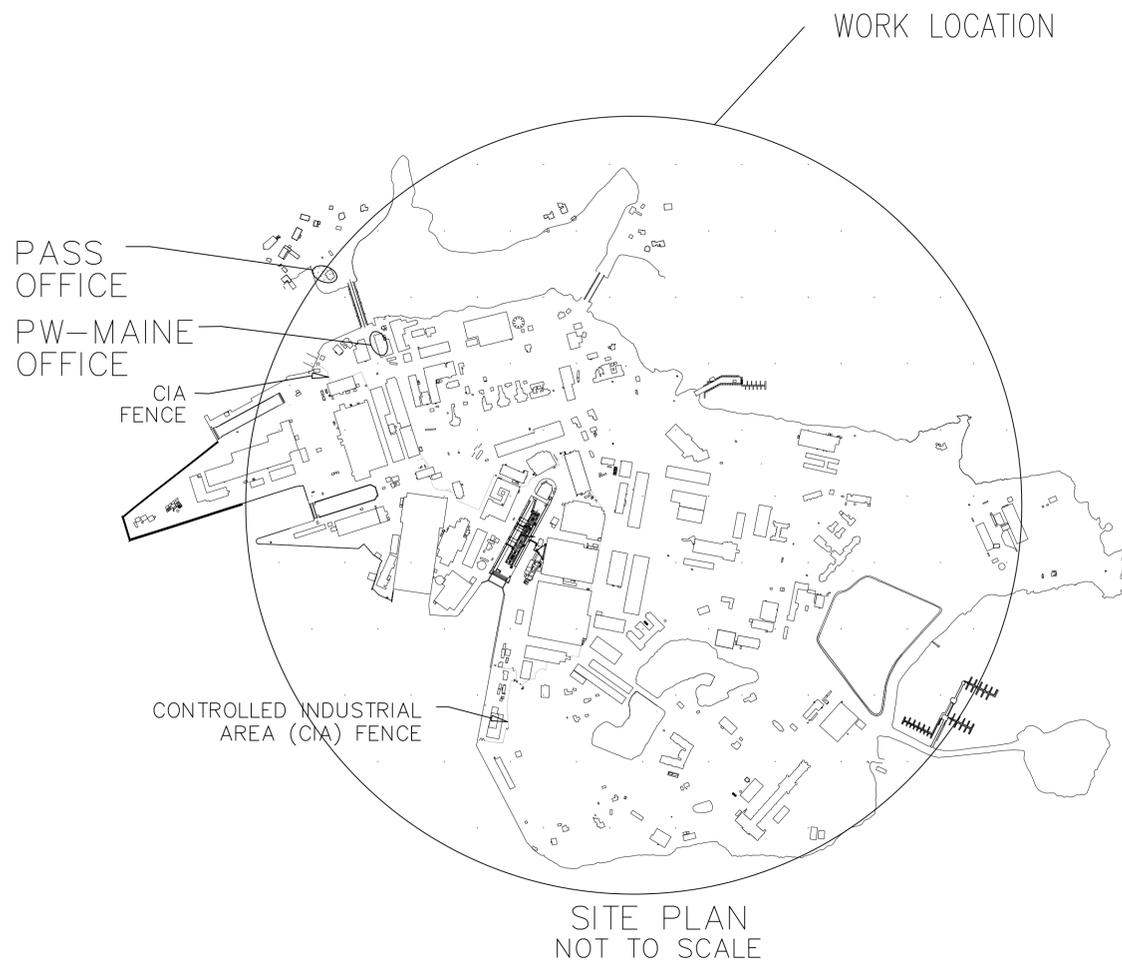
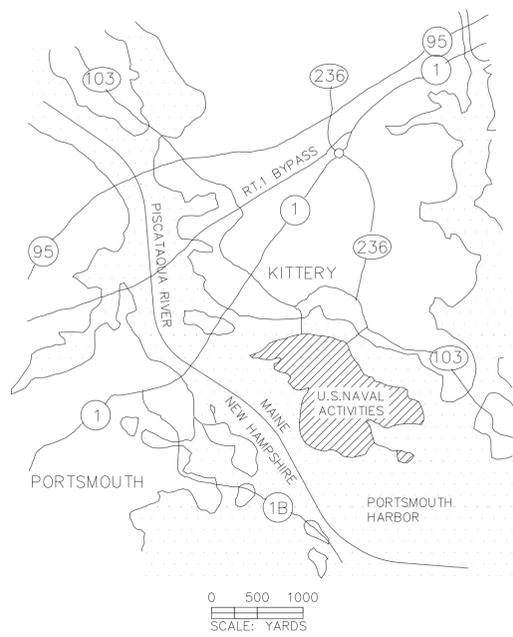
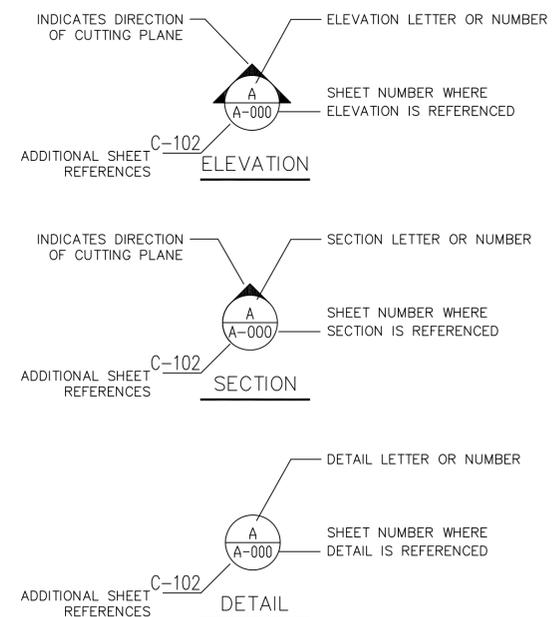


PORTSMOUTH NAVAL SHIPYARD KITTERY, ME

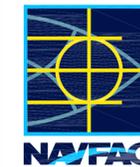
FY 16 ENERGY PROJECT
R-22 HVAC REPLACEMENT AND DDC
IMPROVEMENTS
CONTRACT NO. N40085-XX-C-XXXX



ELEVATION, SECTION OR DETAIL SYMBOLS



DATE	DESCRIPTION	BY	APPR
07/31/2015	100% SUBMISSION		DM
06/04/2015	90% SUBMISSION		DM



APPROVED	A/E INFO
FOR COMMANDER NAVFAC	
ACTIVITY	

SATISFACTORY TO	DATE
DES KLC	DRW SRR
CHK KLC	
PM/DM	PETER STOCKLESS
BRANCH MANAGER	BRUCE LITALEN
LEAD/PM/ME	AMIN BAHROUR, PM&E
FIRE PROTECTION	X

DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING COMMAND	MID-ATLANTIC	NAVAL SHIPYARD - PORTSMOUTH, ME
NAVAL SHIPYARD - MAINE	PORTSMOUTH NAVAL SHIPYARD	KITTERY, MAINE	
FY 16 ENERGY PROJECTS			
TASK 1-B-R-22			
TITLE SHEET			

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703454
SHEET	1 OF 506

R-22 AND DDC DRAWING SHEET LIST

PAGE NO.	SHEET NO.	NAVFAC DWG NO.	PWD-ME DWG NO.	SHEET TITLE	PAGE NO.	SHEET NO.	NAVFAC DWG NO.	PWD-ME DWG NO.	SHEET TITLE	PAGE NO.	SHEET NO.	NAVFAC DWG NO.	PWD-ME DWG NO.	SHEET TITLE	PAGE NO.	SHEET NO.	NAVFAC DWG NO.	PWD-ME DWG NO.	SHEET TITLE
1	G1.0	12703454	43-15-67	TITLE SHEET	128	H1.0	12703581	44-15-144	BUILDING 44 HAZARDOUS MATERIAL SAMPLING PLAN	255	C1.0	12703708	153-15-351	BUILDING 153 DEMOLITION PLAN	381	M3.1	12703834	306-15-247	BUILDING 306 HVAC CONTROLS
2	G1.1	12703455	43-15-67	DRAWING SHEET LIST	129	C1.0	12703582	44-15-145	BUILDING 44 DEMOLITION PLAN	256	C2.0	12703709	153-15-352	BUILDING 153 SITE PLAN	382	M3.2	12703835	306-15-248	BUILDING 306 HVAC CONTROLS
3	G1.2	12703456	43-15-69	GENERAL NOTES & LEGEND	130	C2.0	12703583	44-15-146	BUILDING 44 SITE PLAN	257	M1.0	12703710	153-15-353	BUILDING 153 HVAC LEGEND	383	M4.0	12703836	306-15-249	BUILDING 306 HVAC SCHEDULES AND DETAILS
4	A1.0	12703457	43-15-72	CHASE & SOFFIT DETAILS	131	M1.0	12703584	44-15-147	BUILDING 44 HVAC LEGEND	258	M2.0B	12703711	153-15-354	BUILDING 153 HVAC FIRST FLOOR DEMO PLAN PART B	384	E1.0	12703837	306-15-250	BUILDING 306 ELECTRICAL LEGEND
5	S1.0	12703458	43-15-74	STRUCTURAL GENERAL NOTES AND RTU SUPPORT DETAIL	132	M2.0	12703585	44-15-148	BUILDING 44 HVAC FIRST FLOOR DEMO PLAN	259	M2.0B	12703712	153-15-355	BUILDING 153 HVAC SECOND FLOOR DEMO PLAN PART B	385	ED2.0A	12703838	306-15-251	BUILDING 306 ELECTRICAL FIRST FLOOR DEMOLITION PLAN PART A
6	ET1.0	12703459	14-15-186	BUILDING 13 RF INSTALLATION DETAILS	133	M2.0	12703586	44-15-149	BUILDING 44 HVAC FIRST FLOOR DEMO PLAN	260	M2.0B	12703713	153-15-356	BUILDING 153 HVAC SECOND FLOOR DEMO PLAN PART B	386	ED2.0B	12703839	306-15-252	BUILDING 306 ELECTRICAL FIRST FLOOR DEMOLITION PLAN PART B
7	H1.0	12703460	14-15-173	HAZARDOUS MATERIAL SAMPLING PLAN	134	M3.0	12703587	44-15-150	BUILDING 44 HVAC CONTROLS	261	M2.0B	12703714	153-15-357	BUILDING 153 HVAC SECOND FLOOR DEMO PLAN PART B	387	ED2.0C	12703840	306-15-253	BUILDING 306 ELECTRICAL FIRST FLOOR DEMOLITION PLAN PART C
8	M1.0	12703461	14-15-174	HAZARDOUS MATERIAL SAMPLING PLAN	135	M3.0	12703588	44-15-151	BUILDING 44 HVAC CONTROLS	262	M3.0	12703715	153-15-358	BUILDING 153 HVAC SECOND FLOOR DEMO PLAN PART B	388	E2.0	12703841	306-15-254	BUILDING 306 ELECTRICAL FIRST FLOOR DEMO PLAN PART A
9	M2.0	12703462	14-15-175	HAZARDOUS MATERIAL SAMPLING PLAN	136	M3.2	12703589	44-15-152	BUILDING 44 HVAC CONTROLS	263	M3.0	12703716	153-15-359	BUILDING 153 HVAC SECOND FLOOR DEMO PLAN PART B	389	E2.0B	12703842	306-15-255	BUILDING 306 ELECTRICAL FIRST FLOOR DEMO PLAN PART B
10	M2.0	12703463	14-15-176	HAZARDOUS MATERIAL SAMPLING PLAN	137	M4.0	12703590	44-15-153	BUILDING 44 HVAC SCHEDULES AND DETAILS	264	M3.2	12703717	153-15-360	BUILDING 153 HVAC CONTROLS	390	E2.0C	12703843	306-15-256	BUILDING 306 ELECTRICAL FIRST FLOOR DEMO PLAN PART C
11	M3.0	12703464	14-15-177	HAZARDOUS MATERIAL SAMPLING PLAN	138	E1.0	12703591	44-15-154	BUILDING 44 ELECTRICAL LEGEND	265	M4.0	12703718	153-15-361	BUILDING 153 HVAC SCHEDULES AND DETAILS	391	E4.0	12703844	306-15-257	BUILDING 306 ELECTRICAL PANELBOARD SCHEDULES
12	M3.1	12703465	14-15-178	HAZARDOUS MATERIAL SAMPLING PLAN	139	E2.0	12703592	44-15-155	BUILDING 44 ELECTRICAL LEGEND	266	E1.0	12703719	153-15-362	BUILDING 153 ELECTRICAL LEGEND	392	E1.0	12703845	306-15-258	BUILDING 306 ELECTRICAL ONE LINE DIAGRAM, MECHANICAL EQUIPMENT SCHEDULE AND PANELBOARD SCHEDULES
13	M3.2	12703466	14-15-179	HAZARDOUS MATERIAL SAMPLING PLAN	140	E2.0	12703593	44-15-156	BUILDING 44 ELECTRICAL FIRST FLOOR DEMO PLAN	267	ED2.0B	12703720	153-15-363	BUILDING 153 ELECTRICAL FIRST FLOOR DEMOLITION PLAN PART B	393	H1.0	12703846	306-15-259	BUILDING 306 HAZARDOUS MATERIAL SAMPLING PLAN
14	M4.0	12703467	14-15-180	HAZARDOUS MATERIAL SAMPLING PLAN	141	E3.0	12703594	44-15-157	BUILDING 44 ELECTRICAL SCHEDULES	268	ED2.1B	12703721	153-15-364	BUILDING 153 ELECTRICAL SECOND FLOOR DEMOLITION PLAN PART B	394	C1.0	12703847	306-15-260	BUILDING 306 DEMOLITION PLAN
15	E1.0	12703468	14-15-181	ELECTRICAL LEGEND	142	ET1.0	12703595	44-15-158	BUILDING 44 RF INSTALLATION DETAILS	269	E2.0B	12703722	153-15-365	BUILDING 153 ELECTRICAL FIRST FLOOR DEMOLITION PLAN PART B	395	C2.0	12703848	306-15-261	BUILDING 306 SITE PLAN
16	ED2.0	12703469	14-15-182	ELECTRICAL FIRST FLOOR DEMOLITION PLAN	143	H1.0	12703596	44-15-159	BUILDING 44 HAZARDOUS MATERIAL SAMPLING PLAN	270	E2.1B	12703723	153-15-366	BUILDING 153 ELECTRICAL SECOND FLOOR DEMOLITION PLAN PART B	396	M1.0	12703849	306-15-262	BUILDING 306 HVAC LEGEND
17	E2.0	12703470	14-15-183	ELECTRICAL FIRST FLOOR DEMO PLAN	144	M1.0	12703597	44-15-160	BUILDING 44 HVAC LEGEND	271	E3.0	12703724	153-15-367	BUILDING 153 ELECTRICAL SCHEDULES	397	M2.0	12703850	306-15-263	BUILDING 306 HVAC FIRST FLOOR DEMO PLAN
18	E3.0	12703471	14-15-184	ELECTRICAL SCHEDULES	145	M2.0	12703598	44-15-161	BUILDING 44 HVAC FIRST FLOOR DEMO PLAN	272	ET1.0	12703725	153-15-368	BUILDING 153 RF INSTALLATION DETAILS	398	M2.0	12703851	306-15-264	BUILDING 306 HVAC FIRST FLOOR DEMO PLAN
19	ET1.0	12703472	14-15-184	RF INSTALLATION DETAILS	146	M2.0	12703599	44-15-162	BUILDING 44 HVAC FIRST FLOOR DEMO PLAN	273	H1.0	12703726	156-15-225	BUILDING 156 HAZARDOUS MATERIAL SAMPLING PLAN	399	M3.0	12703852	306-15-265	BUILDING 306 HVAC CONTROLS
20	H1.0	12703473	18-15-559	HAZARDOUS MATERIAL SAMPLING PLAN	147	M3.0	12703600	44-15-163	BUILDING 44 HVAC CONTROLS	274	M1.0	12703727	156-15-226	BUILDING 156 HVAC CONTROLS	400	M3.1	12703853	306-15-266	BUILDING 306 HVAC CONTROLS
21	H1.1	12703474	18-15-560	HAZARDOUS MATERIAL SAMPLING PLAN	148	M3.1	12703601	44-15-164	BUILDING 44 HVAC CONTROLS	275	M2.0	12703728	156-15-227	BUILDING 156 HVAC FIRST FLOOR DEMO PLAN	401	M3.2	12703854	306-15-267	BUILDING 306 HVAC CONTROLS
22	H1.2	12703475	18-15-561	HAZARDOUS MATERIAL SAMPLING PLAN	149	M3.2	12703602	44-15-165	BUILDING 44 HVAC CONTROLS	276	M2.0	12703729	156-15-228	BUILDING 156 HVAC FIRST FLOOR DEMO PLAN	402	M4.0	12703855	306-15-268	BUILDING 306 SCHEDULES AND DETAILS
23	C1.0	12703476	18-15-562	DEMOLITION PLAN	150	M4.0	12703603	44-15-166	BUILDING 44 HVAC SCHEDULES AND DETAILS	277	M3.0	12703730	156-15-229	BUILDING 156 HVAC CONTROLS	403	E1.0	12703856	306-15-269	BUILDING 306 ELECTRICAL LEGEND
24	C2.0	12703477	18-15-563	DEMOLITION PLAN	151	E1.0	12703604	44-15-167	BUILDING 44 ELECTRICAL LEGEND	278	M3.1	12703731	156-15-230	BUILDING 156 HVAC CONTROLS	404	E2.0	12703857	306-15-270	BUILDING 306 ELECTRICAL FIRST FLOOR DEMO PLAN
25	M1.0	12703478	18-15-564	HAZARDOUS MATERIAL SAMPLING PLAN	152	ED2.0	12703605	44-15-168	BUILDING 44 ELECTRICAL FIRST FLOOR DEMOLITION PLAN	279	M3.2	12703732	156-15-231	BUILDING 156 HVAC CONTROLS	405	E2.0	12703858	306-15-271	BUILDING 306 ELECTRICAL FIRST FLOOR DEMO PLAN
26	M2.0A	12703479	18-15-565	HAZARDOUS MATERIAL SAMPLING PLAN	153	E2.0	12703606	44-15-169	BUILDING 44 ELECTRICAL FIRST FLOOR DEMO PLAN	280	M4.0	12703733	156-15-232	BUILDING 156 HVAC SCHEDULES	406	E3.0	12703859	306-15-272	BUILDING 306 ELECTRICAL ONE LINE DIAGRAM MECHANICAL EQUIPMENT SCHEDULE & PANELBOARD SCHEDULES
27	M2.0B	12703480	18-15-566	HAZARDOUS MATERIAL SAMPLING PLAN	154	E3.0	12703607	44-15-170	BUILDING 44 ELECTRICAL SCHEDULES	281	E1.0	12703734	156-15-233	BUILDING 156 ELECTRICAL LEGEND	407	ET1.0	12703860	306-15-273	BUILDING 306 RF INSTALLATION DETAILS
28	M2.1A	12703481	18-15-567	HAZARDOUS MATERIAL SAMPLING PLAN	155	E1.0	12703608	44-15-171	BUILDING 44 ELECTRICAL SCHEDULES	282	ED2.0	12703735	156-15-234	BUILDING 156 ELECTRICAL DEMOLITION PART AND FIRST FLOOR DEMOLITION PLAN	408	E1.0	12703861	306-15-274	BUILDING 306 ELECTRICAL LEGEND
29	M2.1B	12703482	18-15-568	HAZARDOUS MATERIAL SAMPLING PLAN	156	M1.0	12703609	44-15-172	BUILDING 44 HVAC LEGEND	283	E2.0	12703736	156-15-235	BUILDING 156 ELECTRICAL BASEMENT PART AND FIRST FLOOR DEMO PLAN	409	M1.0	12703862	306-15-275	BUILDING 306 HVAC LEGEND
30	M2.0B	12703483	18-15-569	HAZARDOUS MATERIAL SAMPLING PLAN	157	M2.0	12703610	44-15-173	BUILDING 44 HVAC FIRST FLOOR PARTIAL PLAN B, SCHEDULES & CONTROLS	284	E3.0	12703737	156-15-236	BUILDING 156 ELECTRICAL SCHEDULES	410	M2.0	12703863	306-15-276	BUILDING 306 HVAC FIRST FLOOR DEMO PLAN
31	M2.1A	12703484	18-15-570	HAZARDOUS MATERIAL SAMPLING PLAN	158	M3.0	12703611	44-15-174	BUILDING 44 HVAC CONTROLS	285	ET1.0	12703738	156-15-237	BUILDING 156 RF INSTALLATION DETAILS	411	M2.1	12703864	306-15-277	BUILDING 306 HVAC SECOND FLOOR DEMO PLAN
32	M3.0	12703485	18-15-571	HAZARDOUS MATERIAL SAMPLING PLAN	159	M1.0	12703612	44-15-175	BUILDING 44 HVAC CONTROLS	286	H1.0	12703739	170-15-718	BUILDING 170 HAZARDOUS MATERIAL SAMPLING PLAN	412	M2.0	12703865	306-15-278	BUILDING 306 ELECTRICAL FIRST FLOOR DEMO PLAN
33	M3.1	12703486	18-15-572	HAZARDOUS MATERIAL SAMPLING PLAN	160	E1.0	12703613	44-15-176	BUILDING 44 ELECTRICAL LEGEND	287	H1.1	12703740	170-15-719	BUILDING 170 HAZARDOUS MATERIAL SAMPLING PLAN	413	M2.1	12703866	306-15-279	BUILDING 306 HVAC SECOND FLOOR DEMO PLAN
34	M3.2	12703487	18-15-573	HAZARDOUS MATERIAL SAMPLING PLAN	161	ET1.0	12703614	44-15-177	BUILDING 44 RF INSTALLATION DETAILS	288	H1.2	12703741	170-15-720	BUILDING 170 HAZARDOUS MATERIAL SAMPLING PLAN	414	M3.0	12703867	306-15-280	BUILDING 306 HVAC CONTROLS
35	M4.0	12703488	18-15-574	HAZARDOUS MATERIAL SAMPLING PLAN	162	H1.0	12703615	44-15-178	BUILDING 44 HAZARDOUS MATERIAL SAMPLING PLAN	289	H1.3	12703742	170-15-721	BUILDING 170 HAZARDOUS MATERIAL SAMPLING PLAN	415	M3.1	12703868	306-15-281	BUILDING 306 HVAC CONTROLS
36	E1.0	12703489	18-15-575	ELECTRICAL LEGEND	163	H1.1	12703616	44-15-179	BUILDING 44 HAZARDOUS MATERIAL SAMPLING PLAN	290	H1.4	12703743	170-15-722	BUILDING 170 HAZARDOUS MATERIAL SAMPLING PLAN	416	M3.2	12703869	306-15-282	BUILDING 306 HVAC CONTROLS
37	ED2.0A	12703490	18-15-576	ELECTRICAL SECOND FLOOR DEMOLITION PLAN PART A	164	M1.0	12703617	44-15-180	BUILDING 44 HVAC LEGEND	291	M2.0	12703744	170-15-723	BUILDING 170 HVAC SIXTH FLOOR DEMO PLAN PART B	417	M4.0	12703870	306-15-283	BUILDING 306 HVAC SCHEDULES, DETAILS, AND CONTROLS
38	ED2.0B	12703491	18-15-577	ELECTRICAL SECOND FLOOR DEMOLITION PLAN PART B	165	M2.0	12703618	44-15-181	BUILDING 44 HVAC SECOND FLOOR DEMO PLAN PART A	292	M2.1A	12703745	170-15-724	BUILDING 170 HVAC ROOF DEMO PLAN PART A	418	E1.0	12703871	306-15-284	BUILDING 306 ELECTRICAL LEGEND
39	ED2.1A	12703492	18-15-578	ELECTRICAL SECOND FLOOR DEMOLITION PLAN PART A	166	M2.1	12703619	44-15-182	BUILDING 44 HVAC THIRD FLOOR DEMO PLAN PART A	293	M2.1B	12703746	170-15-725	BUILDING 170 HVAC ROOF DEMO PLAN PART B	419	ED2.0	12703872	306-15-285	BUILDING 306 ELECTRICAL FIRST FLOOR DEMO PLAN
40	ED2.0A	12703493	18-15-579	ELECTRICAL SECOND FLOOR DEMOLITION PLAN PART A	167	M2.0	12703620	44-15-183	BUILDING 44 HVAC SECOND FLOOR DEMO PLAN PART A	294	M2.1C	12703747	170-15-726	BUILDING 170 HVAC ROOF DEMO PLAN PART C	420	E2.0	12703873	306-15-286	BUILDING 306 ELECTRICAL SECOND FLOOR DEMO PLAN
41	ED2.1B	12703494	18-15-580	ELECTRICAL SECOND FLOOR DEMOLITION PLAN PART B	168	M2.0	12703621	44-15-184	BUILDING 44 HVAC SECOND FLOOR DEMO PLAN PART A	295	M2.0	12703748	170-15-727	BUILDING 170 HVAC SIXTH FLOOR DEMO PLAN PART B & SIXTH FLOOR DEMO PLAN PART C PARTIAL PLAN	421	E2.0	12703874	306-15-287	BUILDING 306 ELECTRICAL FIRST FLOOR DEMO PLAN
42	E2.1A	12703495	18-15-581	ELECTRICAL FIRST FLOOR DEMO PLAN PART A	169	M2.1	12703622	44-15-185	BUILDING 44 HVAC THIRD FLOOR DEMO PLAN PART A	296	M2.1A	12703749	170-15-728	BUILDING 170 HVAC ROOF DEMO PLAN PART A	422	E2.1	12703875	306-15-288	BUILDING 306 ELECTRICAL SECOND FLOOR DEMO PLAN
43	E3.0	12703496	18-15-582	ELECTRICAL SCHEDULES	170	M2.2	12703623	44-15-186	BUILDING 44 HVAC ROOF DEMO PLAN PART A	297	M2.1B	12703750	170-15-729	BUILDING 170 HVAC ROOF DEMO PLAN PART B	423	E3.0	12703876	306-15-289	BUILDING 306 ELECTRICAL FIRST FLOOR DEMO PLAN A
44	ET1.0	12703497	18-15-583	RF INSTALLATION DETAILS	171	M3.0	12703624	44-15-187	BUILDING 44 HVAC CONTROLS	298	M2.1C	12703751	170-15-730	BUILDING 170 HVAC ROOF DEMO PLAN PART C	424	ET1.0	12703877	306-15-290	BUILDING 306 RF INSTALLATION DETAILS
45	ED2.0	12703498	18-15-584	ELECTRICAL SECOND FLOOR DEMOLITION PLAN PART A	172	M3.1	12703625	44-15-188	BUILDING 44 HVAC CONTROLS	299	M3.0	12703752	170-15-731	BUILDING 170 HVAC CONTROLS	425	M1.0	12703878	306-15-291	BUILDING 306 ELECTRICAL LEGEND
46	H1.1	12703499	22-15-521	HAZARDOUS MATERIAL SAMPLING PLAN	173														

ABBREVIATIONS

# & @	Pound OR Number And At	IAQ	Indoor Air Quality
ACM	Asbestos Containing	ID	Inside Diameter
ACT	Acoustic Ceiling	IRGWB	Impact Resistant Gypsum Wall Board
AD	Area Drain	ILO	In Lieu Of
AFF	Above Finished	IN	Inch (es)
ADJ	Adjustable	INCAND	Incandescent
ALUM	Aluminum	INSUL	Insulated or Insulation
ALT	Alternate	INT	Interior
ANOD	Anodized	LAV	Lavatory
AP	Access Panel	LF	Linear Foot
		LO	Low
		LTL	Lintel
BLDG	Building	MAS	Masonry
BLKG	Blocking	MATL	Material
BM	Bearing	MAX	Maximum
BO	By Owner	MB	Marker Board
BRK	Brick	MDO	Medium Density
BSMT	Basement	MO	Masonry Opening
BYND	Beyond	MECH	Mechanical
BOT	Bottom	MEMBR	Membrane
		MFR	Manufacturer
CB	Chalkboard	MIN	Minimum
CFMF	Cold Formed Metal	MISC	Miscellaneous
CIP	Cast In	MR	Mirror
CHNL	Channel	MRGWB	Mirror Gypsum Wall Board
CHT	Ceiling	MTL	Metal
CJ	Control	MUL	Mullion
CLG	Ceiling		
CLR	Clear	NBN	Numbered
CMU	Concrete Masonry	NFM	New Floor
COL	Column	NIC	Not In Contract
COMPR	Compressible	NO	Number
CONC	Concrete	NOM	Nominal
CONT	Continuous	NTS	Not To
CONTR	Contractor	NWRK	No Work
CORR	Corridor		
CP	Control	OC	On
CPT	Carpet	OH	Opposite
CRS	Courses	OSB	Oriented Strand
CT	Ceramic	OZ	Ounce
CTYD	Courtyard		
CWB	Cementitious Wall Board	PAFS	Power Actuated Fastening
		PC	Porcelain
DBL	Double	PCC	Pre-Cast Concrete
DEMO	Demolish or Demolition	PLAM	Plastic Laminate
DIA	Diameter	PLUMB	Plumbing
DIM	Dimension	PWD	Plywood
DIMS	Dimensions	PT	Pressure Treated
DN	Down	PNT	Paint or Painted
DR	Door	PVC	Polyvinyl Chloride
DTL	Detail		
DWG	Drawing	REF	Reference
EA	Each	RBR	Rubber
EJ	Expansion	RCP	Reflected Ceiling Plan
EL	Elevation	RD	Roof Drain
ELEC	Electrical	REQD	Required
ELEV	Elevator or	RM	Room
EP	Electrical	RMV	Remove (d)
EPDM	Ethylene Propylene Diene M-Class (Roofing)	RO	Rough Opening
		R-PNT	Repaint
		R-CLR	Refinish Clear
EQ	Equal		
EXIST	Existing	SCT	Structural Clay Tile
EXP	Expansion	SD	Static
EXSTR	Exposed	SF	Square Foot
EXT	Exterior e	SIM	Similar
		SPEC	Specified OR Specification
FA	Fire	SPK	Sprinkler or Speaker
FE	Fire	SSTL	Stainless
FEC	Fire Extinguisher	STC	Sound Transmission Coefficient
FD	Floor Drain or Fire Department	STL	Steel
FEC	Fire Extinguisher	STO	Storage
FF	Finish	STRU	Structure or Structural
FIN	Finish	SUSP	Suspended
FIXT	Fixture		
FL	Flooring	T&G	Tongue And Groove
FLR	Floor	TELE	Telephone
FM	Filled	TG	Tempered Glass
FND	Foundation	TLT	Toilet
FO	Face	TO	Top
FR	Frame	TOF	Top Of
FRP	Fiberglass Reinforced Plastic	TOC	Top Of
FT	Foot, Fire Treated	TOS	Top Of
FTG	Footing	TPD	Toilet Paper Dispenser
FUT	Future	T/D	Telephone/Data
FXD	Fixed	TYP	Typical
GA	Gauge	UH	Unit
GALV	Galvanized	UNO	Unless Noted Otherwise
CWB	Gypsum Wall	U/S	Underside
GYP	Gypsum		
		VCT	Vinyl Composition Tile
HC	Hollow	VERT	Vertical
HDWD	Hardwood	VEST	Vestibule
HGT	Height	VIF	Verify In
HI	High	VP	Vision Panel
HM	Hollow Metal		
HORIZ	Horizontal		

PLAN MATERIAL KEY

	UNDISTURBED SOIL		EARTH FILL
	FACE BRICK		GRAVEL FILL
	CONCRETE MASONRY UNIT		BRICK
	RIGID INSULATION		BATT INSULATION
	CONCRETE		ALUMINUM
	STRUCTURAL CLAY TILE OR GLAZED FINISH CMU		STEEL
	DIMENSIONAL LUMBER		WOOD BLOCKING
	FINISH WOOD		PLYWOOD
	GYPSUM OR PLASTER		SPRAY FOAM INSULATION
	EXISTING DOOR TO REMAIN		
	EXISTING DOOR TO BE REMOVED RE: DEMO PLAN		
	NEW DOOR RE: DOOR SCHEDULE		
	EXISTING WALL		
	DEMOLISHED WALL		
	NEW WALL		

SYMBOL LEGEND

Room name	ROOM TAG		KEYNOTE CALLOUT
	CALLOUT TAG		SECTION HEAD
	CENTERLINE		SPOT ELEVATION
	DOOR NUMBER		WALL TYPE
	ELEVATION CALLOUT		WINDOW TYPE
	COLUMN GRIDLINE		REVISION CLOUD
			REVISION TAG

GENERAL NOTES

GENERAL DRAWING NOTES

- ALL WORK ON HISTORIC BUILDINGS WITHIN THE PORTSMOUTH NAVAL SHIPYARD OR WORK ON BUILDINGS WITHIN THE HISTORIC DISTRICT SHALL COMPLY WITH THE SECRETARY OF INTERIOR'S STANDARDS FOR REHABILITATION OF HISTORIC PROPERTIES.
- DO NOT SCALE THE DRAWINGS. IMMEDIATELY NOTIFY THE ARCHITECT-ENGINEER IN THE EVENT OF MISSING OR CONFLICTING DIMENSIONS, FLOOR PLANS, FINISHES, OR SYSTEMS PRIOR TO CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS AND MINOR DETAILS ASSOCIATED WITH THE PRESCRIBED SCOPE OF WORK INCLUDING THOSE NOT SHOWN ON THE DESIGN DRAWINGS.
- DRAWINGS ARE INTENDED TO PROVIDE AN ACCURATE DEPICTION OF EXISTING CONDITIONS. HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND INACCURACIES OR CHANGES AND IMMEDIATELY NOTIFYING THE ARCHITECT-ENGINEER.
- SEE INDIVIDUAL DISCIPLINE DRAWING LEGENDS FOR DISCIPLINE SPECIFIC LEGENDS AND ABBREVIATIONS.

GENERAL CONSTRUCTION NOTES

- ALL WORK SHALL CONFORM TO ALL APPLICABLE PORTSMOUTH NAVAL SHIPYARD, LOCAL, STATE, AND FEDERAL STANDARDS, REGULATIONS, AND CODES. WORKMANSHIP SHALL BE CONSISTENT WITH INDUSTRY BEST PRACTICES.
- CONTRACTOR IS REQUIRED TO FAMILIARIZE THEMSELVES WITH EXISTING BUILDING AND SITE CONDITIONS PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL COORDINATE ALL ACTIVITIES IN ADVANCE WITH THE PORTSMOUTH NAVAL SHIPYARD PROJECT MANAGER TO MINIMIZE IMPACTS TO BUILDING OCCUPANTS.
- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH OSHA STANDARDS FOR CONSTRUCTION SAFETY AND WORKER PROTECTION. ALL WORKERS SHALL BE TRAINED AND COMPETENT IN THEIR ASSIGNED WORK TASK(S). MINIMUM WORKER TRAINING INCLUDES OSHA 10-HOUR CONSTRUCTION SAFETY CERTIFICATE.
- CONTRACTOR IS RESPONSIBLE FOR QUALITY CONTROL AND DOCUMENTATION OF ALL WORK.
- CONTRACTOR IS RESPONSIBLE FOR THE MANAGEMENT AND COORDINATION OF ALL SUBCONTRACTED TRADES. CONTRACTOR AND SUBCONTRACTOR TRADES SHALL HAVE REQUISITE EXPERIENCE, TRAINING, CERTIFICATIONS, AND LICENSES NECESSARY FOR THEIR ASSIGNED TASK(S).
- CONTRACTOR SHALL MAINTAIN A WORKING SET OF AS-BUILT DOCUMENTS (DRAWINGS AND SPECIFICATIONS) AT THE WORK SITE. THESE DOCUMENTS SHALL BE AVAILABLE FOR REVIEW BY THE ARCHITECT-ENGINEER. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DOCUMENTS TO THE ARCHITECT-ENGINEER UPON COMPLETION OF ALL WORK.
- CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY FACILITIES ASSOCIATED WITH THE PRESCRIBED SCOPE OF WORK, INCLUDING BUT NOT LIMITED TO STAGING AREAS, TRAILERS, UTILITIES, SNOW REMOVAL, OFF-SITE WASTE DISPOSAL, AND TEMPORARY HEATING/COOLING OF OCCUPIED BUILDING SPACES.
- CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL EXISTING FACILITIES WITHIN AND ADJACENT TO THE WORK AREA. ANY DAMAGE OR ALTERATION OF FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR.
- STORAGE AND STAGING OF MATERIALS, EQUIPMENT, AND SUPPLIES SHALL BE LIMITED TO CONTRACTOR STAGING AREA.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SAFE EGRESS TO ALL WORK AREAS.
- CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY SHORING/BRACING OF ALL STRUCTURAL ASSEMBLIES AND EQUIPMENT.
- CONTRACTOR IS RESPONSIBLE FOR TEMPORARY WEATHER BARRIERS ON EXISTING BUILDING WALL AND ROOF PENETRATIONS.
- CONTRACTOR IS RESPONSIBLE FOR ALL HOUSEKEEPING. WORK AREAS SHALL BE KEPT NEAT AND ORDERLY AND SHALL BE CLEANED AT THE END OF EACH WORKDAY.

DATE	07/31/15	DM	
DATE	07/15/15	APPR	
SYMBOL	100% SUBMISSION	DESCRIPTION	
SYMBOL	90% SUBMISSION	DESCRIPTION	



13 WATER ST NEWMARKET NH
(603) 200-0096 ACCOR-ROOM

APPROVED	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO DATE	
DES: KLC	DRW: SRR
CHK: KLC	
FW/DW	PETER STOCKLESS
BRANCH MANAGER	BRUCE LITALIEN
FEAD/PM/AC	AMIN BAHROUR PM&E
FIRE PROTECTION	X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD - PORTSMOUTH, NH

NAVAL FACILITIES ENGINEERING COMMAND
~ MID-ATLANTIC
NAVAL SHIPYARD - PORTSMOUTH, NH

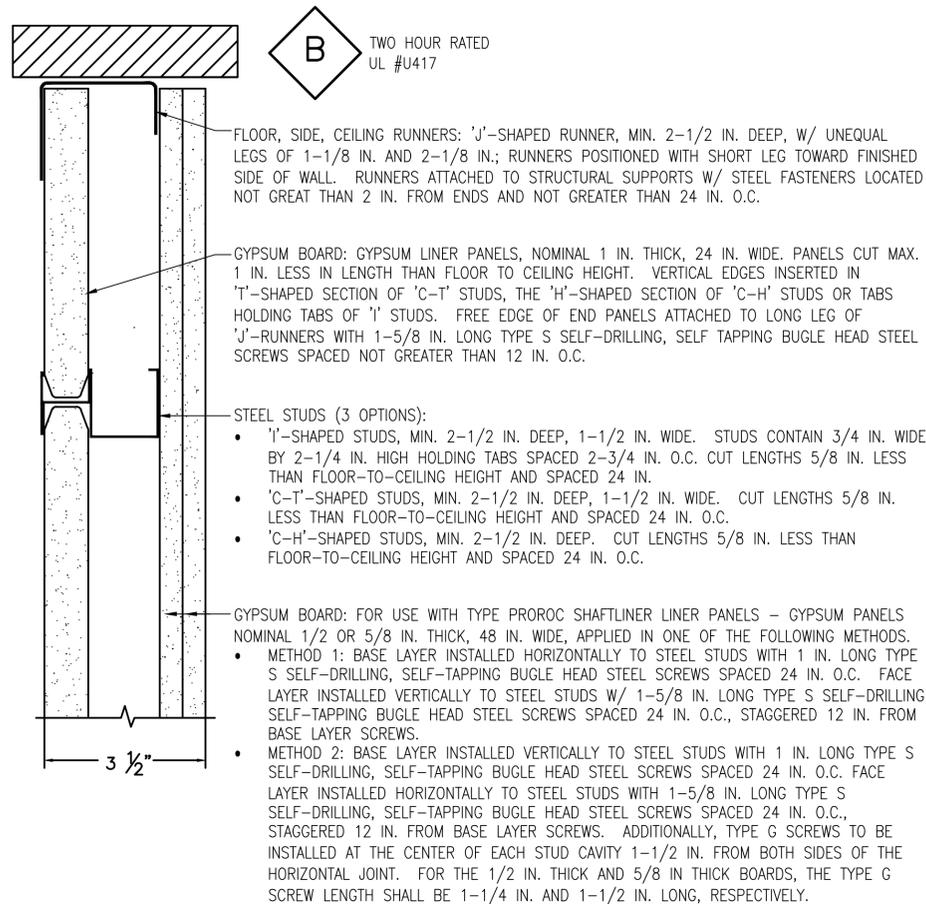
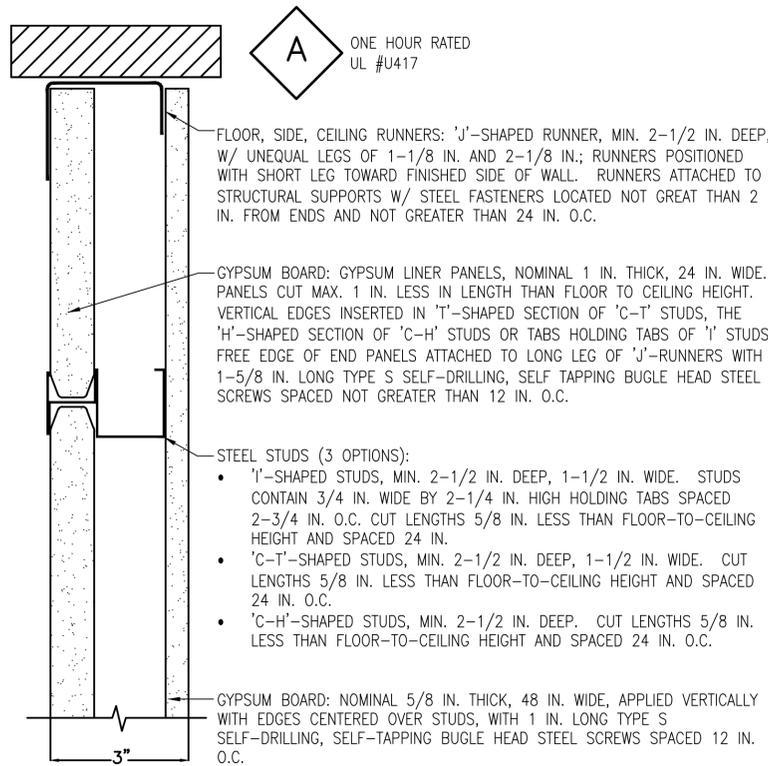
ATTN: MAINE

FY 16 ENERGY PROJECT
TASK 1-B-R-22

GENERAL NOTES & LEGENDS

EPROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703456
SHEET	3 OF 506

G1.2 43-15-69



NOTE: ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN ACCORDANCE WITH CODES AND REGULATIONS AS APPROVED AND AMENDED BY THE STATE OF MAINE AND THE TOWN OF KITTERY.

UNLESS IT IS OTHERWISE NOTED, IT IS THE INTENTION THAT THE ABOVE CODES AND REGULATIONS REFER TO THE LATEST EDITION OR REVISION ENFORCED ON THE DATE OF CONSTRUCTION START.

NOT ALL CODE SECTIONS THAT ARE RELATED TO THIS PROJECT ARE MENTIONED IN THE FOLLOWING CODE REVIEW. ONLY KEY ARCHITECTURAL ITEMS HAVE BEEN HIGHLIGHTED.

IBC 2009

SECTION 708 SHAFT ENCLOSURES

708.1 THE PROVISIONS OF THIS SECTION SHALL APPLY TO SHAFTS REQUIRED TO PROTECT OPENINGS AND PENETRATIONS THROUGH FLOOR/CEILING AND ROOF/CEILING ASSEMBLIES. SHAFT ENCLOSURES SHALL BE CONSTRUCTED AS FIRE BARRIERS IN ACCORDANCE WITH SECTION 707 OR HORIZONTAL ASSEMBLIES IN ACCORDANCE WITH SECTION 712, OR BOTH.

708.2 SHAFT ENCLOSURE REQUIRED. OPENINGS THROUGH A FLOOR/CEILING ASSEMBLY SHALL BE PROTECTED BY A SHAFT ENCLOSURE COMPLYING WITH THIS SECTION.

708.4 FIRE-RESISTANCE RATING. SHAFT ENCLOSURES SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 2 HOURS WHERE CONNECTING FOUR STORIES OR MORE, AND NOT LESS THAN 1 HOUR WHERE CONNECTING LESS THAN FOUR STORIES. THE NUMBER OF STORIES CONNECTED BY THE SHAFT ENCLOSURE SHALL INCLUDE ANY BASEMENTS BUT NOT ANY MEZZANINES. SHAFT ENCLOSURES SHALL HAVE A FIRE-RESISTANCE RATING NOT LESS THAN THE FLOOR ASSEMBLY PENETRATED, BUT NEED NOT EXCEED 2 HOURS. SHAFT ENCLOSURES SHALL MEET THE REQUIREMENTS OF SECTION 703.2.1.

708.7 OPENINGS. OPENINGS IN A SHAFT ENCLOSURE SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 715 AS REQUIRED FOR FIRE BARRIERS.

708.8 PENETRATIONS. PENETRATIONS IN A SHAFT ENCLOSURE SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 713 AS REQUIRED FOR FIRE BARRIERS.

708.10 DUCTS AND AIR TRANSFER OPENINGS. PENETRATIONS OF A SHAFT ENCLOSURE BY DUCTS AND AIR TRANSFER OPENINGS SHALL COMPLY WITH SECTION 716.

708.11 ENCLOSURE AT THE BOTTOM. SHAFTS THAT DO NOT EXTEND TO THE BOTTOM OF THE BUILDING OR STRUCTURE SHALL COMPLY WITH ONE OF THE FOLLOWING:

- THEY SHALL BE ENCLOSED AT THE LOWEST LEVEL WITH CONSTRUCTION OF THE SAME FIRE-RESISTANCE RATING AS THE LOWEST FLOOR THROUGH WHICH THE SHAFT PASSES, BUT NOT LESS THAN THE RATING REQUIRED FOR THE SHAFT ENCLOSURE.
- THEY SHALL TERMINATE IN A ROOM HAVING A USE RELATED TO THE PURPOSE OF THE SHAFT. THE ROOM SHALL BE SEPARATED FROM THE REMAINDER OF THE BUILDING BY FIRE BARRIERS CONSTRUCTED IN ACCORDANCE WITH SECTION 707 OR HORIZONTAL ASSEMBLIES CONSTRUCTED IN ACCORDANCE WITH SECTION 712, OR BOTH. THE FIRE RESISTANCE RATING AND OPENING PROTECTIVES SHALL BE AT LEAST EQUAL TO THE PROTECTION REQUIRED FOR THE SHAFT ENCLOSURE.
- THEY SHALL BE PROTECTED BY APPROVED FIRE DAMPERS INSTALLED IN ACCORDANCE WITH THEIR LISTING AT THE LOWEST LEVEL WITHIN THE SHAFT ENCLOSURE.

708.12 ENCLOSURE AT THE TOP. A SHAFT ENCLOSURE THAT DOES NOT EXTEND TO THE UNDERSIDE OF THE ROOF SHEATHING, DECK OR SLAB OF THE BUILDING SHALL BE ENCLOSED AT THE TOP WITH CONSTRUCTION OF THE SAME FIRE-RESISTANCE RATING AS THE TOPMOST FLOOR PENETRATED BY THE SHAFT, BUT NOT LESS THAN THE FIRE-RESISTANCE RATING REQUIRED FOR THE SHAFT ENCLOSURE.

SECTION 712 HORIZONTAL ASSEMBLIES

712.1 FLOOR AND ROOF ASSEMBLIES REQUIRED TO HAVE A FIRE RESISTANCE RATING SHALL COMPLY WITH THIS SECTION. NONFIRE-RESISTANCE-RATED FLOOR AND ROOF ASSEMBLIES SHALL COMPLY WITH SECTION 713.4.2.

SECTION 713 PENETRATIONS

713.1 SCOPE. THE PROVISIONS OF THIS SECTION SHALL GOVERN THE MATERIALS AND METHODS OF CONSTRUCTION USED TO PROTECT THROUGH PENETRATIONS AND MEMBRANE PENETRATIONS OF HORIZONTAL ASSEMBLIES AND FIRE-RESISTANCE-RATED WALL ASSEMBLIES.

713.3 FIRE-RESISTANCE-RATED WALLS. PENETRATIONS INTO OR THROUGH FIRE WALLS, FIRE BARRIERS, SMOKE BARRIER WALLS AND FIRE PARTITIONS SHALL COMPLY WITH SECTION 713.3.1 THROUGH 713.3.3. PENETRATIONS IN SMOKE BARRIER WALLS SHALL ALSO COMPLY WITH SECTION 713.5.

713.4 HORIZONTAL ASSEMBLIES. PENETRATIONS OF A FLOOR, FLOOR/CEILING ASSEMBLY OR THE CEILING MEMBRANE OF A ROOF/CEILING ASSEMBLY NOT REQUIRED TO BE ENCLOSED IN A SHAFT BY SECTION 708.2 SHALL BE PROTECTED IN ACCORDANCE WITH SECTIONS 713.4.1 THROUGH 713.4.2.2.

713.4.1 FIRE-RESISTANCE-RATED ASSEMBLIES. PENETRATIONS OF THE FIRE-RESISTANCE-RATED FLOOR, FLOOR/CEILING ASSEMBLY OR THE CEILING MEMBRANE OF A ROOF/CEILING ASSEMBLY SHALL COMPLY WITH SECTIONS 713.4.1.1. THROUGH 713.4.1.4. PENETRATIONS IN HORIZONTAL SMOKE BARRIERS SHALL ALSO COMPLY WITH 713.5

SECTION 716 DUCTS AND AIR TRANSFER OPENINGS

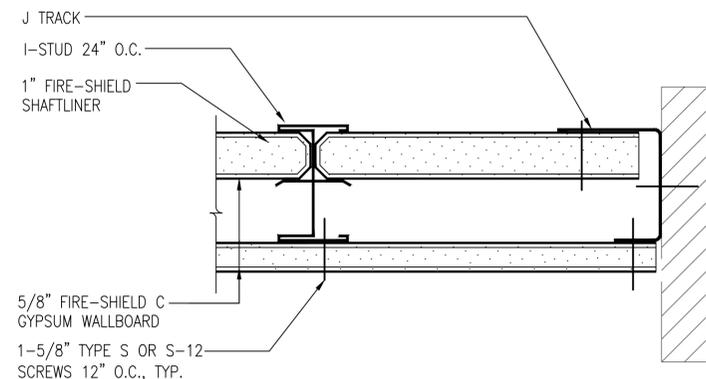
716.1 GENERAL. THE PROVISIONS OF THIS SECTION SHALL GOVERN THE PROTECTION OF DUCT PENETRATIONS AND AIR TRANSFER OPENINGS IN ASSEMBLIES REQUIRED TO BE PROTECTED.

716.5 WHERE REQUIRED. FIRE DAMPERS, SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS SHALL BE PROVIDED AT THE LOCATIONS PRESCRIBED IN SECTIONS 716.5.1 THROUGH 716.5.7 AND 716.6. WHERE AN ASSEMBLY IS REQUIRED TO HAVE BOTH FIRE DAMPERS AND SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS OR A FIRE DAMPER AND A SMOKE DAMPER SHALL BE REQUIRED.

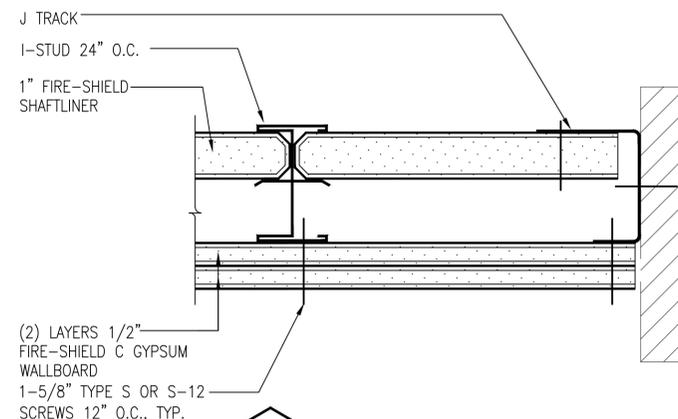
716.6 HORIZONTAL ASSEMBLIES. PENETRATIONS BY DUCTS AND AIR TRANSFER OPENINGS OF A FLOOR, FLOOR/CEILING ASSEMBLY OR THE CEILING MEMBRANE OF A ROOF/CEILING ASSEMBLY SHALL BE PROTECTED BY A SHAFT ENCLOSURE THAT COMPLIES WITH SECTION 708 OR SHALL COMPLY WITH SECTIONS 716.6.1 THROUGH 716.6.3.

B1 WALL/CHASE TYPES
6" = 1'-0"

AS NOTED ON MECHANICAL AND ELECTRICAL DRAWINGS, PROVIDE CHASES, BOTH HORIZONTAL AND VERTICAL AS INDICATED. EVALUATE EXISTING FIELD CONDITIONS FOR FIRE RATING; CONSULT OWNER & A-E FIRM WITH FINDINGS PRIOR TO CONSTRUCTION



C1 ONE HOUR HORIZONTAL SHAFTWALL
CORRIDOR CEILING (092611)*

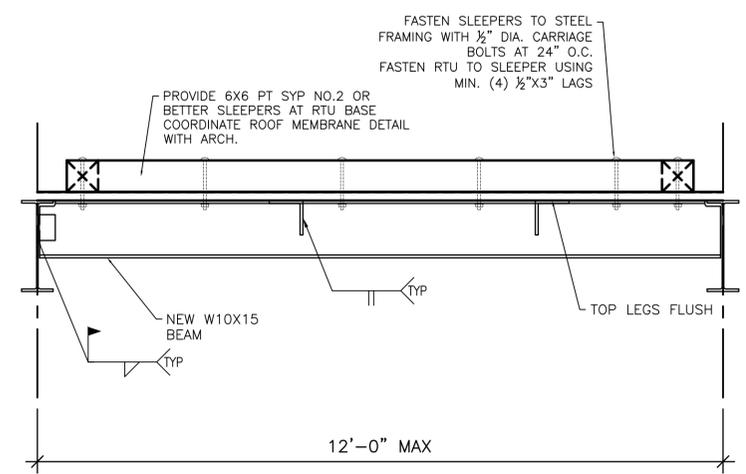
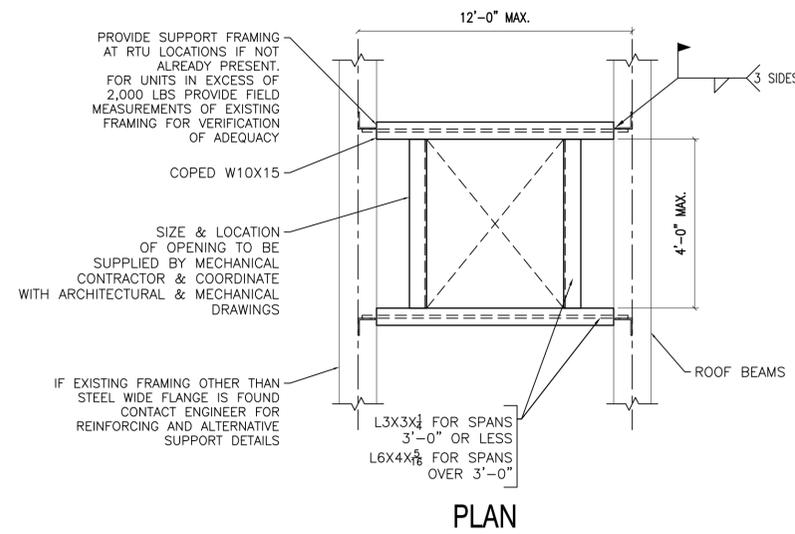


C2 TWO HOUR HORIZONTAL SHAFTWALL
CORRIDOR CEILING (09260H)*

A1 CEILING SOFFIT TYPES
6" = 1'-0"

* SEE ICBO EVALUATION SERVICES, INC. EVALUATION REPORT NO. 3579 FOR ALLOWABLE VALUES AND/OR CONDITIONS OF USE CONCERNING MATERIAL PRESENTED IN THIS DOCUMENT. IT'S SUBJECT TO RE-EXAMINATIONS, REVISIONS, AND POSSIBLE CANCELLATIONS.

DATE	07/31/15	DM	APPR
DATE	07/15/15	DATE	
DESCRIPTION	100% SUBMISSION	90% SUBMISSION	
SW	0	SW	
13 WATER ST NEWMARKET NH (603) 200-0096 AQCM.COM			
APPROVED	A/E INFO		
FOR COMMANDER NAVFAC			
ACTIVITY			
SATISFACTORY TO	DATE		
DES	NCM	DRW	SRR
CHK	KLC		
PA/DM	PETER STOCKLESS		
BRANCH MANAGER	BRUCE LITALIEN		
TEAM/PM/SE	AMIN BAHROUR PM&E		
FIRE PROTECTION	X		
DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING COMMAND		
PUBLIC WORKS DEPARTMENT - MAINE	NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC		
PORTSMOUTH NAVAL SHIPYARD	NAVAL SHIPYARD - PORTSMOUTH, NH		
KITTERY, MAINE			
FY 16 ENERGY PROJECT TASK 1-B-R-22 CHASE & SOFFIT DETAILS			
PROJECT NO.:	1350913		
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX		
NAVFAC DRAWING NO.:	12703457		
SHEET	4	OF	506
A1.0 43-15-72			



TYP. DETAILS AT ROOF OPENINGS W/ MECH. UNITS
 SCALE: 3/4"=1'-0" 3B

GENERAL SHEET NOTES

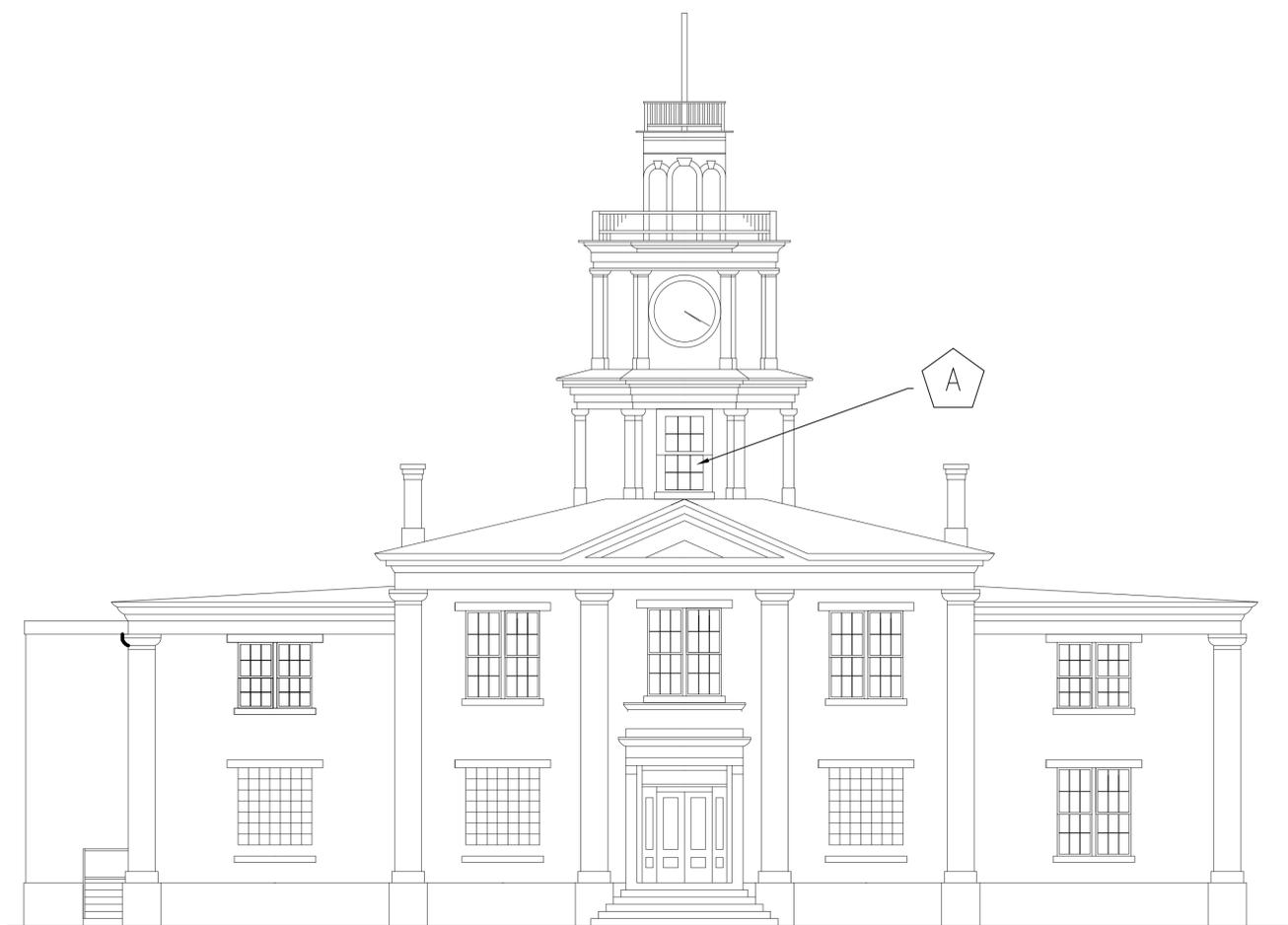
- ALL WORK SHALL CONFORM TO THE APPLICABLE REFERENCED STANDARDS. THESE INCLUDE:
 UFC 1-200-01 GENERAL BUILDING REQUIREMENTS [16 AUGUST 2010 WITH 28 NOVEMBER 2011 CHANGES]
 UFC 3-310-01 STRUCTURAL LOAD DATA [15 MAY 2005 WITH 5 DECEMBER 2007 CHANGES]
 ASCE 7-10 MINIMUM LIVE LOADS FOR BUILDINGS AND OTHER STRUCTURES
 ACI 318-11 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
 ACI 301-10 SPECIFICATIONS FOR STRUCTURAL CONCRETE
 AISI NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL
 STRUCTURAL MEMBERS, 2007 EDITION SDI SPECIFICATION FOR STEEL DECK SDI CODE OF STANDARD PRACTICE
- THESE DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS. CONFLICTS BETWEEN THE ARCHITECTURAL DRAWINGS AND THE STRUCTURAL DRAWINGS SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OF RECORD (AOR) AND THE ENGINEER OF RECORD (EOR) FOR RESOLUTION.
- ALL WORK SHALL BE MONITORED AND INSPECTED BY AN INDEPENDENT TESTING AGENCY EITHER CONTINUOUSLY OR PERIODICALLY AS SPECIFIED IN THE SCHEDULE OF SPECIAL INSPECTIONS AND THE BUILDING CODE.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. REPORT ANY DISCREPANCIES AND OBSERVATIONS TO THE AOR/EOR BEFORE PROCEEDING WITH ANY WORK.
- SHOP AND ERECTION DRAWINGS SHALL BE PROVIDED BY TRADE CONTRACTORS FOR REVIEW PRIOR TO ORDERING MATERIAL, FABRICATION, AND CONSTRUCTION. WORK SHALL NOT COMMENCE UNTIL SHOP DRAWINGS ARE APPROVED.
- PLAN REFERENCES TO EXISTING FRAMING/CONDITIONS ARE FOR REFERENCE ONLY AND SHOULD NOT BE CONSTRUED AS ACTUAL FIELD CONDITIONS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE SHORING AND BRACING TO SAFELY SUPPORT THE BUILDING DURING CONSTRUCTION. ANY APPROVAL BY THE ENGINEER WILL NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY, FOR SHORING AND/OR BRACING.
- DURING THE CONSTRUCTION PHASE OF THE PROJECT THE CONTRACTOR SHALL REVIEW THE DESIGN LOADS TO LIMIT AND CONTROL CONSTRUCTION LOADING, INCLUDING BUT NOT LIMITED TO MATERIAL STOCK PILING AND CONSTRUCTION EQUIPMENT.
- THE CONTRACTOR AND SUBCONTRACTOR SHALL REVIEW ALL ADDITIONAL DRAWINGS AND FIELD CONDITIONS FOR PITS AND ROOF OPENINGS AND OTHER SPECIFIC ITEMS NOT CALLED OUT FOR ON THE STRUCTURAL DRAWING. SPECIFIC ATTENTION TO THE ARCHITECTURAL AND MECHANICAL PLANS REQUIRED TO COVER ALL ITEMS IN BIDDING.

STRUCTURAL STEEL

- ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE BUILDING CODE, AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS" (AISC 360-05), "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (AISC 303-05), AND THE AMERICAN WELDING SOCIETY'S "STRUCTURAL WELDING CODE - STEEL" (AWS D1.1-05).
- STEEL GRADES BY TYPE:
 ROLLED WIDE-FLANGE SHAPES A992, Fy=50ksi
 ANGLES, CHANNELS, PLATES A36, Fy=36ksi
- ALL BOLTS TO BE ASTM A325N, 3/4" DIA., TENSION CONTROLLED BOLTS (TWIST-OFF). SLIP-CRITICAL CONNECTIONS ARE NOT ALLOWED.
- WELDERS TO BE CERTIFIED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) STANDARD QUALIFICATION PROCEDURES.
- WELDING ELECTRODES SHALL BE LOW-HYDROGEN E70XX SERIES FOR ALL STRUCTURAL CONNECTIONS. E60XX ELECTRODES MAY BE USED FOR WELDING STEEL DECK.
- STEEL FABRICATOR SHALL BE AN AISC CERTIFIED PLANT.
- STEEL FABRICATOR SHALL PROVIDE ENGINEER WITH SHOP FABRICATION DRAWINGS AND CONNECTION DESIGN CALCULATIONS. CALCULATIONS SHALL BE PREPARED AND STAMPED BY A LICENSED ENGINEER IN THE STATE THE PROJECT IS LOCATED. THE ENGINEER SHALL CARRY A MIN. PROFESSIONAL LIABILITY INSURANCE POLICY OF \$500,000.
- STRUCTURAL STEEL SHALL HAVE ONE COAT OF RED OXIDE RUST INHIBITIVE PRIMER; EXCEPT FOR MEMBERS WHICH ARE TO BE ENCASED IN CONCRETE, SPRAY FIRE-PROOFED, OR WITHIN 2-INCHES OF FIELD WELDS.
- FIELD CUTTING OR MODIFICATIONS TO THE STRUCTURAL STEEL IS NOT PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

DESIGN LOADS
RTUS: SEE MECHANICAL SCHEDULE
SUBMITTALS
1. THE FOLLOWING MATERIALS REQUIRE SUBMITTALS (SHOP DRAWINGS) FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO ORDERING MATERIAL FOR CONSTRUCTION: STRUCTURAL STEEL INCLUDING CONNECTION CALCULATIONS 2. THE EOR SHALL BE ALLOWED 2 WEEKS TO REVIEW SHOP DRAWINGS.
GRAPHIC SCALE
1/8" = 1' scale feet

DATE	07/31/15	APPR							
DESCRIPTION	100% SUBMISSION	SYM	100% SUBMISSION	DESCRIPTION	SYM	100% SUBMISSION	DESCRIPTION	SYM	100% SUBMISSION
<small>AQUA ENGINEERS AND CONSTRUCTORS 13 WATER ST NEWMARKET NH 03857 AECOR.COM (603) 200-0096</small>									
APPROVED									
FOR COMMANDER NAVFAC									
ACTIVITY									
SATISFACTORY TO DATE									
DESIGN: CWT DRAW: CWT CHK: TC									
PM/DM: PETER STOCKLESS									
BRANCH MANAGER: BRUCE LITALIEN									
FEAD/PM/MAKE: AMIN BAHROUR PM&E									
FIRE PROTECTION: X									
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC PUBLIC WORKS DEPARTMENT - MAINE PORTSMOUTH, MAINE SHIPYARD - KITTERY, MAINE FY 16 ENERGY PROJECT TASK 1-B-R-22 STRUCTURAL GENERAL NOTES AND RTU SUPPORT DETAIL									
PROJECT NO.: 1350913									
CONSTR. CONTR. NO. N40085-XX-C-XXXX									
NAVFAC DRAWING NO. 12703458									
SHEET 5 OF 506									
S1.0 43-15-74									
<small>DRAWING REVISION: 10 OCTOBER 2014</small>									



NOTE: NO FLOOR PLAN WAS AVAILABLE TO CREATE DRAWING; EXTERIOR ELEVATION IS SHOWN TO IDENTIFY WHICH WINDOW IS BEING UTILIZED; ANTENNA SHALL BE INSTALLED ON INTERIOR.

B13 ANTENNA LOCATION - EAST ELEVATION
 1/8" = 1'-0" 

EQUIPMENT	WIRELESS STANDARD	ANTENNA	FREQUENCY	DIMENSIONS	WEIGHT	INPUT POWER	MANUFACTURER	DESIGN BASED ON MODEL
WIRELESS ACCESS POINT	802.11n	INTEGRATED	2.4 GHZ & 5.8 GHZ	8.7 X 8.7 X 1.84 INCHES	1.9 LBS	AIR-PWRINJ4	CISCO AIRONET	AIR-CAP16021-x-K9

NOTE: PROVIDE POWER INJECTOR FOR POWER OVER ETHERNET TO WIRELESS ACCESS POINT. DESIGN BASED ON CISCO MODEL AIR-PWRINJ4.

GENERAL SHEET NOTES

- FASTENERS SHALL BE ATTACHED TO MORTAR IN MASONRY BUILDINGS, AVOIDING DAMAGE TO THE BRICK WHEREVER PRACTICAL.
- EXTERIOR CONDUIT SHALL BE INSTALLED IN SHADOW-LINES OR ADJACENT TO EXISTING CONDUIT; CONDUIT COLOR TO BE COORDINATED WITH CULTURAL RESOURCE MANAGER AND A-E.
- REFER TO MECHANICAL DRAWINGS FOR JACE LOCATION AND INFORMATION.
- EXISTING ROOF AND WALL PENETRATIONS SHALL BE USED WHEREVER PRACTICAL.
- INTERIOR, WINDOW-MOUNTED ACCESS POINTS SHALL BE MOUNTED IN AN OBSCURE LOCATION THAT IS LEAST VISIBLE FROM INTERIOR & EXTERIOR.
- ACCESS POINT MOUNTS SHALL NOT OBSTRUCT EGRESS, EXISTING WALKWAYS, STAIRWELLS, MECHANICAL EQUIPMENT CLEARANCES, OR OTHER APPURTANANCES.
- UNLESS OTHERWISE NOTED, ROOFTOP ACCESS POINTS SHALL BE CENTRALIZED ON THE ROOF TO MINIMIZE VISIBILITY FROM GROUND LEVEL.
- CONTRACTOR TO FIELD-VERIFY COMMUNICATION ACCESS POINTS ARE ALIGNED AND LINE OF SIGHT IS UNOBSTRUCTED.
- IF A FIELD CHANGE IS REQUIRED, CONTRACTOR SHALL COORDINATE WITH CULTURAL RESOURCE MANAGER AND A-E PRIOR TO RELOCATING EQUIPMENT.
- ANY PROPOSED CHANGES (PENETRATIONS, CONDUIT, ETC.) NOT ALREADY INDICATED ON DRAWINGS MADE TO HISTORIC BUILDINGS OR BUILDINGS LOCATED IN HISTORIC DISTRICT MUST BE REVIEWED AND APPROVED BY SHPO THROUGH NAVFAC CULTURAL RESOURCES DEPARTMENT PRIOR TO INSTALLATION.
- CONTRACTOR TO VERIFY RF SIGNAL STRENGTH AND CONNECTIVITY FROM/TO ALL ACCESS POINTS.
- SEE PWD-ME DRAWING NUMBERS:
 - 43-15-67 FOR TITLE SHEET
 - 43-15-68 FOR LIST OF DRAWINGS
 - 43-15-69 FOR GENERAL NOTES AND LEGEND
 - 43-15-72 FOR CHASE AND SOFFIT DETAILS
 - 43-15-74 FOR STRUCTURAL NOTES AND SUPPORT

DATE	DESCRIPTION	BY	APPR
07/31/15	100% SUBMISSION		
07/15/15	90% SUBMISSION		



APPROVED
 FOR COMMANDER NAVFAC
 ACTIVITY

NEW WORK KEYNOTES

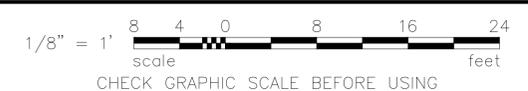
- CONTRACTOR TO SET RF ACCESS POINT ON INTERIOR SILL OF CUPOLA WINDOW; WEIGH DOWN WITH BEAN BAGS AND PROVIDE SOFT BASE AS NOT TO DAMAGE SILL; INSTALL WITH CLEAR LINE-OF-SIGHT TO B86A.
- CONTRACTOR SHALL ENSURE LINE-OF-SIGHT THROUGH WINDOW TO B086A ACCESS POINT.
- CAT5 CABLE SHALL BE ROUTED ALONG EXISTING PATH TO JACE.

DES	VSL	DRW	SRR	CHK	KLC

PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 FEAD/PNAME: AMIN BAHROUR, PM&E
 FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 B013 RF INSTALLATION DETAILS

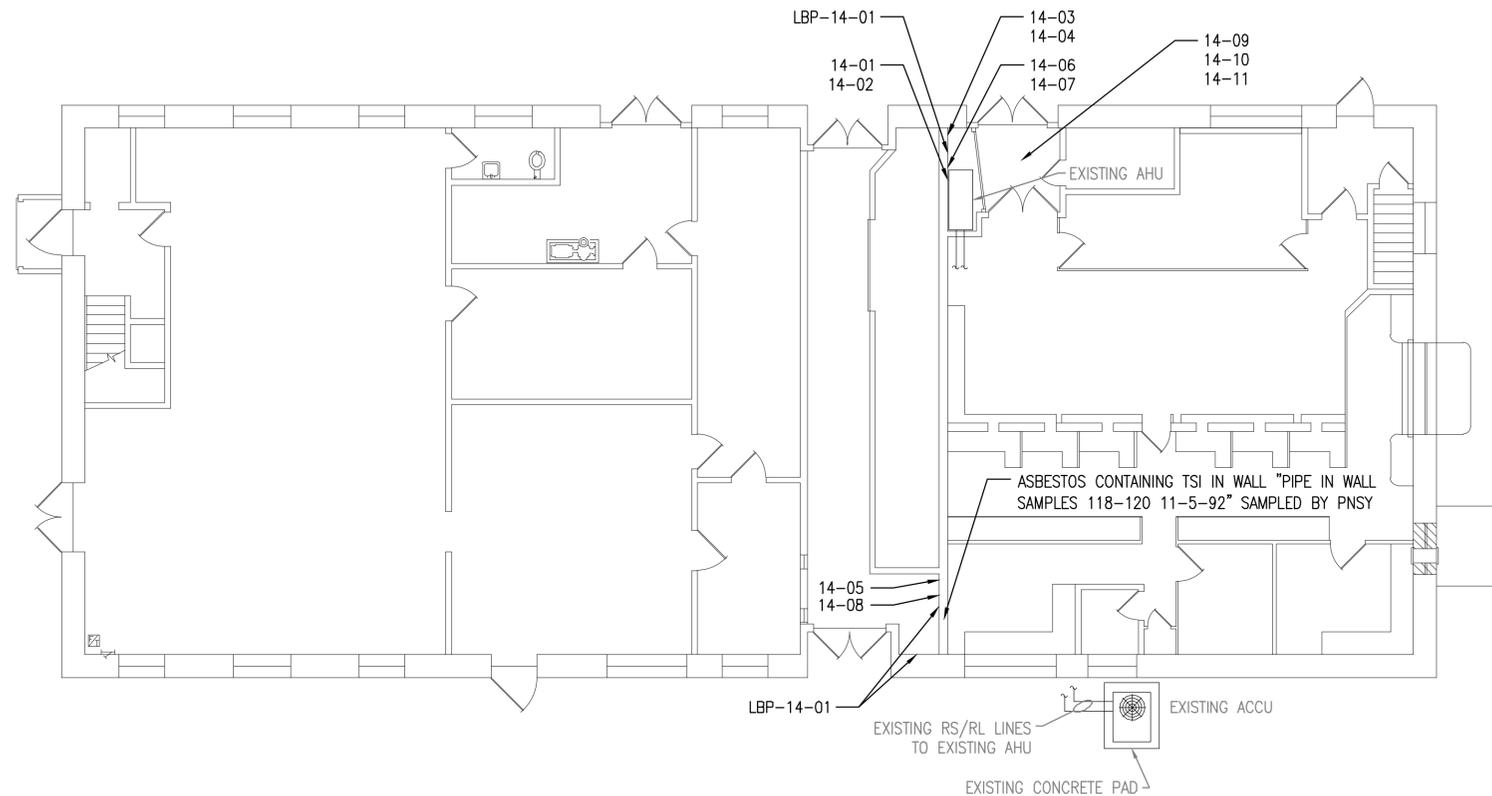
GRAPHIC SCALE



PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703459
SHEET:	6 OF 506

ET1.0 13-15-196
 DRAWFORM REVISION: 10 OCTOBER 2014

FILE NAME: I:\A\1186 ACI Subcontracting Support\hazardous\B14\1066_2_HMT_022.dwg LAYOUT NAME: B14-H1.0 PLOTTED: Friday, August 07, 2015 - 2:36pm USER: RJP



B14 HAZARDOUS MATERIAL SAMPLING PLAN
SCALE: 1/8" = 1'

GENERAL SHEET NOTES

- ALL PACM (PRESUMED ASBESTOS CONTAINING MATERIAL), LBP (LEAD BASED PAINT), PCB, AND OTHER HAZARDOUS BUILDING MATERIALS MAY NOT BE IDENTIFIED IN THIS SURVEY, PARTICULARLY THOSE HIDDEN IN WALLS, CEILINGS, FLOORS, ETC. AND IN AREAS DESCRIBED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, WHICH WERE INACCESSIBLE DURING THE SURVEY. ASSESSMENT EFFORTS DID INCLUDE, TO THE EXTENT FEASIBLE, ACCESS TO INTERIOR AND EXTERIOR OF THE STRUCTURE. HOWEVER, THE ABSENCE OF ALL PACM, LBP, PCB, AND OTHER HAZARDOUS BUILDING MATERIALS IN HIDDEN OR INACCESSIBLE PORTIONS CANNOT BE DEFINITELY ENSURED.
- RENOVATION AND/OR DEMOLITION ACTIVITIES SHOULD BE MONITORED BY PERSONNEL CAPABLE OF IDENTIFYING PACM, LBP, PCB AND OTHER HAZARDOUS BUILDING MATERIALS. IF PACM, LBP, PCB OR OTHER HAZARDOUS BUILDING MATERIALS ARE ENCOUNTERED, THESE MATERIALS SHOULD BE BULK SAMPLED BY A LICENSED INSPECTOR AND DISPOSED OF IN ACCORDANCE WITH PNSY AND ALL OTHER APPLICABLE REGULATIONS.
- SEE B14 ASBESTOS, LEAD, PCB, AND TCLP INVENTORY TABLES LOCATED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, DATED JUNE 22, 2015, FOR ADDITIONAL INFORMATION.

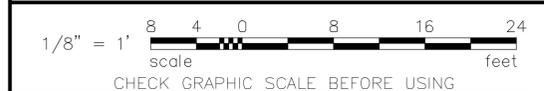
HAZARDOUS MATERIAL SAMPLING SUMMARY

SAMPLE ID	ACM	LBP
14-01	ND	NS
14-02	ND	NS
14-03	ND	NS
14-04	ND	NS
14-05	ND	NS
14-06	ND	NS
14-07	ND	NS
14-08	ND	NS
14-09	ND	NS
14-10	ND	NS
14-11	ND	NS
LBP-14-01	NS	0.11

ACM = ASBESTOS CONTAINING MATERIALS
 LBP = LEAD BASED PAINT
 <RL = LESS THAN REPORTING LIMIT
 ND = NONE DETECTED
 NS = NOT SAMPLED
 H = EXCEEDS REGULATORY STANDARDS FOR HAZARDOUS CONCENTRATION

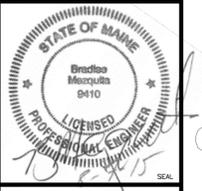
NOTE:
 REFER TO HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT DATED JUNE 22, 2015 FOR COMPLETE SAMPLING INFORMATION AND DATA.

GRAPHIC SCALE



DATE	BLM	BLM	APPR
08/07/2015			
06/05/2015			

NO.	DESCRIPTION	DATE
2	100% SUBMISSION	
1	90% SUBMISSION	



Tighe & Bond
 Consulting Engineers
 177 Corporate Drive
 Portsmouth, New Hampshire
 (603) 433-8818
 www.tighebond.com

APPROVED				
FOR COMMANDER NAVFAC				
ACTIVITY				
SATISFACTORY TO DATE				
DES A/E	DRW	REP	CHK	BLM
PA/DM	PETER STOCKLESS			
BRANCH MANAGER	BRUCE LITALIEN			
TEAM/PM/E	AMIN BAHRLOUR PM&E			
TITLE PROTECTION	X			

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT ~ MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 NAVY SHIPYARD - PORTSMOUTH, NH
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 B14 HAZARDOUS MATERIAL SAMPLING PLAN

EPROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703460
SHEET	7 OF 506
H1.0	14-15-173

DRAWING REVISION: 10 OCTOBER 2014

HVAC ABBREVIATIONS

*F	DEGREES FAHRENHEIT	ID	INSIDE DIAMETER
*C	DEGREES CELSIUS	IN	INCHES
Ø	DIAMETER	INSUL	INSULATION
ACV	AUTOMATIC CONTROL VALVE	KW	KILOWATT
AD	ACCESS DOOR	KVA	KILOVOLT AMPERE
ADJ	ADJUSTABLE	L	LENGTH
ADDL	ADDITIONAL	LB	POUND
AFF	ABOVE FINISHED FLOOR	LF	LINEAR FEET
AFG	ABOVE FINISHED GRADE	LVG	LEAVING
ALT	ALTERNATE	M	ONE THOUSAND
AP	ACCESS PANEL	MAX	MAXIMUM
ARCH	ARCHITECT	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
ATC	AUTOMATIC TEMPERATURE CONTROL	MCA	MINIMUM CIRCUIT AMPS
AS	AIR SEPARATOR	MCC	MOTOR CONTROL CENTER
AVG	AVERAGE	MECH	MECHANICAL
BAS	BUILDING AUTOMATION SYSTEM	MEZZ	MEZZANINE
BFF	BELOW FINISHED FLOOR	MFR	MANUFACTURER
BHP	BRAKE HORSEPOWER	MIN	MINIMUM
BLDG	BUILDING	MTD	MOUNTED
BLR	BOILER	MU	MAKEUP WATER
BOD	BOTTOM OF DUCT	N/A	NOT APPLICABLE
BOP	BOTTOM OF PIPE	NC	NORMALLY CLOSED
BSMY	BASEMENT	NC	NOISE CRITERIA
BTU	BRITISH THERMAL UNIT	NIC	NOT IN CONTRACT
BTUH	BRITISH THERMAL UNIT PER HOUR	NO	NORMALLY OPEN
C	CONVECTOR	NO.	NUMBER
CF	CEILING FAN	NOM	NOMINAL
CL	CENTERLINE	NTS	NOT TO SCALE
CLG	CEILING	OB	OCTAVE BAND
CO	CLEAN-OUT	OC	ON CENTER
COL	COLUMN	OD	OUTSIDE DIAMETER
COL	COLUMN	OD	OUTSIDE DIAMETER
COMP	COMPRESSOR	ODP	OPEN DRIP PROOF
CONC	CONCRETE	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CONN	CONNECTION	OFOI	OWNER FURNISHED OWNER INSTALLED
CONTR	CONTRACTOR	OV	OUTLET VELOCITY
CORR	CORRIDOR	PCF	POUNDS PER CUBIC FOOT
CUF	CUBIC FEET	PD	PRESSURE DROP
CUH	CABINET UNIT HEATER	PH	PHASE
CYL	CYLINDER	PLMB	PLUMBING
D	DRAIN	POS	PROVIDED BY OTHER SECTION(S)
DB	DRY BULB TEMPERATURE	PRESS	PRESSURE
DDC	DIRECT DIGITAL CONTROL	PRIM	PRIMARY
DDCFP	DIRECT DIGITAL CONTROL FIELD PANEL	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
DIA	DIAMETER	PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
DIM	DIMENSION	PSIG	POUNDS PER SQUARE INCH GAUGE
DN	DOWN	PVC	POLYVINYL CHLORIDE
DWG	DRAWING	REP	REPRESENTATIVE
EA	EACH	RET	RETURN
EAT	ENTERING AIR TEMPERATURE	REQD	REQUIRED
EFF	EFFICIENCY	REQS	REQUIREMENTS
ECUH	ELECTRIC CABINET UNIT HEATER	RH	RELATIVE HUMIDITY
ELEC	ELECTRICAL	RM	ROOM
ELEV	ELEVATION	RPM	REVOLUTIONS PER MINUTE
EMER	EMERGENCY	SCH	SCHEDULE
ENT	ENTERING	SOV	SOLENOID OPERATED VALVE
EQUIP	EQUIPMENT	SPECS	SPECIFICATIONS
EXH	EXHAUST	SQ	SQUARE
EXP	EXPANSION	SQFT	SQUARE FEET
FTR	FINNED TUBE RADIATION	SS	STAINLESS STEEL
FCV	FLOW CONTROL VALVE	STD	STANDARD
FG	FIBERGLASS	STDBY	STANDBY
FLEX	FLEXIBLE	STL	STEEL
FLR	FLOOR	SUCT	SUCTION
FLDR	FLOOR DRAIN	SUP	SUPPLY
FP	FIRE PROTECTION	TA	THROW-AWAY
FPM	FEET PER MINUTE	TAV	THERMOSTATIC AIR VENT
FT	FEET	TEFC	TOTALLY ENCLOSED FAN COOLED
FT/SEC	FEET PER SECOND	TEL	TELEPHONE
FURN	FURNISHED	TEMP	TEMPERATURE
FNVR	FULL VOLTAGE NON-REVERSING	TOD	TOP OF DUCT
GA	GAUGE	TOP	TOP OF PIPE
GAL	GALLONS	TYP	TYPICAL
GALV	GALVANIZED	UH	UNIT HEATER
GC	GENERAL CONTRACTOR	V	VENT
GND	GROUND	VEL	VELOCITY
GPH	GALLONS PER HOUR	VERT	VERTICAL
GPM	GALLONS PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
GRD	GRADE (GROUND LEVEL)	VTR	VENT THROUGH ROOF
GWB	GYPSONUM WALL BOARD	W	WIDTH
H	HEIGHT	W/	WITH
HD	HEAD	W/O	WITHOUT
HP	HORSEPOWER	WB	WET BULB TEMPERATURE
HR	HOUR	WF	WIDE FLANGE
HZ	HERTZ	WG	WATER GAUGE
		WRT	WITH RESPECT TO

PIPING LEGEND

—○—	RISE (SINGLE LINE - PLAN VIEW)
—○—	DROP (SINGLE LINE - PLAN VIEW)
—○—	TOP TAKEOFF
—○—	BOTTOM TAKEOFF
—/—	PIPE BREAK (SINGLE LINE)

FLOW DIAGRAM & CONTROL DIAGRAM EQUIP. SYMBOLS

	FILTER BANK		CENTRIFUGAL FAN
	HEATING COIL		INLINE CENTRIFUGAL FAN
	COOLING COIL		OPPOSED BLADE DAMPER W/ TWO POSITION ACTUATOR
	PARALLEL BLADE DAMPER W/ MODULATING ACTUATOR		OPPOSED BLADE DAMPER W/ MODULATING ACTUATOR
	BACKDRAFT DAMPER		PARALLEL BLADE DAMPER W/ TWO POSITION ACTUATOR

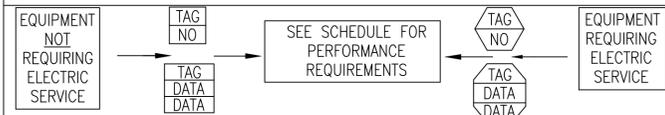
HVAC SYSTEM TAGS

	AIR HANDLING UNIT		AIR COOLED CONDENSING UNIT		JACE BOX
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CALL OUT SYMBOLS

	THERMOSTAT		REFER TO DRAWINGS () FOR CONTINUATION
	CONNECT TO EXISTING		SYMBOL DESIGNATES ASSOCIATED SYSTEM OR SERVICE (ie LPS)
	DIFFUSER, GRILLE, REGISTER LETTER DESIGNATION (See Schedule for ATD type)		DESIGN CFM

EQUIPMENT TAG SYMBOLS & ABBREVIATIONS



NOTE: REFER TO SCHEDULES FOR DEFINITION OF EQUIPMENT SPECIFIC DATA LISTED WITHIN TAG BLOCKS

AIR SYSTEM SPECIFIC ABBREVIATIONS

AC	AIR CONDITIONING	LVDR	LOUVERED DOOR
ACD	AUTOMATIC CONTROL DAMPER	OA	OUTSIDE AIR
ACU	AIR CONDITIONING UNIT	OAI	OUTSIDE AIR INTAKE
AF	AIR FOIL	OBD	OPPOSED BLADE DAMPER
AHU	AIR HANDLING UNIT	OED	OPEN END DUCT
ALD	ACOUSTICALLY LINED DUCTWORK	RA	RETURN AIR
ATD	AIR TERMINAL DEVICE	RF	RETURN FAN
AVS	AIR VOLUME TRAVERSE STATION	RG	RETURN GRILLE
BDD	BACKDRAFT DAMPER	RHC	REHEAT COIL
BI	BACKWARD INCLINED	RLF	RELIEF
CC	COOLING COIL	RR	RETURN REGISTER
CD	CEILING DIFFUSER	RV	ROOF VENT
CFM	CUBIC FEET PER MINUTE	SA	SUPPLY AIR
CG	CEILING GRILLE	SATT	SOUND ATTENUATOR
DIFF	DIFFUSER	SCR	SCREEN
DWDI	DOUBLE WIDTH DOUBLE INLET	SD	SMOKE DAMPER
DWSI	DOUBLE WIDTH SINGLE INLET	SDET	SMOKE DETECTOR
DX	DIRECT EXPANSION	SEF	SMOKE EXHAUST FAN
EF	EXHAUST FAN	SF	SUPPLY FAN
EG	EXHAUST GRILLE	SFD	COMBINATION AUTOMATIC SMOKE/FIRE DAMPER
ESP	EXTERNAL STATIC PRESSURE		WITH ACCESS DOOR
F	FAN	SG	SUPPLY GRILLE
FC	FORWARD CURVED	SM	SHEETMETAL
FA	FREE AREA	SP	STATIC PRESSURE
FCU	FAN COIL UNIT	SR	SUPPLY REGISTER
FD	FIRE DAMPER (W/ ACCESS DOOR)	SWDI	SINGLE WIDTH DOUBLE INLET
FLTR	FILTER	SWSI	SINGLE WIDTH SINGLE INLET
FPI	FINS PER INCH	TE	TOILET EXHAUST
FPT	FAN POWERED TERMINAL BOX	TF	TRANSFER FAN
GE	GENERAL EXHAUST	TG	TRANSFER GRILLE
GIH	GRAVITY INTAKE HOOD	TR	TRANSFER
GRH	GRAVITY RELIEF HOOD	TSP	TOTAL STATIC PRESSURE
HC	HEATING COIL	UC	UNDERCUT DOOR
LAT	LEAVING AIR TEMPERATURE	VD	VOLUME DAMPER
LD	LINEAR DIFFUSER	VV	VARIABLE VOLUME SUPPLY AIR TERMINAL BOX
LUVR	LOUVER	WMS	WIRE MESH SCREEN

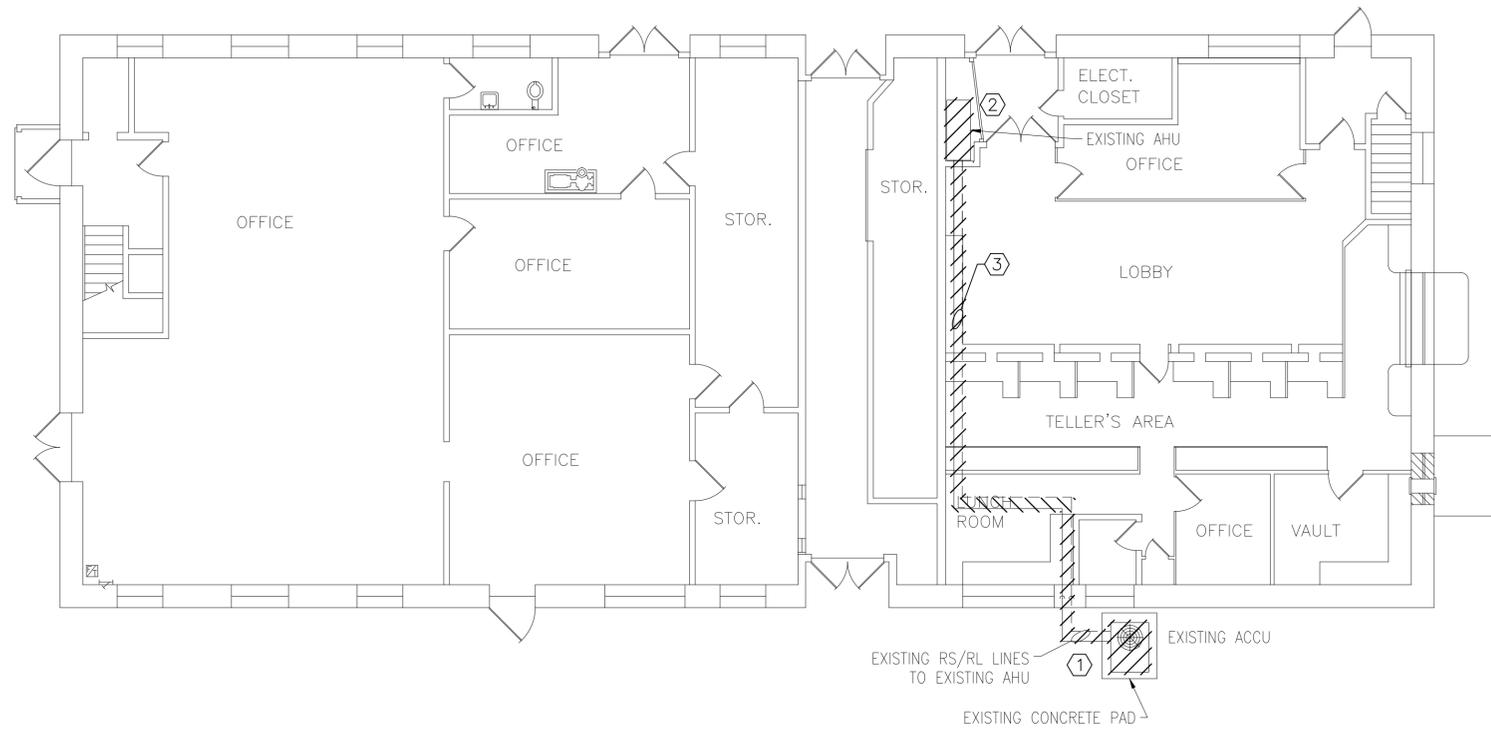
HVAC GENERAL NOTES

- GENERAL NOTES APPLY TO ALL HVAC DRAWINGS.
- THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID, ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITIONS OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. ABSOLUTELY NO CLAIMS FOR EXTRA COMPENSATION WILL BE CONSIDERED FOR EXISTING CONDITIONS VISIBLE OR REASONABLY INFERRABLE FROM A CAREFUL EXAMINATION OF THE EXISTING BUILDING.
- THIS CONTRACTOR SHALL INSPECT THE EXISTING FIELD CONDITIONS AT THE SITE AND THE "AS-BUILT" BASE BUILDING CONTRACT DOCUMENTS PRIOR TO THE START OF ANY WORK TO DETERMINE WHAT EFFECT THE EXISTING CONDITIONS WILL HAVE ON HIS WORK. POTENTIAL PROBLEM AREAS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER IMMEDIATELY.
- THIS CONTRACTOR SHALL CONNECT HIS WORK TO VARIOUS EXISTING PIPING, DUCTWORK, AND CONTROL SYSTEMS IN THE BASE BUILDING. THE NEW WORK SHALL BE COMPATIBLE WITH THE EXISTING SYSTEMS. LOCATION OF EQUIPMENT OR THE ROUTING OF THE VARIOUS SYSTEMS AS WELL AS OPENINGS IN FLOOR SLABS OR WALLS SHALL BE GOVERNED BY THE EXISTING CONDITIONS AS THEY APPEAR IN THE FIELD OR ON THE "AS-BUILT" DRAWINGS.
- CARE SHALL BE TAKEN DURING THE INSTALLATION TO NOT DAMAGE OR INTERRUPT BUILDING SYSTEMS AND SERVICES THAT ARE ALREADY INSTALLED. DAMAGE TO SUCH SYSTEMS OR EQUIPMENT CAUSED BY THIS CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.
- SHUTDOWN OF EXISTING SYSTEMS FOR CONNECTION TO EXISTING SERVICES SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR AND BUILDING OWNER. THIS CONTRACTOR SHALL SUBMIT REQUESTS, WHERE THEY AFFECT THE OPERATION OF THE BUILDING SYSTEMS, AT LEAST FIFTEEN DAYS IN ADVANCE OF ANY REQUIRED SHUTDOWN. THE ACTUAL SHUTDOWN PERIOD SHALL BE AS SHORT AS POSSIBLE AND AT A TIME MUTUALLY AGREEABLE TO THE BUILDING OWNER AND THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR.
- DRAWINGS ARE DIAGRAMMATIC, THEREFORE DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS, AS WELL AS ROUTING PATHS, IN FIELD.
- ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER, AND SHOULD BE KEPT TO A MINIMUM FOR SYSTEM EFFICIENCIES.
- VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT AND/OR PIPE TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION. VERIFY ACCESS IS PROVIDED FOR SERVICING EQUIPMENT AS REQUIRED.
- ALL MATERIALS AND EQUIPMENT UNLESS SPECIFICALLY INDICATED AS REUSED, SHALL BE NEW.
- ACCESS PANELS SHALL BE PROVIDED TO ALLOW FOR CLEANING OF COILS AND SERVICING OF DAMPERS, HEATERS, VALVES, AND ALL CONCEALED MECHANICAL EQUIPMENT.
- INSTALL NEW THERMOSTATS 4 FEET AFF OR AS DIRECTED OTHERWISE BY ENGINEER.
- GENERAL CONTRACTOR TO PATCH ALL EFFECTED INTERIOR AND EXTERIOR EXISTING FLOOR, WALL, AND CEILING SURFACES TO MATCH EXISTING. PROVIDE ESCUTCHEON PLATES.
- CONTRACTOR RESPONSIBLE FOR ROUTING PIPE AND PERFORMING PRESSURE LOSS CALCULATIONS TO SIZE PIPE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
- ANY AND ALL WALLS, CEILINGS AND FLOORS THAT ARE ANTICIPATED TO BE DISTURBED DURING THE DEMOLITION OR INSTALLATIONS PROCESS, AS INDICATED ON THE DRAWINGS, SHALL BE TESTED FOR HAZARDOUS MATERIALS PRIOR TO DISTURBING THE SURFACES. ROUTING OF PIPING HAS BEEN INDICATED TO DEPICT THE INTENT OF THE WORK. ACTUAL ROUTING MAY DIFFER IN THE FIELD DUE TO BUILDING CONSTRUCTION. COORDINATE TESTING OF ALL SURFACES TO BE DISTURBED, ALONG THE ACTUAL INSTALLATION ROUTE, WITH THE HAZARDOUS MATERIALS CONTRACTOR. REFER TO EXISTING HAZMAT REPORT FOR TESTING RESULTS.
- MECHANICAL CONTRACTOR TO REMOVE ALL IDENTIFIED R-22 EQUIPMENT AND ASSOCIATED APPURTENANCES AND REPLACE IN KIND WITH A R410A OR R407C SYSTEM.
- REFRIGERANT PIPING IS DIAGRAMMATIC, CONTRACTOR TO DETERMINE ROUTING IN FIELD AND RE-USE EXISTING PENETRATIONS. ANY EXPOSED PIPING TO BE CONCEALED IN A CHASE. CONTRACTOR RESPONSIBLE FOR ROUTING PIPE AND PERFORMING PRESSURE LOSS CALCULATIONS TO SIZE PIPE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- SEE CIVIL DRAWINGS FOR DEMOLISHED AND NEW CONCRETE PADS.
- THE MECHANICAL NEW WORK PLANS DO NOT SHOW ALL ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION AMONG TRADES TO DETERMINE ALL ACCESSORIES AND COMPONENTS REQUIRED TO FORM A COMPLETE AND FUNCTIONAL SYSTEM. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY ACCESSORIES AND COMPONENTS NEEDED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM AND SHALL BE RESPONSIBLE TO ENSURE THE INTEGRITY AND SAFETY OF THE SYSTEM AFTER COMPLETION. THE MECHANICAL CONTRACTOR SHALL TAKE ALL NECESSARY STEPS AND PROVIDE ALL ADDITIONAL COMPONENTS NEEDED TO ENSURE THE SYSTEM IS SAFE UPON COMPLETION OF THE PROJECT.
- SEE PWD-ME DRAWING;
43-15-67 FOR TITLE SHEET
43-15-68 FOR LIST OF DRAWINGS
43-15-69 FOR GENERAL NOTES & LEGENDS
43-15-72 FOR CHASE AND SOFFIT DETAILS
43-15-74 FOR STRUCTURAL NOTES AND SUPPORTS

SCHEDULE OF DRAWINGS

DWG#	DESCRIPTION
M1.0	BUILDING 14 HVAC LEGEND
MD2.0	BUILDING 14 HVAC FIRST FLOOR DEMOLITION PLAN
M2.0	BUILDING 14 HVAC FIRST FLOOR PLAN
M3.0	BUILDING 14 HVAC CONTROLS
M3.1	BUILDING 14 HVAC CONTROLS
M3.2	BUILDING 14 HVAC CONTROLS
M4.0	BUILDING 14 HVAC SCHEDULES & DETAILS

DM	08/07/2015	DATE	
DM	07/24/2015		
DM	06/04/2015		
DM	04/24/2015		
DM	02/23/2015		
APPR			
4	100% SUBMISSION		
3	100% REVIEW SUBMISSION		
2	90% SUBMISSION		
1	80% SUBMISSION		
0	35% SUBMISSION		
REV	DESCRIPTION		
APPROVED: _____ FOR COMMANDER NAVFAC			
SATISFACTORY TO: _____ DATE: _____			
DES	JC	DRW	SV
CHK	DM		
PM/DM	PETER STOCKLESS		
BRANCH MANAGER BRUCE LITALIEN			
LEAD/PM&E AMIN BAHRROUR PM&E			
FOR PROTECTION X			
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND PUBLIC WORKS DEPARTMENT - MAINE PORTSMOUTH NAVAL SHIPYARD PORTSMOUTH - PORTSMOUTH, MAINE RITNEY, MAINE			
FY 16 ENERGY PROJECT TASK 1-B-R-22 BUILDING 14 HVAC LEGEND			
PROJECT NO.: 1350913 CONSTR. CONTR. NO.: N40085-XX-C-XXXX NAVFAC DRAWING NO.: 12703461			
SHEET	8	OF	506
M1.0 14-15-174			
DRAWFORM REVISION: 10 OCTOBER 2014			



BUILDING 14 HVAC FIRST FLOOR DEMOLITION PLAN
 1/8"=1'-0"

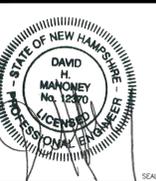
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EQUIPMENT AND MATERIALS AT PERMITTED WASTE FACILITY.
3. CONTRACTOR TO COORDINATE R-22 DISPOSAL WITH PSNY ENVIRONMENTAL GROUP.

