

3. EQUIPMENT

3.1 EQUIPMENT NUMBERING



AA: EQUIPMENT CODE
EQUIPMENT

CODE

AIRCOLER	AE
COMPRESSOR	C
CONTROL PANEL	LC(LCP)
DIESEL ENGINE	DL
EXCHANGER SHELL-AND TUBE, DOUBLE PIPE, PLATE, COIL, AIR COOLED, REBOILER, BOX COOLER, CASCADE COOLER, SURFACE CONDENSER, BAROMETRIC CONDENSER, WASTE-HEAT BOILER	E
FAN	FA
FILTER	F
FLARE STACK	FS(FST)
GAS TURBINE	GT
HEATER, FIRED, FURNACE	H
HOIST	HI
HOSE HOUSE	HH
HOSE REEL	HR
IGNITION PACKAGE	IG
INDOOR HOSE REELS	IN(HR)
MOTOR ELECTRIC	M
OUTDOOR HOSE REELS	OH(OHR)
PACKAGE UNIT	PK
PIG LAUNCHER	PL
PULSATION DAMPENER	PD
PUMP	P
SCALE, WEIGHING, MEASURING	SC
SILENCER, MUFFLER	SI
STACK, CHIMNY	SE
STRAINER	ST(STR)
SUMP	SU
TANK, SILO, HOPPER	TK
TOWER, COLUMN	T
UNLOADER	UL
VESSEL (SCRUBBER, ACCUMULATOR, K.O. DRUM, SPHERE, BULLET, SEPARATOR)	V

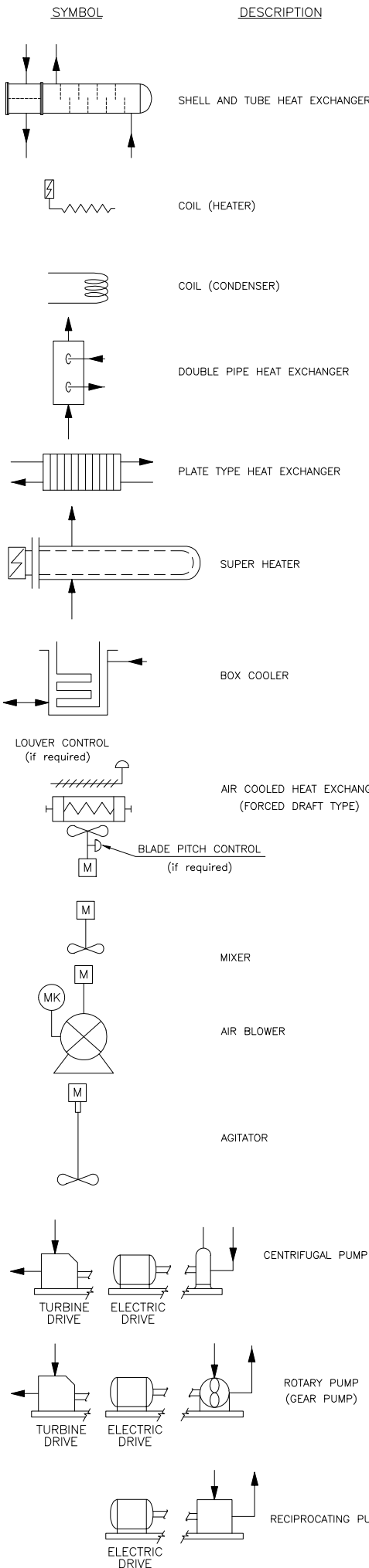
B: PLANT NO ABBREVIATION
GCS PLANT : 2

C: UNIT NO
1 PROCESS
2 UTILITY
3 FIRE WATER

DD: SEQUENTIAL NO (01 TO 09) IF MORE REQUIRED IT CAN BE IDENTIFIED WITH TWO DIGIT SUCH THAT THE FIRST DIGIT COMES FROM THE LAST DIGIT UNIT KEY.

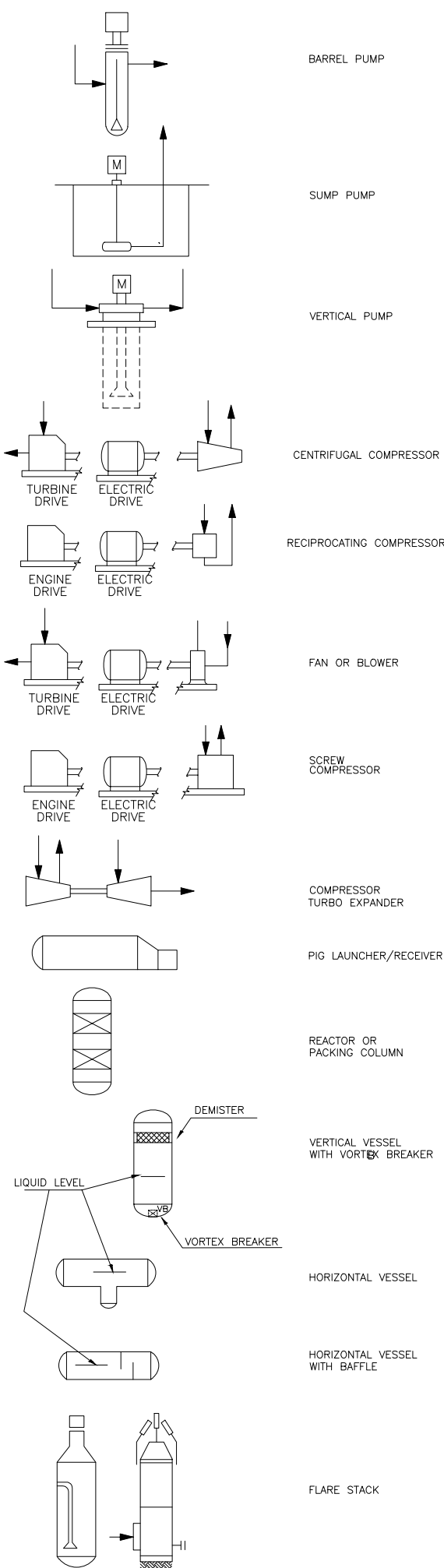
E: ALPHABETICAL LETTER (FOR MULTIPLE IDENTICAL EQ. AND SPARE)

