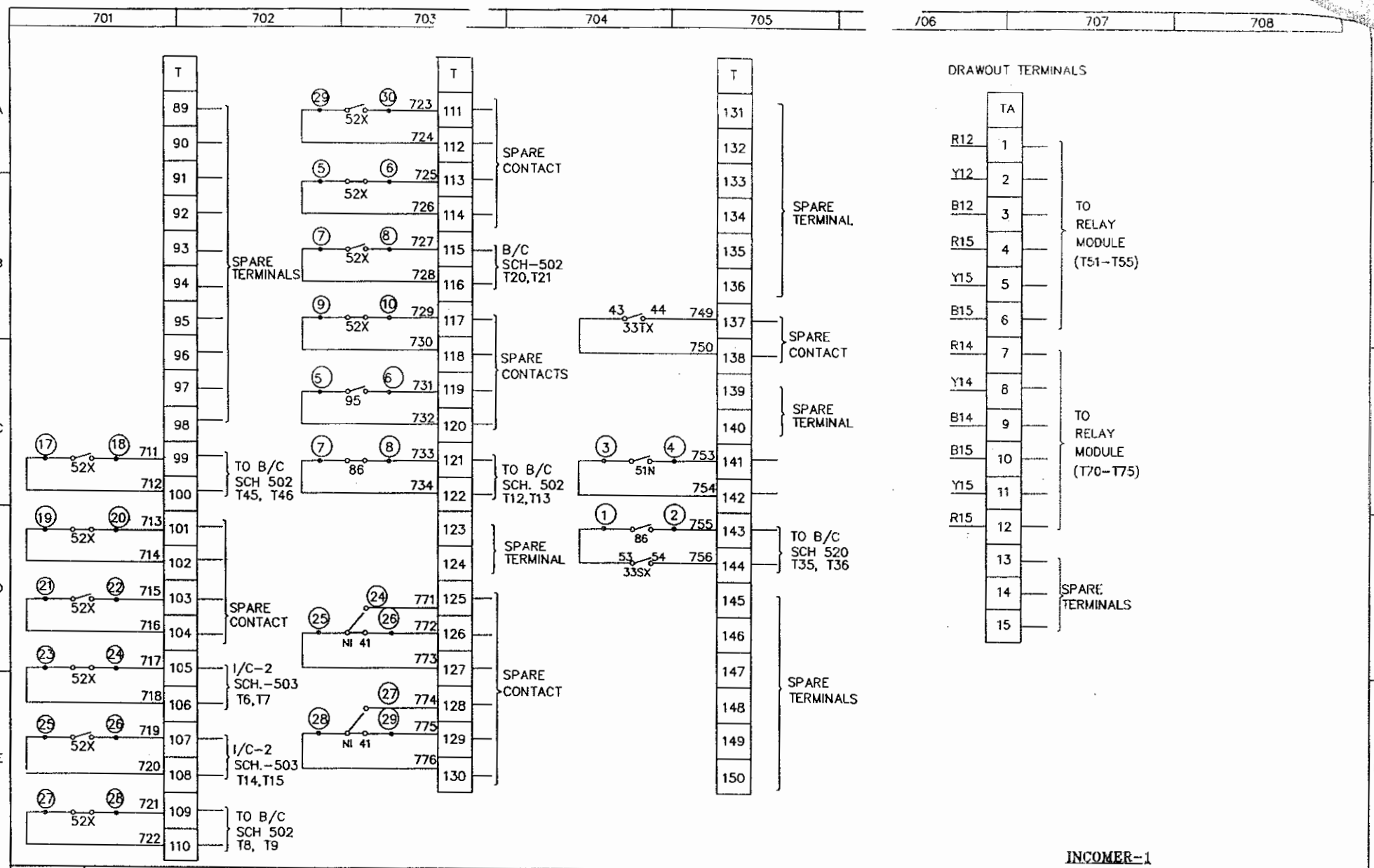



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INCOMER-1


REV.	I(B)-		II(C)-		III-	IV-	
Date	Name	PROJECT:	GIPCL SLP-11 (UNIT 3&4), ZX125MW		Client:-	BHEL-RANIPET	
Drawn	03.05.08	SHAHID	CONSULTANT:- TATA CONSULTING ENGINEERING		Work:-	INCOMER-1	
Checked					Details:	SCHEMATIC/WIRING DIAGRAM	
Approved			CONTROLS & SWITCHGEAR COMPANY LTD. C-59 NODA PHASE-II, NODA-201305 DIST. GALTAM BUDH NAGAR (U.P.) FORMAT No. : QAF-04/04		Order No.:	4281049 DT. 09.04.08	
						DRG. NO.	BHEL/J2434/501
						SCALE:	NTS
						SHEET NO.	08
						NO. OF SHEET	08

FIRST ANGLE PROJECTION

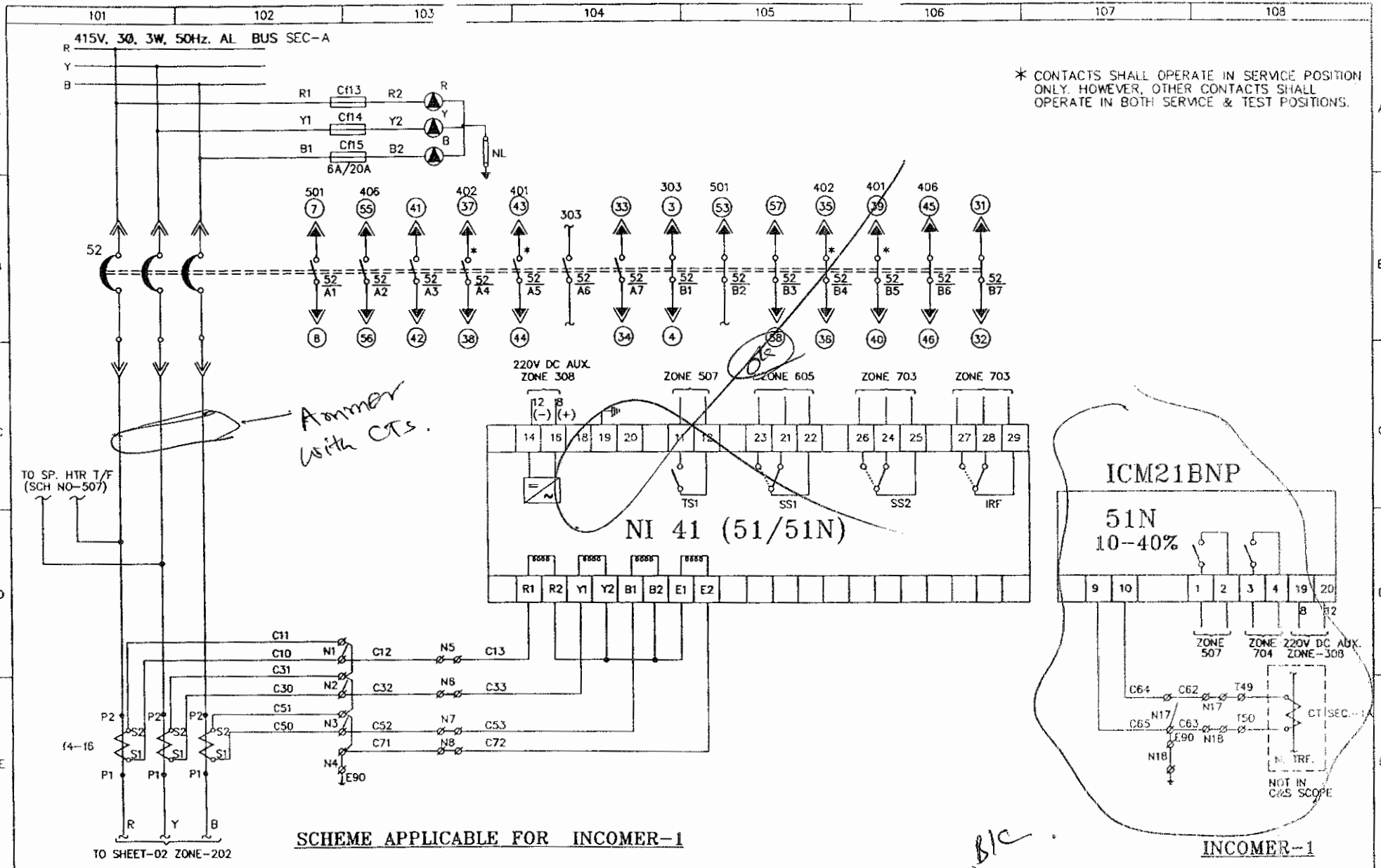
ALL DIMENSIONS ARE IN MM


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OWNER:	<b>GUJRAT INDUSTRIES POWER CO. LTD.</b> SLPP-II (UNIT 3&4), 2X125MW
OWNER'S CONSULTANT:	 <b>TCE CONSULTING ENGINEERS LIMITED</b> BANGALORE
	<b>BHARAT HEAVY ELECTRICALS LTD.</b> BOILER AUXILIARIES PLANT RANIPET-632 406
	<b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b>
TITLE:-	<b>SCHEMATIC/WIRING DIAGRAM BUS COUPLER</b>

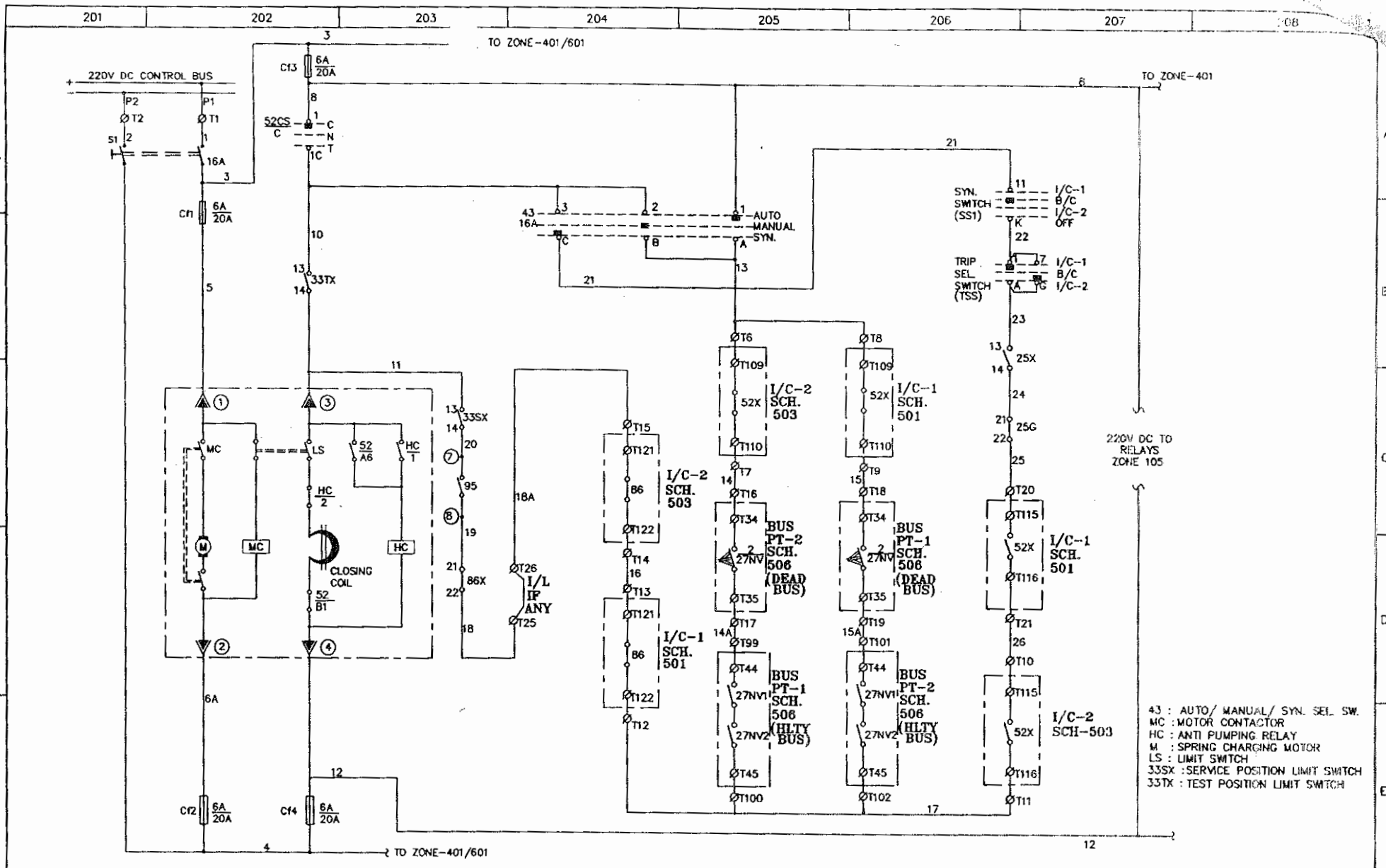
REV.	I-	II-	III-	IV-
Date	Name	PROJECT:- GIPCL-SLPP-II (UNIT 3&4), 2X125MW	Client:- <b>BHEL-RANIPET</b> Work:- <b>BUS COUPLER</b> Details:- <b>SCHEMATIC/WIRING DIAGRAM</b> Order No.:- <b>4281049 DT. 09.04.08</b>	DRG. NO. <b>BHEL/J2434/502</b> SCALE: NTS
Drawn	03.05.08	SAHID	CONSULTANT:- <b>TATA CONSULTING ENGINEERING</b>	REV. 0
Checked			 <b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> C-59 NODA PHASE-II, NODA-201305 DIST. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04	SHEET NO. 01
Approved				NO. OF SHEET 10

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REV.	I-	II-	III-	IV-		
Date	Name	PROJECT:		Client: -		
03.05.08	SHAHID	GIPCL SLPP-11 (UNIT 3&4), 2X125MW		BHEL-RANIPET		
Checked		CONSULTANT:-		Work: -		
Approved		TATA CONSULTING ENGINEERING		INCOMER-1		
		 <b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> C-59 NOIDA PHASE-II, NOIDA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04		Details: SCHEMATIC/WIRING DIAGRAM Order No.: 4281049 DT. 09.04.08	DRG. NO. BHEL/J2434/501 SCALE: NTS	REV. 0 SHEET NO 02 NO. OF SHEET 08

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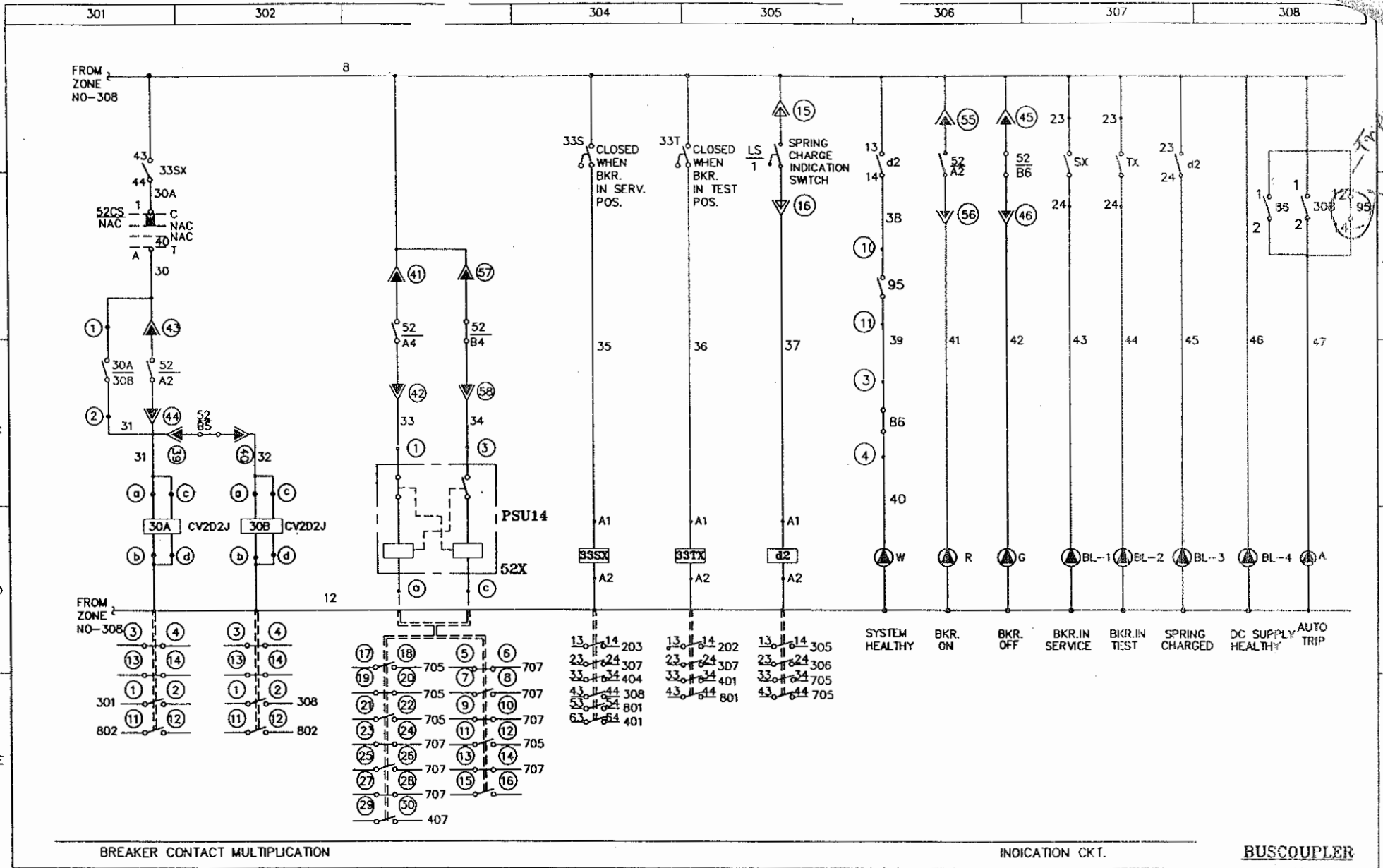



43 : AUTO / MANUAL / SYN. SEL SW.  
 MC : MOTOR CONTACTOR  
 HC : ANTI PUMPING RELAY  
 M : SPRING CHARGING MOTOR  
 LS : LIMIT SWITCH  
 33SX : SERVICE POSITION LIMIT SWITCH  
 33TX : TEST POSITION LIMIT SWITCH

BREAKER SPRING CHARGING      BREAKER CLOSING CIRCUIT      CLOSING INTERLOCK      BUSCOUPLER

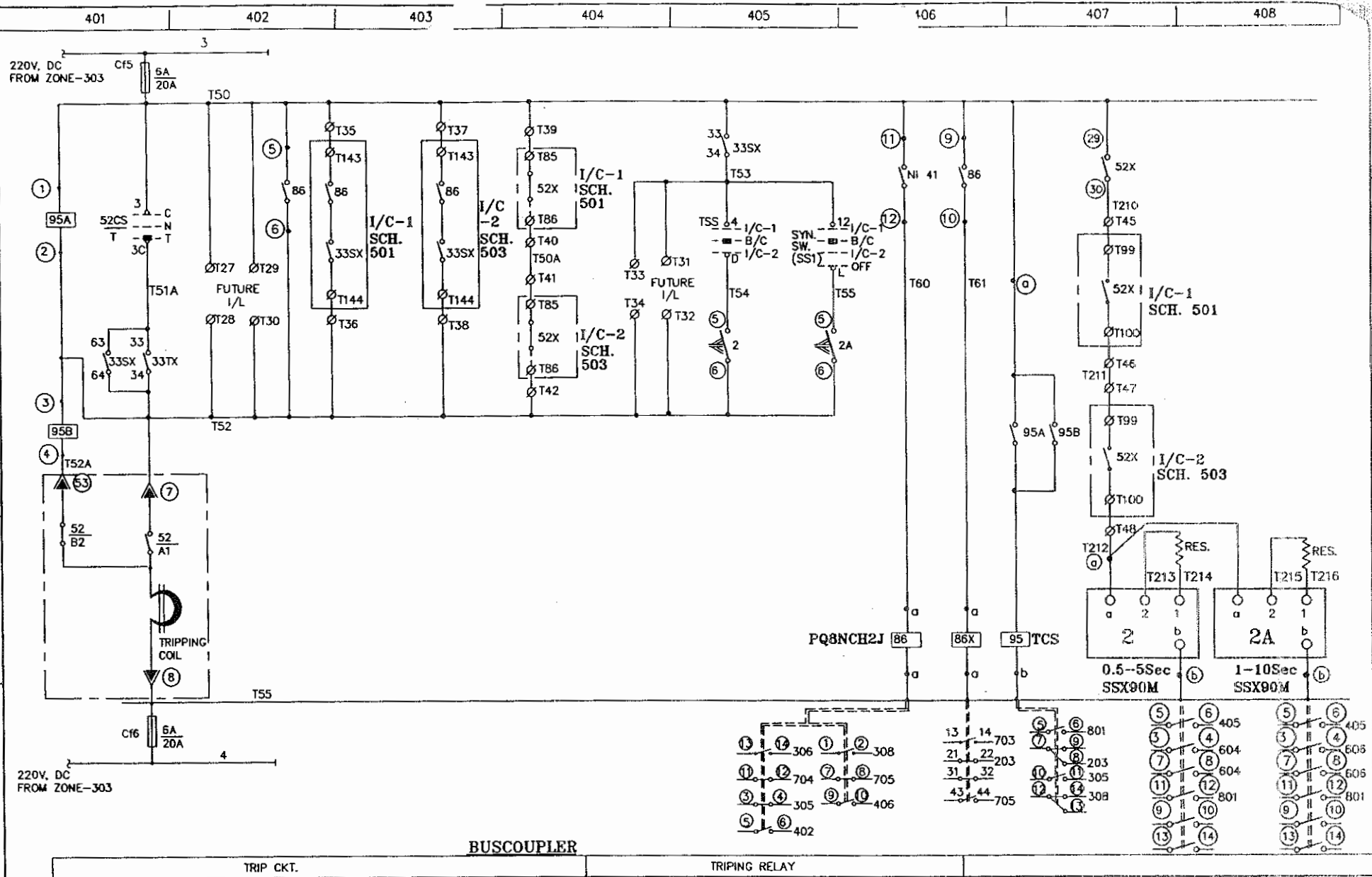
REV.	I(B)-		II(C)-		III-	IV-	
Drawn	Date	Name	PROJECT:			Client: -	
Checked	03.05.08	SHAHID	GUPCL SLP-11 (UNIT 3&4), 2X125MW			BHEL-RANIPET	
Approved			CONSULTANT:-			Work: -	
			TATA CONSULTING ENGINEERING			BUSCOUPLER	
			CONTROLS & SWITCHGEAR COMPANY LTD. C-59 NOIDA PHASE-II, NOIDA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04			Details: SCHEMATIC/WIRING DIAGRAM	
						Order No. : 4281049 OT. 09.04.08	
						BHEL/J2434/502	
						REV.	
						0	
						SCALE:	
						NTS	
						SHEET NO.	
						03	
						NO. OF SHEET	
						10	

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REV.	I(B)-	II-	III-	IV-
REV.	Date	Name	PROJECT:	Client: - BHEL-RANIPET
Drawn	03.05.08	SHAHID	GIPCL SLPP-11 (UNIT 3&4), 2X125MW	Work: - BUSCOUPLER
Checked			CONSULTANT:- TATA CONSULTING ENGINEERING	DRG. NO. BHEL/J2434/502
Approved			 CONTROLS & SWITCHGEAR COMPANY LTD. C-59 NOIDA PHASE-II, NOIDA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04	REV. 0
			SCALE: NTS	SHEET NO. 04
			Order No.: 4281049 DT. 09.04.08	NO. OF SHEET 10


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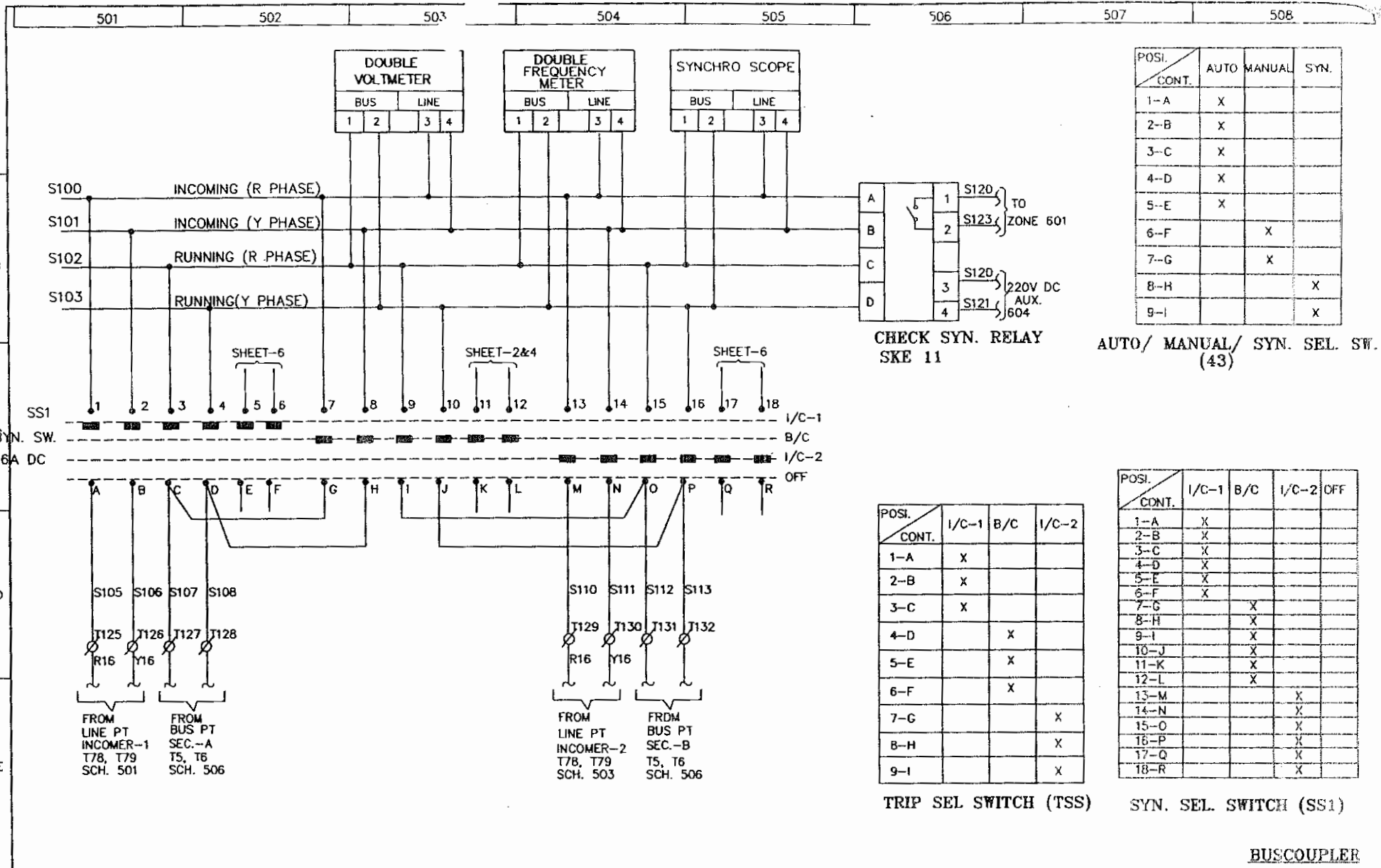
**BUSCOUPLER**

TRIP CKT.

