

E5 HVAC PLAN
SCALE: 1/4" = 1'-0"

SUPPLY DUCTWORK SIZING TABLE*			
SIZE	CFM RANGE	SIZE	CFM RANGE
8"	115 - 235	8"x8"	205 - 300
10"	240 - 435	10"x8"	305 - 400
12"	440 - 710	10"x10"	405 - 550
14"	715 - 1,070	12"x10"	555 - 700
16"	1,075 - 1,530	12"x12"	705 - 900
18"	1,535 - 2,090	14"x12"	905 - 1,105
20"	2,095 - 2,760	16"x12"	1,110 - 1,315
22"	2,765 - 3,550	18"x12"	1,320 - 1,520
24"	3,555 - 4,470	20"x12"	1,525 - 1,740
*CONTRACTOR MAY SUBSTITUTE RECTANGULAR FOR ROUND DUCTWORK ON MAIN RUNS AT THEIR DISCRETION. BRANCHES TO DIFFUSERS TO REMAIN ROUND.			
		22"x12"	1,745 - 1,950
		24"x12"	1,955 - 2,170
		26"x12"	2,175 - 2,400
		28"x12"	2,405 - 2,610
		30"x12"	2,615 - 2,840
		32"x12"	2,845 - 3,070
		34"x12"	3,075 - 3,290
		36"x12"	3,295 - 3,520
		36"x14"	3,525 - 4,420

DIFFUSER, REGISTER, AND GRILLE SCHEDULE									
TAG	SERVICE	TYPE	MATERIAL	THROW	FACE	NECK	MOUNTING	MANUFACTURER/MODEL	Notes
SD-1	SUPPLY	LOUVERED	STEEL	4-WAY	24X24	SEE PLAN	LAY-IN	CARNES SFP24	2,4
SD-2 - NOT USED									
SD-3	SUPPLY	LOUVERED	STEEL	3-WAY	SEE PLAN	SEE PLAN	SURFACE	CARNES SKSA	2,4
SD-4	SUPPLY	LOUVERED	STEEL	4-WAY	12X12	SEE PLAN	SURFACE	CARNES SKSA	1,2,4
SD-5	SUPPLY	PERFORATED	STEEL	PERFORATED	24X24	SEE PLAN	LAY-IN	CARNES SPRB24	2,4
RG-1	RETURN	SQUARE EGGRATE	ALUMINUM	N/A	24X24	22X22	LAY-IN	CARNES RAPMF	2,3,4
EG-1	RETURN	LOUVERED GRILLE	STEEL	N/A	12X12	SEE PLAN	SURFACE	CARNES RTLAH	1,2,4
TG-1	TRANSFER	LOUVERED GRILLE	STEEL	N/A	SEE PLAN	SEE PLAN	SURFACE	CARNES RTLAH	2,4
DIFFUSER NOTES:									
1. PROVIDE w/ ADJUSTABLE OPPOSED BLADE DAMPER									
2. VERIFY ALL DIFFUSERS AND RETURN GRILLE COLORS WITH OWNER AND ARCHITECT									
3. PROVIDE w/ 22X22 PLENUM BOX.									
4. ALL DIFFUSERS AND RETURNS LOCATED IN BLACK CEILING SHALL BE FLAT BLACK FINISH.									

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LOWELL JOHN LARSON
REGISTERED
STATE OF INDIANA
PROFESSIONAL ENGINEER
EX. 71312022
9/17/20

NEW CULVER'S RESTAURANT
Morristown Road
Shelbyville, IN 46176
County of SHELBY

Culver Franchising System, Inc.
1240 Water Street
Prairie du Sac, WI 53578
608-643-7980

OWNER: S&L PROPERTIES OF SHELBYVILLE, LLC
2651 Kicking Court
Portage, WI 53071
Jeff Liegel
608-762-9893

OLLMANN ASSOCIATES ARCHITECTS, P.C.
200 South State Street
Bellevue, Illinois 61008
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HVAC PLAN, DIFFUSER SCHEDULE

Revision: _____
Date: 9-14-2021

2021-101

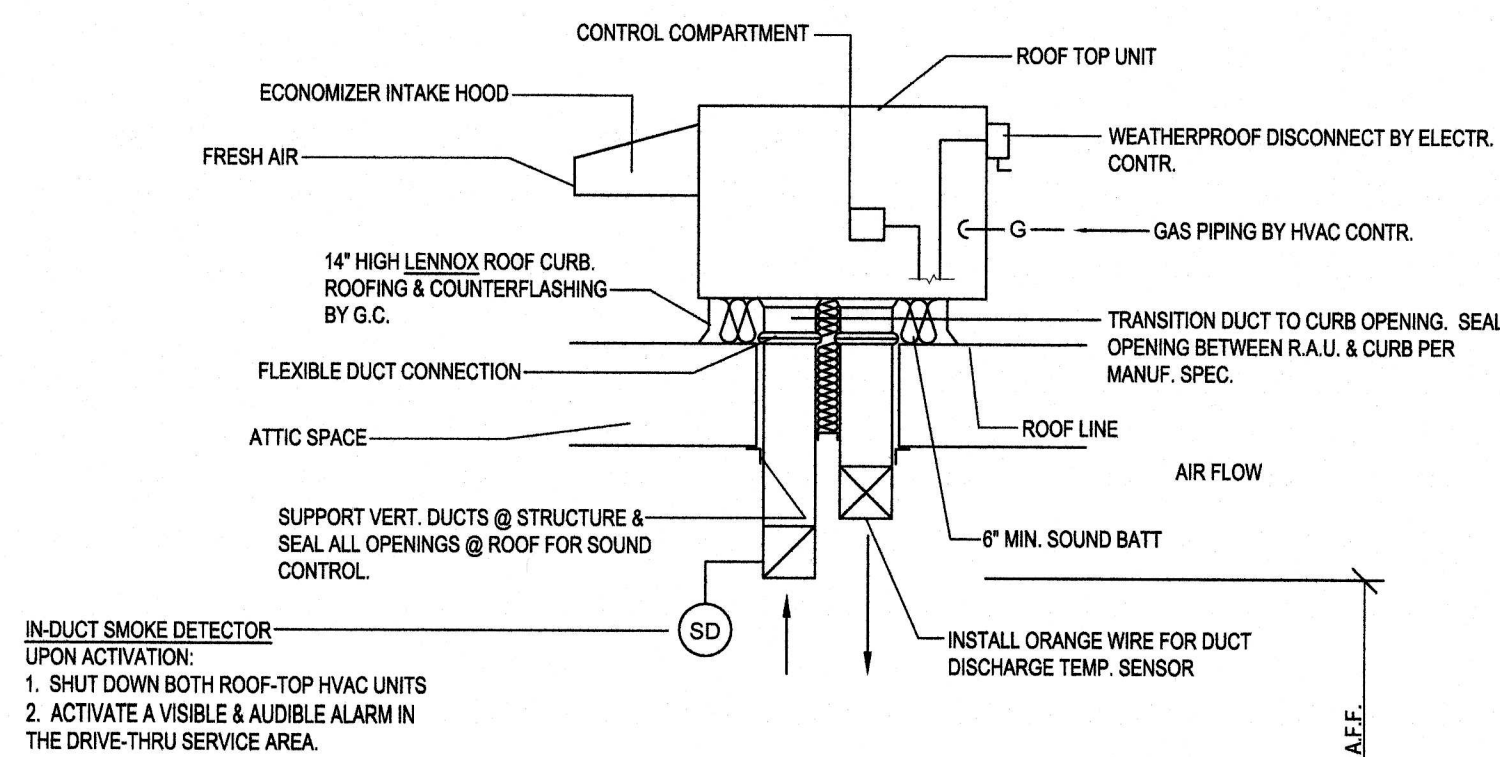
M101

GENERAL NOTES

- DEVIATIONS FROM THE HVAC PLANS ARE THE RESPONSIBILITY OF THE HVAC CONTRACTOR & WILL NOT RESULT IN ADDITIONAL COSTS TO THE OWNER UNLESS WRITTEN CHANGE ORDERS ARE APPROVED BY THE OWNER.
- ALL WORK TO BE PERFORMED TO STATE CODE & SMACNA GUIDELINES.
- INSTALL UNITS ACCORDING TO MANUFACTURERS GUIDELINES.
- PROVIDE OWNER W/ OPERATION & MAINTENANCE MANUALS & SYSTEM SCHEMATICS.
- CONTRACTOR TO CONFIRM VOLTAGES & PHASES OF EQUIPMENT PRIOR TO INSTALLATION.
- VERIFY ALL EXISTING CONDITIONS PRIOR TO INSTALLATION DRAWINGS ARE DIAGRAMMATIC IN NATURE & DO NOT REFLECT EXACT LOCATIONS OF EQUIPMENT OR OTHER APPARATUS.
- PROVIDE SHOP DRAWINGS TO THE ARCHITECT/DESIGNER FOR EQUIPMENT, FANS, REGISTERS, ETC. PRIOR TO PROCUREMENT.
- PROVIDE OWNER W/ COLOR CHOICES FOR SWITCHES & OTHER APPARATUS WHERE APPLICABLE.
- VENT OWNER WATER HEATER AS REQUIRED.
- VENT DRYER THRU SIDEWALL TO EXTERIOR AS REQUIRED. MAINTAIN CLEARANCE FROM INTAKES AS NOTED.
- HANG & SUPPORT MATERIALS SHALL BE INSTALLED THE LATEST EDITION OF THE ASHRAE HANDBOOK OF FUNDAMENTALS.
- MAINTAIN AT LEAST 10 FEET CLEARANCE FROM INTAKES OR WINDOWS ON ALL EXHAUST VENTS.
- TEST, ADJUST, & CALIBRATE CONTROL SYSTEMS AS REQUIRED. PROVIDE SCHEMATICS / DESCRIPTION TO THE OWNER PRIOR TO INSTALLATION.
- INSTALLER RESPONSIBLE FOR FINAL TEST & BALANCING DURING TRAINING WEEK. PROVIDE WRITTEN REPORT BY THIRD PARTY INDEPENDENT TAB CONTRACTOR.
- HVAC CONTRACTOR TO INSTALL #2 GAS W/ 1/4" WATER COLUMN MAX. PER STATE CODE & AGA GUIDELINES (LABEL AS REQUIRED).
- CONTRACTOR TO VERIFY GAS METER CAPACITY W/ LOCAL GAS SUPPLIER.
- VERIFY W/ OWNER EXACT HEATER LOCATION TO AVOID BUILDING FUNCTION INTERFERENCE.
- REPLACE ALL AIR FILTERS PRIOR TO TURNING SYSTEM OPERATIONS OVER TO OWNER.
- HVAC CONTRACTOR IS RESPONSIBLE FOR A COMPLETE & FULLY WORKING SYSTEM.
- DUCT DIMENSIONS LISTED ARE NET FREE - CLEAR INSIDE DIMENSIONS.
- VERIFY DUCT LOCATIONS PRIOR TO FABRICATION. (VERIFY LIMITED AREA FOR DUCTWORK & OTHER APPARATUS.)
- INSULATE DUCT WORK TO SMACNA GUIDELINES & STATE CODES.
- INSTALL VOLUME CONTROL DAMPERS AS INDICATED ON PLANS.
- FLEXIBLE ROUND DUCT WORK NOT TO EXCEED 8 FEET IN LENGTH. AVOID UNNECESSARY TURNS & SLACK.
- VERTICAL RETURN AIR DUCT WORK DOWN FROM RTUS TO BE LINED FOR SOUND ATTENUATION.
- DUCT WORK TO BE STANDARD GAUGE SHEET METAL (FIBROUS DUCT NOT ALLOWED.)
- INSULATE EXHAUST DUCT FOR EXHAUST FAN TO EXTERIOR TERMINATION.
- COORDINATE WORK W/ GENERAL CONTRACTOR & OWNER TO MAXIMIZE CEILING HEIGHT & AVOID CONFLICTS.
- SIS WALL PANELS FOR THE KITCHEN AREA ARE TO BE FURNISHED AND INSTALLED BY THE HVAC CONTRACTOR. PANELS ARE TO BE 18 GA. TYPE 304 S/S. SEE DETAILS AND LOCATIONS ON THE A103 DRAWING.
- EXHAUST FANS AND FURNACE FANS TO RUN CONTINUOUSLY DURING OCCUPIED MODE.
- NIGHT SET BACK THERMOSTATS TO BE INSTALLED ON ALL HVAC EQUIPMENT.

