

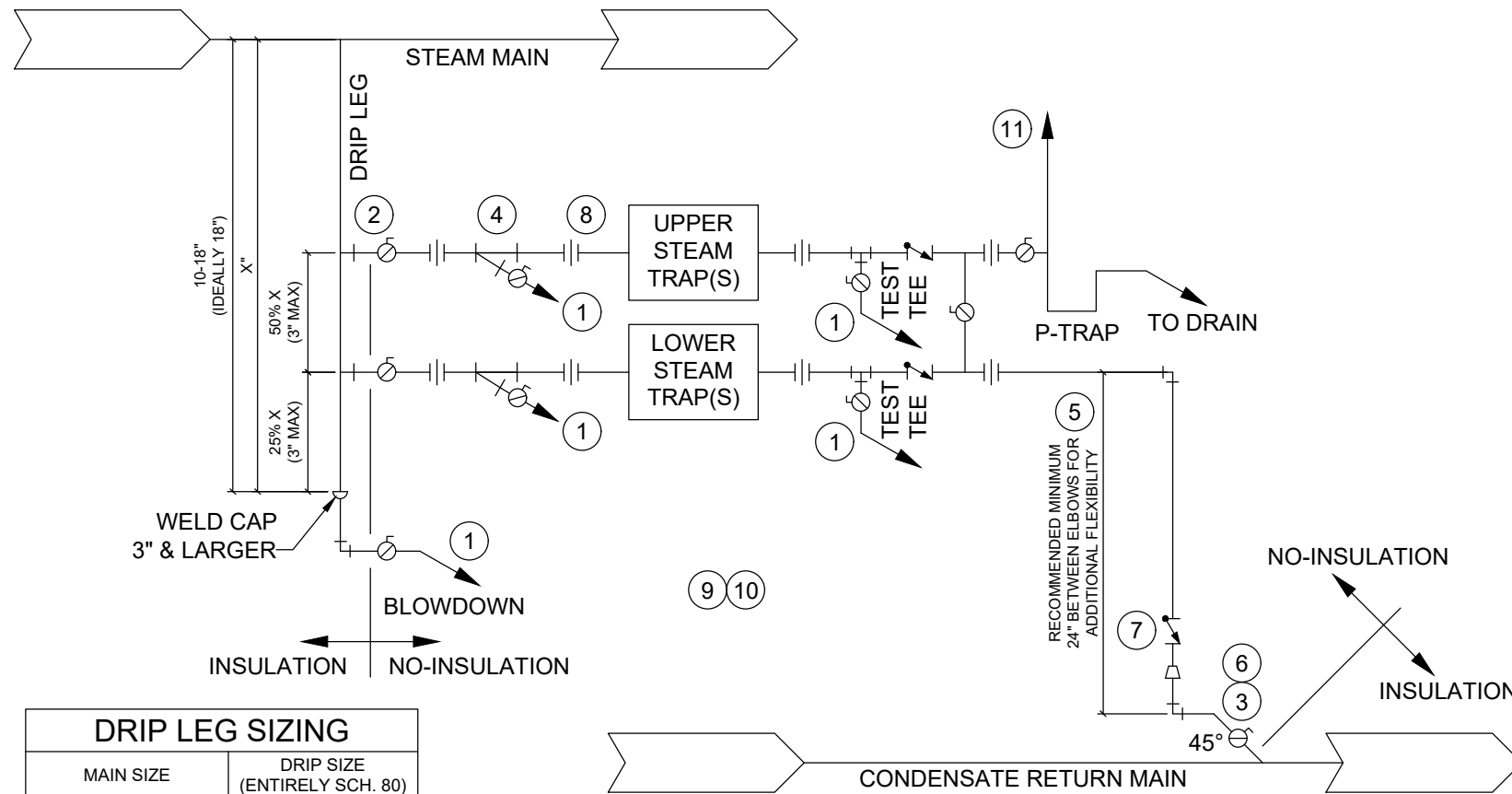
**GENERAL NOTES**

1. INSTALL TRAP ASSEMBLY SHALL BE EASILY ACCESSIBLE FOR VISUAL INSPECTION AND REPAIRS.
2. SPACE DRIP TRAPS IDEALLY AT A MAXIMUM 150' INTERVALS (300' FOR DIRECT BURIED). UPHILL (EVEN IF TEMPORARY) AND FLAT RUNS TO BE GIVEN SPECIAL CARE. ADDITIONALLY, DESIGN SUCH THAT THERE IS A DRIP UPSTREAM OF ALL EXPANSION JOINTS, BRANCH CONNECTIONS, ELEVATION CHANGES, CONTROL VALVES, AND ISOLATION VALVES. NO EXPANSION U-LOOPS ALLOWED FOR UPHILLS (THEY CAN HARBOR CONDENSATE).
3. ALL TRAPS: 3/4" (MIN.), THREADED CONNECTIONS.
4. LOWER TRAP, CITY CAMPUS: TLV FREE FLOAT MODEL JH5RLB-5 (JH5RLB-22 FOR 250 PSI) SUPERHEAT STEAM TRAPS.
5. LOWER TRAP, EAST CAMPUS: ARMSTRONG 800, 811, 812, 813 SERIES INVERTED BUCKET STEAM TRAPS, OR TLV JH5RLB-5.
6. UPPER TRAP, BOTH CAMPUSES: TLV FREE FLOAT JH5RLB-5 (JH5RLB-22 FOR 250 PSI).
7. FOR STAINLESS FITTINGS (TRAP FOR EXAMPLE), USE ANTI-SIEZE COMPOUND, PLUS ALL STAINLESS HARDWARE (NUTS, BOLTS).
8. DRESS FITTINGS WITH HIGH TEMPERTUARE TEFLON TAPE (550 DEG F) USING EXACTLY THREE WRAP THICKNESSES, NO PIPE DOPE.

9. AREAS THAT ARE PRONE TO FLOODING, OR COULD GET FLOODED VIA WATER PIPING BREAK, INSTALL 2X100% (UPPER & LOWER) TRAPS, EACH OF ADEQUATE CAPACITY, SUCH THAT THEY CAN HANDLE A SUBMERGED STEAM PIPE (WHICH WILL BE FORMING A LOT OF CONDENSATE), SEE TABLE.
10. AT ANY CRITICAL LOCATIONS (END OF RUN, LOW POINT, UPHILL RUNS, FLOODING POTENTIAL, OTHER) WHERE A LACK OF CONDENSATE REMOVAL COULD BE CATASTROPHIC, INSTALL 2X100% (UPPER & LOWER) STEAM TRAP ASSEMBLIES IN PARALLEL.
