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: 91.4 DEG DRY BULB
74.5 DEG WET BULB
WINTER: 3.1 DEG DRY BULB

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ISSUE/REVISION

	DATE	DESCRIPTION
1	09/14/2023	90% OWNER REVIEW
	10/24/2023	BID / PERMIT ISSUE

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3071 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 522343
ISSUE DATE 10/24/23

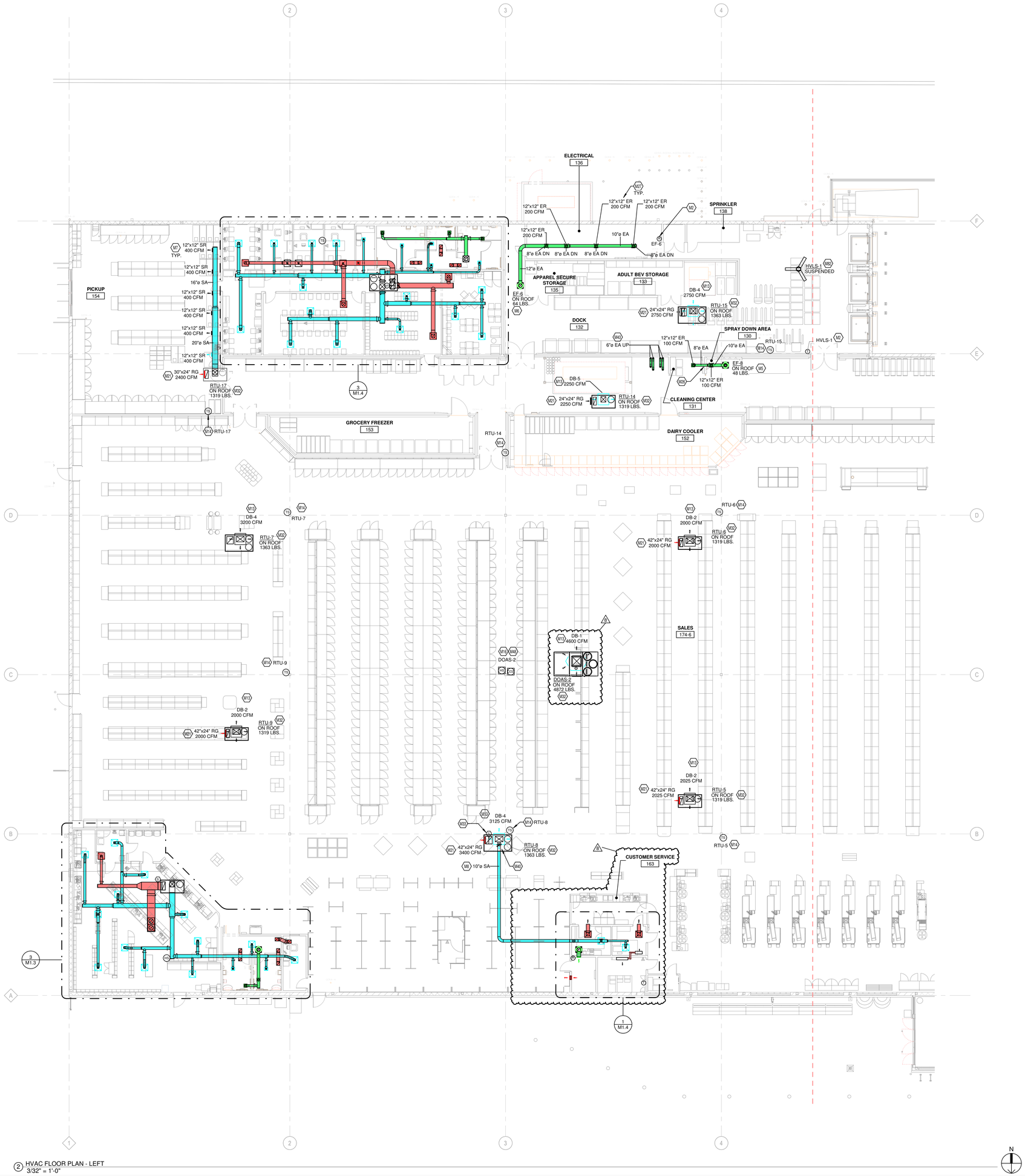
SHEET TITLE
MECHANICAL ABBREVIATIONS, SYMBOLS, AND GENERAL NOTES

SHEET NO.
M0.1

PLOTTED: 10/23/2023 4:11:21 PM FILE LOCATION: C:\Users\tsteen\Documents\Revit\20228.09-25-MEP-Kroger A971 Edgewood, KY -2023_tsteen1.rvt

KEYED NOTES

M2	THERMOSTAT TO BE MOUNTED AT 5'0" AFF. PROVIDE LOCKABLE PROTECTIVE COVER OVER DEVICE.
M5	DUCT UP TO OPENING THROUGH ROOF CAPPED WITH CURB AND KROGER FURNISHED EXHAUST FAN. REFER TO DETAIL 233723.00-01 ON SHEET M5.2 FOR MORE INFORMATION.
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 M5.2 FOR INSTALLATION INFORMATION.
M8	DUCTWORK TO BE HELD TIGHT TO STRUCTURE. REFER TO DETAIL HSD-3 ON SHEET M5.1 FOR DUCT ELEVATION DETAILS.
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 BUILDING CONTROLS PROVIDER. 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 EXHAUST GRILLE 8' ABOVE FINISHED FLOOR IN CLEANING CENTER AREA.
M27	MOUNTED GRILLE/REGISTER 10'0" AFF.
M32	ROOFTOP UNIT FURNISHED BY KROGER AND INSTALLED BY MECHANICAL CONTRACTOR. AIRFLOW TO BE BALANCED TO SCHEDULED AIRFLOW BY THIRD PARTY. REFERENCE DETAIL HSD-10 ON SHEET M5.1.
M33	DUCT MOUNTED SMOKE DETECTOR TO BE INSTALLED IN THE RETURN 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.
M40	VOLUME DAMPER AT DUCT CONNECTION. CONTRACTOR TO INSTALL PER DETAIL 233300.00-01 ON M5.2.
M43	FLUE VENT AND INTAKES FROM WATER HEATERS. REFER TO PLUMBING PLANS AND HVAC ROOF PLAN - LEFT.
M48	PROVIDE CO2 SENSOR WHERE SHOWN. ROUTE CONTROL WIRING TO BUILDING CONTROL PANEL.
M82	6-BLADE FAN PROVIDED BY CONTRACTOR AND CONTROLLED BY REMOTE MOUNTED VFD INCLUDED WITH UNIT. MOUNT FAN AND INCLUDED DISCONNECT ABOVE LIGHTS AND PER MANUFACTURERS SPECIFIC INSTALLATION INSTRUCTIONS. CONFIRM FINAL MOUNTING HEIGHT AND LOCATION (OF FAN AND CONTROLS) WITH OWNER AND ARCHITECT.



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

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A	01/03/2025	BID / PERMIT ISSUE
1	01/19/2024	BULLETIN NO. 1
2	05/22/2024	BULLETIN NO. 4
3	10/17/2024	BULLETIN NO. 6
4	10/31/2024	BULLETIN NO. 7
8	01/24/2025	BULLETIN NO. 11

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3077 Dixie Highway
Edgewood, KY 41018

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ISSUE DATE 01/03/2025

SHEET TITLE
HVAC FLOOR PLAN - LEFT

SHEET NO.
M1.1a

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KEYED NOTES

M2	THERMOSTAT TO BE MOUNTED AT 5'0" AFF. PROVIDE LOCKABLE PROTECTIVE COVER OVER DEVICE.
M4	CONTRACTOR TO FURNISH AND INSTALL SUSPENDED ELECTRIC HEATER IN HORIZONTAL DISCHARGE ORIENTATION USING THREADED ROD TO UNISTRUT CHANNEL OR APPROVED EQUAL. SPECIFY LOW VOLTAGE UNIT-MOUNTED ROOM THERMOSTAT, CONTACTOR, AND CONTROL TRANSFORMER WHEN ORDERING. MOUNT BOTTOM OF UNIT LEVEL WITH BOTTOM OF LIGHTS IN AREA. VERIFY FINAL LOCATION AND REQUIREMENTS TO OWNER PRIOR TO INSTALLATION. REFER TO HSD-16 ON SHEET M5.1 AND TO SCHEDULES ON M6.1 FOR MORE INFORMATION.
M5	DUCT UP TO OPENING THROUGH ROOF CAPPED WITH CURB AND KROGER FURNISHED EXHAUST FAN. REFER TO DETAIL 233723.00-01 ON SHEET M5.2 FOR MORE INFORMATION.
M7	SIDEWALL DIFFUSERS TO BE INSTALLED AT 45 DEGREES DOWNWARD. REFER TO 233713.00-02 ON M5.2 FOR INSTALLATION INFORMATION.
M8	DUCTWORK TO BE HELD TIGHT TO STRUCTURE. REFER TO DETAIL HSD-3 ON SHEET M5.1 FOR DUCT ELEVATION DETAILS.
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 BUILDING CONTROLS PROVIDER. 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.
M32	ROOFTOP UNIT FURNISHED BY KROGER AND INSTALLED BY MECHANICAL CONTRACTOR. AIRFLOW TO BE BALANCED TO SCHEDULED AIRFLOW BY THIRD PARTY. REFERENCE DETAIL HSD-10 ON SHEET M5.1.
M33	DUCT MOUNTED SMOKE DETECTOR TO BE INSTALLED IN THE RETURN 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 60 DEG F.
M39	INSTALL TRANSFER GRILLES PER DETAIL 233713.00-19 ON SHEET M5.2. TYPICAL.
M48	PROVIDE CO2 SENSOR WHERE SHOWN. ROUTE CONTROL WIRING TO BUILDING CONTROL PANEL.

KROGER RESTROOM FIXTURE COUNTS

MARK	DESCRIPTION	LOCATION	QTY.	FURNISH BY	INSTALL BY
PLTLF	FLOOR SET FLUSH VALVE WATER CLOSET	RESTROOM	0	P.C.	P.C.
PLTLFH	FLOOR SET FLUSH VALVE WATER CLOSET (ACCESSIBLE)	RESTROOM	2	P.C.	P.C.
PLUR	URINAL (ACCESSIBLE)	RESTROOM	0	P.C.	P.C.

RESTROOMS ON THIS SHEET:
179 - RESTROOM 'A'
180 - RESTROOM 'B'

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

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8	01/24/2025	BULLETIN NO. 11
9	01/28/2025	BULLETIN NO. 12
10	04/21/2025	BULLETIN NO. 13

EXECUTED BY: TDS
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PROJECT TITLE
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ISSUE DATE 01/03/2025

SHEET TITLE
HVAC FLOOR PLAN - RIGHT

SHEET NO.
M1.1b

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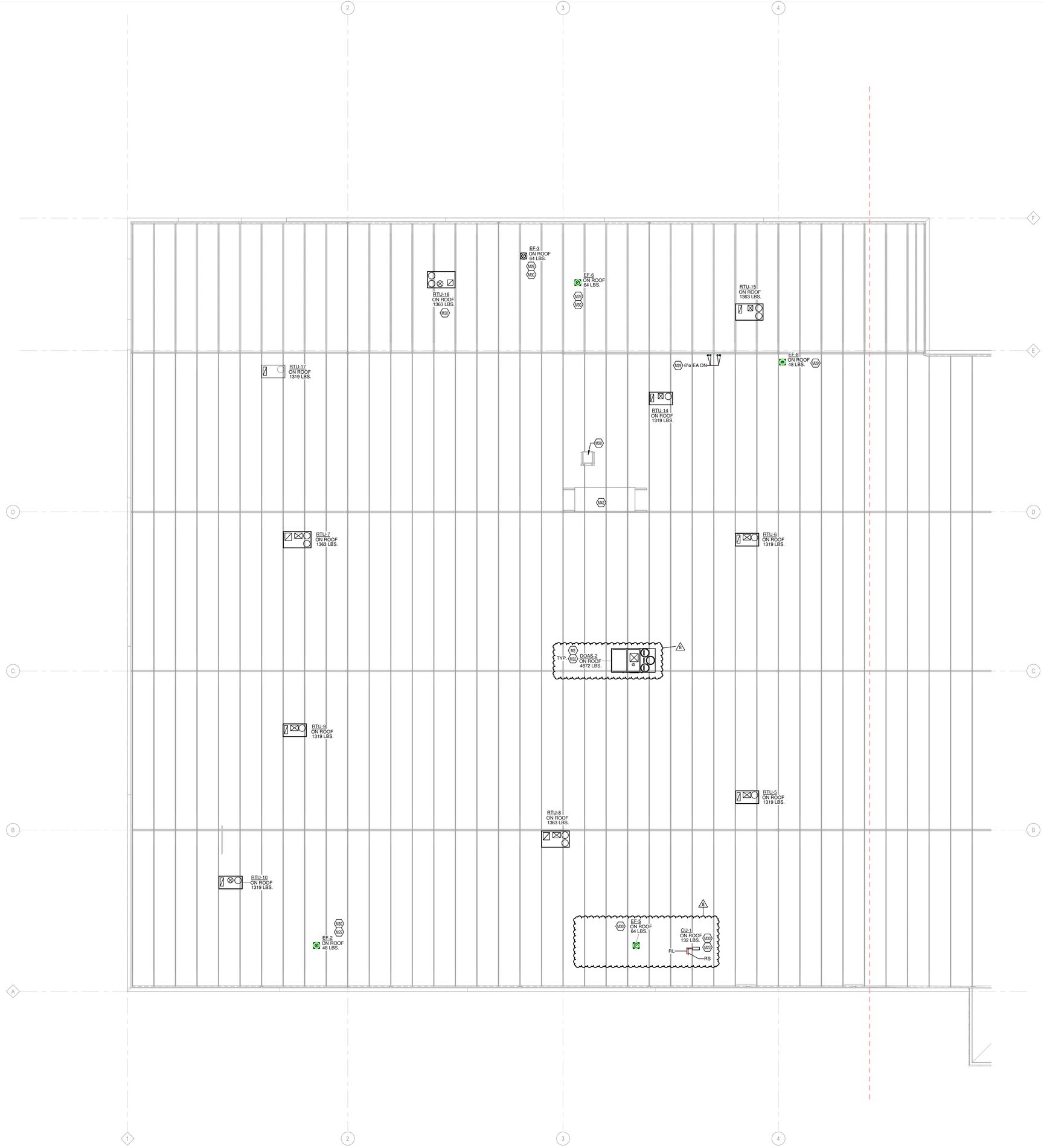
KEYED NOTES

M3	REFER TO SHEETS M5.1.16 - M5.1.18 FOR INFORMATION REGARDING DOAS UNITS.
M20	ROOF HATCH.
M23	KROGER FURNISHED SPLIT SYSTEM PROVIDED WITH LOW AMBIENT KIT AND WIND BAFFLES. MOUNT INDOOR UNIT ON WALL A MINIMUM 7'-0" AFF AND PER MANUFACTURER'S RECOMMENDATIONS. ROUTE REFRIGERANT LINES THROUGH ROOF TO CONDENSING UNIT PER MANUFACTURER'S GUIDELINES. ROUTE INSULATED CONDENSATE TO HUB DRAIN IN AREA. COORDINATE ORDERING OF REFRIGERANT LINESET WITH OWNER'S PROJECT MANAGER. REFERENCE HSD-11 FOR ADDITIONAL INFORMATION.
M29	INSTALL ALL FLUES, EXHAUST FANS, AND WATER HEATER INTAKES A MINIMUM OF 10 FEET FROM OUTSIDE AIR INTAKE OF ROOFTOP UNITS.
M30	INSTALL EQUIPMENT A MINIMUM OF 10 FEET FROM BUILDING EDGE, ADJACENT BUILDINGS, AND PROPERTY LINES.
M32	ROOFTOP UNIT FURNISHED BY KROGER AND INSTALLED BY MECHANICAL CONTRACTOR. AIRFLOW TO BE BALANCED TO SCHEDULED AIRFLOW BY THIRD PARTY. REFERENCE DETAIL HSD-10 ON SHEET M5.1.
M42	ROOF MOUNTED REFRIGERATION CONDENSER SHOWN FOR COORDINATION PURPOSES.



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

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2	05/22/2024	BULLETIN NO. 4
8	01/24/2025	BULLETIN NO. 11

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REVIEWED BY: KSL

PROJECT TITLE
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ISSUE DATE 01/03/2025
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HVAC ROOF PLAN - LEFT

SHEET NO.
M1.2a

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KEYED NOTES

M3	REFER TO SHEETS M3.1.16 - M3.1.18 FOR INFORMATION REGARDING DOAS UNITS.
M20	ROOF HATCH.
M29	INSTALL ALL FLUES, EXHAUST FANS, AND WATER HEATER INTAKES A MINIMUM OF 10 FEET FROM OUTSIDE AIR INTAKE OF ROOFTOP UNITS.
M30	INSTALL EQUIPMENT A MINIMUM OF 10 FEET FROM BUILDING EDGE, ADJACENT BUILDINGS, AND PROPERTY LINES.
M32	ROOFTOP UNIT FURNISHED BY KROGER AND INSTALLED BY MECHANICAL CONTRACTOR. AIRFLOW TO BE BALANCED TO SCHEDULED AIRFLOW BY THIRD PARTY. REFERENCE DETAIL HSD-10 ON SHEET M5.1.
M42	ROOF MOUNTED REFRIGERATION CONDENSER SHOWN FOR COORDINATION PURPOSES.

RTU-13 ON ROOF 1319 LBS.
EF-7 ON ROOF 64 LBS.
RTU-12 ON ROOF 997 LBS.
RTU-4 ON ROOF 1319 LBS.
RTU-2 ON ROOF 1319 LBS.
EF-9 ON ROOF 79 LBS.
EF-10 ON ROOF 79 LBS.
EF-11 ON ROOF 48 LBS.
DOAS-1 ON ROOF 4672 LBS.
TYP.
RTU-19 ON ROOF 1363 LBS.
EF-12 ON ROOF 96 LBS.
RTU-11 ON ROOF 2164 LBS.
EF-4A ON ROOF 96 LBS.
RTU-3 ON ROOF 1319 LBS.
RTU-1 ON ROOF 1319 LBS.
EF-4B ON ROOF 96 LBS.
EF-13 ON ROOF 77 LBS.
EF-1 ON ROOF 64 LBS.
RTU-18 ON ROOF 1319 LBS.

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

N

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9	01/28/2025	BULLETIN NO. 12
10	04/21/2025	BULLETIN NO. 13

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO: 523302
ISSUE DATE 01/03/2025

SHEET TITLE
HVAC ROOF PLAN - RIGHT

SHEET NO.
M1.2b

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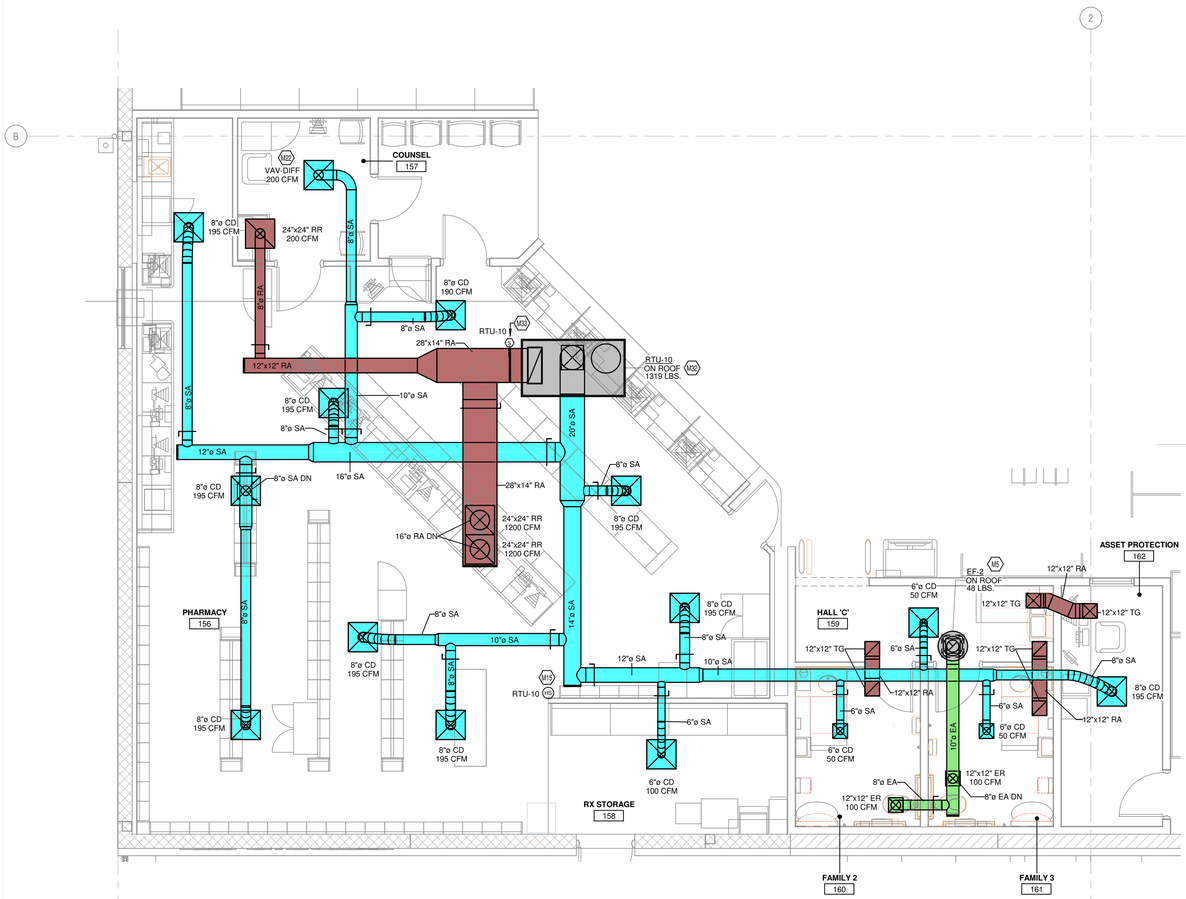
KEYED NOTES

M5	DUCT UP TO OPENING THROUGH ROOF CAPPED WITH CURB AND KROGER FURNISHED EXHAUST FAN. REFER TO DETAIL 233723.00-01 ON SHEET M5.2 FOR MORE INFORMATION.
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. REFERENCE HSD-4 ON M5.1 AND BOTH 233813.00-02 AND 233813.00-04 ON M5.2 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.
M15	COMBINATION TEMPERATURE/RELATIVE HUMIDITY SENSOR FOR RTU FURNISHED BY BUILDING CONTROL PROVIDER. ROUTE CONTROL WIRING THROUGH RTU AND BACK TO BUILDING CONTROL PANEL.
M17	DISH HOOD IS NOT INCLUDED IN CAPTIVEAIRE PACKAGE. DISH HOOD TO BE PROVIDED BY CONTRACTOR. HOOD, EXHAUST FAN, AND DUCTWORK TO BE INSTALLED BY MECHANICAL CONTRACTOR. REFER TO FOODSERVICE DRAWINGS 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.
M22	MECHANICAL CONTRACTOR TO PROVIDE VAV DIFFUSER, ACCUTHERM THERMA-FUSE MODEL TF-HC OR APPROVED EQUAL.
M24	HOOD ANSUL PULL STATION LOCATION. COORDINATE FINAL LOCATION WITH ELECTRICAL PLANS AND FOODSERVICE DRAWINGS. PROVIDE NAMEPLATE AT STATION WITH HOOD NUMBER AND LOCATIONS. REFERENCE HSD-4A FOR ADDITIONAL INFORMATION.
M27	MOUNTED GRILLE/REGISTER 10'0" AFF.
M31	INSTALL TRANSFER IN ACCORDANCE WITH 233713.00-19 ON M5.2.
M32	ROOFTOP UNIT FURNISHED BY KROGER AND INSTALLED BY MECHANICAL CONTRACTOR. AIRFLOW TO BE BALANCED TO SCHEDULED AIRFLOW BY THIRD PARTY. REFERENCE DETAIL HSD-10 ON SHEET M5.1.
M33	DUCT MOUNTED SMOKE DETECTOR TO BE INSTALLED IN THE RETURN 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	REFER TO ARCHITECTURAL DRAWINGS FOR FINAL HOOD LOCATION AND HOOD DIMENSIONS.

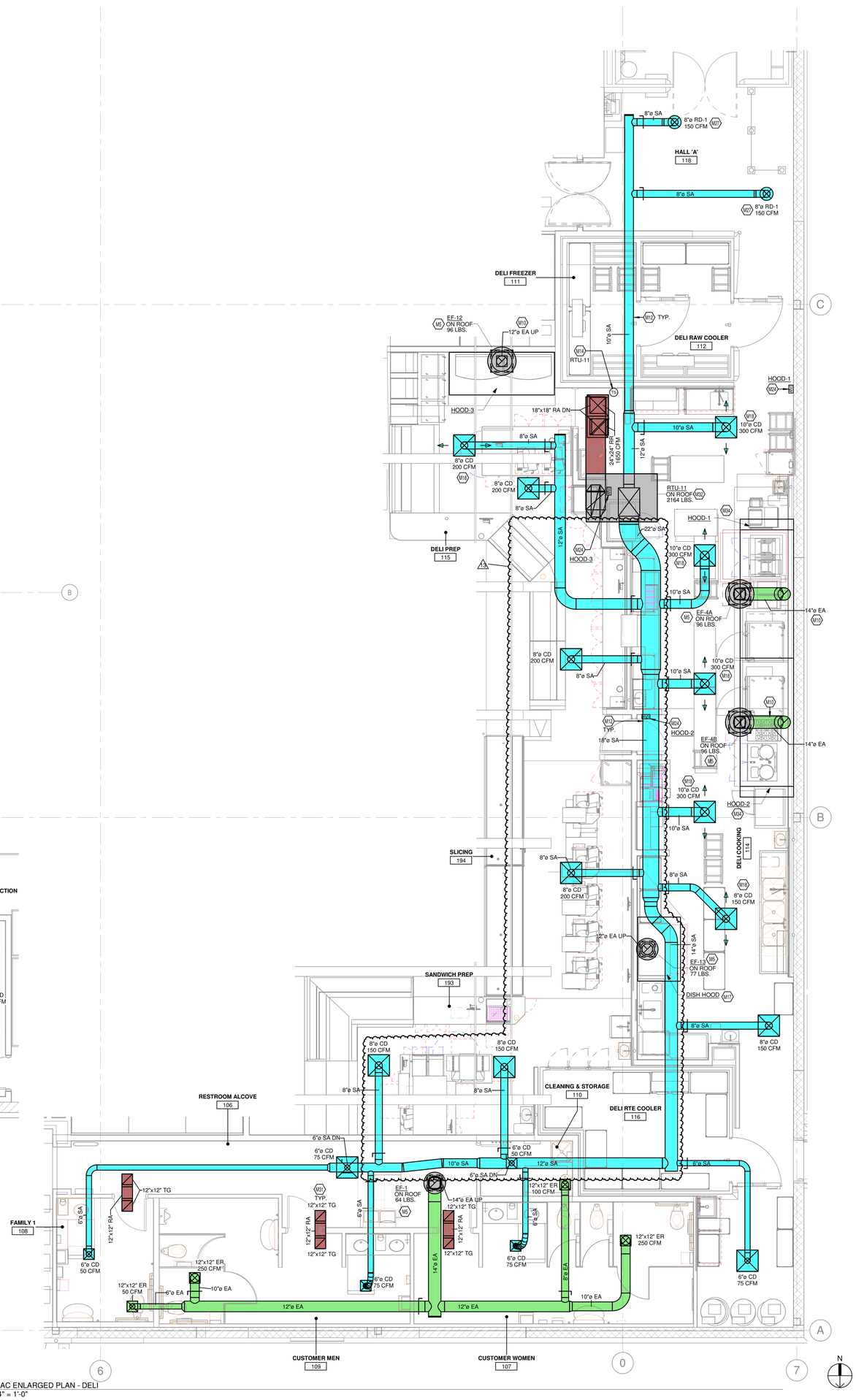
KROGER RESTROOM FIXTURE COUNTS

MARK	DESCRIPTION	LOCATION	QTY.	FURNISH BY	INSTALL BY
PLTLF	FLOOR SET FLUSH VALVE WATER CLOSET	RESTROOM	3	P.C.	P.C.
PLTLFH	FLOOR SET FLUSH VALVE WATER CLOSET (ACCESSIBLE)	RESTROOM	5	P.C.	P.C.
PLUR	URINAL (ACCESSIBLE)	RESTROOM	1	P.C.	P.C.

