

MECHANICAL LEGEND	
	RECTANGULAR DUCT
	ROUND METAL DUCT
	FLEXIBLE ROUND DUCT
	ELBOW WITH TURNING VANES
	VOLUME DAMPER
	SUPPLY TAP WITH VOLUME DAMPER
	SUPPLY TAP
	SUPPLY DIFFUSER/GRILLE OR RISER
	RETURN REGISTER/GRILLE OR RISER
	CEILING EXHAUST FAN
	T-STAT
	CONNECT TO EXISTING
	EXISTING DUCTWORK/GRILLE TO BE REMOVED
	EXISTING EQUIPMENT/DUCTWORK

HVAC GENERAL NOTES	
1.	THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT IN STRICT ACCORDANCE WITH THE 2018 NORTH CAROLINA MECHANICAL CODE, ALL STATE AND LOCAL CODES AND STANDARDS, AND PER MANUFACTURER'S DIRECTIONS.
2.	THE CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS, LICENSE, INSPECTIONS, APPROVALS, AND FEES.
3.	THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES BEFORE INSTALLATION OF ANY MATERIALS OR EQUIPMENT.
4.	THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATION AND ARRANGEMENT OF ALL MATERIALS AND EQUIPMENT. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT.
5.	DO NOT SCALE DRAWINGS FOR MEASUREMENTS.
6.	ALL DUCT DIMENSIONS SHOWN ARE INTERIOR DUCT DIMENSIONS.
7.	ALL PENETRATIONS THROUGH EXTERIOR WALLS & ROOF SHALL BE FLASHED & COUNTERFLASHED IN A WATERPROOF MANNER (COLOR TO MATCH EXTERIOR).
8.	SEAL ALL PENETRATIONS OF RATED WALLS WITH FIRE DAMPER OR SEALANT MATERIAL APPROVED BY LOCAL CODE. TO BE INSTALLED PER MFG. INSTRUCTIONS.
9.	ALL SUSPENDED MATERIALS AND EQUIPMENT SHALL BE INDIVIDUALLY SUPPORTED FROM THE BUILDING STRUCTURE. DO NOT SUSPEND ITEMS FROM THE CEILING OR ITS SUPPORT SYSTEM.
10.	LOCATE CEILING DIFFUSERS IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS (IF PROVIDED).
11.	ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED W/ WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS, TO AVOID INTERFERENCE.
12.	ALL SUPPLY AND RETURN DUCTS SHALL BE INSULATED AS FOLLOWS: CONDITIONED SPACES R-6 MINIMUM NON-CONDITIONED SPACES R-8 MINIMUM
13.	ALL INTAKE OPENINGS SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ALL EXHAUST LOCATIONS.
14.	ALL CUTTING AND PATCHING OF WALLS AND FLOORS FOR MECHANICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
15.	EXISTING HVAC EQUIPMENT HAS BEEN ASSUMED TO BE IN GOOD WORKING ORDER FOR BASIS OF DESIGN. MC TO TEST AND VERIFY PROPER FUNCTION OF EQUIPMENT AND NOTIFY OWNER/ENGINEER OF ANY MALFUNCTIONING EQUIPMENT.
16.	MC SHALL PREPARE ALL EXPOSED DUCT, GRILLES, PIPING, AND UNITS FOR PAINTING. GC WILL BE RESPONSIBLE FOR PAINTING.
17.	MC SHALL CONSULT OWNER OR OWNER'S REPRESENTATIVE WITH REGARD TO ALL DEMO/REMOVED EQUIPMENT FOR DISPOSAL OR RESALE.

HOOD SCHEDULE								
UNIT DESIG.	LOCATION	MANUFACTURER & MODEL #	LENGTH (IN)	EXHAUST CFM	SUPPLY CFM	EXHAUST RISER (IN)	SUPPLY RISER (IN)	NOTES
H-1	FRYER	CAPTIVE AIRE 5412-SND-2	131	2293	-	14"	-	1-6
H-2	CHAR	CAPTIVE AIRE 5412-SND-2	78	1462	-	12"	-	1-6

- NOTES:
- PROVIDE HOOD MOUNTED DUPLEX SWITCH FOR INDEPENDENT ON/OFF OPERATION OF FANS AND LIGHTS.
 - PROVIDE EXHAUST FANS.
 - W/ FIRE SUPPRESSION SYSTEM. LOCATE FIRE SYSTEM UTILITY CABINET PER KITCHEN PLANS
 - W/ GREASE CUP
 - U.L. 710 LISTED, 3" BACK AIR SPACE
 - INFORMATION TAKEN FROM KITCHEN EQUIPMENT SUPPLIER DRAWINGS. SEE KITCHEN EQUIPMENT SUPPLIER DRAWINGS & MECHANICAL DETAIL SHEET FOR MORE INFO.
- TEMPERATURE SENSOR FOR AUTOMATIC FAN OPERATION, PROVIDED BY HOOD MANUFACTURER, TO BE INSTALLED BY M.C. PER MANUFACTURER'S REQUIREMENTS.

GRAVITY VENTILATOR SCHEDULE							
UNIT DESIG.	AREA SERVED	FUNCTION	MANUFACTURER & MODEL #	CFM	MOUNTING	PRESSURE DROP	NOTES
GV-1	RESTROOM	RELIEF	GREENHECK GRSR-10	-	ROOF	0.06	1-4

- NOTES:
- PROVIDE FACTORY MANUFACTURED ROOF CURB.
 - COLOR TO MATCH ROOF.
 - INSTALL W/ BACKDRAFT DAMPER.
 - INSTALL W/ INSECT SCREEN.

Drawing Sheet List	
#	Title
M001	Mechanical Legend, Notes, and Schedules
M002	Mechanical Details
M003	Mechanical Details
M004	Mechanical Details
M005	Mechanical Details
M006	Mechanical Details
M101	Mechanical Demo Plan - 1st Floor
M102	Mechanical Demo Plan - 2nd Floor
M101	Mechanical Plan - 1st Floor
M102	Mechanical Plan - 2nd Floor

SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE																									
AIR HANDLING UNIT DATA										HEAT PUMP															
UNIT TAG	AREA SERVED	MANUF. MODEL	FAN CFM	FAN DATA			COOLING			HEAT			AUX.			ELECTRICAL DATA			GENERAL DATA			ELECTRICAL DATA			NOTES
				ESP (° OF HG)	MOTOR (HP)	OA (CFM)	TOTAL (MEB)	SENS (MEB)	TOTAL (MEB)	HEAT (KW@240)	VOLTAGE (V/PH)	MCA (A)	MCOCP (A)	UNIT TAG	MANUF. MODEL	TONNAGE	SEER 2	HSPF 2	VOLTAGE (V/PH)	MCA (A)	MCOCP (A)				
AH-1	MEZZANINE	DAIKIN MSZGS36	560	-	-	-	33.2	24.9	22.8	-	POWERED VIA OUTDOOR UNIT	HP-1	DAIKIN MSZGS36	3.0	26.0	-	208/1Ø	22.0	25	1-9					
AH-2	STORAGE	DAIKIN MSZGS32	307	-	-	-	12.0	9.0	9.0	-	POWERED VIA OUTDOOR UNIT	HP-2	DAIKIN MSZGS32	1.0	26.0	-	208/1Ø	10.0	15	1-9					

- NOTES:
- COOLING CAPACITIES ARE RATED IN ACCORDANCE WITH ARI STANDARD 210/240 AT 95°F AMBIENT OUTDOOR AIR TEMP., 80°F DRY BULB, 67°F WET BULB ENTERING AIR TEMP., AND AIR QUANTITY LISTED BY MFG. UNITS ABOVE 5 TONS ARE RATED IN ACCORDANCE WITH ARI STANDARD 340.
 - REFRIG. PIPING TO BE SIZED PER TOTAL INSTALL. EQUIV. LENGTH. LONG-LINE APP. TO BE PROVIDED PER MFG. GUIDELINES WHEN REQUIRED. MC TO CONFIRM ALL LENGTHS WILL MEET MFG. REQUIREMENTS BEFORE INSTALLATION.
 - PROVIDE SINGLE POINT ELECTRICAL CONNECTION FOR AIR HANDLING UNIT.
 - SYSTEMS SHALL HAVE A MINIMUM 14.3 SEER2 AND 7.5 HSPF2 RATING.
 - PROVIDE BI-FLOW TXV FOR HEAT PUMP OPERATION.
 - DRAIN CONDENSATE TO HUB DRAIN.
 - PROVIDE WITH WALL MOUNTED T-STAT
 - CONDENSATE AND REFRIGERANT PIPING TO BE LOCATED INSIDE WALL CAVITY. ALL PENETRATIONS TO BE PATCHED AND SEALED.
 - CATALOG NUMBERS AND MANUFACTURERS ARE TO INDICATE TYPE AND QUALITY OF UNIT DESIRED. SUBMIT CUTSHEETS OF THESE AND ALTERNATE MANUFACTURERS FOR ARCHITECT AND OWNER APPROVAL PRIOR TO PURCHASE OF ANY UNITS. INFORMATION ON ALTERNATE UNITS PROPOSED BY THE CONTRACTOR SHALL INCLUDE THE ADD/DEDUCT ASSOCIATED WITH ACCEPTANCE OF THAT UNIT (OR THE ALTERNATE PACKAGE AS A WHOLE).

PACKAGED DX COOLING / GAS HEATING ROOF TOP UNIT SCHEDULE																	
UNIT NO.	AREA SERVED	SUPPLY - FAN DATA				HEATING CAPACITY		COOLING CAPACITY		ELECTRICAL DATA			MANUFACTURER & MODEL	UNIT CAP. (TONS)	EFF. SEER	UNIT WEIGHT (LBS)	NOTES
		TOTAL CFM	O/A CFM	MIN. EXT. S.P. (IN.HG)	FAN RPM	MOTOR H.P.	INPUT M.B.H.	OUTPUT M.B.H.	TOTAL M.B.H.	SENSIBLE M.B.H.	VOLT/PH	MCA					
RTU-1	DINING	3000	725	-	MFG	-	-	-	-	-	-	-	-	7.5	-	-	1-2
RTU-2	KITCHEN	1200	275	-	MFG	-	-	-	-	-	-	-	-	3.0	-	-	1-2

- NOTES:
- EXISTING ROOFTOP UNIT TO REMAIN. RELOCATE DUCTWORK AS SHOWN ON PLANS.
 - BALANCE O.A. TO VALUE SHOWN. CALCULATIONS BASED ON EXCEPTION LISTED IN NCMC SECTION 403.2

FAN SCHEDULE											
UNIT NO.	SERVICE	AREA SERVED	CFM	S.P.	RPM	TYPE & ARRANGEMENT	MIN. MOTOR HP & VOLTAGE	MANUFACTURER & MODEL NO.	DRIVE	CONTROL SCHEME	REMARKS
EF-1	EXHAUST	TOILET	80	0.10"	MFG	FAN/LIGHT	43 WATTS/0.4 A 120/1Ø	BROAN MODEL HD80L	DIRECT	A	1-5
EF-2	EXHAUST	RESTROOM	150	0.10"	MFG	CEILING	60 WATTS/0.5 A 120/1Ø	BROAN MODEL GT150	DIRECT	B	1-4

- NOTES:
- SCREEN
 - BACKDRAFT DAMPER
 - COLOR BY ARCHITECT
 - INTEGRAL DISCONNECT SWITCH
 - FAN/LIGHT COMBO
- CONTROL OPTIONS:
- CONTROL W/ SWITCH
 - CONTROL W/ ROOM LIGHTS

KITCHEN FAN SCHEDULE												
UNIT NO.	SERVICE	HOOD SERVED	CFM	INPUT MBH	S.P.	RPM	TYPE & ARRANGEMENT	MIN. MOTOR HP & VOLTAGE	MANUFACTURER & MODEL NO.	MOTOR TYPE	CONTROL SCHEME	REMARKS
KEF-1	EXHAUST	H-1	2293	-	1.0"	MFG	UPBLAST	1.0 HP 120/1Ø	CAPTIVE AIRE DUB5HFA	TEAO-ECM	A,C	1,3,4,7,8
KEF-2	EXHAUST	H-2	1462	-	1.0"	MFG	UPBLAST	1.0 HP 120/1Ø	CAPTIVE AIRE DUB5HFA	TEAO-ECM	A,C	1,3,4,7,8
DOAS-1	SUPPLY	H-1,2	3250	328	0.5"	MFG	RTU	3.0 HP 208/3Ø	CAPTIVE AIRE CAS-HVAC3-1400-20-TOT	20P-3	B	2,3,6,8,9

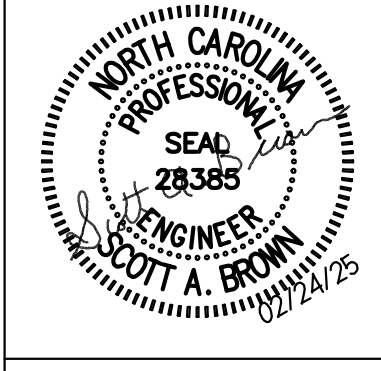
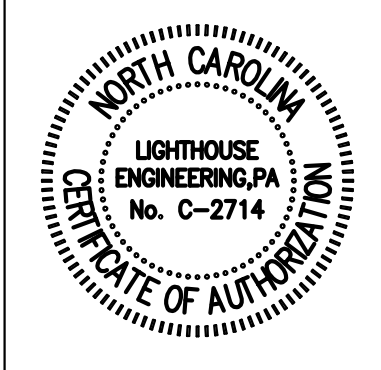
- NOTES:
- U.L. 762 LISTED FOR GREASE REMOVAL
 - U.L. OR ETL LISTED.
 - PROVIDE STARTER AS REQUIRED
 - W/ GREASE TRAP W/ DRAIN CONNECTION.
 - BACKDRAFT DAMPER
 - W/ ALUMINUM BIRD SCREEN.
 - FURNISH W/ EXHAUST EXTENSION.
 - COORDINATE W/ KITCHEN EQUIPMENT SUPPLIER DRAWINGS. SEE FOR MORE INFO.
 - COORDINATE GAS INPUT W/ P.C.
- CONTROL OPTIONS:
- CNTRL W/ HOOD SWITCH
 - INTERLOCK W/ HOODS
 - ALL HOODS TO BE INTERLOCKED TOGETHER.

DOAS ELECTRICAL SCHEDULE								
CONDENSER SIDE				GENERAL DATA				
UNIT TAG	SYSTEM SERVED	VOLTAGE (V/PH)	MCA (A)	MCOCP (A)	MANUF. MODEL	TONNAGE	SEER	NOTES
DOAS-1	KITCHEN	208/3Ø	81.5	90	20P-3	20	14	1-2

- NOTES:
- CONDENSERS PART OF PACKAGED UNIT
 - CONSULT CAPTIVEAIRE FOR CU MODEL # AND COORDINATE BREAKER SIZES

DIFFUSER SCHEDULE											
SYMBOL	CFM	NECK SIZE	MODULE SIZE	FRAME TYPE	PATTERN	DAMPER	MATERIAL	SERVICE	FINISH	MANUFACTURER & MODEL NO.	NOTES
(A)	AS NOTED	AS NOTED	24x24	LAY-IN	4-WAY	YES	STEEL	SUPPLY	NOTE 2	TITUS TDC	1-3
(B)	AS NOTED	AS NOTED	AS NOTED	SURFACE	FIX BLD.	YES	STEEL	SUPPLY	NOTE 2	TITUS 300RS	1-3
(C)	AS NOTED	AS NOTED	12x12	SURFACE	4-WAY	YES	STEEL	SUPPLY	NOTE 2	TITUS TDC	1-3

- NOTES:
- DIFFUSER DESIGNATIONS ON PLANS AS FOLLOWS:
DIFFUSER OR NECK SIZE: $\frac{8x4}{75}$ (A) DIFFUSER TYPE AS NOTED ABOVE
AIR QUANTITY: $\frac{8x4}{75}$ (A)
 - FINISH TO MATCH / BE ABLE MATCH CEILING OR WALL OR DOOR.
 - FACTORY INSULATION BACKING ON GRILLES EXPOSED TO NON-CONDITIONED AREAS. ALTERNATELY, FIELD SUPPLY AND INSTALL.



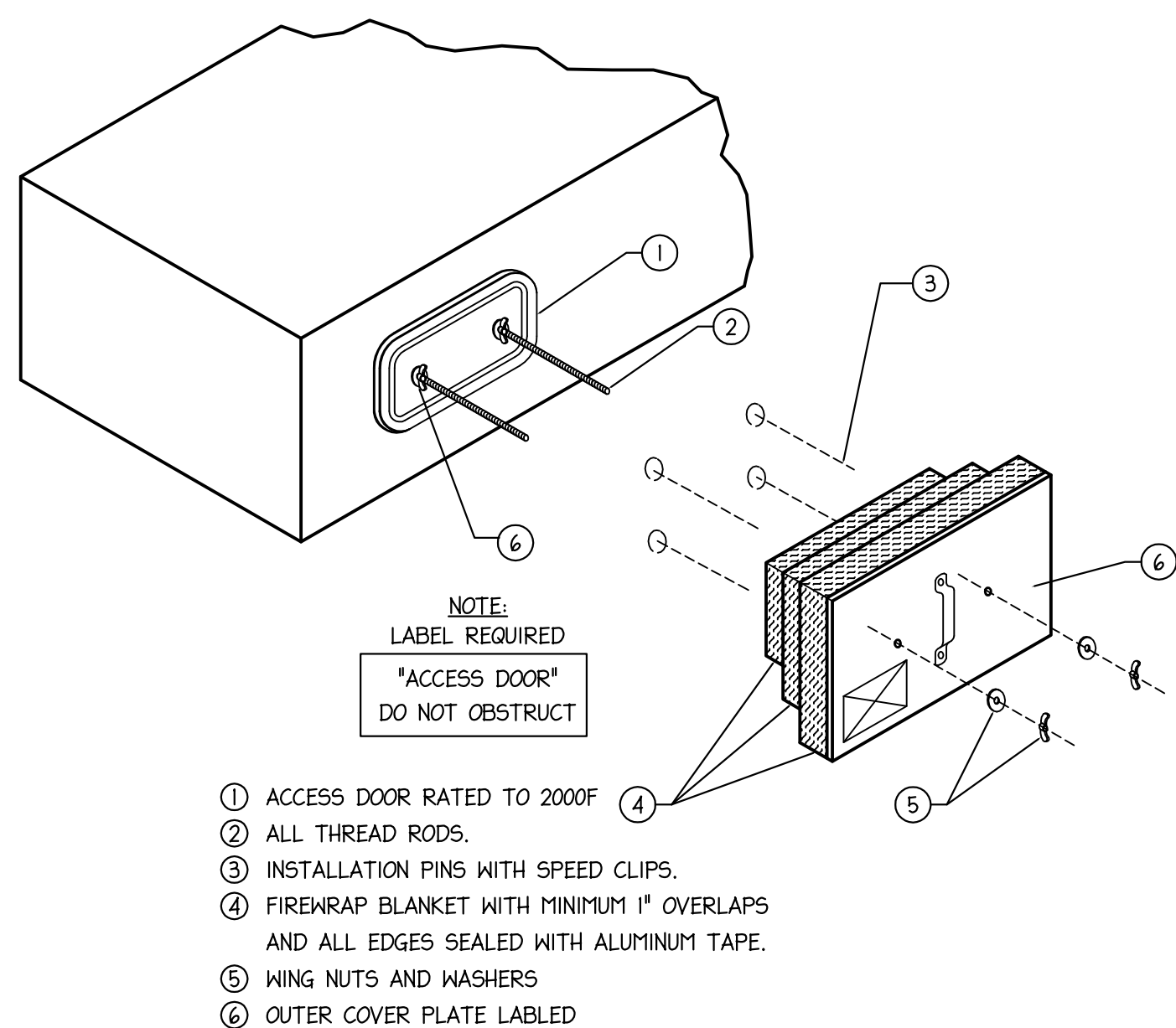
mon(arc) studio
701 W Trinity Ave #117
Durham, NC 27701

for permit 10/11/24
ifc 02/21/2025

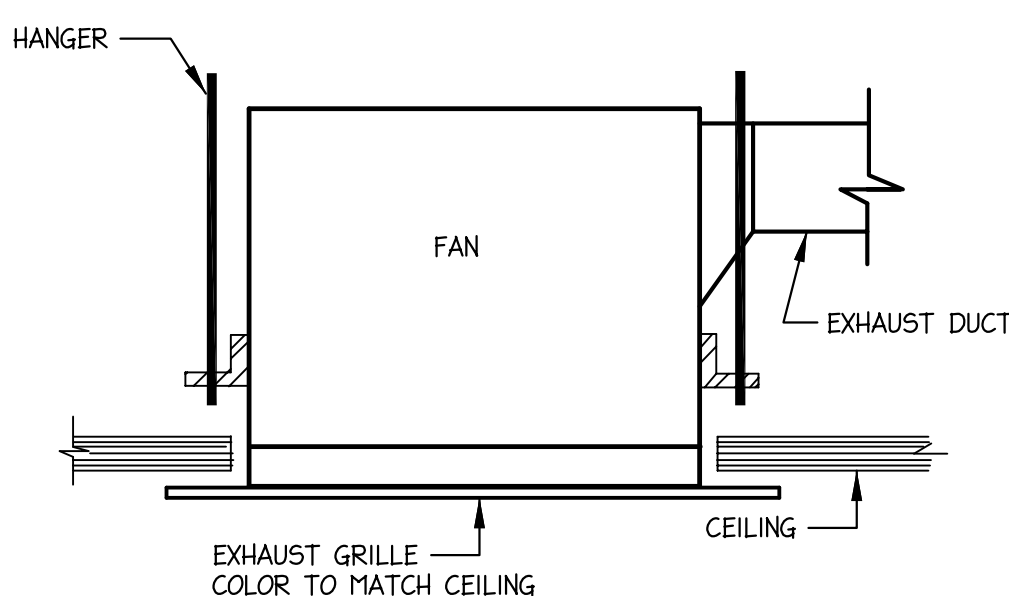
Hutchins Showroom
a restaurant upfit
408 W Geer St.
Durham, NC 27701

Mechanical Legend, Notes, and Schedules

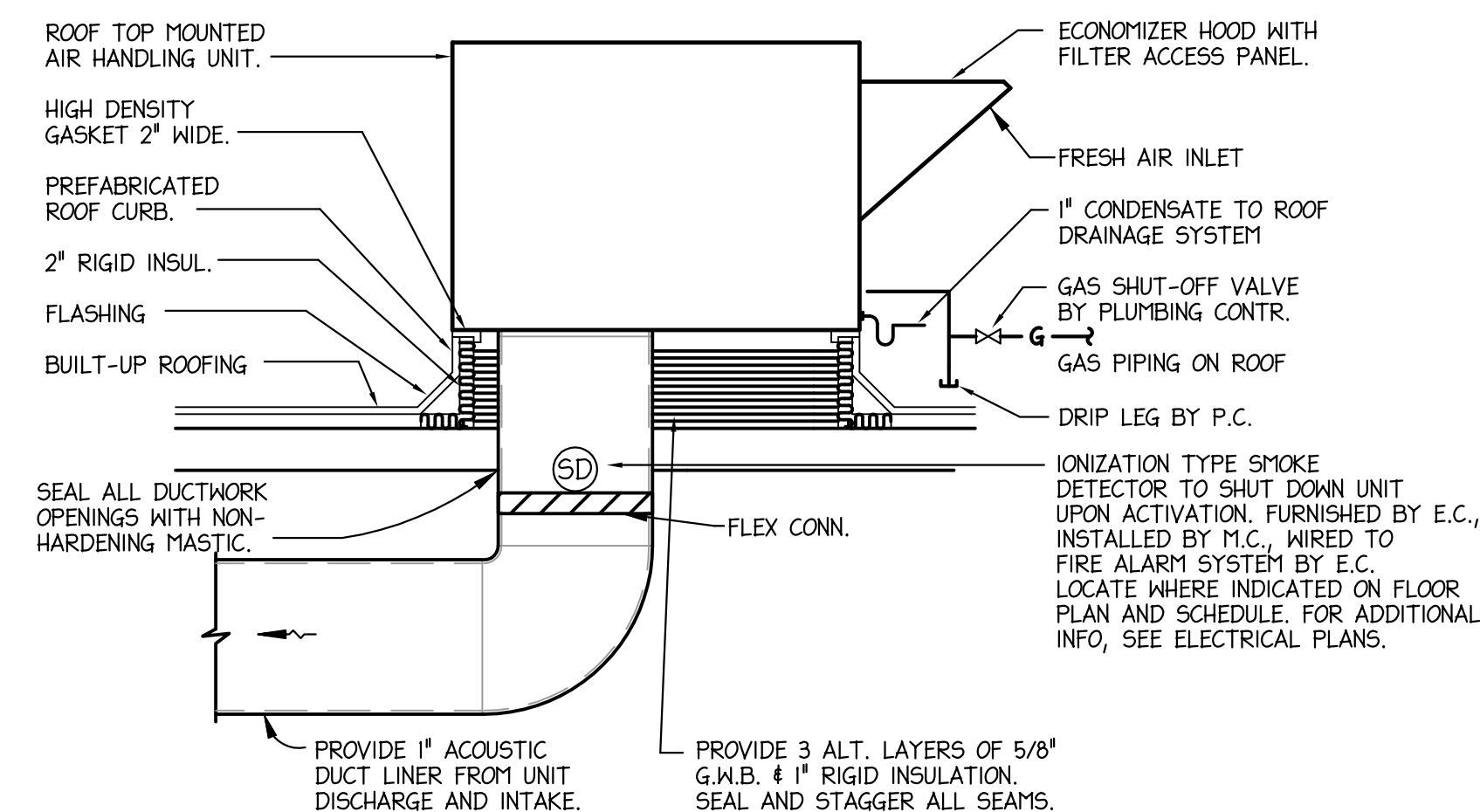
M001



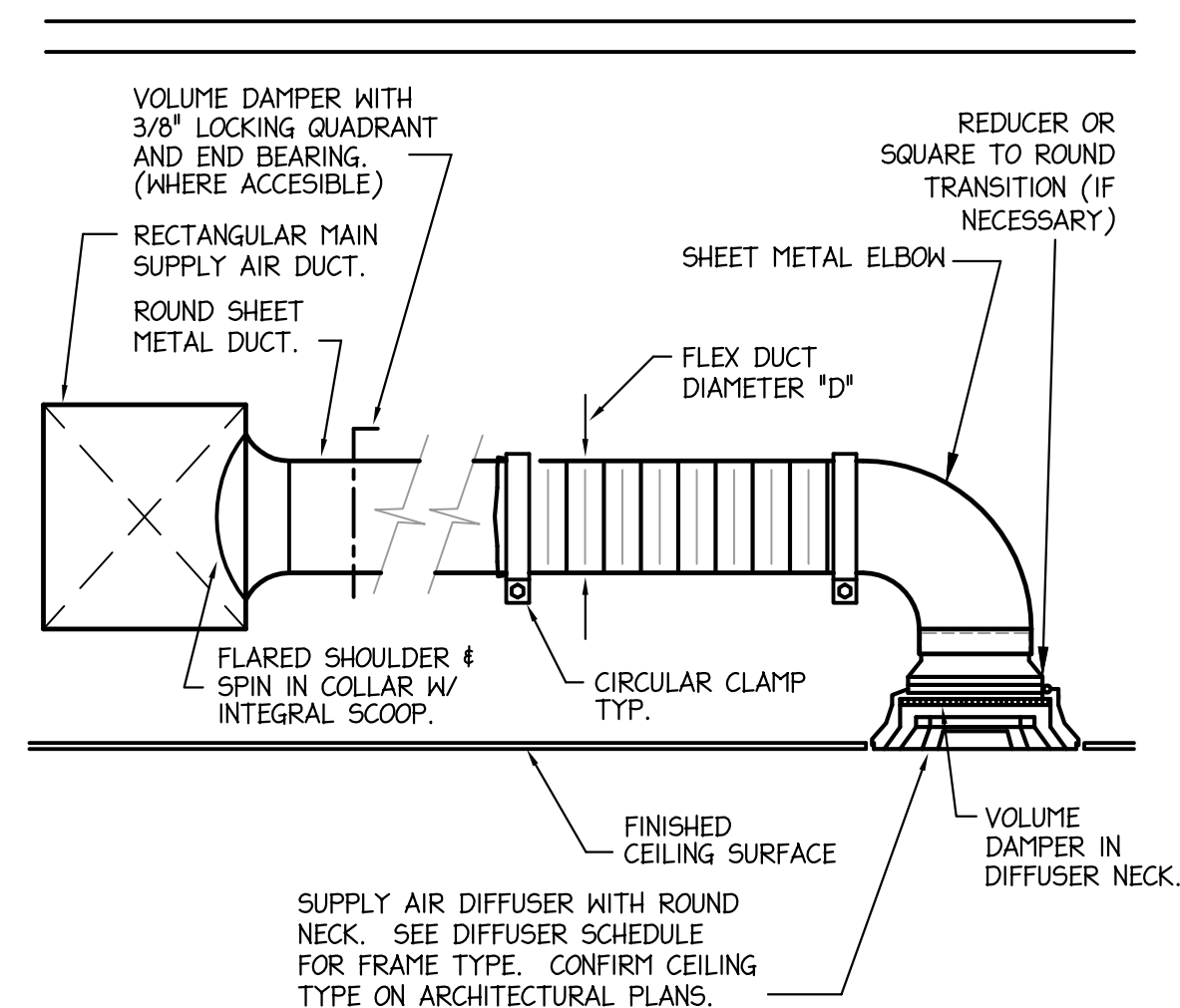
5 GREASE DUCT CLEANOUT DETAIL
NO SCALE



4 EXHAUST FAN DETAIL
NO SCALE



3 GAS DOAS UNIT
NO SCALE



2 SUPPLY AIR DIFFUSER DETAIL
NO SCALE

KITCHEN HOOD NOTES

- KITCHEN EXHAUST DUCT TO BE CONSTRUCTED OF 1/2 GAUGE BLACK IRON W/CONTINUOUS EXTERNAL LIQUID-TIGHT WELDS
- SLOPE EXHAUST DUCT 1/4" PER FOOT MINIMUM.
- RADIUS THROAT AND ELBOW OF EXHAUST DUCT
- OFFSETS WITH MINIMUM 6" INNER RADIUS PROVIDE CLEAN-OUTS PER CODE.
- WRAP ENTIRE DUCT WITH ASTM E2336 APPROVED FIREWRAP FROM HOOD EXHAUST TO FAN DISCHARGE WHERE REQ'D. FOR CLEARANCES PER CODE.
- DUCT WRAP TO BE INSTALLED PER MFR'S REQUIREMENTS AND UL CLASSIFICATION AND TESTS.
- GC TO SPACE STRUCTURE TO ACCOMMODATE DUCTS W/ WRAP AS REQ'D. (MIN 18" CLEAR TO COMBUSTIBLES) & PROVIDE RATED CHASE W/RATED ACCESS DOOR AS REQ'D.
- PROVIDE/PROTECT CLEAN-OUTS PER MFR'S AND U.L. REQUIREMENTS.
- PROVIDE WITH FACTORY PRE-WIRED MOTOR CONTROL PACKAGE.
- INSTALL HOOD AT HEIGHT PER CODE & W/ GREASE FILTERS 3.5' ABOVE COOKING SURFACE W/OPEN FLAME, PER CODE.
- HOOD CAPTURE SIZE BASED UPON EQUIP. SCHEDULED TO BE UNDER HOOD PLUS MIN. 6" ON ALL EXPOSED SIDES PER CODE. FIELD VERIFY/COORD. HOOD SIZE & FANS CAPACITIES W/ACTUAL EQUIP. FURNISHED.
- EXACT HOOD-DUCT CONNECTION & TRANSITION SIZES SHALL BE FULLY COORD. W/HOOD MFG. PRIOR TO FABRICATION
- MAKE-UP AIR FAN TO SHUTDOWN UPON DETECTION OF FIRE SUPPRESSION SYSTEM.
- EXHAUST FAN TO REMAIN OPERATING DURING "ALARM".
- HOOD MUST MEET U.L. 710
- SECTIONS OF GREASE DUCT THAT ARE INACCESSIBLE FROM THE HOOD OR DISCHARGE OPENINGS SHALL BE PROVIDED WITH CLEANOUT OPENINGS SPACED NOT MORE THAN 20 FEET APART AND NOT MORE THAN 10 FEET FROM CHANGES IN DIRECTION GREATER THAN 45°.

PROVIDED FEATURES:

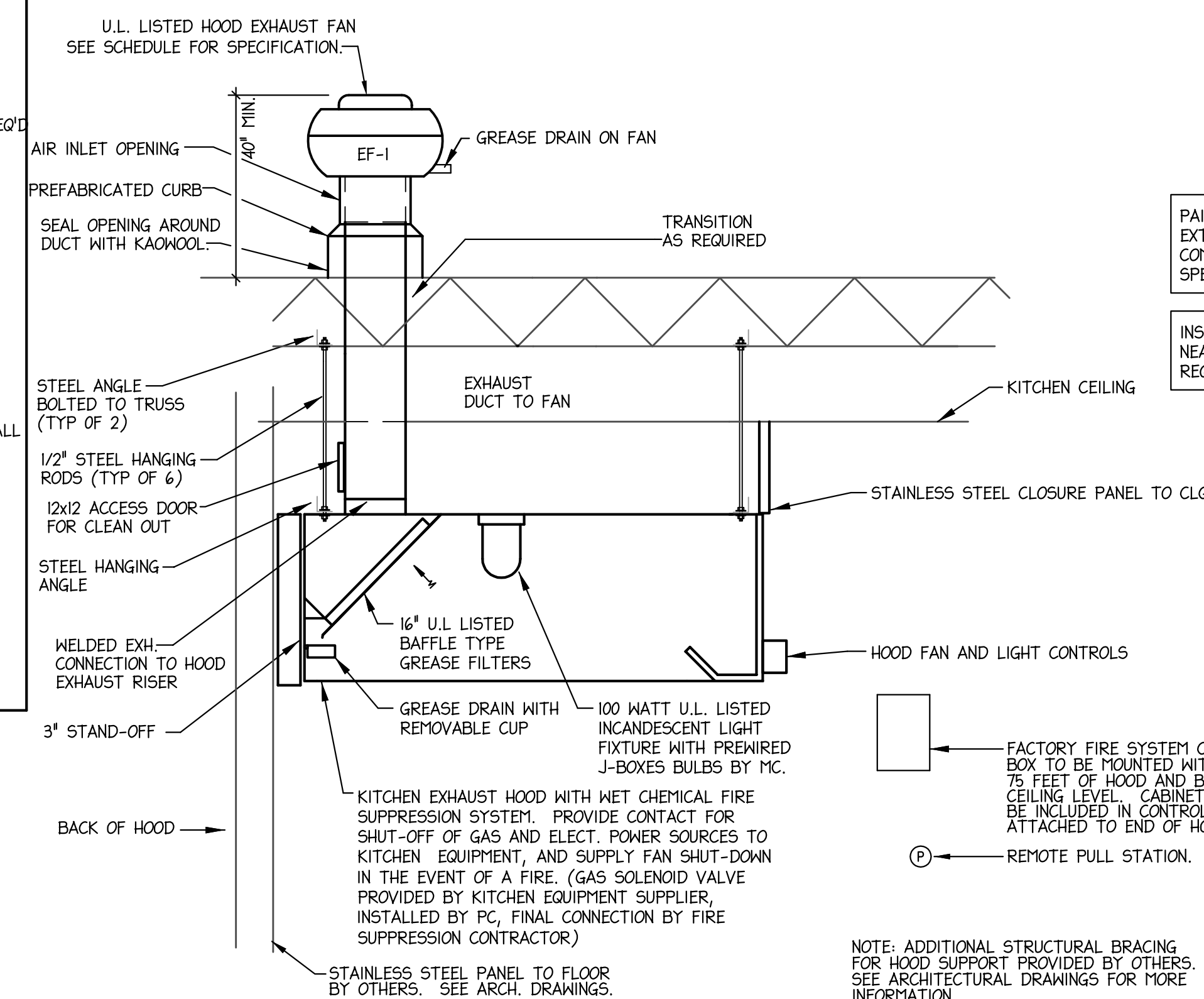
- ROOF MOUNTED FANS RESTAURANT MODEL
- UL 762 & UL 705
- WEATHERPROOF DISCONNECT
- THERMAL OVERLOAD PROTECTION
- HIGH HEAT OPERATION (400°F)
- GREASE CLASSIFICATION TESTING:
 - CSA APPROVED NORMAL TEMPERATURE TEST EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 400°F (204°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.
 - ABNORMAL FLARE-UP TEST EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (315°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

PROVIDED OPTIONS:

- GREASE CUP
- HINGED FAN
- HASP KIT
- INSULATED CURB
- PITCHED CURB

KITCHEN HOOD FIRE SUPPRESSION SYSTEM

PROVIDE A PRE-ENGINEERED, WET CHEMICAL, CARTRIDGE OPERATED TYPE FIRE SUPPRESSION SYSTEM. IT SHALL BE A FIXED NOZZLE AGENT DISTRIBUTION NETWORK, AND SHALL BE UL LISTED. THE SYSTEM SHALL BE CAPABLE OF AUTOMATIC DETECTION AND REMOTE ACTUATION. THE SYSTEM SHALL BE IN ACCORDANCE WITH NFPA 96 AND AUTHORITY HAVING JURISDICTION. DISCHARGE NOZZLES WILL PROVIDE COVERAGE OF, BUT NOT LIMITED TO, THE HOOD AREA AND EXHAUST DUCT. FURNISH ELECTRIC OPERATED SHUT OFF VALVE. THE SYSTEM SHALL BE AN ANSUL MODEL R-102 OR APPROVED EQUAL.



PAINT ALL FLASHING AND EXTERNAL MECHANICAL COMPONENTS, COLOR AS SPECIFIED BY ARCHITECT.

INSULATE COMBUSTIBLES NEAR EXHAUST DUCT AS REQUIRED BY LOCAL CODE

FACTORY FIRE SYSTEM CONTROL BOX TO BE MOUNTED WITHIN 75 FEET OF HOOD AND BELOW CEILING LEVEL. CABINET MAY BE INCLUDED IN CONTROL PANEL ATTACHED TO END OF HOOD.

NOTE: ADDITIONAL STRUCTURAL BRACING FOR HOOD SUPPORT PROVIDED BY OTHERS. SEE ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.

1 KITCHEN HOOD (TYPE 1) DETAIL - GENERIC
NO SCALE

FOR QUESTIONS, CALL THE
Eastern North Carolina
REGION 36
PHONE: (919) 825 - 3566
EMAIL: reg36@captivair.com

PATENT NUMBERS
EXHAUST HOODS ND-2/BD-2/SND-2 (CANADA) - CA PATENT 2520435 C.

HOOD INFORMATION - JOB#6967115

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)					HOOD CONSTRUCTION	HOOD CONFIG			
										WIDTH	LENG	HEIGHT	DIA	CFM		VEL	SP	END TO END	ROW
1	KH-1 LEFT	5412 SND-2	CAPTIVEAIRE	10' 11"	450 DEG	I	MEDIUM	210	2293			4'	14'	2293	2145	-1.052'	430 SS WHERE EXPOSED	LEFT	ALONE
2	KH-2 RIGHT	5412 SND-2	CAPTIVEAIRE	6' 6"	450 DEG	I	MEDIUM	225	1462			4'	12'	1462	1861	-0.749'	430 SS WHERE EXPOSED	RIGHT	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT	
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM	SIZE			ELECTRICAL MODEL #
1	KH-1 LEFT	CAPTRATE SOLO FILTER	8	20"	16"	85% SEE FILTER SPEC	5	RECESSED ROUND	NO						YES	662 LBS
2	KH-2 RIGHT	CAPTRATE SOLO FILTER	4	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO						YES	412 LBS

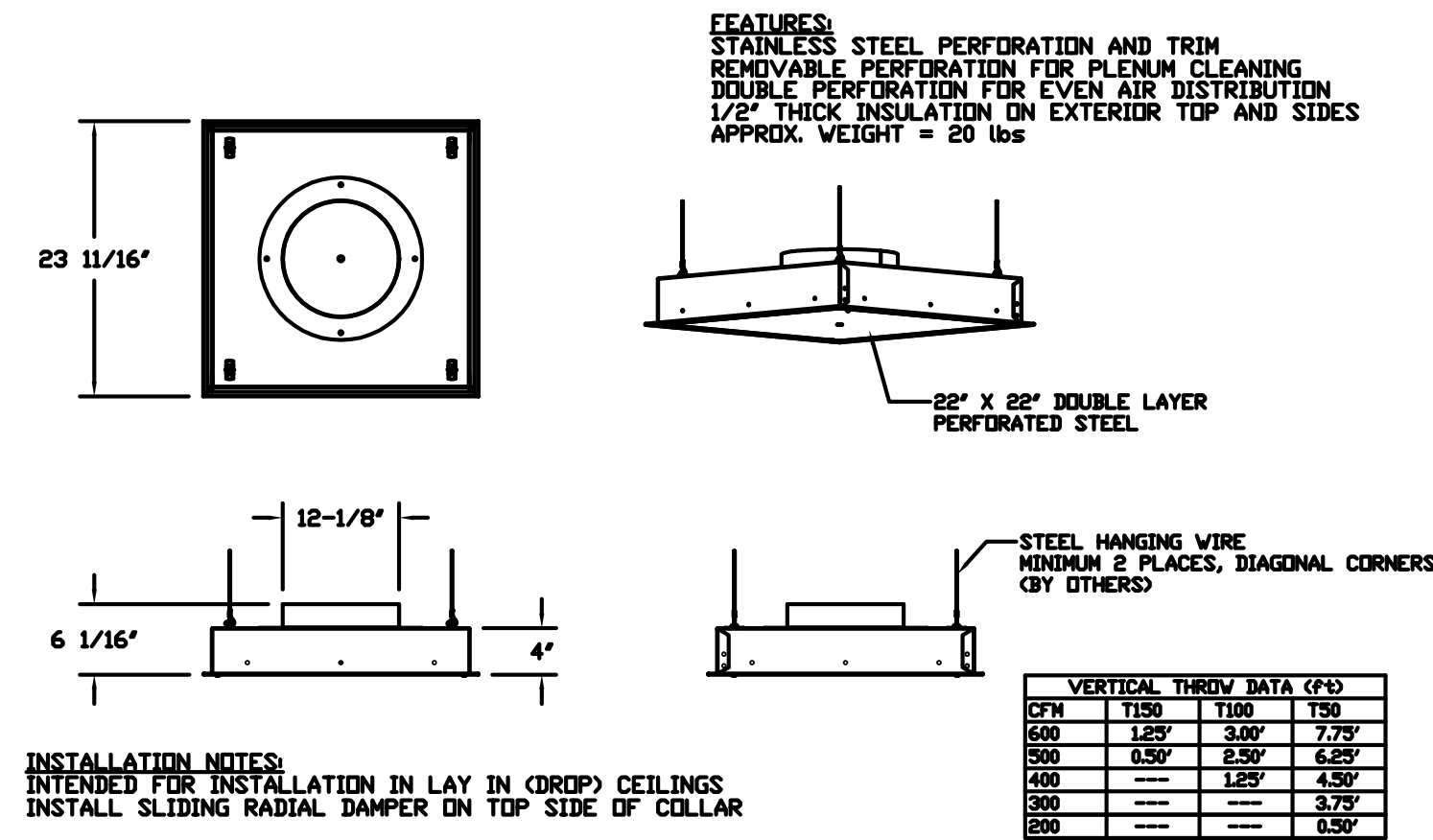
HOOD OPTIONS

HOOD NO	TAG	OPTION
1	KH-1 LEFT	FIELD WRAPPER 18.00' HIGH FRONT.
		BACKSPLASH 68.00' HIGH X 209.00' LONG 430 SS VERTICAL.
		BACK STANDOFF (FLAT) 5' WIDE 131' LONG.
		INSULATION FOR TOP OF HOOD.
2	KH-2 RIGHT	INSULATION FOR BACK OF HOOD.
		LEFT VERTICAL END PANEL 27' TOP WIDTH, 21' BOTTOM WIDTH, 68' HIGH INSULATED 430 SS.
		FIELD WRAPPER 18.00' HIGH FRONT.
		INSULATION FOR TOP OF HOOD.
		INSULATION FOR BACK OF HOOD.
		RISER SENSOR INSTALL 6IN PLEN.
		RIGHT VERTICAL END PANEL 27' TOP WIDTH, 21' BOTTOM WIDTH, 68' HIGH INSULATED 430 SS.

WALL-MOUNT UTILITY CABINET

HOOD NO	LOCATION	SIZE	UTILITY CABINET(S)			WEIGHT
			FIRE SYSTEM	ELECTRICAL	SWITCHES	
2	WALL MNT	12"x60"x24"	TANK FS	4.0/4.0/4.0	SC-E012011MA 1 LIGHT 1 FAN	440.00 LBS

QTY 6-DROP-IN PERFORATED SUPPLY PLENUM DIFFUSER (DI-PSP)



SPECIFICATION: CAPTRATE® GREASE-STOP® SOLO FILTER

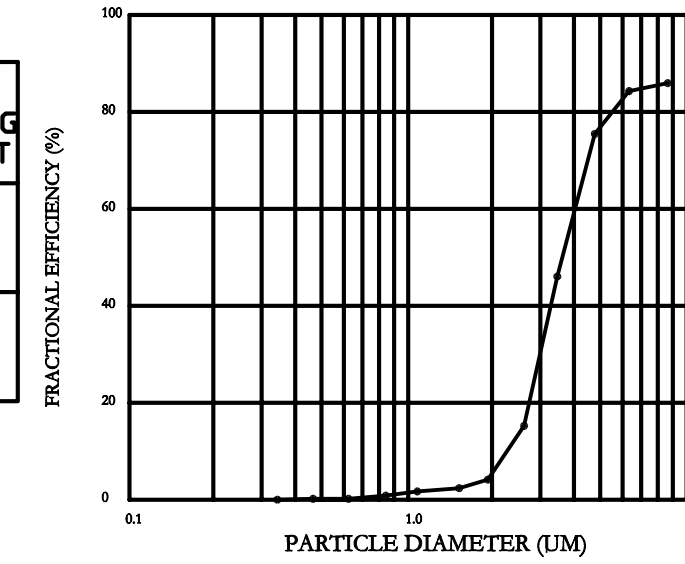
THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

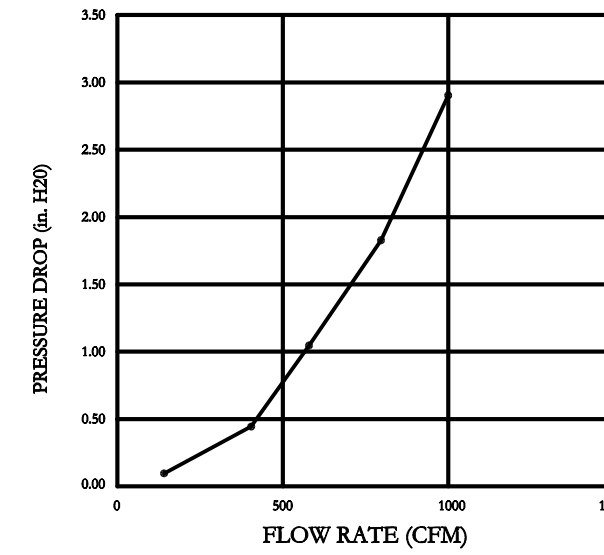
UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE. THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

EFFICIENCY VS. PARTICLE DIAMETER



PRESSURE DROP VS. FLOW RATE



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:
NFPA #96.
NSF STANDARD #2.
UL STANDARD #1046.
INT. MECH. CODE (IMC).
ULC-S649.



REVISIONS

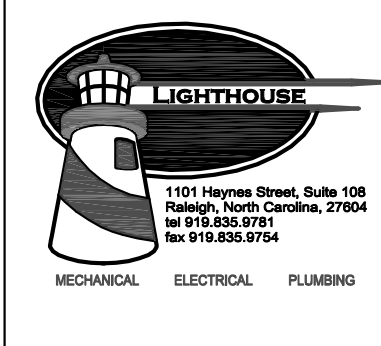
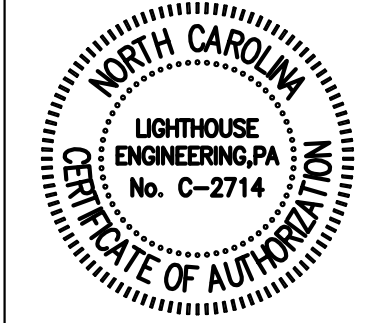
DESCRIPTION	DATE

CAPTIVE

Eastern North Carolina
4641 Paragon Park Rd., Raleigh, NC, 27616 PHONE: (919) 825 - 3566 FAX: 9192275917 EMAIL: reg36@captivair.com

HUTCHINS SHOWROOM-DURHAM-R4 (20T)
408 West Geer Street,
Durham, NC, 27701

DATE: 10/28/2024
DWG.#: 6967115
DRAWN BY:
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 1



mon(arc) studio
701 W Trinity Ave #117
Durham, NC 27701

for permit 10/11/24

Hutchins Showroom
a restaurant upfit
408 W Geer St.
Durham, NC 27701

Mechanical Details

M003

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EMAIL: reg36@captivair.com

PATENT NUMBERS
EXHAUST HOODS ND-2/BD-2/SND-2 (CANADA) - CA PATENT 2520435 C.

HOOD INFORMATION - JOB#6967115

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)					HOOD CONSTRUCTION	HOOD CONFIG			
										WIDTH	LENG	HEIGHT	DIA	CFM		VEL	SP	END TO END	ROW
1	KH-1 LEFT	5412 SND-2	CAPTIVEAIRE	10' 11"	450 DEG	I	MEDIUM	210	2293			4'	14'	2293	2145	-1.052'	430 SS WHERE EXPOSED	LEFT	ALONE
2	KH-2 RIGHT	5412 SND-2	CAPTIVEAIRE	6' 6"	450 DEG	I	MEDIUM	225	1462			4'	12'	1462	1861	-0.749'	430 SS WHERE EXPOSED	RIGHT	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S)				LIGHT(S)			UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT		
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM			SIZE	ELECTRICAL MODEL #
1	KH-1 LEFT	CAPTRATE SOLO FILTER	8	20"	16"	85% SEE FILTER SPEC	5	RECESSED ROUND	NO						YES	662 LBS
2	KH-2 RIGHT	CAPTRATE SOLO FILTER	4	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO						YES	412 LBS

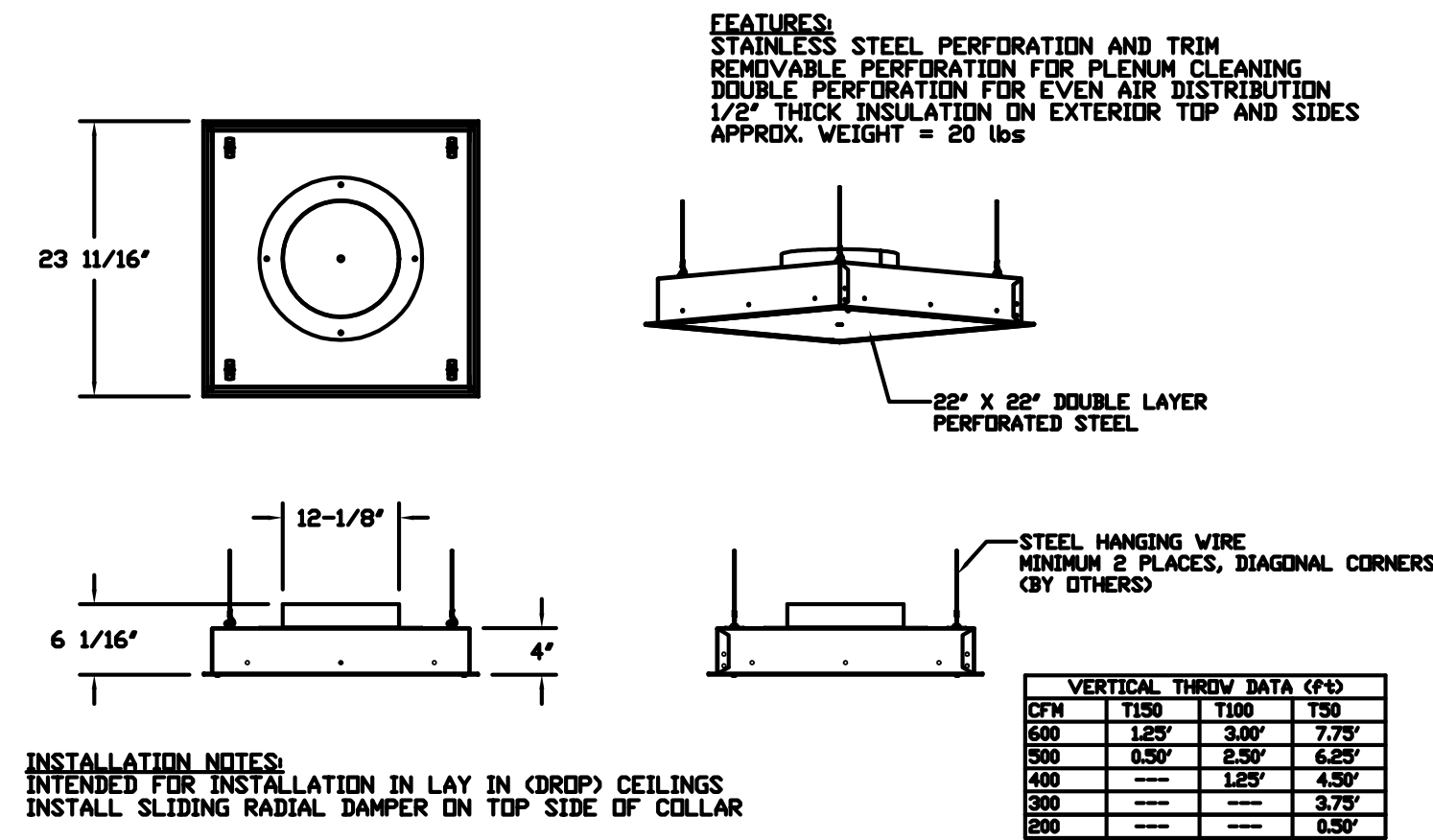
HOOD OPTIONS

HOOD NO	TAG	OPTION
1	KH-1 LEFT	FIELD WRAPPER 18.00' HIGH FRONT.
		BACKSPLASH 68.00' HIGH X 209.00' LONG 430 SS VERTICAL.
		BACK STANDOFF (FLAT) 5' WIDE 131' LONG.
		INSULATION FOR TOP OF HOOD.
2	KH-2 RIGHT	INSULATION FOR BACK OF HOOD.
		LEFT VERTICAL END PANEL 27' TOP WIDTH, 21' BOTTOM WIDTH, 68' HIGH INSULATED 430 SS.
		FIELD WRAPPER 18.00' HIGH FRONT.
		INSULATION FOR TOP OF HOOD.
		INSULATION FOR BACK OF HOOD.
		RISER SENSOR INSTALL 6IN PLEN.
		RIGHT VERTICAL END PANEL 27' TOP WIDTH, 21' BOTTOM WIDTH, 68' HIGH INSULATED 430 SS.

WALL-MOUNT UTILITY CABINET

HOOD NO	LOCATION	SIZE	UTILITY CABINET(S)			WEIGHT
			FIRE SYSTEM	ELECTRICAL	SWITCHES	
2	WALL MNT	12"x60"x24"	TANK FS	4.0/4.0/4.0	SC-E012011MA 1 LIGHT 1 FAN	440.00 LBS

QTY 6-DROP-IN PERFORATED SUPPLY PLENUM DIFFUSER (DI-PSP)



SPECIFICATION: CAPTRATE® GREASE-STOP® SOLO FILTER

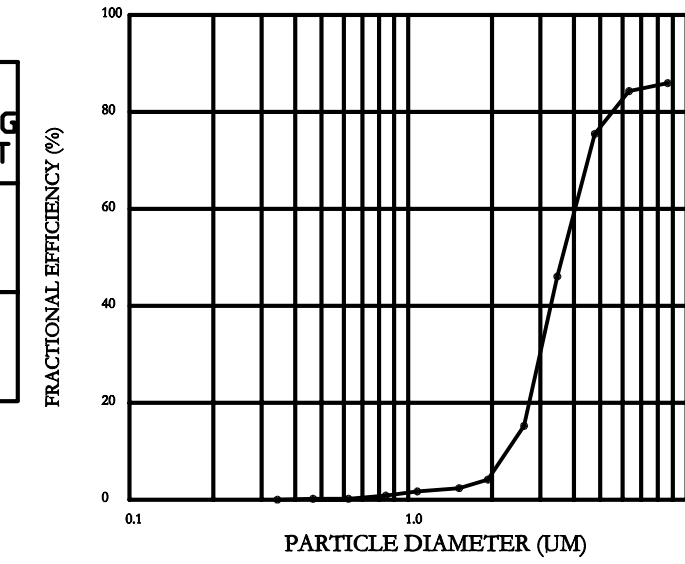
THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

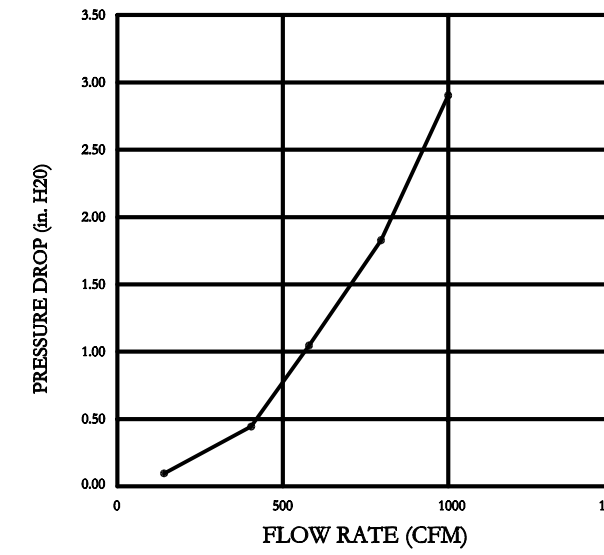
UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE. THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

EFFICIENCY VS. PARTICLE DIAMETER



PRESSURE DROP VS. FLOW RATE



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:
NFPA #96.
NSF STANDARD #2.
UL STANDARD #1046.
INT. MECH. CODE (IMC).
ULC-S649.



REVISIONS

DESCRIPTION	DATE

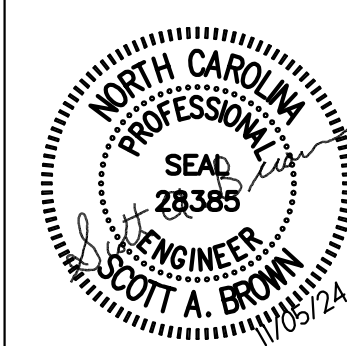
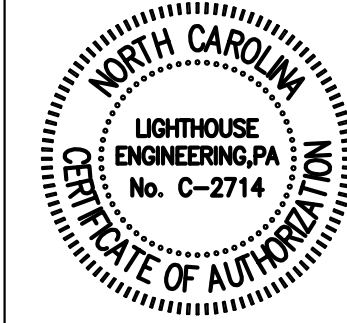
CAPTIVE

Eastern North Carolina
4641 Paragon Park Rd., Raleigh, NC, 27616 PHONE: (919) 825 - 3566 FAX: 9192275917 EMAIL: reg36@captivair.com

HUTCHINS SHOWROOM-DURHAM-R4 (20T)
408 West Geer Street,
Durham, NC, 27701

DATE: 10/28/2024
DWG.#: 6967115
DRAWN BY:
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 1



mon(arc) studio
701 W Trinity Ave #117
Durham, NC 27701

for permit 10/11/24

Hutchins Showroom
a restaurant upfit
408 W Geer St.
Durham, NC 27701

Mechanical Details

M004

DOAS/RTU FAN SCHEDULE - JOB#6867115

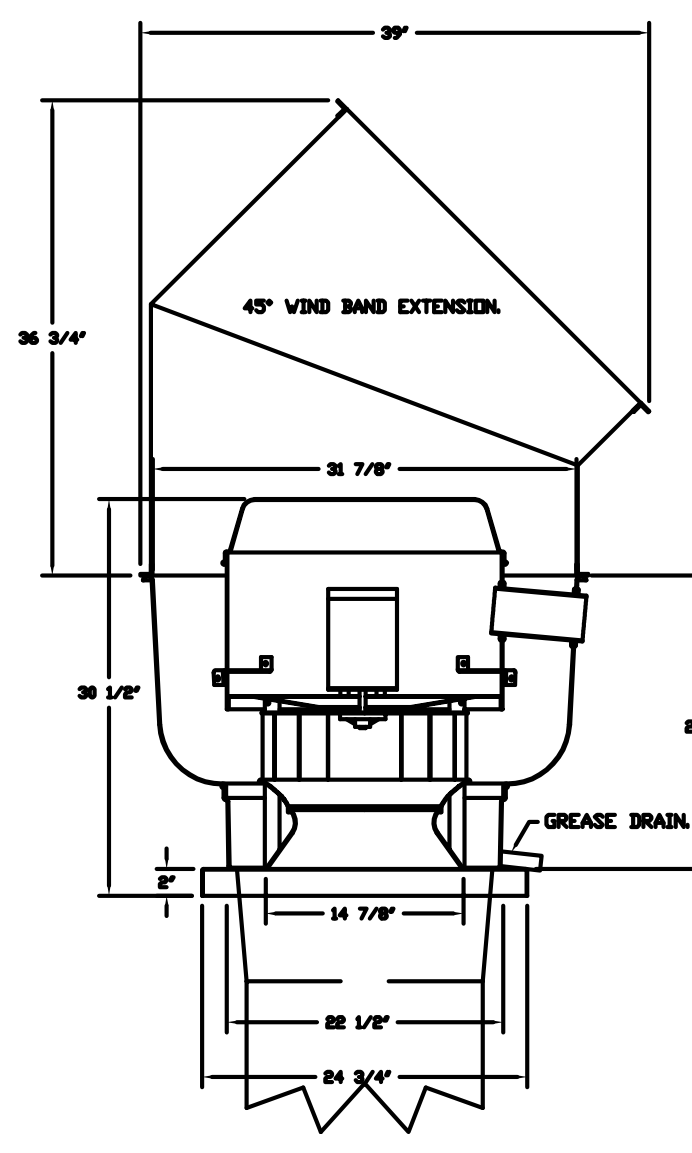
FAN INFORMATION										ELECTRICAL INFORMATION										COOLING INFORMATION										REHEAT INFORMATION										GAS HEAT INFORMATION										NOTES
FAN UNIT NO.	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	RETURN AIR CFM	MAX OUTSIDE AIR CFM	TOTAL CFM	WEIGHT (LBS)	ESP	HP	PHASE	VOLT	NCA	NDCP	OUTSIDE AIR DB	INDOOR AIR DB	LEAVING AIR DB	DB	WB	DB	WB	SP	TOTAL	SENS.	DEER	ISHRE	DISCHARGE DB	WB	DESIRED	MAX	MOISTURE REMOVAL RATE	GAS TYPE	INPUT BTUH	OUTPUT BTUH	TEMP RISE	REQUIRED INPUT GAS PRESSURE													
3	DOAS	1	CAS-HVAC3-1400-20-20T	CAPTIVEAIR	20P-3	0	3250	3250	2725	0.500	3.00	3	208	01.50A	90A	82.5°F	77.2°F	82.5°F	77.2°F	54.4°F	54.4°F	54.5°F	255.3	NH3	99.9	NH3	18.2	6.0	70.0°F	60.4°F	56.2	NH3	29.6	37.9	7.9	LBS/HR	NATURAL	32707	265334	70°F	7 IN. V.C. - 14 IN. V.C.	1,2,3,4,5,6,7,8,9,10,11,12,13,14								

- NOTES:**
- INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL.
 - DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE.
 - INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER.
 - REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE.
 - CC MOTOR CONDENSING FANS.
 - ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE.
 - SUCTON LINE ACCUMULATOR.
 - FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER.
 - AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT.
 - 2" EXTERIOR RAIN-WALL CONSTRUCTION W/ R-3 INSULATION-MINIMUM 20GA EXTERIOR W/ TIGA BASE.
 - 8X EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE, 15:1 TURNDOWN WITH NG AND 10:1 TURNDOWN WITH LP.
 - SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE.
 - FULLY MODULATING HOT GAS REHEAT.
 - DOWN DISCHARGE/DOWN RETURN.

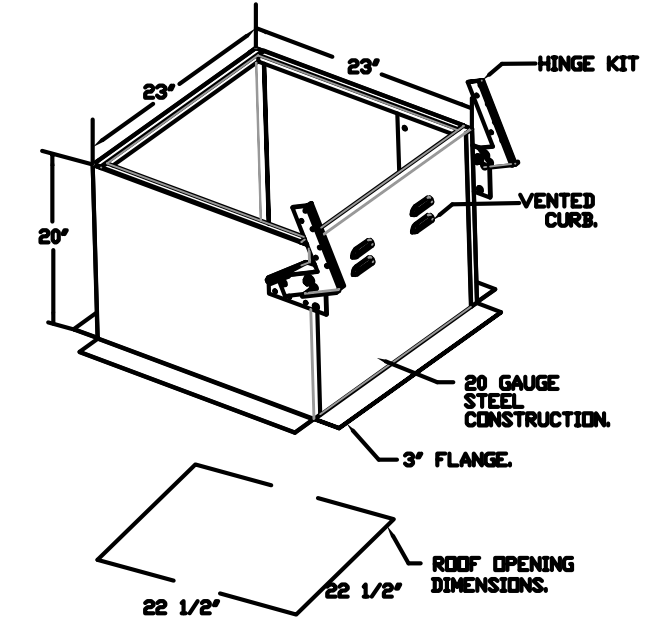
FAN OPTIONS

FAN UNIT NO.	TAG	QTY	DESCRIPTION
1	KEF-1	1	GREASE BOX
			FAN BASE CERAMIC SEAL - DU/DRB5FA - INSTALLED AT PLANT - FOR GREASE DUCTS
2	KEF-2	1	45° VIND BAND EXTENSION IS (SHIPS LOOSE), ADDS 3 WEEKS TO FAN LEAD TIME
			ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL -RTC- (TELECO MOTOR, CCW ROTATION)
3	DOAS	1	2 YEAR PARTS WARRANTY
			FAN BASE CERAMIC SEAL - DU/DRB5FA - INSTALLED AT PLANT - FOR GREASE DUCTS
3	DOAS	1	45° VIND BAND EXTENSION IS (SHIPS LOOSE), ADDS 3 WEEKS TO FAN LEAD TIME
			ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL -RTC- (TELECO MOTOR, CCW ROTATION)
3	DOAS	1	2 YEAR PARTS WARRANTY
			INLET PRESSURE GAUGE, 0-35"
3	DOAS	1	TOTAL CFM MONITORING
			INTAKE FIRESTAT SET TO 150°F
3	DOAS	1	FIRESTAT
			DISCHARGE FIRESTAT SET TO 240°F
3	DOAS	1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU 750VA TRANSFORMER USED IF A NON-DCV PREWIRE CONTROLS THIS UNIT. THE 800, #47, #4W OR #22P PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE.
			CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
3	DOAS	1	RTU DOWN DISCHARGE, 400, 500 MM
			2" SERV 13 FILTERS FOR RTU3 QTY. 4)
3	DOAS	1	2" SERV 8 FILTERS FOR RTU3 QTY. 4)
			OVERHEAT STAT
3	DOAS	1	50 TON MODULATING COOLING OPTION, 200/230V, R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
			50 TON MODULATING REHEAT OPTION - SPACE SETPOINT CONTROL - R410A
3	DOAS	1	RTU3 CURB DUCT HANGER
			COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS
3	DOAS	1	OCCUPIED SCHEDULING
			HIGH TURNDOWN OPTION FOR DOAS UNITS
3	DOAS	1	MANIFOLD PRESSURE GAUGE, 0 TO 10" V.C. 2 FURNACES
			CLOGGED FILTER SWITCH - NOTIFICATION ON HMI
3	DOAS	1	RTU INTAKE/RETURN DAMPER - MANUAL CONTROL VIA HMI
			RTU DOWN RETURN
3	DOAS	1	REHOTE TEMPERATURE AND HUMIDITY SPACE SENSOR
			VAV PACKAGE W/ MANUAL/DCV CONTROL (371 VFD INCLUDED)
3	DOAS	1	UNIT MOUNTED VFD CONFIGURED FOR DCV
			24VAC FIRE INPUT
3	DOAS	1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIR SERVICE VISIT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)
			EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET

FAN #1, DOAS-1, #2, DOAS-2 - BURSHA EXHAUST FAN



- FEATURES:**
- DIRECT DRIVE CONSTRUCTION ON BELTS/PULLEYS.
 - ROOF MOUNTED FANS.
 - RESTAURANT MODEL.
 - UL75 AND UL98 AND ILL-5645.
 - VARIABLE SPEED CONTROL.
 - INTERNAL WIRING.
 - THERMAL OVERLOAD PROTECTION SINGLE PHASE.
 - HIGH HEAT OPERATION 300°F/149°C.
 - GREASE CLASSIFICATION TESTING.
 - HMI OR SAFETY DISCONNECT SWITCH.
- NORMAL TEMPERATURE TEST:**
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE COMBUSTION BURNING GREASE VAPORS AT 600°F/316°C FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.
- ABNORMAL FLAME-UP TEST:**
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE COMBUSTION BURNING GREASE VAPORS AT 600°F/316°C FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.
- DESIGNS:**
- GREASE BOX
 - FAN BASE CERAMIC SEAL - DU/DRB5FA - INSTALLED AT PLANT - FOR GREASE DUCTS
 - 45° VIND BAND EXTENSION IS (SHIPS LOOSE), ADDS 3 WEEKS TO FAN LEAD TIME
 - ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL -RTC- (TELECO MOTOR, CCW ROTATION)
 - 2 YEAR PARTS WARRANTY



FAN ACCESSORIES

FAN UNIT NO.	TAG	EXHAUST		SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT DISCHARGE	SIDE GRAVITY DAMPER	METORIZED DAMPER	WALL MOUNT
1	KEF-1	YES					
2	KEF-2	YES					

CURB ASSEMBLIES

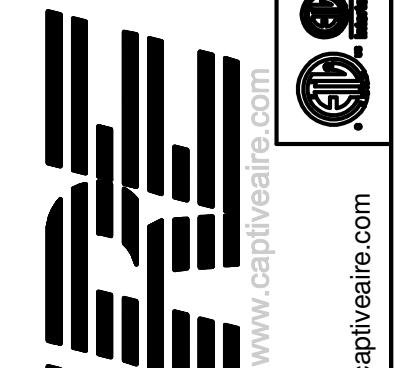
NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	1	KEF-1	36 LBS	CURB	23,000"V X 23,000"L X 20,000"H VENTED HINGED
2	2	KEF-2	36 LBS	CURB	23,000"V X 23,000"L X 20,000"H VENTED HINGED
3	3	DOAS	104 LBS	CURB	29,500"V X 29,000"L X 14,000"H INSULATED

EXHAUST FAN INFORMATION - JOB#6867115

FAN UNIT NO.	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL.	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SCONES
1	KEF-1	1	DUR5FA	CAPTIVEAIR	2293	1100	1577	TEAD-EDM	1.000	0.7000	1	115	11.6	786 FPM	126	16.9
2	KEF-2	1	DUR5FA	CAPTIVEAIR	1462	1.000	1270	TEAD-EDM	1.000	0.3660	1	115	11.6	463 FPM	126	10.1

REVISIONS

DESCRIPTION	DATE



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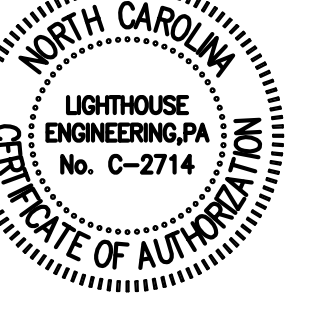
for permit 10/11/24

CAPTIVEAIR
Eastern North Carolina
4641 Paragon Park Rd., Raleigh, NC, 27616 PHONE: (919) 825-3566 FAX: 9192275917 EMAIL: reg@captivair.com

HUTCHINS SHOWROOM-DURHAM-R4 (20T)
408 West Geer Street,
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MASTER DRAWING

SHEET NO. 4



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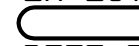
Hutchins Showroom
a restaurant upfit
408 W Geer St.
Durham, NC 27701

Mechanical Details

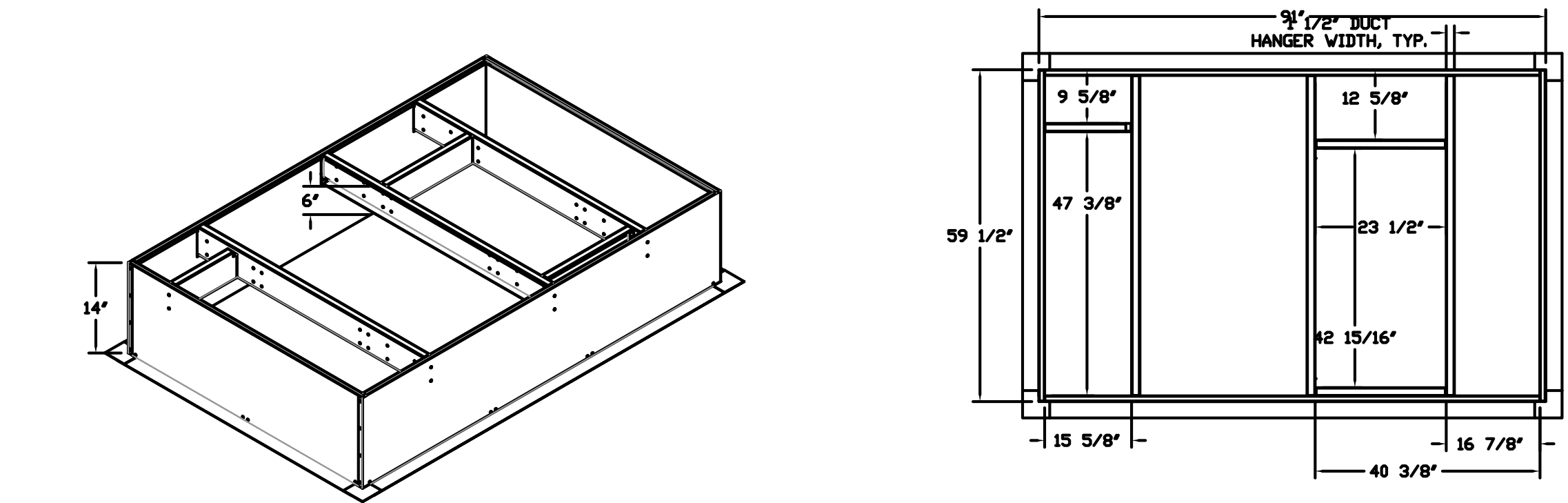
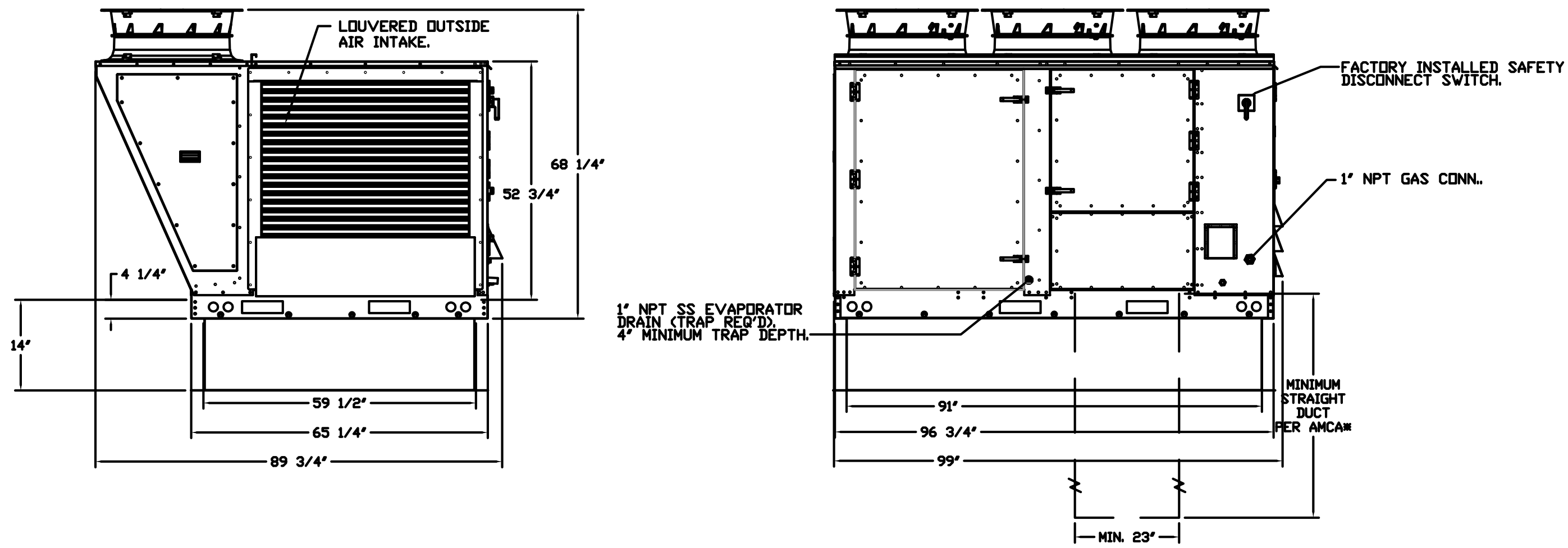
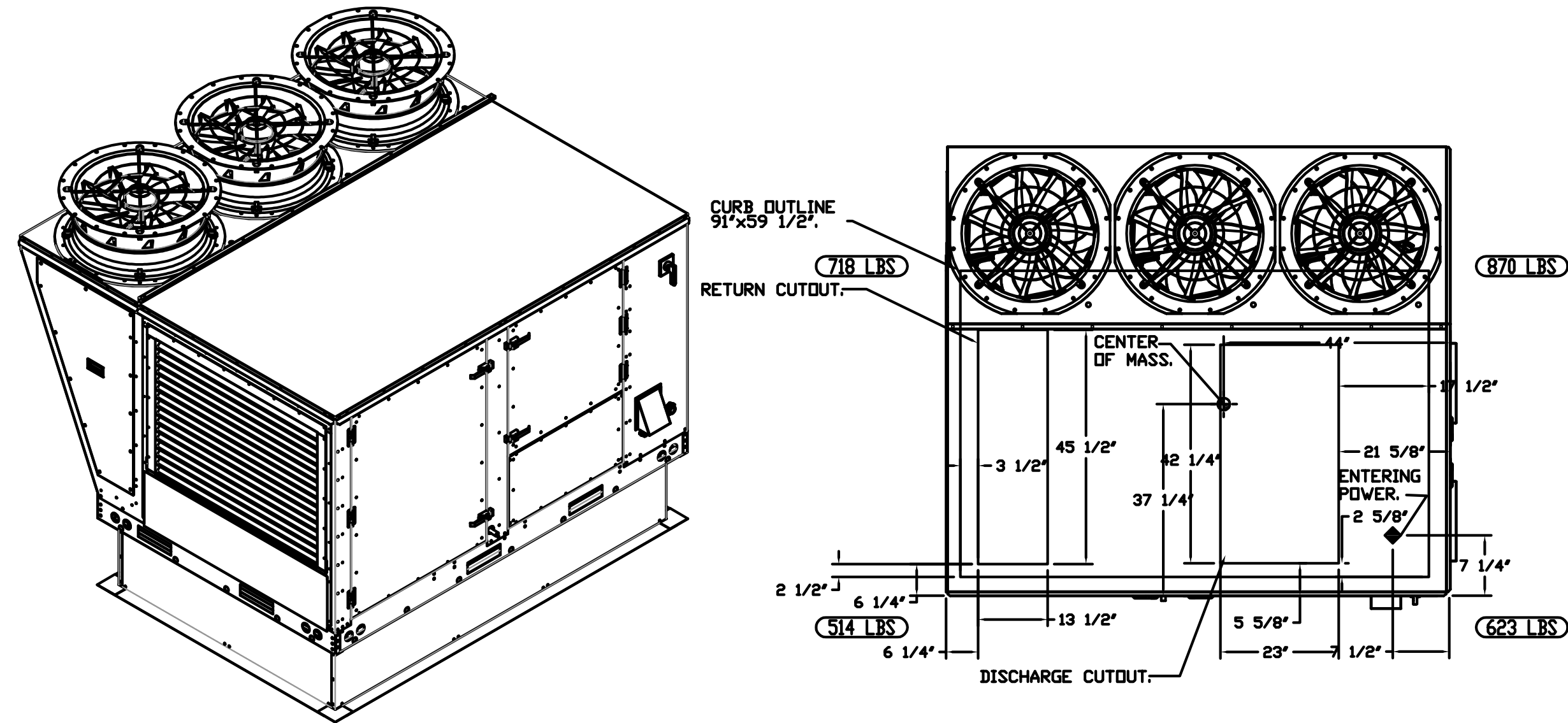
M005

FAN #3 CAS-HVAC3-1.400-20-20T - HEATER (DDAS)

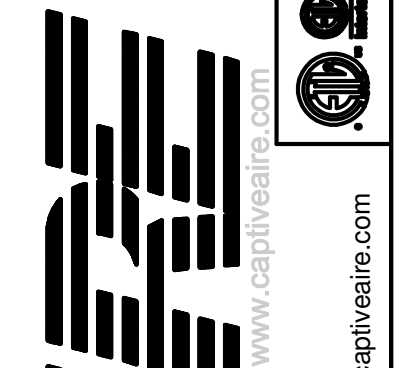
NOTES:

- DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
-  DENOTES CORNER WEIGHT.
- ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
- CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
- EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 23" x 39".



REVISIONS	
DESCRIPTION	DATE



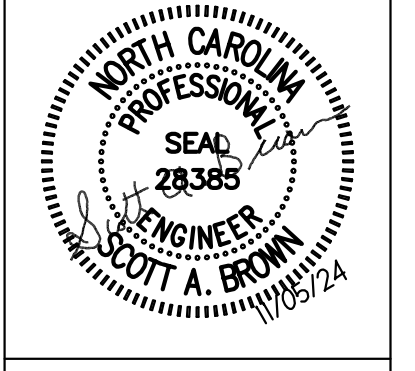
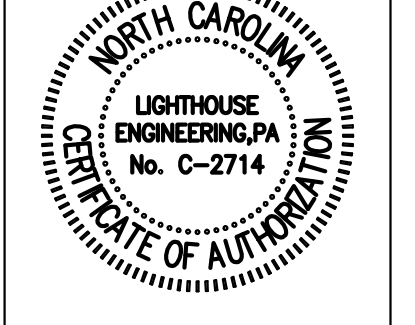
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701 W Trinity Ave #117
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SHEET NO. 5



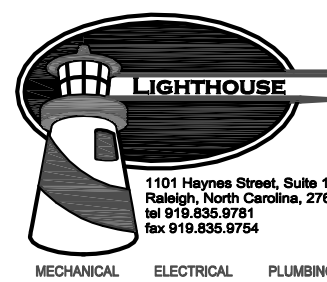
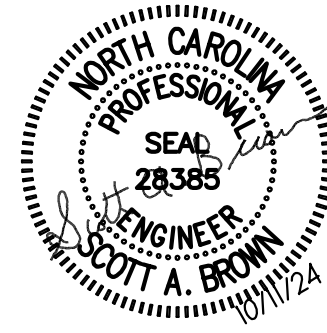
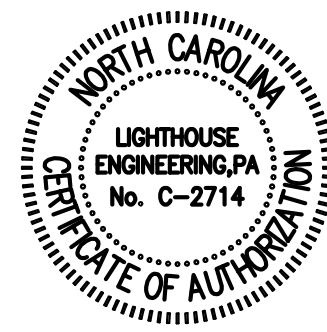
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701 W Trinity Ave #117
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Hutchins Showroom
a restaurant upfit
408 W Geer St.
Durham, NC 27701

Mechanical
Details

M006



mon(arc) studio

701 W Trinity Ave #117
Durham, NC 27701

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Hutchins Showroom
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408 W Geer St.
Durham, NC 27701

Mechanical Demo
Plan - 1st Floor

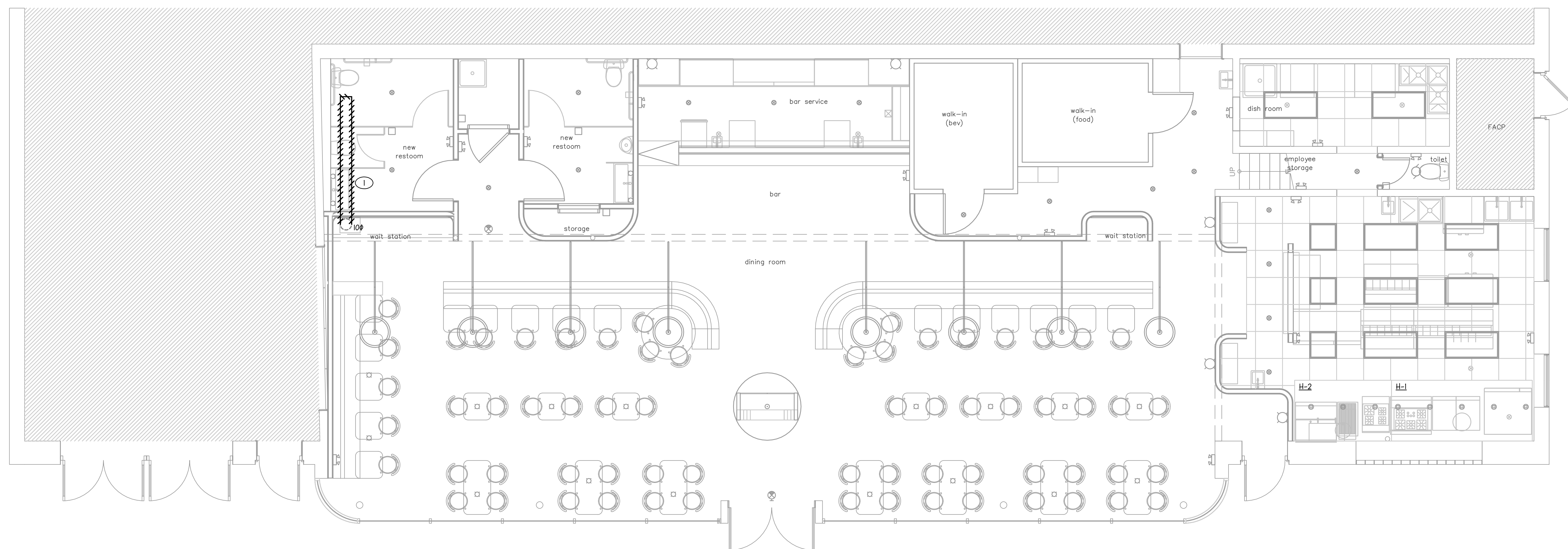
M101

TAGGED NOTES - THIS SHEET

1 DEMO EXISTING DUCTWORK AS SHOWN.

MECHANICAL NEW PLAN GENERAL NOTES:

1. EXISTING EQUIPMENT, GRILLES, DUCT ARE SHOWN
FAINT AND DASHED, NEW AND RELOCATED ITEMS
ARE SHOWN **BOLD** IN NEW LOCATION.



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

REFRIGERANT CALCULATION				
UNIT DESIG.	ROOM VOLUME (CUBIC FEET)	R-442A LBS PER 1,000 CUBIC FEET (PER NCHC TABLE 1103.1)	ALLOWABLE REFRIGERANT	R-442A IN SYSTEM
WALK-IN BEV	544	21	11.4 LBS.	3 LBS.
WALK-IN FOOD	544	21	11.4 LBS.	3 LBS.

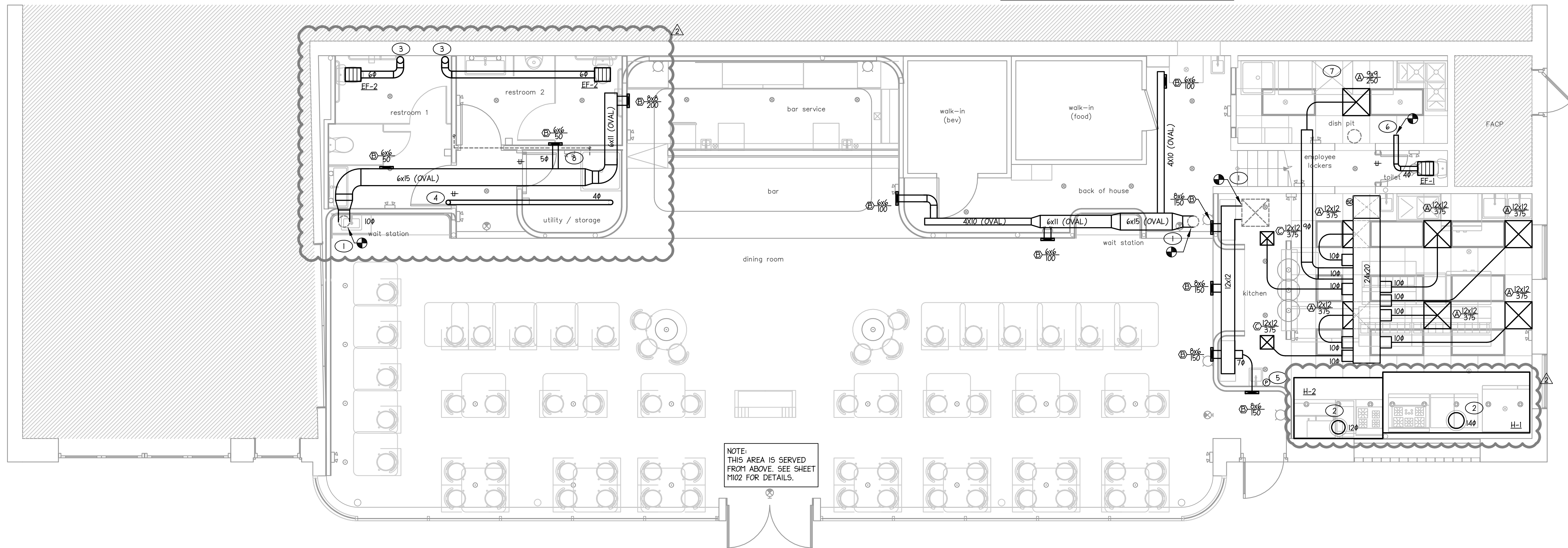
BLDG AIR BALANCE SUMMARY OUTSIDE AIR		
UNIT NO.	OUTSIDE AIR (CFM)	EXHAUST AIR (CFM)
KITCHEN		
KEF-1	-	2293
KEF-2	-	1462
DOAS-1	3250	-
KITCHEN TOTAL	3250	3755
KITCHEN BALANCE = 3250 - 3755 = 505 CFM NEGATIVE		
KITCHEN TRANSFER AIR		
EF-1	-	505
EF-2 (X2)	-	80
RTU-1,2	1000	-
TOTALS	1000	885
BUILDING BALANCE = 1000 - 885 = 115 CFM POSITIVE		

EXHAUST CALCULATIONS

KITCHEN:
 = (397 SQFT) X (.7 CFM/SQFT EXHAUST)
 = 278 CFM

H-1,2 PROVIDE 3764 CFM OF EXHAUST

- TAGGED NOTES - THIS SHEET**
- CONNECT NEW DUCTWORK TO EXISTING AS SHOWN.
 - KITCHEN HOOD EXHAUST DUCTWORK UP TO KEF-1 AND KEF-2 ON ROOF ABOVE.
 - DUCTWORK UP TO LEVEL ABOVE.
 - 4" WATER HEATER CONCENTRIC VENT TO LEVEL ABOVE.
 - REMOTE FIRE SUPPRESSION SYSTEM PULL STATION. VERIFY EXACT LOCATION W/ KITCHEN EQUIPMENT SUPPLIER & LOCAL AHJ.
 - CONNECT BATH EXHAUST DUCT TO EXISTING EXHAUST DUCT. FIELD VERIFY EXACT LOCATION. EXTEND DUCTWORK AS REQUIRED.
 - LOW TEMP. CHEMICAL TYPE DISHWASHER. NO HOOD REQUIRED.
 - CONDENSATE PIPING FROM ABOVE TO MOP SINK.

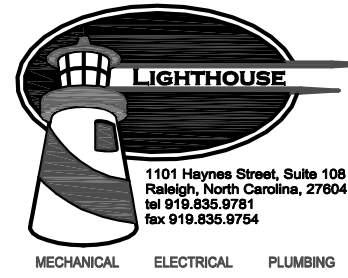
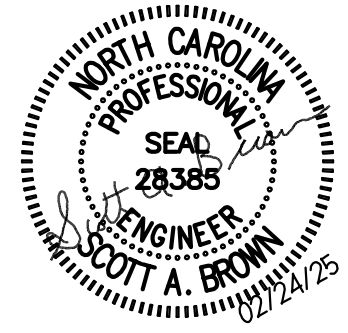
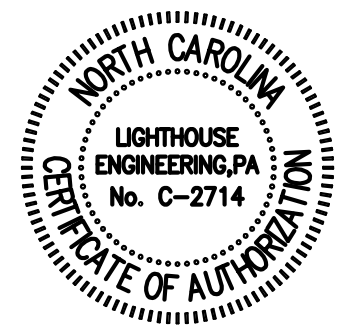


NOTE:
THIS AREA IS SERVED FROM ABOVE. SEE SHEET M102 FOR DETAILS.

MECHANICAL NEW PLAN GENERAL NOTES:

- EXISTING EQUIPMENT, GRILLES, DUCT ARE SHOWN FAINT AND DASHED, NEW AND RELOCATED ITEMS ARE SHOWN **BOLD** IN NEW LOCATION.

1 1ST FLOOR PLAN
1/4" = 1'-0"



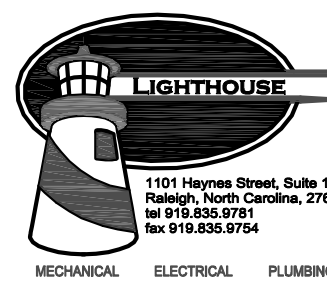
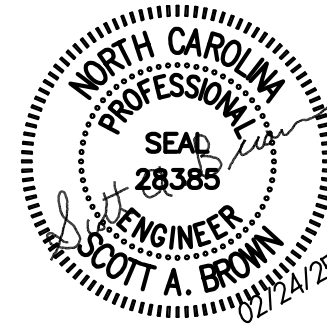
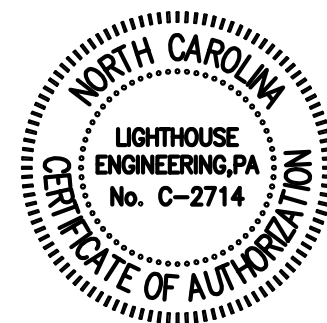
mon(arc) studio
 701 W Trinity Ave #117
 Durham, NC 27701

for permit 10/11/24
 ifc 02/21/2025

Hutchins Showroom
 a restaurant upfit
 408 W Geer St.
 Durham, NC 27701

Mechanical
 Plan - 1st Floor

M201



mon(arc) studio
701 W Trinity Ave #117
Durham, NC 27701

for permit 10/11/24
ifc 02/21/2025

Hutchins Showroom
a restaurant upfit
408 W Geer St.
Durham, NC 27701

Mechanical
Plan - 2nd Floor

M202

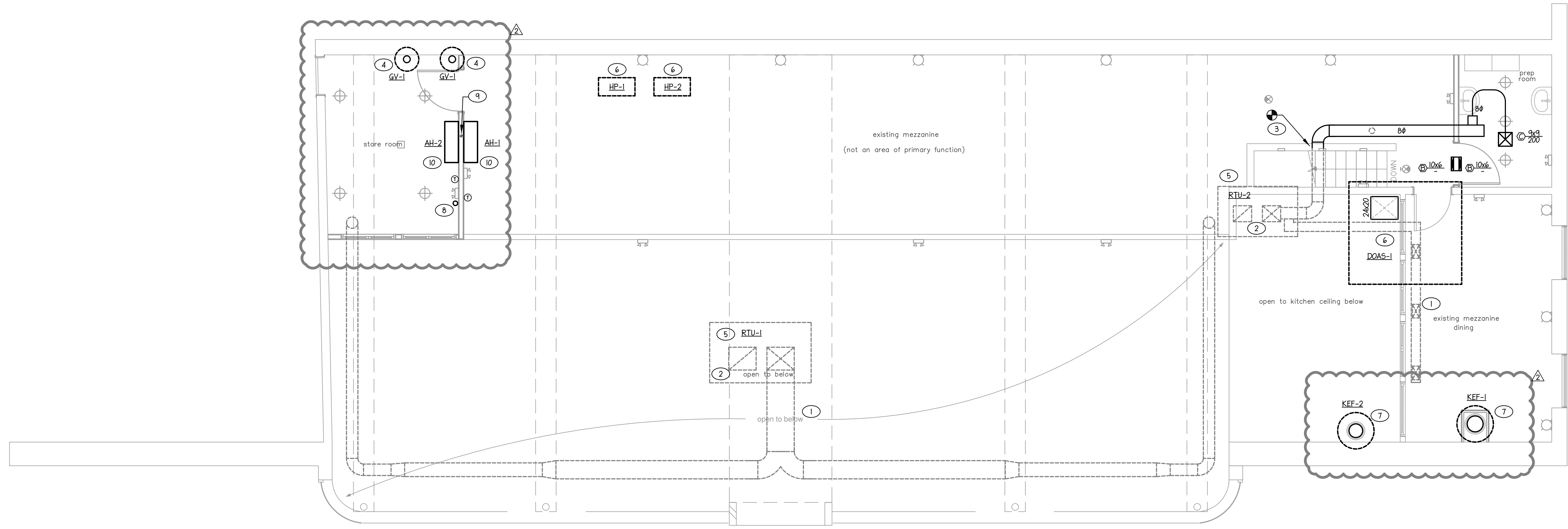
TAGGED NOTES - THIS SHEET

- 1 EXISTING HVAC IN THIS AREA TO REMAIN AS IS.
- 2 ENSURE RTU HAS AN EXISTING DUCT SMOKE DETECTOR. INSTALL NEW DETECTOR IF ABSENT.
- 3 CONNECT NEW DUCTWORK TO EXISTING AS SHOWN.
- 4 TERMINATE DUCTWORK AT ROOF ABOVE WITH GRAVITY VENTILATOR.
- 5 EXISTING MECHANICAL EQUIPMENT ON ROOF ABOVE. EXACT LOCATIONS TO BE FIELD VERIFIED.
- 6 NEW MECHANICAL EQUIPMENT ON ROOF ABOVE. COORDINATE EXACT LOCATIONS IN FIELD WITH EXISTING EQUIPMENT. MAINTAIN 10' FROM ANY INTAKES AND EXHAUST.
- 7 KITCHEN HOOD EXHAUST FAN ON ROOF ABOVE. ENSURE MINIMUM 10' CLEARANCE TO ALL INTAKES.
- 8 WATER HEATER CONCENTRIC VENT TO TERMINATE AT ROOF ABOVE.
- 9 CONDENSATE PIPING FROM MINI-SPLITS DOWN TO MOP SINK BELOW.
- 10 INSTALL UNIT HIGH ON WALL, WHILE MAINTAINING MFG CLEARANCES ABOVE. ALL CONDENSATE AND REFRIGERANT PIPING TO BE RUN WITHIN WALL CAVITY BEHIND UNIT.

MECHANICAL NEW PLAN GENERAL NOTES:

1. EXISTING EQUIPMENT, GRILLES, DUCT ARE SHOWN FAINT AND DASHED, NEW AND RELOCATED ITEMS ARE SHOWN **BOLD** IN NEW LOCATION.

MECHANICAL VENTILATION CALCULATIONS												
HVAC Unit	Location	Zone Occupancy	Occupant Density (People/1000 sf)	Outdoor Air		Zone Population	Outdoor Air		Initial Zone Outdoor Airflow (Vbz)	Zone Area Distribution Effectivness (Ez)	Required Zone Outdoor Airflow (Voz)	Design Zone Outdoor Airflow (CFM)
				CFM/Person (Rp)	(Pz)		CFM/SQFT (Ra)	(Az)				
RTU-1&2	DINING	Dining	70	7.5	51	0.18	725	513.0	0.8	641.3		
	BAR	Dining	70	7.5	10	0.18	135	99.3	0.8	124.1		
	WALKWAY	Corridor	0	0	0	0.06	1000	60.0	0.8	75.0		
	MEZZ. DINING	Dining	70	7.5	4	0.18	50	39.0	0.8	48.8		
	MEZZANINE	Dining	70	7.5	7	0.18	100	70.5	0.8	88.1		
Calculations are base on the 2018 NCMC Table 403.3, Vbz = RpPz + RaAz, Voz = Vbz/Ez											1000	



1 2ND FLOOR PLAN
1/4" = 1'-0"