



**Chick-fil-A**  
 5200 Buffington Road  
 Atlanta, Georgia  
 30349-2998

**Kurzynske & Associates**  
 2705 Lebanon Pike - Suite One  
 Nashville, Tennessee 37214  
 Telephone: (615) 255-5203



10/28/22

**CHICK-FIL-A**  
**RELO CHRISTIANSBURG**  
 FSU  
 2580 NORTH FRANKLIN STREET  
 CHRISTIANSBURG, VA 24073

**FSR#05049**

BUILDING TYPE / SIZE: P13 LE LRG  
 RELEASE: 22.02  
 PRINTED FOR: CONSTRUCTION  
 REVISION SCHEDULE

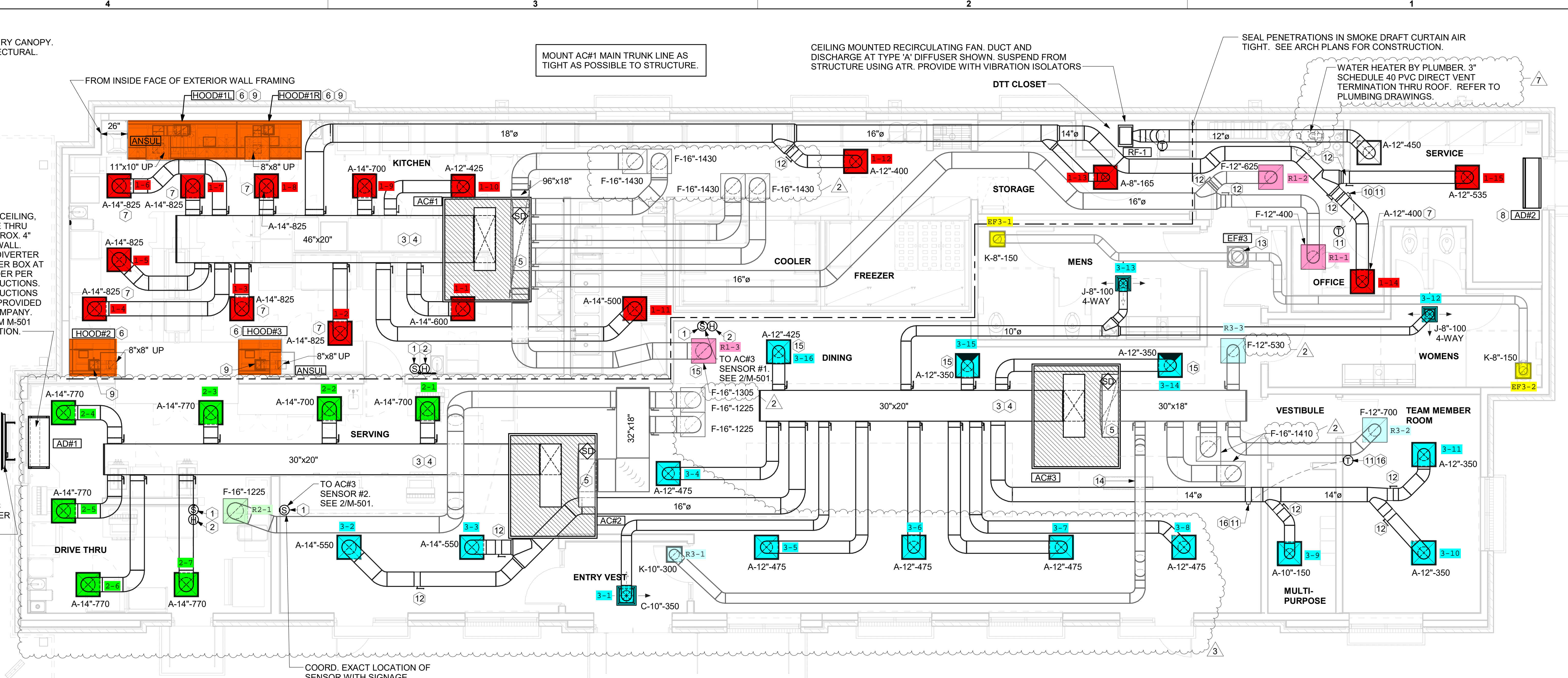
NO.	DATE	DESCRIPTION
1	06/22/2022	PLAN REVIEW
2	08/01/2022	EDC
3	10/28/2022	PLAN REVIEW

CONSULTANT PROJECT # 22077.EH.S  
 DATE 04/26/2022  
 DRAWN BY BLM

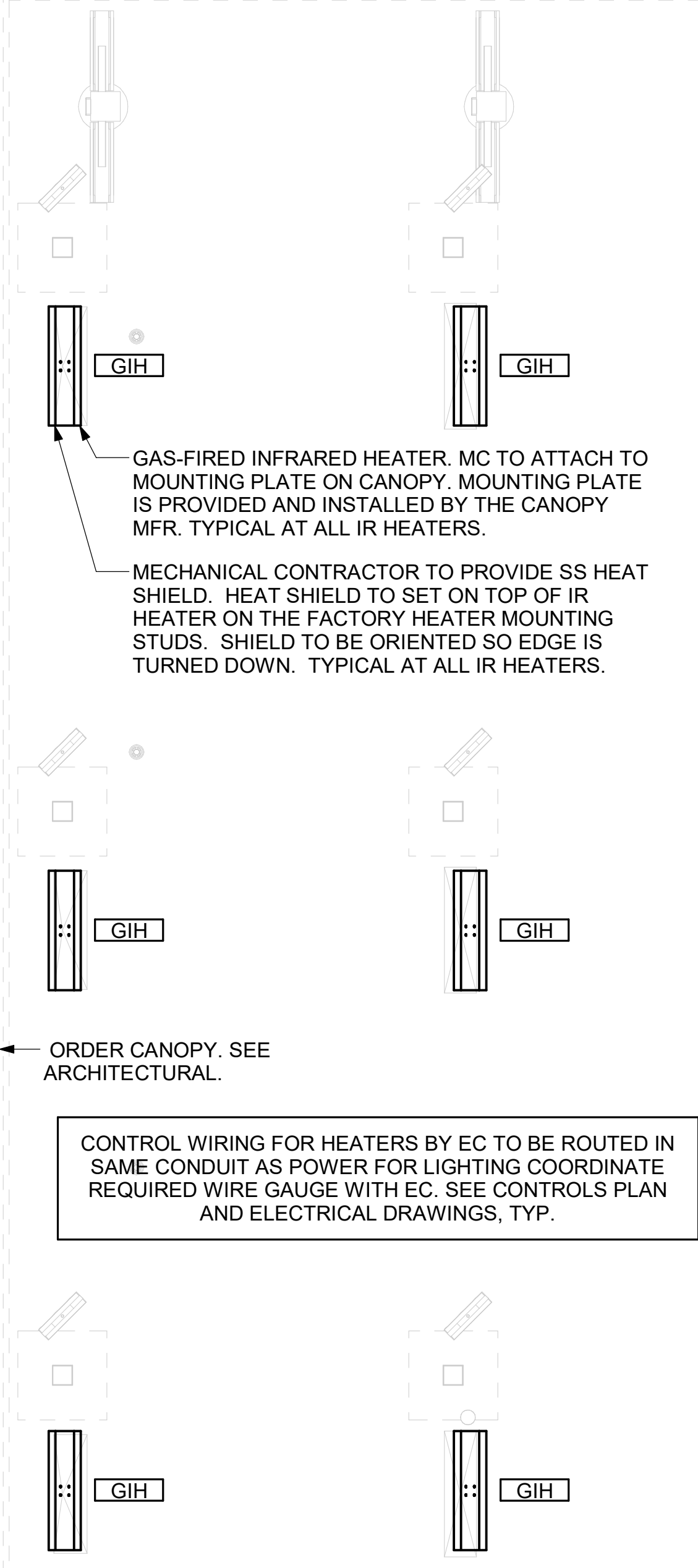
Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET MECHANICAL FLOOR PLAN  
 SHEET NUMBER

**M-201**



**1 MECHANICAL FLOOR PLAN**  
 1/4" = 1'-0"



**2 MECHANICAL FLOOR PLAN - ORDER CANOPY**  
 1/4" = 1'-0"

**SHEET NOTES**

- DUCT SIZES SERVING DIFFUSERS AND GRILLES ARE SAME SIZE AS DIFFUSER OR GRILLE NECK UNLESS NOTED OTHERWISE.
- FLEXIBLE DUCT NOT SHOWN FOR CLARITY. ALL TAKE-OFFS SHALL INCLUDE FLEXIBLE DUCT. SEE DETAIL 1/M-401 FOR FLEXIBLE DUCT INSTALLATION REQUIREMENTS.
- FOR SUPPLY AND RETURN OPENINGS, CUT OPENING AROUND DUCT DROPS 4" TO 8" MINIMUM (EXCEPT WHERE STRUCTURE PREVENTS THIS). SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- AT EACH PIECE OF ROOF EQUIPMENT, PROVIDE A PLASTIC ENGRAVED LABEL WITH 1" HIGH WHITE LETTERS ON A BLACK BACKGROUND. THE LABEL IS TO HAVE A SELF ADHESIVE BACKING.
- UNLESS NOTED OTHERWISE, MC TO ADJUST ALL DIFFUSER AIR PATTERN DEFLECTORS TO THROW HORIZONTALLY ALONG THE CEILING.
- SUPPORT ALL DUCT DROPS AT BASE OF DROP FROM STRUCTURE.

**CANOPY GENERAL NOTES**

- COORDINATE NEW WORK WITH EXISTING CONDUIT, STRUCTURE, AND PIPING. FIELD VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.
- COORDINATE LOCATION AND RESPONSIBILITIES FOR UNDERGROUND PIPING AND ASSOCIATED TRENCHING WITH GENERAL CONTRACTOR PRIOR TO START OF WORK.
- EXPOSED GAS PIPING SHALL BE PAINTED BY GENERAL CONTRACTOR.
- ACTUAL NUMBER OF GAS INFRARED HEATERS WILL BE DETERMINED BY SITE-SPECIFIC CANOPY LAYOUT AND EQUIPMENT LOCATIONS, AS INDICATED ON ARCHITECTURAL PLANS.
- CONTROL WIRING FOR HEATERS BY EC. COORDINATE REQUIRED WIRE GAUGE WITH EC. SEE CONTROLS PLAN AND ELECTRICAL DRAWINGS, TYP.

**KEY NOTES**

- MOUNT REMOTE SENSOR ON WALL AT 5'-0" AFF U.N.O. AND ROUTE WIRING BACK TO SUNCOAST TEMP CONTROL PANEL. FOR SENSOR SERVING AC#1, COORDINATE EXACT LOCATION WITH KITCHEN EQUIPMENT.
- MOUNT LENNOX HUMIDITY SENSOR ON WALL ABOVE SPACE TEMP SENSOR AND ROUTE WIRING TO UNIT ON ROOF.
- BRANCH TAKE-OFFS ARE NOT TO BE LOCATED CLOSER THAN 3'-0" FROM ANY OFFSET OR ELBOW INCLUDING THE SUPPLY AIR DROP FROM CURB.
- TRANSITION IN VERTICAL DROP FROM FULL SIZE OF CURB OPENING TO SIZE SHOWN. TRANSITION WITHIN CURB WHERE REQUIRED TO AVOID STRUCTURE. WHERE THE DUCT IS SHOWN OFFSET HORIZONTALLY, PROVIDE ELBOW WITH TURNING VANES. FOR DROPS WITH NO HORIZONTAL OFFSET, EXTEND DROP BELOW STRUCTURE TO ACCOMMODATE START COLLARS. TERMINATE DROP A MINIMUM 0'-10" ABOVE CEILING (0'-4" ABOVE CEILING IF REQUIRED TO ACCOMMODATE TAKE-OFF AND DROP IS NOT LOCATED DIRECTLY ABOVE A LIGHT).
- TRANSITION IN VERTICAL DROP FROM FULL SIZE OF CURB OPENING TO SIZE SHOWN. SEE DETAIL 6/M-401 FOR REQUIRED TRANSITION GEOMETRY. TRANSITION WITHIN CURB WHERE REQUIRED TO AVOID STRUCTURE. WHERE THE DUCT IS SHOWN OFFSET HORIZONTALLY, PROVIDE ELBOW WITH TURNING VANES. FOR DROPS WITH NO HORIZONTAL OFFSET, EXTEND DROP BELOW STRUCTURE TO ACCOMMODATE START COLLARS. TERMINATE DROP A MINIMUM 0'-10" ABOVE CEILING (0'-4" ABOVE CEILING IF REQUIRED TO ACCOMMODATE TAKE-OFF AND DROP IS NOT LOCATED DIRECTLY ABOVE A LIGHT).
- SEE ELEVATIONS ON M-301 FOR CJ FAN DUCTING REQUIREMENTS.
- MECHANICAL CONTRACTOR TO ADJUST PATTERN DEFLECTORS TO THROW STRAIGHT DOWN.
- AIR CURTAIN MOUNTED OVER DOOR HEADER AT 7'-2" AFF TO BOTTOM OF UNIT. PROVIDE BLOCKING IN WALL BEHIND AIR CURTAIN. USE FACTORY PRE-PUNCHED MOUNTING HOLES ON BACK SIDE OF AIR CURTAIN ONLY. ATTACH AIR CURTAIN TO WALL USING 3/8" LAG BOLTS. LENGTH AS REQUIRED TO FULLY PENETRATE BLOCKING. LOCATE MAGNETIC CONTACT TYPE MICROSWITCH IN DOOR FRAME ON STRIKE SIDE.
- HALTON KBD DAMPER AT HOOD COLLAR BY MECHANICAL CONTRACTOR. SEE HOOD ELEVATIONS ON M-301 FOR LOCATION.
- YOUNG REGULATOR 12" MODEL 4075-LMB24-IF ROUND ZONE DAMPER WITH MODEL T-720A AUTOMATIC CHANGEOVER THERMOSTAT. MOUNT T'STAT AT 4'-0" AFF. POWER OPEN/SPRING CLOSE. ADJUST MECHANICAL LIMIT FOR 50 CFM MINIMUM AIRFLOW. CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE ZONE DAMPER. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE ZONE DAMPER DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010. FOR PRICING AND AVAILABILITY. ZONE DAMPERS NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.
- PROVIDE 120V/24V 50 VA TRANSFORMER TO SERVE YOUNG REGULATOR ZONE DAMPER ACTUATOR AND THERMOSTAT. POWER TRANSFORMER FROM 120V POWER CIRCUIT THAT REMAINS LIVE 24/7. PROVIDE ALL NECESSARY WIRING AND COMPONENTS TO MAKE CONTROL AND POWER CONNECTIONS TO TRANSFORMER, ZONE DAMPER, AND THERMOSTAT PER MANUFACTURER'S IOM. THERE IS NO INTERLOCKING OR MONITORING BY WAY OF THE S.E.C. CFA-500 PANEL. SEE WIRING DIAGRAMS ON M-501.
- RUSKIN MDRS25 MVD W/LOCKING QUADRANT HANDLE.
- 10X10 EXHAUST DUCT DOWN.
- ROUTE DUCT WITHIN STRUCTURE.
- SA/RA GRILLE REQUIRES PRICE AMF SURFACE MOUNT ADAPTER FRAME.
- YOUNG REGULATOR 14" MODEL 4075-LMB24-IF ROUND ZONE DAMPER WITH MODEL T-720A AUTOMATIC CHANGEOVER THERMOSTAT. MOUNT T'STAT AT 4'-0" AFF. POWER OPEN/CLOSE/MODULATING. ADJUST MECHANICAL LIMIT FOR 50 CFM MINIMUM AIRFLOW. ADJUST MAXIMUM LIMIT TO FULLY OPEN POSITION. INITIAL BALANCE TO BE DONE WITH VAV AT THE FULL OPEN POSITION. CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE ZONE DAMPER. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE ZONE DAMPER DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010. FOR PRICING AND AVAILABILITY. ZONE DAMPERS NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.

**LEGEND**

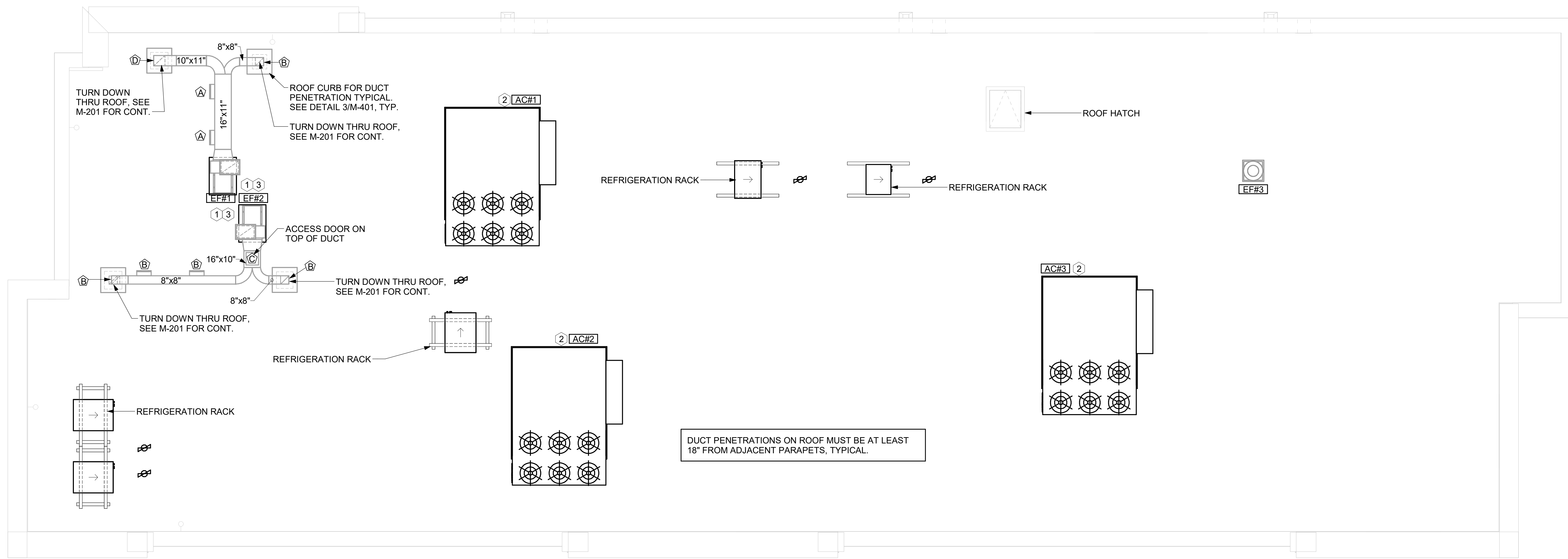
Symbol	DESCRIPTION	Symbol	DESCRIPTION
A-12-400	TYPE - NECK SIZE - CFM	EF#1	EXHAUST FAN #1 (TYP.)
[Symbol]	SPIN-IN FITTING WITH MANUAL BALANCING DAMPER, WITHOUT SCOOP	AC#1	AIR CONDITIONING UNIT #1 (TYP.)
[Symbol]	SPIN-IN HARD Ø FLEXIBLE Ø DIFFUSER	[Symbol]	RETURN/EXHAUST (TYP.)
(S)	REMOTE TEMPERATURE SENSOR	[Symbol]	SUPPLY DIFFUSER, SQ FACE (TYP.)
(H)	HUMIDITY SENSOR	(1)	PLAN NOTE REFERENCE
[Symbol]	SMOKE DETECTOR	[Symbol]	MANUAL VOLUME DAMPER
12x18	DUCT SIZE (reverse for elevation views) 1ST NUMBER - HORIZONTAL DIMENSION 2ND NUMBER - VERTICAL DIMENSION	[Symbol]	DIRECTION OF THROW ON DIFFUSER
[SW]	AIR DOOR SWITCH	[Symbol]	CLOSED AIR PATTERN DEFLECTOR
EC	ELECTRICAL CONTRACTOR	[GIH]	GAS INFRARED HEATER (TYP.)
MC	MECHANICAL CONTRACTOR	B/G	BELOW GRADE
		(T)	THERMOSTAT

**H.E.S. SYSTEM**  
 MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL SUNCOAST H.E.S. SYSTEM FOR ALL HOODS. SEE HOOD FAN/EQUIPMENT INTERLOCK WIRING DIAGRAM ON M-501 FOR MORE INFORMATION.