3.2 SYMBOL



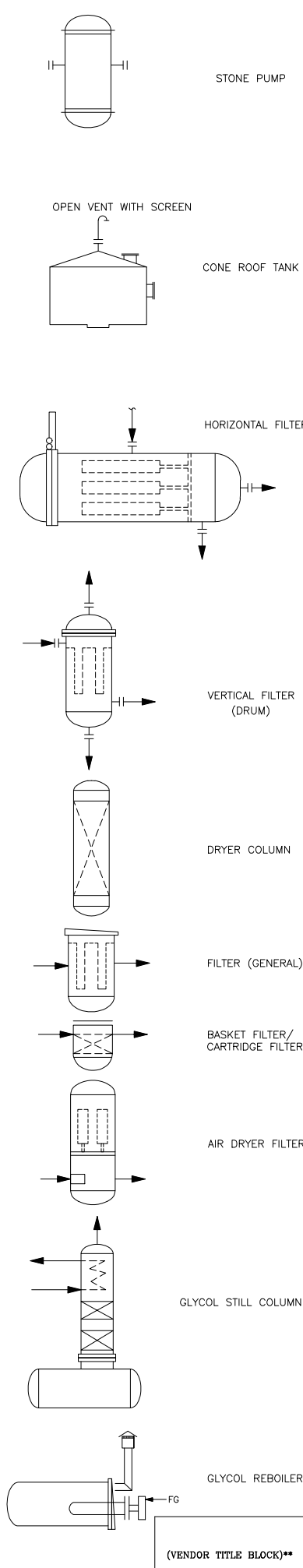
SYMBOL

DESCRIPTION



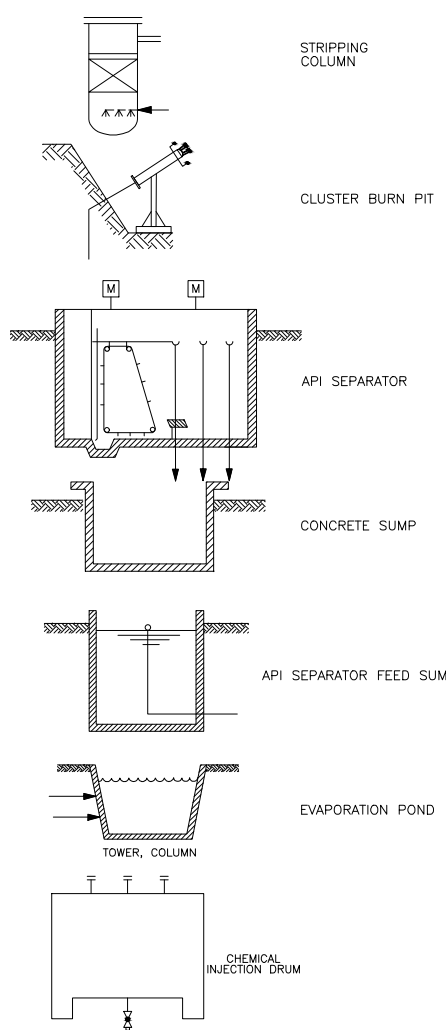
SYMBOL

DESCRIPTION



SYMBOL

DESCRIPTION



NOTES

LEGEND

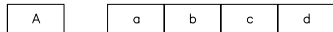
REFERENCE DRAWING	DRG. No.
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KEY PLAN

D03	DEC.2022	AFC	M.ARYAPAR	M.PAKHARIAN	M.MEHRSHAD																				
D02	MAR.2022	IFA	M.ARYAPAR	M.PAKHARIAN	M.MEHRSHAD		***	*****	** **	*** ****	** **	*** ****													
D01	JAN.2022	IFA	M.ARYAPAR	M.PAKHARIAN	M.MEHRSHAD	***																			
D00	OCT.2021	IPC	M.ARYAPAR	M.PAKHARIAN	F.HAJIVAND	***	REV.	DESCRIPTION	BY	DATE	BY	DATE	REV. APPR.												
REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.	اصل و کاپیه نسخ این نقشه و حق آفتابان متعلق به شرکت ملی مناطق نفت خیز جنوب میباشد.																		
PROJECT NAME:						BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION						THE ORIGINAL AND ALL COPIES OF THIS DRAWING TOGETHER WITH THE COPYRIGHT THEREIN ARE THE SOLE PROPERTY OF N.I.S.O.C./ FIELDS													
PROJECT NO.:			971020																						
EPC CONTRACTOR:			EPD/EPC CONTRACTOR (GC):			BINAK OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION																			
						PETROIRAN DEVELOPMENT COMPANY																			
DATE			SCALE			DRAWING BY			CHECKED BY			PROJECT ENG.													
DRAWING TITLE:						NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED																			
APPROVED FOR CONSTRUCTION						BY:			DATE:																
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NS		A3		BK-GCS-PEDCO-120-PR-PI-0001				2 OF 8		D03		053-073-9184		F		2		A		708779		2 OF 8		D03	

5. INSTRUMENT

5.1 INSTRUMENT NUMBERING



A : INSTRUMENT TYPE ASPER SECTION 5.3

(a) : PLANT NO. ASPER SECTION 1









(b) : UNIT NO. ASPER SECTION 1.

(c) : SEQUENCE NO.

