

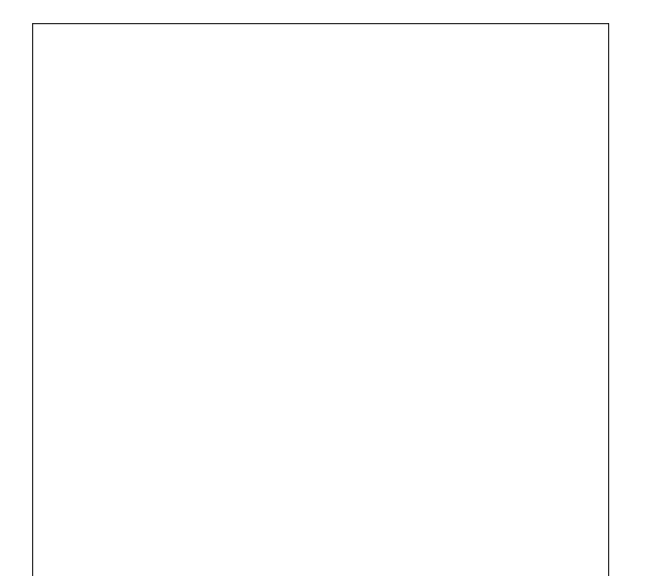


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02/15/2023



**CHICK-FIL-A**  
**PRINCETON WOODS**  
 3330 PINE BLUFF DRIVE  
 DUMFRIES, VA 22026

**FSR#04916**  
 BUILDING TYPE / SIZE: P13 LSR LRG  
 RELEASE: 22.05  
 PRINTED FOR: CONSTRUCTION

NO.	DATE	DESCRIPTION
3	12-12-22	CODE COMMENTS

CONSULTANT PROJECT # 22050.EH.S  
 DATE 08/22/2022  
 DRAWN BY BLM

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 SHEET MECHANICAL FLOOR PLAN  
 SHEET NUMBER

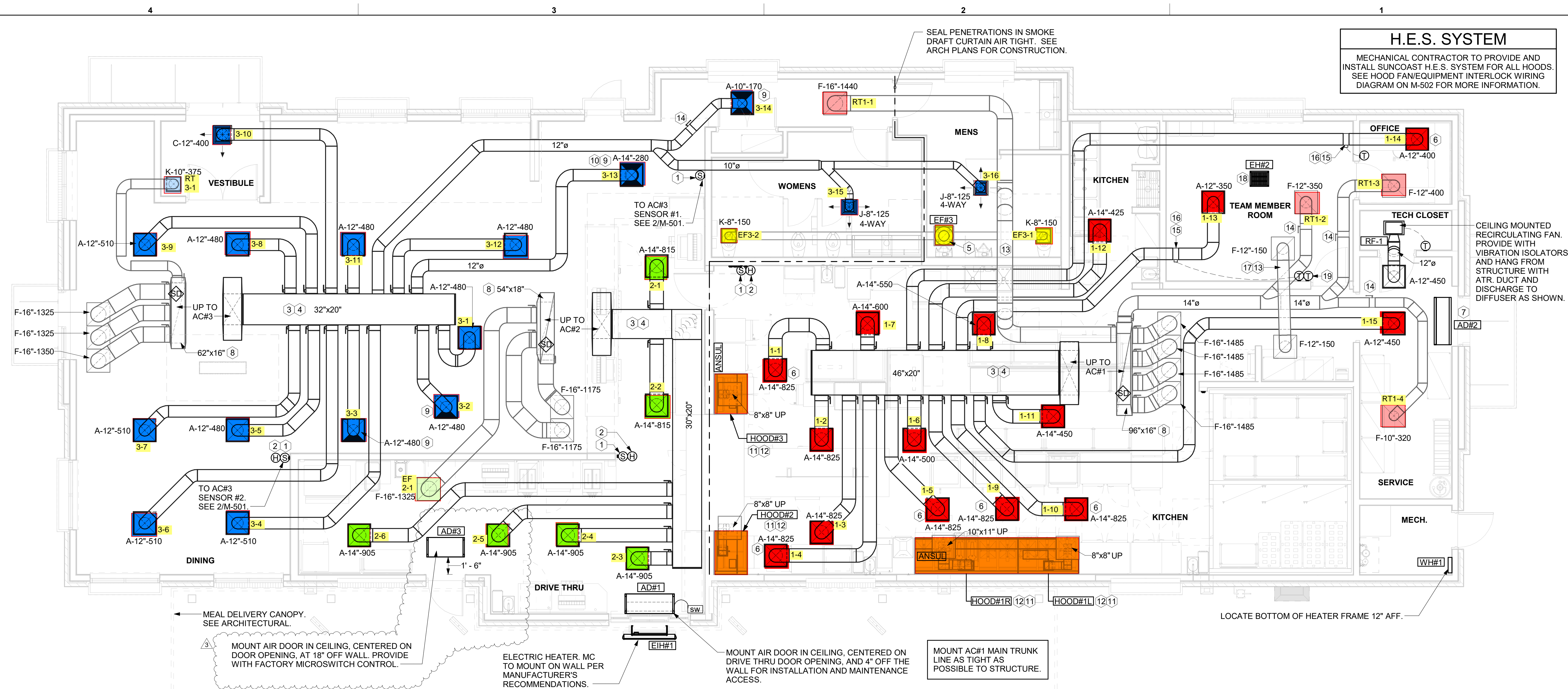
**M-201**

**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-502 FOR MORE INFORMATION.

SEAL PENETRATIONS IN SMOKE DRAFT CURTAIN AIR TIGHT. SEE ARCH PLANS FOR CONSTRUCTION.

CEILING MOUNTED RECIRCULATING FAN. PROVIDE WITH VIBRATION ISOLATORS AND HANG FROM STRUCTURE WITH ATR. DUCT AND DISCHARGE TO DIFFUSER AS SHOWN.

LOCATE BOTTOM OF HEATER FRAME 12" AFF.



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

**SHEET NOTES**

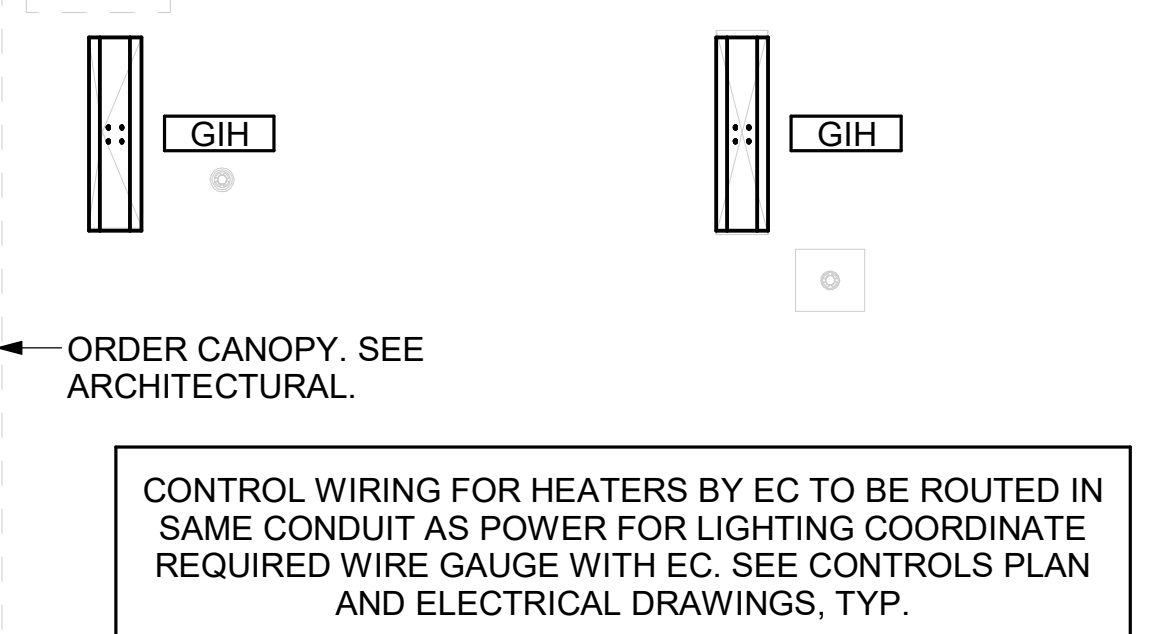
- DUCT SIZES SERVING DIFFUSERS AND GRILLES ARE SAME SIZE AS DIFFUSER OR GRILLE NECK UNLESS NOTED OTHERWISE.
- FLEXIBLE DUCT NOT SHOWN FOR CLARITY. ALL TAKE-OFFS SHALL INCLUDE FLEXIBLE DUCT. SEE DETAIL 1/M-401 FOR FLEXIBLE DUCT INSTALLATION REQUIREMENTS.
- FOR SUPPLY AND RETURN OPENINGS, CUT OPENING AROUND 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 REMOTE 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).
- 10X10 EXHAUST DUCT DOWN.
- 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.
- TRANSITION IN VERTICAL DROP FROM FULL SIZE OF CURB OPENING TO SIZE SHOWN. SEE DETAIL ON SHEET M-401 FOR REQUIRED TRANSITION GEOMETRY. TRANSITION WITHIN CURB WHERE REQUIRED TO AVOID STRUCTURE. WHERE THE DUCT IS SHOWN OFFSET HORIZONTALLY, PROVIDE ELBOW WITHOUT 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).
- MECHANICAL CONTRACTOR TO CLOSE THE AIR PATTERN DEFLECTORS ON SHADED SIDE.
- PROVIDE 14" TO 12" TRANSITION ON COLLAR OF DIFFUSER.
- HALTON KBD DAMPER AT HOOD COLLAR BY MECHANICAL CONTRACTOR. SEE HOOD ELEVATIONS ON M-301 FOR LOCATION.
- SEE ELEVATIONS ON M-301 FOR CJ FAN DUCTING REQUIREMENTS.
- ROUTE DUCT WITHIN STRUCTURE.
- RUSKIN MDRS25 MVD W/LOCKING QUADRANT HANDLE.
- YOUNG REGULATOR 12" MODEL 4075-LMB24-IF ROUND ZONE DAMPER WITH MODEL T-720A AUTOMATIC CHANGE-OVER THERMOSTAT. MOUNT TSTAT 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.
- TRANSFER AIR DUCT, NO BALANCING DAMPERS AT GRILLES.
- CEILING MOUNTED ELECTRIC HEATER. HEATER SPEC: MARKEL MODEL HF3386D-RP-T, 3 KW CEILING MOUNTED HEATER, 208/160. PROVIDE WITH FACTORY WALL MOUNT THERMOSTAT, INTEGRAL DISCONNECT, AND 2X2 T-BAR MOUNTING KIT. CONTRACTOR TO CONTACT SCOTT GEORGE OF TOM BARROW COMPANY AT 404-351-1010 TO PURCHASE EH#2. HEATER NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.
- LOCATE THERMOSTAT FOR CEILING MOUNTED ELECTRIC HEATER AT 48" AFF NEXT TO VAV DAMPER THERMOSTAT.



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

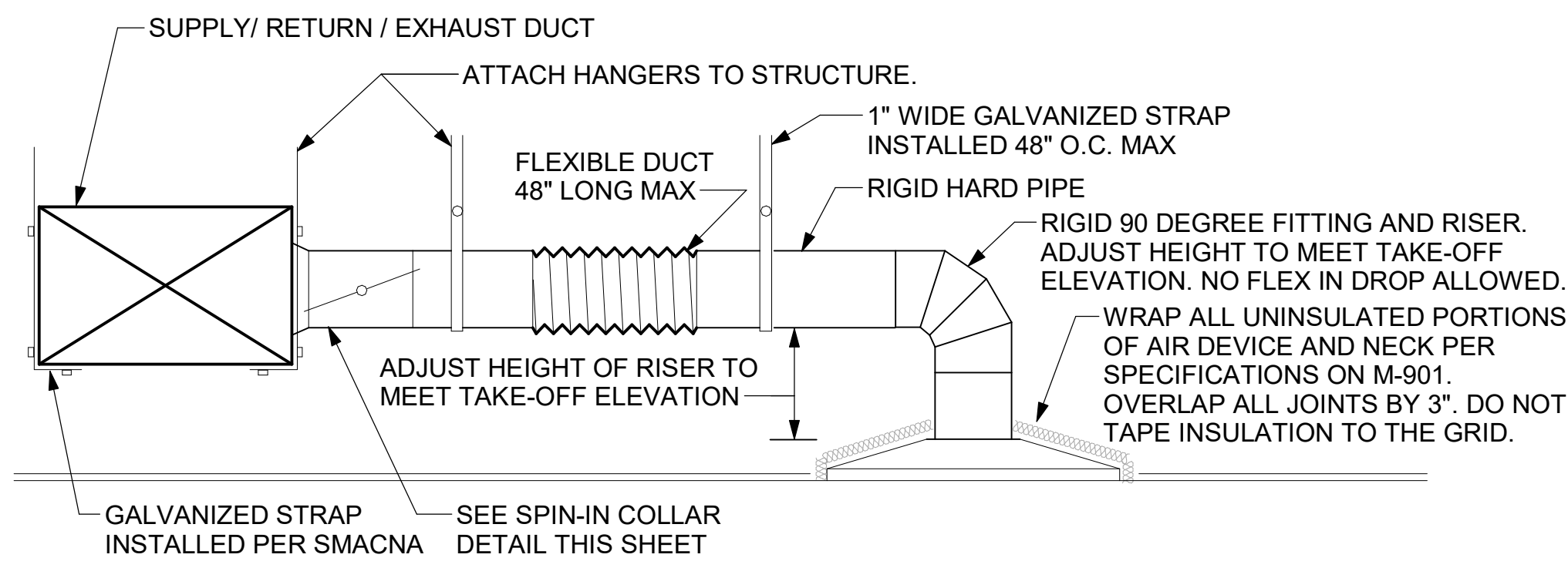
**LEGEND**

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
[SD]	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
EIH	ELECTRIC INFRARED HEATER	[T]	THERMOSTAT

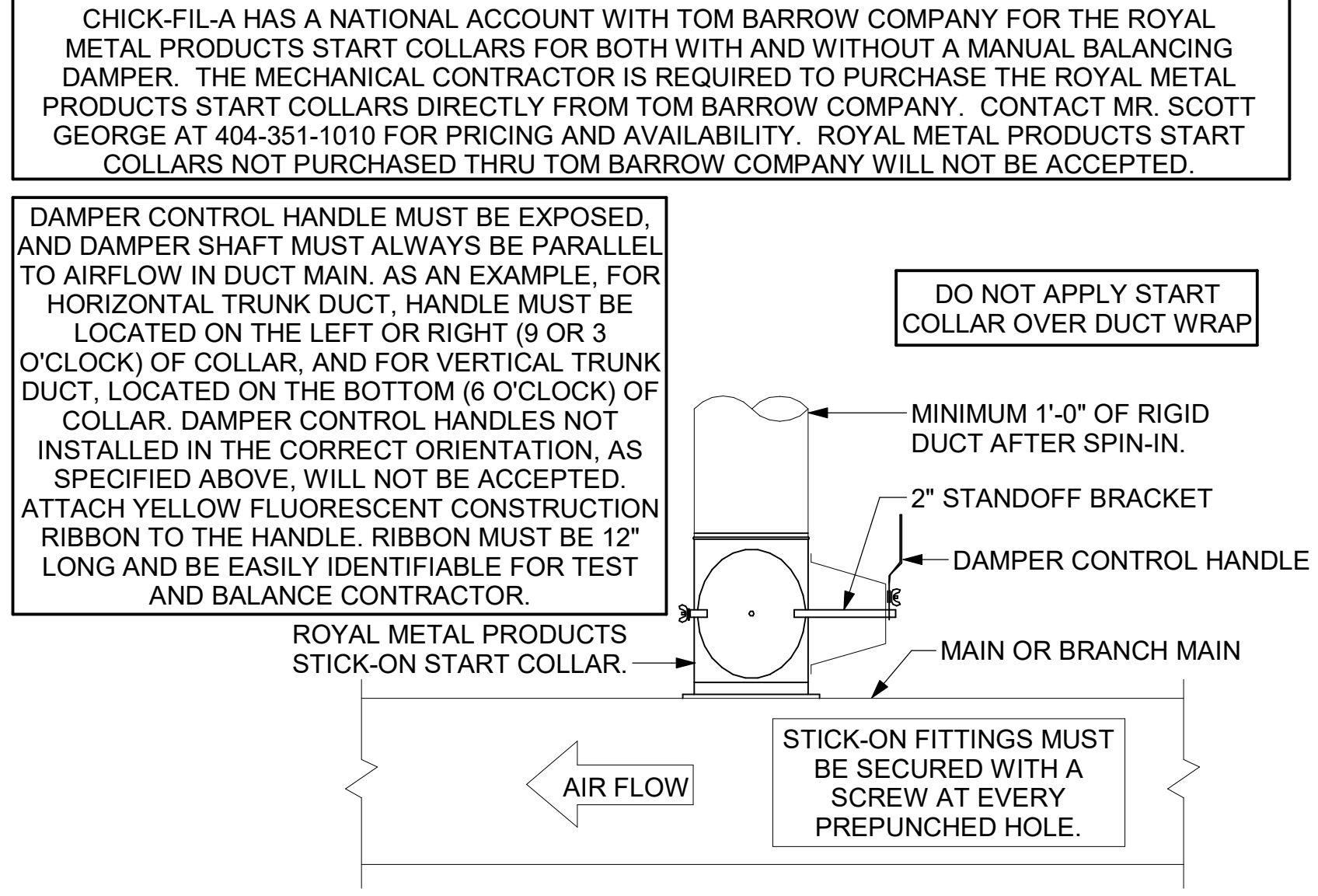
**AIR BALANCE SCHEDULE**

Mark	SUPPLY AIR	RETURN AIR	OUTSIDE AIR	EXHAUST AIR	BUILDING POSITIVE PRESSURE
AC#1	9500	8450	1050		
AC#2	5250	3675	1575		
AC#3	6500	4375	2125		
EF#1				1913	
EF#2				1402	
EF#3				300	
	21250	16500	4750	3615	1135

