

LEGEND			
A-12-400	TYPE - NECK SIZE - CFM	EF#1	EXHAUST FAN #1 (TYP)
	SPIN-IN FITTING WITH MANUAL BALANCING DAMPER, WITHOUT SCOOP	ACH#1	AIR CONDITIONING UNIT #1 (TYP)
	SPIN-IN FITTING WITH MANUAL BALANCING DAMPER, WITH SCOOP		RETURN/EXHAUST (TYP)
	REMOTE TEMPERATURE SENSOR		SUPPLY DIFFUSER, SQ FACE (TYP)
	HUMIDITY SENSOR		PLAN NOTE REFERENCE
	SMOKE DETECTOR		MANUAL VOLUME DAMPER
	DUCT SIZE 1ST NUMBER - HORIZONTAL DIMENSION 2ND NUMBER - VERTICAL DIMENSION		DIRECTION OF THROW ON DIFFUSER

LENNOX FRESH AIR TEMPERING SETUP

- 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.
- CHANGE ROOFTOP UNIT ECTO PARAMETER 6.20 TO A VALUE OF 145. THIS WILL PREVENT THE SUPPLY AIR TEMPERATURE FROM DROPPING BELOW 66F DEG DURING HEATING MODE WHEN THERMOSTAT IS NOT ACTIVELY CALLING FOR HEAT. ECTO PARAMETER 6.20 MUST BE CHANGED TO ACTIVATE THE FRESH AIR TEMPERING FEATURE.
- CHANGE ROOFTOP UNIT ECTO PARAMETER 6.21 TO A VALUE OF 21 WHICH WILL MAKE THE DEADBAND VALUE EQUAL 14F.
- CHANGE ROOFTOP UNIT ECTO PARAMETER 6.22 TO A VALUE OF 37 WHICH WILL MAKE THE CYCLE TIME VALUE EQUAL 5 MINUTES.

KEY NOTES

- MOUNT REMOTE SENSOR ON WALL AT 5'-0" AFF AND ROUTE WIRING BACK TO SUNCOAST TEMP CONTROL PANEL.
- 6X8 CONNECTION TO HOOD#3 WITH HALTON KBD EQUALIZER IN RISER. SEE DWG M21 FOR MORE INFORMATION.
- BRANCH TAKE-OFFS ARE NOT TO BE LOCATED CLOSER THAN 3'-0" FROM ANY ELBOW INCLUDING THE SUPPLY AIR DROP FROM CURB.
- TRANSITION IN VERTICAL DROP FROM FULL SIZE OF CURB OPENING TO SIZE SHOWN. PROVIDE TURNING VANES IN ELBOW.
- TRANSITION IN VERTICAL DROP FROM FULL SIZE OF CURB OPENING TO SIZE SHOWN. NO TURNING VANES IN ELBOW.
- R/A DUCT DROP TO BE FULL SIZE OF CURB CONNECTION. TERMINATE DROP 0'-5" ABOVE CEILING.
- MOUNT LENNOX HUMIDITY SENSOR ON WALL ABOVE SPACE TEMP SENSOR AND ROUTE WIRING TO UNIT ON ROOF.
- EF#1 AND EF#2 MUST BE LOCATED A MINIMUM OF 10 FT FROM PARAPETS.
- INSULATION ON DUCT DROP THROUGH UPPER CEILING TO STOP AT UPPER CEILING PENETRATION. SAND/DEGREASE GALVANIZED SHEET METAL AND PAINT FLAT WHITE. CEILING TILE AT UPPER CEILING TO BE CUT TO FIT AROUND DUCT DROP.
- MOUNT REMOTE SENSOR FOR PLAYGROUND 10'-4" AFF. ROUTE WIRING BACK TO SUNCOAST TEMP CONTROL PANEL.

LEGEND	
SEC.	SUNCOAST ENVIRONMENTAL CONTROLS CFA-500 ENERGY MGT PANEL
AC	SUNCOAST FACTORY INSTALLED AND WIRED A/C RELAY, ENERGIZED BY PUTTING STORE SWITCH IN 'STORE OCCUPIED' POSITION
- - -	18 GA. WIRING BY CONTRACTOR
- - -	RTU FACTORY WIRING
- - -	SEC. FACTORY WIRING
	DUCT HEATER RELAY BY MECHANICAL

REMOVE JUMPER

PROVIDE ENGRAVED PLASTIC LABEL DUCT HEATER CONTROL:

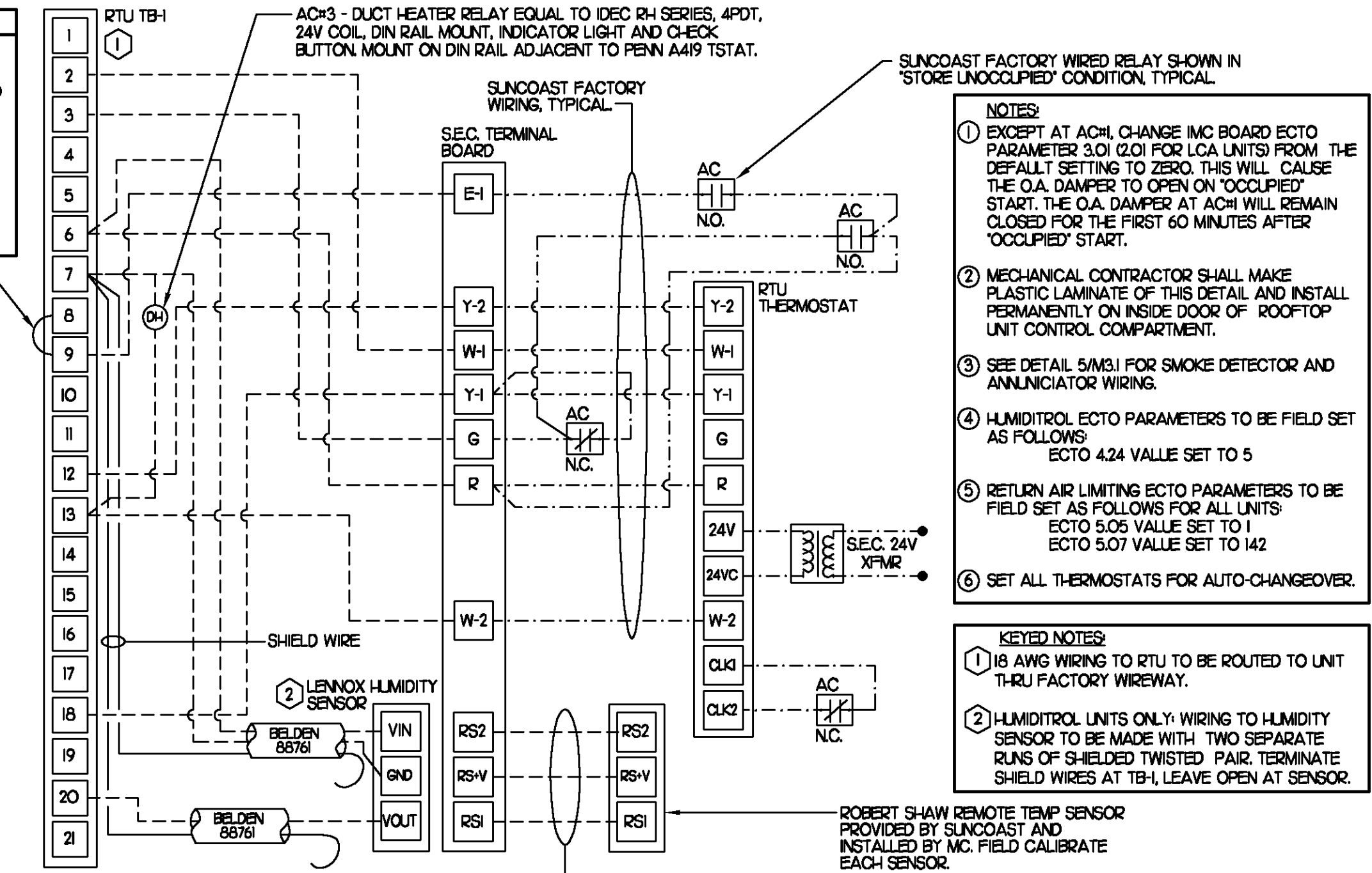
MOUNT SENSOR INSIDE RAIN HOOD IN CENTER OF AIRSTREAM ON FIELD INSTALLED STRUT.

PEN#1 A/R SPECIFIC TSTAT MOUNTED ON DIN RAIL IN ACH#3 CONTROL SECTION SET FOR HEATING WITH 35 DEG SETPOINT, 2 DEG DIFF, 5 MIN ANTI-CYCLE SET JUMPER FOR CUT-IN.

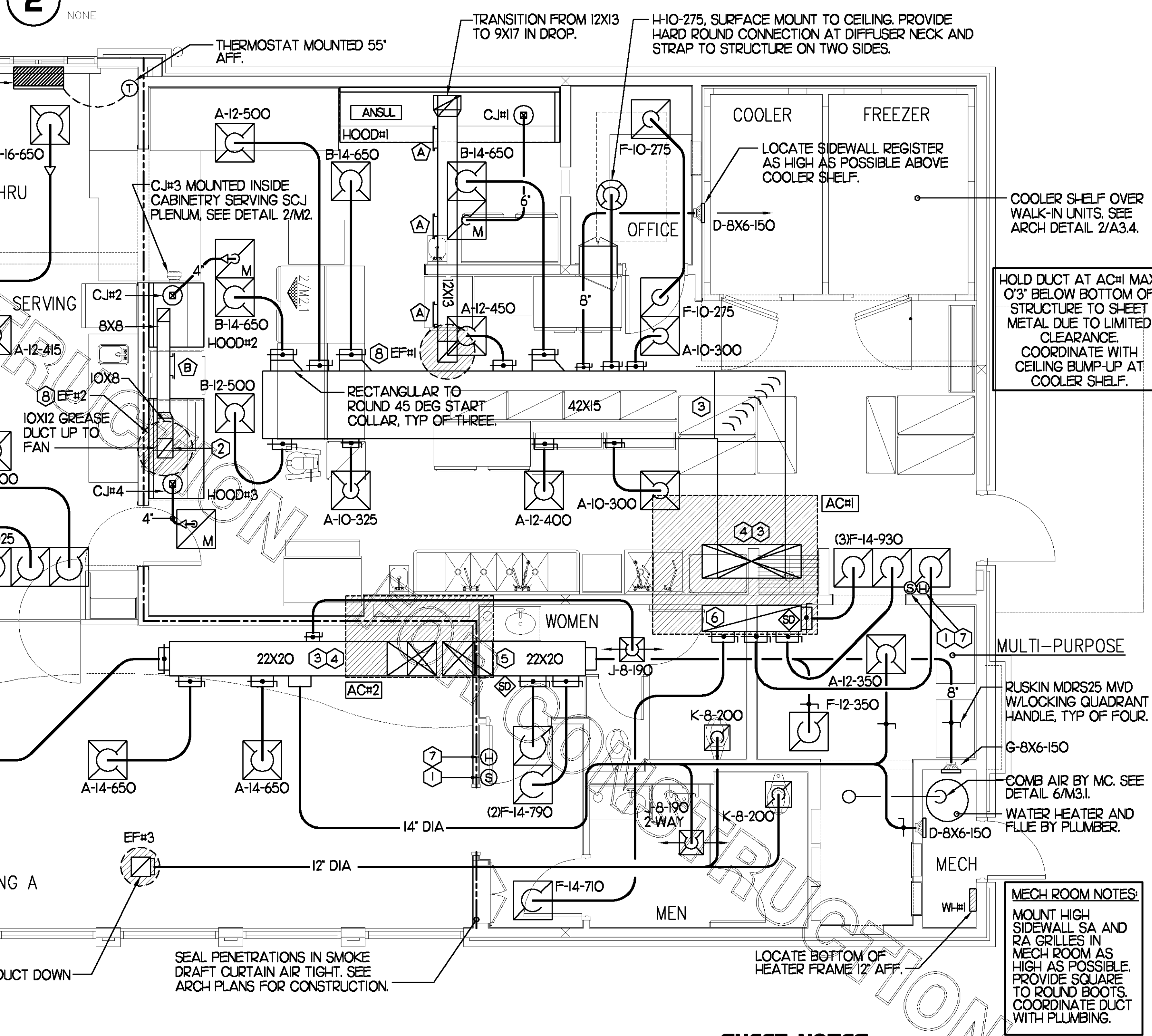
ROUTE TO EDH#1 CONTROL TB FOR START SIGNAL.

