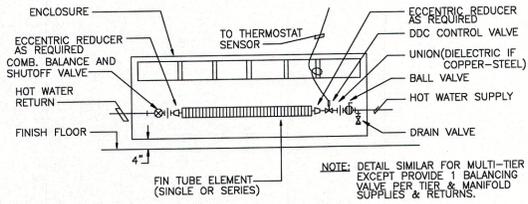
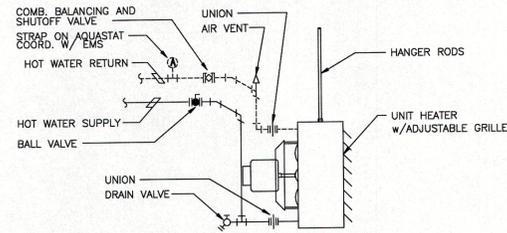


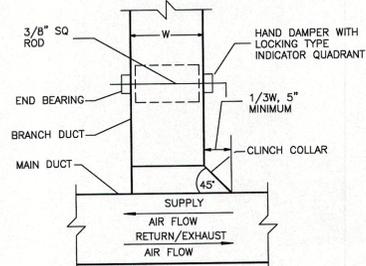
TYPICAL CABINET HEATER
NOT TO SCALE



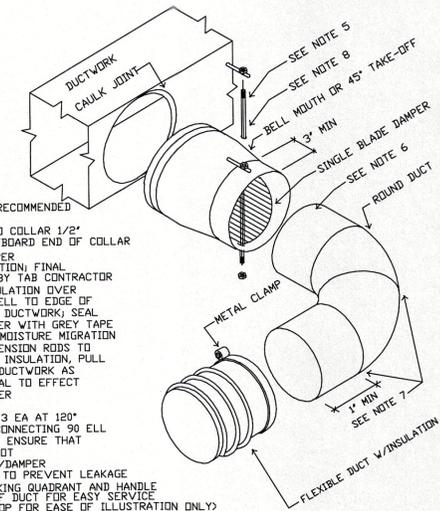
TYP. HOT WATER RADIATION PIPING DTL.
NO SCALE



TYPICAL HOT WATER UNIT HEATER DETAIL
NO SCALE

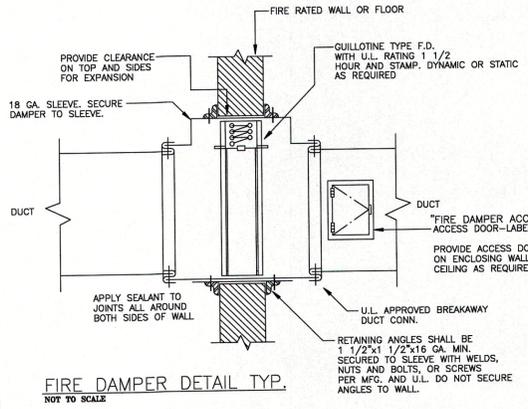


RECTANGULAR DUCT TAP WITH VOLUME DAMPER
NO SCALE

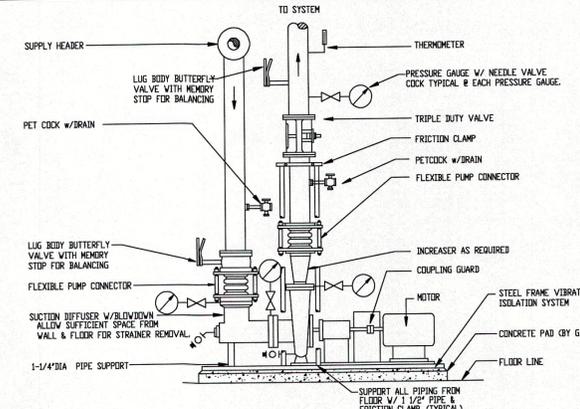


- NOTES:
- 1 SUPPORT AS RECOMMENDED BY SMACNA
 - 2 BAND FLEX TO COLLAR 1/2" MIN FROM OUTBOARD END OF COLLAR
 - 3 INSTALL DAMPER IN OPEN POSITION; FINAL ADJUSTMENT BY TAB CONTRACTOR
 - 4 PROVIDE INSULATION OVER ROUND DUCT ELL TO EDGE OF RECTANGULAR DUCTWORK; SEAL VAPOR BARRIER WITH GREY TAPE TO PREVENT MOISTURE MIGRATION
 - 5 PROVIDE EXTENSION RODS TO ACCOMMODATE INSULATION, PULL TO EDGE OF DUCTWORK AS READ AND SEAL TO EFFECT VAPOR BARRIER
 - 6 SHEET METAL SCREWS, MIN 3 EA AT 120" INTERVALS, CONNECTING 90 ELL TO TAKE-OFF; ENSURE THAT SCREWS DO NOT INTERFERE W/DAMPER
 - 7 SEAL JOINTS TO PREVENT LEAKAGE
 - 8 INSTALL LOCKING QUADRANT AND HANDLE ON BOTTOM OF DUCT FOR EASY SERVICE (SHOWN ON TOP FOR EASE OF ILLUSTRATION ONLY)

