



DRAWING INFORMATION		
DATE	DESCRIPTION	BY
01-07-18	FOR CONSTRUCTION	KM

N-C-A
CONSULTANTS / GROUP

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CALL NCA MARKETING FOR PRICING
NCA JOB# 19-107

ATTENTION GENERAL CONTRACTOR: "RE-ENGINEERING" DEVIATIONS FROM THE DESIGN AND REQUIRED HVAC EQUIPMENT MUST BE APPROVED IN ADVANCE BY THE ARCHITECT AND PROFESSIONAL ENGINEER. UNAUTHORIZED SUBSTITUTIONS OR ALTERATIONS WILL VOID THE SIGNATURE AND SEAL OF THE PROFESSIONAL ENGINEER AND LEAVE VIOLATORS RESPONSIBLE FOR RESUBMISSION OF REDESIGNED AND RECALCULATED DRAWINGS.

CONTRACTORS NOTES

- HVAC CONTRACTOR SHALL FURNISH AND INSTALL THE HVAC SYSTEM SHOWN IN THE NCA HVAC EQUIPMENT PACKAGE NOTE, THIS SHEET.
- THE HVAC CONTRACTOR SHALL INSTALL THE EXHAUST HOOD. REFER TO MOST RECENT KITCHEN PLANS ON SITE. INSTALL ALL EXHAUST DUCT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. SEE SHEET M-3. VERIFY LOCATION ON SITE WITH MOST RECENT KITCHEN EQUIPMENT PLAN.
- ALL AIR CONDITIONING UNIT CURBS SHALL BE SUPPLIED BY NCA CONSULTANTS.
- ALL AIR CONDITIONING UNITS SHALL BE FABRICATED BY NCA CONSULTANTS FROM 18 GA. GALVANIZED METAL WITH WELDED SEAMS, WATER-TIGHT AND EXTERNALLY INSULATED.
- UNITS SHALL BE BRACED BY THE CONTRACTOR BETWEEN THE ROOF DECK AND THE CURB AS NEEDED TO COMPENSATE FOR ROOF SLOPE.
- ALL FLEX DUCT SHALL BE FOIL-BASED, R-6, U.L. LISTED, CLASSIFIED AS A CLASS 1 AIR DUCT, AND MEET LOCAL CODE REQUIREMENTS.
- INCLUDING ANY EXPOSED DUCTWORK, ALL NON-FLEXIBLE DUCT AND ALL AIR DISTRIBUTION DEVICES SHALL BE INSULATED WITH R-8, 2" X .75 DENSITY FOIL-BACKED INSULATION, WITH FIRE AND SMOKE RATING [25]-[1].
- ALL DUCTWORK SHALL BE INDEPENDENTLY HUNG FROM STRUCTURAL MEMBERS.
- ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED PER SMACNA LOW-VELOCITY DUCT MANUAL (LATEST EDITION).
- UNLESS OTHERWISE NOTED, EVERY SUPPLY TAP COLLAR SHALL HAVE A LOCKING MANUAL VOLUME ADJUSTER.
- THE HVAC CONTRACTOR SHALL COORDINATE DIFFUSER LOCATIONS ON SITE WITH THE MOST RECENT REFLECTED CEILING PLAN.
- THE HVAC CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE COVERING A ONE-YEAR PERIOD FOR ALL EQUIPMENT AND AN ADDITIONAL FOUR-YEAR PERIOD FOR THE COMPRESSORS IN THE AIR CONDITIONING UNITS.
- UPON COMPLETION OF PROJECT THE HVAC CONTRACTOR SHALL HIRE AN A.A.B.C. OR N.E.B.B. CERTIFIED, INDEPENDENT TEST AND BALANCE COMPANY TO CONDUCT A COMPLETE, CERTIFIED TEST AND BALANCE OF ALL HVAC EQUIPMENT. PROVIDE A WRITTEN REPORT TO NCA CONSULTANTS. ALL CAPACITIES MUST BE SET TO AMOUNTS INDICATED ON THE FLOOR PLANS AND SCHEDULES.
- ALL FANS SHALL BE U.L. LISTED.
- THE HVAC CONTRACTOR SHALL VERIFY LOCATIONS OF THE EXHAUST HOOD AND EF-1 FROM MOST RECENT KITCHEN EQUIPMENT PLANS ON SITE. THIS IS TO ENSURE NO OFFSETS IN EXHAUST DUCTWORK.
- HVAC CONTRACTOR IS TO MAKE ALL LOW-VOLTAGE WIRING FINAL CONNECTIONS FOR ALL HVAC EQUIPMENT INCLUDING SENSORS, THERMOSTATS, AUDIO-VISUAL ANNUNCIATORS, ROOF-TOP UNITS, SMOKE DETECTORS, CONTACTOR PANEL, AND CONTROL PANEL.

