VALVE SYMBOLS

1 SCREWED OR SOCKET WELD. PLAN DRAWINGS	2 ISOMETRIC DRAWINGS	3 SINGLE LINE BELOW 24"ON PLAN DRAWINGS	4 DOUBLE LINE FOR 24" AND ABOVE ON PLAN DRAWINGS	VALVE DESCRIPTION
				GATE
				GLOBE
				CHECK
				COCK OR PLUG
				SAFETY
				NEEDLE
				3 WAY
				ANGLE
				SAUNDERS
				CONTROL
				BALL

SYMBOLS

5 RANDOM DETAILS ON PLAN DRAWINGS AND ISOMETRICS	6 FITTINGS ON ISOMETRIC DRAWINGS	7 SINGLE LINE BELOW 24" ON PLAN DRAWINGS	8 DOUBLE LINE FOR 24" AND ABOVE ON PLAN DRAWINGS	DESCRIPTION
				CAP
				90° ELBOW
				45° ELBOW
				TEE
				90° REDUCING ELBOW
				CONCENTRIC REDUCER
				ECCENTRIC REDUCER
				BRANCH WELD (LINE SIZE OR SMALLER)
				CONCENTRIC SWAGE
				ECCENTRIC SWAGE
				TYPICAL MITRED BEND
				CROSS
				FLANGED 90° ELBOW
				FLANGED 45° ELBOW
				FLANGED TEE
				FLANGED 90° REDUCING ELBOW
				FLANGED CONCENTRIC REDUCER
				FLANGED ECCENTRIC REDUCER
				FLANGED 90° BASE ELBOW
				FLANGED CROSS
				BLIND FLANGE
				WELD NECK FLANGE
				SLIP-ON FLANGES
				FIGURE 8 FLANGE (SPADE SPECTACLE)
				LAP JOINT FLANGES
				SCREWED OR SOCKET WELD FLANGES
				LARGE MALE & FEMALE FLANGES
				SMALL MALE & FEMALE FLANGES
				LARGE TONGUE & GROOVE FLANGE
				SMALL TONGUE & GROOVE FLANGES
				ORIFICE FLANGE
				BOSS OR COUPLING WELDED ON LINE
				EXPANSION JOINT
				SPIGOT & SOCKET TEE
				SPIGOT & SOCKET ELBOW
				SPIGOT & SOCKET ANGLE BRANCH
				SOCKOLET OR WELDOLET WELDED ON LINE
				UNION
				BULL PLUG

ABBREVIATIONS

A.F.C.	APPROVED FOR CONSTRUCTION
A.I.	ANALYZER INDICATOR
A.R.	ANALYZER RECORDER
ATMOS.	ATMOSPHERE
BLD.	BLIND
B.O.P.	BOTTOM OF PIPE
BOTT OR BTM.	BOTTOM
B.W.	BUTT WELD
C.D.	CONTINUOUS DRAIN
CHANN.	CHANNEL
CHK.	CHECK
CH.OP.	CHAIN OPERATED
℄	CENTRE LINE
COL.	COLUMN
COMP.	COMPRESSOR
CONC.	CONCENTRIC
COND.	CONDENSATE
CONN.	CONNECTION
CONT.	CONTINUE(D)
CPLG.	COUPLING
Cr.Mo.	CHROME MOLYBDENUM
C.S.	CARBON STEEL
CYL.	CYLINDER
DET.	DETAIL
DIA OR Ø	DIAMETER
DISCH.	DISCHARGE
D.P.	DRIP POCKET
DR.	DRAIN
DWG.	DRAWING
ECC.	ECCENTRIC
EL.	ELEVATION
ELL.	ELBOW
EXP.	EXPANSION
EXT.	EXTENDED
f.	SMALL FEMALE
F.	STRAINER OR FILTER
FAB.	FABRICATE (D)
F.O.R.C.	FLOW RECORDING RATIO CONTROLLER
Fe.	LARGE FEMALE
FE.	FLOW ELEMENT
F.F.	FLAT FACE
F TO F	FACE TO FACE
F.G.	FLOW INDICATOR SIGHT GLASS
F.I.	FLOW DISPLACEMENT METER
F.I.	FLOW INDICATOR
F.I.C.	FLOW INDICATOR CONTROLLER
F.I.C.V.	FLOW INDICATING CONTROLLER VALVE
FIG.	FIGURE
FLEX.	FLEXIBLE
FLG.	FLANGE
F.R.	FLOW RECORDER
F.R.C.	FLOW RECORDER CONTROLLER
F.R.C.V.	FLOW RECORDER CONTROLLER VALVE
F.S.	FORGED STEEL
FUT.	FUTURE
F.W.	FIELD WELD
g.	SMALL GROOVE
G.	LARGE GROOVE
GALV.	GALVANISED
H.C.	HOSE CONNECTION
H.Ce.	SOLENOID OR MOTOR OPERATED
H.C.V.	HAND CONTROL VALVE
HOR.	HORIZONTAL
H.P.T.	HIGH POINT
H.P.	HYDROGEN PROBE
H.S.	HOSE STATION
H.SE	HOUSE
HTR.	HEATER