11. TRAPS TO BE SIZED FOR QUICK (120 MINUTES), UNSUPERVISED WARM-UP. ACTUAL WARMUP WILL TAKE LONGER, 120 MINUTES PROVIDES MARGIN/SAFETY FACTOR. DURING WARM UP, TRAP TEST TEE'S CAN REMAIN OPEN UNTIL SUFFICIENT PRESSURE ABOVE CONDENSATE RETURN MAIN PRESSURE IS DEVELOPED.
12. NO GRAY IRON, DUCTILE IRON OR BRONZE VALVES, STRAINERS, FITTINGS, ETC. ANY WHERE (EXCEPT FOR ARMSTRONG 800'S TRAPS).

PRESSURE SERVICE	LINE SIZE	RUNNING LOAD PER 100'	WARM-UP LOAD PER 100', (NO RUNNING LOAD ADDED)	SUBMERGED BARE-PIPE RUNNING LOAD PER 100'	SUBMERGED SOAKED-INSULATION RUNNING LOAD PER 100'
33 & 60 PSIG	1"	5 LB/HR	10 LB TOTAL	520 LB/HR	67 LB/HR
33 & 60 PSIG	2"	7 LB/HR	22 LB TOTAL	1700 LB/HR	220 LB/HR
33 & 60 PSIG	3"	10 LB/HR	35 LB TOTAL	3700 LB/HR	480 LB/HR
33 & 60 PSIG	4"	12 LB/HR	49 LB TOTAL	6100 LB/HR	780 LB/HR
33 & 60 PSIG	6"	16 LB/HR	86 LB TOTAL	14000 LB/HR	1700 LB/HR
33 & 60 PSIG	8"	20 LB/HR	130 LB TOTAL	23000 LB/HR	2900 LB/HR
33 & 60 PSIG	10"	24 LB/HR	190 LB TOTAL	35000 LB/HR	4500 LB/HR
33 & 60 PSIG	12"	28 LB/HR	250 LB TOTAL	49000 LB/HR	6300 LB/HR
33 & 60 PSIG	14"	30 LB/HR	290 LB TOTAL	59000 LB/HR	7600 LB/HR
33 & 60 PSIG	16"	34 LB/HR	380 LB TOTAL	77000 LB/HR	9900 LB/HR
33 & 60 PSIG	18"	38 LB/HR	480 LB TOTAL	97000 LB/HR	13000 LB/HR
33 & 60 PSIG	20"	42 LB/HR	560 LB TOTAL	120000 LB/HR	16000 LB/HR
250 PSIG	2"	13 LB/HR	37 LB TOTAL	1700 LB/HR	220 LB/HR
250 PSIG	4"	21 LB/HR	80 LB TOTAL	6100 LB/HR	780 LB/HR

