

KEY NOTES

- MOUNT REMOTE SENSOR ON WALL AT 5'-0" AFF AND ROUTE WIRING BACK TO SUNCOAST TEMP CONTROL PANEL. SENSOR IN KITCHEN TO BE MOUNTED AT 6'-7" AFF TO TOP OF SENSOR.
- 8X8 CONNECTION TO HOOD#3 WITH HALTON MBD BALANCING DAMPER INSTALLED AT HOOD COLLAR. 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. SENSOR IN KITCHEN TO BE MOUNTED BESIDE SPACE TEMP SENSOR.
- 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.
- MECHANICAL CONTRACTOR TO COORDINATE THE LOCATION OF THE SUPPLY AND RETURN DUCT AND GRILLES WITH PIPING IN THIS AREA. SEE DETAIL 5/P-61 FOR GRILLE LOCATIONS AND PIPING PENETRATION LOCATIONS. DUCT TO BE LOCATED ABOVE THE CEILING ON THE KITCHEN SIDE OF THE WALL.
- MECHANICAL CONTRACTOR TO ADJUST PATTERN DEFLECTORS TO THROW STRAIGHT DOWN.
- AIR CURTAIN MOUNTED OVER DOOR HEADER AT 7'-5" AFF TO BOTTOM OF UNIT. LOCATE MAGNETIC CONTACT TYPE MICROSWITCH IN DOOR FRAME ON STRIKE SIDE.
- SEE ELEVATIONS ON M-21 FOR CJ FAN DUCTING REQUIREMENTS.
- PROVIDE 8" GALVANIZED COMBUSTION AIR DUCT WITH VENT CAP AND ROOF JACK. LOCATE COMBUSTION AIR DUCT, MIN 18" AWAY FROM PARAPET. SEE ARCH ROOF PLAN FOR PARAPET LOCATIONS. ROUTE COMBUSTION AIR DUCT STRAIGHT DOWN AND TERMINATE 8" BELOW CEILING. WRAP DUCT ABOVE CEILING WITH 1/2" BATT INSULATION AND PROVIDE CHROME ESCUTCHEON AT CEILING PENETRATION.

LEGEND

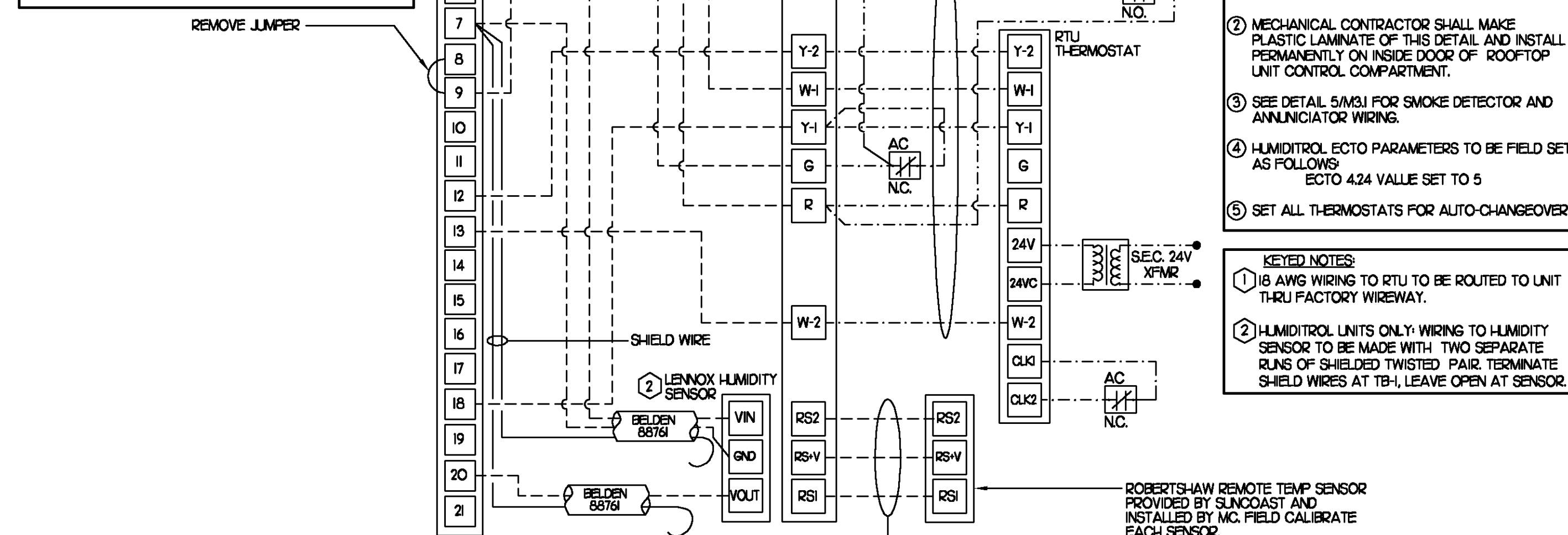
A-12-400	TYPE - NECK SIZE - CFM	EF#1	EXHAUST FAN #1 (TYP)
	SPIN-IN FITTING WITH MANUAL BALANCING DAMPER, WITHOUT SCOOP	ACH#1	AIR CONDITIONING UNIT #1 (TYP)
	SPIN-IN HARD Φ		RETURN/EXHAUST (TYP)
	SPIN-IN FLEXIBLE Φ		SUPPLY DIFFUSER, SQ FACE (TYP)
	REMOTE TEMPERATURE SENSOR		PLAN NOTE REFERENCE
	HUMIDITY SENSOR		MANUAL VOLUME DAMPER
	SMOKE DETECTOR		DUCT SIZE (REVERSE FOR ELEVATION VIEWS) 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.

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



- NOTES:**
- EXCEPT AT ACH, CHANGE IMC BOARD ECTO PARAMETER 3.01 (20 FOR LCA UNITS) FROM THE DEFAULT SETTING TO 2500. THIS WILL CAUSE THE O.A. DAMPER TO OPEN ON 'OCCUPIED' START. THE O.A. DAMPER AT ACH WILL REMAIN CLOSED FOR THE FIRST 60 MINUTES AFTER 'OCCUPIED' START.
 - MECHANICAL CONTRACTOR SHALL MAKE PLASTIC LAMINATE OF THIS DETAIL AND INSTALL PERMANENTLY ON INSIDE DOOR OF ROOFTOP UNIT CONTROL COMPARTMENT.
 - SEE DETAIL 5/M31 FOR SMOKE DETECTOR AND ANNUNCIATOR WIRING.
 - HUMIDITROL ECTO PARAMETERS TO BE FIELD SET AS FOLLOWS:
ECTO 4.24 VALVE SET TO 5
 - SET ALL THERMOSTATS FOR AUTO-CHANGEOVER.
- KEYED NOTES:**
- 18 AWG WIRING TO RTU TO BE ROUTED TO UNIT THRU FACTORY WIREWAY.
 - HUMIDITROL UNITS ONLY: WIRING TO HUMIDITY SENSOR TO BE MADE WITH TWO SEPARATE RUNS OF SHIELDED TWISTED PAIR. TERMINATE SHIELD WIRES AT TB-1, LEAVE OPEN AT SENSOR.

2 ROOFTOP UNIT CONTROL WIRING

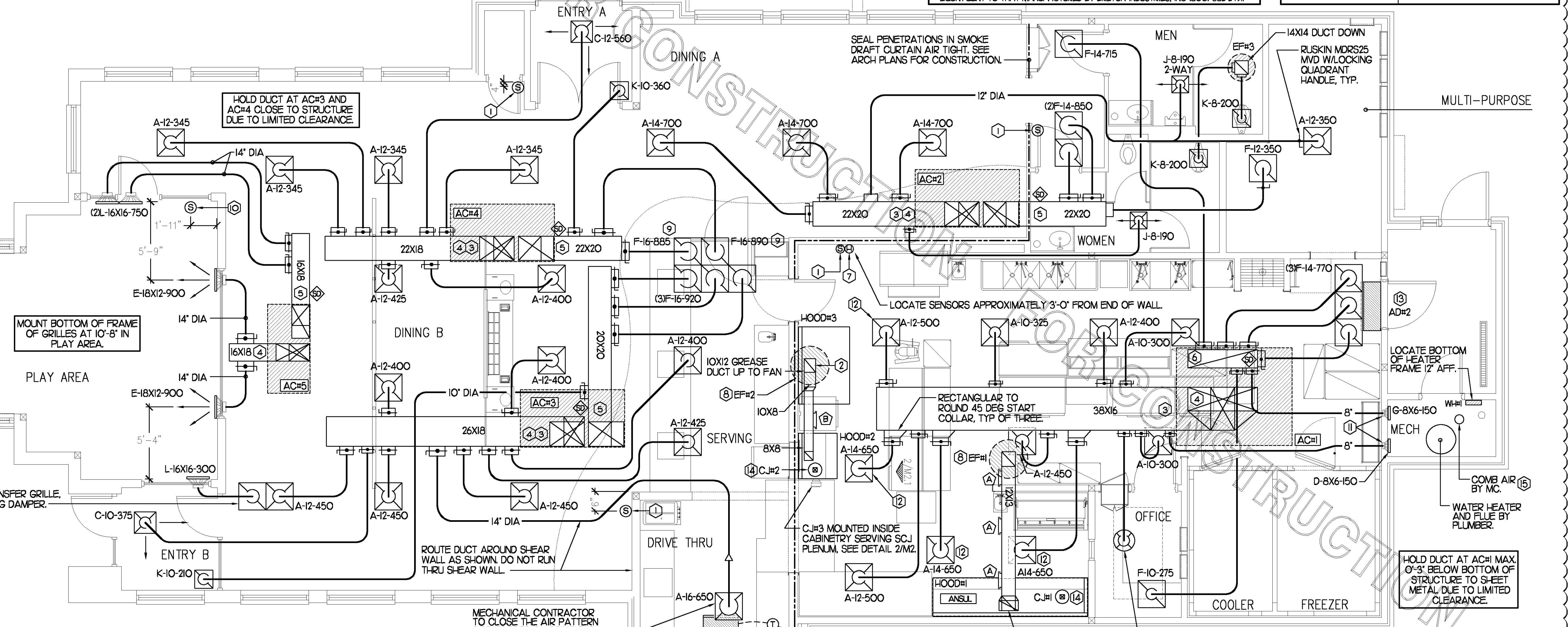
4 GREASE ACCESS DOOR SCHEDULE

MARK	OPENING SIZE	DOOR SIZE	REMARKS
A	10.5H X 14W	12.5H X 16W	I
B	5.5H X 14W	7.5H X 16W	I

1) ACCESS DOORS SHALL BE UL 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 BRETON INDUSTRIES, INC (800) 382-2491.

3 AIR BALANCE SCHEDULE

AIR TYPE	TOTAL CFM
SUPPLY	16,545
RETURN	12,005
EXHAUST	3,500
OUTSIDE AIR	4,440
BUILDING POSITIVE PRESSURE	940

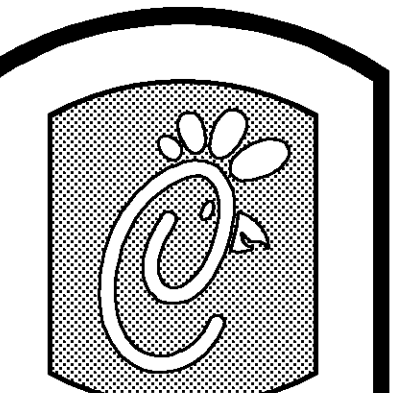


SHEET NOTES

- DUCT SIZES SERVING DIFFUSERS AND GRILLES ARE SAME SIZE AS DIFFUSER OR GRILLE NECK UNLESS NOTED OTHERWISE.

MECHANICAL FLOOR PLAN

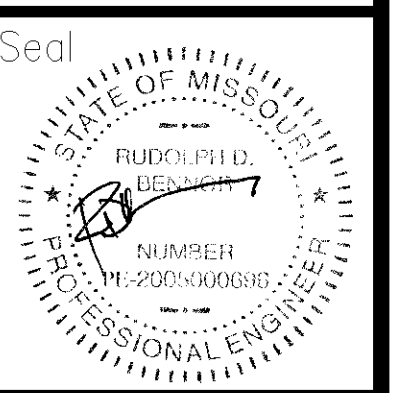
1/4" = 1'-0"



5200 Buffington Rd.
Atlanta Georgia,
30349-2998

Revisions:

Mark	Date	By
1/13/09		OWNER CHANGES



BENNON ENGINEERING, LLC
9000 Longfords Road
Building 2400
Norcross, GA 30071
(770) 729-1422 bus
(770) 729-0430 fax
contact@bennonEng.com

STORE
Chick-Fil-A
FSU S08C-R

5303 North Belt Hwy
St. Joseph, MO

SHEET TITLE
MECHANICAL
FLOOR PLAN

VERSION 4
ISSUE DATE 7-2009

Job No. : 7082
Store : 2309
Date : 11/13/09
Drawn By : JAL
Checked By : RDB

Sheet
M-1.1

KEY NOTES

- MOUNT REMOTE SENSOR ON WALL AT 5'-0" AFF AND ROUTE WIRING BACK TO SUNCOAST TEMP CONTROL PANEL. SENSOR IN KITCHEN TO BE MOUNTED AT 6'-7" AFF TO TOP OF SENSOR.
- 8X8 CONNECTION TO HOOD#3 WITH HALTON MBD BALANCING DAMPER INSTALLED AT HOOD COLLAR. 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. SENSOR IN KITCHEN TO BE MOUNTED BESIDE SPACE TEMP SENSOR.
- 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.
- MECHANICAL CONTRACTOR TO COORDINATE THE LOCATION OF THE SUPPLY AND RETURN DUCT AND GRILLES WITH PIPING IN THIS AREA. SEE DETAIL 5/P-61 FOR GRILLE LOCATIONS AND PIPING PENETRATION LOCATIONS. DUCT TO BE LOCATED ABOVE THE CEILING ON THE KITCHEN SIDE OF THE WALL.
- MECHANICAL CONTRACTOR TO ADJUST PATTERN DEFLECTORS TO THROW STRAIGHT DOWN.
- AIR CURTAIN MOUNTED OVER DOOR HEADER AT 7'-5" AFF TO BOTTOM OF UNIT. LOCATE MAGNETIC CONTACT TYPE MICROSWITCH IN DOOR FRAME ON STRIKE SIDE.
- SEE ELEVATIONS ON M-21 FOR CJ FAN DUCTING REQUIREMENTS.
- PROVIDE 8" GALVANIZED COMBUSTION AIR DUCT WITH VENT CAP AND ROOF JACK. LOCATE COMBUSTION AIR DUCT, MIN 18" AWAY FROM PARAPET. SEE ARCH ROOF PLAN FOR PARAPET LOCATIONS. ROUTE COMBUSTION AIR DUCT STRAIGHT DOWN AND TERMINATE 8" BELOW CEILING. WRAP DUCT ABOVE CEILING WITH 1/2" BATT INSULATION AND PROVIDE CHROME ESCUTCHEON AT CEILING PENETRATION.

LEGEND

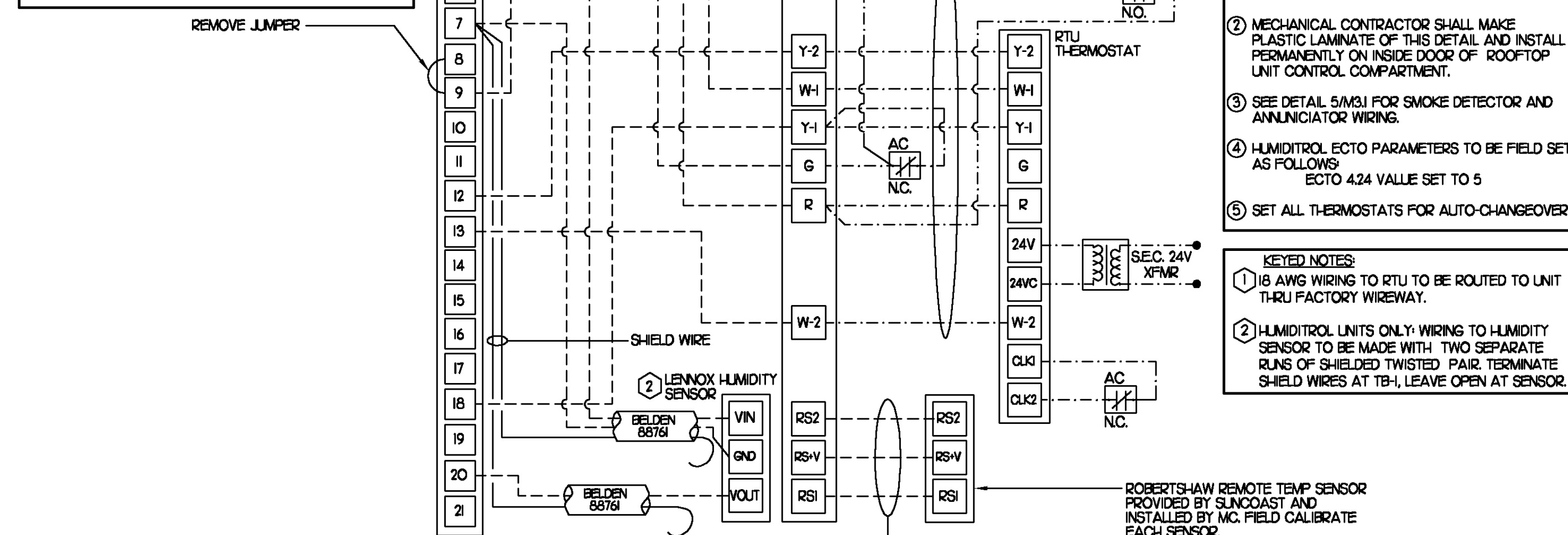
A-12-400	TYPE - NECK SIZE - CFM	EF#1	EXHAUST FAN #1 (TYP)
	SPIN-IN FITTING WITH MANUAL BALANCING DAMPER, WITHOUT SCOOP	ACH#1	AIR CONDITIONING UNIT #1 (TYP)
	SPIN-IN HARD Φ DIFFUSER		RETURN/EXHAUST (TYP)
	REMOTE TEMPERATURE SENSOR		SUPPLY DIFFUSER, SQ FACE (TYP)
	HUMIDITY SENSOR		PLAN NOTE REFERENCE
	SMOKE DETECTOR		MANUAL VOLUME DAMPER
12X18	DUCT SIZE (REVERSE FOR ELEVATION VIEWS) 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.

