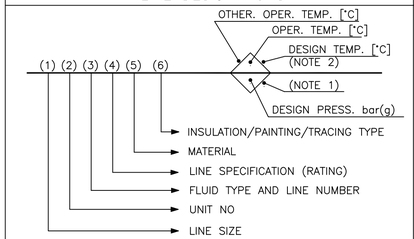
1208-01-PR-PID-051

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

LINE DESIGNATIONS



NOTE 1: F.V. HAS BEEN INDICATED IN CASE THE REQUIREMENT OF FULL VACUUM DESIGN PRESSURE IS NECESSARY.

NOTE 2: DESIGN TEMPERATURE HAS TO BE CONSIDERED EQUAL TO OPERATING TEMPERATURE (+30°C) WHERE NO INDICATION IS PRESENT.

FLUID TYPE

UP = UREA PROCESS FLUIDS.
SA = PLANT AIR (SERVICE AIR)
CWS/CWR = CIRCULATING COOLING WATER SUPPLY/RETURN.
CY = CHEMICAL WATER (UREA).
OY = OIL SEWER.
SY = POTENTIALLY OILY CONTAMINATED WATER.
HS = HIGH PRESSURE SUPERHEATED STEAM (O.P.= 39 bar(g); O.T.= 370°C).
MS = MEDIUM PRESSURE SUPERHEATED STEAM. (O.P.= 23.7 bar(g); O.T.= 327°C).
MSS = MEDIUM PRESSURE SATURATED STEAM (O.P.= 21.8 bar(g); O.T.= 219°C).
MLS = MEDIUM LOW PRESSURE SATURATED STEAM (O.P.= 5.5 bar(g); O.T.= 162°C).
LS = LOW PRESSURE SATURATED STEAM (O.P.= 3.4 bar(g); O.T.= 147°C).
CO2 = CARBON DIOXIDE (CO2 GAS).
NHG = AMMONIA GAS.
NHL = AMMONIA LIQUID.
NHH = HIGH PRESSURE AMMONIA LIQUID.
KW = HIGH PRESSURE WASHING CONDENSATE. (O.P.= 170 bar (g); O.T.=120°C).
HW = MEDIUM PRESSURE WASHING CONDENSATE. (O.P.= 24.5 bar (g); O.T.=120°C).
LW = LOW PRESSURE WASHING CONDENSATE. (O.P.= 8 bar (g); O.T.=120°C).
MC = MEDIUM PRESSURE CONDENSATE.
LC = LOW PRESSURE CONDENSATE.
CD = CLOSE DRAIN (TO 11-TK-104).
BD = BLOW DOWN.
FL = TO FLARE.
SW = SERVICE WATER.
DW = DEMI WATER / DEMINERALIZED WATER CLOSED CIRCUIT.
IA = INSTRUMENT AIR.
UD = UREA DUST.
UG = UREA GRANULATED
NG = NATURAL GAS
NIT = NITROGEN.
FG = FUEL GAS.
UF = UREA/FORMALDEHYDE/WATER SOLUTION.
OD = OPEN DRAIN (TO 11-TK-153).
AIR = ATMOSPHERIC AIR.
PC = PROCESS CONDENSATE.
CHM = AMMONIA SULPHATE. (CHEMICAL)
SAC = SULFURIC ACID.
VG = VENT GAS.
CDS = AMMONIA SULPHATE CLOSE DRAIN (TO 11-TK-158).
PW = POTABLE WATER
LO = LUBE OIL
VG = VENT GAS

INSULATION/PAINTING/TRACING TYPE

ET= ELECTRIC TRACED LINE
C= COLD INSULATED LINE (TEMP.: +5°C/-273°C)
H= HOT INSULATED LINE (TEMP.: +6°C AND ABOVE)
N= NOT PAINTED AND NOT INSULATED LINE
ST= STEAM TRACED LINE
DT= DOUBLE STEAM TRACED LINE
V= LINE WITH EXTERNAL PAINTING ONLY
SJ= JACKETED LINE
P= PERSONAL PROTECTION
UW= UNDER GROUND LINE

= ELECTRICALLY HEATED LINE
= COLD INSULATED LINE
= HOT INSULATED LINE
= JACKETED LINE
= STEAM TRACING
= DOUBLE STEAM TRACING

INSTRUMENT LINE SYMBOLS

= CONNECTION TO PROCESS
= CAPILLARY TUBING (FILLED SYSTEM)
= PNEUMATIC SIGNAL
= HYDRAULIC SIGNAL
= ELECTRIC SIGNAL
= INTERNAL SYSTEM LINK (SOFTWARE OR DATALINK)
AS = AIR SUPPLY
ES = ELECTRIC SUPPLY
GS = GAS SUPPLY (EXCEPT AIR AND NITROGEN)
HS = HYDRAULIC SUPPLY
NS = NITROGEN SUPPLY
SS = STEAM SUPPLY
WS = WATER SUPPLY

VALVES

= GATE
= GLOBE
= CHECK
= PLUG
= BALL
= 3-WAY
= 4-WAY
= ANGLE
= DIAPHRAGM
= BUTTERFLY
= SINGLE BODY TYPE (WITH SINGLE THREE WAY PLUG)
= SINGLE BODY TYPE (WITH DOUBLE THREE WAY PLUG)
= PRESSURE RELIEF OR SAFETY VALVE ANGLE PATTERN. SPRING OR WEIGHT LOADED OR WITH INTEGRAL PILOT
= VACUUM BREAKER
= CONTROL VALVE DIAPHRAGM OPERATED
= CONTROL VALVE (WITH HAND ACTUATOR-SIDE MOUNTED)
= CONTROL VALVE (ON-OFF)
= ELECTRIC MOTOR OPERATED
= SOLENOID OPERATED
= CAR SEAL OPEN
= CAR SEAL CLOSED
= NORMALLY OPEN
= NORMALLY CLOSED
= NEEDLE VALVE
= BACKPRESSURE REGULATOR
= LOCKED OPEN
= LOCKED CLOSED
= AUTOMATIC NON RETURN/ MINIMUM FLOW VALVE (WITH NON RETURN VALVES IN BOTH DIRECTION)
= AUTOMATIC NON RETURN/ MINIMUM FLOW VALVE

MISCELLANEOUS

= STEAM TRAP (FLOATING TYPE)
= STEAM TRAP (THERMAL TYPE)
= Y STRAINER
= BASKET STRAINER
= T STRAINER
= SPECTABLE BLIND
= DRIP RING
= SINGLE BLIND
= BLIND FLANGE
= CAP (BUTT WELD)
= SCREWED CAP
= REDUCER
= HOSE CONNECTION
= SPECIAL LENS GASKET (USED IN HIGH PRESSURE SECTION)
= SPECIAL LENS GASKET WITH NIPPLE (USED IN HIGH PRESSURE SECTION)
= OPEN SEWER (FUNNEL)
= EXPANSION JOINT
HS = HOSE STATION
SES = SAFETY SHOWER
CB = CATCH BASIN
MO = MANHOLE
DU = DUCT

PIPING REQUIREMENT (REFER TO DOC. ZA-E-06667)

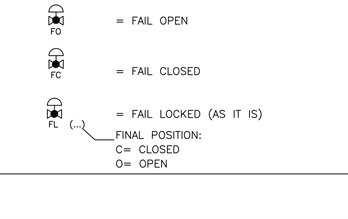
= SLOPED PIPE (WITH SPECIFIC SLOPE REQUIREMENT)
NO POCKET = NO LOW POINT LINE
LPT = LOWEST POINT
HPT = HIGHEST POINT

INSTRUMENTS (as per ISA S 5.1)

INSTRUMENTS INDICATIONS

= LOCAL FIELD INSTRUMENT
= INSTRUMENT ON PANEL OR HARD CONSOLE IN CENTRAL CONTROL ROOM
= INSTRUMENT ON LOCAL PANEL
= LOCAL INSTRUMENT FOR MORE THAN ONE FUNCTION
= DISTRIBUTED CONTROL SYSTEM (DCS) FUNCTION IN CENTRAL CONTROL ROOM
= DCS AUXILIARY INTERFACE DEVICE
= SHUTDOWN LOGIC ON ESD
= LOGIC ON DCS
= INSTRUMENT PURGE
= INSTRUMENT LOCATED IN THE BACK BOARD
= LAMP ON DCS

INSTRUMENTS ELEMENTS



CONTROL VALVES

ACTUATOR ACTION IN EVENT OF ACTUATOR POWER FAILURE:

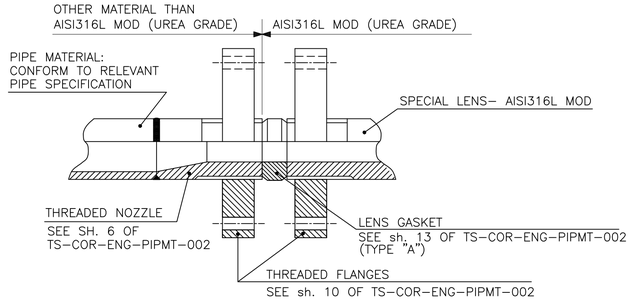
FO = FAIL OPEN
FC = FAIL CLOSED
FL (...) = FAIL LOCKED (AS IT IS)
FINAL POSITION:
C= CLOSED
O= OPEN

TYPICAL INSTRUMENT NAMES (IDENTIFICATION LETTERS)

INSTRUMENT FUNCTION \ MEASURED VARIABLE		ANALYSIS	DENSITY	FLOW	HAND	LEVEL	CURRENT	PRESSURE	DIFFERENTIAL PRESSURE	SPEED	TEMPERATURE	MULTIVARIABLE	VISCOSITY	POSITION
ALARM	HIGH	AAH				LAH	IAH	PAH	PDH			UA		
	LOW	AAL				LAL	IAL	PAL	PDL					
CONTROLLER		AC		FC	HC	LC		PC	PDC	SC	TC			ZC
CONTROL VALVE		AV		FV	HV	LV		PV	PDV	SV	TV			
SELF ACTUATED CONTROL VALVE		ACV		FCV	HCV	LCV		PCV	PDCV	SCV	TCV			
PRIMARY ELEMENT		AE	DE	FE		LE		PE	PDE	SE	TE			ZE
GLASS				FG		LG								
INDICATOR		AI	DI	FI		LI	II	PI	PDI	SI	TI	UI	VI	ZI
INDICATING – CONTROLLER		AIC		FIC	HIC	LIC		PIC	PDIC	SIC	TIC			
INTEGRATOR				FQ										
RATIO RELAY		AFY		FFY		LFY		PFY	PDFY		TFY			
RESTRICTION ORIFICE				FO										
COMPUTING RELAY, SOLENOID VALVE, CONVERTER, ETC.		AY		FY	HY	LY		PY	PDY	SY	TY			ZY
RUPTURE DISK								PSE						
SAFETY VALVE								PSV						
SWITCH		AS		FS	HS	LS		PS	PDS	SS	TS			ZS
HIGH SWITCH		ASH		FSH		LSH		PSH	PDSH	SSH	TSH			ZSH
HIGH HIGH SWITCH	(WITH CONNECTION TO INTERLOCK SYSTEM (ESD))	ASXH		FSXH		LSXH	ISXH	PSXH	PDSXH		TSXH			ZSXH
LOW SWITCH		ASL		FSL		LSL		PSL	PDSL	SSL	TSL			ZSL
LOW LOW SWITCH	(WITH CONNECTION TO INTERLOCK SYSTEM (ESD))	ASXL		FSXL		LSXL	ISXL	PSXL	PDSXL		TSXL			ZSXL
TRANSMITTER		AT	DT	FT		LT	IT	PT	PDT	ST	TT		VT	ZT
WELL											TW			
INDICATING LIGHT		AL		FL		LL		PL	PDL	SL	TL	EL		ZL
LIMIT SWITCH (HIGH POSITION)														ZSH
LIMIT SWITCH (LOW POSITION)														ZSL
ON-OFF VALVE	(WITH CONNECTION TO INTERLOCK SYSTEM (ESD))											XV		
HAND SWITCH FORCED					HSF									

LT DP = DP CELL LEVEL TRANSMITTER
LT DISP = DISPLACER TYPE LEVEL TRANSMITTER
LT CP = CAPACITIVE TYPE LEVEL TRANSMITTER
LT BUB = BUBBLER TYPE LEVEL TRANSMITTER
LT NUC = NUCLEONIC TYPE LEVEL TRANSMITTER
LG M = MAGNETIC LEVEL INDICATOR
LG G = REFLEX LEVEL INDICATOR
SG = SIGHT GLASS
= ATMOSPHERIC VENT
AP (...) = SAMPLE CONNECTION (NOTE 7)

DETAIL "A"



GENERAL NOTES:

1) = BATTERY OR PACKAGE UNIT
2) CONTRACTOR / MANUFACTURER/SUPPLIER
3) MIN = WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMETERS) IN ORDER TO PREVENT DEAD ZONES AND CONSEQUENT CRYSTALLIZATION PROBLEMS.
4) CONVERTER IS AN INTEGRAL PART OF ELECTRO-PNEUMATIC POSITIONER (4-20mA OR FIELD BUS FOUNDATION AS APPLICABLE) ALONG WITH THE VALVE.
5) LT ON UPSTREAM VESSELS TO BE VISIBLE FORM LV BYPASS VALVE.
6) TAG NUMBER OF FLOW ELEMENT WILL BE THE SAME OF TAG INSTRUMENTS SHOWN IN P&IDs.
7) FOR SAMPLE CONNECTION DETAIL IN UREA SYNTHESIS AND GRANULATION REFER TO 1208-11-PR-PID-080/081.
8) ALL PRESSURE TRANSMITTERS ARE EQUIPPED WITH ISOLATING VALVES EXCEPT FOR ASSEMBLY NUMBERS 20J AND 20K. FOR MORE DETAIL REFER TO DOCUMENT GA-E-60902.

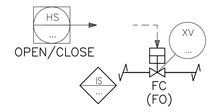
PIPING MATERIALS

04 = GALVANIZED
24 = CS
26 = CS (PTFE LINED)
40 = SS304L
42 = SS316L
43 = SS316L (ALLOY TRIM)
70 = ALLOY 20
14U = LOW TEMP. CS
40U = SS304L (UREA GRADE)
42U = SS316L (UREA GRADE)
L90 = UREA GRADE SS (AISI 316L MOD.)
M90 = UREA GRADE SS (AISI 316L MOD.)
K90 = (AISI 316L MOD. MEDIUM PRESSURE)

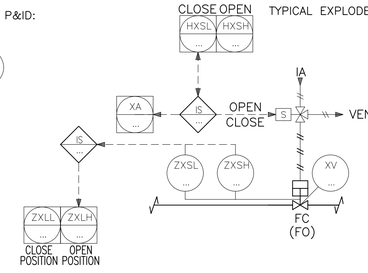
FIRST LETTER INDICATES FLANGE RATING:
B = 150 #
D = 300 #
F = 600 #
G = 900 #
H = 1500 #
J = 2500 #

ON-OFF VALVES (XV) – TYPICAL

REPRESENTATION ON PROCESS P&ID:



TYPICAL EXPLODED VIEW:



LICENSOR REF. : P40

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
03	31.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	04.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
01	13.06.2018	APPROVED FOR CONSTRUCTION	M.Yazdanpanah	A.Azma	A.Azma	M.Saremi
00	21.01.2018	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت سرمایه گذاری صنایع پتروشیمی
MC : شرکت سرمایه گذاری صنایع پتروشیمی
EPCC CONTRACTOR : PIDEC

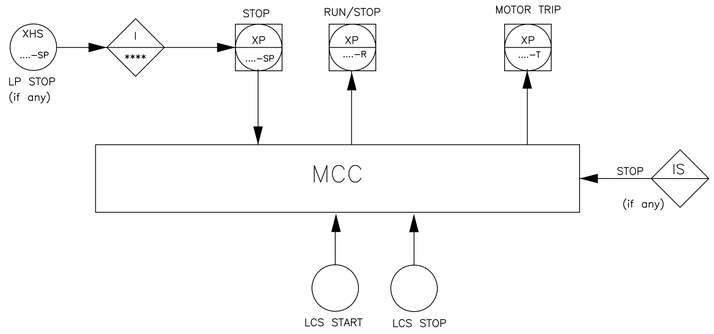
PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM SYMBOLS AND IDENTIFICATION FOR UREA SYNTHESIS AND GRANULATION PLANT

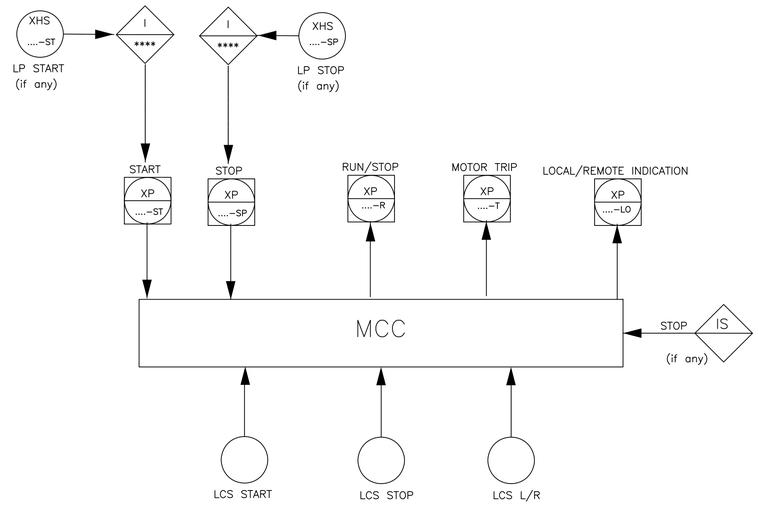
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. :	REV.	SIZE :
SHT. : 1 OF 2	PIDEC PROJECT NO. : 1208	1208-01-PR-PID-051	03	A1

TYPICAL MOTOR TYPE

TYPE –A



TYPE –B



REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

LIST OF PROCESS & INSTRUMENTATION DIAGRAM

1208-01-PR-PID-051 (SHEET 1 & 2)	PIPING AND INSTRUMENTATION DIAGRAM SYMBOLS AND IDENTIFICATION FOR UREA SYNTHESIS AND GRANULATION PLANT
1208-11-PR-PID-051	PIPING AND INSTRUMENTATION DIAGRAM AMMONIA HIGH PRESSURE PUMPS
1208-11-PR-PID-052	PIPING AND INSTRUMENTATION DIAGRAM CARBAMATE HIGH PRESSURE PUMPS
1208-11-PR-PID-053	PIPING AND INSTRUMENTATION DIAGRAM HIGH PRESSURE SECTION 1 OF 4
1208-11-PR-PID-054	PIPING AND INSTRUMENTATION DIAGRAM HIGH PRESSURE SECTION 2 OF 4
1208-11-PR-PID-055	PIPING AND INSTRUMENTATION DIAGRAM HIGH PRESSURE SECTION 3 OF 4
1208-11-PR-PID-056	PIPING AND INSTRUMENTATION DIAGRAM HIGH PRESSURE SECTION 4 OF 4
1208-11-PR-PID-057	PIPING AND INSTRUMENTATION DIAGRAM MEDIUM PRESSURE SECTION 1 OF 4
1208-11-PR-PID-058	PIPING AND INSTRUMENTATION DIAGRAM MEDIUM PRESSURE SECTION 2 OF 4
1208-11-PR-PID-059	PIPING AND INSTRUMENTATION DIAGRAM MEDIUM PRESSURE SECTION 3 OF 4
1208-11-PR-PID-060	PIPING AND INSTRUMENTATION DIAGRAM MEDIUM PRESSURE SECTION 4 OF 4
1208-11-PR-PID-061	PIPING AND INSTRUMENTATION DIAGRAM LOW PRESSURE SECTION 1 OF 3
1208-11-PR-PID-062	PIPING AND INSTRUMENTATION DIAGRAM LOW PRESSURE SECTION 2 OF 3
1208-11-PR-PID-063	PIPING AND INSTRUMENTATION DIAGRAM LOW PRESSURE SECTION 3 OF 3
1208-11-PR-PID-064	PIPING AND INSTRUMENTATION DIAGRAM VACUUM EVAPORATION SECTION 1 OF 5
1208-11-PR-PID-065	PIPING AND INSTRUMENTATION DIAGRAM VACUUM EVAPORATION SECTION 2 OF 5
1208-11-PR-PID-066	PIPING AND INSTRUMENTATION DIAGRAM VACUUM EVAPORATION SECTION 3 OF 5
1208-11-PR-PID-067	PIPING AND INSTRUMENTATION DIAGRAM VACUUM EVAPORATION SECTION 4 OF 5
1208-11-PR-PID-068	PIPING AND INSTRUMENTATION DIAGRAM VACUUM EVAPORATION SECTION 5 OF 5
1208-11-PR-PID-069	PIPING AND INSTRUMENTATION DIAGRAM PROCESS CONDENSATE TREATMENT SECTION 1 OF 4
1208-11-PR-PID-070	PIPING AND INSTRUMENTATION DIAGRAM PROCESS CONDENSATE TREATMENT SECTION 2 OF 4
1208-11-PR-PID-071	PIPING AND INSTRUMENTATION DIAGRAM PROCESS CONDENSATE TREATMENT SECTION 3 OF 4
1208-11-PR-PID-072	PIPING AND INSTRUMENTATION DIAGRAM PROCESS CONDENSATE TREATMENT SECTION 4 OF 4
1208-11-PR-PID-073	PIPING AND INSTRUMENTATION DIAGRAM STEAM CONDENSATE RECOVERY SYSTEM
1208-11-PR-PID-074 (SHEET 1 ~ 5)	PIPING AND INSTRUMENTATION DIAGRAM WASHING SYSTEM
1208-11-PR-PID-075	PIPING AND INSTRUMENTATION DIAGRAM STEAM SYSTEM 1 OF 2
1208-11-PR-PID-076	PIPING AND INSTRUMENTATION DIAGRAM STEAM SYSTEM 2 OF 2
1208-11-PR-PID-077	PIPING AND INSTRUMENTATION DIAGRAM OFF SPEC TANK AND PUMPS
1208-11-PR-PID-078	PIPING AND INSTRUMENTATION DIAGRAM DEMINERALIZED WATER CLOSED CIRCUIT
1208-11-PR-PID-079	PIPING AND INSTRUMENTATION DIAGRAM BLOW DOWN SYSTEM
1208-11-PR-PID-080	PIPING AND INSTRUMENTATION DIAGRAM SAMPLE CONNECTION DETAIL
1208-11-PR-PID-081	PIPING AND INSTRUMENTATION DIAGRAM SAMPLE CONNECTION DETAIL
1208-18-PR-PID-051	PIPING AND INSTRUMENTATION DIAGRAM GRANULATOR FEED SYSTEM
1208-18-PR-PID-052	PIPING AND INSTRUMENTATION DIAGRAM GRANULATOR
1208-18-PR-PID-053	PIPING AND INSTRUMENTATION DIAGRAM GRANULATOR EXTRACTOR
1208-18-PR-PID-054	PIPING AND INSTRUMENTATION DIAGRAM GRANULATOR FLUIDIZATION AIR
1208-18-PR-PID-055	PIPING AND INSTRUMENTATION DIAGRAM GRANULATOR ATOMIZATION AIR
1208-18-PR-PID-056	PIPING AND INSTRUMENTATION DIAGRAM FIRST FLUID BED COOLER
1208-18-PR-PID-057	PIPING AND INSTRUMENTATION DIAGRAM ELEVATORS
1208-18-PR-PID-058	PIPING AND INSTRUMENTATION DIAGRAM SCREENING 1
1208-18-PR-PID-059	PIPING AND INSTRUMENTATION DIAGRAM SCREENING 2
1208-18-PR-PID-060	PIPING AND INSTRUMENTATION DIAGRAM ROLL CRUSHERS
1208-18-PR-PID-061	PIPING AND INSTRUMENTATION DIAGRAM FINAL FLUID BED COOLER
1208-18-PR-PID-062	PIPING AND INSTRUMENTATION DIAGRAM GRANULATOR DUST SCRUBBER
1208-18-PR-PID-063	PIPING AND INSTRUMENTATION DIAGRAM COOLER SCRUBBER
1208-18-PR-PID-064	PIPING AND INSTRUMENTATION DIAGRAM GRANULATION STACK
1208-18-PR-PID-065	PIPING AND INSTRUMENTATION DIAGRAM UREA SOLUTION RECYCLE
1208-18-PR-PID-066	PIPING AND INSTRUMENTATION DIAGRAM GRANULATION CONDENSATE RECOVERY SYSTEM
1208-18-PR-PID-067	PIPING AND INSTRUMENTATION DIAGRAM UF-85 STORAGE TANKS AND PUMPS
1208-18-PR-PID-068	PIPING AND INSTRUMENTATION DIAGRAM NH3 CHILLING SEPARATORS
1208-18-PR-PID-069	PIPING AND INSTRUMENTATION DIAGRAM SULPHURIC ACID STORAGE TANK AND PUMPS
1208-18-PR-PID-070	PIPING AND INSTRUMENTATION DIAGRAM GRANULATOR AMMONIA SCRUBBER
1208-18-PR-PID-071	PIPING AND INSTRUMENTATION DIAGRAM AMMONIUM SULPHATE CLOSE DRAIN
1208-18-PR-PID-072	PIPING AND INSTRUMENTATION DIAGRAM AMMONIUM SULPHATE STORAGE TANKS AND PUMPS
1208-18-PR-PID-073	PIPING AND INSTRUMENTATION DIAGRAM GRANULATOR UREA HEADERS DRAINS
1208-18-PR-PID-074	PIPING AND INSTRUMENTATION DIAGRAM GRANULATION DETAILS
1208-18-PR-PID-075	PIPING AND INSTRUMENTATION DIAGRAM START-UP BIN

LICENSOR REF. : P--

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
03	31.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	04.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
01	13.06.2018	APPROVED FOR CONSTRUCTION	M.Yazdanpanah	A.Azma	A.Azma	M.Saremi
00	21.01.2018	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت سرمایه گذاری صنایع پتروشیمی (سهامی خاص)

MC : شرکت مدیریت طرح سرمایه گذاری

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM SYMBOLS AND IDENTIFICATION FOR UREA SYNTHESIS AND GRANULATION PLANT

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-01-PR-PID-051	REV. 03	SIZE : A1
SHT. : 2 OF 2	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-011

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-02-PR-PID-001-02

NOTES:

1- ALL SIGNALS WILL BE REPEATED IN FCS (BY REDUNDANT MODBUS)

2- TT(s) AND TG(s) ARE 1 1/2" FLANGE TYPE AND ACCORDING TO ANSI B16.5 ,EXCEPT FOR RATING 1500# AND HIGHER THAT ARE WELDED TYPE (IF ANY)

3- TEMPORARY STRAINER.

