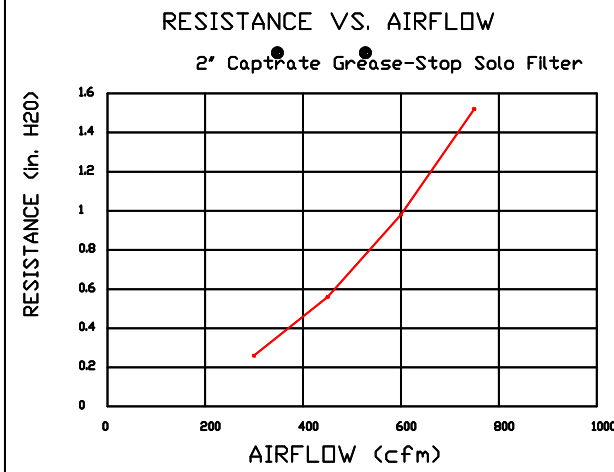


Captrate Grease-Stop Solo Filter



Filter Detail

CAPTRATE

EXHAUST CFM=LENGTH OF HOOD X CFM/LIN.FT. (LOAD)
 SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED
 TOTAL DUCT AREA=144 X CFM / FPM(*)
 DUCT LENGTH= TOTAL DUCT AREA / DUCT DEPTH
 GREASE-STOP SOLO FILTER IS ETL LISTED UNDER FILE NUMBER 3064494-001 AND COMPLIES WITH UL1046 STANDARD, NSF STANDARD #2, NFPA 96 AND IBC
 *CAPTIVE-AIRE VENTILATOR DUCT SIZES ARE CALCULATED USING AN EXHAUST VELOCITY OF 1600-1800 FPM AND A SUPPLY VELOCITY OF 1000 FPM. PLEASE CONSULT FACTORY FOR MAXIMUM ALLOWABLE DUCT SIZES

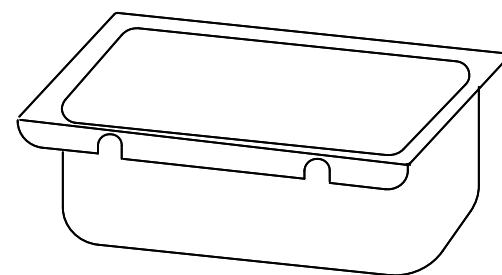
CALCULATIONS UTILIZED

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH:
 • NFPA #96

- B.O.C.A. #93-16
- I.C.B.O. 34416
- SBCCI PST & ESI NO. 93137
- E.T.L. LISTED 3054804-001
- LOS ANGELES RR#8080
- ETL IS LISTED TO ULC STANDARDS

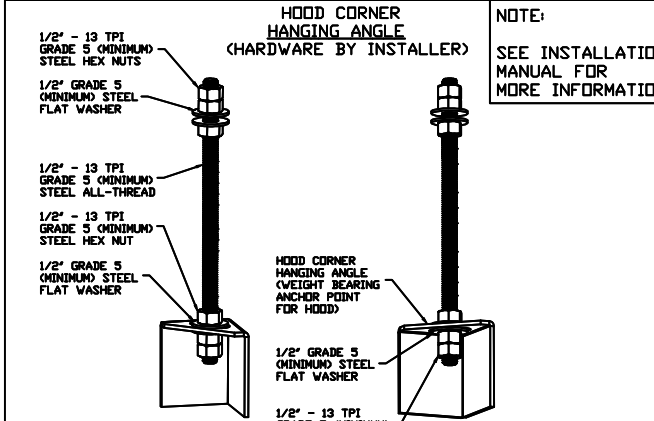


BUILDING CODES



GREASE CUP WILL BE SUPPORTED BY TWO STUDS ON THE INSIDE WALL OF THE HOOD. THE GREASE WILL DRAIN THROUGH A CONCEALED GREASE TROUGH AND INTO THIS REMOVABLE/CLEANABLE CUP.

1/2 Pint Grease Cup Detail



ND-2 HANGING ANGLE DETAIL

HANGING ANGLES WILL BE LOCATED IN THE FOLLOWING LOCATIONS FOR WALL CANOPIES

HOOD STYLE	DIM FROM REAR	DIM FROM FRONT (24" High Hood)	DIM FROM FRONT (30" High Hood)
Wall Exhaust Only	4.166	2.25"	2.25"
Wall Exhaust With MUA		2.25"	2.25"
Back Shelf Exhaust Only	4.166	2.25"	2.25"
Back Shelf Exhaust With MUA		2.25"	2.25"
Condensate	2.25"	2.25"	

HANGING ANGLE LOCATIONS

HOOD INFORMATION - JOB#5194275

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)					TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG			
										WIDTH	LENG	HEIGHT	DIA	CFM			VEL	SP	END TO END	ROW
1		5424 ND-2-PSP-F	CAPTIVEAIRE	8' 8"	600 DEG	I	HEAVY	225	1950			4"	14"	1950	1824	-0.818"	1658	430 SS WHERE EXPOSED	RIGHT	ALONE
2		5424 ND-2-PSP-F	CAPTIVEAIRE	15' 4"	600 DEG	I	HEAVY	275	4217			4"	14"	2108	1972	-1.062"	3374	430 SS WHERE EXPOSED	LEFT	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM TYPE	SIZE		
1		CAPTRATE SOLO FILTER	6	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO					YES	472 LBS
2		CAPTRATE SOLO FILTER	11	20"	16"	85% SEE FILTER SPEC	4	RECESSED ROUND	NO	LEFT	12"x54"x24"	TANK FS	4.0/4.0/4.0		1159 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1		RIGHT END STANDOFF (FINISHED) 1" WIDE 54" LONG INSULATED. 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		Front	105'	18'	6'	MUA	12"	28"		829	0.254"
							12"	28"		829	0.254"
							12"	28"		842	0.262"
							12"	28"		842	0.262"
2		Front	196'	18'	6'	MUA	12"	28"		842	0.262"
							12"	28"		842	0.262"
							12"	28"		842	0.262"
							12"	28"		842	0.262"

EXHAUST FAN INFORMATION - JOB#5194275

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		1	DU180HFA	CAPTIVEAIRE	1950	1.500	1240	DDP, PREMIUM	1.500	1.0690	3	208	6.6	450 FPM	188	16.9
2		1	DU240HFA	CAPTIVEAIRE	4217	2.000	1062	DDP, PREMIUM	5.000	2.8960	3	208	15.8	958 FPM	313	23

MUA FAN INFORMATION - JOB#5194275

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MCCP	EVAP FLOW RATE (GAL/HR)	EVAP COOLER ENTERING DB TEMP	EVAP COOLER LEAVING WB TEMP	EVAP COOLER LEAVING DB TEMP	EVAP COOLER LEAVING WB TEMP	WEIGHT (LBS)	SONES
3		1	A2-20D	20MF-2-MDD	A2	1500	5032	0.500	1865	DDP, PREMIUM	5.000	3.1180	3	208	15.0	18.8A	30A	6.87	109.0°F	72.0°F	89.0°F	72.0°F	853	27

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1		1	GREASE_BOX.
		1	UNIT MOUNTED VFD FOR USE WITH ECPM03.
		1	VFD MOUNTING BRACKET FOR DU/DR 180 - 200.
		1	EXHAUST FAN HEAT BAFFLE.
		1	2 YEAR PARTS WARRANTY.
2		1	GREASE_BOX.
		1	UNIT MOUNTED VFD FOR USE WITH ECPM03.
		1	VFD MOUNTING BRACKET FOR DU/DR 240.
		1	EXHAUST FAN HEAT BAFFLE.
		1	2 YEAR PARTS WARRANTY.
3		1	EVAPORATIVE COOLER WIRING HARNESS.
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY.
		1	2 YEAR PARTS WARRANTY.

FAN ACCESSORIES

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

CURB ASSEMBLIES

NO	ON FAN	WEIGHT	ITEM	SIZE
1	# 1	37 LBS	CURB	26.500"W X 26.500"L X 20.000"H ALONG LENGTH, RIGHT VENTED.
2	# 2	43 LBS	CURB	31.500"W X 31.500"L X 20.000"H ALONG LENGTH, RIGHT VENTED.
3	# 3	62 LBS	CURB	31.000"W X 31.000"L X 20.000"H ALONG LENGTH, RIGHT.
	# 3		RAIL	4.000"W X 4.000"L X 36.000"H RIGHT.
	# 3		RAIL	4.000"W X 4.000"L X 36.000"H RIGHT.

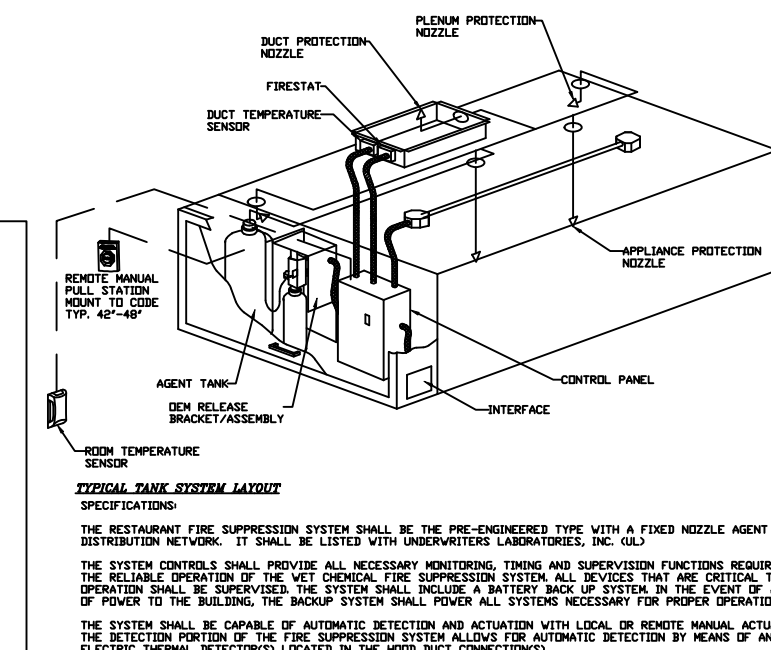
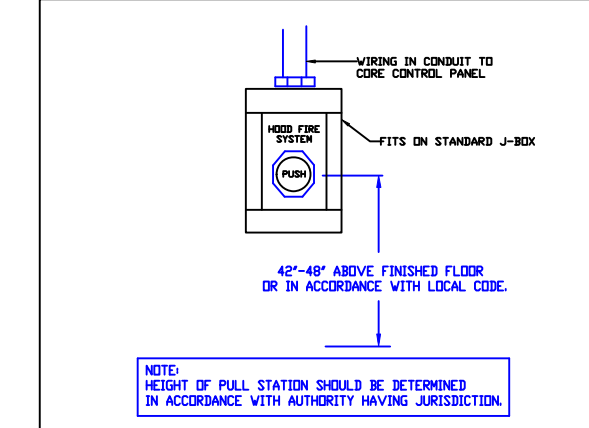
FIRE SYSTEM INFORMATION - JOB#5194275

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0/4.0	24	FIRE CABINET LEFT	LEFT, HOOD 2

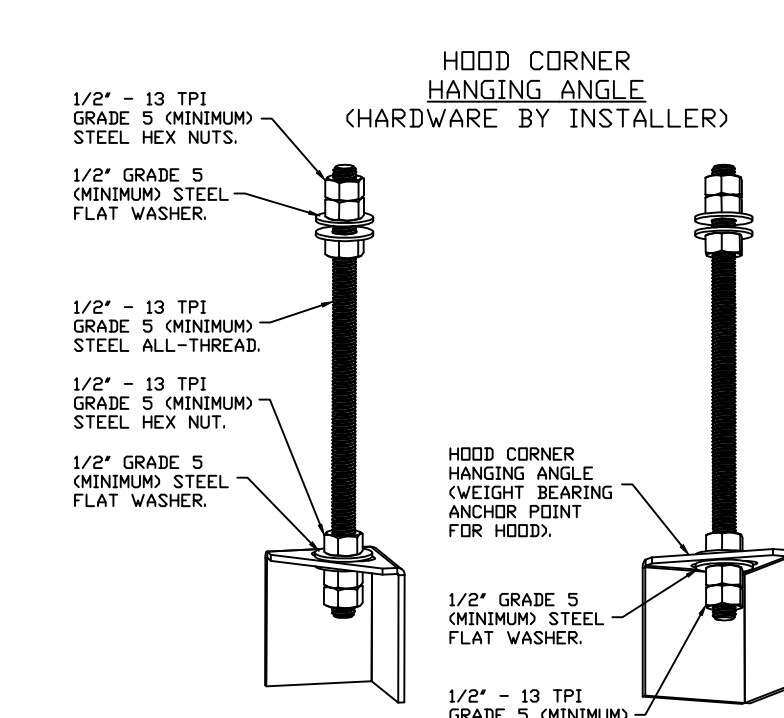
GAS VALVE(S)

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

TANK PULL STATION DETAIL



THE RESTAURANT FIRE SUPPRESSION SYSTEM SHALL BE THE PRE-ENGINEERED TYPE WITH A FIXED NEUTRAL AGENT DISTRIBUTION NETWORK. IT SHALL BE LISTED WITH UNDERWRITERS LABORATORIES (UL-863)
 THE SYSTEM CONTROLS SHALL PROVIDE ALL NECESSARY MONITORING, TRILING AND SUPERVISION FUNCTIONS REQUIRED FOR THE RELIABLE OPERATION OF THE FIRE SUPPRESSION SYSTEM. ALL DEVICES THAT ARE CRITICAL TO PROPER OPERATION SHALL BE EMPLOYED. THE SYSTEM SHALL INCLUDE A BATTERY BACK UP SYSTEM IN THE EVENT OF A LOSS OF POWER TO THE BUILDING. THE BATTERY SHALL PROVIDE ALL SYSTEMS NECESSARY FOR PROPER OPERATION.
 THE SYSTEM SHALL BE CAPABLE OF AUTOMATIC DETECTION AND ACTIVATION WITH LOCAL OR REMOTE MANUAL ACTIVATION. THE DETECTOR PORTION OF THE FIRE SUPPRESSION SYSTEM ALLOWS FOR AUTOMATIC DETECTION BY MEANS OF AN ELECTRIC THERMAL DETECTOR(S) LOCATED IN THE HOOD DUCT CONNECTION(S).
 SPECIFICATION:
 THE RESTAURANT FIRE SUPPRESSION SYSTEM SHALL BE THE PRE-ENGINEERED TYPE WITH A FIXED NEUTRAL AGENT DISTRIBUTION NETWORK. IT SHALL BE LISTED WITH UNDERWRITERS LABORATORIES (UL-863)
 THE SYSTEM CONTROLS SHALL PROVIDE ALL NECESSARY MONITORING, TRILING AND SUPERVISION FUNCTIONS REQUIRED FOR THE RELIABLE OPERATION OF THE FIRE SUPPRESSION SYSTEM. ALL DEVICES THAT ARE CRITICAL TO PROPER OPERATION SHALL BE EMPLOYED. THE SYSTEM SHALL INCLUDE A BATTERY BACK UP SYSTEM IN THE EVENT OF A LOSS OF POWER TO THE BUILDING. THE BATTERY SHALL PROVIDE ALL SYSTEMS NECESSARY FOR PROPER OPERATION.
 THE SYSTEM SHALL BE CAPABLE OF AUTOMATIC DETECTION AND ACTIVATION WITH LOCAL OR REMOTE MANUAL ACTIVATION. THE DETECTOR PORTION OF THE FIRE SUPPRESSION SYSTEM ALLOWS FOR AUTOMATIC DETECTION BY MEANS OF AN ELECTRIC THERMAL DETECTOR(S) LOCATED IN THE HOOD DUCT CONNECTION(S).