RESTROOMS ON THIS SHEET:
107 - CUSTOMER WOMEN
108 - FAMILY 1
109 - CUSTOMER MEN
160 - FAMILY 2
161 - FAMILY 3



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



1 HVAC ENLARGED PLAN - DELI
1/4" = 1'-0"

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10	04/21/2025	BULLETIN NO. 13
11	04/25/2025	BULLETIN NO. 14
13	06/19/2025	BULLETIN NO. 17

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO: 523302
ISSUE DATE: 01/03/2025

SHEET TITLE
HVAC ENLARGED PLANS

SHEET NO.
M1.3

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FILE LOCATION: C:\Users\tschaer\Documents\Revit\2026\9.00.23-MEP-Kroger A971 Edgewood, KY -V26_tschaer.rvt

KROGER RESTROOM FIXTURE COUNTS

MARK	DESCRIPTION	LOCATION	QTY.	FURNISH BY	INSTALL BY
PLTLF	FLOOR SET FLUSH VALVE WATER CLOSET	RESTROOM	1	P.C.	P.C.
PLTLFH	FLOOR SET FLUSH VALVE WATER CLOSET (ACCESSIBLE)	RESTROOM	3	P.C.	P.C.
PLUR	URINAL (ACCESSIBLE)	RESTROOM	1	P.C.	P.C.

RESTROOMS ON THIS SHEET:
144 - EMPLOYEE WOMEN
145 - EMPLOYEE MEN
146 - UNISEX

KEYED NOTES

M1 CONTRACTOR TO REFER TO HSD-3 FOR DUCTWORK INSTALLATION INFORMATION. TYPICAL.

M2 THERMOSTAT TO BE MOUNTED AT 5'0" AFF. PROVIDE LOCKABLE PROTECTIVE COVER OVER DEVICE.

M5 DUCT UP TO OPENING THROUGH ROOF CAPPED WITH CURB AND KROGER FURNISHED EXHAUST FAN. REFER TO DETAIL 233723.00-01 ON SHEET M5.2 FOR MORE INFORMATION.

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 ON SHEET M5.1 AND MANUFACTURER'S SPECIFICATIONS ON THIS SHEET FOR ADDITIONAL INFORMATION.

M11 INSTALL RETURNS IN ACCORDANCE WITH 233713.00-13 ON M5.2.

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.

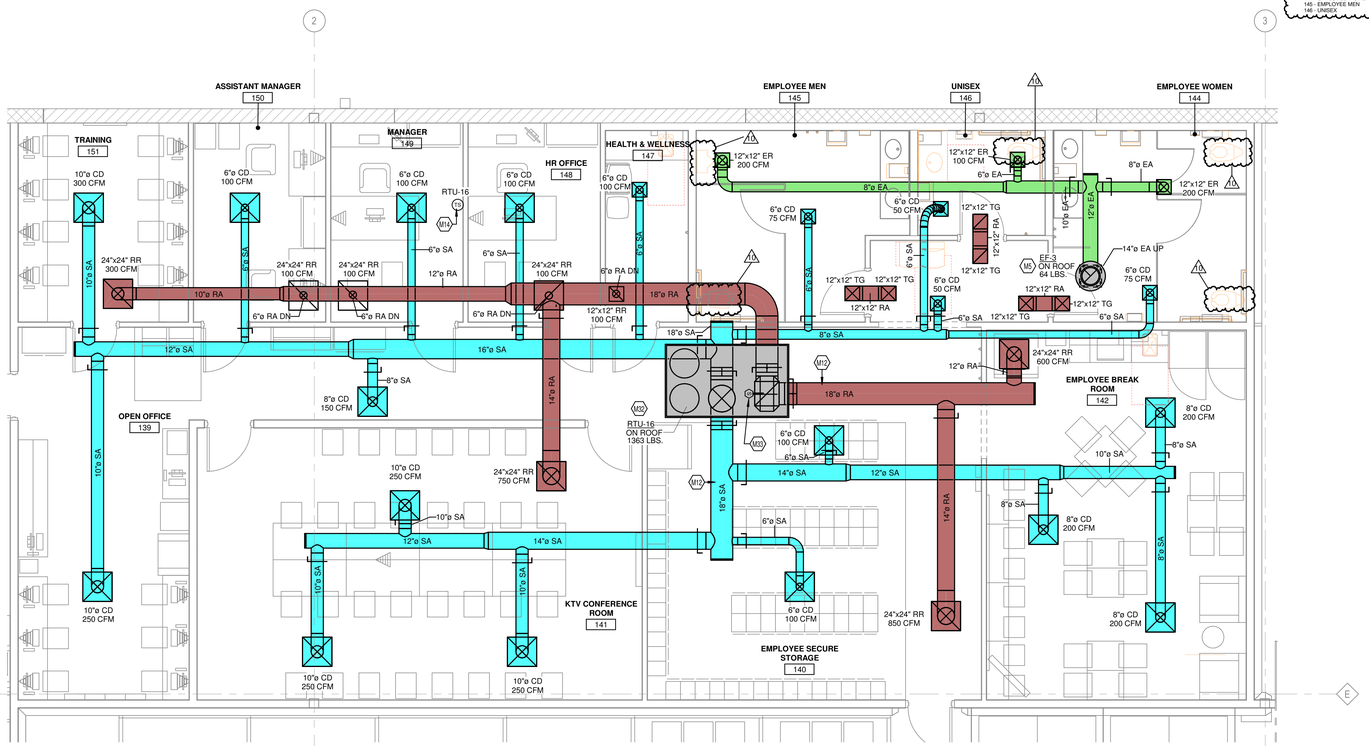
M22 MECHANICAL CONTRACTOR TO PROVIDE VAV DIFFUSER, ACCUTHERM THERMA-FUSE MODEL TF-HC OR APPROVED EQUAL.

M23 KROGER FURNISHED SPLIT SYSTEM PROVIDED WITH LOW AMBIENT KIT AND WIND BAFFLES. MOUNT INDOOR UNIT ON WALL A MINIMUM 7'-0" AFF AND PER MANUFACTURER'S RECOMMENDATIONS. ROUTE REFRIGERANT LINES THROUGH ROOF TO CONDENSING UNIT PER MANUFACTURER'S GUIDELINES. ROUTE INSULATED CONDENSATE TO HUB DRAIN IN AREA. COORDINATE ORDERING OF REFRIGERANT LINESET WITH OWNER'S PROJECT MANAGER. REFERENCE HSD-11 FOR ADDITIONAL INFORMATION.

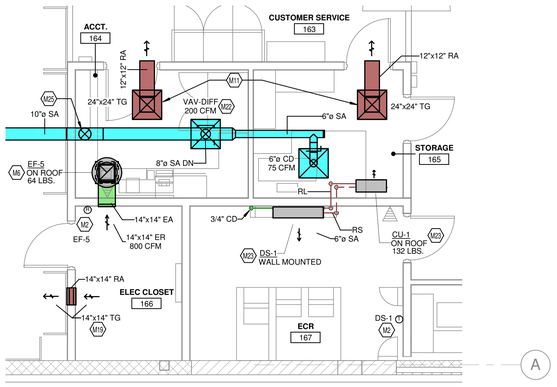
M25 DROP DUCT DOWN TO 10'-0" AFF TO LIMIT VISIBILITY FROM SALES FLOOR.

M32 ROOFTOP UNIT FURNISHED BY KROGER AND INSTALLED BY MECHANICAL CONTRACTOR. AIRFLOW TO BE BALANCED TO SCHEDULED AIRFLOW BY THIRD PARTY. REFERENCE DETAIL HSD-10 ON SHEET M5.1.

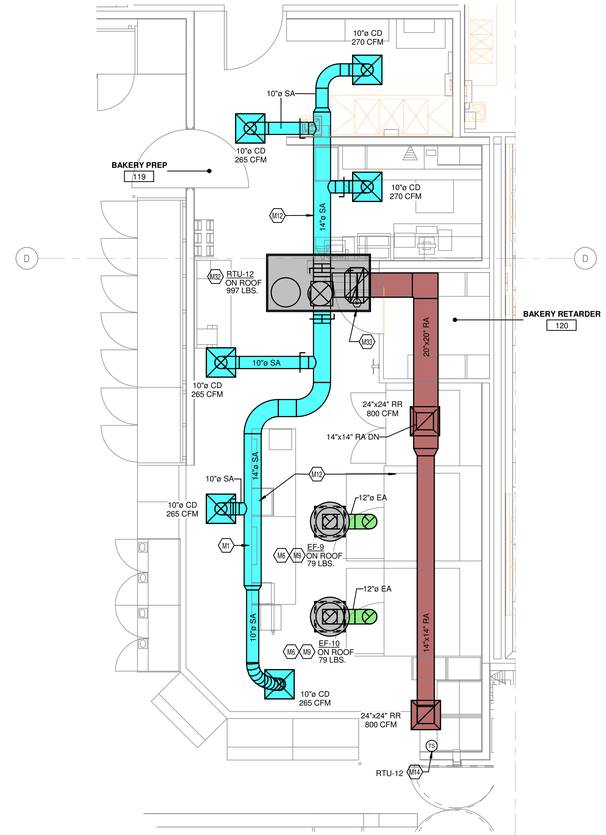
M33 DUCT MOUNTED SMOKE DETECTOR TO BE INSTALLED IN THE RETURN DUCTWORK, DOWNSTREAM OF FILTERS AND UPSTREAM OF ANY BRANCH CONNECTIONS. INSTALL SAMPLING TUBE(S) AND DETECTOR HOUSING IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. DETECTOR, FAN SHUTDOWN WIRING AND CONTROLS BY OTHERS.



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



1 HVAC ENLARGED PLAN - CUSTOMER SERVICE
1/4" = 1'-0"



2 HVAC ENLARGED PLAN - BAKERY
1/4" = 1'-0"

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SHEET TITLE
HVAC ENLARGED PLANS

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M1.4

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EMAIL: reg15@captiveaire.com

PATENT NUMBERS

EXHAUST HOODS ND-2/BD-2/SND-2 (CANADA) - CA PATENT 2520435 C.

HOOD INFORMATION - JOB#7171510

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1	H1A - K-0002317	6024 ND-2	CAPTIVEAIRE	12' 0"	450 DEG	I	MEDIUM	150	1800			4"	14"	1800	1684	-0.415"	304 SS WHERE EXPOSED	LEFT	ALONE
2	H1B - K-0002317	6024 ND-2	CAPTIVEAIRE	12' 0"	450 DEG	I	MEDIUM	150	1800			4"	14"	1800	1684	-0.415"	304 SS WHERE EXPOSED	RIGHT	ALONE
3	PNET - 42301	4824 ND-2	CAPTIVEAIRE	9' 10"	450 DEG	I	MEDIUM	150	1475			4"	12"	1475	1878	-0.858"	304 SS WHERE EXPOSED	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S) FIRE SYSTEM TYPE	SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1	H1A - K-0002317	SS BAFFLE WITH HANDLES	9	16"	16"	30%	4	L55 SERIES E26	NO	LEFT	12"x60"x24"			SC-320110MA	1 LIGHT 1 FAN	YES	666 LBS
2	H1B - K-0002317	SS BAFFLE WITH HANDLES	9	16"	16"	30%	4	L55 SERIES E26	NO	RIGHT	12"x60"x24"	TANK FS	4.0/4.0/4.0/4.0			YES	1077 LBS
3	PNET - 42301	CAPTRATE SOLO FILTER	7	16"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO							YES	402 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	H1A - K-0002317	FIELD WRAPPER 16.00" HIGH FRONT, LEFT.
		STRUCTURAL FRONT PANEL.
		SENSOR-CV.
2	H1B - K-0002317	FIELD WRAPPER 16.00" HIGH FRONT, RIGHT.
		STRUCTURAL FRONT PANEL.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 304 SS.
		SENSOR-CV.
3	PNET - 42301	RISER SENSOR INSTALL 6IN PLEN.

WALL-MOUNT UTILITY CABINET

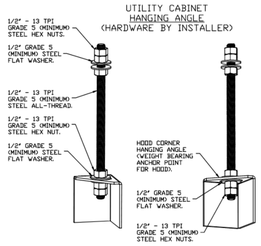
HOOD NO	LOCATION	SIZE	UTILITY CABINET(S) FIRE SYSTEM TYPE	SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	WEIGHT
3	WALL MNT	12"x42"x30"	TANK FS	4.0	SC-310110MA	1 LIGHT 1 FAN	240.00 LBS

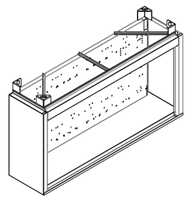
WALL-MOUNT UTILITY CABINET ASSEMBLY INSTRUCTIONS

CABINET TO BE HUNG BY OTHERS. SEE UTILITY CABINET SCHEDULE FOR CABINET SIZE.

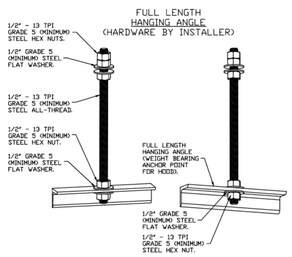
HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH UTILITY CABINET HANGING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

UTILITY CABINET HANGING ANGLE (HARDWARE BY INSTALLER)





FULL LENGTH HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

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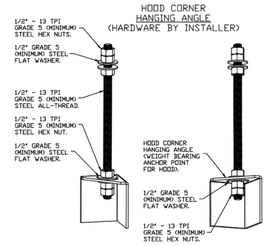
CLEARANCE TO COMBUSTIBLES

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

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

HOOD CORNER HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

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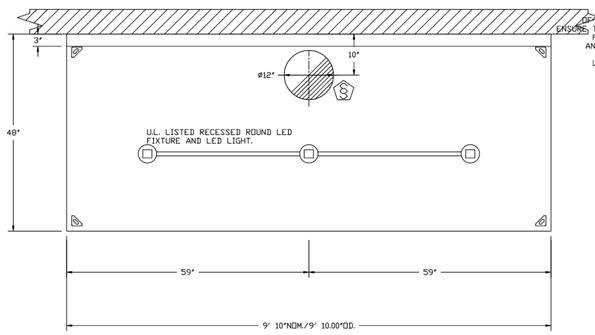


PLAN VIEW - HOOD #3 (PNET - 42301)
9' 10.00" LONG 4824ND-2

SPECIFICATION: CAPTRATE® GREASE-STOP® SOLO FILTER

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

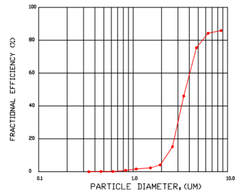
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

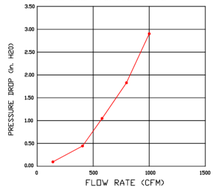
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

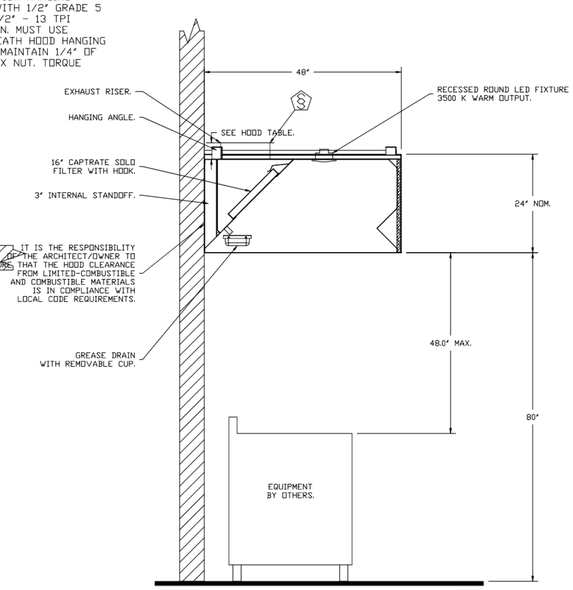
EFFICIENCY VS. PARTICLE DIAMETER



PRESSURE DROP VS. FLOW RATE



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



SECTION VIEW - MODEL 4824ND-2
HOOD - #3 (PNET - 42301)

REVISIONS

	DESCRIPTION	DATE:
1		
2		
3		
4		

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National Accounts
4641 Paragon Park Rd., Raleigh, NC. 27616 PHONE: (919) 882 - 2410 FAX: 9192275948 EMAIL: reg15@captiveaire.com
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Edgewood, KY, 41018

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A971

3077 Dixie Highway
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ISSUE DATE 01/03/2025

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.1

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JOB NO 7171510 | MODEL NUMBER SC-320110MA | JOB NAME KROGER - EDGEWOOD KY - KVS - -

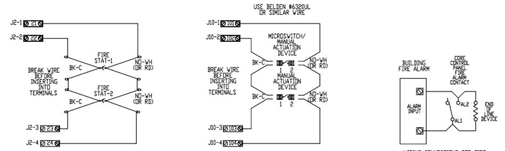
DRAWN BY | SCHEMATIC TYPE INSTALL | DATE 11/18/2024 | DWG NO ECP #2-1

DESCRIPTION OF OPERATION: Fire System #1 TANK FS - 40/40/40/40 #'S - 1.

TANK PROTECTION LOW-VOLTAGE FIGURES

10/01/2023 Rev. 17

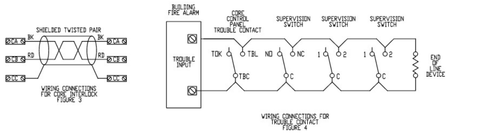
FS-1: MASTER



WIRING CONNECTIONS FOR PULL STATION LOOP FIGURE 1

WIRING CONNECTIONS FOR MANUAL ACTUATION LOOP FIGURE 1A

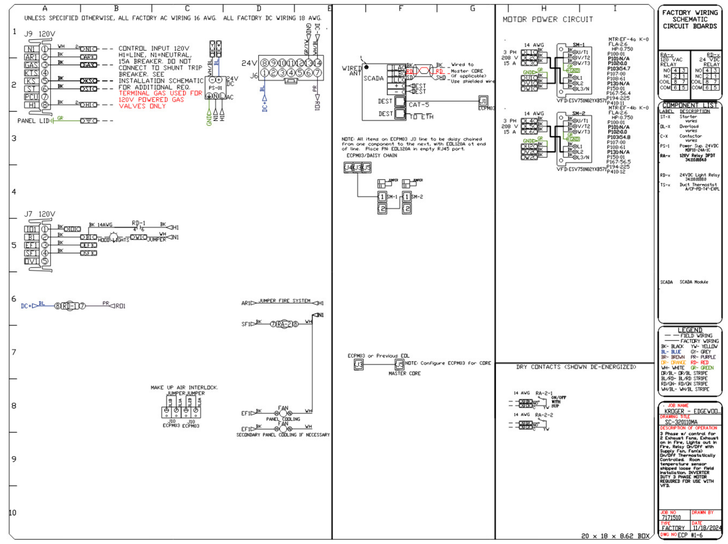
WIRING CONNECTIONS FOR FIRE ALARM CONTACT FIGURE 2

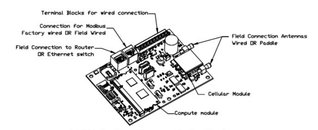


WIRING CONNECTIONS FOR TROUBLE CONTACT FIGURE 4

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

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





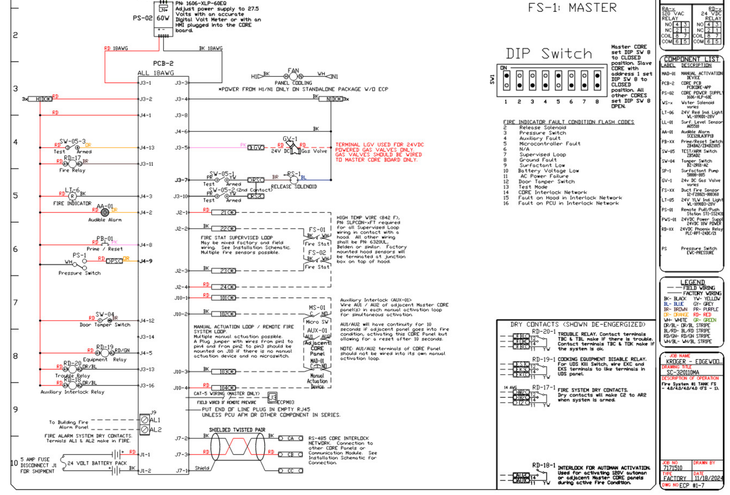
CASlink Monitor and Control

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

MONITORING AND CONTROL POINTS LIST

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

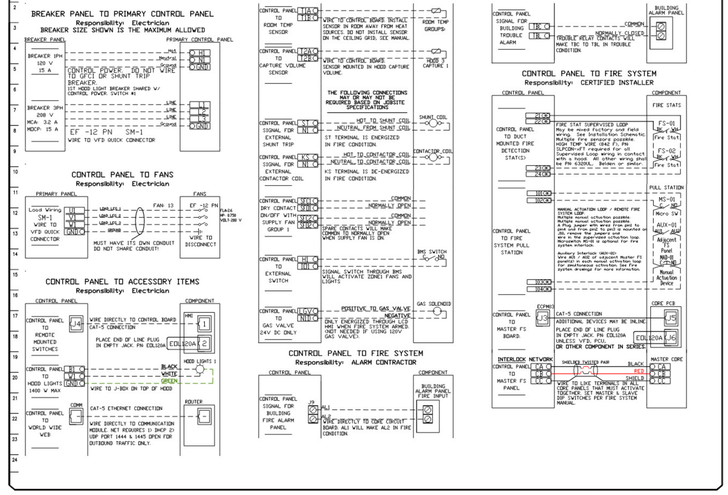
SC Packages	Function
Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCV Faults	MONITOR
PCV Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire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



JOB NO 7171510 | MODEL NUMBER SC-310110MA | JOB NAME KROGER - EDGEVOOD KY - KVS - --

DRAWN BY | SCHEMATIC TYPE INSTALL | DATE 11/18/2024 | DWG NO ECP #2-1

DESCRIPTION OF OPERATION: 3 Phase A/ control for 1 Exhaust Fan, Exhaust wo in Fire, Lights out in Fire, Relay On/Off with Supply Fan, Cycle On/Off Thermostatically Controlled, Room temperature sensor shipped loose for field installation. INVERTER DUTY 5 PANEL WITH VFD.



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KROGER - EDGEWOOD KY - KVS - R2
3071 Dixie Highway,
Edgewood, KY, 41018

DATE: 11/18/2024

DWG.#: 7171510

DRAWN BY:

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

MASTER DRAWING

SHEET NO. 10

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EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 523302
ISSUE DATE 01/03/2025

SHEET TITLE
△ HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.10

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FILE LOCATION: C:\Users\tedwr\Documents\Revit\2026\06-20-24-MEP-Kroger-A971-Edgewood, KY - 2023_tedwr.rvt

JOB NO 7171510 | MODEL NUMBER SC-310110MA | JOB NAME KROGER - EDGEWOOD KY - KVS - .. | DRAWN BY | SCHEMATIC TYPE INSTALL | DATE 11/18/2024 | ENG NO ECP #2-2

DESCRIPTION OF OPERATION:
Fire System #2 Tank FS - 48.

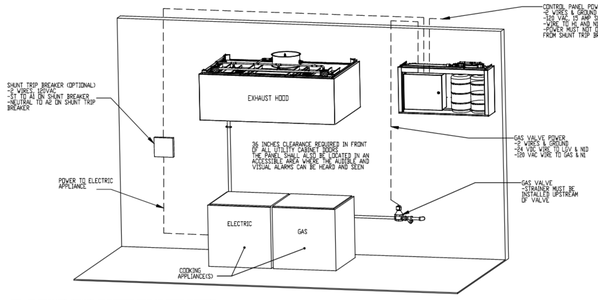
WALL MOUNT UTILITY CABINET TANK PROTECTION ELECTRICAL DETAIL

10/01/2023 Rev. 03

FS-2: MASTER

ELECTRICIAN:
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE ALL FANS PER INCLUDED SCHEMATIC
3. WIRE SHUNT TRIP BREAKER (OPTIONAL)
4. WIRE UDS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

ELECTRICAL CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & NI	BREAKER COIL (A1 & A2)	120 VAC	< 4 AMPS	ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	H1 & N1 + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & N1	KTS & N1	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AUI, AUI2	SOLENOID	120 VAC	< 6 AMPS	120V TO AUI, AUI2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
GAS VALVE	120 & N2 OF 24 VAC/ GAS & N2 OF 120 VAC)	RED/RED/GREEN	24 VDC OR 120 VAC	< 10 AMPS	IF 24 VDC - 2 WIRES & GROUND, X2 TO RED, 120 TO RED, AND GREEN TO GROUND IF 120 VAC - 2 WIRES & GROUND GAS TO RED, N2 TO RED, AND GREEN TO GROUND



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

JOB NO 7171510 | MODEL NUMBER SC-310110MA | JOB NAME KROGER - EDGEWOOD KY - KVS - .. | DRAWN BY | SCHEMATIC TYPE INSTALL | DATE 11/18/2024 | ENG NO ECP #2-3

DESCRIPTION OF OPERATION:
Fire System #2 Tank FS - 48.

