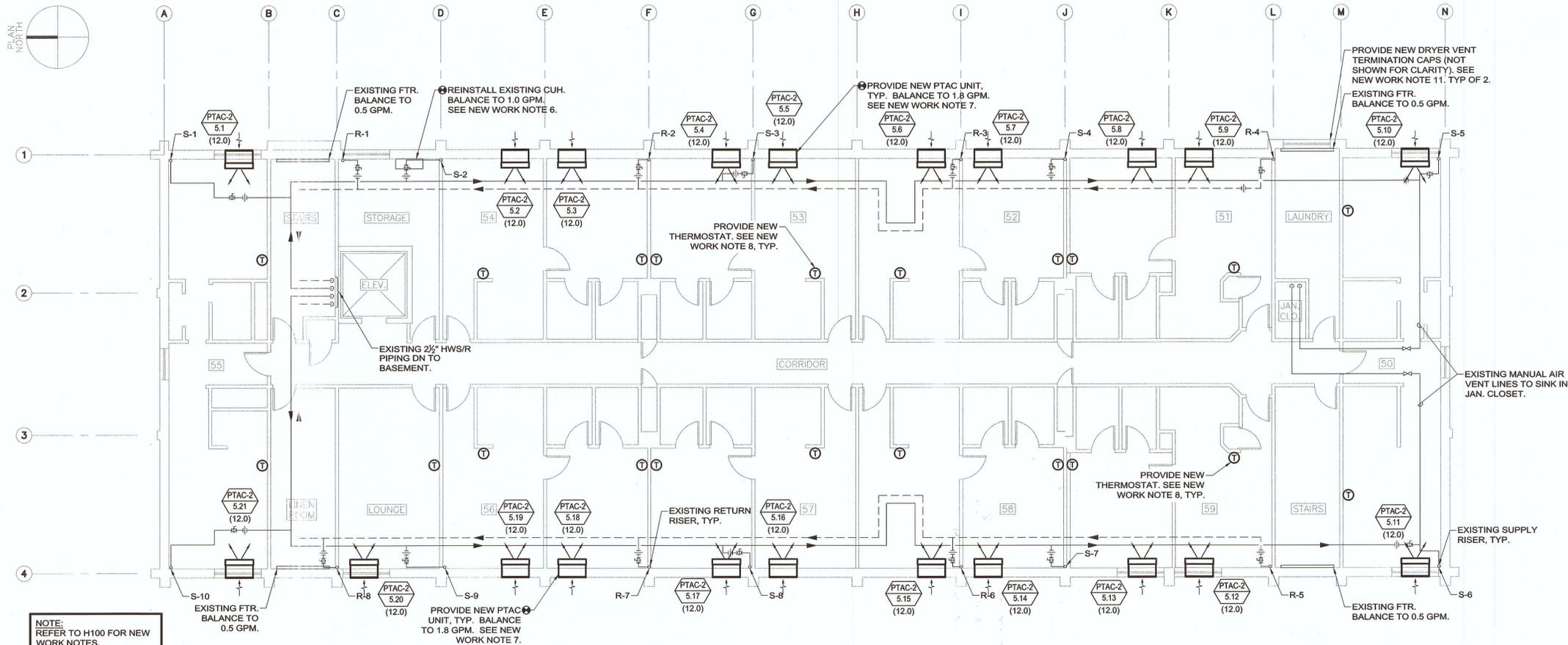


FILE NAME: J:\2011\20110571 - Newport Naval Station Bldg 678 Electrical\Work\Sheets\20110571 - H105 HVAC FIFTH FLOOR PLAN.dwg LAYOUT NAME: Work PLOTTED: Tuesday, April 09, 2013 - 2:16pm USER: dfranzek



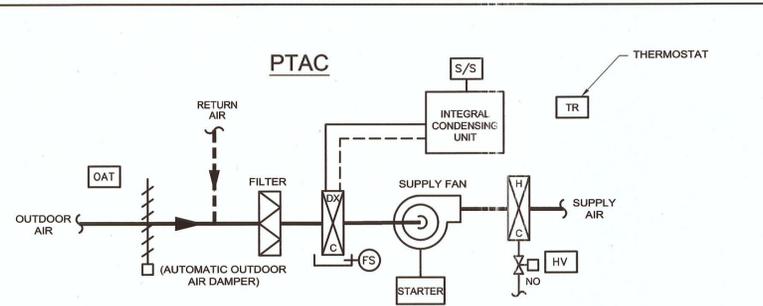
FIFTH FLOOR NEW WORK PLAN

NOTE:  
REFER TO H100 FOR NEW WORK NOTES.



