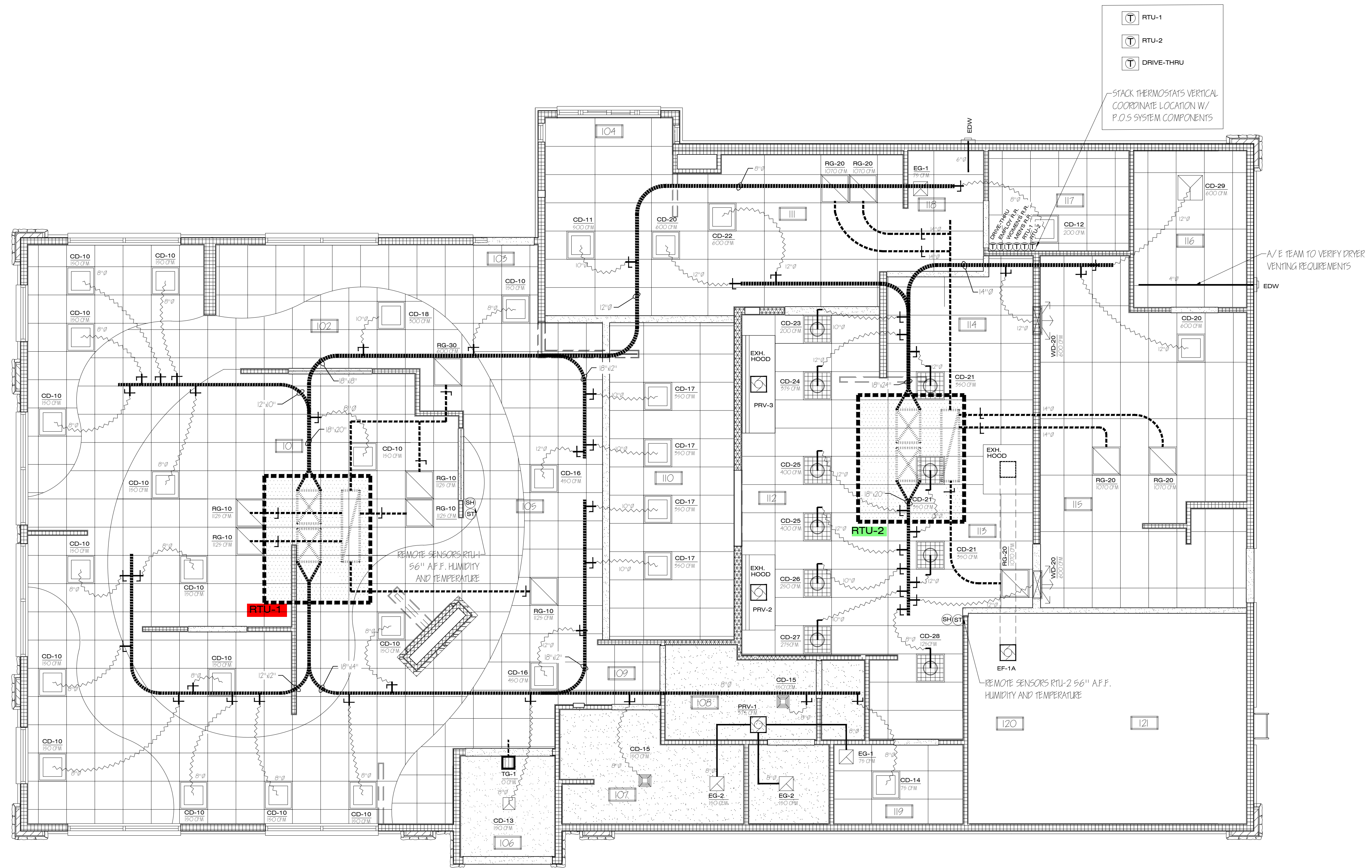


H.V.A.C. LEGEND:

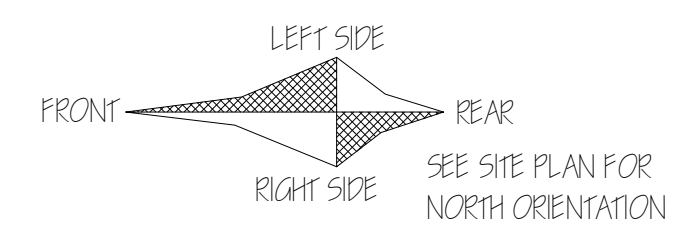
WD-20 600 CFM	←	DIFFUSER DESIGNATION
←		DIFFUSER C.F.M.
□		CD CEILING DIFFUSER W/ C.F.M. - 4 WAY
⊞		CD PERFORATED CEILING DIFFUSER
⊞		CD CEILING DIFFUSER W/ C.F.M. - 3 WAY
⊞		CD CEILING DIFFUSER W/ C.F.M. - 2 WAY
□		RG RETURN DIFFUSER - SUSP. CEILING
⊞		EG EXHAUST GRILLE
⊞		PRV POWER ROOF VENT
⊞		ECH ELECTRIC CEILING HEATER
⊞		WD - WALL OR BULKHEAD SUPPLY GRILLE - LINEAR
⊞		TG - TRANSFER GRILL
SH		SH - SENSOR HUMIDITY
ST		ST - SENSOR TEMPERATURE

- GENERAL NOTES:
1. VERIFY ALLOWABLE FLEX DUCT LENGTHS WITH LOCAL CODES AND MODIFY ACCORDINGLY. ATTACH FLEXIBLE AIR CONNECTOR TO RIGID DUCT W/ STEEL DRAW BANDS ONLY. CLASS 1 FLEXIBLE AIR CONNECTOR PER U.L-181 - MAX LENGTH 8'-0". PROVIDE SUPPORT AT 4'-0" O.C.
 2. VENTING OF ANY COMBUSTIBLE BY-PRODUCTS IS PROHIBITED WITHIN 10 FEET OF ROOF TOP UNITS. VERIFY WITH LOCAL BUILDING INSPECTOR.
 3. ALL SUPPLY AND RETURN DUCTWORK TO BE LOCATED IN TRUSS SPACE. COORDINATE WITH TRUSS SUPPLIER.
 4. DIFFUSERS AND RETURN GRILLES IN BLACK ACT TO BE BLACK, ALL OTHERS TO BE WHITE.

- RECOMMENDED HVAC SET POINTS:
1. DINING HEATING 70°, COOLING 72°
 2. KITCHEN HEATING 68°, COOLING 74°



HVAC PLAN - METRO M - 2024 PROTOTYPE
SCALE: 1/4" = 1'-0"



BID/PERMIT	• 05.22.24
DRAWN BY:	• XXX
CHECKED:	• DSH
HVAC PLAN	
PROJECT No.	• 240118

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 AND LOCAL CODES & 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.
- EXHAUST FANS AND FURNACE FANS TO RUN CONTINUOUSLY DURING OCCUPIED MODE.
- VERIFY w/ OWNER EXACT WATER HEATER LOCATION TO AVOID BUILDING FUNCTION INTERFERENCE.
- NIGHT SET BACK THERMOSTATS TO BE INSTALLED ON ALL HVAC EQUIPMENT.
- INSULATE DUCT WORK TO SMACNA GUIDELINES AND STATE CODES.
- INSTALL VOLUME CONTROL DAMPERS AS INDICATED ON PLANS.
- MAINTAIN AT LEAST 10 FEET CLEARANCE FROM INTAKES OR WINDOWS ON ALL EXHAUST VENTS.
- RETURN AIR DUCT WORK TO BE LINED FOR SOUND ATTENUATION.
- FLEXIBLE ROUND DUCT WORK NOT TO EXCEED 8 FEET IN LENGTH. AVOID UNNECESSARY TURNS & SLACK.
- DUCT WORK TO BE STANDARD GAUGE SHEET METAL (FIBROUS DUCT NOT ALLOWED).
- COORDINATE WORK WITH GENERAL CONTRACTOR & OWNER TO MAXIMIZE CEILING HEIGHT & AVOID CONFLICTS.
- TEST, ADJUST & CALIBRATE CONTROL SYSTEMS AS REQUIRED. PROVIDE SCHEMATICS & DESCRIPTION TO THE OWNER PRIOR TO INSTALLATION.
- INSULATE EXHAUST DUCT FOR EXHAUST FAN TO EXTERIOR TERMINATION, comply with note 31 below.
- CONTRACTOR TO VERIFY GAS METER CAPACITY WITH LOCAL GAS SUPPLIER.
- VERIFY ALL EXISTING CONDITIONS PRIOR TO INSTALLATION (DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT REFLECT EXACT LOCATIONS OF EQUIPMENT OR OTHER APPARATUSES.)
- PROVIDE SHOP DRAWINGS TO THE ARCHITECT/DESIGNER FOR EQUIPMENT, FANS, REGISTERS ETC. PRIOR TO PROCUREMENT.
- PROVIDE OWNER WITH COLOR CHOICES FOR SWITCHES AND OTHER APPARATUSES WHERE APPLICABLE.
- VENT OWNERS WATER HEATER AS REQUIRED.
- VENT DRYER TO EXTERIOR AS REQUIRED. MAINTAIN CLEARANCES FROM INTAKES AS NOTED ABOVE.
- HANG AND SUPPORT MATERIALS SHALL BE INSTALLED THE LATEST EDITION OF THE ASHRAE HANDBOOK OF FUNDAMENTALS.
- HVAC CONTRACTOR RESPONSIBLE FOR A COMPLETE AND FULLY WORKING SYSTEM.
- REPLACE ALL AIR FILTERS PRIOR TO TURNING SYSTEM OPERATIONS OVER TO OWNER.
- INSTALLER IS RESPONSIBLE FOR FINAL TEST & BALANCING DURING TRAINING WEEK & PROVIDE A WRITTEN REPORT TO OWNER.
- HVAC CONTRACTOR TO INSTALL #2 GAS w/ 1/4" WATER COLUMN MAX. PER STATE CODE & AGA GUIDELINES (LABEL AS REQUIRED).
- VERIFY DUCT LOCATIONS PRIOR TO FABRICATION. VERIFY LIMITED AREA FOR DUCTWORK & OTHER APPARATUSES.
- S/S 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 A-6 AND A-8.1 DRAWINGS.
- COMMERCIAL KITCHEN HOOD VENTILATION DUCTS AND EXHAUST EQUIPMENT SHALL BE IN COMPLIANCE WITH NFPA-96-2014, WHICH IS THE STANDARD OF THE NATIONAL FIRE PROTECTION ASSOCIATION LISTED IN CHAPTER 15 OF THE CODE.