FROM 208/24V FIELD INSTALLED 50VA XFMR IN RTU CONTROL SECTION.

AC#3 DUCT HEATER CONTROL



2 ROOFTOP UNIT CONTROL WIRING



4 GREASE ACCESS DOOR SCHEDULE

MARK	OPENING SIZE	DOOR SIZE	REMARKS
	84 X 12W	104 X 14W	1
	64 X 10W	84 X 12W	1

1) ACCESS DOOR SHALL BE UL 1978 LISTED, REQUIRE NO TOOLS FOR REMOVAL AND BE EQUAL TO DUCTMATE ULTIMATE DOOR II WELD ON TYPE.

3 AIR BALANCE SCHEDULE

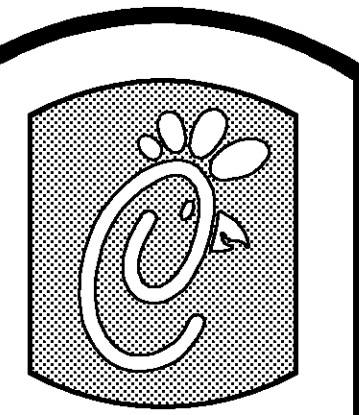
AIR TYPE	TOTAL CFM
SUPPLY	14,780
RETURN	10,725
EXHAUST	3,320
OUTSIDE AIR	4,055
BUILDING POSITIVE PRESSURE	735

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.



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Revisions:

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STORE
Parkersburg FSU
S06E

210 Grand Central Ave.
Vienna, WV

SHEET TITLE
MECHANICAL
FLOOR PLAN

DWG EDITION 07.1
REVISION

Job No. : 7077

Store : 2274

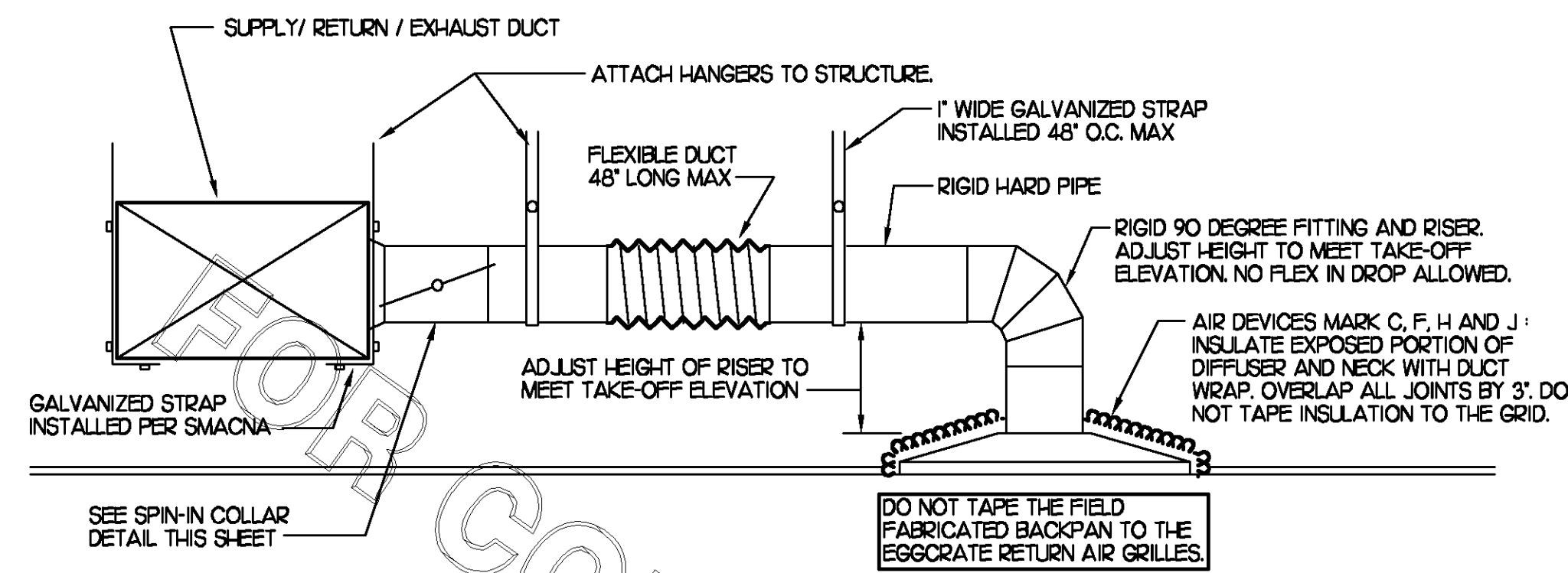
Date : 10/19/07

Drawn By : RWW

Checked By : RDB

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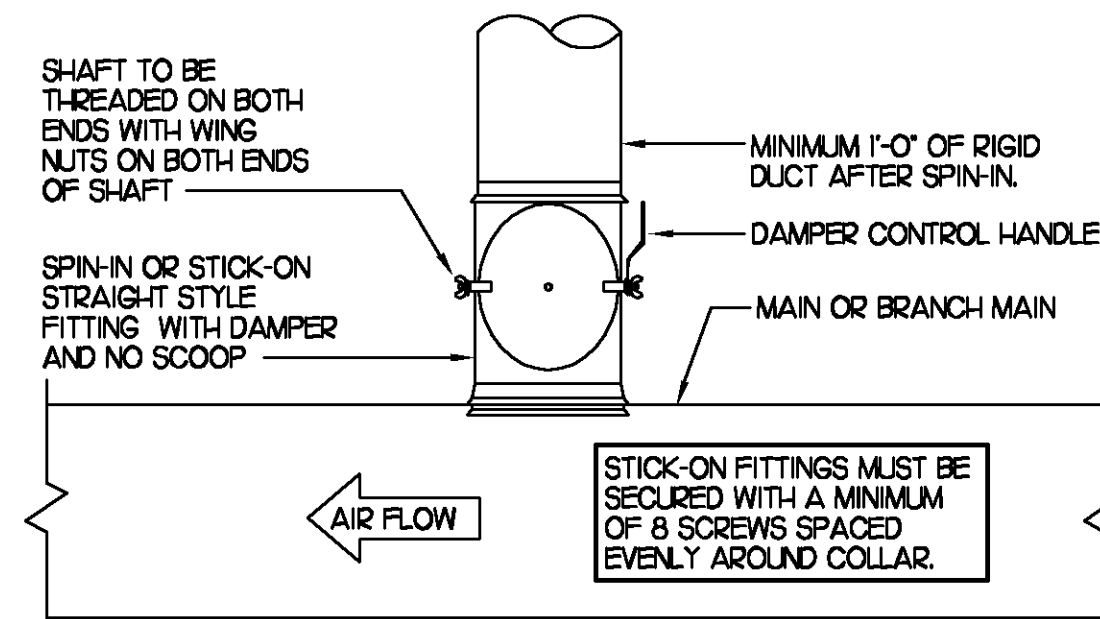
M-11