DEMOLITION KEYNOTES

1. REMOVE EXISTING ACCU. EXISTING CONCRETE PAD TO REMAIN.
2. REMOVE EXISTING AHU AND ASSOCIATED THERMOSTAT. EXISTING CONDENSATE LINES, CONTROL WIRING, AND DUCTWORK TO REMAIN AND BE DISCONNECTED.
3. ACCESSIBLE EXISTING RS/RL LINES TO BE REMOVED. ANY REMAINING RS/RL CONCEALED TO BE EVACUATED, CAPPED AND ABANDONED IN PLACE.

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAFAC

SATISFACTORY TO DATE

DES: JC | DRW: SV | CHK: DM
 PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 14 HVAC FIRST FLOOR DEMOLITION PLAN

PROJECT NO.: 1350913

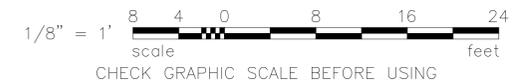
CONSTR. CONTR. NO.: N40085-XX-C-XXXX

NAFAC DRAWING NO.: 12703462

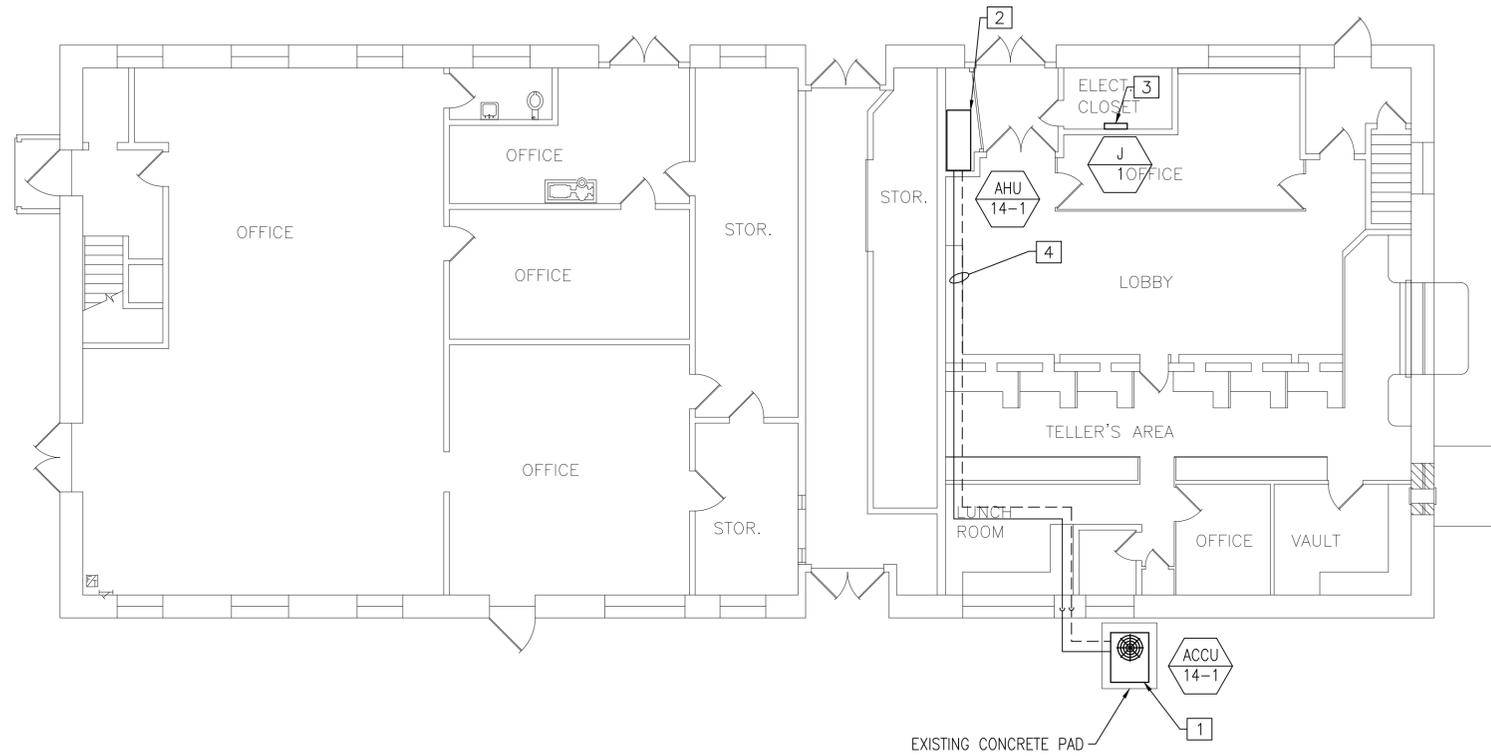
SHEET 9 OF 506

MD2.0 14-15-175
DRAWING REVISION: 10 OCTOBER 2014

GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING



BUILDING 14 HVAC FIRST FLOOR PLAN
1/8"=1'-0"



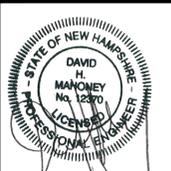
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

NEW WORK KEYNOTES

- FURNISH AND INSTALL NEW ACCU AND IT'S ASSOCIATED RS/RL LINES. NEW ACCU TO BE PLACED ON EXISTING CONCRETE PAD.
- FURNISH AND INSTALL NEW AHU AND CONNECT TO ASSOCIATED RS/RL LINES. EXISTING CONDENSATE LINES, CONTROL WIRING, AND DUCTWORK TO BE RECONNECTED. PROVIDE WITH NEW DUCTWORK WHERE NECESSARY TO CONNECT TO NEW EQUIPMENT. PROVIDE WITH NEW DDC COMPATIBLE THERMOSTAT AND CONNECT TO EXISTING CONTROL WIRING, FIELD COORDINATE EXACT LOCATION WITH NAVFAC.
- MECHANICAL CONTRACTOR TO FIELD COORDINATE EXACT LOCATION OF NEW DDC JACE BOX WITH NAVFAC.
- SEE HVAC GENERAL NOTE 17 ON SHEET M1.0 FOR PIPING INFORMATION.

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED:
FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES: JC | PRW: SV | CHK: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHROUR PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

FY 16 ENERGY PROJECT
TASK 1-B-R-22

BUILDING 14 HVAC FIRST FLOOR PLAN

PROJECT NO.: 1350913

CONSTR. CONTR. NO.: N40085-XX-C-XXXX

NAVFAC DRAWING NO.: 12703463

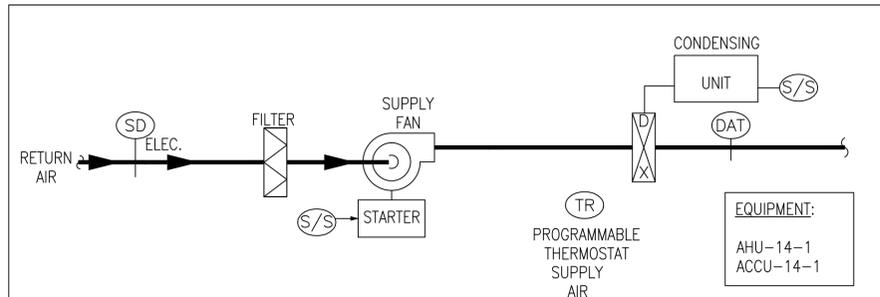
SHEET 10 OF 506

M2.0 14-15-176

DRAWING REVISION: 10 OCTOBER 2014

GRAPHIC SCALE





GENERAL

1. THE EQUIPMENT IS STARTED AND STOPPED VIA DDC THERMOSTAT. COORDINATE OCCUPIED AND UNOCCUPIED SCHEDULES WITH OWNER.

OFF

1. SF DEENERGIZED
2. ACCU DEENERGIZED

UNOCCUPIED COOLING CONTROL

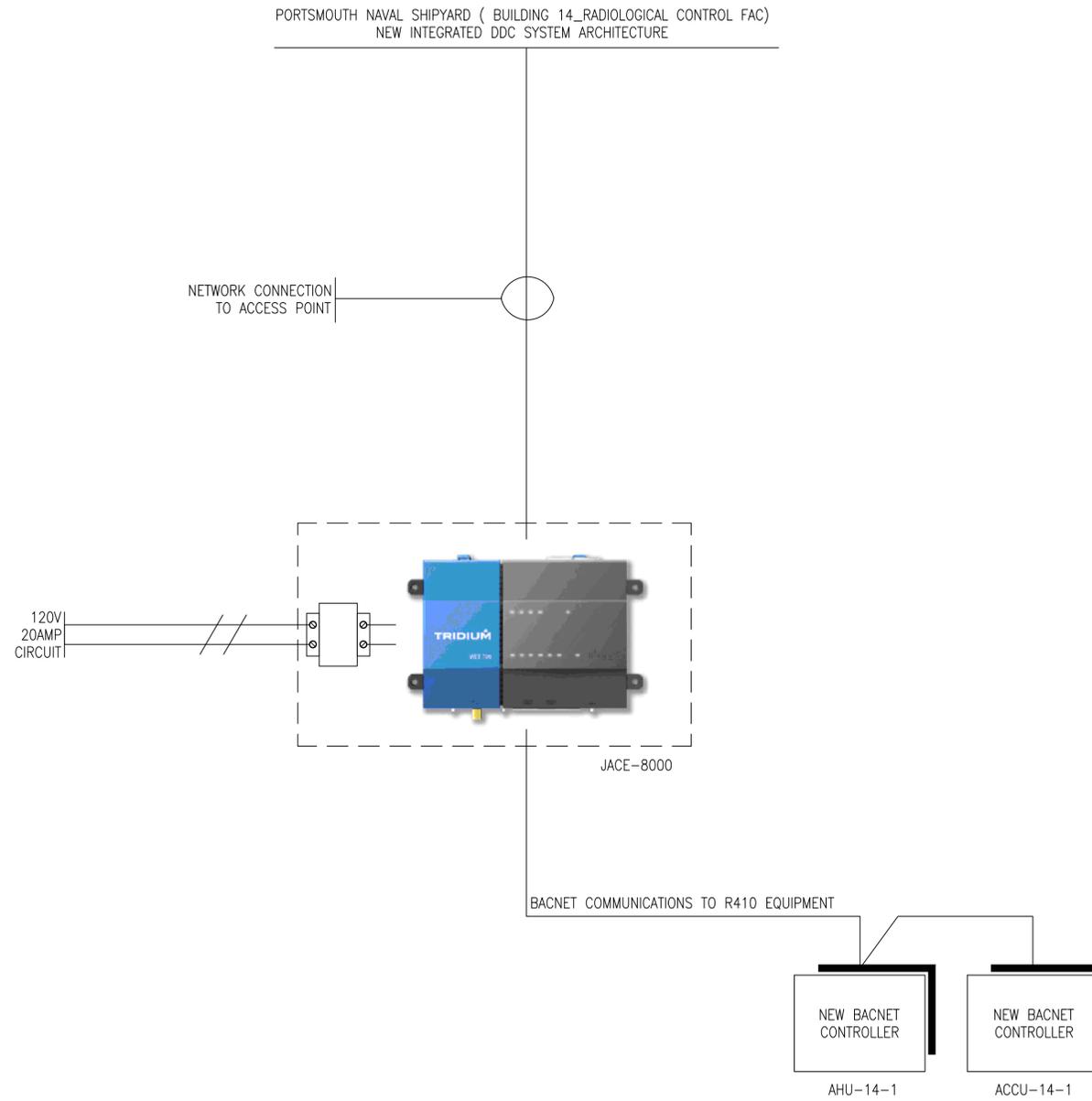
1. SF ENERGIZED
2. ACCU IS STAGED ON TO MAINTAIN THE SPACE TEMPERATURE SETPOINT OF 80°F(ADJ).
3. DISCHARGE AIR TEMPERATURE SENSOR DAT SHALL LIMIT SUPPLY AIR TO 53°F MINIMUM.

OCCUPIED COOLING CONTROL

1. SF ENERGIZED
2. ACCU IS STAGED ON TO MAINTAIN THE SPACE TEMPERATURE SETPOINT OF 75°F(ADJ).
3. DISCHARGE AIR TEMPERATURE SENSOR DAT SHALL LIMIT SUPPLY AIR TO 53°F MINIMUM.

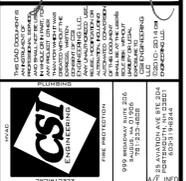
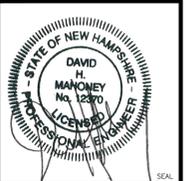
AIR HANDLER W/ DX COOLING SEQUENCE OF OPERATION

PANEL MATERIAL			
ITEM NO	MODEL	DESCRIPTION	QTY
C1	J-8000	N4 WEB BASED GLOBAL NETWORK INTERFACE	1
	NPM-1GB	MEMORY UPGRADE TO 4GB	1



PORTSMOUTH NAVAL SHIPYARD (BUILDING 14_RADIOLOGICAL CONTROL FAC)
NEW INTEGRATED DDC SYSTEM ARCHITECTURE

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES: JC | PRW: SV | CHK: DM
PM/DM: PETER STOCKLESS
BRANCH MANAGER: BRUCE LITALIEN
TEAM/PM: AMIN BAHROUR PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
BUILDING 14 HVAC CONTROLS

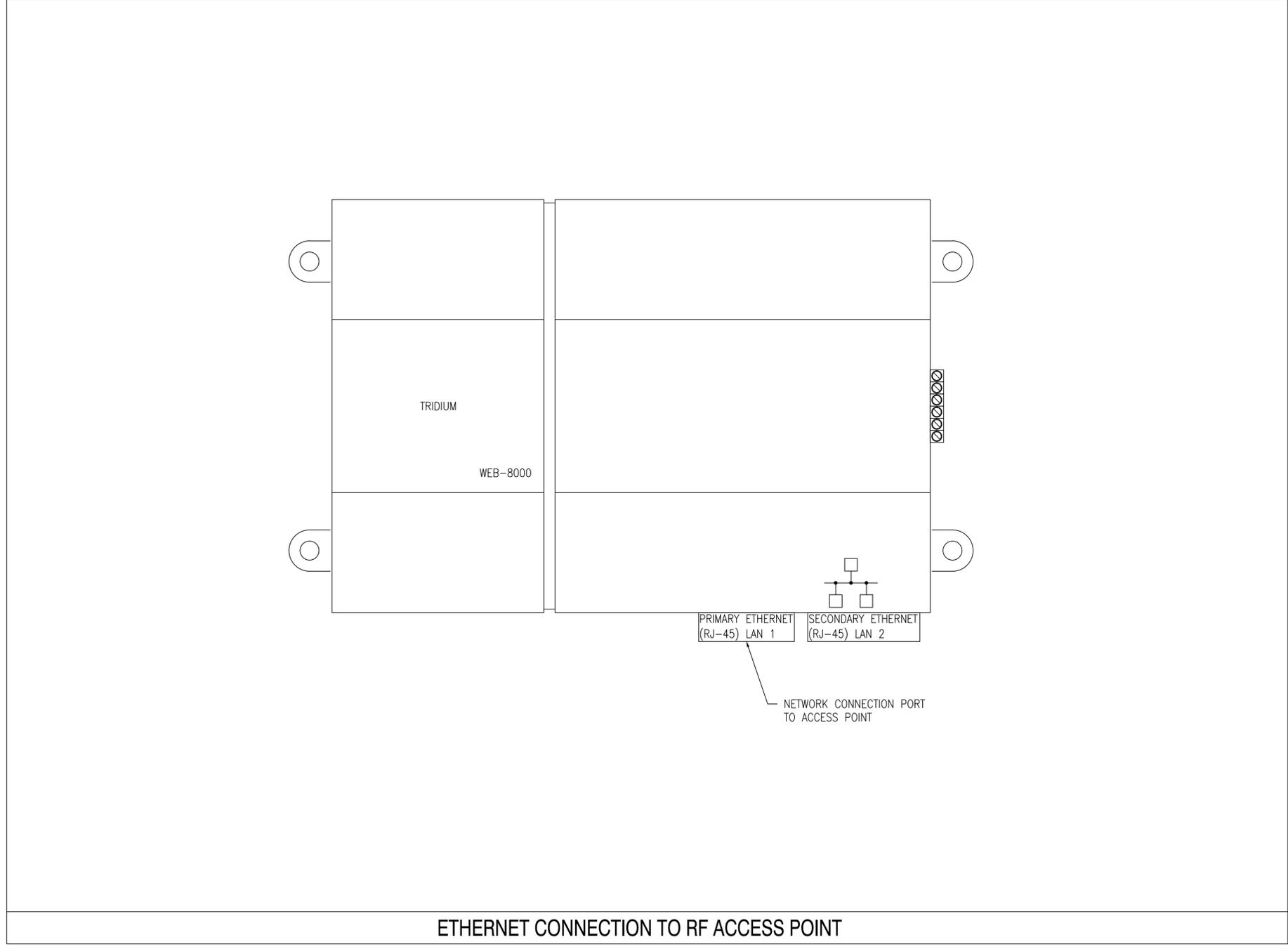
PROJECT NO.: 1350913

CONSTR. CONTR. NO.: N40085-XX-C-XXXX

NAVFAC DRAWING NO.: 12703464

SHEET 11 OF 506

M3.0 14-15-177
DRAWING REVISION: 10 OCTOBER 2014



SN	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES JC | DRAW SV | CHG DM

PM/DM PETER STOCKLESS

BRANCH MANAGER BRUCE LITALIEN

FEAD/PM&E AMIN BAHROUR PM&E

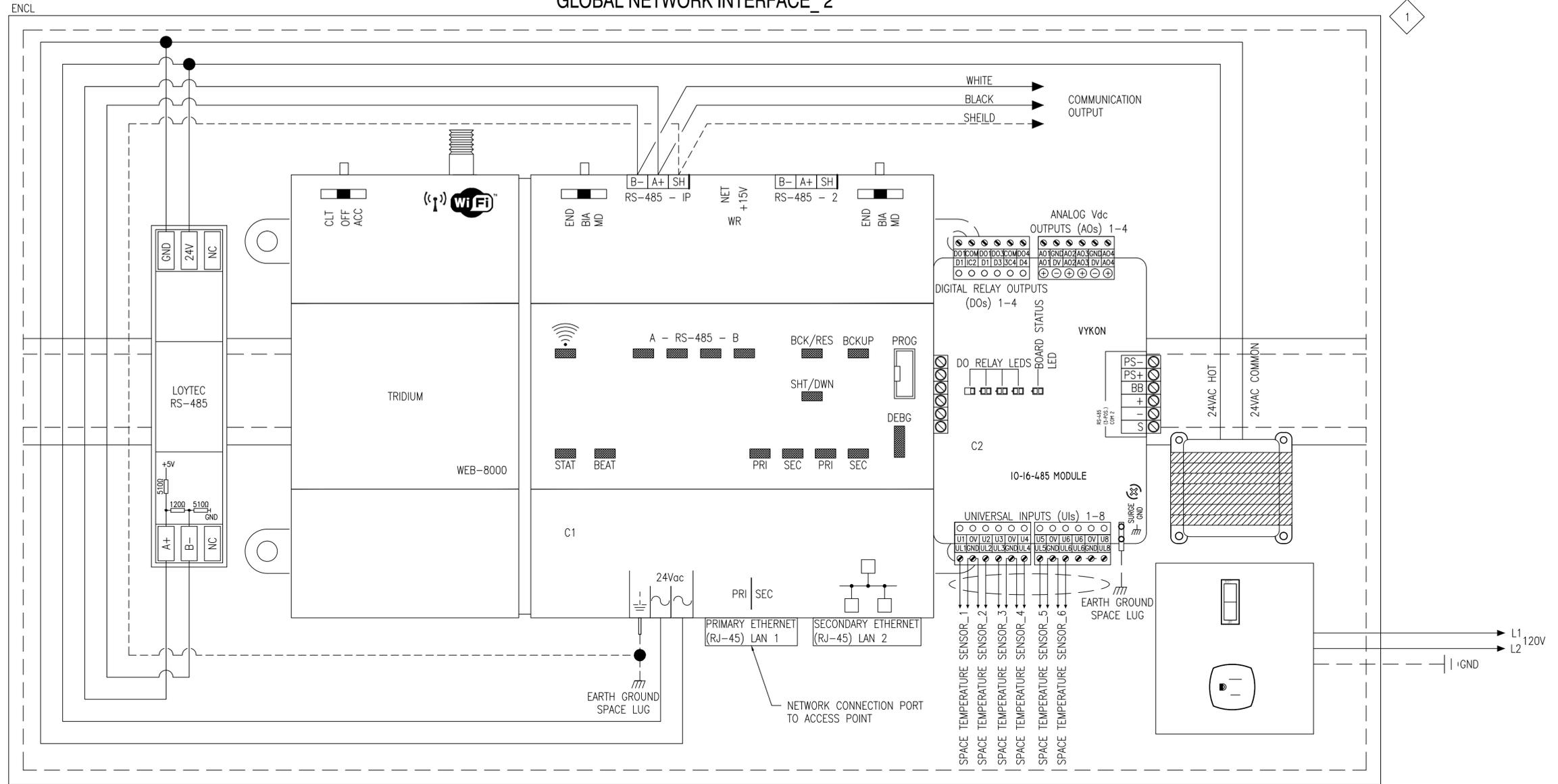
DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 14 HVAC CONTROLS

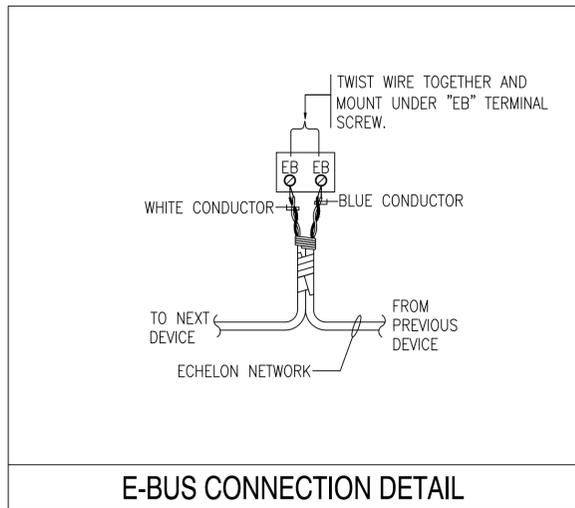
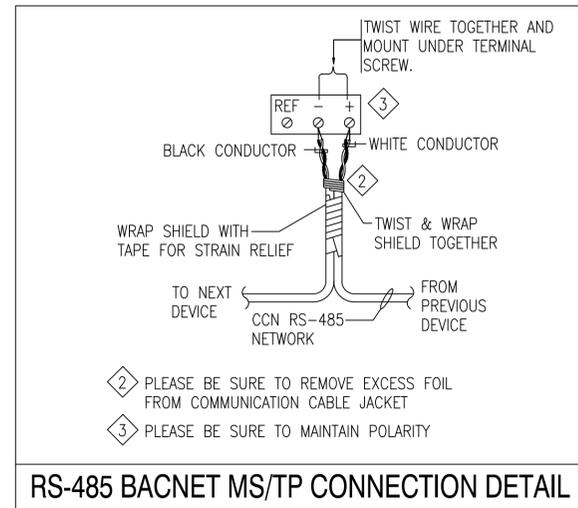
PROJECT NO.: 1350913
 CONSTR. CONTR. NO. N40085-XX-C-XXXX
 NAVFAC DRAWING NO. 12703465
 SHEET 12 OF 506

M3.1 14-15-178

GLOBAL NETWORK INTERFACE_2

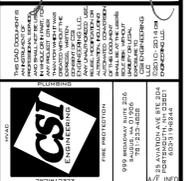
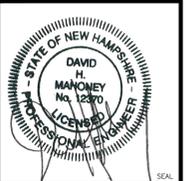


1 LOCATION OF CONTROLLER TO BE FIELD VERIFIED



PANEL MATERIAL			
ITEM NO	MODEL	DESCRIPTION	QTY
C1	J-8000	N4 WEB BASED GLOBAL NETWORK INTERFACE	1
C2	10-16-485	REMOTE I/O MODULE	1
ENCL	ENC-001	12"x18"x4" ENCLOSURE W/ 24V TRANSFORMER	1
EOL1	209541B	END OF LINE RESISTOR	1
LT1	LT-B4	RS-485 NETWORK TERMINATOR	1

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED:

FBR COMMANDER NAVFAC

SATISFACTORY TO: DATE:

DES: JC | DRW: SV | CHK: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

LEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION: X

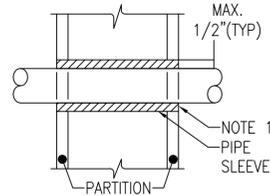
DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT ~ MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 14 HVAC CONTROLS

PROJECT NO.: 1350913

CONSTR. CONTR. NO.: N40085-XX-C-XXXX

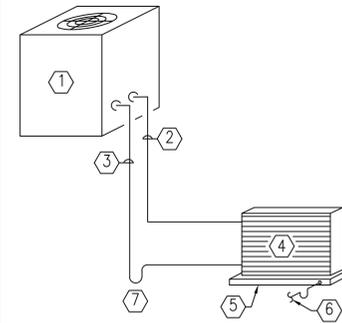
NAVFAC DRAWING NO.: 12703466

SHEET 13 OF 506
 M3.2 | 14-15-179
 DRAWING REVISION: 10 OCTOBER 2014



- NOTES:
1. AT FIRE RATED PARTITIONS ADD LAYER OF FIRE SAFING INSULATION AROUND PENETRATIONS SO AS TO FILL CAVITY.
 2. PIPE PENETRATIONS THROUGH CORRIDOR WALLS ABOVE THE CEILING ARE TO BE FIRE STOPPED AROUND THE PENETRATION.
 3. CONTRACTOR REPSONSIBLE FOR DETERMINING REQUIRED HOUR RATING TO MATCH EXISTING WALL ASSEMBLY.

PIPE PENETRATIONS



- ① CONDENSING UNIT
- ② LIQUID LINE
- ③ INSULATED SUCTION LINE
- ④ COOLING COIL
- ⑤ DRAIN PAN
- ⑥ DRAIN LINE-TRAP & ROUTE TO DRAIN OR CONDENSATE PUMP
- ⑦ TRAP

- NOTE:
1. PIPE SIZES, CONTROL EQUIPMENT AND TRAPS AS REQUIRED BY UNIT MANUFACTURER (SUBMIT IN SHOP DRAWING).

REFRIGERANT PIPING SMALL COMPONENT SCHEMATIC

AIR HANDLING UNIT SCHEDULE

TAG	SERVICE	LOCATION	CFM	FAN DATA				DX COOLING COIL						DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES	
				MOTOR				CAPACITY (MBH)		REFRIGERANT TYPE	AIR DATA					
				RPM	HP	V	PH	TOTAL	SENS.		EAT (°F)		LAT (°F)			
AHU-14-1	BLDG 14	ENTRANCE	4000	1725	2	208	3	120.5	95.46	R-410A	80	67	59	57.9	TRANE TWE120D3	SEE NOTES

NOTES: 1. PROVIDE W/ BACNET INTERFACE. 2. MECHANICAL CONTRACTOR TO VERIFY SMOKE DETECTOR IN EXISTING DUCTWORK. 3. PROVIDE MOUNTING HARDWARE AS REQUIRED. 4. PROVIDE W/ BELT DRIVE MOTORS. 5. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT.

AIR COOLED CONDENSING UNIT SCHEDULE

TAG	SERVES	MANUFACTURER	MODEL No.	COOLING DATA		ELECTRIC DATA						NOTES
				COOLING (MBH)	CONDENSING (MBH)	VOLTS	HZ	PHASE	FLA	MCA	MOCF	
ACCU-14-1	BLDG-14	TRANE	TTA120D3	120.5	208	60	3	5	42.6	60	SEE NOTES	

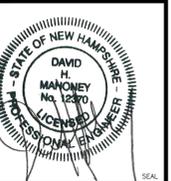
NOTES: 1. PROVIDE W/ BACNET INTERFACE. 2. PROVIDE W/ HIGH PRESSURE CONTROL. 3. PROVIDE LIQUID LINE REFRIGERANT DRIER. 4. PROVIDE W/ LOW AMBIENT COOLING TO 50°F IN ELECTROMECHANICAL MODELS. 5. PROVIDE W/ SCROLL COMPRESSORS. 6. PROVIDE W/ THERMAL EXPANSION VALVE. 7. PROVIDE UNIT CONTROL PANEL WITH MAIN DISCONNECT. 8. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT. 9. PROVIDE WITH SEACOAST RATED COATING FOR CONDENSER COIL.

JACE BOX

TAG NO.	LOCATION	ELECTRICAL		DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES
		AMP	V		
J-1	SEE PLANS	20	120	JACE 8000	SEE NOTES

NOTES: 1. PROVIDE W/ MEMORY UPGRADE TO 4GB. 2. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT.

REV	DATE	DESCRIPTION	BY	APPR
4	08/07/2015	100% SUBMISSION	DM	DM
3	07/24/2015	100% REVIEW SUBMISSION	DM	DM
2	06/04/2015	90% SUBMISSION	DM	DM
1	04/24/2015	80% SUBMISSION	DM	DM
0	02/23/2015	35% SUBMISSION	DM	DM



APPROVED:
FOR COMMANDER NAVFAC

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

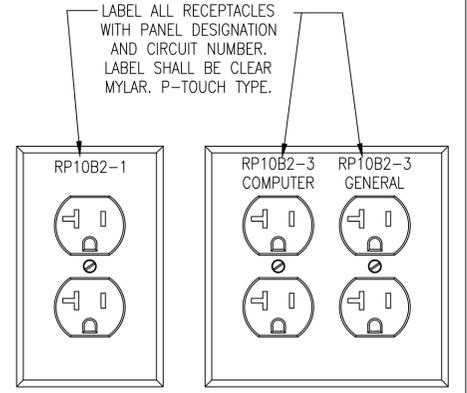
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
NAVAL SHIPYARD - PORTSMOUTH, NH

FY 16 ENERGY PROJECT
TASK 1-B-R-22

BUILDING 14 HVAC SCHEDULES AND DETAILS

PROJECT NO.: 1350913
CONSTR. CONTR. NO.: N40085-XX-C-XXXX
NAVFAC DRAWING NO.: 12703467
SHEET 14 OF 506

M4.0 14-15-180
DRAWING REVISION: 10 OCTOBER 2014



RECEPTACLE LABEL REQUIREMENTS

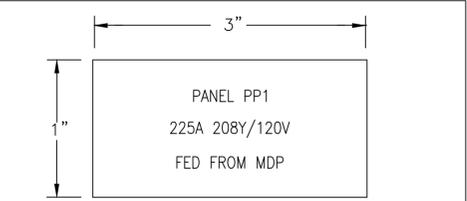
WARNING

ARC FLASH AND SHOCK HAZARD
APPROPRIATE PPE REQUIRED

EQUIPMENT TYPE:	
GROUNDING:	Y/N GROUNDED
WORK DISTANCE:	INCHES
AVAILABLE 3Ø BOLTED CURRENT:	kA
FLASH PROTECTION BOUNDARY:	INCHES
INCIDENT ENERGY AT 23 INCHES:	cal/cm ²
PPE LEVEL:	4
DATE:	xx/xx/xxxx

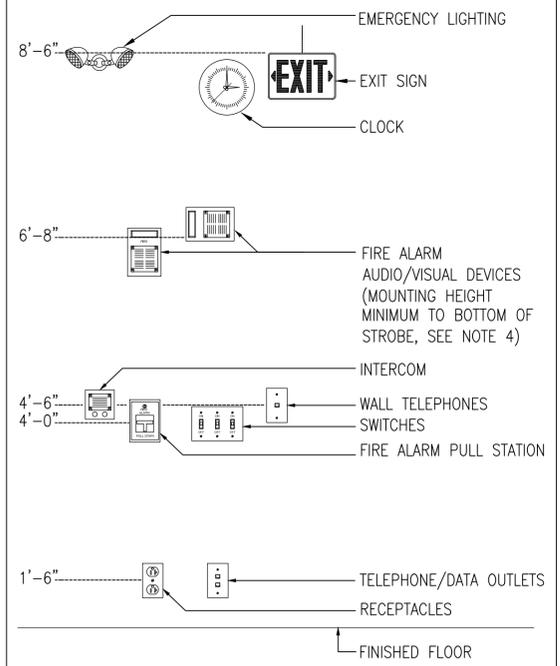
- NOTES:**
- REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
 - PROVIDE ON ALL IN-LINE METER SOCKETS, SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS AND MOTOR CONTROL CENTERS IN ACCORDANCE WITH NEC 110.16.

TYPICAL FLASH PROTECTION WARNING LABEL



- NOTES:**
- REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
 - NAMEPLATE TO BE 1/16" THICK PLASTIC WITH WHITE CENTER LAMINATION. FACE SHALL BE BLACK, ENGRAVED LETTERS SHALL BE WHITE.
 - SECURE NAMEPLATE TO SURFACES WITH HIGH STRENGTH ADHESIVE CEMENT. UTILIZE MECHANICAL FASTENERS FOR ALL EXTERIOR LOCATIONS.
 - TYPICAL FOR "STARTERS", "DISCONNECTS", AND "TRANSFORMERS".

TYPICAL NAMEPLATE DETAIL



- NOTES:**
- ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGNS, CLOCKS, EMERGENCY LIGHTING AND FIRE ALARM A/V DEVICES.
 - DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
 - ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.
 - STROBE HEIGHT ILLUSTRATED AT MAXIMUM HEIGHT. STROBE SHALL BE 80" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER.

TYPICAL DEVICE MOUNTING HEIGHTS DETAIL

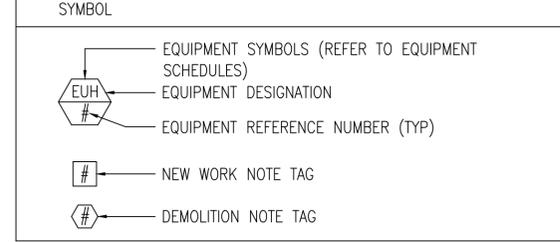
ELECTRIC ABBREVIATIONS

A/AMP AMPERE	LTG LIGHTING
AC ALTERNATING CURRENT	MCB MAIN CIRCUIT BREAKER
ADA AMERICAN WITH DISABILITIES ACT	MEC MASSACHUSETTS ELECTRIC CODE
AF AMPERE FRAME	MH MANHOLE
AFF ABOVE FINISHED FLOOR	MLO MAIN LUGS ONLY
AFG ABOVE FINISHED GRADE	MTD MOUNTED
AIC AMPERE INTERRUPTING CAPACITY	MTG MOUNTING
AL ALUMINUM	NEC NATIONAL ELECTRIC CODE
AT AMPERE TRIP	NTS NOT TO SCALE
ATS AUTOMATIC TRANSFER SWITCH	# NUMBER
AWG AMERICAN WIRE GAUGE	PVC POLYVINYL CHLORIDE
C CONDUIT	PWR POWER
CATV CABLE TELEVISION	RGS RIGID GALVANIZED STEEL
CCTV CLOSED CIRCUIT TELEVISION	SWBD SWITCHBOARD
CB CIRCUIT BREAKER	TEL TELEPHONE
CKT CIRCUIT	TERM TERMINAL
ε CENTERLINE	TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
DWG DRAWING	TSP TWISTED SHIELDED PAIR
EC ELECTRICAL CONTRACTOR	TYP TYPICAL
EMT ELECTRICAL METALLIC TUBING	UNO UNLESS OTHERWISE NOTED
FLMT FLEXIBLE LIQUID TIGHT METALLIC TUBING	UPS UNINTERRUPTIBLE POWER SUPPLY
GFI GROUND FAULT INTERRUPTING	UTP UNSHIELDED TWISTED PAIR
GND GROUND	V VOLT
HH HANDHOLE	VA VOLT AMPERE
HP HORSEPOWER	VFD VARIABLE FREQUENCY DRIVE
HVAC HEATING, VENTILATION AND AIR CONDITIONING	W WATT
HZ HERTZ	WP WEATHERPROOF
IG ISOLATED GROUND	
KVA KILOVOLT - AMPERE	
KW KILOWATT	

MOTOR & CONTROLS LEGEND

SYMBOL	DESCRIPTION
SM	MANUAL MOTOR STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION
30AS 3R	DISCONNECT SWITCH RATED 30AMP, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "30AS" - INDICATES 30A SWITCH
30AS 15AF	FUSED DISCONNECT SWITCH, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "30AS" - INDICATES 30AMP SWITCH "15AF" - INDICATES 15AMP FUSES
UCB	DDC CONTROL JACE BOX. PROVIDED BY TRADE CONTRACTOR. FIELD COORDINATE EXACT LOCATION.

ELECTRIC SYSTEM TAGS OR CALL OUT SYMBOLS



POWER DISTRIBUTION LEGEND

SYMBOL	DESCRIPTION
—	208Y/120 VOLT PANELBOARD, REFER TO SCHEDULE OF PANELBOARDS

BRANCH CIRCUIT & FEEDER LEGEND

SYMBOL	DESCRIPTION
PP1-(X)	BRANCH CIRCUIT HOME RUN. TYPICAL 2#12 & 1#12G IN 3/4" MINIMUM. PP1-(1) INDICATES PANEL AND CIRCUIT DESIGNATION FROM WHICH HOME RUN SHALL ORIGINATE. EACH CIRCUIT SHALL BE 20A-1P (20AMP SINGLE POLE) UNLESS NOTED OTHERWISE.

EXISTING EQUIPMENT LEGEND

SYMBOL	DESCRIPTION
XM	EXISTING EQUIPMENT TO REMAIN
XR	EXISTING EQUIPMENT TO BE REMOVED
□	EXISTING EQUIPMENT TO REMAIN FOR INFORMATION ONLY - INDICATED BY SYMBOL WITH LIGHT OUT OF FUNCTION LINE TYPE
□	EXISTING EQUIPMENT TO BE REWORKED - (XN, XL, XE, XR) INDICATED BY SYMBOL WITH DASHED AND IN FUNCTION LINE TYPE

WIRING DEVICES

SYMBOL	DESCRIPTION
# GFI	DUPLEX RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V "WP" - INDICATES WEATHERPROOF (TYP) "GFI" - INDICATES GROUND FAULT INTERRUPTER

FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
XXXX	FIRE ALARM DEVICE "RTS" - INDICATES REMOTE TEST STATION
☐	DUCT MOUNTED SMOKE DETECTOR

ELECTRIC GENERAL NOTES

- THE ELECTRICAL DEMOLITION PLANS AND DETAILS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE SUBMISSION OF BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE FOR REMOVAL. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF WORK. DAMAGE SHALL INCLUDE BUT NOT LIMITED TO THE DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR BE SALVAGED.
- THE ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINT OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE CUT FLUSH AT THE SURFACE FOR PATCHING BY TRADE CONTRACTOR. ALL CIRCUIT BREAKERS ASSOCIATED WITH THE DEMOLITION SCOPE SHALL BE DE-ENERGIZED AND LABELED AS SPARE.
- ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF UNLESS IDENTIFIED FOR REUSE OR TURNED OVER TO OWNER. THE OWNER'S REPRESENTATIVE SHALL INSPECT ALL RETAINED ITEMS PRIOR TO PLACEMENT IN THE IDENTIFIED STORAGE LOCATION BY THE ELECTRICAL CONTRACTOR.
- CIRCUIT NUMBERS ARE DIAGRAMMATIC. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD AND REFLECTED ON AS-BUILT DOCUMENTATION BY THE ELECTRICAL CONTRACTOR. CIRCUITRY HAS BEEN DETERMINED BASED UPON INFORMATION GATHERED, ASSUMPTIONS, AND INFORMATION OBTAINED FROM NAVFAC. EXACT CIRCUITING, EQUIPMENT SIZES, AND CONDUIT AND WIRING SIZES MAY DIFFER IN THE FIELD FROM WHAT IS SHOWN ON THE DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TRACING ALL CIRCUITS BEING DEMOLISHED AND REUSED PRIOR TO DISCONNECTING, VERIFYING EXISTING CIRCUITRY AND EQUIPMENT SIZES, AND SHALL SIZE ALL NEW EQUIPMENT AND BRANCH CIRCUITRY ACCORDINGLY IF ACTUAL CONDITIONS DIFFER FROM WHAT IS SHOWN ON THE DRAWINGS. THE ASSOCIATED CIRCUIT NUMBERS THAT ARE APPLIED TO EACH DEVICE AND PIECE OF EQUIPMENT INFERS INTERCONNECTING BRANCH CIRCUITRY. INTERCONNECTING BRANCH WIRING SHALL BE SIZED EQUAL TO THE HOMERUN UNLESS NOTED OTHERWISE.
- VOLTAGE DROP HAS BEEN CONSIDERED IN THE DESIGN OF ALL BRANCH CIRCUITRY AND FEEDER SIZES BASED UPON THE ILLUSTRATED EQUIPMENT LAYOUTS AND SHORTEST CONDUCTOR/RACEWAY ROUTING. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR DEVIATIONS TAKEN THAT WILL INCREASE CONDUCTOR/RACEWAY ROUTING LENGTHS. BRANCH CIRCUITS LONGER THAN 75' FOR 120V FROM PANEL TO LAST OUTLET SHALL BE INCREASED A MINIMUM OF ONE SIZE ABOVE THAT SPECIFIED TO LIMIT VOLTAGE DROP TO LESS THAN 3%. FEEDERS SHALL FOLLOW SIMILAR GUIDELINES AND BE LIMITED TO 2% DROP.
- THE ELECTRICAL NEW WORK PLANS DO NOT SHOW ALL ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION AMONG TRADES TO DETERMINE ALL ACCESSORIES AND COMPONENTS REQUIRED TO FORM A COMPLETE AND FUNCTIONAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY ACCESSORIES AND COMPONENTS NEEDED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM AND SHALL BE RESPONSIBLE TO ENSURE THE INTEGRITY AND SAFETY OF THE SYSTEM AFTER COMPLETION. THE ELECTRICAL CONTRACTOR SHALL TAKE ALL NECESSARY STEPS AND PROVIDE ALL ADDITIONAL COMPONENTS NEEDED TO ENSURE THE SYSTEM IS SAFE UPON COMPLETION OF THE PROJECT.
- ROUTING IS DIAGRAMMATIC. CONTRACTOR SHALL DETERMINE ROUTING IN FIELD AND RE-USE EXISTING PENETRATIONS WHERE POSSIBLE.
- SEE PWD-ME DRAWING NUMBERS;
 - 43-15-67 FOR TITLE SHEET
 - 43-15-68 FOR LIST OF DRAWINGS
 - 43-15-69 FOR GENERAL NOTES & LEGENDS
 - 43-15-72 FOR CHASE AND SOFFIT DETAILS
 - 43-15-74 FOR STRUCTURAL NOTES AND SUPPORTS

SCHEDULE OF DRAWINGS

DWG#	DESCRIPTION
E1.0	BUILDING 14 ELECTRICAL LEGEND
ED2.0	BUILDING 14 ELECTRICAL FIRST FLOOR DEMOLITION PLAN
E2.0	BUILDING 14 ELECTRICAL FIRST FLOOR PLAN
E3.0	BUILDING 14 ELECTRICAL SCHEDULES

100% SUBMISSION	08/07/2015	DM
100% REVIEW SUBMISSION	07/24/2015	DM
90% SUBMISSION	06/04/2015	DM
80% SUBMISSION	04/24/2015	DM
35% SUBMISSION	02/23/2015	DM
SYN	DESCRIPTION	DATE

NAVFAC

STATE OF NEW HAMPSHIRE
CHARLES E. MACE
No. 13078
PROFESSIONAL ENGINEER

CS1
CONSTRUCTION SOFTWARE

FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES: TM | DSW: TM | CHK: JO

PM/DM: PETER STOCKLESS

BRANCH MANAGER BRUCE LITALEN

FEAD/PM&E AMIN BAHRROUR PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
RYTERY, MAINE

FY 16 ENERGY PROJECT
TASK 1-B-R-22

BUILDING 14 ELECTRICAL LEGEND

PROJECT NO.: 1350913

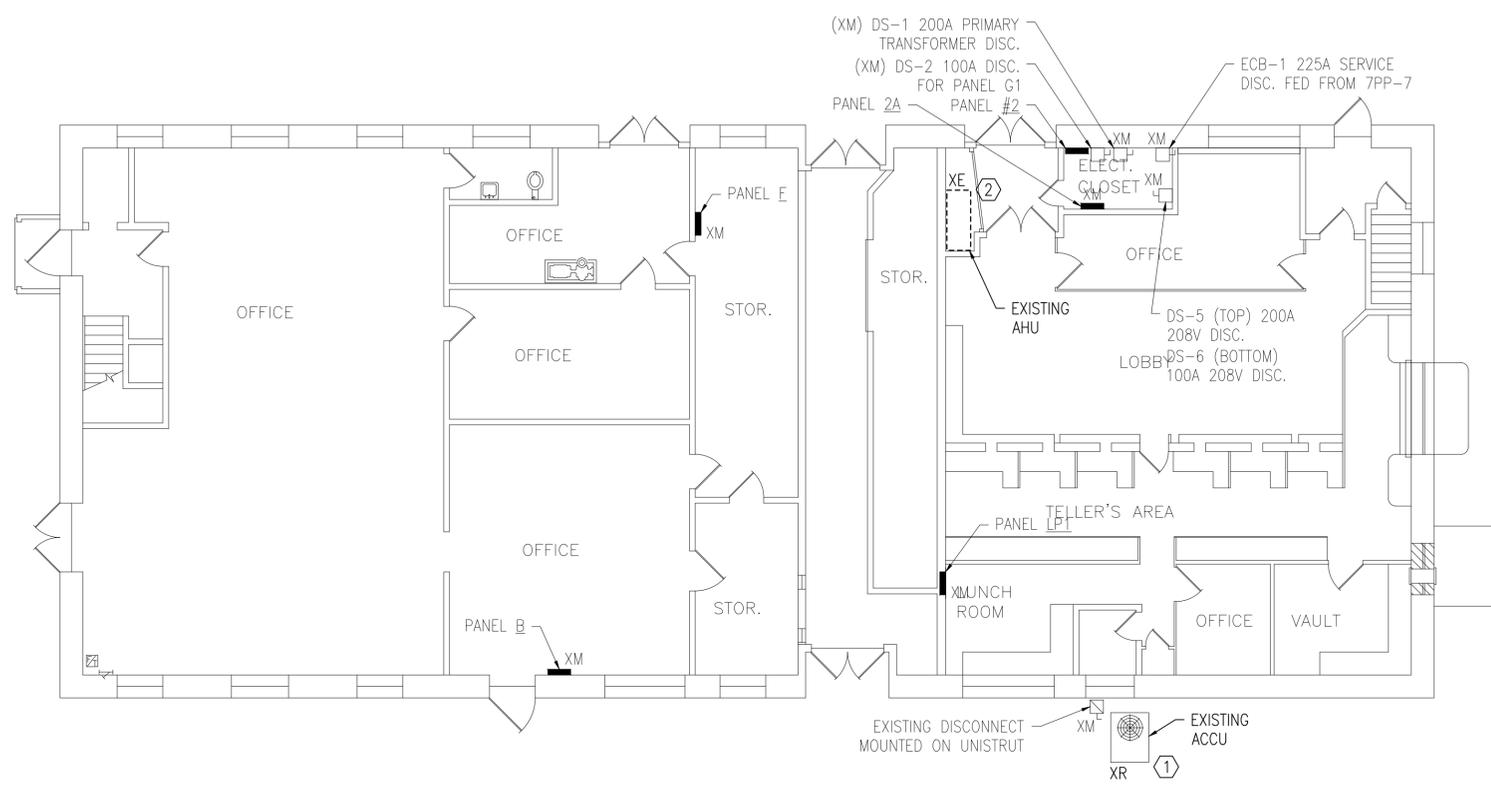
CONSTR. CONTR. NO.: N40085-XX-C-XXXX

NAVFAC DRAWING NO.: 12703468

SHEET 15 OF 506

E1.0 | 14-15-181

DRAWFORM REVISION: 10 OCTOBER 2014



BUILDING 14 ELECTRICAL FIRST FLOOR DEMOLITION PLAN
 1/8" = 1'-0"

GENERAL SHEET NOTES

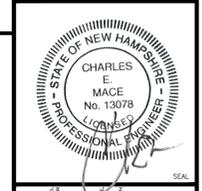
- REFER TO DRAWING E1.0 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
- THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS SCHEDULED PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
- THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.

REV	DESCRIPTION	DATE	DM	APP
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



DEMOLITION KEYNOTES

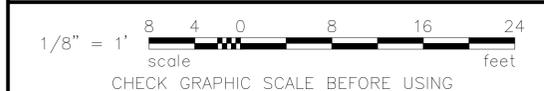
- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING ACCU. MAINTAIN EXISTING BRANCH CIRCUITRY, DISCONNECT, AND CIRCUIT BREAKER FOR REUSE. MAINTAIN EXISTING UNISTRUT USED FOR UNIT DISCONNECT.
- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING AHU. MAINTAIN ASSOCIATED CIRCUIT BREAKER AND BRANCH CIRCUITRY FOR REUSE. DEMOLISH EXISTING DISCONNECT IN ITS ENTIRETY.



APPROVED FOR COMMANDER NAVFAC
 ACTIVITY
 SATISFACTORY TO DATE
 DES: TM | DRW: TM | CHK: JO
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 FEAD/PM&E: AMIN BAHROUR, PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 14 ELECTRICAL FIRST FLOOR DEMOLITION PLAN

GRAPHIC SCALE



PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703469
SHEET	16 OF 506
ED2.0	14-15-182

MECHANICAL EQUIPMENT SCHEDULE

EQUIP TAG	DESCRIPTION	LOAD				PANEL SOURCE		BRANCH CIRCUIT	CONNECTION				NOTES
		HP	KVA	VOLT	PH	PANEL	C/B		FLEX	JB	REC	DISC	
ACCU 14-1	CONDENSING UNIT	-	15.35	208	3	LP1-(8,10,12) CRT. #8	60A/3P	(3)#6 & (1)#10G., 3/4"C	X			X	NOTES 6,7
AHU 14-1	AIR HANDLER	2	2.81	208	3	LP1-(18,20,22) CRT. #14	15A/3P	(3)#12 & (1)#12G, 3/4"C	X			X	NOTE 6

- NOTES:
1. BRANCH CIRCUIT WIRING METHODS SHALL BE AS NOTED ON THE DRAWINGS AND/OR SPECIFICATIONS FOR THE APPLICABLE LOCATION.
 2. "FLEX" - DENOTES FINAL THREE FEET (MAXIMUM) OF RACEWAY SHALL BE FLEXIBLE METAL OR LIQUIDTIGHT METAL CONDUIT.
 3. "JB" - JUNCTION BOX DENOTES FINAL CONNECTION TO BOX OR CONTROL PANEL PREWIRED TO THE EQUIPMENT.
 4. "REC" - PROVIDE RECEPTACLE IN THE NEMA CONFIGURATION NOTED.
 5. NOTES 6-9 ARE OPTIONS WHICH SHALL BE SPECIFICALLY NOTED IN REMARKS FOR INCLUSION.
 6. DISCONNECT SHALL BE FUSIBLE.
 7. DISCONNECT SHALL BE NEMA "3R"
 8. DISCONNECT SHALL BE MOTOR-RATED SWITCH WITH THERMAL OVERLOAD ELEMENT.
 9. DISCONNECT PROVIDED INTEGRAL (PREWIRED) TO EQUIPMENT BY TRADE CONTRACTOR.
 10. INTEGRAL CONVENIENCE RECEPTACLE PROVIDED PREWIRED TO EQUIPMENT BY TRADE CONTRACTOR.

PANELBOARD SCHEDULE

PANEL: LP1		VOLTS: 120/ 208		NEW/EXISTING.: EXISTING					
MAIN: 200A MCB		BUS AMPS: 200A		MOUNT.: RECESSED					
PH/WIRE: 3ø/4W		AIC:		LOC: BLDG 14 BANK KITCHEN					
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD kVA	NOTE	NOTE	LOAD kVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1	20/1	FLOR. LTS - LUNCH & BATH	0	-		-	FLOR. LTS TELLERS	20/1	2
3	20/1	FLOR. LTS OFFICE & VAULT	0	-		-	FLOR. LTS LOBBY	20/1	4
5	20/1	FLOR. LTS OFFICE 104	0	-		-	FLOR. LTS LOBBY	20/1	6
7	20/1	EM. LTS	0	-		-			8
9	30/2	KITCHEN UNIT	0	OFF	1	15.3	ACCU-14-1	70/3	10
11									12
13	20/1	SPARE	0	-	1	18	ACCU-14-1 GFI RECEPTACLE	20/1	14
15	20/1	WIREMOLD & REC. OFFICE 104	0	-		-	SPARE	20/1	16
17	20/1	WIREMOLD & REC. OFFICE 104	0	-		-			18
19	20/1	REC. WINDOW AREA	0	-	1	2.81	AHU-14-1	30/3	20
21	20/1	WIREMOLD & REC. OFFICE 104	0	-		-			22
23	20/1	REC. WINDOW AREA	0	-		-	CONDENSATE PUMP	20/1	24
25	20/1	WIREMOLD TELLERS	0	-		-	WIREMOLD TELLERS	20/1	26
27	20/1	WIREMOLD TELLERS	0	-		-	WIREMOLD TELLERS	20/1	28
29	20/1	EXHAUST FAN LUNCH ROOM	0	-		-	REC. KITCHEN	20/1	30
31	20/1	WIREMOLD TELLERS	0	-		-	WIREMOLD TELLERS	20/1	32
33	20/1	WIREMOLD TELLERS	0	-		-	WIREMOLD TELLERS	20/1	34
35	20/1	ALARM	0	-		-	WIREMOLD VAULT	20/1	36
37	20/1	?	0	-		-	REC. WALK-UP	20/1	38
39	20/1	?	0	-		-	?	20/1	40
41		SPACE					SPACE		42
			0.0				TOTAL CONNECTED kVA:	18.29	
							TOTAL CONNECTED AMPERES:	50.83	

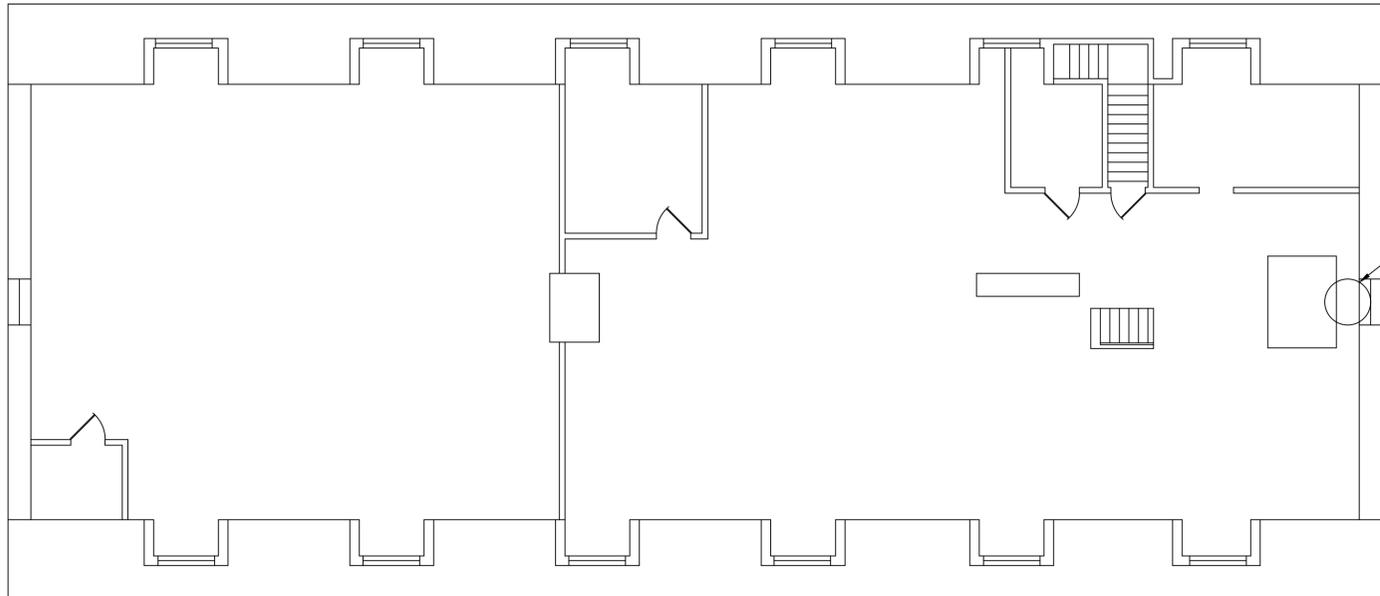
- NOTES:
1. VERIFY AND REUSE EXISTING CIRCUIT BREAKER AS INDICATED FOR NEW LOAD.
 2. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

PANELBOARD SCHEDULE

PANEL: 2A		VOLTS: 120/ 208		NEW/EXISTING.: EXISTING					
MAIN: 225A MCB		BUS AMPS: 225A		MOUNT.: SURFACE					
PH/WIRE: 3ø/4W		AIC: 10K		LOC: BLDG 14 MAIN ELEC. ROOM					
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD kVA	NOTE	NOTE	LOAD kVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1	60/2	PANEL F	0	-		-	HEAT PUMPS	30/3	4
3	20/2	A/C	0	-		-	ATM	20/1	8
5	20/2	A/C	0	-		-	?	20/1	10
7	30/2	SECURITY GATES	0	-		-	SUBSTATION LTS	20/1	12
9	30/2	SECURITY GATES	0	-		-	EXIT LTS	20/1	14
11	30/2	SECURITY BOOTH	0	-		-	MODINE HEATER NW CORNER	20/1	16
13	20/2	A/C IN VAULT	0	-		-	REC. IN RADCON CNTRL RM	20/1	18
15	20/2	A/C IN VAULT	0	-		-	?	20/1	20
17	20/2	RADCON HALL REC.	0	-		-	TELE REC.	30/1	22
19	20/2	RADCON HALL REC.	0	-		-	BANK HEATER COND. UNITS	30/1	24
21	20/2	RADCON HALL REC.	0	-		-	?	20/1	26
23		SPACE			1	0.2	JACE BOX	20/1	26
25		SPACE					SPACE		28
27		SPACE					SPACE		30
29		SPACE					SPACE		32
31		SPACE					SPACE		34
33		SPACE					SPACE		36
35		SPACE					SPACE		38
37		SPACE					SPACE		40
39		SPACE					TEMP. 100A OUTSIDE SERVICE	100/2	42
41		SPACE					?	20/1	42
			0.00				TOTAL CONNECTED kVA:	0.02	
							TOTAL CONNECTED AMPERES:	0.06	

- NOTES:
1. VERIFY AND REUSE EXISTING CIRCUIT BREAKER AS INDICATED FOR NEW LOAD.
 2. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

08/07/2015	07/24/2015	06/04/2015	04/24/2015	02/23/2015	DATE				
4	3	2	1	0	SUBMISSION				
100%	100%	90%	80%	35%	SUBMISSION				
100%	100%	90%	80%	35%	SUBMISSION				
100%	100%	90%	80%	35%	SUBMISSION				
100%	100%	90%	80%	35%	SUBMISSION				
100%	100%	90%	80%	35%	SUBMISSION				
									
									
									
APPROVED FOR COMMANDER NAVAC									
SATISFACTORY TO DATE									
DES: TM DRAW: TM CHK: JO									
PM/DM: PETER STOCKLESS BRANCH MANAGER: BRUCE LITALIEN LEAD/PM&E: AMIN BAHRROUR PM&E									
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND PUBLIC WORKS DEPARTMENT - MAINE PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE									
FY 16 ENERGY PROJECT TASK 1-B-R-22 BUILDING 14 ELECTRICAL SCHEDULES									
PROJECT NO.: 1350913 CONSTR. CONTR. NO.: N40085-XX-C-XXXX NAVFAC DRAWING NO.: 12703471									
SHEET 18 OF 506									
E3.0 14-15-184									
<small>DRAWING REVISION: 10 OCTOBER 2014</small>									



B014 ANTENNA LOCATION - FOURTH FLOOR PLAN
 1/8" = 1'-0"



EQUIPMENT	WIRELESS STANDARD	ANTENNA	FREQUENCY	DIMENSIONS	WEIGHT	INPUT POWER	MANUFACTURER	DESIGN BASED ON MODEL
WIRELESS ACCESS POINT	802.11n	INTEGRATED	2.4 GHZ & 5.8 GHZ	8.7 X 8.7 X 1.84 INCHES	1.9 LBS	AIR-PWRINJ4	CISCO AIRONET	AIR-CAP16021-x-K9

NOTE: PROVIDE POWER INJECTOR FOR POWER OVER ETHERNET TO WIRELESS ACCESS POINT. DESIGN BASED ON CISCO MODEL AIR-PWRINJ4.

GENERAL SHEET NOTES

1. FASTENERS SHALL BE ATTACHED TO MORTAR IN MASONRY BUILDINGS, AVOIDING DAMAGE TO THE BRICK WHEREVER PRACTICAL.
2. EXTERIOR CONDUIT SHALL BE INSTALLED IN SHADOW-LINES OR ADJACENT TO EXISTING CONDUIT; CONDUIT COLOR TO BE COORDINATED WITH CULTURAL RESOURCE MANAGER AND A-E.
3. REFER TO MECHANICAL DRAWINGS FOR JACE LOCATION AND INFORMATION.
4. EXISTING ROOF AND WALL PENETRATIONS SHALL BE USED WHEREVER PRACTICAL.
5. INTERIOR, WINDOW-MOUNTED ACCESS POINTS SHALL BE MOUNTED IN AN OBSCURE LOCATION THAT IS LEAST VISIBLE FROM INTERIOR & EXTERIOR.
6. ACCESS POINT MOUNTS SHALL NOT OBSTRUCT EGRESS, EXISTING WALKWAYS, STAIRWELLS, MECHANICAL EQUIPMENT CLEARANCES, OR OTHER APPURTANANCES.
7. UNLESS OTHERWISE NOTED, ROOFTOP ACCESS POINTS SHALL BE CENTRALIZED ON THE ROOF TO MINIMIZE VISIBILITY FROM GROUND LEVEL.
8. CONTRACTOR TO FIELD-VERIFY COMMUNICATION ACCESS POINTS ARE ALIGNED AND LINE OF SIGHT IS UNOBSTRUCTED.
9. IF A FIELD CHANGE IS REQUIRED, CONTRACTOR SHALL COORDINATE WITH CULTURAL RESOURCE MANAGER AND A-E PRIOR TO RELOCATING EQUIPMENT.
10. ANY PROPOSED CHANGES (PENETRATIONS, CONDUIT, ETC.) NOT ALREADY INDICATED ON DRAWINGS MADE TO HISTORIC BUILDINGS OR BUILDINGS LOCATED IN HISTORIC DISTRICT MUST BE REVIEWED AND APPROVED BY SHPO THROUGH NAVFAC CULTURAL RESOURCES DEPARTMENT PRIOR TO INSTALLATION.
11. CONTRACTOR TO VERIFY RF SIGNAL STRENGTH AND CONNECTIVITY FROM/TO ALL ACCESS POINTS.
12. SEE PWD-ME DRAWING NUMBERS;
 - 12.1. 43-15-67 FOR TITLE SHEET
 - 12.2. 43-15-68 FOR LIST OF DRAWINGS
 - 12.3. 43-15-69 FOR GENERAL NOTES AND LEGEND
 - 12.4. 43-15-72 FOR CHASE AND SOFFIT DETAILS
 - 12.5. 43-15-74 FOR STRUCTURAL NOTES AND SUPPORT



APPROVED
 FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES VSL | DRW SRR | CHK KLC

PM/DM PETER STOCKLESS

BRANCH MANAGER BRUCE LITALIEN

TEAM/PM/ME AMIN BAHROUR PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY16 ENERGY PROJECT
 TASK 1-B-R-22
 B014 RF INSTALLATION DETAILS

EPROJCT NO.: 1350913

CONSTR. CONTR. NO. N40085-XX-C-XXXX

NAVFAC DRAWING NO. 12703472

SHEET 19 OF 506

ET1.0 14-15-184

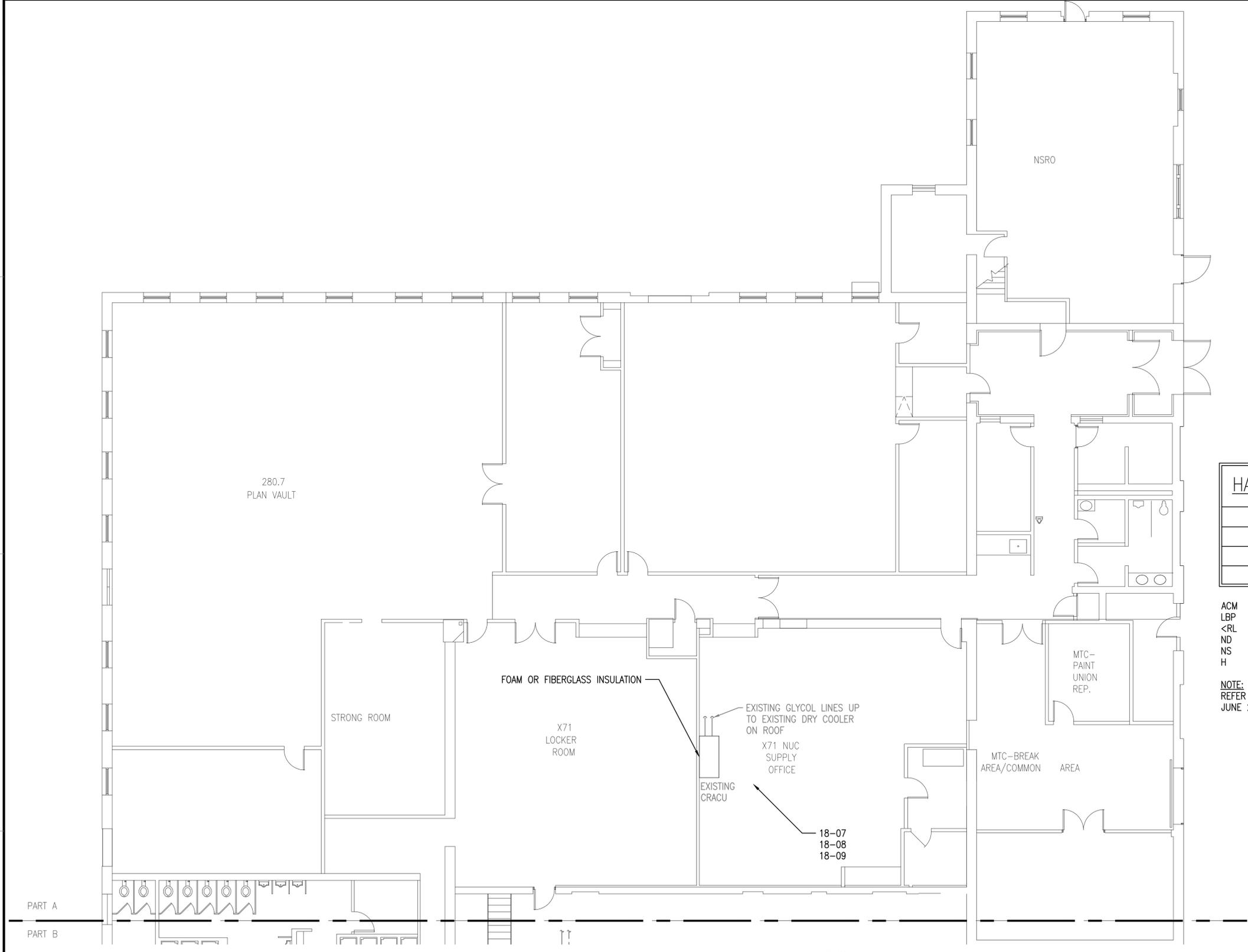
DRAWING REVISION: 10 OCTOBER 2014

GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING

FILE NAME: J:\A\1806_AEP_Subcontracting_Support\Drawings\DWG\A1066_2_HM1_B22.dwg LAYOUT NAME: B18-H1.0 PLOTTED: Friday, August 07, 2015 - 2:34pm USER: REP



B18 PART A HAZARDOUS MATERIAL SAMPLING PLAN
SCALE: 1/8" = 1'



GENERAL SHEET NOTES

- ALL PACM (PRESUMED ASBESTOS CONTAINING MATERIAL), LBP (LEAD BASED PAINT), PCB, AND OTHER HAZARDOUS BUILDING MATERIALS MAY NOT BE IDENTIFIED IN THIS SURVEY, PARTICULARLY THOSE HIDDEN IN WALLS, CEILINGS, FLOORS, ETC. AND IN AREAS DESCRIBED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, WHICH WERE INACCESSIBLE DURING THE SURVEY. ASSESSMENT EFFORTS DID INCLUDE, TO THE EXTENT FEASIBLE, ACCESS TO INTERIOR AND EXTERIOR OF THE STRUCTURE. HOWEVER, THE ABSENCE OF ALL PACM, LBP, PCB, AND OTHER HAZARDOUS BUILDING MATERIALS IN HIDDEN OR INACCESSIBLE PORTIONS CANNOT BE DEFINITELY ENSURED.
- RENOVATION AND/OR DEMOLITION ACTIVITIES SHOULD BE MONITORED BY PERSONNEL CAPABLE OF IDENTIFYING PACM, LBP, PCB AND OTHER HAZARDOUS BUILDING MATERIALS. IF PACM, LBP, PCB OR OTHER HAZARDOUS BUILDING MATERIALS ARE ENCOUNTERED, THESE MATERIALS SHOULD BE BULK SAMPLED BY A LICENSED INSPECTOR AND DISPOSED OF IN ACCORDANCE WITH PNSY AND ALL OTHER APPLICABLE REGULATIONS.
- SEE B18 ASBESTOS, LEAD, PCB, AND TCLP INVENTORY TABLES LOCATED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, DATED JUNE 22, 2015, FOR ADDITIONAL INFORMATION.

NO.	DESCRIPTION	DATE	BLM	BLM	APPR.
2	100% SUBMISSION	08/07/2015			
1	90% SUBMISSION	06/05/2015			



Tighe & Bond
Consulting Engineers
177 Corporate Drive
Portsmouth, New Hampshire
(603) 433-8818
www.tighebond.com

HAZARDOUS MATERIAL SAMPLING SUMMARY

SAMPLE ID	ACM	LBP
18-07	ND	NS
18-08	ND	NS
18-09	ND	NS

ACM = ASBESTOS CONTAINING MATERIALS
LBP = LEAD BASED PAINT
<RL = LESS THAN REPORTING LIMIT
ND = NONE DETECTED
NS = NOT SAMPLED
H = EXCEEDS REGULATORY STANDARDS FOR HAZARDOUS CONCENTRATION

NOTE:
REFER TO HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT DATED JUNE 22, 2015 FOR COMPLETE SAMPLING INFORMATION AND DATA.

GRAPHIC SCALE



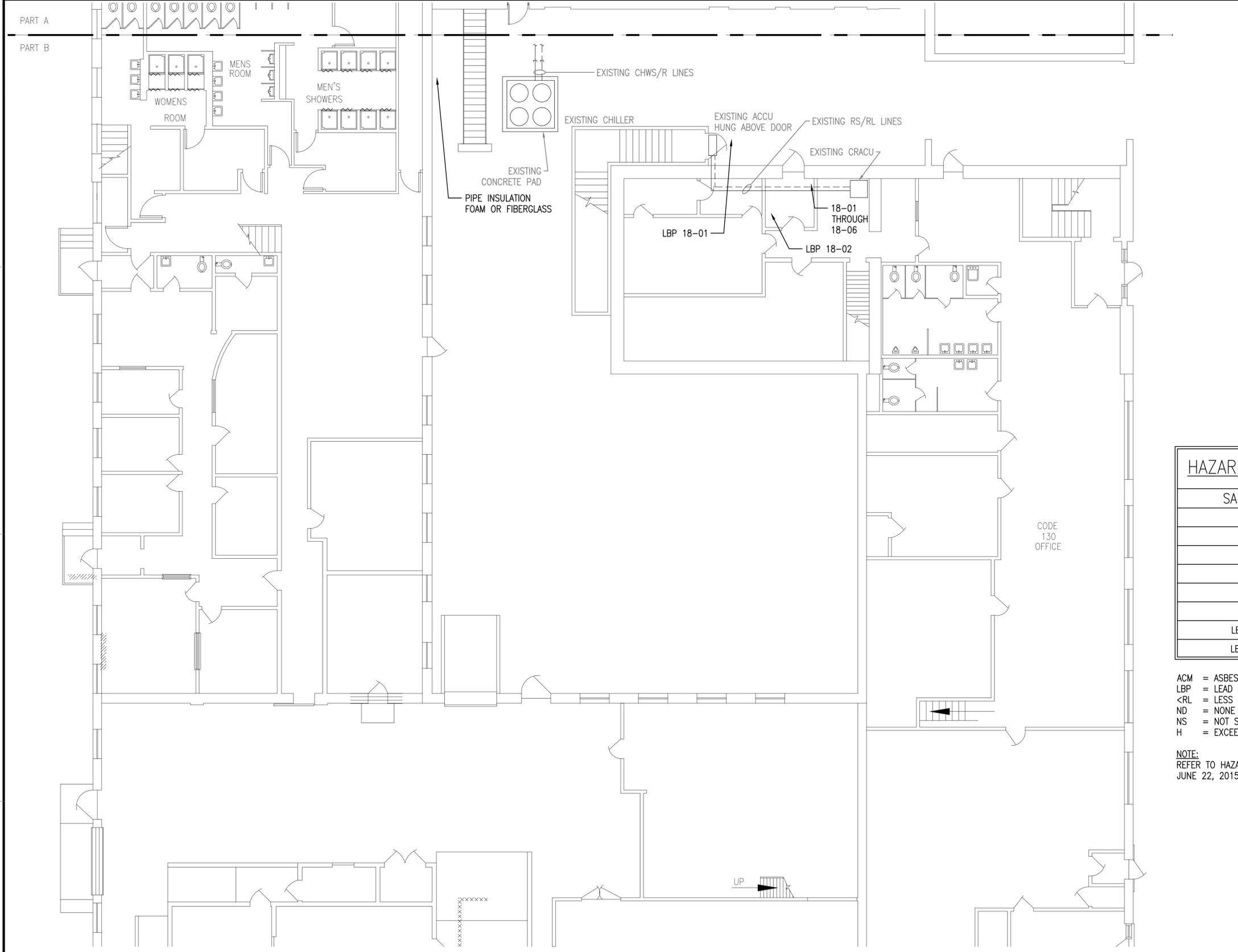
DES	A/E	DRW	REP	CHK	BLM
PM/DM	PETER STOCKLESS				
BRANCH MANAGER	BRUCE LITALIEN				
LEAD/PAINE	AMIN BAHROUR PM&E				
FIRE PROTECTION	X				

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
B18 HAZARDOUS MATERIAL SAMPLING PLAN

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703473
SHEET	20 OF 506
H1.0	18-15-559

DRAWFORM REVISION: 10 OCTOBER 2014

FILE NAME: J:\A\18166_AEP_Subcontracting_Support\Drawings\DWG\A1066_2_HM_B22.dwg LAYOUT NAME: B18-H1.1 PLOTTED: Friday, August 07, 2015 - 2:34pm USER: REP



B18 PART B HAZARDOUS MATERIAL SAMPLING PLAN
SCALE: 1/8" = 1'



GENERAL SHEET NOTES

- ALL PACM (PRESUMED ASBESTOS CONTAINING MATERIAL), LBP (LEAD BASED PAINT), PCB, AND OTHER HAZARDOUS BUILDING MATERIALS MAY NOT BE IDENTIFIED IN THIS SURVEY, PARTICULARLY THOSE HIDDEN IN WALLS, CEILINGS, FLOORS, ETC. AND IN AREAS DESCRIBED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, WHICH WERE INACCESSIBLE DURING THE SURVEY. ASSESSMENT EFFORTS DID INCLUDE, TO THE EXTENT FEASIBLE, ACCESS TO INTERIOR AND EXTERIOR OF THE STRUCTURE. HOWEVER, THE ABSENCE OF ALL PACM, LBP, PCB, AND OTHER HAZARDOUS BUILDING MATERIALS IN HIDDEN OR INACCESSIBLE PORTIONS CANNOT BE DEFINITELY ENSURED.
- RENOVATION AND/OR DEMOLITION ACTIVITIES SHOULD BE MONITORED BY PERSONNEL CAPABLE OF IDENTIFYING PACM, LBP, PCB AND OTHER HAZARDOUS BUILDING MATERIALS. IF PACM, LBP, PCB OR OTHER HAZARDOUS BUILDING MATERIALS ARE ENCOUNTERED, THESE MATERIALS SHOULD BE BULK SAMPLED BY A LICENSED INSPECTOR AND DISPOSED OF IN ACCORDANCE WITH PNSY AND ALL OTHER APPLICABLE REGULATIONS.
- SEE B18 ASBESTOS, LEAD, PCB, AND TCLP INVENTORY TABLES LOCATED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, DATED JUNE 22, 2015, FOR ADDITIONAL INFORMATION.

NO.	DESCRIPTION	DATE	BLM	BLM	APPR.
2	100% SUBMISSION	08/07/2015			
1	90% SUBMISSION	06/05/2015			



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Consulting Engineers
177 Corporate Drive
Portsmouth, New Hampshire
(603) 433-8818
www.tighebond.com

HAZARDOUS MATERIAL SAMPLING SUMMARY

SAMPLE ID	ACM	LBP
18-01	ND	NS
18-02	ND	NS
18-03	ND	NS
18-04	ND	NS
18-05	ND	NS
18-06	ND	NS
LBP-18-01	NS	<RL
LBP-18-02	NS	0.16

- ACM = ASBESTOS CONTAINING MATERIALS
- LBP = LEAD BASED PAINT
- <RL = LESS THAN REPORTING LIMIT
- ND = NONE DETECTED
- NS = NOT SAMPLED
- H = EXCEEDS REGULATORY STANDARDS FOR HAZARDOUS CONCENTRATION

NOTE:
REFER TO HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT DATED JUNE 22, 2015 FOR COMPLETE SAMPLING INFORMATION AND DATA.

GRAPHIC SCALE



DES	A/E	DRW	REP	CHK	BLM
PM/DM	PETER STOCKLESS				
BRANCH MANAGER	BRUCE LITALIEN				
LEAD/PM/ME	AMIN BAHRLOUR PM&E				
FIRE PROTECTION	X				

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITERY, MAINE

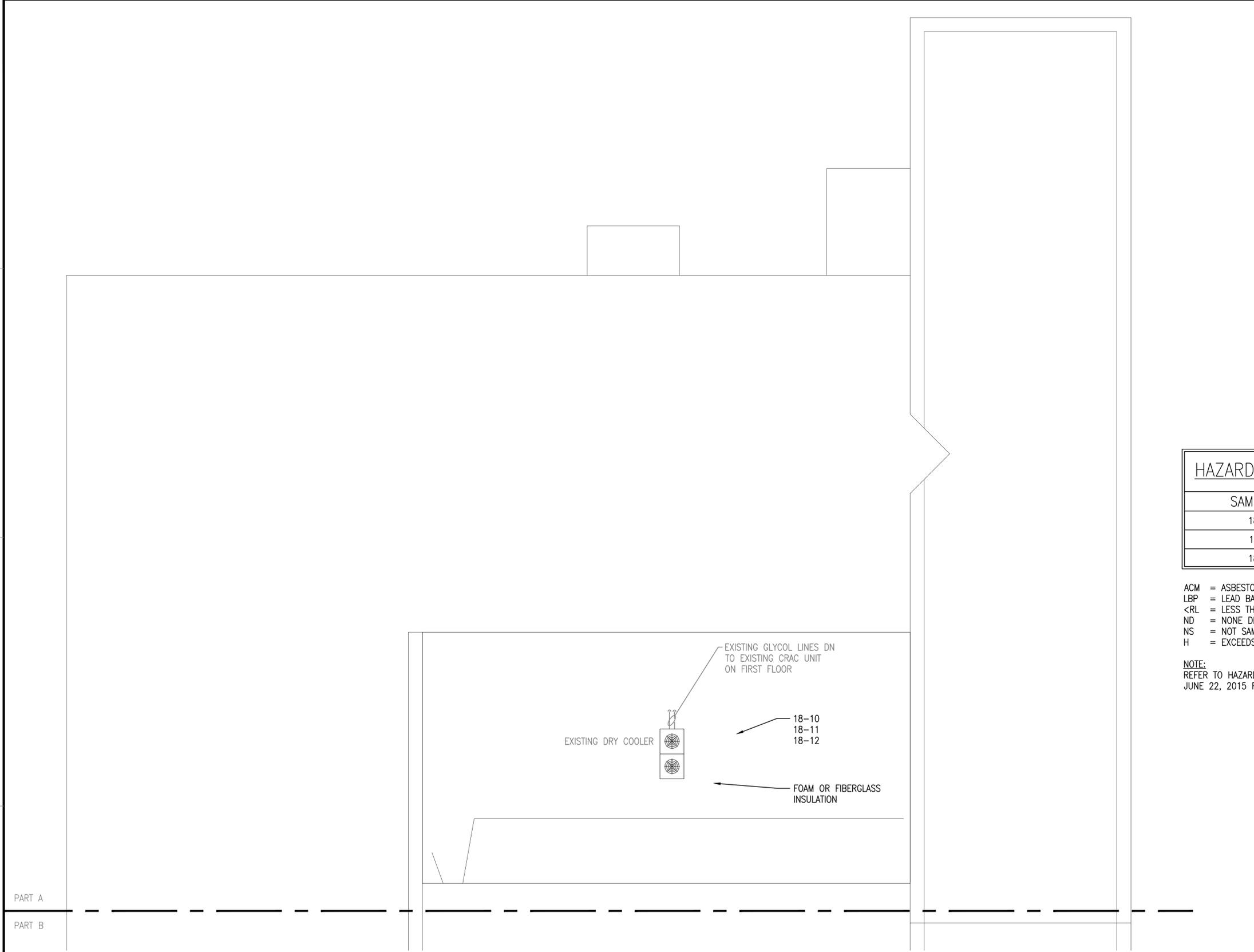
**FY 16 ENERGY PROJECT
TASK 1-B-R-22**

B18 HAZARDOUS MATERIAL SAMPLING PLAN

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703474
SHEET	21 OF 506
H1.1	18-15-560

DRAWFORM REVISION: 10 OCTOBER 2014

FILE NAME: J:\A\18166_AEP_Subcontracting_Support\Drawings\DWG\18166_2_HM1_822.dwg LAYOUT NAME: B18-H1.2 PLOTTED: Friday, August 07, 2015 - 2:34pm USER: REP



B18 ROOF HAZARDOUS MATERIAL SAMPLING PLAN
SCALE: 1/8" = 1'



GENERAL SHEET NOTES

- ALL PACM (PRESUMED ASBESTOS CONTAINING MATERIAL), LBP (LEAD BASED PAINT), PCB, AND OTHER HAZARDOUS BUILDING MATERIALS MAY NOT BE IDENTIFIED IN THIS SURVEY, PARTICULARLY THOSE HIDDEN IN WALLS, CEILINGS, FLOORS, ETC. AND IN AREAS DESCRIBED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, WHICH WERE INACCESSIBLE DURING THE SURVEY. ASSESSMENT EFFORTS DID INCLUDE, TO THE EXTENT FEASIBLE, ACCESS TO INTERIOR AND EXTERIOR OF THE STRUCTURE. HOWEVER, THE ABSENCE OF ALL PACM, LBP, PCB, AND OTHER HAZARDOUS BUILDING MATERIALS IN HIDDEN OR INACCESSIBLE PORTIONS CANNOT BE DEFINITELY ENSURED.
- RENOVATION AND/OR DEMOLITION ACTIVITIES SHOULD BE MONITORED BY PERSONNEL CAPABLE OF IDENTIFYING PACM, LBP, PCB AND OTHER HAZARDOUS BUILDING MATERIALS. IF PACM, LBP, PCB OR OTHER HAZARDOUS BUILDING MATERIALS ARE ENCOUNTERED, THESE MATERIALS SHOULD BE BULK SAMPLED BY A LICENSED INSPECTOR AND DISPOSED OF IN ACCORDANCE WITH PNSY AND ALL OTHER APPLICABLE REGULATIONS.
- SEE B18 ASBESTOS, LEAD, PCB, AND TCLP INVENTORY TABLES LOCATED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, DATED JUNE 22, 2015, FOR ADDITIONAL INFORMATION.

