

ABBREVIATIONS

NOTE: THIS IS A STANDARD ABBREVIATION LIST.
SOME ABBREVIATIONS MAY NOT APPEAR ON THE ACCOMPANYING DRAWINGS.

AFF ABOVE FINISHED FLOOR	EX EXISTING	LAT LEAVING AIR TEMPERATURE	SA SUPPLY AIR
AHU AIR HANDLING UNIT	'F DEGREE(S) FAHRENHEIT	LBS POUNDS	SAN SANITARY, SOIL, WASTE
BHP BRAKE HORSEPOWER	FD FIRE DAMPER, FOUNDATION DRAIN	LBS/HR POUNDS PER HOUR	SF SQUARE FOOT
BTU BRITISH THERMAL UNIT	FF FINISHED FLOOR	LPS LOW PRESSURE SUPPLY	SP STATIC PRESSURE
BTUH BRITISH THERMAL UNIT PER HOUR	FFE FINISHED FLOOR ELEVATION	LPR LOW PRESSURE RETURN	SQ FT SQUARE FOOT
°C DEGREE(S) CELSIUS	FFE FINS PER FOOT	MBH THOUSAND BRITISH THERMAL UNITS PER HOUR	ΔT TEMPERATURE DIFFERENCE
CD CONDENSATE DRAIN	FIN/FT FINS PER INCH	MOD MOTOR OPERATED DAMPER	TSP TOTAL STATIC PRESSURE
CFM CUBIC FEET PER MINUTE	FIN/INCH FINS PER INCH	NC NOISE CRITERIA, NORMALLY CLOSED	TYP TYPICAL
CHR CHILLED WATER RETURN	FPM FEET PER MINUTE	NFPA NATIONAL FIRE PROTECTION ASSOCIATION	UL UNDERWRITERS LABORATORIES
CHS CHILLED WATER SUPPLY	FPS FEET PER SECOND	OA OUTSIDE AIR	V VACUUM, VOLTS
CO CLEANOUT	FT FOOT, FEET	PV POST INDICATING VALVE	VD VOLUME DAMPER
CONT CONTINUOUS	GPH GALLONS PER HOUR	PPH POUNDS PER HOUR	VFD VARIABLE FREQUENCY DRIVE
CO2 CARBON DIOXIDE	GPM GALLONS PER MINUTE	PRV PRESSURE REDUCING/REGULATING VALVE	VPD VACUUM PUMP DISCHARGE
CW COLD WATER, CITY WATER	HB HOSE BIBB	PSI POUNDS PER SQUARE INCH	VSD VARIABLE SPEED DRIVE
DDC DIRECT DIGITAL CONTROL	HP HORSEPOWER, HIGH POINT	PSIG POUNDS PER SQUARE INCH GAUGE	VTR VENT THROUGH ROOF
DL DOOR LOUVER	HT HEIGHT	RA RETURN AIR, RELIEF AIR	W WATTS, WIDE
DN DOWN	HW HOT WATER	RH RELATIVE HUMIDITY	WB WET BULB
EA EXHAUST AIR	IN INCH, INCHES	RL REFRIGERANT LIQUID	WC WATER COLUMN
EAT ENTERING AIR TEMPERATURE	INV EL INVERT ELEVATION	RPM REVOLUTIONS PER MINUTE	WG WATER GAUGE
ESP EXTERNAL STATIC PRESSURE	KW KILOWATTS		
EWT ENTERING WATER TEMPERATURE	L LONG, LENGTH		