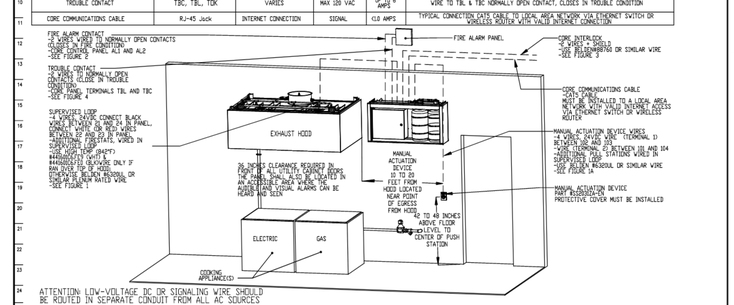
WALL MOUNT UTILITY CABINET TANK PROTECTION LOW-VOLTAGE DETAIL

10/01/2023 Rev. 3

FS-2: MASTER

ALARM CONTRACTOR:
1. WIRE SMOKE ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. COMPLETE FINAL HOOKUP OF SYSTEM
3. VERIFY FINAL FIRE SYSTEM TEST

ALARM CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104 102 AND 103	1 & 2	24 VDC	< 1.0 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 101 AND 102 WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 103 AND 104 JUMPER 101 TO 104 AND 103 TO 102 IF NO MANUAL ACTUATION DEVICE IS INSTALLED
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED IF SMOKE HEADING USE COVER EXTENSION P/N 418018
REMOTE FIRESTAT SENSOR(S)	D1 AND D4 D2 AND D3	BLACK AND WHITE	24 VDC	< 1.0 AMPS	WIRE FIRE SENSOR WIRES BETWEEN ANSUL HOOD PANEL TERMINALS D1 AND D4 WIRE FIRE SENSOR BLACK WIRE BETWEEN HOOD CORE PANEL TERMINALS D2 AND D4 HIGH TEMP (360°F) 84450(5)FEE (WET) & 84450(5)FEE (BELOW OR SIMILAR ONLY IF RAW WATER SERVICE)
FIRE ALARM CONTACT	AL1, AL2	VARIES	50V MAX (AC/DC)	UP TO 1 AMP	FIRE ALARM RELAY CONTACTS ARE NORMALLY OPEN AND ARE LOCATED IN THE CORE ELECTRICAL CONTROL PANEL
CORE INTERLOCK(S)	CA, CB, CC	CA, CB, CC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM (C) CA, TO CORE SYSTEM (C) CA; CORE SYSTEM (C) CB, TO CORE SYSTEM (C) CB; CORE SYSTEM (C) CC, TO CORE SYSTEM CO CC USE BELDEN 8870 OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TDK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	<1.0 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION



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

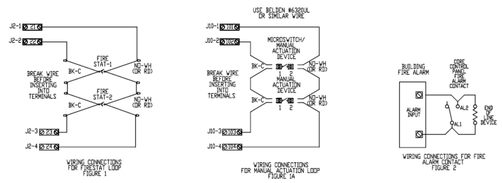
NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

DESCRIPTION OF OPERATION:

10/01/2023 Rev. 17

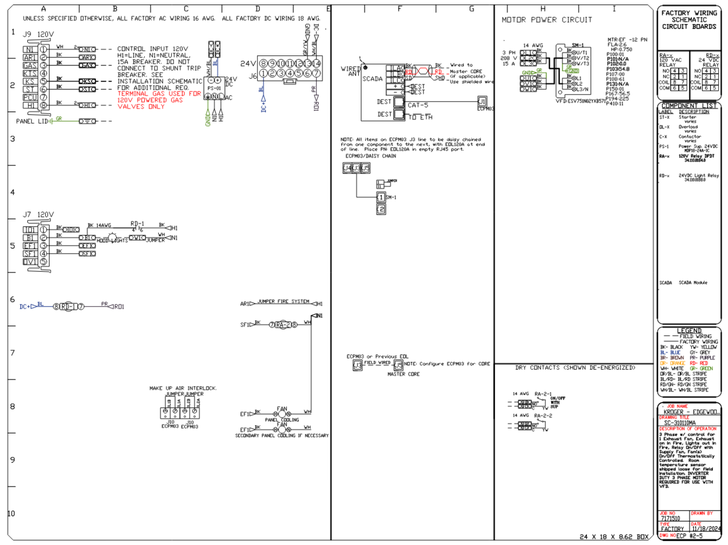
TOTAL PROTECTION LOW-VOLTAGE FIGURES

FS-2: MASTER



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

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



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ISSUE DATE 01/03/2025

SHEET TITLE
2 HVAC SECTIONS AND DETAILS

SHEET NO.
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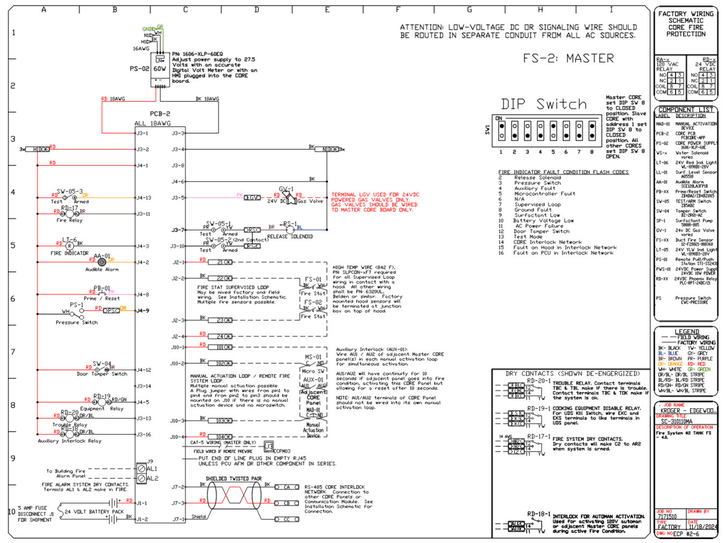

SYSTEM DESIGN VERIFICATION (SDV)

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

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

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

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HVAC SECTIONS AND DETAILS

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DUCTWORK #1 PARTS - JOB#7171510 DOUBLE WALL DUCT-1

TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
H1-E1	DW18DWRISER-2R-S	1800				-0.415	8.15	0.00	1	DOUBLE WALL RISER COVER - USED ON 14' INNER RISER, 4' LONG - 2 LAYERS REDUCED CLEARANCE - 18' STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE V CLAMPS FOR INNER & OUTER CONNECTIONS.
P1	DW1447DWLT-2R-S	1800				-0.02	62.39	1683.79	1	DOUBLE WALL DUCT - 14' INNER DUCT, 47' LONG - 2 LAYERS REDUCED CLEARANCE - 18' STAINLESS STEEL OUTER SHELL.
P2	DW1447DWLT-2R-S	1800				-0.0197	62.39	1683.79	1	DOUBLE WALL DUCT - 14' INNER DUCT, 47' LONG - 2 LAYERS REDUCED CLEARANCE - 18' STAINLESS STEEL OUTER SHELL.
P3	DW1447DWLT-2R-S	1800				-0.0197	62.39	1683.79	1	DOUBLE WALL DUCT - 14' INNER DUCT, 47' LONG - 2 LAYERS REDUCED CLEARANCE - 18' STAINLESS STEEL OUTER SHELL.
P4	DW1423DWLT-2R-S	1800				-0.0097	30.75	1683.79	1	DOUBLE WALL DUCT - 14' INNER DUCT, 23' LONG - 2 LAYERS REDUCED CLEARANCE - 18' STAINLESS STEEL OUTER SHELL.
P5 ASSEMBLED W/P6	DW1447DWAJDTP-2R-S	1800				-0.0129	93.06	1683.79	1	DOUBLE WALL ADJUSTABLE DUCT TRANSITION PLATE - 14' INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 18' STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11' / MAX LENGTH = 48.5' / ADJUSTMENT = 30.5' / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL 'V' CLAMPS.
P6 ASSEMBLED W/P5 D=B	DW2314TPDBEX	1800					8.00	1683.79	1	DUCT TO CURB TRANSITION 3/4' DOWN TURN, 23' CURB TO 14' DUCT, 16 GA ALUMINIZED. USED ON NCA14FA & NCA14HPFA. TRANSITION PLATE OD IS 23.5' DESIGNED FOR USE WITH EXHAUST FAN.
SYSTEM AT P6						-0.497	0.00			
RC1	DW18DWRISER-2R-S						8.15		1	DOUBLE WALL RISER COVER - USED ON 14' INNER RISER, 4' LONG - 2 LAYERS REDUCED CLEARANCE - 18' STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE V CLAMPS FOR INNER & OUTER CONNECTIONS.
	3M-2000PLUS						0.80		2	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW14DWCLASY-2R-S						7.21		3	DUCT - 14' DUCT - 18' DOUBLE 'V' CLAMP - 2R INSULATION & SINGLE 'V' CLAMP INCLUDED - REDUCED CLEARANCE.
TOTAL WEIGHT							358.51			

DOUBLE WALL FACTORY BUILT DUCTWORK

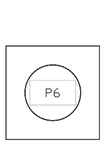
- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16' PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.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

HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (FT)
5'	7'
6'	7'
7'	7'
8'	7'
10'	7'
12'	7'
14'	7'
16'	7'
18'	5'
20'	5'
22'	5'
24'	5'
26'	5'
28'	5'
30'	5'
32'	5'
34'	5'
36'	5'

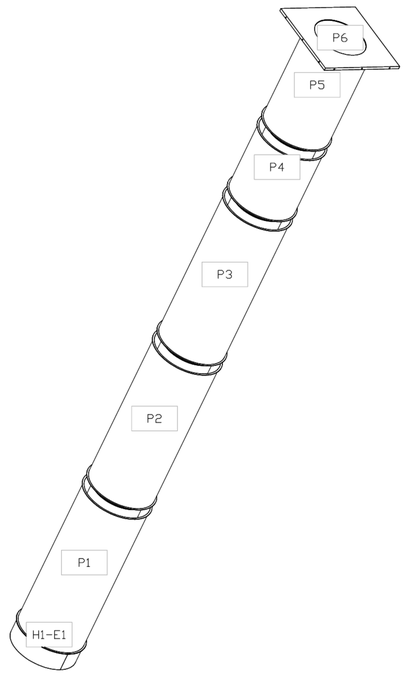
VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5'-16')	20'	24'	24'
2R (18')	18'	24'	24'
3R & 3Z (5'-24')	10'	24'	24'
3Z (26' -36')	10'	20'	20'

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

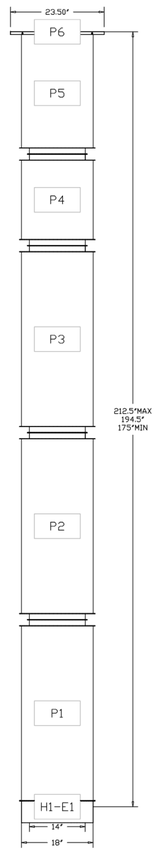
DUCTWORK #1 TOP VIEW
DUCT-1



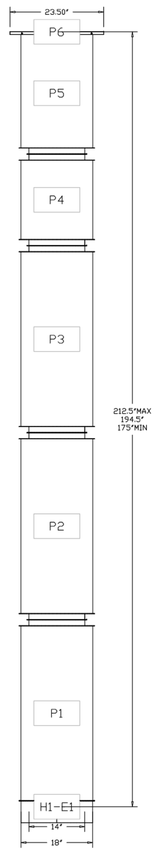
DUCTWORK #1 SE VIEW
DUCT-1



DUCTWORK #1 FRONT VIEW
DUCT-1



DUCTWORK #1 SIDE VIEW
DUCT-1



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ISSUE DATE: 01/03/2025

SHEET TITLE
△9 HVAC SECTIONS AND DETAILS

SHEET NO.
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DUCTWORK #3 PARTS – JOB#7171510 DOUBLE WALL DUCT-3

TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
H3-E1	DW16DWRISER-2R-S	1475				-0.858	7.31	0.00	1	DOUBLE WALL RISER COVER - USED ON 12" INNER RISER, 4' LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE V CLAMPS FOR INNER & OUTER CONNECTIONS.
P1	DW1247DWLT-2R-S	1475				-0.0287	54.71	1878.03	1	DOUBLE WALL DUCT - 12" INNER DUCT, 47" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P2	DW1247DWLT-2R-S	1475				-0.0287	54.71	1878.03	1	DOUBLE WALL DUCT - 12" INNER DUCT, 47" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P3	DW1247DWLT-2R-S	1475				-0.0287	54.71	1878.03	1	DOUBLE WALL DUCT - 12" INNER DUCT, 47" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P4	DW1223DWLT-2R-S	1475				-0.0141	27.05	1878.03	1	DOUBLE WALL DUCT - 12" INNER DUCT, 23" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P5 ASSEMBLED W/P6	DW1247DWAJDTP-2R-S	1475				-0.0178	82.74	1878.03	1	DOUBLE WALL ADJUSTABLE DUCT TRANSITION PLATE - 12" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 48.5" / ADJUSTMENT = 30.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P6 ASSEMBLED W/P5 D=B	DW2312TPDBEX	1475					8.00	1878.03	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 23" CURB TO 12" DUCT, 16 GA ALUMINIZED. USED ON NCA14FA & NCA14HPFA. TRANSITION PLATE OD IS 23.5" DESIGNED FOR USE WITH EXHAUST FAN.
SYSTEM AT P6						-0.976	0.00			
RC1	DW16DWRISER-2R-S						7.31		1	DOUBLE WALL RISER COVER - USED ON 12" INNER RISER, 4' LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE V CLAMPS FOR INNER & OUTER CONNECTIONS.
	3M-2000PLUS						0.80		1	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW12DWCLASY-2R-S						6.44		3	DUCT - 12" DUCT - 16" DOUBLE "V" CLAMP - 2R INSULATION & SINGLE "V" CLAMP INCLUDED - REDUCED CLEARANCE.
TOTAL WEIGHT							316.66			

DOUBLE WALL FACTORY BUILT DUCTWORK

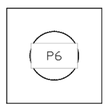
- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.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

HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (FT)
5"	7'
6"	7'
7"	7'
8"	7'
10"	7'
12"	7'
14"	7'
16"	7'
18"	5'
20"	5'
22"	5'
24"	5'
26"	5'
28"	5'
30"	5'
32"	5'
34"	5'
36"	5'

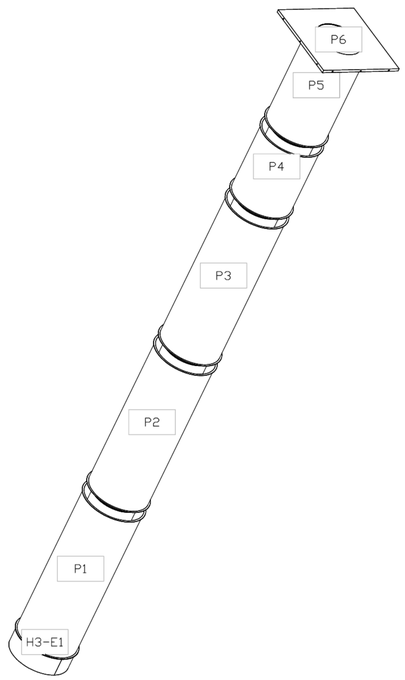
VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5'-16")	20'	24'	24'
2R (18")	18'	24'	24'
3R & 3Z (5'-24")	10'	24'	24'
3Z (26" -36")	10'	20'	20'

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

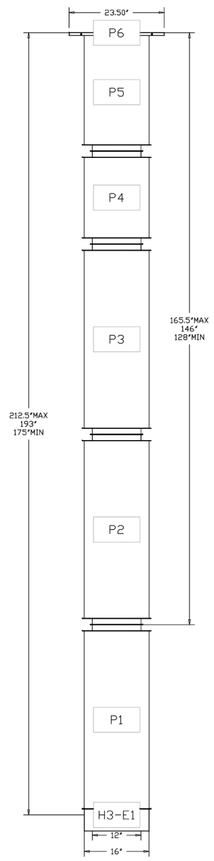
DUCTWORK #3 TOP VIEW
DUCT-3



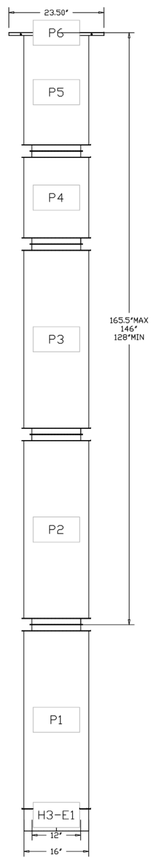
DUCTWORK #3 SE VIEW
DUCT-3



DUCTWORK #3 FRONT VIEW
DUCT-3



DUCTWORK #3 SIDE VIEW
DUCT-3



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PROJECT TITLE
KROGER STORE
A971

3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO.: 523302
ISSUE DATE: 01/03/2025

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
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DUCTWORK #2 PARTS – JOB#7171510 DOUBLE WALL DUCT-2

TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
H2-E1	DW18DWRISER-2R-S	1800				-0.415	8.15	0.00	1	DOUBLE WALL RISER COVER – USED ON 14' INNER RISER, 4' LONG – 2 LAYERS REDUCED CLEARANCE – 18' STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE V CLAMPS FOR INNER & OUTER CONNECTIONS.
P1	DW1447DWLT-2R-S	1800				-0.0198	62.39	1683.79	1	DOUBLE WALL DUCT – 14' INNER DUCT, 47' LONG – 2 LAYERS REDUCED CLEARANCE – 18' STAINLESS STEEL OUTER SHELL.
P2	DW1447DWLT-2R-S	1800				-0.0198	62.39	1683.79	1	DOUBLE WALL DUCT – 14' INNER DUCT, 47' LONG – 2 LAYERS REDUCED CLEARANCE – 18' STAINLESS STEEL OUTER SHELL.
P3	DW1447DWLT-2R-S	1800				-0.0198	62.39	1683.79	1	DOUBLE WALL DUCT – 14' INNER DUCT, 47' LONG – 2 LAYERS REDUCED CLEARANCE – 18' STAINLESS STEEL OUTER SHELL.
P4	DW1423DWLT-2R-S	1800				-0.0097	30.75	1683.79	1	DOUBLE WALL DUCT – 14' INNER DUCT, 23' LONG – 2 LAYERS REDUCED CLEARANCE – 18' STAINLESS STEEL OUTER SHELL.
P5 ASSEMBLED W/P6	DW1447DWAJDTP-2R-S	1800				-0.0121	93.06	1683.79	1	DOUBLE WALL ADJUSTABLE DUCT TRANSITION PLATE – 14' INNER DUCT – 2 LAYERS REDUCED CLEARANCE – 18' STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11' / MAX LENGTH = 48.5' / ADJUSTMENT = 30.5' / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL 'V' CLAMPS.
P6 ASSEMBLED W/P5 D=B	DW2314TPDBEX	1800					8.00	1683.79	1	DUCT TO CURB TRANSITION 3/4' DOWN TURN, 23' CURB TO 14' DUCT, 16 GA ALUMINIZED. USED ON NCA14FA & NCA14HPFA. TRANSITION PLATE OD IS 23.5' DESIGNED FOR USE WITH EXHAUST FAN.
SYSTEM AT P6						-0.496	0.00			
RC1	DW18DWRISER-2R-S						8.15		1	DOUBLE WALL RISER COVER – USED ON 14' INNER RISER, 4' LONG – 2 LAYERS REDUCED CLEARANCE – 18' STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE V CLAMPS FOR INNER & OUTER CONNECTIONS.
	3M-2000PLUS						0.80		2	DUCT – 3M FIRE BARRIER 2000 PLUS SILICONE – USED AS SEALANT TO SEAL DUCT JOINTS.
	DW14DWCLASY-2R-S						7.21		3	DUCT – 14' DUCT – 18' DOUBLE 'V' CLAMP – 2R INSULATION & SINGLE 'V' CLAMP INCLUDED – REDUCED CLEARANCE.
TOTAL WEIGHT							358.51			

DOUBLE WALL FACTORY BUILT DUCTWORK

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HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (FT)
5'	7'
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7'	7'
8'	7'
10'	7'
12'	7'
14'	7'
16'	7'
18'	5'
20'	5'
22'	5'
24'	5'
26'	5'
28'	5'
30'	5'
32'	5'
34'	5'
36'	5'

VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5'-16')	20'	24'	24'
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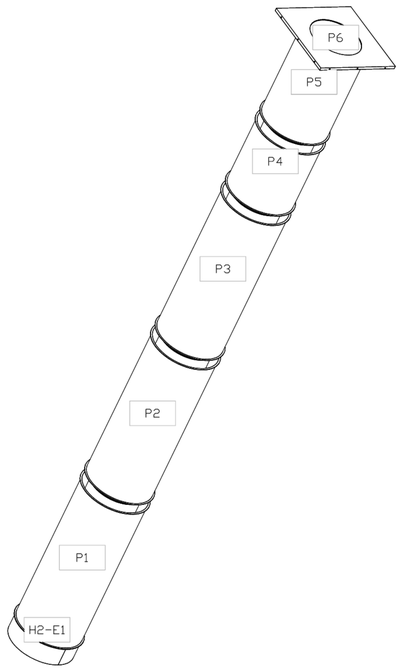
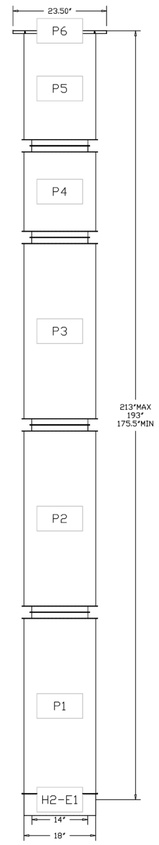
DUCTWORK #2 TOP VIEW
DUCT-2

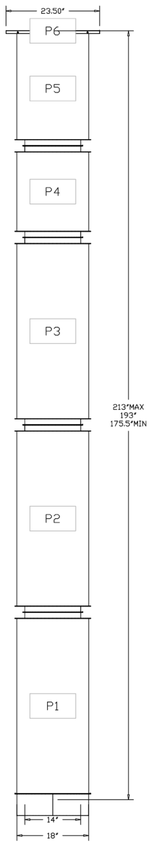
DUCTWORK #2 SE VIEW
DUCT-2



DUCTWORK #2 FRONT VIEW
DUCT-2



DUCTWORK #2 SIDE VIEW
DUCT-2



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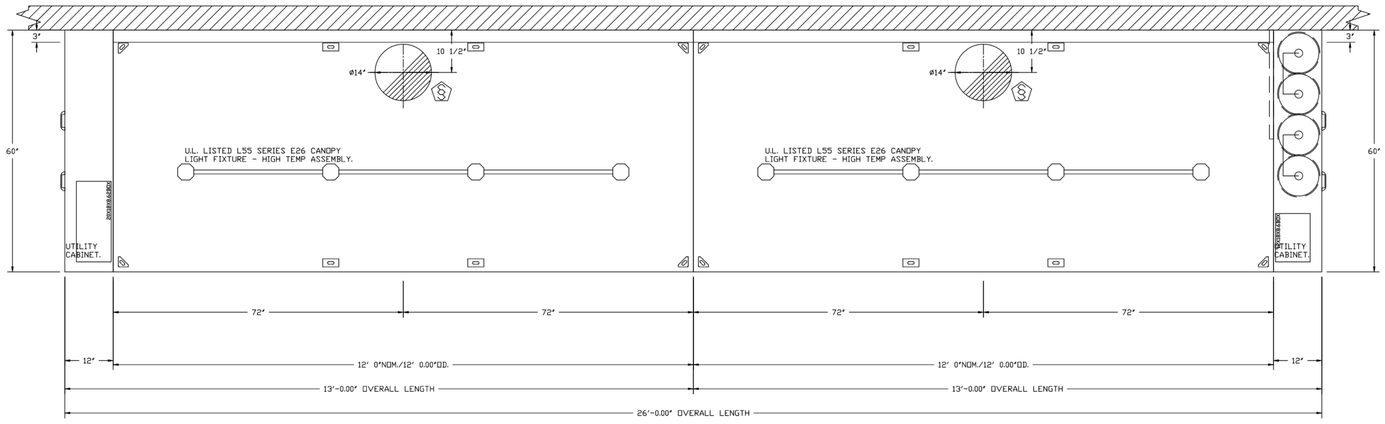
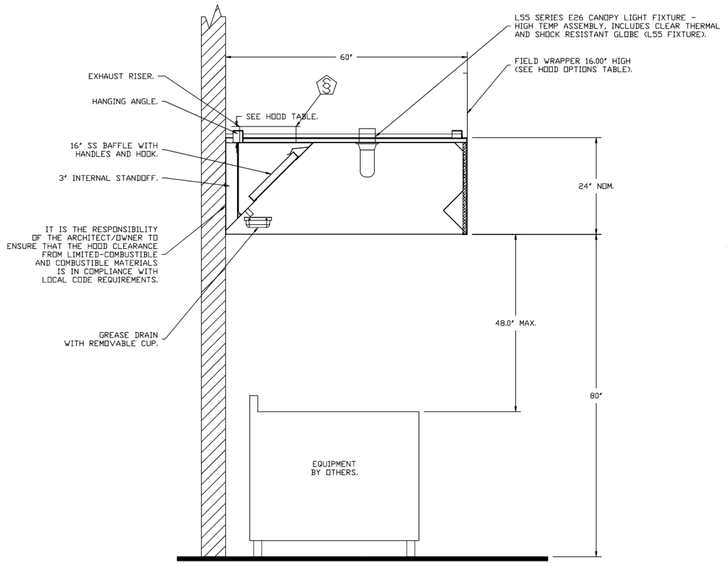
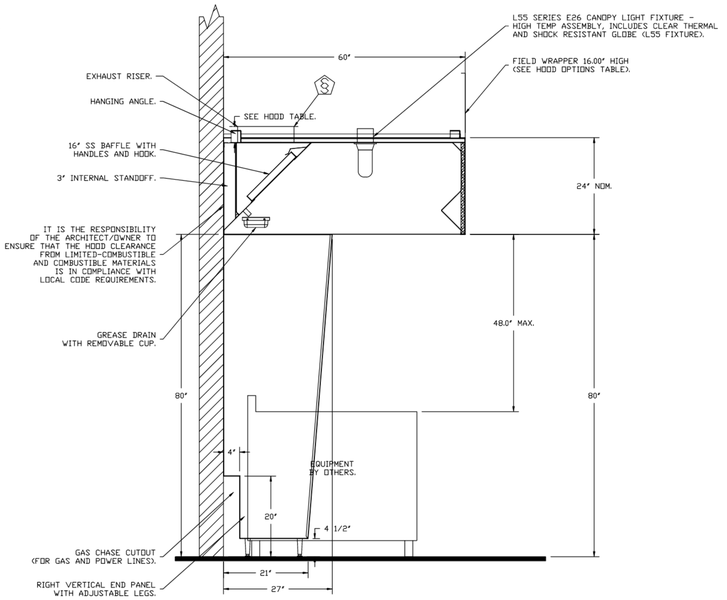


PLAN VIEW - HOOD #1 (H1A - K-0002317)
12' 0.00" LONG 6024ND-2
NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12' AND LONGER.

PLAN VIEW - HOOD #2 (H1B - K-0002317)
12' 0.00" LONG 6024ND-2
NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12' AND LONGER.



