

ELECTRIC UNIT HEATER SCHEDULE													
TAG	MANUFACTURER	MODEL	SERVICE	AIRFLOW (CFM)	CAPACITY (MBH)	FAN TYPE	AIR THROW (FT)	MOUNT HEIGHT (FT)	POWER (KW)	FLA (AMPS)	VOLTAGE (V/PH/Hz)	CONTROL VOLTAGE (V)	NOTES
EUH-1	MARKEL	P3P5105CA1N	GENERATOR ROOM	400	17.1	PROPELLER	12	9	5.0	6.1	460/3/60	24	---

NOTES:  
1. WALL-MOUNTING BRACKET.  
2. CONTROL TRANSFORMER TO PROVIDE CONTROL VOLTAGE FROM MAIN POWER SUPPLY.  
3. WALL-MOUNTED LOW-VOLTAGE THERMOSTAT WITH RANGE LIMITING DEVICES TO PREVENT SETPOINT ABOVE 55 DEG. F.  
4. DISCONNECT SWITCH.

LOUVER SCHEDULE												
TAG	MANUFACTURER	MODEL	TYPE	SERVICE	APPLICATION	SIZE W X H (IN.)	DEPTH (IN.)	FREE AREA (SQ. FT)	AIRFLOW (CFM)	VELOCITY (FPM)	APD (IN. WG)	NOTES
L-1	GREENHECK	AFA-801	ACOUSTIC AIRFOIL	GENERATOR	EXHAUST	84 X 42	8	7.67	8770	1143	0.10	---
L-2	GREENHECK	AFA-801	ACOUSTIC AIRFOIL	GENERATOR	INTAKE	84 X 48	8	9.04	9490	1050	0.07	---

NOTES:  
1. BEGINNING POINT OF WATER PENETRATION 879 FPM FREE AREA VELOCITY PER AMCA 511 TEST STANDARD.  
2. FINISH: CLEAR ANODIZE R-1, >0.7 MIL THICKNESS, 5-YEAR WARRANTY.  
3. INTERIOR BIRDSCREEN.  
4. NOISE REDUCTION VALUES APPLY TO BOTH ACOUSTIC LOUVERS. NOISE REDUCTION IS TRANSMISSION LOSS PLUS 6 dB.  
5. AIRFLOWS BASED ON CUMMINS DSHAB DIESEL GENERATOR.

FAN SCHEDULE																								
TAG	MANUFACTURER	MODEL	SERVICE	APPLICATION	AIRFLOW RATED (CFM)	AIRFLOW BALANCE (CFM)	STATIC PRESSURE (IN. WG)	FAN SPEED (RPM)	NOISE INLET (SONES)	NOISE OUTLET (SONES)	NOISE INLET (dB(A))	NOISE OUTLET (dB(A))	POWER (BHP)	FAN OVERALL SIZE W X H L D (IN.)	WEIGHT (LBS)	FAN TYPE	DRIVE TYPE	MOTOR CONTROL	MOTOR SPEED (RPM)	MOTOR TYPE	MOTOR SIZE (HP)	FLA (AMPS)	VOLTAGE (V/PH/Hz)	NOTES
SF-1	LOREN COOK	30TD11	GENERATOR	SUPPLY	11,080	9,500	0.4	1140	31	38	80	82	1.94	34 DIA. X 25	311	TUBE AXIAL	DIRECT	VFD	1140	TEFC	2	---	460/3/60	OUTLET GUARD
EF-1	LOREN COOK	GC-720	GENERATOR	EXHAUST	619	500	0.375	1375	6.5	---	48	---	245 W	17 X 12 X 12	40	CEILING	DIRECT	TIMER	1375	ODP	---	3.9	120/1/60	---

NOTES:  
1. INTERLOCK SF-1 WITH GENERATOR AND DAMPERS.  
2. AMCA CERTIFIED SOUND AND AIR RATINGS.  
3. SF-1: VERIFY REQUIRED AIRFLOW WITH APPROVED GENERATOR. BASIS OF DESIGN CUMMINS DSHAB GENERATOR REQUIRES 9,486 CFM COMBINED RADIATOR & COMBUSTION AIR.  
4. SF-1: BALANCE AIRFLOW WITH VFD AND WITH INTAKE DAMPER SETTING AS REQUIRED.  
5. EF-1: WHITE METAL INLET GRILLE, FACTORY-MOUNTED AND WIRED SPEED DIAL FOR BALANCING.