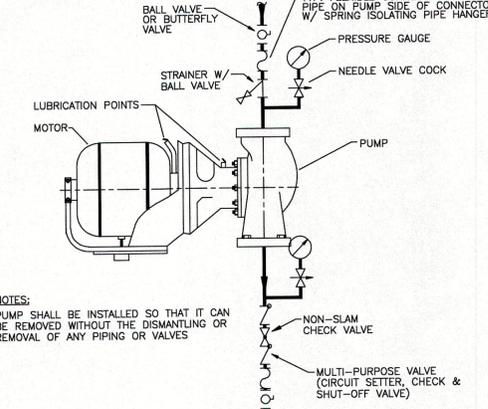
FLEXIBLE DUCT CONNECTION
NO SCALE TYPICAL FOR BOTH STRAIGHT OR ELBOW EXTENSION



FIRE DAMPER DETAIL TYP.
NOT TO SCALE

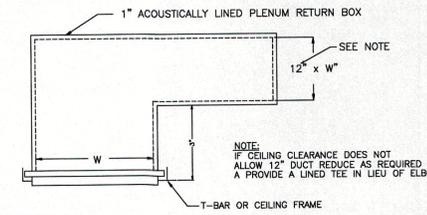


TYPICAL END SUCTION PUMP DETAIL
NO SCALE

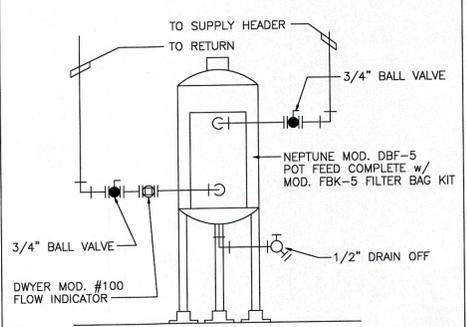


- NOTES:
1. PUMP SHALL BE INSTALLED SO THAT IT CAN BE REMOVED WITHOUT THE DISMANTLING OR REMOVAL OF ANY PIPING OR VALVES

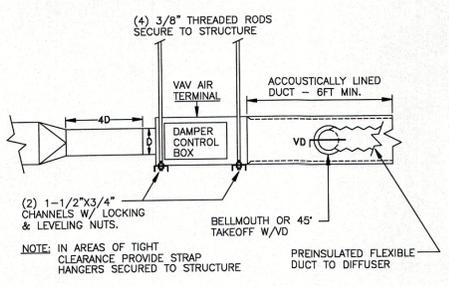
TYPICAL IN-LINE PUMP DETAIL
NO SCALE



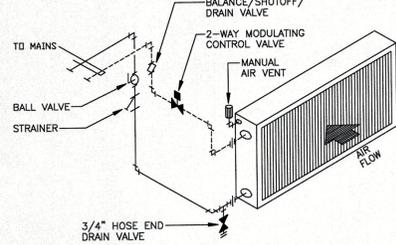
TYPICAL PLENUM RETURN GRILLE DETAIL
NO SCALE



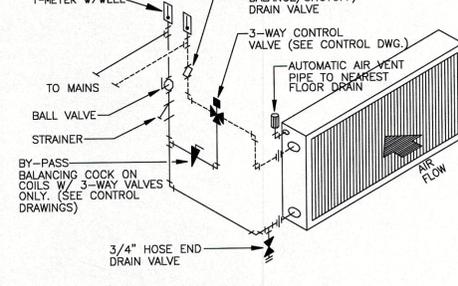
SYSTEM CHEMICAL FEED DETAIL TYP.
NO SCALE



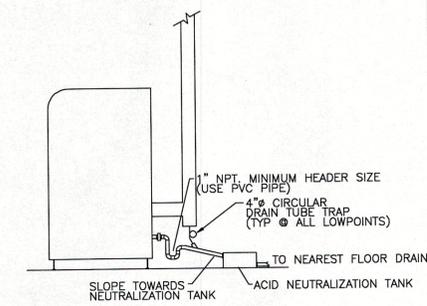
VAV TERMINAL INSTALLATION DETAIL
NOT TO SCALE



TYP. HOT WATER COIL PIPING DETAIL
NOT TO SCALE



TYP. CHILLED WATER COIL PIPING DETAIL
NOT TO SCALE



BOILER & FLUE CONDENSATE DETAIL
TYPICAL OF (2)
NO SCALE

SYMBOLS LEGEND

| | |
|--|--|
| | DIRECTION OF AIRFLOW |
| | VOLUME DAMPER |
| | SUPPLY REGISTER |
| | RETURN REGISTER/GRILLE |
| | FLEXIBLE DUCTWORK |
| | DEMOLISH & REMOVE |
| | DUCTWORK |
| | INTERNALLY LINED DUCTWORK AS SHOWN OR AS SPECIFIED |
| | DIFFUSER CALLOUT CUBIC FEET PER MINUTE (CFM) |
| | EQUIPMENT CALLOUT |
| | THERMOSTAT |
| | HEATING WATER SUPPLY (HWS) |
| | HEATING WATER RETURN (HWR) |
| | PRESSURE GAUGE W/GAUGE COCK |
| | CHECK VALVE SWING OR NO-SLAM AS SPECIFIED |
| | BALL VALVE FULL PORT |
| | BALANCING VALVE |
| | UNION |
| | THERMOMETER W/ WELL |
| | BUTTERFLY VALVE W/ MEMORY STOP |
| | FLEXIBLE PIPE CONNECTION |
| | FIRE DAMPER W/ ACCESS PANEL |
| | MOTORIZED DAMPER (LOW LEAKAGE) |
| | GRAVITY DAMPER |

KANG ASSOCIATES, INC
339 BOSTON POST ROAD
SUDBURY, MA

WESTFORD TOWN HALL
ADDITION & RENOVATIONS
55 MAIN STREET, WESTFORD, MA



DATE: 09/02/09
SCALE: 1/16" = 1'-0"

HVAC DETAILS

H5

ATCO As Build 3/31/2011

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