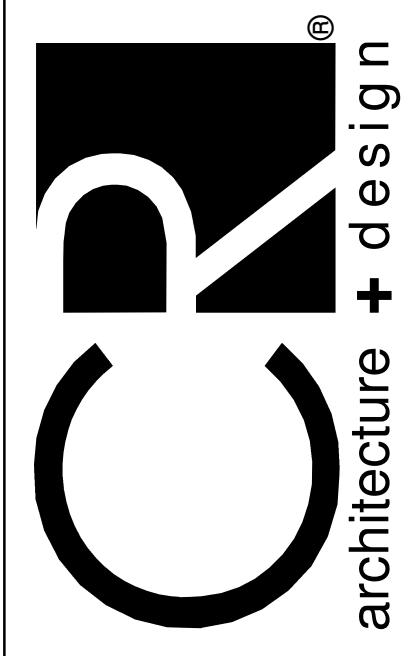


MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
DRAWING SET APPEARANCE	
<p>TO BETTER COMMUNICATE SCOPE TO PERMIT AGENCIES AND CONTRACTORS, EACH DRAWING IN THIS DRAWING SET HAS BEEN CREATED IN BOTH "COLOR" AND "BLACK AND WHITE". THERE EXISTS A COLOR LAYER WITHIN EACH DRAWING WHERE VISIBILITY IS CONTROLLED THROUGH THE PDF LAYER MANAGER. THIS LAYER VISIBILITY CAN BE TOGGLED DISPLAYING EITHER "COLOR" OR "BLACK AND WHITE". TO MAINTAIN SCOPE BASED SHADING WHEN PRINTING TO PAPER, BLACK AND WHITE NEEDS TO BE VISIBLE. FOR FURTHER INSTRUCTIONS, REFER TO CONTRACTOR RESOURCES ON OUR WEBSITE AND DOWNLOAD "DRAWING COLOR INSTRUCTIONS". WWW.KLHENGRS.COM - CONTRACTOR RESOURCES (RIGHT HAND SIDE OF PAGE).</p>	
PIPING LINE TYPES	
	REFRIGERANT LIQUID
	REFRIGERANT SUCTION
	CONDENSATE DRAIN
	SUPPLY MAIN OR BRANCH
	RETURN MAIN OR BRANCH
MECHANICAL AIR DEVICES	
	SUPPLY REGISTER
	RETURN REGISTER
	EXHAUST REGISTER
	RETURN GRILLE
	CEILING DIFFUSER
	2'x2' SQUARE CEILING DIFFUSER WITH 10' NECK
	ROUND CEILING DIFFUSER
MECHANICAL DUCTWORK	
	SUPPLY DUCT WITH ELBOW TURNED UP
	SUPPLY DUCT WITH ELBOW TURNED DOWN
	RETURN DUCT WITH ELBOW TURNED UP
	RETURN DUCT WITH ELBOW TURNED DOWN
	EXHAUST DUCT WITH ELBOW TURNED UP
	EXHAUST DUCT WITH ELBOW TURNED DOWN
	SUPPLY DUCT
	RETURN DUCT
	EXHAUST DUCT
	FLEXIBLE DUCTWORK CONNECTION
	BRANCH TAKEOFF
	REDUCER, CONCENTRIC
	REDUCER, NONCONCENTRIC
MECHANICAL DUCTWORK ACCESSORIES	
	DUCT WITH MANUAL VOLUME DAMPER
	ROUND ELBOW WITH TURNING VANES
	ELBOW WITH TURNING VANES
	DUCT MOUNTED SMOKE DETECTOR (HARD WIRE INTERLOCK TO FAN MOTOR BY E.C.) FURNISHED BY E.C., INSTALLED BY M.C.
MECHANICAL STATS & SENSORS	
	TEMPERATURE SENSOR
	LOW VOLTAGE THERMOSTAT
	REVERSE ACTING THERMOSTAT
	HUMIDITY SENSOR
	CARBON DIOXIDE SENSOR
MECHANICAL MISCELLANEOUS	
	ANSUL PULL STATION

GENERAL NOTES	
A.	REFER TO HEATING, VENTILATING & AIR CONDITIONING SPECIFICATIONS AND GENERAL CONDITIONS FOR ADDITIONAL REQUIREMENTS.
B.	ALL DIFFUSERS AND CEILING GRILLES SHALL BE COORDINATED WITH LAY-IN CEILING GRID AND PROVIDED BY MECHANICAL CONTRACTOR. REFER TO DETAILS 230713.00.21 AND 230713.00.04 ON SHEET M5.2 FOR INSTALLATION INFORMATION.
C.	PROVIDE BALANCING DAMPERS FOR EACH DIFFUSER, REGISTER AND GRILLE AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE BRANCHES LEAD OFF FROM LARGER DUCTS OR IN DIFFUSERS AS REQUIRED FOR AIR BALANCING. INSTALL AT A MINIMUM OF TWO DUCT WIDTHS FROM BRANCH TAKEOFF WHERE PRACTICAL. REFER TO DETAIL 230500.00.01 ON SHEET M5.2 FOR ADDITIONAL INFORMATION.
D.	ALL NEW EXHAUST FANS AND RTUS SPECIFIED ARE INCLUDED IN KROGER'S DIRECT BUY PROGRAM AND SHALL BE FURNISHED BY KROGER AND INSTALLED BY HVAC CONTRACTOR, UNLESS OTHERWISE NOTED.
E.	ALL HVAC DUCT SMOKE DETECTORS ARE TO BE PROVIDED BY HVAC CONTRACTOR.
F.	PROVIDE BACKDRAFT DAMPERS FOR NON-KITCHEN EXHAUST FANS.
G.	SUPPLY AND RETURN DUCTWORK FROM ROOFTOP UNITS TO BE INTERNALLY INSULATED A MINIMUM OF TEN FEET FOR SOUND ATTENUATION.
H.	PROVIDE TURNING VANES IN ALL RECTANGULAR MITERED ELBOWS.
I.	ALL DIFFUSERS ARE 4-WAY UNLESS OTHERWISE INDICATED.
J.	RUNOUTS TO CEILING DIFFUSERS ARE THE SAME SIZE AS THE DIFFUSER NECK UNLESS NOTED OTHERWISE.
K.	SUPPLY, RETURN AND OUTSIDE AIR DUCT TO BE EXTERNALLY INSULATED WHERE LOCATED ABOVE CEILING SPACE. REFER TO SPECIFICATION 230700.

DESIGN AMBIENT TEMP'S:
**SUMMER: 102 DEG DRY BULB
75 DEG WET BULB
WINTER: 22 DEG DRY BULB**



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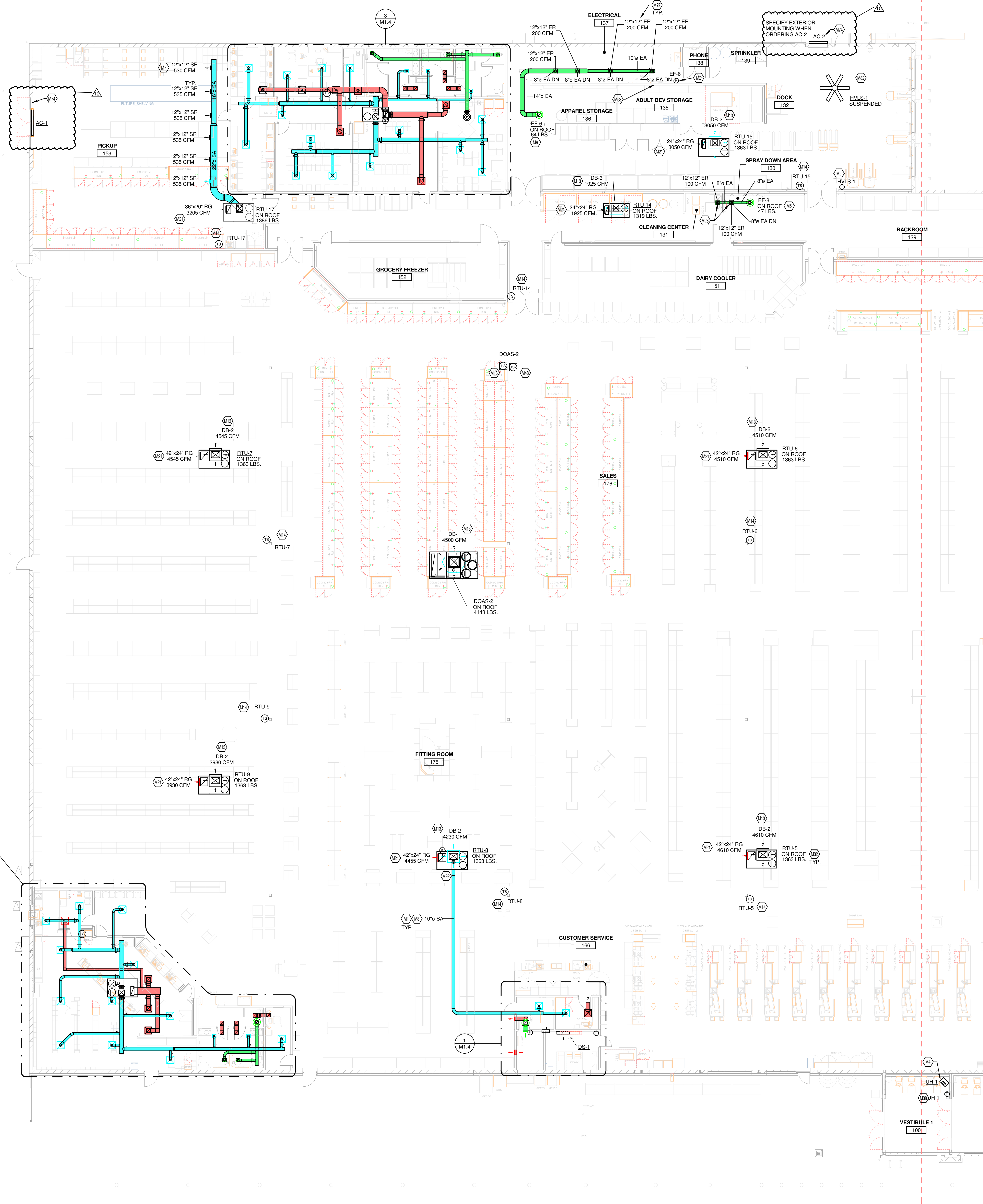


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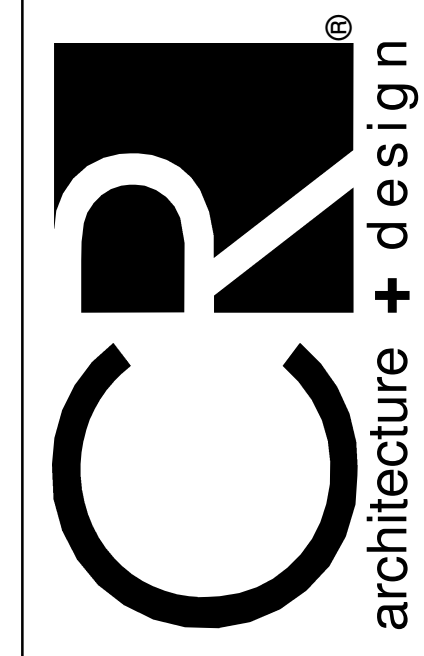
FORT WORTH, TX
COMMISSION NO. **522316**
ISSUE DATE **05/24/23**
SHEET TITLE
**MECHANICAL
ABBREVIATIONS,
SYMBOLS, AND
GENERAL NOTES**

SHEET NO.
MO.1



KEYED NOTES

- M1 CONTRACTOR TO REFER TO HSD-3 FOR DUCTWORK INSTALLATION INFORMATION.
- M2 THERMOSTAT TO BE MOUNTED AT 4'0" AFF. PROVIDE LOCKABLE PROTECTIVE COVER OVER DEVICE.
- M4 SUSPENDED ELECTRIC HEATER USING THREADED ROD TO UNISTRUT CHANNEL OR APPROVED EQUIV. MOUNT 1'00" AFF TO BOTTOM OF UNIT. VERIFY LOCATION AND REQUIREMENTS TO OWNER PRIOR TO INSTALLATION. REFER TO 238289.00-01 ON M5.2 AND M6.1 FOR MORE INFORMATION.
- M5 DUCT UP TO OPENING THROUGH ROOF CAPPED WITH CURB AND KROGER FURNISHED EXHAUST FAN.
- M6 DUCT UP TO OPENING THRU ROOF. CONTRACTOR TO PROVIDE REVERSE ACTING THERMOSTAT FOR FAN. FAN TO ENERGIZE WHEN ROOM REACHES 80 DEG F.
- M7 SIDEWALL DIFFUSERS TO BE INSTALLED AT 45 DEGREES DOWNWARD. REFER TO 237113.00-02 ON M5.2 FOR INSTALLATION INFORMATION.
- M8 DUCTWORK TO BE HELD TIGHT TO STRUCTURE.
- M13 DROP BOX DIFFUSER SYSTEM. REFER TO DIFFUSER SCHEDULE FOR ASES MODEL NUMBERS AND QUANTITIES. REFER TO FLOOR PLANS FOR THROW DIRECTIONS AND AIRFLOW. REFER TO DETAIL HSD-1 FOR INSTALLATION.
- M14 TEMPERATURE SENSOR FOR RTU FURNISHED BY ORIGINAL EQUIPMENT MANUFACTURER. ROUTE CONTROL WIRING THROUGH RTU AND BACK TO BUILDING CONTROL PANEL.
- M16 HUMIDITY/TEMPERATURE SENSOR FURNISHED BY ORIGINAL EQUIPMENT MANUFACTURER. INSTALL PROBE AT 7'-0" AFF ON COLUMN. REFER TO EM SERIES OF DRAWINGS FOR FURTHER INFORMATION.
- M21 RETURN AIR GRILLE IN SIDE OF DUCT DROP. TITUS 50F WITH 1 INCH OPENINGS OR APPROVED EQUIV.
- M26 MOUNT GRILLE-REGISTER 8'0" AFF.
- M27 MOUNT GRILLE-REGISTER 10'0" AFF.
- M28 ROOFTOP UNIT FURNISHED BY KROGER AND INSTALLED BY MECHANICAL CONTRACTOR. BALANCE TO SCHEDULED AIRFLOW. REFER TO ARCHITECTURAL ROOF PLAN FOR HVAC ROOFTOP DIMENSIONAL INFORMATION. REFER TO STRUCTURAL DRAWINGS FOR JOIST AND BEAM LOCATIONS AND DIMENSIONAL INFORMATION. REFER TO HSD-10 FOR INFORMATION REGARDING BRACING FOR WIND RESISTANCE.
- M38 THERMOSTAT TO BE CONFIGURED WITH AUTOMATIC HEATING SHUTOFF ACTIVATING WHEN OUTDOOR AIR TEMPERATURE REACHES 45 DEG F.
- M48 PROVIDE CO2 SENSOR WHERE SHOWN. ROUTE CONTROL WIRING TO BUILDING CONTROL PANEL.
- M52 AIR CURTAIN TO BE FURNISHED BY OWNER AND TO BE INSTALLED BY MECHANICAL CONTRACTOR ABOVE DOORWAY PER MANUFACTURER'S RECOMMENDATIONS. DOOR LIMIT SWITCH IS TO BE INCLUDED WITH ORDERING OF AIR CURTAIN. CONTRACTOR SHALL PROVIDE MOUNTING HARDWARE AND INTERLOCK SWITCH FOR AUTOMATIC ON/OFF CONTROL WHEN DOOR IS OPEN/CLOSED. AIR CURTAIN TO BE CONNECTED TO BUILDING CONTROL PANEL.
- M82 6-BLADE FAN PROVIDED BY CONTRACTOR AND CONTROLLED BY LOCAL SWITCH INCLUDED WITH UNIT. MOUNT FAN PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. MOUNT FAN ABOVE LIGHTS. CONFIRM FINAL MOUNTING HEIGHT AND LOCATION (OF FAN AND SWITCH) WITH OWNER AND ARCHITECT.
- M92 PROVIDE MANUAL DAMPER IN BRANCH DUCT SERVING ACCOUNTING AREA.



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6/10/29/2024	BULLETIN NO. 6
10/03/17/2025	BULLETIN NO. 10

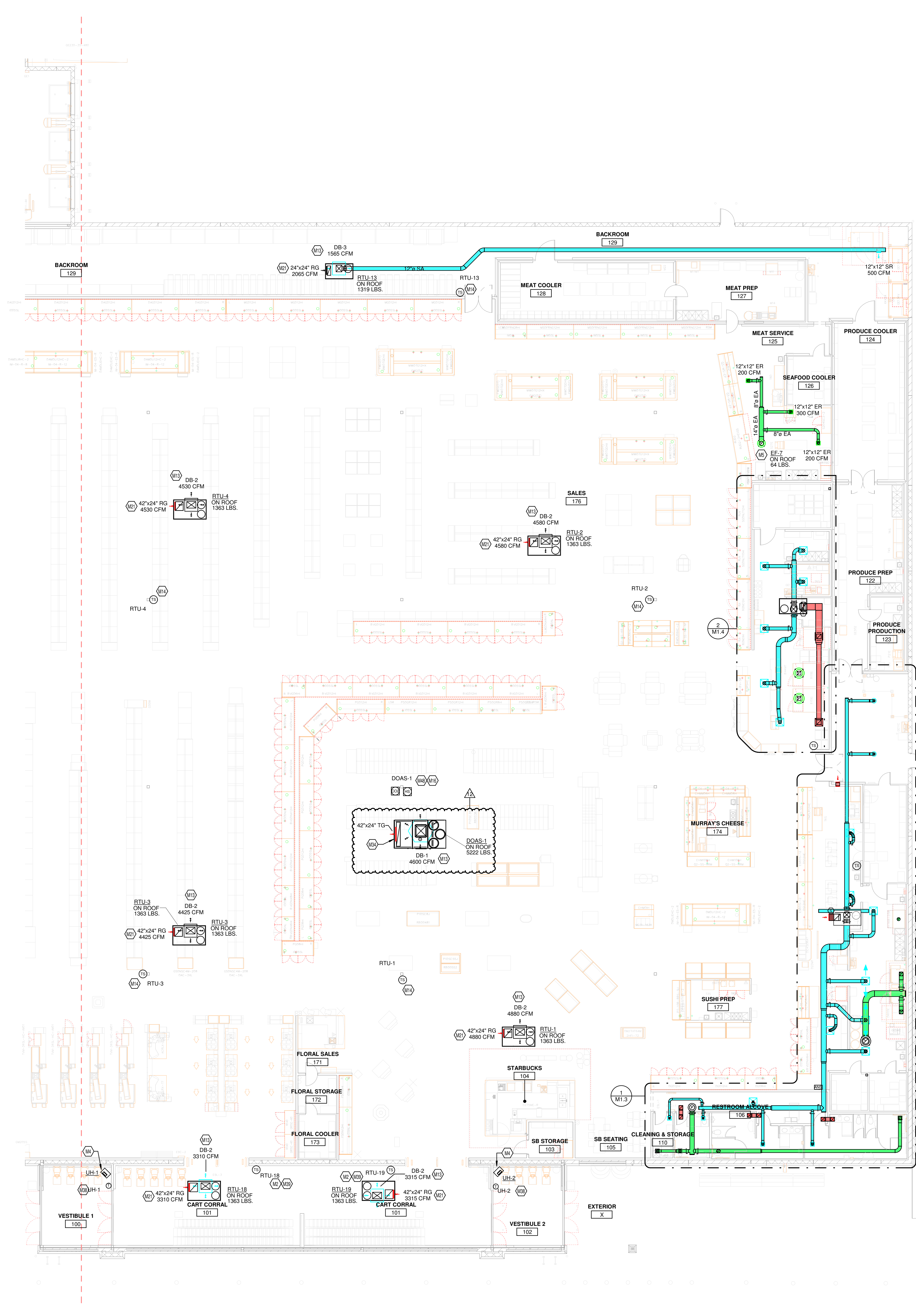
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PROJECT TITLE
**KROGER STORE
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SHEET TITLE
HVAC FLOOR PLAN - LEFT

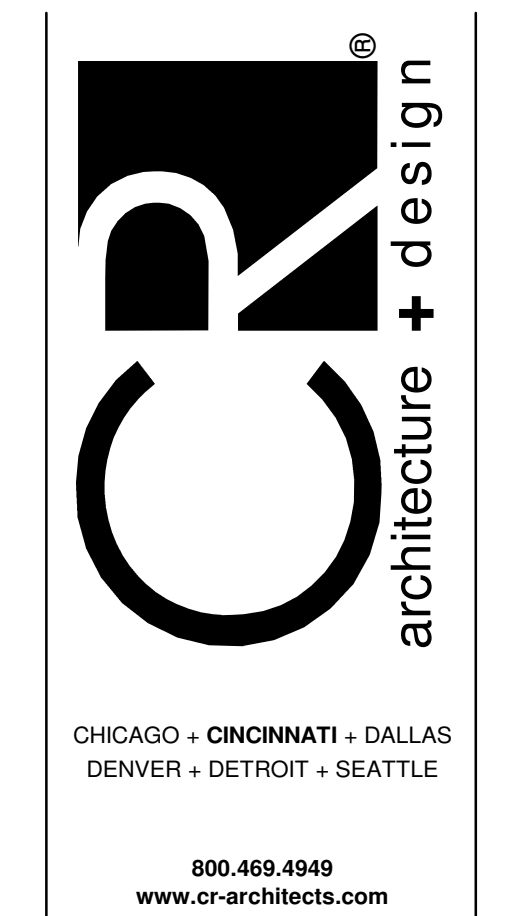
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2 HVAC FLOOR PLAN - LEFT
3/32" = 1'-0"

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- KEYED NOTES**
- M2 THERMOSTAT TO BE MOUNTED AT 4" AFF. PROVIDE LOCKABLE PROTECTIVE COVER OVER DEVICE.
 - M4 SUSPENDED ELECTRIC HEATER USING THREADED ROD TO UNISTRUT CHANNEL OR APPROVED EQUAL. MOUNT 16" AFF TO BOTTOM OF UNIT. VERIFY LOCATION AND REQUIREMENTS TO OWNER PRIOR TO INSTALLATION. REFER TO 238239.00-01 ON M5.2 AND M6.1 FOR MORE INFORMATION.
 - M5 DUCT UP TO OPENING THROUGH ROOF CAPPED WITH CURB AND KROGER FURNISHED EXHAUST FAN.
 - M13 DROP BOX DIFFUSER SYSTEM. REFER TO DIFFUSER SCHEDULE FOR AES MODEL NUMBERS AND QUANTITIES. REFER TO FLOOR PLANS FOR THROW DIRECTIONS AND AIRFLOW. REFER TO DETAIL HSD-1 FOR INSTALLATION.
 - M14 TEMPERATURE SENSOR FOR RTU FURNISHED BY ORIGINAL EQUIPMENT MANUFACTURER. ROUTE CONTROL WIRING THROUGH RTU AND BACK TO BUILDING CONTROL PANEL.
 - M16 HUMIDITY/TEMPERATURE SENSOR FURNISHED BY ORIGINAL EQUIPMENT MANUFACTURER. INSTALL PROBE AT 7' AFF ON COLUMN. REFER TO EM SERIES OF DRAWINGS FOR FURTHER INFORMATION.
 - M21 RETURN AIR GRILLE IN SIDE OF DUCT DROP. TITUS 50F WITH 1 INCH OPENINGS OR APPROVED EQUAL.
 - M24 RETURN AIR GRILLE TO BE INSTALLED ON VERTICAL FACE OF RETURN DUCT DROP. OPPOSITE 6-WAY DROPBOX DIFFUSER. BASIS OF DESIGN TITUS 50F WITH 1 INCH OPENINGS OR APPROVED EQUAL.
 - M26 THERMOSTAT TO BE CONFIGURED WITH AUTOMATIC HEATING SHUTOFF ACTIVATING WHEN OUTDOOR AIR TEMPERATURE REACHES 45 DEG F.
 - M29 THERMOSTAT TO BE CONFIGURED WITH AUTOMATIC CONTROLS TO LIMIT HEATING TO A 46 DEG F MAXIMUM AND COOLING TO AN 85 DEG F MINIMUM.
 - M48 PROVIDE CO2 SENSOR WHERE SHOWN. ROUTE CONTROL WIRING TO BUILDING CONTROL PANEL.