FLOOR PLAN HVAC
SCALE 1/4" = 1' - 0" WHEN PLOTTED 36" X 24" 19-107

PLENUMIZED CURB INSTALLATION NOTES

- CAREFULLY LOCATE AND MARK ROOF CURB LOCATIONS SO THAT DUCT WORK CAN BE INSTALLED IN THE APPROXIMATE LOCATIONS AS SHOWN BY THE FLOOR PLAN. PAY ATTENTION TO THE LOCATION OF THE ROOF STRUCTURE IN ORDER TO ACCOMMODATE THE DUCT DROPS.
- MARK THE EXACT LOCATION OF EACH ROOF CURB. LOCATE THE EQUIPMENT LOCATIONS IN ORDER TO MAINTAIN CLEARANCES FROM EXHAUST FANS AND VENTS AS REQUIRED BY THE MANUFACTURER'S CLEARANCES.
- GENERAL CONTRACTOR SHALL CUT OFF DECKING MATERIALS CAREFULLY TO AVOID CUTTING ANY STRUCTURAL COMPONENTS. GENERAL CONTRACTOR SHALL ALSO PROVIDE ANY NECESSARY FRAMING OR BRACKING AT OPENINGS.
- WITH ROOF CURB INSIDE DOWN (SOLID SIDE BOTTOM UP) MEASURE AND MARK THE LOCATION OF ALL JOISTS OR ROOF FRAMING MEMBERS THAT MUST BE AVOIDED. MEASURE AND MARK THE LOCATION OF ALL THE DUCT TAPS.
- CUT ALL DUCT TAPS TO THE BOTTOM PANEL OF THE ROOF CURB. BE CAREFUL NOT TO DAMAGE THE ROOFING SURFACE WHILE MAKING THESE CUTS.
- INSTALL DUCT TAP FITTINGS AND MANUAL DAMPERS INTO THE OPENINGS PREVIOUSLY CUT. SEAL ALL CONNECTIONS ON BOTH THE BOTTOM AND THE TOP SIDES OF THE TAPS.
- FLAY THE TAB OF START COLLAR INSIDE CURB, TIGHT AGAINST INSULATION. SEAL INSIDE OF COLLAR AND TABS TO INSULATION USING MASTIC DUCT SEALER. ALLOW SEALER TO DRY PRIOR TO PROCEEDING.
- APPLY DUCT SEALER TO OPEN END OF COLLAR. SLIDE INNER CORE OF FLEXIBLE DUCT ONTO COLLAR, AND CONNECT PANDUIT STRAP PER MANUFACTURER'S INSTRUCTIONS.
- SLIDE OUTER INSULATION SLEEVE OF FLEX TIGHT TO BOTTOM OF CURB. SEAL INSULATION TO BOTTOM OF CURB WITH PRESSURE-SENSITIVE FOIL TAPE. DO NOT USE TAPE MEANT FOR RIGID DUCTBOARD. SQUEEGEE OUT ALL AIR BUBBLES FOR PROPER ADHESION.
- TURN CURB RIGHT SIDE UP. LEVEL CURB BETWEEN BOTTOM OF CURB AND DECK. INSTALL IN ROOF OPENING. SECURE CURB TO ROOF FRAMING AS REQUIRED.
- GENERAL CONTRACTOR OR ROOFING CONTRACTOR SHALL FLASH AND ROOF IN THE CURB AS DETAILED ON THE DRAWINGS.
- INSIDE BUILDING, THE DUCT RUNS SHALL BE INSTALLED FROM THE TAPS TO THE DIFFUSER LOCATIONS AS SHOWN ON THE PLANS. SUPPORT PER SMACNA AND LOCAL CODES.
- NOTE: IF NECESSARY, FLEX DROPS MAY BE CONNECTED TO TAPS AFTER CURB HAS BEEN INSTALLED. REFER TO STEPS #9 AND #8.

