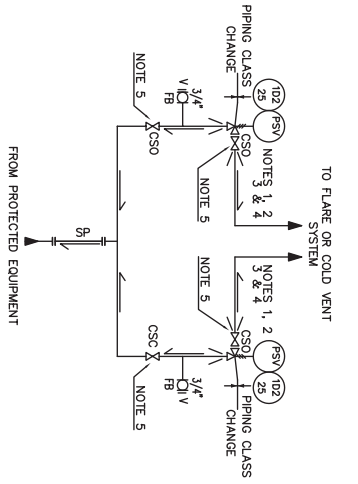
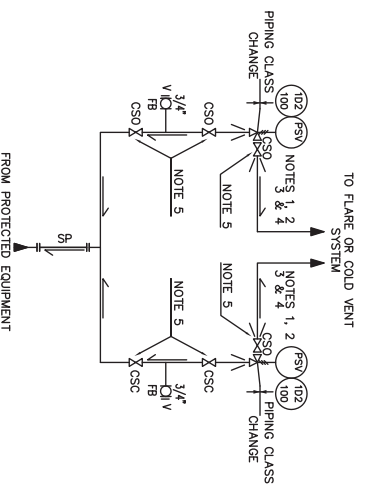


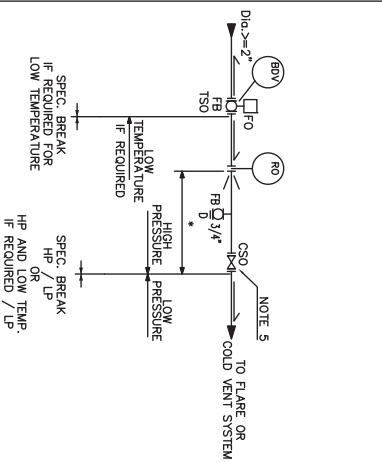
TYPICAL 1
 PSV'S INSTALLATION WITH ONE UPSTREAM ISOLATING VALVE
 OPERATING PRESSURE > 70 barg
 AND H/S PARTIAL PRESSURE < 1 bar
 (TWO 100% PSV'S FOR VESSEL IN CONTINUOUS SERVICE)
 TO FLARE OR COLD VENT SYSTEM



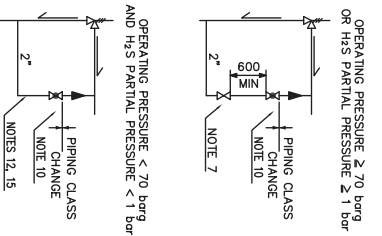
TYPICAL 2
 PSV'S INSTALLATION WITH TWO UPSTREAM ISOLATING VALVES
 OPERATING PRESSURE > 70 barg
 OR H/S PARTIAL PRESSURE > 1 bar
 (TWO 100% PSV'S FOR VESSEL IN CONTINUOUS SERVICE)
 TO FLARE OR COLD VENT SYSTEM



TYPICAL 3
 DEPRESSURISATION VALVE ARRANGEMENT



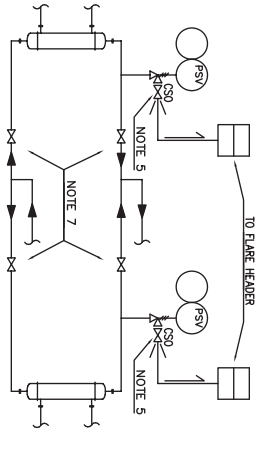
TYPICAL 4
 BY PASS OF PSV'S



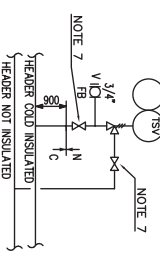
NOTES

- 1- DISTANCE BETWEEN PSV AND REDUCER IS MINIMUM.
- 2- DOWNSTREAM BLOCK VALVE IS INSTALLED FLANGE TO FLANGE WITH PSV. IF THE BLOCK VALVE BACK PRESSURE IS TOO HIGH, IF THE BLOCK VALVE IS INSTALLED DOWNSTREAM THE REDUCER.
- 3- INSTALLATION OF ELBOW BETWEEN PSV AND REDUCER IS FORBIDDEN.
- 4- PIPING CLASS CHANGE COULD BE REQUIRED DOWNSTREAM PSV, DEPENDING ON RELIEF PRESSURE, RELIEF TEMPERATURE AND PSV SIZE.
- 5- TYPE OF ISOLATION VALVE FOLLOWING SELECTION CRITERIA (BALL VALVES SHALL BE SPECIFIED "FULL BORE").
- 6- DELETED.
- 7- TYPE OF VALVE FOLLOWING SELECTION CRITERIA. IF BLOCK VALVE IS IN 3/4" DIAMETER, IT SHALL BE A FULL BORE BALL VALVE.
- 8- TOP OR SIDE CONNECTION.
- 9- CASE BY CASE DEFINITION AS PER SAFETY CONCEPT.
- 10- PIPING CLASS BREAK CAN BE DIFFERENT ACCORDING TO PROCESS CONDITIONS UPSTREAM AND DOWNSTREAM THE PSV. OF CONTROL VALVES FOR MAINTENANCE PURPOSE. DESIGN SHALL CONSIDER THE ADDITION OF BLOCK VALVE UPSTREAM/DOWNSTREAM CONTROL VALVE OR THE USE OF THE CLOSEST VALVE TO MINIMIZE SPILL OR LOSS OF PRODUCT.
- 12- IF PSV BYPASS IS FREQUENTLY USED FOR MAINTENANCE, THE BYPASS BLOCK VALVE TO BE MODIFIED TO FULL BORE BALL VALVE (BALL VALVES SHALL BE SPECIFIED "FULL BORE").
- 13- BALL VALVE TO BE INSTALLED UPSTREAM GLOBE VALVE AT 600 mm MIN. FOR HIGH PRESSURE DROP SERVICE (DP > 30 barg) OR WHEN FREEZING OR HYDRATE FORMATION ARE EXPECTED.
- 14- SOLID BLOCK ASSEMBLY TO BE INSTALLED FOR OPERATING PRESSURE > 70 barg OR H/S PARTIAL PRESSURE > 1 bar, PARTICULARLY WHEN INSTRUMENT LOCATED DIRECTLY ON PIPING.
- 15- BALL VALVE TO BE INSTALLED UPSTREAM GLOBE VALVE WHEN HYDRATE FORMATION IS EXPECTED.

