MECHANICAL LEGEND

SYMBOL	DESCRIPTION
DRAWING SET APPEARANCE	
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).	
PIPING LINE TYPES	
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
CD	CONDENSATE DRAIN
	SUPPLY MAIN OR BRANCH
	RETURN MAIN OR BRANCH
MECHANICAL AIR DEVICES	
SR	SUPPLY REGISTER
RR	RETURN REGISTER
ER	EXHAUST REGISTER
RG	RETURN GRILLE
CD	CEILING DIFFUSER
CD-10"Ø	2'x2' SQUARE CEILING DIFFUSER WITH 10" NECK
RCD	ROUND CEILING DIFFUSER
MECHANICAL DUCTWORK	
UP	SUPPLY DUCT WITH ELBOW TURNED UP
DN	SUPPLY DUCT WITH ELBOW TURNED DOWN
UP	RETURN DUCT WITH ELBOW TURNED UP
DN	RETURN DUCT WITH ELBOW TURNED DOWN
UP	EXHAUST DUCT WITH ELBOW TURNED UP
DN	EXHAUST DUCT WITH ELBOW TURNED DOWN
24X12 SA	SUPPLY DUCT
24X12 RA	RETURN DUCT
24X12 EA	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
S	DUCT MOUNTED SMOKE DETECTOR (HARD WIRE INTERLOCK TO FAN MOTOR BY E.C.) FURNISHED BY E.C., INSTALLED BY M.C.
MECHANICAL STATS & SENSORS	
TS	TEMPERATURE SENSOR
T	LOW VOLTAGE THERMOSTAT
R	REVERSE ACTING THERMOSTAT
HS	HUMIDITY SENSOR
CO2	CARBON DIOXIDE SENSOR
MECHANICAL MISCELLANOUS	
ANS	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 233713.00-21 AND 233713.00-04 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 233300.00-01 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: 93 DEG DRY BULB
75 DEG WET BULB
WINTER: 6 DEG DRY BULB

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2	02/16/2023	100% / BID / PERMIT

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REVIEWED BY: MCD

PROJECT TITLE
KROGER STORE
A492

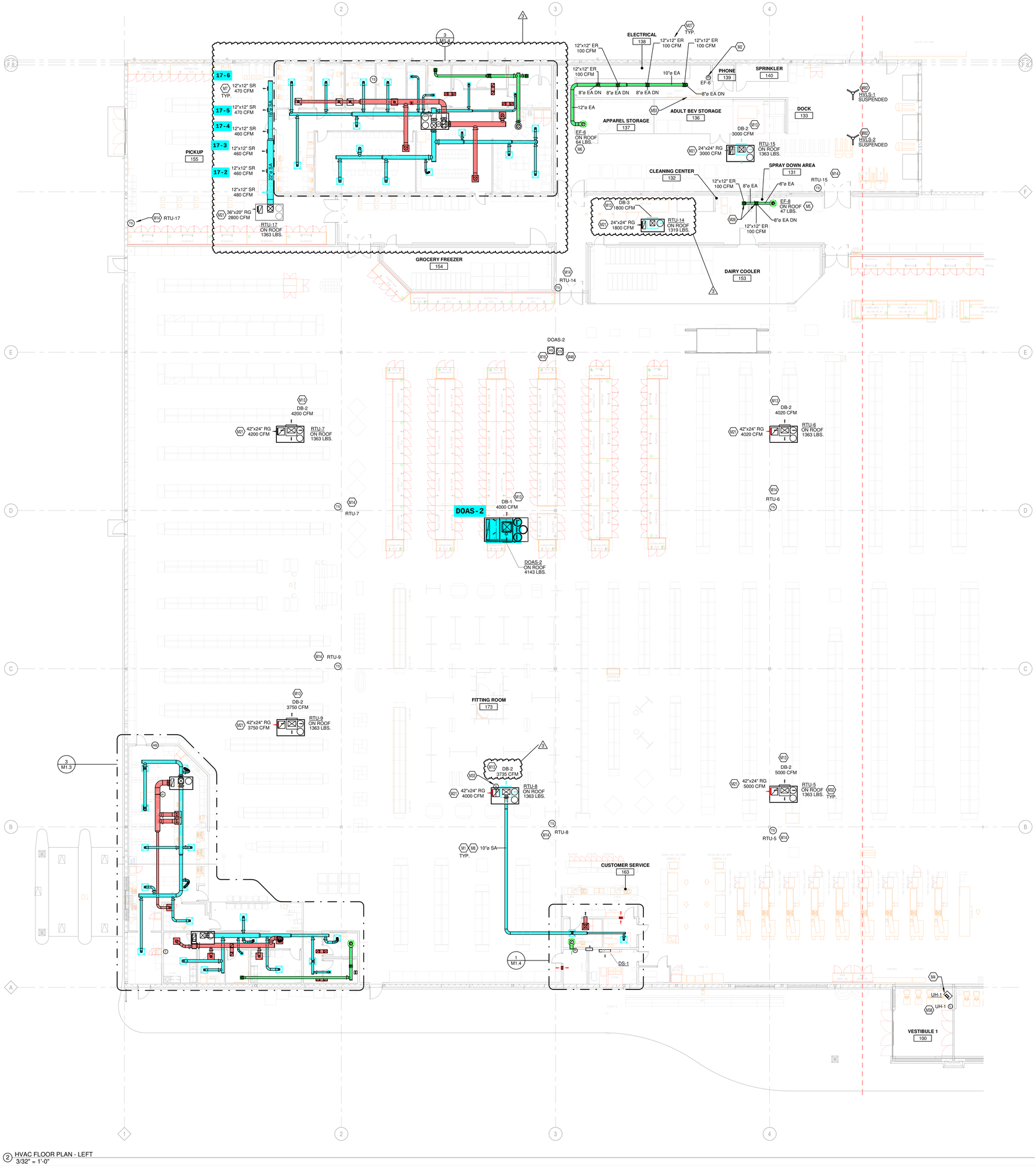
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COMMISSION NO. 522341
ISSUE DATE 02/16/23

SHEET TITLE
MECHANICAL ABBREVIATIONS, SYMBOLS, AND GENERAL NOTES

SHEET NO.
M0.1

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FILE LOCATION: C:\Users\kslaw\Documents\Revit\24567.00-26-MEP-Kroger A492 Maineville, OH - 2022_kslaw1.rvt



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

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 EQUAL. MOUNT 16'0" AFF TO BOTTOM OF UNIT. VERIFY LOCATION AND REQUIREMENTS TO OWNER PRIOR TO INSTALLATION. REFER TO 238239.00-01 ON MS.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 233713.00-02 ON MS.2 FOR INSTALLATION INFORMATION.
M8	DUCTWORK TO BE HELD TIGHT TO STRUCTURE.
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'-6" 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.
M26	MOUNT GRILLE/REGISTER 8'0" AFF.
M27	MOUNT GRILLE/REGISTER 10'0" AFF.
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 RETUN DUCTWORK, DOWNSTREAM OF FILTERS AND UPSTREAM OF ANY BRANCH CONNECTIONS. INSTALL SAMPLING TUBE(S) AND DETECTOR HOUSING IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. DETECTOR, FAN SHUTDOWN WIRING, AND CONTROLS BY OTHERS.
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.
M53	LOCATION OF EMS PANEL.
M82	FAN PROVIDED BY CONTRACTOR AND CONTROLLED BY LOCAL SWITCH. MOUNT FAN PER MANUFACTURER'S RECOMMENDATIONS.

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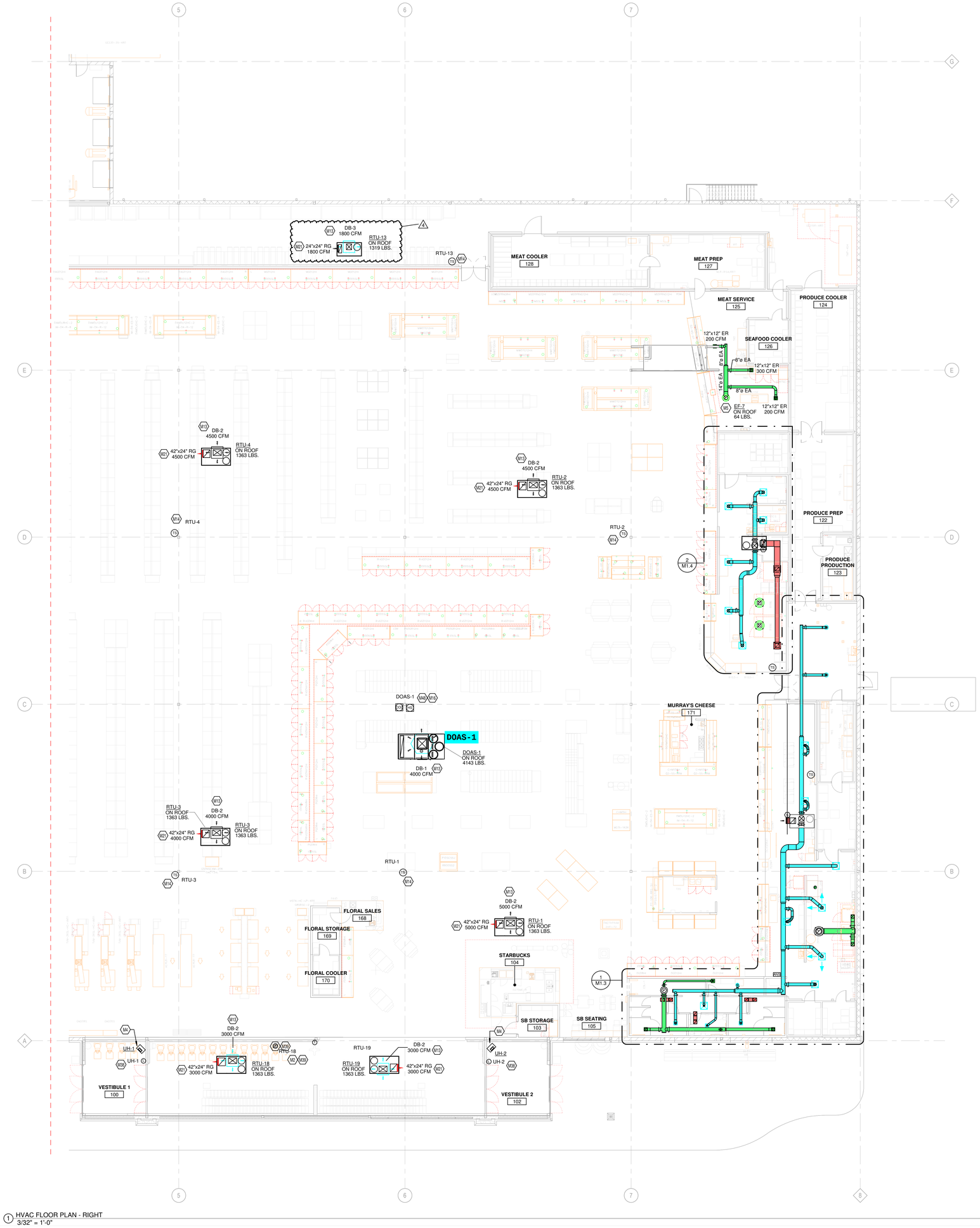
SHEET TITLE
HVAC FLOOR PLAN - LEFT

SHEET NO.
M1.1a

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KEYED NOTES

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 EQUAL. MOUNT 160" 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'-6" 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.
M38	THERMOSTAT TO BE CONFIGURED WITH AUTOMATIC HEATING SHUTOFF ACTIVATING WHEN OUTDOOR AIR TEMPERATURE REACHES 45 DEG F.
M39	THERMOSTAT TO BE CONFIGURED WITH AUTOMATIC CONTROLS TO LIMIT HEATING TO A 60 DEG F MAXIMUM AND COOLING TO AN 85 DEG F MINIMUM.
M48	PROVIDE CO2 SENSOR WHERE SHOWN. ROUTE CONTROL WIRING TO BUILDING CONTROL PANEL.



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

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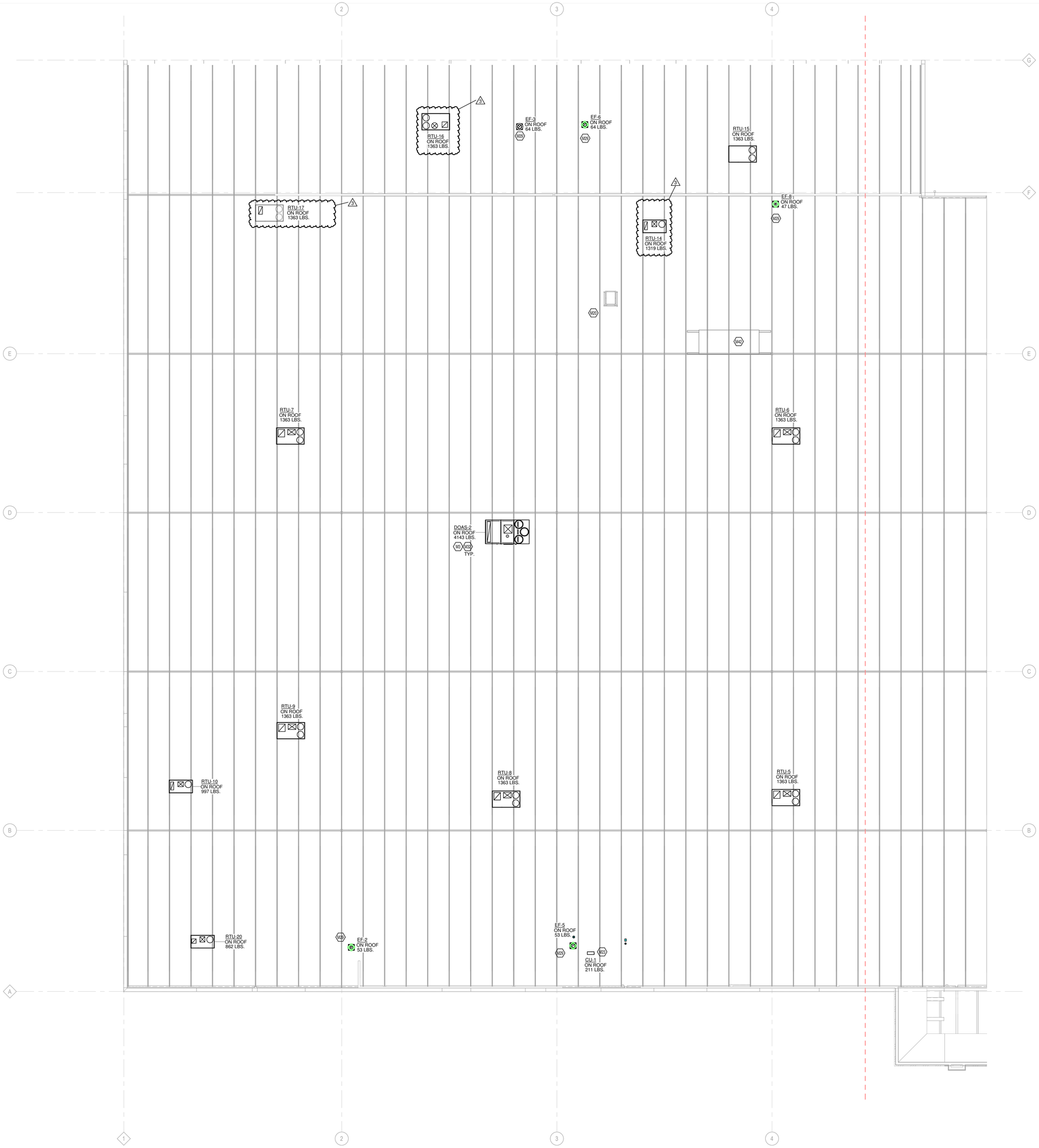
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M1.1b

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

KEYED NOTES

M3	REFER TO SHEETS M3.1.6 AND M3.1.7 FOR DETAILED INFORMATION REGARDING DOAS UNITS.
M20	ROOF HATCH
M23	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 MANUFACTURERS GUIDELINES. ROUTE INSULATED 3/4" CONDENSATE TO HUB DRAIN IN AREA. COORDINATE ORDERING OF REFRIGERANT LINESET 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.
M42	ROOF MOUNTED REFRIGERATION CONDENSER SHOWN FOR COORDINATION PURPOSES.

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2	04/18/2023	ADDENDUM NO. 3
3	08/01/2023	BULLETIN NO. 1

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PROJECT TITLE
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SHEET TITLE
HVAC ROOF PLAN - LEFT

SHEET NO.
M1.2a

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KEYED NOTES

M3	REFER TO SHEETS M3.1.6 AND M3.1.7 FOR DETAILED INFORMATION REGARDING DOAS UNITS.
M28	INSTALL EQUIPMENT A MINIMUM OF 10 FEET FROM ROOF EDGE OR PARAPET WALL. REFER TO STRUCTURAL DRAWINGS FOR DIMENSIONS.
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.
M42	ROOF MOUNTED REFRIGERATION CONDENSER SHOWN FOR COORDINATION PURPOSES.

RTU-13 ON ROOF 1319 LBS. M28
RTU-4 ON ROOF 1363 LBS.
RTU-2 ON ROOF 1363 LBS.
M42
EF-7 ON ROOF 64 LBS. M29
RTU-12 ON ROOF 997 LBS.
M29 EF-9 ON ROOF 79 LBS.
M29 EF-10 ON ROOF 79 LBS.
DOAS-1 ON ROOF 4143 LBS. M3 M32 TYP.
RTU-3 ON ROOF 1363 LBS.
RTU-11 ON ROOF 1319 LBS.
10"ø EA
M29 EF-4 ON ROOF 164 LBS.
RTU-1 ON ROOF 1363 LBS.
M29 EF-1 ON ROOF 64 LBS.
RTU-18 ON ROOF 1363 LBS.
RTU-19 ON ROOF 1363 LBS.