1 SAG/RAG/GRILLE TAKE-OFF

NO SCALE

DAMPER CONTROL HANDLE MUST BE LEFT EXPOSED. ATTACH A YELLOW FLUORESCENT CONSTRUCTION RIBBON TO THE HANDLE. RIBBON MUST HANG 12\"/>



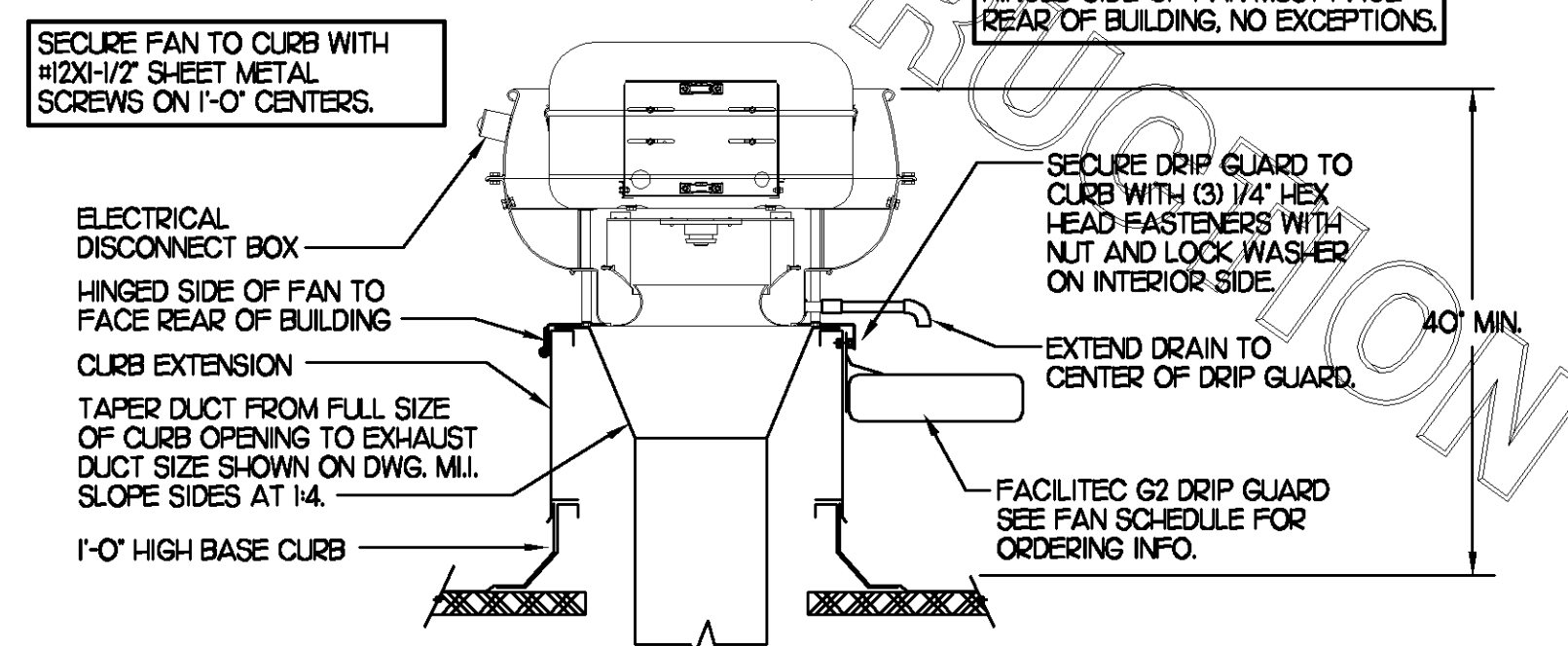
2 SPIN-IN COLLAR

NO SCALE

IO	GAS FIRED ROOFTOP UNIT SCHEDULE									
	COOLING CAPACITY (MBH)		HEATING CAPACITY (MBH)		FAN SECTION (CFM)			MODEL	MANUFACTURER	REMARKS
MARK	TOTAL	SENS	INPUT	OUTPUT	SUPPLY	O.A.	HP	ESP		
ACH1	1881	135.4	480.0	384.0	5150	1650	5	.70	LGC1804-2	LENNOX 1,3,5,6,8,9,10,11,2,13,15
ACH2	105.9	76.2	240.0	192.0	2830	750	2	.70	LGA028-2	LENNOX 2,3,5,6,9,10,11,2,13,14,15
ACH3	145.6	99.0	240.0	192.0	5,000	1,355	5	.70	LGC150S2	LENNOX 1,3,5,6,9,10,11,2,13,14,15
ACH4	63.9	47.3	125.0	100.0	1,800	300	1.5	.70	LGA0604-2	LENNOX 3,4,5,7,8,9,10,11,2,13,14,15