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



- NOTES:**
- EXCEPT AT ACH, CHANGE IMC BOARD ECTO PARAMETER 3.01 (20 FOR LCA UNITS) FROM THE DEFAULT SETTING TO 2500. THIS WILL CAUSE THE O.A. DAMPER TO OPEN ON 'OCCUPIED' START. THE O.A. DAMPER AT ACH WILL REMAIN CLOSED FOR THE FIRST 60 MINUTES AFTER 'OCCUPIED' START.
 - MECHANICAL CONTRACTOR SHALL MAKE PLASTIC LAMINATE OF THIS DETAIL AND INSTALL PERMANENTLY ON INSIDE DOOR OF ROOFTOP UNIT CONTROL COMPARTMENT.
 - SEE DETAIL 5/M31 FOR SMOKE DETECTOR AND ANNUNCIATOR WIRING.
 - HUMIDITROL ECTO PARAMETERS TO BE FIELD SET AS FOLLOWS:
ECTO 4.24 VALVE SET TO 5
 - SET ALL THERMOSTATS FOR AUTO-CHANGEOVER.
- KEYED NOTES:**
- 18 AWG WIRING TO RTU TO BE ROUTED TO UNIT THRU FACTORY WIREWAY.
 - HUMIDITROL UNITS ONLY: WIRING TO HUMIDITY SENSOR TO BE MADE WITH TWO SEPARATE RUNS OF SHIELDED TWISTED PAIR. TERMINATE SHIELD WIRES AT TB-1, LEAVE OPEN AT SENSOR.

2 ROOFTOP UNIT CONTROL WIRING

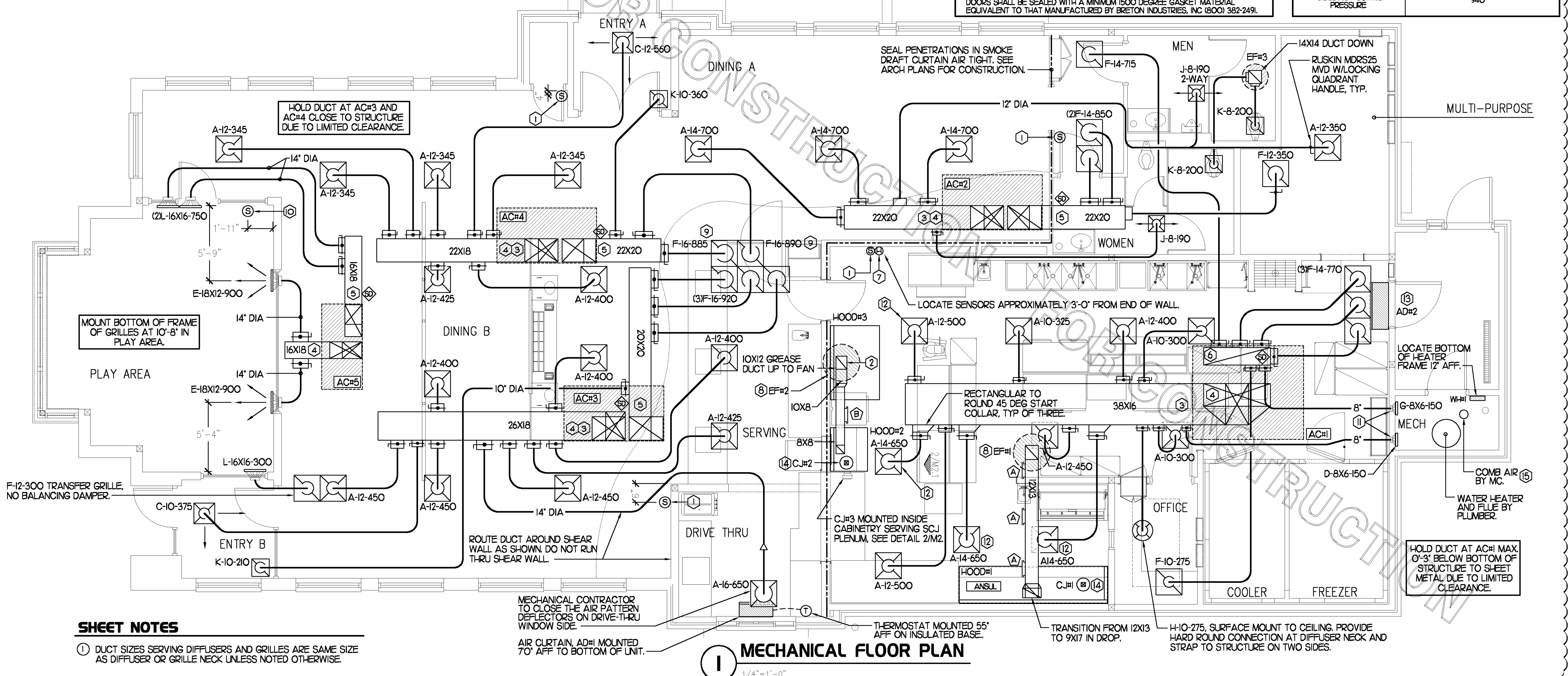
4 GREASE ACCESS DOOR SCHEDULE

MARK	OPENING SIZE	DOOR SIZE	REMARKS
A	10.5H X 14W	12.5H X 16W	I
B	5.5H X 14W	7.5H X 16W	I

1) ACCESS DOORS SHALL BE UL 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 TUBING SCREWS. ACCESS DOORS SHALL BE SEALED WITH A MINIMUM 1500 DEGREE GASKET MATERIAL EQUIVALENT TO THAT MANUFACTURED BY BRETON INDUSTRIES, INC (800) 382-2491.

3 AIR BALANCE SCHEDULE

AIR TYPE	TOTAL CFM
SUPPLY	16,545
RETURN	12,005
EXHAUST	3,500
OUTSIDE AIR	4,440
BUILDING POSITIVE PRESSURE	940

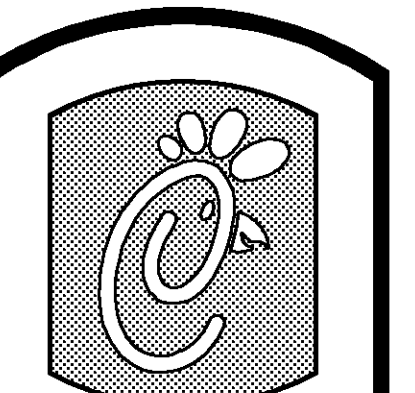


SHEET NOTES

- DUCT SIZES SERVING DIFFUSERS AND GRILLES ARE SAME SIZE AS DIFFUSER OR GRILLE NECK UNLESS NOTED OTHERWISE.

MECHANICAL FLOOR PLAN

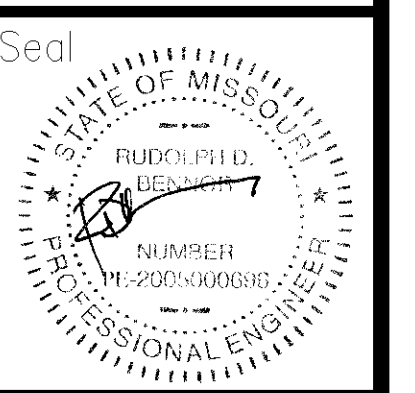
1/4" = 1'-0"



5200 Buffington Rd.
Atlanta Georgia,
30349-2998

Revisions:
Mark Date By
11/13/09
OWNER CHANGES

Mark Date By
Mark Date By
Mark Date By



BENNON ENGINEERING, LLC
9000 Longfords Road
Building 2400
Norcross, GA 30071
(770) 729-1422 bus
(770) 729-0430 fax
contact@bennonEng.com

STORE
Chick-Fil-A
FSU S08C-R

5303 North Belt Hwy
St. Joseph, MO

SHEET TITLE
MECHANICAL
FLOOR PLAN

VERSION 4
ISSUE DATE 7-2009

Job No. : 7082
Store : 2309
Date : 11/13/09
Drawn By : JAL
Checked By : RDB

Sheet
M-1.1

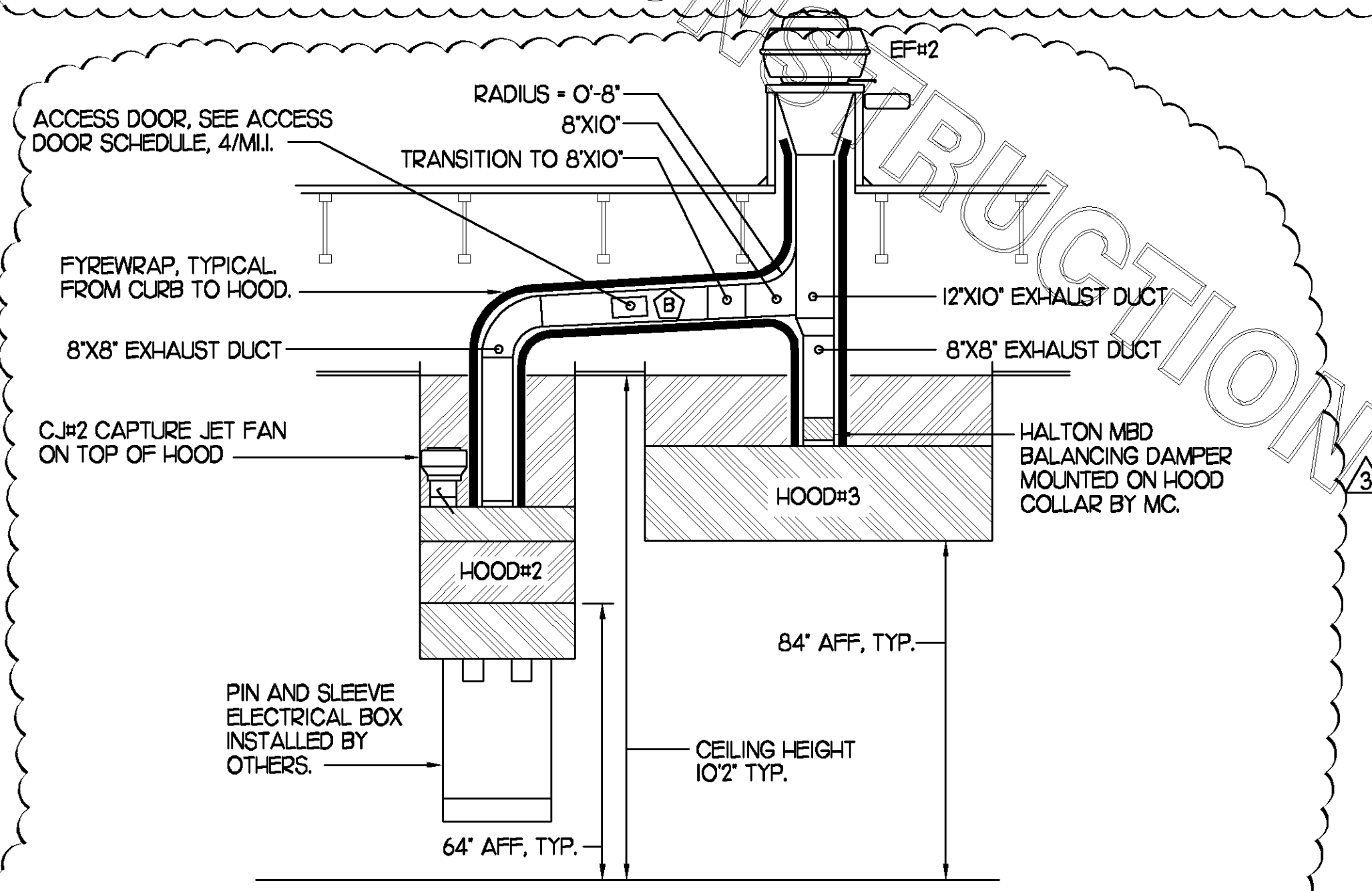
6 KITCHEN HOOD SYSTEMS NOTES

- 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 HIRED BY HALTON.
- 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, NO EXCEPTIONS ALLOWED. 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. FyreWRAP PRODUCT USED SHALL MEET LOCAL CODE REQUIREMENTS.
- SUPPORT 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 DRAWING S5-1.

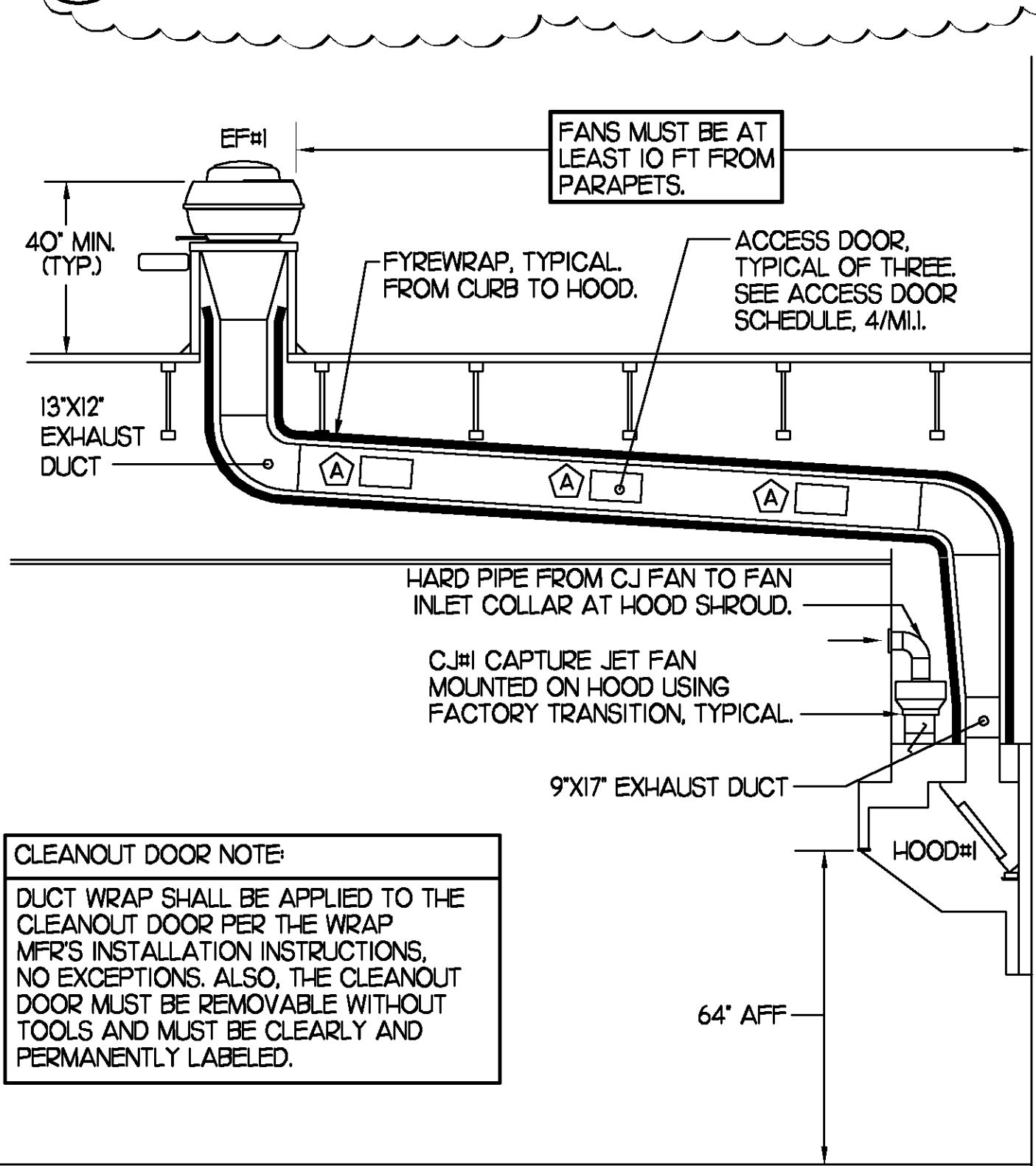
5 HOOD SCHEDULE

MARK	EXHAUST CFM	SP • TAB PORT	CAPTURE JET CFM & SP.	TYPE	COLLAR SIZE	WIDTH	DEPTH	HEIGHT	MANUFACTURER	MODEL	REMARKS
HOOD#1	1,700	0.20"	100 • 0.30"	BACK SHELF	9X17"	136.5"	34"	48"	HALTON	KVL	1,3,4,5,6,7,9,10,15,18,21
HOOD#2	700	0.27"	30 • 0.30"	BACK SHELF	8'X8"	40"	34"	48"	HALTON	KVL	1,2,4,8,10,11,14,18,19,20,21
HOOD#3	700	0.14"	50 • 0.25"	CANOPY	8'X8"	68"	45"	24"	HALTON	KVE	1,4,5,12,13,16,17,21