(d) : OPTIONAL SUFFIX (ONE LETTER)

5.2 SYMBOLS




5.2.1 LINE / SIGNAL

<u>SYMBOL</u>	<u>DESCRIPTION</u>
	INSTRUMENTS SUPPLY OR CONNECTION TO PROCESS
	PNEUMATIC SIGNAL
	ELECTRICAL SIGNAL (DIGITAL, ANALOGUE SMART/HART)
	HYDRAULIC SIGNAL
	CAPILLARY TUBE
	ELECTROMAGNETIC OR SONIC SIGNAL
	INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)
	FIBER OPTIC







5.2.2 CONTROL VALVE & ACTUATOR

SYMBOL	DESCRIPTION
	HAND CONTROL VALVE
	CONTROL VALVE WITH POSITIONER
	CONTROL VALVE WITH POSITIONER HANDWHEEL
	CYLINDER OR PISTON ACTUATED VALVE
	MOTOR OPERATED VALVE
	SOLENOID VALVE (WITH RESET)
	SOLENOID VALVE (WITHOUT RESET)
	SPRING LOADING VALVE
	HYDRAULIC OPERATED CONTROL VALVE
	CONTROL VALVE (ANGLE TYPE)
	CONTROL VALVE (BUTTERFLY TYPE)
	CONTROL VALVE WITH POSITIONER AND SOLENOID VALVE

5.2.3 SELF ACTUATED REGULATOR

<u>SYMBOL</u>	<u>DESCRIPTION</u>
	PRESSURE-REDUCING REGULATOR
	BACK-PRESSURE REGULATOR
	SELF-CONTAINED REGULATOR












5.2.4 FAILURE ACTION OF CONTROL VALVE

<u>SYMBOL</u>	<u>DESCRIPTION</u>
	FAIL OPEN
	FAIL CLOSE
	FAIL LOCKED
	FAIL LOCKED OPEN
	FAIL LOCKED CLOSE
	THREE WAY VALVE FAIL OPEN TO PATH A-C










5.2.5 PRIMARY ELEMENT

SYMBOL	DESCRIPTION
	ORIFICE TYPE FLOW METER
	POSITIVE DISPLACEMENT TYPE FLOW METER
	ROTAMETER
	VENTURI TYPE FLOW METER
	FLOW NOZZLE
	TURBINE TYPE FLOW METER
	PILOT TUBE TYPE FLOW METER
	ULTRA SONIC FLOW METER
	* = METER TYPE C CORIOLIS MASS FLOW METER M MAGNETIC FLOW METER MPF MULTI PHASE FLOW METER TM THERMAL MASS FLOW METER
	VORTEX FLOW METER
	DISPLACEMENT TYPE LEVEL TRANSMITTER
	DIFFERENTIAL PRESSURE TYPE LEVEL TRANSMITTER
	ULTRASONIC TYPE LEVEL TRANSMITTER
	RADAR TYPE LEVEL TRANSMITTER
	LEVEL GAUGE









5.2.6 INTERLOCK LOGIC SYMBOL

<u>SYMBOL</u>	<u>DESCRIPTION</u>	<u>SYMBOL</u>
	OUTPUT EXIST IF ONE OR MORE INPUT EXIST	
	OUTPUT EXIST IF AND ONLY IF ALL THE INPUTS EXISTS	
	NO OUTPUT EXIST IF ONE AND ONLY ONE INPUT EXISTS	
	TIME DELAY—OUTPUT EXISTS AFTER PRESET TIME	
	OUTPUT EXISTS IF ONE AND ONLY ONE INPUT EXISTS	
	SEQUENTIAL LOGIC CONTROL CONNECTION	












5.2.8 DISTRIBUTED CONTROL/SHARED DISPLAY SYMBOLS

SYMBOL		DESCRIPTION	
		FIELD MOUNTED INSTRUMENT (NOT NORMALLY ACCESSIBLE) TO OPERATOR)	
		BEHIND THE PANEL DEVICES OR FUNCTIONS IN CONTROL ROOM NORMALLY INACCESSIBLE	
		INDICATOR/CONTROLLER/ALARM (NORMALLY ACCESSIBLE TO OPERATOR)	
	H*	SOFTWARE ALARMS WITH SHARED DISPLAY DEVICE	
	L*	(* IS MEASURED VARIABLE)	
	HH*	CRITICAL SOFTWARE ALARM	
	LL*	(* IS MEASURED VARIABLE)	
	R	DATA RECORDING FUNCTION ACCESSIBLE TO OPERATOR	
		I (UNDEFINED INTERLOCK)	
		(XX: INDICATE INTERLOCK SERIAL NO.)	





5.2.10 PROGRAMMABLE LOGIC CONTROLLER (PLC)

<u>SYMBOL</u>	<u>DESCRIPTION</u>
	MOUNTED BEHIND THE CONTROL BOARD NOT NORMALLY ACCESSIBLE TO OPERATOR
	MOUNTED BEHIND THE CONTROL BOARD NORMALLY ACCESSIBLE TO OPERATOR
	CONTROL BOARD MOUNTED AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
	BEHIND OF CONTROL BOARD AUXILIARY LOCATION NOT NORMALLY ACCESSIBLE TO OPERATOR
	AUXILIARY OPERATOR'S INTERFACE DEVICES (ON UCP)
	INTERLOCK IN UCP XX: INTERLOCK SERIAL NO.
	ESD COMMENT X: ESD LEVEL
	UNIT SHUTDOWN COMMENT




























5.2.7 GENERAL INSTRUMENT SYMBOL

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FIELD MOUNTED INSTRUMENT		ELECTRICAL TRACED INSTRUMENT
	INSTRUMENT MOUNTED BEHIND CONTROL PANEL IN CONTROL ROOM		LIGHT (COLOR : R=RED, G=GREEN)
	PANEL MOUNTED INSTRUMENT AUXILIARY CONSOLE		VALVE POSITION INDICATING LAMPS
	LOCAL PANEL MOUNTED INSTRUMENT		CRITICAL SOFTWARE ALARM(* IS MEASURED VARIABLE)
	INSTRUMENT SHARING COMMON HOUSING WITH TWO FUNCTION		CRITICAL SOFTWARE ALARM(* IS MEASURED VARIABLE)
			CRITICAL SHUTDOWN ALARM


5.2.9 COMPUTER (DATA STORAGE) FUNCTION SYMBOL


<u>SYMBOL</u>	<u>DESCRIPTION</u>
	FIELD MOUNTED INSTRUMENT NOT NORMALLY ACCESSIBLE TO OPERATOR
	INSTRUMENT MOUNTED BEHIND CONTROL PANEL IN CONTROL ROOM
	PANEL MOUNTED INSTRUMENT NORMALLY ACCESSIBLE TO OPERATOR
	LOCAL PANEL MOUNTED INSTRUMENT NORMALLY ACCESSIBLE TO OPERATOR

