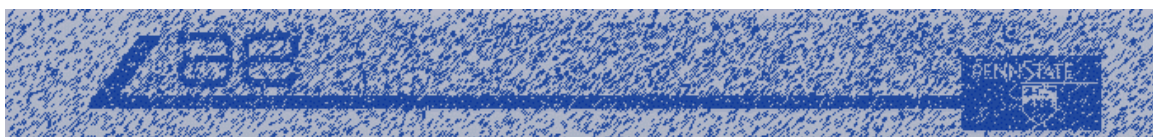
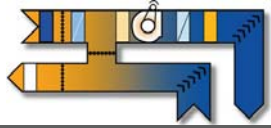


## Appendix A: Mechanical Equipment Schedules

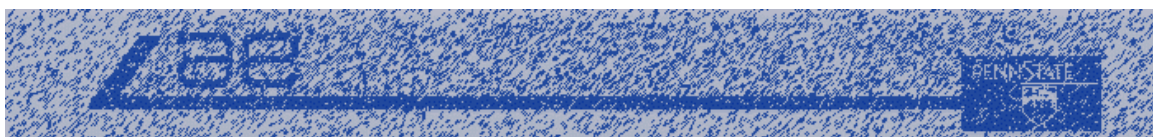
<b>Supply Air Handling Unit Schedule</b>				
Unit Number		AHU-1 to AHU-4 All Air Handlers are Identical		
Unit Location		Penthouse		
Areas served		All		
Unit Configuration		Draw-Through		
Supply Fans 2 per AHU	CFM/Fan		35,000	
	Total S.P. (in. H2O)		9.0	
	Total Pressure (in. H2O)		9.325	
	Electrical		480V 3-Phase	
	Motor – Max. BHP		100	
Heat Recovery Runaround Coils	Air Side	CFM		70,000
		Number of Coils		6
		$\Delta P$ max. (in. H2O)		0.8
		EAT ( $^{\circ}F$ )		0
		LAT ( $^{\circ}F$ )		31.7
	Total MBH		2448	
	Water Side	Fluid Type		40% Propylene Glycol
		GPM		455
		EWT ( $^{\circ}F$ )		45.4
		LWT ( $^{\circ}F$ )		33.6
$\Delta P$ max. (ft. H2O)		15		
Steam Preheat Coils	Air Side	CFM		70,000
		Number of Coils		2
		$\Delta P$ max. (in. H2O)		0.6
		EAT ( $^{\circ}F$ )		0
		LAT ( $^{\circ}F$ )		55
	Steam Side	Inlet psig		5
		Flow (lb./hr.)		4332
		Min. MBH		4158

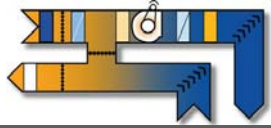




**Supply Air Handling Unit Schedule (Continued)**

Chilled Water Cooling Coils	Air Side	CFM	70,000
		Number of Coils	6
		$\Delta P$ max. (in. H20)	1.3
		EAT db/wb (°F)	91 / 75
		LAT db/wb (°F)	52.5 / 52
		Total MBH / Sensible MBH	5408 / 2910
	Water Side	Fluid Type	40% Propylene Glycol
		GPM	721
		EWT (°F)	44
		LWT (°F)	59
$\Delta P$ max. (ft. H20)		12	
Filters	Pre-Filter	Filter Efficiency %	30
		$\Delta P$ (in. H20)	.5
		Size (in.)	24 x 24
		CFM	70,000
		Number of Individual Filters	40
	Final Filters	Filter Efficiency %	95
		$\Delta P$ (in. H20)	1.0
		Size (in.)	24 x 24
		CFM	70,000
		Number of Individual Filters	40
Humidifiers	Space	CFM	70,000
		°F	72
		%RH	30
	Stm.	psig	8
		Lbs./hr.	763