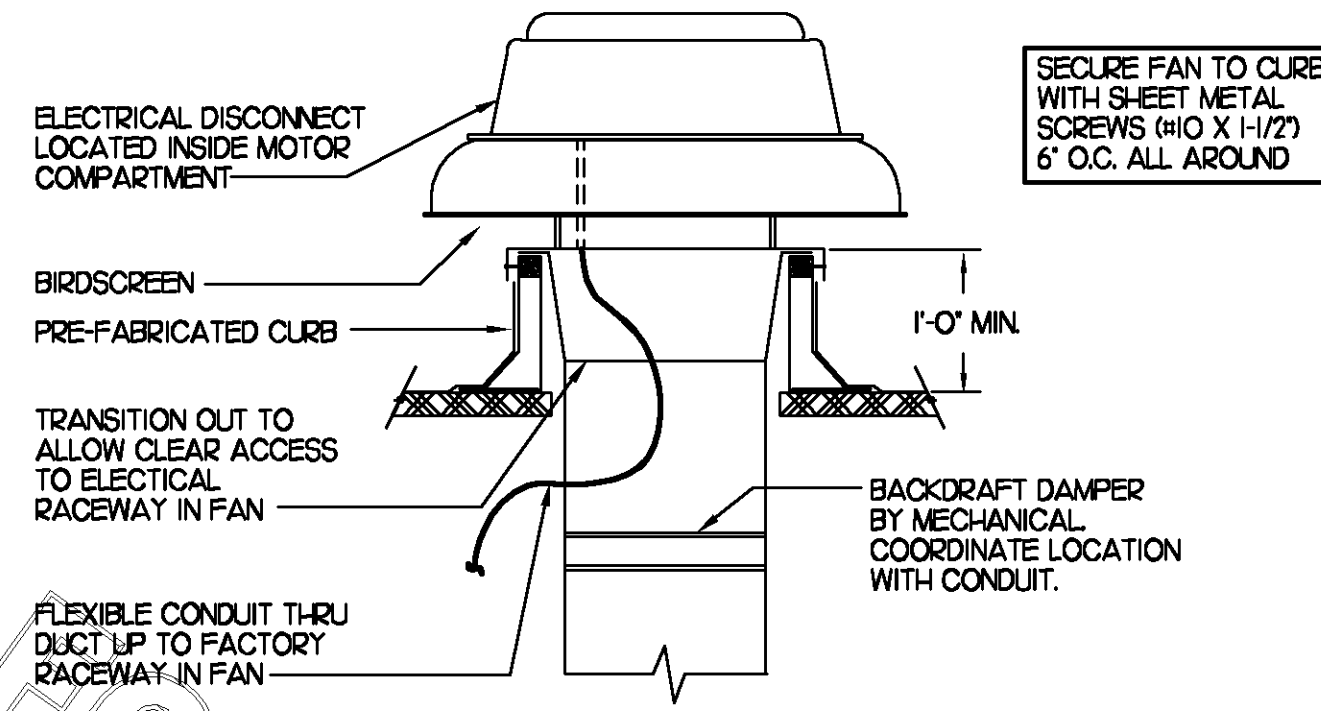
NOTES:
 * COOLING CAPACITIES ARE GROSS, BASED ON INDOOR: 80°FDB/67°FWB, OUTDOOR: 35°FDB, AND 400 CFM PER TON.
 * CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT FOR EQUIPMENT WITH LENNOX CORPORATION. CONTACT LENNOX NATIONAL ACCOUNTS AT 972-497-6260 (OR BY FAX AT 972-497-5112) FOR PRICING, ORDERING AND AVAILABILITY.

REMARKS:
 1) PROVIDE DIFFERENTIAL ENTHALPY ECONOMIZER WITH POWER EXHAUST.
 2) PROVIDE DIFFERENTIAL ENTHALPY ECONOMIZER WITH BAROMETRIC EXHAUST.
 3) PROVIDE 14\"/>



3 KITCHEN HOOD EXHAUST FAN

NO SCALE



4 RESTROOM EXHAUST FAN

NO SCALE

9	EXHAUST FAN SCHEDULE									
	MARK	CFM	ESP	RPM	TIP SPEED (FPM)	HP	AREA SERVED	MODEL	MANUFACTURER	REMARKS
EF#1	1,700	3/4	1,663	4641	1/2	HOOD#1	150V5B	LOREN COOK	1,2,3,4,5,6,12	
EF#2	1,220	3/4	1,586	6,228	1/2	HOOD#2 & HOOD#3	150V5B	LOREN COOK	1,2,3,4,5,6,12	
EF#3	400	3/8	1,429	3,413	1/8	RESTROOMS	ACED-90C5DH	LOREN COOK	2,7,8,9,10,11,2	

NOTES:
 GREASE EXHAUST FAN RPM BASED ON 80 DEGREE F AIR AT 1000 FEET ABOVE SEA LEVEL.

REMARKS:
 1) PROVIDE FACTORY 1\"/>

11	ELECTRIC WALL HEATER SCHEDULE						
	MARK	KW	FRAME SIZE (WIDTH x HEIGHT)	CFM	MOUNTING TYPE	MODEL	MANUFACTURER
WH#1	15	16\"/>					