NATIONAL ACCOUNT PROGRAM

- LENNOX INDUSTRIES, INC.** - ROOFTOP HVAC EQUIPMENT
National Accounts Sales: (800) 367-6288. Order #: lennox.com
National Account Technical Support: (800) 367-6288. Order #: lennox.com
- ACCUREX/GREENHECK FAN CORPORATION** - KITCHEN HOODS, EXHAUST FANS, ROOF CURBS, ANSUL SYSTEMS, ACCESSORIES AND TEST AND BALANCE
CONTACT: Andy Jacobs @ 1-715-320-0222 or www.3200ac.com
Secondary contact: Phila. Dept. 1-800-827-7585. phil@accurex.com
ACCUREX WILL PROVIDE BALANCED AIRFLOW AND FUNCTIONAL CHARACTERISTICS OF THE HVAC AS THEY RELATE TO AIRFLOW AND RESISTANCE ONLY. SERVICES TO BE PERFORMED BY A CERTIFIED NEBB FIRM AND ITS MANAGING GROUP - NATIONAL TAB
- CARNES COMPANY** - DIFFUSERS AND GRILLES
National Accounts Sales: Chris Straton @ (800) 940-4111. cstraton@carne.com
National Accounts Rep: Brian Baker @ (800) 940-4111. bbaker@carne.com



MECHANICAL EQUIPMENT SPECIFICATIONS

- RTU-1 **LENNOX EMERGENCY SERIES LGH-180-H48 W/ PRODIGY CONTROLLER**
COMBINATION GAS W/ HIGH TWO-STAGE HEATING & ELECTRIC COOLING ROOFTOP UNIT W/ HUMIDITROL & STAINLESS STEEL HEAT EXCHANGER. LOW HEAT 234,000 BTUHR & HIGH HEAT 380,000 BTUHR INPUT HEATING CAPACITY, 80.0% EFF. 180,000 NOMINAL COOLING CAPACITY, 12.0 EER, 208 / 230 VOLT, 3 PHASE, 100 MOCIP (NOTIFY ELECTRICAL CONTRACTOR IF BREAKER SIZE CHANGES), 6,150 CFM CONSTANT VOLUME SUPPLY, 1,700 CFM OA MINIMUM. IN ADDITION TO THE OPTIONS LISTED ABOVE, INCLUDE THE FOLLOWING FACTORY INSTALLED OPTIONS: WEATHERPROOF DISCONNECT SWITCH, FACTORY INSTALLED FIELD POWERED GFCI, RETURN AIR SMOKE DETECTORS, DRAIN PAN OVERFLOW SWITCH, SINGLE ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF AND HOODS. INCLUDE THE FOLLOWING FIELD INSTALLED OPTIONS: 2" MERV13 FILTERS, SPARE BELT, DOWN FLOW HYBRID CURB, PVC DRAIN TRAP KIT, REMOTE HUMIDITY SENSOR, MESH HAIL GUARD, LENNOX MODEL CS7500 PROGRAMMABLE THERMOSTAT. **NO SUBSTITUTIONS.**
- RTU-2 **LENNOX EMERGENCY SERIES LGH-210-H48 W/ PRODIGY CONTROLLER**
COMBINATION GAS W/ HIGH TWO-STAGE HEATING & ELECTRIC COOLING ROOFTOP UNIT W/ HUMIDITROL & STAINLESS STEEL HEAT EXCHANGER. LOW HEAT 234,000 BTUHR & HIGH HEAT 380,000 BTUHR INPUT HEATING CAPACITY, 80.0% EFF. 210,000 NOMINAL COOLING CAPACITY, 12.0 EER, 208 / 230 VOLT, 3 PHASE, 100 MOCIP (NOTIFY ELECTRICAL CONTRACTOR IF BREAKER SIZE CHANGES), 6,150 CFM CONSTANT VOLUME SUPPLY, 1,700 CFM OA MINIMUM. IN ADDITION TO THE OPTIONS LISTED ABOVE, INCLUDE THE FOLLOWING FACTORY INSTALLED OPTIONS: WEATHERPROOF DISCONNECT SWITCH, FACTORY INSTALLED FIELD POWERED GFCI, RETURN AIR SMOKE DETECTORS, DRAIN PAN OVERFLOW SWITCH, SINGLE ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF AND HOODS. INCLUDE THE FOLLOWING FIELD INSTALLED OPTIONS: 2" MERV13 FILTERS, SPARE BELT, DOWN FLOW HYBRID CURB, PVC DRAIN TRAP KIT, REMOTE HUMIDITY SENSOR, MESH HAIL GUARD, LENNOX MODEL CS7500 PROGRAMMABLE THERMOSTAT. **NO SUBSTITUTIONS.**
- PRV-1 **RESTROOM EXHAUST FAN - REFER TO SHEET M204**
- PRV-2 **GRIDDLE EXHAUST FAN - REFER TO SHEET M202**
- PRV-3 **FRYER EXHAUST FAN - REFER TO SHEET M203**
- EF-1A **MOP ROOM EXHAUST FAN - REFER TO SHEET M204**
- ITEM #48A **GRIDDLE HOOD - REFER TO SHEET M202**
- ITEM #59A **FRYER HOOD - REFER TO SHEET M203**

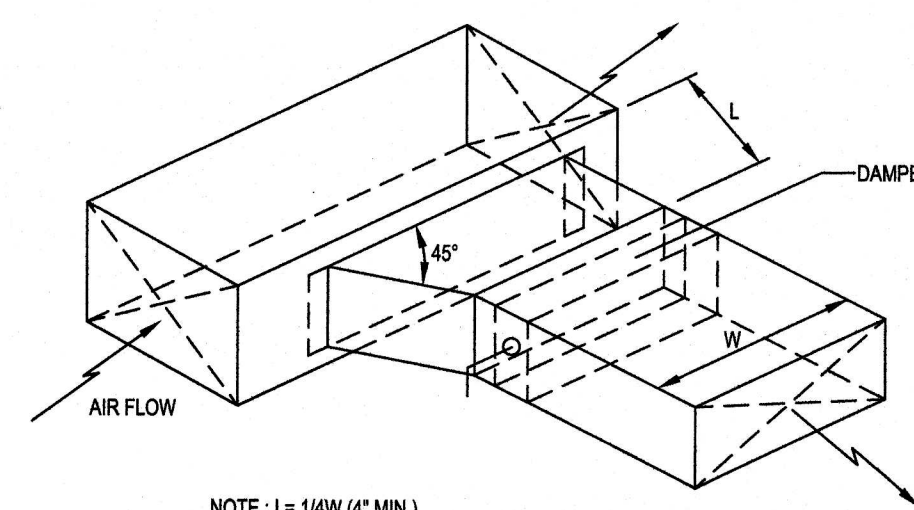
CONTROL NOTES

- NOTE: KITCHEN HOODS SUPPLIED AND INSTALLED BY HVAC CONTRACTOR**
- WIRE RTU-1, RTU-2 TO SHUT-DOWN & EXHAUST HOOD FANS TO CONTINUE TO RUN UPON ACTIVATION OF THE ANSUL SYSTEM.
 - WIRE RTU-1 & RTU-2 TO SHUT-DOWN UPON ACTIVATION OF ANY IN-DUCT SMOKE DETECTOR.
 - OCCUPIED MODE: FANS IN RTU-1 & RTU-2, EXHAUST FANS PRV-1, PRV-2, PRV-3 AND EF-1 TO RUN CONTINUOUSLY.
 - UNOCCUPIED MODE: FANS IN RTU-1 & RTU-2 TO RUN ONLY WHEN COOLING OR HEATING IS CALLED FOR.

TEST & BALANCE NOTES

- ACCUREX WILL PROVIDE BALANCED AIRFLOW & FUNCTIONAL CHARACTERISTICS OF THE HVAC SYSTEM AS THEY RELATE TO AIRFLOW & AIR PRESSURE ONLY. SERVICES TO BE PERFORMED BY A CERTIFIED NEBB FIRM & ITS MANAGING GROUP NATIONAL TAB.
- SERVICES NOT INCLUDED, PULLEY / SHEAVE CHANGES, MOTOR CHANGE OUTS, OR RETURN TRIPS DUE TO DELAYS CAUSED BY JOB INCOMPLETENESS.

AIR BALANCE TABLE				
EXHAUST AIR FLOW				
EQUIPMENT TAG	SERVICE	CFM		
PRV-1	RESTROOMS	375		
PRV-2	ITEM #49	1,500		
PRV-3	ITEM #59	1,500		
EF-1A	MOP ROOM	75		
TOTAL =		3,450		
VENTILATION REQUIRED PER 2018 INTERNATIONAL MECHANICAL CODE				
EQUIPMENT TAG	SERVICE	CFM		
RTU-1	DINING ROOM	1,477		
RTU-2	KITCHEN	108		
TOTAL =		1,585		
3,450 > 1,585 -> USE 3,450 CFM FOR OUTSIDE AIR CFM				
OVERALL AIRFLOW SUMMARY				
EQUIPMENT TAG	SERVICE	SUPPLY CFM	RETURN CFM	OUTSIDE AIR CFM
RTU-1	DINING ROOM	6,150	4,400	1,750
RTU-2	KITCHEN	6,150	4,450	1,700
TOTAL OUTSIDE AIR CFM =		3,450		

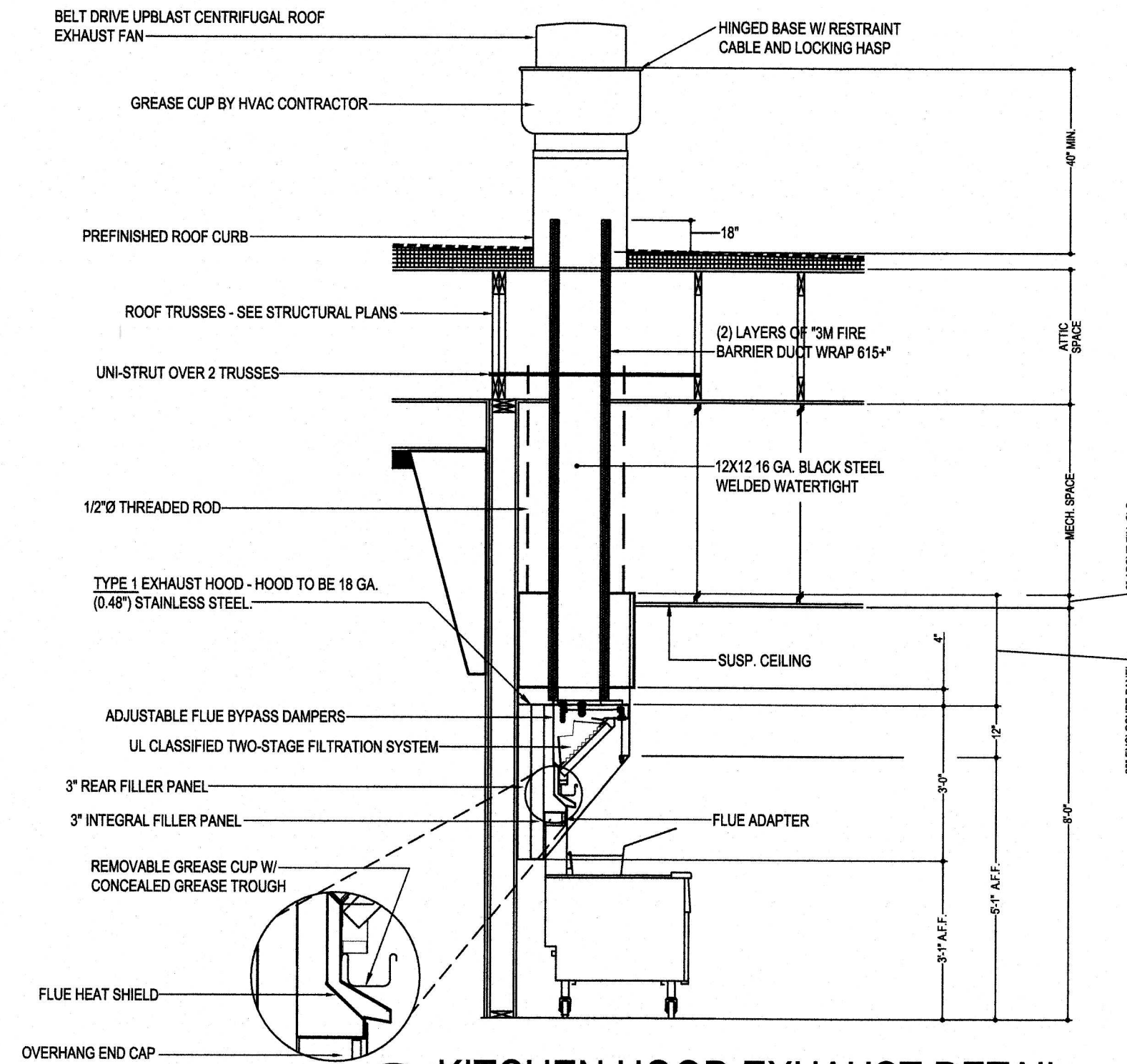


COOKING APPLIANCE / TYPE 1 HOOD INTERLOCK

- REMOTE SWITCH ON - POWER TO KITCHEN FAN CONTROL CENTER (KFCO)
- KFCO CONTROLS:
 - EXHAUST FANS PRV-2 (GRILLE) & PRV-3 (FRYERS) ARE STARTED.
 - OPENS OUTSIDE AIR INTAKE ON RTU-1 & RTU-2 TO MINIMUM FRESH AIR OPENING.
 - POWER TO OUTLETS #51 (GRILLE) & #60 (FRYERS).
- GRILLE & FRYER CAN BE STARTED.
- IN CASE OF FIRE:
 - SHUNT TRIP BREAK FOR GRILLE & FRYERS OUTLET TRIPS.
 - ANSUL SYSTEM IS ACTIVATED.
 - THE MECHANICAL GAS VALVES CLOSES.
 - SHUT DOWN RTU-1 & RTU-2 & CLOSE OUTSIDE AIR.
 - EXHAUST FANS PRV-2 & PRV-3 CONTINUE TO RUN.