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

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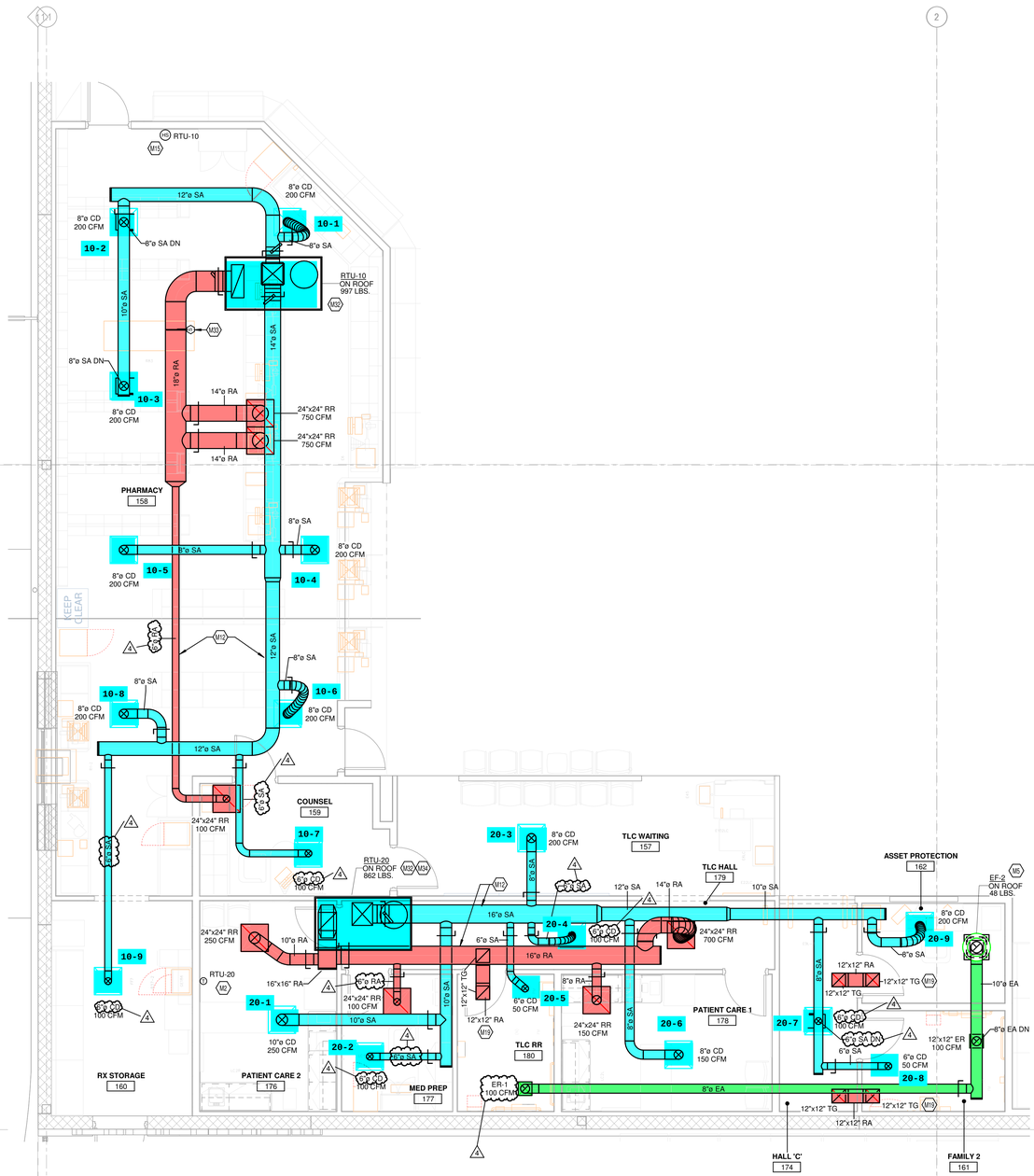
SHEET TITLE
HVAC ROOF PLAN - RIGHT

SHEET NO.
M1.2b

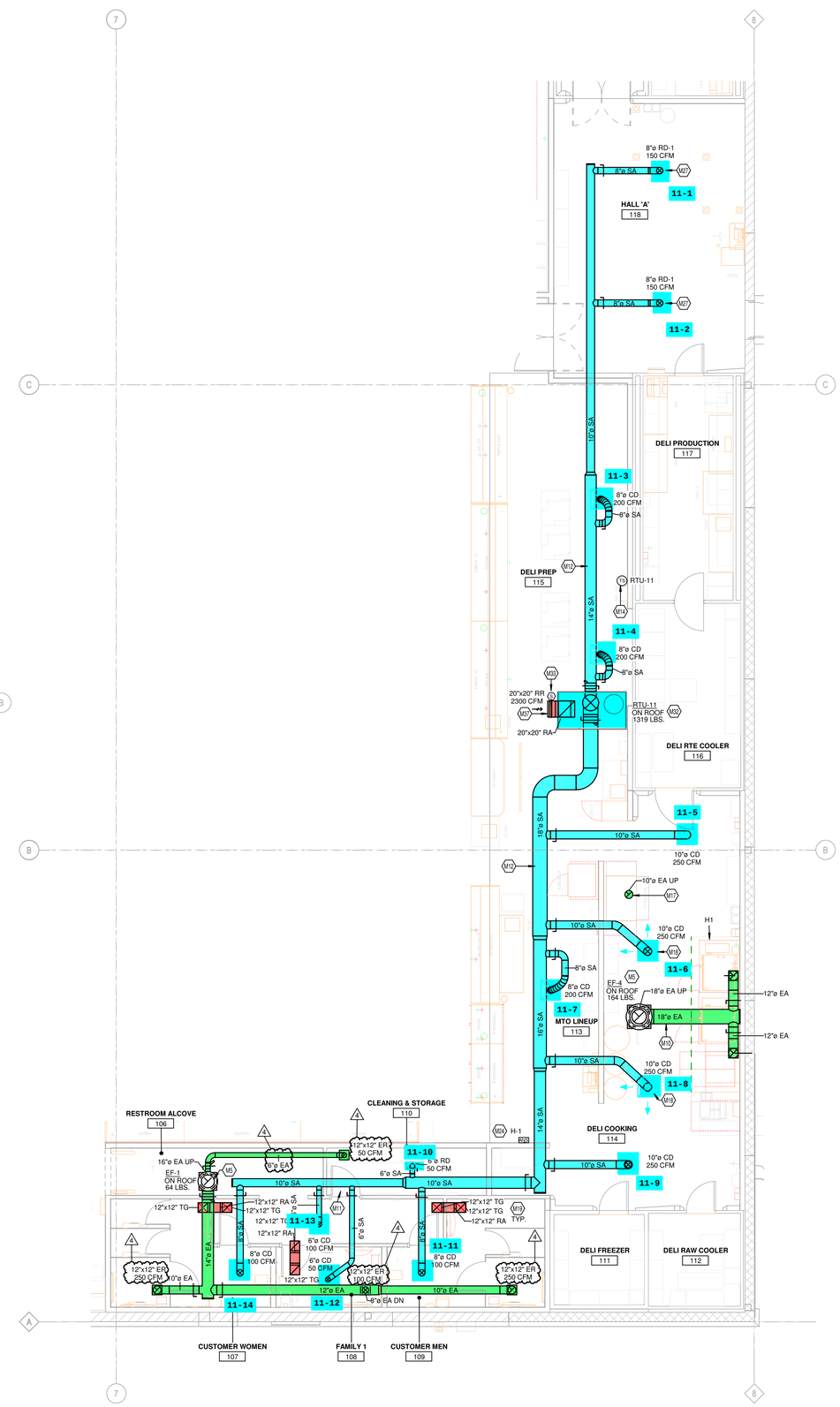
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KEYED NOTES

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.
M10	GREASE DUCT FROM EXHAUST HOOD TO OPENING THROUGH ROOF PER NFPA 96. MECHANICAL CONTRACTOR TO INSTALL PROVIDED HINGE KIT. DUCTWRAP IS TO RUN THE ENTIRE LENGTH OF GREASE DUCT FROM CEILING PENETRATION TO FAN. REFER TO HSD-4 AND HSD-4B ON M5.1, AND BOTH 233813.00-04 AND 233813.00-02 ON M5.2 FOR ADDITIONAL INFORMATION.
M11	UNDERCUT DOOR 1" TO ALLOW FOR RETURN AIRFLOW.
M12	ROUTE SUPPLY AND RETURN DUCTWORK ROUGHLY 2'0" 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.
M15	COMBINATION TEMPERATURE/RELATIVE HUMIDITY SENSOR FOR RTU FURNISHED BY ORIGINAL EQUIPMENT MANUFACTURER. ROUTE CONTROL WIRING THROUGH RTU AND BACK TO BUILDING CONTROL PANEL.
M17	UW-50 VENT KIT INCLUDED WITH UNIT AND SUPPLIED BY HOBART. VENT KIT AUTOMATICALLY REMOVES STEAM/CONDENSATION AT THE COMPLETION OF THE WAREWASH CYCLE. WAREWASH DOOR WILL NOT OPEN UNTIL THIS PROCESS IS COMPLETED. MECHANICAL CONTRACTOR TO CONNECT STAINLESS STEEL DUCT TO THE VENT KIT OPENING THROUGH ROOF. REFER TO HSD-8 FOR ADDITIONAL INFORMATION.
M18	DIFFUSER AROUND HOOD TO BE A 2-WAY DIFFUSER FACING AWAY FROM THE HOOD TO PREVENT INTERFERENCE WITH THE HOOD'S CONTAIN AND CAPTURE.
M19	INSTALL TRANSFER GRILLES IN WALL USING NOTES FROM DETAIL 233713.00-19 ON M5.2. CONFIRM FINAL LOCATION AND FINISH WITH ARCHITECT AND OWNER.
M24	HOOD ANSUL PULL STATION LOCATION. COORDINATE FINAL LOCATION WITH ELECTRICAL PLANS. PROVIDE NAMEPLATE AT STATION WITH HOOD NUMBER AND LOCATIONS. REFERENCE HSD-4A FOR ADDITIONAL INFORMATION.
M27	MOUNT GRILLE/REGISTER 10'0" AFF.
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 RETUN DUCTWORK, DOWNSTREAM OF FILTERS AND UPSTREAM OF ANY BRANCH CONNECTIONS. INSTALL SAMPLING TUBE(S) AND DETECTOR HOUSING IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. DETECTOR, FAN SHUTDOWN WIRING, AND CONTROLS BY OTHERS.
M34	THE TLC RTU-20 IS TO ONLY BE SUPPLIED WITH MERV 13 FILTERS.
M37	INSTALL TOP OF RETURN GRILLE 15'-0" AFF IN SOFFIT. COORDINATE FINAL LOCATION WITH ARCHITECT AND WITH DECOR. LOCATION OF DECOR TAKES PRECEDENCE OVER LOCATION OF RETURN GRILLE.



3 HVAC ENLARGED PLAN - PHARMACY & TLC
1/4" = 1'-0"



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

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ISSUE/REVISION

	DATE	DESCRIPTION
A	01/26/2023	90% OWNER REVIEW
	02/16/2023	100% / BID / PERMIT
1	03/06/2023	ISSUED FOR BID
3	08/01/2023	BULLETIN NO. 1
4	10/24/2023	BULLETIN NO. 2

EXECUTED BY: KSL
REVIEWED BY: MCD

PROJECT TITLE
KROGER STORE
A492

MAINEVILLE, OH

COMMISSION NO. 522341
ISSUE DATE 02/16/23

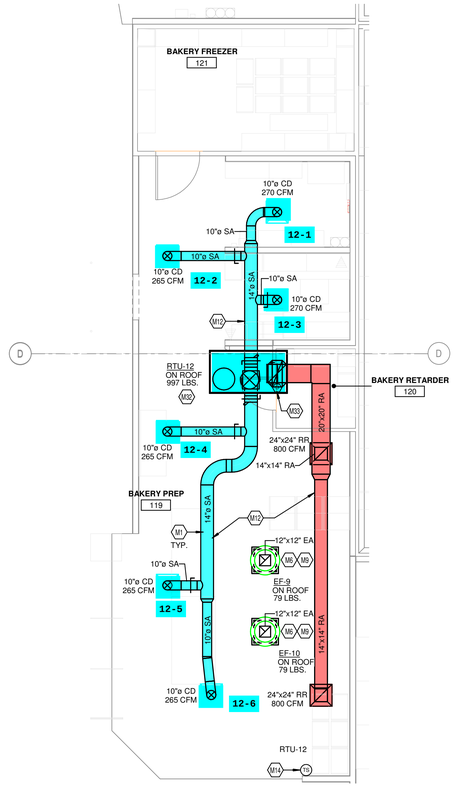
SHEET TITLE
HVAC ENLARGED PLANS

SHEET NO.
M1.3

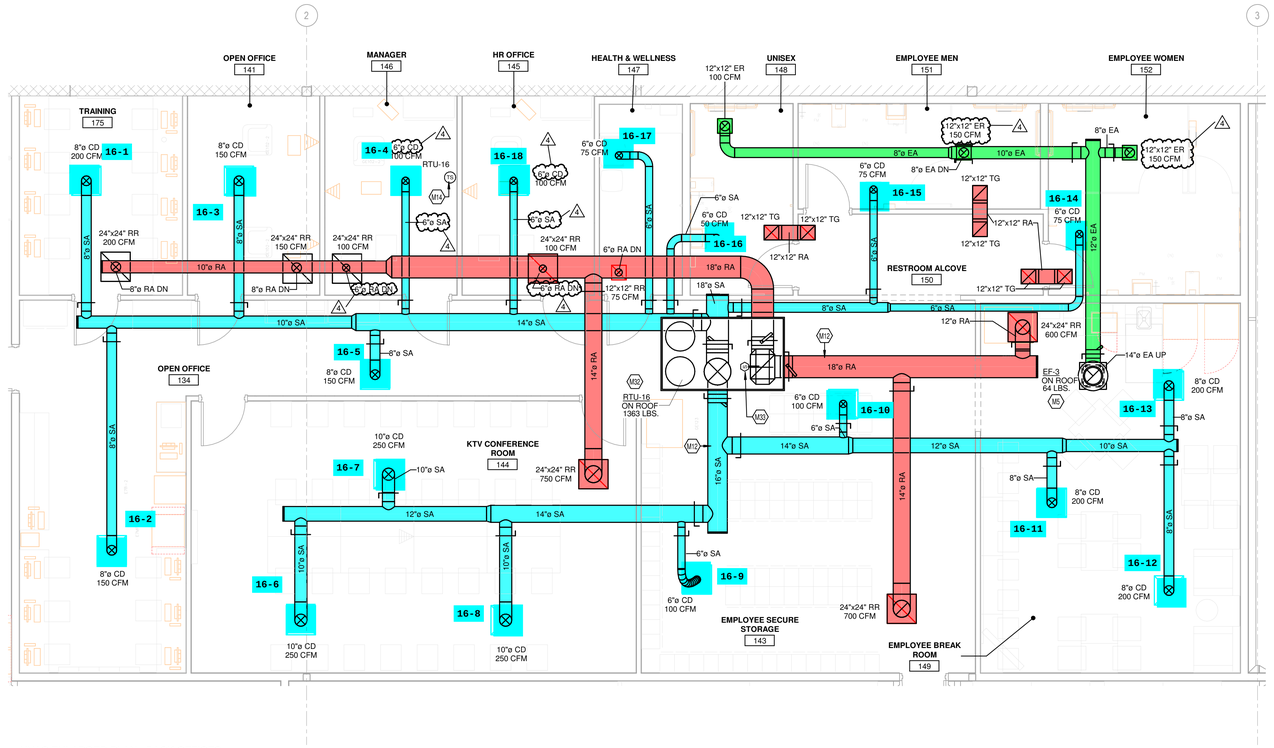
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KEYED NOTES

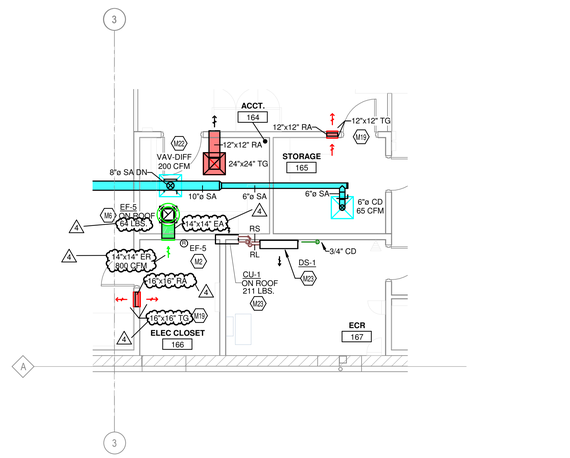
M1	CONTRACTOR TO REFER TO HSD-3 FOR DUCTWORK INSTALLATION INFORMATION.
M2	THERMOSTAT TO BE MOUNTED AT 4'0" AFF. PROVIDE LOCKABLE PROTECTIVE COVER OVER DEVICE.
M5	DUCT UP TO OPENING THROUGH ROOF CAPPED WITH CURB AND KROGER FURNISHED EXHAUST FAN.
M6	DUCT UP TO OPENING THRU ROOF. CONTRACTOR TO PROVIDE REVERSE 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 2'0" 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 233713.00-19 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	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 LINESET 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 RETUN DUCTWORK, DOWNSTREAM OF FILTERS AND UPSTREAM OF ANY BRANCH CONNECTIONS. INSTALL SAMPLING TUBE(S) AND DETECTOR HOUSING IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. DETECTOR, FAN SHUTDOWN WIRING, AND CONTROLS BY OTHERS.