NO.	DESCRIPTION	DATE	BLM	BLM	APPR.
2	100% SUBMISSION	08/07/2015			
1	90% SUBMISSION	06/05/2015			



HAZARDOUS MATERIAL SAMPLING SUMMARY

SAMPLE ID	ACM	LBP
18-10	ND	NS
18-11	ND	NS
18-12	ND	NS

- ACM = ASBESTOS CONTAINING MATERIALS
- LBP = LEAD BASED PAINT
- <RL = LESS THAN REPORTING LIMIT
- ND = NONE DETECTED
- NS = NOT SAMPLED
- H = EXCEEDS REGULATORY STANDARDS FOR HAZARDOUS CONCENTRATION

NOTE:
REFER TO HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT DATED JUNE 22, 2015 FOR COMPLETE SAMPLING INFORMATION AND DATA.

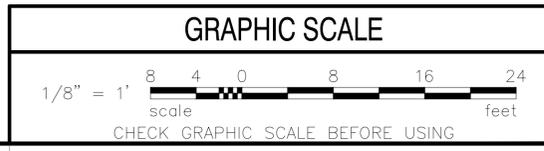
Tighe & Bond
Consulting Engineers
177 Corporate Drive
Portsmouth, New Hampshire
(603) 433-8818
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APPROVED:
FOR COMMANDER NAFAC

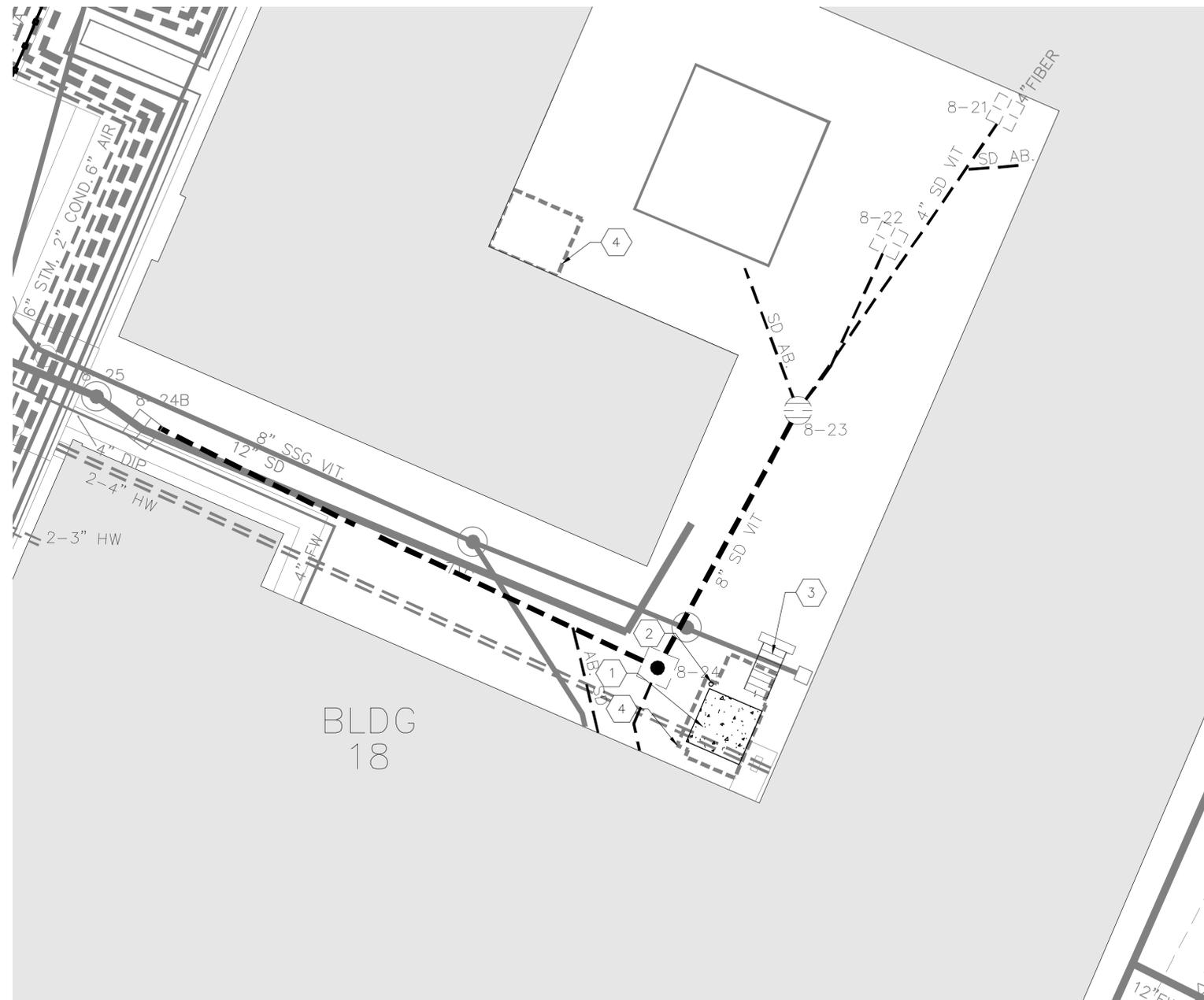
SATISFACTORY TO	DATE
DES A/E	DRW
REP	CHK
BLM	
PM/DM	PETER STOCKLESS
BRANCH MANAGER	BRUCE LITALIEN
LEAD/PM/ME	AMIN BAHRLOUR PM&E
FIRE PROTECTION	X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITCHEN, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
B18 HAZARDOUS MATERIAL SAMPLING PLAN

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703475
SHEET	22 OF 506
H1.2	18-15-561



FILE NAME: J:\A\1866_AEP_Subcontracting_Support\02_P-22\DWG-CAD\DESCA\1086_2_R22_SITE.dwg LAYOUT NAME: C1.0 B018 DEMO PLOTTED: Friday, August 07, 2015 - 2:53pm USER: REP



B18 DEMOLITION PLAN
SCALE: 1" = 10'



GENERAL SHEET NOTES

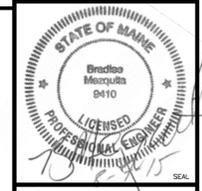
1. ALL WORK SHALL BE COORDINATED THROUGH THE PWD-MAINE CONSTRUCTION OFFICER.
2. BURIED UTILITIES ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS OF ALL BURIED UTILITIES.
3. CONTRACTOR SHALL CONDUCT AN ENVIRONMENTAL PERMIT REVIEW OF THE SITE PRIOR TO EXCAVATION.
4. CONTRACTOR SHALL CONDUCT AN ARCHEOLOGICAL REVIEW OF THE SITE PRIOR TO EXCAVATION.
5. EXCAVATED SOIL SHALL BE DISPOSED OF IN ACCORDANCE WITH SECTION 31 23 00.00 22 EXCAVATION AND FILL (PWD MAINE).
6. CONTRACTOR SHALL DISPOSE OF ALL CONSTRUCTION DEBRIS AND MATERIALS AT PERMITTED OFF-SITE DISPOSAL FACILITY.

REV	DESCRIPTION	DATE	BLM	APP
2	100% SUBMISSION	08/07/2015	BLM	APP
1	90% SUBMISSION	06/05/2015	BLM	APP



DEMOLITION KEYNOTES

1. DEMOLISH EXISTING CONCRETE EQUIPMENT PAD.
2. DEMOLISH EXISTING BOLLARD.
3. DEMOLISH EXISTING STAIRCASE TO ROOF.
4. LIMIT OF SAWCUT.



Tighe & Bond
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177 Corporate Drive
Portsmouth, New Hampshire
(603) 433-8818
www.tighebond.com

APPROVED:
FOR COMMANDER NAVFAC
ACTIVITY:

DES	A/E	DRW	REP	CHK	BLM

BRANCH MANAGER: BRUCE LITALIEN
TEAM/PM&E: AMIN BAHRROUR PM&E
FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

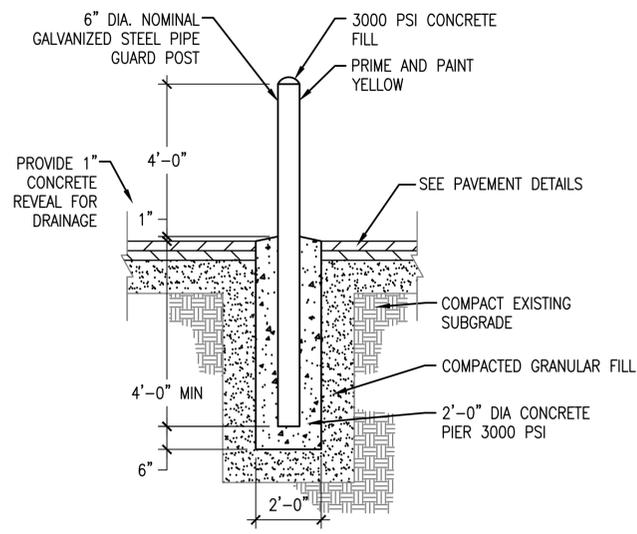
FY 16 ENERGY PROJECT
TASK 1-B-R-22
B18 DEMOLITION PLAN

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703476
SHEET	23 OF 506
C1.0	18-15-562

GRAPHIC SCALE

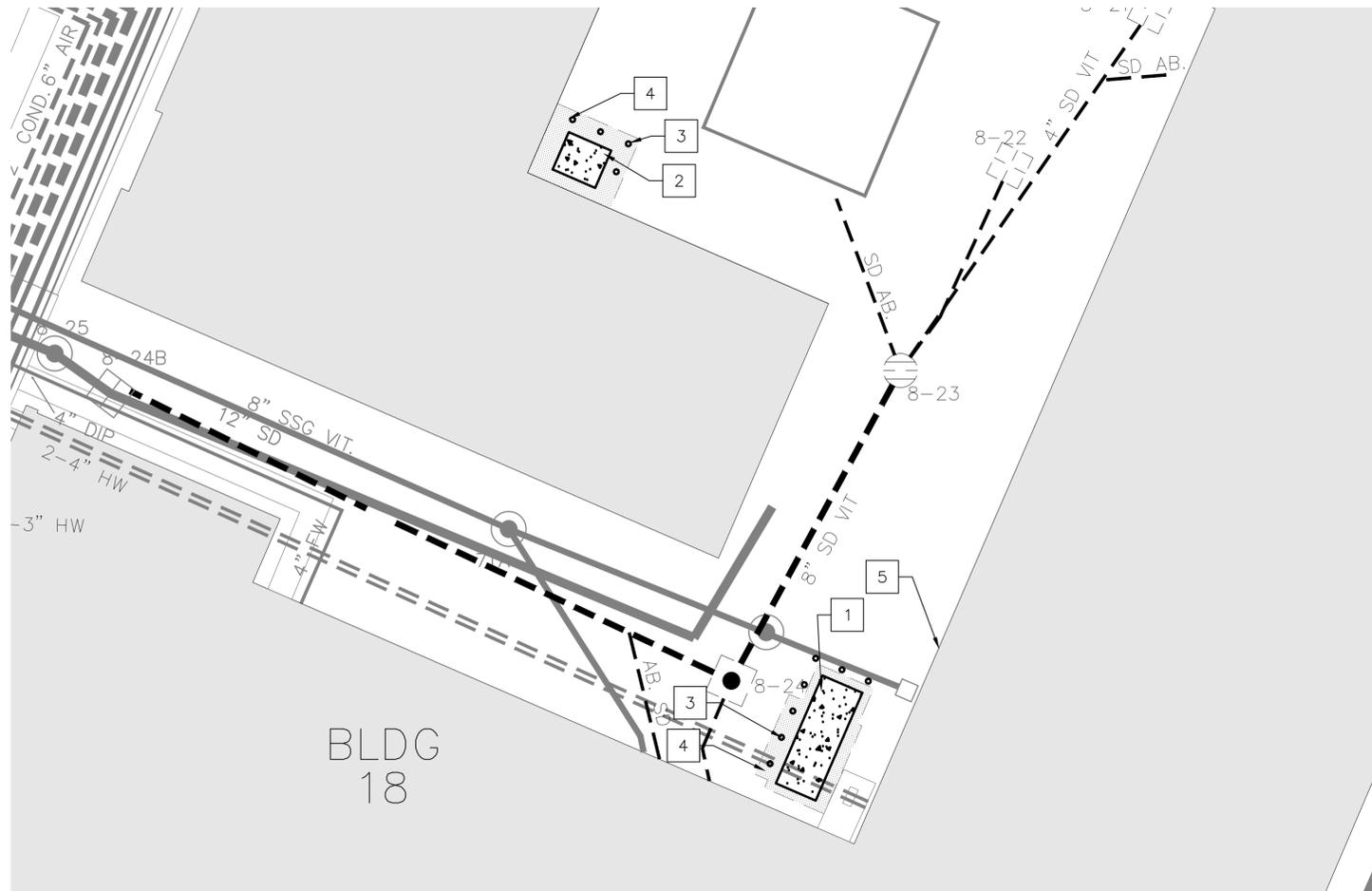


DRAWING REVISION: 10 OCTOBER 2014

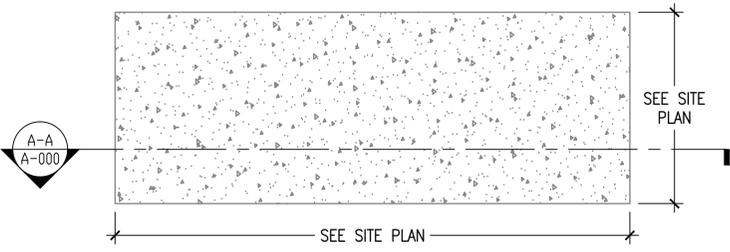


CONCRETE FILLED STEEL BOLLARD DETAIL
NO SCALE

3



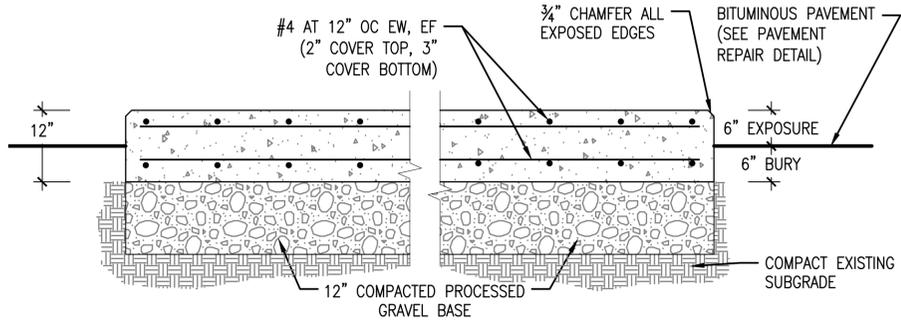
B18 SITE PLAN
SCALE: 1" = 10'



CONCRETE EQUIPMENT PAD DETAIL
NO SCALE

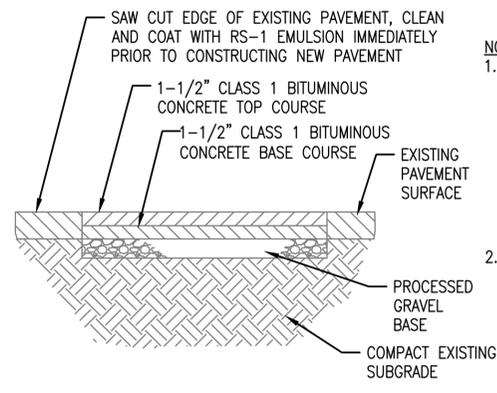
1,2

- NOTES:**
- COORDINATE PAD DIMENSIONS WITH ACTUAL EQUIPMENT DIMENSIONS.
 - CONCRETE SHALL EXTEND 6" ON EACH SIDE OF EQUIPMENT.
 - CONCRETE SHALL BE MINIMUM 4000 PSI, 7% AIR ENTRAINED.
 - EXCAVATION AND CONSTRUCTION OF CONCRETE PADS SHALL CONFORM TO THE MATERIALS, EQUIPMENT AND CONSTRUCTION REQUIREMENTS OF NAVFAC PWD-MAINE.



SECTION VIEW
NO SCALE

A-A



PERMANENT PAVEMENT REPAIR DETAIL
NO SCALE

4

- NOTES:**
- ALL BITUMINOUS CONCRETE, AGGREGATE, STABILIZED COURSE, SUBBASE AND LIQUID BITUMEN SHALL CONFORM TO THE MATERIALS, EQUIPMENT AND CONSTRUCTION REQUIREMENTS OF NAVFAC AND MAINE DOT. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 15' WIDE TRAVEL WAY AT ROAD CROSSINGS AT ALL TIMES DURING CONSTRUCTION.

GENERAL SHEET NOTES

- ALL WORK SHALL BE COORDINATED THROUGH THE PWD-MAINE CONSTRUCTION OFFICER.
- BURIED UTILITIES ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS OF ALL BURIED UTILITIES.
- CONTRACTOR SHALL CONDUCT AN ENVIRONMENTAL PERMIT REVIEW OF THE SITE PRIOR TO EXCAVATION.
- CONTRACTOR SHALL CONDUCT AN ARCHEOLOGICAL REVIEW OF THE SITE PRIOR TO EXCAVATION.
- EXCAVATED SOIL SHALL BE DISPOSED OF IN ACCORDANCE WITH SECTION 31 23 00.00 22 EXCAVATION AND FILL (PWD MAINE).
- CONTRACTOR SHALL DISPOSE OF ALL CONSTRUCTION DEBRIS AND MATERIALS AT PERMITTED OFF-SITE DISPOSAL FACILITY.
- VERIFY LOCATION AND DEPTH OF SANITARY SEWER AND ABANDONED HOT WATER SERVICE PRIOR TO CONSTRUCTION.
- RELOCATE CONCRETE PAD AND BOLLARDS AS NECESSARY TO AVOID INTERRUPTION TO UTILITY SERVICES.

NEW WORK KEYNOTES

- CONSTRUCT 13'-6" x 5'-0" CONCRETE EQUIPMENT PAD.
- CONSTRUCT 5'-4" x 4'-8" CONCRETE EQUIPMENT PAD.
- CONSTRUCT 6" CONCRETE FILLED STEEL BOLLARDS AROUND EQUIPMENT PADS. (TYP. OF 7 EACH PAD) BOLLARDS SHALL BE EVENLY SPACED AND PLACED AS TO NOT INTERFERE WITH EQUIPMENT ACCESS OR OPERATION.
- REPAIR PAVEMENT IN AREA OF DEMOLISHED EQUIPMENT PAD.
- CONSTRUCT OSHA EGRESS COMPLIANT STEEL ACCESS LADDER. LADDER SHALL BE CONSTRUCTED TO ALLOW ROOF ACCESS FROM THE COURTYARD. REFER TO SPECIFICATION SECTION 05 50 13 MISCELLANEOUS METAL FABRICATIONS FOR DESIGN AND INSTALLATION DETAILS.

NO.	DESCRIPTION	DATE	APPR.
2	100% SUBMISSION	08/07/2015	BLM
1	90% SUBMISSION	06/05/2015	BLM



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DES	DRW	REP	CHK	BLM
A/E				

BRANCH MANAGER: BRUCE LITALIEN
LEAD/PAVE: AMIN BAHRLOUR PM&E

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

FY 16 ENERGY PROJECT
TASK 1-B-R-22
B18 SITE PLAN

GRAPHIC SCALE



PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703477
SHEET	24 OF 506

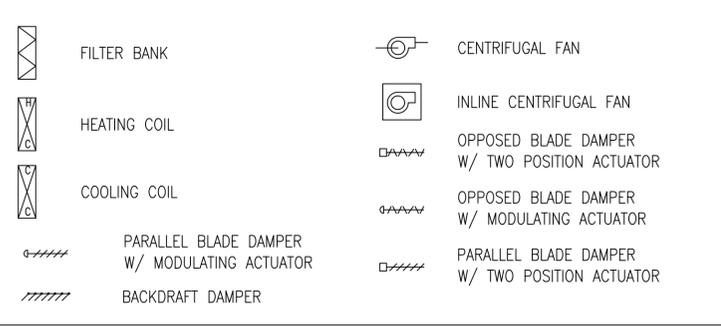
C2.0 18-15-563
DRAWING REVISION: 10 OCTOBER 2014

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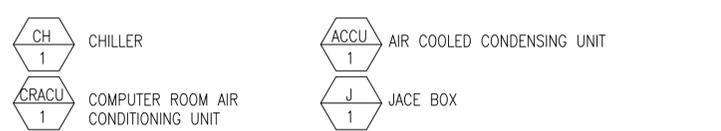
HVAC ABBREVIATIONS

*F	DEGREES FAHRENHEIT	ID	INSIDE DIAMETER
*C	DEGREES CELSIUS	IN	INCHES
Ø	DIAMETER	INSUL	INSULATION
ACV	AUTOMATIC CONTROL VALVE	KW	KILOWATT
AD	ACCESS DOOR	KVA	KILOVOLT AMPERE
ADJ	ADJUSTABLE	L	LENGTH
ADDL	ADDITIONAL	LB	POUND
AFF	ABOVE FINISHED FLOOR	LF	LINEAR FEET
AFG	ABOVE FINISHED GRADE	LVG	LEAVING
ALT	ALTERNATE	M	ONE THOUSAND
AP	ACCESS PANEL	MAX	MAXIMUM
ARCH	ARCHITECT	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
ATC	AUTOMATIC TEMPERATURE CONTROL	MCA	MINIMUM CIRCUIT AMPS
AS	AIR SEPARATOR	MCC	MOTOR CONTROL CENTER
AVG	AVERAGE	MECH	MECHANICAL
BAS	BUILDING AUTOMATION SYSTEM	MEZZ	MEZZANINE
BFF	BELOW FINISHED FLOOR	MFR	MANUFACTURER
BHP	BRAKE HORSEPOWER	MIN	MINIMUM
BLDG	BUILDING	MTD	MOUNTED
BLR	BOILER	MU	MAKEUP WATER
BOD	BOTTOM OF DUCT	N/A	NOT APPLICABLE
BOP	BOTTOM OF PIPE	NC	NORMALLY CLOSED
BSMY	BASEMENT	NC	NOISE CRITERIA
BTU	BRITISH THERMAL UNIT	NIC	NOT IN CONTRACT
BTUH	BRITISH THERMAL UNIT PER HOUR	NO	NORMALLY OPEN
C	CONVECTOR	NO.	NUMBER
CF	CEILING FAN	NOM	NOMINAL
CL	CENTERLINE	NTS	NOT TO SCALE
CLG	CEILING	OB	OCTAVE BAND
CO	CLEAN-OUT	OC	ON CENTER
COL	COLUMN	OD	OUTSIDE DIAMETER
COL	COLUMN	OD	OUTSIDE DIAMETER
COMP	COMPRESSOR	ODP	OPEN DRIP PROOF
CONC	CONCRETE	OFCl	OWNER FURNISHED CONTRACTOR INSTALLED
CONN	CONNECTION	OFOl	OWNER FURNISHED OWNER INSTALLED
CONTR	CONTRACTOR	OV	OUTLET VELOCITY
CORR	CORRIDOR	PCF	POUNDS PER CUBIC FOOT
CUF	CUBIC FEET	PD	PRESSURE DROP
CUH	CABINET UNIT HEATER	PH	PHASE
CYL	CYLINDER	PLMB	PLUMBING
D	DRAIN	POS	PROVIDED BY OTHER SECTION(S)
DB	DRY BULB TEMPERATURE	PRESS	PRESSURE
DDC	DIRECT DIGITAL CONTROL	PRIM	PRIMARY
DDCFP	DIRECT DIGITAL CONTROL FIELD PANEL	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
DIA	DIAMETER	PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
DIM	DIMENSION	PSIG	POUNDS PER SQUARE INCH GAUGE
DN	DOWN	PVC	POLYVINYL CHLORIDE
DWG	DRAWING	REP	REPRESENTATIVE
EA	EACH	RET	RETURN
EAT	ENTERING AIR TEMPERATURE	REQD	REQUIRED
EFF	EFFICIENCY	REQS	REQUIREMENTS
ECUH	ELECTRIC CABINET UNIT HEATER	RH	RELATIVE HUMIDITY
ELEC	ELECTRICAL	RM	ROOM
ELEV	ELEVATION	RPM	REVOLUTIONS PER MINUTE
EMER	EMERGENCY	SCH	SCHEDULE
ENT	ENTERING	SOV	SOLENOID OPERATED VALVE
EQUIP	EQUIPMENT	SPECS	SPECIFICATIONS
EXH	EXHAUST	SQ	SQUARE
EXP	EXPANSION	SQFT	SQUARE FEET
FTR	FINNED TUBE RADIATION	SS	STAINLESS STEEL
FCV	FLOW CONTROL VALVE	STD	STANDARD
FG	FIBERGLASS	STDBY	STANDBY
FLEX	FLEXIBLE	STL	STEEL
FLR	FLOOR	SUCT	SUCTION
FLRDR	FLOOR DRAIN	SUP	SUPPLY
FP	FIRE PROTECTION	TA	THROW-AWAY
FPM	FEET PER MINUTE	TAV	THERMOSTATIC AIR VENT
FT	FEET	TEFC	TOTALLY ENCLOSED FAN COOLED
FT/SEC	FEET PER SECOND	TEL	TELEPHONE
FURN	FURNISHED	TEMP	TEMPERATURE
FVNR	FULL VOLTAGE NON-REVERSING	TOD	TOP OF DUCT
GA	GAUGE	TOP	TOP OF PIPE
GAL	GALLONS	TP	TYPICAL
GALV	GALVANIZED	UH	UNIT HEATER
GC	GENERAL CONTRACTOR	V	VENT
GND	GROUND	VEL	VELOCITY
GPH	GALLONS PER HOUR	VERT	VERTICAL
GPM	GALLONS PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
GRD	GRADE (GROUND LEVEL)	VTR	VENT THROUGH ROOF
GWB	GYPSTUM WALL BOARD	W	WIDTH
H	HEIGHT	W/	WITH
HD	HEAD	W/O	WITHOUT
HP	HORSEPOWER	WB	WET BULB TEMPERATURE
HR	HOUR	WF	WIDE FLANGE
HZ	HERTZ	WG	WATER GAUGE
		WRT	WITH RESPECT TO

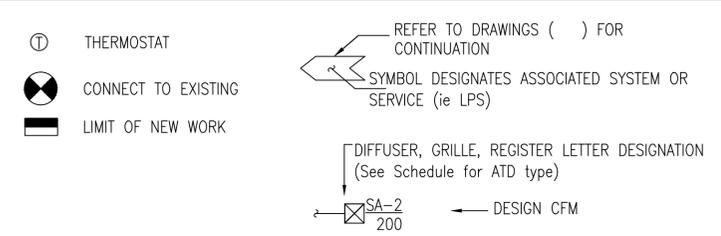
FLOW DIAGRAM & CONTROL DIAGRAM EQUIP. SYMBOLS



HVAC SYSTEM TAGS



CALL OUT SYMBOLS



AIR SYSTEM SPECIFIC ABBREVIATIONS

AC	AIR CONDITIONING	LVDR	LOUVERED DOOR
ACD	AUTOMATIC CONTROL DAMPER	OA	OUTSIDE AIR
ACU	AIR CONDITIONING UNIT	OAI	OUTSIDE AIR INTAKE
AF	AIR FOIL	OBD	OPPOSED BLADE DAMPER
AHU	AIR HANDLING UNIT	OED	OPEN END DUCT
ALD	ACOUSTICALLY LINED DUCTWORK	RA	RETURN AIR
ATD	AIR TERMINAL DEVICE	RF	RETURN FAN
AVS	AIR VOLUME TRAVERSE STATION	RG	RETURN GRILLE
BDD	BACKDRAFT DAMPER	RHC	REHEAT COIL
BI	BACKWARD INCLINED	RLF	RELIEF
CC	COOLING COIL	RR	RETURN REGISTER
CD	CEILING DIFFUSER	RV	ROOF VENT
CFM	CUBIC FEET PER MINUTE	SA	SUPPLY AIR
CG	CEILING GRILLE	SATT	SOUND ATTENUATOR
DIFF	DIFFUSER	SCR	SCREEN
DWDI	DOUBLE WIDTH DOUBLE INLET	SD	SMOKE DAMPER
DWSI	DOUBLE WIDTH SINGLE INLET	SDET	SMOKE DETECTOR
DX	DIRECT EXPANSION	SEF	SMOKE EXHAUST FAN
EF	EXHAUST FAN	SF	SUPPLY FAN
EG	EXHAUST GRILLE	SFD	COMBINATION AUTOMATIC SMOKE/FIRE DAMPER
ESP	EXTERNAL STATIC PRESSURE	--	WITH ACCESS DOOR
F	FAN	SG	SUPPLY GRILLE
FC	FORWARD CURVED	SM	SHEETMETAL
FA	FREE AREA	SP	STATIC PRESSURE
FCU	FAN COIL UNIT	SR	SUPPLY REGISTER
FD	FIRE DAMPER (W/ ACCESS DOOR)	SWDI	SINGLE WIDTH DOUBLE INLET
FLTR	FILTER	SWSI	SINGLE WIDTH SINGLE INLET
FPI	FINS PER INCH	TE	TOILET EXHAUST
FPT	FAN POWERED TERMINAL BOX	TF	TRANSFER FAN
GE	GENERAL EXHAUST	TG	TRANSFER GRILLE
GIH	GRAVITY INTAKE HOOD	TR	TRANSFER
GRH	GRAVITY RELIEF HOOD	TSP	TOTAL STATIC PRESSURE
HC	HEATING COIL	UC	UNDERCUT DOOR
LAT	LEAVING AIR TEMPERATURE	VD	VOLUME DAMPER
LD	LINEAR DIFFUSER	VV	VARIABLE VOLUME SUPPLY AIR TERMINAL BOX
LUVR	LOUVER	WMS	WIRE MESH SCREEN

HVAC GENERAL NOTES

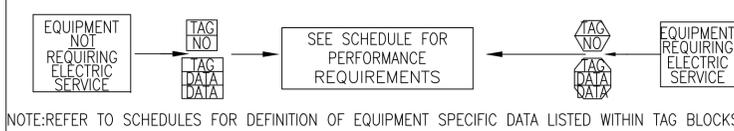
- GENERAL NOTES APPLY TO ALL HVAC DRAWINGS.
- THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID, ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITIONS OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. ABSOLUTELY NO CLAIMS FOR EXTRA COMPENSATION WILL BE CONSIDERED FOR EXISTING CONDITIONS VISIBLE OR REASONABLY INFERRABLE FROM A CAREFUL EXAMINATION OF THE EXISTING BUILDING.
- THIS CONTRACTOR SHALL INSPECT THE EXISTING FIELD CONDITIONS AT THE SITE AND THE "AS-BUILT" BASE BUILDING CONTRACT DOCUMENTS PRIOR TO THE START OF ANY WORK TO DETERMINE WHAT EFFECT THE EXISTING CONDITIONS WILL HAVE ON HIS WORK. POTENTIAL PROBLEM AREAS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER IMMEDIATELY.
- THIS CONTRACTOR SHALL CONNECT HIS WORK TO VARIOUS EXISTING PIPING, DUCTWORK, AND CONTROL SYSTEMS IN THE BASE BUILDING. THE NEW WORK SHALL BE COMPATIBLE WITH THE EXISTING SYSTEMS. LOCATION OF EQUIPMENT OR THE ROUTING OF THE VARIOUS SYSTEMS AS WELL AS OPENINGS IN FLOOR SLABS OR WALLS SHALL BE GOVERNED BY THE EXISTING CONDITIONS AS THEY APPEAR IN THE FIELD OR ON THE "AS-BUILT" DRAWINGS.
- CARE SHALL BE TAKEN DURING THE INSTALLATION TO NOT DAMAGE OR INTERRUPT BUILDING SYSTEMS AND SERVICES THAT ARE ALREADY INSTALLED. DAMAGE TO SUCH SYSTEMS OR EQUIPMENT CAUSED BY THIS CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.
- SHUTDOWN OF EXISTING SYSTEMS FOR CONNECTION TO EXISTING SERVICES SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR AND BUILDING OWNER. THIS CONTRACTOR SHALL SUBMIT REQUESTS, WHERE THEY AFFECT THE OPERATION OF THE BUILDING SYSTEMS, AT LEAST FIFTEEN DAYS IN ADVANCE OF ANY REQUIRED SHUTDOWN. THE ACTUAL SHUTDOWN PERIOD SHALL BE AS SHORT AS POSSIBLE AND AT A TIME MUTUALLY AGREEABLE TO THE BUILDING OWNER AND THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR.
- DRAWINGS ARE DIAGRAMMATIC, THEREFORE DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS, AS WELL AS ROUTING PATHS, IN FIELD.
- ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER, AND SHOULD BE KEPT TO A MINIMUM FOR SYSTEM EFFICIENCIES.
- VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT AND/OR PIPE TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION. VERIFY ACCESS IS PROVIDED FOR SERVICING EQUIPMENT AS REQUIRED.
- ALL MATERIALS AND EQUIPMENT UNLESS SPECIFICALLY INDICATED AS REUSED, SHALL BE NEW.
- ACCESS PANELS SHALL BE PROVIDED TO ALLOW FOR CLEANING OF COILS AND SERVICING OF DAMPERS, HEATERS, VALVES, AND ALL CONCEALED MECHANICAL EQUIPMENT.
- INSTALL NEW THERMOSTATS 4 FEET AFF OR AS DIRECTED OTHERWISE BY ENGINEER.
- GENERAL CONTRACTOR TO PATCH ALL EFFECTED INTERIOR AND EXTERIOR EXISTING FLOOR, WALL, AND CEILING SURFACES TO MATCH EXISTING. PROVIDE ESCUTCHEON PLATES.
- CONTRACTOR RESPONSIBLE FOR ROUTING PIPE AND PERFORMING PRESSURE LOSS CALCULATIONS TO SIZE PIPE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
- ANY AND ALL WALLS, CEILINGS AND FLOORS THAT ARE ANTICIPATED TO BE DISTURBED DURING THE DEMOLITION OR INSTALLATIONS PROCESS, AS INDICATED ON THE DRAWINGS, SHALL BE TESTED FOR HAZARDOUS MATERIALS PRIOR TO DISTURBING THE SURFACES. ROUTING OF PIPING HAS BEEN INDICATED TO DEPICT THE INTENT OF THE WORK. ACTUAL ROUTING MAY DIFFER IN THE FIELD DUE TO BUILDING CONSTRUCTION. COORDINATE TESTING OF ALL SURFACES TO BE DISTURBED, ALONG THE ACTUAL INSTALLATION ROUTE, WITH THE HAZARDOUS MATERIALS CONTRACTOR. REFER TO EXISTING HAZMAT REPORT FOR TESTING RESULTS.
- MECHANICAL CONTRACTOR TO REMOVE ALL IDENTIFIED R-22 EQUIPMENT AND ASSOCIATED APPURTENANCES AND REPLACE IN KIND WITH A R410A OR R407C SYSTEM.
- REFRIGERANT PIPING IS DIAGRAMMATIC, CONTRACTOR TO DETERMINE ROUTING IN FIELD AND RE-USE EXISTING PENETRATIONS. ANY EXPOSED PIPING TO BE CONCEALED IN A CHASE. CONTRACTOR RESPONSIBLE FOR ROUTING PIPE AND PERFORMING PRESSURE LOSS CALCULATIONS TO SIZE PIPE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- SEE CIVIL DRAWINGS FOR DEMOLISHED AND NEW CONCRETE PADS.
- THE MECHANICAL NEW WORK PLANS DO NOT SHOW ALL ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION AMONG TRADES TO DETERMINE ALL ACCESSORIES AND COMPONENTS REQUIRED TO FORM A COMPLETE AND FUNCTIONAL SYSTEM. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY ACCESSORIES AND COMPONENTS NEEDED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM AND SHALL BE RESPONSIBLE TO ENSURE THE INTEGRITY AND SAFETY OF THE SYSTEM AFTER COMPLETION. THE MECHANICAL CONTRACTOR SHALL TAKE ALL NECESSARY STEPS AND PROVIDE ALL ADDITIONAL COMPONENTS NEEDED TO ENSURE THE SYSTEM IS SAFE UPON COMPLETION OF THE PROJECT.
- SEE PWD-ME DRAWING;
43-15-67 FOR TITLE SHEET
43-15-68 FOR LIST OF DRAWINGS
43-15-69 FOR GENERAL NOTES & LEGENDS
43-15-72 FOR CHASE AND SOFFIT DETAILS
43-15-74 FOR STRUCTURAL NOTES AND SUPPORTS

SCHEDULE OF DRAWINGS

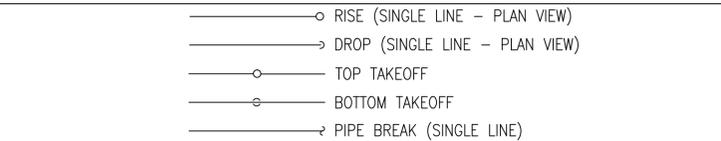
DWG#	DESCRIPTION
M1.0	BUILDING 18 HVAC LEGEND
MD2.0A	BUILDING 18 HVAC FIRST FLOOR DEMOLITION PLAN PART A
MD2.0B	BUILDING 18 HVAC FIRST FLOOR DEMOLITION PLAN PART B
MD2.1A	BUILDING 18 HVAC ROOF DEMOLITION PLAN PART A

M2.0A	BUILDING 18 HVAC FIRST FLOOR PLAN PART A
M2.0B	BUILDING 18 HVAC FIRST FLOOR PLAN PART B
M2.1A	BUILDING 18 HVAC ROOF PLAN PART A
M3.0	BUILDING 18 HVAC CONTROLS
M3.1	BUILDING 18 HVAC CONTROLS
M3.2	BUILDING 18 HVAC CONTROLS
M4.0	BUILDING 18 HVAC SCHEDULES & DETAILS

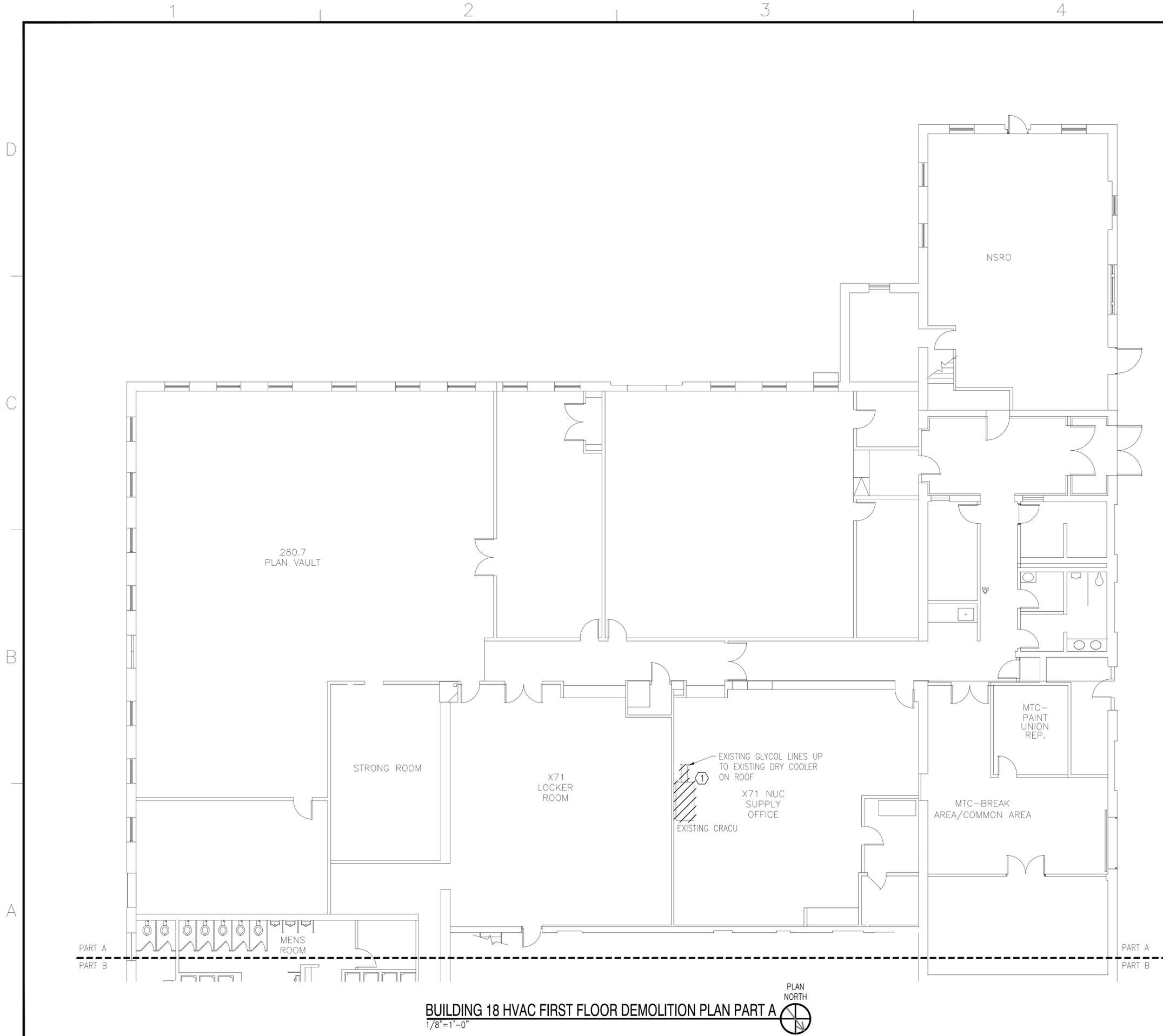
EQUIPMENT TAG SYMBOLS & ABBREVIATIONS



PIPING LEGEND



DATE	08/07/2015	DM	DM	DM	DM	DM	APPR
DESCRIPTION	100% SUBMISSION	100% REVIEW SUBMISSION	90% SUBMISSION	80% SUBMISSION	80% SUBMISSION	35% SUBMISSION	DATE
NO.	4	3	2	1	0		
SYN							
APPROVED: _____ FOR COMMANDER NAVFAC							
ACTIVITY: _____							
SATISFACTORY TO DATE: _____							
DES	JC	DRW	SV	CHK	DM		
PM/DM	PETER STOCKLESS						
BRANCH MANAGER	BRUCE LITALEN						
LEAD/PMAC	AMIN BAHRROUR PM&E						
FIRE PROTECTION	X						
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC PUBLIC WORKS DEPARTMENT - MAINE PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE FY 16 ENERGY PROJECT TASK 1-B-R-22 BUILDING 18 HVAC LEGEND							
PROJECT NO.: 1350913 CONSTR. CONTR. NO.: N40085-XX-C-XXXX NAVFAC DRAWING NO.: 12703478 SHEET 25 OF 506 M1.0 18-15-564							
DRAWFORM REVISION: 10 OCTOBER 2014							



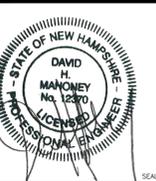
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EQUIPMENT AND MATERIALS AT PERMITTED WASTE FACILITY.
3. CONTRACTOR TO COORDINATE R-22 DISPOSAL WITH PSNY ENVIRONMENTAL GROUP.

DEMOLITION KEYNOTES

1. REMOVE EXISTING CRAC UNIT, ASSOCIATED THERMOSTAT, AND ASSOCIATED GLYCOL LINES. EXISTING DUCTWORK, CONTROL WIRING, CONDENSATE LINES, AND WATER LINES TO REMAIN AND BE DISCONNECTED.

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES: JC | PRW: SV | CHG: DM
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, MAINE
 PORTSMOUTH NAVAL SHIPYARD

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 18 HVAC FIRST FLOOR DEMOLITION PLAN PART A

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX

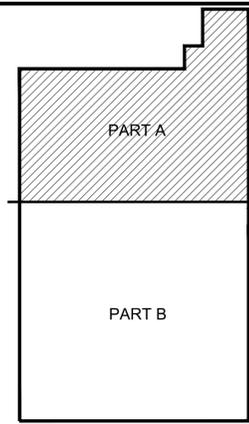
NAVFAC DRAWING NO.: 12703479

SHEET 26 OF 506

MD2.0A 18-15-565

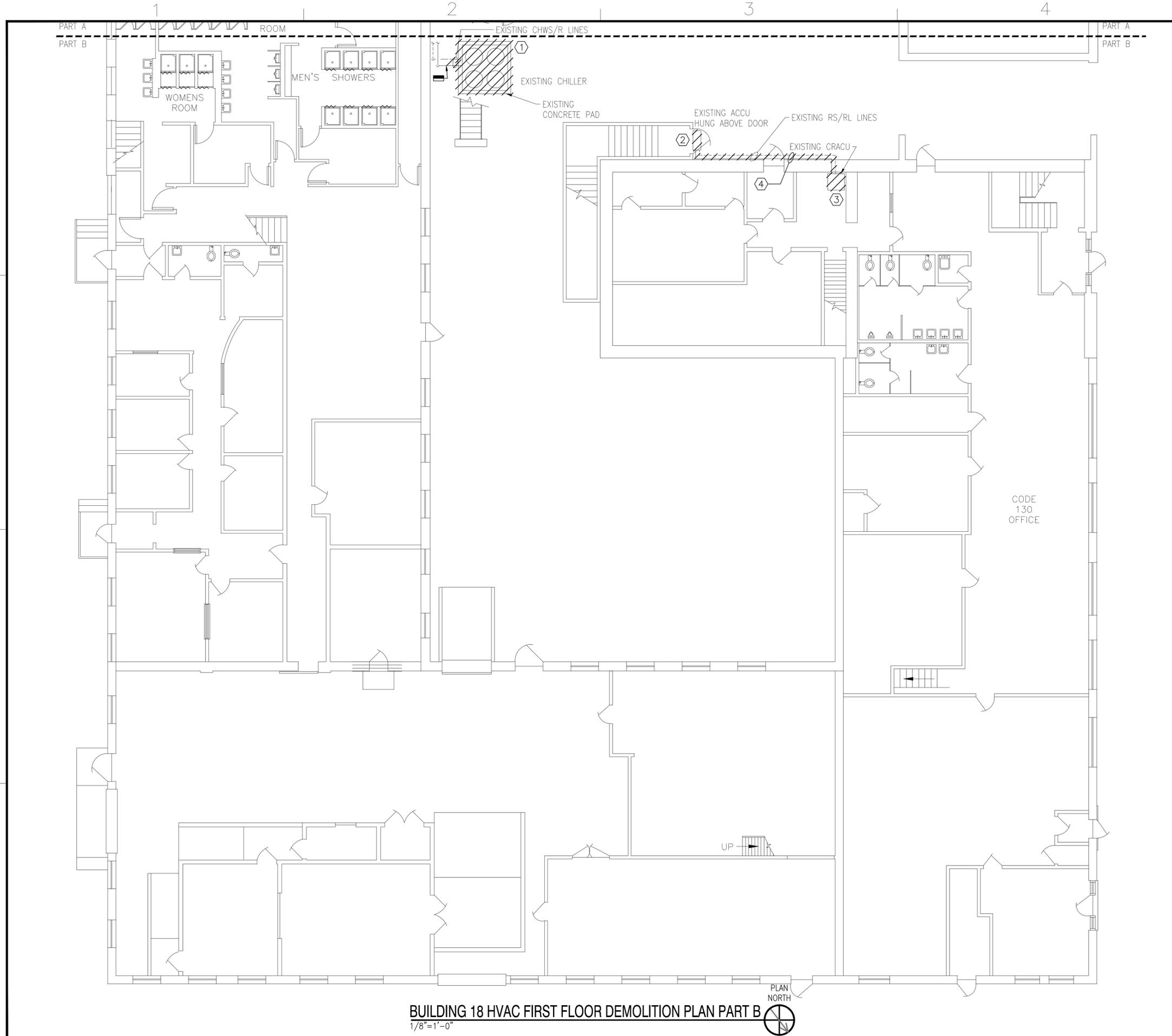
DRAWFORM REVISION: 10 OCTOBER 2014

KEY PLAN



GRAPHIC SCALE





GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EQUIPMENT AND MATERIALS AT PERMITTED WASTE FACILITY.
3. CONTRACTOR TO COORDINATE R-22 DISPOSAL WITH PSNY ENVIRONMENTAL GROUP.

DEMOLITION KEYNOTES

1. REMOVE EXISTING CHILLER AND IT'S ASSOCIATED CHWS/R LINES UP TO POINT OF DEMOLITION. EXISTING CONCRETE PAD TO BE REMOVED. EXISTING STAIRS UP TO ROOF TO BE REMOVED AND BE REPLACED WITH A LADDER PROVIDING ROOF ACCESS.
2. REMOVE EXISTING ACCU.
3. REMOVE EXISTING CRAC UNIT AND ASSOCIATED THERMOSTAT. EXISTING DUCTWORK, CONTROL WIRING, CONDENSATE LINES, AND WATER LINES TO REMAIN AND BE DISCONNECTED.
4. ACCESSIBLE EXISTING RS/RL LINES TO BE REMOVED. ANY REMAINING RS/RL CONCEALED TO BE EVACUATED, CAPPED AND ABANDONED IN PLACE.

REV	DATE	DESCRIPTION
4	08/07/2015	100% SUBMISSION
3	07/24/2015	100% REVIEW SUBMISSION
2	06/04/2015	90% SUBMISSION
1	04/24/2015	80% SUBMISSION
0	02/23/2015	35% SUBMISSION



APPROVED:

FOR COMMANDER NAVFAC

ACTIVITY:

SATISFACTORY TO: _____ DATE: _____

DES: JC | PRW: SV | CHR: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION: _____

NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC NAVAL SHIPYARD - PORTSMOUTH, MAINE

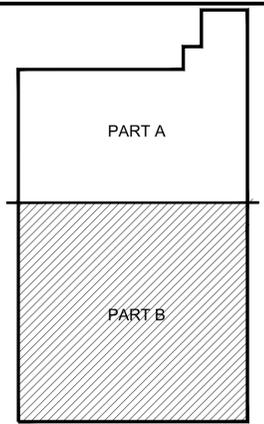
PORTSMOUTH NAVAL SHIPYARD - KITTERY, MAINE

FY 16 ENERGY PROJECT

TASK 1-B-R-22

BUILDING 18 HVAC FIRST FLOOR DEMOLITION PLAN PART B

KEY PLAN



GRAPHIC SCALE



BUILDING 18 HVAC FIRST FLOOR DEMOLITION PLAN PART B
1/8"=1'-0"

PROJECT NO.: 1350913

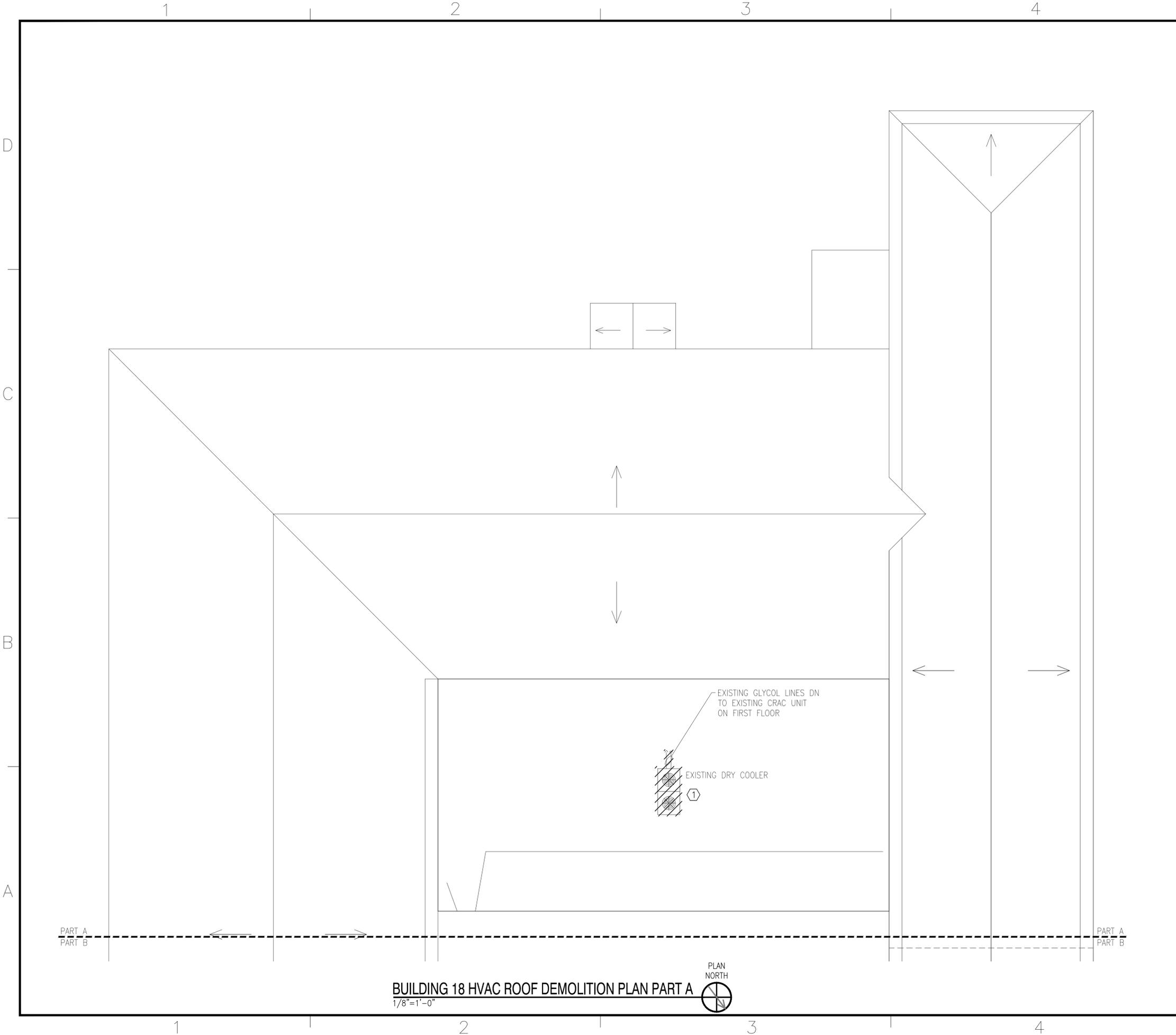
CONSTR. CONTR. NO.: N40085-XX-C-XXXX

NAVFAC DRAWING NO.: 12703480

SHEET 27 OF 506

MD2.0B 18-12-566

DRAWING REVISION: 10 OCTOBER 2014



BUILDING 18 HVAC ROOF DEMOLITION PLAN PART A
 1/8"=1'-0"



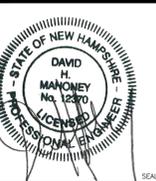
GENERAL SHEET NOTES

- REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- CONTRACTOR RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EQUIPMENT AND MATERIALS AT PERMITTED WASTE FACILITY.
- CONTRACTOR TO COORDINATE R-22 DISPOSAL WITH PSNY ENVIRONMENTAL GROUP.

DEMOLITION KEYNOTES

- REMOVE EXISTING DRYCOOLER AND ASSOCIATED GLYCOL LINES. SEE STRUCTURAL DRAWINGS FOR ANY ROOF CURB MODIFICATIONS.

REV	DESCRIPTION	DATE	DM	APPR
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



APPROVED:

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES: JC | DRW: SV | CHK: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHROUR, PM&E

FIRE PROTECTION: X

NAVFAC PROJECT: NAVAL FACILITIES ENGINEERING COMMAND

NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC

NAVAL SHIPYARD - PORTSMOUTH, NH

PORTSMOUTH NAVAL SHIPYARD

KITTERY, MAINE

FY 16 ENERGY PROJECT

TASK 1-B-R-22

BUILDING 18 HVAC ROOF DEMOLITION PLAN PART A

PROJECT NO.: 1350913

CONSTR. CONTR. NO.: N40085-XX-C-XXXX

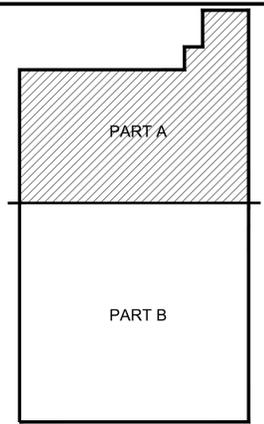
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SHEET 28 OF 506

MD2.1A 18-15-567

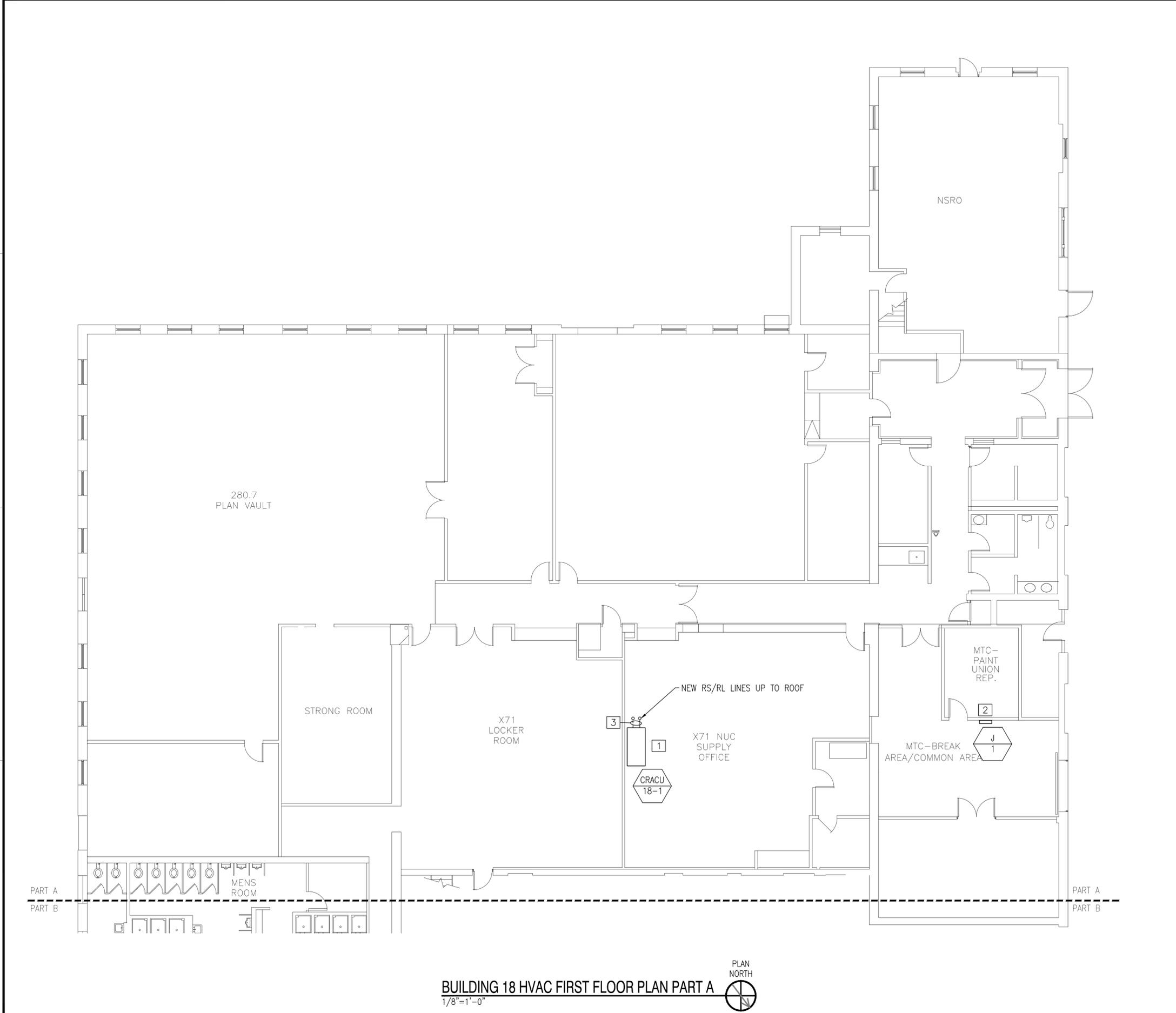
DRAWING REVISION: 10 OCTOBER 2014

KEY PLAN



GRAPHIC SCALE





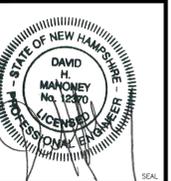
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

NEW WORK KEYNOTES

- FURNISH AND INSTALL NEW CRACU AND ASSOCIATED RS/RL LINES. NEW CRACU TO BE CONNECTED TO ASSOCIATED NEW ACCU. EXISTING DUCTWORK, CONTROL WIRING, CONDENSATE LINES, AND WATER LINES TO BE RECONNECTED. PROVIDE WITH NEW DUCTWORK WHERE NECESSARY TO CONNECT TO NEW EQUIPMENT. REFER TO CRAC REFRIGERANT PIPING SMALL COMPONENT SCHEMATIC ON SHEET M4.0. PROVIDE WITH NEW DDC COMPATIBLE THERMOSTAT, FIELD COORDINATE EXACT LOCATION WITH NAVFAC.
- MECHANICAL CONTRACTOR TO FIELD COORDINATE EXACT LOCATION OF NEW DDC JACE BOX WITH NAVFAC.
- SEE HVAC GENERAL NOTE 17 ON SHEET M1.0 FOR PIPING INFORMATION.

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED:
FOR COMMANDER NAVFAC

SATISFACTORY TO: _____ DATE: _____

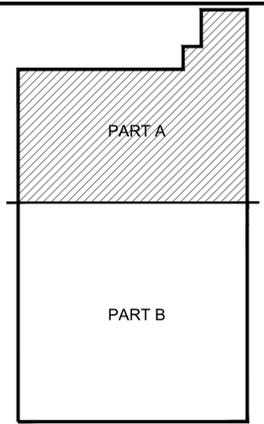
DES: JC | DRW: SV | CHK: DM
PM/DM: PETER STOCKLESS
BRANCH MANAGER: BRUCE LITALIEN
LEAD/PM&E: AMIN BAHROUR PM&E

FIRE PROTECTION: X
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND

NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
BUILDING 18 HVAC FIRST FLOOR PLAN PART A

PROJECT NO.: 1350913
CONSTR. CONTR. NO.: N40085-XX-C-XXXX
NAVFAC DRAWING NO.: 12703482
SHEET 29 OF 506
M2.0A 18-15-568
DRAWFORM REVISION: 10 OCTOBER 2014

KEY PLAN

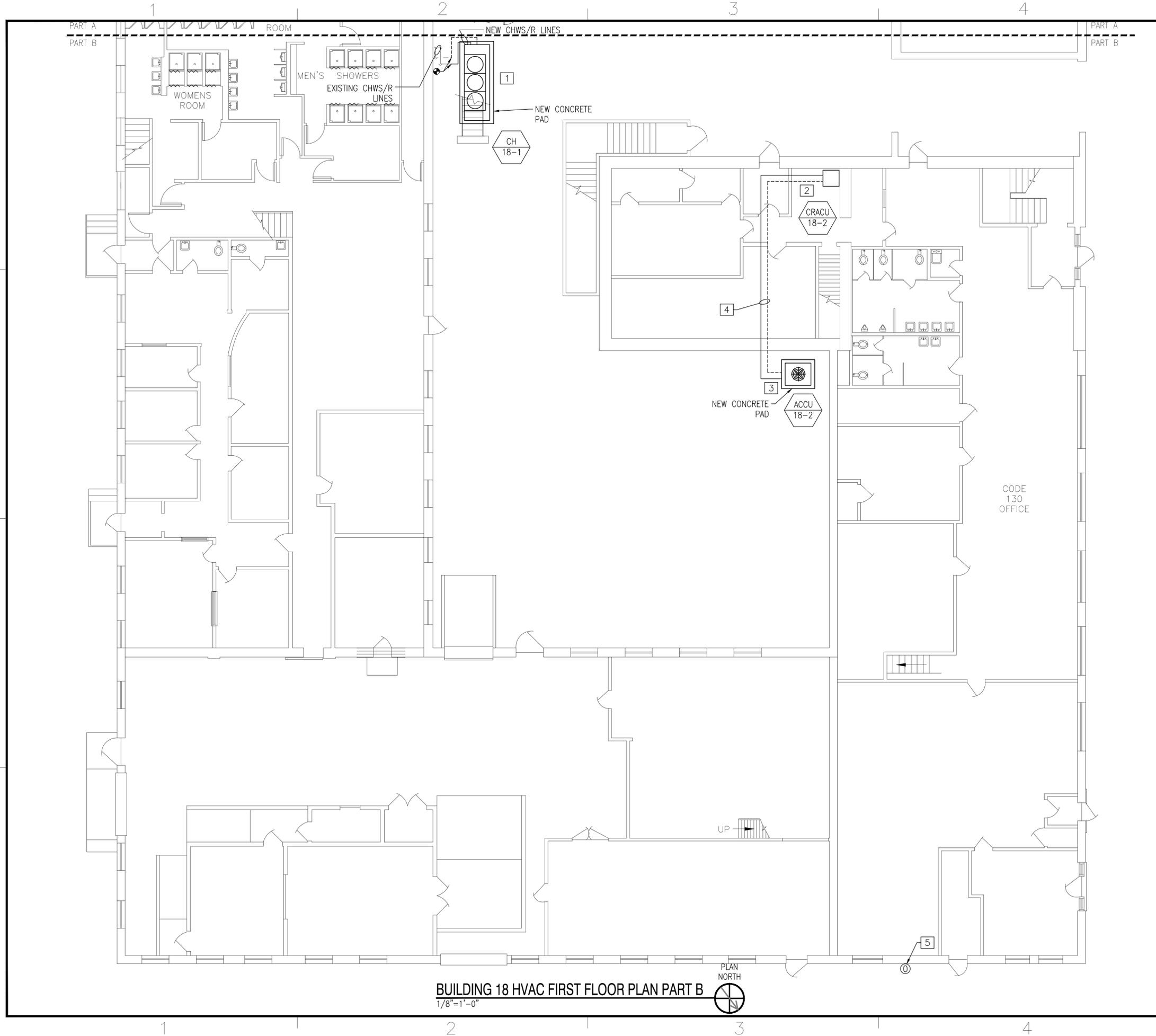


GRAPHIC SCALE



BUILDING 18 HVAC FIRST FLOOR PLAN PART A
1/8"=1'-0"





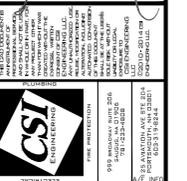
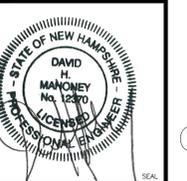
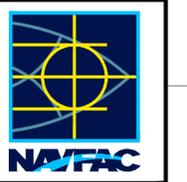
GENERAL SHEET NOTES

- REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

NEW WORK KEYNOTES

- FURNISH AND INSTALL NEW CHILLER AND CONNECT CHWS/R PIPING TO EXISTING SYSTEM. NEW CHILLER TO BE PLACED ON NEW CONCRETE PAD.
- FURNISH AND INSTALL NEW CRACU AND ASSOCIATED RS/RL LINES. NEW CRACU TO BE CONNECTED TO ASSOCIATED NEW ACCU. EXISTING DUCTWORK, CONTROL WIRING, CONDENSATE LINES, AND WATER LINES TO BE RECONNECTED. PROVIDE WITH NEW DUCTWORK WHERE NECESSARY TO CONNECT TO NEW EQUIPMENT. REFER TO CRAC REFRIGERANT PIPING SMALL COMPONENT SCHEMATIC ON SHEET M4.0. PROVIDE WITH NEW DDC COMPATIBLE THERMOSTAT, FIELD COORDINATE EXACT LOCATION WITH NAVFAC.
- FURNISH AND INSTALL NEW ACCU AND RS/RL LINES. NEW ACCU TO BE PLACED ON NEW CONCRETE PAD.
- SEE HVAC GENERAL NOTE 17 ON SHEET M1.0 FOR PIPING INFORMATION.
- MECHANICAL CONTRACTOR TO FIELD COORDINATE EXACT LOCATION OF OUTDOOR AIR SENSOR WITH NAVFAC.

REV	DATE	DESCRIPTION
4	08/07/2015	100% SUBMISSION
3	07/24/2015	100% REVIEW SUBMISSION
2	06/04/2015	90% SUBMISSION
1	04/24/2015	80% SUBMISSION
0	02/23/2015	35% SUBMISSION



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES: JC | PRW: SV | CHK: DM
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHROUR PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 18 HVAC FIRST FLOOR PLAN PART B

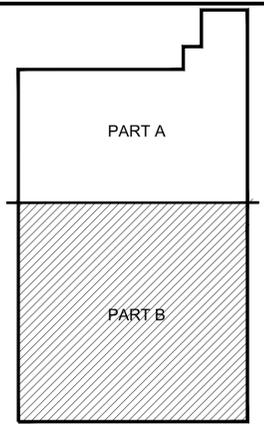
EPROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX

NAVFAC DRAWING NO.: 12703483

SHEET 30 OF 506
M2.0B 18-15-569

DRAWFORM REVISION: 10 OCTOBER 2014

KEY PLAN

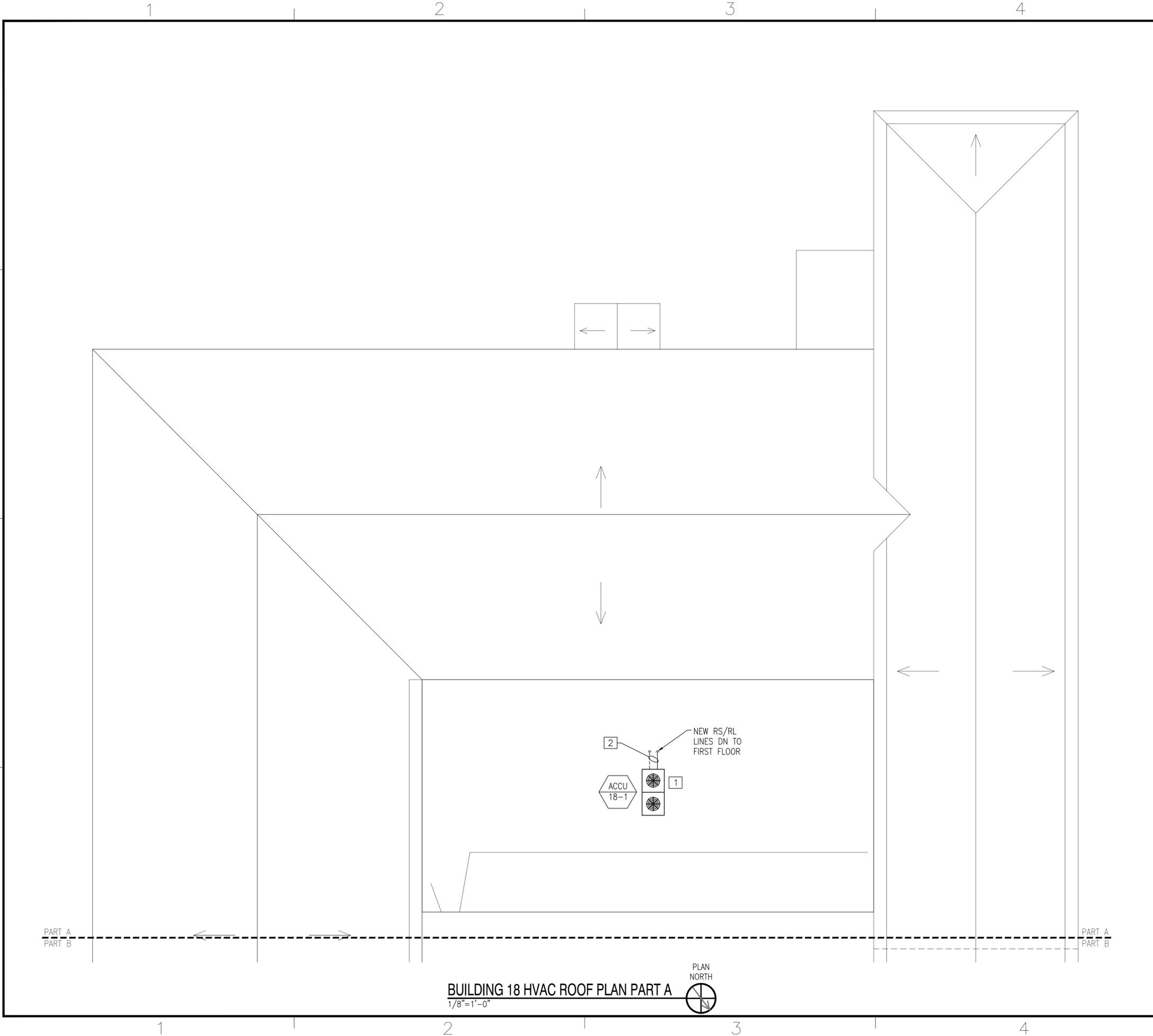


GRAPHIC SCALE



BUILDING 18 HVAC FIRST FLOOR PLAN PART B
 1/8" = 1'-0"





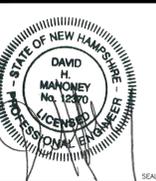
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

NEW WORK KEYNOTES

1. FURNISH AND INSTALL NEW ACCU AND IT'S ASSOCIATED RS/RL LINES. SEE STRUCTURAL DRAWINGS FOR ANY ROOF CURB MODIFICATIONS.
2. SEE HVAC GENERAL NOTE 17 ON SHEET M1.0 FOR PIPING INFORMATION.

REV	DESCRIPTION	DATE	DM	APPR
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES JC | DRW SV | CHK DM

PM/DM PETER STOCKLESS

BRANCH MANAGER BRUCE LITALIEN

FEAD/PM&E AMIN BAHROUR PM&E

FIRE PROTECTION X

NAVAL FACILITIES ENGINEERING COMMAND

NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC

PUBLIC WORKS DEPARTMENT - MAINE

PORTSMOUTH NAVAL SHIPYARD

KITTERY, MAINE

FY 16 ENERGY PROJECT

TASK 1-B-R-22

BUILDING 18 HVAC ROOF PLAN PART A

PROJECT NO. 1350913

CONSTR. CONTR. NO. N40085-XX-C-XXXX

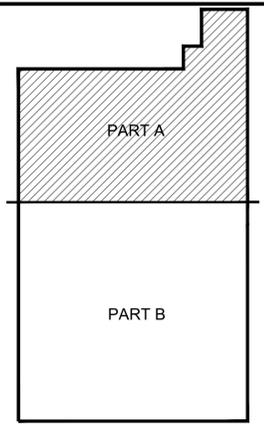
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SHEET 31 OF 506

M2.1A 18-15-570

DRAWING REVISION: 10 OCTOBER 2014

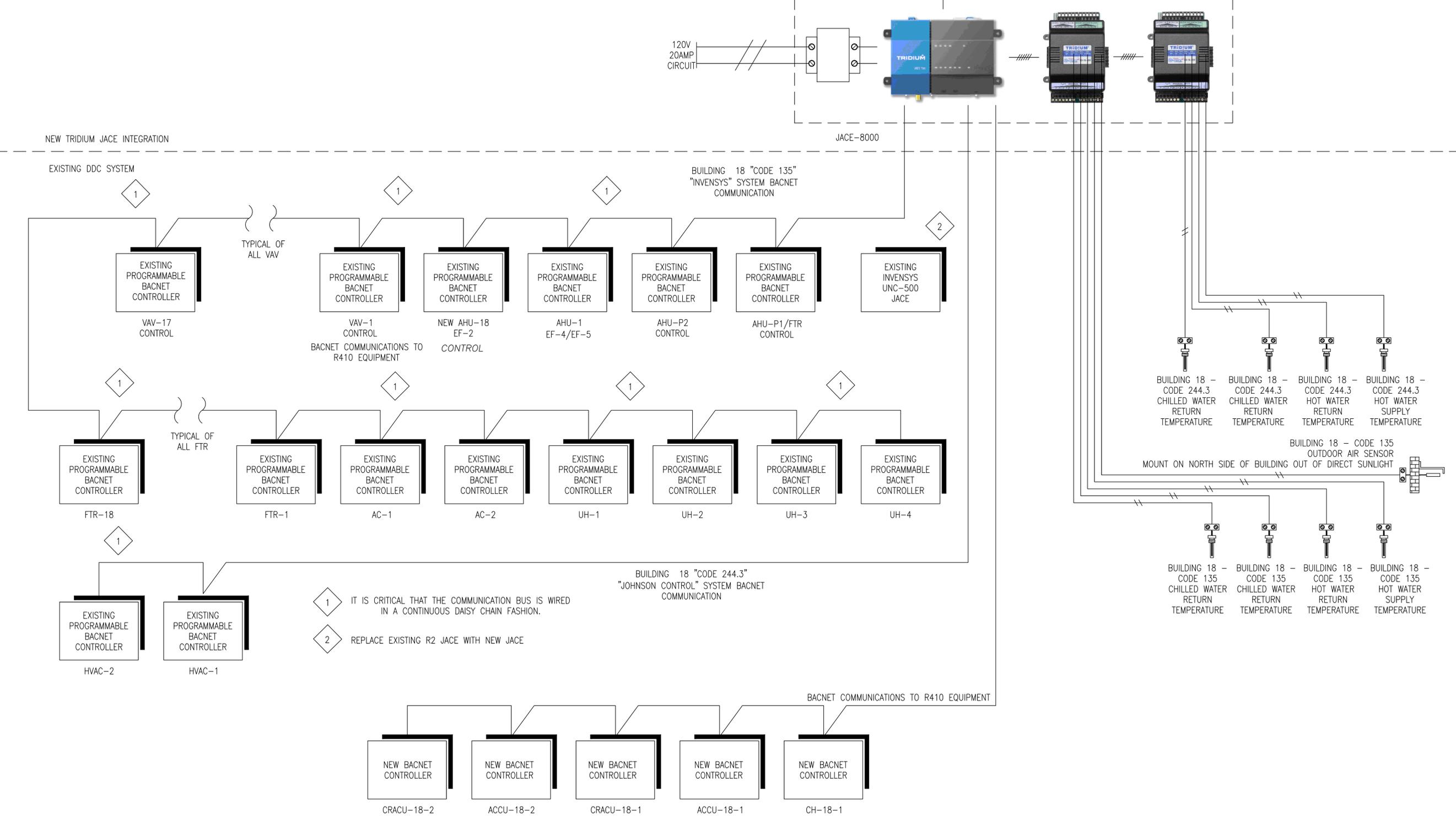
KEY PLAN



GRAPHIC SCALE



PANEL MATERIAL			
ITEM NO	MODEL	DESCRIPTION	QTY
C1	J-8000	N4 WEB BASED GLOBAL NETWORK INTERFACE	1
		APPROPRIATE DEVICE PACKS	
C2,3	IO-16-485	REMOTE I/O MODULE	2



- 1 IT IS CRITICAL THAT THE COMMUNICATION BUS IS WIRED IN A CONTINUOUS DAISY CHAIN FASHION.
- 2 REPLACE EXISTING R2 JACE WITH NEW JACE

PORTSMOUTH NAVAL SHIPYARD (BUILDING 18 _ PROD. SHOP, ADMIN.)
EXISTING INVENSYS & JOHNSON INTEGRATED DDC SYSTEM ARCHITECTURE

DM	08/07/2015	100% SUBMISSION
DM	07/24/2015	100% REVIEW SUBMISSION
DM	06/04/2015	90% SUBMISSION
DM	04/24/2015	80% SUBMISSION
DM	02/23/2015	35% SUBMISSION
APPR		

SEAL

DAVID H. MAHONEY
LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
No. 12370

CS1

APPROVED FOR COMMANDER NAVFAC

ACTIVITY

FOR COMMANDER NAVFAC

DATE

DESIGNER JC (proj) SV (chk) DM

PM/DM PETER STOCKLESS

BRANCH MANAGER BRUCE LITALIEN

LEAD/PM&E AMIN BAHRROUR PM&E

FIRE PROTECTION X

NAVAL FACILITIES ENGINEERING COMMAND

NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC

PUBLIC WORKS DEPARTMENT - MAINE

PORTSMOUTH NAVAL SHIPYARD

KITTERY, MAINE

FY 16 ENERGY PROJECT

TASK 1-B-R-22

BUILDING 18 HVAC CONTROLS

PROJECT NO.: 1350913

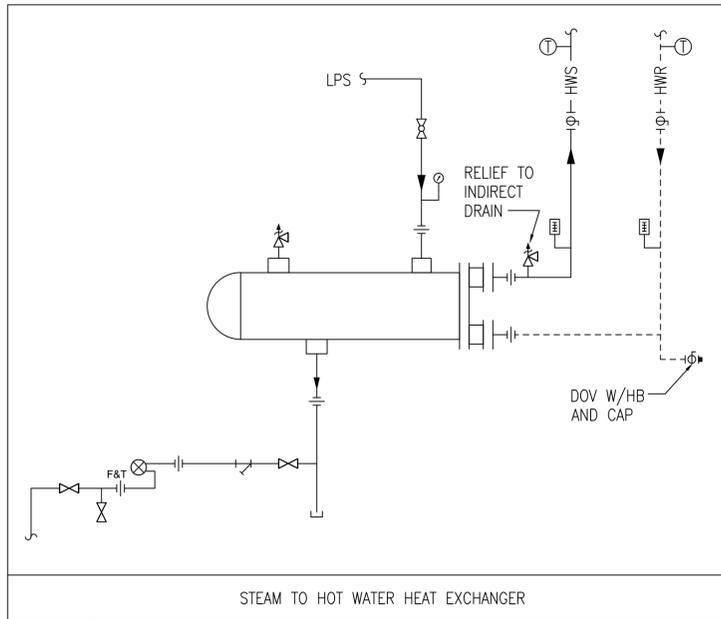
CONSTR. CONTR. NO. N40085-XX-C-XXXX

NAVFAC DRAWING NO. 12703485

SHEET 32 OF 506

M3.0 18-15-571

DRAWING REVISION: 10 OCTOBER 2014



GENERAL:

- PACKAGED CHILLER IS MONITORED AND ON/OFF CONTROLLED BY THE NEW NIAGRA BUILDING DDC SYSTEM

OFF MODE:

- PACKAGED CHILLER IS DE-ENERGIZED

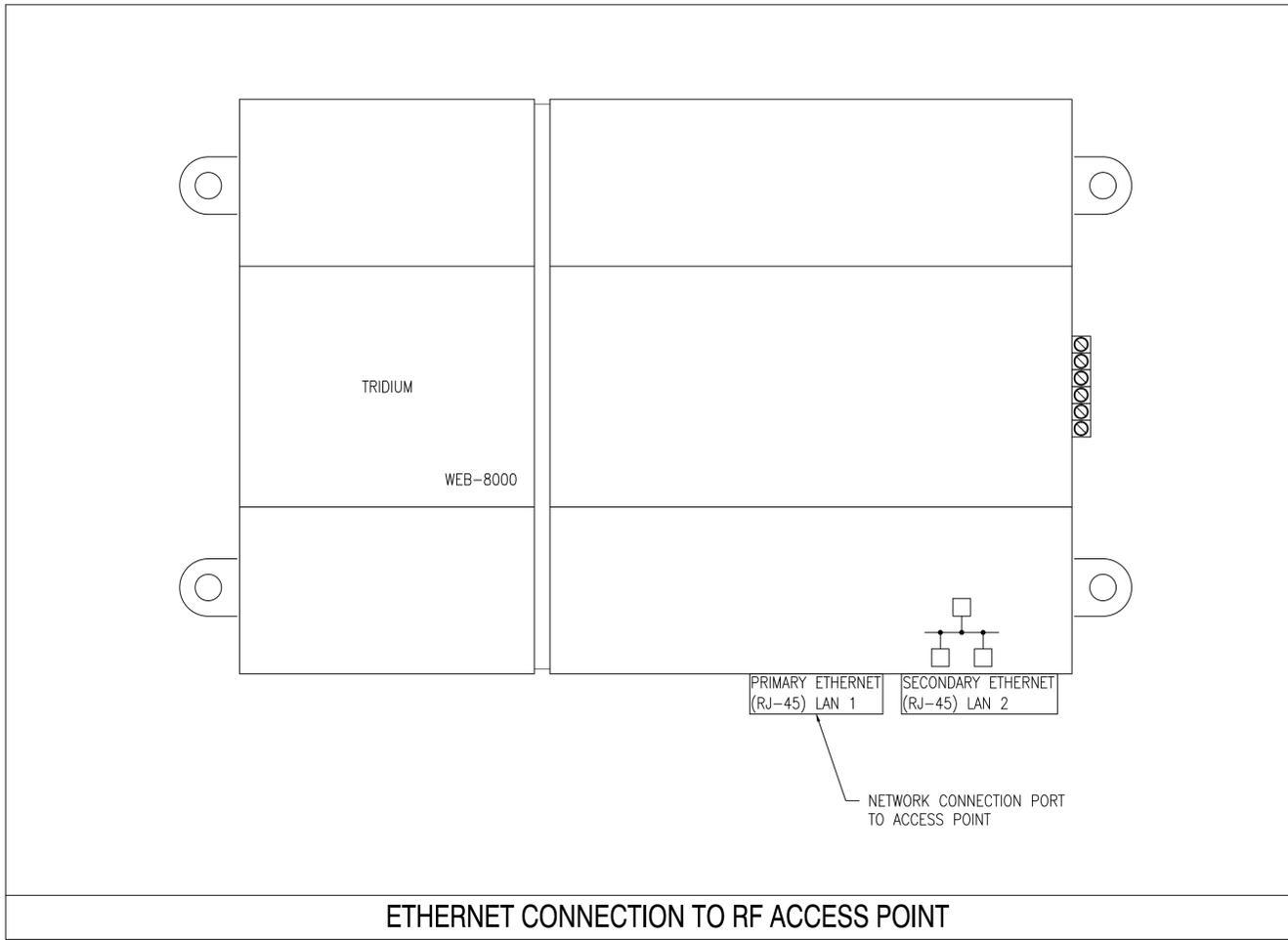
ON MODE:

- CHILLED WATER PUMPS ARE ENERGIZED AND FLOW ESTABLISHED
- PACKAGED CHILLER IS ENERGIZED
- SCROLL COMPRESSORS STAGE ON TO MAINTAIN DISCHARGE WATER TEMPERATURE OF 44°F (ADJ.)

ALARMS:

- PUMP FAILURE SENDS SIGNAL TO DDC FRONT END
- GENERAL FAILURE ALARM FROM CHILLER CONTROL PANEL

PACKAGED CHILLER SEQUENCE OF OPERATION



OFF MODE

- SUPPLY FAN IS OFF
- ACCU OFF
- COMPRESSOR IS OFF
- ELECTRIC REHEAT COIL IS OFF
- HUMIDIFIER IS OFF

HUMIDIFY MODE

- SUPPLY FAN IS ON
- ACCU ON
- ELECTRIC REHEAT COIL IS OFF
- SETPOINT IS 70°F(ADJ)
- IF ROOM RELATIVE HUMIDITY (RH) DROPS BELOW 45% (ADJ) FOR TEN MINUTES AS MEASURED BY HSTAT, HUMIDIFICATION CYCLE SHALL BE ACTIVATED.
- HUMIDIFIER IS ON

DEHUMIDIFICATION MODE

- SUPPLY FAN IS ON
- ACCU ON
- HUMIDIFIER IS OFF
- SETPOINT IS 70°F(ADJ)
- IF ROOM RELATIVE HUMIDITY (RH) RISES ABOVE 55% (ADJ) FOR TEN MINUTES AS MEASURED BY HSTAT, DEHUMIDIFICATION CYCLE SHALL BE ACTIVATED.
- ELECTRIC REHEAT COIL IS ON
- DEHUMIDIFICATION CYCLE ENDS WHEN SPACE HUMIDITY RISES ABOVE 55% (ADJ).

BE ACTIVATED.

- ELECTRIC REHEAT COIL IS ON
- DEHUMIDIFICATION CYCLE ENDS WHEN SPACE HUMIDITY DROPS BELOW 45% (ADJ).