SECTION VIEW - MODEL 6024ND-2
HOOD - #1 (H1A - K-0002317)



SECTION VIEW - MODEL 6024ND-2
HOOD - #2 (H1B - K-0002317)

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FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1	FS - 1	0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 12-F28021-32144-OT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F. (A0034310).	2	0
		0 - 0 - 32-00002 QUIK SEAL - 1/2" (UL).	2	0
		0 - 0 - 361091 3/8" BRASS PLUG.	5	0
		0 - 0 - 4429K153 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	4	0
		0 - 0 - 4429K422 1/2" X 1/4" BRASS REDUCING BUSHING.	2	0
		0 - 0 - 79425 3/8" NPT FEMALE TO 1/2" MALE PROPRESS ADAPTER.	5	0
		0 - 0 - 79525 1/2" 90 PRO-PRESS ELBOW WITH 1/2" NPT FEMALE CONNECTION, VIEGA.	2	0
		0 - 0 - 79580 1/2" X 1/2" PRO-PRESS TEE X 1/2" NPT FEMALE CONNECTION, VIEGA.	4	0
		0 - 0 - 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - 87-300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	4	0
		0 - 0 - 87-300030-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	16	0
		0 - 0 - 9055455PC PRD PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	19	0
		0 - 0 - 9097200PC PRD PRESS PC611 1/2 PRESS TEE LD.	15	0
		0 - 0 - 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	8	0
		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - A31484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	2	0
		0 - 0 - BI145 3/8" BLACK IRON 90 ELL.	6	0
		0 - 0 - CBI-22.5 CHROME PLATED PIPE FITTING 3/8" NPT 22.5 DEGREE ELBOW.	2	0
		0 - 0 - DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - SLPCON-03FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 2' GAP. KIT CONTAINS 5 FEET OF BLACK MG WIRE, 5 FEET OF TAN MG WIRE, 3 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - SLPCON-05FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 4' GAP. KIT CONTAINS 7 FEET OF BLACK MG WIRE, 7 FEET OF TAN MG WIRE, 5 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - SLPCON-30FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UPTO 29' GAP. KIT CONTAINS 32 FEET OF BLACK MG WIRE, 32 FEET OF TAN MG WIRE, 30 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	12	0
		0 - 0 - TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	4	0
		16 - 16 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	16	0
		16 - 16 - DL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	16	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	16	0
		34 - 34 - A0034331 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT. RED COLOR.	1	0
2		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 12-F28021-32144-OT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F. (A0034310).	1	0
		0 - 0 - 32-00002 QUIK SEAL - 1/2" (UL).	1	0
		0 - 0 - 361091 3/8" BRASS PLUG.	3	0
		0 - 0 - 4429K153 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	1	0
		0 - 0 - 4429K422 1/2" X 1/4" BRASS REDUCING BUSHING.	1	0
		0 - 0 - 79425 3/8" NPT FEMALE TO 1/2" MALE PROPRESS ADAPTER.	3	0
		0 - 0 - 79525 1/2" 90 PRO-PRESS ELBOW WITH 1/2" NPT FEMALE CONNECTION, VIEGA.	1	0
		0 - 0 - 79580 1/2" X 1/2" PRO-PRESS TEE X 1/2" NPT FEMALE CONNECTION, VIEGA.	1	0
		0 - 0 - 87-300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300030-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - 9055455PC PRD PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	3	0
		0 - 0 - 9097200PC PRD PRESS PC611 1/2 PRESS TEE LD.	2	0
		0 - 0 - 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - A31484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	1	0
		0 - 0 - BI145 3/8" BLACK IRON 90 ELL.	2	0
		0 - 0 - DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - SLPCON-20FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UPTO 19' GAP. KIT CONTAINS 22 FEET OF BLACK MG WIRE, 22 FEET OF TAN MG WIRE, 20 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - SLPCON-30FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UPTO 29' GAP. KIT CONTAINS 32 FEET OF BLACK MG WIRE, 32 FEET OF TAN MG WIRE, 30 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	3	0
		0 - 0 - TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	1	0
		16 - 16 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	2	0
		16 - 16 - DL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	2	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	2	0
		34 - 34 - A0034331 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT. RED COLOR.	1	0

EXHAUST FAN INFORMATION - JOB#7171510

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-0002355	1	DR30HFA	CAPTIVEAIRE	650	0.500	1327	ODP	0.250	0.1310	1	115	3.8		64	8.5
2	EF-2 K-0002358	1	DR10HFA	CAPTIVEAIRE	200	0.300	1258	ODP	0.060	0.0380	1	115	1.1		48	3.4
3	EF-3 K-0002355	1	DR30HFA	CAPTIVEAIRE	400	0.500	1096	ODP	0.250	0.0740	1	115	3.8		64	5.9
4	EF-4A K-0069365	1	DU85HFA	CAPTIVEAIRE	1800	1.000	1379	ODP	0.750	0.4610	3	208	2.6	570 FPM	96	12.5
5	EF-4B K-0069365	1	DU85HFA	CAPTIVEAIRE	1800	0.500	1159	ODP	0.750	0.2730	3	208	2.6	570 FPM	96	9.5
6	EF-5 K-0002355	1	DR30HFA	CAPTIVEAIRE	800	0.400	1431	ODP	0.250	0.1640	1	115	3.8		64	9.9
7	EF-6 K-0002355	1	DR30HFA	CAPTIVEAIRE	800	0.400	1431	ODP	0.250	0.1640	1	115	3.8		64	9.9
8	EF-7 K-0002355	1	DR30HFA	CAPTIVEAIRE	700	0.400	1316	ODP	0.250	0.1280	1	115	3.8		64	8.4
9	EF-8 K-0002358	1	DR10HFA	CAPTIVEAIRE	200	0.300	1258	ODP	0.060	0.0380	1	115	1.1		48	3.4
10	EF-9 K-0002372	1	DU33HFA	CAPTIVEAIRE	600	0.500	1255	ODP	0.333	0.1190	1	115	5.6	297 FPM	79	10.9
11	EF-10 K-0002372	1	DU33HFA	CAPTIVEAIRE	600	0.500	1255	ODP	0.333	0.1190	1	115	5.6	297 FPM	79	10.9
12	EF-11 K-0002358	1	DR10HFA	CAPTIVEAIRE	200	0.300	1258	ODP	0.060	0.0380	1	115	1.1		48	3.4
13	EF -12 PNET - 42845	1	DU85HFA	CAPTIVEAIRE	1475	1.200	1364	ODP	0.750	0.4450	3	208	2.6	467 FPM	96	11.6
14	EF-13 DISH	1	DU33HFA	CAPTIVEAIRE	475	0.700	1323	ODP	0.333	0.1390	3	208	1.3	235 FPM	77	12.1

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	EF-1 K-0002355	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 15-BDD DAMPER
		1	2 YEAR PARTS WARRANTY
2	EF-2 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-4A K-0069365	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	2 YEAR PARTS WARRANTY
5	EF-4B K-0069365	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	2 YEAR PARTS WARRANTY
6	EF-5 K-0002355	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 15-BDD DAMPER
		1	2 YEAR PARTS WARRANTY
7	EF-6 K-0002355	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 15-BDD DAMPER
		1	2 YEAR PARTS WARRANTY
8	EF-7 K-0002355	1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	I 15-BDD DAMPER
		1	2 YEAR PARTS WARRANTY
9	EF-8 K-0002358	1	I 12-BDD DAMPER
		1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
10	EF-9 K-0002372	1	GREASE BOX
		1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
11	EF-10 K-0002372	1	GREASE BOX
		1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
12	EF-11 K-0002358	1	I 12-BDD DAMPER
		1	HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	2 YEAR PARTS WARRANTY
13	EF -12 PNET - 42845	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	2 YEAR PARTS WARRANTY
14	EF-13 DISH	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - DU/DR30/33HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		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-4A K-0069365	YES						
5	EF-4B K-0069365	YES						
6	EF-5 K-0002355		YES					
7	EF-6 K-0002355		YES					
8	EF-7 K-0002355		YES					
9	EF-8 K-0002358		YES					
10	EF-9 K-0002372	YES						
11	EF-10 K-0002372	YES						
12	EF-11 K-0002358		YES					
13	EF -12 PNET - 42845	YES						
14	EF-13 DISH	YES						

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

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DATE: 11/18/2024

DWG.#: 7171510

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OWNER
Kroger

ISSUE/REVISION

	DATE	DESCRIPTION
7	01/03/2025	BID / PERMIT ISSUE
8	01/24/2025	BULLETIN NO. 11

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3077 Dixie Highway
Edgewood, KY 41018

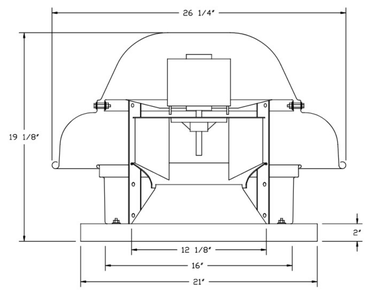
COMMISSION NO. 523302
ISSUE DATE 01/03/2025

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.3

PLOTTED: 1/24/2025 12:29:05 PM
FILE LOCATION: C:\Users\tdavis\Documents\Revit\2026\A-26-24-MEP-Kroger A971 Edgewood, KY - 2025_tdavis.rvt

FANS #1 (EF-1 K-0002355), #3 (EF-3 K-0002355), #6 (EF-5 K-0002355), #7 (EF-6 K-0002355), #8 (EF-7 K-0002355) - DR30HFA EXHAUST FAN



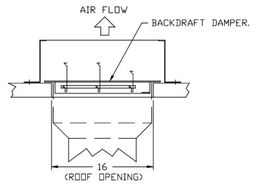
FEATURES:

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

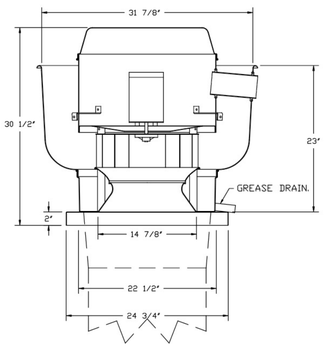
OPTIONS

- HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS.
- 1 15-BDD DAMPER.
- 2 YEAR PARTS WARRANTY.

BACKDRAFT DAMPER INSTALLATION



FANS #4 (EF-4A K-0069365), #5 (EF-4B K-0069365), #13 (EF -12 PNET - 42845) - DU85HFA EXHAUST FAN



FEATURES:

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

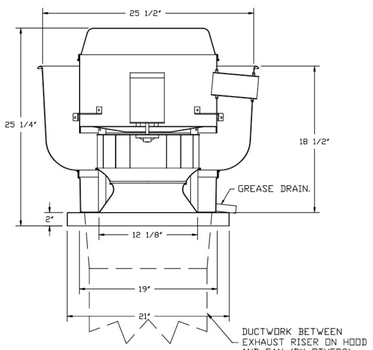
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

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

OPTIONS

- GREASE BOX.
- FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS.
- 2 YEAR PARTS WARRANTY.

FAN #14 DU33HFA - EXHAUST FAN (EF-13 DISH)



FEATURES:

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

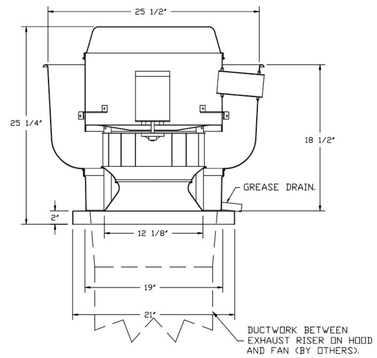
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

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

OPTIONS

- GREASE BOX.
- FAN BASE CERAMIC SEAL - DU/DR30/33HFA - INSTALLED AT PLANT - FOR GREASE DUCTS.
- 2 YEAR PARTS WARRANTY.

FANS #10 (EF-9 K-0002372), #11 (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.

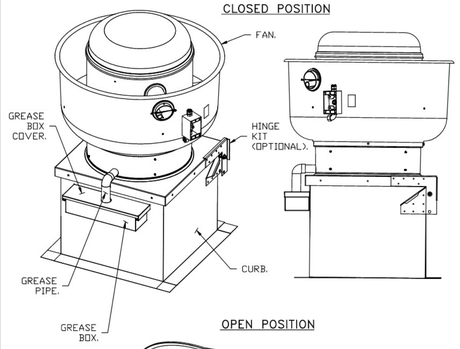
OPTIONS

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

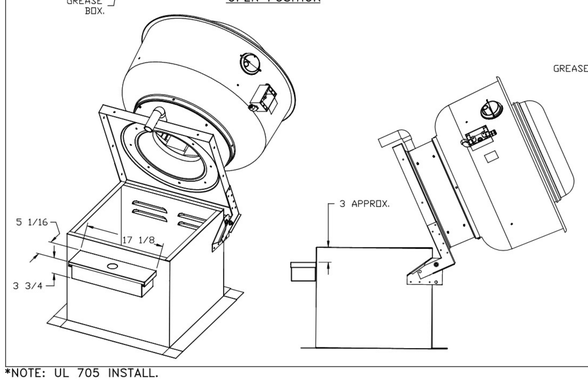
GREASE BOX INSTALLATION

GREASEBOX
REV.#2 08/19/22

CLOSED POSITION



OPEN POSITION



PARTS INCLUDED

GREASE BOX.
GREASE BOX COVER.
GREASE PIPE.

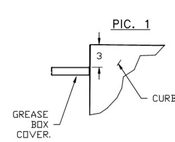
SHEET METAL SCREWS
3 - LONG (3/4" LG.).

GREASE BOX FIELD INSTALLATION

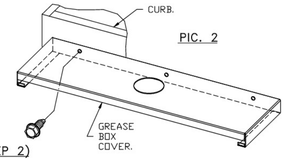
STEP 1)

ATTACH GREASE BOX COVER TO THE CURB, HOLD 3" DIMENSION AS SHOWN ON PIC. 1. SCREW GREASE BOX COVER TO CURB USING (3) LONG (3/4" LG.) SCREWS AS SHOWN ON PIC. 2.

PIC. 1



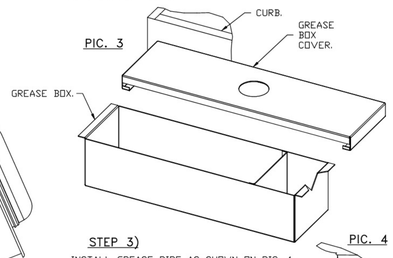
PIC. 2



STEP 2)

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

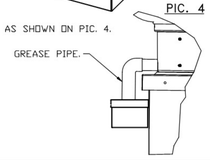
PIC. 3



STEP 3)

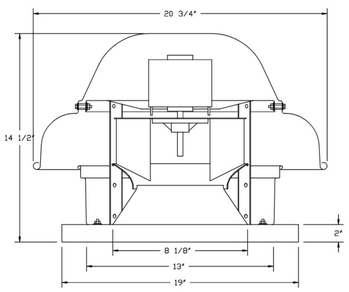
INSTALL GREASE PIPE AS SHOWN ON PIC. 4.

PIC. 4



*NOTE: UL 705 INSTALL.

FANS #2 (EF-2 K-0002358), #9 (EF-8 K-0002358), #12 (EF-11 K-0002358) - DR10HFA EXHAUST FAN



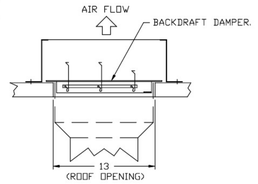
FEATURES:

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

OPTIONS

- 1 12-BDD DAMPER.
- HINGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS.
- 2 YEAR PARTS WARRANTY.

BACKDRAFT DAMPER INSTALLATION



REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

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Kroger

ISSUE/REVISION

	DATE	DESCRIPTION
7	01/03/2025	BID / PERMIT ISSUE
8	01/24/2025	BULLETIN NO. 11

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE A971

3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 523302
ISSUE DATE 01/03/2025
SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.4

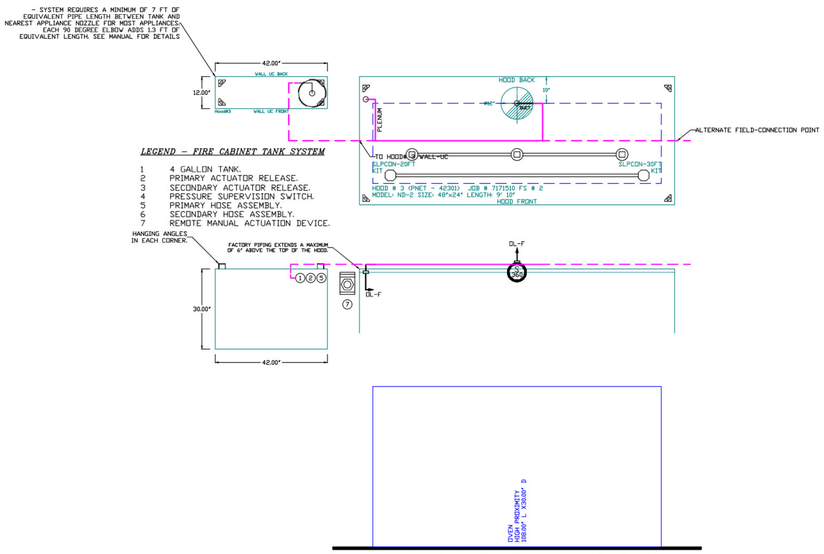
PLOTTED: 1/24/2025 12:23:14 PM FILE LOCATION: C:\Users\tdavis\Documents\Revit\2026.06.22-MEP-Kroger A971 Edgewood, KY -2025_tadavis.rvt

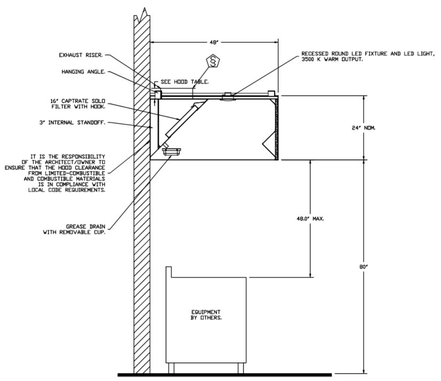
FIRE SYSTEM INFORMATION – JOB#7171510

FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION	
						SYSTEM	LOCATION ON HOOD
1	FS - 1	TANK FS	4.0/4.0/4.0/4.0	80	72	FIRE CABINET RIGHT	RIGHT, HOOD 2
2		TANK FS	4.0	20	8	WALL UTILITY CABINET LEFT	N/A

GAS VALVE(S)

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





SECTION VIEW – MODEL 4824ND-2 HOOD – #3

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 UL 300 REQUIREMENTS.

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

JOB #: 7171510.
JOB NAME: KROGER - EDGEWOOD KY - KVS - R2.

SYSTEM SIZE: TANK-SP-1-WC DESIGN FP: 8. MAXIMUM FP: 20.
HOOD # 3 9'10.00" LONG x 48" WIDE x 24" HIGH.
RISER # 1 SIZE: 1.0" DIA.
HOOD # 3 METAL BLOW-OFF CAPS INCLUDED.

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

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

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

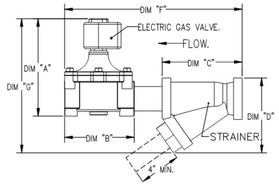
GAS VALVES AND STRAINERS

	GAS VALVE SIZING						GAS VALVE DIMENSIONS						INSTALLATION	PART NUMBERS		
	TYPE	SIZE	VOLTAGE	MIN. INLET PRESSURE	MAX. INLET PRESSURE	FLOW AT 1 IN.W.C. DROP NATURAL GAS	FLOW AT 1 IN.W.C. DROP PROPANE	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "F"	DIM "G"	MOUNTING ORIENTATION	GAS VALVE PART NUMBER	STRAINER PART NUMBER	GAS VALVE/STRAINER KIT
GAS VALVE FOR FS#1	ELECTRICAL	2"	120 VAC	0 PSI (0 IN.W.C.)	5 PSI (138 IN.W.C.)	2,840,500 BTU/HR	1,808,048 BTU/HR	7-5/8"	6-3/8"	7-1/4"	7-13-16"	15-5/8"	13-15/16"	HORIZONTAL	8214280	4417K68	(SCSEGV2)-24
GAS VALVE FOR FS#2	ELECTRICAL	2"	24 VDC	0 PSI (0 IN.W.C.)	5 PSI (138 IN.W.C.)	2,840,500 BTU/HR	1,808,048 BTU/HR	7-5/8"	6-3/8"	7-1/4"	7-13-16"	15-5/8"	13-15/16"	HORIZONTAL	8214280-24VDC	4417K68	(SCSEGV2)-24

ELECTRIC GAS VALVES ONLY:
3/4"-2" 120VAC GAS VALVES CAN BE MOUNTED WITH THE SOLENOID IN ANY POSITION ABOVE HORIZONTAL.
2-1/2"-3" 120VAC GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.
24VDC GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.

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

CALCULATIONS
TO CALCULATE GAS FLOW FOR OTHER THAN 1 IN.W.C. PRESSURE DROP
NEW BTU/HR = (BTU/HR AT 1 IN.W.C. PRESSURE DROP) X NEW PRESSURE DROP$^{0.5}$
TO CALCULATE GAS FLOW FOR OTHER THAN 0.64 SPECIFIC GRAVITY
NEW BTU/HR = (BTU/HR AT 0.64) X (0.64 / NEW SPECIFIC GRAVITY)$^{0.5}$.



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SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.5

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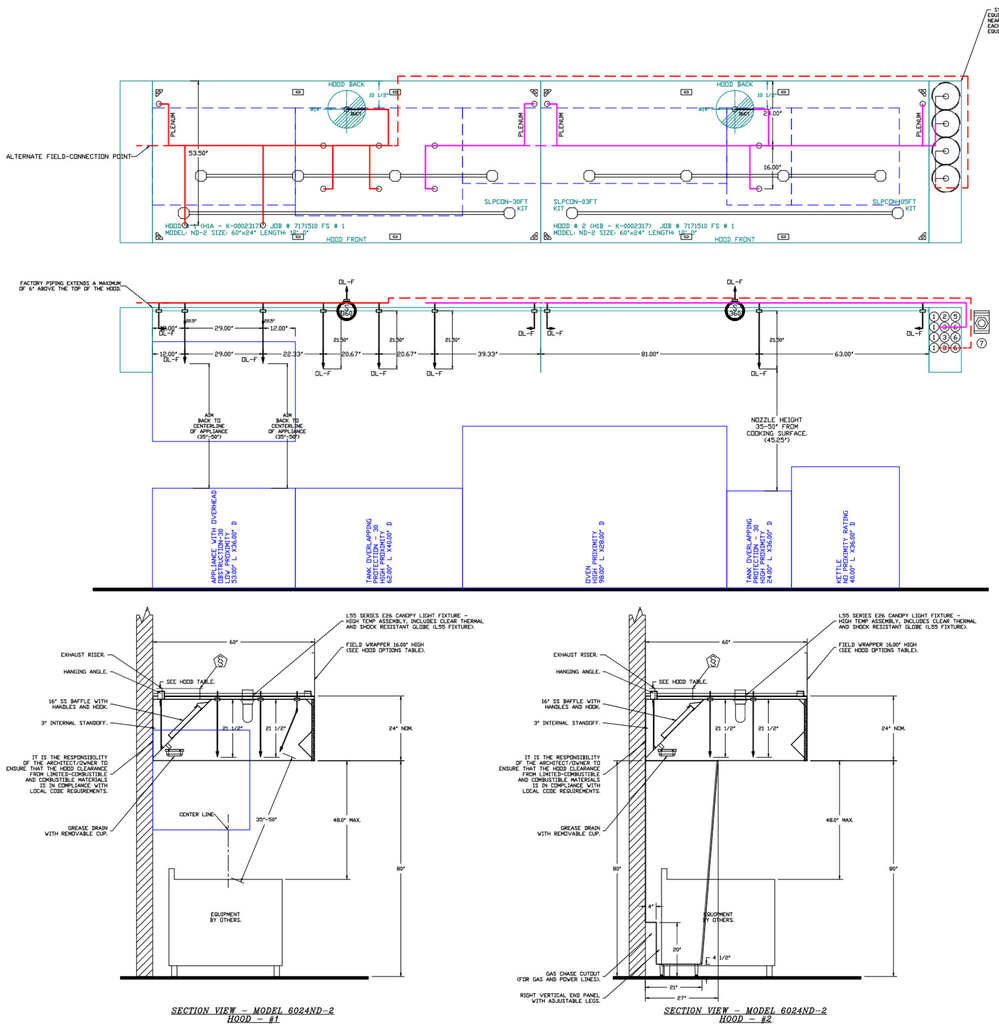

SECTION VIEW – MODEL 6024ND-2 HOOD – #1

SECTION VIEW – MODEL 6024ND-2 HOOD – #2

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.
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- 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 #: 7171510.
JOB NAME: KROGER - EDGEWOOD KY - KVS - R2.

SYSTEM SIZE: TANK-SP-4 DESIGN FP: 72. MAXIMUM FP: 80.
HOOD # 1 12' 0.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 12' 0.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

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

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

LEGEND – FIRE CABINET TANK SYSTEM

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

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KROGER STORE A971

3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 523302
ISSUE DATE 01/03/2025

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
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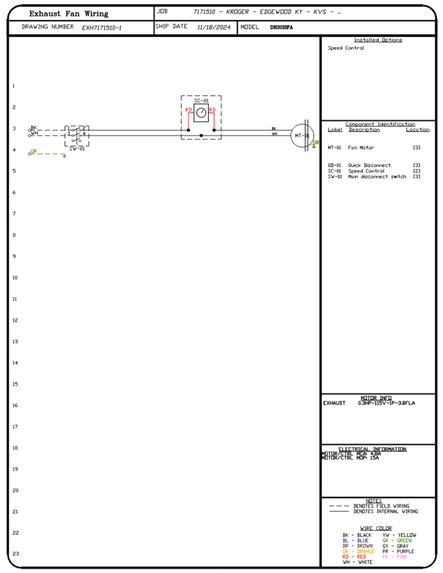

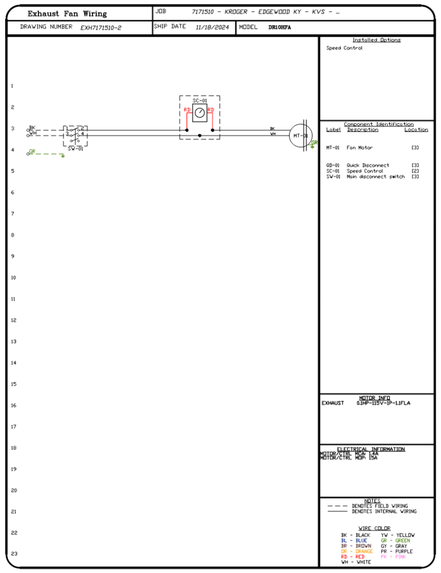

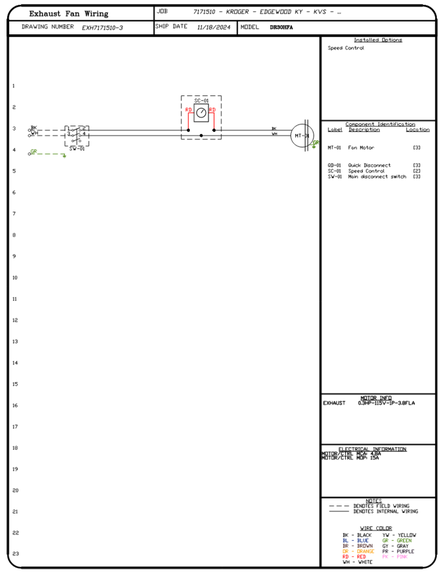

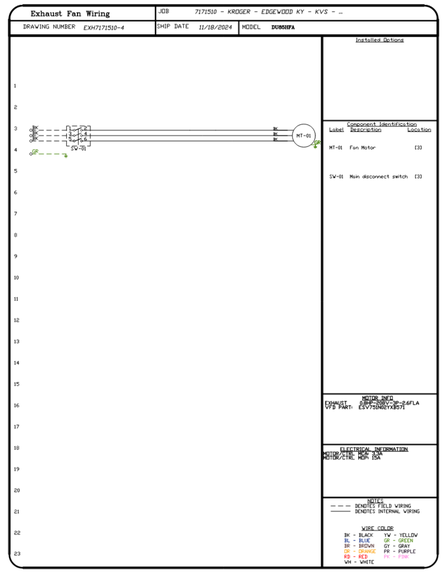

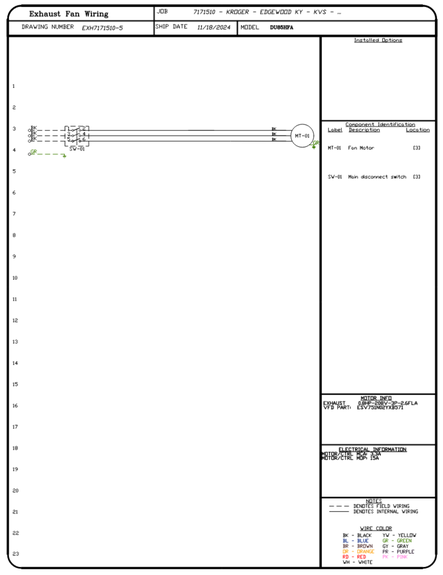

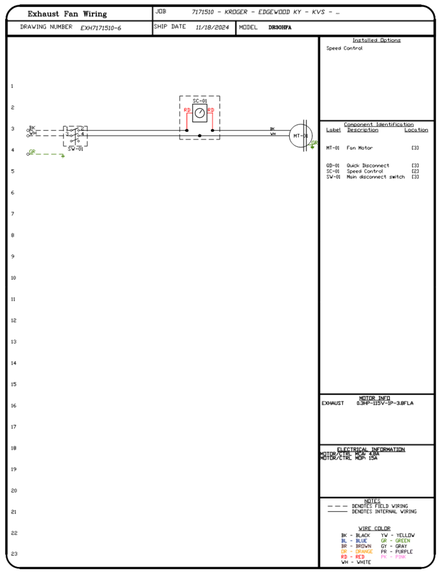

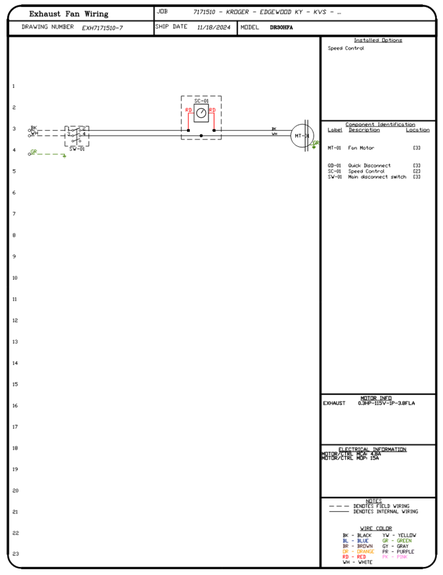

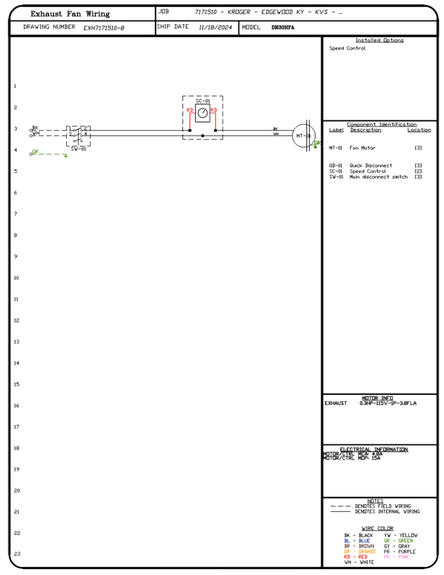

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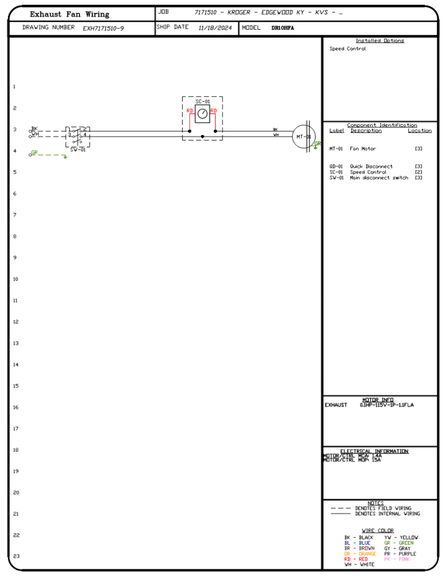
Exhaust Fan Wiring — JOB 7171510 - KROGER - EDGEWOOD KY - KVS - ... — DRAWING NUMBER EXH7171510-9 — SHOP DATE 11/18/2024 — MODEL DL010FA