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5 06/19/2024	BULLETIN NO. 4
6 10/29/2024	BULLETIN NO. 6
12 05/19/2025	BULLETIN NO. 12

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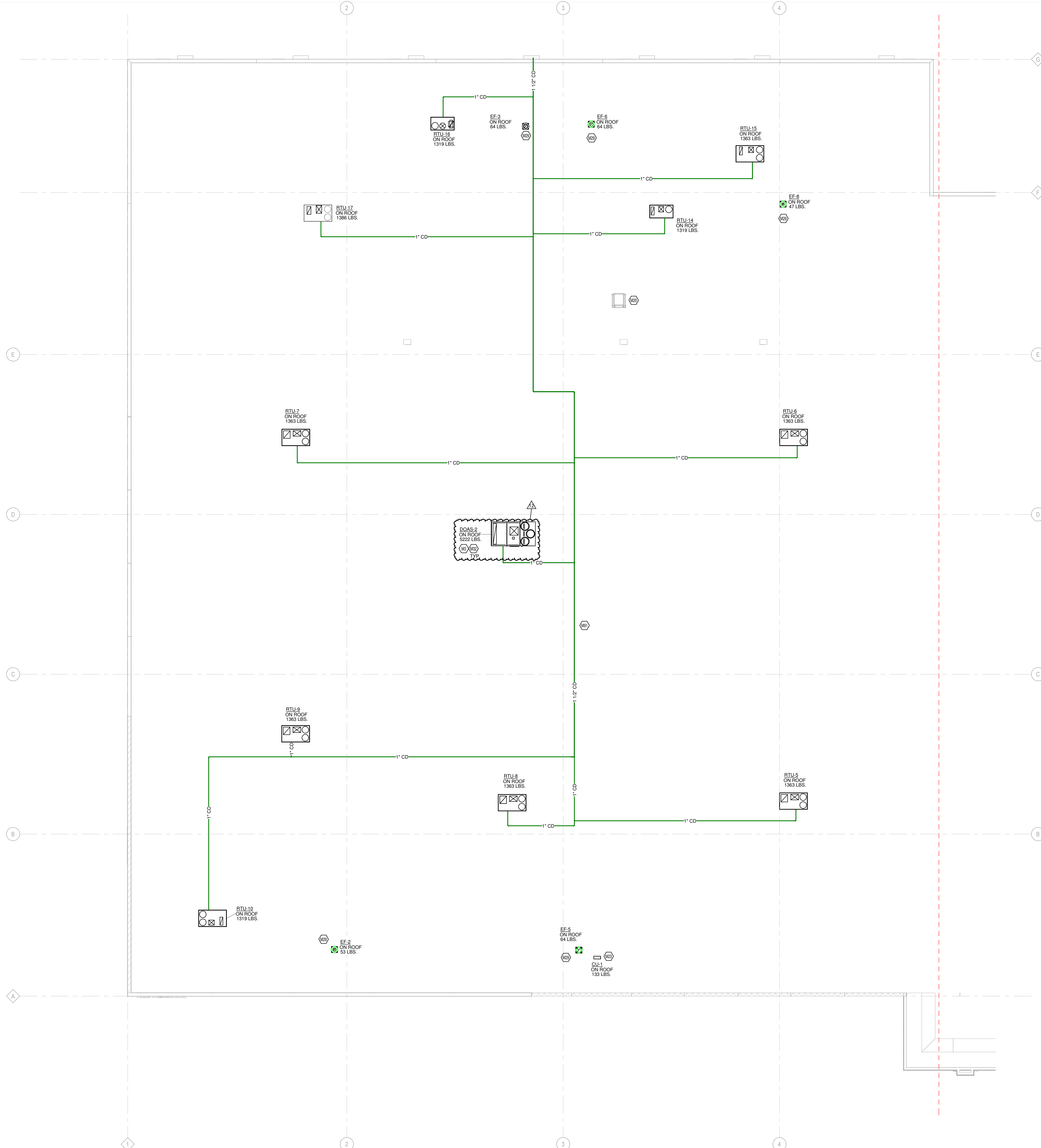
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SHEET TITLE
HVAC FLOOR PLAN -
RIGHT

SHEET NO.
M1.1b

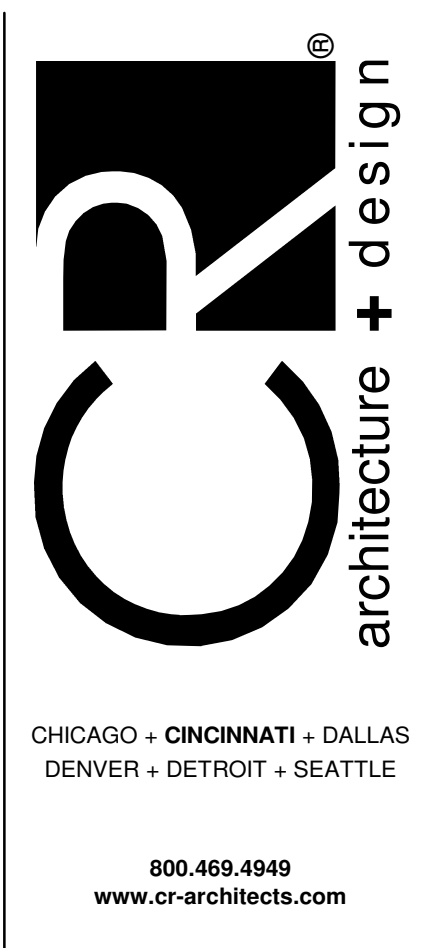
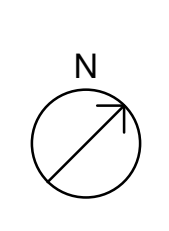
1 HVAC FLOOR PLAN - RIGHT
3/32" = 1'-0"

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- KEYED NOTES**
- M1 REFER TO SHEETS M3.1.8 - M3.1.10 FOR INFORMATION REGARDING DOAS UNITS AND INSTALL PER MANUFACTURER'S INSTALLATION DETAILS AND INSTRUCTIONS.
 - M20 ROOF HATCH
 - M23 INSTALL MINIMUM 7'-0" AFF KROGER FURNISHED SPLIT SYSTEM PROVIDED WITH LOW AMBIENT KIT AND WIND BAFFLES. MOUNT PER MANUFACTURER'S RECOMMENDATIONS. ROUTE REFRIGERANT LINES THROUGH ROOF TO CONDENSING UNIT PER MANUFACTURER'S GUIDELINES. ROUTE INSULATED 3/4" CONDENSATE TO HUB DRAIN IN AREA. COORDINATE ORDERING OF REFRIGERANT LINES WITH OWNER'S PROJECT MANAGER. REFERENCE HSD-11 FOR ADDITIONAL INFORMATION.
 - M29 INSTALL FLUES AND EXHAUST FANS A MINIMUM OF 10 FEET FROM OUTSIDE AIR INTAKE OF ROOFTOP UNITS.
 - M32 ROOFTOP UNIT FURNISHED BY KROGER AND INSTALLED BY MECHANICAL CONTRACTOR. BALANCE TO SCHEDULED AIRFLOW. REFER TO ARCHITECTURAL ROOF PLAN FOR HVAC ROOFTOP DIMENSIONAL INFORMATION. REFER TO STRUCTURAL DRAWINGS FOR JOIST AND BEAM LOCATIONS AND DIMENSIONAL INFORMATION. REFER TO HSD-10 FOR INFORMATION REGARDING BRACING FOR WIND RESISTANCE.
 - M31 COORDINATE CONDENSATE LINE LOCATIONS WITH GAS PIPING ON ROOF.

1 HVAC ROOF PLAN - LEFT
3/32" = 1'-0"



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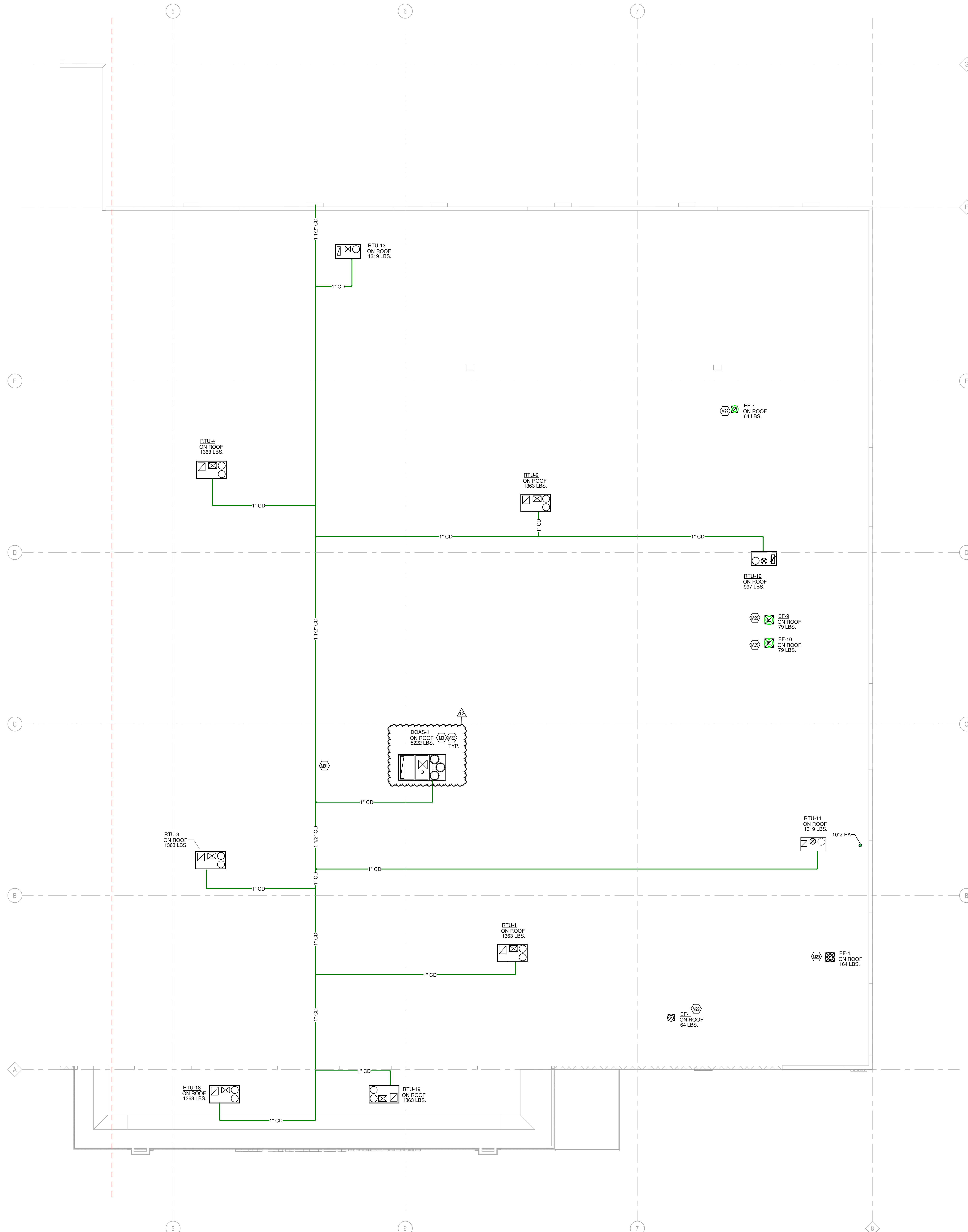
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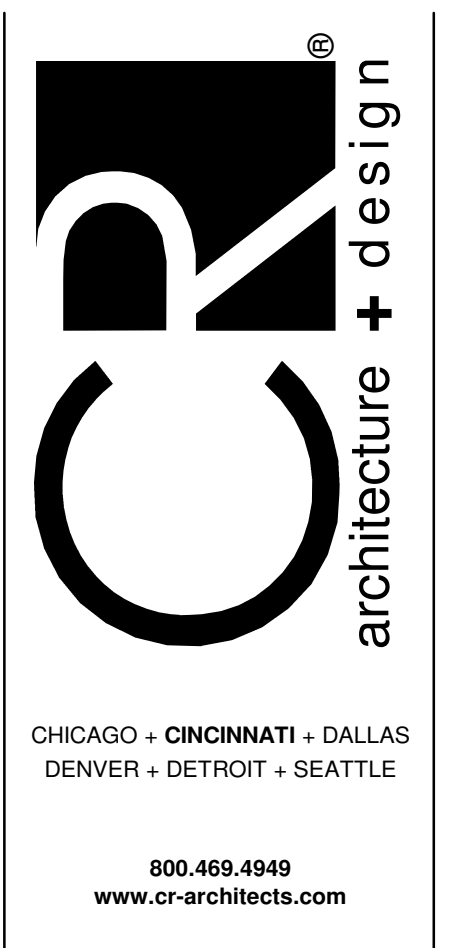
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HVAC ROOF PLAN - LEFT

SHEET NO.
M1.2a

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- KEYED NOTES**
- M1 REFER TO SHEETS M.1.9 - M.1.10 FOR INFORMATION REGARDING DOAS UNITS AND INSTALL PER MANUFACTURER'S INSTALLATION DETAILS AND INSTRUCTIONS.
 - M2 INSTALL ELBES AND DRAINS PANS A MINIMUM OF 10 FEET FROM OUTSIDE AIR INTAKE OF ROOFTOP UNITS.
 - M3 ROOFTOP UNIT FURNISHED BY KROGER AND INSTALLED BY MECHANICAL CONTRACTOR. BALANCE TO SCHEDULED AIRFLOW. REFER TO ARCHITECTURAL ROOF PLAN FOR HVAC ROOFTOP DIMENSIONAL INFORMATION. REFER TO STRUCTURAL DRAWINGS FOR JOIST AND BEAM LOCATIONS AND DIMENSIONAL INFORMATION. REFER TO HSD-10 FOR INFORMATION REGARDING BRACING FOR WIND RESISTANCE.
 - M4 COORDINATE CONDENSATE LINE LOCATIONS WITH GAS PIPING ON ROOF.



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SHEET TITLE
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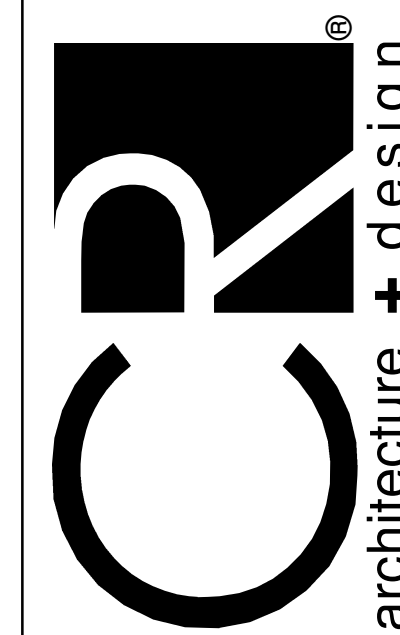
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1 HVAC ROOF PLAN - RIGHT
3/32" = 1'-0"

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KEYED NOTES

- M2 THERMOSTAT TO BE MOUNTED AT 4'0" AFF. PROVIDE LOCKABLE PROTECTIVE COVER OVER DEVICE.
- M5 DUCT UP TO OPENING THROUGH ROOF CAPPED WITH CURB AND KROGER FURNISHED EXHAUST FAN.
- M6 DUCT UP TO OPENING THRU ROOF. CONTRACTOR TO PROVIDE REVERSE ACTING THERMOSTAT FOR FAN. FAN TO ENERGIZE WHEN ROOM REACHES 80 DEG F.
- M9 B-VENT DUCT UP FROM RACK OVEN VENT COLLAR THROUGH ROOF. DUCTS ARE ONLY TO OFFSET ABOVE ACT TILES. DUCTS ARE TO BE RUN STRAIGHT AND VERTICAL WHEN VISIBLE TO SALES FLOOR. REFER TO DETAIL HSD-7 FOR ADDITIONAL INFORMATION.
- M12 ROUTE SUPPLY AND RETURN DUCTWORK ROUGHLY 2" ABOVE THE CEILING FOR EASE OF FUTURE ACCESS. CONFIRM FINAL HEIGHT WITH OWNER.
- M14 TEMPERATURE SENSOR FOR RTU FURNISHED BY ORIGINAL EQUIPMENT MANUFACTURER. ROUTE CONTROL WIRING THROUGH RTU AND BACK TO BUILDING CONTROL PANEL.
- M19 INSTALL TRANSFER GRILLES IN WALL USING NOTES FROM DETAIL 235713-00-19 ON M5.2. CONFIRM FINAL LOCATION AND FINISH WITH ARCHITECT AND OWNER.
- M22 MECHANICAL CONTRACTOR TO PROVIDE VAV DIFFUSER, ACCUTHERM THERMA-FUSE MODEL TF-HC OR APPROVED EQUAL.
- M23 INSTALL MINIMUM 7'0" AFF KROGER FURNISHED SPLIT SYSTEM PROVIDED WITH LOW AMBIENT KIT AND WIND BAFFLES. MOUNT PER MANUFACTURER'S RECOMMENDATIONS. ROUTE REFRIGERANT LINES THROUGH ROOF TO CONDENSING UNIT PER MANUFACTURER'S GUIDELINES. ROUTE INSULATED 3/4" CONDENSATE TO HUB DRAIN IN AREA. COORDINATE ORDERING OF REFRIGERANT LINES WITH OWNER'S PROJECT MANAGER. REFERENCE HSD-11 FOR ADDITIONAL INFORMATION.
- M32 ROOFTOP UNIT FURNISHED BY KROGER AND INSTALLED BY MECHANICAL CONTRACTOR. BALANCE TO SCHEDULED AIRFLOW. REFER TO ARCHITECTURAL ROOF PLAN FOR HVAC ROOFTOP DIMENSIONAL INFORMATION. REFER TO STRUCTURAL DRAWINGS FOR JOIST AND BEAM LOCATIONS AND DIMENSIONAL INFORMATION. REFER TO HSD-10 FOR INFORMATION REGARDING BRACING FOR WIND RESISTANCE.
- M33 DUCT MOUNTED SMOKE DETECTOR TO BE INSTALLED IN THE RETURN DUCTWORK, DOWNSTREAM OF FILTERS AND UPSTREAM OF ANY BRANCH CONNECTIONS. INSTALL SAMPLING TUBES(S) AND DETECTOR HOUSING IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. DETECTOR, FAN SHUTDOWN WIRING, AND CONTROLS BY OTHERS.



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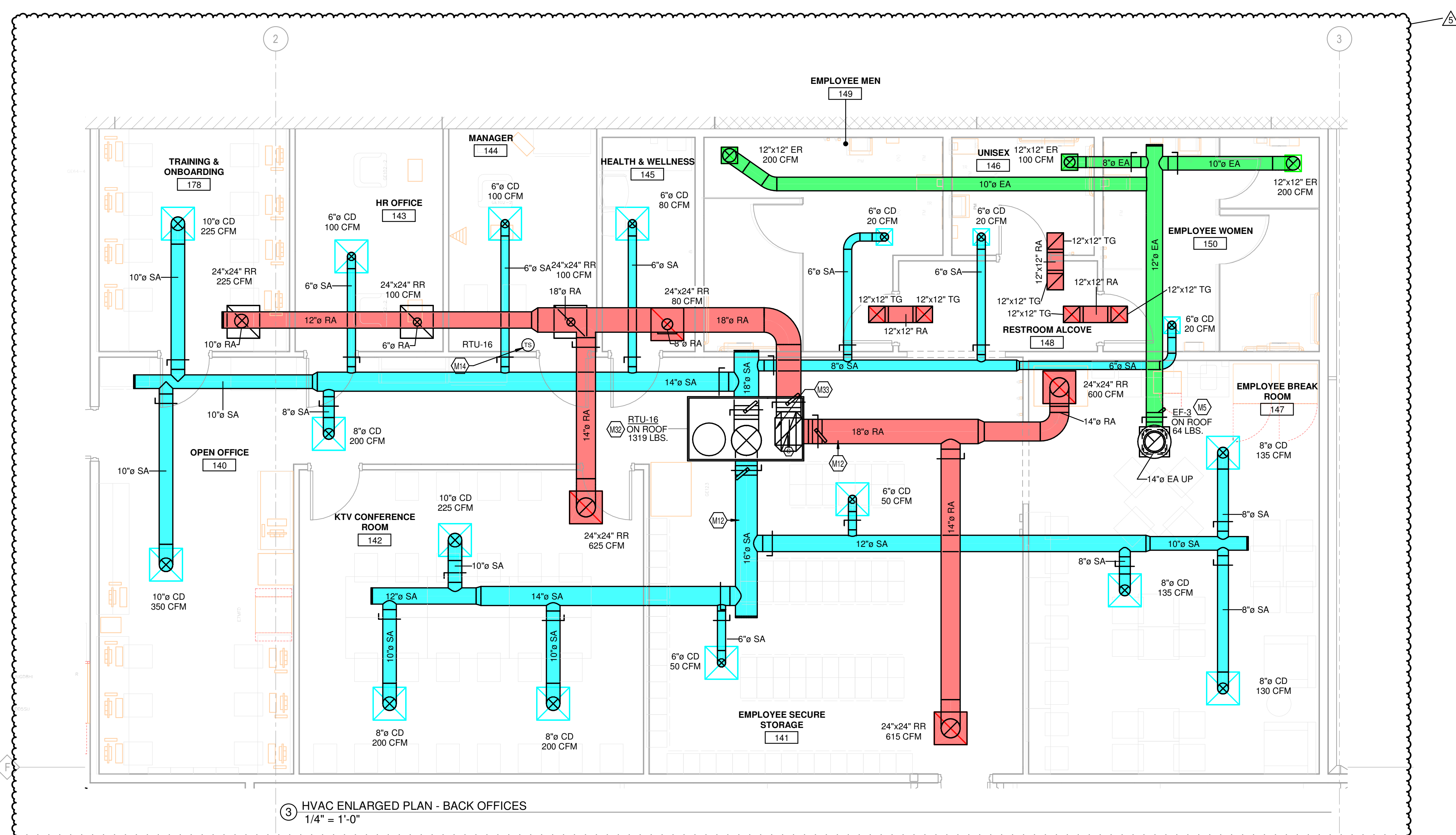
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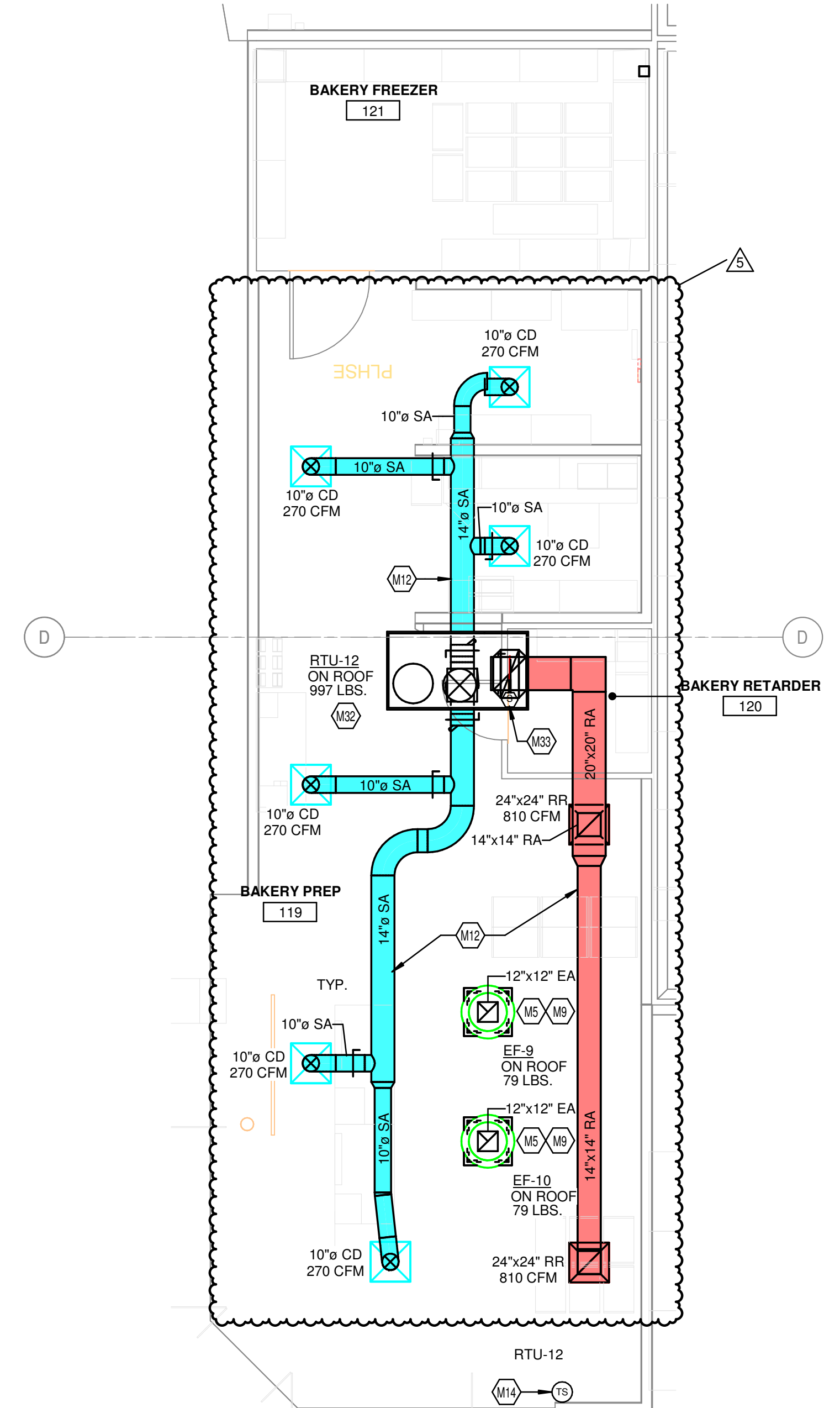


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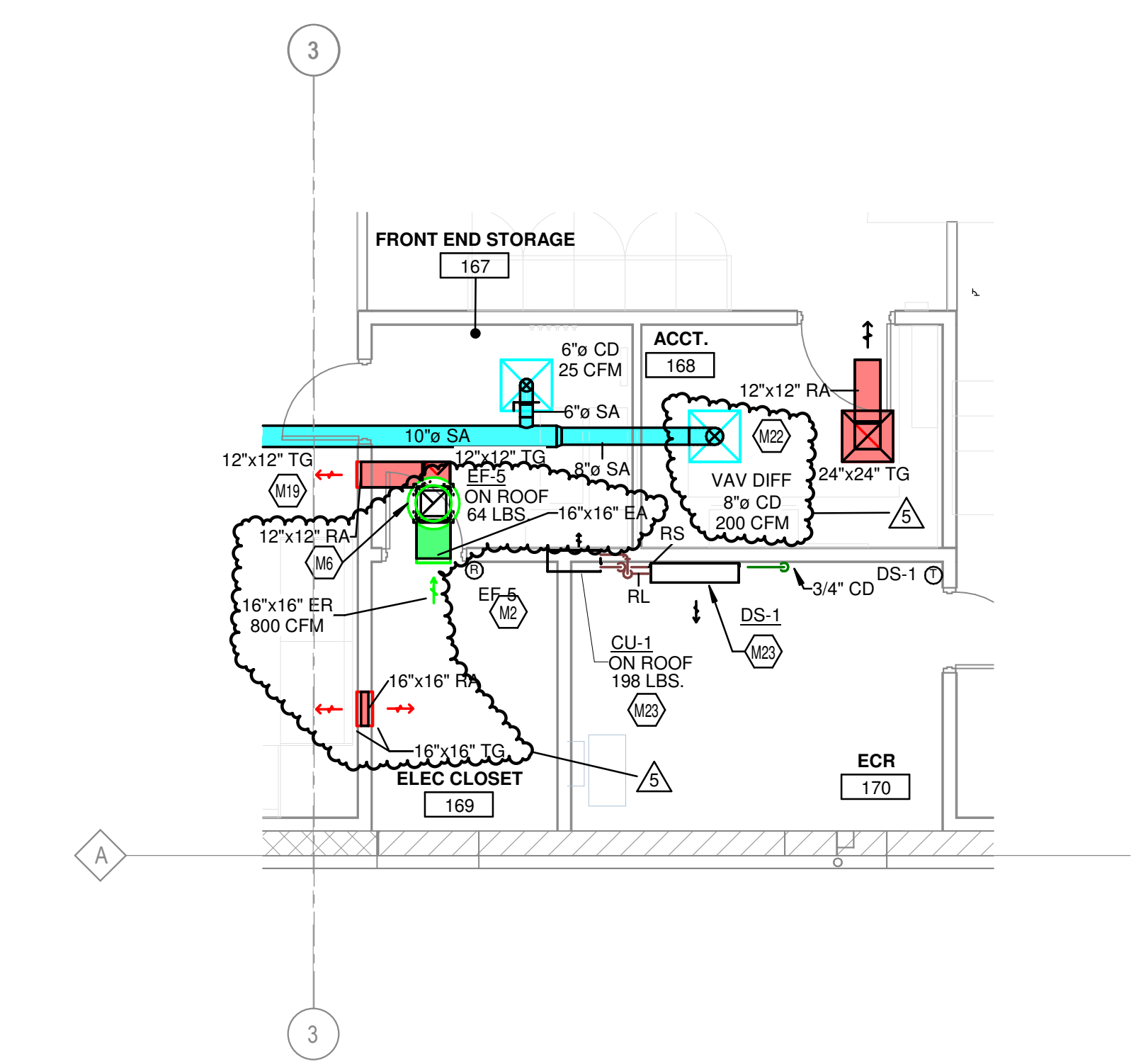
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1 09/08/2023	ADDENDUM NO. 1
5 06/19/2024	BULLETIN NO. 4



3 HVAC ENLARGED PLAN - BACK OFFICES
1/4" = 1'-0"



2 HVAC ENLARGED PLAN - BAKERY
3/16" = 1'-0"



1 HVAC ENLARGED PLAN - CUSTOMER SERVICE
3/16" = 1'-0"

EXECUTED BY: KSL
REVIEWED BY: MCD
PROJECT TITLE
KROGER STORE
DAL541

FORT WORTH, TX
COMMISSION NO. 522316
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SHEET TITLE
HVAC ENLARGED PLANS

SHEET NO.
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HOOD INFORMATION - JOB#5967339

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISERS				HOOD CONSTRUCTION	HOOD CONFIG		
										WIDTH	LENG	HEIGHT	DIA		CFM	VEL	SP
1	K1L - K-0002317	6024 ND-2	CAPTIVEAIRE	8' 0"	450 DEG	1	MEDIUM	150	1200	4"	12"	1200	1528	-0.294"	304 SS WHERE EXPOSED	LEFT	ALONE
2	K1R - K-0002317	6024 ND-2	CAPTIVEAIRE	8' 0"	450 DEG	1	MEDIUM	150	1200	4"	12"	1200	1528	-0.294"	304 SS WHERE EXPOSED	RIGHT	ALONE

