AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF	PAGES
	1		16

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicble)
AMENDMENT NO. 0001	08/25/20		18-0042

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE
NAVFAC Mid-Atlantic Resident Officer in Charge of Construction 1005 Michael Road Camp Lejeune, NC 28547-2521	N40085	See Item 6	

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(X)	9A. AMENDMENT OF SOLICIATION NO.
	✘	N40085-20-R-4112
		9B. DATED (SEE ITEM 11) 08/06/20
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 11)
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☒ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a)By completing items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPIRATION DATA (If required)

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return ——— copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

18-0042, Repair BEQ HP510
Amendment 0001, Answer Requests for information, update on drawings to reflect removal of heat recovery systems, and update to wage determination

The time and date for receipt of proposals is hereby changed to 1400, 1 September 2020.

This amendment should be acknowledged when your proposal is submitted. Failure to acknowledge the amendment may constitute grounds for rejection of a proposal.

See Continuation Page(s)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED

CONTINUATION SHEET

1. **QUESTION:** In review of the specification section 02 41 00, Part 3, is it the intent of the government to have contractor remove and store all of this material to be returned to the government?

ANSWER:
- Per specification 3.1.8 Carpet is to be disposed of by the contractor
- Per specification 3.1.9 Acoustic Ceiling Tile is to be disposed of by the contractor
- Per specification 3.1.12 Locksets on Swinging Doors, the Contractor shall coordinate with the Contracting Officer after award
- Per specification 3.1.13 Mechanical Equipment and Fixtures, do not salvage equipment and fixtures; items shall be disposed of by the contractor.
- Per specification 3.1.13.1 Preparation for Storage, do not salvage units, tanks, and fixtures; items shall be disposed of by the contractor. If items found contain flammable, explosive or other dangerous liquids we Environmental Group should be contacted for guidelines. Jamie Ingram, Performance Assessment Rep, FSC, (910)-451-5783 x 3235.

2. **QUESTION:** How would you quantify the piping etc.? In addition, all insulation would have to be removed prior to storage.

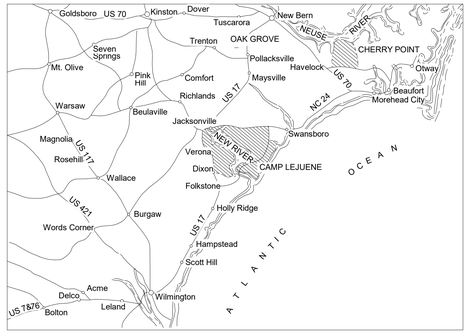
ANSWER: Per specification 3.1.13.2 Piping, do not salvage piping; items shall be disposed of by contractor.

3. **QUESTION:** Is the intent for the government to keep all of the plumbing fixtures as stated in 3.1.13.4?

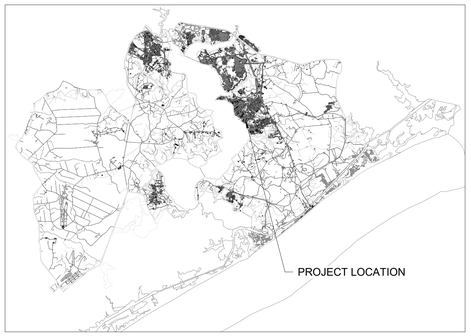
ANSWER: Do not salvage fixtures, motors, machines; items shall be disposed of by contractor.

4. Delete Sheets G-001, P-104, M-101, M-504, M-602, MI105, and MI108 and replace with the attached Sheets G-001, P-104, M-101, M-504, M-602, MI105, and MI108.

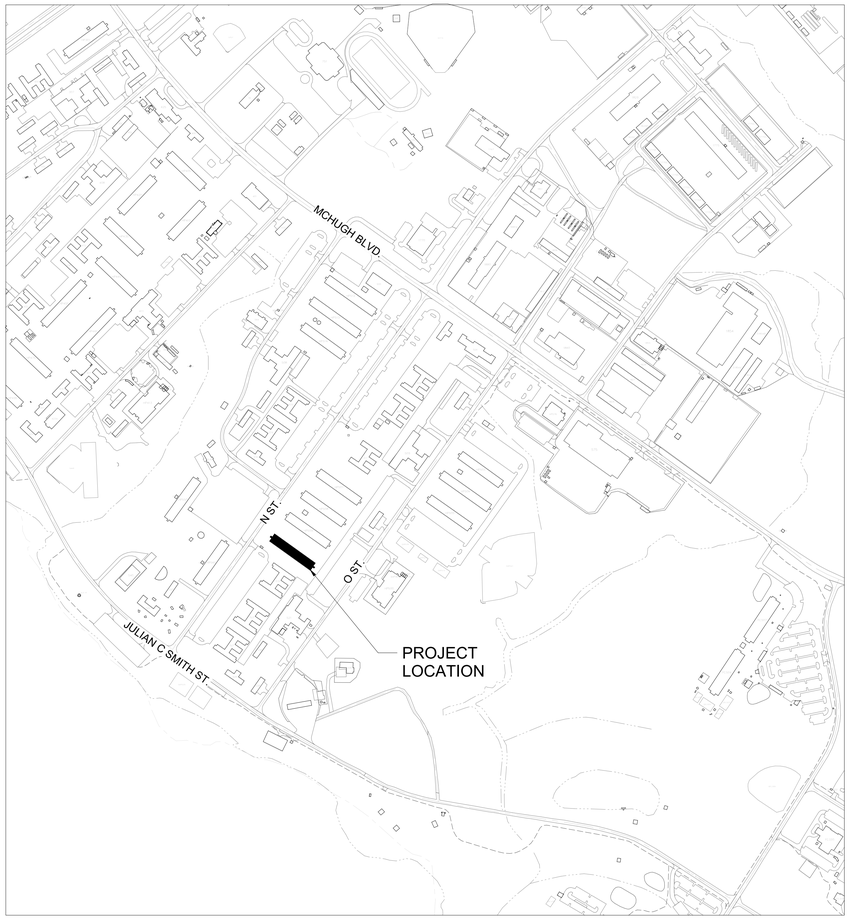
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED
1	REMOVE ALL HEAT RECOVERY SYSTEMS	08/10/20	PCM



1 VICINITY MAP
SCALE: NOT TO SCALE



2 BASE MAP
SCALE: NOT TO SCALE



3 BASE LOCATION MAP
SCALE: NOT TO SCALE

REPAIR BEQ HP510

MCB CAMP LEJEUNE N.C.

