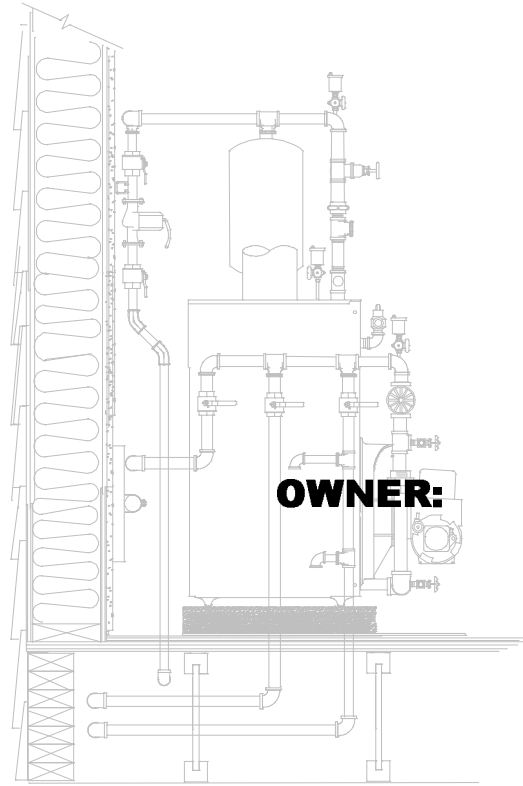


PROJECT:

Convert Old High School Classrooms Into a Community Bingo Hall



OWNER:

PILOT STATION INCORPORATED

ART HECKMAN

**PO BOX 5059
PILOT STATION, ALASKA 99650
907 549 3517**

CONTENTS

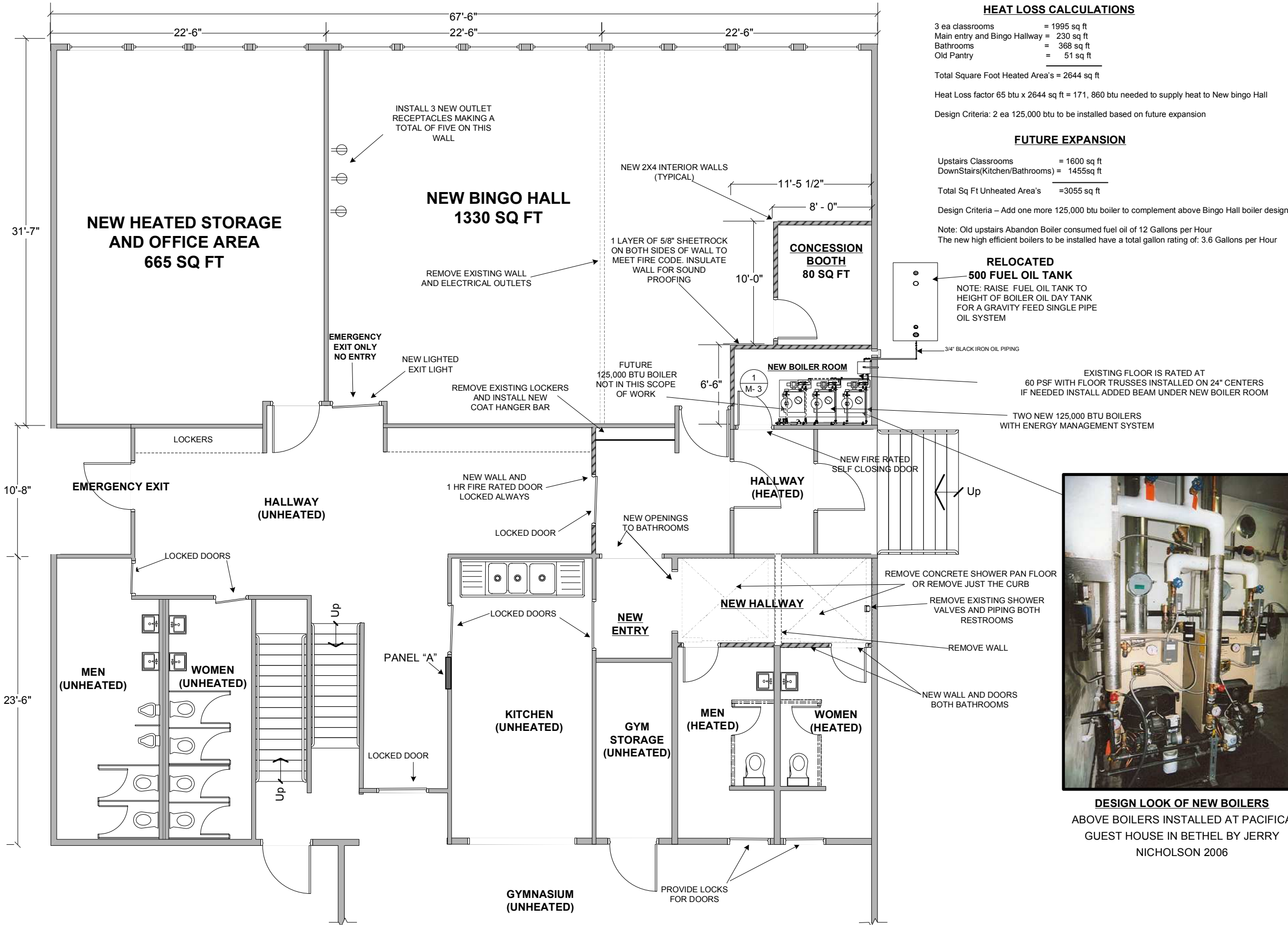
A-1	GENERAL SCOPE OF WORK
M-1	EXISTING HEATING PIPING MAINS & BRANCHES
M-2	NEW REVISED HEATING PIPING MAINS
M-3	NEW BOILER ROOM TOP VIEW
M-4	NEW BOILER RM SIDE VIEW & CHIMNEY
M-5	NEW BOILER ROOM FRONT VIEW
M-6	NEW ENERGY MANAGEMENT SYSTEM
M-7	NEW OIL DAY TANK & EQUIPMENT SCHEDULE

**GENERAL
CONSULTANT:**


JERRY NICHOLSON
 MECHANICAL ADMINISTRATOR
 dba **NUSHAGAK CONSULTANTS**
 907 277 1864

APRIL 2007





HEAT LOSS CALCULATIONS

3 ea classrooms = 1995 sq ft
 Main entry and Bingo Hallway = 230 sq ft
 Bathrooms = 368 sq ft
 Old Pantry = 51 sq ft

Total Square Foot Heated Area's = 2644 sq ft

Heat Loss factor 65 btu x 2644 sq ft = 171, 860 btu needed to supply heat to New bingo Hall