GREASE HOOD FIRE SUPPRESSION SYSTEM

WET-CHEMICAL EXTINGUISHING SYSTEMS SHALL BE INSTALLED, MAINTAINED, PERIODICALLY INSPECTED AND TESTED IN ACCORDANCE WITH NFPA 17A AND THEIR LISTING.



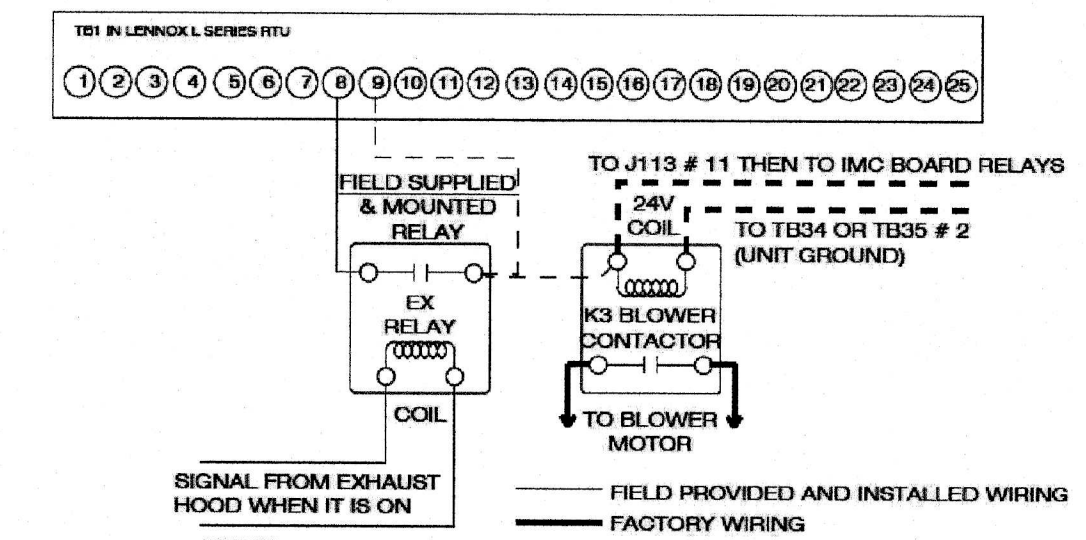
LENNOX SETTINGS FOR CULVERS

KITCHEN UNIT
PARAMETER 3.01 HEAT DELAY NEEDS TO BE SET TO "DISABLED". CONTROL PARAMETER 3.01+0 PG. 92
ECONOMIZER DIP SWITCHES A56 (EM1) NEED TO BE SET TO "GLOBAL" MODE. 1-ON 2-OFF (PG. 5 FIG 8)
ECONOMIZER MIN POSITION POTENTIOMETER NEEDS TO BE DETERMINED AND SET BY AIR BALANCER. (PG. 52 FIG 33)
BOTH THE THERMOSTAT AND THE HOOD FANS MUST BE TIED INTO T81 TERMINAL 889 FOR OCCUUNOCC CONTROL.
FRESH AIR TEMPERING (HEATING) CONTROL. PARAMETER 6.20+180 "55F" (KITCHEN IS USUALLY IN COOLING MODE)
(PARAMETER 6.20 PG 96; X CHARTS PG 109)

DINING ROOM UNIT
PARAMETER 3.01 HEAT DELAY NEEDS TO BE SET TO "DISABLED". CONTROL PARAMETER 3.01+0 PG. 92
ECONOMIZER DIP SWITCHES A56 (EM1) NEED TO BE SET TO ECONOMIZER TYPE PURCHASED/INSTALLED. 1-? 2-? (PG 5 FIGURE 8)
ECONOMIZER MIN POSITION POTENTIOMETER NEEDS TO BE DETERMINED AND SET BY AIR BALANCER. (PG 52 FIGURE 33)
THE THERMOSTAT MUST BE TIED INTO T81 TERMINAL 889 FOR OCCUUNOCC CONTROL.
FRESH AIR TEMPERING (HEATING) CONTROL. PARAMETER 6.20+142 "68F" (ROOM NEUTRAL).
(PARAMETER 6.20 PAGE 96; X CHARTS PAGE 109)

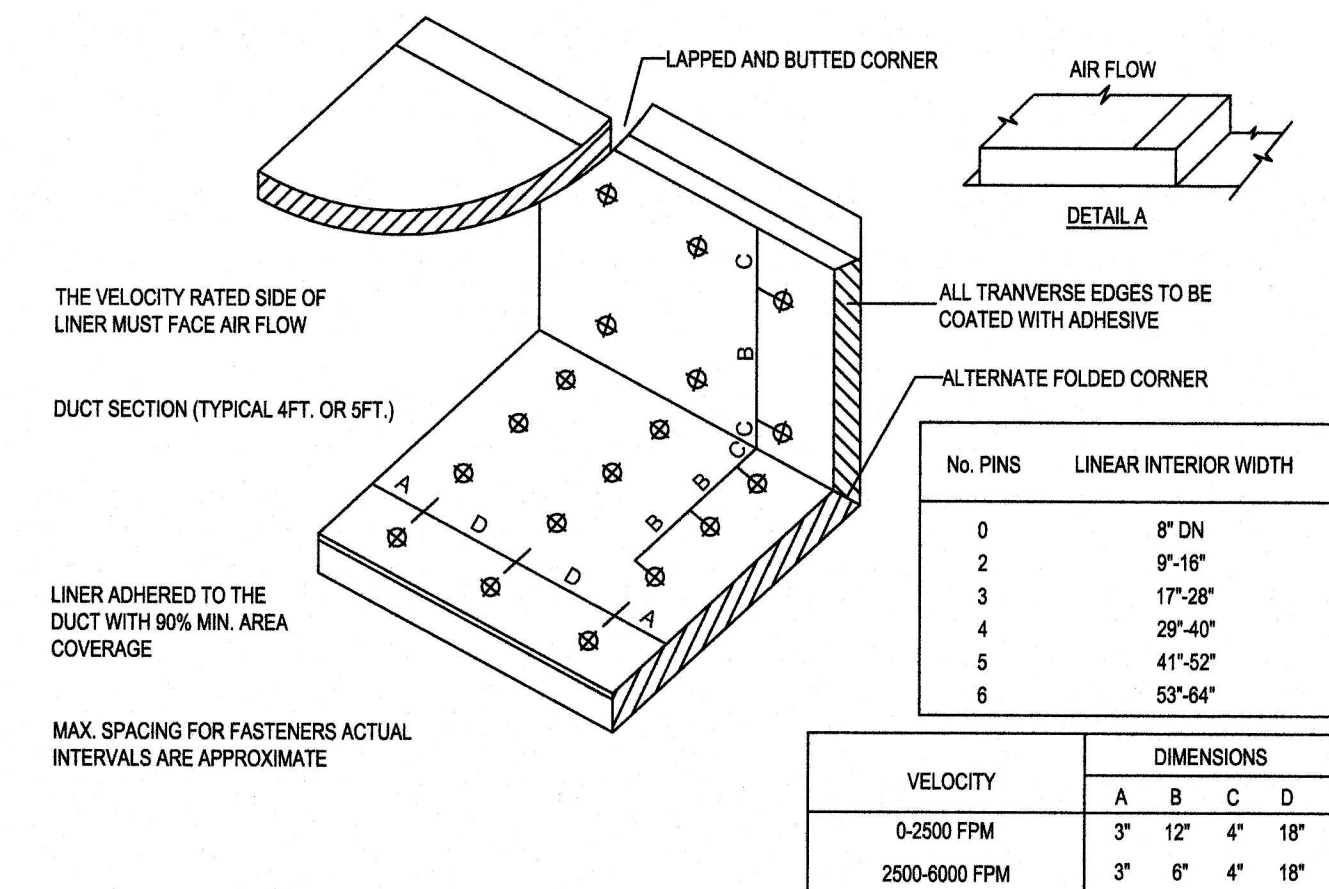
OTHER PARAMETERS THAT WE DIDNT SET, BUT ARE PART OF START-UP:
ROOM SET POINT
REMOTE SENSOR OPERATION
TEMP DEADBANDS

CHECK FOR CORRECT OPERATION AND WIRING OF ALL SENSORS.



CONTACTS FROM KITCHEN EXHAUST FAN STARTER ENERGIZE OPERATOR COIL OF A FIELD PROVIDED AND FIELD INSTALLED RELAY. THE RELAY CONTACTS ARE USED TO MAKE AND BREAK THE OCCUPIED SIGNAL BETWEEN TERMINALS B AND B1 ON T81, AND INSURE K3 BLOWER IS ENERGIZED. CREATING THE "OCCUPIED CALL" WILL MAKE THE ECONOMIZER MINIMUM POSITIONER ACTIVE, THEREBY MEETING FRESH AIR REQUIREMENTS. ECONOMIZER WILL MODULATE DAMPERS BEYOND MINIMUM POSITION SETTING. WHEN OUTDOOR AIR IS DEEMED SUITABLE FOR COOLING, DAMPERS WILL MODULATE TO TARGET 55 DEG F (DEFAULT) DISCHARGE AIR TEMPERATURE WHEN PROVIDING FREE COOLING.

LENNOX CULVERS EXHAUST FAN INTERLOCK FOR STORES WITHOUT MCP CONTROLLER



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LOWELL JOHN LARSON
REGISTERED PROFESSIONAL ENGINEER
No. PE1400478
STATE OF INDIANA
Exp. 7/31/2022

NEW CULVERS RESTAURANT
Morristown Road
Shelbyville, IN 46176
County of SHELBY

Culvers
Culver Franchising System, Inc.
1240 Water Street
Prairie du Sac, WI 53578
608-643-7890

OWNER: S&L PROPERTIES OF SHELBYVILLE, LLC
2651 Kitting Court
Portage, WI 53901
Jeff Liegel
608-742-2893

CULMANN ASSOCIATES ARCHITECTS, P.C.
200 South State Street
Bellevue, Illinois 61006
815-544-7790 Phone

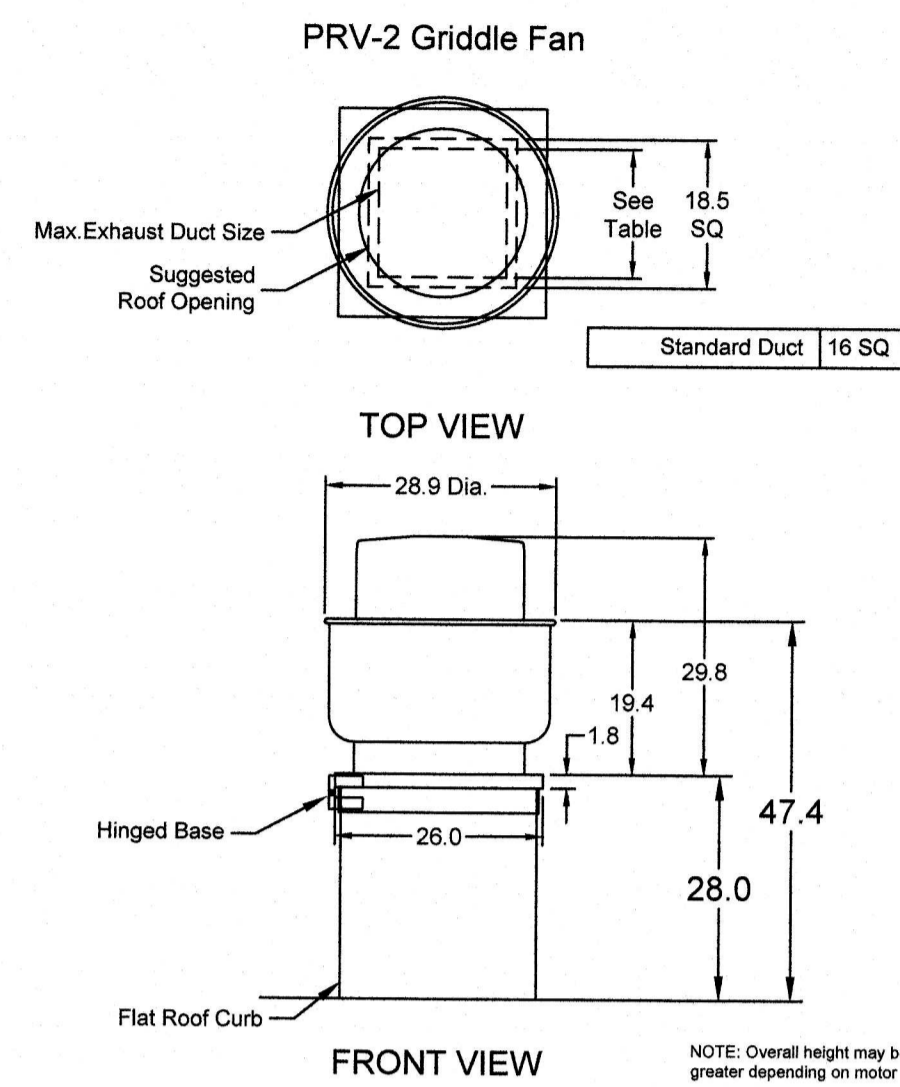
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HVAC SCHEDULE & DETAILS

