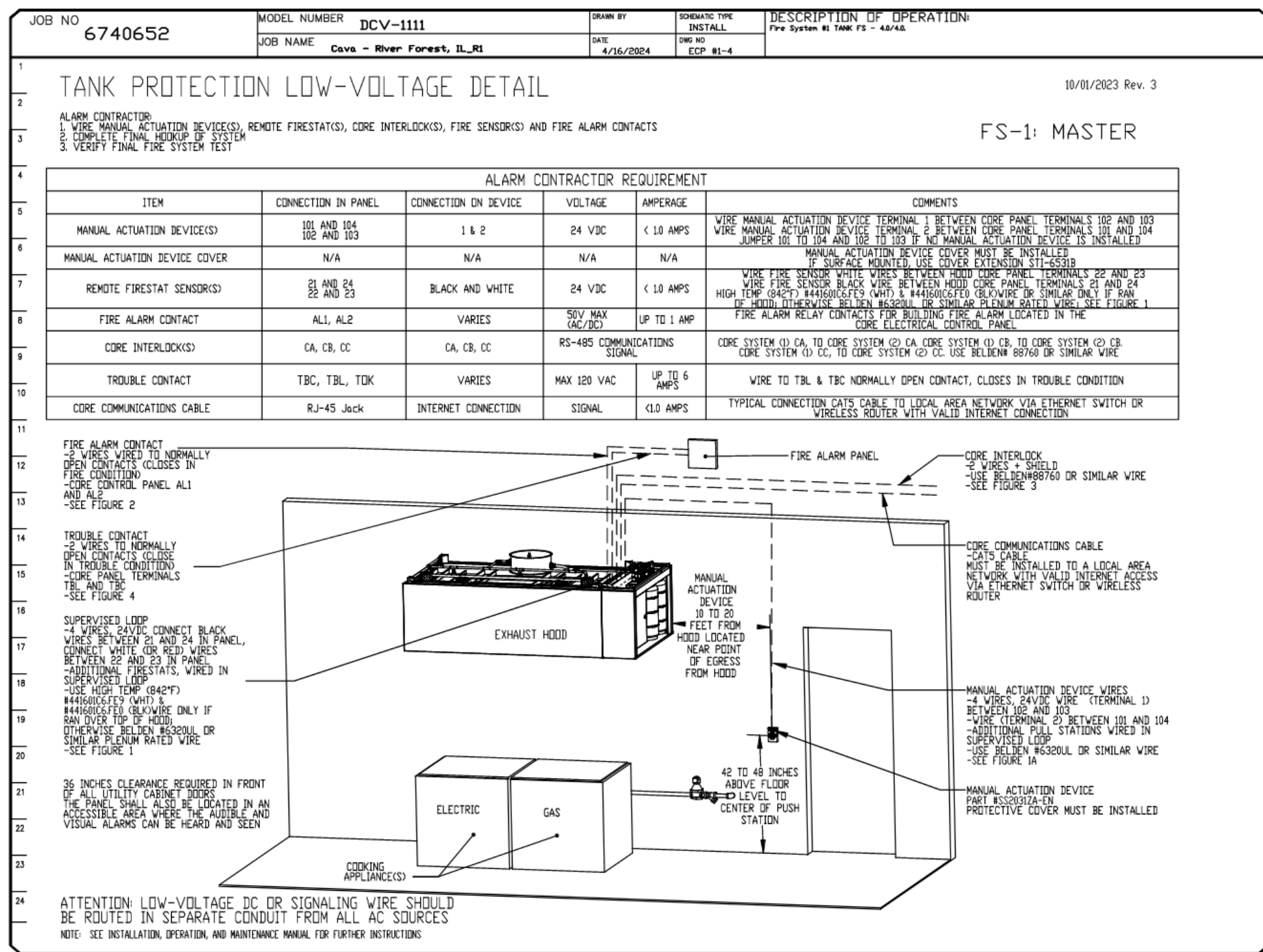