Design Criteria: 2 ea 125,000 btu to be installed based on future expansion

FUTURE EXPANSION

Upstairs Classrooms = 1600 sq ft
 DownStairs(Kitchen/Bathrooms) = 1455sq ft

Total Sq Ft Unheated Area's = 3055 sq ft

Design Criteria - Add one more 125,000 btu boiler to complement above Bingo Hall boiler design

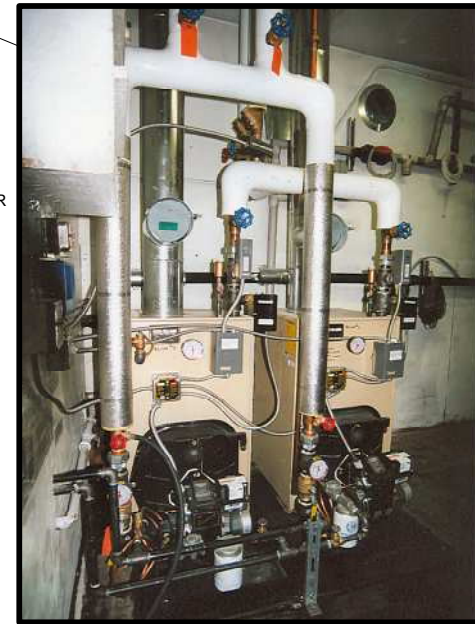
Note: Old upstairs Abandon Boiler consumed fuel oil of 12 Gallons per Hour
 The new high efficient boilers to be installed have a total gallon rating of: 3.6 Gallons per Hour

RELOCATED 500 FUEL OIL TANK

NOTE: RAISE FUEL OIL TANK TO HEIGHT OF BOILER OIL DAY TANK FOR A GRAVITY FEED SINGLE PIPE OIL SYSTEM


EXISTING FLOOR IS RATED AT 60 PSF WITH FLOOR TRUSSES INSTALLED ON 24" CENTERS IF NEEDED INSTALL ADDED BEAM UNDER NEW BOILER ROOM