HOOD INFORMATION

HOOD NO	TAG	TYPE	FILTER(S)		EFFICIENCY @ 7 MICRONS	QTY	LIGHT(S)		WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S)		ELECTRICAL	SWITCHES	FIRE SYSTEM	HOOD HANGING PIPING WEIGHT
			QTY	HEIGHT			LENGTH	TYPE				TYPE	SIZE				
1	K1L - K-0002317	SS BAFFLE WITH HANDLES	5	16"	16"	30%	3	L55 SERIES E26	ND								418 LBS
2	K1R - K-0002317	SS BAFFLE WITH HANDLES	5	16"	16"	30%	3	L55 SERIES E26	ND	RIGHT	12"x60"x24"	TANK FS	4.0/4.0	SC-310110MA	1 LIGHT 1 FAN		742 LBS

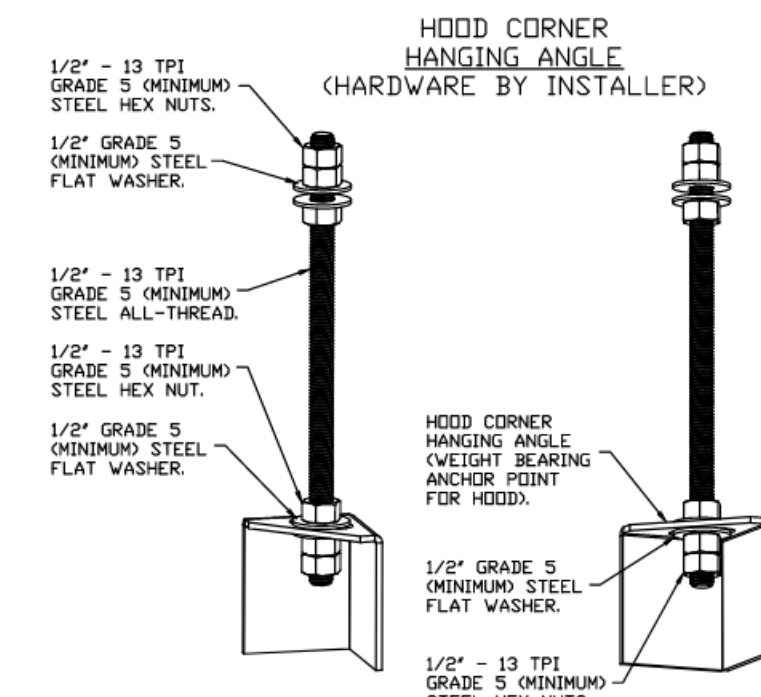
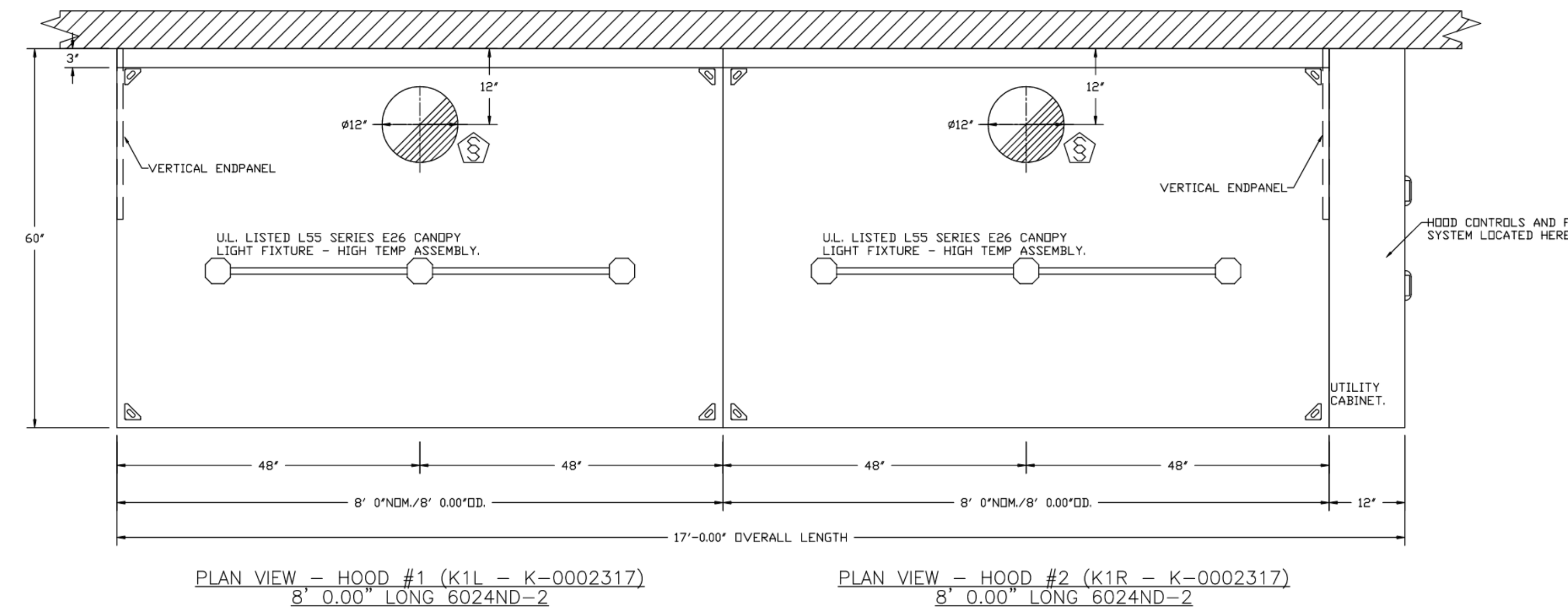
HOOD OPTIONS

HOOD NO	TAG	OPTION
1	K1L - K-0002317	FIELD WRAPPER 17.00" HIGH FRONT, LEFT. LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 304 SS. SENSOR-CV.
2	K1R - K-0002317	FIELD WRAPPER 17.00" HIGH FRONT, LEFT. RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 304 SS. SENSOR-CV.

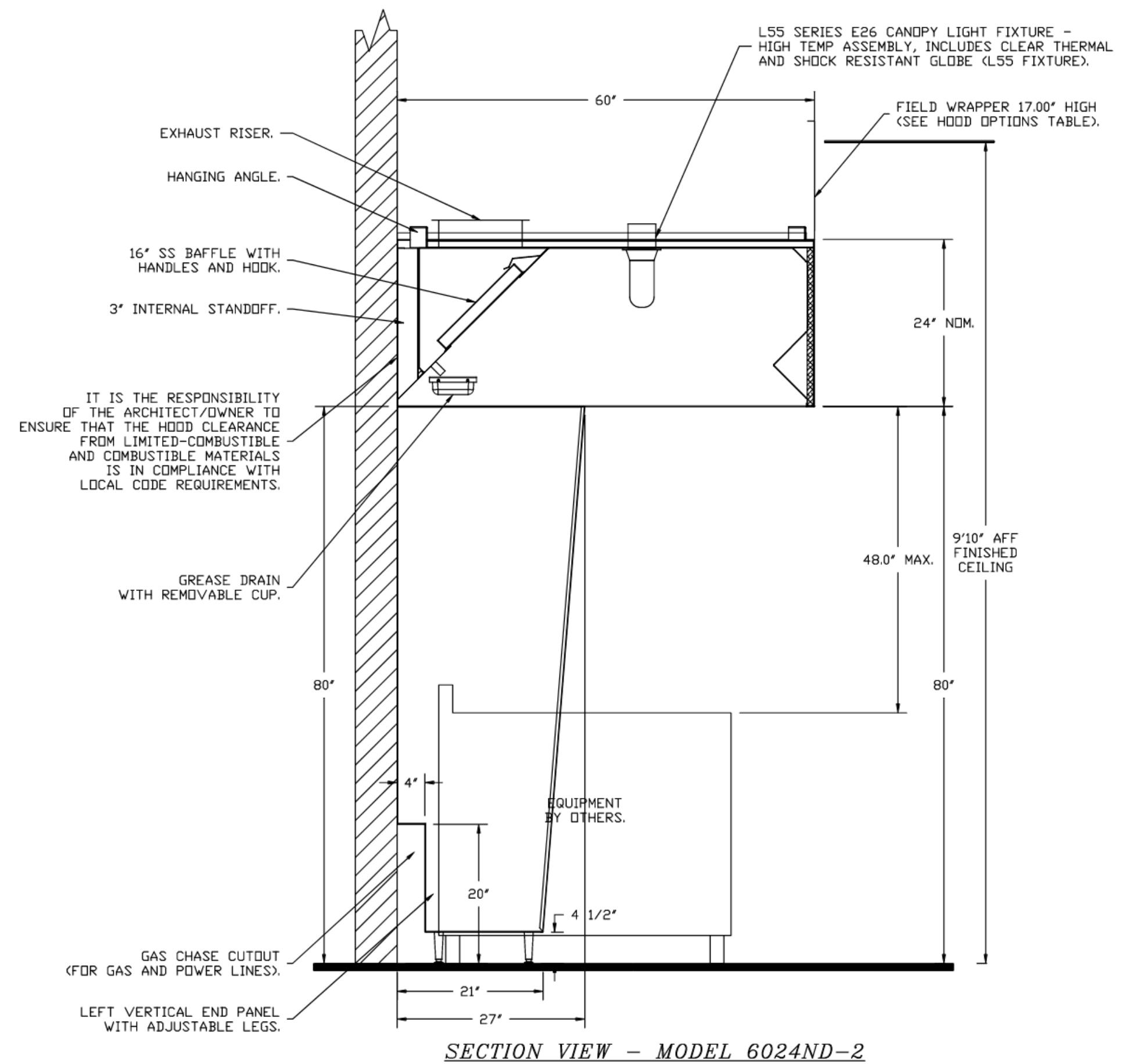
CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH UL 710 AND NFPA 96 AND ARE RECOGNIZED BY ONE OR MORE OF THE FOLLOWING:

ETL SANITATION LISTED
ETL LISTED
FILE# 102900319PRT-001

HVAC DISTRIBUTION NOTE
IT IS RECOMMENDED NOT TO INSTALL HIGH VELOCITY DIFFUSERS OR HVAC RETURNS WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.



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.



REVISIONS

NO.	DATE	DESCRIPTION

CAPTIVEAIRE
National Accounts
4641 Pangloss Park Rd., Raleigh, NC 27616 PHONE: (919) 882-2410 FAX: (919) 227-5948 EMAIL: ngs1@captivaire.com

KROGER 541 - FT WORTH, TX
FORT WORTH, TX, 76179

DATE: 4/24/2023
DWG.#: 5967339
DRAWN BY: JAC
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 1



CONSULTANTS
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGINEERS.COM
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859-442-8058 FAX

OWNER
Kroger
ISSUE/REVISION
DATE DESCRIPTION
04/20/2023 90% OWNER REVIEW
05/24/2023 100% BID/PERMIT

EXECUTED BY: KSL
REVIEWED BY: MCD
PROJECT TITLE
KROGER STORE DAL541
FORT WORTH, TX
COMMISSION NO. 522316
ISSUE DATE 05/24/23
SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.1

EXHAUST FAN INFORMATION - JOB#5967339

FAN UNIT NO.	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL.	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SDNES
1	EF-1 K-0002355	1	DR30HFA	CAPTIVEAIRE	700	0.500	1378	ODP	0.250	0.1470	1	115	3.8		64	9.1
2	EF-2 PNET42845	1	DR12HFA	CAPTIVEAIRE	200	0.400	1099	TEAD-ECM	0.250	0.0570	1	115	2.9		54	4.4
3	EF-3 K-0002355	1	DR30HFA	CAPTIVEAIRE	500	0.500	1176	ODP	0.250	0.0920	1	115	3.8		64	6.7
4	EF-4 K-0069365	1	DUI80HFA	CAPTIVEAIRE	2400	1.250	1148	ODP, PREMIUM	2.000	1.0370	3	208	6.1	554 FPM	164	13.5
5	EF-5 K-0002357	1	DR12HFA	CAPTIVEAIRE	500	0.400	1449	ODP	0.180	0.1310	1	115	1.9		53	8
6	EF-6 K-0002357	1	DR12HFA	CAPTIVEAIRE	400	0.400	1303	ODP	0.180	0.0960	1	115	1.9		53	6.3
7	EF-7 K-0002355	1	DR30HFA	CAPTIVEAIRE	700	0.400	1313	ODP	0.250	0.1280	1	115	3.8		64	8.4
8	EF-8 K-0002358	1	DR10HFA	CAPTIVEAIRE	200	0.300	1258	ODP	0.060	0.0380	1	115	1.1		47	3.4
9	EF-9 K-0002372	1	DU33HFA	CAPTIVEAIRE	600	0.500	1253	ODP	0.333	0.1190	1	115	5.6	297 FPM	79	10.9
10	EF-10 K-0002372	1	DU33HFA	CAPTIVEAIRE	600	0.500	1253	ODP	0.333	0.1190	1	115	5.6	297 FPM	79	10.9

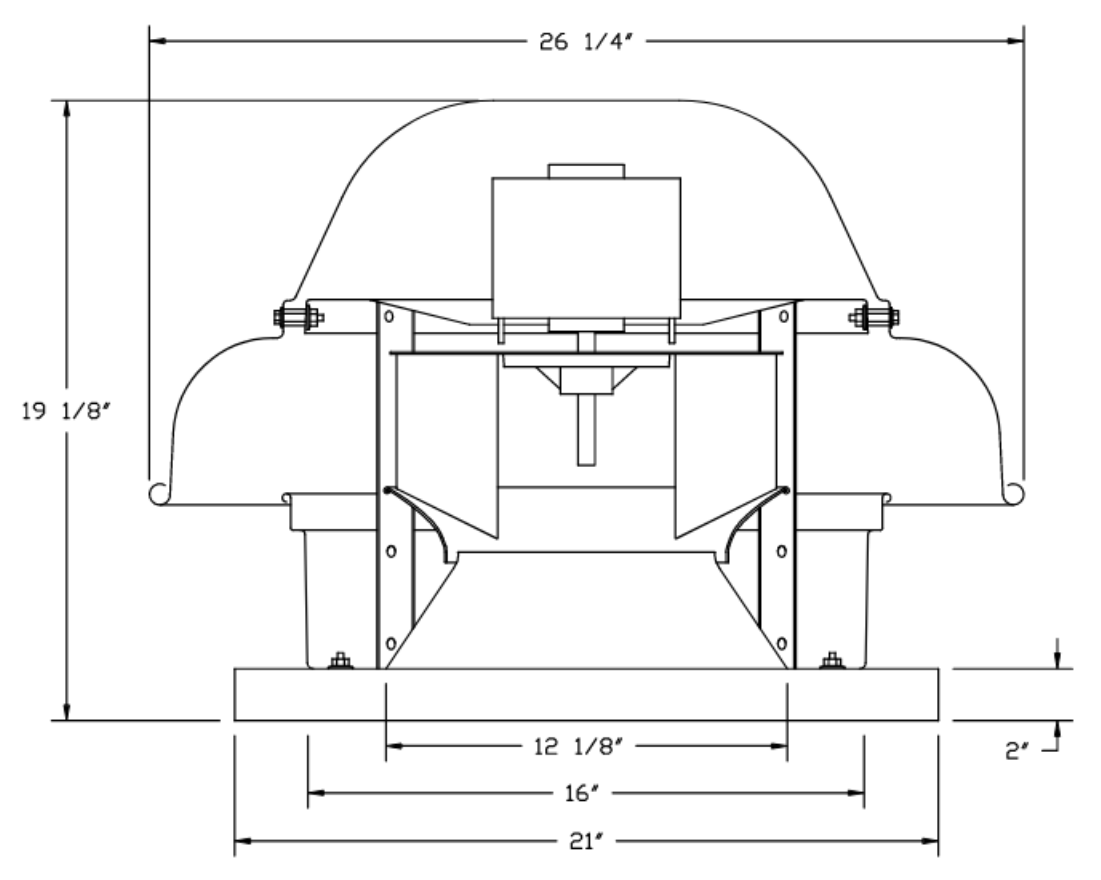
FAN OPTIONS

FAN UNIT NO.	TAG	QTY	DESCRIPTION
1	EF-1 K-0002355	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 15-BDD DAMPER
		1	2 YEAR PARTS WARRANTY
2	EF-2 PNET42845	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	ECM WIRING PACKAGE - MANUAL DR 0-10VDC REFERENCE SPEED CONTROL -RTC- (TELCD MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
3	EF-3 K-0002355	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 15-BDD DAMPER
		1	2 YEAR PARTS WARRANTY
4	EF-4 K-0069365	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
		1	I 12-BDD DAMPER
5	EF-5 K-0002357	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 15-BDD DAMPER
		1	2 YEAR PARTS WARRANTY
6	EF-6 K-0002357	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 12-BDD DAMPER
		1	2 YEAR PARTS WARRANTY
7	EF-7 K-0002355	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 15-BDD DAMPER
		1	2 YEAR PARTS WARRANTY
		1	I 12-BDD DAMPER
8	EF-8 K-0002358	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
		1	GREASE BOX
9	EF-9 K-0002372	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
		1	GREASE BOX
10	EF-10 K-0002372	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY

FAN ACCESSORIES

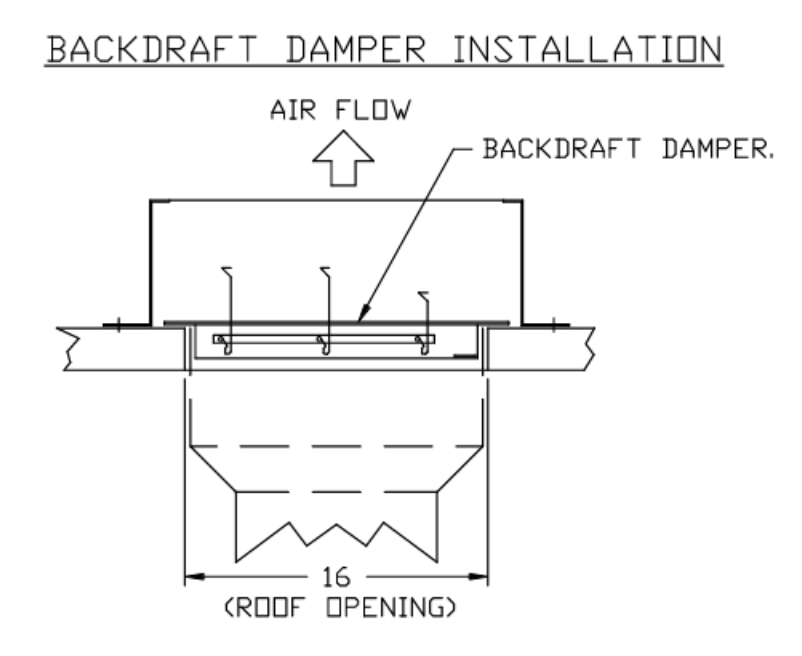
FAN UNIT NO.	TAG	EXHAUST			SUPPLY		
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER
1	EF-1 K-0002355		YES				
2	EF-2 PNET42845		YES				
3	EF-3 K-0002355		YES				
4	EF-4 K-0069365	YES					
5	EF-5 K-0002357		YES				
6	EF-6 K-0002357		YES				
7	EF-7 K-0002355		YES				
8	EF-8 K-0002358		YES				
9	EF-9 K-0002372	YES					
10	EF-10 K-0002372	YES					

FANS #1 (EF-1 K-0002355), #3 (EF-3 K-0002355), #7 (EF-7 K-0002355) - DR30HFA EXHAUST FAN

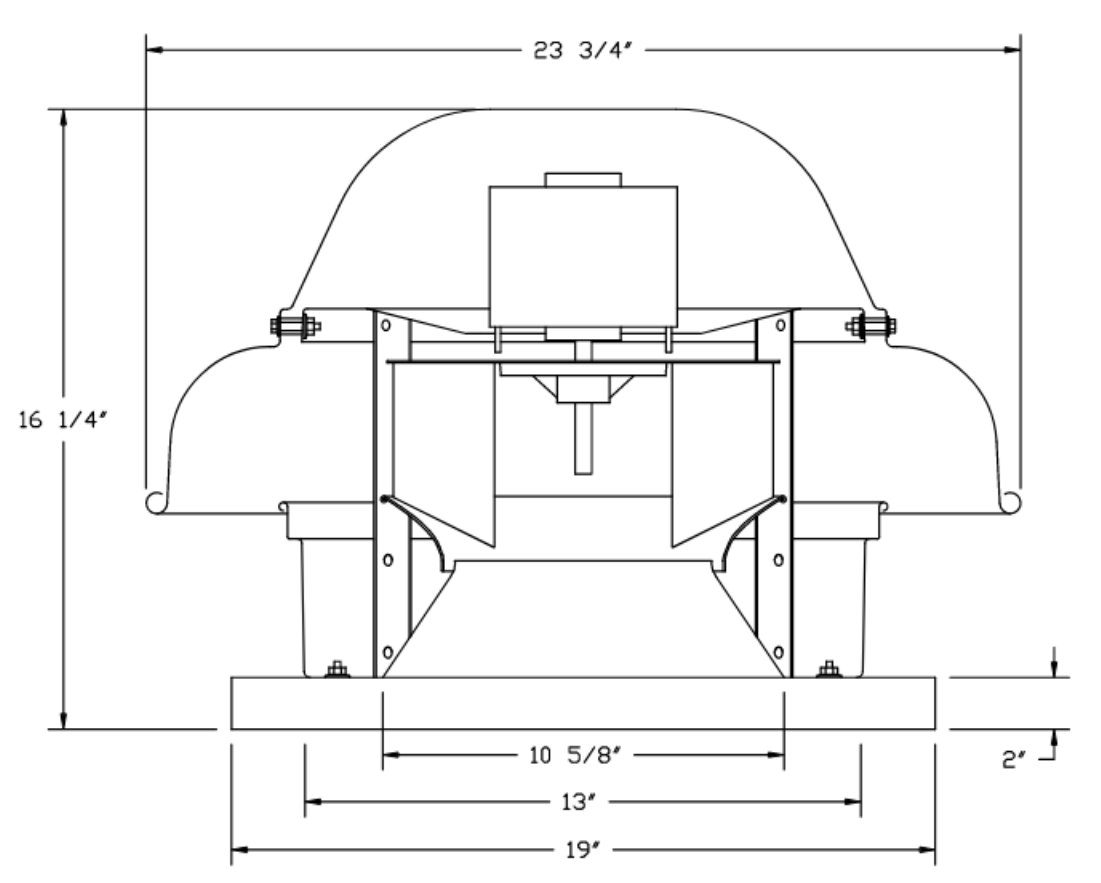


- FEATURES:**
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
 - ROOF MOUNTED FANS.
 - UL705.
 - SAFETY DISCONNECT.
 - STANDARD BIRD SCREEN.
 - SPEED CONTROL.
 - THERMAL OVERLOAD PROTECTION (SINGLE PHASE).

- OPTIONS:**
- HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS.
 - I 15-BDD DAMPER.
 - 2 YEAR PARTS WARRANTY.

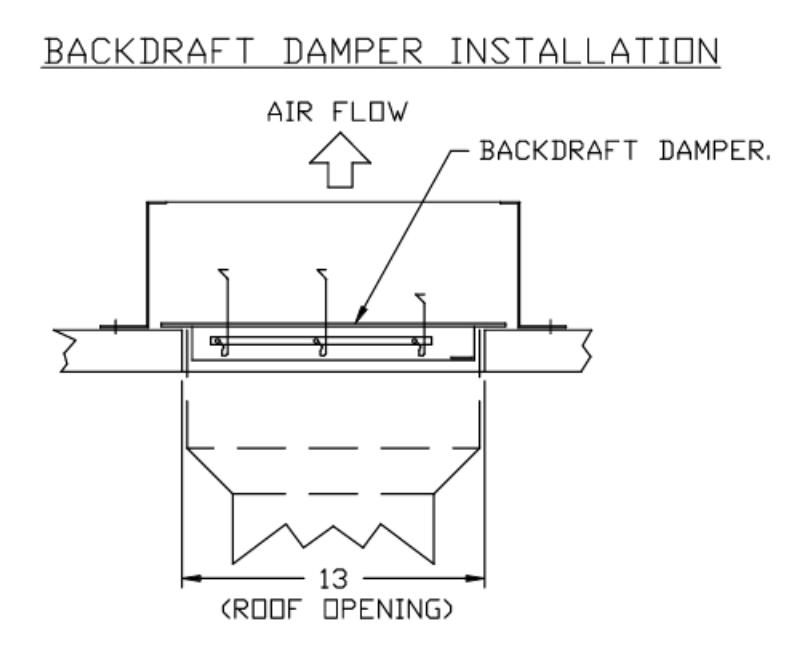


FAN #2 (DR12HFA) - EXHAUST FAN (EF-2 PNET42845)

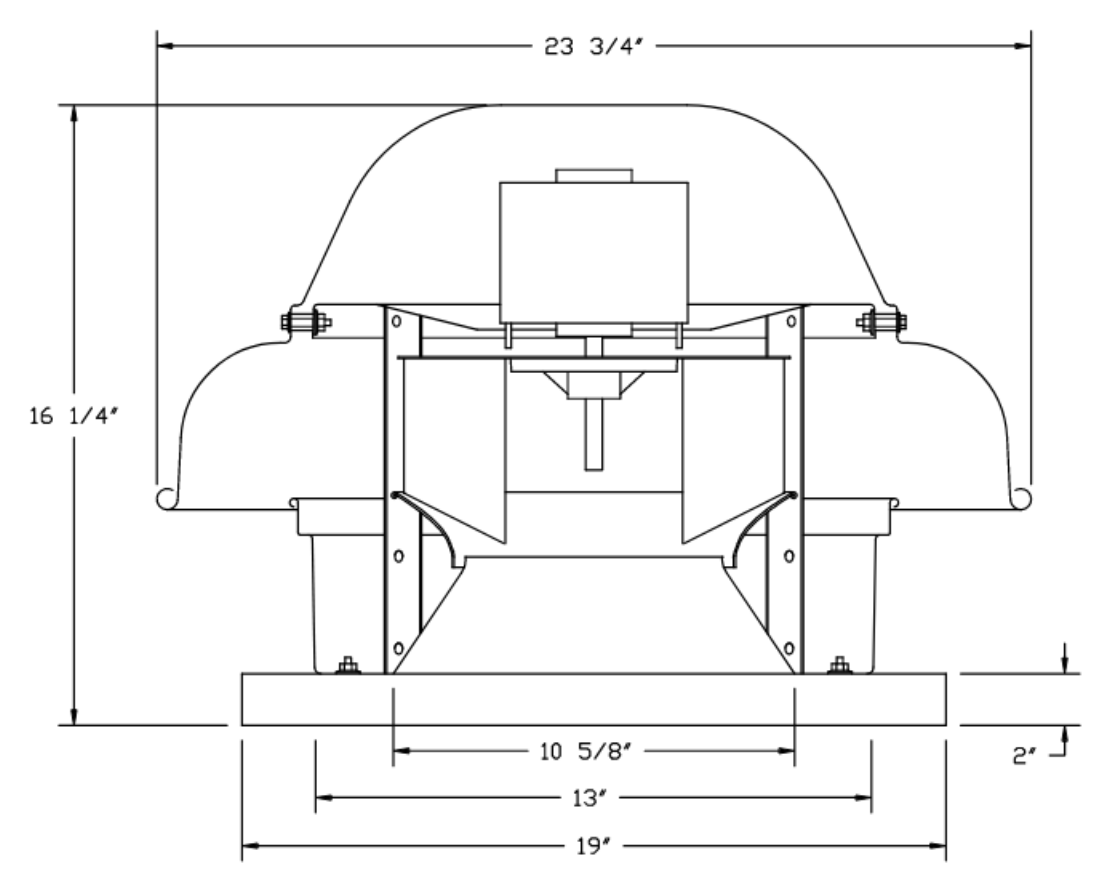


- FEATURES:**
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
 - ROOF MOUNTED FANS.
 - UL705.
 - SAFETY DISCONNECT.
 - STANDARD BIRD SCREEN.
 - SPEED CONTROL.
 - THERMAL OVERLOAD PROTECTION (SINGLE PHASE).