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.

NOTE
 ALL WALLS THAT COME WITHIN 18" OF THE TYPE I HOOD MUST BE METAL STUD AND SHEETROCK. IF WOOD STUDS FACTORY INSTALLED INSULATION REQUIRED. PLEASE ADVISE CAPTIVE AIRE PRIOR TO FABRICATION.

NOTE- Exhaust Collar Must be Factory Installed. If A Different Size Or Location is Required, Please Note Change In Submittal.
 Rear Discharge Is Available. Contact CaptiveAire For Possible Locations.

Operation of All CaptiveAire Equipment to be Verified by Factory Service Technician. Equipment Must be Operational and Fire System shall be Hooked-up and Armed. Report to be Sent to Customer by Manufacturer When Complete.

FOR QUESTIONS CALL:
 BRIAN NEESAN
 LOS ANGELES SALES OFFICE
 REFERENCE JOB NUMBER
 PHONE: 310.876.8505 REG81@CAPTIVEAIRE.COM

REVISIONS

DESCRIPTION	DATE

CAPTIVEAIRE
 www.captiveaire.com
 Los Angeles Office
 1810 14th St Suite 214, Santa Monica, CA, 90404 PHONE: (310) 876-8505 FAX: (919) 747-5639 EMAIL: reg81@captiveaire.com

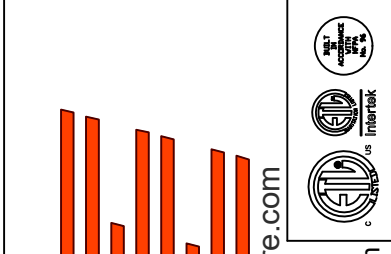
Diamond Automotive Cafe
 55761 Twentynine Palms Highway,
 Yucca Valley, CA, 92284

DATE: 11/18/2021
 DWG.#: 5194275
 DRAWN BY:
 SCALE: 3/4" = 1'-0"
 MASTER DRAWING

SHEET NO. 1

REVISIONS

DESCRIPTION	DATE



CAPTIVE
 www.captive.com
Los Angeles Office
 1810 14th St Suite 214, Santa Monica, CA, 90404 PHONE: (310) 876-8505 FAX: (919) 747-5639 EMAIL: reg8@captive.com

Diamond Automotive Cafe
 55761 Twentynine Palms Highway,
 Yucca Valley, CA, 92284

DATE: 11/18/2021

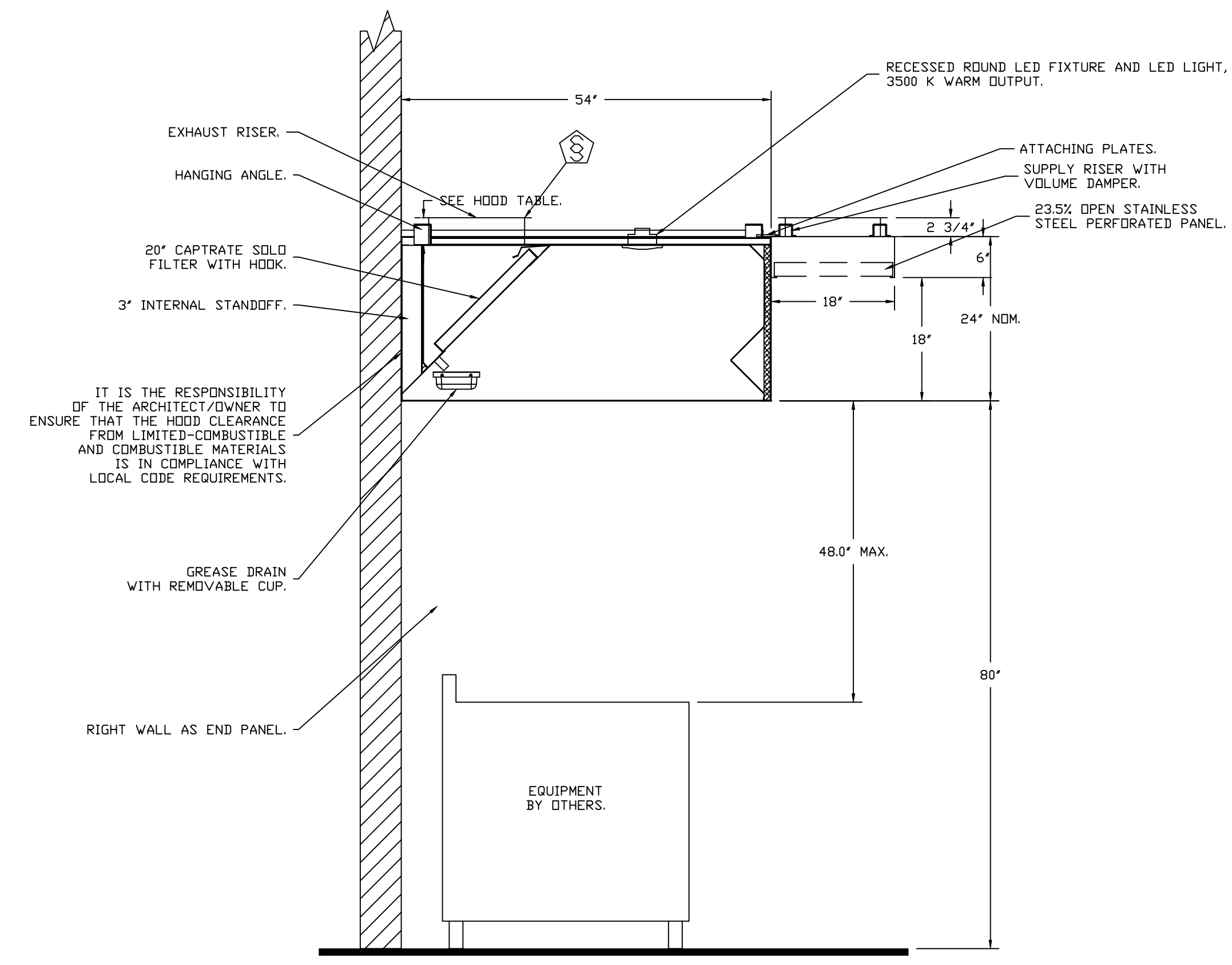
DWG.#:
 5194275

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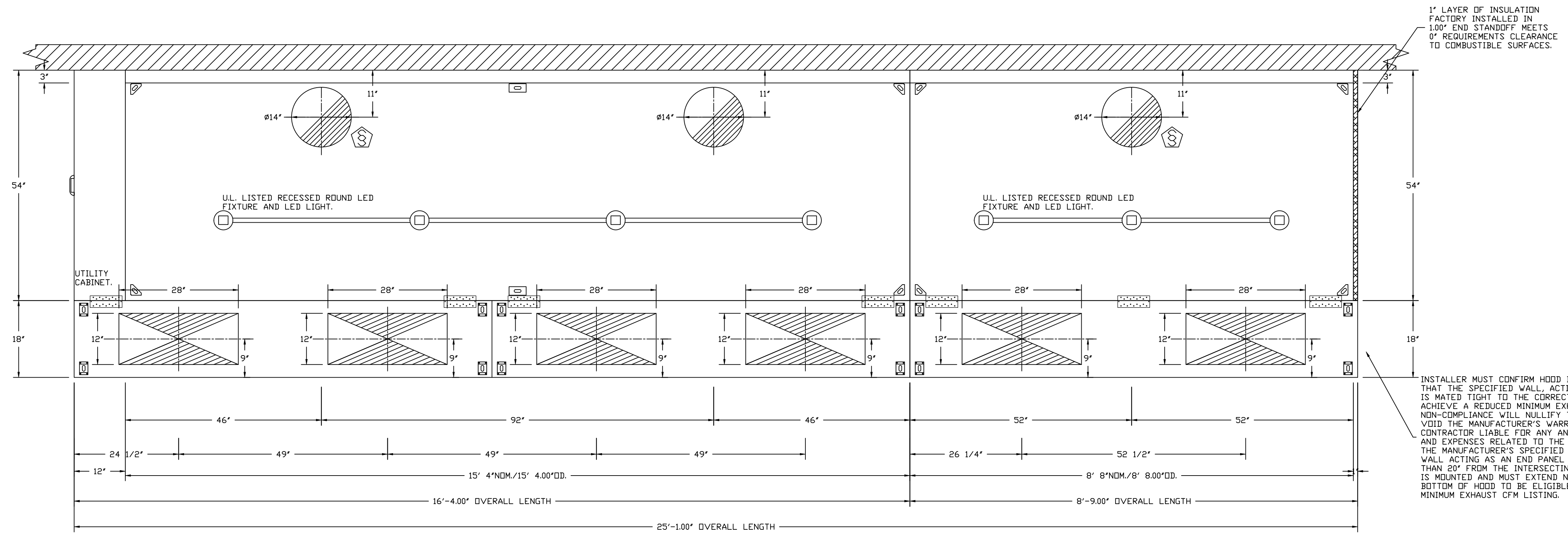
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 3/4" = 1'-0"

MASTER DRAWING

SHEET NO.
 2



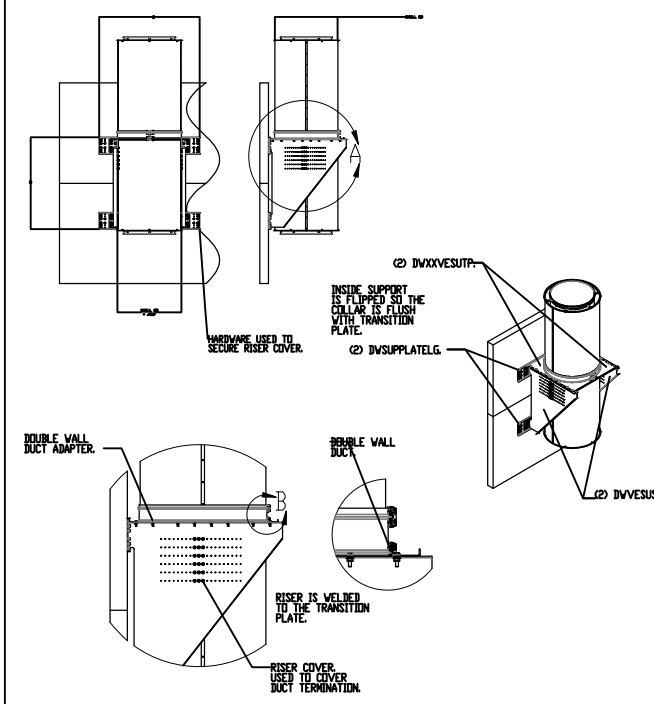
SECTION VIEW - MODEL 5424ND-2-PSP-F
 HOOD - #1, #2



PLAN VIEW - HOOD #2
 15' 4.00" LONG 5424ND-2-PSP-F
 NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12" AND LONGER.

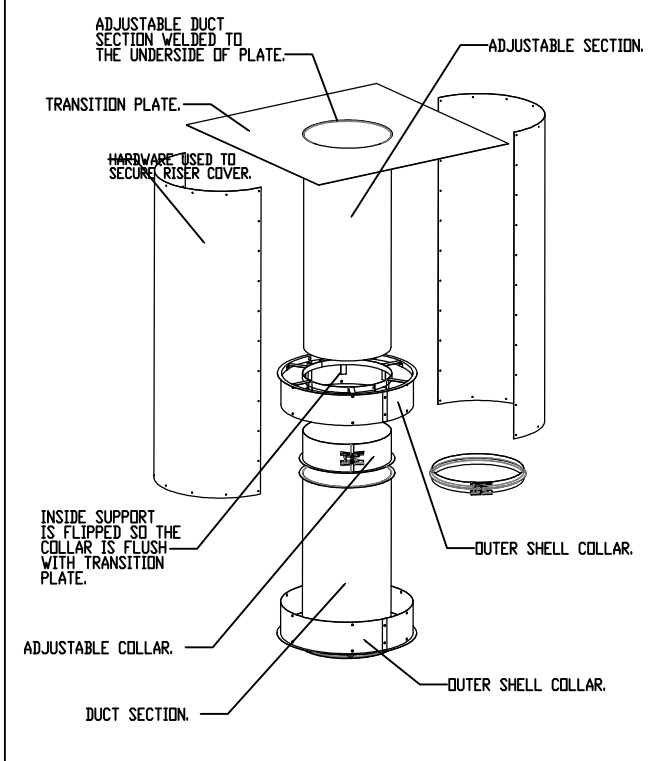
PLAN VIEW - HOOD #1
 8' 8.00" LONG 5424ND-2-PSP-F

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" FROM THE INTERSECTING WALL ON WHICH HOOD IS MOUNTED AND MUST EXTEND NO LESS THAN 20" UNDER BOTTOM OF HOOD TO BE ELIGIBLE FOR REDUCED MINIMUM EXHAUST CFM LISTING.