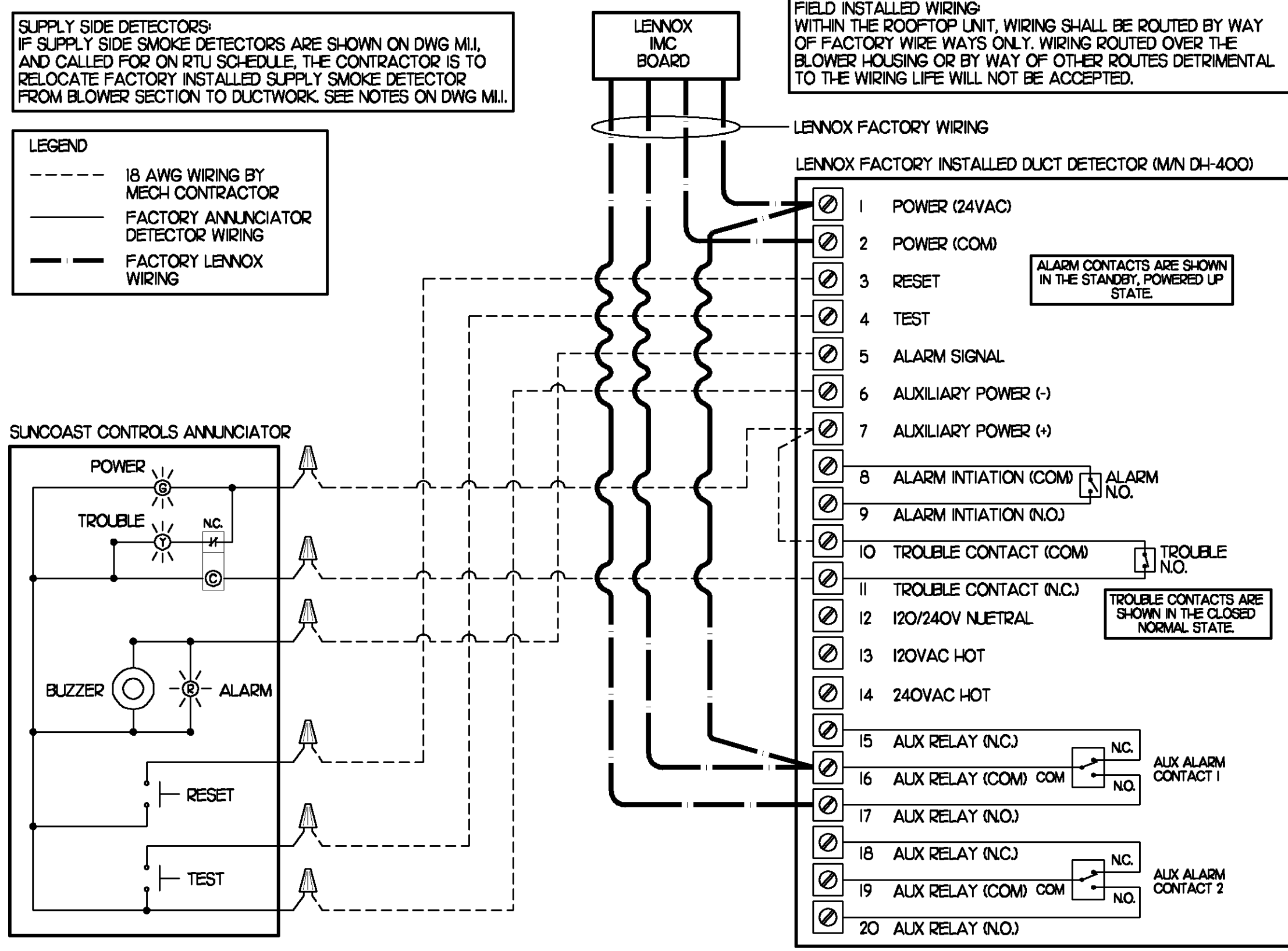
REMARKS:
 1) AUTOMATIC FAN DELAY SWITCH AND INTEGRAL DISCONNECT.
 2) INTEGRAL TAMPERPROOF THERMOSTAT SET AT 65 DEG. F.
 3) CAPACITY SHOWN IS FOR 208V SERVICE.
 4) CONFIRM ELECTRICAL CHARACTERISTICS PRIOR TO ORDERING EQUIPMENT.
 5) POWDER COATED 18 GA. STEEL GRILLE WITH ALUMINUM FRAME.
 6) AUTOMATIC RESET THERMAL LIMIT SWITCH.
 7) TUBULAR STEEL ELEMENT WITH STEEL FINS.

12	ELECTRIC DUCT HEATER SCHEDULE						
	MARK	KW	DUCT SIZE (IN WIDTH x HEIGHT)	CFM	TEMP. RISE	TYPE	MODEL
ED#1	25.0	26\"/>					

REMARKS:
 1) PROVIDE FACTORY AIR FLOW SWITCH, NON ADJUSTABLE, .05\"/>

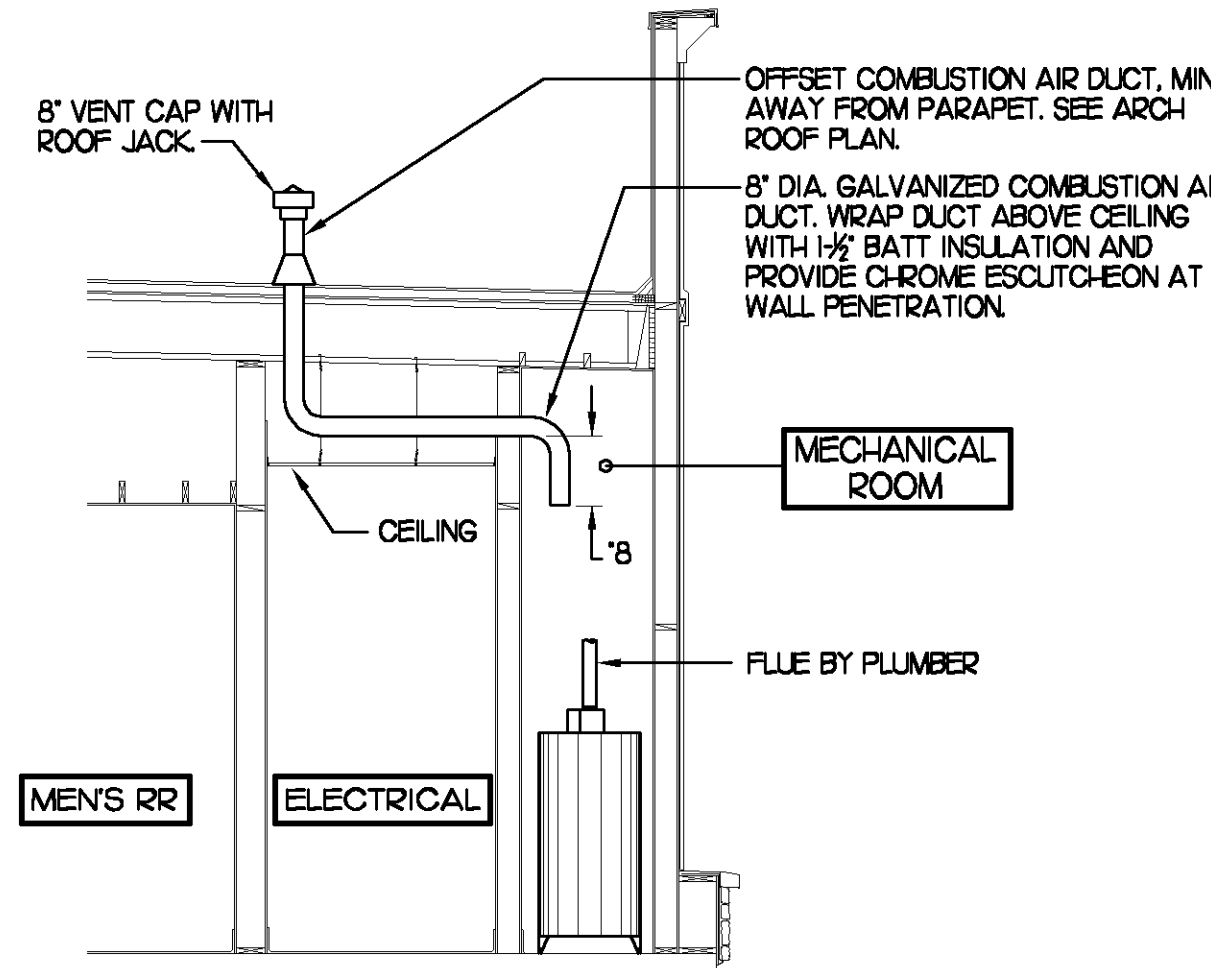
8	AIR DEVICE SCHEDULE						
	MARK	DESCRIPTION	LOCATION	NECK SIZE	FACE SIZE	FRAME TYPE	REMARKS
A	TITUS MODEL PSS-AA ALUMINUM SUPPLY AIR DIFFUSER WITH AIR PATTERN CONTROLLER.	DINING AREA KITCHEN	SEE PLAN	24X24	LAY-IN	1,8,9	
B	TITUS MODEL PAR-AA ALUMINUM RETURN AIR GRILLE USED AS A SUPPLY DIFFUSER.	KITCHEN	SEE PLAN	24X24	LAY-IN	1,8,9	
C	TITUS MODEL MCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	ENTRY 'A' ENTRY 'B'		14X14	19X9	SURFACE	1,5,7,9
D	TITUS MODEL 272FS DOUBLE DEFLECTION ALUMINUM SIDEWALL SUPPLY GRILLE FRONT BLADE PARALLEL TO SHORT SIDE.	MECHANICAL ROOM MEZZANINE		8X6	10X8	SURFACE	1,9
E	TITUS MODEL 272FL DOUBLE DEFLECTION ALUMINUM SIDEWALL SUPPLY GRILLE FRONT BLADE PARALLEL TO LONG SIDE.	PLAYGROUND		18X12	20X14	SURFACE	1,9
F	DONCO MODEL CPDF EGGRATE RETURN AIR GRILLE WITH REMOVABLE WHITE CORE, FACTORY FLAT BACKPAN AND ROUND NECK.	DINING/OFFICE KITCHEN	SEE PLAN	24X24	LAY-IN	1,7,9	
G	TITUS MODEL 56FL ALUMINUM SIDEWALL RETURN GRILLE, FRONT BLADE PARALLEL TO LONG SIDE.	MECHANICAL ROOM		8X6	10X8	SURFACE	1,9
H	TITUS MODEL TMR-AA ALUMINUM CONCENTRIC ROUND CONE SUPPLY DIFFUSER.	OFFICE		10	18	LAY-IN	1,6,7,9
J	TITUS MODEL MCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	RESTROOMS		10X10	15X15	SURFACE	1,2,3,5,7,9
K	TITUS MODEL PAR STEEL PERFORATED FACE RETURN AIR GRILLE WITH OBD.	RESTROOMS ENTRY 'A' & 'B'		14X14	16X16	SURFACE	1,4,9
L	TITUS MODEL 56FL ZERO DEGREE DEFLECTION ALUMINUM SIDEWALL RETURN GRILLE FRONT BLADE PARALLEL TO LONG SIDE.	PLAYGROUND		16X16	18X18	SURFACE	1,9
M	TITUS MODEL PAR-AA ALUMINUM RETURN AIR GRILLE.	KITCHEN		6	24X24	LAY-IN	1,9