- OPTIONS:**
- I 12-BDD DAMPER.
 - HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS.
 - ECM WIRING PACKAGE - MANUAL DR 0-10VDC REFERENCE SPEED CONTROL -RTC- (TELCD MOTOR), CCW ROTATION.
 - 2 YEAR PARTS WARRANTY.

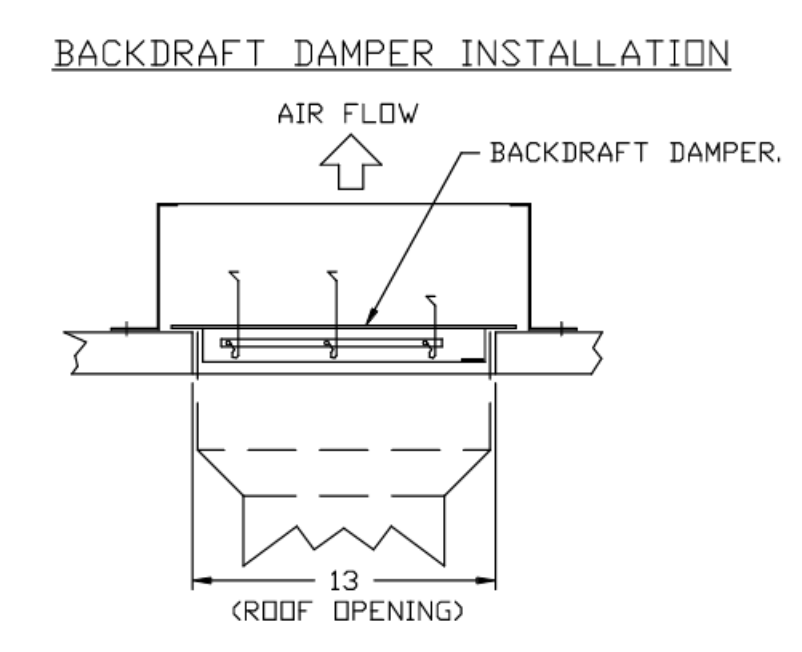


FANS #5 (EF-5 K-0002357), #6 (EF-6 K-0002357) - DR12HFA EXHAUST FAN

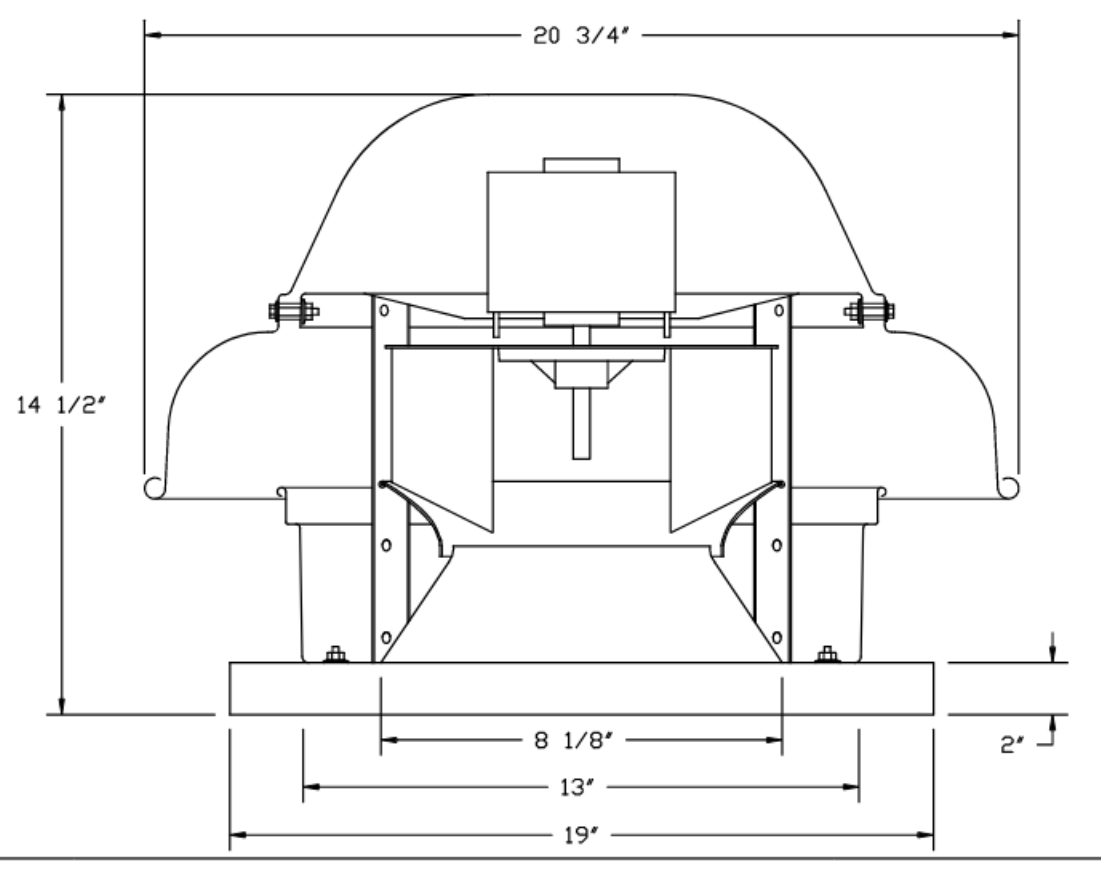


- FEATURES:**
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
 - ROOF MOUNTED FANS.
 - UL705.
 - SAFETY DISCONNECT.
 - STANDARD BIRD SCREEN.
 - SPEED CONTROL.
 - THERMAL OVERLOAD PROTECTION (SINGLE PHASE).

- OPTIONS:**
- I 12-BDD DAMPER.
 - HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS.
 - 2 YEAR PARTS WARRANTY.

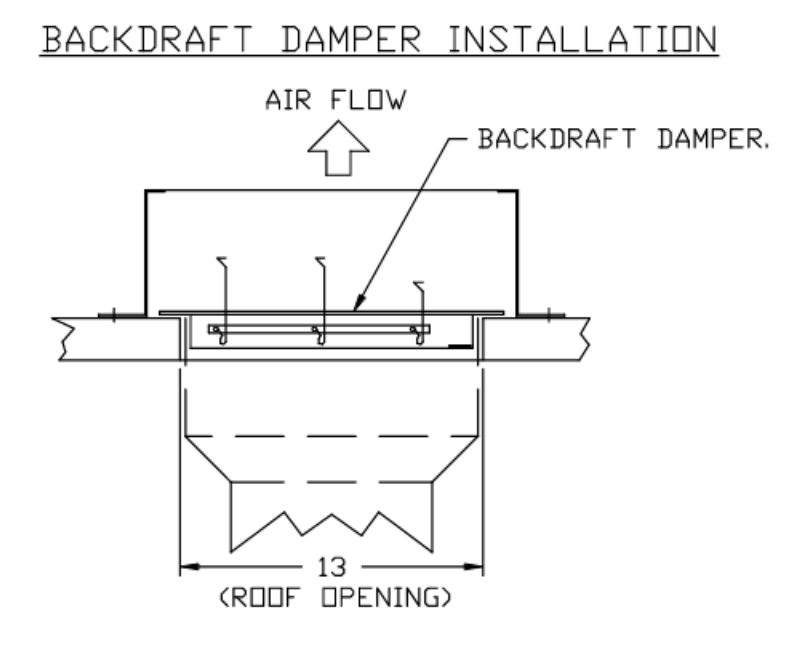


FAN #8 (DR10HFA) - EXHAUST FAN (EF-8 K-0002358)



- FEATURES:**
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
 - ROOF MOUNTED FANS.
 - UL705.
 - SAFETY DISCONNECT.
 - STANDARD BIRD SCREEN.
 - SPEED CONTROL.
 - THERMAL OVERLOAD PROTECTION (SINGLE PHASE).

- OPTIONS:**
- I 12-BDD DAMPER.
 - HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS.
 - 2 YEAR PARTS WARRANTY.



REVISIONS

NO.	DESCRIPTION	DATE

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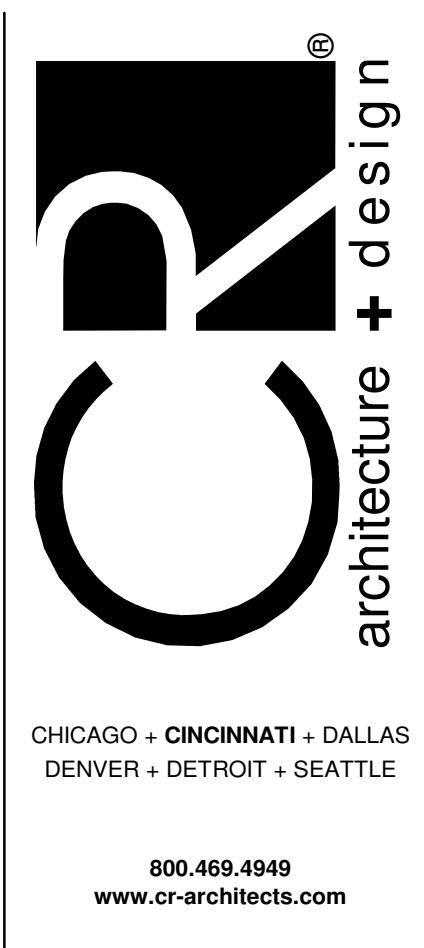
National Accounts

4641 Paragon Park Rd., Raleigh, NC 27616 PHONE: (919) 862-2410 FAX: (919) 227-5948 EMAIL: mg16@captveaire.com

KROGER 541 - FT WORTH, TX
FORT WORTH, TX, 76179

DATE: 4/24/2023
DWG.#: 5967339
DRAWN BY: JAC
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO.
3



ISSUE/REVISION

NO.	DATE	DESCRIPTION
04/20/2023	90% OWNER REVIEW	
05/24/2023	100% BID PERMIT	

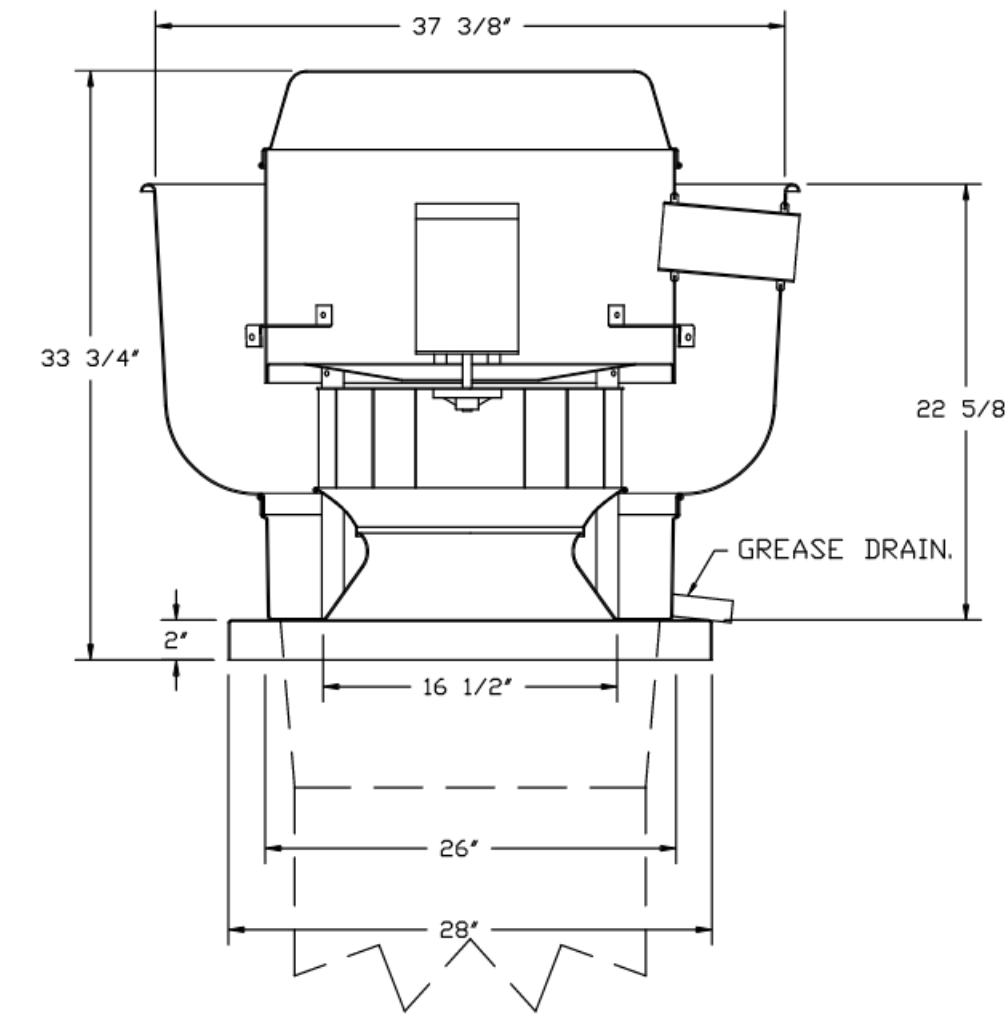
EXECUTED BY: Author
REVIEWED BY: Checker

PROJECT TITLE
KROGER STORE
DAL541

FORT WORTH, TX
COMMISSION NO. 522316
ISSUE DATE 05/24/23
SHEET TITLE
HVAC SECTIONS AND
DETAILS

SHEET NO.
M3.1.3

FAN #4 DUBHFA - EXHAUST FAN (CF-4 K-0069365)



FEATURES:

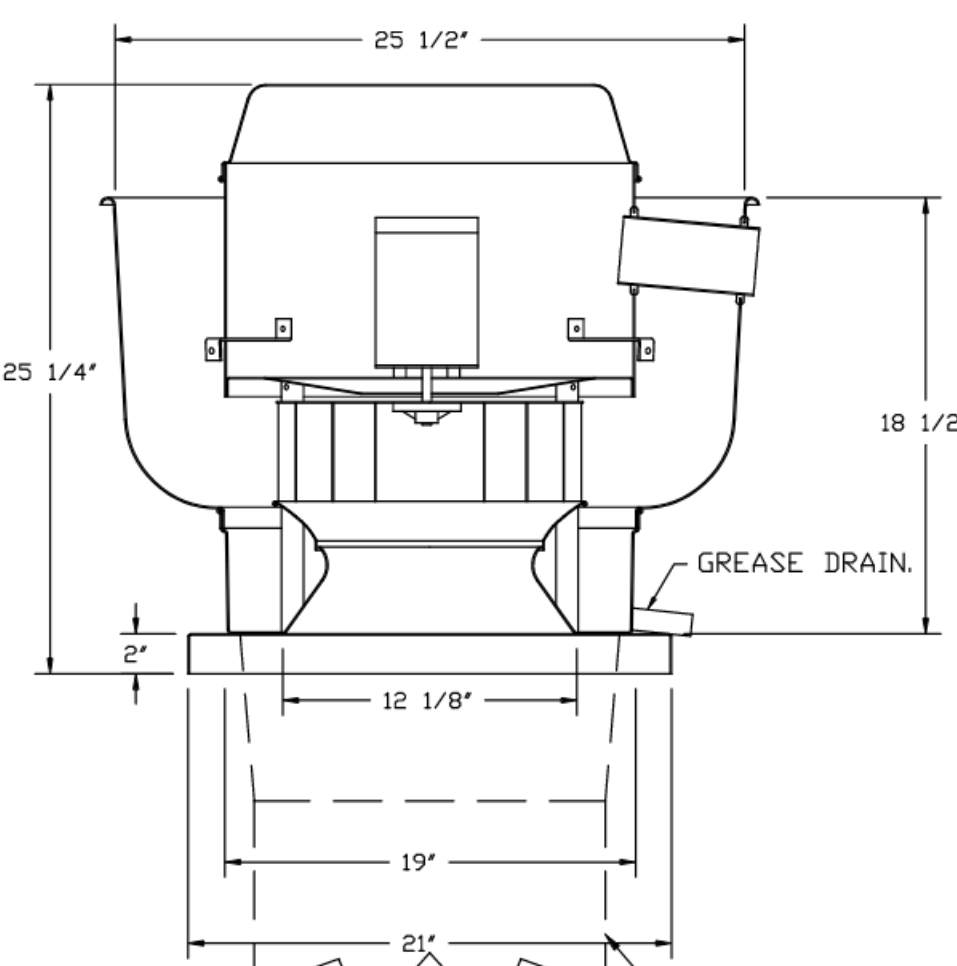
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND UL6-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT 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 DEGRADATING 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.
 - HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS.
 - 2 YEAR PARTS WARRANTY.

FANS #9 (CF-9 K-0002372), #10 (CF-10 K-0002372) - 3U33FA EXHAUST FAN



FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND UL6-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.

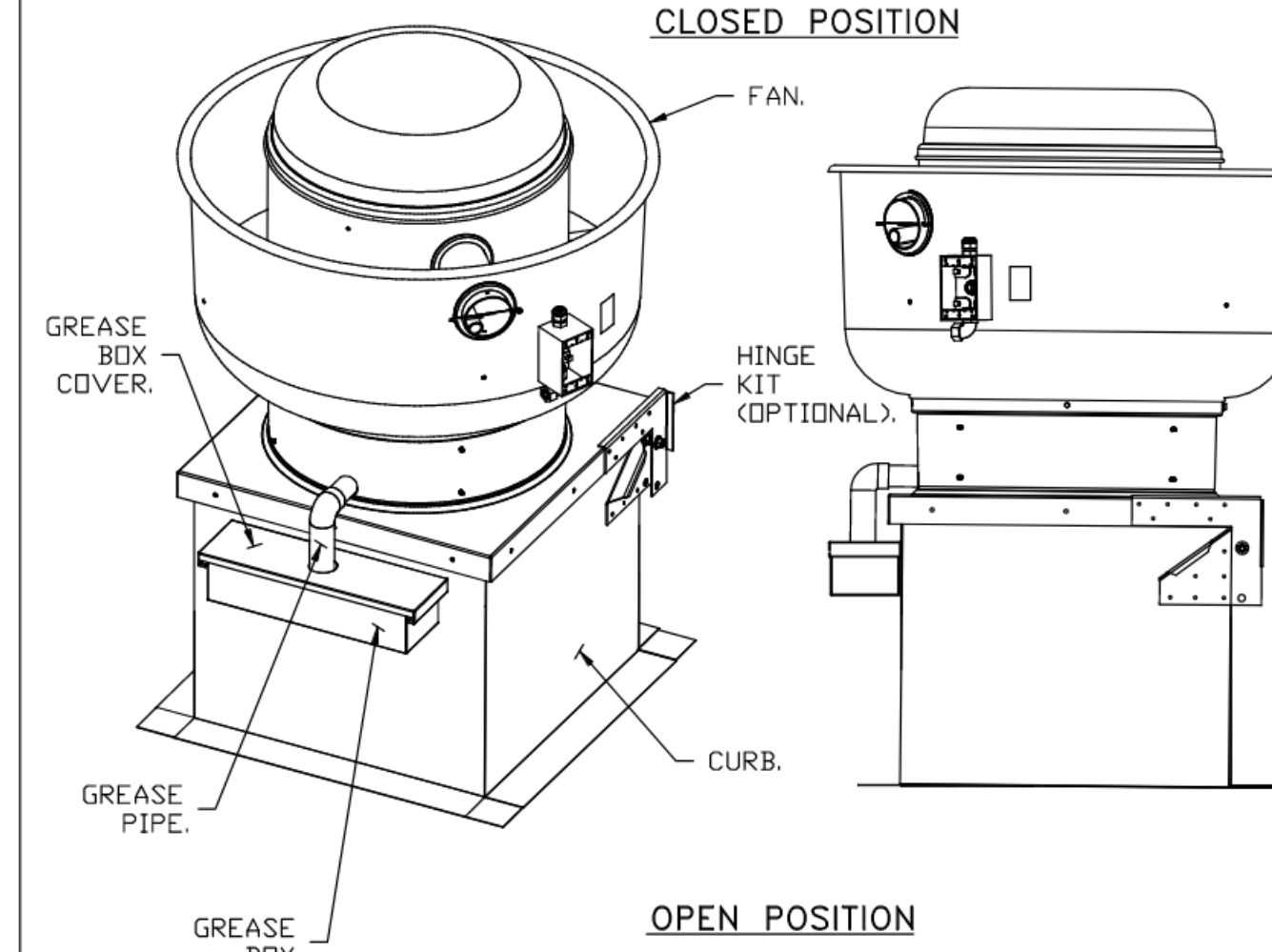
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DEGRADATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

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.
 - HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS.
 - 2 YEAR PARTS WARRANTY.

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

GREASE BOX INSTALLATION

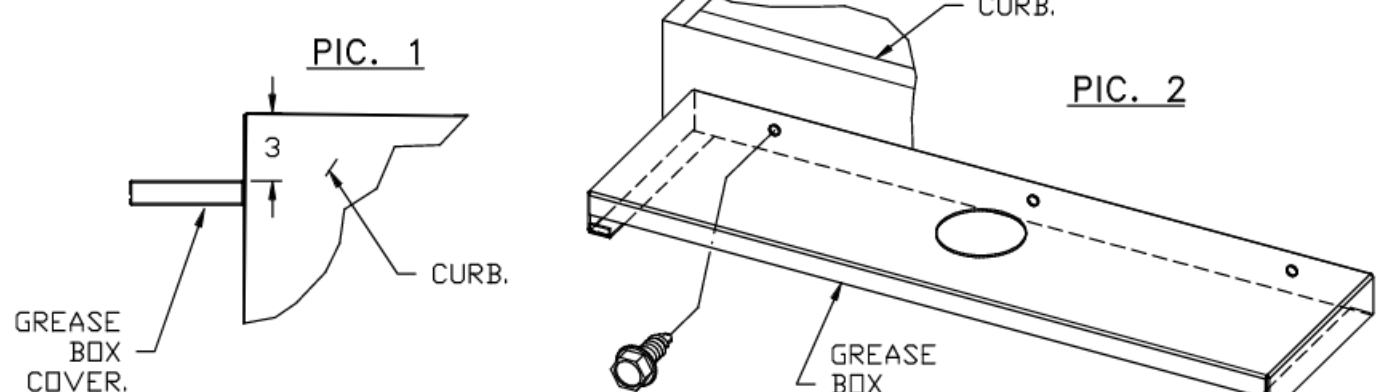


PARTS INCLUDED

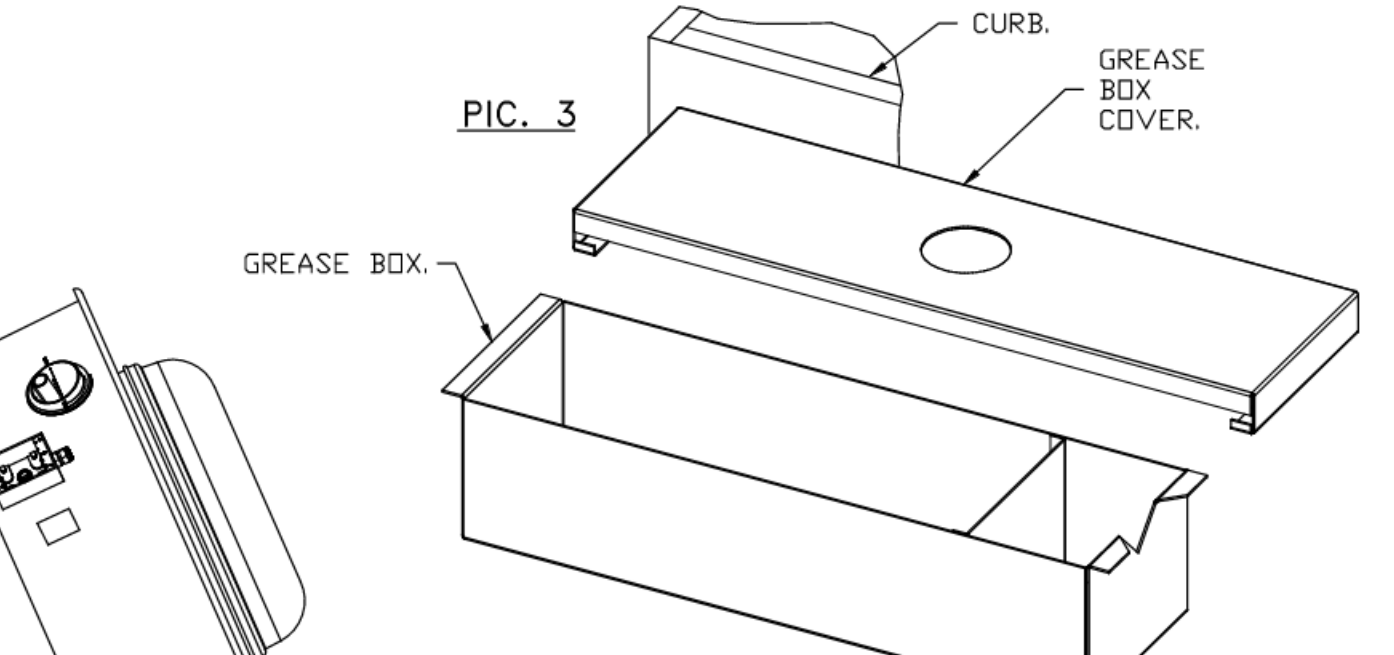
- GREASE BOX.
- GREASE BOX COVER.
- GREASE PIPE.
- SHEET METAL SCREWS 3 - LONG (3/4\"/>

GREASE BOX FIELD INSTALLATION

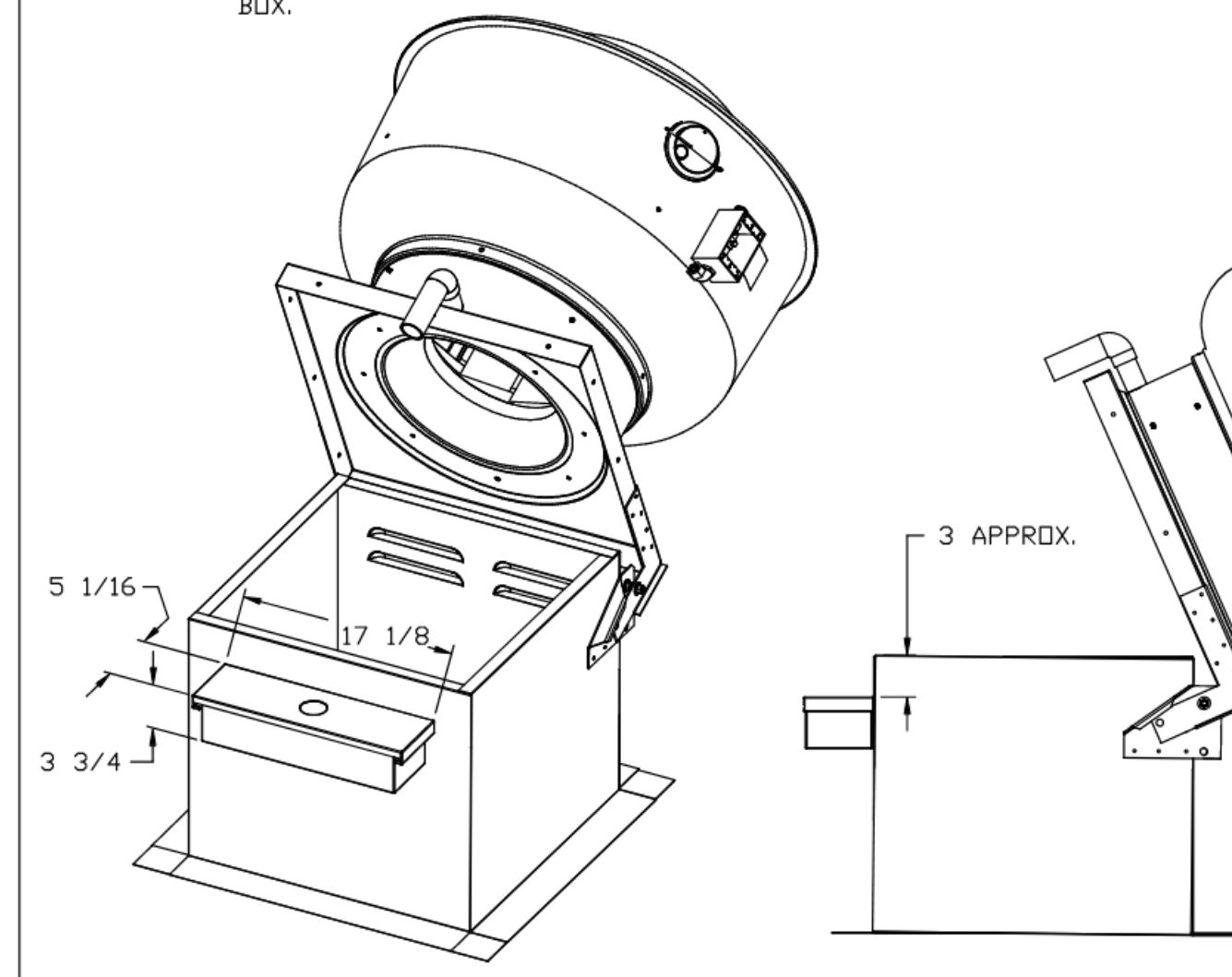
STEP 1)
ATTACH GREASE BOX COVER TO THE CURB, HOLD 3\"/>



STEP 2)
ATTACH GREASE BOX TO GREASE BOX COVER, SLIDE AND DROP. AS SHOWN ON PIC. 3.



