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 DESIGNED BY:  
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 PROJECT:  
 21502.10

UNIVERSITY OF NEW ENGLAND  
 PORTLAND CAMPUS  
 STEVEN AVENUE ARMORY  
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RENOVATIONS TO THE  
 STEVENS AVENUE ARMORY

MECHANICAL  
 SCHEDULES 1

SCALE: AS NOTED

DATE: 05-24-16

DWG. M-601

SHEET: 139 OF 169

**AIR HANDLING UNIT SCHEDULE**

UNIT NO	SERVES	SA FAN			COOLING COIL (BASED ON 33% PROPYLENE GLYCOL SOLUTION)										HOT WATER COIL (BASED ON 33% PROPYLENE GLYCOL SOLUTION)										ELECTRICAL		INSTALLED WEIGHT LBS	BASIS OF DESIGN	NOTES
		ESP	MAX CFM	MIN OA	TYPE	ENTERING AIR DB/WB F	LEAVING AIR DB/WB F	TC/SC MBH	EWT/LWT F	GPM	MAX WPD FT WC	ROWS	APD IN WC	DESIGN AIRFLOW	EAT F	LAT F	APD IN WC	GPM	ROWS	WPD FT WC	EWT F	LWT F	MBH	FAN HP	RPM	VOLTS/PHASE			
AHU-1	LG FUNCTION RM	1.5	12,000	600	CHW	80/67	53.0/52.9	515/357	45/55	112.6	9.3	0.84	5700	0	65	0.2	28.0	2	3.0	180	150	399	20	1800	460/3	3900	TRANE CLCH	1,2,3,4,6,7,8,10,11	
AHU-2	CLASSROOMS	2.5	9000	600	CHW	80/67	52.6/52.5	396/372	45/55	86.5	7.2	0.72	3930	0	65	0.2	19.4	2	3.0	180	150	275	10	1800	460/3	3300	TRANE CLCH	1,2,3,4,6,7,8,10,11	
AHU-3	PRE-FUNCTION RM	2.0	7500	600	CHW	80/67	55.0/54.5	290/207	45/55	63.3	19.5	0.55	3670	0	65	0.2	18.1	2	3.0	180	150	257	10	1800	460/3	2700	TRANE CLCH	1,2,3,4,6,7,8,10,11	

NOTES: 1. PROVIDE MERV 8 AND MERV 13 FILTER IN MIXING BOX. 2. VFD FOR SUPPLY FAN. 3. INTERIOR AIR HANDLING UNIT. 4. VAV SYSTEM. 5. CONSTANT VOLUME SYSTEM. 6. MAXIMUM FILTER FACE VELOCITY = 625 FPM. 7. MAXIMUM COIL FACE VELOCITY = 600 FPM. 8. PROVIDE STAINLESS STEEL DRAIN PAN. 9. EXTERIOR AIR HANDLING UNIT. 10. REFER TO MECHANICAL DETAIL DRAWINGS FOR AIR HANDLING UNIT CONFIGURATION DIAGRAM. 11. PROVIDE LOW FLOW AIR MEASURING STATION IN OUTSIDE AIR INTAKE.

**AIR COOLED CHILLER SCHEDULE**

UNIT NO	CAPACITY NOMINAL LOAD TONS	CHILLED WATER				REFRIG TYPE	EER FULL LOAD	DESIGN COND AMBIENT	CONDENSER FANS			COMPRESSOR(S)			ELECTRICAL			UNIT WEIGHT (LB)	BASIS OF DESIGN	NOTES	
		GPM	EWT	LWT	WPD (FT)				QTY	FAN KW EA	TOTAL FLA	QTY	# OF CKTS / CAPACITY STEPS	RLA EA	LRA EA	VOLTS/PHASE	MCA				MOP (A)
CH-1	110	287	55	45	32.9	410A	15.3	86/71	8	9.90	26.6	4	2/4	41.9/50.6	260/320	460/3	250.1	250.0	9400	TRANE CGAM 110	1-13

NOTES: 1. PROVIDE UL LISTING. 2. PROVIDE LOW AMBIENT (10F) OPERATION. 3. PROVIDE FREEZE PROTECTION. 4. PROVIDE FACTORY INSULATION- ALL COLD PARTS. 5. PROVIDE FACTORY FULL REFRIGERANT CHARGE. 6. PROVIDE MICRO CHANNEL CONDENSER COILS WITH COMPLETE COAT. 7. PROVIDE SINGLE POINT POWER CONNECTION. 8. PROVIDE BACNET INTERFACE. 9. PROVIDE WITH DUAL HIGH HEAD PUMP PACKAGE WITH VARIABLE SPEED DRIVES. 10. PROVIDE WITH INTEGRAL BUFFER TANK. 11. PROVIDE SEISMICALLY RATED ISOLATORS. 12. PROVIDE HIGHEST PERFORMANCE SOUND ATTENUATION PACKAGE OFFERED BY CHILLER MANUFACTURER. 13. PROVIDE ARCHITECTURAL LOUVERED PANELS.

