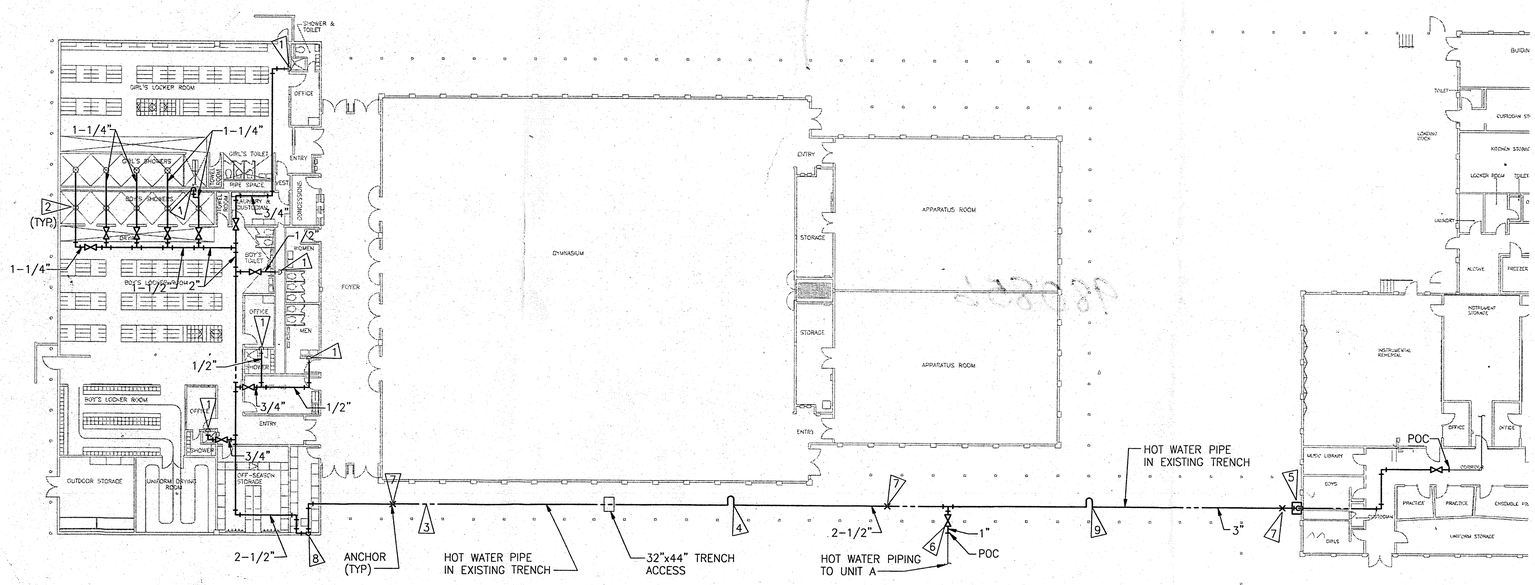
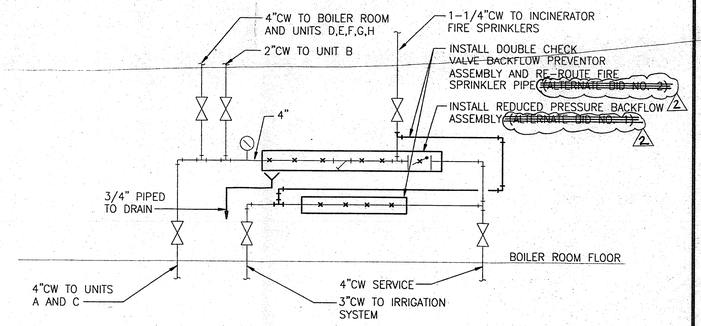


MECHANICAL PIPING PLAN

SCALE: 1/16"=1'-0"

FLAG NOTES:

1. REPLACE THE HORIZONTAL HW PIPING AND CONNECT TO THE EXISTING PIPING DROP AT ELBOW.
2. REPLACE THE HORIZONTAL HW PIPING AND CONNECT TO THE DROP INTO THE GANG SHOWER.
3. REMOVE EXISTING 2-1/2" HW PIPE AND THE ABANDONED HWC PIPES IN THE PIPE TRENCH. PROVIDE NEW PIPE HANGERS AND HANG FROM THE EXISTING UNISTRUT SUPPORTS.
4. REPLACE EXISTING EXPANSION JOINT. REPLACE WITH AN EXPANSION LOOP ALLOWING +/- 2-1/2" MOVEMENT.
5. REMOVE SHEET METAL ENCLOSURE AND RUN NEW HW PIPING PARALLEL TO THE CW PIPING UP THE WALL . REPLACE ENCLOSURE WHEN COMPLETE.
6. REPLACE GATE VALVE AND INSTALL WITH A NEW BALL VALVE.
7. ANCHOR NEW PIPE. CONNECT TO EXISTING SUPPORTS.
8. REPLACE 2-1/2" SHUT OFF VALVE ON HW RISER.
9. REPLACE EXISTING EXPANSION JOINT. REPLACE WITH AN EXPANSION LOOP ALLOWING +/- 1-1/2" MOVEMENT.
10. ADD BACKFLOW PREVENTORS IN CW SERVICE AND IRRIGATION SUPPLY, SEE DIAGRAM THIS SHEET.



BOILER ROOM COLD WATER SERVICE DIAGRAM

SCALE: NONE

MECHANICAL SPECIFICATIONS

PIPING SYSTEMS

COPPER PIPING
A. Pressure Ratings: Provide pipe, tubing, fittings, accessories and all other components with minimum pressure rating of 150 psig.
B. Tubing (Pipe), Above Ground: ASTM B88 Type L copper water tube, hard drawn.
C. Fittings
1. Wrought copper solder fittings and screwed adapters, ANSI B16.22.
2. Cast bronze solder joint fittings and screwed adapters, ANSI B16.18.

D. Flanges and Flanged Fittings: Cast bronze, 125-psig Class, ASME Standards.
E. Bolting: Machine bolts and nuts, hex head bolt, hexagon nut, ASTM A 307, Grade B, dimensions ANSI B18.2, threads ANSI B1.1, bronze plated.
F. Gaskets: ANSI B16.21 nonmetallic 1/16-inch thick. Garlock Style 3000.
G. Solder: 95 percent tin, 5 percent antimony solder, ASTM B 32 Harris "Bridgit" acceptable. Laco flux or similar not permitted.
H. Valves
1. Ball: Apollo 70-100 or 70-200 Series, 600-psig WOG bronze body, stainless steel ball and stem, solder ends or screwed, Teflon seat and seal. Provide stem extension for use in insulated piping.

I. Test Requirements
1. Pressure: 1-1/2 times design working pressure or 150 psig, whichever is greater.
2. Time: Hold pressure to inspect all joints and connections.
3. Test all joints in air-tested systems by brushing with a soapy water solution.
4. Water test all piping, with water less than 100 F.

BACK FLOW PREVENTERS:
A. Watts products specified; equivalent of Febco, Wilkins, Beeco, Cla-Val or Ames are acceptable.
B. Double Check Valve Assemblies: Watts Series 007 complete with isolating ball valves and strainer.
C. Reduced-pressure type backflow preventors; 2-1/2-inch and larger, epoxy coated cast iron construction with epoxy coated cast iron strainer and isolating gate valves; Watts 909 Series;
DIELECTRIC UNIONS
A. Provide at each joint between dissimilar metals
1. 2 Inches and Smaller: Dielectric unions rated at 250 psig at 180 F conforming to ANSI B16.39.
2. 2-1/2 Inches and Larger: Dielectric flange fittings conforming to ANSI B16.42 (iron) or ANSI B16.24 (bronze).
3. Manufacturer: Watts 3000 Series, Epco or equivalent.

PIPE HANGERS
A. Approvals: MSS SP58.
B. Manufacturers: Grinnell, Tolco, Basic Engineering Inc., B-Line, Michigan, PHD or Mechanical Pipe Shields.
C. Materials
1. Hanger Material: Match piping material at point of contact with piping; Black steel pipe - Carbon steel, cast iron or malleable iron; Galvanized steel pipe - Carbon steel, cast iron or malleable with zinc coating; Copper tubing Carbon steel or malleable iron with copper finish--Optional Carbon steel or malleable iron, plastic coated.
2. All pipe hangers and hanger rods in pipe trench shall be galvanized.

D. Insulation Inserts
1. Provide factory fabricated split type insert with galvanized steel jacket and calcium silicate insert at all pipe supports: Mechanical Pipe Shields, Mfg.