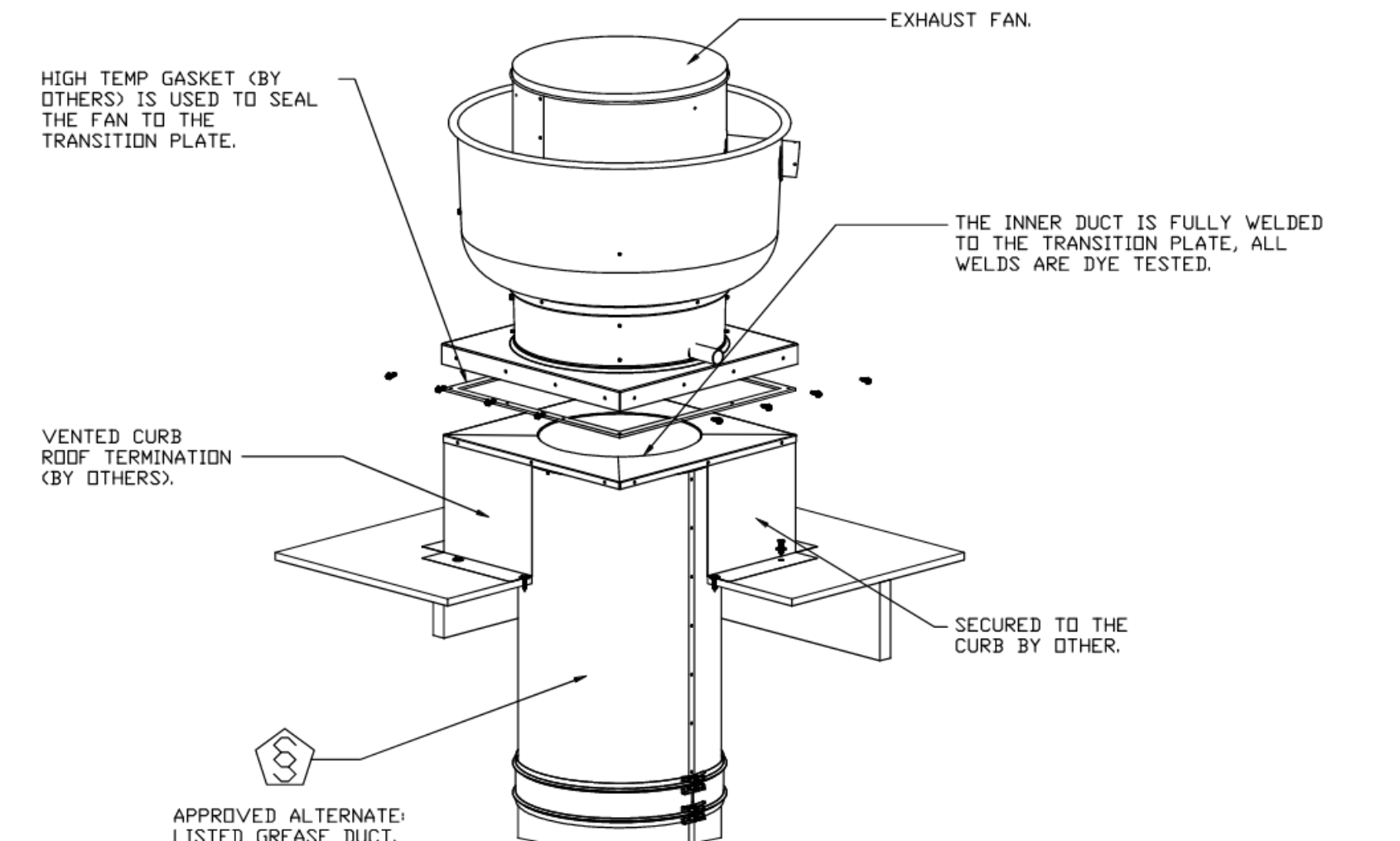
STEP 3)
INSTALL GREASE PIPE AS SHOWN ON PIC. 4.



*NOTE: UL 705 INSTALL.

CAPTIVE AIRE UL LISTED DUCT IS APPROVED AS AN ALTERNATE - SPEC BELOW

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 MANUFACTURER'S INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURER'S LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16\"/>



REVISIONS

NO.	DESCRIPTION	DATE
1		
2		
3		
4		

CAPTIVE AIRE

National Accounts
www.captiveaire.com
4641 Pangborn Park Rd., Raleigh, NC 27616 PHONE: (919) 882-2410 FAX: (919) 227-5948 EMAIL: ngs15@captiveaire.com

KROGER 541 - FT WORTH, TX
FORT WORTH, TX, 76179

DATE: 4/24/2023
DWG.#: 5967339
DRAWN BY: JAC
SCALE: 3/4" = 1'-0"
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1538 ALEXANDRIA PIKE, SUITE 111
FT. THOMAS, KENTUCKY 41075
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859-442-8058 FAX

OWNER

Kroger

ISSUE/REVISION

DATE	DESCRIPTION
04/20/2023	90% OWNER REVIEW
05/24/2023	100% BID PERMIT

EXECUTED BY: Author
REVIEWED BY: Checker

PROJECT TITLE
KROGER STORE
DAL541

FORT WORTH, TX
COMMISSION NO. 522316
ISSUE DATE 05/24/23
SHEET TITLE
HVAC SECTIONS AND
DETAILS

SHEET NO.
M3.1.4

FILE LOCATION: C:\Users\jacob\OneDrive\Documents\5967339.dwg (24/04/2023 10:28:07 AM) PLOTTED: 05/24/2023 10:28:07 AM

DUCTWORK #1 PARTS - JOB#5967339 DOUBLE WALL

TAG	PART #	CFM	GPM	ZONE	COVERED BY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1223DWLT-2R-S	1200					-0.009	27.05	1527.89	1 DOUBLE WALL DUCT - 12" INNER DUCT, 23' LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P2	DW1290DWASY-2R-S	1200					-0.096	27.16	1527.89	1 DOUBLE WALL DUCT - 12" INNER 90 DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P3	DW1216DWRNDADPECCASY17-2R-S	1200					-0.045	28.71	1527.89	1 DOUBLE WALL DUCT ECCENTRIC - 12" X 16" RND2RND ADAPTER - 17" TALL - 2 LAYERS REDUCED CLEARANCE - 16" X 20" STAINLESS STEEL OUTER SHELL. STANDARD ADAPTER.
P4	DW16DWTEASY-2R-S	2400		1			-0.377	49.32	1718.87	1 DOUBLE WALL DUCT - 16" INNER TEE DUCT - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL.
P5	DW1216DWRNDADPECCASY17-2R-S	1200					-0.045	28.71	1527.89	1 DOUBLE WALL DUCT ECCENTRIC - 12" X 16" RND2RND ADAPTER - 17" TALL - 2 LAYERS REDUCED CLEARANCE - 16" X 20" STAINLESS STEEL OUTER SHELL. STANDARD ADAPTER.
P6	DW1210DWLT-2R-S	1200					-0.004	12.88	1527.89	1 DOUBLE WALL DUCT - 12" INNER DUCT, 10' LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P7	DW12DWTEASY-2R-S	1200		1			-0.096	34.13	1527.89	1 DOUBLE WALL DUCT - 12" INNER TEE DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P8	DW1223DWLT-2R-S	1200					-0.009	27.05	1527.89	1 DOUBLE WALL DUCT - 12" INNER DUCT, 23' LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P9	DW12DWACCDORCDV-2R-S							18.57		1 DOUBLE WALL DUCT - 12" INNER ACCESS DOOR & 16" ACCESS DOOR COVER WITH CLAMPS - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P10	DW1647DWLT-2R-S	2400					-0.0182	70.12	1718.87	1 DOUBLE WALL DUCT - 16" INNER DUCT, 47' LONG - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL.
P11	DW1635DWLT-2R-S	2400					-0.0136	52.26	1718.87	1 DOUBLE WALL DUCT - 16" INNER DUCT, 35' LONG - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL.
P12	DW167DWAJD-2R-S	2400					-0.0072	58.31	1718.87	1 DOUBLE WALL ADJUSTABLE DUCT - 16" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11' / MAX LENGTH = 24.5' / ADJUSTMENT = 13.5' / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL 'V' CLAMPS.
P13	DW2024SADKIT							8.01		1 DUCT - HORIZONTAL SADDLE SUPPORT KIT, USED WITH 20" OD - INCLUDES UNI-STRUT CUT TO LENGTH, DW2024SAD, & HARDWARE BAG 4.
P14	DW2024SADKIT							8.01		1 DUCT - HORIZONTAL SADDLE SUPPORT KIT, USED WITH 20" OD - INCLUDES UNI-STRUT CUT TO LENGTH, DW2024SAD, & HARDWARE BAG 4.
P15	DW1615DWASY-2R-S	2400					-0.0472	17.21	1718.87	1 DOUBLE WALL DUCT - 16" INNER 15 DUCT - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL.
P16	DW1609DWLT-2R-S	2400					-0.003	14.11	1718.87	1 DOUBLE WALL DUCT - 16" INNER DUCT, 9' LONG - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL.
P17	DW2024SADKIT							8.01		1 DUCT - HORIZONTAL SADDLE SUPPORT KIT, USED WITH 20" OD - INCLUDES UNI-STRUT CUT TO LENGTH, DW2024SAD, & HARDWARE BAG 4.
P18	DW1615DWASY-2R-S	2400					-0.055	17.21	1718.87	1 DOUBLE WALL DUCT - 16" INNER 15 DUCT - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL.
P19	DW16DWTEASY-2R-S	2400		1			-0.1705	49.32	1718.87	1 DOUBLE WALL DUCT - 16" INNER TEE DUCT - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL.
P20	DW16DWACCDORCDV-2R-S							21.48		1 DOUBLE WALL DUCT - 16" INNER ACCESS DOOR & 20" ACCESS DOOR COVER WITH CLAMPS - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL.
P21	DW1602DWOFFSETASY-2R-S	2400					-0.003	14.03	1718.87	1 DOUBLE WALL DUCT - 16" INNER DUCT RISER & 2 DEGREE OFFSET - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL.
P22	DW1647DWLT-2R-S	2400					-0.0179	70.12	1718.87	1 DOUBLE WALL DUCT - 16" INNER DUCT, 47' LONG - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL.
P23	DW1647DWAJD-2R-S	2400					-0.0161	103.34	1718.87	1 DOUBLE WALL ADJUSTABLE DUCT - 16" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11' / MAX LENGTH = 48.5' / ADJUSTMENT = 30.5' / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL 'V' CLAMPS.
P24	DW164550DWLTTP-2R-S	2400					-0.017	68.55	1718.87	1 DOUBLE WALL DUCT - 16" INNER DUCT, 45.5' LONG - 2 LAYERS REDUCED CLEARANCE - 20" STAINLESS STEEL OUTER SHELL - USED WITH TRANSITION PLATE.
P25	DW2616TPBEX	2400						9.00	1718.87	1 DUCT TO CURB TRANSITION 3/4" DOWN TURN, 26 1/2" CURB TO 16" DUCT, 16 GA ALUMINIZED. USED ON NCA16FA / NCA16HPFA & NCA18FA / NCA18HPFA. TRANSITION PLATE OD IS 27.00" DESIGNED FOR USE WITH EXHAUST FAN. NON-STANDARD PART.
	3M-2000PLUS							0.80		6 DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW12DWCLASY-2R-S							6.44		5 DUCT - 12" DUCT - 16" DOUBLE 'V' CLAMP - 2R INSULATION & SINGLE 'V' CLAMP INCLUDED - REDUCED CLEARANCE.
	DW16DWCLASY-2R-S							7.96		9 DUCT - 16" DUCT - 20" DOUBLE 'V' CLAMP - 2R INSULATION & SINGLE 'V' CLAMP INCLUDED - REDUCED CLEARANCE.
	TOTAL WEIGHT							951.31		

DOUBLE WALL FACTORY BUILT DUCTWORK

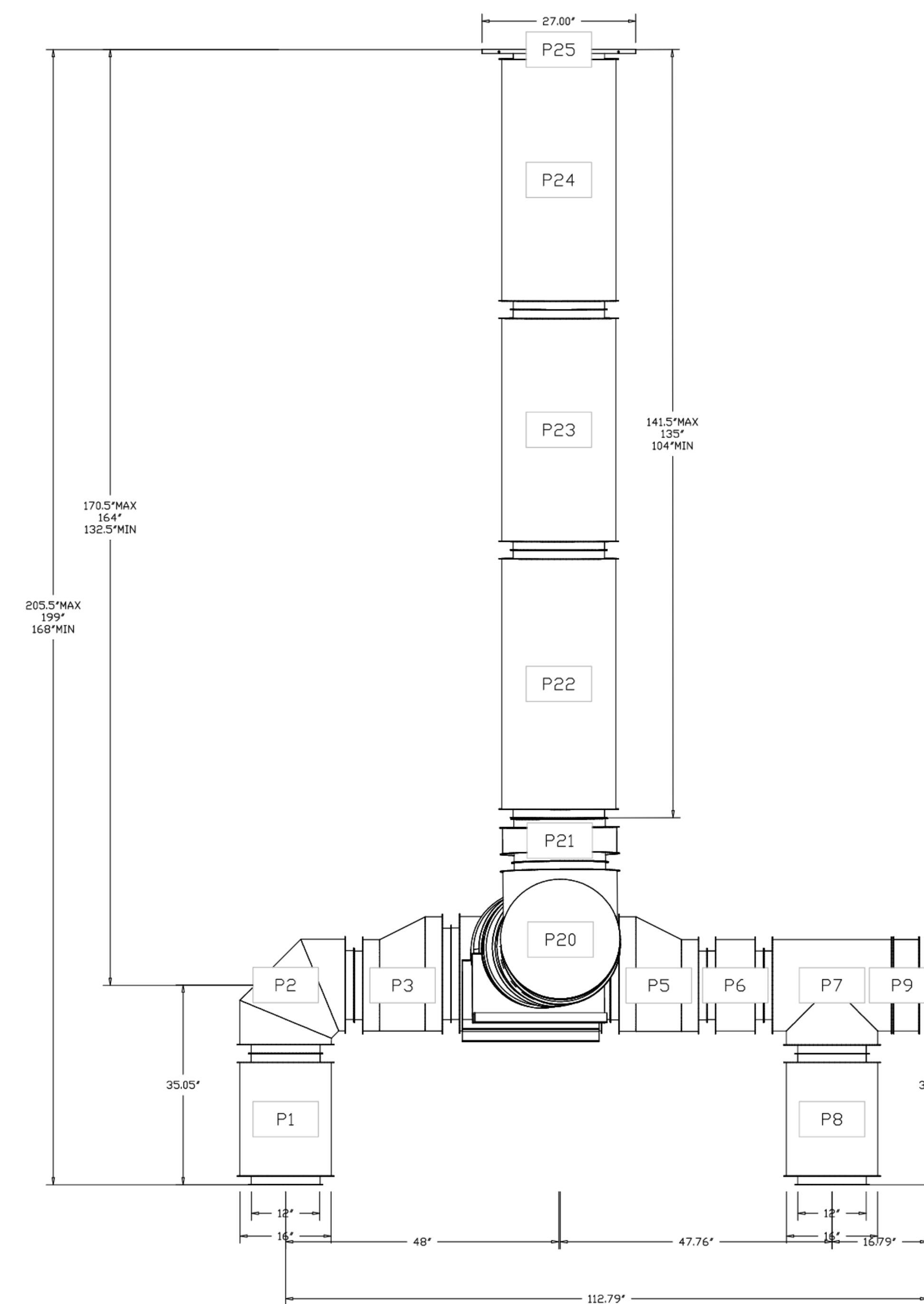
- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- 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)
5"	7'
6"	7'
7"	7'
8"	7'
10"	7'
12"	7'
14"	7'
16"	7'
18"	5'
20"	5'
22"	5'
24"	5'
26"	5'
28"	5'
30"	5'
32"	5'
34"	5'
36"	5'

VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5'-16")	20'	24'	24'
2R (18")	18'	24'	24'
3R & 3Z (5'-24")	10'	24'	24'
3Z (26' - 36")	10'	20'	20'

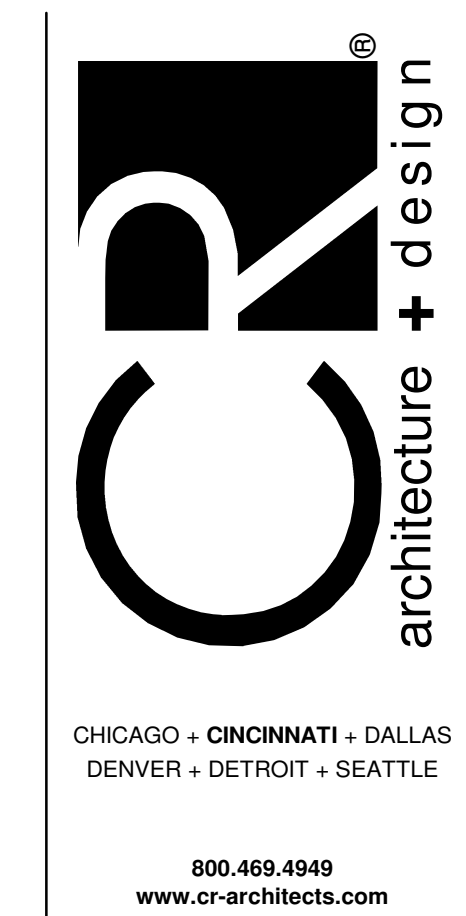
DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

DUCTWORK #1 FRONT VIEW

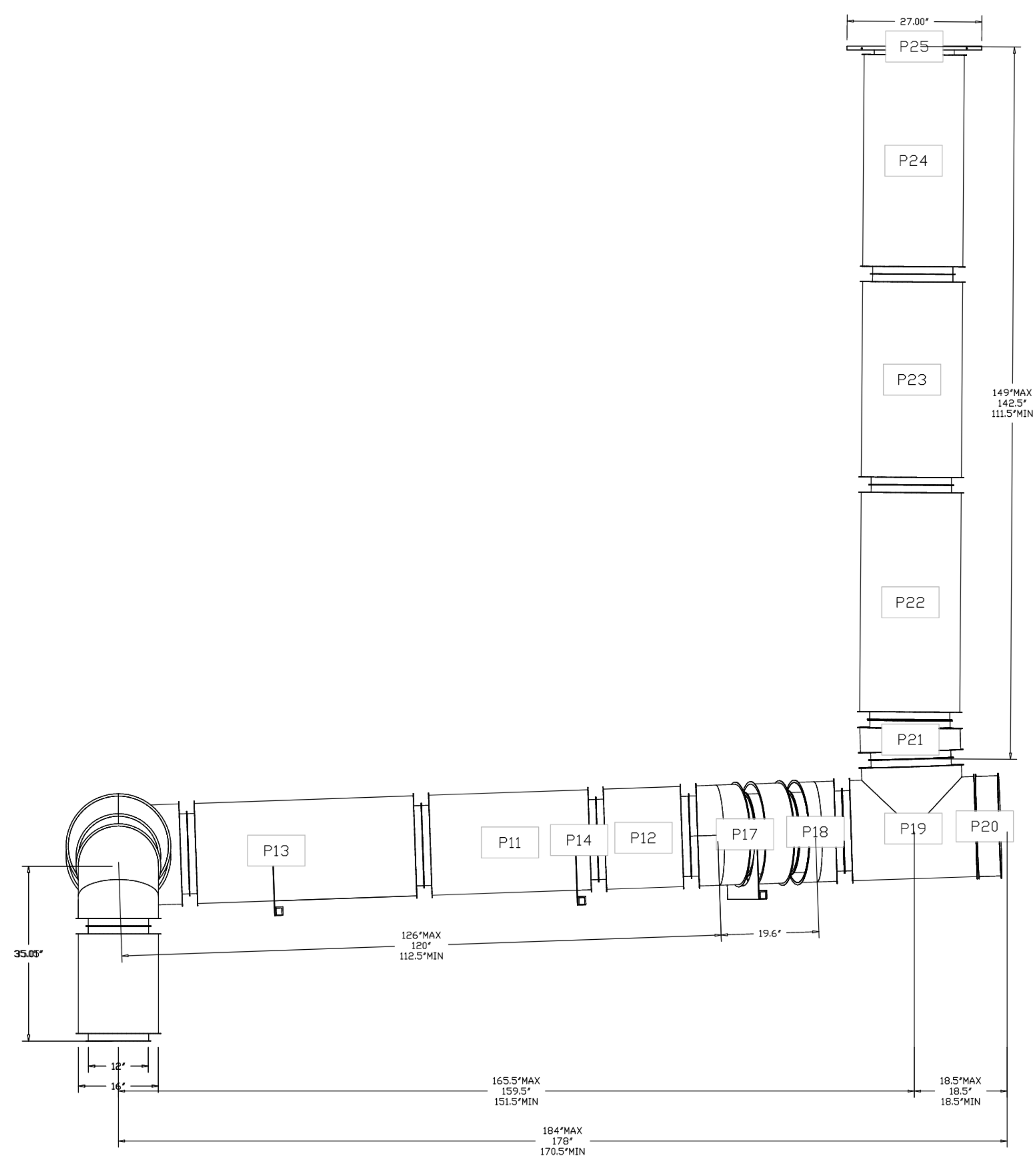


DUCT DESIGN IS PRELIMINARY. THE FINAL DESIGN MUST BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO ORDERING.