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



**2 START COLLAR**  
NOT TO SCALE

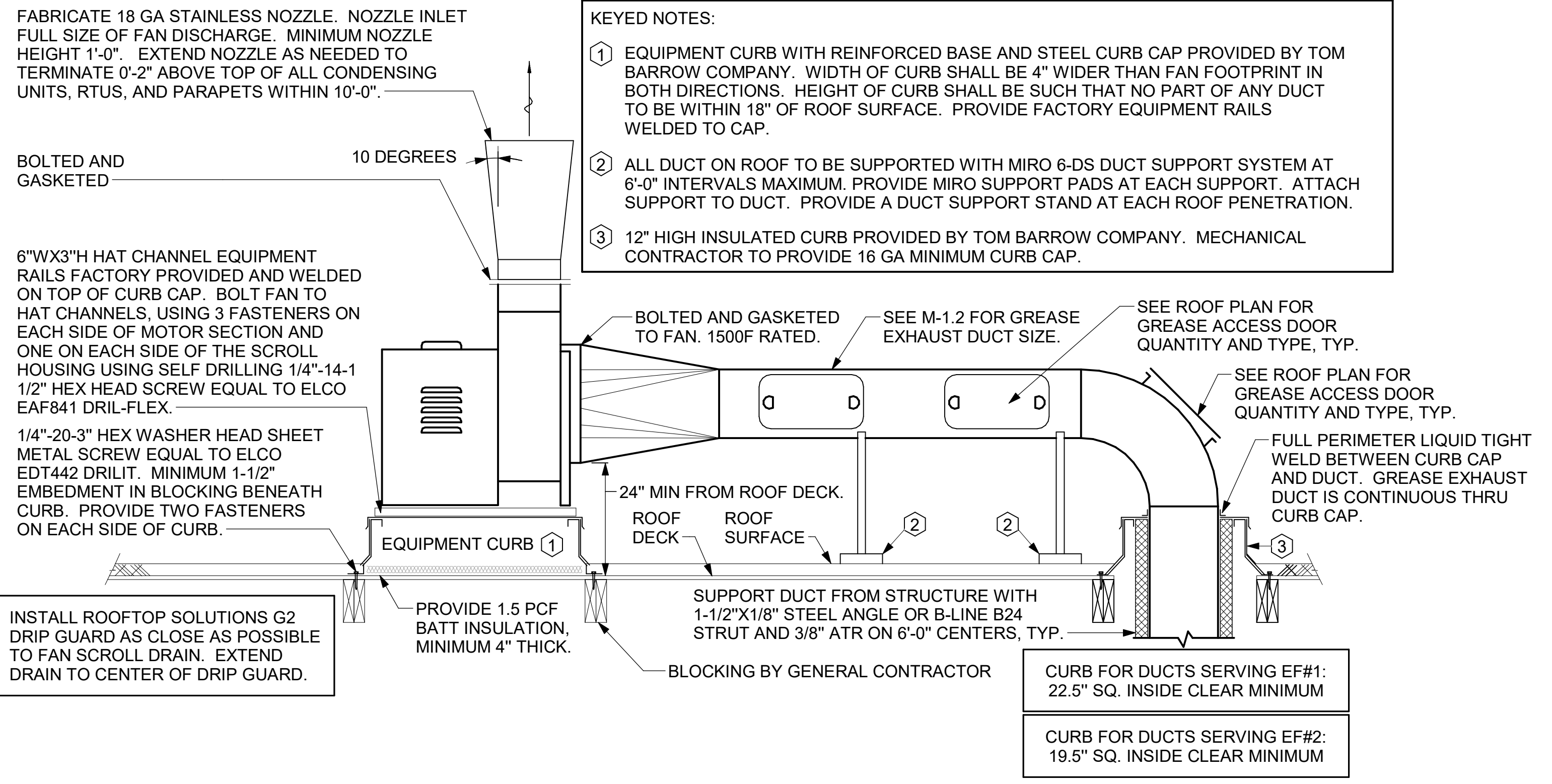
GAS FIRED ROOFTOP UNIT SCHEDULE																	
MARK	Total Cooling MBH	Sensible Cooling MBH	EER	IEER	Heating Input	Heating Output	AFUE	Supply Air	Outside Air	Fan HP	ESP (in WC)	MCA	MOCF	MODEL	MFR	Weight	REMARKS
AC#1	280.4	217.7	9.8	13.0	400	324	81%	9500	1050	(2) 3.1	1.40	125	150	YSJ300	TRANE	2788.00 lbf	1-13
AC#2	206.1	140.5	10.8	14.0	400	324	81%	5250	1575	(2) 3.1	0.90	98	125	YSJ210	TRANE	2668.00 lbf	1-13
AC#3	240.0	169.1	9.8	13.0	400	324	81%	6500	2125	(2) 3.1	1.00	113	150	YSJ240	TRANE	2738.00 lbf	1-13

NOTES:

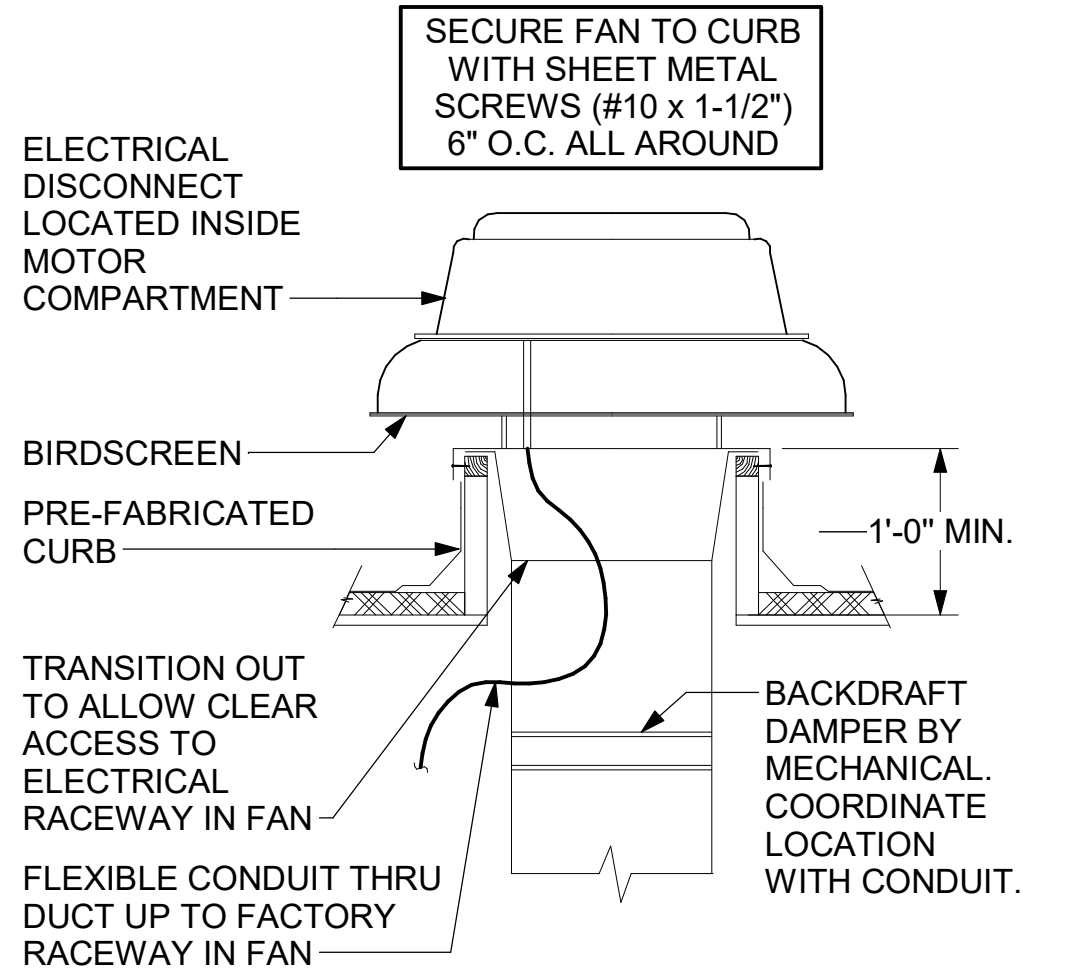
- COOLING CAPACITIES ARE GROSS, BASED ON ENTERING: 80FDB/67FWB, OUTDOOR: 95FDB, AND 400 CFM PER TON.
- CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT FOR EQUIPMENT WITH TRANE. CONTACT TRANE NATIONAL ACCOUNTS AT 830-400-4285 FOR PRICING, ORDERING AND AVAILABILITY.
- MECHANICAL CONTRACTOR TO VERIFY TRANE SUBMITTAL WITH CONSTRUCTION DOCUMENTS.

REMARKS:

- PROVIDE DIFFERENTIAL ENTHALPHY ECONOMIZER WITH FIELD INSTALLED POWER EXHAUST.
- PROVIDE FACTORY 14\"/>



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



**4 RESTROOM EXHAUST FAN**  
NOT TO SCALE

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	
AD#3	1268	2760 FPM	N/A	3/4 HP	DRIVE-THRU	CHA-1-36	Powered Aire	1,2,4	

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 WIRED DISCONNECT.
- FACTORY PROVIDED. FIELD INSTALLED BY MC. REMOTE WALL SWITCHES FOR EHATING 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.	VARIES	VARIES	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 EGGCRATE RETURN AIR GRILLE WITH REMOVABLE WHITE CORE, FACTORY FLAT BLACK BACKPAN AND ROUND NECK.	VARIES	VARIES	24"x24"	LAY-IN	1,7
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. MC TO SEAL JOINTS WITH MASTIC AND INSULATE EXTERNALLY.
- FIELD INSULATE BACKPAN AS SHOWN ON DETAIL 1/M-401.
- FACTORY INSULATED R-6 BACKPAN.

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

NOTES:

- CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH BROMIC HEATING USA FOR THE ELECTRIC HEATER PACKAGE. THE MECHANICAL CONTRACTOR SHALL PURCHASE HEATERS DIRECTLY FROM BROMIC HEATING USA. CONTACT MR. BLAKE RUSSIE AT 858-381-4850 FOR PRICING AND AVAILABILITY. BROMIC HEATERS NOT PURCHASED THRU BROMIC HEATING USA WILL NOT BE ACCEPTED.

REMARKS:

- 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.
- PROVIDE BLACK HEATER WITH HIGH TEMPERATURE COATING, AND MANUFACTURER MOUNTING BRACKETS.

RECIRCULATING FAN SCHEDULE									
Mark	Fan CFM	Fan ESP	Fan RPM	Fan HP	Area Served	Model	Manufacturer	Fan Remarks	
RF-1	450	0.30	1144	58 W	TECH CLOSET	GCVF-700	LOREN COOK	1,2,3	

NOTES:

- CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE FANS PACKAGE. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE FANS 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 THERMOSTAT / TEMPERATURE CONTROLLER. SET TO 76°F.

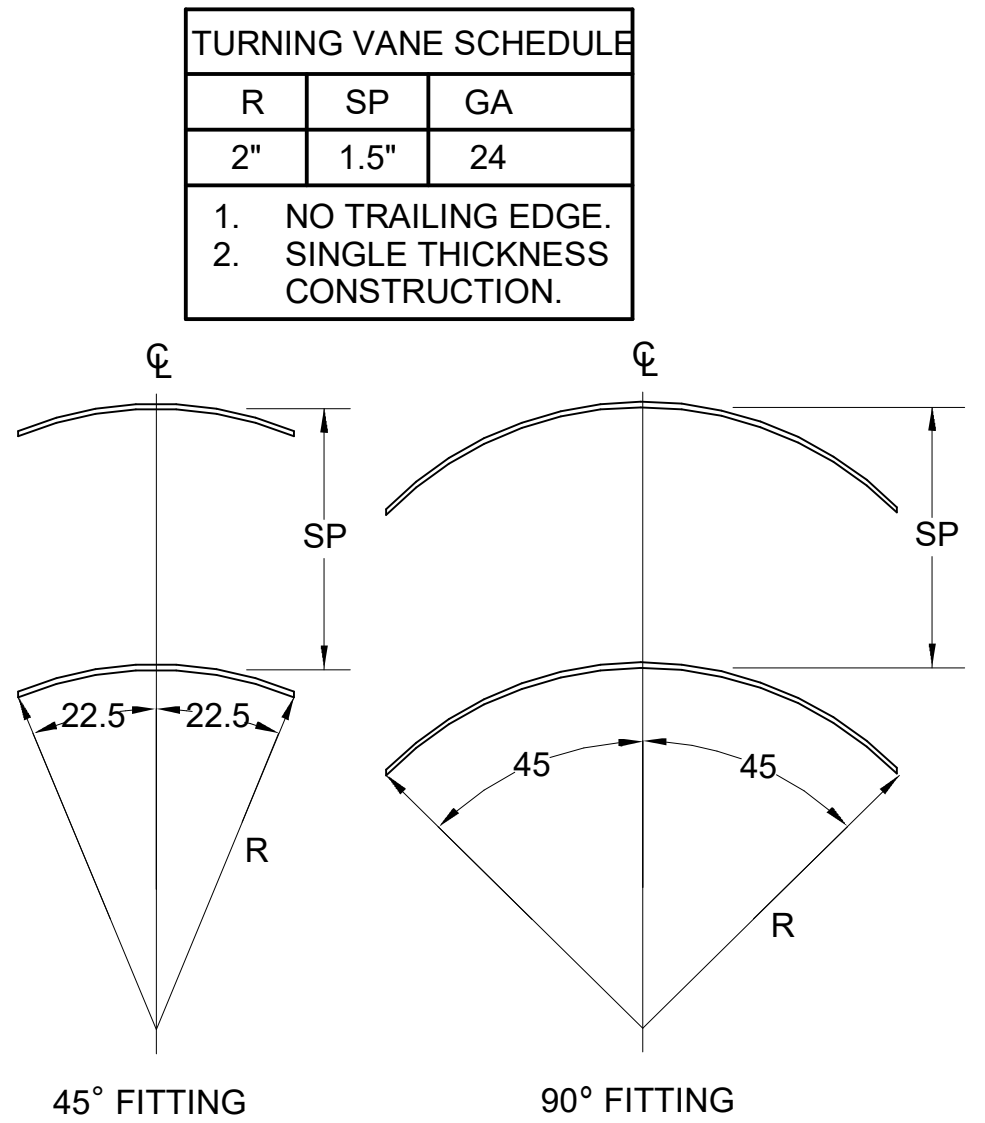
ELECTRIC WALL HEATER SCHEDULE						
MARK	KW	FRAME SIZE WIDTH HEIGHT	CFM	MOUNTING TYPE	MODEL	MANUFACTURER
WH#1	3.0	14-1/8"   19-1/2"	175	SURFACE	HF3325TD-RP	MARKEL

NOTES:

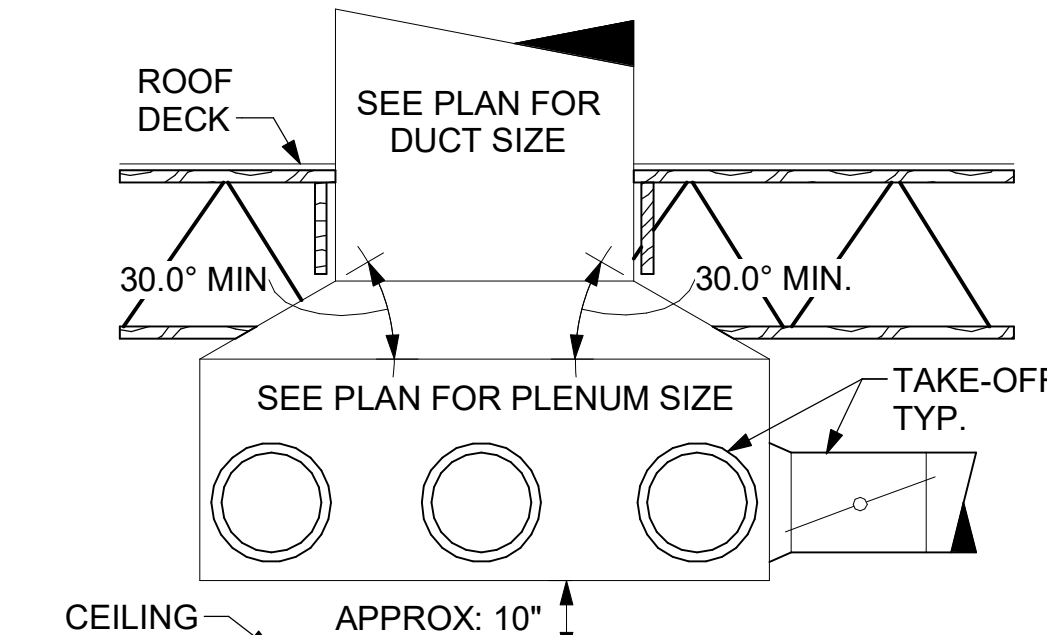
- CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE ELECTRIC WALL HEATER PACKAGE. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE WALL HEATERS DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010. FOR PRICING AND AVAILABILITY. WALL HEATERS NOT PURCHASED THRU TOM BARROW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

REMARKS:

- AUTOMATIC FAN DELAY SWITCH AND INTEGRAL DISCONNECT.
- INTEGRAL TAMPERPROOF THERMOSTAT SET AT 65 DEG. F.
- CAPACITY SHOWN IS BASED ON 208V SERVICE.
- CONFIRM ELECTRICAL CHARACTERISTICS WITH E-SHEETS PRIOR TO ORDERING EQUIPMENT.
- POWDER COATED 18 GA. STEEL GRILLE WITH ALUMINUM FRAME.
- AUTOMATIC RESET THERMAL LIMIT SWITCH.
- TUBULAR STEEL ELEMENT WITH STEEL FINS.