MECHANICAL EQUIPMENT SPECIFICATIONS

- RTU - 1** **LENNOX EMERGENCE SERIES PACKAGED ROOFTOP UNITS WITH PRODIGY CONTROLLER**
COMBINATION GAS WITH HIGH TWO STAGE HEATING AND COOLING ROOFTOP UNIT WITH HUMIDITROL AND S/S HEAT EXCHANGERS. LOW HEAT 135,000 BTU/HR AND HIGH HEAT 208,000 BTU/HR OUTPUT HEATING CAPACITY. 80% AFUE THERMAL EFF. 180,000 NET COOLING CAPACITY. 12.0 EER MINIMUM. BLOWER MOTOR SET FOR NOMINAL 6,150 CFM & FRESH AIR INTAKE DAMPER SET FOR MINIMUM 1,900 CFM. UNIT TO BE 208/3, 87 MCA, 100 MOCOP & DRIVE KIT 1. VERIFY AMPERAGE AND COORDINATE WITH ELECTRICAL CONTRACTOR. IN ADDITION TO OPTIONS LISTED ABOVE INCLUDE THE FOLLOWING FACTORY INSTALLED OPTIONS: TWO STAGE CONTROL, WEATHERPROOF DISCONNECT SWITCH, FACTORY INSTALLED/FIELD POWERED GFCI, RETURN SMOKE DETECTOR, DRAIN PAN OVERFLOW SWITCH, SINGLE ENTHALPHY ECONOMIZER WITH BAROMETRIC RELIEF AND HOODS, BLOWER BELT AUTO TENSIONER. INCLUDE THE FOLLOWING FIELD INSTALLED OPTIONS: 2" MERV8 FILTERS, SPARE BELT, DOWN FLOW HYBRID CURB, PVC DRAIN TRAP KIT, REMOTE HUMIDITY SENSOR, MESH HAIL GUARD, LENNOX MODEL 13H15 PROGRAMMABLE THERMOSTAT. **NO SUBSTITUTIONS.**
- RTU - 2** **LENNOX EMERGENCE SERIES PACKAGED ROOFTOP UNITS WITH PRODIGY CONTROLLER**
COMBINATION GAS WITH HIGH TWO STAGE HEATING AND COOLING ROOFTOP UNIT WITH HUMIDITROL AND S/S HEAT EXCHANGER. LOW HEAT 135,000 BTU/HR AND HIGH HEAT 208,000 BTU/HR OUTPUT HEATING CAPACITY. 80% AFUE THERMAL EFF. 210,000 NET COOLING CAPACITY. 12.0 EER MINIMUM. BLOWER MOTOR SET FOR NOMINAL 6,150 CFM & FRESH AIR INTAKE DAMPER SET FOR MINIMUM 1,900 CFM. UNIT TO BE 208/3, 87 MCA, 100 MOCOP & DRIVE KIT 1. VERIFY AMPERAGE AND COORDINATE WITH ELECTRICAL CONTRACTOR. IN ADDITION TO OPTIONS LISTED ABOVE INCLUDE THE FOLLOWING FACTORY INSTALLED OPTIONS: TWO STAGE CONTROL, WEATHERPROOF DISCONNECT SWITCH, FACTORY INSTALLED/FIELD POWERED GFCI, RETURN SMOKE DETECTOR, DRAIN PAN OVERFLOW SWITCH, SINGLE ENTHALPHY ECONOMIZER WITH BAROMETRIC RELIEF AND HOODS, BLOWER BELT AUTO TENSIONER. INCLUDE THE FOLLOWING FIELD INSTALLED OPTIONS: 2" MERV8 FILTERS, SPARE BELT, DOWN FLOW HYBRID CURB, PVC DRAIN TRAP KIT, REMOTE HUMIDITY SENSOR, MESH HAIL GUARD, LENNOX MODEL 13H15 PROGRAMMABLE THERMOSTAT. **NO SUBSTITUTIONS.**
- PRV - 1** **ACCUREX MODEL XRED-090-D** DOWNBLAST EXHAUST FAN WITH ROOF CURB AND BACKDRAFT DAMPER. 375 CFM AT .5" SP, .0667 HP MOTOR, 115 VOLTS, SINGLE PHASE. FAN TO RUN CONTINUOUSLY DURING OCCUPIED MODE. **NO SUBSTITUTIONS.**
- PRV - 2** **ACCUREX MODEL XRUB-161XP-15** KITCHEN FAN UPBLAST EXHAUST FAN W/CLEAN-OUT PORT, MOUNTED HINGE BASE, & AUTO BELT TENSIONER, SPARE BELT, & ROOF CURB WITH CURB EXTENSION. 1500 CFM AT 1.00" SP, 1.5 HP MOTOR, 208 VOLTS THREE PHASE FAN TO RUN CONTINUOUSLY DURING OCCUPIED MODE. **NO SUBSTITUTIONS.**
- PRV - 3** **ACCUREX MODEL XRUB-141-7** KITCHEN FAN UPBLAST EXHAUST FAN W/CLEAN-OUT PORT, MOUNTED HINGE BASE, & AUTO BELT TENSIONER, SPARE BELT, & ROOF CURB WITH CURB EXTENSION. 1500 CFM AT 1.00" SP, .75 HP MOTOR, 208 VOLTS THREE PHASE FAN TO RUN CONTINUOUSLY DURING OCCUPIED MODE. **NO SUBSTITUTIONS.**
- EF1-A** **ACCUREX MODEL XRED-090-D** CONDENSATE DOWNBLAST EXHAUST FAN WITH ROOF CURB AND BACKDRAFT DAMPER. 350 CFM AT 6" SP, .0667 HP MOTOR, 115 VOLTS, SINGLE PHASE. FAN TO RUN w/STARTING OF DISHWASHER & FOR ONE MINUTE AFTER THE CYCLE IS COMPLETE. **NO SUBSTITUTIONS.**
- EF - 1** **ACCUREX MODEL XCR-B80** CEILING EXHAUST FAN, SPEED CONTROL & MODEL WC-4 HOODED WALL CAP. PAINT WALL CAP TO MATCH EXTERIOR FINISH. 75 CFM AT .125"SP, 115 VOLT, SINGLE PHASE. FAN TO RUN CONTINUOUSLY DURING OCCUPIED MODE. **NO SUBSTITUTIONS.**
- ITEM #49** **GRIDDLE EXHAUST HOOD - ACCUREX MODEL XGEP-5.33S** 64" x 26" x 36" HIGH, LOW PROXIMITY w/FLUE BYPASS. 1500 CFM AT 1.918" SP, 12" x 12" DUCT COLLAR. INCLUDES THE 3" INTEGRAL AIR SPACE ON BACK OF HOOD & AN ADDITIONAL 3" REAR FILLER PANEL. STAINLESS STEEL WHERE EXPOSED, w/GREASE GRABBER TWO-STAGE FILTRATION SYSTEM. 26" HIGH ENCLOSURE PANELS, FRONT, LEFT AND RIGHT SIDES. GREASE TROUGH SHALL BE PITCHED TO THE LEFT END OF THE HOOD. APPROVALS SHALL INCLUDE UL LISTING AND THE NSF SEAL. THE VENTILATOR SHALL CONFORM TO THE REQUIREMENTS OF NFPA-96 & TO ALL PREVAILING LOCAL CODE REQUIREMENTS. **NO SUBSTITUTIONS.**
- ITEM #59** **FRYER EXHAUST HOOD - ACCUREX MODEL XXEP-FB-6.92-S** 83" x 26" x 36" HIGH, LOW PROXIMITY w/FLUE BYPASS. 1500 CFM AT .518" SP, 12" x 12" DUCT COLLAR. INCLUDES THE 3" INTEGRAL AIR SPACE ON BACK OF HOOD & AN ADDITIONAL 3" REAR FILLER PANEL. STAINLESS STEEL WHERE EXPOSED, w/X-TRACTOR STAINLESS STEEL FILTERS TWO-STAGE FILTRATION SYSTEM. 26" HIGH ENCLOSURE PANELS, FRONT, LEFT AND RIGHT SIDES. GREASE TROUGH SHALL BE PITCHED TO THE LEFT END OF THE HOOD. APPROVALS SHALL INCLUDE UL LISTING AND THE NSF SEAL. THE VENTILATOR SHALL CONFORM TO THE REQUIREMENTS OF NFPA-96 **NO SUBSTITUTIONS.**
- ITEM #25A** **DISHWASHER CONDENSATE HOOD - ACCUREX MODEL XD3-3.5-S** CONDENSATE HOOD w/BAFFLE, 42" X 42" X 24" HIGH, STAINLESS STEEL WHERE EXPOSED. 350 CFM AT .127 SP, 7 x 7 DUCT COLLAR. APPROVALS SHALL INCLUDE THE NSF SEAL. (UL LABEL NOT REQUIRED FOR NON-GREASE APPLICATION). THE VENTILATOR SHALL CONFORM TO THE REQUIREMENTS OF NFPA-96 & TO ALL PREVAILING LOCAL CODE REQUIREMENTS. **NO SUBSTITUTIONS.**

DIFFUSER/GRILLE SCHEDULE

QNTY	Mark	Manuf.	Model	Type	Mounting	Diffuser	Neck	CFM	Zone	Notes
16	CD-10	RAYMON	PRO2	SUPPLY	GRID	4-WAY	8"	150	RTU-1	2
1	CD-11	RAYMON	PRO2	SUPPLY	GRID	4-WAY	10"	500	RTU-1	1
1	CD-12	RAYMON	PRO2	SUPPLY	GRID	4-WAY	8"	200	RTU-1	1
1	CD-13	RAYMON	PRO2/DAG	SUPPLY	CEILING	3-WAY	8"	150	RTU-1	3
1	CD-14	RAYMON	PRO2	SUPPLY	GRID	4-WAY	8"	75	RTU-1	
2	CD-15	RAYMON	PRO2/DMP	SUPPLY	CEILING	4-WAY	8"	150	RTU-1	3
2	CD-16	RAYMON	PRO2	SUPPLY	GRID	4-WAY	12"	450	RTU-1	
1	CD-18	RAYMON	PRO2	SUPPLY	GRID	4-WAY	10"	300	RTU-1	
4	CD-17	RAYMON	PRO2	SUPPLY	GRID	4-WAY	10"	350	RTU-1	6
2	CD-20	RAYMON	PRO2	SUPPLY	GRID	4-WAY	12"	600	RTU-2	
3	CD-21	RAYMON	RPR	SUPPLY	GRID	PERFORATED	12"	350	RTU-2	7,9
1	CD-22	RAYMON	PRO2	SUPPLY	GRID	4-WAY	12"	600	RTU-2	
1	CD-23	RAYMON	RPR	SUPPLY	GRID	PERFORATED	10"	200	RTU-2	7,9
1	CD-24	RAYMON	RPR	SUPPLY	GRID	PERFORATED	12"	375	RTU-2	7,9
2	CD-25	RAYMON	RPR	SUPPLY	GRID	PERFORATED	12"	400	RTU-2	7,9
1	CD-26	RAYMON	RPR	SUPPLY	GRID	PERFORATED	10"	250	RTU-2	7,9
1	CD-27	RAYMON	RPR	SUPPLY	GRID	PERFORATED	10"	275	RTU-2	7,9
1	CD-28	RAYMON	RPR	SUPPLY	GRID	PERFORATED	8"	125	RTU-2	7,9
1	CD-29	RAYMON	PRO2/DAG	SUPPLY	GRID	3-WAY	12"	600	RTU-2	
		RAYMON	ECR-TB							
2	EG-1	RAYMON	RA-HVD	EXHAUST	GRID	12" x 12"	6"	75	RTU-1	4
2	EG-2	RAYMON	FGEC-TB1	EXHAUST	CEILING	12" x 12"	6"	150	RTU-1	8
5	RG-10	RAYMON	FGEC-TB1	RETURN	GRID	RETURN	12" x 12"	1125	RTU-1	8
5	RG-20	RAYMON	RA-HVD	RETURN	GRID	RETURN	14"	1070	RTU-2	
1	RG-30	RAYMON	RA-HVD	RETURN	GRID	RETURN	10"	600	RTU-1	5
1	TG-1	RAYMON	RA-RH	TRANSFER	WALL	12" x 4"	12" x 4"	0	RTU-1	
2	WD-20			SUPPLY	WALL	24" x 6"	12"	600	RTU-2	

DIFFUSER NOTES:

- PROVIDE KXDA EXTENSION ROD WITH KNOB
- 4 OF THE CD-10 DIFFUSERS ARE TO BE FLAT BLACK. ALL OTHERS TO BE WHITE. SEE REFLECTED CEILING PLAN FOR LOCATIONS.
- 12X12 NOMINAL PANEL SIZE
- PROVIDE WITH ADJUSTABLE OPPOSED BLADE DAMPER
- MOUNT SO THE OCCUPANT CAN NOT SEE INTO THE DUCT
- FLAT BLACK FINISH
- DESIGN CFM MUST BE MAINTAINED FOR PROPER HOOD OPERATION
- REMOVABLE CORE DIFFUSERS
- WITHOUT PATTERN CONTROLLERS

CONTROL NOTES

- 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, 2 & 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.

LENNOX SETTINGS FOR CULVERS

IN ORDER TO SET UP THE RTU'S YOU WILL NEED TO DOWNLOAD LENNOX CORE SERVICE APP AND PAIR YOUR DEVICE WITH THE CORE CONTROLLER. ONCE PAIRED YOU WILL SEE THE OPERATION OVERVIEW SCREEN. SEE INSTALLATION MANUAL FOR INSTRUCTIONS ON DOWNLOADING THE APP, OR SCAN THE QR CODE ON THE FRONT COVER OF THE CONTROLLER

HEAT DELAY ADJUSTMENT

- HEAT DELAY WILL BE PR65 IN THE CORE CONTROLLER AND CHANGED IN THE APP AS SHOWN IN THE MENU PATH BELOW, DEFAULT IS SET AT 3600 SECONDS.
- TAP THE MENU BUTTON (THREE LINES IN THE UPPER LEFT OF THE SCREEN) TO OPEN THE MENU. SCROLL DOWN AND TAP ON RTU OPTIONS
 - TAP EDIT PARAMETER. CHOOSE FROM THE CATEGORY OF PARAMETERS LISTED. (FOR HEAT DELAY CHOOSE HEATING)
 - CHOOSE THE PARAMETER TO ADJUST (65). SELECT "0" FOR NO HEAT DELAY (0 SECONDS)

GLOBAL ECONOMIZER MODE (KITCHEN UNIT ONLY)

- THIS IS SET BY CHANGING CONFIGURATION ID#1 CHARACTER 2 TO G
- FROM THE MAIN SCREEN (OPERATION OVERVIEW) TAP THE MENU BUTTON (THREE LINES IN THE UPPER LEFT OF THE SCREEN) TO OPEN THE MENU
 - TAP INSTALL
 - TAP NEXT ON DATE AND TIME
 - TAP NEXT ON RTU NAME, MODEL NUMBER, SERIAL NUMBER AND CATEGORY IF ALREADY ENTERED, IF NOT PLEASE ENTER
 - TAP CONFIGURATION ID 1 AND CHANGE 2ND CHARACTER TO G