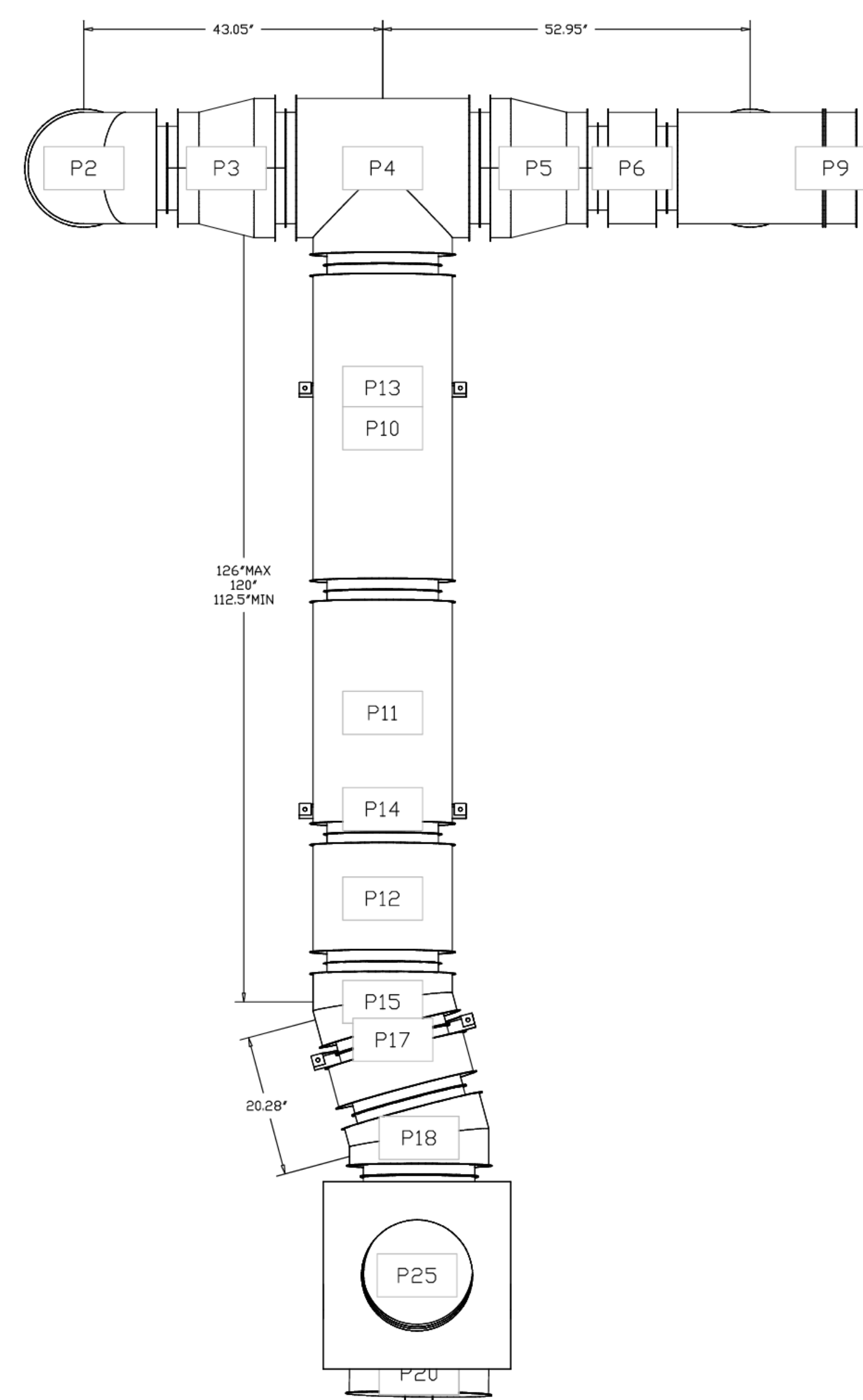
CAPTIVEAIRE
 CONSULTANTS
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 WWW.KLHENGINEERS.COM
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 KOHRIS LONNEMANN HEIL ENGINEERS, INC.
 1538 ALEXANDRIA PIKE, SUITE 111
 FT. THOMAS, KENTUCKY 41075
 859-442-8050 FAX
 4641 Pengon Park Rd., Raleigh, NC 27616 PHONE: (919) 882-2410 FAX: (919) 277-5948 EMAIL: ngf@captivaire.com
 KROGER 541 - FT WORTH, TX
 FORT WORTH, TX, 76179
 DATE: 4/24/2023
 PROJECT NO: 5967339
 DRAWN BY: JAC
 SCALE: 3/4" = 1'-0"
 MASTER DRAWING
 SHEET NO. 6



DUCTWORK #1 SIDE VIEW



DUCTWORK #1 TOP VIEW



NO.	DATE	DESCRIPTION

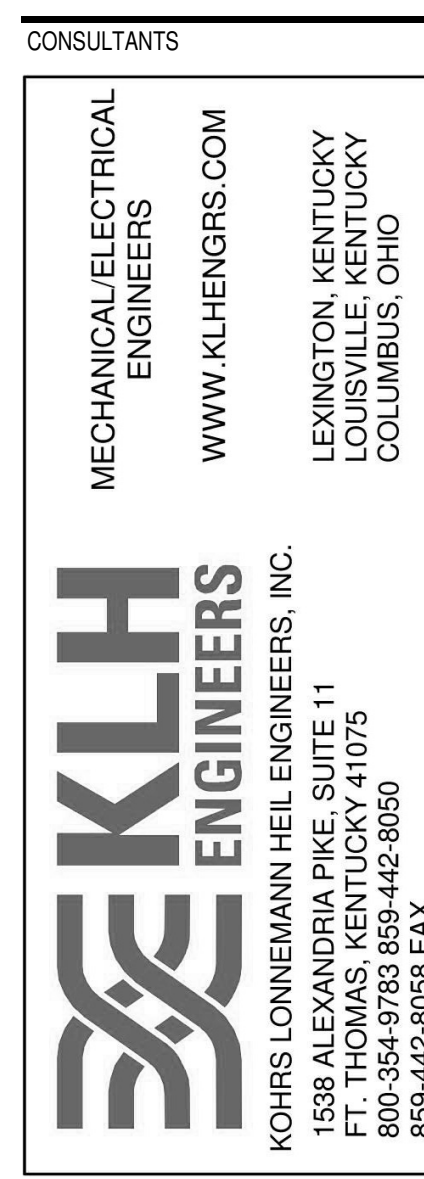
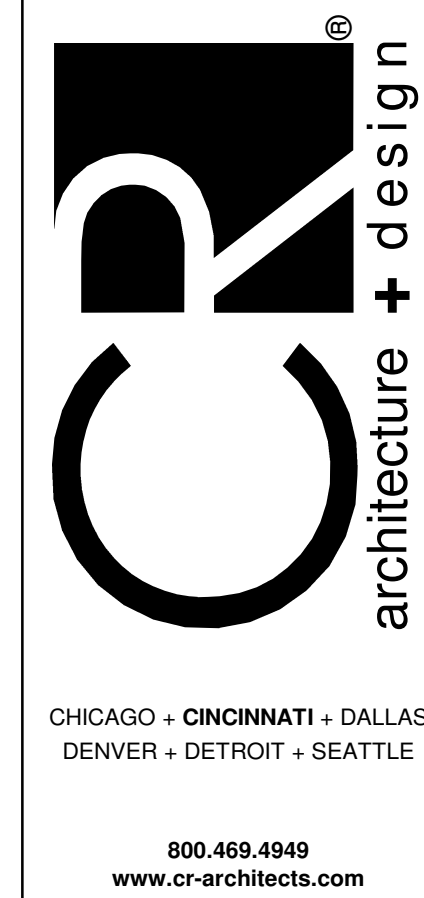
4641 Parnon Park Rd., Raleigh, Nc. 27616 PHONE: (919) 882-2410 FAX: (919) 227-5948 EMAIL: ng1@captiveair.com

KROGER 541 - FT WORTH, TX
 FORT WORTH, TX, 76179

DATE: 4/24/2023
 NO. 5967339
 DRAWN BY: JAC
 SCALE: 3/4" = 1'-0"
 MASTER DRAWING

SHEET NO.
 7

PLOTTED: 05/24/2023 10:52 AM FILE LOCATION: C:\Users\jmc\OneDrive\Documents\Projects\Kroger\Kroger - TX - 2023\New_Arch\dwg



ISSUE/REVISION

NO.	DATE	DESCRIPTION
04/20/2023	90% OWNER REVIEW	
05/24/2023	100% BID PERMIT	

EXECUTED BY: Author
 REVIEWED BY: Checker

PROJECT TITLE
 KROGER STORE
 DAL541

FORT WORTH, TX
 COMMISSION NO. 522316
 ISSUE DATE 05/24/23
 SHEET TITLE
 HVAC SECTIONS AND
 DETAILS

SHEET NO.
 M3.1.7

NO.	DATE	BY	DESCRIPTION
1	04/20/2023	KLH	ISSUED FOR PERMIT
2	05/24/2023	KLH	REVISIONS

FOR QUESTIONS, CALL THE PROJECT MANAGER:
PHONE: 817.469.4949
EMAIL: info@croger.com

FOR QUESTIONS, CALL THE PROJECT MANAGER:
PHONE: 817.469.4949
EMAIL: info@croger.com

NO.	DATE	BY	DESCRIPTION
1	04/20/2023	KLH	ISSUED FOR PERMIT
2	05/24/2023	KLH	REVISIONS

NO.	DATE	BY	DESCRIPTION
1	04/20/2023	KLH	ISSUED FOR PERMIT
2	05/24/2023	KLH	REVISIONS

DOAS/RTU BACnet Points List - JOB#7318957

BACNET POINTS AVAILABLE FOR FAN #1 (GDAS-D), #2 (GDAS-D)				BACNET POINTS AVAILABLE FOR FAN #1 (GDAS-D), #2 (GDAS-D)					
BACnet Object	BACnet Type	BACnet ID	LIN SNVT Name	Function	BACnet Object	BACnet Type	BACnet ID	LIN SNVT Name	Function
DDChasCommand	BV	1	nvDDChas1	Control/Monitor	MixingBoxManualVoldDcc	AV	102	nvMxBowManVdC	Control/Monitor
DDCoolCommand	BV	2	nvDDCool	Control/Monitor	MixingBoxManualVoldDcc	AV	103	nvMxBowManVdC	Control/Monitor
DDCBoosterCommand	BV	3	nvDDBooster	Control/Monitor	DynamicSpDFast	AV	120	nvDySpDFast	Control/Monitor
DDModulation	AV	4	nvDDMod	Control/Monitor	DynamicSpDFast	AV	121	nvDySpDFast	Control/Monitor
DDDCSupervisory	BV	5	nvDDSuperv	Control/Monitor	DynamicSpDFast	AV	122	nvDySpDFast	Control/Monitor
IntakeHeaTSP	AV	6	nvIntakeHeaTSP	Control/Monitor	DynamicSpDFast	AV	123	nvDySpDFast	Control/Monitor
IntakeHeaTSP	AV	7	nvIntakeHeaTSP	Control/Monitor	UnitStatus	AI	139	nvUnitStatus	Monitor/Day
SpaceHeaTSP	AV	8	nvSpaceHeaTSP	Control/Monitor	CurrentLoadStatus	AI	140	nvCurLoadStat	Monitor/Day
DischargeHeaTSP	AV	12	nvDischargeHeaTSP	Control/Monitor	AverageSpTemp	AI	141	nvAvgSpTemp	Monitor/Day
BachargeHeaTSP	AV	13	nvBachargeHeaTSP	Control/Monitor	AverageRH	AI	143	nvAvgRH	Monitor/Day
IntakeCoolDCCSP	AV	16	nvIntakeCoolDCCSP	Control/Monitor	ReturnTemp	AI	147	nvRetTurnTemp	Monitor/Day
IntakeCoolInnocSP	AV	17	nvIntakeCoolInnocSP	Control/Monitor	DischargeTemp	AI	148	nvDischargeTemp	Monitor/Day
SpaceCoolInnocSP	AV	18	nvSpaceCoolInnocSP	Control/Monitor	SpaceTemp	AI	150	nvSpaceTemp	Monitor/Day
DischargeCoolDCCSP	AV	20	nvDischargeCoolDCCSP	Control/Monitor	HRU Temp	AI	151	nvHRUTemp	Monitor/Day
BachargeCoolDCCSP	AV	23	nvBachargeCoolDCCSP	Control/Monitor	SuctionLineTemp	AI	156	nvSuctLineTemp	Monitor/Day
RoomOverrideDCCSP	AV	26	nvRoomOverrideDCCSP	Control/Monitor	LiquidLineTemp	AI	157	nvLiqLineTemp	Monitor/Day
RoomOverrideInnocSP	AV	27	nvRoomOverrideInnocSP	Control/Monitor	Evaporator Coil Temp	AI	158	nvEvapCoilTemp	Monitor/Day
FreezeTSP	AV	29	nvFreezeTSP	Control/Monitor	Condensator Coil Temp	AI	159	nvCondCoilTemp	Monitor/Day
DiverterTSP	AV	31	nvDiverterTSP	Control/Monitor	Compressor Discharge Temp	AI	160	nvCompDisTemp	Monitor/Day
CabinetHeaTSP	AV	32	nvCabinetHeaTSP	Control/Monitor	IntakeRH	AI	161	nvIntakeRH	Monitor/Day
FurnaceTSP	AV	33	nvFurnaceTSP	Control/Monitor	DischargeRH	AI	163	nvDischargeRH	Monitor/Day
IntakeRHInnocSP	AV	34	nvIntakeRHInnocSP	Control/Monitor	ReturnRH	AI	165	nvReturnRH	Monitor/Day
IntakeRHInnocSP	AV	35	nvIntakeRHInnocSP	Control/Monitor	SurroundRH	AI	166	nvSurroundRH	Monitor/Day
SpaceRHInnocSP	AV	36	nvSpaceRHInnocSP	Control/Monitor	DischargeRH	AI	167	nvDischargeRH	Monitor/Day
DischargeRHInnocSP	AV	38	nvDischargeRHInnocSP	Control/Monitor	LiquidRH	AI	168	nvLiqRH	Monitor/Day
BachargeRHInnocSP	AV	39	nvBachargeRHInnocSP	Control/Monitor	HRU RH	AI	169	nvHRURH	Monitor/Day
IntakeSpDCCSP	AV	40	nvIntakeSpDCCSP	Control/Monitor	Superheate	AI	174	nvSuperheate	Monitor/Day
IntakeSpDCCSP	AV	41	nvIntakeSpDCCSP	Control/Monitor	CondPantRH	AI	176	nvCondPantRH	Monitor/Day
SpaceSpDCCSP	AV	42	nvSpaceSpDCCSP	Control/Monitor	MoistureRH	AI	178	nvMoistRH	Monitor/Day
DischargeSpDCCSP	AV	43	nvDischargeSpDCCSP	Control/Monitor	AdjJustReliefValveOutput	AI	180	nvAdjJustReliefValveOutput	Monitor/Day
BachargeSpDCCSP	AV	44	nvBachargeSpDCCSP	Control/Monitor	DRBStartTieFlag	BI	182	nvDRBStartTieFlag	Monitor/Day
ScheduleSundaysStart	AV	45	nvScheduleSundaysStart	Control/Monitor	ReheatActiveFlag	BI	183	nvReheatActiveFlag	Monitor/Day
ScheduleSundaysEnd	AV	46	nvScheduleSundaysEnd	Control/Monitor	DRFStartTieFlag	BI	184	nvDRFStartTieFlag	Monitor/Day
ScheduleSundaysStart	AV	47	nvScheduleSundaysStart	Control/Monitor	PumpStartActiveFlag	BI	185	nvPumpStartActiveFlag	Monitor/Day
ScheduleSundaysEnd	AV	48	nvScheduleSundaysEnd	Control/Monitor	PumpOverDriveFlag	BI	186	nvPumpOverDriveFlag	Monitor/Day
ScheduleSundaysStart	AV	49	nvScheduleSundaysStart	Control/Monitor	ReheatValuePosition	AI	187	nvReheatValuePos	Monitor/Day
ScheduleSundaysEnd	AV	50	nvScheduleSundaysEnd	Control/Monitor	LeakValvePosition	AI	188	nvLeakValvePos	Monitor/Day
ScheduleMondaysStart	AV	51	nvScheduleMondaysStart	Control/Monitor	IntakeSpActual	AI	189	nvIntakeSpActual	Monitor/Day
ScheduleMondaysEnd	AV	52	nvScheduleMondaysEnd	Control/Monitor	SpaceSpActual	AI	190	nvSpaceSpActual	Monitor/Day
ScheduleTuesdaysStart	AV	53	nvScheduleTuesdaysStart	Control/Monitor	CompressorPower	AI	191	nvCompPower	Monitor/Day
ScheduleTuesdaysEnd	AV	54	nvScheduleTuesdaysEnd	Control/Monitor	CompressorFrequency	AI	192	nvCompFreq	Monitor/Day
ScheduleWednesdaysStart	AV	55	nvScheduleWednesdaysStart	Control/Monitor	CompressorCurrent	AI	193	nvCompCurr	Monitor/Day
ScheduleWednesdaysEnd	AV	56	nvScheduleWednesdaysEnd	Control/Monitor	Subcool	AI	208	nvSubcool	Monitor/Day
ScheduleThursdaysStart	AV	57	nvScheduleThursdaysStart	Control/Monitor	Superheat	AI	209	nvSuperheat	Monitor/Day
ScheduleThursdaysEnd	AV	58	nvScheduleThursdaysEnd	Control/Monitor	ActiveVal1	AI	210	nvActiveVal1	Monitor/Day
ScheduleFridaysStart	AV	59	nvScheduleFridaysStart	Control/Monitor	ActiveVal2	AI	211	nvActiveVal2	Monitor/Day
ScheduleFridaysEnd	AV	60	nvScheduleFridaysEnd	Control/Monitor	ActiveVal3	AI	212	nvActiveVal3	Monitor/Day
ScheduleSaturdaysStart	AV	61	nvScheduleSaturdaysStart	Control/Monitor	ActiveVal4	AI	213	nvActiveVal4	Monitor/Day
ScheduleSaturdaysEnd	AV	62	nvScheduleSaturdaysEnd	Control/Monitor	ActiveVal5	AI	214	nvActiveVal5	Monitor/Day
ScheduleSundaysStart	AV	63	nvScheduleSundaysStart	Control/Monitor	ActiveVal6	AI	215	nvActiveVal6	Monitor/Day
ScheduleSundaysEnd	AV	64	nvScheduleSundaysEnd	Control/Monitor	ControlHeatingFlag	BI	216	nvControlHeatingFlag	Monitor/Day
ScheduleSundaysStart	AV	65	nvScheduleSundaysStart	Control/Monitor	HeatTemperModeDcc	AV	217	nvHeatTemperModeDcc	Control/Monitor
ScheduleSundaysEnd	AV	66	nvScheduleSundaysEnd	Control/Monitor	HeatTemperModeInnoc	AV	218	nvHeatTemperModeInnoc	Control/Monitor
ScheduleSundaysStart	AV	67	nvScheduleSundaysStart	Control/Monitor	CoolTemperModeDcc	AV	219	nvCoolTemperModeDcc	Control/Monitor
ScheduleSundaysEnd	AV	68	nvScheduleSundaysEnd	Control/Monitor	CoolTemperModeInnoc	AV	220	nvCoolTemperModeInnoc	Control/Monitor
ScheduleSundaysStart	AV	69	nvScheduleSundaysStart	Control/Monitor	ActiveValDcc	AV	221	nvActiveValDcc	Control/Monitor
ScheduleSundaysEnd	AV	70	nvScheduleSundaysEnd	Control/Monitor	ActiveValInnoc	AV	222	nvActiveValInnoc	Control/Monitor
ScheduleSundaysStart	AV	71	nvScheduleSundaysStart	Control/Monitor	BlowerModeDcc	AV	223	nvBlowerModeDcc	Control/Monitor
ScheduleSundaysEnd	AV	72	nvScheduleSundaysEnd	Control/Monitor	BlowerModeInnoc	AV	224	nvBlowerModeInnoc	Control/Monitor
ScheduleSundaysStart	AV	73	nvScheduleSundaysStart	Control/Monitor	MixingBoxModeDcc	AV	225	nvMixingBoxModeDcc	Control/Monitor
ScheduleSundaysEnd	AV	74	nvScheduleSundaysEnd	Control/Monitor	Reheat BP Adj Dcc	AV	226	nvReheatBPAdjDcc	Control/Monitor
ScheduleSundaysStart	AV	75	nvScheduleSundaysStart	Control/Monitor	Reheat BP Adj Innoc	AV	227	nvReheatBPAdjInnoc	Control/Monitor
ScheduleSundaysEnd	AV	76	nvScheduleSundaysEnd	Control/Monitor	BlowerFanModeDcc	AV	232	nvBlowerFanModeDcc	Control/Monitor
ScheduleSundaysStart	AV	77	nvScheduleSundaysStart	Control/Monitor	BlowerFanModeInnoc	AV	233	nvBlowerFanModeInnoc	Control/Monitor
ScheduleSundaysEnd	AV	78	nvScheduleSundaysEnd	Control/Monitor	BlowerFanModeDcc	AV	234	nvBlowerFanModeDcc	Control/Monitor
ScheduleSundaysStart	AV	79	nvScheduleSundaysStart	Control/Monitor	BlowerFanModeInnoc	AV	235	nvBlowerFanModeInnoc	Control/Monitor
ScheduleSundaysEnd	AV	80	nvScheduleSundaysEnd	Control/Monitor	MixingBoxModeDcc	AV	236	nvMixingBoxModeDcc	Control/Monitor
ScheduleSundaysStart	AV	81	nvScheduleSundaysStart	Control/Monitor	MixingBoxModeInnoc	AV	237	nvMixingBoxModeInnoc	Control/Monitor
ScheduleSundaysEnd	AV	82	nvScheduleSundaysEnd	Control/Monitor	MixingBoxModeDcc	AV	238	nvMixingBoxModeDcc	Control/Monitor
ScheduleSundaysStart	AV	83	nvScheduleSundaysStart	Control/Monitor	MixingBoxModeInnoc	AV	239	nvMixingBoxModeInnoc	Control/Monitor
ScheduleSundaysEnd	AV	84	nvScheduleSundaysEnd	Control/Monitor	MixingBoxModeDcc	AV	240	nvMixingBoxModeDcc	Control/Monitor
ScheduleSundaysStart	AV	85	nvScheduleSundaysStart	Control/Monitor	MixingBoxModeInnoc	AV	241	nvMixingBoxModeInnoc	Control/Monitor
ScheduleSundaysEnd	AV	86	nvScheduleSundaysEnd	Control/Monitor	MixingBoxModeDcc	AV	242	nvMixingBoxModeDcc	Control/Monitor
ScheduleSundaysStart	AV	87	nvScheduleSundaysStart	Control/Monitor	MixingBoxModeInnoc	AV	243	nvMixingBoxModeInnoc	Control/Monitor
ScheduleSundaysEnd	AV	88	nvScheduleSundaysEnd	Control/Monitor	CFReading	AI	244	nvCFReading	Read/Day
ScheduleSundaysStart	AV	89	nvScheduleSundaysStart	Control/Monitor	StaticPressure	AI	245	nvStaticPressure	Read/Day
ScheduleSundaysEnd	AV	90	nvScheduleSundaysEnd	Control/Monitor					
ScheduleSundaysStart	AV	91	nvScheduleSundaysStart	Control/Monitor					
ScheduleSundaysEnd	AV	92	nvScheduleSundaysEnd	Control/Monitor					
ScheduleSundaysStart	AV	93	nvScheduleSundaysStart	Control/Monitor					
ScheduleSundaysEnd	AV	94	nvScheduleSundaysEnd	Control/Monitor					
ScheduleSundaysStart	AV	95	nvScheduleSundaysStart	Control/Monitor					
ScheduleSundaysEnd	AV	96	nvScheduleSundaysEnd	Control/Monitor					
ScheduleSundaysStart	AV	97	nvScheduleSundaysStart	Control/Monitor					
ScheduleSundaysEnd	AV	98	nvScheduleSundaysEnd	Control/Monitor					
ScheduleSundaysStart	AV	99	nvScheduleSundaysStart	Control/Monitor					
ScheduleSundaysEnd	AV	100	nvScheduleSundaysEnd	Control/Monitor					
ScheduleSundaysStart	AV	101	nvScheduleSundaysStart	Control/Monitor					
ScheduleSundaysEnd	AV	102	nvScheduleSundaysEnd	Control/Monitor					

REVISIONS

NO.	DATE	DESCRIPTION
1	04/20/2023	ISSUED FOR PERMIT
2	05/24/2023	REVISIONS

CAPTIVE WIRE
 National Accounts
 4641 Ferguson Drive Rd., Irving, TX 75038 PHONE: (972) 469-4949 FAX: (972) 469-8559
 www.captivewire.com

DATE: 2/4/2025
DWG.#: 7318957
SCALE: 1/2" = 1'-0"
MASTER DRAWING

SHEET NO. 1

REVISIONS

NO.	DATE	DESCRIPTION
1	04/20/2023	ISSUED FOR PERMIT
2	05/24/2023	REVISIONS

CAPTIVE WIRE
 National Accounts
 4641 Ferguson Drive Rd., Irving, TX 75038 PHONE: (972) 469-4949 FAX: (972) 469-8559
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DATE: 2/4/2025
DWG.#: 7318957
SCALE: 1/2" = 1'-0"
MASTER DRAWING

SHEET NO. 2

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 FT. THOMAS, KENTUCKY 41075
 859-442-8559 FAX
 859-442-8559 FAX

OWNER

Kroger

ISSUE/REVISION

DATE	DESCRIPTION
04/20/2023	90% OWNER REVIEW
05/24/2023	100% BID PERMIT
12/05/2025	BULLETIN NO. 12

EXECUTED BY: KSL
REVIEWED BY: MCD
PROJECT TITLE: KROGER STORE DAL541
LOCATION: FORT WORTH, TX
COMMISSION NO.: 522316
ISSUE DATE: 05/24/23
SHAC TITLE: HVAC SECTIONS AND DETAILS