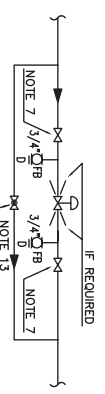
TYPICAL 5
 RELIEF SAFETY VALVES ON EQUIPMENT WITH INSTALLED SPARE OR UNSPARED EQUIPMENT IN NON-PERMANENT SERVICE



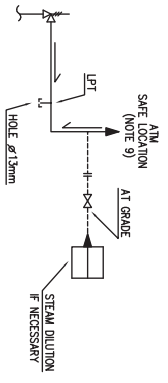
TYPICAL 8
 ARRANGEMENT AND LIMIT OF INSULATION FOR THERMAL EXPANSION RELIEF VALVES (TSV)



TYPICAL 9
 CONTROL VALVE MAINFOLD



TYPICAL 6
 RELIEF VALVES DISCHARGING TO ATM AT SAFE LOCATION



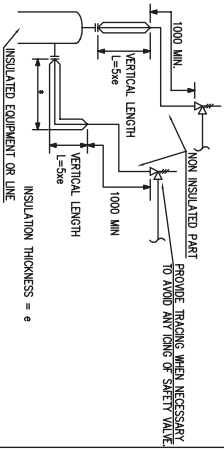
GENERAL NOTES

- TO AVOID ACCIDENTAL BLOCKAGE DUE TO A LOOSENED WEDGE, GATE VALVES INSTALLED AROUND SAFETY / RELIEF VALVES AND IN FLARE LINES SHALL BE POSITIONED WITH THE STEM IN THE HORIZONTAL POSITION.
- UNLESS OTHER SPECIFIC REQUIREMENTS SHOWN ON THE PROCESS P&ID, 600 mm MIN. ON THIS STANDARDISATION DRAWING HAVE TO BE FOLLOWED.
- BRANCH LINES FROM EACH UNIT MUST BE CONNECTED TO UNIT FLARE HEADER AS FOLLOWS:
 - BRANCH LINES 3" AND LARGER
 - BRANCH LINES 2" AND SMALLER
 - MAKE CONNECTION ON TOP OF HEADER WITH RIGHT ANGLE.

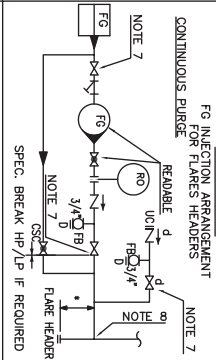
- 1 - FOR CONTROL VALVE DIAMETER < 6" IN CONTINUOUS SERVICE, COMPLETE MAINFOLD (BLOCK-BY-PASS) SHALL BE PROVIDED.
- II - FOR CONTROL VALVE DIAMETER > 6", THE NEED FOR INSTALLATION OF BLOCK AND BY-PASS VALVES AROUND OF CONTROL VALVE SHALL BE DETERMINED BY CASE (HAND WHEEL MAY BE PROVIDED IF NO BY-PASS, ACCORDING TO PROCESS REQUIREMENTS (NOTE 11))
- III - 3/4" BLEED TO "C" SHALL BE PROVIDED AS FOLLOWS
 -UPSTREAM CONTROL VALVE SIZE < 2" :
 -CONTROL VALVE OPEN BY FLUID FAILURE (FO), ONE MAINTENANCE BLEED (3/4" BOX VALVE WITH BAND FLANG) WILL BE INSTALLED DOWNSTREAM THE CONTROL VALVE.
 -CONTROL VALVE CLOSED BY FLUID FAILURE (FC), TWO MAINTENANCE BLEEDS WILL BE INSTALLED, ONE UPSTREAM AND ONE DOWNSTREAM THE CONTROL VALVE.
 -ONE MAINTENANCE BLEED WILL BE INSTALLED DOWNSTREAM THE CONTROL VALVE WHATEVER THE CONTROL VALVE POSITION (FO OR FC) BY FLUID FAILURE.

BLEED & BY-PASS VALVES SHALL BE SIZED ACCORDING TO DRG-2017-999-912-203.

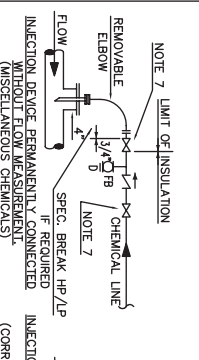
TYPICAL 7
 A NOTE ON P&ID WILL REFER TO THIS DRAWING FOR PARTICULAR CASE OF CROSSING SAFETY VALVES INSULATION



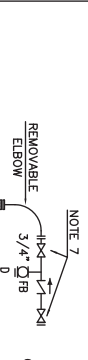
TYPICAL 11
 FG INJECTION ARRANGEMENT FOR FLARES HEADERS



TYPICAL 13
 CONTINUOUS CHEMICAL INJECTION IN PROCESS LINE



DETAIL "1"



DETAIL "2"



UTILITY CONNECTIONS FOR MAINTENANCE	
Ø	≤ 4"
d	3/4"
	2"

(SOLID BLOCK FOR INSTRUMENT NOT FITTED WITH NON RETURN VALVE)