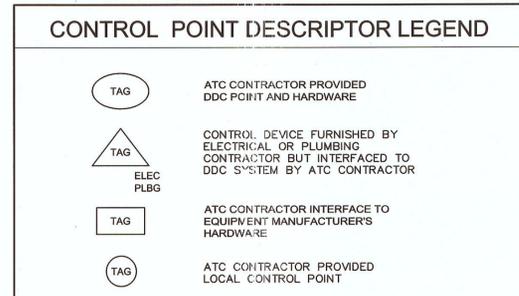
**RDK ENGINEERS**  
 Andover, MA - Boston, MA - Amherst, MA  
 Durham, NC - Charlotte, NC  
 RDK Engineers  
 200 Brickstone Square  
 Andover, MA 01810-1488  
 T. 978-296-4200

APPR.	
DATE	
DESCRIPTION	
SYN.	
 GREGORY J. TITTERINGTON No. 5870 REGISTERED PROFESSIONAL ENGINEER	
 Gale Associates, Inc. Engineers Planners 163 LIBBEY PARKWAY WEYMOUTH, MA 02189 P 781.335.6465 F 781.335.6467 www.gainc.com Boston Baltimore Orlando San Francisco	
A/E INFO GALE 024502	
APPROVED FOR COMMANDER NAVAL FACILITIES ENGINEERING COMMAND ACTIVITY Satisfactory to DATE APRIL 12, 2013 DES. NR. DRW. DM. CHK. NO. <<P/W/DM>> BRANCH MANAGER CHIEF ENG./ARCH <<<<>>	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NEWPORT, RI NAVAL STATION EXTERIOR REPAIRS BUILDING 678 CODDINGTON POINT HVAC FIFTH FLOOR PLAN	
SCALE: 1/8"=1'-0" PROJECT NO.: 1116160 CONSTR. CONTR. NO.: N40065-11-D-7207-0502 NAVFAC DRAWING NO.: 12642112 SHEET 51 OF 66 <b>H105</b> DRAWING REVISION: 10 MARCH 2009	