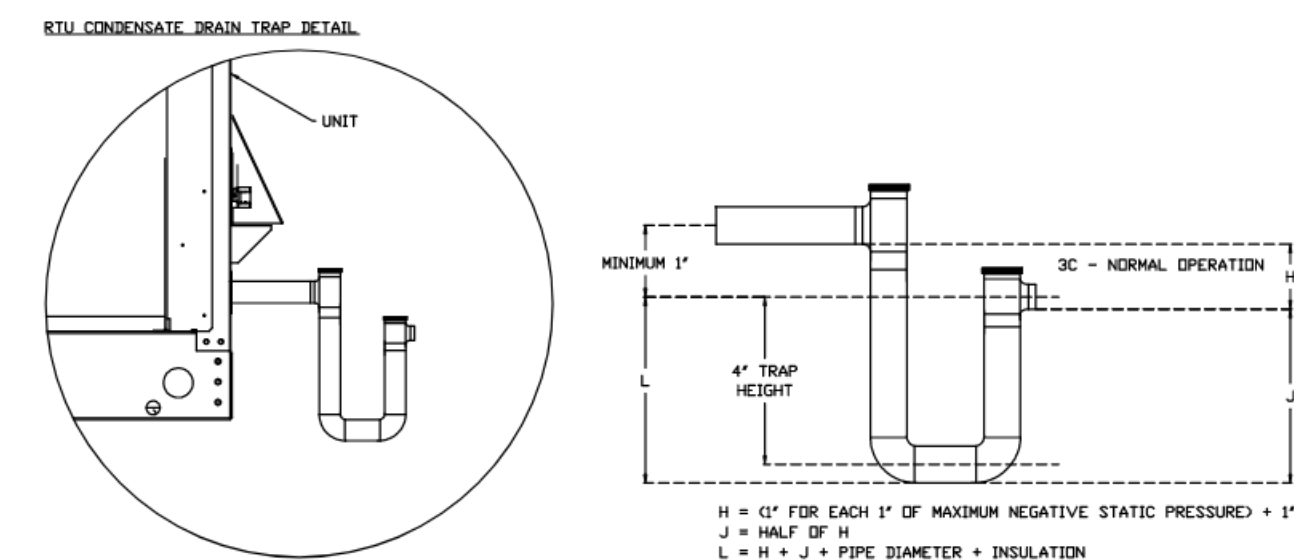
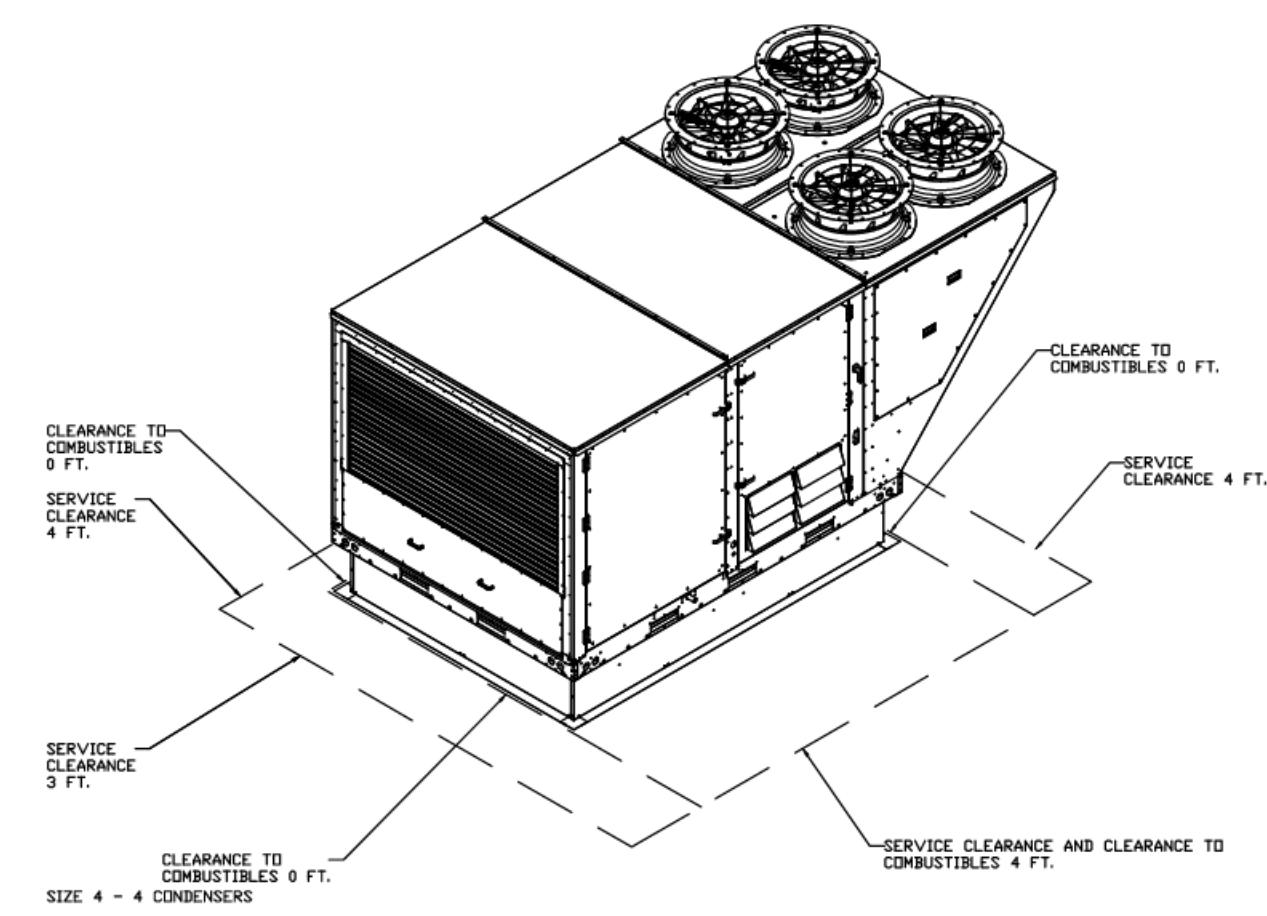
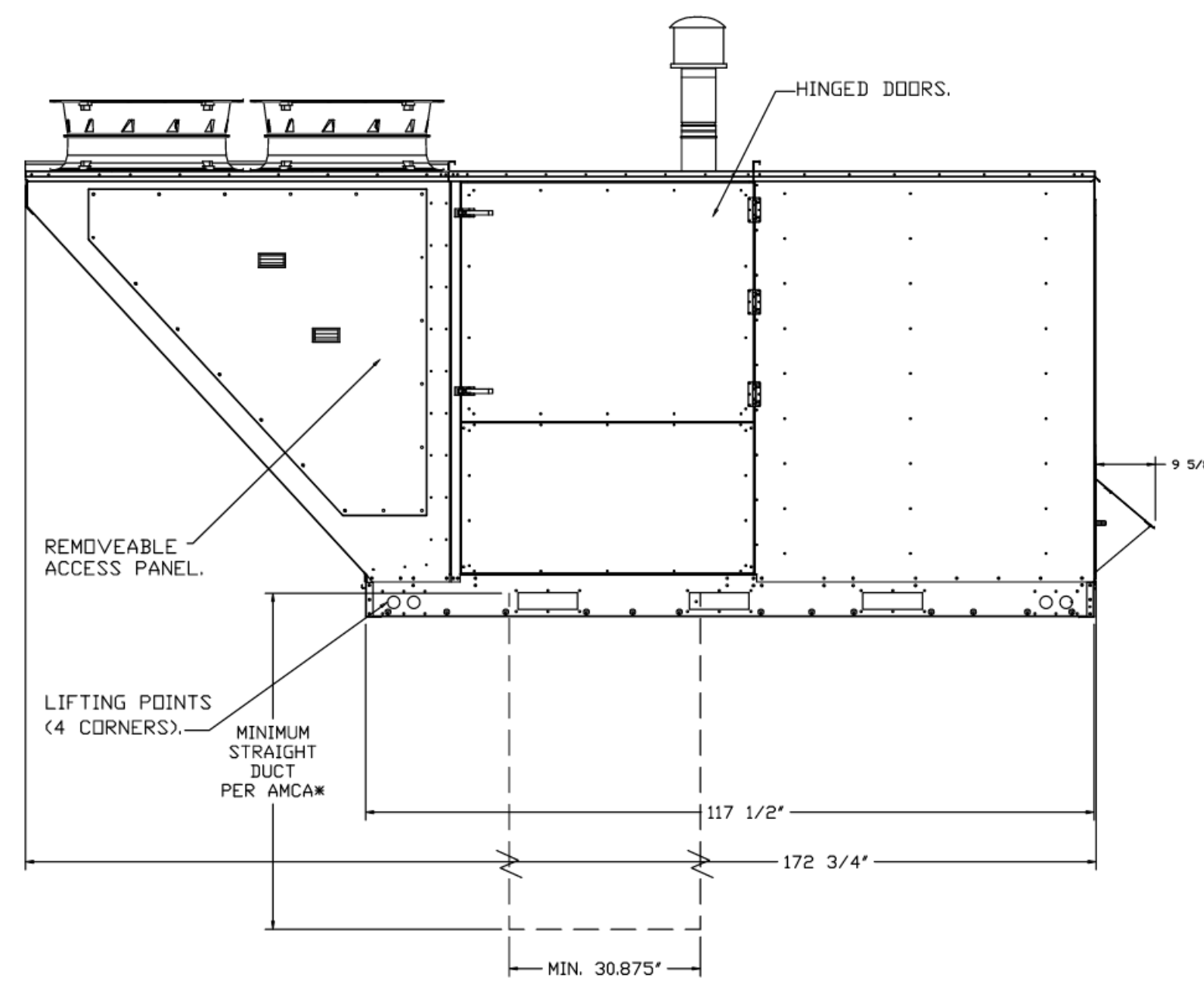
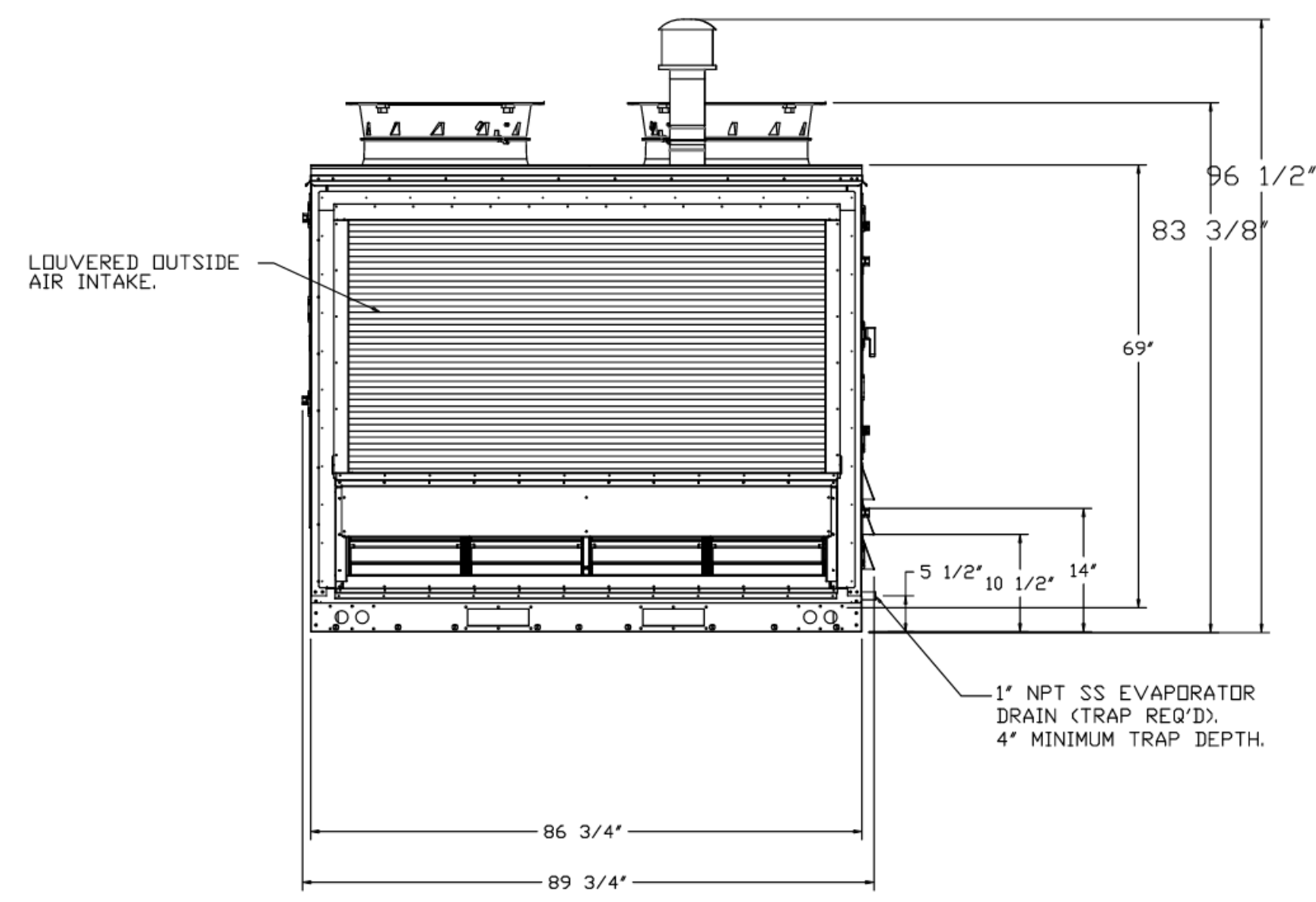
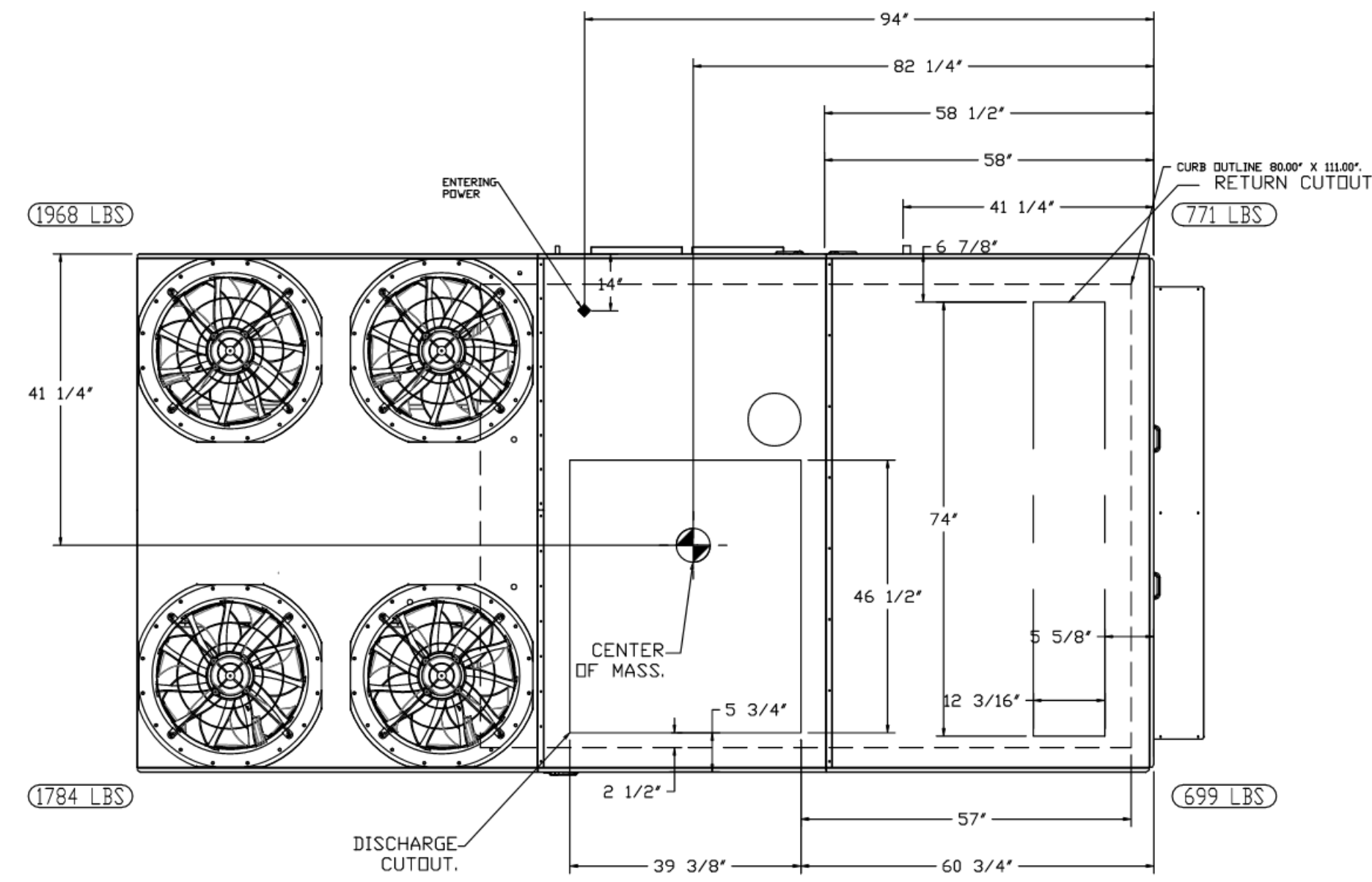
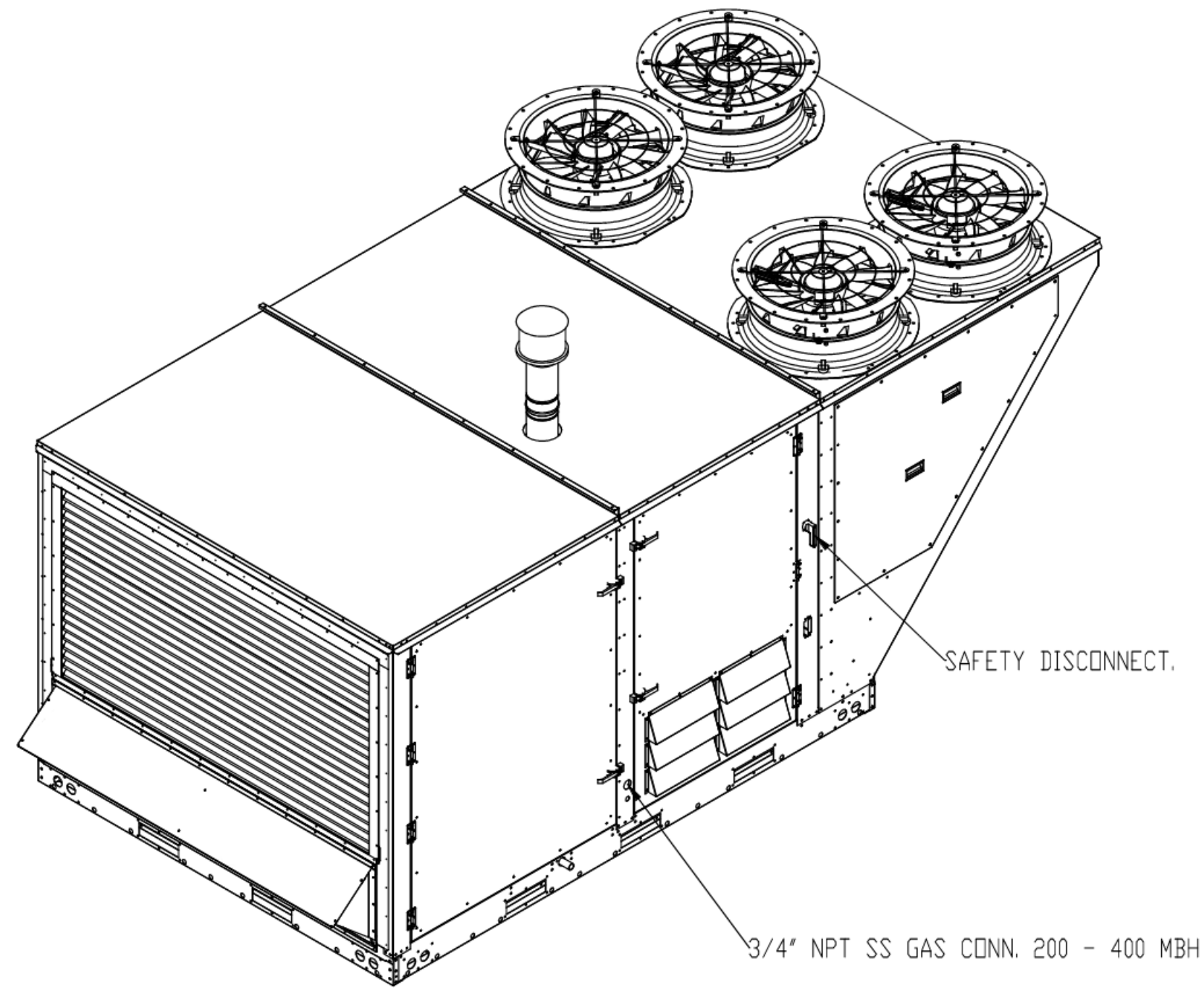
SHEET NO.
M3.1.8

FAN #1 (DDAS-1), #2 (DDAS-1) - CAS-HVAC4-1.400-22-40T-2 HEATER

NOTES:

1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. () DENOTES CORNER WEIGHT.
3. CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
4. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.

*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 801. 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 30.875" x 39.75"



REVISIONS	
NO.	DESCRIPTION

CAPTIVE

National Accounts

4641 Paragon Park Rd., Raleigh, NC 27616 PHONE: (919) 862-2410 FAX: 9192775948 EMAIL: reg15@captivewair.com

KROGER 541 - FT WORTH, TX - DDAS R2

113 EAST BONDS RAND ROAD, TAG: PO#

FORT WORTH, TX, 76179

DATE: 2/4/2025

DWG.#: 7318957

DRAWN BY:

SCALE: 1/2" = 1'-0"

MASTER DRAWING

SHEET NO. 3

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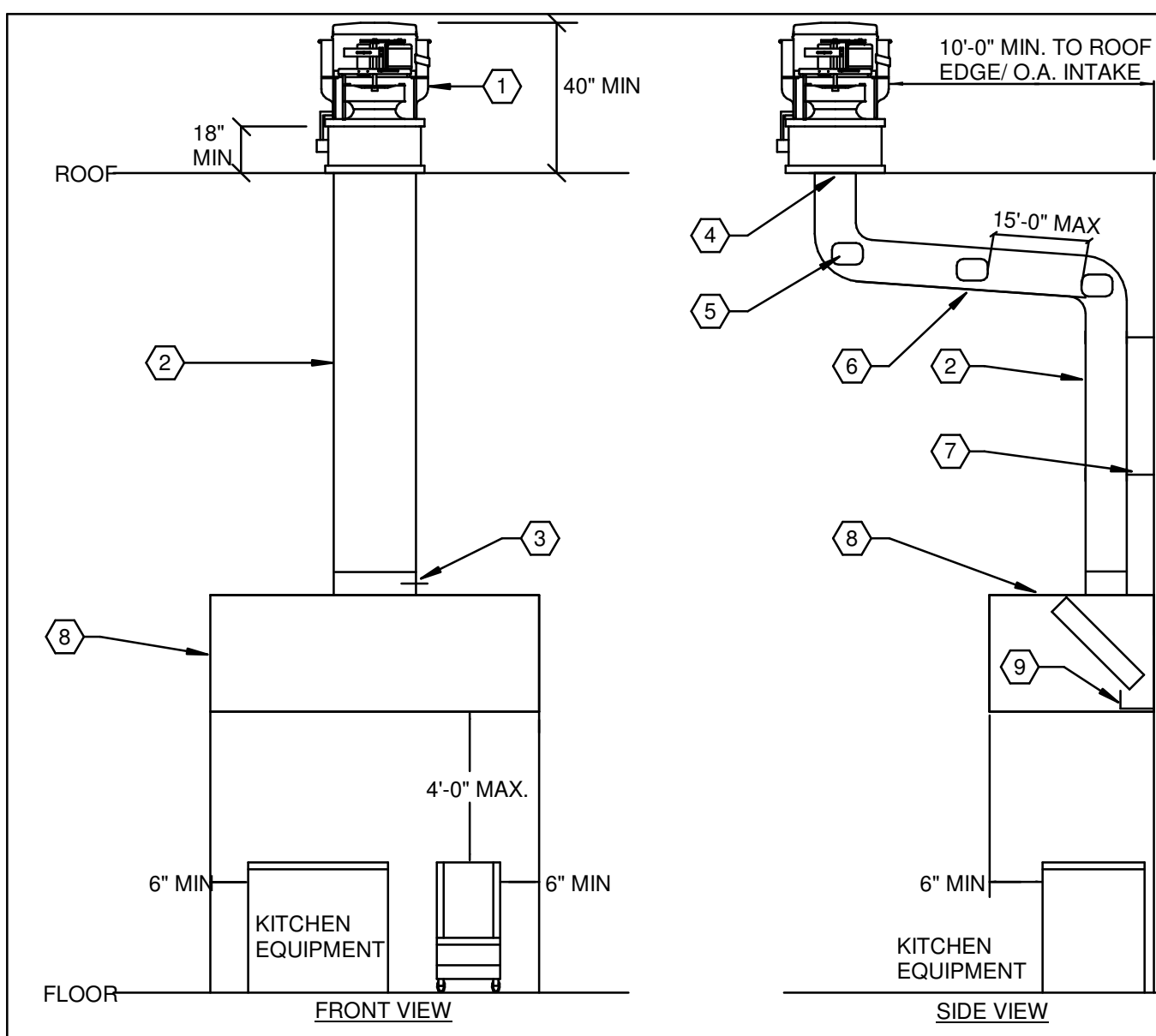
ISSUE/REVISION	DATE	DESCRIPTION
04/20/2023	90% OWNER REVIEW	
05/24/2023	100% BID PERMIT	
12/05/19/2025	BULLETIN NO. 12	

EXECUTED BY: KSL
REVIEWED BY: MCH

PROJECT TITLE
KROGER STORE
DAL541

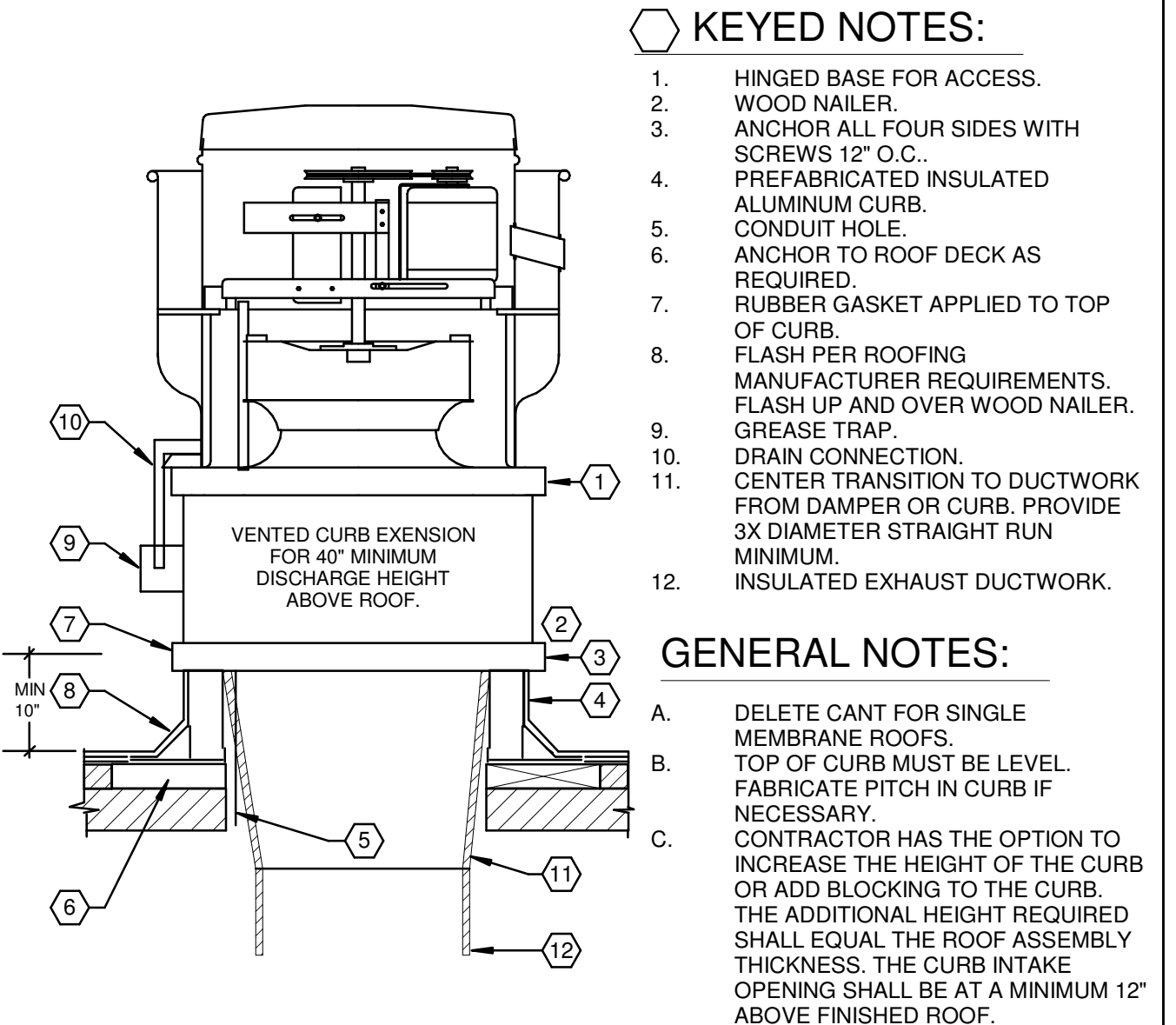
FORT WORTH, TX
COMMISSION NO. 522316
ISSUE DATE 05/24/23
SHEET TITLE
HVAC SECTIONS AND
DETAILS