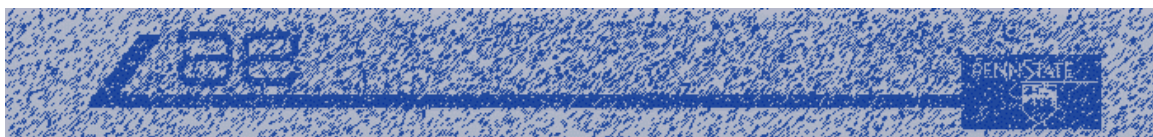


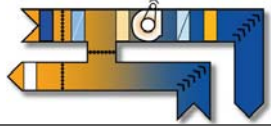
**Exhaust Air Handling Unit Schedule**

Unit Number		EAHU-1 – EAHU-4 All Air Handlers are Identical	
Unit Location		Penthouse	
Areas served		All	
Unit Configuration		Draw-Through	
Supply Fans 2 per AHU	CFM/Fan	35,000	
	Total S.P. (in. H2O)	9.0	
	Total Pressure (in. H2O)	9.325	
	Electrical	480V 3-Phase	
	Motor – Max. BHP	100	
Heat Recovery Runaround Coils	Air Side	CFM	70,000
		Number of Coils	6
		ΔP max. (in. H2O)	1.1
		EAT db.wb (°F)	78 / 62
		LAT db/wb (°F)	49.8 / 49.3
		Total MBH / Sensible MBH	2468 / 2167
	Water Side	Fluid Type	40% Propylene Glycol
		GPM	455
		EWT (°F)	33.6
		LWT (°F)	45.4
		ΔP max. (ft. H2O)	15
		FPI	8
Filters	Pre-Filter	CFM	70,000
		ΔP (in. H2O)	0.5

**Finned Tube Radiation Schedule**

Unit No.	Min Cap. BTUH/LFT	AWT °F	Pipe Size	Fins / ft.	No. of Elements
A	1130	190	1-1/4" Copper	33	1
B	1130	190	1-1/4" Copper	33	1
C	910	190	1-1/4" Copper	48	1
D	910	190	1-1/4" Copper	48	1



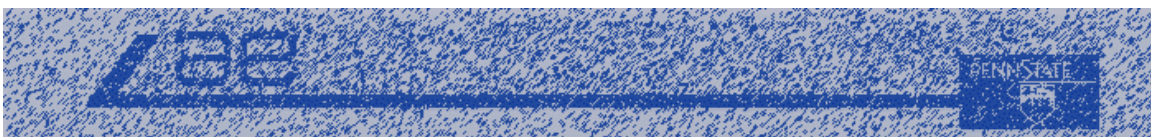


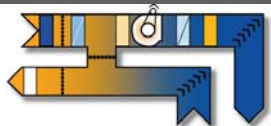
**Air Distribution Device Schedule**

Unit No.	Service	Air Pattern	Material
A	Supply Air	1-Way	Painted Steel
B	Supply Air	2-Way 90°	Painted Steel
C	Supply Air	2-Way 180°	Painted Steel
D	Supply Air	3-Way	Painted Steel
E	Supply Air	4-Way	Painted Steel
F	Return / Exhaust	-	Painted Steel
G	Supply Air	-	Painted Steel
H	Supply Air	-	Painted Steel
I	Toilet Exhaust	-	Painted Steel
J	-	Not Used	Not Used
K	Supply Air	Double Deflection	Painted Steel
L	Supply Air	1 & 2 Way	Painted Steel
M	-	Not Used	Not Used
N	Return / Exhaust	45°Fixed	Painted Steel
O	-	Not Used	Not Used
P	Return / Exhaust	45°Fixed	Painted Steel
Q	Supply Air	Double Deflection	Painted Steel
R	Return / Exhaust	45° Fixed	Painted Steel
G <sub>1</sub>	Supply Air	-	Painted Steel

**General Fan Schedule**

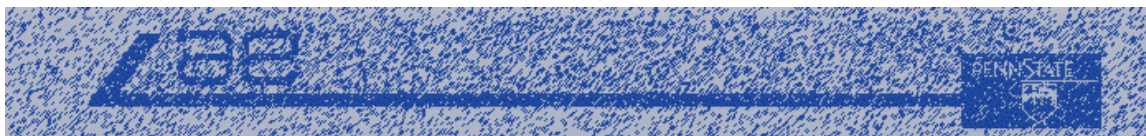
Unit No.	Service	Location	Wheel Diam. in.	CFM	Tot. S.P. in. H20	Motor Data @ 60 Hz			
						HP	Fan RPM	V	PH
EX-1	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-2	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-3	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-4	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-5	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-6	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-7	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3