ALARMS & SAFETIES

- WHEN SMOKE DETECTOR IS ACTIVATED, CRAC AND ACCU IS SHUTDOWN
- WHEN FAN FAILS UNIT SHUTS DOWN

CRAC CONTROL SEQUENCE

REV	DATE	DESCRIPTION
4	08/07/2015	100% SUBMISSION
3	07/24/2015	100% REVIEW SUBMISSION
2	06/04/2015	90% SUBMISSION
1	04/24/2015	80% SUBMISSION
0	02/23/2015	35% SUBMISSION

APPROVED FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES: JC | DWS: SV | CHG: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION: X

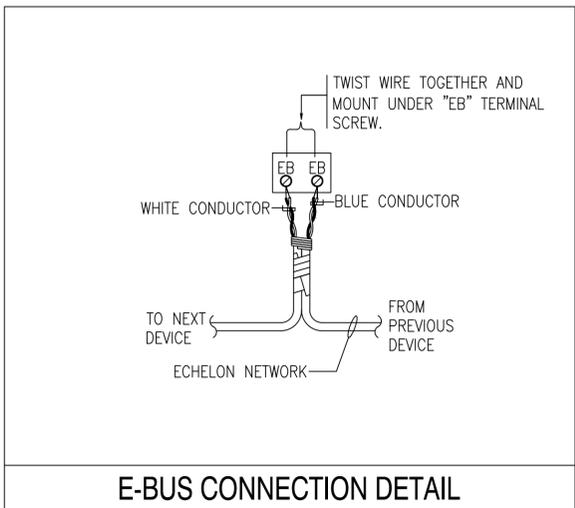
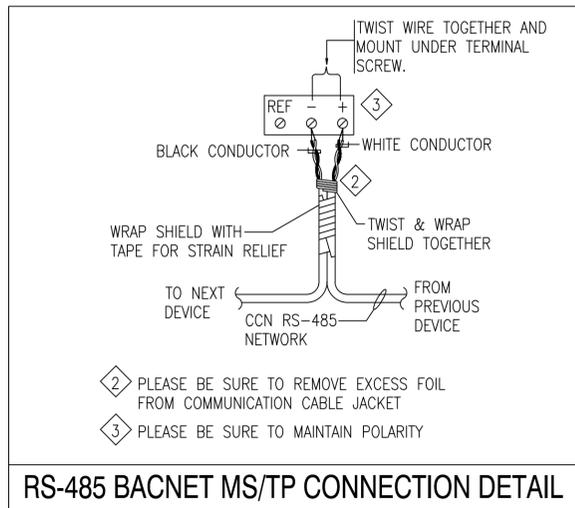
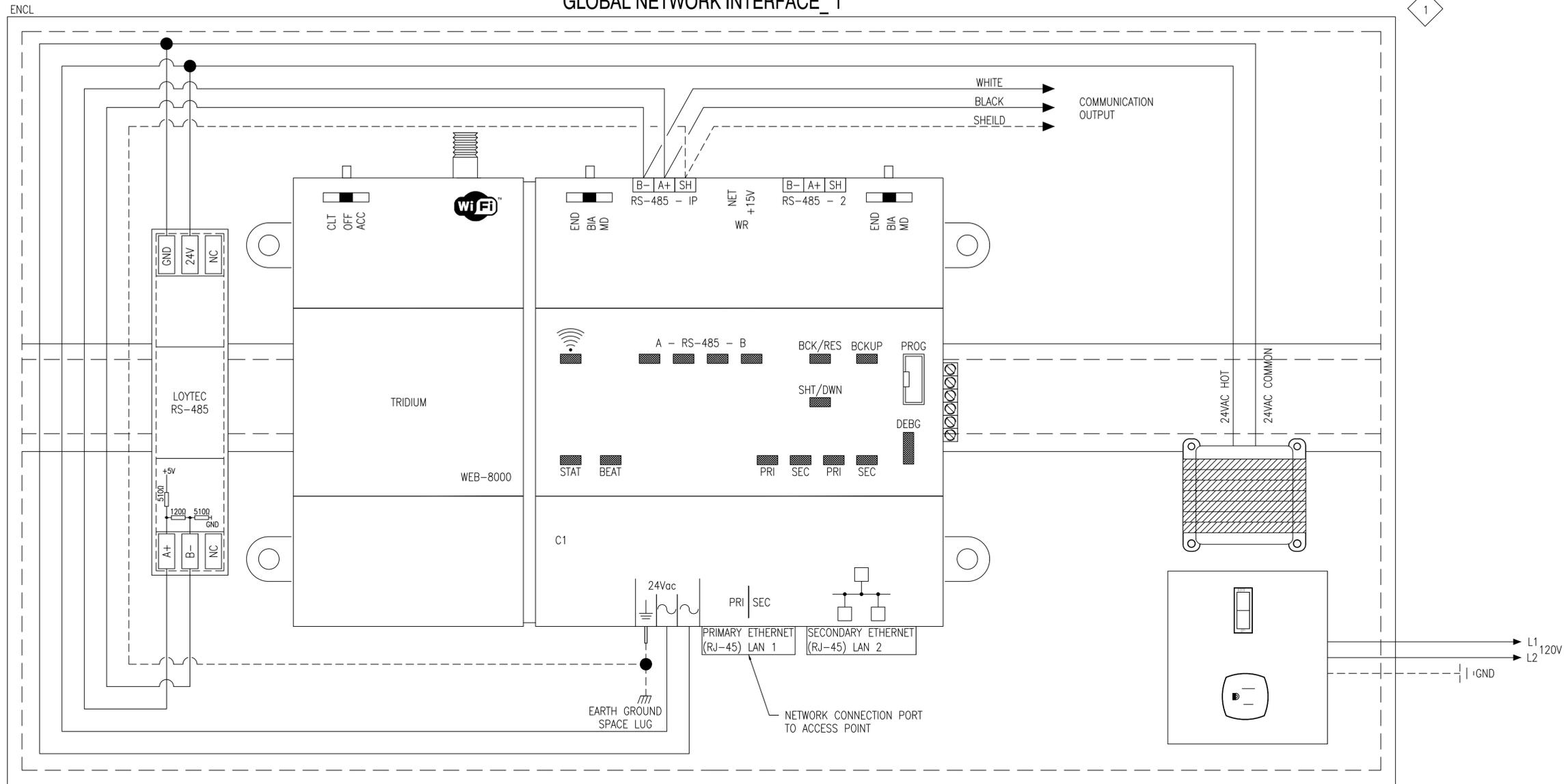
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

**FY 16 ENERGY PROJECT
TASK 1-B-R-22**

BUILDING 18 HVAC CONTROLS

PROJECT NO.: 1350913
CONSTR. CONTR. NO.: N40085-XX-C-XXXX
NAVFAC DRAWING NO.: 12703486
SHEET 33 OF 506
M3.1 18-15-572
DRAWING REVISION: 10 OCTOBER 2014

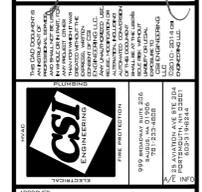
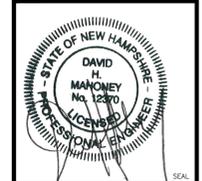
GLOBAL NETWORK INTERFACE_1



1 LOCATION OF CONTROLLER TO BE FIELD VERIFIED

PANEL MATERIAL			
ITEM NO	MODEL	DESCRIPTION	QTY
C1	J-8000	N4 WEB BASED GLOBAL NETWORK INTERFACE	1
ENCL	ENC-001	12"x18"x4" ENCLOSURE W/ 24V TRANSFORMER	1
EOL1	209541B	END OF LINE RESISTOR	1
LT1	LT-B4	RS-485 NETWORK TERMINATOR	1

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED:
 FOR COMMANDER NAVFAC
 ACTIVITY
 SATISFACTORY TO DATE
 DES: JC | PRW: SV | CHR: DM
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM: AMIN BAHRROUR PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
BUILDING 18 HVAC CONTROLS

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703487
 SHEET 34 OF 506
M3.2 18-15-573

COMPUTER ROOM AIR-CONDITIONING UNIT SCHEDULE

TAG No.	SERVICE	ASSOCIATED OUTDOOR UNIT	CFM	SUPPLY FAN				COMPRESSOR	DX EVAPORATOR COIL				REHEAT		HUMIDIFIER			ELECTRICAL				FILTER DATA (SEE FILTER SCHEDULE)	DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES		
				TOTAL	MOTOR				TYPE	CAPACITY (MBH)		EDB (°F)	EWB (°F)	CAPACITY (MBH)	ELECTRIC		TYPE	CAPACITY LB./HR	ELEC. (KW)	V	PH				FLA	OPD
					EXTERNAL	QTY.	HP			TYPE	TOTAL				SENS.	STAGES										
CRACU-18-1	BLDG 18	ACCU-18-1	5,200	0.3	1	-	EC FAN MOTOR	DIGITAL SCROLL	130	113	75	61	51	2	15	STEAM GEN.	11	5	460	3	34	45	MERV 8	LIEBERT VS035-AAEI	1-8	
CRACU-18-2	BLDG 18	ACCU-18-2	3,000	0.5	1	2	-	DIGITAL SCROLL	62.3	58.8	75	61	56.2	2	15	STEAM GEN.	11	4.8	460	3	32	40	MERV 8	LIEBERT BU067A-AAEI	1,2,4,5,6,7,8	

NOTES: 1. PROVIDE WITH BACNET INTERFACE. 2. PROVIDE WITH CABLE LEAK DETECTION. 3. PROVIDE WITH EC PLUG FANS. 4. PROVIDE WITH ELECTRIC REHEAT. 5. PROVIDE WITH STEAM GENERATING HUMIDIFIER. 6. PROVIDE WITH DUAL-FLOAT CONDENSATE PUMP. 7. PROVIDE WITH SMOKE DETECTOR IN RETURN AIR. 8. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT. 9. PROVIDE WITH SOUND JACKETS ON DIGITAL SCROLLS.

AIR-COOLED WATER CHILLER SCHEDULE

TAG	SERVICE	LOCATION	MINIMUM CAPACITY (TONS)	EVAPORATOR					REFRIG. TYPE	COMPRESSOR(S)			AMBIENT (°F)	CONDENSER FAN			ELECTRIC SERVICE				WEIGHT (LBS)	DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES	
				GPM	% GLYCOL	EWT (°F)	LWT (°F)	MAX P.D.(FT.)		QTY.	POWER (KW)	TYPE		MAX	QTY.	POWER (KW)	RPM	MAX KW	MCA (AMP)	MOP (AMP)				V
CH-18-1	BLDG 18	GROUND FLOOR	30	70	35	55	44	23	R-410A	2	28.5	SCROLL	95	3	3.7	840	32.4	66.3	90	460	3	2880	TRANE CGAM030F	SEE NOTES

NOTES: 1. PROVIDE WITH BACNET INTERFACE. 2. PROVIDE UNIT CONTROL PANEL WITH MAIN DISCONNECT. 3. PROVIDE WITH LOW-TEMPERATURE PROCESSING. 4. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT. 5. PROVIDE WITH SEACOAST RATED COATING FOR CONDENSER COIL.

JACE BOX

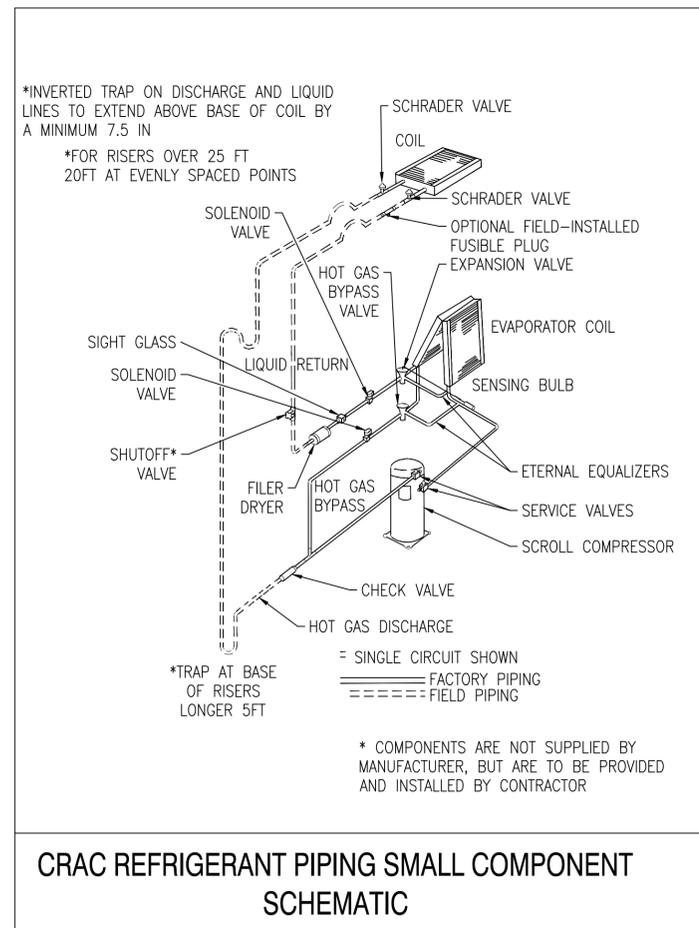
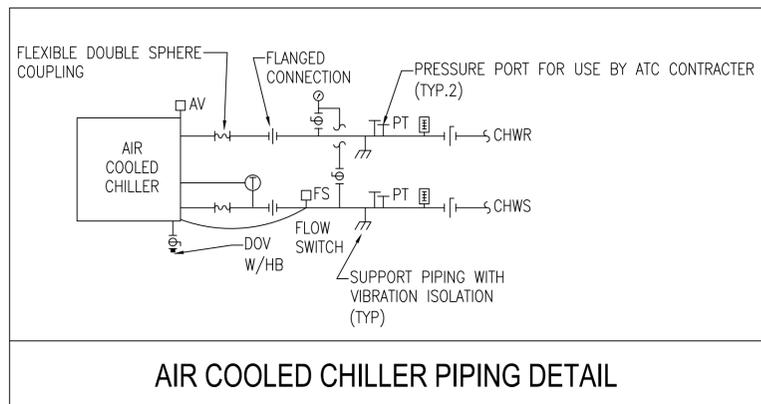
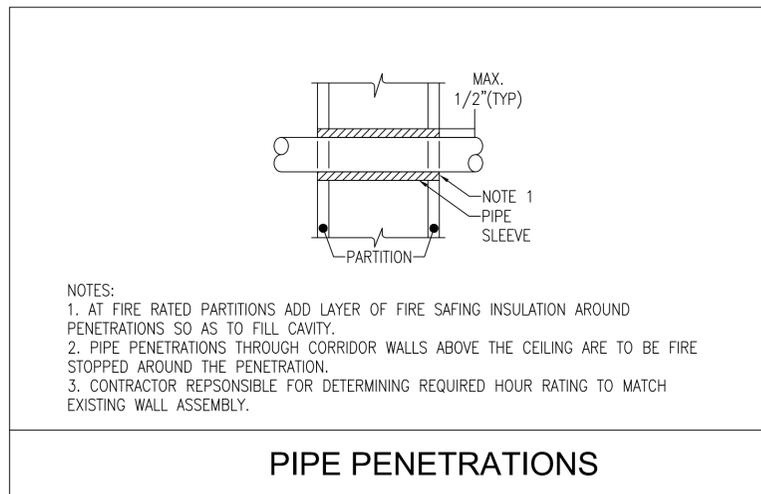
TAG NO.	LOCATION	ELECTRICAL		DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES
		AMP	V		
J-1	SEE PLANS	20	120	JACE 8000	SEE NOTES

NOTES: 1. PROVIDE W/ MEMORY UPGRADE TO 4GB. 2. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT.

AIR COOLED CONDENSING UNIT SCHEDULE

TAG	DESIGN BASED ON MANUFACTURER	DESIGN BASED ON MODEL No.	COOLING DATA		NOMINAL CONDENSER CAPACITY (KW)	ELECTRIC DATA				NOTES
			COOLING (MBH)	COOLING (KW)		VOLTS	PHASE	FLA	MOCP	
ACCU-18-1	LIEBERT	MCS056	191	56	208	3	6	15	SEE NOTES	
ACCU-18-2	LIEBERT	CF083-A	102	30	208	3	5	15	SEE NOTES	

NOTES: 1. PROVIDE UNIT CONTROL PANEL WITH MAIN DISCONNECT. 2. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT. 3. PROVIDE WITH SEACOAST RATED COATING FOR CONDENSER COIL.



DM	08/07/2015
DM	07/24/2015
DM	06/04/2015
DM	04/24/2015
DM	02/23/2015
APPR	DATE

4	100% SUBMISSION	08/07/2015
3	100% REVIEW SUBMISSION	07/24/2015
2	90% SUBMISSION	06/04/2015
1	80% SUBMISSION	04/24/2015
0	35% SUBMISSION	02/23/2015
SN	DESCRIPTION	DATE

APPROVED:

FOR COMMANDER NAVFAC

ACTIVITY

SAISFACTORY TO DATE

DES: JC | PRW: SV | CHK: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

FY 16 ENERGY PROJECT
TASK 1-B-R-22

BUILDING 18 HVAC SCHEDULES AND DETAILS

PROJECT NO.: 1350913
CONSTR. CONTR. NO.: N40085-XX-C-XXXX
NAVFAC DRAWING NO.: 12703488
SHEET 35 OF 506
M4.0 18-15-574
DRAWING REVISION: 10 OCTOBER 2014

WARNING

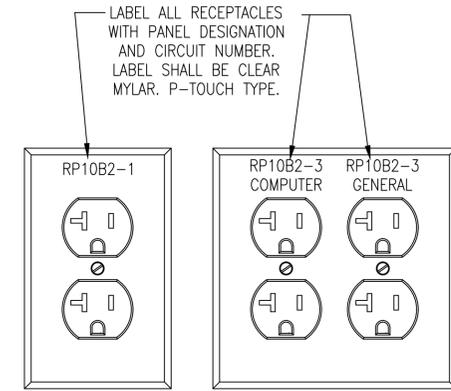
ARC FLASH AND SHOCK HAZARD
APPROPRIATE PPE REQUIRED

EQUIPMENT TYPE: _____
GROUNDING: _____
WORK DISTANCE: _____

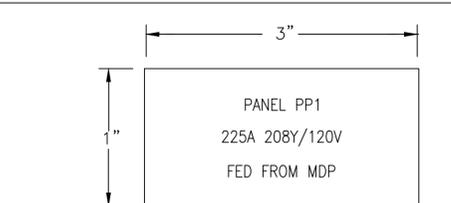
AVAILABLE 3Ø BOLTED CURRENT: _____ kA
FLASH PROTECTION BOUNDARY: _____ INCHES
INCIDENT ENERGY AT 23 INCHES: _____ cal/cm²
PPE LEVEL: _____
DATE: _____

- NOTES:
- REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
 - PROVIDE ON ALL IN-LINE METER SOCKETS, SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS AND MOTOR CONTROL CENTERS IN ACCORDANCE WITH NEC 110.16.

TYPICAL FLASH PROTECTION WARNING LABEL

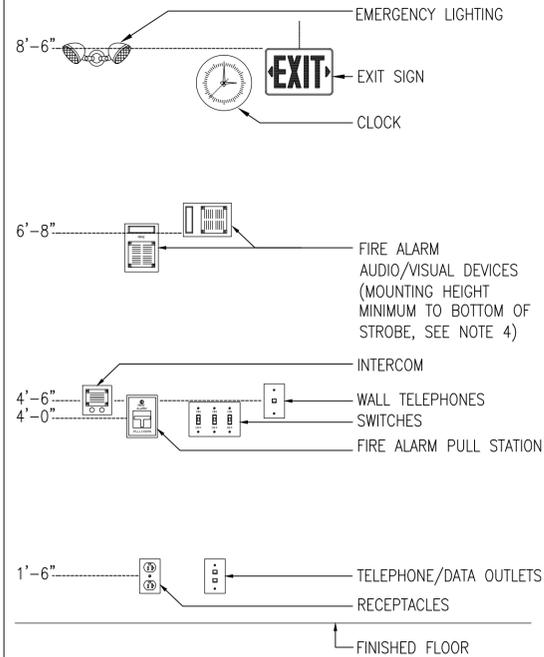


RECEPTACLE LABEL REQUIREMENTS



- NOTES:
- REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
 - NAMEPLATE TO BE 1/16" THICK PLASTIC WITH WHITE CENTER LAMINATION. FACE SHALL BE BLACK, ENGRAVED LETTERS SHALL BE WHITE.
 - SECURE NAMEPLATE TO SURFACES WITH HIGH STRENGTH ADHESIVE CEMENT. UTILIZE MECHANICAL FASTENERS FOR ALL EXTERIOR LOCATIONS.
 - TYPICAL FOR "STARTERS", "DISCONNECTS", AND "TRANSFORMERS".

TYPICAL NAMEPLATE DETAIL



- NOTES:
- ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGNS, CLOCKS, EMERGENCY LIGHTING AND FIRE ALARM A/V DEVICES.
 - DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
 - ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.
 - STROBE HEIGHT ILLUSTRATED AT MAXIMUM HEIGHT. STROBE SHALL BE 80" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER.

TYPICAL DEVICE MOUNTING HEIGHTS DETAIL

ELECTRIC ABBREVIATIONS

A/AMP AMPERE	LTG LIGHTING
AC ALTERNATING CURRENT	MCB MAIN CIRCUIT BREAKER
ADA AMERICAN WITH DISABILITIES ACT	MEC MASSACHUSETTS ELECTRIC CODE
AF AMPERE FRAME	MH MANHOLE
AFF ABOVE FINISHED FLOOR	MLO MAIN LUGS ONLY
AFG ABOVE FINISHED GRADE	MTD MOUNTED
AIC AMPERE INTERRUPTING CAPACITY	MTG MOUNTING
AL ALUMINUM	NEC NATIONAL ELECTRIC CODE
AT AMPERE TRIP	NTS NOT TO SCALE
ATS AUTOMATIC TRANSFER SWITCH	# NUMBER
AWG AMERICAN WIRE GAUGE	PVC POLYVINYL CHLORIDE
C CONDUIT	PWR POWER
CATV CABLE TELEVISION	RGS RIGID GALVANIZED STEEL
CCTV CLOSED CIRCUIT TELEVISION	SWBD SWITCHBOARD
CB CIRCUIT BREAKER	TEL TELEPHONE
CKT CIRCUIT	TERM TERMINAL
ε CENTERLINE	TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
DWG DRAWING	TSP TWISTED SHIELDED PAIR
EC ELECTRICAL CONTRACTOR	TYP TYPICAL
EML ELECTRICAL METALLIC TUBING	UNO UNLESS OTHERWISE NOTED
FLMT FLEXIBLE LIQUID TIGHT METALLIC TUBING	UPS UNINTERRUPTIBLE POWER SUPPLY
GFI GROUND FAULT INTERRUPTING	UTP UNSHIELDED TWISTED PAIR
GND GROUND	V VOLT
HH HANDHOLE	VA VOLT AMPERE
HP HORSEPOWER	VFD VARIABLE FREQUENCY DRIVE
HVAC HEATING, VENTILATION AND AIR CONDITIONING	W WATT
HZ HERTZ	WP WEATHERPROOF
IG ISOLATED GROUND	
KVA KILOVOLT - AMPERE	
KW KILOWATT	

MOTOR & CONTROLS LEGEND

SYMBOL	DESCRIPTION
30AS 3R	DISCONNECT SWITCH RATED 30AMP, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "30AS" - INDICATES 30A SWITCH
30AS 15AF	FUSED DISCONNECT SWITCH, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "30AS" - INDICATES 30AMP SWITCH "15AF" - INDICATES 15AMP FUSES
UCB	DDC CONTROL JACE BOX, PROVIDED BY TRADE CONTRACTOR. FIELD COORDINATE EXACT LOCATION.

ELECTRIC SYSTEM TAGS OR CALL OUT SYMBOLS

SYMBOL	DESCRIPTION
	EQUIPMENT SYMBOLS (REFER TO EQUIPMENT SCHEDULES)
	EQUIPMENT DESIGNATION
	EQUIPMENT REFERENCE NUMBER (TYP)
	NEW WORK NOTE TAG
	DEMOLITION NOTE TAG

POWER DISTRIBUTION LEGEND

SYMBOL	DESCRIPTION
	208Y/120 VOLT PANELBOARD, REFER TO SCHEDULE OF PANELBOARDS
	480Y/277 VOLT PANELBOARD, REFER TO SCHEDULE OF PANELBOARDS
	DRY TYPE TRANSFORMER

BRANCH CIRCUIT & FEEDER LEGEND

SYMBOL	DESCRIPTION
PP1-(X)	BRANCH CIRCUIT HOME RUN. TYPICAL 2#12 & 1#12G IN 3/4" MINIMUM. PP1-(1) INDICATES PANEL AND CIRCUIT DESIGNATION FROM WHICH HOME RUN SHALL ORIGINATE. EACH CIRCUIT SHALL BE 20A-1P (20AMP SINGLE POLE) UNLESS NOTED OTHERWISE.

EXISTING EQUIPMENT LEGEND

SYMBOL	DESCRIPTION
XM	EXISTING EQUIPMENT TO REMAIN
XR	EXISTING EQUIPMENT TO BE REMOVED
XE	EXISTING EQUIPMENT TO BE REMOVED AND NEW EQUIPMENT TO BE INSTALLED ON EXISTING BRANCH/FEEDER
	EXISTING EQUIPMENT TO REMAIN FOR INFORMATION ONLY - (XM) INDICATED BY SYMBOL WITH LIGHT OUT OF FUNCTION LINE TYPE
	EXISTING EQUIPMENT TO BE REWORKED - (XN, XL, XE, XR) INDICATED BY SYMBOL WITH DASHED AND IN FUNCTION LINE TYPE

WIRING DEVICES

SYMBOL	DESCRIPTION
# GFI	DUPLEX RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V "# - INDICATES CIRCUIT NUMBER (TYP) "WP" - INDICATES WEATHERPROOF (TYP) "GFI" - INDICATES GROUND FAULT INTERRUPTER

ELECTRIC GENERAL NOTES

- THE ELECTRICAL DEMOLITION PLANS AND DETAILS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE SUBMISSION OF BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE FOR REMOVAL. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF WORK. DAMAGE SHALL INCLUDE BUT NOT LIMITED TO THE DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR BE SALVAGED.
- THE ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINT OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE CUT FLUSH AT THE SURFACE FOR PATCHING BY TRADE CONTRACTOR. ALL CIRCUIT BREAKERS ASSOCIATED WITH THE DEMOLITION SCOPE SHALL BE DE-ENERGIZED AND LABELED AS SPARE.
- ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF UNLESS IDENTIFIED FOR REUSE OR TURNED OVER TO OWNER. THE OWNER'S REPRESENTATIVE SHALL INSPECT ALL RETAINED ITEMS PRIOR TO PLACEMENT IN THE IDENTIFIED STORAGE LOCATION BY THE ELECTRICAL CONTRACTOR.
- CIRCUIT NUMBERS ARE DIAGRAMMATIC. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD AND REFLECTED ON AS-BUILT DOCUMENTATION BY THE ELECTRICAL CONTRACTOR. CIRCUITRY HAS BEEN DETERMINED BASED UPON INFORMATION GATHERED, ASSUMPTIONS, AND INFORMATION OBTAINED FROM NAVFAC. EXACT CIRCUITING, EQUIPMENT SIZES, AND CONDUIT AND WIRING SIZES MAY DIFFER IN THE FIELD FROM WHAT IS SHOWN ON THE DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TRACING ALL CIRCUITS BEING DEMOLISHED AND REUSED PRIOR TO DISCONNECTING, VERIFYING EXISTING CIRCUITRY AND EQUIPMENT SIZES, AND SHALL SIZE ALL NEW EQUIPMENT AND BRANCH CIRCUITRY ACCORDINGLY IF ACTUAL CONDITIONS DIFFER FROM WHAT IS SHOWN ON THE DRAWINGS. THE ASSOCIATED CIRCUIT NUMBERS THAT ARE APPLIED TO EACH DEVICE AND PIECE OF EQUIPMENT INFERS INTERCONNECTING BRANCH CIRCUITRY. INTERCONNECTING BRANCH WIRING SHALL BE SIZED EQUAL TO THE HOMERUN UNLESS NOTED OTHERWISE.
- VOLTAGE DROP HAS BEEN CONSIDERED IN THE DESIGN OF ALL BRANCH CIRCUITRY AND FEEDER SIZES BASED UPON THE ILLUSTRATED EQUIPMENT LAYOUTS AND SHORTEST CONDUCTOR/RACEWAY ROUTING. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR DEVIATIONS TAKEN THAT WILL INCREASE CONDUCTOR/RACEWAY ROUTING LENGTHS. BRANCH CIRCUITS LONGER THAN 75' FOR 120V FROM PANEL TO LAST OUTLET SHALL BE INCREASED A MINIMUM OF ONE SIZE ABOVE THAT SPECIFIED TO LIMIT VOLTAGE DROP TO LESS THAN 3%. FEEDERS SHALL FOLLOW SIMILAR GUIDELINES AND BE LIMITED TO 2% DROP.
- THE ELECTRICAL NEW WORK PLANS DO NOT SHOW ALL ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION AMONG TRADES TO DETERMINE ALL ACCESSORIES AND COMPONENTS REQUIRED TO FORM A COMPLETE AND FUNCTIONAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY ACCESSORIES AND COMPONENTS NEEDED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM AND SHALL BE RESPONSIBLE TO ENSURE THE INTEGRITY AND SAFETY OF THE SYSTEM AFTER COMPLETION. THE ELECTRICAL CONTRACTOR SHALL TAKE ALL NECESSARY STEPS AND PROVIDE ALL ADDITIONAL COMPONENTS NEEDED TO ENSURE THE SYSTEM IS SAFE UPON COMPLETION OF THE PROJECT.
- ROUTING IS DIAGRAMMATIC. CONTRACTOR SHALL DETERMINE ROUTING IN FIELD AND RE-USE EXISTING PENETRATIONS WHERE POSSIBLE.
- SEE PWD-ME DRAWING NUMBERS;
 - 43-15-67 FOR TITLE SHEET
 - 43-15-68 FOR LIST OF DRAWINGS
 - 43-15-69 FOR GENERAL NOTES & LEGENDS
 - 43-15-72 FOR CHASE AND SOFFIT DETAILS
 - 43-15-74 FOR STRUCTURAL NOTES AND SUPPORTS

SCHEDULE OF DRAWINGS

DWG#	DESCRIPTION
E1.0	BUILDING 18 ELECTRICAL LEGEND
ED2.0A	BUILDING 18 ELECTRICAL FIRST FLOOR DEMOLITION PLAN PART A
ED2.0B	BUILDING 18 ELECTRICAL FIRST FLOOR DEMOLITION PLAN PART B
ED2.1A	BUILDING 18 ELECTRICAL ROOF DEMOLITION PLAN PART A
E2.0A	BUILDING 18 ELECTRICAL FIRST FLOOR PLAN PART A
E2.0B	BUILDING 18 ELECTRICAL FIRST FLOOR PLAN PART B
E2.1A	BUILDING 18 ELECTRICAL ROOF PLAN PART A
E3.0	BUILDING 18 ELECTRICAL SCHEDULES

08/07/2015
07/24/2015
06/04/2015
04/24/2015
02/23/2015

100% SUBMISSION
100% REVIEW SUBMISSION
90% SUBMISSION
80% SUBMISSION
35% SUBMISSION

DATE
DATE
DATE
DATE
DATE

DESCRIPTION

SYMBOL

NAVAC

STATE OF NEW HAMPSHIRE
CHARLES E. MACE
No. 13078
PROFESSIONAL ENGINEER

CS1

FOR COMMANDER NAVFAC

ACTIVITY

NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTEBY, MAINE

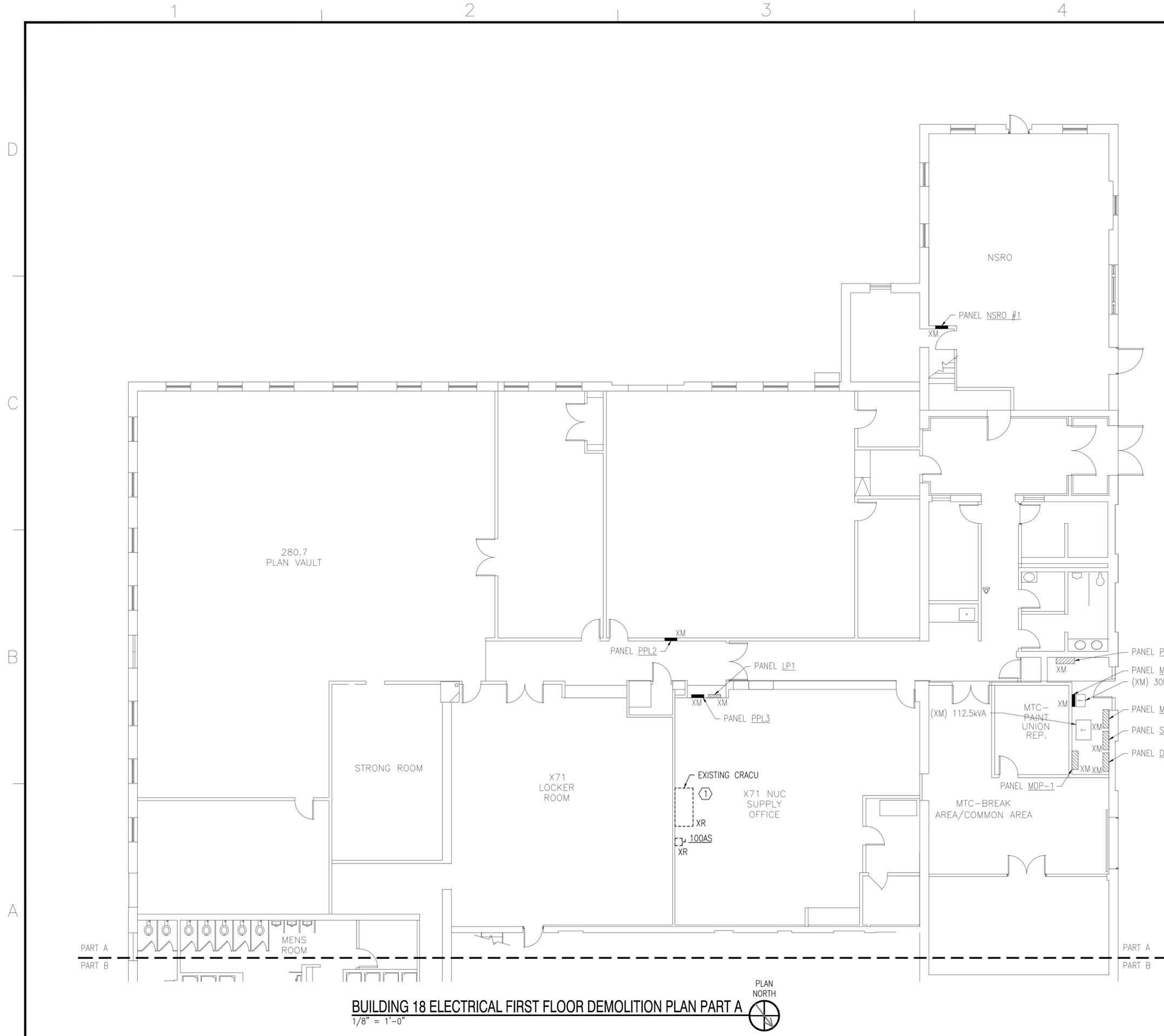
NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTEBY, MAINE

FY 16 ENERGY PROJECT
TASK 1-B-R-22

BUILDING 18 ELECTRICAL LEGEND

PROJECT NO.: 1350913
CONSTR. CONTR. NO.: N40085-XX-C-XXXX
NAVFAC DRAWING NO.: 12703489
SHEET 36 OF 506
E1.0 18-15-575

DRAWFORM REVISION: 10 OCTOBER 2014



BUILDING 18 ELECTRICAL FIRST FLOOR DEMOLITION PLAN PART A
 1/8" = 1'-0"



GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
- THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS SCHEDULED PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
- THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.

DEMOLITION KEYNOTES

- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING CRACU. DEMOLISH ASSOCIATED DISCONNECT, BRANCH CIRCUITRY, AND CIRCUIT BREAKERS IN THEIR ENTIRETY.

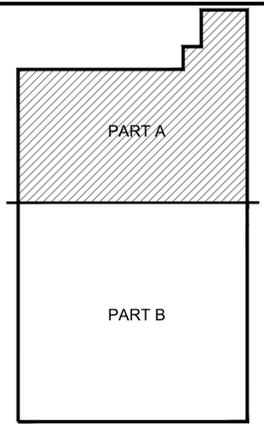
REV	DESCRIPTION	DATE	DM	APP
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3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



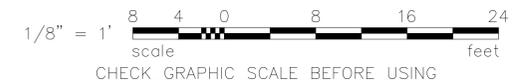
APPROVED FOR COMMANDER NAVFAC

DES: TM | PRW: TM | CHK: JO
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 FEAD/PM&E: AMIN BAHRROUR PM&E

KEY PLAN



GRAPHIC SCALE

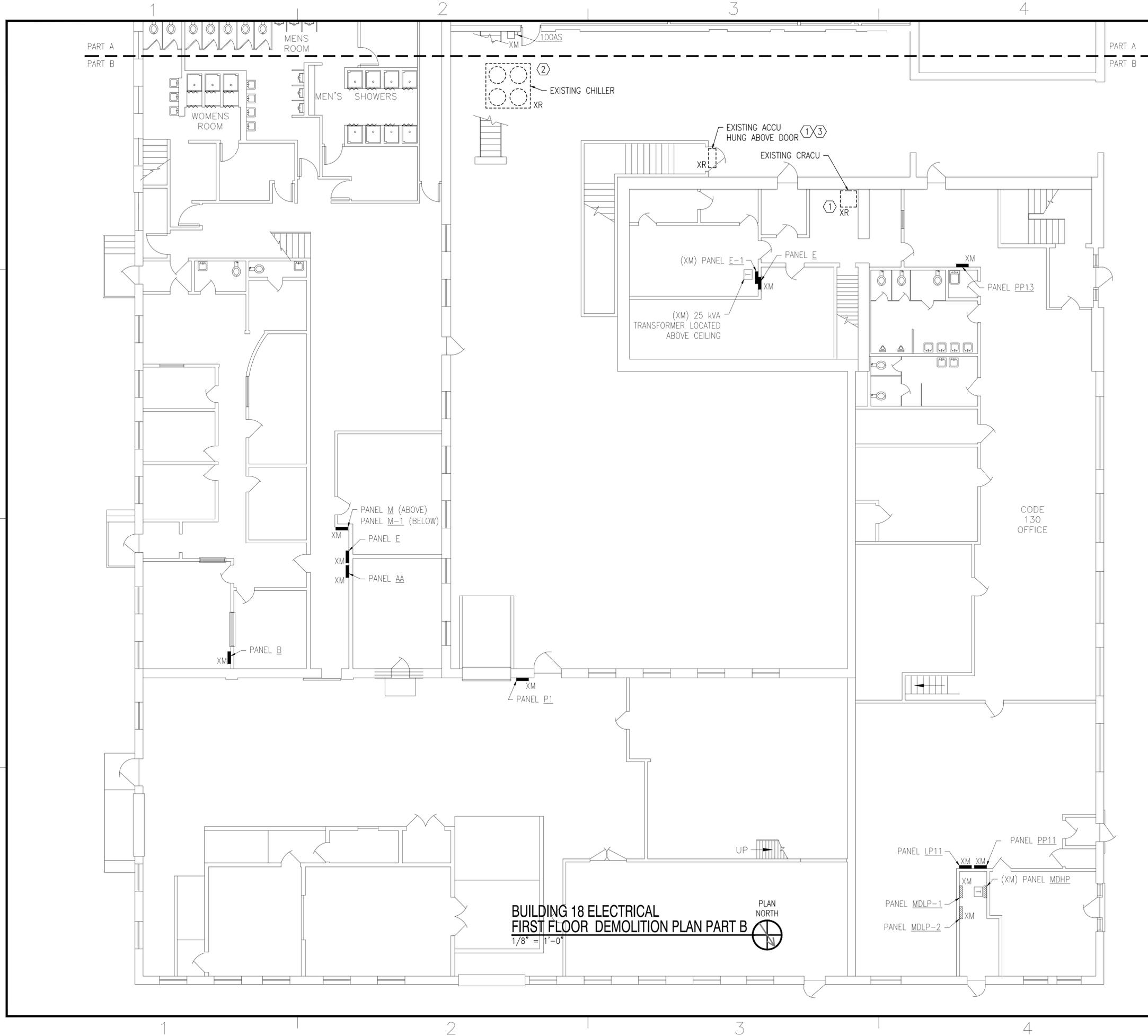


DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 18 ELECTRICAL FIRST FLOOR DEMOLITION PLAN PART A

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703490
 SHEET 37 OF 506
 ED2.0A 18-15-576
 DRAWFORM REVISION: 10 OCTOBER 2014

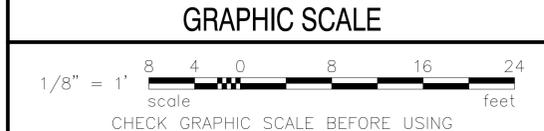
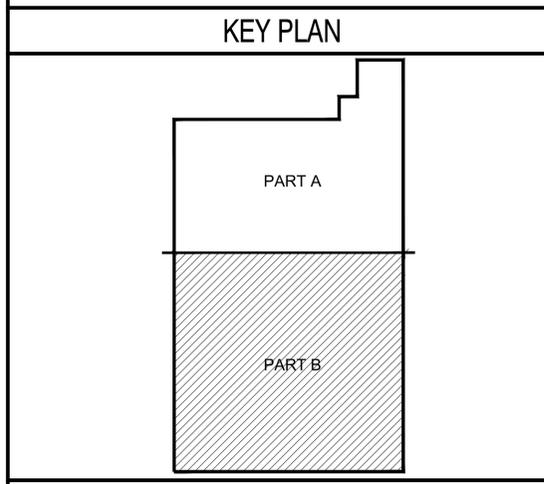


GENERAL SHEET NOTES

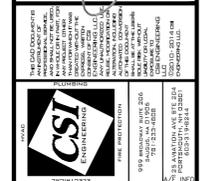
- REFER TO DRAWING E1.0 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
- THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS SCHEDULED PRIOR TO BE REMOVED WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
- THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.

DEMOLITION KEYNOTES

- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING UNIT. DEMOLISH ASSOCIATED BRANCH CIRCUITRY AND DISCONNECT IN THEIR ENTIRETY. MAINTAIN ASSOCIATED CIRCUIT BREAKER AND LABEL AS "SPARE" FOR FUTURE USE.
- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING UNIT. DEMOLISH ALL ASSOCIATED BRANCH CIRCUITRY AND DISCONNECT IN ITS ENTIRETY. MAINTAIN ASSOCIATED CIRCUIT BREAKER AND LABEL AS "SPARE" FOR FUTURE USE.
- CONTRACTOR SHALL TRACE EXISTING CIRCUIT BACK TO PANEL OF ORIGIN. REFER TO DRAWING E2.1 FOR ADDITIONAL INFORMATION.



NO	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES: TM | PRW: TM | CHK: JO

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

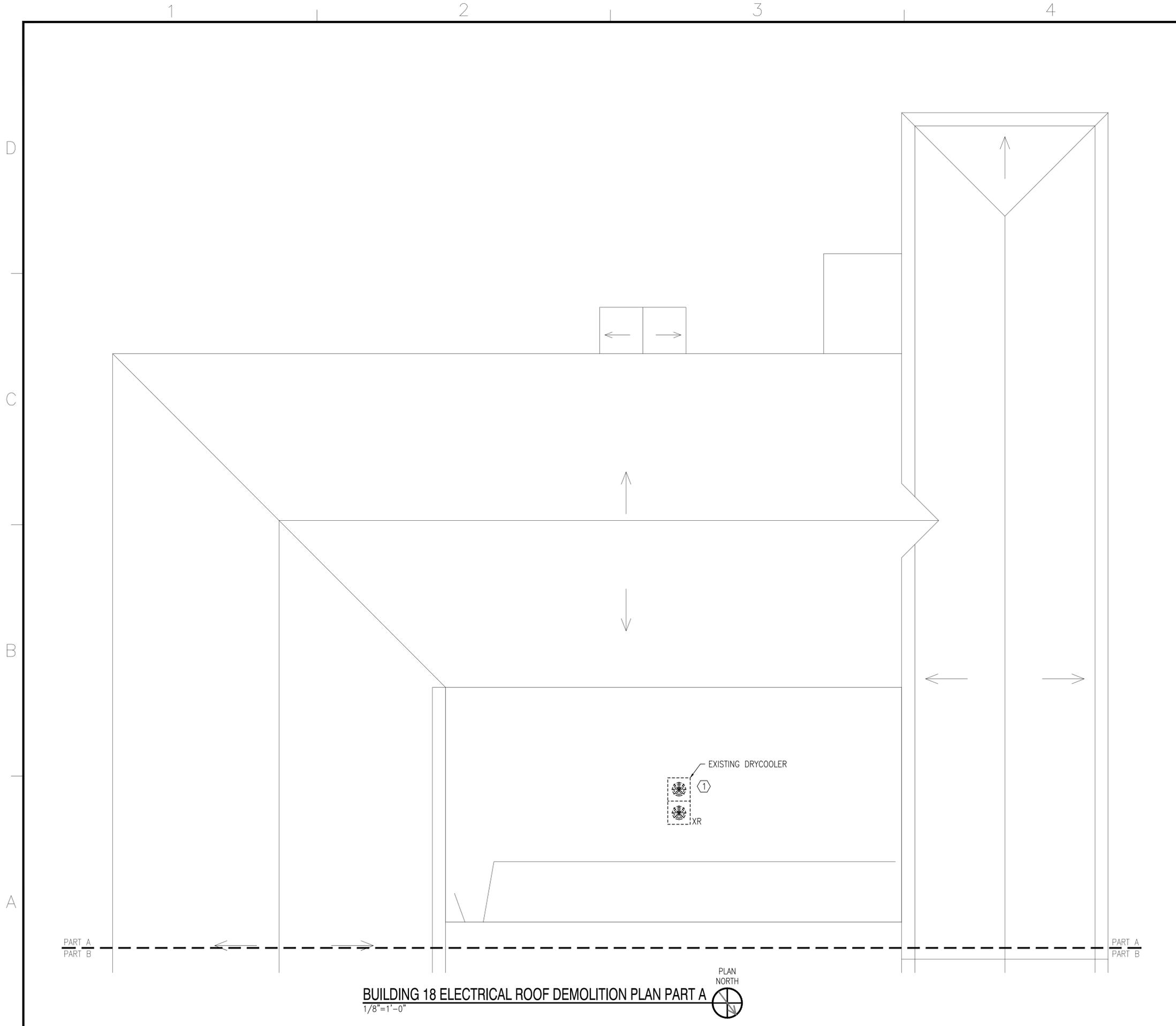
FEAD/PM&E: AMIN BAHROUR PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, MAINE
 PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 18 ELECTRICAL FIRST FLOOR DEMOLITION PLAN PART B

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703491
 SHEET 38 OF 506
 ED2.0B 18-15-577



BUILDING 18 ELECTRICAL ROOF DEMOLITION PLAN PART A
 1/8"=1'-0"



GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
- THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS SCHEDULED PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
- THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.

DEMOLITION KEYNOTES

- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING DRY COOLER. DEMOLISH ASSOCIATED BRANCH CIRCUITRY, DISCONNECT AND CIRCUIT BREAKER IN THEIR ENTIRETY.

REV	DESCRIPTION	DATE	DM	APP
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



APPROVED:
 FOR COMMANDER NAVFAC

SATISFACTORY TO: _____ DATE: _____

DES: **TM** | DRW: **TM** | CHK: **JO**

PM/DM: **PETER STOCKLESS**

BRANCH MANAGER: **BRUCE LITALIEN**

FEAD/PM&E: **AMIN BAHRROUR PM&E**

FIRE PROTECTION: **X**

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 18 ELECTRICAL ROOF DEMOLITION PLAN PART A

PROJECT NO.: 1350913

CONSTR. CONTR. NO.: N40085-XX-C-XXXX

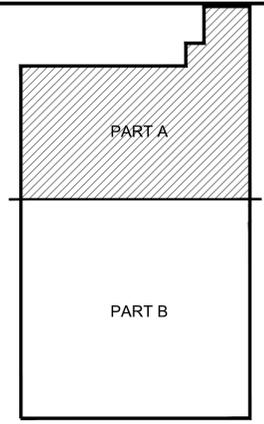
NAVFAC DRAWING NO.: 12703492

SHEET 39 OF 506

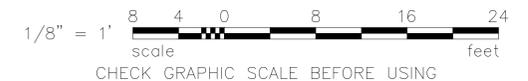
ED2.1A 18-15-578

DRAWFORM REVISION: 10 OCTOBER 2014

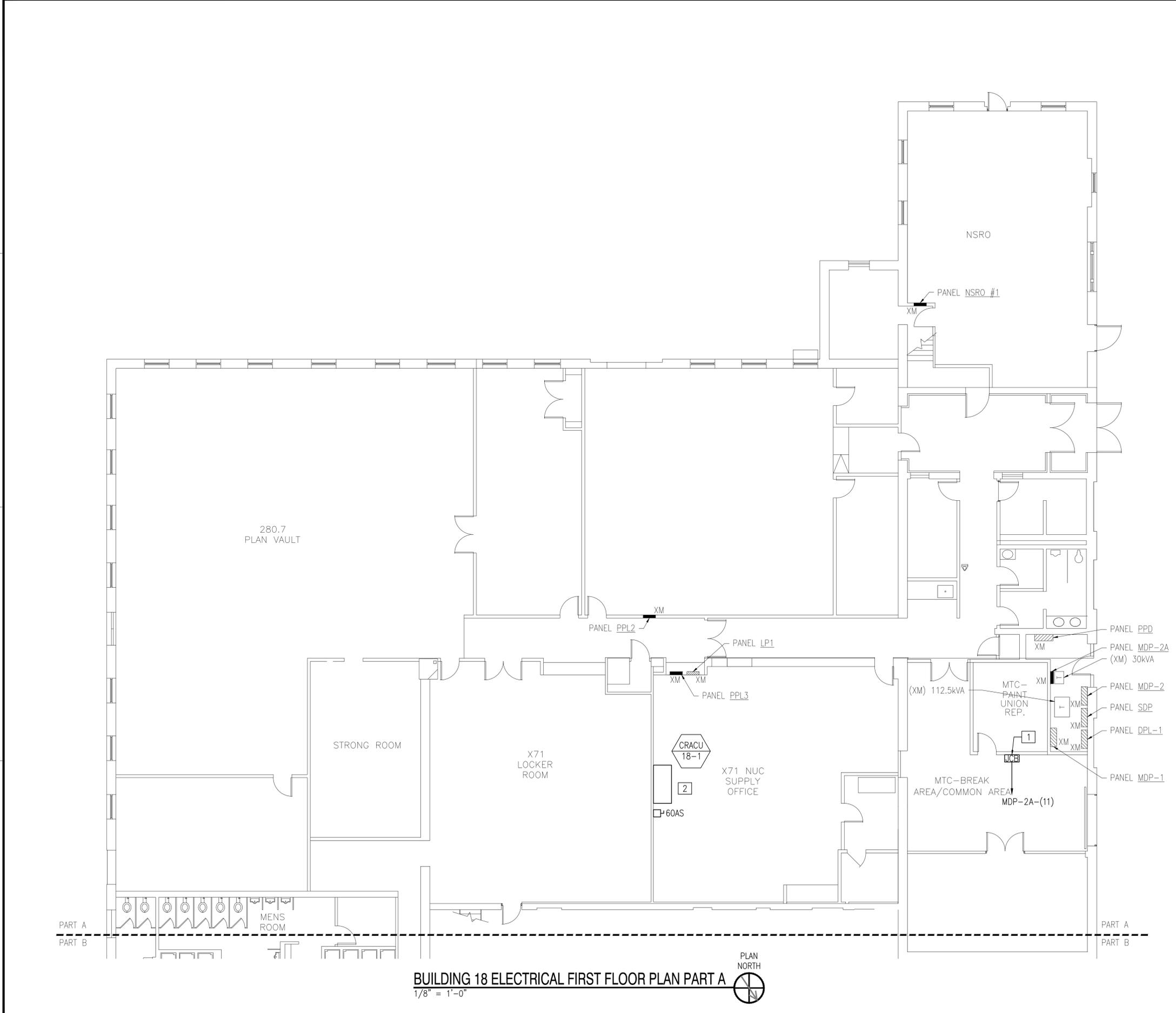
KEY PLAN



GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING



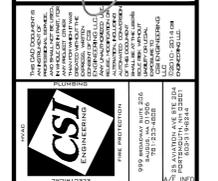
GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- POWER BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT FROM THE PANEL TO THE FIRST DEVICE AND/OR WHERE EXPOSED. POWER BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
- MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.
- FINAL LOW-VOLTAGE CONNECTIONS TO BE MADE BY CONTROLS CONTRACTOR. FIELD COORDINATE EXACT LOCATION OF EQUIPMENT WITH CONTROLS CONTRACTOR AND NAVFAC.
- FIRE ALARM BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT FROM THE PANEL TO THE FIRST DEVICE AND/OR WHERE EXPOSED. FIRE ALARM BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
- MC CABLE FOR FIRE ALARM SERVICE SHALL HAVE A RED IDENTIFIER ALONG ITS ENTIRE LENGTH. JUNCTION BOX COVERS AND CONDUIT COUPLINGS FOR ALL FIRE ALARM WIRING RACEWAYS SHALL BE PAINTED RED PRIOR TO INSTALLATION.
- MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING FIRE ALARM DEVICES TO REMAIN.

NEW WORK KEYNOTES

- NEW DDC JACE BOX PROVIDED BY TRADE CONTRACTOR. FIELD COORDINATE EXACT LOCATION WITH NAVFAC AND CONTROLS CONTRACTOR.
- PROVIDE NEW CIRCUIT BREAKER IN PANEL "DPL-1" FOR NEW CRACU. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.

REV	DESCRIPTION	DATE	DM	APP
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



APPROVED:
FOR COMMANDER NAVFAC

SATISFACTORY TO	DATE
DES: TM	DRW: TM
CHK: JO	
PM/DM	PETER STOCKLESS
BRANCH MANAGER	BRUCE LITALIEN
FEAD/PM&E	AMIN BAHRROUR PM&E

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL SHIPYARD - PORTSMOUTH, MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

KEY PLAN

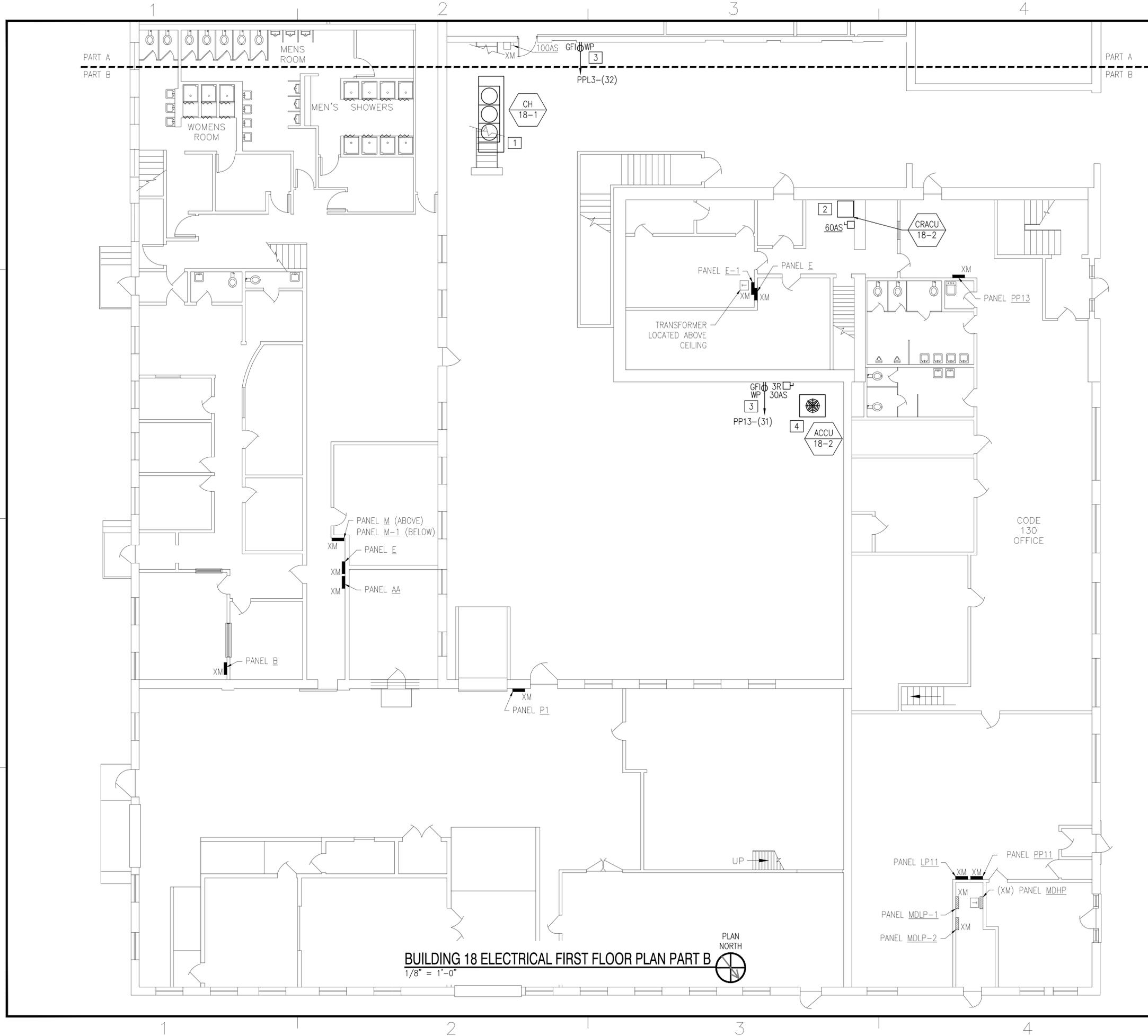
GRAPHIC SCALE

1/8" = 1' scale

8 4 0 8 16 24 feet

CHECK GRAPHIC SCALE BEFORE USING

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703493
SHEET	40 OF 506
E2.0A	18-15-579



BUILDING 18 ELECTRICAL FIRST FLOOR PLAN PART B
 1/8" = 1'-0"

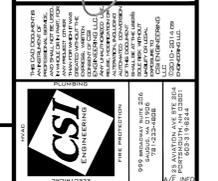
GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- POWER BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT FROM THE PANEL TO THE FIRST DEVICE AND/OR WHERE EXPOSED. POWER BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
- MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.

NEW WORK KEYNOTES

- PROVIDE NEW CIRCUIT BREAKER IN PANEL "PPD" FOR NEW CHILLER. CONNECT NEW CHILLER TO EXISTING DISCONNECT MAINTAINED DURING DEMOLITION. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.
- PROVIDE NEW CIRCUIT BREAKER IN PANEL "PPD" FOR NEW UNIT. PROVIDE NEW DISCONNECT AS SHOWN. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.
- ELECTRICAL CONTRACTOR TO FIELD VERIFY IF A RECEPTACLE EXISTS WITHIN 6 FEET OF NEW UNIT. IF NO RECEPTACLE EXISTS, PROVIDE NEW AS SHOWN. REFER TO PANELBOARD SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.
- SOURCE PANELBOARD FEEDING EXISTING UNIT NOT ABLE TO BE DETERMINED BY VISUAL OBSERVATIONS. ELECTRICAL CONTRACTOR SHALL TRACE CIRCUIT TO DETERMINE PANEL OF ORIGIN AND PROVIDE NEW CIRCUIT BREAKER AND FEEDER PER THE MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 IN PANEL OF ORIGIN. CONTRACTOR SHALL ASSUME A FEEDER LENGTH OF 35 FEET FROM NEW CONDENSING UNIT TO SOURCE PANEL. IF EXISTING BREAKER AND FEEDER ARE THE SAME AS NEW, REUSE EXISTING CIRCUIT BREAKER AND FEEDER FOR NEW EQUIPMENT AND EXTEND EXISTING CIRCUIT AS REQUIRED TO NEW LOCATION.

REV	DESCRIPTION	DATE	DM	APPR
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



APPROVED:		
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO	DATE	
DES: TM	DRW: TR	CHK: JO
PM/DM	PETER STOCKLESS	
BRANCH MANAGER	BRUCE LITALIEN	
FEAD/PM&E	AMIN BAHROUR PM&E	
FIRE PROTECTION	X	

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, MAINE
 PORTSMOUTH NAVAL SHIPYARD
 RITERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 18 ELECTRICAL FIRST FLOOR PLAN PART B

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703494
SHEET	41 OF 506
E2.0B	18-15-580

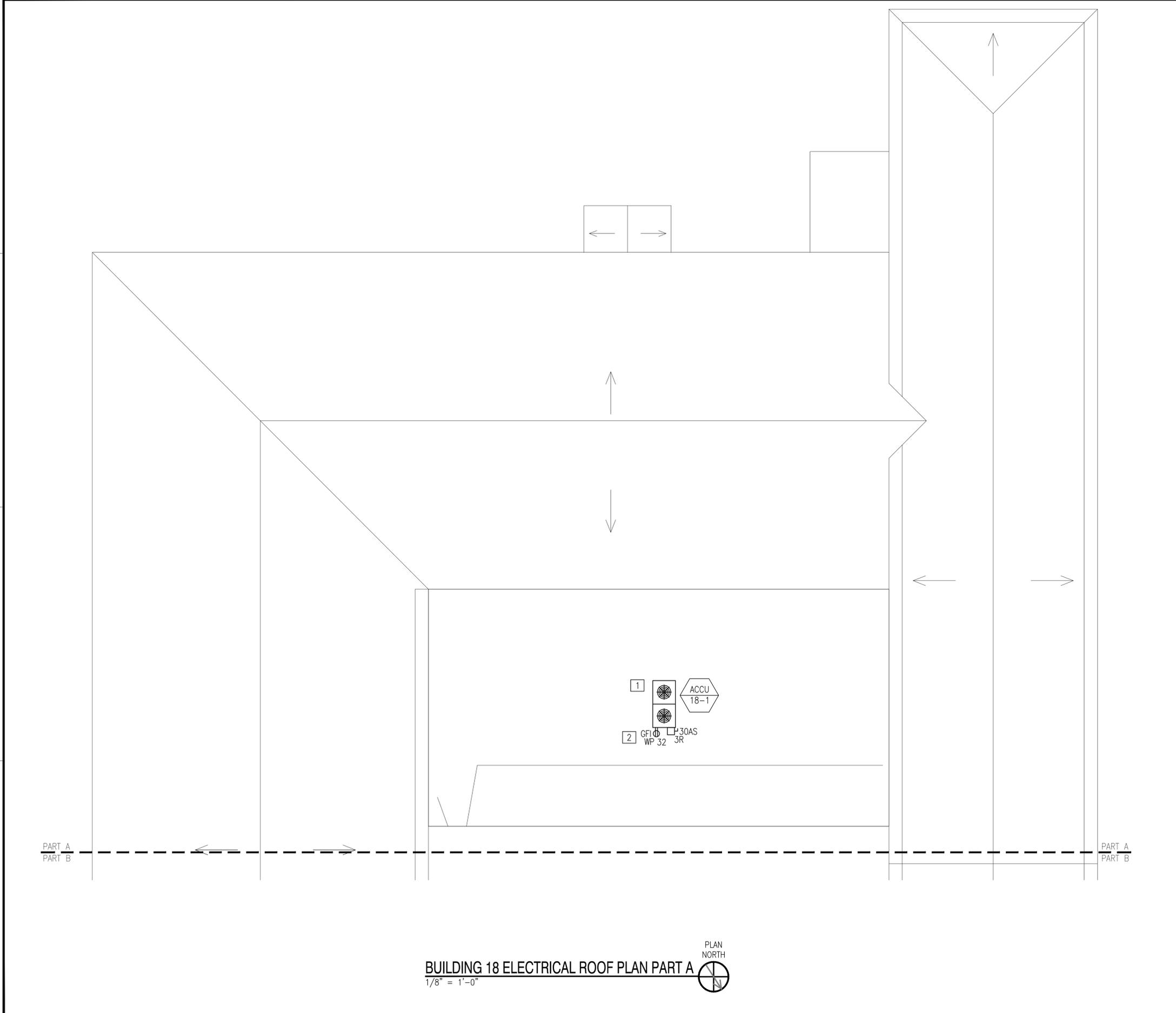
KEY PLAN

GRAPHIC SCALE

1/8" = 1' scale

0 8 16 24 feet

CHECK GRAPHIC SCALE BEFORE USING



BUILDING 18 ELECTRICAL ROOF PLAN PART A
 1/8" = 1'-0"



GENERAL SHEET NOTES

1. REFER TO DRAWING E1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. POWER BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT FROM THE PANEL TO THE FIRST DEVICE AND/OR WHERE EXPOSED. POWER BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
3. MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.

NEW WORK KEYNOTES

1. PROVIDE NEW CIRCUIT BREAKER IN PANEL "PPL3" FOR NEW ACCU. PROVIDE NEW DISCONNECT AS SHOWN. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.
2. PROVIDE NEW RECEPTACLE FOR NEW UNIT. NEW RECEPTACLE TO BE POWERED FROM THE SAME CIRCUIT AS THE NEW CHILLER RECEPTACLE ON DRAWING E2.1. REFER TO PANELBOARD SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.

REV	DESCRIPTION	DATE	DM	APPR
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



APPROVED:
 FOR COMMANDER NAVFAC

SATISFACTORY TO: _____ DATE: _____

DES: **TM** | DRAW: **TM** | CHK: **JO**
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHROUR PM&E

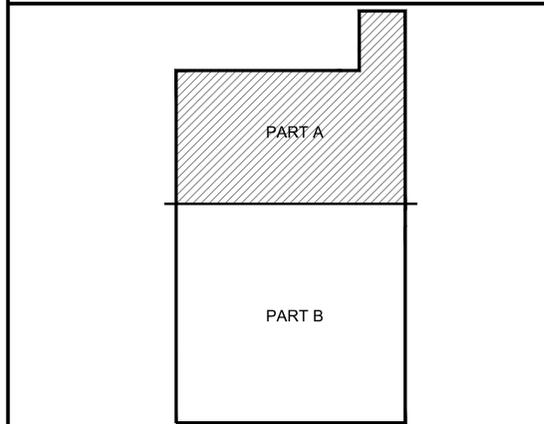
FIRE PROTECTION: _____
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL SHIPYARD - PORTSMOUTH, NH
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 18 ELECTRICAL ROOF PLAN PART A

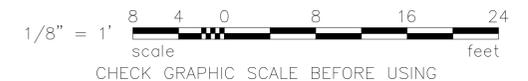
PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703495
 SHEET 42 OF 506
E2.1A 18-15-581

DRAWING REVISION: 10 OCTOBER 2014

KEY PLAN



GRAPHIC SCALE



PANELBOARD SCHEDULE											
PANEL: PPD		VOLTS: 277/ 480			NEW/EXISTING.: EXISTING						
MAIN: 225A MCB		BUS AMPS: 225A			MOUNT.: SURFACE						
PH/WIRE: 3Ø/4W		AIC:			LOC: BLDG 18 SW MAIN ELEC. RM						
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD kVA	NOTE	NOTE	LOAD kVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.		
1											
3	100/3	CH-18-1	52.8	1	-	0	HVAC-2 BLUE-PRINT ROOM	35/3	2		
5									4		
7									6		
9	35/3	HVAC-1 MICROFILM ROOM	0	-	-	0	CIRC. PUMPS 1 & 2	20/3	8		
11									10		
13									12		
15	15/3	HUMIDIFIER MICROFILM RM	0	-	-	0	HUMIDIFIER BLUEPRINT ROOM	15/3	14		
17									16		
19		SPACE					SPACE		18		
21		SPACE					SPACE		20		
23		SPACE					SPACE		22		
25		SPACE					SPACE		24		
27		SPACE					SPACE		26		
29		SPACE					SPACE		28		
31		SPACE					SPACE		30		
33		SPACE					SPACE		32		
35		SPACE					SPACE		34		
37		SPACE					SPACE		36		
39		SPACE					SPACE		38		
41		SPACE					SPACE		40		
			52.8			0.0	TOTAL CONNECTED kVA:	52.80	42		
							TOTAL CONNECTED AMPERES:	63.58			

NOTES:
1. REUSE EXISTING CIRCUIT BREAKER AS INDICATED FOR NEW LOAD.
2. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

PANELBOARD SCHEDULE											
PANEL: MDP-2A		VOLTS: 120/ 208			NEW/EXISTING.: EXISTING						
MAIN: 100A MCB		BUS AMPS: 225A			MOUNT.: SURFACE						
PH/WIRE: 3Ø/4W		AIC:			LOC: BLDG 18 SW MAIN ELEC. ROOM						
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD kVA	NOTE	NOTE	LOAD kVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.		
1	20/1	FEEDS MC CABLE FROM PANEL	0	-	-	0	DUCT SMOKE SET	20/1	2		
3	20/1	MANHOLE 5 SUMP	0	-	-	0	DEIONIZATION FILTERS	20/1	4		
5	20/1	MANHOLE 4 SUMP	0	-	-	0	RECIRC. PUMP 1	20/1	6		
7	20/2	EXT. WALL PACKS	0	-	-	0	AMI	20/1	8		
9							SPACE		10		
11	20/1	JACE BOX	0.02	1	-		SPACE		12		
13	20/1	FA AIR COMPRESSOR	0	-	-	0	CHILLER CNTRL PNL PUMP RM	20/1	14		
15	20/1	FA AIR COMPRESSOR	0	-	-	0	LTS	20/1	16		
17	20/1	FA AIR COMPRESSOR	0	-	-	0	PNL REC, CH REC, CNTRL PWR	20/1	18		
19							SPACE		20		
21	100/3	PANEL H 2ND FLOOR	0	-	-		SPACE		22		
23							SPACE		24		
25											
27	100/3	MAIN	0	-							
29											
			0.0			0.0	TOTAL CONNECTED kVA:	0.02			
							TOTAL CONNECTED AMPERES:	0.06			

NOTES:
1. PROVIDE NEW CIRCUIT BREAKER SIZED AS INDICATED FOR NEW LOAD.
2. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

PANELBOARD SCHEDULE											
PANEL: DPL-1		VOLTS: 277/ 480			NEW/EXISTING.: EXISTING						
MAIN: 350A MCB		BUS AMPS: 400A			MOUNT.: SURFACE						
PH/WIRE: 3Ø/4W		AIC:			LOC: BLDG 14 SW MAIN ELEC. ROOM						
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD kVA	NOTE	NOTE	LOAD kVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.		
1									2		
3	100/3	PP12	0	-	1	27.1	CRACU-18-1	45/3	4		
5									6		
7									8		
9	100/3	PP13	0	-	-	0	WH-1	100/3	10		
11									12		
13									14		
15	100/3	PANEL LP (NSRO #1)	0	-	2	25.5	CRACU-18-2	40/3	16		
17									18		
19											
21	225/3	PP11	0	-							
23											
			0.0			52.6	TOTAL CONNECTED kVA:	52.60			
							TOTAL CONNECTED AMPERES:	63.34			

NOTES:
1. REMOVE EXISTING CIRCUIT BREAKER & PROVIDE NEW SIZED AS INDICATED FOR NEW LOAD.
2. PROVIDE NEW CIRCUIT BREAKER. SIZE AS INDICATED FOR NEW LOAD.
3. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

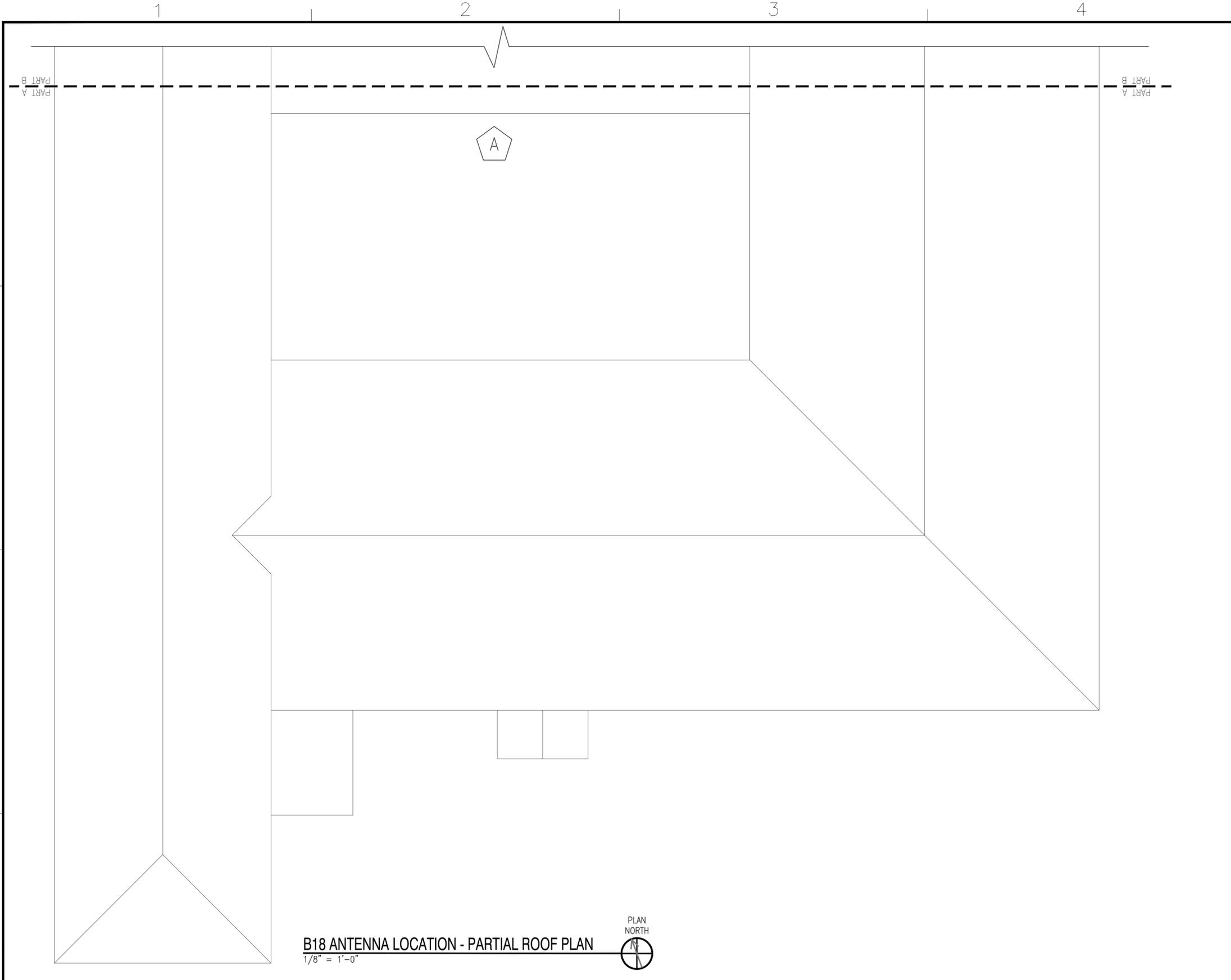
PANELBOARD SCHEDULE											
PANEL: PPL3		VOLTS: 120/ 208			NEW/EXISTING.: EXISTING						
MAIN: 100A MCB		BUS AMPS: 100A			MOUNT.: RECESSED						
PH/WIRE: 3Ø/4W		AIC:			LOC: BLDG 18 NUC SUPPLY OFFICE						
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD kVA	NOTE	NOTE	LOAD kVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.		
1									2		
3	30/3	DATA MASTER	0	-	-	0	DOC 11	30/2	4		
5									6		
7	20/2	3M TABLE	0	-	-	0	DOC 11	30/2	8		
9									10		
11	20/2	3M TABLE	0	-	-	0	F10 PROCESSOR	20/2	12		
13									14		
15	20/1	DARK RM GFI	0	-	-	0	ENCODER	20/1	16		
17	20/1	COFFEE REC.	0	-	-	0	DOC 11 COMPUTER	20/1	18		
19	20/1	PHOTOLAB REC.	0	-	-	0	DOC 11 COMPUTER	20/1	20		
21	20/1	PHOTOLAB REC.	0	-	-	0	FIC COMPUTER	20/1	22		
23	20/1	PHOTOLAB REC.	0	-	-	0	PHOTOLAB REC.	20/1	24		
25	20/1	PHOTOLAB REC.	0	-	-	0	PHOTOLAB REC.	20/1	26		
27									28		
29	15/3	ACCU-18-1	2.2	1	-		DATA MASTER COMPUTER	20/1	30		
31							EF-7 & DARK RM LTS	20/1	32		
33							2.36 CH-18-1 & ACCU-18-1 REC.	20/1	34		
35	20/3	SPARE	0	-	-		SPARE	20/1	36		
37							SPACE		38		
39		SPACE					SPACE		40		
41		SPACE					SPACE		42		
			2.2			0.4	TOTAL CONNECTED kVA:	2.56			
							TOTAL CONNECTED AMPERES:	7.11			

NOTES:
1. PROVIDE NEW CIRCUIT BREAKER SIZED AS INDICATED FOR NEW LOAD.
2. VERIFY AND REUSE EXISTING CIRCUIT BREAKER AS INDICATED FOR NEW LOAD.
3. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

MECHANICAL EQUIPMENT SCHEDULE													
EQUIP TAG	DESCRIPTION	LOAD			PANEL SOURCE		BRANCH CIRCUIT	CONNECTION				NOTES	
		HP	kVA	VOLT	PH	PANEL		C/B	FLEX	JB	REC		DISC
CH-18-1	CHILLER	-	52.8	460	3	PPD-(1,3,5)	90A/3P	(3)#3,(1)#8G, 1-1/4°C	X			X	NOTE 7
ACCU-18-1	CONDENSING UNIT	-	2.2	208	3	PPL3-(27,29,31)	15A/3P	(3)#12,(1)#12G, 3/4°C	X			X	NOTE 7
ACCU-18-2	CONDENSING UNIT	-	1.8	208	3	-	15A/3P	(3)#12,(1)#12G, 3/4°C	X			X	NOTE 7
CRACU-18-1	COMPUTER ROOM A/C UNIT	-	27.1	460	3	DPL-1-(2,4,6)	45A/3P	(3)#8,(1)#10G, 3/4°C	X			X	NOTE 11
CRACU-18-2	COMPUTER ROOM A/C UNIT	-	25.5	460	3	DPL-1-(14,16,18)	40A/3P	(3)#8,(1)#10G, 3/4°C	X			X	NOTE 11

NOTES:
1. BRANCH CIRCUIT WIRING METHODS SHALL BE AS NOTED ON THE DRAWINGS AND/OR SPECIFICATIONS FOR THE APPLICABLE LOCATION.
2. "FLEX" - DENOTES FINAL THREE FEET (MAXIMUM) OF RACEWAY SHALL BE FLEXIBLE METAL OR LIQUIDTIGHT METAL CONDUIT.
3. "JB" - JUNCTION BOX DENOTES FINAL CONNECTION TO BOX OR CONTROL PANEL PREWIRED TO THE EQUIPMENT.
4. "REC" - PROVIDE RECEPTACLE IN THE NEMA CONFIGURATION NOTED.
5. NOTES 6-9 ARE OPTIONS WHICH SHALL BE SPECIFICALLY NOTED IN REMARKS FOR INCLUSION.
6. DISCONNECT SHALL BE FUSIBLE.
7. DISCONNECT SHALL BE NEMA "3R"
8. DISCONNECT SHALL BE MOTOR-RATED SWITCH WITH THERMAL OVERLOAD ELEMENT.
9. DISCONNECT PROVIDED INTEGRAL (PREWIRED) TO EQUIPMENT BY TRADE CONTRACTOR.
10. INTEGRAL CONVENIENCE RECEPTACLE PROVIDED PREWIRED TO EQUIPMENT BY TRADE CONTRACTOR.
11. PROVIDE NEW DISCONNECT AS SHOWN ON FLOOR PLAN.

DM	08/07/2015	DM	07/24/2015	DM	06/04/2015	DM	04/24/2015	DM	02/23/2015	APPR	
	100% SUBMISSION		100% REVIEW SUBMISSION		90% SUBMISSION		80% SUBMISSION		35% SUBMISSION		
4		3		2		1		0			
											
											
											
APPROVED: _____ FOR COMMANDER NAVFAC ACTIVITY: _____ SATISFACTORY TO: _____ DATE: _____ DES: TM DRAW: TM CHG: JO PM/DM: PETER STOCKLESS BRANCH MANAGER: BRUCE LITALIEN LEAD/PM&E: AMIN BAHRLOUR PM&E FIRE PROTECTION: X											
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND PUBLIC WORKS DEPARTMENT - MAINE PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE FY 16 ENERGY PROJECT TASK 1-B-R-22 BUILDING 18 ELECTRICAL SCHEDULES											
PROJECT NO.: 1350913 CONSTR. CONTR. NO.: N40085-XX-C-XXXX NAVFAC DRAWING NO.: 12703496 SHEET 43 OF 506 E3.0 18-15-582 <small>DRAWING REVISION: 10 OCTOBER 2014</small>											



B18 ANTENNA LOCATION - PARTIAL ROOF PLAN
 1/8" = 1'-0"

EQUIPMENT	WIRELESS STANDARD	ANTENNA	FREQUENCY	DIMENSIONS	WEIGHT	INPUT POWER	MANUFACTURER	DESIGN BASED ON MODEL
WIRELESS ACCESS POINT	802.11n	INTEGRATED	2.4 GHZ & 5.8 GHZ	9 X 7 X 4 INCHES	5 LBS	AIR-PWRINJ4	CISCO AIRONET	AIR-AP1532I-UXK9

NOTE: PROVIDE POWER INJECTOR FOR POWER OF ETHERNET TO WIRELESS ACCESS POINT. DESIGN BASED ON CISCO MODEL AIR-PWRINJ4.

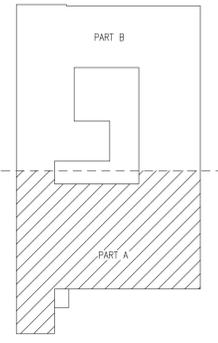
GENERAL SHEET NOTES

- FASTENERS SHALL BE ATTACHED TO MORTAR IN MASONRY BUILDINGS, AVOIDING DAMAGE TO THE BRICK WHEREVER PRACTICAL.
- EXTERIOR CONDUIT SHALL BE INSTALLED IN SHADOW-LINES OR ADJACENT TO EXISTING CONDUIT; CONDUIT COLOR TO BE COORDINATED WITH CULTURAL RESOURCE MANAGER AND A-E.
- REFER TO MECHANICAL DRAWINGS FOR JACE LOCATION AND INFORMATION.
- EXISTING ROOF AND WALL PENETRATIONS SHALL BE USED WHEREVER PRACTICAL.
- INTERIOR, WINDOW-MOUNTED ACCESS POINTS SHALL BE MOUNTED IN AN OBSCURE LOCATION THAT IS LEAST VISIBLE FROM INTERIOR & EXTERIOR.
- ACCESS POINT MOUNTS SHALL NOT OBSTRUCT EGRESS, EXISTING WALKWAYS, STAIRWELLS, MECHANICAL EQUIPMENT CLEARANCES, OR OTHER APPURTANANCES.
- UNLESS OTHERWISE NOTED, ROOFTOP ACCESS POINTS SHALL BE CENTRALIZED ON THE ROOF TO MINIMIZE VISIBILITY FROM GROUND LEVEL.
- CONTRACTOR TO FIELD-VERIFY COMMUNICATION ACCESS POINTS ARE ALIGNED AND LINE OF SIGHT IS UNOBSTRUCTED.
- IF A FIELD CHANGE IS REQUIRED, CONTRACTOR SHALL COORDINATE WITH CULTURAL RESOURCE MANAGER AND A-E PRIOR TO RELOCATING EQUIPMENT.
- ANY PROPOSED CHANGES (PENETRATIONS, CONDUIT, ETC.) NOT ALREADY INDICATED ON DRAWINGS MADE TO HISTORIC BUILDINGS OR BUILDINGS LOCATED IN HISTORIC DISTRICT MUST BE REVIEWED AND APPROVED BY SHPO THROUGH NAVFAC CULTURAL RESOURCES DEPARTMENT PRIOR TO INSTALLATION.
- CONTRACTOR TO VERIFY RF SIGNAL STRENGTH AND CONNECTIVITY FROM/TO ALL ACCESS POINTS.
- SEE PWD-ME DRAWING NUMBERS;
 - 43-15-67 FOR TITLE SHEET
 - 43-15-68 FOR LIST OF DRAWINGS
 - 43-15-69 FOR GENERAL NOTES AND LEGEND
 - 43-15-72 FOR CHASE AND SOFFIT DETAILS
 - 43-15-74 FOR STRUCTURAL NOTES AND SUPPORT

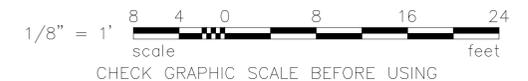
NEW WORK KEYNOTES

- CONTRACTOR SHALL INSTALL NON-PENETRATING ROOF-MOUNT FOR RF ACCESS POINT ON INTERIOR COURTYARD FLAT ROOF.
- CONTRACTOR SHALL ENSURE LINE-OF-SIGHT TO B086A ACCESS POINT.
- ROOF MOUNT SHALL BE CAPABLE OF WITHSTANDING 100 MPH SUSTAINED WINDS AND 165 MPH WIND GUSTS. MOUNTING HEIGHT TO BE DETERMINED BY CONTRACTOR TO MINIMIZE GROUND-LEVEL VISIBILITY WHILE MAINTAINING ACCESS POINT LINE-OF-SIGHT.
- CAT5 CABLE SHALL BE ROUTED THROUGH EXISTING ROOF PENETRATION FOR CRAC UNIT AND ALONG EXISTING PATH THROUGH DROP CEILING TO JACE.

KEY PLAN



GRAPHIC SCALE



DATE	07/31/15	DATE	07/15/15
DM		DM	
APPR		APPR	
DESCRIPTION	100% SUBMISSION	DESCRIPTION	90% SUBMISSION
SW	0	SW	0

13 WATER ST NEWMARKET NH
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APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES VSL [] DRW SRR [] CHK KLC []

PM/DM PETER STOCKLESS

BRANCH MANAGER BRUCE LITALIEN

TEAD/P&E AMIN BAHROUR PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, NH
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

B018 RF INSTALLATION DETAILS

PROJECT NO.: 1350913

CONSTR. CONTR. NO.: N40085-XX-C-XXXX

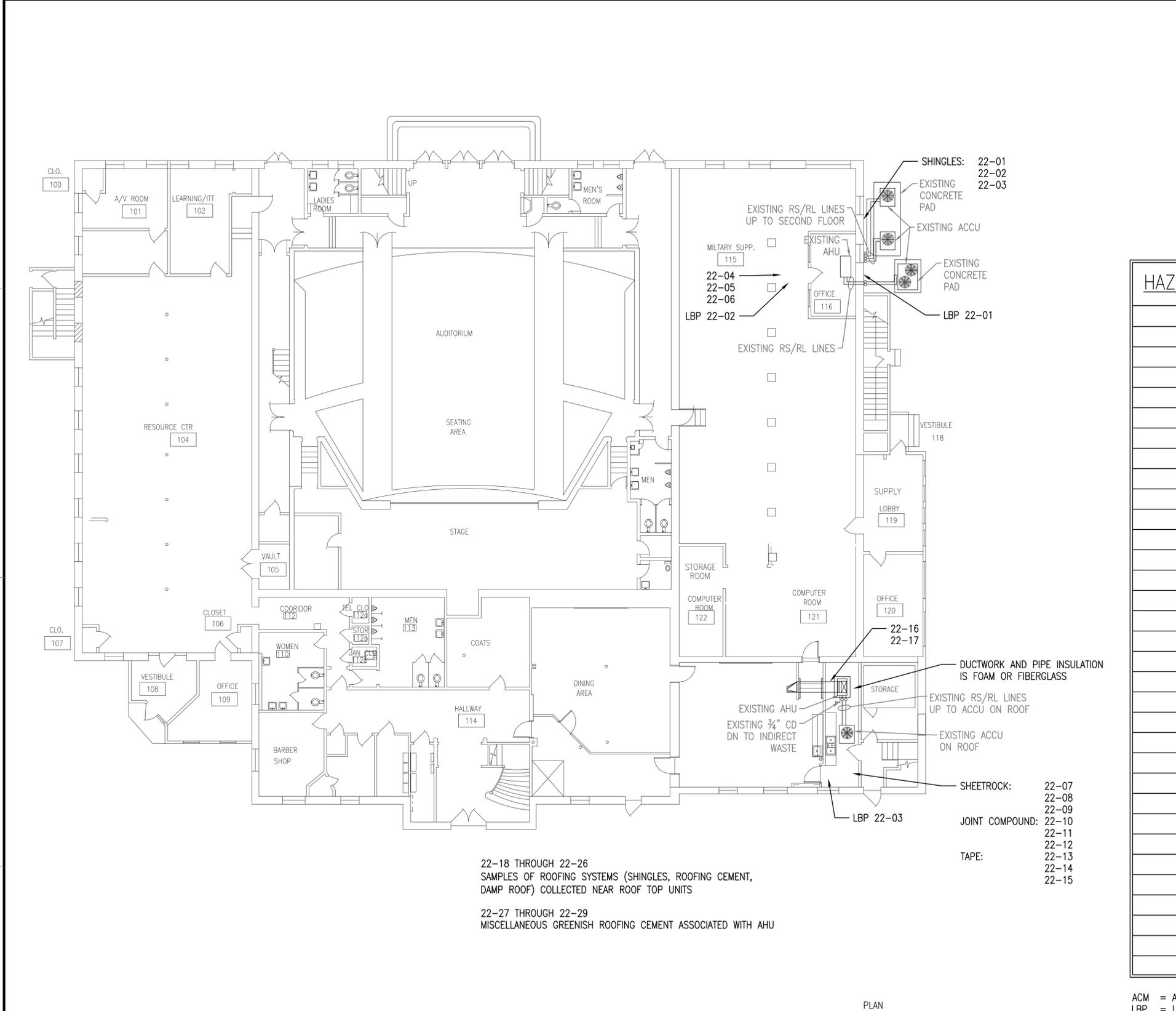
NAVFAC DRAWING NO.: 12703497

SHEET 44 OF 506

ET1.0 18-15-583

DRAWFORM REVISION: 10 OCTOBER 2014

FILE NAME: J:\A\1866_AEP_Subcontracting_Support\Drawings\DWG\A1066_2_HM1_B22.dwg LAYOUT NAME: B22-H1.0 PLOTTED: Friday, August 07, 2015 - 2:34pm USER: REP



22-18 THROUGH 22-26
SAMPLES OF ROOFING SYSTEMS (SHINGLES, ROOFING CEMENT,
DAMP ROOF) COLLECTED NEAR ROOF TOP UNITS

22-27 THROUGH 22-29
MISCELLANEOUS GREENISH ROOFING CEMENT ASSOCIATED WITH AHU

B22 FIRST FLOOR HAZARDOUS MATERIAL SAMPLING PLAN
SCALE: 3/32" = 1'



GENERAL SHEET NOTES

- ALL PACM (PRESUMED ASBESTOS CONTAINING MATERIAL), LBP (LEAD BASED PAINT), PCB, AND OTHER HAZARDOUS BUILDING MATERIALS MAY NOT BE IDENTIFIED IN THIS SURVEY, PARTICULARLY THOSE HIDDEN IN WALLS, CEILINGS, FLOORS, ETC. AND IN AREAS DESCRIBED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, WHICH WERE INACCESSIBLE DURING THE SURVEY. ASSESSMENT EFFORTS DID INCLUDE, TO THE EXTENT FEASIBLE, ACCESS TO INTERIOR AND EXTERIOR OF THE STRUCTURE. HOWEVER, THE ABSENCE OF ALL PACM, LBP, PCB, AND OTHER HAZARDOUS BUILDING MATERIALS IN HIDDEN OR INACCESSIBLE PORTIONS CANNOT BE DEFINITELY ENSURED.
- RENOVATION AND/OR DEMOLITION ACTIVITIES SHOULD BE MONITORED BY PERSONNEL CAPABLE OF IDENTIFYING PACM, LBP, PCB AND OTHER HAZARDOUS BUILDING MATERIALS. IF PACM, LBP, PCB OR OTHER HAZARDOUS BUILDING MATERIALS ARE ENCOUNTERED, THESE MATERIALS SHOULD BE BULK SAMPLED BY A LICENSED INSPECTOR AND DISPOSED OF IN ACCORDANCE WITH PNSY AND ALL OTHER APPLICABLE REGULATIONS.
- SEE B22 ASBESTOS, LEAD, PCB, AND TCLP INVENTORY TABLES LOCATED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, DATED JUNE 22, 2015, FOR ADDITIONAL INFORMATION.

HAZARDOUS MATERIAL SAMPLING SUMMARY

SAMPLE ID	ACM	LBP
22-01	ND	NS
22-02	ND	NS
22-03	ND	NS
22-04	ND	NS
22-05	ND	NS
22-06	ND	NS
22-07	ND	NS
22-08	ND	NS
22-09	ND	NS
22-10	ND	NS
22-11	ND	NS
22-12	ND	NS
22-13	ND	NS
22-14	ND	NS
22-15	ND	NS
22-16	ND	NS
22-17	ND	NS
22-18	ND	NS
22-19	ND	NS
22-20	ND	NS
22-21	ND	NS
22-22	ND	NS
22-23	ND	NS
22-24	ND	NS
22-25	ND	NS
22-26	ND	NS
22-27	ND	NS
22-28	ND	NS
22-29	ND	NS
LBP-22-01	NS	0.54 (H)
LBP-22-02	NS	0.75 (H)
LBP-22-03	NS	0.06

ACM = ASBESTOS CONTAINING MATERIALS
 LBP = LEAD BASED PAINT
 <RL = LESS THAN REPORTING LIMIT
 ND = NONE DETECTED
 NS = NOT SAMPLED
 H = EXCEEDS FEDERAL REGULATORY LIMIT

NOTE:
 REFER TO HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT DATED JUNE 22, 2015 FOR COMPLETE SAMPLING INFORMATION AND DATA.