**5 TURNING VANES**  
NOT TO SCALE



**6 RETURN DROP GEOMETRY**  
NOT TO SCALE

GAS FIRED INFRARED HEATER SCHEDULE							
MARK	INPUT (MBH)	FRAME LENGTH	FRAME WIDTH	FRAME DEPTH	MOUNTING TYPE	MODEL	MANUFACTURER
GIH	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" MIN. AWAY FROM THE LONG SIDE OF THE HEATER.
- STAINLESS STEEL HEAT SHIELDS PROVIDED BY TOM BARROW COMPANY.



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02/15/2023

**CHICK-FIL-A**  
**PRINCETON WOODS**  
3330 PINE BLUFF DRIVE  
DUMFRIES, VA 22026

**FSR#04916**

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CONSULTANT PROJECT # 22050.EH.S  
DATE 08/22/2022  
DRAWN BY BLM  
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SHEET HVAC DETAILS AND SCHEDULES  
SHEET NUMBER

**M-401**

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30-LSR-04916-M-401-HVAC DETAILS AND SCHEDULES



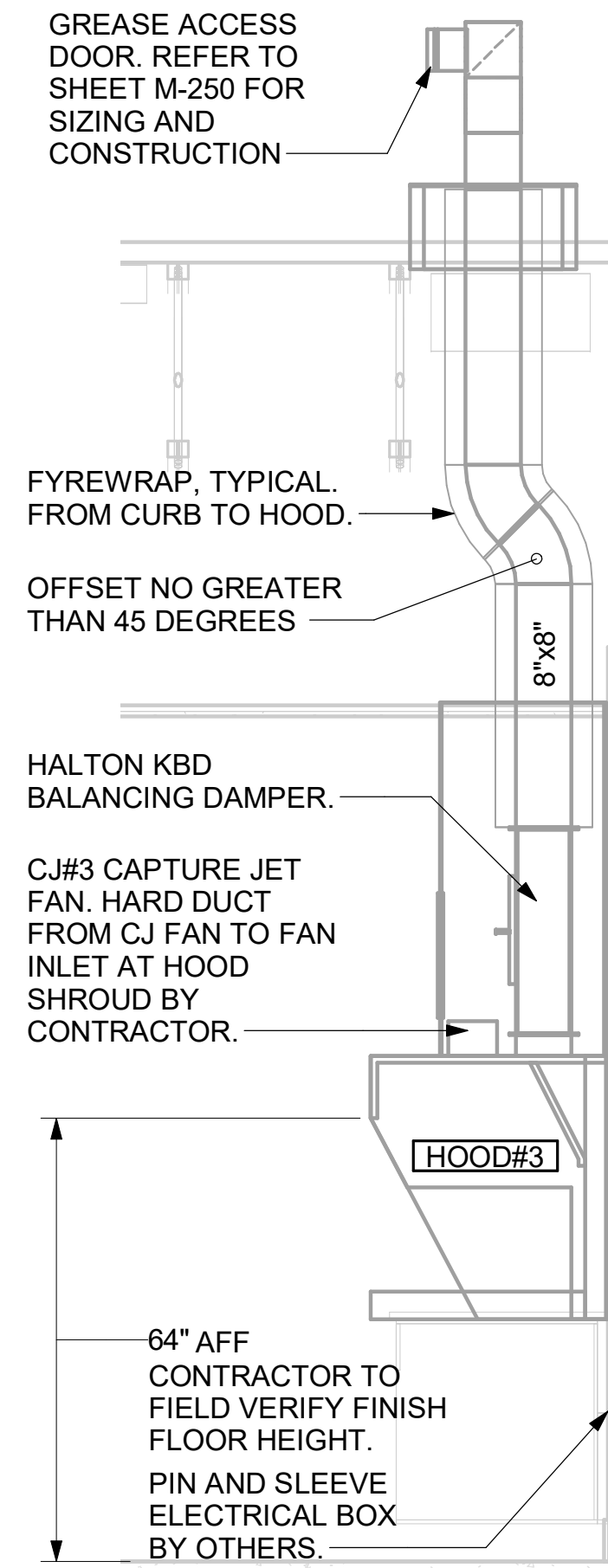
**GREASE EXHAUST DUCT CLEARANCE NOTE:**  
 CLEARANCES ABOVE CEILING ARE TIGHT. MECHANICAL CONTRACTOR TO FIELD VERIFY EXACT ROUTING AND CLEARANCES PRIOR TO FABRICATING GREASE EXHAUST DUCT.

**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	709	0.13"	47 @ 0.30"	BACKSHELF	8"x8"	63"	37"	38"	HALTON	KVL-2 IC	1
HOOD#1R	1204	0.13"	80 @ 0.30"	BACKSHELF	14"x8"	107"	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 CONSTRUCTION AND OPTIONS. HOOD SHOP DRAWINGS ARE INCLUDED FOR REFERENCE ON SHEET MH-101.										

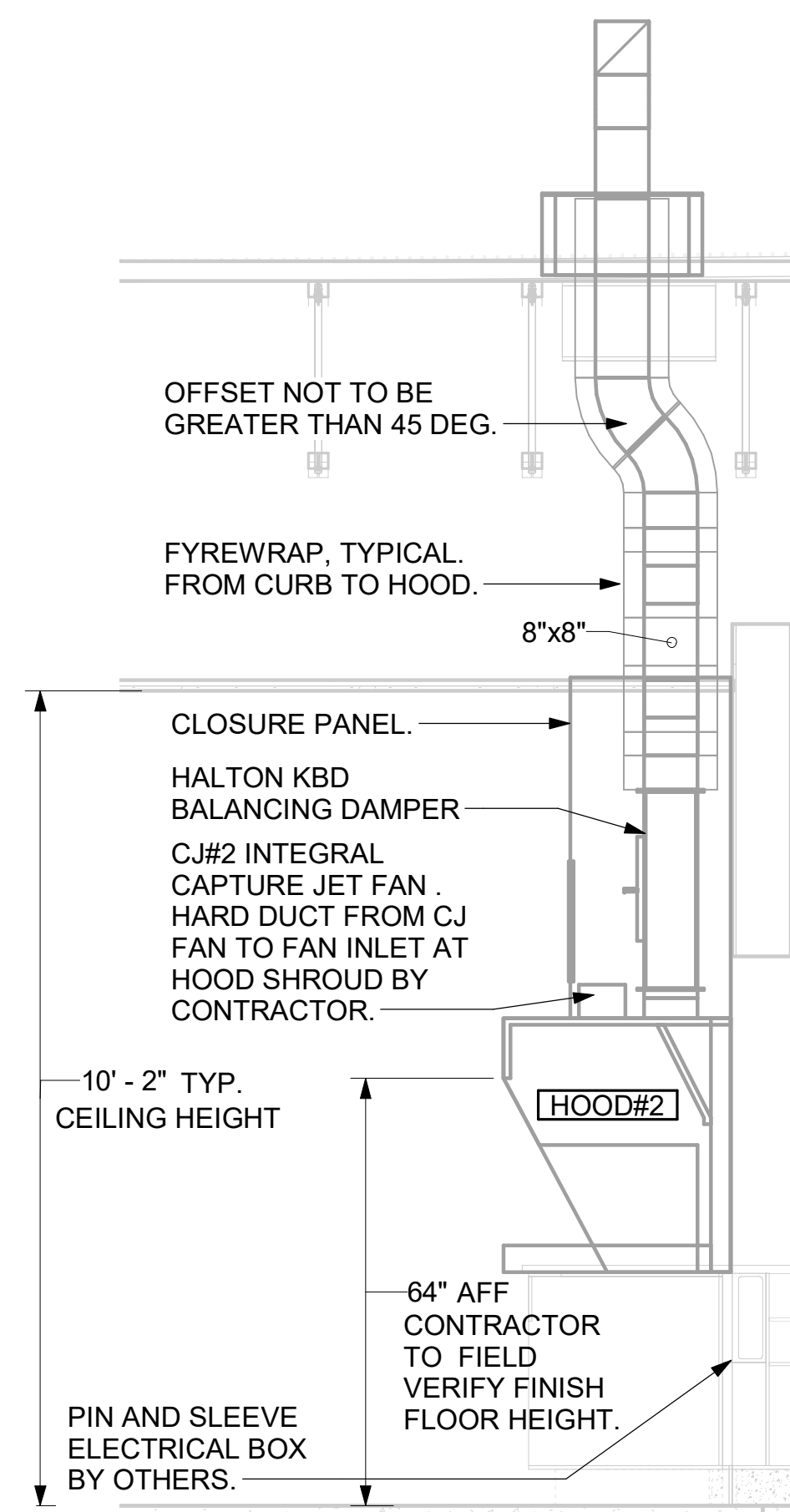
- KITCHEN HOOD SYSTEMS NOTES**
- CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT WITH HALTON CO. FOR THE HOODS. CHICK-FIL-A WILL PURCHASE AND PROVIDE THE HOODS FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR RECEIVING THE HOODS. CONTACT HALTON CO. AT 270-237-5600 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 FYREWRAP. INSULATION ON ACCESS DOORS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTALLATION RECOMMENDATIONS. UNIFRAX FYREWRAP 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 TEXTRON 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-502 FOR MORE INFORMATION.