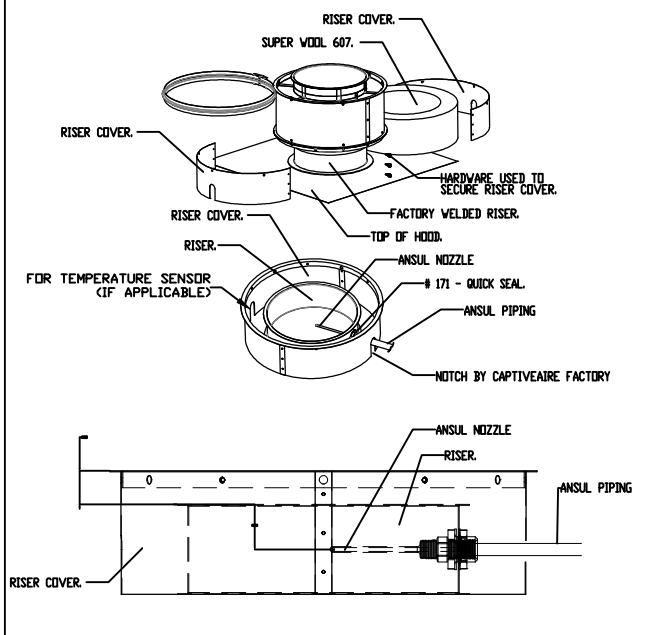


DUCT DIAMETER	MAXIMUM SPACING (FT)
8"	7'
10"	7'
12"	7'
14"	7'
16"	7'
18"	5'
20"	5'
22"	5'
24"	5'

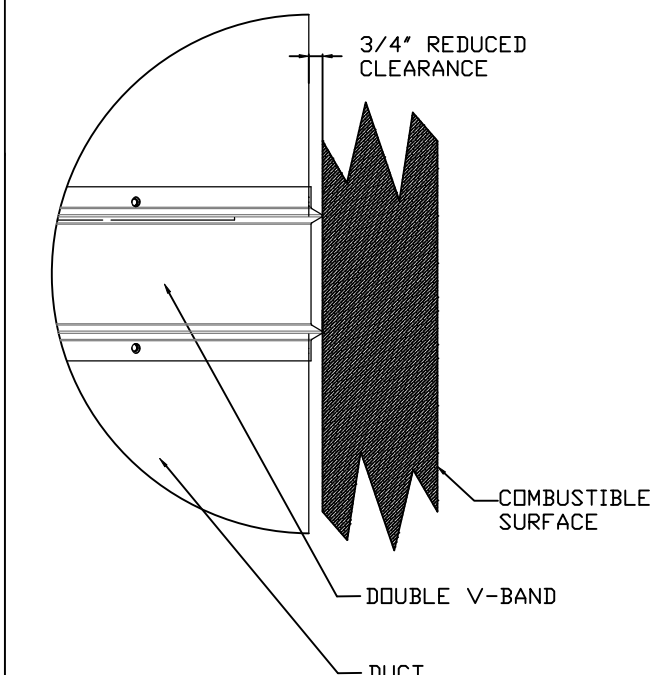
DUCT SUPPORT ASSEMBLY



TRANSITION PLATE DETAIL



OUTER DUCT BAND DETAIL



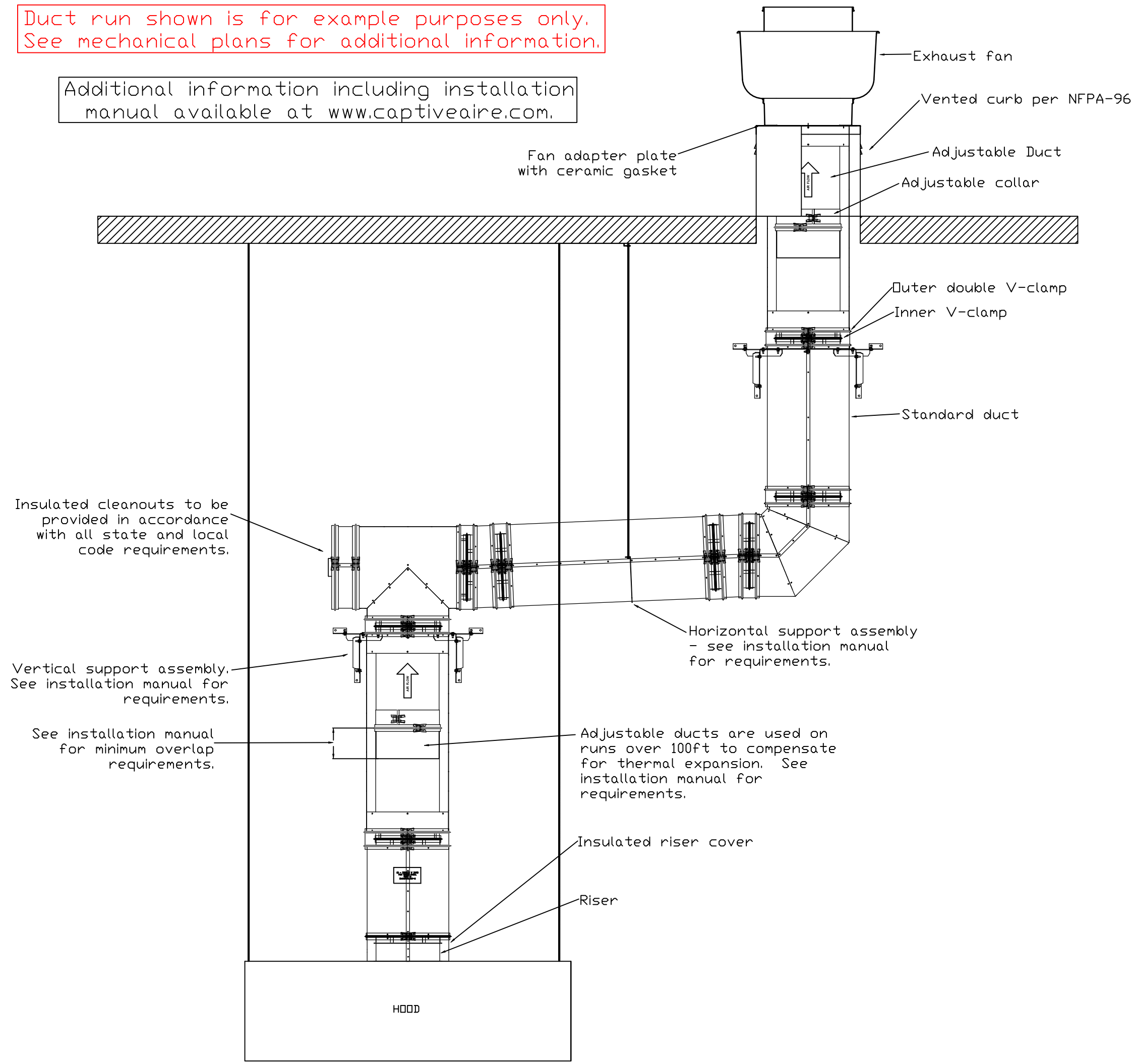
REDUCED CLEARANCE DETAIL

- DUCT RUN TO BE FIELD VERIFIED, PARTS SUBJECT TO CHANGE
- DUCT RUNS TO HAVE CLEANOUTS EVERY 10', AND EVERY CHANGE OF DIRECTION UNLESS SPECIFIED OTHERWISE.
- VERTICAL HANGING SUPPORTS TO BE EVERY 10', HORIZONTAL SUPPORTS TO BE EVERY 7' FOR INNER DUCT DIA 8" TO 16" AND EVERY 5' FOR INNER DUCT DIA 18" TO 24".
- ADJUSTABLE DUCT OVERLAP TO BE NO LESS THAN 6", UNLESS INNER DIAMETER IS 8" (4" OVERLAP) OR 10" (5" OVERLAP).
- 3/4" CLEARANCE TO COMBUSTIBLES IS FROM OUTER SHELL. V-BAND IS LISTED TO BE AGAINST SURFACE.

DUCTWORK NOTES

Duct run shown is for example purposes only. See mechanical plans for additional information.

Additional information including installation manual available at www.captiveaire.com.



Insulated cleanouts to be provided in accordance with all state and local code requirements.

Vertical support assembly. See installation manual for requirements.

See installation manual for minimum overlap requirements.

Horizontal support assembly - see installation manual for requirements.

Adjustable ducts are used on runs over 100ft to compensate for thermal expansion. See installation manual for requirements.

Insulated riser cover

Riser

DOUBLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (ft)
8"	7'
10"	7'
12"	7'
14"	7'
16"	7'
18"	5'
20"	5'
22"	5'
24"	5'

TYPE	VERTICAL		
	WALL SUPPORT (ft)	CURB SUPPORT (ft)	FLOOR SUPPORT (ft)
2R & 2R HT	20'	24'	24'
3R	10'	24'	24'
3Z	10'	24'	24'

SINGLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

DUCT DIAMETER	HORIZONTAL SUPPORT (ft)	VERTICAL WALL SUPPORT (ft)	VERTICAL CURB SUPPORT (ft)
8"	10'	10'	24'
10"	10'	10'	24'
12"	10'	10'	24'
14"	10'	10'	24'
16"	10'	10'	24'
18"	10'	10'	24'
20"	10'	10'	24'
22"	10'	10'	24'
24"	10'	10'	24'

GREASE DUCT 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 MANUFACTURES INSTALLATION GUIDE.
 PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES 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 IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 LISTED DOUBLE WALL GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 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

The Double Wall Ductwork Series has been certified by ITS. This certification mark indicates that the product has been tested to and has met the minimum requirements of a widely recognized (consensus) U.S. Product safety standard, that the manufacturing site has been audited, and that the applicant has agreed to a program of periodic factory follow-up inspections to verify continued performance.

Models DW-2R and DW-3R are ETL Listed under file number 1000082319SAT-006 EEV and comply with UL1978 and UL2221 Standards.

Model DW-3Z is ETL Listed under file number 1000082319SAT-006 EEV and complies with UL1978, UL2221 and CAN/ULC-S144 Standards.

DOUBLE WALL GREASE DUCT WRITTEN SPECIFICATION

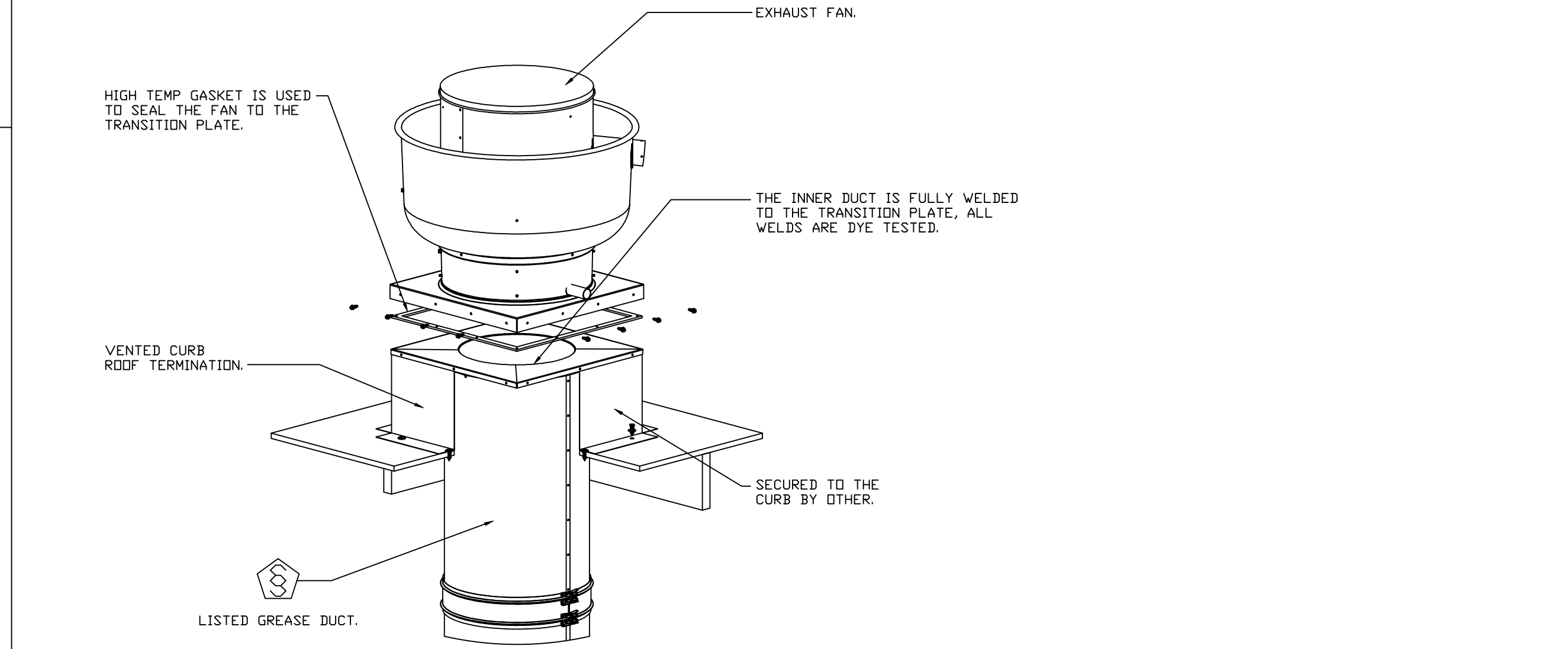
Furnish double wall, factory built grease duct for use with Type I kitchen hoods, which conforms to the requirements of NFPA-96. Products shall be ETL listed to UL-1978 and UL-2221 for venting air and grease vapors from commercial cooking operation. Models DW-2R, 3R and 3Z are used for grease duct applications when installed in accordance with these instructions and National Fire Protection Association "NFPA 96"; Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations. Double wall grease ducts are listed for a continuous internal temperature of 500 degrees F and intermittent temperatures of 2000 degrees F.

The duct sections shall be constructed of an inner duct wall and an outer wall with insulation in between. The inner duct wall shall be constructed of .036 inch thick, 430 type stainless steel and be available in diameters 8" through 24". The outer wall shall be constructed of stainless steel at a minimum of .024 inch thickness. The duct, based on model number, shall include layers of Super Wool 607 Plus insulation between the inner and outer wall. Grease duct joints shall be held together by means of formed V clamps and sealed with 3M Fire Barrier 2000+. The duct wall assembly shall be tested and listed at 3/4" or zero inch clearance, according to classifications.

Classifications and Clearances

UL 2221: Standard for Fire Resistive Grease Duct Enclosure Assemblies. Chapter 7 of this standard references a test labeled Internal Fire Test. Section 7.1.1 references two installation conditions, Condition A and Condition B. Condition A represents all installation condition except for installation within non-ventilated combustible enclosures. Condition B represents installation within a non-ventilated combustible enclosure.

Model DW-2R is classified under UL2221 (Test of Fire Resistive Duct Enclosure Assemblies) as an alternate to 2-Hr. fire resistive shaft enclosures with a reduced clearance to combustibles (sizes 8" to 16" diameter). Model 2R is listed in accordance with the requirements for duct enclosure Condition B.