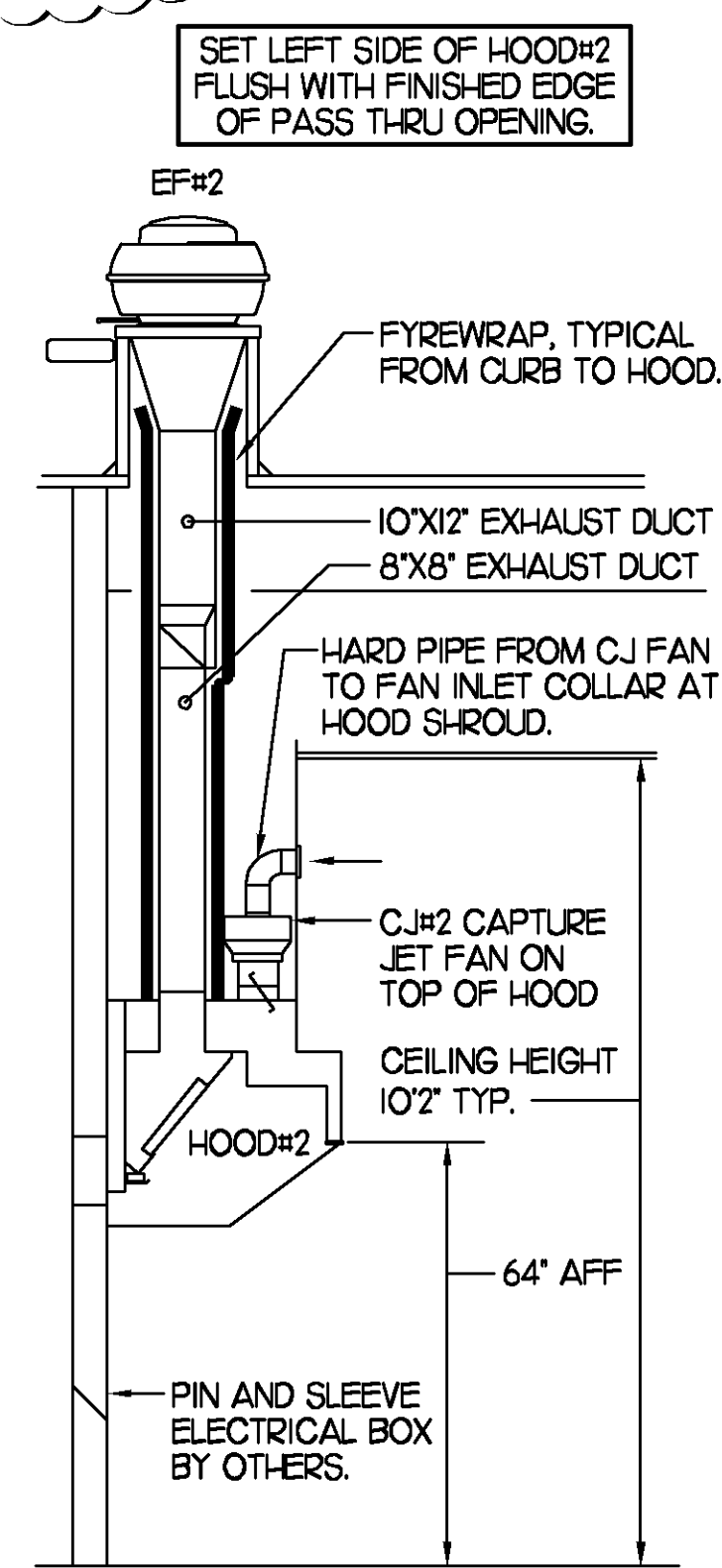
- NOTES: DIMENSIONS OF HOODS INCLUDE BACK AND SIDE SPACERS (HEIGHT DOES NOT INCLUDE CLOSURE PANELS).
- REMARKS:
- STAINLESS STEEL CONSTRUCTION.
 - PROVIDE FULL HEIGHT SS CLOSURE PANEL WITH ACCESS PANEL IN FRONT LARGE ENOUGH TO REMOVE CAPTURE JET FAN.
 - PROVIDE FULL HEIGHT SS CLOSURE PANEL WITH ACCESS PANEL IN FRONT LARGE ENOUGH TO SERVICE ANSUL COMPONENTS AND REMOVE CAPTURE JET FAN.
 - PROVIDE PRE-PIPED ANSUL R-102 WET FIRE EXTINGUISHING SYSTEM.
 - PROVIDE 3" BACK SPACER.
 - PROVIDE 3" LEFT SIDE SPACER.
 - PROVIDE NOTCHED RIGHT END SIDE PANEL.
 - PROVIDE NOTCHED LEFT END SIDE PANEL.
 - ANSUL CABINET AND COMPONENTS ON RIGHT SIDE ABOVE HOOD.
 - PROVIDE TOP PLENUM CAPTURE JET FAN, SPEED CONTROLLER AND COLLAR.
 - PROVIDE COUNTER MOUNTED SIDE CAPTURE JET PLENUM ASSEMBLY AND FAN ON LEFT SIDE OF HOOD.
 - PROVIDE HALTON MBD BALANCING DAMPER.
 - PROVIDE FULL HEIGHT SS CLOSURE PANEL WITH ACCESS PANEL IN FRONT LARGE ENOUGH TO ACCESS MBD LINKAGE.
 - PROVIDE FULL RIGHT END PANEL EXTENDING BELOW TOP OF COOKING SURFACE.
 - PROVIDE FULL LEFT END PANEL EXTENDING BELOW TOP OF COOKING SURFACE.
 - PROVIDE FACTORY INSTALLED CAPTURE JET FAN IN PLENUM.
 - PROVIDE FACTORY INSTALLED LIGHTING.
 - PROVIDE CAPTURE JET AIR INLET AND COLLAR AT FRONT OF CLOSURE PANEL.
 - PROVIDE 3" CUSTOM BACK SPACER TO ACCOMMODATE PIN AND SLEEVE ELECTRICAL BOX.
 - PROVIDE PIN AND SLEEVE ELECTRICAL BOX. SEE ARCHITECTURAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
 - PROVIDE EQUIPMENT I.D. LABELS LOCATED ON FRONT LEADING EDGE OF HOOD.



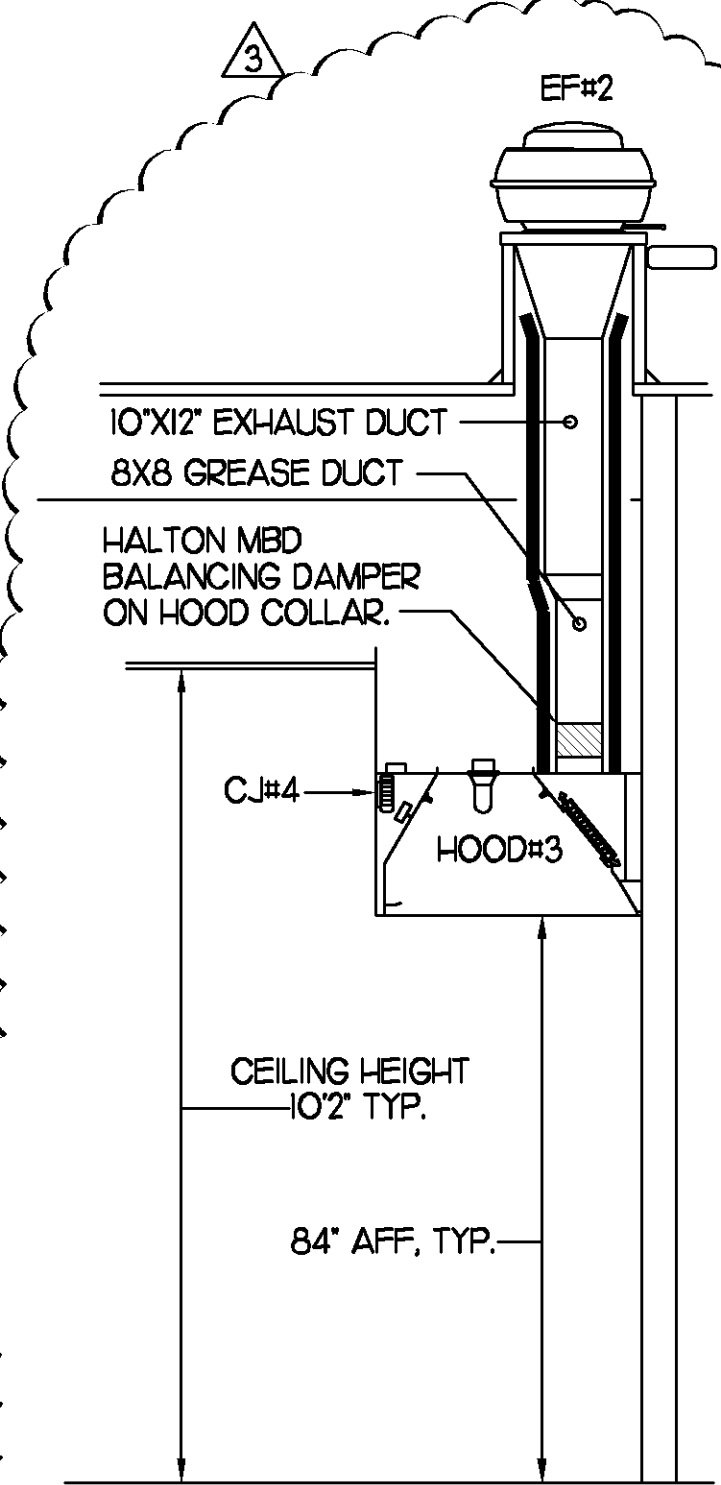
4 HOOD ELEVATION SECTION "D-D"



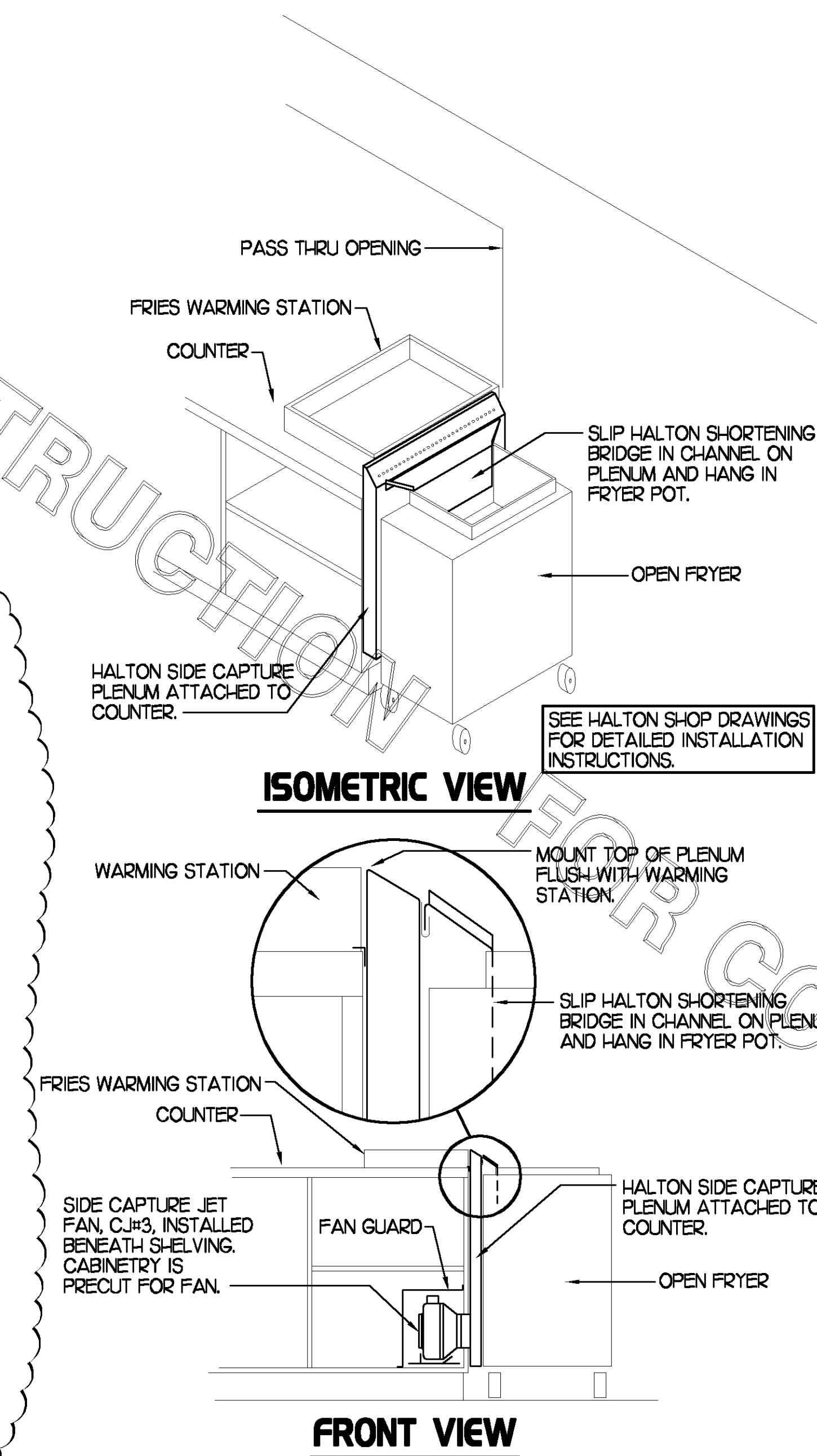
SECTION "A-A"



SECTION "B-B"

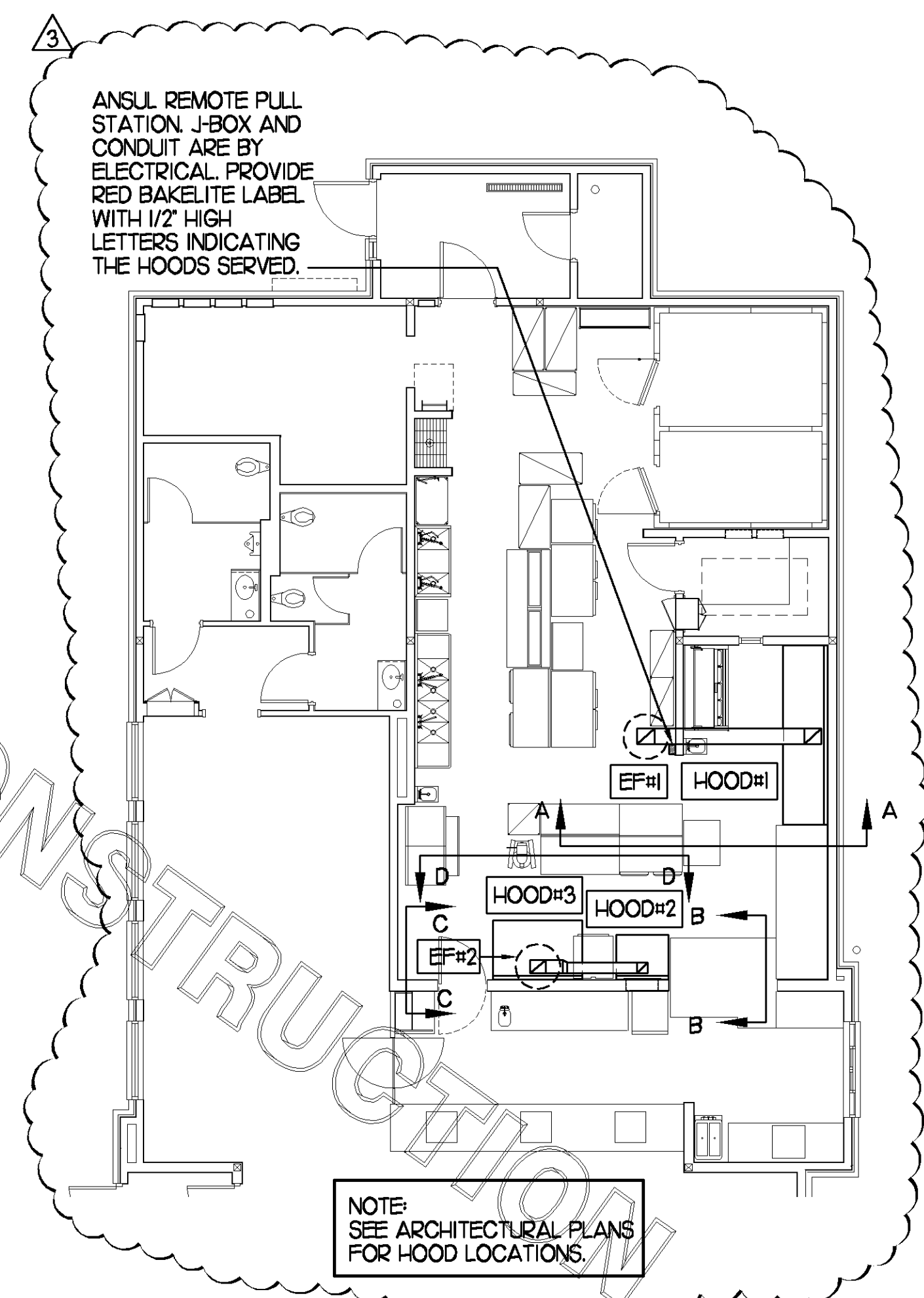


SECTION "C-C"