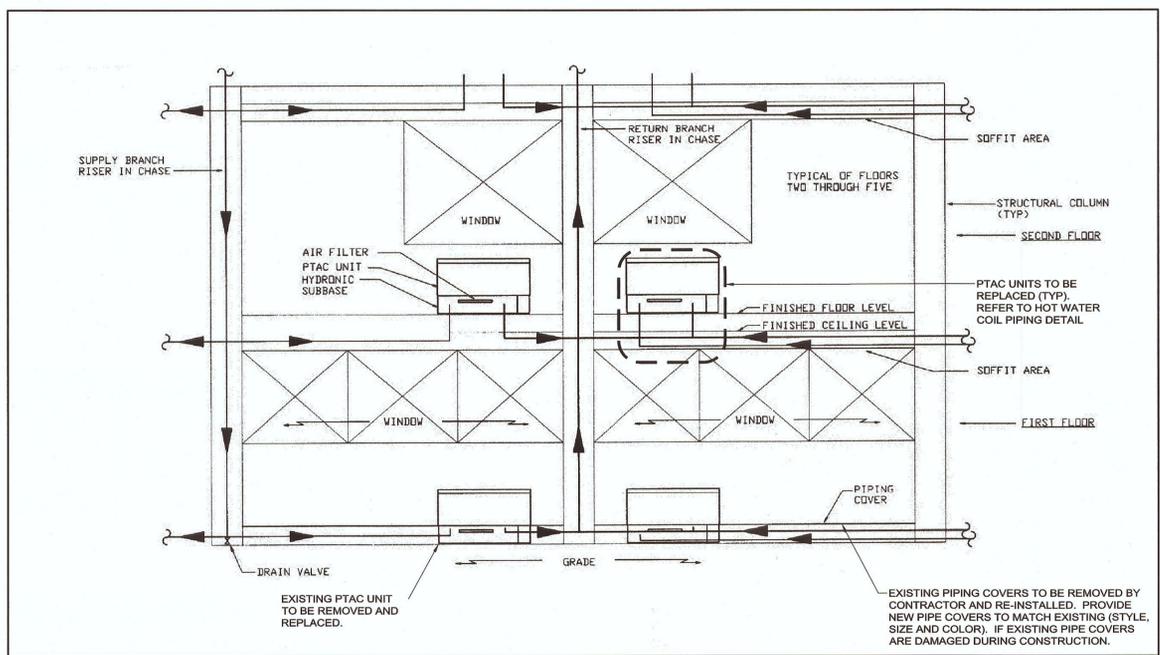
- NEW PACKAGED TERMINAL AIR CONDITIONING UNIT CONTROLS:**
- GENERAL**
- A WALL MOUNTED THERMOSTAT SHALL BE PROVIDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE PACKAGED TERMINAL AIR CONDITIONING UNIT'S REFRIGERATION CYCLE SHALL BE CONTROLLED BY THE PTAC UNIT'S INTEGRAL CONTROLLER.
  - THE PACKAGED TERMINAL AIR CONDITIONING UNIT'S INTEGRAL UNIT MOUNTED SENSORS (EXCEPT FOR THE CONDENSATE FLOAT/OVERFLOW SWITCH) SHALL BE PROVIDED BY THE PACKAGED TERMINAL AIR CONDITIONING UNIT MANUFACTURER.
  - ANTI-RECYCLE TIME DELAYS AND SAFETIES ON COMPRESSORS SHALL BE PROVIDED BY THE PACKAGED TERMINAL AIR CONDITIONING UNIT MANUFACTURER. THE COMPRESSOR SHALL BE LOCKED OUT WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 25°F.
  - THE CONTRACTOR SHALL PROVIDE A FLOAT/OVERFLOW SWITCH IN THE COOLING COIL DRAIN / CONDENSATE DRAIN PAN. THE PTAC UNIT SHALL BE DE-ENERGIZED WHEN THE COOLING COIL DRAIN PAN / CONDENSATE DRAIN PAN OVERFLOW SWITCH IS ACTIVATED.
  - THE CONTRACTOR SHALL ADJUST THE LOW AND HIGH TEMPERATURE LIMITS IN THE PTAC UNIT SET-UP MODE TO A RANGE OF 65° TO 78°F FOR EACH PTAC UNIT.
  - ALL TEMPERATURES ARE LISTED IN FAHRENHEIT.
  - THE UNIT'S INTEGRAL CONTROLLER SHALL AUTOMATICALLY CLOSE THE OUTSIDE AIR DAMPER AND INITIATE THE HEAT MODE TO PREVENT FREEZING WHEN THE UNIT SENSES A TEMPERATURE OF 40°F OR LOWER AT THE UNIT. THE OUTDOOR FAN AND COMPRESSOR SHALL BE DE-ENERGIZED.
  - THE ROOM TEMPERATURE SETPOINTS SHALL INITIALLY BE SET FOR 70°F (HEATING) AND 75°F (COOLING).
  - THE AUTOMATIC OUTDOOR AIR DAMPER SHALL BE INTERLOCKED WITH THE INDOOR FAN.
- FAN CONTROL**
- THE INDOOR FAN SHALL OPERATE CONTINUOUSLY ON A CALL FOR HEAT OR COOLING FROM THE ROOM THERMOSTAT. THE FAN SHALL BE DE-ENERGIZED WHEN THE ROOM THERMOSTAT IS SATISFIED.
- COOLING**
- THE COMPRESSOR, THE OUTDOOR FAN MOTOR AND INDOOR FAN MOTOR SHALL BE ENERGIZED. IN THE COOLING MODE, THE COMPRESSOR WILL BE ENERGIZED WHEN THE SPACE TEMPERATURE IS AT LEAST 1°F ABOVE THE THERMOSTAT SET POINT AND WILL BE DE-ENERGIZED WHEN THE SPACE TEMPERATURE IS APPROXIMATELY 2°F BELOW THE SETPOINT, SUBJECT TO TIMING PROJECTIONS.
  - MANUFACTURER PROVIDED TIME DELAYS SHALL PREVENT COMPRESSOR SHORT-CYCLING.
- HEATING**
- WHEN THE PTAC UNIT IS IN THE HEATING MODE AND CALLING FOR HEAT, THE HEATING VALVE SHALL OPEN AND THE INDOOR FAN SHALL NOT BE ENERGIZED UNTIL THE HEAT FAN LOCKOUT SENSOR (PROVIDED WITH THE PTAC UNIT / NOT SHOWN IN THE ATC DIAGRAM) IS ABOVE 115°F. IF AT ANY TIME WHILE THE PTAC UNIT IS IN THE HEATING MODE AND THE HEAT FAN LOCKOUT SENSOR IS BELOW 95°F, THE INDOOR FAN SHALL BE DE-ENERGIZED. THE PTAC INTEGRAL CONTROLLER SHALL CHECK THE HEAT FAN LOCKOUT SENSOR TEMPERATURE IS ABOVE 115°F FOR 2 SECONDS BEFORE RESUMING THE INDOOR FAN OPERATION.