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



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



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

N

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1	03/06/2023	ISSUED FOR BID
2	04/18/2023	ADDENDUM NO. 3
3	08/01/2023	BULLETIN NO. 1
4	10/24/2023	BULLETIN NO. 2

EXECUTED BY: KSL
REVIEWED BY: MCD

PROJECT TITLE
KROGER STORE
A492

MAINEVILLE, OH

COMMISSION NO. 522341
ISSUE DATE 02/16/23

SHEET TITLE
HVAC ENLARGED PLANS

SHEET NO.
M1.4

PLOTTED: 10/24/2023 11:11:29 AM
FILE LOCATION: C:\Users\ksladam\Documents\Revit\24901F.09.22-MEP-Kroger Add Maineville, OH - 2022_ksladam.rvt

HOOD INFORMATION – JOB#5831835

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)							HOOD CONSTRUCTION	HOOD CONFIG	
										WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP		END TO END	ROW
1	K1L – K-0002317	6024 ND-2	CAPTIVEAIRE	8' 0"	450 DEG	I	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	I	MEDIUM	150	1200			4"	12"	1200	1528	-0.294"	304 SS WHERE EXPOSED	RIGHT	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	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY		
1	K1L – K-0002317	SS BAFFLE WITH HANDLES	5	16"	16"	30%	3	L55 SERIES E26	NO							YES	418 LBS
2	K1R – K-0002317	SS BAFFLE WITH HANDLES	5	16"	16"	30%	3	L55 SERIES E26	NO	RIGHT	12"x60"x24"	TANK FS	4.0/4.0	SC-310110MA	1 LIGHT 1 FAN	YES	742 LBS

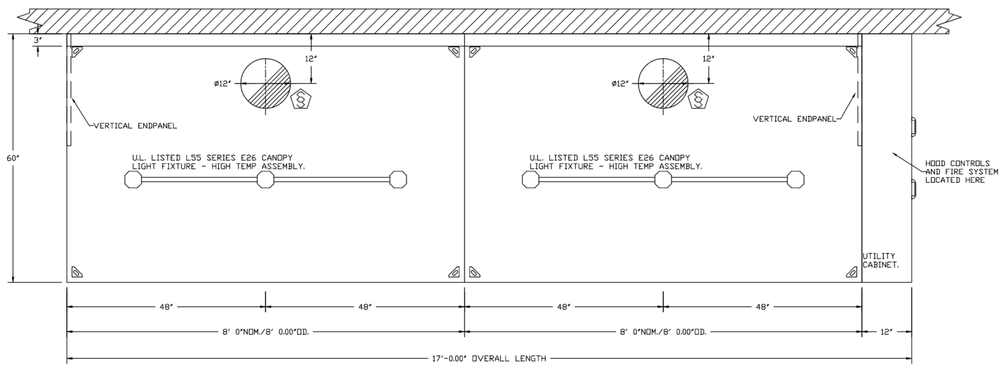
HOOD OPTIONS

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

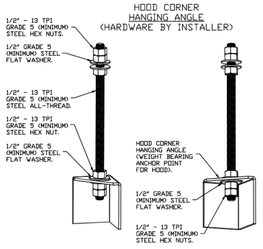


PLAN VIEW – HOOD #1 (K1L – K-0002317)
8' 0.00" LONG 6024ND-2

PLAN VIEW – HOOD #2 (K1R – K-0002317)
8' 0.00" LONG 6024ND-2

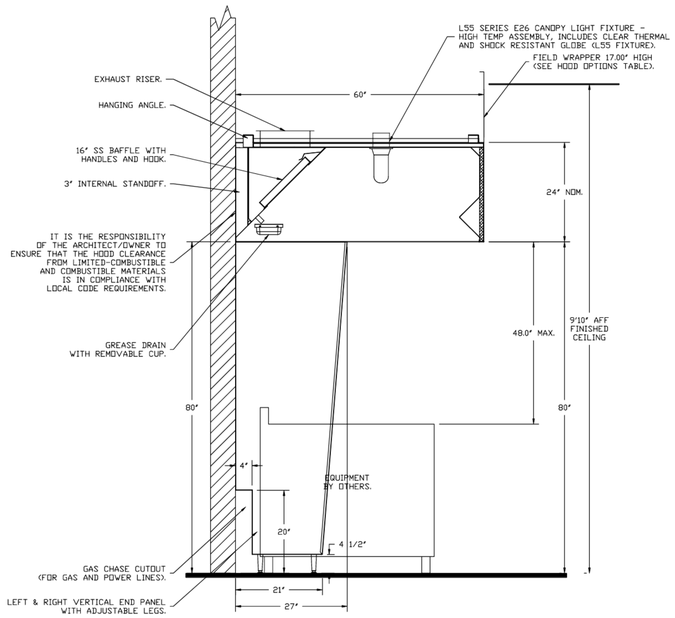
HVAC DISTRIBUTION NOTE

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.



SECTION VIEW – MODEL 6024ND-2

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

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KROGER #492 – MAINEVILLE, OH
State Route 48,
Maineville, OH, 45039

DATE: 1/27/2023

DWG.#: 5831835

DRAWN BY: JAC

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

MASTER DRAWING

SHEET NO. 1

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MAINEVILLE, OH

COMMISSION NO. 522341
ISSUE DATE 02/16/23

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.1

PLOTTED: 2/17/2023 2:15:18 PM FILE LOCATION: C:\Users\kslevin\Documents\Revit\5831835-20-24-MEP-Kroger AAM Maineville, OH - 2022_kslevin.rvt

FIRE SYSTEM INFORMATION – JOB#5831835

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	36	FIRE CABINET RIGHT	RIGHT, HOOD 2

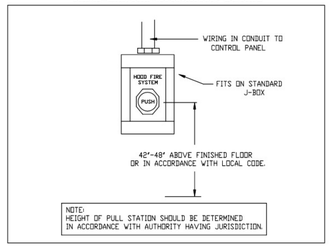
THE TANK WET CHEMICAL FIRE SUPPRESSION SYSTEM IS UL & ULC LISTED IN ACCORDANCE WITH UL300, UL1254, ULCORD-C1254.6 UNDER FILE# EX27953. ETL LISTED UNDER REPORT 10456027SSAT-003.

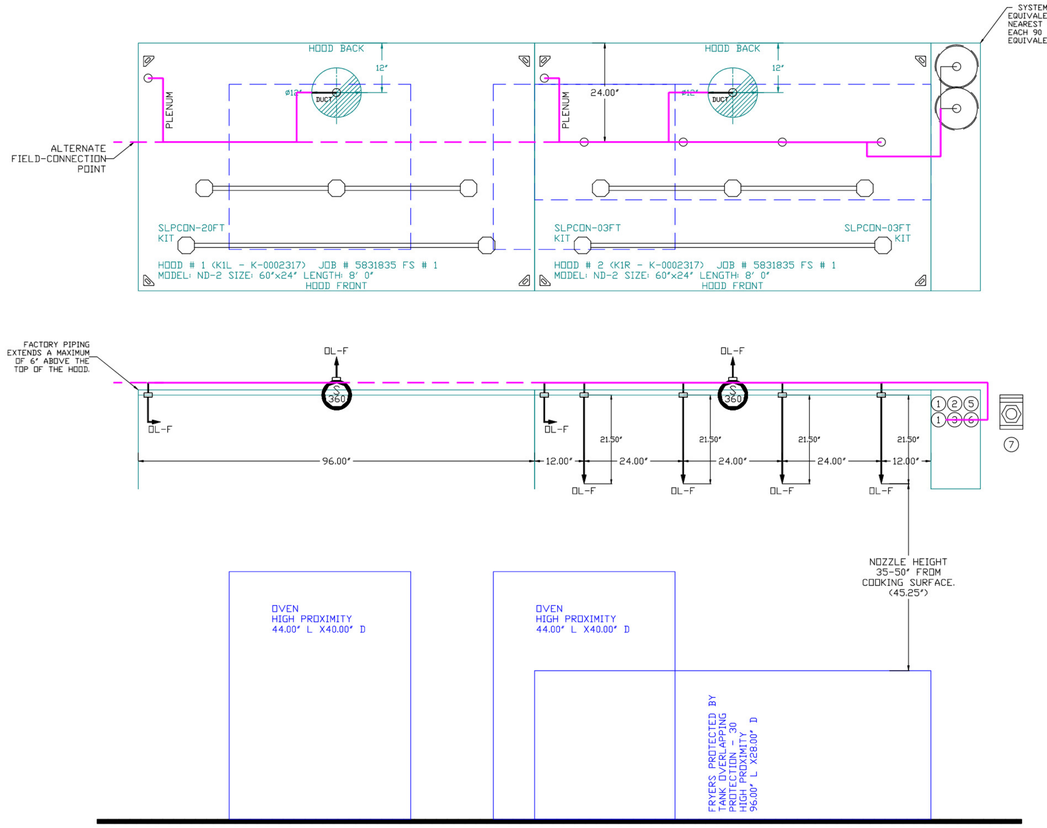
THE MICROPROCESSOR-BASED CONTROL BOARD IS ETL LISTED TO UL864 AND CAN/ULC-S527-11.

THE TANK WET CHEMICAL FIRE SUPPRESSION SYSTEM IS ACCEPTABLE FOR USE IN NEW YORK CITY, IS APPROVED PER FDNY COA #5870.

MEETS THE REQUIREMENTS OF NFPA 96 AND NFPA 17A.

TANK MANUAL ACTIVATION DETAIL





NOTES
- FIELD PIPE DROPS AS SHOWN
  PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

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

JOB #: 5831835.
JOB NAME: KROGER #492 - MAINEVILLE, OH.

SYSTEM SIZE: TANK-SP-2 TOTAL FP REQUIRED: 36.
HOOD # 1 8' 0.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 12" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 8' 0.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 12" DIA.
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

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

LEGEND – FIRE CABINET TANK SYSTEM

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

REVISIONS

	DESCRIPTION	DATE:
1		
2		
3		
4		

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HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.2

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FILE LOCATION: C:\Users\adam\Documents\Revit\24987-18-20-MEP-Kroger A492 Maineville, OH - 2020_adam.rvt

EXHAUST FAN INFORMATION – JOB#5831835

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	EF-1 K-0065079	1	DR30HFA	CAPTIVEAIRE	650	0.500	1327	ODP	0.250	0.1310	1	115	3.8		64	8.0
2	EF-2 K-0002358	1	DR10HFA	CAPTIVEAIRE	200	0.300	1258	ODP	0.060	0.0380	1	115	1.1		48	3.3
3	EF-3 K-0002355	1	DR30HFA	CAPTIVEAIRE	400	0.500	1096	ODP	0.250	0.0740	1	115	3.8		64	7.2
4	EF-4 K-0069365	1	DU180HFA	CAPTIVEAIRE	2400	1.250	1147	ODP,PREMIUM	2.000	1.0380	3	208	6.1	554 FPM	164	13.5
5	EF-5 K-0002355	1	DR30HFA	CAPTIVEAIRE	800	0.400	1429	ODP	0.250	0.1650	1	115	3.8		64	9.8
6	EF-6 K-0002355	1	DR30HFA	CAPTIVEAIRE	800	0.400	1429	ODP	0.250	0.1650	1	115	3.8		64	9.8
7	EF-7 K-0002355	1	DR30HFA	CAPTIVEAIRE	700	0.400	1313	ODP	0.250	0.1280	1	115	3.8	4	64	8.4
8	EF-8 K-0002358	1	DR10HFA	CAPTIVEAIRE	200	0.300	1250	ODP	0.060	0.0380	1	115	1.1		48	3.3
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

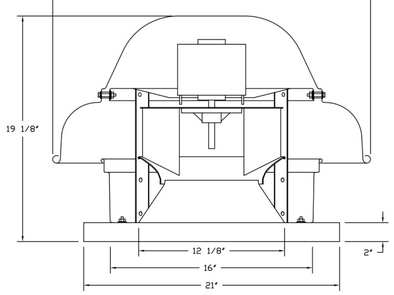
FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	EF-1 K-0002355	1	I 15-BDD DAMPER
		1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
2	EF-2 K-0002358	1	I 12-BDD DAMPER
		1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		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	GREASE BOX
		1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
5	EF-5 K-0002355	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 15-BDD DAMPER
		1	2 YEAR PARTS WARRANTY
6	EF-6 K-0002355	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 15-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
8	EF-8 K-0002358	1	I 12-BDD DAMPER
		1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
9	EF-9 K-0002372	1	GREASE BOX
		1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
10	EF-10 K-0002372	1	GREASE BOX
		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	WALL MOUNT
1	EF-1 K-0002355		YES					
2	EF-2 K-0002358		YES					
3	EF-3 K-0002355		YES					
4	EF-4 K-0069365	YES						
5	EF-5 K-0002355		YES					
6	EF-6 K-0002355		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) #5 (EF-5 K-0002355) #6 (EF-6 K-0002355), #7 (EF-7 K-0002355) - DR30HFA EXHAUST FAN



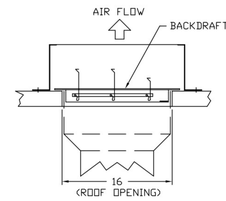
FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- UL705.
- SAFETY DISCONNECT.
- STANDARD BIRD SCREEN.
- SPEED CONTROL.

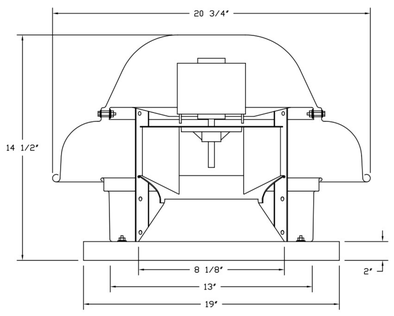
OPTIONS

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

BACKDRAFT DAMPER INSTALLATION



FANS #2 (EF-2 K-0002358) #8 (EF-8 K-0002358) - DR10HFA EXHAUST FAN



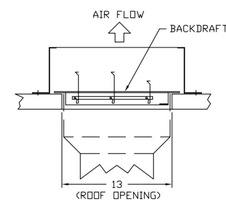
FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- UL705.
- SAFETY DISCONNECT.
- STANDARD BIRD SCREEN.
- SPEED CONTROL.

OPTIONS

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

BACKDRAFT DAMPER INSTALLATION



REVISIONS

	DESCRIPTION	DATE:
4		
3		
2		
1		

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KROGER #492 - MAINEVILLE, OH
State Route 48,
Maineville, OH, 45039

DATE: 1/27/2023

DWG.#: 5831835

DRAWN BY: JAC

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

MASTER DRAWING

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OWNER

Kroger

ISSUE/REVISION

	DATE	DESCRIPTION
	01/26/2023	90% OWNER REVIEW
	02/16/2023	100% / BID / PERMIT
3	08/01/2023	BULLETIN NO. 1
4	10/24/2023	BULLETIN NO. 2

EXECUTED BY: Author
REVIEWED BY: Checker

PROJECT TITLE
KROGER STORE
A492

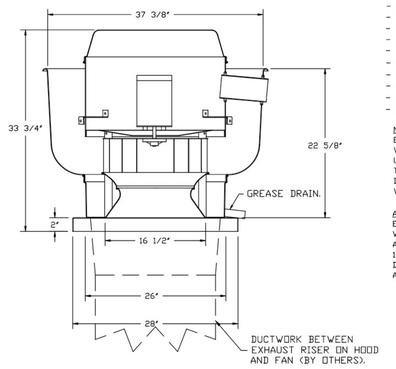
MAINEVILLE, OH
COMMISSION NO. 522341
ISSUE DATE 02/16/23

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.3

PLOTTED: 10/24/2023 11:11:58 AM
FILE LOCATION: C:\Users\adam\Documents\Revit\2469139-20-24EP-Kroger-A492-Maineville,OH-_002_adam.rvt

FAN #4 DU180HFA - EXHAUST FAN (EF-4 K-0069365)



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

FANS #9 (EF-9 K-0002372), #10 (EF-10 K-0002372) - DU33HFA EXHAUST FAN

FEATURES:

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

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

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

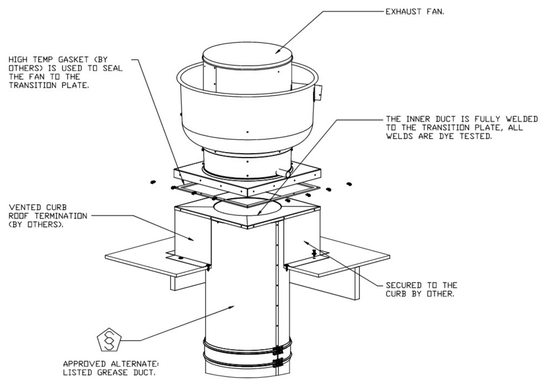
OPTIONS

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

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

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



REVISIONS

	DESCRIPTION	DATE:
1		
2		
3		
4		

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www.captiveaire.com

KROGER #492 - MAINEVILLE, OH
State Route 48,
Maineville, OH, 45039

DATE: 1/27/2023

DWG.#: 5831835

DRAWN BY: JAC

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

MASTER DRAWING

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OWNER
Kroger

ISSUE/REVISION

	DATE	DESCRIPTION
1	01/26/2023	90% OWNER REVIEW
	02/16/2023	100% / BID / PERMIT

EXECUTED BY: Author
REVIEWED BY: Checker

PROJECT TITLE
KROGER STORE
A492

MAINEVILLE, OH
COMMISSION NO. 522341
ISSUE DATE 02/16/23

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.4

PLOTTED: 2/17/2023 2:14:42 PM
FILE LOCATION: C:\Users\dwhitt\Documents\Revit\24567-19-29-MEP-Kroger A492 Maineville, OH - 2020_dwhitt.rvt

ELECTRICAL PACKAGE – JOB#5831835

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	ϕ	HP	VOLT	FLA
1		SC-310110MA	UTILITY CABINET RIGHT	UTILITY CABINET RIGHT	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	EF-4 K-0069365	EXHAUST	3	2.000	208	6.1
				HOOD # 2	1 FAN							

JOB NO 5831835 | MODEL NUMBER SC-310110MA | JOB NAME KROGER #492 - MAINEVILLE, OH | DRAWN BY | DATE 1/27/2023 | CONDUCTOR TYPE INSTALL | CONTROL EOP #1-1

DESCRIPTION OF OPERATION:
1 Power w/ control for 1 Exhaust fan, Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan. Factory wired for Remote Start/Stop, Fire Shutdown, Fire Alarm, Temperature sensor shipped loose for field installation, INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD

BREAKER PANEL TO PRIMARY CONTROL PANEL
Responsibility: Electrician

BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED

BREAKER PANEL — PRIMARY CONTROL PANEL

BREAKER 1PH 120 V 15 A — CONTROL POWER (TO TWO WIRE TO OPEN OF SHUNT TRIP BREAKER)