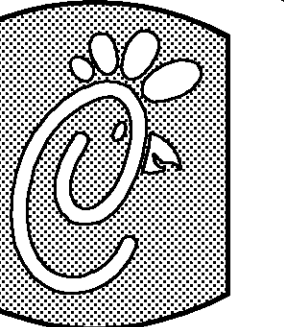
2 HALTON SIDE CAPTURE JET PLENUM

NOT TO SCALE



1 HOOD LAYOUT

1/8"=1'-0"



Chick-Fil-A

5200 Buffington Rd.
Atlanta Georgia,
30349-2998

Revisions:

Mark	Date	By
#3	11/13/09	OWNER CHANGES

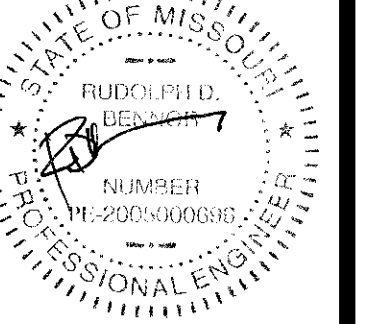
Mark Date By

△

Mark Date By

△

Seal



BENNER ENGINEERING, LLC
9000 Longford Road
Building 2400
Nevada, GA 30071
(770) 729-1422 bus
(770) 729-0490 fax
contact@bennerEng.com



STORE
Chick-Fil-A
FSU S08C-R

5303 North Belt Hwy
St. Joseph, MO

SHEET TITLE
HOOD DETAILS
& SCHEDULES

VERSION 4
ISSUE DATE 7-2009

Job No. : 7082

Store : 2309

Date : 11/13/09

Drawn By : JAL

Checked By : RDB

Sheet

M-2.1

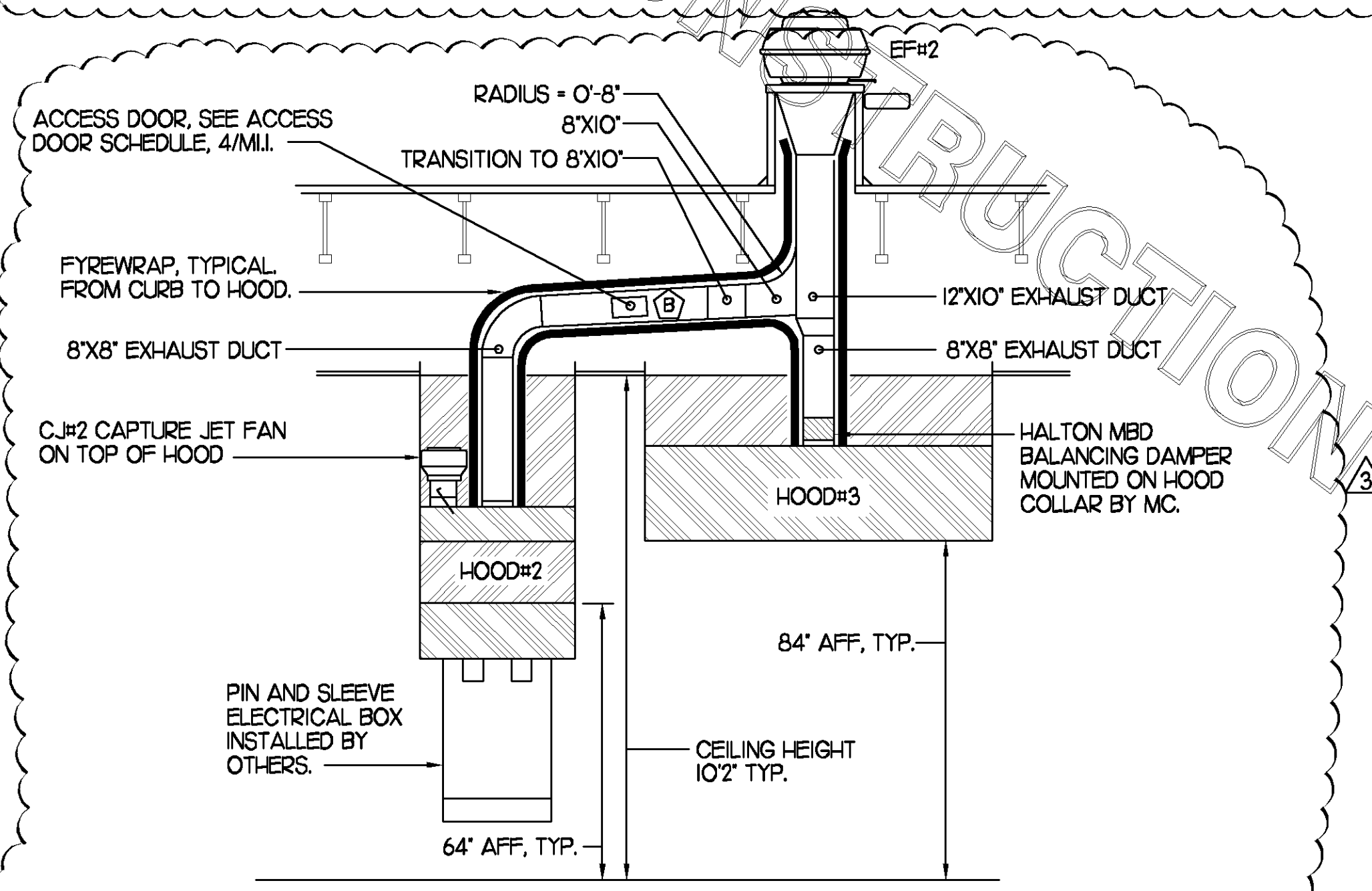
6 KITCHEN HOOD SYSTEMS NOTES

- 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 HIRED BY HALTON.
- 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, NO EXCEPTIONS ALLOWED. 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. FyreWRAP PRODUCT USED SHALL MEET LOCAL CODE REQUIREMENTS.
- SUPPORT 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 DRAWING S5-1.

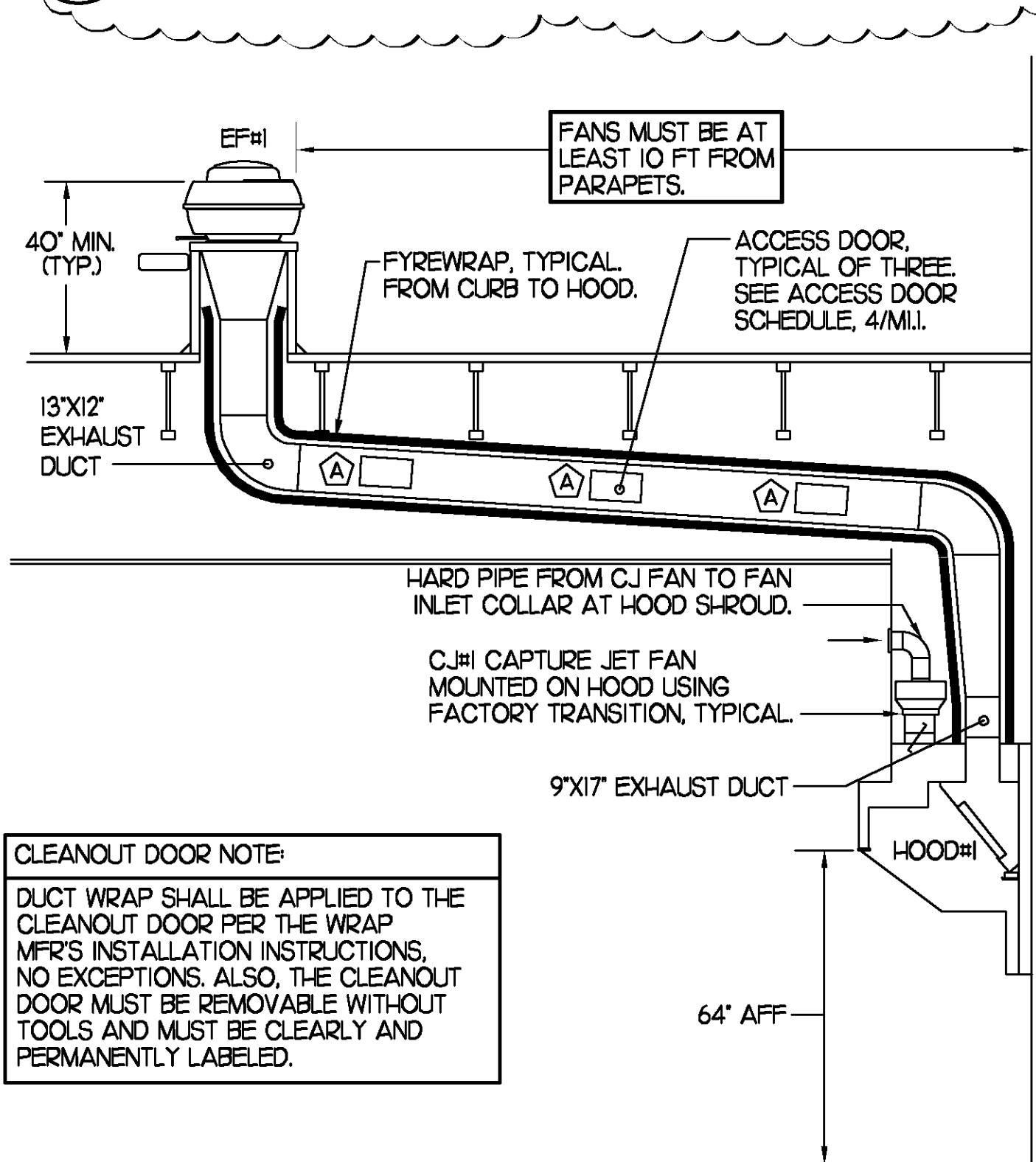
5 HOOD SCHEDULE

MARK	EXHAUST CFM	SP • TAB PORT	CAPTURE JET CFM & SP.	TYPE	COLLAR SIZE	WIDTH	DEPTH	HEIGHT	MANUFACTURER	MODEL	REMARKS
HOOD#1	1,700	0.20"	100 • 0.30"	BACK SHELF	9X17"	136.5"	34"	48"	HALTON	KVL	1,3,4,5,6,7,9,10,15,18,21
HOOD#2	700	0.27"	30 • 0.30"	BACK SHELF	8'X8'	40"	34"	48"	HALTON	KVL	1,2,4,8,10,11,14,18,19,20,21
HOOD#3	700	0.14"	50 • 0.25"	CANOPY	8'X8'	68"	45"	24"	HALTON	KVE	1,4,5,12,13,16,17,21

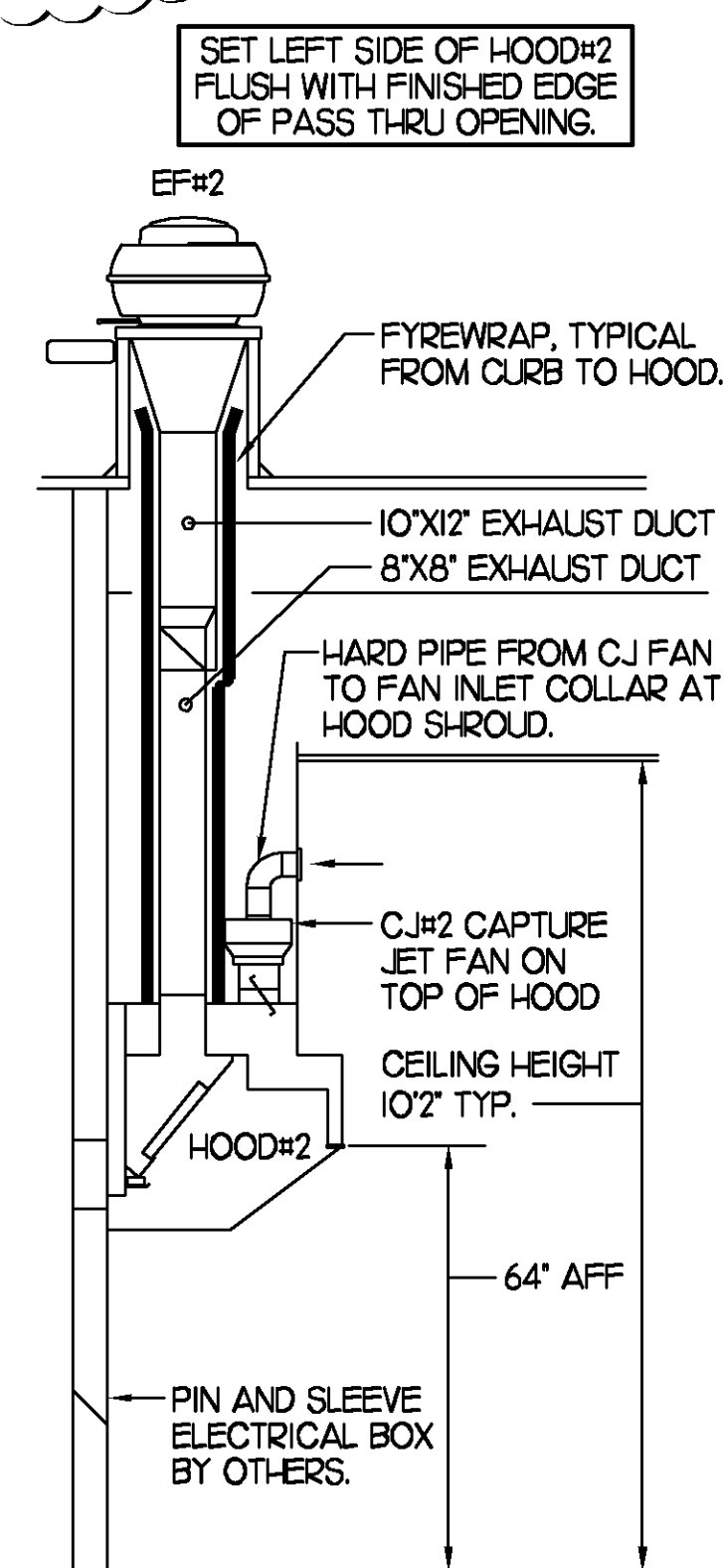
- NOTES: DIMENSIONS OF HOODS INCLUDE BACK AND SIDE SPACERS (HEIGHT DOES NOT INCLUDE CLOSURE PANELS).
- REMARKS:
- STAINLESS STEEL CONSTRUCTION.
 - PROVIDE FULL HEIGHT SS CLOSURE PANEL WITH ACCESS PANEL IN FRONT LARGE ENOUGH TO REMOVE CAPTURE JET FAN.
 - PROVIDE FULL HEIGHT SS CLOSURE PANEL WITH ACCESS PANEL IN FRONT LARGE ENOUGH TO SERVICE ANSUL COMPONENTS AND REMOVE CAPTURE JET FAN.
 - PROVIDE PRE-PIPED ANSUL R-102 WET FIRE EXTINGUISHING SYSTEM.
 - PROVIDE 3" BACK SPACER.
 - PROVIDE 3" LEFT SIDE SPACER.
 - PROVIDE NOTCHED RIGHT END SIDE PANEL.
 - PROVIDE NOTCHED LEFT END SIDE PANEL.
 - ANSUL CABINET AND COMPONENTS ON RIGHT SIDE ABOVE HOOD.
 - PROVIDE TOP PLENUM CAPTURE JET FAN, SPEED CONTROLLER AND COLLAR.
 - PROVIDE COUNTER MOUNTED SIDE CAPTURE JET PLENUM ASSEMBLY AND FAN ON LEFT SIDE OF HOOD.
 - PROVIDE HALTON MBD BALANCING DAMPER.
 - PROVIDE FULL HEIGHT SS CLOSURE PANEL WITH ACCESS PANEL IN FRONT LARGE ENOUGH TO ACCESS MBD LINKAGE.
 - PROVIDE FULL RIGHT END PANEL EXTENDING BELOW TOP OF COOKING SURFACE.
 - PROVIDE FULL LEFT END PANEL EXTENDING BELOW TOP OF COOKING SURFACE.
 - PROVIDE FACTORY INSTALLED CAPTURE JET FAN IN PLENUM.
 - PROVIDE FACTORY INSTALLED LIGHTING.
 - PROVIDE CAPTURE JET AIR INLET AND COLLAR AT FRONT OF CLOSURE PANEL.
 - PROVIDE 3" CUSTOM BACK SPACER TO ACCOMMODATE PIN AND SLEEVE ELECTRICAL BOX.
 - PROVIDE PIN AND SLEEVE ELECTRICAL BOX. SEE ARCHITECTURAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
 - PROVIDE EQUIPMENT I.D. LABELS LOCATED ON FRONT LEADING EDGE OF HOOD.



