

FLOOR PLAN - HVAC  
SCALE 1/4" = 1' - 0" WHEN PLOTTED 6" X 24"

**ATTENTION GENERAL CONTRACTOR:**  
RE-ENGINEERING DEVIATIONS FROM THE SHOWN 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 SIGNED AND SEALED DRAWINGS.

DRAWING INFORMATION		
DATE	DESCRIPTION	BY
04-27-20	FOR CONSTRUCTION	KM

### CONTRACTORS NOTES

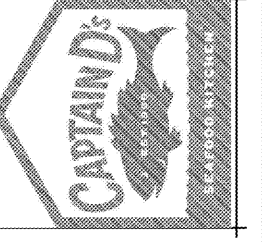
- HVAC CONTRACTOR
- THE HVAC CONTRACTOR IS TO FURNISH AND INSTALL THE ROOF-TOP UNITS, HOODS, FANS, DUCTWORK, INSULATION WRAP, DIFFUSERS AND GRILLES, SMOKE DETECTORS, AND TEMPERATURE CONTROLS.
  - THE HVAC CONTRACTOR IS TO VERIFY LOCATIONS FOR THE HOOD FANS AND THE HOODS ON SITE FROM MOST-RECENT KITCHEN EQUIPMENT PLANS. ALL FANS ARE TO BE UL LISTED.
  - ALL HVAC EQUIPMENT CURBS ARE TO BE SUPPLIED BY THE HVAC CONTRACTOR.
  - ALL RTU CURBS ARE TO BE FABRICATED FROM 18 GA. GALVANIZED METAL WITH FULL WELDED SEAMS, WATER TIGHT AND INTERNALLY INSULATED. FACTORY CURB CONVERSION SHALL NOT BE ACCEPTED.
  - SHIMS ARE TO BE PROVIDED BY HVAC CONTRACTOR BETWEEN THE ROOF DECK AND THE CURBS TO COMPENSATE FOR ROOF PITCH.
  - ALL FLEX DUCT IS TO BE U.L. LISTED, R-6, FOIL-BACKED, CLASSIFIED AS "CLASS A" AIR DUCT. MAXIMUM LENGTH PER LOCAL CODE.
  - ALL METAL DUCT AND AIR DISTRIBUTION DEVICES ARE TO BE INSULATED WITH R-6, 2" X .75 DENSITY FOIL-BACKED INSULATION, WITH FIRE AND SMOKE RATING F-1.
  - ALL DUCTWORK IS TO BE INDEPENDENTLY HUNG FROM STRUCTURAL MEMBERS.
  - ALL DUCTWORK IS TO BE FABRICATED, INSTALLED, SEALED AND EXTERNALLY INSULATED PER SMACNA LOW-VELOCITY DUCT MANUAL (LATEST ISSUE). INTERNALLY LINED DUCTWORK IS NOT ALLOWED.
  - UNLESS OTHERWISE NOTED, ALL TAKEOFFS SHALL HAVE A MANUAL VOLUME CONTROL DAMPER.
  - THE HVAC CONTRACTOR IS TO COORDINATE DIFFUSER LOCATIONS ON SITE WITH THE MOST RECENT REFLECTED CEILING PLAN.
  - THE HVAC CONTRACTOR TO FURNISH WRITTEN GUARANTEE COVERING A ONE-YEAR PERIOD FOR ALL HVAC EQUIPMENT AND PROVIDE AN ADDITIONAL FOUR-YEAR PERIOD FOR THE COMPRESSORS IN THE RTUS. ALL FANS TO BE UL LISTED.
  - UPON COMPLETION OF PROJECT THE HVAC CONTRACTOR IS TO HIRE AN A.S.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 WRITTEN REPORT TO NCA CONSULTANTS. ALL CAPACITIES MUST BE SET TO AMOUNTS INDICATED ON THE FLOOR PLANS AND SCHEDULES.
  - THE HVAC CONTRACTOR IS TO PROVIDE ALL LOW-VOLTAGE WIRING FOR ALL HVAC EQUIPMENT INCLUDING TEMPERATURE CONTROLS, RTUS, AND SMOKE DETECTORS.
- GENERAL CONTRACTOR
- IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO RECEIVE, OFFLOAD, AND STORE ALL HVAC MATERIALS WHICH ARRIVE AT THE JOB SITE. ALL MATERIAL MUST BE STORED INSIDE THE BUILDING. HOODS MUST BE STORED IN THE KITCHEN.
  - IT IS VERY IMPORTANT THAT ACCURATE MEASUREMENTS ARE USED WHEN LOCATING EXHAUST FAN ROOF OPENING. 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.
  - ALL ROOF, CEILING, WALL, AND STRUCTURAL FRAMING REQUIRED FOR UNIT, FAN, DUCT, DIFFUSER, AND ALL OTHER HVAC WORK IS TO BE BY THE G.C. COORDINATE ON SITE WITH HVAC CONTRACTOR. GENERAL CONTRACTOR IS TO PROVIDE ANY SORENING, GUARD RAILS, ETC. FOR ROOF-MOUNTED HVAC EQUIPMENT PER IBC AND LOCAL CODES.
  - IF NECESSARY THE GENERAL CONTRACTOR IS TO REMOVE, REPLACE, AND/OR REPAIR CEILING GRID AND TILES IN ORDER FOR THE HVAC WORK TO BE PERFORMED.



SHANE HAMILTON, P.E.  
912 W. MLK BLVD. TAMPA, FL  
KANSAS LICENSE #25546



A NEW LOCATION FOR  
**CAPTAIN D'S**  
7525 STATE AVENUE  
KANSAS CITY, KS 66112  
**CAPTAIN D'S, LLC**  
624 GRASSMERE PARK DRIVE,  
SUITE 30  
NASHVILLE, TN 37211



Job Number: \_\_\_\_\_

Revisions: \_\_\_\_\_

HVAC FLOOR PLAN, NOTES, AND SCHEDULES

M-1

**KEYED NOTES**

- PROVIDE TYPE-I GREASE HOOD OVER APPLIANCES. 16 GAUGE BLACK IRON SHEETMETAL DUCT FROM CONNECTION ON HOOD TO EXHAUST FAN ON ROOF. OFFSET AND TRANSITION AT CONNECTIONS AS NEEDED. VERIFY DIMENSIONS PRIOR TO FABRICATION OR INSTALLATION. REFER TO HOOD DETAIL SHEETS, THIS SET. USE FACTORY-MANUFACTURED PIPE AND FITTINGS ONLY. CONFIRM LOCATION ON SITE WITH MOST RECENT KITCHEN PLANS. ALL WORK PER NFPA96 AND LOCAL CODES INCLUDING THE PROVISION OF FIRE WRAP AND ACCESS DOORS.
- PROVIDE REMOTE TEMPERATURE SENSOR IN WALL NEAR LOCATION SHOWN. SEAL WALL OPENINGS WITH CAULK. AUDIO-VISUAL ANNUNCIATOR TIED INTO SMOKE DETECTOR. COORDINATE LOCATION ON SITE WITH G.C. AND EQUIPMENT. AVOID SOURCES OF HEAT. THERMOSTATS IN PANEL IN MANAGERS AREA. HUMIDISTAT SET TO 55% RELATIVE HUMIDITY.
- CONCENTRIC WATER HEATER FLUE TO WEATHERPROOF WALL. GAS PROVIDED BY PLUMBING CONTRACTOR. OFFSET AND TRANSITION AT CONNECTIONS AS NEEDED. USE FACTORY-MANUFACTURED PIPE AND FITTINGS ONLY. COMBUSTION AIR IS PROVIDED VIA NATURAL DRAFT USING OUTSIDE AIR FROM THE ROOF-TOP UNITS.
- ROUTE ROUND SHEETMETAL EXHAUST DUCT FROM GRILLE OVER RESTROOMS TO 12X12 SHEETMETAL DROP FROM FAN ON ROOF.
- SHIM CURBS ON ROOF IN ORDER TO MAKE TOP OF CURBS LEVEL. SEE DETAIL ON SHEET M-2. CONFIRM STRUCTURAL FRAMING PRIOR TO LAYING OUT ROOF PENETRATIONS.
- ROUTE 8" SHEETMETAL EXHAUST DUCT FROM GRILLE OVER MOP SINK TO EF-3 ON ROOF.

**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. LAYOUT ALL EQUIPMENT LOCATIONS IN ORDER TO MAINTAIN PROPER CLEARANCES FOR EXHAUST FANS AND VENTS AS WELL AS PROVIDING FOR PROPER RISE CLEARANCES.
- GENERAL CONTRACTOR SHALL CUT ROOF DECKING GENERAL TAKING CARE TO AVOID CUTTING ANY STRUCTURAL COMPONENTS. GENERAL CONTRACTOR SHALL ALSO INSTALL ANY NECESSARY FRAMING OR BRACING AT OPENINGS.
- WITH ROOF CURBS UPSIDE DOWN (SOLID METAL BOTTOM UP) MEASURE AND MARK THE LOCATION OF ANY POSTS OR OTHER FRAMING MEMBERS THAT MUST BE AVOIDED. MEASURE AND MARK THE LOCATION OF ALL THE DUCT TAPS.
- CUT ALL DUCT TAPS INTO THE BOTTOM OF THE ROOF CURB. BE CAREFUL NOT TO DAMAGE THE ROOFING SURFACE WHILE MAKING THESE CUTS.
- INSTALL DUCT FITTINGS AND MANUAL DAMPERS INTO THE OPENINGS PREVIOUSLY MADE. SEE ALL CONDITIONS ON BOTH THE BOTTOM AND THE TOP SIDES OF THE TAPS.
- FLATTEN TABS OF STAINLESS 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.
- ONLY 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 #8 AND #9.

**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	13
B**	24X24	SUPPLY PERF.	12"	ADDF3-1424	WHITE	12"	T-BAR	5
C**	12X12	SUPPLY 1 WAY	8"	630	WHITE	12X12	SIZE + 1/4"	3
D**	24X24	RETURN	18"	630TB	WHITE	22X22	T-BAR	4
E	12X12	EXHAUST	8"	630	WHITE	12X12	SIZE + 1/4"	2
F	12X12	EXHAUST	6"	630	WHITE	12X12	SIZE + 1/4"	1

ALL DIFFUSERS SHALL BE MANUFACTURED BY METALARE OR EQUIVALENT AND 100% ALUMINUM CONSTRUCTION  
\*\* PROVIDE WITH PVC/RV SLIDING-BLADE DAMPER  
\* PROVIDE WITH FIVE 1/4" TO 1/2" REDUCERS FOR TOPS OF DIFFUSERS  
\*\*\* PROVIDE WITH OPPOSED-BLADE DAMPER

**FAN SCHEDULE**

UNIT NUMBER	EF-1	EF-2	EF-3	MAU-1
AREA SERVED	HOOD-1	HOOD-2	RESTROOMS, MOP SINK	HOODS
MANUFACTURER	TWIN CITY	TWIN CITY	TWIN CITY	ABSOLUTE AIR
MODEL	BCRJR210	BCRUR110	DCRD100	VZ-HOX
CFM	1980	800	375	2000
STATIC PRESSURE, "WG	(V.I.F.)	(V.I.F.)	(V.I.F.)	1.0
FAN HORSEPOWER	1.0	0.5	(V.I.F.)	2.0
DRIVE	BELT	BELT	BELT	BELT
RPM	(V.I.F.)	(V.I.F.)	(V.I.F.)	(V.I.F.)
ELECTRICAL V/PHASE/Hz	115/1/60	115/1/60	115/1/60	208/3/60
NCA CURB L X W X H @ FLANGE	VERIFY WITH MANUFACTURER PRIOR TO ORDERING FANS			
WEIGHT, LBS	250	150	50 (EACH)	500
ACCESSORIES	B,D,E,J,K,L,M	B,D,E,J,K,L,M	B,D,E,J,K,L,M	B,D,E,J,K,L,M,N
NOTES/ACCESSORIES	6. INTERLOCK WITH SALES LIGHTS			
	H. 12" HIGH PREFABRICATED ROOF CURB			
	J. INTERLOCKED BY ELECTRICIAN PER NFPA96 AND LOCAL CODES			
	K. SAFETY DISCONNECT SWITCH			
	L. GRAVITY BACKDRAFT DAMPER			
	M. REFER TO KITCHEN BALANCE SCHEDULE			
	N. ANCA SEAL & U.L. CERTIFIED			
	O. 25' MIN. CLEARANCE FROM AIR INTAKES			
	P. SPEED CONTROL			
	M. COORDINATE WITH MANUFACTURER FOR FINAL SELECTION			
	F. HINGE KIT			
	N. 192 MBTUH GAS HEAT SECTION			

**AIR BALANCE SCHEDULE**

TAG	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST AIR	BLDG. PRESSURE	% OUTSIDE AIR
RTU-1	2000 CFM	400 CFM	1600 CFM	----	+ 400 CFM	20
RTU-2	1600 CFM	320 CFM	1280 CFM	----	+ 320 CFM	20
RTU-3	4000 CFM	800 CFM	3200 CFM	----	+ 800 CFM	20
SF-1	----	2000 CFM	----	----	+ 2000 CFM	100
EF-1	----	----	1980 CFM	- 1980 CFM	----	----
EF-2	----	----	800 CFM	- 800 CFM	----	----
EF-3	----	----	375 CFM	- 375 CFM	----	----
TOTAL	7600 CFM	3520 CFM	6080 CFM	3155 CFM	+ 365 CFM	20

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

TAG	RTU-1	RTU-2	RTU-3
MANUFACTURER	CARRIER	CARRIER	CARRIER
MODEL	48GCEA05 (5 TON)	48HCEA05 (4 TON)	48HCEA12 (10 TON)
LOCATION, CURB DIMENSIONS	ROOF, 67" X 37"	ROOF, 67" X 37"	ROOF, 78" X 50"
TYPE OF HEAT	NATURAL GAS	NATURAL GAS	NATURAL GAS
TOTAL COOLING CAPACITY, MBTU/HR	60.2	47.6	123.3
SENSIBLE COOLING CAPACITY, MBTU/HR	48.3	34.2	95.0
ENTERING AIR CONDITIONS, DBT/WBT	80/67	80/67	80/67
AMBIENT AIR DBT TEMPERATURE, °F	95	95	95
SUPPLY AIR, CFM	2000	1600	4000
OUTSIDE AIR, CFM	SEE SCHEDULE	SEE SCHEDULE	SEE SCHEDULE
EXTERNAL STATIC PRESSURE, "WG	0.75	0.75	0.75
BHP - MEDIUM STATIC MOTOR	2.24	1.7	3.7
E.F.E.R.	18.0 (S.E.F.E.R.)	15.6 (S.E.F.E.R.)	11.5
GAS INPUT MBTU/HR	82/110	82/115	180/244
GAS OUTPUT MBTU/HR	65/98	66/93	147/184
UNIT WEIGHT, LBS.	500	250	1250
ELECTRICAL REQUIREMENT, V/PHASE/Hz	208-230/3/60	208-230/3/60	208-230/3/60
MINIMUM CIRCUIT AMPERAGE	31.0	24.0	52.0
MAXIMUM OVER CURRENT PROTECTION	45	30	60

ACCESSORIES:  
1. 100% ECONOMISER WITH BAROMETRIC RELIEF  
2. NCA FLENUMIZED CURBS TO ORDER CALL TOLL-FREE (877) 530-0078.  
3. ONE YEAR COMPLETE PARTS AND LABOR WARRANTY  
4. ADDITIONAL FOUR YEAR PARTS WARRANTY COVERING COMPRESSORS  
5. SMOKE DETECTOR (SEE HVAC ROOF PLAN, SHEET M-2)  
6. AQUAGUARD AG-3100E MOISTURE SENSOR FOR PRIMARY FAN

NOTE: COORDINATE RTU PLACEMENT ON SITE PRIOR TO SETTING EQUIPMENT. IF ADJUSTMENT IS NECESSARY MAINTAIN FRESH AIR INTAKE CLEARANCES

HVAC SYSTEM  
**N.C.A.**  
CONSULTANTS / GROUP  
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CALL NCA MARKETING FOR PRICING  
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