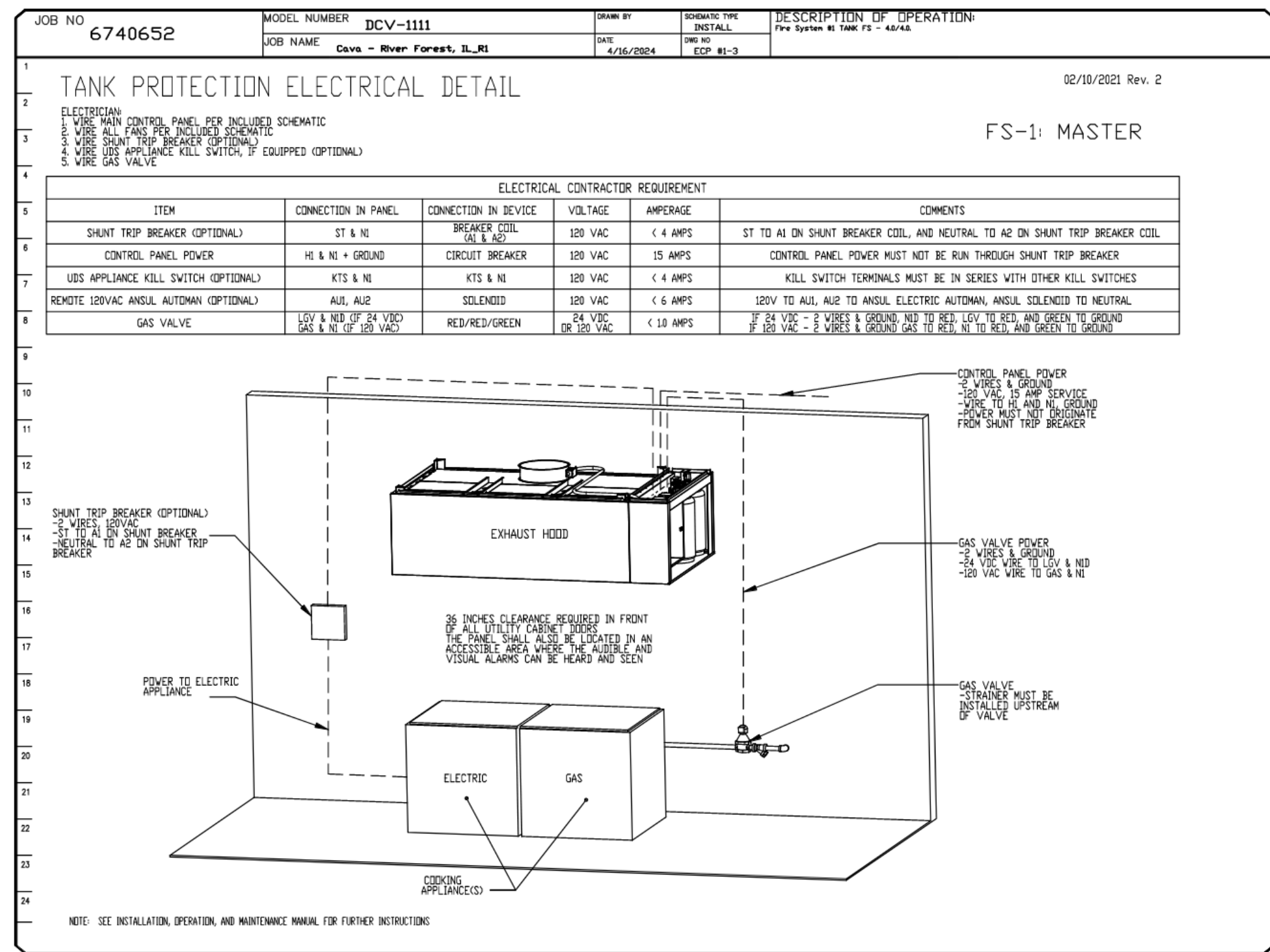