GRAPHIC SCALE

3/32" = 1' scale

0 3' 6" 12' 18' 30'

feet

CHECK GRAPHIC SCALE BEFORE USING

DATE	08/07/2015	BLM	BLM	APPR
DESCRIPTION	100% SUBMISSION	90% SUBMISSION	DATE	
DATE	06/05/2015	BLM	BLM	APPR
DESCRIPTION	2	1	1	1

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APPROVED: _____
 FOR COMMANDER NAFAC

ACTIVITY: _____

SATISFACTORY TO: _____ DATE: _____

DES: A/E [] DRW: REP [] CHK: BLM []
 PM/DM: PETER STOCKLESS []
 BRANCH MANAGER: BRUCE LITALIEN []
 LEAD/PM/ME: AMIN BAHROUR PM&E []
 FIRE PROTECTION: X

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 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD - KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

B22 HAZARDOUS MATERIAL SAMPLING PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAFAC DRAWING NO.: 12703498
 SHEET 45 OF 506
 H1.0 22-15-520
 DRAWING REVISION: 10 OCTOBER 2014

FILE NAME: C:\A\11866_AEP_Subcontracting_Support\Drawings\DWG\A1066_2_HDMT_B22.dwg LAYOUT NAME: B22-H1.1 PLOTTED: Friday, August 07, 2015 - 2:34pm USER: REP

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3

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A

D

C

B

D

C

B

A

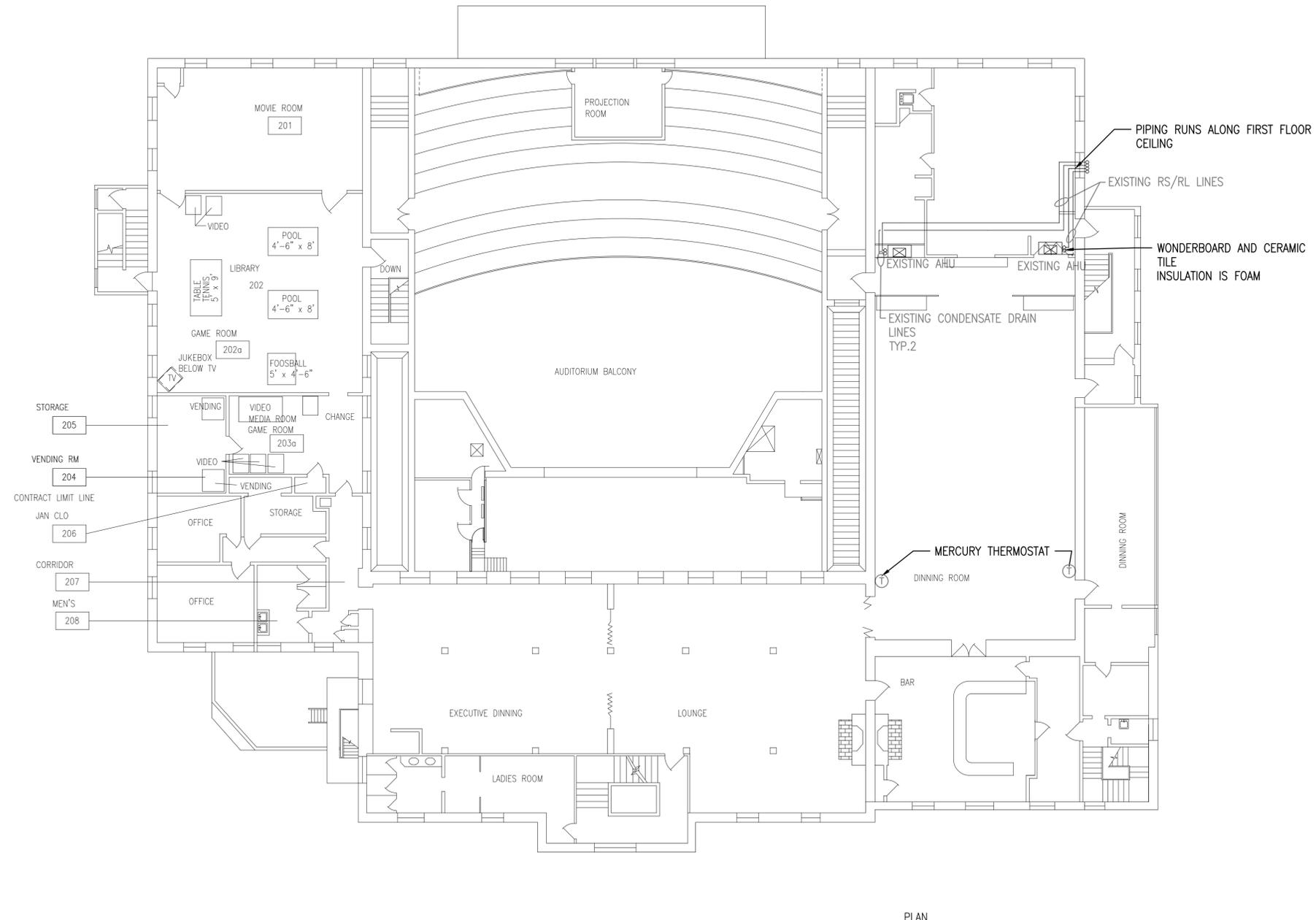
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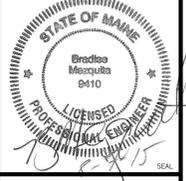
B22 SECOND FLOOR HAZARDOUS MATERIAL SAMPLING PLAN
SCALE: 3/32" = 1'



GENERAL SHEET NOTES

- ALL PACM (PRESUMED ASBESTOS CONTAINING MATERIAL), LBP (LEAD BASED PAINT), PCB, AND OTHER HAZARDOUS BUILDING MATERIALS MAY NOT BE IDENTIFIED IN THIS SURVEY, PARTICULARLY THOSE HIDDEN IN WALLS, CEILINGS, FLOORS, ETC. AND IN AREAS DESCRIBED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, WHICH WERE INACCESSIBLE DURING THE SURVEY. ASSESSMENT EFFORTS DID INCLUDE, TO THE EXTENT FEASIBLE, ACCESS TO INTERIOR AND EXTERIOR OF THE STRUCTURE. HOWEVER, THE ABSENCE OF ALL PACM, LBP, PCB, AND OTHER HAZARDOUS BUILDING MATERIALS IN HIDDEN OR INACCESSIBLE PORTIONS CANNOT BE DEFINITELY ENSURED.
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- SEE B22 ASBESTOS, LEAD, PCB, AND TCLP INVENTORY TABLES LOCATED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, DATED JUNE 22, 2015, FOR ADDITIONAL INFORMATION.

NO.	DESCRIPTION	DATE	BY	APPR.
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1	90% SUBMISSION	06/05/2015		BLM

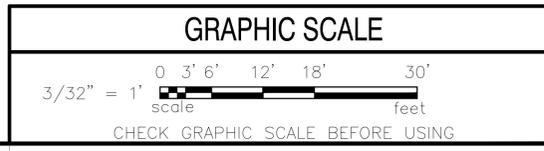


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APPROVED:	DATE:	
FOR COMMANDER NAFAC:	ACTIVITY:	
SATISFACTORY TO:	DATE:	
DES: A/E	DRAW: REP	CHECK: BLM
PM/DM: PETER STOCKLESS	BRANCH MANAGER: BRUCE LITALIEN	LEAD/PM&E: AMIN BAHRLOUR PM&E
FIRE PROTECTION: X		

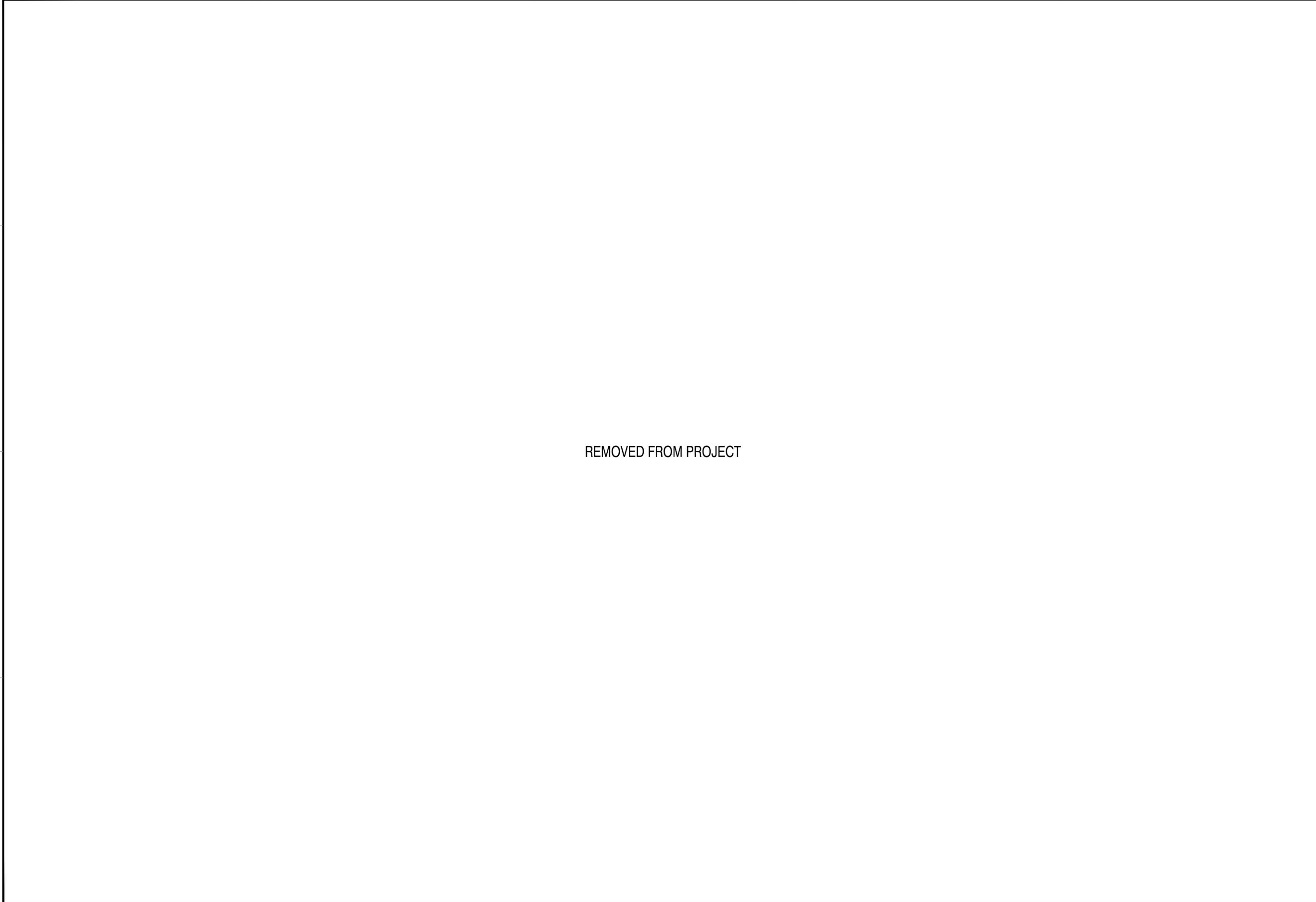
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NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
PUBLIC WORKS DEPARTMENT ~ MAINE
PORTSMOUTH NAVAL SHIPYARD
KITERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
B22 HAZARDOUS MATERIAL SAMPLING PLAN

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703499
SHEET:	46 OF 506
H1.1	22-15-521



DRAWFORM REVISION: 10 OCTOBER 2014

FILE NAME: J:\A\11866_AEP_Subcontracting_Support\02_P-22\DWG-500\DESIGN\1086_2_R22_SITE.dwg LAYOUT NAME: C1.0_B022 DEMO PLOTTED: Friday, August 07, 2015 - 2:53pm USER: REP



REMOVED FROM PROJECT

	
	
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ACTIVITY: _____	
SATISFACTORY TO: _____ DATE: _____	
DES	CHK
A/E	BLM
PM/DM	PETER STOCKLESS
BRANCH MANAGER	BRUCE LITALIEN
LEAD/FRAME	AMIN BAHROUR PM&E
FIRE PROTECTION: X	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC PUBLIC WORKS DEPARTMENT - MAINE PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE	
FY 16 ENERGY PROJECT TASK 1-B-R-22 B22 DEMOLITION PLAN	
EPROJECT NO.: 1350913 CONSTR. CONTR. NO.: N40085-XX-C-XXXX NAVFAC DRAWING NO.: 12703500 SHEET 47 OF 506	
C1.0 22-15-522 <small>DRAWFORM REVISION: 10 OCTOBER 2014</small>	

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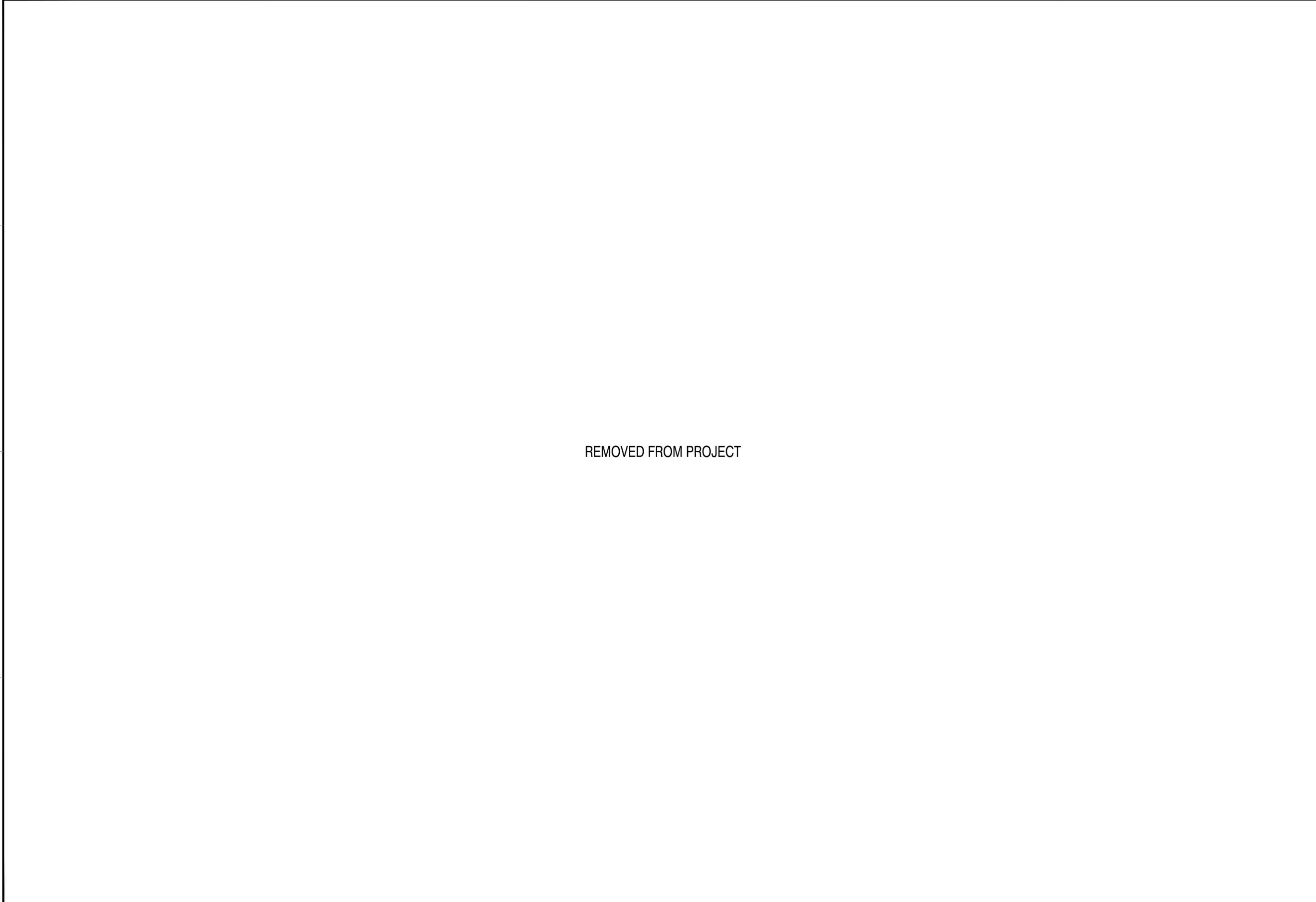
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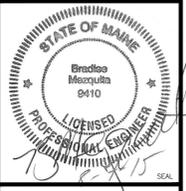
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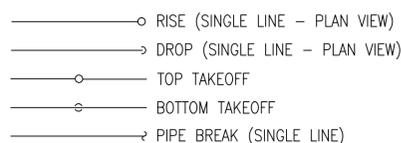
	
	
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APPROVED: _____ FOR COMMANDER NAVFAC	
ACTIVITY: _____	
SATISFACTORY TO: _____ DATE: _____	
DES	DATE
A/E	
DRW	
REP	
CHK	
BLM	
PM/DM	PETER STOCKLESS
BRANCH MANAGER	BRUCE LITALIEN
LEAD/PAVE	AMIN BAHROUR PM&E
FIRE PROTECTION: X	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC PUBLIC WORKS DEPARTMENT - MAINE PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE	
FY 16 ENERGY PROJECT TASK 1-B-R-22 B22 SITE PLAN	
EPROJECT NO.: 1350913 CONSTR. CONTR. NO.: N40085-XX-C-XXXX NAVFAC DRAWING NO.: 12703501 SHEET 48 OF 506	
C2.0 22-15-523 <small>DRAWFORM REVISION: 10 OCTOBER 2014</small>	

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1	90% SUBMISSION	06/05/2015			

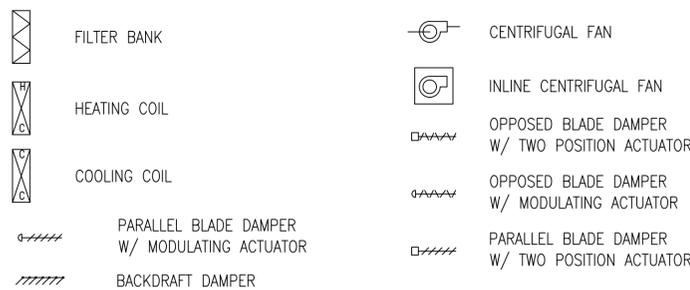
HVAC ABBREVIATIONS

*F	DEGREES FAHRENHEIT	ID	INSIDE DIAMETER
°C	DEGREES CELSIUS	IN	INCHES
∅	DIAMETER	INSUL	INSULATION
ACV	AUTOMATIC CONTROL VALVE	KW	KILOWATT
AD	ACCESS DOOR	KVA	KILOVOLT AMPERE
ADJ	ADJUSTABLE	L	LENGTH
ADDL	ADDITIONAL	LB	POUND
AFF	ABOVE FINISHED FLOOR	LF	LINEAR FEET
AFG	ABOVE FINISHED GRADE	LVG	LEAVING
ALT	ALTERNATE	M	ONE THOUSAND
AP	ACCESS PANEL	MAX	MAXIMUM
ARCH	ARCHITECT	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
ATC	AUTOMATIC TEMPERATURE CONTROL	MCA	MINIMUM CIRCUIT AMPS
AS	AIR SEPARATOR	MCC	MOTOR CONTROL CENTER
AVG	AVERAGE	MECH	MECHANICAL
BAS	BUILDING AUTOMATION SYSTEM	MEZZ	MEZZANINE
BFF	BELOW FINISHED FLOOR	MFR	MANUFACTURER
BHP	BRAKE HORSEPOWER	MIN	MINIMUM
BLDG	BUILDING	MTD	MOUNTED
BLR	BOILER	MU	MAKEUP WATER
BOD	BOTTOM OF DUCT	N/A	NOT APPLICABLE
BOP	BOTTOM OF PIPE	NC	NORMALLY CLOSED
BSMY	BASEMENT	NC	NOISE CRITERIA
BTU	BRITISH THERMAL UNIT	NIC	NOT IN CONTRACT
BTUH	BRITISH THERMAL UNIT PER HOUR	NO	NORMALLY OPEN
C	CONVECTOR	NO.	NUMBER
CF	CEILING FAN	NOM	NOMINAL
CL	CENTERLINE	NTS	NOT TO SCALE
CLG	CEILING	OB	OCTAVE BAND
CO	CLEAN-OUT	OC	ON CENTER
COL	COLUMN	OD	OUTSIDE DIAMETER
COL	COLUMN	OD	OUTSIDE DIAMETER
COMP	COMPRESSOR	ODP	OPEN DRIP PROOF
CONC	CONCRETE	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CONN	CONNECTION	OFOI	OWNER FURNISHED OWNER INSTALLED
CONTR	CONTRACTOR	OV	OUTLET VELOCITY
CORR	CORRIDOR	PCF	POUNDS PER CUBIC FOOT
CUF	CUBIC FEET	PD	PRESSURE DROP
CUH	CABINET UNIT HEATER	PH	PHASE
CYL	CYLINDER	PLMB	PLUMBING
D	DRAIN	POS	PROVIDED BY OTHER SECTION(S)
DB	DRY BULB TEMPERATURE	PRESS	PRESSURE
DDC	DIRECT DIGITAL CONTROL	PRIM	PRIMARY
DDCFP	DIRECT DIGITAL CONTROL FIELD PANEL	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
DIA	DIAMETER	PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
DIM	DIMENSION	PSIG	POUNDS PER SQUARE INCH GAUGE
DN	DOWN	PVC	POLYVINYL CHLORIDE
DWG	DRAWING	REP	REPRESENTATIVE
EA	EACH	RET	RETURN
EAT	ENTERING AIR TEMPERATURE	REQD	REQUIRED
EFF	EFFICIENCY	REQS	REQUIREMENTS
ECUH	ELECTRIC CABINET UNIT HEATER	RH	RELATIVE HUMIDITY
ELEC	ELECTRICAL	RM	ROOM
ELEV	ELEVATION	RPM	REVOLUTIONS PER MINUTE
EMER	EMERGENCY	SCH	SCHEDULE
ENT	ENTERING	SOV	SOLENOID OPERATED VALVE
EQUIP	EQUIPMENT	SPECS	SPECIFICATIONS
EXH	EXHAUST	SQ	SQUARE
EXP	EXPANSION	SOFT	SQUARE FEET
FTR	FINNED TUBE RADIATION	SS	STAINLESS STEEL
FCV	FLOW CONTROL VALVE	STD	STANDARD
FG	FIBERGLASS	STDBY	STANDBY
FLEX	FLEXIBLE	STL	STEEL
FLR	FLOOR	SUCT	SUCTION
FLDR	FLOOR DRAIN	SUP	SUPPLY
FP	FIRE PROTECTION	TA	THROW-AWAY
FPM	FEET PER MINUTE	TAV	THERMOSTATED AIR VENT
FT	FEET	TEFC	TOTALLY ENCLOSED FAN COOLED
FT/SEC	FEET PER SECOND	TEL	TELEPHONE
FURN	FURNISHED	TEMP	TEMPERATURE
FVNR	FULL VOLTAGE NON-REVERSING	TOD	TOP OF DUCT
GA	GAUGE	TOP	TOP OF PIPE
GAL	GALLONS	TYP	TYPICAL
GALV	GALVANIZED	UH	UNIT HEATER
GC	GENERAL CONTRACTOR	V	VENT
GND	GROUND	VEL	VELOCITY
GPH	GALLONS PER HOUR	VERT	VERTICAL
GPM	GALLONS PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
GRD	GRADE (GROUND LEVEL)	VTR	VENT THROUGH ROOF
GWB	GYPSONUM WALL BOARD	W	WIDTH
H	HEIGHT	W/	WITH
HD	HEAD	W/O	WITHOUT
HP	HORSEPOWER	WB	WET BULB TEMPERATURE
HR	HOUR	WF	WIDE FLANGE
HZ	HERTZ	WG	WATER GAUGE
		WRT	WITH RESPECT TO

PIPING LEGEND



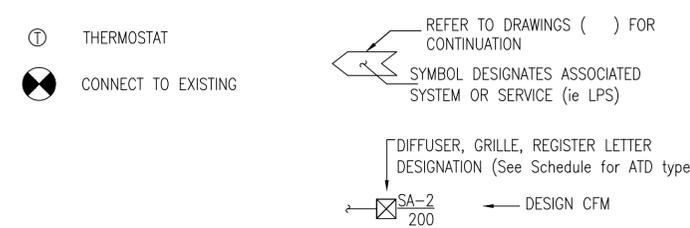
FLOW DIAGRAM & CONTROL DIAGRAM EQUIP. SYMBOLS



HVAC SYSTEM TAGS



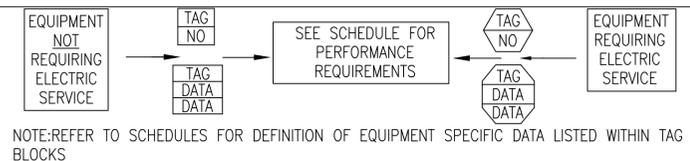
CALL OUT SYMBOLS



AIR SYSTEM SPECIFIC ABBREVIATIONS

AC	AIR CONDITIONING	LVDR	LOUVERED DOOR
ACD	AUTOMATIC CONTROL DAMPER	OA	OUTSIDE AIR
ACU	AIR CONDITIONING UNIT	OAI	OUTSIDE AIR INTAKE
AF	AIR FOIL	ODB	OPPOSED BLADE DAMPER
AHU	AIR HANDLING UNIT	OED	OPEN END DUCT
ALD	ACOUSTICALLY LINED DUCTWORK	RA	RETURN AIR
ATD	AIR TERMINAL DEVICE	RF	RETURN FAN
AVS	AIR VOLUME TRAVERSE STATION	RG	RETURN GRILLE
BDD	BACKDRAFT DAMPER	RHC	REHEAT COIL
BI	BACKWARD INCLINED	RLF	RELIEF
CC	COOLING COIL	RR	RETURN REGISTER
CD	CEILING DIFFUSER	RV	ROOF VENT
CFM	CUBIC FEET PER MINUTE	SA	SUPPLY AIR
CG	CEILING GRILLE	SATT	SOUND ATTENUATOR
DIFF	DIFFUSER	SCR	SCREEN
DWDI	DOUBLE WIDTH DOUBLE INLET	SD	SMOKE DAMPER
DWSI	DOUBLE WIDTH SINGLE INLET	SDET	SMOKE DETECTOR
DX	DIRECT EXPANSION	SEF	SMOKE EXHAUST FAN
EF	EXHAUST FAN	SF	SUPPLY FAN
EG	EXHAUST GRILLE	SFD	COMBINATION AUTOMATIC SMOKE/FIRE DAMPER
ESP	EXTERNAL STATIC PRESSURE	--	WITH ACCESS DOOR
F	FAN	SG	SUPPLY GRILLE
FC	FORWARD CURVED	SM	SHEETMETAL
FA	FREE AREA	SP	STATIC PRESSURE
FCU	FAN COIL UNIT	SR	SUPPLY REGISTER
FD	FIRE DAMPER (W/ ACCESS DOOR)	SWDI	SINGLE WIDTH DOUBLE INLET
FLTR	FILTER	SWSI	SINGLE WIDTH SINGLE INLET
FPI	FINS PER INCH	TE	TOILET EXHAUST
FPT	FAN POWERED TERMINAL BOX	TF	TRANSFER FAN
GE	GENERAL EXHAUST	TG	TRANSFER GRILLE
GIH	GRAVITY INTAKE HOOD	TR	TRANSFER
GRH	GRAVITY RELIEF HOOD	TSP	TOTAL STATIC PRESSURE
HC	HEATING COIL	UC	UNDERCUT DOOR
LAT	LEAVING AIR TEMPERATURE	VD	VOLUME DAMPER
LD	LINEAR DIFFUSER	VV	VARIABLE VOLUME SUPPLY AIR TERMINAL BOX
LVUR	LOUVER	WMS	WIRE MESH SCREEN

EQUIPMENT TAG SYMBOLS & ABBREVIATIONS



HVAC GENERAL NOTES

- GENERAL NOTES APPLY TO ALL HVAC DRAWINGS.
- THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID, ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITIONS OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. ABSOLUTELY NO CLAIMS FOR EXTRA COMPENSATION WILL BE CONSIDERED FOR EXISTING CONDITIONS VISIBLE OR REASONABLY INFERABLE FROM A CAREFUL EXAMINATION OF THE EXISTING BUILDING.
- THIS CONTRACTOR SHALL INSPECT THE EXISTING FIELD CONDITIONS AT THE SITE AND THE "AS-BUILT" BASE BUILDING CONTRACT DOCUMENTS PRIOR TO THE START OF ANY WORK TO DETERMINE WHAT EFFECT THE EXISTING CONDITIONS WILL HAVE ON HIS WORK. POTENTIAL PROBLEM AREAS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER IMMEDIATELY.
- THIS CONTRACTOR SHALL CONNECT HIS WORK TO VARIOUS EXISTING PIPING, DUCTWORK, AND CONTROL SYSTEMS IN THE BASE BUILDING. THE NEW WORK SHALL BE COMPATIBLE WITH THE EXISTING SYSTEMS. LOCATION OF EQUIPMENT OR THE ROUTING OF THE VARIOUS SYSTEMS AS WELL AS OPENINGS IN FLOOR SLABS OR WALLS SHALL BE GOVERNED BY THE EXISTING CONDITIONS AS THEY APPEAR IN THE FIELD OR ON THE "AS-BUILT" DRAWINGS.
- CARE SHALL BE TAKEN DURING THE INSTALLATION TO NOT DAMAGE OR INTERRUPT BUILDING SYSTEMS AND SERVICES THAT ARE ALREADY INSTALLED. DAMAGE TO SUCH SYSTEMS OR EQUIPMENT CAUSED BY THIS CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.
- SHUTDOWN OF EXISTING SYSTEMS FOR CONNECTION TO EXISTING SERVICES SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR AND BUILDING OWNER. THIS CONTRACTOR SHALL SUBMIT REQUESTS, WHERE THEY AFFECT THE OPERATION OF THE BUILDING SYSTEMS, AT LEAST FIFTEEN DAYS IN ADVANCE OF ANY REQUIRED SHUTDOWN. THE ACTUAL SHUTDOWN PERIOD SHALL BE AS SHORT AS POSSIBLE AND AT A TIME MUTUALLY AGREEABLE TO THE BUILDING OWNER AND THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR.
- DRAWINGS ARE DIAGRAMMATIC, THEREFORE DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS, AS WELL AS ROUTING PATHS, IN FIELD.
- ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER, AND SHOULD BE KEPT TO A MINIMUM FOR SYSTEM EFFICIENCIES.
- VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT AND/OR PIPE TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION. VERIFY ACCESS IS PROVIDED FOR SERVICING EQUIPMENT AS REQUIRED.
- ALL MATERIALS AND EQUIPMENT UNLESS SPECIFICALLY INDICATED AS REUSED, SHALL BE NEW.
- ACCESS PANELS SHALL BE PROVIDED TO ALLOW FOR CLEANING OF COILS AND SERVICING OF DAMPERS, HEATERS, VALVES, AND ALL CONCEALED MECHANICAL EQUIPMENT.
- INSTALL NEW THERMOSTATS 4 FEET AFF OR AS DIRECTED OTHERWISE BY ENGINEER.
- GENERAL CONTRACTOR TO PATCH ALL EFFECTED INTERIOR AND EXTERIOR EXISTING FLOOR, WALL, AND CEILING SURFACES TO MATCH EXISTING. PROVIDE ESCUTCHEON PLATES.
- CONTRACTOR RESPONSIBLE FOR ROUTING PIPE AND PERFORMING PRESSURE LOSS CALCULATIONS TO SIZE PIPE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
- ANY AND ALL WALLS, CEILINGS AND FLOORS THAT ARE ANTICIPATED TO BE DISTURBED DURING THE DEMOLITION OR INSTALLATIONS PROCESS, AS INDICATED ON THE DRAWINGS, SHALL BE TESTED FOR HAZARDOUS MATERIALS PRIOR TO DISTURBING THE SURFACES. ROUTING OF PIPING HAS BEEN INDICATED TO DEPICT THE INTENT OF THE WORK. ACTUAL ROUTING MAY DIFFER IN THE FIELD DUE TO BUILDING CONSTRUCTION. COORDINATE TESTING OF ALL SURFACES TO BE DISTURBED, ALONG THE ACTUAL INSTALLATION ROUTE, WITH THE HAZARDOUS MATERIALS CONTRACTOR. REFER TO EXISTING HAZMAT REPORT FOR TESTING RESULTS.
- MECHANICAL CONTRACTOR TO REMOVE ALL IDENTIFIED R-22 EQUIPMENT AND ASSOCIATED APPURTENANCES AND REPLACE IN KIND WITH A R410A OR R407C SYSTEM.
- REFRIGERANT PIPING IS DIAGRAMMATIC, CONTRACTOR TO DETERMINE ROUTING IN FIELD AND RE-USE EXISTING PENETRATIONS. ANY EXPOSED PIPING TO BE CONCEALED IN A CHASE. CONTRACTOR RESPONSIBLE FOR ROUTING PIPE AND PERFORMING PRESSURE LOSS CALCULATIONS TO SIZE PIPE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- SEE CIVIL DRAWINGS FOR DEMOLISHED AND NEW CONCRETE PADS.
- THE MECHANICAL NEW WORK PLANS DO NOT SHOW ALL ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION AMONG TRADES TO DETERMINE ALL ACCESSORIES AND COMPONENTS REQUIRED TO FORM A COMPLETE AND FUNCTIONAL SYSTEM. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY ACCESSORIES AND COMPONENTS NEEDED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM AND SHALL BE RESPONSIBLE TO ENSURE THE INTEGRITY AND SAFETY OF THE SYSTEM AFTER COMPLETION. THE MECHANICAL CONTRACTOR SHALL TAKE ALL NECESSARY STEPS AND PROVIDE ALL ADDITIONAL COMPONENTS NEEDED TO ENSURE THE SYSTEM IS SAFE UPON COMPLETION OF THE PROJECT.
- SEE PWD-ME DRAWING; 43-15-67 FOR TITLE SHEET
43-15-68 FOR LIST OF DRAWINGS
43-15-69 FOR GENERAL NOTES & LEGENDS
43-15-72 FOR CHASE AND SOFFIT DETAILS
43-15-74 FOR STRUCTURAL NOTES AND SUPPORTS

SCHEDULE OF DRAWINGS

DWG#	DESCRIPTION
M1.0	BUILDING 22 HVAC LEGEND
MD2.0	BUILDING 22 HVAC FIRST FLOOR DEMOLITION PLAN
MD2.1	BUILDING 22 HVAC SECOND FLOOR DEMOLITION PLAN
MD2.2	BUILDING 22 HVAC THIRD FLOOR DEMOLITION PLAN
M2.0	BUILDING 22 HVAC FIRST FLOOR PLAN
M2.1	BUILDING 22 HVAC SECOND FLOOR PLAN
M3.0	BUILDING 22 HVAC CONTROLS
M3.1	BUILDING 22 HVAC CONTROLS
M3.2	BUILDING 22 HVAC CONTROLS
M4.0	BUILDING 22 HVAC SCHEDULES AND DETAILS

DATE	08/07/2015	DM
DATE	07/24/2015	DM
DATE	06/04/2015	DM
DATE	04/24/2015	DM
DATE	02/23/2015	DM
DATE		APPR

NO. DESCRIPTION	DATE
4 100% SUBMISSION	08/07/2015
3 100% REVIEW SUBMISSION	07/24/2015
2 90% SUBMISSION	06/04/2015
1 80% SUBMISSION	04/24/2015
0 35% SUBMISSION	02/23/2015

APPROVED: _____

FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DESIGNED BY JC DRAWN BY SV CHECKED BY DM

PM/DM PETER STOCKLESS

BRANCH MANAGER BRUCE LITALEN

TEAM/PM/ME AMIN BAHRROUR PM&E

FIRE PROTECTION X

NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC ~ PORTSMOUTH, NH

PUBLIC WORKS DEPARTMENT - NAVAL SHIPYARD - PORTSMOUTH, NH

RY 16 ENERGY PROJECT

TASK 1-B-R-22

BUILDING 22 HVAC LEGEND

PROJECT NO.: 1350913

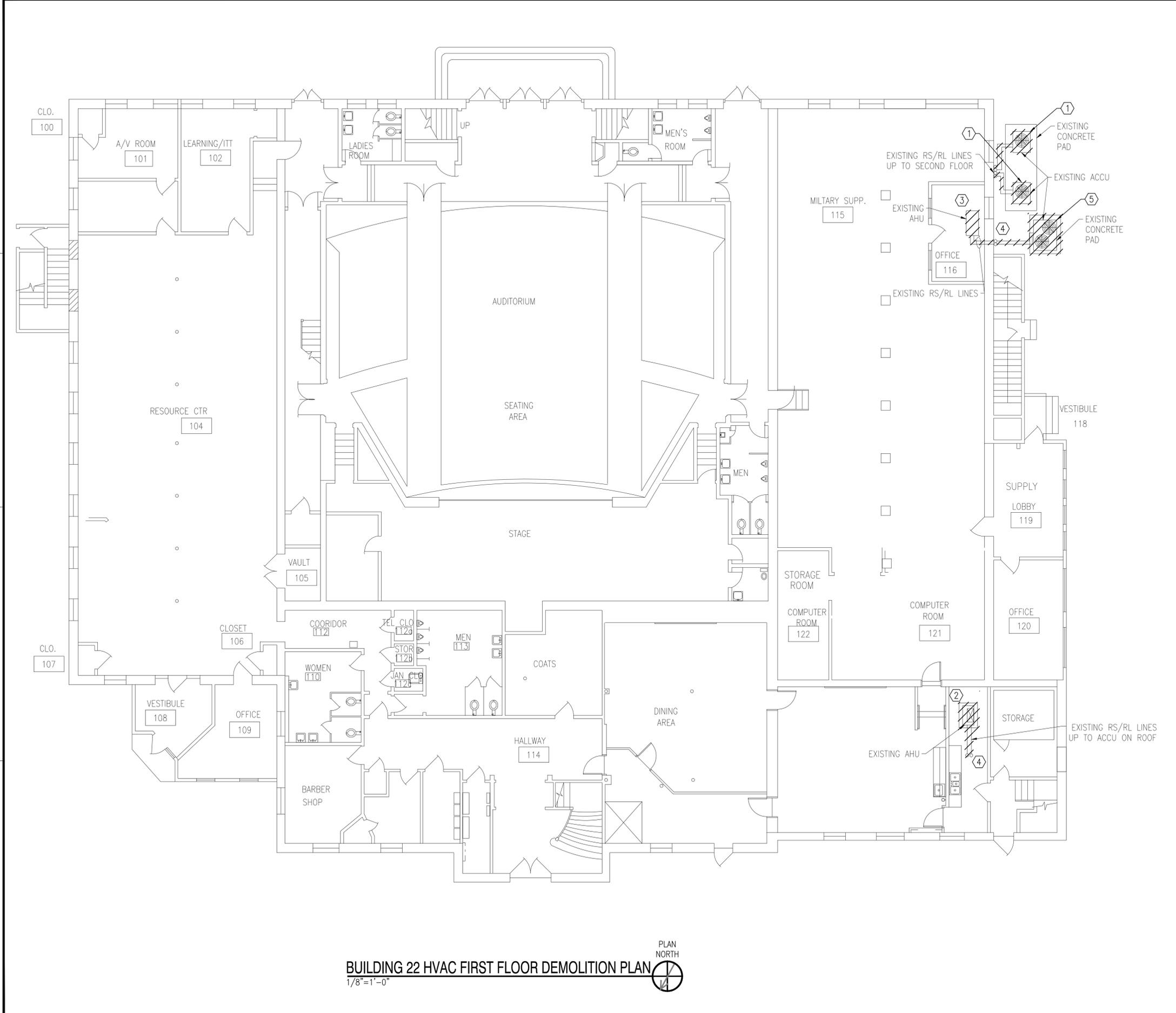
CONSTR. CONTR. NO. N40085-XX-C-XXXX

NAVFAC DRAWING NO. 12703502

SHEET 49 OF 506

M1.0 22-15-524

DRAWFORM REVISION: 10 OCTOBER 2014



BUILDING 22 HVAC FIRST FLOOR DEMOLITION PLAN
 1/8" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EQUIPMENT AND MATERIALS AT PERMITTED WASTE FACILITY.
3. CONTRACTOR TO COORDINATE R-22 DISPOSAL WITH PSNY ENVIRONMENTAL GROUP.

DEMOLITION KEYNOTES

1. REMOVE EXISTING ACCU. EXISTING CONCRETE PAD TO REMAIN.
2. REMOVE EXISTING AHU AND ASSOCIATED THERMOSTAT. EXISTING CONDENSATE DRAIN LINES, CONTROL WIRING, AND DUCTWORK TO REMAIN AND BE DISCONNECTED. EXISTING HOT WATER COIL TO BE REMOVED, EXISTING HW SUPPLY AND RETURN LINES TO BE CAPPED.
3. REMOVE EXISTING AHU AND ASSOCIATED THERMOSTAT. EXISTING CONDENSATE LINES, CONTROL WIRING, AND DUCTWORK TO REMAIN AND BE DISCONNECTED.
4. EXISTING ACCESSIBLE RS/RL LINES TO BE REMOVED. ANY REMAINING RS/RL CONCEALED TO BE EVACUATED, CAPPED, AND ABANDONED IN PLACE.
5. REMOVE EXISTING ACCU AND ASSOCIATED CONCRETE PAD.

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES: JC | DRW: SV | CHK: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHROUR PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 22 HVAC FIRST FLOOR DEMOLITION PLAN

PROJECT NO.: 1350913

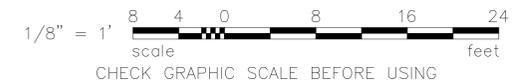
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NAVFAC DRAWING NO.: 12703503

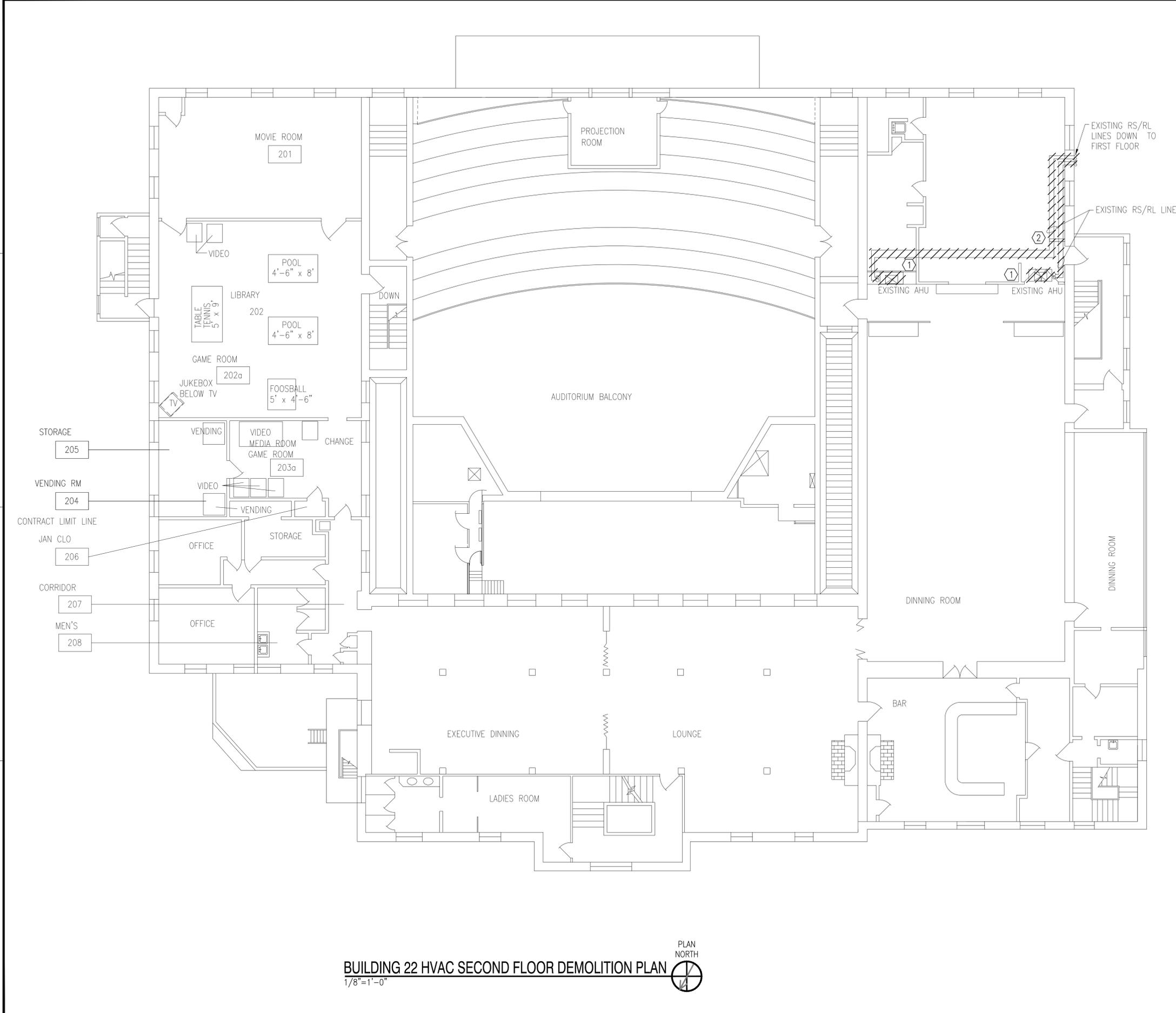
SHEET 50 OF 506

MD2.0 22-15-525
 DRAWING REVISION: 10 OCTOBER 2014

GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING



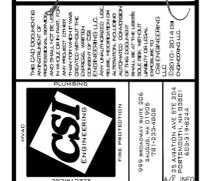
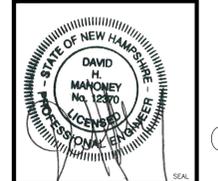
GENERAL SHEET NOTES

- REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- CONTRACTOR RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EQUIPMENT AND MATERIALS AT PERMITTED WASTE FACILITY.
- CONTRACTOR TO COORDINATE R-22 DISPOSAL WITH PSNY ENVIRONMENTAL GROUP.

DEMOLITION KEYNOTES

- REMOVE EXISTING AHU AND ASSOCIATED THERMOSTAT. EXISTING CONDENSATE DRAIN LINES, CONTROL WIRING, AND DUCTWORK TO REMAIN AND BE DISCONNECTED.
- EXISTING ACCESSIBLE RS/RL LINES TO BE REMOVED. ANY REMAINING RS/RL CONCEALED TO BE EVACUATED, CAPPED, AND ABANDONED IN PLACE.

REV	DESCRIPTION	DATE	DM	APP
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	

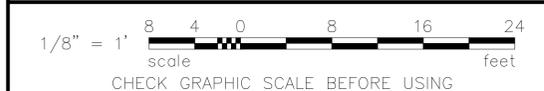


APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO	DATE
JCS JC	prw SV
PM/DM	PETER STOCKLESS
BRANCH MANAGER	BRUCE LITALIEN
FEAD/PAE	AMIN BAHROUR PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT ~ MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 22 HVAC SECOND FLOOR DEMOLITION PLAN

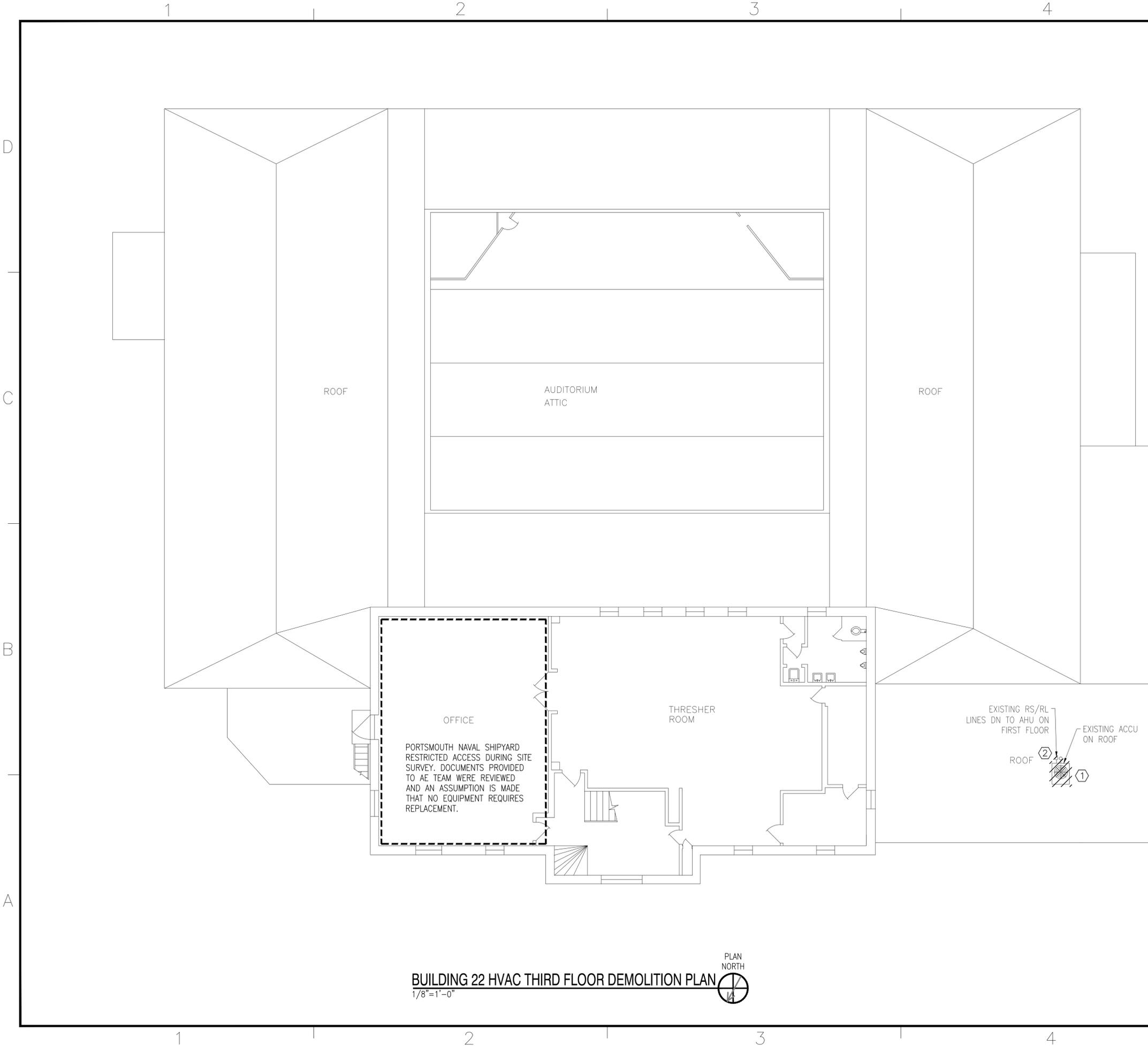
GRAPHIC SCALE



BUILDING 22 HVAC SECOND FLOOR DEMOLITION PLAN
 1/8"=1'-0"



PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703504
SHEET	51 OF 506
MD2.1	22-15-526



BUILDING 22 HVAC THIRD FLOOR DEMOLITION PLAN
 1/8"=1'-0"

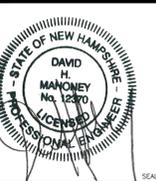
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EQUIPMENT AND MATERIALS AT PERMITTED WASTE FACILITY.
3. CONTRACTOR TO COORDINATE R-22 DISPOSAL WITH PSNY ENVIRONMENTAL GROUP.

DEMOLITION KEYNOTES

1. REMOVE EXISTING ACCU AND ASSOCIATED ROOF SUPPORT.
2. EXISTING ACCESSIBLE RS/RL LINES TO BE REMOVED. ANY REMAINING RS/RL CONCEALED TO BE EVACUATED, CAPPED, AND ABANDONED IN PLACE.

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



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SATISFACTORY TO DATE

DES: JC | PRW: SV | CHK: DM
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHRROUR PM&E

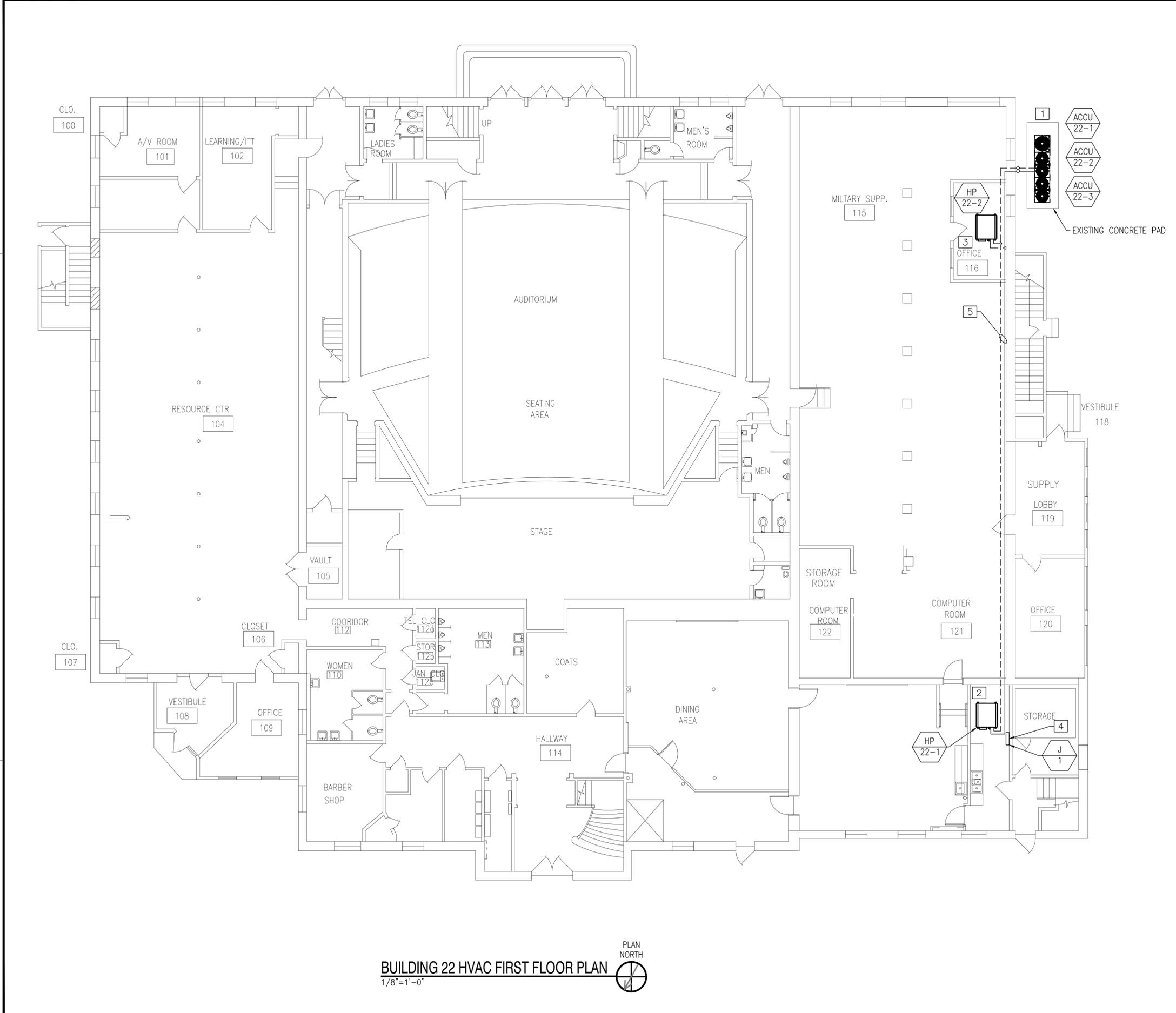
FIRE PROTECTION X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 22 HVAC THIRD FLOOR DEMOLITION PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703505
 SHEET 52 OF 506
 MD2.2 22-15-527

GRAPHIC SCALE





BUILDING 22 HVAC FIRST FLOOR PLAN
1/8"=1'-0"



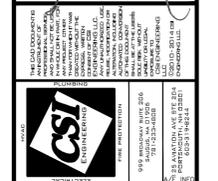
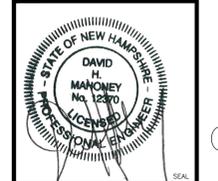
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

NEW WORK KEYNOTES

- FURNISH AND INSTALL NEW ACCU AND NEW RS/RL LINES TO ASSOCIATED HEAT PUMPS. NEW ACCU TO BE PLACED ON EXISTING CONCRETE PAD, EXTEND WHERE NECESSARY.
- FURNISH AND INSTALL NEW HP AND CONNECT TO ASSOCIATED RS/RL LINES. EXISTING CONDENSATE LINES, CONTROL WIRING, AND DUCTWORK TO BE RECONNECTED. PROVIDE WITH NEW DUCTWORK WHERE NECESSARY TO CONNECT TO NEW EQUIPMENT. FIELD FABRICATE MIXING BOX. PROVIDE WITH NEW DDC COMPATIBLE THERMOSTAT AND CONNECT TO EXISTING CONTROL WIRING, FIELD COORDINATE EXACT LOCATION WITH NAVFAC.
- FURNISH AND INSTALL NEW HP. EXISTING CONDENSATE LINES, CONTROL WIRING, AND DUCTWORK TO BE RECONNECTED. PROVIDE WITH NEW DUCTWORK WHERE NECESSARY TO CONNECT TO NEW EQUIPMENT. PROVIDE WITH NEW DDC COMPATIBLE THERMOSTAT AND CONNECT TO EXISTING CONTROL WIRING, FIELD COORDINATE EXACT LOCATION WITH NAVFAC.
- MECHANICAL CONTRACTOR TO FIELD COORDINATE EXACT LOCATION OF NEW DDC JACE BOX WITH NAVFAC.
- SEE HVAC GENERAL NOTE 17 ON SHEET M1.0 FOR PIPING INFORMATION.

REV	DATE	DESCRIPTION	BY	APPR
4	08/07/2015	100% SUBMISSION	DM	DM
3	07/24/2015	100% REVIEW SUBMISSION	DM	DM
2	06/04/2015	90% SUBMISSION	DM	DM
1	04/24/2015	80% SUBMISSION	DM	DM
0	02/23/2015	35% SUBMISSION	DM	DM

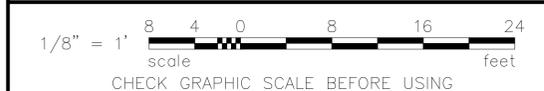


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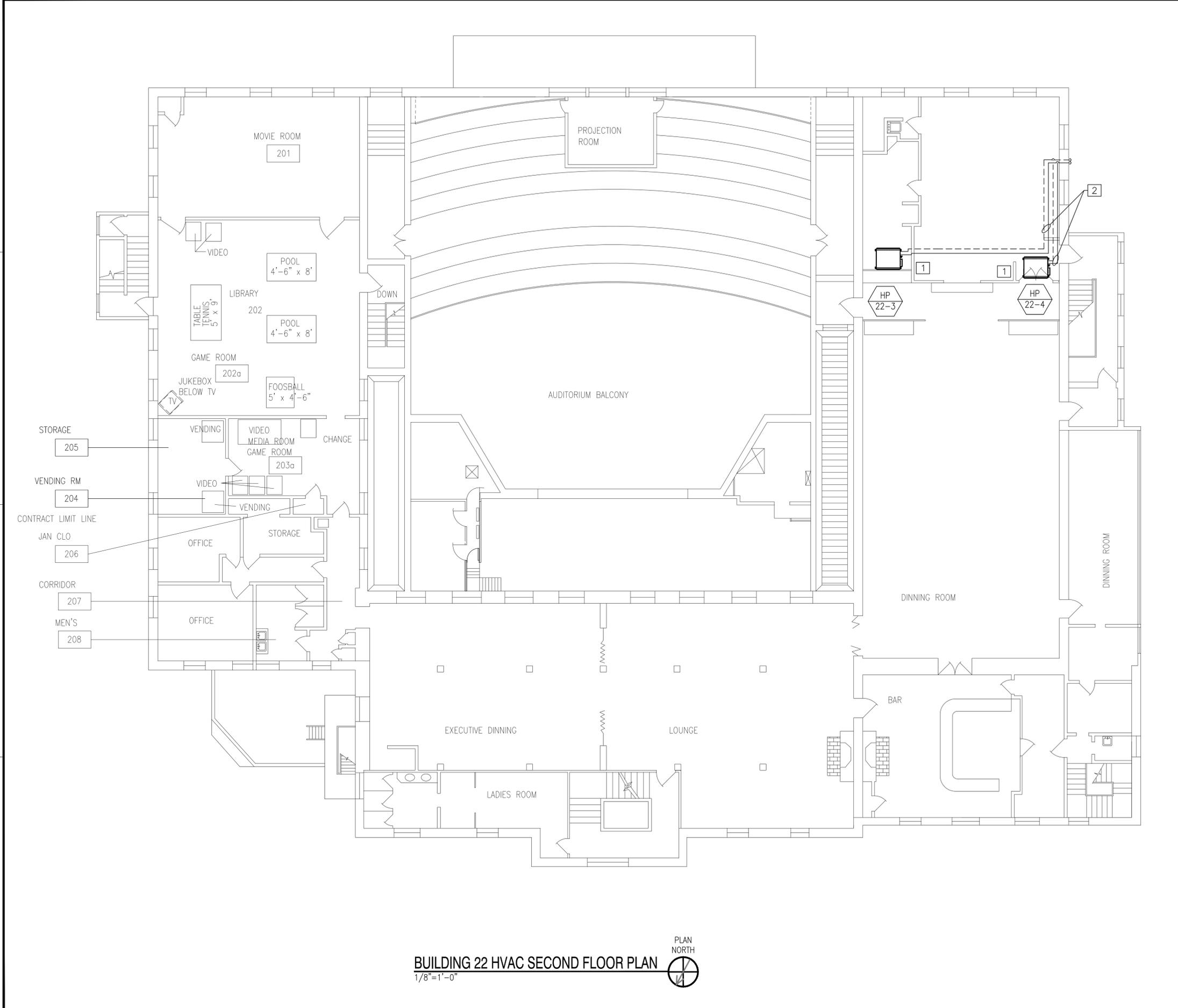
SATISFACTORY TO DATE
DES: JC | PRW: SV | CHK: DM
PM/DM: PETER STOCKLESS
BRANCH MANAGER: BRUCE LITALIEN
FEAD/PM&E: AMIN BAHRROUR PM&E

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD - KITTERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
BUILDING 22 HVAC FIRST FLOOR PLAN

GRAPHIC SCALE



PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703506
SHEET	53 OF 506
M2.0	22-15-528



BUILDING 22 HVAC SECOND FLOOR PLAN
1/8"=1'-0"



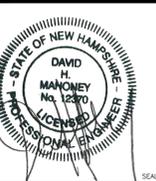
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

NEW WORK KEYNOTES

- FURNISH AND INSTALL NEW HP AND CONNECT TO ASSOCIATED RS/RL LINES. EXISTING CONDENSATE LINES, CONTROL WIRING, AND DUCTWORK TO BE RECONNECTED. PROVIDE WITH NEW DUCTWORK WHERE NECESSARY TO CONNECT TO NEW EQUIPMENT. PROVIDE WITH NEW DDC COMPATIBLE THERMOSTAT, FIELD COORDINATE EXACT LOCATION WITH NAVFAC.
- SEE HVAC GENERAL NOTE 17 ON SHEET M1.0 FOR PIPING INFORMATION.

REV	DESCRIPTION	DATE	DM	APP
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

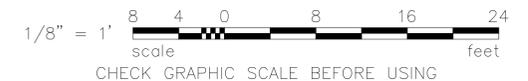
DES: JC | PRW: SV | CHK: DM
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHROUR PM&E

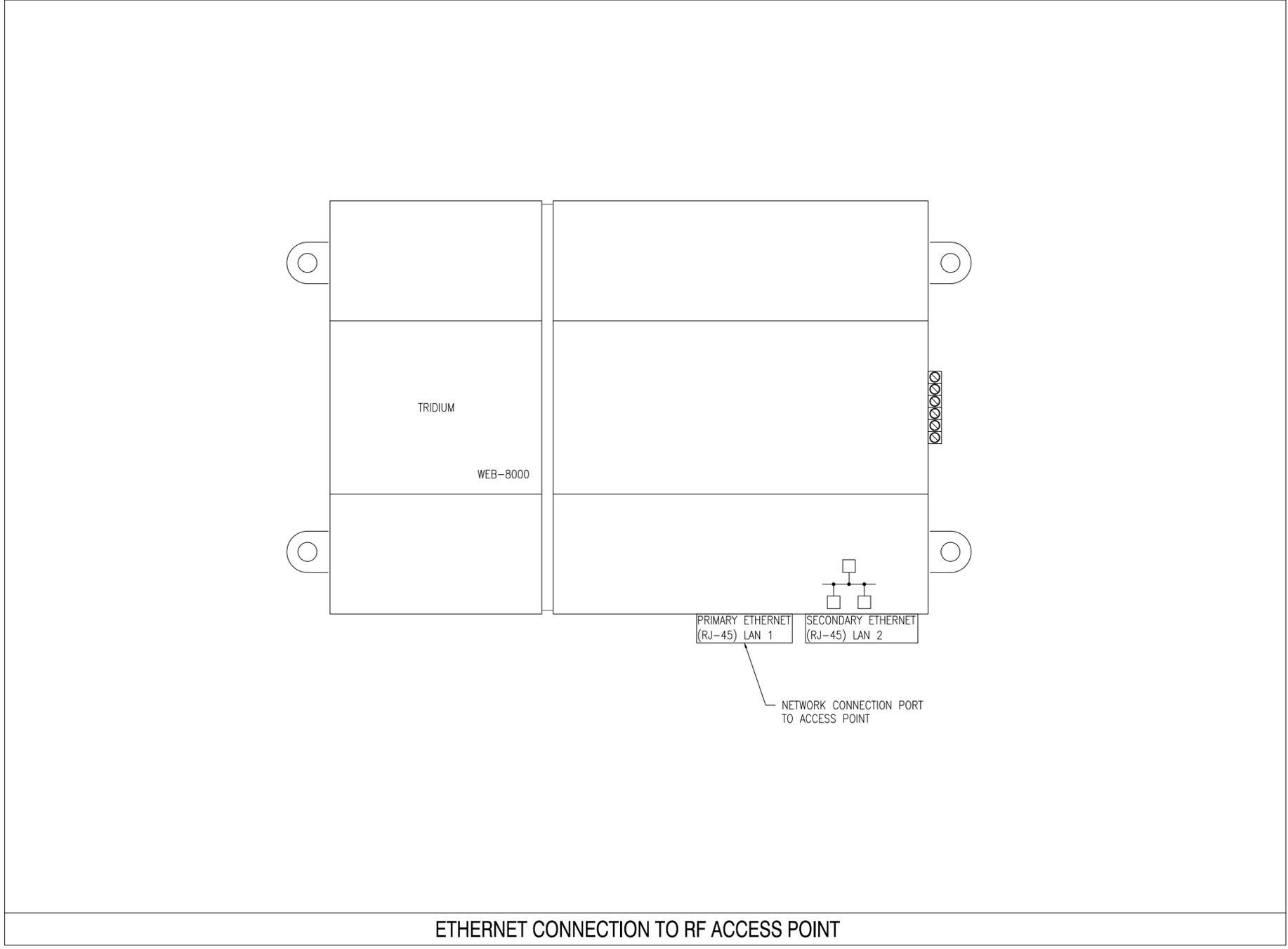
FIRE PROTECTION X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 22 HVAC SECOND FLOOR PLAN

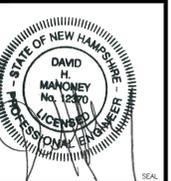
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 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703507
 SHEET 54 OF 506
M2.1 22-15-529
DRAWFORM REVISION: 10 OCTOBER 2014

GRAPHIC SCALE





SN#	DESCRIPTION	DATE	APPR
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3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES: JC | PRW: SV | CHK: DM
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHROUR PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 22 HVAC CONTROLS

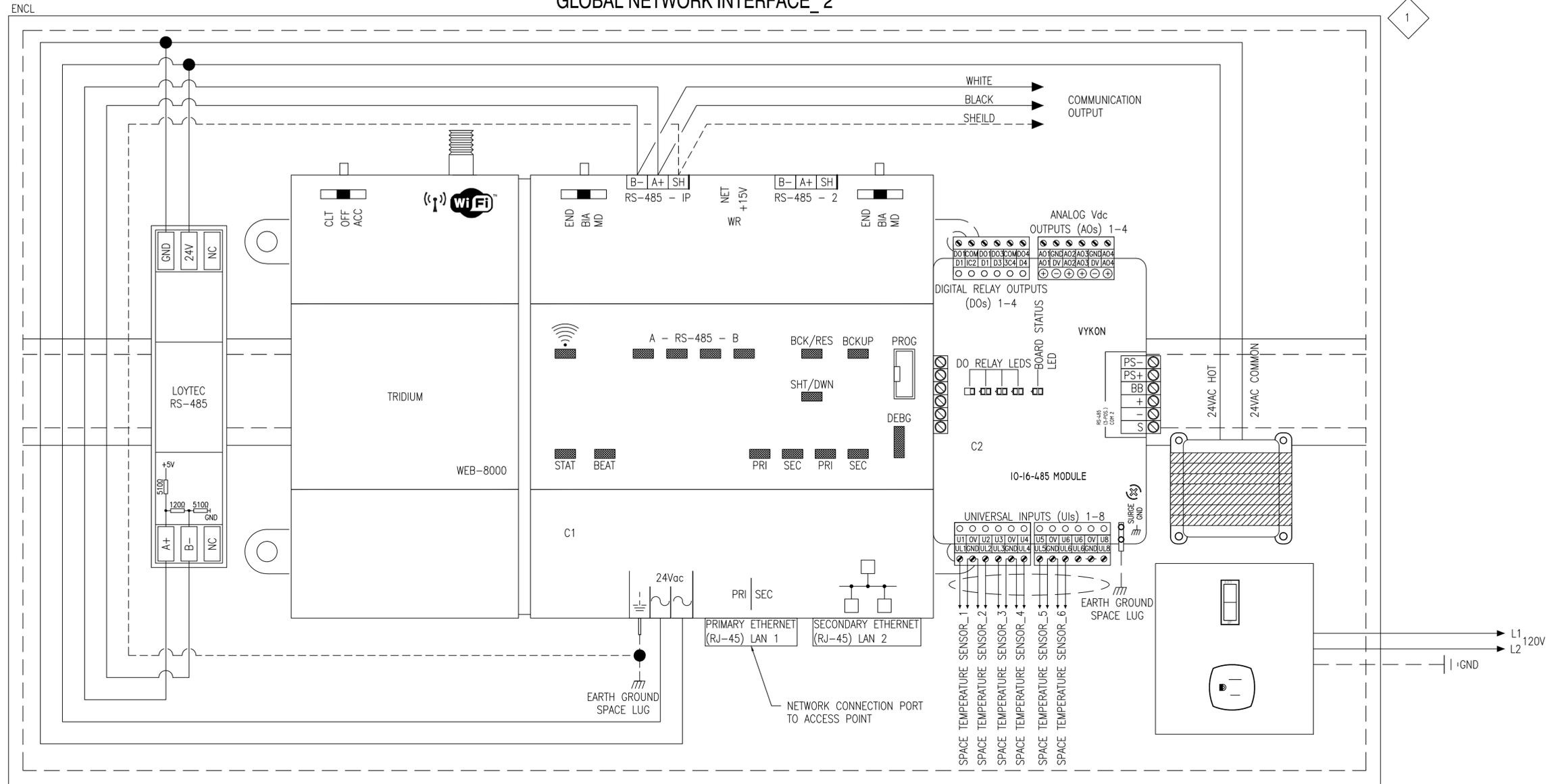
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 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703509

SHEET 56 OF 506

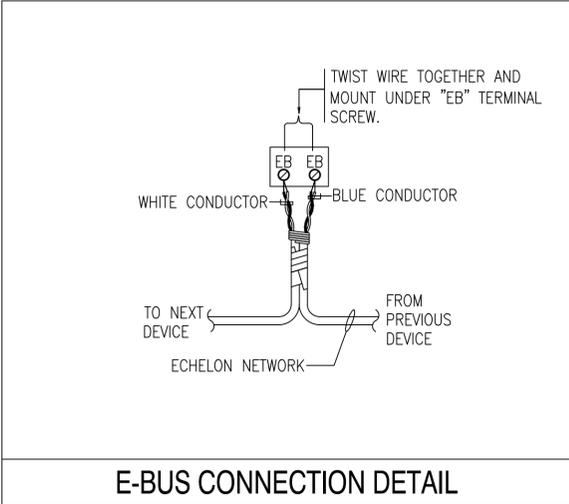
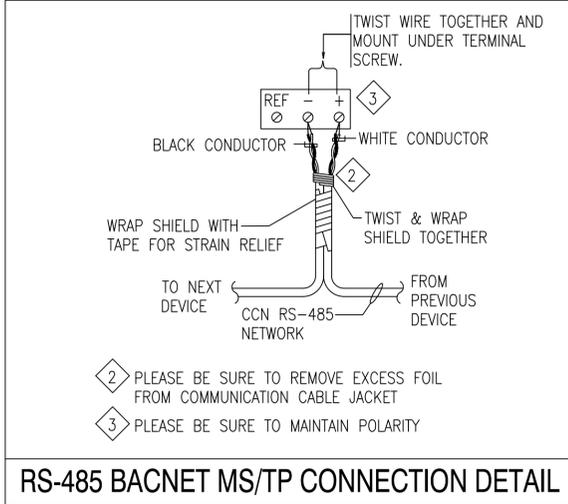
M3.1 22-15-531

DRAWING REVISION: 10 OCTOBER 2014

GLOBAL NETWORK INTERFACE_2



1 LOCATION OF CONTROLLER TO BE FIELD VERIFIED



PANEL MATERIAL			
ITEM NO	MODEL	DESCRIPTION	QTY
C1	J-8000	N4 WEB BASED GLOBAL NETWORK INTERFACE	1
C2	IO-16-485	REMOTE I/O MODULE	1
ENCL	ENC-001	12"x18"x4" ENCLOSURE W/ 24V TRANSFORMER	1
EOL1	209541B	END OF LINE RESISTOR	1
LT1	LT-B4	RS-485 NETWORK TERMINATOR	1

DATE	08/07/2015	DM
DATE	07/24/2015	DM
DATE	06/04/2015	DM
DATE	04/24/2015	DM
DATE	02/23/2015	DM
DATE		APPR

100% SUBMISSION	08/07/2015	DM
100% REVIEW SUBMISSION	07/24/2015	DM
90% SUBMISSION	06/04/2015	DM
80% SUBMISSION	04/24/2015	DM
35% SUBMISSION	02/23/2015	DM
REV	DESCRIPTION	DATE

APPROVED: _____

FBI COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO: _____ DATE: _____

DES: JC | DRW: SV | CHK: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

LEAD/PM: AMIN BAHRROUR PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT ~ MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 22 HVAC CONTROLS

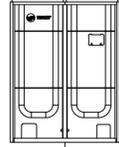
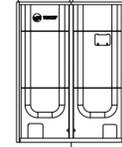
PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703509
 SHEET 57 OF 506
M3.2 22-15-532
DRAWING REVISION: 10 OCTOBER 2014

ACCU-1, 2, 3
Cooling Capa / Heating Capa
336000(0)BTU/h / 378000(0)BTU/h

Cooling Capa / Heating Capa
72000BTU/h / 81000BTU/h

Cooling Capa / Heating Capa
120000BTU/h / 135000BTU/h

Cooling Capa / Heating Capa
144000BTU/h / 162000BTU/h



Pipe Size : 3/8" / 3/4"
Pipe Length : 5.00ft/4.99ft/0

Pipe Size : 1/2" / 1 1/8"
Pipe Length : 3.28ft / 3.28ft / 0

Pipe Size : 1/2" / 1 1/8"
Pipe Length : 3.28ft / 3.28ft / 0

Pipe Size : 5/8" / 1 1/8"
Pipe Length : 5.00ft/4.99ft/0

Pipe Size : 3/4" / 1 3/8"
Pipe Length : 60.00ft/65.75ft/5

Pipe Size : 5/8" / 1 1/8"
Pipe Length : 45.00ft/51.57ft/4

Pipe Size : 3/8" / 3/4"
Pipe Length : 50.00ft/54.59ft/4

Pipe Size : 3/8" / 3/4"
Pipe Length : 15.00ft / 17.29ft / 2

Pipe Size : 5/8" / 1 1/8"
Pipe Length : 25.00ft/29.92ft/3

Pipe Size : 3/8" / 7/8"
Pipe Length : 20.00ft/23.92ft/3

Pipe Size : 3/8" / 7/8"
Pipe Length : 20.00ft / 22.60ft / 2

PIPING DIAGRAM

AIR COOLED CONDENSING UNIT SCHEDULE

TAG No.	SERVES	LOCATION	DESIGN BASED ON MANUFACTURER	DESIGN BASED ON MODULE MODEL No.	MODEL No.	COOLING DATA		HEATING DATA		ELECTRIC DATA			NOTES	
						COOLING (MBH)	EAT(°F)	HEATING (MBH)	EAT(°F)	VOLTS	PHASE	MOCP		MCA
ACCU-22-1	HP-1,2,3,4	OUTSIDE	TRANE	4TVH0336B300NB	4TVH0072B300NB	69	95	77	4	208	3	35	28	SEE NOTES
ACCU-22-2					4TVH0120B300NB	114	95	129	4	208	3	50	43	SEE NOTES
ACCU-22-3					4TVH0144B300NB	138	95	154	4	208	3	70	52.6	SEE NOTES

NOTES: 1. PROVIDE WITH DISCONNECT 2. PROVIDE WITH CONCRETE PAD 3. PROVIDE LOW AMBIENT CONTROLS TO ZERO DEGREES. 4. PROVIDE TIME DELAY CONTROLS. 5. UNIT IS A SINGLE PACKAGE UNIT. 6. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT. 7. PROVIDE WITH SEACOAST RATED COATING FOR CONDENSER COIL.

INDOOR HEAT PUMP SCHEDULE

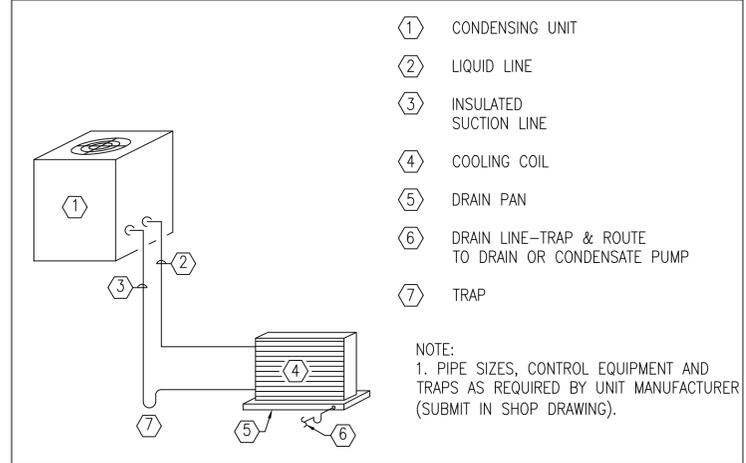
TAG NO.	TYPE	SERVICE	COOLING DATA		HEATING DATA		FAN DATA		ELECTRICAL DATA			DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES			
			TOTAL MBH	INDOOR TEMP. DB (°F)	OUTDOOR TEMP. DB (°F)	MBH	INDOOR TEMP. DB (°F)	OUTDOOR TEMP. DB (°F)	CFM	EXT.SP (IN.WG)	V			PH	HZ	
			HP-22-1	DUCTED	FIRST FLOOR	76.8	75	63	95	85.2	70			4	1837	0.2-0.98
HP-22-2	DUCTED	FIRST FLOOR	76.8	75	63	95	85.2	70	4	1837	0.2-0.98	208	1	60	TRANE 4TVA0076B100NB	1,2,3,4,5,6,8
HP-22-3	DUCTED	SECOND FLR	96	75	63	95	108	70	4	2295	0.2-1.10	208	1	60	TRANE 4TVA0096B100NB	1,2,3,4,5,6,7,8
HP-22-4	DUCTED	SECOND FLR	96	75	63	95	108	70	4	2295	0.2-1.10	208	1	60	TRANE 4TVA0096B100NB	1,2,3,5,6,7,8

NOTES: 1. PROVIDE WITH CONDENSATE FLOAT KIT. 2. PROVIDE WITH 2" THROWAWAY FILTERS. 3. PROVIDE WITH REMOTE THERMOSTAT. 4. PROVIDE WITH DRAIN PUMP CONDUMPXVHB01. 5. PROVIDE WITH WIRED REMOTE CONTROLLER TVCTRLTWRWD01T. 6. PROVIDE WITH BACNET GATEWAY TVCTRLTIMB17A0. 7. CONTRACTOR TO VERIFY SMOKE DETECTOR IN RA. 8. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT.

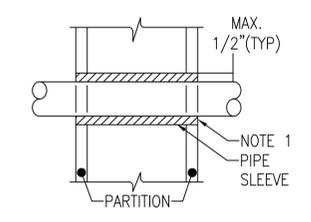
JACE BOX

TAG NO.	LOCATION	ELECTRICAL		DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES
		AMP	V		
J-1	SEE PLANS	20	120	JACE 8000	SEE NOTES

NOTES: 1. PROVIDE W/ MEMORY UPGRADE TO 4GB. 2. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT.



REFRIGERANT PIPING SMALL COMPONENT SCHEMATIC



NOTES:
1. AT FIRE RATED PARTITIONS ADD LAYER OF FIRE SAFING INSULATION AROUND PENETRATIONS SO AS TO FILL CAVITY.
2. PIPE PENETRATIONS THROUGH CORRIDOR WALLS ABOVE THE CEILING ARE TO BE FIRE STOPPED AROUND THE PENETRATION.
3. CONTRACTOR REPSONSIBLE FOR DETERMINING REQUIRED HOUR RATING TO MATCH EXISTING WALL ASSEMBLY.

PIPE PENETRATIONS

DM	08/07/2015
DM	07/24/2015
DM	06/04/2015
DM	04/24/2015
DM	02/23/2015
APPR	DATE

4 100% SUBMISSION
3 100% REVIEW SUBMISSION
2 90% SUBMISSION
1 80% SUBMISSION
0 35% SUBMISSION

SEAL

DAVID H. MAHONEY
LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
No. 12370

CS1

APPROVED FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES JC | DSW SV | CHR DM

PM/DM PETER STOCKLESS

BRANCH MANAGER BRUCE LITALIEN

LEAD/PM&E AMIN BAHRROUR PM&E

FIRE PROTECTION

NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
NAVAL SHIPYARD - PORTSMOUTH, NH
PORTSMOUTH NAVAL SHIPYARD - KITTERY, MAINE

FY 16 ENERGY PROJECT
TASK 1-B-R-22

BUILDING 22 HVAC SCHEDULES AND DETAILS

PROJECT NO.: 1350913
CONSTR. CONTR. NO. N40085-XX-C-XXXX
NAVFAC DRAWING NO. 12703511
SHEET 58 OF 506
M4.0 22-15-533
DRAWING REVISION: 10 OCTOBER 2014

WARNING

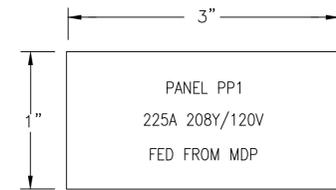
ARC FLASH AND SHOCK HAZARD
APPROPRIATE PPE REQUIRED

EQUIPMENT TYPE: _____
GROUNDING: _____
WORK DISTANCE: _____

AVAILABLE 3Ø BOLTED CURRENT: _____ kA
FLASH PROTECTION BOUNDARY: _____ INCHES
INCIDENT ENERGY AT 23 INCHES: _____ cal/cm²
PPE LEVEL: _____
DATE: _____

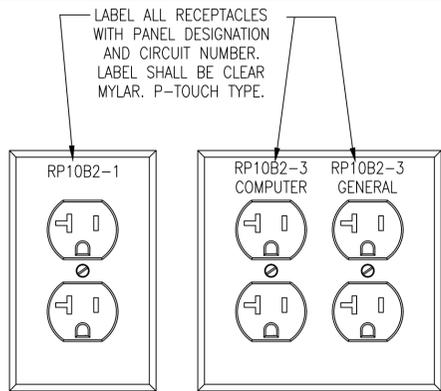
- NOTES:
- REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
 - PROVIDE ON ALL IN-LINE METER SOCKETS, SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS AND MOTOR CONTROL CENTERS IN ACCORDANCE WITH NEC 110.16.

TYPICAL FLASH PROTECTION WARNING LABEL

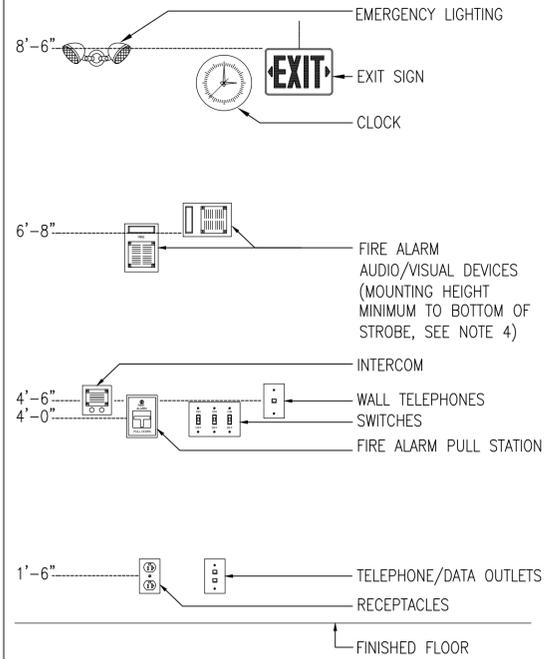


- NOTES:
- REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
 - NAMEPLATE TO BE 1/16" THICK PLASTIC WITH WHITE CENTER LAMINATION. FACE SHALL BE BLACK, ENGRAVED LETTERS SHALL BE WHITE.
 - SECURE NAMEPLATE TO SURFACES WITH HIGH STRENGTH ADHESIVE CEMENT. UTILIZE MECHANICAL FASTENERS FOR ALL EXTERIOR LOCATIONS.
 - TYPICAL FOR "STARTERS", "DISCONNECTS", AND "TRANSFORMERS".

TYPICAL NAMEPLATE DETAIL



RECEPTACLE LABEL REQUIREMENTS



- NOTES:
- ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGNS, CLOCKS, EMERGENCY LIGHTING AND FIRE ALARM A/V DEVICES.
 - DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
 - ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.
 - STROBE HEIGHT ILLUSTRATED AT MAXIMUM HEIGHT. STROBE SHALL BE 80" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER.

TYPICAL DEVICE MOUNTING HEIGHTS DETAIL

ELECTRIC ABBREVIATIONS

A/AMP AMPERE	LTG LIGHTING
AC ALTERNATING CURRENT	MCB MAIN CIRCUIT BREAKER
ADA AMERICAN WITH DISABILITIES ACT	MEC MASSACHUSETTS ELECTRIC CODE
AF AMPERE FRAME	MH MANHOLE
AFF ABOVE FINISHED FLOOR	MLO MAIN LUGS ONLY
AFG ABOVE FINISHED GRADE	MTD MOUNTED
AIC AMPERE INTERRUPTING CAPACITY	MTG MOUNTING
AL ALUMINUM	NEC NATIONAL ELECTRIC CODE
AT AMPERE TRIP	NTS NOT TO SCALE
ATS AUTOMATIC TRANSFER SWITCH	# NUMBER
AWG AMERICAN WIRE GAUGE	PVC POLYVINYL CHLORIDE
C CONDUIT	PWR POWER
CATV CABLE TELEVISION	RGS RIGID GALVANIZED STEEL
CCTV CLOSED CIRCUIT TELEVISION	SWBD SWITCHBOARD
CB CIRCUIT BREAKER	TEL TELEPHONE
CKT CIRCUIT	TERM TERMINAL
ε CENTERLINE	TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
DWG DRAWING	TSP TWISTED SHIELDED PAIR
EC ELECTRICAL CONTRACTOR	TYP TYPICAL
EMT ELECTRICAL METALLIC TUBING	UNO UNLESS OTHERWISE NOTED
FLMT FLEXIBLE LIQUID TIGHT METALLIC TUBING	UPS UNINTERRUPTIBLE POWER SUPPLY
GFI GROUND FAULT INTERRUPTING	UTP UNSHIELDED TWISTED PAIR
GND GROUND	V VOLT
HH HANDHOLE	VA VOLT AMPERE
HP HORSEPOWER	VFD VARIABLE FREQUENCY DRIVE
HVAC HEATING, VENTILATION AND AIR CONDITIONING	W WATT
HZ HERTZ	WP WEATHERPROOF
IG ISOLATED GROUND	
KVA KILOVOLT - AMPERE	
KW KILOWATT	

MOTOR & CONTROLS LEGEND

SYMBOL	DESCRIPTION
	MANUAL MOTOR STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION
	DISCONNECT SWITCH RATED 30AMP, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "3OAS" - INDICATES 30A SWITCH
	ENCLOSED CIRCUIT BREAKER IN NEMA TYPE 1 ENCLOSURE UNLESS OTHERWISE NOTED. "100AF" - INDICATES 100A, 3-POLE FRAME CIRCUIT BREAKER "80AT" - INDICATES TRIP RATING
	DDC CONTROL JACE BOX. PROVIDED BY TRADE CONTRACTOR. FIELD COORDINATE EXACT LOCATION.

ELECTRIC SYSTEM TAGS OR CALL OUT SYMBOLS

SYMBOL	DESCRIPTION
	EQUIPMENT SYMBOLS (REFER TO EQUIPMENT SCHEDULES)
	EQUIPMENT DESIGNATION
	EQUIPMENT REFERENCE NUMBER (TYP)
	NEW WORK NOTE TAG
	DEMOLITION NOTE TAG

POWER DISTRIBUTION LEGEND

SYMBOL	DESCRIPTION
	208Y/120 VOLT PANELBOARD, REFER TO SCHEDULE OF PANELBOARDS
	480Y/277 VOLT PANELBOARD, REFER TO SCHEDULE OF PANELBOARDS
	DRY TYPE TRANSFORMER

BRANCH CIRCUIT & FEEDER LEGEND

SYMBOL	DESCRIPTION
	BRANCH CIRCUIT HOME RUN. TYPICAL 2#12 & 1#12G IN 3/4" MINIMUM. PP1-(1) INDICATES PANEL AND CIRCUIT DESIGNATION FROM WHICH HOME RUN SHALL ORIGINATE. EACH CIRCUIT SHALL BE 20A-1P (20AMP SINGLE POLE) UNLESS NOTED OTHERWISE.