Installed Options
Speed Control

Component Identification

Label	Description	Location
MT-01	Fan Motor	[3]
GD-01	Quick Disconnect	[3]
SC-01	Speed Control	[2]
SW-01	Main disconnect switch	[3]

MOTOR INFO
EXHAUST 0.5HP-208V-3P-1.6FLA

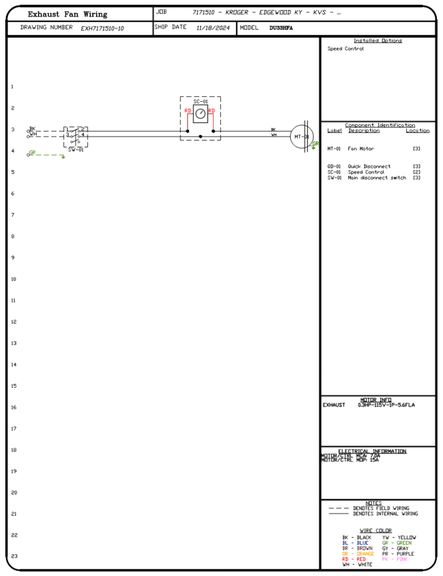
ELECTRICAL INFORMATION
MOTOR(ETR) MCA 15A
MOTOR(ETR) MOP 15A

NOTES
---- DENOTES FIELD WIRING
—— DENOTES INTERNAL WIRING

WIRE COLOR

BK = BLACK	YW = YELLOW		
BL = BLUE	GR = GREEN		
BR = BROWN	GY = GRAY		
OR = ORANGE	PR = PURPLE		
RD = RED	PK = PINK		
WH = WHITE			

Exhaust Fan Wiring — JOB 7171510 - KROGER - EDGEWOOD KY - KVS - ... — DRAWING NUMBER EXH7171510-10 — SHOP DATE 11/18/2024 — MODEL DU030FA



Installed Options
Speed Control

Component Identification

Label	Description	Location
MT-01	Fan Motor	[3]
GD-01	Quick Disconnect	[3]
SC-01	Speed Control	[2]
SW-01	Main disconnect switch	[3]

MOTOR INFO
EXHAUST 0.5HP-208V-3P-3.6FLA

ELECTRICAL INFORMATION
MOTOR(ETR) MCA 15A
MOTOR(ETR) MOP 15A

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---- DENOTES FIELD WIRING
—— DENOTES INTERNAL WIRING

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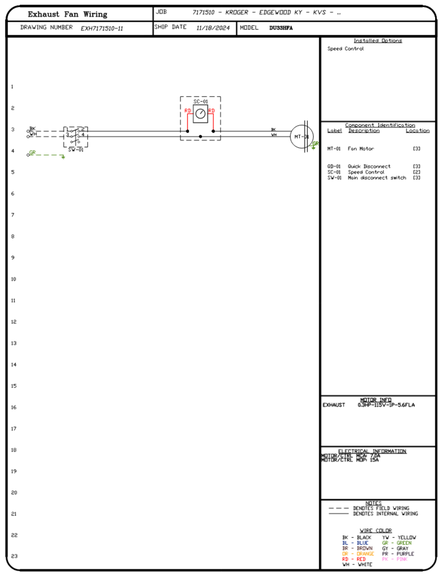
Exhaust Fan Wiring — JOB 7171510 - KROGER - EDGEWOOD KY - KVS - ... — DRAWING NUMBER EXH7171510-11 — SHOP DATE 11/18/2024 — MODEL DU030FA



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Speed Control

Component Identification

Label	Description	Location
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GD-01	Quick Disconnect	[3]
SC-01	Speed Control	[2]
SW-01	Main disconnect switch	[3]

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EXHAUST 0.5HP-208V-3P-3.6FLA

ELECTRICAL INFORMATION
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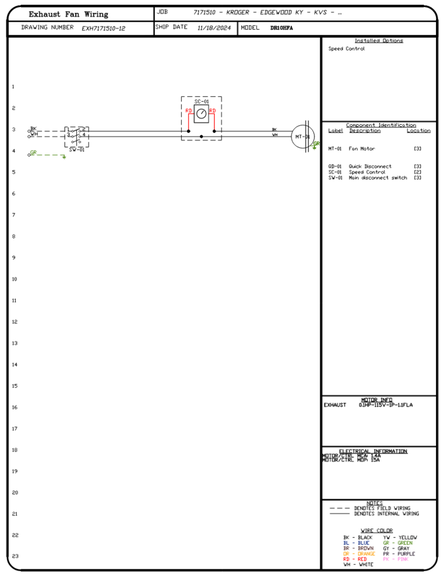
WH = WHITE			

Exhaust Fan Wiring — JOB 7171510 - KROGER - EDGEWOOD KY - KVS - ... — DRAWING NUMBER EXH7171510-12 — SHOP DATE 11/18/2024 — MODEL DL010FA



Installed Options
Speed Control

Component Identification

Label	Description	Location
MT-01	Fan Motor	[3]
GD-01	Quick Disconnect	[3]
SC-01	Speed Control	[2]
SW-01	Main disconnect switch	[3]

MOTOR INFO
EXHAUST 0.5HP-208V-3P-1.6FLA

ELECTRICAL INFORMATION
MOTOR(ETR) MCA 15A
MOTOR(ETR) MOP 15A

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—— DENOTES INTERNAL WIRING

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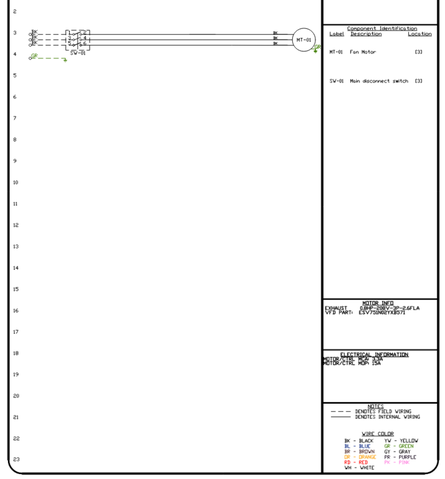
BK = BLACK	YW = YELLOW		
BL = BLUE	GR = GREEN		
BR = BROWN	GY = GRAY		
OR = ORANGE	PR = PURPLE		
RD = RED	PK = PINK		
WH = WHITE			

Exhaust Fan Wiring — JOB 7171510 - KROGER - EDGEWOOD KY - KVS - ... — DRAWING NUMBER EXH7171510-13 — SHOP DATE 11/18/2024 — MODEL DU005FA



Installed Options

Component Identification

Label	Description	Location
MT-01	Fan Motor	[3]
SV-01	Main disconnect switch	[3]

MOTOR INFO
EXHAUST 0.5HP-208V-3P-2.6FLA
VFD PART: E2VF2S2M2VBSF4

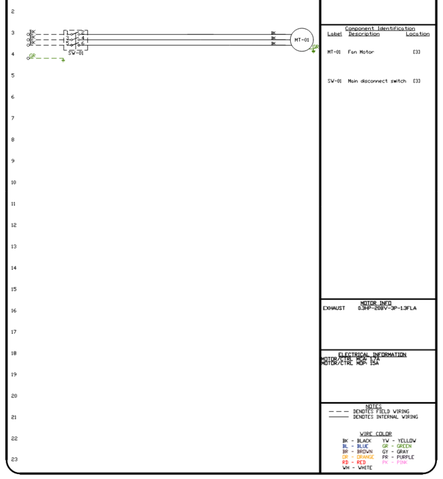
ELECTRICAL INFORMATION
MOTOR(ETR) MCA 15A
MOTOR(ETR) MOP 15A

NOTES
---- DENOTES FIELD WIRING
—— DENOTES INTERNAL WIRING

WIRE COLOR

BK = BLACK	YW = YELLOW		
BL = BLUE	GR = GREEN		
BR = BROWN	GY = GRAY		
OR = ORANGE	PR = PURPLE		
RD = RED	PK = PINK		
WH = WHITE			

Exhaust Fan Wiring — JOB 7171510 - KROGER - EDGEWOOD KY - KVS - ... — DRAWING NUMBER EXH7171510-14 — SHOP DATE 11/18/2024 — MODEL DU030FA



Installed Options

Component Identification

Label	Description	Location
MT-01	Fan Motor	[3]
SV-01	Main disconnect switch	[3]

MOTOR INFO
EXHAUST 0.5HP-208V-3P-1.3FLA

ELECTRICAL INFORMATION
MOTOR(ETR) MCA 15A
MOTOR(ETR) MOP 15A

NOTES
---- DENOTES FIELD WIRING
—— DENOTES INTERNAL WIRING

WIRE COLOR

BK = BLACK	YW = YELLOW		
BL = BLUE	GR = GREEN		
BR = BROWN	GY = GRAY		
OR = ORANGE	PR = PURPLE		
RD = RED	PK = PINK		
WH = WHITE			

REVISIONS

	DESCRIPTION	DATE:
1		
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www.captiveaire.com

KROGER - EDGEWOOD KY - KVS - R2
3071 Dixie Highway,
Edgewood, KY, 41018

DATE: 11/18/2024

DWG.#: 7171510

DRAWN BY:

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

MASTER DRAWING

SHEET NO. 8

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ISSUE/REVISION

	DATE	DESCRIPTION
3	01/03/2025	BID / PERMIT ISSUE
8	01/24/2025	BULLETIN NO. 11

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3077 Dixie Highway
Edgewood, KY 41018

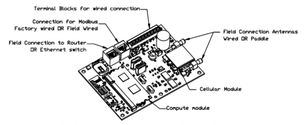
COMMISSION NO. 523302
ISSUE DATE 01/03/2025
SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.8

PLOTTED: 1/24/2025 12:25:50 PM
FILE LOCATION: C:\Users\tsellers\Documents\Revit\523302-R9-25-MEP-Kroger A971 Edgewood, KY 2025_tsellers.rvt

ELECTRICAL PACKAGE – JOB#7171510

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
1		SC-320110MA	UTILITY CABINET LEFT	UTILITY CABINET LEFT	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	EF-4a K-0069365	EXHAUST	3	0.750	208	2.6
				HOOD # 1	1 FAN		EF-4b K-0069365	EXHAUST	3	0.750	208	2.6
2		SC-310110MA	WALL UTILITY CABINET LEFT	FACE MOUNT LEFT SIDE OF HOOD	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	EF -12 PNET - 42845	EXHAUST	3	0.750	208	2.6
				HOOD # 3	1 FAN							



CASLink Monitor and Control

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

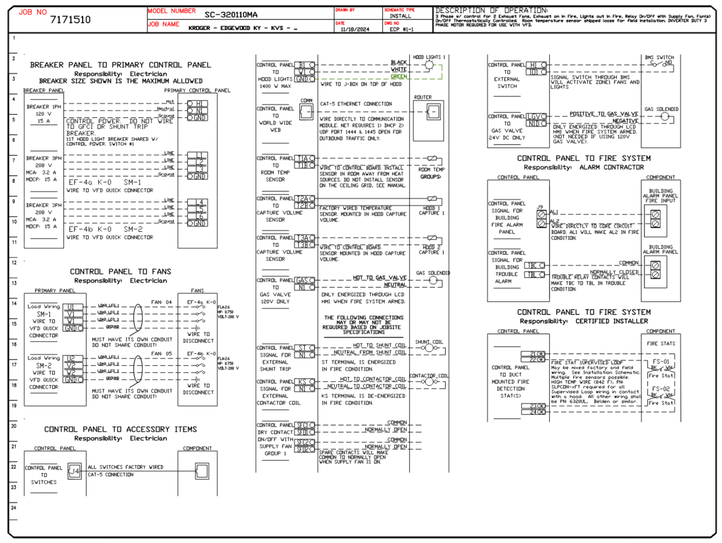
MONITORING AND CONTROL POINTS LIST

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

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

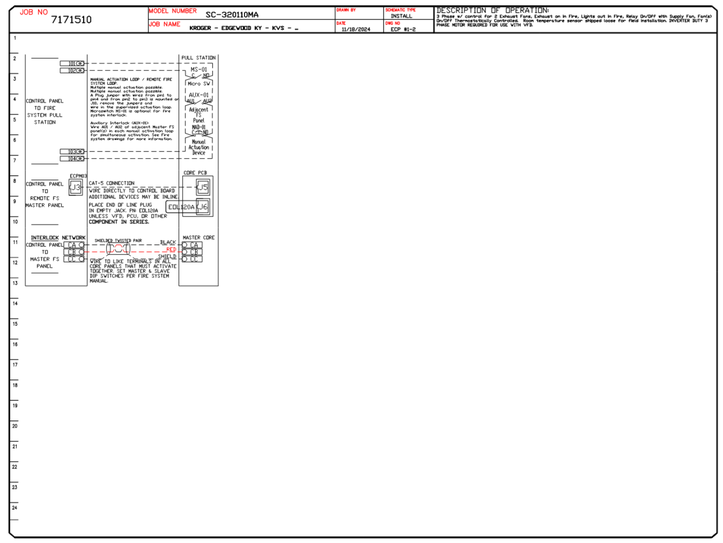
JOB NO 7171510 | MODEL NUMBER SC-320110MA | JOB NAME KROGER – EDGEWOOD KY – KVS – – | DRAWN BY | SCHEMATIC TYPE INSTALL | DATE 11/18/2024 | DWG NO ECP #1-1

DESCRIPTION OF OPERATION:
3 Phase AC control for 2 Exhaust Fans. Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan. Fanzo On/Off thermostatically Controlled. Room temperature sensor shipped loose for field installation. DIVERTER BUTT 2 PHASE MOTOR REQUIRES FOR USE WITH VFD.



JOB NO 7171510 | MODEL NUMBER SC-320110MA | JOB NAME KROGER – EDGEWOOD KY – KVS – – | DRAWN BY | SCHEMATIC TYPE INSTALL | DATE 11/18/2024 | DWG NO ECP #1-2

DESCRIPTION OF OPERATION:
3 Phase AC control for 2 Exhaust Fans. Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan. Fanzo On/Off thermostatically Controlled. Room temperature sensor shipped loose for field installation. DIVERTER BUTT 2 PHASE MOTOR REQUIRES FOR USE WITH VFD.



JOB NO 7171510 | MODEL NUMBER SC-320110MA | JOB NAME KROGER – EDGEWOOD KY – KVS – – | DRAWN BY | SCHEMATIC TYPE INSTALL | DATE 02/10/2021 | DWG NO ECP #1-3

DESCRIPTION OF DESCRIPTION:
Fire System RE TANK FS – 40/40/40/40 OFS – D.

TANK PROTECTION ELECTRICAL DETAIL

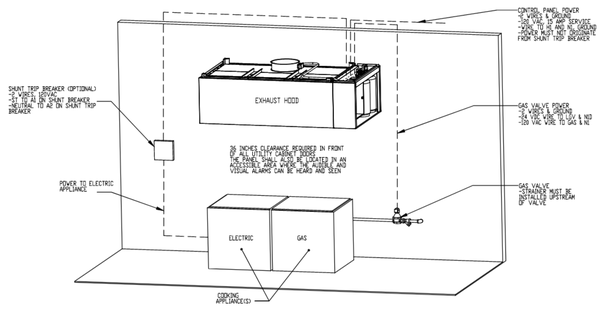
02/10/2021 Rev. 2

FS-1: MASTER

ELECTRICIAN
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE FIRE ALARM CONTRACTOR PER SCHEMATIC
3. WIRE SHUNT TRIP BREAKER (OPTIONAL)
4. WIRE UDS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVES

ELECTRICAL CONTRACTOR REQUIREMENT

ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & N1	BREAKER COIL (A1 & N1)	120 VAC	< 4 AMPS	ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	H1 & N1 + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & N1	KTS & N1	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AU1, AU2	SOLENOID	120 VAC	< 6 AMPS	120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
GAS VALVE	24V & N2 OF 24 VDC/ VAC & N1 OF 120 VAC	RED/RED/GREEN	24 VDC OR 120 VAC	< 10 AMPS	24 VDC – 1 WIRE & GROUND 24V TO RED, 2ND GREEN TO GROUND 120 VAC – 2 WIRE & GROUND GAS TO RED, N1 TO BLU, AND GREEN TO GROUND



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

JOB NO 7171510 | MODEL NUMBER SC-320110MA | JOB NAME KROGER – EDGEWOOD KY – KVS – – | DRAWN BY | SCHEMATIC TYPE INSTALL | DATE 11/18/2024 | DWG NO ECP #1-4

DESCRIPTION OF DESCRIPTION:
Fire System RE TANK FS – 40/40/40/40 OFS – D.

TANK PROTECTION LOW-VOLTAGE DETAIL

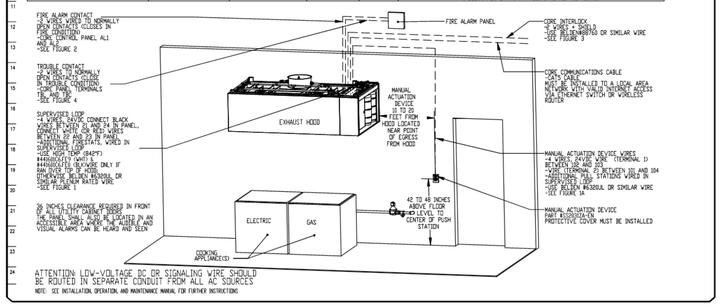
10/18/2023 Rev. 3

FS-1: MASTER

ALARM CONTRACTOR:
1. WIRE MANUAL ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. COMPLETE FINAL SIGNOFF OF SYSTEM
3. VERIFY FINAL FIRE SYSTEM TEST

ALARM CONTRACTOR REQUIREMENT

ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104 102 AND 103	1 & 2	24 VDC	< 10 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 101 AND 103 WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 102 AND 104 JUMPER 101 TO 104 AND 103 TO 102 IF NO MANUAL ACTUATION DEVICE IS INSTALLED
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED IF SURFACE MOUNTED USE COVER EXTENTION ST-58568
REMOTE FIRESTAT SENSOR(S)	J1 AND J4 J2 AND J3	BLACK AND WHITE	24 VDC	< 10 AMPS	WIRE FIRE SENSOR BLACK WIRES BETWEEN HOOD AND CORE PANEL TERMINALS J4 AND J3 HIGH TEMP FASTY-TEMP SENSOR WIRE WHITE WIRES BETWEEN CORE PANEL TERMINALS J2 AND J1 ALL HOOD SENSORS MUST BE WIRED IN SERIES WITH ONE END TERMINATED WITH 2K EOL RESISTOR BETWEEN BLACK & WHITE. SEE FIGURE 1
FIRE ALARM CONTACT	A1, A2	VARIES	50V MAX (AC/DC)	UP TO 1 AMP	FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE CORE ELECTRICAL CONTROL PANEL
CORE INTERLOCK(S)	CA, CB, CC	CA, CB, CC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM (1) CA, TO CORE SYSTEM (2) CA CORE SYSTEM (1) CB, TO CORE SYSTEM (2) CB CORE SYSTEM (1) CC, TO CORE SYSTEM (2) CC USE BELDEN 8895AP OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TCK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	<10 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION



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

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

REVISIONS

	DESCRIPTION	DATE
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KROGER – EDGEWOOD KY – KVS – R2
3071 Dixie Highway,
Edgewood, KY, 41018

DATE: 11/18/2024

DWG.#: 7171510

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SCALE: 3/4" = 1'–0"

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8	01/24/2025	BULLETIN NO. 11

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE A971

3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 523302
ISSUE DATE 01/03/2025

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.9

PLOTTED: 1/24/2025 12:24:00 PM
FILE LOCATION: C:\Users\adam\Documents\Revit\23336-00-20-MEP-Kroger A971 Edgewood, KY 2025_adam.rvt

DOAS/RTU FAN SCHEDULE – JOB#7177763

FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	FAN INFORMATION: RETURN AIR CFM	MAX OUTSIDE AIR CFM	TOTAL CFM	WEIGHT (LBS)	ESP	ELECTRICAL INFORMATION: HP	PHASE	VOLT	MCA	MOCP	COOLING INFORMATION: 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.	IECR	ISMRE	REHEAT INFORMATION: DISCHARGE DB	DISCHARGE WB	CAPACITY DESIRED	CAPACITY MAX	MOISTURE REMOVAL RATE	GAS HEAT INFORMATION: GAS TYPE	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	A2L MINIMUM ROOM VOLUME: ROOM AREA (FT2)	AIRFLOW (CFM)	HEIGHT (FT)	NOTES
1	DOAS -1	1	CAS-HVAC4-1.500-20-30T	CAPTIVEAIRE	20P-4	0	4600	4600	4815	0.500	5.00	3	460	73.5A	80A	86.8°F	77.4°F	86.8°F	77.4°F	54.3°F	54.3°F	54.4°F	371.6 MBH	162.5 MBH	17.8	4.8	70.0°F	60.3°F	78.6 MBH	260 MBH	1801 LBS/HR	NATURAL	468246	379279	70°F	7 IN. W.C. – 14 IN. W.C.	1042.6	1877	7.2	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18
2	DOAS -2	1	CAS-HVAC4-1.500-20-30T	CAPTIVEAIRE	20P-4	0	4600	4600	4815	0.500	5.00	3	460	73.5A	80A	86.8°F	77.4°F	86.8°F	77.4°F	54.3°F	54.3°F	54.4°F	371.6 MBH	162.5 MBH	17.8	4.8	70.0°F	60.3°F	78.6 MBH	260 MBH	1801 LBS/HR	NATURAL	468246	379279	70°F	7 IN. W.C. – 14 IN. W.C.	1042.6	1877	7.2	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18

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/ 16GA BASE
11. 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 15:1 TURNDOWN WITH NG AND 12:1 TURNDOWN WITH LP
12. 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
18. MINIMUM ROOM AREA ASSUMED 7.2' SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60335-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER.