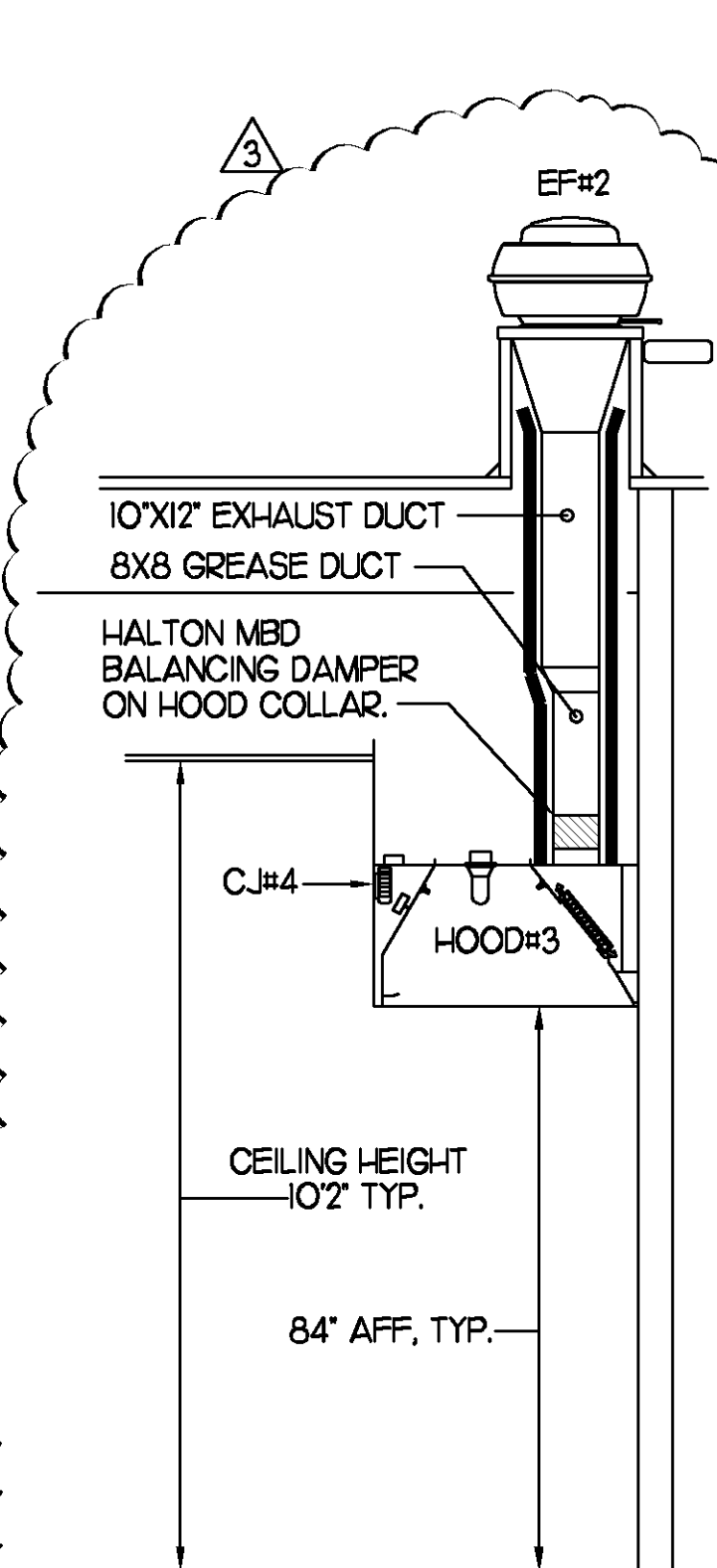
4 HOOD ELEVATION SECTION "D-D"



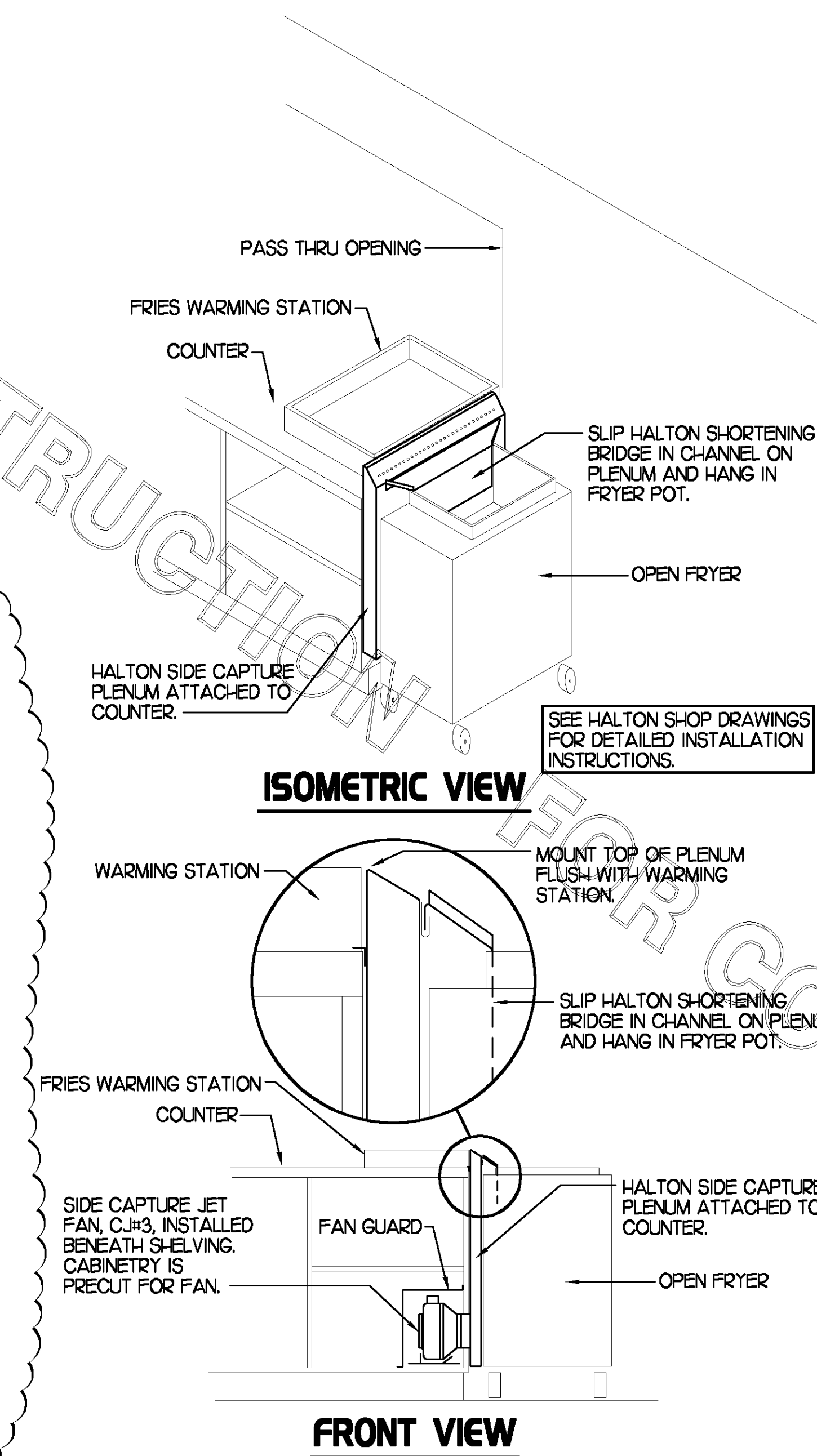
SECTION "A-A"



SECTION "B-B"

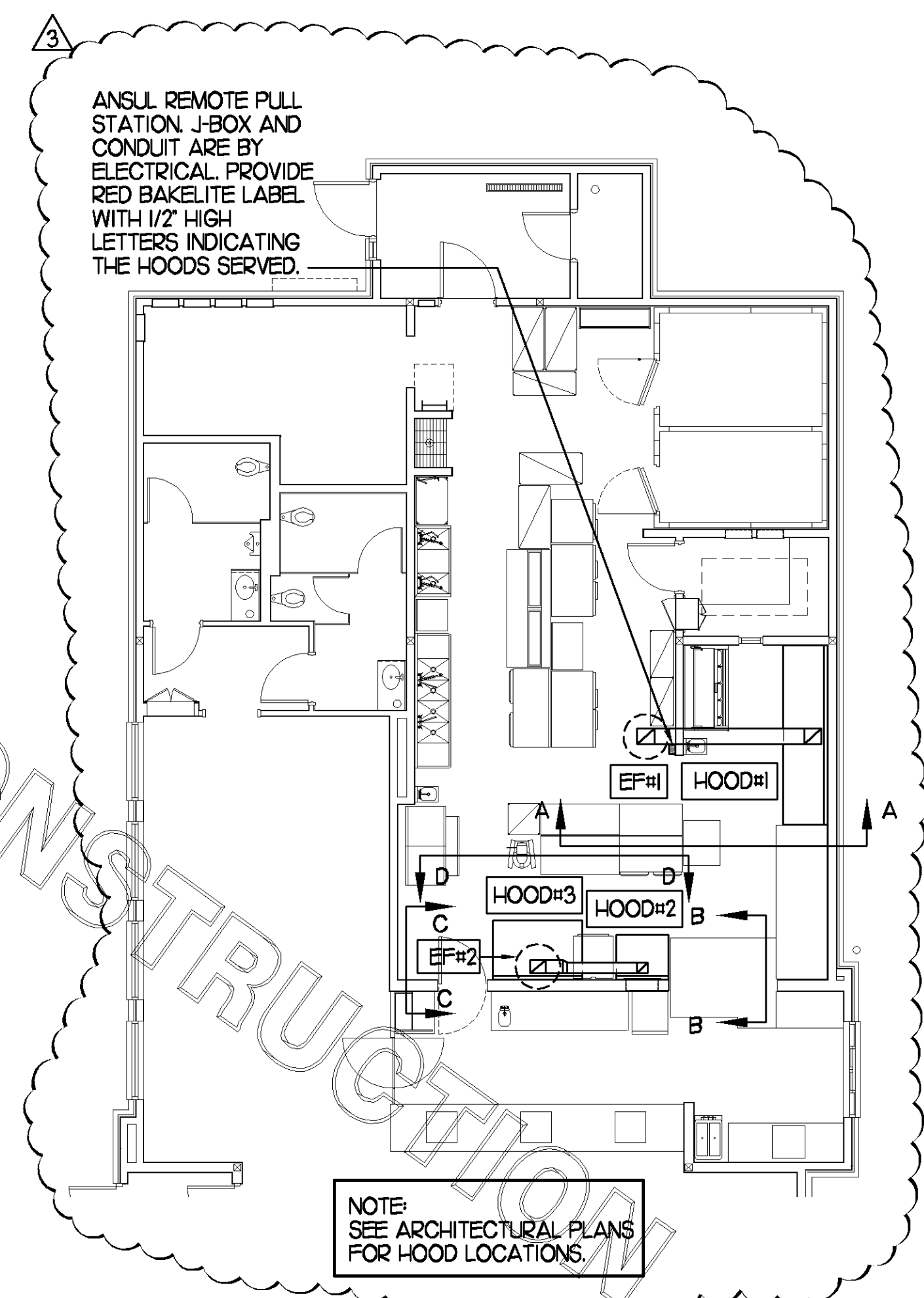


SECTION "C-C"



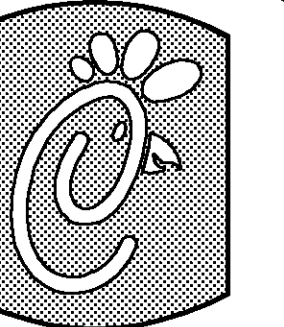
2 HALTON SIDE CAPTURE JET PLENUM

NOT TO SCALE



1 HOOD LAYOUT

1/8"=1'-0"



Chick-Fil-A

5200 Buffington Rd.
Atlanta Georgia,
30349-2998

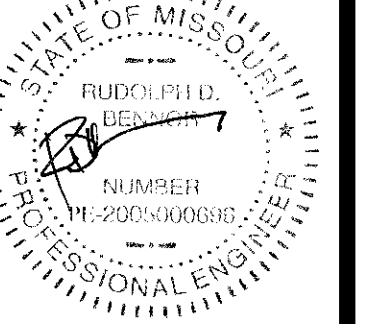
Revisions:

Mark	Date	By
#3	11/13/09	OWNER CHANGES

Mark	Date	By
△		

Mark	Date	By
△		

Seal



BENNER ENGINEERING, LLC
9000 Longford Road
Building 2400
Nevada, GA 30071
(770) 729-1422 bus
(770) 729-0490 fax
contact@bennerEng.com