I/D	INSIDE DIAMETER
INST.	INSTRUMENT
INSUL.	INSULATE
INV.	INVERTED
ISOM.	ISOMETRIC
La.	LEVEL ALARM
LC.	LEVEL CONTROLLER
LC.V.	LEVEL CONTROLLER VALVE
LG.	LEVEL GAUGE
LI.	LEVEL INDICATOR
LI.S.	LEVEL INDICATOR (SOLIDS)
L.O.	LOCKED OPEN
L.P.	LOW POINT
L.R.	LONG RADIUS
LR.	LEVEL RECORDER
LR.C.	LEVEL RECORDER CONTROLLER
LR.C.V.	LEVEL RECORDER CONTROLLER VALVE
L.S.	LOCKED SHUT
m.	SMALL MALE
M.	LARGE MALE
MAX.	MAXIMUM
M/H.	MANHOLE
M.I.	MALLEABLE IRON
MIN.	MINIMUM
M/L.	MATCHLINE
MM.	MILLIMETRE
MS.	MILD STEEL
NOZZ OR N.	NOZZLE
N.T.S.	NOT TO SCALE
No.	NUMBER
O/D	OUTSIDE DIAMETER
OP.	OPERATE
OPP.	OPPOSITE
O.R.	ORIFICE RESTRICTION
ORD.	ORDINATE
ORIF.	ORIFICE
O.S.B.L.	OUTSIDE BATTERY LIMIT
Pa.	PRESSURE ALARM
P.B.E.	PLAIN BOTH ENDS
PC.	PRESSURE CONTROLLER PILOT OPERATED
PC.i.	PRESSURE CONTROLLER DIRECT ACTING
PC.V.	PRESSURE CONTROLLER VALVE
Pd.R.C.	PRESSURE DIFFERENTIAL RECORDER CONTROLLER
pHR	ACIDITY RECORDED
PI.	PRESSURE INDICATOR
PI.C.	PRESSURE INDICATING CONTROLLER
PI.C.V.	PRESSURE INDICATING CONTROLLER VALVE
PLAT.	PLATFORM
P.R.	PRESSURE RECORDER
PR.C.	PRESSURE RECORDER CONTROLLER
PR.C.V.	PRESSURE RECORDER CONTROLLER VALVE
PRESS.	PRESSURE
P.T.	PRESSURE TAP
PV.S.V.	PRESSURE VACUUM SAFETY VALVE
PIG.SIG.	PIG SIGNAL
RAD.	RADIUS
RED.	REDUCER
REF.	REFERENCE
REQD.	REQUIRED
R.F.	RAISED FACE
R.J.	RING JOINT
ROV	REMOTE OPERATED VALVE
R.D.	RUPTURE DISC
S.	SAMPLE POINT
S.C.	SAMPLE COOLER
SCRD.	SCREWED
SECT.	SECTION
S.K.	SKIN THERMOCOUPLE
S.O.	SLIP-ON
SPEC.	SPECIFICATION
S.R.	SHORT RADIUS