TRIPING RELAY

REV.	I(B)-	II(C)-	III-	IV-
Drawn	Date: 03.05.08 Name: SHAHID	PROJECT: GIPCL SLPP-11 (UNIT 3&4), 2X125MW		Client: - BHEL-RANIPET
Checked		CONSULTANT:- TATA CONSULTING ENGINEERING		Work: - BUSCOUPLER
Approved		 CONTROLS & SWITCHGEAR COMPANY LTD. C-59 NODA PHASE-II, NODA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04		DRG. NO. BHEL/J2434/502 SCALE: NTS SHEET NO. 05 NO. OF SHEET 10
			Details: SCHEMATIC/WIRING DIAGRAM Order No.: 4281049 DT. 09.04.08	REV. 0

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POSI. CONT.	AUTO	MANUAL	SYN.
1-A	X		
2-B	X		
3-C	X		
4-D	X		
5-E	X		
6-F		X	
7-G		X	
8-H			X
9-I			X

AUTO/ MANUAL/ SYN. SEL. SW. (43)

POSI. CONT.	I/C-1	B/C	I/C-2
1-A	X		
2-B	X		
3-C	X		
4-D		X	
5-E		X	
6-F		X	
7-G			X
8-H			X
9-I			X

TRIP SEL SWITCH (TSS)

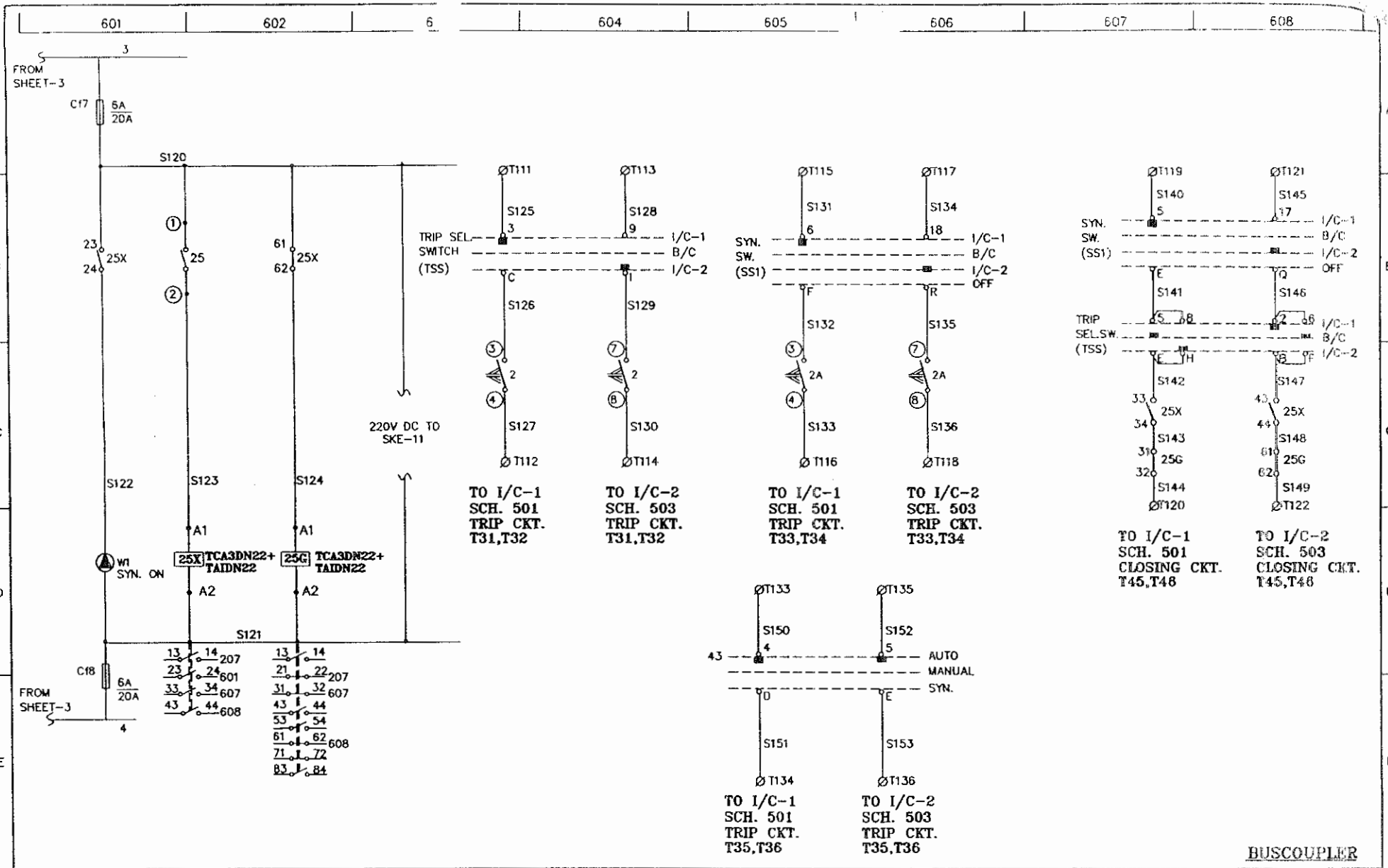
POSI. CONT.	I/C-1	B/C	I/C-2	OFF
1-A	X			
2-B	X			
3-C	X			
4-D	X			
5-E	X			
6-F	X			
7-G		X		
8-H		X		
9-I		X		
10-J		X		
11-K		X		
12-L		X		
13-M			X	
14-N			X	
15-O			X	
16-P			X	
17-Q			X	
18-R			X	

SYN. SEL. SWITCH (SS1)


**BUSCOUPLER**

REV.	I(B)-	II-	III-	IV-
Drawn	Date: 03.05.08 Name: SHAHID	PROJECT: GIPCL SLPP-11 (UNIT 3&4), ZX125MW		Client: - BHEL-RANIPET
Checked		CONSULTANT:- TATA CONSULTING ENGINEERING		Work: - BUSCOUPLER
Approved				Details: SCHEMATIC/WIRING DIAGRAM
				Order No.: 4281049 DT. 09.04.08
				DRG. NO. BHEL/J2434/502
				REV. 0
				SCALE: NTS
				SHEET NO. 06
				NO. OF SHEET 10

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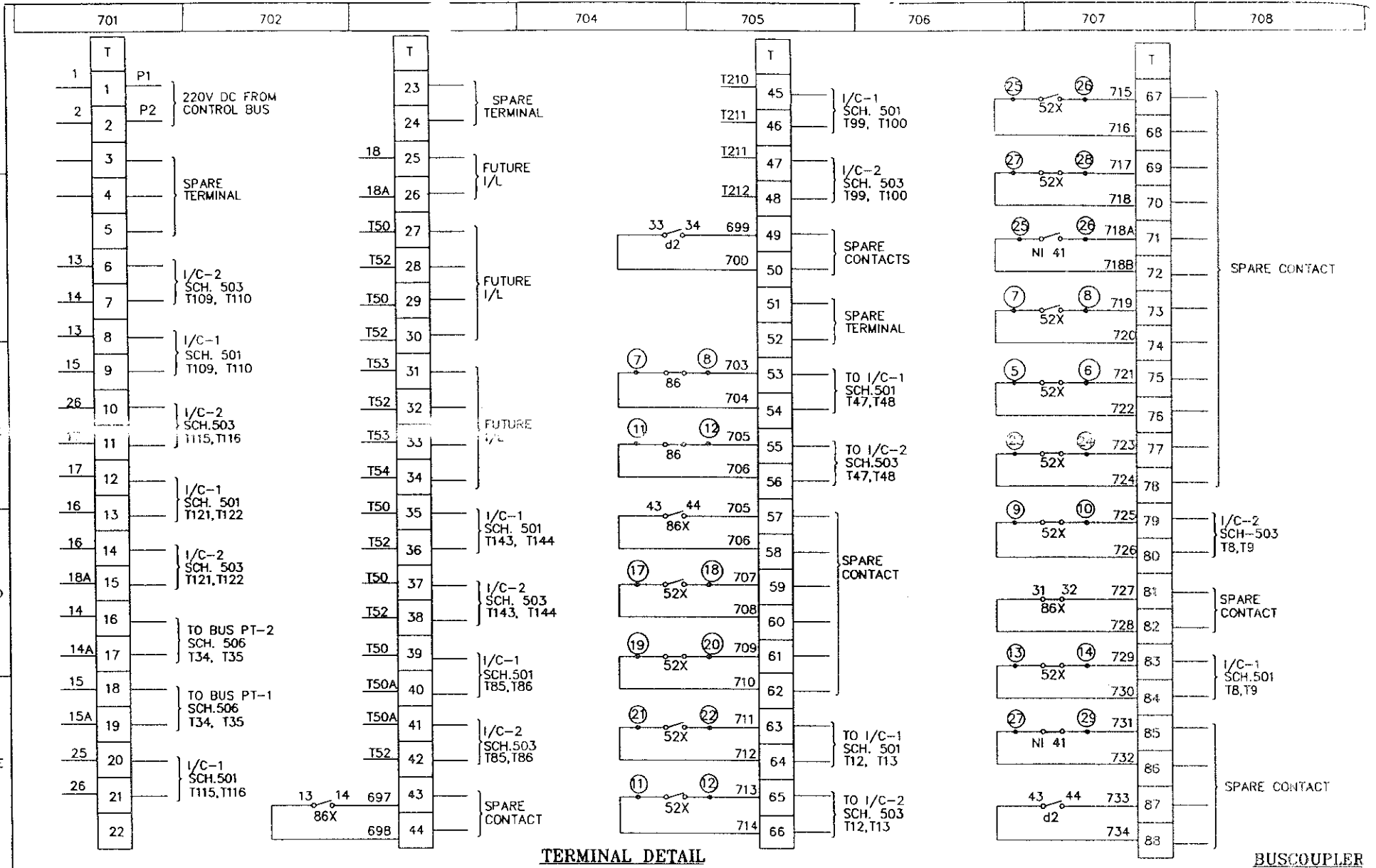


**BUSCOUPLER**

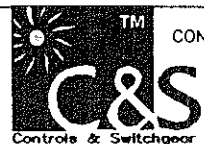
REV.	I(B)-	II-	III-	IV-
Drawn	Date: 03.05.08	Name: SHAHID	PROJECT: GIPCL SLPP-11 (UNIT 3&4), 2X125MW	
Checked			CONSULTANT:- TATA CONSULTING ENGINEERING	
Approved			 <b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> C-59 NOIDA PHASE-III, NOIDA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-D4/04	
			Client: - BHEL-RANIPET	DRG. NO. BHEL/J2434/502
			Work: - BUSCOUPLER	REV. 0
			Details: SCHEMATIC/WIRING DIAGRAM	SCALE: NTS
			Order No.: 4281049 DT. 09.04.08	SHEET NO. 07 NO. OF SHEET 10



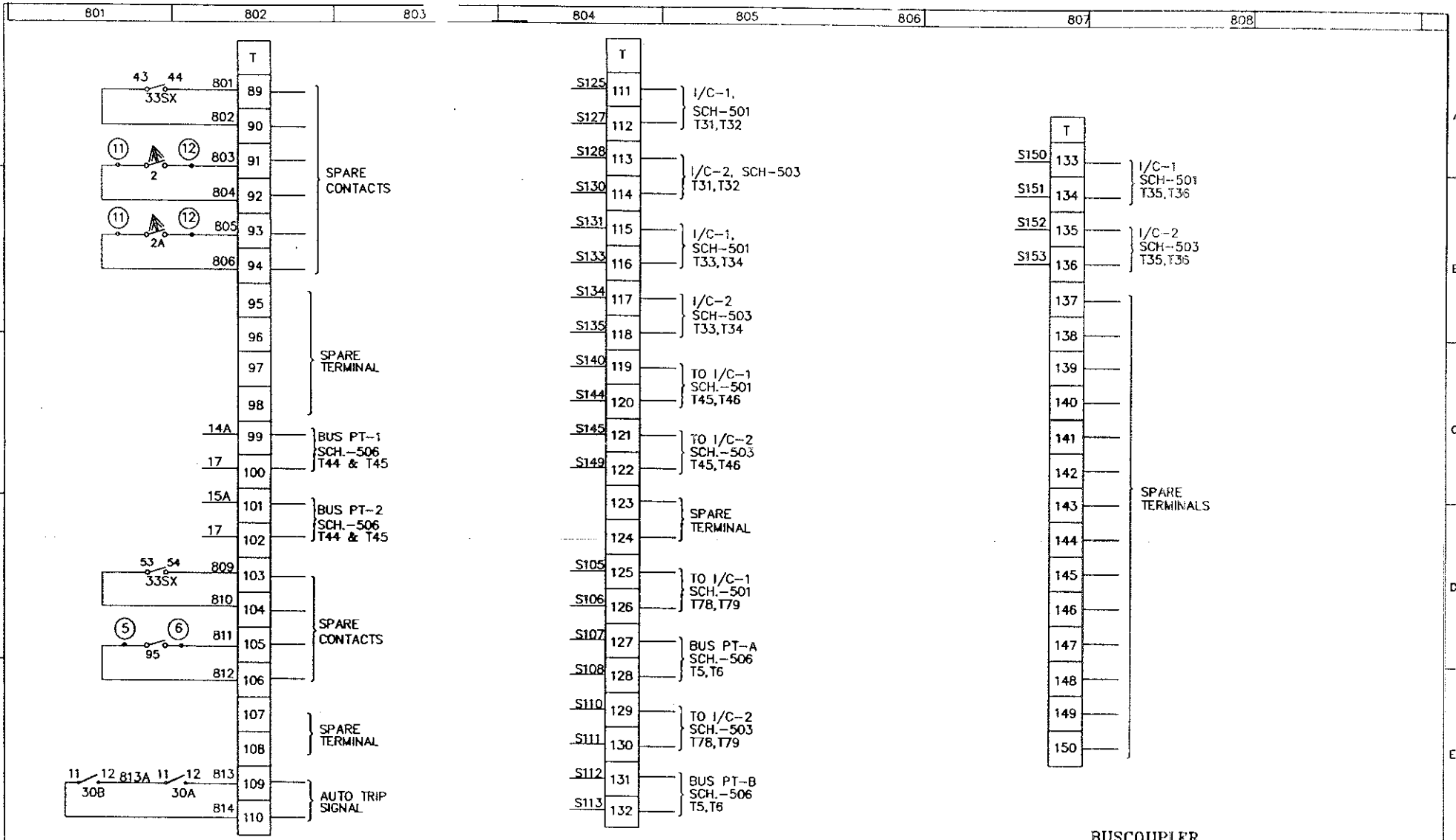
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REV.	I(B)-		II-		III-		IV-	
	Date	Name	<b>PROJECT:</b>		CONTROLS & SWITCHGEAR COMPANY LTD.		Client: - BHEL-RANIPET	
Drawn	03.05.08	SHAHID	GIPCL SLPP-11 (UNIT 3&4), 2X125MW		C-59 NODA PHASE-II, NODA-201305		DRG. NO. BHEL/J2434/502	
Checked					DIST. GAUTAM BUDH NAGAR (U.P.)		REV. 0	
Approved					FORMAT No. : QAF-04/04		SCALE: NTS	
							Work: - BUSCOUPLER	
							Details: SCHEMATIC/WIRING DIAGRAM	
							Order No.: 4281049 DT. 09.04.08	
							SHEET NO. 08	
							NO. OF SHEET 10	



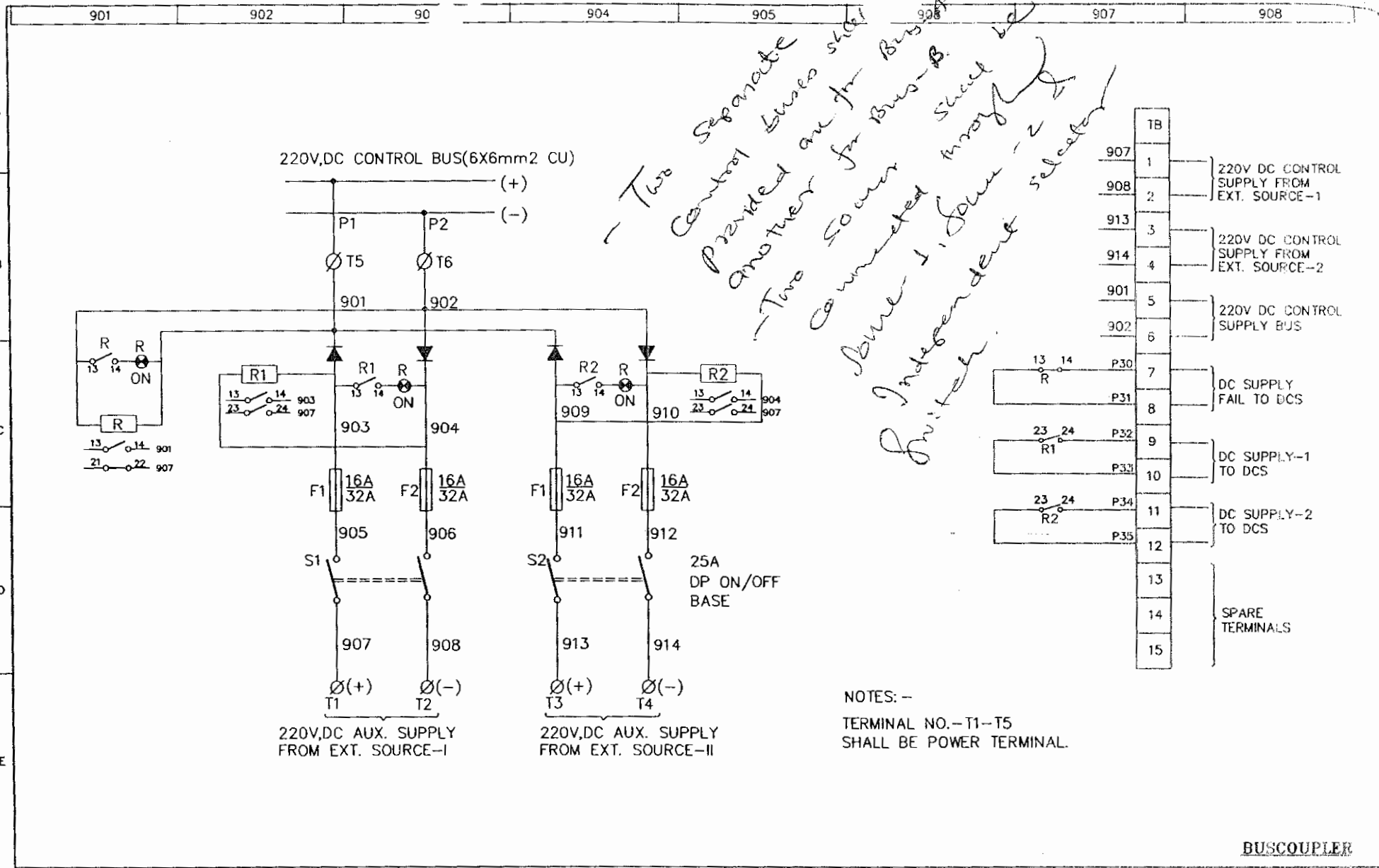
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**BUSCOUPLER**

REV.	I(B)-	II(C)-	III-	IV-
Drawn	Date: 03.05.08	Name: SHAHID	<b>PROJECT:</b> GIPCL SILPP-11 (UNIT 3&4), 2X125MW <b>CONSULTANT:-</b> TATA CONSULTING ENGINEERING	
Checked			 CONTROLS & SWITCHGEAR COMPANY LTD. C-59 NOIDA PHASE-II, NOIDA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : OAF-04/04	
Approved			Client:- BHEL-RANIPET Work:- BUSCOUPLER Details: SCHEMATIC/WIRING DIAGRAM Order No.: 4281049 DT. 09.04.08	ORG. NO. BHEL/J2434/502 SCALE: NTS SHEET NO. NO. OF SHEET
				REV. 0 09 10

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NOTES: -  
TERMINAL NO.-T1-T5 SHALL BE POWER TERMINAL.