<b>SCHEDULES</b>		<b>B1</b>
NO SCALE	REF: NA	

### LEGEND

AC AIR CONDITIONING UNIT	HC HEATING COIL		ACV 2 - WAY
ACC AIR COOLED CONDENSER	HEDV HOSE END DRAIN VALVE		ACV 3 - WAY
ACV AUTOMATIC CONTROL VALVE	HP HORSEPOWER		BACKDRAFT DAMPER
AD ACCESS DOOR	HZ HERTZ (CYCLES PER SECOND)		CAP - PIPE
AFF ABOVE FINISHED FLOOR	IN. INCH, INCHES		CHECK VALVE
AFG ABOVE FINISHED GRADE	L LOUVER		COMBINATION BALANCING, FLOW MEASURING & TIGHT SHUT-OFF VALVE
AHU AIR HANDLING UNIT	LD LINEAR DIFFUSER		DRAIN VALVE WITH 3/4" HOSE CONNECTION, BRASS CAP AND DRAW
ALD ACOUSTICALLY LINED DUCT	MAX MAXIMUM		DUCT SECTION - SUPPLY
ATC AUTOMATIC TEMPERATURE CONTROL	MBH 1000 BRITISH THERMAL UNITS PER HOUR		DUCT SECTION - RETURN/EXHAUST
BD BAROMETRIC DAMPER	MD MOTORIZED DAMPER		DUCT TURNING VANES
BDD BACKDRAFT DAMPER	MIN MINIMUM		FIRE DAMPER (1 1/2 HOUR RATED)
BHP BRAKE HORSEPOWER	MS MAGNETIC STARTER		ISOLATION VALVE
CBD COUNTERBALANCED BACKDRAFT DAMPER	N.I.C. NOT IN CONTRACT		LOUVER
CC COOLING COIL	OA OUTSIDE AIR		MANUAL AIR VENT
CD CEILING DIFFUSER	OED OPEN ENDED DUCT		MOTORIZED DAMPER
CDR CONDENSATE DRAIN (FROM COOLING COIL)	PD PRESSURE DROP		PITCH DOWN
CDRP CONDENSATE DRAIN PUMP (FOR COOLING COIL)	PH PREHEAT COIL		PLUG VALVE
CG CEILING GRILLE	PRD PRESSURE RELIEF DAMPER		PUMP WITH FLANGES
CFM CUBIC FEET PER MINUTE	REF RETURN/EXHAUST FAN		PRESSURE GAUGE (4-INCH DIA.)
CO CLEANOUT	RET RETURN		PRESSURE REDUCING VALVE
CPD CONDENSATE PUMP DISCHARGE	RF RETURN AIR FAN		PRESSURE RELIEF VALVE
CRAC COMPUTER ROOM AIR CONDITIONER	RH REHEAT COIL		PRESSURE RELIEF DAMPER
CTE CONNECT TO EXISTING	RPM REVOLUTIONS PER MINUTE		REDUCER - CONCENTRIC
CUH CABINET UNIT HEATER	RR RETURN REGISTER		REDUCER - ECCENTRIC
CW COLD WATER	S SWITCH		RETURN AIR
D CONDENSATE DRAIN	SD SMOKE DAMPER		RETURN AIR DUCT
DDR DOUBLE DEFLECTION REGISTER	SF SUPPLY FAN		RETURN PIPING (HEATING WATER, CHILLED WATER HEAT RECOVERY, CONDENSATE RETURN)
DHW DOMESTIC HOT WATER	SG SUPPLY GRILLE		SECTION I.D. (SECTION A SHOWN ON DWG. MH101)
EF EXHAUST FAN	SP STATIC PRESSURE		STRAINER
EG EXHAUST GRILLE	SS STAINLESS STEEL		SUPPLY AIR
ER EXHAUST REGISTER	SV SOLENOID VALVE		SUPPLY AIR DUCT
EXG EXISTING	TD TRANSFER DUCT		SUPPLY PIPING (HEATING WATER, CHILLED WATER HEAT RECOVERY, STEAM)
EXH EXHAUST	TF TRANSFER FAN		TAKE - OFF FROM BOTTOM OF PIPE
FC FLEXIBLE CONNECTOR	TC TRANSFER GRILLE		TAKE - OFF FROM TOP OF PIPE
FCU FAN COIL UNIT	UH UNIT HEATER		TEMPERATURE SENSOR
FD FIRE DAMPER	VAV VARIABLE AIR VOLUME BOX		THERMOMETER (4-INCH DIA. TYPE)
FPT FREEZE PROTECTION THERMOSTAT	VD VOLUME DAMPER		THERMOMETER WELL
FR FLOOR REGISTER	VF VENTILATION FAN		DUCT MOUNTED SMOKE DETECTOR (BY DIVISION 16)
FS FLOW SWITCH	WC WATER COLUMN		THERMOSTAT
FT FEET	WG WALL GRILLE		UNION
GPM GALLONS PER MINUTE	WR WALL REGISTER		VOLUME DAMPER
GR GLYCOL RETURN	W/ WITH		
GS GLYCOL SUPPLY			