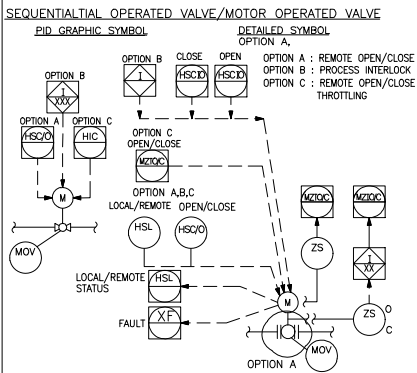
5.2.11 FUNCTION IDENTIFICATION

				*DESIGNATION	SIGNAL		
	SUMMING		SQUARE ROOT		BIAS	A D E F I H O P R mV	ANALOG DIGITAL VOLTAGE FIELD BUS CURRENT HYDRAULIC ELECTROMAGNETIC PNEUMATIC RESISTANCE MILIVOLTS
	AVERAGING		EXPONENTIAL		BIAS		
	DIFFERENCE		NONLINEAR OR UNSPECIFIED		BIAS		
	PROPORTIONAL		TIME FUNCTION		ALARM LOW SIGNAL MONITOR		
	REVERSE PROPORTIONAL		HIGH SELECTING		ALARM HIGH SIGNAL MONITOR		
	INTEGRAL		LOW SELECTING		ALARM HIGH LOW SIGNAL MONITOR		
	DERIVATIVE		HIGH LIMITING		REVERSE ACTION		
	MULTIPLYING		LOW LIMITING		ON/OFF		
	DIVIDING		VELOCITY LIMITER		CONVERT (INPUT/OUTPUT) OF THE FOLLOWING		

5.2.12 MCC IDENTIFICATION

 PLANT MOTOR CONTROL CENTER

 UNIT MOTOR CONTROL CENTER

[illegible]

5. INSTRUMENT (CONTINUED)	
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SIGNAL TYPES

FIRST-LETTER		SUCCEEDING-LETTER			
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSES				
B	BURNER, COMBUSTION				
C				CONTROL	
D		DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS, VIEWING DEVICE		
H	HAND				HIGH/OPEN/START
I	CURRENT (ELEC.)		INDICATE, INPUT		
J	POWER	SCAN			
K	TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW/CLOSE/STOP
M	MOISTURE/HUMIDITY	MOMENTARY			MIDDLE, INTERMEDIATE
N					
O	PRESSURE/VACUUM		ORIFICE, RESTRICTION	OUTPUT	
P	PRESSURE/VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY, NUMBER	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE,DAMPER,LOUVER	
W	WEIGHT, FORCE		WELL		
X	SPECIFIC GRAVITY	X-Axis	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y-Axis		RELAY COMPUTE CONVERT	
Z	POSITION, DIMENSION	Z-Axis		DRIVER,ACTUATOR UNCLASSIFIED FINAL CONTROL ELEMENT	

TYPICAL LETTER COMBINATIONS																	
PROCESS VARIABLE	PRIMARY ELEMENT TRANSMITTER	INDICATING TRANSMITTER	SCAN	INDICATOR	RECORDER	BLIND CONTROLLER	INDICATING CONTROLLER	RECORDING CONTROLLER	SWITCH		ALARM		GLASSVIEWING DEVICE	WELL(W) CONNECTION(P)	SELF-ACTUATED REGULATOR VALVE	SOLENOID VALVE RELAY CONVERTER	FINAL ELEMENT
									ABNORMAL PROCESS FIRST STATE	ABNORMAL PROCESS SECOND STATE	ABNORMAL PROCESS FIRST STATE	ABNORMAL PROCESS SECOND STATE					
									HIGH	LOW	VERY HIGH	VERY LOW					

*RO : RESTRICTION ORIFICE	** PSV : PRESSURE RELIEF OR SAFETY VALVE	PSE : PRESSURE RUPTURE DISC

NOTES
1— FOR MORE DETAILS REFER TO INSTRUMENT HOOK UP DIAGRAM AND PILING ASSEMBLY DRAWING FOR EACH ITEM

PIPING ASSEMBLY DRAWING FOR EACH ITEM:

LEGEND

REFERENCE DRAWING	DRG. No.
*****	*****

KEY PLAN

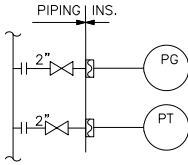
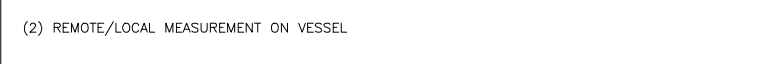
6.1 PRESSURE INSTRUMENT (NOTE 1)

<u>REPRESENTATION</u> <u>ON P&ID</u>	<u>ACTUAL ARRANGEMENT</u>
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<u>REPRESENTATION</u> <u>ON P&ID</u>	<u>ACTUAL ARRANGEMENT</u>
---	---------------------------

<u>REPRESENTATION</u> <u>ON P&ID</u>	<u>ACTUAL ARRANGEMENT</u>
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(1) REMOTE/LOCAL MEASUREMENT ON PIPE OR STANDPIPE	PIPING INS.
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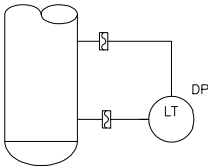
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	NS	A3	BK-GCS-PEDCO-120-PR-PI-0001	5 OF 8	D03

REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.	امل و کلیه نسخ این نقشه و حق اقتباس متعلق به شرکت ملی مناطق نفت خیز جنوب می باشد.												
PROJECT NAME:							BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION												
PROJECT NO.:							971020												
EPC CONTRACTOR:							EPD/EPC CONTRACTOR (GC):							<div></div> <div>TTE THE ORIGINAL AND ALL COPIES OF THIS DRAWING TOGETHER WITH THE COPYRIGHT THEREIN ARE THE SOLE PROPERTY OF N.I.S.O.C./ FIELDS</div>					
<div></div>							<div></div> <div>PETROIRAN DEVELOPMENT COMPANY</div>												
HIRGAN ENERGY – DESIGN & INSPECTION COMPANIES							PEDCO												
BINAK OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION																			
DATE							DRAWING BY			CHECKED BY			PROJECT ENG.						
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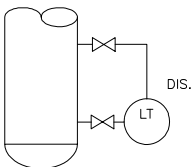
6.2 LT/LG ARRANGEMENT (NOTE 1)

REPRESENTATION ON P&ID

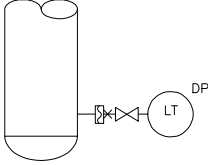
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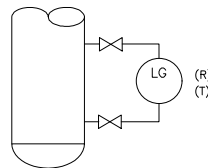
DISPLACEMENT TYPE



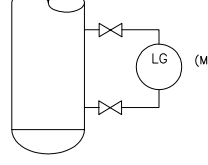
D/P CELL LEVEL TRANSMITTER WITH DIAPHRAGM SEAL (FOR HP TAP)



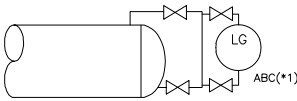
LEVEL GAUGE, SINGLE INSTALLATION



LEVEL GAUGE, SINGLE INSTALLATION

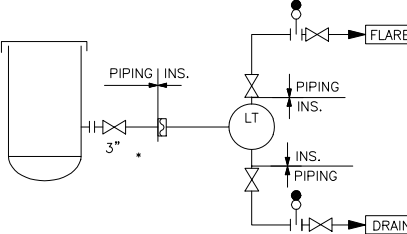
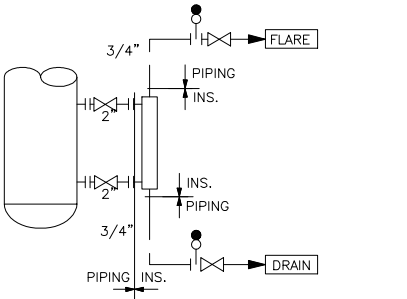
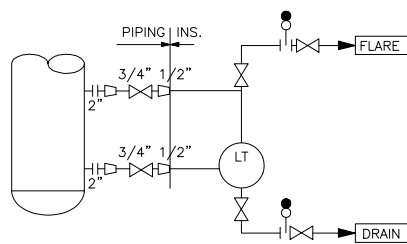


LEVEL GAUGE, MULTIPLE INSTALLATION ON HORIZONTAL VESSEL

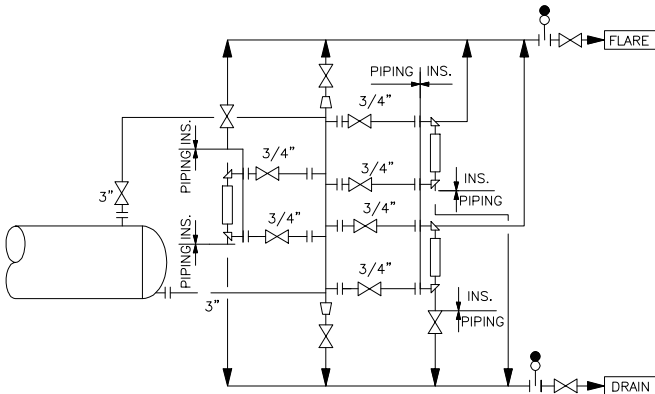
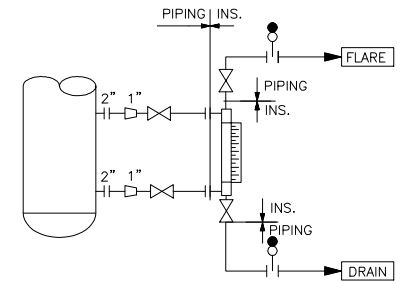
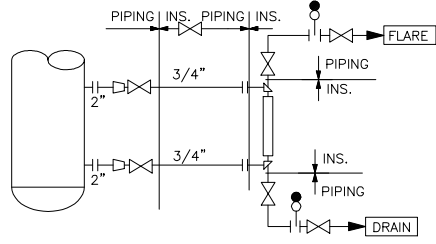


*1. ABC" DENOTES NUMBER OF LEVEL GAUGES.

ACTUAL ARRANGEMENT



(*) FOR LP TAP 2" SHOULD BE CONSIDERED.

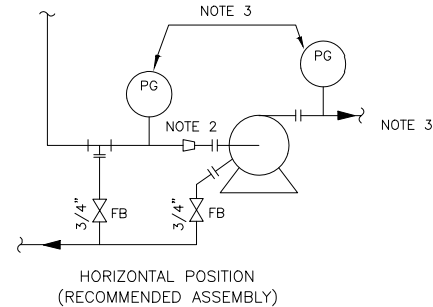
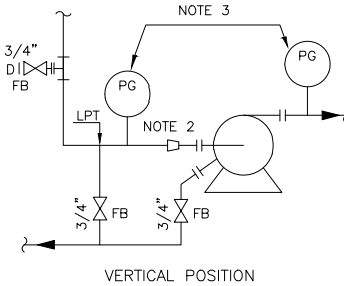


6. TYPICAL PIPING ARRANGEMENT

6.3 DRAIN FOR FILTER AT PUMP SUCTION

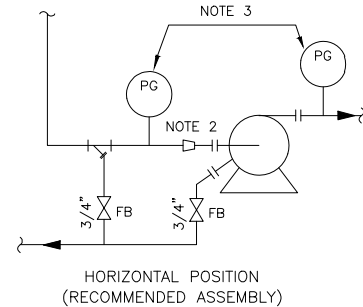
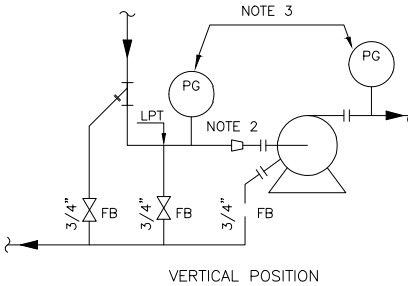
TABLE "A" (NOTE 4)
DRAIN FOR FILTER AT PUMP SUCTION
T-FILTER