PROJECT NO.: 18-0042

INDEX OF DRAWINGS

# OF TOTAL	NAVFAC NO.	SHEET NO.	SHEET TITLE
GENERAL			
1	60023959	G-001	COVER SHEET
2	60023960	LS101	BUILDING CODE ANALYSIS
3	60023961	LS102	LIFE SAFETY PLAN
4	60023962	H-101	ABATEMENT PLANS
5	60023963	H-102	ABATEMENT ROOF PLAN
CIVIL			
6	60023964	C-001	LEGEND AND GENERAL NOTES
7	60023965	VF101	EXISTING TOPOGRAPHIC SURVEY
8	60023966	CD101	DEMOLITION / EROSION CONTROL PLAN
9	60023967	CS101	SITE PLAN
10	60023968	CP101	PLANTING PLAN
11	60023969	C-501	EROSION CONTROL DETAILS
12	60023970	C-502	DETAILS
13	60023971	C-503	DETAILS
STRUCTURAL			
14	60023972	S-001	GENERAL NOTES AND DESIGN LOADS
15	60023973	SD101	DEMOLITION PLANS
16	60023974	SD401	ENLARGED DEMOLITION PLAN
17	60023975	S-101	CATWALK FRAMING PLANS
18	60023976	S-102	ROOF FRAMING PLANS
19	60023977	S-103	FLOOR PLANS
20	60023978	S-104	MECHANICAL YARD PLANS
21	60023979	S-105	DUMPSTER ENCLOSURE PLAN
22	60023980	S-301	FRAMING SECTIONS AND DETAILS
23	60023981	S-302	CMU SECTIONS AND DETAILS
24	60023982	S-303	MECHANICAL OPENING SECTIONS AND DETAILS
25	60023983	S-401	ENLARGED PLANS
26	60023984	S-501	ROOF FRAMING DETAILS
27	60023985	S-502	SECTIONS AND DETAILS
28	60023986	S-503	SECTIONS AND DETAILS
ARCHITECTURAL			
29	60023987	A-001	GENERAL NOTES AND LEGENDS
30	60023988	AD101	DEMOLITION FLOOR PLANS
31	60023989	AD102	DEMOLITION REFLECTED CEILING PLANS
32	60023990	AD103	DEMOLITION ROOF PLAN
33	60023991	AD201	DEMOLITION ELEVATIONS
34	60023992	AD401	DEMOLITION ENLARGED CORE FLOOR PLAN
35	60023993	AD402	DEMOLITION ENLARGED CORE REFLECTED CEILING PLANS
36	60023994	AD403	DEMOLITION ENLARGED SLEEPING ROOM PLAN, RCP, AND ELEVATIONS
37	60023995	AD501	DEMOLITION DETAILS
38	60023996	AD901	DEMOLITION PHOTOS
39	60023997	A-101	FLOOR PLANS
40	60023998	A-102	REFLECTED CEILING PLANS
41	60023999	A-103	ROOF PLAN
42	60024000	A-104	MECHANICAL YARD FLOOR, REFLECTED CEILING, AND ROOF PLAN
43	60024001	A-201	BUILDING ELEVATIONS
44	60024002	A-202	ENLARGED BUILDING ELEVATIONS
45	60024003	A-203	MECHANICAL YARD EXTERIOR ELEVATIONS, SECTIONS, AND DETAILS
46	60024004	A-301	BUILDING SECTIONS
47	60024005	A-302	WALL SECTIONS
48	60024006	A-401	ENLARGED CORE FLOOR PLANS
49	60024007	A-402	ENLARGED CORE REFLECTED CEILING PLANS
50	60024008	A-403	ENLARGED SLEEPING ROOM FLOOR PLAN AND REFLECTED CEILING PLANS
51	60024009	A-404	ENLARGED SLEEPING ROOM ELEVATIONS AND DETAILS
52	60024010	A-405	ENLARGED TOILET ROOM PLANS AND ELEVATIONS
53	60024011	A-501	DETAILS
54	60024012	A-502	ROOF DETAILS
55	60024013	A-503	RAILING DETAILS
56	60024014	A-504	CASEWORK DETAILS
57	60024015	A-601	FINISH SCHEDULE AND DETAILS
58	60024016	A-602	DOOR SCHEDULE AND DETAILS
59	60024017	A-603	DOOR DETAILS
60	60024018	A-604	DOOR DETAILS
61	60024019	A-605	WINDOW SCHEDULE AND DETAILS
62	60024020	A-606	SIGNAGE PLANS
63	60024021	A-607	SIGNAGE SCHEDULE
64	60024022	A-608	SIGNAGE TYPES
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65	60024023	FA001	FIRE ALARM GENERAL NOTES, LEGENDS, AND DIAGRAMS
66	60024024	FA002	FIRE ALARM/MASS NOTIFICATION LEGEND AND RISER DIAGRAM
67	60024025	FD101	FIRE ALARM DEMOLITION PLANS
68	60024026	FA101	FIRE ALARM/MASS NOTIFICATION PLANS
69	60024027	FA401	ENLARGED FIRE ALARM/MNS PLANS
70	60024028	FX001	FIRE PROTECTION LEGEND, DETAILS, AND RISER DIAGRAM
71	60024029	FX101	FIRE PROTECTION PLANS
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72	60024030	P-001	LEGEND, DETAILS, AND SCHEDULES
73	60024031	PD101	DEMOLITION PLANS
74	60024032	PD401	ENLARGED DEMOLITION PLANS
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76	60024034	PD403	ENLARGED DEMOLITION PLANS
77	60024035	P-101	SANITARY PIPING PLANS
78	60024036	P-102	DOMESTIC PIPING PLANS
79	60024037	P-103	ATTIC PIPING PLAN
80	60024038	P-104	MECHANICAL BUILDING PLUMBING PLANS
81	60024039	P-401	ENLARGED SANITARY PIPING PLANS
82	60024040	P-402	ENLARGED DOMESTIC PIPING PLANS
83	60024041	P-403	ENLARGED PIPING PLANS
84	60024042	P-404	ENLARGED PIPING PLANS
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86	60024044	P-502	DETAILS
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90	60024048	MS101	SITE PIPING DEMOLITION PLAN
91	60024049	MS102	SITE PIPING PLAN
92	60024050	MD101	DEMOLITION PLANS
93	60024051	MD102	ROOF DEMOLITION PLAN
94	60024052	MD401	ENLARGED DEMOLITION PLANS
95	60024053	MD402	ENLARGED DEMOLITION PLAN
96	60024054	MD403	ENLARGED DEMOLITION PLANS
97	60024055	MH101	FLOOR PLANS
98	60024056	MH102	ATTIC PLAN
99	60024057	MH401	ENLARGED PLANS
100	60024058	MH402	ENLARGED PLANS AND SECTIONS
101	60024059	MH403	ENLARGED PLANS
102	60024060	MP101	FLOOR PLANS
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105	60024063	M-501	DETAILS
106	60024064	M-502	DETAILS
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109	60024067	M-601	SCHEDULES
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113	60024071	MI101	CENTER ROOM AHU CONTROLS AND OPERATION
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117	60024075	MI105	CHW CONTROLS AND OPERATION
118	60024076	MI106	HHW CONTROLS
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121	60024078	E-001	GENERAL NOTES AND LEGEND
122	60024079	ES101	SITE DEMOLITION PLAN
123	60024080	ES102	SITE PLAN
124	60024081	ED101	DEMOLITION PLANS
125	60024082	ED102	ROOF DEMOLITION PLAN
126	60024083	ED401	ENLARGED DEMOLITION PLANS
127	60024084	ED402	ENLARGED DEMOLITION PLANS
128	60024085	E-101	FLOOR PLANS
129	60024086	E-102	ATTIC PLAN
130	60024087	E-103	MECHANICAL BUILDING 510A PLANS
131	60024088	E-401	ENLARGED PLANS
132	60024089	E-402	ENLARGED PLANS
133	60024090	E-403	ENLARGED PLANS
134	60024091	E-501	LIGHTING DETAILS AND SCHEDULE
135	60024092	E-502	DETAILS
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141	60024098	E-605	ELECTRICAL RISER DIAGRAM
142	60024099	E-606	MECHANICAL BUILDING ELECTRICAL RISER DIAGRAM
143	60024100	E-701	LIGHTNING PROTECTION PLAN AND DETAILS

TOTAL: 143

DISCLOSURE OF INFORMATION

CONTRACTOR SHALL COMPLY AS FOLLOWS:

A. THE CONTRACTOR SHALL NOT RELEASE TO ANYONE OUTSIDE THE CONTRACTOR'S ORGANIZATION ANY UNCLASSIFIED INFORMATION, REGARDLESS OF MEDIUM (E.G., FILM, TAPE, DOCUMENT), PERTAINING TO ANY PART OF THE CONTRACT OR ANY PROGRAM RELATED TO THIS CONTRACT, UNLESS-

1. THE CONTRACTING OFFICE HAS GIVEN PRIOR WRITTEN APPROVAL; OR
2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

B. REQUESTS FOR APPROVAL SHALL IDENTIFY THE SPECIFIC INFORMATION TO BE RELEASED, THE MEDIUM TO BE USED, AND THE PURPOSE FOR THE RELEASE. THE CONTRACTOR SHALL SUBMIT ITS REQUEST TO THE CONTRACTING OFFICER AT LEAST 45 DAYS BEFORE PROPOSED DATE FOR RELEASE.

C. THE CONTRACTOR AGREES TO INCLUDE A SIMILAR REQUIREMENT IN EACH SUBCONTRACT UNDER THIS CONTRACT. SUBCONTRACTORS SHALL SUBMIT REQUESTS FOR AUTHORIZATION TO RELEASE THROUGH THE PRIME CONTRACTOR TO THE CONTRACTING OFFICER.

PLAN NORTH

ISSUE DATE:15 MAY 2020

G-001

CEMS ENGINEERING | ARCHITECTURE
108 Bentora Lodge Rd., Summerville, SC. 29485 843.875.3037
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1640
CEMS Project No: 15153V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIR BEQ HP510

COVER SHEET

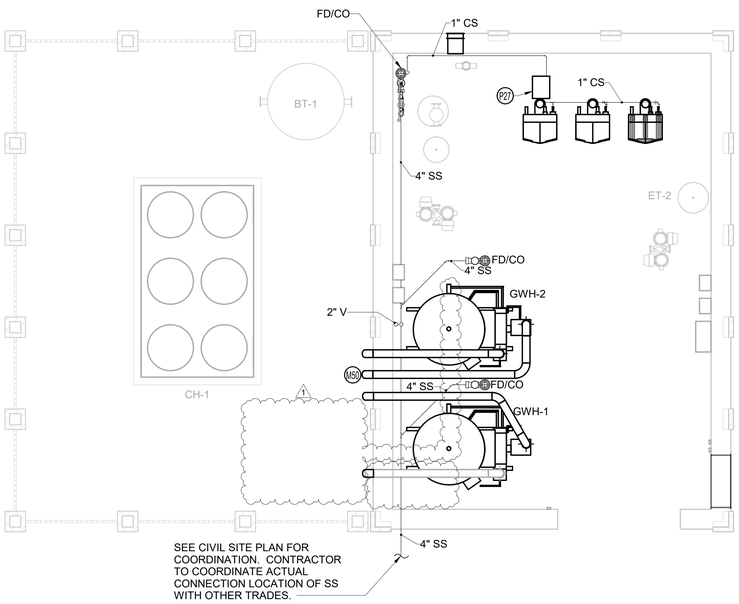
DES.	M. SMITH
DR.	P. HARRIS/ R. LEONARD
CHK.	M. SMITH
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60023959

