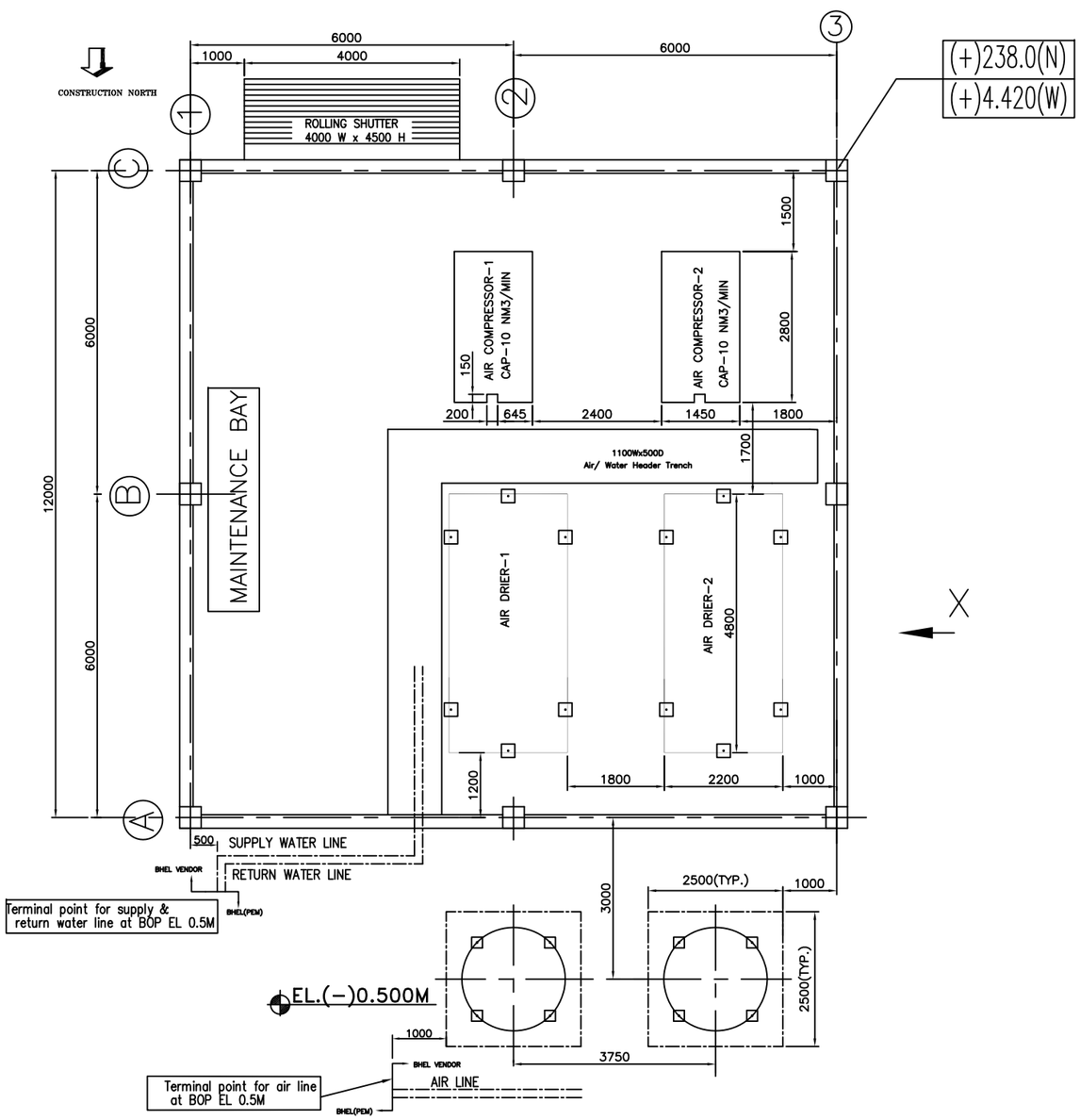
	AMENDMENT ON TECHNICAL SPECIFICATION FOR COMPRESSED AIR SYTEM PACKAGE **370 MW (109 FB) CCPP YELAHANKA**	SPECIFICATION NO.: PE-TS-409-555-A001 AMENDMENT NO # 2 REV. NO. 00 | DATE: 15/03/2016

The following modifications with respect to Technical Specification compressed air system BHEL's Technical specification no **PE-TS-409-555-A001** shall apply.