- NOTES:
1. RUNNING LOAD: 20 DEG. F AMBIENT TEMPERATURE (NO AIR SPEED), 3.0" FIBERGLASS INSULATION, 5% OF PIPE UNINSULATED (ANCHORS/GUIDES/DRIPS/VALVES), PLUS 10% MARGIN.
  2. WARM-UP LOAD: SCH. 40 PIPE (1"&2"=SCH. 80), 20 DEG F AMBIENT (NO AIR SPEED), PLUS 10% MARGIN.
  3. WARM-UP LOAD WILL BE SPREAD ACROSS TIME, AGAIN THE NUMBERS ABOVE ARE LB, NOT LB/HR.
  4. SUBMERGED CONDENSATE LOADS BASED ON FLOODED MANHOLES AND SUBMERGED STEAM LINES, WAYNE KIRSNER (2002), CORRECTED FOR 55 DEG F WATER.
  5. STEAM CONSIDERED TO BE SATURATED (NO SUPERHEAT) IN ALL CASES.
  6. CALCULATIONS RUN USING TLV'S ONLINE CALCULATORS.



DRIP LEG SIZING	
MAIN SIZE	DRIP SIZE (ENTIRELY SCH. 80)
4" AND UNDER	SAME AS MAIN
5" AND 6"	4"
OVER 6"	HALF AS MAIN
IF NON-STANDARD VERTICAL HEIGHT	BY FPC ENGR.

**STEAM DISTRIBUTION SYSTEM DRIP TRAP DETAIL**

1 A1.01 SCALE: NO SCALE

**# KEY NOTES**

1. ROTATE/POSITION ANY DISCHARGES AWAY FROM PERSONNEL, EQUIPMENT, AND INSULATION. ANGLE TOWARD THE AWAY WALL RATHER THAN STRAIGHT DOWN. QUARTER-TURN VALVE HANDLE TO BE ORIENTED FURTHER AWAY FROM DISCHARGE IN OPEN POSITION, AND HANDLE IN CLOSED POSITION SHOULD NOT PRESENT TRIP OR CATCH HAZARD.
2. ADD THREDOLET & PLUG EVEN IF NO UPPER TRAP ASSEMBLY PROVIDED.
3. ISOLATION VALVES AT EITHER END OF THE TRAP ASSEMBLY TO BE LOCATED AS CLOSE TO RESPECTIVE MAIN AS POSSIBLE. NO FITTINGS ALLOWED BETWEEN ISOLATION VALVE AND DRIP.
4. INSTALL LEGS OF STRAINERS IN HORIZONTAL POSITION, VERTICAL ACCEPTABLE IF NEEDED TO MINIMIZE CONDENSATE HOLDING. STRAINER MESH=20 OR HIGHER.
5. USE A MINIMUM OF TWO 90 DEGREE BENDS BETWEEN CHECK VALVE AND ISOLATION VALVE ON CONDENSATE MAIN, TO ALLOW THERMAL GROWTH/EXPANSION BETWEEN STEAM AND CONDENSATE RETURN PIPES.
6. TO PREVENT EROSION OF OPPOSITE PIPE WALL, TRAP DISCHARGE TO ENTER AT 45 DEGREE ENTRY INTO CONDENSATE MAIN IN THE DIRECTION OF THE CONDENSATE FLOW. STREET 90 JUST PRIOR TO 45, TO MAXIMIZE FLEXIBILITY FOR THERMAL EXPANSION.
7. GO UP AT LEAST 1 PIPE SIZE PIOR TO 45 DEG INTO CONDENSATE. MIN PIPE SIZE OF 1-1/2".
8. MAY LOCATE BLOWDOWN ON SIDE OF LEG (AS LOW AS PRACTICAL) BECAUSE OF SPACE CONSTRAINTS.
9. INSTALL UNIONS REGARDLESS IF TRAP COMES WITH UNIVERSAL 2-BOLT FLANGE BODY.
10. NO IRON OR BRONZE VALVES. NO GATE VALVES. QUARTER-TURN VALVES AND CHECKS 2" AND UNDER TO BE STEAM RATED, CLASS 300 OR 2000 CWP OR BETTER. ACCEPTABLE BALL VALVES INCLUDE APOLLO 73A-100-24, AND MILWAUKEE 10-SERIES, ACCEPTABLE SWING CHECK VALVES (NO SPRINGS, NO PISTON-TYPE) INCLUDE VELAN CLASS 800 FORCED SWING CHECK, AND POWELL CLASS 300 FORCED SWING CHECK.
11. PIPING TO BE THREADED-ONLY 3/4" SCH 80, MIN. CLASS 300 FITTINGS. NO FLANGES. NO SOCKET WELDS.
12. ROUTE TO CONSPICUOUS LOCATION (NEAR SURFACE HATCH, OR OUT VENT COFFER).