**RDk** **PACKAGED TERMINAL AIR CONDITIONER CONTROL SEQUENCE**



**CONTROL ABBREVIATIONS**

FS	FLOAT SWITCH
HV	HEATING COIL CONTROL VALVE
LLSV	LIQUID LINE SOLENOID VALVE
NC	NORMALLY CLOSED (ON LOSS OF POWER)
NO	NORMALLY OPEN (ON LOSS OF POWER)
OAD	OUTSIDE AIR DAMPER
OAT	OUTSIDE AIR TEMPERATURE SENSOR (DRY BULB)
S/S	START/STOP
TR	TEMPERATURE SENSOR / THERMOSTAT

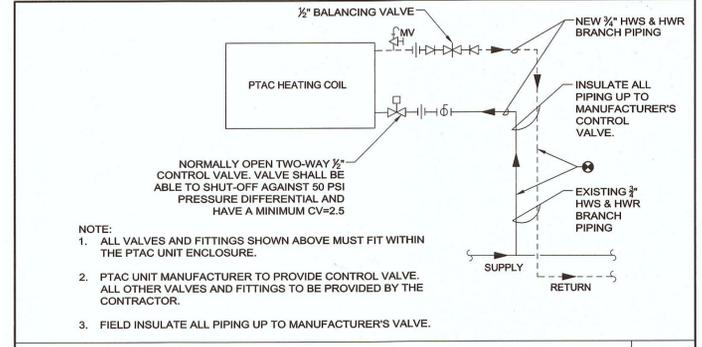


**RDk** **PTAC UNITS FLOORS 1-5 EXISTING ELEVATION VIEW TYP. (NTS)**

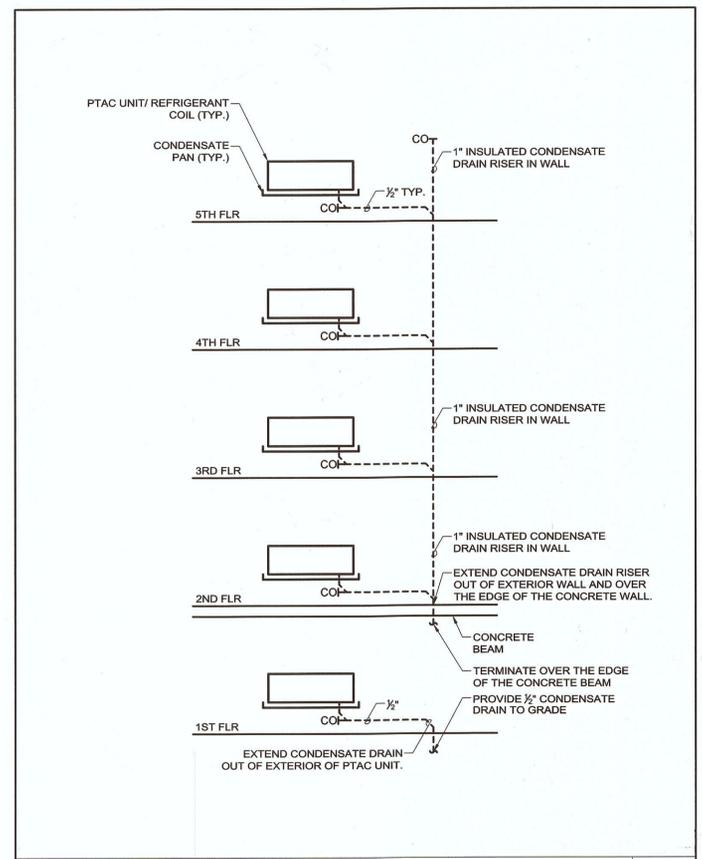
**PACKAGED TERMINAL AIR CONDITIONER SCHEDULE** (COOLING MBH)

