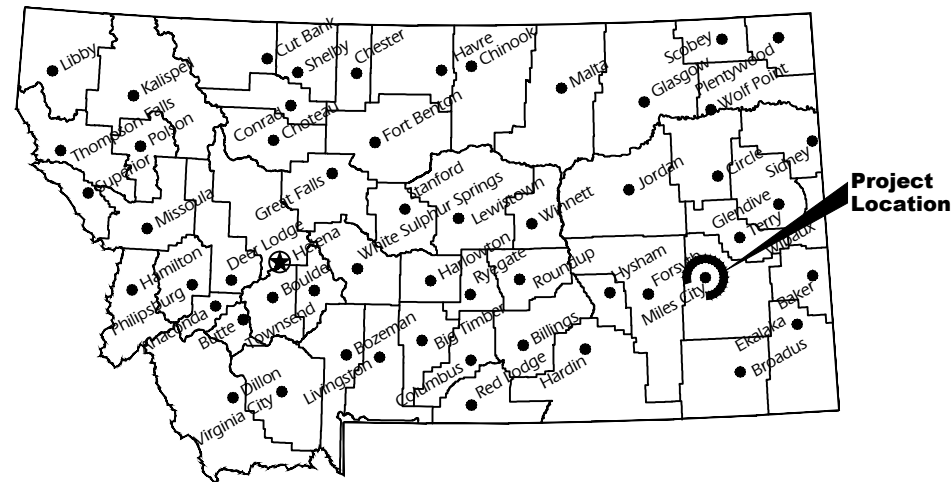


Montana Fish, Wildlife & Parks Region 7 Headquarters Boiler Replacement

Miles City, Custer County, Montana

FWP Project No. - #7219133



Location Map

No Scale



Vicinity Map

No Scale

North



**MONTANA FISH, WILDLIFE AND PARKS
DESIGN AND CONSTRUCTION**

MAILING ADDRESS:

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HELENA, MT 59620-0701

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HELENA, MT 59601

DRAWING INDEX

Sheet	Description
CVR	Cover
ME1.1	Demo Mechanical
ME2.1	New Mechanical
ME3.1	Mechanical Schedules



Kelly Brown
DRAWN BY: Sept. 23, 2022
DATE:

APPROVED BY: DATE:

APPROVED BY: DATE:



**MONTANA FISH,
WILDLIFE & PARKS**

Region 7 Headquarters Boiler Replacement
Cover Sheet

SHEET: 1 of 4

LINETYPE LEGEND

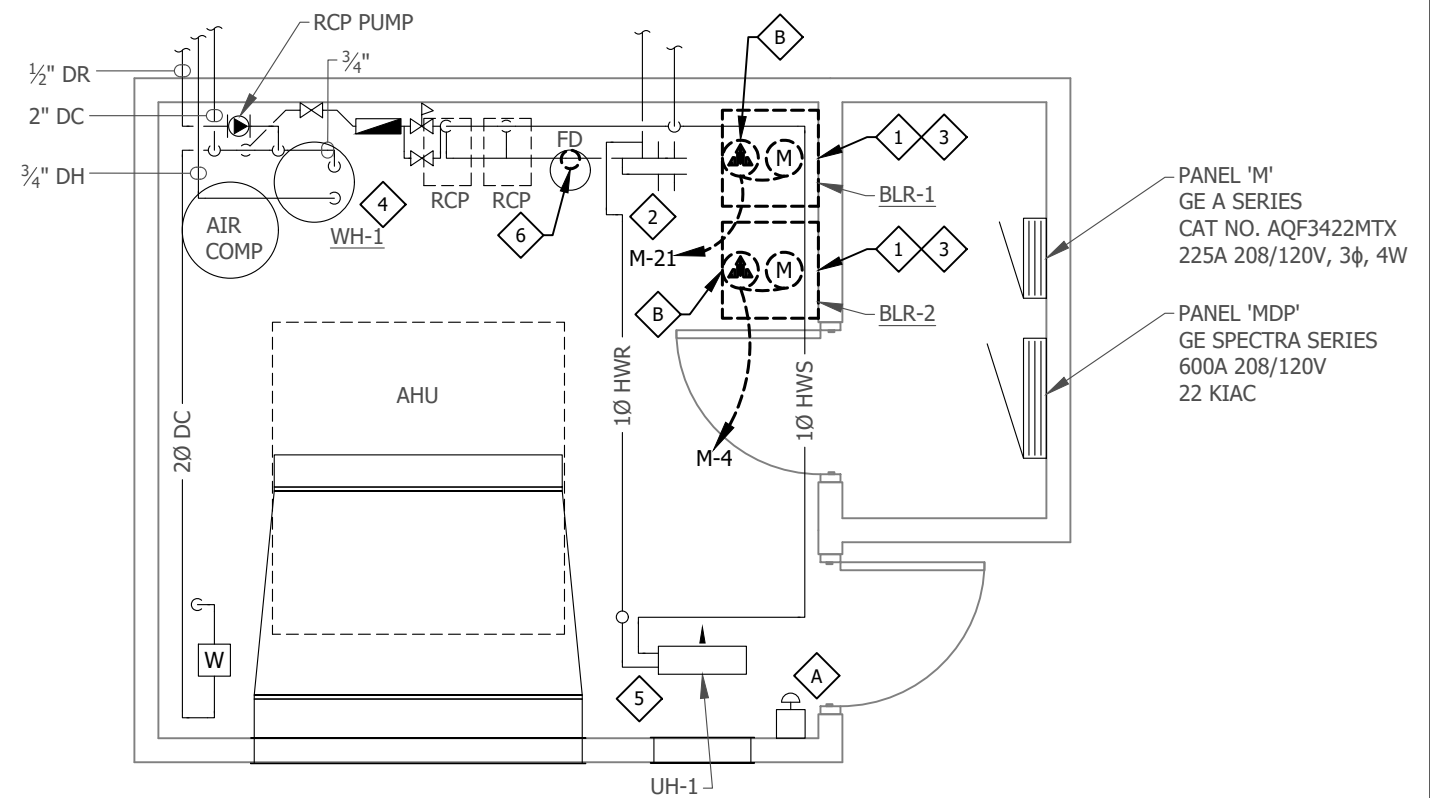
- DARK DASHED LINES, EXISTING TO BE REMOVED.
 _____ LIGHT SOLID LINES, EXISTING TO REMAIN.

MECHANICAL DEMO NOTES

- 1 REMOVE WALL MOUNTED BOILER.
- 2 SUPPLY/RETURN MANIFOLD, 2" WITH (2) SETS OF 1½" CONNECTIONS FOR BOILER PIPING. MANIFOLD MAXIMUM SEPARATION 12". HEADER TO BE REUSED FOR NEW EQUIPMENT.
- 3 DISCONNECT 1" GAS TO EACH INDIVIDUAL BOILER.
- 4 ELECTRIC WATER HEATER TO REMAIN.
- 5 SPACE HYDRONIC UNIT HEATER TO REMAIN.
- 6 REPLACE AIR SCOOP AIR VENT WITH TACO 409 AIR VENT.

ELECTRICAL DEMO NOTES

- A BOILER SHUT DOWN SWITCH TO REMAIN.
- B DISCONNECT BOILER WITH DEDICATED BOILER PUMP FOR EQUIPMENT REPLACEMENT.



MECHANICAL / ELECTRICAL
 PROFESSIONAL ENGINEERS
 1639 AVIE D STE 7-C, BILLINGS MT 59102
 PHONE: 406.252.3237 FAX: 406.252.3276
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#	REVISION	DATE	BY

**REGION 7 HEADQUARTERS
 BOILER REPLACEMENT**
 MILES CITY, MONTANA

BOILER ROOM
 DEMO
 MECHANICAL

DRAWN: KGB
 DESIGNED: JAG
 CHECKED: JAG

#22046

09/23/22

ME1.1



BOILER ROOM - DEMO MECHANICAL

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



LINETYPE LEGEND

- DARK SOLID LINES, NEW WORK.
- LIGHT SOLID LINES, EXISTING TO REMAIN.