Revision: _____
Date: 9-14-2021

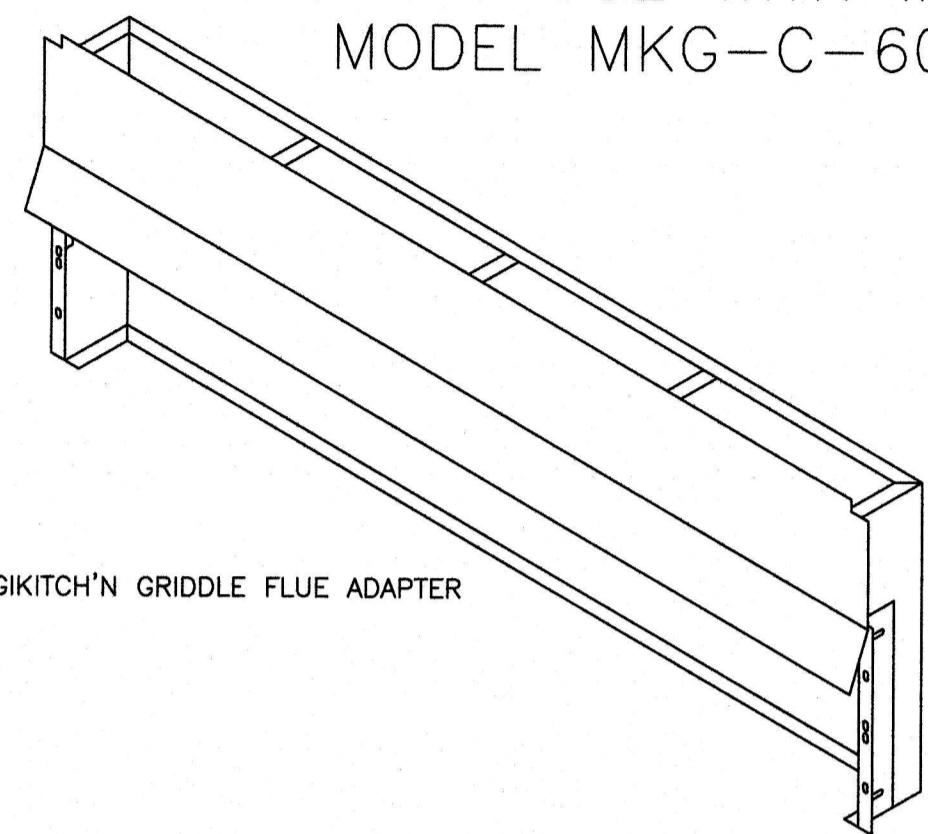
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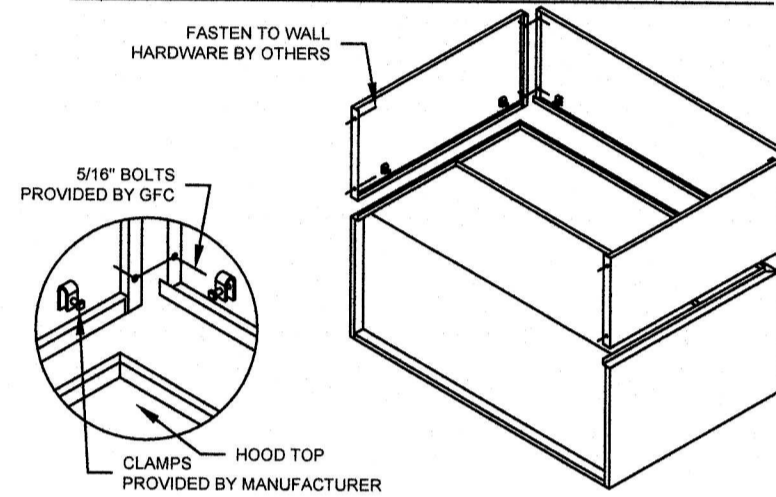


MUST USE WITH MAGIKITCH'N MODEL MKG-C-60

60" MAGIKITCH'N GRIDDLE FLUE ADAPTER



ENCLOSURE PANEL INSTALLATION DETAIL

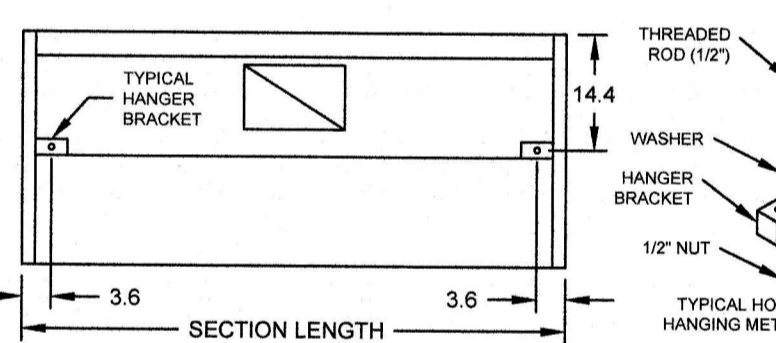


HOOD HANGING HEIGHT FOR FIRE SYSTEMS

VERIFICATION OF HOOD HANGING HEIGHT ABOVE FINISHED FLOOR (A.F.F.) IS REQUIRED FOR CORRECT PLACEMENT OF FIRE SYSTEM NOZZLES.

- RECOMMENDED HANGING HEIGHT = 60" FROM FINISHED FLOOR TO LOWER FRONT EDGE OF HOOD.
- OTHER HANGING HEIGHT = " FROM FINISHED FLOOR TO LOWER EDGE OF HOOD.

HOOD HANGER BRACKET DETAIL FOR BACKSHELF HOODS



GENERAL DRAWING NOTES

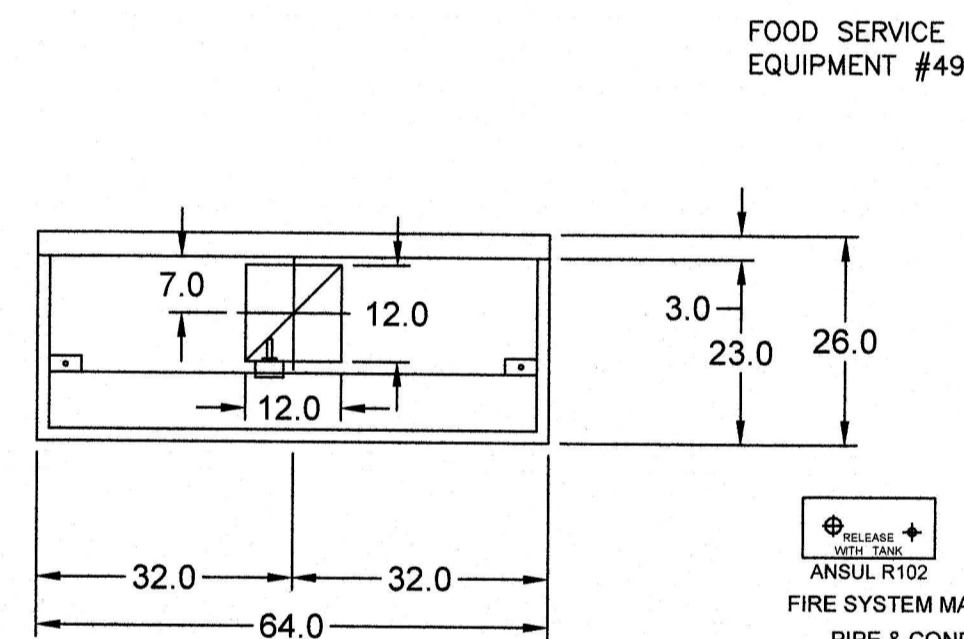
Verify building entry conditions or limitations for equipment access to space.
 Verify type and height of finished ceiling and if hood(s) may extend above finished ceiling (if required).
 Seismic installation and bracing of equipment is by others.
 Greenheck will not accept liability for problems that result from non-standard installation. Including field electrical wiring that deviates from supplied diagrams, labels conditions (ductwork, fuel types and structural conditions) that GFC has not been notified of at the time of ordering. Or use of this equipment other than that for which it is designed.
 It is the responsibility of the purchaser to hire qualified personnel for installation and start-up of all equipment. Installation and start-up information is shipped with all equipment via the Installation, Operation and Maintenance Manual (IOM), also included in a troubleshooting guide. Have all start-up info available prior to any warranty claims and/or factory technical support.

VENTILATION SYSTEM NOTES

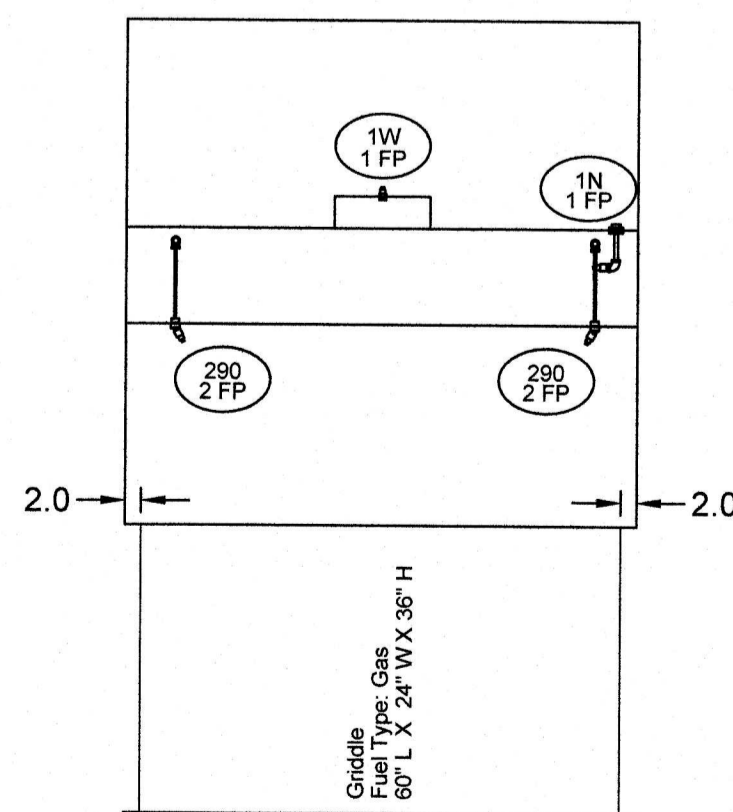
Greenheck ventilators are designed in compliance with all national codes: NFPA # 96, national electric code, BOCA, uniform mechanical code, international mechanical code, and southern building conference. See national evaluation report #36 for allowable values, and/or conditions of use concerning material presented in this document. Local codes may vary. It is the responsibility of the purchaser to submit drawings to local authorities.
 Exhaust and supply air volumes are to be maintained within +/-5% to +/-10% tolerance of values indicated. Static pressure(s) indicated are for the ventilator at the duct connection(s) only.
 The grease filter face velocities are based on the filter manufacturers recommendations for maximum grease extraction. Inlet opening air velocities for waterwash, dry cartridge and high velocity cartridge filters manufactured by Greenheck are designed to deliver maximum grease extraction.
 Hoods installation (by others unless otherwise noted) shall be in accordance with NFPA # 96 and applicable building codes.