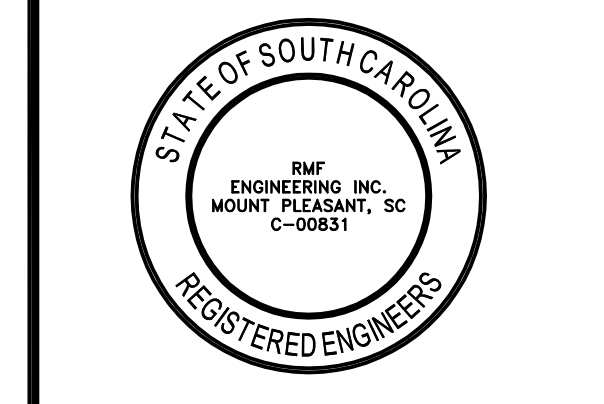
MECHANICAL LEGEND AND GENERAL SYMBOLS

DUCTWORK SYMBOLS		PIPING SYMBOLS		TEXT SYMBOLS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	THERMOSTAT		PIPE DROP	&	AND
	AIR FLOW		PIPE RISE	°F	DEGREE(S) FAHRENHEIT
	SUPPLY AIR DIFFUSER		PIPE CAP	°C	DEGREE(S) CELSIUS
	RETURN AIR GRILLE		BRANCH TAKE OFF	/	DIAMETER, PHASE
	EXHAUST AIR GRILLE		PIPE DROP TEE	\$	DOLLAR
	FIRE DAMPER		PIPE RISE TEE	=	EQUALS, EQUAL TO
	COMBINATION FIRE/SMOKE DAMPER		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)	>	FEET, FOOT
	VOLUME DAMPER		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)	>	GREATER THAN
	ELBOW WITH DOUBLE THICKNESS TURNING VANES		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)	≥	GREATER THAN OR EQUAL TO
	RECTANGULAR BRANCH TAKE-OFF		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)	<	LESS THAN
	BELL MOUTH BRANCH TAKE-OFF		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)	≤	LESS THAN OR EQUAL TO
	ROUND BRANCH TAKE-OFF		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)	MINUS	MINUS
	ROUND DUCT DROP OFF BOTTOM		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)	#	MULTIPLY BY, BY
	DUCT TRANSITION		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)	%	PERCENT
	SQUARE TO ROUND TRANSITION		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)	±	PLUS OR MINUS
	DUCTWORK CHANGE IN ELEVATION (UP OR DOWN)		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)		
	SUPPLY/OUTSIDE AIR DUCT RISER		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)		
	RETURN AIR DUCT RISER		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)		
	EXHAUST/RELIEF AIR DUCT RISER		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)		
	ROUND DUCT RISER (SMALLER THAN 12")		SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)		