REVISIONS	
DESCRIPTION	DATE



Diamond Automotive Cafe
 55761 Twentynine Palms Highway,
 Yucca Valley, CA, 92284

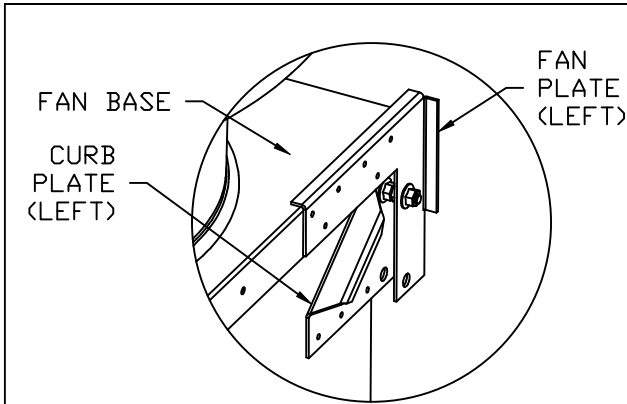
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 DWG.#: 5194275

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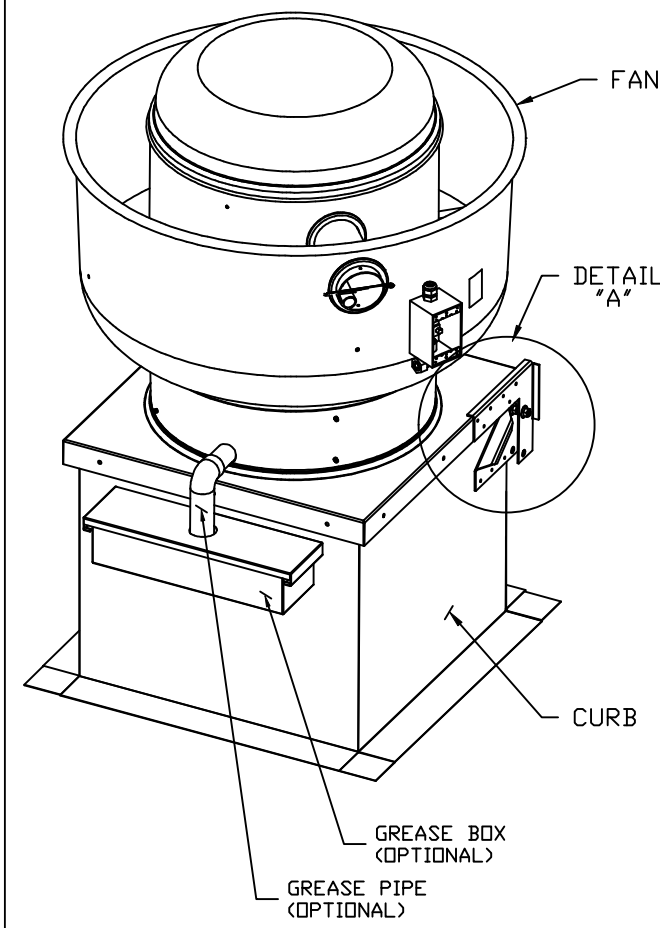
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MASTER DRAWING

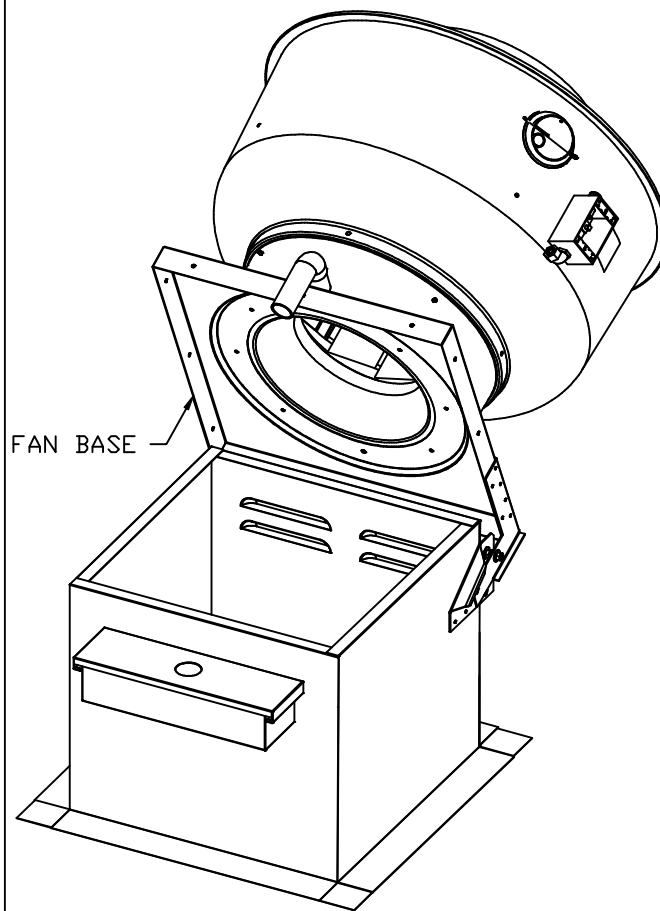
SHEET NO. 3



HINGE KIT DETAIL

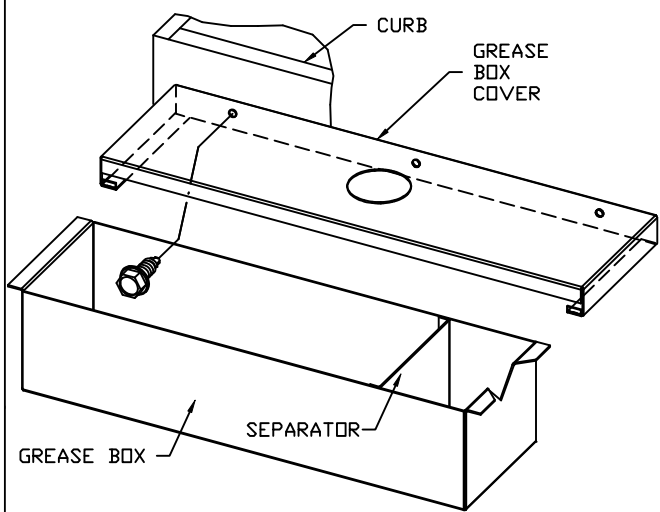


FAN IN CLOSED POSITION

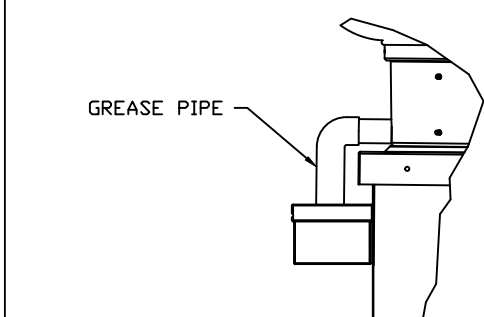


ATTENTION: INSTALLER SHOULD SUPPLY ENOUGH ELECTRICAL CORD TO LET FAN MAKE COMPLETE SWING.

FAN IN OPEN POSITION



ATTACH GREASE BOX COVER TO THE CURB 3" BELOW TOP EDGE OF CURB. USING (3) LONG (3/4" LG.) SCREWS AS SHOWN. INSTALL GREASE PIPE AS SHOWN.

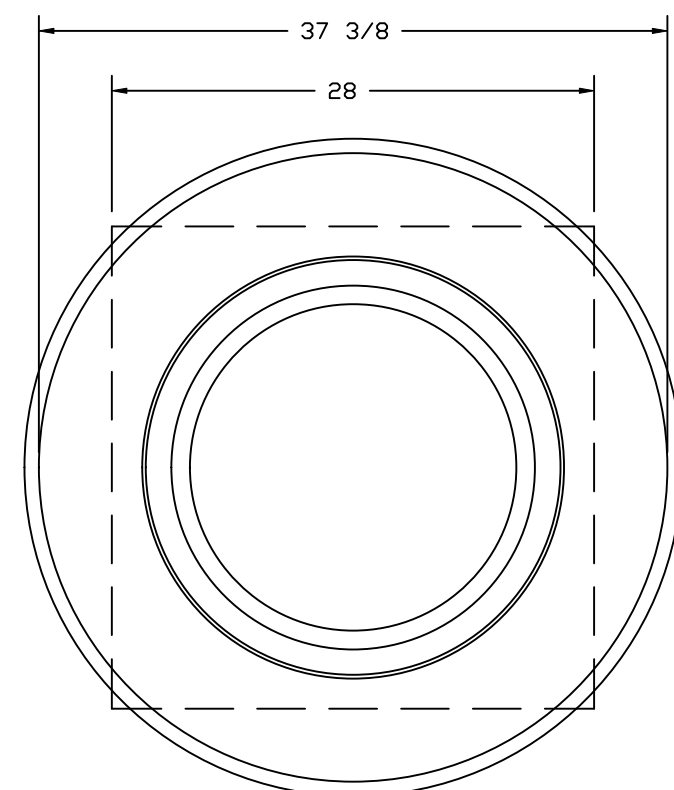
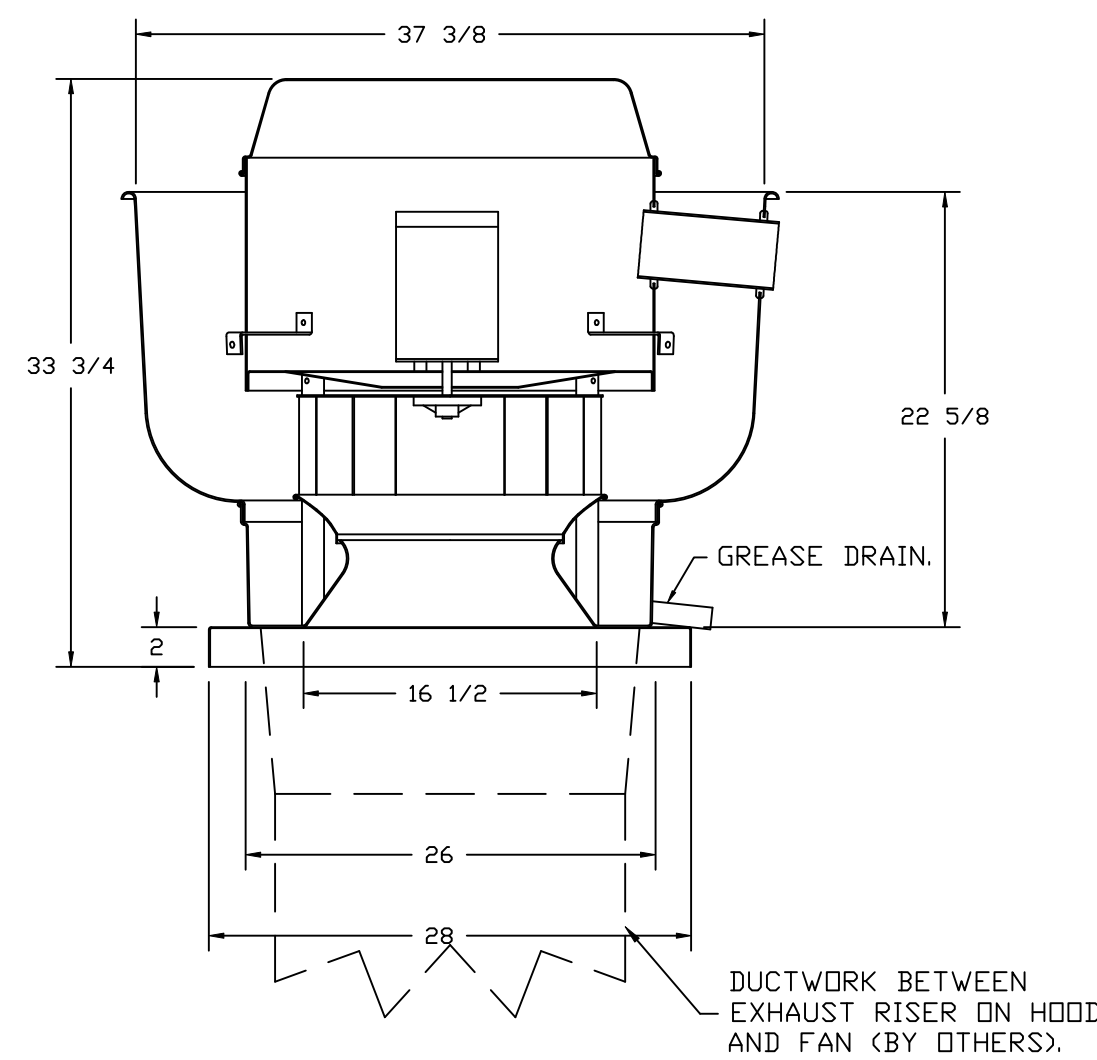


GREASE BOX INSTALLATION

1. A PRE-WIRED ELECTRICAL CONTROL PACKAGE SHALL BE PROVIDED TO OPERATE THE HOOD LIGHTS AND FANS.
2. PACKAGE SHALL CONSIST OF SWITCH PANEL WITH LIGHT SWITCH(ES) AND RED-LIGHTED FAN SWITCH(ES), STARTER/OVERLOAD ASSEMBLY FOR EACH FAN(OPTIONAL), NUMBERED INPUT/OUTPUT TERMINAL STRIPS, AND A TERMINAL FOR DOUBLE-DUAL FIRE SYSTEM MICROSWITCH CONNECTION.
3. ONE RELAY IS WIRED TO MICROSWITCH (IN FIRE SYSTEM) FOR SUPPLY FAN SHUTDOWN AND OTHER RELAY FOR ADDITIONAL FIRE SYSTEM ACTIVATED DRY CONTACTS.
4. ELECTRICAL CONDUIT DROPS FROM THE FAN(S) SHALL BE CONNECTED TO THE NUMBERED TERMINAL STRIP. CONDUIT BETWEEN THE PRE-WIRE PACKAGE AND FAN(S) SHALL BE SUPPLIED BY THE ELECTRICAL CONTRACTOR.

ELECTRICAL PACKAGE NOTES

FAN #1 DU180HFA - EXHAUST FAN



TOP VIEW

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.