TO BE USED FOR LINE $\phi > 2"$



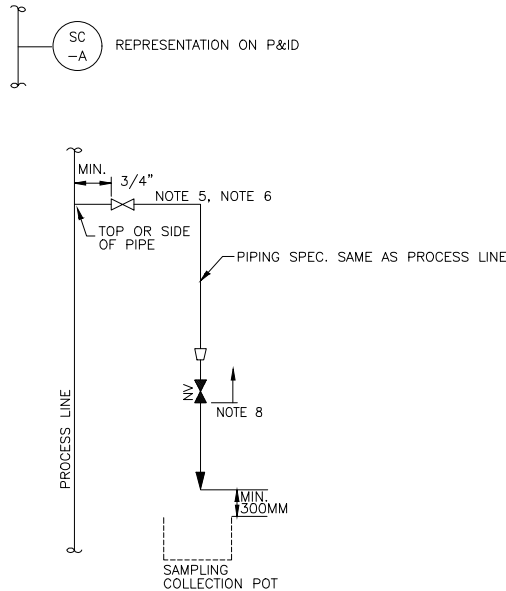
Y-FILTER

TO BE USED FOR LINE $\phi < 2"$

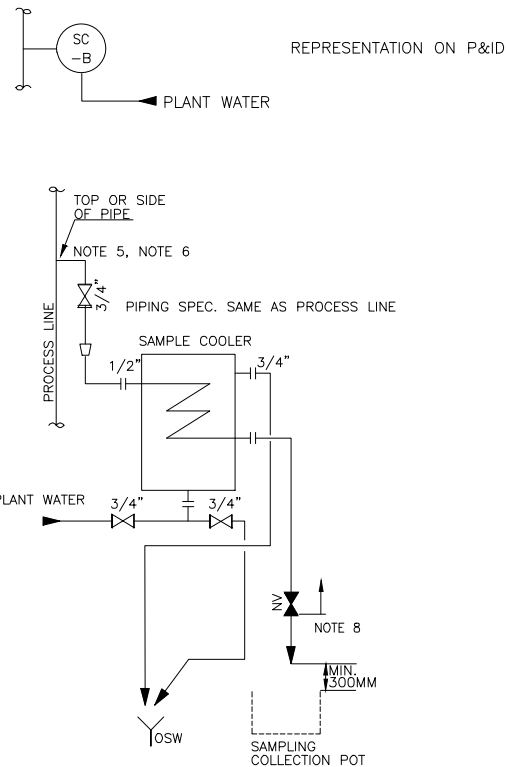


7. SAMPLE CONNECTION DETAILS

7.1 TYPE-A : FOR NON-HAZARDOUS LIQUID AND VAPOR WHOSE TEMPERATURE IS LOWER THAN 65°C. (NOTE 7)



7.2 TYPE-B : FOR NON-HAZARDOUS LIQUID AND VAPOR WHOSE TEMPERATURE IS LOWER THAN 65°C. (NOTE 7)



D03	DEC.2022	AFC	M.ARYAPAR	M.PAKHARIAN	M.MEHRSHAD	
D02	MAR.2022	IFA	M.ARYAPAR	M.PAKHARIAN	M.MEHRSHAD	
D01	JAN.2022	IFA	M.ARYAPAR	M.PAKHARIAN	M.MEHRSHAD	** **
D00	OCT.2021	IPC	M.ARYAPAR	M.PAKHARIAN	F.HAJIVAND	** **

REV. DATE P.O.I.S PREP. CHK. APP. AUT.

PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION

PROJECT NO.: 971020

EPC CONTRACTOR: HIRGAN ENERGY

EPD/EPC CONTRACTOR (GC): PETROIRAN DEVELOPMENT COMPANY

DATE SCALE DRAWING BY CHECKED BY PROJECT ENG.

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

APPROVED FOR CONSTRUCTION BY: DATE:

SCALE SIZE DRAWING NO. SHEET NO. REV. BUDGET REF. LOCATION SIZE CLASS SERIAL NO. SHEET REVISION

NS A3 BK-GCS-PEDCO-120-PR-PI-0001 6 OF 8 D03 053-073-9184 F 2 A 708779 6 OF 8 D03

NOTES

- FOR MORE DETAILS REFER TO INSTRUMENT HOOK UP DIAGRAM AND PIPING ASSEMBLY DRAWING FOR EACH ITEM.
- IF A REDUCER IS REQUIRED AT THE SUCTION OF THE PUMP, IT SHALL BE ECCENTRIC WITH FLUSH TOP.
- PRESSURE GAUGES TO BE INSTALLED IN ARRANGEMENT WITH STANDARD, PREFERABLY IN HORIZONTAL POSITION AND SHALL BE EASILY READABLE.
- ASSEMBLY RECOMMENDATIONS FOR FILTERS PUMP SUCTION HAVE TO BE FOLLOWED. FILTERS ARRANGEMENT DRAWN ON PID SHALL NOT BE CONSIDERED AS AN INSTALLATION REQUIREMENT.
- MINIMIZE DISTANCE FROM PROCESS TAKE-OFF TO SAMPLE STATION.
- SAMPLE CONNECTIONS IN SERVICES WITH ANSI CLASS 900 RATINGS OR MORE SHALL BE PROVIDED WITH TWO BLOCK VALVES.
- IF PROCESS LINE HAS HEAT TRACE, SAMPLE CONNECTIONS SHALL BE PROVIDED WITH HEAT TRACE.
- LINE CLASS SHALL BE THE SAME S THAT OF MAIN LINE.
- GATE VALVE

LEGEND

REFERENCE DRAWING

DRG. No.