4- AXIAL NON-SLAM CHECK VALVE

5- ALL INSTRUMENT TAG NUMBER HAVE PREFIX OF NO. 11 .FOR EXAMPLE 11-TG-10154

6- THE UPSTREAM AND DOWNSTREAM OF FE IS 12D AND 4D.

7- AS CLOSE AS POSSIBLE TO COMPRESSOR SUCTION.

8- LSHH-10130 TO 10133 A/B/C HAVE SEPARATE NOZZLE CONNECTION FOR INSTALLING ON VESSEL

9- All THE MANUAL & CHECK VALVE IS STANDARD TYPE OF VALVE.

10- FYHS-10131 WILL SEND HIGHER INPUT VALUE TO CONTROL VALVE AUTOMATICALLY OR MANUALLY SELECTABLE VALUE BY OPERATOR.

11- TRIM LINE FOR:
- 11-E-119A: 11-CWR11070-B24-V (SHELL SIDE) ; 11-C0211070-D24-N (TUBE SIDE)
- 11-E-119B: 11-CWR11071-B24-V (SHELL SIDE) ; 11-C0211071-D50-N (TUBE SIDE)
- 11-E-119C: 11-CWR11072-B24-V (SHELL SIDE) ; 11-C0211072-G50-N (TUBE SIDE)

12- TUBE RAPTURE

13- SAMPLING DEVICE

14- DIFFUSER FOR :
11-HV-10130: 6"x10", 10"x14", 14"x18", CONNECTION DELIVER @ 18" BW
11-FV-10138, 3"x4", 4"x6", 6"x10", 10"x16", CONNECTION DELIVER @ 16" BW

15- COMPRESSOR VENDOR SCOPE OF DESIGN / SUPPLY.

16- FOR COMPRESSOR VENDOR P&IDS REFER TO VD-1208-301B-PID-401 TO 408.

EQUIPMENT LIST

11-L-106	11-C-101	11-V-115A
	11-E-119A	11-V-115B
	11-E-119B	11-V-115C
	11-E-119C	11-V-115D

VENDOR PIDEC

LICENSOR REF. : --

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	13.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	12.05.2021	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	07.04.2014	ISSUED FOR ENGINEERING	A.Parvass	A.Azma	A.Azma	S.Roostapour
01	18.03.2013	ISSUED FOR ENGINEERING	B.Jafari	A.Azma	A.Azma	S.Roostapour
00	17.10.2012	ISSUED FOR ENGINEERING	M.Khademi	A.Azma	A.Azma	S.Roostapour

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
CO2 COMPRESSION PACKAGE

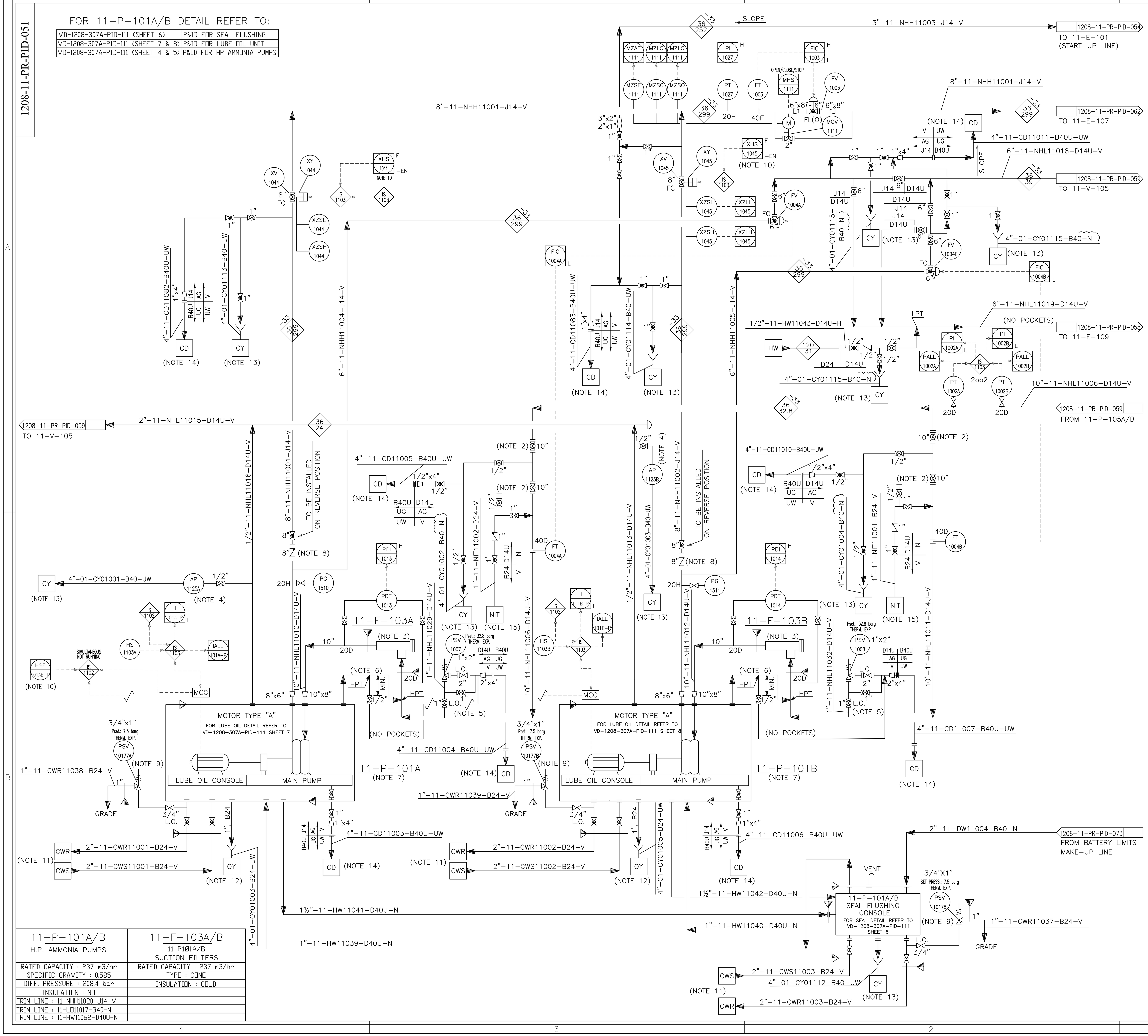
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-011	REV. 04	SIZE : A2
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

11-C-101 (11-K-101) CO2 COMPRESSOR	11-E-119A CO2 COMPRESSOR FIRST STAGE COOLER NOTE 15	11-E-119B CO2 COMPRESSOR 2nd STAGE COOLER NOTE 15	11-E-119C CO2 COMPRESSOR 3rd STAGE COOLER NOTE 15	11-V-115A CO2 COMPRESSOR FIRST STAGE SEPARATOR NOTE 15	11-V-115B CO2 COMPRESSOR 2nd STAGE SEPARATOR NOTE 15	11-V-115C CO2 COMPRESSOR 3rd STAGE SEPARATOR NOTE 15	11-V-115D CO2 COMPRESSOR 4th STAGE SEPARATOR NOTE 15	11-L-106 CO2 VENT SILENCER NOTE 15
RATED CAPACITY : 59712 Nm3/hr	SHELL LENGTH : 4600 mm	SHELL LENGTH : 5300 mm	SHELL LENGTH : 5300 mm	I.D. x T.L.TL : 3600 x 4600 mm	I.D. x T.L.TL : 2300 x 3200 mm	I.D. x T.L.TL : 1600 x 2800 mm	I.D. x T.L.TL : 1300 x 2500 mm	CAPACITY : 114.8 T/hr
RATED POWER : 14.511 MW	SHELL I.D. : 1600 mm	SHELL I.D. : 1400 mm	SHELL I.D. : 1000 mm	DESIGN PRESS. : 3.5 barg	DESIGN PRESS. : 12 barg	DESIGN PRESS. : 40 barg	DESIGN PRESS. : 100 barg	DESIGN PRESS. : 3.5 barg
TYPE : CENTRIFUGAL	DESIGN PRESS. S/T : 7.5 / 12 barg	DESIGN PRESS. S/T : 7.5 / 37 barg	DESIGN PRESS. S/T : 7.5 / 100 barg	DESIGN TEMP. : 85 °C	DESIGN TEMP. : 85 °C	DESIGN TEMP. : 120 °C	DESIGN TEMP. : 85 °C	DESIGN TEMP. : 85 °C
SUCTION PRESS. / TEMP. : 0.6 barg / 49°C	DESIGN TEMP. S/T : 85 / 300 °C	DESIGN TEMP. S/T : 85 / 295 °C	DESIGN TEMP. S/T : 85 / 210 °C	INSULATION : NO	INSULATION : NO	INSULATION : NO	INSULATION : NO	INSULATION : NO
DISCHARGE PRESS. / TEMP. : 162 barg / 126°C	INSULATION : NO	INSULATION : NO	INSULATION : NO	TRIM LINE : 11-C0211050-B50-N	TRIM LINE : 11-C0211051-B50-N	TRIM LINE : 11-C0211052-D50-N	TRIM LINE : 11-C0211053-G50-N	

1208-11-PR-PID-051

FOR 11-P-101A/B DETAIL REFER TO:

VD-1208-307A-PID-111 (SHEET 6)	P&ID FOR SEAL FLUSHING
VD-1208-307A-PID-111 (SHEET 7 & 8)	P&ID FOR LUBE OIL UNIT
VD-1208-307A-PID-111 (SHEET 4 & 5)	P&ID FOR HP AMMONIA PUMPS



11-P-101A/B	11-F-103A/B
H.P. AMMONIA PUMPS	11-PI01A/B SUCTION FILTERS
RATED CAPACITY : 237 m3/hr	RATED CAPACITY : 237 m3/hr
SPECIFIC GRAVITY : 0.585	TYPE : CONE
DIFF. PRESSURE : 208.4 bar	INSULATION : COLD
INSULATION : NO	
TRIM LINE : 11-NHH11020-J14-V	
TRIM LINE : 11-LO11017-B40-N	
TRIM LINE : 11-HW11062-D40U-N	

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) FOR THIS SYSTEM -33 °C IS POSSIBLE ONLY AT ATMOSPHERIC PRESSURE DURING DEPRESSURIZATION.
2) FULL BORE BALL VALVE.
3) MESH SIZE TO BE DEFINED BY 11-P-101A/B MFR.
4) FOR SAMPLE CONNECTIONS DETAILS AND PIPING ARRANGEMENT REFER TO P&ID 1208-11-PR-PID-080 & 1208-11-PR-PID-081.
5) STRAIGHT HORIZONTAL LINE.
6) BALANCE LINE TO BE CONFIRMED BY 11-P-101A/B PUMP MFR.
7) ALL PUMPS CONNECTIONS DEFINED AS PER MFR SELECTION.
8) MOCKVELD CHECK VALVE TYPE.
9) PSV-10178 TO BE SUPPLIED BY PUMP VENDOR.
10) FOR FUNCTION OF HSF, PLEASE REFER TO C&E DOCUMENT.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID. 1208-01-PR-PID-051
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY-PASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" (ZA-E-06667) WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-FV-102B
11) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.
12) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-056.
14) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
15) FOR NITROGEN LINES CONNECTION REFER DWG.: 1208-01-PR-UDD-052.

HOLD

- DELETED
- DELETED

EQUIPMENT LIST

11-P-101A/B
11-F-103A/B

LICENSOR REF. : P41

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	31.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	12.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	13.03.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : Persian Gulf Petrochemical Industries Co. PGPIC

MC : Persian Gulf Petrochemical Industries Co. PGPIC

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

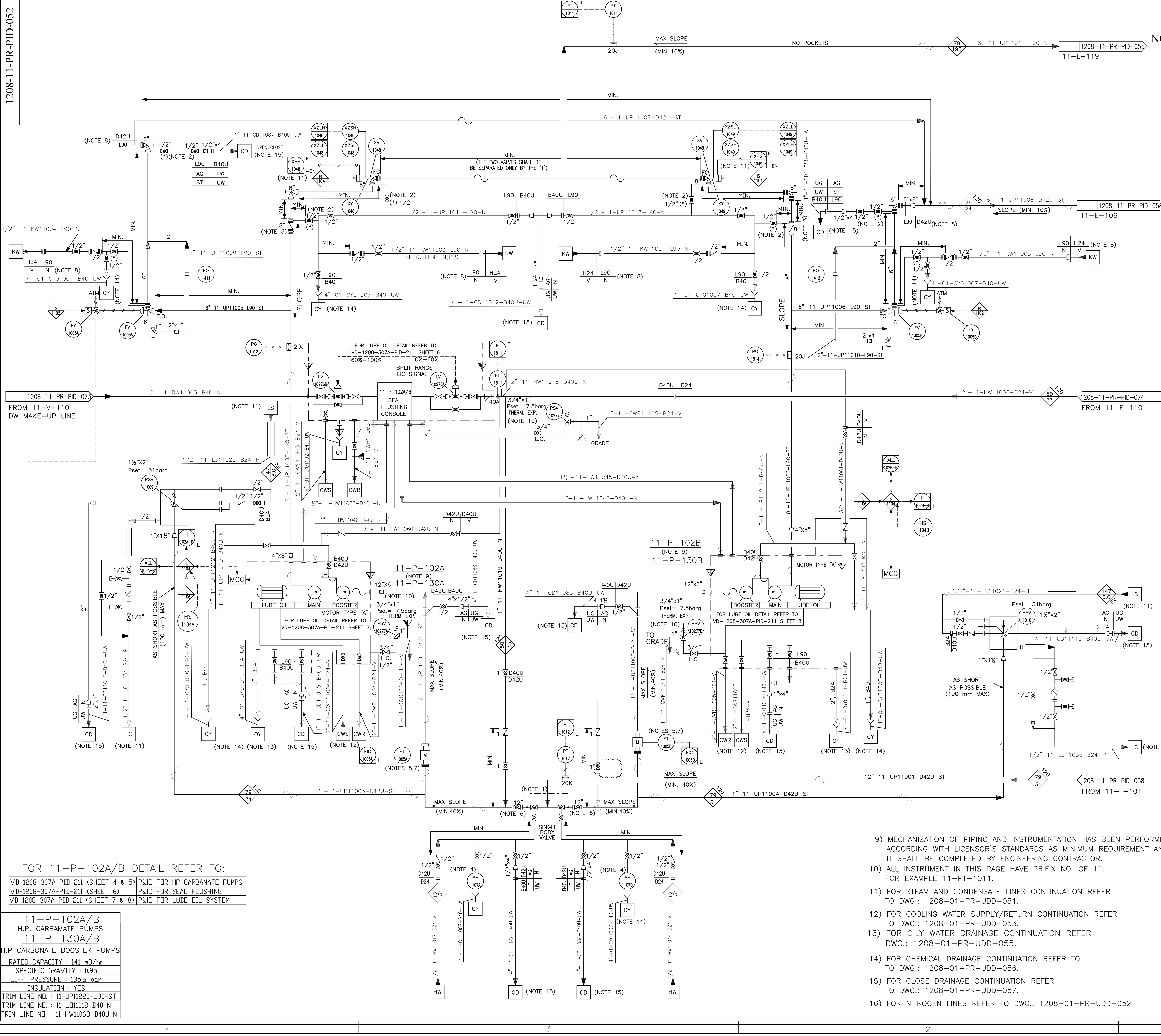
TITLE :

PIPING AND INSTRUMENTATION DIAGRAM
AMMONIA HIGH PRESSURE PUMPS

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-051	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-052

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01



NOTES:

1) OPERATING POSITION OF 12" AT 11-P-102A/B SUCTION:

INLET PROCESS LINE — OUTLET PROCESS LINE — WASHING LINE

2) BLOCK VALVES MARKED WITH (*) ARE TO BE INSTALLED AT MINIMUM DISTANCE FROM PROCESS LINE WITH THE PLUG FACING THE PROCESS FLUID.

PROCESS SIDE — WASHING SIDE

3) CHECK VALVE TO BE INSTALLED ON VERTICAL POSITION/UNLESS VENDOR DIFFERENT INDICATION.
4) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT, REFER TO P&ID 1208-11-PR-PID-080 AND 1208-11-PR-PID-081.
5) UPSTREAM STRAIGHT RUN FIVE TIMES FLOW METER INLET DIAMETER, DOWN STREAM STRAIGHT RUN TWO TIMES FLOW METER OUTLET DIAMETER.
6) FULL BORE BALL VALVE.
7) STEAM TRACING SHALL BE AVOIDED AROUND THE FLOWMETERS 11-FT-1005A/B.
8) REFER TO DETAIL "A" ON P&ID 1208-01-PR-PID-051.
9) ALL PUMPS CONNECTIONS DEFINED AS PER MFR SELECTION.
10) PSV TO BE SUPPIED BY PUMP VENDOR.
11) FOR FUNCTION OF HSF, PLEASE REFER TO C&E DOCUMENT.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY-PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.

HOLD

- DELETED
- DELETED

EQUIPMENT LIST
11-P-102A/B
11-P-130A/B

LICENSOR REF. : P42

9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-PT-1011.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.
13) FOR OILY WATER DRAINAGE CONTINUATION REFER DWG.: 1208-01-PR-UDD-055.
14) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.
15) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
16) FOR NITROGEN LINES REFER TO DWG.: 1208-01-PR-UDD-052

FOR 11-P-102A/B DETAIL REFER TO:

VD-1208-307A-PID-211 (SHEET 4 & 5)	P&ID FOR HP CARBAMATE PUMPS
VD-1208-307A-PID-211 (SHEET 6)	P&ID FOR SEAL FLUSHING
VD-1208-307A-PID-211 (SHEET 7 & 8)	P&ID FOR LUBE OIL SYSTEM

11-P-102A/B H.P. CARBAMATE PUMPS 11-P-130A/B H.P CARBONATE BOOSTER PUMPS
RATED CAPACITY : 141 m3/hr
SPECIFIC GRAVITY : 0.95
DIFF. PRESSURE : 135.6 bar
INSULATION : YES
TRIM LINE NO. : 11-UP11220-L90-ST
TRIM LINE NO. : 11-LO11018-B40-N
TRIM LINE NO. : 11-HW11063-D40U-N

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	26.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	12.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	13.03.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت صنایع پتروشیمی خلیج فارس — Persian Gulf Petrochemical Industries Co. PGPIC — شرکت پتروشیمی هنگام (سهامی خاص)

MC : شرکت صنایع پتروشیمی خلیج فارس — Persian Gulf Petrochemical Industries Co. PGPIC — شرکت مدیریت توسعه صنایع پتروشیمی (سهامی خاص)

EPCC CONTRACTOR : PIDEC

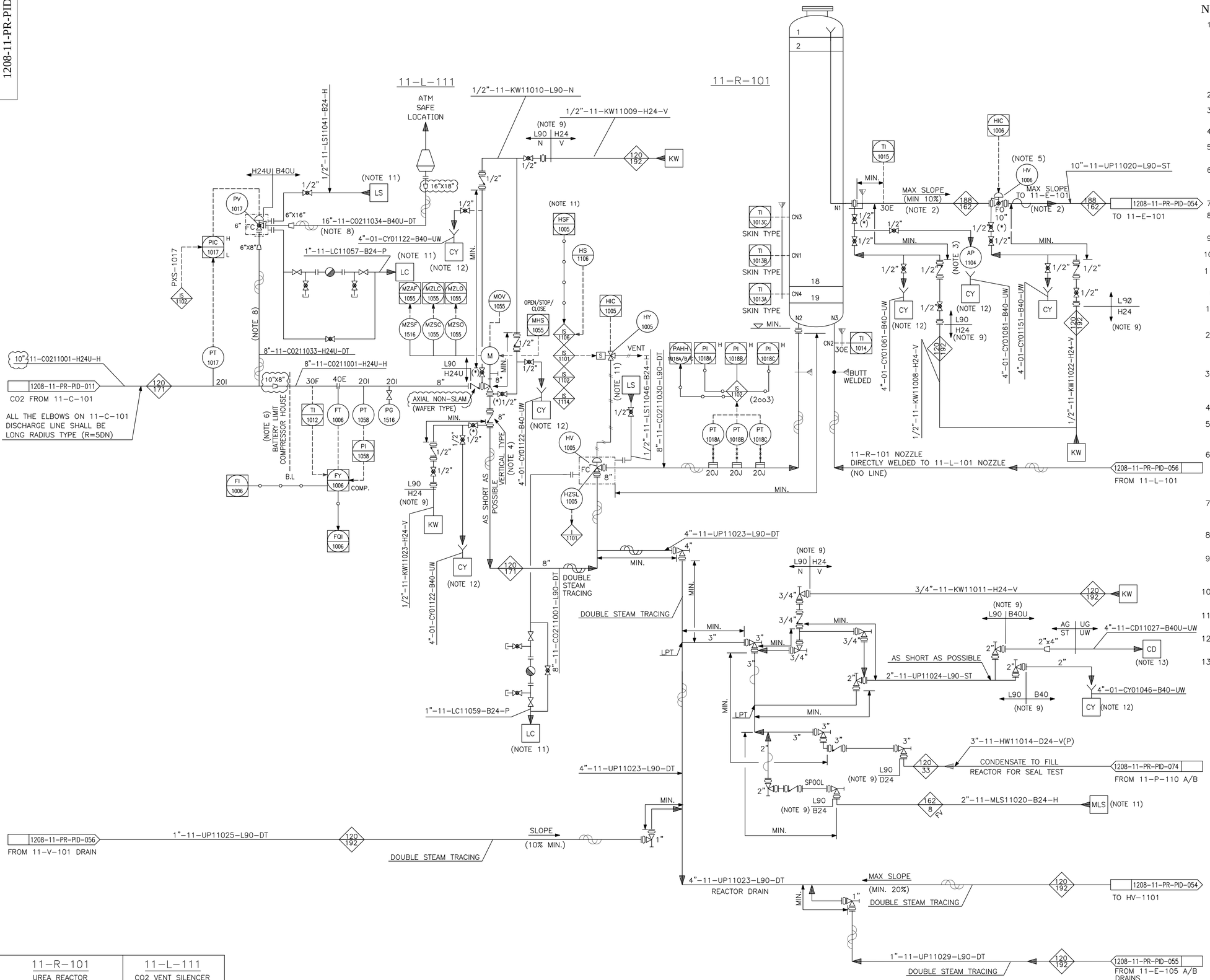
PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
CARBAMATE HIGH PRESSURE PUMPS

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-052	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

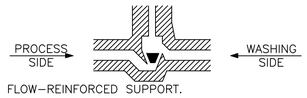
1208-11-PR-PID-053

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01



NOTES:

1) BLOCK VALVES MARKED WITH (*) ARE TO BE INSTALLED AT MINIMUM DISTANCE FROM PROCESS LINE WITH THE PLUG FACING THE PROCESS FLUID



2) TWO PHASE FLOW–REINFORCED SUPPORT.
3) FOR SAMPLE CONNECTIONS DETAILS AND PIPING ARRANGEMENTS REFER TO P&ID 1208–11–PR–PID–080 AND 1208–11–PR–PID–081.
4) CHECK VALVE TO BE INSTALLED ON VERTICAL POSITION.
5) HV–1006 IS A DRILLED VALVE LOCATED NOT LESS THAN 2000mm FROM 11–E–101 INLET NOZZLE.
6) SAFETY VALVE & VENT VALVE ON CO2 LINE TO BE INSTALLED AS NEAR AS POSSIBLE TO 11–C–101 DISCHARGE (COMPRESSOR HOUSE BATTERY LIMITS).
7) DELETED.
8) PV–1017 LINE SHALL BE DOUBLE STEAM TRACED UPSTREAM AND DOWNSTREAM.
9) REFER TO DETAIL "A" ON P&ID 1208–01–PR–PID–051.
10) DELETED.
11) FOR FUNCTION OF HSF, PLEASE REFER TO C&E DOCUMENT.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID. 1208–01–PR–PID–051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11–TK–104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY–PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) ▷ MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11–FT–1006.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–051.
12) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–056.
13) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–057.