MECHANICAL DEMO NOTES

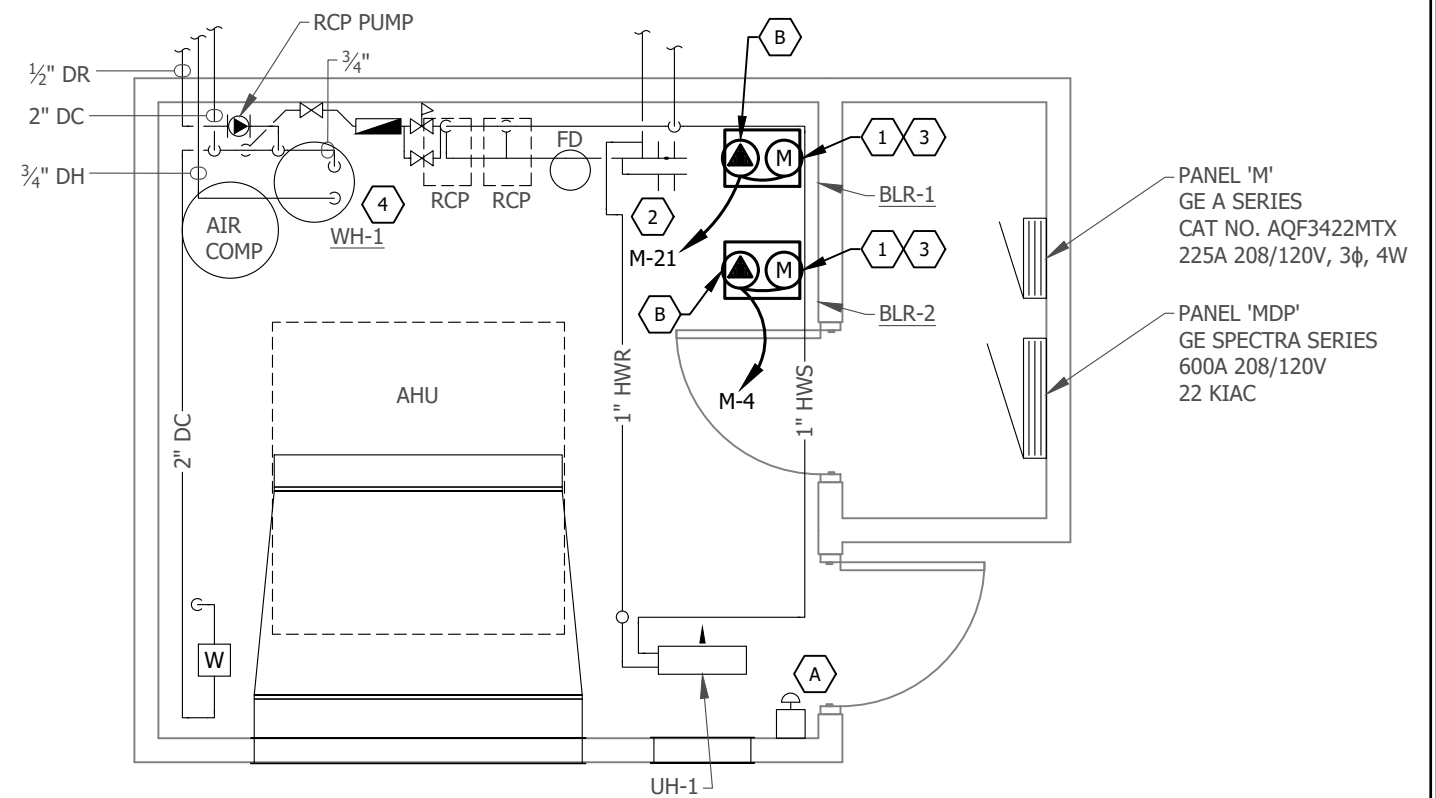
1. INSTALL NEW WALL MOUNTED BOILER AS PER DETAIL. EXTEND VENT AND COMBUSTION AIR PIPING TO NEW VERTICAL CONCENTRIC TERMINATION THROUGH ROOF. RE-USE OF EXISTING ROOF PENETRATION ACCEPTABLE. EXTEND EXISTING DDC CONTROLS TO NEW BOILER BMS CARD.
2. EXISTING SUPPLY/RETURN MANIFOLD, 2" WITH (2) SETS OF 1½" CONNECTIONS FOR BOILER PIPING. MANIFOLD MAXIMUM SEPARATION 12". SEE BOILER DETAIL FOR NEAR BOILER PIPING.
3. EXTEND 1" GAS TO EACH INDIVIDUAL BOILER. REDUCE GAS PIPING TO ¾" AFTER INDIVIDUAL UNIT DRIP LEG AND PLUG VALVE.
4. WATER HEATER TO REMAIN.