**PACKAGED ROOFTOP HVAC UNIT SCHEDULE**

UNIT NO	AREA SERVED	NOMINAL COOLING CAPACITY, TONS	MIN COOLING		ENTERING AIR DB/WB	CFM		EXTERNAL STATIC PRESSURE IN WC	ECONOMIZER	GAS HEATING OUTPUT MBH	ELECTRICAL VOLTS/PHASE	UNIT WEIGHT (LBS)	BASIS OF DESIGN	NOTES
			SENSIBLE COOLING MBH	TOTAL COOLING MBH		SUPPLY AIR	MIN OUTSIDE AIR							
RTU-1	OPEN OFFICE-NORTH	15.0	135	176	86.0/71.0	5300	400	1.5	YES	246	460/3	2200	TRANE PERFORMANCE YSH180	1,2,3,4,5,6,7,8,9,10,11
RTU-2	OPEN OFFICE-SOUTH	12.5	109	137	86.0/71.0	4500	260	1.5	YES	176	460/3	1800	TRANE PERFORMANCE YSH150	1,2,3,4,5,6,7,8,9,10,11
RTU-3	2ND FLR EAST CONF RMS	6.0	35	42	86.0/71.0	1840	280	1.0	NO	100	280/3	800	EXISTING YORK ZF072	11

NOTES: 1. PROVIDE STAINLESS STEEL HEAT EXCHANGER. 2. PROVIDE SMOKE DETECTOR IN THE SUPPLY DUCT AT OUTLET OF UNIT. 3. PROVIDE STAINLESS STEEL DRAIN PAN. 4. PROVIDE ECONOMIZER, COMPARATIVE ENTHALPHY WITH POWER VENT. 5. PROVIDE HINGED ACCESS PANELS WITH 2" MERV 13 FILTERS. 6. PROVIDE COMPLETE COAT CONDENSER COIL WITH HAIL GUARD. 7. PROVIDE THROUGH BASE ELECTRIC PIPING. 8. PROVIDE MODULATING GAS BURNER CONTROL. 9. PROVIDE BACNET COMMUNICATIONS INTERFACE. 10. PROVIDE CLOGGED FILTER SWITCH. 11. PROVIDE EQUIPMENT, MATERIALS AND LABOR TO SECURE ROOFTOP UNIT TO ELEVATED STEEL FRAME.

**AIR SEPARATOR SCHEDULE**

UNIT NO	LOCATION	SERVES	TYPE	CAPACITY (GPM)	PRESSURE DROP (FT)	STRAINER FREE AREA (SQ IN)	BASIS OF DESIGN	NOTES
AS-1	MECH RM 205	HYDRONIC HEATING LOOP	TANK	204	0.5	80	TACO AC4F	1
AS-2	MECH RM 205	CHILLED WATER LOOP	TANK	287	2.3	80	TACO AC4F	1

NOTES: 1. PERFORMANCE BASED ON 33% PROPYLENE GLYCOL SOLUTION.

**EXPANSION TANK SCHEDULE**

UNIT NO	LOCATION	SERVES	TANK VOLUME	ACCEPTANCE VOLUME	DIMENSIONS	BASIS OF DESIGN	NOTES
EXP-1	MECH RM 205	HTG WATER LOOP	45 GAL	24 GAL	20W x 44H	TACO CBX 170	1
EXP-2	CHILLER ENCLOSURE	CHILLED WATER LOOP	8 GAL	5 GAL	14W x 23H	TACO CBX 30	1

NOTES: 1. PERFORMANCE BASED ON 33% PROPYLENE GLYCOL.

**VAV TERMINAL UNITS SCHEDULE**

UNIT NO	SERVES	PRIMARY CFM		INLET SIZE IN	APD @ MAX AIRFLOW IN WC	HOT WATER COIL		NOTES
		MAX	MIN			MBH	GPM	
VAV-2.1	CLASSROOM 102	2000	600	14ø	0.2	16.2	1.7	1,2
VAV-2.2	CLASSROOM 101	2000	600	14ø	0.2	16.2	1.7	1,2
VAV-2.3	CLASSROOM 201N	2250	675	14ø	0.2	15.0	1.6	1,2
VAV-2.4	CLASSROOM 201S	2250	675	14ø	0.2	15.0	1.6	1,2
CAV-3.1	MECH ROOM 205	1360	0	12ø	0.2	N/A	N/A	3
CAV-2.1	CORRIDOR 103	200	200	5ø	0.2	5.0	0.5	2
CAV-2.2	CORRIDOR 202	300	300	6ø	0.2	5.0	0.5	2