CONSTR. CONTR. NO.: N40085-18-B-0042

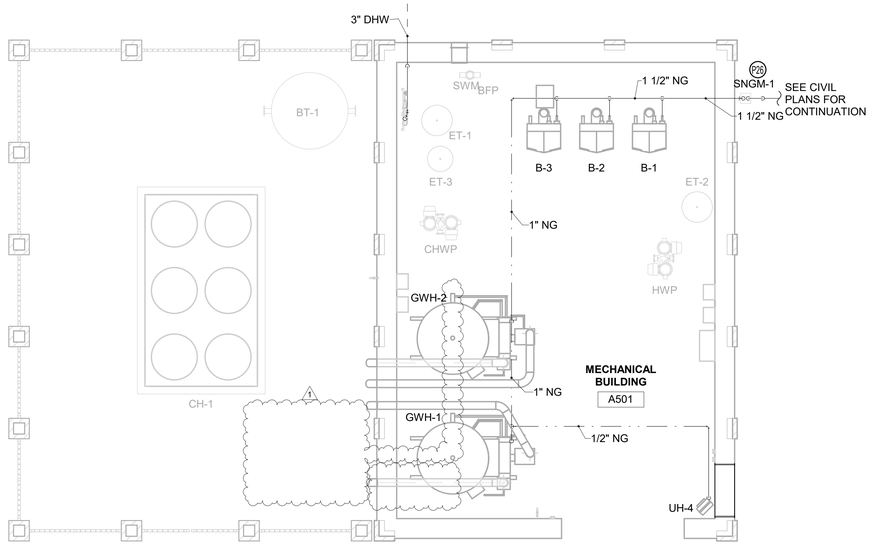
SCALE: NONE | SPEC. 05-18-0042 | SHEET 1 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED
1	REMOVE ALL HEAT RECOVERY SYSTEMS	08/10/20	PCM



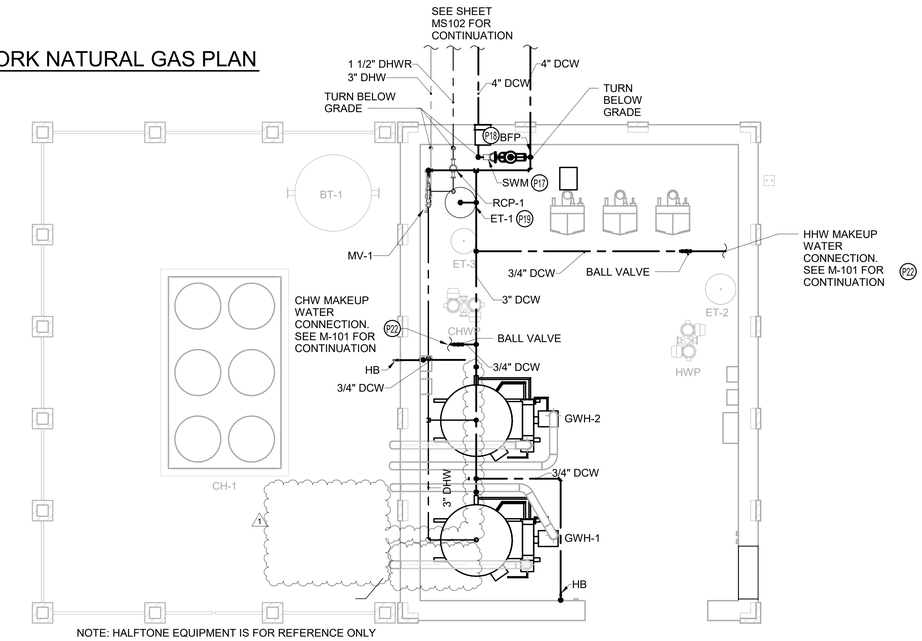
1 MECHANICAL BUILDING NEW WORK SANITARY PLAN

SCALE: 1/4" = 1'-0"



2 MECHANICAL BUILDING NEW WORK NATURAL GAS PLAN

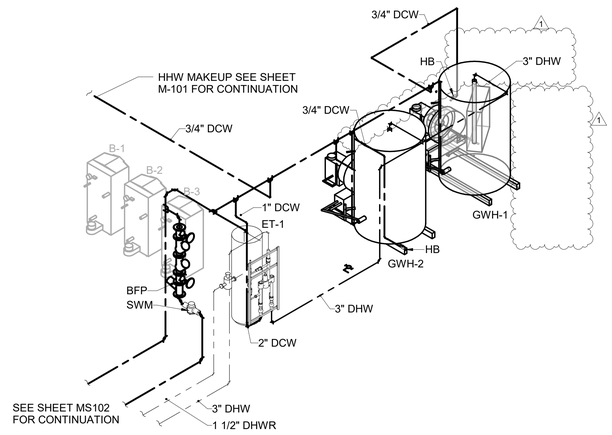
SCALE: 1/4" = 1'-0"



NOTE: HALFTONE EQUIPMENT IS FOR REFERENCE ONLY

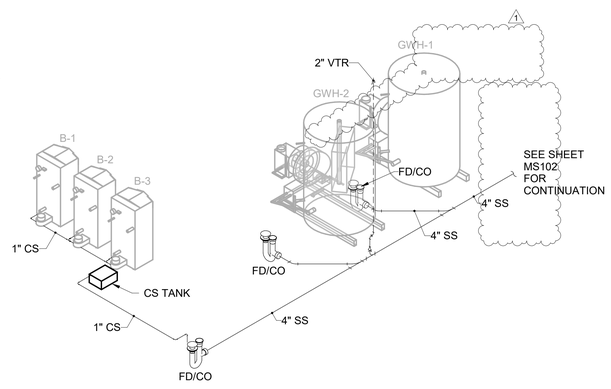
5 MECHANICAL BUILDING NEW WORK DOMESTIC PLAN

SCALE: 1/4" = 1'-0"



3 DOMESTIC PLUMBING RISER

SCALE: NOT TO SCALE



4 SANITARY PLUMBING RISER

SCALE: NOT TO SCALE

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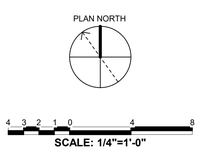
GENERAL NOTES

1. PROVIDE ISOLATION VALVES AND FLEXIBLE CONNECTIONS FOR ALL MECHANICAL EQUIPMENT. SEE GAS TRAIN DETAIL SHEET P-502 FOR ALL GAS FIRED EQUIPMENT.

KEYNOTES

M50	PROVIDE VENT THROUGH EXTERIOR WALL AS SHOWN. REFER TO MANUFACTURER FOR EXACT TERMINATION AND SIZING REQUIREMENTS.
P17	DOMESTIC WATER SUPPLY TO THE BUILDING SHALL BE PROVIDED WITH DOMESTIC SMART WATER METER (SWM) COMMUNICATING VIA ITRON WATER ERT-60W OR AN APPROVED EQUIVALENT. SWM TO REPORT BACK TO BASEWIDE ITRON FIXED NETWORK 2.0 COMMUNICATING VIA A 900 MHz WIRELESS SIGNAL.
P18	PROVIDE BACKFLOW PREVENTER (BFP). THE INSTALLATION/TESTING OF BACKFLOW PREVENTION DEVICES ON POTABLE WATER LINES MUST BE DONE IN ACCORDANCE WITH THE SAFE DRINKING WATER ACT.
P19	PROVIDE DOMESTIC HOT WATER EXPANSION TANK ET-1.
P22	PROVIDE MAKE UP WATER PIPING TO HEATING AND COOLING SYSTEMS PER DETAIL 11 ON SHEET M-503.
P26	CONTRACTOR TO EXTEND NG PIPE TO EXTERIOR OF BUILDING IN LOCATION SHOWN. UTILITY SHALL PROVIDE 2 PSIG SERVICE, PROVIDE GAS METER AND MAKE ALL FINAL CONNECTIONS.
P27	PROVIDE CONDENSATE NEUTRALIZATION TANK FOR HHW BOILERS. PROVIDE TANK SIZED FOR TOTAL CAPACITY OF ALL BOILERS. THE TANK SHALL HAVE A REMOVABLE LID FOR INSPECTION AND MAINTENANCE WITHOUT TAKING THE TANK OUT OF SERVICE OR DISCONNECTING PIPE. ROUTE CPVC DISCHARGE PIPE TO FLOOR DRAIN SUCH THAT CONDENSATE DOES NOT DRAIN ON CONCRETE FLOOR.



P-104

CEMS ENGINEERING | ARCHITECTURE
100 Bentons Lodge Rd., Summerville, SC. 29485 843.875.3637
300 N. 3rd St., Suite 110, Wilmington, NC. 28401 910.363.1646
CEMS Project No: 10153V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

MECHANICAL BUILDING PLUMBING PLANS

DES. P. MAHAFFEY	
DR. N. FLEXNER	
CHK. P. MAHAFFEY	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

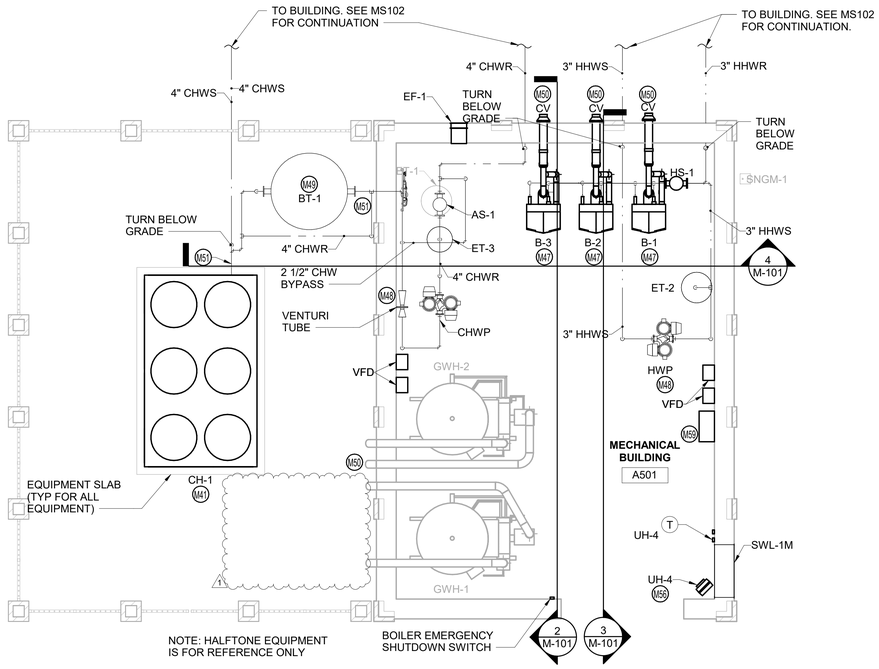
ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024038