**AIR BALANCE SCHEDULE**

Mark	SUPPLY AIR	RETURN AIR	OUTSIDE AIR	EXHAUST AIR	BUILDING POSITIVE PRESSURE
AC#1	9500	8050	1450		
AC#2	5250	3675	1575		
AC#3	6000	4250	1750		
EF#1				1913	
EF#2				1402	
EF#3				300	
	20750	15975	4775	3615	1160

BIM 360/AVA\_05049\_RELO Christiansburg FSU\_2022.2\_FSR#05049\_RELO Christiansburg FSU\_MECH.rvt  
 10/26/2022 9:21:54 AM  
 30-LE-05049-M-201-MECHANICAL FLOOR PLAN



1 MECHANICAL ROOF PLAN  
1/4" = 1'-0"

**SHEET NOTES**

- ALL DUCTWORK AND UNFINISHED METAL ON ROOF EXCEPT STAINLESS SHALL BE PREPARED WITH TWO COATS OF SHERWIN WILLIAMS B66-200 SERIES DTM WHITE ACRYLIC SEMI-GLOSS INDUSTRIAL MAINTENANCE COATING. DEGREASE AND PRIME BARE METAL SURFACE WITH ONE COAT OF SHERWIN WILLIAMS DTM ACRYLIC PRIMER PRIOR TO PAINTING.
- AT EACH PIECE OF ROOF EQUIPMENT, PROVIDE A PLASTIC ENGRAVED LABEL WITH 1" HIGH WHITE LETTERS ON A BLACK BACKGROUND. THE LABEL IS TO HAVE A SELF ADHESIVE BACKING.
- MAINTAIN 18" CLEARANCE FROM GREASE EXHAUST DUCTWORK ABOVE ROOF TO ANY COMBUSTIBLE CONSTRUCTION INCLUDING PARAPET WALLS.

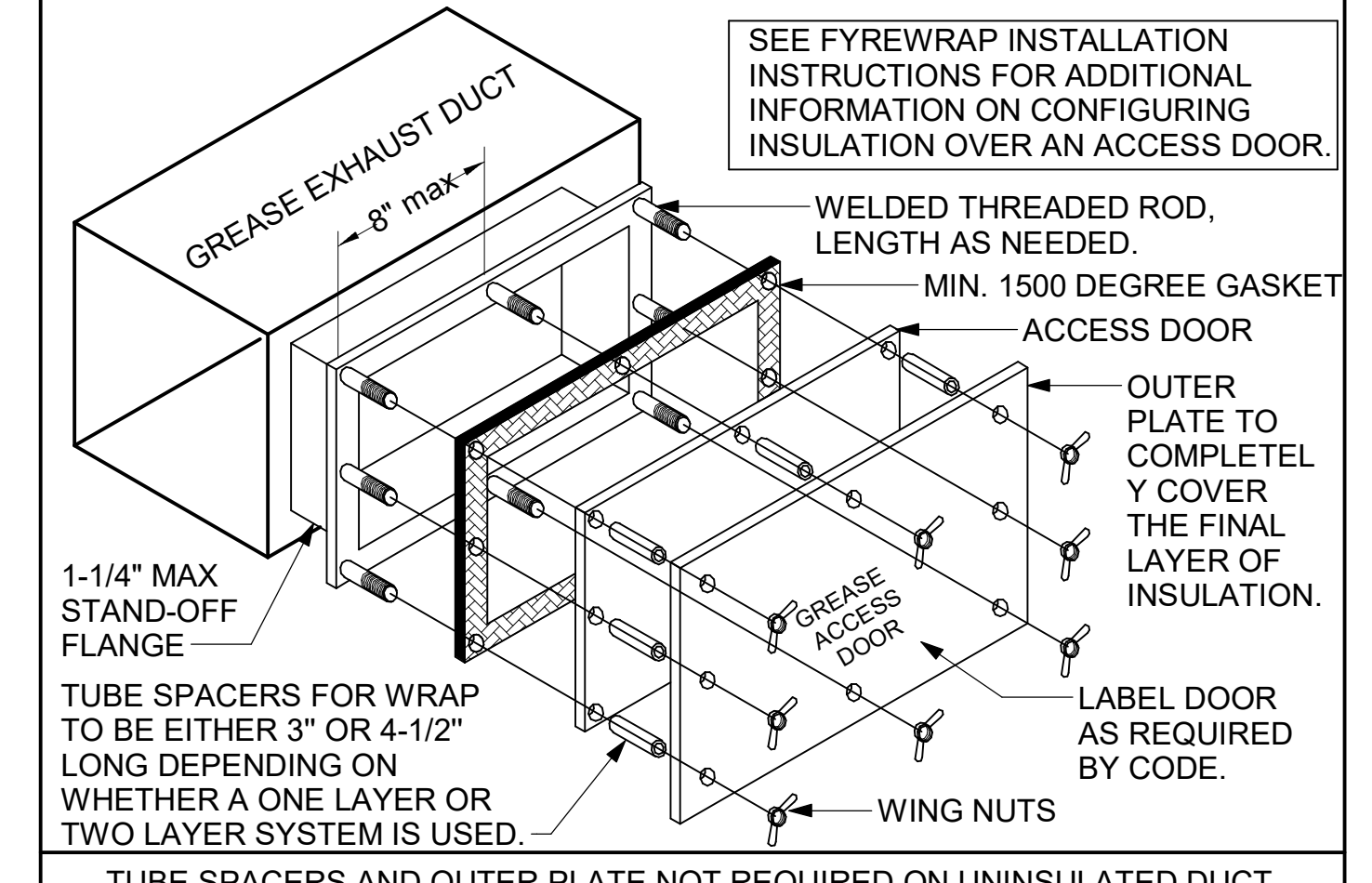
**KEY NOTES**

- FABRICATE DISCHARGE AIR NOZZLE. VERIFY EXHAUST TERMINATION IS A MINIMUM 10'-0" FROM PARAPETS AND OUTSIDE AIR INTAKES. SEE DETAIL 3/M-401.
- MECHANICAL CONTRACTOR TO SEE ARCHITECTURAL ROOF PLAN FOR NOTES REGARDING LEVELING FRAMES FOR RTUS. COORDINATE WITH GENERAL CONTRACTOR EXACT LOCATIONS AND SIZE NEEDED.
- GREASE EXHAUST DUCT LOCATED ON ROOF SHALL SLOPE 1/4" PER FOOT TOWARDS THE HOOD, THE FAN, OR A COMBINATION OF THE TWO SUCH THAT NO PORTION OF THE RADIUS ELBOW AT THE CURB IS BELOW THE CURB CAP AND SUCH THAT THE FAN BASE SETS DIRECTLY ON THE CURB RAILS. THE BOTTOM OF THE RADIUS ELBOW MAY BE EVEN OR FLUSH WITH THE CURB CAP, BUT NOT BELOW THE CAP. THE DUCT AT THE FAN MUST BE CENTERED ON THE FAN INLET. THE MC MAY ADD A VERTICAL RISER AT THE RADIUS ELBOW LOCATED AT THE DUCT CURB AS NEEDED IN ORDER TO CENTER THE DUCT ON THE FAN INLET.

**GREASE ACCESS DOOR SCHEDULE**

MARK	OPENING SIZE	DOOR SIZE	REMARKS
A	9H X 14W	11H X 16W	1
B	6H X 14W	8H X 16W	1
C	12H X 12W	14H X 14W	1
D	8H X 14W	10H X 16W	1

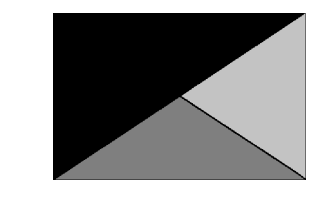
1. ACCESS DOORS SHALL BE U.L. 1978 LISTED OR FIELD FABRICATED, REQUIRE NO TOOLS FOR REMOVAL AND MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE IMC. ACCESS DOOR ASSEMBLY SHALL BE WELDED IN PLACE TO THE GREASE EXHAUST DUCT AND THE ACCESS DOOR SHALL BE SECURED WITH THUMB SCREWS. ACCESS DOORS SHALL BE SEALED WITH A MINIMUM 1500 DEGREE GASKET MATERIAL EQUIVALENT TO THAT MANUFACTURED BY BRENTON INDUSTRIES, INC (800) 382-2491.



BIM: 360/VA\_05049\_RELO Christiansburg FSU\_2022.2\_FSR#05049\_RELO Christiansburg FSU\_MEC.rvt  
8/30/2022 2:26:04 PM  
30-LE-05049-M-250-MECHANICAL ROOF PLAN



**Chick-fil-A**  
2000 Peachtree Dunwoody Road  
Atlanta, Georgia  
30349-2998



**Kurzynske & Associates**  
2705 Lebanon Pike - Suite One  
Nashville, Tennessee 37214  
Telephone: (615) 255-5203



09/06/22

**CHICK-FIL-A**  
**RELO CHRISTIANSBURG**  
**FSU**  
2580 NORTH FRANKLIN STREET  
CHRISTIANSBURG, VA 24073

**FSR#05049**

BUILDING TYPE / SIZE: P13 LE LRG  
RELEASE: 22.02  
PRINTED FOR: CONSTRUCTION  
REVISION SCHEDULE

NO.	DATE	DESCRIPTION

CONSULTANT PROJECT # 22077.EH.S  
DATE 04/26/2022  
DRAWN BY BLM

Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET MECHANICAL ROOF PLAN

SHEET NUMBER

**M-250**

**GREASE EXHAUST DUCT CLEARANCE NOTE:**  
 CLEARANCES ABOVE CEILING ARE TIGHT. MECHANICAL CONTRACTOR TO FIELD VERIFY EXACT ROUTING AND CLEARANCES PRIOR TO FABRICATING GREASE EXHAUST DUCT.

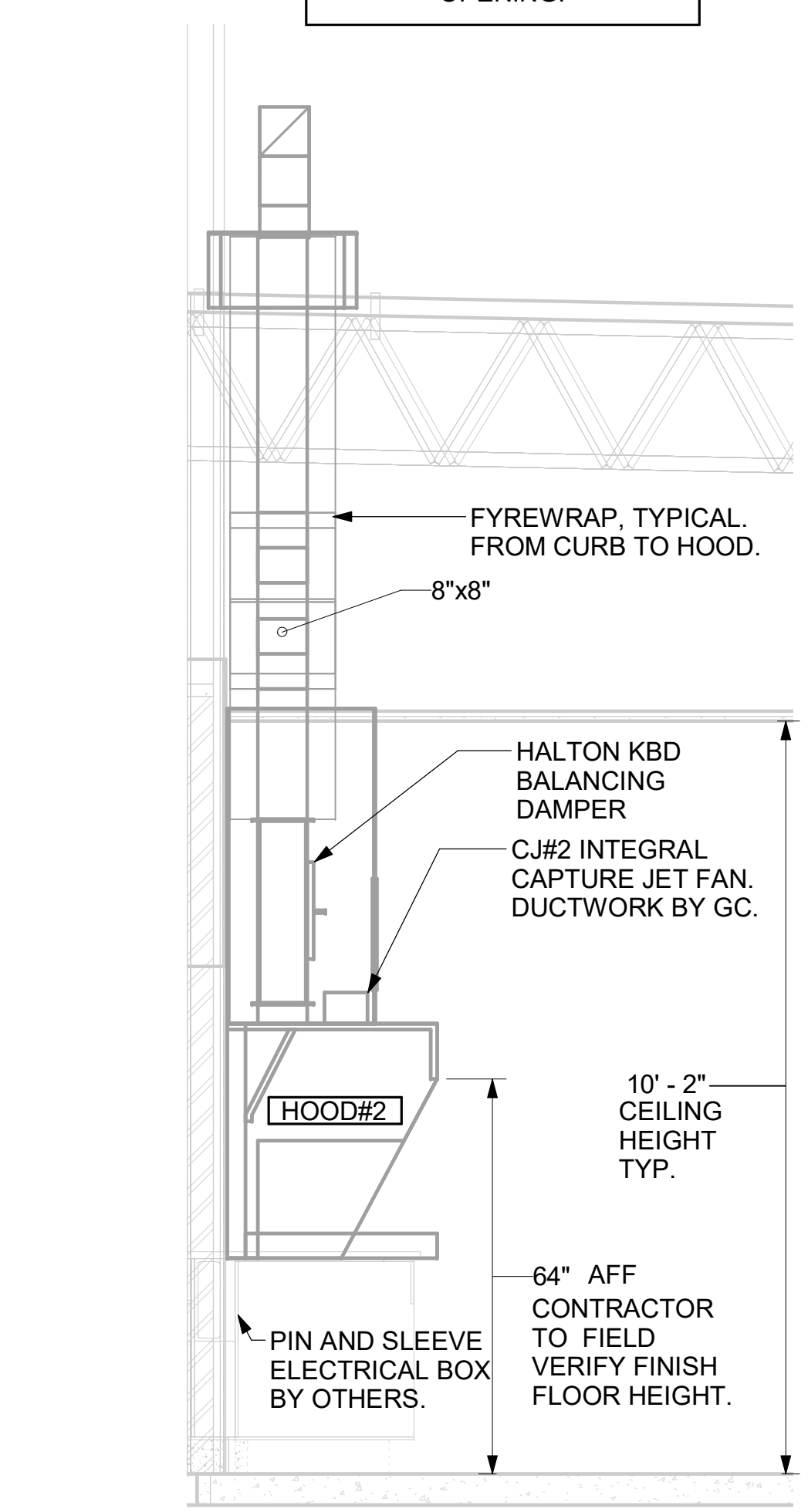
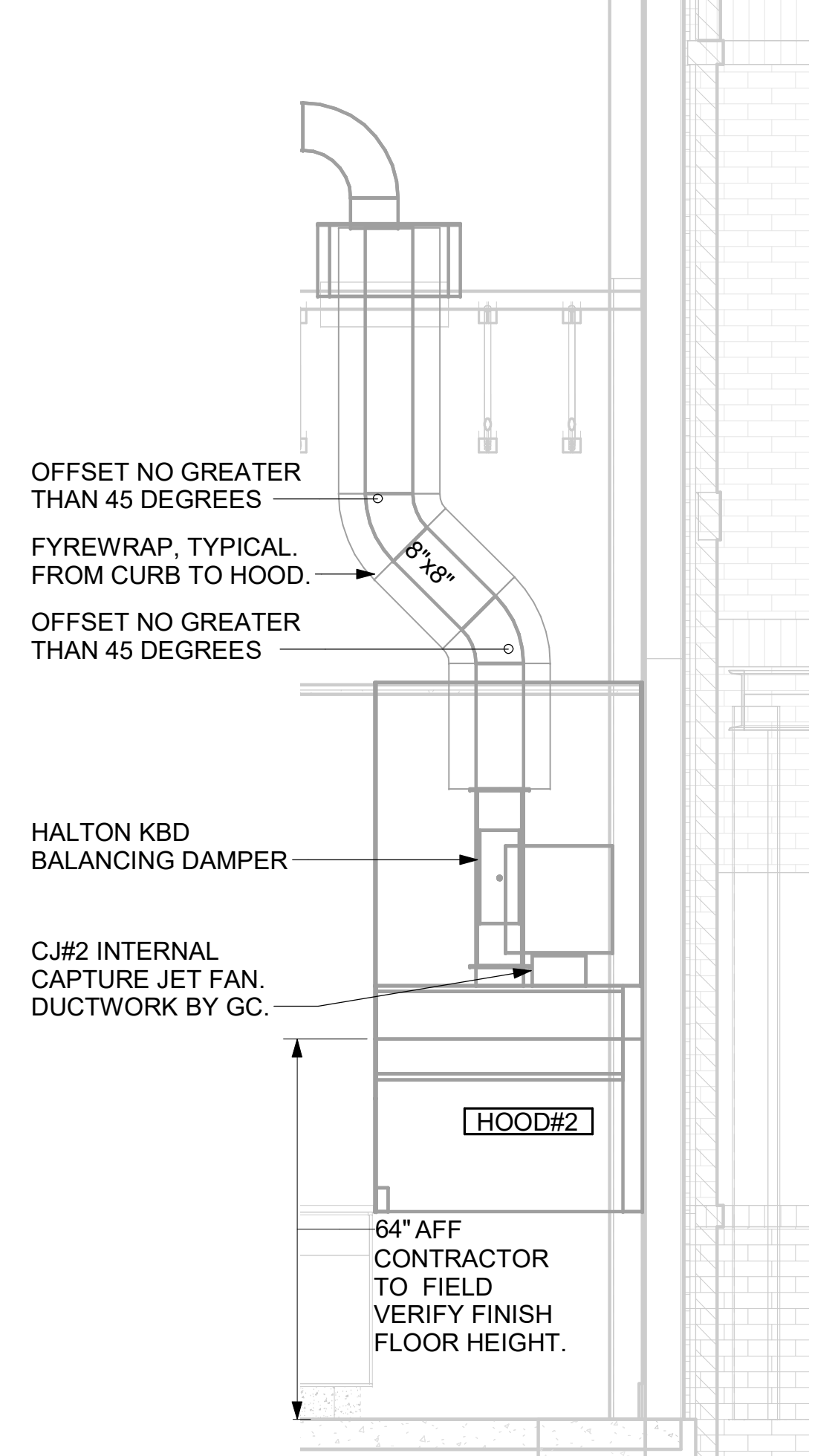
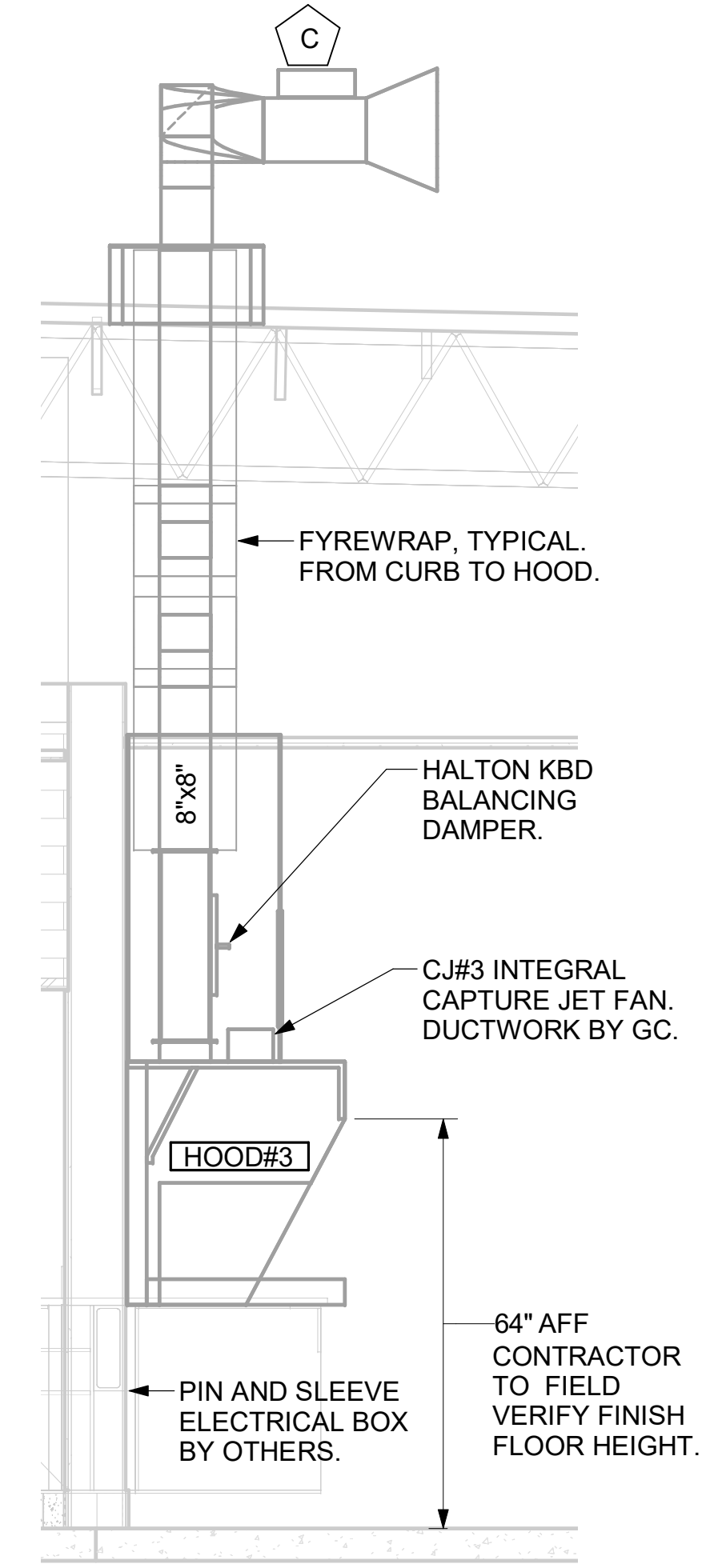
**CLEANOUT DOOR NOTE:**  
 DUCT WRAP SHALL BE APPLIED TO THE CLEANOUT DOOR PER THE WRAP MFR'S INSTALLATION INSTRUCTIONS, NO EXCEPTIONS. ALSO, THE CLEANOUT DOOR MUST BE REMOVABLE WITHOUT TOOLS AND MUST BE CLEARLY AND PERMANENTLY LABELED.

