

101-BCA1	
COLD PROCESS AIR PREHEAT COIL	
DES./OPER.TEMP	°C 213; 388/183.1; 358.3
DES./OPER.PRESS	kg/cm ² G 48/43; 42.6
MATERIAL	A335 GR.P11
HEAT DUTY	GCal/hr 8.78

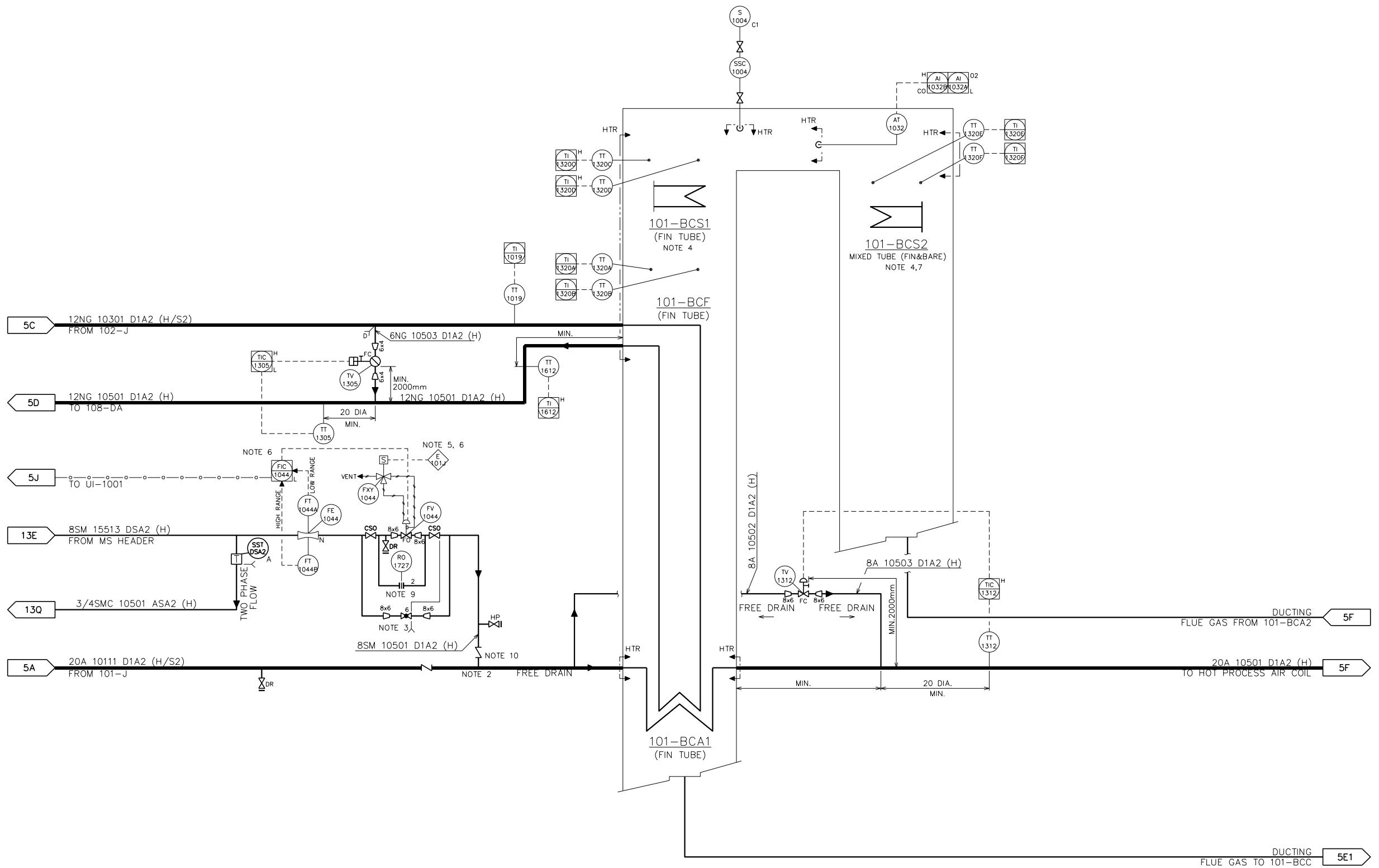
101-BCF	
FEED GAS PREHEAT COIL	
DES./OPER.TEMP	°C 133; 390/102.8; 360
DES./OPER.PRESS	kg/cm ² G 56/48.8; 48
MATERIAL	A335 GR.P11
HEAT DUTY	GCal/hr 11.58

101-BCS1	
HP STEAM SUPERHEAT COIL (COLD)	
DES./OPER.TEMP	°C 146/345.6; 432
DES./OPER.PRESS	kg/cm ² G 139.2/124.8; 124.2
MATERIAL	TOP (4 ROWS) SA213 GR.T91
HEAT DUTY	GCal/hr 35.57