STORE
Chick-Fil-A
FSU S08C-R

5303 North Belt Hwy
St. Joseph, MO

SHEET TITLE
HOOD DETAILS
& SCHEDULES

VERSION 4
ISSUE DATE 7-2009

Job No. : 7082

Store : 2309

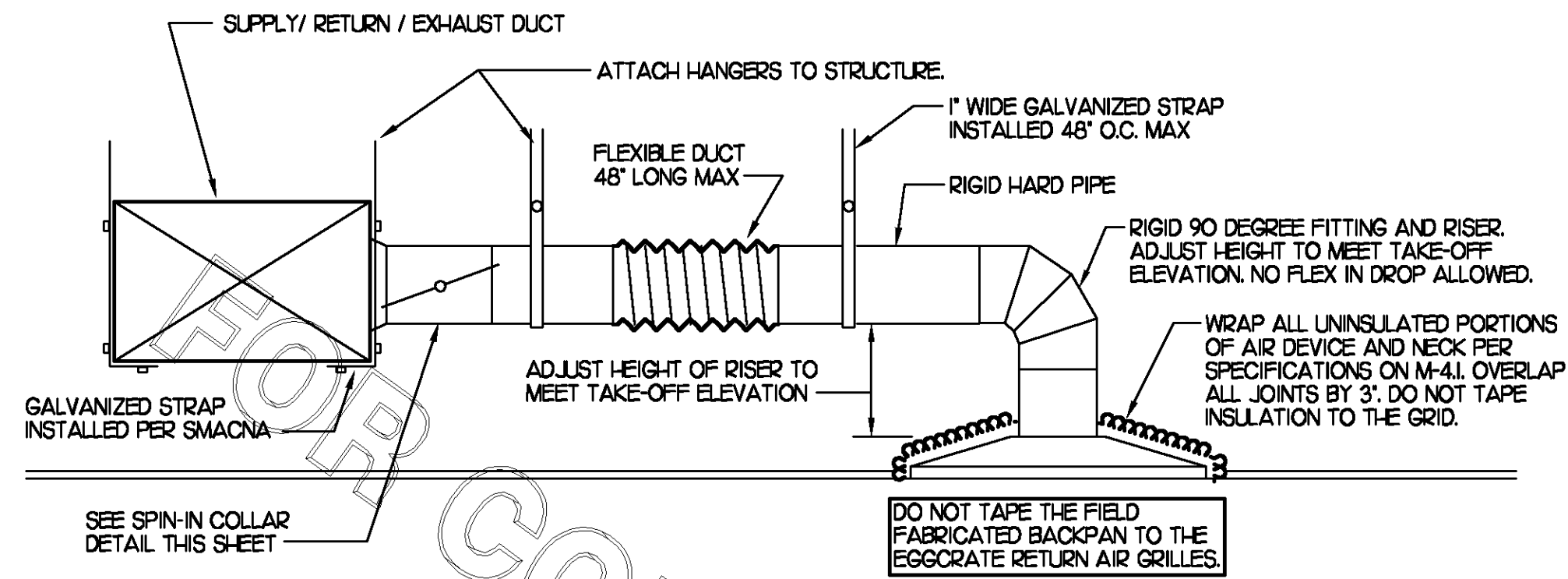
Date : 11/13/09

Drawn By : JAL

Checked By : RDB

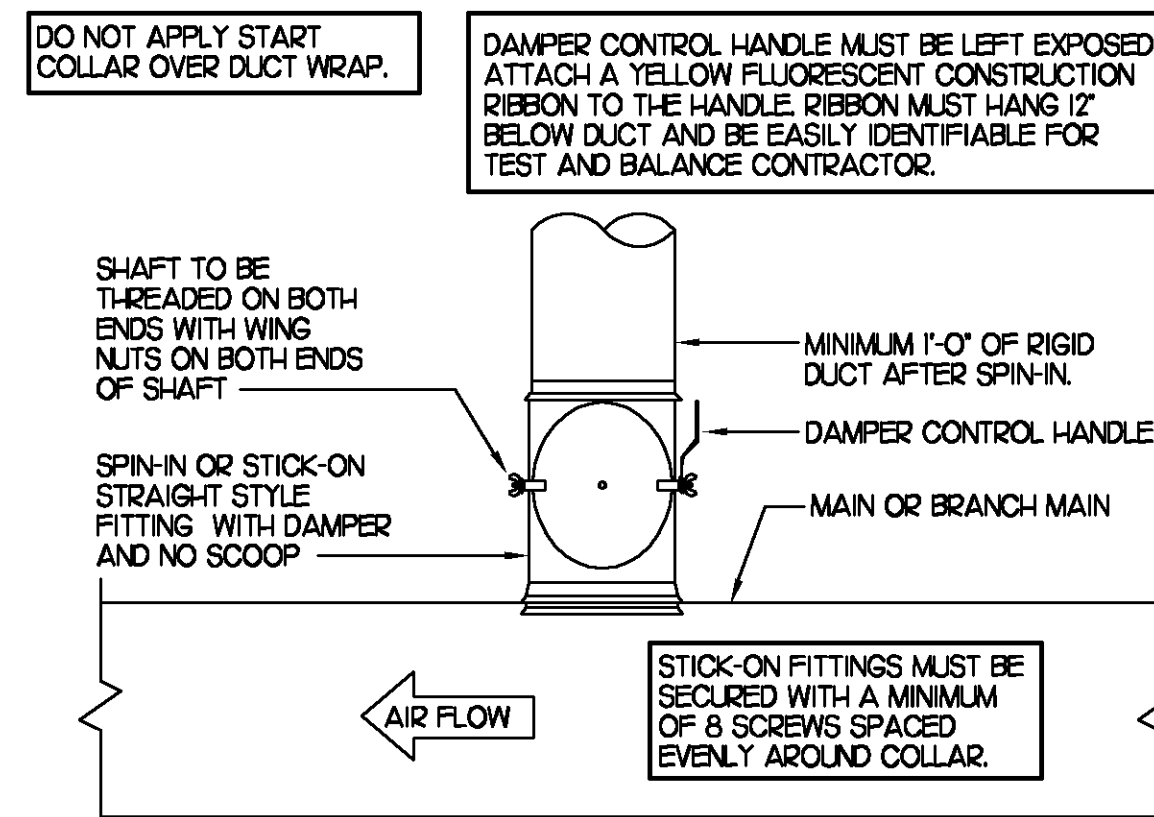
Sheet

M-2.1



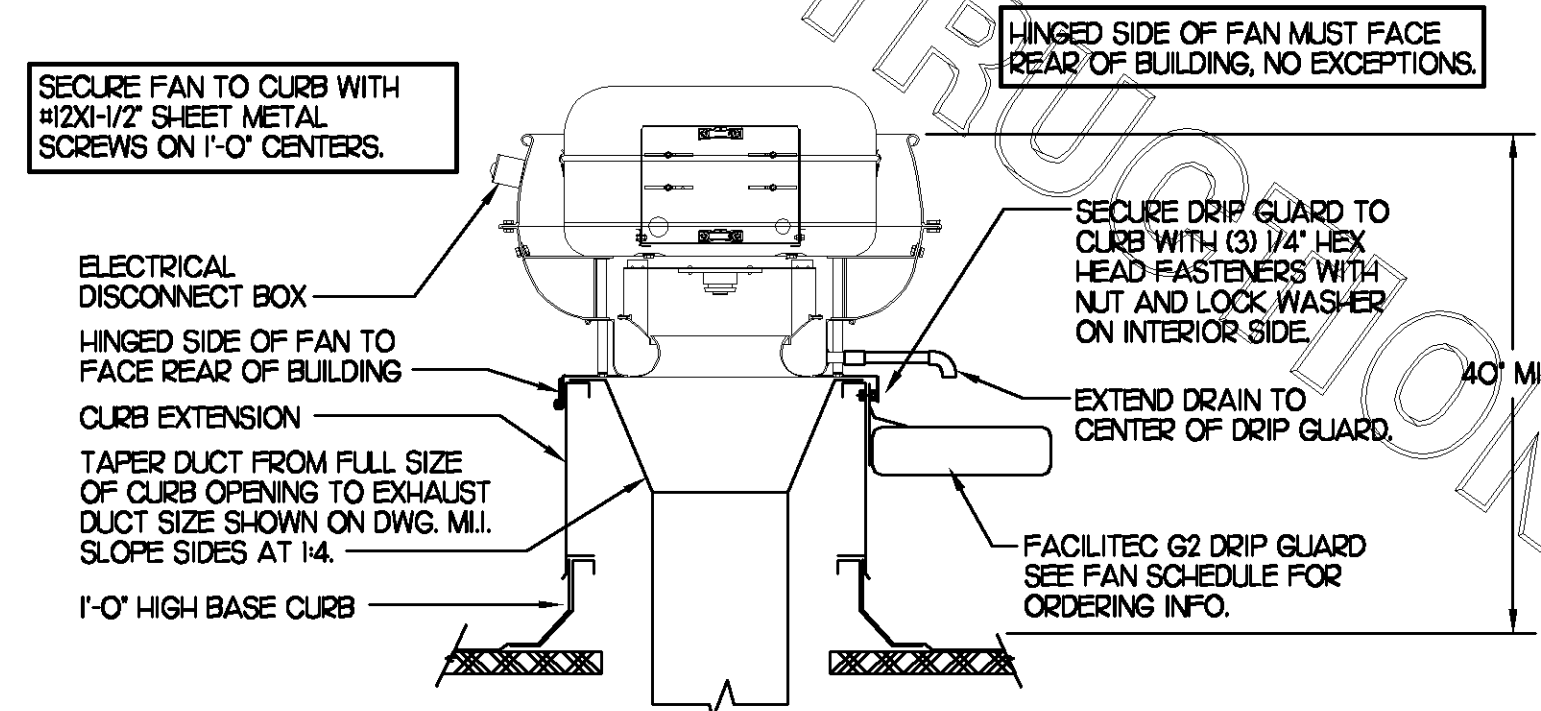
1 SAG/RAG/GRILLE TAKE-OFF

NO SCALE



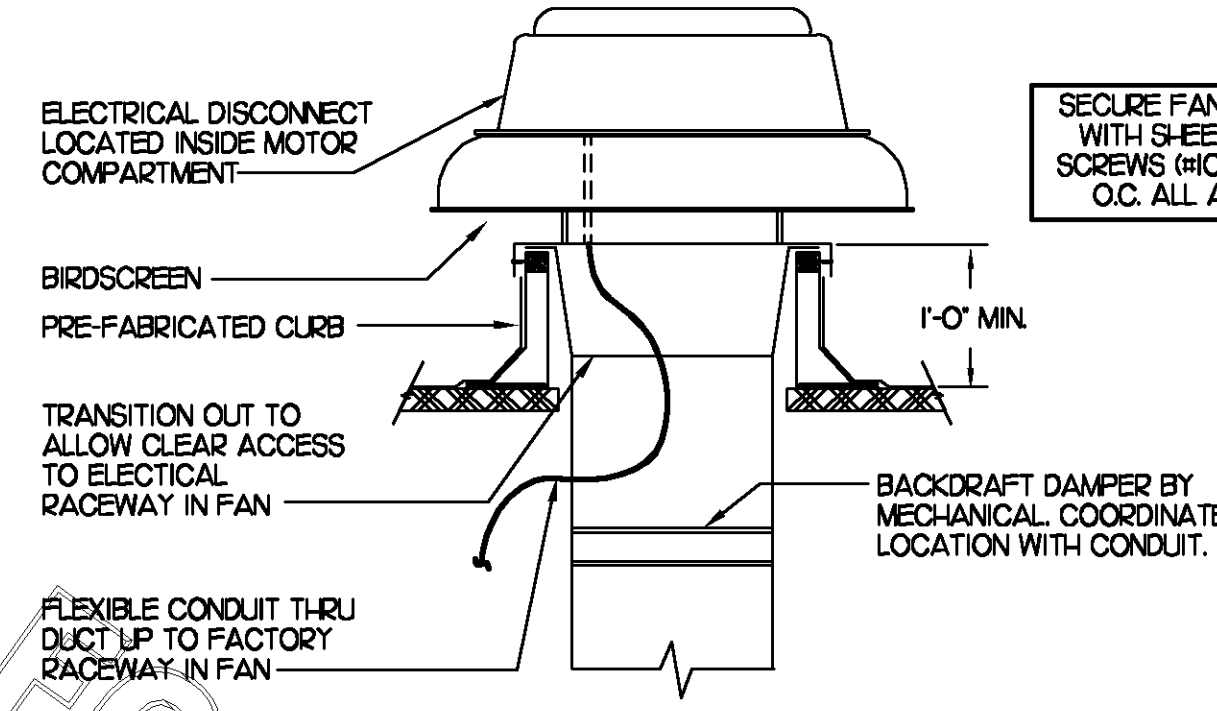
2 START COLLAR

NO SCALE



3 KITCHEN HOOD EXHAUST FAN

NO SCALE



4 RESTROOM EXHAUST FAN

NO SCALE

9 GAS FIRED ROOFTOP UNIT SCHEDULE											
MARK	COOLING CAPACITY (MBH)		HEATING CAPACITY (MBH)		FAN SECTION (CFM)			MODEL R-40A	MANUFACTURER	REMARKS	
	TOTAL	SENS	INPUT	OUTPUT	SUPPLY	O.A.	ESP				
ACH	188.1	135.4	480.0	384.0	5,950	1,700	5	.70	LGC180H4	LENNOX	1,35,6,8,9,10,11,21,15
AC#2	105.9	76.2	240.0	192.0	2,830	780	2	.65	LGA102H4	LENNOX	2,3,5,7,8,9,10,11,21,14
AC#3	128.0	90.9	240.0	192.0	4,000	1,030	3	.65	LGA120H4	LENNOX	1,3,5,7,8,9,10,11,21,14
AC#4	93.8	67.5	240.0	192.0	2,765	630	2	.65	LGA090H4	LENNOX	2,3,5,8,9,10,11,21,14
AC#5	63.9	47.3	125.0	100.0	1,800	300	1.5	.65	LGA060H4	LENNOX	3,4,5,8,9,10,11,21,14

NOTES:
 * COOLING CAPACITIES ARE GROSS, BASED ON INDOOR: 80°FDB/67°FWB, OUTDOOR: 95°FDB, AND 400 CFM PER TON.
 * CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT FOR EQUIPMENT WITH LENNOX CORPORATION. CONTACT LENNOX NATIONAL ACCOUNTS AT 972-497-6219 (OR BY FAX AT 972-497-5112) FOR PRICING, ORDERING AND AVAILABILITY.

REMARKS:
 1) PROVIDE DIFFERENTIAL ENTHALPY ECONOMIZER WITH POWER EX-HAUST.
 2) PROVIDE DIFFERENTIAL ENTHALPY ECONOMIZER WITH BAROMETRIC EX-HAUST.
 3) PROVIDE 12\"/>

8 EXHAUST FAN SCHEDULE										
MARK	CFM	ESP	RPM	TIP SPEED (FPM)	HP	AREA SERVED	MODEL	MANUFACTURER	REMARKS	
EF#1	1,700	3/4	1,182	4,641	1/2	HOOD#1	150V5B	LOREN COOK	1,2,3,4,5,6,12	
EF#2	1,400	3/4	1,162	5,019	1/2	HOOD#2 & HOOD#3	165V-6B	LOREN COOK	1,2,3,4,5,6,12	
EF#3	400	3/8	1,433	3,423	1/8	RESTROOMS	ACED-90C5DH	LOREN COOK	2,7,8,9,10,11,12	

NOTES:
 * GREASE EXHAUST FAN RPM BASED ON 80 DEGREE F AIR AT 1000 FEET ABOVE SEA LEVEL.
 * GREASE EXHAUST FANS TO BE UL 762 LISTED.

REMARKS:
 1) PROVIDE FACTORY 1'-0\"/>

10 ELECTRIC WALL HEATER SCHEDULE						
MARK	KW	FRAME SIZE WIDTH HEIGHT	CFM	MOUNTING TYPE	MODEL	MANUFACTURER
WH-1	15	16\"/>				

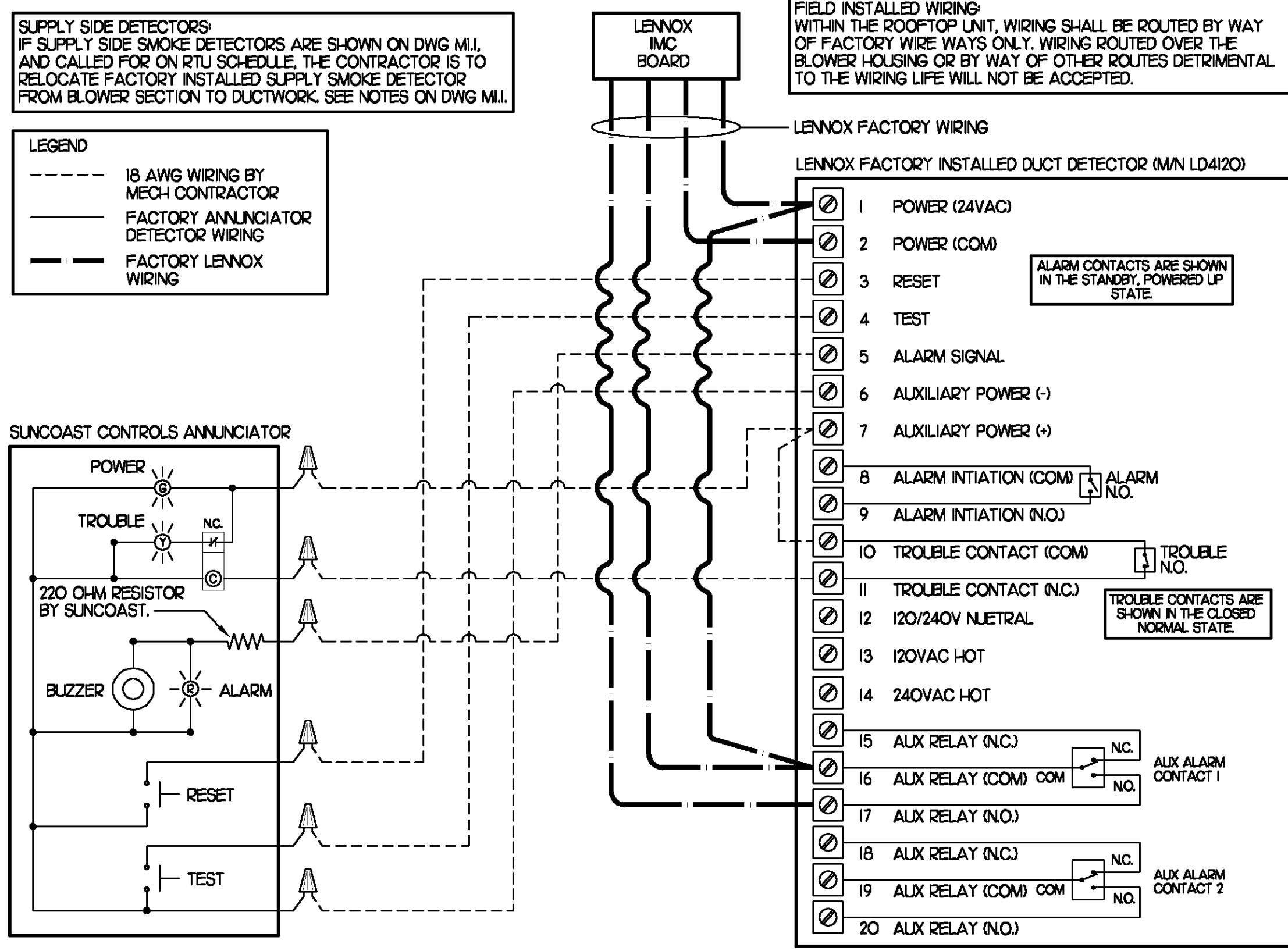
REMARKS:
 1) AUTOMATIC FAN DELAY SWITCH AND INTEGRAL DISCONNECT.
 2) INTEGRAL TAMPERPROOF THERMOSTAT SET AT 65 DEG. F.
 3) CAPACITY SHOWN IS FOR 208V SERVICE.
 4) CONFIRM ELECTRICAL CHARACTERISTICS PRIOR TO ORDERING EQUIPMENT.
 5) POWDER COATED 18 GA. STEEL GRILLE WITH ALUMINUM FRAME.
 6) AUTOMATIC RESET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

7 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
C	TITUS MODEL MCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	ENTRY 'A' ENTRY 'B'	14X14	19X9	SURFACE	1,3,5,7,9
D	TITUS MODEL 272FS DOUBLE DEFLECTION ALUMINUM SIDEWALL SUPPLY GRILLE FRONT BLADE PARALLEL TO SHORT SIDE.	MECH/ELEC ROOM	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 CFDF 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.	MECH/ELEC 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
	TITUS MODEL 56FL ZERO DEGREE DEFLECTION ALUMINUM SIDEWALL RETURN GRILLE FRONT BLADE PARALLEL TO LONG SIDE.	PLAYGROUND	16X16	18X18	SURFACE	1,9

REMARKS:
 1) STANDARD OFF WHITE FINISH.
 2) PROVIDE MODEL AG-85 NECK DAMPER.
 3) SEE DRAWING M1 FOR THROW.
 4) PROVIDE MODEL AG-75 NECK DAMPER ON GRILLES IN RESTROOMS.
 5) FIELD FABRICATE 8\"/>

6 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-1-30E	POWERED-AIRE	1,2,4		
AD#2	3,384	4,000	NA	3/4	REAR DOOR	BCT-1-42	POWERED-AIRE	3,4		

REMARKS:
 1) FACTORY PROVIDED REMOTE MOUNTED HEAT/ON/AUTO CONTROLS.
 2) FACTORY PROVIDED, UNIT MOUNTED SPEED CONTROLLER.
 3) FACTORY PROVIDED SECO-LARM SM-226R MAGNETIC CONTACT WITH FACTORY INSTALLED LOW VOLTAGE CONTROLS LOCATED IN AIR DOOR CABINET.
 4) CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARRROW COMPANY FOR THE AIR DOORS. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE AIR DOORS DIRECTLY FROM TOM BARRROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010 FOR PRICING AND AVAILABILITY. AIR DOORS NOT PURCHASED THRU TOM BARRROW COMPANY WILL NOT BE ACCEPTED.