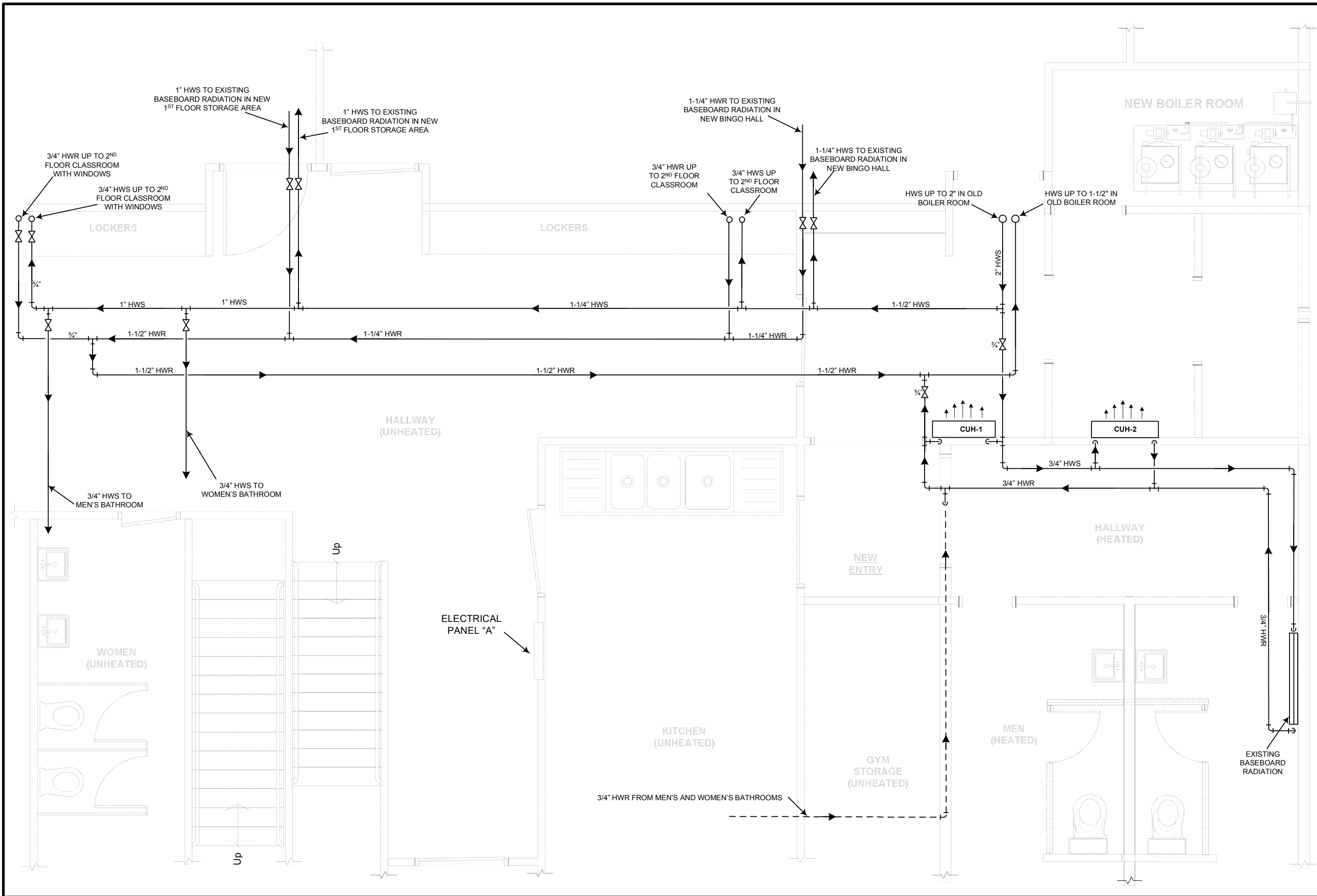
TWO NEW 125,000 BTU BOILERS WITH ENERGY MANAGEMENT SYSTEM





DESIGN LOOK OF NEW BOILERS
 ABOVE BOILERS INSTALLED AT PACIFICA GUEST HOUSE IN BETHEL BY JERRY NICHOLSON 2006

SCOPE OF WORK - REMODEL BUILDING FIRST FLOOR PLAN

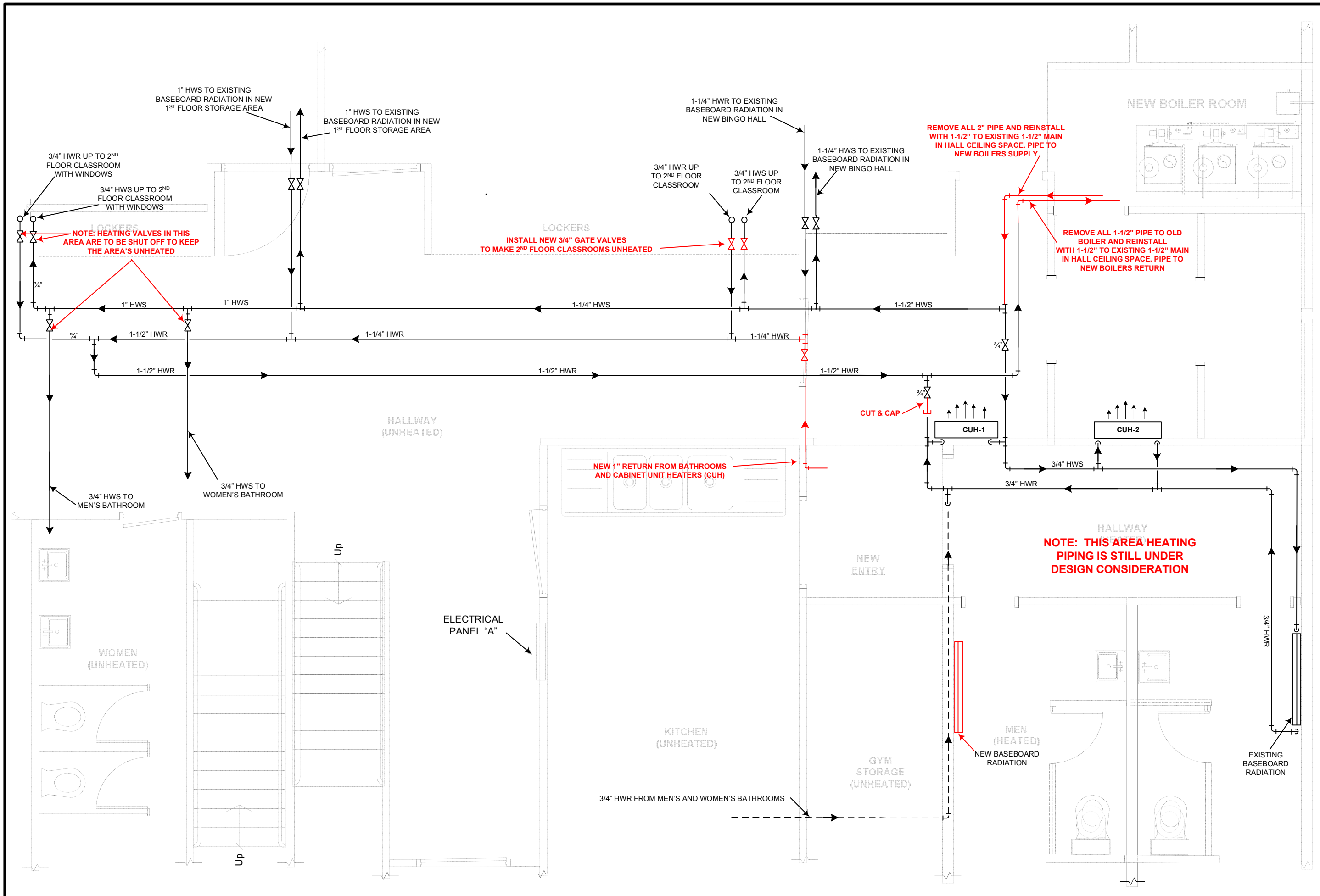
PROJECT	CONVERT OLD H.S. CLASSROOMS INTO BINGO HALL	
	OWNER	PILOT STATION INCORPORATED
SYSTEM	GENERAL	None
	REVISION	None
REVISION	SCOPE OF WORK DETAIL	Revision: None
	GENERAL CONSULTANT	100% INDIAN OWNED COMPANY
 NU SHAGAK CONSULTANTS 225 EAST FIREWEED ANCHORAGE, ALASKA 907 277 1864 jerrynicholson@alaska.net		
Scale: 1/8" = 1" - 0"		
Drawn by: jn		
Date: 4/1/07		
Job No. Pilot.H.S. 07		
Contents: SCOPE		
Category	Sheet	
A	1	of 1




PROJECT: CONVERT OLD H.S. CLASSROOMS INTO BINGO HALL	
OWNER: PILOT STATION INCORPORATED	
SYSTEM: EXISTING	REVISION: None
REVISION: None	REVISION: None

 GENERAL CONSULTANT 100% INDIAN OWNED COMPANY	 NUSHAGAK CONSULTANTS 225 EAST FIREWEED ANCHORAGE, ALASKA 907 277 1864 jerryincholson@alaska.net
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Scale: 1/8" = 1'-0"	
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Drawn by: jn	
Date: 4/1/07	
Category	Sheet
M 1	OF 7