S.S.	STAINLESS STEEL
ST.	STEAM TRAP
STD.	STANDARD
STM.	STEAM
ST.TR.	STEAM TRACED
SUCT.	SUCTION
S.V.	SAFETY VALVE
S.W.	SOCKET WELD
SWG.	SWAGE

SWAGE NIPPLES (SWG'S) PREPARATION OF ENDS DENOTED THUS:-

LARGE END	SMALL END
Wx.S.	PREPARED FOR WELDING SCREWED
Wx.P.	PREPARED FOR WELDING PLAIN
Px.P.	PLAIN PLAIN
Px.S.	PLAIN SCREWED
Sx.S.	SCREWED SCREWED
Sx.P.	SCREWED PLAIN
WxW	PREPARED FOR WELDING PREPARED FOR WELDING
Px.W.	PLAIN PREPARED FOR WELDING
SxW	SCREWED PREPARED FOR WELDING

t.	SMALL TONGUE
T.	LARGE TONGUE
Ta.	TEMPERATURE ALARM
TAN.	TANGENT
T.B.E.	THREADED BOTH ENDS
TC.	TEMPERATURE CONTROLLER
TC.V.	TEMPERATURE CONTROLLER VALVE
TEMP.	TEMPERATURE
T.G.	THERMOMETER INDUSTRIAL TYPE
T.I.	TEMPERATURE INDICATOR
T.I.C.	TEMPERATURE INDICATOR CONTROLLER
T.I.C.V.	TEMPERATURE INDICATING CONTROLLER VALVE
T.O.E.	THREADED ONE END
T.O.S.	TOP OF STEEL OR SUPPORT
T.R.	TEMPERATURE RECORDER
T.R.C.	TEMPERATURE RECORDER CONTROLLER
T.R.C.V.	TEMPERATURE RECORDER CONTROLLER VALVE
T.S.	TEMPORARY SCREEN
T.S.E.	THREADED SMALL END
T.W.	THERMOWELL
U.C.	UTILITY CONNECTION
U/G.	UNDERGROUND
UND.	UNDER
V.B.	VACUUM BREAKER
VERT.	VERTICAL
VLV.	VALVE
V.S.V.	VACUUM SAFETY VALVE
V.T.	VACUUM TRAP
W.C.	WATER COLUMN
W.N.	WELD NECK
W.P.	WORK POINT
W.T.	WATER TRAP
XT	FLAME ARRESTER
#	POUND PER SQUARE INCH
#	CONTINUATION OR No.