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

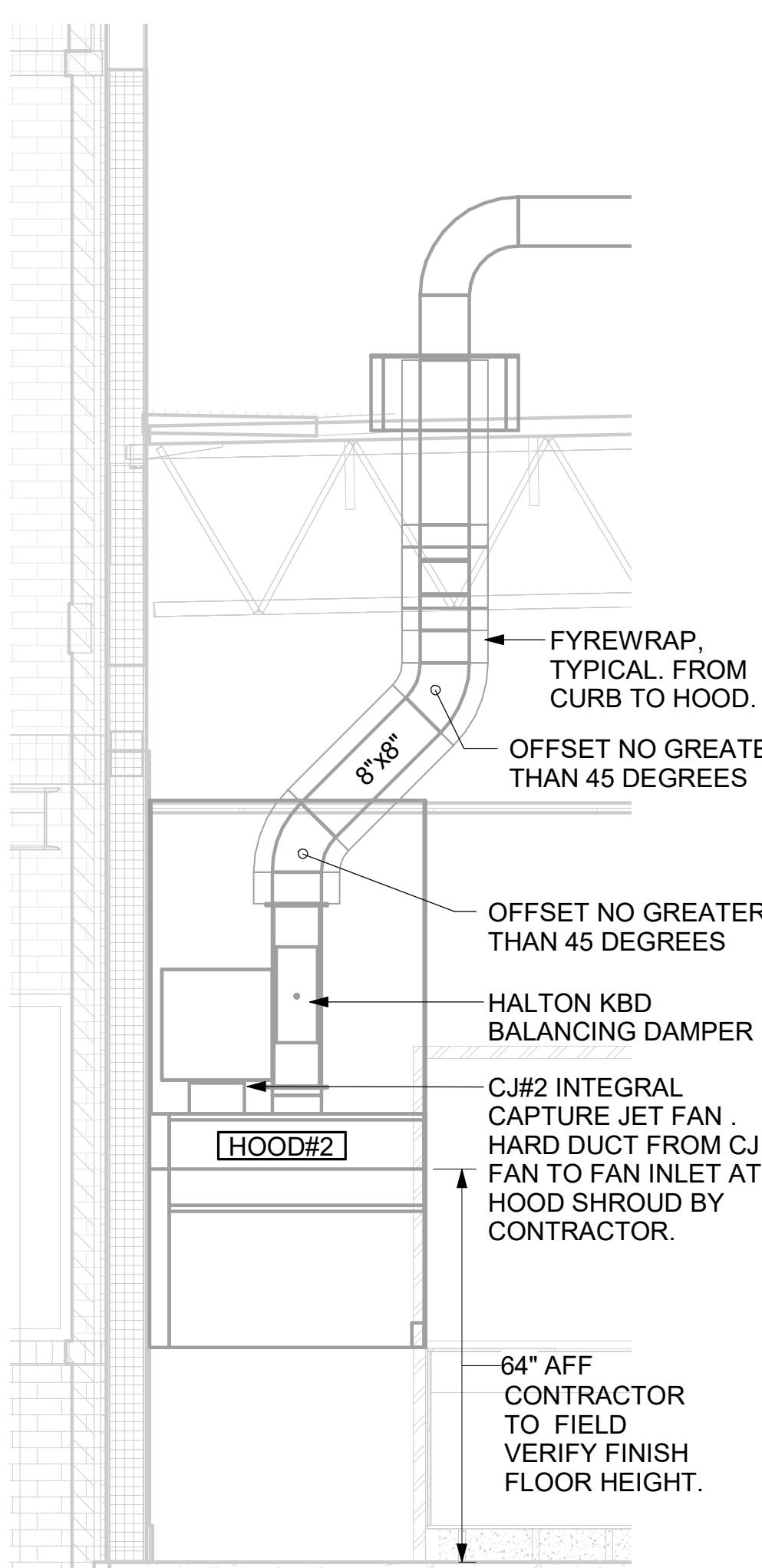


7 HOOD ELEVATION - HOOD#3  
 NOT TO SCALE

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

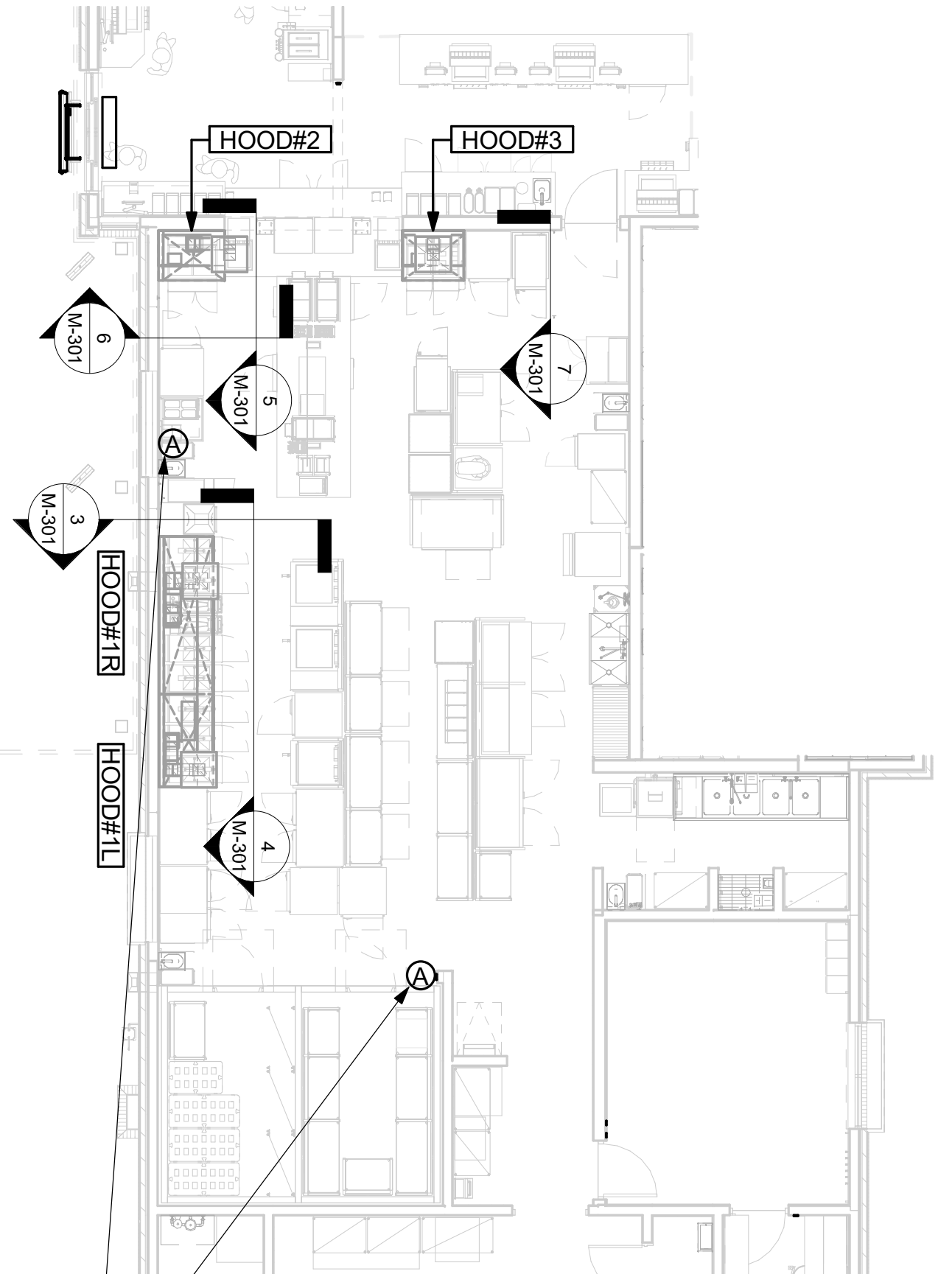


5 HOOD ELEVATION - HOOD#2 - SIDE  
 NOT TO SCALE



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

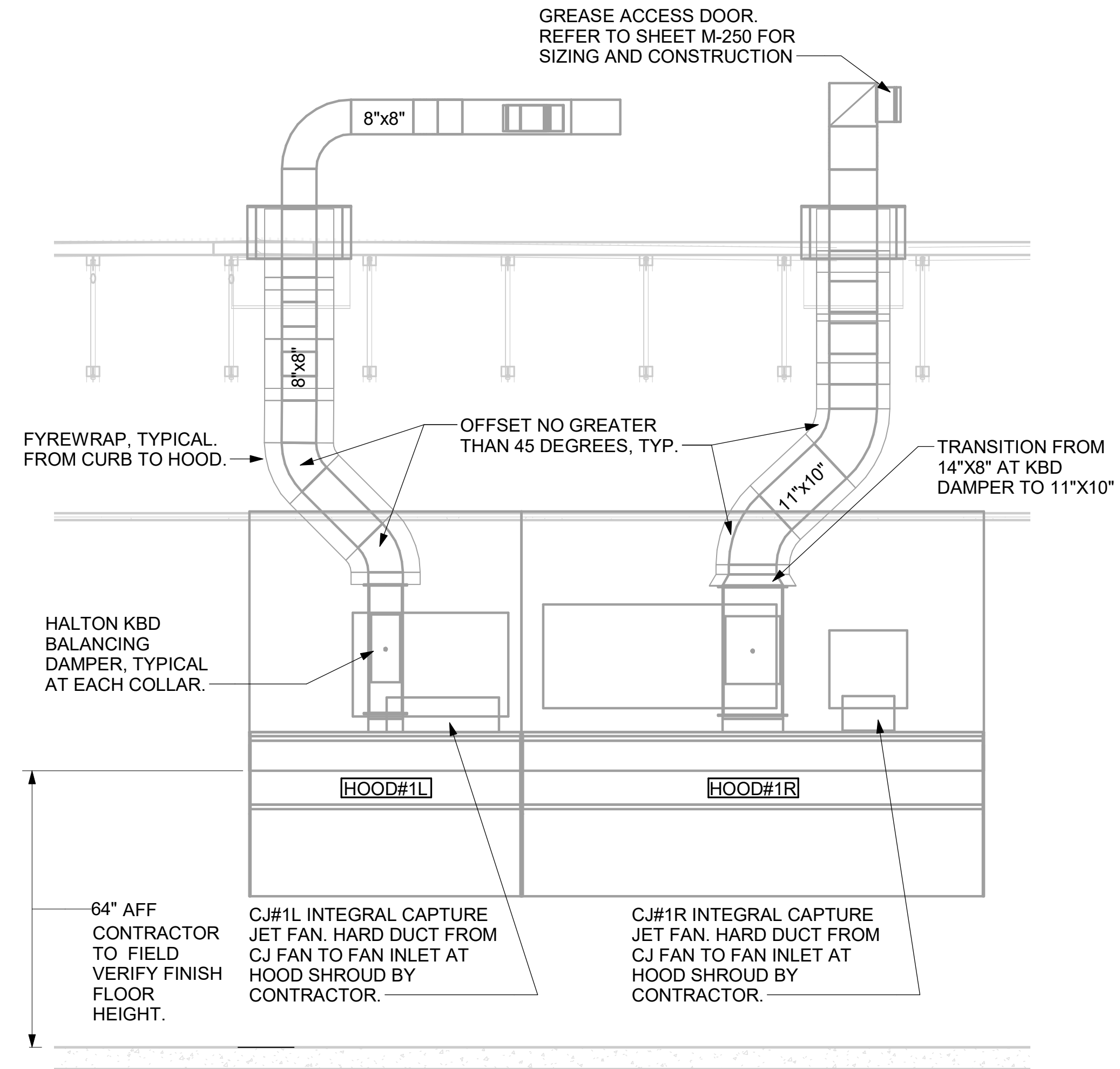
NOTE: SEE ARCHITECTURAL PLANS FOR HOOD LOCATIONS.



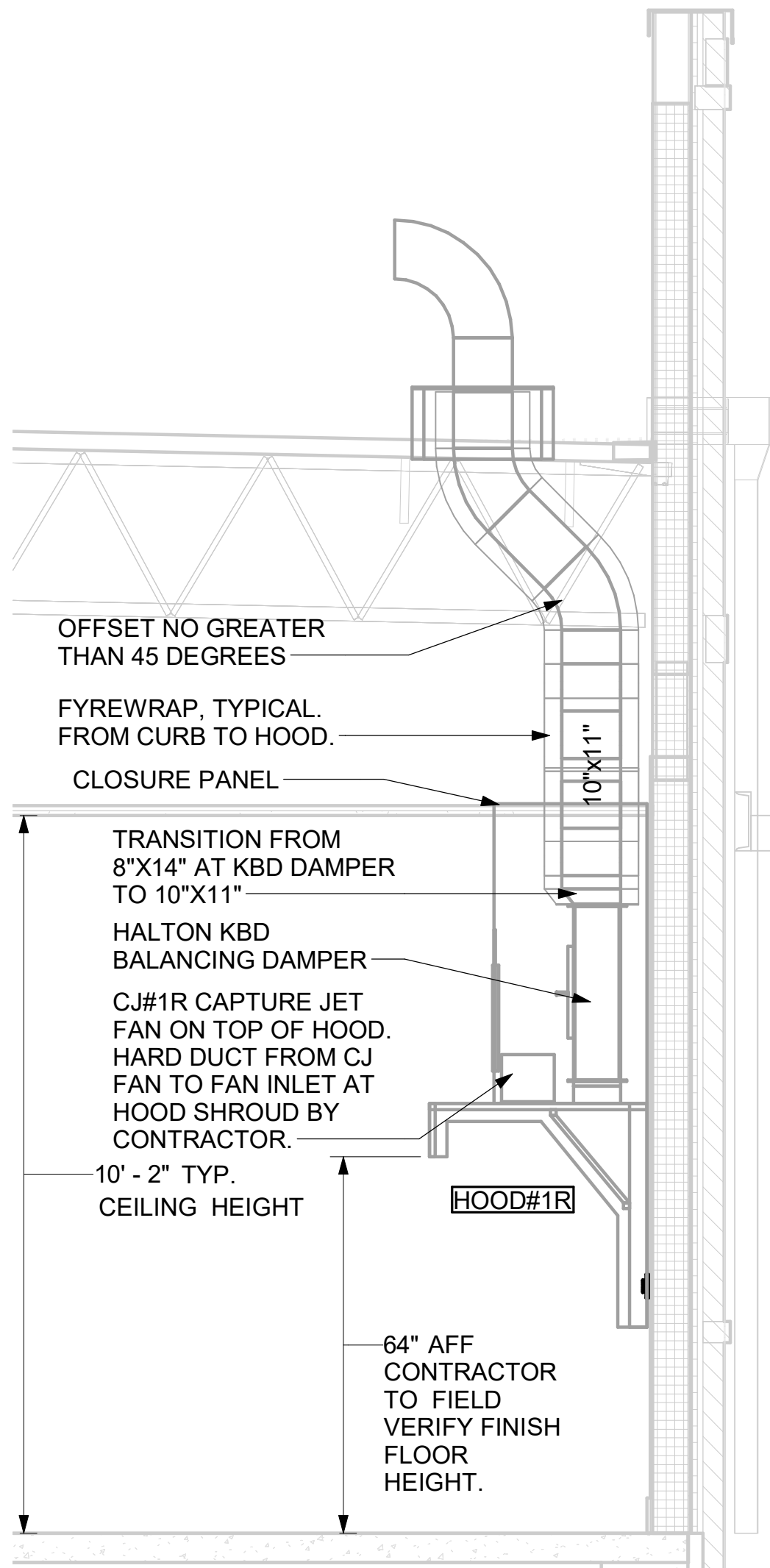
ANSUL PULL STATION SERVING HOOD#1. LOCATE ANSUL PULL STATION BETWEEN 42" AND 48" AFF. COORDINATE EXACT LOCATION WITH KITCHEN EQUIPMENT ELEVATIONS. J-BOX AND CONDUIT ARE BY ELECTRICAL. PROVIDE RED BAKELITE LABEL WITH 1/4" HIGH WHITE LETTERS INDICATING THE HOODS SERVED, I.E.: "MAIN COOKLINE HOOD".

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".

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



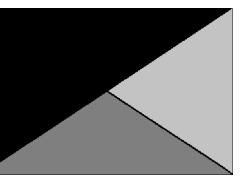
4 HOOD ELEVATION - HOOD#1 - FRONT  
 NONE



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



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 30349-2998



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



02/15/2023

**CHICK-FIL-A**  
**PRINCETON WOODS**  
 3330 PINE BLUFF DRIVE  
 DUMFRIES, VA 22026

**FSR#04916**

BUILDING TYPE / SIZE: P13 LSR LRG  
 RELEASE: 22.05  
 PRINTED FOR  
 CONSTRUCTION

REVISION SCHEDULE		
NO.	DATE	DESCRIPTION

CONSULTANT PROJECT # 22050.EH.S  
 DATE 08/22/2022  
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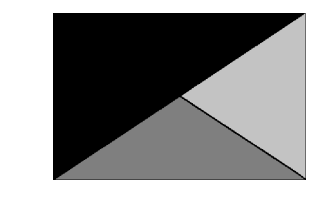
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SHEET HOOD DETAILS AND SCHEDULES

SHEET NUMBER  
**M-301**



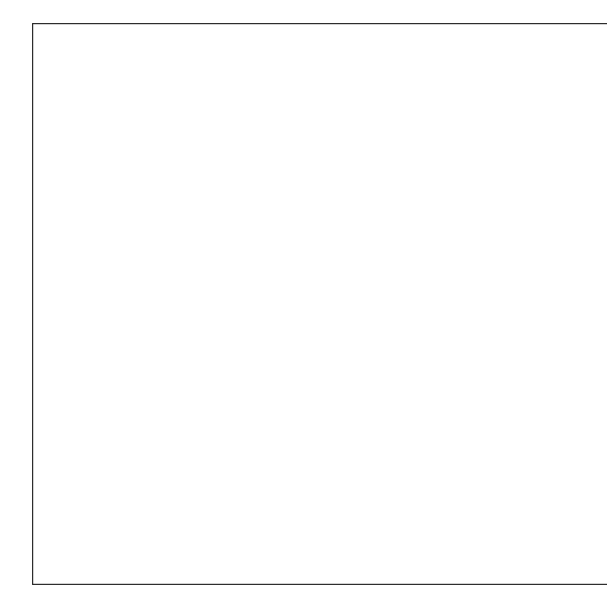
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02/15/2023



**CHICK-FIL-A**  
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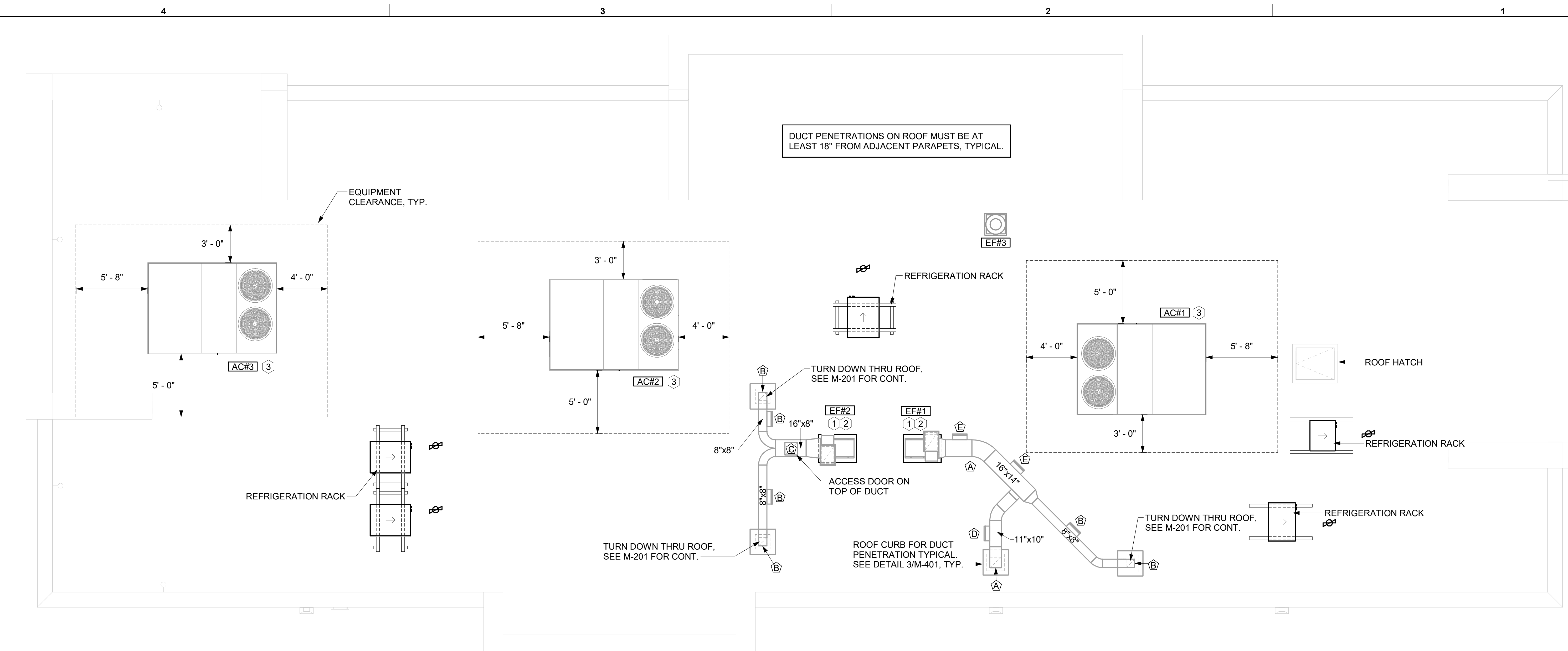
NO.	DATE	DESCRIPTION

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SHEET  
 MECHANICAL ROOF PLAN

SHEET NUMBER  
**M-250**



**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 PRO INDUSTRIAL DTM ACRYLIC COATING, SEMI-GLOSS, WHITE. DEGREASE AND PRIME BARE METAL SURFACE WITH ONE COAT OF SHERWIN WILLIAMS PRO INDUSTRIAL PRO-CRYL ACRYLIC UNIVERSAL PRIMER, WHITE, 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.

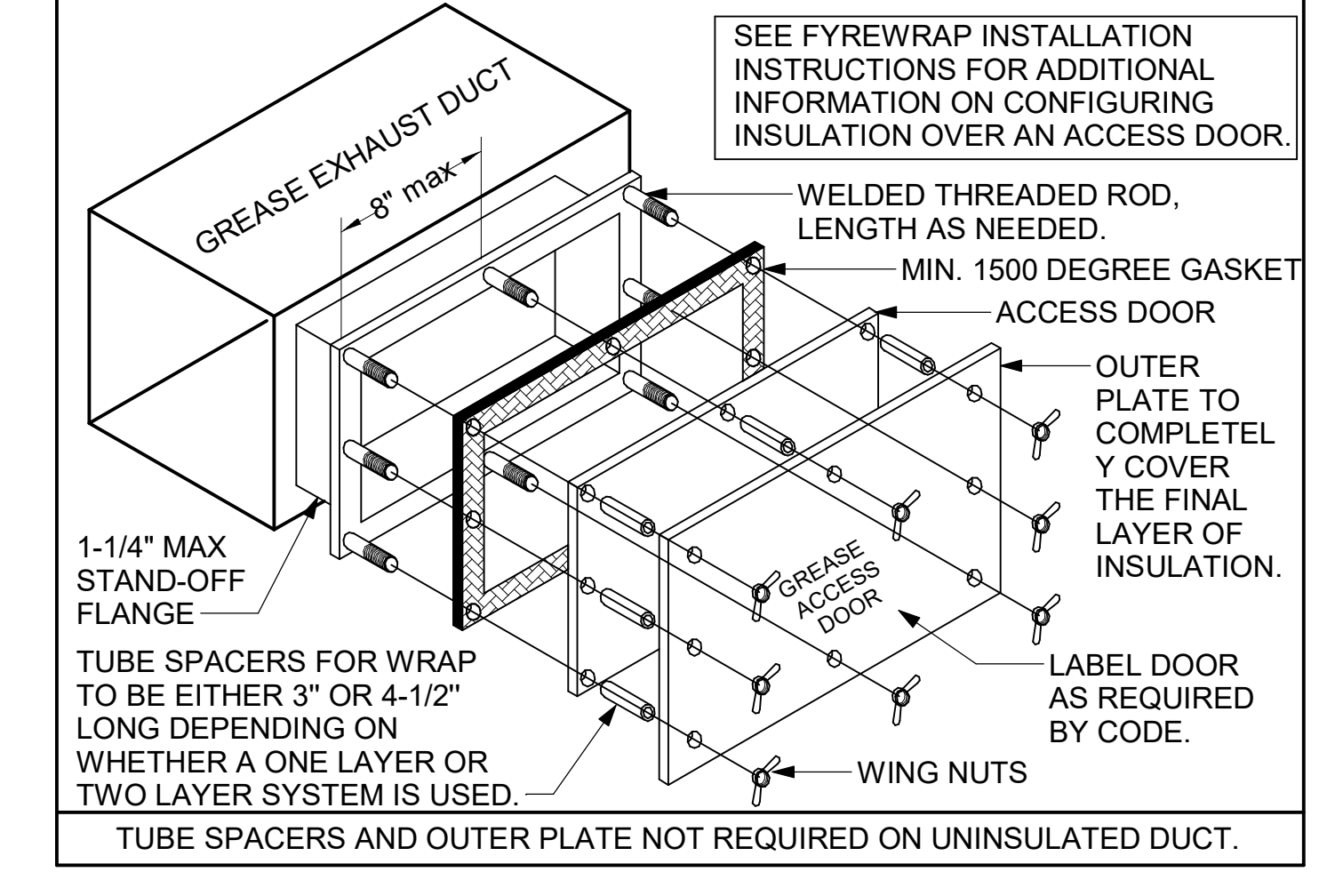
**KEY NOTES**

- FABRICATE DISCHARGE AIR NOZZLE. VERIFY EXHAUST TERMINATION IS A MINIMUM 10'-0" FROM PARAPETS AND OUTSIDE AIR INTAKES. SEE DETAIL 3/M-401.
- 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.
- MECHANICAL CONTRACTOR TO SEE ARCHITECTURAL ROOF PLAN FOR NOTES REGARDING LEVELING FRAMES FOR RTUS. COORDINATE WITH GENERAL CONTRACTOR EXACT LOCATIONS AND SIZE NEEDED.