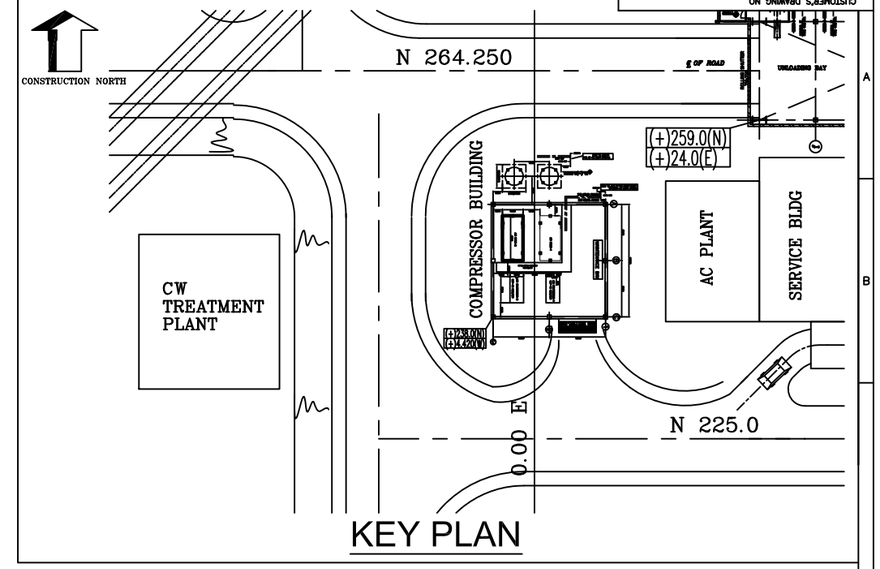
Bidder to note that existing clauses/details as appearing in the specification stands deleted and clauses/details as mentioned in "Modified to or Read as" column shall be applicable and complied by the bidder.

MODIFIED CLAUSES/PAGE NUMBERS.

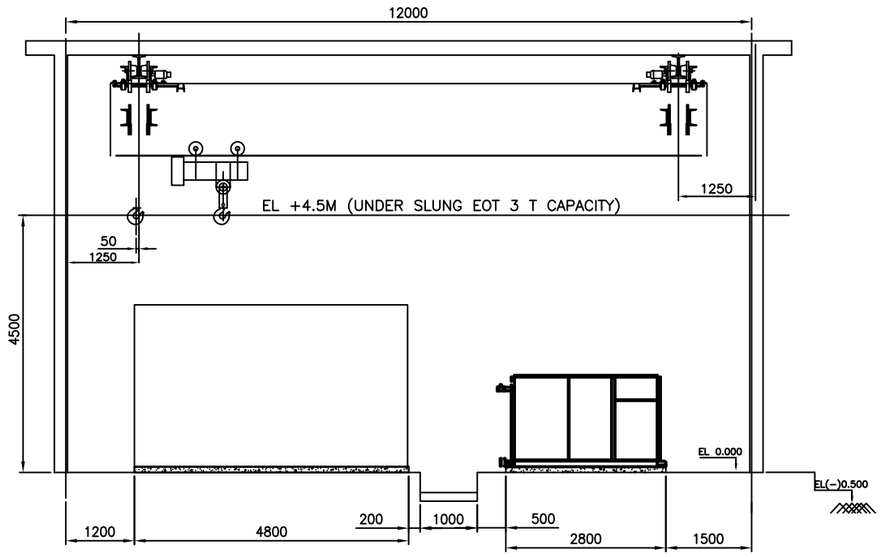
Sl no.	Vol. No.	Section/ Description	Clause	Page no	Existing clause/details	Modified to or Read as
1.		SECTION 8 / Compressor house layout R-0.		223	-	Compressor house layout R-1 attached herewith.
2.		AMENDMENT NO # 1, P & ID diagram of compressor house layout.				Please consider ball valves in water line as globe valves as shown in attached P&ID.
3.		SECTION: C1A/ SCOPE OF SUPPLY,TERMINAL POINTS AND EXCLUSIONS	10	19	Compressor and air dryer shall be designed for cooling water (Station Aux. Cooling Water) with inlet temp of 34 deg C with terminal pressure 03 kg/sqcm(g) and rise in temp shall be limited to 10 deg C and pressure drop across Compressed Air System within terminal point shall be limited to 10 mwc. Qty of cooling water shall be provided by bidder considering working equipment only.	Compressor and air dryer shall be designed for cooling water from DMCW system. Quantity of cooling water for cooling of air compressors & air dryers shall be limited to **20 m3/hr**. (max.) for all working drives. Pressure drop across the cooling water circuit shall be limited to 10 MWC .The max temp of hot water from compressor shall be 10 deg. C higher cooling water inlet temp. Accordingly the coolers for air compressors and driers shall designed taking the above factors into consideration.