SET HOOD LIGHT BREAKER OVER W/ CONTROL POWER SWITCH #1

BREAKER 3PH 208 V MCA 7.6 A HOOP 15 A — EF-4 K-00 SM-1 — WIRE TO VFD QUICK CONNECTOR

CONTROL PANEL TO FANS
Responsibility: Electrician

PRIMARY PANEL — FANS

Loop Wiring SM-1 WIRE TO VFD QUICK CONNECTOR — FAN 04 — EF-4 K-00 — WIRE TO DISCONNECT

MUST HAVE ITS OWN CONDUIT DO NOT SHARE CONDUIT

CONTROL PANEL TO ACCESSORY ITEMS
Responsibility: Electrician

CONTROL PANEL — COMPONENT

CONTROL PANEL TO SWITCHES — ALL SWITCHES FACTORY WIRED CAT-5 CONNECTION

CONTROL PANEL TO HOOD LIGHTS — WIRE TO J-BOX ON TOP OF HOOD — BLACK WHITE GREEN — HOOD LIGHTS 1

CONTROL PANEL TO KITCHEN TEMP SENSOR — KITCHEN TEMP

CONTROL PANEL TO CAPTURE VOLUME SENSOR — FACTORY WIRED TEMPERATURE SENSOR MOUNTED IN HOOD CAPTURE VOLUME — HOOD 1 CAPTURE 1

CONTROL PANEL TO CAPTURE VOLUME SENSOR — 120VAC "S" CONTROL SIGNAL FROM CAPTURE VOLUME SENSOR MOUNTED IN HOOD CAPTURE VOLUME — HOOD 1 CAPTURE 1

THE FOLLOWING CONNECTIONS MAY OR MAY NOT BE REQUIRED DEPENDING ON SITE SPECIFICATIONS

CONTROL PANEL TO SIGNAL FOR EXTERNAL SHUNT TRIP — HOT TO SHUNT COIL — NEUTRAL FROM SHUNT COIL — SHUNT COIL — ST TERMINAL IS ENERGIZED IN FIRE CONDITION

CONTROL PANEL TO SIGNAL FOR EXTERNAL CONTACTOR COIL — HOT TO CONTACTOR COIL — NEUTRAL TO CONTACTOR COIL — CONTACTOR COIL — K1 TERMINAL IS DE-ENERGIZED IN FIRE CONDITION

CONTROL PANEL TO DRY CONTACT — COMMON — NORMALLY OPEN

CONTROL PANEL TO SUPPLY FAN SIGNAL — COMMON — NORMALLY OPEN — CONTACTS WILL CLOSE WHEN SUPPLY FAN IS ON

CONTROL PANEL TO EXTERNAL SWITCH — SIGNAL SWITCH THROUGH BMS TO ACTIVATE ZONED FANS AND LIGHTS — BMS SWITCH

CONTROL PANEL TO DRY CONTACT — COMMON — NORMALLY OPEN

CONTROL PANEL TO ON-OFF WITH EXHAUST FAN GROUP 1 — COMMON — NORMALLY OPEN — SOME CONTACTS WILL CLOSE COMMON TO NORMALLY OPEN WHEN EXHAUST FAN IS ON

CONTROL PANEL TO GAS VALVE 24V DC ONLY — POSITIVE TO GAS VALVE — NEGATIVE — ONLY ENERGIZED THROUGH LIFE MIN WHEN FIRE SYSTEM ARMED. NOT NEEDED IF USING 120V GAS VALVE.

CONTROL PANEL TO SPARE FIRE SYSTEM SPV CONTACT — COMMON — NORMALLY OPEN — SPARE CONTACTS WILL CLOSE COMMON TO NORMALLY OPEN WHEN FIRE SYSTEM IS IN FIRE ALARM. NOT TO BE USED TO POWER EQUIPMENT DIRECTLY. MAY BE TAKEN DIRECTLY TO BUILDING FIRE SUPPRESSION CONTROLS

CONTROL PANEL TO FIRE SYSTEM
Responsibility: ALARM CONTRACTOR

CONTROL PANEL — COMPONENT

CONTROL PANEL SIGNAL FOR BUILDING FIRE ALARM PANEL — J9 — PJ1 — WIRE DIRECTLY TO ZONE CIRCUIT BOARD. ALL WILL MAKE ALL IN FIRE CONDITION — BUILDING ALARM PANEL FIRE INPUT

CONTROL PANEL SIGNAL FOR BUILDING TROUBLE ALARM — P3C — P3D — FACTORY WIRED NORMALLY CLOSED CONTACTS WILL MAKE TRC TO TBL IN TROUBLE CONDITION — COMMON — NORMALLY CLOSED — BUILDING ALARM PANEL

CONTROL PANEL TO FIRE SYSTEM
Responsibility: CERTIFIED INSTALLER

CONTROL PANEL — COMPONENT

CONTROL PANEL TO DUCT MOUNTED FIRE DETECTION STAT(S) — FIRE STAT SUPERVISED LOOP May be wired factory and field wiring. See Installation Schematic. Multiple fire sensors possible. MAX TEMP 135°F (57°C) Supervised Loop wiring in conduct to FS-01 to FS-02 to FS-03 to FS-04 to FS-05 to FS-06, Sensors or jumper. — FS-01 FS-02 FS-03 FS-04 FS-05 FS-06 Fire Stat

CONTROL PANEL TO FIRE SYSTEM PULL STATION — PULL STATION — MS-01 Micro SW — AUX-01 Activated Coil — MAKE AUX-01 BREAK — MAKE MS-01 BREAK — Manual Activation Device

CONTROL PANEL TO MASTER FS BOARD. — ECP01 — CAT-5 CONNECTION — ADDITIONAL DEVICES MAY BE INLINE — PLACE END OF LINE PLUG IN EMPTY JACK ON COLIGHA J-XD — DO NOT PLUG INTO ANY OTHER COMPONENT IN SERIES — CORE PCB — EOL — COLIGHA J-XD

INTERLOCK NETWORK CONTROL PANEL TO MASTER FS PANEL — SHIELDED TWISTED PAIR — BLACK — RED — SHIELD — MASTER CORE — RS-485 CORE INTERLOCK — RS-485 CORE INTERLOCK

XXX TO LINE TERMINAL OF ALL CORE PANELS THAT NEED ACTIVATE FROM THIS PANEL. SEE SPV SWITCHES PER FIRE SYSTEM MANUAL

DRY CONTACTS (SHOWN DE-ENGERGIZED)

RS-20-1 — TROUBLE RELAY. Contact terminals 1&2 CLOSE when system is in trouble. Contact terminals 1&3 is the mode if the system is on.

RS-19-1 — COOKING EQUIPMENT DISABLE RELAY. 1&2 CLOSE N/O Switch, wire ERC and ERS terminals to the terminals in UDS panel.

RS-17-1 — FIRE SYSTEM DRY CONTACTS. Dry contacts will make C2 to ARE when system is armed.

RS-10-1 — INTERLOCK FOR AUTOMAN ACTIVATION. Used for activating 120V automan gas valve shutoff. Will open during active fire condition.

JOB NAME KROGER #492 - MAINEVILLE, OH — SC-310110MA — DESCRIPTION OF OPERATION: Fire System W/ TANK FS - 6/45 — JOB NO 5831835 — DRAWN BY JAC — DATE 1/27/2023 — CONDUCTOR TYPE FACTORY — CONT. NO ECP #1-6

CONTROL PANEL TO FIRE SYSTEM
Responsibility: CERTIFIED INSTALLER

CONTROL PANEL — COMPONENT

CONTROL PANEL TO DUCT MOUNTED FIRE DETECTION STAT(S) — FIRE STAT SUPERVISED LOOP May be wired factory and field wiring. See Installation Schematic. Multiple fire sensors possible. MAX TEMP 135°F (57°C) Supervised Loop wiring in conduct to FS-01 to FS-02 to FS-03 to FS-04 to FS-05 to FS-06, Sensors or jumper. — FS-01 FS-02 FS-03 FS-04 FS-05 FS-06 Fire Stat

CONTROL PANEL TO FIRE SYSTEM PULL STATION — PULL STATION — MS-01 Micro SW — AUX-01 Activated Coil — MAKE AUX-01 BREAK — MAKE MS-01 BREAK — Manual Activation Device

CONTROL PANEL TO MASTER FS BOARD. — ECP01 — CAT-5 CONNECTION — ADDITIONAL DEVICES MAY BE INLINE — PLACE END OF LINE PLUG IN EMPTY JACK ON COLIGHA J-XD — DO NOT PLUG INTO ANY OTHER COMPONENT IN SERIES — CORE PCB — EOL — COLIGHA J-XD

INTERLOCK NETWORK CONTROL PANEL TO MASTER FS PANEL — SHIELDED TWISTED PAIR — BLACK — RED — SHIELD — MASTER CORE — RS-485 CORE INTERLOCK — RS-485 CORE INTERLOCK

XXX TO LINE TERMINAL OF ALL CORE PANELS THAT NEED ACTIVATE FROM THIS PANEL. SEE SPV SWITCHES PER FIRE SYSTEM MANUAL

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JOB NAME KROGER #492 - MAINEVILLE, OH — SC-310110MA — DESCRIPTION OF OPERATION: Fire System W/ TANK FS - 6/45 — JOB NO 5831835 — DRAWN BY JAC — DATE 1/27/2023 — CONDUCTOR TYPE FACTORY — CONT. NO ECP #1-7

MOTOR POWER CIRCUIT

UNLESS SPECIFIED OTHERWISE, ALL FACTORY AC WIRING 16 AWG. ALL FACTORY DC WIRING 18 AWG.

J9 120V — CONTROL INPUT 120V H1=LINE, N1=NEUTRAL. 15A BREAKER. DO NOT CONNECT TO SHUNT TRIP BREAKER. SEE INSTALLATION SCHEMATIC FOR ADDITIONAL REQ. TERMINAL GA2 USED FOR 120V POWERED GAS VALVES ONLY — PANEL LID-1

J7 120V — DC- — DC+ — PR — 3RD1

NOTE All Items on ECPM03 J3 line to be daisy chained from one component to the next, with EOL104 at end of line. Place PN EOL104 in empty RJ45 port. ECPM03/DAISY CHAIN — ECPM03 or Previous EOL — NOTE: Configure ECPM03 for CORE MASTER CORE

MAKE UP AIR INTERLOCK JUMPER JUMPER — ECPM03 ECPM03

AR1 JUMPER FIRE SYSTEM — SF1 FAN — EF1 FAN — EF2 FAN — SECONDARY PANEL COOLING IF NECESSARY — PANEL COOLING

3 PH 208 V 15 A — 14 AWG — MTR-EF-4 K-00 FLA-6.1 HP-2.000 F100-01 P200AC/A F107-00 P107-00 P108-01 P108-04 F108-05 F107-01 F107-02 P104-025 F40-01

DRY CONTACTS (SHOWN DE-ENERGIZED)

14 AWG RA-2-1 — ON/OFF WITH 1ST STEP — 14 AWG RA-2-2 — ON/OFF WITH 2ND STEP — 14 AWG RA-3-1 — 14 AWG RA-3-2

24 X 18 X 8.62 BOX

FACTORY WIRING SCHEMATIC CIRCUIT BOARDS DCV Rev. 2.14.00 HMI Rev. 2.14.00

DCV — 24 VDC RELAY — NO NC COM — 24 VDC RELAY — NO NC COM

HMI — 24 VAC/VDC RELAY — NO NC COM — 24 VDC RELAY — NO NC COM

COMPONENT LIST

LABEL	DESCRIPTION
DCV	Digital Control Valve
DL-6	Overload
C-4	Contactor
FS-1	Pressure Switch, 0.5"WC Rise On 1" WC Drop Relay #HT3AB4M
RA-x	24VDC Light Relay (#1564860) Bull Transmitter A/O/B-FB-24A
TD-x	Time Delay Relay (#1564860) Bull Transmitter A/O/B-FB-24A

LEGEND

FIELD WIRING — FACTORY WIRING

BK- BLACK	WH- WHITE	YW- YELLOW	
BL- BLUE	GY- GREY		
BR- BROWN	PK- PINK		
OR- ORANGE	RD- RED		
VI- VIOLET	GR- GREEN		
BL/BK- BLUE STRIPE	BL/WH- BLUE STRIPE		
RD/BK- RED STRIPE	RD/WH- RED STRIPE		
WH/BL- WHITE STRIPE			

WH- WHITE GR- GREEN BL/BK- BLUE STRIPE RD/BK- RED STRIPE WH/BL- WHITE STRIPE

JOB NAME KROGER #492 - MAINEVILLE, OH — SC-310110MA — DESCRIPTION OF OPERATION: 1 Power w/ control for 1 Exhaust fan, Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan. Factory wired for Remote Start/Stop, Fire Shutdown, Fire Alarm, Temperature sensor shipped loose for field installation, INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD. — JOB NO 5831835 — DRAWN BY JAC — DATE 1/27/2023 — CONDUCTOR TYPE FACTORY — CONT. NO ECP #1-5

FACTORY WIRING SCHEMATIC CORE FIRE PROTECTION

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES.

FS-1: MASTER

DIP Switch — Master CORE set DIP SW 8 to CLOSED position. Slave CORE when. Set DIP SW 8 to CLOSED position. All other CORES set DIP SW 8 OPEN.

FIRE INDICATOR FAULT CONDITION FLASH CODES:
1 Release Solenoid
3 Pressure Switch
4 Auxiliary Fault
5 Sub-controller Fault
6 N/A
7 Supervised Loop
8 Ground Fault
9 Surfactant Low
10 Primary Actuator Low
11 AC Power Failure
12 Door Tamper Switch
13 Test Mode
14 CORE Interlock No-Work
15 CORE Interlock to Interlock Network
16 Fault on PCU in Interlock Network

PSM-2 60V — Pin 1606-XLP-60EG Adjust power supply to 27.5 Volts with an accurate Digital Volt Meter or with an HMI plugged into the CORE board. — 16AWG — PCB-2 ALL 18AWG — P3 18AWG — BK 18AWG

Jumper if water valve supervision switch is used — TERMINAL 10V USED FOR 24VDC POWERED GAS VALVES ONLY. GAS VALVES SHOULD BE WIRED TO MASTER CORE BOARD ONLY. — Gas Valve — RELEASE SOLENOID — FIRE INDICATOR — Audible Alarm — Fire / Reset — Pressure Switch — Door Tamper Switch — Equipment Relay — Trouble Relay — Auxiliary Interlock Relay

HIGH TEMP WIRE (842 F). Pn SLPCON-xFT required wiring in conduct with a hood. All other wiring in conduct if in the kitchen or indoor. Factory mounted hood sensors will be terminated at junction box on top of hood — FIRE STAT SUPERVISED LOOP May be wired factory and field wiring. See Installation Schematic. Multiple fire sensors possible. — FS-01 FS-02 Fire Stat

Auxiliary Interlock (AUX-01) Wire AUX / AUZ of adjacent Master CORE panel into fire suppression loop for simultaneous activation. — MS-01 Micro SW — AUX-01 Activated Coil — MAKE AUX-01 BREAK — MAKE MS-01 BREAK — Manual Activation Device

MANUAL ACTUATION LOOP / REMOTE FIRE SYSTEM LOOP Manual activation possible. A Plug jumper with wires from pin1 to pin4 and from pin3 to pin2 should be left in place if not using a manual activation device and no microswitch. — AUS/AUZ will have continuity for 10 seconds if adjacent panel goes into fire condition, activating this CORE Panel but allowing for a reset after 10 seconds. NOTE: AUS/AUZ terminals of CORE Panel should not be wired into its own manual activation loop.

FIELD WIRED IF REMOTE MOUNT — PUT END OF LINE PLUG IN EMPTY RJ45 UNLESS PCU W/M OR OTHER COMPONENT IN SERIES. — CAT-5 wiring (MASTER TO SLAVE/CORE) — EOL104 — SHIELDED TWISTED PAIR — RS-485 CORE INTERLOCK RS-485 - Connection to other CORE Panels. Communication Module. See Installation Schematic for Connection.

To Building Fire Alarm Panel — FIRE ALARM SYSTEM DRY CONTACTS Terminals AL1 & AL2 make in FIRE — AL1 AL2

5 AMP FUSE DISCONNECT JI FOR SHIPMENT — 24 VOLT BATTERY PACK — P9 — J9-1 — J9-2

DRY CONTACTS (SHOWN DE-ENERGIZED)

RS-20-1 — TROUBLE RELAY. Contact terminals 1&2 CLOSE when system is in trouble. Contact terminals 1&3 is the mode if the system is on.

RS-19-1 — COOKING EQUIPMENT DISABLE RELAY. 1&2 CLOSE N/O Switch, wire ERC and ERS terminals to the terminals in UDS panel.

RS-17-1 — FIRE SYSTEM DRY CONTACTS. Dry contacts will make C2 to ARE when system is armed.

RS-10-1 — INTERLOCK FOR AUTOMAN ACTIVATION. Used for activating 120V automan gas valve shutoff. Will open during active fire condition.