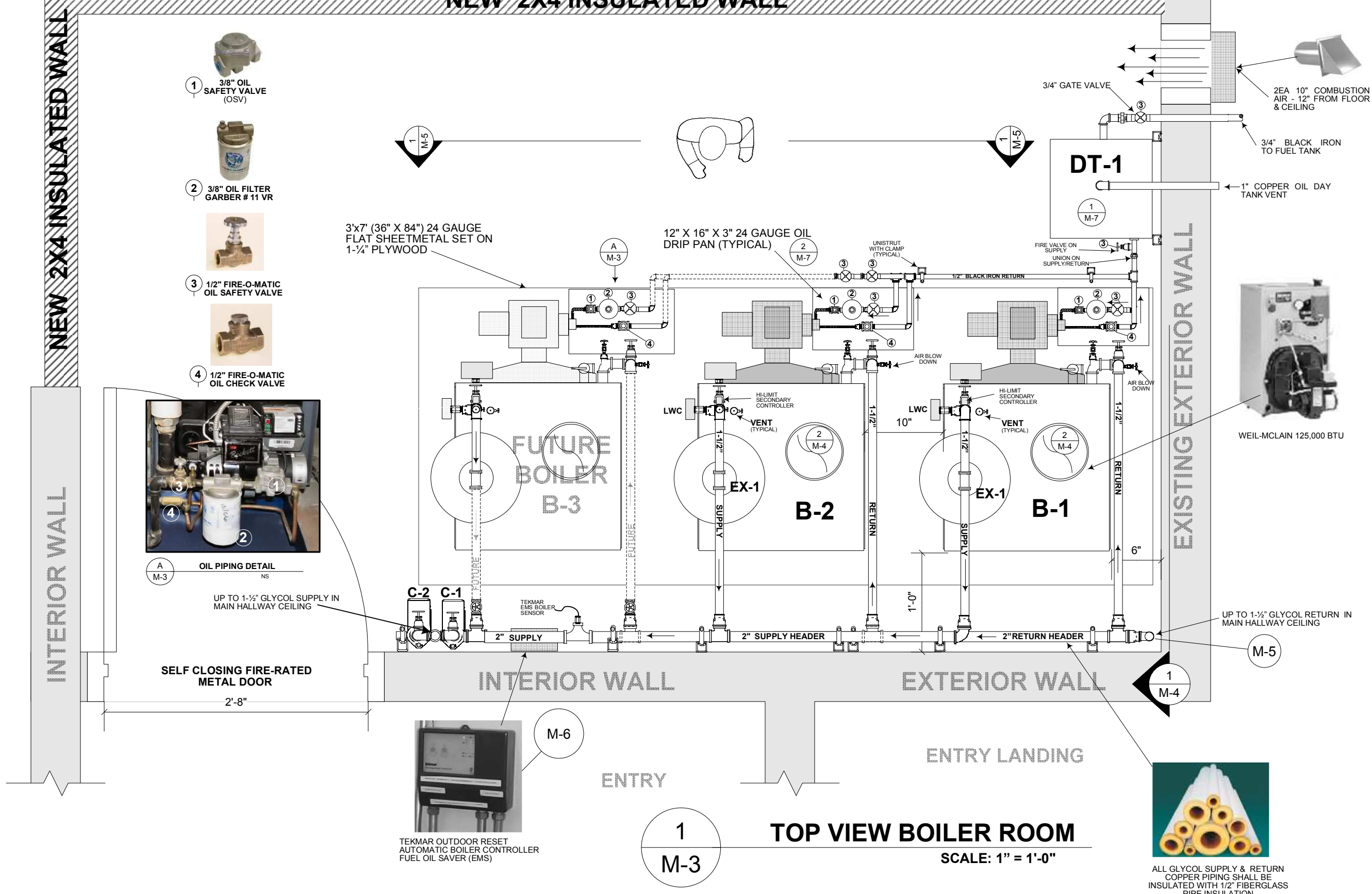


PROJECT CONVERT OLD H.S. CLASSROOMS INTO BINGO HALL	
OWNER	PILOT STATION INCORPORATED
SYSTEM	NEW BOILERS
REVISION	None
REVISION: None	

GENERAL CONSULTANT	
100% INDIAN OWNED COMPANY	
	
NUSHAGAK CONSULTANTS 225 EAST FIREWEED ANCHORAGE, ALASKA 907 277 1864 jerry@nushagak.com	

Scale: 1/8" = 1"
0"
Drawn by: jn
Date: 4/1/07
Category
Sheet
M 2 OF 7

BINGO HALL
NEW 2X4 INSULATED WALL



- 1 3/8" OIL SAFETY VALVE (OSV)
- 2 3/8" OIL FILTER GARBER # 11 VR
- 3 1/2" FIRE-O-MATIC OIL SAFETY VALVE
- 4 1/2" FIRE-O-MATIC OIL CHECK VALVE

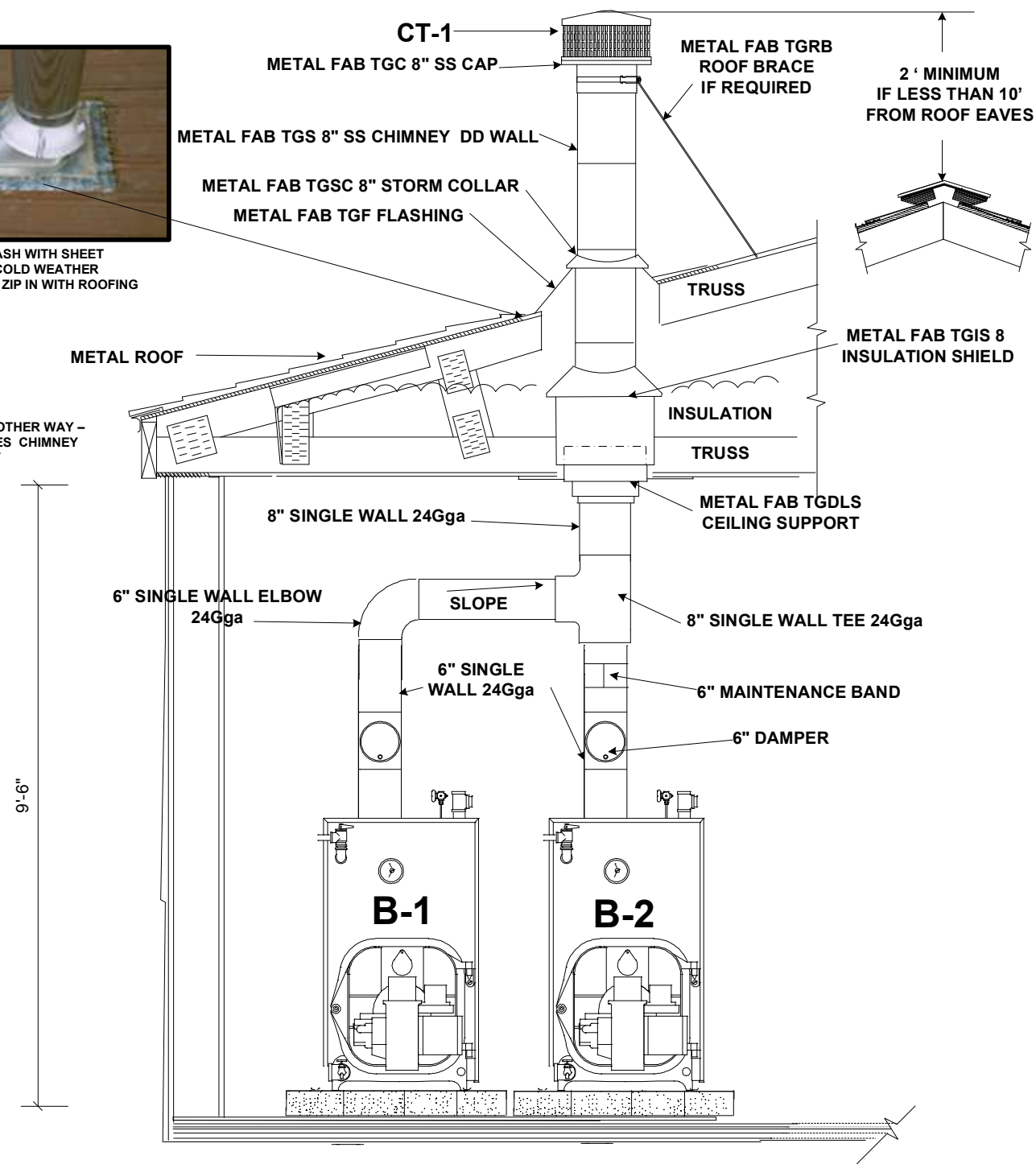


PROJECT CONVERT OLD H.S. CLASSROOMS INTO BINGO HALL		OWNER PILOT STATION INCORPORATED	
SYSTEM NEW BOILERS		REVISION None	
REVISION None		REVISION None	
MECHANICAL CONSULTANT 100% INDIAN OWNED COMPANY		BOILER ROOM TOP VIEW	
NU SHAGAK CONSULTANTS 225 EAST FIREWED ANCHORAGE, ALASKA 907 277 1864 jerrynicholson@alaska.net			
Scale: 1" = 1'-0"			
Drawn by: jn			
Date: 4/1/07			
Job No. Pilot.H.S. 07			
Contents: HEATING			
Category	Sheet		
M	3 OF ?		