**BUSCOUPLER**


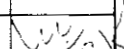
REV.	I(B)-	II(C)-	III-	IV-
Drawn	Date: 03.05.08 Name: SHAHID	<b>PROJECT:</b> GIPCL SLPP-11 (UNIT 3&4), 2X125MW <b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> <small>C-59 NOIDA PHASE-I, NOIDA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04</small>		Client: - <b>BHEL-RANIPET</b> Work: - <b>BUSCOUPLER</b> Details: <b>SCHEMATIC/WIRING DIAGRAM</b> Order No.: 4281049 DT. 09.04.08
Checked		<b>CONSULTANT:-</b> TATA CONSULTING ENGINEERING		DRG. NO. <b>BHEL/J2434/502</b> SCALE: NTS SHEET NO. <b>10</b> NO. OF SHEET <b>10</b>
Approved				REV. <b>0</b> NO. OF SHEET <b>10</b>

FIRST ANGLE PROJECTION

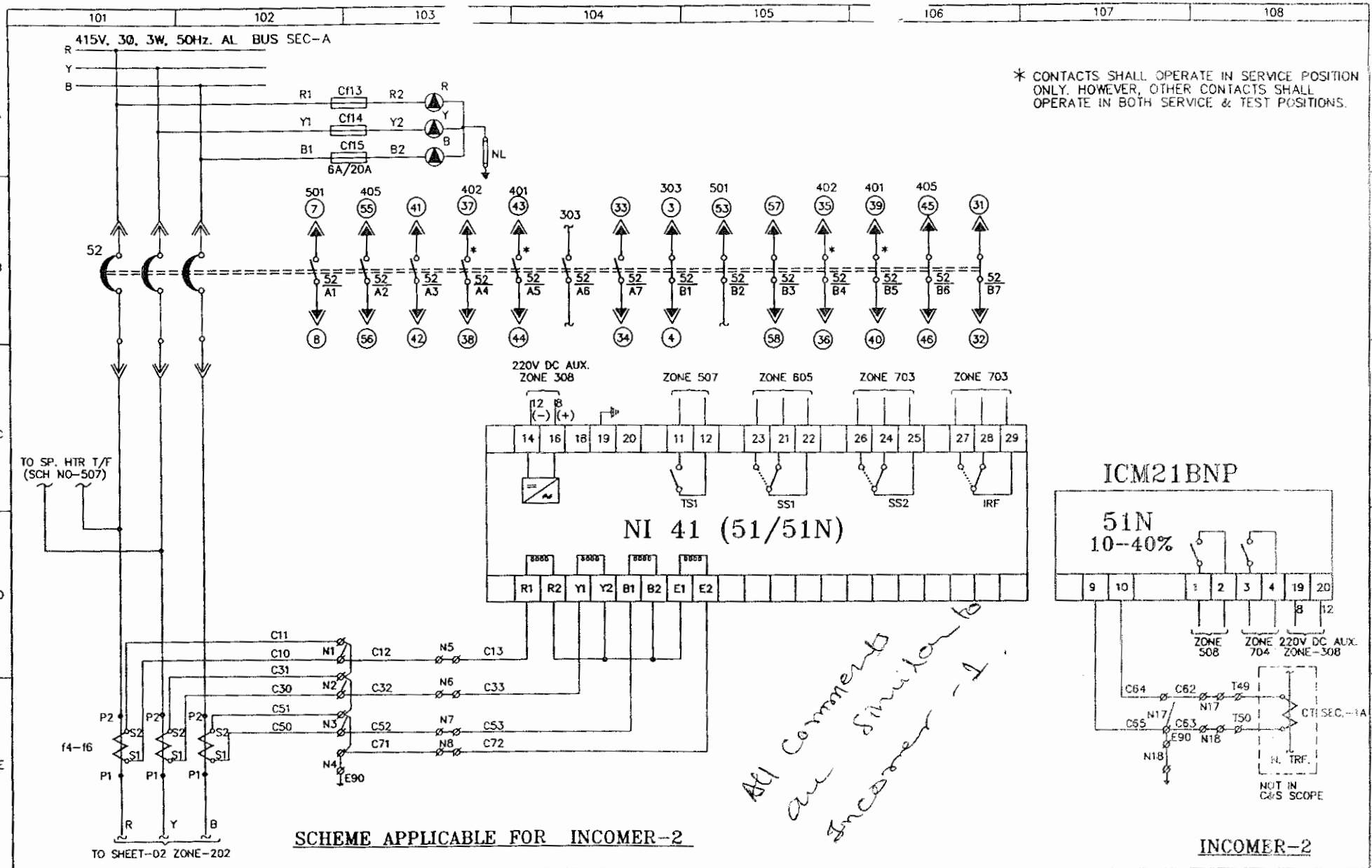
ALL DIMENSIONS ARE IN MM


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OWNER:	<b>GUJRAT INDUSTRIES POWER CO. LTD.</b> SLPP-II (UNIT 3&4), 2X125MW
OWNER'S CONSULTANT:	 <b>TCE CONSULTING ENGINEERS LIMITED</b> BANGALORE
	 <b>BHARAT HEAVY ELECTRICALS LTD.</b> BOILER AUXILIARIES PLANT RANIPET-632 406
	 <b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b>
TITLE:-	<b>SCHEMATIC/WIRING DIAGRAM INCOMER-2</b>

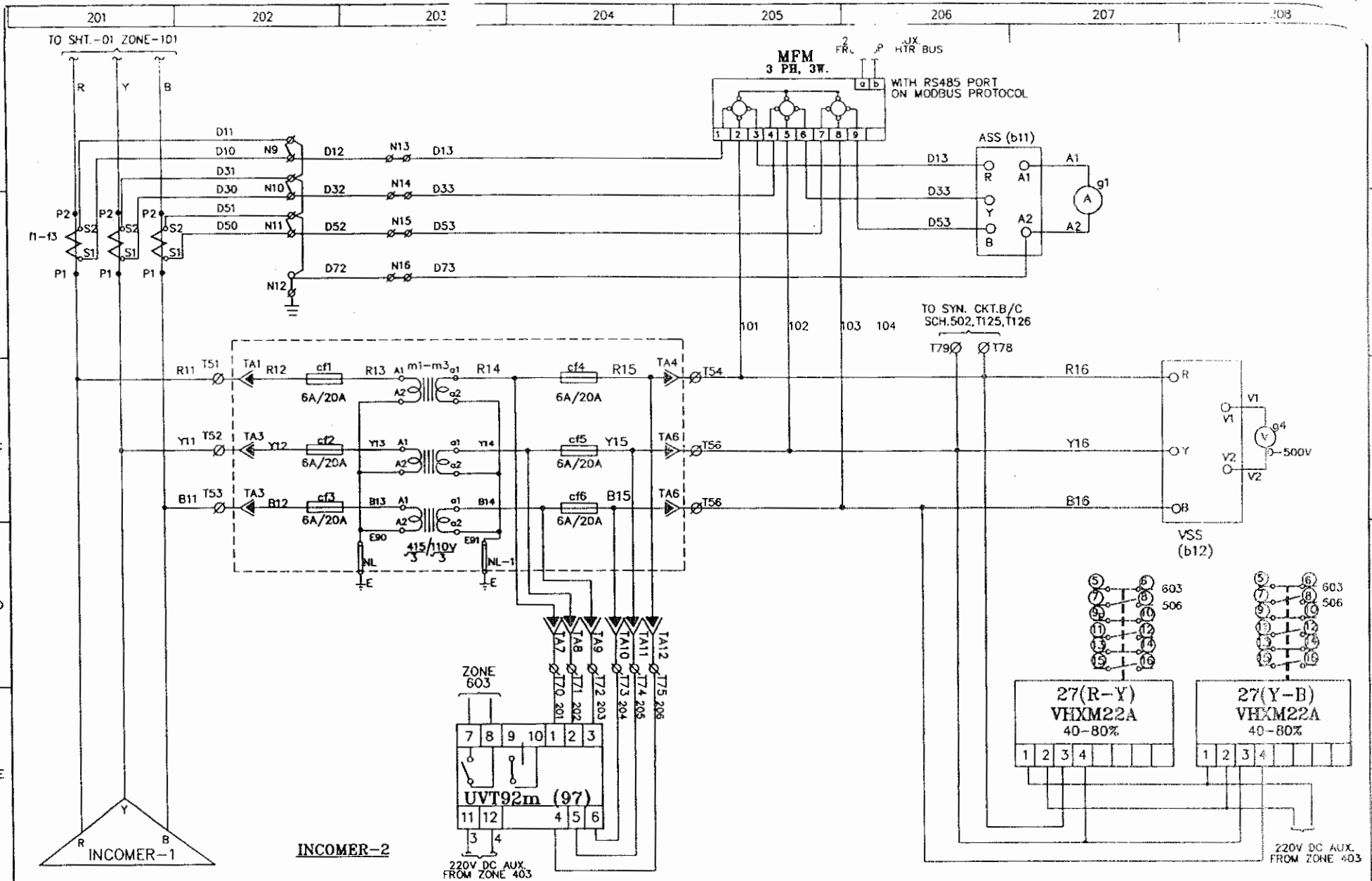
REV.	I-	II-	III-	IV-
Drawn	Date: 03.05.08 Name: SHABID	PROJECT:- GEPCL-SLPP-II (UNIT 3&4), 2X125MW	 <b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> C-59 NOIDA PHASE-II, NOIDA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04	Client:- BHEL-RANIPET Work:- INCOMER-2 Details:- SCHEMATIC/WIRING DIAGRAM Order No.:- 4281049 DT. 09.04.08
Checked		CONSULTANT:- TATA CONSULTING ENGINEERING		DRG. NO. BHEL/J2434/503
Approved				REV. ( ) SCALE: NTS SHEET NO. 01 NO. OF SHEET 08

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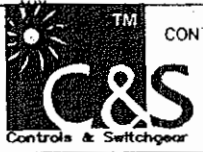


REV.	I-	II-	III-	IV-	
Drawn	Date: 03.05.08 Name: SHAHID	PROJECT: GPCL SLPP-II (UNIT#3&4) 2X125MW		Client: - BHEL-RANIPET	
Checked		CONSULTANT: TATA CONSULTING ENGINEERING		Work: - INCOMER-2	
Approved				Details: SCHEMATIC/WIRING DIAGRAM	
				Order No.: 4281049 DT. 09.04.08	DRG. NO. BHEL/J2434/503
				SCALE: NTS	SHEET NO. 02 NO. OF SHEET 08

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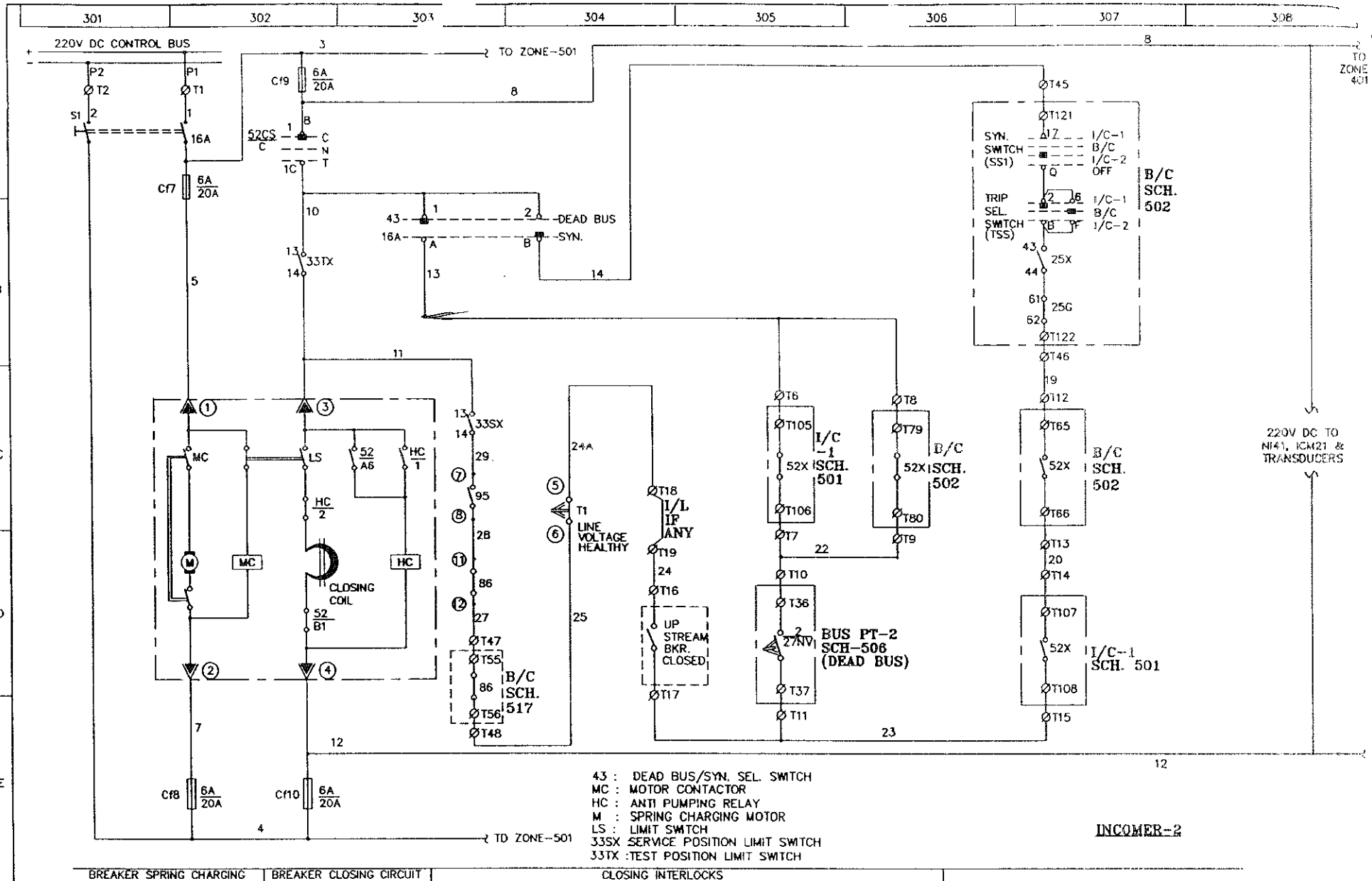


REV.	I-	II-	III-	IV-
Drawn	Date: 03.05.08	Name: SHAHID	PROJECT: GIPCL SLPP-II (UNIT#3&4) 2X125MW	Client: - BHEL-RANIPET
Checked			CONSULTANT: TATA CONSULTING ENGINEERING	Work: - INCOMER-2
Approved				Details: SCHEMATIC/WIRING DIAGRAM
				Order No.: 4281049 DT. 09.04.08
				DRG. NO. BHEL/J2434/503
				SCALE: NTS
				SHEET NO. 03
				NO. OF SHEET 08
				REV. 0



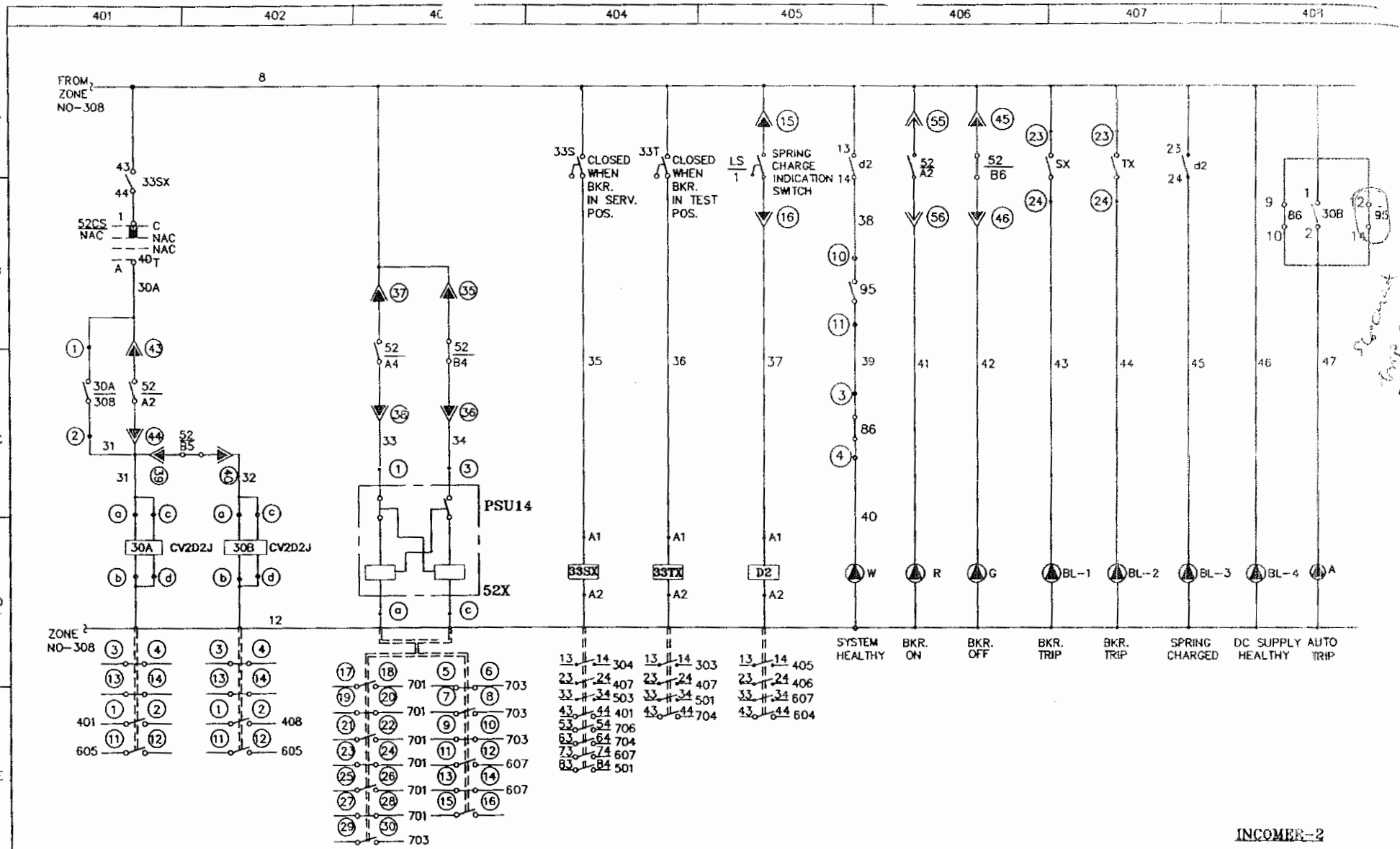
CONTROLS & SWITCHGEAR COMPANY LTD.  
 C-59 NOIDA PHASE-II, NOIDA-201305  
 DISTT. GAUTAM BUDDH NAGAR (U.P.)  
 FORMAT No. : QAF-04/04

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REV.	I-	II(C)-	III-	IV-
Drawn	Date: 03.05.08	Name: SHAHD	PROJECT: GIPCL SLPP-II (UNIT#3&4) 2X125MW	
Checked			CONSULTANT: TATA CONSULTING ENGINEERING	
Approved			<b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> C-59 NODA PHASE-II, NODA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04	
			Client: - BHEL-RANIPET	DRG. NO. BHEL/J2434/503
			Work: - INCOMER-2	REV. 0
			Details: SCHEMATIC/WIRING DIAGRAM	SCALE: NTS
			Order No.: 4281049 DT. 09.04.08	SHEET NO. 04 NO. OF SHEET 08

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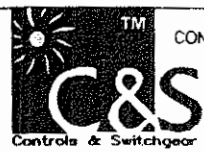


**INCOMER-2**

BREAKER CONTACT MULTIPLICATION

INDICATION

REV.	I-	II(C)-	III-	IV-
Drawn	Date: 03.05.08	Name: SHAHID	PROJECT: GIPCL SLPP-II (UNIT#3&4) 2X125MW	Client: - BHEL-RANIPET
Checked			CONSULTANT: TATA CONSULTING ENGINEERING	Work: - INCOMER-2
Approved				DRG. NO. BHEL/J2434/503
				REV. 0
				SCALE: NTS
				SHEET NO. 05
				NO. OF SHEET 08

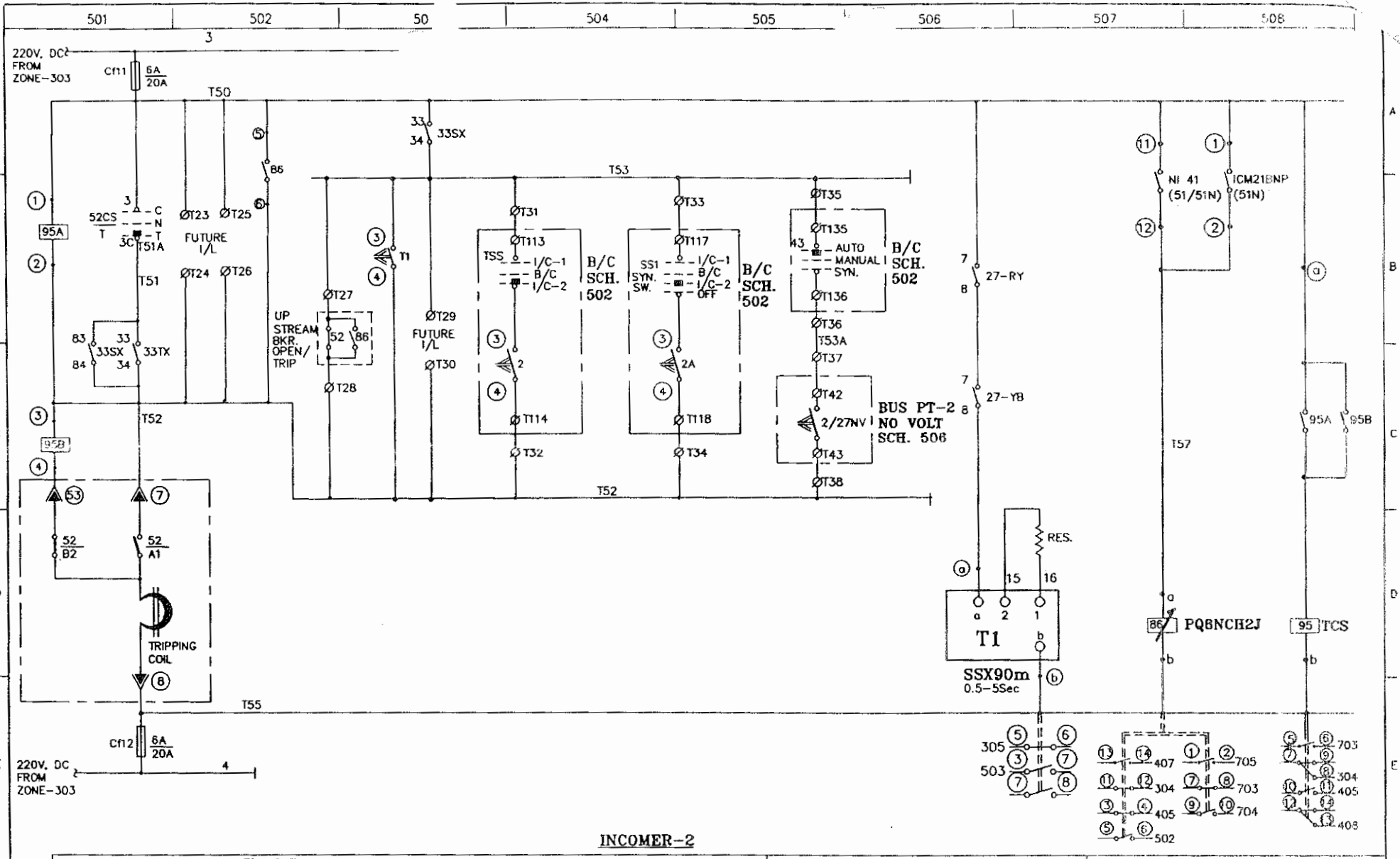


CONTROLS & SWITCHGEAR COMPANY LTD.  
 C-59 NODA PHASE-II, NODA-201305  
 DISTT. GAUTAM BUDDH NAGAR (U.P.)  
 FORMAT No. : QAF-04/04

Client: - BHEL-RANIPET  
 Work: - INCOMER-2  
 Details: SCHEMATIC/WIRING DIAGRAM  
 Order No.: 4281049 DT. 09.04.08



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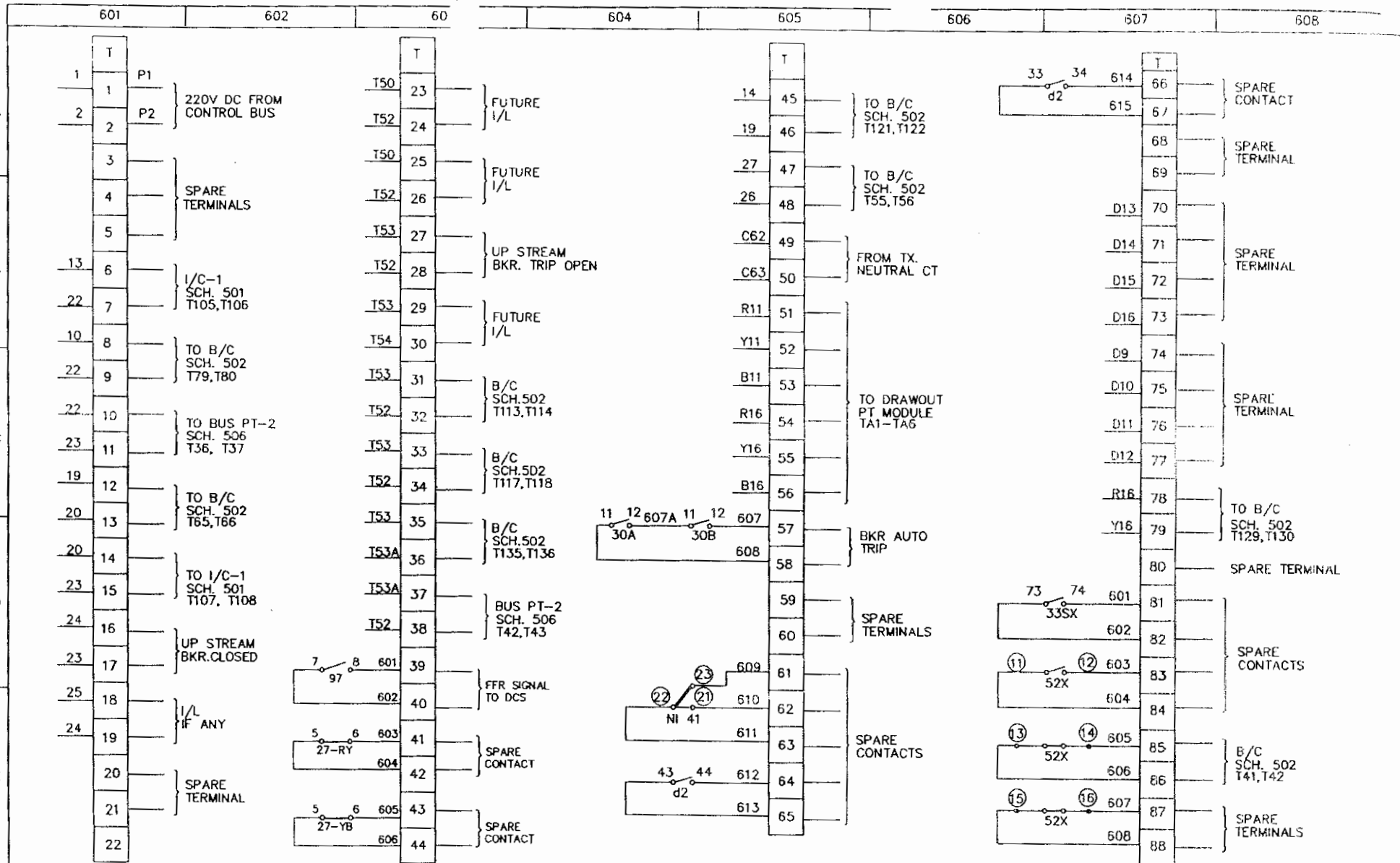
**INCOMER-2**