TAG NO.	SERVICE	LOCATION	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	UNIT CFM	DX COOLING DATA @ 95°F AMBIENT				HOT WATER HEATING DATA					UNIT EER	WEIGHT	ELECTRICAL DATA			REMARKS					
						COOLING (MBH)		EAT (°F)		AIR DATA		HOT WATER DATA					VOLTS	PHASE	FULL LOAD AMPS (COOLING)		FULL LOAD AMPS (HEATING)				
						TOTAL	SENSIBLE	DB	WB	EAT (°F)	LAT (°F)	GPM	EWT (°F)	LWT (°F)								W.P.D. (FT.)			
PTAC-1	1ST FLOOR	WALL MOUNTED	MCQUAY	PDAA 012	360/330	380/340	50	12.8	9.0	80	67	18.4	58.0	102.8	1.8	180	160	1.3	10.0	152	208	1	7.15	.41	1, 2, 4
PTAC-2	2ND FLOOR THRU 5TH FLOOR	WALL MOUNTED	MCQUAY	PDAA 012	360/330	380/340	50	12.8	9.0	80	67	18.4	58.0	102.8	1.8	180	160	1.3	10.0	153	208	1	7.15	.41	1, 3, 4

- NOTES:**
- PROVIDE EACH UNIT WITH 10-3/4" DEEP ROOM CABINET, WALL SLEEVE AND WALL SLEEVE EXTENSION (CONTRACTOR TO FIELD VERIFY DEPTH OF WALL SLEEVE PRIOR TO ORDERING AND INSTALLING UNITS), 42"x18" OUTDOOR AIR ARCHITECTURAL LOUVER, LOUVER FRAME, PERMANENT CLEANABLE FILTER, SUBBASE (CONTRACTOR TO FIELD VERIFY KICKPLATE HEIGHT PRIOR TO ORDERING UNITS) WITH HOT WATER COIL, DISCONNECT SWITCH, 15 AMP TIME DELAY FUSE, AND AUTOMATIC OUTSIDE AIR DAMPER. HOT WATER HEATING COIL TO BE PROVIDED WITH NORMALLY OPEN TWO POSITION 1/2" CONTROL VALVE AND DIGITAL CONTROLLER. UNITS TO BE HARD WIRED/PROVIDE PLUG/COVER FOR SUBBASE. ALL UNITS SHALL BE PROVIDED WITH FACTORY APPLIED CORROSION RESISTANT TREATMENT ON THE CONDENSER COILS.
  - PROVIDE EXTERNAL DRAIN KIT WITH 6" LONG 1/2" DIAMETER STRAIGHT COPPER TUBE.
  - PROVIDE INTERNAL DRAIN KIT. PROVIDE INTERNAL CONDENSATE CONNECTION FOR FLOORS 2-5.
  - PROVIDE EACH PTAC UNIT WITH WALL MOUNTED, NON PROGRAMMABLE THERMOSTAT. THE CONTRACTOR SHALL ADJUST THE LOW AND HIGH TEMPERATURE LIMITS IN THE PTAC UNIT SET-UP MODE TO A RANGE OF 65°F TO 78°F FOR EACH PTAC UNIT.