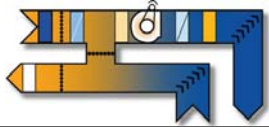




**General Fan Schedule (Continued)**

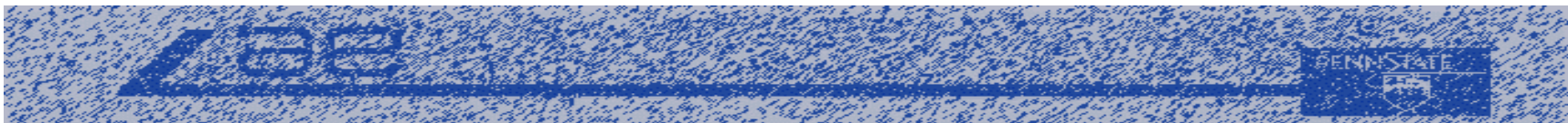
Unit No.	Service	Location	Wheel Diam. in.	CFM	Tot. S.P. in. H2O	Motor Data @ 60 Hz			
						HP	Fan RPM	V	PH
EX-8	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-9	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-10	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-11	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-12	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-13	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-14	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-15	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-16	General Exhaust	Roof	50	23,000	6.5	40	1170	480	3
EX-17	Special Exhaust	Level 11	21	7000	8	20	2414	480	3
EX-17A	Special Exhaust	Level 11	21	7000	8	20	2414	480	3
EX-19	Stair No. 1	Roof	21	6600	2	5	1625	480	3
EX-20	Stair No. 1	Wall	16.5	2500	0.5	0.75	1078	480	3
EX-21	-	-	-	-	-	-	-	-	-
EX-22	Mechanical Rm.	Level 11	22.5	6000	2	5	1266	480	3
EX-23	Electric Bsmt	Level 11	15	1200	2	1.5	2023	480	3
EX-24	Glass Wash	Level 11	18	3000	2	3	1511	480	3
EX-25	Penthouse	Roof	24.5	5500	0.5	1.5	709	480	3
EX-26	Electric Vault	Basement	24	8000	1.5	5	1770	480	3
EX-27	Lvl 11 Elec Rm	Level 11	15	2400	0.5	1	1923	480	3
SF-1	Electric Vault	Basement	24	8000	1.5	5	1770	480	3

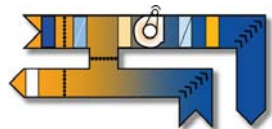




**Variable and Constant Volume Box Schedule**

Unit #	Type	Design Range CFM	$\Delta P$ max. (in. H2O)	Hot Water Coil		Inlet Duct Size (in.)	Outlet Duct Size (in.)
				MBH	GPM		
VCV/CV-6	V/C Volume	75-400	0.7	19.4	0.7	7	12 x 10
VCV/CV-8	V/C Volume	150-700	0.7	34	1.1	9	12 x 12
VCV/CV-10	V/C Volume	250-1000	0.7	48.6	1.6	11	16 x 12
VCV/CV-12	V/C Volume	350-1500	0.7	72.9	2.4	13	20 x 12
VCV/CV-14	V/C Volume	475-1950	0.7	94.8	3.2	14	24 x 12
VCV/CV-16	V/C Volume	650-2800	0.7	136.1	4.5	16	30 x 12
VCVE/CVE-6	Variable Volume Exhaust	75-400	0.2	-	-	12 x 10	12 x 10
VCVE/CVE-8	Variable Volume Exhaust	150-700	0.2	-	-	12 x 12	12 x 12
VCVE/CVE-10	Variable Volume Exhaust	250-1000	0.2	-	-	16 x 12	16 x 12
VCVE/CVE-12	Variable Volume Exhaust	350-1500	0.2	-	-	20 x 12	20 x 12
VCVE/CVE-14	Variable Volume Exhaust	475-1950	0.2	-	-	24 x 12	24 x 12
VCVE/CVE-16	Variable Volume Exhaust	650-2300	0.2	-	-	30 x 12	30 x 12