GENERAL NOTES:

1. EXISTING BUILDING DDC SYSTEM HONEYWELL CONTROL SYSTEM.

ELECTRICAL DEMO NOTES

- A. BOILER SHUT DOWN SWITCH, WIRE IN SERIES TO SHUT DOWN ALL BOILERS UPON ACTIVATION OF SWITCH.
- B. NEW MODULAR BOILER WITH DEDICATED BOILER PUMP. PUMP WIRED THROUGH BOILER CONTROLLER. EXTEND EXISTING CIRCUIT AS REQUIRED TO NEW EQUIPMENT.



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**REGION 7 HEADQUARTERS
BOILER REPLACEMENT**
MILES CITY, MONTANA

BOILER ROOM
NEW
MECHANICAL

DRAWN: KGB
DESIGNED: JAG
CHECKED: JAG

#22046

09/23/22

ME2.1



BOILER ROOM - NEW MECHANICAL

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



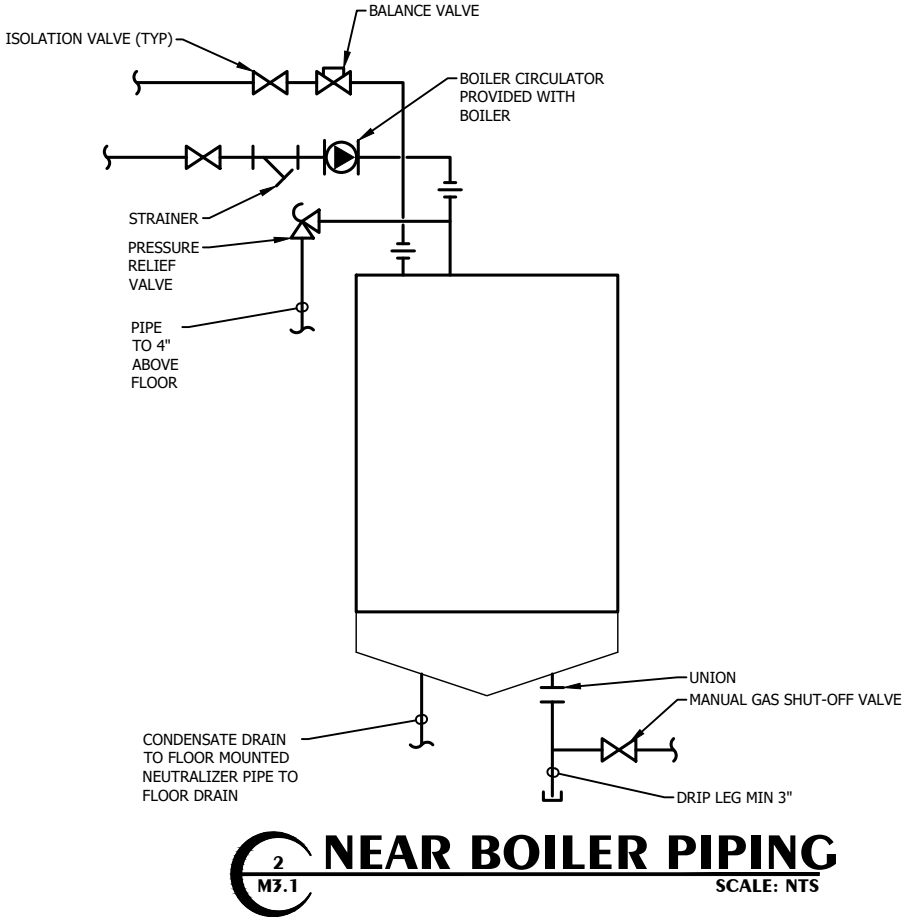
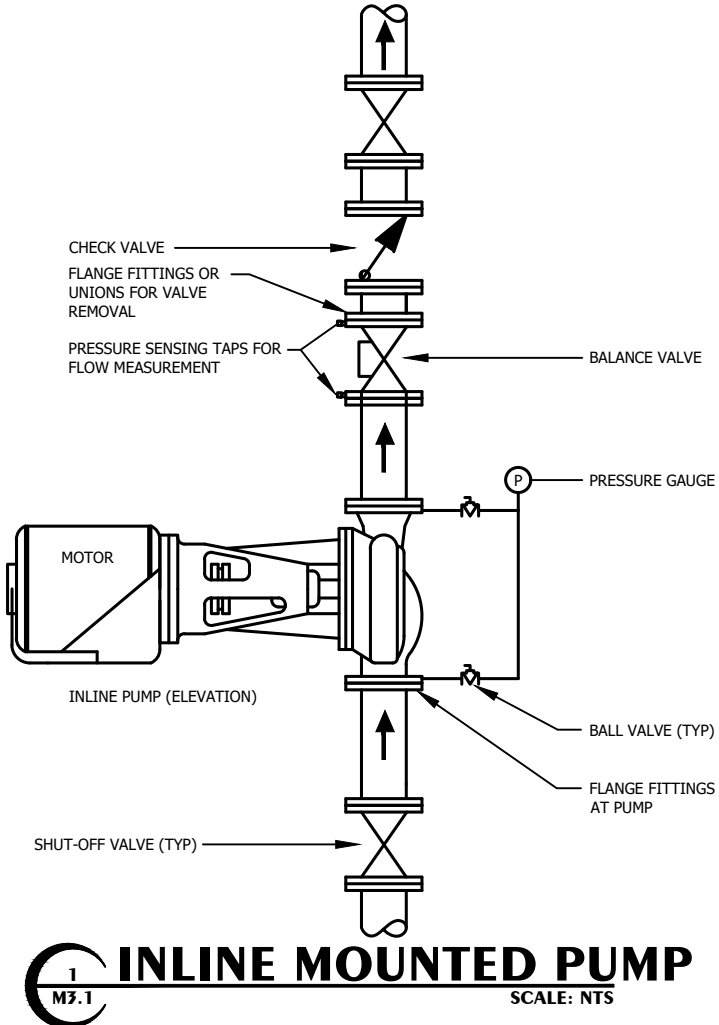
BOILER SCHEDULE												
MARK	MANUFACTURER & MODEL NO.	SEA LEVEL A.G.A. RATING (MBH)		BOILER TYPE	EFF	FUEL TYPE	FLUE Ø	DIMENSIONS				REMARKS
		INPUT	OUTPUT					LENGTH	WIDTH	HEIGHT	MOUNT HEIGHT	
BOILER 1&2	LOCHINVAR WHB	285	264	CONDENSING	95	NAT GAS	3"/3"	14 1/8"	18 3/4"	41 1/4"	60" AFF	(2) REQUIRED