HOLD

– DELETED

EQUIPMENT LIST	
11–L–111	11–R–101

11–R–101 UREA REACTOR	11–L–111 CO2 VENT SILENCER
I.D. x TL.TL : 2400 x 47000 mm	FLOW RATE : 74000 kg/hr
DESIGN PRESS. : 168 barg	DESIGN PRESS. : 5 barg
DESIGN TEMP. : 218°C	DESIGN TEMP. : 150°C
INSULATION : YES	INSULATION : NO
TRIM LINE NO. : 11–UP11166–L90–ST	

LICENSOR REF. : P43

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	26.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	05.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	13.03.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE :

PIPING AND INSTRUMENTATION DIAGRAM
HIGH PRESSURE SECTION 1 of 4

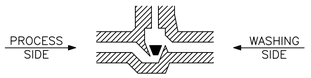
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-053	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-054

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) BLOCK VALVES MARKED WITH (*) ARE TO BE INSTALLED AT MINIMUM DISTANCE FROM PROCESS LINE WITH THE PLUG FACING THE PROCESS FLUID



2) TWO PHASE FLOW–REINFORCED SUPPORT.
3) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT, REFER TO P&ID 1208–11–PR–PID–080 AND 1208–11–PR–PID–081.
4) STEAM TRAPS TO BE LOCATED AT GROUND LEVEL AND CLOSE TO STEAM VALVES MARKED WITH (**)
5) PIPE THICKNESS TO BE IN ACCORDANCE WITH AISI 316 L MOD.–SPEC LENS PIPING SPECIFICATIONS.
6) PROVIDE DOUBLE STEAM TRACING FOR SPECIAL PIECE OF PIPING.
7) PROVIDE DEDICATED SUPPORT TO AVOID 11–E–101 NOZZLE BENDING.
8) HV–1007 UNDER EMERGENCY POWER NETWORK.
9) 11–V–109 INLET NOZZLE TO BE LOCATED 4000 mm BELOW 11–E–101 SHELL SIDE OUTLET NOZZLE.
10) TO BE INSTALLED AFTER BLOWING OF THE LINES.
11) JACKETED LINE ARRANGEMENT: 4 SEGMENTS OF 10 mt EACH INDEPENDENT IN/OUT STEAM AND CONDENSATE DEVICE. IF JUMP OVERS ARE REQUIRED FOR LINE–ROUTING CONSTRAINS, JUMP OVERS MUST BE OF THE SAME SIZE OF STEAM INLET (1 1/2"). STEAM TRAPS AND MANUAL VALVES ON STEAM INLET LINE TO BE LOCATED AT GROUND LEVEL AND ON THE SAME AREA TO FACILITATE THE OPERABILITY.
12) REFER TO DETAIL "A" ON 1208–01–PR–PID–051.
13) MAX SPOOL LENGTH TO ENSURE 11–E–101 REMOVAL IS 3m ACCORDING TO LAY–OUT.
14) FOR DETAIL REFER TO VD–1208–302–PID–006

GENERAL NOTES:

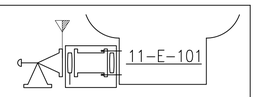
1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO DOC. 1208–01–PR–PID–051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11–TK–104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY–PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIF REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPETIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11–FT–1013.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–051.
12) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208–01–PR–UDD–056.
13) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–057.
14) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208–01–SA–UDD–003.
15) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–055.

HOLD

– DELETED
– DELETED

11–E–101 STRIPPER	11–C–102A/B STRIPPER PASSIVATION AIR COMPRESSORS
SHELL LENGTH : 5500 mm	CAPACITY : 80 Nm3/hr
SHELL I.D : 2160 mm	TYPE : RECIPROCATING
DESIGN PRESS. S/T : 28 & F.V./162 barg	
DESIGN TEMP. S/T : 250/234°C	
INSULATION : YES	
TRIM LINE NO. (TUBE) : 11–UP11167–L90–ST	
TRIM LINE NO. (SHELL) : 11–MSS11008–D24–H	

DETAIL "A"



SPECIAL LENS GASKET AND SPECIAL PIECE SUPPLIED BY 11–E–101 MANUFACTURER

EQUIPMENT LIST
11–C–102A/B 11–E–101

LICENSOR REF. : P44

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	26.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	24.10.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	13.03.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت پتروشیمی هنگام

MC : شرکت مهندسی و ساخت پتروشیمی

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
HIGH PRESSURE SECTION 2 of 4

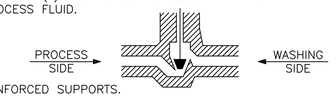
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-054	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-055

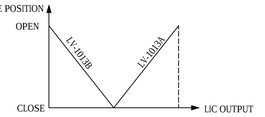
REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

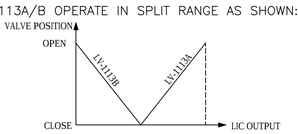
1) BLOCK VALVES MARKED WITH (*) ARE TO BE INSTALLED WITH THE PLUG FACING THE PROCESS FLUID.



2) TWO-PHASE FLOW REINFORCED SUPPORTS.
3) MINIMIZE PIPE LENGHT BETWEEN HV-1059 AND MIXER 11-L-119, BUT ENSURING SPACE REQUESTED FOR 11-L-119 REMOVAL FOR SPRAYER INSPECTION.
4) CHECK VALVES TO BE INSTALLED ON VERTICAL POSITION
5) LV-1013A AND B AND LV-1113A AND B SHALL BE OPERATED SEPARATELY WHEN THE RELEVANT CONTROLLER IS IN MANUAL MODE.
6) FV-1041 SHALL BE INSTALLED IN "FLOW TO OPEN" DIRECTION; ADEGUATE SUPPORTATION MUST BE PROVIDED AT SITE.
7) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT, REFER TO P&ID 1208-11-PR-PID-080 AND 1208-11-PR-PID-081
8) REFER TO DETAIL "A" ON P&ID 1208-01-PR-PID-051
9) PSV-1015A/B AND PSV-1016A/B HAVE TO BE LOCATED ON MAIN PIPE RACK WITH AN ELEVATION TO ENSURE PSV'S OUTLET LINES SLOPE TOWARDS BLOWDOWN MAIN HEADER. PSV'S DISCHARGE OUTLET LINES HAVE TO BE DEDICATED FOR EACH RELIEF VALVE AND SINGLE/SEPARATED LINE UP TO BD MAIN HEADER.
10) SPOOL PIECE TO BE AS SHORT AS POSSIBLE AND DOUBLE STEAM TRACED.
11) 11-LV-1013A/B OPERATE IN SPLIT RANGE AS SHOWN:



12) 11-LV-1113A/B OPERATE IN SPLIT RANGE AS SHOWN:



13) 11-LV-1113B SHALL BE AS CLOSED AS POSSIBLE TO 11-V-110 "N7" NOZZLE.
14) 11-LV-1013B SHALL BE AS CLOSED AS POSSIBLE TO 11-E-105B "N4" NOZZLE.
15) FOR FUNCTION OF HSF, PLEASE REFER TO C&E DOCUMENT.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO 1208-01-PR-PID-051
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY-PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.

HOLD

- DELETED
- DELETED

EQUIPMENT LIST
11-E-105A/B
11-L-119

LICENSOR REF. : P45

7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-FT-1041.
11) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.
12) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-056.
14) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
15) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208-01-SA-UDD-003.

11-L-119 CARBAMATE MIXER	11-E-105A 1st CARBAMATE CONDENSER	11-E-105B 2st CARBAMATE CONDENSER
MAX. CAPACITY : 896 m3/hr	SHELL LENGTH : 12000 mm	SHELL LENGTH : 12000 mm
DESIGN PRESS. : 162. barg	SHELL I.D : 1790/2800 mm	SHELL I.D : 1070/2100 mm
DESIGN TEMP. : 220°C	DESIGN PRESS. S/T : 8 & F.V./162 barg	DESIGN PRESS. S/T : 6&FV/162 barg
INSULATION : YES	DESIGN TEMP. S/T : 190/210°C	DESIGN TEMP. S/T : 180/200°C
	INSULATION : YES	INSULATION : YES
	TRIM LINE NO. : 11-LC11074-B24-H	TRIM LINE NO. : 11-LC11075-B24-H

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	26.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	05.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	13.03.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
HIGH PRESSURE SECTION 3 of 4

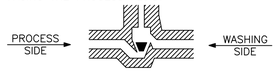
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-055	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-056

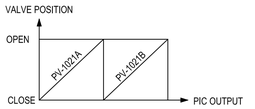
REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) BLOCK VALVES MARKED WITH (*) ARE TO BE INSTALLED WITH THE PLUG FACING THE PROCESS FLUID.



2) TWO-PHASE FLOW REINFORCED SUPPORTS.
3) PV-1021A AND B SHALL BE OPERATED SEPARATELY WHEN THE PRESSURE CONTROLLER IS IN MANUAL MODE.
4) CHECK VALVES TO BE INSTALLED ON VERTICAL POSITION AT MINIMUM DISTANCE FROM XV-1010 BUT IN ORDER TO PERMIT FLANGE BOLTS TORQUING.
5) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO P&ID N° 1208-11-PR-PID-080/081.
6) SEE DETAIL "A" ON P&ID 1208-01-PR-PID-051.
7) PROVIDE SUPPORT TO AVOID XV-1010 NOZZLE BENDING.
8) 11-PV-1021A/B OPERATE IN SPLIT RANGE AS SHOWN:



9) FOR FUNCTION OF HSF, PLEASE REFER TO C&E DOCUMENT.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID. 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC."GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR/LICENSOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-XV-1010.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.
13) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
14) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208-01-SA-UDD-003.

HOLD

- DELETED
- DELETED

11-L-101 CARBAMATE EJECTOR	11-V-101 CARBAMATE SEPARATOR
MAX. CAPACITY : 364593 (Kg/hr)	I.D. x TL.TL : 1900 x 4000 mm
DESIGN PRESS. (MOTIVE SIDE/DISCHARGE SIDE) : 229/171 barg	DESIGN PRESS. : 162 barg
DESIGN TEMP. (MOTIVE SIDE/DISCHARGE SIDE) : 125/185°C	DESIGN TEMP. : 185°C
INSULATION : STEAM JACKET	INSULATION : YES
	TRIM LINE NO. : 11-UP11168-L90-ST

EQUIPMENT LIST
11-V-101
11-L-101

LICENSOR REF. : P46

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	17.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	05.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	13.03.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت پتروشیمی هنگام

MC : شرکت مهندسی و توسعه پتروشیمی

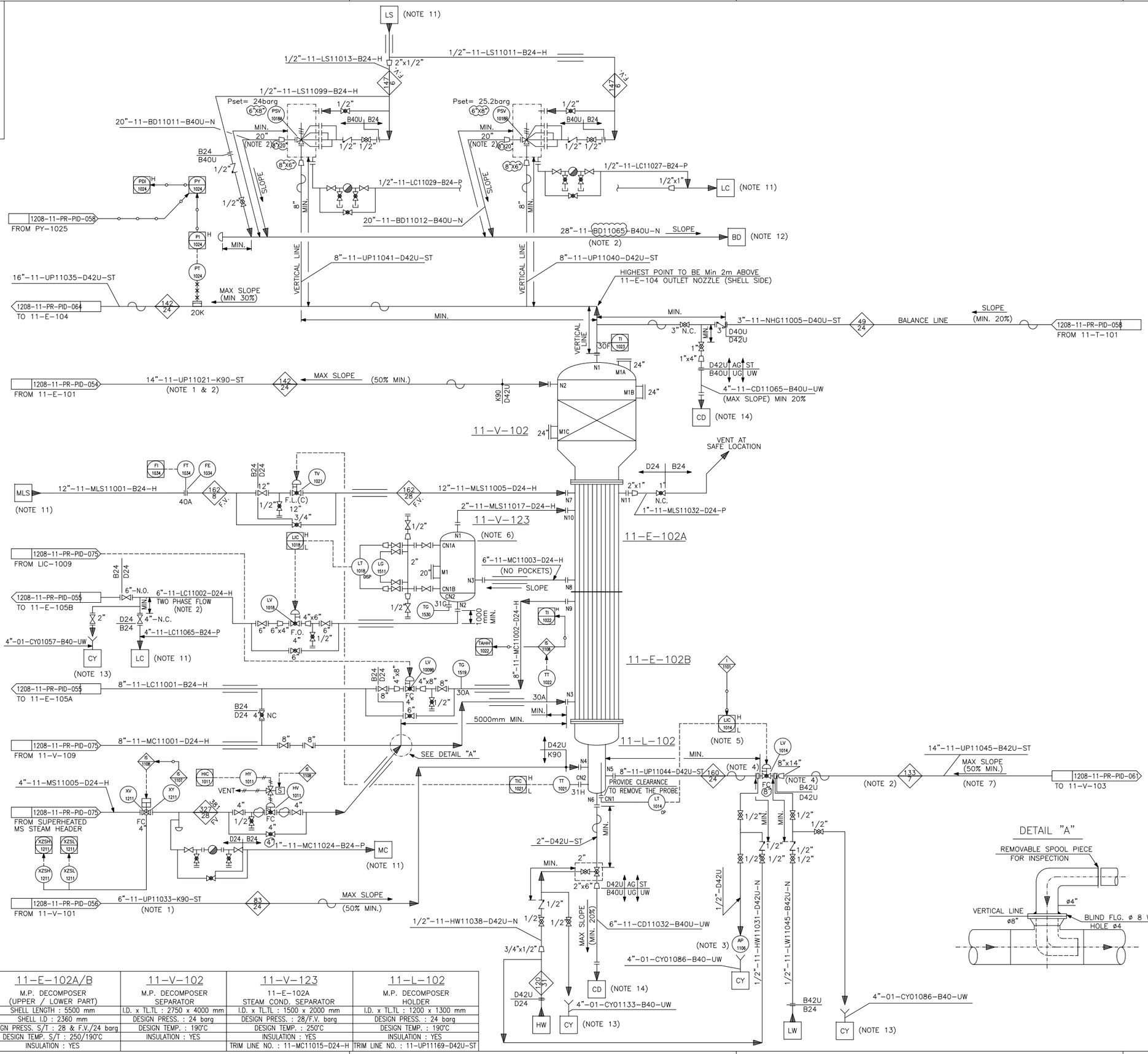
EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
HIGH PRESSURE SECTION 4 of 4

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-056	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-057



REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) PIPE THK. TO BE IN ACCORDANCE WITH AISI 316L MOD. SPEC. LENS. PIPING SPECIFICATION. THIS LINE TO BE TESTED ACCORDING TO PIPING SPEC. AISI 316L-300RF.
2) TWO PHASE FLOW REINFORCED SUPPORT.
3) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO PID. N° 1208-11-PR-PID-080 AND 1208-11-PR-PID-081
4) DRIP RING SPARE PLUG SHALL BE SEAL WELDED.
5) LIC-1014 OUTPUT SHALL BE FORCED TO 0% IN CASE OF I-1101 ACTIVATION.
6) ELEVATION OF UPPER TANGENT LINE OF 11-V-123 SHALL BE LOWER THAN THE ELEVATION OF INTERMEDIATE TUBESHEET OF 11-E-102 A/B.
7) LV-1014 OUTLET LINE SHALL BE MIN. IN HORIZONTAL (AS POSSIBLE).

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID. 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-PT-1024.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208-01-SA-UDD-003.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-056.
14) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.

HOLD

- DELETED
- DELETED

11-E-102A/B M.P. DECOMPOSER (UPPER / LOWER PART)	11-V-102 M.P. DECOMPOSER SEPARATOR	11-V-123 11-E-102A STEAM COND. SEPARATOR	11-L-102 M.P. DECOMPOSER HOLDER
SHELL LENGTH : 5500 mm	I.D. x TL.TL : 2750 x 4000 mm	I.D. x TL.TL : 1500 x 2000 mm	I.D. x TL.TL : 1200 x 1300 mm
SHELL I.D : 2360 mm	DESIGN PRESS. : 24 barg	DESIGN PRESS. : 28/F.V. barg	DESIGN PRESS. : 24 barg
DESIGN PRESS. S/T : 28 & F.V./24 barg	DESIGN TEMP. : 190°C	DESIGN TEMP. : 250°C	DESIGN TEMP. : 190°C
DESIGN TEMP. S/T : 250/190°C	INSULATION : YES	INSULATION : YES	INSULATION : YES
INSULATION : YES		TRIM LINE NO. : 11-MC11015-D24-H	TRIM LINE NO. : 11-UP11169-D42U-ST

EQUIPMENT LIST

11-E-102A/B 11-V-102 11-V-123 11-L-102

LICENSOR REF. : P47

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Sarem
02	05.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanah	A.Azma	M.Sarem
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanah	A.Azma	A.Azma	M.Sarem
00	13.03.2017	ISSUED FOR ENGINEERING	F.Ahmadi	A.Habibi	A.Azma	M.Sarem

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
MEDIUM PRESSURE SECTION 1 of 4

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-057	REV. 03	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

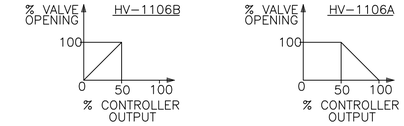
1208-11-PR-PID-058

11-T-101 M.P. ABSORBER	11-E-106 M.P. CONDENSER	11-E-109 AMMONIA CONDENSER
I.D. x TL.TL : 2600 x 11000 mm	SHELL LENGTH : 4500 mm	SHELL LENGTH : 11790 mm
DESIGN PRESS. : 24 barg	SHELL I.D : 1225 mm	SHELL I.D : 1800 mm
DESIGN TEMP. : 120°C	DESIGN PRESS. S/T : 24/8 barg	DESIGN PRESS. S/T : 24/7.5 barg
INSULATION : YES	DESIGN TEMP. S/T : 150/90°C	DESIGN TEMP. S/T : -33 & 120/85°C
TRIM LINE NO. : 11-UP11170-D42U-ST	INSULATION : YES	INSULATION : NO

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) VALVE TO BE ACCESSIBLE.
2) TWO PHASE FLOW REINFORCED SUPPORT.
3) VALVE TO BE INSTALLED ON THE FLOOR BELOW THE DM WATER INLET TO 11-E-106.
4) TIE-IN ON THE UPPER TANGENT LINE.
5) VALVE TO BE INSTALLED AT THE SAME LEVEL OF 11-E-109.
6) THIS LINE LOWER THAN 11-V-102 OVHD LINE (2m MIN.) AND AT SAME ELEVATION OF 11-E-104 OUTLET LINE.
7) MAXIMUM SLOPE AFTER THE ELBOW TIE-IN LOCATED AFTER THE ELBOW AT MINIMUM DISTANCE FROM HPT.
8) HV-1106A AND HV-1106B OPENING AND CLOSING MUST BE DONE ACCORDING TO FOLLOW CURVES :



GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO DOC. 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) ▷ MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-FT-1010.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-056.
14) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
15) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208-01-SA-UDD-003.

HOLD

- DELETED
- DELETED

EQUIPMENT LIST
11-T-101 11-E-106
11-E-109

LICENSOR REF. : P48

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	26.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	21.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanah	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanah	A.Azma	A.Azma	M.Saremi
00	13.03.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE :
PIPING AND INSTRUMENTATION DIAGRAM
MEDIUM PRESSURE SECTION 2 of 4

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-058	REV. : 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-059

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) TWO PHASE FLOW REINFORCED SUPPORT.
2) FOR SAMPLE CONNECTIONS DETAILS AND PIPING ARRANGEMENT, REFER TO PID. N° 1208-11-PR-PID-080 AND 1208-11-PR-PID-081.
3) FULL BORE BALL VALVE.
4) TOP LINE ELEVATION SAME AS UPPER 11-T-103 T.L.
5) ON-OFF VALVE DIRECTLY CONNECTED WITH LIQUID OUTLET 11-V-105 NOZZLE.
6) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.
7) IN CASE JUMP OVERS ARE REQUIRED FOR LINE-ROUTING COSTRAINS, JUMP OVERS MUST BE OF THE SAME SIZE OF STEAM INLET.
8) FOR FUNCTION OF HSF, PLEASE REFER TO C&E DOCUMENT.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMETERS) IN ORDER TO PREVENT DEAD ZONE.