CONSTR. CONTR. NO.: N40085-18-B-0042

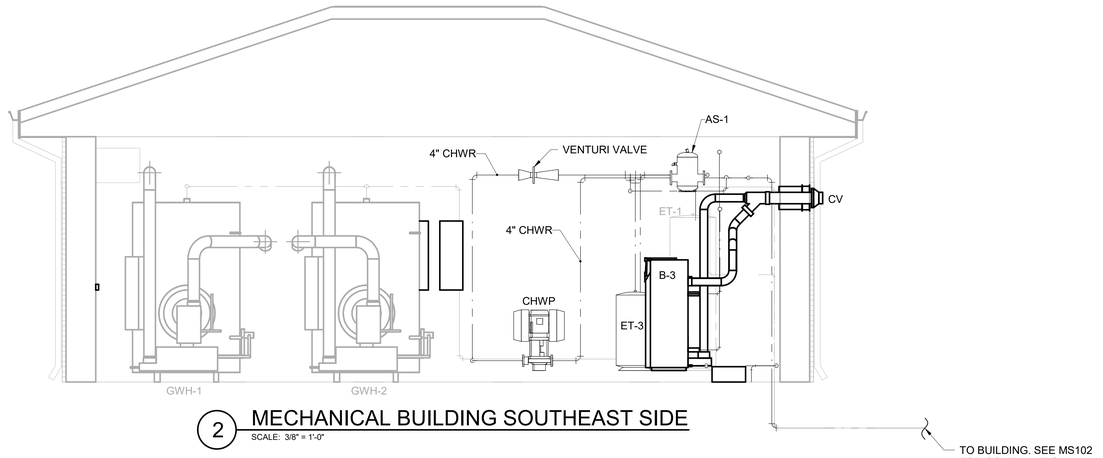
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 80 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED
1	REMOVE ALL HEAT RECOVERY SYSTEMS	08/10/20	PCM



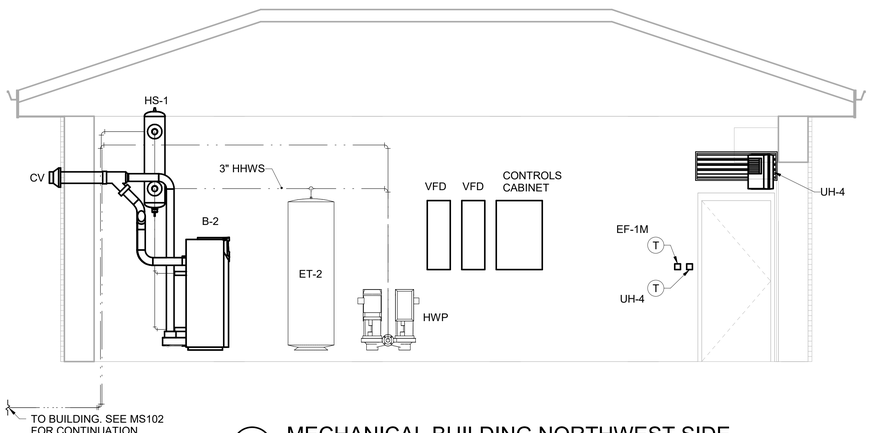
1 MECHANICAL BUILDING NEW WORK PLAN

SCALE: 1/4" = 1'-0"



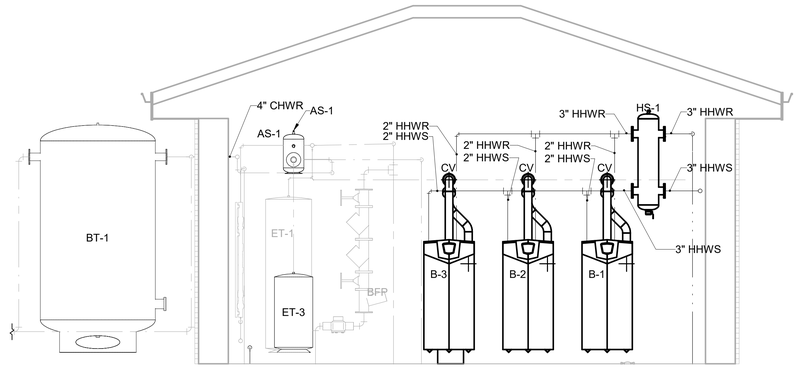
2 MECHANICAL BUILDING SOUTHEAST SIDE

SCALE: 3/8" = 1'-0"



3 MECHANICAL BUILDING NORTHWEST SIDE

SCALE: 3/8" = 1'-0"



4 BOILER SECTION

SCALE: 3/8" = 1'-0"

GENERAL NOTES

1. SEE PLUMBING PLANS FOR GAS WATER HEATER (GWH), CONDENSATE NEUTRALIZATION TANKS, AND EXPANSION TANK (ET-1)

SHEET KEYNOTES

M41 PROVIDE CHILLER (CH-1) COMPLETE WITH FLOW SWITCH, STRAINER, T&P TEST PLUGS, DRAIN VALVE, SHUTOFF VALVES, AND TEMPERATURE CONTROL ELEMENT. SEE CHILLER PIPING DETAIL. INSTALL DIRT AND AIR SEPARATOR IN CHILLED WATER RETURN LINE PIPING. INSTALL CHILLER ON MINIMUM 1" NEOPRENE ISOLATION PADS.

M47 PROVIDE BOILER (B) COMPLETE WITH ASSOCIATED PIPING, CONTROLS AND WIRING, PIPE SUPPORTS, VALVES AND RELATED DEVICES. BOILER SHALL BE MOUNTED ON 4" HOUSEKEEPING PAD. ROUTE CONDENSATE TO NEAREST FLOOR DRAIN. ROUTE FLUE TO EXTERIOR WALL AS SHOWN.

M48 PROVIDE CHW/HW PUMP SYSTEM COMPLETE WITH CONTROLS AND WIRING, RELATED VALVES, PIPE SUPPORTS AND ACCESSORIES INCLUDING EXPANSION TANK, CHEMICAL FEED TANK AND AIR SEPARATOR.

M49 PROVIDE BAFFLED THERMAL BUFFER TANK. PROVIDE AIR ELIMINATOR ATOP THE INERTIA TANK. TANK TO BE LOCATED ON AN EQUIPMENT PAD.

M50 PROVIDE VENT THROUGH EXTERIOR WALL AS SHOWN. REFER TO MANUFACTURER FOR EXACT TERMINATION AND SIZING REQUIREMENTS.

M51 EXPOSED CHILLED WATER PIPING TO HAVE HEAT TRACE APPLIED AND WRAPPED IN INSULATION. INDIVIDUAL PIECES OF EQUIPMENT AND CHILLED WATER PIPING TO HAVE HEAT TRACE APPLIED IN SECTIONS TO FACILITATE EASE OF HEAT TRACE, PIPING, OR EQUIPMENT REPLACEMENT IN THE EVENT OF FUTURE REPAIRS.

M56 PROVIDE UNIT HEATER, PIPING, AND CONTROLS.

M59 PROVIDE CONTROL CABINET AS SHOWN.

PLAN NORTH

4 2 0 4
SCALE: 3/8"=1'-0"

4 3 2 1 0 4 8
SCALE: 1/4"=1'-0"

GRAPHIC SCALES

DISCLOSURE OF INFORMATION

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2. THE INFORMATION IS OTHERWISE IN THE PUBLIC DOMAIN BEFORE THE DATE OF RELEASE.

B. REQUESTS FOR APPROVAL SHALL IDENTIFY THE SPECIFIC INFORMATION TO BE RELEASED, THE MEDIUM TO BE USED, AND THE PURPOSE FOR THE RELEASE. THE CONTRACTOR SHALL SUBMIT ITS REQUEST TO THE CONTRACTING OFFICER AT LEAST 45 DAYS BEFORE PROPOSED DATE FOR RELEASE.

C. THE CONTRACTOR AGREES TO INCLUDE A SIMILAR REQUIREMENT IN EACH SUBCONTRACT UNDER THIS CONTRACT. SUBCONTRACTORS SHALL SUBMIT REQUESTS FOR AUTHORIZATION TO RELEASE THROUGH THE PRIME CONTRACTOR TO THE CONTRACTING OFFICER.