AIR DEVICE SCHEDULE

SYM.	SIZE	TYPE	DUCT SIZE	MODEL#	FINISH	BOOT SIZE	OPENING SIZE	QTY.
A	24x24	SUPPLY 4 WAY	12"	NCA12	WHITE	12"	T-BAR	4
B	24x24	SUPPLY ROUND	12"	NCA12	WHITE	12"	T-BAR	8
C	24x24	SUPPLY 3 WAY	12"	NCA12-3	WHITE	12"	T-BAR	1
D	24x24	SUPPLY 2 WAY (PARALLEL)	12"	NCA12-2P	WHITE	12"	T-BAR	1
E	24x24	SUPPLY 3 WAY	10"	NCA10-3	WHITE	10"	T-BAR	1
F	24x24	SUPPLY 2 WAY (CORNER)	10"	NCA10-2C	WHITE	10"	T-BAR	2
G	12x12	SUPPLY 1 WAY W/O.B.D.	8"	630	WHITE	12x12	SIZE + 1/4"	1
H	12x12	SUPPLY 1 WAY W/O.B.D.	6"	630	WHITE	12x12	SIZE + 1/4"	2
I	24x24	RETURN	18"	630TB	WHITE	22x22	T-BAR	3
J	12x12	EXHAUST	6"	630	WHITE	12x12	SIZE + 1/4"	4

ALL DIFFUSERS SHALL BE MANUFACTURED BY METALARE OR EQUIVALENT AND 100% ALUMINUM CONSTRUCTION
* PROVIDE WITH PVC9 SLIDING-BLADE DAMPER
** NOTE: PROVIDE WITH EIGHT 24X24 LAY-IN FRAMES FOR INSTALLATION IN SHEETROCK CEILING
NOTE: LOCATION AND ORIENTATION OF DIRECTIONAL BLOW PATTERN DIFFUSERS IN THE KITCHEN IS CRITICAL. INSTALLER WILL ENSURE PROPER INSTALLATION OF DIFFUSERS. CONTACT THE NCA CONSULTANTS PROJECT COORDINATOR IMMEDIATELY WITH ANY CONFLICTS THAT PREVENT INSTALLATION PER THE PROPOSED DESIGN.

AIR BALANCE SCHEDULE

TAG	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST AIR	BLDG. PRESSURE	% OUTSIDE AIR
RTU-1	3000 CFM	750 CFM	2250 CFM	---	+ 750 CFM	25
RTU-2	2000 CFM	500 CFM	1500 CFM	---	+ 500 CFM	25
RTU-3	2000 CFM	500 CFM	1500 CFM	---	+ 500 CFM	25
RTU-4	3000 CFM	750 CFM	2250 CFM	---	+ 750 CFM	25
EF-1	---	---	---	1200 CFM**	- 1200 CFM	---
EF-2	---	---	---	885 CFM**	- 885 CFM	---
EF-3	---	---	---	300 CFM	- 300 CFM	---
TOTAL*	10000 CFM	2500 CFM	7500 CFM	2385 CFM	+ 115 CFM	25