REMARKS:
 1) STANDARD OFF WHITE FINISH.
 2) PROVIDE MODEL AG-85 NECK DAMPER.
 3) SEE DRAWING MJ FOR THROW.
 4) PROVIDE MODEL AG-75 NECK DAMPER ON GRILLES IN RESTROOMS.
 5) FIELD FABRICATE 6\"/>



5 SMOKE DETECTOR AND ANNUNCIATOR WIRING DIAGRAM

NO SCALE

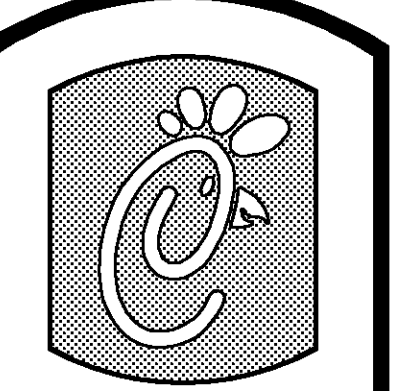


6 WATER HEATER VENT/C.A. ROUTING

NO SCALE

7	AIR DOOR SCHEDULE								
	MARK	CFM	VELOCITY	HEATING CAP	HP	AREA SERVED	MODEL	MANUFACTURER	REMARKS
AD#1	750	3,050	72 KW	1/5	DRIVE THRU		MP-1-50E	POWERED-AIRE	1,2,3

REMARKS:
 1) FACTORY PROVIDED REMOTE MOUNTED HEAT/ON/AUTO CONTROLS.
 2) FACTORY PROVIDED, UNIT MOUNTED SPEED CONTROLLER.
 3) CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE AIR DOOR. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE AIR DOOR DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-0101 FOR PRICING AND AVAILABILITY. AN AIR DOOR NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.



5200 Buffington Rd.
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Revisions:
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STORE
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210 Grand Central Ave.
 Vienna, WV

SHEET TITLE
 HVAC DETAILS
 & SCHEDULES

DWG EDITION 07.1
 REVISION

Job No. : 7077

Store : 2274

Date : 10/19/07

Drawn By : RWW

Checked By : RDB

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M-3.I

NATIONAL ACCOUNTS

1. LENNOX EQUIPMENT - CONTACT LENNOX NATIONAL ACCOUNTS AT 972-497-6260 (OR BY FAX AT 972-497-5112) FOR PRICING, ORDERING AND AVAILABILITY.
2. 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.
3. TITUS AIR DEVICES - 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. AIR DEVICES NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.
4. SUNCOAST ENVIRONMENTAL CONTROLS - CONTACT SUNCOAST ENVIRONMENTAL CONTROLS FOR THE SMOKE DETECTOR TEST/RESET ANNUNCIATOR STATIONS. THE TEST/RESET STATIONS WILL BE PURCHASED AND PROVIDED BY THE MECHANICAL CONTRACTOR AS A PART OF A NATIONAL ACCOUNT PACKAGE.
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.