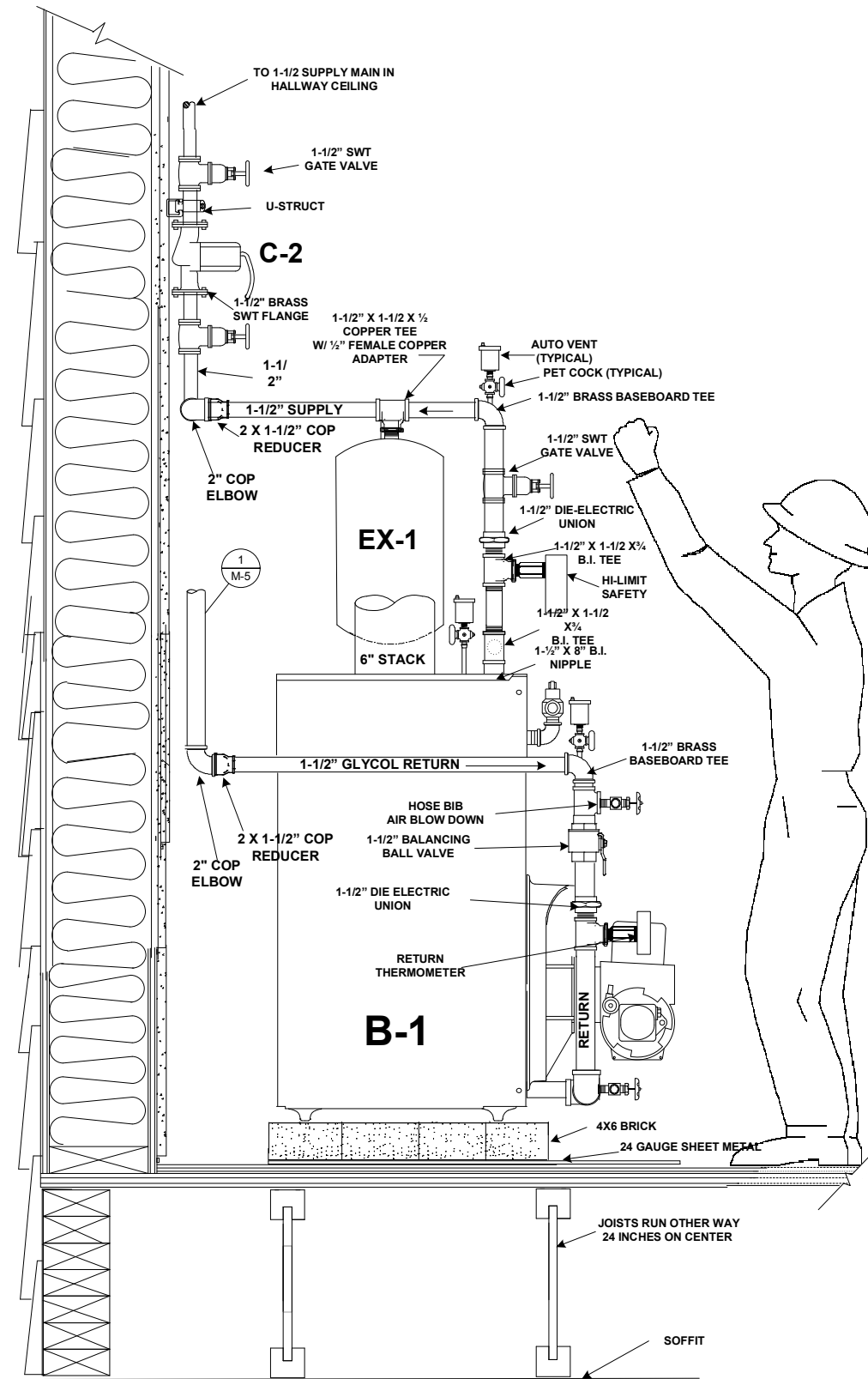
COUNTERFLASH WITH SHEET LEAD - USE COLD WEATHER SILICON AND ZIP IN WITH ROOFING SCREWS