ECONOMIZER MINIMUM POSITION SET-UP

- THIS IS ADJUSTED THROUGH THE MENU FROM THE MAIN SCREEN
- TAP THE MENU BUTTON (THREE LINES IN THE UPPER LEFT OF THE SCREEN)
 - SCROLL DOWN AND TAP RTU OPTIONS
 - TAP EDIT PARAMETERS
 - CHOOSE FROM THE CATEGORY OF PARAMETERS LISTED (AIRFLOW)
 - CHOOSE THE PARAMETER TO ADJUST (132) MINIMUM FRESH AIR DAMPER POSITION DURING OCCUPIED OPERATION

OCCUPIED AND UNOCCUPIED

- USING 24v THERMOSTAT CONTROL OCCUPIED/ UNOCCUPIED WILL BE DETERMINED BY INPUT ON P297-8 ON THE M4 BOARD
- FOR (KITCHEN UNIT ONLY) BOTH THE THERMOSTAT AND HOOD FANS MUST BE TIED INTO P297-8 ON THE M4 CONTROL BOARD

FRESH AIR TEMPERING (HEATING)

- THIS IS ADJUSTED THROUGH THE MENU FROM THE MAIN SCREEN
- TAP THE MENU BUTTON (THREE LINES IN THE UPPER LEFT OF THE SCREEN) TO OPEN THE MENU
 - TAP SETUP
 - TAP TEST AND BALANCE
 - TAP DAMPER
 - THERE ARE SEVERAL SETTINGS TO SELECT IN THIS MENU PATH BEFORE REACHING THE DESIRED SETTING. FRESH AIR HEATING ENABLED =YES OR NO. AFTER ENABLING FAH THE NEXT SCREEN WILL ALLOW THE FAH SET POINT TO BE CONFIGURED. SUGGESTED FAH TEMPERATURE RANGES 65-67 DEGREES F. VERIFY WITH ENGINEER

FRESH AIR TEMPERING (COOLING)

- THIS IS ADJUSTED THROUGH THE MENU FROM THE MAIN SCREEN
- TAP THE MENU BUTTON (THREE LINES IN THE UPPER LEFT OF THE SCREEN) TO OPEN THE MENU
 - TAP SETUP
 - TAP TEST AND BALANCE
 - TAP DAMPER
 - THERE ARE SEVERAL SETTINGS TO SELECT IN THIS MENU PATH BEFORE REACHING THE DESIRED SETTING. FRESH AIR HEATING ENABLED =YES OR NO. AFTER ENABLING FAH THE NEXT SCREEN WILL ALLOW THE FAH SET POINT TO BE CONFIGURED. SUGGESTED FAH TEMPERATURE RANGES 73-75 DEGREES F. VERIFY WITH ENGINEER

ENSURE THAT THE PROBE STYLE SENSOR GETS INSTALLED IN THE SUPPLY DUCTWORK FOR FAH/FAAC TO OPERATE PROPERLY

FOR HELP PLEASE CALL LENNOX NATIONAL ACCOUNT TECH SUPPORT AT 1-800-367-6285

CHECK FOR CORRECT OPERATION AND WIRING OF ALL SENSORS

AIR BALANCE TABLE

Mark	Vent. Air CFM	Exh. Air CFM	Net Balance
RTU-1	+1900	--	+1900
RTU-2	+1900	--	+3800
PRV-1	--	-300	+3500
PRV-2	--	-1500	+2000
EF1-A	--	-1500	+500
PRV-4	--	-350	+150
EF-1	--	-75	+75

NATIONAL ACCOUNT PROGRAM

1. LENNOX INDUSTRIES, INC. - ROOFTOP HVAC EQUIPMENT

National Accounts Sales: (800) 367-6285 Option #1 lennoxind.com

National Account Technical Support: (800) 367-6285 Option #2 lennoxind.com

2. ACCUREX/ GREENHECK FAN CORPORATION - KITCHEN HOODS, EXHAUST FANS, ROOF CURBS, ANSUL SYSTEMS, AND ACCESSORIES

CONTACT Andy Jacobs @ 1-715-301-6022 or andrew.jacobs@accurex.com

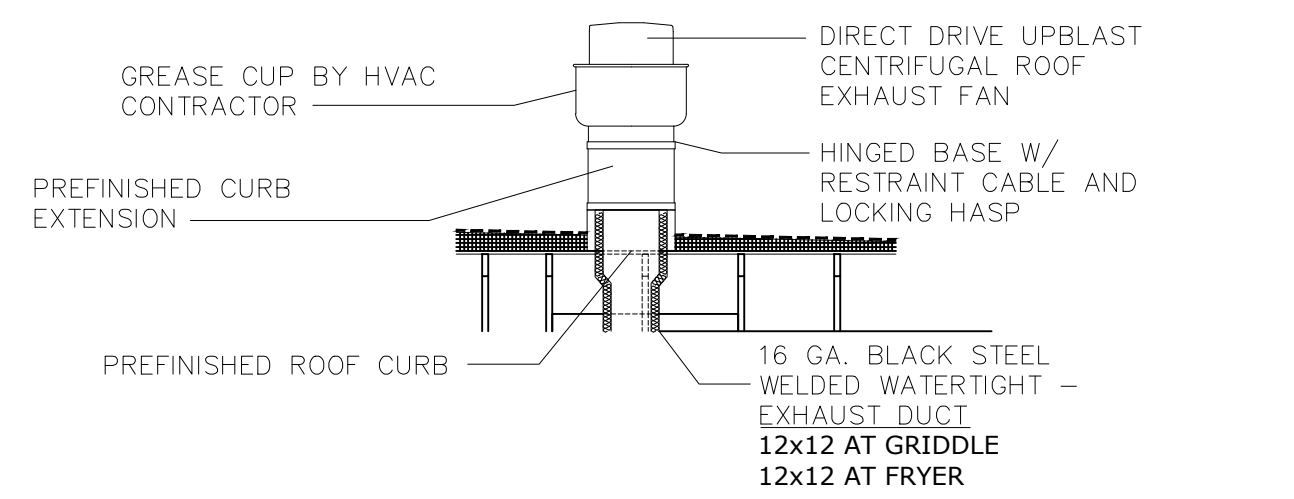
Secondary contact Sara Block @ 1-877-377-2548

3. CARNES COMPANY - DIFFUSERS AND GRILLES

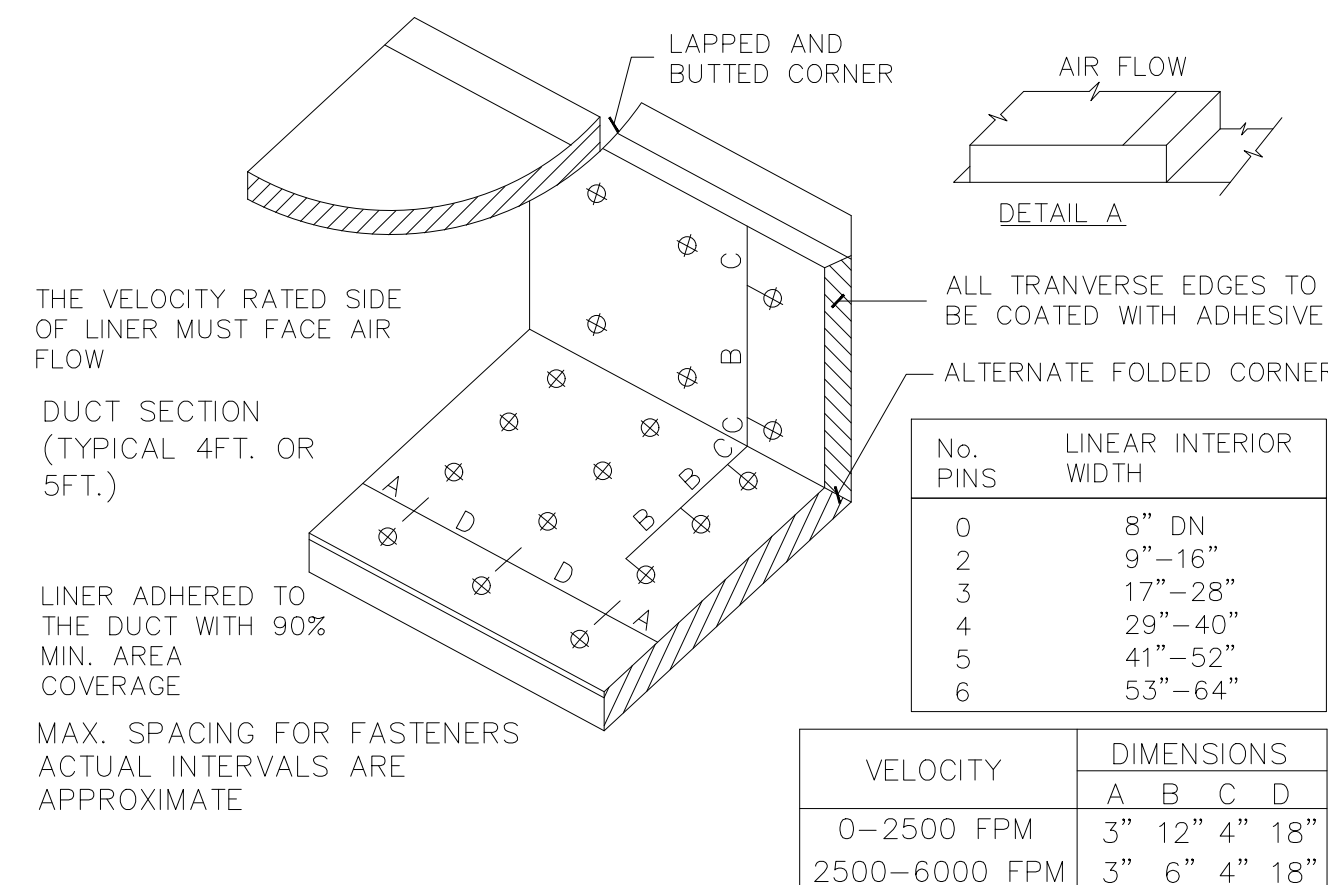
National Accounts Sales: Chris Stratton @ (608) 845-6411 cstratton@carnes.com

National Accounts Rep: Brian Baker @ (608) 845-6411 bbaker@carnes.com

NOTE : KITCHEN HOODS AND FANS SUPPLIED AND INSTALLED BY HVAC CONTRACTOR - MINIMUM FOUR WEEK LEAD TIME.



KITCHEN HOOD EXHAUST FAN DETAIL
N.T.S.



DUCT LINER INSTALLATION DETAIL
N.T.S.

NOTE: USE ONLY ON VERTICAL DROP FROM RTU TO WITHIN 9'-10" A.F.F., DUCT LINER WILL NOT BE PERMITTED ON ANY HORIZ. RUNS.



BRANCH DUCT TAKEOFF DETAILS
N.T.S.

NOTE : L = 1/4W (4" MIN.)

HOOD INFORMATION

HOOD NO.	MARK	MODEL	HOOD DIMENSIONS (IN.)			HOOD CONSTR.	COOKING LOAD / DUTY RATING	EXHAUST COLLAR(S)					SUPPLY		TOTAL WEIGHT LBS.	SECTION LOCATION	
			LENGTH	WIDTH	HEIGHT			TOTAL CFM	WIDTH	LENGTH	DIA.	CFM	S.P.	MUA CFM			AC CFM
1	GRIDDLE HOOD	XGPE-64-S	64	TOP 23 BOT 8	FRT 12 BACK 36	430 SS WHERE EXPOSED	MEDIUM	1500	12	12		1500	1.918			137	SINGLE

HOOD INFORMATION

HOOD NO.	MARK	LIGHTING DETAILS			GREASE FILTRATION DETAILS			UTILITY CABINET(S)						
		FIXTURE TYPE	BULB / LAMP INFO	QTY	FOOT CANDLES	TYPE / MODEL	MATERIAL	QTY	SIZE (IN.)	LOCATION	FIRE SYSTEM TYPE	SIZE	MODEL	CONTROLS INTERFACE
1	GRIDDLE HOOD					GREASE GRABBER	STAINLESS STEEL	4	16	16				

HOOD OPTIONS

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)
 PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
 STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH

SPECIAL DESIGN REQUESTS

SDR #K1100145 - FLUE BYPASS HOOD
 SDR #K1800144 - CULVERS 4VAT 2FIRE PROCESS - GRIDDLE HOOD

FIRE SYSTEM INFORMATION

MARK	MODEL	LOCATION	FLOW POINTS		SUPPLY LINE	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
			HOODS	PCU			
FIRE SUPPRESSION-GRIDDLE HOOD	ANSUL R-102 WET CHEMICAL	REMOTE MOUNTED	6 UTILIZED	11 AVAILABLE	CONTINUOUS	FUSIBLE LINK	GRIDDLE HOOD SECTION 1

FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)
 CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED
 METAL BLOW-OFF CAPS - INCLUDED
 HOOD SUPPRESSION AGENT - INCLUDED - 3 GAL. - [(1) 3.0 TANK(S)]
 REMOTE PULL STATION - STANDARD - INSTALLATION AT SINGLE POINT OF EGRESS