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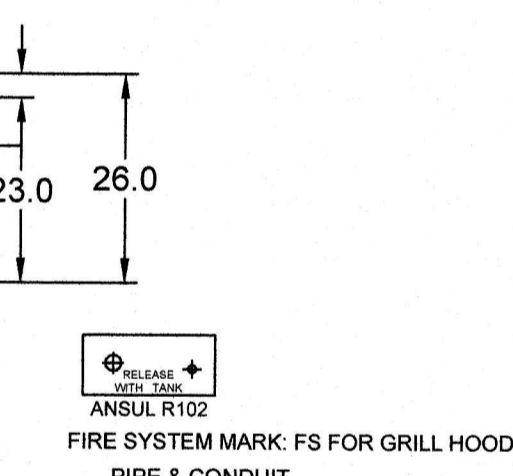


MARK: ITEM #49 PLAN VIEW

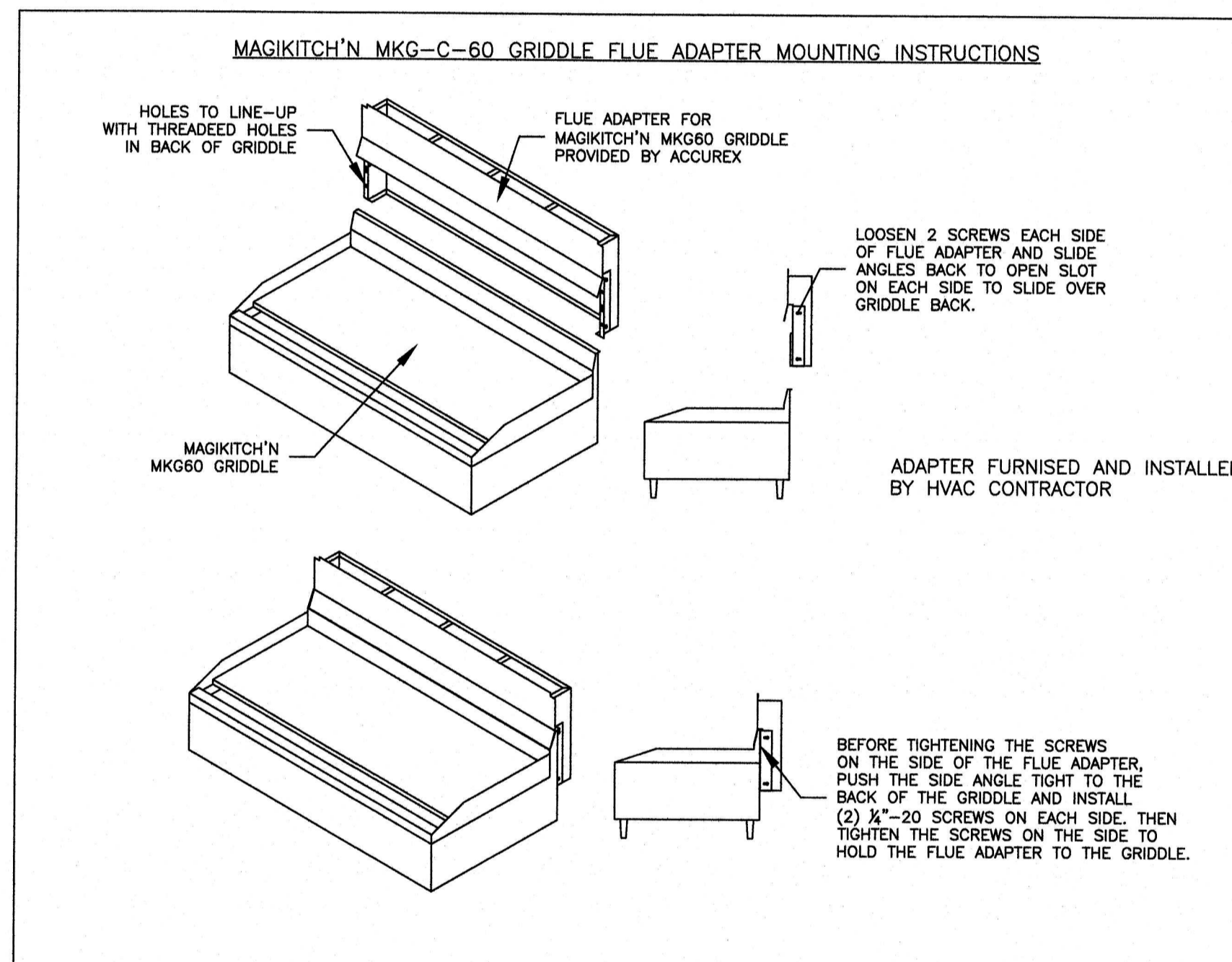


MARK: ITEM #49 ELEVATION VIEW

FOOD SERVICE EQUIPMENT #49



MARK: ITEM #49 SECTION VIEW



ANSUL R102 (WET CHEMICAL) FIRE PROTECTION SYSTEM - MODEL FSSC

CONTROL PANEL

1. STAINLESS STEEL ENCLOSURE
2. ARGENT STORAGE TANK
3. EXCELLENT GAS CARTRIDGE
4. ANSUL R102 MFM RELEASE
5. REGULATOR
6. KNOCKOUT FOR WIRING MICROSWITCH

WIRING DIAGRAMS
 WIDPOT MICRO SWITCH
 DPDT SWITCHES PROVIDED BY MANUFACTURER MAY BE WIRED PER TYPICAL EXAMPLES SHOWN. VERIFY WITH LOCAL CODES AND EQUIPMENT SUPPLIER THE CONNECTION NEEDED FOR YOUR INSTALLATION.

CONNECTION TO BUILDINGS ALARM

CONNECTION TO COOKING EQUIPMENT SHUT DOWN

CONNECTION TO FAN SHUT DOWN

NOTES:

Wet chemical fire protection system to be Ansul R-102, designed in compliance with UL 300 requirements.
 -Verification of all cooking equipment make, model and location required for all fire protection systems.
 -All fire system piping is standardly to the right end of the hood unless a wall is located on the right end.
 -Annual Automatic Release to be located within 60" of hood.
 The basic fire system will include the following:
 -Gas shut-off valve, if required, to be supplied by Manufacturer (up to 2" diameter as standard), and installed by a licensed plumber.
 -Micro switch to be supplied by Manufacturer for connection to, but not limited to, building alarm system(s), exhaust and supply fans and electrical power shut down. Field wiring and connections to be performed by a licensed electrician.
 The basic fire system does NOT include the following:
 -Full dump test other than what is specified per the installation manual, or to satisfy a state or local code. Permit and testing fees are not included unless noted under the equipment schedule for the fire system.
 -More than two trips to the job site or special transportation, or overnight lodging requirements in remote areas. Normal travel distance is first 50 mi. (80.5 km) from office.
 -Special classes or additional labor for access to security sensitive areas.
 -Installation of gas shut-off valve.
 -Union labor, Government labor, or Prevailing wages required for final field hook-up.
 -Any and all electrical connections/combinations required to shut down fans, shut off device for electric cooking equipment (shut trip breaker) or activate an alarm system, etc.
 -Any dismantling or reassembly required to gain access to the fire suppression piping located on the top of the hood.
 -Rough-in hidden conduits for remote pull station or gas valve (flush mounted pull station).
 -Installation of more than (1) remote pull station or distances greater than 20 ft (6.1M).
 -Parts or labor required to correct piping due to cooking equipment changes or deviation from plans. OR Any charges for missing or additional parts other than those indicated on the Fire Suppression Detail.

CONSTRUCTION COMPLIES WITH NFPA 96

Thank you for your interest in Accurex

SUBMITTAL

Please return one approved print to your Greenheck Representative including signature, date, and answers to all submitter "verify" notes and questions. Fabrication will not begin until after approved drawings are received.

APPROVED AS SUBMITTED
 APPROVED AS NOTED
 REJECTED - REVISE AND RESUBMIT

SIGNATURE _____ DATE _____

EQUIPMENT SCHEDULE												
TYPE 1 KITCHEN HOOD					MARK: ITEM#49							
HOOD NO.	ACCUREX MODEL STYLE / CONFIGURATION	SECTION LENGTH	WIDTH	HEIGHT	GREASE CUP OR DRAIN	HOOD TEMP. RATING	TOTAL WEIGHT	SECTION LOCATION				
1	SINGLE WALL EXHAUST ONLY LOW PROXIMITY	64 IN	TOP 23 IN FRONT 12 IN BOT 8 IN	FRONT 12 IN BACK 38 IN	RIGHT	600 DEG F	196 LBS	SINGLE				
ILLUMINATION DETAILS					GREASE FILTRATION DETAILS							
HOOD NO.	FIXTURE TYPE	QTY	INTENSITY FT CANDLES	TYPE / MODEL	MATERIAL	QTY	LENGTH (IN)	HEIGHT				
1	NONE	NA	0 / 0 IN OC		GREASE GRABBER STAINLESS STEEL	2	18 IN	18 IN				
HOOD SECTION # COLLAR #					EXHAUST PLENUM COLLARS							
1 / 1					DISTANCE TO END (IN)	WIDTH (IN)	LENGTH (IN)	VOLUME (CFM)	S.P. (IN WC)	VELOCITY (FT/MIN)		
TOTAL EXHAUST CFM - SECTION 1					32	12	12	1500	1.918	1500		
					1500 = 281 CFM / FT							
OPTIONS AND ACCESSORIES												
430 STAINLESS STEEL WHERE EXPOSED UL 710 LISTED W/O EXHAUST FIRE DAMPER - UL #R2825 BACK NON-INTEGRAL AIR SPACE - 3 IN WIDE 26 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED FACTORY MOUNTED EXHAUST COLLAR(S) THIS HOOD IS PART OF A TEMPERATURE INTERLOCK CONTROL SYSTEM INCLUDES PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH EMBOSSED STAINLESS STEEL FINISH FOR HIGH CORROSION RESISTANCE EQUIPMENT SPECIFIC S/S FLUE ADAPTER												
SPECIAL DESIGN REQUESTS												
SDR #K1100145 - FLUE SYSTEM HOOD												
FIRE SUPPRESSION SYSTEM					MARK: FS FOR GRILL HOOD							
MANUFACTURER / MODEL	SUPPRESSANT TYPE	FLOW POINTS	SUPPLY LINE	DETECTION	MOUNTING							
ANSUL R-102 WET CHEMICAL	6 UTILIZED 11 AVAILABLE	CONTINUOUS	FUSIBLE LINK	RIGHT END REMOTE MOUNTED								
FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL) CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED SUPPRESSION AGENT - INCLUDED - 3 GAL. (1) 3 TANK(S) GAS VALVE - INCLUDED - MECHANICAL SHUTOFF VALVE, SUPPLIED UP TO 2" REMOTE PULL STATION - STANDARD - INSTALLATION AT SINGLE POINT OF EGRESS METAL BLOW-OFF CAPS - INCLUDED FIRE SYSTEM PERMIT - REQUIRED - FEE INCLUDED 360°F. FUSIBLE LINK OR AS TESTED AND INSTALLED BY LOCAL INSTALLER PER UL MANUAL.												
FIRE SYSTEM PROTECTED HOOD(S) (UL-300) (MARK: NAME / SECTION)												
GRILL HOOD SECTION 1 - (LENGTH 64.0 IN) - LOW PROXIMITY HOOD - GREASE GRABBER FILTRATION SYSTEM												
Belt Drive Upblast Centrifugal Roof Exhaust Fan					MARK: PRV-2							
Qty	Accurex Model	Volume (CFM)	SP (in wg)	FRPM (in wg)	Operating (in wg)	Weight (Lbs.)	Size (hp)	VICP	Encl.	Motor RPM	Winding	FLA
1	XRUB-160XP-15	1500	2.337	2.411	1.29	171	1.5	208/60/3	OP	1725	1	6.6
OPTIONS AND ACCESSORIES												
ULUL762 Listed - "Power Ventilators for Rest. Exh. Appliances" Switch, NEMA-1, (PN N1TSNO-3-30) Toggle, Shipped with unit Larger curb cap size - 26" Square Roof curb-dash, GFF-26-G28, Under sized 1.5" Total Hinged Base (Attached) High Temp Curb Seal Rated for Continuous duty at 2000F (Attached) Clean-out Port Grease Trap with Drain Connection (PN 475538) Heat Baffle (Attached) Bearings with Grease Fittings, L10 life of 100,000 hrs (L50 avg. life 500,000 hrs)												

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 LOWELL JOHN LARSON
 REGISTERED PROFESSIONAL ENGINEER
 No. PE11400475
 STATE OF INDIANA
 PROFESSIONAL ENGINEER
 Exp. 1/31/2022
 9/17/2021

NEW CULVER'S RESTAURANT
 Morristown Road
 Shelbyville, IN 46176
 County of SHELBY

Culver's Franchising System, Inc.
 1240 Water Street
 Framet du Sac, WI 53578
 800-643-7990

OWNER: S&L PROPERTIES OF SHELBYVILLE, LLC
 2651 Kicking Court
 Portage, WI 53901
 Jeff Liegel
 808-742-2893

OLLIMANN ASSOCIATES ARCHITECTS, P.C.
 200 South State Street
 Belvidere, Illinois 61008
 815-544-7790 Phone

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Revision: _____
 Date: 9-14-2021