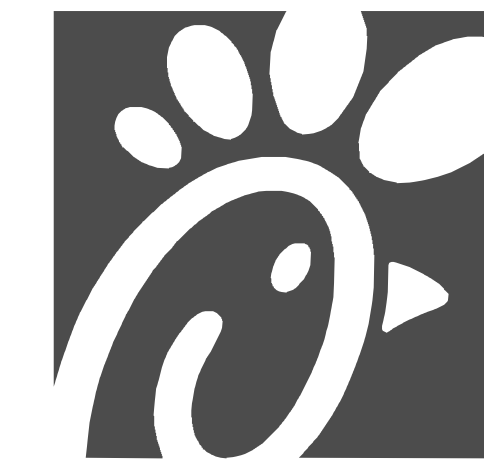
**GREASE ACCESS DOOR SCHEDULE**

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
E	12H X 14W	14H X 16W	1

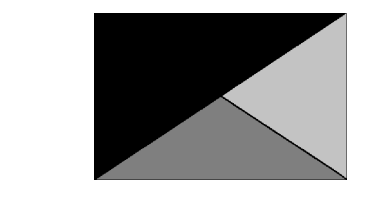
1. ACCESS DOORS SHALL BE U.L. 1978 LISTED OR FIELD FABRICATED, REQUIRE NO TOOLS FOR REMOVAL AND MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE IMC. ACCESS DOOR ASSEMBLY SHALL BE WELDED IN PLACE TO THE GREASE EXHAUST DUCT AND THE ACCESS DOOR SHALL BE SECURED WITH THUMB SCREWS. ACCESS DOORS SHALL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



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02/15/2023

**CHICK-FIL-A**  
**PRINCETON WOODS**  
 3330 PINE BLUFF DRIVE  
 DUMFRIES, VA 22026

**FSR#04916**

BUILDING TYPE / SIZE: P13 LSR LRG

RELEASE: 22.05

PRINTED FOR: CONSTRUCTION

REVISION SCHEDULE

NO. DATE DESCRIPTION

SHEET HVAC CONTROLS

CONSULTANT PROJECT # 22050.EH.S

DATE 08/22/2022

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SHEET HVAC CONTROLS

SHEET NUMBER

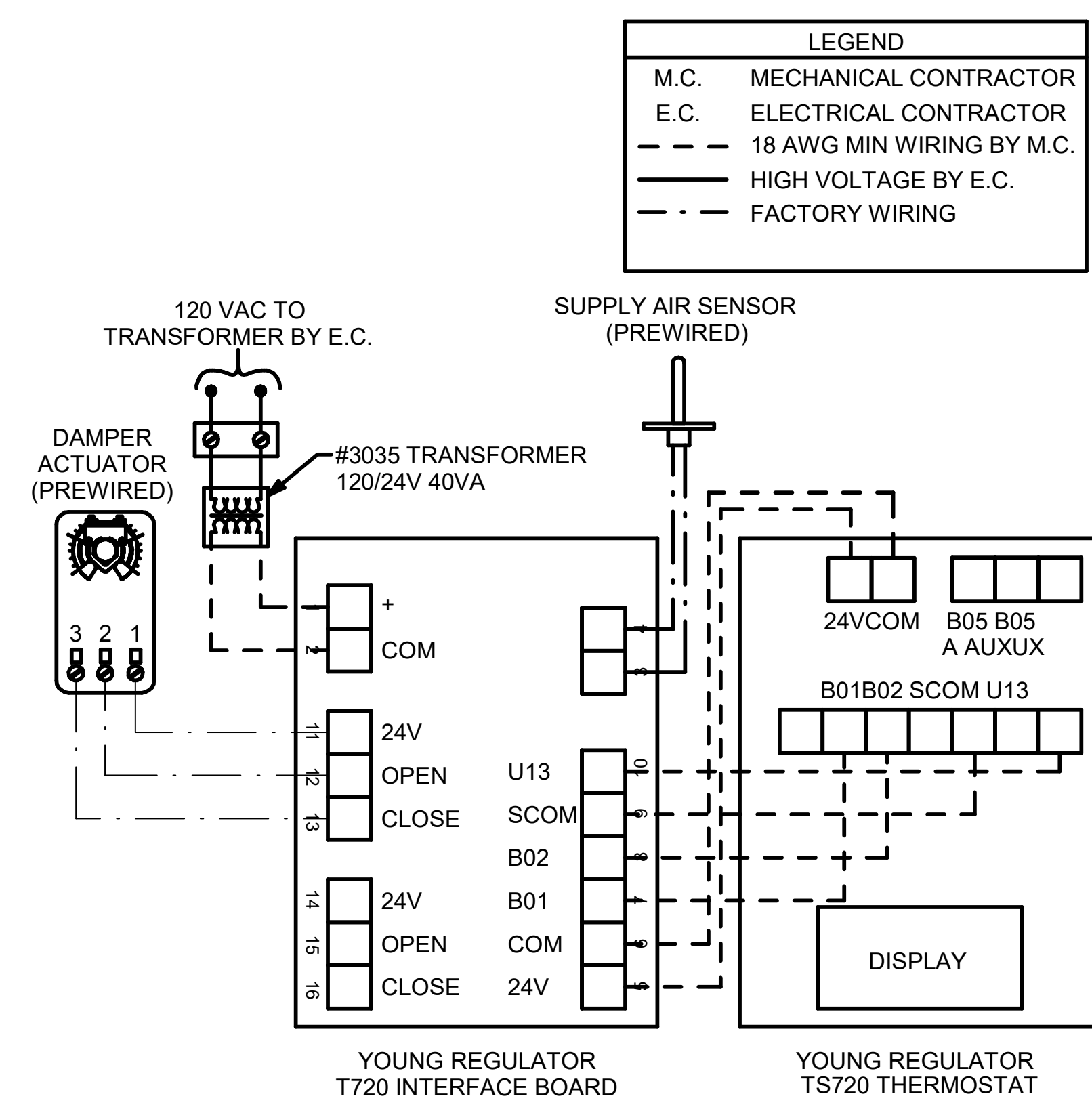
**M-501**

**NOTES**

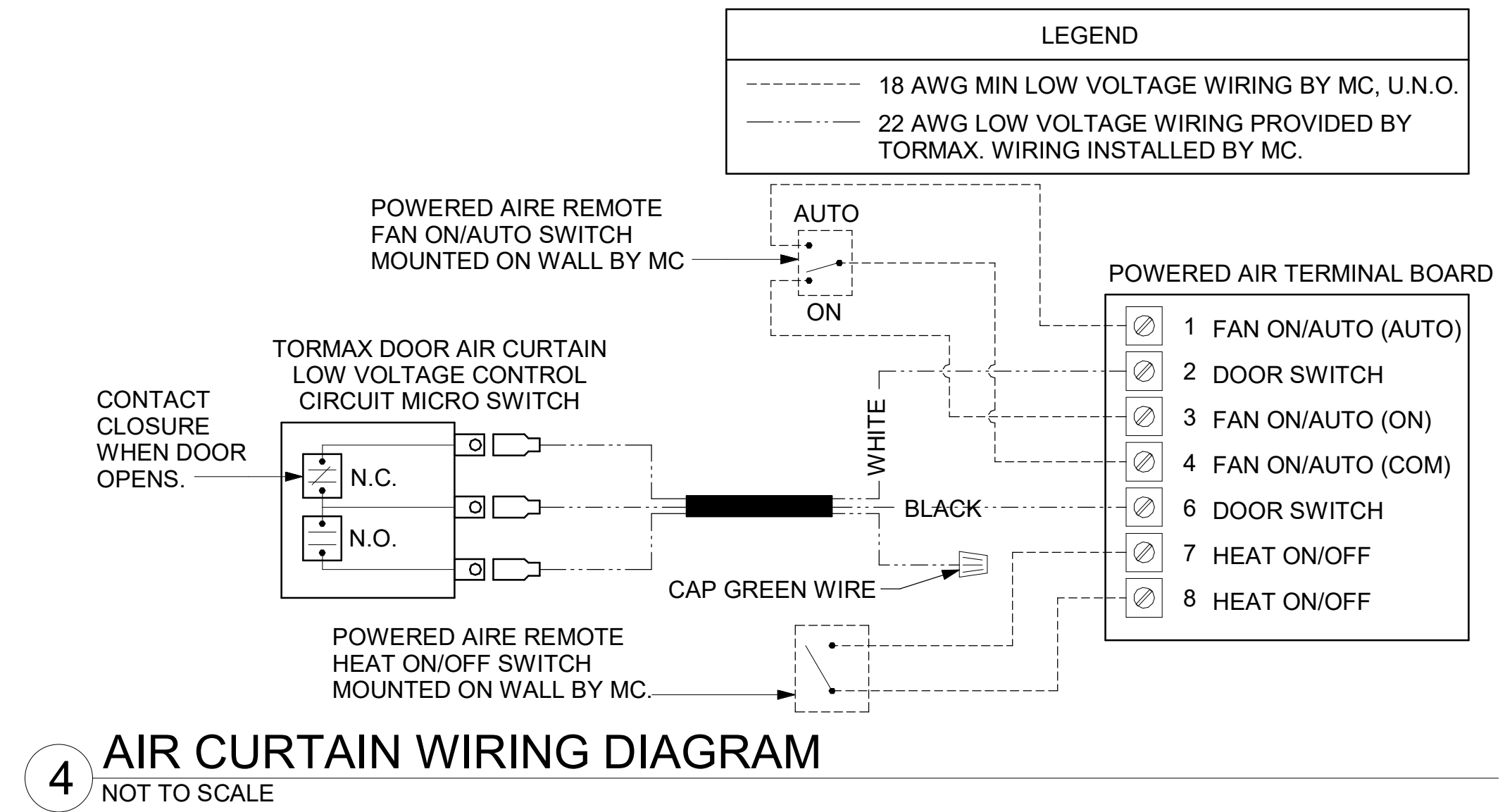
- SEE DWG M-201 FOR COMPONENT MODEL NUMBERS AND ORDERING INFORMATION.
- 120V POWER FOR TRANSFORMER TO BE NON SWITCHED AND LIVE 24 HOURS EACH DAY.
- PROVIDE ALL NECESSARY WIRING AND COMPONENTS TO MAKE CONTROL AND POWER CONNECTIONS TO TRANSFORMER, ZONE DAMPER, AND THERMOSTAT PER MANUFACTURER'S IOM.
- PROVIDE 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 68F (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.



**3 DAMPER AND TSTAT - MGRS OFFICE & TEAM MEMBER ROOM**  
 NOT TO SCALE



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

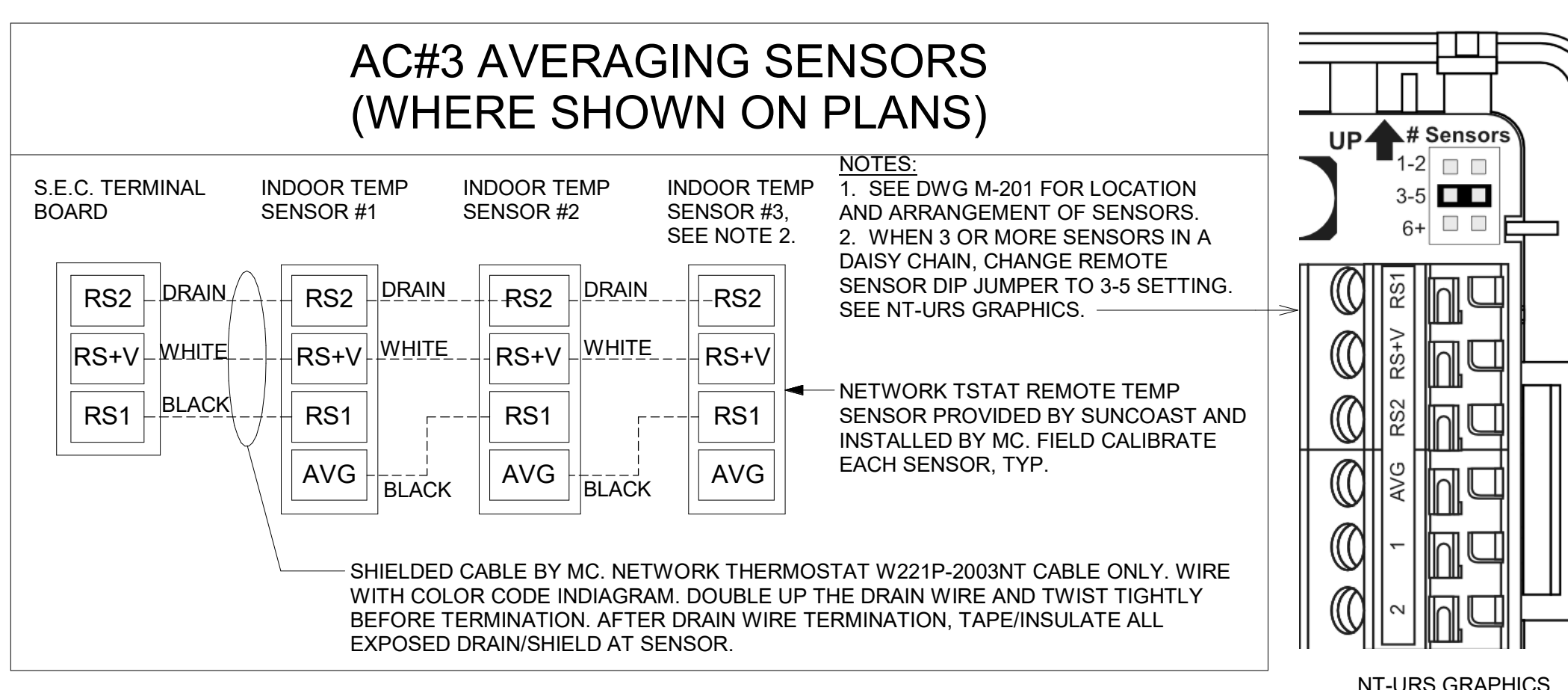
PROVIDE A PROFESSIONAL LAMINATED COPY OF THESE DETAILS TO BE INSTALLED INSIDE THE ROOFTOP UNIT CONTROL CABINET. USE A SETON CHART FRAME STYLE #69824, TELEPHONE NUMBER 800-243-6624. FOR MOUNTING THE DETAIL, ATTACHED THE FRAME TO THE INTERIOR OF THE UNIT IN PLAIN AND EASY VIEW OF THE CONTROLS SECTION. CONTACT ENGINEER OF RECORD FOR A REPRODUCIBLE COPY OF THE DETAIL.

**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 PLAIC ENGRAV 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 WIRING. LEAVE 4FT SERVICE LOOP AT RTU FOR TERMINATION AND FUTURE CONTROLS. DO NOT CUT OFF EXTRA CONDUCTORS.
- 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. SEAL CABLE PENETRATION AT ALL WALL LOCATIONS.
- THE RH SETPOINT IS ESTABLISHED BY ADJUSTING THE R41 POTENTIOMETER (LABELED "DEHUMID SP") ON THE RTOM MODULE. SET TO 60%.



**LEGEND**

SUNCOAST ENVIRONMENTAL CONTROLS (SUPPLIER OF TEMP/FAN CONTROL PANEL) LOCATED IN THE KITCHEN

KEY NOTE REFERENCE

MECHANICAL CONTRACTOR

SUNCOAST RELAY FACTORY INSTALLED AND WIRED IN CFA-500 PANEL, ENERGIZED BY PUTTING STORE SWITCH IN "STORE OCCUPIED" POSITION

SUNCOAST RELAY FACTORY INSTALLED AND WIRED IN CFA-500 PANEL, DENERGIZED WHEN ANSUL FIRE SUPPRESSION SYSTEM IS ACTIVATED, AS NOTED.