NOTE: ROOF SLOPE OTHER WAY - DRAWING DELINEATES CHIMNEY INSTALLATION ONLY




2
M-4

CHIMNEY PENETRATION & BREECHING DETAIL
N.T.S

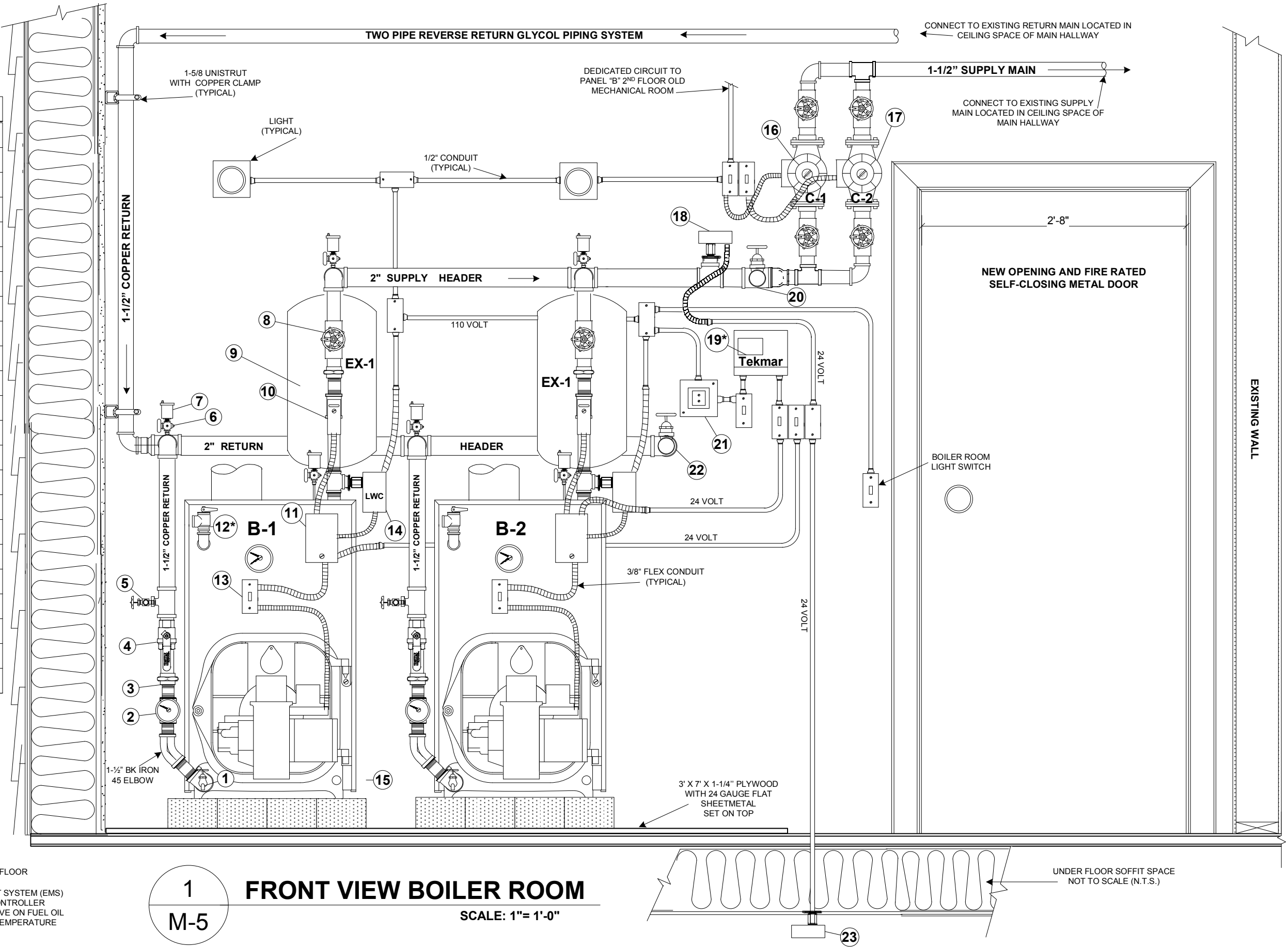


1
M-4

SIDE VIEW MECHANICAL ROOM

PROJECT	CONVERT OLD H.S. CLASSROOMS INTO BINGO HALL	
	OWNER	PILOT STATION INCORPORATED
SYSTEM	NEW BOILERS	
	REVISION	None
REVISION: None		Revision: None
MECHANICAL CONSULTANT	100% INDIAN OWNED COMPANY	
	 NU SHAGAK CONSULTANTS 225 EAST FIREWED ANCHORAGE, ALASKA 907 277 1864 jerrynicholson@alaska.net	
Scale: 1" = 1'-0"		
Drawn by: jn		
Date: 4/13/07		
Job No. Pilot.H.S. 07		
Contents: HEATING		
Category	Sheet	
M	4	OF 7

PARTS SCHEDULE	
1	BOILER DRAIN
2	THERMOMETER
3	DIE-ELECTRIC UNION
4	SWT BALANCE VALVE
5	HOSE BIB
6	PET COCK
7	AUTO VENT
8	SWT GATE VALVE
9	EXPANSION TANK
10	2 ND HI LIMIT CONTROL
11	MAIN BOILER CONTROL
12	RELIEF VALVE
13	BOILER ON/OFF
14	LOW WATER CUTOFF
15	4X6 BRICK
16	MAIN CIRCULATOR
17	SPARE CIRC
18	TEMPERATURE SENSOR
19	EMS CONTROLLER
20	FUTURE SUPPLY
21	TRANSFORMER
22	FUTURE RETURN
23	TEMPERATURE SENSOR




1
M-5

FRONT VIEW BOILER ROOM

SCALE: 1" = 1'-0"

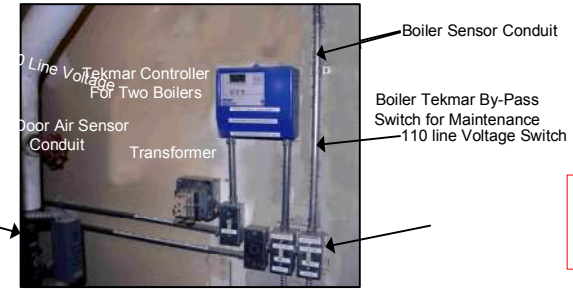
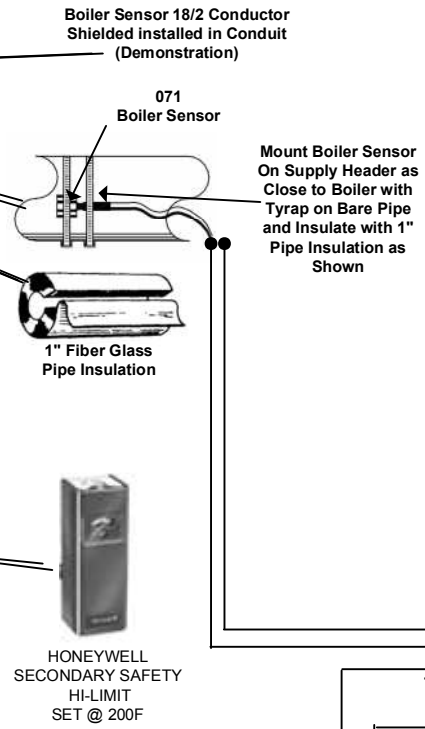
- 12* PIPED TO WITHIN 6" OF FLOOR
- 19* ENERGY MANAGEMENT SYSTEM (EMS) AUTOMATIC BOILER CONTROLLER DESIGNED TO CONSERVE ON FUEL OIL BASED ON OUTDOOR TEMPERATURE

PROJECT CONVERT OLD H.S. CLASSROOMS INTO BINGO HALL	
OWNER PILOT STATION INCORPORATED	
SYSTEM NEW BOILERS	REVISION None
BOILER ROOM FRONT VIEW	
Revision: None	