GRIDDLE HOOD/EXHAUST SCHEDULE & DETAILS

2021-101
 M202

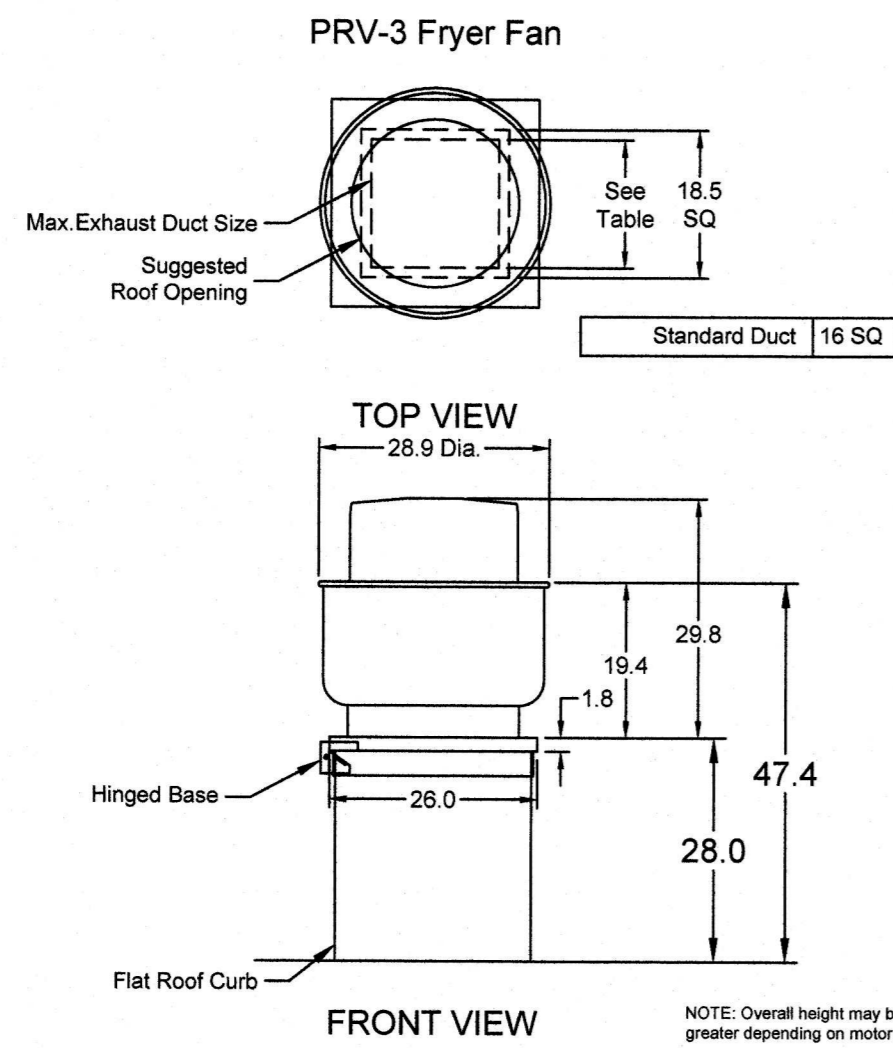
REV DESCRIPTION DATE

ACCUREX

CULVER'S MASTER TEMPLATE

1/24 CAD DRAWING

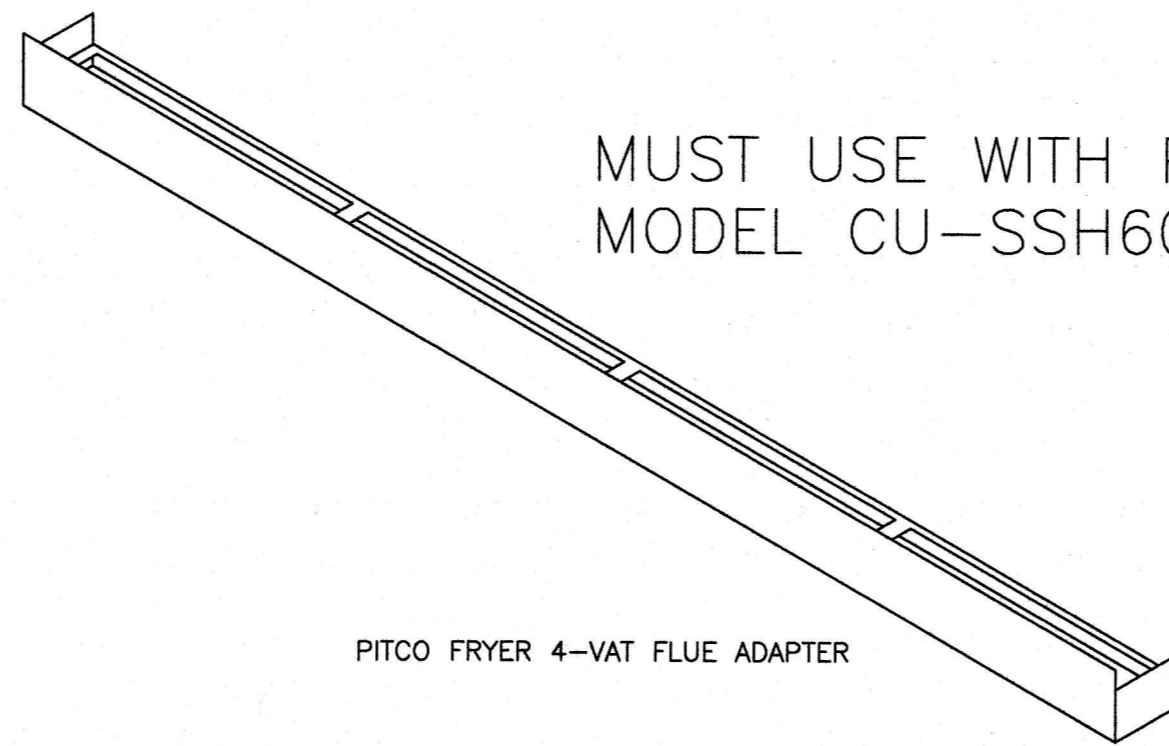
C28805A



FOOD SERVICE EQUIPMENT #59

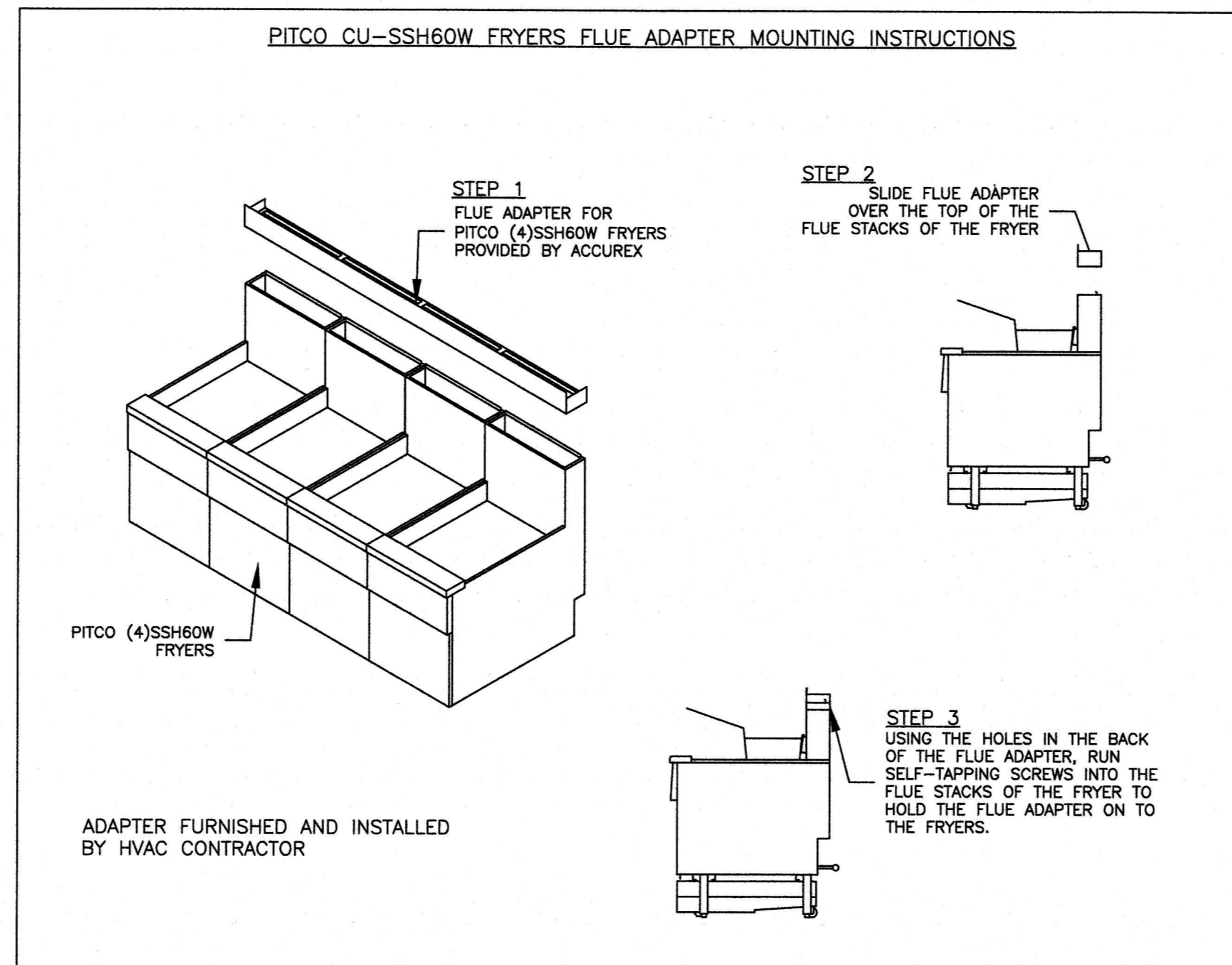
4-VAT FRYER BATTERY

MUST USE WITH PITCO MODEL CU-SSH60W



PITCO FRYER 4-VAT FLUE ADAPTER

PITCO CU-SSH60W FRYERS FLUE ADAPTER MOUNTING INSTRUCTIONS



EQUIPMENT SCHEDULE

TYPE 1 KITCHEN HOOD		MARK: ITEM #59						
HOOD NO.	ACCUREX MODEL STYLE / CONFIGURATION	SECTION LENGTH	WIDTH	HEIGHT	GREASE CUP OR DRAIN	HOOD TEMP. RATING	TOTAL WEIGHT	SECTION LOCATION
1	SINGLE WALL EXHAUST ONLY LOW PROXIMITY	83 IN	TOP 23 IN FRONT 12 IN BOT 3 IN	36 IN	RIGHT	600 DEG F	189.0 LBS	SINGLE

ILLUMINATION DETAILS		GREASE FILTRATION DETAILS	
FIXTURE TYPE	QTY	INTENSITY FT CANDLES	TYPE / MODEL MATERIAL
NONE	NA	0 / 0 IN. OC	X-TRACTOR STAINLESS STEEL

HOOD SECTION # COLLAR #		EXHAUST PLENUM COLLARS	
DISTANCE TO END (IN.)	WIDTH (IN.)	LENGTH (IN.)	DIAMETER (IN.)
1.1	41.5	12	12

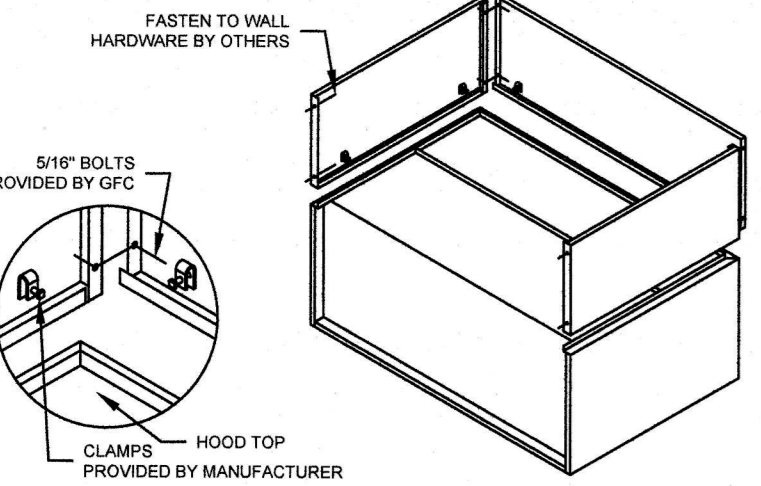
430 STAINLESS STEEL WHERE EXPOSED
UL 710 LISTED W/OUT EXHAUST FIRE DAMPER - UL #R25625
BACK NON-INTEGRAL AIR SPACE - 3 IN WIDE
26 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED
FACTORY MOUNTED EXHAUST COLLAR(S)
THIS HOOD IS PART OF A TEMPERATURE INTERLOCK CONTROL SYSTEM
INCLUDES PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH
EMBOSSED STAINLESS STEEL FINISH FOR HIGH CORROSION RESISTANCE
EQUIPMENT SPECIFIC S/S FLUE ADAPTER

FIRE SUPPRESSION SYSTEM		MARK: FS FOR FRYER HOOD	
MANUFACTURER / MODEL	FLOW POINTS	SUPPLY LINE	DETECTION
ANSUL R-102 WET CHEMICAL	18 UTILIZED 22 AVAILABLE	CONTINUOUS	FUSIBLE LINK

FRYER HOOD SECTION 1 - (LENGTH 83.0 IN.) - LOW PROXIMITY HOOD		MARK: PRV-3	
Qty	Accurex Model	Volume (CFM)	SP (in wg)
1	XRUB-140-7	1500	1

OPTIONS AND ACCESSORIES		MARK: PRV-3	
Qty	Accurex Model	Volume (CFM)	SP (in wg)
1	XRUB-140-7	1500	1

ENCLOSURE PANEL INSTALLATION DETAIL



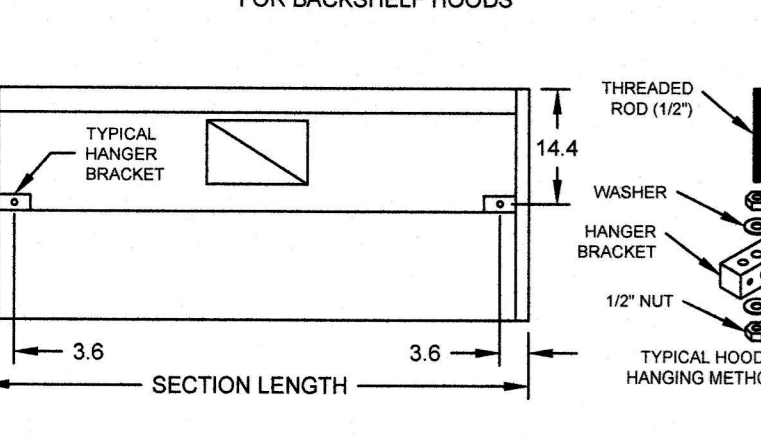
HOOD HANGING HEIGHT FOR FIRE SYSTEMS

VERIFICATION OF HOOD HANGING HEIGHT ABOVE FINISHED FLOOR (A.F.F.) IS REQUIRED FOR CORRECT PLACEMENT OF FIRE SYSTEM NOZZLES.