JOB NAME KROGER #492 - MAINEVILLE, OH — SC-310110MA — DESCRIPTION OF OPERATION: Fire System W/ TANK FS - 6/45 — JOB NO 5831835 — DRAWN BY JAC — DATE 1/27/2023 — CONDUCTOR TYPE FACTORY — CONT. NO ECP #1-7

LEGEND — FIELD WIRING — FACTORY WIRING — BK- BLACK YW- YELLOW — BL- BLUE GY- GREY — BR- BROWN PK- PINK — OR- ORANGE RD- RED — WH- WHITE GR- GREEN — BL/BK- BLUE STRIPE — BL/WH- BLUE STRIPE — RD/BK- RED STRIPE — RD/WH- RED STRIPE — WH/BL- WHITE STRIPE

FACTORY WIRING SCHEMATIC CORE FIRE PROTECTION

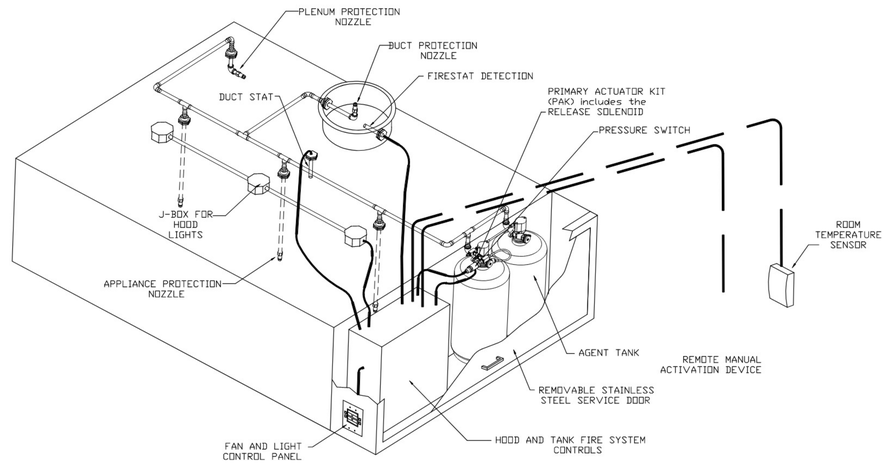
RS-x 120 VAC — RS-x 24 VDC — NO NC COM

COMPONENT LIST

LABEL	DESCRIPTION
MAD-01	MANUAL ACTIVATION DEVICE
PCB-2	CORE PCB
PSM-2	CORE POWER SUPPLY 60V/27.5VDC
VT-1	Water Solenoid
LT-96	24V Red 2nd Light PN 1606-RF
LL-10	Surfactant Sensor
AH-01	Audible Alarm
FB-01	Fire/Reset Switch SY-F202
DV-05	TESTVAVE Switch SY-2001
DV-04	Tamper Switch SY-2001
IP-1	Surfactant Pump 1000-001
GV-1	24v DC Gas Valve
FS-01	3rd Fire Sensor SY-F2003-0800
LT-05	24V Red 2nd Light PN 1606-RF
PS-01	Remote Pull/Fire Station SY-F2001
PV1-01	24VDC Power Supply 24VDC 5A 40WATT
FB-01	24VDC Power Relay PCJ-HPT-24DC-D
PS	Pressure Switch 1/4"-PRESURE

TYPICAL HOOD and TANK FIRE SYSTEM LAYOUT

THIS DETAIL IS GENERIC AND IS NOT INTENDED TO COVER ALL POSSIBLE, ACCEPTABLE SCENARIOS.
REFER TO PROJECT DRAWINGS/SCHEMATICS FOR DETAILS.



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KROGER #492 - MAINEVILLE, OH — State Route 48, Maineville, OH, 45039

DATE: 1/27/2023

DWG.#: 5831835

DRAWN BY: JAC

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

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OWNER

Kroger

ISSUE/REVISION

	DATE	DESCRIPTION
A	01/26/2023	90% OWNER REVIEW
	02/16/2023	100% / BID / PERMIT

EXECUTED BY: Author
REVIEWED BY: Checker

PROJECT TITLE
KROGER STORE A492

MAINEVILLE, OH
COMMISSION NO. 522341
ISSUE DATE 02/16/23

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.5

PLOTTED: 2/17/2023 2:15:49 PM
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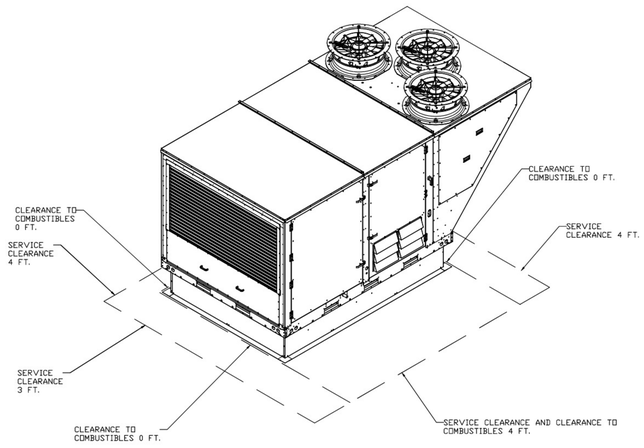
DOAS/RTU FAN SCHEDULE – JOB#5833026

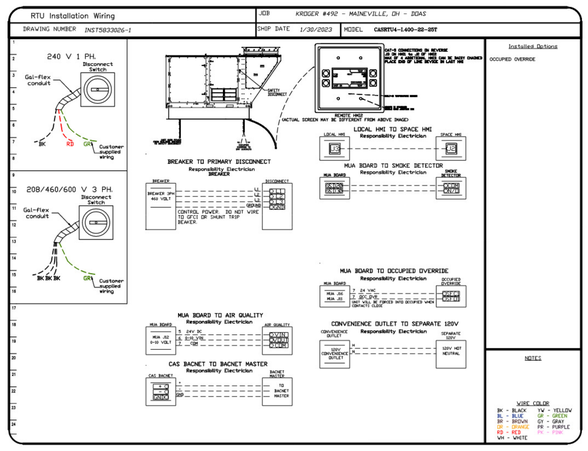
FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	RETURN AIR CFM	MAX OUTSIDE AIR CFM	TOTAL CFM	WEIGHT (LBS)	ESP	HP	PHASE	VOLT	MCA	MOCP	OUTSIDE AIR DB	OUTSIDE AIR WB	MIXED AIR DB	MIXED AIR WB	LEAVING AIR DB	LEAVING AIR WB	LEAVING AIR DP	CAPACITY TOTAL	CAPACITY SENS.	IEER	ISMRE	DISCHARGE DB	DISCHARGE WB	REHEAT CAPACITY DESIRED	REHEAT CAPACITY MAX	MOISTURE REMOVAL RATE	GAS TYPE	INPUT BTUs	OUTPUT BTUs	TEMP RISE	NOTES
1	DOAS-1	1	CASRTU4-1.400-22-25T	CAPTIVEAIRE	22Z-4	0	4000	4000	4143	0.500	5.00	3	460	59.4A	60A	82.5°F	77.0°F	82.5°F	77.0°F	52.4°F	51.3°F	50.5°F	336.0 MBH	126.8 MBH	17.9	4.7	70.0°F	58.4°F	77.3 MBH	260 MBH	188.6 LBS/HR	NATURAL	396357	321049	68°F	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17
2	DOAS-2	1	CASRTU4-1.400-22-25T	CAPTIVEAIRE	22Z-4	0	4000	4000	4143	0.500	5.00	3	460	59.4A	60A	82.5°F	77.0°F	82.5°F	77.0°F	52.4°F	51.3°F	50.5°F	336.0 MBH	126.8 MBH	17.9	4.7	70.0°F	58.4°F	77.3 MBH	260 MBH	188.6 LBS/HR	NATURAL	396357	321049	68°F	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17

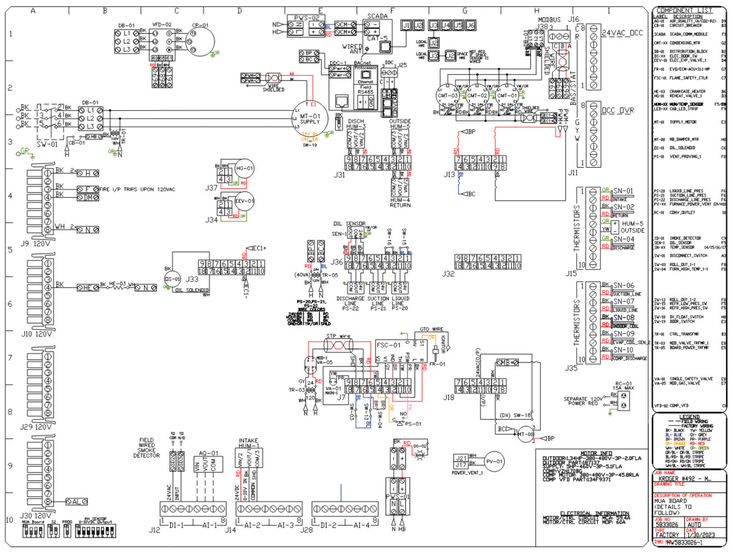
NOTES:
1. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL
2. DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE
3. INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER
4. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
5. EC MOTOR CONDENSING FANS
6. ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE
7. SUCTION LINE ACCUMULATOR
8. FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER
9. AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)
10. 2" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION-MINIMUM 20GA EXTERIOR W/ 14GA BASE
11. 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 6:1 TURNDOWN WITH NG AND 5:1 TURNDOWN WITH LP
12. SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
13. FULLY MODULATING HOT GAS REHEAT
14. HAIL GUARD FOR CONDENSING COIL
15. RTU ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL
16. BAROMETRIC RELIEF DAMPER
17. DOWN DISCHARGE/DOWN RETURN

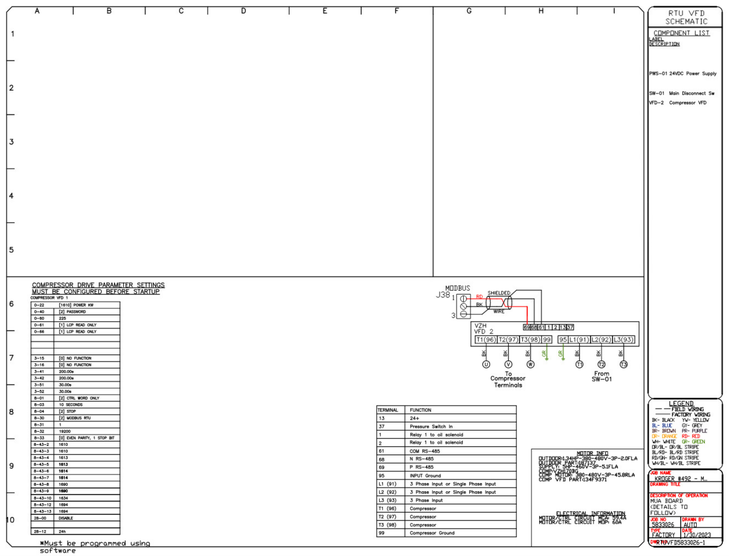
FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1 & 2	DOAS-1 & DOAS-2	1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE
		1	RTU TOTAL CFM MONITORING
		1	SHIP LOOSE GAS STRAINER 3/4"
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	RTU4 DOWN DISCHARGE
		1	2" MERV 8 FILTERS FOR RTU4 (QTY. 12)
		1	OVERHEAT STAT
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS
		1	ECM WIRING PACKAGE - SUPPLY FAN CONTROL RTU MUA BOARD
		1	DAMPER CONTROL - CO2 MIN/MAX OVERRIDE SETPOINT
		1	AUXILIARY REHEAT
		1	DDC MSTP BACNET REMOTE UNIT MONITORING - ALLOWS FOR REMOTE DDC OCCUPIED OVERRIDE AND SETPOINT CHANGES
		1	OCCUPIED SCHEDULING
		1	RTU4 CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J-BOX
		1	25 TON MODULATING COOLING OPTION, 460/480V. 3CFS. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	ECM FAN DOAS - 3 PHASE
		1	25 TON MODULATING REHEAT OPTION - DISCHARGE DEWPOINT CONTROL
		1	RTU ECONOMIZER - DIFFERENTIAL ENTHALPY CONTROL
		1	RTU4 ECONOMIZER BAROMETRIC RELIEF
		1	RTU4 HAIL GUARD
		1	RTU INTAKE/RETURN DAMPER - MANUAL CONTROL VIA HMI
		1	RTU4 DOWN RETURN
		1	FREEZESTAT
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)









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#	DATE	DESCRIPTION
1	01/26/2023	90% OWNER REVIEW
2	02/16/2023	100% / BID / PERMIT

EXECUTED BY: Author
REVIEWED BY: Checker

PROJECT TITLE
KROGER STORE A492

MAINEVILLE, OH

COMMISSION NO. 522341
ISSUE DATE 02/16/23

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.6

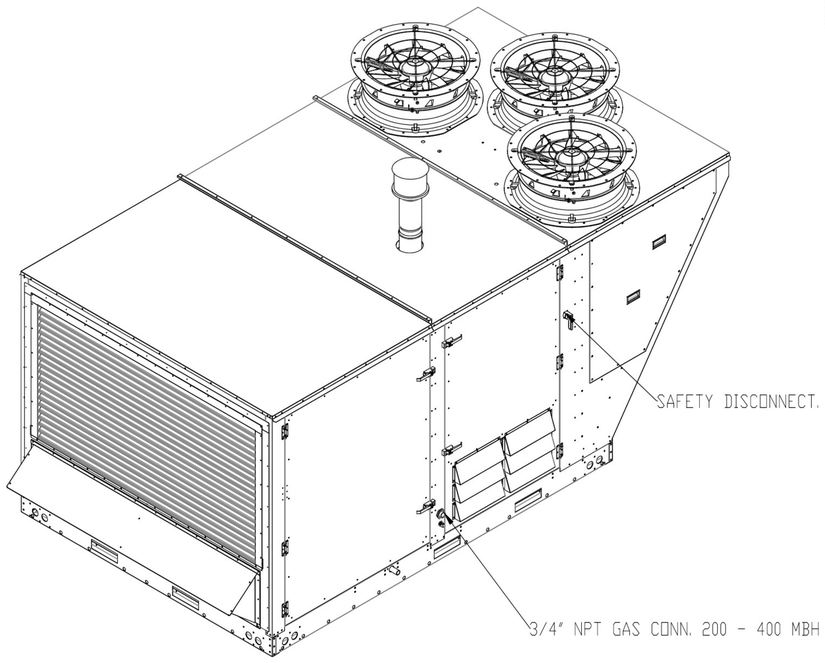
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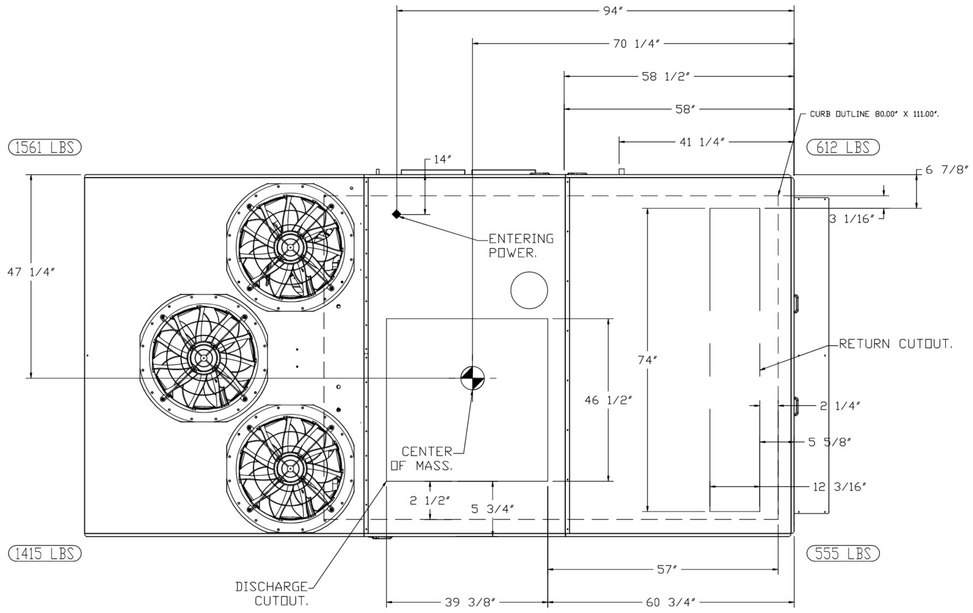
FAN #1 (DOAS-1), #2 (DOAS-2) - CASRTU4-I.400-22-25T HEATER

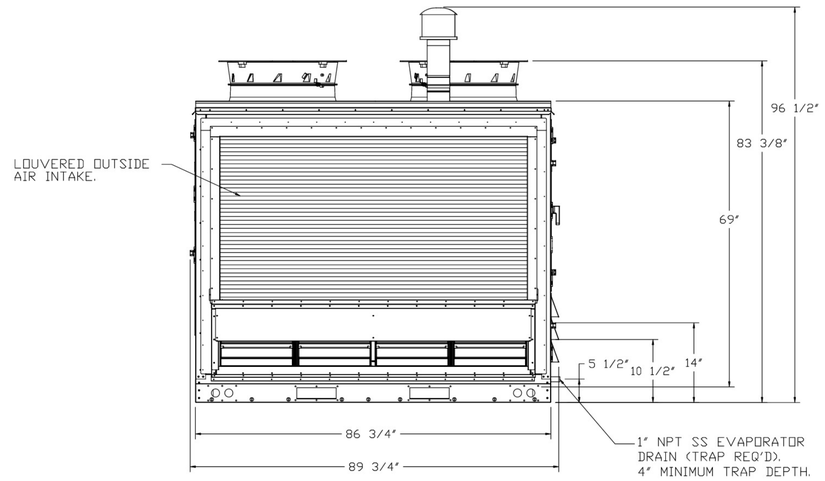
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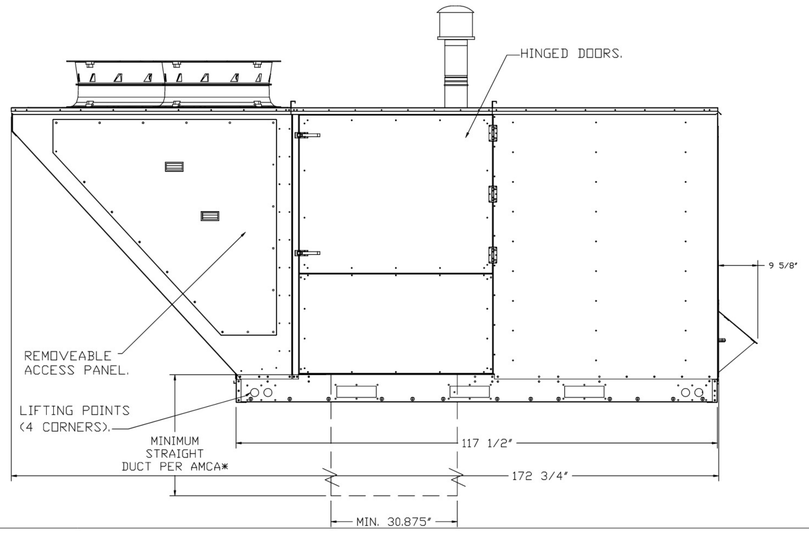
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.

*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 30.875" x 39.75".