HOOD SCHEDULE											
MARK	EXHAUST CFM	SP @ TAB PORT	CAPTURE JET CFM & S.P.	TYPE	COLLAR SIZE	WIDTH	DEPTH	HEIGHT	MANUFACTURER	MODEL	REMARKS
HOOD#1L	1204	0.13"	80 @ 0.30"	BACKSHELF	14"X8"	107"	37"	38"	HALTON	KVL-2 IC 1	
HOOD#1R	709	0.13"	47 @ 0.30"	BACKSHELF	8"X8"	63"	37"	38"	HALTON	KVL-2 IC 1	
HOOD#2	701	0.30"	30 @ 0.29"	BACKSHELF	8"X8"	45"	34"	38"	HALTON	KVL-C IC 1	
HOOD#3	701	0.30"	30 @ 0.29"	BACKSHELF	8"X8"	42"	34"	38"	HALTON	KVL-C IC 1	
NOTES	DIMENSIONS OF HOODS INCLUDE BACK AND SIDE SPACERS (HEIGHT DOES NOT INCLUDE CLOSURE PANELS).										
REMARKS	1. REFER TO HOOD SHOP DRAWINGS FOR HOOD OPTIONS AND CONSTRUCTION. SHOP DRAWINGS ARE INCLUDED FOR REFERENCE ON SHEET MH-101.										

- KITCHEN HOOD SYSTEMS NOTES**
- CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT WITH HALTON CO. FOR THE HOODS. CHICK-FIL-A WILL PURCHASE AND PROVIDE THE HOODS FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR RECEIVING THE HOODS. CONTACT HALTON CO. AT 270-237-5600 FOR MORE INFO.
  - THE FIRE SUPPRESSION SYSTEM SHALL CONSIST OF A COMPLETE WET ANSUL SYSTEM FURNISHED BY HALTON. THE HOOD SHALL BE FURNISHED PRE-PIPED BY HALTON.
  - THE R-102 ANSUL FIRE SUPPRESSION SYSTEM EXTERNAL TO THE HOODS SHALL BE INSTALLED IN ACCORDANCE WITH HOOD MANUFACTURER'S SHOP DRAWINGS BY AN AUTHORIZED ANSUL SYSTEM INSTALLER SELECTED AND HIRED BY HALTON. COST FOR ANSUL INSTALLATION INCLUDED IN PRICE OF HOODS TO CFA.
  - HOOD EXHAUST DUCTWORK SHALL BE 16 GA. BLACK STEEL WITH CONTINUOUS LIQUID TIGHT WELD OF JOINTS & SEAMS.
  - TURNS IN GREASE EXHAUST DUCTWORK SHALL BE LONG RADIUS TYPE, WITH A CENTERLINE RADIUS R=3W/2, UNLESS OTHERWISE NOTED. NO MITERED FITTINGS ALLOWED.
  - ALL STAINLESS STEEL CLOSURE PANELS SHALL BE SUPPLIED BY HOOD MANUFACTURER AND INSTALLED BY THE MECHANICAL CONTRACTOR ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
  - SLOPE ALL GREASE EXHAUST DUCT BACK TO HOOD AT 1/4" PER FOOT OF RUN.
  - WRAP NEW GREASE DUCT WITH UNIFRAX FYREWAP. INSULATION ON ACCESS DOORS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTALLATION RECOMMENDATIONS. UNIFRAX FYREWAP PRODUCT USED SHALL MEET LOCAL CODE REQUIREMENTS.
  - SUPPORT ALL HOODS WITH THREADED ROD AT EACH FACTORY SUPPORT POINT. EACH SUPPORT POINT MUST SUPPORT THE HOOD WEIGHT EQUALLY. ATTACH TO STRUCTURE AS DETAILED ON STRUCTURAL DRAWINGS. ATTACH HOOD TO WALL AT 16" INTERVALS ALONG FULL LENGTH OF HOOD ON TOP AND BOTTOM. ATTACHMENT TO WALL REQUIRES FIELD DRILLING OF SUPPORT ANGLE AT BACK OF HOODS. EACH WALL ATTACHMENT POINT MUST OCCUR AT A WALL STUD. ATTACHMENT HARDWARE TO BE #12-24 HEX HEAD SHEET METAL SCREW EQUAL TO TETRON SDS EDT265, LENGTH AS REQUIRED TO FULLY PENETRATE THE STUD.
  - MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL SUNCOAST H.E.S. SYSTEM FOR ALL HOODS. SEE HOOD FAN/EQUIPMENT INTERLOCK WIRING DIAGRAM ON M-501 FOR MORE INFORMATION.

SET RIGHT SIDE OF HOOD#3 FLUSH WITH FINISHED EDGE OF PASS THRU OPENING.

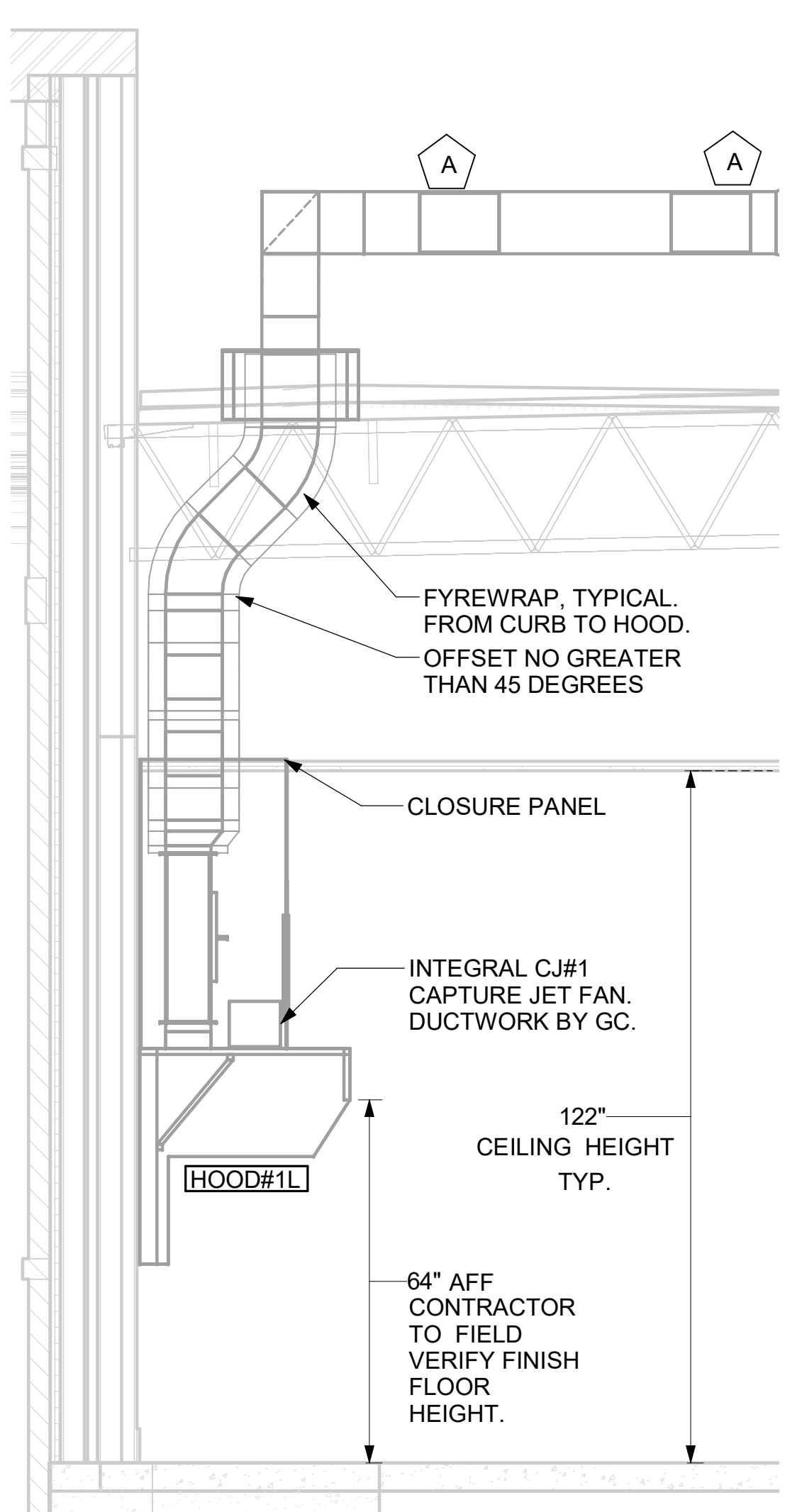
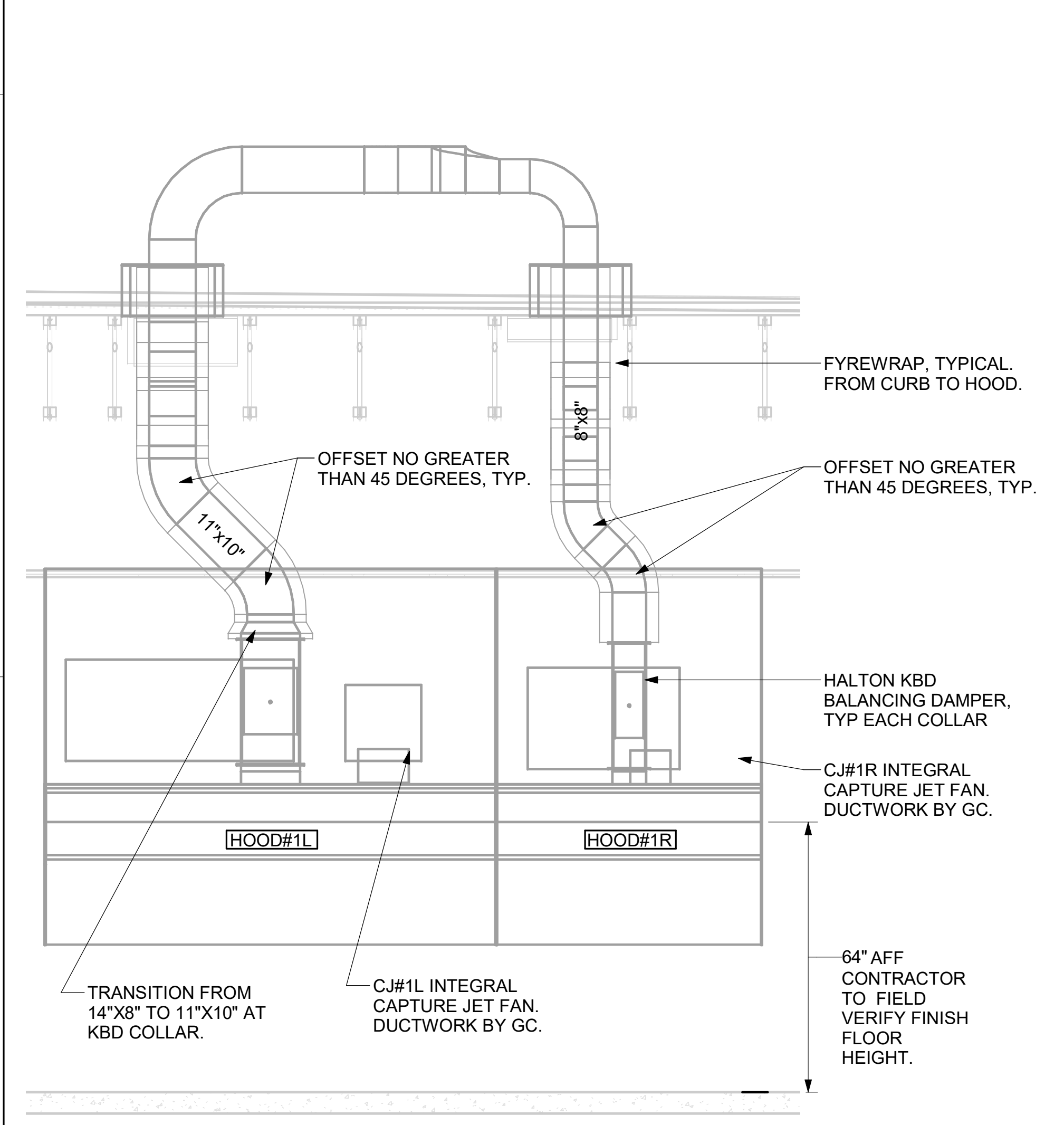
SET LEFT SIDE OF HOOD#2 FLUSH WITH FINISHED EDGE OF PASS THRU OPENING.



7 HOOD ELEVATION - HOOD#3 NOT TO SCALE

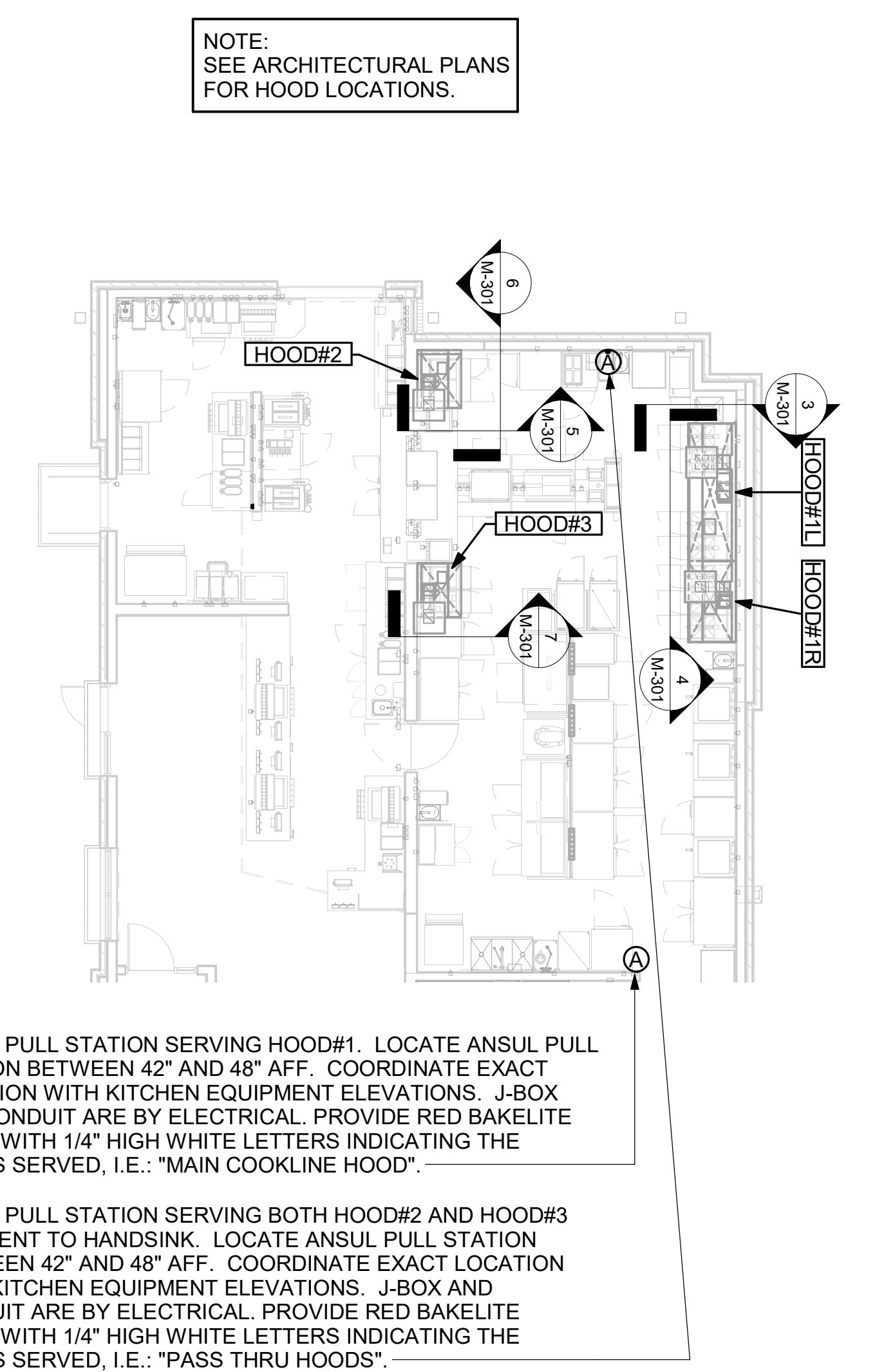
6 HOOD ELEVATION - HOOD#2 - FRONT NOT TO SCALE

5 HOOD ELEVATION - HOOD#2 - SIDE NOT TO SCALE



4 HOOD ELEVATION - HOOD#1 - FRONT NONE

3 HOOD ELEVATION - HOOD#1 - SIDE NOT TO SCALE



1 HOOD LAYOUT 1/8" = 1'-0"

ANSUL PULL STATION SERVING HOOD#1. LOCATE ANSUL PULL STATION BETWEEN 42" AND 48" AFF. COORDINATE EXACT LOCATION WITH KITCHEN EQUIPMENT ELEVATIONS. J-BOX AND CONDUIT ARE BY ELECTRICAL. PROVIDE RED BAKELITE LABEL WITH 1/4" HIGH WHITE LETTERS INDICATING THE HOODS SERVED, I.E.: "MAIN COOKLINE HOOD".