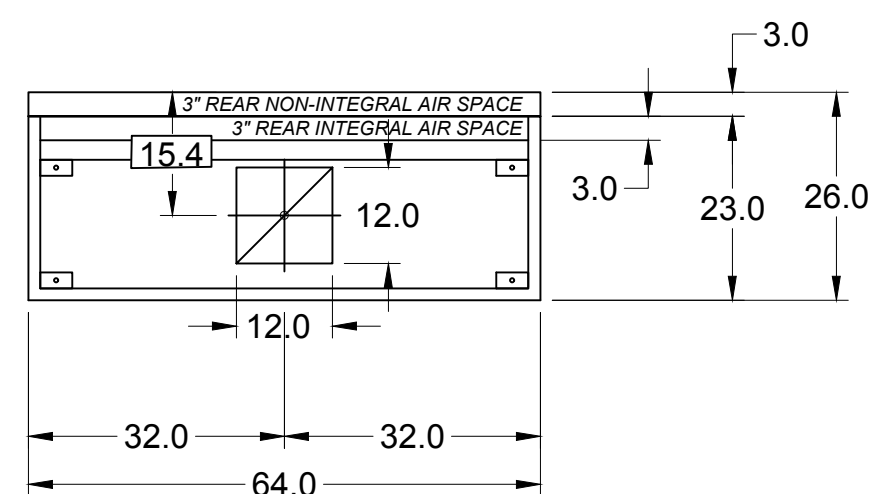
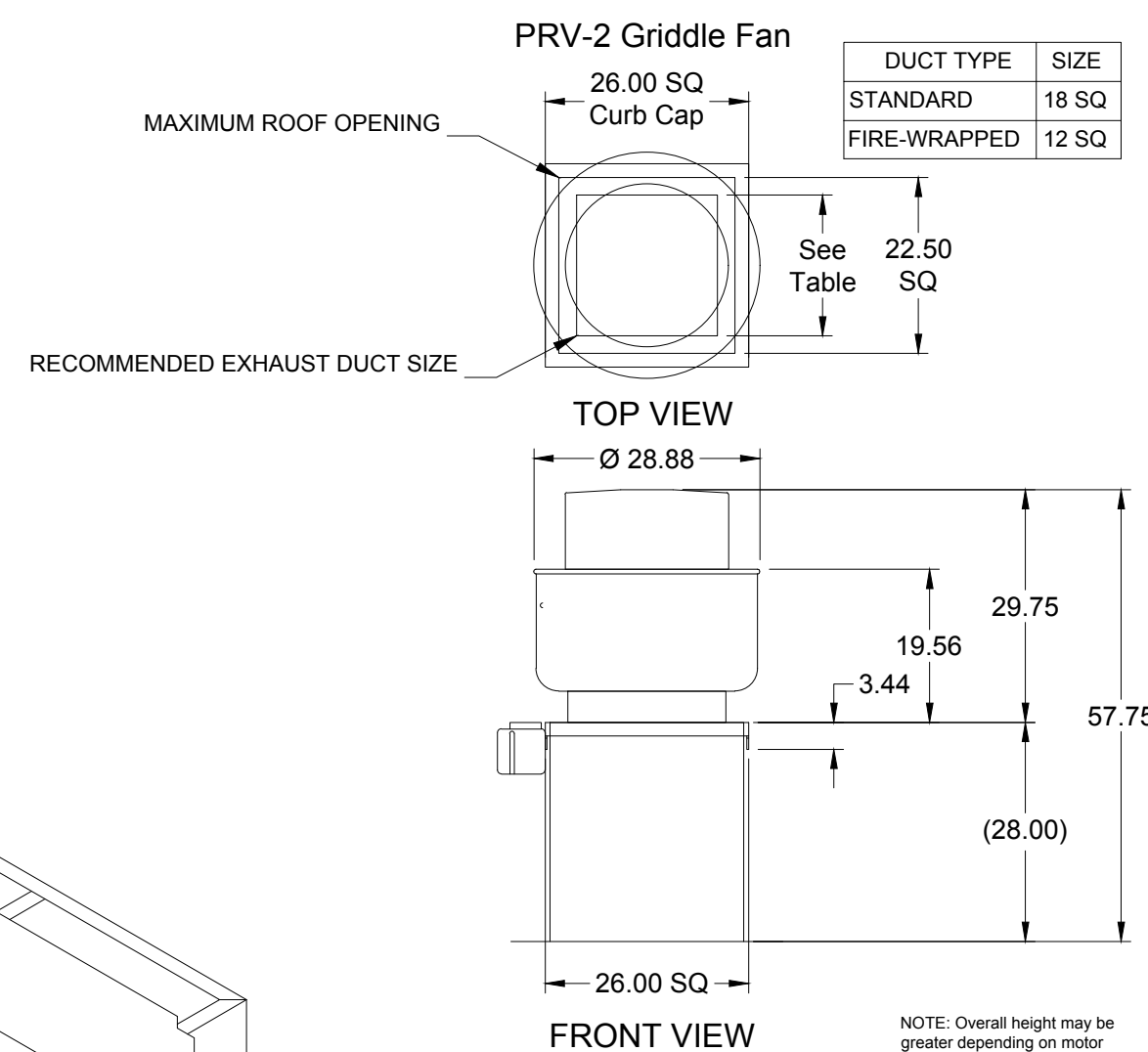
Direct Drive Upblast Centrifugal Roof Exhaust Fan

MARK INFORMATION		FAN INFORMATION					MOTOR INFORMATION						
QTY	MARK	MODEL	VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)	FAN RPM	OPERATING POWER (HP)	WEIGHT (LB.)	SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS	NEC FLA*
1	PRV-2 Griddle Fan	XCUE-140-VG	1,500	1.801	1,725	0.83	92	1	115/60/1	OP	1725	1	16

NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory

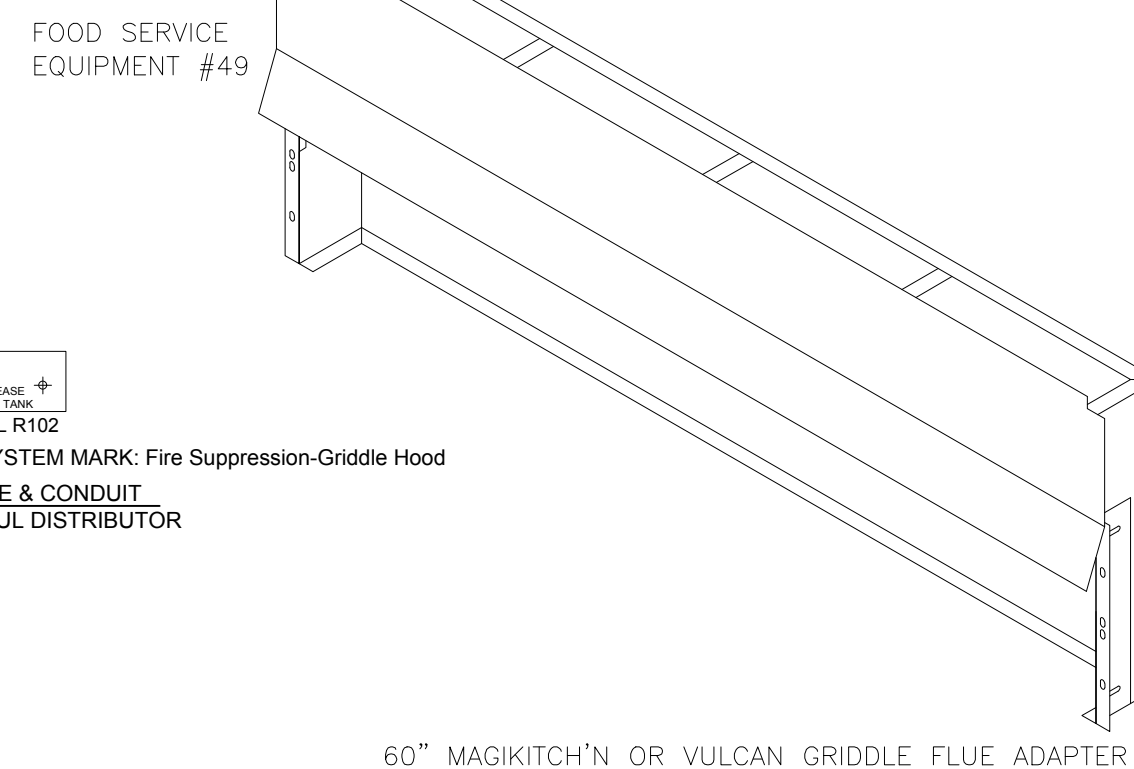
PRV-2 Griddle Fan : SELECTED OPTIONS AND ACCESSORIES

One piece fully welded windband
 Tapered bushing wheel hub
 Breather tube outlet area min. 4.4 sq. in. (sizes 99-480), 2.0 sq. in. (sizes 60-95)
 Min. windband material thickness: 0.051" aluminum (060-240), 0.064" aluminum (240HP, 240XP), 0.080" aluminum (sizes 300-480)
 Larger Curb Cap Size - 26 Square
 UL/cUL 705 Listed - Supplement SC - "Power Ventilators for Restaurant Exh. Appliances" (Formerly UL 762)
 Switch, NEMA-3R, Toggle,
 Hinge, Factory Installed
 High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)
 Grease Trap (PN 475538)
 Clean-out Port - Factory Installed
 Conduit Chase Qty 1