REV.	I-	II-	III-	IV-
Date	03.05.08	Name	SHAHD	
Drawn		Checked		Approved
PROJECT:		GIPCL SLPP-II (UNIT#3&4) 2X125MW		
CONSULTANT:		TATA CONSULTING ENGINEERING		
Client:-		BHEL-RANIPET		DRG. NO.
Work:-		INCOMER-2		BHEL/J2434/503
Details:		SCHEMATIC/WIRING DIAGRAM		REV.
Order No.:		4281049 DT. 09.04.08		0
SCALE:		NTS		SHEET NO.
				06
				NO. OF SHEET
				08




CONTROLS & SWITCHGEAR COMPANY LTD.  
 C-59 NOIDA PHASE-II, NOIDA-201305  
 DIST. GAUTAM BUDDH NAGAR (U.P.)  
 FORMAT No. : QAF-04/04

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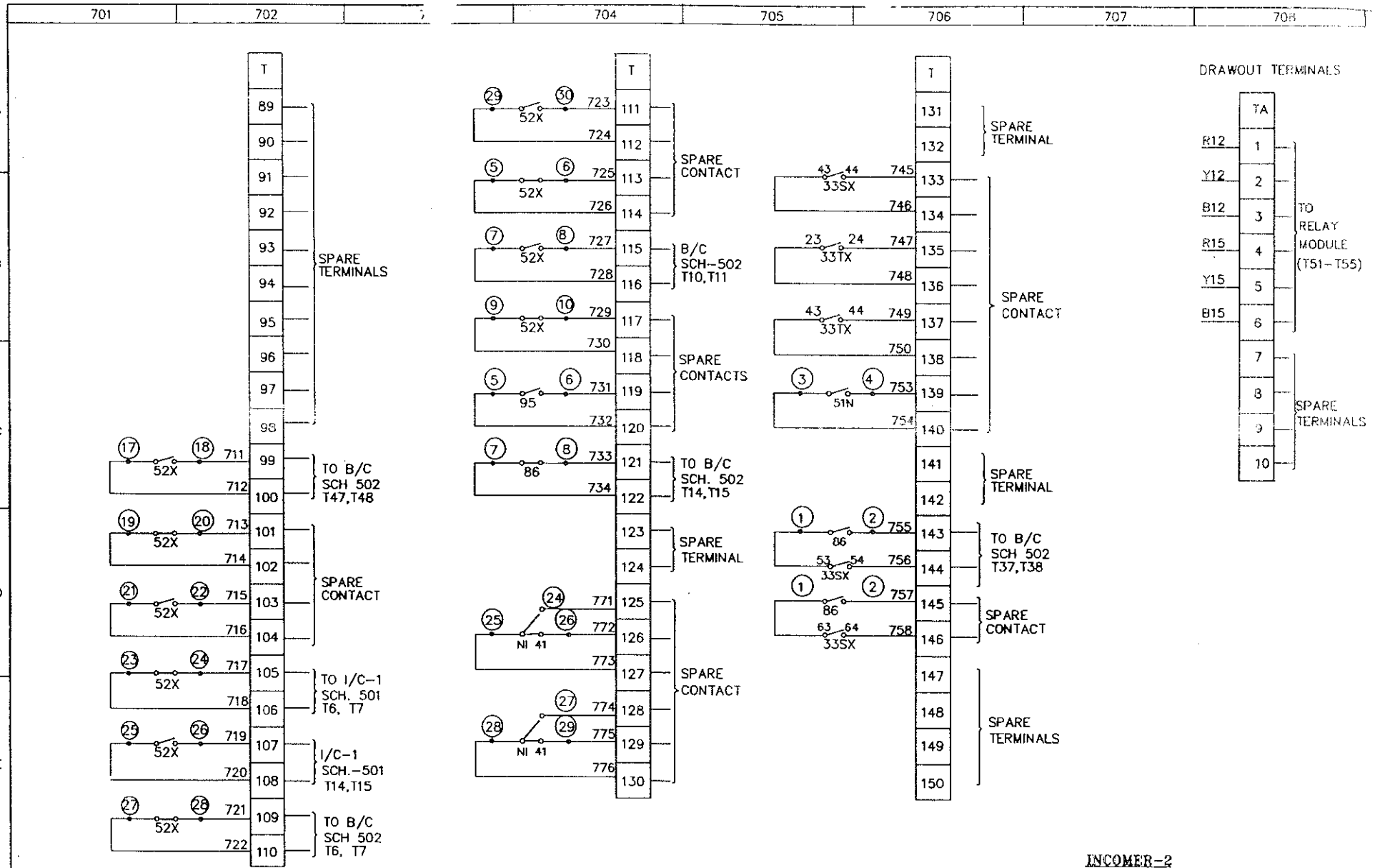


**TERMINAL DETAIL**

INCOMER-2

REV.	I-	II-	III-	IV-
Drawn	Date: 03.05.08	Name: SHAHID	PROJECT: GIPCL SLP-II (UNIT#3&4) 2X125MW	Client: - BHEL-RANIPET
Checked			CONSULTANT: TATA CONSULTING ENGINEERING	Work: - INCOMER-2
Approved			 <b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> C-59 NOIDA PHASE-II, NOIDA-201305 DIST. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04	DRG. NO. BHEL/J2434/503 REV. 0 SCALE: NTS SHEET NO. 07 NO. OF SHEET 08
				Details: SCHEMATIC/WIRING DIAGRAM Order No.: 4281049 DT. 09.04.08

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INCOMER-2

REV.	I-	II-	III-	IV-
Drawn	Date: 03.05.08	Name: SHAHID	PROJECT: GIPCL SLPP-II (UNIT#3&4) 2X125MW	Client: - BHEL-RANIPET
Checked			CONSULTANT: TATA CONSULTING ENGINEERING	Work: - INCOMER-2
Approved				Details: SCHEMATIC/WIRING DIAGRAM
				Order No.: 4281049 DT. 09.04.08
				DRG. NO. BHEL/J2434/503
				REV. 0
				SCALE: NTS
				SHEET NO. 08
				NO. OF SHEET 08



CONTROLS & SWITCHGEAR COMPANY LTD.  
 C-59 NOIDA PHASE-II, NOIDA-201305  
 DIST. GAUTAM BUDDH NAGAR (U.P.)  
 FORMAT No. : QAF-04/04

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

OWNER:  
**GUJRAT INDUSTRIES POWER CO. LTD.**  
 SLPP-II (UNIT 3&4), 2X125MW

OWNER'S CONSULTANT:  
 **TCE CONSULTING ENGINEERS LIMITED**  
 BANGALORE




**BHARAT HEAVY ELECTRICALS LTD.**  
 BOILER AUXILIARIES PLANT  
 RANIPET-632 406



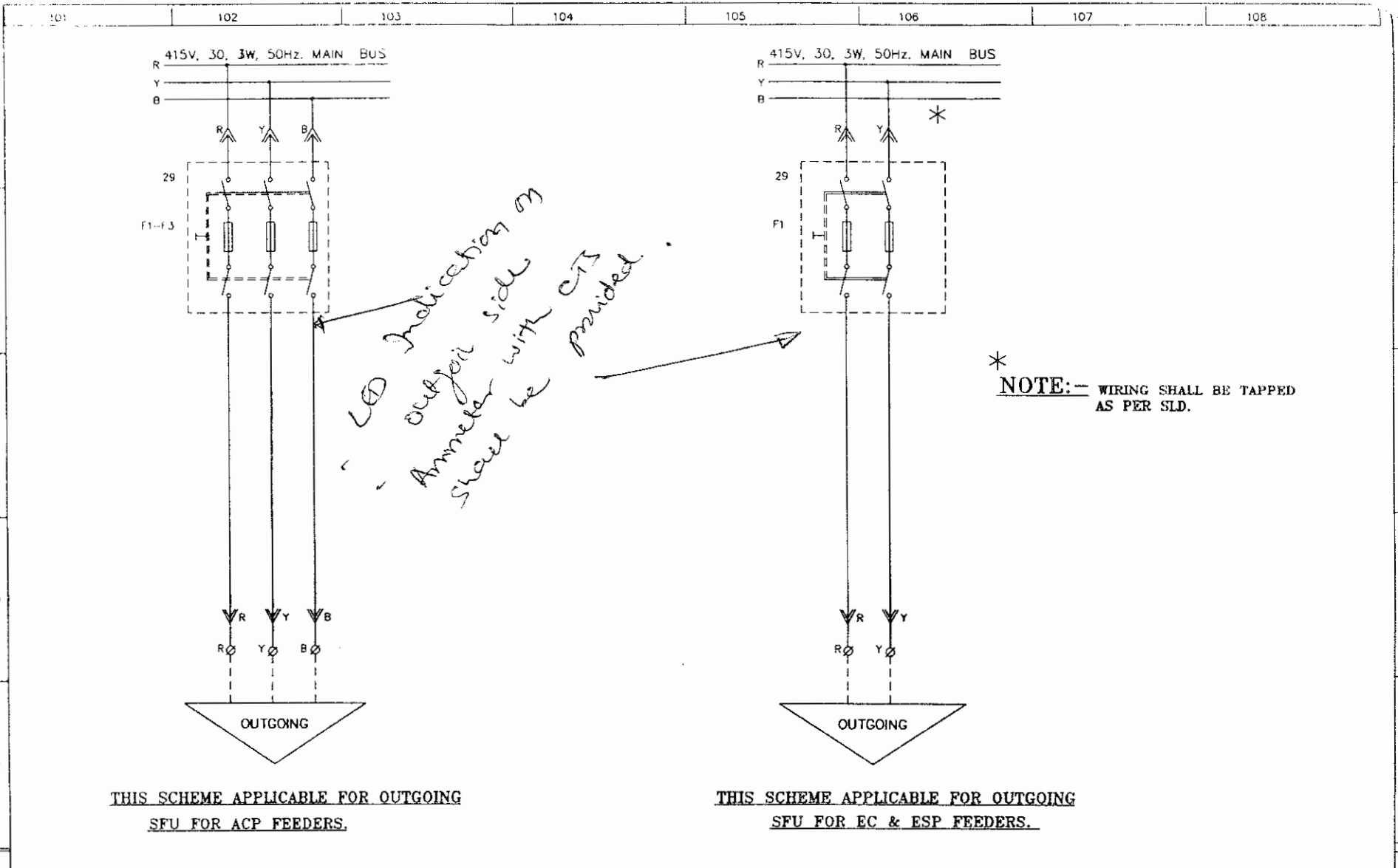
**CONTROLS & SWITCHGEAR COMPANY LTD.**

TITLE:- **SCHEMATIC/WIRING DIAGRAM**  
**OUT GOINF SFU FEEDER**

and they should neither be copied nor given to a third person, without the prior permission of our company

REV.	I-	II-	III-	IV-				
	Date	Name	 <b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> C-59 NODA PHASE-I, NODA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04		Client:-	<b>BHEL-RANIPET</b>	DWG. NO.	REV.
Drawn	03.05.08	SHAHID			Work:-	<b>OUT GOINF SFU FEEDER</b>	<b>BHEL/J2434/504</b>	0
Checked					Details:-	<b>SCHEMATIC/WIRING DIAGRAM</b>	SCALE:	
Approved					Order No.:-	<b>4281049 DT. 09.04.08</b>	NTS	
							SHEET NO.	01
							NO. OF SHEET	02

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REV.	I-	II-	III-	IV-
Drawn	Date: 03.05.08	Name: SHAHD	<b>PROJECT:-</b> GIPCL-SLPP-II (UNIT 3&4), 2X125MW <b>CONSULTANT:-</b> TATA CONSULTING ENGINEERING	
Checked			<b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> C-59 NOIDA PHASE-II, NOIDA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04	
Approved				
			Client:- <b>BHEL-RANIPET</b>	DRG. NO. <b>BHEL/J2434/504</b>
			Work:- <b>LTMSB</b>	REV. <b>0</b>
			Details:- <b>SCHEMATIC/WIRING DIAGRAM</b>	SCALE: NTS
			P.O.No. <b>4281049 DT. 09.04.08</b>	SHEET NO. <b>02</b>
				NO. OF SHEET <b>02</b>


FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM


OWNER: **GUJRAT INDUSTRIES POWER CO. LTD.**  
SLPP-II (UNIT 3&4), 2X125MW

OWNER'S CONSULTANT:  
 **TCE CONSULTING ENGINEERS LIMITED**  
BANGALORE

 **BHARAT HEAVY ELECTRICALS LTD.**  
BOILER AUXILIARIES PLANT  
RANIPET-632 406

 **CONTROLS & SWITCHGEAR COMPANY LTD.**

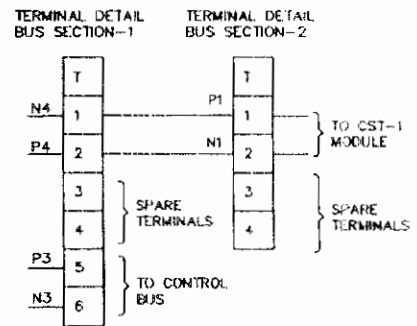
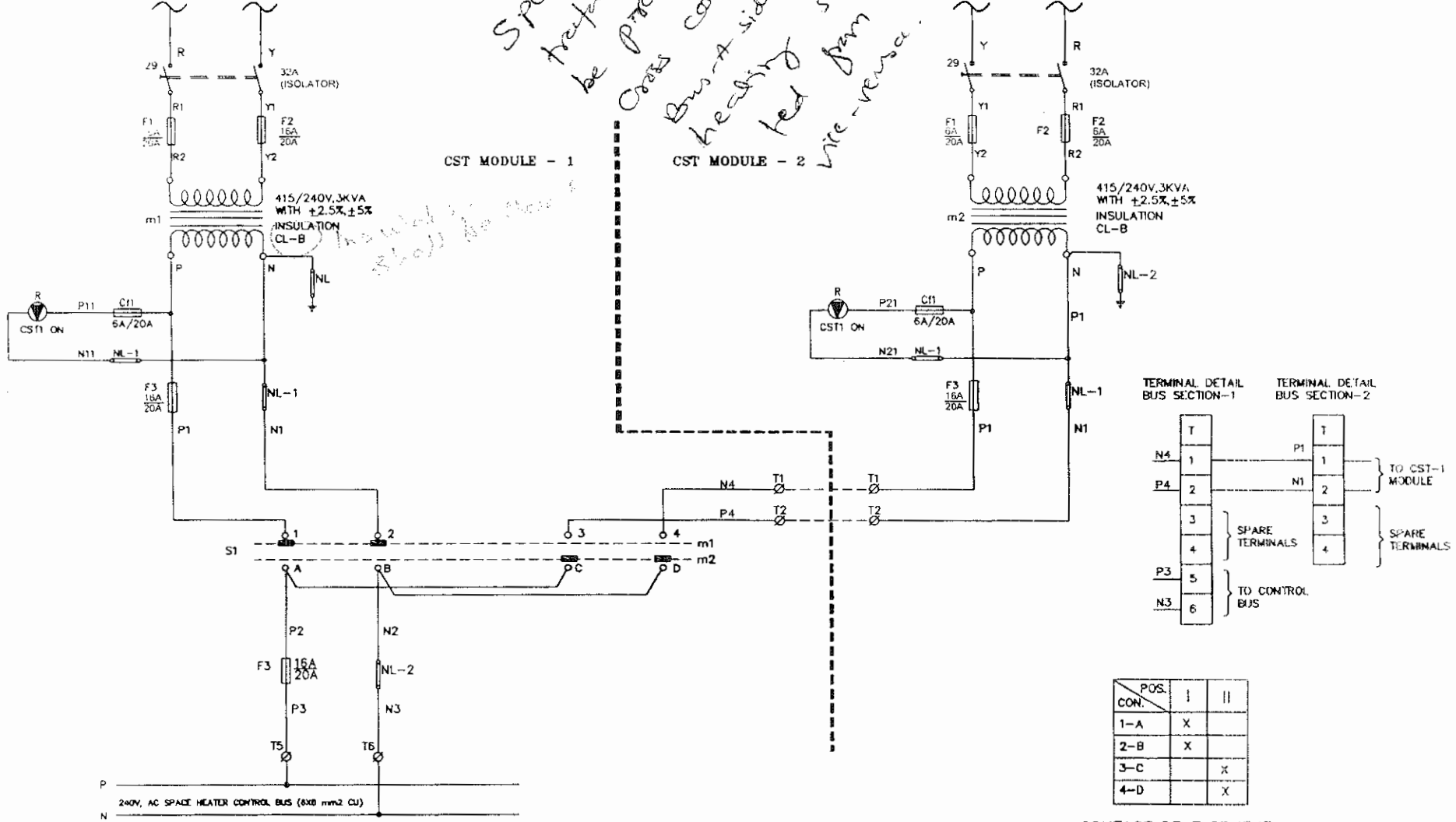
TITLE:- **SCHEMATIC/WIRING DIAGRAM**  
**CONTROL SUPPLY T/F FEEDER**

REV.	I-		II-		III-		IV-		
	Date	Name	PROJECT:-		Client:-		DRG. NO.		REV.
Drawn	03.05.08	SHAHID	GIPCL-SLPP-II (UNIT 3&4), 2X125MW		BHEL-RANIPET		BHEL/J2434/505		0
Checked			CONSULTANT:-		Work:- CONTROL SUPPLY T/F		SCALE:		SHEET NO.
Approved			TATA CONSULTING ENGINEERING		Details:- SCHEMATIC/WIRING DIAGRAM		NTS		NO. OF SHEET
					Order No.:- 4281049 DT. 09.04.08				01
			CONTROLS & SWITCHGEAR COMPANY LTD.						02
			C-59 NODA PHASE-II, NODA-201305						
			DIST. GAUTAM BUDDH NAGAR (U.P.)						
			FORMAT No. : QAF-04/04						

*Space heat transfer shall be provided with cross connection heating shall be provided from Bus-B vice-versa.*

FROM INCOMER-1, SCH-501 SH-01

FROM INCOMER-2, SCH-503 SH-01



POS. CON.	I	II
1-A	X	
2-B	X	
3-C		X
4-D		X


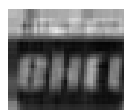

SCHEME APPLICABLE FOR CST 1&2


CONTACT DEVELOPMENT DIAGRAM SELECTOR S/W

REV.	I-	II-	III-	IV-
Drawn	Date: 03.05.08	Name: SHAHID	PROJECT:- GIPCL-SLPP-II (UNIT 3&4), 2X125MW	CLIENT: BHEL-RANIPET
Checked			CONSULTANT:- DESIN PVT. LTD - NEW DELHI.	Work: CST
Approved			Controls & Switchgear COMPANY LTD. C-59 NODA PHASE-II, NODA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P) FORMAT No. : QAF-04/04	Details: SCHEMATIC/WIRING DIAGRAM
				Order No.: 4281049 DT. 08.04.08
				DRG. NO. BHEL/J2434/505
				SCALE: NTS
				SHEET NO. NO. OF SHEET
				REV. 0
				02

FIRST ANGLE PROJECTION

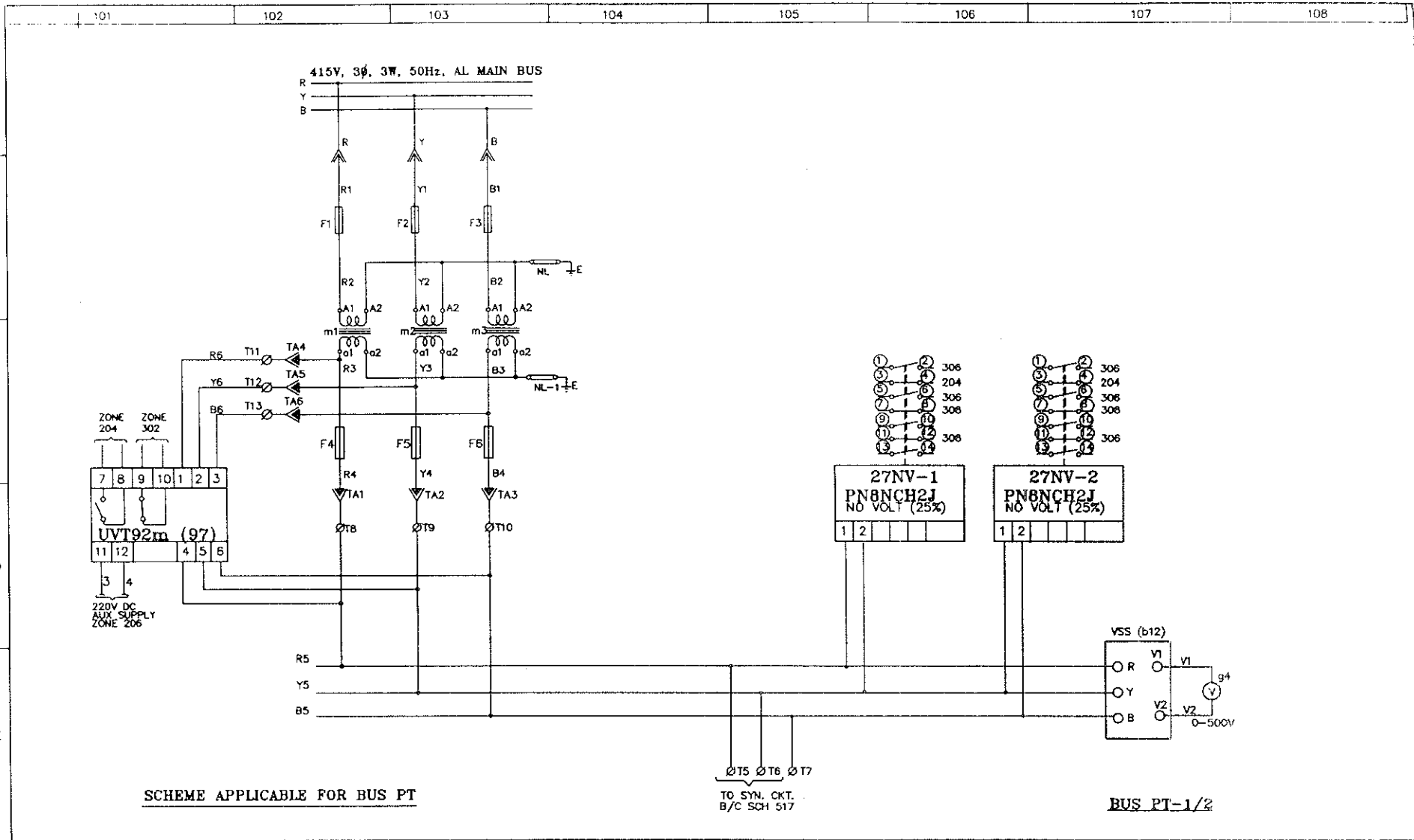
ALL DIMENSIONS ARE IN MM

OWNER:	<b>GUJRAT INDUSTRIES POWER CO. LTD.</b> SLPP-II (UNIT 3&4), 2X125MW
OWNER'S CONSULTANT:	 <b>TCE CONSULTING ENGINEERS LIMITED</b> BANGALORE
	<b>BHARAT HEAVY ELECTRICALS LTD.</b> BOILER AUXILIARIES PLANT RANIPET-632 406
	<b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b>
TITLE:-	<b>SCHEMATIC/WIRING DIAGRAM</b> <b>BUS PT-1&amp;2</b>

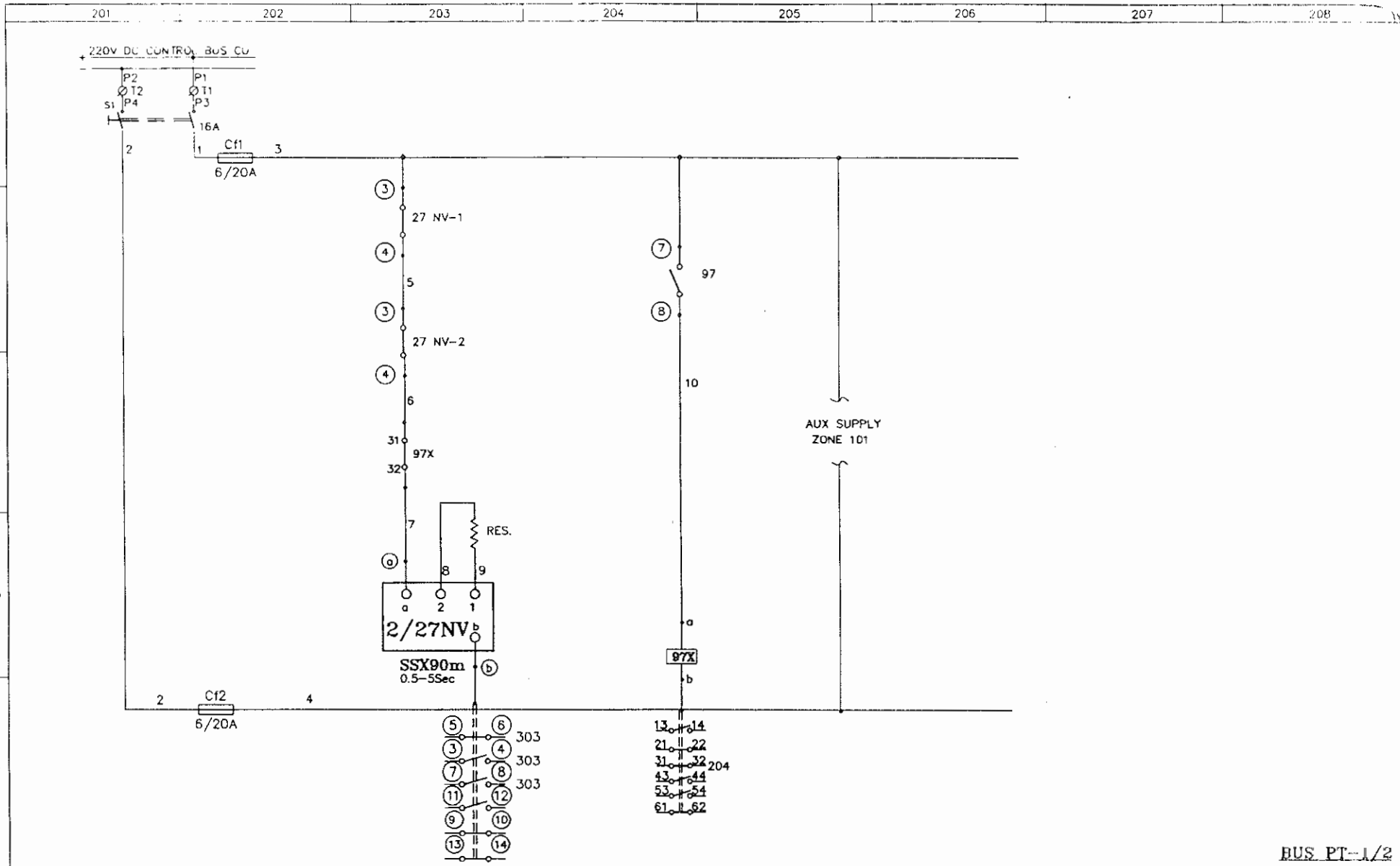
REV.	I-	II-	III-	IV-
Drawn	Date: 03.05.08 Name: SHAHID	PROJECT:- GIPCL-SLPP-II (UNIT 3&4), 2X125MW	 <b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> C-59 NOIDA PHASE-II, NOIDA-201305 DIST. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04	Client:- <b>BHEL-RANIPET</b> Work:- <b>BUS PT-1&amp;2</b> Details:- <b>SCHEMATIC/WIRING DIAGRAM</b> Order No.:- <b>4281049 DT. 09.04.08</b>
Checked		CONSULTANT:- TATA CONSULTING ENGINEERING		DRG. NO. <b>BHEL/J2434/506</b>
Approved				REV. <b>0</b>
				SCALE: NTS
				SHEET NO. NO. OF SHEET
				01A 04



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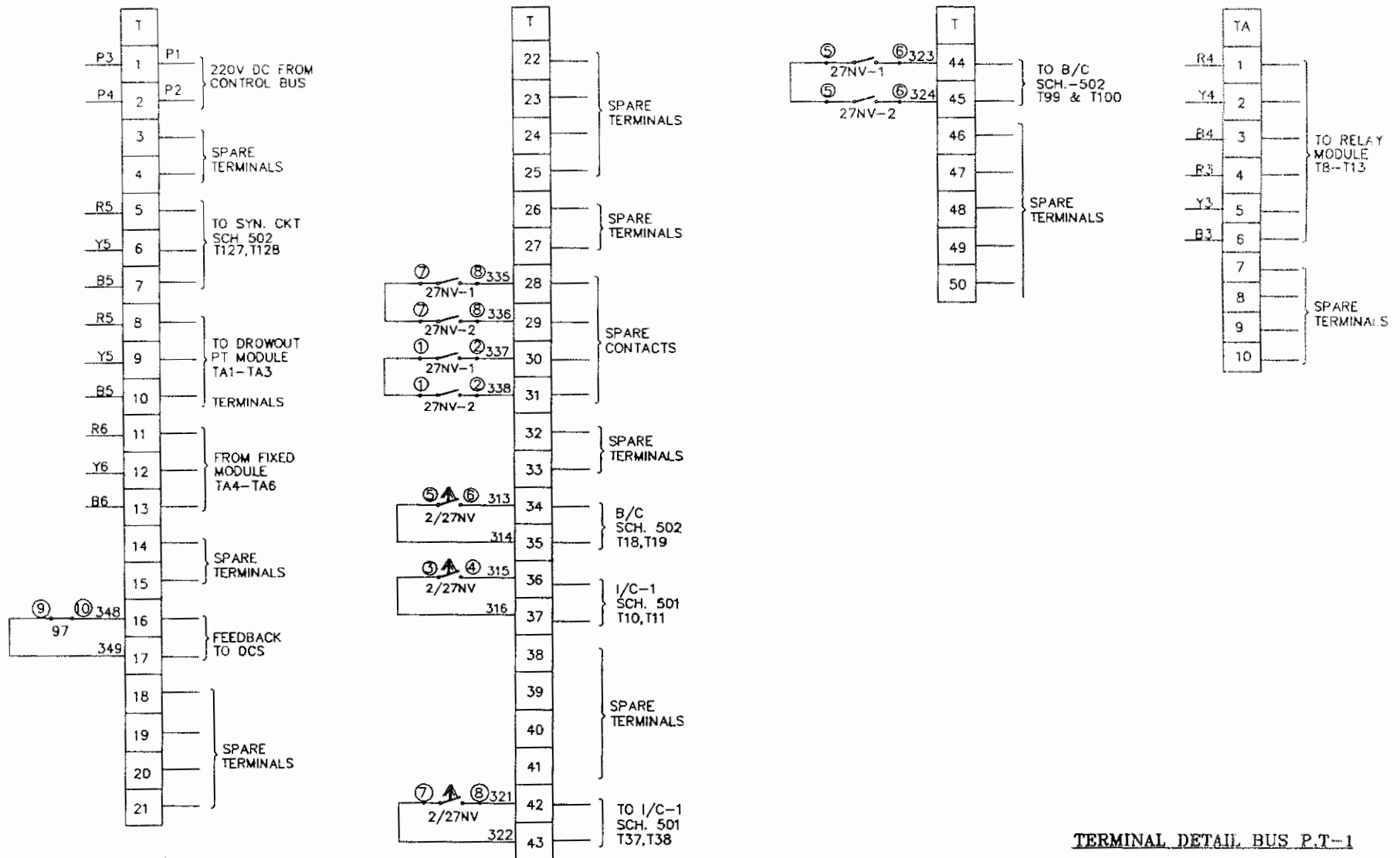
REV.	I-	II-	III-	IV-
Drawn	Date: 03.05.08 Name: SHAHID	<b>PROJECT:-</b> GIPCL-SLPP-II (UNIT 3&4), 2X125MW <b>CONSULTANT:-</b> TATA CONSULTING ENGINEERING		<b>DRG. NO.</b> BHEL/J2434/506
Checked		<b>CONTROLS &amp; SWITCHGEAR COMPANY LTD.</b> C-59 NOIDA PHASE-II, NOIDA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04		<b>REV.</b> 0
Approved		Client: - BHEL, RANIPET. Work: - BUS PT Details: <b>SCHEMATIC/WIRING DIAGRAM</b> Order No.: 4281049 DT 09.04.08		<b>SHEET NO.</b> 01 <b>NO. OF SHEET</b> 04



BUS PT--1/2

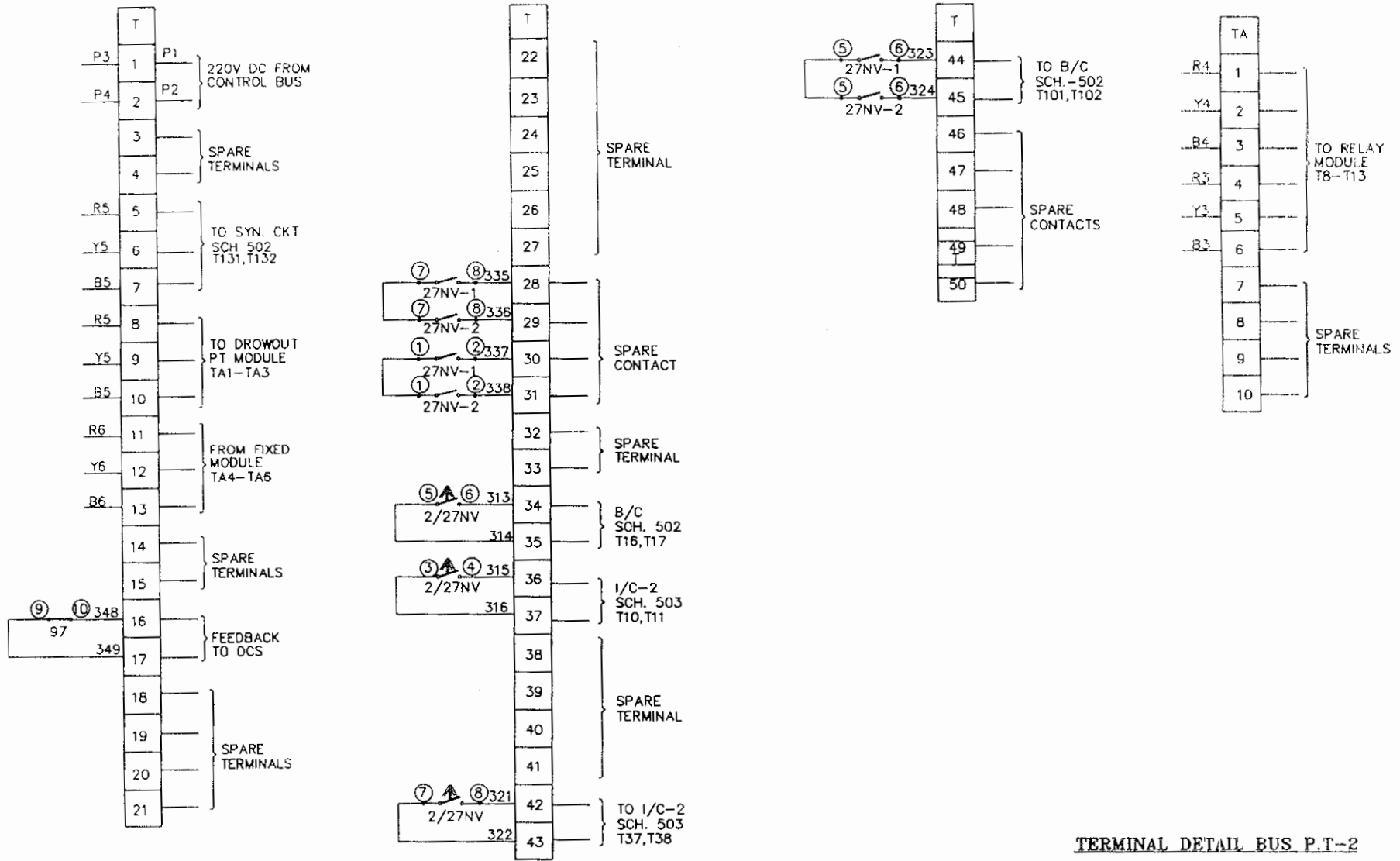
REV.	I-			III-	IV-				
Drawn	03.05.08	Name	SHAHID	PROJECT:-	GIPCL-SLPP-II (UNIT 3&4) 2X125MW	Client:- BHEL, RANIPET.			
Checked		CONSULTANT:-	TATA CONSULTING ENGINEERING	CONTROLS & SWITCHGEAR COMPANY LTD.	C-59 NOIDA PHASE-II, NOIDA-201305 DISTT. GAUTAM BUDDH NAGAR (U.P.) FORMAT No. : QAF-04/04	Work:- BUS PT			
Approved						Details: SCHEMATIC/WIRING DIAGRAM			
						DRG. NO.	BHEL/J2434/506	REV.	0
						SCALE:	NTS	SHEET NO.	02
						Order No.:	4281049 DT 06.04.08	NO. OF SHEET	04





**TERMINAL DETAIL BUS P.T.-1**

REV.	I-	III-	IV-
Drawn	Date: 03.05.08	Name: SHAHID	PROJECT:- GIPCL-SLPP-II (UNIT 3&4), 2X125MW
Checked			CONSULTANT:- TATA CONSULTING ENGINEERING
Approved			
		Client:- BHEL, RANIPET. Work:- BUS PT Details: SCHEMATIC/WIRING DIAGRAM Order No.: 4281049 DT 09.04.08	DRG. NO. BHEL/J2434/506 SCALE: NTS SHEET NO. 03 NO. OF SHEET 04
			REV. 0



TERMINAL DETAIL BUS P.T-2

REV.	I-		III-	IV-	
Drawn	Date: 03.05.08	Name: SHAHID	PROJECT:- GIPCL-SLPP-II (UNIT 3&4), 2X125MW	Client:- BHEL, RANIPET.	DRG. NO. BHEL/J2434/506
Checked			CONSULTANT:- TATA CONSULTING ENGINEERING	Work:- BUS PT	REV. 0
Approved				Details: SCHEMATIC/WIRING DIAGRAM	SCALE: NTS
				Order No.: 4281049 DT 09.04.08	SHEET NO. NO. OF SHEET
					04 04



CONTROLS & SWITCHGEAR COMPANY LTD.  
C-59 NOIDA PHASE-II, NOIDA-201305  
DISTT. GAUTAM BUDDH NAGAR (U.P.)  
FORMAT No. : QAF-04/04

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

OWNER:

GUJRAT INDUSTRIES POWER CO. LTD.  
SLPP-II (UNIT 3&4), 2X125MW

OWNER'S CONSULTANT:



TCE CONSULTING ENGINEERS LIMITED  
BANGALORE



BHARAT HEAVY ELECTRICALS LTD.  
BOILER AUXILIARIES PLANT  
RANIPET-632 406



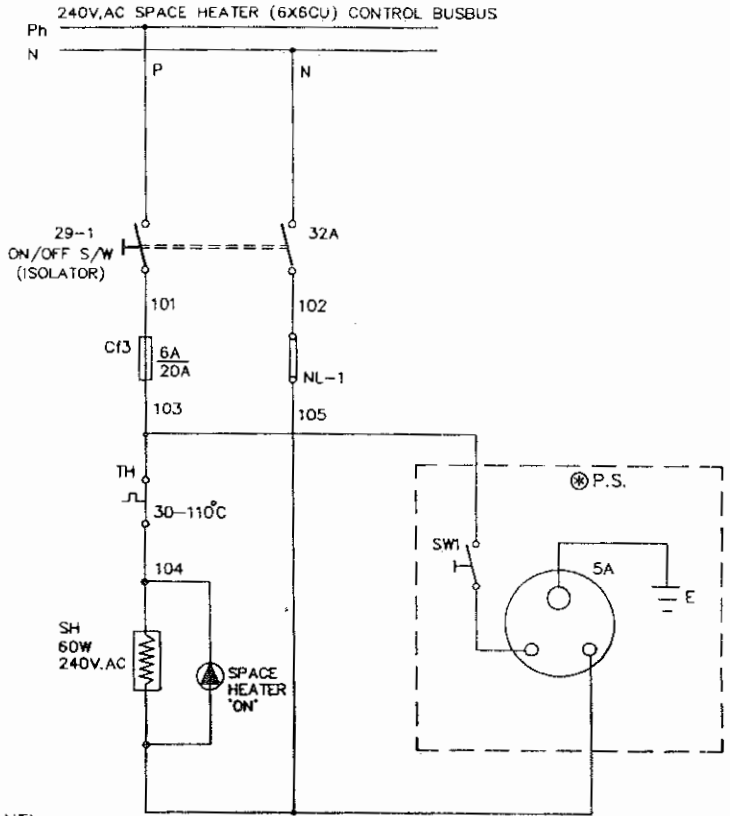
CONTROLS & SWITCHGEAR COMPANY LTD.

TITLE:-

SCHEMATIC/WIRING DIAGRAM  
SPACE HEATER CIRCUIT

REV.	I-	II-	III-	IV-			REV.		
	Date	Name	PROJECT:- GIPCL-SLPP-II (UNIT 3&4), 2X125MW			Client:- BHEL-RANIPET		DRG. NO.	REV.
Drawn	03.05.08	SHAHID	CONSULTANT:- TATA CONSULTING ENGINEERING			Work:- SPACE HEATER CIRCUIT		BHEL/J2434/507	0
Checked						Details:- SCHEMATIC/WIRING DIAGRAM		SCALE: NTS	SHEET NO. NO. OF SHEET
Approved					Order No.:- 4281049 DT. 09.04.08				

CONTROLS & SWITCHGEAR COMPANY LTD.  
C-59 NOIDA PHASE-II, NOIDA-201305  
DIST. GAUTAM BUDDH NAGAR (U.P.)  
FORMAT No. : QAF-04/04



1. PANEL SPACE HEATER CIRCUIT SHALL BE PROVIDED IN CABLE ALLEY OF EACH VERTICAL PANEL
2. P.S. CKT. SHALL BE PROVIDED IN MIDDLE PANEL OF EACH SHIPPING SECTION.

**THIS SCHEME APPLICABLE FOR SPACE HEATER FEEDER**

and they should neither be copied nor given to a third person, without the prior written consent of the company.

REV.	III -	IV -	DRG. NO.		
	I -	II -	DRG. NO.		
Drawn	Date 03.05.08	Name SHAHID	Client BHEL-RANIPET	DRG. NO. BHEL/J2434/507	REV. 0
Checked			Work SPACE HEATER		
Approved			Details SCHEMATIC/WIRING DIAGRAM		
			Order No. 4281049 DT. 09.04.08	SCALE: NTS	SHEET NO. 02
					NO. OF SHEET 02

PROJECT:-  
GIPCL-SLPP-II (UNIT 3&4), 2X125MW

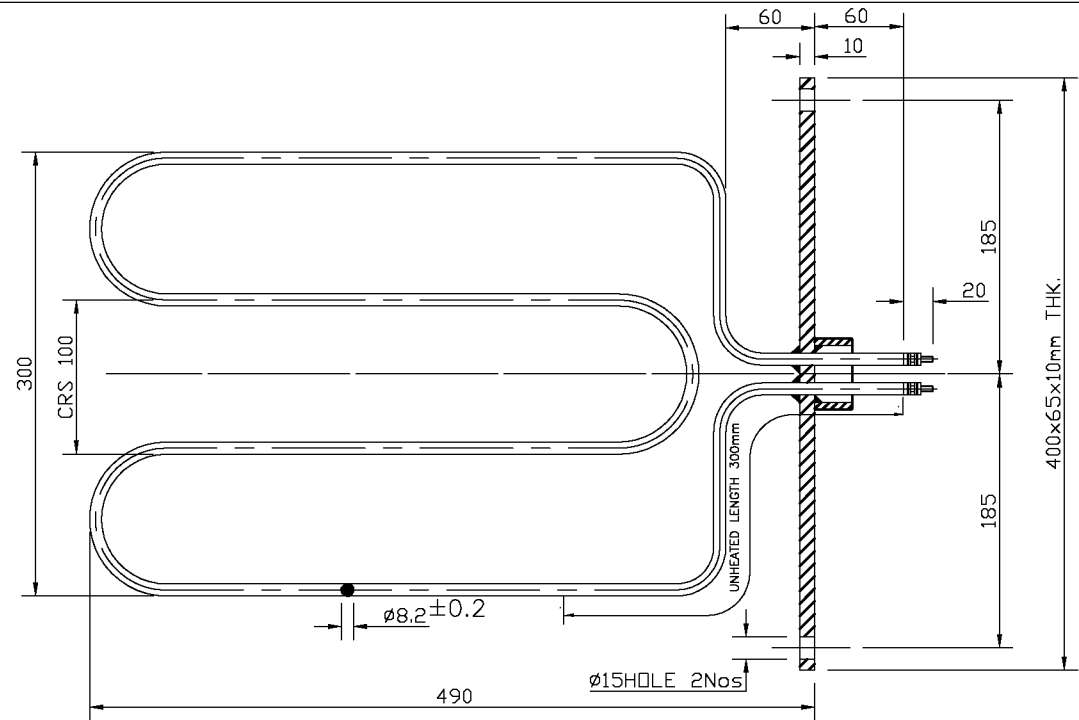
CONSULTANT:-  
TATA CONSULTING ENGINEERING



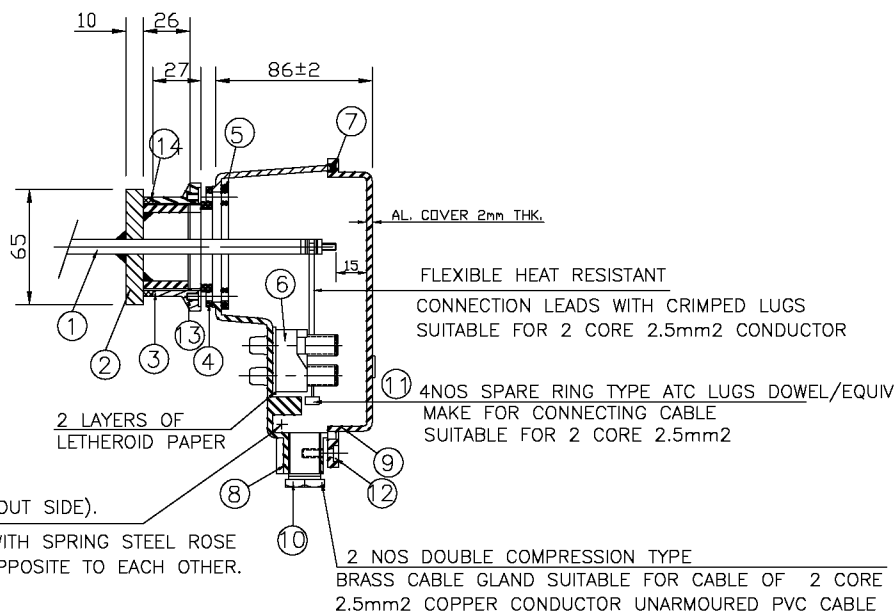
CONTROLS & SWITCHGEAR COMPANY LTD.  
C-59, NOIDA PHASE II, NOIDA - 201305  
DIST. GAUTAM BUDDH NAGAR (U.P.)  
FORMAT No.: QAF-04/04

Client: BHEL-RANIPET  
Work: SPACE HEATER  
Details: SCHEMATIC/WIRING DIAGRAM  
Order No.: 4281049 DT. 09.04.08

DRG. NO.: BHEL/J2434/507  
REV.: 0  
SHEET NO.: 02  
NO. OF SHEET: 02



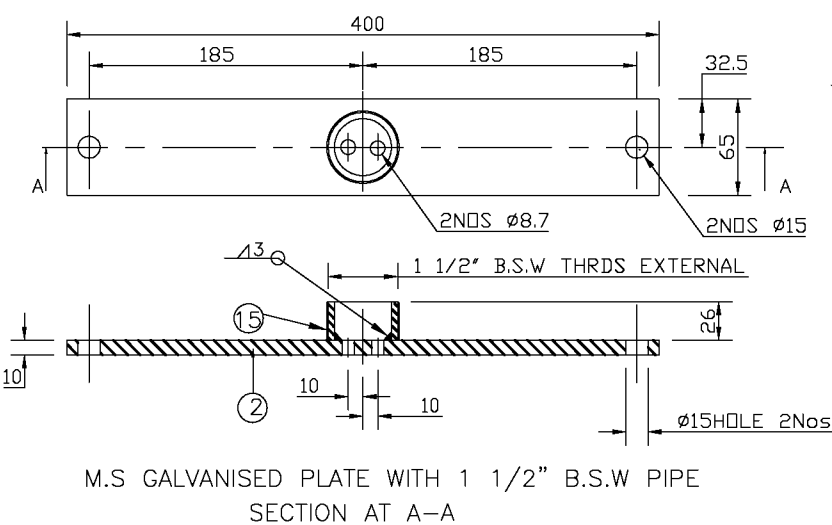
DETAIL OF HEATING ELEMENT



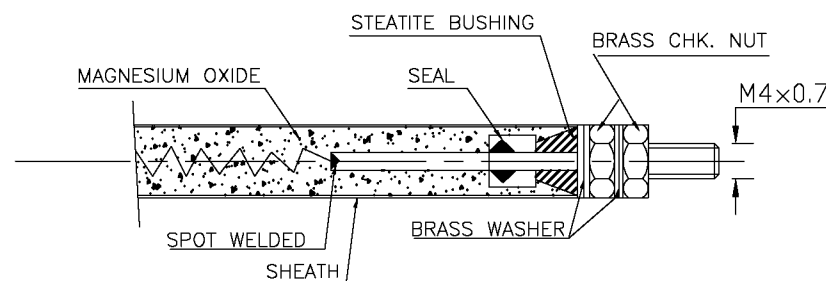
EARTHING TERMINAL (OUT SIDE).

2NOS M6 TERMINAL WITH SPRING STEEL ROSE COURTNEY WASHER OPPOSITE TO EACH OTHER.

2 NOS DOUBLE COMPRESSION TYPE BRASS CABLE GLAND SUITABLE FOR CABLE OF 2 CORE 2.5mm2 COPPER CONDUCTOR UNARMoured PVC CABLE



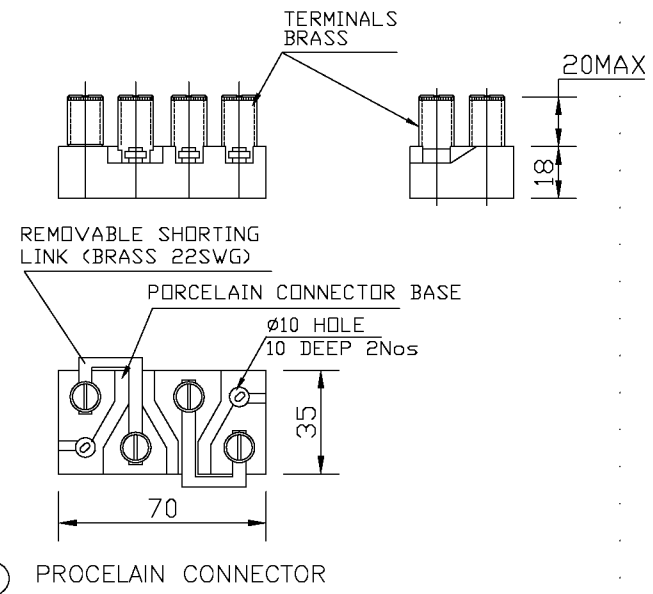
M.S GALVANISED PLATE WITH 1 1/2" B.S.W PIPE SECTION AT A-A



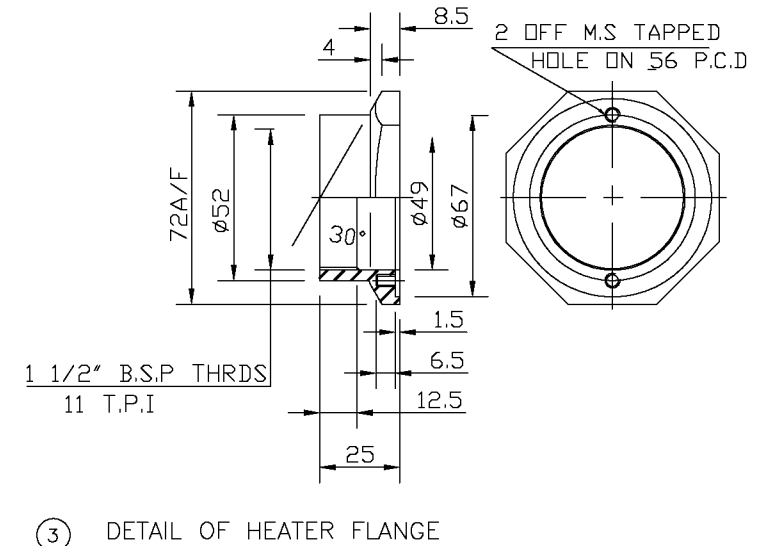
NOTE:-

- HEATING ELEMENT COIL MATERIAL-KANTHAL D WIRE.
  - ALL FERROUS PARTS TO BE GALVENZED AND ALL BRASS PARTS TO BE NICKLE PLATED TO 7 MICRONS THICKNESS (minimum)
  - ALUMINIUM TERMINAL BOX TO BE PAINTED IN ALUMINIUM PAINT.
  - TERMINAL BOX MATERIAL ALUMINIUM ALLOY PRESSURE DIE CAST.
  - CABLE GLANDS WILL BE PROVIDED WITH DUMMY PLUGS
  - METALLIC HEATER RATING NAME PLATE FIXED ON TERMINAL BOX COVER
- TERMINAL BOX SHALL BE SUITABLE FOR IP 56 DEGREE OF PROTECTION AS PER IS 13947  
SHEATING MATERIAL :- STAINLESS STEEL SS321  
BHEL DRG. REF. No. 1-00-114-27991, REV-00  
TECH. SPECS ; TEP:BARH3 x 660:HE:009: REV-00

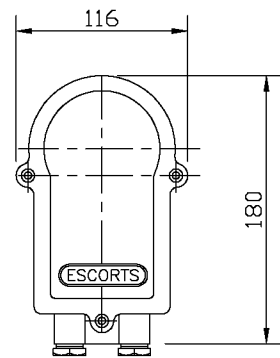
TYPE:- R2280/300-300/1680 CN  
415 V - 1000 W/1 PHASE



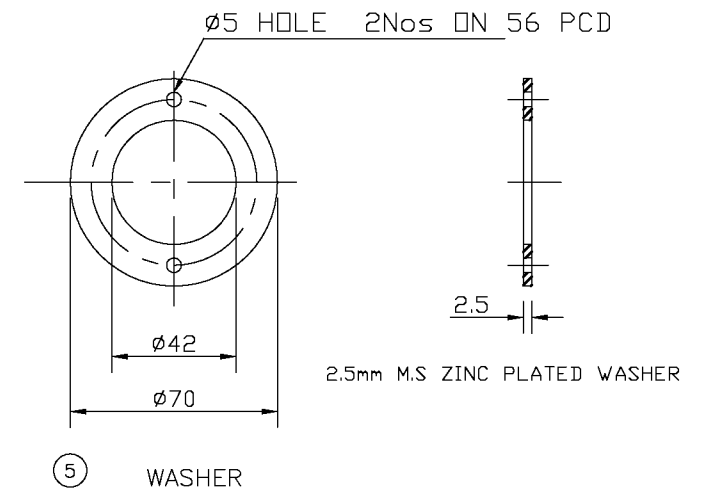
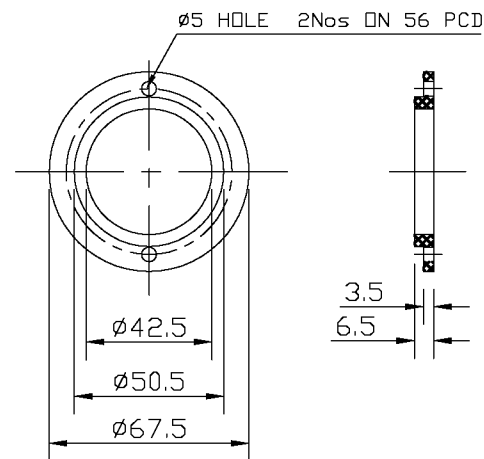
⑥ PORCELAIN CONNECTOR



③ DETAIL OF HEATER FLANGE



④ NEOPRENE WASHER

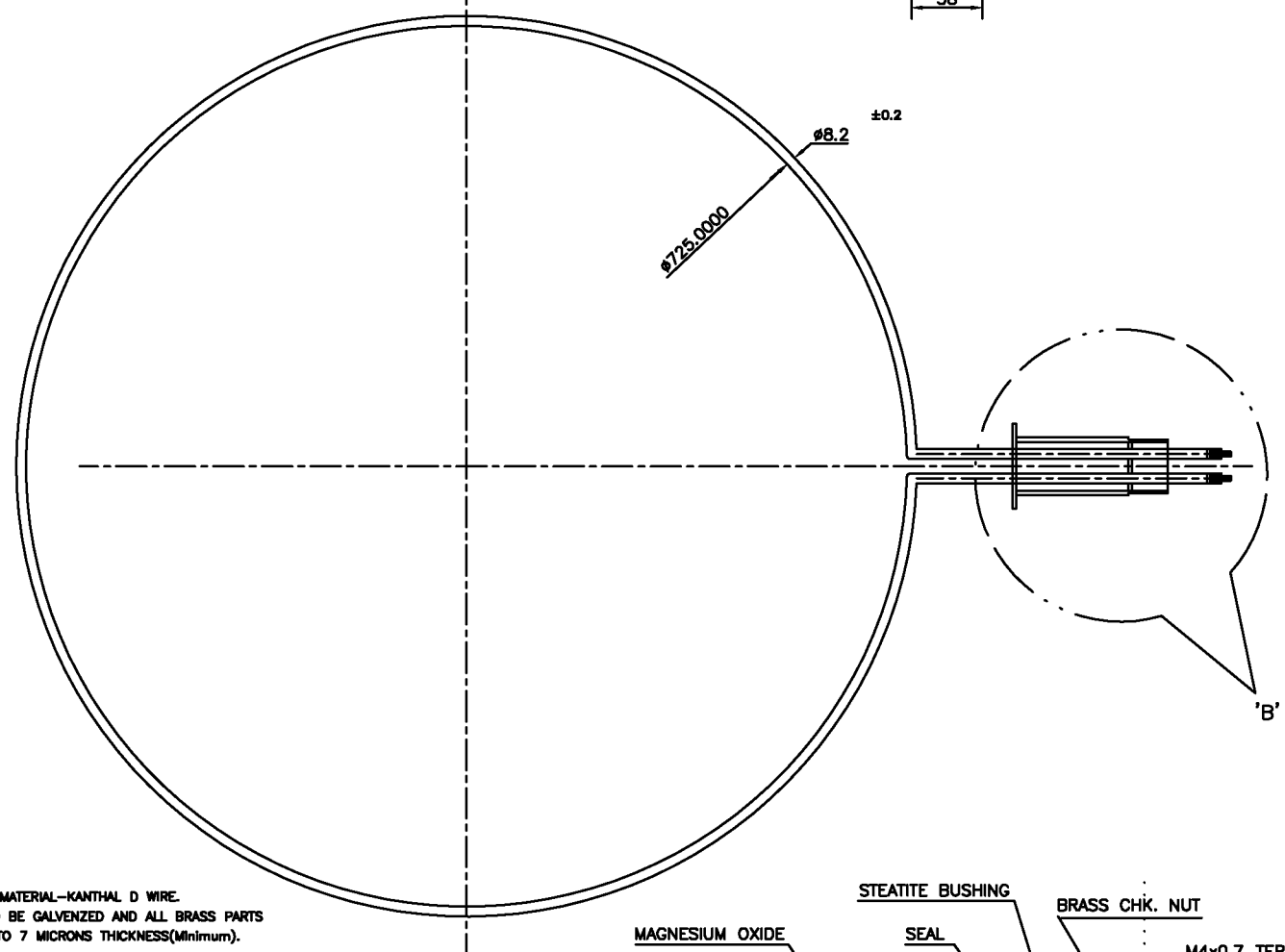
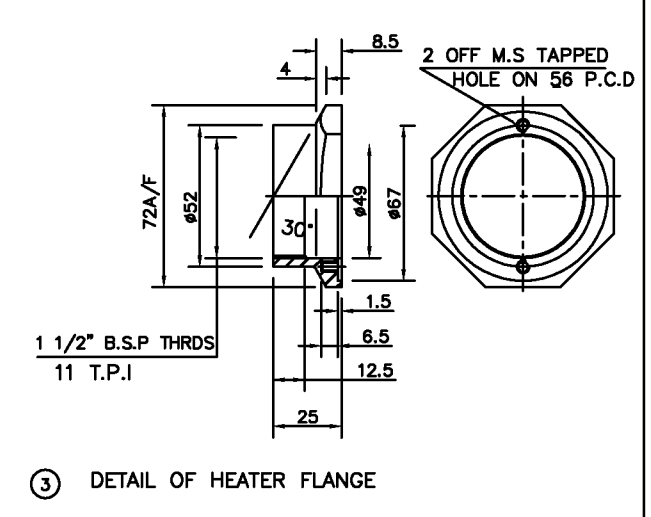
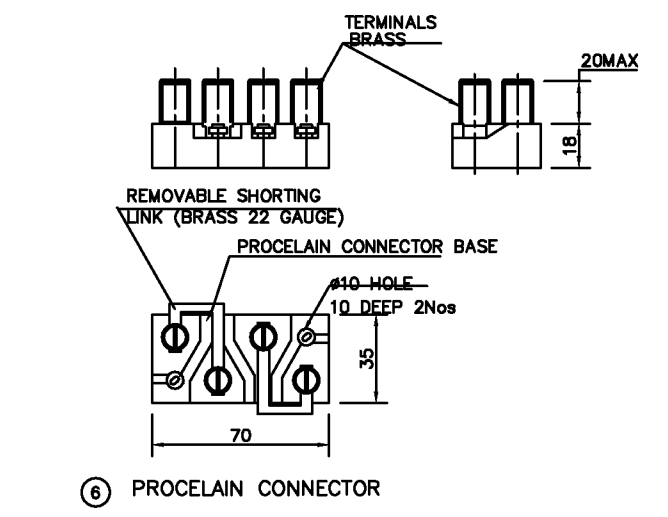
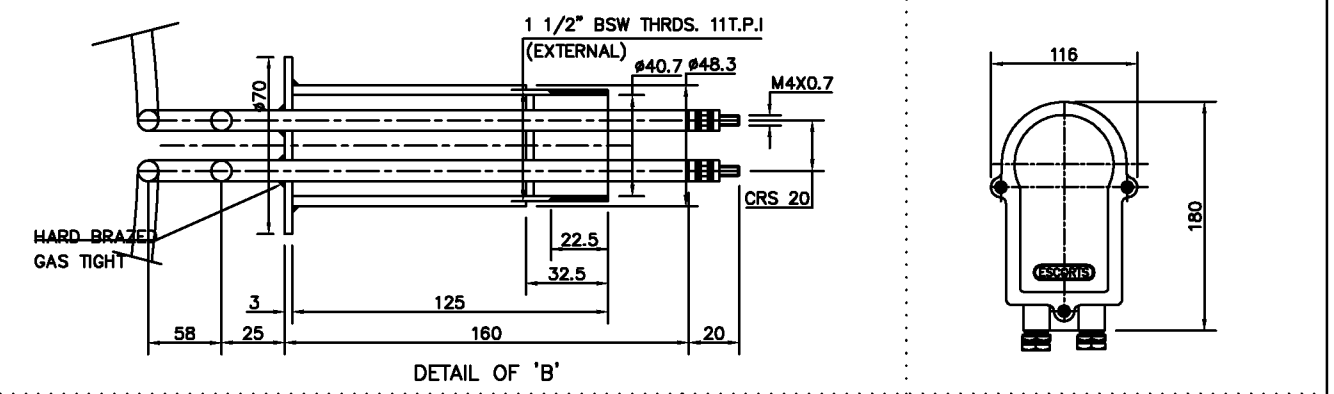
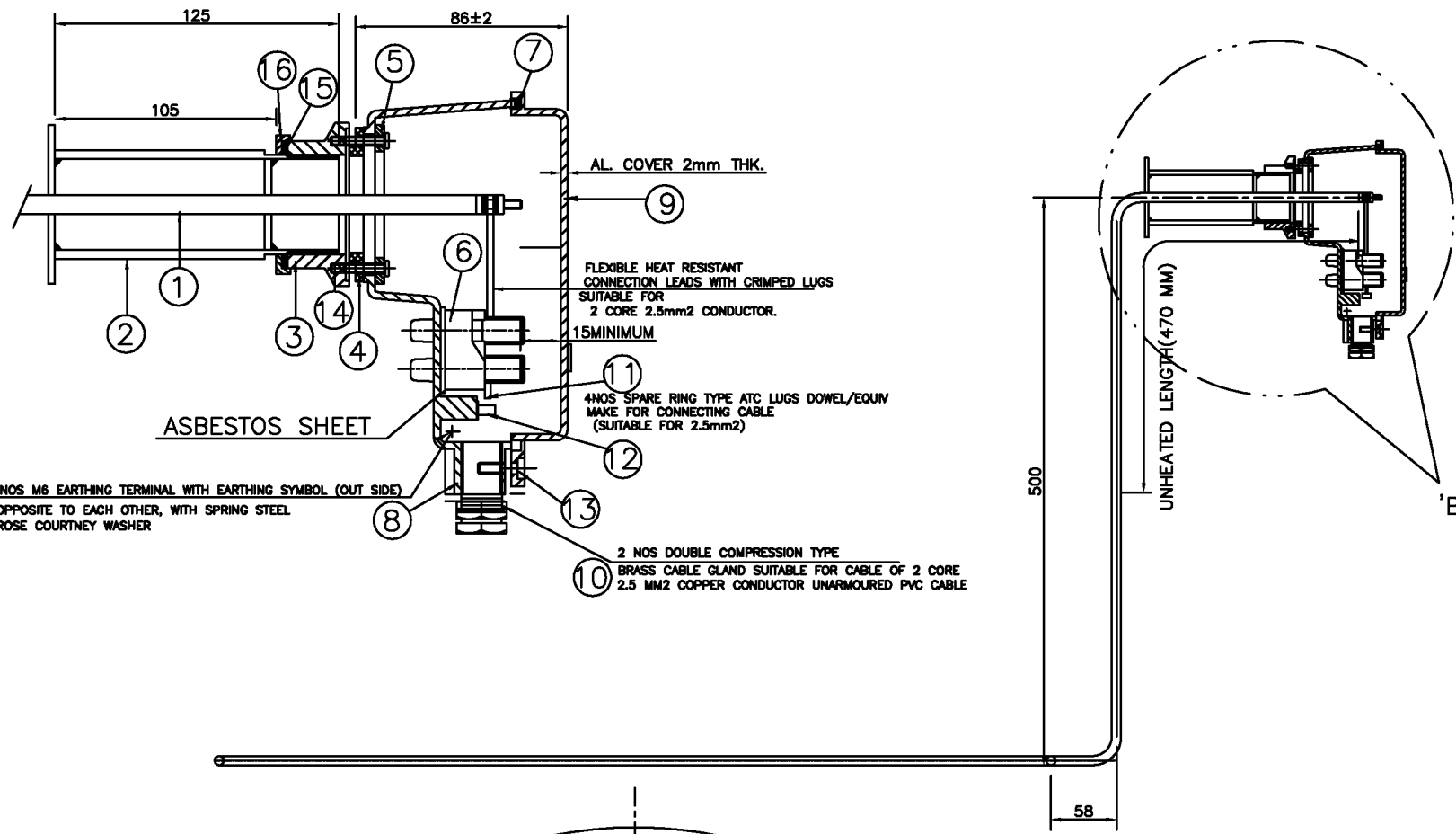


⑤ WASHER

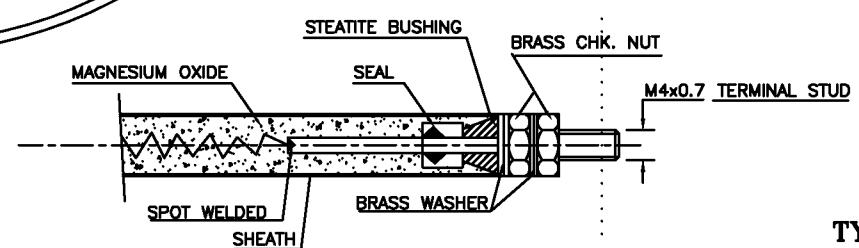
P.O No.	4203055
DATE	27/01/2011
PROJECT	BARH STPP-STAGE-I
QTY.	216 Nos.

Item	Description	No. off	Material	Size	Remarks
16	CHECKNUT	1	BRASS NICKEL PLATED		
15	MS PIPE 1-1/2" BSP	1	MS GALVENIZED 48.3x3.25, L=26		
14	NEOPRENE GASKET	1	NEOPRENE (SHORE HARDNESS 70-75)		
13	SCREW FOR TER. BOX FIXING	2	M5X15 GALVENIZED		
12	SCREW FOR COVER FIXING	3	M5X15 GALVENIZED		
11	CABLE LUG.(Insulated)	4	COPPER(DOWELS/JAINSON).		
10	COMP.TYPE CABLE GLAND	2	BRASS		
9	ALU. T.BOX COVER	1	ALU. PRESSURE DIE CASTING		
8	ALU. T.BOX HOUSING	1	ALU. PRESSURE DIE CASTING		
7	NEOPRENE GASKET	1	NEOPRENE (SHORE HARDNESS 60-65)		
6	PORCELAIN CONNECTOR	1	PORCELAIN		
5	M.S WASHER	1	M.S ZING PLATED		
4	NEOPRENE WASHER	1	NEOPRENE (SHORE HARDNESS 70-75)		
3	HEATER FLANGE	1	BRASS CASTING NICKEL PLATED		
2	MS PLATE	1	MS GALVENIZED		
1	HEATING ELEMENTS	1	SS321 TUBE		

Issue	Amendments	Sign	Date	Issue	Amendments	Sign	Date
00	INITIAL DRAWING FPR APP.	GSJ	10.02.11				
~	As Received	DRN	NSC.	10.02.11	Dimensions in		<b>ESCORTS LIMITED</b> RESEARCH & DEVELOPMENT FARIDABAD
∇	Rough Machined	CHKD.	CNC.	10.02.11	Millimeters		
∇∇	Fine Machined	APPD.	G.SJOHAR	10.02.11	Inches		
∇∇∇	Grinding (G)	SCALE					
PROJECT: HEATING ELEMENTS TITLE: HEATING ELEMENT FOR SHAFT INSULATOR DRG NO.: HEA4.1208 REV: 00							



NOTE:-  
 1. HEATING ELEMENT COIL MATERIAL-KANTHAL D WIRE.  
 2. ALL FERROUS PARTS TO BE GALVENEZED AND ALL BRASS PARTS TO BE NICKLE PLATED TO 7 MICRONS THICKNESS(Minimum).  
 3. ALUMINIUM TERMINAL BOX TO BE PAINTED IN ALUMINIUM PAINT.  
 4. TERMINAL BOX MATERIAL ALUMINIUM ALLOY PRESSURE DIE CAST.  
 5. CABLE GLAND WILL BE PROVIDED WITH DUMMY PLUGS  
 6. METALLIC HEATER RATING NAME PLATE FIXED ON TERMINAL BOX COVER  
 TERMINAL BOX SHALL BE SUITABLE FOR IP 56 DEGREE OF PROTECTION AS PER IS 13947  
 SHEATHING MATERIAL :- STAINLESS STEEL SS321



TYPE:- R3700/470-470/2760 CN  
 415 V - 1000 W/1 PHASE

Item	Description	Qty	Material	Size	Remarks
16	CHECK NUT	1	BRASS NICKEL PLATED		
15	NEOPRENE GASKET	1	NEOPRENE(SHORE HARDNESS 70-75)		
14	SCREW FOR TER. BOX FIXING	2	M5X15 (GALVENEZED)		
13	SCREW FOR COVER FIXING	3	M5X15 (GALVENEZED)		
12	CABLE CLAMP	2	MS(PLATED)		
11	CABLE LUG.(Insulated)	4	COPPER(DOWEL/JAINSONS)		
10	DOUBLE COMP. TYPE CABLE GLAND	2	BRASS		
9	ALU. T.BOX COVER	1	ALU. DIE CASTING		
8	ALU. T.BOX HOUSING	1	ALU. CASTING		
7	NEOPRENE GASKET	1	NEOPRENE(SHORE HARDNESS 60-65)		
6	PROCELAIN CONNECTOR	1	PORCELAIN		
5	M.S WASHER	1	M.S ZING PLATED		
4	NEOPRENE WASHER	1	NEOPRENE(SHORE HARDNESS 70-75)		
3	HEATER FLANGE	1	BRASS CASTING NICKEL PLATED		
2	HOUSING	1	MS PIPE GALVANIZED, #48.3x3.25x125 L		
1	HEATING ELEMENTS	1	SS 321 TUBE		

Issue	Amendments	Sign	Date	Issue	Amendments	Sign	Date
03	drg. revised as marked			02	drg. revised as marked		
01	drg. revised						

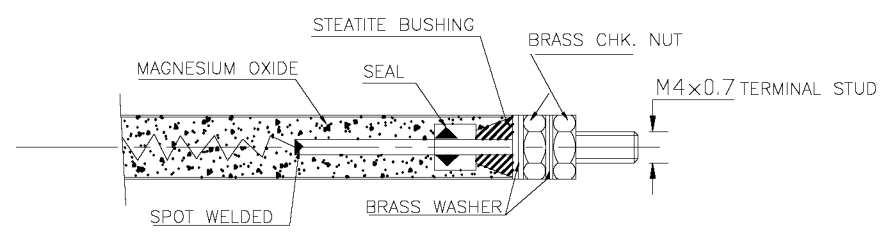
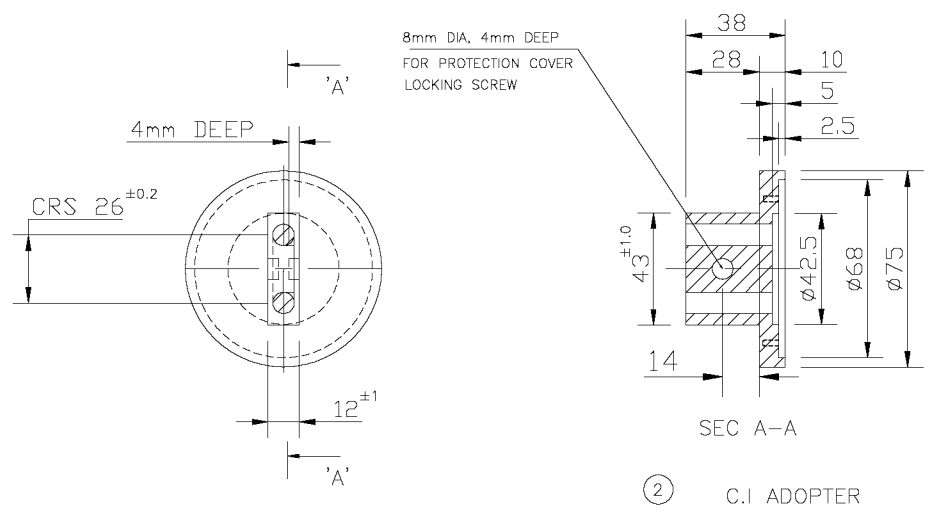
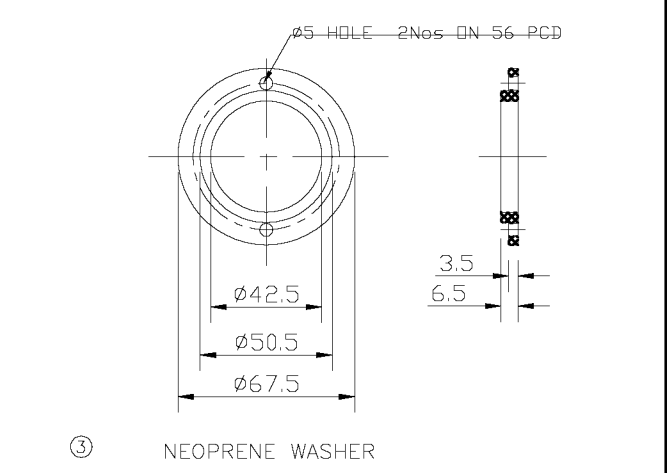
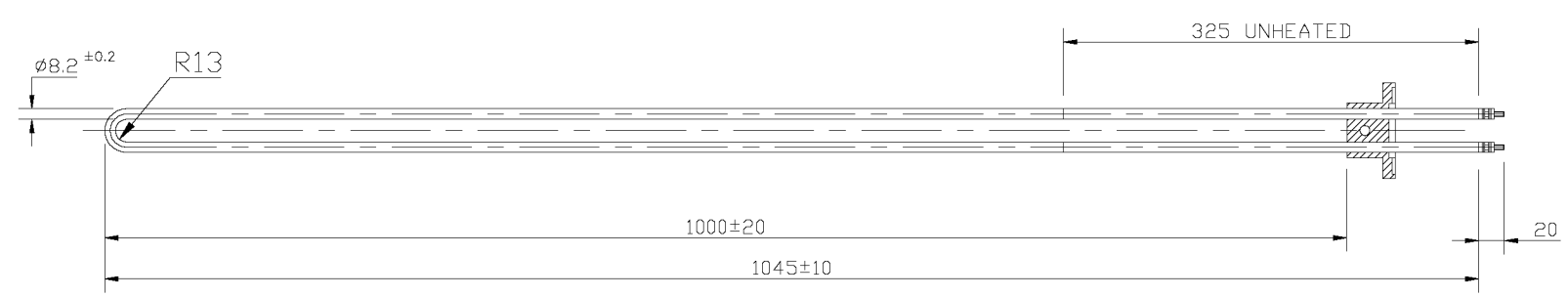
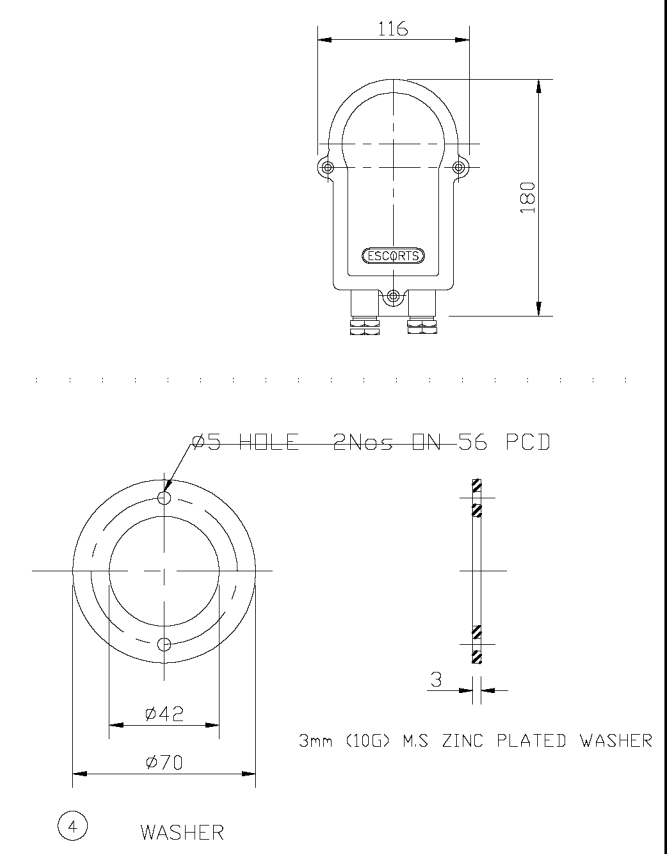
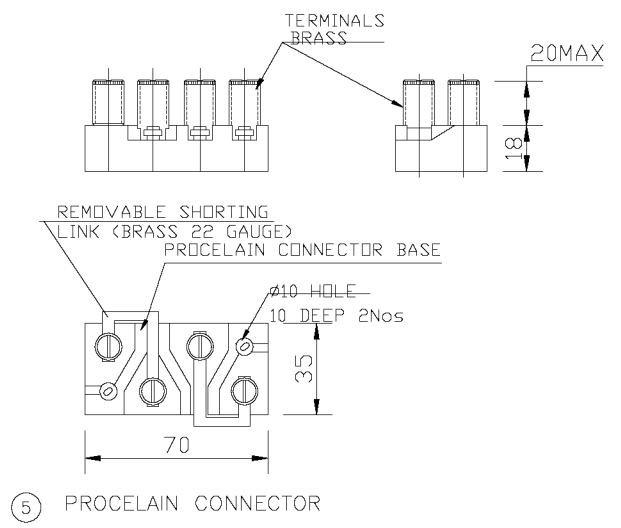
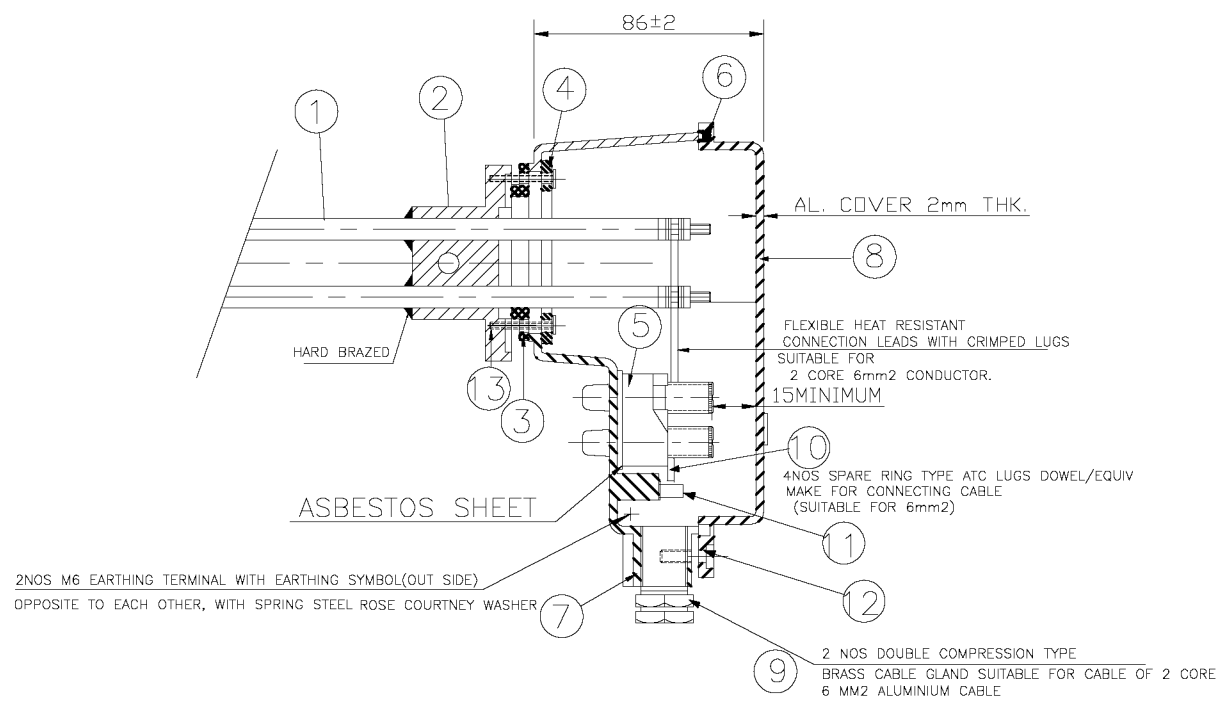
  

Surface Symbols	Sign	Date	Dimensions in
~ As Received	DRN ANAND		Millimeters
▽ Rough Machined	CHKD. SATBIR		Inches
▽▽ Fine Machined	APPD. G.SJOHAR		
▽▽▽ Grinding (G)			

PROJECT	TITLE	DRG NO.
HEATING ELEMENTS	HEATING ELEMENT FOR INSULATOR HOUSING	HEA4.1210





CROSS SECTION OF HEATING ELEMENTS

- NOTE:-**
- HEATING ELEMENT COIL MATERIAL-KANTHAL D WIRE.
  - ALL FERROUS PARTS TO BE GALVANIZED AND ALL BRASS PARTS TO BE NICKLE PLATED TO 7 MICRONS THICKNESS.
  - ALUMINIUM TERMINAL BOX TO BE PAINTED IN ALUMINIUM PAINT.
  - TERMINAL BOX MATERIAL ALUMINIUM ALLOY PRESSURE DIE CAST.
  - CABLE GLAND WILL BE PROVIDED WITH DUMMY PLUGS
  - METALLIC HEATER RATING NAME PLATE FIXED ON TERMINAL BOX COVER
  - QTY. : 200 NOS.

TYPE:- R2090/325-325/1440 CN  
415 V - 500 W

15					
14					
13	SCREW FOR TER. BOX FIXING	2	M5 X15		
12	SCREW FOR COVER FIXING	3	M5 X15		
11	CABLE CLAMPS	2	MS		
10	CABLE LUG.	4	DOWEL/JAINSONS		
9	DOUBLE COMP.TYPE CABLE GLAND	2	BRASS		
8	ALU. T.BOX COVER	1	ALU. DIE CASTING		
7	ALU. T.BOX HOUSING	1	ALU. CASTING		
6	NEOPRENE GASKET	1	NEOPRENE		
5	PROCELAIN CONNECTOR	1	PORCELAIN		
4	M.S WASHER	1	M.S ZING PLATED		
3	NEOPRENE WASHER	1	NEOPRENE		
2	C.I. ADAPTER	1	CAST IRON		
1	HEATING ELEMENTS	1	CHROME MNIKEL 8.2 mm dia		
Item	Description	No. of	Material	Size	Remarks
02	Drq revised as per marked 02	GSJ	22.6.02	04	cable glands make indicated
01	Drq revised as per BHEL comments	GSJ	19.6.01	03	Drq revised
Issue	Amendments	Sign	Date	Issue	Amendments
Surface Symbols	Sign	Date	Dimensions In	 <b>ESCORTS LIMITED</b> RESEARCH & DEVELOPMENT FARIDABAD	
~ As Received	DRN	(N) Singh	31.10.08		
∇ Rough Machined	CHKD.	CNC	31.10.08		
∇∇ Fine Machined	APPD.	G.S.JDHAR	31.10.08		
SCALE	NTS		TITLE		DRG NO.
			HEATING ELEMENT FOR		HEA4.1243
			E.S.P. HOPPER		REV 00
PROJECT ANPAR THERMAL POWER STATION					

# PRODUCT

## RAPPER CONTROL PANEL

PROJECT  
GIPCL - SLPP  
UNITS 3 & 4

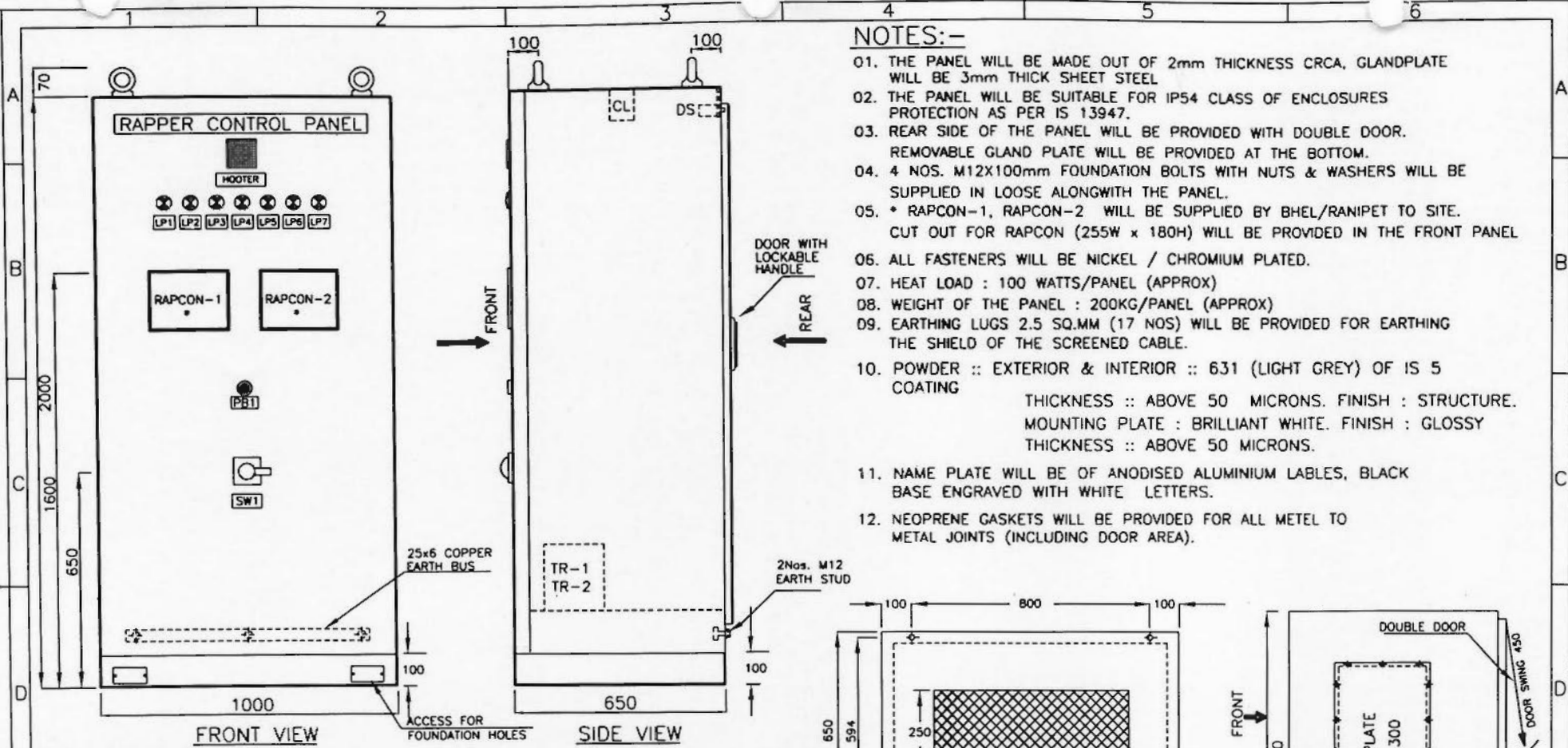
CUSTOMER  
M/s. BHEL / AUX. PLANT  
RANIPET - 632 406

SUPPLIER  
M/s. SAJAS ELECTRICALS  
MATHUR - 622 515

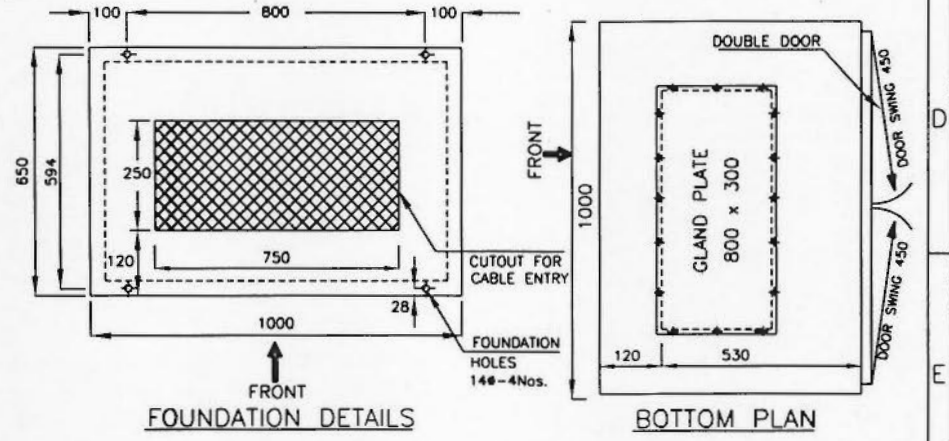
SL.No.	DRAWING No.	NAME OF TITLE:-	Drg.Sh.No.	REVISION STATUS				
				00	01	02	03	04
01.	SE-487 / 07-02-01	COVER SHEET	1 / 11	X	X	X		
02.	SE-487 / 07-02-01	GENERAL ARRANGEMENT OF RCP	2 / 11	X	X	X		
03.	SE-487 / 07-02-01	INTERNAL ARRANGEMENT OF RCP	3 / 11	X	X	X		
04.	SE-487 / 07-02-01	MAIN AND AUXILIARY POWER SUPPLY SCHEME OF RCP	4 / 11	X	X	X		
05.	SE-487 / 07-02-01	SCHEMATIC DIAGRAM OF RCP - EP-A	5 / 11	X	X	X		
06.	SE-487 / 07-02-01	SCHEMATIC DIAGRAM OF RCP - EP-A	6 / 11	X	X	X		
07.	SE-487 / 07-02-01	SCHEMATIC DIAGRAM OF RCP - EP-B	7 / 11	X	X	X		
08.	SE-487 / 07-02-01	SCHEMATIC DIAGRAM OF RCP - EP-B	8 / 11	X	X	X		
09.	SE-487 / 07-02-01	SCHEME FOR SERIAL COMMUNICATION OF RCP	9 / 11	X	X	X		
10.	SE-487 / 07-02-01	TB DIAGRAM	10 / 11	X	X	X		
11.	SE-487 / 07-02-01	BILL OF MATERIALS	11 / 11	X	X	X		

REV	DATE	ALTERED	BY	REV	DATE	ALTERED	BY	NAME	SIGN	DATE	PO.NO.	DATE	Qty.	
02	11.01.08	CHECKED	✓	01	06.11.07	CHECKED	✓	DRN M.Md.IBRAHIM	-SD-	05.05.2007	4263337/DATE : 08.03.2007 /	08.03.2007	02 Nos.	
AS FITTED				REVISED AS PER BHEL (R) COMMENTS DATED 01.11.2007				CKD D.R.BABU	-SD-	05.05.2007	SCALE - MTS	Drg.No.	SHT.No.	REV
								APPD S.JAYARAM	-SD-	05.05.2007	SE-487/07-02-01	01 / 11	02	

ALL DIMENSIONS ARE IN MM



- NOTES:-**
01. THE PANEL WILL BE MADE OUT OF 2mm THICKNESS CRCA, GLANDPLATE WILL BE 3mm THICK SHEET STEEL
  02. THE PANEL WILL BE SUITABLE FOR IP54 CLASS OF ENCLOSURES PROTECTION AS PER IS 13947.
  03. REAR SIDE OF THE PANEL WILL BE PROVIDED WITH DOUBLE DOOR. REMOVABLE GLAND PLATE WILL BE PROVIDED AT THE BOTTOM.
  04. 4 NOS. M12X100mm FOUNDATION BOLTS WITH NUTS & WASHERS WILL BE SUPPLIED IN LOOSE ALONGWITH THE PANEL.
  05. \* RAPCON-1, RAPCON-2 WILL BE SUPPLIED BY BHEL/RANIPET TO SITE. CUT OUT FOR RAPCON (255W x 180H) WILL BE PROVIDED IN THE FRONT PANEL
  06. ALL FASTENERS WILL BE NICKEL / CHROMIUM PLATED.
  07. HEAT LOAD : 100 WATTS/PANEL (APPROX)
  08. WEIGHT OF THE PANEL : 200KG/PANEL (APPROX)
  09. EARTHING LUGS 2.5 SQ.MM (17 NOS) WILL BE PROVIDED FOR EARTHING THE SHIELD OF THE SCREENED CABLE.
  10. POWDER :: EXTERIOR & INTERIOR :: 631 (LIGHT GREY) OF IS 5 COATING  
 THICKNESS :: ABOVE 50 MICRONS. FINISH : STRUCTURE.  
 MOUNTING PLATE : BRILLIANT WHITE. FINISH : GLOSSY  
 THICKNESS :: ABOVE 50 MICRONS.
  11. NAME PLATE WILL BE OF ANODISED ALUMINIUM LABELS, BLACK BASE ENGRAVED WITH WHITE LETTERS.
  12. NEOPRENE GASKETS WILL BE PROVIDED FOR ALL METEL TO METAL JOINTS (INCLUDING DOOR AREA).



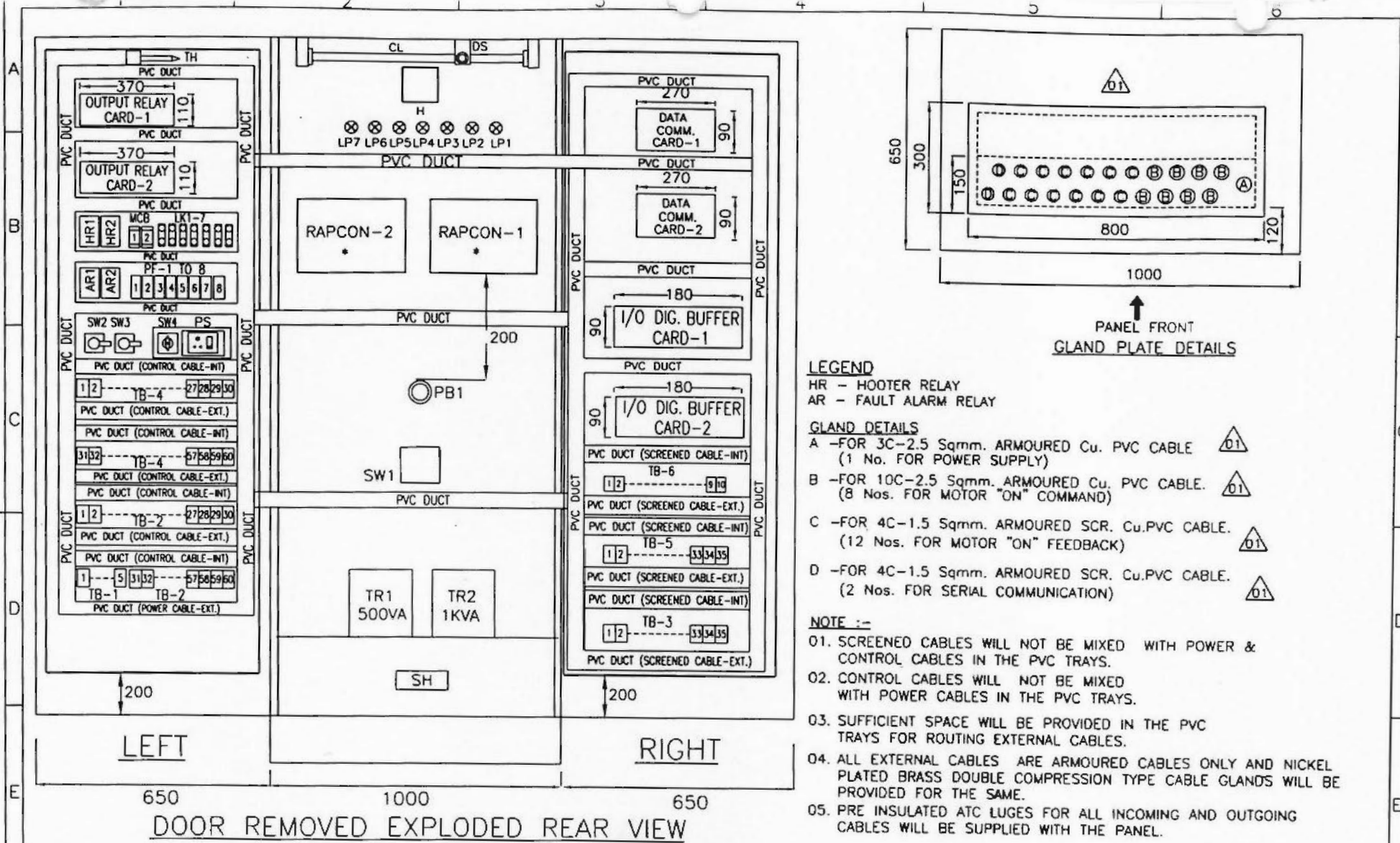
**NAME PLATE DETAILS**

LEGEND	COLOUR	LABEL DESCRIPTION
LP1	RED	MAINS 'ON'
LP2	RED	AUXILIARY SUPPLY 'ON'
LP3	RED	RAPCON-1 POWER 'ON'
LP4	RED	RAPCON-2 POWER 'ON'
LP5	RED	SPACE HEATER 'ON'
LP6	AMBER	SYSTEM ERROR (RAPCON-1)

LEGEND	COLOUR	LABEL DESCRIPTION
LP7	AMBER	SYSTEM ERROR (RAPCON-2)
SW1	-	MAIN SUPPLY SWITCH
SW2	-	AUX. SUPPLY SWITCH
SW3	-	AUX. SUPPLY SWITCH
SW4	-	SPACE HEATER SUPPLY SWITCH
PB1	BLACK	ALARM ACCEPT
H	-	HOOPER

REV. DATE	02.11.01.08	ALTERED	✓	AS FITTED	SUPPLIER	M/s. SAJAS ELECTRICALS MATHUR - 622 515	CUSTOMER	M/s. BHEL RANIPET - 632 406	PO.NO.4263337/DATE:08.03.2007/Qty.02Nos.			
REV. DATE	01.06.11.07	ALTERED	-SD-	REVISD AS PER BHEL (R) COMMENTS DATED 01.11.2007	NAME	M.Md.IBRAHIM	SIGN	-SD-	DATE	05.05.2007	PROJECT	GIPCL - SLPP UNIT - 3 & 4
REV. DATE	01.06.11.07	ALTERED	-SD-	REVISD AS PER BHEL (R) COMMENTS DATED 01.11.2007	NAME	D.R.BABU	SIGN	-SD-	DATE	05.05.2007	PROJECT	GIPCL - SLPP UNIT - 3 & 4
REV. DATE	01.06.11.07	ALTERED	-SD-	REVISD AS PER BHEL (R) COMMENTS DATED 01.11.2007	NAME	S.JAYARAM	SIGN	-SD-	DATE	05.05.2007	PROJECT	GIPCL - SLPP UNIT - 3 & 4
					TITLE			GENERAL ARRANGEMENT OF RCP		PROJECT		GIPCL - SLPP UNIT - 3 & 4
					APPD.			S.JAYARAM		DRG. No.		SE-487/07-02-01
										SCALE - NT		1:1
										SHT. No. REV		02 / 11 02

ALL DIMENSIONS ARE IN MM



PANEL FRONT  
GLAND PLATE DETAILS

**LEGEND**

HR - HOOTER RELAY  
AR - FAULT ALARM RELAY

**GLAND DETAILS**

- A -FOR 3C-2.5 Sqmm. ARMoured Cu. PVC CABLE (1 No. FOR POWER SUPPLY) 01
- B -FOR 10C-2.5 Sqmm. ARMoured Cu. PVC CABLE. (8 Nos. FOR MOTOR "ON" COMMAND) 01
- C -FOR 4C-1.5 Sqmm. ARMoured SCR. Cu.PVC CABLE. (12 Nos. FOR MOTOR "ON" FEEDBACK) 01
- D -FOR 4C-1.5 Sqmm. ARMoured SCR. Cu.PVC CABLE. (2 Nos. FOR SERIAL COMMUNICATION) 01

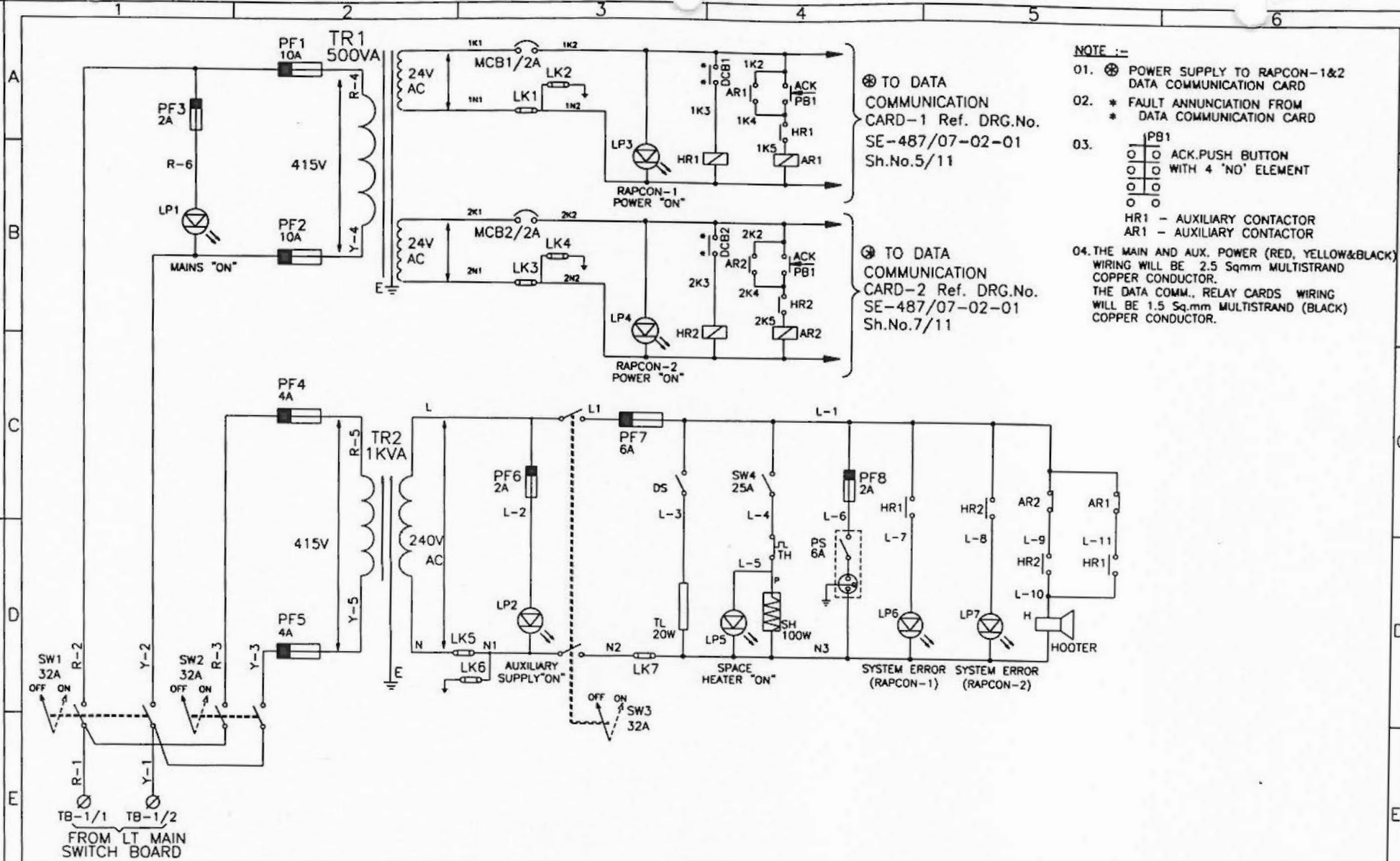
**NOTE :-**

01. SCREENED CABLES WILL NOT BE MIXED WITH POWER & CONTROL CABLES IN THE PVC TRAYS.
02. CONTROL CABLES WILL NOT BE MIXED WITH POWER CABLES IN THE PVC TRAYS.
03. SUFFICIENT SPACE WILL BE PROVIDED IN THE PVC TRAYS FOR ROUTING EXTERNAL CABLES.
04. ALL EXTERNAL CABLES ARE ARMoured CABLES ONLY AND NICKEL PLATED BRASS DOUBLE COMPRESSION TYPE CABLE GLANDS WILL BE PROVIDED FOR THE SAME.
05. PRE INSULATED ATC LUGS FOR ALL INCOMING AND OUTGOING CABLES WILL BE SUPPLIED WITH THE PANEL.

DOOR REMOVED EXPLODED REAR VIEW

REV. DATE		ALTERED	✓	AS FITTED	SUPPLIER		CUSTOMER		PO.NO.4263337/DATE:08.03.2007/Qty.02Nos.	
02		11.01.08	CHECKED	✓	M/s. SAJAS ELECTRICALS MATHUR - 622 515		M/s. BHEL RANIPET - 632 406		PRODUCT: RAPPER CONTROL PANEL	
REV. DATE		ALTERED	-SD-		NAME		SIGN	DATE	PROJECT: GIPCL - SLPP UNIT - 3 & 4	
01		06.11.07	CHECKED	-SD-	DRN	M.Md.IBRAHIM	-SD-	05.05.2007	SCALE - NTS	
REVISED AS PER BHEL (R) 01					CKD	D.R.BABU	-SD-	05.05.2007	GIPCL - SLPP UNIT - 3 & 4	
COMMENTS DATED 01.11.2007					APPD	S.JAYARAM	-SD-	05.05.2007	PROJECT: SE-487/07-02-01	
1		2		3		4		5		SHT. No. REV 03 / 11 02

ALL DIMENSIONS ARE IN MM



- NOTE :-**
- ⊗ POWER SUPPLY TO RAPCON-1&2 DATA COMMUNICATION CARD
  - \* FAULT ANNUNCIATION FROM DATA COMMUNICATION CARD
  - |     |   |
|-----|---|
| PB1 |   |
| ○   | ○ |
| ○   | ○ |
| ○   | ○ |
| ○   | ○ |
| ○   | ○ |

ACK.PUSH BUTTON WITH 4 'NO' ELEMENT

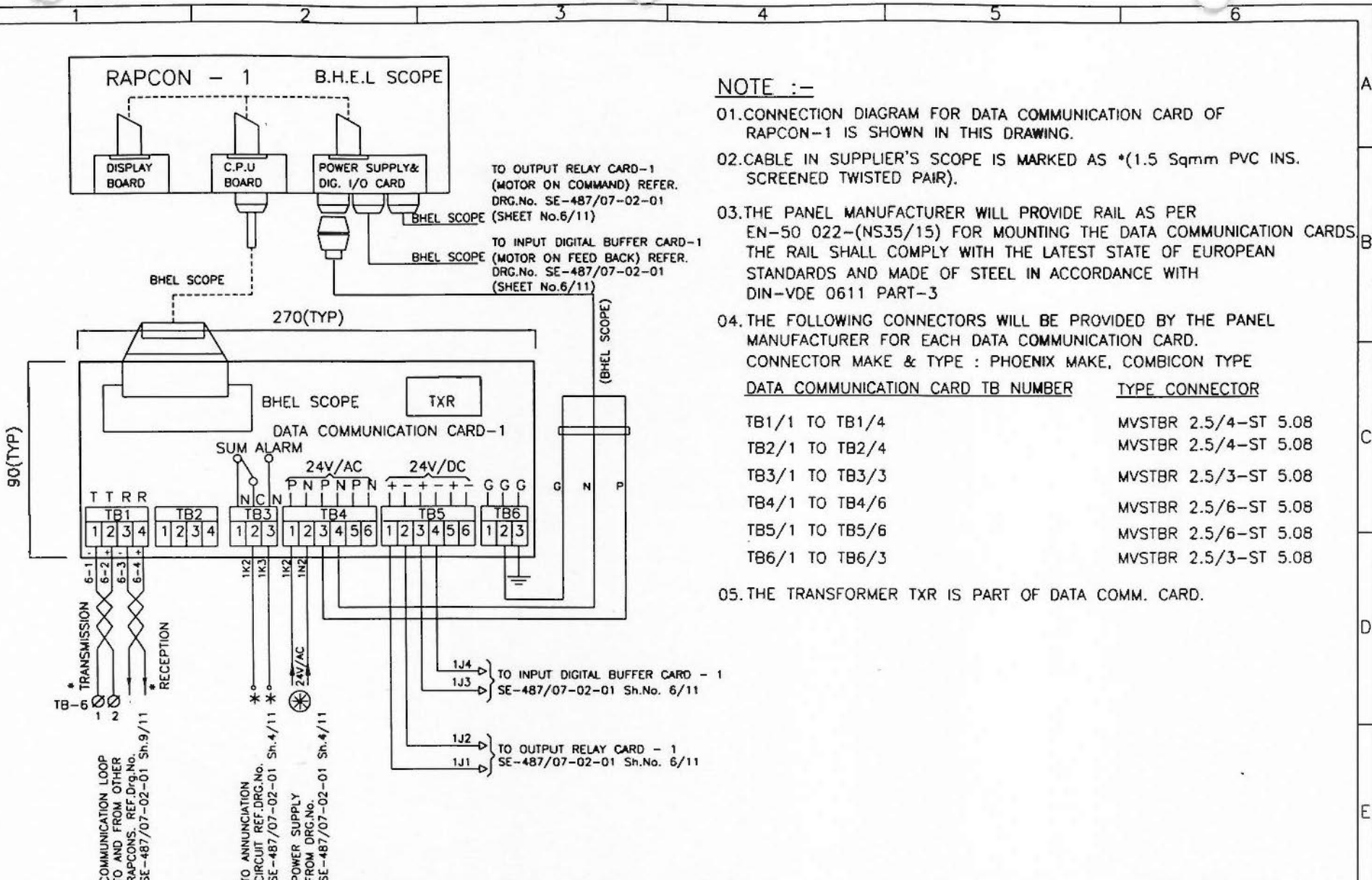
HR1 - AUXILIARY CONTACTOR  
AR1 - AUXILIARY CONTACTOR
  - THE MAIN AND AUX. POWER (RED, YELLOW&BLACK) WIRING WILL BE 2.5 Sqmm MULTISTRAND COPPER CONDUCTOR. THE DATA COMM., RELAY CARDS WIRING WILL BE 1.5 Sqmm MULTISTRAND (BLACK) COPPER CONDUCTOR.

⊗ TO DATA COMMUNICATION CARD-1 Ref. DRG.No. SE-487/07-02-01 Sh.No.5/11

⊗ TO DATA COMMUNICATION CARD-2 Ref. DRG.No. SE-487/07-02-01 Sh.No.7/11

REV	DATE	ALTERED	✓	AS FITTED	SUPPLIER	M/s. SAJAS ELECTRICALS MATHUR - 622 515	CUSTOMER	M/s. BHEL RANIPET - 632 406	PO.NO.4263337/DATE:08.03.2007/Qty.02Nos.
02	11.01.08	CHECKED	✓		NAME	M.Md.IBRAHIM	REF.BHEL DRG.NO:3-00-114-32957[REV.01]	PROJECT :	RAPPER CONTROL PANEL
01	06.11.07	CHECKED	-SD-		SIGN	D.R.BABU	TITLE	GIPCL - SLPP	SCALE - NTS
			-SD-		DATE	05.05.2007	MAIN AND AUX. POWER SUPPLY SCHEME OF RCP	UNIT - 3 & 4	⊗
					APPD	S.JAYARAM	Drq. No.	SE-487/07-02-01	SHT. No. REV
								04 / 11	02

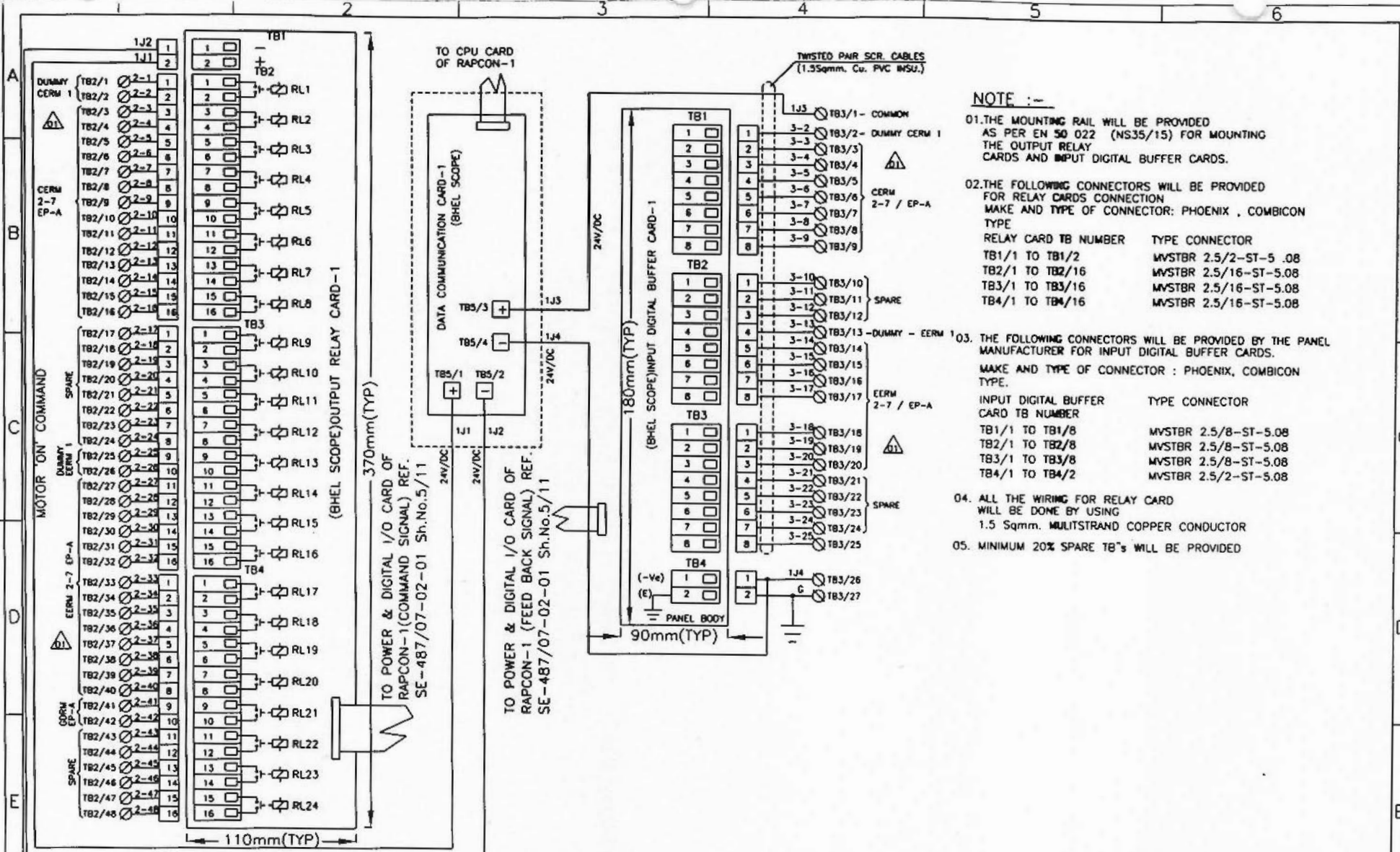
ALL DIMENSIONS ARE IN MM



- NOTE :-**
- CONNECTION DIAGRAM FOR DATA COMMUNICATION CARD OF RAPCON-1 IS SHOWN IN THIS DRAWING.
  - CABLE IN SUPPLIER'S SCOPE IS MARKED AS \*(1.5 Sqmm PVC INS. SCREENED TWISTED PAIR).
  - THE PANEL MANUFACTURER WILL PROVIDE RAIL AS PER EN-50 022-(NS35/15) FOR MOUNTING THE DATA COMMUNICATION CARDS. THE RAIL SHALL COMPLY WITH THE LATEST STATE OF EUROPEAN STANDARDS AND MADE OF STEEL IN ACCORDANCE WITH DIN-VDE 0611 PART-3
  - THE FOLLOWING CONNECTORS WILL BE PROVIDED BY THE PANEL MANUFACTURER FOR EACH DATA COMMUNICATION CARD.
- | DATA COMMUNICATION CARD TB NUMBER | TYPE CONNECTOR       |
|-----------------------------------|----------------------|
| TB1/1 TO TB1/4                    | MVSTBR 2.5/4-ST 5.08 |
| TB2/1 TO TB2/4                    | MVSTBR 2.5/4-ST 5.08 |
| TB3/1 TO TB3/3                    | MVSTBR 2.5/3-ST 5.08 |
| TB4/1 TO TB4/6                    | MVSTBR 2.5/6-ST 5.08 |
| TB5/1 TO TB5/6                    | MVSTBR 2.5/6-ST 5.08 |
| TB6/1 TO TB6/3                    | MVSTBR 2.5/3-ST 5.08 |
05. THE TRANSFORMER TXR IS PART OF DATA COMM. CARD.

REV. DATE	02	11.01.08	ALTERED	✓	AS FITTED	SUPPLIER	M/s. SAJAS ELECTRICALS MATHUR - 622 515	CUSTOMER	M/s. BHEL RANIPET - 632 406	PO.NO.4263337/DATE:08.03.2007/Qty.02Nos.
REV. DATE	01	06.11.07	ALTERED	✓	AS FITTED	NAME	M. Md. IBRAHIM	REF. BHEL DRG. NO. 3-00-114-32958/REV. 01	PROJECT	GIPCL - SLPP UNIT - 3 & 4
REV. DATE	01	06.11.07	ALTERED	✓	AS FITTED	ORIGINATOR	D.R. BABU	TITLE	SCHMATIC DIAGRAM OF RCP-EP-A	SCALE - MTS
REV. DATE	01	06.11.07	ALTERED	✓	AS FITTED	APPD.	S. JAYARAM	Org. No.	SE-487/07-02-01	SHT. No. REV
REVISED AS PER BHEL (R) COMMENTS DATED 01.11.2007										05 / 11 02

ALL DIMENSIONS ARE IN MM



**NOTE :-**

- 01. THE MOUNTING RAIL WILL BE PROVIDED AS PER EN 50 022 (NS35/15) FOR MOUNTING THE OUTPUT RELAY CARDS AND INPUT DIGITAL BUFFER CARDS.
- 02. THE FOLLOWING CONNECTORS WILL BE PROVIDED FOR RELAY CARDS CONNECTION MAKE AND TYPE OF CONNECTOR: PHOENIX, COMBICON TYPE
 

RELAY CARD TB NUMBER	TYPE CONNECTOR
TB1/1 TO TB1/2	MVSTBR 2.5/2-ST-5 .08
TB2/1 TO TB2/16	MVSTBR 2.5/16-ST-5.08
TB3/1 TO TB3/16	MVSTBR 2.5/16-ST-5.08
TB4/1 TO TB4/16	MVSTBR 2.5/16-ST-5.08
- 03. THE FOLLOWING CONNECTORS WILL BE PROVIDED BY THE PANEL MANUFACTURER FOR INPUT DIGITAL BUFFER CARDS. MAKE AND TYPE OF CONNECTOR : PHOENIX, COMBICON TYPE.
 

INPUT DIGITAL BUFFER CARD TB NUMBER	TYPE CONNECTOR
TB1/1 TO TB1/8	MVSTBR 2.5/8-ST-5.08
TB2/1 TO TB2/8	MVSTBR 2.5/8-ST-5.08
TB3/1 TO TB3/8	MVSTBR 2.5/8-ST-5.08
TB4/1 TO TB4/2	MVSTBR 2.5/2-ST-5.08
- 04. ALL THE WIRING FOR RELAY CARD WILL BE DONE BY USING 1.5 Sqmm. MULTISTRAND COPPER CONDUCTOR
- 05. MINIMUM 20% SPARE TB'S WILL BE PROVIDED

REV	DATE	ALTERED	✓	By	SUPPLIER
02	11.01.08	CHECKED	✓		M/s. SAJAS ELECTRICALS MATHUR - 622 515
AS FITTED					
REV	DATE	ALTERED	-SD-		NAME
01	06.11.07	CHECKED	-SD-		DRN M.M.G.IBRAHIM
					SIGN
					DATE
					05.05.2007
					CKD D.R.BABU
					DATE
					05.05.2007
					APPO S.JAYARAM
					DATE
					05.05.2007

CUSTOMER	M/s. BHEL RANIPET - 632 406
REF. BHEL DRG. NO.	3-00-114-32959 REV.01
TITLE	SCHEMATIC DIAGRAM OF RCP EP-A

PO. NO.	4263337/DATE:08.03.2007/Qty.02Nos.
PRODUCT	RAPPER CONTROL PANEL
PROJECT	GIPCL - SLPP UNIT - 3 & 4
Org. No.	SE-487/07-02-01
SCALE - NTS	
SHT. No.	06 / 11
REV	02