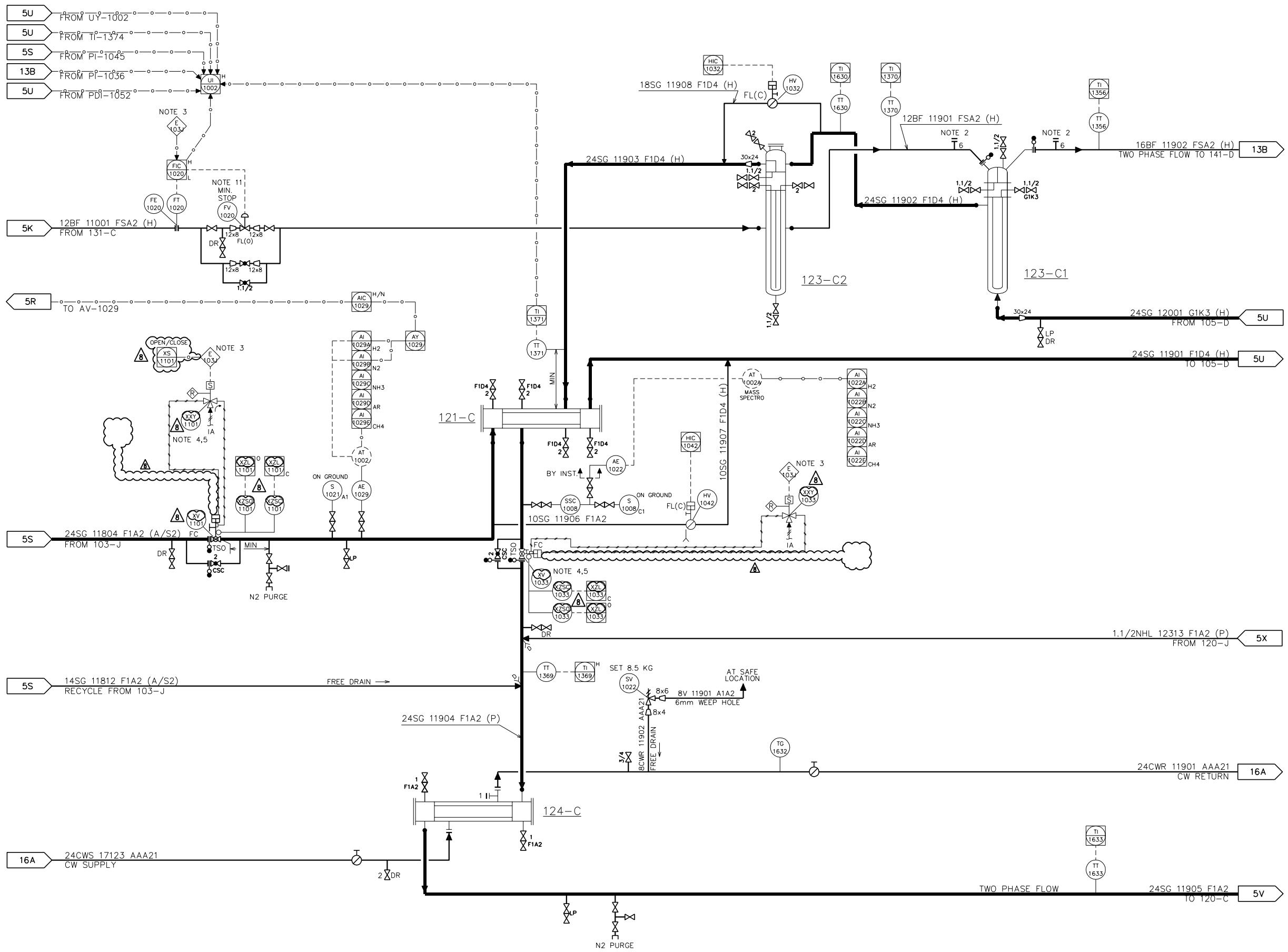


| 124-C | | | |
|------------------------|----------------------|------------|---------------|
| AMMONIA CONV. | EFFLUENT | COOLER | |
| | SHELL | TUBE | |
| DES./OPER.TEMP | °C | 80/36;48 | 150/104;1;41 |
| DES./OPER.PRESS | kg/cm ² G | 8.5/4 | 170/150.5 |
| INSULATION/THICK | mm | N0/- | HOT/65 |
| MATERIAL | | CS | CS (SEAMLESS) |
| DIMENSION (ID SHELLxL) | mm | 1500x14000 | |
| SURFACE AREA | m ² | 16.36 | |

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

| 123-C2 | | | |
|------------------------|------------------------|------------------|----------------|
| AMMONIA CONV. | EFFLUENT/BFW PREHEATER | EXCHANGER | |
| | | SHELL | TUBE |
| DES./OPER TEMP | °C | 358/187.1; 300.7 | 380/343.4; 220 |
| DES./OPER.PRESS | kg/cm ² G | 143/127.3 | 170/151.7 |
| INSULATION/THICK | mm | HOT/120 | HOT/120 |
| MATERIAL | | CS | 1.1/4Cr-1/2M |
| DIMENSION (ID SHELLxL) | mm | 3200x6800 | |
| SURFACE AREA | m ² | 1385 | |

| 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/cm ² G | 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 ² | 615 | |



NOTES

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. XV-1101/1033 NORMALLY TO BE FULLY OPEN.
 5. XV-1101 AND XV-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.

| S. | RE-ISSUED FOR CONSTRUCTION (AFC-3) | TS | ABA | DU | HOW | ANS | HK | US | GL | 14/11/13 |
|------|------------------------------------|-------|------|------|------|------|------|------|------|------------|
| S. | RE-ISSUED FOR CONSTRUCTION (AFC-2) | TS | ABA | DU | HOW | AM | HK | US | GL | 28/06/13 |
| S. | RE-ISSUED FOR CONSTRUCTION (AFC-1) | TS | ABA | DU | HOW | AM | HK | US | GL | 10/06/13 |
| S. | ISSUED FOR CONSTRUCTION (AFC) | EB | ABA | DU | RK | AM | SHL | US | GL | 26/11/12 |
| S. | RE-ISSUED FOR APPROVAL (AFD-1) | EB | ABA | DU | RK | LI | SHL | US | GL | 29/06/12 |
| S. | ISSUED FOR APPROVAL (AFD) | EB | ABA | DU | RK | UJ | SHL | US | GL | 27/06/12 |
| S. | ISSUED FOR DETAIL DESIGN (APD-2) | EB | ABA | JMK | YSK | BOP | HNL | SHL | US | 14/05/12 |
| REV. | DESCRIPTION | DRAWN | CHKD | DESD | CHKD | APFD | APFD | APFD | APFD | ISSUE DATE |

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

CLIENT NAME : **PUPUK KALTIM**

KBR Engineering Services by
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ABBR. FOR ISSUE
C-CLENT
L-LICENSOR
S-SUPPLR
V-VENDOR

CONTRACTOR : ISSUE MARK
P.T. INTI KARYA PERSADA TEKNIK  **Toyo ENGINEERING CORPORATION**

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

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