KEY PLAN

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7. SAMPLE CONNECTION DETAILS

7.3 TYPE-C : FOR NON-HAZARDOUS LIQUID WITH HIGH POUR POINT (HEAVIER H.C. LIQUID THAN LIGHT DIESEL) WHOSE TEMPERATURE IS HIGHER THAN 65°C. (HEAT TRACE IS REQUIRED)

FOR TYPE-C, TO AVOID SOLIDIFICATION IN LEAD PIPING, FAST LOOP SHALL BE PROVIDED ACROSS CONTROL VALVE OR PUMP AS FOLLOWS :

REPRESENTATION ON P&ID

7.5 TYPE-E : TOXIC CRUDE AND TOXIC GAS SERVICE WHOSE TEMPERATURE IS HIGHER THAN 65°C. (NOTE 3 & 4)

TO FLARE (NOTE 8) REPRESENTATION ON P&ID

REPRESENTATION ON P&ID

REPRESENTATION ON P&ID

Diagram 7.6 Type-F: TOXIC GAS AND TOXIC CRUDE WHOSE TEMPERATURE IS LOWER THAN 65°C. (NOTE 3 & 4)

Diagram 7.6 Type-F: TOXIC GAS AND TOXIC CRUDE WHOSE TEMPERATURE IS HIGHER THAN 65°C. (NOTE 3 & 4)

7.4 TYPE=D : CRUDE AND GAS SERVICE WHOSE TEMPERATURE IS LOWER THAN 65°C. (NOTE 3 & 4)

REPRESENTATION ON P&ID

7.7 TYPE=F : DETAIL "B" SAMPLE CONCTION ASSEMBLY POINT ACCORDING TO NISOC STANDARD DRAWINGS (S4L)

The diagram illustrates a process flow for a sample point assembly connection. The main process line is shown on the left, with a sample bomb connected via two valves (NOTE 5) and two pressure gauges (PG). The sample bomb is labeled "SAMPLE BOMB". The process line is labeled "PROCESS LINE" and "PROCESS FLARE LINE SPEC".

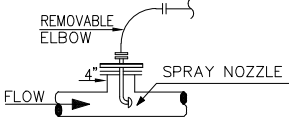
Key components and notes include:

- NOTE 7: 1/2" valve
- NOTE 6: 1/2" valve
- NOTE 5: 1/2" valve
- PG: Pressure Gauge
- SAMPLE BOMB
- PROCESS LINE SPEC
- PROCESS FLARE LINE SPEC

The detail view on the right shows the "SAMPLE POINT ASSEMBLY CONNECTION" with the following specifications:

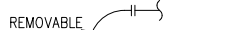
- 1" x 1/2" DINAG NIPPLE CONN. FOR 3/4" APPL. 6000.
- 1" x 1/2" min. LONG NIPPLE BARREL FOR 3/4" APPL. 6000.
- 6" x 1" THREDOLET APPL. 6000. SUPPLIED WITH STON TRAP.
- 1/4" PIPE OR 7/8" W.T. 2.0.
- 200 END BARREL NIPPLE TO THE SAMPLE PIPE
- NO SEAL WELDING REQUIRED
- DIRECTION OF FLOW
- DETAIL "B"
- SAMPLE POINT ASSEMBLY CONNECTION

8.CONTINUOUS CHEMICAL INJECTION IN PROCESS LINE	<p style="text-align: center;">NOTES</p> <p>1- MINIMIZE DISTANCE FROM PROCESS TAKE-OFF TO SAMPLE STATION.</p> <p>2- SAMPLE CONNECTIONS IN SERVICES WITH ANSI CLASS 900 RATINGS OR MORE SHALL BE PROVIDED WITH TWO BLOCK VALVES.</p> <p>3- IF PROCESS LINE HAS HEAT TRACE, SAMPLE CONNECTIONS SHALL BE PROVIDED WITH HEAT TRACE.</p>
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<p style="text-align: center;"><u>TYPE 1</u></p> 	<p>4- SAMPLE CONNECTIONS SHALL BE ACCESSIBLE FROM GRADE AS MUCH AS POSSIBLE.</p> <p>5- THREADED FEMALE CONNECTIONS TO MATE WITH MALE CONNECTION OF SAMPLE CYLINDER CONNECTIONS SHALL NOT PUT TORQUE ON TUBE OR PIPING.</p> <p>6- LINE CLASS SHALL BE THE SAME S THAT OF MAIN LINE.</p> <p>7- BALL VALVE SHALL BE PROVIDED.</p> <p>8- RELEASE TO LOCAL BURN PIT FOR WELLSITE AREA.</p>
<p>INJECTION VALVE PERMANENTLY CONNECTED</p>	<p style="text-align: center;">LEGEND</p>

INJECTION DEVICE PERMANENTLY CONNECTED (GAS SERVICE)		
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TYPE 2



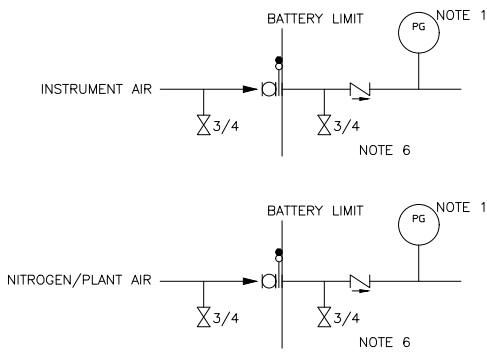
REMOVABLE
ELBOW

45° CUT

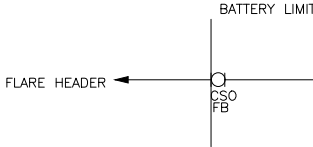
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TYPICAL DETAIL FOR ISOLATION BATTERY LIMIT VALVING