PUMP	11-P-105A	11-P-105B
NIT	3/4"	3/4"
FO-1	10596A	10596B
PG	10596A	10596B
PT PAH	10596A	10596B
FO-2	10595A	10595B
BD	1"	1"
CD	1/2"	1/2"

DETAIL "A"

TYPICAL SEAL SYSTEM ARRANGEMENT FOR 11-P-105A/B
(IN PUMP VENDOR SCOPE)

HOLD

- DELETED
- DELETED

6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-PSV-1022.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-056.
14) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
15) FOR NITROGEN/NATURAL GAS LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-052.
16) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208-01-SA-UDD-003.

11-T-105 M.P. AMMONIA RECOVERY TOWER	11-P-105A/B AMMONIA BOOSTER PUMPS	11-F-102A/B AMMONIA FILTERS	11-V-105 AMMONIA RECEIVER
I.D. x TL.TL : 1510 x 3700 mm	RATED CAPACITY : 324 m3/hr	RATED CAPACITY : 98600 Kg/hr	I.D. x TL.TL : 3950 x 12000 mm
DESIGN PRESS. : 25 barg	SPECIFIC GRAVITY : 0.585	DESIGN PRESS. : 30 barg	DESIGN PRESS. : 25 barg
DESIGN TEMP. : -33 & 85°C	DIFF. PRESSURE : 6.4 bar	DESIGN TEMP. : -33 & 85°C	DESIGN TEMP. : -33 & 85°C
INSULATION : NO	INSULATION : NO	INSULATION : YES	INSULATION : NO
	TRIM LINE NO. : 11-NHL11055-D14U-V	TRIM LINE NO. : 11-NHL11060-D14U-C	TRIM LINE NO. : 11-NHL11028-D40U-N

EQUIPMENT LIST

11-V-105 11-T-105 11-P-105A/B 11-F-102A/B

LICENSOR REF. : P49

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	30.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	29.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	20.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	13.03.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت سرمایه گذاری صنایع پتروشیمی

MC : شرکت مهندسی توسعه صنایع پتروشیمی

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
MEDIUM PRESSURE SECTION 3 of 4

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-059	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-060

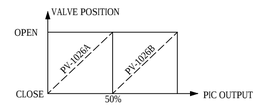
REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

HOLD

- DELETED
- DELETED

NOTES:

1) TOP LINE ELEVATION SAME AS UPPER 11–T–103 T.L.
2) FOR SAMPLE CONNECTIONS DETAILS AND PIPING ARRANGEMENT, REFER TO P&ID 1208–11–PR–PID–080 AND 1208–11–PR–PID–081.
3) EARTHING REQUIRED TO ENSURE ELECTRICAL CONTINUITY FROM PV–1026A/B AND 11–T–103 BOTTOM.
4) MAX SPOOL LENGHT TO ENSURE 11–T–103 TOP REMOVAL IS 3m ACCORDING TO LAY–OUT.
5) PV–1026A AND PV–1026B SHALL BE OPERATED SEPARATELY WHEN THE PRESSURE CONTROLLER IS IN MANUAL MODE.
6) PROCESS VAPOURS/ASSIST GAS RATIO TO BE DEFINED BY FLARE MFR.
7) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.
8) SPLIT RANGE FOR PV–1026A/B



9) FOR FUNCTION OF HSF, PLEASE REFER TO C&E DOCUMENT.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208–01–PR–PID–051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11–TK–104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.

TYPICAL SEAL SYSTEM ARRANGEMENT FOR 11–P–107A/B

(IN PUMP VENDOR SCOPE)

PUMP	P–107A	P–107B
NIT	3/4"	3/4"
FO–1	10796A	10796B
PG	10796A	10796B
PT PAH	10796A	10796B
FO–2	10795A	10795B
BD	1"	1"
CD	1/2"	1/2"

EQUIPMENT LIST

11–T–103 11–E–111 11–P–107A/B

11–E–111 M.P. AMMONIA ABSORBER	11–T–103 M.P. INERTS WASHING TOWER	11–P–107 A/B AMMONIA SOLUTION PUMPS
SHELL LENGTH : 5500 mm	I.D. x TL.TL : 800 x 9600 mm	RATED CAPACITY : 16 m3/hr
SHELL I.D : 800 mm	DESIGN PRESS. : 24 barg	SPECIFIC GRAVITY : 0.77
DESIGN PRESS. S/T : 7.5/24 barg	DESIGN TEMP. : –33 & 250°C	DIFF. PRESSURE : 5.8 bar
DESIGN TEMP. S/T : 85/(100 & –33)°C	TRIM LINE NO. : 11–UP11171–D14U–V	INSULATION : NO
INSULATION : NO		TRIM LINE NO. : 11–UP11200–D14U–V

4) MFR CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11–FT–1012.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–051.
12) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–053.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–056.
14) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–057.
15) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208–01–SA–UDD–003.
16) FOR NITROGEN/NATURAL GAS LINES CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–052.
17) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–055.

LICENSOR REF. : P50

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	26.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	20.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanah	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanah	A.Azma	A.Azma	M.Saremi
00	13.03.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE :

PIPING AND INSTRUMENTATION DIAGRAM

MEDIUM PRESSURE SECTION 4 of 4

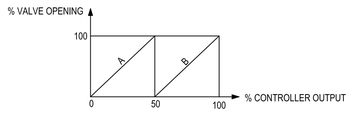
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-060	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-062

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) PROVIDE TWO PHASES FLOW REINFORCED SUPPORT.
2) TAPPING OF LINES TO BE CLOSE TO LV-1015.
3) RUPTURE DISK BLOCK VALVES MUST BE INTERLOCKED.
4) VENT TO BE ACCESSIBLE
5) PV-1038A AND PV-1038B SHALL BE OPERATED SEPARATELY WHEN THE PRESSURE CONTROLLER IS MANUAL MADE.
6) FULL CONE SPRAYER THE SPRAYER SHALL BE LOCATED CLOSE TO 11-E-107 AND HIGHER THAN 11-E-107 OUTLET LINE. FULL CONE SPRAYER ΔP= 2bar FLOWRATE= 9m3/h. THE SPRAYER SHALL BE REMOVABLE THROUGH THE FLANGE FOR INSPECTION.
7) PROVIDE PIPING WITH HIGHER THICKNESS RATING 300RF AND AISI 316L FOR STRESS AND EROSION PHENOMENA.
8) PV-1038 A/B OPERATE IN SPLIT RANGE AS SHOWN:



GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-PSV-1029.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-056.
14) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
15) FOR COLD FLARE LINES CONTINUATION REFER TO DWG.: 1208-97-SA-PID-014
16) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208-01-SA-UDD-003.

HOLD

- DELETED
- DELETED

EQUIPMENT LIST	
11-E-107	11-E-108

11-E-107 AMMONIA PREHEATER	11-E-108 L.P. CONDENSER
SHELL LENGTH : 4750 mm	SHELL LENGTH : 8500 mm
SHELL I.D : 875 mm	SHELL I.D : 1150 mm
DESIGN PRESS. S/T : 10/299 barg	DESIGN PRESS. S/T : 7/7.5 barg
DESIGN TEMP. S/T : 165/-33 TO 125°C	DESIGN TEMP. S/T : 165/85°C
INSULATION : YES	INSULATION : YES (P)

LICENSOR REF. : P53

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

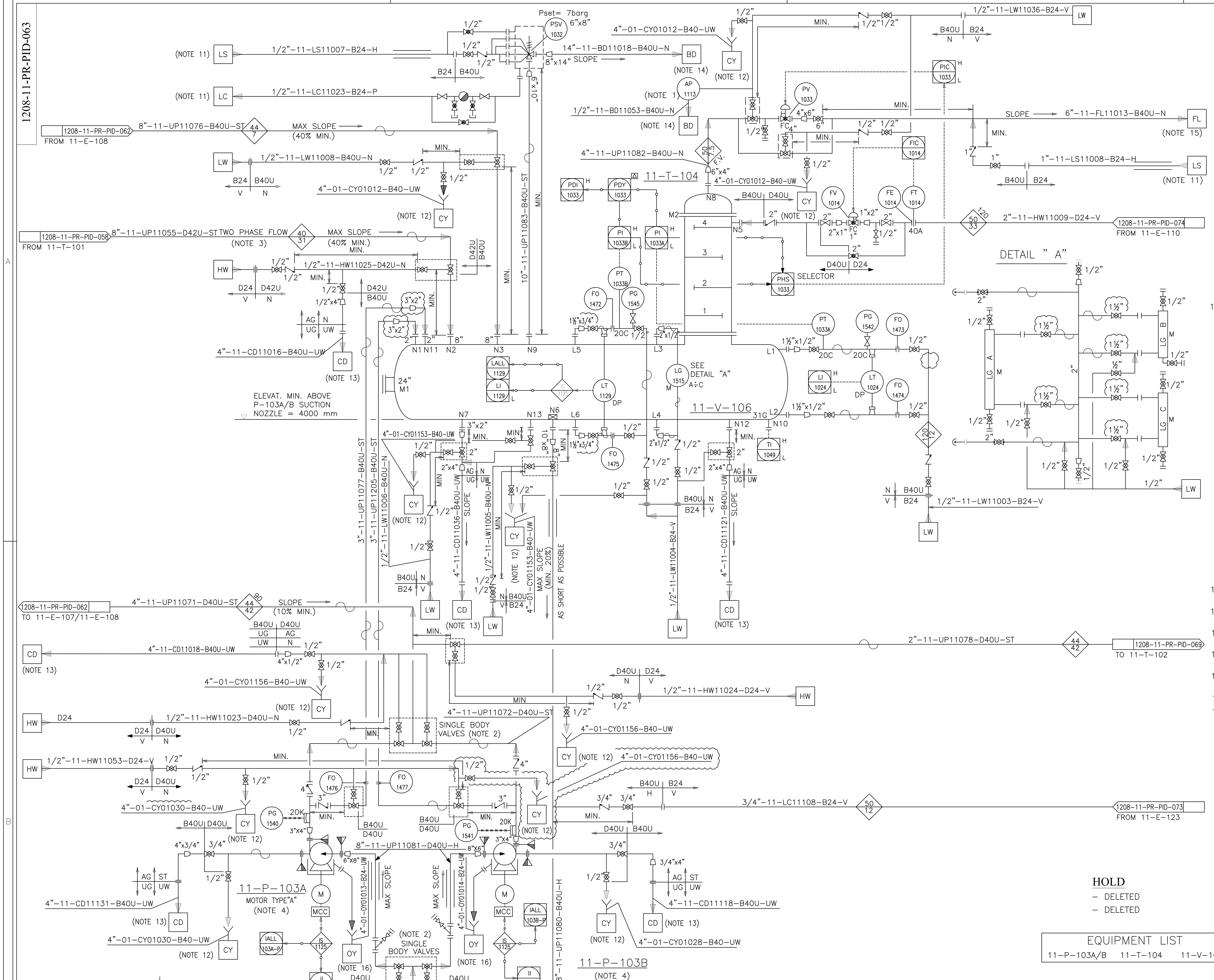
REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	30.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	29.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	21.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	13.03.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
LOW PRESSURE SECTION 2 of 3

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-062	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			



REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) FOR SAMPLE CONNECTION DETAIL AND PIPING ARRANGEMENT REFER TO P&ID. 1208-11-PR-PID-080/081.
2) OPERATING POSITION OF VALVES AT 11-P-103A/B SUCTION AND DISCHARGE:

PROCESS SIDE — PROCESS SIDE — CONDENSATE LINE

3) PROVIDE TWO PHASE FLOW REINFORCED SUPPORT.
4) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-FV-1014.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.
13) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
14) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208-01-SA-UDD-003.
15) FOR FLARE CONTINUATION REFER TO DWG.: 1208-97-SA-PID-014.
16) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.

EQUIPMENT LIST

11-P-103A/B 11-T-104 11-V-106

11-V-106	11-T-104	11-P-103A/B
CARBONATE SOLUTION ACCUMULATOR	L.P. INERTS WASHING TOWER	M.P. CARBONATE PUMPS
I.D. x TL.TL : 5100 x 15000 mm	I.D. x TL.TL : 1040 x 2100 mm	RATED CAPACITY : 107 m3/hr
DESIGN PRESS. : 7.5/F.V. barg	DESIGN PRESS. : 7.5/F.V. barg	SPECIFIC GRAVITY : 0.908
DESIGN TEMP. : 100°C	DESIGN TEMP. : 100°C	DIFF. PRESSURE : 23.7 bar
INSULATION : YES	INSULATION : NO	INSULATION : YES
TRIM LINE NO. : 11-UP11174-B40U-H		TRIM LINE NO. : 11-UP11221-D40U-ST

LICENSOR REF. : P54

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
	DE Eng. Phase	EXT Purpose of Distribution (POD)	AFC Purpose of Issue (POI)		A Owner's Action	
04	31.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	29.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	20.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : MC : EPCC CONTRACTOR : PIDEC

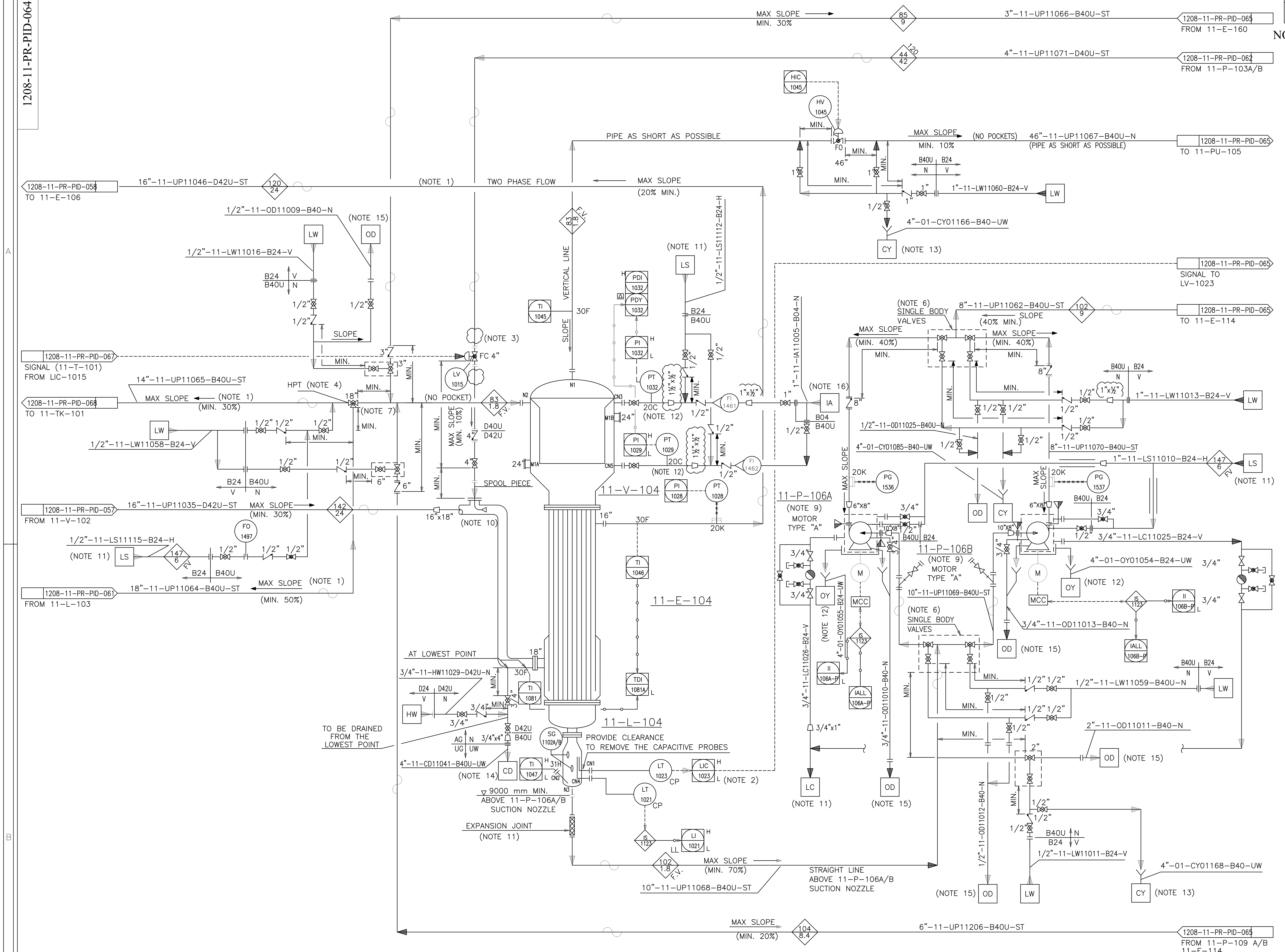
PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
LOW PRESSURE SECTION 3 of 3

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-063	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

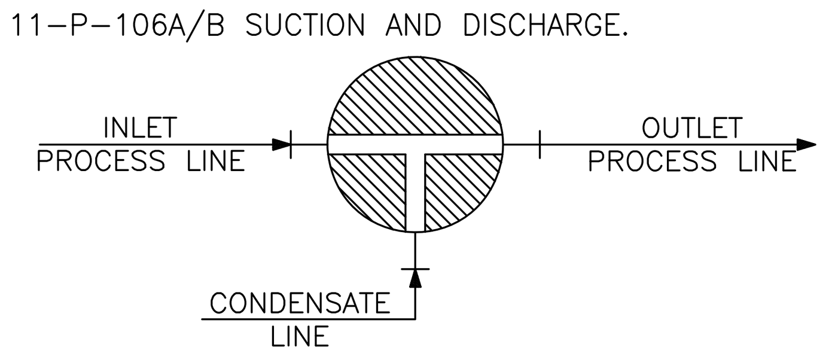
1208-11-PR-PID-064

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01



NOTES:

1) PROVIDE TWO PHASES FLOW REINFORCED SUPPORT.
2) LIC-1023 OUTPUT SHALL BE FORCED TO 0% IN CASE OF IS-1123 ACTIVATION.
3) TO BE INSTALLED AT HIGHEST POINT.
4) TAPPING POINT FOR 11-P-109A/B RECYCLE LINE FROM TOP.
5) TO BE SUPPLIED BY EQUIPMENT MFR.
6) OPERATING POSITION OF VALVES WITH INCORPORATED WASHING CONNECTION AT 11-P-106A/B SUCTION AND DISCHARGE.



7) TO BE LOCATED AT ABOUT 1m FROM 11-V-104. INLET PLUG SHALL BE ORIENTED SO THAT 11-V-104 AND TK-101 CANNOT BE IN CONNECTION.
8) FOR ALL "OD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "OD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING.
9) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.
10) THE SPRAYER SHALL BE CLOSED TO 11-E-104 AND HIGHER THAN 11-E-104 OUTLET LINE FULL CONE SPRAYER ΔP=2 bar FLOWRATE=68 m3/h THE SPRAYER SHALL BE REMOVABLE THROUGH THE FLANGE FOR MAINTENANCE PURPOSE.
11) EXPANSION JOINT TO BE DESIGNED ACCORDING TO PROCESS CONDITION WITHOUT INTERNAL SLEEVE.
12) PT-1029 AND PT-1032 INSTALLATION TO BE LOCATED ON 11-V-104 TOP PLATFORM ENSURING TUBING IN SLOPE TOWARDS RELATED VESSEL NOZZLES CONNECTIONS.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.

10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-HV-1045.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.
14) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
15) FOR OPEN DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-058.
16) FOR INSTRUMENT AIR CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-052.

11-V-104	11-E-104	11-L-104	11-P-106A/B
VACUUM PRECONCENTRATOR SEPARATOR	VACUUM PRECONCENTRATOR	VACUUM PRECONCENTRATOR HOLDER	UREA SOLUTION PUMPS
I.D. x TL.TL : 4500 x 3200 mm	SHELL LENGTH : 4000 mm	I.D. x TL.TL : 1500 x 1600 mm	RATED CAPACITY : 180 m3/hr
DESIGN PRESS. : 1.8/F.V. barg	SHELL I.D : 3300 mm	DESIGN PRESS. : 1.8/F.V. barg	SPECIFIC GRAVITY : 1.195
DESIGN TEMP. : 135'C	DESIGN PRESS. S/T : 24/1.8 & F.V. barg	DESIGN TEMP. : 135'C	DIFF. PRESSURE : 5 bar
INSULATION : YES	DESIGN TEMP. S/T : 165/140'C	INSULATION : YES	INSULATION : YES
	INSULATION : YES	TRIM LINE NO. : 11-UP11173-B40U-ST	TRIM LINE NO. : 11-UP11225-B40U-ST

HOLD

– DELETED

EQUIPMENT LIST

11-E-104	11-P-106A/B
11-L-104	11-V-104

LICENSOR REF. : P52

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	01.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	21.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mozaie	A.Habibi	A.Azma	M.Saremi

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
VACUUM EVAPORATION SECTION 1 of 5

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-064	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-065

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) AS VERTICAL AS POSSIBLE FROM THE CONNECTION TO THE GRADE.
2) PART OF LINE NOT JACKETED TO BE STEAM TRACED IF MORE THAN 500mm.
3) P–108A/B SUCTION /RECYCLE LINE: THE THICKNESS OF THE JACKETED STRAIGHT TUBE MUST BE SIZED CONSIDERING AN EXTERNAL PRESSURE OF 6.0 bar(g) AND FULL VACUUM INSIDE.
4) TO BE INSTALLED ON VERTICAL POSITION.
5) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO P&ID. 1208–11–PR–PID–080 AND 1208–11–PR–PID–081.
6) EXPANSION JOINT TO BE DESIGNED ACCORDING TO PROCESS CONDITION WITHOUT INTERNAL SLEEVE.
7) PT–1043A/B TRANSMITTERS INSTALLATION TO BE LOCATED ON 11–V–114 TOP PLATFORM ENSURING TUBING IN SLOPE TOWARDS RELATED VESSEL NOZZLES CONNECTIONS.
8) EXPANSION JOINT IF NECESSARY ACCORDING TO STRESS ANALYSIS.
9) TO BE CONNECTED TO NEAREST CY FUNNEL.
10) STEAM TRACING SHALL BE AVOIDED AROUND FLOW METER FT–1037 BODY.
11) DELETED.
12) T.T.L. OF 11–V–125 TO BE LOWER THAN BOTTOM TUBESHEET OF 11–E–114.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208–01–PR–PID–051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11–TK–104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL "OD" LINES SHALL HAVE MAX SLOPE TOWARDS GROUND LEVEL. "OD" UNDERGROUND HEADER SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 18–TK–153 TANK.
11) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11–FI–1501.

12) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–051.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208–01–PR–UDD–056.
14) FOR OPEN DRAINAGE CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–058.
15) FOR INSTRUMENT AIR CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–052.