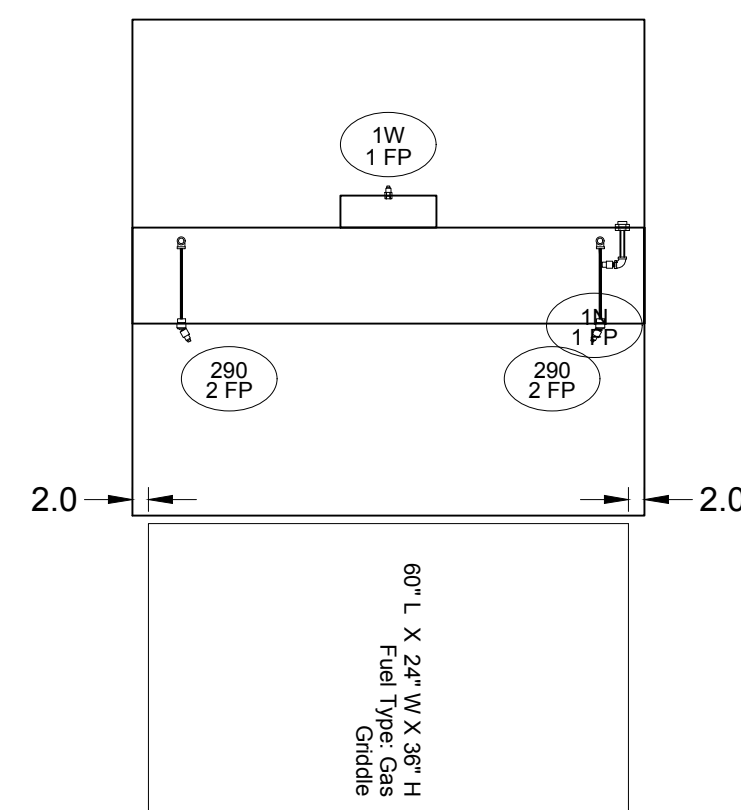


MARK: Griddle Hood - SECTION 1 PLAN VIEW

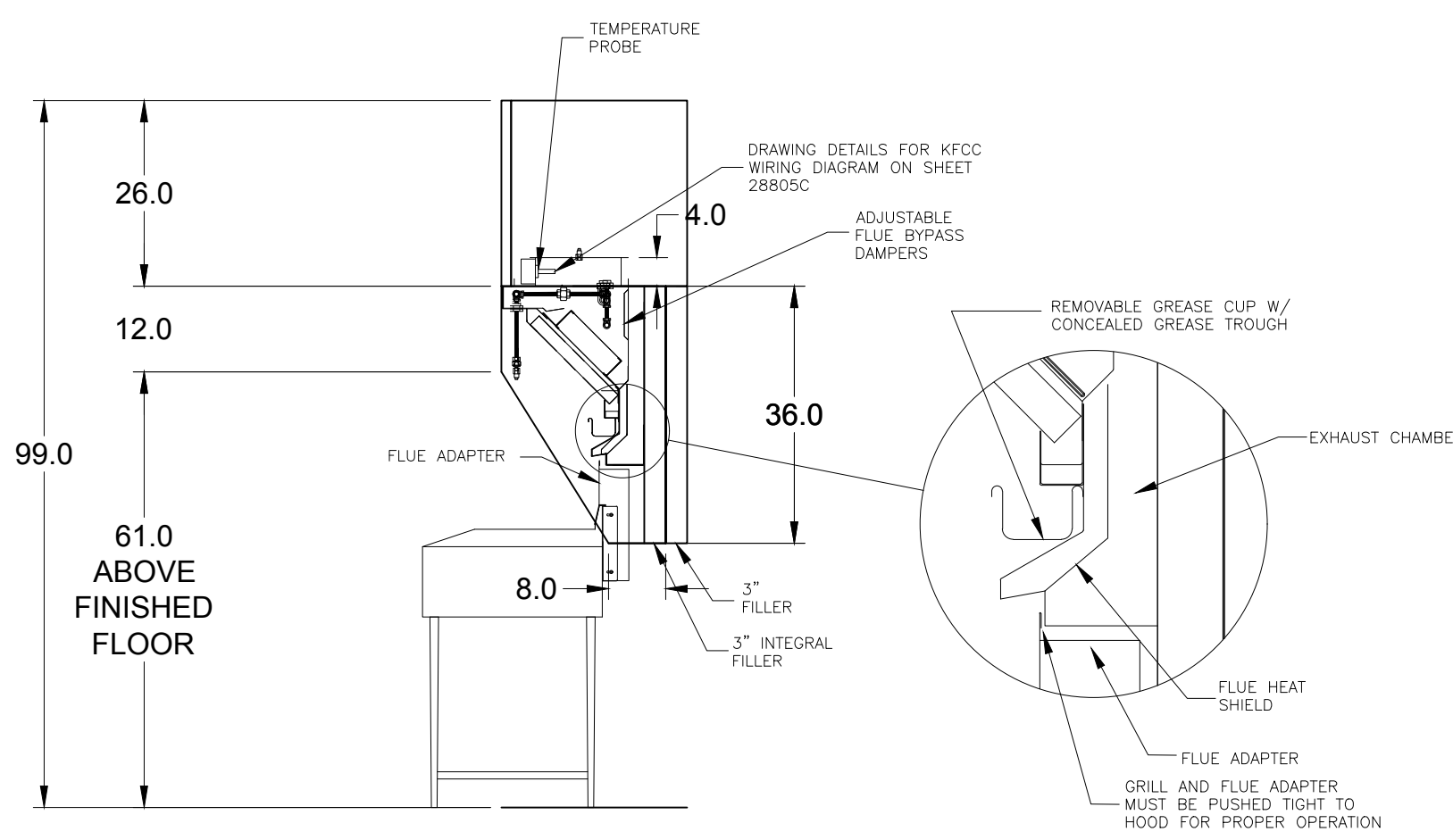
MUST USE WITH MAGIKITCH'N MODEL MKG-C-60 OR VULCAN MODEL VIG60-R3



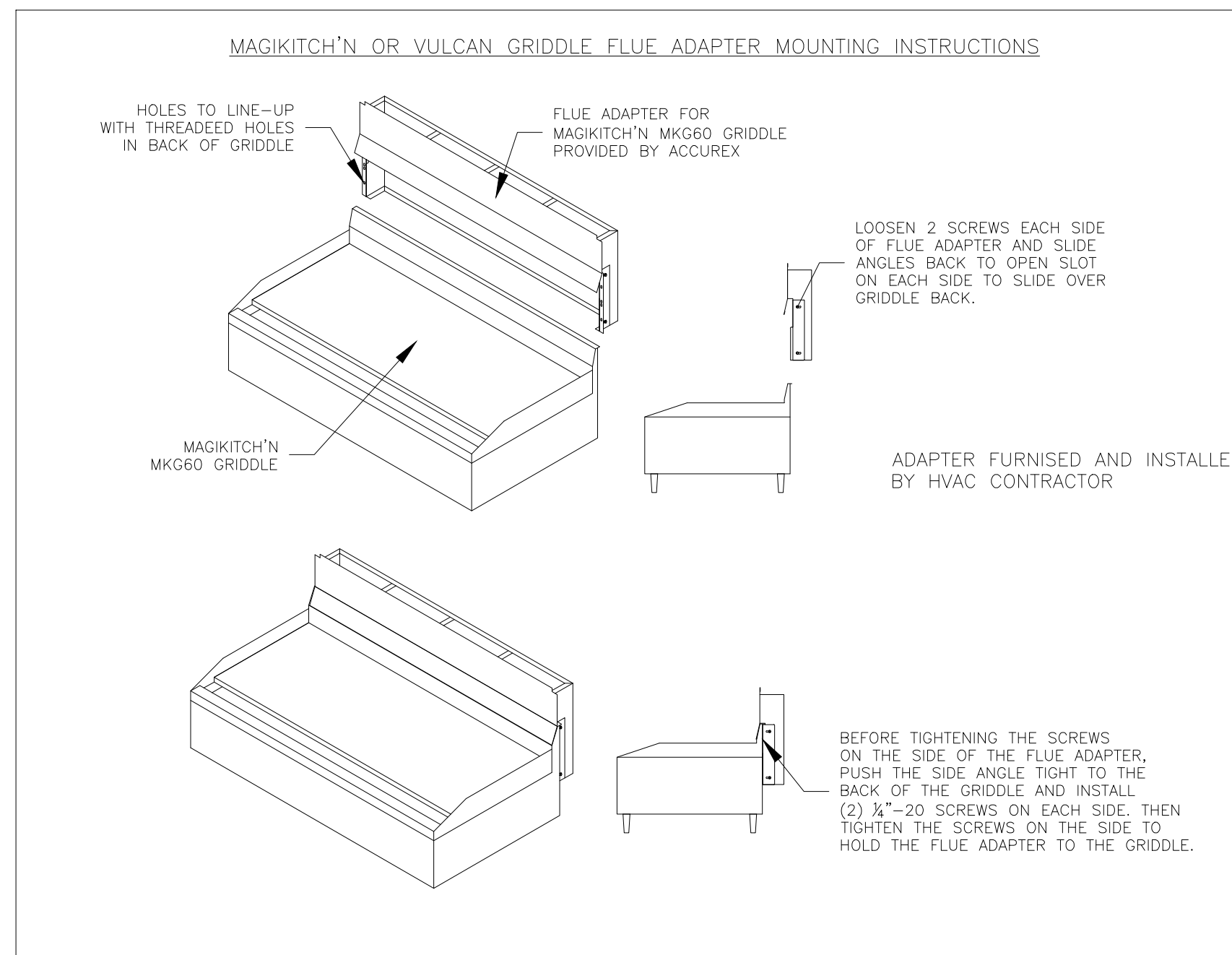
ANSUL R102 FIRE SYSTEM MARK: Fire Suppression-Griddle Hood PIPE & CONDUIT BY ANSUL DISTRIBUTOR



SECTION 1 ELEVATION VIEW



MARK: Griddle Hood SECTION VIEW



BEFORE TIGHTENING THE SCREWS ON THE SIDE OF THE FLUE ADAPTER, PUSH THE SIDE ANGLE TIGHT TO THE BACK OF THE GRIDDLE AND INSTALL (2) 1/4\"/>

ADAPTER FURNISHED AND INSTALLED BY HVAC CONTRACTOR

LOOSEN 2 SCREWS EACH SIDE OF FLUE ADAPTER AND SLIDE ANGLES BACK TO OPEN SLOT ON EACH SIDE TO SLIDE OVER GRIDDLE BACK.

FLUE ADAPTER FOR MAGIKITCH'N MKG60 GRIDDLE PROVIDED BY ACCUREX

HOLES TO LINE-UP WITH THREADED HOLES IN BACK OF GRIDDLE

MAGIKITCH'N MKG60 GRIDDLE

60\"/>

RECOMMENDED EXHAUST DUCT SIZE

MAXIMUM ROOF OPENING

PRV-2 Griddle Fan

See Table

22.50 SQ

26.00 SQ Curb Cap

TOP VIEW

FRONT VIEW

NOTE: Overall height may be greater depending on motor.

NOT TO SCALE

CONTROL PANEL

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

1. STAINLESS STEEL ENCLOSURE

2. EXPLOSION RESISTANT GLASS

3. EXPLOSION RESISTANT GLASS

4. EXPLOSION RESISTANT GLASS

5. EXPLOSION RESISTANT GLASS

6. EXPLOSION RESISTANT GLASS

7. EXPLOSION RESISTANT GLASS

8. EXPLOSION RESISTANT GLASS

9. EXPLOSION RESISTANT GLASS

10. EXPLOSION RESISTANT GLASS

11. EXPLOSION RESISTANT GLASS

12. EXPLOSION RESISTANT GLASS

13. EXPLOSION RESISTANT GLASS

14. EXPLOSION RESISTANT GLASS

15. EXPLOSION RESISTANT GLASS

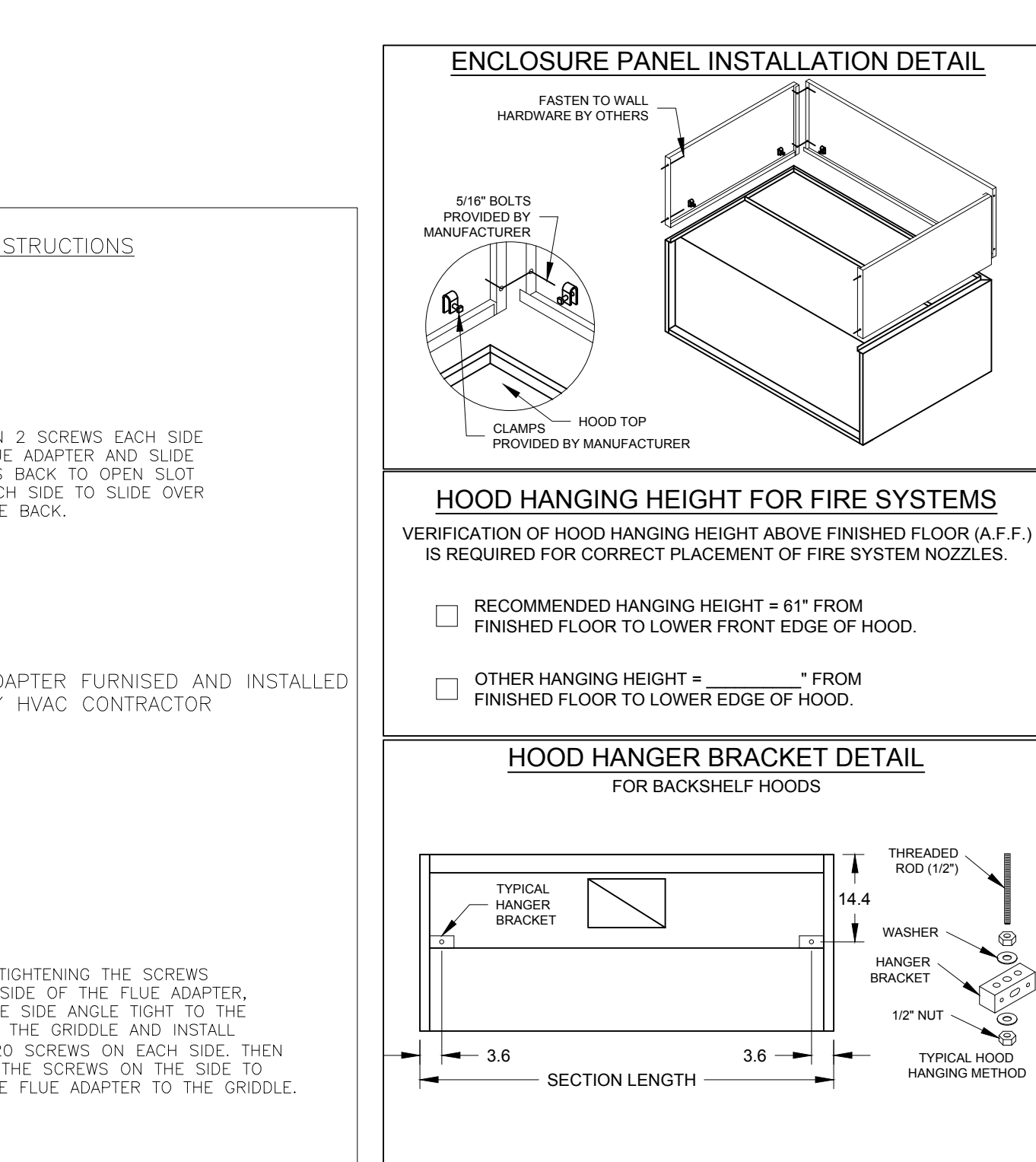
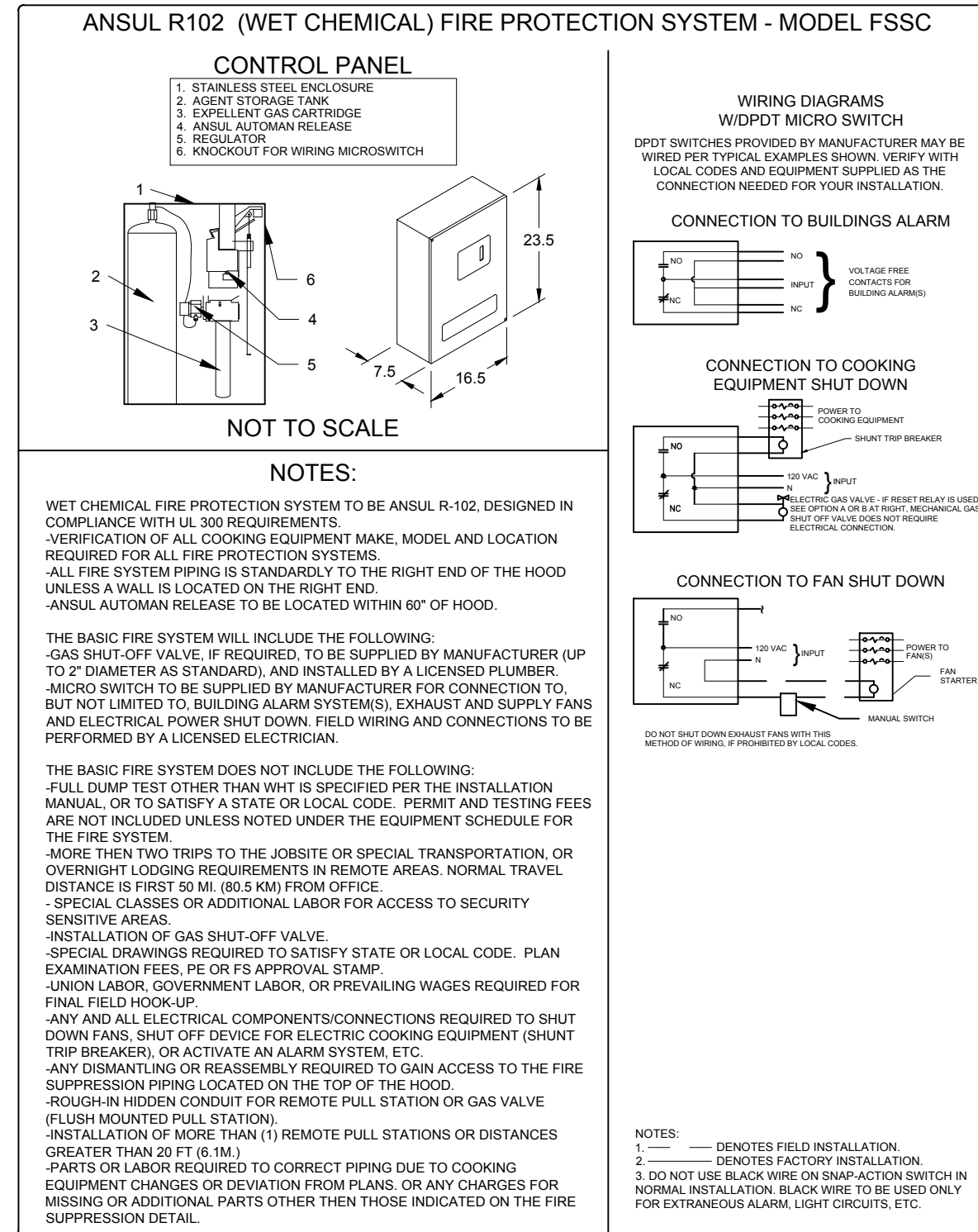
16. EXPLOSION RESISTANT GLASS