ANSUL PULL STATION SERVING BOTH HOOD#2 AND HOOD#3 ADJACENT TO HANDSINK. LOCATE ANSUL PULL STATION BETWEEN 42" AND 48" AFF. COORDINATE EXACT LOCATION WITH KITCHEN EQUIPMENT ELEVATIONS. J-BOX AND CONDUIT ARE BY ELECTRICAL. PROVIDE RED BAKELITE LABEL WITH 1/4" HIGH WHITE LETTERS INDICATING THE HOODS SERVED, I.E.: "PASS THRU HOODS".

NOTE: SEE ARCHITECTURAL PLANS FOR HOOD LOCATIONS.



**Chick-fil-A**  
 5200 Buffington Road  
 Atlanta, Georgia  
 30349-2998

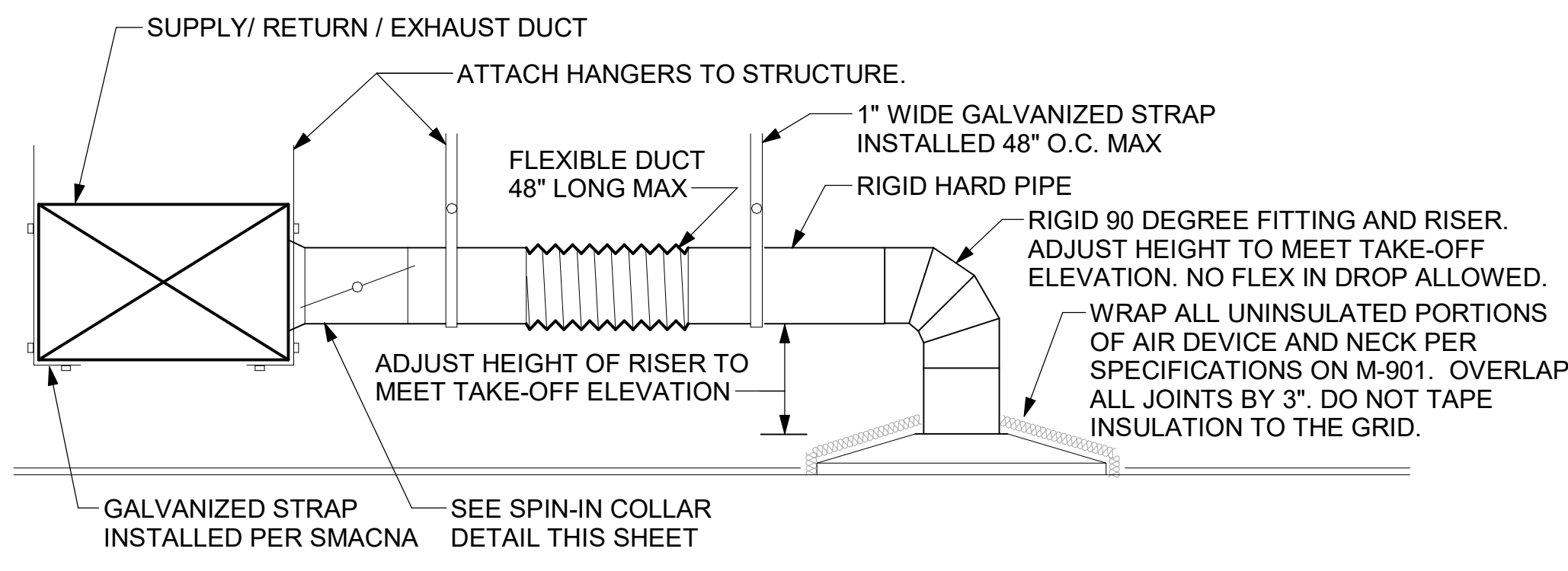
**Kurzynske & Associates**  
 2705 Lebanon Pike - Suite One  
 Nashville, Tennessee 37214  
 Telephone: (615) 255-5203



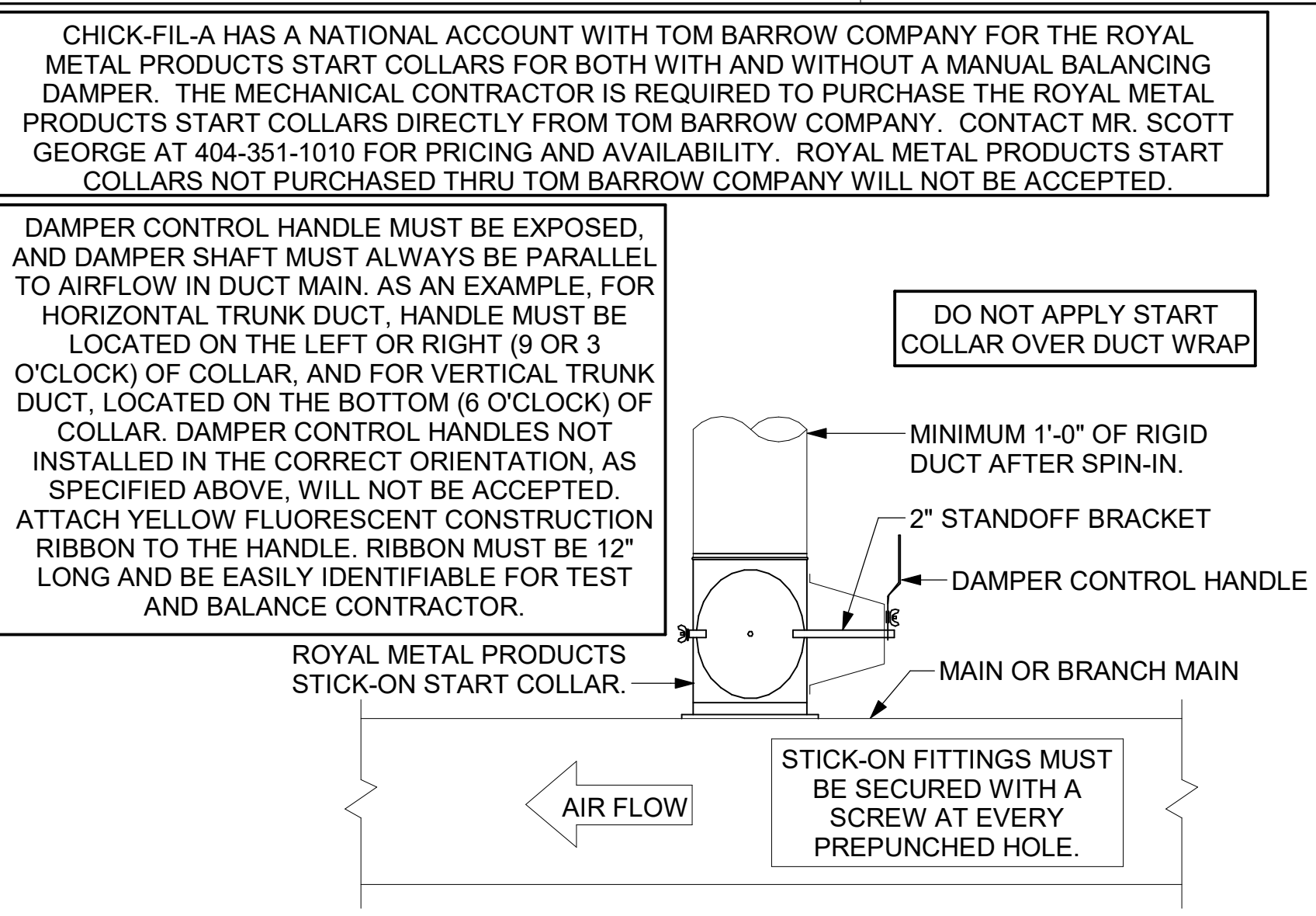
**CHICK-FIL-A**  
**RELO CHRISTIANSBURG**  
**FSU**  
 2580 NORTH FRANKLIN STREET  
 CHRISTIANSBURG, VA 24073

**FSR#05049**  
 BUILDING TYPE / SIZE: P13 LE LRG  
 RELEASE: 22.02  
 PRINTED FOR CONSTRUCTION  
 REVISION SCHEDULE

CONSULTANT PROJECT # 22077.EH.S  
 DATE 04/26/2022  
 DRAWN BY BLM  
 SHEET HOOD DETAILS AND SCHEDULES  
 SHEET NUMBER **M-301**



**1 SAG/RAG/GRILLE TAKE-OFF**  
NOT TO SCALE



**2 START COLLAR**  
NOT TO SCALE

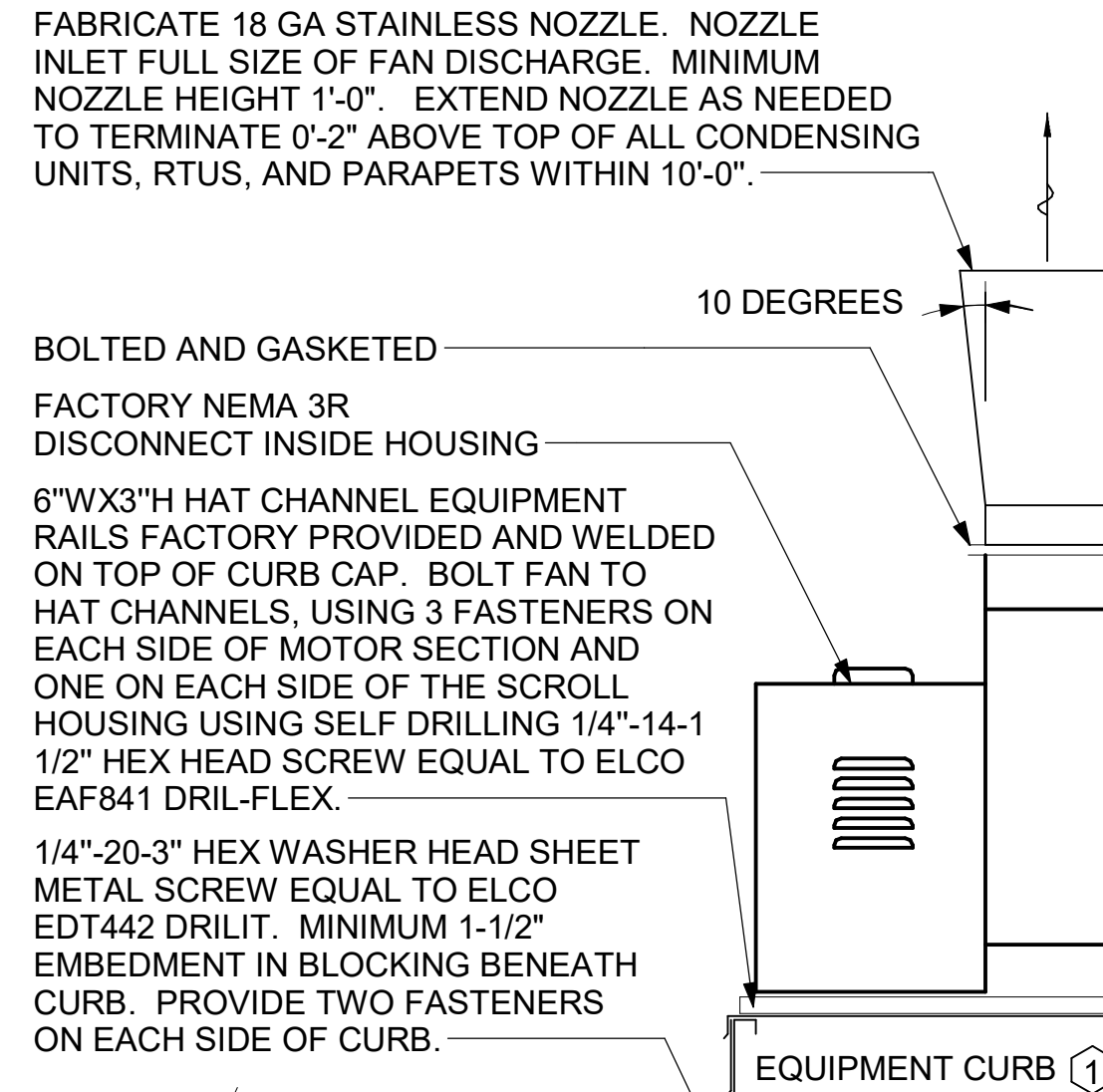
GAS FIRED ROOFTOP UNIT SCHEDULE																
MARK	TOTAL COOLING MBH	SENSIBLE COOLING MBH	ASHRAE MIN. EER	ASHRAE EER	HEATING INPUT MBH	HEATING OUTPUT MBH	STAGES	ASHRAE MIN Et	ASHRAE Et	SUPPLY	O.A.	HP	ESP	MODEL	MFGR	REMARKS
AC#1	288.4	219.2	9.8	10.5	480	384	2	80%	80%	9500	1450	10	0.80	LGH300S4B	LENNOX	1-16
AC#2	208.9	160.9	10.8	12.0	360	288	2	80%	80%	5250	1575	5	0.65	LGH210H4B	LENNOX	1-15,17
AC#3	247.3	192.9	9.8	12.0	480	384	2	80%	80%	6000	1750	5	0.65	LGH240H4B	LENNOX	1-16

**NOTES**

- COOLING CAPACITIES ARE GROSS, BASED ON ENTERING: 80FDB/67FWB, OUTDOOR: 95FDB, AND 400 CFM PER TON.
- CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT FOR EQUIPMENT WITH LENNOX CORPORATION. CONTACT LENNOX NATIONAL ACCOUNTS AT 800-367-6285 (OR BY FAX AT 972-497-5112) FOR PRICING, ORDERING AND AVAILABILITY.
- MECHANICAL CONTRACTOR TO VERIFY LENNOX SUBMITTAL WITH CONSTRUCTION DOCUMENTS.

**REMARKS**

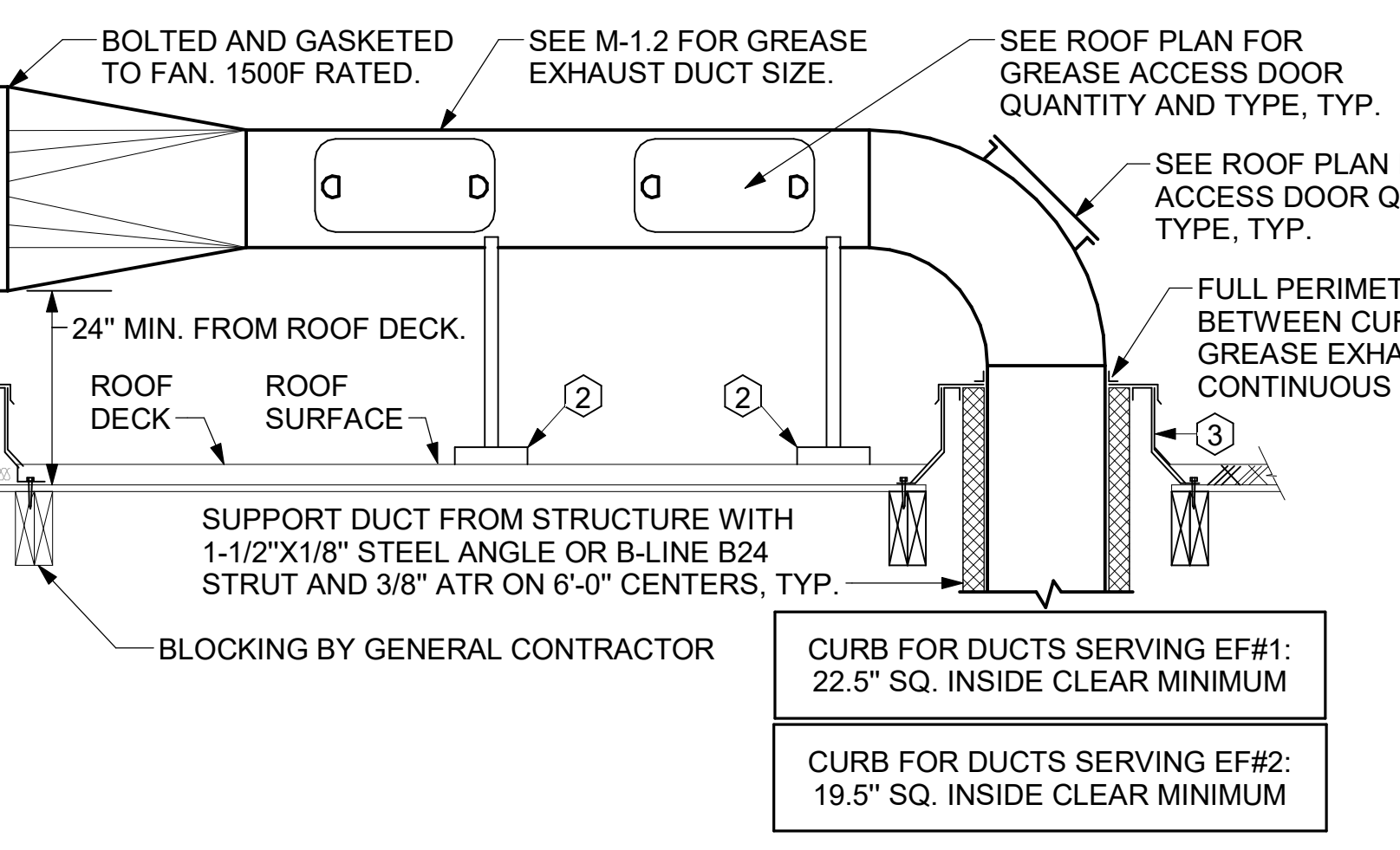
- PROVIDE DIFFERENTIAL ENTHALPY ECONOMIZER WITH POWER EXHAUST.
  - ECONOMIZER SHALL BE LOW LEAKAGE WITH MAXIMUM ALLOWABLE DAMPER LEAKAGE RATE OF 10 CFM/FT<sup>2</sup>.
  - ECONOMIZER SHALL BE PROVIDED WITH A HIGH LIMIT SHUTOFF PER ASHRAE 90.1.
  - ECONOMIZER SHALL BE ABLE TO MODULATE BOTH THE OUTDOOR AIR DAMPER AND RETURN AIR DAMPERS FOR 100% OF SUPPLY AIRFLOW.
  - THE OUTDOOR, SUPPLY, AND RETURN AIR SENSORS SHALL BE CALIBRATED WITHIN THE FOLLOWING ACCURACIES:
    - DRY-BULB AND WET-BULB TEMPERATURES SHALL BE ACCURATE TO ±2°F OVER THE RANGE OF 40°F TO 80°F.
    - ENTHALPY AND THE VALUE OF A DIFFERENTIAL ENTHALPY SENSOR SHALL BE ACCURATE TO ±3 BTU/LB OVER THE RANGE OF 20 TO 36 BTU/LB.
    - RELATIVE HUMIDITY SHALL BE ACCURATE TO ±5% OVER THE RANGE OF 20% TO 80% RH.
  - ECONOMIZER SHALL BE PROVIDED WITH FAULT DETECTION AND DIAGNOSTICS PER ASHRAE 90.1 6.4.3.12.
  - ECONOMIZER SYSTEMS SHALL BE INTEGRATED WITH THE MECHANICAL COOLING SYSTEM AND BE CAPABLE OF AND CONFIGURED TO PROVIDE PARTIAL COOLING EVEN WHEN ADDITIONAL MECHANICAL COOLING IS REQUIRED TO MEET THE COOLING LOAD. CONTROLS SHALL NOT FALSE LOAD THE MECHANICAL COOLING SYSTEMS BY LIMITING OR DISABLING THE ECONOMIZER OR BY ANY OTHER MEANS, SUCH AS HOT-GAS BYPASS, EXCEPT AT THE LOWEST STAGE OF MECHANICAL COOLING.
  - ECONOMIZER CONTROLS SHALL BE SUCH THAT ECONOMIZER OPERATION DOES NOT INCREASE THE BUILDING HEATING ENERGY USE DURING NORMAL OPERATION.
- PROVIDE 14" HIGH ROOF CURB.
- SEE DETAIL 2/M-501 FOR SETTING OF PRODIGY M3 BOARD CONTROL PARAMETERS BY MC.
- PROVIDE FACTORY INSTALLED RETURN SIDE SMOKE DETECTOR.
- PROVIDE FACTORY INSTALLED NON-FUSED DISCONNECT.
- PROVIDE 2" MERV 8 THROW AWAY FILTERS.
- PROVIDE HINGED PANELS FOR FILTER ACCESS, FAN MOTOR ACCESS, COMPRESSOR ACCESS AND CONTROL COMPARTMENT ACCESS.
- ADJUST GAS MANIFOLD PRESSURE AT LOCATIONS WHERE ELEVATION EXCEEDS 2000' ABOVE SEA LEVEL AS RECOMMENDED BY MANUFACTURER.
- PROVIDE FACTORY COIL HAIL GUARD, FIELD INSTALLED.
- PROVIDE FACTORY INSTALLED CONDENSATE PAN DRAIN OVERFLOW SWITCH.
- PROVIDE HUMIDITROL OPTION WITH FACTORY WALL MOUNTED HUMIDITY SENSOR.
- PROVIDE FACTORY INSTALLED BELT TENSIONER.
- PROVIDE FACTORY CONFIGURED PHASE LOSS PROTECTION.
- PROVIDE WITH FRESH AIR TEMPERING KIT.
- PROVIDE WITH HIGH FAULT SCRR.
- PROVIDE FACTORY INSTALLED AND UNIT POWERED 115V GFI SERVICE OUTLET.
- PROVIDE FACTORY INSTALLED 115V GFI SERVICE OUTLET.