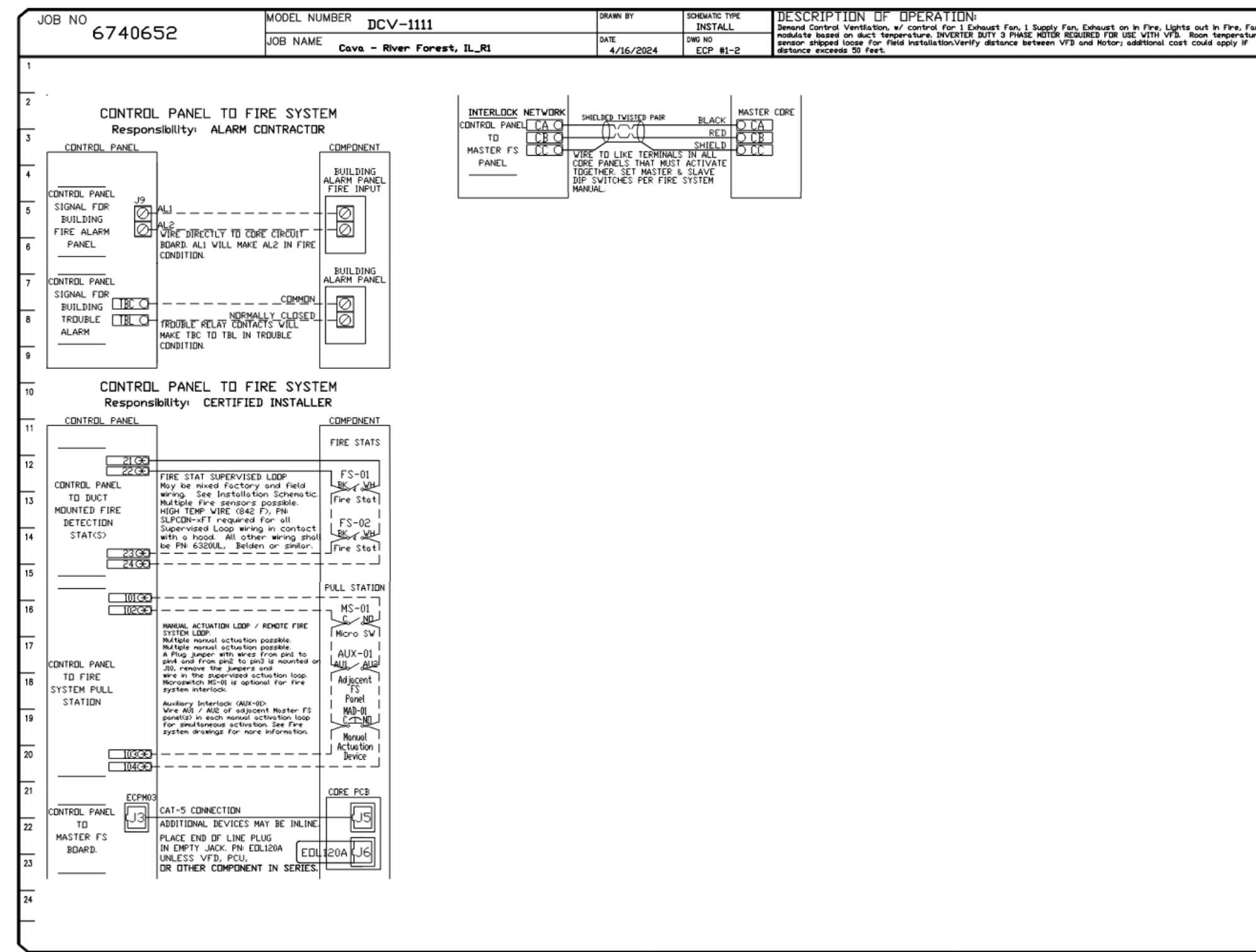