ACCESSORIES FOR INDIVIDUAL BOILERS:

- ECM VARIABLE SPEED BOILER CIRCULATING PUMP.
- CONDENSATE NEUTRALIZER KIT.
- CSD-1 COMPLIANT WITH MANUAL RESET HIGH LIMIT.
- OUTDOOR AIR SENSOR RESET SCHEDULE 110°F @ 60°F 180°F @ 10°F OR BELOW.
- 30 PSI PRESSURE RELIEF VALVE.
- BMS COMMUNICATION CARD.

CONTROL EQUIPMENT SCHEDULE																
EQPT FURNISHED BY CONTR. SEE EQPT SCHED. &/OR SPEC.				STARTERS AND CONTROLS								AUXILIARY CONTROL EQUIPMENT				REMARKS
UNIT	MOTOR			INTEGRAL WITH EQPT	MANUFACTURER & TYPE	BRK/ FUSED	NEMA ENCLOS	NEMA SIZE	POLES	SWITCH	PILOT	CONTR'S: TC-TEMP CONTROL EC-ELEC, MC-MECH GC-GEN, ES-EQPT SUPPLIER				
	HP/ LOAD	VOLT	Ø									ITEM	FURN	INST	CONN	
BLR-1	12A	120	1	DISC	-	-	-	-	-	-	-	MANF	MC	MC	EC	(2)
BLR-2	12A	120	1	DISC	-	-	-	-	-	-	-	MANF	MC	MC	EC	(2)
CP-BLR1	1/2	120	1	-	CERUS BAS-1P (3)	-	1	0	1	H/O/A	ON W/ LOAD	BOILER CONTROL	MC	EC	EC	(1)
CP-BLR2	1/2	120	1	-	CERUS BAS-1P (3)	-	1	0	1	H/O/A	ON W/ LOAD	BOILER CONTROL	MC	EC	EC	(1)

(1) WIRE THROUGH BOILER CONTROLLER
(2) WIRE UNITS FOR LEAD/LAG OPERATION AND OUTDOOR AIR. RESET PER MANUFACTURER GUIDELINES.
(3) IF EXISTING REUSING STARTERS ACCEPTABLE.



REVISION	DATE	BY
#		

**REGION 7 HEADQUARTERS
BOILER REPLACEMENT**
MILES CITY, MONTANA

MECHANICAL SCHEDULES

DRAWN: KGB
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09/23/22

ME3.1