FOUNDATION DETAIL



KEY PLAN



VIEW FROM - X

NOTES :-

1) ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS. EL(−) 0.500 M CORRESPONDS TO RL(+) 900.5 M.

2) EQUIPMENT FOUNDATION, PIPING, VALVES, PIPE AND CABLE SLIT DETAILS SHALL BE INDICATED IN A SEPARATE DRAWING.

REFERENCE DRAWING :−

1) PLOT PLAN	PE−DG−409−100−M001

JOB No. 409				
STATUS PROJECT				
CONTRACT				
TO				
No.OFF				
REV	DATE	ALTD	CHD	APPD
01	08.03.2016	08.03.2016	08.03.2016	08.03.2016

OWNER:
KARNATAKA POWER CORPORATION LIMITED
1x370 MW YELAHANKA COMBINED CYCLE POWER PLANT

OWNER'S CONSULTANT:
FICHTNER Consulting Engineers (India) Private Limited, Chennai, Bengaluru.

EPC CONTRACTOR:
BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NEW DELHI

DEPT CODE		NAME	SIGN	DATE
M	DRN	MK	Sd/−	08.01.2016
	DESN	MK	Sd/−	08.01.2016
	CHD	SR	Sd/−	08.01.2016
	APPD	HK	Sd/−	08.01.2016

TITLE
COMPRESSOR HOUSE LAYOUT

DEPT. | SCALE 1:3000 | DRAWING NO. PE−V0−409−555−SK002
SIGN
DATE
SHEET 1 OF 1 | REV. 01

SIZE−A1

COMPUTER FILE NAME:

DRAWING NO. PE-DG-409-555-A501

CUSTOMER'S DRAWING NO.

TO SERVICE AIR DISTRIBUTION HEADER

NRV 02
BV 19 AIR OUTLET

SERVICE AIR RECV. CAP. 10m
DESIGN PRESSRE- 12 KG/CM2

AIR INLET
NRV 01 BV 17

SV 02

ADT ASSLY. (TYP.)

IV 03

ELECTRONIC DEW POINT METER

BV 10

AIR DRING PLANT#1 (WORKING)
CAPACITY- 10 NM3/MIN
DISCHARGE PRESSURE-7.5 KG/CM2

AIR INLET

BV 09

REGENERATION AIR LINE

BV 01
GV 01
GV 02
SV 01

AIR COMPRESSOR (OIL FREE SCREW TYPE)
NO-1
(WORKING)
CAPACITY- 10 NM3/MIN
DISCHARGE PRESSURE-8.0 KG/CM2

BV 04
AIR INLET

GV 05
GV 06

BV 05
GV 03
GV 04
SV 02

AIR COMPRESSOR (OIL FREE SCREW TYPE)
NO-2
(STANDBY)
CAPACITY- 10 NM3/MIN
DISCHARGE PRESSURE-8.0 KG/CM2

BV 08
AIR INLET

GV 07
GV 08

BV 13

AIR DRING PLANT#2 (STANDBY)
CAPACITY- 10 NM3/MIN
DISCHARGE PRESSURE-7.5 KG/CM2

AIR INLET

BV 14

ELECTRONIC DEW POINT METER

TO INSTRUMENT AIR DISTRIBUTION HEADER

NRV 04
BV 20 AIR OUTLET

INSTRUMENT AIR RECV. CAP. 10m
DESIGN PRESSRE- 12 KG/CM2

AIR INLET
NRV 03 BV 18

WATER OUTLET HEADER
IV 02

WATER INLET HEADER
IV 01

DRAIN HEADER

L E G E N D

	BALL VALVE (OPEN)	TG	TEMP. GAUGE
	BAL VALVE (CLOSED)		NON RETURN VALVE
	ISOLATION VALVE		WATER
	GLOBE VALVE (OPEN)		AIR
	CONTROL VALVE		DRAIN
	RELIFE/SAFETY VALVE		'Y' TYPE FUNNEL
PG	PRESSURE GAUGE	FS	FLOW SWITCH
FI	FLOW INDICATOR	PT	PRESSURE TRANSMITTER
SV	SOLENOID VALVE		HOT AIR
ADT ASSLY.	AUTO DRAIN TRAP ASSEMBLY		TO DCS

NOTES:-

1. THE GIVEN P&I IS CONFINED TO INSTRUMENTS AND PIPING FOR COMPRESSOR HOUSE AREA ONLY.
2. ALL INTERCONNECTING COMPRESSED AIR PIPING SHALL CONFORM TO IS:1239 (HEAVY GRADE) OR IS:3589 Gr.410 AND GALVANISED AS PER IS:4736.
3. ALL COOLING WATER PIPING WILL BE CONFORMING TO IS:1239 (PART-I, HEAVY GRADE).
4. FITTINGS FOR AIR PIPING SHALL BE CONFORMING TO RELEVANT BIS STANDARD AND GRADE EQUIVALENT THAT OF PARENT PIPE GRADE.
5. COMPRESSED AIR PIPING HANDLING HOT AIR WILL BE SUITABLY INSULATED SO AS TO RESTRICT SURFACE TEMPERATURE TO 60 deg C.
6. DRAIN PIPING UPTO THE NEAREST DRAIN POINT WITHIN THE AIR COMPRESSOR ROOM SHALL BE PROVIDED.

△ **7. COMPRESSOR SHALL BE DESIGNED FOR A TEMP OF 45 DEG C.**

△ **8. RECEIVER SHALL BE DESIGNED FOR A TEMP OF 50 DEG C.**

ALTERNATIVE – I

JOB NO.	409
STATUS	CONTRACT
DISTRIBUTION	

REV.	DATE	ALTD	CHD	APPD

OWNER: KARNATAKA POWER CORPORATION LIMITED
1x370 MW YELAHANKA COMBINED CYCLE POWER PLANT

OWNER'S CONSULTANT: FICHTNER Consulting Engineers (India) Private Limited, Chennai, Bangaluru.

EPC CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NEW DELHI

DEPT. CODE		NAME	SIGN	DATE
M	DRN.	MK	Sd/-	02.01.16
	DES.	MK	Sd/-	02.01.16
	CHD	SK	Sd/-	02.01.16
	APPD	HK	Sd/-	02.01.16

TITLE: P & I DIAGRAM FOR IA & SA SYSTEM
(WITH ROTARY HOC AIR DRYER)

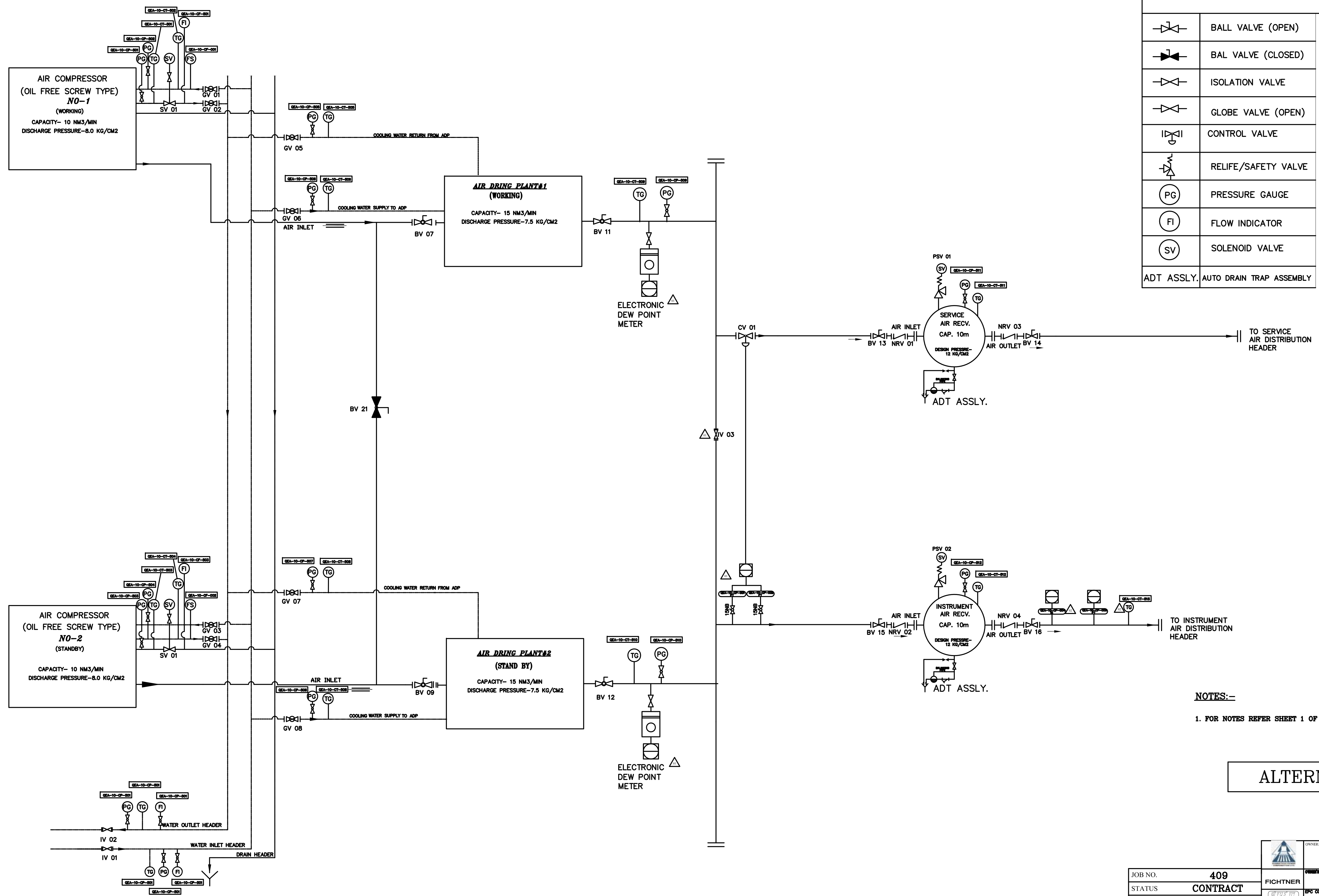
DEPT. | SCALE 1:2000 | DRAWING NO. PE-DG-409-555-A501
SIGN
DATE
SHEET 1 OF 2 | REV. 02

SIZE-A1

FILE:- C:\skc\compressedAirsystem\customerDVC\PidCompressoralternative-I

DRAWING NO. PE-DG-409-555-A501

CUSTOMER'S DRAWING NO.



LEGEND

Symbol	Description	Symbol	Description
	BALL VALVE (OPEN)	TG	TEMP. GAUGE
	BAL VALVE (CLOSED)		NON RETURN VALVE
	ISOLATION VALVE		WATER
	GLOBE VALVE (OPEN)		AIR
	CONTROL VALVE		DRAIN
	RELIFE/SAFETY VALVE		'Y' TYPE FUNNEL
PG	PRESSURE GAUGE	FS	FLOW SWITCH
FI	FLOW INDICATOR	PT	PRESSURE TRANSMITTER
SV	SOLENOID VALVE		HOT AIR
ADT ASSLY.	AUTO DRAIN TRAP ASSEMBLY		TO DCS

NOTES:-

1. FOR NOTES REFER SHEET 1 OF 2 OF THE SAME DRG.(PE-DG-409-555-A501).

ALTERNATIVE – II

JOB NO.	409
STATUS	CONTRACT
DISTRIBUTION	

REV.	DATE	ALTD	CHD	APPD

OWNER: KARNATAKA POWER CORPORATION LIMITED
1x370 MW YELAHANKA COMBINED CYCLE POWER PLANT

OWNER'S CONSULTANT: FICHTNER Consulting Engineers (India) Private Limited, Chennai, Bengaluru.

EPC CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NEW DELHI

TITLE: P & I DIAGRAM FOR IA & SA SYSTEM
(WITH CONVENTIONAL HOC AIR DRYER)

SCALE 1:5000 DRAWING NO. PE-DG-409-555-A501
SHEET 2 OF 2 REV. 02

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