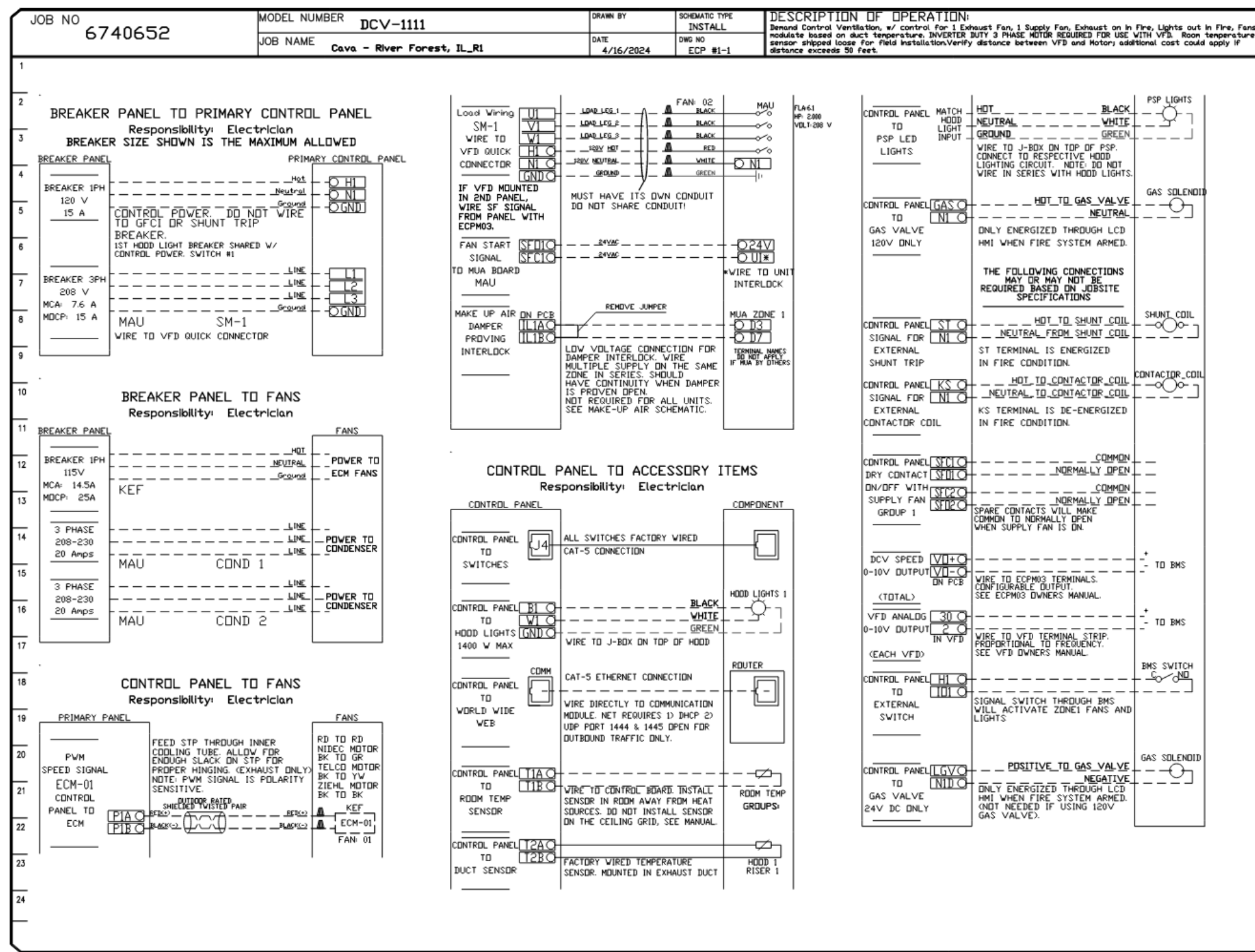