**RDk** **HOT WATER COIL PIPING**



**RDk** **PTAC UNIT CONDENSATE RISER DIAGRAM (NTS)**

**RDk ENGINEERS**

Andover, MA - Boston, MA - Amherst, MA  
Durham, NC - Charlotte, NC

RDk Engineers  
200 Brickstone Square  
Andover, MA 01810-1488  
T. 978-286-6200

NAVFAC  
GREGORY J. TITTERINGTON  
No. 5870  
REGISTERED PROFESSIONAL ENGINEER  
GALE  
Gale Associates, Inc.  
Engineers Planners  
163 LIBBEY PARKWAY  
WEYMOUTH, MA 02189  
P 781.335.6465  
F 781.335.6467 www.gainc.com  
Boston Baltimore Orlando San Francisco  
Gale in 824502  
FOR COMMANDER NAVFAC  
ACTIVITY  
SATISFACTORY TO DATE APRIL 12, 2013  
DES: MH DRW: RH CHK: BD  
BRANCH MANAGER  
CHIEF ENG./ARCH  
DEPARTMENT OF THE NAVY  
NAVAL FACILITIES ENGINEERING COMMAND  
NEWPORT, RI  
NEWPORT, RI  
NAVAL STATION  
NAVAL STATION  
EXTERIOR REPAIRS BUILDING 678  
CODDINGTON POINT  
HVAC CONTROLS, DETAILS AND SCHEDULES  
SCALE: NTS  
PROJECT NO.: 1116160  
CONSTR. CONTR. NO.: N40065-11-D-7207-0502  
NAVFAC DRAWING NO.: 12642113  
SHEET 52 OF 66  
H800  
DRAWING REVISION: 10 MARCH 2009

FILE NAME: J:\2011\20110571 - Newport Naval Station Bldg 678 Electrical\Voice\Plot\_Sheets\20110571 - H800 HVAC CONTROLS, DETAILS AND SCHEDULES.dwg PLOTTED: Tuesday, April 09, 2013 - 2:16pm USER: dfranzek

FILE NAME: J:\2011\20110571 - Newport Naval Station Bldg 678 Electrical\Electrical\Plot Sheets\20110571 - E000 ELECTRICAL LEGEND, NOTES AND ABBREVIATIONS.dwg LAYOUT NAME: Work PLOTTED: Wednesday, April 10, 2013 - 10:00am USER: fdeaze

### WIRING DEVICE LEGEND

	<p>DUPLEX RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V                      "5"- INDICATES CIRCUIT NUMBER                      "GFI"- INDICATES INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER                      "IG"- INDICATES ISOLATED GROUND TYPE                      "WP"- INDICATES WEATHERPROOF                      "SP"- INDICATES SURGE PROTECTION                      "TR"- INDICATES TAMPER RESISTANT SAFETY                      "C"- INDICATES COUNTER HEIGHT</p>
	DOUBLE DUPLEX RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V
	SPECIAL PURPOSE RECEPTACLE, "15"- INDICATES TAG NUMBER
	JUNCTION BOX

### BRANCH CIRCUIT & FEEDER LEGEND

	BRANCH CIRCUIT OR FEEDER CONCEALED IN FINISHED AREAS
	BRANCH CIRCUIT OR FEEDER, CONCEALED IN OR UNDER FLOOR SLAB
	BRANCH CIRCUIT OR FEEDER TURNING UP TOWARDS OBSERVER
	BRANCH CIRCUIT OR FEEDER TURNING DOWN AWAY FROM OBSERVER
	CONDUIT STUBBED ABOVE CEILING
	BRANCH CIRCUIT HOME RUN TICKS INDICATE QUANTITY OF CONDUCTORS, GROUND CONDUCTORS ARE NOT INDICATED. NO TICKS INDICATES 2#12 & 1#12G IN 3/4" MINIMUM. R22A-1,3,5 INDICATES PANEL AND CIRCUIT DESIGNATION FROM WHICH HOMERUN SHALL ORIGINATE. EACH CIRCUIT SHALL BE 20A-1P (20AMP SINGLE POLE) UNLESS NOTED OTHERWISE.
	FLEXIBLE CONNECTION TO EQUIPMENT, RACEWAY AND CONDUCTOR RATING TO MATCH ASSOCIATED BRANCH CIRCUIT OR FEEDER
	BRANCH CIRCUIT FOR EMERGENCY BATTERY DC CIRCUIT, MINIMUM 2#10 IN 3/4" C. UNLESS OTHERWISE NOTED

### MOTOR & CONTROLS LEGEND

	MOTOR, NUMERAL INDICATES HORSEPOWER "2" - INDICATES HORSEPOWER RATING
	FUSED DISCONNECT SWITCH, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED. "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "60AS" - INDICATES 60AMP SWITCH "50AF" - INDICATES 50AMP FUSES
	EQUIPMENT TAG, TOP ALPHANUMERIC CORRESPONDS TO EQUIPMENT ID LOWER INDICATES LOAD (KW, HP, ETC.)