ISSUE DATE:15 MAY 2020

M-101

CEMS ENGINEERING | ARCHITECTURE
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CEMS Project No: 15153V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

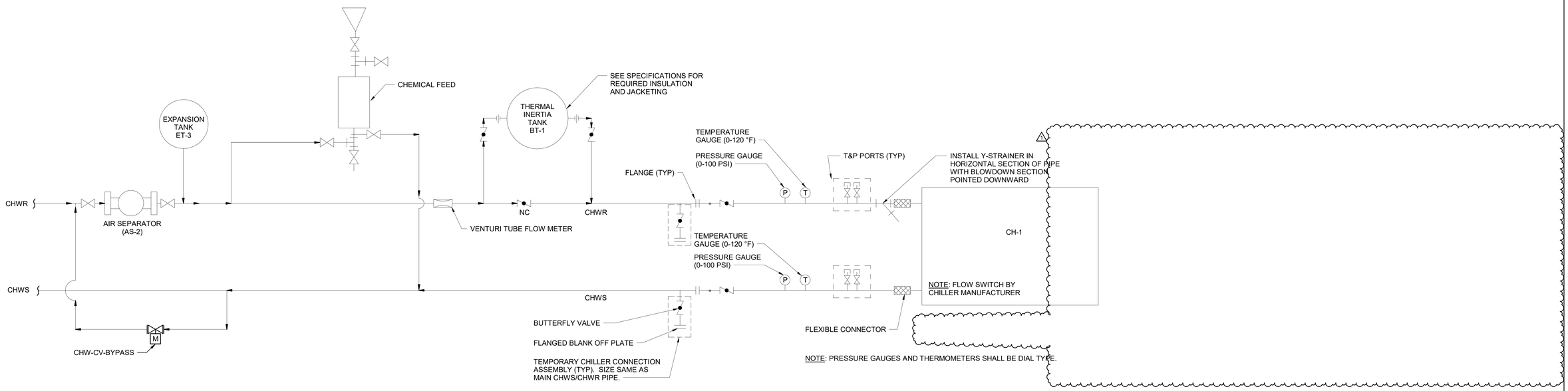
REPAIRS BEQ HP510

MECHANICAL BUILDING PLAN AND SECTIONS

DES.	P. MAHAFFEY
DR.	N. FLEXNER
CHK.	P. MAHAFFEY
SUBMITTED BY:	CEMS ENGINEERING
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

SIZE E1 | CODE IDENT NO. 80091 | NAVFAC DRAWING NO. 60024062
CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED | SPEC. 05-18-0042 | SHEET 104 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED
1	REMOVE ALL HEAT RECOVERY SYSTEMS	08/10/20	PCM



1 CHILLER PIPING DETAIL
SCALE: NOT TO SCALE

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GENERAL NOTES

1. PROVIDE EQUIPMENT PAD AND FLEXIBLE CONNECTIONS FOR ALL MECHANICAL EQUIPMENT DUCTWORK AND PIPING

M-504

CEMS ENGINEERING | ARCHITECTURE
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CEMS Project No: 15153V Project Manager: R. Alvar

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MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

DETAILS AND SECTIONS

DES. P. MAHAFFEY	
DR. N. FLEXNER	
CHK. P. MAHAFFEY	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024066
		CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED	SPEC. 05-18-0042	SHEET 108 OF 143

REVISIONS			
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1	REMOVE ALL HEAT RECOVERY SYSTEMS	08/10/20	PCM

AIR COOLED WATER CHILLER SCHEDULE

TAG	TYPE	TONS	EER	IPLV EER	OUTSIDE AMBIENT °F	DESIGN FLOW	EWT	LWT	HD LOSS	FLA	MCA	MOCP	V/Ø/HZ	REFRIGERANT TYPE
CH-1	SCROLL	110	10.5	14.7	95	187 GPM	54 °F	42 °F	11.2 FT	27 A	226 A	250	460/3/60	R410A

NOTES:
1. PROVIDE WITH SINGLE POINT POWER CONNECTION, ALUMINUM MICROCHANNEL CONDENSER COILS, LOW AMBIENT OPERATION DOWN TO 20°F, AND VFD'S FOR CONDENSER FANS.
2. PROVIDE EACH CHILLER WITH A 120V SERVICE OUTLET AND STEP DOWN TRANSFORMER.
3. PROVIDE CHILLER PACKAGE WITH BACNET MS/TP INTERFACE. COORDINATE WITH DDC CONTRACTOR AND CONTROLS PLANS FOR UNIT OPERATION.

1

MECHANICAL PUMP SCHEDULE

								MOTOR	
TAG	SERVICE	TYPE	DRIVE	FLOW	HEAD	RPM	PUMP MIN (EFF)	HP	V/Ø/HZ
CHWP	CHILLED WATER	VERTICAL TWIN	VFD	187 GPM	65 FT	1800	65%	7.5	460/3/60
HWP	HEATED HOT WATER	VERTICAL TWIN	VFD	60 GPM	65 FT	1800	65%	3.0	460/3/60

NOTES:
1. BASIS OF DESIGN PUMPS ARE VARIABLE SPEED, VERTICAL TWIN INLINE TYPE.
2. PROVIDE TWIN PUMP WITH AN INDIVIDUAL POWER CONNECTION FOR EACH PUMP MOTOR.

HYDRONIC EXPANSION TANK SCHEDULE

TAG	SYSTEM	MIN ACCEPTANCE VOLUME (GAL)	MIN OPERATING TEMP./ PRESSURE (°F/PSIG)	MAX OPERATING TEMP./ PRESSURE (°F/PSIG)	PRECHARGE PRESSURE (PSIG)	SEPARATION
ET-2	HEATED HOT WATER	20.0	50F/12.0 PSIG	140/22	20	BLADDER
ET-3	CHILLED WATER	10.0	42F/12.0 PSIG	90/150	20	BLADDER

NOTE:
1. PROVIDE EXPANSION TANK RATED FOR 200°F AND 150 PSIG WORKING PRESSURE.

EXHAUST FAN SCHEDULE

TAG	AREA SERVED	DRIVE	CONTROL	CFM	ESP IWG	HP	V/Ø/HZ
EF-1	MECHANICAL BUILDING	DIRECT DRIVE	WALL MOUNTED SWITCH	650	0.1	0.05	115/1/60

NOTES:
1. PROVIDE A DIRECT DRIVE SIDEWALL MOUNTED PROPELLER FAN. FAN ARRANGEMENT SHALL BE EXHAUST. PROVIDE WITH WALL SLEEVE AND BIRD SCREEN.
2. FAN PROPELLER SHALL BE ALUMINUM BLADE MECHANICALLY FASTENED TO STEEL HUB; WHEEL SHALL BE STATICALLY AND DYNAMICALLY BALANCED IN ACCORDANCE WITH AMCA STANDARD 204-05.
3. FAN MOTOR SHALL BE TEFC OR TEAO AND PERMANENTLY LUBRICATED WITH A MAXIMUM CONTINUOUS OPERATING TEMPERATURE OF 130°F.
4. PROVIDE FAN CONTROL SWITCH LOCATED NEAR ENTRANCE.

UNIT HEATER SCHEDULE

TAG	AREA SERVED	TYPE	FAN TYPE	CFM	HEATING CAPACITY	MAX GAS INLET PRESSURE (I.W.G.)	WEIGHT	FAN HP	V/Ø/HZ
UH-4	MECHANICAL BUILDING	NATURAL GAS	PROPELLER	500	30,000 Btu/h	14	55	.06	115/1/60

NOTES:
1. PROVIDE 82% HIGH-EFFICIENCY, SEPARATED -COMBUSTION, POWER VENTED, GAS-FIRED UNIT HEATER.
2. HEAT EXCHANGER SHALL BE EQUIPPED WITH A MULTI-CELL, MULTI-PASS SERPENTINE STYLE 316 STAINLESS STEEL HEAT EXCHANGER.
3. BURNER SHALL BE A SINGLE PIECE ASSEMBLY WITH A SINGLE ORIFICE.
4. UNIT CONTROLS SHALL INCLUDE A SINGLE STAGE GAS VALVE; DIRECT SPARK MULTI-TRY IGNITION WITH ELECTRONIC FLAME SUPERVISION WITH TIMED LOCKOUT.
5. CABINET SHALL BE CONSTRUCTED OF G30 GALVANIZED STEEL.

AIR AND DIRT SEPARATOR SCHEDULE

TAG	TYPE	SYSTEM	RATED FLOW RATE (GPM) AT 4.9 FPS	CONNECTION SIZE (IN)
AS-1	COALESCING	CHW	187	4

NOTE:
1. AIR AND DIRT SEPARATOR SHALL BE EQUIPPED WITH BLOWDOWN VALVE AND REMOVABLE FILTER MEDIA.

HYDRAULIC SEPARATOR SCHEDULE

TAG	TYPE	SYSTEM	FLOW RATE (GPM)	CONNECTION SIZE (IN)
HS-1	COALESCING	HHW	60	3

NOTES:
1. HYDRAULIC SEPARATOR SHALL HAVE INTEGRATED AIR AND DIRT SEPARATOR CAPABLE OF PARTICLE REMOVAL DOWN TO 5 MICRONS, FACTORY EQUIPPED WITH AN AUTOMATIC AIR VENTING DEVICE, AND A FACTORY INSTALLED BOTTOM BLOWDOWN VALVE.
2. SHALL BE DESIGNED AND CONSTRUCTED PER ASME BPV CODE SECTION VIII DIV 1.
3. SHALL BE EQUIPPED W/ 304 STAINLESS COALESCENCE PALL RINGS.
4. PROVIDING INDIVIDUAL AIR AND DIRT SEPARATOR AND HYDRAULIC SEPARATOR IS ACCEPTABLE IF ALL PRIOR REQUIREMENTS ARE MET.

