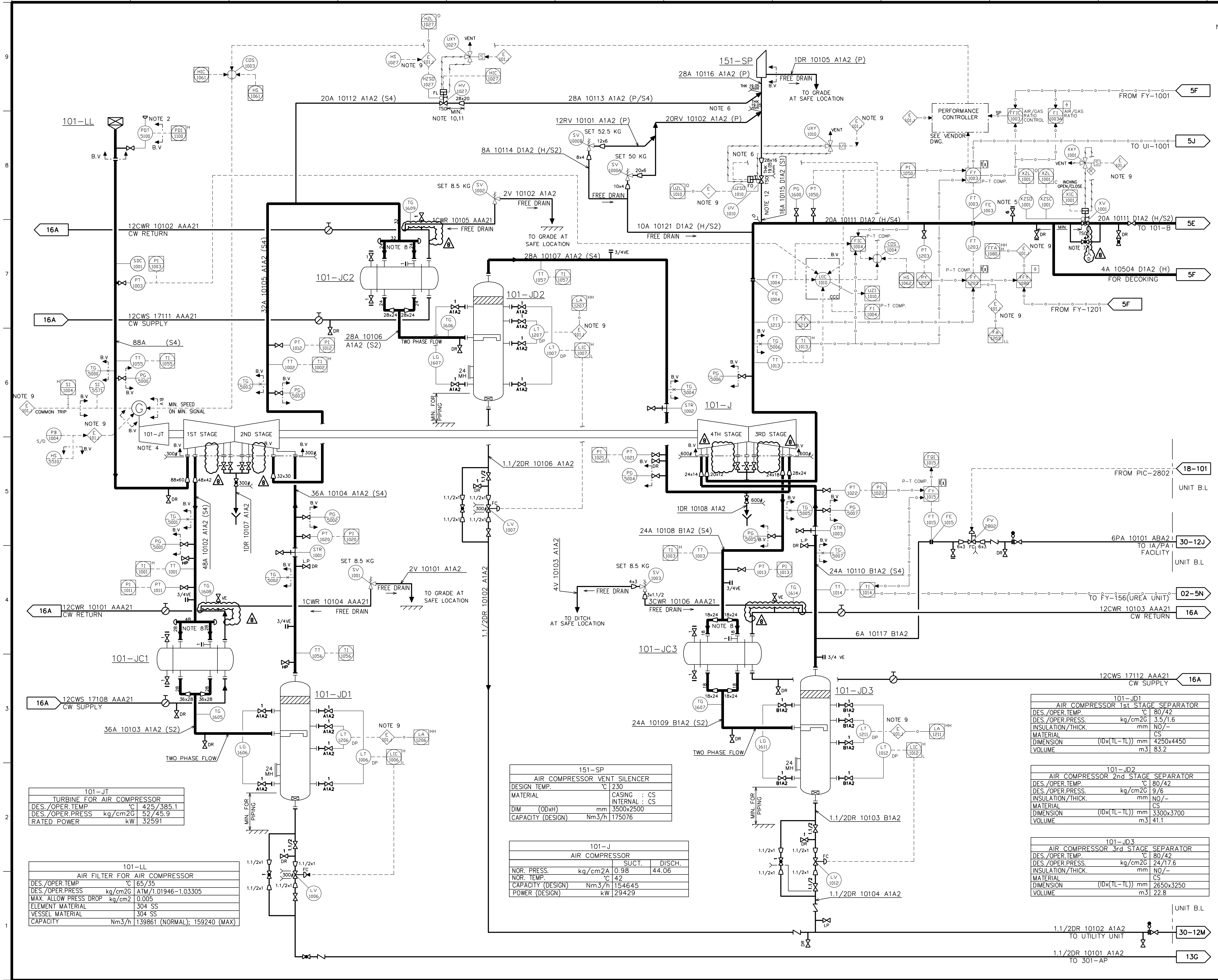

NOTE

1. FOR GENERAL NOTES AND SYMBOLS SEE DRAWING 4A, 4B.
2. VENT HIGH PRESSURE SIDE TO ATMOSPHERE.
3. DELETED.
4. SEE DRAWING 13N FOR STEAM SIDE PIPING.
5. TEMPORARY CONNECTION FOR START-UP LINE BLOWING.
6. PROVIDE 6mm WEEP HOLE AT LOW POINT.
7. XV BY-PASS USED AT START-UP FOR LOW AIR FLOWRATE TO SECONDARY REFORMER.
8. PIPING TO BE SYMMETRICAL.
9. REFER TO WRITE-UP BY CONTROL SYSTEMS ENGINEERING FOR INTERLOCK DESCRIPTION.
10. HV-1027 TO BE PROVIDED WITH VOLUME BOTTLE.
11. HV-1027 OPEN/CLOSE TIME TO BE LESS THAN OR EQUAL TO TWO(2) SECONDS.
12. UV-1010 OPEN/CLOSE TIME TO BE LESS THAN OR EQUAL TO TWO(2) SECONDS. UV-1010 NEEDS TO BE PROVIDED WITH VOLUME BOTTLE.
13. DELETED.
14. DELETED.