EXISTING EQUIPMENT LEGEND

SYMBOL	DESCRIPTION
	EXISTING EQUIPMENT TO REMAIN
	EXISTING EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT TO REMAIN FOR INFORMATION ONLY - (XM)
	EXISTING EQUIPMENT TO BE REWORKED - (XN, XL, XE, XR)
	EXISTING EQUIPMENT TO BE REWORKED - (XN, XL, XE, XR) INDICATED BY SYMBOL WITH DASHED AND IN FUNCTION LINE TYPE

WIRING DEVICES

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V
	"WP" - INDICATES WEATHERPROOF (TYP)
	"GFI" - INDICATES GROUND FAULT INTERRUPTER

ELECTRIC GENERAL NOTES

- THE ELECTRICAL DEMOLITION PLANS AND DETAILS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE SUBMISSION OF BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE FOR REMOVAL. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF WORK. DAMAGE SHALL INCLUDE BUT NOT LIMITED TO THE DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR BE SALVAGED.
- THE ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINT OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE CUT FLUSH AT THE SURFACE FOR PATCHING BY TRADE CONTRACTOR. ALL CIRCUIT BREAKERS ASSOCIATED WITH THE DEMOLITION SCOPE SHALL BE DE-ENERGIZED AND LABELED AS SPARE.
- ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF UNLESS IDENTIFIED FOR REUSE OR TURNED OVER TO OWNER. THE OWNER'S REPRESENTATIVE SHALL INSPECT ALL RETAINED ITEMS PRIOR TO PLACEMENT IN THE IDENTIFIED STORAGE LOCATION BY THE ELECTRICAL CONTRACTOR.
- CIRCUIT NUMBERS ARE DIAGRAMMATIC. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD AND REFLECTED ON AS-BUILT DOCUMENTATION BY THE ELECTRICAL CONTRACTOR. CIRCUITRY HAS BEEN DETERMINED BASED UPON INFORMATION GATHERED, ASSUMPTIONS, AND INFORMATION OBTAINED FROM NAVFAC.
- VOLTAGE DROP HAS BEEN CONSIDERED IN THE DESIGN OF ALL BRANCH CIRCUITRY AND FEEDER SIZES BASED UPON THE ILLUSTRATED EQUIPMENT LAYOUTS AND SHORTEST CONDUCTOR/RACEWAY ROUTING. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR DEVIATIONS TAKEN THAT WILL INCREASE CONDUCTOR/RACEWAY ROUTING LENGTHS. BRANCH CIRCUITS LONGER THAN 75' FOR 120V FROM PANEL TO LAST OUTLET SHALL BE INCREASED A MINIMUM OF ONE SIZE ABOVE THAT SPECIFIED TO LIMIT VOLTAGE DROP TO LESS THAN 3%. FEEDERS SHALL FOLLOW SIMILAR GUIDELINES AND BE LIMITED TO 2% DROP.
- THE ELECTRICAL NEW WORK PLANS DO NOT SHOW ALL ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION AMONG TRADES TO DETERMINE ALL ACCESSORIES AND COMPONENTS REQUIRED TO FORM A COMPLETE AND FUNCTIONAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY ACCESSORIES AND COMPONENTS NEEDED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM AND SHALL BE RESPONSIBLE TO ENSURE THE INTEGRITY AND SAFETY OF THE SYSTEM AFTER COMPLETION. THE ELECTRICAL CONTRACTOR SHALL TAKE ALL NECESSARY STEPS AND PROVIDE ALL ADDITIONAL COMPONENTS NEEDED TO ENSURE THE SYSTEM IS SAFE UPON COMPLETION OF THE PROJECT.
- ROUTING IS DIAGRAMMATIC. CONTRACTOR SHALL DETERMINE ROUTING IN FIELD AND RE-USE EXISTING PENETRATIONS WHERE POSSIBLE.
- SEE PWD-ME DRAWING NUMBERS;
 - 43-15-67 FOR TITLE SHEET
 - 43-15-68 FOR LIST OF DRAWINGS
 - 43-15-69 FOR GENERAL NOTES & LEGENDS
 - 43-15-72 FOR CHASE AND SOFFIT DETAILS
 - 43-15-74 FOR STRUCTURAL NOTES AND SUPPORTS

SCHEDULE OF DRAWINGS

DWG#	DESCRIPTION
E1.0	BUILDING 22 ELECTRICAL LEGEND
ED2.0	BUILDING 22 ELECTRICAL FIRST FLOOR DEMOLITION PLAN
ED2.1	BUILDING 22 ELECTRICAL SECOND FLOOR DEMOLITION PLAN
E2.0	BUILDING 22 ELECTRICAL FIRST FLOOR PLAN
E2.1	BUILDING 22 ELECTRICAL SECOND FLOOR PLAN
E2.2	BUILDING 22 ELECTRICAL THIRD FLOOR PLAN
E3.0	BUILDING 22 ELECTRICAL SCHEDULES

08/07/2015 07/24/2015 06/04/2015 04/24/2015 02/23/2015

100% SUBMISSION 100% REVIEW SUBMISSION 90% SUBMISSION 80% SUBMISSION 35% SUBMISSION

DATE DESCRIPTION

STATE OF NEW HAMPSHIRE
CHARLES E. MACE
No. 13078
PROFESSIONAL ENGINEER

CS1

APPROVED: _____
FOR COMMANDER NAVFAC

SATISFACTORY TO: _____ DATE: _____

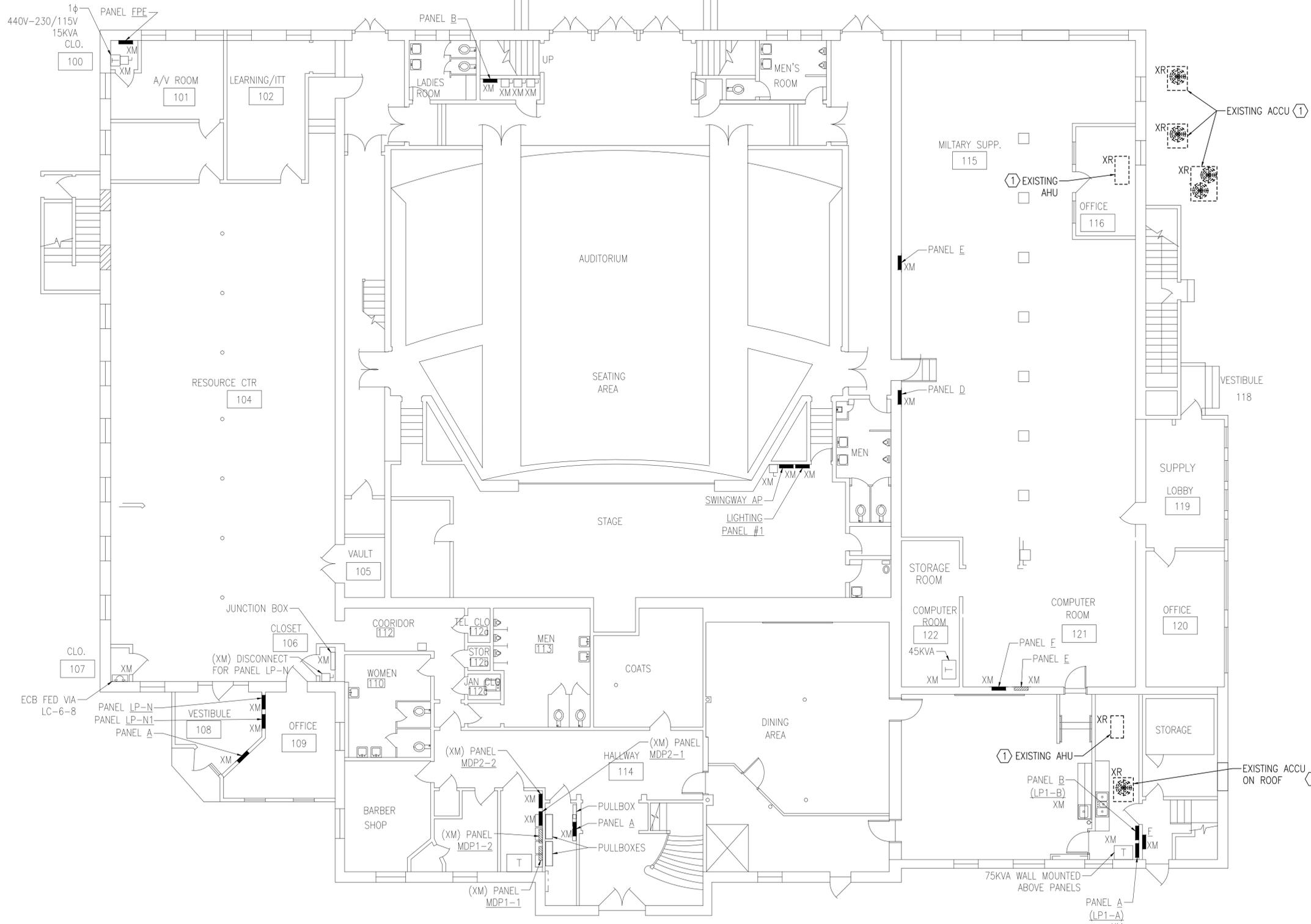
DES: TM | DSW: TM | CHR: JO
PM/DM: PETER STOCKLESS
BRANCH MANAGER BRUCE LITALIEN
LEAD/PM/ME AMIN BAHRROUR PM&E

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

FY 16 ENERGY PROJECT
TASK 1-B-R-22

BUILDING 22 ELECTRICAL LEGEND

PROJECT NO.: 1350913
CONSTR. CONTR. NO.: NA0085-XX-C-XXXX
NAVFAC DRAWING NO.: 12703512
SHEET 59 OF 506
E1.0 22-15-534
DRAWING REVISION: 10 OCTOBER 2014



BUILDING 22 ELECTRICAL FIRST FLOOR DEMOLITION PLAN
 1/8" = 1'-0"



GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
- THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS SCHEDULED PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
- THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.

DEMOLITION KEYNOTES

- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING UNIT. DEMOLISH EXISTING BRANCH CIRCUITRY AND DISCONNECT IN THEIR ENTIRETY. MAINTAIN ASSOCIATED CIRCUIT BREAKER AND LABEL AS "SPARE" FOR FUTURE USE.

NO	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES: TM | DRW: TM | CHK: JO
 PM/DM: PETER STOCKLESS

BRANCH MANAGER BRUCE LITALIEN
 FEAD/PM&E AMIN BAHROUR PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 22 ELECTRICAL FIRST FLOOR DEMOLITION PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703513

SHEET 60 OF 506

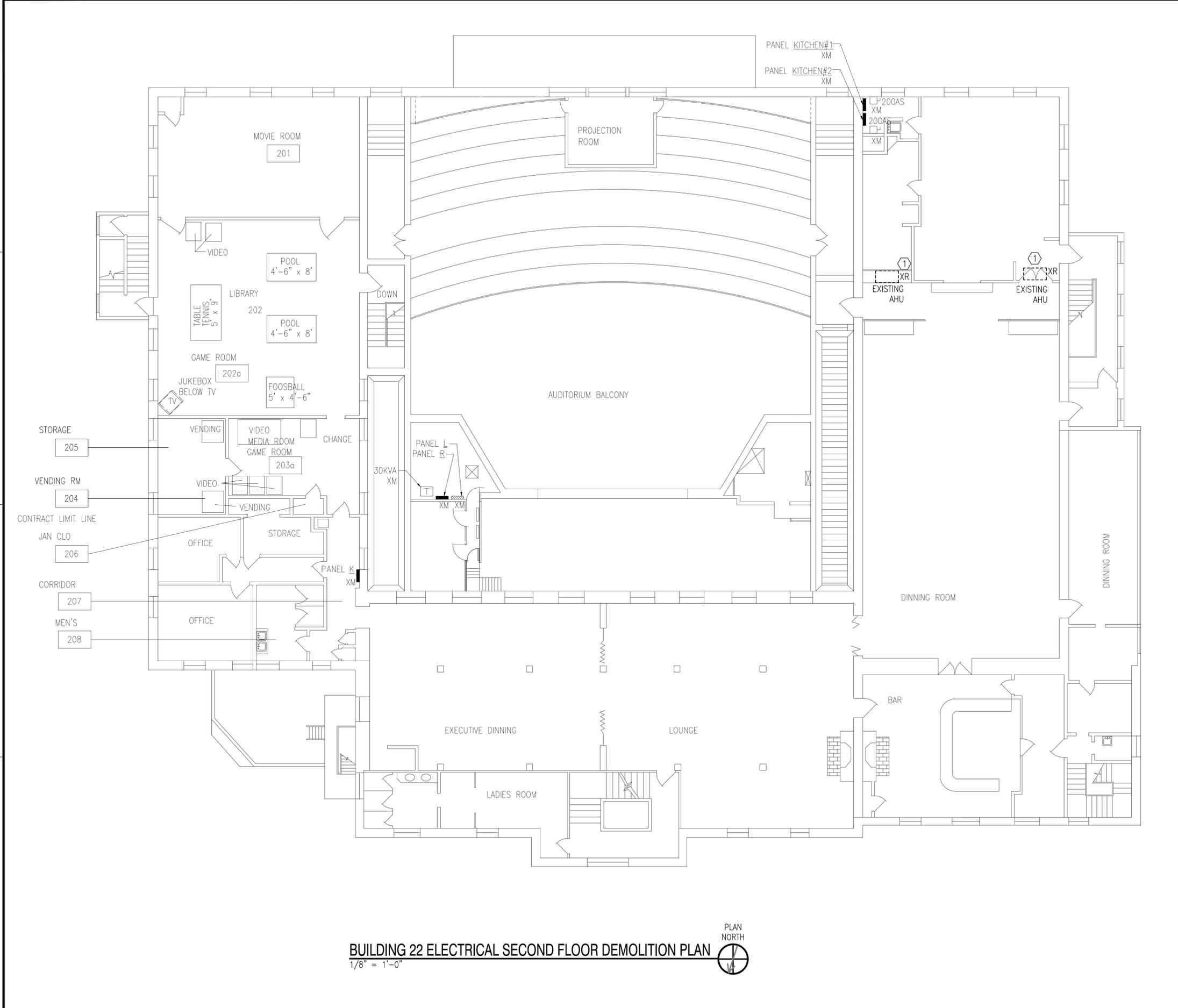
ED2.0 22-15-535

DRAWING REVISION: 10 OCTOBER 2014

GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING



BUILDING 22 ELECTRICAL SECOND FLOOR DEMOLITION PLAN
 1/8" = 1'-0"



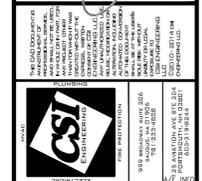
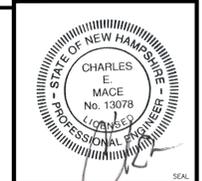
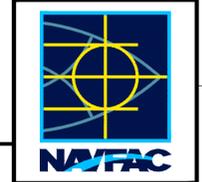
GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
- THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS SCHEDULED PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
- THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.

DEMOLITION KEYNOTES

- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING AHU. DEMOLISH EXISTING BRANCH CIRCUITRY, CIRCUIT BREAKER, AND DISCONNECT IN THEIR ENTIRETY.

REV	DESCRIPTION	DATE	DM	APP
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES: TM | PRW: TM | CHK: JO
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHROUR, PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT ~ MAINE
 PORTSMOUTH NAVAL SHIPYARD
 PORTSMOUTH, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 22 ELECTRICAL SECOND FLOOR DEMOLITION PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703514

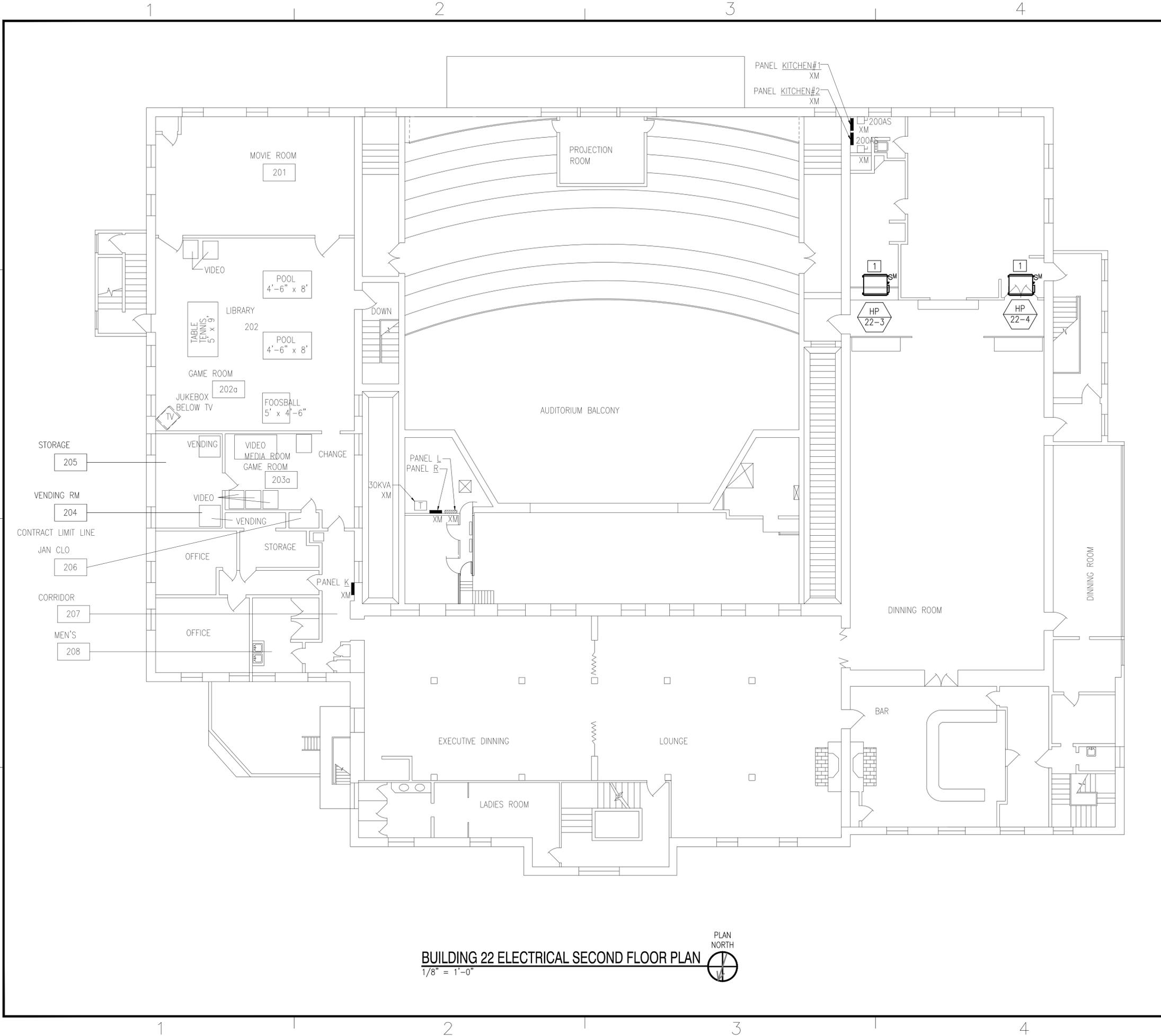
SHEET 61 OF 506

ED2.1 22-15-536

DRAWING REVISION: 10 OCTOBER 2014

GRAPHIC SCALE





BUILDING 22 ELECTRICAL SECOND FLOOR PLAN
 1/8" = 1'-0"
 PLAN NORTH

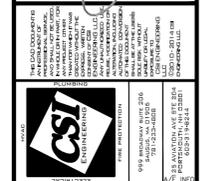
GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- POWER BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT FROM THE PANEL TO THE FIRST DEVICE AND/OR WHERE EXPOSED. POWER BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
- MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.

NEW WORK KEYNOTES

- PROVIDE NEW CIRCUIT BREAKER IN PANEL "KITCHEN #1" FOR NEW HEAT PUMP. PROVIDE NEW DISCONNECT AS SHOWN. REFER TO MECHANICAL EQUIPMENT SCHEDULE AND PANELBOARD SCHEDULE FOR ADDITIONAL INFORMATION.

REV	DATE	DESCRIPTION
4	08/07/2015	100% SUBMISSION
3	07/24/2015	100% REVIEW SUBMISSION
2	06/04/2015	90% SUBMISSION
1	04/24/2015	80% SUBMISSION
0	02/23/2015	35% SUBMISSION



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

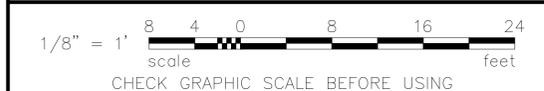
DES: TM | DSW: TM | CHK: JO
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 FEAD/PM&E: AMIN BAHROUR, PM&E

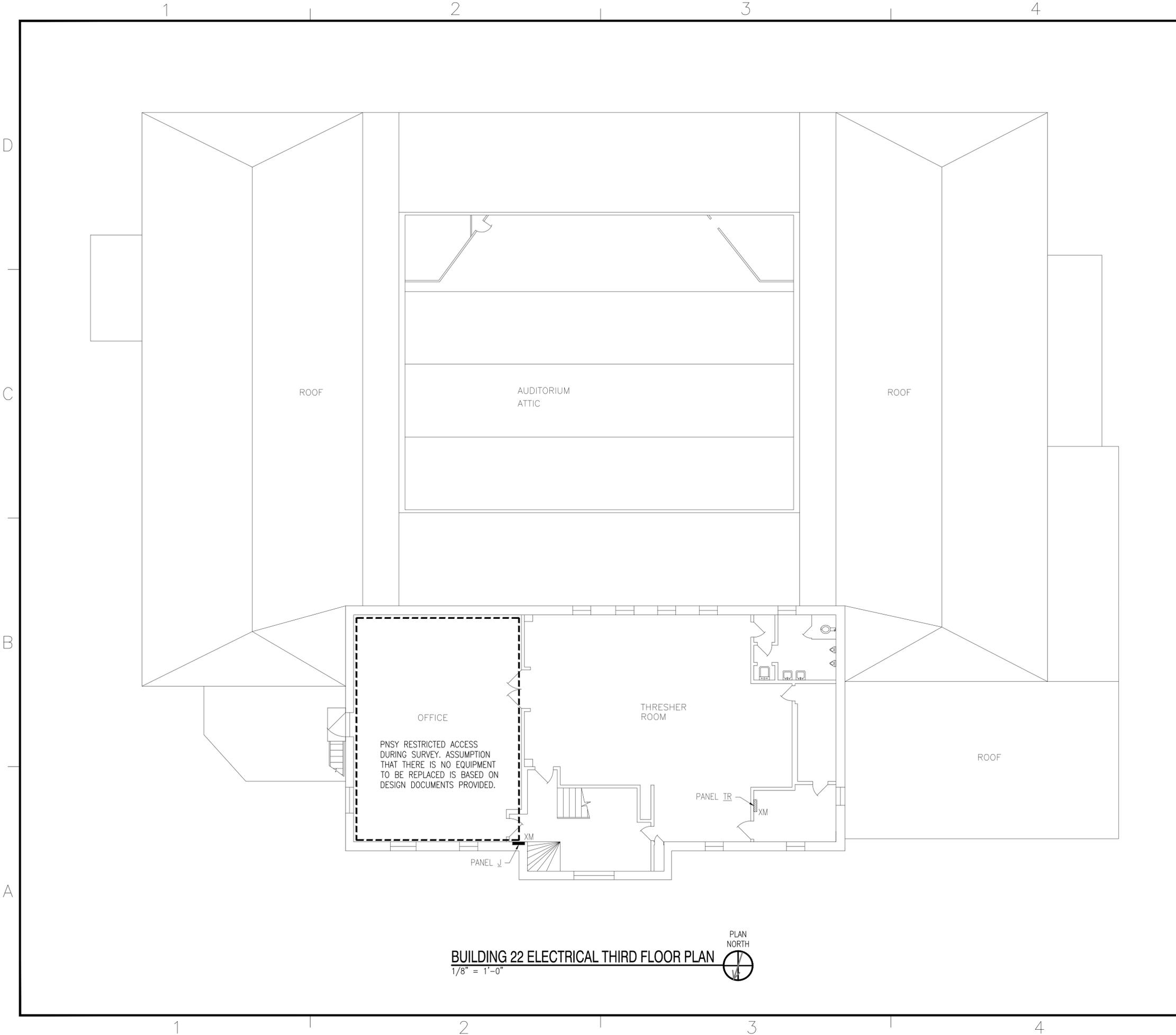
FIRE PROTECTION X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 22 ELECTRICAL SECOND FLOOR PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703516
 SHEET 63 OF 506
E2.1 22-15-538

GRAPHIC SCALE





BUILDING 22 ELECTRICAL THIRD FLOOR PLAN
 1/8" = 1'-0"



GENERAL SHEET NOTES

1. SHOWN FOR REFERENCE ONLY.

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

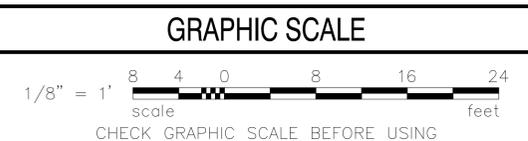
SATISFACTORY TO DATE

DES: TM | DRW: TM | CHK: JO
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHROUR PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 22 ELECTRICAL THIRD FLOOR PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703517
 SHEET 64 OF 506



PANELBOARD SCHEDULE									
PANEL: <u>D</u>		VOLTS: 120/ 208		NEW/EXISTING.: EXISTING					
MAIN: <u>MLO</u>		BUS AMPS: 100A		MOUNT.: SURFACE					
PH/WIRE: <u>3ø/4W</u>		AIC: 10K		LOC: BLDG 22 MILITARY SUPP. 115					
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD kVA	NOTE	NOTE	LOAD kVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1	20/1	TEMP. CONTROL PANEL	0	-	1	.53	HP-22-2	20/2	2
3	20/1	A/C REC. CODE 100	0	-	-	0	D-2 REC. COMP. ROOM	20/1	6
5	30/2	HEATER CIRCUIT	0	-	-	0	LTS KELLY'S OFFICE	20/1	8
7					-	0	REC. KELLY'S OFFICE	20/1	10
9	20/1	<u>ACCU GFI RECEPTACLE</u>	.18	2	-	0	REC. BELOW	20/1	12
11	20/1	SPARE	0	-	-	0	LTS COMP. ROOM	20/1	14
13	20/1	REC. THIS WALL	0	-	-	0	SPARE	20/1	16
15	20/1	SPARE	0	-	-	0	GFI WALL REC.	20/1	18
17					-	0	O'CLUB STEAM TABLE	40/2	20
19	15/3	HALON EXH. FAN	0	-	-	0	SPACE		22
21					-	0	SPACE		24
23		SPACE			-	0	TOTAL CONNECTED kVA:	0.71	
			0.18		-	0	TOTAL CONNECTED AMPERES:	1.97	

NOTES:
 1. REMOVE EXISTING 20A/1P CIRCUIT BREAKERS AND PROVIDE NEW CIRCUIT BREAKER SIZED AS INDICATED FOR NEW LOAD.
 2. VERIFY AND REUSE EXISTING CIRCUIT BREAKER AS SHOWN FOR NEW LOAD.
 3. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

PANELBOARD SCHEDULE									
PANEL: <u>KITCHEN#1</u>		VOLTS: 240		NEW/EXISTING.: EXISTING					
MAIN: <u>MLO</u>		BUS AMPS:		MOUNT.: SURFACE					
PH/WIRE: <u>3ø/4W</u>		AIC: 10K		LOC: BLDG 22 KITCHEN STORAGE					
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD kVA	NOTE	NOTE	LOAD kVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1	20/1	SPACE	0	-	-	0	SPACE	20/1	2
3	20/1	SPACE	0	-	-	0	SPACE	20/1	4
5	20/1	SHUNT TRIP	0	-	-	0	PIZZA OVEN	50/3	6
7					-	0	SHUNT TRIP	20/1	8
9	30/3	HOT PLATE COOKTOP	0	-	-	0	SHUNT TRIP	20/1	10
11					-	0	RIGHT SIDE FRYER	50/3	12
13	20/2	<u>HP-22-3</u>	.79	1	-	0	SHUNT TRIP	20/1	14
15					-	0	SHUNT TRIP	20/1	16
17	20/2	<u>HP-22-4</u>	.79	1	-	0	SHUNT TRIP	20/1	18
19					-	0	LEFT SIDE FRYER	60/3	20
21		SPACE			-	0	SHUNT TRIP	20/1	22
23		SPACE			-	0	SHUNT TRIP	20/1	24
25					-	0	SHUNT TRIP	20/1	26
27	20/3	IN-SINKERATOR	0	-	-	0	RANGE/GRIDDLE TOP	70/3	28
29					-	0	SHUNT TRIP	20/1	30
31					-	0	SHUNT TRIP	20/1	32
33	20/3	HOOD FAN	0	-	-	0	HOOD LIGHTS/CEILING FANS	20/1	34
35					-	0	ANSIL SHUNT TRIP CIRCUIT	20/1	36
37	20/1	PANEL REC.	0	-	-	0	SPARE (HOOD CTRL CIRCUIT)	20/1	38
39	20/1	PANEL REC.	0	-	-	0	TOTAL CONNECTED kVA:	1.58	40
41	20/1	PANEL REC.	0	-	-	0	TOTAL CONNECTED AMPERES:	3.81	42

NOTES:
 1. REMOVE (2) EXISTING 3P CIRCUIT BREAKERS AND PROVIDE NEW 2P CIRCUIT BREAKERS SIZED AS INDICATED FOR NEW LOADS. PROVIDE (2) 1P SPACE PLATES FOR REMAINING SPACES MADE AVAILABLE UPON DEMOLITION OF EXISTING 3P CIRCUIT BREAKERS.
 2. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

PANELBOARD SCHEDULE									
PANEL: <u>A (LP1-A)</u>		VOLTS: 120/ 208		NEW/EXISTING.: EXISTING					
MAIN: <u>225A MCB</u>		BUS AMPS: 225A		MOUNT.: SURFACE					
PH/WIRE: <u>3ø/4W</u>		AIC:		LOC: BLDG 22					
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD kVA	NOTE	NOTE	LOAD kVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1	20/1	<u>JACE BOX</u>	.02	1	-	0	SPARE	20/1	2
3	20/1	SPARE	0	-	-	0	SPARE	20/1	4
5	20/1	SPARE	0	-	-	0	SPACE		6
7	20/1	SPARE	0	-	-	0	SPACE TO JBOX BEHIND BAR	30/3	8
9	50/2	SPARE	0	-	-	0	SPARE	80/3	10
11					-	0	SPARE	40/3	12
13	15/2	EXIST. CIRCUIT UNKNOWN	0	-	-	0	AHU	20/1	14
15					-	0	AHU CONTROL PANEL	30/2	16
17	30/2	SPARE	0	-	-	0	TOTAL CONNECTED kVA:	0.55	18
19	20/1	SPARE	0	-	-	0	TOTAL CONNECTED AMPERES:	1.53	20
21	20/1	SPARE	0	-	-	0			22
23	20/2	<u>HP-22-1</u>	.53	1	-	0			24
25					-	0			26
27	20/2	AHU A/C	0	-	-	0			28
29					-	0			30

NOTES:
 1. VERIFY AND REUSE EXISTING CIRCUIT BREAKER AS INDICATED FOR NEW LOAD.
 2. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

PANELBOARD SCHEDULE									
PANEL: <u>MDP-2 (SEC. 1)</u>		VOLTS: 120/ 208		NEW/EXISTING.: EXISTING					
MAIN: <u>600A MCB</u>		BUS AMPS: 600A		MOUNT.: SURFACE					
PH/WIRE: <u>3ø/4W</u>		AIC: 25K		LOC: BLDG. 22 MAIN ELEC. ROOM					
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD kVA	NOTE	NOTE	LOAD kVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1	100/3	SNACK BAR PANEL	0	-	1	10.1	ACCU-22-1	35/3	2
3	100/3	PANEL E	0	-	1	15.5	ACCU-22-2	50/3	4
5		SPACE			2	19.0	ACCU-22-3	70/3	6
7	60/3	PANEL J	0	-	-	0	PANEL G	60/3	8
9	60/3	PANEL F	0	-	-	0	PANEL K	60/3	10
11	200/3	AUDITORIUM SWINGWAY (AP)	0	-	-	0	GALLEY SWINGWAY (IC)	200/3	12
13		SPACE			-	0	PANEL IC-A	200/3	14
			0.00		-	0	TOTAL CONNECTED kVA:	44.60	
					-	0	TOTAL CONNECTED AMPERES:	123.94	

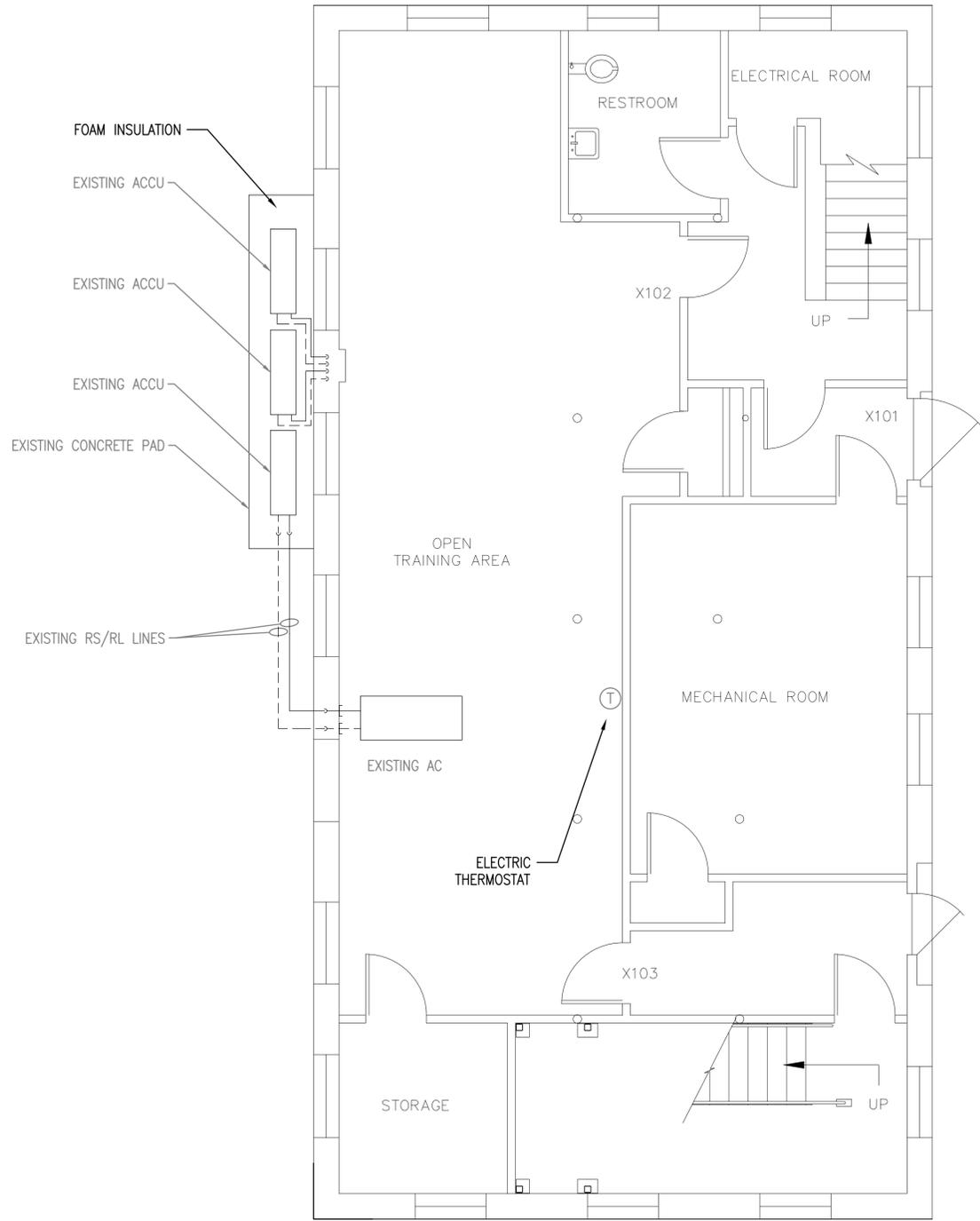
NOTES:
 1. REMOVE EXISTING CIRCUIT BREAKER AND PROVIDE NEW SIZED AS INDICATED FOR NEW LOAD.
 2. PROVIDE NEW CIRCUIT BREAKER SIZED AS INDICATED FOR NEW LOAD.
 3. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

MECHANICAL EQUIPMENT SCHEDULE													
EQUIP TAG	DESCRIPTION	LOAD				PANEL SOURCE		CONNECTION				NOTES	
		HP	KVA	VOLT	PH	PANEL	C/B	BRANCH CIRCUIT	FLEX	JB	REC		DISC
ACCU-22-1	AIR CONDENSING UNIT	-	10.09	208	3	MDP-2-(2) SECTION 1	35A/3P	(3)#10, (1)#10G, 3/4"C	X			X	NOTE 7
ACCU-22-2	AIR CONDENSING UNIT	-	15.49	208	3	MDP-2-(4) SECTION 1	50A/3P	(3)#8, (1)#10G, 3/4"C	X			X	NOTE 7
ACCU-22-3	AIR CONDENSING UNIT	-	18.95	208	3	MDP-2-(6) SECTION 1	70A/3P	(3)#4, (1)#8G, 1"C	X			X	NOTE 7
HP-22-1	HEAT PUMP	-	.53	208	1	LP1-A-(23,25) PANEL "A"	20A/2P	(2)#12, (1)#12G, 3/4"C	X			X	NOTE 8
HP-22-2	HEAT PUMP	-	.53	208	1	D-(2,4)	20A/2P	(2)#12, (1)#12G, 3/4"C	X			X	NOTE 8
HP-22-3	HEAT PUMP	-	.79	208	1	KITCHEN #1-(13,15)	20A/2P	(2)#12, (1)#12G, 3/4"C	X			X	NOTE 8
HP-22-4	HEAT PUMP	-	.79	208	1	KITCHEN #1-(17,19)	20A/2P	(2)#12, (1)#12G, 3/4"C	X			X	NOTE 8

NOTES:
 1. BRANCH CIRCUIT WIRING METHODS SHALL BE AS NOTED ON THE DRAWINGS AND/OR SPECIFICATIONS FOR THE APPLICABLE LOCATION.
 2. "FLEX" - DENOTES FINAL THREE FEET (MAXIMUM) OF RACEWAY SHALL BE FLEXIBLE METAL OR LIQUIDTIGHT METAL CONDUIT.
 3. "JB" - JUNCTION BOX DENOTES FINAL CONNECTION TO BOX OR CONTROL PANEL PREWIRED TO THE EQUIPMENT.
 4. "REC" - PROVIDE RECEPTACLE IN THE NEMA CONFIGURATION NOTED.
 5. NOTES 6-9 ARE OPTIONS WHICH SHALL BE SPECIFICALLY NOTED IN REMARKS FOR INCLUSION.
 6. DISCONNECT SHALL BE FUSIBLE.
 7. DISCONNECT SHALL BE NEMA "3R".
 8. DISCONNECT SHALL BE MOTOR-RATED SWITCH WITH THERMAL OVERLOAD ELEMENT.
 9. DISCONNECT PROVIDED INTEGRAL (PREWIRED) TO EQUIPMENT BY TRADE CONTRACTOR.
 10. INTEGRAL CONVENIENCE RECEPTACLE PROVIDED PREWIRED TO EQUIPMENT BY TRADE CONTRACTOR.

DM	08/07/2015	DM	07/24/2015	DM	07/10/2015	DM	04/24/2015	DM	01/20/2015	DATE
100% SUBMISSION		100% REVIEW SUBMISSION		90% SUBMISSION		80% SUBMISSION				
4		3		2		1		0		
										
										
										
APPROVED FOR COMMANDER NAVAC ACTIVITY SATISFACTORY TO DATE DES TM DESW TM CHW JO PM/DM PETER STOCKLESS BRANCH MANAGER BRUCE LITALIEN LEAD/FRAME AMIN BAHROUR PM&E FIRE PROTECTION X NAVAC DRAWING NO. 12703518 SHEET 65 OF 506 E3.0 22-15-540 DRAWFORM REVISION: 10 OCTOBER 2014										

FILE NAME: J:\A\1866_AEP_Subcontracting_Support\Drawings\DWG\A1066_2_HM1_B27.dwg LAYOUT NAME: B27-H1.0 PLOTTED: Friday, August 07, 2015 - 2:34pm USER: REP



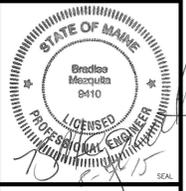
B27 FIRST FLOOR HAZARDOUS MATERIAL SAMPLING PLAN
SCALE: 1/4" = 1'



GENERAL SHEET NOTES

- ALL PACM (PRESUMED ASBESTOS CONTAINING MATERIAL), LBP (LEAD BASED PAINT), PCB, AND OTHER HAZARDOUS BUILDING MATERIALS MAY NOT BE IDENTIFIED IN THIS SURVEY, PARTICULARLY THOSE HIDDEN IN WALLS, CEILINGS, FLOORS, ETC. AND IN AREAS DESCRIBED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, WHICH WERE INACCESSIBLE DURING THE SURVEY. ASSESSMENT EFFORTS DID INCLUDE, TO THE EXTENT FEASIBLE, ACCESS TO INTERIOR AND EXTERIOR OF THE STRUCTURE. HOWEVER, THE ABSENCE OF ALL PACM, LBP, PCB, AND OTHER HAZARDOUS BUILDING MATERIALS IN HIDDEN OR INACCESSIBLE PORTIONS CANNOT BE DEFINITELY ENSURED.
- RENOVATION AND/OR DEMOLITION ACTIVITIES SHOULD BE MONITORED BY PERSONNEL CAPABLE OF IDENTIFYING PACM, LBP, PCB AND OTHER HAZARDOUS BUILDING MATERIALS. IF PACM, LBP, PCB OR OTHER HAZARDOUS BUILDING MATERIALS ARE ENCOUNTERED, THESE MATERIALS SHOULD BE BULK SAMPLED BY A LICENSED INSPECTOR AND DISPOSED OF IN ACCORDANCE WITH PNSY AND ALL OTHER APPLICABLE REGULATIONS.
- SEE B27 ASBESTOS, LEAD, PCB, AND TCLP INVENTORY TABLES LOCATED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, DATED JUNE 22, 2015, FOR ADDITIONAL INFORMATION.

NO.	DATE	DESCRIPTION	BY	APPR.
2	08/07/2015	100% SUBMISSION		
1	06/05/2015	90% SUBMISSION		



Tighe & Bond
Consulting Engineers
177 Corporate Drive
Portsmouth, New Hampshire
(603) 433-8818
www.tighebond.com

APPROVED:
FOR COMMANDER NAFAC

DES	A/E	DRW	REP	CHK	BLM

BRANCH MANAGER: BRUCE LITALIEN
LEAD/PAINE: AMIN BAHRLOUR PM&E

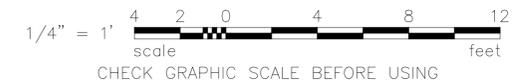
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
NAVAL SHIPYARD - MID-ATLANTIC
NAVAL SHIPYARD - PORTSMOUTH, NH
PORTSMOUTH NAVAL SHIPYARD
KITERY, MAINE

**FY 16 ENERGY PROJECT
TASK 1-B-R-22**

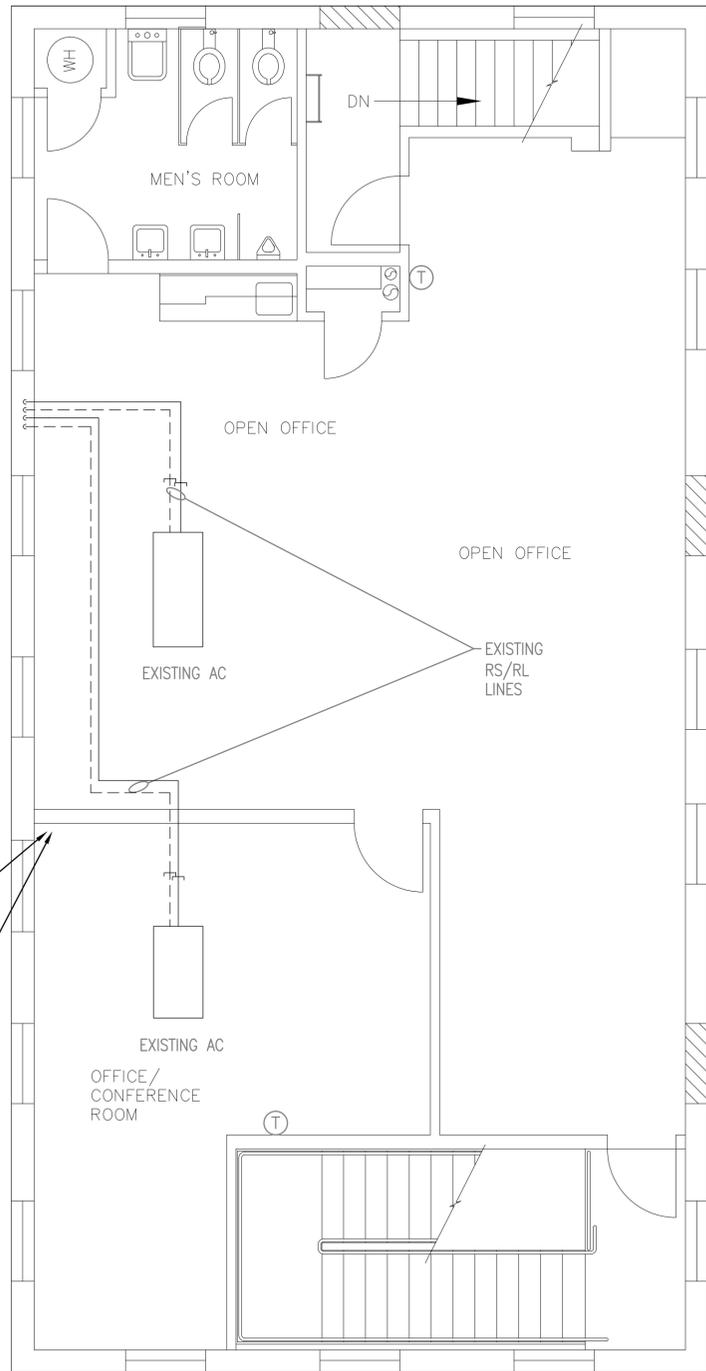
B27 HAZARDOUS MATERIAL SAMPLING PLAN

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAFAC DRAWING NO.:	12703520
SHEET	67 OF 506
H1.0	27-15-27

GRAPHIC SCALE



FILE NAME: J:\A\1866_AEP_Subcontracting_Support\Drawings\DWG\A1066_2_HM1_B27.dwg LAYOUT NAME: B27-H1.1 PLOTTED: Friday, August 07, 2015 - 2:34pm USER: REP



B27 SECOND FLOOR HAZARDOUS MATERIAL SAMPLING PLAN

SCALE: 1/4" = 1'



GENERAL SHEET NOTES

- ALL PACM (PRESUMED ASBESTOS CONTAINING MATERIAL), LBP (LEAD BASED PAINT), PCB, AND OTHER HAZARDOUS BUILDING MATERIALS MAY NOT BE IDENTIFIED IN THIS SURVEY, PARTICULARLY THOSE HIDDEN IN WALLS, CEILINGS, FLOORS, ETC. AND IN AREAS DESCRIBED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, WHICH WERE INACCESSIBLE DURING THE SURVEY. ASSESSMENT EFFORTS DID INCLUDE, TO THE EXTENT FEASIBLE, ACCESS TO INTERIOR AND EXTERIOR OF THE STRUCTURE. HOWEVER, THE ABSENCE OF ALL PACM, LBP, PCB, AND OTHER HAZARDOUS BUILDING MATERIALS IN HIDDEN OR INACCESSIBLE PORTIONS CANNOT BE DEFINITELY ENSURED.
- RENOVATION AND/OR DEMOLITION ACTIVITIES SHOULD BE MONITORED BY PERSONNEL CAPABLE OF IDENTIFYING PACM, LBP, PCB AND OTHER HAZARDOUS BUILDING MATERIALS. IF PACM, LBP, PCB OR OTHER HAZARDOUS BUILDING MATERIALS ARE ENCOUNTERED, THESE MATERIALS SHOULD BE BULK SAMPLED BY A LICENSED INSPECTOR AND DISPOSED OF IN ACCORDANCE WITH PNSY AND ALL OTHER APPLICABLE REGULATIONS.
- SEE B27 ASBESTOS, LEAD, PCB, AND TCLP INVENTORY TABLES LOCATED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, DATED JUNE 22, 2015, FOR ADDITIONAL INFORMATION.

NO.	DESCRIPTION	DATE	BLM	BLM	APPR.
2	100% SUBMISSION	08/07/2015			
1	90% SUBMISSION	06/05/2015			



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 Consulting Engineers
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 Portsmouth, New Hampshire
 (603) 433-8818
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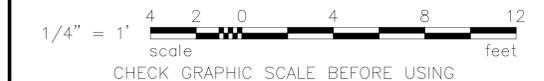
HAZARDOUS MATERIAL SAMPLING SUMMARY

SAMPLE ID	ACM	LBP
27-01	ND	NS
27-02	ND	NS
27-03	ND	NS
27-04	ND	NS
27-05	ND	NS
27-06	ND	NS

ACM = ASBESTOS CONTAINING MATERIALS
 LBP = LEAD BASED PAINT
 <RL = LESS THAN REPORTING LIMIT
 ND = NONE DETECTED
 NS = NOT SAMPLED
 H = EXCEEDS REGULATORY STANDARDS FOR HAZARDOUS CONCENTRATION

NOTE:
 REFER TO HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT DATED JUNE 22, 2015 FOR COMPLETE SAMPLING INFORMATION AND DATA.

GRAPHIC SCALE



DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE

NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 NAVAL SHIPYARD - PORTSMOUTH, NH

FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 B27 HAZARDOUS MATERIAL SAMPLING PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703521
 SHEET 68 OF 506
H1.1 27-15-28
 DRAWFORM REVISION: 10 OCTOBER 2014

1

2

3

4

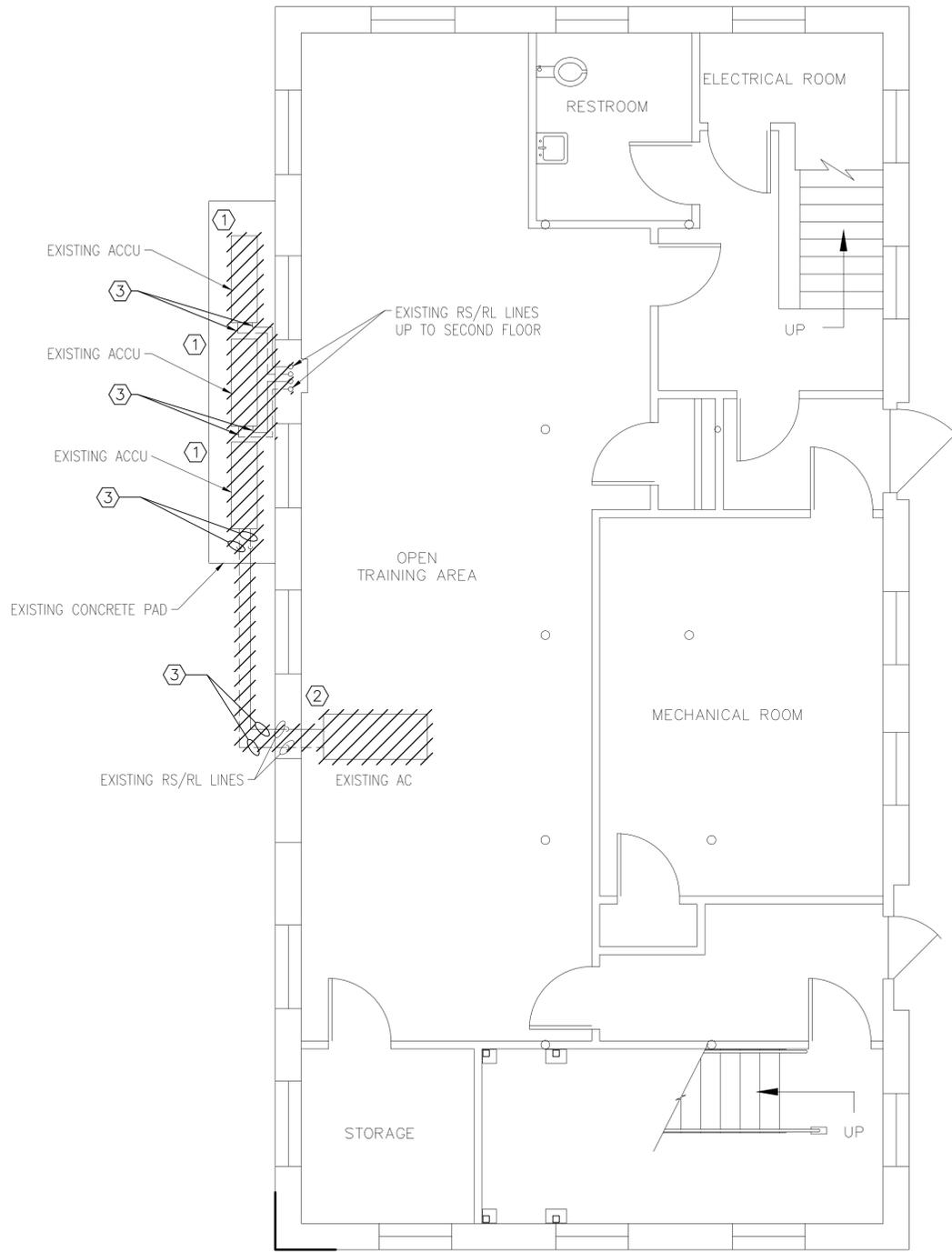
5

D

C

B

A



BUILDING 27 HVAC FIRST FLOOR DEMOLITION PLAN
 1/4"=1'-0"



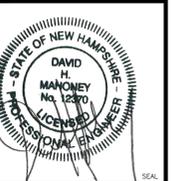
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EQUIPMENT AND MATERIALS AT PERMITTED WASTE FACILITY.
3. CONTRACTOR TO COORDINATE R-22 DISPOSAL WITH PSNY ENVIRONMENTAL GROUP.

DEMOLITION KEYNOTES

1. REMOVE EXISTING ACCU. EXISTING CONCRETE PAD TO REMAIN.
2. REMOVE EXISTING AC AND ASSOCIATED THERMOSTAT. EXISTING CONDENSATE LINES, CONTROL WIRING, AND DUCTWORK TO REMAIN AND BE DISCONNECTED.
3. ACCESSIBLE EXISTING RS/RL LINES TO BE REMOVED. ANY REMAINING RS/RL CONCEALED TO BE EVACUATED, CAPPED AND ABANDONED IN PLACE.

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

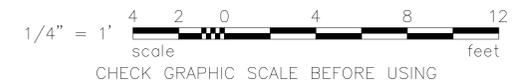
DES: JC | PRW: SV | CHK: DM
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION X

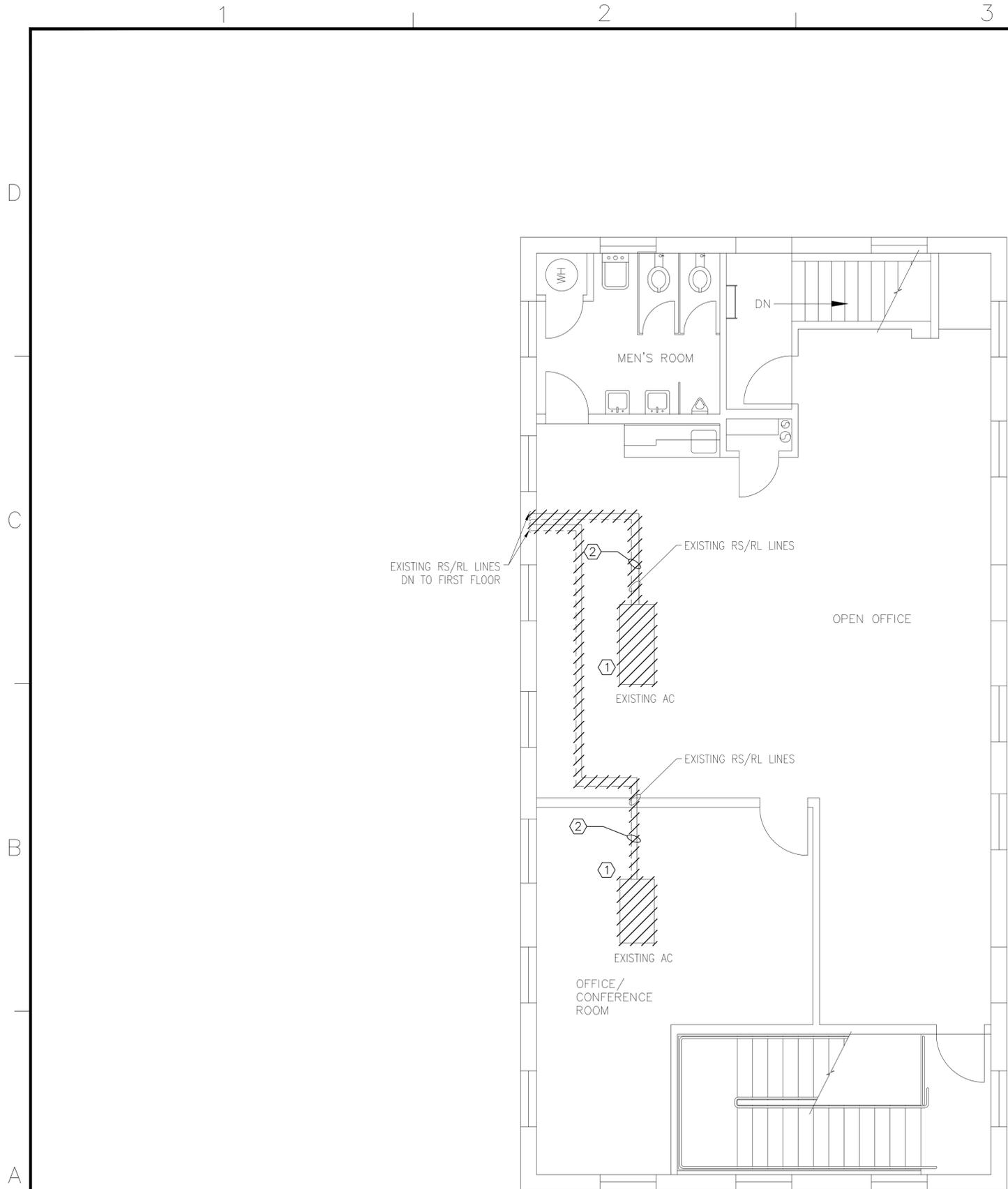
DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 27 HVAC FIRST FLOOR DEMOLITION PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703523
 SHEET 70 OF 506
 MD2.0 27-15-30

GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING



BUILDING 27 HVAC SECOND FLOOR DEMOLITION PLAN
 1/4"=1'-0"
 PLAN NORTH

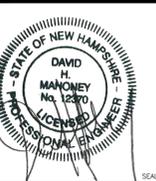
GENERAL SHEET NOTES

- REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- CONTRACTOR RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EQUIPMENT AND MATERIALS AT PERMITTED WASTE FACILITY.
- CONTRACTOR TO COORDINATE R-22 DISPOSAL WITH PSNY ENVIRONMENTAL GROUP.

DEMOLITION KEYNOTES

- REMOVE EXISTING AC AND ASSOCIATED THERMOSTAT. EXISTING CONDENSATE LINES, CONTROL WIRING, AND DUCTWORK TO REMAIN AND BE DISCONNECTED.
- ACCESSIBLE EXISTING RS/RL LINES TO BE REMOVED. ANY REMAINING RS/RL CONCEALED TO BE EVACUATED, CAPPED AND ABANDONED IN PLACE.

NO.	DESCRIPTION	DATE	DM	APPR.
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



APPROVED FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES. JC | DWR SV | CHK. DM

PM/DM PETER STOCKLESS

BRANCH MANAGER BRUCE LITALIEN

FEAD/PM&E AMIN BAHROUR PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY

NAVAL FACILITIES ENGINEERING COMMAND

NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC

NAVAL SHIPYARD - PORTSMOUTH, NH

PORTSMOUTH NAVAL SHIPYARD

RY 16 ENERGY PROJECT

TASK 1-B-R-22

BUILDING 27 HVAC SECOND FLOOR DEMOLITION PLAN

PROJECT NO.: 1350913

CONSTR. CONTR. NO. N40085-XX-C-XXXX

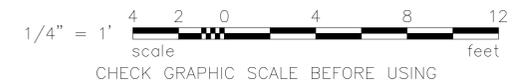
NAVFAC DRAWING NO. 12703524

SHEET 71 OF 506

MD2.1 27-15-31

DRAWING REVISION: 10 OCTOBER 2014

GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING

1

2

3

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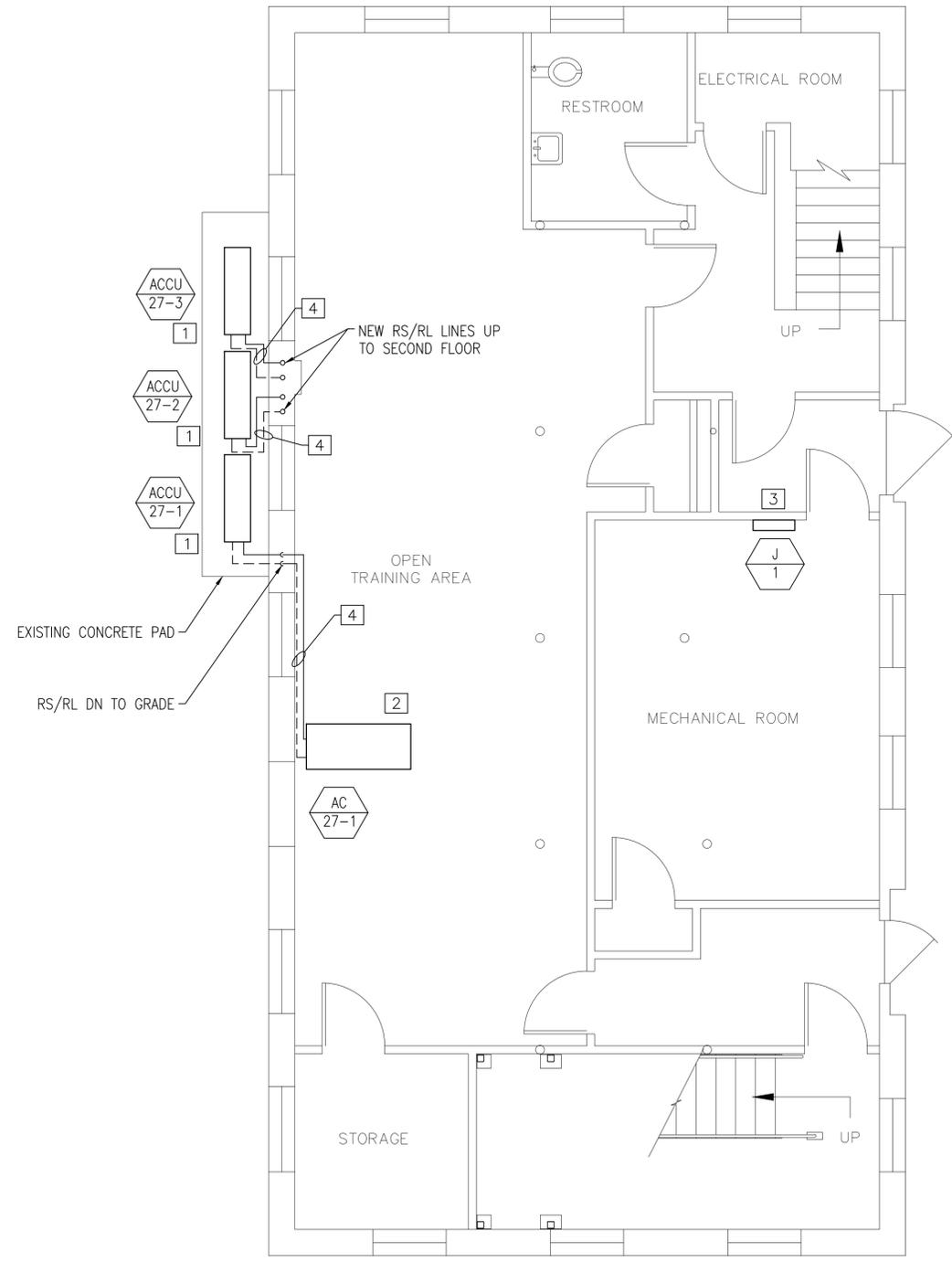
5

D

C

B

A



BUILDING 27 HVAC FIRST FLOOR PLAN

1/4" = 1'-0"



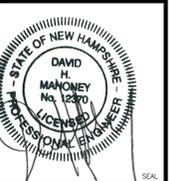
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

NEW WORK KEYNOTES

1. FURNISH AND INSTALL NEW ACCU AND IT'S ASSOCIATED RS/RL LINES. NEW ACCU TO BE PLACED ON EXISTING CONCRETE PAD.
2. FURNISH AND INSTALL NEW AC AND ASSOCIATED RS/RL LINES AND CONNECT TO ACCU. EXISTING CONDENSATE LINES, CONTROL WIRING, AND DUCTWORK TO BE RECONNECTED. PROVIDE WITH NEW DUCTWORK WHERE NECESSARY TO CONNECT TO NEW EQUIPMENT. PROVIDE WITH NEW DDC COMPATIBLE THERMOSTAT AND CONNECT TO EXISTING CONTROL WIRING, FIELD COORDINATE EXACT LOCATION WITH NAVFAC.
3. MECHANICAL CONTRACTOR TO FIELD COORDINATE EXACT LOCATION OF NEW DDC JACE BOX WITH NAVFAC.
4. SEE HVAC GENERAL NOTE 17 ON SHEET M1.0 FOR PIPING INFORMATION.

NO.	DATE	DESCRIPTION	BY	APPR.
4	08/07/2015	100% SUBMISSION	DM	DM
3	07/24/2015	100% REVIEW SUBMISSION	DM	DM
2	06/04/2015	90% SUBMISSION	DM	DM
1	04/24/2015	80% SUBMISSION	DM	DM
0	02/23/2015	35% SUBMISSION	DM	DM



APPROVED FOR COMMANDER NAVFAC

ACTIVITY

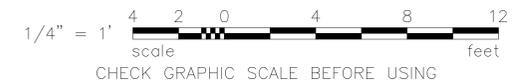
SATISFACTORY TO DATE

DES: JC | PRW: SV | CHK: DM
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHROUR PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 27 HVAC FIRST FLOOR PLAN

GRAPHIC SCALE



PROJECT NO.: 1350913

CONSTR. CONTR. NO. N40085-XX-C-XXXX

NAVFAC DRAWING NO. 12703525

SHEET 72 OF 506

M2.0 27-15-32

DRAWING REVISION: 10 OCTOBER 2014

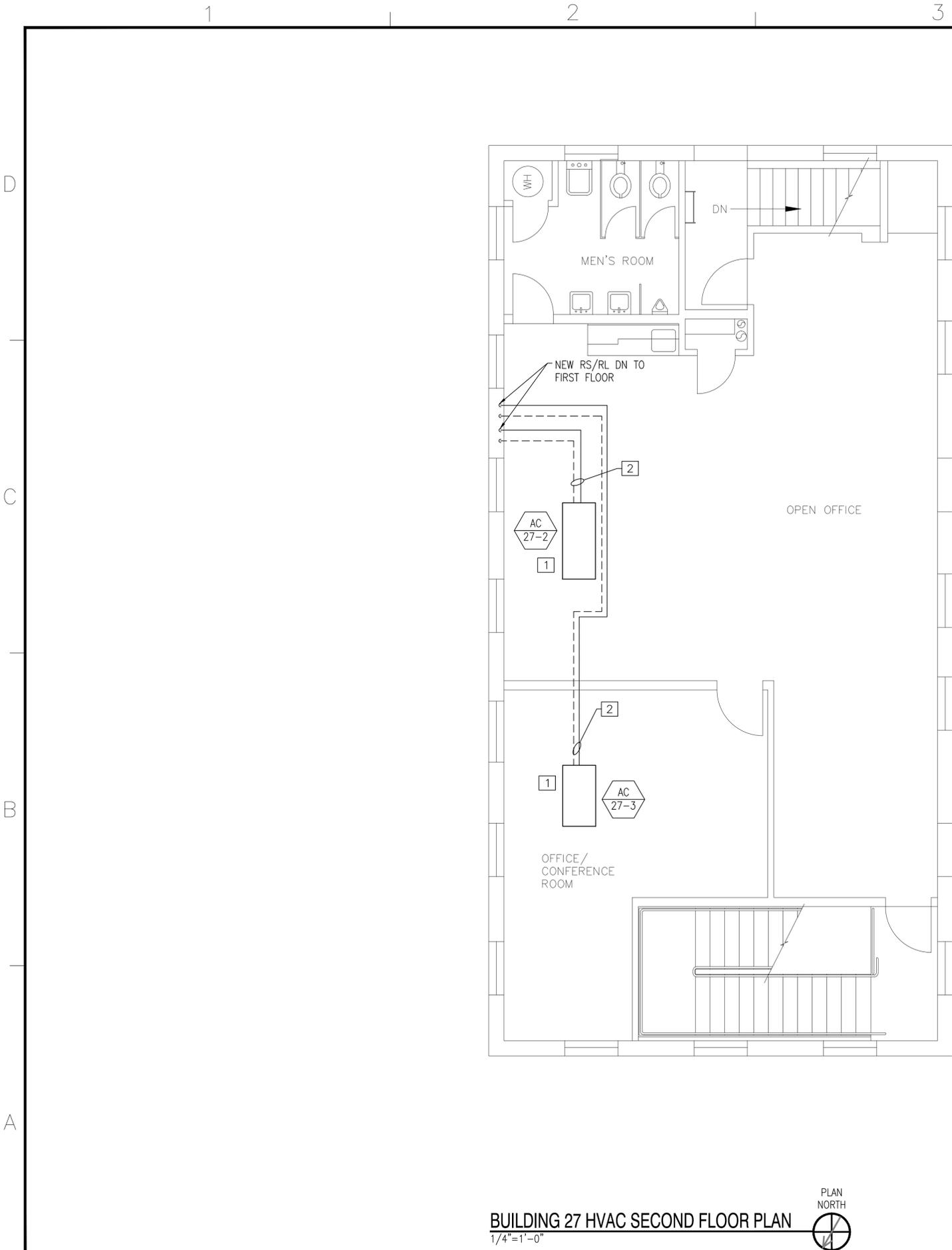
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BUILDING 27 HVAC SECOND FLOOR PLAN
1/4" = 1'-0"



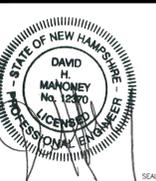
GENERAL SHEET NOTES

1. REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

NEW WORK KEYNOTES

- FURNISH AND INSTALL NEW AC AND ASSOCIATED RS/RL LINES AND CONNECT TO ACCU. EXISTING DUCTWORK, CONTROL WIRING, CONDENSATE LINES TO BE RECONNECTED. PROVIDE WITH NEW DUCTWORK WHERE NECESSARY TO CONNECT TO NEW EQUIPMENT. PROVIDE WITH NEW DDC COMPATIBLE THERMOSTAT AND CONNECT TO EXISTING CONTROL WIRING, FIELD COORDINATE EXACT LOCATION WITH NAVFAC.
- SEE HVAC GENERAL NOTE 17 ON SHEET M1.0 FOR PIPING INFORMATION.

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

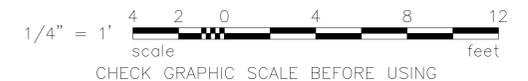
SATISFACTORY TO DATE

DES: JC | DRW: SV | CHK: DM
PM/DM: PETER STOCKLESS
BRANCH MANAGER: BRUCE LITALIEN
FEAD/PM&E: AMIN BAHROUR, PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
BUILDING 27 HVAC SECOND FLOOR PLAN

GRAPHIC SCALE

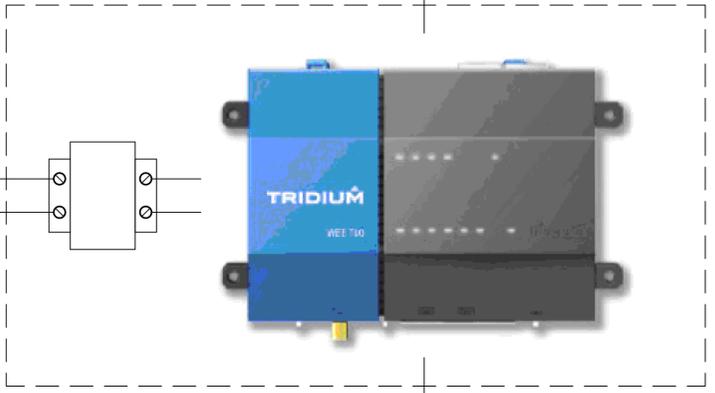


PROJECT NO.: 1350913
CONSTR. CONTR. NO.: N40085-XX-C-XXXX
NAVFAC DRAWING NO.: 12703526
SHEET 73 OF 506
M2.1 27-15-33

PORTSMOUTH NAVAL SHIPYARD (BUILDING 27_ COMSUBLANT ADMIN.)
NEW INTEGRATED DDC SYSTEM ARCHITECTURE

NETWORK CONNECTION
TO ACCESS POINT

120V
20AMP
CIRCUIT



JACE-8000

PANEL MATERIAL

ITEM NO	MODEL	DESCRIPTION	QTY
C1	J-8000	N4 WEB BASED GLOBAL NETWORK INTERFACE	1
		APPROPRIATE DEVICE PACKS	

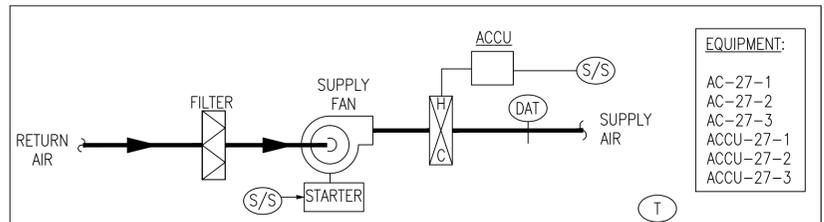
BACNET COMMUNICATIONS TO R410 EQUIPMENT



TYPICAL OF
ALL ACCU



TYPICAL OF
ALL AC



- EQUIPMENT:**
- AC-27-1
 - AC-27-2
 - AC-27-3
 - ACCU-27-1
 - ACCU-27-2
 - ACCU-27-3

GENERAL
1. THE EQUIPMENT IS STARTED AND STOPPED VIA DCC THERMOSTAT. COORDINATE OCCUPIED AND UNOCCUPIED SCHEDULES WITH OWNER.

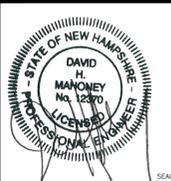
OFF
1. SF DEENERGIZED
2. ACCU DEENERGIZED

UNOCCUPIED COOLING CONTROL
1. SF ENERGIZED
2. ACCU IS STAGED ON TO MAINTAIN THE SPACE TEMPERATURE SETPOINT OF 80°F(ADJ).
3. DISCHARGE AIR TEMPERATURE SENSOR DAT SHALL LIMIT SUPPLY AIR TO 53°F MINIMUM.

OCCUPIED COOLING CONTROL
1. SF ENERGIZED
2. ACCU IS STAGED ON TO MAINTAIN THE SPACE TEMPERATURE SETPOINT OF 75°F(ADJ).
3. DISCHARGE AIR TEMPERATURE SENSOR DAT SHALL LIMIT SUPPLY AIR TO 53°F MINIMUM.

AIR CONDITIONER w/ DX SEQUENCE OF OPERATION

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED:
FOR COMMANDER NAVFAC

SATISFACTORY TO: _____ DATE: _____

DES: JC | PRW: SV | CHK: DM
PM/DM: PETER STOCKLESS
BRANCH MANAGER: BRUCE LITALIEN
LEAD/PM&E: AMIN BAHRROUR | PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
BUILDING 27 HVAC CONTROLS

PROJECT NO.: 1350913
CONSTR. CONTR. NO.: N40085-XX-C-XXXX

NAVFAC DRAWING NO.: 12703527

SHEET 74 OF 506

M3.0 27-15-34
DRAWING REVISION: 10 OCTOBER 2014

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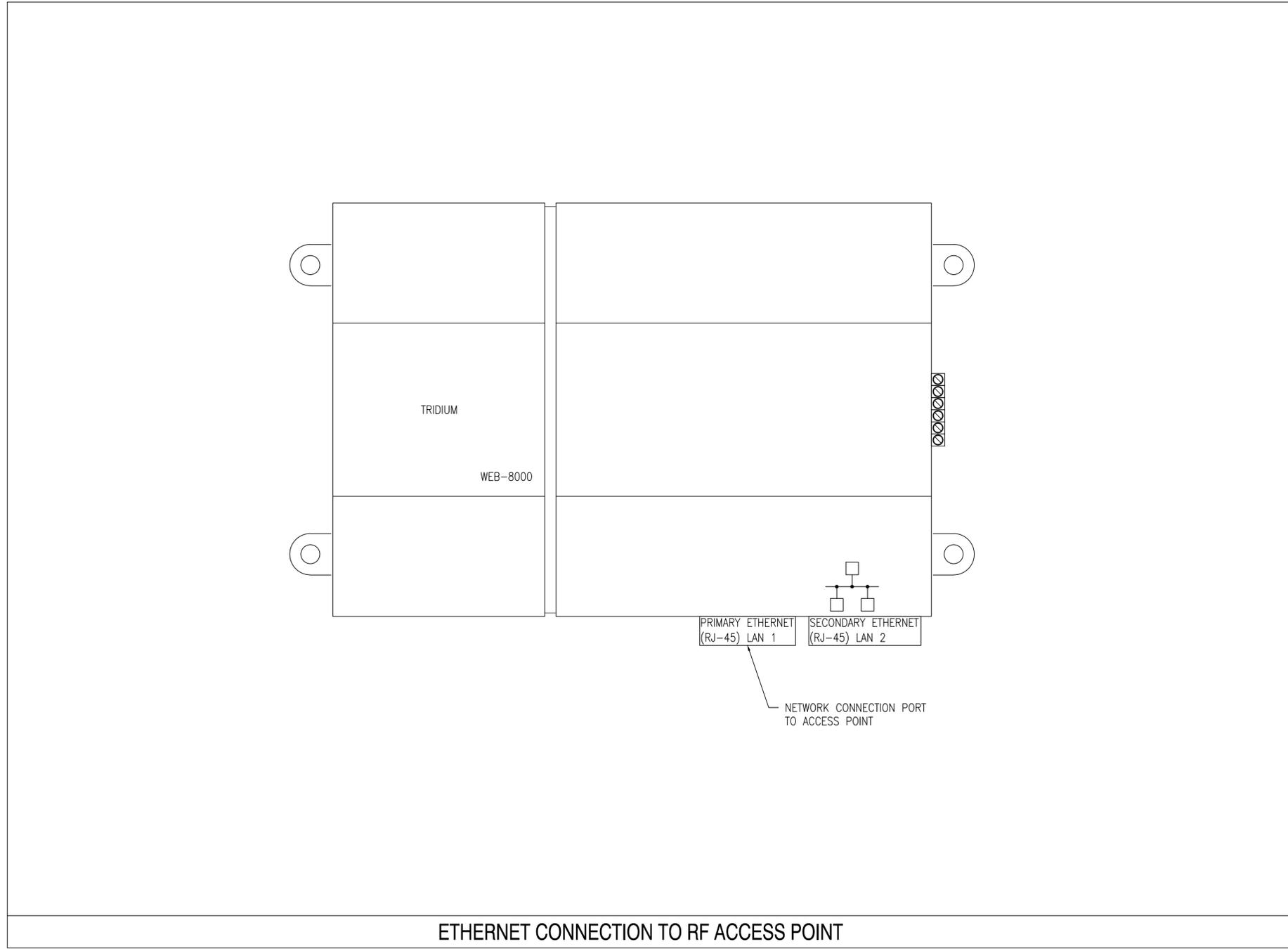
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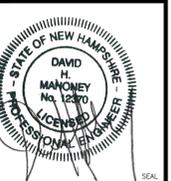
C

B

A



REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED:
FOR COMMANDER NAVFAC

SATISFACTORY TO: _____ DATE: _____

DES: JC | DRW: SV | CHK: DM
PM/DM: PETER STOCKLESS
BRANCH MANAGER: BRUCE LITALIEN
TEAM/PM: AMIN BAHRROUR PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
NAVAL SHIPYARD - PORTSMOUTH, NH
KITTEERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
BUILDING 27 HVAC CONTROLS

PROJECT NO.: 1350913
CONSTR. CONTR. NO.: N40085-XX-C-XXXX

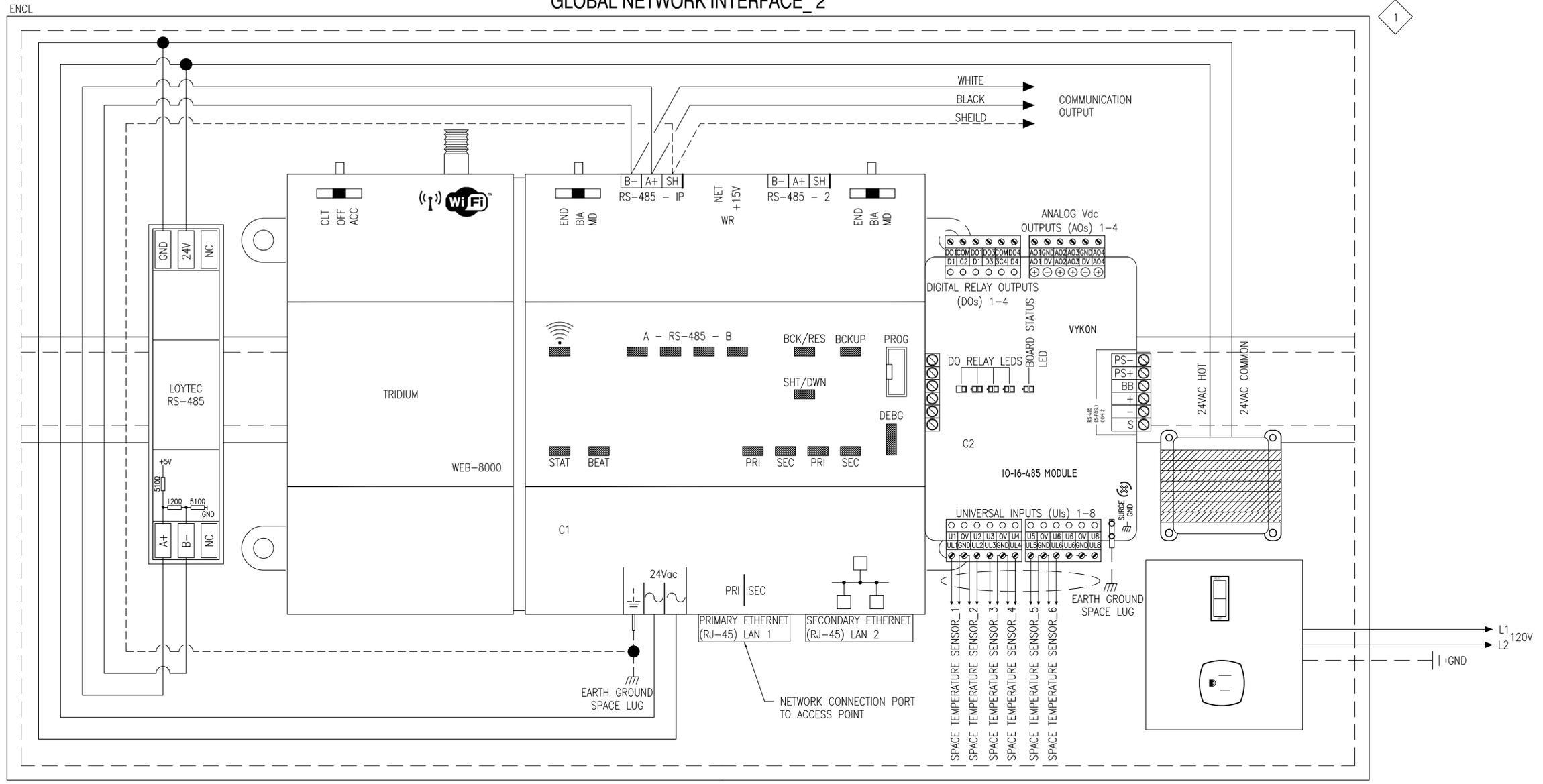
NAVFAC DRAWING NO.: 12703528

SHEET 75 OF 506

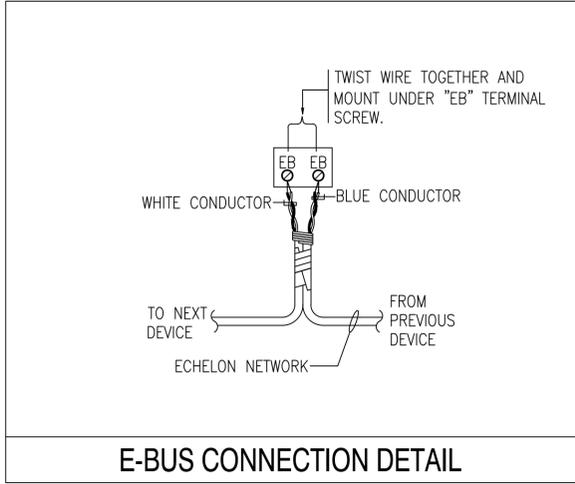
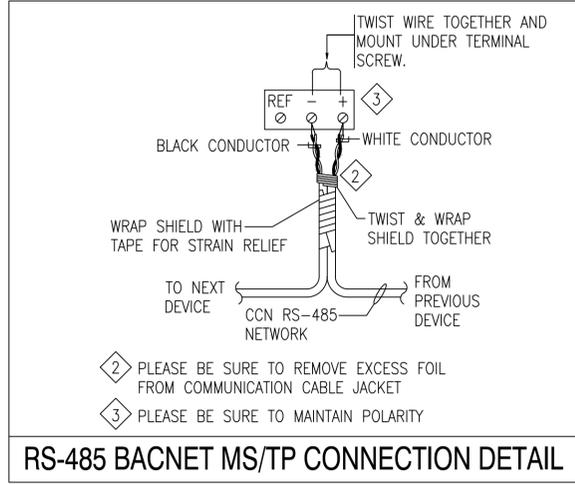
M3.1 27-15-35

DRAWING REVISION: 10 OCTOBER 2014

GLOBAL NETWORK INTERFACE_2



1 LOCATION OF CONTROLLER TO BE FIELD VERIFIED



PANEL MATERIAL			
ITEM NO	MODEL	DESCRIPTION	QTY
C1	J-8000	N4 WEB BASED GLOBAL NETWORK INTERFACE	1
C2	IO-16-485	REMOTE I/O MODULE	1
ENCL	ENC-001	12"x18"x4" ENCLOSURE W/ 24V TRANSFORMER	1
EOL1	209541B	END OF LINE RESISTOR	1
LT1	LT-B4	RS-485 NETWORK TERMINATOR	1

DATE	DESCRIPTION	BY	APPR
08/07/2015	DM		
07/24/2015	DM		
06/04/2015	DM		
04/24/2015	DM		
02/23/2015	DM		

APPROVED: _____

FOR COMMANDER NAVFAC

SATISFACTORY TO: _____ DATE: _____

DES: JC | DW: SV | CHK: DM

PM/DW: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION: _____

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT ~ MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 27 HVAC CONTROLS

EPROJECT NO.: 1350913
 CONSTR. CONTR. NO. N40085-XX-C-XXXX
 NAVFAC DRAWING NO. 12703529
 SHEET 76 OF 506

M3.2 27-15-36

DRAWING REVISION: 10 OCTOBER 2014

INDOOR AIR CONDITIONER SCHEDULE

INDOOR UNIT														DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES
TAG NO.	LOCATION	ASSOCIATED OUTDOOR UNIT	TYPE	COOLING DATA			FAN DATA		ELECTRICAL DATA						
				TOTAL MBH	INDOOR TEMP.		CFM	V	PH	Hz	MCA				
					DB(°F)	WB(°F)						OUTDOOR TEMP. DB(°F)			
AC-27-1	BUILDING 27	ACCU-27-1	CEILING SUSPENDED	42	75	63	85	810-1,025	208	1	60	2	MITSUBISHI PCA-A42KA5	SEE NOTES	
AC-27-2	BUILDING 27	ACCU-27-2	CEILING SUSPENDED	42	75	63	85	810-1,025	208	1	60	2	MITSUBISHI PCA-A42KA5	SEE NOTES	
AC-27-3	BUILDING 27	ACCU-27-3	CEILING SUSPENDED	24	75	63	85	530-670	208	1	60	1	MITSUBISHI PCA-A24KA4	SEE NOTES	

NOTES: 1. PROVIDE WITH 2" THROWAWAY FILTERS. 2. PROVIDE CONDENSATE LIFT MECHANISM 3. PROVIDE W/ WALL MOUNTED THERMOSTAT. 4. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT.

AIR COOLED CONDENSING UNIT SCHEDULE

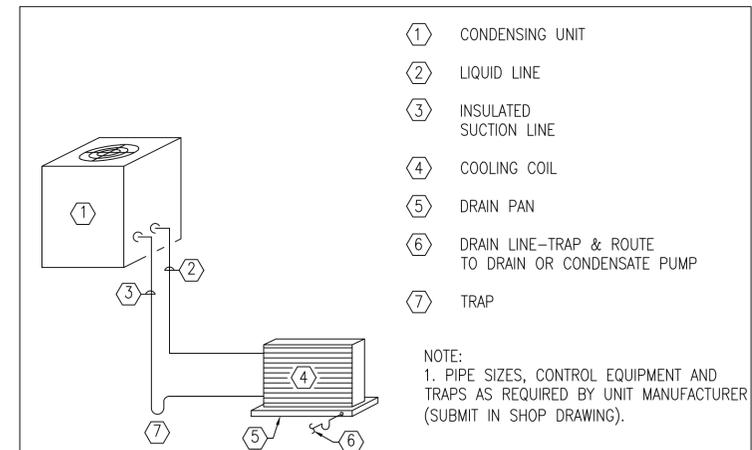
TAG	SERVES	DESIGN BASED ON MANUFACTURER	DESIGN BASED ON MODEL No.	COOLING DATA		ELECTRIC DATA					NOTES
				COOLING (MBH)	VOLTS	HZ	PHASE	FLA	MCA	MOCP	
ACCU-27-1	BLDG-27	MITSUBISHI	PUY-A42NHA5-BS	42	208	60	1	0.4	26	40	1-6
ACCU-27-2	BLDG-27	MITSUBISHI	PUY-A42NHA5-BS	42	208	60	1	0.4	26	40	1-6
ACCU-27-3	BLDG-27	MITSUBISHI	PUY-A24MHA4-BS	24	208	60	1	0.75	18	30	1-4,6

NOTES: 1. PROVIDE W/ SEACOAST MODEL. 2. PROVIDE W/ WIND BAFFLE. 3. PROVIDE WITH DRAIN PAN AND DRAIN SOCKET. 4. PROVIDE WITH MOUNTING BASE. 5. PROVIDE UNIT CONTROL PANEL WITH MAIN DISCONNECT. 6. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT.

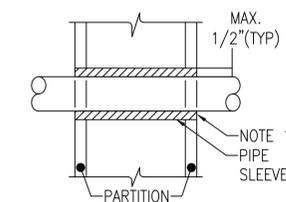
JACE BOX

TAG NO.	LOCATION	ELECTRICAL		DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES
		AMP	V		
J-1	SEE PLANS	20	120	JACE 8000	SEE NOTES

NOTES: 1. PROVIDE W/ MEMORY UPGRADE TO 4GB. 2. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT.



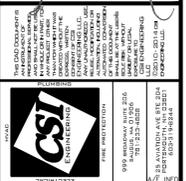
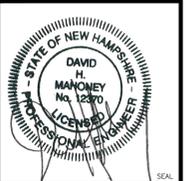
REFRIGERANT PIPING SMALL COMPONENT SCHEMATIC



NOTES:
1. AT FIRE RATED PARTITIONS ADD LAYER OF FIRE SAFING INSULATION AROUND PENETRATIONS SO AS TO FILL CAVITY.
2. PIPE PENETRATIONS THROUGH CORRIDOR WALLS ABOVE THE CEILING ARE TO BE FIRE STOPPED AROUND THE PENETRATION.
3. CONTRACTOR RESPONSIBLE FOR DETERMINING REQUIRED HOUR RATING TO MATCH EXISTING WALL ASSEMBLY.

PIPE PENETRATIONS

NO.	DESCRIPTION	DATE	APPR.
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED:

FOR COMMANDER NAFAC

SATISFACTORY TO: _____ DATE: _____

DES: JC | DRW: SV | CHK: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 27 HVAC SCHEDULES AND DETAILS

PROJECT NO.: 1350913

CONSTR. CONTR. NO.: N40085-XX-C-XXXX

NAFAC DRAWING NO.: 12703530

SHEET 77 OF 506

M4.0 27-15-37

DRAWING REVISION: 10 OCTOBER 2014

WARNING

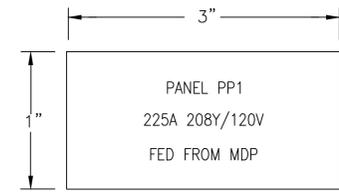
ARC FLASH AND SHOCK HAZARD
APPROPRIATE PPE REQUIRED

EQUIPMENT TYPE: _____
GROUNDING: Y/N GROUNDED
WORK DISTANCE: _____ INCHES

AVAILABLE 3Ø BOLTED CURRENT: _____ kA
FLASH PROTECTION BOUNDARY: _____ INCHES
INCIDENT ENERGY AT 23 INCHES: _____ cal/cm²
PPE LEVEL: _____
DATE: _____

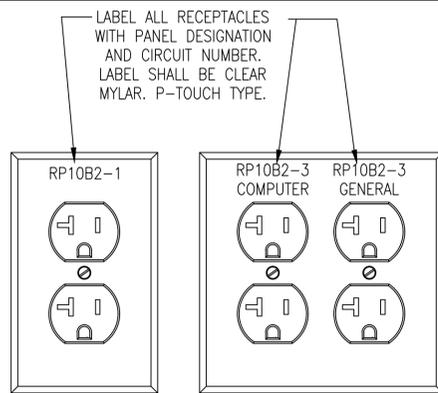
- NOTES:
- REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
 - PROVIDE ON ALL IN-LINE METER SOCKETS, SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS AND MOTOR CONTROL CENTERS IN ACCORDANCE WITH NEC 110.16.