### MECHANICAL EQUIPMENT LEGEND

	HEATING, VENTILATING AND AIR CONDITIONING UNIT (BY MECHANICAL)
	CABINET UNIT HEATER (BY MECHANICAL)

### LIGHTING FIXTURE LEGEND

	<p>LIGHTING FIXTURE (SEE LIGHTING FIXTURE SCHEDULE)                      "FR2" - INDICATES LIGHTING FIXTURE TYPE                      "2" - INDICATES CIRCUIT NUMBER                      "a" - INDICATES SWITCH CONTROL                      "NL"- INDICATES NIGHT LIGHT (UNSWITCHED) CIRCUIT</p>
	LIGHTING FIXTURE WALL MOUNTED
	EMERGENCY LIGHTING REMOTE LAMP HEADS, SINGLE OR DOUBLE

### SWITCH LEGEND

	SINGLE POLE SWITCH, RATED 20A, 120/277V "a" LOWER CASE LETTER INDICATES FIXTURE SWITCH CONTROL
	THREE WAY SWITCH, RATED 20A, 120/277V

### POWER DISTRIBUTION

	208Y/120 VOLT PANELBOARD, SURFACE MOUNTED REFER TO SCHEDULE OF PANELBOARDS
	208Y/120 VOLT PANELBOARD, RECESSED MOUNTED REFER TO SCHEDULE OF PANELBOARDS

### TELECOMMUNICATIONS LEGEND

	TELEPHONE OUTLET "C" INDICATES COUNTER HEIGHT
	CABLE TV OUTLET, WALL MOUNTED

### FIRE ALARM LEGEND

	MASTER BOX JUNCTION BOX
	FIRE ALARM MASTER BOX
	FIRE ALARM RED ROTATING BEACON, EXTERIOR MOUNTED, WEATHERPROOF
	FIRE ALARM STROBE
	FIRE ALARM HORN
	FIRE ALARM MANUAL PULL STATION
	COMBINATION FIRE ALARM STROBE/HORN

### ABBREVIATIONS

A/AMP	AMPERE	KWH	KILOWATT HOURS
AC	ALTERNATION CURRENT	LTG	LIGHTING
ADA	AMERICAN WITH DISABILITIES ACT	MCB	MAIN CIRCUIT BREAKER
AF	AMPERE FRAME	MEC	MASSACHUSETTS ELECTRICAL CODE
AFF	ABOVE FINISHED FLOOR	M/G	MOTOR/GENERATOR SET
AFG	ABOVE FINISHED GRADE	MH	MANHOLE
AIC	AMPERE INTERRUPTING CAPACITY	MLO	MAIN LUGS ONLY
AL	ALUMINUM	MTD	MOUNTED
AT	AMPERE TRIP	MTG	MOUNTING
ATS	AUTOMATIC TRANSFER SWITCH	NC	NORMALLY CLOSED CONTACT
AWG	AMERICAN WIRE GAUGE	NEC	NATIONAL ELECTRICAL CODE
B	BURIED	NO	NORMALLY OPEN CONTACT
C	CONDUIT	NTS	NOT TO SCALE
CA	CABLE	#	NUMBER
CATV	CABLE TELEVISION	OPD	OVER CURRENT PROTECTION DEVICE
CCTV	CLOSED CIRCUIT TELEVISION SYSTEM	POS	PROVIDED UNDER OTHER SECTIONS
CB	CIRCUIT BREAKER	PVC	POLYVINYL CHLORIDE
CKT	CIRCUITS	PWR	POWER
CPU	CENTRAL PROCESSING UNIT	RGS	RIGID GALVANIZED STEEL
CL	CENTERLINE	RMS	ROOT MEAN SQUARE VALUE
dB	DECIBEL	RPM	REVOLUTIONS PER MINUTE
DC	DIRECT CURRENT	SN	SOLID NEUTRAL
DWG	DRAWING	SWBD	SWITCHBOARD
EC	ELECTRICAL CONTRACTOR	TB	TERMINAL BLOCK
EMT	ELECTRIC METALLIC TUBING	TEL	TELEPHONE
FDR	FEEDER	TERM N	TERMINAL
FLMT	FLEXIBLE LIQUID TIGHT METALLIC TUBING	TSP	TWISTED SHIELDED-PAIR
FREQ	FREQUENCY	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
GEC	GROUNDING ELECTRODE CONDUCTOR	TYP	TYPICAL
GFI	GROUND FAULT INTERRUPTING	UG	UNDERGROUND
GND	GROUND	UNO	UNLESS NOTED OTHERWISE
HH	HANDHOLE	UPS	UNINTERRUPTIBLE POWER SUPPLY
HP	HORSEPOWER	UTP	UNSHIELDED TWISTED-PAIR
HVAC	HEATING, VENTILATING AND AIR CONDITIONING	V	VOLTS
HZ	HERTZ	VA	VOLT-AMPERE
IG	ISOLATED GROUND	VSD	VARIABLE SPEED DRIVE
JB	JUNCTION BOX	W	WATTS
KVA	KILOVOLT-AMPERE	WP	WEATHERPROOF
KW	KILOWATT		

