MECHANICAL LEGEND

ABBREVIATIONS

ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AIR	MEDICAL OR COMPRESSED AIR
BDD	BACKDRAFT DAMPER
BFP	BACKFLOW PREVENTER
BLW	BELOW
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CAP	CAPACITY
CD	CONDENSER WATER RETURN
CDR	CONDENSER WATER SUPPLY
CDS	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CLG	CEILING OR COOLING (CONTEXT)
CO	CLEANOUT
CONT	CONTINUOUS OR CONTINUATION (CONTEXT)
CW	DOMESTIC COLD WATER
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
DB	DRY BULB (TEMP)
DEG	DEGREES
DN	DOWN
DWG	DRAWING
ELEC	ELECTRIC OR ELECTRICAL (CONTEXT)
ESP	EXTERNAL STATIC PRESSURE
ENT	ENTERING WATER TEMP
EXIST	EXISTING
EXST	EXISTING
FD	FLOOR DRAIN (PLUMBING); FIRE DAMPER (HVAC)
FDC	FIRE DEPARTMENT CONNECTION
FPM	FILTER RETURN GRILL
FRG	FEET PER MINUTE
FT	FEET
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HP	HORSEPOWER
HTG	HEATING
HUB	HUB DRAIN
HW	DOMESTIC HOT WATER
HWR	DOMESTIC HOT WATER RETURN
HZ	HERTZ (FREQUENCY)
IN	INCHES
INCL	INCLUDES, INCLUDING (CONTEXT)
KW	KILOWATT
LAT	LEAVING AIR TEMP
LWT	LEAVING WATER TEMP
MBH	THOUSAND BTUH
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINUTE(S)
MTD	MOUNTED
NTS	NOT TO SCALE
O2	OXYGEN
PD	PRESSURE DROP
PLBG	PLUMBING
PSI	POUNDS PER SQUARE INCH (PRESSURE)
PSIG	PSI (GAUGE PRESSURE)
RD	ROOF DRAIN
RG	REQUIRED
REQD	RETURN GRILL
RPM	REVOLUTIONS PER MINUTE
SEC	SECONDS
SENS	SENSIBLE
SP	STATIC PRESSURE
SQ FT	SQUARE FOOT/FEET (AREA)
SNG	SIDEWALL GRILL / REGISTER
TEMP	TEMPERATURE
THRU	THROUGH
TYP	TYPICAL
VAC	VACUUM
VERT	VERTICAL
VTR	VENT THROUGH ROOF
W	WITH
WO	WITHOUT
WB	WET BULB (TEMP)
WG	WATER GAUGE (PRESSURE)
WPD	WATER PRESSURE DROP
WSHP	WATER SOURCE HEAT PUMP

SYMBOLS

(FD)	FIRE DAMPER
AP	ACCESS PANEL
	SPIN-IN DUCT FITTING
	FLEX RUNOUT FROM SPIN-IN FITTING
	CEILING DIFFUSER
	RETURN AIR GRILL
	45 DEG BRANCH TAKEOFF WITH DAMPER
	PIPE DOWN
	PIPE UP
OR	ISOLATION VALVE (PIPING)
BDD	BACKDRAFT DAMPER
	MOTORIZED OBVD DAMPER
M	
T	THERMOSTAT / TEMPERATURE SENSOR
H	HUMIDITY SENSOR
CO2	CARBON DIOXIDE SENSOR

VAV BOX SCHEDULE

TAG	TYPE	MIN CFM	COOLING MAX CFM	HEATING MAX CFM	TOTAL KW	# OF ELEMENTS	ELEC VOLT/PH	REMARKS
VAV 1-1	PRIMARY	200	600	300	3.0	1	277/1	LOCAL DDC CONTROLS
VAV 1-2	PRIMARY	300	750	450	5.0	1	277/1	LOCAL DDC CONTROLS
VAV 2-1	PRIMARY	175	400	270	3.0	1	277/1	LOCAL DDC CONTROLS
VAV 2-2	PRIMARY	400	800	500	5.0	1	277/1	LOCAL DDC CONTROLS
VAV 2-3	PRIMARY	250	600	350	4.0	1	277/1	LOCAL DDC CONTROLS
VAV 2-4	PRIMARY	500	1400	720	8.0	1	480/3	LOCAL DDC CONTROLS
VAV 2-5	PRIMARY	500	1000	650	6.0	1	277/1	LOCAL DDC CONTROLS
VAV 2-6	PRIMARY	350	1200	500	5.0	1	277/1	LOCAL DDC CONTROLS