NOTES:  
 1. PROVIDE CO2 CONTROL. REFER TO CONTROL DIAGRAM.  
 2. ZONE HEATING BY FIN RADIATION. REFER TO CONTROL DIAGRAM.  
 3. TO PROVIDE MAKE AIR TO MECHANICAL ROOM 205 WHEN EXHAUST FAN EF-4 IS ACTIVATED.  
 GENERAL NOTES (APPLIES TO ALL VAVS):  
 A. SELECTION BASED ON TRANE; OUTLET AND INLET SIZES SHOWN ON PLANS ARE BASED ON THIS MFR. VARIATIONS IN INLET AND OUTLET SIZES WHICH PROVIDE COMPARABLE PERFORMANCE ARE ACCEPTABLE.  
 B. UNLESS NOTED OTHERWISE, SIZE COILS FOR 180" EWT, 20" WTD, AND 5.0 FT OR LESS WPD.  
 C. 600 CFM, 20F ΔT USE AS BASIS FOR AIR COIL SELECTION. PERFORMANCE BASED ON 33% PROPYLENE GLYCOL SOLUTION.

**ENERGY RECOVERY UNIT SCHEDULE**

UNIT NO	SERVES	SUPPLY		EXHAUST		SUMMER RECOVERY				WINTER RECOVERY				COOLING COIL										HOT WATER COIL										HOT WATER COIL MODEL NUMBER	ELECTRICAL DATA VOLTS/PHASE	UNIT WEIGHT (LBS)	BASIS OF DESIGN	NOTES				
		CFM	ESP IN WC	FAN HP	CFM	ESP IN WC	FAN HP	EAT DB/WB F	LAT DB/WB F	EAT DB/RH	LAT DB/RH	EAT F	LAT F	EAT F	LAT F	TYPE	ENTERING AIR DB/WB F	LEAVING AIR DB/WB F	TC/SC MBH	EWT/LWT F	GPM	MAX WPD FT WC	ROWS	FINS/FT	APD IN WC	COOLING COIL MODEL NUMBER	EAT F	LAT F	APD IN WC	GPM	ROWS	FINS/FOOT	WPD FT WC						EWT F	LWT F	MBH	
ERV-1	RESTROOMS	3545	1.5	5.0	3450	1.5	5.0	86.8/73.9	77.8/65.7	75.0/50.0	84.3/71.8	-0.3	54.0	72835	15.2	CHW	77.8/65.7	60.2/59.2	75.1/67.5	45/55	15.9	5.1	4	120	0.34	CW58S04Q10-51X24	55.0	76.8	0.06	6.0	1	120	0.2	180	150	83.8	HW58S01Q10-51X22	460/3	17.8	2300	GREENHECK ERCH-45-30L-CW-HW-01	1,2,3,4,5
ERV-2	MEDICAL SIM AREA	1810	1.5	3.0	1690	1.5	3.0	86.8/73.9	78.1/66.0	75.0/50.0	84.3/71.8	-0.3	53.0	72835	15.0	CHW	78.1/66.0	60.4/59.3	39.4/34.8	45/55	8.3	3.2	4	120	0.32	CW58S04Q10-36X18	53.0	73.2	0.04	2.8	1	120	0.1	180	150	39.7	HW38S01H10-36X18	460/3	11.5	1700	GREENHECK ERCH-20-30L-CW-HW-01	1,2,3,4,5

NOTES: 1. PROVIDE LOW LEAKAGE, MOTORIZED DAMPERS FOR OUTSIDE AIR AND EXHAUST. 2. PROVIDE THE FOLLOWING ADDITIONAL OPTIONS AND ACCESSORIES: UL-cUL 1995, FROST CONTROL: MODULATING WHEEL, WEATHERHOOD: DOWNTURN HOOD, SPRING ISOLATION, WATER PIPING VESTIBULE, NETWORK PROTOCOL: BACnetIP, ROTATION SENSOR, DUCT FLANGE. 3. MERV 8 AND MERV 13 OUTSIDE AIR FILTER, MERV 8 RETURN AIR FILTER. 4. PROVIDE EQUIPMENT, MATERIALS AND LABOR TO SECURE ROOFTOP UNIT TO ELEVATED STEEL FRAME. 5. HEATING AND COOLING COIL PERFORMANCE BASED ON 33% PROPYLENE GLYCOL SOLUTION.

**GENERAL NOTE**

NOTE ON BASIS OF DESIGN  
 PRODUCTS OF OTHER MANUFACTURERS ARE ACCEPTABLE IF THEY MEET THE OPERATIONAL REQUIREMENTS INDICATED. ANY ADJUSTMENTS TO DUCTING, PIPING, WIRING OR CONFIGURATION DUE TO THE SELECTION OF A MANUFACTURER OTHER THAN THAT LISTED AS THE BASIS OF DESIGN WILL BE ACCOMPLISHED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE GOVERNMENT.