TYPICAL FLASH PROTECTION WARNING LABEL

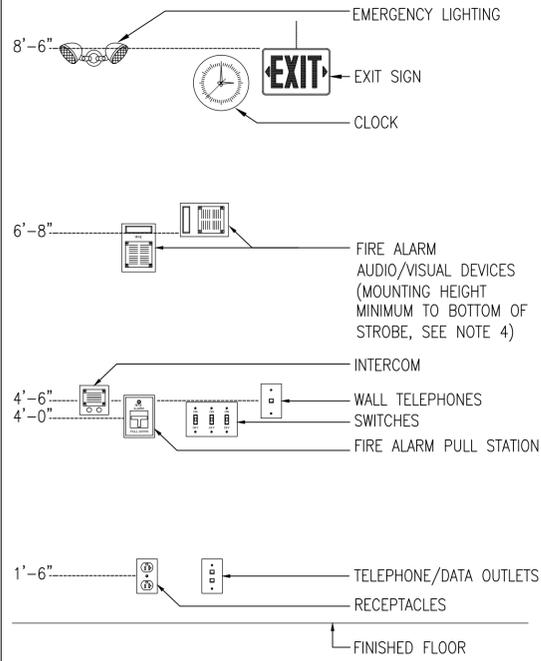


- NOTES:
- REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
 - NAMEPLATE TO BE 1/16" THICK PLASTIC WITH WHITE CENTER LAMINATION. FACE SHALL BE BLACK, ENGRAVED LETTERS SHALL BE WHITE.
 - SECURE NAMEPLATE TO SURFACES WITH HIGH STRENGTH ADHESIVE CEMENT. UTILIZE MECHANICAL FASTENERS FOR ALL EXTERIOR LOCATIONS.
 - TYPICAL FOR "STARTERS", "DISCONNECTS", AND "TRANSFORMERS".

TYPICAL NAMEPLATE DETAIL



RECEPTACLE LABEL REQUIREMENTS



- NOTES:
- ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGNS, CLOCKS, EMERGENCY LIGHTING AND FIRE ALARM A/V DEVICES.
 - DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
 - ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.
 - STROBE HEIGHT ILLUSTRATED AT MAXIMUM HEIGHT. STROBE SHALL BE 80" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER.

TYPICAL DEVICE MOUNTING HEIGHTS DETAIL

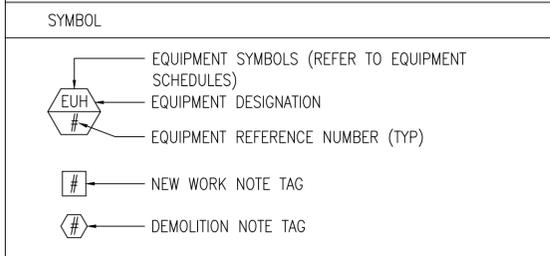
ELECTRIC ABBREVIATIONS

A/AMP AMPERE	LTG LIGHTING
AC ALTERNATING CURRENT	MCB MAIN CIRCUIT BREAKER
ADA AMERICAN WITH DISABILITIES ACT	MEC MASSACHUSETTS ELECTRIC CODE
AF AMPERE FRAME	MH MANHOLE
AFF ABOVE FINISHED FLOOR	MLO MAIN LUGS ONLY
AFG ABOVE FINISHED GRADE	MTD MOUNTED
AIC AMPERE INTERRUPTING CAPACITY	MTG MOUNTING
AL ALUMINUM	NEC NATIONAL ELECTRIC CODE
AT AMPERE TRIP	NTS NOT TO SCALE
ATS AUTOMATIC TRANSFER SWITCH	# NUMBER
AWG AMERICAN WIRE GAUGE	PVC POLYVINYL CHLORIDE
C CONDUIT	PWR POWER
CATV CABLE TELEVISION	RGS RIGID GALVANIZED STEEL
CCTV CLOSED CIRCUIT TELEVISION	SWBD SWITCHBOARD
CB CIRCUIT BREAKER	TEL TELEPHONE
CKT CIRCUIT	TERM TERMINAL
ε CENTERLINE	TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
DWG DRAWING	TSP TWISTED SHIELDED PAIR
EC ELECTRICAL CONTRACTOR	TYP TYPICAL
EMT ELECTRICAL METALLIC TUBING	UNO UNLESS OTHERWISE NOTED
FLMT FLEXIBLE LIQUID TIGHT METALLIC TUBING	UPS UNINTERRUPTIBLE POWER SUPPLY
GFI GROUND FAULT INTERRUPTING	UTP UNSHIELDED TWISTED PAIR
GND GROUND	V VOLT
HH HANDHOLE	VA VOLT AMPERE
HP HORSEPOWER	VFD VARIABLE FREQUENCY DRIVE
HVAC HEATING, VENTILATION AND AIR CONDITIONING	W WATT
HZ HERTZ	WP WEATHERPROOF
IG ISOLATED GROUND	
KVA KILOVOLT - AMPERE	
KW KILOWATT	

MOTOR & CONTROLS LEGEND

SYMBOL	DESCRIPTION
	MANUAL MOTOR STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION
	DISCONNECT SWITCH RATED 30AMP, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "30AS" - INDICATES 30A SWITCH
	FUSED DISCONNECT SWITCH, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "30AS" - INDICATES 30AMP SWITCH "15AF" - INDICATES 15AMP FUSES
	DDC CONTROL JACE BOX. PROVIDED BY TRADE CONTRACTOR. FIELD COORDINATE EXACT LOCATION.

ELECTRIC SYSTEM TAGS OR CALL OUT SYMBOLS



POWER DISTRIBUTION LEGEND

SYMBOL	DESCRIPTION
	208Y/120 VOLT PANELBOARD, REFER TO SCHEDULE OF PANELBOARDS
	480Y/277 VOLT PANELBOARD, REFER TO SCHEDULE OF PANELBOARDS
	DRY TYPE TRANSFORMER

BRANCH CIRCUIT & FEEDER LEGEND

SYMBOL	DESCRIPTION
	BRANCH CIRCUIT HOME RUN. TYPICAL 2#12 & 1#12G IN 3/4" C MINIMUM. PP1-(1) INDICATES PANEL AND CIRCUIT DESIGNATION FROM WHICH HOME RUN SHALL ORIGINATE. EACH CIRCUIT SHALL BE 20A-1P (20AMP SINGLE POLE) UNLESS NOTED OTHERWISE.

EXISTING EQUIPMENT LEGEND

SYMBOL	DESCRIPTION
	EXISTING EQUIPMENT TO REMAIN
	EXISTING EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT TO BE INSTALLED ON EXISTING BRANCH/FEEDER
	EXISTING EQUIPMENT TO REMAIN FOR INFORMATION ONLY - (XM)
	EXISTING EQUIPMENT TO BE REWORKED - (XN, XL, XE, XR)
	EXISTING EQUIPMENT TO BE REWORKED - (XN, XL, XE, XR) INDICATED BY SYMBOL WITH DASHED AND IN FUNCTION LINE TYPE

WIRING DEVICES

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V "WP" - INDICATES WEATHERPROOF (TYP) "GFI" - INDICATES GROUND FAULT INTERRUPTER

ELECTRIC GENERAL NOTES

- THE ELECTRICAL DEMOLITION PLANS AND DETAILS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE SUBMISSION OF BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE FOR REMOVAL. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF WORK. DAMAGE SHALL INCLUDE BUT NOT LIMITED TO THE DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR BE SALVAGED.
- THE ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINT OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE CUT FLUSH AT THE SURFACE FOR PATCHING BY TRADE CONTRACTOR. ALL CIRCUIT BREAKERS ASSOCIATED WITH THE DEMOLITION SCOPE SHALL BE DE-ENERGIZED AND LABELED AS SPARE.
- ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF UNLESS IDENTIFIED FOR REUSE OR TURNED OVER TO OWNER. THE OWNER'S REPRESENTATIVE SHALL INSPECT ALL RETAINED ITEMS PRIOR TO PLACEMENT IN THE IDENTIFIED STORAGE LOCATION BY THE ELECTRICAL CONTRACTOR.
- CIRCUIT NUMBERS ARE DIAGRAMMATIC. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD AND REFLECTED ON AS-BUILT DOCUMENTATION BY THE ELECTRICAL CONTRACTOR. CIRCUITRY HAS BEEN DETERMINED BASED UPON INFORMATION GATHERED, ASSUMPTIONS, AND INFORMATION OBTAINED FROM NAVFAC. EXACT CIRCUITING, EQUIPMENT SIZES, AND CONDUIT AND WIRING SIZES MAY DIFFER IN THE FIELD FROM WHAT IS SHOWN ON THE DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TRACING ALL CIRCUITS BEING DEMOLISHED AND REUSED PRIOR TO DISCONNECTING, VERIFYING EXISTING CIRCUITRY AND EQUIPMENT SIZES, AND SHALL SIZE ALL NEW EQUIPMENT AND BRANCH CIRCUITRY ACCORDINGLY IF ACTUAL CONDITIONS DIFFER FROM WHAT IS SHOWN ON THE DRAWINGS. THE ASSOCIATED CIRCUIT NUMBERS THAT ARE APPLIED TO EACH DEVICE AND PIECE OF EQUIPMENT INFERS INTERCONNECTING BRANCH CIRCUITRY. INTERCONNECTING BRANCH WIRING SHALL BE SIZED EQUAL TO THE HOMERUN UNLESS NOTED OTHERWISE.
- VOLTAGE DROP HAS BEEN CONSIDERED IN THE DESIGN OF ALL BRANCH CIRCUITRY AND FEEDER SIZES BASED UPON THE ILLUSTRATED EQUIPMENT LAYOUTS AND SHORTEST CONDUCTOR/RACEWAY ROUTING. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR DEVIATIONS TAKEN THAT WILL INCREASE CONDUCTOR/RACEWAY ROUTING LENGTHS. BRANCH CIRCUITS LONGER THAN 75' FOR 120V FROM PANEL TO LAST OUTLET SHALL BE INCREASED A MINIMUM OF ONE SIZE ABOVE THAT SPECIFIED TO LIMIT VOLTAGE DROP TO LESS THAN 3%. FEEDERS SHALL FOLLOW SIMILAR GUIDELINES AND BE LIMITED TO 2% DROP.
- THE ELECTRICAL NEW WORK PLANS DO NOT SHOW ALL ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION AMONG TRADES TO DETERMINE ALL ACCESSORIES AND COMPONENTS REQUIRED TO FORM A COMPLETE AND FUNCTIONAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY ACCESSORIES AND COMPONENTS NEEDED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM AND SHALL BE RESPONSIBLE TO ENSURE THE INTEGRITY AND SAFETY OF THE SYSTEM AFTER COMPLETION. THE ELECTRICAL CONTRACTOR SHALL TAKE ALL NECESSARY STEPS AND PROVIDE ALL ADDITIONAL COMPONENTS NEEDED TO ENSURE THE SYSTEM IS SAFE UPON COMPLETION OF THE PROJECT.
- ROUTING IS DIAGRAMMATIC. CONTRACTOR SHALL DETERMINE ROUTING IN FIELD AND RE-USE EXISTING PENETRATIONS WHERE POSSIBLE.
- SEE PWD-ME DRAWING NUMBERS;
 - 43-15-67 FOR TITLE SHEET
 - 43-15-68 FOR LIST OF DRAWINGS
 - 43-15-69 FOR GENERAL NOTES & LEGENDS
 - 43-15-72 FOR CHASE AND SOFFIT DETAILS
 - 43-15-74 FOR STRUCTURAL NOTES AND SUPPORTS

SCHEDULE OF DRAWINGS

DWG#	DESCRIPTION
E1.0	BUILDING 27 ELECTRICAL LEGEND
ED2.0	BUILDING 27 ELECTRICAL FIRST FLOOR DEMOLITION PLAN
ED2.1	BUILDING 27 ELECTRICAL SECOND FLOOR DEMOLITION PLAN
E2.0	BUILDING 27 ELECTRICAL FIRST FLOOR PLAN
E2.1	BUILDING 27 ELECTRICAL SECOND FLOOR PLAN
E3.0	BUILDING 27 ELECTRICAL ONE-LINE DIAGRAM & SCHEDULES

08/07/2015 07/24/2015 06/04/2015 04/24/2015 02/23/2015

100% SUBMISSION 100% REVIEW SUBMISSION 90% SUBMISSION 80% SUBMISSION 35% SUBMISSION

DATE DESCRIPTION

NAVAF

STATE OF NEW HAMPSHIRE
CHARLES E. MAZE
No. 13078
PROFESSIONAL ENGINEER

CSJ

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES: TM | DSW: TM | CHR: JO

PM/DM: PETER STOCKLESS

BRANCH MANAGER BRUCE LITALIEN

FEAD/PM&E AMIN BAHRROUR PM&E

FIRE PROTECTION X

NAVY FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

FY 16 ENERGY PROJECT
TASK 1-B-R-22

BUILDING 27 ELECTRICAL LEGEND

PROJECT NO.: 1350913

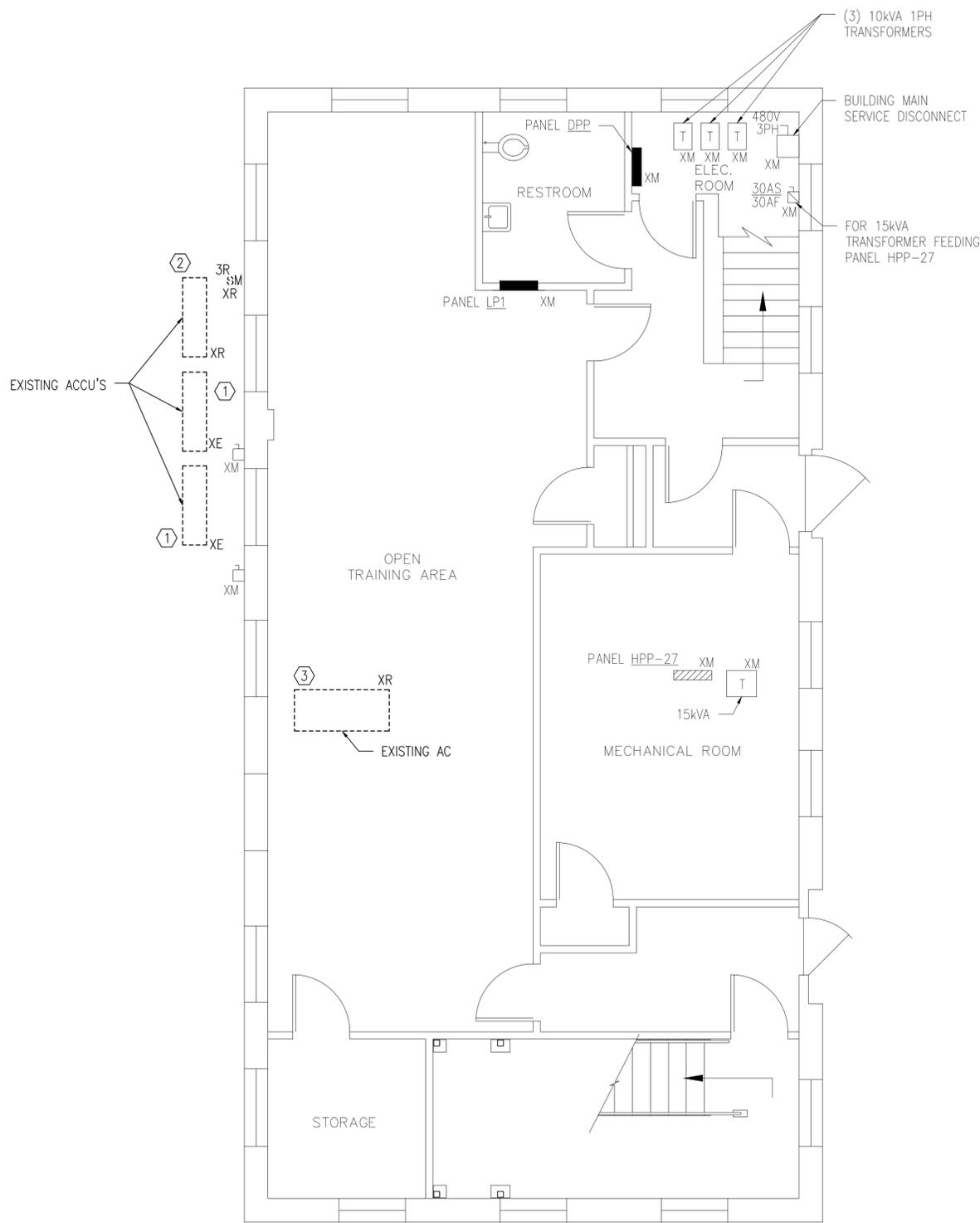
CONSTR. CONTR. NO. N40085-XX-C-XXXX

NAVFAC DRAWING NO. 12703531

SHEET 78 OF 506

E1.0 27-15-38

DRAWFORM REVISION: 10 OCTOBER 2014



BUILDING 27 ELECTRICAL FIRST FLOOR DEMOLITION PLAN

1/4" = 1'-0"



GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
- THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS SCHEDULED TO BE REMOVED WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
- THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.

DEMOLITION KEYNOTES

- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING ACCU. MAINTAIN EXISTING BRANCH CIRCUITRY, DISCONNECT, AND CIRCUIT BREAKER FOR REUSE.
- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING ACCU. DEMOLISH EXISTING BRANCH CIRCUITRY, DISCONNECT AND ASSOCIATED CIRCUIT BREAKER IN THEIR ENTIRETY.
- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING AC UNIT. DEMOLISH EXISTING BRANCH CIRCUITRY AND DISCONNECT IN THEIR ENTIRETY. MAINTAIN EXISTING CIRCUIT BREAKER AND LABEL AS "SPARE" FOR FUTURE USE.

REV	DESCRIPTION	DATE	DM	APPR
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



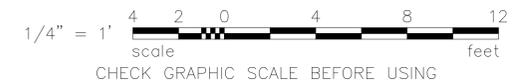
APPROVED:
FOR COMMANDER NAVFAC

SATISFACTORY TO: _____ DATE: _____
DES: TM | DSW: TM | CHK: JO
PM/DM: PETER STOCKLESS
BRANCH MANAGER: BRUCE LITALIEN
FEAD/PM&E: AMIN BAHROUR PM&E

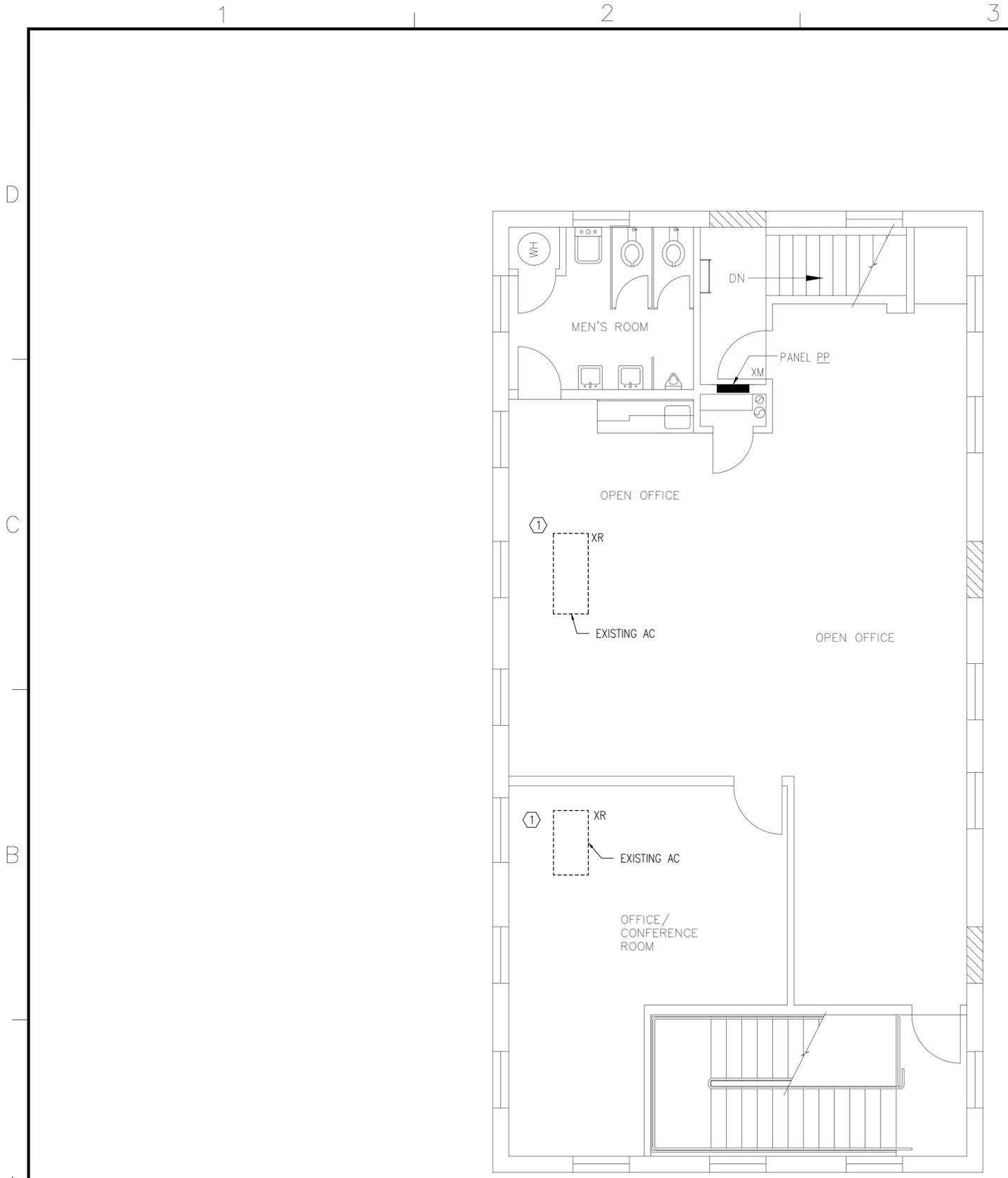
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PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
BUILDING 27 ELECTRICAL FIRST FLOOR DEMOLITION PLAN

PROJECT NO.: 1350913
CONSTR. CONTR. NO.: N40085-XX-C-XXXX
NAVFAC DRAWING NO.: 12703532
SHEET 79 OF 506
ED2.0 27-15-39
DRAWFORM REVISION: 10 OCTOBER 2014

GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING



BUILDING 27 ELECTRICAL SECOND FLOOR DEMOLITION PLAN
 1/4" = 1'-0"



GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
- THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS SCHEDULED TO BE REMOVED WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
- THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.

REV	DESCRIPTION	DATE	APPR
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1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



DEMOLITION KEYNOTES

- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING AC UNIT. DEMOLISH EXISTING BRANCH CIRCUITRY AND DISCONNECT IN THEIR ENTIRETY. MAINTAIN EXISTING CIRCUIT BREAKER AND LABEL AS "SPARE" FOR FUTURE USE.



APPROVED:
 FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

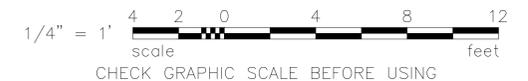
DES: TM | DRW: TM | CHK: JO
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHROUR PM&E

FIRE PROTECTION

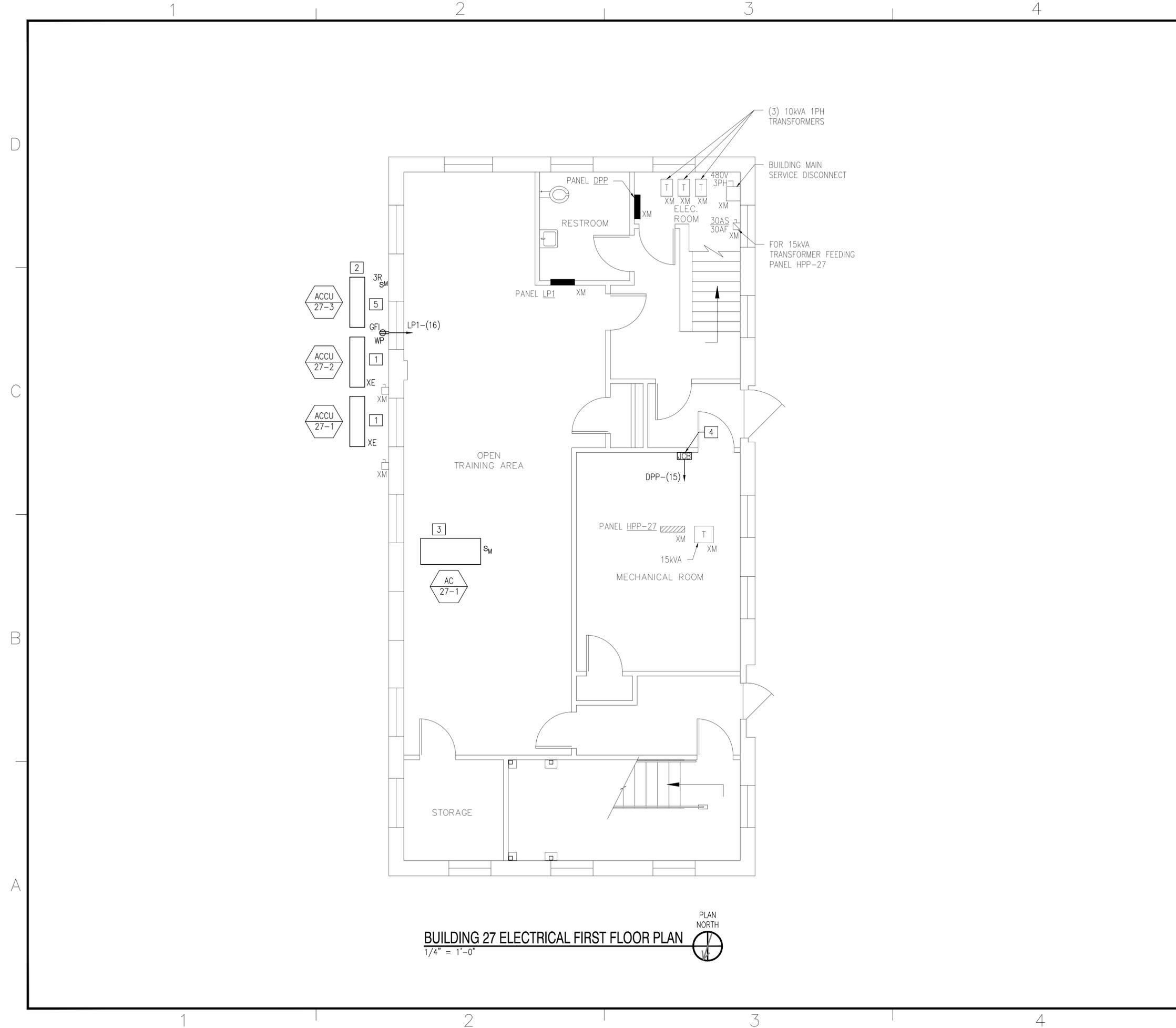
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 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 27 ELECTRICAL SECOND FLOOR DEMOLITION PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703533
 SHEET 80 OF 506
 ED2.1 27-15-40
 DRAWFORM REVISION: 10 OCTOBER 2014

GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING



GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- POWER BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT FROM THE PANEL TO THE FIRST DEVICE AND/OR WHERE EXPOSED. POWER BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILING AND IN METAL STUD WALLS.
- MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.
- FINAL LOW-VOLTAGE CONNECTIONS TO BE MADE BY CONTROLS CONTRACTOR. FIELD COORDINATE EXACT LOCATION OF EQUIPMENT WITH CONTROLS CONTRACTOR AND NAVFAC.

NEW WORK KEYNOTES

- CONNECT NEW ACCU TO EXISTING BRANCH CIRCUITRY, DISCONNECT, AND CIRCUIT BREAKER MAINTAINED DURING DEMOLITION. REUSE AS MUCH EXISTING CONDUIT AND WIRING AS POSSIBLE AND EXTEND AS NEEDED. NEW CONDUIT AND WIRING TO MATCH EXISTING IN ALL RESPECTS. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.
- PROVIDE NEW DISCONNECT AS SHOWN FOR NEW ACCU. PROVIDE NEW CIRCUIT BREAKER IN PANEL "DPP" FOR NEW UNIT. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.
- UTILIZE EXISTING CIRCUIT BREAKER IN PANEL "DPP". PROVIDE NEW DISCONNECT AS SHOWN. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.
- NEW DDC JACE BOX PROVIDED BY TRADE CONTRACTOR. FIELD COORDINATE EXACT LOCATION WITH NAVFAC AND CONTROLS CONTRACTOR.
- ELECTRICAL CONTRACTOR TO FIELD VERIFY IF A RECEPTACLE EXISTS WITHIN 6' OF NEW CONDENSING UNITS. IN ON RECEPTACLE EXISTS, PROVIDE NEW AS SHOWN. REFER TO PANELBOARD SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.

REV	DESCRIPTION	DATE	DM	APP
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FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES: TM | DRW: TM | CHK: JO

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
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 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 27 ELECTRICAL FIRST FLOOR PLAN

EPROJECT NO.: 1350913

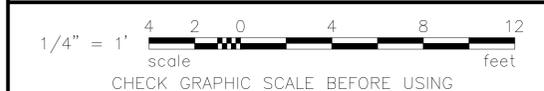
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NAVFAC DRAWING NO.: 12703534

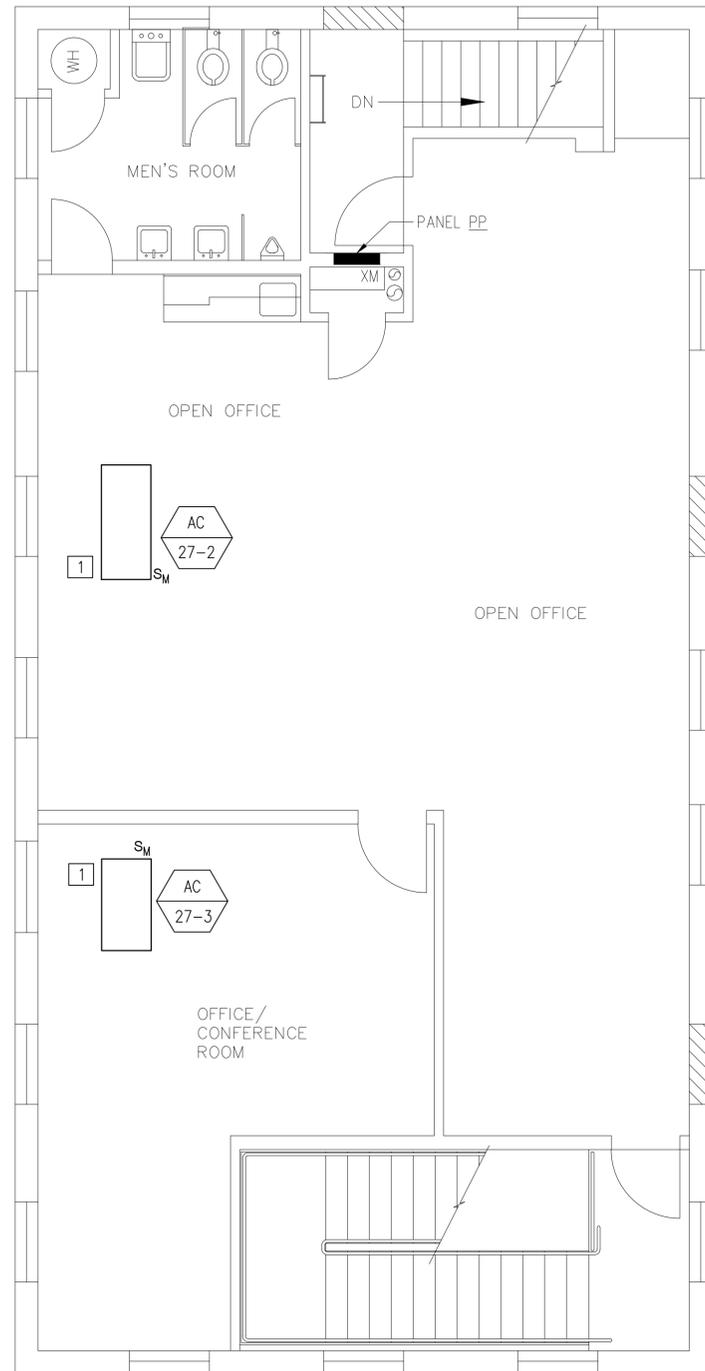
SHEET 81 OF 506

E2.0 27-15-41
 DRAWFORM REVISION: 10 OCTOBER 2014

GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING



BUILDING 27 ELECTRICAL SECOND FLOOR PLAN
 1/4" = 1'-0"
 PLAN NORTH

GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- POWER BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT FROM THE PANEL TO THE FIRST DEVICE AND/OR WHERE EXPOSED. POWER BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
- MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.

NEW WORK KEYNOTES

- UTILIZE EXISTING CIRCUIT BREAKER IN "DPP". PROVIDE NEW DISCONNECT AS SHOWN. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.

REV	DESCRIPTION	DATE	DM	APPR
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0	35% SUBMISSION	02/23/2015	DM	



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DES: TM | DSW: TM | CHK: JO
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHROUR, PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
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 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 27 ELECTRICAL SECOND FLOOR PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703535
 SHEET 82 OF 506
E2.1 27-15-42

GRAPHIC SCALE



MECHANICAL EQUIPMENT SCHEDULE

EQUIP TAG	DESCRIPTION	LOAD				PANEL SOURCE		BRANCH CIRCUIT	CONNECTION				NOTES
		HP	KVA	VOLT	PH	PANEL	C/B		FLEX	JB	REC	DISC	
ACCU-27-1	CONDENSING UNIT	-	5.41	208	1	DPP-(7,9)	40A/2P	-	X			X	NOTE 11
ACCU-27-2	CONDENSING UNIT	-	5.41	208	1	DPP-(8,10)	40A/2P	-	X			X	NOTE 11
ACCU-27-3	CONDENSING UNIT	-	3.74	208	1	DPP-(11,13)	30A/2P	(2)#10 & (1)#10G, 3/4"C	X			X	NOTE 7
AC-27-1	AIR CONDITONER	-	0.42	208	1	DPP-(27,29)	20A/2P	(2)#12 & (1) #12G, 3/4"C	X			X	NOTE 8
AC-27-2	AIR CONDITONER	-	0.42	208	1	DPP-(27,29)	20A/2P	(2)#12 & (1) #12G, 3/4"C	X			X	NOTE 8
AC-27-3	AIR CONDITONER	-	0.21	208	1	DPP-(27,29)	20A/2P	(2)#12 & (1) #12G, 3/4"C	X			X	NOTE 8

NOTES:

- BRANCH CIRCUIT WIRING METHODS SHALL BE AS NOTED ON THE DRAWINGS AND/OR SPECIFICATIONS FOR THE APPLICABLE LOCATION.
- "FLEX" - DENOTES FINAL THREE FEET (MAXIMUM) OF RACEWAY SHALL BE FLEXIBLE METAL OR LIQUIDTIGHT METAL CONDUIT.
- "JB" - JUNCTION BOX DENOTES FINAL CONNECTION TO BOX OR CONTROL PANEL PREWIRED TO THE EQUIPMENT.
- "REC" - PROVIDE RECEPTACLE IN THE NEMA CONFIGURATION NOTED.
- NOTES 6-9 ARE OPTIONS WHICH SHALL BE SPECIFICALLY NOTED IN REMARKS FOR INCLUSION.
- DISCONNECT SHALL BE FUSIBLE.
- DISCONNECT SHALL BE NEMA "3R"
- DISCONNECT SHALL BE MOTOR-RATED SWITCH WITH THERMAL OVERLOAD ELEMENT.
- DISCONNECT PROVIDED INTEGRAL (PREWIRED) TO EQUIPMENT BY TRADE CONTRACTOR.
- INTEGRAL CONVENIENCE RECEPTACLE PROVIDED PREWIRED TO EQUIPMENT BY TRADE CONTRACTOR.
- REUSE EXISTING BRANCH CIRCUITRY, DISCONNECT, AND CIRCUIT BREAKER FOR NEW UNIT. EXTEND CIRCUIT AS NEEDED.

PANELBOARD SCHEDULE

PANEL: DPP		VOLTS: 120/ 208		NEW/EXISTING.: EXISTING					
MAIN: 175A MCB		BUS AMPS: 225A		MOUNT.: SURFACE					
PH/WIRE: 3ø/4W		AIC: 10K		LOC: BLDG 27 ELECT. RM. UNDERSTAIRS 102					
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD KVA	NOTE	NOTE	LOAD KVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1									
3	60/3	LP-2 (PP)	0	-		0	LP-3 (LP1)	60/3	2
5									4
7	40/2	ACCU-27-1	5.4	1		5.4	ACCU-27-2	40/2	8
9									10
11						0	SPARE	20/1	12
13						0	SPARE	20/1	14
15	20/1	JACE BOX	.02	1		0	SPARE	20/1	16
17	20/1	FA	0	-		0	SPARE	20/1	18
19	20/1	SPARE	0	-		0	SPARE	20/1	20
21	20/1	SPARE	0	-		0	SPARE	20/1	22
23	20/1	SPARE	0	-		0	SPARE	20/1	24
25	20/1	SPARE	0	-		0	SPARE	20/1	26
27						0	SPARE	20/1	28
29	20/2	AC-27-1,2, & 3	1.04	1		0	SPARE	20/1	30
			10.2			5.40	TOTAL CONNECTED KVA:	15.56	
							TOTAL CONNECTED AMPERES:	43.24	

NOTES:

- VERIFY AND REUSE EXISTING CIRCUIT BREAKER AS INDICATED FOR NEW LOAD.
- REMOVE EXISTING CIRCUIT BREAKER AND PROVIDE NEW SIZED AS INDICATED FOR NEW LOAD.
- NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

PANELBOARD SCHEDULE

PANEL: LP1		VOLTS: 120/ 208		NEW/EXISTING.: EXISTING					
MAIN: 100A MCB		BUS AMPS: 225A		MOUNT.: RECESSED					
PH/WIRE: 3ø/4W		AIC:		LOC: RM. 104					
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD KVA	NOTE	NOTE	LOAD KVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1	20/1	RM 102, 103, 110	0	-		0	RM 109	20/1	2
3	20/1	RM 104, 105, LTS	0	-		0	RM 104 LTS	20/1	4
5	20/1	RM 104, 106, 107, 109	0	-		0	RM 104, 105 COMPS.	20/1	6
7	20/1	RM 101, 102, 103, 104, 110	0	-		0	NMCI CAB FEED	20/1	8
9	20/1	REAR PROJECTOR RECEPT.	0	-		0	?	20/1	10
11	20/1	FRONT PROJECTOR RECEPT.	0	-		0	EL EQUIP. RM.	20/1	12
13	20/1	PODIUM RECEPT.	0	-		0	?	20/1	14
15	20/1	EQUIP. RACK	0	-		1.18	CONDENSER UNITS GFI RECPT.	20/1	16
17	20/1	SPARE	0	-		0	SPARE	20/1	18
19	20/1	SPARE	0	-		0	SPARE	20/1	20
21	20/1	SPARE	0	-		0	SPARE	20/1	22
23	20/1	SPARE	0	-		0	SPARE	20/1	24
25	20/1	SPARE	0	-		0	SPARE	20/1	26
27	20/1	SPARE	0	-		0	SPARE	20/1	28
29	20/1	SPARE	0	-		0	SPARE	20/1	30
			0.00			0.18	TOTAL CONNECTED KVA:	0.18	
							TOTAL CONNECTED AMPERES:	0.50	

NOTES:

- VERIFY AND REUSE EXISTING CIRCUIT BREAKER AS INDICATED FOR NEW LOAD.
- NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

DATE	DESCRIPTION
08/07/2015 <td>DM</td>	DM
07/24/2015 <td>DM</td>	DM
06/04/2015 <td>DM</td>	DM
04/24/2015 <td>DM</td>	DM
02/23/2015 <td>DM</td>	DM
	APPR



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO: DATE

DES: TM | DSW: TM | CHK: JO

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

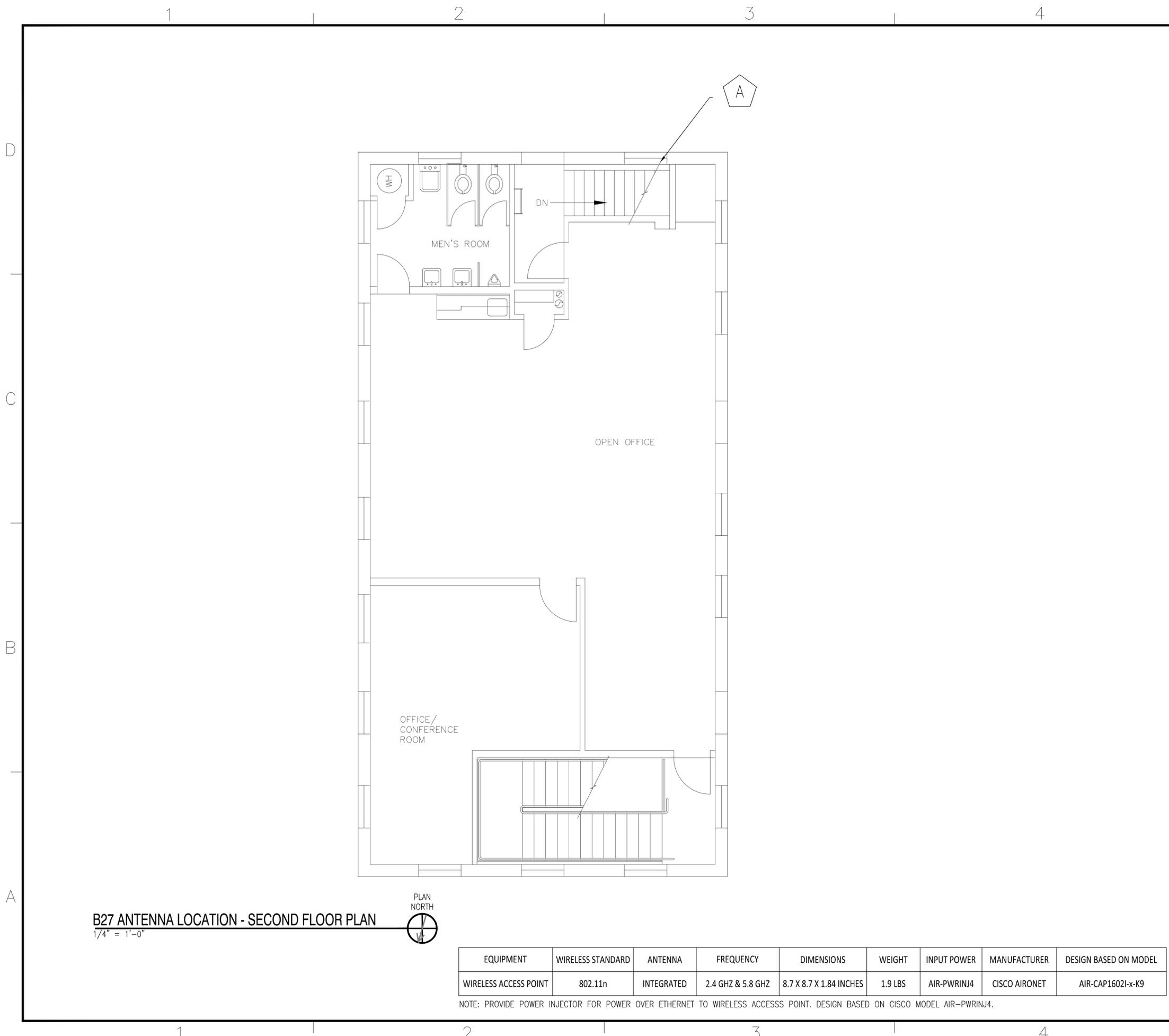
FEAD/PM&E: AMIN BAHRROUR PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 NAVAL SHIPYARD - PORTSMOUTH, NH
 KITTERY, MAINE

**FY 16 ENERGY PROJECT
 TASK 1-B-R-22**

BUILDING 27 ELECTRICAL ONE-LINE DIAGRAM & SCHEDULES

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703536
 SHEET 83 OF 506



B27 ANTENNA LOCATION - SECOND FLOOR PLAN
 1/4" = 1'-0"



EQUIPMENT	WIRELESS STANDARD	ANTENNA	FREQUENCY	DIMENSIONS	WEIGHT	INPUT POWER	MANUFACTURER	DESIGN BASED ON MODEL
WIRELESS ACCESS POINT	802.11n	INTEGRATED	2.4 GHZ & 5.8 GHZ	8.7 X 8.7 X 1.84 INCHES	1.9 LBS	AIR-PWRINJ4	CISCO AIRONET	AIR-CAP1602I-x-K9

NOTE: PROVIDE POWER INJECTOR FOR POWER OVER ETHERNET TO WIRELESS ACCESS POINT. DESIGN BASED ON CISCO MODEL AIR-PWRINJ4.

GENERAL SHEET NOTES

- FASTENERS SHALL BE ATTACHED TO MORTAR IN MASONRY BUILDINGS, AVOIDING DAMAGE TO THE BRICK WHEREVER PRACTICAL.
- EXTERIOR CONDUIT SHALL BE INSTALLED IN SHADOW-LINES OR ADJACENT TO EXISTING CONDUIT; CONDUIT COLOR TO BE COORDINATED WITH CULTURAL RESOURCE MANAGER AND A-E.
- REFER TO MECHANICAL DRAWINGS FOR JACE LOCATION AND INFORMATION.
- EXISTING ROOF AND WALL PENETRATIONS SHALL BE USED WHEREVER PRACTICAL.
- INTERIOR, WINDOW-MOUNTED ACCESS POINTS SHALL BE MOUNTED IN AN OBSCURE LOCATION THAT IS LEAST VISIBLE FROM INTERIOR & EXTERIOR.
- ACCESS POINT MOUNTS SHALL NOT OBSTRUCT EGRESS, EXISTING WALKWAYS, STAIRWELLS, MECHANICAL EQUIPMENT CLEARANCES, OR OTHER APPURTANANCES.
- UNLESS OTHERWISE NOTED, ROOFTOP ACCESS POINTS SHALL BE CENTRALIZED ON THE ROOF TO MINIMIZE VISIBILITY FROM GROUND LEVEL.
- CONTRACTOR TO FIELD-VERIFY COMMUNICATION ACCESS POINTS ARE ALIGNED AND LINE OF SIGHT IS UNOBSTRUCTED.
- IF A FIELD CHANGE IS REQUIRED, CONTRACTOR SHALL COORDINATE WITH CULTURAL RESOURCE MANAGER AND A-E PRIOR TO RELOCATING EQUIPMENT.
- ANY PROPOSED CHANGES (PENETRATIONS, CONDUIT, ETC.) NOT ALREADY INDICATED ON DRAWINGS MADE TO HISTORIC BUILDINGS OR BUILDINGS LOCATED IN HISTORIC DISTRICT MUST BE REVIEWED AND APPROVED BY SHPO THROUGH NAVFAC CULTURAL RESOURCES DEPARTMENT PRIOR TO INSTALLATION.
- CONTRACTOR TO VERIFY RF SIGNAL STRENGTH AND CONNECTIVITY FROM/TO ALL ACCESS POINTS.
- SEE PWD-ME DRAWING NUMBERS;
 - 43-15-67 FOR TITLE SHEET
 - 43-15-68 FOR LIST OF DRAWINGS
 - 43-15-69 FOR GENERAL NOTES AND LEGEND
 - 43-15-72 FOR CHASE AND SOFFIT DETAILS
 - 43-15-74 FOR STRUCTURAL NOTES AND SUPPORT

DATE	DESCRIPTION	BY	APPR
07/31/15	100% SUBMISSION		DM
07/15/15	90% SUBMISSION		APPR



NEW WORK KEYNOTES

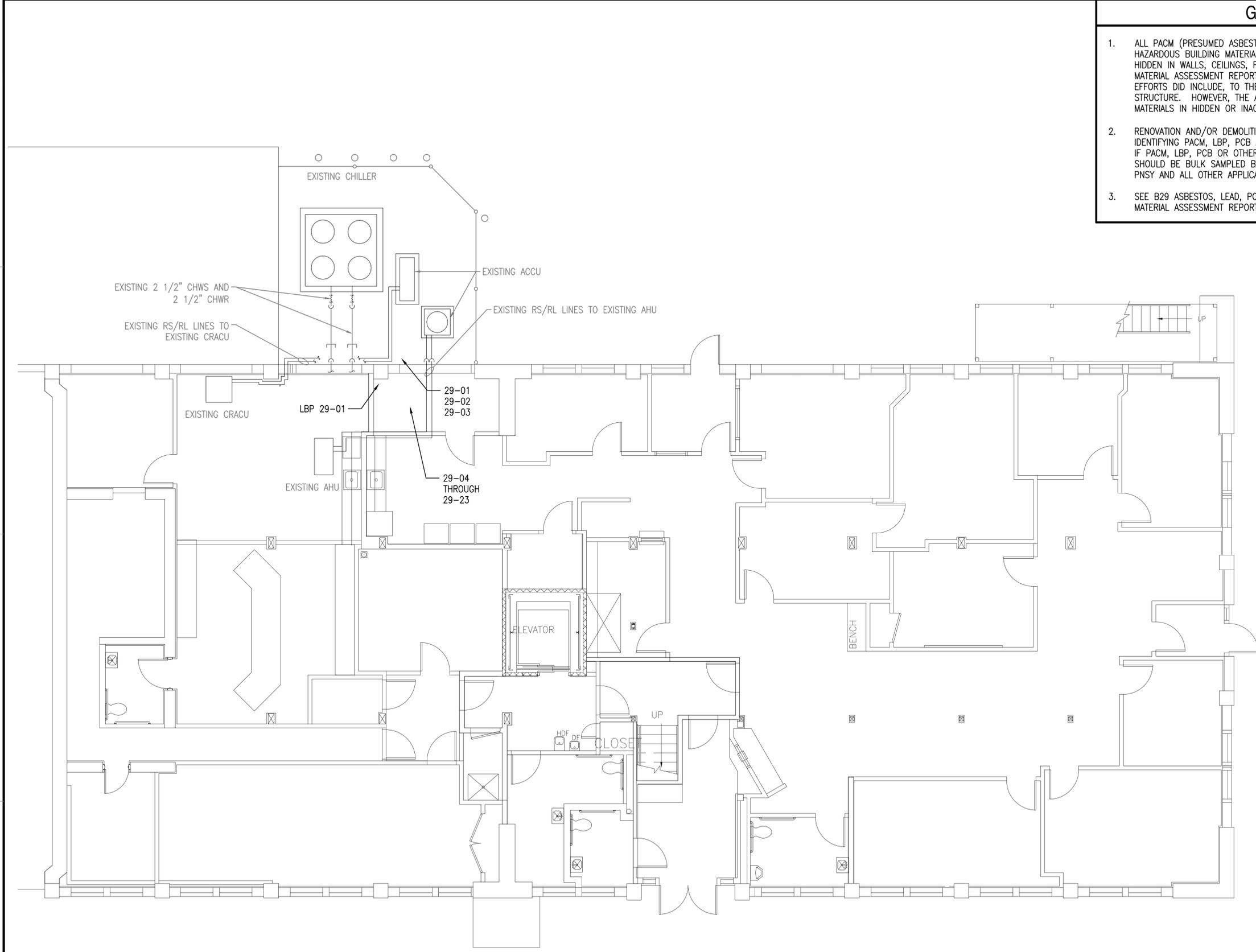
- CONTRACTOR SHALL MOUNT RF ACCESS POINT TO INTERIOR WALL ON THIRD FLOOR OF SOUTH STAIRWELL.
- CONTRACTOR SHALL ENSURE LINE-OF-SIGHT THROUGH STAIRWELL WINDOW TO B170 ACCESS POINT.
- CATS CABLE SHALL BE ROUTED ALONG EXISTING PATH TO JACE.

GRAPHIC SCALE



DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH, NAVAL SHIPYARD - KITTERY, MAINE
 PROJECT NO.: 1350913
 CONSTR. CONTR. NO. N40085-XX-C-XXX
 NAVFAC DRAWING NO. 12703537
 SHEET 84 OF 506
 ET1.0 27-15-44
 DRAWING REVISION: 10 OCTOBER 2014

FILE NAME: J:\A\1866_AEP_Subcontracting_Support\Drawings\DWG\A1866_2_HM_B22.dwg LAYOUT NAME: B29-H1.0 PLOTTED: Friday, August 07, 2015 - 2:34pm USER: REP



B29 HAZARDOUS MATERIAL SAMPLING PLAN
SCALE: 3/16" = 1'



GENERAL SHEET NOTES

1. ALL PACM (PRESUMED ASBESTOS CONTAINING MATERIAL), LBP (LEAD BASED PAINT), PCB, AND OTHER HAZARDOUS BUILDING MATERIALS MAY NOT BE IDENTIFIED IN THIS SURVEY, PARTICULARLY THOSE HIDDEN IN WALLS, CEILINGS, FLOORS, ETC. AND IN AREAS DESCRIBED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, WHICH WERE INACCESSIBLE DURING THE SURVEY. ASSESSMENT EFFORTS DID INCLUDE, TO THE EXTENT FEASIBLE, ACCESS TO INTERIOR AND EXTERIOR OF THE STRUCTURE. HOWEVER, THE ABSENCE OF ALL PACM, LBP, PCB, AND OTHER HAZARDOUS BUILDING MATERIALS IN HIDDEN OR INACCESSIBLE PORTIONS CANNOT BE DEFINITELY ENSURED.
2. RENOVATION AND/OR DEMOLITION ACTIVITIES SHOULD BE MONITORED BY PERSONNEL CAPABLE OF IDENTIFYING PACM, LBP, PCB AND OTHER HAZARDOUS BUILDING MATERIALS. IF PACM, LBP, PCB OR OTHER HAZARDOUS BUILDING MATERIALS ARE ENCOUNTERED, THESE MATERIALS SHOULD BE BULK SAMPLED BY A LICENSED INSPECTOR AND DISPOSED OF IN ACCORDANCE WITH PNSY AND ALL OTHER APPLICABLE REGULATIONS.
3. SEE B29 ASBESTOS, LEAD, PCB, AND TCLP INVENTORY TABLES LOCATED IN THE HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT, DATED JUNE 22, 2015, FOR ADDITIONAL INFORMATION.

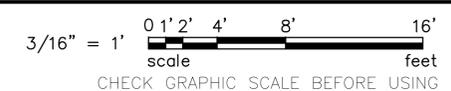
HAZARDOUS MATERIAL SAMPLING SUMMARY

SAMPLE ID	ACM	LBP
29-01	ND	NS
29-02	ND	NS
29-03	ND	NS
29-04	ND	NS
29-05	ND	NS
29-06	ND	NS
29-07	ND	NS
29-08	ND	NS
29-09	ND	NS
29-10	ND	NS
29-11	ND	NS
29-12	ND	NS
29-13	ND	NS
29-14	ND	NS
29-15	ND	NS
29-16	ND	NS
29-17	ND	NS
29-18	ND	NS
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29-22	ND	NS
29-23	ND	NS
LBP-29-01	NS	0.14

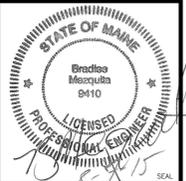
ACM = ASBESTOS CONTAINING MATERIALS
 LBP = LEAD BASED PAINT
 <RL = LESS THAN REPORTING LIMIT
 ND = NONE DETECTED
 NS = NOT SAMPLED
 H = EXCEEDS REGULATORY STANDARDS FOR HAZARDOUS CONCENTRATION

NOTE:
 REFER TO HAZARDOUS BUILDING MATERIAL ASSESSMENT REPORT DATED JUNE 22, 2015 FOR COMPLETE SAMPLING INFORMATION AND DATA.

GRAPHIC SCALE



NO.	DESCRIPTION	DATE	BLM	BLM	APPR.
2	100% SUBMISSION	08/07/2015			
1	90% SUBMISSION	06/05/2015			



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 FOR COMMANDER NAFAC

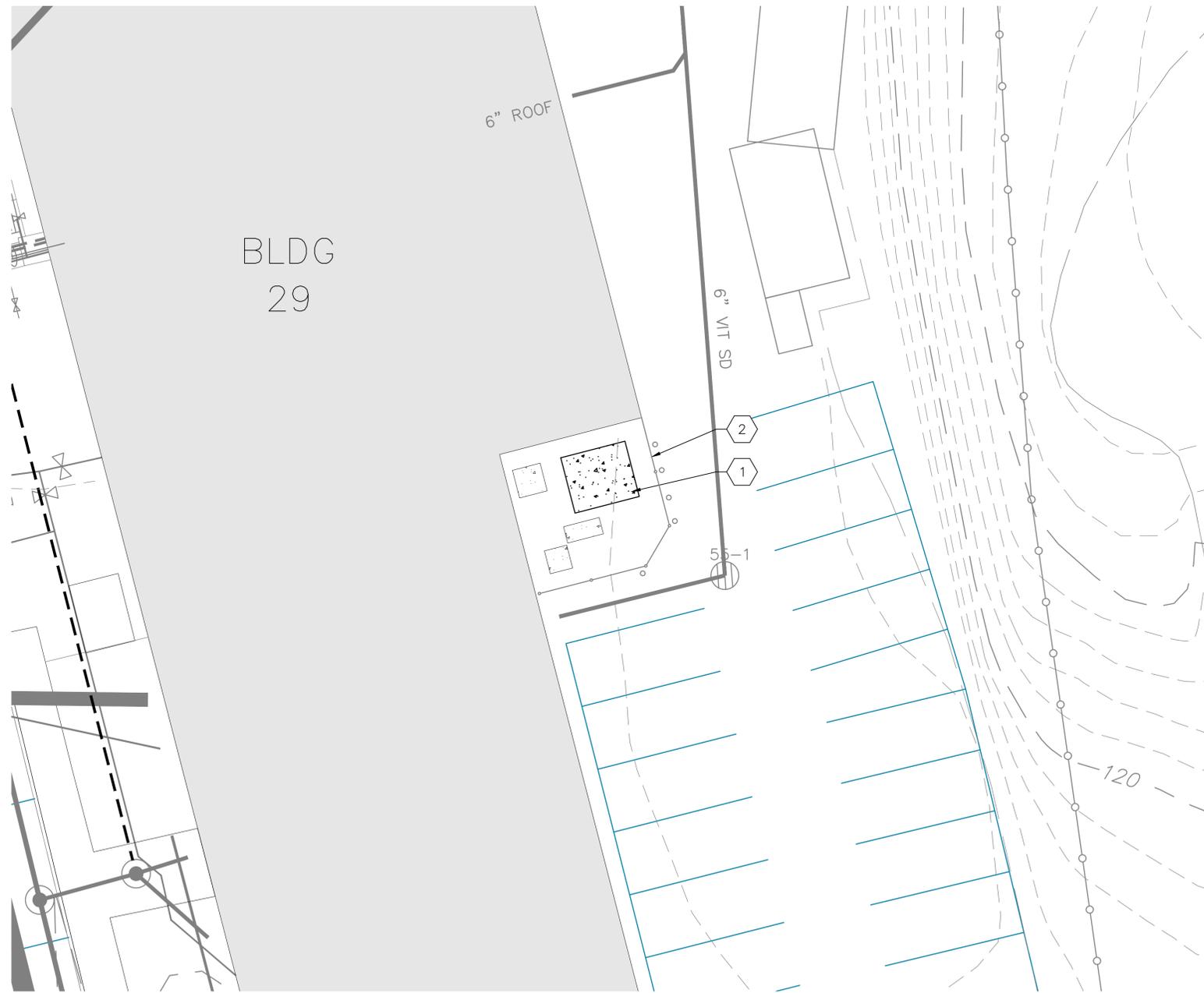
SATISFACTORY TO DATE
 DES: A/E | DRAW: REP | CHECK: BLM
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PAINT: AMIN BAHRLOUR PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITCHEN, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 B29 HAZARDOUS MATERIAL SAMPLING PLAN

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAFAC DRAWING NO.: 12703538
 SHEET 85 OF 506
H1.0 29-15-398

DRAWING REVISION: 10 OCTOBER 2014

FILE NAME: J:\A\1866_AEP_Subcontracting_Support\02_P-22\DWG-340\DESIGN\1066_2_R22_SITE.dwg LAYOUT NAME: C1.0 B029 DEMO PLOTTED: Friday, August 07, 2015 - 2:53pm USER: REP



B29 DEMOLITION PLAN
SCALE: 1" = 10'



GENERAL SHEET NOTES

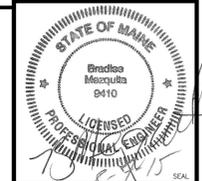
1. ALL WORK SHALL BE COORDINATED THROUGH THE PWD-MAINE CONSTRUCTION OFFICER.
2. BURIED UTILITIES ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS OF ALL BURIED UTILITIES.
3. CONTRACTOR SHALL CONDUCT AN ENVIRONMENTAL PERMIT REVIEW OF THE SITE PRIOR TO EXCAVATION.
4. CONTRACTOR SHALL CONDUCT AN ARCHEOLOGICAL REVIEW OF THE SITE PRIOR TO EXCAVATION.
5. EXCAVATED SOIL SHALL BE DISPOSED OF IN ACCORDANCE WITH SECTION 31 23 00.00 22 EXCAVATION AND FILL (PWD MAINE).
6. CONTRACTOR SHALL DISPOSE OF ALL CONSTRUCTION DEBRIS AND MATERIALS AT PERMITTED OFF-SITE DISPOSAL FACILITY.

REV	DATE	DESCRIPTION	BY	CHK	APP
2	08/07/2015	100% SUBMISSION			BLM
1	06/05/2015	90% SUBMISSION			BLM



DEMOLITION KEYNOTES

1. DEMOLISH EXISTING CONCRETE EQUIPMENT PAD.
2. EXISTING FENCE AND BOLLARDS ARE TO REMAIN. EXISTING FENCE TO BE ROLLED BACK FOR ACCESS TO EQUIPMENT AREA. COORDINATE ACCESS WITH CONSTRUCTION OFFICER.



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APPROVED: _____
FOR COMMANDER NAFAC

DES	A/E	DRW	REP	CHK	BLM

BRANCH MANAGER: BRUCE LITALIEN
LEAD/PAVE: AMIN BAHROUR PM&E

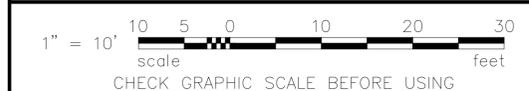
FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

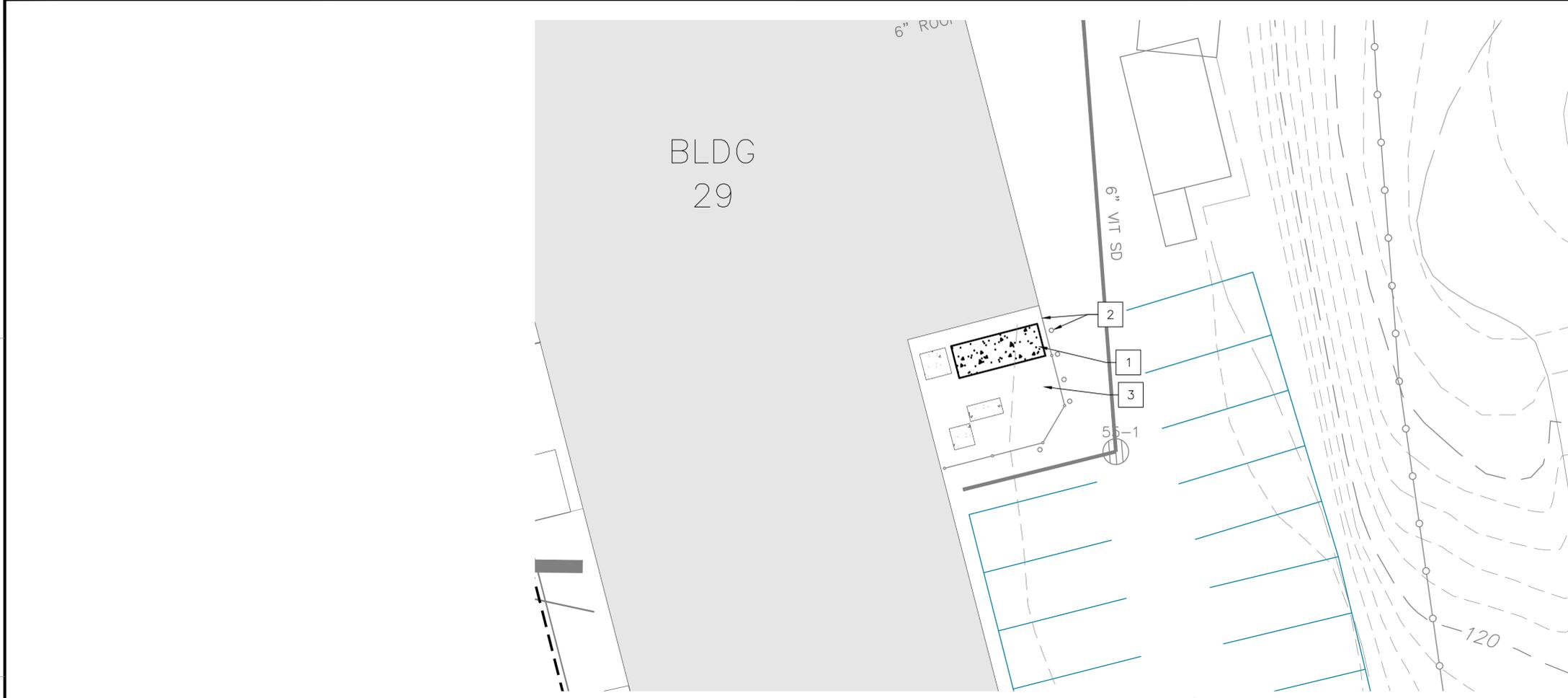
FY 16 ENERGY PROJECT
TASK 1-B-R-22
B29 DEMOLITION PLAN

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703539
SHEET	86 OF 506

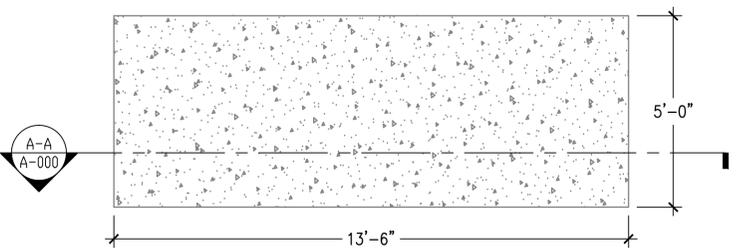
GRAPHIC SCALE



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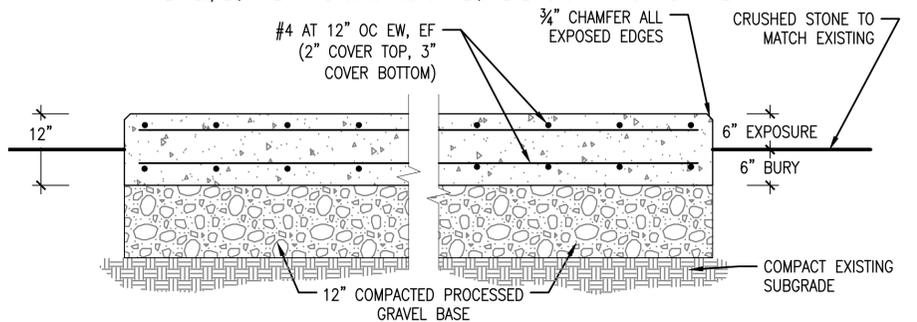


B29 SITE PLAN
SCALE: 1" = 10'



CONCRETE EQUIPMENT PAD DETAIL
NO SCALE

- NOTES:**
- COORDINATE PAD DIMENSIONS WITH ACTUAL EQUIPMENT DIMENSIONS.
 - CONCRETE SHALL EXTEND 6" ON EACH SIDE OF EQUIPMENT.
 - CONCRETE SHALL BE MINIMUM 4000 PSI, 7% AIR ENTRAINED.
 - EXCAVATION AND CONSTRUCTION OF CONCRETE PADS SHALL CONFORM TO THE MATERIALS, EQUIPMENT AND CONSTRUCTION REQUIREMENTS OF NAVFAC PWD-MAINE.



SECTION VIEW
NO SCALE

GENERAL SHEET NOTES

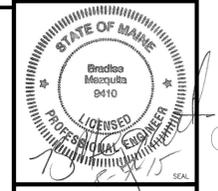
- ALL WORK SHALL BE COORDINATED THROUGH THE PWD-MAINE CONSTRUCTION OFFICER.
- BURIED UTILITIES ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS OF ALL BURIED UTILITIES.
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- CONTRACTOR SHALL CONDUCT AN ARCHEOLOGICAL REVIEW OF THE SITE PRIOR TO EXCAVATION.
- EXCAVATED SOIL SHALL BE DISPOSED OF IN ACCORDANCE WITH SECTION 31 23 00.00 22 EXCAVATION AND FILL (PWD MAINE).
- CONTRACTOR SHALL DISPOSE OF ALL CONSTRUCTION DEBRIS AND MATERIALS AT PERMITTED OFF-SITE DISPOSAL FACILITY.

REV	DATE	DESCRIPTION
2	08/07/2015	100% SUBMISSION
1	06/05/2015	90% SUBMISSION



NEW WORK KEYNOTES

- CONSTRUCT CONCRETE EQUIPMENT PAD.
- EXISTING BOLLARDS TO BE SANDED, PRIMED AND PAINTED YELLOW. FENCE TO BE RESTORED TO EXISTING CONDITION.
- RESTORE GROUND SURFACE TO EXISTING CONDITIONS



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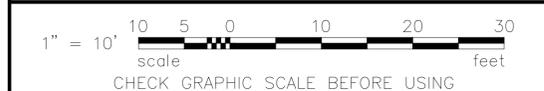
APPROVED: _____
FOR COMMANDER NAVFAC

DES	DRW	REP	CHK	BLM
AMIN	BRUCE	PETER		

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

FY 16 ENERGY PROJECT
TASK 1-B-R-22
B29 SITE PLAN

GRAPHIC SCALE



PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703540
SHEET	87 OF 506

C2.0 29-15-400
DRAWING REVISION: 10 OCTOBER 2014

HVAC ABBREVIATIONS

*F	DEGREES FAHRENHEIT	ID	INSIDE DIAMETER
°C	DEGREES CELSIUS	IN	INCHES
Ø	DIAMETER	INSUL	INSULATION
ACV	AUTOMATIC CONTROL VALVE	KW	KILOWATT
AD	ACCESS DOOR	KVA	KILOVOLT AMPERE
ADJ	ADJUSTABLE	L	LENGTH
ADDL	ADDITIONAL	LB	POUND
AFF	ABOVE FINISHED FLOOR	LF	LINEAR FEET
AFG	ABOVE FINISHED GRADE	LVG	LEAVING
ALT	ALTERNATE	M	ONE THOUSAND
AP	ACCESS PANEL	MAX	MAXIMUM
ARCH	ARCHITECT	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
ATC	AUTOMATIC TEMPERATURE CONTROL	MCA	MINIMUM CIRCUIT AMPS
AS	AIR SEPARATOR	MCC	MOTOR CONTROL CENTER
AVG	AVERAGE	MECH	MECHANICAL
BAS	BUILDING AUTOMATION SYSTEM	MEZZ	MEZZANINE
BFF	BELOW FINISHED FLOOR	MFR	MANUFACTURER
BHP	BRAKE HORSEPOWER	MIN	MINIMUM
BLDG	BUILDING	MTD	MOUNTED
BLR	BOILER	MU	MAKEUP WATER
BOD	BOTTOM OF DUCT	N/A	NOT APPLICABLE
BOP	BOTTOM OF PIPE	NC	NORMALLY CLOSED
BSPY	BASEMENT	NC	NOISE CRITERIA
BTU	BRITISH THERMAL UNIT	NIC	NOT IN CONTRACT
BTUH	BRITISH THERMAL UNIT PER HOUR	NO	NORMALLY OPEN
C	CONVECTOR	NO.	NUMBER
CF	CEILING FAN	NOM	NOMINAL
CL	CENTERLINE	NTS	NOT TO SCALE
CLG	CEILING	OB	OCTAVE BAND
CO	CLEAN-OUT	OC	ON CENTER
COL	COLUMN	OD	OUTSIDE DIAMETER
COL	COLUMN	OD	OUTSIDE DIAMETER
COMP	COMPRESSOR	ODP	OPEN DRIP PROOF
CONC	CONCRETE	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CONN	CONNECTION	OFOI	OWNER FURNISHED OWNER INSTALLED
CONTR	CONTRACTOR	OV	OUTLET VELOCITY
CORR	CORRIDOR	PCF	POUNDS PER CUBIC FOOT
CUF	CUBIC FEET	PD	PRESSURE DROP
CUH	CABINET UNIT HEATER	PH	PHASE
CYL	CYLINDER	PLMB	PLUMBING
D	DRAIN	POS	PROVIDED BY OTHER SECTION(S)
DB	DRY BULB TEMPERATURE	PRESS	PRESSURE
DDC	DIRECT DIGITAL CONTROL	PRIM	PRIMARY
DDCFP	DIRECT DIGITAL CONTROL FIELD PANEL	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
DIA	DIAMETER	PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
DIM	DIMENSION	PSIG	POUNDS PER SQUARE INCH GAUGE
DN	DOWN	PVC	POLYVINYL CHLORIDE
DWG	DRAWING	REP	REPRESENTATIVE
EA	EACH	RET	RETURN
EAT	ENTERING AIR TEMPERATURE	REQD	REQUIRED
EFF	EFFICIENCY	REQS	REQUIREMENTS
ECUH	ELECTRIC CABINET UNIT HEATER	RH	RELATIVE HUMIDITY
ELEC	ELECTRICAL	RM	ROOM
ELEV	ELEVATION	RPM	REVOLUTIONS PER MINUTE
EMER	EMERGENCY	SCH	SCHEDULE
ENT	ENTERING	SOV	SOLENOID OPERATED VALVE
EQUIP	EQUIPMENT	SPECS	SPECIFICATIONS
EXH	EXHAUST	SQ	SQUARE
EXP	EXPANSION	SOFT	SQUARE FEET
FTR	FINNED TUBE RADIATION	SS	STAINLESS STEEL
FCV	FLOW CONTROL VALVE	STD	STANDARD
FG	FIBERGLASS	STDBY	STANDBY
FLEX	FLEXIBLE	STL	STEEL
FLR	FLOOR	SUCT	SUCTION
FLRDR	FLOOR DRAIN	SUP	SUPPLY
FP	FIRE PROTECTION	TA	THROW-AWAY
FPM	FEET PER MINUTE	TAV	THERMOSTATIC AIR VENT
FT	FEET	TEFC	TOTALLY ENCLOSED FAN COOLED
FT/SEC	FEET PER SECOND	TEL	TELEPHONE
FURN	FURNISHED	TEMP	TEMPERATURE
FVNR	FULL VOLTAGE NON-REVERSING	TOD	TOP OF DUCT
GA	GAUGE	TOP	TOP OF PIPE
GAL	GALLONS	TYP	TYPICAL
GALV	GALVANIZED	UH	UNIT HEATER
GC	GENERAL CONTRACTOR	V	VENT
GND	GROUND	VEL	VELOCITY
GPH	GALLONS PER HOUR	VERT	VERTICAL
GPM	GALLONS PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
GRD	GRADE (GROUND LEVEL)	VTR	VENT THROUGH ROOF
GWB	GYPSSUM WALL BOARD	W	WIDTH
H	HEIGHT	W/	WITH
HD	HEAD	W/O	WITHOUT
HP	HORSEPOWER	WB	WET BULB TEMPERATURE
HR	HOUR	WF	WIDE FLANGE
HZ	HERTZ	WG	WATER GAUGE
		WRT	WITH RESPECT TO

PIPING LEGEND

	RISE (SINGLE LINE - PLAN VIEW)
	DROP (SINGLE LINE - PLAN VIEW)
	TOP TAKEOFF
	BOTTOM TAKEOFF
	PIPE BREAK (SINGLE LINE)

FLOW DIAGRAM & CONTROL DIAGRAM EQUIP. SYMBOLS

	FILTER BANK		CENTRIFUGAL FAN
	HEATING COIL		INLINE CENTRIFUGAL FAN
	COOLING COIL		OPPOSED BLADE DAMPER W/ TWO POSITION ACTUATOR
	PARALLEL BLADE DAMPER W/ MODULATING ACTUATOR		OPPOSED BLADE DAMPER W/ MODULATING ACTUATOR
	BACKDRAFT DAMPER		PARALLEL BLADE DAMPER W/ TWO POSITION ACTUATOR

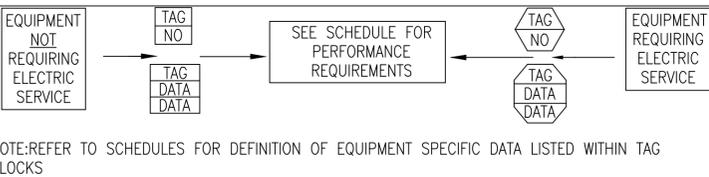
HVAC SYSTEM TAGS

	CHILLER		AIR COOLED CONDENSING UNIT
	AIR HANDLING UNIT		COMPUTER ROOM AC UNIT
	JACE BOX		

CALL OUT SYMBOLS

	THERMOSTAT		REFER TO DRAWINGS () FOR CONTINUATION
	CONNECT TO EXISTING		SYMBOL DESIGNATES ASSOCIATED SYSTEM OR SERVICE (ie LPS)
	LIMIT OF NEW WORK		DIFFUSER, GRILLE, REGISTER LETTER DESIGNATION (See Schedule for ATD type)
			DESIGN CFM

EQUIPMENT TAG SYMBOLS & ABBREVIATIONS



AIR SYSTEM SPECIFIC ABBREVIATIONS

AC	AIR CONDITIONING	LVDR	LOUVERED DOOR
ACD	AUTOMATIC CONTROL DAMPER	OA	OUTSIDE AIR
ACU	AIR CONDITIONING UNIT	OAI	OUTSIDE AIR INTAKE
AF	AIR FOIL	OBD	OPPOSED BLADE DAMPER
AHU	AIR HANDLING UNIT	OED	OPEN END DUCT
ALD	ACOUSTICALLY LINED DUCTWORK	RA	RETURN AIR
ATD	AIR TERMINAL DEVICE	RF	RETURN FAN
AVS	AIR VOLUME TRAVERSE STATION	RG	RETURN GRILLE
BDD	BACKDRAFT DAMPER	RHC	REHEAT COIL
BI	BACKWARD INCLINED	RLF	RELIEF
CC	COOLING COIL	RR	RETURN REGISTER
CD	CEILING DIFFUSER	RV	ROOF VENT
CFM	CUBIC FEET PER MINUTE	SA	SUPPLY AIR
CG	CEILING GRILLE	SATT	SOUND ATTENUATOR
DIFF	DIFFUSER	SCR	SCREEN
DWDI	DOUBLE WIDTH DOUBLE INLET	SD	SMOKE DAMPER
DWSI	DOUBLE WIDTH SINGLE INLET	SDET	SMOKE DETECTOR
DX	DIRECT EXPANSION	SEF	SMOKE EXHAUST FAN
EF	EXHAUST FAN	SF	SUPPLY FAN
EG	EXHAUST GRILLE	SFD	COMBINATION AUTOMATIC SMOKE/FIRE DAMPER
ESP	EXTERNAL STATIC PRESSURE	--	WITH ACCESS DOOR
F	FAN	SG	SUPPLY GRILLE
FC	FORWARD CURVED	SM	SHEETMETAL
FA	FREE AREA	SP	STATIC PRESSURE
FCU	FAN COIL UNIT	SR	SUPPLY REGISTER
FD	FIRE DAMPER (W/ ACCESS DOOR)	SWDI	SINGLE WIDTH DOUBLE INLET
FLTR	FILTER	SWSI	SINGLE WIDTH SINGLE INLET
FPI	FINS PER INCH	TE	TOILET EXHAUST
FPT	FAN POWERED TERMINAL BOX	TF	TRANSFER FAN
GE	GENERAL EXHAUST	TG	TRANSFER GRILLE
GIH	GRAVITY INTAKE HOOD	TR	TRANSFER
GRH	GRAVITY RELIEF HOOD	TSP	TOTAL STATIC PRESSURE
HC	HEATING COIL	UC	UNDERCUT DOOR
LAT	LEAVING AIR TEMPERATURE	VD	VOLUME DAMPER
LD	LINEAR DIFFUSER	VV	VARIABLE VOLUME SUPPLY AIR TERMINAL BOX
LUVR	LOUVER	WMS	WIRE MESH SCREEN

HYDRONIC SYSTEM SPECIFIC ABBREVIATIONS

AS	AIR SEPARATOR	ET	EXPANSION TANK
AAV	AUTOMATIC AIR VENT	EWT	ENTERING WATER TEMPERATURE
CH	CHILLER	LWT	LEAVING WATER TEMPERATURE
CHW	CHILLED WATER	MAV	MANUAL AIR VENT
CHWR	CHILLED WATER RETURN	NPSH	NET POSITIVE SUCTION HEAD
CHWS	CHILLED WATER SUPPLY	PU	PUMP

HVAC GENERAL NOTES

- GENERAL NOTES APPLY TO ALL HVAC DRAWINGS.
- THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID, ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITIONS OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. ABSOLUTELY NO CLAIMS FOR EXTRA COMPENSATION WILL BE CONSIDERED FOR EXISTING CONDITIONS VISIBLE OR REASONABLY INFERRABLE FROM A CAREFUL EXAMINATION OF THE EXISTING BUILDING.
- THIS CONTRACTOR SHALL INSPECT THE EXISTING FIELD CONDITIONS AT THE SITE AND THE "AS-BUILT" BASE BUILDING CONTRACT DOCUMENTS PRIOR TO THE START OF ANY WORK TO DETERMINE WHAT EFFECT THE EXISTING CONDITIONS WILL HAVE ON HIS WORK. POTENTIAL PROBLEM AREAS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER IMMEDIATELY.
- THIS CONTRACTOR SHALL CONNECT HIS WORK TO VARIOUS EXISTING PIPING, DUCTWORK, AND CONTROL SYSTEMS IN THE BASE BUILDING. THE NEW WORK SHALL BE COMPATIBLE WITH THE EXISTING SYSTEMS. LOCATION OF EQUIPMENT OR THE ROUTING OF THE VARIOUS SYSTEMS AS WELL AS OPENINGS IN FLOOR SLABS OR WALLS SHALL BE GOVERNED BY THE EXISTING CONDITIONS AS THEY APPEAR IN THE FIELD OR ON THE "AS-BUILT" DRAWINGS.
- CARE SHALL BE TAKEN DURING THE INSTALLATION TO NOT DAMAGE OR INTERRUPT BUILDING SYSTEMS AND SERVICES THAT ARE ALREADY INSTALLED. DAMAGE TO SUCH SYSTEMS OR EQUIPMENT CAUSED BY THIS CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.
- SHUTDOWN OF EXISTING SYSTEMS FOR CONNECTION TO EXISTING SERVICES SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR AND BUILDING OWNER. THIS CONTRACTOR SHALL SUBMIT REQUESTS, WHERE THEY AFFECT THE OPERATION OF THE BUILDING SYSTEMS, AT LEAST FIFTEEN DAYS IN ADVANCE OF ANY REQUIRED SHUTDOWN. THE ACTUAL SHUTDOWN PERIOD SHALL BE AS SHORT AS POSSIBLE AND AT A TIME MUTUALLY AGREEABLE TO THE BUILDING OWNER AND THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR.
- DRAWINGS ARE DIAGRAMMATIC, THEREFORE DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS, AS WELL AS ROUTING PATHS, IN FIELD.
- ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER, AND SHOULD BE KEPT TO A MINIMUM FOR SYSTEM EFFICIENCIES.
- VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT AND/OR PIPE TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION. VERIFY ACCESS IS PROVIDED FOR SERVICING EQUIPMENT AS REQUIRED.
- ALL MATERIALS AND EQUIPMENT UNLESS SPECIFICALLY INDICATED AS REUSED, SHALL BE NEW.
- ACCESS PANELS SHALL BE PROVIDED TO ALLOW FOR CLEANING OF COILS AND SERVICING OF DAMPERS, HEATERS, VALVES, AND ALL CONCEALED MECHANICAL EQUIPMENT.
- INSTALL NEW THERMOSTATS 4 FEET AFF OR AS DIRECTED OTHERWISE BY ENGINEER.
- GENERAL CONTRACTOR TO PATCH ALL EFFECTED INTERIOR AND EXTERIOR EXISTING FLOOR, WALL, AND CEILING SURFACES TO MATCH EXISTING. PROVIDE ESCUTCHEON PLATES.
- CONTRACTOR RESPONSIBLE FOR ROUTING PIPE AND PERFORMING PRESSURE LOSS CALCULATIONS TO SIZE PIPE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- ANY AND ALL WALLS, CEILINGS AND FLOORS THAT ARE ANTICIPATED TO BE DISTURBED DURING THE DEMOLITION OR INSTALLATIONS PROCESS, AS INDICATED ON THE DRAWINGS, SHALL BE TESTED FOR HAZARDOUS MATERIALS PRIOR TO DISTURBING THE SURFACES. ROUTING OF PIPING HAS BEEN INDICATED TO DEPICT THE INTENT OF THE WORK. ACTUAL ROUTING MAY DIFFER IN THE FIELD DUE TO BUILDING CONSTRUCTION. COORDINATE TESTING OF ALL SURFACES TO BE DISTURBED, ALONG THE ACTUAL INSTALLATION ROUTE, WITH THE HAZARDOUS MATERIALS CONTRACTOR. REFER TO EXISTING HAZMAT REPORT FOR TESTING RESULTS.
- MECHANICAL CONTRACTOR TO REMOVE ALL IDENTIFIED R-22 EQUIPMENT AND ASSOCIATED APPURTENANCES AND REPLACE IN KIND WITH A R410A OR R407C SYSTEM.
- REFRIGERANT PIPING IS DIAGRAMMATIC, CONTRACTOR TO DETERMINE ROUTING IN FIELD AND RE-USE EXISTING PENETRATIONS. ANY EXPOSED PIPING TO BE CONCEALED IN A CHASE. CONTRACTOR RESPONSIBLE FOR ROUTING PIPE AND PERFORMING PRESSURE LOSS CALCULATIONS TO SIZE PIPE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- SEE CIVIL DRAWINGS FOR DEMOLISHED AND NEW CONCRETE PADS.
- THE MECHANICAL NEW WORK PLANS DO NOT SHOW ALL ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION AMONG TRADES TO DETERMINE ALL ACCESSORIES AND COMPONENTS REQUIRED TO FORM A COMPLETE AND FUNCTIONAL SYSTEM. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY ACCESSORIES AND COMPONENTS NEEDED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM AND SHALL BE RESPONSIBLE TO ENSURE THE INTEGRITY AND SAFETY OF THE SYSTEM AFTER COMPLETION. THE MECHANICAL CONTRACTOR SHALL TAKE ALL NECESSARY STEPS AND PROVIDE ALL ADDITIONAL COMPONENTS NEEDED TO ENSURE THE SYSTEM IS SAFE UPON COMPLETION OF THE PROJECT.
- SEE PWD-ME DRAWING; 43-15-67 FOR TITLE SHEET
43-15-68 FOR LIST OF DRAWINGS
43-15-69 FOR GENERAL NOTES & LEGENDS
43-15-72 FOR CHASE AND SOFFIT DETAILS
43-15-74 FOR STRUCTURAL NOTES AND SUPPORTS

SCHEDULE OF DRAWINGS

DWG#	DESCRIPTION
M1.0	BUILDING 29 HVAC LEGEND
MD2.0	BUILDING 29 HVAC FIRST FLOOR DEMOLITION PLAN
M2.0	BUILDING 29 HVAC FIRST FLOOR PLAN

M3.0	BUILDING 29 HVAC CONTROLS
M3.1	BUILDING 29 HVAC CONTROLS
M3.2	BUILDING 29 HVAC CONTROLS
M3.3	BUILDING 29 HVAC CONTROLS & DETAILS
M4.0	BUILDING 29 HVAC SCHEDULES

DATE	APPR
08/07/2015	DM
07/24/2015	DM
06/04/2015	DM
04/24/2015	DM
02/23/2015	DM
DESCRIPTION	REV
100% SUBMISSION	4
100% REVIEW SUBMISSION	3
90% SUBMISSION	2
80% SUBMISSION	1
35% SUBMISSION	0

APPROVED: _____

FOR COMMANDER NAVFAC

ACTIVITY

SAFETY TO DATE

DES: JC | DOW: SV | CHN: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALEN

FEAD/PM&E: AMIN BAHRROUR, PM&E

FIRE PROTECTION: X

NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC

PUBLIC WORKS DEPARTMENT - MAINE

PORTSMOUTH NAVAL SHIPYARD

RY 16 ENERGY PROJECT

TASK 1-B-R-22

BUILDING 29 HVAC LEGEND

PROJECT NO.: 1350913

CONSTR. CONTR. NO. N40085-XX-C-XXXX

NAVFAC DRAWING NO. 12703541

SHEET 88 OF 506

M1.0 29-15-401

DRAWFORM REVISION: 10 OCTOBER 2014

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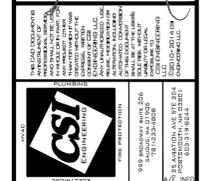
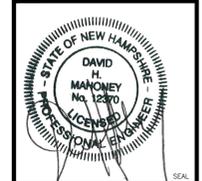
GENERAL SHEET NOTES

- REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- CONTRACTOR RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EQUIPMENT AND MATERIALS AT PERMITTED WASTE FACILITY.
- CONTRACTOR TO COORDINATE R-22 DISPOSAL WITH PSNY ENVIRONMENTAL GROUP.

DEMOLITION KEYNOTES

- REMOVE EXISTING CHILLER AND IT'S ASSOCIATED PIPING TO THE POINT OF DEMOLITION AS INDICATED ON THE DRAWING. EXISTING CONCRETE PAD TO BE REMOVED.
- REMOVE EXISTING AIR COOLED CONDENSING UNIT. EXISTING CONCRETE PAD TO REMAIN.
- REMOVE EXISTING CRAC UNIT AND ASSOCIATED THERMOSTAT. EXISTING DUCTWORK, CONTROL WIRING, CONDENSATE, AND WATER LINES TO REMAIN AND BE DISCONNECTED.
- REMOVE EXISTING AHU AND ASSOCIATED THERMOSTAT. EXISTING DUCTWORK CONTROL WIRING, AND CONDENSATE LINES TO REMAIN AND BE DISCONNECTED.
- ACCESSIBLE EXISTING RS/RL LINES TO BE REMOVED. ANY REMAINING RS/RL CONCEALED TO BE EVACUATED, CAPPED, AND ABANDONED IN PLACE.