* NOTE: UPON START-UP VERIFY THAT THE EXHAUST FAN CURRENT SENSOR IS SET TO THE MOTOR AMPERAGE. IF IT IS NECESSARY TO ADJUST THE AMPERAGE OF THE EXHAUST HOOD FAN MOTOR, THE FAN MOTOR CURRENT SENSOR MUST BE RESET BY THE ELECTRICAL CONTRACTOR AS FOLLOWS: ADJUST UNDERCURRENT POTENTIOMETER TO MINIMUM (CLOCKWISE IS MAXIMUM) APPLY CURRENT. ONCE CURRENT IS STABILIZED, INCREASE UNDERCURRENT POT UNTIL RED LED LIGHTS, WITHIN SEVEN SECONDS TURN DOWN UNTIL RED LIGHT TURNS OFF. IF A LIGHT REMAINS ON FOR MORE THAN TEN SECONDS, DISCONNECT SUPPLY VOLTAGE TO RESET. SEE MANUFACTURER'S OPERATION-INSTALLATION INSTRUCTIONS THAT SHIP WITH THE FAN. WITH LIMITED BUILDING PRESSURE, THE ±10% TOLERANCE IS NOT ACCEPTABLE. SET CFM AS SPECIFIED. ENSURE THAT EXHAUST FAN PULLEY IS ADJUSTED FOR PROPER ALIGNMENT.

FAN SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	AREA SERVED	CFM	STATIC PRESSURE, "WG	FAN HORSEPOWER	FAN RPM	DRIVE	ELECTRICAL REQ. V/Ø/Hz	ROOF OPENING, INCHES	ROOF CURB	BACKDRAFT DAMPER	BIRDSCREEN	GREASE TROUGH	INTERLOCK
EF-1	COOK	100 CPS-BK	ROOF	BROILER	1200*	0.75*	(VERIFY)	(VERIFY)	BELT	208-230/1/60	22x22	NO	YES	NO	YES	NO
EF-2	COOK	100 CPS-BK	ROOF	FRYERS	885*	0.81	(VERIFY)	(VERIFY)	BELT	208-230/1/60	22x22	YES	YES	NO	NO	NO
EF-3	COOK	100C100H	ROOF	RESTROOM	500	1/25	(VERIFY)	(VERIFY)	DIRECT	120/1/60	13.5X13.5	YES	YES	NO	NO	NO

* SEE AIR BALANCE SCHEDULE
NOTE: VERIFY ALL INFORMATION WITH MANUFACTURER PRIOR TO ORDERING AND INSTALLATION

PACKAGE ROOFTOP UNIT SCHEDULE (RTU-1,2,3,4)

TAG	MANUFACTURER	MODEL	LOCATION, CURB DIMENSIONS	TYPE OF HEAT	TOTAL COOLING CAPACITY, MBTU/HR	SENSIBLE COOLING CAPACITY, MBTU/HR	ENTERING AIR CONDITIONS, DB/F/WB/F	AMBIENT AIR DB TEMPERATURE, °F	SUPPLY AIR, CFM	OUTSIDE AIR, CFM	EXTERNAL STATIC PRESSURE, "WG	BHP - MEDIUM STATIC MOTOR	E.E.R./S.E.E.R.	GAS INPUT MBTU/HR	GAS OUTPUT MBTU/HR	UNIT WEIGHT, LBS.	ELECTRICAL REQUIREMENT, V/PHASE/Hz	MINIMUM CIRCUIT AMPERAGE	MAXIMUM OVER CURRENT PROTECTION
RTU-1,4	CARRIER	48HCEDOR (7.5 TON)	ROOF, 78" X 50"	NATURAL GAS	95.2	71.0	80/67	95	3000	2000	0.75	2.4	12.0	120/180	98/148	1100	208-230/3/60	28.8	50
RTU-2,3	CARRIER	48HCEAOB (5 TON)	ROOF, 67" X 37"	NATURAL GAS	61.9	47.7	80/67	95	2000	1500	0.75	2.24	15.2 (S.E.E.R.)	120/180	82/115	750	208-230/3/60	26.5	40