FURNISH WITH XXXV-24V TRANSFORMER, AND DDC THERMOSTAT CONTROLS WITH AUTO CHANGEOVER.
PROVIDE LISTED ACCESSORY ELECTRIC HEATERS WITH VAV UNITS.
UNIT CONTROLLERS SHALL HAVE DUAL-MAXIMUM SETPOINT FULLY PROGRAMMABLE CONTROLS BY SIEMENS.

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CHILLED WATER AIR HANDLING UNIT SCHEDULE

TAG	TOT CFM	MAX OA CFM	ESP	SERVES	COOLING COIL								ELECTRIC HEATING SECTION			ELEC VOLT/PH	MOTOR HP	REMARKS
					GPM	TOT MBH	ENT H2O °F	LVG H2O °F	ENT AIR °F (DB)	ENT AIR °F (WB)	LVG AIR °F (DB)	LVG AIR °F (WB)	KW	ENT TEMP	LVG TEMP			
AHU-1	2000	900	0.60"	CAGES	24.0	120.0	44	54	87.1	73.9	54.6	54.6	25.0	50.0	90.0	460/3	2.0	--
AHU-2	6000	1200	2.0"	1ST/2ND FLRS	56.0	280.0	44	54	83.6	69.4	54.2	53.8	7.5	36.0	55.0	460/3	7.5	--

NOTE: UNIT SHALL HAVE THE FOLLOWING FEATURES:
DOUBLE WALL CONSTRUCTION WITH FIBERGLASS INSULATED PANEL SYSTEM, DOUBLE-SLOPED IAQ DRAIN PAN, DRAW-THROUGH CONFIGURATION, HIGH-EFFICIENCY INVERTER-DUTY FAN MOTORS, SINGLE-POINT POWER CONNECTIONS, INTEGRATED (FACTORY-MOUNTED) DDC-CONTROLS, SENSORS, AND DEVICES.
AHU-1 HEATING SECTION SHALL BE EXTERNALLY-MOUNTED DUCT HEATER. AHU-2 HEATING SECTION IS DUCT MOUNTED HEATER IN OA DUCTWORK.

AIR COOLED CHILLER SCHEDULE

TAG	NOM TONS	EVAPORATOR						ELEC VOLT/PH	UNIT MCA	RECC MOP	EER	EER NPLV	REFRIG	MODEL #	WEIGHTS (LBS) RIGGING / OPER	REMARKS
		GPM	ENT H2O °F	ENT H2O °F	# PASSES	FOUL FCTR	MAX PD									
CH-1	40	91.4	54.0	44.0	--	0.00010	10.0	460/3	91.8	110.0	10.0	14.3	410A	CGAM040	3354 / 3377	SEE NOTES

NOTES:
1. UNITS SHALL BE MOUNTED AT GRADE ON A STRUCTURAL SLAB.
2. UNIT INCLUDES A-T-L STARTER, AND INTEGRATED VPF (VARIABLE PRIMARY FLOW) DDC CONTROLS.
3. UNIT SHALL COME FULLY CHARGED AND FACTORY RUN-TESTED PRIOR TO DELIVERY AND INSTALLATION.