RECOMMENDED HANGING HEIGHT = 60" FROM FINISHED FLOOR TO LOWER FRONT EDGE OF HOOD.

OTHER HANGING HEIGHT = _____ FROM FINISHED FLOOR TO LOWER EDGE OF HOOD.

HOOD HANGER BRACKET DETAIL FOR BACKSHELF HOODS



GENERAL DRAWING NOTES

Verify building entry conditions or limitations for equipment access to space.

Verify type and height of finished ceiling and if hood(s) may extend above finished ceiling (if required).

Seismic installation and bracing of equipment is by others.

Greenheck will not accept liability for problems that result from sub-standard installation, including field electrical wiring that deviate from supplied diagrams, job-site conditions (ductwork, fuel types and structural conditions) that GFP has not been notified of at the time of ordering. Or use of this equipment other than that for which it is designed.

It is the responsibility of the purchaser to hire qualified personnel for installation and start-up of all equipment. Installation and start-up information is shipped with all equipment via the Installation, Operation and Maintenance Manual (IOM), also included is a troubleshooting guide. Have all start-up info available prior to any warranty claims and/or factory technical support.

VENTILATION SYSTEM NOTES

Greenheck ventilators are designed in compliance with all national codes: NFPA # 96, national electric code, BOCA, uniform mechanical code, international mechanical code, and southern building conference. See national evaluation report #436 for allowable values, and/or conditions of use concerning material presented in this document. Local codes may vary. It is the responsibility of the purchaser to submit drawings to local authorities.

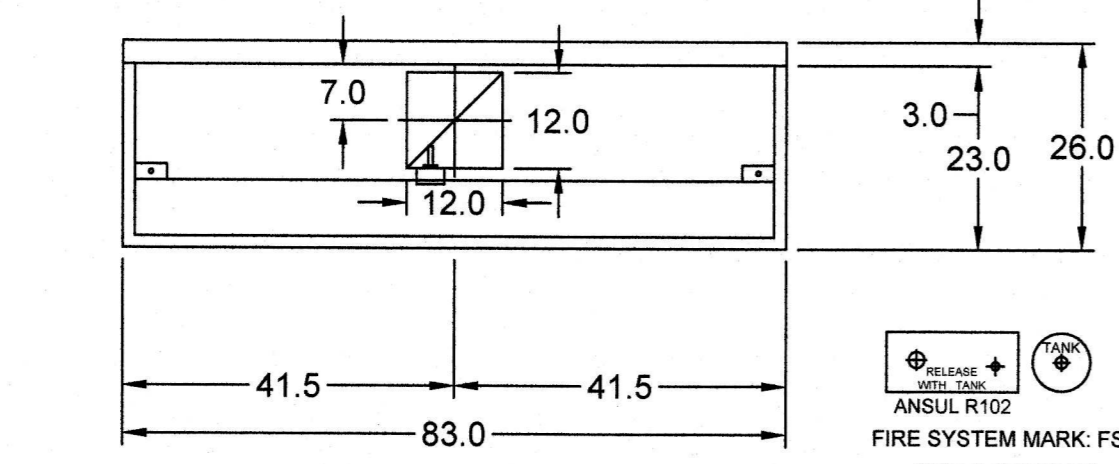
Exhaust and supply air volumes are to be maintained within -5% to +10% tolerance of values indicated. Static pressure(s) indicated are for the ventilator at the duct connection(s) only.

The grease filter face velocities are based on the filter manufacturers recommendations for maximum grease extraction. Inlet opening air velocities for waterwash, dry cartridge and high velocity cartridge filters manufactured by Greenheck are designed to deliver maximum grease extraction.

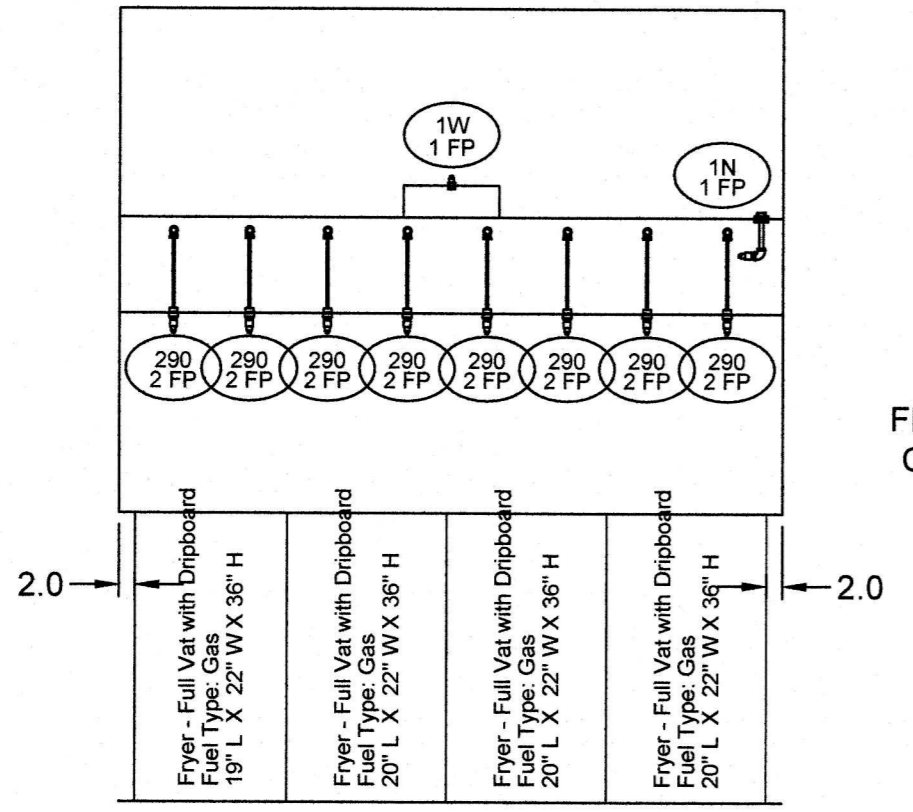
Hoods installation (by others unless otherwise noted) shall be in accordance with NFPA # 96 and applicable building codes.

PROPRIETARY INFORMATION NOTICE

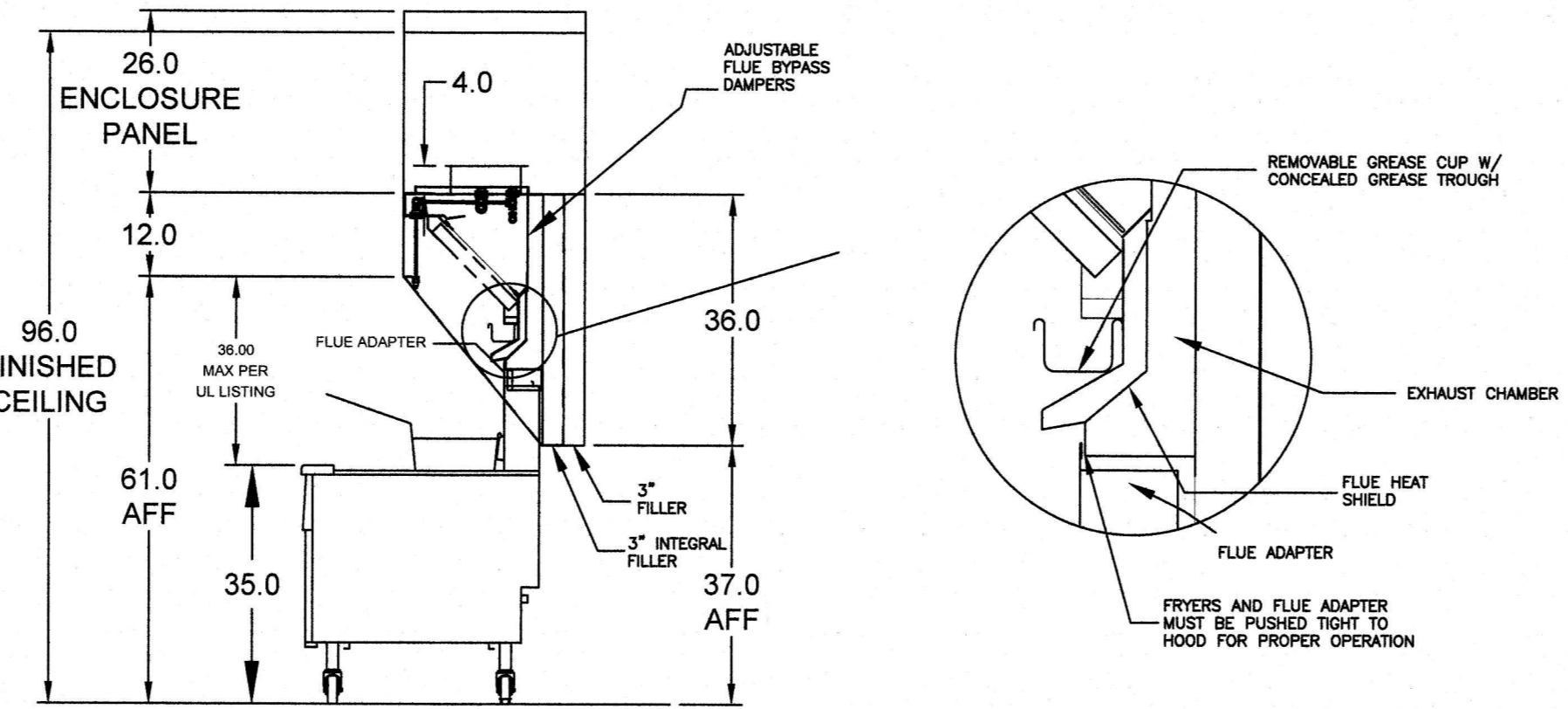
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MARK: ITEM #59 PLAN VIEW

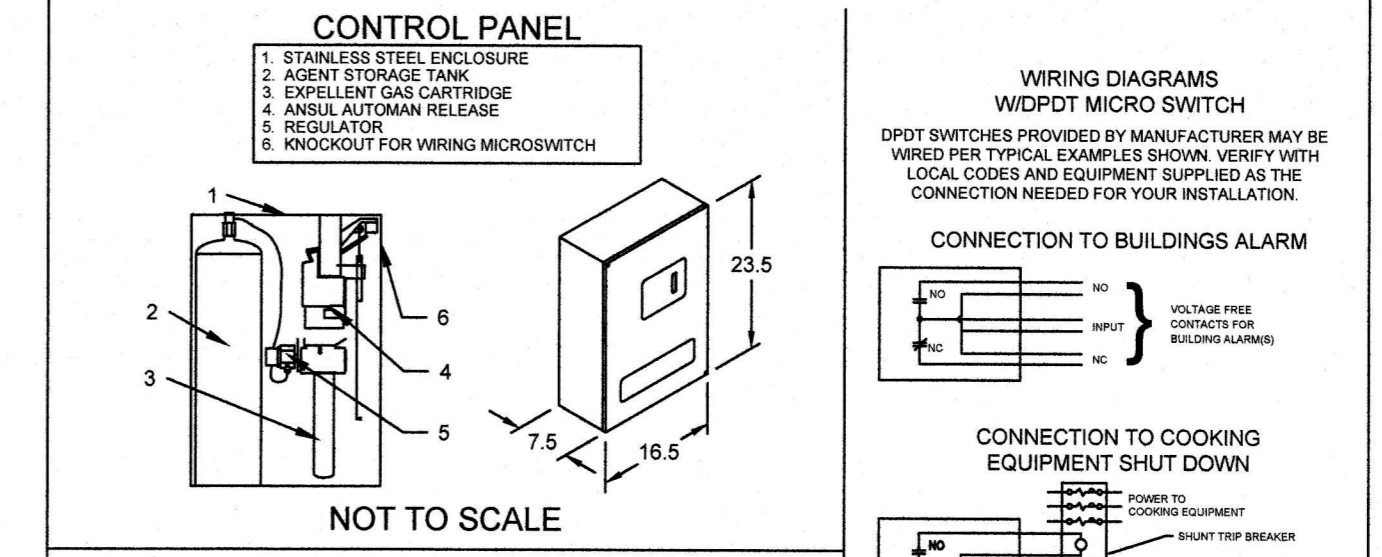


MARK: ITEM #59 ELEVATION VIEW



MARK: ITEM #59 SECTION VIEW

ANSUL R102 (WET CHEMICAL) FIRE PROTECTION SYSTEM - MODEL FSSC



NOTES:

Wet chemical fire protection system to be Ansul R-102, designed in compliance with UL 300 requirements.