BUFFER TANK SCHEDULE

TAG	CAPACITY
BT-1	500 gal

NOTE:
1. PROVIDE BUFFER TANK WITH INTERNAL BAFFLE, AIR VENT ATOP TANK, INCLUDING A DRAIN, FLANGED LOW CONNECTIONS AND 4 LEG STANDS FOR MOUNTING TO CONCRETE PAD.

SIDEWALL LOUVER SCHEDULE

TAG	MIN VELOCITY	MAX VELOCITY	DESCRIPTION	FACE SIZE	CFM
SWL-1M	500	N/A	BAKED ENAMEL - MATCH EXTERIOR COLOR	40" x 12"	650

NOTES:
1. SEE ARCHITECTURAL PLANS FOR SIDEWALL LOUVER SCHEDULES. APPROXIMATE FACE SIZES ARE SHOWN HERE FOR COORDINATION PURPOSES ONLY.
2. PROVIDE ALL OUTSIDE AIR INTAKES, RELIEF AIR, AND EXHAUST AIR OPENINGS WITH LOW LEAKAGE DAMPERS. THE LOW LEAKAGE DAMPERS SHALL HAVE MAXIMUM LEAKAGE RATES OF 3 CFM/SQUARE FOOT WITH A DIFFERENTIAL PRESSURE OF ONE INCH OF WATER GAGE ACROSS THE DAMPER.

NATURAL GAS FIRED CONDENSING BOILER SCHEDULE

TAG	TYPE	INPUT	OUTPUT	MAX NG INPUT PRESSURE (I.W.G.)	NOMINAL FLOW	EFFICIENCY	EWT	LWT	V/Ø/HZ
B-1	FIRE TUBE	399,900 Btu/h	379,000 Btu/h	14	20 GPM	95%	100 °F	140 °F	115/1/60
B-2	FIRE TUBE	399,900 Btu/h	379,000 Btu/h	14	20 GPM	95%	100 °F	140 °F	115/1/60
B-3	FIRE TUBE	399,900 Btu/h	379,000 Btu/h	14	20 GPM	95%	100 °F	140 °F	115/1/60

NOTES:
1. PROVIDE FIRETUBE BOILER WITH VARIABLE PRIMARY FLOW CAPABILITY. COORDINATE BOILER MINIMUM FIRE FLOW RATE WITH PUMP CONTROLS TO PREVENT TRIPPING BOILER SAFETIES.
2. PROVIDE MANUFACTURER CONCENTRIC DIRECT VENT SYSTEM FOR EACH BOILER WITH HORIZONTAL SIDEWALL TERMINATION USING STAINLESS STEEL OR OTHER CATEGORY IV APPROVED MATERIAL.
3. PROVIDE BOILERS WITH REQUIRED CSD-1 CONTROL AND LOCATE EMERGENCY SHUTOFF SWITCH ON EXTERIOR OF MECHANICAL ROOM AS SHOWN ON PLANS.
4. PROVIDE A SINGLE CONDENSATE NEUTRALIZATION KIT FOR CONNECTION WITH ALL NEW BOILERS. CONDENSATE NEUTRALIZATION KIT SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE BACNET MS/TP INTERFACE.
6. PROVIDE BOILER MANUFACTURER APPROVED AND BOILER CONTROLLABLE PRIMARY/CIRCULATING PUMP WITH VARIABLE SPEED MOTOR RATED AT BOILER MAX FLOW AND 25 FT OF HEAD MINIMUM.

1

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M-602

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CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

MECHANICAL BUILDING SCHEDULES

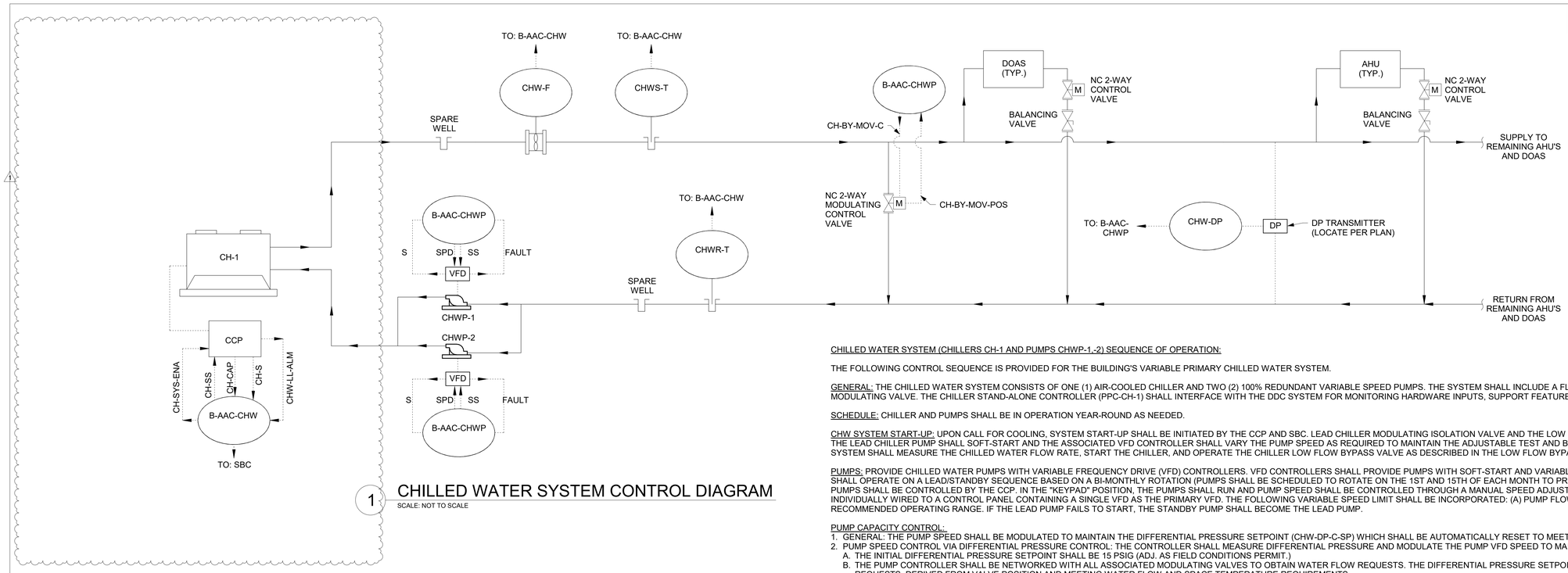
DES. P. MAHAFFEY
DR. N. FLEXNER
CHK. P. MAHAFFEY
SUBMITTED BY: CEMS ENGINEERING
DESIGN DIR.
APPROVED: PWO OR OICC DATE
SATISFACTORY TO: DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024068

CONSTR. CONTR. NO.: N40085-18-B-0042
SCALE: AS NOTED SPEC. 05-18-0042 SHEET 110 OF 143

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED
1	REMOVE ALL HEAT RECOVERY SYSTEMS	08/10/20	PCM



1 CHILLED WATER SYSTEM CONTROL DIAGRAM

SCALE: NOT TO SCALE

CHW POINTS LIST

POINT NAME	HARWARE AI	AO	BO	BI	SOFTWARE AV	BV	LOOP	SCHED	TREND	ALARM	FAILURE MODE	SHOW ON GRAPHIC
CH-CAP / CHILLER CAPACITY [TON]	•								•			•
CH-S / CHILLER STATUS [ON/OFF]				•						•		•
CHW-BY-F-SP / CHW BYPASS FLOW SETPOINT [GPM]					•							•
CHW-BY-MOV-C / CHW BYPASS VALVE CONTROL [% OPEN]		•										•
CHW-BY-MOV-P / CHW BYPASS VALVE POSITION [% OPEN]	•											•
CHW-DP-C / CHW DIFFERENTIAL PRESSURE CONTROL [FT H2O]	•									•		•
CHW-DP-SP / CHW DIFFERENTIAL PRESSURE SETPOINT [FT H2O]					•							•
CHW-F / CH FLOW [GPM]	•								•	•		•
CHW-LL / CHILLER LOW WATER LEVEL ALARM				•						•	SYSTEM SHUTDOWN	•
CHW-SYS-ENA / CHW SYSTEM ENABLE [ON/OFF]			•									•
CHWP-1-ENA / PUMP ENABLE [ON/OFF]			•									•
CHWP-1-FBK / PUMP FEEDBACK/FAULT ALARM	•											•
CHWP-1-S / PUMP STATUS [ON/OFF]				•						•	PUMP OFF	•
CHWP-1-SPD / PUMP SPEED [HZ]		•										•
CHWP-1-SPD-SP / PUMP SPEED SETPOINT [HZ]					•							•
CHWP-2-ENA / PUMP ENABLE [ON/OFF]			•									•
CHWP-2-FBK / PUMP FEEDBACK/FAULT ALARM	•											•
CHWP-2-S / PUMP STATUS [ON/OFF]				•						•	PUMP OFF	•
CHWP-2-SPD / PUMP SPEED [HZ]		•										•
CHWP-2-SPD-SP / PUMP SPEED SETPOINT [HZ]					•							•
CHWR-T / CHWR TEMP [°F]	•								•			•
CHWS-T / CHWS TEMP [°F]	•								•	•		•

NOTES:

1. POINTS LIST IS THE MINIMUM REQUIRED FOR OPERATION. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POINTS AND MONITORING POINTS FOR A COMPLETE AND OPERABLE SYSTEM

CHILLED WATER SYSTEM (CHILLERS CH-1 AND PUMPS CHWP-1,-2) SEQUENCE OF OPERATION:

THE FOLLOWING CONTROL SEQUENCE IS PROVIDED FOR THE BUILDING'S VARIABLE PRIMARY CHILLED WATER SYSTEM.