PUMP SCHEDULE

TAG	GPM	HEAD FT	SERVES	ELEC VOLT/PH	MOTOR HP	REMARKS
P-1	91.2	40	CHILLED WATER	460/3	2.0	B&G SERIES 1510-1-1/2AC, HIGH EFFICIENCY, INVERTER DUTY, TEFC MOTOR
P-2	91.2	40	CHILLED WATER	460/3	2.0	B&G SERIES 1510-1-1/2AC, HIGH EFFICIENCY, INVERTER DUTY, TEFC MOTOR
REC-1	5.0	20	DOMESTIC HW RECIRC	120/1	1/12	B&G SERIES PL-30B, BRONZE CONSTRUCTION, MAINTENANCE-FREE MOTOR

NOTES:
1. P-1 / P-2 - PROVIDE WITH HIGH-EFFICIENCY INVERTER DUTY MOTOR, TRIPLE DUTY VALVE, SUCTION DIFFUSER W/ STRAINER

TANK SCHEDULE

TAG	WEIGHT	TYPE	VOLUME	ACCEPT	REMARKS
COMP-1	--	VERTICAL DIAPHRAGM - PRESSURIZED	40	12	B&G SERIES B
T-1	--	STORAGE - INSULATED	100 GAL	N/A	THERMAL FLYWHEEL TANK

EXHAUST FAN SCHEDULE

TAG	CFM	ESP	TYPE	HP	DRIVE	ELEC	LOCATION	SERVES	GREENHECK MODEL	REMARKS
EF-1	800	0.20"	INLINE	1/6	DIR	120/1	CAGES	CAGES	SQ-100-B	--
EF-2	6000	0.25"	SIDEWALL	1/2	DIR	120/1	STAGING	VENTIL.	SBI-H20-5	--
EF-3	6000	0.25"	SIDEWALL	1/2	DIR	120/1	BOAT STOR	VENTIL.	SBI-H20-5	--
EF-4	240	0.25"	INLINE	1/20	DIR	120/1	2ND FLOOR	1ST FL HEADS	SQ-80-6	--
EF-5	500	0.25"	INLINE	1/15	DIR	120/1	2ND FLOOR	2ND FL HEADS	SQ-95-6	--

ELECTRIC WATER HEATER SCHEDULE

TAG	TYPE	CAP GAL	RECOVERY @ 90°F RISE	TOTAL KW	# OF ELEMENTS	ELEC VOLT/PH	LOCATION	REMARKS
WH-1	STORAGE	120	110 GPH	24.0	06	480/3	FIRST FLOOR	---
WH-2	LOWBOY	10	20 GPH	3.0	01	208/1	SECOND FLOOR	RHEEM EGSP10
WH-3	INSTANT	--	INSTANT	3.0	01	208/1	BREAK AREA	EEMAX SP3208

STANDBY LOSSES FROM UNITS SHALL COMPLY WITH ASHRAE 90.1, CURRENT EDITION.
WH-1 SHALL HAVE MIN ENERGY FACTOR OF 0.93.

ELECTRIC UNIT HEATER SCHEDULE

TAG	TYPE	CFM	THROW AT 9' AFF	TOTAL KW	ELEC VOLT/PH	AMPS	REMARKS
UH-1	HORIZ.	400	12'	3.3	480/3	4.0	SET STAT AT 55°F

UNITS ARE FOR FREEZE PROTECTION OF SPRINKLER PIPING. FURNISH WITH ACCESSORY SUSPENSION KITS, WALL-MOUNTED THERMOSTATS (24V), DISCONNECT SWITCH, STRATIFICATION THERMOSTAT, AND SUMMER FAN SWITCH.

MINI-SPLIT HPU SYSTEM SCHEDULE

TAG	MBH COOL	HEAT	MIN. SEER	VOLT	PH	INDR. MOCP	OUT. BRKR	LOCATION	MODEL (INDOOR / OUTDOOR)
AC-1	24.0	24.0	13.0	208	1Φ	--	25	SERVER	MITSU. PKA-A24FAL W/ PUY-A24NHA-BS

NOTE: CONTRACTOR SHALL CLOSELY COORDINATE REQUIRED VOLTAGE AND PHASE OF EQUIPMENT PRIOR TO PURCHASE.

APPR | DATE | DESCRIPTION | SYM

NAVFAC

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APRIL 29, 2009

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SOF RIVERINE AND COMBATANT CRAFT OPERATIONS FACILITY

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