CASlink Monitor and Control

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 ENGINEER control strategies for Fully Integrated Building Management.

MONITORING AND CONTROL POINTS LIST

ACT Package	Function	DC Package	Function
Room Temperature	MONITOR	Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR	Duct Temperature(s)	MONITOR
MHA Discharge Temperature	MONITOR	MHA Discharge Temperature	MONITOR
Blahon RTU Discharge Temperature	MONITOR	Blahon RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR	Control Fan Speed	MONITOR
Fan Amperage	MONITOR	Fan Amperage	MONITOR
Fan Power	MONITOR	Fan Status	MONITOR
VFD Faults	MONITOR	PCV Faults	MONITOR
Control Fan Faults	MONITOR	PCV Filter Clog Percentages	MONITOR
Fan Status	MONITOR	Fan Condition	MONITOR
PCV Status	MONITOR	COSE Fire Status	MONITOR
PCV Filter Clog Percentages	MONITOR	Building Pressure	MONITOR & CONTROL
COSE Fire System	MONITOR	Light Alarm(s)	MONITOR & CONTROL
Building Pressure	MONITOR	Push Button	MONITOR & CONTROL
Push Time Button	MONITOR & CONTROL		
Push Alarm	MONITOR & CONTROL		
Light Alarm	MONITOR & CONTROL		
Push Alarm	MONITOR & CONTROL		



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.

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PROFESSIONAL ENGINEER
 JESSICA N. NERSEN
 062-068559
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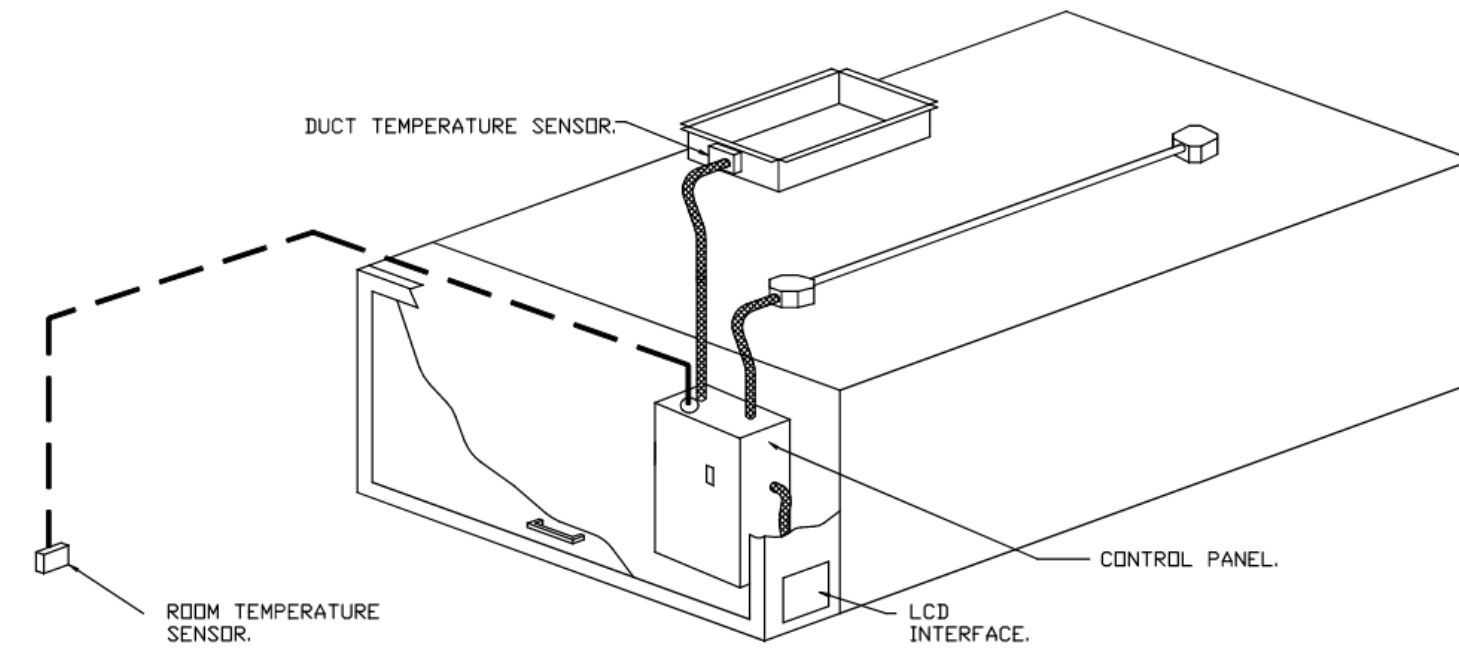
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 engineering consultants
 2800 156th Ave SE | Suite 115
 Bellevue, WA 98007
 rtmec.com | 847.756.4180