GENERAL: THE CHILLED WATER SYSTEM CONSISTS OF ONE (1) AIR-COOLED CHILLER AND TWO (2) 100% REDUNDANT VARIABLE SPEED PUMPS. THE SYSTEM SHALL INCLUDE A FLOW METER AND LOW FLOW BYPASS WITH 2-WAY MODULATING VALVE. THE CHILLER STAND-ALONE CONTROLLER (PPC-CH-1) SHALL INTERFACE WITH THE DDC SYSTEM FOR MONITORING HARDWARE INPUTS, SUPPORT FEATURES, AND STRATEGIES DESCRIBED BELOW.

SCHEDULE: CHILLER AND PUMPS SHALL BE IN OPERATION YEAR-ROUND AS NEEDED.

CHW SYSTEM START-UP: UPON CALL FOR COOLING, SYSTEM START-UP SHALL BE INITIATED BY THE CCP AND SBC. LEAD CHILLER MODULATING ISOLATION VALVE AND THE LOW FLOW BYPASS VALVE SHALL BE IN THE FULLY OPEN POSITION. THE LEAD CHILLER PUMP SHALL SOFT-START AND THE ASSOCIATED VFD CONTROLLER SHALL VARY THE PUMP SPEED AS REQUIRED TO MAINTAIN THE ADJUSTABLE TEST AND BALANCE DIFFERENTIAL PRESSURE SETPOINT. THE DDC SYSTEM SHALL MEASURE THE CHILLED WATER FLOW RATE, START THE CHILLER, AND OPERATE THE CHILLER LOW FLOW BYPASS VALVE AS DESCRIBED IN THE LOW FLOW BYPASS SECTION.

PUMPS: PROVIDE CHILLED WATER PUMPS WITH VARIABLE FREQUENCY DRIVE (VFD) CONTROLLERS. VFD CONTROLLERS SHALL PROVIDE PUMPS WITH SOFT-START AND VARIABLE SPEED OPERATION. REDUNDANT PUMPS CHWP-1/CHWP-2 SHALL OPERATE ON A LEAD/STANDBY SEQUENCE BASED ON A BI-MONTHLY ROTATION (PUMPS SHALL BE SCHEDULED TO ROTATE ON THE 1ST AND 15TH OF EACH MONTH TO PROMOTE EVEN WEAR/USAGE). IN THE "REMOTE" SETTING, THE PUMPS SHALL BE CONTROLLED BY THE CCP. IN THE "KEYPAD" POSITION, THE PUMPS SHALL RUN AND PUMP SPEED SHALL BE CONTROLLED THROUGH A MANUAL SPEED ADJUSTMENT INTEGRAL TO THE VFD. EACH PUMP MOTOR SHALL BE INDIVIDUALLY WIRED TO A CONTROL PANEL CONTAINING A SINGLE VFD AS THE PRIMARY VFD. THE FOLLOWING VARIABLE SPEED LIMIT SHALL BE INCORPORATED: (A) PUMP FLOW CONTROL SHALL BE LIMITED IAW THE VFD MANUFACTURER RECOMMENDED OPERATING RANGE. IF THE LEAD PUMP FAILS TO START, THE STANDBY PUMP SHALL BECOME THE LEAD PUMP.

PUMP CAPACITY CONTROL:

1. GENERAL: THE PUMP SPEED SHALL BE MODULATED TO MAINTAIN THE DIFFERENTIAL PRESSURE SETPOINT (CHW-DP-C-SP) WHICH SHALL BE AUTOMATICALLY RESET TO MEET ZONE WATER FLOW DEMANDS.
2. PUMP SPEED CONTROL VIA DIFFERENTIAL PRESSURE CONTROL: THE CONTROLLER SHALL MEASURE DIFFERENTIAL PRESSURE AND MODULATE THE PUMP VFD SPEED TO MAINTAIN AN OPTIMIZED DIFFERENTIAL PRESSURE SETPOINT.
   A. THE INITIAL DIFFERENTIAL PRESSURE SETPOINT SHALL BE 15 PSIG (ADJ. AS FIELD CONDITIONS PERMIT.)
   B. THE PUMP CONTROLLER SHALL BE NETWORKED WITH ALL ASSOCIATED MODULATING VALVES TO OBTAIN WATER FLOW REQUESTS. THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE RESET BASED ON ZONE WATER FLOW REQUESTS, DERIVED FROM VALVE POSITION AND MEETING WATER FLOW AND SPACE TEMPERATURE REQUIREMENTS.
   C. AS WATER FLOW REQUESTS DECREASE WHEN ALL ZONE VALVES ARE THROTTLING CLOSED THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE INCREMENTALLY RESET DOWN BY 2 PSIG (ADJ.) AT A FREQUENCY OF 10 MINUTES (ADJ.) TO A MINIMUM OF 5 PSIG (ADJ. AS FIELD CONDITIONS PERMIT) OR THE PUMP VFD HAS REACHED ITS LOWEST OPERATING SPEED LIMIT.
   D. AS WATER FLOW REQUESTS INCREASE WHEN ALL ZONE VALVES ARE THROTTLING OPEN AND AT LEAST ONE ZONE VALVE IS GREATER THAN 95% OPEN AND SPACE TEMPERATURE IS NOT SATISFIED, THE DIFFERENTIAL PRESSURE SETPOINT SHALL INCREMENTALLY RESET UP BY 2 PSIG (ADJ.) AT A FREQUENCY OF 10 MINUTES (ADJ.) TO A MAXIMUM OF 30 PSIG (ADJ. AS FIELD CONDITIONS PERMIT).
   E. IF THE DIFFERENTIAL PRESSURE INCREASES ABOVE 115% OF PEAK OPERATING PSIG (ADJ), THE PUMP VFD SHALL RESET TO ITS LOWEST OPERATING SPEED LIMIT AND AN ALARM SHALL BE GENERATED.

LOW FLOW BYPASS: PROVIDE A CHILLED WATER LOW FLOW BYPASS AS DETAILED AND SPECIFIED THROUGHOUT. LOW FLOW BYPASS TWO-WAY MODULATING CONTROL VALVE SHALL MODULATE TO MAINTAIN 100 GPM (ADJ.) DURING PART LOAD OPERATION BASED ON INSTANTANEOUS CHILLED WATER FLOW RATE AT THE FLOW METER ON THE DISCHARGE SIDE OF THE CHILLERS. IN THE EVENT THAT THE FLOW METER READS A FLOW RATE GREATER THAN 100 GPM (ADJ.), THE TWO-WAY BYPASS VALVE SHALL BE CLOSED AT A MODERATE RATE. IN THE EVENT THAT THE FLOW METER READS A FLOW RATE LESS THAN 100 GPM (ADJ.), THE TWO-WAY BYPASS VALVE SHALL MODULATE TO MAINTAIN THE MINIMUM FLOWS PREVIOUSLY MENTIONED. MINIMUM FLOWS SHALL BE MAINTAINED IAW CHILLER MANUFACTURER TO PREVENT CHILLER SAFETY FAILURE

CHW SHUTDOWN: SYSTEM SHUTDOWN SHALL BE INITIATED BY THE CCP AND SBC. CHILLER BYPASS VALVE SHALL OPEN, THEN CHILLER SHALL SHUT DOWN FIRST FOLLOWED BY THE PUMPS BEING SET TO MINIMUM FLOW AND THEN DE-ENERGIZED.

SENSORS: SENSORS SHALL BE PROVIDED AS REQUIRED BY THIS SEQUENCE OF OPERATION, THE CONTROL DIAGRAM, AND THE ASSOCIATED POINTS LIST.

SAFETY SHUTDOWN AND ALARMS: ALL ALARMS SHALL BE DISPLAYED AND REQUIRE MANUAL RESET AT THE LOCAL DDC PANEL.

1. EMERGENCY SHUTDOWN: IF THE HVAC EMERGENCY SHUTDOWN SIGNAL IS RECEIVED, THE CHW SYSTEM SHALL SHUTDOWN AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
2. HIGH/LOW CHILLED WATER SUPPLY TEMPERATURE ALARM: CHWS TEMPERATURE SENSOR SHALL BE INSTALLED AFTER THE CHILLERS AND IN A LOCATION TO PROVIDE AN ACCURATE SUPPLY WATER TEMPERATURE. IF THE CHWS TEMPERATURE (CHWS-T) IS NOT WITHIN +/- 5°F OF CHWS-T-SP FOR 5 MINUTES (ADJ.) OR LONGER, AN ALARM SHALL BE SENT TO THE DDC SYSTEM. IF CHWS TEMPERATURE IS GREATER THAN 75°F OR LESS THAN 38°F, THE CHW SYSTEM SHALL SHUTDOWN AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
3. CHILLER LOW WATER LIMIT: IF THE WATER LEVEL REACHES THE LOW LIMIT, THE CHW SYSTEM SHALL SHUTDOWN AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
4. PUMP FAILURE: IF ANY OF THE FOLLOWING OCCUR, AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
   A. PUMP COMMAND IS ON AND STATUS IS OFF
   B. PUMP VFD FAULT

CHILLER STATUS REPORT -

PROVIDE AN OPERATING STATUS REPORT FOR THE CHILLER. THE REPORT SHALL PROVIDE THE OPERATOR WITH CRITICAL CHILLER OPERATING DATA.