NO.	DESCRIPTION	DATE	DM	DM	DM	DM	DM	DM	APPR.
4	100% SUBMISSION	08/07/2015							
3	100% REVIEW SUBMISSION	07/24/2015							
2	90% SUBMISSION	06/04/2015							
1	80% SUBMISSION	04/24/2015							
0	35% SUBMISSION	02/23/2015							



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES: JC | DRW: SV | CHK: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALEN

LEAD/PM&E: AMIN BAHRROUR, PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 RITERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 29 HVAC FIRST FLOOR DEMOLITION PLAN

PROJECT NO.: 1350913

CONSTR. CONTR. NO.: N40085-XX-C-XXXX

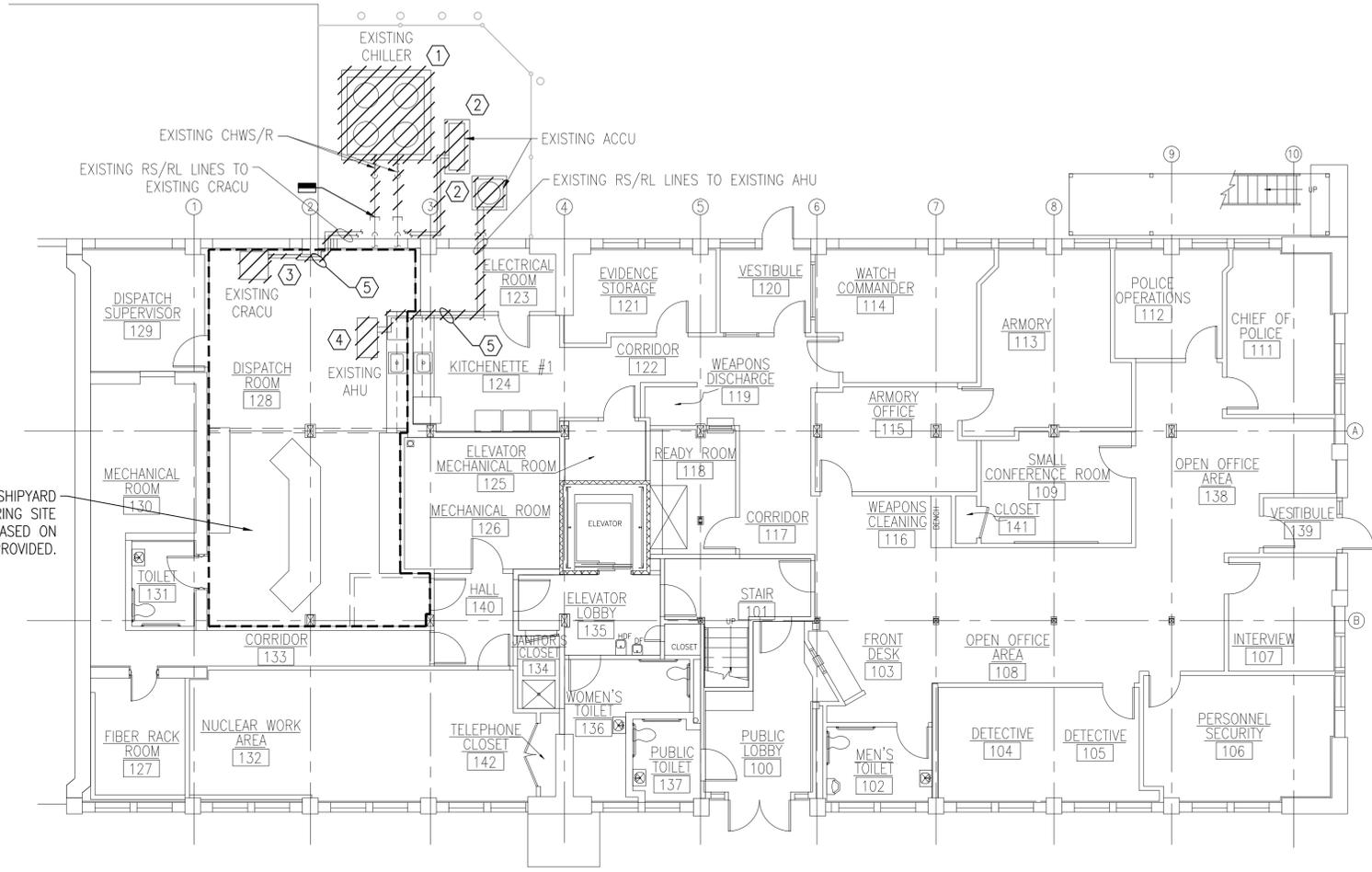
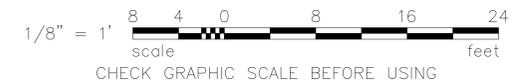
NAVFAC DRAWING NO.: 127035542

SHEET 89 OF 506

MD2.0 29-15-402

DRAWING REVISION: 10 OCTOBER 2014

GRAPHIC SCALE



PORTSMOUTH NAVAL SHIPYARD
 RESTRICTED ACCESS DURING SITE
 SURVEY. ASSUMPTIONS BASED ON
 DESIGN DOCUMENTS PROVIDED.

BUILDING 29 HVAC FIRST FLOOR DEMOLITION PLAN
 1/8"=1'-0"
 PLAN NORTH

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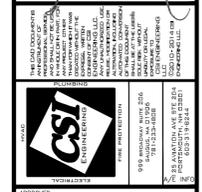
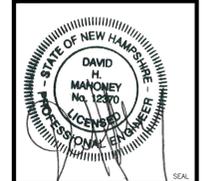
GENERAL SHEET NOTES

- REFER TO DRAWING M1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.

NEW WORK KEYNOTES

- FURNISH AND INSTALL A NEW CHILLER, IT'S ASSOCIATED CHWS/R PIPING AND CONNECT THE NEW CHWS/R INTO THE EXISTING CHILLED SYSTEM. NEW CHILLER SHALL BE PLACED ON NEW CONCRETE PAD.
- FURNISH AND INSTALL A NEW ACCU AND IT'S ASSOCIATED RS/RL LINES. NEW ACCU TO BE PLACED ON EXISTING CONCRETE PAD.
- FURNISH AND INSTALL NEW CRACU AND RS/RL LINES AND CONNECT TO IT'S ASSOCIATED ACCU. EXISTING CONTROL WIRING, DUCTWORK, CONDENSATE, AND WATER LINES TO BE RECONNECTED. PROVIDE WITH NEW DUCTWORK WHERE NECESSARY TO CONNECT TO NEW EQUIPMENT. REFER TO CRAC REFRIGERANT PIPING SMALL COMPONENT SCHEMATIC ON SHEET M4.0. PROVIDE WITH NEW DDC COMPATIBLE THERMOSTAT AND CONNECT TO EXISTING CONTROL WIRING, FIELD COORDINATE EXACT LOCATION WITH NAVFAC.
- FURNISH AND INSTALL NEW AHU AND RS/RL LINES AND CONNECT TO IT'S ASSOCIATED ACCU. EXISTING CONTROL WIRING, DUCTWORK, AND CONDENSATE LINES TO BE RECONNECTED. PROVIDE WITH NEW DUCTWORK WHERE NECESSARY TO CONNECT TO NEW EQUIPMENT. PROVIDE WITH NEW DDC COMPATIBLE THERMOSTAT AND CONNECT TO EXISTING CONTROL WIRING, FIELD COORDINATE EXACT LOCATION WITH NAVFAC.
- MECHANICAL CONTRACTOR TO FIELD COORDINATE EXACT LOCATION OF NEW DDC JACE BOX WITH NAVFAC.
- SEE GENERAL NOTE 17 ON SHEET M1.0 FOR PIPING INFORMATION.

REV	DATE	DESCRIPTION
4	08/07/2015	100% SUBMISSION
3	07/24/2015	100% REVIEW SUBMISSION
2	06/04/2015	90% SUBMISSION
1	04/24/2015	80% SUBMISSION
0	02/23/2015	35% SUBMISSION

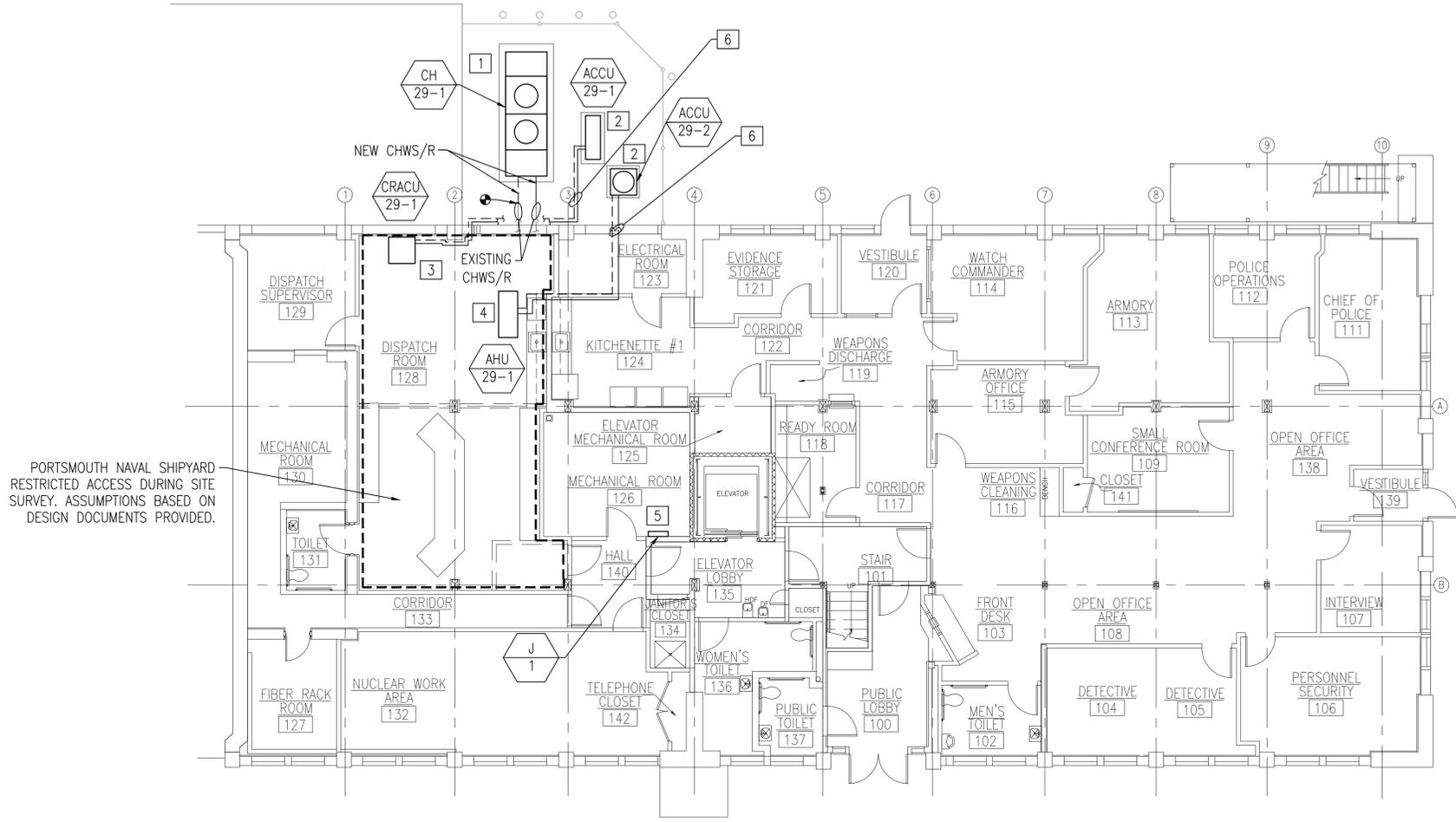


APPROVED:		
FOR COMMANDER NAVFAC		
SATISFACTORY TO:	DATE:	
DES: JC	DRW: SV	CHK: DM
PM/DM:	PETER STOCKLESS	
BRANCH MANAGER:	BRUCE LITALEN	
FEAD/PM&E:	AMIN BAHRROUR PM&E	

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 RITERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 29 HVAC FIRST FLOOR PLAN

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703543
SHEET	90 OF 506
M2.0	29-115-403

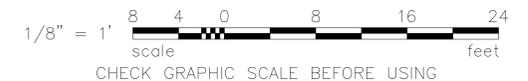
DRAWING REVISION: 10 OCTOBER 2014



PORTSMOUTH NAVAL SHIPYARD
 RESTRICTED ACCESS DURING SITE
 SURVEY. ASSUMPTIONS BASED ON
 DESIGN DOCUMENTS PROVIDED.

BUILDING 29 HVAC FIRST FLOOR PLAN
 1/8" = 1'-0"
 PLAN NORTH

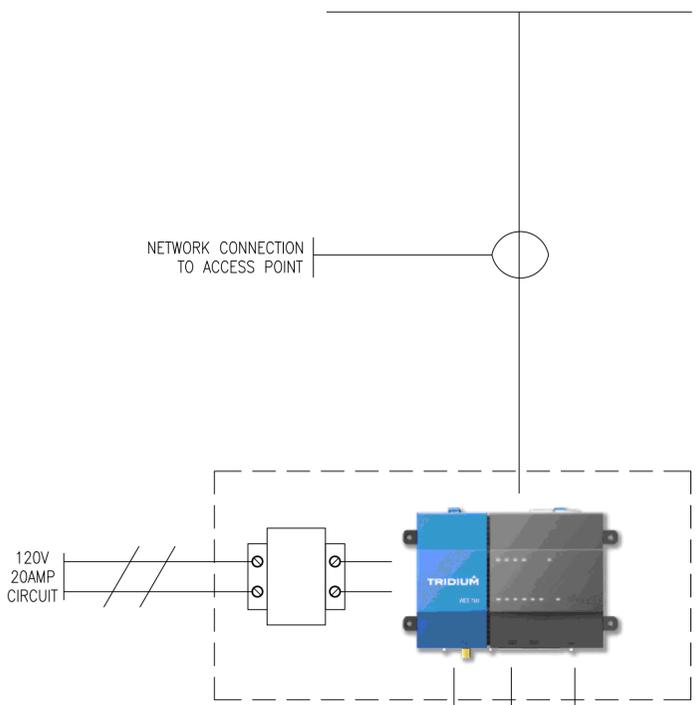
GRAPHIC SCALE



PORTSMOUTH NAVAL SHIPYARD (BUILDING 29_FIRE STATION / SECURITY)
EXISTING DELTA & INVENSYS INTEGRATED DDC SYSTEM ARCHITECTURE

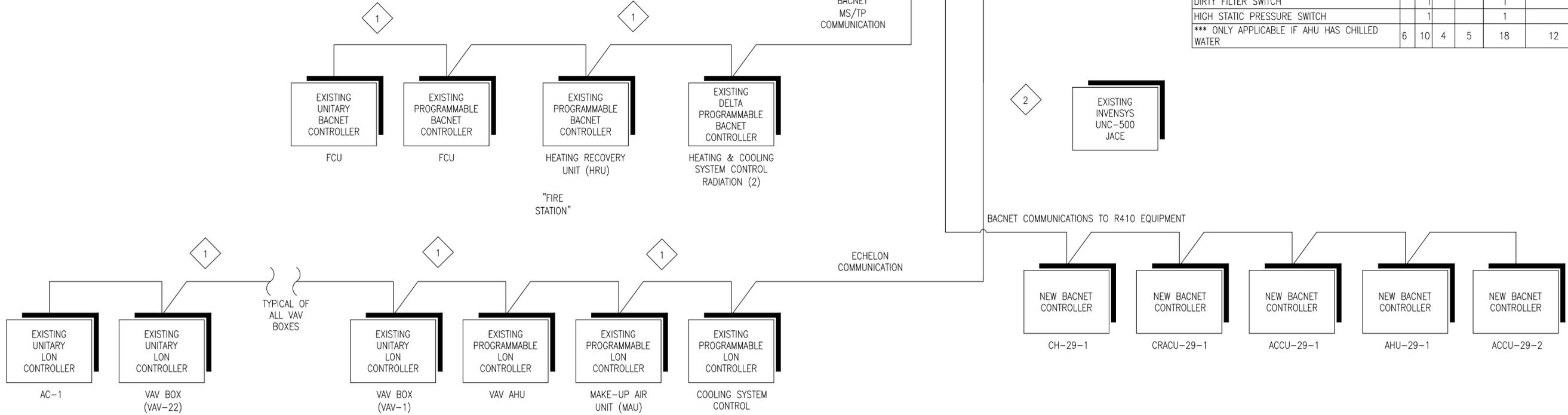
PANEL MATERIAL			
ITEM NO	MODEL	DESCRIPTION	QTY
C1	J-8000	N4 WEB BASED GLOBAL NETWORK INTERFACE	1
		APPROPRIATE DEVICE PACKS	

VAV AIR HANDLING UNIT							
POINT	AI	DI	DO	AO	STATUS POINT	CONTROL POINT	ALARM POINT
DISCHARGE AIR TEMPERATURE	1				1		1
DISCHARGE AIR TEMPERATURE SET POINT						1	
RETURN AIR TEMPERATURE	1				1		1
MIXED AIR TEMPERATURE	1				1		1
DUCT STATIC PRESSURE	1					1	1
DUCT STATIC PRESSURE SET POINT						1	
SUPPLY FAN START/STOP			1			1	
SUPPLY FAN STATUS	1				1		1
SUPPLY FAN VFD SPEED CONTROL SIGNAL				1		1	
SUPPLY FAN VFD FEEDBACK IN AMPS	1				1		
SUPPLY FAN VFD FAULT	1				1		1
RETURN FAN START/STOP			1			1	
RETURN FAN STATUS	1				1		1
RETURN FAN VFD SPEED CONTROL SIGNAL						1	
RETURN FAN VFD FEEDBACK IN AMPS	1				1		
RETURN FAN VFD FAULT	1				1		1
COOLING STAGE #1 START/STOP			1			1	
COOLING STAGE #2 START/STOP			1			1	
COOLING STAGE #1 STATUS	1				1		1
COOLING STAGE #2 STATUS	1				1		1
CHILLED WATER CONTROL VALVE				1		1	
CHILLED WATER CONTROL VALVE POSITION					1		1
HEATING CONTROL VALVE				1		1	
HEATING CONTROL VALVE POSITION					1		1
MIXED AIR DAMPERS (ECONOMIZER)				1		1	
MIXED AIR DAMPER POSITION					1		1
FREEZESTAT	1				1		1
DUCT SMOKE DETECTOR	1				1		1
DIRTY FILTER SWITCH	1				1		1
HIGH STATIC PRESSURE SWITCH	1				1		1
*** ONLY APPLICABLE IF AHU HAS CHILLED WATER	6	10	4	5	18	12	17



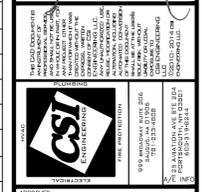
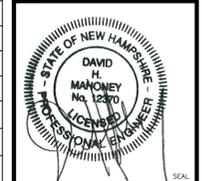
NEW TRIDIUM JACE INTEGRATION
EXISTING DDC SYSTEM

NEW TRIDIUM JACE INTEGRATION
EXISTING DDC SYSTEM



- 1 IT IS CRITICAL THAT THE COMMUNICATION BUS IS WIRED IN A CONTINUOUS DAISY CHAIN FASHION.
- 2 REPLACE EXISTING R2 JACE WITH NEW JACE

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC
ACTIVITY

SATISFACTORY TO DATE
DES: JC | DRW: SV | CHG: DM
PM/DM: PETER STOCKLESS
BRANCH MANAGER: BRUCE LITALIEN
FEAD/PM&E: AMIN BAHRROUR, PM&E

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
PUBLIC WORKS DEPARTMENT - MAINE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
FY 16 ENERGY PROJECT
TASK 1-B-R-22
BUILDING 29 HVAC CONTROLS

PROJECT NO.: 1350913
CONSTR. CONTR. NO.: N40085-XX-C-XXXX
NAVFAC DRAWING NO.: 12703544
SHEET 91 OF 506

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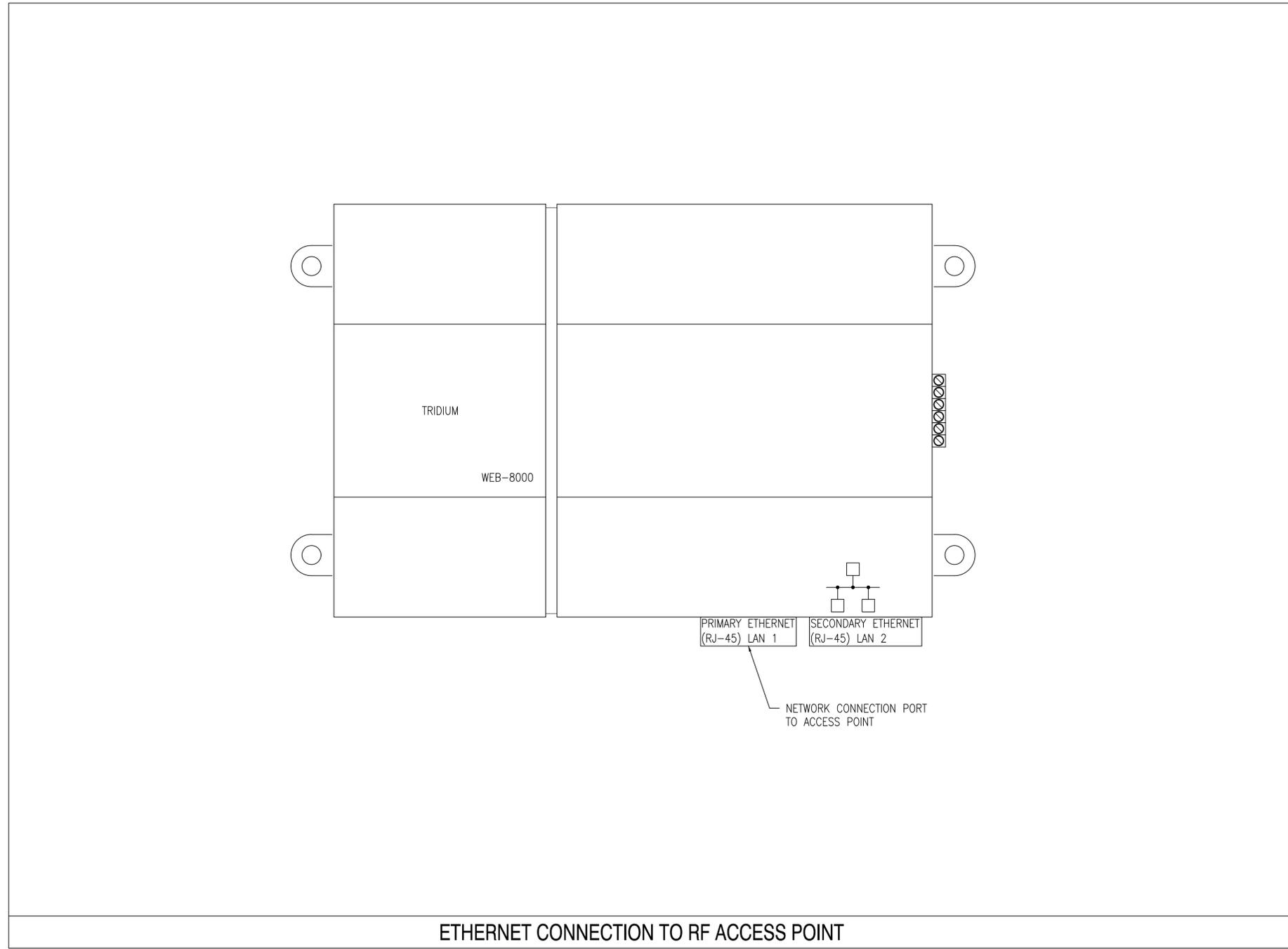
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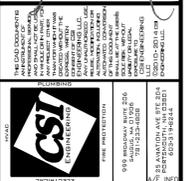
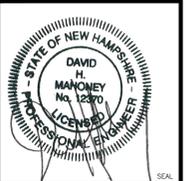
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SN	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED FOR COMMANDER NAVFAC

SATISFACTORY TO DATE

DES JC | DRW SV | CHK DM
 PM/DM PETER STOCKLESS
 BRANCH MANAGER BRUCE LITALIEN
 LEAD/PM&E AMIN BAHROUR PM&E

FIRE PROTECTION X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT ~ MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 29 HVAC CONTROLS

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703545

SHEET 92 OF 506

M3.1 29-15-405

DRAWING REVISION: 10 OCTOBER 2014

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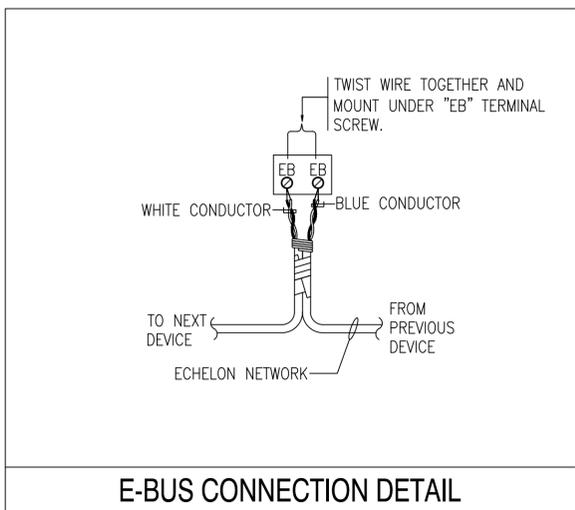
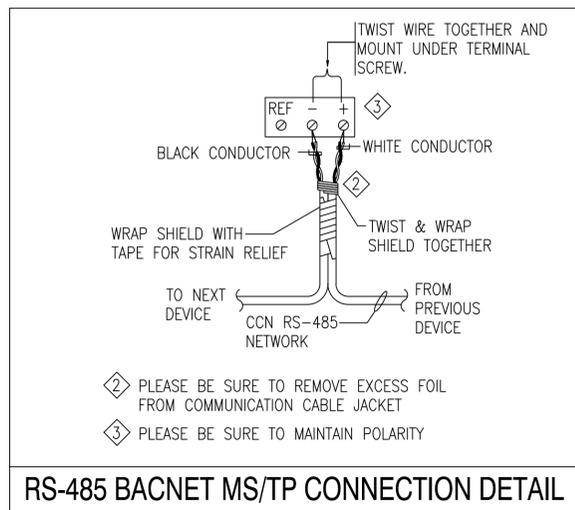
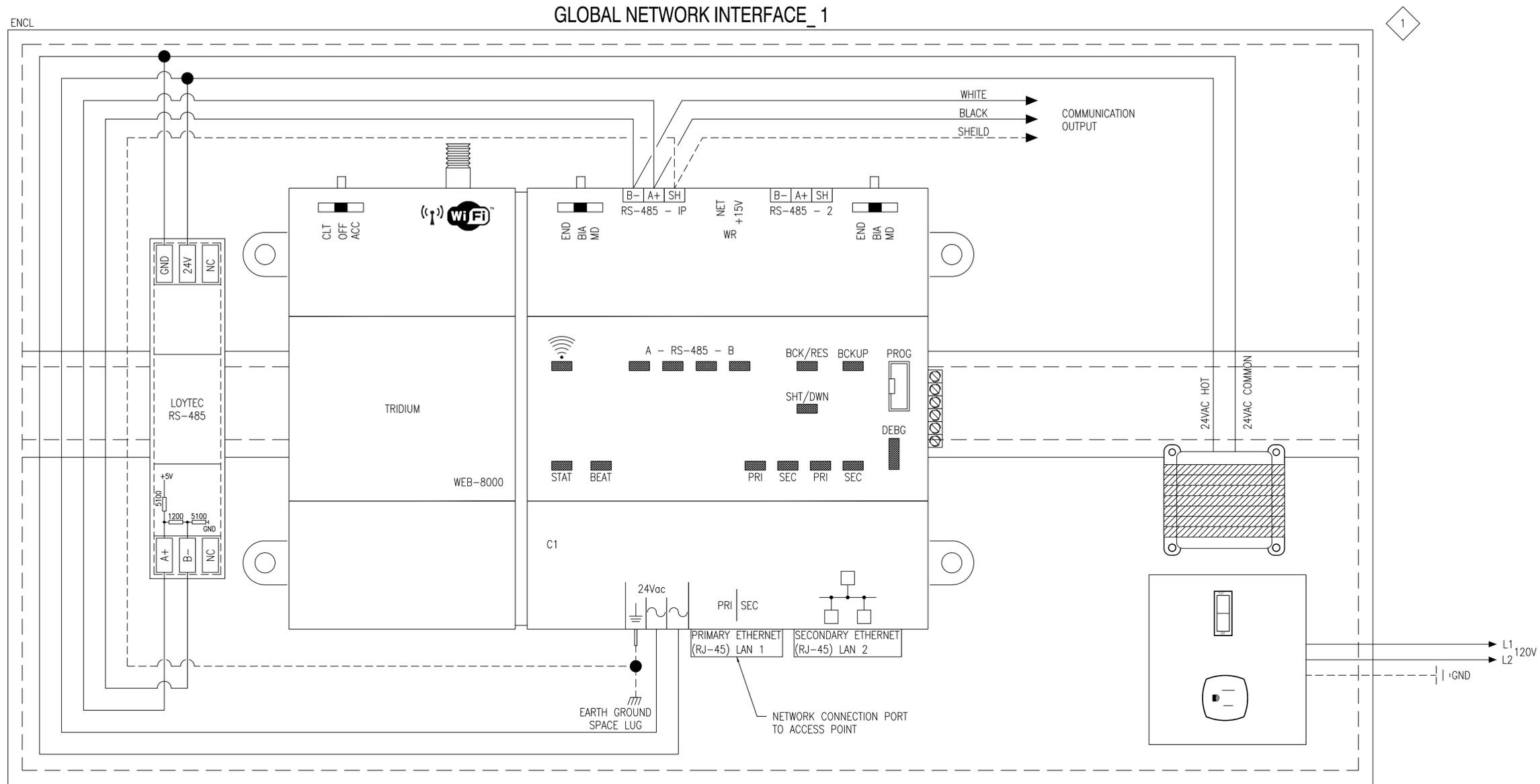
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D

C

B

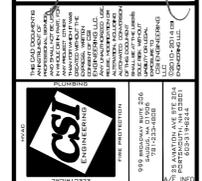
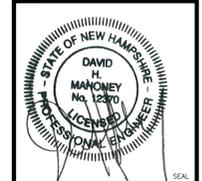
A



1 LOCATION OF CONTROLLER TO BE FIELD VERIFIED

PANEL MATERIAL			
ITEM NO	MODEL	DESCRIPTION	QTY
C1	J-8000	N4 WEB BASED GLOBAL NETWORK INTERFACE	1
ENCL	ENC-001	12"x18"x4" ENCLOSURE W/ 24V TRANSFORMER	1
EOL1	209541B	END OF LINE RESISTOR	1
LT1	LT-B4	RS-485 NETWORK TERMINATOR	1

REV	DESCRIPTION	DATE	APPR
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM

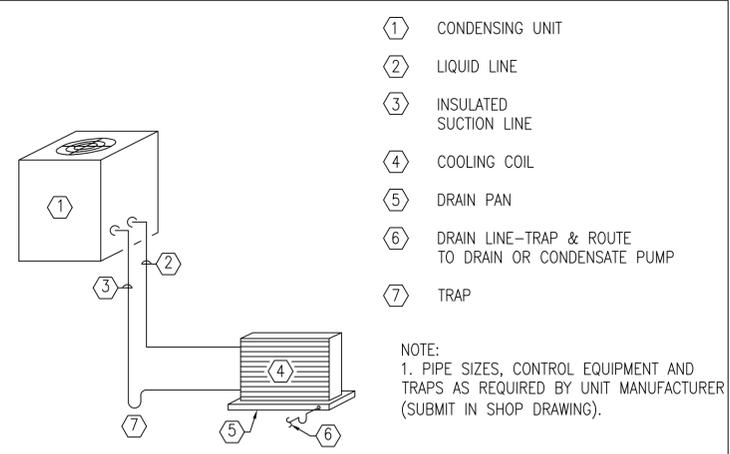


APPROVED FOR COMMANDER NAVFAC

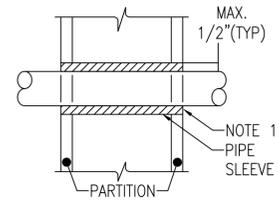
SATISFACTORY TO DATE
 DES: JC | DRW: SV | CHR: DM
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM&E: AMIN BAHRROUR, PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 29 HVAC CONTROLS

PROJECT NO.: 1350913
 CONSTR. CONTR. NO.: N40085-XX-C-XXXX
 NAVFAC DRAWING NO.: 12703546
 SHEET 93 OF 506

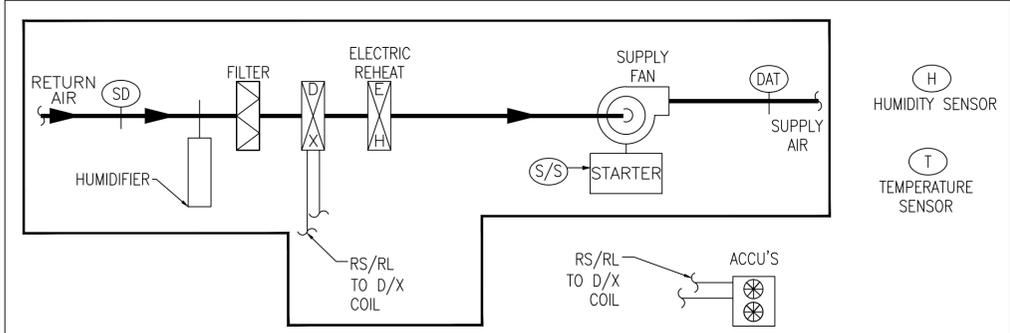


REFRIGERANT PIPING SMALL COMPONENT SCHEMATIC



NOTES:
 1. AT FIRE RATED PARTITIONS ADD LAYER OF FIRE SAFING INSULATION AROUND PENETRATIONS SO AS TO FILL CAVITY.
 2. PIPE PENETRATIONS THROUGH CORRIDOR WALLS ABOVE THE CEILING ARE TO BE FIRE STOPPED AROUND THE PENETRATION.
 3. CONTRACTOR RESPONSIBLE FOR DETERMINING REQUIRED HOUR RATING TO MATCH EXISTING WALL ASSEMBLY.

PIPE PENETRATIONS



OFF MODE

- SUPPLY FAN IS OFF
- ACCU OFF
- COMPRESSOR IS OFF
- ELECTRIC REHEAT COIL IS OFF
- HUMIDIFIER IS OFF

COOLING MODE

- SUPPLY FAN IS ON
- ACCU ON
- COMPRESSOR IS ON
- HUMIDIFIER IS OFF
- ELECTRIC REHEAT COIL IS OFF
- SETPOINT IS 70°F(ADJ)

HUMIDIFY MODE

- SUPPLY FAN IS ON
- ACCU ON

ELECTRIC REHEAT COIL IS OFF

- SETPOINT IS 70°F(ADJ)
- IF ROOM RELATIVE HUMIDITY (RH) DROPS BELOW 45% (ADJ) FOR TEN MINUTES AS MEASURED BY HSTAT, HUMIDIFICATION CYCLE SHALL BE ACTIVATED.
- HUMIDIFIER IS ON
- HUMIDIFICATION CYCLE ENDS WHEN SPACE HUMIDITY RISES ABOVE 55% (ADJ).

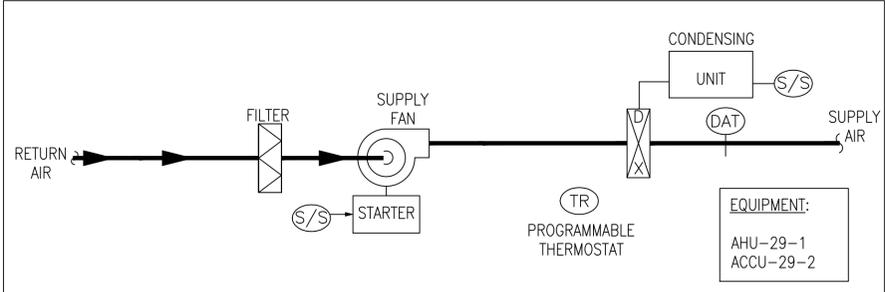
DEHUMIDIFICATION MODE

- SUPPLY FAN IS ON
- ACCU ON
- HUMIDIFIER IS OFF
- SETPOINT IS 70°F(ADJ)
- IF ROOM RELATIVE HUMIDITY (RH) RISES ABOVE 55% (ADJ) FOR TEN MINUTES AS MEASURED BY HSTAT, DEHUMIDIFICATION CYCLE SHALL BE ACTIVATED.
- ELECTRIC REHEAT COIL IS ON
- DEHUMIDIFICATION CYCLE ENDS WHEN SPACE HUMIDITY DROPS BELOW 45% (ADJ).

ALARMS & SAFETIES

- WHEN SMOKE DETECTOR IS ACTIVATED, CRAC AND ACCU IS SHUTDOWN
- WHEN FAN FAILS UNIT SHUTS DOWN

CRAC CONTROL SEQUENCE



GENERAL

1. THE EQUIPMENT IS STARTED AND STOPPED VIA DCC THERMOSTAT. COORDINATE OCCUPIED AND UNOCCUPIED SCHEDULES WITH OWNER.

OFF

1. SF DEENERGIZED
 2. ACCU DEENERGIZED

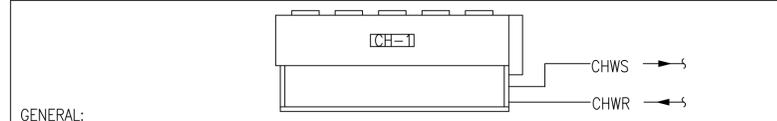
UNOCCUPIED COOLING CONTROL

1. SF ENERGIZED
 2. ACCU IS STAGED ON TO MAINTAIN THE SPACE TEMPERATURE SETPOINT OF 80°F(ADJ).
 3. DISCHARGE AIR TEMPERATURE SENSOR DAT SHALL LIMIT SUPPLY AIR TO 53°F MINIMUM.

OCCUPIED COOLING CONTROL

1. SF ENERGIZED
 2. ACCU IS STAGED ON TO MAINTAIN THE SPACE TEMPERATURE SETPOINT OF 75°F(ADJ).
 3. DISCHARGE AIR TEMPERATURE SENSOR DAT SHALL LIMIT SUPPLY AIR TO 53°F MINIMUM.

AIR HANDLER W/ DX COOLING SEQUENCE OF OPERATION



GENERAL:

- PACKAGED CHILLER IS MONITORED AND ON/OFF CONTROLLED BY THE NEW NIAGRA BUILDING DDC SYSTEM

OFF MODE:

- PACKAGED CHILLER IS DE-ENERGIZED

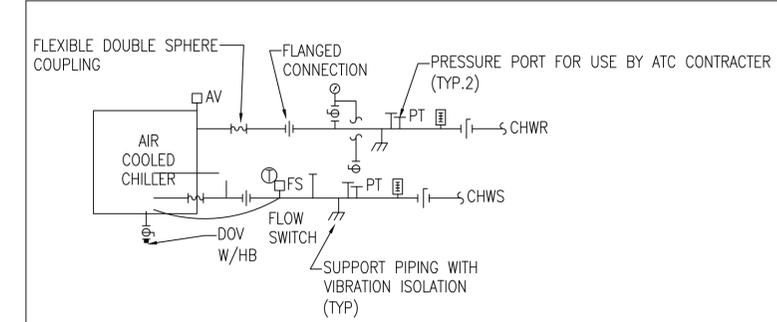
ON MODE:

- CHILLED WATER PUMPS ARE ENERGIZED AND FLOW ESTABLISHED
- PACKAGED CHILLER IS ENERGIZED
- SCROLL COMPRESSORS STAGE ON TO MAINTAIN DISCHARGE WATER TEMPERATURE OF 44°F (ADJ.)

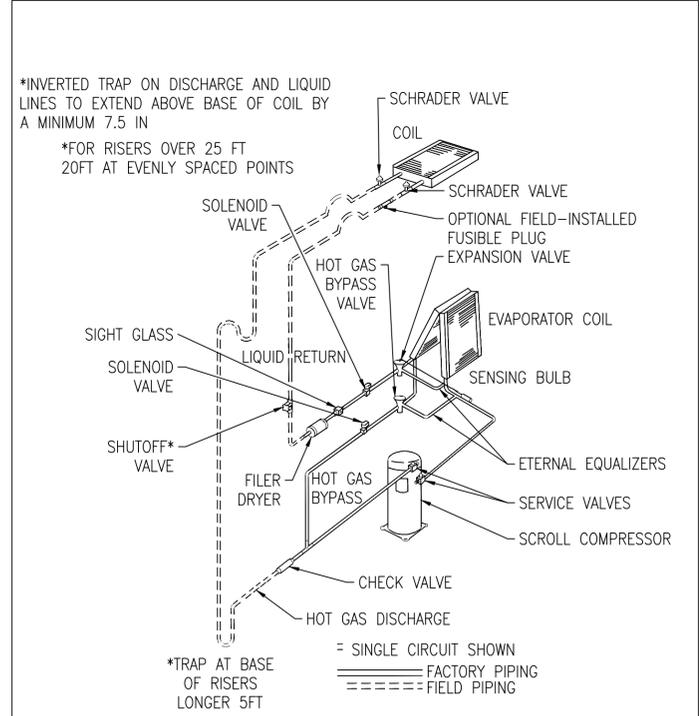
ALARMS:

- PUMP FAILURE SENDS SIGNAL TO DDC FRONT END
- GENERAL FAILURE ALARM FROM CHILLER CONTROL PANEL

PACKAGED CHILLER SEQUENCE OF OPERATION

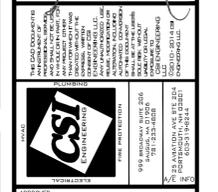
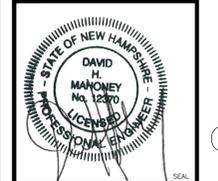


AIR COOLED CHILLER PIPING DETAIL



CRAC REFRIGERANT PIPING SMALL COMPONENT SCHEMATIC

NO.	DESCRIPTION	DATE	APPR.
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED:

FOR COMMANDER NAVFAC

ACTIVITY:

SATISFACTORY TO DATE:

DES: JC | DSW: SV | CHR: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHRROUR, PM&E

FIRE PROTECTION: X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 KITTERY, MAINE

FY 16 ENERGY PROJECT
 TASK 1-B-R-22

BUILDING 29 HVAC CONTROLS & DETAILS

PROJECT NO.: 1350913

CONSTR. CONTR. NO.: N40085-XX-C-XXXX

NAVFAC DRAWING NO.: 12703547

SHEET 94 OF 506

M3.3 29-15-407

DRAWING REVISION: 10 OCTOBER 2014

AIR-COOLED WATER CHILLER SCHEDULE																								
TAG	SERVICE	LOCATION	MINIMUM CAPACITY (TONS)	EVAPORATOR					REFRIG. TYPE	COMPRESSOR(S)			AMBIENT (°F)	CONDENSER FAN			ELECTRIC SERVICE					WEIGHT (LBS)	DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES
				GPM	% GLYCOL	EWT (°F)	LWT (°F)	P.D.(FT.)		QTY.	POWER (KW)	TYPE		MAX	QTY.	POWER (KW)	RPM	MAX KW	MCA (AMP)	MOP (AMP)	V			
CH-29-1	BLDG 29	GROUND FLOOR	30	70.4	35	55	44	23.0	R-410A	2	28.5	SCROLL	95	3	3.7	840	32.4	66.3	90	460	3	2880	TRANE CGAM030F	SEE NOTES

NOTES: 1. PROVIDE WITH BACNET INTERFACE. 2. PROVIDE UNIT CONTROL PANEL WITH MAIN DISCONNECT. 3. PROVIDE WITH LOW-TEMPERATURE PROCESSING. 4. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT. 5. PROVIDE WITH SEACOAST RATED COATING FOR CONDENSER COIL.

COMPUTER ROOM AIR-CONDITIONING UNIT SCHEDULE																						
TAG No.	SERVICE	LOCATION	ASSOCIATED OUTDOOR UNIT	CFM	SUPPLY FAN		DX EVAPORATOR COIL		REHEAT		HUMIDIFIER		ELECTRICAL DATA				FILTER DATA (SEE FILTER SCHEDULE)	DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES			
					TOTAL	MOTOR	CAPACITY (MBH)	ROWS	CAPACITY (MBH)	ELECTRIC	TYPE	CAPACITY LB./HR	HZ	V	PH	FLA				MOP		
					HP	TOTAL	SENS.	STAGES	DB	WB	DB	WB	MCA	MOCP								
CRACU-29-1	BLDG 29	DISPATCH RM	ACCU-29-1	2,800	3	59.3	54.6	4	56.2	2	STEAM GEN.	11	60	460	3	30.3	40	MERV8	LIEBERT BU060E7ADEI	SEE NOTES		

NOTES: 1. PROVIDE WITH BACNET INTERFACE. 2. PROVIDE WITH SMOKE DETECTOR IN UNIT RETURN. 3. PROVIDE WITH DUAL-FLOAT CONDENSATE PUMP. 4. PROVIDE WITH CABLE LEAK DETECTION. 5. PROVIDE WITH ELECTRIC REHEAT. 6. PROVIDE WITH STEAM GENERATING HUMIDIFIER. 7. PROVIDE WITH LOCKING DISCONNECT SWITCH. 8. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT. 9. PROVIDE WITH SOUND JACKETS ON DIGITAL SCROLLS.

AIR HANDLING UNIT SCHEDULE																						
TAG	SERVICE	LOCATION	CFM	FAN DATA				DX COOLING COIL				ELECTRICAL DATA				DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES					
				MOTOR		CAPACITY (MBH)		REFRIGERANT TYPE		AIR DATA		MCA	MOCP									
				RPM	HP	V	PH	TOTAL	SENS.	EAT (°F)	LAT (°F)											
				DB	WB	DB	WB															
AHU-29-1	BLDG 29	DISPATCH RM	1,400	VAR.	0.5	208	1	44.4	32.5	R-410A	80	67	58.2	56.6	4	15	TRANE TAM7A0C42H31SA	SEE NOTES				

NOTES: 1. PROVIDE W/ BACNET INTERFACE. 2. PROVIDE MOUNTING HARDWARE AS REQUIRED. 3. PROVIDE W/ BELT DRIVE MOTORS. 4. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT.

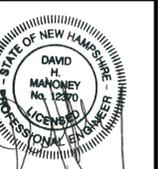
AIR COOLED CONDENSING UNIT SCHEDULE												
TAG	SERVES	DESIGN BASED ON MANUFACTURER	DESIGN BASED ON MODEL No.	COOLING DATA		ELECTRIC DATA					NOTES	
				COOLING (MBH)	COOLING (MBH)	VOLTS	HZ	PHASE	FLA	MCA		MOCP
ACCU-29-1	BLDG-29	LIEBERT	PFH067ACAL7	59.3	460	60	3	11.7	14.2	20	2,4,6,7	
ACCU-29-2	BLDG-29	TRANE	4TTB3036A1000	36	208	60	1	0.7	20	35	1-6	

NOTES: 1. PROVIDE WITH BACNET INTERFACE. 2. PROVIDE UNIT CONTROL PANEL WITH MAIN DISCONNECT. 3. PROVIDE WITH DIGITAL SCROLL COMPRESSOR. 4. PROVIDE WITH SEACOAST RATED COATING FOR CONDENSER COIL. 5. PROVIDE WITH LOW AMBIENT COOLING. 6. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT. 7. PROVIDE WITH HOT GAS BYPASS CAPACITY CONTROL.

JACE BOX					
TAG NO.	LOCATION	ELECTRICAL		DESIGN BASED ON MANUFACTURER AND MODEL NUMBER (AS STANDARD)	NOTES
		AMP	V		
J-1	SEE PLANS	20	120	JACE 8000	SEE NOTES

NOTES: 1. PROVIDE W/ MEMORY UPGRADE TO 4GB. 2. CONTRACTOR SHALL PROVIDE VENDOR AUTHORIZED SOFTWARE & TRAINING FOR EACH PIECE OF EQUIPMENT.

NO.	DESCRIPTION	DATE	APPR.
4	100% SUBMISSION	08/07/2015	DM
3	100% REVIEW SUBMISSION	07/24/2015	DM
2	90% SUBMISSION	06/04/2015	DM
1	80% SUBMISSION	04/24/2015	DM
0	35% SUBMISSION	02/23/2015	DM



APPROVED:

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES: JC | DRAW: SV | CHK: DM

PM/DM: PETER STOCKLESS

BRANCH MANAGER: BRUCE LITALIEN

FEAD/PM&E: AMIN BAHRROUR PM&E

FIRE PROTECTION

NAVAL FACILITIES ENGINEERING COMMAND

NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC

PUBLIC WORKS DEPARTMENT - MAINE

PORTSMOUTH NAVAL SHIPYARD

KITTERY, MAINE

FY 16 ENERGY PROJECT

TASK 1-B-R-22

BUILDING 29 HVAC SCHEDULES

PROJECT NO.: 1350913

CONSTR. CONTR. NO. N40085-XX-C-XXXX

NAVFAC DRAWING NO. 12703548

SHEET 95 OF 506

M4.0 29-15-408

DRAWING REVISION: 10 OCTOBER 2014

WARNING

ARC FLASH AND SHOCK HAZARD
APPROPRIATE PPE REQUIRED

EQUIPMENT TYPE:	Y/N GROUNDED
GROUNDING:	INCHES
WORK DISTANCE:	

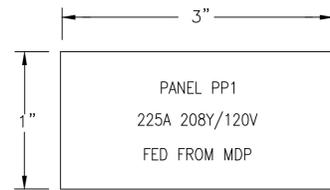
AVAILABLE 3Ø BOLTED CURRENT:
FLASH PROTECTION BOUNDARY:
INCIDENT ENERGY AT 23 INCHES:
PPE LEVEL:
DATE:

kA	
INCHES	
cal/cm ²	
4	
xx/xx/xxxx	

NOTES:

- REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
- PROVIDE ON ALL IN-LINE METER SOCKETS, SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS AND MOTOR CONTROL CENTERS IN ACCORDANCE WITH NEC 110.16.

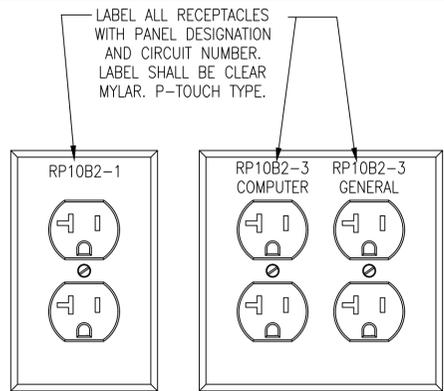
TYPICAL FLASH PROTECTION WARNING LABEL



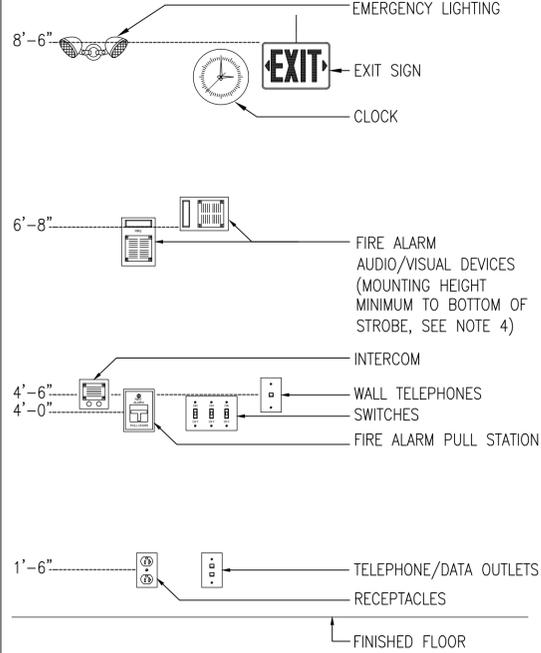
NOTES:

- REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
- NAMEPLATE TO BE 1/16" THICK PLASTIC WITH WHITE CENTER LAMINATION. FACE SHALL BE BLACK, ENGRAVED LETTERS SHALL BE WHITE.
- SECURE NAMEPLATE TO SURFACES WITH HIGH STRENGTH ADHESIVE CEMENT. UTILIZE MECHANICAL FASTENERS FOR ALL EXTERIOR LOCATIONS.
- TYPICAL FOR "STARTERS", "DISCONNECTS", AND "TRANSFORMERS".

TYPICAL NAMEPLATE DETAIL



RECEPTACLE LABEL REQUIREMENTS



NOTES:

- ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGNS, CLOCKS, EMERGENCY LIGHTING AND FIRE ALARM A/V DEVICES.
- DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
- ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.
- STROBE HEIGHT ILLUSTRATED AT MAXIMUM HEIGHT. STROBE SHALL BE 80" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER.

TYPICAL DEVICE MOUNTING HEIGHTS DETAIL

ELECTRIC ABBREVIATIONS

A/AMP AMPERE	LTG LIGHTING
AC ALTERNATING CURRENT	MCB MAIN CIRCUIT BREAKER
ADA AMERICAN WITH DISABILITIES ACT	MEC MASSACHUSETTS ELECTRIC CODE
AF AMPERE FRAME	MH MANHOLE
AFF ABOVE FINISHED FLOOR	MLO MAIN LUGS ONLY
AFG ABOVE FINISHED GRADE	MTD MOUNTED
AIC AMPERE INTERRUPTING CAPACITY	MTG MOUNTING
AL ALUMINUM	NEC NATIONAL ELECTRIC CODE
AT AMPERE TRIP	NTS NOT TO SCALE
ATS AUTOMATIC TRANSFER SWITCH	# NUMBER
AWG AMERICAN WIRE GAUGE	PVC POLYVINYL CHLORIDE
C CONDUIT	PWR POWER
CATV CABLE TELEVISION	RGS RIGID GALVANIZED STEEL
CCTV CLOSED CIRCUIT TELEVISION	SWBD SWITCHBOARD
CB CIRCUIT BREAKER	TEL TELEPHONE
CKT CIRCUIT	TERM TERMINAL
ε CENTERLINE	TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
DWG DRAWING	TSP TWISTED SHIELDED PAIR
EC ELECTRICAL CONTRACTOR	TYP TYPICAL
EMT ELECTRICAL METALLIC TUBING	UNO UNLESS OTHERWISE NOTED
FLMT FLEXIBLE LIQUID TIGHT METALLIC TUBING	UPS UNINTERRUPTIBLE POWER SUPPLY
GFI GROUND FAULT INTERRUPTING	UTP UNSHIELDED TWISTED PAIR
GND GROUND	V VOLT
HH HANDHOLE	VA VOLT AMPERE
HP HORSEPOWER	VFD VARIABLE FREQUENCY DRIVE
HVAC HEATING, VENTILATION AND AIR CONDITIONING	W WATT
HZ HERTZ	WP WEATHERPROOF
IG ISOLATED GROUND	
KVA KILOVOLT - AMPERE	
KW KILOWATT	

MOTOR & CONTROLS LEGEND

SYMBOL	DESCRIPTION
	MANUAL MOTOR STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION
	DISCONNECT SWITCH RATED 30AMP, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "2P" - INDICATES 2 POLE SINGLE PHASE DISCONNECT "30AS" - INDICATES 30A SWITCH
	FUSED DISCONNECT SWITCH, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "30AS" - INDICATES 30AMP SWITCH "15AF" - INDICATES 15AMP FUSES "2P" - INDICATES 2 POLE SINGLE PHASE DISCONNECT
	DDC CONTROL JACE BOX. PROVIDED BY TRADE CONTRACTOR. FIELD COORDINATE EXACT LOCATION.
	ENCLOSED CIRCUIT BREAKER IN NEMA TYPE 1 ENCLOSURE UNLESS OTHERWISE NOTED. "100AF" - INDICATES 100A, 3-POLE FRAME CIRCUIT BREAKER "90AT" - INDICATES TRIP RATING

ELECTRIC SYSTEM TAGS OR CALL OUT SYMBOLS

SYMBOL	DESCRIPTION
	EQUIPMENT SYMBOLS (REFER TO EQUIPMENT SCHEDULES)
	EQUIPMENT DESIGNATION
	EQUIPMENT REFERENCE NUMBER (TYP)
	NEW WORK NOTE TAG
	DEMOLITION NOTE TAG

POWER DISTRIBUTION LEGEND

SYMBOL	DESCRIPTION
	208Y/120 VOLT PANELBOARD, REFER TO SCHEDULE OF PANELBOARDS
	480Y/277 VOLT PANELBOARD, REFER TO SCHEDULE OF PANELBOARDS
	DRY TYPE TRANSFORMER

BRANCH CIRCUIT & FEEDER LEGEND

SYMBOL	DESCRIPTION
	BRANCH CIRCUIT HOME RUN. TYPICAL 2#12 & 1#12G IN 3/4"C MINIMUM. PP1-(1) INDICATES PANEL AND CIRCUIT DESIGNATION FROM WHICH HOME RUN SHALL ORIGINATE. EACH CIRCUIT SHALL BE 20A-1P (20AMP SINGLE POLE) UNLESS NOTED OTHERWISE.

EXISTING EQUIPMENT LEGEND

SYMBOL	DESCRIPTION
	EXISTING EQUIPMENT TO REMAIN
	EXISTING EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT TO BE INSTALLED ON EXISTING BRANCH/FEEDER
	EXISTING EQUIPMENT TO REMAIN FOR INFORMATION ONLY - (XM)
	EXISTING EQUIPMENT TO BE REWORKED - (XN, XL, XR)
	EXISTING EQUIPMENT TO BE REWORKED - (XN, XL, XR) INDICATED BY SYMBOL WITH DASHED AND IN FUNCTION LINE TYPE

WIRING DEVICES

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V
	"WP" - INDICATES WEATHERPROOF (TYP)
	"GFI" - INDICATES GROUND FAULT INTERRUPTER

FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
	FIRE ALARM DEVICE
	"RTS" - INDICATES REMOTE TEST STATION
	DUCT MOUNTED SMOKE DETECTOR

ELECTRIC GENERAL NOTES

- THE ELECTRICAL DEMOLITION PLANS AND DETAILS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE SUBMISSION OF BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE FOR REMOVAL. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF WORK. DAMAGE SHALL INCLUDE BUT NOT LIMITED TO THE DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR BE SALVAGED.
- THE ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINT OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE CUT FLUSH AT THE SURFACE FOR PATCHING BY TRADE CONTRACTOR. ALL CIRCUIT BREAKERS ASSOCIATED WITH THE DEMOLITION SCOPE SHALL BE DE-ENERGIZED AND LABELED AS SPARE.
- ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF UNLESS IDENTIFIED FOR REUSE OR TURNED OVER TO OWNER. THE OWNER'S REPRESENTATIVE SHALL INSPECT ALL RETAINED ITEMS PRIOR TO PLACEMENT IN THE IDENTIFIED STORAGE LOCATION BY THE ELECTRICAL CONTRACTOR.
- CIRCUIT NUMBERS ARE DIAGRAMMATIC. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD AND REFLECTED ON AS-BUILT DOCUMENTATION BY THE ELECTRICAL CONTRACTOR. CIRCUITRY HAS BEEN DETERMINED BASED UPON INFORMATION GATHERED, ASSUMPTIONS, AND INFORMATION OBTAINED FROM NAVFAC.
- VOLTAGE DROP HAS BEEN CONSIDERED IN THE DESIGN OF ALL BRANCH CIRCUITRY AND FEEDER SIZES BASED UPON THE ILLUSTRATED EQUIPMENT LAYOUTS AND SHORTEST CONDUCTOR/RACEWAY ROUTING. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR DEVIATIONS TAKEN THAT WILL INCREASE CONDUCTOR/RACEWAY ROUTING LENGTHS. BRANCH CIRCUITS LONGER THAN 75' FOR 120V FROM PANEL TO LAST OUTLET SHALL BE INCREASED A MINIMUM OF ONE SIZE ABOVE THAT SPECIFIED TO LIMIT VOLTAGE DROP TO LESS THAN 3%. FEEDERS SHALL FOLLOW SIMILAR GUIDELINES AND BE LIMITED TO 2% DROP.
- THE ELECTRICAL NEW WORK PLANS DO NOT SHOW ALL ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION AMONG TRADES TO DETERMINE ALL ACCESSORIES AND COMPONENTS REQUIRED TO FORM A COMPLETE AND FUNCTIONAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY ACCESSORIES AND COMPONENTS NEEDED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM AND SHALL BE RESPONSIBLE TO ENSURE THE INTEGRITY AND SAFETY OF THE SYSTEM AFTER COMPLETION. THE ELECTRICAL CONTRACTOR SHALL TAKE ALL NECESSARY STEPS AND PROVIDE ALL ADDITIONAL COMPONENTS NEEDED TO ENSURE THE SYSTEM IS SAFE UPON COMPLETION OF THE PROJECT.
- ROUTING IS DIAGRAMMATIC. CONTRACTOR SHALL DETERMINE ROUTING IN FIELD AND RE-USE EXISTING PENETRATIONS WHERE POSSIBLE.
- SEE PWD-ME DRAWING NUMBERS;
 - 43-15-67 FOR TITLE SHEET
 - 43-15-68 FOR LIST OF DRAWINGS
 - 43-15-69 FOR GENERAL NOTES & LEGENDS
 - 43-15-72 FOR CHASE AND SOFFIT DETAILS
 - 43-15-74 FOR STRUCTURAL NOTES AND SUPPORTS

SCHEDULE OF DRAWINGS

DWG#	DESCRIPTION
E1.0	BUILDING 29 ELECTRICAL LEGEND
ED2.0	BUILDING 29 ELECTRICAL FIRST FLOOR DEMOLITION PLAN
E2.0	BUILDING 29 ELECTRICAL FIRST FLOOR PLAN
E3.0	BUILDING 29 ELECTRICAL SCHEDULES

DM	08/07/2015	DM	07/24/2015	DM	06/04/2015	DM	04/24/2015	DM	02/23/2015	APPR	
	100% SUBMISSION		100% REVIEW SUBMISSION		90% SUBMISSION		80% SUBMISSION		35% SUBMISSION		
	4	3	2	1	0						
APPROVED: _____ FOR COMMANDER NAVFAC ACTIVITY: _____ SATISFACTORY TO: _____ DATE: _____ DES: TM DSW: TM CHR: JO PM/DM: PETER STOCKLESS BRANCH MANAGER BRUCE LITALEN LEAD/PM/ME AMIN BAHROUR PM&E FIRE PROTECTION: X DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC PUBLIC WORKS DEPARTMENT - MAINE PORTSMOUTH NAVAL SHIPYARD RITERY, MAINE FY 16 ENERGY PROJECT TASK 1-B-R-22 BUILDING 29 ELECTRICAL LEGEND											
PROJECT NO.: 1350913 CONSTR. CONTR. NO.: N40085-XX-C-XXXX NAVFAC DRAWING NO.: 12703549 SHEET 96 OF 506 E1.0 29-15-409 DRAWFORM REVISION: 10 OCTOBER 2014											

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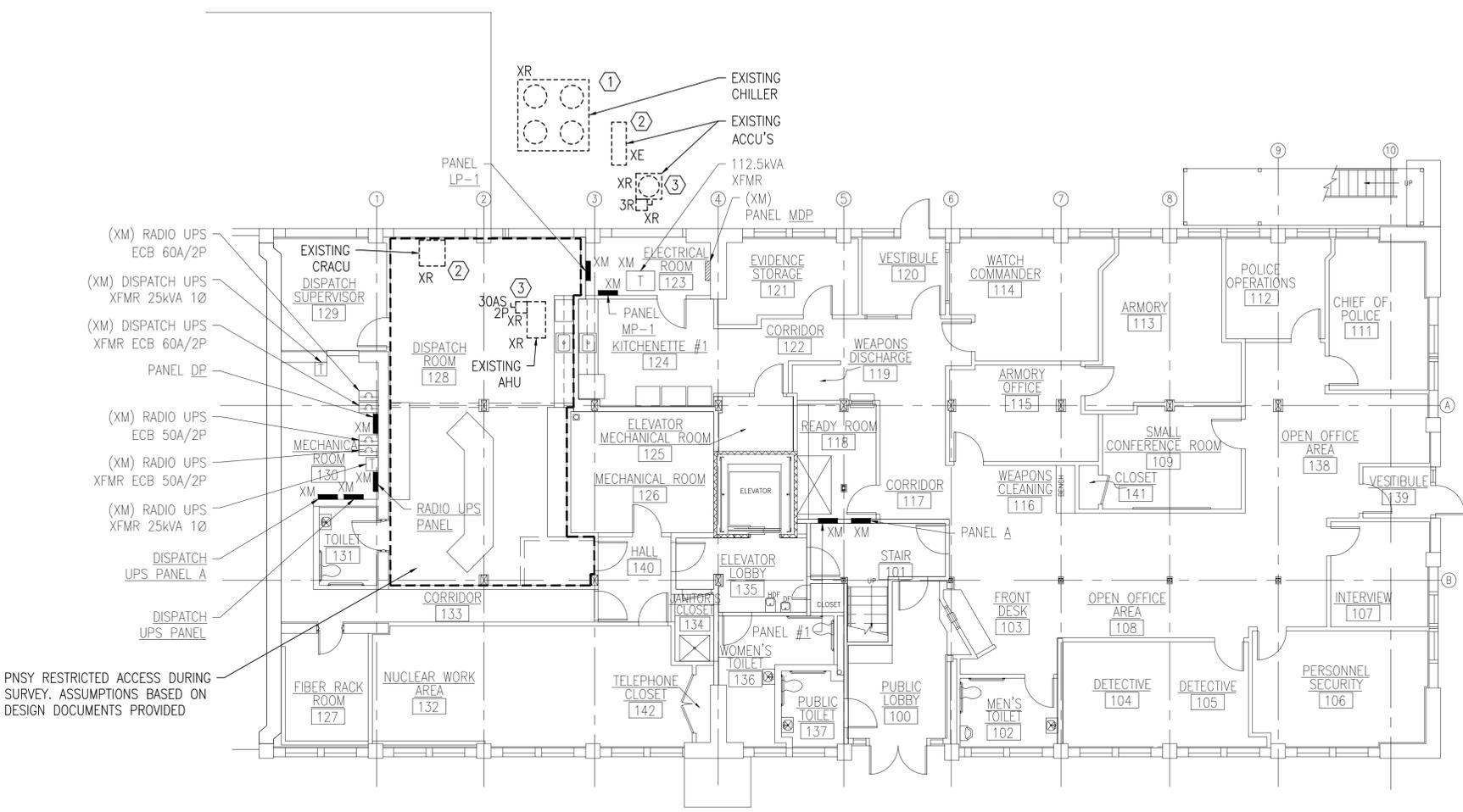
5

D

C

B

A



BUILDING 29 ELECTRICAL FIRST FLOOR DEMOLITION PLAN
 1/8" = 1'-0"
 PLAN NORTH

GENERAL SHEET NOTES

- REFER TO DRAWING E1.0 FOR LEGEND, SYMBOLS AND GENERAL NOTES.
- THE ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS SCHEDULED TO BE REMOVED WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
- THE ELECTRICAL CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.

REV	DESCRIPTION	DATE	DM	APPR
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



DEMOLITION KEYNOTES

- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING CHILLER. DEMOLISH EXISTING BRANCH CIRCUITRY, DISCONNECT AND ASSOCIATED CIRCUIT BREAKER IN THEIR ENTIRETY.
- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING ACCU AND ASSOCIATED CRACU. MAINTAIN ASSOCIATED BRANCH CIRCUITRY, AND CIRCUIT BREAKERS FOR REUSE. DEMOLISH ASSOCIATED DISCONNECTS IN THEIR ENTIRETY.
- DISCONNECT AND MAKE SAFE FOR REMOVAL EXISTING ACCU AND ASSOCIATED AHU. DEMOLISH EXISTING BRANCH CIRCUITRY AND DISCONNECT IN THEIR ENTIRETY. MAINTAIN ASSOCIATED CIRCUIT BREAKER AND LABEL AS "SPARE" FOR FUTURE USE.

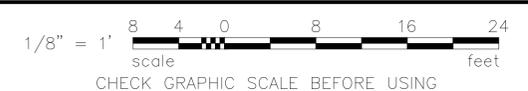


APPROVED:
FOR COMMANDER NAVAC

SATISFACTORY TO: DATE:
 DES: TM | DRW: TM | CHR: JO
 PM/DM: PETER STOCKLESS
 BRANCH MANAGER: BRUCE LITALIEN
 LEAD/PM: AMIN BAHROUR PM&E

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING DIVISION - MAINE
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD - KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 29 ELECTRICAL FIRST FLOOR DEMOLITION PLAN

GRAPHIC SCALE



PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVAC DRAWING NO.:	12703550
SHEET	97 OF 506
ED2.0	29-15-410

DRAWFORM REVISION: 10 OCTOBER 2014

1

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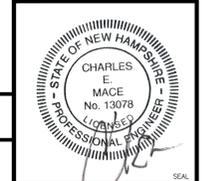
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GENERAL SHEET NOTES

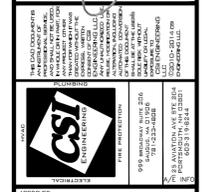
- REFER TO DRAWING E1.0 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- POWER BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT FROM THE PANEL TO THE FIRST DEVICE AND/OR WHERE EXPOSED. POWER BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
- MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.
- FINAL LOW-VOLTAGE CONNECTIONS TO BE MADE BY CONTROLS CONTRACTOR. FIELD COORDINATE EXACT LOCATION OF EQUIPMENT WITH CONTROLS CONTRACTOR AND NAVFAC.
- FIRE ALARM BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT FROM THE PANEL TO THE FIRST DEVICE AND/OR WHERE EXPOSED. FIRE ALARM BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
- MC CABLE FOR FIRE ALARM SERVICE SHALL HAVE A RED IDENTIFIER ALONG ITS ENTIRE LENGTH. JUNCTION BOX COVERS AND CONDUIT COUPLINGS FOR ALL FIRE ALARM WIRING RACEWAYS SHALL BE PAINTED RED PRIOR TO INSTALLATION.
- MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING FIRE ALARM DEVICES TO REMAIN.

REV	DESCRIPTION	DATE	DM	APP
4	100% SUBMISSION	08/07/2015	DM	
3	100% REVIEW SUBMISSION	07/24/2015	DM	
2	90% SUBMISSION	06/04/2015	DM	
1	80% SUBMISSION	04/24/2015	DM	
0	35% SUBMISSION	02/23/2015	DM	



NEW WORK KEYNOTES

- PROVIDE NEW DISCONNECT AS SHOWN FOR NEW CHILLER. PROVIDE NEW CIRCUIT BREAKER IN PANEL "MDP" FOR NEW UNIT. FIELD COORDINATE EXACT LOCATION OF DISCONNECT. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.
- RECONNECT NEW ACCU AND ASSOCIATED CRACU TO EXISTING BRANCH CIRCUITRY AND CIRCUIT BREAKERS MAINTAINED DURING DEMOLITION. PROVIDE NEW DISCONNECTS AS SHOWN FOR NEW UNITS. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION. FIELD COORDINATE EXACT LOCATION OF DISCONNECTS. ELECTRICAL CONTRACTOR SHALL REUSE AS MUCH EXISTING CONDUIT AND WIRING AS POSSIBLE AND EXTEND AS NEEDED. NEW CONDUIT AND WIRING SHALL MATCH EXISTING IN ALL RESPECTS.
- PROVIDE NEW DISCONNECT AS SHOWN FOR NEW CONDENSING UNIT. PROVIDE NEW CIRCUIT BREAKER IN PANEL "MP-1" FOR NEW ACCU. FIELD COORDINATE EXACT LOCATION OF DISCONNECT. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.
- NEW DDC JACE BOX PROVIDED BY TRADE CONTRACTOR. FIELD COORDINATE EXACT LOCATION WITH NAVFAC AND CONTROLS CONTRACTOR.
- PROVIDE NEW CIRCUIT BREAKER IN PANEL "MP-1" FOR NEW AHU. REFER TO MECHANICAL EQUIPMENT SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.
- NEW DUCT SMOKE DETECTOR PROVIDED BY TRADE CONTRACTOR. COORDINATE EXACT LOCATION OF DUCT SMOKE DETECTOR WITH MECHANICAL CONTRACTOR. PROVIDE NEW REMOTE TEST STATION. CONNECT NEW DUCT SMOKE DETECTOR AND REMOTE TEST STATION TO EXISTING FIRE ALARM DETECTION CIRCUIT SERVING THE AREA. REUSE AS MUCH EXISTING CONDUIT AND WIRING AS POSSIBLE AND EXTEND AS NEEDED. NEW CONDUIT AND WIRING SHALL MATCH EXISTING IN ALL RESPECTS.
- ELECTRICAL CONTRACTOR TO FIELD VERIFY IF RECEPTACLE EXISTS WITHIN 6' OF NEW UNITS. IF NO RECEPTACLE EXISTS, PROVIDE NEW AS SHOWN. REFER TO PANELBOARD SCHEDULE ON DRAWING E3.0 FOR ADDITIONAL INFORMATION.

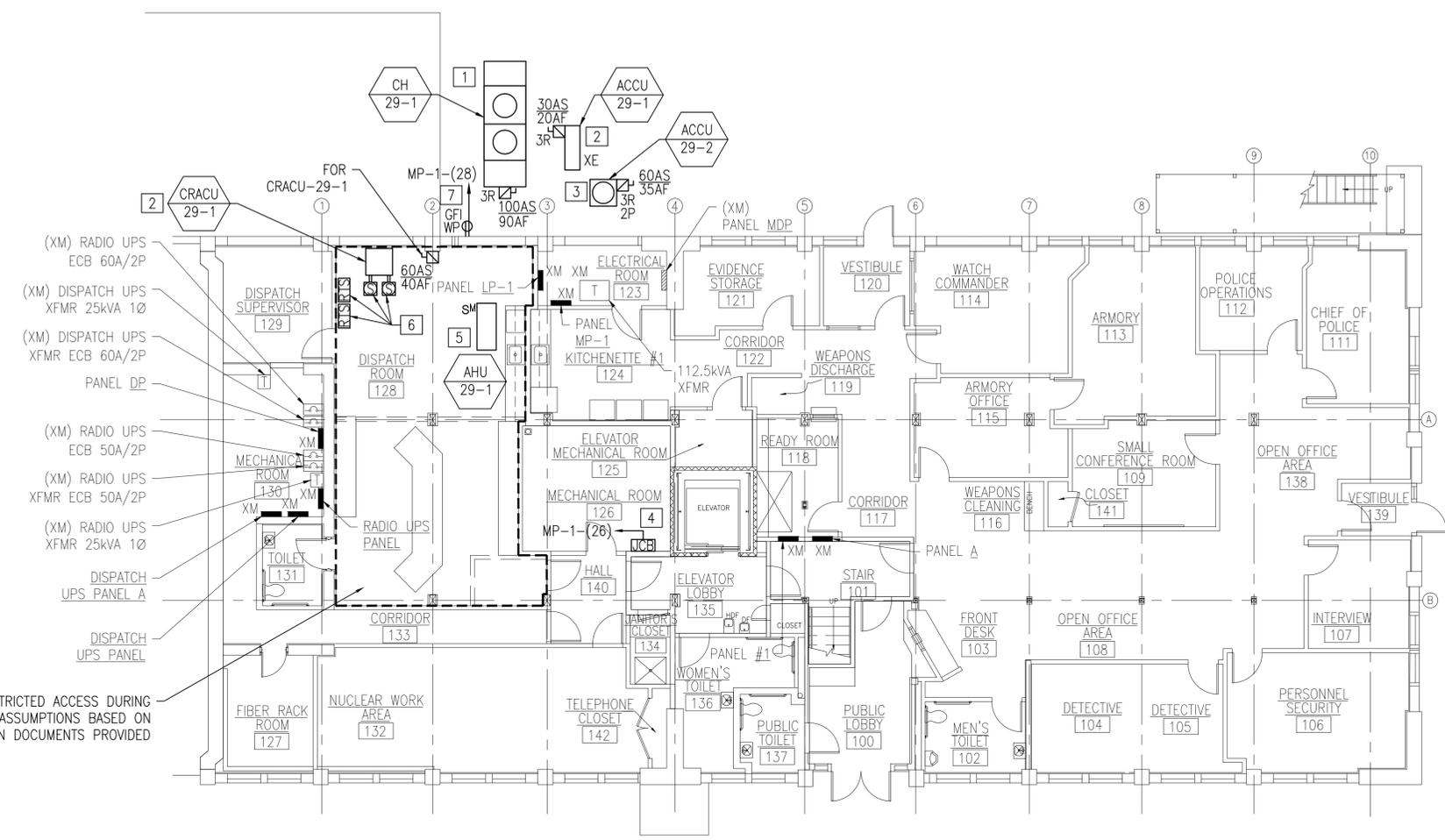
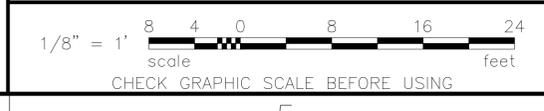


APPROVED:	FOR COMMANDER NAVFAC	
SATISFACTORY TO:	DATE:	
DES: TM	DESIGN: TM	CHK: JO
PM/DM:	PETER STOCKLESS	
BRANCH MANAGER:	BRUCE LITALIEN	
FEAD/PM&E:	AMIN BAHRROUR, PM&E	
FIRE PROTECTION:	X	

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH NAVAL SHIPYARD
 NAVAL SHIPYARD - PORTSMOUTH, NH
 RITERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 BUILDING 29 ELECTRICAL FIRST FLOOR PLAN

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703551
SHEET	98 OF 506
E2.0	29-15-411

GRAPHIC SCALE



BUILDING 29 ELECTRICAL FIRST FLOOR PLAN
 1/8" = 1'-0"
 PLAN NORTH

PNSY RESTRICTED ACCESS DURING SURVEY. ASSUMPTIONS BASED ON DESIGN DOCUMENTS PROVIDED

PANELBOARD SCHEDULE									
PANEL: MP-1		VOLTS: 120/ 208			NEW/EXISTING.: EXISTING				
MAIN: 400A MCB		BUS AMPS: 400A			MOUNT.: SURFACE				
PH/WIRE: 3ø/4W		AIC:			LOC: BLDG 29 ELEC. RM 123				
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD KVA	NOTE	NOTE	LOAD KVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1					-	0	MECHANICAL & ELEV. ROOM	20/1	2
3	125/3	LP-1	0	-	-	0	FACP	20/1	4
5					-	0	GEN. JACKET HEATER	20/1	6
7					-	0	ELEVATOR CAB LIGHTS	20/1	8
9	125/3	LP-2	0	-	-	0	GEN JACKET WATER	20/1	10
11					-	0	GEN BATTERY CHARGER	20/1	12
13					-	0	SPARE	20/2	14
15	125/3	LP-3	0	-	-	0	SPARE	30/2	18
17					-	0	SPARE	30/2	20
19					1	4.16	ACCU-29-2	35/2	22
21	150/3	DP	0	-	-				24
23					-				26
25	15/2	AHU-29-1	0.83	1	1	.02	DDC JACE BOX & SWITCH	20/1	26
27					1	.18	GFI RECPT. FOR OUTDOOR UNITS	20/1	28
29		SPACE		-	-		SPACE		30
31		SPACE		-	-		SPACE		32
33		SPACE		-	-		SPACE		34
35		SPACE		-	-		SPACE		36
37		SPACE		-	-		SPACE		38
39		SPACE		-	-		SPACE		40
41		SPACE		-	-		SPACE		42
			0.8			4.4	TOTAL CONNECTED KVA:	5.19	
							TOTAL CONNECTED AMPERES:	14.42	

NOTES:
 1. PROVIDE NEW CIRCUIT BREAKER SIZED AS INDICATED FOR NEW LOAD.
 2. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

PANELBOARD SCHEDULE									
PANEL: MDP		VOLTS: 277/ 480			NEW/EXISTING.: EXISTING				
MAIN: 400A MCB		BUS AMPS: 400A			MOUNT.: SURFACE				
PH/WIRE: 3ø/4W		AIC:			LOC: BLDG 29 ELEC. RM 123				
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD KVA	NOTE	NOTE	LOAD KVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1									2
3	400/3	MAIN BREAKER							4
5									6
7									8
9	175/3	PANEL MP-1 VIA 112.5kVA TRANSFORMER	5.19	-	-	0	AHU	XXA/3	10
11									12
13									14
15	90/3	CH-29-1	52.8	1	-	0	VFD	25/3	16
17									18
19									20
21	70/3	ELEVATOR	0	-	-	0	PUMP P-1	20/3	22
23									24
25									26
27	20/3	ACCU-29-1 CONDENSER	11.3	2	2	30.2	CRACU-29-1	40/3	28
29									30
			69.3			30.2	TOTAL CONNECTED KVA:	99.49	
							TOTAL CONNECTED AMPERES:	119.81	

NOTES:
 1. REMOVE EXISTING CIRCUIT BREAKER AND PROVIDE NEW SIZED AS INDICATED FOR NEW LOAD.
 2. VERIFY AND REUSE EXISTING CIRCUIT BREAKER FOR NEW LOAD AS INDICATED.
 3. NEW WORK DENOTED WITH UNDERLINED TEXT. ANY PANELS THAT SHOW NO NEW WORK ARE FOR REFERENCE ONLY.

MECHANICAL EQUIPMENT SCHEDULE													
EQUIP TAG	DESCRIPTION	LOAD				PANEL SOURCE		BRANCH CIRCUIT	CONNECTION				NOTES
		HP	KVA	VOLT	PH	PANEL	C/B		FLEX	JB	REC	DISC	
ACCU-29-1	CONDENSING UNIT - CONDENSER	-	11.31	460	3	MDP-(25,27,29)	20A/3P	-	X			X	NOTE 6,7,11
AHU-29-1	AIR HANDLER	-	0.83	208	1	MP-1-(25,27)	15A/2P	(2)#12 & (1)#12G, 3/4°C	X			X	NOTE 6
ACCU-29-2	CONDENSING UNIT	-	4.16	208	1	MP-1-(22,24)	35A/2P	(2)#8 & (1)#10G, 3/4°C	X			X	NOTE 6,7
CRACU-29-1	COMPUTER ROOM AIR CONDITIONER	3	30.20	460	3	MDP-(26,28,30)	40A/3P	-	X			X	NOTE 11,12
CH-29-1	CHILLER	-	52.82	460	3	MDP-(13,15,17)	90A/3P	(3)#3 & (1)#8G, 1-1/4°C	X			X	NOTE 6,7

- NOTES:
 1. BRANCH CIRCUIT WIRING METHODS SHALL BE AS NOTED ON THE DRAWINGS AND/OR SPECIFICATIONS FOR THE APPLICABLE LOCATION.
 2. "FLEX" - DENOTES FINAL THREE FEET (MAXIMUM) OF RACEWAY SHALL BE FLEXIBLE METAL OR LIQUIDTIGHT METAL CONDUIT.
 3. "JB" - JUNCTION BOX DENOTES FINAL CONNECTION TO BOX OR CONTROL PANEL PREWIRED TO THE EQUIPMENT.
 4. "REC" - PROVIDE RECEPTACLE IN THE NEMA CONFIGURATION NOTED.
 5. NOTES 6-9 ARE OPTIONS WHICH SHALL BE SPECIFICALLY NOTED IN REMARKS FOR INCLUSION.
 6. DISCONNECT SHALL BE FUSIBLE.
 7. DISCONNECT SHALL BE NEMA "3R"
 8. DISCONNECT SHALL BE MOTOR-RATED SWITCH WITH THERMAL OVERLOAD ELEMENT.
 9. DISCONNECT PROVIDED INTEGRAL (PREWIRED) TO EQUIPMENT BY TRADE CONTRACTOR.
 10. INTEGRAL CONVENIENCE RECEPTACLE PROVIDED PREWIRED TO EQUIPMENT BY TRADE CONTRACTOR.
 11. REUSE EXISTING BRANCH CIRCUITRY AND CIRCUIT BREAKER. PROVIDE NEW DISCONNECT AS SHOWN ON DRAWING E2.0. EXTEND CIRCUIT AS NEEDED.
 12. ALSO CONSIDERED ACCU-29-1 EVAPORATOR.

DM	08/07/2015	DM	07/24/2015	DM	06/04/2015	DM	04/24/2015	DM	02/23/2015	APPR
	100% SUBMISSION		100% REVIEW SUBMISSION		90% SUBMISSION		80% SUBMISSION		35% SUBMISSION	
4		3		2		1		0		
	DATE		DATE		DATE		DATE		DATE	
										
										
										
APPROVED FOR COMMANDER NAVFAC ACTIVITY SATISFACTORY TO DATE DES: TM DRW: TM CHR: JO PM/DM: PETER STOCKLESS BRANCH MANAGER BRUCE LITALIEN FEAD/PM&E AMIN BAHRROUR PM&E FIRE PROTECTION X										
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC PUBLIC WORKS DEPARTMENT - MAINE PORTSMOUTH NAVAL SHIPYARD - KITTERY, MAINE FY 16 ENERGY PROJECT TASK 1-B-R-22 BUILDING 29 ELECTRICAL SCHEDULES										
EPROJECT NO.: 1350913 CONSTR. CONTR. NO.: N40085-XX-C-XXXX NAVFAC DRAWING NO.: 12703552 SHEET 99 OF 506 E3.0 29-15-412 <small>DRAWING REVISION: 10 OCTOBER 2014</small>										

1 2 3 4 5

GENERAL SHEET NOTES

- FASTENERS SHALL BE ATTACHED TO MORTAR IN MASONRY BUILDINGS, AVOIDING DAMAGE TO THE BRICK WHEREVER PRACTICAL.
- EXTERIOR CONDUIT SHALL BE INSTALLED IN SHADOW-LINES OR ADJACENT TO EXISTING CONDUIT; CONDUIT COLOR TO BE COORDINATED WITH CULTURAL RESOURCE MANAGER AND A-E.
- REFER TO MECHANICAL DRAWINGS FOR JACE LOCATION AND INFORMATION.
- EXISTING ROOF AND WALL PENETRATIONS SHALL BE USED WHEREVER PRACTICAL.
- INTERIOR, WINDOW-MOUNTED ACCESS POINTS SHALL BE MOUNTED IN AN OBSCURE LOCATION THAT IS LEAST VISIBLE FROM INTERIOR & EXTERIOR.
- ACCESS POINT MOUNTS SHALL NOT OBSTRUCT EGRESS, EXISTING WALKWAYS, STAIRWELLS, MECHANICAL EQUIPMENT CLEARANCES, OR OTHER APPURTANANCES.
- UNLESS OTHERWISE NOTED, ROOFTOP ACCESS POINTS SHALL BE CENTRALIZED ON THE ROOF TO MINIMIZE VISIBILITY FROM GROUND LEVEL.
- CONTRACTOR TO FIELD-VERIFY COMMUNICATION ACCESS POINTS ARE ALIGNED AND LINE OF SIGHT IS UNOBSTRUCTED.
- IF A FIELD CHANGE IS REQUIRED, CONTRACTOR SHALL COORDINATE WITH CULTURAL RESOURCE MANAGER AND A-E PRIOR TO RELOCATING EQUIPMENT.
- ANY PROPOSED CHANGES (PENETRATIONS, CONDUIT, ETC.) NOT ALREADY INDICATED ON DRAWINGS MADE TO HISTORIC BUILDINGS OR BUILDINGS LOCATED IN HISTORIC DISTRICT MUST BE REVIEWED AND APPROVED BY SHPO THROUGH NAVFAC CULTURAL RESOURCES DEPARTMENT PRIOR TO INSTALLATION.
- CONTRACTOR TO VERIFY RF SIGNAL STRENGTH AND CONNECTIVITY FROM/TO ALL ACCESS POINTS.
- SEE PWD-ME DRAWING NUMBERS;
 - 43-15-67 FOR TITLE SHEET
 - 43-15-68 FOR LIST OF DRAWINGS
 - 43-15-69 FOR GENERAL NOTES AND LEGEND
 - 43-15-72 FOR CHASE AND SOFFIT DETAILS
 - 43-15-74 FOR STRUCTURAL NOTES AND SUPPORT

DATE	07/31/15	DM	APPR
DATE	07/15/15	DM	APPR
DESCRIPTION	100% SUBMISSION	SM	DESCRIPTION
DESCRIPTION	90% SUBMISSION	SM	DESCRIPTION
DESCRIPTION	0	SM	DESCRIPTION



13 WATER ST NEW MARKET NH (603) 200-0096 AECOR.COM

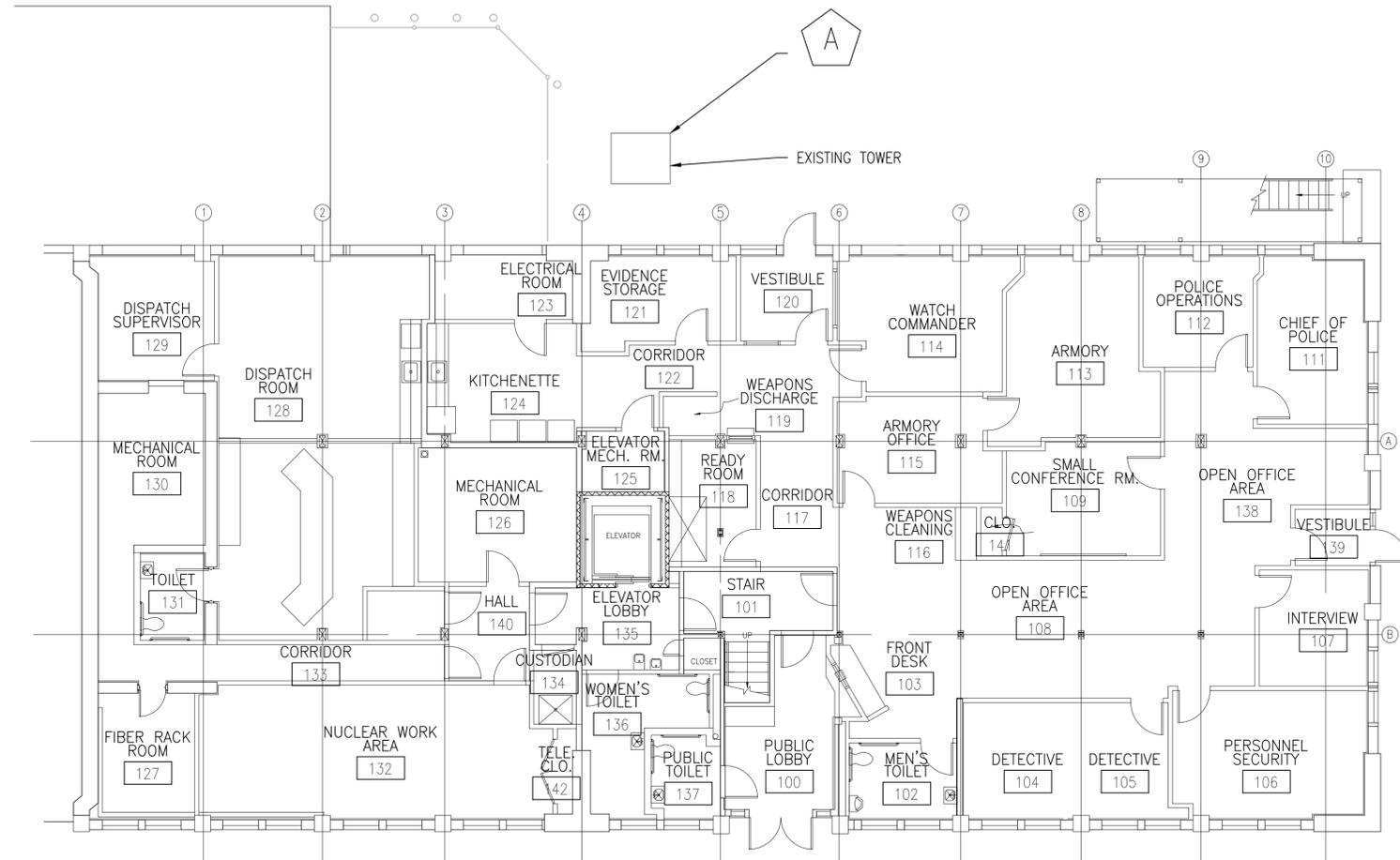
APPROVED FOR COMMANDER NAVFAC ACTIVITY

SATISFACTORY TO	DATE
DES VSL	DRW SRR
CHK	KLC
PM/DM	PETER STOCKLESS
BRANCH MANAGER	BRUCE LITALEN
FEAD/PM/MAKE	AMIN BAHROUR PM&E
FIRE PROTECTION	X

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - MID-ATLANTIC
 PUBLIC WORKS DEPARTMENT - MAINE
 PORTSMOUTH, NAVAL SHIPYARD - PORTSMOUTH, NH
 KITTERY, MAINE
 FY 16 ENERGY PROJECT
 TASK 1-B-R-22
 B029 RF INSTALLATION DETAILS

PROJECT NO.:	1350913
CONSTR. CONTR. NO.:	N40085-XX-C-XXXX
NAVFAC DRAWING NO.:	12703553
SHEET	100 OF 506
ET1.0	29-15-413

DRAWING REVISION: 10 OCTOBER 2014



B29 ANTENNA LOCATION - FIRST FLOOR PLAN
 1/8" = 1'-0"



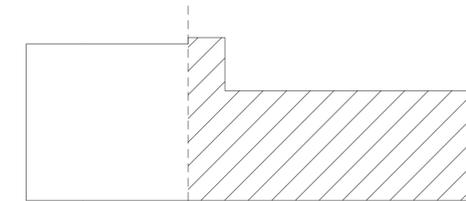
EQUIPMENT	WIRELESS STANDARD	ANTENNA	FREQUENCY	DIMENSIONS	WEIGHT	INPUT POWER	MANUFACTURER	DESIGN BASED ON MODEL
WIRELESS ACCESS POINT	802.11n	INTEGRATED	2.4 GHZ & 5.8 GHZ	9 X 7 X 4 INCHES	5 LBS	AIR-PWRINJ4	CISCO AIRONET	AIR-AP1532I-UXX9

NOTE: PROVIDE POWER INJECTOR FOR POWER OF ETHERNET TO WIRELESS ACCESS POINT. DESIGN BASED ON CISCO MODEL AIR-PWRINJ4.

NEW WORK KEYNOTES

- CONTRACTOR SHALL MOUNT RF ACCESS POINT TO EXISTING TOWER ON EAST SIDE OF BUILDING.
- CONTRACTOR SHALL ENSURE LINE-OF-SIGHT TO B170 ACCESS POINT.
- TOWER MOUNT SHALL BE CAPABLE OF WITHSTANDING 100 MPH SUSTAINED WINDS AND 165 MPH WIND GUSTS. MOUNTING HEIGHT TO BE DETERMINED BY CONTRACTOR TO MAINTAIN ACCESS POINT LINE-OF-SIGHT.
- CAT5 CABLE SHALL BE ROUTED ALONG EXISTING PATH TO JACE.

KEY PLAN



GRAPHIC SCALE