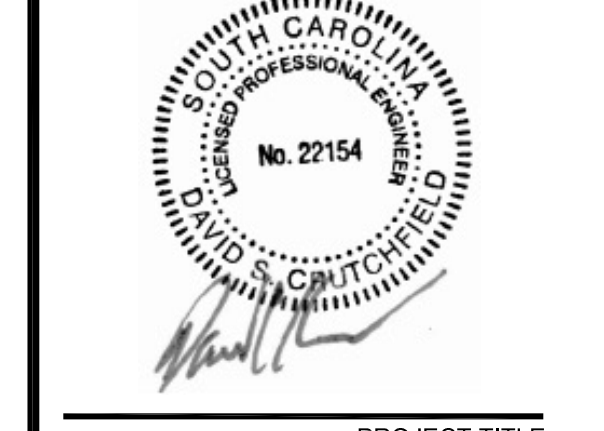
GENERAL NOTES

- NOTIFY THE OWNER, IN WRITING, AT LEAST SEVEN (7) DAYS IN ADVANCE OF ALL REQUIRED SHUTDOWNS OF WATER, FIRE, SEWER, GAS, ELECTRICAL SERVICE, OR OTHER UTILITIES. UPON WRITTEN RECEIPT OF APPROVAL FROM OWNER, SHUTDOWN SHALL BE PERFORMED BETWEEN THE HOURS OF SIX (6) P.M. AND SIX (6) A.M. OR AS DIRECTED OTHERWISE BY THE OWNER AND SHALL BE ACCOMPLISHED AT NO ADDITIONAL CONTRACT COST. AT THE END OF EACH SHUTDOWN ALL SERVICES SHALL BE RESTORED SO THAT NORMAL USE OF THE UTILITIES CAN CONTINUE.
- WHEN WORKING IN AND AROUND THE EXISTING BUILDING, EXTREME CARE SHALL BE EXERCISED WITH REGARD TO PROTECTION OF THE EXISTING STRUCTURE AND MECHANICAL AND ELECTRICAL SERVICES WHICH WILL REMAIN. REPAIR, REPLACE, OR RESTORE TO THE SATISFACTION OF THE ENGINEER/OWNER ALL EXISTING WORK DAMAGED IN THE PERFORMANCE OF DEMOLITION AND/OR NEW WORK.
- ALL EXISTING PIPING, EQUIPMENT, DUCTWORK, AND MATERIALS NOT REQUIRED FOR RE-USE OR RE-INSTALLATION (SHOWN OR OTHERWISE) SHALL BE REMOVED. ALL EXISTING MATERIALS AND EQUIPMENT WHICH ARE REMOVED AND ARE DESIRED BY THE OWNER, OR ARE INDICATED TO REMAIN THE PROPERTY OF THE OWNER, SHALL BE DELIVERED TO HIM ON THE PREMISES BY THE CONTRACTOR WHERE DIRECTED BY THE ENGINEER. ALL OTHER MATERIALS AND EQUIPMENT WHICH ARE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY THE CONTRACTOR FROM THE PREMISES.
- EXISTING CONDITIONS, I.E., PRESENCE AND LOCATION OF DUCTWORK, PIPING, EQUIPMENT AND MATERIALS, INDICATED ARE BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORD DRAWINGS AND FIELD SURVEYS AND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF ALL DUCTWORK, PIPING, EQUIPMENT AND MATERIALS IN THE FIELD PRIOR TO STARTING ALL WORK.
- EXISTING DUCT, PIPE, AND EQUIPMENT SIZES NOTED ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND ARE NOT WARRANTED TO BE CORRECT. CONTRACTOR SHALL VERIFY ALL SIZES IN THE FIELD IF THEY EFFECT HIS WORK.
- EXISTING PIPING NO LONGER REQUIRED TO REMAIN IN SERVICE (SHOWN OR OTHERWISE) SHALL BE DISCONNECTED AND REMOVED BACK TO SERVICE MAINS UNLESS OTHERWISE INDICATED OR NOTED ON THE PLANS. REMOVE EXISTING PIPE HANGERS, SUPPORTS, VALVES, ETC., EXISTING PIPING INDICATED OR REQUIRED TO REMAIN IN SERVICE OR IN PLACE SHALL BE CAPPED, PLUGGED, OR OTHERWISE SEALED. NO EXISTING PIPING SHALL BE LEFT OPEN END.
- EXISTING DUCTWORK INDICATED TO BE DISCONNECTED AND REMOVED SHALL INCLUDE ALL RELATED AIR DEVICES, HANGERS, SUPPORTS, ETC., UNLESS OTHERWISE INDICATED OR NOTED ON THE PLANS. EXISTING DUCTWORK WHERE INDICATED TO BE CAPPED OR REQUIRED TO REMAIN IN SERVICE SHALL BE CAPPED WITH 18 GAUGE SHEET METAL, SECURE CAP WITH SHEET METAL SCREWS AND SEAL PERIMETER OF OPENING AIR TIGHT WITH DUCT SEALER. NO EXISTING DUCTWORK SHALL BE LEFT OPEN FOR ANY EXTENDED PERIOD OF TIME. CAP EXISTING DUCTWORK IMMEDIATELY AS REQUIRED OR DIRECTED BY THE ARCHITECT. CONTRACTOR SHALL RETURN ALL AIR DEVICES TO OWNER.
- EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT, PIPING, DUCTWORK, AND MATERIALS AFFECTED BY DEMOLITION OR NEW WORK INSTALLATION AND REQUIRED TO REMAIN IN SERVICE SHALL BE RE-INSTALLED OR SUPPORTED AS REQUIRED IN ACCORDANCE WITH NEW WORK SPECIFICATION. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE ARCHITECT AND AT NO ADDITIONAL CONTRACT COST.
- PATCH ALL DISTURBED SURFACES, INCLUDING WALLS, CEILINGS, ROOF, AND FLOOR. PATCHING SHALL MATCH EXISTING ADJACENT SURFACES AS TO THICKNESS, TEXTURE, MATERIALS, AND COLOR. ALL PATCHING SHALL BE PERFORMED TO THE SATISFACTION OF THE OWNER/ENGINEER AND AT NO ADDITIONAL CONTRACT COST.
- IN GENERAL ALL PIPING, EQUIPMENT, DUCTWORK, AND MATERIALS SHOWN "LIGHT" IS EXISTING TO REMAIN. ALL PIPING, CONDUITS, EQUIPMENT, DUCTWORK, AND MATERIALS SHOWN "HEAVY AND DASHED" IS EXISTING AND SHALL BE DEMOLISHED.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SOUTH CAROLINA BUILDING CODES, UNIVERSITY OF SOUTH CAROLINA, AND THE LOCAL FIRE MARSHALL'S REQUIREMENTS.
- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES/ SUBCONTRACTORS INCLUDING BUT NOT LIMITED TO AUTOMATIC TEMPERATURE CONTROLS, ELECTRICAL, AND GENERAL TRADES.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL STAIRWELLS AND EGRESS CORRIDORS DURING CONSTRUCTION.
- CONCRETE CORING OR CUTTING MAY BE REQUIRED IN ORDER TO RUN ELECTRICAL, PLUMBING, CABLING OR OTHER SERVICES TO A SPECIFIC AREA. IT IS IMPERATIVE WHEN CONSIDERING EITHER CORING, CUTTING OR CHIPPING THAT REBAR, PLUMBING, ELECTRICAL SERVICES, ETC WITHIN THE CONCRETE SLAB, WALL OR FLOOR BE LOCATED PRIOR TO DISTURBING THE INTEGRITY OF THE EXISTING CONCRETE. OBTAIN STRUCTURAL DRAWINGS OF THE AREA IN QUESTION AND, USING THE BUILDING GRIDLINES, DETERMINE AND MARK THE EXACT LOCATIONS REQUIRED FOR NEW SERVICES. DETERMINE THE FINAL LOCATION OF THE CORE OR CUT BY LOCATING THE PRECISE POSITIONING OF ANY REBAR USING X-RAYS OR FERRO SCAN.
- ALL PENETRATIONS MUST BE SEALED WITH FIRE STOP MATERIAL AFTER SERVICES ARE RUN THROUGH. ALL PENETRATIONS THROUGH EXTERIOR WALLS ABOVE AND BELOW GRADE OR SLAB ON GRADE MUST BE WATERPROOFED.
- FINAL CEILING HEIGHTS TO BE DETERMINED WITH ENGINEER AND ARCHITECT IN FIELD AFTER DEMOLITION OF EXISTING CEILINGS. NO FABRICATION OF DUCTWORK, HVAC PIPING OR PLUMBING PIPING SHALL BEGIN UNTIL AFTER THE CONTRACTOR HAS COMPLETED COORDINATION DRAWINGS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CLOSING ANY CEILINGS FOR A COMPLETE CHECKOUT OF THE HVAC SYSTEM. THE SYSTEM MUST BE COMPLETE AND OPERATIONAL INCLUDING CONTROLS, REGISTERS, INSULATION, AND BALANCING WITH REPORT. THE SYSTEM SHALL BE RUN THROUGH ITS COMPLETE HEATING AND COOLING CYCLES. THE CONTRACTOR AND ALL APPROVED SUBCONTRACTORS SHALL BE PRESENT AT THE ENGINEER CHECKOUT. THE TESTING AND BALANCE AGENCY SHALL CERTIFY THAT THESE CONDITIONS ARE MET.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO ASSURE THAT ALL WORK BY THE SUBCONTRACTORS IS INSTALLED AND COMPLETED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS AND THAT ALL MEP WORK IS 100% COMPLETE AT THE TIME OF BENEFICIAL OCCUPANCY.
- ANY CEILING STRUCTURE, INSULATION, PIPING, FURNITURE OR DUCTWORK DAMAGED DURING DEMOLITION OR NEW WORK CONSTRUCTION MUST BE REPLACED WITH THE EXACT TYPE AS APPROVED BY THE OWNER AND ENGINEER.