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1	01/26/2023	90% OWNER REVIEW
2	02/16/2023	100% / BID / PERMIT

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REVIEWED BY: Checker

PROJECT TITLE
KROGER STORE
A492

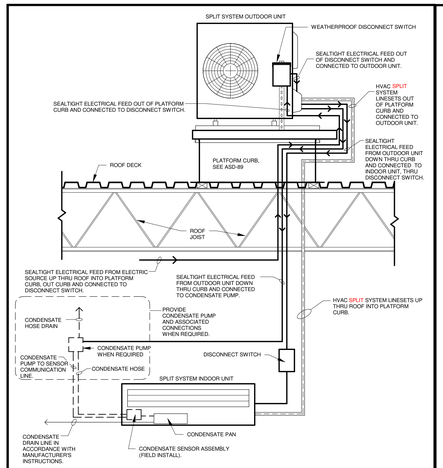
MAINEVILLE, OH

COMMISSION NO.	522341
ISSUE DATE	02/16/23

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.7

PLOTTED: 2/17/2023 2:54:57 PM
FILE LOCATION: C:\Users\author\Documents\Revit\5833026-20-23-MEP-Kroger A492 Maineville, OH - 2022_author.rvt



Notes:

1. REFER TO ASD-89 FOR PLATFORM CURB INSTALLATION AND ADDITIONAL INFORMATION.
2. SPLIT SYSTEM'S MANUFACTURERS AND MODELS VARY. REFERENCE MANUFACTURER'S INSTALLATION GUIDE FOR ADDITIONAL INFORMATION.

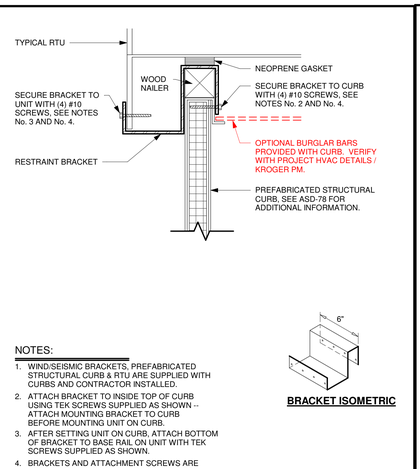
HVAC SPLIT SYSTEM DIAGRAM

DATE: 10/11/12
DRAWN: ZAW

MASTER SPECIFICATION DETAIL

HSD-11

ORIGINAL ISSUE DATE 3/11/11



NOTES:

1. WIND/SEISMIC BRACKETS, PREFABRICATED STRUCTURAL CURB & RTU ARE SUPPLIED WITH CURBS AND CONTRACTOR INSTALLED.
2. ATTACH BRACKET TO INSIDE TOP OF CURB USING TEK SCREWS SUPPLIED AS SHOWN -- ATTACH MOUNTING BRACKET TO CURB BEFORE MOUNTING UNIT ON CURB.
3. AFTER SETTING UNIT ON CURB, ATTACH BOTTOM OF BRACKET TO BASE RAIL ON UNIT WITH TEK SCREWS SUPPLIED AS SHOWN.
4. BRACKETS AND ATTACHMENT SCREWS ARE PROVIDED WITH EACH CURB AND INCLUDE:
   (6) 14 GA. STEEL ATTACHMENT BRACKETS
   #10 - 1 1/2" LONG TEK SCREWS. PROVIDE AMPLE NUMBER OF SCREWS.
   THREE BRACKETS ON EACH LONG SIDES OF CURB EQUALLY SPACED.
5. (8) BRACKETS ON 'D' CABINET ONLY.

BRACKET ISOMETRIC

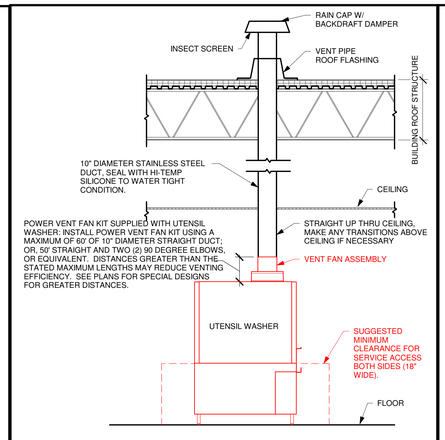
RTU WIND-SEISMIC RESTRAINT BRACKET

DATE: 11/15/17
DRAWN: ZAW

MASTER SPECIFICATION DETAIL

HSD-10

ORIGINAL ISSUE DATE 10/1/09



NOTES:

1. ALL VENT COMPONENTS AND ROOF FLASHING ARE CONTRACTOR PROVIDED AND INSTALLED.
2. CONTRACTOR TO COORDINATE WIRING EXHAUST FAN IN VENT KIT TO THE UTENSIL WASHER.
3. ALL DUCT MATERIALS INCLUDING DUCT, RAINCAP, INSECT SCREEN AND OTHER CONNECTIONS TO BE TYPE 304 STAINLESS STEEL.
4. IN AREAS WHERE LOCAL CODES REQUIRE EXHAUST HOODS FOR UTENSIL WASHER, OMIT POWER VENT FAN KIT.

Notice:
Detail Based on Hobart PW20 Utensil/Pan Washer.
** Refer to Manufacturer's Installation Details for Additional Information.

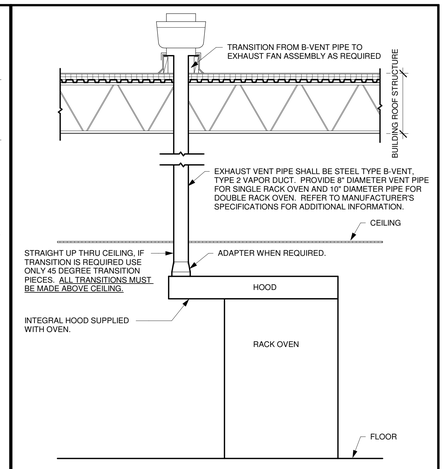
UTENSIL WASHER EXHAUST

DATE: 11/10/16
DRAWN: ZAW

MASTER SPECIFICATION DETAIL

HSD-8

ORIGINAL ISSUE DATE 1/30/09



NOTES:

1. ALL DELI/BAKERY HOOD EXHAUST FANS SHALL BE 10'-0" HORIZONTALLY OR 3'-0" VERTICALLY FROM ANY PARAPET WALL. COORDINATE WITH LOCAL & STATE CODES.

Notice:
Detail based on Baxter Single Rack Oven & Double Rack Oven.
** Refer to Manufacturer's Installation Details for Additional Information.

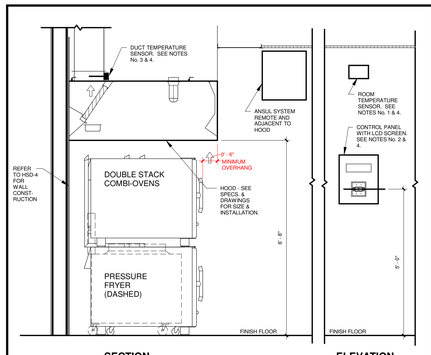
BAKERY RACK OVEN EXHAUST

DATE: 10/11/12
DRAWN: ZAW

MASTER SPECIFICATION DETAIL

HSD-7

ORIGINAL ISSUE DATE 1/30/09



SECTION **ELEVATION**

NOTES:

1. ROOM TEMPERATURE SENSOR. PROVIDES ROOM OVERRIDE BASED ON TEMPERATURE DIFFERENTIAL BETWEEN THE ROOM AND DUCT. INSTALL ON A WALL IN SPACE BUT NOT DIRECTLY UNDER THE HOOD, NEAR A HVAC DIFFUSER, OR CLOSE TO A HEAT PRODUCING APPLIANCE SO THE READING IS ACCURATE FOR THE SPACE.
2. WALL MOUNT CONTROL PANEL. RUN WIRES IN WALL. REMOTE MOUNTED. REFER TO FIXTURE PLAN FOR LOCATION.
3. HOOD SENSORS ARE FACTORY INSTALLED. FIELD WIRED FOR WALL MOUNT AND CONTROL PANELS.
4. REFER TO MECHANICAL DRAWINGS AND DETAIL ESD-35A FOR WIRING SET-UP AND LOCATION POINTS. FIELD INSTALLED.

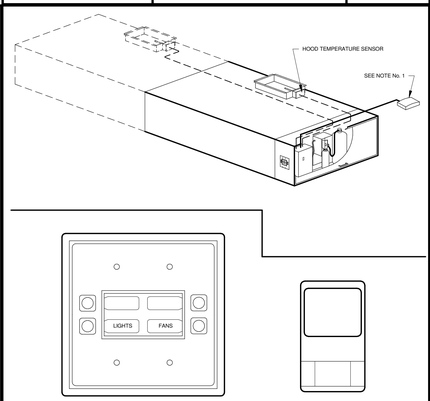
HOOD WITH REMOTE ANSUL & CONTROL PANEL

DATE: 5/15/19
DRAWN: ZAW

MASTER SPECIFICATION DETAIL

HSD-4B

ORIGINAL ISSUE DATE 6/5/15



LCD SCREEN ROOM TEMP SENSOR

NOTES:

1. ROOM TEMPERATURE SENSOR. PROVIDE ROOM OVERRIDE BASED ON TEMPERATURE DIFFERENTIAL BETWEEN THE ROOM AND THE DUCT. INSTALL ON A WALL IN SPACE BUT NOT DIRECTLY UNDER THE HOOD, NEAR A HVAC DIFFUSER, OR CLOSE TO A HEAT PRODUCING APPLIANCE SO THE READING IS ACCURATE FOR THE SPACE.

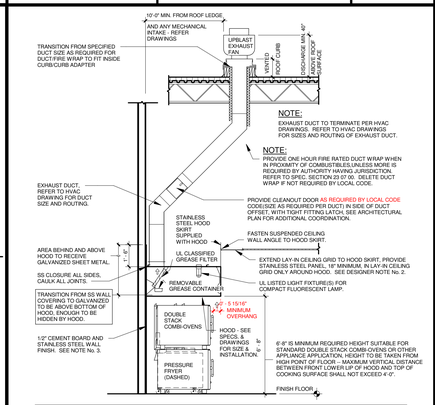
TYP. HOOD WITH BUILT IN ANSUL SYSTEM & CONTROL PANEL

DATE: 5/15/19
DRAWN: ZAW

MASTER SPECIFICATION DETAIL

HSD-4A

ORIGINAL ISSUE DATE 6/15/15



DESIGNER NOTICE:

1. BE CAREFUL OF AIR DISTRIBUTION TYPE AND PROXIMITY TO HOOD. AIR CURRENTS FROM AIR DISTRIBUTION DEVICES CAN DISRUPT PROPER HOOD OPERATION.
2. REFER TO SPEC. SECTION 55 50 00 METAL FABRICATION FOR INFORMATION REGARDING GAGE, FINISH AND INSTALLATION OF STAINLESS STEEL WALL COVERING AND STAINLESS STEEL CEILING TILE.
3. INSTALL 1/2" CEMENT BOARD ON METAL STUD WALL EXTENDING A MINIMUM 18" ABOVE AND BEYOND EXHAUST HOOD SIDES. INSTALL STAINLESS STEEL WALL COVERING OVER CEMENT BOARD AREA OF WALL, THE WIDTH OF THE HOOD, THE 18" OF WALL SURFACE UNDER AND BEYOND THE EDGE OF THE HOOD CAN ONLY BE COVERED WITH NONCOMBUSTIBLE MATERIAL SUCH AS CERAMIC TILE. ADDITIONAL 5S WALL COVERING ON GALVANIZED SHEET METAL.
4. REFER TO HSD-4A OR HSD-4B AS INDICATED FOR ADDITIONAL INFORMATION.
5. SINGLE STACK OVENS WILL HAVE MORE CLEARANCE BETWEEN TOP OF OVEN AND BOTTOM OF HOOD.

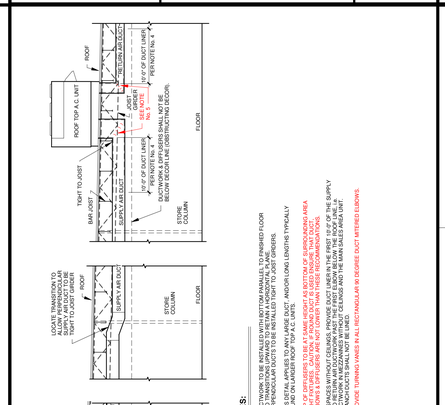
DELI-BAKERY EXHAUST HOOD INSTALLATION

DATE: 5/15/19
DRAWN: ZAW

MASTER SPECIFICATION DETAIL

HSD-4

ORIGINAL ISSUE DATE 6/1/07



NOTES:

1. DUCTWORK TO BE INSTALLED WITH BOTTOM PARALLEL TO FINISHED FLOOR ELEVATION. DUCTWORK TO BE INSTALLED TIGHT TO JOIST GIRDERS PERPENDICULAR DUCTS TO BE INSTALLED TIGHT TO JOIST GIRDERS.
2. ALL DUCTWORK TO BE FABRICATED AND/OR LONG LENGTHS TYPICALLY HOOKED ON LARGER ROOF A.C. UNITS.
3. TOP OF DIFFUSERS TO BE AT SAME HEIGHT AS BOTTOM OF SURROUNDING AREA LIGHT FIXTURES. DUCTWORK TO BE INSTALLED SO THAT TRANSITIONS, ELBOWS & DIFFUSERS ARE NOT LOWER THAN THESE RECOMMENDATIONS.
4. AND RETURN AIR DUCTWORK THAT PIERCES ROOF WITHIN 10'-0" OF THE SUPPLY AIR DUCTWORK SHALL BE INSULATED AND LINED AS SHOWN FOR THE FIRST BRANCH DUCTS SHALL NOT BE LINED.
5. PROVIDE TURNING VANES IN ALL RECTANGULAR 90 DEGREE DUCT MITERED ELBOWS.

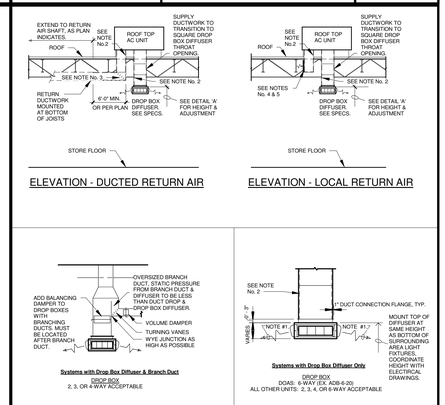
MAIN DUCT ELEVATION

DATE: 9/22/10
DRAWN: JFQ

MASTER SPECIFICATION DETAIL

HSD-3

ORIGINAL ISSUE DATE 10/2/06



NOTE:

1. EACH DIFFUSER LOUVER ANGLE OF DEFLECTION MUST BE ADJUSTED SO THE SUPPLY AIR DOES NOT CAUSE LIGHT FIXTURE & DECOR TRELLIS MOVEMENT OR EXCEED A VELOCITY OF 50 FPM AT THE FACE OF ANY REFRIGERATED DISPLAY CASE, INCLUDING ISLAND CASES. OTHERWISE, ADJUST LOUVERS DOWNWARDS TO DISTRIBUTE AIR INTO THE SALES AREA, TAKING CARE NOT TO DISCOMFORT CUSTOMERS.
2. PROVIDE SUPPLY & RETURN AIR DUCTWORK WITH LINER, SEE SPECIFICATIONS.
3. PROVIDE TURNING VANES IN ALL RECTANGULAR 90 DEGREE DUCT MITERED ELBOWS.
4. RETURN AIR GRILLE IN SIDE OF DUCT DROP TO BE TITUS 50F w/1" OPENINGS OR EQUAL. SIZE GRILLE SIMILAR IN LENGTH AND APPROX. 1.5x WIDTH OF RTU RETURN AIR OPENING (EX. 26"x10" RETURN AIR OPENING = 28"x16" RETURN AIR GRILLE. ROUND UP TO STANDARD SIZE.)
5. RETURN AIR GRILLE TO BE MOUNTED OPPOSITE OF SUPPLY DUCT DROP. MINIMIZE DISTANCE OF RETURN AIR DROP BELOW ROOF DECK.

DROP BOX DIFFUSER

DATE: 5/15/19
DRAWN: ZAW

MASTER SPECIFICATION DETAIL

HSD-1

ORIGINAL ISSUE DATE 2/20/06

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OWNER

Kroger

ISSUE/REVISION

#	DATE	DESCRIPTION
1	01/26/2023	90% OWNER REVIEW
2	02/16/2023	100% / BID / PERMIT

EXECUTED BY: KSL
REVIEWED BY: MCD

PROJECT TITLE
KROGER STORE
A492

MAINEVILLE, OH
COMMISSION NO. 522341
ISSUE DATE 02/16/23

SHEET TITLE
HVAC STANDARD DETAILS (HSD)

SHEET NO.
M5.1

PLOTTED: 2/17/2023 2:16:14 PM FILE LOCATION: C:\Users\bsteller\Documents\Revit\22401-20-23-MEP-Forge-A492-Maineville, OH - 2022_bsteller.rvt

233813.00-04 - KITCHEN HOOD DETAIL UP BLAST

SCALE: NONE

KEYED NOTES:

1. KITCHEN EXHAUST FAN U.L. LISTED FOR GREASE (SEE KITCHEN EXHAUSTER DETAIL). FAN MOTOR SHALL BE OUT OF AIRSTREAM. PROVIDE GREASE CUP AND DRAIN.
2. 16 GAUGE INSULATED WELDED BLACK IRON OR 18 GAUGE INSULATED WELDED STAINLESS STEEL DUCTWORK WRAPPED WITH 2 LAYERS OF ZERO CLEARANCE DUCT WRAP (TYPICAL).
3. HEAT SENSOR IN EACH COLLAR INTERLOCKED TO VENTILATION SYSTEM.
4. FLANGED & GASKETED DUCT TO EXHAUST FAN CONNECTION.
5. CLEANOUT DOOR/LATCH (12"X12" MIN.) MADE OF 16 GAUGE WELDED BLACK IRON OR 18 GAUGE WELDED STAINLESS STEEL (TYPICAL).
6. MINIMUM 2% SLOPE TOWARD HOOD WITH CLEANOUTS A MINIMUM OF EVERY 15 FEET AND CHANGE IN DIRECTION.
7. GREASE DUCT SUPPORT IS TO BE SIZED, SPACED, AND INSTALLED BY CODE.
8. HOOD WITH ANSUL SYSTEM.
9. MAINTAIN 18" CLEARANCE TO COMBUSTIBLES.
10. GREASE DRIP TRAY.