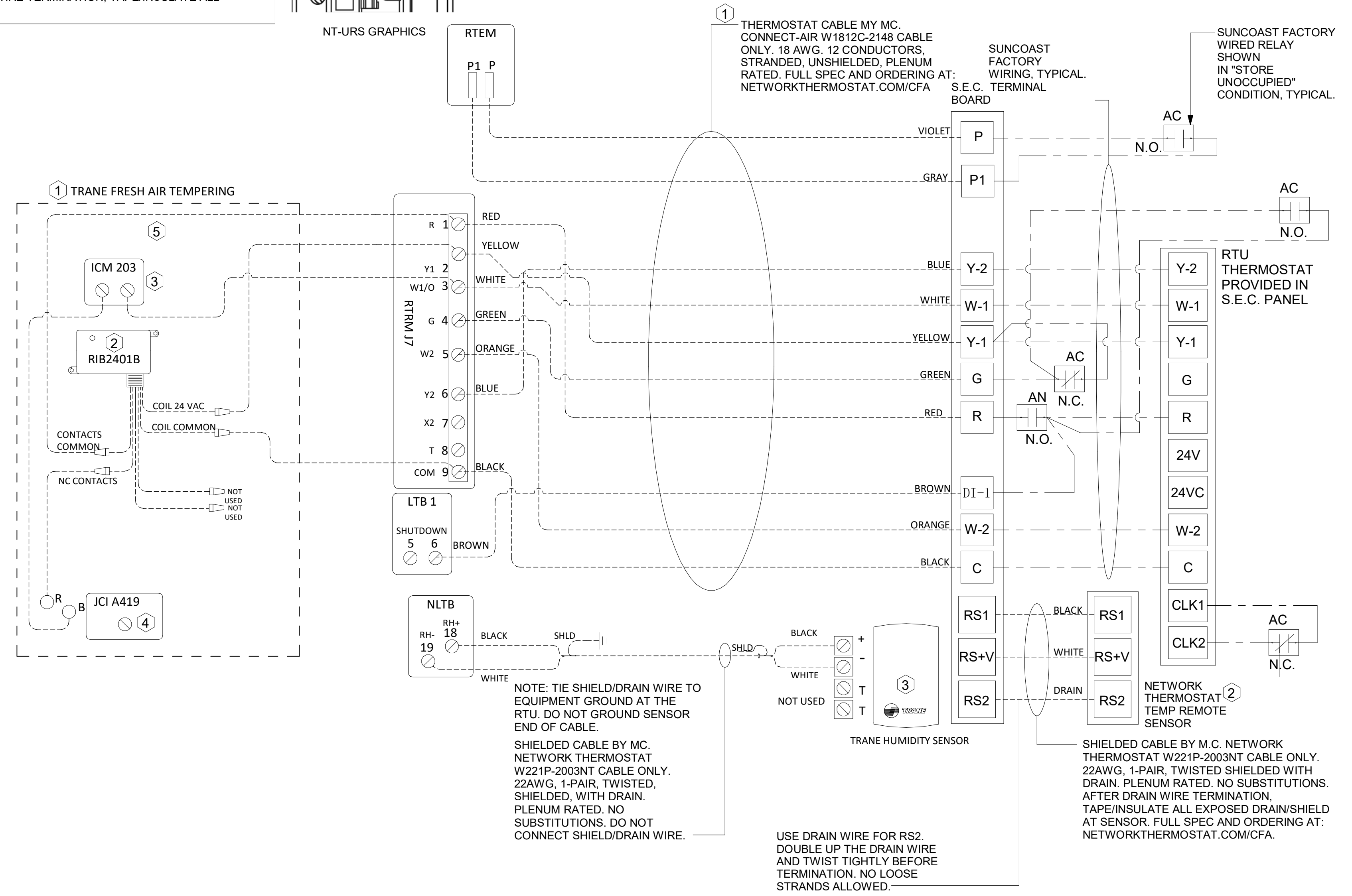
ALL LOW VOLTAGE CABLING BY MC. ONLY USE CABLE SPECIFIED. NO SUBSTITUTIONS.

LOW VOLTAGE WIRING BY S.E.C.

LINE VOLTAGE BY ELECTRICIAN OR S.E.C.

**FRESH AIR TEMPERING KEYED NOTES:**

- INSTALL FRESH AIR TEMPERING KIT AS RECOMMENDED BY TRANE WHERE REQUIRED IN RTU SCHEDULE.
- RIB2401B SPDT RELAY PROVIDED BY TRANE AND INSTALLED BY CONTRACTOR IN CONTROL CABINET OF TRANE UNIT.
- ICM 203 DOB TIMER PROVIDED BY TRANE AND INSTALLED BY CONTRACTOR IN CONTROL CABINET OF TRANE UNIT.
- JCI A419 TEMPERATURE CONTROLLER PROVIDED BY TRANE AND INSTALLED BY CONTRACTOR, DIN-MOUNTED IN THE RTU CONTROL CABINET. SET TO 58F. LOCATE SUPPLY AIR TEMPERATURE SENSOR IN THE SUPPLY DUCT DOWNSTREAM OF FIRST ELBOW. SECURE WIRING TO DUCT OR STRUCTURE WITH RUBBER COATED CLAMPS. DO NOT RUN WIRING INSIDE DUCTWORK. PROTECT ALL WIRING PENETRATIONS WITH RUBBER GROMMETS.
- 18 AWG MIN. LOW VOLTAGE WIRING BY MC.



**1 ROOFTOP UNIT CONTROL WIRING - TRANE**  
 NOT TO SCALE

**2 SMOKE DETECTOR AND ANNUNCIATOR WIRING DIAGRAM - LARGE**  
 NOT TO SCALE

**LEGEND**

18 AWG MIN WIRING BY MECH CONTRACTOR

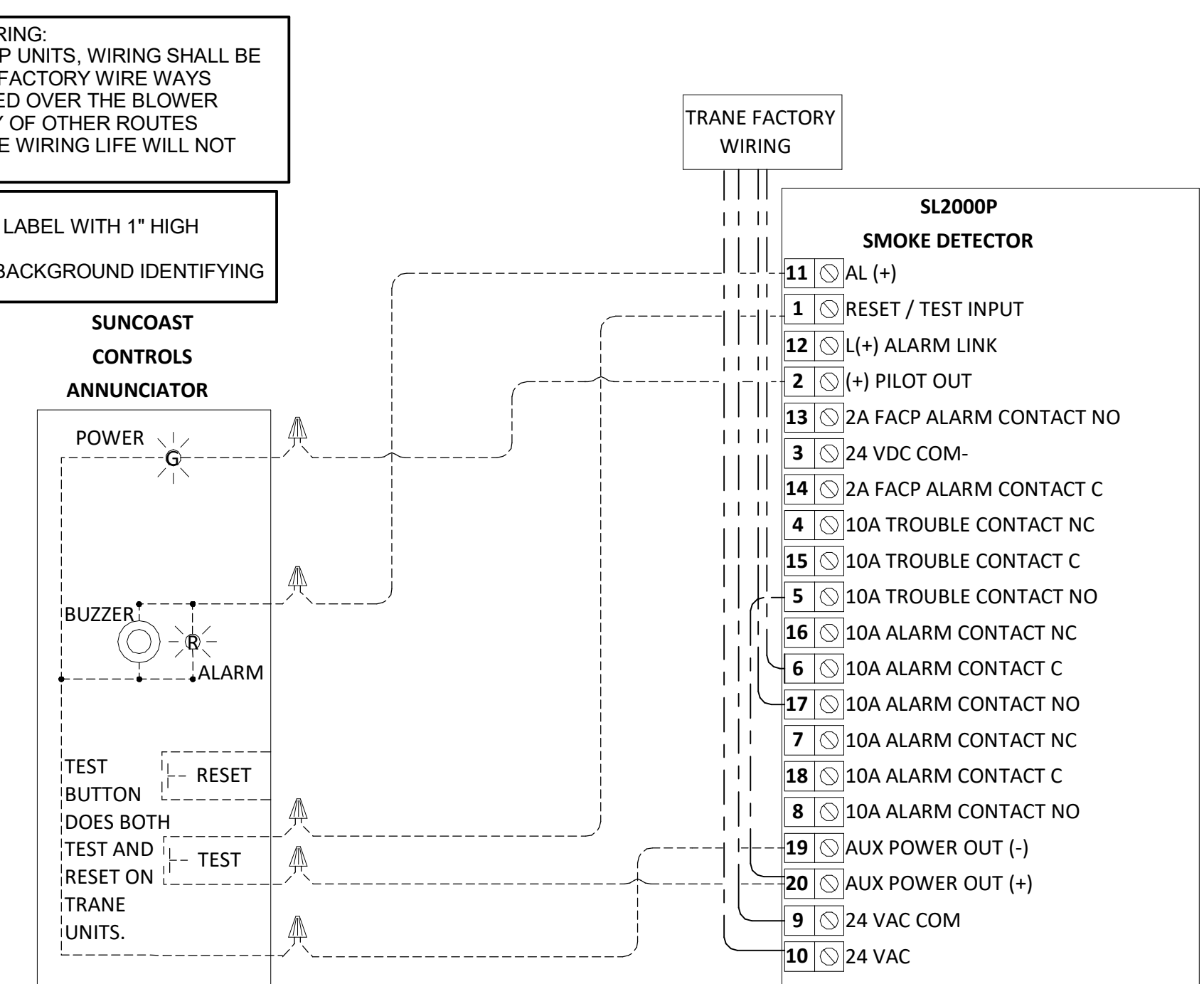
FACTORY ANNUNCIATOR DETECTOR WIRING

FACTORY TRANE WIRING

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 UNITS, WIRING SHALL BE ROUTED BY WAY OF FACTORY WIREWAYS ONLY. WIRING ROUTED OVER THE BLOWER HOUSING OR BY WAY OF OTHER ROUTES DETRIMENTAL TO THE WIRING LIFE WILL NOT BE ACCEPTED.

LABELING: PROVIDE ENGRAVED LABEL WITH 1" HIGH WHITE LETTERS ON BLACK BACKGROUND IDENTIFYING UNIT SERVED.



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E

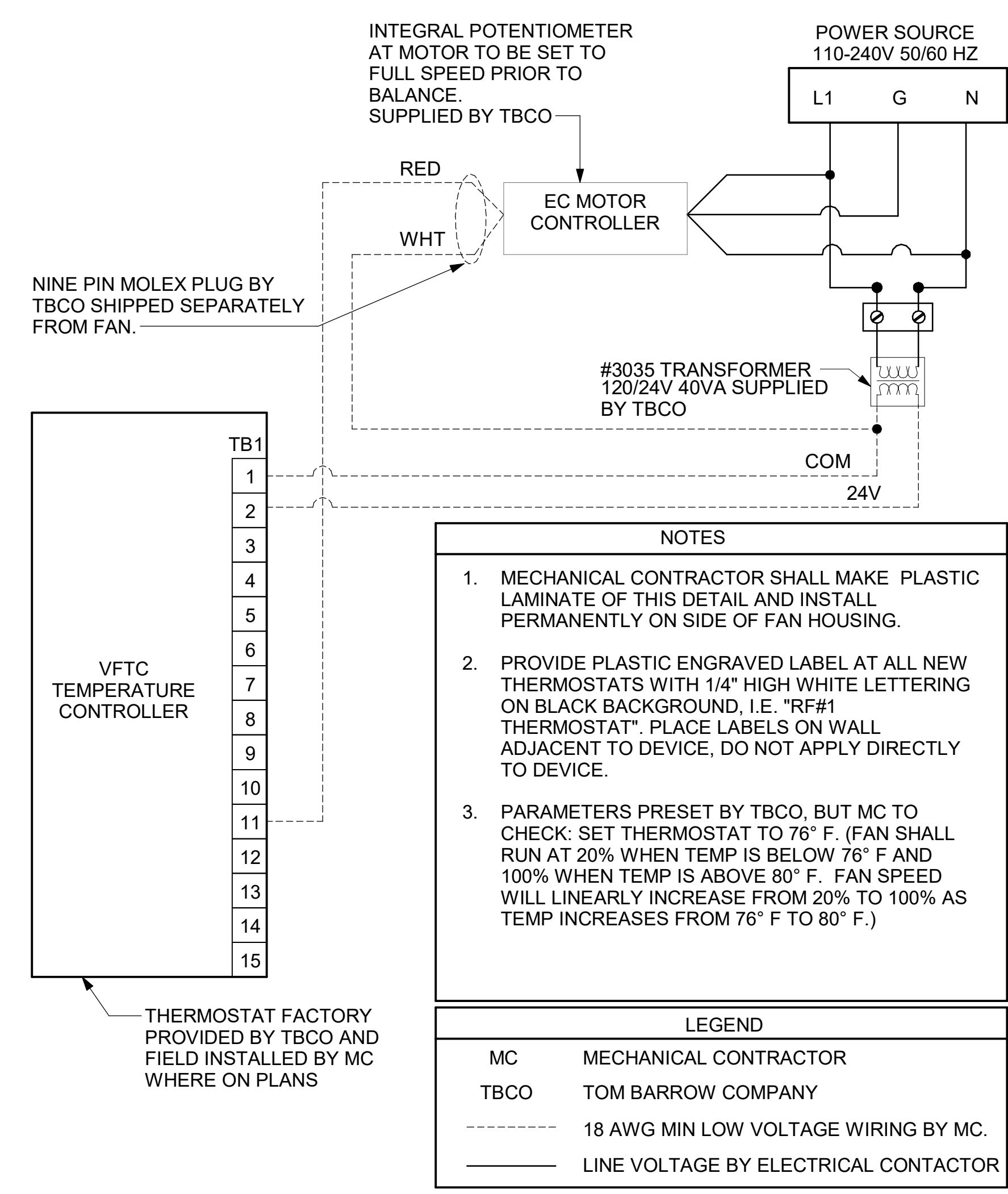
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C

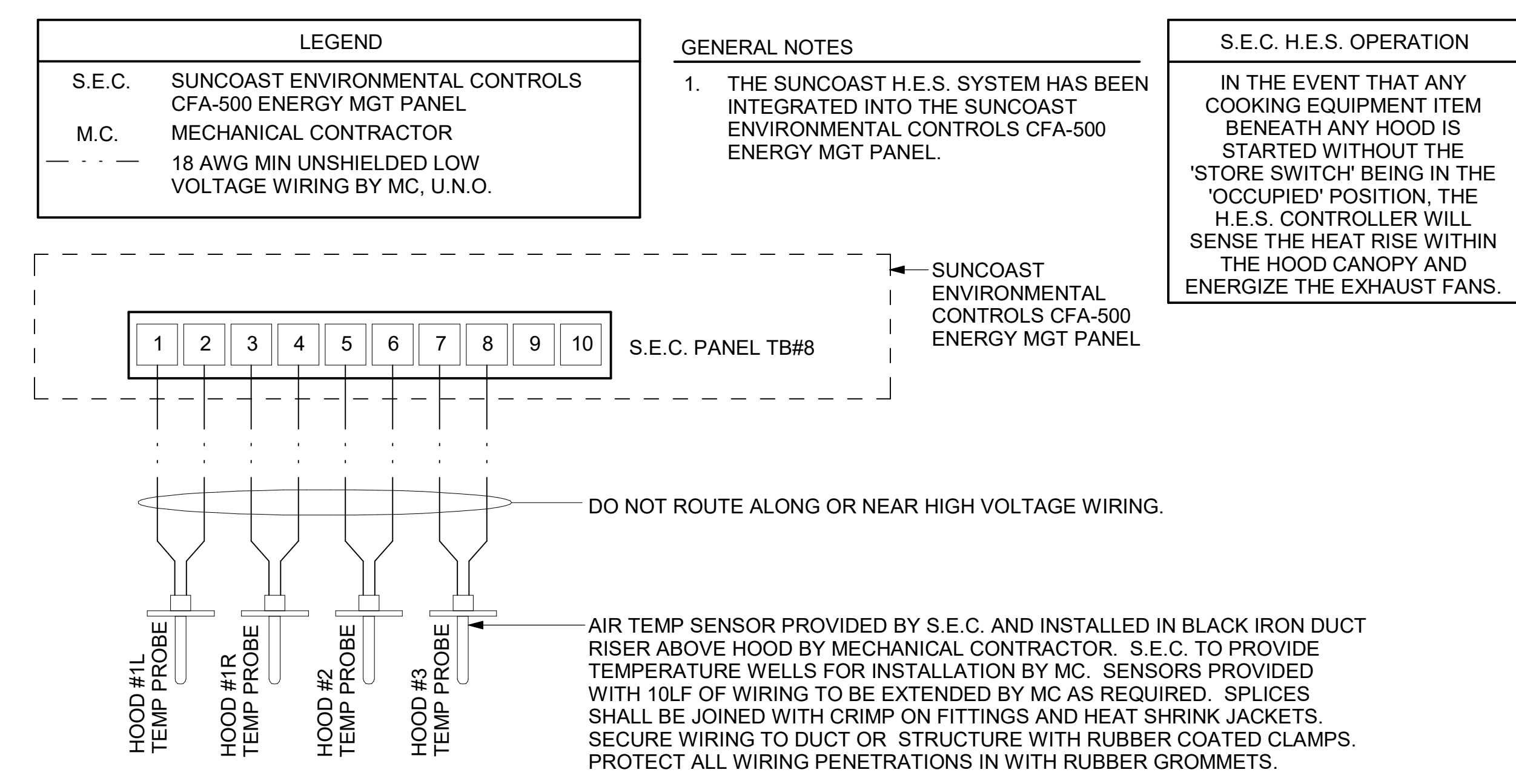
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A

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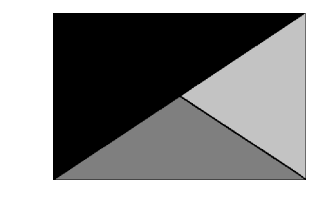
**2 TECH CLOSET CONTROL DIAGRAM**  
NOT TO SCALE



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



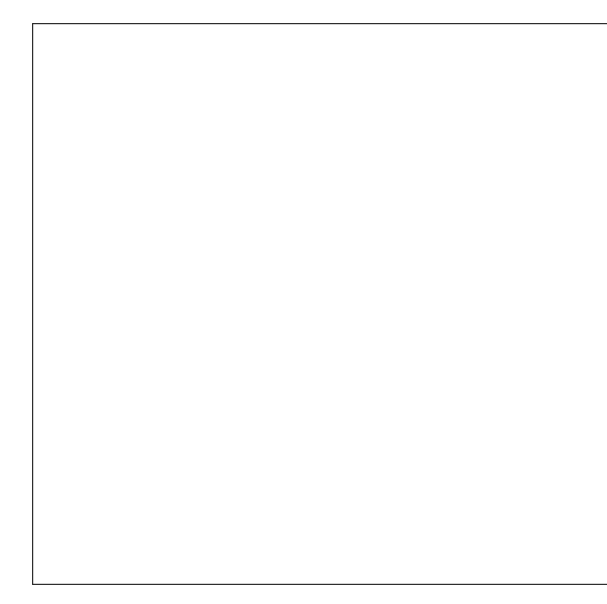
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02/15/2023