**3 KITCHEN HOOD EXHAUST FANS**  
NOT TO SCALE

**KEYED NOTES:**

- EQUIPMENT CURB WITH REINFORCED BASE AND STEEL CURB CAP PROVIDED BY TOM BARROW COMPANY. WIDTH OF CURB SHALL BE 4" WIDER THAN FAN FOOTPRINT IN BOTH DIRECTIONS. HEIGHT OF CURB SHALL BE SUCH THAT NO PART OF ANY DUCT TO BE WITHIN 18" OF ROOF SURFACE. PROVIDE FACTORY EQUIPMENT RAILS WELDED TO CAP.
- ALL DUCT ON ROOF TO BE SUPPORTED WITH MIRO 6-DS DUCT SUPPORT SYSTEM AT 6'-0" INTERVALS MAXIMUM. PROVIDE MIRO SUPPORT PADS AT EACH SUPPORT. ATTACH SUPPORT TO DUCT. PROVIDE A DUCT SUPPORT STAND AT EACH ROOF PENETRATION.
- 12" HIGH INSULATED CURB PROVIDED BY TOM BARROW COMPANY. MECHANICAL CONTRACTOR TO PROVIDE 16 GA MINIMUM CURB CAP.



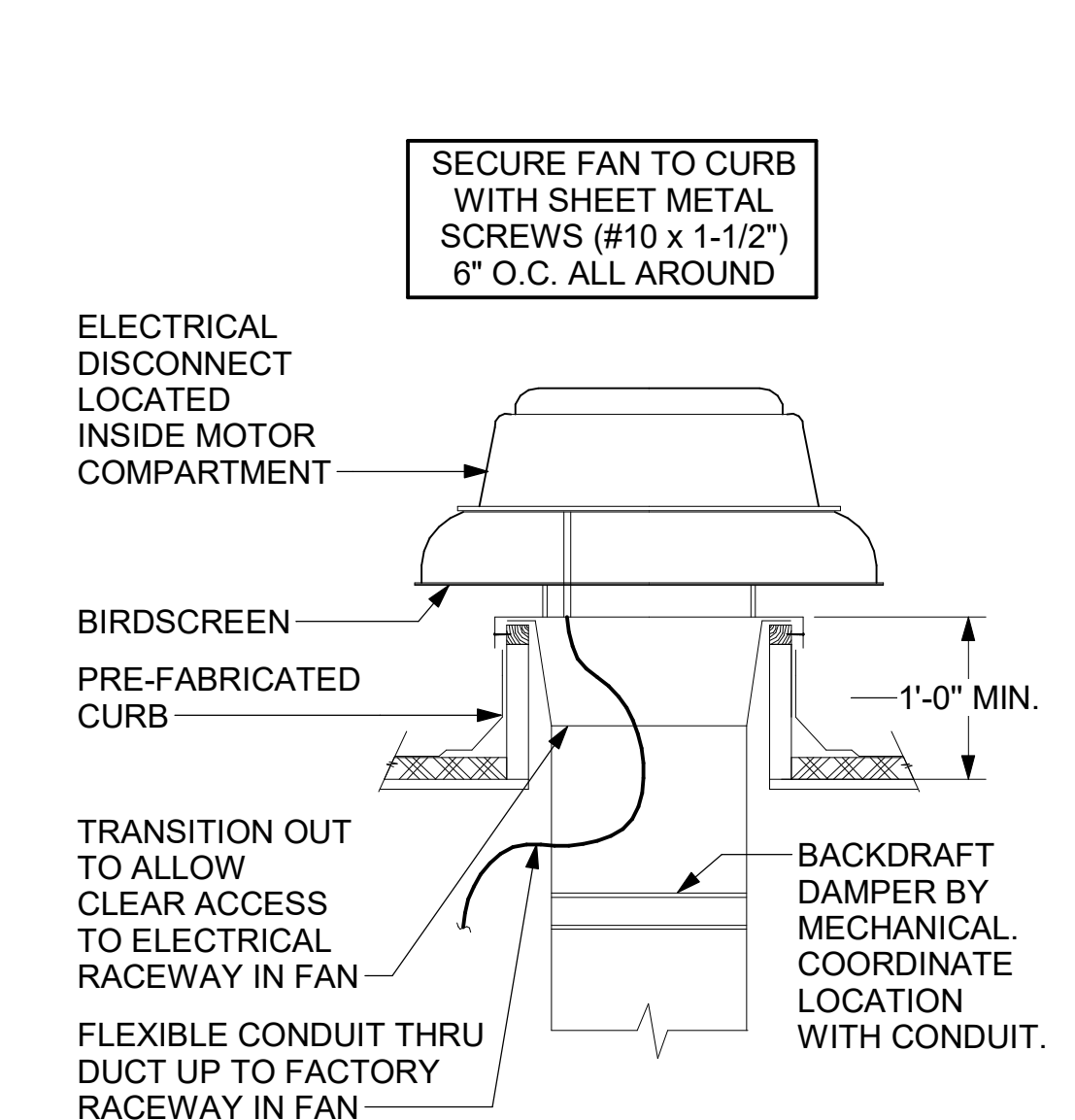
RECIRCULATING FAN SCHEDULE									
Mark	Fan CFM	Fan ESP	Fan RPM	Fan HP	Area Served	Model	Manufacturer	Fan Remarks	
RF-1	450	0.30	1144	58W	DTT CLOSET	GCVF-500	LOREN COOK	1, 2, 3, 4	

**NOTES**

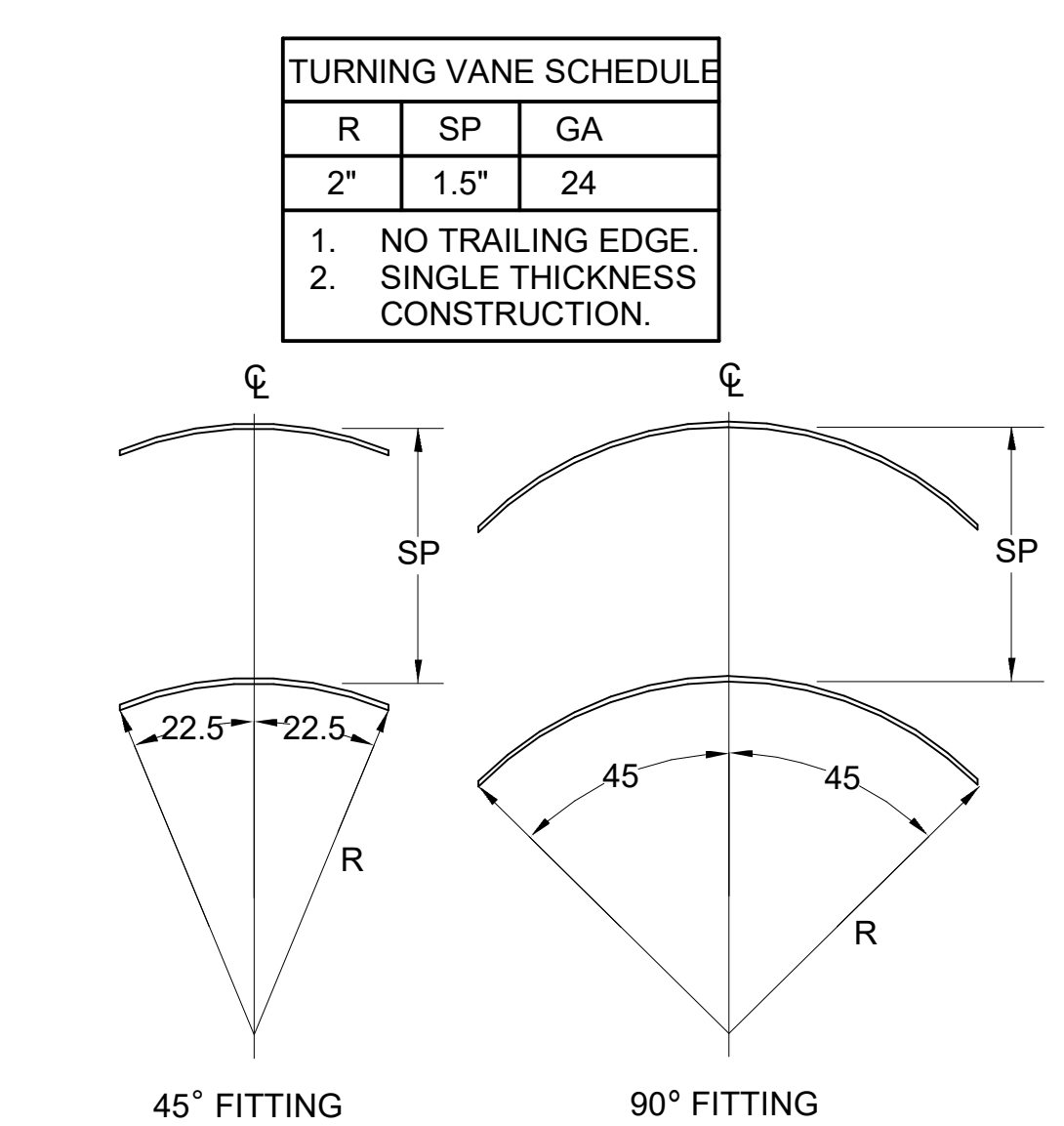
- CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE FANS PACKAGE. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE FANS PACKAGE DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010, FOR PRICING AND AVAILABILITY. FANS NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.

**REMARKS**

- PROVIDE NEMA 1 PREWIRED DISCONNECT.
- INTEGRAL POTENTIOMETER ON FAN MOTOR. SET TO FULL SPEED.
- PROVIDE AIR BALANCE KIT AND SET TO AUTOSCALE.
- PROVIDE THERMOSTAT / TEMPERATURE CONTROLLER. SET TO 76°F.



**4 RESTROOM EXHAUST FAN**  
NOT TO SCALE



**5 TURNING VANES**  
NOT TO SCALE

GAS FIRED INFRARED HEATER SCHEDULE							
MARK	INPUT (MBH)	FRAME LENGTH	FRAME WIDTH	FRAME DEPTH	MOUNTING TYPE	MODEL	MANUFACTURER
GH	50	48-1/4"	13"	10"	Bracket	2352-NG	Schwank

**NOTES**

- CONFIRM HEATER QUANTITY WITH CANOPY SHOP DRAWINGS.
- CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE GAS FIRED INFRARED HEATERS. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE HEATER PACKAGE DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010, FOR PRICING AND AVAILABILITY. HEATERS NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.

**REMARKS**

- STEEL BURNER WITH CERAMIC BURNER TILES.
- STAINLESS STEEL LENS WITH BLACK EMISSIVE COATING.
- PROVIDE ENGRAVED PLASTIC LABEL AT EACH UNIT WITH UNIT DESIGNATION IN 1" HIGH WHITE LETTERS ON A BLACK BACKGROUND. MOUNT TO CANOPY DECK, FACING FORWARD, 12" Laterally FROM THE LONG SIDE OF THE HEATER.
- STAINLESS STEEL HEAT SHIELDS PROVIDED BY TOM BARROW COMPANY.

BROMIC ELECTRIC HEATER SCHEDULE							
MARK	KW	FRAME LENGTH	FRAME WIDTH	FRAME DEPTH	MOUNTING TYPE	MODEL	MANUFACTURER
EH#1	6.0	56"	8.5"	3.5"	BRACKET	BH0420035	Bromic

**NOTES**

- CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH BROMIC COMPANY FOR THE BROMIC ELECTRIC HEATER PACKAGE. THE MECHANICAL CONTRACTOR SHALL PURCHASE HEATERS DIRECTLY FROM BROMIC COMPANY. CONTACT MR. BLAKE RUSSIE AT 858-776-8522, FOR PRICING AND AVAILABILITY. BROMIC HEATERS NOT PURCHASED THRU BROMIC COMPANY WILL NOT BE ACCEPTED.

**REMARKS**

- PROVIDE WITH BLACK HIGH TEMPERATURE COATING.
- PROVIDE ENGRAVED PLASTIC LABEL AT EACH UNIT WITH UNIT DESIGNATION IN 1" HIGH WHITE LETTERS ON A BLACK BACKGROUND.
- PROVIDE WITH MOUNTING BRACKETS PER MANUFACTURER'S RECOMMENDATIONS.

AIR DOOR SCHEDULE									
MARK	CFM	VELOCITY	HEATING CAP	HP	AREA SERVED	MODEL	MANUFACTURER	REMARKS	
AD#1	1765	2670 FPM	10 kW	3/4 HP	DRIVE THRU	CHA-1-48E	Powered Aire	1,2,3,5	
AD#2	3867	4220 FPM	N/A	3/4 HP	REAR DOOR	RBT-1-48	Powered Aire	4	

**NOTES**

- CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE AIR DOORS. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE AIR DOORS DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010, FOR PRICING AND AVAILABILITY. AIR DOORS NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.

**REMARKS**

- FACTORY PROVIDED, WIRED, AND UNIT MOUNTED SPEED CONTROLLER LOCATED ABOVE CEILING.
- FACTORY WIRE DISCONNECT.
- FACTORY PROVIDED, FIELD INSTALLED BY MC. REMOTE WALL SWITCHES FOR HEATING ON/OFF AND FAN ON/AUTO SWITCH. SEE DETAIL, AIR CURTAIN WIRING DIAGRAM.
- FACTORY PROVIDED MAGNETIC DOOR CONTACT WITH FACTORY INSTALLED LOW VOLTAGE CONTROLS LOCATED IN AIR DOOR CABINET.
- PROVIDE WITH A DIVERTER BOX. PROVIDE WITH MOUNTING BRACKETS PER MANUFACTURER'S RECOMMENDATIONS.

AIR DEVICE SCHEDULE							
MARK	DESCRIPTION	LOCATION	NECK SIZE	FACE SIZE	FRAME TYPE	REMARKS	
A	PRICE MODEL APDC ALUMINUM SUPPLY AIR DIFFUSER WITH INDIVIDUALLY ADJUSTABLE CURVED AIR PATTERN CONTROLLERS.	DINING/OFFICE/ KITCHEN	VARIABLES	24"x24"	LAY-IN	1,7	
C	PRICE MODEL SMCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	ENTRY	14"x14"	19"x19"	BEVELLED	1,3,5,6	
F	PRICE MODEL 80 EGCCRATE RETURN AIR GRILLE WITH REMOVABLE WHITE CORE, FACTORY FLAT BLACK BACKPAN AND ROUND NECK.	DINING/OFFICE/ KITCHEN	VARIABLES	24"x24"	LAY-IN	1,7,8	
J	PRICE MODEL SMCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	RESTROOMS	10"x10"	15"x15"	BEVELLED	1,2,3,5,6	
K	PRICE MODEL APDDR ALUMINUM PERFORATED FACE RETURN AIR GRILLE.	RESTROOMS/ ENTRY	14"x14"	16"x16"	SURFACE	1,4,5,6	

**NOTES**

- CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE AIR DEVICES. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE AIR DEVICES DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010, FOR PRICING AND AVAILABILITY. AIR DEVICES NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.

**REMARKS**

- STANDARD OFF WHITE FINISH.
- PROVIDE MODEL VCS3 NECK DAMPER.
- SEE DRAWING M-201 FOR THROW.
- PROVIDE MODEL VCR7 NECK DAMPER ON GRILLES IN RESTROOMS SERVING EXHAUST FAN.
- PROVIDE BACKPAN TO SEAL JOINTS WITH MASTIC AND INSULATE EXTERNALLY.
- FIELD INSULATE BACKPAN AS SHOWN ON DETAIL 1/M-401.
- FACTORY INSULATED R-6 BACKPAN.
- PRICE AMF SURFACE MOUNT ADAPTER FRAME. SEE 1/M-201 FOR LOCATION AND QUANTITY.