-Verification of all cooking equipment make, model and location required for all fire protection systems.

-All fire system piping is standard to the right end of the hood unless a wall is located on the right end.

-Ansil Autom Release to be located within 60' of hood.

The basic fire system will include the following:

- Gas shut-off valve, if required, to be supplied by Manufacturer (up to 2" diameter as standard), and installed by a licensed plumber.
- Micro switch to be supplied by Manufacturer for connection to, but not limited to, building alarm systems, exhaust and supply fans and electrical power shut down. Field wiring and connections to be performed by a licensed electrician.

The basic fire system does NOT include the following:

- Full dump test other than what is specified per the installation manual, or to satisfy a state or local code. Permit and testing fees are not included unless noted under the equipment schedule for the fire system.
- More than two trips to the job-site or special transportation, or overnight lodging requirements in remote areas. Normal travel distance is first 50 mi. (80.5 km) from office.
- Special classes or additional labor for access to security sensitive areas.
- Installation of gas shut-off valve.
- Special drawings required to satisfy state or local code. Plan examination fees, PE or FS Approval Stamp.
- Union labor, Government labor, or Prevailing wages required for final hook-up.
- Any and all electrical components/connectors required to shut down fans, shut off device for electric cooking equipment (shut trip breaker), or activate an alarm system, etc.
- Any dismantling or reassembly required to gain access to the fire suppression piping located on the top of the hood.
- Rough-in hidden conduit for remote pull station or gas valve (flush mounted pull station).
- Installation of more than (1) remote pull stations or distances greater than 20 ft (6.1m).
- Parts or labor required to correct piping due to cooling equipment changes or deviation from plans. OR Any charges for missing or additional parts other than those indicated on the Fire Suppression Detail.

Thank you for your interest in Accurex

SUBMITTAL

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CULVER'S MASTER TEMPLATE

2021-101

M203

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REGISTERED PROFESSIONAL ENGINEER
STATE OF INDIANA
Exp. 7/31/2022

NEW CULVER'S RESTAURANT
Morristown Road
Shelbyville, IN 46176
County of SHELBY

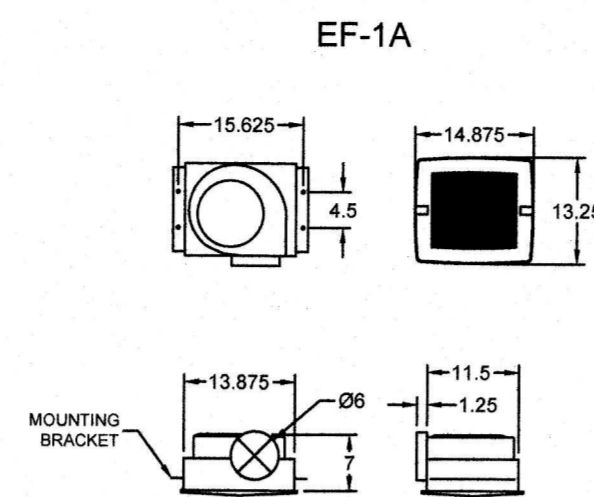
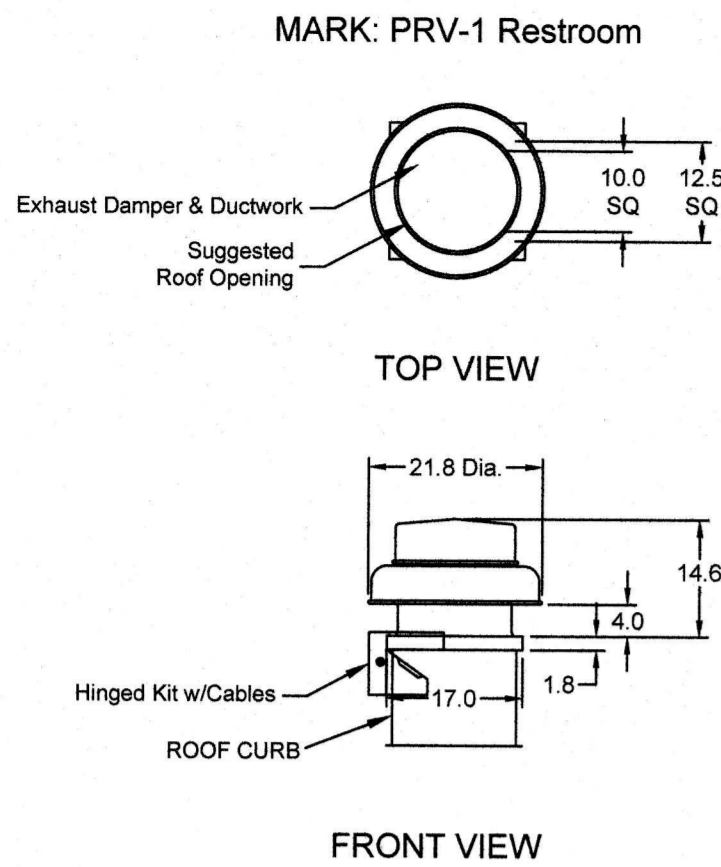
Culver's
Culver Franchising System, Inc.
1240 Water Street
Prairie du Sac, WI 53578
608-643-7980

OWNER: S&L PROPERTIES OF SHELBYVILLE, LLC
2601 Kitting Court
Portage, WI 53901
Jeff Liegel
608-742-2883

OLLMANN ASSOCIATES ARCHITECTS, P.C.
200 South State Street
Belleville, Illinois 61008
815-544-7790 Phone

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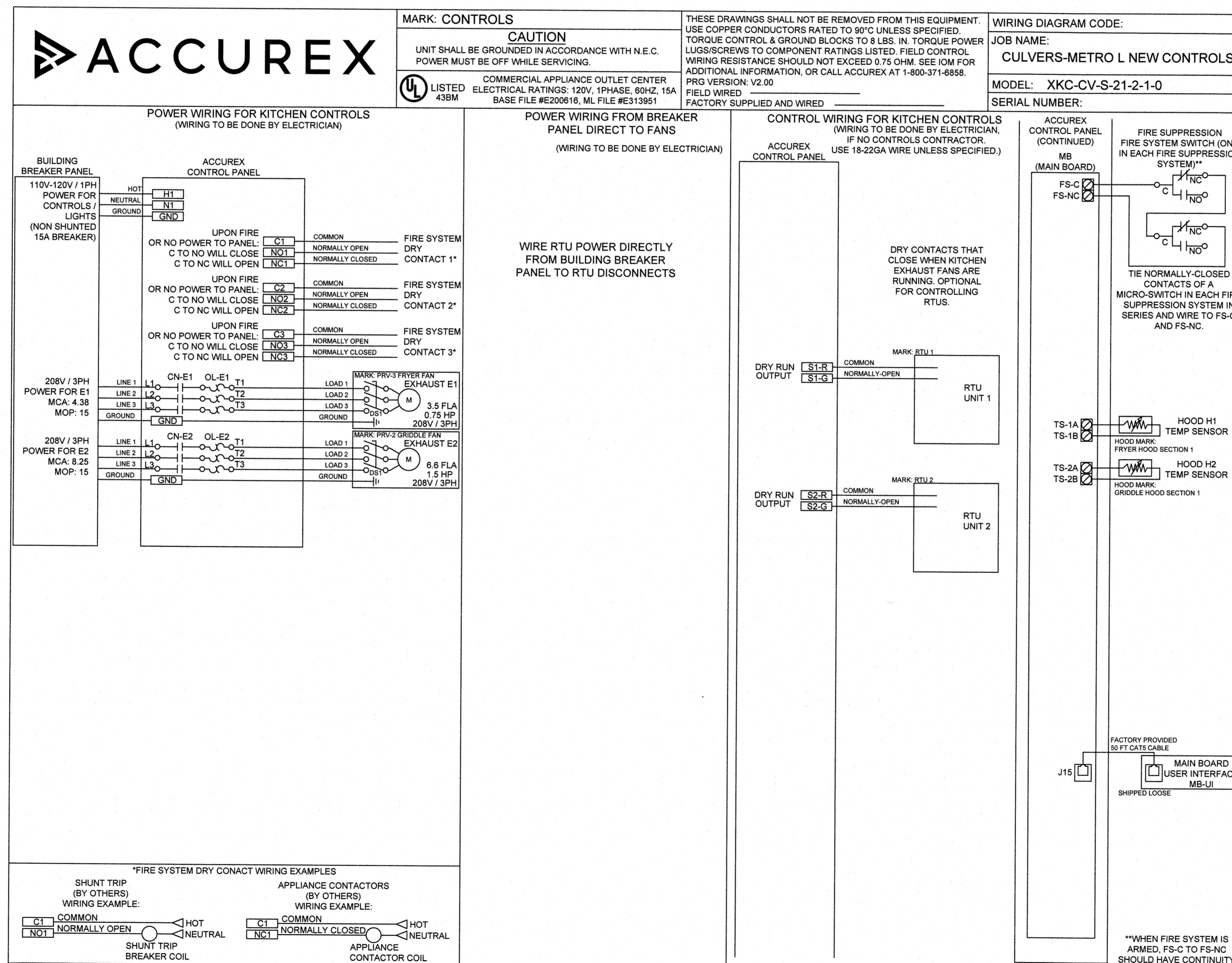
Revision: _____
Date: 9-14-2021



EQUIPMENT SCHEDULE				
ELECTRICAL CONTROL BOX			MARK: KFCC	
DESCRIPTION / ACCUREX MODEL	EXHAUST FAN QTY	SUPPLY FAN QTY	POWER FREQUENCY	
MOUNTING LOCATION (CONTROL PANEL / SWITCHES)				
KITCHEN FAN CONTROL CENTER / XFCC	2	0	60 CYCLE	
SHIP LOOSE / SHIP LOOSE FOR REMOTE MOUNTING				
CONTROL PANEL ENCLOSURE - 16 GA 304 STAINLESS STEEL ENCLOSURE (NEMA-1) - DIMENSIONS 12 X 18 X 6				
WIRING DIAGRAM # 1100-2 - 20				
STARTERS PROVIDED IN CONTROL PANEL - QTY 2				
2 POSITION FAN SWITCH - QTY 1				
INTEGRATED EXHAUST TEMPERATURE INTERLOCK SYSTEM				
-FACTORY MOUNTED EXHAUST TEMPERATURE SENSORS - QTY 2				
-COMPLIES WITH INTERNATIONAL MECHANICAL CODE 2008 SECTION 507.2.1.1				
TURN ON EXHAUST IN FIRE				
THERMAL OVERLOADS IN CABINET				
1 SPEED FAN(S)				
SPECIAL DESIGN REQUESTS				
SDR #K0800240 - USE KIT #852883, WIRING DIAG. #Z2905338				

EQUIPMENT SCHEDULE											
Direct Drive Centrifugal Roof Exhaust Fan MARK: PRV-1 Restroom											
Qty	Accurex Model	Volume (CFM)	SP (in wg)	FRPM	Operating Power (hp)	Weight (LB.)	Size (hp)	V/CP	Encl.	Micro RPM	Windings FLA
1	XRED-085-D	375	0.5	1479	0.060	43	0.0667	115/80/1	OP	1550	1 NA

OPTIONS AND ACCESSORIES											
UL/ULCUL 705 Listed - "Power Ventilators"											
Switch, NEMA-1, Toggle, Shipped with unit											
Hinged Curb Cap Kit w/Cables (PN 851018) (Shipped Loose)											
Curb Seal (Attached)											
Damper, WD-100-PB-10X10, Gravity Operated (Loose)											
Solid State Speed Control, Mounted and Wired (PN WS5SC)											
Roof Curb-Galv., GPI-17-10-G12, Undersized 1" total											



FOR TECHNICAL SUPPORT ON ACCUREX CONTROLS PLEASE CALL ACCUREX TECHNICAL SUPPORT: 1-800-371-6858
SECONDARY CONTACTS ARE: AARON VAN KREY 715.841.8521 TYLER SCHILLING 715.841.8749



Thank you for your interest in Accurex

SUBMITTAL
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- APPROVED AS SUBMITTED
- APPROVED AS NOTED
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SIGNATURE _____ DATE _____

REV	DESCRIPTION	DATE

TITLE: CULVER'S MASTER TEMPLATE
 SCALE: 1/24
 C28805C

VENTILATION SYSTEM NOTES

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STATE OF INDIANA
No. PE140075
Exp. 1/31/2022

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FAN SCHEDULE & DETAILS

2021-101

M204

Revised: 9-14-2021
Date: 9-14-2021