HOLD

– DELETED

EQUIPMENT LIST

11–E–114 11–E–160 11–L–114
11–V–114 11–V–125

11–E–160 UREA RECYCLE PREHEATER
SHELL LENGTH : 2650 mm
SHELL I.D : 500 mm
DESIGN PRESS. S/T : 12/12 barg
DESIGN TEMP. S/T : 150/120°C
INSULATION : YES

11–E–114 VACUUM CONCENTRATOR	11–V–114 VACUUM SEPARATOR	11–L–114 VACUUM SEPARATOR HOLDER	11–V–125 11–E–114 STEAM CONDENSATE SEPARATOR
SHELL LENGTH : 5000 mm	I.D. x TL.TL : 4700 x 6000 mm	I.D. x TL.TL : 1500 x 1600 mm	I.D. x TL.TL : 1500 x 2000 mm
SHELL I.D : 1260 mm	DESIGN PRESS. : 1.8 & F.V. barg	DESIGN PRESS. : 1.8/F.V. barg	DESIGN PRESS. : 6 & F.V. barg
DESIGN PRESS. S/T : 6 & F.V./1.8 & F.V. barg	DESIGN TEMP. : 170°C	DESIGN TEMP. : 170°C	DESIGN TEMP. : 180°C
DESIGN TEMP. S/T : 180/170°C	INSULATION : YES	INSULATION : YES	INSULATION : YES
INSULATION : YES	TRIM LINE NO. : 11–UP11180–B40U–ST	TRIM LINE NO. : 11–UP11175–B40U–SJ	TRIM LINE NO. : 11–LC11077–B24–H

LICENSOR REF. : P55

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	21.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mojtaie	A.Habibi	A.Azma	M.Saremi

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE :

PIPING AND INSTRUMENTATION DIAGRAM
VACUUM EVAPORATION SECTION 2 of 5

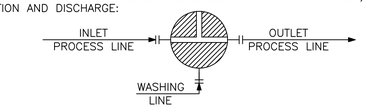
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-065	REV. 03	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-066

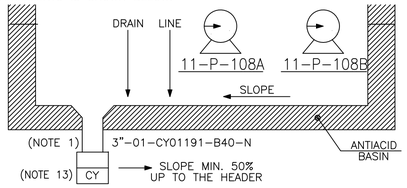
REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) AS VERTICAL AS POSSIBLE FROM THE CONNECTION TO THE GRADE.
2) PART OF LINE NOT JACKETED TO BE STEAM TRACED IF MORE THAN 500mm.
3) 11-P-108A/B SUCTION LINE: THE THICKNESS OF THE JACKETED STRAIGHT TUBE MUST BE SIZED CONSIDERING AN EXTERNAL PRESSURE OF 6.0 bar(g) AND FULL VACUUM INSIDE.
4) VALVE TO BE LOCATED DIRECTLY CONNECTED TO PROCESS LINE.
5) JACKETED LINE ARRANGEMENT :
   - PROVIDE BREAK-UP FLANGE EVERY 20m ;
   - PROVIDE FOR EACH LINE SEGMENT INDIPENDENT IN/OUT SYSTEM AND CONDENSATE DEVICE.
   IF JUMPOVERS ARE REQUIRED FOR LINE ROUTING CONSTRAINS, JUMPOVERS MUST BE OF THE SAME SIZE OF STEAM INLET LINE.
6) OPERATING POSITION OF VALVES SINGLE BODY TYPE AT 11-P-108A/B SUCTION AND DISCHARGE:



7) ALL THE "CY" DRAINS CONNECTION AT 11-P-108A/B FLOOR SHALL BE DISCHARGED INSIDE THE ANTIACID BASIN AND FROM THERE COLLECTED TO "CY" BY MEANS OF 3" LINE TYPICAL ARRANGEMENTS IS SHOWN BELOW:



8) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO P&ID 1208-11-PR-PID-080 AND 1208-11-PR-PID-081.
9) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.
10) THE ELEVATION OF COMMON DISCHARGE LINES OF 11-P-108A/B PUMPS HAS TO ENSURE A MINIMUM SLOPE 10% FROM THIS HPT POINT AND PV-2172/LV-1025 VALVES.
11) PROCESS DESIGN CONDITIONS FOR THIS LINE SHALL BE CONSIDERED INDEPENDENTLY FOR EACH OF THE FOLLOWING SCENARIOS:
    A) DURING NORMAL OPERATION (UREA SOLUTION FLOWING):
       DESIGN PRESSURE= 11 barg; DESIGN TEMPERATURE= 170 °C.
    B) DURING WASHING SCENARIO (LW FLUID FLOWING):
       DESIGN PRESSURE= 12 barg; DESIGN TEMPERATURE= 120 °C.
12) RESIDENCE TIME OF UREA SOLUTION FROM UF-85 INJECTION POINT AT 11-P-108A/B A/B SUCTION LINE TO GRAN.HEADER N.18 (REF.TO P&ID GD-B-06702) MUST BE MINIMUM 30 sec. AND MAX 45 sec.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.

6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL "OD" LINES SHALL HAVE MAX SLOPE TOWARDS GROUND LEVEL. "OD" UNDERGROUND HEADER SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 18-TK-153 TANK.
11) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-PT-1035.
12) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.
14) FOR OPEN DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-058.

11-P-108 A/B
GRANULATION FEED PUMPS
RATED CAPACITY : 162 m3/hr
SPECIFIC GRAVITY : 1.21
DIFF. PRESSURE : 7.42 bar
INSULATION : YES
TRIM LINE NO. : 11-UP11226-B40U-DT

EQUIPMENT LIST
11-P-108A/B

LICENSOR REF. : P56

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	07.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	29.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	20.11.2022	APPROVED FOR CONSTRUCTION	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت پتروشیمی هنگام
MC : شرکت پتروشیمی هنگام
EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE :
PIPING AND INSTRUMENTATION DIAGRAM
VACUUM EVAPORATION SECTION 3 of 5

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-066	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-067

11-PU-105

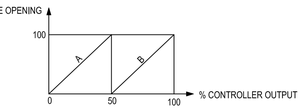
HOLD

- DELETED.
- DELETED
- DELETED

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO P&ID 1208-11-PR-PID-080 AND 1208-11-PR-PID-081.
2) DELETED.
3) CONDENSATE OUTLET NOZZLE OF EACH EXCHANGER OF 11-PU-105 SHALL BE LOCATED MINIMUM 11m HIGHER THAN 11-TK-102 TANK ROOF.
4) NOZZLE PROJECTION LENGTH TO BE MINIMIZED AND STEAM TRACED.
5) MINIMUM FLOW DEVICE AND AUTOMATIC NON RETURN VALVE TO BE SUPPLIED BY PUMP MFR.
6) ARV TO BE INSTALLED IN VERTICAL POSITION.
7) ALL INSTRUMENT IN PACKAGE TO BE SUPPLIED BY 11-PU-105 PACKAGE MFR.
8) VACUUM BREAKER TO BE SUPPLIED BY TANK 11-TK-102 MFR. SEE DETAIL "A".
9) NUMBER OF CONNECTIONS CONFIRMED BY 11-PU-105 MFR.
10) ∝ = 40° MAX
11) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.
12) SPLIT RANGE FOR PV-1034A/B:



GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL "OD" LINES SHALL HAVE MAX SLOPE TOWARDS GROUND LEVEL. "OD" UNDERGROUND HEADER SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 18-TK-153 TANK.
11) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-FO-1495.
12) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
13) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.
14) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-056.
15) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
16) FOR NITROGEN LINES CONNECTION REFER DWG.: 1208-01-PR-UDD-052.
17) FOR FLARE CONTINUATION REFER TO DWG.: 1208-97-SA-PID-014
18) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.

EQUIPMENT LIST	
11-P-114A/B	11-PU-105
11-TK-102	11-T-135

LICENSOR REF. : P57

11-P-114A/B	11-PU-105
DISTILLATION TOWER FEED PUMPS	VACUUM SYSTEM (PACKAGE)
RATED CAPACITY : 93 m3/hr	CAPACITY : 83002 kg/hr
SPECIFIC GRAVITY : 0.99	
DIFF. PRESSURE : 9.7 bar	
INSULATION : NO	
TRIM LINE NO. : 11-PC11065-B40U-N	

11-TK-102	11-T-135
PROCESS CONDENSATE TANK	VACUUM VENT SCRUBBER (INCLUDED IN PU-105 PKG)
I.D. x TL.TL : 6500 x 6700 mm	BY VACUUM PACKAGE VENDOR
DESIGN PRESS. : HYDROST. + 0.175 barg	
DESIGN TEMP. : 100°C	
INSULATION : NO	
TRIM LINE NO. : 11-PC11034-B40U-N	

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	14.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	02.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	21.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzale	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت پتروشیمی هنگام

MC : شرکت پتروشیمی هنگام

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
VACUUM EVAPORATION SECTION 4 OF 5

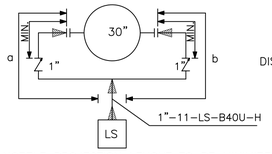
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-067	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-068

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

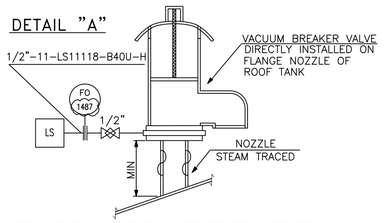
NOTES:

1) UPSTREAM STRAIGHT RUN 5 TIMES FLOWMETER INLET DIAMETER. DOWNSTREAM STRALIGHT RUN 2 TIMES FLOWMETER OUTLET DIAMETER.
2) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO. P&ID 1208-11-PR-PID-080 AND 1208-11-PR-PID-081.
3) TOP COVER MADE OF GRATING.
4) TO BE LOCATED AT STRUCTURE AT 11-P-108A/B FLOOR.
5) LS STEAM CONNECTIONS ARRANGEMENT:

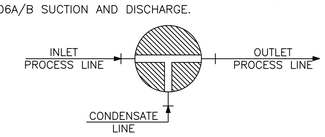


6) NOZZLE PROJECTION LENGHT TO BE MINIMIZED AND STEAM TRACED.

DETAIL "A"



7) PROVIDE TWO PHASE FLOW REINFORCED SUPPORT.
8) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.
9) STEAM TRACING SHALL BE AVOIDED AROUND FLOWMETER FT-1114 BODY.
10) VACUUM BREAKER TO BE SUPPLIED BY TANK MFR.
11) TO BE LOCATED IN GRAN. BUILDING GROUND LEVEL, CLOSE TO 18-P-153 A/B.
12) OPERATING POSITION OF VALVES WITH INCORPORATED WASHING CONNECTION AT 11-P-106A/B SUCTION AND DISCHARGE.



GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO DOC. 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIF REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPETIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPETIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL "OD" LINES SHALL HAVE MAX SLOPE TOWARDS GROUND LEVEL. "OD" UNDERGROUND HEADER SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 18-TK-153 TANK.
11) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-FO-1514.
12) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
13) FOR NITROGEN LINES CONNECTION REFER DWG.: 1208-01-PR-UDD-052.
14) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-056.
15) FOR OPEN DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-058.
16) FOR FLARE CONTINUATION REFER TO DWG.: 1208-97-SA-PID-014
17) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.

HOLD

– DELETED

EQUIPMENT LIST

11-TK-101 11-F-101A/B 11-P-109A/B
11-TK-106

11-TK-101	11-P-109A/B	11-F-101A/B	11-TK-106
UREA SOLUTION TANK	UREA SOLUTION RECOVERY PUMPS	UREA SOLUTION FILTERS	CATCH BASIN FOR 11-TK-101
I.D. x TL.TL : 18400 x 7000 mm	RATED CAPACITY : 65 m3/hr	MAX. CAPACITY : 22100 Kg/hr	MATERIAL : CONCRETE
DESIGN PRESS. : HYDROST.+0.175 barg	SPECIFIC GRAVITY : 1.175	DESIGN PRESS. S/T : 12 barg	DESIGN PRESS. : FULL OF WATER
DESIGN TEMP. : 170°C	DIFF. PRESSURE : 6 bar	DESIGN TEMP. S/T : 150°C	DESIGN TEMP. : 170°C
INSULATION : YES	INSULATION : YES	INSULATION : NO	GEOMETRIC VOLUME : 6.28 m3
TRIM LINE NO. : 11-UP11176-B40U-ST	TRIM LINE NO. : 11-UP11201-B40U-ST	TRIM LINE NO. : 11-UP11224-B40U-ST	

LICENSOR REF. : P58

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	17.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	30.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	21.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت سرمایه گذاری توسعه صنایع پتروشیمی

MC : شرکت مهندسی توسعه صنایع پتروشیمی

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
VACUUM EVAPORATION SECTION 5 of 5

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. :	REV.	SIZE :
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208	1208-11-PR-PID-068	04	A1

1208-11-PR-PID-069

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO P&ID. 1208-11-PR-PID-080 AND 1208-11-PR-PID-081.
2) FT-1027 AND FV-1027 TO BE LOCATED NEAR AND AT GROUND LEVEL.
3) MINIMUM FLOW DEVICE AND AUTOMATIC NOT RETURN VALVE TO BE SUPPLIED BY PUMP MFR.
   ARV VALVE TO BE INSTALLED IN VERTICAL POSITION.
4) STEAM TRACING SHALL BE AVOIDED AROUND FLOWMETER FT-1027.
5) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL "OD" LINES SHALL HAVE MAX SLOPE TOWARDS GROUND LEVEL. "OD" UNDERGROUND HEADER SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 18-TK-153 TANK.
11) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-FT-1027.
12) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
13) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.
14) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.
15) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.
16) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
17) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208-01-SA-UDD-003.

HOLD

- DELETED
- DELETED

11-T-102 DISTILLATION TOWER	11-P-115A/B HYDROLYZER FEED PUMPS
I.D. x TL.TL : 1900 x 28080 mm	RATED CAPACITY : 113 m3/hr
DESIGN PRESS. : 7 barg/F.V.	SPECIFIC GRAVITY : 0.92
DESIGN TEMP. : 185°C	DIFF. PRESSURE : 31.8 bar
INSULATION : YES	INSULATION : YES
TRIM LINE NO. : 11-PC11035-B40U-H	TRIM LINE NO. : 11-UP11223-F42U-H

EQUIPMENT LIST
11-T-102 11-P-115A/B

LICENSOR REF. : P59

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	31.12.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	30.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	21.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت سهامی خاص پتروشیمی هنگام
MC : شرکت سهامی خاص پتروشیمی هنگام
EPCC CONTRACTOR : PIDEC

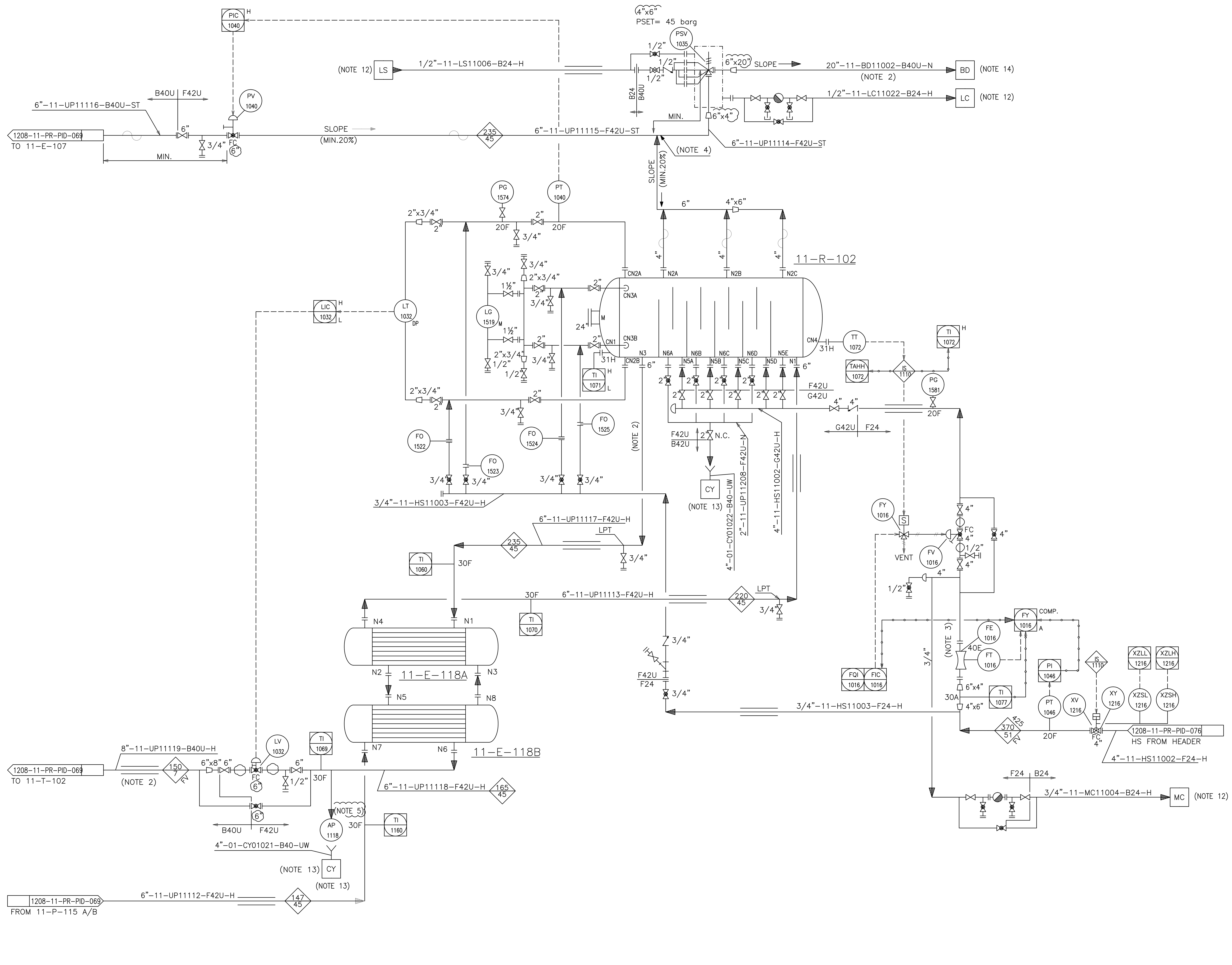
PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
PROCESS CONDENSATE TREATMENT SECTION 1 of 4

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. :	REV.	SIZE :
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208	1208-11-PR-PID-069	04	A1

1208-11-PR-PID-070

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01



NOTES:

1) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO P&ID 1208-11-PR-PID-080 AND 1208-11-PR-PID-081.
2) TWO PHASE FLOW REINFORCED SUPPORT.
3) TO BE INSTALLED AFTER BLOWING THE HS LINES
4) PSV-1035 TO BE LOCATED AS CLOSE AS POSSIBLE TO 11-R-102, BUT AT HIGHER ELEVATION THAN "BD" HEADER IN ORDER TO ENSURE SLOPE TOWARDS HEADER.
5) TRIM LINE NO. FOR AP-1118: 11-UP11227-F42U-H

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208-01-PR-PID-051
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL "OD" LINES SHALL HAVE MAX SLOPE TOWARDS GROUND LEVEL.
"OD" UNDERGROUND HEADER SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 18-TK-153 TANK.
11) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-LV-1032.
12) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.
14) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208-01-SA-UDD-003.

HOLD

- DELETED
- DELETED

EQUIPMENT LIST

11-E-118A/B   11-R-102

11-E-118A/B	11-R-102
HYDROLYZER PREHEATER	UREA HYDROLYZER
SHELL I.D. : 650 mm	I.D. x TL.TL : 2700 x 9000 mm
SHELL LENGTH : 8500 mm	DESIGN PRESS. : 45 barg/F.V.
DESIGN PRESS. S/T : 45/45 barg	DESIGN TEMP. : 265°C
DESIGN TEMP. S/T : 265/265°C	INSULATION : YES
INSULATION : YES	TRIM LINE NO. : 11-UP11177-F42U-H

LICENSOR REF. : P60

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
03	26.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	21.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanah	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanah	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : | MC : | EPCC CONTRACTOR : PIDEC

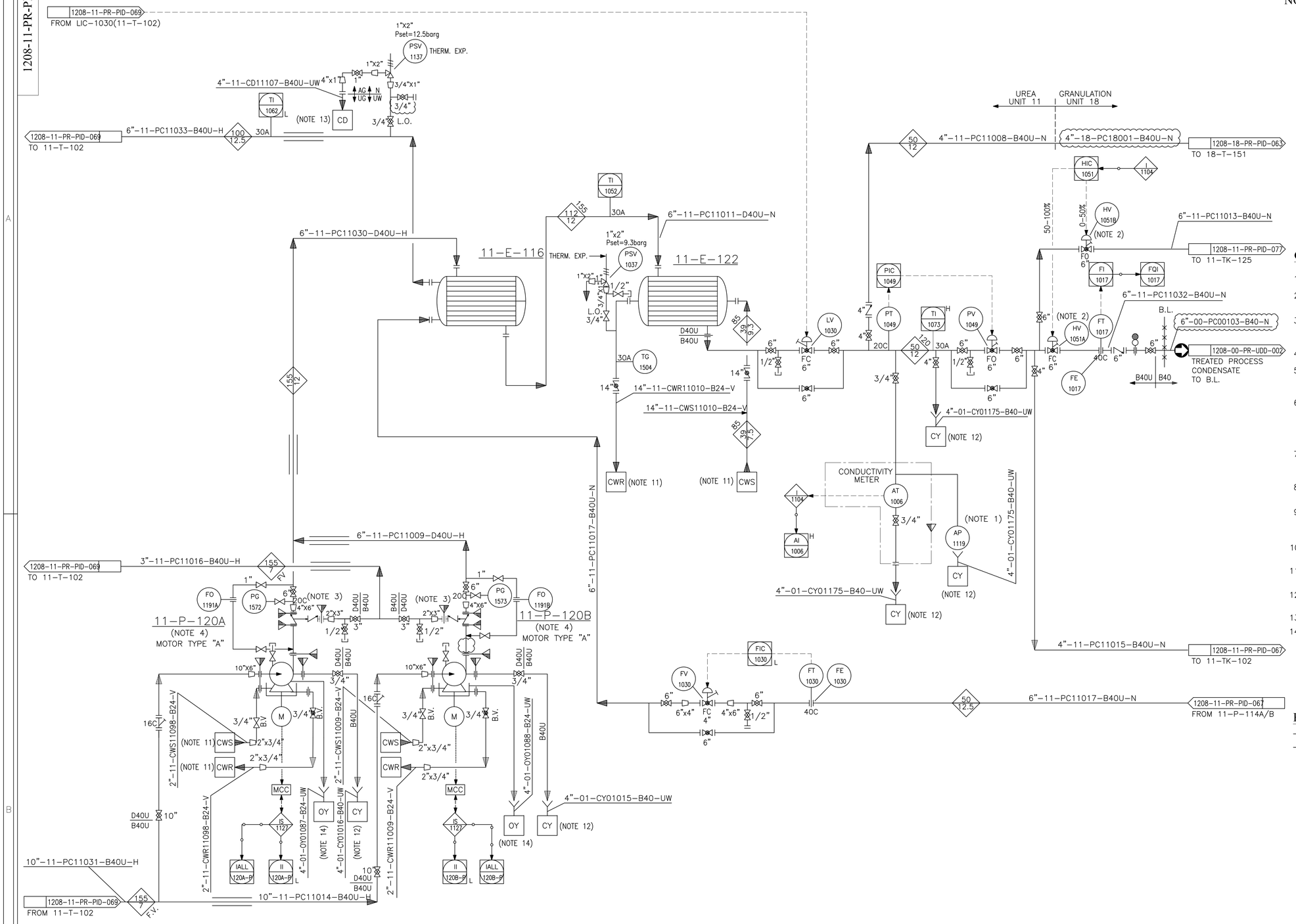
PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
PROCESS CONDENSATE TREATMENT SECTION 2 OF 4

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-070	REV. 03	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

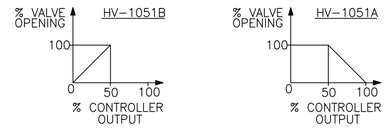
1208-11-PR-PID-071

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01



NOTES:

1) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO P&ID. 1208-11-PR-PID-080 AND 1208-11-PR-PID-081.
2) HV-1051A AND HV-1051B OPENING AND CLOSING MUST BE DONE ACCORDING TO FOLLOW CURVES :



3) MINIMUM FLOW DEVICE AND AUTOMATIC NON RETURN VALVE TO BE SUPPLIED BY PUMP MFR.
ARV TO BE INSTALLED IN VERTICAL POSITION.
4) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.

GENERAL NOTES

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID. 1208-01-PR-PID-051.
2) ALL "OD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 18-TK-153 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY-PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-FT-1030.
11) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.
12) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.
13) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
14) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.