SHEET NO.
M3.1.9

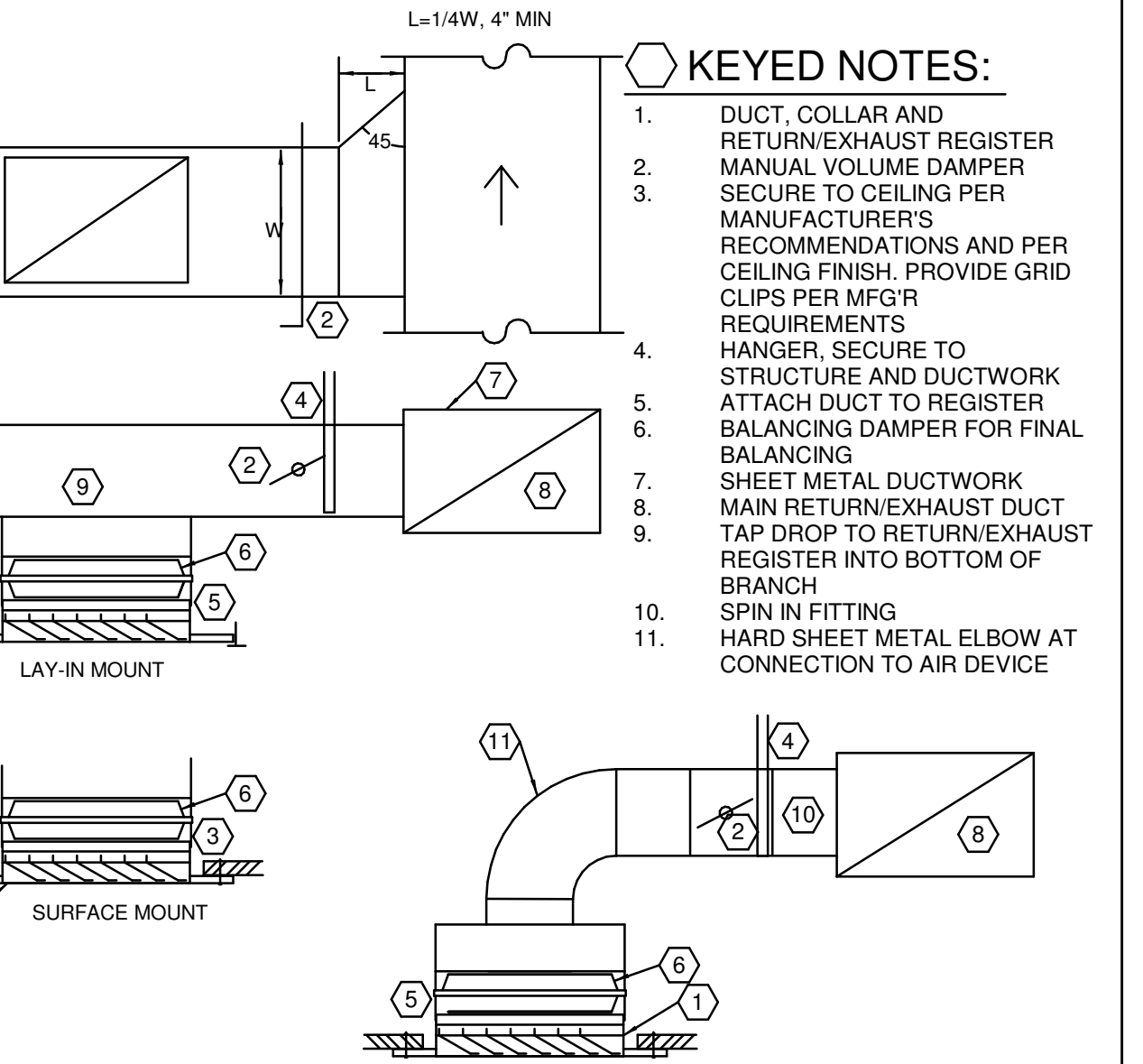


233813.00-04 - KITCHEN HOOD DETAIL UP BLAST
SCALE: NONE

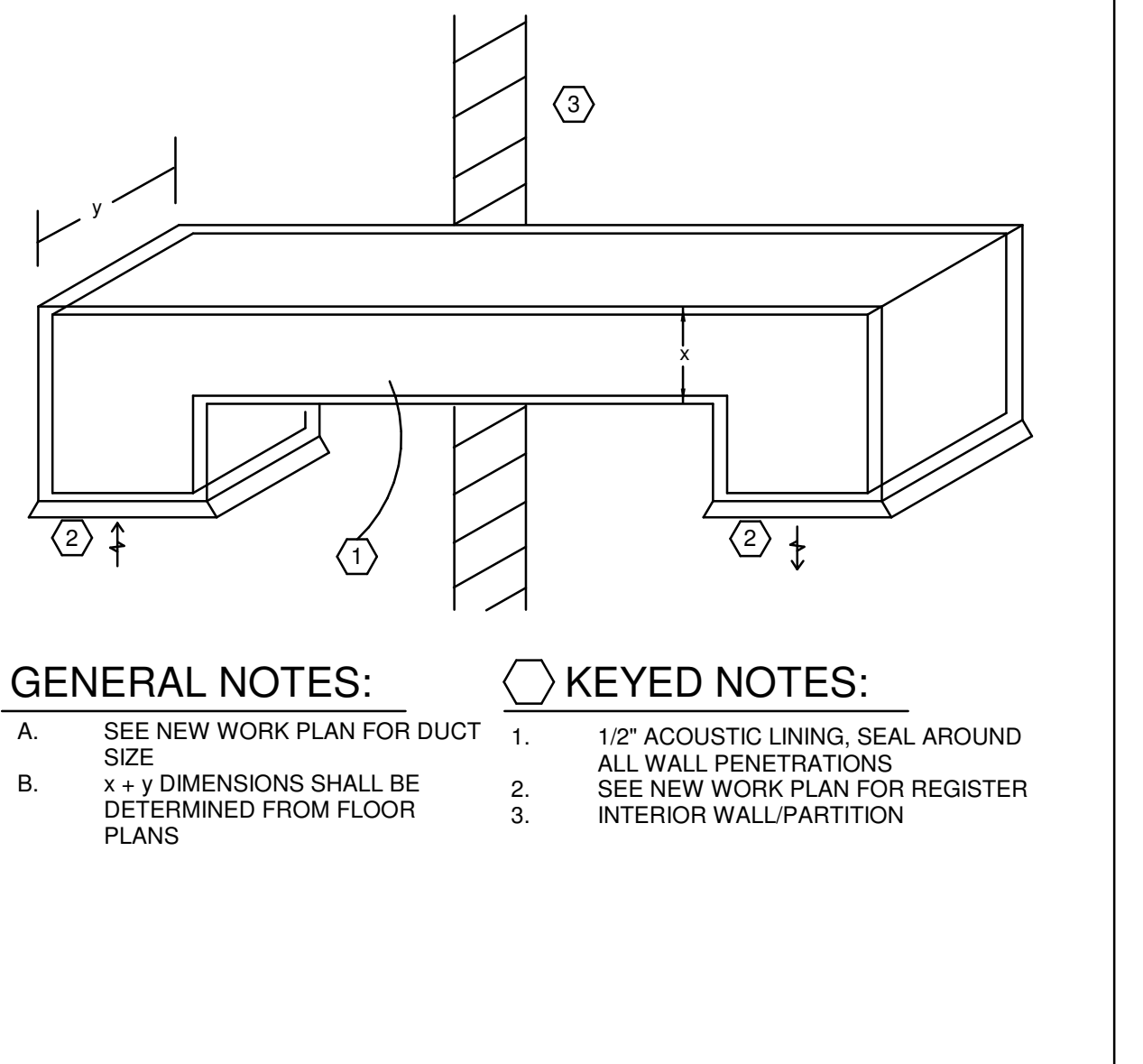
- KEYED NOTES:**
- KITCHEN EXHAUST FAN U.L. LISTED FOR GREASE (SEE KITCHEN EXHAUSTER DETAIL). FAN MOTOR SHALL BE OUT OF AIRSTREAM. PROVIDE GREASE CUP AND DRAIN.
 - 18 GAUGE INSULATED WELDED BLACK IRON OR 18 GAUGE INSULATED WELDED STAINLESS STEEL. DUCTWORK WRAPPED WITH 2 LAYERS OF ZERO CLEARANCE DUCT WRAP (TYPICAL).
 - HEAT SENSOR IN EACH COLLAR INTERLOCKED TO VENTILATION SYSTEM. FLANGED & GASKETED DUCT TO EXHAUST FAN CONNECTION.
 - CLEANOUT DOOR/LATCH (12"x12" MIN.) MADE OF 16 GAUGE WELDED BLACK IRON OR 18 GAUGE WELDED STAINLESS STEEL (TYPICAL).
 - MINIMUM 2% SLOPE TOWARD HOOD WITH CLEANOUTS A MINIMUM OF EVERY 15 FEET AND CHANGE IN DIRECTION.
 - GREASE DUCT SUPPORT IS TO BE SIZED, SPACED, AND INSTALLED BY CODE.
 - HOOD WITH ANSUL SYSTEM. MAINTAIN 1" CLEARANCE TO COMBUSTIBLES.
 - GREASE DRIP TRAY.
- GENERAL NOTES:**
- TYPE HOOD SHALL BE STAINLESS STEEL, 18 GAUGE, WITH WELDED SEAMS AND U.L. LISTED EXHAUST DUCT SHALL BE 18 GA. BLACK IRON OR 18 GA. STAINLESS STEEL, FINISH # 3, WITH CONTINUOUS LIQUID TIGHT WELDED JOINTS AND SEAMS.
 - AIR VELOCITY SHALL BE PER CODE AND AHJ.
 - PROVIDE INSULATION WRAP EQUAL TO 3M FIBRE MASTER DUCT WRAP WITH U.L. LISTINGS OF 723, 1978, AND 1479.
 - INSULATION SHALL BE A LIGHTWEIGHT, NON-ASBESTOS, HIGH TEMPERATURE, INORGANIC, CERAMIC FIBER BLANKET TOTALLY ENCAPSULATED IN FOLIOSCRIM HAVING A SERVICE TEMPERATURE RANGE UP TO 2300 DEGREE F.
 - INSULATION SHALL BE A 2-HOUR FIRE RESISTIVE RATED GREASE AIR DUCT ENCLOSURE AS A SHAFT ALTERNATIVE AND A METHOD FOR PROVIDING ZERO INCH CLEARANCE AROUND COMMERCIAL KITCHEN GREASE DUCT EXHAUST SYSTEMS TO COMBUSTIBLE MATERIALS.
 - ALUMINUM GREASE FILTER WITH TROUGH, SHALL BE INSTALLED IN THE HOOD IN COMPLIANCE WITH CODE. FILTERS SHALL BE MOUNTED AT AN ANGLE OF 45 DEGREES MINIMUM.
 - PROVIDE STAINLESS STEEL ENCLOSURE PANEL BETWEEN TOP OF KITCHEN HOOD AND CEILING, PER LOCAL CODE REQUIREMENTS.



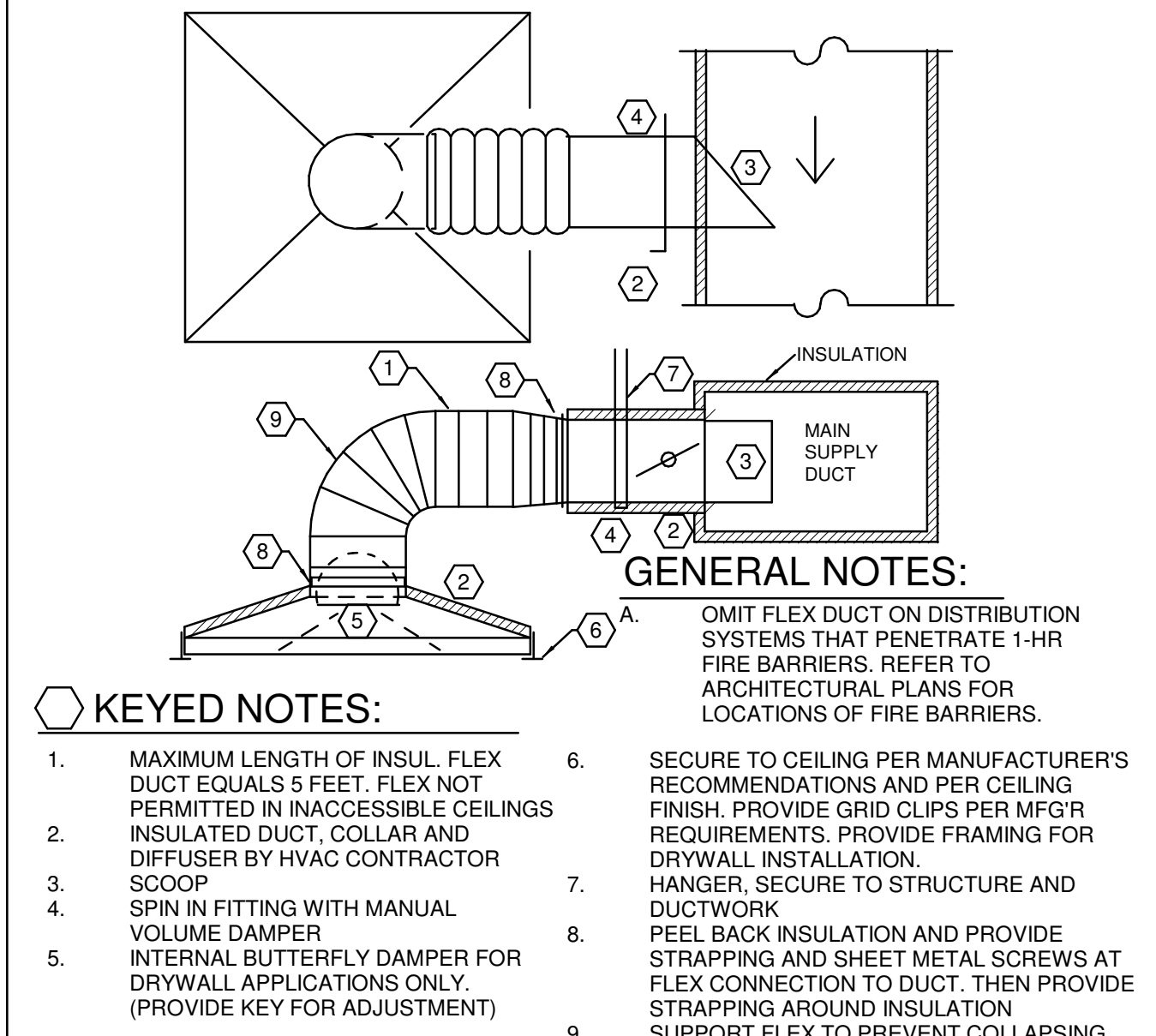
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SCALE: NONE



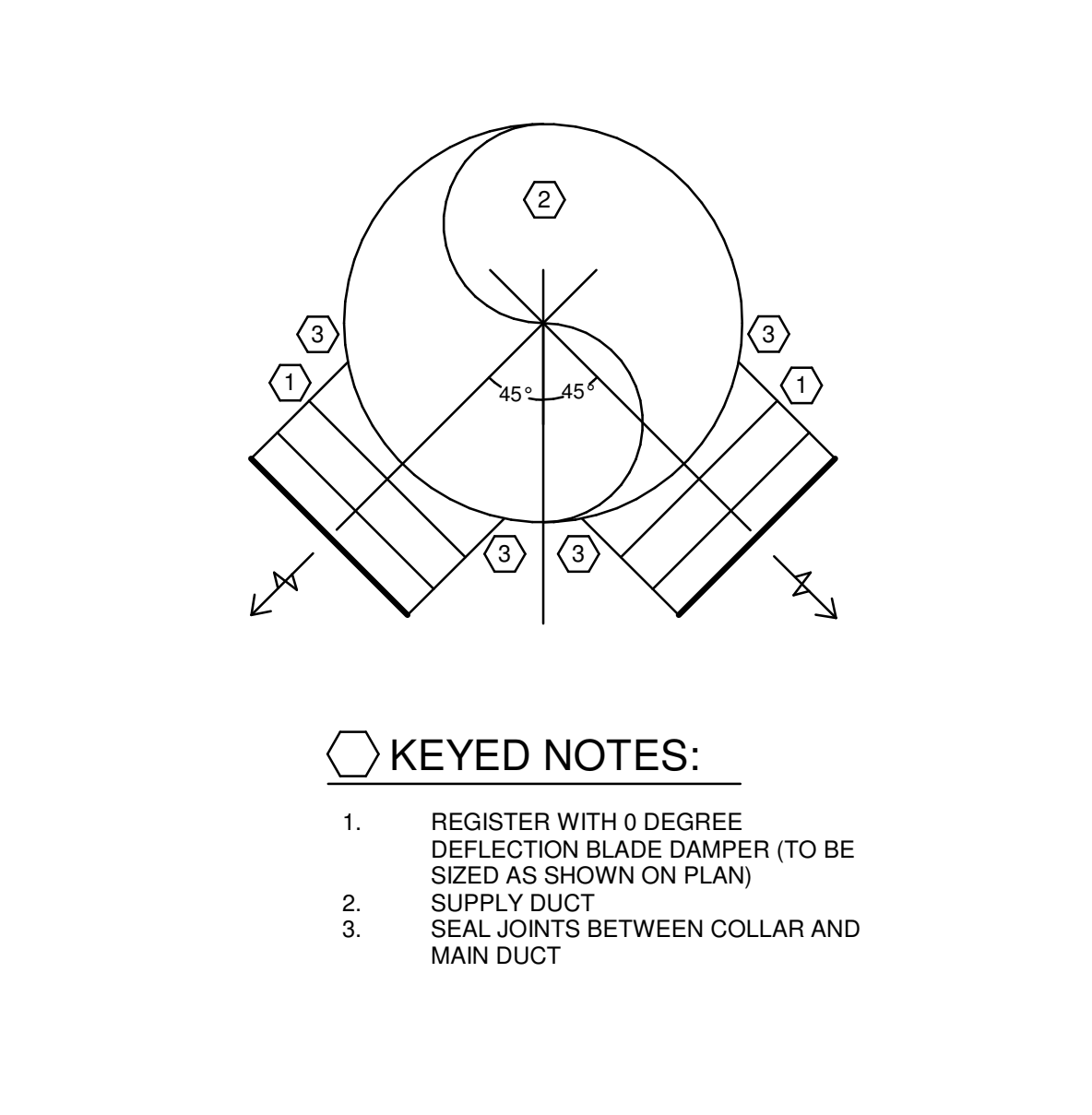
233713.00-21 - RETURN/EXHAUST REGISTER INSTALLATION
SCALE: NONE



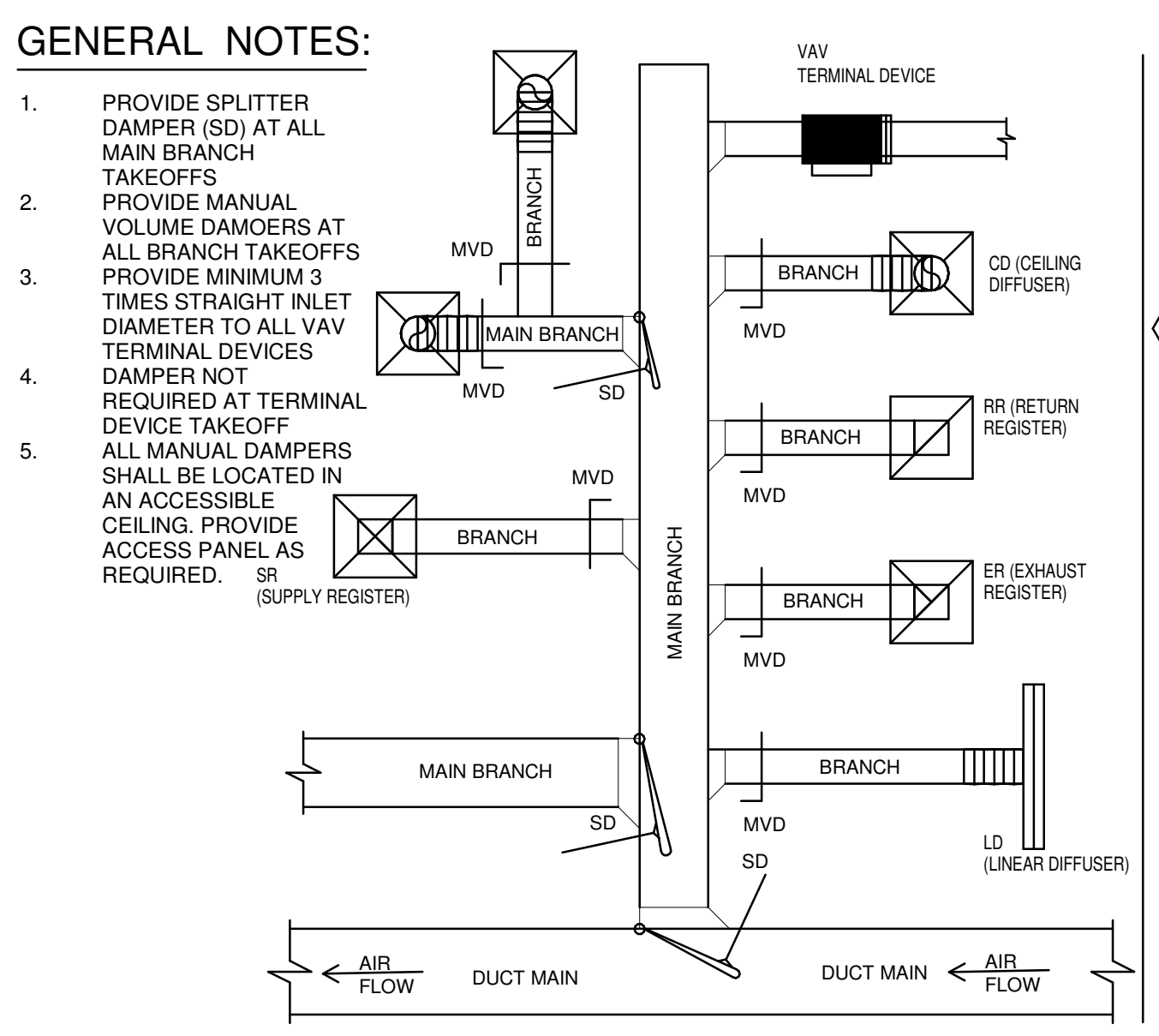
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SCALE: NONE



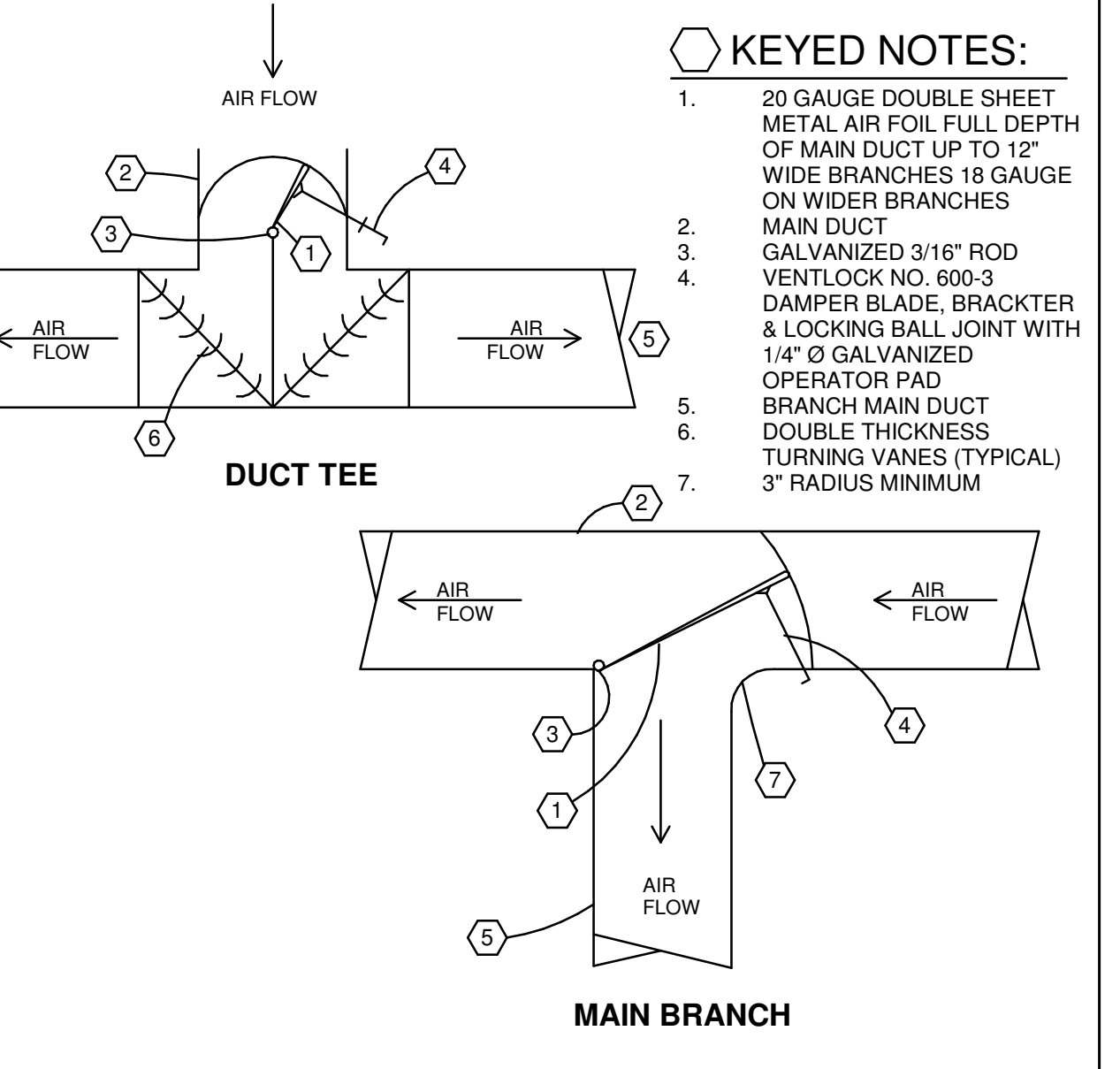
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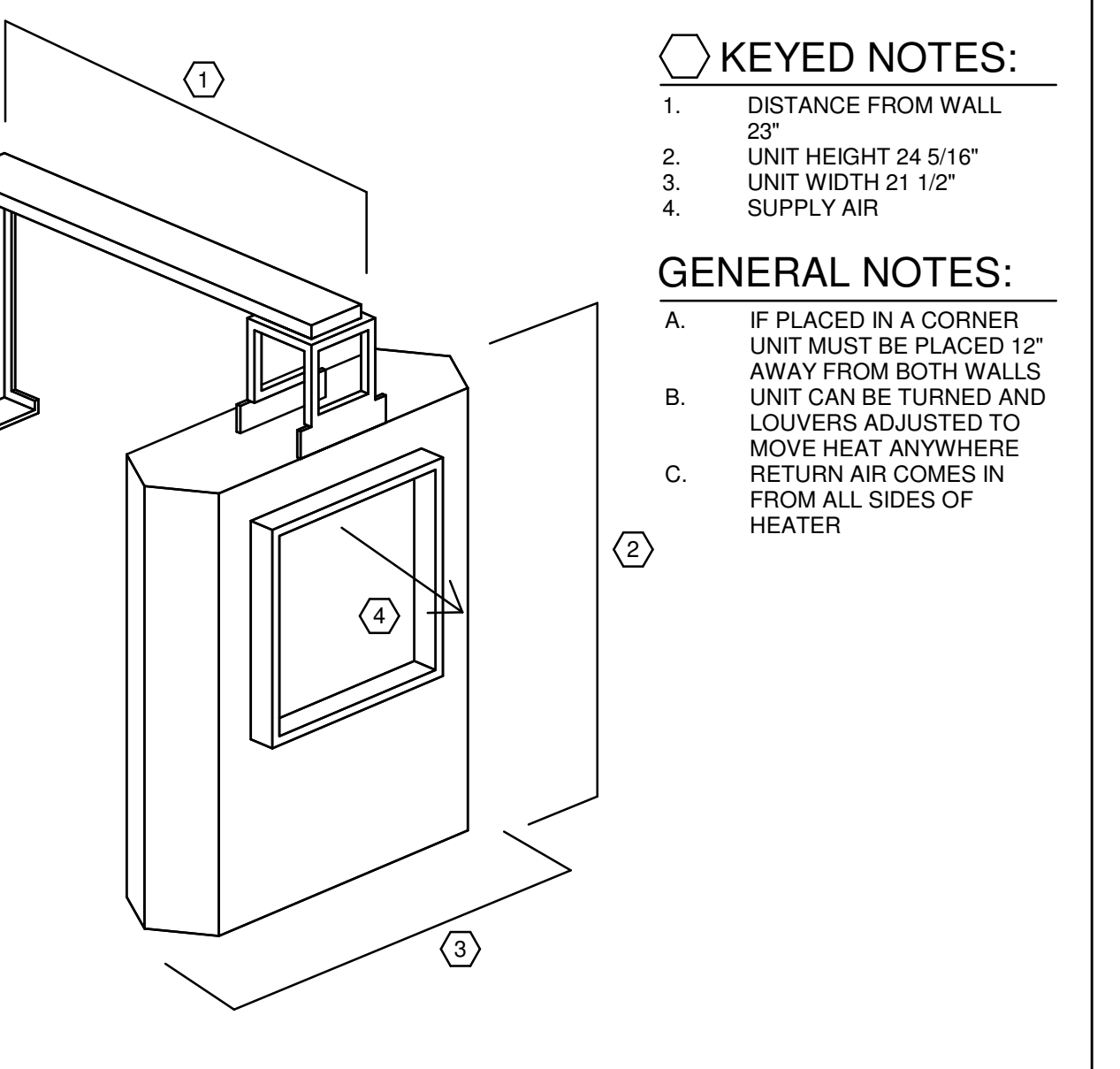
233713.00-02 - ANGLED REGISTER INSTALLATION
SCALE: NONE



233300.00-01 - MANUAL DAMPER DETAIL
SCALE: NONE



233713.00-21 - DUCT TEE
SCALE: NONE



238239.00-01 - ELECTRIC UNIT HEATER MOUNTING A
SCALE: NONE