S (SUPPLY) R (RETURN)  
E (EXHAUST) T (TRANSFER)  
SUPPLY DIFFUSER (TYPE 2)  
DIFFUSER DESCRIPTION (SEE REG., GRILLES & DIFF. SCHEDULE)  
QUANTITY  
400 CFM EA

<b>LEGEND</b>		<b>A2</b>
NO SCALE	REF: NA	

### GENERAL NOTES

- VISIT THE BUILDING SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS, AND TO TAKE MEASUREMENTS AS NECESSARY FOR COMPLETION OF THE WORK ASSOCIATED WITH THE DESIGN INTENT OF THESE CONTRACT DOCUMENTS.
- COORDINATE WORK OF MECHANICAL SUBCONTRACTOR WITH WORK OF OTHER TRADES.
- DUCTWORK, PIPING AND EQUIPMENT ARE INDICATED DIAGRAMMATICALLY. FIELD-VERIFY LOCATIONS.
- PRIOR TO FABRICATING DUCTWORK, COORDINATE WITH OTHER TRADES TO ENSURE THAT THE DUCTWORK CAN BE INSTALLED WITH THE INDICATED SIZES AND LOCATIONS. FIELD-VERIFY EXISTING DUCT SIZES AND CONDITIONS. SUBMIT ANY DISCREPANCIES OR PROPOSED CHANGES.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATIONS OF CEILING DIFFUSERS AND REGISTERS.
- PROVIDE VOLUME DAMPERS SO THAT EVERY REGISTER, GRILLE, AND DIFFUSER (SUPPLY, RETURN, AND EXHAUST) CAN BE INDIVIDUALLY BALANCED. VERIFY INSTALLATION OF EXISTING VOLUME DAMPERS AT EACH BRANCH IN EXISTING SUPPLY DUCT. PROVIDE ADDITIONAL VOLUME DAMPERS WHERE REQUIRED.
- LOCATE VOLUME DAMPERS AS FAR AWAY FROM REGISTERS, GRILLES, AND DIFFUSERS AS POSSIBLE TO MINIMIZE NOISE. LOCATE TO BE UNOBSTRUCTED AND EASILY ACCESSIBLE FOR TESTING AND BALANCING. LOCATE ABOVE ACCESSIBLE SUSPENDED CEILINGS WHEREVER POSSIBLE. WHERE VOLUME DAMPERS MUST BE LOCATED ABOVE CEILING ACCESS PANELS, PROVIDE ACCESS PANELS AS SPECIFIED AND NOTIFY THE ARCHITECT VERBALLY AND IN WRITING OF SUCH LOCATIONS. OBTAIN PERMISSION FROM THE ARCHITECT BEFORE INSTALLING ACCESS PANELS.
- DUCT ELBOWS SHALL BE LONG-RADIUS TYPE (THROAT RADIUS EQUAL TO OR GREATER THAN DUCT WIDTH IN THE PLANE OF THE TURN) WHEREVER SPACE ALLOWS. IF SPACE IS NOT ADEQUATE, PROVIDE MITERED ELBOWS WITH TURNING VANES.