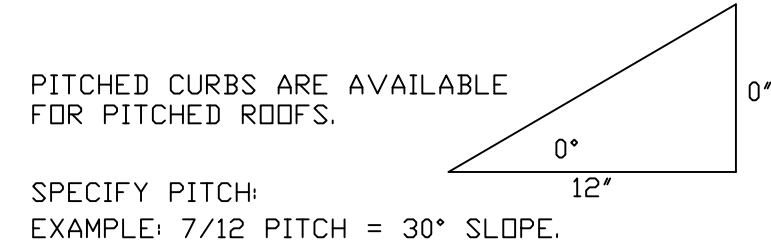
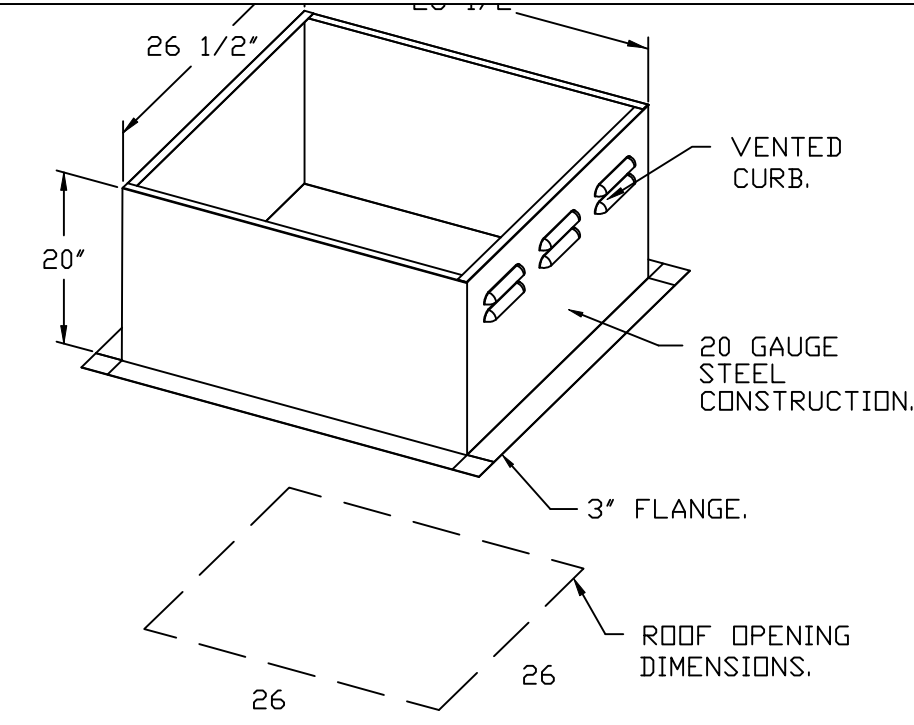
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

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.
- UNIT MOUNTED VFD FOR USE WITH ECPM03.
- VFD MOUNTING BRACKET FOR DU/DR 180 - 200.
- EXHAUST FAN HEAT BAFFLE.
- 2 YEAR PARTS WARRANTY.

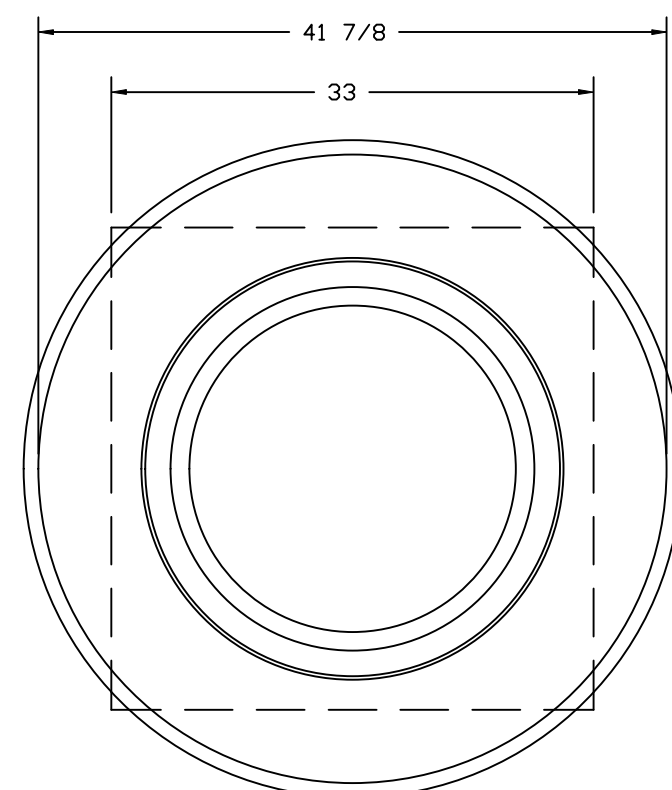
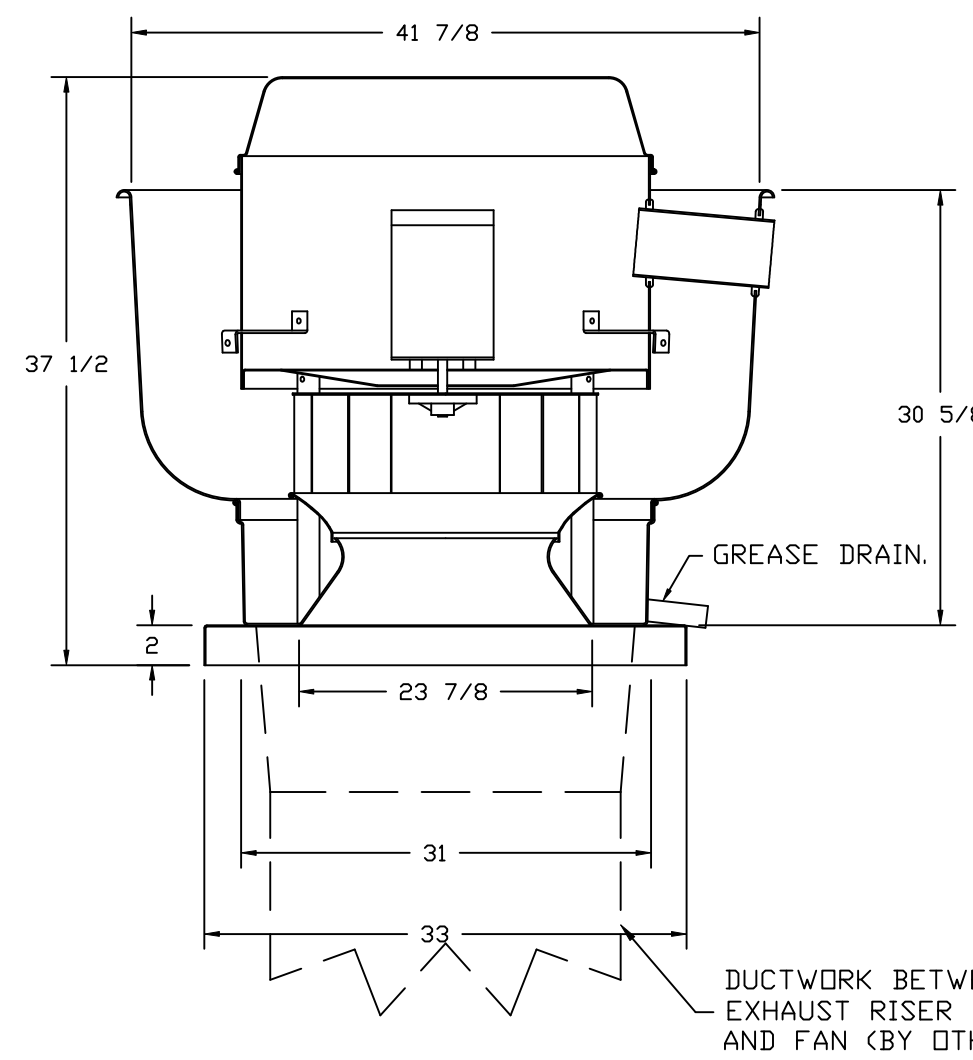
DUCTWORK BETWEEN EXHAUST RISER ON HOOD AND FAN (BY OTHERS).



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

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

FAN #2 DU240HFA - EXHAUST FAN



TOP VIEW

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.

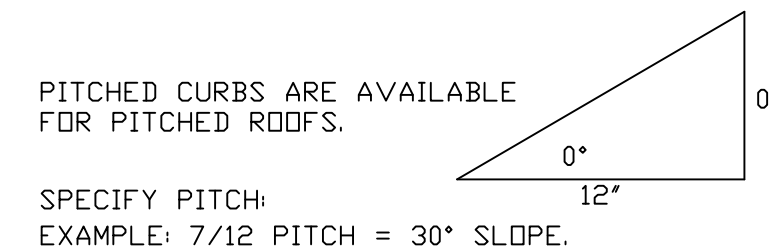
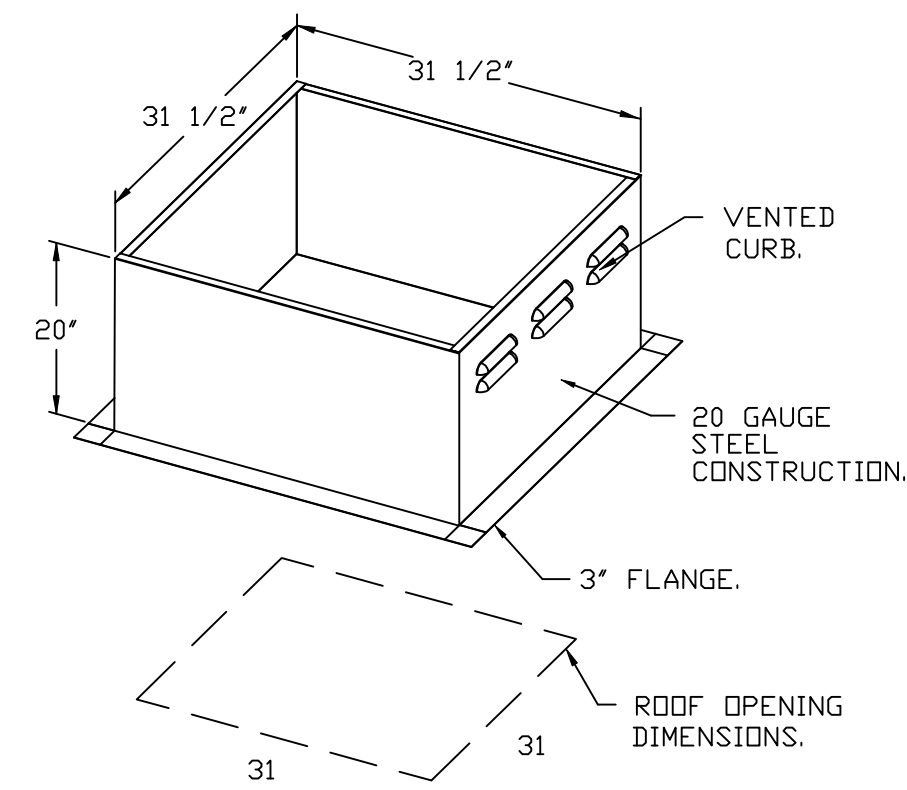
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

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

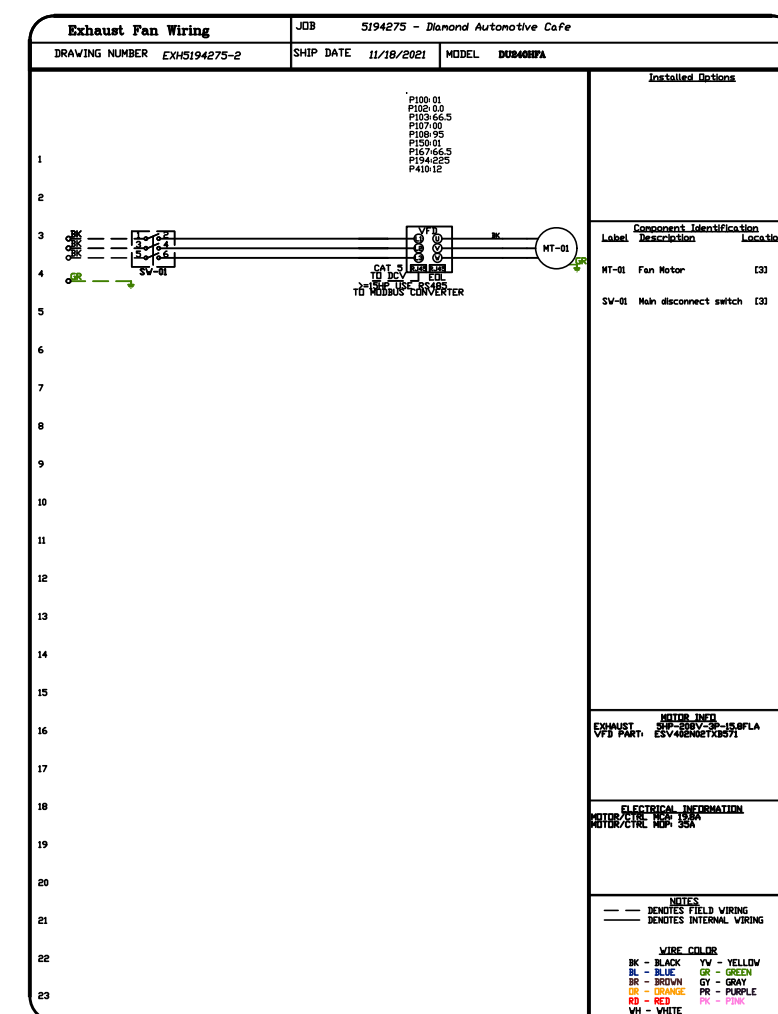
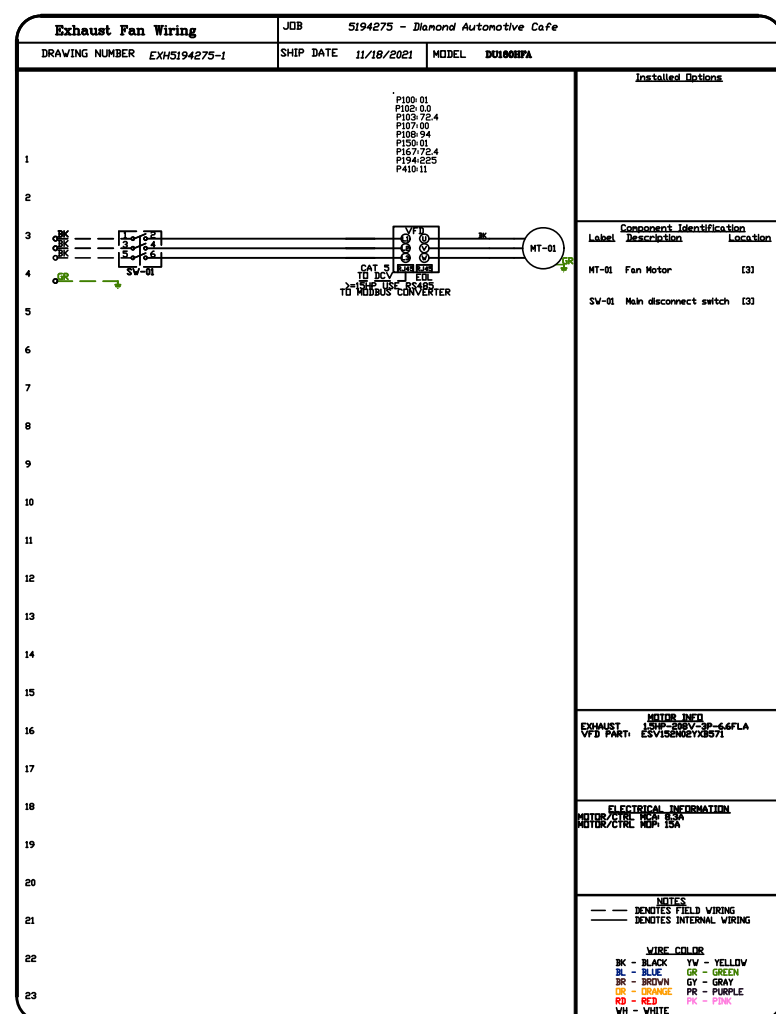
- GREASE BOX.
- UNIT MOUNTED VFD FOR USE WITH ECPM03.
- VFD MOUNTING BRACKET FOR DU/DR 240.
- EXHAUST FAN HEAT BAFFLE.
- 2 YEAR PARTS WARRANTY.