17. EXPLOSION RESISTANT GLASS

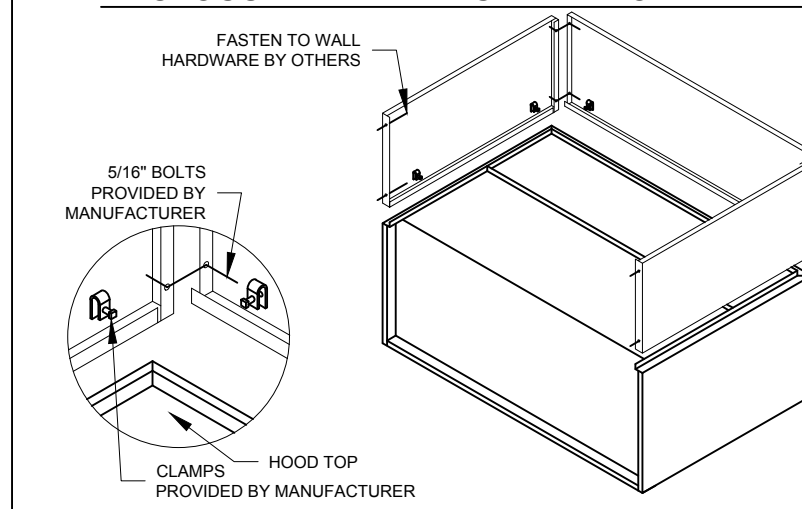
18. EXPLOSION RESISTANT GLASS

19. EXPLOSION RESISTANT GLASS

20. EXPLOSION RESISTANT GLASS



ENCLOSURE PANEL INSTALLATION DETAIL

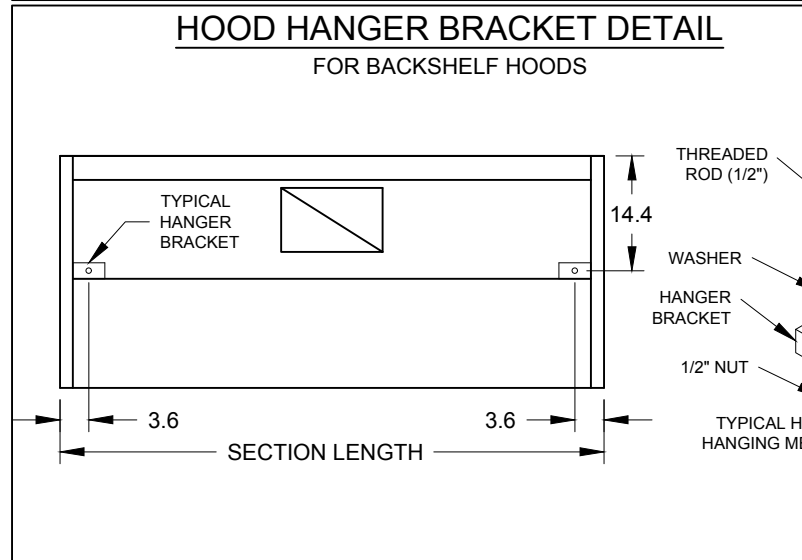


HOOD HANGING HEIGHT FOR FIRE SYSTEMS

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

- RECOMMENDED HANGING HEIGHT = 61" 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

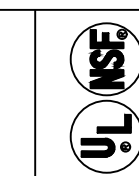


PROJECT 12/4/2019 CULVERS - METRO L 2021 (S)

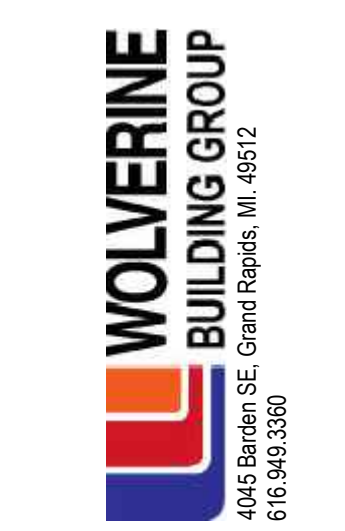
MARK

ACCUREX - W.I.A
 PHILLIP KRAFT
 PHILLIP.KRAFT@ACCUREX.COM
 262-227-7865

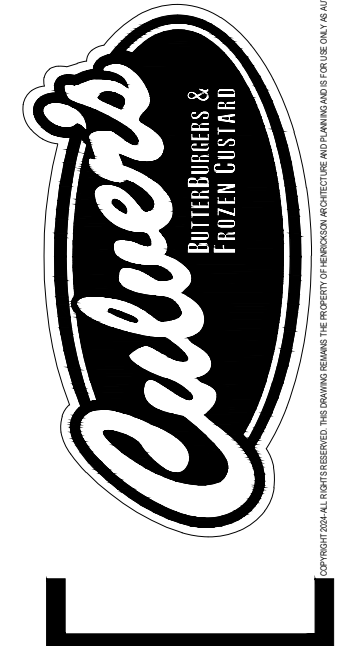
ACCUREX



GRIDDLE HOOD
 PRV-2 GRIDDLE FAN
 FIRE SUPPRESSION-GRIDDLE HOOD



Metro M - 2024
 NORTH GETTY STREET
 MUSKOGEE TOWNSHIP, MICHIGAN



BID/PERMIT 05.22.24
 DRAWN BY: XXX
 CHECKED: DSH
 HVAC HOOD, FAN & FIRE SUPPRESSION
 PROJECT No. 240118

EQUIPMENT SCHEDULE						
ELECTRICAL CONTROL BOX			MARK: KXC			
DESCRIPTION / ACCUREX MODEL	MOUNTING LOCATION (CONTROL PANEL / SWITCHES)	EXHAUST FAN QTY	SUPPLY FAN QTY	POWER FREQUENCY		
KITCHEN FAN CONTROL CENTER / KXC SHIP LOOSE / SHIP LOOSE FOR REMOTE MOUNTING		2	0	60 CYCLE		
CONTROL PANEL ENCLOSURE - 16 GA 304 STAINLESS STEEL ENCLOSURE (NEMA-1) - DIMENSIONS 18 X 20 X 6 WIRING DIAGRAM # T100-2-20 STARTERS PROVIDED IN CONTROL PANEL - QTY 2 USER INTERFACE CONTROL - 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						
SPECIAL DESIGN REQUESTS						
SDR #K0800240 - USE KIT #852883, WIRING DIAG. #Z295336						
TYPE 2 KITCHEN HOOD			MARK: ITEM #25			
HOOD NO.	ACCUREX MODEL STYLE / CONFIGURATION	HOOD DIMENSIONS SECTION LENGTH WIDTH HEIGHT	GREASE CUP OR DRAIN	HOOD TEMP. RATING	TOTAL WEIGHT	SECTION LOCATION
1	X33-42-S CONDENSATE HOOD - DOUBLE BAFFLE	42.0 IN. 42 IN. 24 IN.	RIGHT	NA	224.0 LBS.	NA
HOOD SECTION # COLLAR #	EXHAUST PLENUM COLLARS					
1/1	DISTANCE TO END (IN.)	WIDTH (IN.)	LENGTH (IN.)	DIAMETER (IN.)	VOLUME (CFM)	S.P. (IN. WC)
	21	7	7	NA	350	0.127 1029
TOTAL EXHAUST CFM - SECTION 1						350.0 = 100.0 CFM / FT
OPTIONS AND ACCESSORIES						
304 STAINLESS STEEL 100% CONSTRUCTION FACTORY MOUNTED EXHAUST COLLAR(S)						

EQUIPMENT SCHEDULE												
Direct Drive Centrifugal Roof Exhaust Fan		MARK: PRV-1 Restroom		Motor Information								
Qty	Accurex Model	Volume (CFM)	SP (in wg)	FRPM	Operating Power (hp)	Weight (Lb.)	Size (hp)	VIC/P	Endc	Motor RPM	Windings	FLA
1	XRED-090-VG	375	0.5	1465	0.060	30	0.1	115/60/1	OP	1725	1	NA
OPTIONS AND ACCESSORIES												
UL/ULC 705 Listed - "Power Ventilators" Switch, NEMA-1, Toggle, Shipped with unit Curb Seal (Attached) Damper, WD-100-PB-10X10, Gravity Operated (Loose) Van-Green electronically commutated motor, speed dial adjustment on motor Roof Curb-Galv., GPH-17-10-G12, Undersized 1.5" total												

EQUIPMENT SCHEDULE												
Direct Drive Centrifugal Roof Exhaust Fan		MARK: PRV-4 Condensate Fan		Motor Information								
Qty	Accurex Model	Volume (CFM)	SP (in wg)	FRPM	Operating Power (hp)	Weight (Lb.)	Size (hp)	VIC/P	Endc	Motor RPM	Windings	FLA
1	XRED-095-VG	350	0.6	1486	0.09	33	0.167	115/60/1	OP	1725	1	4.4
OPTIONS AND ACCESSORIES												
UL/ULC 705 Listed - "Power Ventilators" Switch, NEMA-1, Toggle, Shipped with unit Curb Seal (Attached) Damper, WD-100-PB-10X10, Gravity Operated (Loose) Van-Green electronically commutated motor, speed dial adjustment on motor Roof Curb-Galv., GPH-17-10-G12, Undersized 1.5" total												

EQUIPMENT SCHEDULE												
Ceiling Exhaust Fan		MARK: EF-1 Condensate Fan		Motor Information								
Qty	Accurex Model	Volume (CFM)	SP (in wg)	FRPM	Operating Power (hp)	Weight (Lb.)	Size (hp)	VIC/P	Endc	Motor RPM	Windings	FLA
2	XCR-880	75	0.125	885	0.01	10	0.0	115/60/1	OP	900	1	NA
OPTIONS AND ACCESSORIES												
UL/ULC 705 Listed - Electric fan Solid State Speed Control, 6.0 amp, mounted and wired Round Hooded Wall cap, (PN: WC-6) Mounted and Wired) Designer Grille Round duct connection Polypropylene Wheel Material Energy Star Rated												