M408

DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL (UL 508A) AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.7.5 (2021).
- THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.
- TEMPERATURE PROBE(S) LOCATED IN THE EXHAUST DUCT RISER(S) SHALL BE CONSTRUCTED OF STAINLESS STEEL.
- A DIGITAL CONTROLLER SHALL BE PROVIDED TO ACTIVATE THE HOOD EXHAUST FANS DYNAMICALLY BASED ON A FIXED DIFFERENTIAL BETWEEN THE AMBIENT AND DUCT TEMPERATURE SENSORS. THIS FUNCTION SHALL MEET THE REQUIREMENTS OF IMC 507.1.1.
- A DIGITAL CONTROLLER SHALL PROVIDE ADJUSTABLE HYSTERESIS SETTINGS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND/OR THE HEAT IN THE EXHAUST SYSTEM IS REDUCED.
- A DIGITAL CONTROLLER SHALL PROVIDE AN ADJUSTABLE MINIMUM FAN RUN-TIME SETTING TO PREVENT FAN CYCLING.
- VARIABLE FREQUENCY DRIVES (VFDs) SHALL BE PROVIDED FOR FANS AS REQUIRED. THE DIGITAL CONTROLLER SHALL MODULATE THE VFDs BETWEEN A MINIMUM SETPOINT AND A MAXIMUM SETPOINT ON DEMAND. THE DUCT TEMPERATURE SENSOR INPUT(S) TO THE DIGITAL CONTROLLER SHALL BE USED TO CALCULATE THE SPEED REFERENCE SIGNAL.
- THE VFD SPEED RANGE OF OPERATION SHALL BE FROM 0% TO 100% FOR THE SYSTEM, WITH THE ACTUAL MINIMUM SPEED SET AS REQUIRED TO MEET MINIMUM VENTILATION REQUIREMENTS.
- AN INTERNAL ALGORITHM TO THE DIGITAL CONTROLLER SHALL MODULATE SUPPLY FAN VFD SPEED PROPORTIONAL TO ALL EXHAUST FANS THAT ARE LOCATED IN THE SAME FAN GROUP AS THE SUPPLY FAN.
- THE SYSTEM SHALL OPERATE IN PREP MODE DURING LIGHT COOKING LOAD OR COOL DOWN MODE WHEN SUFFICIENT HEAT REMAINS UNDERNEATH THE HOOD SYSTEM AFTER COOKING OPERATIONS HAVE COMPLETED. OPERATION DURING EITHER OF THESE PERIODS WILL DISABLE THE SUPPLY FANS AND PROVIDE AN EXHAUST FAN SPEED THAT IS EQUAL TO THE MINIMUM VENTILATION REQUIREMENT.
- A DIGITAL CONTROLLER SHALL DISABLE THE SUPPLY FAN(S), ACTIVATE THE EXHAUST FAN(S), ACTIVATE THE APPLIANCE SHUNT TRIP, AND DISABLE AN ELECTRIC GAS VALVE AUTOMATICALLY WHEN FIRE CONDITION IS DETECTED ON A COVERED HOOD.
- A DIGITAL CONTROLLER SHALL ALLOW FOR EXTERNAL BMS FAN CONTROL VIA DRY CONTACT (EXTERNAL CONTROL SHALL NOT OVERRIDE FAN OPERATION LOGIC AS REQUIRED BY CODE).
- AN LCD INTERFACE SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
 - A. ON/OFF PUSH BUTTON FAN & LIGHT SWITCH ACTIVATION.
 - B. INTEGRATED GAS VALVE RESET FOR ELECTRONIC GAS VALVES (NO RESET RELAY REQUIRED).
 - C. VFD FAULT DISPLAY WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
 - D. DUCT TEMPERATURE SENSOR FAILURE DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
 - E. MIS-WIRED DUCT TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
 - F. A SINGLE LOW VOLTAGE CAT-5 RJ45 WIRING CONNECTION.
 - G. AN ENERGY SAVINGS INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDs.