101-JC1 AIR COMPRESSOR 1st STAGE INTERCOOLER		SHELL	TUBE
DES./OPER.TEMP	°C	210/162.7; 42	80/36; 46.5
DES./OPER.PRESS	kg/cm2G	3.5/1.74	8.5/4
INSULATION/THICK	mm	PP/25	NO
MATERIAL		CS	304 SS
DIMENSION (ID SHELLxL)	mm	2200x6500	
SURFACE AREA	m2	1648	

101-JC2 AIR COMPRESSOR 2nd STAGE INTERCOOLER		SHELL	TUBE
DES./OPER.TEMP	°C	210/174.2; 42	80/36; 46.5
DES./OPER.PRESS	kg/cm2G	9/6.1	8.5/4
INSULATION/THICK	mm	PP/50	NO
MATERIAL		CS	304 SS
DIMENSION (ID SHELLxL)	mm	2000x6000	
SURFACE AREA	m2	1370	

101-JC3 AIR COMPRESSOR 3rd STAGE INTERCOOLER		SHELL	TUBE
DES./OPER.TEMP	°C	210/164.3; 42	80/36; 46.5
DES./OPER.PRESS	kg/cm2G	24/17.6	8.5/4
INSULATION/THICK	mm	PP/50	NO
MATERIAL		CS	CS
DIMENSION (ID SHELLxL)	mm	1950x6000	
SURFACE AREA	m2	1280	

101-JT TURBINE FOR AIR COMPRESSOR		
DES./OPER.TEMP	°C	425/385.1
DES./OPER.PRESS	kg/cm2G	52/45.9
RATED POWER	kW	32591

101-LL AIR FILTER FOR AIR COMPRESSOR		
DES./OPER.TEMP	°C	65/35
DES./OPER.PRESS	kg/cm2G	ATM/1.01946-1.03305
MAX. ALLOW PRESS DROP	kg/cm2	0.005
ELEMENT MATERIAL		304 SS
VESSEL MATERIAL		304 SS
CAPACITY	Nm3/h	139861 (NORMAL); 159240 (MAX)

151-SP AIR COMPRESSOR VENT SILENCER		
DESIGN TEMP.	°C	230
MATERIAL		CASING : CS INTERNAL : CS
DIM (ODxH)	mm	3500x2500
CAPACITY (DESIGN)	Nm3/h	175076

101-J AIR COMPRESSOR		SUCT.	DISCH.
NOR. PRESS.	kg/cm2A	0.98	44.06
NOR. TEMP.	°C	42	
CAPACITY (DESIGN)	Nm3/h	154645	
POWER (DESIGN)	kW	29429	

101-JD1 AIR COMPRESSOR 1st STAGE SEPARATOR		
DES./OPER.TEMP.	°C	80/42
DES./OPER.PRESS.	kg/cm2G	3.5/1.6
INSULATION/THICK.	mm	NO/-
MATERIAL		CS
DIMENSION	(IDx(TL-TL)) mm	4250x4450
VOLUME	m3	83.2

101-JD2 AIR COMPRESSOR 2nd STAGE SEPARATOR		
DES./OPER.TEMP.	°C	80/42
DES./OPER.PRESS.	kg/cm2G	9/6
INSULATION/THICK.	mm	NO/-
MATERIAL		CS
DIMENSION	(IDx(TL-TL)) mm	3300x3700
VOLUME	m3	41.1

101-JD3 AIR COMPRESSOR 3rd STAGE SEPARATOR		
DES./OPER.TEMP.	°C	80/42
DES./OPER.PRESS.	kg/cm2G	24/17.6
INSULATION/THICK.	mm	NO/-
MATERIAL		CS
DIMENSION	(IDx(TL-TL)) mm	2650x3250
VOLUME	m3	22.8

REV.	DESCRIPTION	DRWN	CHKD		DESD	CHKD	APVD		APVD	AUTH	ISSUE	DATE
8/I	RE-ISSUED FOR CONSTRUCTION (AFC-3)	TS	ABA		DU	HGW	ANS		HK	US	C L S V	14/11/13
7/H	RE-ISSUED FOR CONSTRUCTION (AFC-2)	TS	ABA		DU	HGW	AH		HK	US	C L S V	28/06/13
6/G	RE-ISSUED FOR CONSTRUCTION (AFC-1)	TS	ABA		DU	HGW	AH		HK	US	C L S V	10/04/13
5/F	ISSUED FOR CONSTRUCTION (AFC)	EB	ABA		DU	RK	AH		SHL	US	C L S V	26/11/12
4/E	RE-ISSUED FOR APPROVAL (AFD-1)	EB	ABA		DU	RK	IJ		SHL	US	C L S V	29/08/12
3/D	ISSUED FOR APPROVAL (AFD)	EB	ABA		DU	RK	IJ		SHL	US	C L S V	22/06/12
2/C	ISSUED FOR DETAIL DESIGN (AFP-2)	EB	ABA		JHK	YSK	BOP		H.N	SHL	C L S V	14/05/12

REVISIONS

PROJECT NAME :
KALTIM-5 PROJECT
2500 MTPD AMMONIA AND 3500 MTPD UREA
BONTANG, EAST KALIMANTAN, INDONESIA

CLIENT NAME :
PUPUK KALTIM
PT. PUPUK KALIMANTAN TIMUR

KBR
Engineering Services by
KBR Technical Services, Inc.

ABBR. FOR ISSUE
C = CLIENT
L = LICENSOR
S = SITE
V = VENDOR

CONTRACTOR :
P.T. INTI KARYA PERSADA TEHNIK
TOYO ENGINEERING CORPORATION

ISSUE MARK
I
14/NOV/13

CONTRACTOR WORK NUMBER : 10107 / BA096300 / 11-018-01

PIPING & INSTRUMENT FLOW DIAGRAM
AIR COMPRESSOR

SCALE ~

DWG. NO. K5-01-E1-PD-5A-T

DOC. NO. K5-01-E1-PD-003-T | SHEET 003/073 | REV.8