DUCTWORK BETWEEN EXHAUST RISER ON HOOD AND FAN (BY OTHERS).



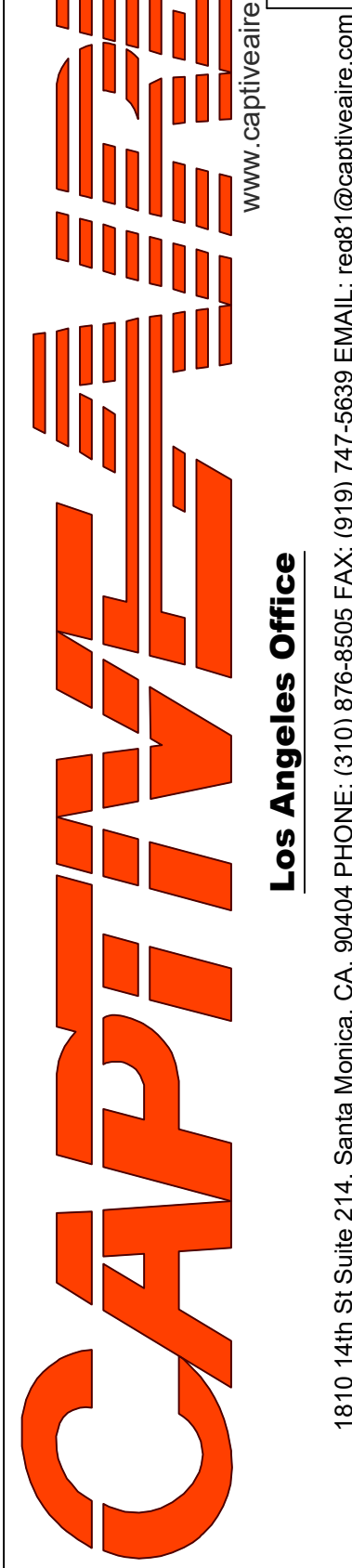
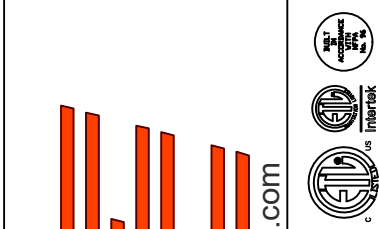
PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

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



REVISIONS

DESCRIPTION	DATE:



Diamond Automotive Cafe
55761 Twentynine Palms Highway,
Yucca Valley, CA, 92284

DATE: 11/18/2021

DWG.#:
5194275

DRAWN BY:

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

MASTER DRAWING

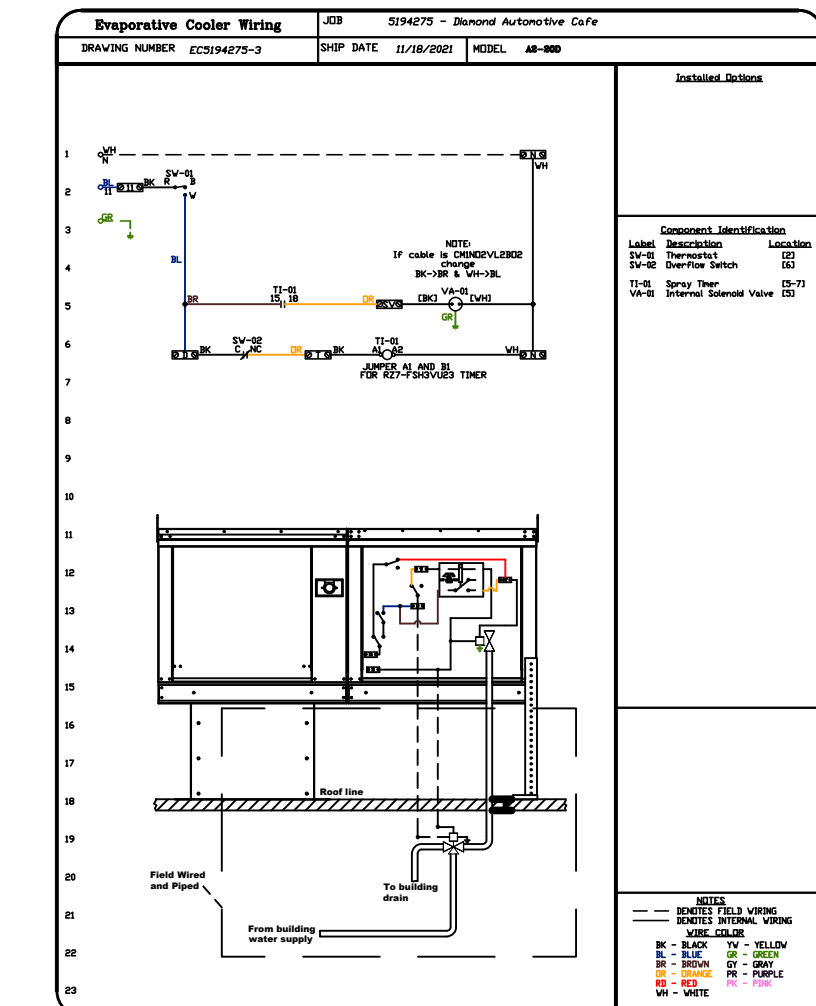
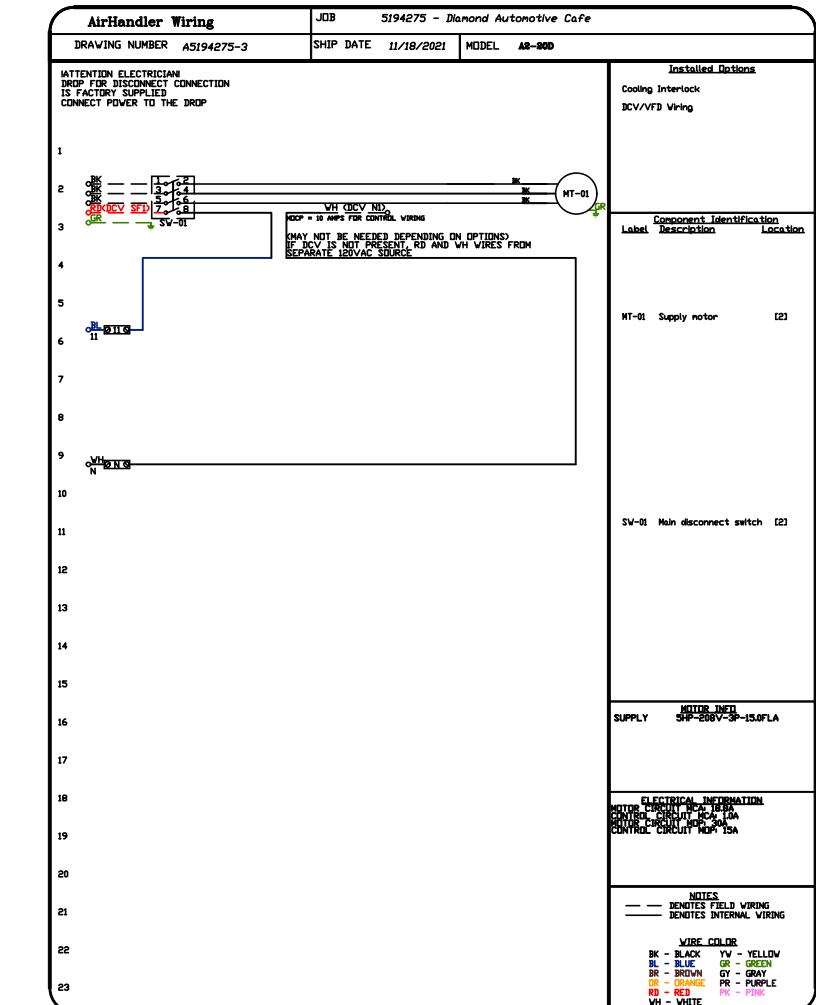
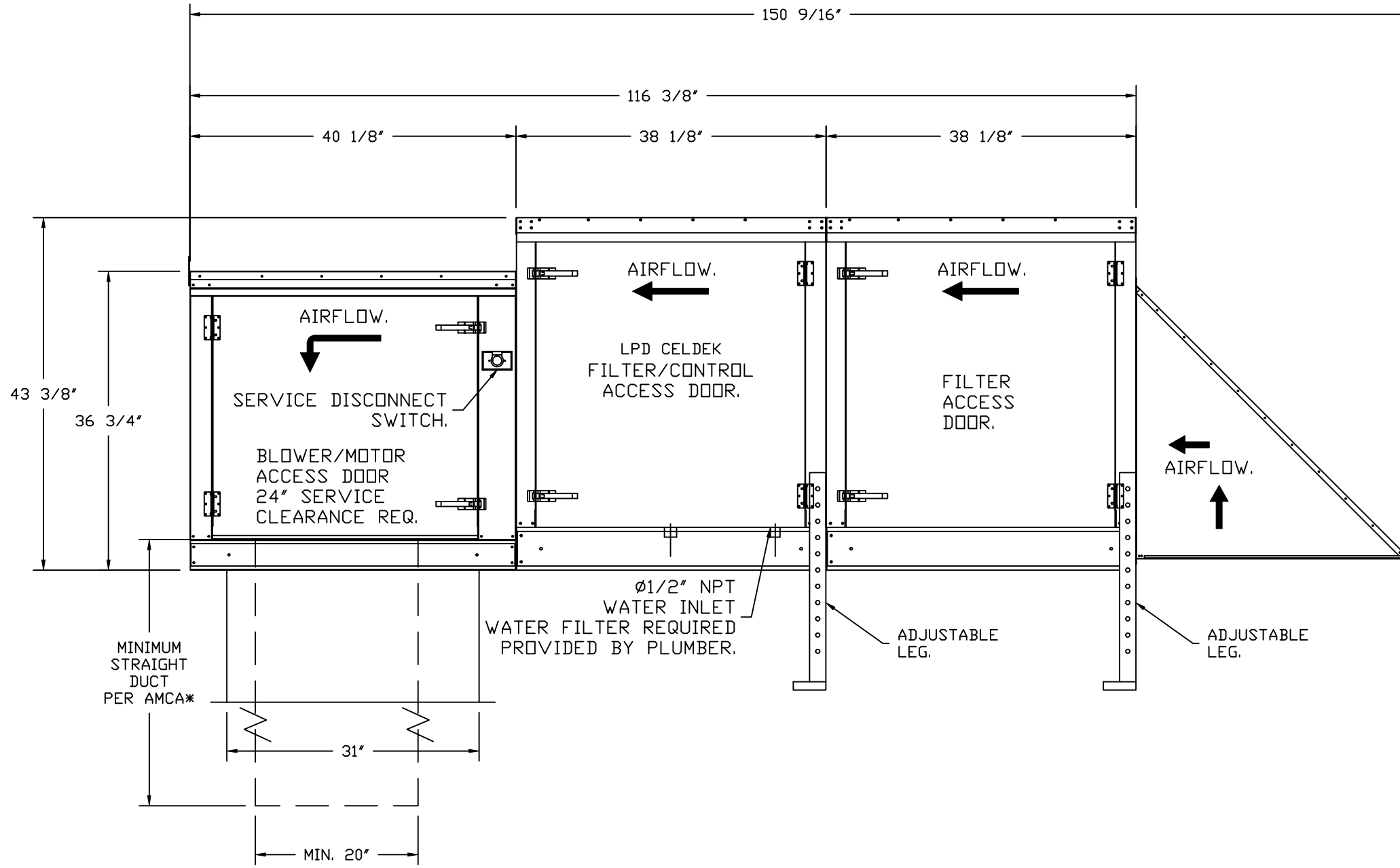
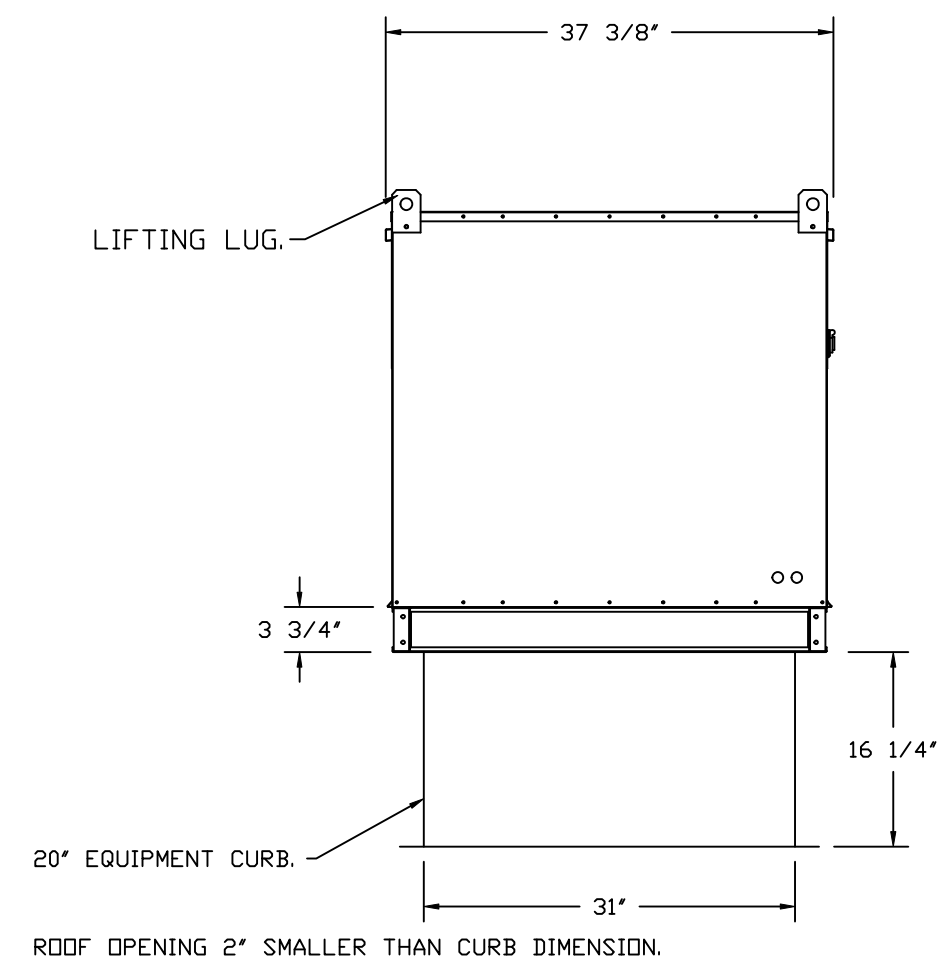
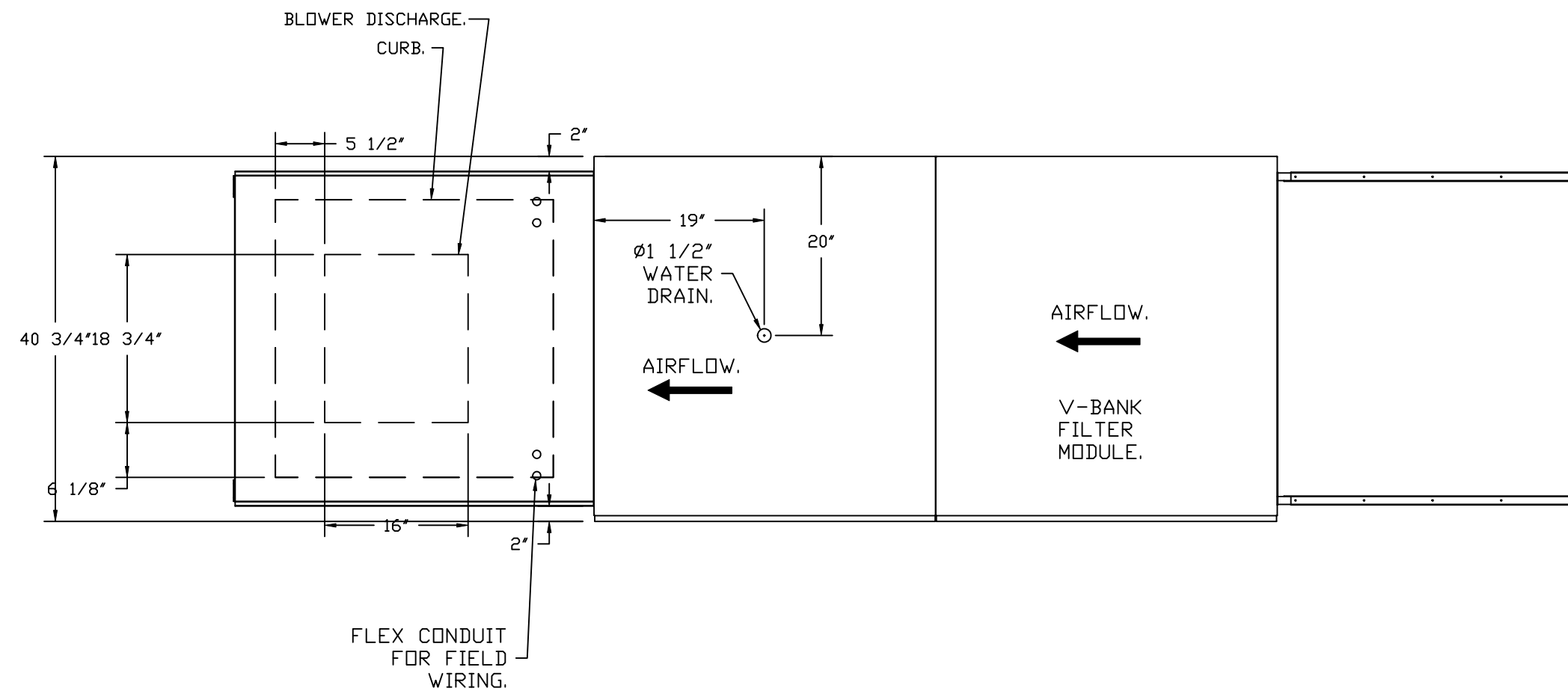
SHEET NO.

