HWS
HWR

AIR/DIRT SEPARATOR.
SEE DRAWING #23 21 13-01

REPLACEABLE BLADDER EXPANSION TANK.

NOMINAL 4” CONCRETE PAD (TYP.)
REFER TO STEAM AND CONDENSATE FLOW DIAGRAM. SEE DRAWING #23 20 00-02

CENTER-GUIDED SILENT CHECK VALVE (TYP.)
PORTABLE FILL UNIT SEE SPEC. SECTION 23 21 13

3/4” FILL CONNECTION

FLOW DIAGRAM - HOT WATER HEATING SYSTEM

NOT TO SCALE

GENERAL NOTES
1. PROVIDE MANUAL AIR VENT AT EACH HIGH POINT IN SYSTEM.
2. PROVIDE DRAIN AT EACH LOW POINT. SEE DRAWING #23 21 13-02.
3. ALL THREADED STEEL PIPE NIPPLES SHALL BE SCHED. 80

EXPANSION TANK CHARGING PROCEDURE:
1. ENSURE THAT SYSTEM FLUID IS ROOM TEMPERATURE
2. ENSURE THAT ALL AIR IS VENTED FROM SYSTEM
3. CLOSE VALVE BETWEEN EXPANSION TANK AND SYSTEM
4. OPEN VENT/DRAIN VALVE AT EXPANSION TANK
5. ADJUST AIR PRESSURE TO ___ PSIG.
6. CLOSE DRAIN/VENT VALVE AT TANK
7. OPEN VALVE BETWEEN EXPANSION TANK AND SYSTEM

BLOW - DOWN PROCEDURE FOR AIR/DIRT SEPARATOR:
1. CLOSE VALVE V-1
2. OPEN VALVES V-2 AND V-3
3. THROTTLE VALVE V-4
4. DO NOT EXCEED 15 PSIG ACROSS BAG FILTER
5. CLEAN BAG FILTER AS REQUIRED
6. RETURN VALVES TO ORIGINAL POSITIONS

NOTES TO A/E:
PROVIDE PRESSURE SETTING FOR RELIEF VALVE (E.G. 50 PSIG)
PROVIDE AIR PRESSURE SETTING FOR EXPANSION TANK (E.G. HEIGHT OF SYSTEM ABOVE TANK CONVERTED TO PSI PLUS 10 PSIG.)
SIZE EXPANSION TANK 20% LARGER THAN STANDARD CALCULATED VOLUME.

KEYNOTES
1. CONNECT EXPANSION TANK PIPING TO SIDE OF MAIN. SIZE PIPING PER MANUFACTURER'S RECOMMENDATIONS.
2. SET SAFETY RELIEF VALVE AT ___ PSIG. SIZE PER ASME CODE.
3. PROVIDE DP AND SP TRANSMITTERS AT REMOTE LOCATION(S) IN SYSTEM. SEE DRAWINGS # 23 09 13-1 AND 23 09 13-2
4. PROVIDE BYPASS VALVE NEAR LOCATION OF DP TRANSMITTER. VALVE SHALL BE MANUAL BALANCING TYPE IN SERIES WITH AUTOMATED SHUT-OFF VALVE. SEE SPECIFICATION 23 21 13.

NOT TO SCALE