**Reed Berinato**  
Mechanical Option

**Jaharis Center**  
Boston, MA

Mechanical Systems Existing Conditions

November 12, 2004

### Double Effect Steam Absorption Chiller Schedule

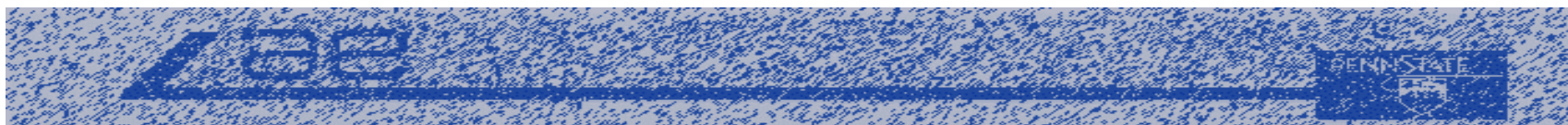
Mark	Nom. Tons	Steam Performance Max.			Chilled Water Data				Absorber-Cond. Water Data				Electrical	
		Press. psig	Lbs. Ton-hr	Lbs hr Total	GPM	$\Delta P$ max. (ft. H2O)	EWT °F	LWT °F	GPM	$\Delta P$ max. (ft. H2O)	EWT °F	LWT °F	Volts	Max kW
CH-2	800	114	9.69	7754	1280	8.4	59	44	3510	30	85	95	480	11.4

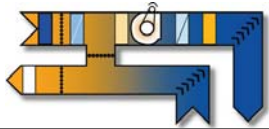
### Centrifugal Chiller Schedule (High Efficiency)

Unit No.	Nom. Tons	Compressor Data			Evaporator (Water)				Condensator				Electrical	
		FLA	kW Rating	kW/Ton max	GPM	$\Delta P$ max. (ft. H2O)	EWT °F	LWT °F	GPM	$\Delta P$ max. (ft. H2O)	EWT °F	LWT °F	Volts	Max Amp
CH-1	600	492	333	0.55	960	19.3	59	44	1800	12.0	85	95	480	1000

### Cooling Tower Schedule

Unit No.	Nom. tons	No. of Cells	EWT °F	LWT °F	EAT Wb °F	GPM	No. of Fans	Motor Data				
								HP	RPM	Volts	Phase	Hz
CT-1	1774	2	95	85	78	5320	2	60/Cell	1800	480	3	60
CT-2	50	1	95	85	78	150	1	7.5	1800	480	3	60





**Water Pump Schedule**

Unit No.	Service	Type	GPM	Head ft. H2O	HP	RPM	Volts	Phase	Hz	Emergency Power
HWP-1	Radiation	End Suction	300	65	10	1750	480	3	60	Yes
HWP-2	Reheat	End Suction	500	65	15	1750	480	3	60	No
HWP-3	Shared Standby	End Suction	500	65	15	1750	480	3	60	Yes
CHP-1	Pri. Chilled Water	Double Suction	960	55	20	1750	480	3	60	No
CHP-3	Shared Standby	Double Suction	1280	40	20	1750	480	3	60	No
SCHP-1	Secondary Chilled Water	Double Suction	2240	80	60	1750	480	3	60	No
SCHP-2	Secondary Chilled Water	Double Suction	2240	80	60	1750	480	3	60	No
HRP-1	Heat Recovery	Double Suction	1800	80	50	1750	480	3	60	No
PCWP-1	Process Cond. Water	End Suction	150	80	5	1750	480	3	60	No
PCWP-2	Process Cond. Water	End Suction	150	80	5	1750	480	3	60	No
CWP-1	Condenser Water	Double Suction	1800	80	50	1750	480	3	60	No
CWP-3	Shared Standby	Double Suction	3620	90	125	1750	480	3	60	No
CP-1	Duplex Condensate Return	-	90	-	2@7.5	3500	480	3	60	No
CP-2	Duplex Condensate Return	-	75	-	2@5	3500	480	3	60	No
CP-3	Duplex Condensate Return	-	9	-	2@1	3500	480	3	60	No
CP-4	Duplex Condensate Return	-	37	-	2@3	3500	480	3	60	No