5 SMOKE DETECTOR AND ANNUNCIATOR WIRING DIAGRAM

NO SCALE

5200 Buffington Rd.
Atlanta Georgia,
30349-2998

Revisions:
 Mark Date By
 #1 11/13/09 OWNER CHANGES

Mark Date By
 #2

Mark Date By
 #3

Seal
 STATE OF MISSOURI
 PROFESSIONAL ENGINEER
 NUMBER 11-2008-00086

BENNON ENGINEERING, LLC
 5000 Longfords Road
 Building 2400
 Norcross, GA 30071
 (770) 729-1422 bus
 (770) 729-0490 fax
 contact@bennoneng.com

STORE
 Chick-Fil-A
 FSU S08C-R

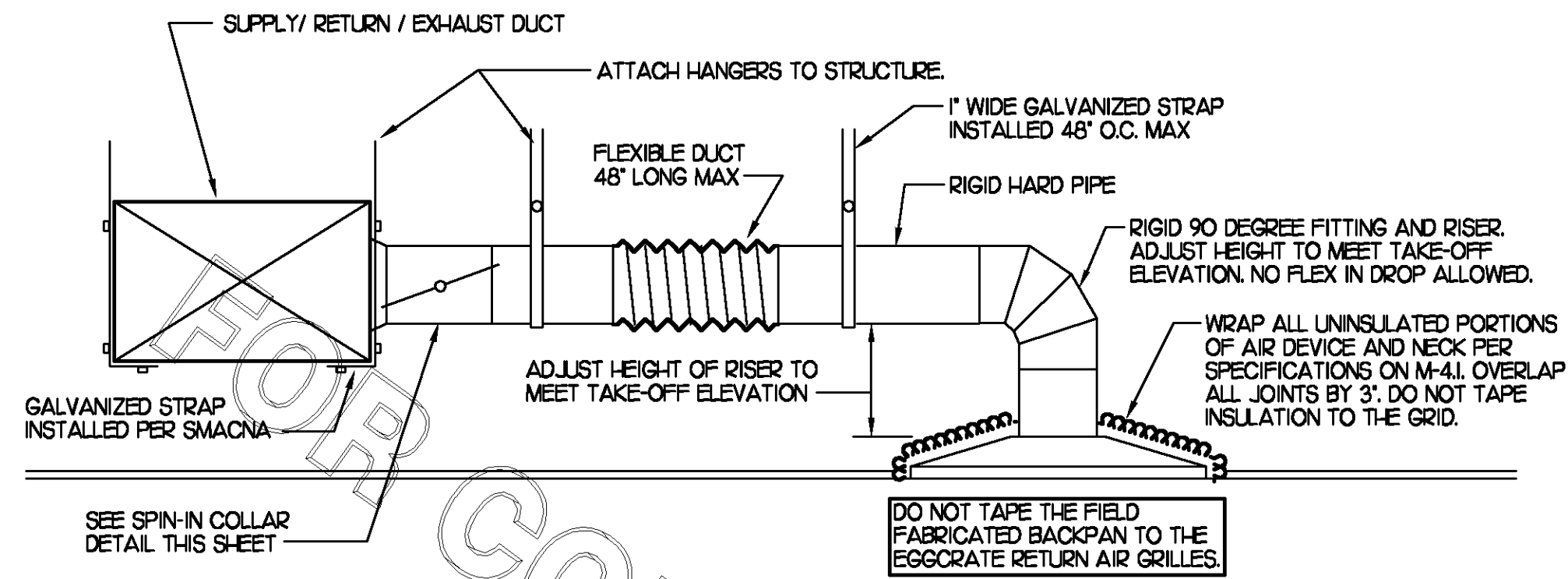
5303 North Belt Hwy
 St. Joseph, MO

SHEET TITLE
 HVAC DETAILS
 & SCHEDULES

VERSION 4
 ISSUE DATE 7-2009

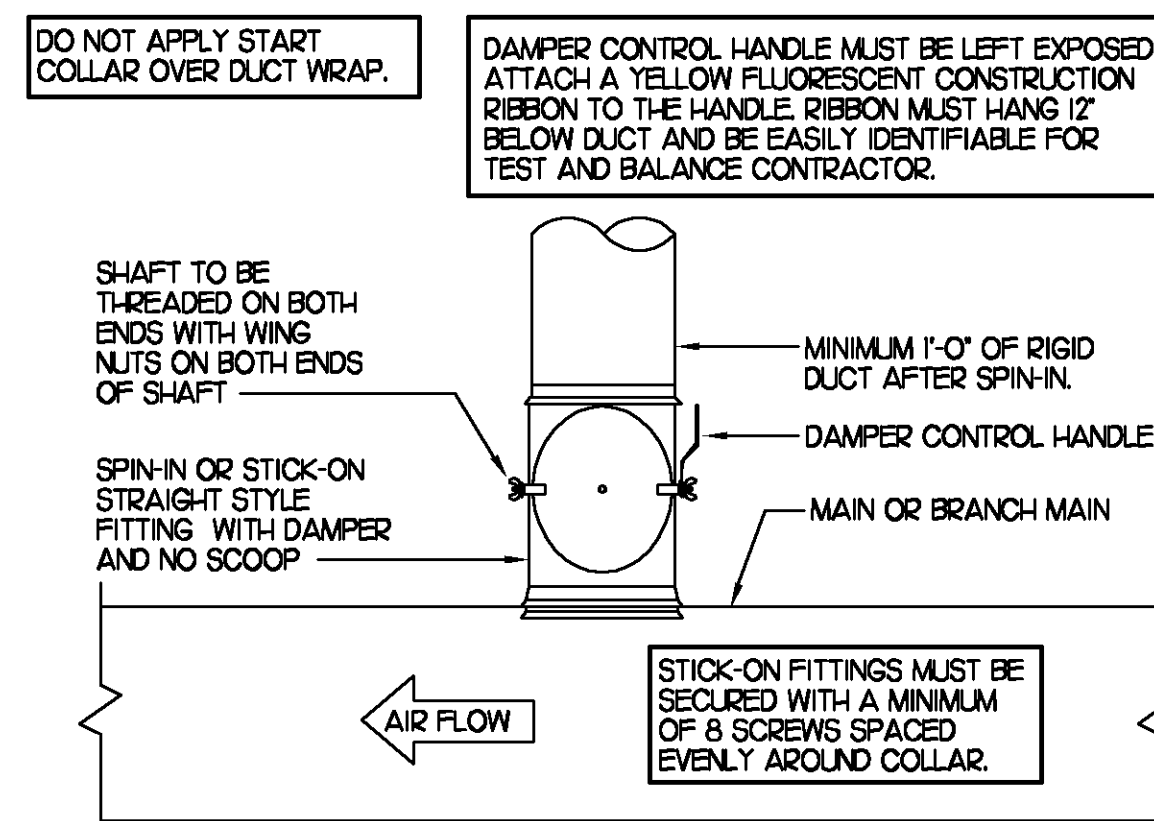
Job No. : 7082
 Store : 2309
 Date : 11/13/09
 Drawn By : JAL
 Checked By : RDB
 Sheet