FOR QUESTIONS, CALL THE
National Accounts
REGION 15
PHONE: (919) 882 – 2410
EMAIL: regl5@captiveaire.com

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	DOAS -1	1	INLET PRESSURE GAUGE, 0-25"
		1	SHIP LOOSE GAS STRAINER 1"
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREVAIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" PREVAIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREVAIRE
		1	CASLINK BUILDING MONITORING SYSTEM – INTERNET OR CELLULAR CONNECTION REQUIRED
		1	CONSTRUCTION MODE – MODIFIES START-UP SETTINGS TO ALLOW TEMPERING A BUILDING STILL UNDER CONSTRUCTION
		1	RTU#4 DOWN DISCHARGE
		1	2" MERV 8 FILTERS FOR RTU4 (QTY. 12)
		1	OVERHEAT STAT
		1	TOTAL CFM MONITORING
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	R454B LEAK DETECTOR OPTION FOR RTU5
		1	OCCUPIED SCHEDULING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	AUXILIARY REHEAT – IBT
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK – ALARM SUPPLIED BY OTHERS
		1	RTU#4 DOWN RETURN
		1	RTU#4 HAIL GUARD
		1	RTU#4 ECONOMIZER BAROMETRIC RELIEF
		1	RTU ECONMIZER – DIFFERENTIAL ENTHALPY CONTROL
		1	HIGH TURNDOWN OPTION FOR DOAS UNITS
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 2' FURNACES
		1	DAMPER CONTROL – CO2 MIN/MAX OVERRIDE SETPOINT
		1	DDC MSTP BACNET REMOTE UNIT MONITORING
		1	RTU# CONVENIENCE OUTLET (GFCI), 15 AMP – REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J-BOX
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (S7) VFD INCLUDED)
		1	RTU INTAKE/RETURN DAMPER – MANUAL CONTROL VIA HMI
		1	LOAD REACTOR MOUNTED IN FAN
		1	R454B – 30 TON MODULATING COOLING OPTION, 460/480V. 3CFS. R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	R454B – 30 TON MODULATING REHEAT OPTIION – DISCHARGE DEWPOINT CONTROL – R454B
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET
2	DOAS -2	1	INLET PRESSURE GAUGE, 0-25"
		1	SHIP LOOSE GAS STRAINER 1"
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREVAIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" PREVAIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREVAIRE
		1	CASLINK BUILDING MONITORING SYSTEM – INTERNET OR CELLULAR CONNECTION REQUIRED
		1	CONSTRUCTION MODE – MODIFIES START-UP SETTINGS TO ALLOW TEMPERING A BUILDING STILL UNDER CONSTRUCTION
		1	RTU#4 DOWN DISCHARGE
		1	2" MERV 8 FILTERS FOR RTU4 (QTY. 12)
		1	OVERHEAT STAT
		1	TOTAL CFM MONITORING
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	R454B LEAK DETECTOR OPTION FOR RTU5
		1	OCCUPIED SCHEDULING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	AUXILIARY REHEAT – IBT
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK – ALARM SUPPLIED BY OTHERS
		1	RTU#4 DOWN RETURN
		1	RTU#4 HAIL GUARD
		1	RTU#4 ECONMIZER BAROMETRIC RELIEF
		1	RTU ECONMIZER – DIFFERENTIAL ENTHALPY CONTROL
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 2' FURNACES
		1	DAMPER CONTROL – CO2 MIN/MAX OVERRIDE SETPOINT
		1	DDC MSTP BACNET REMOTE UNIT MONITORING
		1	RTU# CONVENIENCE OUTLET (GFCI), 15 AMP – REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J-BOX
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (S7) VFD INCLUDED)
		1	RTU INTAKE/RETURN DAMPER – MANUAL CONTROL VIA HMI
		1	LOAD REACTOR MOUNTED IN FAN
		1	R454B – 30 TON MODULATING COOLING OPTION, 460/480V. 3CFS. R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	R454B – 30 TON MODULATING REHEAT OPTIION – DISCHARGE DEWPOINT CONTROL – R454B
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET

CONTROLS DESIGN SERVICE

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

HMI SCHEDULE				
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #1	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55
FAN #1	HMI #2 - SPACE	MANAGER'S OFFICE	NOT AVERAGED	56
FAN #2	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55
FAN #2	HMI #2 - SPACE	MANAGER'S OFFICE	NOT AVERAGED	56

DOAS/RTU BACNet Points List – JOB#7177763

BACNET POINTS AVAILABLE FOR FAN #1 (DOAS -1), #2 (DOAS -2)				
BACNet Object	BACNet Type	BACNet ID	LON SNVT Name	Function
DDCHeatCommand	BV	1	nviDDCHeat	Control/Monitor
DDCCoolCommand	BV	2	nviDDCCool	Control/Monitor
DDCBlowerCommand	BV	3	nviDDCBlow	Control/Monitor
DDCModulation	AV	4	nviDDCModHeat	Control/Monitor
DDCOccupiedOverride	BV	5	nviDDCOccOvrrd	Control/Monitor
IntakeHeatUnoccSP	AV	6	nviSnHeatUnocSP	Control/Monitor
IntakeHeatUnoccSP	AV	7	nviSnHeatUnocSP	Control/Monitor
SpaceHeatUnoccSP	AV	8	nviSpHeatUnocSP	Control/Monitor
SpaceHeatUnoccSP	AV	9	nviSpHeatUnocSP	Control/Monitor
DischargeHeatUnoccSP	AV	12	nviDisHeatUnocSP	Control/Monitor
DischargeHeatUnoccSP	AV	13	nviDisHeatUnocSP	Control/Monitor
IntakeCoolUnoccSP	AV	16	nviInCoolUnocSP	Control/Monitor
IntakeCoolUnoccSP	AV	17	nviInCoolUnocSP	Control/Monitor
SpaceCoolUnoccSP	AV	18	nviSpCoolUnocSP	Control/Monitor
SpaceCoolUnoccSP	AV	19	nviSpCoolUnocSP	Control/Monitor
DischargeCoolUnoccSP	AV	22	nviDisCoolUnocSP	Control/Monitor
DischargeCoolUnoccSP	AV	23	nviDisCoolUnocSP	Control/Monitor
RoomOverrideOccSP	AV	26	nviRoomOvOccSP	Control/Monitor
RoomOverrideUnoccSP	AV	27	nviRoomOvUnocSP	Control/Monitor
Firesta1IntakeSP	AV	28	nviFire1nIntakeSP	Control/Monitor
Firesta1DischargeSP	AV	29	nviFire1DschSP	Control/Monitor
Freezesta1SP	AV	30	nviFreezeSP	Control/Monitor
Overheat1DischargeSP	AV	31	nviDheat1DisSP	Control/Monitor
CabinetHeat1SP	AV	32	nviCabHeat1SP	Control/Monitor
FurnaceDrainHeat1SP	AV	33	nviFDrainHeat1SP	Control/Monitor
IntakeRhOccSP	AV	34	nviInRhOccSP	Control/Monitor
IntakeRhUnoccSP	AV	35	nviInRhUnoccSP	Control/Monitor
SpaceRhOccSP	AV	36	nviSpRhOccSP	Control/Monitor
SpaceRhUnoccSP	AV	37	nviSpRhUnoccSP	Control/Monitor
DischargeRhOccSP	AV	38	nviDisRhOccSP	Control/Monitor
DischargeRhUnoccSP	AV	39	nviDisRhUnoccSP	Control/Monitor
IntakeDpOccSP	AV	40	nviInDpOccSP	Control/Monitor
IntakeDpUnoccSP	AV	41	nviInDpUnoccSP	Control/Monitor
SpaceDpOccSP	AV	42	nviSpDpOccSP	Control/Monitor
SpaceDpUnoccSP	AV	43	nviSpDpUnoccSP	Control/Monitor
DischargeDpOccSP	AV	44	nviDisDpOccSP	Control/Monitor
DischargeDpUnoccSP	AV	45	nviDisDpUnoccSP	Control/Monitor
ScheduleSundayAStart	AV	46	nviSundayAStart	Control/Monitor
ScheduleSundayAEnd	AV	47	nviSundayAEnd	Control/Monitor
ScheduleSundayBStart	AV	48	nviSundayBStart	Control/Monitor
ScheduleSundayBEnd	AV	49	nviSundayBEnd	Control/Monitor
ScheduleSundayCStart	AV	50	nviSundayCStart	Control/Monitor
ScheduleSundayCEnd	AV	51	nviSundayCEnd	Control/Monitor
ScheduleMondayAStart	AV	52	nviMondayAStart	Control/Monitor
ScheduleMondayAEnd	AV	53	nviMondayAEnd	Control/Monitor
ScheduleMondayBStart	AV	54	nviMondayBStart	Control/Monitor
ScheduleMondayBEnd	AV	55	nviMondayBEnd	Control/Monitor
ScheduleMondayCStart	AV	56	nviMondayCStart	Control/Monitor
ScheduleMondayCEnd	AV	57	nviMondayCEnd	Control/Monitor
ScheduleTuesdayAStart	AV	58	nviTuesdayAStart	Control/Monitor
ScheduleTuesdayAEnd	AV	59	nviTuesdayAEnd	Control/Monitor
ScheduleTuesdayBStart	AV	60	nviTuesdayBStart	Control/Monitor
ScheduleTuesdayBEnd	AV	61	nviTuesdayBEnd	Control/Monitor
ScheduleTuesdayCStart	AV	62	nviTuesdayCStart	Control/Monitor
ScheduleTuesdayCEnd	AV	63	nviTuesdayCEnd	Control/Monitor
ScheduleWednesdayAStart	AV	64	nviWedAStart	Control/Monitor
ScheduleWednesdayAEnd	AV	65	nviWedAEnd	Control/Monitor
ScheduleWednesdayBStart	AV	66	nviWedBStart	Control/Monitor
ScheduleWednesdayBEnd	AV	67	nviWedBEnd	Control/Monitor
ScheduleWednesdayCStart	AV	68	nviWedCStart	Control/Monitor
ScheduleWednesdayCEnd	AV	69	nviWedCEnd	Control/Monitor
ScheduleThursdayAStart	AV	70	nviThursAStart	Control/Monitor
ScheduleThursdayAEnd	AV	71	nviThursAEnd	Control/Monitor
ScheduleThursdayBStart	AV	72	nviThursBStart	Control/Monitor
ScheduleThursdayBEnd	AV	73	nviThursBEnd	Control/Monitor
ScheduleThursdayCStart	AV	74	nviThursCStart	Control/Monitor
ScheduleThursdayCEnd	AV	75	nviThursCEnd	Control/Monitor
ScheduleFridayAStart	AV	76	nviFridayAStart	Control/Monitor
ScheduleFridayAEnd	AV	77	nviFridayAEnd	Control/Monitor
ScheduleFridayBStart	AV	78	nviFridayBStart	Control/Monitor
ScheduleFridayBEnd	AV	79	nviFridayBEnd	Control/Monitor
ScheduleFridayCStart	AV	80	nviFridayCStart	Control/Monitor
ScheduleFridayCEnd	AV	81	nviFridayCEnd	Control/Monitor
ScheduleSaturdayAStart	AV	82	nviSatAStart	Control/Monitor
ScheduleSaturdayAEnd	AV	83	nviSatAEnd	Control/Monitor
ScheduleSaturdayBStart	AV	84	nviSatBStart	Control/Monitor
ScheduleSaturdayBEnd	AV	85	nviSatBEnd	Control/Monitor

BACNET POINTS AVAILABLE FOR FAN #1 (DOAS -1), #2 (DOAS -2)				
BACNet Object	BACNet Type	BACNet ID	LON SNVT Name	Function
ScheduleSaturdayCStart	AV	86	nviSatCStart	Control/Monitor
ScheduleSaturdayCEnd	AV	87	nviSatCEnd	Control/Monitor
BlowerManualFreqDcc	AV	88	nviBlowManFreqDc	Control/Monitor
BlowerManualFreqUnocc	AV	89	nviBlowManFreqUn	Control/Monitor
EconomizerTempSPOcc	AV	94	nviEcoTempSPOcc	Control/Monitor
EconomizerTempSPUnocc	AV	95	nviEcoTemSPUnocc	Control/Monitor
EconomizerTempBandOcc	AV	96	nviEcoTemBandOcc	Control/Monitor
EconomizerTempBandUnocc	AV	97	nviEcoTempBUnocc	Control/Monitor
EconomizerTotalBandOcc	AV	98	nviEcoTotBandOcc	Control/Monitor
EconomizerTotalBandUnocc	AV	99	nviEcoTotBUnocc	Control/Monitor
EconomizerRhSPOcc	AV	100	nviEcoRhSPOcc	Control/Monitor
EconomizerRhSPUnocc	AV	101	nviEcoRhSPUnocc	Control/Monitor
MixingBoxManualVoltsDcc	AV	102	nviMxBoxManVDc	Control/Monitor
MixingBoxManualVoltsUnocc	AV	103	nviMxBoxManVUn	Control/Monitor
DynamicSpDiff	AV	120	nviDynSpDiff	Control/Monitor
DynamicSpDiffset	AV	121	nviDynSpDiffset	Control/Monitor
DynamicSpHeat1Da	AV	122	nviDynSpHeat1Da	Control/Monitor
DynamicSpCool1Da	AV	123	nviDynSpCool1Da	Control/Monitor
UnitStatus	AI	139	nvoCurrentState	Monitor Only
CurrentOccupiedStatus	AI	140	nvoOccStatus	Monitor Only
AverageSpaceTemp	AI	141	nvoAvgSpaceTemp	Monitor Only
BlowerFrequency	AI	142	nvoBlowVFDFreq	Monitor Only
BlowerCurrent	AI	143	nvoBlowVFDAmps	Monitor Only
BlowerPower	AI	144	nvoBlowVFDPower	Monitor Only
AverageRH	AI	145	nvoAvgRh	Monitor Only
OutdoorTemp	AI	146	nvoOutdoorTemp	Monitor Only
ReturnTemp	AI	147	nvoReturnTemp	Monitor Only
DischargeTemp	AI	148	nvoDischargeTemp	Monitor Only
IntakeTemp	AI	149	nvoIntakeTemp	Monitor Only
SpaceTemp	AI	150	nvoSpaceTemp	Monitor Only
HMITemp	AI	151	nvoHmiDTemp	Monitor Only
SuctionLineTemp	AI	156	nvoSucLineTemp	Monitor Only
LiquidLineTemp	AI	157	nvoLiqLineTemp	Monitor Only
EvapIndoorCoilTemp	AI	158	nvoEvapCoilTemp	Monitor Only
CondOutdoorCoilTemp	AI	159	nvoOutCoilTemp	Monitor Only
CompressorDischargeTemp	AI	160	nvoCompDisTemp	Monitor Only
IntakeRh	AI	161	nvoIntakeRh	Monitor Only
SpaceRh	AI	162	nvoSpaceRh	Monitor Only
OutdoorRh	AI	163	nvoOutdoorRh	Monitor Only
DischargeRh	AI	164	nvoDischargeRh	Monitor Only
ReturnRh	AI	165	nvoReturnRh	Monitor Only
SuctionLinePs	AI	166	nvoSucLinePs	Monitor Only
DischargeLinePs	AI	167	nvoDisLinePs	Monitor Only
LiquidLinePs	AI	168	nvoLiqLinePs	Monitor Only
HMIRh	AI	169	nvoHmiRh	Monitor Only
CondFan1PwmRate	AI	176	nvoCond1PwmRate	Monitor Only
CondFan2PwmRate	AI	177	nvoCond2PwmRate	Monitor Only
ModulatingGasValveIDutput	AI	178	nvoMGV1Output	Monitor Only
AdjustableDamperOutput	AI	180	nvoDmpOutput	Monitor Only
DXBoostActiveFlag	BI	182	nvoDXBoost1N	Monitor Only
RehestActiveFlag	BI	183	nvoRehest1N	Monitor Only
DefrostActiveFlag	BI	184	nvoDefrost1N	Monitor Only
PumpdownOFFActiveFlag	BI	185	nvoPumpOFFDn	Monitor Only
PumpdownOnActiveFlag	BI	186	nvoPumpONDn	Monitor Only
RehestValvePosition	AI	187	nvoRehestPos	Monitor Only
EevValvePosition	AI	188	nvoEevValvePos	Monitor Only
IntakeDpActual	AI	189	nvoInDpActual	Monitor Only
SpaceDpActual	AI	190	nvoSpDpActual	Monitor Only
CompressorPower	AI	191	nvoCompPower	Monitor Only
CompressorFrequency	AI	192	nvoCompFreq	Monitor Only
CompressorCurrent	AI	193	nvoCompAmps	Monitor Only
Subcool	AI	208	nvoSubcool	Monitor Only
Superheat	AI	209	nvoSuperheat	Monitor Only
ActiveFault1	AI	210	nvoActiveFault1	Monitor Only
ActiveFault2	AI	211	nvoActiveFault2	Monitor Only
ActiveFault3	AI	212	nvoActiveFault3	Monitor Only
ActiveFault4	AI	213	nvoActiveFault4	Monitor Only
ActiveFault5	AI	214	nvoActiveFault5	Monitor Only
ActiveFault6	AI	215	nvoActiveFault6	Monitor Only
SchedulingEnabledFlag	BV	216	nvoSchedEnabled	Control/Monitor
HeatTemperModeOcc	AV	217	nvoHeatModeOcc	Control/Monitor
HeatTemperModeUnocc	AV	218	nvoHeatModeUnocc	Control/Monitor
CoolTemperModeOcc	AV	219	nvoCoolModeOcc	Control/Monitor
CoolTemperModeUnocc	AV	220	nvoCoolModeUnocc	Control/Monitor
ActivateSnOcc	AV	221	nvoActivateOcc	Control/Monitor
ActivateSnUnocc	AV	222	nvoActivateUnocc	Control/Monitor
BlowerModeOcc	AV	223	nvoBlowModeOcc	Control/Monitor

BACNET POINTS AVAILABLE FOR FAN #1 (DOAS -1), #2 (DOAS -2)				
BACNet Object	BACNet Type	BACNet ID	LON SNVT Name	Function
BlowerModeUnocc	AV	224	nvoBlowModeUnocc	Control/Monitor
MixingBoxMode	AV	225	nvoMBMode	Control/Monitor
Reheat DP Adj Dcc	AV	226	nvoDPAdjDcc	Control/Monitor
Reheat DP Adj Unocc	AV	227	nvoDPAdjUnocc	Control/Monitor
BlowerVFdMnFreqDcc	AV	228	nvoVFDMnFreqDcc	Control/Monitor
BlowerVFdMnFreqUnocc	AV	229	nvoVFDMnFUnocc	Control/Monitor
BlowerVFdMxFreqDcc	AV	230	nvoVFDMxFreqDcc	Control/Monitor
BlowerVFdMxFreqUnocc	AV	231	nvoVFDMxFUnocc	Control/Monitor
MixingBoxMnDAPercentDcc	AV	236	nvoMBMnDAPerDcc	Control/Monitor
MixingBoxMnDAPercentUnocc	AV	237	nvoMBMnDAPerUn	Control/Monitor
MixingBoxMxDAPercentDcc	AV	238	nvoMBMxDAPerDcc	Control/Monitor
MixingBoxMxDAPercentUnocc	AV	239	nvoMBMxDAPerUn	Control/Monitor
MixingBoxMinVoltsDcc	AV	240	nvoMBMinVoltsDcc	Control/Monitor
MixingBoxMinVoltsUnocc	AV	241	nvoMBMinVoltsUn	Control/Monitor
MixingBoxMaxVoltsDcc	AV	242	nvoMBMxxVoltsDcc	Control/Monitor
MixingBoxMaxVoltsUnocc	AV	243	nvoMBMxxVoltsUn	Control/Monitor
CFMReading	AI	244	nvoCFMReading	Read Only
StaticPressure	AI	245	nvoStaticPress	Read Only

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KROGER #971 - EDGEWOOD (ERLANGER), KY DOAS R2
DIXIE HWY., TAG: PU#
ERLANGER, KY, 41018

DATE: 11/19/2024

DWG.#: 7177763

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9	01/03/2025	BID / PERMIT ISSUE
8	01/24/2025	BULLETIN NO. 11

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 523302
ISSUE DATE 01/03/2025

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.16

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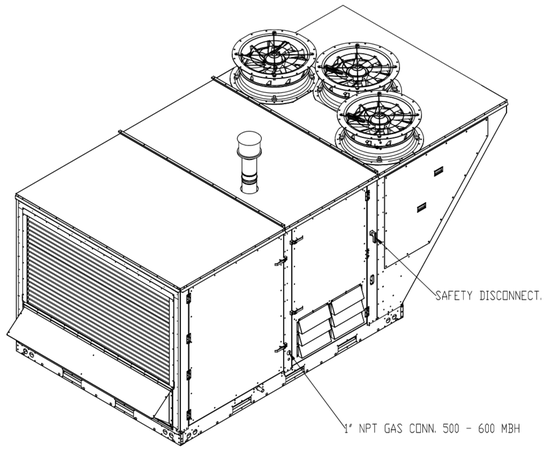
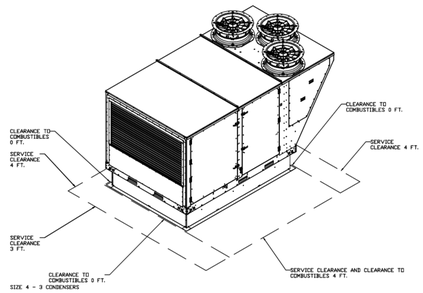
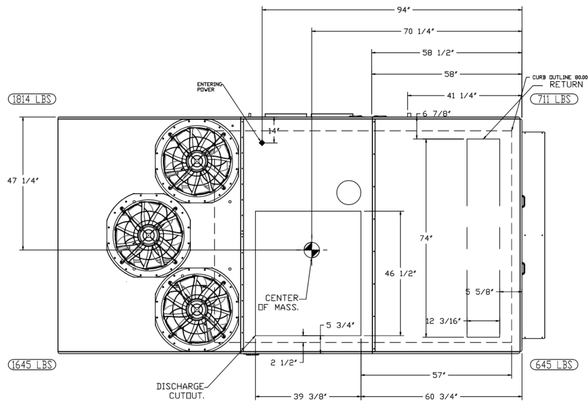
FAN #1 (DOAS -1), #2 (DOAS -2) - CAS-HVAC4-I.500-20-30T HEATER

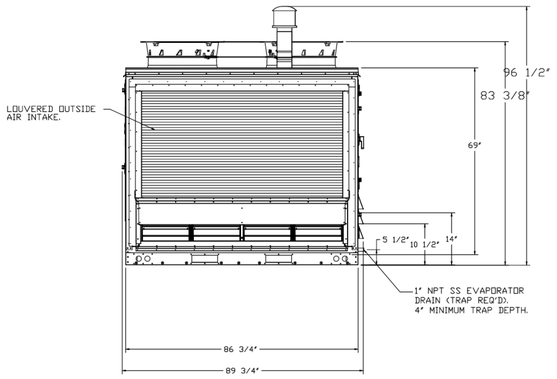
NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.
3. CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
4. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.

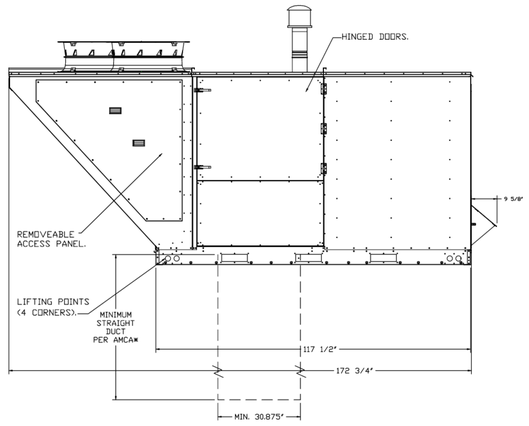
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE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

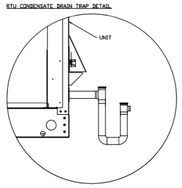


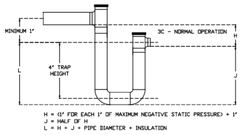












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3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 523302
ISSUE DATE 01/03/2025
SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
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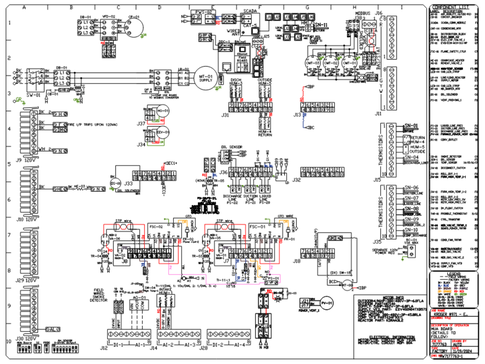

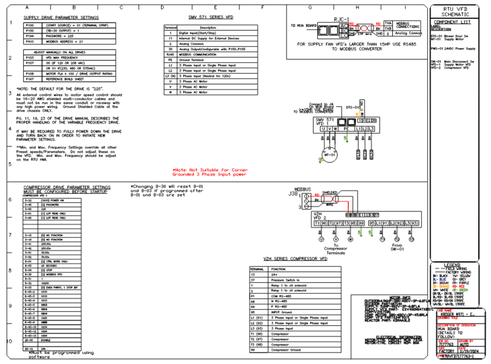

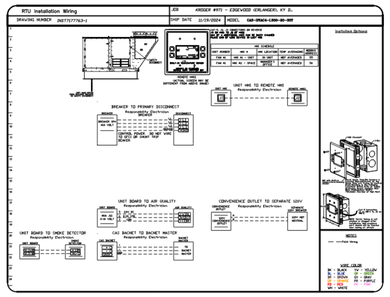

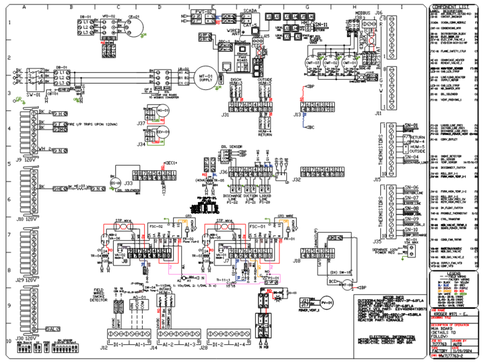

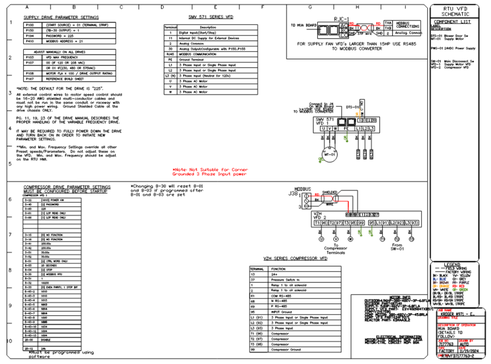

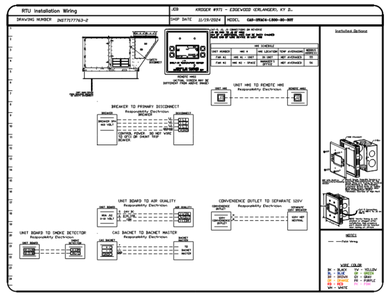

SYSTEM DESIGN VERIFICATION (SDV)

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

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

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

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KROGER #971 - EDGEWOOD (ERLANGER), KY 3DAS R2
DIXIE HWY,TAG: PO#
ERLANGER, KY, 41018

DATE: 11/19/2024

DWG.#: 7177763

DRAWN BY:

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

MASTER DRAWING

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OWNER

Kroger

ISSUE/REVISION

	DATE	DESCRIPTION
7	01/03/2025	BID / PERMIT ISSUE
8	01/24/2025	BULLETIN NO. 11

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 523302
ISSUE DATE 01/03/2025

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.18

PLOTTED: 1/24/2025 12:25:22 PM FILE LOCATION: C:\Users\tsabol\Documents\Revit\2026\26.00.04\A971 Kroger A971 Edgewood, KY 2026_tsabol.rvt

DOAS/RTU FAN SCHEDULE – JOB#7331759

FAN NO.	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	RETURN AIR DP/MIN CFM	MAX EXTERNAL S.P.	TOTAL CFM	WEIGHT (LBS)	ESP	HP	PHASE	VOLT	MCA	MOCP
1	RTU – 1	1	CAS-HVAC2-1250-18-MF	CAPTIVEAIRE	18HP-2-RTU	2743	660	3300	1964	3.750	3.00	3	460	119.74	225A

FAN NO.	OUTSIDE AIR DB	OUTSIDE AIR WB	MIXED AIR DB	MIXED AIR WB	LEAVING AIR DB	LEAVING AIR WB	CAPACITY IP	CAPACITY TOTAL	CAPACITY SENS.	ECR	TONS
1	75.0°F	66.0°F	75.0°F	62.9°F	53.1°F	52.4°F	52.3°F	98.8 MBH	83.9 MBH	252	9.8

FAN NO.	REHEAT INFORMATION DISCHARGE DB	CAPACITY (SCORED)	CAPACITY MAX	MOISTURE REMOVAL RATE	GAS HEAT INFORMATION GAS TYPE	INPUT BTUH	OUTPUT BTUH	TEMP RISE	REQUIRED INPUT GAS PRESSURE	ADL MINIMUM ROOM VOLUME ROOM AREA (FT2)	ASHRAE 62.1	HEIGHT (FT)	NOTES
1	68.0°F	61.1°F	57 MBH	60 MBH	NATURAL	2250/50	1828/30	49°F	7" W.C. – 14 IN W.C.	3524	634	7.0	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19

NOTES:
1. TWO SCROLL COMPRESSOR WITH INTEGRATED ISL 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. REMOTE ACCESS AND REMOTE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
5. ECC MOTOR CONDENSING FANS
6. ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE
7. R-410A REFRIGERANT CHARGE
8. FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER
9. AVAILABLE IN SHAE, EVAP COND SECONDARY, TEMPERATURE CONTROLLED WARRANTY (SHOULD BE AN ESTIMATED MARKED WITH UNIT)
10. 5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR COMPRESSOR WARRANTY, 20 YEAR STAINLESS STEEL FURNACE
11. ECO EFFICIENT FURNACE, WITH MODULATING BURNER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE (4:1 TURNDOWN WITH NG AND 5:1 TURNDOWN WITH LP)
12. ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL AND DIFFERENTIAL DRY BULB WITH DTM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
13. FULLY MODULATING HOT GAS REHEAT
14. 115V GFCI CONVENIENCE OUTLET
15. HAIL GUARD FOR CONDENSING SECTION
16. RTU ECONOMIZER WITH DIFFERENTIAL ENTHALPHY CONTROL
17. BAROMETRIC RELIEF DAMPER
18. 30% DOWNSTREAM PLEATED MERV 8 FILTERS
19. 30% DISCHARGE/DOWN RETURN
20. MINIMUM ROOM AREA ASSUMES 7.5' SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60335-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER.