4

www.captiveair.com
Los Angeles Office
1810 14th St Suite 214, Santa Monica, CA, 90404 PHONE: (310) 876-8505 FAX: (919) 747-5639 EMAIL: reg98@captiveair.com

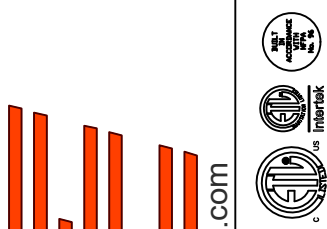
- FAN #3 A2-20D - SUPPLY FAN
 1. UNTEMPERED SUPPLY UNIT WITH 20" MIXED FLOW DIRECT DRIVE FAN IN SIZE #2 HOUSING.
 2. EVAP COOLER (LPD) & V-BANK WITH 2" TA-13 FILTERS-OUTDOOR.
 3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
 4. 120V WIRING CONNECTION TO ENERGIZE EVAPORATIVE COOLERS FROM UNTEMPERED SUPPLY FANS.
 5. 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.
 6. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER/EVAP SECTION).
 7. 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 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" x 20".



REVISIONS

DESCRIPTION	DATE:



www.captiveair.com
 Los Angeles Office

CAPTIVE AIR

Diamond Automotive Cafe
 55761 Twentynine Palms Highway,
 Yucca Valley, CA, 92284

DATE: 11/18/2021

DWG.#:
 5194275

DRAWN BY:

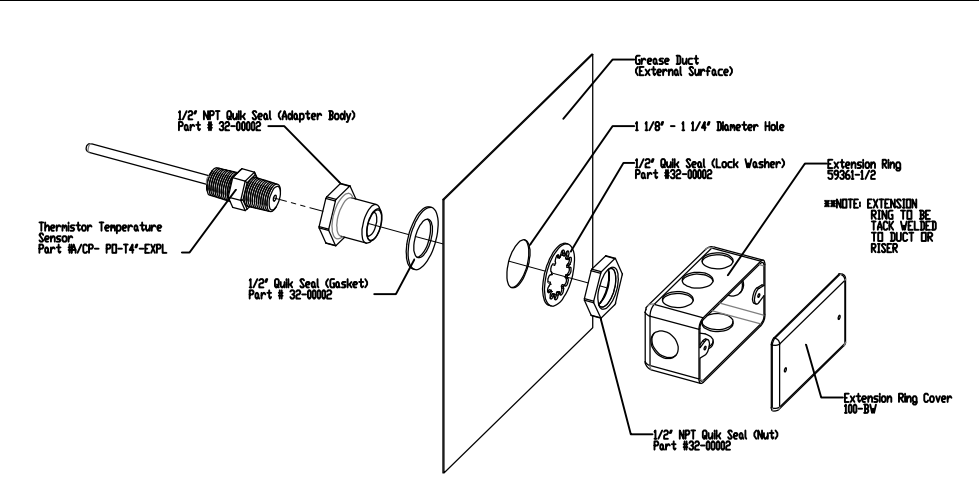
SCALE:
 3/4" = 1'-0"

MASTER DRAWING

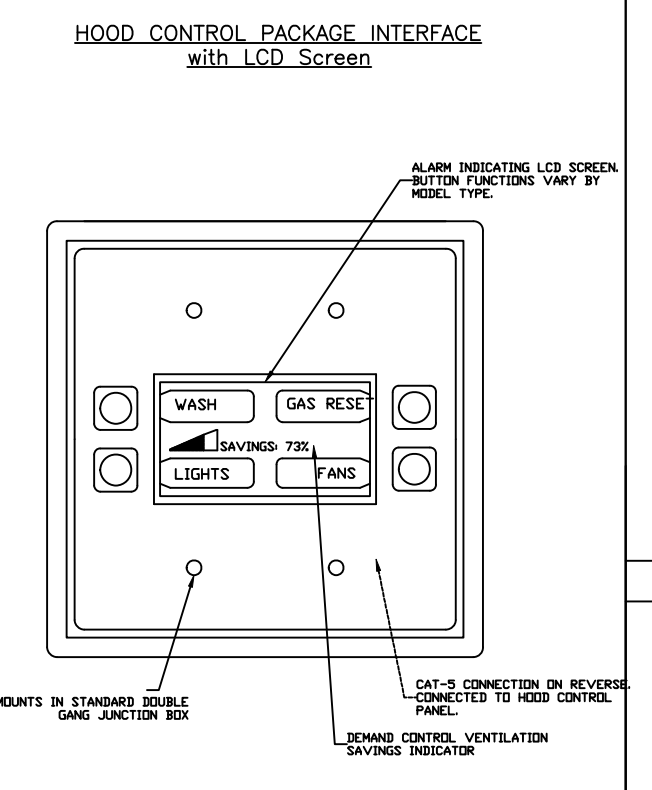
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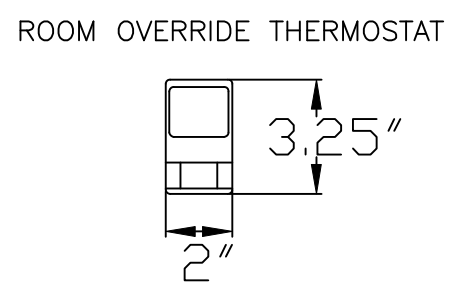
1810 14th St Suite 214, Santa Monica, CA, 90404 PHONE: (310) 876-8505 FAX: (919) 747-5639 EMAIL: reg8@captiveair.com