HOLD

- DELETED
- DELETED

EQUIPMENT LIST

11-E-116 11-P-120A/B
11-E-122

11-E-116	11-E-122	11-P-120A/B
DISTILLATION TOWER PREHEATER	FINAL PROCESS CONDENSATE COOLER	PROCESS CONDENSATE PUMPS
SHELL I.D. : 575 mm	SHELL I.D. : 625 mm	RATED CAPACITY : 115 m3/hr
SHELL LENGTH : 5000 mm	SHELL LENGTH : 9000 mm	SPECIFIC GRAVITY : 0.912
DESIGN PRESS. S/T : 12/12.5 barg	DESIGN PRESS. S/T : 12/9.3 barg	DIFF. PRESSURE : 3.7 bar
DESIGN TEMP. S/T : 185/130°C	DESIGN TEMP. S/T : 155/85°C	INSULATION : NO
INSULATION : YES	INSULATION : NO	TRIM LINE NO. : 11-PC11066-D40U-H

LICENSOR REF. : P61

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	07.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	30.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	21.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت سرمایه گذاری صنایع پتروشیمی
MC : شرکت سرمایه گذاری صنایع پتروشیمی
EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
PROCESS CONDENSATE TREATMENT SECTION 3 of 4

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-071	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-072

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) TO BE SUPPLIED BY TANK MANUFACTURER.
2) PROJECTION LENGTH TO BE MINIMIZED AND STEAM TRACED.
3) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.
4) TAPPING ON TOP OF PIPING.

GENERAL NOTES:

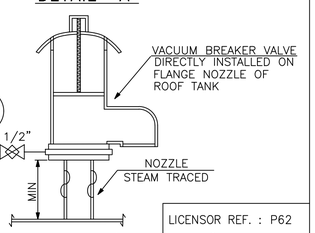
1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-HV-1017.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR NITROGEN LINES CONNECTION REFER DWG.: 1208-01-PR-UDD-052.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.
14) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
15) FOR FLARE CONTINUATION REFER TO DWG.: 1208-97-SA-PID-014.

HOLD
– DELETED

EQUIPMENT LIST

11-TK-104 11-P-116A/B
11-TK-107

DETAIL "A"



LICENSOR REF. : P62

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
03	30.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	21.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
PROCESS CONDENSATE TREATMENT SECTION 4 OF 4

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-072	REV. 03	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

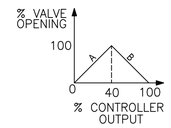
11-TK-104 CARBONATE CLOSE DRAIN TANK	11-TK-107 CLOSE DRAIN EMERGENCY TANK	11-P-116A/B CLOSE DRAIN RECOVERY PUMPS
I.D x HEIGHT : 3000 x 2000 mm	L x H x W : 3000 x 3700 x 2000 mm	RATED CAPACITY : 10 m3/hr
TYPE : FLATE ROOF	TYPE : UNDERGROUND	SPECIFIC GRAVITY : 0.97
DESIGN PRESS. : HYDROST. + 0.172 barg	DESIGN PRESS. : ATM (FULL OF WATER mmH20)	DIFF. PRESSURE : 2.47 bar
DESIGN TEMP. : 100°C	DESIGN TEMP. : 85°C	INSULATION : NO
INSULATION : NO	INSULATION : NO	AUTO START
TRIM LINE NO. : 11-UP11178-B40U-N		

1208-11-PR-PID-073

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) LV-1035A/B SHALL BE OPERATED SEPARATELY WHEN THE LEVEL CONTROLLER IS MANUAL MODE.
2) PROVIDE TWO PHASE FLOW REINFORCED SUPPORT.
3) MINIMUM FLOW DEVICE TO BE SUPPLIED BY VENDOR: AUTOMATIC NON RETURN BY-PASS (TO BE SUPPLIED BY PUMPS MFR.).
4) DRIP HOLE d=13mm AT LOW POINT AND SHALL BE PIPED TO GRADE LEVEL.
5) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO P&ID 1208-11-PR-PID-080 AND 1208-11-PR-PID-081.
6) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.
7) SPLIT CURVE FOR LV-1035 A/B AS FOLLOWING:



GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID. 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY-PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-FT-1127.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.
13) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.
14) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.

HOLD

- DELETED
- DELETED

EQUIPMENT LIST

11-T-106 11-E-123 11-P-113A/B
11-V-110

LICENSOR REF. : P63

11-T-106	11-V-110	11-P-113A/B	11-E-123
STEAM RECOVERY TOWER	STEAM CONDENSATE ACCUMULATOR	STEAM CONDENSATE PUMPS	STEAM CONDENSATE COOLER
I.D. x TL.TL : 1560 x 2500 mm	I.D. x TL.TL : 3330 x 9000 mm	RATED CAPACITY : 104 m3/hr	SHELL LENGTH : 6000 mm
DESIGN PRESS. : 3.5/F.V. barg	DESIGN PRESS. : 3.5/F.V. barg	SPECIFIC GRAVITY : 0.943	SHELL I.D : 725 mm
DESIGN TEMP. : 180°C	DESIGN TEMP. : 180°C	DIFF. PRESSURE : 6.88 bar	DESIGN PRESS. S/T : 12/9.3 barg
INSULATION : YES	INSULATION : YES	INSULATION : NO	DESIGN TEMP. S/T : 150/85°C
	TRIM LINE NO. : 11-LC11079-B24-H	TRIM LINE NO. : 11-LC11233-B24-H	INSULATION : NO

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	01.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	09.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	22.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mizaei	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت پتروشیمی هرمز

MC : شرکت مهندسی و ساخت پتروشیمی

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
STEAM CONDENSATE RECOVERY SYSTEM

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. :	REV.	SIZE :
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208	1208-11-PR-PID-073	04	A1

1208-11-PR-PID-074

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) MINIMUM FLOW DEVICE AND AUTOMATIC NON RETURN VALVE TO BE SUPPLIED BY 11-P-110A/B MFR.
2) TO BE SUPPLIED BY 11-P-111A/B MFR.
3) FOR WASHING POINTS CLOSE TO EACH OTHER A COMMON CY CAN BE PROVIDED FOR WASHING POINTS FAR FROM EACH OTHER SEPARATED CY SHALL PROVIDED.
4) THE SIZE OF MINIMUM FLOW LINE OF THE PUMP VERIFIED BASED ON PUMP SELECTION.
5) 11-P-110A/B AND 11-P-111A/B ARE UNDER EMERGENCY POWER NETWORK.

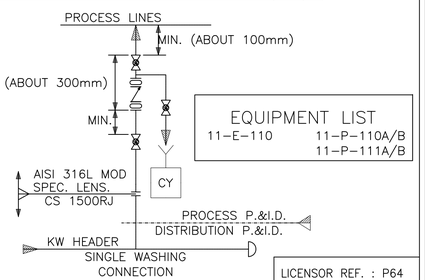
GENERAL NOTES

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID. 1208-01-PR-PID-051.
2) ALL "OD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 18-TK-153 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY-PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-PV-1045.
11) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.
12) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.
13) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO TO DWG.: 1208-01-PR-UDD-056.

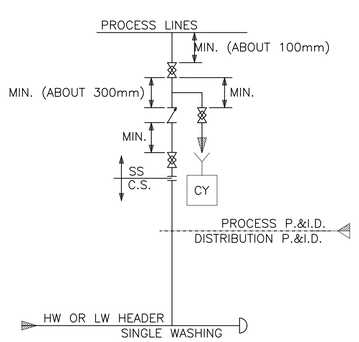
HOLD

- DELETED
- DELETED

TYPICAL WASHING CONNECTIONS (KW)



TYPICAL WASHING CONNECTIONS (HW AND LW)



11-E-110 FLUSHING CONDENSATE COOLER	11-P-110A/B STEAM CONDENSATE FLUSHING PUMPS	11-P-111A/B HP FLUSHING PUMPS
SHELL LENGTH : 5100 mm	RATED CAPACITY : 45 m3/hr	RATED CAPACITY : 10 m3/hr
SHELL I.D : 438 mm	SPECIFIC GRAVITY : 0.943	SPECIFIC GRAVITY : 0.943
DESIGN PRESS. S/T : 34/7 barg	DIFF. PRESSURE : 25.4 bar	DIFF. PRESSURE : 147 bar
DESIGN TEMP. S/T : 150/85°C	INSULATION : NO	INSULATION : NO
INSULATION : NO	BY AUTO START FCS	BY AUTO START FCS
	TRIM LINE NO. : 11-HW11056-D24-H	TRIM LINE NO. : 11-KW11030-H24-H

EQUIPMENT LIST	
11-E-110	11-P-110A/B
	11-P-111A/B

LICENSOR REF. : P64

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	29.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	04.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	23.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت پتروشیمی هنگام

MC : شرکت مهندسی و ساخت پتروشیمی

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
WASHING SYSTEM

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-074	REV. 04	SIZE : A1
SHT. : 1 OF 5	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-074

PLANT NORTH

N

REFERENCE DRAWING	DWG. NO.

NOTES:

12"-11-NHG11009-D40U-N
1208-11-PR-PID-058

2"x1"

1/2"-11-HW11048-D24-V → SINGLE BODY VALVE 3"-11-NHG11005-D40U-ST | 1208-11-PR-PID-058

3/4"-11-HW11029-D24-V → SINGLE BODY VALVE 16"-11-UP11035-D42U-ST | 1208-11-PR-PID-064

1/2"-11-HW11033-D24-V → SINGLE BODY VALVE 14"-11-UP11049-D42U-ST | 1208-11-PR-PID-058

1/2"-11-HW11036-D24-V → SINGLE BODY VALVE 8"-11-UP11055-D42U-ST | 1208-11-PR-PID-058

1/2"-11-HW11030-D24-V → SINGLE BODY VALVE 16"-11-UP11046-D42U-ST | 1208-11-PR-PID-058

1/2"-11-HW11034-D24-V → 11-LT-1015 11/2"-11-UP11170-D42U-ST | 1208-11-PR-PID-058

1/2"-11-HW11035-D24-V → SINGLE BODY VALVE 12"-11-UP11001-D42U-ST | 1208-11-PR-PID-058

1/2"-11-HW11049-D24-V → SINGLE BODY VALVE 2"-11-UP11170-D42U-ST | 1208-11-PR-PID-058

2"-11-HW11032-D24-V

SINGLE BODY VALVE 2"-11-UP11074-D40U-ST | 1208-11-PR-PID-062 ← 3/4"x1/2" ← 3/4"-11-HW11027-D24-V

1/2"-11-HW11052-D24-V → SINGLE BODY VALVE 2"-11-UP11048-D40U-ST | 1208-11-PR-PID-062

1/2"-11-HW11026-D24-V → SINGLE BODY VALVE 2"-11-UP11073-D42U-ST | 1208-11-PR-PID-062

SINGLE BODY VALVE 2"-11-UP11169-D42U-ST | 1208-11-PR-PID-057

3/4"x1/2"

3/4"-11-HW11038-D42U-N

1/2"-11-HW11031-D42U-N → 11-LV-1014 8"-11-UP11044-D42U-ST | 1208-11-PR-PID-057

D42U
D24

11-T-101
1208-11-PR-PID-058

2"-11-HW11037-D24-V

11-P-111A | 1208-11-PR-PID-074 — 3"-11-HW11012-D24-H
11-P-111B | 1208-11-PR-PID-074 — 3"-11-HW11013-D24-H
LW SERVICE | 1208-11-PR-PID-074 — 3"-11-HW11003-D24-H
4"-11-UP11023-L90-DT | 1208-11-PR-PID-053 — 3"-11-HW11014-D24-V(P)
11-L-118 12"-11-MS11002-D24-H | 1208-11-PR-PID-076 — 2"-11-HW11016-D24-H
3"-11-LC11013-B24-P | 1208-11-PR-PID-074 — 3/4"-11-HW11015-B24-H

11-P-110 B | 1208-11-PR-PID-074 — 4"-11-HW11001-D24-H
11-P-110 A | 1208-11-PR-PID-074 — 4"-11-HW11002-D24-H

4"x3"

11-PV-1045
1208-11-PR-PID-074

3"-11-HW11001-D24-H

2"-11-HW11005-D24-H → 11-V-109 | 1208-11-PR-PID-074

3"x2"

4"-11-HW11004-D24-P

2"-11-HW11054-D24-H

11-E-110
1208-11-PR-PID-074

4"-11-HW11004-D24-P → 2"-18-HW18001-D24-H → 18-V-169 | 1208-18-PR-PID-055

3"-11-HW11006-D24-V

11-T-104
1208-11-PR-PID-074
← 2"-11-HW11009-D24-V
3"x2"

2"-11-HW11010-D24-V → 11-T-103 | 1208-11-PR-PID-074

2"-11-HW11008-D24-V → 11-PU-105 | 1208-11-PR-PID-074

2"-11-HW11018-D40U-N → 11-P-102 | 1208-11-PR-PID-052

1"-11-HW11019-D40U-N → 12"-11-UP11001-D42U-ST | 1208-11-PR-PID-052

3/4"-11-HW11061-D42U-N → 1"-11-UP11211-B40U-N | 1208-11-PR-PID-052

3/4"-11-HW11060-D42U-N → 1"-11-UP11210-B40U-N | 1208-11-PR-PID-052

1/2"-11-HW11043-D24-H → 6"-11-NHL11019-D14U-V | 1208-11-PR-PID-051

1"-11-HW11017-D24-V → 1"x1/2" → SINGLE BODY VALVE 12"-11-UP11001-D42U-ST | 1208-11-PR-PID-052

1/2"-11-HW11044-D42U-V → SINGLE BODY VALVE 12"-11-UP11001-D42U-ST | 1208-11-PR-PID-052

1"-11-HW11024-D24-V → 1"x1/2" → SINGLE BODY VALVE 2"-11-UP11078-D40U-ST | 1208-11-PR-PID-063

1/2"-11-HW11053-D24-V → SINGLE BODY VALVE 3"-11-UP11077-B40U-ST 3"-11-UP11205-B40U-ST | 1208-11-PR-PID-063

1/2"-11-HW11023-D24-V → SINGLE BODY VALVE 4"-11-UP11077-D40U-ST | 1208-11-PR-PID-063

1 1/2"-11-HW11007-D24-V

1/2"-11-HW11051-D24-V → 2"-11-NHL11028-D40U-C | 1208-11-PR-PID-059

1/2"-11-HW11025-D24-V → SINGLE BODY VALVE 8"-11-UP11055-D42U-ST | 1208-11-PR-PID-063

1/2"-11-HW11050-D24-V → SINGLE BODY VALVE 10"-11-NHL11020-D40U-N | 1208-11-PR-PID-059

1/2"-11-HW11022-D24-V → SINGLE BODY VALVE 6"-11-NHG11008-D40U-N | 1208-11-PR-PID-058

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	29.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
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01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت سرمایه گذاری هنگام

MC : شرکت مدیریت و توسعه سرمایه گذاری هنگام

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

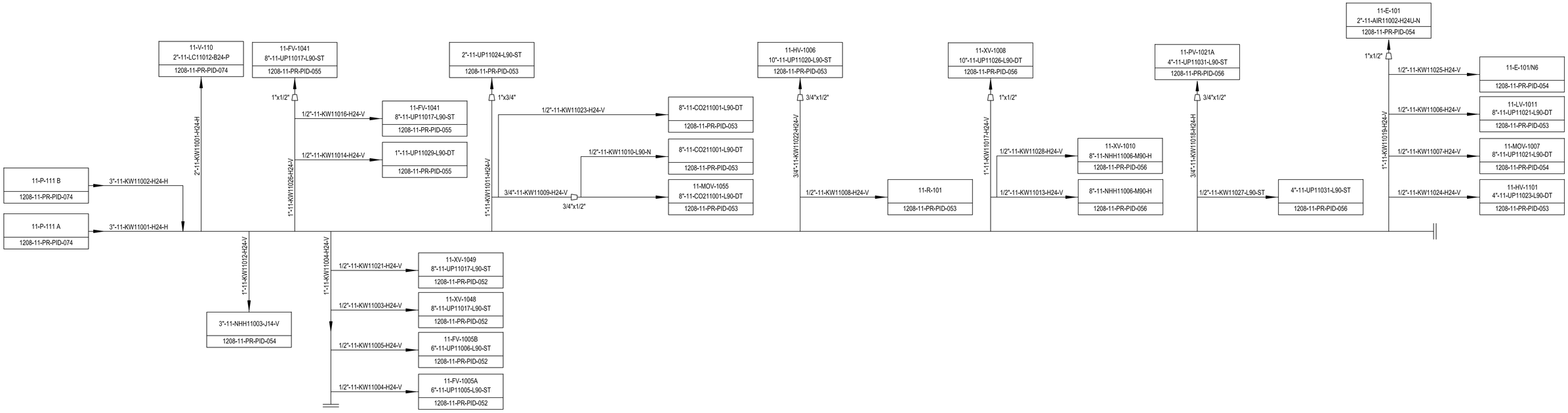
TITLE : PIPING AND INSTRUMENTATION DIAGRAM
WASHING SYSTEM

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-074	REV. 04	SIZE : A1
SHT. : 2 OF 5	PIDEC PROJECT NO. : 1208			

REFERENCE DRAWING	DWG. NO.

NOTES:

PLANT NORTH



DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	29.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	04.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	23.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : MC : EPCC CONTRACTOR :

PROJECT :

HENGAM FERTILIZER PROJECT

TITLE :

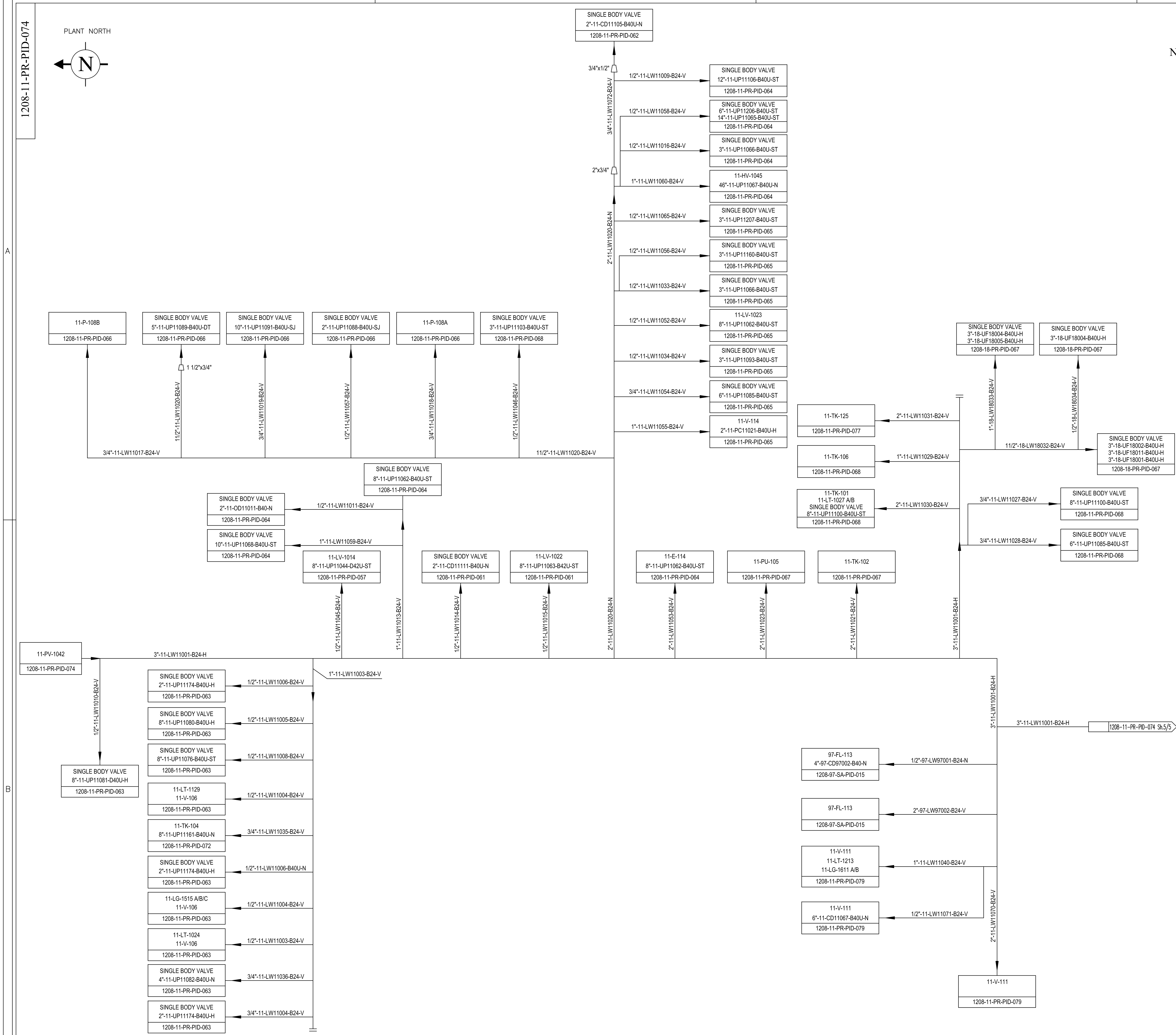
PIPING AND INSTRUMENTATION DIAGRAM

WASHING SYSTEM

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. :	REV.	SIZE :
SHT. : 3 OF 5	PIDEC PROJECT NO. : 1208	1208-11-PR-PID-074	04	A1

REFERENCE DRAWING	DWG. NO.