**CHICK-FIL-A**  
**PRINCETON WOODS**  
3330 PINE BLUFF DRIVE  
DUMFRIES, VA 22026

**FSR#04916**

BUILDING TYPE / SIZE: P13 LSR ALL  
RELEASE: 22.05  
PRINTED FOR:  
CONSTRUCTION

REVISION SCHEDULE		
NO.	DATE	DESCRIPTION

CONSULTANT PROJECT # 22050.EH.S  
DATE 08/22/2022  
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SHEET HVAC CONTROLS  
SHEET NUMBER

**M-502**

**Air System Sizing Summary for DINING**  
 Project Name: P13 LSR  
 Prepared by: Kurzynske & Associates  
 Date: 09/21/2022

**Air System Information**  
 Air System Name: DINING  
 Equipment Class: PKG ROOF  
 Air System Type: SZCAV  
 Number of zones: 1  
 Floor Area: 1893.0 ft<sup>2</sup>  
 Location: Washington, Dist. of Columbia

**Sizing Calculation Information**  
 Calculation Months: Jan to Dec  
 Sizing Data: Calculated  
 Zone CFM Sizing: Sum of space airflow rates  
 Space CFM Sizing: Individual peak space loads

**Central Cooling Coil Sizing Data**  
 Total coil load: 16.7 Tons  
 OA DB / WB: 84.5 / 75.9 °F  
 Sensible coil load: 119.9 MBH  
 Entering DB / WB: 88.3 / 72.5 °F  
 Leaving DB / WB: 54.0 / 55.0 °F  
 Max block CFM: 3246 CFM  
 Coil ADP: 50.2 °F  
 Bypass Factor: 0.100  
 Resulting RH: 55 %  
 Design supply temp: 55.0 °F  
 Zone T-stat Check: 0 of 1 OK  
 CFM/Ton: 113.3  
 RT/Ton: 105.9  
 Water flow @ 12.0 °F rise: N/A

**Central Heating Coil Sizing Data**  
 Max coil load: 139.6 MBH  
 Des Htg BTU/hr (°F): 73.8  
 Coil CFM at Des Htg: 3246 CFM  
 Max coil CFM: 3246 CFM  
 Water flow @ 50.0 °F drop: N/A

**Supply Fan Sizing Data**  
 Actual max CFM: 3246 CFM  
 Standard CFM: 3238 CFM  
 Actual max CFM/HP: 1.71 CFM/HP  
 Fan motor BHP: n/a  
 Fan motor kW: 2.60 kW

**Outdoor Ventilation Air Data**  
 Design airflow CFM: 2125 CFM  
 CFM/HP: 1.12 CFM/HP

Hourly Analysis Program 5.11 Page 1 of 9

**Air System Design Load Summary for DINING**  
 Project Name: P13 LSR  
 Prepared by: Kurzynske & Associates  
 Date: 09/21/2022

ZONE LOADS	DESIGN COOLING			DESIGN HEATING		
	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	276 ft <sup>2</sup>	7599	-	276 ft <sup>2</sup>	-	-
Wall Transmission	1727 ft <sup>2</sup>	1634	-	1727 ft <sup>2</sup>	6290	-
Roof Transmission	1893 ft <sup>2</sup>	2094	-	1893 ft <sup>2</sup>	3332	-
Window Transmission	276 ft <sup>2</sup>	1957	-	276 ft <sup>2</sup>	6376	-
Skylight Transmission	0 ft <sup>2</sup>	0	-	0 ft <sup>2</sup>	0	-
Door Loads	84 ft <sup>2</sup>	3908	-	84 ft <sup>2</sup>	3557	-
Floor Transmission	1893 ft <sup>2</sup>	0	-	1893 ft <sup>2</sup>	2589	-
Partitions	0 ft <sup>2</sup>	0	-	0 ft <sup>2</sup>	0	-
Ceiling	0 ft <sup>2</sup>	0	-	0 ft <sup>2</sup>	0	-
Overhead Lighting	1136 W	3875	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1420 W	4844	-	0	0	-
People	130	29343	35100	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	8123	0	-	2214	0
Safety Factor	10% / 10%	8194	3510	10%	2214	0
>> Total Zone Loads	-	67690	38610	-	24358	0
Zone Conditioning	-	69936	38610	-	23656	0
Plenum Wall Load	0%	0	0	0%	0	0
Plenum Roof Load	0%	0	0	0%	0	0
Plenum Lighting Load	0%	0	0	0%	0	0
Return Fan Load	3246 CFM	0	-	3246 CFM	0	-
Ventilation Load	2125 CFM	41045	42010	2125 CFM	12487	0
Supply Fan Load	3246 CFM	8877	-	3246 CFM	-8877	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	0	0%	0	0
>> Total System Loads	-	119858	80620	-	139636	0
Central Cooling Coil	-	119858	80620	-	139636	0
Central Heating Coil	-	-	-	-	-	139636
>> Total Conditioning	-	119858	80620	-	139636	0

**Key:**  
 Positive values are ckg loads  
 Negative values are hkg loads

Hourly Analysis Program 5.11 Page 3 of 9

**Air System Sizing Summary for SERVING**  
 Project Name: P13 LSR  
 Prepared by: Kurzynske & Associates  
 Date: 09/21/2022

**Air System Information**  
 Air System Name: SERVING  
 Equipment Class: PKG ROOF  
 Air System Type: SZCAV  
 Number of zones: 1  
 Floor Area: 731.0 ft<sup>2</sup>  
 Location: Washington, Dist. of Columbia

**Sizing Calculation Information**  
 Calculation Months: Jan to Dec  
 Sizing Data: Calculated  
 Zone CFM Sizing: Sum of space airflow rates  
 Space CFM Sizing: Individual peak space loads

**Central Cooling Coil Sizing Data**  
 Total coil load: 16.9 Tons  
 OA DB / WB: 85.0 / 76.0 °F  
 Sensible coil load: 131.4 MBH  
 Entering DB / WB: 88.0 / 57.0 °F  
 Leaving DB / WB: 55.4 °F  
 Max block CFM: 5156 CFM  
 Coil ADP: 55.4 °F  
 Bypass Factor: 0.100  
 Resulting RH: 61 %  
 Design supply temp: 55.0 °F  
 Zone T-stat Check: 1 of 1 OK  
 CFM/Ton: 43.2  
 RT/Ton: 277.5  
 Water flow @ 12.0 °F rise: N/A

**Central Heating Coil Sizing Data**  
 Max coil load: 213.5 MBH  
 Des Htg BTU/hr (°F): 292.0  
 Coil CFM at Des Htg: 5156 CFM  
 Max coil CFM: 5156 CFM  
 Water flow @ 50.0 °F drop: N/A

**Supply Fan Sizing Data**  
 Actual max CFM: 5156 CFM  
 Standard CFM: 5144 CFM  
 Actual max CFM/HP: 7.05 CFM/HP  
 Fan motor BHP: n/a  
 Fan motor kW: 4.13 kW

**Outdoor Ventilation Air Data**  
 Design airflow CFM: 1575 CFM  
 CFM/HP: 2.15 CFM/HP

Hourly Analysis Program 5.11 Page 7 of 9

**Air System Sizing Summary for KITCHEN**  
 Project Name: P13 LSR  
 Prepared by: Kurzynske & Associates  
 Date: 09/21/2022

**Air System Information**  
 Air System Name: KITCHEN  
 Equipment Class: PKG ROOF  
 Air System Type: SZCAV  
 Number of zones: 1  
 Floor Area: 2064.0 ft<sup>2</sup>  
 Location: Washington, Dist. of Columbia

**Sizing Calculation Information**  
 Calculation Months: Jan to Dec  
 Sizing Data: Calculated  
 Zone CFM Sizing: Sum of space airflow rates  
 Space CFM Sizing: Individual peak space loads

**Central Cooling Coil Sizing Data**  
 Total coil load: 21.9 Tons  
 OA DB / WB: 84.5 / 75.9 °F  
 Sensible coil load: 204.7 MBH  
 Entering DB / WB: 88.3 / 72.5 °F  
 Leaving DB / WB: 53.0 / 55.0 °F  
 Max block CFM: 7365 CFM  
 Coil ADP: 50.2 °F  
 Bypass Factor: 0.100  
 Resulting RH: 45 %  
 Design supply temp: 55.0 °F  
 Zone T-stat Check: 1 of 1 OK  
 CFM/Ton: 147.3  
 RT/Ton: 127.3  
 Water flow @ 12.0 °F rise: N/A

**Central Heating Coil Sizing Data**  
 Max coil load: 59.8 MBH  
 Des Htg BTU/hr (°F): 73.8  
 Coil CFM at Des Htg: 7365 CFM  
 Max coil CFM: 7365 CFM  
 Water flow @ 50.0 °F drop: N/A

**Supply Fan Sizing Data**  
 Actual max CFM: 7365 CFM  
 Standard CFM: 7347 CFM  
 Actual max CFM/HP: 1.97 CFM/HP  
 Fan motor BHP: n/a  
 Fan motor kW: 5.77 kW

**Outdoor Ventilation Air Data**  
 Design airflow CFM: 1850 CFM  
 CFM/HP: 0.51 CFM/HP

Hourly Analysis Program 5.11 Page 4 of 9

**Air System Design Load Summary for SERVING**  
 Project Name: P13 LSR  
 Prepared by: Kurzynske & Associates  
 Date: 09/21/2022

ZONE LOADS	DESIGN COOLING			DESIGN HEATING		
	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	16 ft <sup>2</sup>	620	-	16 ft <sup>2</sup>	-	-
Wall Transmission	507 ft <sup>2</sup>	531	-	507 ft <sup>2</sup>	1961	-
Roof Transmission	731 ft <sup>2</sup>	833	-	731 ft <sup>2</sup>	1297	-
Window Transmission	16 ft <sup>2</sup>	136	-	16 ft <sup>2</sup>	440	-
Skylight Transmission	0 ft <sup>2</sup>	0	-	0 ft <sup>2</sup>	0	-
Door Loads	55 ft <sup>2</sup>	1329	-	55 ft <sup>2</sup>	3328	-
Floor Transmission	731 ft <sup>2</sup>	0	-	731 ft <sup>2</sup>	731	-
Partitions	0 ft <sup>2</sup>	0	-	0 ft <sup>2</sup>	0	-
Ceiling	0 ft <sup>2</sup>	0	-	0 ft <sup>2</sup>	0	-
Overhead Lighting	439 W	1408	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	548 W	1871	-	0	0	-
People	15	3507	6525	0	0	0
Infiltration	-	43097	32440	-	118517	0
Miscellaneous	-	23318	2500	-	0	0
Safety Factor	10% / 10%	7874	4177	10%	12626	0
>> Total Zone Loads	-	84412	45951	-	138869	0
Zone Conditioning	-	84971	45951	-	136316	0
Plenum Wall Load	0%	0	0	0%	0	0
Plenum Roof Load	0%	0	0	0%	0	0
Plenum Lighting Load	0%	0	0	0%	0	0
Return Fan Load	5156 CFM	0	-	5156 CFM	0	-
Ventilation Load	1575 CFM	32281	25551	1575 CFM	91241	0
Supply Fan Load	5156 CFM	14100	-	5156 CFM	-14100	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	0	0%	0	0
>> Total System Loads	-	131352	71501	-	213457	0
Central Cooling Coil	-	131352	71511	-	213457	0
Central Heating Coil	-	-	-	-	-	213457
>> Total Conditioning	-	131352	71511	-	213457	0

**Key:**  
 Positive values are ckg loads  
 Negative values are hkg loads

Hourly Analysis Program 5.11 Page 9 of 9

**Air System Design Load Summary for KITCHEN**  
 Project Name: P13 LSR  
 Prepared by: Kurzynske & Associates  
 Date: 09/21/2022

ZONE LOADS	DESIGN COOLING			DESIGN HEATING		
	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	52 ft <sup>2</sup>	949	-	52 ft <sup>2</sup>	-	-
Wall Transmission	2309 ft <sup>2</sup>	2648	-	2309 ft <sup>2</sup>	8128	-
Roof Transmission	2064 ft <sup>2</sup>	2119	-	2064 ft <sup>2</sup>	3633	-
Window Transmission	52 ft <sup>2</sup>	369	-	52 ft <sup>2</sup>	1201	-
Skylight Transmission	0 ft <sup>2</sup>	0	-	0 ft <sup>2</sup>	0	-
Door Loads	42 ft <sup>2</sup>	355	-	42 ft <sup>2</sup>	1155	-
Floor Transmission	1802 ft <sup>2</sup>	0	-	1802 ft <sup>2</sup>	1096	-
Partitions	0 ft <sup>2</sup>	0	-	0 ft <sup>2</sup>	0	-
Ceiling	0 ft <sup>2</sup>	0	-	0 ft <sup>2</sup>	0	-
Overhead Lighting	1238 W	4225	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1548 W	5262	-	0	0	-
People	31	7372	14105	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	12097	10500	-	0	0
Safety Factor	10% / 10%	14694	2411	10%	1611	0
>> Total Zone Loads	-	158440	26516	-	17724	0
Zone Conditioning	-	164304	26516	-	17424	0
Plenum Wall Load	0%	0	0	0%	0	0
Plenum Roof Load	0%	0	0	0%	0	0
Plenum Lighting Load	0%	0	0	0%	0	0
Return Fan Load	7365 CFM	0	-	7365 CFM	0	-
Ventilation Load	1850 CFM	20679	31535	1850 CFM	62058	0
Supply Fan Load	7365 CFM	19690	-	7365 CFM	-19690	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	0	0%	0	0
>> Total System Loads	-	204672	58053	-	59792	0
Central Cooling Coil	-	204672	58053	-	59792	0
Central Heating Coil	-	-	-	-	-	59792
>> Total Conditioning	-	204672	58053	-	59792	0

**Key:**  
 Positive values are ckg loads  
 Negative values are hkg loads

Hourly Analysis Program 5.11 Page 6 of 9

SHEET ADDED TO SET



Chick-fil-A

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5200 Buffington Road  
Atlanta, Georgia  
30349-2998

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



02/15/2023

CHICK-FIL-A  
PRINCETON WOODS  
3330 PINE BLUFF DRIVE  
DUMFRIES, VA 22026

FSR#04916

BUILDING TYPE / SIZE: P13 LSR LRG  
RELEASE: 22.05  
PRINTED FOR: CONSTRUCTION

**REVISION SCHEDULE**

NO.	DATE	BUILDING	DESCRIPTION
1	09-21-22	BUILDING	CHECKLIST

CONSULTANT PROJECT # 22050.EH.S  
DATE 08/22/2022  
DRAWN BY BLM

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SHEET HVAC LOADS

SHEET NUMBER M-701

SHEET ADDED TO SET

### CHICK-FIL-A

**HERMETIC CONDENSING UNIT**  
208-230/60/3Ø R-404A

MODEL #	H.P.	ELECTRICAL DATA			CAPACITY @ 35° WALK-IN TEMP. (90° AMBIENT)	LINE SIZES		APPROX. NET WEIGHT
		COMPRESSOR AMPS	MCA	MOPD		LIQUID	SUCTION	
MOH010X63	1	5.75	15	15	9,300 BTU	3/8"	5/8"	138 LBS.

RECEIVER CAPACITY @ 90% FULL: 5.5#

**EVAPORATOR COIL**  
208-230/60/1Ø

MODEL #	QTY. MOTORS	AIR FLOW (CFM)	ELECTRICAL DATA		LINE SIZES			APPROX. NET WEIGHT
			AMPS	WATTS	INLET	SUCTION	DRAIN	
TKM-0900	2	1400	1.0	118	1/2" OD	7/8" OD	3/4" MPT	48 LBS.

1/4" OD EXTERNAL EQUALIZER CONNECTION W/EC MOTORS

MOH010X63 208-230/60/3Ø W/  
TKM-0900 208-230/60/1Ø

Mid-South Industries, Inc. • P.O. Box 989  
Laurel, Mississippi 39441 • Phone 601/649-4600  
FAX 601/649-0558

/mh Rev.9-12-11

1 WALK-IN COOLER MECHANICAL EQUIPMENT DETAIL  
NTS

### CHICK-FIL-A

**HERMETIC LOW TEMPERATURE CONDENSING UNIT**  
208-230/60/3Ø R-404A

MODEL #	H.P.	ELECTRICAL DATA			CAPACITY @ -10° WALK-IN TEMP. (90° AMBIENT)	LINE SIZES		APPROX. NET WEIGHT
		COMPRESSOR AMPS	MCA	MOPD		LIQUID	SUCTION	
MOH031L63	3	14.38	28.8	30	11,540 BTU	1/2"	7/8"	223 LBS.

RECEIVER CAPACITY @ 90% FULL: 14.0#

**EVAPORATOR COIL**  
208-230/60/1Ø

MODEL #	QTY. MOTORS	AIR FLOW (CFM)	ELECTRICAL DATA				LINE SIZES			APPROX. NET WEIGHT
			FANS		HEATER		INLET	SUCTION	DRAIN	
			AMPS	WATTS	AMPS	WATTS				
TKL-1201	3	2100	1.5	177	11.7	2700	1/2" OD	7/8" OD	3/4" MPT	60 LBS.