TYPICAL HOOD CONTROL PANEL INSTALLATION

SEQUENCE OF OPERATIONS:

- THE HOOD CONTROL PANEL IS CAPABLE OF OPERATING IN ONE OR MORE OF THE FOLLOWING STATES AT ANY GIVEN TIME:
- **AUTOMATIC:** THE SYSTEM OPERATES BASED ON THE DIFFERENTIAL BETWEEN ROOM TEMPERATURE AND THE TEMPERATURE AT THE HOOD CAVITY OR EXHAUST DUCT COLLAR. FANS ACTIVATE AT A CONFIGURABLE TEMPERATURE DIFFERENTIAL THRESHOLD. DEPENDING ON THE JOB CONFIGURATION EACH FAN ZONE CAN BE CONFIGURED AS STATIC OR DYNAMIC. THESE TERMS REFER TO WHETHER A VARIABLE MOTOR (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) MODULATE WITH TEMPERATURE. IF THE PANEL IS EQUIPPED WITH VARIABLE SPEED FANS AND THE ZONE IS DEFINED AS "DYNAMIC", THESE WILL MODULATE WITHIN A USER-DEFINED RANGE BASED ON THE TEMPERATURE DIFFERENTIAL. PANELS EQUIPPED WITH VARIABLE SPEED FANS AND A FAN ZONE DEFINED AS "STATIC", FANS WILL RUN AT A SET SPEED CALCULATED FOR THE DRIVE. DEMAND CONTROL VENTILATION SYSTEMS ARE CAPABLE OF MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.7.5 (2021).
 - **MANUAL:** THE SYSTEM OPERATES BASED ON HUMAN INPUT FROM AN HMI.
 - **SCHEDULE:** A WEEKLY SCHEDULE CAN BE SET TO RUN FANS FOR A SPECIFIED PERIOD THROUGHOUT THE DAY. THERE ARE THREE OCCUPIED TIMES PER DAY TO ALLOW FOR THE USER TO SET UP A TIME THAT IS SUITABLE TO THEIR NEEDS. ANY TIME THAT IS WITHIN THE DEFINED OCCUPIED TIME, THE SYSTEM WILL RUN AT MODULATION MODE AND FOLLOW THE FAN PROCEDURE ALGORITHM BASED ON TEMPERATURE DURING THIS TIME. DURING UNOCCUPIED TIME, THE SYSTEM WILL HAVE AN EXTRA OFFSET TO PREVENT UNINTENDED ACTIVATION OF THE SYSTEM DURING A TIME WHERE THE SYSTEM IS NOT BEING OCCUPIED.
 - **OTHER:** THE SYSTEM OPERATES BASED ON THE INPUT FROM AN EXTERNAL SOURCE (DDC, BMS OR HARD-WIRED INTERLOCK).
 - **FIRE:** UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.

SYSTEM DESIGN VERIFICATION (SDV)

IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

REVISIONS

DESCRIPTION	DATE



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ADR PROJECT NUMBER:
CAV022

ISSUE	DATE
PERMIT SET	01/12/2024
BID SET	02/29/2024
REVISION 2	05/13/2024

MECHANICAL HOOD DETAIL
PLAN

SHEET:

