

VENTILATION SCHEDULE PER 2018 INTERNATIONAL MECHANICAL CODE													
ROOM No.	ROOM NAME	CATEGORY	FLOOR AREA SQ. FT.	ORDINANCE REQUIREMENT				ACTUAL VENT.				REMARKS	
				NUMBER OF OCCUPANTS AND/OR FIXTURES	AREA OUTDOOR AIRFLOW RATE	PEOPLE OUTDOOR AIRFLOW RATE	REQUIRED VENTILATION OR EXHAUST (CFM)	SUPPLY CFM	OUTSIDE AIR CFM	EXHAUST CFM	EXHAUST FAN NUMBER		SUPPLY UNIT NUMBER
100	CUSTOMER SHOWROOM	RETAIL	782	12	0.12 CFM PER SQUARE FEET	7.5 CFM PER PERSON	183	1400	300	---	---	RTU-1	
102	OFFICE	OFFICE	63	1	0.06 CFM PER SQUARE FEET	5 CFM PER PERSON	9	200	20	---	---	RTU-1	
103	UNISEX TOILET ROOM	TOILET ROOMS	50	1 FIXTURE	70 CFM PER FIXTURE	---	70	75	---	100	---	EF-2	EF-2 CONTROLLED BY TOILET ROOM LIGHTS
104/105	CLEAN UP / BREAK AREA	DINING ROOM	143	4	0.18 CFM PER SQUARE FEET	7.5 CFM PER PERSON	56	250	80	---	---	RTU-1	
106/107	SHOP TOILET	TOILET ROOMS	50	1 FIXTURE	70 CFM PER FIXTURE	---	70	75	---	100	---	EF-2	EF-2 CONTROLLED BY TOILET ROOM LIGHTS
108	SERVICE AREA	AUTOMOTIVE SERVICE STATION	3288	---	1.5 CFM PER SQUARE FEET	---	4932	---	5200	5200	---	EF-3	EF-3 CONTROLLED BY CO SENSOR
109	INVENTORY	WAREHOUSE	1388	---	0.06 CFM PER SQUARE FEET	---	84	---	300	300	---	EF-1	EF-1 CONTROLLED BY MOTION SENSOR
110/111	USED INVENTORY/ UTILITY AREA	WAREHOUSE	216	---	0.06 CFM PER SQUARE FEET	---	13	---	---	---	---	---	UNOCCUPIED - NO REQUIREMENT
	TOTAL		---	---	---	---	5417	2000	5900	5700	---	---	

AIR DISTRIBUTION DEVICE SCHEDULE							
MARK	TYPE	MANUFACTURER	MODEL #	FACE	STYLE	BORDER TYPE	FINISH
S-1	SUPPLY	AES	ADB-1	6x12	DROP BOX	DUCT MOUNT	PAINT PER ARCHITECTURAL PLANS
S-2	SUPPLY	TITUS	300RL	20x8	LOUVERED	DUCT MOUNT	PAINT PER ARCHITECTURAL PLANS
S-3	SUPPLY	TITUS	TMS	12x12	LOUVERED	SURFACE MOUNT (TYPE 1)	PAINT PER ARCHITECTURAL PLANS
T-1	TRANSFER	TITUS	350RL	20x8	LOUVERED	SURFACE MOUNT (TYPE 1)	PAINT PER ARCHITECTURAL PLANS
E-1	EXHAUST	TITUS	350	12x12	LOUVERED	SURFACE MOUNT (TYPE 1)	PAINT PER ARCHITECTURAL PLANS

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
 * KRUEGER * TUTTLE & BAILEY
 * MESTEK * GARNES

NOTES:
 - ROUND CONNECTION TO MATCH ROUND DUCT DIMENSION AS SHOWN ON FLOOR PLAN.
 - SUPPLY AND RETURN AIR DIFFUSERS SHALL BE SELECTED AT A MAX NOISE CRITERIA OF 30.

GAS FIRED UNIT HEATER SCHEDULE											
TAG	AREA SERVING	MFR.	MODEL	MBH INPUT	MBH OUTPUT	AFUE	WEIGHT	FLA	MOCP	PHASE	VOLTS
UH-1	INVENTORY	REZNOR	UDAS30	30	26.4	82	456	1.9	15	1	115
UH-2	USED INVENTORY	REZNOR	UDAS30	30	26.4	82	456	1.9	15	1	115

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
 * STERLING * LENNOX
 * MODINE

NOTES:
 1. UNIT SHALL BE COMPLETE WITH CONTROL TRANSFORMER RELAY PACKAGE, 24V REVERSE ACTING THERMOSTAT WITH NIGHT SETBACK
 2. PROVIDE SHUTOFF COCK AT EACH BURNER
 3. UNIT TO HAVE VERTICAL VENT TERMINAL AND CONDENSATE DRAIN
 4. VIBRATION ISOLATION HANGER RODS OR APPROVED EQUIV.

Room Identification and Outdoor Air Calculations (2018 NCMC Table 403.3)			
Room number	Room Use	Initial Calculations for the system as a whole	Initial Calculations for individual zones
100	Showroom	Primary supply air flow to system at conditioned analyzed	Vps cfm = Vpsd Ds = 1850
102	Office	Uncorrected OA requirement for system	Vou cfm = Rps Ps + Ras As = 205
104	Break Room	Uncorrected OA req'd as a fraction of primary SA	Xs = Vou / Vps = 0.11
		OA rate per unit area for zone	Ra cfm/sf = 0.12
		OA rate per person for zone	Rp cfm/p = 7.50
		Total supply air to zone (at condition being analyzed)	Vdz cfm = Vdsd Ds = 1350
		Unused OA req'd to breathing zone	Vbz cfm = Rpz Pz + Raz Az = 181.8
		Unused OA requirement for zone	Voz cfm = Vbz/Ez = 227
		Fraction of supply air to zone from sources outside the zone	Fa = Ep + (1-Ep)Er = 1.00
		Fraction of supply air to zone from fully mixed primary air	Fb = Ep = 1.00
		Fraction of outdoor air to zone from sources outside the zone	Fc = 1 - (1-Ez)(1-Ep)(1-Er) = 1.00
		Outdoor air fraction required in air discharged to zone	Zd = Voz / Vdz = 0.17
		Unused OA fraction required in primary air to zone	Zp = Voz / Vpz = 0.17
		System Ventilation Efficiency	
		Zone Ventilation Efficiency	Evz = (Fa + FbXs - FcZ) / Fa = 0.94
		System Ventilation Efficiency	Ev = min (Evz) = 0.94
		Corrected OA req'd	Vot = Vou/Ev = 217

GAS FIRED ROOFTOP UNIT SCHEDULE																	
TAG	MFR	MODEL	NOMINAL TON	ENTERING AIR CONDITIONS	ARI SEER	SUPPLY CFM	RETURN CFM	O.A. CFM	TOTAL S.P.	FAN MOTOR HP	GAS MBH INPUT	GAS MBH OUTPUT	ELECTRICAL DATA	WT.			
											VOLTS	PHASE	FLA	MOCP			
RTU-1	LENNOX	KGB060	5	94.8°F DB 75.7°F WB @ 100°F AMBIENT	14.0	2000	1600	400	0.8	3/4	108	86	208	3Ø	20.8	35	1000

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
 * CARRIER * YORK
 * TRANE

NOTES:
 1. MECHANICAL UNIT SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 2. PROVIDE UNIT WITH UNPOWERED GFCI CONVENIENCE OUTLET.
 3. INSTALL NEW FILTERS IN UNIT AFTER ALL DUCTWORK HAS BEEN COMPLETED AND PRIOR TO TEST AND BALANCING OF UNIT.
 4. PROVIDE WITH DIFFERENTIAL ENTHALPY TYPE ECONOMIZER WITH BAROMETRIC RELIEF DAMPER.
 5. PROVIDE UNIT WITH 14" HIGH ROOF CURB WITH SECURITY BARS.
 6. PROVIDE UNIT WITH FACTORY INSTALLED HINGED ACCESS PANELS.
 7. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.

EXHAUST FAN SCHEDULE									
TAG	DESCRIPTION	MFR.	MODEL	CFM	EST. HP / WATTS	PHASE	VOLTS	NOTES	
EF-1	INVENTORY PROPELLER FAN	COOK	10XP24D103	150	1.15	1	115	1.6, 8, 9	
EF-2	TOILET EXHAUST FAN	COOK	620	200	3/4	1	115	3.5, 6	
EF-3	SERVICE AREA EXHAUST FAN	COOK	245S	5200	1.0	3	208	2.4, 6, 7	

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
 * GREENHECK * TREN

NOTES:
 1. PROPELLER FANS SHALL BE COMPLETE WITH WALL COLLAR, SIDE GUARD, BACK DRAFT DAMPER AND SPEED CONTROLLER
 2. ALL EXHAUST FANS ARE TO BE COMPLETE WITH COMBINATION MAGNETIC MOTOR STARTER. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
 3. INTERLOCKED WITH TOILET ROOM LIGHTING. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
 4. ACTUATED BY C.O. SENSOR. MOUNT FAN AS HIGH AS POSSIBLE.
 5. RESTROOM INLINE FAN TO BE PROVIDED WITH WITH HANGING ISOLATOR KIT, SUSPENSION RODS, SPEED CONTROLLER, ELECTRICAL BACKDRAFT DAMPER AND LOUVERED BRICK VENT - MODEL BV5-. PRIMED FINISH. FOR FIELD PAINTING TO MATCH WALL COLOR.
 6. SERVICE BAY INLINE FAN TO BE COMPLETE WITH VIBRATION ISOLATION, SUSPENSION RODS, FLANGE DUCT CONNECTION, AND BELT GUARD
 7. EXHAUST FAN ASSEMBLY SHALL BE SHIPPED "PRIMED" FOR FIELD PAINTING. COORDINATE COLOR WITH GENERAL CONTRACTOR.
 8. INTERLOCK WITH ROOM LIGHT MOTION SENSORS. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.

