



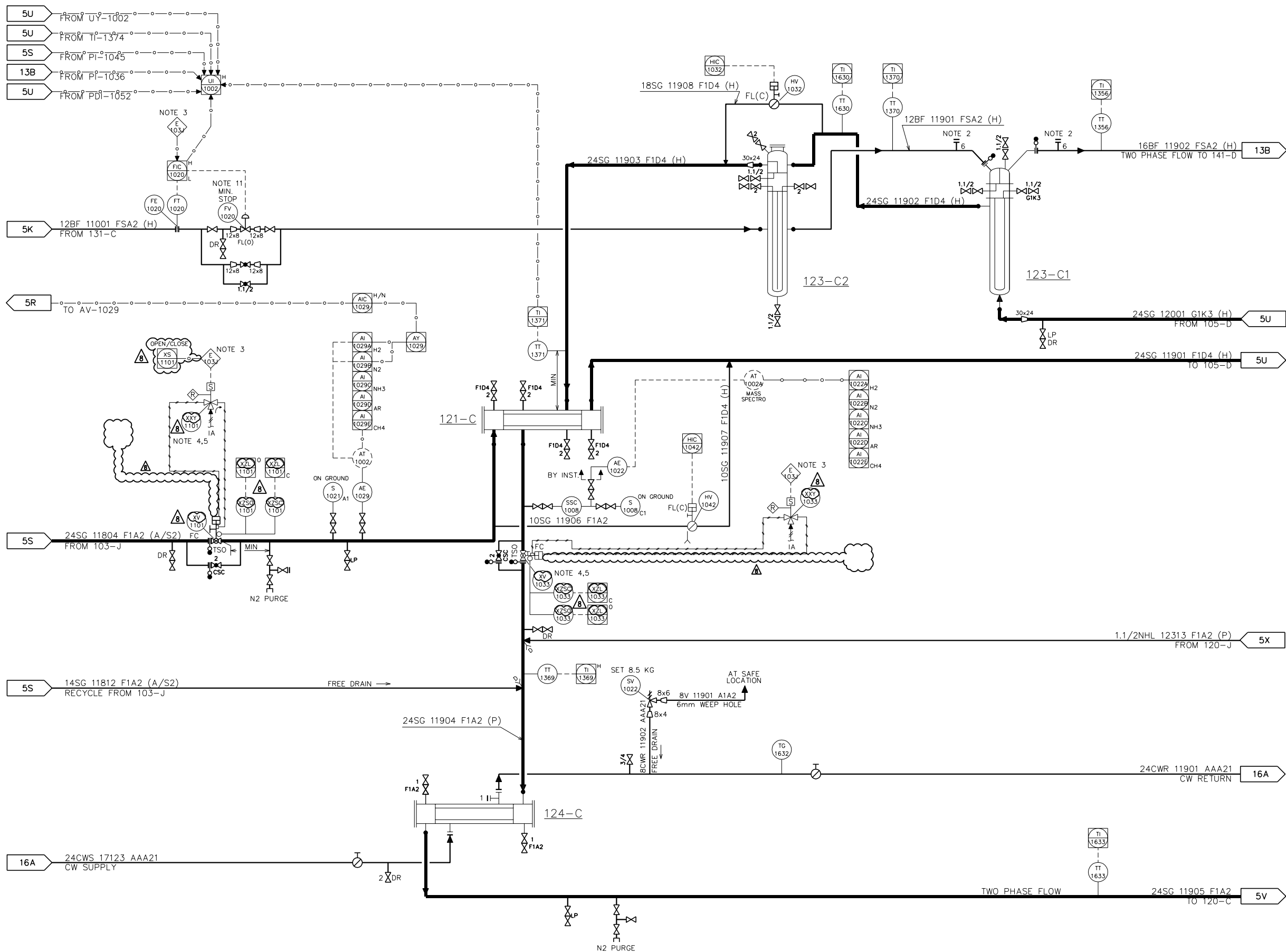


121-C			
AMMONIA CONV. FEED		EFFLUENT EXCHANGER	
		SHELL	TUBE
DES./OPER.TEMP	°C	300/220;104.1	275/69.8
DES./OPER.PRESS	kg/cm2G	170/151.2	170/155.8
INSULATION (THICK	mm	HOT/95	HOT/80
MATERIAL		1.1/4Cr-1/2Mo	1.1/4Cr-1/2Mo
DIMENSION (ID SHELLxL)	mm	1300x15000	
SURFACE AREA	m <sup>2</sup>	1102	