GENERAL NOTES:

A. TYPE I HOOD SHALL BE STAINLESS STEEL, 18 GAUGE, WITH WELDED SEAMS AND UL 710 LISTED.
B. EXHAUST DUCT SHALL BE 16 GA. BLACK IRON OR 18 GA. STAINLESS STEEL, FINISH # 3, WITH CONTINUOUS LIQUID TIGHT WELDED JOINTS AND SEAMS.
C. AIR VELOCITY SHALL BE PER CODE AND AHJ.
D. PROVIDE INSULATION WRAP EQUAL TO 3M "FIRE MASTER DUCT WRAP" WITH UL LISTINGS OF 723, 1978, AND 1479.
E. INSULATION SHALL BE A LIGHTWEIGHT, NON-ASBESTOS, HIGH TEMPERATURE, INORGANIC, CERAMIC FIBER BLANKET TOTALLY ENCAPSULATED IN FOIL/SCRIM HAVING A SERVICE TEMPERATURE RANGE UP TO 2300 DEGREE F.
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.
G. 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.
H. PROVIDE STAINLESS STEEL ENCLOSURE PANEL BETWEEN TOP OF KITCHEN HOOD AND CEILING, PER LOCAL CODE REQUIREMENTS.

233813.00-02 - KITCHEN EXHAUSTER

SCALE: NONE

KEYED NOTES:

1. HINGED BASE FOR ACCESS.
2. WOOD NAILER.
3. ANCHOR ALL FOUR SIDES WITH SCREWS 12" O.C.
4. PREFABRICATED INSULATED ALUMINUM CURB.
5. CONDUIT HOLE.
6. ANCHOR TO ROOF DECK AS REQUIRED.
7. RUBBER GASKET APPLIED TO TOP OF CURB.
8. FLASH PER ROOFING MANUFACTURER REQUIREMENTS. FLASH UP AND OVER WOOD NAILER.
9. GREASE TRAP.
10. DRAIN CONNECTION.
11. CENTER TRANSITION TO DUCTWORK FROM DAMPER OR CURB. PROVIDE 3X DIAMETER STRAIGHT RUN MINIMUM.
12. INSULATED EXHAUST DUCTWORK.

GENERAL NOTES:

A. DELETE CANT FOR SINGLE MEMBRANE ROOFS.
B. TOP OF CURB MUST BE LEVEL. FABRICATE PITCH IN CURB IF NECESSARY.
C. CONTRACTOR HAS THE OPTION TO INCREASE THE HEIGHT OF THE CURB OR ADD BLOCKING TO THE CURB. THE ADDITIONAL HEIGHT REQUIRED SHALL EQUAL THE ROOF ASSEMBLY THICKNESS. THE CURB INTAKE OPENING SHALL BE AT A MINIMUM 12" ABOVE FINISHED ROOF.
D. LOCATE A MINIMUM OF 10'-0" FROM EDGE OF ROOF, INTAKES, AND ROOF HATCH.

233713.00-21 - RETURN/EXHAUST REGISTER INSTALLATION

SCALE: NONE

KEYED NOTES:

1. DUCT, COLLAR AND RETURN/EXHAUST REGISTER
2. MANUAL VOLUME DAMPER
3. SECURE TO CEILING PER MANUFACTURER'S RECOMMENDATIONS AND PER CEILING FINISH. PROVIDE GRID CLIPS PER MFG'R REQUIREMENTS
4. HANGER, SECURE TO STRUCTURE AND DUCTWORK
5. ATTACH DUCT TO REGISTER
6. BALANCING DAMPER FOR FINAL BALANCING
7. SHEET METAL DUCTWORK
8. MAIN RETURN/EXHAUST DUCT
9. TAP DROP TO RETURN/EXHAUST REGISTER INTO BOTTOM OF BRANCH
10. SPIN IN FITTING
11. HARD SHEET METAL ELBOW AT CONNECTION TO AIR DEVICE

GENERAL NOTES:

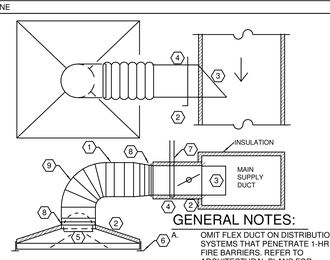
A. SEE NEW WORK PLAN FOR DUCT SIZE
B. x + y DIMENSIONS SHALL BE DETERMINED FROM FLOOR PLANS

KEYED NOTES:

1. 1/2" ACOUSTIC LINING, SEAL AROUND ALL WALL PENETRATIONS
2. SEE NEW WORK PLAN FOR REGISTER
3. INTERIOR WALL/PARTITION

233713.00-19 - TRANSFER GRILLE

SCALE: NONE



GENERAL NOTES:

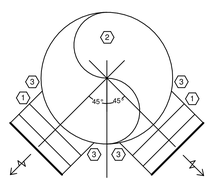
A. OMIT FLEX DUCT ON DISTRIBUTION SYSTEMS THAT PENETRATE 1-HR FIRE BARRIERS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE BARRIERS.

KEYED NOTES:

1. MAXIMUM LENGTH OF INSUL. FLEX DUCT EQUALS 5 FEET. FLEX NOT PERMITTED IN INACCESSIBLE CEILINGS
2. INSULATED DUCT, COLLAR AND DIFFUSER BY HVAC CONTRACTOR
3. SCOOP
4. SPIN IN FITTING WITH MANUAL VOLUME DAMPER
5. INTERNAL BUTTERFLY DAMPER FOR DRYWALL APPLICATIONS ONLY. (PROVIDE KEY FOR ADJUSTMENT)
6. SECURE TO CEILING PER MANUFACTURER'S RECOMMENDATIONS AND PER CEILING FINISH. PROVIDE GRID CLIPS PER MFG'R REQUIREMENTS. PROVIDE FRAMING FOR DRYWALL INSTALLATION.
7. HANGER, SECURE TO STRUCTURE AND DUCTWORK
8. PEEL BACK INSULATION AND PROVIDE STRAPPING AND SHEET METAL SCREWS AT FLEX CONNECTION TO DUCT. THEN PROVIDE STRAPPING AROUND INSULATION
9. SUPPORT FLEX TO PREVENT COLLAPSING

233713.00-04 - DIFFUSER INSTALLATION TYPICAL

SCALE: NONE



KEYED NOTES:

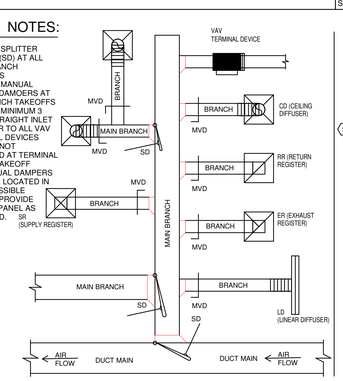
1. REGISTER WITH 0 DEGREE DEFLECTION BLADE DAMPER (TO BE SIZED AS SHOWN ON PLAN)
2. SUPPLY DUCT
3. SEAL JOINTS BETWEEN COLLAR AND MAIN DUCT

233713.00-02 - ANGLED REGISTER INSTALLATION

SCALE: NONE

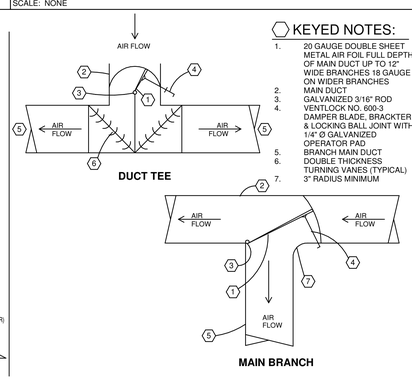
GENERAL NOTES:

1. PROVIDE SPLITTER DAMPER (SD) AT ALL MAIN BRANCH TAKEOFFS
2. PROVIDE MANUAL VOLUME DAMOERS AT ALL BRANCH TAKEOFFS
3. PROVIDE MINIMUM 3 TIMES STRAIGHT INLET DIAMETER TO ALL VAV TERMINAL DEVICES
4. DAMPER NOT REQUIRED AT TERMINAL DEVICE TAKEOFF
5. ALL MANUAL DAMPERS SHALL BE LOCATED IN AN ACCESSIBLE CEILING. PROVIDE ACCESS PANEL AS REQUIRED.



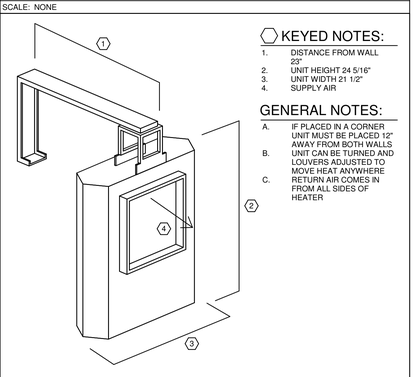
233300.00-01 - MANUAL DAMPER DETAIL

SCALE: NONE



KEYED NOTES:

1. 20 GAUGE DOUBLE SHEET METAL AIR FOIL FULL DEPTH OF MAIN DUCT UP TO 12" WIDE BRANCHES 18 GAUGE ON WIDER BRANCHES
2. MAIN DUCT
3. GALVANIZED 3/16" ROD
4. VENTLOCK NO. 600-3 DAMPER BLADE, BRACKTER & LOCKING BALL JOINT WITH 1/4" Ø GALVANIZED OPERATOR PAD
5. BRANCH MAIN DUCT
6. DOUBLE THICKNESS TURNING VANES (TYPICAL)
7. 3" RADIUS MINIMUM



KEYED NOTES:

1. DISTANCE FROM WALL 23"
2. UNIT HEIGHT 24 5/16"
3. UNIT WIDTH 21 1/2"
4. SUPPLY AIR

GENERAL NOTES:

A. IF PLACED IN A CORNER UNIT MUST BE PLACED 12" AWAY FROM BOTH WALLS
B. UNIT CAN BE TURNED AND LOUVERS ADJUSTED TO MOVE HEAT ANYWHERE
C. RETURN AIR COMES IN FROM ALL SIDES OF HEATER

238239.00-01 - ELECTRIC UNIT HEATER MOUNTING A

SCALE: NONE

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OWNER

Kroger

ISSUE/REVISION

	DATE	DESCRIPTION
1	01/26/2023	90% OWNER REVIEW
2	02/16/2023	100% / BID / PERMIT

EXECUTED BY: KSL
REVIEWED BY: MCD

PROJECT TITLE

KROGER STORE A492

MAINEVILLE, OH

COMMISSION NO. 522341
ISSUE DATE 02/16/23

SHEET TITLE

HVAC PROJECT-SPECIFIC DETAILS

SHEET NO.

M5.2

PLOTTED: 2/17/2023 2:16:25 PM
FILE LOCATION: C:\Users\admin\Documents\Revit\22-03 A&P Kroger A&E Maineville, OH - 2022_admin.rvt

EQUIPMENT MARK	LOCATION	100% OCCUPIED - MAX REQUIRED OA	CO2 LEVEL SATISFIED - HOODS ON, ASHRAE SPACE MIN	CO2 LEVEL SATISFIED - HOODS OFF, ASHRAE SPACE MIN
DOAS-1	SALES	4000	2600	0
DOAS-2	SALES	4000	2600	0
RTU-1	SALES	0	0	0
RTU-2	SALES	0	0	0
RTU-3	SALES	0	0	0
RTU-4	SALES	0	0	0
RTU-5	SALES	0	0	0
RTU-6	SALES	0	0	0
RTU-7	SALES	0	0	0
RTU-8	SALES	1000	1000	1000
RTU-9	SALES	0	0	0
RTU-10	PHARMACY	224	224	224
RTU-11	DELI	90	90	90
RTU-12	BAKERY	64	64	64
RTU-13	BACKROOM	180	180	180
RTU-14	BACKROOM	270	270	270
RTU-15	DOCK	660	660	660
RTU-16	OFFICES	642	642	642
RTU-17	PICKUP	560	560	560
RTU-18	VESTIBULE	150	150	150
RTU-19	VESTIBULE	150	150	150
RTU-20	TLC	240	240	240
EF-1	CUSTOMER RRs	-650	-650	-650
EF-2	FAMILY 2	-200	-200	-200
EF-3	EMPLOYEE RRs	-400	-400	-400
EF-4	DELI HOOD	-2400	-2400	0
EF-5	FRONT ELECTRICAL	-800	-800	-800
EF-6	ELECTRICAL	-800	-800	-800
EF-7	SEAFOOD	-700	-700	-700
EF-8	CLEANING CENTER	-200	-200	-200
EF-9	BAKERY OVEN	-600	-600	0
EF-10	BAKERY OVEN	-600	-600	0
Building Totals (OA)		12230	9430	4230
Building Totals (Exhaust)		-7350	-7350	-3750
Building Pressure (OA-Exhaust)		4880	2080	480
		During occupied hours	During occupied hours	During unoccupied hours

HVAC ELECTRICAL COORDINATION SCHEDULE

ABBREVIATIONS

DC	LOCAL DISCONNECT
MC	MOTOR CONTROL (POWER)
SD	DUCT SMOKE DETECTOR
CN	CONTROLS
TS	TOGGLE SWITCH
CB	H.A.C.R. CIRCUIT BREAKER AT SOURCE
FUSE	PANELBOARD
FLA	FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)
MCA	OPERATING FULL LOAD AMPS
CP	MINIMUM CIRCUIT AMPACITY
	CORD AND PLUG CONNECTION

CONTRACTOR TYPE

EC	ELECTRICAL CONTRACTOR
EX	EXISTING
FC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
HC	HVAC CONTRACTOR
MFR	MANUFACTURER
PC	PLUMBING CONTRACTOR
OR	OWNER OR OTHERS

MOTOR CONTROL TYPE

CS	COMBINATION STARTER
MCC	MOTOR CONTROL STARTER
MG	MAGNETIC STARTER OR CONTACT
MS	MANUAL STARTER
VFD	VARIABLE FREQUENCY DRIVE
MSR	MANUAL STARTER W/ CONTROL RELAY
OV	OVERCURRENT PROTECTION

CONTROL TYPE

TC	TIMECLOCK
CPT	CONTROL POWER TRANSFORMER
BAS	BUILDING AUTOMATION SYSTEM
LOW	LOW VOLTAGE CONTROLS
LINE	LINE VOLTAGE CONTROLS
RLINE	REVERSE ACTING LINE VOLTAGE THERMOSTAT
MAN	MANUAL
FA	FIRE ALARM
CO	CARBON MONOXIDE SENSOR
INT	INTEGRAL TO EQUIPMENT
ASD	AREA SMOKE DETECTOR
DSD	DUCT SMOKE DETECTOR

CONNECTION MARK	DESCRIPTION	VOLTS (V)	PHASE	HP (HP)	HTG (kW)	FLA (A)	MCA (A)	OCP (A)	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	AVAILABLE FAULT CURRENT (A)	SD TYPE
CU-1	AIR SOURCE OUTDOOR CONDENSING UNIT	208	1				17.1	25	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	EC	2494	23 62 12.00
DOAS-1	OUTDOOR MAKEUP AIR UNIT, DX COOLING AND GAS HEAT	480	3	3.1	0		59.4	60	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	EC	2540	23 74 23.00
DOAS-2	OUTDOOR MAKEUP AIR UNIT, DX COOLING AND GAS HEAT	480	3	3.1	0		59.4	60	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	EC	4468	23 74 23.00
EF-1	CENTRIFUGAL ROOF VENTILATOR	208	1	0.25		3.8			EC	EC	EC	MG	MFR	MFR	MFR	TC	EC	EC	EC	387	23 34 00.00
EF-2	CENTRIFUGAL ROOF VENTILATOR	208	1	0.18		3.8			EC	EC	EC	MG	MFR	MFR	MFR	TC	EC	EC	EC	631	23 34 00.00
EF-3	CENTRIFUGAL ROOF VENTILATOR	208	1	0.25		3.8			EC	EC	EC	MG	MFR	MFR	MFR	TC	EC	EC	EC	1027	23 34 00.00
EF-4	UPBLAST PROPELLER ROOF FAN	208	3	2.0		6.1			EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	559	23 34 00.00
EF-5	CENTRIFUGAL ROOF VENTILATOR	208	1	0.18		3.8			EC	EC	EC	MG	MFR	MFR	MFR	RLINE	EC	EC	EC	1522	23 34 00.00
EF-6	CENTRIFUGAL ROOF VENTILATOR	120	1	0.25		6.9			EC	EC	EC	MG	MFR	MFR	MFR	RLINE	EC	EC	EC	1446	23 34 00.00
EF-7	CENTRIFUGAL ROOF VENTILATOR	120	1	0.25		3.8			EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	517	23 34 00.00
EF-8	CENTRIFUGAL ROOF VENTILATOR	120	1	0.06		1.1			EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	667	23 34 00.00
EF-9	UPBLAST PROPELLER ROOF FAN	120	1	0.33		5.6			EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	1023	23 34 00.00
EF-10	UPBLAST PROPELLER ROOF FAN	120	1	0.33		5.6			EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	1127	23 34 00.00
HVLS-1	HIGH VOLUME LOW SPEED FAN	120	1			0.6			EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	607	23 34 00.00
HVLS-2	HIGH VOLUME LOW SPEED FAN	120	1			0.6			EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	595	23 34 00.00
RTU-1	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		29	31	35	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	952	23 74 33.00
RTU-2	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		21.2	24	30	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	791	23 74 33.00
RTU-3	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		21.2	24	30	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1195	23 74 33.00
RTU-4	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		21.2	24	30	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1111	23 74 33.00
RTU-5	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		21.2	24	30	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1733	23 74 33.00
RTU-6	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		21.2	24	30	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1568	23 74 33.00
RTU-7	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		21.2	24	30	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1184	23 74 33.00
RTU-8	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		21.2	24	30	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	2523	23 74 33.00
RTU-9	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		18.7	21	25	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1380	23 74 33.00
RTU-10	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		17.2	19	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	799	23 74 33.00
RTU-11	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	1.5		10.7	13	15	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	676	23 74 33.00
RTU-12	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	1.5		10.2	12	15	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	386	23 74 33.00
RTU-13	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	1.5		12	15	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	742	23 74 33.00
RTU-14	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	1.5		10.7	13	15	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	2321	23 74 33.00
RTU-15	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		17.2	19	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	2208	23 74 33.00
RTU-16	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		17.2	19	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	2946	23 74 33.00
RTU-17	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	3.75		17.2	19	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	969	23 74 33.00
RTU-18	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	1.5		10.7	13	15	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	898	23 74 33.00
RTU-19	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	1.5		10.7	13	15	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	717	23 74 33.00
RTU-20	PACKAGED ROOFTOP UNIT, GAS HEAT	480	3	1.5		12	15	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1079	23 74 33.00
UH-1	ELECTRIC UNIT HEATER	480	3	1/30	7.5	9.0			EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC	1200	23 82 39.00
UH-2	ELECTRIC UNIT HEATER	480	3	1/30	7.5	9.0			EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC	697	23 82 39.00