LOUVER SCHEDULE											
TAG	DESCRIPTION	MFR.	MODEL	CFM	SIZE AREA	FREE AREA	DAMPER			NOTES	
							HP	PHASE	VOLTS	MODEL	
L-1	INVENTORY INTAKE LOUVER	RUSKIN	ELC445D	300	18 x 18	0.64	FRAC.	1	115	---	2.3, 5, 6, 7
L-2	SERVICE AREA INTAKE LOUVER	RUSKIN	ELC445D	5200	48 x 54	7.31	FRAC.	1	115	---	2.4, 5, 6, 7
L-3	SERVICE AREA EXHAUST LOUVER	RUSKIN	ELBD375E	5200	36 x 30	3.19	---	---	---	---	1, 2, 5

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
 * GREENHECK

NOTES:
 1. DRAINABLE COMBINATION LOUVER PROVIDED WITH A GRAVITY BACKDRAFT DAMPER.
 2. LOUVERS TO BE PRIMED FOR FIELD PAINTING AND PROVIDED WITH BIRD / INSECT SCREEN.
 3. DRAINABLE COMBINATION LOUVER WITH 120 VOLT MOTORIZED DAMPER INTERLOCKED WITH EF-1.
 4. DRAINABLE COMBINATION LOUVER WITH 120 VOLT MOTORIZED DAMPER INTERLOCKED WITH EF-3.
 5. COORDINATE MOUNTING LOCATION WITH ARCHITECTURAL ELEVATIONS AND GENERAL CONTRACTOR.
 6. ALL MOTORIZED DAMPERS SHALL BE WIRED TO BE OPEN WHEN CORRESPONDING EQUIPMENT IS ENERGIZED.
 7. ALL DAMPERS SHALL DEFAULT TO SPRING SHUT WHEN POWER LOSS OCCURS OR WHEN NOT IN USE.

GAS FIRED STRAIGHT TUBE RADIANT HEATER SCHEDULE										
TAG	MANUFACTURER	MODEL	INPUT MBH	GAS CONNECTION	ELECTRICAL DATA			TUBE TYPE	TUBE LENGTH	
					VOLTS	PHASE	START DRAW	RUN DRAW		
RAD-1 & RAD-2	SPACE RAY	ETS100	100	1/2" Ø	120	1Ø	3.0 AMP	2.6 AMP	STRAIGHT	40 FT

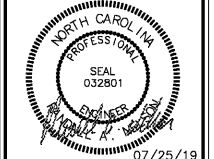
ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
 * DETROIT RADIANT PRODUCTS / RE-VERBER-RAY
 * ROBERTS / GORDON, INC.

NOTES:
 1. HEATERS SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 2. EACH HEATER SHALL BE CONTROLLED BY A MANUFACTURER SUPPLIED NIGHT SETBACK DIGITAL THERMOSTATS, MOUNTED 4'-0" ABOVE THE FINISHED FLOOR. SEE MECHANICAL PLAN FOR LOCATIONS.
 3. HEATERS SHALL BE "PULL (NEGATIVE PRESSURE OR VACUUM) THROUGH" SYSTEMS WITH CAST IRON BURNERS AND CALORIZED EMITTER TUBES (ALC OPTION). THE EMITTER TUBES SHALL BE CALORIZED FOR LONGEVITY. CORROSION RESISTANCE AND HIGH RADIANT EFFICIENCY. HOT ROLLED EMITTER TUBES ARE NOT ALLOWED.
 4. HEATERS SHALL OPERATE UNDER A NEGATIVE PRESSURE AT ALL TIMES TO PRECLUDE THE ESCAPE OF COMBUSTION GASSES INSIDE OF THE BUILDING.
 5. UNIT TO BE SHUT OFF WHEN EXHAUST FAN EF-3 IS ACTIVATED. (BY C.O. SENSOR.)
 6. HEATERS SHALL BE FURNISHED WITH END REFLECTORS (2 - PAIRS).



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 1. THE DRAWING WAS PREPARED FOR USE ON A PROJECT WHERE THE CLIENT HAS AGREED TO BE BOUND BY THE TERMS AND CONDITIONS OF THE AGREEMENT. IT IS NOT TO BE USED IN ANY WAY THAT DEVIATES FROM THE INTERESTS OF BRIDGESTONE RETAIL OPERATIONS, LLC. THAT IT IS NOT TO BE USED IN ANY WAY THAT DEVIATES FROM THE INTERESTS OF BRIDGESTONE RETAIL OPERATIONS, LLC. ADMISSION TO THE EXCLUSIVE OWNERSHIP (AND TO THE DRAWING BY BRIDGESTONE RETAIL OPERATIONS, LLC).

NEW FCAC STORE
 2019 JANUARY - SMALL ER
 5845 NC HWY 42
 GARNER, NC



07/25/19
 ACERTUS NORTH CAROLINA
 CERTIFICATION NUMBER - P1514

PROPERTY NO.:		160017
6 DIGIT NO.:		903065
4 DIGIT NO.:		015P
AOR PROJECT NUMBER:	1955801	
TO PERMIT DATE:	07-28-19	
TO BID DATE:	##-##-##	

SHEET TITLE:
MECHANICAL EQUIPMENT SCHEDULES

SHEET NUMBER:
M3

Order Plans