123-C1			
AMMONIA CONV. EFFLUENT/STEAM GENERATOR			
		SHELL	TUBE
DES./OPER.TEMP	°C	480/443.8; 343.4	400/300.7; 328
DES./OPER.PRESS	kg/cm2G	170/152	143/126.5
INSULATION THICK	mm	HOT/140	HOT/120
MATERIAL		21/4Cr-1Mo WITH 308L SS OVERLAY/CLAD	321 SS (STRESS RELIEVE U-BEND)
DIMENSION (ID SHELLxL)	mm	1450x9000	
SURFACE AREA	m <sup>2</sup>	615	

1. FOR GENERAL NOTES AND SYMBOLS SEE DRAWING 4A, AB.
2. CHEMICAL CLEANING CONNECTION. LOCATE MINIMUM DISTANCE FROM BLIND OR FLANGE.
3. REFER TO WRITE-UP BY CONTROL SYSTEMS ENGINEERING FOR INTERLOCK DESCRIPTION.
4.  XVA-1101/1033 NORMALLY TO BE FULLY OPEN.
5.  XVA-1101 AND  XVD-1033 DCS POSITION INPUT TO BE RESET TO ZERO AFTER 103-J TRIP.
6. DELETED. 
7. DELETED.
8. DELETED.
9. DELETED.
10. DELETED.
11. DCS STOPPER.



REV	DESCRIPTION	DRWN	CHGD	DESIGN	CHGD	APPROV	DATE
1	RE-ISSUED FOR CONSTRUCTION (AFC-3)	TS	ABA	DU	HCB	AKS	11/11/11
2	RE-ISSUED FOR CONSTRUCTION (AFC-2)	TS	ABA	DU	HCB	AKS	10/06/11
3	RE-ISSUED FOR CONSTRUCTION (AFC-1)	TS	ABA	DU	HCB	AKS	09/06/11
4	ISSUED FOR CONSTRUCTION (AFC)	EB	ABA	DU	RK	AH	06/11/11
5	RE-ISSUED FOR APPROVAL (AFD-1)	EB	ABA	DU	RK	UJ	03/06/11
6	ISSUED FOR APPROVAL (AFD)	EB	ABA	DU	RK	UJ	02/06/11
7	ISSUED FOR FINAL DESIGN (AFP-2)	EB	ABA	YSA	BPB	NJN	01/06/11

PROJECT NAME :	KALTIM-5 PROJECT 2500 MTPD AMMONIA AND 3500 MTPD UREA BONTANG, EAST KALIMANTAN, INDONESIA
CLIENT NAME :	<b>PUPUK KALTIM</b> PT. PUPUK KALIMANTAN TIMUR
<b>KBR</b>	Engineering Services by KBR Technical Services, Inc.

THIS DOCUMENT CONTAINS INFORMATION WHICH IS PROPRIETARY TO KELLOGG BROWN & ROOT. THIS INFORMATION IS TO BE HELD IN CONFIDENCE. NO DISCLOSURE, REPRODUCTION OR OTHER USE OF THIS DOCUMENT IS TO BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF KELLOGG BROWN & ROOT.

THIS DRAWING EMBODIES PROPRIETARY INFORMATION OF TOYO ENGINEERING CORPORATION  
THIS DRAWING OR THE MATERIAL DESCRIBED THEREON MAY NOT BE COPIED OR DISCLOSED  
IN ANY FORM OR MEDIUM TO THIRD PARTIES, OR USED FOR OTHER THAN THE PURPOSE FOR  
WHICH IT HAS BEEN PROVIDED, IN WHOLE OR IN PART IN ANY MANNER EXCEPT AS EXPRESSLY  
PERMITTED BY TOYO ENGINEERING CORPORATION.

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

CONTRACTOR :		VENDOR
 <b>PT. INTI KARYA PERSADA TEKNIK</b>		ISSUE MARK
 <b>Toyo ENGINEERING CORPORATION</b>		<div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="width: 20px; height: 20px; border: 1px solid black; margin: 5px;"></div> <div style="width: 20px; height: 20px; border: 1px solid black; margin: 5px;"></div> <div style="width: 20px; height: 20px; border: 1px solid black; margin: 5px;"></div> <div style="width: 20px; height: 20px; border: 1px solid black; margin: 5px;"></div> </div>

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

PIPING & INSTRUMENT FLOW DIAGRAM  
AMMONIA CONVERTER FEED/  
EFFLUENT EXCHANGERS

SCALE $\propto$	DWG. NO. K5-01-E1-PD-5T-T		
DOC. NO. K5-01-E1-PD-021-T		SHEET 021/073	REV.8