**CHICK-FIL-A**  
**RELO CHRISTIANSBURG**  
**FSU**  
2580 NORTH FRANKLIN STREET  
CHRISTIANSBURG, VA 24073

**FSR#05049**  
BUILDING TYPE / SIZE: P13 LE LRG  
RELEASE: 22.02

PRINTED FOR CONSTRUCTION REVISION SCHEDULE

NO.	DATE	DESCRIPTION
2	06/22/2022	PLAN REVIEW

CONSULTANT PROJECT # 22077.EH.S  
DATE 04/26/2022  
DRAWN BY BLM

Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET HVAC DETAILS AND SCHEDULES

SHEET NUMBER **M-401**

BIM 360/AVA\_05049\_RELO Christiansburg FSU\_2022.2\_FSR#05049\_RELO Christiansburg FSU\_MECC.rvt  
8/30/2022 2:26:41 PM  
3D-LE-05049-M-401-HVAC DETAILS AND SCHEDULES

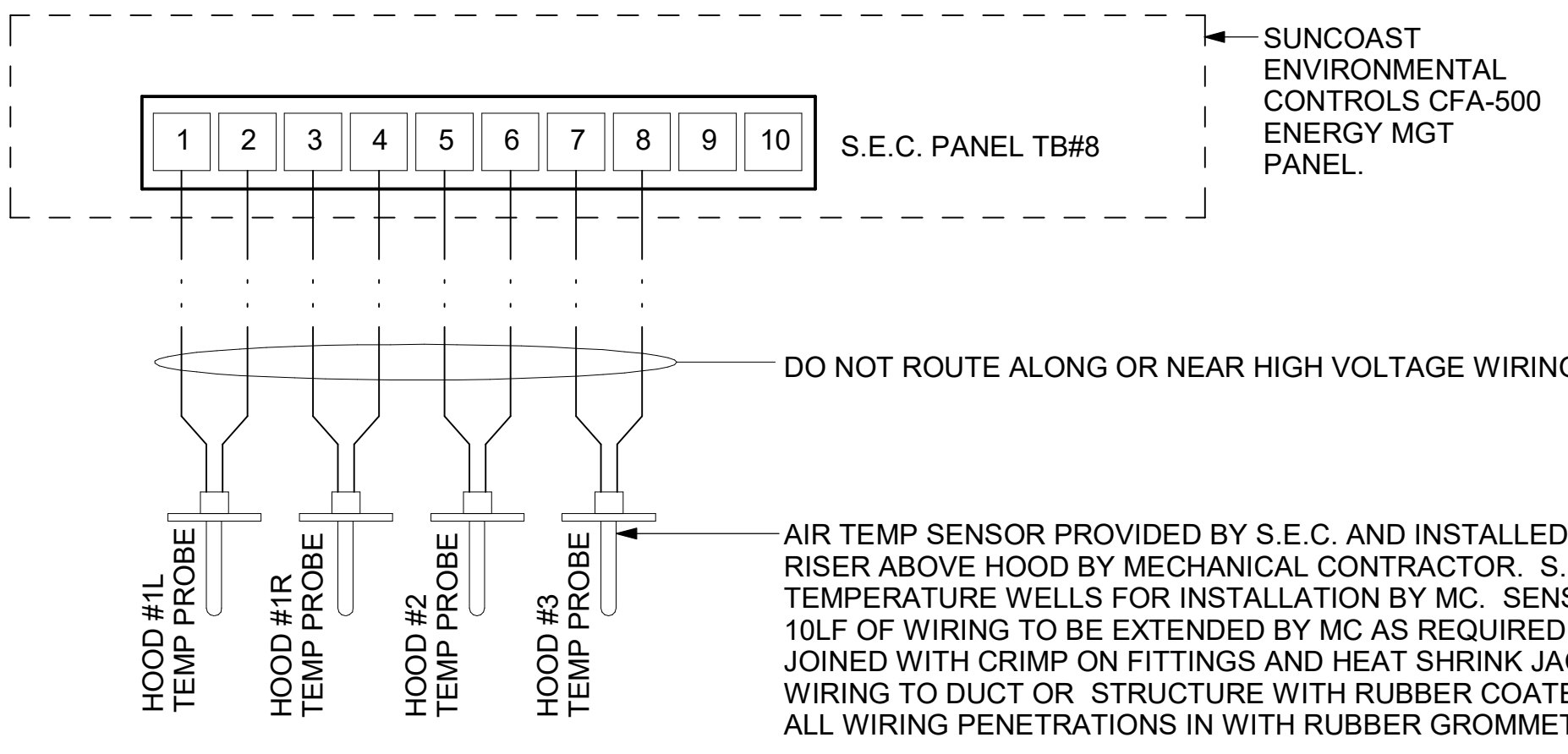
LEGEND	
S.E.C.	SUNCOAST ENVIRONMENTAL CONTROLS CFA-500 ENERGY MGT PANEL
M.C.	MECHANICAL CONTRACTOR
---	18 AWG MIN UNSHIELDED LOW VOLTAGE WIRING BY MC, U.N.O.

**GENERAL NOTES**

- THE SUNCOAST H.E.S. SYSTEM HAS BEEN INTEGRATED INTO THE SUNCOAST ENVIRONMENTAL CONTROLS CFA-500 ENERGY MGT PANEL.

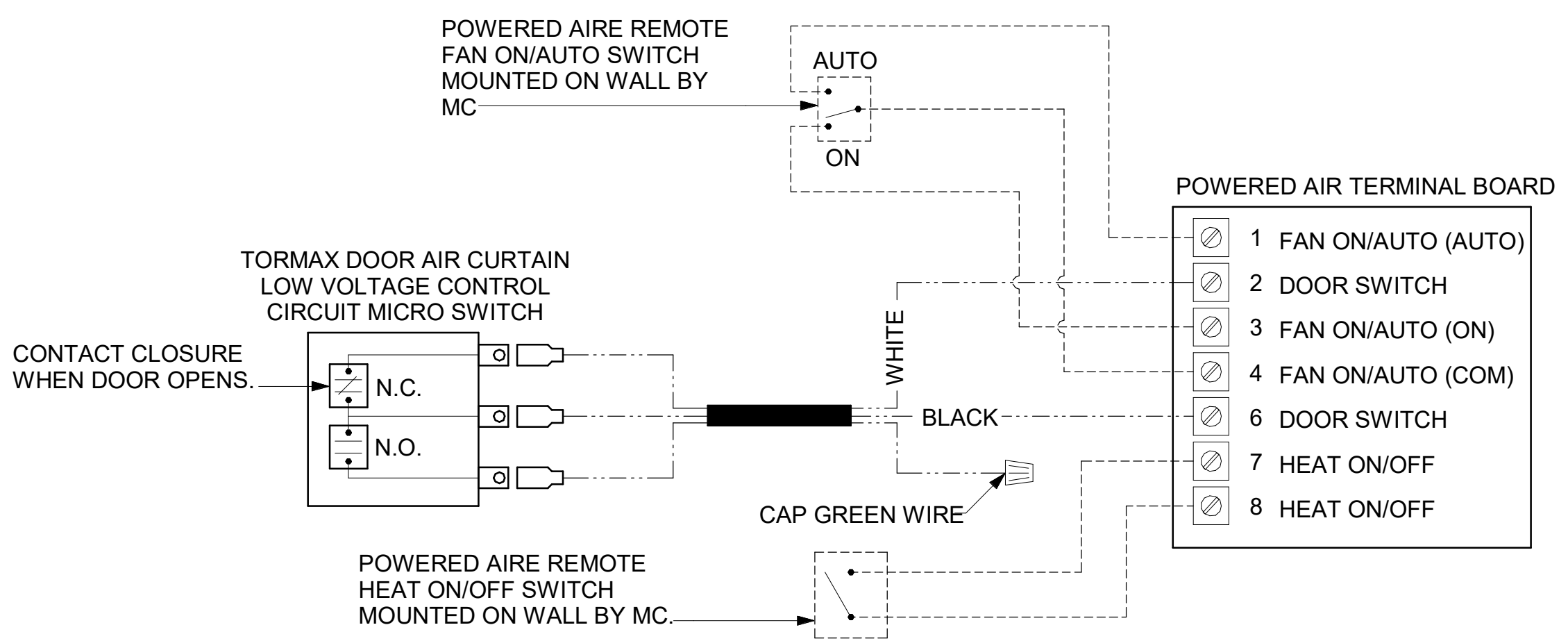
**S.E.C. H.E.S. OPERATION**

IN THE EVENT THAT ANY COOKING EQUIPMENT ITEM BENEATH ANY HOOD IS STARTED WITHOUT THE 'STORE SWITCH' BEING IN THE 'OCCUPIED' POSITION, THE H.E.S. CONTROLLER WILL SENSE THE HEAT RISE WITHIN THE HOOD CANOPY AND ENERGIZE THE EXHAUST FANS.



**5 HOOD FAN/EQUIPMENT INTERLOCK - 3 Hood (4 Collars) - CFA500 Integrated**  
1/4" = 1'-0"

LEGEND	
---	18 AWG MIN LOW VOLTAGE WIRING BY MC, U.N.O.
---	22 AWG LOW VOLTAGE WIRING PROVIDED BY TORMAX. WIRING INSTALLED BY MC.



**4 AIR CURTAIN WIRING DIAGRAM**  
NOT TO SCALE

**NOTES:**

- MECHANICAL CONTRACTOR SHALL MAKE PLASTIC LAMINATE OF THIS DETAIL AND INSTALL PERMANENTLY ON INSIDE DOOR OF ROOFTOP UNIT CONTROL COMPARTMENT.
- SEE DETAILS THIS SHEET FOR SMOKE DETECTOR AND ANNUNCIATOR WIRING.
- SET ALL THERMOSTATS FOR AUTO CHANGEOVER.
- PROVIDE PLASTIC ENGRAVED LABEL AT ALL NEW SENSORS WITH 1/4" HIGH WHITE LETTERING ON BLACK BACKGROUND, I.E. "AC#2 HUMIDITY SENSOR" OR "AC#2 TEMP SENSOR". PLACE LABELS ON WALL ADJACENT TO DEVICE, DO NOT APPLY DIRECTLY TO DEVICE.

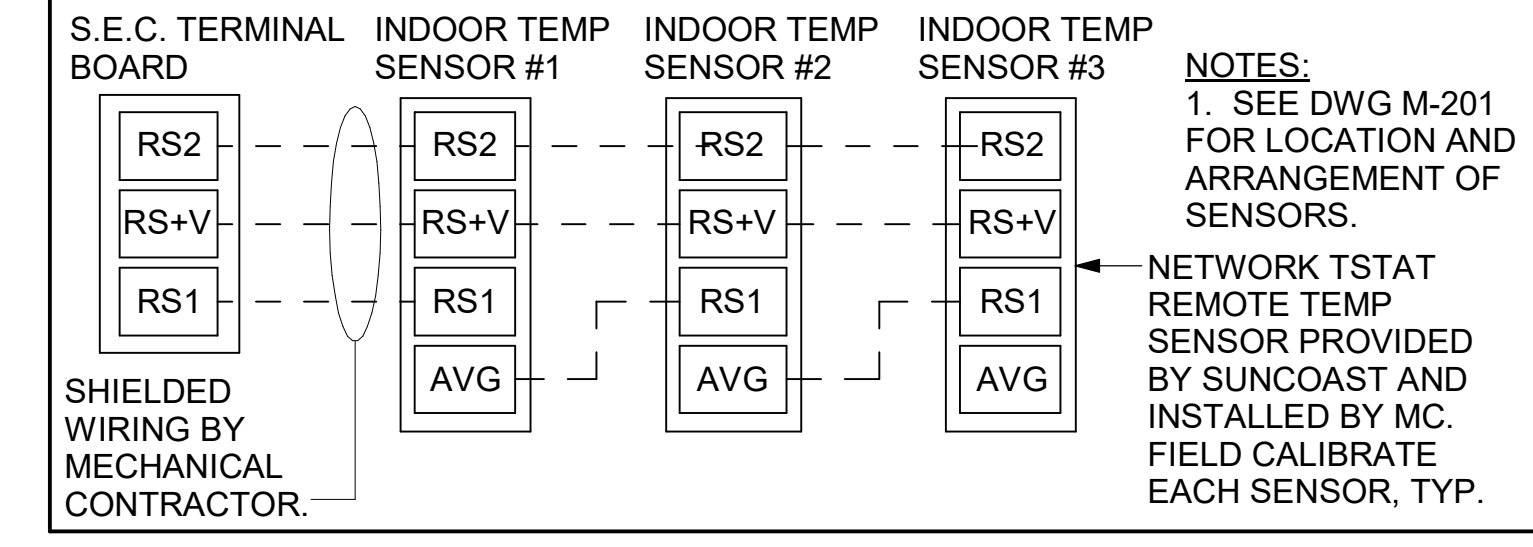
**KEYED NOTES:**

- LOW VOLTAGE WIRING TO RTU TO BE ROUTED TO UNIT THRU FACTORY WIREWAY.
- HUMIDITROL UNITS ONLY: WIRING TO HUMIDITY SENSOR TO BE MADE WITH TWO SEPARATE RUNS OF SHIELDED TWISTED PAIR. TERMINATE SHIELD WIRES AT TB-1, LEAVE OPEN AT SENSOR.
- NETWORK TSTAT REMOTE TEMP SENSOR PROVIDED BY SUNCOAST AND INSTALLED BY MC. SENSOR IS INTENDED TO BE SURFACE MOUNTED AND DOES NOT REQUIRE A SINGLE GANG BOX OR CONDUIT. FIELD CALIBRATE EACH SENSOR.

LEGEND	
S.E.C.	SUNCOAST ENVIRONMENTAL CONTROLS (SUPPLIER OF TEMP/FAN CONTROL PANEL) LOCATED IN KITCHEN
1	KEY NOTE REFERENCE
MC	MECHANICAL CONTRACTOR
AC	SUNCOAST RELAY FACTORY INSTALLED AND WIRED IN CFA-500 PANEL, ENERGIZED BY PUTTING STORE SWITCH IN 'STORE OCCUPIED' POSITION.
AN	SUNCOAST RELAY FACTORY INSTALLED AND WIRED IN CFA-500 PANEL, DENERGIZED WHEN ANSUL FIRE SUPPRESSION SYSTEM IS ACTIVATED, AS NOTED.
---	18 AWG MIN LOW VOLTAGE WIRING BY MC, U.N.O. USE BELDEN OR SOUTHWIRE SINGLE PAIR TWISTED WITH FOIL SHIELD AND DRAIN WIRE FOR TEMPERATURE SENSORS (NOT HUMIDITY SENSORS).
---	LOW VOLTAGE WIRING BY S.E.C.
---	LINE VOLTAGE BY ELECTRICIAN OR S.E.C.

**2 ROOFTOP UNIT CONTROL WIRING - LENNOX**  
NOT TO SCALE

**AC#3 AVERAGING SENSORS (WHERE SHOWN ON PLANS)**

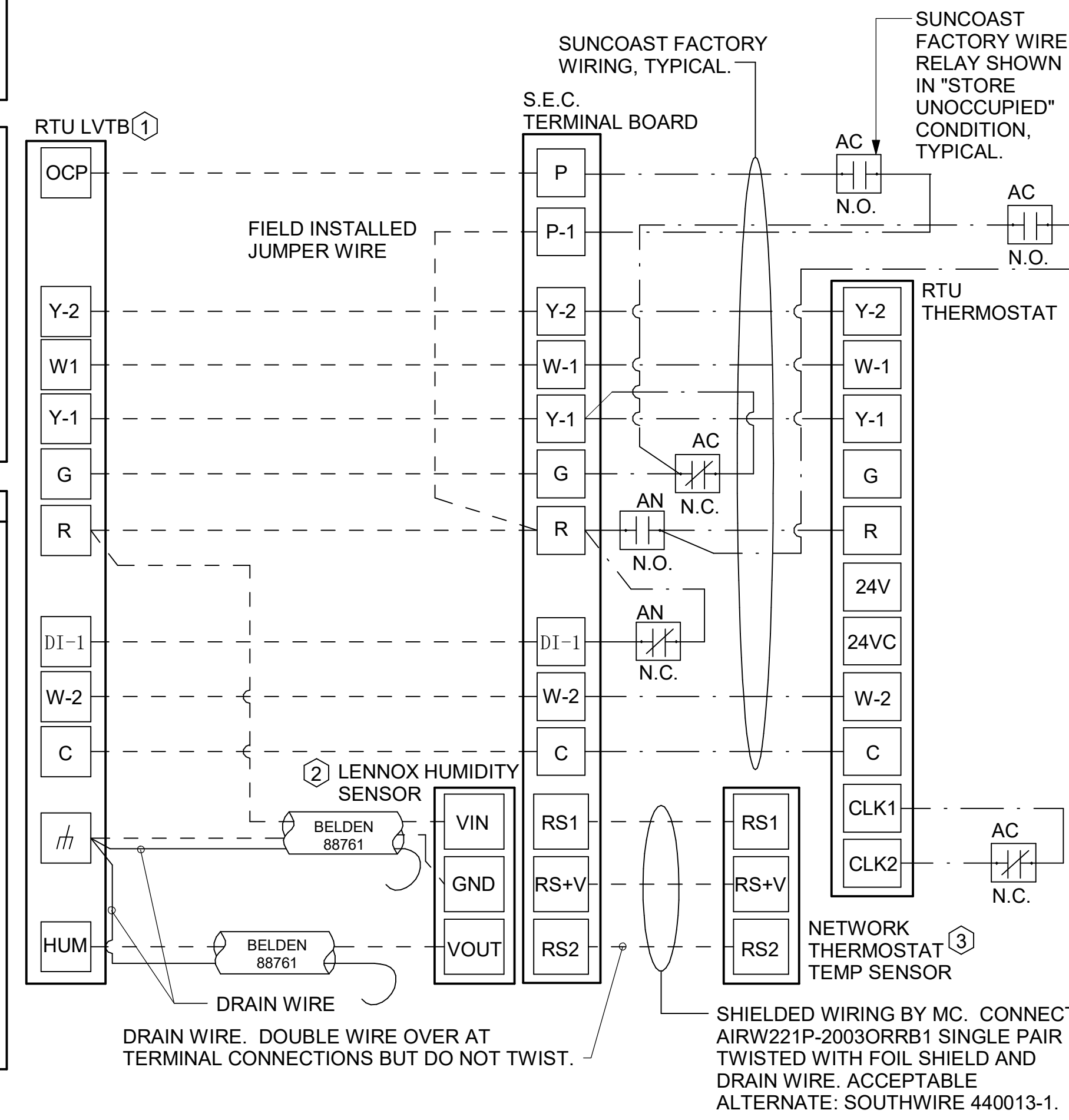


**LENNOX PRODIGY CONTROLLER SETTINGS:**

- FOR ALL RTU'S EXCEPT AT AC#1. CHANGE PRODIGY-M3 BOARD CONTROL PARAMETER #65 TO ZERO (#58 ON LCH UNITS). THIS WILL CAUSE THE O.A. DAMPER TO OPEN ON "OCCUPIED" START. AT AC#1 (LGH TYPE) LEAVE THE SETTING AT THE DEFAULT VALUE SO THE O.A. DAMPER WILL REMAIN CLOSED FOR THE FIRST 60 MINUTES AFTER "OCCUPIED" START. AT AC#1 (LCH TYPE) CHANGE THE VALUE TO 5400 SO THE O.A. DAMPER WILL REMAIN CLOSED FOR THE FIRST 90 MINUTES AFTER "OCCUPIED" START.
- AT HUMIDITROL RTU'S, SET PRODIGY-M3 BOARD CONTROL PARAMETER #105 FOR DEHUMIDIFICATION OPERATION TO A VALUE OF 7.
- AT HUMIDITROL RTU'S, SET PRODIGY-M3 BOARD CONTROL PARAMETER #106 FOR DEHUMIDIFICATION SET POINT TO A VALUE OF 60 (60% RH).
- AT HUMIDITROL RTU'S, SET PRODIGY-M3 BOARD CONTROL PARAMETER #107 FOR DEHUMIDIFICATION MODE DEAD BAND TO VALUE OF 2 (2% RH).
- AT MSAV UNITS, SET THE MSAV LOW SPEED SETTING TO THE SAME VALUE AS THE HIGH SPEED SETTING AFTER TAB IS COMPLETE.