CORPORATE SEAL



A/E SEAL



PROJECT TITLE

University of South Carolina

CAREER CENTER AT THOMAS COOPER LIBRARY
GREENE STREET
COLUMBIA, SC 29201

BID SET

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REVISIONS	
NO.	DATE

SHEET INFORMATION	
Date	04.08.13
Project No.	12.130.03
Scale	NONE
Drawn By	BMW
Checked By	DWZ

MECHANICAL LEGEND AND ABBREVIATIONS

SHEET NO.
M0.0

ELECTRIC BASEBOARD HEATER SCHEDULE

DESIGNATION	SERVICE	REQUIRED MBH	CONNECTED KW	ELECTRICAL V/ø/HZ	BASIS OF DESIGN	REMARKS
EBH-01	OFFICES	5.1	1.5	208/1/60	CADET MODEL 6F1500-8	ALTERNATE #2
EBH-02	OFFICES	6.8	2.0	208/1/60	CADET MODEL 8F2000-8	ALTERNATE #2
EBH-03	OFFICES	8.5	2.5	208/1/60	CADET MODEL 8F2500-8	ALTERNATE #2

← ELECTRIC BASEBOARD HEATER WORK PROVIDED UNDER ALTERNATE #2

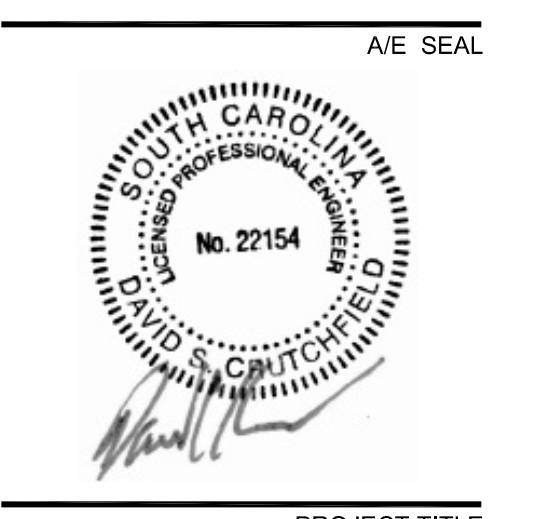
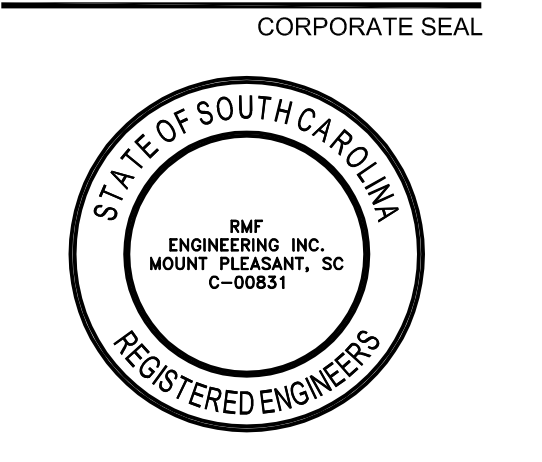
AIR DEVICE SCHEDULE

No.	DUTY	TYPE	CFM RANGE LOW HIGH	FACE/MODULE SIZE (IN)	NOMINAL DUCT SIZE (IN)	BLOW	MAX TOTAL AIR PD (IN H ₂ O)	MAX NOISE CRITERIA	BASIS OF DESIGN	REMARKS
A1	SUPPLY	A	0 150	24x24	6ø	4-WAY	0.15	25	TITUS/TDCA-AA	①②③
A2	SUPPLY	A	151 250	24x24	8ø	4-WAY	0.15	25	TITUS/TDCA-AA	①②③
A3	SUPPLY	A	251 350	24x24	10ø	4-WAY	0.15	25	TITUS/TDCA-AA	①②③
B1	RETURN	B	0 250	24x24	8x8	0° DEFL	0.10	20	TITUS/TDCA-AA	②③
B2	RETURN	B	251 400	24x24	10x10	0° DEFL	0.10	20	TITUS/TDCA-AA	②③
B3	RETURN	B	401 600	24x24	12x12	0° DEFL	0.10	20	TITUS/TDCA-AA	②③

- 18"x18" BACKPAN SIZE
- SCHEDULED MODULE SIZE IS NOMINAL, AND WHERE REQUIRED SHALL BE WITHIN 24"x48" OR 24"x24" ARCHITECTURAL CEILING GRID.
- MAX NC VALUE SHALL BE BASED ON OCTAVE BAND 2-7 SOUND POWER LEVELS MINUS ROOM ABSORPTION OF 10db.

DRAWING NOTES:

- ① REMOVAL OF FIN TUBE RADIATORS AND ASSOCIATED STEAM AND CONDENSATE PIPING SHALL BE WORK PROVIDED UNDER ALTERNATE #1.



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REVISIONS	
NO.	DATE

SHEET INFORMATION	
Date	04.08.13
Project No.	12.130.03
Scale	1/8" = 1'-0"
Drawn By	BMW
Checked By	DWZ

LEVEL 5 - CAREER CENTER - MECHANICAL DEMOLITION