- COMPRESSOR ON\OFF STATUS
- COMPRESOR STARTS/RUN HOURS
- COMPRESSOR PHASE 1/2/3 PERCENT RLA - SEPARATE FOR EACH COMPRESSOR
- COMPRESSOR CURRENT DRAW - RLA PERCENT
- ACTIVE CHILLER DIAGNOSTICS OR ALARMS
- LEAVING CHILLED WATER TEMPERATURE
- ENTERING CHILLED WATER TEMPERATURE
- EVAPORATOR FLOW RATE
- CHILLED WATER SETPOINT
- REFRIGERANT TEMPERATURE EVAPORATOR - SEPARATE FOR EACH CIRCUIT
- OPERATING MODE
- CHILLER MODEL AND SERIAL NUMBER
- OUTSIDE AIR DRY BULB

FREEZE PROTECTION

BAS SHALL BE CAPABLE OF ACCEPTING AND OVERRIDE SIGNAL FROM CHILLER CONTROLLER TO ENERGIZE PUMPS FOR FREEZE PROTECTION OF CHILLER EVAPORATOR.

MI105

CEMS ENGINEERING | ARCHITECTURE
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300 N. 3rd St., Suite 110, Wilmington, NC, 28401 910.363.1640
CEMS Project No: 15102V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

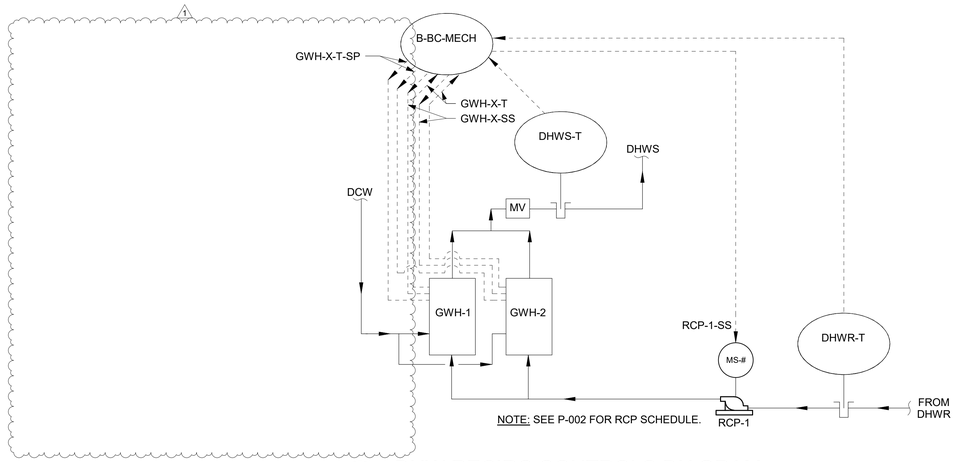
REPAIRS BEQ HP510

CHW CONTROLS AND OPERATION

DES. P. MAHAFFEY	
DR. N. FLEXNER	
CHK. P. MAHAFFEY	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC DATE	SIZE E1 / CODE IDENT NO. 80091 / NAVFAC DRAWING NO. 60024075
SATISFACTORY TO: DATE	CONSTR. CONTR. NO.: N40085-15-D-0858
	SCALE: AS NOTED / SPEC. 15-18-0042 / SHEET 117 OF 143

ISSUE DATE:15 MAY 2020

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED
1	REMOVE ALL HEAT RECOVERY SYSTEMS	08/10/20	PCM



1 DHW RECIRC CONTROLS DIAGRAM

SCALE: NOT TO SCALE

DOMESTIC HOT WATER SYSTEM (GWH-1, GWH-2, AND RCP-1):

GENERAL: THIS SYSTEM IS A DOMESTIC HOT WATER RECIRCULATION SYSTEM. IT CONSISTS OF TWO (2) GAS WATER HEATERS (GWH-X) AND RECIRCULATION PUMP (RCP-1). DDC CONTROLS SHALL MONITOR AND CONTROL GWH-1, GWH-2, AND RCP-1 OPERATION.

A PROGRAMMABLE CONTROLLER CAPABLE OF STAND-ALONE OPERATION SHALL MONITOR GWH-X AND RCP-1 OPERATIONAL STATUS (ON/OFF). THE CONTROLLER SHALL CONTROL RCP-1 OPERATION BASED ON RETURN DOMESTIC HOT WATER TEMPERATURE AND OCCUPANCY SCHEDULE. MANUAL OVERRIDE MODES SHALL BE INITIATED FROM THE DDC SYSTEM.

DURING UNOCCUPIED MODE, GWH-X SHALL BE DE-ENERGIZED AND RCP-1 SHALL BE DE-ENERGIZED.

DURING OCCUPIED MODE, GWH-X SHALL OPERATE TO MAINTAIN 140°F STORAGE WATER TEMPERATURE; THE MIXING VALVE (MV) SHALL OPERATE TO MAINTAIN 120°F DOMESTIC HOT WATER SUPPLY TEMPERATURE. RCP-1 SHALL ENERGIZE WHEN RETURN DOMESTIC HOT WATER TEMPERATURE IS LESS THAN OR EQUAL TO 112°F (ADJ.), AND SHALL BE DE-ENERGIZED WHEN RETURN DOMESTIC WATER TEMPERATURE IS GREATER THAN 117°F (ADJ.).

1 DURING MANUAL OVERRIDE MODE, GWH-X SHALL OPERATE TO MAINTAIN 140°F STORAGE WATER TEMPERATURE; RCP-1 SHALL ENERGIZE.

A HIGH TEMPERATURE ALARM SHALL INTIATE UPON HOT WATER SUPPLY TEMPERATURE ABOVE 125°F.

1

DHW RECIRC POINTS LIST

POINT NAME	HARWARE				SOFTWARE						FAILURE MODE	SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM		
DHWR-T / DHWR TEMP	•											•
DHWS-T / DHWS TEMP	•									•		•
GWH-X-SS / GWH START/STOP				•								•
GWH-X-T / GWH TEMPERATURE [°F]	•								•			•
GWH-X-T-SP / GWH TEMPERATURE SETPOINT [°F]	•											•
RCP-X-SS / RCP START/STOP				•								•

NOTES:

1. POINTS LIST IS THE MINIMUM REQUIRED FOR OPERATION. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POINTS AND MONITORING POINTS FOR A COMPLETE AND OPERABLE SYSTEM

MI108

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CEMS Project No: 15150V Project Manager: R. Alvar

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

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CAMP LEJEUNE, NORTH CAROLINA

REPAIRS BEQ HP510

DHW CONTROLS AND OPERATION

DES. P. MAHAFFEY	
DR. N. FLEXNER	
CHK. P. MAHAFFEY	
SUBMITTED BY: CEMS ENGINEERING	
DESIGN DIR.	
APPROVED: PWO OR OICC	DATE
SATISFACTORY TO:	DATE

ISSUE DATE:15 MAY 2020

SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
E1	80091	60024077A
		CONSTR. CONTR. NO.: N40085-15-D-0858
SCALE: AS NOTED	SPEC. 15-18-0042	SHEET 120 OF 143

5. Delete Wage Determination, General Decision Number: NC200038 dated 01/03/2020 and replace with Wage Determination, General Decision Number: NC200038 dated 08/14/2020.

"General Decision Number: NC20200038 08/14/2020

Superseded General Decision Number: NC20190038

State: North Carolina

Construction Type: Building

County: Onslow County in North Carolina.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate,if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2020
1	08/14/2020

* IRON0848-005 07/01/2020

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 26.00	15.80

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* PLUM0421-003 07/01/2019

	Rates	Fringes
PIPEFITTER	$ 28.50	12.41

SUNC2011-019 08/24/2011

	Rates	Fringes
BRICKLAYER	$ 19.00	0.00
CARPENTER (Drywall Hanging Only)	$ 13.83	0.00
CARPENTER (Form Work Only)	$ 13.38	1.80
CARPENTER, Excludes Drywall Hanging, and Form Work	$ 16.39	4.26
CEMENT MASON/CONCRETE FINISHER	$ 15.80	0.00
ELECTRICIAN	$ 20.64	6.68
HVAC MECHANIC (HVAC Duct Installation Only)	$ 17.37	1.82
LABORER: Common or General	$ 11.13	0.32
LABORER: Landscape & Irrigation	$ 9.13	0.28

LABORER: Pipelayer.....$ 13.35 2.80

LABORER: Mason
Tender-Brick/Cement/Concrete.....$ 12.00 0.00

OPERATOR:
Backhoe/Excavator/Trackhoe.....$ 18.47 2.41

OPERATOR: Bulldozer.....$ 16.00 1.87

OPERATOR: Crane.....$ 19.77 4.48

OPERATOR: Forklift.....$ 13.86 0.00

OPERATOR: Grader/Blade.....$ 15.72 1.49

OPERATOR: Loader.....$ 16.17 0.25

PAINTER: Brush, Roller and
Spray.....$ 12.35 0.00

PLUMBER.....$ 18.48 3.93

ROOFER.....$ 11.75 1.06

SHEET METAL WORKER, Excludes
HVAC Duct Installation.....$ 15.81 1.40

TRUCK DRIVER.....$ 13.38 1.48

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours

they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material,

etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION"

6. All other terms and conditions remain unchanged.