I. MECHANICAL SPECIFICATIONS

PART I GENERAL

1. 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.
2. 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.
3. 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.
4. 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.
5. 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 AND DUCTWORK SHALL BE INSPECTED AND THOROUGHLY CLEANED, READY FOR USE. AT COMPLETION OF JOB, ALL MISCELLANEOUS TOOLS, SCAFFOLDING, SURPLUS MATERIALS, RUBBISH AND DEBRIS SHALL BE REMOVED BY CONTRACTOR.
6. CONTRACTOR SHALL PROVIDE FARR 30/30 2" OR EQUAL THROW AWAY TYPE FILTERS. A CLEAN SET SHALL BE PROVIDED PRIOR TO UNIT STARTUP AND AGAIN PRIOR TO OPENING.

PART II PRODUCTS

I. HEATING AND COOLING EQUIPMENT

- A. FURNISH AND INSTALL 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 UL 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 EXCHANGERS 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 972-497-6260 (OR BY FAX AT 972-497-5112) FOR PRICING, ORDERING AND AVAILABILITY.

2. DUCTWORK, INSULATION & INSTALLATION (SEE DWG M21 FOR GREASE DUCT)

- A. ACCEPTABLE MANUFACTURERS OF INSULATION ARE MANVILLE, OWENS CORNING OR KNAUF.
- B. ALL DUCTWORK SHALL BE SHEET METAL.
- C. DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS.
- 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 SHALL BE SEALED PER SMACNA SEAL CLASS C WITH UL DUCT MASTIC SEALANT APPROVED FOR INTENDED USE. DUCT TAPE IS NOT AN ACCEPTABLE SUBSTITUTE FOR MASTIC.
- E. 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 5.6 R-VALUE INSTALLED WITH EITHER A VAPOR BARRIER WITH MAXIMUM PERMEANCE 0.05 OR A MINIMUM 2 MIL ALUMINUM REINFORCED FOIL/KRAFT FACING.
- F. ALL DUCT DROPS FROM THE ROOFTOP UNITS SHALL BE EXTERNALLY INSULATED.
- G. SUPPLY AND RETURN AIR DUCTWORK SERVING THE PLAYGROUND, KITCHEN, SERVING AND DINING AREAS SHALL BE EXTERNALLY INSULATED.
- H. RESTROOM RECTANGULAR EXHAUST AIR DUCTWORK SHALL BE LINED WITH 1" THICK, 1/2 PCF INSULATION.
- I. TRUNK DUCTS SHALL BE ISOLATED FROM UNIT VIBRATION WITH THE USE OF NFPA AND UL APPROVED FLEXIBLE CONNECTORS INSTALLED AT THE TOP OF BOTH SUPPLY AND RETURN DROPS.
- J. 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 M31.
- K. 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 UL APPROVAL AND SHALL BE EQUIVALENT TO THERMAFLEX MKE.
- L. FLEXIBLE DUCT SHALL BE INSTALLED USING DRAWBANDS AND UL 181B FOIL TAPE ON THE INNER CORE AND OUTER INSULATION.
- M. DUCT TAPE SHALL BE EQUAL TO FASSON 181-B FX, 2-1/2" WIDE.
- N. SINGLE THICKNESS TURNING VANES SHALL BE INSTALLED AT 90 DEGREE TURNS IN SUPPLY DUCTWORK WHERE ANY ONE DIMENSION IS GREATER THAN 12".
- O. RADIUS ELBOWS MAY BE SUBSTITUTED FOR 90 DEGREE ELBOWS AT THE DISCRETION OF THE CONTRACTOR. CENTERLINE RADIUS EQUAL TO 3W/2 PER FIGURE NO. 2-2 IN SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
- P. 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.

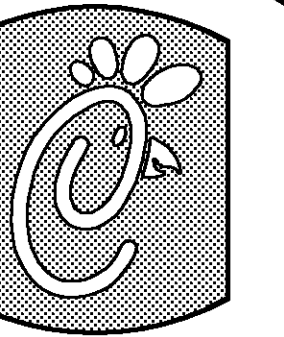
3. CONTROLS

- 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 AND PROVIDED BY THE MECHANICAL CONTRACTOR AS A PART OF A NATIONAL ACCOUNT PACKAGE.

- E. THE REMOTE TEST/RESET ANNUNCIATORS SHALL BE PROVIDED, INSTALLED AND WIRED 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, ALARM LED, 90DB HORN AND TEST/RESET BUTTON.
- F. WHERE REQUIRED BY LOCAL CODE, INSTALL A FIRESTAT IN THE SUPPLY AIR DUCT OF EACH PIECE OF AIR CONDITIONING EQUIPMENT HANDLING 2000 CFM OR MORE TO STOP THE INDOOR FAN AND CLOSE THE OUTSIDE AIR DAMPER WHEN HEAT WITHIN THE DUCT IS IN EXCESS OF 135 DEGREES FAHRENHEIT. FIRESTAT SHALL BE EQUIVALENT TO HONEYWELL MODEL #L4029E HIGH LIMIT CONTROLLER. FIRESTATS SHALL BE PROVIDED AND MOUNTED BY THE MECHANICAL CONTRACTOR. INSTALLATION BY MECHANICAL SHALL INCLUDE MOUNTING OF THE DEVICE AND ALL WIRING FROM THE DEVICE TO THE RTU. SHUTDOWN OF UNIT AND INDOOR FAN SHALL BE IMMEDIATE WITH NO DELAY.
- G. 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.
- H. THERMOSTATS ARE PROVIDED AND INTEGRATED INTO THE TEMPERATURE CONTROL PANEL BY SUNCOAST ENVIRONMENTAL CONTROLS. SUNCOAST WILL PROVIDE A ROBERTSHAW SERIES 300 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.
- I. 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.

PART III EXECUTION

- A. FURNISH AND INSTALL SYSTEM IN ACCORDANCE WITH REFERENCED STANDARDS, APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS AND AS INDICATED ON DRAWINGS.
- B. OWNER SHALL TEST AND BALANCE MECHANICAL SYSTEM IN ACCORDANCE WITH NEI 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.
- C. 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.
- D. 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.
- E. CONTRACTOR SHALL COMPLETE A/C EQUIPMENT STARTUP DOCUMENTATION PROVIDED BY OWNER.



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Revisions:

Mark Date By

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SHEET TITLE
MECHANICAL
SPECIFICATIONS

DWG EDITION 07.1
REVISION -

Job No. : 7077
Store : 2274
Date : 10/19/07
Drawn By : RWW
Checked By : RDB

Sheet

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