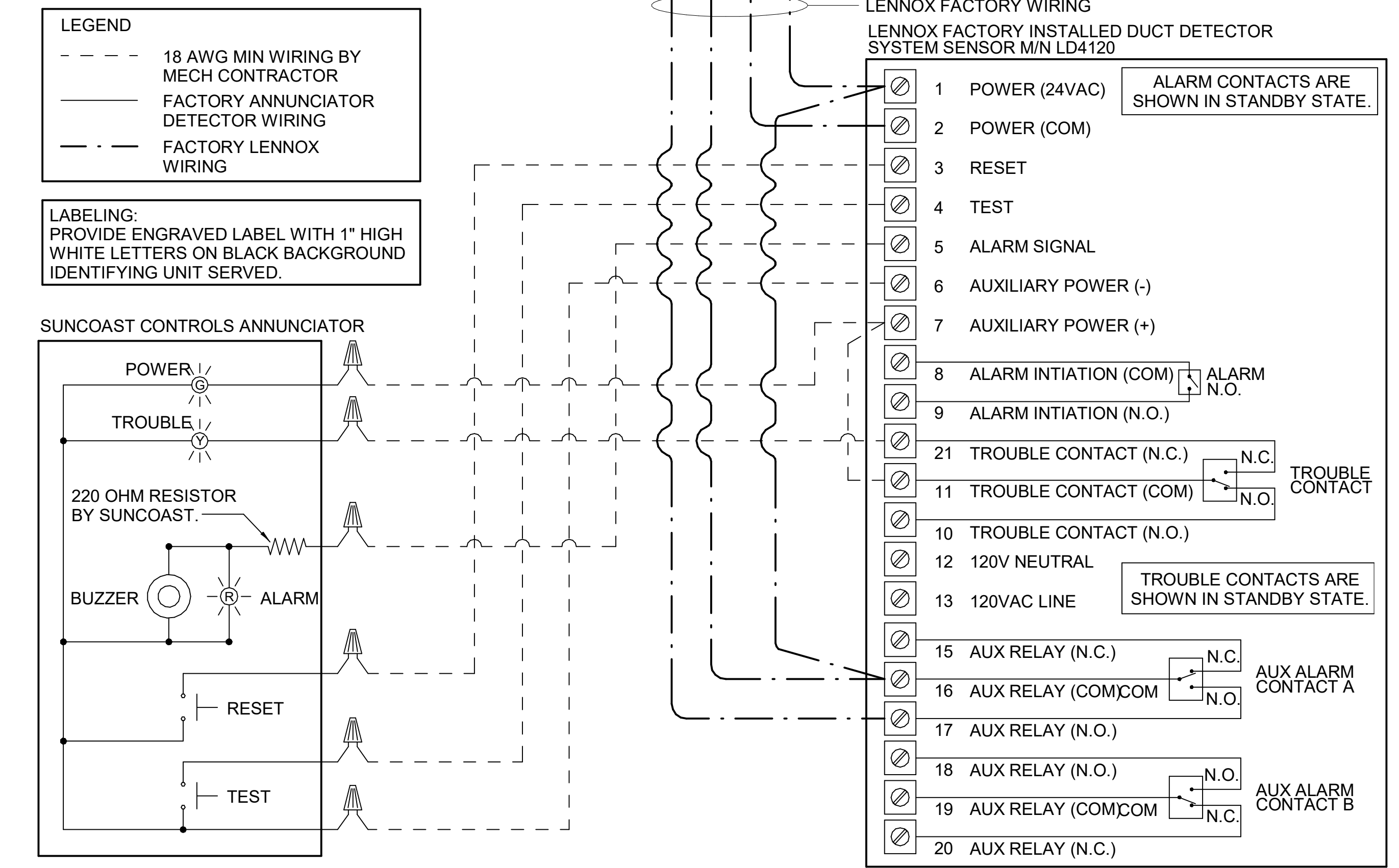
**LENNOX FRESH AIR HEATING SETUP WHEN SPECIFIED:**

- INSTALL FRESH AIR TEMPERING KIT WIRING HARNESS AS RECOMMENDED BY LENNOX.
- LOCATE SUPPLY AIR TEMPERATURE SENSOR IN SUPPLY DUCT DOWNSTREAM OF FIRST ELBOW. SECURE WIRING TO DUCT OR STRUCTURE WITH RUBBER COATED CLAMPS. DO NOT RUN WIRING INSIDE DUCT WORK. PROTECT ALL WIRING PENETRATIONS WITH RUBBER GROMMETS.
- FOR PRODIGY 2.0: FIRST SET FRESH AIR HEATING ENABLE TO "YES" THRU THE TAB/DAMPER MENU (LEAVE FRESH AIR COOLING AS "NO"). NEXT, CHANGE PRODIGY-M3 BOARD CONTROL PARAMETER #156 TO A VALUE OF 66. THIS WILL PREVENT THE SUPPLY AIR TEMPERATURE FROM DROPPING BELOW 66F DEG DURING HEATING MODE WHEN THERMOSTAT IS NOT ACTIVELY CALLING FOR HEAT.
- CHANGE PRODIGY-M3 BOARD CONTROL PARAMETER #157 TO A VALUE OF 14. THIS WILL MAKE THE DEADBAND VALUE EQUAL 14F.
- CHANGE PRODIGY-M3 BOARD CONTROL PARAMETER #158 TO A VALUE OF 300. THIS WILL MAKE THE CYCLE TIME VALUE EQUAL 5 MINUTES.



**SUPPLY SIDE DETECTORS:** IF SUPPLY SIDE SMOKE DETECTORS ARE SHOWN ON DWG M-201, AND CALLED FOR ON RTU SCHEDULE, THE CONTRACTOR IS TO RELOCATE FACTORY INSTALLED SUPPLY SMOKE DETECTOR FROM BLOWER SECTION TO DUCTWORK. SEE NOTES ON DWG M-201.

**FIELD INSTALLED WIRING:** WITHIN THE ROOFTOP UNIT, WIRING SHALL BE ROUTED BY WAY OF FACTORY WIRE WAYS ONLY. WIRING ROUTED OVER THE BLOWER HOUSING OR BY WAY OF OTHER ROUTES DETRIMENTAL TO THE WIRING LIFE WILL NOT BE ACCEPTED.



**1 SMOKE DETECTOR AND ANNUNCIATOR WIRING DIAGRAM**  
NOT TO SCALE

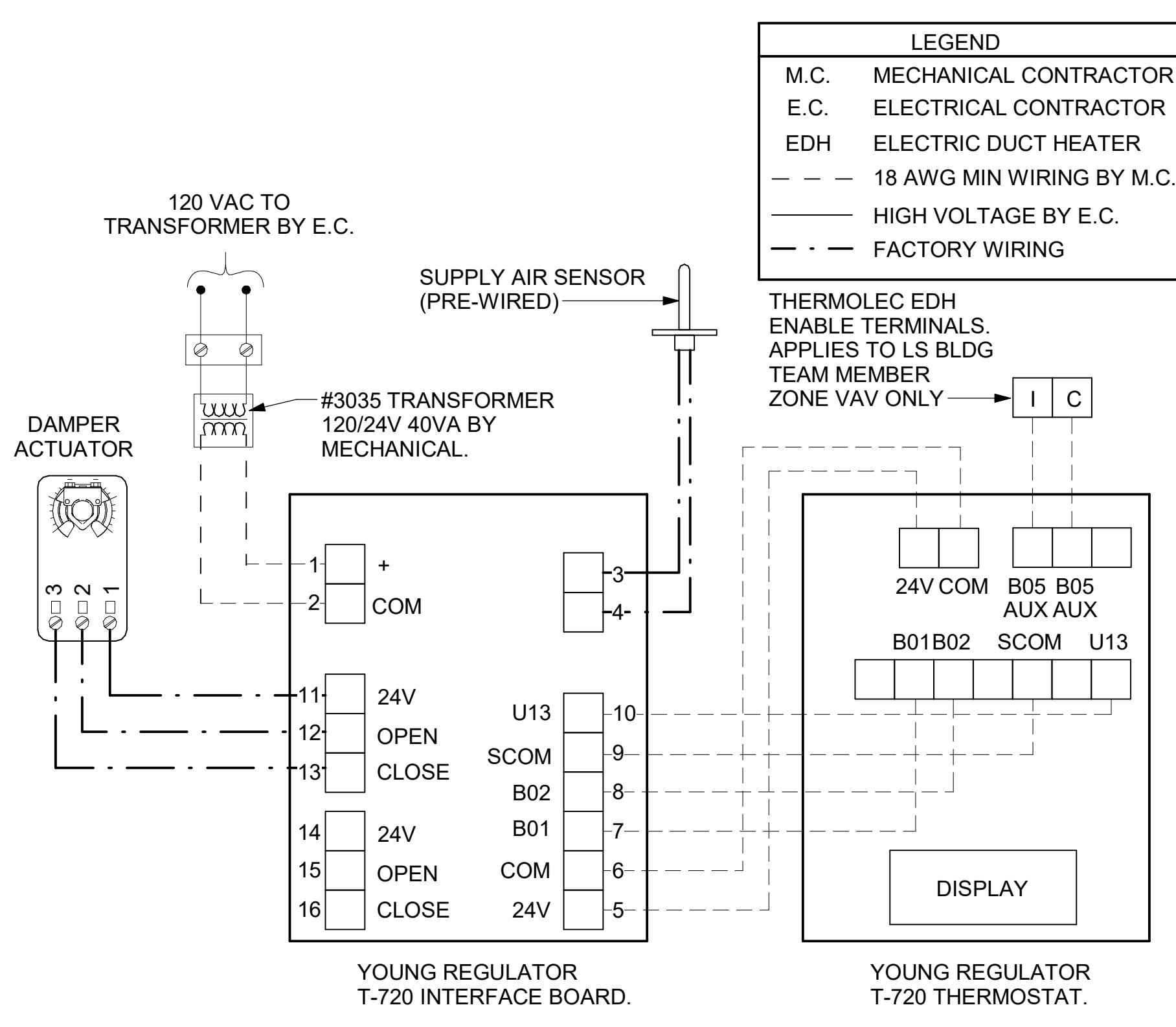
LEGEND	
M.C.	MECHANICAL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
EDH	ELECTRIC DUCT HEATER
---	18 AWG MIN WIRING BY M.C.
---	HIGH VOLTAGE BY E.C.
---	FACTORY WIRING

**NOTES**

- SEE DWG M-201 FOR COMPONENT MODEL NUMBERS AND ORDERING INFORMATION.
- 120V POWER FOR TRANSFORMER TO BE NON-SWITCHED AND LIVE 24 HOURS EACH DAY.
- PROVIDE ALL NECESSARY WIRING AND COMPONENTS TO MAKE CONTROL AND POWER CONNECTIONS TO TRANSFORMER, ZONE DAMPER, AND THERMOSTAT PER MANUFACTURER'S IOM.
- PROVIDE MYLAR LABEL AT ALL NEW THERMOSTATS WITH 1/4" HIGH WHITE LETTERING ON BLACK BACKGROUND, I.E. "OFFICE THERMOSTAT". PLACE LABELS ON WALL ADJACENT TO DEVICE. DO NOT APPLY DIRECTLY ON DEVICE.

**SEQUENCE OF OPERATION**

- WHEN THE SUPPLY AIR TEMPERATURE IS LESS THAN 72F THE DAMPER WILL MODULATE ON A RISE IN SPACE TEMPERATURE ABOVE THE SETPOINT.
- WHEN THE SUPPLY AIR TEMPERATURE IS GREATER THAN 71F THE DAMPER WILL MODULATE ON A FALL IN SPACE TEMPERATURE BELOW THE SETPOINT.
- WHEN SPACE TEMPERATURE FALLS BELOW 66F (ADJ.), THE THERMOSTAT SHALL SEND AN ENABLE SIGNAL TO THE EDH. THE EDH SHALL THEN MODULATE CAPACITY TO MAINTAIN AN 80F (ADJ) DISCHARGE AIR SETPOINT. (LS BUILDING TEAM MEMBER ZONE ONLY)



**3 VAV DAMPER AND TSTAT - ALL**  
NOT TO SCALE



**Chick-Fil-A**  
5200 Buffington Road  
Atlanta, Georgia  
30349-2998

**Kurzynske & Associates**  
2705 Lebanon Pike - Suite One  
Nashville, Tennessee 37214  
Telephone: (615) 255-5203



09/06/22

**CHICK-FIL-A**  
**RELO CHRISTIANSBURG**  
**FSU**  
2580 NORTH FRANKLIN STREET  
CHRISTIANSBURG, VA 24073

**FSR#05049**

BUILDING TYPE / SIZE: P13 LE LRG  
RELEASE: 22.02  
PRINTED FOR: CONSTRUCTION  
REVISION SCHEDULE

NO.	DATE	DESCRIPTION

CONSULTANT PROJECT # 22077.EH.S  
DATE 04/26/2022  
DRAWN BY AUTHOR

Information contained on this drawing and all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET HVAC CONTROLS  
SHEET NUMBER

**M-501**

BIM: 360/AVA\_05049\_RELO Christiansburg FSU\_2022.2\_FSR#05049\_RELO Christiansburg FSU\_MECH.rvt  
8/30/2022 2:26:43 PM  
30-LE-05049-M-501-HVAC CONTROLS

# 1. SECTION C15000 - MECHANICAL SPECIFICATIONS

## PART I - GENERAL

### 1.01 SCOPE

- A. IT IS THE RESPONSIBILITY OF CONTRACTOR TO READ ALL SPECIFICATIONS AND CONSULT ALL DRAWINGS WHICH MAY AFFECT THE INSTALLATION AND COORDINATION OF HIS WORK WITH OTHER TRADES. CONTRACTOR SHALL COORDINATE AND MAKE MINOR ADJUSTMENTS IN LOCATION OF EQUIPMENT AND MATERIALS AS NECESSARY TO SECURE COORDINATION.
- B. COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES, INCLUDING BUT NOT LIMITED TO THE LATEST APPROVED EDITIONS OF NFPA-96, NFPA-90A, NFPA-54, SMACNA, ASHRAE 90.1 AND ASHRAE 62.
- C. SYSTEM LAYOUT IS SCHEMATIC AND EXACT LOCATIONS SHALL BE DETERMINED BY STRUCTURAL CONDITIONS, COORDINATION WITH OTHER TRADES, COORDINATION WITH FINISHES AND OTHER CONDITIONS. STRUCTURAL SUPPORTS SHALL NOT BE CUT OR ALTERED TO ASSURE FIT OF HVAC SYSTEM. TEN FOOT CLEARANCE SHALL BE MAINTAINED BETWEEN OUTSIDE AIR INTAKES AND EXHAUST FANS AND PLUMBING VENT TERMINALS.
- D. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEFECTS, REPAIRS AND REPLACEMENTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER FINAL PAYMENT IS APPROVED. CONTRACTOR SHALL HONOR FACTORY WARRANTIES ON ALL EQUIPMENT PROVIDED AS PART OF THIS SYSTEM.
- E. UPON COMPLETION OF PROJECT, ALL SYSTEM EQUIPMENT AND MATERIALS SHALL BE IN NEW, CLEAN CONDITION WITH ALL DAMAGE RESTORED TO CONDITION ACCEPTABLE TO THE OWNERS REPRESENTATIVE. ALL EQUIPMENT, COMPONENTS, DUCTWORK, AND AIR DEVICES SHALL BE INSPECTED AND THOROUGHLY CLEANED, CLEARED OF DEBRIS, AND READY FOR USE. AT COMPLETION OF JOB, ALL MISCELLANEOUS TOOLS, SCAFFOLDING, SURPLUS MATERIALS, RUBBISH AND DEBRIS SHALL BE REMOVED BY CONTRACTOR.
- F. CONTRACTOR SHALL PROVIDE TWO SETS OF 2" MERV 8 OR HIGHER THROW AWAY TYPE FILTERS. A CLEAN SET SHALL BE PROVIDED PRIOR TO TEST AND BALANCE AND AGAIN PRIOR TO OPENING.

## PART II - PRODUCTS

### 2.01 HEATING AND COOLING EQUIPMENT (C15730)

- A. FURNISH AND INSTALL R-410A ROOFTOP SINGLE PACKAGE COMBINATION ELECTRIC COOLING AND NATURAL GAS FIRED HEATING UNITS BY LENNOX AS SHOWN ON DRAWINGS. EQUIPMENT SHALL BE ARI CERTIFIED AND A.G.A. AND U.L. LISTED.
- B. ACCESSORIES SHALL INCLUDE LOW AND HIGH PRESSURE SAFETIES, CRANK CASE HEATER, OVERCURRENT AND OVERTEMPERATURE SAFETY, COMPRESSOR VIBRATION ISOLATORS, FILTER DRIERS, REFRIGERANT SERVICE VALVES, COIL HAIL GUARDS WHERE SCHEDULED, CONVENIENCE OUTLETS FACTORY INSTALLED ON SCHEDULED UNITS, UNIT MOUNTED NON-FUSED DISCONNECTS, LOW AMBIENT OPERATION DOWN TO 30 DEGREES F AND EVAPORATOR FREEZE STAT.
- C. COMPRESSORS SHALL BE FULLY HERMETIC SCROLL TYPE WITH INTERNAL VIBRATION ISOLATORS. COMPRESSORS SHALL BE PROVIDED WITH A MINIMUM FIVE (5) YEAR FULL WARRANTY.
- D. THE UNIT HEAT EXCHANGERS SHALL BE STEEL WITH ALUMINIZED STEEL COATING. HEATING CONTROLS SHALL CONSIST OF REDUNDANT GAS VALVES, INTERMITTENT PILOT WITH ELECTRONIC SPARK OR HOT PLATE IGNITION SYSTEM, COMBUSTION EXHAUST FAN PROTECTED BY CENTRIFUGAL SWITCHES, HEAT LIMIT SWITCHES, TIME-DELAY RELAY, FLAME, AND PILOT SENSORS. ALL UNITS SHALL BE CAPABLE OF TWO STAGES OF HEAT. HEAT EXCHANGES SHALL HAVE A TEN (10) YEAR WARRANTY. BURNERS SHALL BE ALUMINIZED IN-SHOT TYPE. THE DRAFT MOTOR SHALL BE MONITORED BY THE CONTROL SYSTEM.
- E. CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT FOR EQUIPMENT WITH LENNOX CORPORATION. PRICING FOR THE EQUIPMENT HAS BEEN ESTABLISHED IN ADVANCE. CONTACT LENNOX NATIONAL ACCOUNTS AT 972-497-6280 (OR BY FAX AT 972-497-5112) FOR PRICING, ORDERING AND AVAILABILITY.