- PROVIDE 16 GAUGE SINGLE-THICKNESS TURNING VANES AT MITERED DUCT ELBOWS. VANE EDGES (LEADING AND TRAILING) SHALL BE TANGENTIAL TO AIRFLOW.
- FLEXIBLE DUCTWORK IN NEGATIVE PRESSURE SYSTEMS (RETURN AND EXHAUST) SHALL BE SEMI-RIGID METAL TYPE EQUAL TO BUCKLEY BUCK-DUCT.
- FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 5'-0".
- PAINT DUCTWORK VISIBLE THRU CEILING OPENINGS, DUCT OPENINGS, AND REGISTERS, GRILLES AND DIFFUSERS WITH BLACK PAINT IN ACCORDANCE WITH SECTION 09500 - PAINTING.
- PIPING INDICATED IN OUTSIDE WALLS SHALL BE RUN ON THE WARM SIDE OF BUILDING INSULATION AND VAPOR BARRIER. BUILDING INSULATION BEHIND SUCH PIPING SHALL BE CONTINUOUS, WITHOUT JOINTS OR GAPS.
- PIPING SHALL BE CONCEALED EXCEPT IN MECHANICAL ROOMS AND AS INDICATED. WHERE PIPES DROP IN BLOCK WALLS, PROVIDE 1/2" THICK INSULATION MINIMUM.
- SEAL DUCTWORK AND PIPING THRU MECHANICAL ROOM FLOORS AND PARTITIONS AND THRU FIRE-RATED ASSEMBLIES, WITH FIRESTOPPING MATERIAL AS SPECIFIED.
- MOUNT THERMOSTATS AND TEMPERATURE AND HUMIDITY SENSORS AT 48 INCHES AFF TO CENTERLINE OF ITEM. PROVIDE ELECTRICAL WALL BOX ATTACHED TO FRAMING.
- WHERE THERMOSTATS/TEMPERATURE SENSORS ARE LOCATED NEAR LIGHT SWITCHES, INSTALL SO THAT LIGHT SWITCHES ARE NEARER THE DOOR JAMBES. THE INTENT IS TO LOCATE THERMOSTATS/TEMPERATURE SENSORS SO THEY WILL NOT INTERFERE WITH ACCESSIBILITY OF LIGHT SWITCHES.

<b>GENERAL NOTES</b>		<b>A1</b>
NO SCALE	REF: NA	

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Project Title

**UNIVERSITY OF SOUTHERN MAINE SOUTHERN BUILDING GENERATOR REPLACEMENT**

Portland, Maine

NA Project No.	10633
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Key Plan

Mark	Date	Description
	05-09-2011	ISSUED FOR BID
	04-05-2011	ISSUED FOR 100% REVIEW
	01-24-2011	ISSUED FOR 75% REVIEW

Drawing Status

Drawing Title

**LEGEND, NOTES & SCHEDULES**

PA / PE: \_\_\_\_\_ Drawn By: \_\_\_\_\_

Drawing Number

**M00.1**