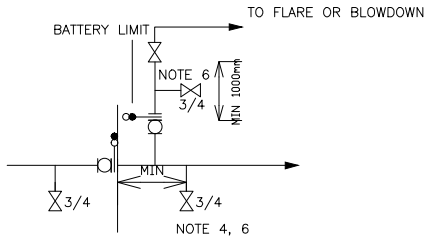
AIR AND NITROGEN BATTERY LIMIT VALVING



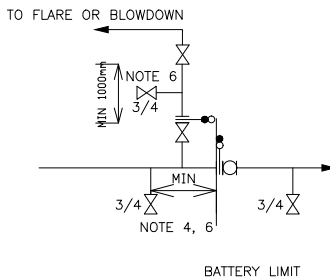
FLARE BATTERY LIMIT VALVING



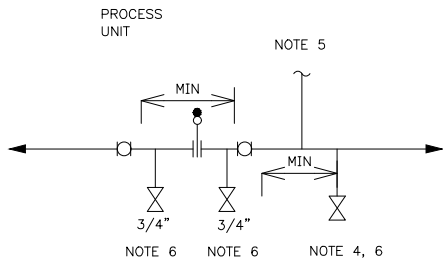
HIGH VAPOUR PRESSURE SERVICE UPSTREAM ISOLATION



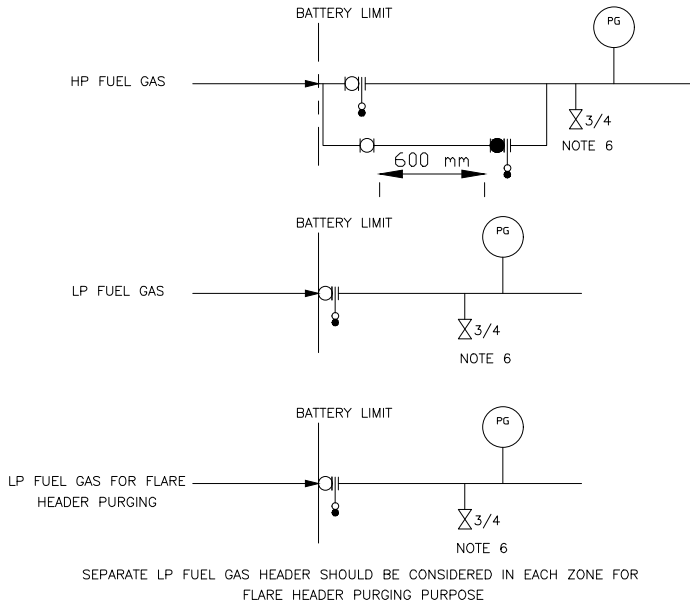
HIGH VAPOUR PRESSURE SERVICE DOWN STREAM ISOLATION



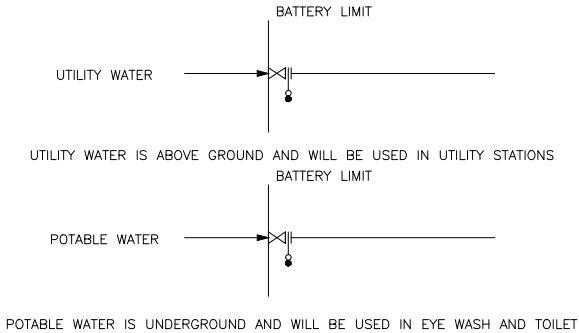
TWO WAY ISOLATION



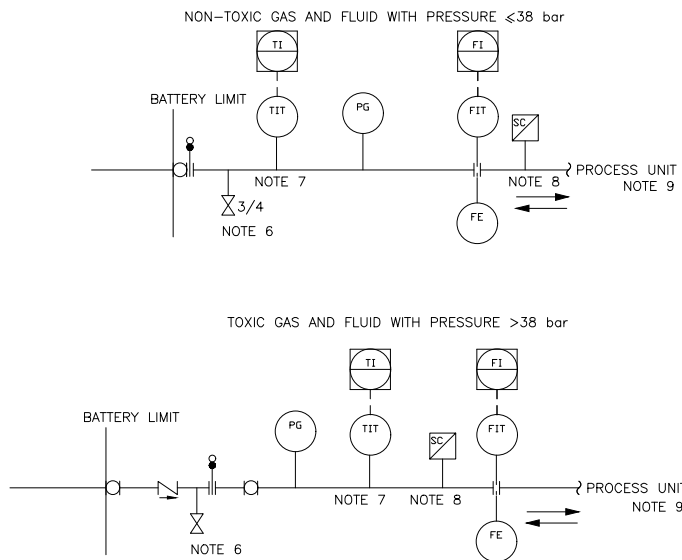
FUEL GAS BATTERY LIMIT VALVING



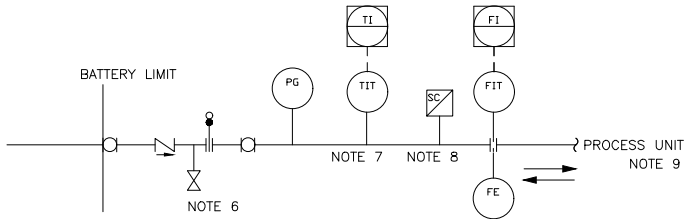
UTILITY & POTABLE WATER BATTERY LIMIT VALVING



PROCESS BATTERY LIMIT VALVING



TOXIC GAS AND FLUID WITH PRESSURE >38 bc



NOTE

- 1- A LOCAL PG ON EACH STREAM SHALL BE PROVIDED.
- 2- DELETED.
- 3- GENERALLY BALL VALVE IS USED FOR GAS SERVICES AND GATE VALVE FOR LIQUID SERVICES.
- 4- DRAIN VALVE SIZE IS DEPENDED ON PROCESS LINE SIZE.
NORMALLY 3/4".
- 5- TO/ FROM FLUSHING OIL, FLARE CONNECTION, ETC., IF REQUIRED.
- 6- END CONNECTION WILL BE SPECIFIED BY PIPING MATERIAL SPECIFICATION FOR EACH PIPING CLASS.
- 7- TIT TO BE LOCATED AT DOWNSTREAM OF THE FLOW ELEMENT.
- 8- SAMPLE CONNECTION TO BE PROVIDED FOR ALL PRODUCTS LEAVING AND/OR ENTERING THE UNIT.
- 9- ALL HARDWARE SHALL NOT BE DUPLICATED ON THE ADJACENT UNITS.
- 10- DRAIN VALVE SIZE IS DETERMINED BASED ON BB2-SD-5014.

LEGEND

REFERENCE DRAWING	DRG. No.
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