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

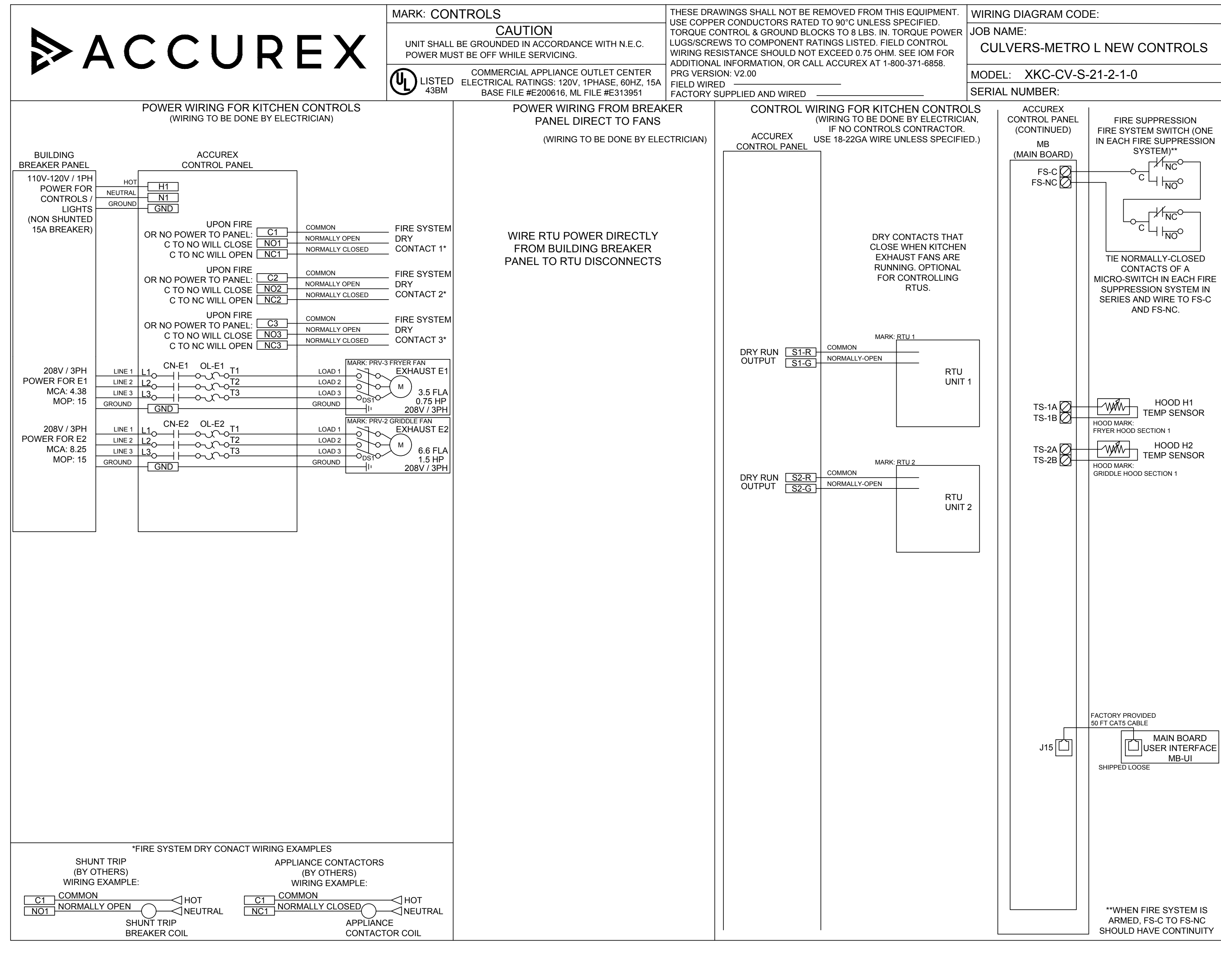
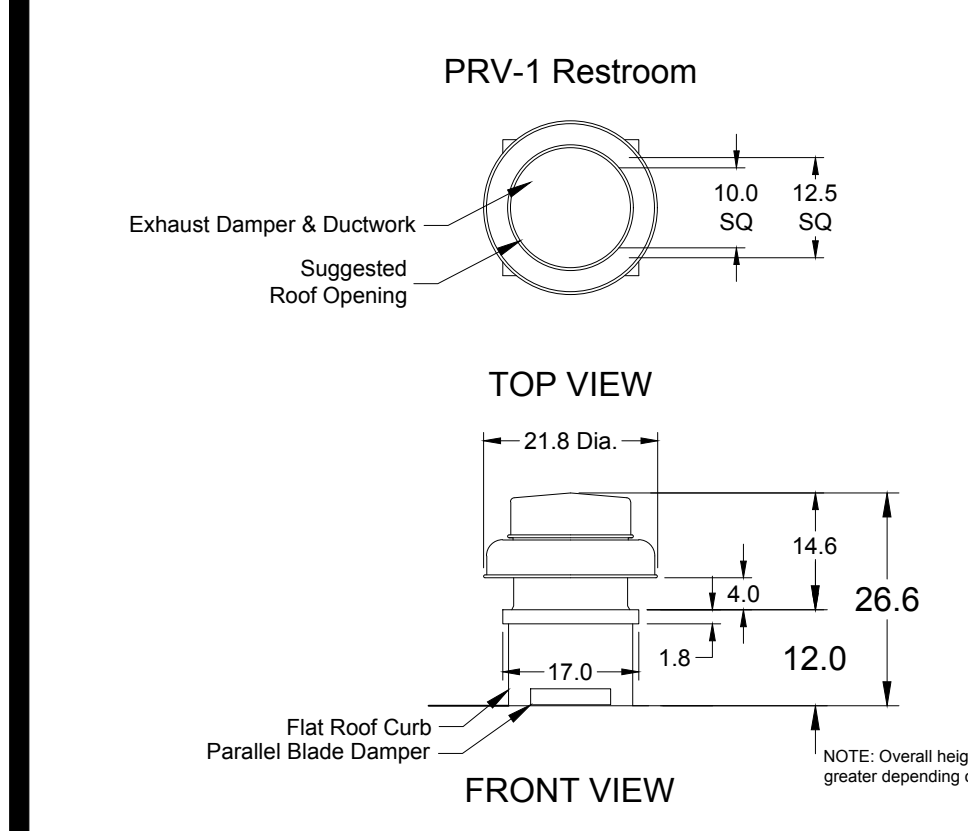
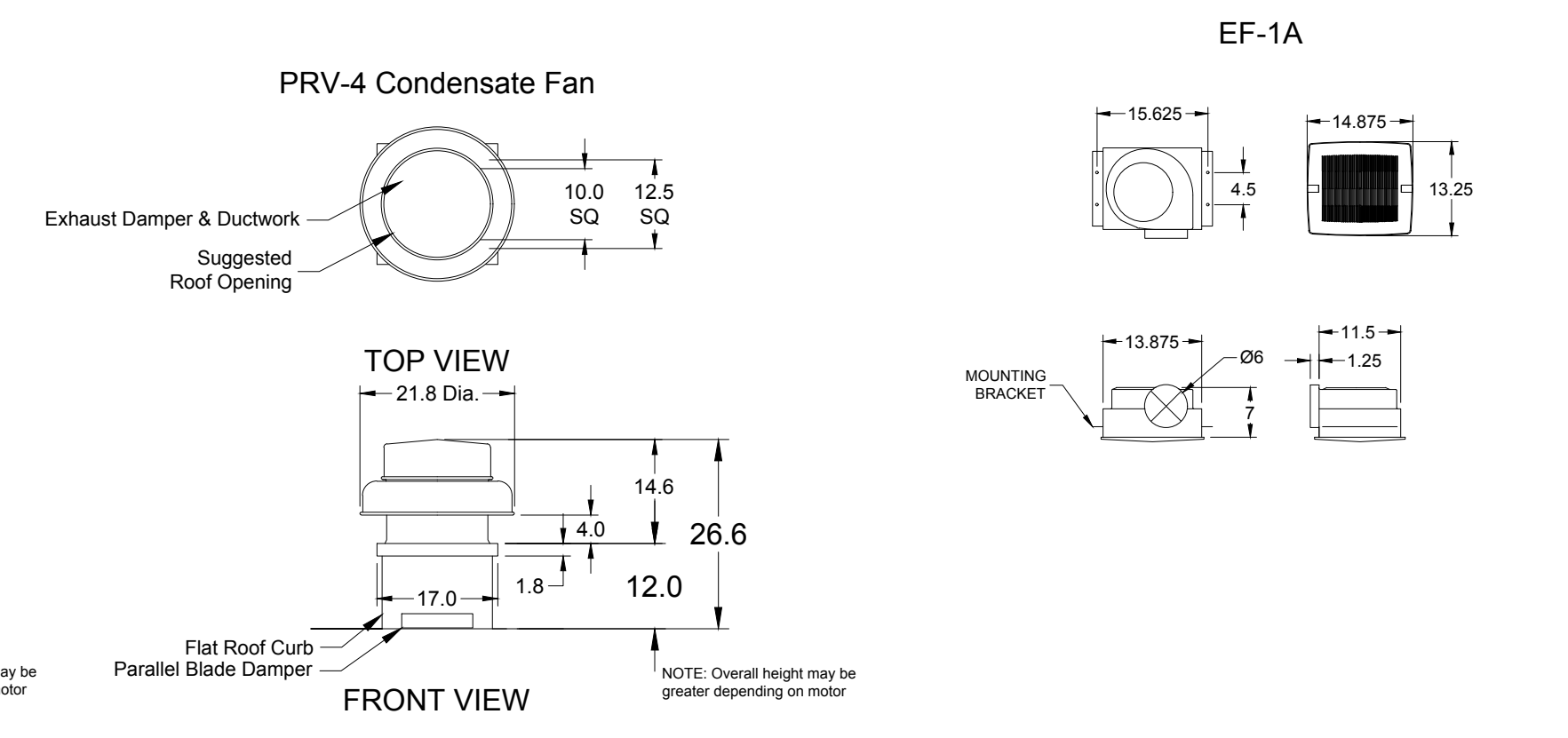
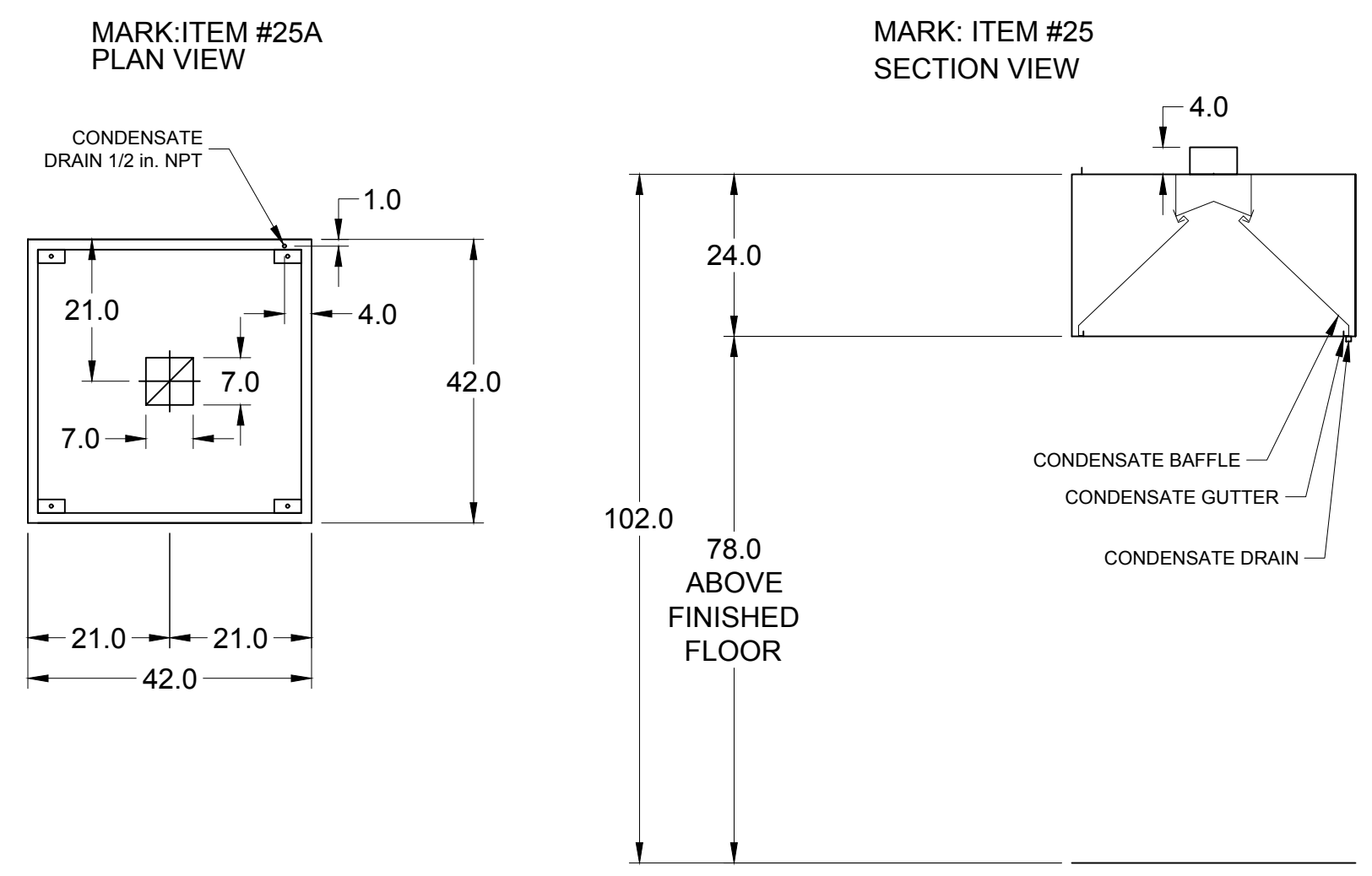
SUBMITTAL
Please return one approved print to your Accurex Representative including signature, date, and answers to all submittal "verify" notes and questions. Fabrication will not begin until after approved drawings are received.