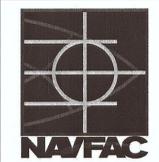
### EXISTING EQUIPMENT LEGEND

	EXISTING EQUIPMENT TO REMAIN
	EXISTING EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT TO BE TEMPORARILY REMOVED
	EXISTING EQUIPMENT PREVIOUSLY REMOVED TO BE REINSTALLED
	NEW LOCATION OF EXISTING RELOCATED EQUIPMENT
	EXISTING EQUIPMENT TO BE REMOVED AND NEW EQUIPMENT TO BE INSTALLED ON EXISTING BRANCH/FEEDER
	EXISTING EQUIPMENT FOR INFORMATION ONLY- INDICATED BY SYMBOL WITH LIGHT AND OUT OF FUNCTION LINE TYPE
	EXISTING EQUIPMENT TO BE REWORKED- INDICATED BY SYMBOL WITH DASHED AND IN FUNCTION LINE TYPE

**LEGEND NOTES:**

- REFER TO SPECIFICATIONS, ARCHITECTURAL DRAWINGS, APPLICABLE SCHEDULES AND DETAILS FOR ADDITIONAL INFORMATION ASSOCIATED WITH EACH DEVICE ILLUSTRATED ON THIS LEGEND.
- SUBSCRIPTS ILLUSTRATED ON THE LEGEND WITH ONE SYMBOL ONLY TO MINIMIZE SPACE. ANY SUBSCRIPT INDICATED WITHIN A LEGEND FAMILY MAY BE APPLIED TO A CORRESPONDING SYMBOL.
- ABBREVIATIONS SUCH AS "WP" MAY BE APPLIED TO ANY SYMBOL.

NO.	DATE	DESCRIPTION



Gale Associates, Inc.  
 Engineers Planners  
 163 LIBBEY PARKWAY  
 WEYMOUTH, MA 02189  
 P 781.335.6465  
 F 781.335.6467 www.gainc.com  
 Boston Baltimore Orlando San Francisco

APPROVED: \_\_\_\_\_  
 FOR COMMANDER NAVFAC ACTIVITY

DES	DM	DRW	DM	CHK	GM

BRANCH MANAGER: \_\_\_\_\_  
 CHEF ENG/ARCH: \_\_\_\_\_

DEPARTMENT OF THE NAVY  
 NAVAL FACILITIES ENGINEERING COMMAND  
 NEWPORT, RI  
 NAVAL STATION  
 EXTERIOR REPAIRS BUILDING 678  
 CODDINGTON POINT  
 ELECTRICAL LEGEND, NOTES & ABBREVIATIONS



RDk Engineers  
 200 Brickstone Square  
 Andover, MA 01810-1488  
 T. 978-296-0200

SCALE: NONE  
 PROJECT NO.: 1116100  
 CONSTR. CONTR. NO.: N40085-11-D-7207-0502  
 NAVFAC DRAWING NO.: 12642114  
 SHEET 53 OF 66  
**E000**

DATE PLOTTED: 10 MARCH 2009