### 2.02 DUCTWORK (C15735) (SEE DWG M-301 FOR ADDITIONAL GREASE DUCT SYSTEM REQ.)

- A. ACCEPTABLE MANUFACTURERS OF INSULATION ARE MANVILLE, OWENS CORNING OR KNAUF.
- B. ALL DUCTWORK SHALL BE SHEET METAL, UNLESS NOTED OTHERWISE (U.N.O.).
- C. DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS, U.N.O.
- D. CONSTRUCTION OF DUCTWORK SHALL MEET SMACNA 1" W.C. PRESSURE CLASS STANDARD AND RECOMMENDATIONS. SMACNA SHALL BE FOLLOWED WITH RESPECT TO GAGE THICKNESS, JOINTS, REINFORCING, CONSTRUCTION, INSTALLATION AND SUPPORT FOR PRESSURE CLASS STATED. ALL TRANSVERSE JOINTS IN RECTANGULAR AND ROUND DUCT INCLUDING DUCT CONNECTION TO AIR DEVICE COLLAR SHALL BE SEALED PER SMACNA SEAL CLASS C WITH U.L. DUCT MASTIC SEALANT APPROVED FOR INTENDED USE. DUCT TAPE IS NOT AN ACCEPTABLE SUBSTITUTE FOR MASTIC UNLESS EQUAL TO HARDCAST FOIL-GRIP 1402 BUTYL RUBBER ADHESIVE TAPE.
- E. DUCT SHALL BE SUPPORTED AT BASE OF DUCT DROPS. CURB DUCT RAILS ARE NOT INTENDED TO AND SHALL NOT SUPPORT THE WEIGHT OF THE DUCT.
- F. ALL DUCT INSULATION SHALL MEET MINIMUM R-VALUE REQUIRED BY ASHRAE 90.1 LATEST EDITION. ALL DUCT WRAP SHALL BE MINIMUM 2" THICK, 3/4 PCF AND 6 R-VALUE INSTALLED WITH EITHER A VAPOR BARRIER WITH MAXIMUM PERMEANCE 0.05 OR A MINIMUM 2 MIL ALUMINUM REINFORCED FOIL/KRAFT FACING.
- G. ALL DUCT DROPS FROM THE ROOFTOP UNITS SHALL BE EXTERNALLY INSULATED.
- H. SUPPLY AND RETURN AIR DUCTWORK SERVING ALL AREAS SHALL BE EXTERNALLY INSULATED.
- I. ALL AIR CONVEYANCE COMPONENTS SUCH AS, BUT NOT LIMITED TO DUCT, DUCT PLENUMS, GRILLES/DIFFUSERS, BACK PANS, AND BOOTS SHALL BE INSULATED. INSULATION TYPE IS COVERED ELSEWHERE IN THIS SPECIFICATION.
- J. RESTROOM RECTANGULAR EXHAUST AIR DUCTWORK SHALL BE LINED WITH 1" THICK, 1-1/2 PCF INSULATION. RESTROOM ROUND EXHAUST DUCT SHALL BE EXTERNALLY INSULATED PER SECTION 2.02F.
- K. TRUNK DUCTS SHALL BE ISOLATED FROM UNIT VIBRATION WITH THE USE OF NFPA AND U.L. APPROVED FLEXIBLE CONNECTORS INSTALLED AT THE TOP OF BOTH SUPPLY AND RETURN DROPS.
- L. INSULATED FLEXIBLE DUCT MAY BE UTILIZED FOR RUNOUTS TO GRILLES AND DIFFUSERS ONLY IN THE HORIZONTAL POSITION AND IN MAXIMUM LENGTHS OF 4'-0", NO EXCEPTIONS. SEE TAKE-OFF DETAIL ON DRAWING M-401.
- M. CONSTRUCTION OF FLEXIBLE DUCTWORK SHALL INCLUDE SPIRAL METAL HELIX BONDED TO A POLYESTER CORE, FIBERGLASS INSULATION WITH POLYETHYLENE OR MYLAR VAPOR BARRIER. ALL COMPONENTS SHALL HAVE APPROPRIATE U.L. APPROVAL AND SHALL BE EQUIVALENT TO THERMAFLEX MKE.
- N. FLEXIBLE DUCT SHALL BE INSTALLED PER THE "ADC FLEXIBLE DUCT PERFORMANCE AND INSTALLATION STANDARDS, 4TH ED" USING FOIL TAPE AND DRAWBAND ON THE INNER CORE AND TAPE OR DRAWBAND ON THE OUTER JACKET.
- O. DUCT TAPE SHALL BE EQUAL TO FASSON 181-B FX, 2-1/2" WIDE.
- P. SINGLE THICKNESS TURNING VANES SHALL BE INSTALLED AT 90 DEGREE TURNS IN SUPPLY DUCTWORK WHERE ANY ONE DIMENSION IS GREATER THAN 12".
- Q. RADIUS ELBOWS MAY BE SUBSTITUTED FOR 90 DEGREE ELBOWS AT THE DISCRETION OF THE CONTRACTOR. CENTERLINE RADIUS EQUAL TO: R=W PER FIGURE NO. 4-2 IN SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
- R. EXTERNAL INSULATION ON BOTTOM OF DUCTS 24" OR WIDER SHALL BE SUPPORTED WITH STICK PINS ON 18" CENTERS. STICK PIN WASHERS SHALL BE COVERED WITH DUCT TAPE OR MASTIC.

### 2.03 CONTROLS (C15735)

- A. SYSTEMS SHALL BE COMPLETE WITH CONNECTIONS TO CFA-500 TEMPERATURE CONTROL PANEL AS MANUFACTURED BY SUNCOAST ENVIRONMENTAL CONTROLS (S.E.C.) (PH: 877-544-6679). THE PANEL IS PROVIDED AND MOUNTED BY THE ELECTRICAL CONTRACTOR. CONTROL WIRING TERMINATIONS ARE BY THE MECHANICAL CONTRACTOR.
- B. THE SMOKE DETECTORS SHALL BE FACTORY INSTALLED AND WIRED BY THE ROOFTOP UNIT MANUFACTURER.
- C. A FACTORY INSTALLED SMOKE DETECTOR IN THE RETURN AIR SECTION OF EACH AIR CONDITIONING UNIT SHALL STOP THE INDOOR FAN AND CLOSE THE OUTSIDE AIR DAMPER IN THE EVENT OF EXCESSIVE TEMPERATURE OR SMOKE. SMOKE DETECTOR SHALL BE LOCATED PRIOR TO ANY EXHAUST FROM THE BUILDING OR MIXING WITH FRESH AIR MAKE-UP. UPON DETECTION, THE SYSTEM SHALL NOT RESTART UNTIL THE DEVICE IS MANUALLY RESET. DEVICES SHALL BE LOCATED WHERE THEY CAN BE EASILY ACCESSED AND WHERE CLEAR OF FILTERS.
- D. CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH SUNCOAST ENVIRONMENTAL CONTROLS FOR THE SMOKE DETECTOR TEST/RESET ANNUNCIATOR STATIONS. THE TEST/RESET STATIONS WILL BE PURCHASED BY THE ELECTRICAL CONTRACTOR AS A PART OF A NATIONAL ACCOUNT PACKAGE AND TURNED OVER TO THE MECHANICAL CONTRACTOR FOR INSTALLATION.
- E. THE REMOTE TEST/RESET ANNUNCIATORS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR. INSTALLATION BY MECHANICAL SHALL INCLUDE MOUNTING OF THE ANNUNCIATORS AND ALL WIRING FROM EACH DEVICE TO THE RTU. ELECTRICAL WILL PROVIDE A JUNCTION BOX IN THE WALL WITH 1/2" CONDUIT STUBBED UP ABOVE THE CEILING FOR EACH REMOTE TEST STATION AS SHOWN ON THE ELECTRICAL PLANS. ANNUNCIATOR SHALL BE SUNCOAST CONTROLS REMOTE TEST/RESET STATION WITH POWER LED, TROUBLE LED, ALARM LED, 90DB HORN AND TEST/RESET BUTTON.
- F. THE RESTROOM FAN SHALL BE INTERLOCKED TO THE LIGHTS SERVING THE MEN AND WOMEN'S RESTROOMS. THE HOOD FANS SHALL BE CONTROLLED VIA THE SUNCOAST CFA-500 CONTROL PANEL. WIRING, RELAYS AND SWITCHES FOR CONTROL OF ALL FANS ARE BY ELECTRICAL CONTRACTOR.
- G. LENNOX UNITS - THERMOSTATS ARE PROVIDED AND INTEGRATED INTO THE TEMPERATURE CONTROL PANEL BY SUNCOAST ENVIRONMENT CONTROLS. SUNCOAST WILL PROVIDE A NETWORK THERMOSTAT US32-CFA THERMOSTAT PREWIRED IN THE TEMPERATURE CONTROL PANEL. A REMOTE TEMPERATURE SENSOR FOR EACH THERMOSTAT IS ALSO PROVIDED. MECHANICAL CONTRACTOR SHALL INSTALL ALL WIRING BETWEEN THE THERMOSTAT, THE REMOTE SENSOR AND THE ROOFTOP UNIT.
- H. MECHANICAL CONTRACTOR SHALL INSTALL CONTROL WIRING IN 1/2" CONDUIT WHERE REQUIRED BY CODE. WHERE NOT REQUIRED TO BE IN CONDUIT, ALL WIRING SHALL BE RUN PARALLEL TO STRUCTURAL MEMBERS OR PERPENDICULAR WITH NO DIAGONAL ROUTING. ALL WIRING SHALL BE SECURED TO THE FRAMING TO PREVENT SAGGING IN RUNS. WIRING TO ROOFTOP UNITS SHALL BE ROUTED THROUGH THE FACTORY THRU-BASE FITTINGS IN THE UNIT BASE. NO SPLICING OF WIRING WILL BE ACCEPTED. ALL WIRING ABOVE THE ROOF SHALL BE INSTALLED IN EXTERIOR GRADE FLEXIBLE CONDUIT. ALL CONTROL WIRING AND CONTROL WIRING CONDUIT SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LATEST EDITION OF NEC. ALL LOW VOLTAGE CONTROL WIRING SHALL BE NO LESS THAN 18 AWG MIN. CONTROL WIRING CONDUCTORS SHALL BE SIZED TO ACCOUNT FOR LOAD AND LENGTH OF RUN TO ALLOW SUFFICIENT VOLTAGE AVAILABLE AT CONTROLLED DEVICE TO OPERATE THE SYSTEM RELIABLY.

## PART III - EXECUTION

### 3.01 SCOPE

- A. FURNISH AND INSTALL SYSTEM IN ACCORDANCE WITH REFERENCED STANDARDS, APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS AND AS INDICATED ON DRAWINGS.
  - B. CONTRACTOR SHALL INSTRUCT THE OWNER'S REPRESENTATIVE IN ALL MATTERS PERTAINING TO THE PROPER MAINTENANCE OF EQUIPMENT FURNISHED UNDER THIS CONTRACT THROUGH DEMONSTRATION AND EXPLANATION OF OPERATING & MAINTENANCE MANUALS.
  - C. CONTRACTOR SHALL PROVIDE A "SAMPLE MAINTENANCE PROPOSAL" TO THE OWNER'S REPRESENTATIVE IN ALL MATTERS PERTAINING TO THE PROPER MAINTENANCE OF EQUIPMENT FURNISHED UNDER THIS CONTRACT.
  - D. CONTRACTOR SHALL COMPLETE A/C EQUIPMENT STARTUP DOCUMENTATION PROVIDED BY OWNER AND/OR MANUFACTURER. THIS SHALL INCLUDE RE-TORQUE OF ALL FIELD AND FACTORY HIGH VOLTAGE CONNECTIONS.
- ### 3.02 LEED PROJECTS
- A. CONTRACTOR SHALL COMPLETE RECEIPT INSPECTION CHECKLISTS PROVIDED IN THE COMMISSIONING PLAN WITHIN 5 DAYS OF RECEIVING EQUIPMENT ON SITE.
  - B. CONTRACTOR SHALL COMPLETE PRE-FUNCTIONAL CHECKLISTS PROVIDED IN THE COMMISSIONING PLAN. CHECKLISTS SHALL BE RETURNED AT LEAST 5 DAYS PRIOR TO SCHEDULING FUNCTIONAL PERFORMANCE TESTING.
  - C. CONTRACTOR SHALL PROVIDE A TECHNICIAN TO ASSIST THE THIRD PARTY COMMISSIONING AUTHORITY WITH FUNCTIONAL TESTING. FUNCTIONAL TESTING SHALL OCCUR AFTER ALL CONTROLS HAVE BEEN INSTALLED AND VERIFIED AND AFTER TEST AND BALANCE IS COMPLETE. THE FUNCTIONAL PERFORMANCE TEST PROCEDURES CAN BE FOUND IN THE COMMISSIONING PLAN.
  - D. IF THE TOTAL TIME REQUIRED TO CORRECT PROBLEMS DURING TESTING IS GREATER THAN FORTY-FIVE (45) MINUTES (UNLESS EXTENUATING CIRCUMSTANCES EXIST), THE TEST SHALL BE CONSIDERED FAILED AND MUST BE REPEATED IN ITS ENTIRETY.
  - E. RE-TESTING: DURING THE COURSE OF THE RETEST, IF AT ANY POINT A MAJOR DEFICIENCY IS DISCOVERED, THE TEST WILL BE STOPPED. REPEAT TESTS UNTIL ACCEPTABLE RESULTS ARE ACHIEVED. IF MORE THAN TWO FUNCTIONAL PERFORMANCE TESTS (ONE INITIAL TEST AND ONE RETEST) FOR ANY TYPE OF EQUIPMENT DUE TO ISSUES THAT THE CONTRACTOR HAD DIRECT OR INDIRECT CONTROL OVER ARE REQUIRED, THE COSTS FOR THE CXA TO WITNESS RETESTING OF SIMILAR TYPES OF EQUIPMENT UNTIL SATISFACTORY RESULTS ARE OBTAINED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ### 3.03 TEST & BALANCE

- A. OWNER SHALL TEST AND BALANCE MECHANICAL SYSTEM IN ACCORDANCE WITH NEBB, NBC OR AABC STANDARDS TO ASSURE CONFORMANCE WITH DESIGN. G.C. WILL MAKE MECHANICAL CONTRACTOR AVAILABLE DURING TEST AND BALANCE TO ASSIST TESTING AGENCY AND TO MAKE CORRECTIONS IMMEDIATELY NECESSARY. CONTRACTOR SHALL CORRECT ITEMS ON WRITTEN TEST AND BALANCE REPORT.
- B. ALL EQUIPMENT TO BE BALANCED MUST HAVE GONE THRU SUCCESSFUL START-UP PROCEDURE BY THE MECHANICAL CONTRACTOR (MC) PRIOR TO TAB VISIT.
- C. THE FLOOR OF THE RESTAURANT SHALL BE CLEARED OF DEBRIS. STAGED CONSTRUCTION MATERIALS, EQUIPMENT, ETC. WHICH MAY, IN THE OPINION OF THE TAB TECHNICIAN, OBSTRUCT ACCESS TO AIR DISTRIBUTION COMPONENTS IN AND ABOVE THE CEILING.
- D. EQUIPMENT ACCESS PANELS, DUCT AIR DEVICES SUCH AS BALANCING DAMPERS AND ACTUATORS SHALL BE ACCESSIBLE AND CLEAR OF PIPING, CONDUIT, FRAMING, SUPPORTS ETC...
- E. PROVIDE AN 8 FT PORTABLE A-FRAME STYLE LADDER DEDICATED FOR THE TAB TECHNICIAN'S USE DURING THE ENTIRE TAB EFFORT DURATION.
- F. THE MC SHALL BE AVAILABLE DURING THE ENTIRE DURATION OF THE TAB EFFORT AND HAVE ON-SITE THE RESOURCES AND TOOLS TO MAKE CORRECTIONS AS NEEDED UNDER THE DIRECTION OF THE TAB TECHNICIAN.

## 2. ADDITIONAL MECHANICAL SPECIFICATIONS

### REFRIGERANT PIPING REQUIREMENTS

- A. ALL REFRIGERANT PIPING (FREEZER, COOLER, ICE MAKER, A/C) SHALL BE INSULATED TO THE LEVEL EXPRESSED IN THE TABLE BELOW:

Fluid Operating Temperature Range (°F) and Usage	Insulation Conductivity		Nominal Pipe or Tube Size, in.				
	Conductivity, Btu-in/h-ft <sup>2</sup> -°F	Mean Rating Temperature, °F	1 to <1	1-1/2 to <4	4 to <8	8 to >=8	
			Insulation Thickness, in.				
-40 to 60	0.21 to 0.27	75	0.5	0.5	1.0	1.0	1.0
<40	0.20 to 0.26	50	0.5	1.0	1.0	1.0	1.5

### COMPLETION REQUIREMENTS

- A. WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL INSTALLATION BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER. RECORD DRAWINGS SHALL INCLUDE, AS A MINIMUM, THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT; GENERAL CONFIGURATION OF THE DUCT AND PIPE DISTRIBUTION SYSTEM, INCLUDING SIZES; AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES.
- B. OPERATING MANUAL AND A MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE. THESE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARDS AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
  - SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
  - OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT AND SYSTEM REQUIRING MAINTENANCE, EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
  - NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY.
  - HVAC CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS, DESIRED OR FIELD-DETERMINED SET POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS.
  - A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SUGGESTED SET POINTS.

### KITCHEN HOOD CAPTURE REQUIREMENTS

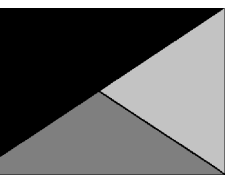
- A. AN APPROVED FIELD TEST METHOD SHALL BE USED TO EVALUATE DESIGN AIRFLOW RATES AND DEMONSTRATE PROPER CAPTURE AND CONTAINMENT PERFORMANCE OF INSTALLED COMMERCIAL KITCHEN EXHAUST SYSTEMS. THIS TEST SHALL BE WITNESSED BY THE MECHANICAL/BUILDING INSPECTOR FOR THE AUTHORITY HAVING JURISDICTION.

VENTILATION CALCULATIONS					
ZONE	PEOPLE OUTDOOR AIR RATE (Rp)	ZONE POPULATION (Pz)	AREA OUTDOOR AIR RATE (Ra)	ZONE FLOOR AREA (Az)	OUTDOOR AIRFLOW RATE REQ'D (Vbz)
SALES (SERVING AREA)	7.5	12	0.12	771	183
DINING (CAFETERIA, FAST FOOD)	7.5	122	0.18	1215	1134
STORAGE	--	--	0.12	402	48
TEAM ROOM (RECEPTION)	5	9	0.06	302	63
OFFICE	5	1	0.06	52	8
KITCHEN	7.5	28	0.12	1378	375
CORRIDOR	--	--	0.06	105	6

ZONE 1 - DINING + CORRIDOR + TEAM ROOM = 1203 CFM.  
 1203 CFM (Vbz) / 0.8 = 1504 CFM (Voz)  
 AC#3 PROVIDES 1,750 CFM OUTSIDE AIR TO ZONE 1.  
 ZONE 2 - KITCHEN + STORAGE + OFFICE = 431 CFM.  
 431 CFM (Vbz) / 0.8 = 539 CFM (Voz)  
 AC#1 PROVIDES 1,450 CFM OUTSIDE AIR TO ZONE 2.  
 ZONE 3 - SALES (SERVING AREA) = 183 CFM.  
 183 CFM (Vbz) / 0.8 = 229 CFM (Voz)  
 AC#2 PROVIDES 1,575 CFM OUTSIDE AIR TO ZONE 3.  
 KITCHEN IS 1,378 SQUARE FEET. AT 0.70 CFM EXHAUST REQUIRED PER SQ. FT. KITCHEN IS REQUIRED TO EXHAUST 965 CFM.  
 KITCHEN EXHAUSTS 3,315 CFM.  
 CALCULATIONS ARE BASED ON TABLE 403.3.3.1, 2018 INTERNATIONAL MECHANICAL CODE.  
 (FOR OA RATE: Vbz = RpPz + RaAz || FOR ZONE OA RATE: Voz = Vbz/0.8)



**Chick-fil-A**  
5200 Buffington Road  
Atlanta, Georgia  
30349-2998



**Kurzynske & Associates**  
2705 Lebanon Pike - Suite 106  
Nashville, Tennessee 37214  
Telephone: (615) 255-5203



09/06/22

**CHICK-FIL-A**  
**RELO CHRISTIANSBURG**  
**FSU**  
2580 NORTH FRANKLIN STREET  
CHRISTIANSBURG, VA 24073

**FSR#05049**

BUILDING TYPE / SIZE: P13 LE LRG  
RELEASE: 22.02

PRINTED FOR: CONSTRUCTION

REVISION SCHEDULE

NO. DATE DESCRIPTION  
2 06/22/2022 PLAN REVIEW

CONSULTANT PROJECT # 22077.EH.S  
DATE 04/26/2022  
DRAWN BY BLM

Information contained on this drawing and all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET MECHANICAL SPECIFICATIONS

SHEET NUMBER

**M-901**