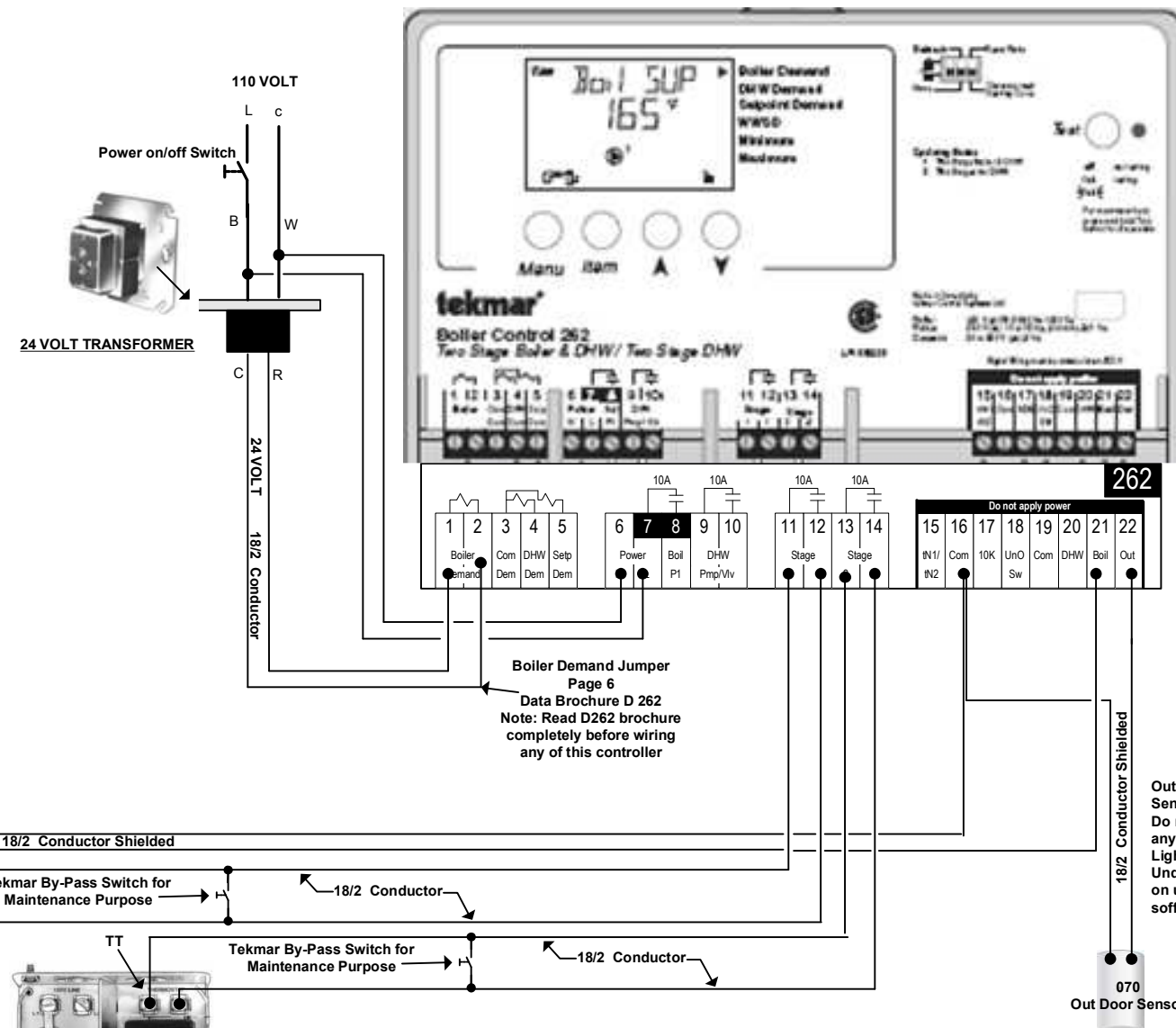
MECHANICAL CONSULTANT	
100% INDIAN OWNED COMPANY	
 NU SHAGAK CONSULTANTS 225 EAST FIREWED ANCHORAGE, ALASKA 907 277 1864 jerrynicholson@alaska.net	
Scale: 1" = 1'-0"	
Drawn by: jn	
Date: 4/15/07	
Job No. Pilot.H.S. 07	
Contents: HEATING	
Category	Sheet
M	5 OF 7



DUAL BOILERS – PILOT STATION NATIVE STORE
 For Demonstration Purpose Only For This Project Showing Proper Installation For A Commercial Installation, e.g. Conduit Above and



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SEQUENCE OF OPERATION

Utilizing Boiler tekmar temperature sensor (071) and the outside air temperature sensor (070) the tekmar controller (256) is programmed to stage the firing of the boiler to meet load requirements. The Tekamr (256) resets the heating water temperature in direct porportion to the out door temperature. Reset is automatic adjustable and is set for 190 F degrees at -10 F Degrees, modulating to 140F degrees at 55F degrees outside air temperature (approximate). Warm Weather Shutdown (WWS) shall shut down the boiler at 68F Outside Air temperature or by a change of setpoint WWS at the tekmar controller. See Pages 11-13.

DESIGN ASSUMPTIONS

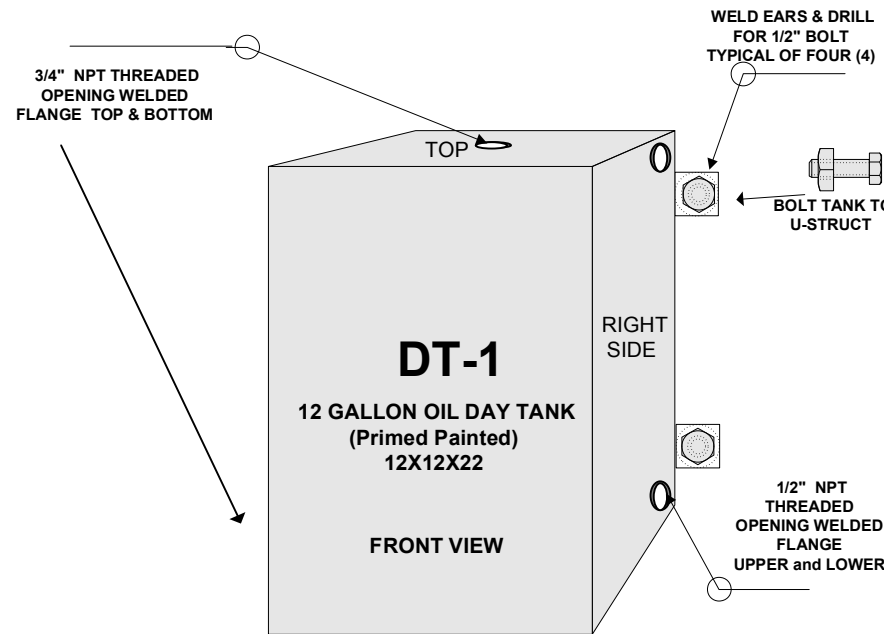
For this application, zone valves, thermostats and circulator pump are completely independent from boiler and tekmar controller.

It is assumed that during high setpoint temperature operation 160F to 190F that at least one zone and circulator will be operating for Boiler Purge. This allows for purging of excess heat out of the boiler after the burner is shut off. This also helps to prevent the water in the boiler from flashing into steam after the boiler is shut off. The owner is to be cautioned to monitor the boiler during high set point temperature operation and make corrections if boiler purge does not occur.