1/4" OD EXTERNAL EQUALIZER CONNECTION W/EC MOTORS

MOH031L63 W/ TKL-1201  
208-230/60/3Ø

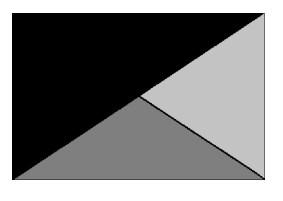
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2 WALK-IN FREEZER MECHANICAL EQUIPMENT DETAIL  
NTS



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02/15/2023

**CHICK-FIL-A**  
PRINCETON WOODS  
3330 PINE BLUFF DRIVE  
DUMFRIES, VA 22026

**FSR#04916**  
BUILDING TYPE / SIZE: P13 LSR LRG  
RELEASE: 22.05  
PRINTED FOR:  
CONSTRUCTION  
REVISION SCHEDULE  
NO. DATE DESCRIPTION  
1 09-21-22 BUILDING CHECKLIST

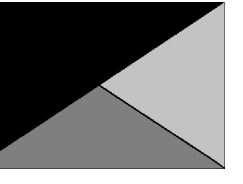
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DATE 08/22/2022  
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SHEET MECHANICAL REFRIGERATION DETAILS  
SHEET NUMBER

**M-602**

Autodesk Docs://VA\_04916\_Princeton Woods\_2021.4\_FSR04916\_Princeton Woods\_MEC.rvt  
2/9/2023 12:00:09 PM  
30-LSR-04916-M-602-MECHANICAL REFRIGERATION DETAILS



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02/15/2023

**CHICK-FIL-A**  
**PRINCETON WOODS**  
3330 PINE BLUFF DRIVE  
DUMFRIES, VA 22026

**FSR#04916**

BUILDING TYPE / SIZE: P13 LSR ALL  
RELEASE: 22.05

PRINTED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	09-21-22	BUILDING CHECKLIST

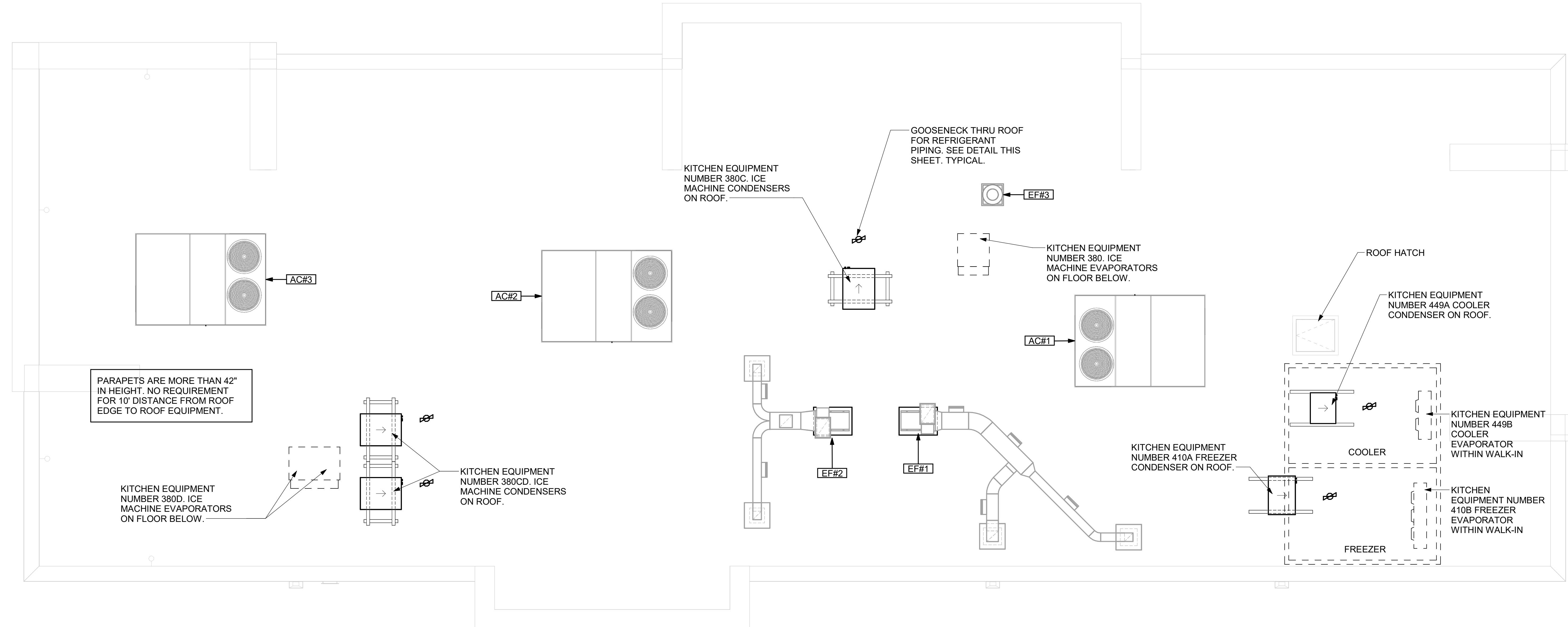
CONSULTANT PROJECT # 22050.EH.S  
DATE 08/22/2022  
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SHEET MECHANICAL REFRIGERATION PLAN

SHEET NUMBER

**M-601**



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

SHEET ADDED TO SET

REFRIGERATION CALCULATIONS AND OTHER INFORMATION REQUIRED PER CHAPTER 11 IMC

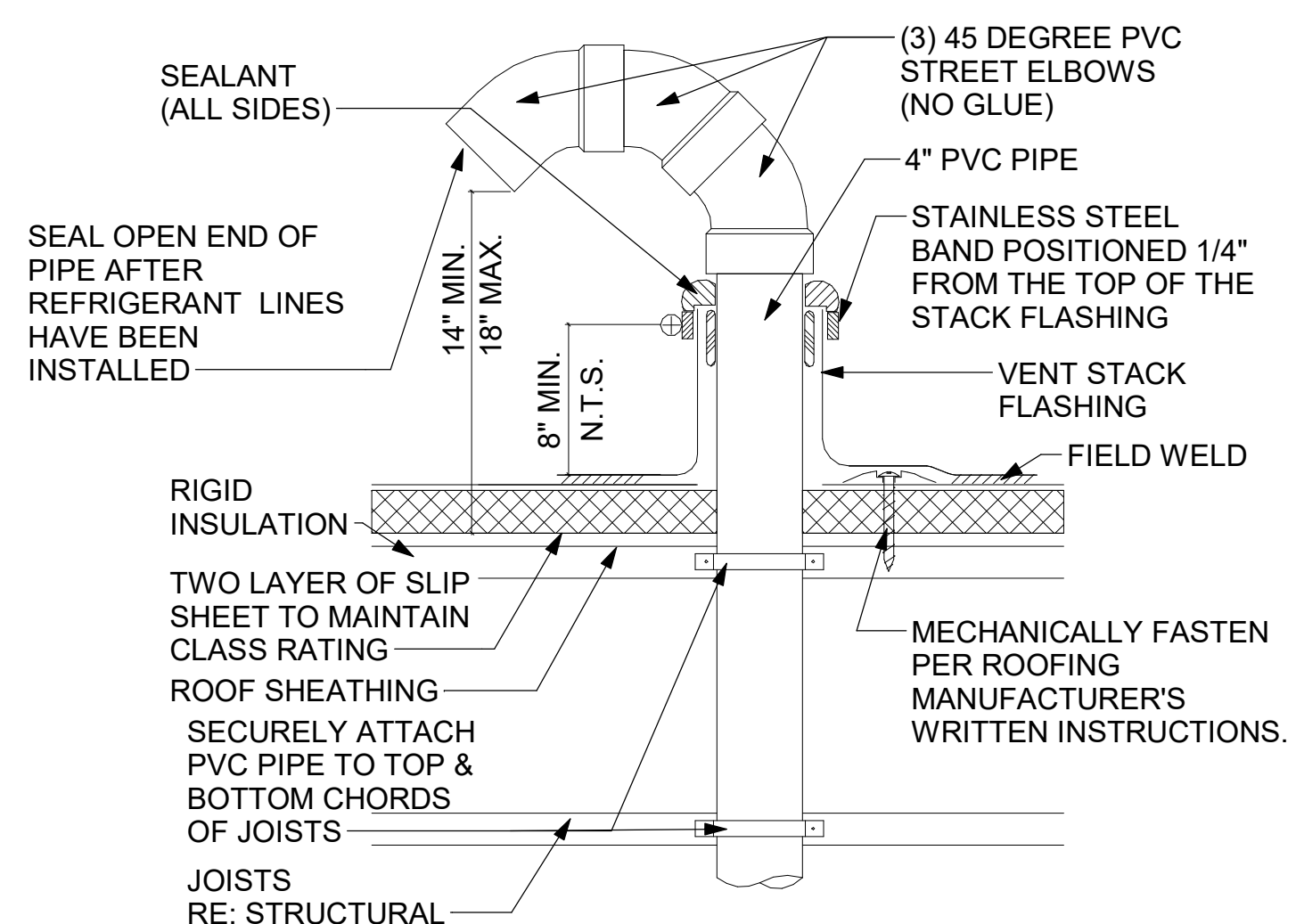
WALK-IN COOLER/FREEZER

1. REFRIGERANT TYPE:	R-404A
2. REFRIGERATION CLASSIFICATION:	A1
3. REFRIGERANT SYSTEM CLASSIFICATION:	LOW PROBABILITY
4. MAXIMUM REFRIGERANT QUANTITY:	31 LBS./1000FT3
5. SYSTEM APPLICATION/VOLUME CALCULATION:	
A - COOLER VOLUME:	11'-7"L X 7'-6"W X 9'-6"H 784 FT3
B - FREEZER VOLUME:	11'-7"L X 7'-3"W X 9'-6"H 758 FT3
6. MAXIMUM ALLOWABLE REFRIGERANT IN SYSTEM:	
A - COOLER:	784 * (31LB./1000FT3) = 24.3 LB MAX
B - FREEZER:	758 * (31LB./1000FT3) = 23.5 LB MAX

FREEZER AND COOLER SHALL HAVE NO MORE THAN THE MAXIMUM ALLOWABLE REFRIGERANT SHOWN ABOVE.

OTHER ITEMS REQUIRED FOR REVIEW:

- 1) PIPING MATERIAL SHALL COMPLY WITH 1107.5 IMC. COPPER REFRIGERANT PIPING IS TO BE USED FOR INSTALLATION.
- 2) ROOF REFRIGERANT PIPE PENETRATION SHOWN ON THIS SHEET, "GOOSENECK PENETRATION DETAIL"
- 3) WALK-IN COOLER/FREEZER CONDENSING AND EVAPORATOR CUT SHEETS ARE LOCATED ON SHEET M-602.
- 4) EVAPORATOR AND CONDENSING UNIT LOCATIONS ARE SHOWN ON THIS SHEET ON THE ROOF PLAN.
- 5) EVAPORATOR CONDENSATE PIPING IS SHOWN ON SHEETS P-101 AND P-201.



**2 GOOSENECK PENETRATION DETAIL**  
NTS

EQUIPMENT	PLAN MARK	MANUFACTURER	MODEL	WIDTH (IN.)	DEPTH (IN.)	HEIGHT (IN.)	REFRIGERANT						PRE-CHARGE LINES (FT)	MATERIAL	WEIGHT (LBS)	
							TYPE	CLASSIFICATION	SYSTEM CLASSIFICATION	MAX. ALLOWED (LB / 1000QFT)	SPACE VOLUME (QFT)	MAX. ALLOWED TOTAL (LB)				AMOUNT OF CHARGE (LB)
ICE MAKER CONDENSER	380C	FOLLET	HCD1410	22.7	24.5	21.25	R 404A	AI	LOW	31	--	--	12.5	35	COPPER	270
ICE MAKER CONDENSER	380CD	FOLLET	HCD1810	30.0	38.5	25.75	R 404A	AI	LOW	31	--	--	14.5	35	COPPER	305
ICE MAKER CONDENSER	380CD	FOLLET	HCD1810	30.0	38.5	25.75	R 404A	AI	LOW	31	--	--	14.5	35	COPPER	305
FREEZER CONDENSER	410A	THERMO-KOOL	MOH031L63	37.75	28.25	19.75	R 404A	AI	LOW	31	777	24	14.0	40	COPPER	223
COOLER CONDENSER	449A	THERMO-KOOL	MOH010X63	23.75	28.25	17.25	R 404A	AI	LOW	31	793	24	5.5	40	COPPER	138

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-94, 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 TRANE 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 FOR THE ROOFTOP UNITS. REFER TO NATIONAL ACCOUNTS ON THIS SHEET FOR MORE INFORMATION.

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. RADIUSSED 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: 877-544-8679). THE PANEL IS PROVIDED AND MOUNTED BY THE MECHANICAL 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. TRANE UNITS - THERMOSTATS ARE PROVIDED AND INTEGRATED INTO THE TEMPERATURE CONTROL PANEL BY SUNCOAST ENVIRONMENTAL CONTROLS. SUNCOAST WILL PROVIDE A NETWORK THERMOSTAT US32-CFA THERMOSTAT PRE-WIRED 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 FITTING 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 CMA 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.

NATIONAL ACCOUNTS

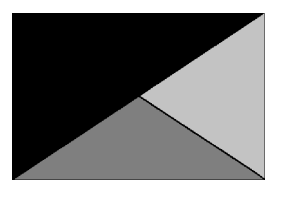
1. LOREN COOK FAN AND CURB PACKAGE - THE MECHANICAL CONTRACTOR IS REQUIRED TO PURCHASE THE FAN/CURB PACKAGE DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010 FOR PRICING AND AVAILABILITY. FANS AND CURBS NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.
2. PRICE AIR DEVICES - THE MECHANICAL CONTRACTOR IS REQUIRED TO 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.
3. AIR DOORS - THE MECHANICAL CONTRACTOR IS REQUIRED TO 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.
4. SUNCOAST ENVIRONMENTAL CONTROLS - THE CFA 500 PANEL AND THE TEST/RESET STATIONS WILL BE PURCHASED AND PROVIDED BY THE ELECTRICAL CONTRACTOR AS A PART OF A NATIONAL ACCOUNT PACKAGE. SEE PART II PARAGRAPH 3A, 3D, AND 3E OF THE MECHANICAL SPECIFICATIONS FOR MORE INFORMATION.
5. HALTON 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.
6. ROYAL METAL PRODUCTS START COLLARS - THE MECHANICAL CONTRACTOR IS REQUIRED TO PURCHASE THE START COLLARS DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010 FOR PRICING AND AVAILABILITY. START COLLARS NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.
7. SCHWANK INFRARED HEATER PACKAGE - THE MECHANICAL CONTRACTOR IS REQUIRED TO 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.
8. BROMIC ELECTRIC HEATER - THE MECHANICAL CONTRACTOR IS REQUIRED TO PURCHASE THE HEATER DIRECTLY FROM BROMIC HEATING USA. CONTACT MR. BLAKE RUSSIE AT 858-381-4850 FOR PRICING AND AVAILABILITY. HEATERS NOT PURCHASED THRU BROMIC HEATING USA WILL NOT BE ACCEPTED.
9. TRANE EQUIPMENT - CONTACT MR. SCOTT ROWLEY AT 630-200-7155 FOR PRICING, ORDERING AND AVAILABILITY. TRANE EQUIPMENT NOT PURCHASED THRU TRANE NATIONAL ACCOUNTS WILL NOT BE ACCEPTED.

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)
CORRIDOR (ENTRYWAYS)	--	--	0.06	228	14
SALES (SERVING AREA)	7.5	11	0.12	731	170
DINING (CAFETERIA, FAST FOOD)	7.5	126	0.18	1262	1172
OFFICE	5	1	0.06	57	9
STORAGE	--	--	0.12	165	20
TEAM MEMBER (RECEPTION)	5	7	0.06	222	48
KITCHEN	7.5	26	0.12	1321	354

ZONE 1 - DINING + ENTRYWAYS = 1,186 CFM.  
 1,186 CFM (Vbz) / 0.8 = 1,483 CFM (Voz)  
 AC#3 PROVIDES 2,125 CFM OUTSIDE AIR TO ZONE 1.  
 ZONE 2 - STORAGE + OFFICE + TEAM MEMBER + KITCHEN = 431 CFM.  
 431 CFM (Vbz) / 0.8 = 539 CFM (Voz)  
 AC#1 PROVIDES 1,050 CFM OUTSIDE AIR TO ZONE 2.  
 ZONE 3 - SALES = 170 CFM.  
 170 CFM (Vbz) / 0.8 = 213 CFM (Voz)  
 AC#2 PROVIDES 1,575 CFM OUTSIDE AIR TO ZONE 3.  
 KITCHEN IS 1,321 SQUARE FEET. AT 0.70 CFM EXHAUST REQUIRED PER SQ. FT. KITCHEN IS REQUIRED TO EXHAUST 925 CFM.  
 KITCHEN EXHAUSTS 3,314 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**  
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 30349-2998



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02/15/2023

**CHICK-FIL-A**  
**PRINCETON WOODS**  
 3330 PINE BLUFF DRIVE  
 DUMFRIES, VA 22026

**FSR#04916**  
 BUILDING TYPE / SIZE: P13 LSR LRG  
 RELEASE: 22.05  
 PRINTED FOR  
 CONSTRUCTION  
 REVISION SCHEDULE

NO.	DATE	DESCRIPTION
1	09-21-22	BUILDING CHECKLIST

CONSULTANT PROJECT # 22050.EH.S  
 DATE 08/22/2022  
 DRAWN BY BLM  
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 SHEET MECHANICAL SPECIFICATIONS  
 SHEET NUMBER

**M-901**

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