M-3.I



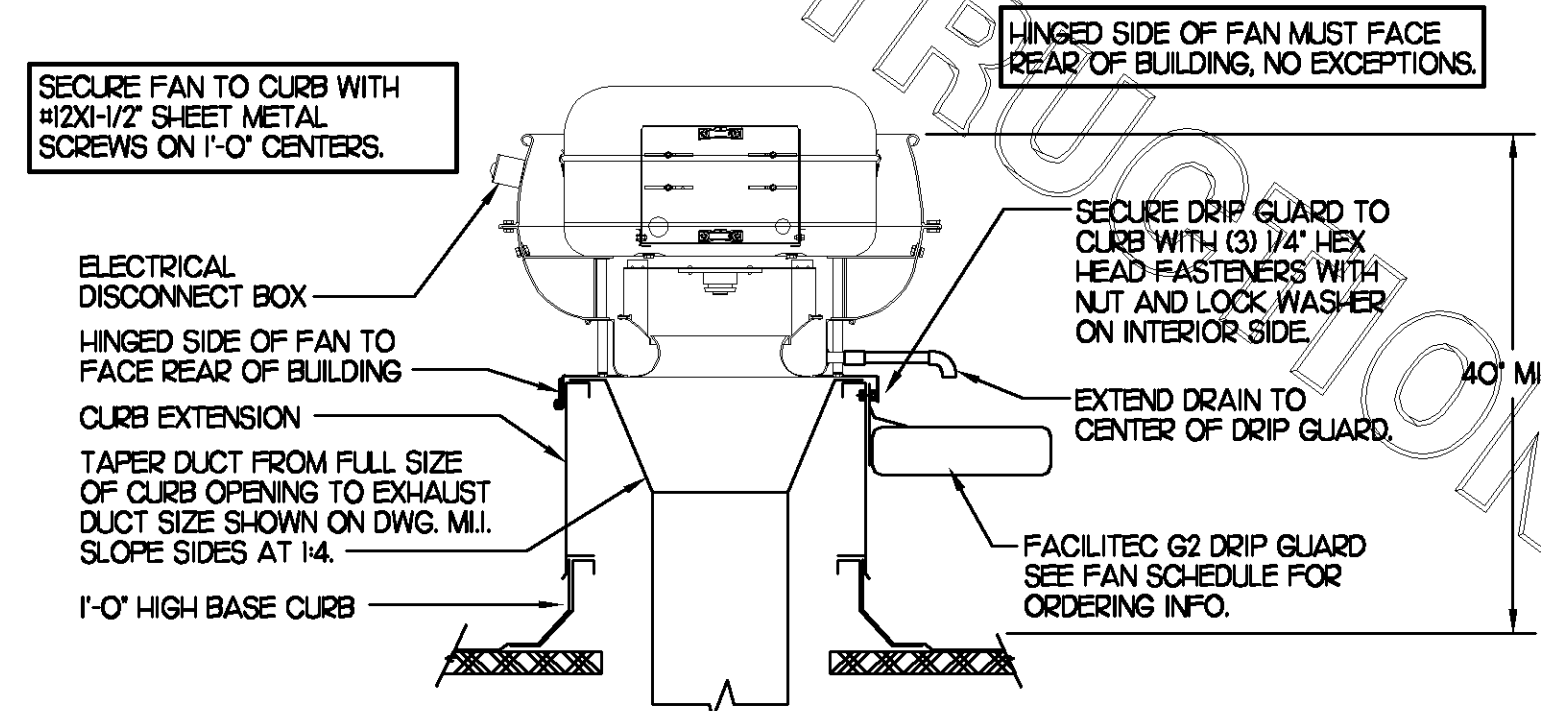
1 SAG/RAG/GRILLE TAKE-OFF

NO SCALE



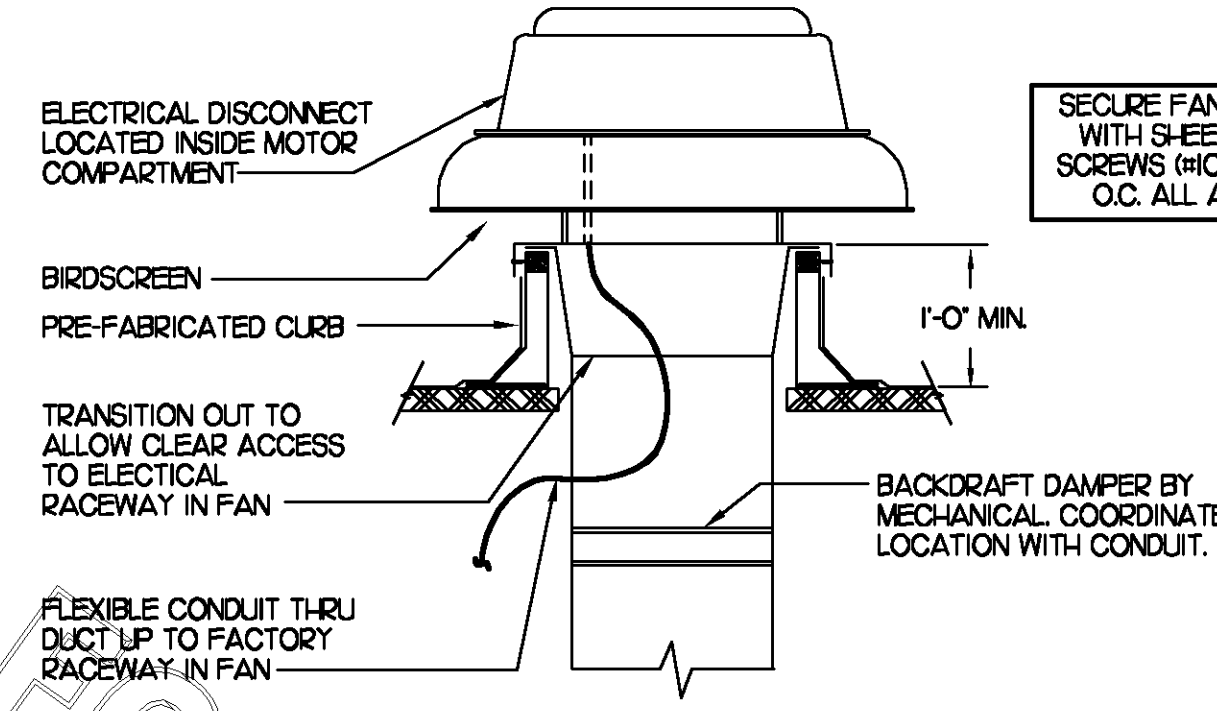
2 START COLLAR

NO SCALE



3 KITCHEN HOOD EXHAUST FAN

NO SCALE



4 RESTROOM EXHAUST FAN

NO SCALE

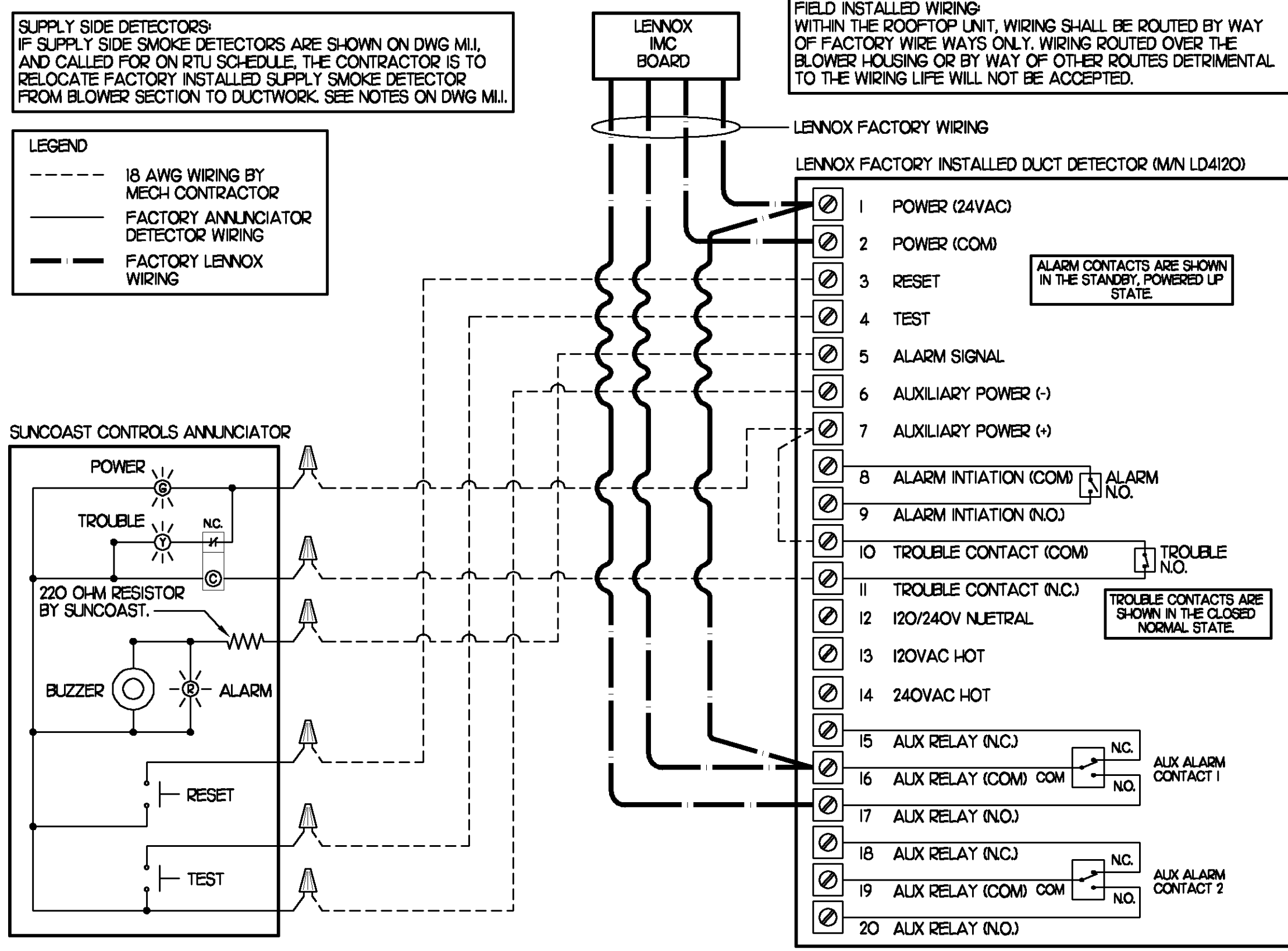
9 GAS FIRED ROOFTOP UNIT SCHEDULE											
MARK	COOLING CAPACITY (MBH)		HEATING CAPACITY (MBH)		FAN SECTION (CFM)			MODEL R-40A	MANUFACTURER	REMARKS	
	TOTAL	SENS	INPUT	OUTPUT	SUPPLY	O.A.	ESP				
ACH	1881	135.4	480.0	384.0	5150	1700	5	.70	LGC180H4	LENNOX	13.5.6.9.10.11.12.14.15
AC#2	105.9	76.2	240.0	192.0	2830	780	2	.65	LGA102H4	LENNOX	23.5.7.8.9.10.11.12.13.14
AC#3	128.0	90.9	240.0	192.0	4000	1030	3	.65	LGA120H4	LENNOX	13.5.7.8.9.10.11.12.13.14
AC#4	93.8	67.5	240.0	192.0	2765	630	2	.65	LGA090H4	LENNOX	23.5.8.9.10.11.12.13.14
AC#5	63.9	47.3	125.0	100.0	1800	300	1.5	.65	LGA060H4	LENNOX	3.4.5.8.9.10.11.12.13.14
NOTES	<ul style="list-style-type: none"> COOLING CAPACITIES ARE GROSS, BASED ON INDOOR: 80°FDB/67°FWB, OUTDOOR: 95°FDB, AND 400 CFM PER TON. CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT FOR EQUIPMENT WITH LENNOX CORPORATION. CONTACT LENNOX NATIONAL ACCOUNTS AT 972-497-6219 (OR BY FAX AT 972-497-5112) FOR PRICING, ORDERING AND AVAILABILITY. 										
REMARKS	<ol style="list-style-type: none"> PROVIDE DIFFERENTIAL ENTHALPY ECONOMIZER WITH POWER EX-HAUST. PROVIDE DIFFERENTIAL ENTHALPY ECONOMIZER WITH BAROMETRIC EX-HAUST. PROVIDE 12\"/> 										

8 EXHAUST FAN SCHEDULE										
MARK	CFM	ESP	RPM	TIP SPEED (FPM)	HP	AREA SERVED	MODEL	MANUFACTURER	REMARKS	
EF#1	1,700	3/4	1,182	4,641	1/2	HOOD#1	150V5B	LOREN COOK	1,2,3,4,5,6,12	
EF#2	1,400	3/4	1,162	5,019	1/2	HOOD#2 & HOOD#3	165V-6B	LOREN COOK	1,2,3,4,5,6,12	
EF#3	400	3/8	1,433	3,423	1/8	RESTROOMS	ACED-90C5DH	LOREN COOK	2,7,8,9,10,11,12	
NOTES	<ul style="list-style-type: none"> GREASE EX-HAUST FAN RPM BASED ON 80 DEGREE F AIR AT 1000 FEET ABOVE SEA LEVEL. GREASE EX-HAUST FANS TO BE UL 762 LISTED. 									
REMARKS	<ol style="list-style-type: none"> PROVIDE FACTORY 1'-0\"/> 									

10 ELECTRIC WALL HEATER SCHEDULE						
MARK	KW	FRAME SIZE WIDTH HEIGHT	CFM	MOUNTING TYPE	MODEL	MANUFACTURER
WH-H	15	16\"/>				
REMARKS	<ol style="list-style-type: none"> AUTOMATIC FAN DELAY SWITCH AND INTEGRAL DISCONNECT. INTEGRAL TAMPERPROOF THERMOSTAT SET AT 65 DEG. F. CAPACITY SHOWN IS FOR 208V SERVICE. CONFIRM ELECTRICAL CHARACTERISTICS PRIOR TO ORDERING EQUIPMENT. POWDER COATED 18 GA. STEEL GRILLE WITH ALUMINUM FRAME. AUTOMATIC RESET THERMAL LIMIT SWITCH. TUBULAR STEEL ELEMENT WITH STEEL FINS. 					

7 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
C	TITUS MODEL MCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	ENTRY 'A' ENTRY 'B'	14X14	19X9	SURFACE	1,3,5,7,9
D	TITUS MODEL 272FS DOUBLE DEFLECTION ALUMINUM SIDEWALL SUPPLY GRILLE FRONT BLADE PARALLEL TO SHORT SIDE.	MECH/ELEC ROOM	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 CFDF 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.	MECH/ELEC 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
	TITUS MODEL 56FL ZERO DEGREE DEFLECTION ALUMINUM SIDEWALL RETURN GRILLE FRONT BLADE PARALLEL TO LONG SIDE.	PLAYGROUND	16X16	18X18	SURFACE	1,9
REMARKS	<ol style="list-style-type: none"> STANDARD OFF WHITE FINISH. PROVIDE MODEL AG-85 NECK DAMPER. SEE DRAWING M1 FOR THROW. PROVIDE MODEL AG-75 NECK DAMPER ON GRILLES IN RESTROOMS. FIELD FABRICATE 8\"/> 					

6 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	MP4-30E	POWERED-AIRE	1,2,4		
AD#2	3,384	4,000	NA	3/4	REAR DOOR	BCT-142	POWERED-AIRE	3,4		
REMARKS	<ol style="list-style-type: none"> FACTORY PROVIDED REMOTE MOUNTED HEAT/ON/AUTO CONTROLS. FACTORY PROVIDED, UNIT MOUNTED SPEED CONTROLLER. FACTORY PROVIDED SECO-LARM SM-226R MAGNETIC CONTACT WITH FACTORY INSTALLED LOW VOLTAGE CONTROLS LOCATED IN AIR DOOR CABINET. CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARRROW COMPANY FOR THE AIR DOORS. THE MECHANICAL CONTRACTOR SHALL PURCHASE THE AIR DOORS DIRECTLY FROM TOM BARRROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010 FOR PRICING AND AVAILABILITY. AIR DOORS NOT PURCHASED THRU TOM BARRROW COMPANY WILL NOT BE ACCEPTED. 									



5 SMOKE DETECTOR AND ANNUNCIATOR WIRING DIAGRAM

NO SCALE

5200 Buffington Rd.
Atlanta Georgia,
30349-2998

Revisions:

Mark	Date	By
1/13/09		

OWNER CHANGES

Mark Date By

Mark Date By

Seal

BENNER ENGINEERING, LLC
5000 Longfords Road
Building 2400
Norcross, GA 30071
(770) 729-1422 bus
(770) 729-0490 fax
contact@bennerEng.com

STORE
Chick-Fil-A
FSU S08C-R

5303 North Belt Hwy
St. Joseph, MO

SHEET TITLE
HVAC DETAILS
& SCHEDULES

VERSION 4
ISSUE DATE 7-2009

Job No. : 7082
Store : 2309
Date : 11/13/09
Drawn By : JAL
Checked By : RDB
Sheet

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 404-351-0101 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 AIR DEVICES DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-0101 FOR PRICING AND AVAILABILITY. AIR DEVICES NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.
4. AIR DOORS - THE MECHANICAL CONTRACTOR IS REQUIRED TO PURCHASE THE AIR DOORS DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-0101 FOR PRICING AND AVAILABILITY. AIR DOORS NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.
5. SUNCOAST ENVIRONMENTAL CONTROLS - 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 3D AND 3E OF THE MECHANICAL SPECIFICATIONS FOR MORE INFORMATION.
6. 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 2' MERV 7 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 R-410A ROOFTOP SINGLE PACKAGE COMBINATION ELECTRIC COOLING AND NATURAL GAS FIRED HEATING UNITS BY LENNOX AS SHOWN ON DRAWINGS. EQUIPMENT SHALL BE ARI CERTIFIED AND A.G.A. AND 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 EXCHANGES SHALL HAVE A TEN (10) YEAR WARRANTY. BURNERS SHALL BE ALUMINIZED IN-SHOT TYPE. THE DRAFT MOTOR SHALL BE MONITORED BY THE CONTROL SYSTEM.
- E. CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT FOR EQUIPMENT WITH LENNOX CORPORATION. PRICING FOR THE EQUIPMENT HAS BEEN ESTABLISHED IN ADVANCE. CONTACT LENNOX NATIONAL ACCOUNTS AT 972-497-6260 (OR BY FAX AT 972-497-5112) FOR PRICING, ORDERING AND AVAILABILITY.

2. DUCTWORK, INSULATION & INSTALLATION (SEE DWG M2I FOR GREASE DUCT)

- 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 F 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 AND GENERAL DUTY EXHAUST FANS SHALL BE EXTERNALLY INSULATED.
- G. SUPPLY AND RETURN AIR DUCTWORK SERVING THE PLAYGROUND, KITCHEN, SERVING, AND DINING AREAS SHALL BE EXTERNALLY INSULATED.
- H. 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.
- I. RESTROOM RECTANGULAR EXHAUST AIR DUCTWORK SHALL BE LINED WITH 1" THICK, 1-1/2 PCF INSULATION.
- J. 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.
- K. 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 M3I.
- L. 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.
- M. 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.
- N. DUCT TAPE SHALL BE EQUAL TO FASSON 181-B FX, 2-1/2" WIDE.
- O. SINGLE THICKNESS TURNING VANES SHALL BE INSTALLED AT 90 DEGREE TURNS IN SUPPLY DUCTWORK WHERE ANY ONE DIMENSION IS GREATER THAN 12".
- P. 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.
- Q. 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.

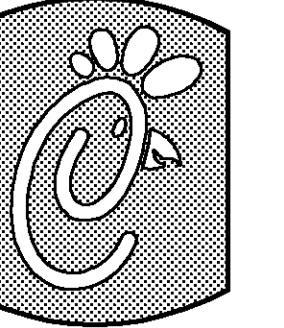
3. CONTROLS

- 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 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. 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 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 ENVIRONMENT 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

1. FURNISH AND INSTALL SYSTEM IN ACCORDANCE WITH REFERENCED STANDARDS, APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS AND AS INDICATED ON DRAWINGS.
2. 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.
3. 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.
4. 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.
5. CONTRACTOR SHALL COMPLETE A/C EQUIPMENT STARTUP DOCUMENTATION PROVIDED BY OWNER.



Chick-fil-A

5200 Buffington Rd.
Atlanta Georgia,
30349-2998

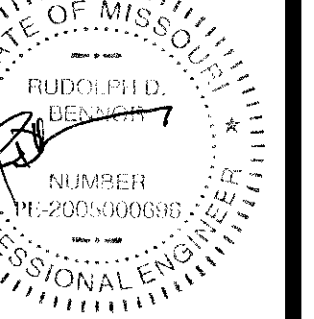
Revisions:

Mark	Date	By
43	11/13/09	OWNER CHANGES

Mark	Date	By
△		

Mark	Date	By
△		

Seal



BENNER ENGINEERING, LLC
5000 Longford Road
Building 2400
Nevada, GA 30071
(770) 729-1422 bus
(770) 729-0430 fax
contact@bennerEng.com



STORE
Chick-Fil-A
FSU S08C-R

5303 North Belt Hwy
St. Joseph, MO

SHEET TITLE
MECHANICAL
SPECIFICATIONS

VERSION 4
ISSUE DATE 7-2009

Job No. : 7082
Store : 2309
Date : 11/13/09
Drawn By : JAL
Checked By : RDB

Sheet

M-4.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 404-351-0101 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 AIR DEVICES DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-0101 FOR PRICING AND AVAILABILITY. AIR DEVICES NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.
4. AIR DOORS - THE MECHANICAL CONTRACTOR IS REQUIRED TO PURCHASE THE AIR DOORS DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-0101 FOR PRICING AND AVAILABILITY. AIR DOORS NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.
5. SUNCOAST ENVIRONMENTAL CONTROLS - 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 3D AND 3E OF THE MECHANICAL SPECIFICATIONS FOR MORE INFORMATION.
6. 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 2' MERV 7 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 R-410A ROOFTOP SINGLE PACKAGE COMBINATION ELECTRIC COOLING AND NATURAL GAS FIRED HEATING UNITS BY LENNOX AS SHOWN ON DRAWINGS. EQUIPMENT SHALL BE ARI CERTIFIED AND A.G.A. AND 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 EXCHANGES SHALL HAVE A TEN (10) YEAR WARRANTY. BURNERS SHALL BE ALUMINIZED IN-SHOT TYPE. THE DRAFT MOTOR SHALL BE MONITORED BY THE CONTROL SYSTEM.
- E. CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT FOR EQUIPMENT WITH LENNOX CORPORATION. PRICING FOR THE EQUIPMENT HAS BEEN ESTABLISHED IN ADVANCE. CONTACT LENNOX NATIONAL ACCOUNTS AT 972-497-6260 (OR BY FAX AT 972-497-5112) FOR PRICING, ORDERING AND AVAILABILITY.

2. DUCTWORK, INSULATION & INSTALLATION (SEE DWG M2I FOR GREASE DUCT)

- 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 F 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 AND GENERAL DUTY EXHAUST FANS SHALL BE EXTERNALLY INSULATED.
- G. SUPPLY AND RETURN AIR DUCTWORK SERVING THE PLAYGROUND, KITCHEN, SERVING, AND DINING AREAS SHALL BE EXTERNALLY INSULATED.
- H. 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.
- I. RESTROOM RECTANGULAR EXHAUST AIR DUCTWORK SHALL BE LINED WITH 1" THICK, 1-1/2 PCF INSULATION.
- J. 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.
- K. 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 M3I.
- L. 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.
- M. 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.
- N. DUCT TAPE SHALL BE EQUAL TO FASSON 181-B FX, 2-1/2" WIDE.
- O. SINGLE THICKNESS TURNING VANES SHALL BE INSTALLED AT 90 DEGREE TURNS IN SUPPLY DUCTWORK WHERE ANY ONE DIMENSION IS GREATER THAN 12".
- P. 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.
- Q. 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.

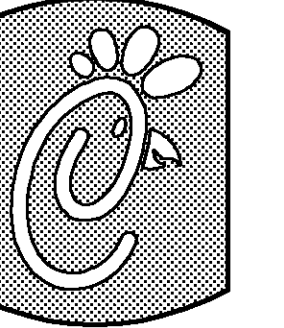
3. CONTROLS

- 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 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. 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 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 ENVIRONMENT 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

1. FURNISH AND INSTALL SYSTEM IN ACCORDANCE WITH REFERENCED STANDARDS, APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS AND AS INDICATED ON DRAWINGS.
2. 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.
3. 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.
4. 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.
5. CONTRACTOR SHALL COMPLETE A/C EQUIPMENT STARTUP DOCUMENTATION PROVIDED BY OWNER.



Chick-fil-A

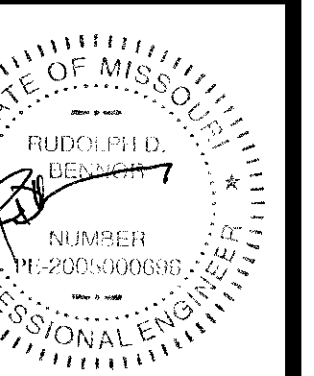
5200 Buffington Rd.
Atlanta Georgia,
30349-2998

Revisions:

Mark	Date	By
43	11/13/09	OWNER CHANGES

Mark	Date	By
△		

Mark	Date	By
△		



BENNER ENGINEERING, LLC
5000 Longford Road
Building 2400
Norcross, GA 30071
(770) 729-1422 bus
(770) 729-0430 fax
contact@bennereng.com



STORE
Chick-Fil-A
FSU S08C-R

5303 North Belt Hwy
St. Joseph, MO

SHEET TITLE
MECHANICAL
SPECIFICATIONS

VERSION 4
ISSUE DATE 7-2009

Job No. : 7082
Store : 2309
Date : 11/13/09
Drawn By : JAL
Checked By : RDB

Sheet

M-4.I