PROJECT	CONVERT OLD H.S. CLASSROOMS INTO BINGO HALL	
	OWNER PILOT STATION INCORPORATED	
SYSTEM	NEW BOILERS	ENERGY MANGEMENT & DAY TANK
	REVISION	REVISION: None
CONSULTANT	100% INDIAN OWNED COMPANY	
	 NUSHAGAK CONSULTANTS 225 EAST FIREWED ANCHORAGE, ALASKA 907 277 1864 jerrynicholson@alaska.net	
Scale:	1" = 1'- 0"	
Drawn by:	jn	
Date:	4/16/07	
Job No.:	Pilot.H.S. 07	
Contents:	HEATING	
Category:	Sheet	
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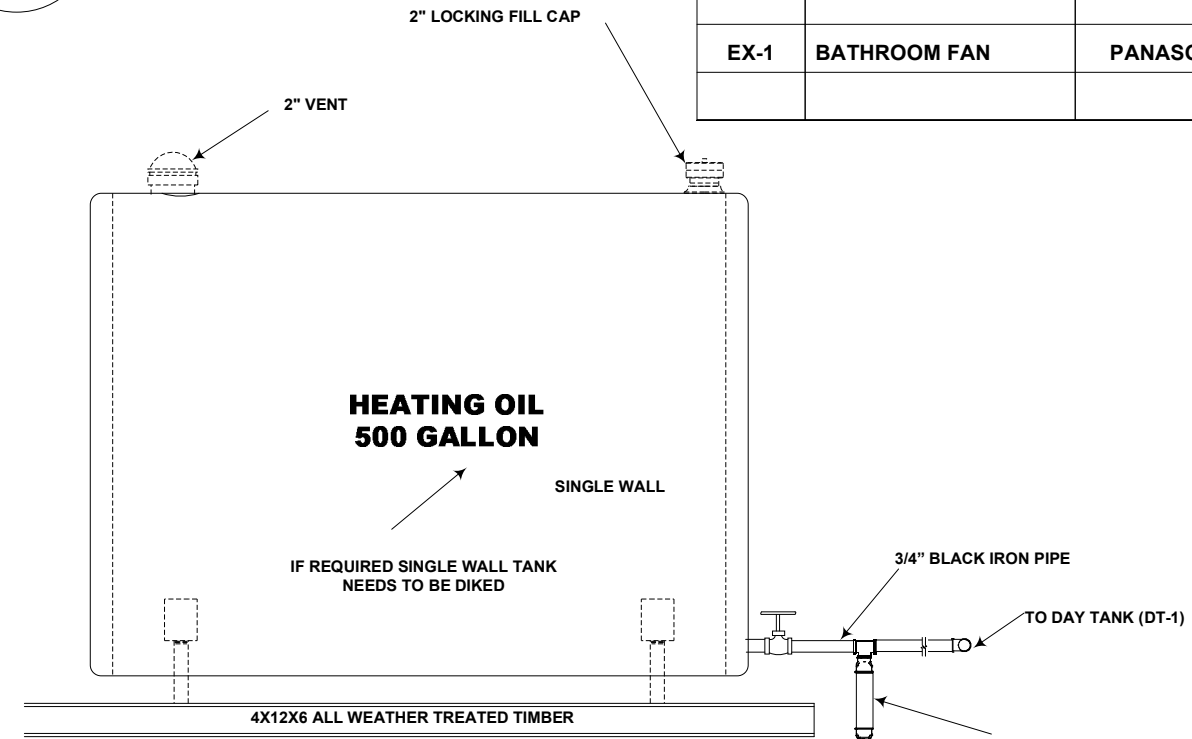
EQUIPMENT SCHEDULE

ITEM	EQUIPMENT	MANUFACT.	P/N #	SIZE	CAPACITY	ELECTRICAL	REMARKS
B-1, 2	BOILER	WEIL-McLAIN	WGO -4	20W x 20W	126 MBH NET	1/8HP 120V 6 AMPS	BECKETT AFG OIL BURNER 50/50 GLYCOL DOW FROST
CT-1	CHIMNEY TOP	METALFAB	TYPE L	8"			SPARK ARRESTOR DOWN DRAFT PREVENTER BLADDER
EX-1	EXPANSION TANK	AMTROL	#60	23X11D"	7.6 GAL.		
LWC	LOW WATER CUTOFF	McDONNELL/MILLER	PS-850	3/4 NPT	ELECTRONIC	120V 5.8 AMP	
LH-1	HI LIMIT SAFETY	HONEYWELL	L6006A			110 VOLT	SECONDARY SAFETY
C-1-2	CIRCULATOR PUMP	GRUNDFOS	UP 26-96F	1-1/2" SWT FLGD	25 GPM @ 30' HD	1PH 1/12HP 1.7 AMP	MAIN CIRC AND SPARE SUPPLIED WITH BOILER FOR HW-1
C-3	CIRCULATOR PUMP	TACO			0-10GPM@ 9' HD		
T-2	THERMOSTAT	HONEYWELL	T100A1028			115/1/60	KITCHEN AND ENTRY
MT-1	THERMOSTAT	HONEYWELL	H1438A1021	Mechanical T-stat			Bathroom and Mechanical BOILER ROOM PRE-HEAT TANK
DT	DAY TANK	Greer Tank		12X12X20	12 GAL		
	OIL FUEL TANK	PILOT			500 GALLON		RELOCATED FROM STORE
BB-1	BASEBOARD FIN TUBE		SCE-632	SYSTEM 6	10MBH @200F 1GPM	1/10HP 115/1/60 2.2 AMP	ENTRY Light Commercial Baseboard
EX-1	BATHROOM FAN	PANASONIC	FV-11VQ3	10X10	110 CFM	115/1/60	LOW NOISE CEILING MOUNT 0.8 SONES

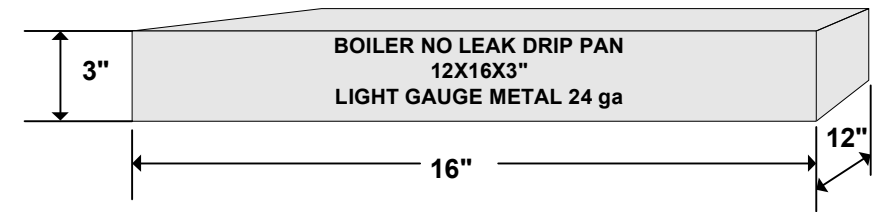


TEST TO 10 lb AIR PRESSURE

1
M-7
OIL DAY TANK
SCALE: N/A



3
M-7
SIDE VIEW SINGLE WALL TANK
SCALE: N/A



2
M-7
DRIP PAN
SCALE: N/A

PROJECT CONVERT OLD H.S. CLASSROOMS INTO BINGO HALL

OWNER PILOT STATION INCORPORATED

MECHANICAL CONSULTANT IAPMO MEMBER
NU SHAGAK CONSULTANTS
225 EAST FIREWED
ANCHORAGE, ALASKA
907 277 1864
jerry nicholson@alaska.net

100% INDIAN OWNED COMPANY

SYSTEM NEW BOILERS
REVISION None

REVISION: None

Scale: 1" = 1'-0"

Drawn by: jn

Date: 4/1/07

Job No. Pilot.H.S. 07

Contents: HEATING

Category Sheet

M 7 OF 7