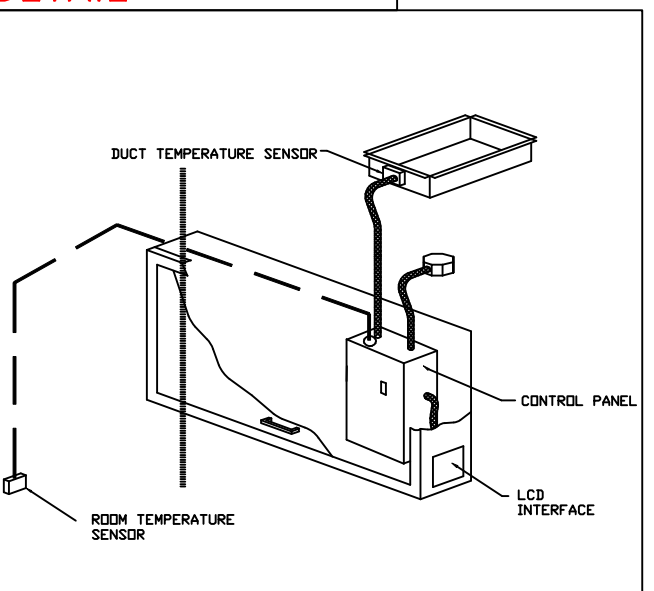
DUCT THERMISTOR DETAIL



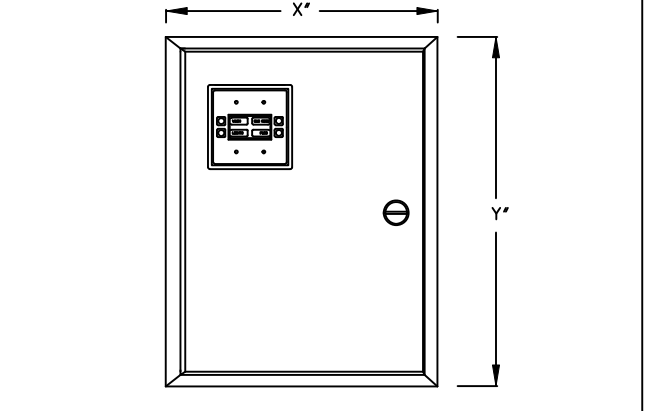
CONTROL PACKAGE INTERFACE



ROOM THERMOSTAT



UTILITY CABINET DETAIL



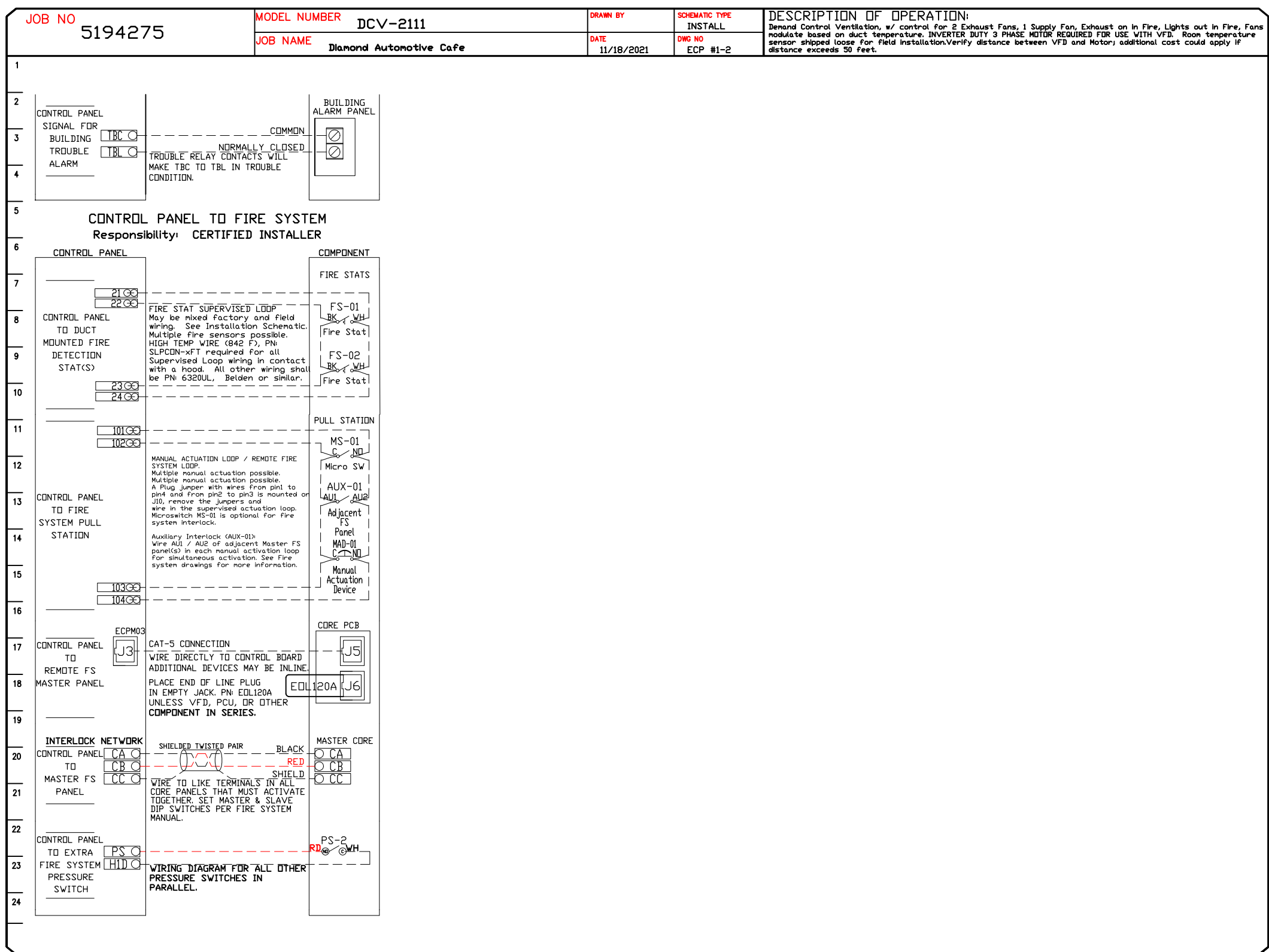
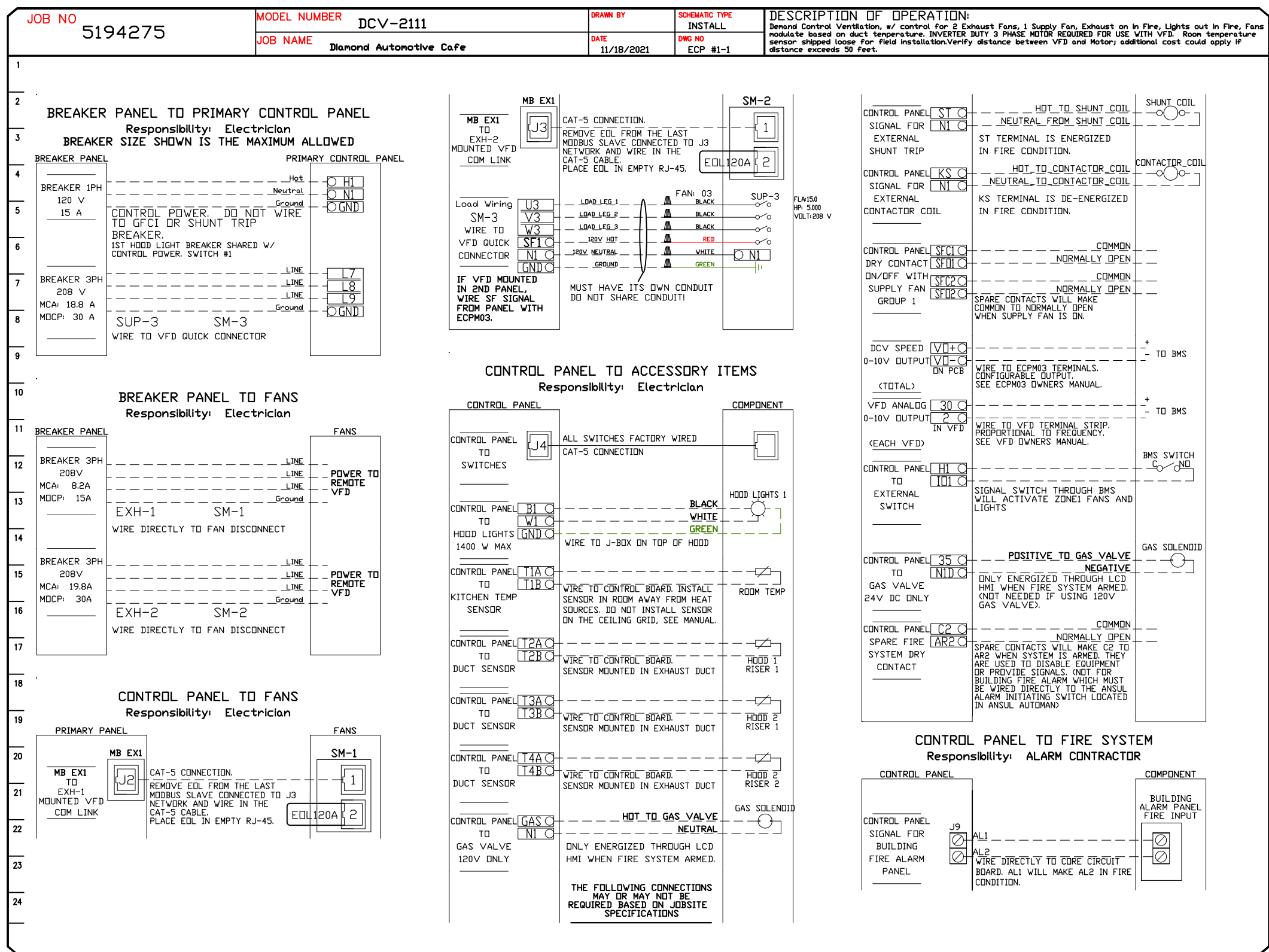
WALL MOUNT BOX DETAIL

- 1. FAN MOTOR HP, PHASE AND VOLTAGE TO BE VERIFIED PRIOR TO FABRICATION.
2. THE DCV PACKAGE PROVIDES FOR A MINIMUM EXHAUST RATE OF 20% OF THE DESIGN EXHAUST VOLUME (60% REDUCTION) AS A STANDARD FEATUREREVENING PREP MODE. THIS EXCEEDS THE 50% EXHAUST VOLUME REDUCTION AS REQUIRED BY CA TITLE 24 SECTION 140.9(b)(9).
3. DUCT TEMP SENSOR TO BE INSTALLED IN EVERY RISER AND TO BE WIRED BACK TO DCV CONTROL BOX.
4. CASLINK OPTION ALLOWS YOU TO MONITOR THE HOOD VENTILATION SYSTEM REMOTELY, AND WILL NOTIFY YOU IF ANYTHING IS NOT PERFORMING CORRECTLY.
5. THE DEMAND CONTROL VENTILATION SYSTEM WILL MEET THE PROPER REQUIREMENTS FOR TITLE 24 COMPLIANCE.
6. WIRING FOR VFDs REQUIRE SEPARATE CONDUITS.

DCV NOTES

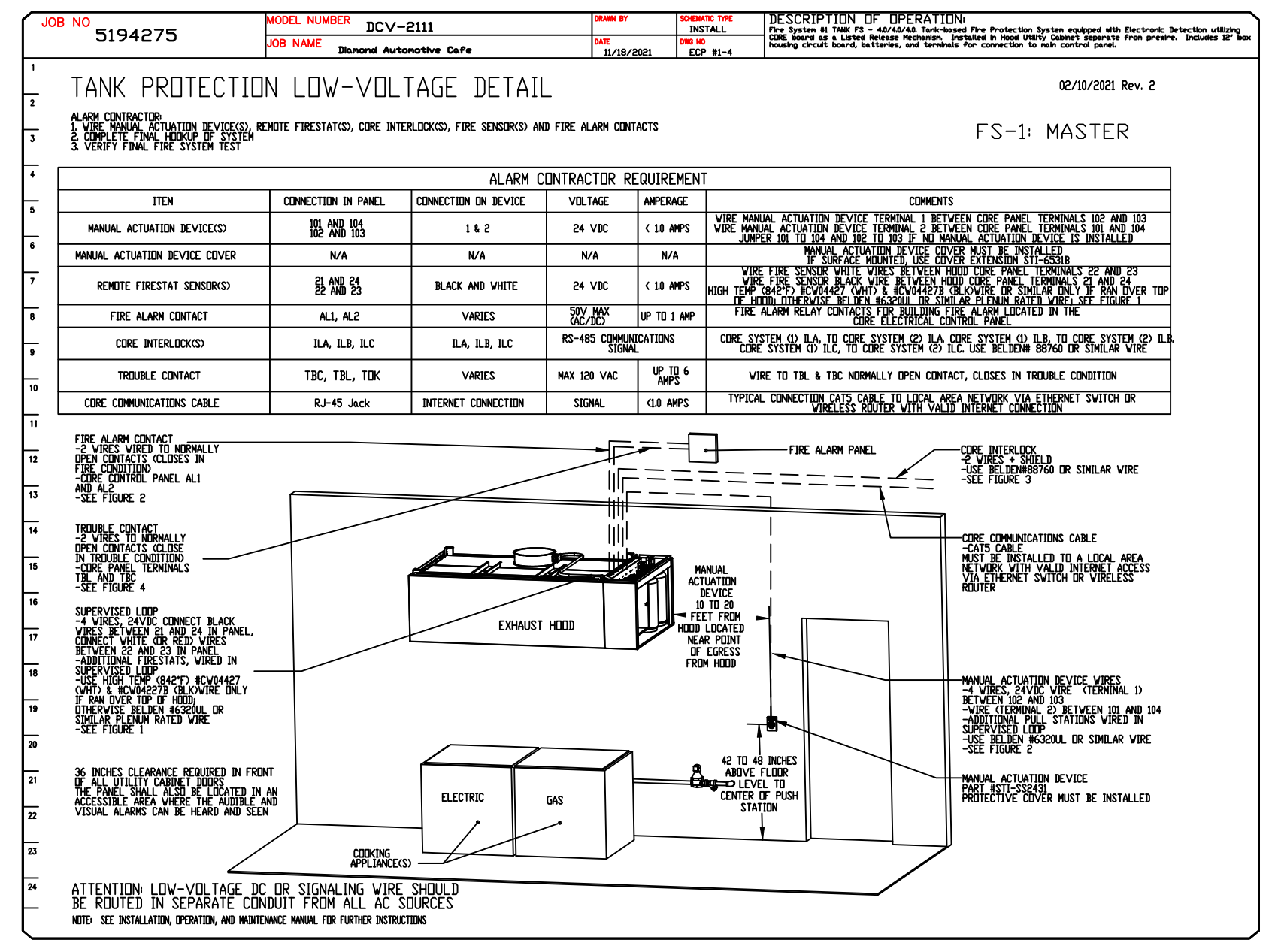
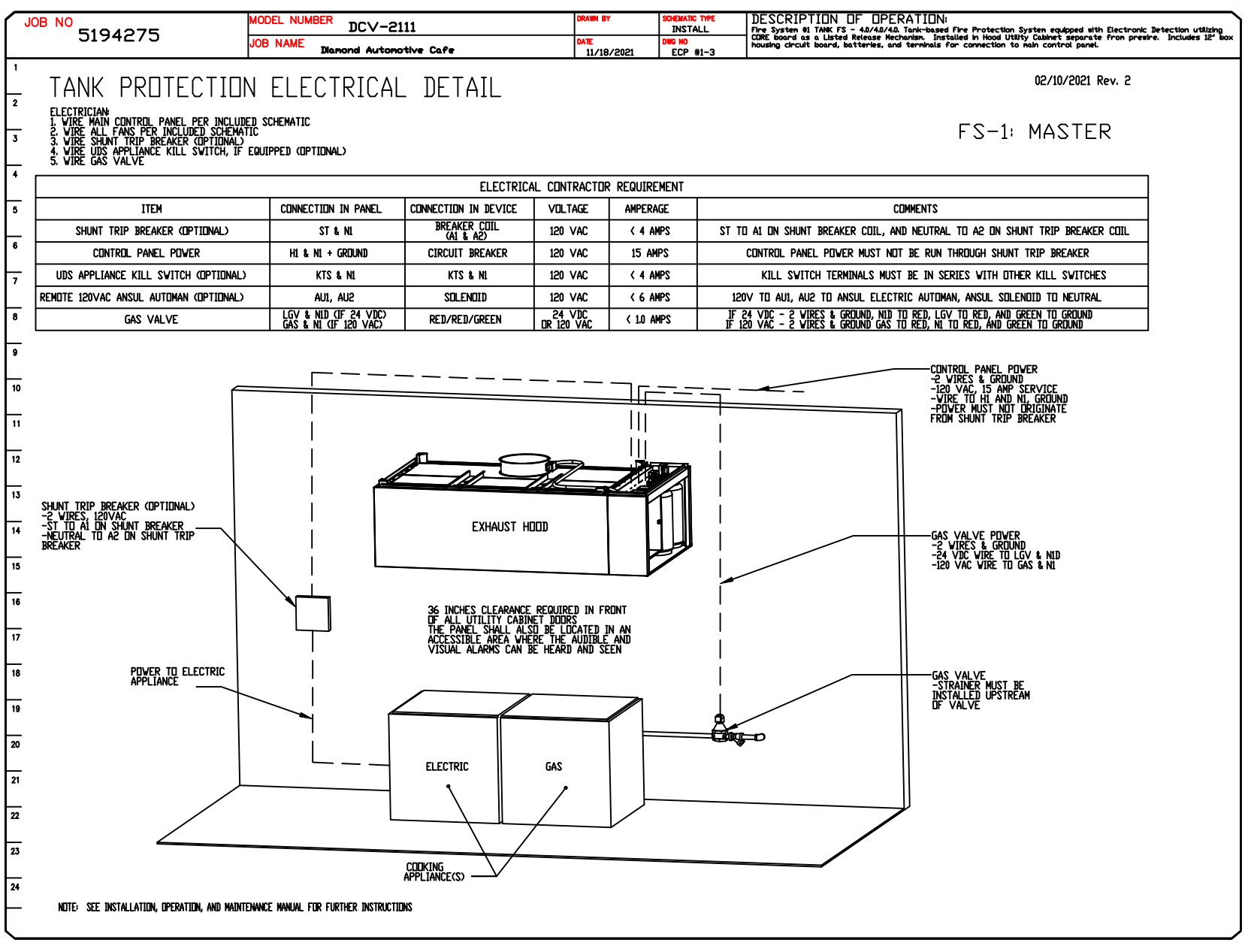
ELECTRICAL PACKAGE - JOB#5194275

Table with columns: ND, TAG, PACKAGE #, LOCATION, SWITCHES, OPTION, FANS CONTROLLED. Row 1: 1, DCV-2111, WALL MOUNT IN SS BOX, 05 - SS WALL MOUNT BOX, 1 LIGHT, SMART CONTROLS DCV, EXHAUST 3 1,500 208 6.6, EXHAUST 3 5,000 208 15.8, SUPPLY 3 5,000 208 15.0



Demand Control Ventilation Hood Control Panel Specifications:

- Controls shall be listed by ETL (UL 508A)
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 thermostat controller shall be provided to activate the hood exhaust fans dynamically based on a +10 degree adjustable offset from the room temperature sensor.
A digital thermostat 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 thermostat 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 Hood Control Panel shall modulate the VFDs between a minimum setpoint and a maximum setpoint on demand. The duct temperature sensor input(s) to the digital thermostat controller shall be 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 thermostat 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 thermostat controller shall disable the supply fan(s), activate the exhaust fan(s), activate the appliance shunt trip, and disable an electric gas valve automatically under the following conditions (as applicable):
a. Fire condition detected on a covered hood
b. Excessive temperature detected on any duct temperature sensor in the system (250 F adjustable)
A digital thermostat 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



REVISIONS table with columns for DESCRIPTION and DATE. CAPTIVE logo. Los Angeles Office address: 1810 14th St Suite 214, Santa Monica, CA, 90404. PHONE: (310) 876-8505. FAX: (919) 747-5639. EMAIL: reg@captivewire.com. Diamond Automotive Cafe address: 55761 Twentynine Palms Highway, Yucca Valley, CA, 92284. DATE: 11/18/2021. DWG #: 5194275. DRAWN BY: SCALE: 3/4" = 1'-0". MASTER DRAWING. SHEET NO. 6.