101-BCS2	
HP STEAM SUPERHEAT COIL (HOT)	
DES./OPER.TEMP	°C 153.8/432; 510
DES./OPER.PRESS	kg/cm ² G 139.2/124.2; 123.1
MATERIAL	SA213 GR.T91
HEAT DUTY	GCal/hr 31.82

NOTES

- FOR GENERAL NOTES AND SYMBOLS SEE DRAWING 4A, 4B.
- CONNECTED AT TOP OF PIPE.
- BYPASS VALVE TO BE IN HORIZONTAL PLANE AS OR ABOVE CONTROL VALVE. OTHERWISE TRAP UPSTREAM AND DOWNSTREAM OF FV-1044; BYPASS SIZE FOR NORMAL PROCESS FLOW RATE.
- FOR SUPERHEATER PIPING SEE DRAWING 13C.
- REFER TO WRITE-UP BY CONTROL SYSTEMS ENGINEERING FOR INTERLOCK DESCRIPTION.
- FV-1044 TO BE INTERLOCKED TO OPEN ON LOSS OF PROCESS AIR, AFTER 10 SEC RESET VALUE OF FIC-1044 IS SET AT 50 MT/Hr AND RELEASED TO OPERATION AFTER 30 SEC.
- BARE TUBE NUMBER 72, FIN TUBE NUMBER 180.
- DELETED.
- DURING NORMAL OPERATION FLOW OF 2841 KG/Hr IS FLOWING VIA ORIFICE (RO).
- TO BE LOCATED AT HIGHEST POINT.



RE-ISSUED FOR CONSTRUCTION (AFC-3)	TS	ABA	DU	HOM	ANS	HK	US	OL	V	14/11/13
7/1 RE-ISSUED FOR CONSTRUCTION (AFC-2)	TS	ABA	DU	HOM	ANS	HK	US	OL	V	28/06/13
6/2 RE-ISSUED FOR CONSTRUCTION (AFC-1)	TS	ABA	DU	HOM	ANS	HK	US	OL	V	10/04/13
5/3 ISSUED FOR CONSTRUCTION (AFC)	EB	ABA	DU	RW	AM	SPK	US	OL	V	26/11/12
4/4 RE-ISSUED FOR APPROVAL (AFD-1)	EB	ABA	DU	RW	U	SPK	US	OL	V	29/09/12
3/5 ISSUED FOR APPROVAL (AFD-2)	EB	ABA	DU	RW	U	SPK	US	OL	V	29/09/12
2/6 ISSUED FOR DETAIL DESIGN (AFT-2)	EB	ABA	JW	YSH	BOP	JW	SH	OL	V	14/05/12
REV. DESCRIPTION	0	0	0	0	0	0	0	0	0	0

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

CLIENT NAME : PT. PUPUK KALIMANTAN TIMUR
KBR
Engineering Services by
KBR Technical Services, Inc.

THIS DOCUMENT CONTAINS TECHNICAL INFORMATION THAT IS SUBJECT TO U.S. EXPORT CONTROL REGULATIONS, INCLUDING RESTRICTIONS ON EXPORTS AND TRANSFERS OF THE ITEM OR ITEMS (SOFTWARE OR SOFTWARE EQUIVALENTS, DOCUMENTATION, EQUIPMENT, ENTITIES, OR PERSONS) THEREIN. IT MAY NOT BE EXPORTED EXCEPT AS AUTHORIZED UNDER APPLICABLE U.S. EXPORT CONTROL REQUIREMENTS.

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.

THE DRAWING CONTAINS PROPRIETARY INFORMATION OF TOYO ENGINEERING CORPORATION. THIS DRAWING OR THE MATERIAL DESCRIBED THEREIN MAY NOT BE COPIED OR DISCLOSED IN ANY FORM OR BY ANY MEANS, WHOLE OR IN PART, WITHOUT THE EXPRESS WRITTEN CONSENT OF TOYO ENGINEERING CORPORATION, UNLESS IT HAS BEEN PROVIDED WHOLE OR IN PART IN ANY MANNER EXCEPT AS EXPRESSLY PERMITTED BY TOYO ENGINEERING CORPORATION.

CONTRACTOR : ISSUE MARK :
PT. INIKRAYA PERUSAHAAN TEKNIK **TOYO ENGINEERING CORPORATION** 14-Nov-13

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

PIPING & INSTRUMENT FLOW DIAGRAM
PRIMARY REFORMER CONVECTION COILS

SCALE : DWG. NO. K5-01-E1-PD-5E-T

DOC. NO. K5-01-E1-PD-007-T SHEET 007/073 REV.8