- 100% ECONOMISER WITH BAROMETRIC RELIEF
- NCA PLENUMIZED CURB. TO ORDER CALL TOLL-FREE (877) 530-0078.
- 1 YEAR COMPLETE PARTS & LABOR WARRANTY + ADDITIONAL 4 YEAR PARTS WARRANTY ON COMPRESSORS
- SMOKE DETECTOR TO SHUT DOWN RESPECTIVE FAN AND SEND A SIGNAL TO THE AV ALARM (SEE SHEET M-2)
- ADUAGUARD AQ-3180E MOISTURE SENSOR FOR PRIMARY PAN
NOTE: COORDINATE RTU PLACEMENT ON SITE PRIOR TO SETTING EQUIPMENT. IF ADJUSTMENT IS NECESSARY, MAINTAIN FRESH AIR INTAKE CLEARANCES.

GENERAL CONTRACTOR

- IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO RECEIVE, OFFLOAD, AND STORE ALL HVAC MATERIALS WHICH ARRIVE AT THE JOB SITE. HOODS MUST BE STORED IN THE KITCHEN.
- IT IS VERY IMPORTANT THAT ACCURATE MEASUREMENTS ARE USED WHEN LOCATING EXHAUST FAN ROOF OPENING TO ENSURE THAT NO OFFSETS ARE REQUIRED IN THE EXHAUST DUCTWORK FROM THE KITCHEN HOOD. COORDINATE ROOF OPENINGS WITH THE KITCHEN EQUIPMENT PLAN AND EXHAUST HOOD PLANS. OBTAIN THE CORRECT PLANS FROM THE KITCHEN EQUIPMENT SUPPLIER.
- RTU ROOF OPENING SIZES AND ROOF CURBS ARE BASED ON EQUIPMENT SHOWN. IF OTHER EQUIPMENT IS USED, VERIFY ROOF OPENING REQUIREMENTS. MAKE PENETRATION AS NEEDED FOR INSTALLATION OF NEW CURB AND RTU. COORDINATE ON SITE WITH HVAC CONTRACTOR. ENSURE THAT ROOFING MATERIAL DOES NOT COVER THE TOP OF ANY HVAC EQUIPMENT CURB.
- ANY FRAMING REQUIRED FOR HVAC WORK SHALL BE BY THE GENERAL CONTRACTOR.
- GENERAL CONTRACTOR IS TO PROVIDE ANY SCREENING, GUARD RAILS, ETC. FOR ROOF-MOUNTED HVAC EQUIPMENT PER IBC AND LOCAL CODES.
- ANY EXPOSED HVAC WORK IN THE DINING ROOM IS TO BE PRIMED AND PAINTED BY THE GENERAL CONTRACTOR.
- GENERAL CONTRACTOR IS TO ENSURE THAT THE ROOF TRUSSES CLOSEST TO THE EXHAUST RISERS FOR THE HOODS ARE SPACED 28" CENTER TO CENTER SO THAT THE EXHAUST STACKS - WHICH BY DESIGN CANNOT BE OFFSET - WILL BE INSTALLED PLUMB. CONFIRM ON SITE WITH HVAC CONTRACTOR AND MOST-RECENT KITCHEN EQUIPMENT/HOOD PLANS.