NOTES:



1208-11-PR-PID-074
PLANT NORTH
N
SINGLE BODY VALVE 2"-11-CD11105-B40U-N 1208-11-PR-PID-062
3/4"x1/2"
3/4"-11-LW11072-B24-V
1/2"-11-LW11009-B24-V
SINGLE BODY VALVE 12"-11-UP11106-B40U-ST 1208-11-PR-PID-064
1/2"-11-LW11058-B24-V
SINGLE BODY VALVE 6"-11-UP11206-B40U-ST 14"-11-UP11065-B40U-ST 1208-11-PR-PID-064
1/2"-11-LW11016-B24-V
SINGLE BODY VALVE 3"-11-UP11066-B40U-ST 1208-11-PR-PID-064
2"x3/4"
1"-11-LW11060-B24-V
11-HV-1045 46"-11-UP11067-B40U-N 1208-11-PR-PID-064
2"-11-LW11020-B24-N
1/2"-11-LW11065-B24-V
SINGLE BODY VALVE 3"-11-UP11207-B40U-ST 1208-11-PR-PID-065
1/2"-11-LW11056-B24-V
SINGLE BODY VALVE 3"-11-UP11160-B40U-ST 1208-11-PR-PID-065
1/2"-11-LW11033-B24-V
SINGLE BODY VALVE 3"-11-UP11066-B40U-ST 1208-11-PR-PID-065
1/2"-11-LW11052-B24-V
11-LV-1023 8"-11-UP11062-B40U-ST 1208-11-PR-PID-065
1/2"-11-LW11034-B24-V
SINGLE BODY VALVE 3"-11-UP11093-B40U-ST 1208-11-PR-PID-065
3/4"-11-LW11054-B24-V
SINGLE BODY VALVE 6"-11-UP11085-B40U-ST 1208-11-PR-PID-065
1"-11-LW11055-B24-V
11-V-114 2"-11-PC11021-B40U-H 1208-11-PR-PID-065
11-P-108B 1208-11-PR-PID-066
SINGLE BODY VALVE 5"-11-UP11089-B40U-DT 1208-11-PR-PID-066
SINGLE BODY VALVE 10"-11-UP11091-B40U-SJ 1208-11-PR-PID-066
SINGLE BODY VALVE 2"-11-UP11088-B40U-SJ 1208-11-PR-PID-066
11-P-108A 1208-11-PR-PID-066
SINGLE BODY VALVE 3"-11-UP11103-B40U-ST 1208-11-PR-PID-068
1 1/2"x3/4"
11/2"-11-LW11020-B24-V
3/4"-11-LW11019-B24-V
1/2"-11-LW11057-B24-V
3/4"-11-LW11018-B24-V
1/2"-11-LW11046-B24-V
3/4"-11-LW11017-B24-V
11/2"-11-LW11020-B24-V
SINGLE BODY VALVE 8"-11-UP11062-B40U-ST 1208-11-PR-PID-064
SINGLE BODY VALVE 2"-11-OD11011-B40-N 1208-11-PR-PID-064
1/2"-11-LW11011-B24-V
SINGLE BODY VALVE 10"-11-UP11068-B40U-ST 1208-11-PR-PID-064
1"-11-LW11059-B24-V
11-LV-1014 8"-11-UP11044-D42U-ST 1208-11-PR-PID-057
SINGLE BODY VALVE 2"-11-CD11111-B40U-N 1208-11-PR-PID-061
11-LV-1022 8"-11-UP11063-B42U-ST 1208-11-PR-PID-061
11-E-114 8"-11-UP11062-B40U-ST 1208-11-PR-PID-064
11-PU-105 1208-11-PR-PID-067
11-TK-102 1208-11-PR-PID-067
1/2"-11-LW11045-B24-V
1"-11-LW11013-B24-V
1/2"-11-LW11014-B24-V
1/2"-11-LW11015-B24-V
2"-11-LW11020-B24-N
1/2"-11-LW11053-B24-V
2"-11-LW11023-B24-V
2"-11-LW11021-B24-V
3"-11-LW11001-B24-H
SINGLE BODY VALVE 3"-18-UF18004-B40U-H 3"-18-UF18005-B40U-H 1208-18-PR-PID-067
SINGLE BODY VALVE 3"-18-UF18004-B40U-H 1208-18-PR-PID-067
1"-18-LW18033-B24-V
1/2"-18-LW18034-B24-V
11-TK-125 1208-11-PR-PID-077
2"-11-LW11031-B24-V
11/2"-18-LW18032-B24-V
SINGLE BODY VALVE 3"-18-UF18002-B40U-H 3"-18-UF18011-B40U-H 3"-18-UF18001-B40U-H 1208-18-PR-PID-067
11-TK-106 1208-11-PR-PID-068
1"-11-LW11029-B24-V
11-TK-101 11-LT-1027 A/B SINGLE BODY VALVE 8"-11-UP11100-B40U-ST 1208-11-PR-PID-068
2"-11-LW11030-B24-V
3/4"-11-LW11027-B24-V
SINGLE BODY VALVE 8"-11-UP11100-B40U-ST 1208-11-PR-PID-068
3/4"-11-LW11028-B24-V
SINGLE BODY VALVE 6"-11-UP11085-B40U-ST 1208-11-PR-PID-068
11-PV-1042 1208-11-PR-PID-074
3"-11-LW11001-B24-H
1/2"-11-LW11010-B24-V
SINGLE BODY VALVE 8"-11-UP11081-D40U-H 1208-11-PR-PID-063
1"-11-LW11003-B24-V
SINGLE BODY VALVE 2"-11-UP11174-B40U-H 1208-11-PR-PID-063
1/2"-11-LW11006-B24-V
SINGLE BODY VALVE 8"-11-UP11080-B40U-H 1208-11-PR-PID-063
1/2"-11-LW11005-B24-V
SINGLE BODY VALVE 8"-11-UP11076-B40U-ST 1208-11-PR-PID-063
1/2"-11-LW11008-B24-V
11-LT-1129 11-V-106 1208-11-PR-PID-063
1/2"-11-LW11004-B24-V
11-TK-104 8"-11-UP11161-B40U-N 1208-11-PR-PID-072
3/4"-11-LW11035-B24-V
SINGLE BODY VALVE 2"-11-UP11174-B40U-H 1208-11-PR-PID-063
1/2"-11-LW11006-B40U-N
11-LG-1515 A/B/C 11-V-106 1208-11-PR-PID-063
1/2"-11-LW11004-B24-V
11-LT-1024 11-V-106 1208-11-PR-PID-063
1/2"-11-LW11003-B24-V
SINGLE BODY VALVE 4"-11-UP11082-B40U-N 1208-11-PR-PID-063
3/4"-11-LW11036-B24-V
SINGLE BODY VALVE 2"-11-UP11174-B40U-H 1208-11-PR-PID-063
3/4"-11-LW11004-B24-V
3"-11-LW11001-B24-H
3"-11-LW11001-B24-H
1208-11-PR-PID-074 Sh.5/5
97-FL-113 4"-97-CD97002-B40-N 1208-97-SA-PID-015
1/2"-97-LW97001-B24-N
97-FL-113 1208-97-SA-PID-015
2"-97-LW97002-B24-V
11-V-111 11-LT-1213 11-LG-1611 A/B 1208-11-PR-PID-079
1"-11-LW11040-B24-V
2"-11-LW11070-B24-V
11-V-111 6"-11-CD11067-B40U-N 1208-11-PR-PID-079
1/2"-11-LW11071-B24-V
11-V-111 1208-11-PR-PID-079

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	29.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	04.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	23.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanah	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanah	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : | MC : | EPCC CONTRACTOR : PIDEC

PROJECT :

HENGAM FERTILIZER PROJECT

TITLE :

PIPING AND INSTRUMENTATION DIAGRAM
WASHING SYSTEM

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO.	REV.	SIZE :
SHT. : 4 OF 5	PIDEC PROJECT NO. : 1208	1208-11-PR-PID-074	04	A1

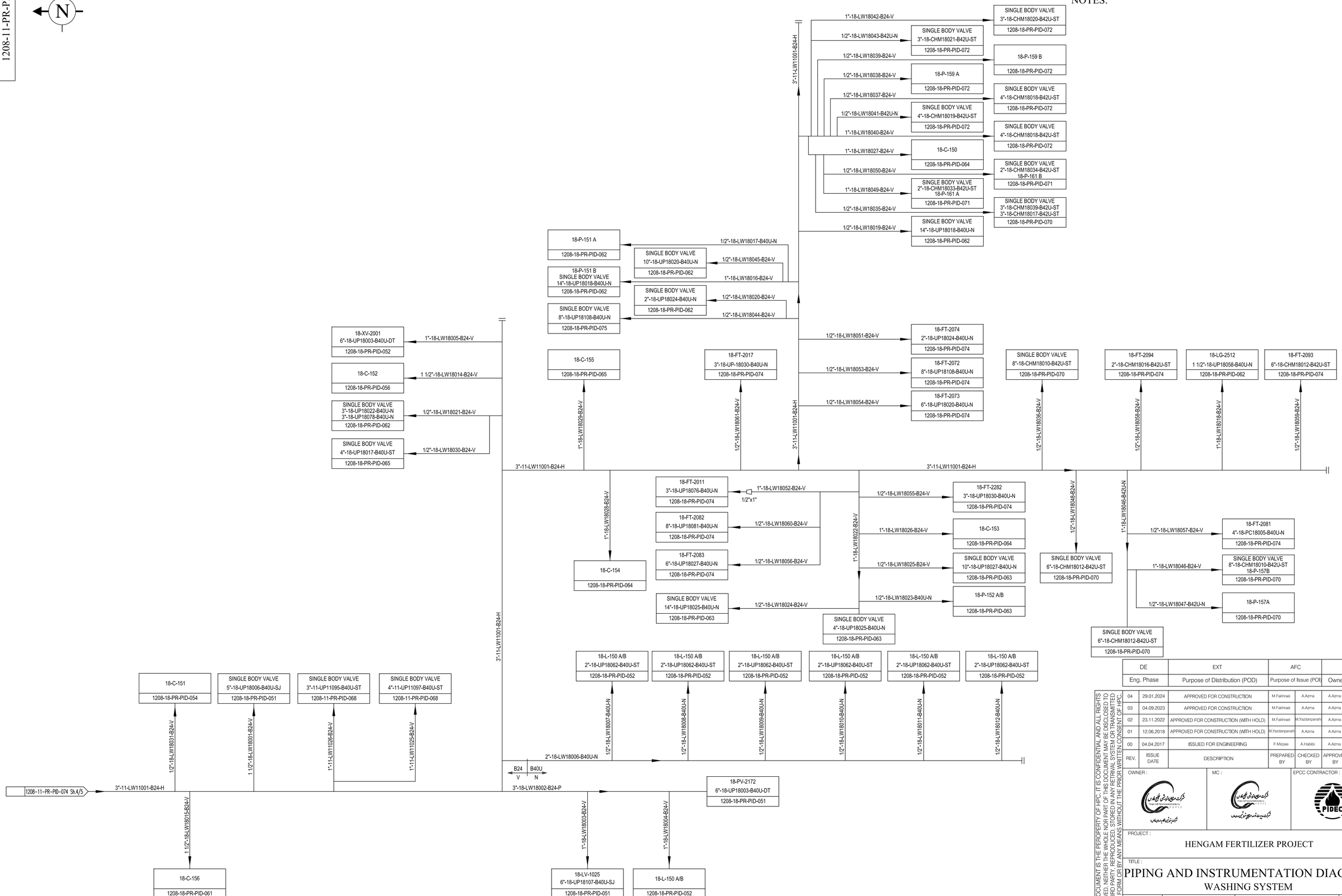
1208-11-PR-PID-074

PLANT NORTH

N

REFERENCE DRAWING	DWG. NO.

NOTES:



DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	29.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	04.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	23.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت پتروشیمی هرمز

MC : شرکت پتروشیمی هرمز

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

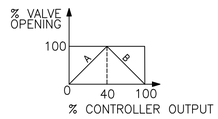
TITLE : PIPING AND INSTRUMENTATION DIAGRAM
WASHING SYSTEM

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-074	REV. 04	SIZE : A1
SHT. : 5 OF 5	PIDEC PROJECT NO. : 1208			

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) 11-V-109 INLET NOZZLE TO BE LOCATED 4000 mm BELOW 11-E-101 SHELL SIDE OUTLET NOZZLE.
2) TO BE INSTALLED AFTER BLOWING OF THE LINES.
3) FOR SAMPLE CONNECTION DETAILS AND PIPING ARRANGEMENT REFER TO P&ID. 1208-11-PR-PID-080 AND 1208-11-PR-PID-081.
4) TO BE LOCATED AT SAFE LOCATION ABOVE 11-V-101 PLATFORM.
5) LV-1009 A/B OPERATE IN SPLIT RANG AS SHOWN:



GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO DOC. 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY-PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) ▷ MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC."GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-PV-1020.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.
12) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-053.
13) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.

HOLD

- DELETED
- DELETED

11-V-109 STRIPPER STEAM SATURATOR	11-L-115 M.P. STEAM SILENCER
I.D. x TL.TL : 2500 x 6400 mm	RATED CAPACITY : 120900 Kg/hr
DESIGN PRESS. : 28/F.V. barg	DESIGN PRESS. : (5 barg)
DESIGN TEMP. : 280°C	DESIGN TEMP. : 381°C
INSULATION : YES	INSULATION : NO
TRIM LINE NO. : 11-MC11014-D24-H	

EQUIPMENT LIST
11-V-109
11-L-115

LICENSOR REF. : P65

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
03	30.08.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	23.11.2022	APPROVED FOR CONSTRUCTION	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : MC : EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
STEAM SYSTEM 1 of 2

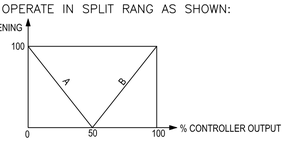
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-075	REV. 03	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-076

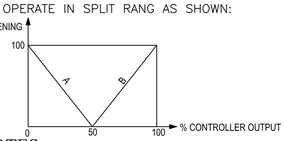
REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) IN CASE OF HIGH PRESSURE ON MLS HEADER, THE CONTROLLER PIC–1059 SHALL GIVE SIGNAL TO PV–1059B TO OPEN, IN CASE THE PRESSURE CONTINUES TO INCREASE THE CONTROLLER SHALL GIVE THE SIGNAL TO PV–1060A TO OPEN.
2) PV–1060 A/B SHALL BE OPERATED SEPARATELY WHEN THE PRESSURE CONTROLLER IS IN MANUAL MODE.
3) DRIP HOLE ø = 1/2" AT LOWEST POINT AND SHALL BE PIPED TO GRADE.
4) PT–1059 AND PT–1060 TO BE LOCATED MINIMUM 20 METERS FROM VENT TAPPING.
5) PY–1060 IS PROVIDED IN ORDER TO GIVE A SIGNAL TO OVERRIDE THE FIC–1140 CLOSING THE VALVE, WHEN THE PRESSURE OF LS HEADER IS DECREASING, EVEN IF PV–1060A IS FULLY OPEN.
6) FORCE TO MINIMUM OUTPUT TO CLOSE PV–1059A.
7) TT–1076B AND TT–1076C TO BE LOCATED ON MLS STEAM HEADER.
8) PV–1059A/B OPERATE IN SPLIT RANG AS SHOWN:



9) PV–1060A/B OPERATE IN SPLIT RANG AS SHOWN:



GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID 1208–01–PR–PID–051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11–TK–104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BYPASS LINE SIZE TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW.
   NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT).
   NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11–FT–1139.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–051.
12) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208–01–PR–UDD–055.

HOLD

– DELETED
– DELETED

EQUIPMENT LIST

11–L–116
11–L–118
11–L–120

LICENSOR REF. : P66

11–L–116 L.P. STEAM SILENCER	11–L–118 M.P. STEAM DESUPERHEATER	11–L–120 M.L.P. STEAM SILENCER
FLOW RATE : 45500 kg/hr	OUTLET STEAM FLOW RATE : 62300 kg/hr	FLOW RATE : 78000 kg/hr
DESIGN PRESS. : 5 barg	DESIGN PRESS. : (WATER SIDE/STEAM SIDE): 33/28 barg	DESIGN PRESS. : 5 barg
DESIGN TEMP. : 180°C	DESIGN TEMP. : 381°C	DESIGN TEMP. : 190°C
INSULATION : NO	INSULATION : YES	INSULATION : NO

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	07.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	02.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	23.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت پتروشیمی هنگام

MC : شرکت مهندسی و ساخت پتروشیمی

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
STEAM SYSTEM 2 of 2

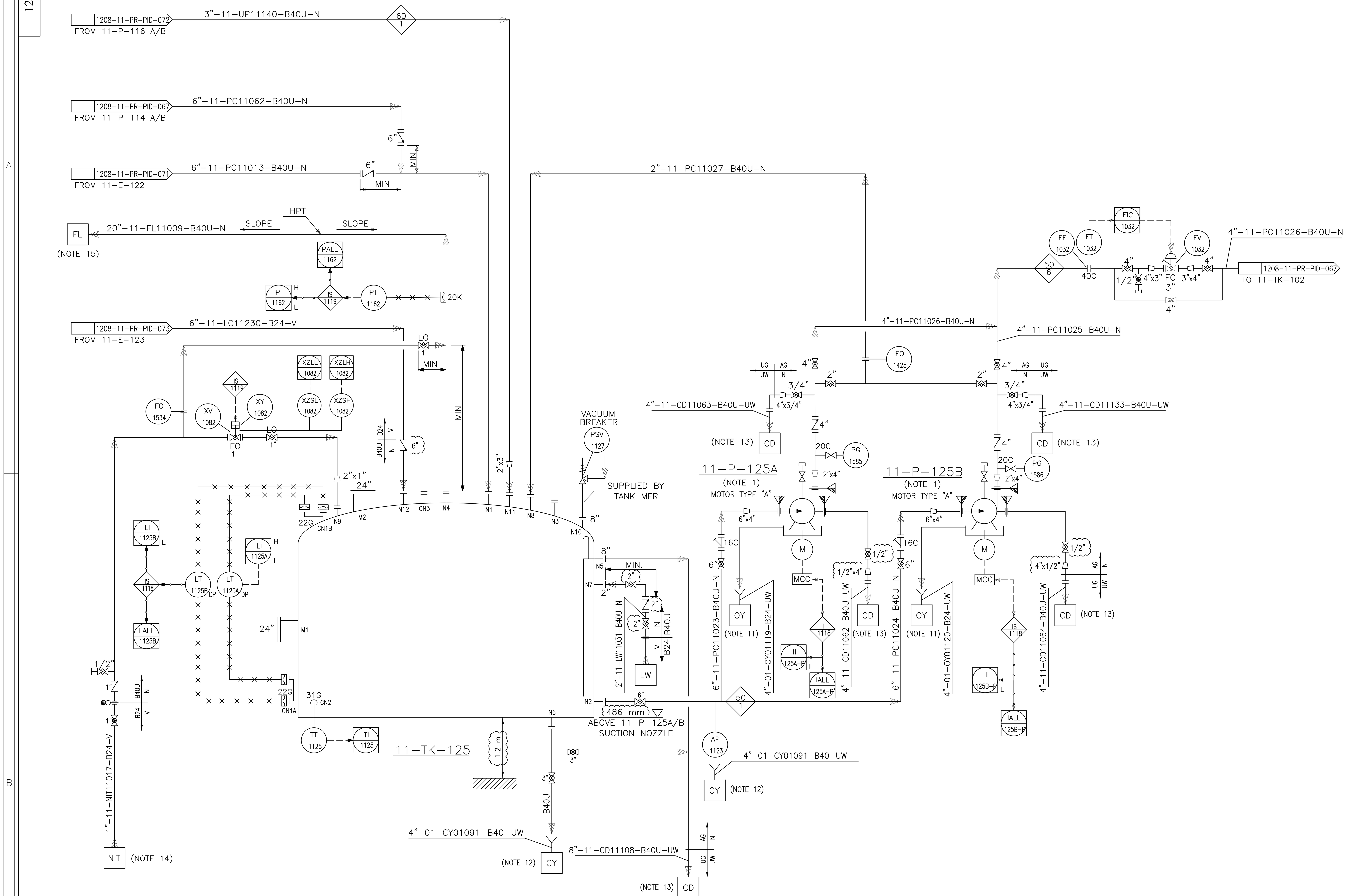
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-076	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-077

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.



GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO PID. 1208-01-PR-PID-051
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY-PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIFIC REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPTIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-FT-1032.
11) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.
12) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-056.
13) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
14) FOR NITROGEN/NATURAL GAS LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-052.
15) FOR FLARE CONTINUATION REFER TO DWG.: 1208-97-SA-PID-014.

HOLD

- DELETED
- DELETED

EQUIPMENT LIST
11-P-125A/B
11-TK-125

11-P-125A/B	11-TK-125
PROCESS	PROCESS
OFF SPEC RECOVERY PUMPS	OFF SPEC TANK
RATED CAPACITY : 40 m3/hr	I.D. x TL.TL : 13800 x 7000 mm
SPECIFIC GRAVITY : 0.988	DESIGN PRESS. : HYDROSTATIC+0.172 barg
DIFF. PRESSURE : 3.8 bar	DESIGN TEMP. : 100°C
INSULATION : NO	INSULATION : NO
TRIM LINE NO. : 11-PC11064-B40U-N	TRIM LINE NO. : 11-PC11036-B40U-N

LICENSOR REF. : P67

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	08.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	03.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	22.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : | MC : | EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
OFF SPEC TANK AND PUMPS

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-077	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-078

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

1) THE LINES SIZE OF THE MINIMUM FLOW LINE OF THE PUMP VERIFIED BASED ON PUMP SELECTION.
2) ALL PUMPS CONNECTIONS DEFINED AS PER PUMP MFR SELECTION.

GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO DOC. 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE.
   ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES TO BE VERIFIED DURING ENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIF REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPETIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPETIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) ALL INSTRUMENT IN THIS PAGE HAVE PRIFIX NO. OF 11. FOR EXAMPLE 11-LV-1210.
11) FOR OILY WATER DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-055.
12) FOR CHEMICAL DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-056.
13) FOR NITROGEN/NATURAL GAS LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-052.
14) FOR UREA BLOW DOWN NETWORK REFER TO DWG.: 1208-01-SA-UDD-003.
15) FOR COOLING WATER SUPPLY/RETURN CONTINUATION REFER TO DWG: 1208-01-PR-UDD-053

HOLD

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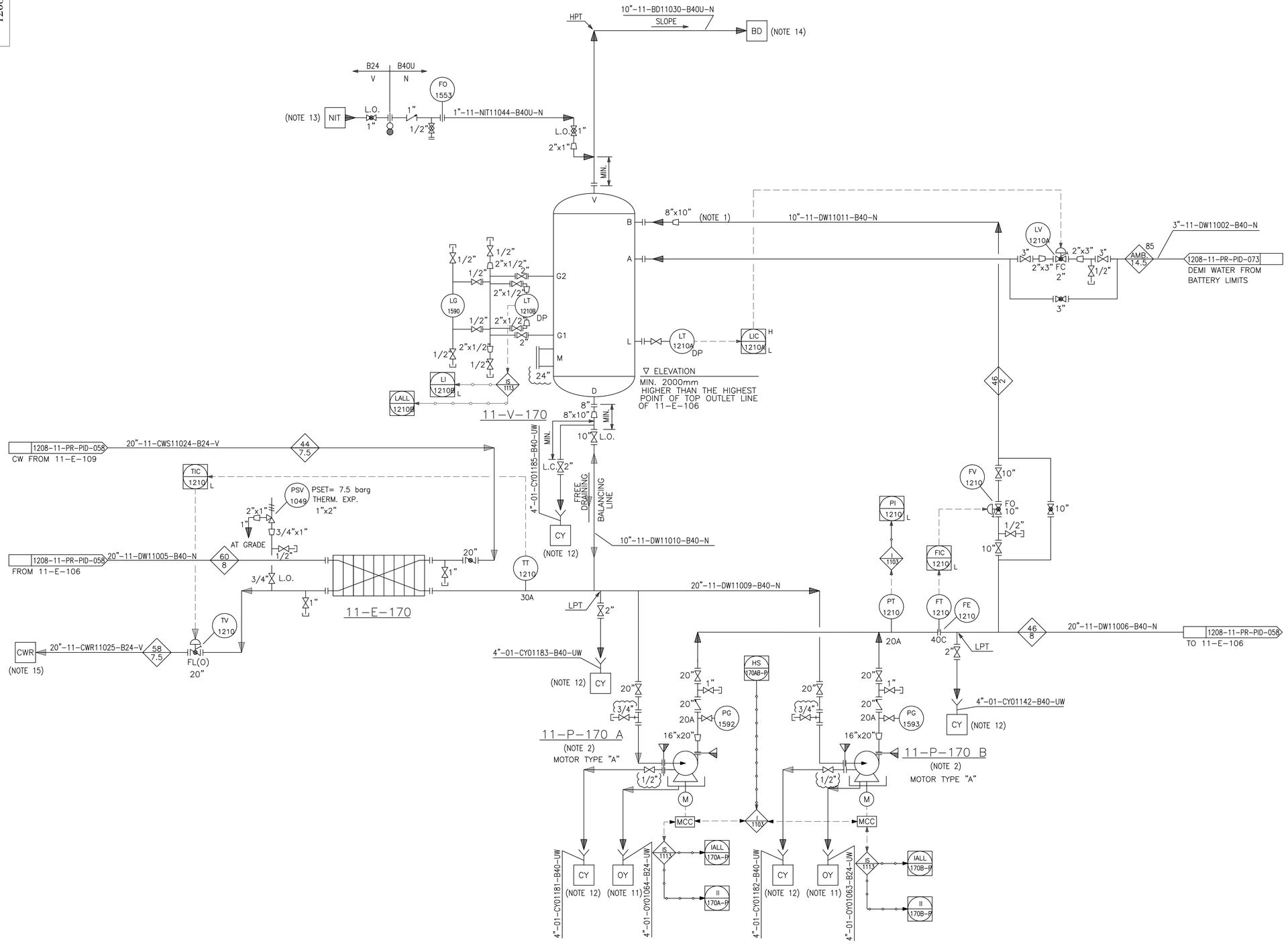
- DELETED