FOR QUESTIONS, CALL THE
National Accounts
REGION 12
PHONE: (919) 882 – 2410
EMAIL: reg12@captiveaire.com

FAN OPTIONS:

FAN NO.	TAG	QTY	DESCRIPTION
1	RTU – 1	1	INLET PRESSURE GAUGE, 0-20"
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE
		1	COOLING OVERRIDE
		1	CONTROL POWER TRANSFORMER 3/4"
		1	CAS/LINK BUILDING MONITORING SYSTEM – INTERNET OR CELLULAR CONNECTION REQUIRED
		1	CONSTRUCTION MODE – MODIFIES START-UP SETTINGS TO ALLOW TEMPERING A BUILDING STILL UNDER CONSTRUCTION
		1	RTU BLOWER DOOR SWITCH
		1	RTU DOOR DISCHARGE
		2" MERV 8 FILTERS FOR RTUS (QTY. 4)	
		1	115V GFCI OUTLET
		1	1X13 FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	8 TON MODULATING COOLING OPTION, 460/480V, R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	LOW AMBIENT COOLING OPERATION – DOWN TO 0F AMBIENT
		1	R410A LEAK DETECTOR OPTION FOR RTUS
		1	COMMERCIAL SMOKE DETECTOR-ALARM INTERLOCK – ALARM SUPPLIED BY OTHERS
		1	SINGLE POINT ELECTRICAL CONNECTION – ALL RTUS TO BE FACTORY WIRED TO A NON-DCV CONTROL SYSTEM. ELECTRICAL REVISIONS TO DCV OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREVIRE
		1	IOC-MSTP BACNET REMOTE UNIT MONITORING
		1	RTU2 ECONOMIZER BAROMETRIC RELIEF
		1	RTU2 HAIL GUARD
		1	FREEZESTAT
		1	LOW AMBIENT FREESTAT SET TO 240°F
		1	1500 PACKAGE w/ MANUAL/DBC CONTROL (57) VFD INCLUDED
		1	LOAD REACTOR MOUNTED IN FAN
		1	RTU2 CURB DUCT HANGER
		1	TOTAL CFM MONITORING
		1	SNOW FIRESTAT SET TO 135°F
		1	8 TON MODULATING REHEAT OPTION – DISCHARGE SETPOINT CONTROL = RH549
		1	RTU2 DYNAMIC/RETURN DAMPER – MANUAL CONTROL VIA LINK
		1	RTU2 ECONOMIZER – DIFFERENTIAL ENTHALPY CONTROL
		1	RTU2 DOWN RETURN
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING, 10 YEAR COMPRESSOR WARRANTY, 20 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY – SEE ADDITIONAL DETAILS
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET

CURB ASSEMBLIES

NO.	ON FAN	WEIGHT	ITEM	SIZE
1	# 1	RTU – 1	CURB	49.500"W x 75.000"L X 14.000"H INSULATED.

CONNECTIONS COMMISSIONING SERVICES(CS):
IF ORDERED, THE CCS ENGINEER WILL PERFORM REMOTE ENGINEERING ANALYSES OF CAPTIVEAIRE EQUIPMENT STARTUP REPORTS AND PROVIDE A WRITTEN REPORT TO THE CONTRACTOR. THE CCS ENGINEER WILL ALSO PERFORM ONE (1) ON-SITE FIELD SERVICE VISIT FOR EQUIPMENT START-UP AND TRAINING. THE CONTRACTOR SHALL SCHEDULE THE ATTENDANCE OF THE CCS ENGINEER AT THE FIELD OFFICE. IF THE CCS ENGINEER DISCOVERS A DISCREPANCY THAT CAN BE RESOLVED REMOTELY, THE CCS ENGINEER WILL NOTIFY THE CONTRACTOR AND ASSIST IN RESOLVING THE DISCREPANCY. A RETURN TRIP FOR CCS WILL BE REQUIRED TO RESOLVE DISCREPANCIES THAT CANNOT BE RESOLVED REMOTELY. IF CCS SERVICE HAS COMMENCED AND THE CCS ENGINEER DISCOVERS A DISCREPANCY BEYOND THE CONTROL OF CAPTIVEAIRE, SUCH AS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

HMI SCHEDULE			
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #1	HMI #1 – UNIT	IN UNIT	NOT AVERAGED	55
FAN #1	HMI #2 – SPACE	MANAGER'S OFFICE	NOT AVERAGED	56

DOAS/RTU BACNet Points List – JOB#7331759

BACNET POINTS AVAILABLE FOR FAN #1 (RTU – 1)					BACNET POINTS AVAILABLE FOR FAN #1 (RTU – 1)				
BACNet Object	BACNet Type	BACNet ID	LON DEVT Name	Function	BACNet Object	BACNet Type	BACNet ID	LON DEVT Name	Function
IOCmdCommand	BV	1	nvoIOCmd1	Control/Monitor	MixingBoxMaxVlvtStDcc	AV	247	nvoMBMaxVlvtStDcc	Control/Monitor
IOCCoolCommand	BV	2	nvoIOCcoo	Control/Monitor	CFMReading	AI	244	nviCFMReading	Read Only
IOCHeatCommand	BV	3	nvoIOCHea	Control/Monitor	StaticPressure	AI	245	nviStaticPressure	Read Only
IOAlarmStatus	BV	4	nviIOAlarmA	Control/Monitor					
SchemeIncIOcSP	AV	6	nvoSchInc10cSP	Control/Monitor					
DischargeSetpoint10cSP	AV	12	nvoDsHea10cSP	Control/Monitor					
IntakeCoolIOcSP	AV	16	nvoICoolIOcSP	Control/Monitor					
DischargeCoolIOcSP	AV	20	nvoDscoolIOcSP	Control/Monitor					
FreezeStatusSP	AV	28	nviFrzStatusSP	Control/Monitor					
FreezeStatDischargeSP	AV	29	nviFrzStatDscSP	Control/Monitor					
FreezestatSP	AV	30	nviFreezeSP	Control/Monitor					
OverheatDischargeSP	AV	31	nviOheatDscSP	Control/Monitor					
OverheatSP	AV	32	nviOverheatSP	Control/Monitor					
FurnaceSystemsSP	AV	33	nviFSystemsSP	Control/Monitor					
IntakeHIOcSP	AV	34	nviSHIOcSP	Control/Monitor					
DischargeHIOcSP	AV	38	nviDsHIOcSP	Control/Monitor					
IntakeSpOcSP	AV	40	nviSpOcSP	Control/Monitor					
DischargeSpOcSP	AV	44	nviDsSpOcSP	Control/Monitor					
BlowerManualFreqDcc	AV	88	nviBlowManFreqDc	Control/Monitor					
EconomizerTempSPDcc	AV	94	nviEcoTempSPDcc	Control/Monitor					
EconomizerTempBandDcc	AV	96	nviEcoTempBandDcc	Control/Monitor					
EconomizerTotalSpDcc	AV	98	nviEcoTotalSpDcc	Control/Monitor					
MixingBoxMinVlvtStDcc	AV	99	nviMBMinVlvtStDcc	Control/Monitor					
MixingBoxManualVlvtStDcc	AV	100	nviMBoxManVlvDc	Control/Monitor					
DynamicSpSPDcc	AV	105	nviDynSpSPDcc	Control/Monitor					
DynamicSpSPFeet	AV	121	nviDynSpSPFeet	Control/Monitor					
DynamicSpHeatSts	AV	122	nviDynSpHeatSts	Control/Monitor					
DynamicSpCoolDs	AV	123	nviDynSpCoolDs	Control/Monitor					
UnitStatus	AI	139	nviCurrentStSvte	Monitor Only					
AverageSpaceTemp	AI	141	nviAvgSpaceTemp	Monitor Only					
BlowerFrequency	AI	142	nviBlwVFDFreq	Monitor Only					
BlowerCurrent	AI	143	nviBlwVFDAmps	Monitor Only					
BlowerRPM	AI	144	nviBlwVFDRpm	Monitor Only					
AverageRH	AI	145	nviAvgRh	Monitor Only					
OutdoorTemp	AI	146	nviOutdoorTemp	Monitor Only					
ReturnTemp	AI	147	nviReturnTemp	Monitor Only					
DischargeTemp	AI	148	nviDischargeTemp	Monitor Only					
IntakeTemp	AI	149	nviSHIntakeTemp	Monitor Only					
SpaceTemp	AI	150	nviSpaceTemp	Monitor Only					
HRDTemp	AI	151	nviHRDTemp	Monitor Only					
SuctionLineTemp	AI	156	nviSuctLineTemp	Monitor Only					
LiquidLineTemp	AI	157	nviLiquidLineTemp	Monitor Only					
EvaporatorCoilTemp	AI	158	nviEvapCoilTemp	Monitor Only					
CondOutdoorCoilTemp	AI	159	nviOutCoilTemp	Monitor Only					
CompressorDischargeTemp	AI	160	nviCompDchTemp	Monitor Only					
IntakeRh	AI	161	nviIntakeRh	Monitor Only					
SpaceRh	AI	162	nviSpaceRh	Monitor Only					
OutdoorRh	AI	163	nviOutdoorRh	Monitor Only					
DischargeRh	AI	164	nviDischargeRh	Monitor Only					
ReturnRh	AI	165	nviReturnRh	Monitor Only					
SuctionLineRh	AI	166	nviSuctLineRh	Monitor Only					
LiquidLineRh	AI	167	nviLiqLineRh	Monitor Only					
LiquidLinePsi	AI	168	nviLiqLinePsi	Monitor Only					
HRDRh	AI	169	nviHRDRh	Monitor Only					
CondFanSPwmState	AI	176	nviCondFanState	Monitor Only					
CondFanSPwmState	AI	177	nviCondFanState	Monitor Only					
ModulatingGasValveOutput	AI	178	nviMGVOutput	Monitor Only					
AdjustableBoosterOutput	AI	180	nviBoostOutput	Monitor Only					
DiBoostMotorFlag	BI	182	nviDiBoost10h	Monitor Only					
RehexMotorFlag	BI	183	nviRehex10h	Monitor Only					
RefrostMotorFlag	BI	184	nviRefrost10h	Monitor Only					
PumpdownSkidFlag	BI	185	nviPumpSkid10h	Monitor Only					
PumpdownDkidFlag	BI	186	nviPumpDKD10h	Monitor Only					
RehexValvePosition	AI	187	nviRehexVlvs	Monitor Only					
EevValvePosition	AI	188	nviEevValvePos	Monitor Only					
IntakeSpAchieved	AI	189	nviIntSpAchieved	Monitor Only					
SpaceSpAchieved	AI	190	nviSpSpAchieved	Monitor Only					
CompressorPower	AI	191	nviCompPower	Monitor Only					
CompressorFrequency	AI	192	nviCompFreq	Monitor Only					
CompressorCurrent	AI	193	nviCompAmps	Monitor Only					
Spare1	AI	194	nviSpare1	Monitor Only					
Spare2	AI	209	nviSpare2	Monitor Only					
ActiveFault1	AI	218	nviActiveFault1	Monitor Only					
ActiveFault2	AI	251	nviActiveFault2	Monitor Only					
ActiveFault3	AI	252	nviActiveFault3	Monitor Only					
ActiveFault4	AI	253	nviActiveFault4	Monitor Only					
ActiveFault5	AI	254	nviActiveFault5	Monitor Only					
ActiveFault6	AI	255	nviActiveFault6	Monitor Only					
HeatTemperMode0cc	AV	257	nviHeatsModeDcc	Control/Monitor					
CoolTemperMode0cc	AV	259	nviCoolsModeDcc	Control/Monitor					
ActiveSt0Dcc	AV	261	nviActiveSt0Dcc	Control/Monitor					
MixingBoxMode	AV	264	nviMBMode	Control/Monitor					
MixingBoxMode	AV	265	nviMBMode	Control/Monitor					
Reheat SP Adj Dcc	AV	266	nviRHAjDcc	Control/Monitor					
BlowerVfdMinFreqDcc	AV	229	nviVFDMinFreqDcc	Control/Monitor					
BlowerVfdMaxFreqDcc	AV	230	nviVFDMaxFreqDcc	Control/Monitor					
MixingBoxMinOAPercentDcc	AV	236	nviMBMinOAPerDcc	Control/Monitor					
MixingBoxMaxOAPercentDcc	AV	238	nviMBMaxOAPerDcc	Control/Monitor					
MixingBoxMinVlvtStDcc	AV	240	nviMBMinVlvtStDcc	Control/Monitor					

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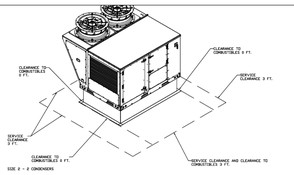
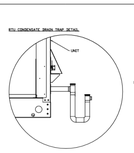
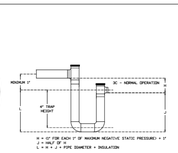
FAN #1 CAS-HVAC2-1250-18MF-8T – HEATER (RTU – 1)

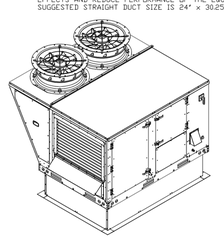
NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ⊗ DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
4. CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
5. EXTERIOR GAS CONNECTION PROVIDED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

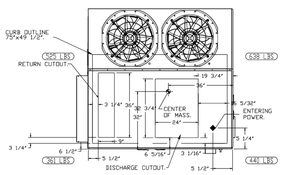


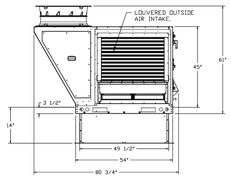


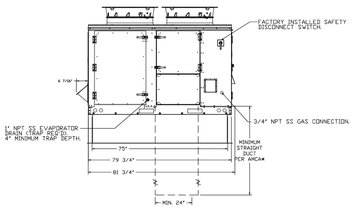


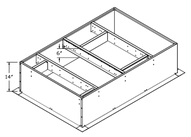
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE 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 24" x 30.25".

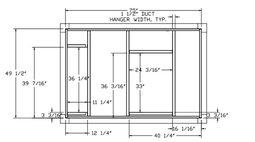


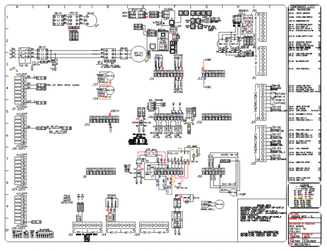


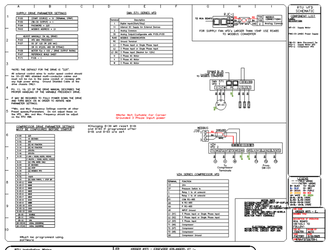


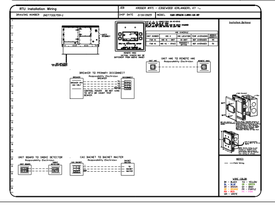












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REVISIONS

	DESCRIPTION	DATE
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2		
3		
4		
5		

KROGER #971 - EDGEWOOD (ERLANGER), KY - RTU MATCH
DIXIE HWY.TAG: PO#
ERLANGER, KY, 41018

DATE: 2/10/2025
DWG.#: 7331759
DRAWN BY:
SCALE: 1/2" = 1'-0"
MASTER DRAWING

SHEET NO. 1

SHEET NO. 2

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OWNER

Kroger

	DATE	DESCRIPTION
1	01/03/2025	BID / PERMIT ISSUE
10	04/21/2025	BULLETIN NO. 13

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE A971

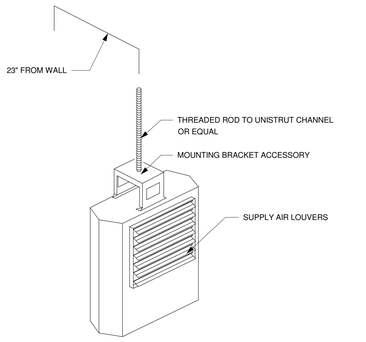
3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 523302
ISSUE DATE 01/03/2025

SHEET TITLE
HVAC SECTIONS AND DETAILS

SHEET NO.
M3.1.19

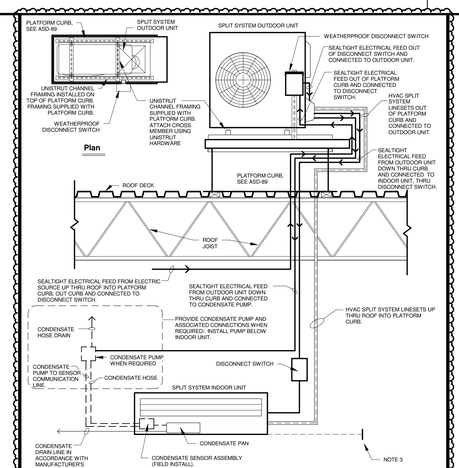
PLOTTED: 4/21/2025 4:05:37 PM
FILE LOCATION: C:\Users\tsmith\Documents\Revit\2025\05.00 24\RTP Kroger A971 Edgewood, KY -2025_tsmith.rvt



NOTES

1. IF PLACED IN CORNER, HEATER MUST BE 12" FROM ALL WALLS
2. MOUNT UNIT HORIZONTALLY, SEE DRAWINGS FOR MOUNTING HEIGHT
3. UNIT TO BE CONTROLLED BY INTEGRAL THERMOSTAT TO MAINTAIN 45°F
4. SUPPLY AIR LOUVERS TO DIRECT AIR TOWARD OCCUPANTS
5. ELECTRIC UNIT HEATERS AND ACCESSORIES TO BE FURNISHED BY KROGER, INSTALLED BY HVAC CONTRACTOR
6. SEE SPECIFICATIONS FOR FURTHER INFORMATION

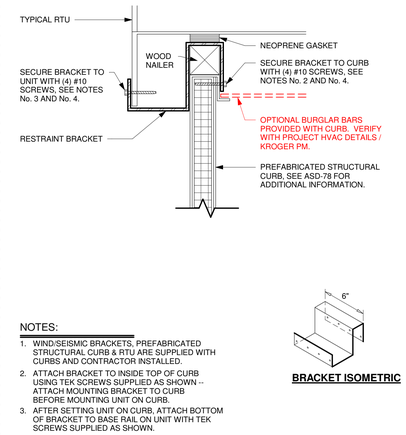
ELECTRIC UNIT HEATER	DATE: 2/22/24
MASTER SPECIFICATION DETAIL	DRAWN: CMR
ORIGINAL ISSUE DATE 2/22/24	HSD-16



Notes:

1. REFER TO ASD-89 FOR PLATFORM CURB INSTALLATION AND ADDITIONAL INFORMATION.
2. SPLIT SYSTEMS MANUFACTURERS AND MODELS VARY. REFERENCE MANUFACTURER'S INSTALLATION GUIDE FOR ADDITIONAL INFORMATION.
3. SPLIT SYSTEM TO BE INSTALLED 7'-0" AFF. IN REMODELS, UNIT MAY BE INSTALLED AT 6'-8" AT A MINIMUM TO COORDINATE WITH EXISTING CONDITIONS.

HVAC SPLIT SYSTEM DIAGRAM	DATE: 6/7/24
MASTER SPECIFICATION DETAIL	DRAWN: KAP
ORIGINAL ISSUE DATE 3/11/11	HSD-11

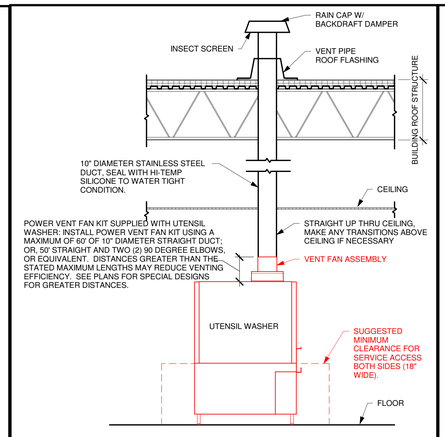


NOTES:

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
MASTER SPECIFICATION DETAIL	DRAWN: ZAW
ORIGINAL ISSUE DATE 10/1/09	HSD-10

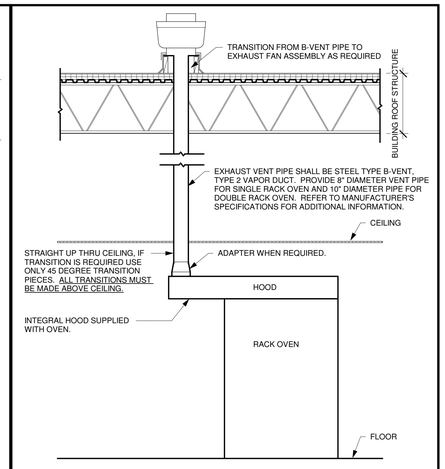


NOTES:

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
MASTER SPECIFICATION DETAIL	DRAWN: ZAW
ORIGINAL ISSUE DATE 1/30/09	HSD-8

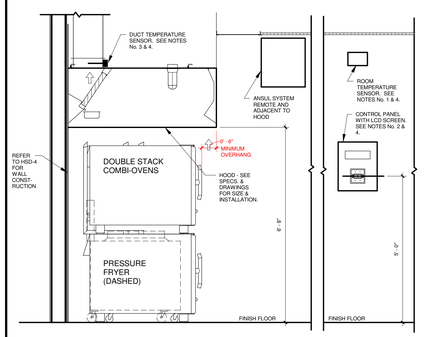


NOTES:

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.

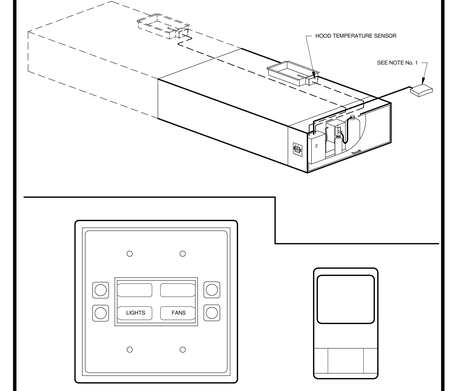
BAKERY RACK OVEN EXHAUST	DATE: 10/11/12
MASTER SPECIFICATION DETAIL	DRAWN: ZAW
ORIGINAL ISSUE DATE 1/30/09	HSD-7



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.

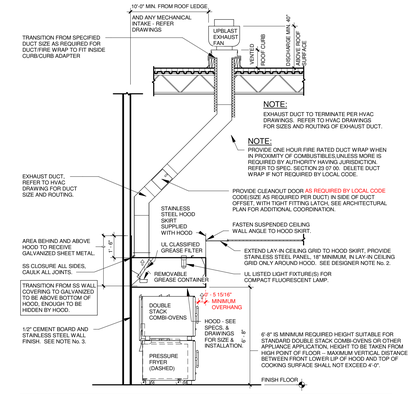
HOOD WITH REMOTE ANSUL & CONTROL PANEL	DATE: 5/15/19
MASTER SPECIFICATION DETAIL	DRAWN: ZAW
ORIGINAL ISSUE DATE 6/5/15	HSD-4B



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.

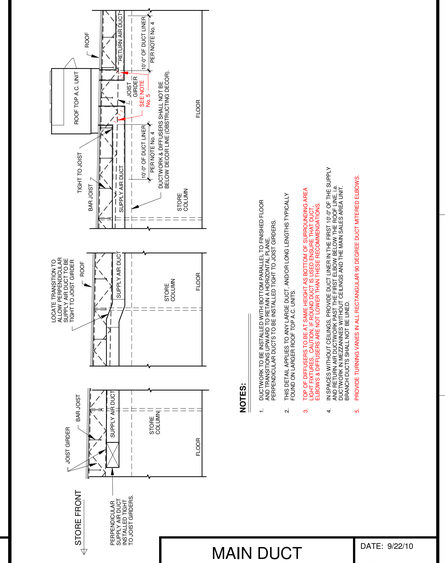
TYP. HOOD WITH BUILT IN ANSUL SYSTEM & CONTROL PANEL	DATE: 5/15/19
MASTER SPECIFICATION DETAIL	DRAWN: ZAW
ORIGINAL ISSUE DATE 6/15/15	HSD-4A



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 05 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 SS WALL COVERING OR 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.

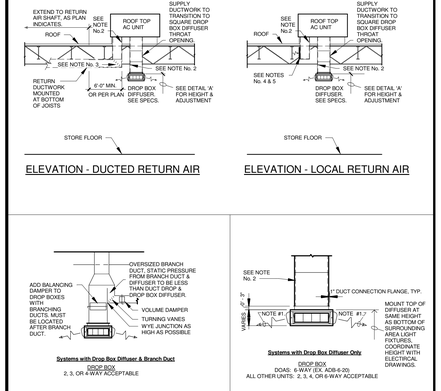
DELI-BAKERY EXHAUST HOOD INSTALLATION	DATE: 5/15/19
MASTER SPECIFICATION DETAIL	DRAWN: ZAW
ORIGINAL ISSUE DATE 6/1/07	HSD-4



NOTES:

1. ROOFWORK TO BE INSTALLED WITH BOTTOM PARALLEL TO FINISHED FLOOR WHERE POSSIBLE. ROOFWORK TO BE INSTALLED TIGHT TO JOIST GIRDERS, PERPENDICULAR DUCTS TO BE INSTALLED TIGHT TO JOIST GIRDERS.
2. DUCTS TO BE SUPPORTED FROM ROOF STRUCTURE AND/OR LONG LENGTHS TYPICALLY HUNG ON LARGER ROOFTOP A.C. UNITS.
3. TOP OF DIFFUSERS TO BE AT SAME HEIGHT AS BOTTOM OF SURROUNDING AREA LIGHT FIXTURES. COORDINATE HEIGHT WITH ELECTRICAL DRAWINGS. DIFFUSERS, ELBOWS & DIFFUSERS ARE NOT LOWER THAN THESE RECOMMENDATIONS.
4. AVOID LOCATING DIFFUSERS DIRECTLY ABOVE OR BELOW THE SUPPLY AND RETURN AIR DUCTWORK THAT THE FIRST RUNS FROM BELOW THE ROOF LINE. AND RETURN AIR DUCTWORK THAT THE FIRST RUNS FROM BELOW THE ROOF LINE. 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
MASTER SPECIFICATION DETAIL	DRAWN: JFQ
ORIGINAL ISSUE DATE 10/2/06	HSD-3



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. 30"x10" RETURN AIR OPENING = 28"x10" 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
MASTER SPECIFICATION DETAIL	DRAWN: ZAW
ORIGINAL ISSUE DATE 2/20/06	HSD-1

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OWNER

Kroger

ISSUE/REVISION

	DATE	DESCRIPTION
1	09/14/2023	90% OWNER REVIEW
	10/24/2023	BID / PERMIT ISSUE
2	05/22/2024	BULLETIN NO. 4
3	10/17/2024	BULLETIN NO. 6

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3071 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 522343
ISSUE DATE 10/24/23

SHEET TITLE
HVAC STANDARD DETAILS (HSD)

SHEET NO.
M5.1

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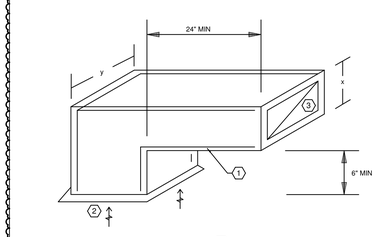


GENERAL NOTES

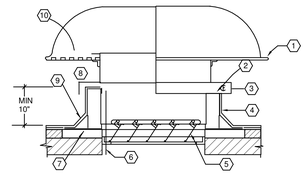
A. OPENING SIZE:
12x12 RR = 12x12 DUCT
12x24 RR = 12x18 DUCT
24x23 RR = 24x18 DUCT

KEYED NOTES:

1. 1/2" ACOUSTIC LINING
2. 12x12 RR OT 24x24 RR (UNLESS OTHERWISE NOTED)
3. OPENING SAME SIZE AS RR NECK

233713.00-13 - PLENUM RETURN GRILLE

SCALE: NONE



KEYED NOTES:

1. GRAVITY ROOF VENTILATOR
2. WOOD NAILER
3. ANCHOR ALL FOUR SIDES WITH SCREWS 12" O.C.
4. PREFABRICATED INSULATED CURB
5. MOTOR OPER. DAMPER INTERFACED WITH CONTROL CIRCUIT ON EXHAUST FANS
6. CONDUIT HOLE
7. ANCHOR TO ROOF DECK AS REQUIRED
8. RUBBER GASKET APPLIED TO TOP OF CURB
9. ROOFING TO UP AND OVER NAILER, FLASH OVER ROOFING AND PER ROOFING MFG'R RECOMMENDATIONS
10. BIRD SCREEN

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 AND ROOF HATCH.