ELECTRICAL CONTRACTOR

- THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL PITCH POCKETS FOR POWER AND CONTROL WIRING TO MAINTAIN 12" MINIMUM CLEARANCE FROM BACK PANEL OF AIR CONDITIONING UNITS AND EXHAUST FANS. ELECTRICAL CONTRACTOR SHALL NOT PENETRATE BOTTOM OF RTU CURB AND EXHAUST FANS.
- THE ELECTRICAL CONTRACTOR SHALL INSTALL THE CONTACTOR PANEL, ON-OFF PANEL, AND LOW-VOLTAGE CONTROL WIRING FOR AIR CONDITIONING UNITS AND CONTROLS. COORDINATE AIR CONDITIONING AND ELECTRICAL PLANS. VERIFY WHETHER ENERGYWISE OR SUNCOAST PANEL IS USED ON ARCH. SHEET E-5. FOR PROJECTS WITHOUT A PANEL THE ELECTRICAL CONTRACTOR WILL INTERLOCK THE COOKING APPLIANCE AND HVAC EQUIPMENT PER NFPA99.
- THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL DISCONNECTS FOR ALL HVAC EQUIPMENT.
- THE ELECTRICAL CONTRACTOR SHALL USE A MINIMUM OF 4"-6" SEALTITE FLEXIBLE CONDUIT WHEN WIRING KITCHEN HOOD EXHAUST FANS ON ROOF SO THAT FANS MAY BE REMOVED FROM CURBS AND PLACED ON ROOF FOR CLEANING EXHAUST DUCTWORK.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE ANY ADDITIONAL INTERLOCK REQUIRED BY LOCAL CODE BEHIND THE HVAC EQUIPMENT, SMOKE DETECTORS, EXHAUST FANS, AND COOKING APPLIANCES.
- THE ELECTRICAL CONTRACTOR SHALL RUN LINE VOLTAGE FROM THE CURRENT SENSOR LOCATED IN THE GREASE EXHAUST FAN TO THE CONTACTOR PANEL LOCATED BY THE SWITCHGEAR.
- FOR EACH UNIT, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ONE SINGLE-GANG RECEPTACLE TEST STATION FOR THE T-STAT, AND ONE DOUBLE-GANG RECEPTACLE TEST STATION FOR THE ANNUNCIATOR, WITH GREEN AND RED LIGHT INDICATORS. THE FIRE AND MECHANICAL INSPECTORS WILL DETERMINE SUITABLE LOCATION FOR TEST STATIONS. ANNUNCIATORS AND TEST STATION WILL BE LOOPED IN THE CIRCUITRY OF THE SMOKE DETECTION DEVICES. WIRING WILL BE INSTALLED BY ELECTRICAL CONTRACTOR.

PLUMBING CONTRACTOR

- THE PLUMBING CONTRACTOR IS TO PROVIDE AND INSTALL PITCH POCKETS FOR CONDENSATE DRAINS/GAS PIPING FOR ALL A/C UNITS AND EXHAUST FANS. PLUMBING CONTRACTOR SHALL NOT PENETRATE BOTTOM OF RTU CURB.
- THE PLUMBING CONTRACTOR TO COORDINATE PLUMBING VENT STACKS WITH OUTSIDE AIR INTAKES OF A/C UNITS. MAINTAIN 10"-0" MINIMUM CLEARANCE OR PER LOCAL CODE.
- THE PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL FLUE GAS EXHAUST VENT FOR WATER HEATER. MAINTAIN 10"-0" MINIMUM HORIZONTAL OR 3' VERTICAL CLEARANCE TO AIR INTAKES.

UPON COMMENCEMENT OF ROUGH-IN AS SCHEDULED BY NCA CONSULTANTS, THE AIR CONDITIONING CONTRACTOR IS TO REMAIN ON THE JOB SITE FULL TIME UNTIL THE ROUGH-IN IS 100% COMPLETE. THE GENERAL CONTRACTOR'S SITE SUPERINTENDENT WILL VERIFY.
UPON COMMENCEMENT OF TRIM-OUT AS SCHEDULED BY NCA CONSULTANTS, THE AIR CONDITIONING CONTRACTOR IS TO REMAIN ON THE JOB SITE FULL TIME UNTIL THE TRIM-OUT IS 100% COMPLETE. THE GENERAL CONTRACTOR'S SITE SUPERINTENDENT WILL VERIFY.

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Order **PLUMBING**

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PROJECT # 18026.02
NOVEMBER 2018 DESIGN RELEASE
RUC-60 FALL 2020 MAJOR
BURGER KING RESTAURANT
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HARPERSVILLE, AL

HVAC FLOOR PLANS, NOTES, AND SCHEDULES

M-1