EQUIPMENT LIST

11-E-170 11-P-170A/B
11-V-170

11-E-170 CLOSED CIRCUIT DEMINERALIZED WATER COOLER	11-P-170 A/B CLOSED CIRCUIT DEMINERALIZED WATER PUMPS	11-V-170 CLOSED CIRCUIT DEMINERALIZED WATER EXPANSION DRUM
TYPE : PLATE EXCHANGER	RATED CAPACITY : 1625 m3/hr	I.D x TL.TL : 1800 x 2000 mm
LENGTH X WIDTH X HEIGHT : 4200X1780X3540mm	SPECIFIC GRAVITY : 0.99	DESIGN PRESS. : 3.5 barg
DESIGN PRESS. SIDE A/B : 8/7.5 barg	DIFF. PRESSURE : 2.5 bar	DESIGN TEMP. : 90°C
DESIGN TEMP. SIDE A/B : 90/85°C	INSULATION : NO	INSULATION : NO
INSULATION : NO	TRIM LINE NO. : 11-DW11013-B40-N	TRIM LINE NO. : 11-DW11012-B40-N

LICENSOR REF. : P68

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	01.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	02.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	22.11.2022	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mirzaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت پتروشیمی هرمز

MC : شرکت پتروشیمی هرمز

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
DEMINERALIZED WATER CLOSED CIRCUIT

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-078	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-079

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

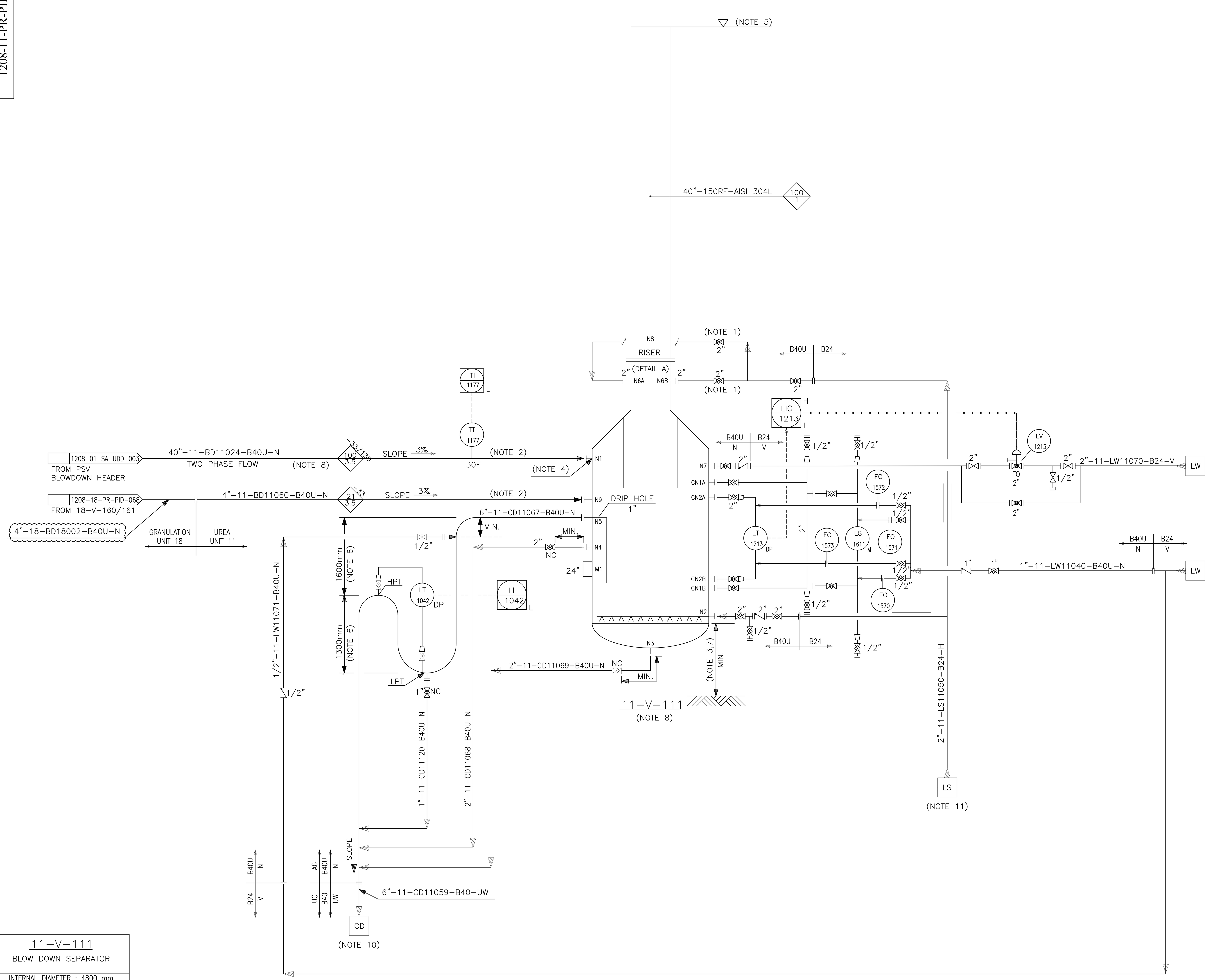
1) VALVES TO BE OPERABLE FROM CLOSER PLATFORM.
2) TWO PHASE FLOW REINFORCED SUPPORT.
3) 11-V-111 TO BE GROUNDED.
4) TANGENTIAL INLET CONNECTIONS.
5) ELEVATION OF 11-V-111 STACK IS ABOUT 60 m ABOVE GROUND LEVEL.
6) MINIMUM DISTANCE BETWEEN PIPE BOTTOM TANGENT LINES.
7) 3500 mm .
8) MAX. TEMPERATURE OF BD HEDER AND BD SEPARATOR IS 265°C.

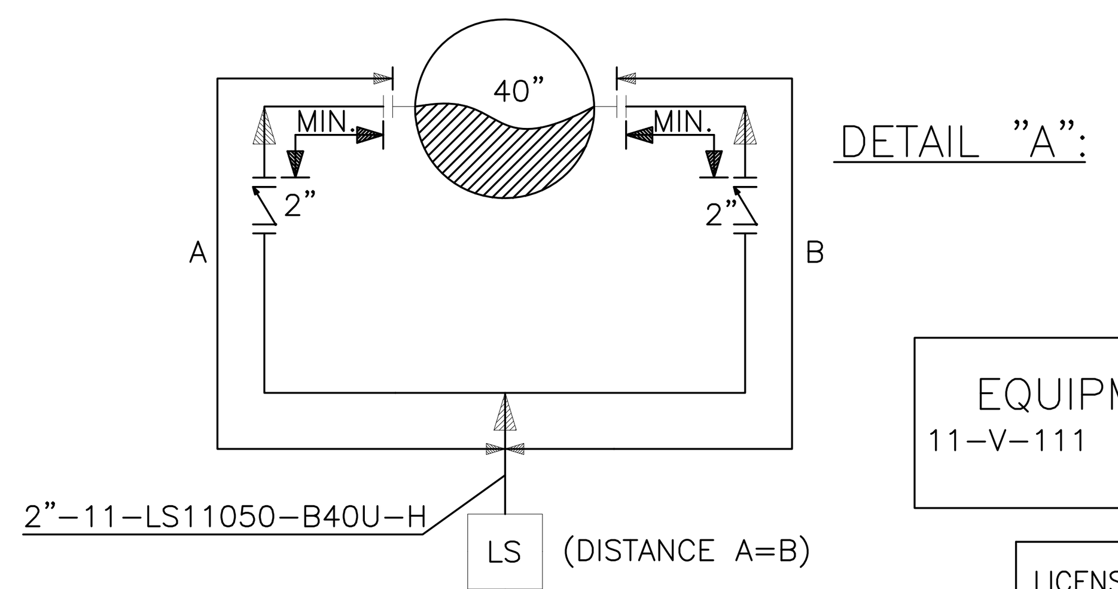
GENERAL NOTES:

1) FOR SYMBOLS AND OTHER DETAILS PLEASE REFER TO DOC. 1208-01-PR-PID-051.
2) FOR ALL "CD" LINES THE FLANGES ARE TO BE LOCATED AT MINIMUM DISTANCE FROM GRADE. ALL "CD" LINES SHALL HAVE SLOPE TO ENSURE FREE DRAINING TOWARDS 11-TK-104 TANK.
3) SAFETY AND CONTROL VALVE IN/OUT LINES AND RELATED BY-PASS LINE SIZE TO BE VERIFIED DURINGENGINEERING PHASE, AFTER CONTROL VALVES AND SAFETY VALVES SELECTION.
4) MFR / CONTRACTOR
5) WHERE IT'S INDICATED "MIN" OR "MINIMUM DISTANCE" THE LENGTH OF THE INTERESTED PIPE TO BE KEPT AS SHORT AS POSSIBLE (ABOUT ONE HUNDRED MILLIMITERS) IN ORDER TO PREVENT DEAD ZONE.
6) FOR THE DESCRIPTION OF ATTRIBUTES OF HYDRAULIC CONSTRAINTS OF LINES (SELF DRAINING, SLOPE, GRAVITY FLOW, ETC.) REFER TO DOC. "GENERAL REQUIREMENTS FOR PIPING" WHERE SPECIF REQUIREMENTS ARE INDICATED THAT PIPING SHALL FOLLOW. NO EXCEPTIONS ARE ALLOWED.
7) ALL DRIP RINGS MUST BE INSTALLED TO HAVE THE RELEVANT TAPPING IN THE BOTTOM PART (THE LOWEST POINT). NO EXCEPETIONS ARE ALLOWED.
8) ALL CHECK VALVES HAVE TO BE INSTALLED IN VERTICAL POSITION, UNLESS VENDOR DIFFERENT INDICATIONS.
9) MECHANIZATION OF PIPING AND INSTRUMENTATION HAS BEEN PERFORMED ACCORDING WITH LICENSOR'S STANDARDS AS MINIMUM REQUIREMENT AND IT SHALL BE COMPLETED BY ENGINEERING CONTRACTOR.
10) FOR CLOSE DRAINAGE CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-057.
11) FOR STEAM AND CONDENSATE LINES CONTINUATION REFER TO DWG.: 1208-01-PR-UDD-051.

HOLD:

- DELETED





11-V-111
BLOW DOWN SEPARATOR

- INTERNAL DIAMETER : 4800 mm
- TL.-TL. LENGTH : 9406mm
- MATERIAL : AISI 304L
- DESIGN PRESSURE : 3.5 barg
- DESIGN TEMPERATURE : 130 °C
- TYPE : VERTICAL
- INSULATION : NO
- TRIM LINE NO. : 11-CD11079-B40U-N

EQUIPMENT LIST
11-V-111

LICENSOR REF. : P71

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
04	01.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
03	03.09.2023	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
02	22.11.2022	APPROVED FOR CONSTRUCTION	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	19.09.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : | MC : | EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE :
PIPING AND INSTRUMENTATION DIAGRAM
BLOW DOWN SYSTEM

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-079	REV. 04	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

1208-11-PR-PID-080

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

NOTES:

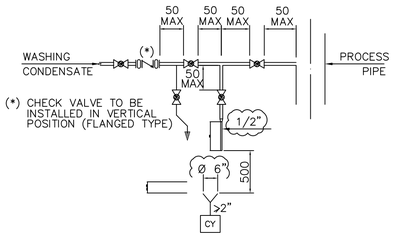
1) FOR SAMPLING PROCEDURE REFER TO ANALYTICAL MANUAL PLAN.
2) TO BE PROVIDED ONLY IF UPSTREAM ISOLATION VALVE (MINIMUM DISTANCE FROM PROCESS PIPE) IS NOT OPERABLE SIMULTANEOUSLY WITH INLET, OUTLET AND BY-PASS VALVE FROM THE SAMPLING CYLINDER.
3) CONNECTING ON THE UPPER TANGENT LINE FOR GAS AND LOWER TANGENT LINE FOR LIQUID.
4) VALVE ACCESSIBLE BY OPERATORS.
5) CONNECTING ON THE UPPER TANGENT LINE. BLOWDOWN HEADER ELEVATION TO BE LOWER THAN RELEVANT PROCESS LINE WHERE SAMPLE IS RECOVERED.

GENERAL NOTES:

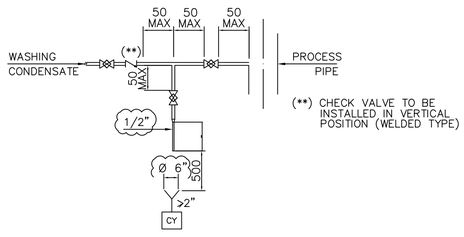
1) FOR LEGEND AND TYPICAL DETAILS PLEASE REFER TO P&ID 1208-01-PR-PID-051.
2) FOR INSULATION LIMITS, REQUIREMENT AND VALVES (TYPE, DIAMETER, PIPING CLASS AND QUANTITY) REFER TO PROCESS P&IDs.

PIPING ARRANGEMENT 1

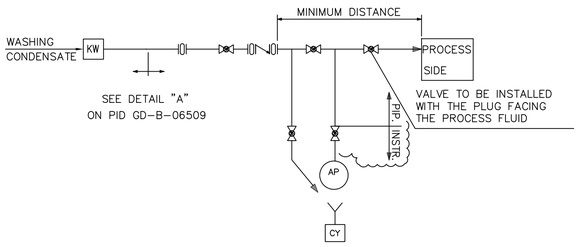
FOR HP SECTION:

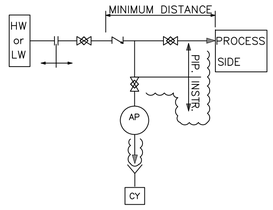


FOR MP, LP AND VACUUM SECTIONS:



REPRESENTATION ON PROCESS PID



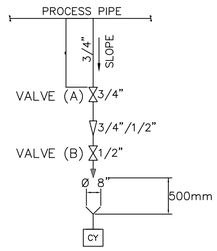


SAMPLE CONNECTION	PROCESS P&ID	VALVES TYPE	DESIGN PRESS bar (g)	OPERATING TEMPERATURE °C
AP-1103	1208-11-PR-PID-056	GLOBE	192	155
AP-1104	1208-11-PR-PID-053	GLOBE	192	188
AP-1105	1208-11-PR-PID-054	GLOBE	192	204

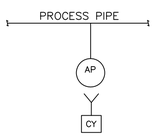
SAMPLE CONNECTION	PROCESS P&ID	VALVES TYPE	DESIGN PRESS bar (g)	OPERATING TEMPERATURE °C
UREA UNIT – 11				
AP-1106	1208-11-PR-PID-057	PLUG	31	160
AP-1107 A/B	1208-11-PR-PID-052	PLUG	31	79
AP-1110	1208-11-PR-PID-061	PLUG	12	148
AP-1112	1208-11-PR-PID-063	PLUG	12	44
AP-1114	1208-11-PR-PID-065	PLUG	12	102
AP-1115	1208-11-PR-PID-068	PLUG	12	104
AP-1120	1208-11-PR-PID-066	PLUG	12	135
AP-1121	1208-11-PR-PID-068	PLUG	12	150
GRANULATION UNIT – 18				
AP-2501	1208-18-PR-PID-067	PLUG	12	48
AP-2502	1208-18-PR-PID-072	PLUG	12	50
AP-2508	1208-18-PR-PID-051	PLUG	12	135
AP-2510	1208-18-PR-PID-062	PLUG	12	50
AP-2511	1208-18-PR-PID-063	PLUG	12	43
AP-2512	1208-18-PR-PID-070	PLUG	12	50

PIPING ARRANGEMENT 2

FOR PROCESS CONDENSATE TREATMENT SECTION AND AMMONIA WATER SOLUTION:



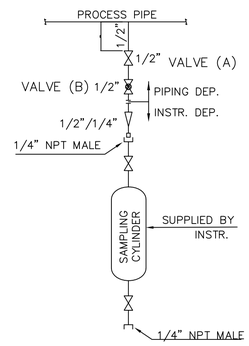
REPRESENTATION ON PROCESS PID



SAMPLE CONNECTION	PROCESS P&ID	DESIGN PRESS bar (g)	OPER. TEMP. °C	VALVE TYPE (A)	VALVE TYPE (B)
AMMONIA WATER SOLUTION					
AP-1111	1208-11-PR-PID-060	24	50	BALL	GLOBE
PROCESS CONDENSATE TREATMENT SECTION					
AP-1116	1208-11-PR-PID-067	1	50	PLUG	GLOBE
AP-1123	1208-11-PR-PID-077	1	50	PLUG	GLOBE

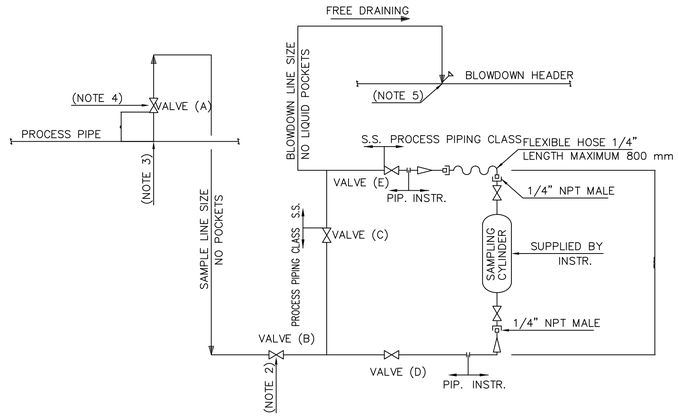
PIPING ARRANGEMENT 3

TYPICAL FOR CO2 GAS SAMPLING (O2 ANALYZER)

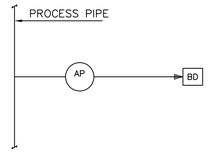


PIPING ARRANGEMENT 4

FOR AMMONIA IN MP AND LP SECTION



REPRESENTATION ON PROCESS PID



SAMPLE CONNECTION	PROCESS P&ID	SAMPLE LINE SIZE	BLOW DOWN LINE SIZE	OPERATING PRESSURE bar (g)	DESIGN PRESSURE bar (g)	TYPE VALVE (A)	TYPE VALVE (B)	TYPE VALVE (C)	TYPE VALVE (D)	TYPE VALVE (E)	VALVE SIZE
AP-1102	1208-11-PR-PID-059	1/2"	1/2"	24	30	BALL	BALL	BALL	BALL	BALL	1/2"
AP-1109	1208-11-PR-PID-060	1/2"	1/2"	18.8	24	BALL	BALL	BALL	BALL	BALL	1/2"
AP-1113	1208-11-PR-PID-063	1/2"	1/2"	3.2	7	PLUG	PLUG	PLUG	PLUG	PLUG	1/2"

LICENSOR REF. : P72

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
02	26.11.2022	APPROVED FOR CONSTRUCTION	M.Fakhraei	M.Yazdanpanahi	A.Azma	M.Saremi
01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت پتروشیمی هرمز

MC : شرکت پتروشیمی فن آوران

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

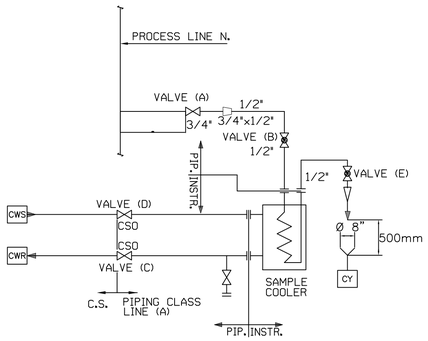
TITLE : PIPING AND INSTRUMENTATION DIAGRAM
SAMPLE CONNECTION DETAIL PART 1

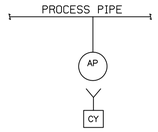
SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. : 1208-11-PR-PID-080	REV. 02	SIZE : A1
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208			

REFERENCE DRAWING	DWG. NO.
SYMBOLS AND IDENTIFICATIONS	1208-01-PR-PID-051-01

PIPING ARRANGEMENT 5

PROCESS CONDENSATE TREATMENT SECTION

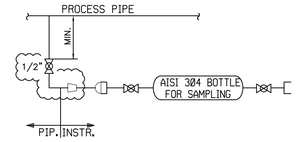




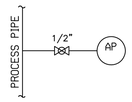
SAMPLE CONNECTION	PROCESS P&ID	OPERATING TEMPERATURE °C	DESIGN PRESSURE bar (g)	VALVE (A)	VALVE (B)	VALVE (C)	VALVE (D)	VALVE (E)
UREA UNIT - 11								
AP-1117	1208-11-PR-PID-069	147	7	GATE	GLOBE	GATE	GATE	GLOBE
AP-1118	1208-11-PR-PID-070	165	45	GATE	GLOBE	GATE	GATE	GLOBE
GRANULATION UNIT - 18								
AP-2515	1208-18-PR-PID-066	95	6	GATE	GLOBE	GATE	GATE	GLOBE

PIPING ARRANGEMENT 6

LIQUID AMMONIA FROM P-101 A/B SEAL SYSTEM



REPRESENTATION ON PROCESS PID



SAMPLE CONNECTION	PROCESS P&ID	OPERATING TEMPERATURE °C	DESIGN PRESSURE bar (g)	VALVE TYPE
AP-1125A	1208-11-PR-PID-051	36	24	BALL
AP-1125B	1208-11-PR-PID-051	36	24	BALL

NOTES:

GENERAL NOTES:

1) FOR LEGEND AND TYPICAL DETAILS PLEASE REFER TO P&ID 120-01-PR-PID-051.
2) FOR INSULATION LIMITS, REQUIREMENT AND VALVES (TYPE, DIAMETER, PIPING CLASS AND QUANTITY) REFER TO PROCESS P&IDs.

THE FOLLOWING SAMPLE CONNECTIONS USE THE OUTLET CONNECTION OF THE RELEVANT ANALYZER FOR THEIR CHECKING, IF ANY.

MINIMUM DISTANCE OF 500 mm BETWEEN CY FUNNEL AND ANALYZER OUTLET CONNECTION SHALL BE ENSURED.

SAMPLE CONNECTION	PROCESS P&ID	CONDUCTIVITY METER
AP-1108	1208-11-PR-PID-055	AT-1005A
AP-1119	1208-11-PR-PID-071	AT-1006
AP-1122	1208-11-PR-PID-073	AT-1004
AP-1126	1208-11-PR-PID-055	AT-1005B
AP-1127	1208-11-PR-PID-075	AT-1003

LICENSOR REF. : P73

DE	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	PROJECT
03	01.01.2024	APPROVED FOR CONSTRUCTION	M.Fakhraei	A.Azma	A.Azma	M.Saremi
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01	12.06.2018	APPROVED FOR CONSTRUCTION (WITH HOLD)	M.Yazdanpanahi	A.Azma	A.Azma	M.Saremi
00	04.04.2017	ISSUED FOR ENGINEERING	F.Mizaie	A.Habibi	A.Azma	M.Saremi

OWNER : شرکت سرمایه گذاری صنایع پتروشیمی

MC : شرکت سرمایه گذاری صنایع پتروشیمی

EPCC CONTRACTOR : PIDEC

PROJECT : HENGAM FERTILIZER PROJECT

TITLE : PIPING AND INSTRUMENTATION DIAGRAM
SAMPLE CONNECTION DETAIL PART 2

SCALE : N.T.S	OWNER PROJECT NO. : NA	DWG. NO. :	REV.	SIZE :
SHT. : 1 OF 1	PIDEC PROJECT NO. : 1208	1208-11-PR-PID-081	03	A1