KROGER HVAC ROOFTOP UNITS SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	LOCATION	WEIGHT (lbs)	MANUFACTURER	MODEL	MIN EER	CFM (cfm)	ESP (in WC)	OACFM (cfm)	NOMINAL TONS	MAT CLG DB (Deg F)	MAT CLG WB (Deg F)	CLG MBH (mbh)	CLG SENS (mbh)	LAT DB (Deg F)	LAT CLG WB (Deg F)	MAT HTG (Deg F)	HTG MBH (mbh)	MIN HTG AFUE	GAS HTG IN (mbh)	GAS HTG OUT (mbh)	MIN GAS PRESSURE (in WC)	MAX GAS PRESSURE (in WC)	ELECTRIC CONNECTION SUMMARY	AVAILABLE FAULT CURRENT	ACCESSORIES
DOAS-1	OUTDOOR MAKEUP AIR UNIT, DX COOLING AND GAS HEAT	SALES	4143	CAPTIVE AIRE	CASTRUI-I-400-22-25T	17.9	4000	0.5	0	25	83	77	336	130	52	51	70	0	80	396	321	7	14	DOAS-1 - 480V/3PH, 5 HP, 59.4 MCA, 60A OCP	2540	SEE SHEET M3.1.6
DOAS-2	OUTDOOR MAKEUP AIR UNIT, DX COOLING AND GAS HEAT	SALES	4143	CAPTIVE AIRE	CASTRUI-I-400-22-25T	17.9	4000	0.5	0	25	83	77	336	130	52	51	70	0	80	396	321	7	14	DOAS-2 - 480V/3PH, 5 HP, 59.4 MCA, 60A OCP	4468	SEE SHEET M3.1.6
RTU-1	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM150U4E	12.2	5000	0.5	0	12.5	76	64	122	104	55	54	70	45	80	130	104	7	14	RTU-1 - 480V/3PH, 26 MCA, 30A OCP	952	3,4,10
RTU-2	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM150U4E	12.2	4500	0.5	0	12.5	76	64	111	93	55	54	70	40	80	130	104	7	14	RTU-2 - 480V/3PH, 26 MCA, 30A OCP	791	3,4,10
RTU-3	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM120U4E	12.2	3970	0.5	0	10	76	64	98	82	55	54	70	35	80	130	104	7	14	RTU-3 - 480V/3PH, 24 MCA, 30A OCP	1195	3,4,10
RTU-4	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM150U4E	12.2	4500	0.5	0	12.5	76	64	111	93	55	54	70	40	80	130	104	7	14	RTU-4 - 480V/3PH, 26 MCA, 30A OCP	1111	3,4,10
RTU-5	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM150U4E	12.2	5000	0.5	0	12.5	76	64	131	114	55	54	70	67	80	130	104	7	14	RTU-5 - 480V/3PH, 26 MCA, 30A OCP	1733	3,4,10
RTU-6	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM120U4E	12.2	4020	0.5	0	10	76	64	100	83	55	54	70	36	80	130	104	7	14	RTU-6 - 480V/3PH, 24 MCA, 30A OCP	1568	3,4,10
RTU-7	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM120U4E	12.2	4200	0.5	0	10	80	66	157	108	55	54	60	102	80	130	104	7	14	RTU-7 - 480V/3PH, 24 MCA, 30A OCP	1184	3,4,10
RTU-8	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM120U4E	12.2	4000	0.5	1000	10	79	66	135	100	55	54	59	108	80	130	104	7	14	RTU-8 - 480V/3PH, 24 MCA, 30A OCP	2523	3,4,10
RTU-9	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM120U4E	12.2	3750	0.5	0	10	76	64	91	78	55	54	70	60	80	130	104	7	14	RTU-9 - 480V/3PH, 24 MCA, 30A OCP	1380	3,4,10
RTU-10	PACKAGED ROOFTOP UNIT, GAS HEAT	PHARMACY	997	LENNOX	LGM048U4E	13.7	1600	0.75	224	4	78	65	45	37	55	54	62	34	80	65	52	7	14	RTU-10 - 480V/3PH, 12 MCA, 15A OCP	799	2,3,4,10,19,22,24
RTU-11	PACKAGED ROOFTOP UNIT, GAS HEAT	DELI	1319	LENNOX	LGM074U4E	12.5	2300	0.75	92	6	77	64	51	48	55	54	67	41	80	65	52	7	14	RTU-11 - 480V/3PH, 15 MCA, 20A OCP	676	2,3,4,10,24
RTU-12	PACKAGED ROOFTOP UNIT, GAS HEAT	BAKERY	997	LENNOX	LGM048U4E	13.7	1600	0.75	64	4	77	64	36	34	55	54	67	9	80	65	52	7	14	RTU-12 - 480V/3PH, 12 MCA, 15A OCP	386	2,3,4,10
RTU-13	PACKAGED ROOFTOP UNIT, GAS HEAT	BACKROOM	1319	LENNOX	LGM060U4E	12.5	1800	0.5	180	5	77	65	45	40	55	54	64	48	80	65	52	7	14	RTU-13 - 480V/3PH, 14 MCA, 20A OCP	742	2,3,4,10,22
RTU-14	PACKAGED ROOFTOP UNIT, GAS HEAT	BACKROOM	1319	LENNOX	LGM060U4E	12.5	1800	0.5	270	5	78	65	50	43	55	54	61	46	80	65	52	7	14	RTU-14 - 480V/3PH, 14 MCA, 20A OCP	2321	2,3,4,10,22
RTU-15	PACKAGED ROOFTOP UNIT, GAS HEAT	DOCK	1363	LENNOX	LGM092U4E	12.5	2850	0.5	627	7.5	79	66	93	76	55	54	58	82	80	104	84.5	7	14	RTU-15 - 480V/3PH, 19 MCA, 20A OCP	2208	2,3,4,10
RTU-16	PACKAGED ROOFTOP UNIT, GAS HEAT	OFFICES	1363	LENNOX	LGM092U4E	12.6	2675	0.75	642	7.5	79	66	97	69	55	54	59	71	80	130	104	7	14	RTU-16 - 480V/3PH, 20 MCA, 25A OCP	2946	2,3,4,10,22,24
RTU-17	PACKAGED ROOFTOP UNIT, GAS HEAT	PICKUP	1363	LENNOX	LGM092U4E	12.5	2800	0.5	560	7.5	79	66	87	67	55	54	59	83	80	104	84.5	7	14	RTU-17 - 480V/3PH, 19 MCA, 20A OCP	969	2,3,4,10,22
RTU-18	PACKAGED ROOFTOP UNIT, GAS HEAT	VESTIBULE	1363	LENNOX	LGM092U4E	12.5	3000	0.5	150	7.5	77	64	72	65	55	54	67	42	80	104	84.5	7	14	RTU-18 - 480V/3PH, 19 MCA, 20A OCP	898	2,3,4,10,22
RTU-19	PACKAGED ROOFTOP UNIT, GAS HEAT	VESTIBULE	1363	LENNOX	LGM092U4E	12.5	3000	0.5	150	7.5	77	64	72	65	55	54	67	42	80	104	84.5	7	14	RTU-19 - 480V/3PH, 19 MCA, 20A OCP	717	2,3,4,10,22
RTU-20	PACKAGED ROOFTOP UNIT, GAS HEAT	TLC	862	LENNOX	LGM036U4E	14.5	1200	0.5	240	3	79	66	37	28	55	54	59	31	80	65	52	7	14	RTU-20 - 480V/3PH, 11 MCA, 15A OCP	1079	2,3,4,10

HVAC ACCESSORIES

ACCESSORIES:

1. MOTOR DAMPER
2. ECONOMIZER
3. ROOF CURB
4. HAIL GUARDS
5. INTAKE HOOD
6. VIBRATION ISOLATION
7. FLAT FILTER
8. FILTER/MIXING BOX
9. ACCESS DOOR
10. FLEX CONNECTIONS
11. MOUNTING COLLAR
12. HOT GAS BYPASS
13. FACE/BYPASS DAMPER
14. CONDENSATE PUMP
15. MOTOR GUARD
16. GREASE TRAP
17. DUCT FLANGES
18. BASE RAIL
19. HUMIDITROL
20. CO2 SENSORS
21. ECON POWERED EXHAUST
22. ECON BAROMETRIC RELIEF
23. HOT GAS REHEAT COIL
24. DUCT SMOKE DETECTOR

KROGER HVAC FANS SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	LOCATION	WEIGHT (lbs)	MANUFACTURER	MODEL	FAN RPM				ELECTRIC CONNECTION SUMMARY	AVAILABLE FAULT CURRENT
						CFM (cfm)	ESP (in WC)	OAP (in WC)	BHP (hp)		
EF-1	CENTRIFUGAL ROOF VENTILATOR	CUSTOMER RRS	64	CAPTIVE AIRE	DR30HFA	650	0.5	1327	0.13	EF-1 - 120V/1PH, 0.25 HP, 3.8A FLA	387
EF-2	CENTRIFUGAL ROOF VENTILATOR	TLC	48	CAPTIVE AIRE	DR10HFA	200	0.5	1256	0.04	EF-2 - 120V/1PH, 0.06 HP, 1.1A FLA	631
EF-3	CENTRIFUGAL ROOF VENTILATOR	EMPLOYEE RRS	64	CAPTIVE AIRE	DR30HFA	400	0.5	1256	0.08	EF-3 - 120V/1PH, 0.25 HP, 3.8A FLA	1027
EF-4	CENTRIFUGAL ROOF VENTILATOR	DELI HOOD	79	CAPTIVE AIRE	DU33HFA	2400	0.5	1282	0.71	EF-4 - 120V/1PH, 0.33 HP, 5.6A FLA	559
EF-5	CENTRIFUGAL ROOF VENTILATOR	FRONT ELECTRICAL	64	CAPTIVE AIRE	DR30HFA	800	0.5	1428	0.17	EF-5 - 120V/1PH, 0.25 HP, 3.8A FLA	1522
EF-6	CENTRIFUGAL ROOF VENTILATOR	ELECTRICAL	64	CAPTIVE AIRE	DR30HFA	800	0.5	1428	0.17	EF-6 - 120V/1PH, 0.25 HP, 3.8A FLA	1446
EF-7	CENTRIFUGAL ROOF VENTILATOR	SEAFOOD	64	CAPTIVE AIRE	DR30HFA	700	0.4	1311	0.13	EF-7 - 120V/1PH, 0.25 HP, 3.8A FLA	517
EF-8	CENTRIFUGAL ROOF VENTILATOR	CLEANING CENTER	47	CAPTIVE AIRE	DR10HFA	200	0.3	1290	0.04	EF-8 - 120V/1PH, 0.06 HP, 1.1A FLA	667
EF-9	UPBLAST PROPELLER ROOF FAN	BAKERY OVEN	79	CAPTIVE AIRE	DU33HFA	600	0.5	1282	119	EF-9 - 120V/1PH, 0.33 HP, 5.6A FLA	1023
EF-10	UPBLAST PROPELLER ROOF FAN	BAKERY OVEN	79	CAPTIVE AIRE	DU33HFA	600	0.5	1282	119	EF-10 - 120V/1PH, 0.33 HP, 5.6A FLA	1127
HVLS-1	HIGH VOLUME LOW SPEED FAN	DOCK	20	CANARM	CP48	7370	0	0	0	HVLS-1 - 120V/1PH, 0.6A FLA	607
HVLS-2	HIGH VOLUME LOW SPEED FAN	DOCK	20	CANARM	CP48	7370	0	0	0	HVLS-2 - 120V/1PH, 0.6A FLA	595

KROGER HVAC AIR COOLED CONDENSING UNIT SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	LOCATION	WEIGHT (lbs)	MANUFACTURER	MODEL	SEER	NOMINAL TONS	CLG MBH (mbh)	CLG SENS (mbh)	ELECTRIC CONNECTION SUMMARY	AVAILABLE FAULT CURRENT
CU-1	AIR SOURCE OUTDOOR CONDENSING UNIT	ROOF	211	MITSUBISHI	TRUYA036IK7	13.0	3	21	18	CU-1 - 208V/1PH, 25 MCA, 35A OCP	2494

KROGER HVAC DUCTLESS SPLIT SYSTEMS (INDOOR UNITS) SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	LOCATION	FED FROM	WEIGHT (lbs)	MANUFACTURER	MODEL	ESP (in WC)
DS-1	DUCTLESS SPLIT INDOOR UNIT	ECR	CU-1	46	MITSUBISHI	TPKA0A361KA7	0.5

KROGER HVAC UNIT HEATERS SCHEDULE

EQUIPMENT MARK	DESCRIPTION	LOCATION	WEIGHT (lbs)	MANUFACTURER	MODEL	VOLTS	PHASE	HTG KW (kW)	FLA (amps)
UH-1	ELECTRIC UNIT HEATER	VESTIBULE 1	40	QMARK	MUH-04-4	480	3	7.5	9.0
UH-2	ELECTRIC UNIT HEATER	VESTIBULE 2	40	QMARK	MUH-04-4	480	3	7.5	9.0

KROGER HVAC LOAD SCHEDULE

THE HEATING AND COOLING LOAD CALCULATIONS ARE BASED ON THE CLTD/CLF (COOLING LOAD TEMPERATURE DIFFERENCE/COOLING LOAD FACTOR) METHOD. ASSUMPTIONS AND EXECUTION OF THESE METHODS ARE PER ASHRAE 183-2007...

HVAC LOADS

COOLING LOAD BREAKDOWN

CROOF	SENSIBLE HEAT GAIN FROM ROOF	CSSENS	TOTAL SENSIBLE HEAT GAIN TO SPACE
CWALL	SENSIBLE HEAT GAIN FROM EXTERIOR WALLS	CFAN	SENSIBLE HEAT GAIN FROM AIR HANDLER FAN
CPART	SENSIBLE HEAT GAIN FROM PARITIONS	COAS	SENSIBLE HEAT GAIN FROM OUTDOOR VENTILATION AIR
CGLASS	SENSIBLE HEAT GAIN FROM GLAZING	CTSENS	TOTAL SENSIBLE HEAT GAIN
CSOLAR	SENSIBLE HEAT GAIN FROM SOLAR GAIN THROGH GLAZING	CPLAT	LATENT HEAT GAIN FROM PEOPLE
CLIGHTS	SENSIBLE HEAT GAIN FROM INTERIOR LIGHTING	COAL	LATENT HEAT GAIN FROM OUTDOOR VENTILATION AIR
CEQUIP	SENSIBLE HEAT GAIN FROM PLUG LOADS, COMPUTERS, ETC.	CTLAT	TOTAL LATENT HEAT GAIN
CPSENS	SENSIBLE HEAT GAIN FROM PEOPLE	CTOT	TOTAL HEAT GAIN (SENSIBLE + LATENT)

HEATING LOAD BREAKDOWN

HROOF	HEAT LOSS FROM ROOF
HWALL	HEAT LOSS FROM EXTERIOR WALLS
HPART	HEAT LOSS FROM PARTITIONS
HGLASS	HEAT LOSS FROM GLAZING
HSLAB	HEAT LOSS FROM SLAB
HSPACE	TOTAL HEAT LOSS FROM SPACE
HOA	HEAT LOSS FROM OUTDOOR VENTILATION AIR
HTOT	TOTAL HEAT LOSS

EQUIPMENT MARK	CROOF	CWALL	CPART	CGLASS	CSOLAR	CLIGHTS	CEQUIP	CPSENS	CSSENS	CFAN	COAS	CTSENS	CPLAT	COAL	CTLAT	CTOT	HROOF	HWALL	HPART	HGLASS	HSLAB	HSPACE	HOA	HTOT	HCU
CU-1	0.2	1.1	0	0	0	0.5	17	2.2	21.2	0.7	0	21.9	2.1	0	2.1	24	0.3	2.8	0	0	0.8	4.1	0	4.1	
DS-1	0.2	1.1	0	0	0	0.5	17	2.2	21.2	0.7	0	21.9	2.1	0	2.1	24	0.3	2.8	0	0	0.8	4.1	0	4.1	
RTU-1	21.4	0.6	0	0	0	45.1	3	29.6	99.9	5	0	99.7	28.6	0	23.4	123.1	34.1	1.7	0	0	13.6	49.5	0	49.5	
RTU-2	21.1	0	0	0	0	44.5	0.9	21.5	88.2	4.5	0	85.3	20.7	0	18	103.3	33.7	0	0	0	13	46.7	0	46.7	
RTU-3	14.2	0	0	0	0	30	0.9	21.5	66.9	3.7	0	70.7	20.7	0	20.7	91.4	22.7	0	0	0	8.8	31.5	0	31.5	
RTU-4	15.4	0	0	0	0	32.6	0.8	21.5	70.6	3.7	0	74.4	20.7	0	20.7	95.1	24.7	0	0	0	9.5	34.2	0	34.2	
RTU-5	15	0	0	0	0	31.7	0.9	21.5	69.3	3.7	0	73	20.7	0	20.7	93.7	24	0	0	0	9.2	33.3	0	33.3	
RTU-6	16.2	0	0	0	0	34.2	0.9	21.5	73	3.9	0	76.9	20.7	0	20.7	97.6	25.9	0	0	0	10	35.9	0	35.9	
RTU-7	17.2