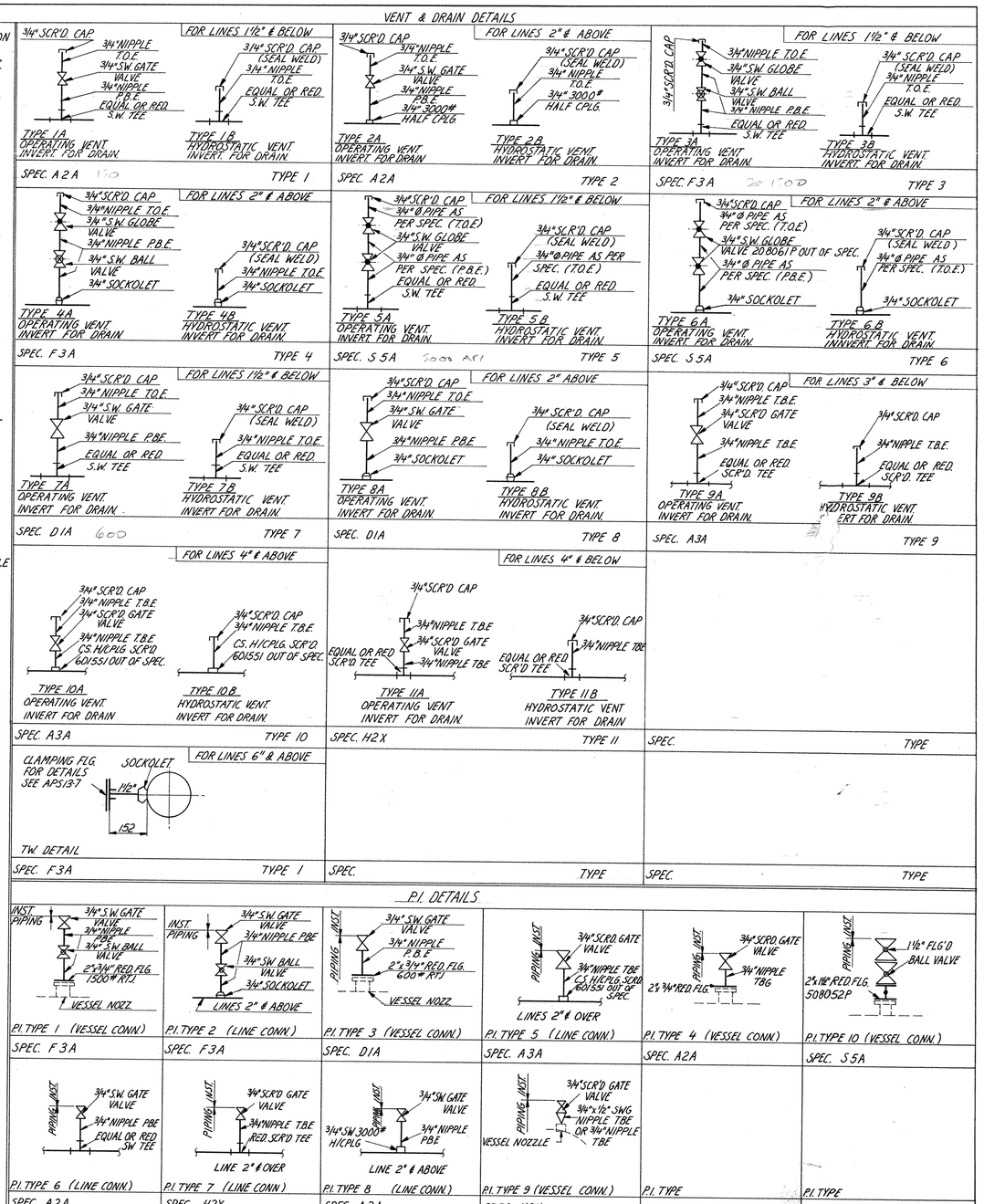
GENERAL NOTES

1. THE REFERENCE ELEVATION 0'-0" SHOWN ON LUMMUS DRAWINGS EQUALS M.L.W. ELEVATION SHOWN ON Mc.DERMOTT DWG'S.
2. FOR LIST OF PIPING AND GENERAL DRAWINGS SEE DWG. No. S - 48E
3. ALL SETS AND ROLLS ARE AT 45° UNLESS OTHERWISE STATED.
4. FOR INSULATION REQUIREMENTS SEE PIPING INSULATION SCHEDULES.
5. FOR TYPICAL STEAM TRAP HOOK-UP SEE DWG No.E
6. ALL LOW POINTS DRAINED.
7. ALL HIGH POINTS VENTED.
8. RADIUS OF PIPE BENDS
9. TEMPORARY SCREENS TO BE PROVIDED ON PUMP SUCTIONS TO BE FULL LINE SIZE AND DOWNSTREAM OF BLOCK VALVE SCREEN TO DWG.No. 7046-63
10. ALL REDUCERS IN THE VERTICAL ARE CONCENTRIC AND IN THE HORIZONTAL ECCENTRIC UNLESS OTHERWISE STATED.
11. ALL SWAGES ARE CONCENTRIC UNLESS OTHERWISE STATED.
12. FOR DRP. POCKET DETAILS SEE
13. ═══ DENOTES STEAM TRACING
14. ═(J)═ DENOTES STEAM JACKETING
15. ALL ELEVATIONS ARE TO ℄ OF PIPE UNLESS OTHERWISE STATED
16. TW. (THERMOWELL) FOR INSTALLATION SEE DWG.No APS 7046/13.13-1.13-3
17. SIZE OF TAPPING ON VALVE BODY (DO NOT USE ON SIZE 2½" AND BELOW) 3"ϕ 4" TAP 1½" 6" & ABOVE TAP ¾" IF LARGER REQ'D SEE MANUFACTURERS CATALOGUE
18. SPADE DENOTES LINE BLIND & SPACER SEE DWG. No. APS 7046-66
19. FIG.8 DENOTES SPECTACLE FLANGE SEE DWG. No APS 7046-66
20. Ⓡ DENOTES REINFORCING PAD
21. BOLT HOLES ON FIELD FABRICATED AND SHOP FABRICATED PIPING SHALL STRADDLE THE REFERENCE NORTH - SOUTH OR VERTICAL CENTRE LINES UNLESS OTHERWISE STATED
22. BUTT-WELD VALVE SYMBOLS USE AS SHOWN IN COLUMN 3 BUT WITH B.W. ADDED.