EXPANSION JOINTS
A. Provide Metraflex, "Metraloop" fittings with minimum 3-inch movement capacity or Unisource "V" joints or approved equivalent.
TESTING OF PIPING
A. General
1. Test all piping systems and connected equipment. Test after the lines have been cleaned and prior to insulation.
2. Isolate from existing systems by the closest valve or valves to the existing system.
3. Furnish all test equipment. Install a calibrated test pressure gage in the system being tested.
4. Prior to testing, remove or valve-off gages, traps and other apparatus which may be damaged by testing.
5. Make test in presence of the Owner.
6. Rectify all defects which develop during testing and retest until approved by Engineer at no additional charge to the Owner.
7. Provide vents and drain valves as required to drain systems after testing.

PIPE INSULATION

INSULATION CHARACTERISTICS
A. Manufacturer: Owens-Corning, Certainteed, Johns Manville, Knauf or Pittsburgh Corning.
B. Pipe Insulation
1. Fiberglass: Suitable for pipe temperature from -60 F to 500 F; one piece type with only one longitudinal joint; thermal conductivity not greater than 0.24 at 75 F mean temperature. Provide factory applied all-service jacket.

JACKETS FOR PIPE INSULATION
A. Factory Applied All-service Jacket (Fiberglass Insulation): White kraft paper outer surface bonded to aluminum foil vapor barrier, suitable for painting. Kraft paper permanently treated for fire and smoke safety and to prevent corrosion of the foil. Factory applied pressure sensitive closure system for permanent seal of laps and butt strips
JACKETS FOR FITTINGS, VALVES AND DEVICES
A. All-service Jacket: Factory premolded one-piece PVC fitting covers.
VALVES, AND FLANGES INSULATION
A. Flexible fiberglass blanket fabricated of a sandwich section of fiberglass batt (1 lb. per cu. ft. density), same thickness as adjacent insulation, enclosed in glass cloth cover machine sewed at the ends; provide copper eyehooks and wire for lacing the blanket.
ITEMS TO BE INSULATED
A. Piping
1. Cold Piping: Domestic cold water piping.
2. Hot Piping:
Domestic hot water supply and circulating piping

ITEMS NOT TO BE INSULATED
A. Piping
1. Valve stems, handwheels and operators.
2. Unions on domestic hot water and domestic cold water piping.

PIPE INSULATION THICKNESS
A. Domestic hot water: 1-inch thick for pipes up to 2" size, 1.5 inch thick for pipes 2.5" and greater.
B. Domestic cold water: 1-inch thick for all sizes.

CITY OF EDMONDS
BUILDING DEPARTMENT
WORK Mechanical
ADDRESS 23200 100th Ave W
OWNER ED Edwood H.S.
APPROVED DATE: 11-20-98
BLDG. OFFICIAL
PERMIT NUMBER 980856

CITY COPY

BUILDING
NOV 20 1998
97 UBC

97 UMC
EFFECTIVE 7-1-98

GRAPHIC SCALE:
0 4 8 16 32 48
1/16"=1'-0" feet

CONFORMED SET

BASSETTI ARCHITECTS
1011 Western Avenue
Suite No. 701
Seattle, Wa 98104
F. 206/340-9519
P. 206/340-9500

WOOD/HARBINGER, INC.
3025 112th Avenue NE, Suite 200
Bellevue, WA 98004-8002
Phone/Fax.425.822.9499/4538
CONSULTING ENGINEERS

STATE OF WASHINGTON
GARY L. LANE
19652
REGISTERED PROFESSIONAL ENGINEER
10-23-98
EXPIRES 3/6/99

REVISIONS	DATE
2	11-5-98

KEY PLAN

EDMONDS 15 SCHOOL DISTRICT

EDMONDS SCHOOL DISTRICT NO. 15
1998 SMALL WORKS PROJECTS

WOODWAY HIGH SCHOOL

APPROVED FOR THE OWNER DATE

APPROVED FOR THE OWNER DATE

JOB NO : 98057
ISSUE DATE : 10/26/98
DRAWN BY : LANE
CHECKED BY : GLR
M1.DWG

MECHANICAL PIPING PLAN

M1

SCALE : 1/16"=1'-0"

AutoCAD 98057 M1 9/24/98 AKR PLOT SCALE:1:1