APPROVED AS SUBMITTED
 APPROVED AS NOTED
 REJECTED - REVISE AND RESUBMIT

SIGNATURE _____ DATE _____

REV	DESCRIPTION	DATE

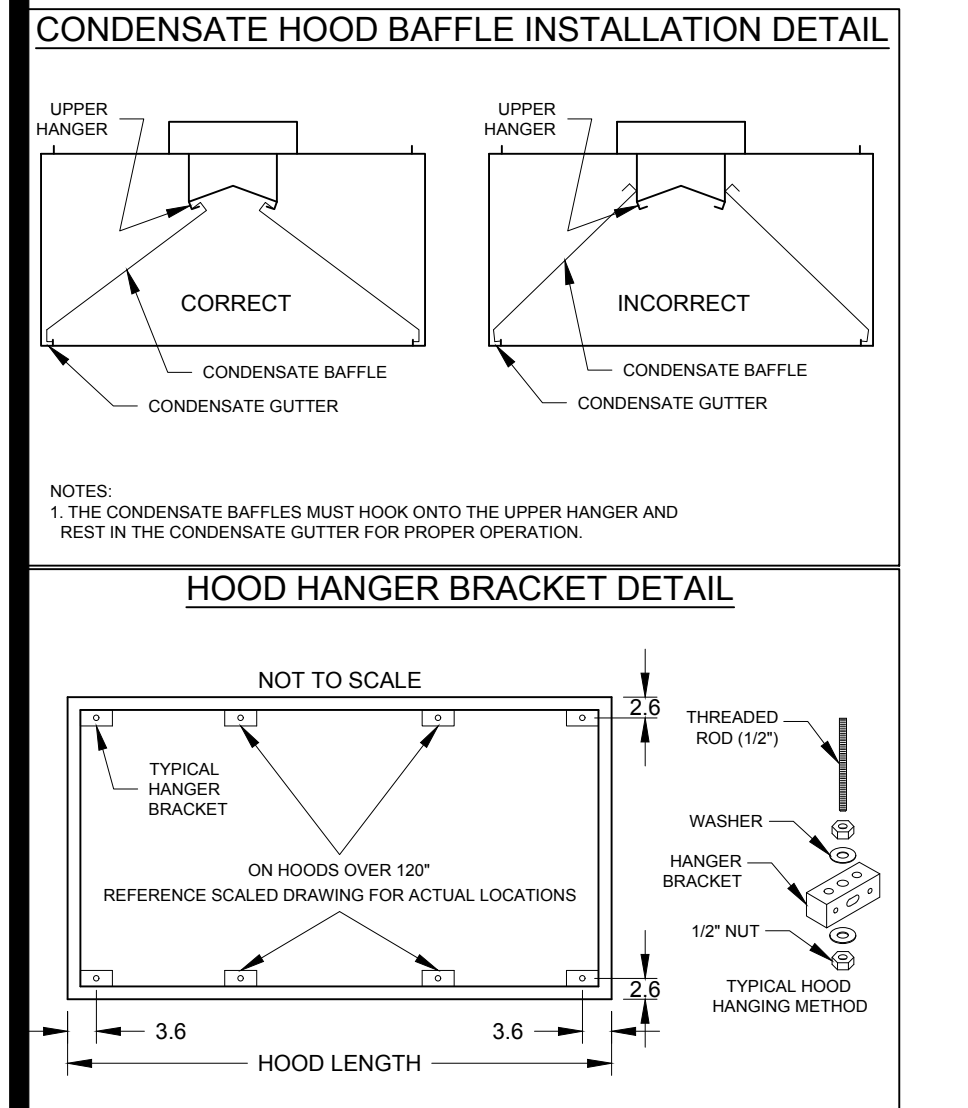
ACCUREX
CULVER'S MASTER TEMPLATE
1/24
C28805C



CONDENSATE HOOD BAFFLE INSTALLATION DETAIL

UPPER HANGER
CORRECT
INCORRECT
CONDENSATE BAFFLE
CONDENSATE GUTTER

NOTES:
1. THE CONDENSATE BAFFLES MUST HOOK ONTO THE UPPER HANGER AND REST IN THE CONDENSATE GUTTER FOR PROPER OPERATION.



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. Accurex will not accept liability for problems that result from sub-standard installation, including field electrical wiring that deviate from supplied diagrams, jobsite conditions (ductwork, fuel types and structural conditions) that Accurex 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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SUBMITTAL

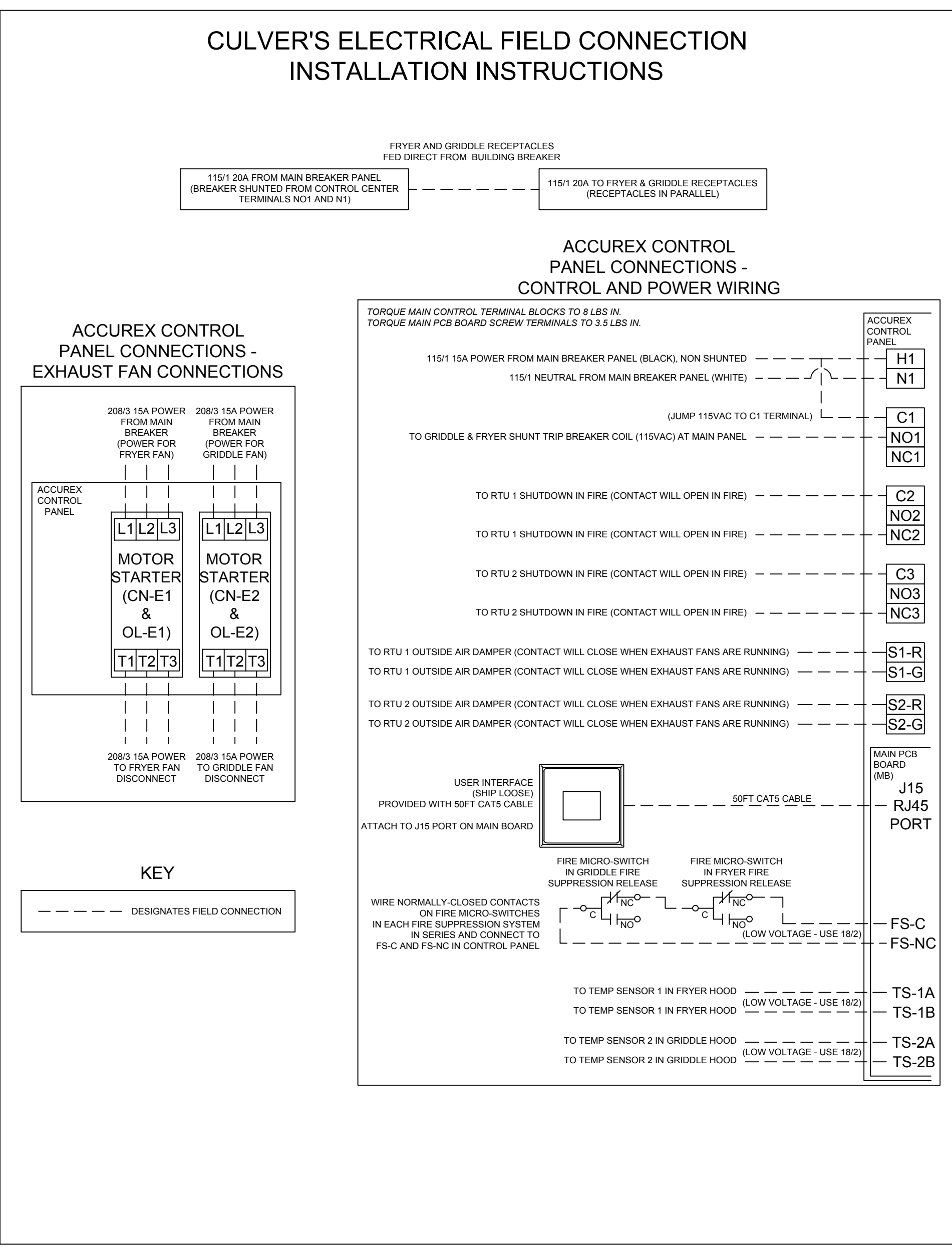
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APPROVED AS SUBMITTED
 APPROVED AS NOTED
 REJECTED - REVISE AND RESUBMIT

SIGNATURE _____ DATE _____



**CULVER'S ELECTRICAL FIELD CONNECTION
 INSTALLATION INSTRUCTIONS**



CULVER'S INSTALLATION AND OPERATION GUIDE
Accurex Control Panel, Fans, Appliance Receptacles

Mechanical Scope of Work

- 1) Mechanical Contractor to mount Accurex Control Panel (Model XKC, 18" W x 20" H x 6" D) in specified location above drop ceiling.
- 2) Assuming all electrical has been completed by Electrical Contractor, Mechanical Contractor to start up fans by pressing "Fans" button on user interface. Verify power to exhaust fans.

Electrical Scope of Work

- 1) Electrical Contractor shall provide one 115VAC 20A circuit with shunt trip breaker (115VAC trip coil) for fryer and griddle receptacles. This circuit will have these receptacles, two for the fryers and one for the griddle. Circuit to be powered directly from circuit breaker.
- 2) Electrical Contractor to install Accurex user interface on wall (user interface provided by Accurex, recess into wall). Connect user interface back to Accurex control panel using factory-provided CAT5 cable (connect to J15 port on main board in Accurex control panel).
- 3) Electrical Contractor to run a separate 115VAC 15A circuit (from non-shunted breaker) to Accurex control panel terminal blocks H1 and N1 to power controls.
- 4) Electrical Contractor to run two 208/60/3 15A circuits from main breaker panel to each motor starter in the Accurex control panel (L1, L2, L3). Run power from T1, T2, T3 on each motor starter in Accurex control panel to kitchen exhaust fan disconnects.
- 5) Electrical Contractor to connect jumper wire from terminal block H1 to terminal block C1 in Accurex control panel, and then run wires from NO1 and N1 in Accurex control panel back to 115VAC shunt-trip breaker coil for fryer and griddle receptacles.
- 6) Electrical Contractor to wire a normally-closed contact off of a micro-switch in each fire suppression system release (one FS for fryer hood, and one FS for griddle hood) in series, and tie this series circuit loop back to FS-C and FS-NC on the main control board (MB) in the Accurex control panel.
- 7) Electrical Contractor to wire RTU 1 & 2 damper control to Accurex control panel terminal blocks S1-R / S1 - G and S2-R / S2-G as indicated on wiring diagram.
- 8) Electrical Contractor to wire RTU 1 & 2 control (8 amp max) circuits to Accurex control panel terminal blocks C2 and NC2 for RTU1 and C3 and NC3 for RTU 2 to shut down units in a fire.
- 9) Electrical Contractor to wire temp sensor in fryer hood collar back to Accurex control panel and land on TS-1A / TS-1B on main PCB board (use 18 to 22ga plenum rated cable)
- 10) Electrical Contractor to wire temp sensor in griddle hood collar back to Accurex control panel and land on TS-2A / TS-2B on main PCB board (use 18 to 22ga plenum rated cable)

Sequence of Operation

- 1) Make sure fryer and griddle receptacles are receiving power (breaker feeding appliance outlets is on).
- 2) Make sure RTU 1 & RTU 2 are both receiving power (breaker feeding RTUs are on and RTU disconnects are on).
- 3) Turn fans on via "Fans" button on user interface. Both fryer and griddle fans should turn on, and RTU 1 & 2 outside air dampers should open/adjust to bring in design OA.
- 4) Before fire system agent tanks are installed, manually trigger fire system while fan switch is on. This should accomplish the following:
 - Display on user interface should stated "FIRE DETECTED"
 - Shunt trip breaker will trip causing a loss of power to fryer and griddle receptacles
 - Gas valve will close shutting gas off to the fryer and griddle
 - Exhaust fans will remain on
 - RTU 1 & 2 will shut down
- 5) Put fire system in the "cocked" position and reset shunt trip breaker. Breakers feeding appliance outlets should be able to be reset manually, and RTU's power should be restored.
- 6) Press "Fans" button on the user interface to turn the fans off. This will shut down power to the fans. RTU outside air dampers will close. RTUs will remain operational providing 100% return air only.