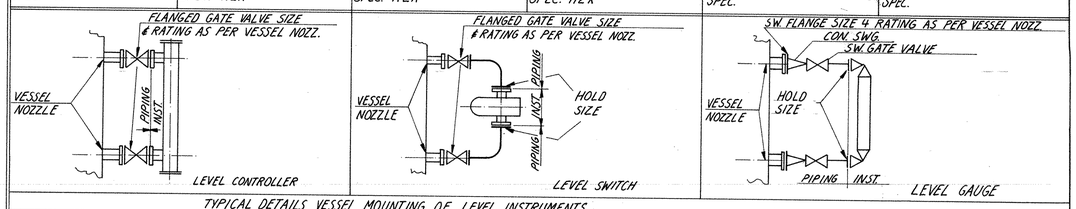
EXAMPLE:- BW B.W

23. FLOW INSTRUMENTS ON PROCESS LINES TO HAVE UP STREAM & DOWNSTREAM RUN IN ACCORDANCE WITH
24. LINE LOW POINT DRAINS OTHER THAN PROCESS DRAINS TO BE ¾".
25. ON ISOMETRIC DWGS. ONLY CPLG'S FOR PI'S, VENTS & DRAIN TO BE SHOWN & REF MADE TO TYPE No. ON THIS DWG.
26. FOR DETAILS OF SAMPLE CONN. SEE DWG. No. APS 7046-31
27. RISERS FROM RELIEF VALVES TO ATMOS SHALL HAVE 10mm WEEP HOLES PROVIDED AT LOWEST POINT

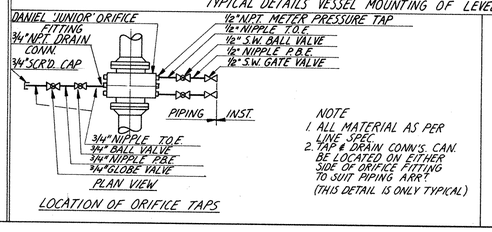
VENT & DRAIN DETAILS



P.I. DETAILS



TYPICAL DETAILS VESSEL MOUNTING OF LEVEL INSTRUMENTS



LOCATION OF ORIFICE TAPS

NOTE
1. ALL MATERIAL AS PER LINE SPEC.
2. TAP & DRAIN CONN'S. CAN BE LOCATED ON EITHER SIDE OF ORIFICE FITTING TO SUIT PIPING ARR'T (THIS DETAIL IS ONLY TYPICAL)

rev.	date	DESCRIPTION	by	app.
1	R&B	STATUS ADDED		CS
0	25-3-80	REDRAWN AND CHECKED BY PETCON A/S		PETCON

B & R DWG. No. CDP1-PP 202

elf aquitaine norge a/s p.o.box 168 – 4001 Stavanger

Installation	System
(A). CDP1	

Job no.

SYMBOLS, STANDARD DETAILS ABBREVIATIONS & GENERAL NOTES FOR PIPING DRAWINGS

Scale: NONE

FRIGG FIELD

Drwg. no. FF 91 00 00 5005 Rev. 1 Sheet

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