233723.00-01 - HOODED GRAVITY VENTILATOR DETAIL

SCALE: NONE

KEYED NOTES:

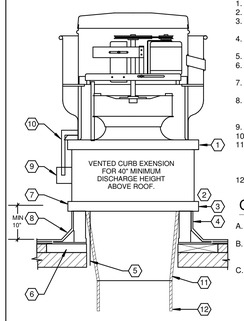
1. KITCHEN EXHAUST FAN U.L. LISTED FOR GREASE (SEE KITCHEN EXHAUSTER DETAIL). FAN MOTOR SHALL BE OUT OF AIRSTREAM. PROVIDE GREASE CUP AND DRAIN.
2. 16 GAUGE INSULATED WELDED BLACK IRON OR 18 GAUGE INSULATED WELDED STAINLESS STEEL DUCTWORK WRAPPED WITH 2 LAYERS OF ZERO CLEARANCE DUCT WRAP (TYPICAL).
3. 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.

233813.00-04 - KITCHEN HOOD DETAIL UP BLAST

SCALE: NONE



KEYED NOTES:

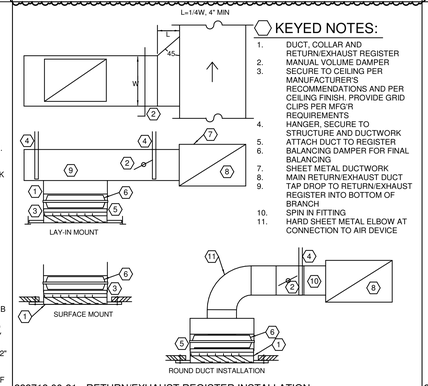
1. HINGED BASE FOR ACCESS.
2. WOOD NAILER.
3. ANCHOR ALL FOUR SIDES WITH SCREWS 12" O.C.
4. PREFABRICATED INSULATED ALUMINUM CURB.
5. CONDUIT HOLE.
6. ANCHOR TO ROOF DECK AS REQUIRED.
7. RUBBER GASKET APPLIED TO TOP OF CURB.
8. FLASH PER ROOFING MANUFACTURER REQUIREMENTS. FLASH UP AND OVER WOOD NAILER.
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.

233813.00-02 - KITCHEN EXHAUSTER

SCALE: NONE

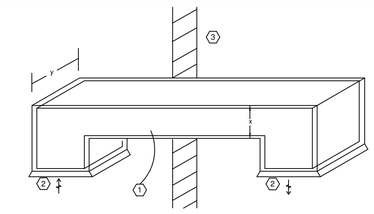


KEYED NOTES:

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

233713.00-21 - RETURN/EXHAUST REGISTER INSTALLATION

SCALE: NONE



GENERAL NOTES:

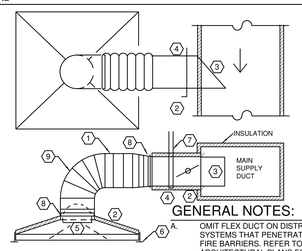
A. SEE NEW WORK PLAN FOR DUCT SIZE
B. x = y DIMENSIONS SHALL BE DETERMINED FROM FLOOR PLANS

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:

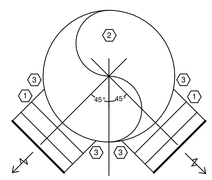
A. OMIT FLEX DUCT ON DISTRIBUTION SYSTEMS THAT PENETRATE 1-HR FIRE BARRIERS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE BARRIERS.

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:

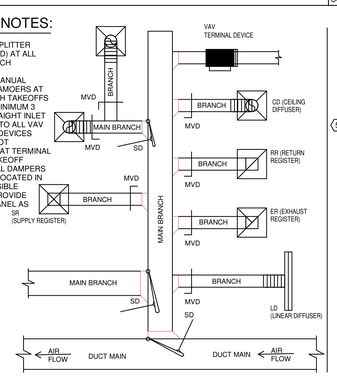
1. REGISTER WITH 0 DEGREE DEFLECTION BLADE DAMPER (TO BE SIZED AS SHOWN ON PLAN)
2. SUPPLY DUCT
3. SEAL JOINTS BETWEEN COLLAR AND MAIN DUCT

233713.00-02 - ANGLED REGISTER INSTALLATION

SCALE: NONE

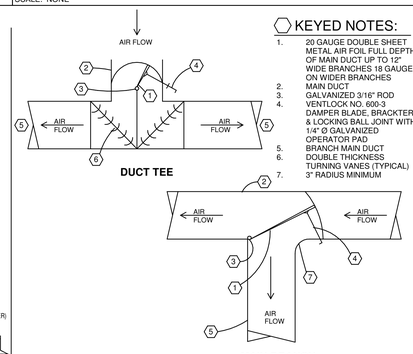
GENERAL NOTES:

1. PROVIDE SPLITTER DAMPER (SD) AT ALL MAIN BRANCH TAKEOFFS
2. PROVIDE MANUAL VOLUME DAMCERS 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.



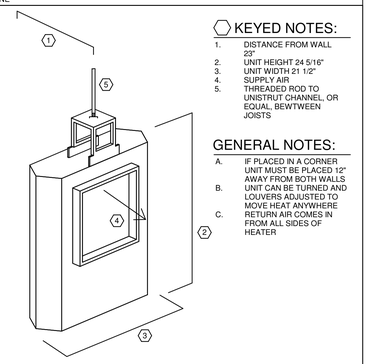
233300.00-01 - MANUAL DAMPER DETAIL

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"-0 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
5. THREADED ROD TO UNISTRUT CHANNEL, OR EQUAL, BEWTWEEN JOISTS

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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ISSUE/REVISION

	DATE	DESCRIPTION
A	01/03/2025	BID / PERMIT ISSUE
2	05/22/2024	BULLETIN NO. 4
8	01/24/2025	BULLETIN NO. 11

EXECUTED BY: TDS
REVIEWED BY: KSL

PROJECT TITLE
KROGER STORE
A971

3077 Dixie Highway
Edgewood, KY 41018

COMMISSION NO. 523302
ISSUE DATE 01/03/2025

SHEET TITLE
HVAC PROJECT-SPECIFIC DETAILS

SHEET NO.
M5.2

PLOTTED: 1/3/2025 12:25:34 PM
FILE LOCATION: C:\Users\tsolon\Documents\Revit\23239.00-29-MEP-Kroger A971 Edgewood, KY - 2023_tsolon.rvt

EQUIPMENT MARK	LOCATION	100% OCCUPIED - MAX REQUIRED OA	HOODS ON, ASHRAE SPACE MIN + AIR FOR DESIRED PRESSURIZATION	CO2 LEVEL SATISFIED - HOODS OFF, ASHRAE SPACE MIN
DOAS-1	SALES	4600	3050	1955
DOAS-2	SALES	4600	3050	1955
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	782	782	782
RTU-9	SALES	0	0	0
RTU-10	PHARMACY	480	480	480
RTU-11	DELI	660	660	660
RTU-12	BAKERY	80	80	80
RTU-13	BACKROOM	500	500	500
RTU-14	BACKROOM	518	518	518
RTU-15	DOCK	523	523	523
RTU-16	OFFICES	493	493	493
RTU-17	PICKUP	400	400	400
RTU-18	VESTIBULE	220	220	220
RTU-19	LIQUOR	816	816	816
EF-1	CUSTOMER RRs	-650	-650	-650
EF-2	FAMILY 2,3	-200	-200	-200
EF-3	EMPLOYEE RRs	-400	-400	-400
EF-4A	24' DELI HOOD	-1800	-1800	0
EF-4B	24' DELI HOOD	-1800	-1800	0
EF-12	9'10" DELI HOOD	-1475	-1475	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
EF-11	LIQUOR RRs	-200	-200	-200
EF-13	DISH HOOD	-475	-475	0
Building Totals (OA)		14672	11572	9382
Building Totals (Exhaust)		-10700	-10700	-3950
Building Pressure (OA-Exhaust)		3972	872	5432
		During occupied hours	During occupied hours	During unoccupied hours

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)	OA/CFM (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	4872	CAPTIVE AIRE	CAS-HVAC4-1.500-20-30T	17.8	4600	0.5	4600	30	83	75	372	163	51	51	0	0	80	469	380	7	14	DOAS-1 - 480V/3PH, 73.5 MCA, 80A OCP	3334	SEE SHEET M3.1.16
DOAS-2	OUTDOOR MAKEUP AIR UNIT, DX COOLING AND GAS HEAT	SALES	4872	CAPTIVE AIRE	CAS-HVAC4-1.500-20-30T	17.8	4600	0.5	4600	30	83	75	372	163	51	51	0	0	80	469	380	7	14	DOAS-2 - 480V/3PH, 73.5 MCA, 80A OCP	6621	SEE SHEET M3.1.16
RTU-1	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1319	LENNOX	LGM074U4E	12.5	2400	1	0	6	76	64	96	88	55	54	70	37	80	108	87	7	14	RTU-1 - 480V/3PH, 15 MCA, 20A OCP	556	3,4,10
RTU-2	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1319	LENNOX	LGM060U4E	12.5	2000	1	0	5	76	64	70	59	55	54	70	24	80	108	87	7	14	RTU-2 - 480V/3PH, 13 MCA, 15A OCP	492	3,4,10
RTU-3	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1319	LENNOX	LGM074U4E	12.5	2400	1	0	6	76	64	99	84	55	54	70	57	80	108	87	7	14	RTU-3 - 480V/3PH, 15 MCA, 20A OCP	794	3,4,10
RTU-4	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1319	LENNOX	LGM060U4E	12.5	2000	1	0	5	76	64	71	60	55	54	70	24	80	108	87	7	14	RTU-4 - 480V/3PH, 13 MCA, 15A OCP	712	3,4,10
RTU-5	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1319	LENNOX	LGM060U4E	12.5	2025	1	0	5	76	64	86	73	55	54	70	52	80	108	87	7	14	RTU-5 - 480V/3PH, 13 MCA, 15A OCP	1333	3,4,10
RTU-6	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1319	LENNOX	LGM092U4E	12.5	2000	1	0	5	76	64	75	63	55	54	70	26	80	108	87	7	14	RTU-6 - 480V/3PH, 13 MCA, 15A OCP	1118	3,4,10
RTU-7	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM102U4E	12.6	3200	1	0	8.5	76	64	79	67	55	54	70	51	80	130	104	7	14	RTU-7 - 480V/3PH, 21 MCA, 25A OCP	1269	3,4,10
RTU-8	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1363	LENNOX	LGM102U4E	12.6	3400	1	782	8.5	79	66	114	84	55	54	58	109	80	180	144	7	14	RTU-8 - 480V/3PH, 21 MCA, 25A OCP	2735	3,4,10
RTU-9	PACKAGED ROOFTOP UNIT, GAS HEAT	SALES	1319	LENNOX	LGM060U4E	12.5	2000	1	0	5	76	64	81	69	55	54	70	53	80	108	87	7	14	RTU-9 - 480V/3PH, 13 MCA, 15A OCP	802	3,4,10
RTU-10	PACKAGED ROOFTOP UNIT, GAS HEAT	PHARMACY	1319	LENNOX	LGM074U4E	12.5	2400	1	480	5	76	64	96	75	55	54	70	74	80	108	87	7	14	RTU-10 - 480V/3PH, 15 MCA, 20A OCP	918	2,3,4,10,19,22,24
RTU-11	PACKAGED ROOFTOP UNIT, GAS HEAT	DELI	2184	CAPTIVE AIRE	CAS-HVAC5-1.250-18-ST	12.2	5300	0.75	660	8.5	79	66	97	78	55	54	59	68	80	227	184	7	14	RTU-11 - 480V/3PH, 19.7 MCA, 20A OCP	680	REFER TO SHEET M3.1.19
RTU-12	PACKAGED ROOFTOP UNIT, GAS HEAT	BAKERY	997	LENNOX	LGM060U4E	13.7	1800	1	80	4	64	57	56	55	54	54	57	13	80	108	87	7	14	RTU-12 - 480V/3PH, 13 MCA, 15A OCP	434	2,3,4,10
RTU-13	PACKAGED ROOFTOP UNIT, GAS HEAT	BACKROOM	1319	LENNOX	LGM060U4E	12.5	2000	1	500	5	79	66	64	50	55	54	57	99	80	108	87	7	14	RTU-13 - 480V/3PH, 13 MCA, 15A OCP	730	2,3,4,10,22
RTU-14	PACKAGED ROOFTOP UNIT, GAS HEAT	BACKROOM	1319	LENNOX	LGM074U4E	12.5	2250	1	502	6	79	66	69	55	55	54	58	58	80	108	87	7	14	RTU-14 - 480V/3PH, 15 MCA, 20A OCP	2092	2,3,4,10,22
RTU-15	PACKAGED ROOFTOP UNIT, GAS HEAT	DOCK	1363	LENNOX	LGM092U4E	12.5	2750	1	522	7.5	78	66	80	66	55	54	60	107	80	180	144	7	14	RTU-15 - 480V/3PH, 20 MCA, 25A OCP	3315	2,3,4,10,22
RTU-16	PACKAGED ROOFTOP UNIT, GAS HEAT	OFFICES	1363	LENNOX	LGM092U4E	12.5	2900	1	493	7.5	78	66	89	68	55	54	60	56	80	130	104	7	14	RTU-16 - 480V/3PH, 20 MCA, 25A OCP	2926	2,3,4,10,22,24
RTU-17	PACKAGED ROOFTOP UNIT, GAS HEAT	PICKUP	1319	LENNOX	LGM074U4E	12.0	2400	1	480	6	79	66	72	58	55	54	59	98	80	150	121	7	14	RTU-17 - 480V/3PH, 15 MCA, 20A OCP	974	2,3,4,10
RTU-18	PACKAGED ROOFTOP UNIT, GAS HEAT	CART CORRAL	1319	LENNOX	LGM060U4E	12.5	2000	1	220	5	78	65	54	46	55	54	64	62	80	108	87	7	14	RTU-18 - 480V/3PH, 13 MCA, 15A OCP	800	3,4,10
RTU-19	PACKAGED ROOFTOP UNIT, GAS HEAT	LIQUOR SALES	1363	LENNOX	LGM102U4E	12.6	3400	1	816	8.5	79	66	115	85	55	54	57	132	80	180	144	7	14	RTU-19 - 480V/3PH, 21 MCA, 25A OCP	594	3,4,10,19,24

RTU CURB WEIGHTS

RTUs 7,8,15,16,19:	230 LBs
RTUs 1,2,3,4,5,6,9,10,12,13,14,17,18:	195 LBs
DOAS 1 & 2:	282 LBs

RTU-11'S WEIGHT INCLUDES THE ESTIMATED WEIGHT OF ITS CURB ADAPTER.

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

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	CFM (cfm)	ESP (in WC)	FAN RPM (rpm)	BHP (hp)	ELECTRIC CONNECTION SUMMARY	AVAILABLE FAULT CURRENT
EF-1	CENTRIFUGAL ROOF VENTILATOR	CUSTOMER RRS	64	CAPTIVE AIRE	DR30HIFA	650	0.5	1327	0.13	EF-1 - 120V/1PH, 0.25 HP, 3.8A FLA	385
EF-2	CENTRIFUGAL ROOF VENTILATOR	FAMILY 2	48	CAPTIVE AIRE	DR10HIFA	200	0.3	1258	0.04	EF-2 - 120V/1PH, 0.06 HP, 1.1A FLA	491
EF-3	CENTRIFUGAL ROOF VENTILATOR	EMPLOYEE RRS	64	CAPTIVE AIRE	DR30HIFA	400	0.5	1096	0.07	EF-3 - 120V/1PH, 0.25 HP, 3.8A FLA	1349
EF-4A	UPBLAST PROPELLER ROOF FAN	DELI HOOD A	96	CAPTIVE AIRE	DU85HIFA	2400	1	1379	0.46	EF-4A - 208V/3PH, 0.75 HP, 2.6A FLA	1385
EF-4B	UPBLAST PROPELLER ROOF FAN	DELI HOOD B	96	CAPTIVE AIRE	DU85HIFA	2400	1	1379	0.46	EF-4B - 208V/3PH, 0.75 HP, 2.6A FLA	1089
EF-5	CENTRIFUGAL ROOF VENTILATOR	FRONT ELECTRICAL	64	CAPTIVE AIRE	DR30HIFA	800	0.4	1431	0.16	EF-5 - 120V/1PH, 0.25 HP, 3.8A FLA	1506
EF-6	CENTRIFUGAL ROOF VENTILATOR	ELECTRICAL	64	CAPTIVE AIRE	DR30HIFA	800	0.4	1431	0.17	EF-6 - 120V/1PH, 0.25 HP, 3.8A FLA	1646
EF-7	CENTRIFUGAL ROOF VENTILATOR	SEAFOOD	64	CAPTIVE AIRE	DR30HIFA	700	0.4	1316	0.13	EF-7 - 120V/1PH, 0.25 HP, 3.8A FLA	975
EF-8	CENTRIFUGAL ROOF VENTILATOR	CLEANING CENTER	48	CAPTIVE AIRE	DR10HIFA	200	0.3	1258	0.04	EF-8 - 120V/1PH, 0.06 HP, 1.1A FLA	721
EF-9	UPBLAST PROPELLER ROOF FAN	BAKERY OVEN	79	CAPTIVE AIRE	DU30HIFA	600	0.5	1255	0.12	EF-9 - 120V/1PH, 0.33 HP, 5.6A FLA	1008
EF-10	UPBLAST PROPELLER ROOF FAN	BAKERY OVEN	79	CAPTIVE AIRE	DU30HIFA	600	0.5	1255	0.12	EF-10 - 120V/1PH, 0.33 HP, 5.6A FLA	1108
EF-11	CENTRIFUGAL ROOF VENTILATOR	LIQUOR RRS	48	CAPTIVE AIRE	DR10HIFA	200	0.3	1258	0.04	EF-11 - 120V/1PH, 0.06 HP, 1.1A FLA	974
EF-12	UPBLAST PROPELLER ROOF FAN	DELI HOOD 3	96	CAPTIVE AIRE	DU85HIFA	600	1.2	1364	0.45	EF-12 - 208V/3PH, 0.75 HP, 2.6A FLA	1656
EF-13	UPBLAST PROPELLER ROOF FAN	DISH HOOD	77	CAPTIVE AIRE	DU30HIFA	650	0.7	1303	0.14	EF-13 - 208V/3PH, 0.333 HP, 1.3A FLA	840
HVLS-1	HIGH VOLUME LOW SPEED FAN	DOCK	520	CAPTIVE AIRE	CA-HVLS-8 (6-BLADE)		0	168	0	HVLS-1 - 208V/3PH, 1 HP, 3.2A FLA	506

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)	ELECTRIC CONNECTION SUMMARY	AVAILABLE FAULT CURRENT
CU-1	AIR SOURCE OUTDOOR CONDENSING UNIT	ROOF	132	DAIKIN	RK36WMVJU9	18.8	3	36	CU-1 - 208V/1PH, 16.6 MCA, 20A OCP	2097

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	38	DAIKIN	FTX36WVJU9	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	TRANE	UHEC073D	480	3	7.5	9.0
UH-2	ELECTRIC UNIT HEATER	VESTIBULE 2	40	TRANE	UHEC073D	480	3	7.5	9.0
UH-3	ELECTRIC UNIT HEATER	VESTIBULE 2	40	TRANE	UHEC073D	480	3	7.5	9.0

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 STANDARD FOR PEAK COOLING AND HEATING LOAD CALCULATIONS IN BUILDINGS EXCEPT LOW-RISE RESIDENTAL BUILDINGS.

COOLING LOAD BREAKDOWN

CROOF	SENSIBLE HEAT GAIN FROM ROOF
CWALL	SENSIBLE HEAT GAIN FROM EXTERIOR WALLS
CPART	SENSIBLE HEAT GAIN FROM PARTITIONS
CGLASS	SENSIBLE HEAT GAIN FROM GLAZING
CSOLAR	SENSIBLE HEAT GAIN FROM SOLAR GAIN THROGH GLAZING
CLIGHTS	SENSIBLE HEAT GAIN FROM INTERIOR LIGHTING
CEQUIP	SENSIBLE HEAT GAIN FROM PLUG LOADS, COMPUTERS, ETC.
CPSENS	SENSIBLE HEAT GAIN FROM PEOPLE
CSSENS	TOTAL SENSIBLE HEAT GAIN TO SPACE
CFAN	SENSIBLE HEAT GAIN FROM AIR HANDLER FAN
COAS	SENSIBLE HEAT GAIN FROM OUTDOOR VENTILATION AIR
CTSENS	TOTAL SENSIBLE HEAT GAIN
CPLAT	LATENT HEAT GAIN FROM PEOPLE
COAL	LATENT HEAT GAIN FROM OUTDOOR VENTILATION AIR
CTLAT	TOTAL LATENT HEAT GAIN
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	HSPACE	HSLAB	HOA	HTOT
RTU-1	11.9	0.85	0	1.38	3.85	39.68	4.2	15.88	78.36	2.4	0	80.76	15.4	0	15.4	96.16	25.2	2.69	0	5.45	37.29	3.96	0	37.29
RTU-2	10.03	0	0	0	0	34.47	1.71	11.28	57.49	1.75	0	59.24	11.28	0	11.28	70.51	20.95	0	0	6	23.84	2.89	0	23.84
RTU-3	14.38	1.38	0	0	0	48.33	1.71	16.42	82.22	2.52	0	84.74	15.12	0	15.12	99.86	30.01	4.97	0	0	56.82	21.84	0	56.82
RTU-4	10.27	0	0	0	0	35.28	1.71	11.28	58.52	1.79	0	60.31	11.28	0	11.28	71.59	21.44	0	0	0	24.4	2.96	0	24.4
RTU-5	11.58	2.92	0	0	0	39.4	4.62	12.69	71.22	2.18	0	73.4	12.65	0	12.65	86.05	24.23	10.17	0	0	51.83	17.43	0	51.83
RTU-6	10.77	0	0	0	0	37	1.71	11.82	61.3	1.87	0	63.17	11.82	0	11.82	75	22.49	0	0	0	25.6	3.1	0	25.6
RTU-7	10.59	3.43	0	0.2	1.66	36.38	1.72	11.62	65.62	2	0	67.62	11.55	0	11.55	79.17	22.11	11.8	0	0.77	51.04	16.36	0	51.04
RTU-8	11.63	3.48	0	0	0	38.65	2.24	13.32	69.32	2.55	13.01	84.88	9.35	20.87	30.22	115.1	23.99	12.67	0	0	53.92	17.25	54.59	108.51
RTU-9	10.84	3.72	0	0.2	1.66	37.27	1.71	12.05	67.45	2.06	0	69.51	11.95	0	11.95	81.46	22.65	12.79	0	0	52.78	16.56	0	52.78
RTU-10	4.73	3.91	0	0.17	1.42	10.84	22.95	4.02	48.58	1.8	7.98	58.36	2.75	12.81	15.56	73.92	9.29	13.91	0	0.93	30.05	5.91	33.51	63.56
RTU-11	16.05	0	0	0	0	13.41	28	7.84	65.29	1.24	10.98	77.51	2.2	17.61	19.81	97.32	19.64	0	0	0	22.35	2.71	46.08	68.43
RTU-12	1.34	0	0	0	0	3.06	28.35	0	32.75	1.2	1.33	35.28	0	2.13	2.13	37.41	2.79	0	0	0	3.18	0.39	5.58	8.76
RTU-13	6.64	11.53	0	0	0	22.81	0	0	40.97	1.25	8.32	50.54	0	13.34	13.34	63.88	13.86	39.6	0	0	63.71	10.26	34.91	98.62
RTU-14	9.63	0	0	0	0	33.09	3.29	0	46.02	1.41	8.35	55.78	0	13.4	13.4	69.17	20.12	0	0	0	22.89	2.78	35.06	57.95
RTU-15	5.17	6.61	0	2.3	20.11	11.85	3.66	0	56.36	1.72	8.69	66.77	0	13.94	13.94	80.71	10.81	22.71	0	9.43	70.23	7.99	36.48	106.71
RTU-16	7.23	1.26	0	0	0	17.23	22.35	10.28	58.35	2.18	8.2	68.73	8.25	13.15	21.4	90.14	13.43	5.45	0	0	21.95	3.07	34.42	56.37
RTU-17	4.51	5.43	0	0.8	6.64	10.34	12.13	1.3	49.23	1.8	7.98	59.01	1.1	12.81	13.91	72.92	9.43	18.66	0	3.65	64.3	6.98	33.51	97.81
RTU-18	2.78	3.15	0	5.82	16.27	6.38	0	3.17	40.95	1.25	3.66	45.86	2.75	5.87	8.62	54.48	5.81	10.82	0	25.69	46.62	4.3	15.36	61.98
RTU-19	10.36	8.75	0	0	0	35.62	3.65	9.14	69.53	2.55	13.57	85.65	8.52	21.77	30.3	115.95	21.3	30.54	0	0	74.96	15.09	56.97	131.93

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 PANELBOARD
FUSE	FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)
FLA	OPERATING FULL LOAD AMPS
MCA	MINIMUM CIRCUIT AMPACITY
CF	CORD AND PLUG CONNECTION
[BLANK]	HARD WIRED (WHEN INDICATED FOR DC TYPE)

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
MAN	THERMOSTAT
FA	MANUAL
CO	FIRE ALARM
INT	CARBON MONOXIDE SENSOR
ASD	INTEGRAL TO EQUIPMENT
DSD	AREA SMOKE DETECTOR...

SHORT CIRCUIT RATING

WHERE SHORT CIRCUIT RATING CODE REQUIRED VALUE INDICATES "YES" APPLICABLE EQUIPMENT'S SHORT CIRCUIT RATING SHALL EXCEED THE AVAILABLE FAULT CURRENT VALUE INDICATED.

CONNECTION MARK	DESCRIPTION	VOLTAGE	PHASE	EMERGENCY	HP	WATTS	HTG KW	FLA	MCA	OCP	FED FROM	DC TYPE	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	SHORT CIRCUIT RATING CODE REQUIRED?	AVAILABLE FAULT CURRENT
CU-1	AIR SOURCE OUTDOOR CONDENSING UNIT	208 V	1	NO					16.6	20			EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	EC	Yes	2097
DOAS-1	OUTDOOR MAKEUP AIR UNIT, DX COOLING AND GAS HEAT	480 V	3	NO					73.5	80			EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	EC	Yes	3334
DOAS-2	OUTDOOR MAKEUP AIR UNIT, DX COOLING AND GAS HEAT	480 V	3	NO					73.5	80			EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	EC	Yes	6621
DS-1	DUCTLESS SPLIT INDOOR UNIT	208 V	1	NO					1	20	CU-1		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	Yes	6621
EF-1	CENTRIFUGAL ROOF VENTILATOR	120 V	1	NO	0.25			3.8					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	385
EF-2	CENTRIFUGAL ROOF VENTILATOR	120 V	1	NO	0.06			1.1					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	491
EF-3	CENTRIFUGAL ROOF VENTILATOR	120 V	1	NO	0.25			3.8					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	1349
EF-4A	UPBLAST PROPELLER ROOF FAN	208 V	3	NO	0.75			2.6					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	1365
EF-4B	UPBLAST PROPELLER ROOF FAN	208 V	3	NO	0.75			2.6					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	1089
EF-5	CENTRIFUGAL ROOF VENTILATOR	120 V	1	NO	0.25			3.8					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	1506
EF-6	CENTRIFUGAL ROOF VENTILATOR	120 V	1	NO	0.25			3.8					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	1646
EF-7	CENTRIFUGAL ROOF VENTILATOR	120 V	1	NO	0.25			3.8					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	975
EF-8	CENTRIFUGAL ROOF VENTILATOR	120 V	1	NO	0.06			1.1					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	721
EF-9	UPBLAST PROPELLER ROOF FAN	120 V	1	NO	0.33			5.6					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	1008
EF-10	UPBLAST PROPELLER ROOF FAN	120 V	1	NO	0.33			5.6					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	1108
EF-11	CENTRIFUGAL ROOF VENTILATOR	120 V	1	NO	0.06			1.1					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	974
EF-12	UPBLAST PROPELLER ROOF FAN	208 V	3	NO	0.75			2.6					EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC