

BHARAT HEAVY ELECTRICALS LIMITED,
(A Government of India Enterprises)
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NOTICE INVITING TENDER(NIT)

**Category of Tender: TWO BID
(PRICED + UN - PRICED)**

**SUB: ELECTRICAL ITEMS FOR 40/10T
AND 60/10T EOT CRANES**

Our Ref: **MM/2/10/4060/CAP/W-053/5053**

DATE: 22.05.2015

Sealed quotations in duplicate are invited from suppliers on **or before 16.06.2015 SUPERSCRIBING OUR REFERENCE AND CATEGORY OF TENDER** on the cover, for supply of the under mentioned stores within the above due date, otherwise send **REGRET LETTER**, strictly subject to the Terms & Conditions attached herewith.
LATE TENDERS ARE NOT ACCEPTABLE.

ITEM No.	DESCRIPTION / SPECN. / SIZE	QTY
1.	Electrical items for 40/10T and 60/10T EOT Cranes	Lot
	Encl: 1. LIST OF ITEMS & DRAWING FOR 40/10T EOT 15 Pages 2. LIST OF ITEMS & DRAWING FOR 60/10T EOT 15 Pages 3. General Terms/ commercial terms and conditions (INCLUDING CHECK LIST) 9 Pages	

For BHARAT HEAVY ELECTRICALS LIMITED,

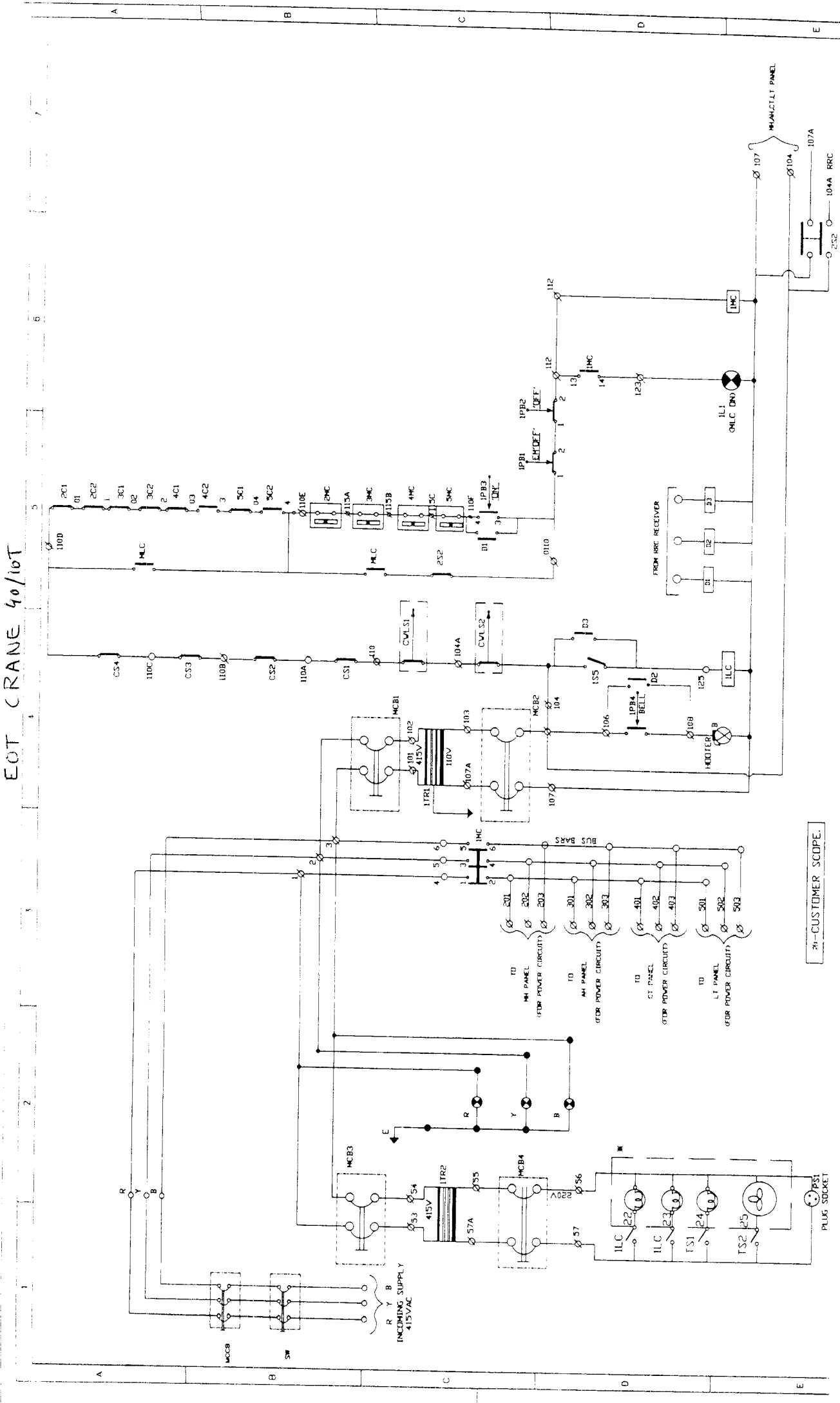
MANAGER (MP-Misc. & CPS)

EOT CRANE 40/10T

SR. NO.	ITEM	DESCRIPTION/RATING	MAKE	QTY. NO.	LOCATION
18	SW	ISOLATOR SWITCH 600A	EE/SIEMENS/BCH	1	PLATFORM
17	CVLSI, CVLSP	CONTR WEIGHT LIMIT SWITCH 40A	SNT/SOC/OMEGA	2	CRAB
16	2MC,3MC,4MC,5MC	MASTER CONTROLLER 10A	SNT/SOC/OMEGA	4	CABIN
15	IPB4	PUSH BUTTON FOR HOOPER	SIEMENS/BCH	1	
14	TS1-TS2	SWITCH FOR CABIN LIGHT & FAN	REPUTED MAKE	2	
13	2S2	RRC SELECTOR SWITCH	SIEMENS/BCH	1	
12	MCCB	3P/400A	SIEMENS/BCH	1	
11	RYB	INDICATING LAMP	SIEMENS/BCH	3	
10	IL1	INDICATING LAMP MLC 'DN'	SIEMENS/BCH	1	
9	D1,D2,D3	CONTACTOR 9A , 110 VAC COIL	SIEMENS/BCH	1	
8	ILC	CONTACTOR 9A , 110 VAC COIL	SIEMENS/BCH	1	PP PANEL ON PLATFORM
7	IPB3	DN PUSH BUTTON 'ND'	SIEMENS/BCH	1	
6	IPB1	EM-OFF PUSH BUTTON MUSHROOM TYPE NC	SIEMENS/BCH	1	
5	MLC	300A CONTACTOR , 110VAC/COIL	SIEMENS/BCH	1	
4	1 TR2	TRANSFORMER 415/220V, FOR LIGHTING	REPUTED MAKE	1	
3	1 TR1	TRANSFORMER 415/110V, FOR CONTROL	REPUTED MAKE	1	
2	MCB3,MCB4	2P/10A FOR LIGHTING I/O CIRCUIT	SIEMENS/BCH	2	
1	MCB1,MCB2	2P/10A FOR CONTROL I/O CIRCUIT	SIEMENS/BCH	2	

BILL OF MATERIAL FOR
PROTECTIVE PANEL

EOT CRANE 40/10T



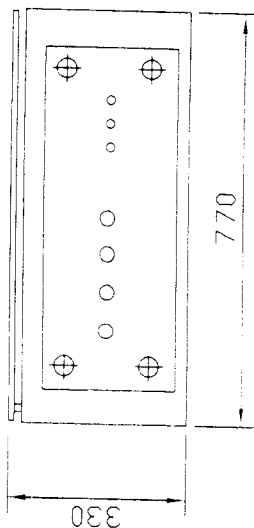
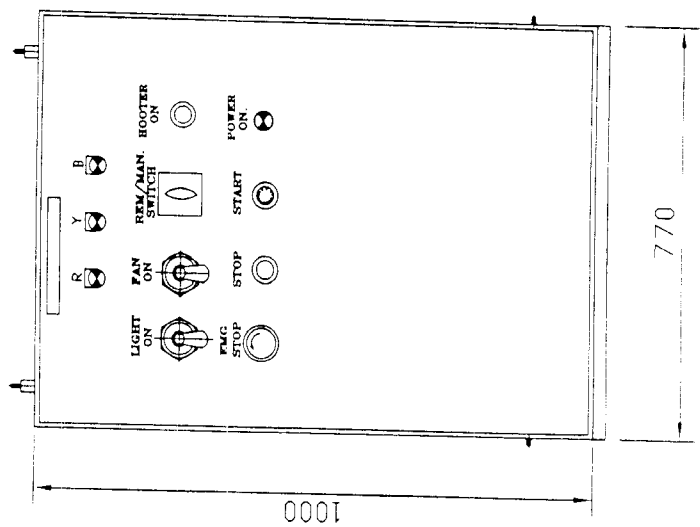
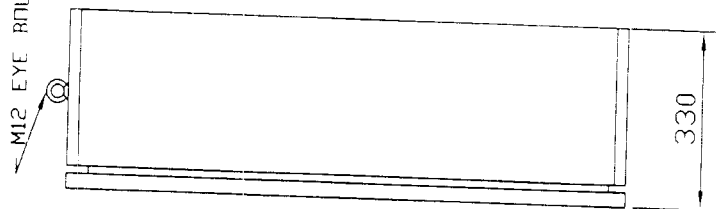
PROTECTIVE PANEL

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24-CUSTOMER SCOPE.

EUI CRANE 40/10T

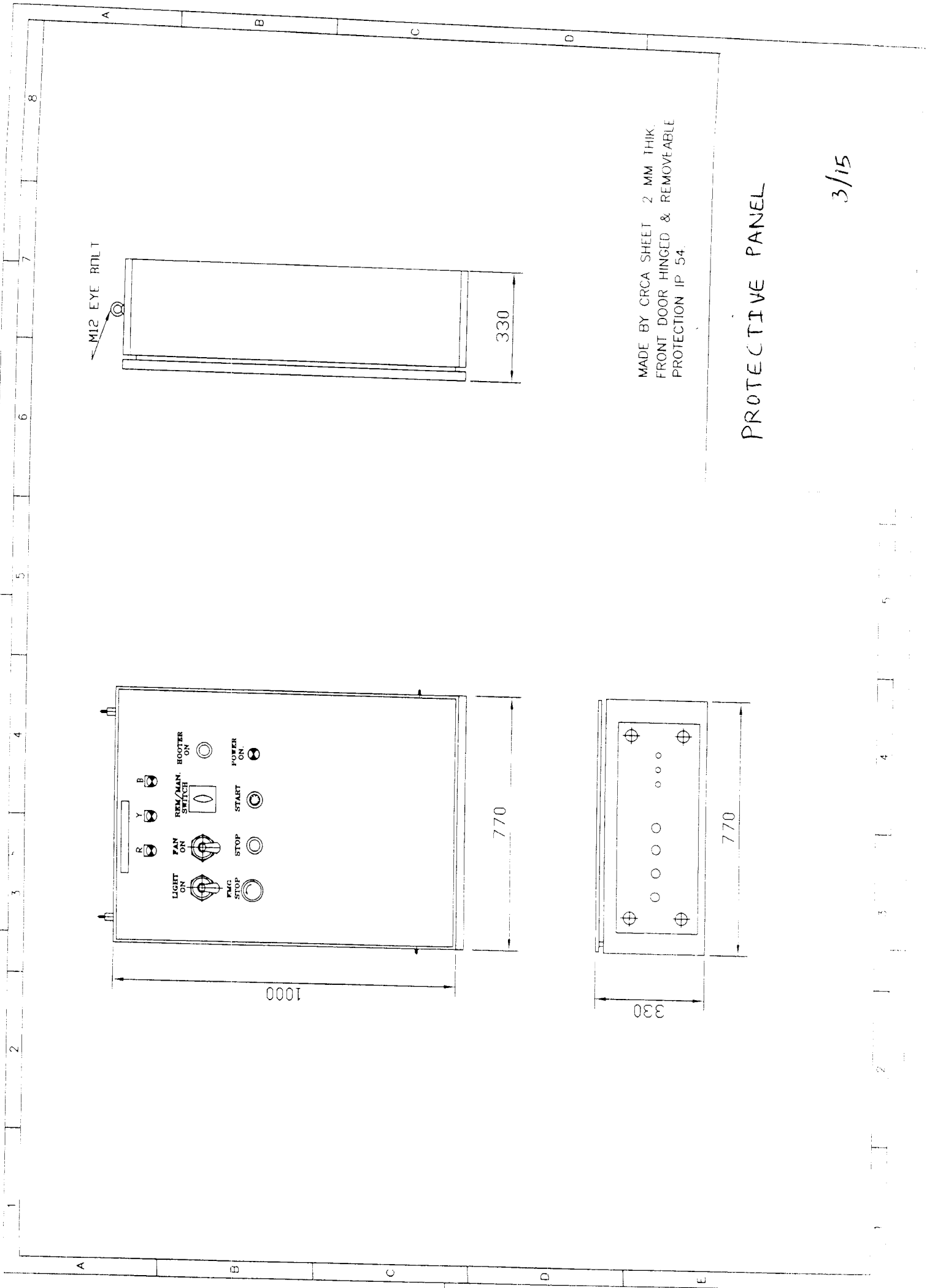
M12 EYE BOLT

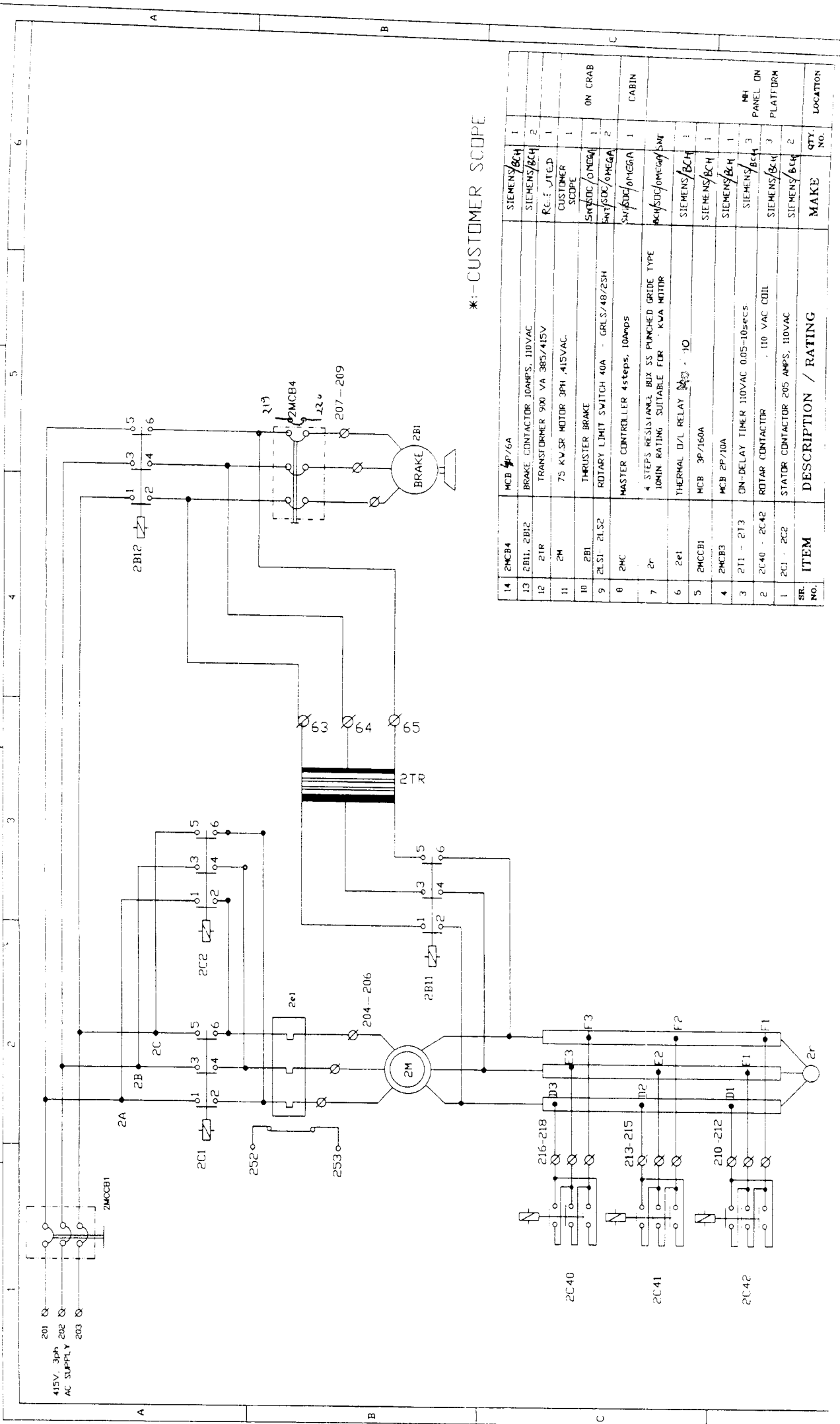


MADE BY CRCA SHEET 2 MM THICK.
FRONT DOOR HINGED & REMOVEABLE
PROTECTION IP 54.

PROTECTIVE PANEL

3/15





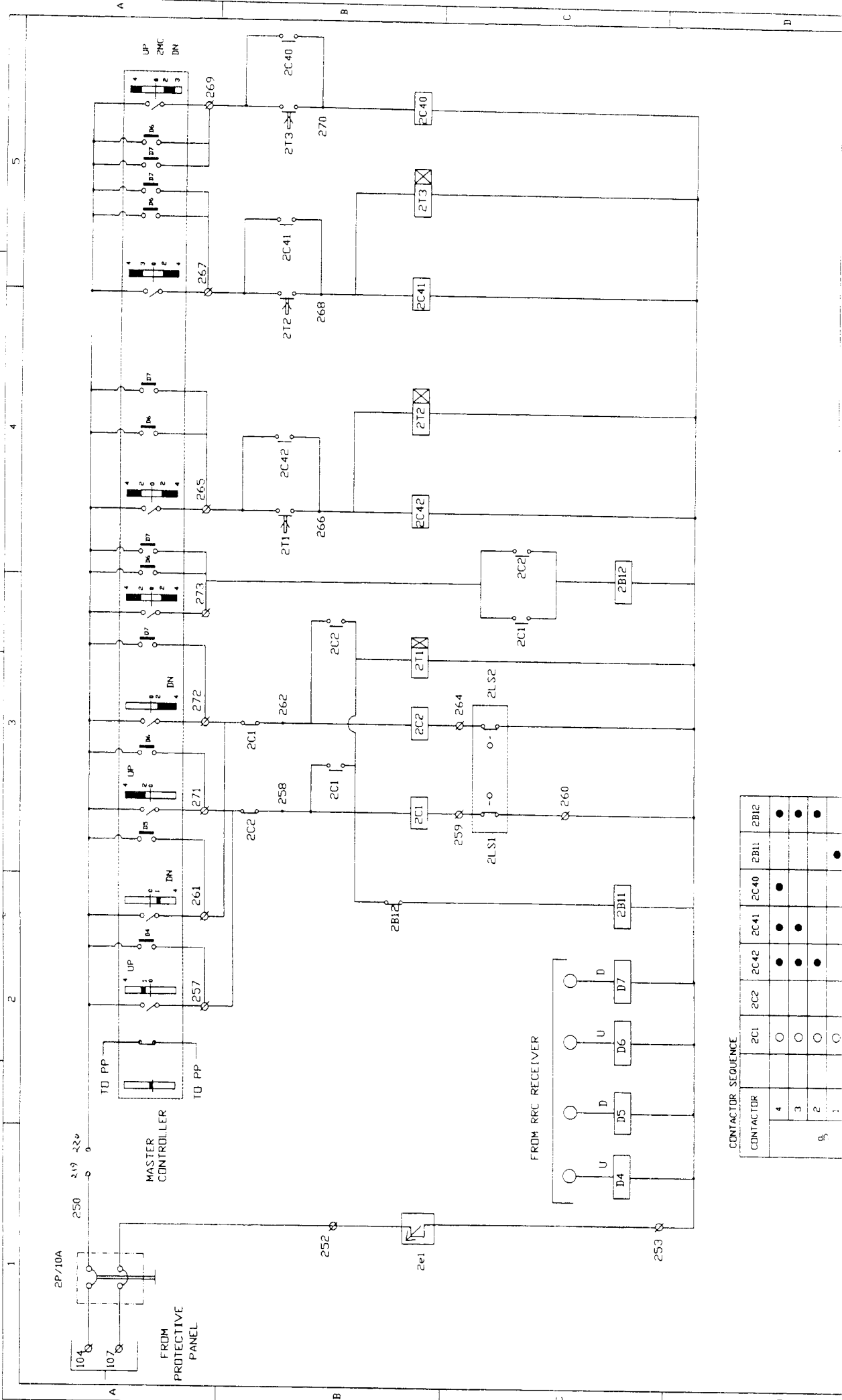
*:--CUSTOMER SCOPE

Sr. No.	ITEM	DESCRIPTION / RATING	MAKE	QTY.	LOCATION
14	2MCCB4	MCB 3P/6A	SIEMENS/BCH	1	
13	2B1, 2B12	BRAKE CONTACTOR 10AMPS, 110VAC	SIEMENS/BCH	2	
12	2TR	TRANSFORMER 900 VA 385/415V	REF. JTED	1	
11	2M	75 KW SP MOTOR 3PH 415VAC.	CUSTOMER SCOPE	1	ON CRAB
10	2B1	THRUSTER BRAKE	SIEMENS/BCH	1	
9	2LS1 - 2LS2	ROTARY LIMIT SWITCH 40A - GRLS/4B/2SH	SIEMENS/BCH	2	
8	2MC	MASTER CONTROLLER 4steps, 10amps	SIEMENS/BCH	1	
7	2r	4 STEPS RESISTANCE BOX SS PUNCHED GRID TYPE 10MIN RATING SUITABLE FOR KVA MOTOR	SIEMENS/BCH	1	
6	2e1	THERMAL O/L RELAY 10A	SIEMENS/BCH	1	
5	2MCCB1	MCB 3P/160A	SIEMENS/BCH	1	
4	2MCCB3	MCB 2P/10A	SIEMENS/BCH	1	
3	2T1 - 2T3	ON-DELAY TIMER 110VAC 0.05-10secs	SIEMENS/BCH	3	MH PANEL ON PLATFORM
2	2C40 - 2C42	ROTAR CONTACTOR 110 VAC COIL	SIEMENS/BCH	3	
1	2C1 - 2C2	STATOR CONTACTOR 205 AMPS, 110VAC	SIEMENS/BCH	2	

POWER DIAGRAM OF MAIN HOIST

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EOT CRANE 40/10T



MAIN HOIST CONTROL
CIRCUIT
5/15

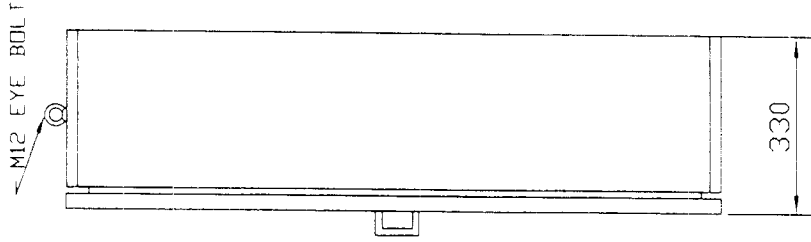
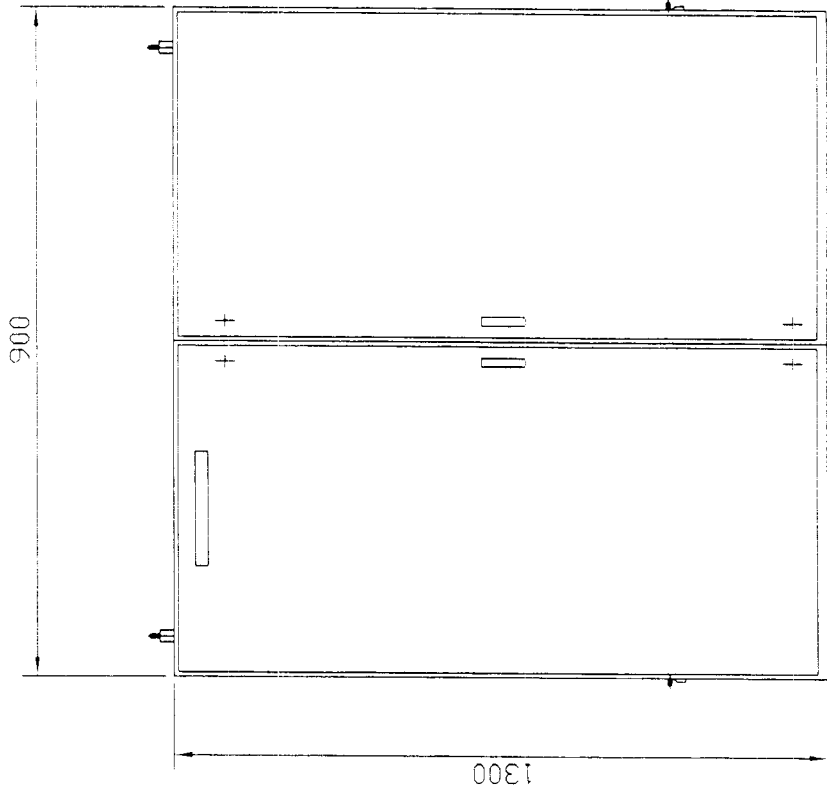
○ CONTACTOR ENERGISED
● CONTACTOR ENERGISED AFTER TIME DELAY

CONTACTOR SEQUENCE

CONTACTOR	2C1	2C2	2C42	2C40	2C41	2B11	2B12
4	○			●			●
3	○		●				●
2	○		●				●
1	○				●		●
OFF						●	
2 DC					●		●
4					●		●

COT CRANE 40/10T

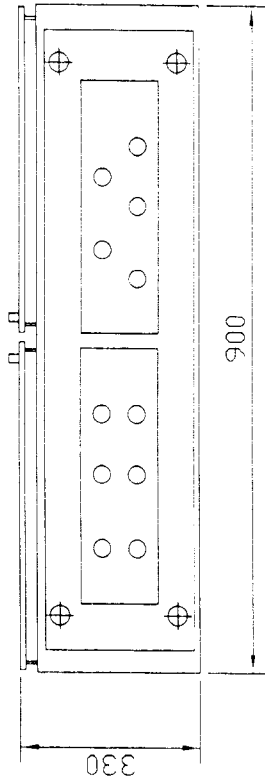
1 2 3 4 5 6 7 8



MADE BY CRCA SHEET 2 MM THIK.
FRONT DOOR HINGED & REMOVEABLE
PROTECTION IP 54.

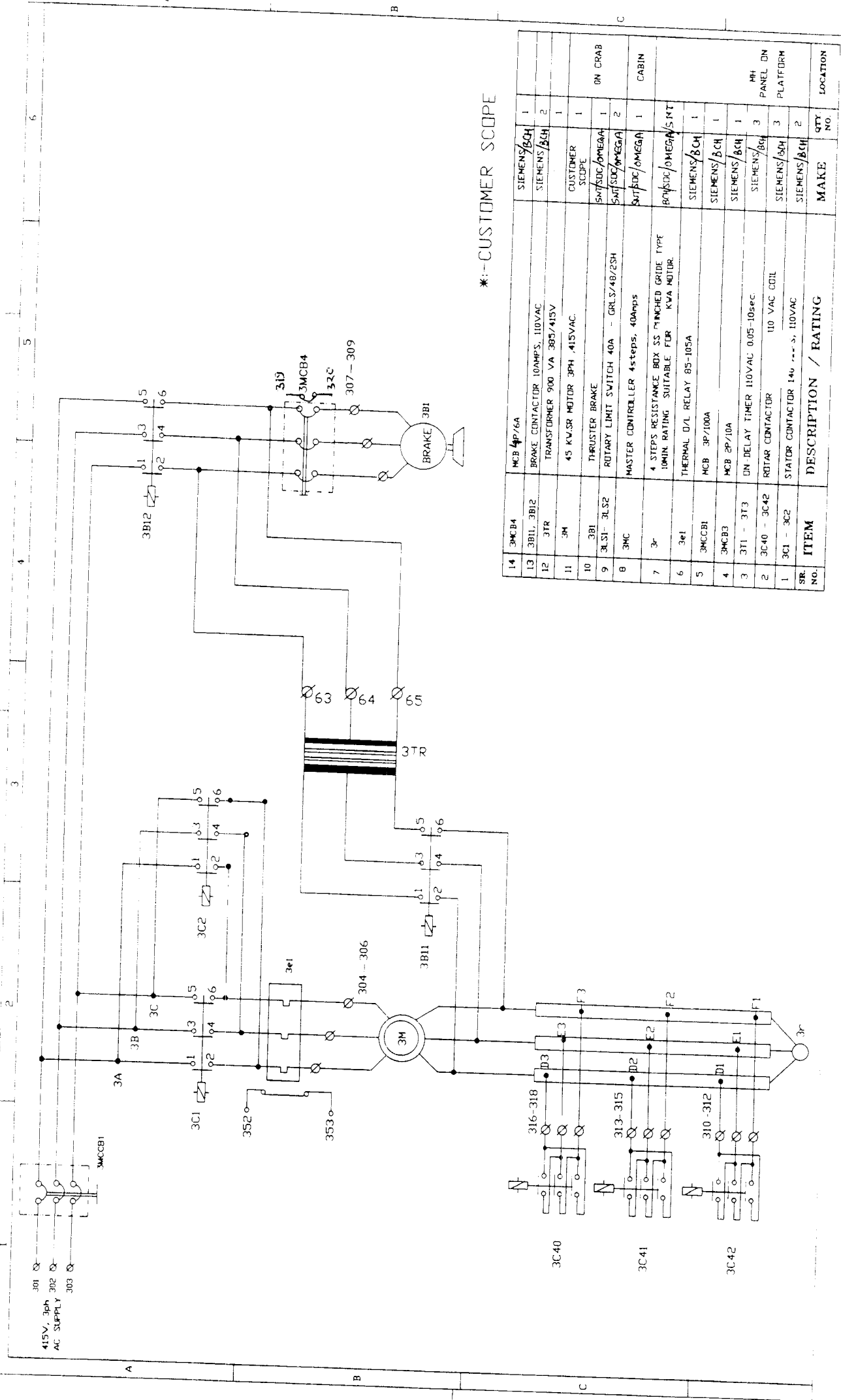
MK PANEL

6/15



1 2 3 4 5

EOT CRANE 40/10T



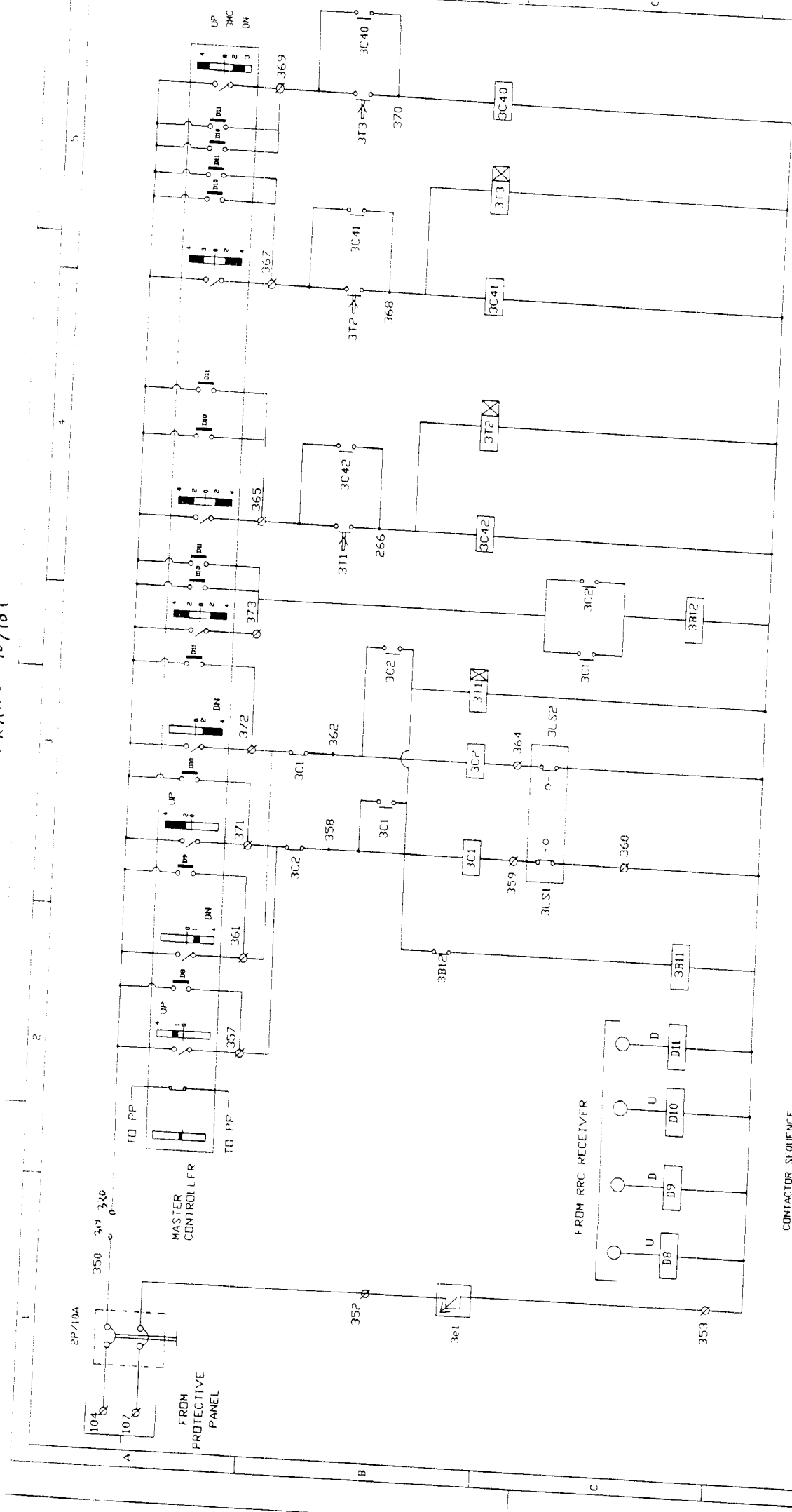
*:-CUSTOMER SCOPE

SER. NO.	ITEM	DESCRIPTION / RATING	MAKE	QTY. NO.	LOCATION
14	3MCCB4	MCB 4P/6A	SIEMENS/BCH	1	
13	3B12, 3B12	BRAKE CONTACTOR 10AMPS, 110VAC	SIEMENS/BCH	2	
12	3TR	TRANSFORMER 900 VA 385/415V		1	
11	3M	45 KW SR MOTOR 3PH, 415VAC.	CUSTOMER SCOPE	1	ON CRAB
10	3B1	THRUSTER BRAKE	SIEMENS/BCH	1	
9	3RS2 - 3LS2	ROTIARY LIMIT SWITCH 40A - GRLS/48/2SH	SIEMENS/BCH	1	
8	3MC	MASTER CONTROLLER 4steps, 40amps	SIEMENS/BCH	1	
7	3r	4 STEPS RESISTANCE BOX SS FINCHED GRID TYPE 10MIN. RATING. SUITABLE FOR KVA MOTOR.	SIEMENS/BCH	1	
6	3e1	THERMAL D/L RELAY 85-105A	SIEMENS/BCH	1	
5	3MCCB1	MCB 3P/100A	SIEMENS/BCH	1	
4	3MCCB3	MCB 2P/10A	SIEMENS/BCH	1	
3	3T1 - 3T3	ON DELAY TIMER 110VAC 0.05-10sec	SIEMENS/BCH	3	MH PANEL ON PLATFORM
2	3C40 - 3C42	ROTOR CONTACTOR 110 VAC COIL	SIEMENS/BCH	3	
1	3C1 - 3C2	STATOR CONTACTOR 140 VAC COIL	SIEMENS/BCH	2	

POWER DIAGRAM OF AUX. HOIST

7/15

EOT CRANE 40/10T



CONTACTOR SEQUENCE

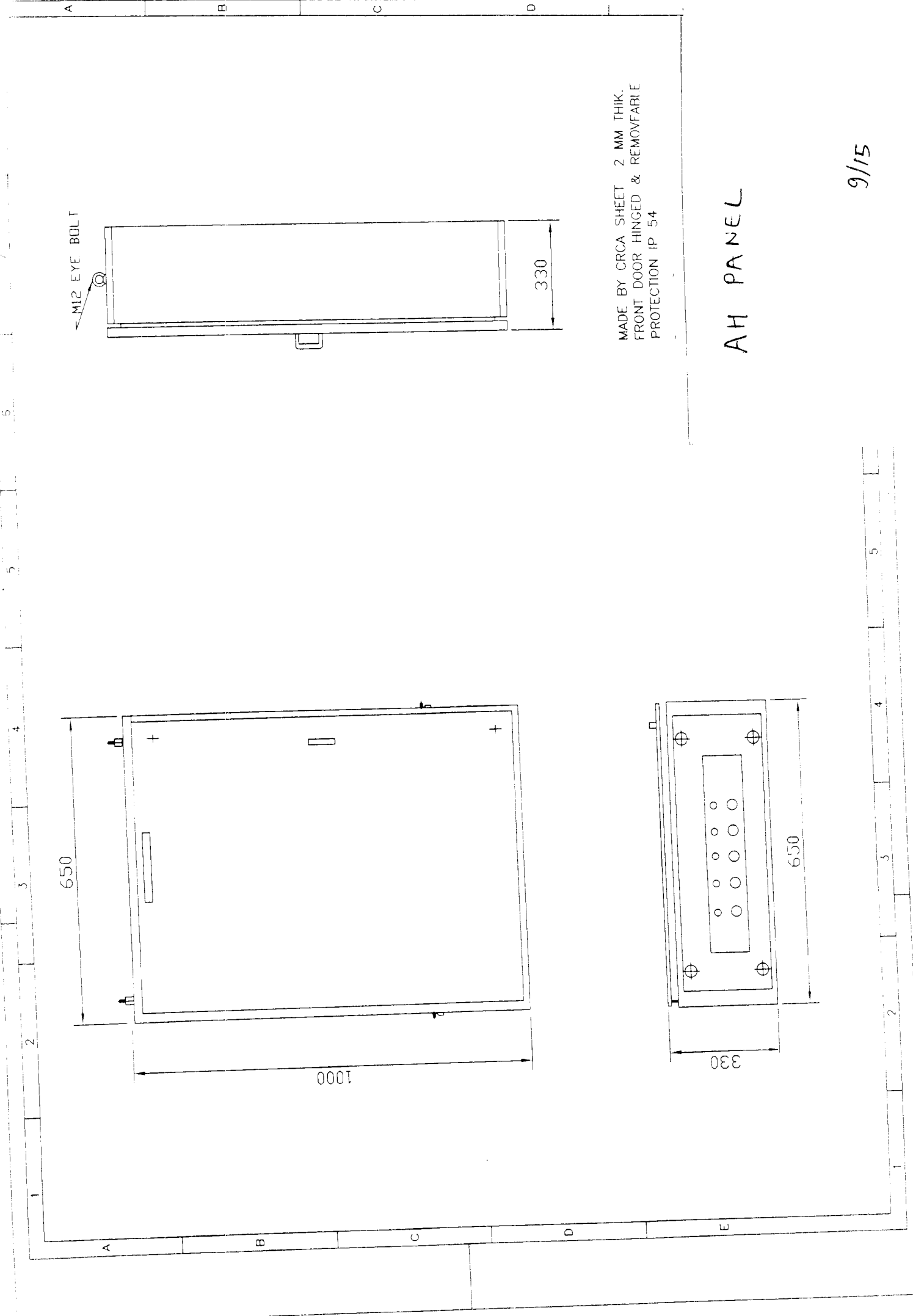
CONTACTOR	3C1	3C2	3C42	3C41	3C40	3B11	3B12
4	○	○	●	●	●	●	●
3	○	○	●	●	●	●	●
2	○	○	●	●	●	●	●
1	○	○	●	●	●	●	●
OFF	○	○	○	○	○	○	○
2	○	○	○	○	○	○	○
3	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○

○ CONTACTOR ENERGIZED
 ● CONTACTOR ENERGIZED AFTER TIME DELAY

AH CONTROL CIRCUIT

8/15

ED1 CRANE 40/10T

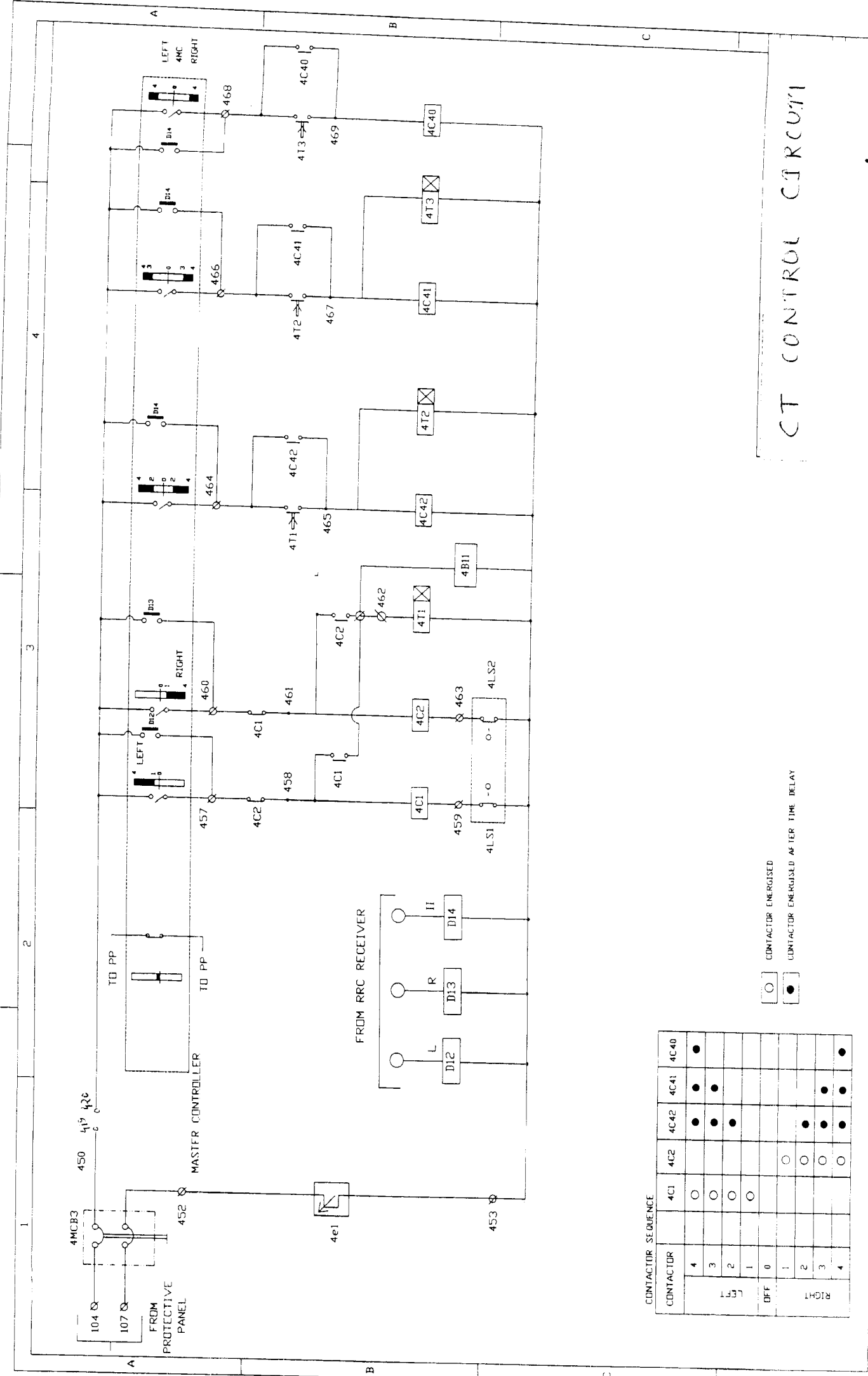


MADE BY CRCA SHEET 2 MM THIK.
FRONT DOOR HINGED & REMOVFABLE
PROTECTION IP 54

AH PANEL

9/15

EOT CRANE 40/10T



CT CONTROL CIRCUIT

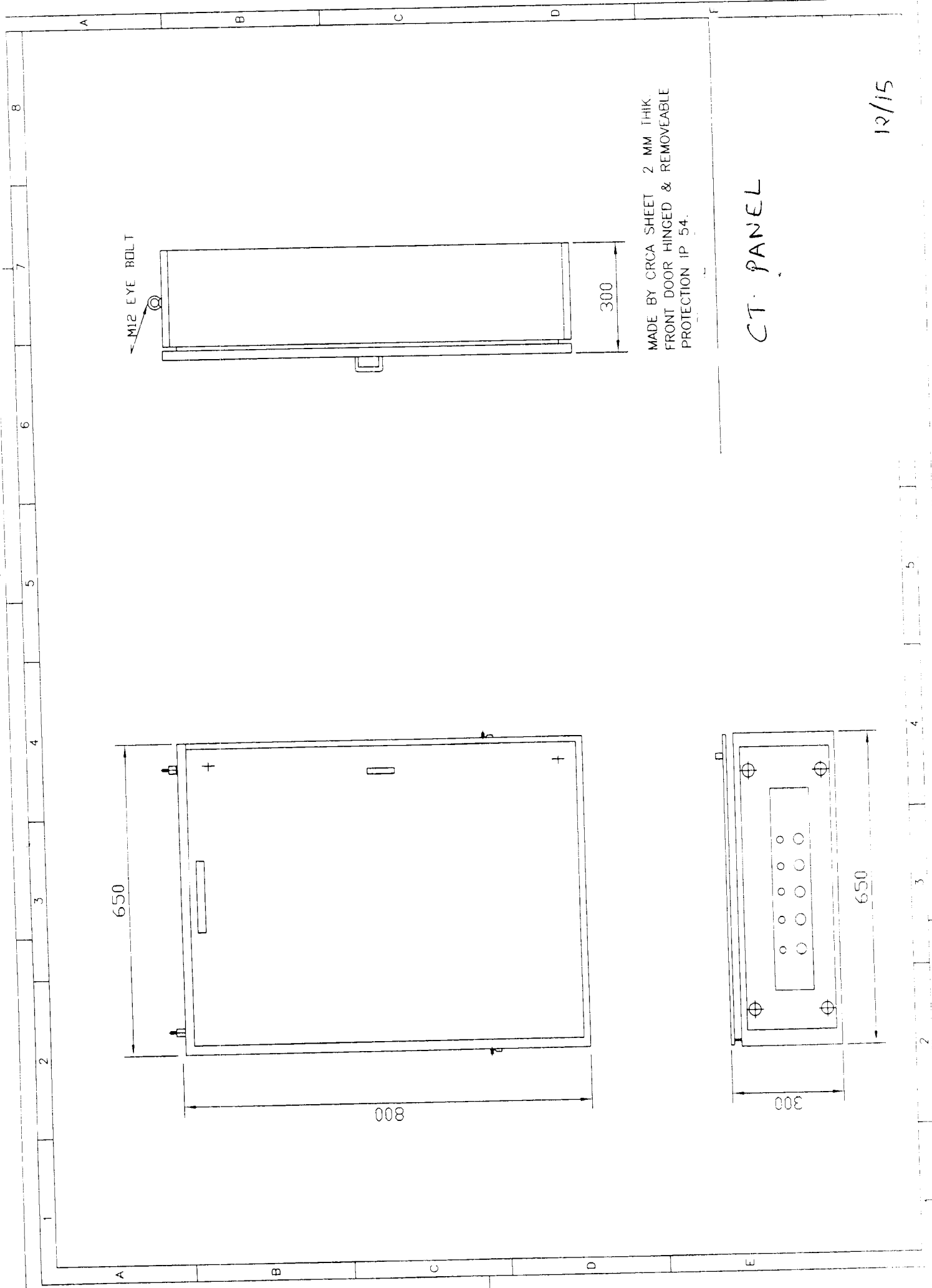
11/15

CONTACTOR SEQUENCE

CONTACTOR	4C1	4C2	4C42	4C41	4C40
4	○		●	●	●
3	○		●	●	
2	○		●		
1	○				
OFF 0		○			
2		○	●		
3		○	●	●	
4		○	●	●	●

○ CONTACTOR ENERGISED
 ○ CONTACTOR ENERGISED AFTER TIME DELAY

EOT CRANE 40/10T

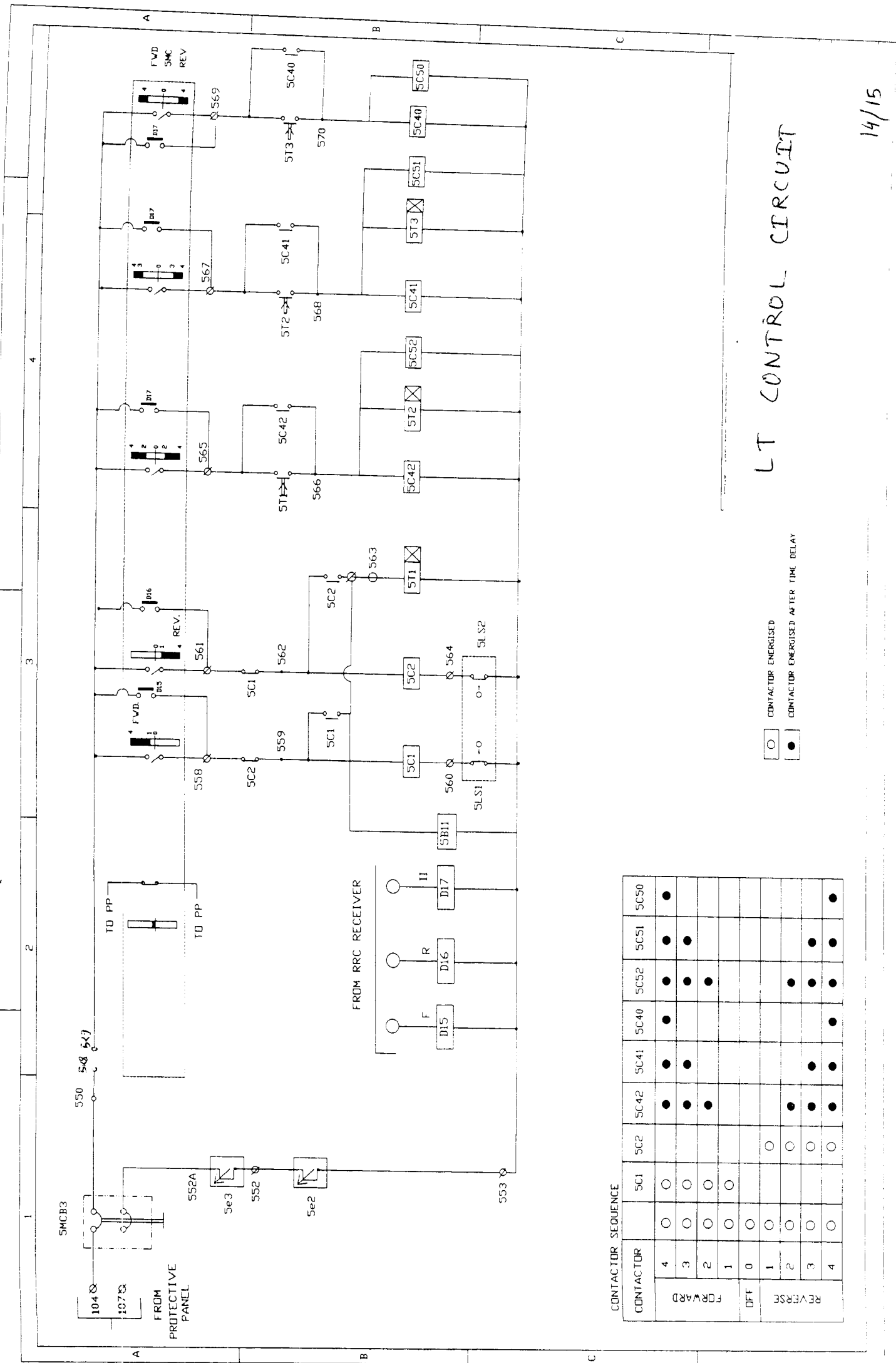


MADE BY CRCA SHEET 2 MM THIK
FRONT DOOR HINGED & REMOVEABLE
PROTECTION IP 54.

CT. PANEL

12/15

EOT CRANE 40/15T



LT CONTROL CIRCUIT

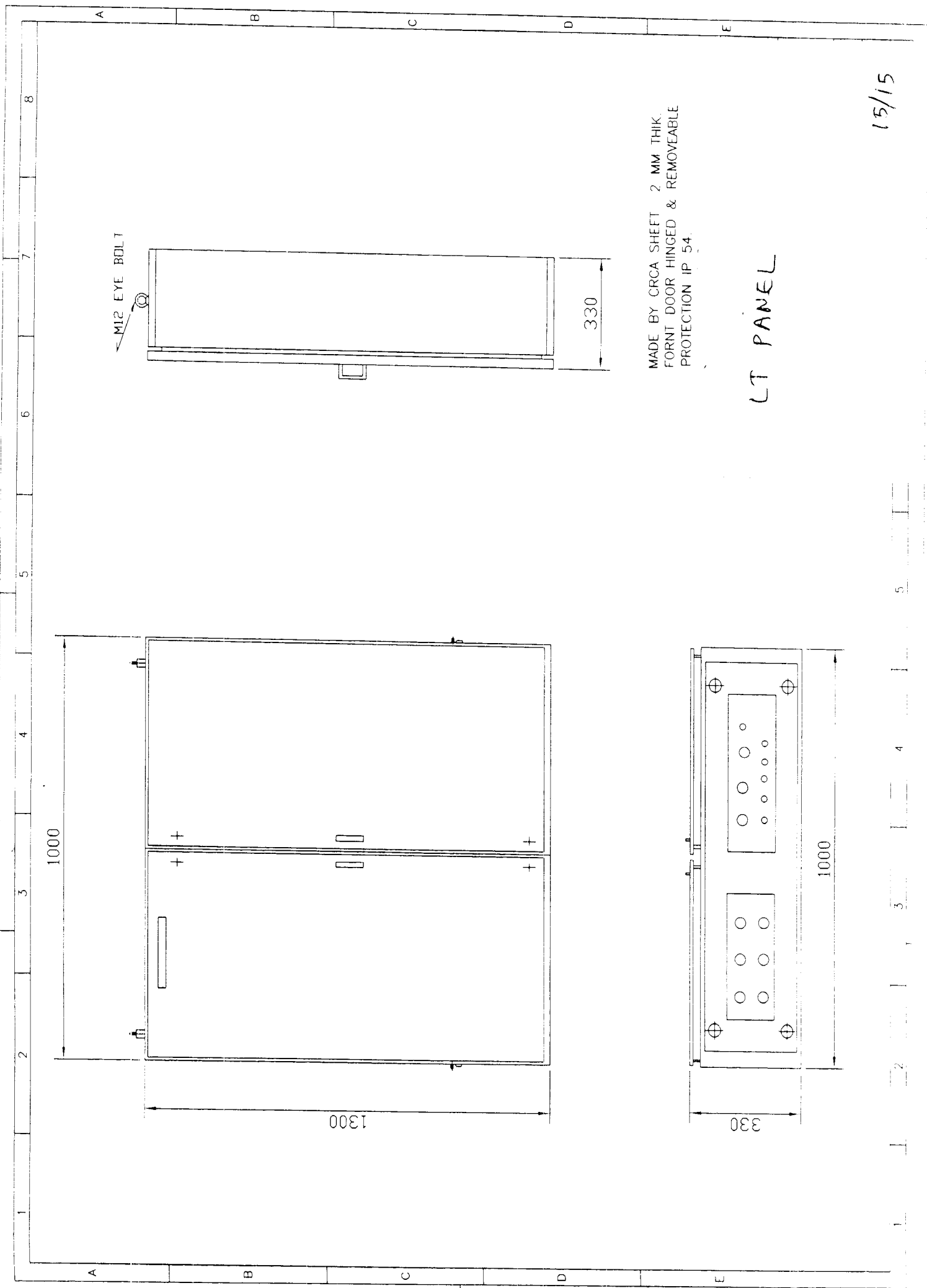
CONTACTOR ENERGISED
 CONTACTOR ENERGISED AFTER TIME DELAY

CONTACTOR SEQUENCE

CONTACTOR	SC1	SC2	SC42	SC41	SC40	SC52	SC51	SC50
4	○		●	●	●	●	●	●
3	○		●	●		●	●	
2	○		●			●		
1	○							
0	○							
1	○	○						
2	○	○	●			●		
3	○	○	●	●		●	●	
4	○	○	●	●	●	●	●	●

14/15

EOT CRANE 40/10T



M12 EYE BOLT

330

MADE BY CRCA SHEET 2 MM THIK.
FORNT DOOR HINGED & REMOVEABLE
PROTECTION IP 54.

LT PANEL

15/15

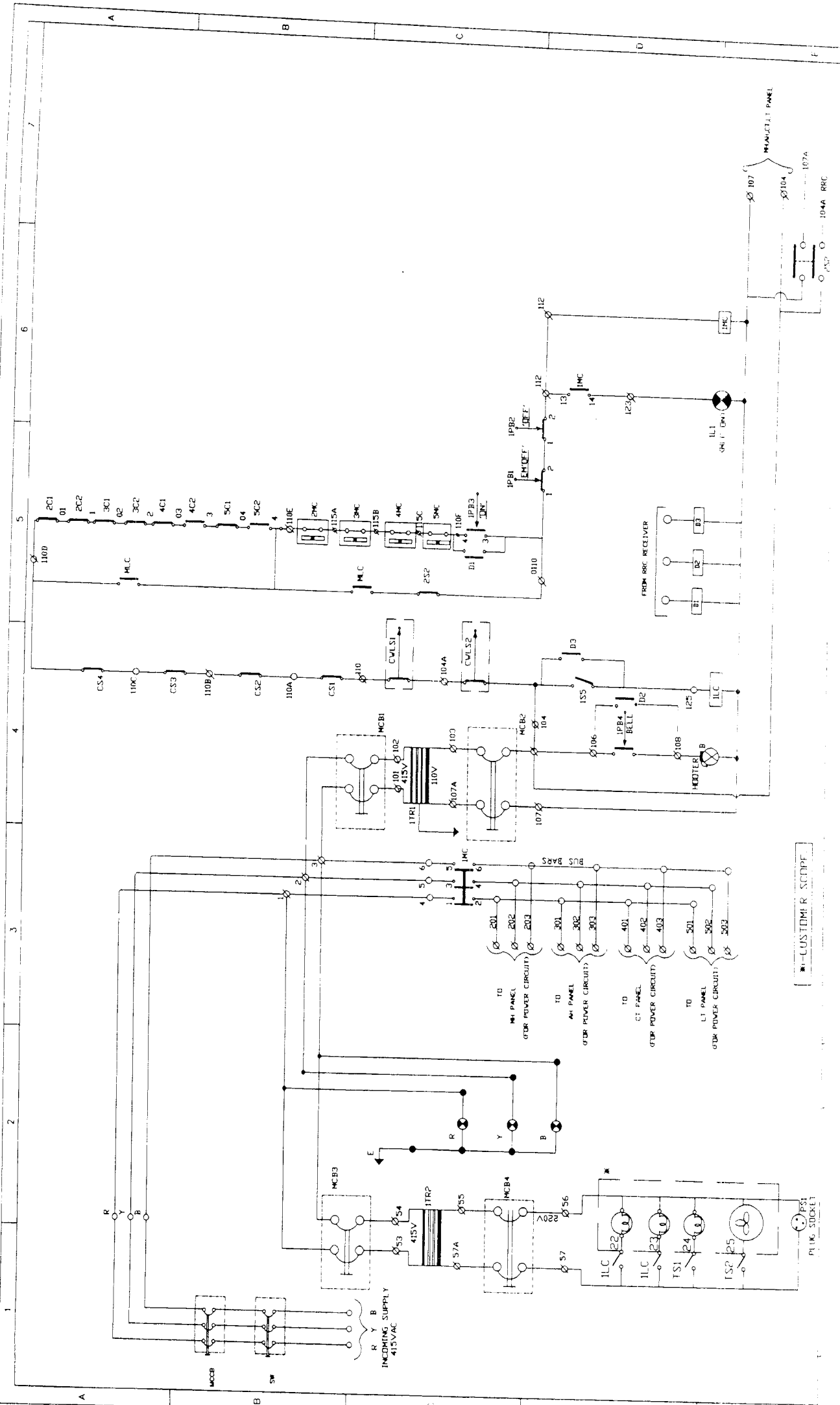


EOT CRANE 60/10T

SR. NO.	ITEM	DESCRIPTION / RATING	MAKE	QTY. NO.	LOCATION
18	SW	ISOLATOR SWITCH 600A	EE/ SIEMENS/BCH	1	PLATFORM
17	CVLSL, CVLS2	CENTER WEIGHT LIMIT SWITCH 40A	SNT/ SDC/OMEGA	2	CRAB
16	2MC,3MC,4MC,5MC	MASTER CONTROLLER 10A	SNT/ SDC/OMEGA	4	CABIN
15	IPB4	PUSH BUTTON FOR HOOTER	SIEMENS/BCH	1	
14	TS1-TS2	SWITCH FOR CABIN LIGHT & FAN	REPUTED	2	
13	2S2	RRC SELECTOR SWITCH	SIEMENS/BCH	1	
12	MCCB	3P/400A	SIEMENS/BCH	1	
11	RYB	INDICATING LAMP	SIEMENS/BCH	3	
10	IL1	INDICATING LAMP MLC 'ON'	SIEMENS/BCH	1	
9	DI,DI2,DI3	CONTACTOR 9A, 110 VAC COIL	SIEMENS/BCH	1	PP
8	ILC	CONTACTOR 9A, 110 VAC COIL	SIEMENS/BCH	1	PANEL ON PLATFORM
7	IPB3	ON PUSH BUTTON 'NO'	SIEMENS/BCH	1	
6	IPB1	EM-OFF PUSH BUTTON MUSHROOM TYPE NC	SIEMENS/BCH	1	
5	MLC	300A CONTACTOR, 110VAC/COIL	SIEMENS/BCH	1	
4	1 TR2	TRANSFORMER 415/220V, FOR LIGHTING	REPUTED MAKE	1	
3	1 TR1	TRANSFORMER 415/110V, FOR CONTROL	REPUTED MAKE	1	
2	MCB3,MCB4	2P/10A FOR LIGHTING I/O CIRCUIT	SIEMENS/BCH	2	
1	MCB1,MCB2	2P/10A FOR CONTROL I/O CIRCUIT	SIEMENS/BCH	2	

BILL OF MATERIAL FOR PROTECTIVE PANEL

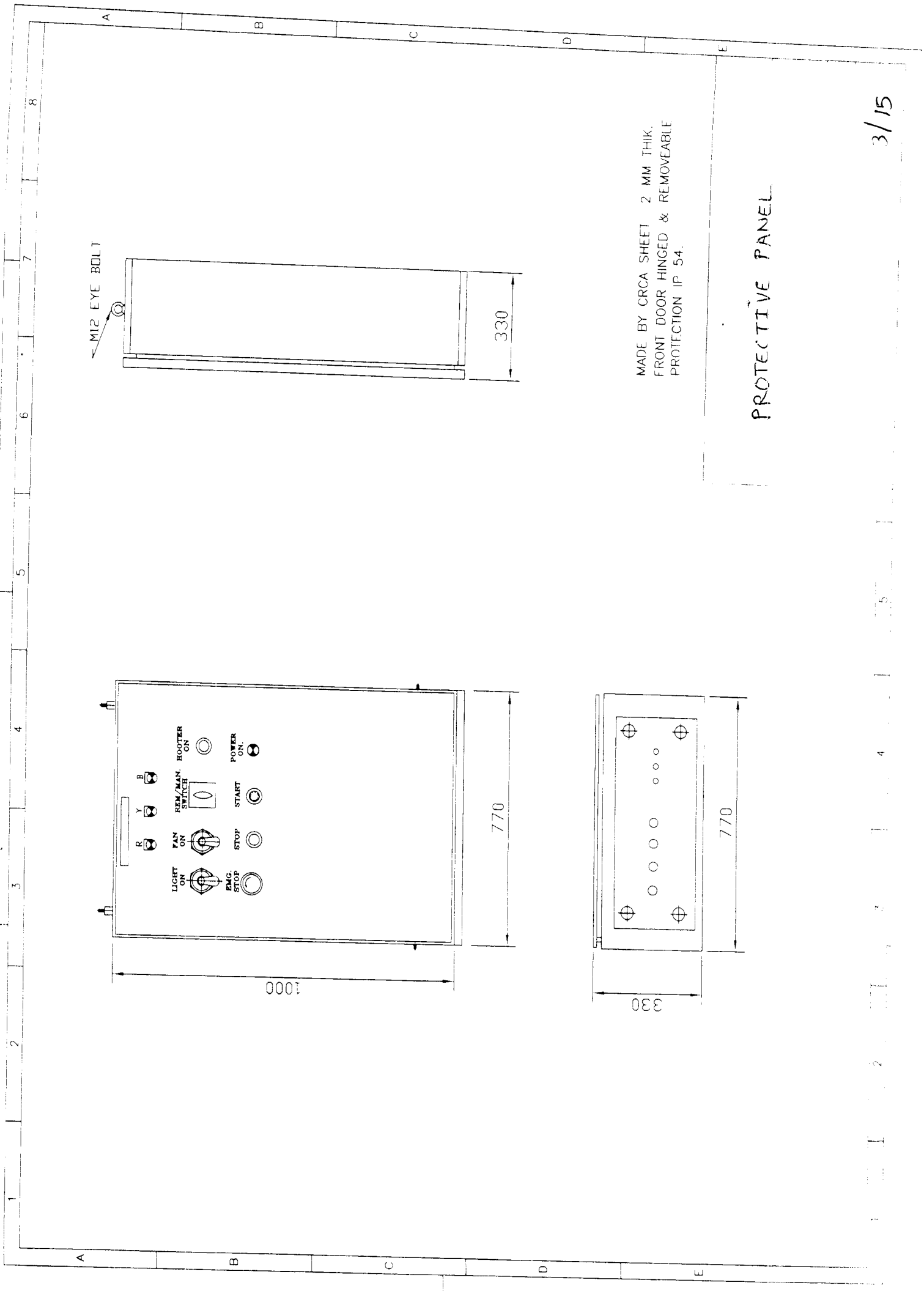
EOT CRANE 60/10T



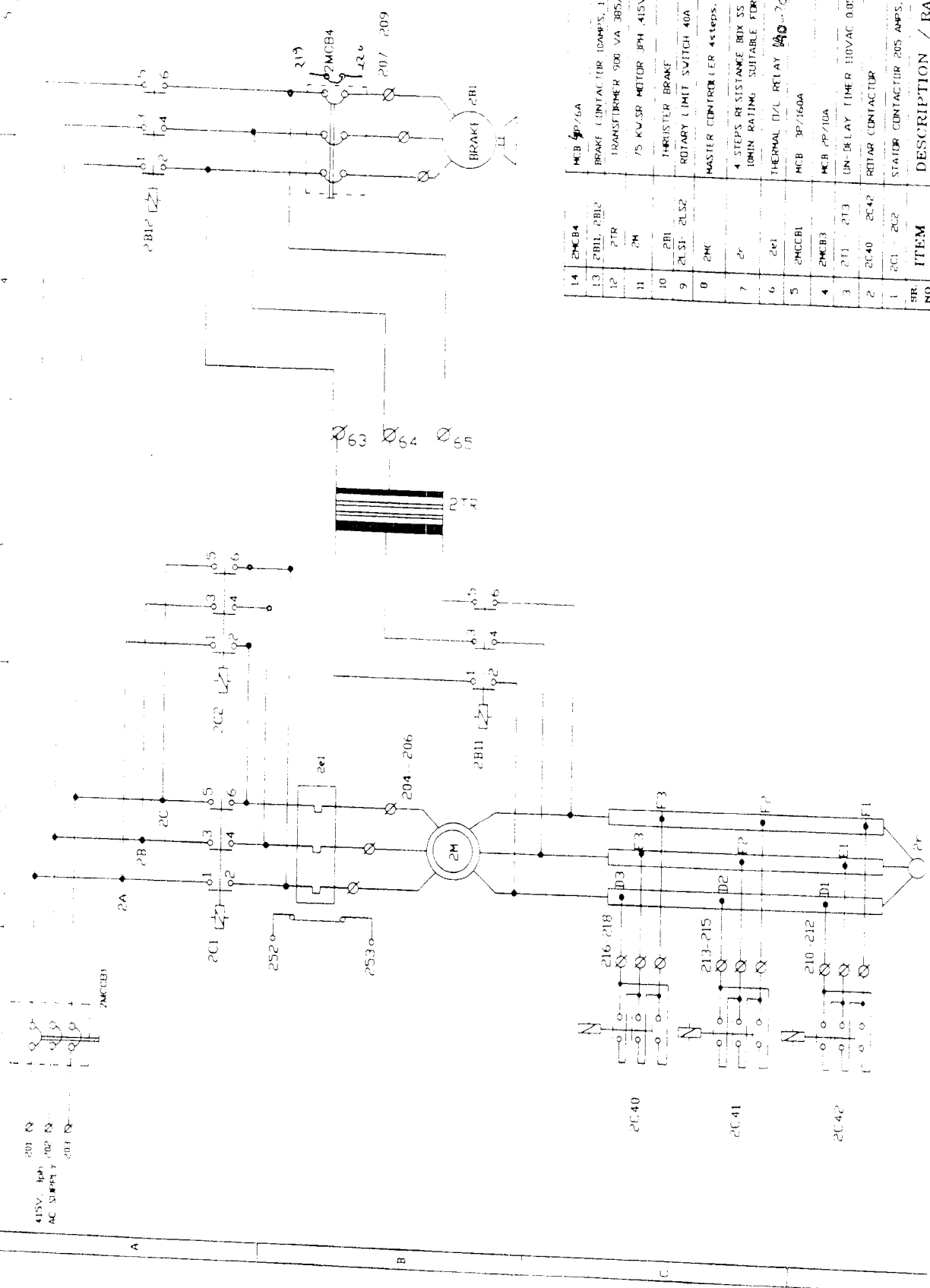
PROTECTIVE PANEL

2/15

EOT CRANE 60/10T



ECI CRANE 60/10T



*: CUSTOMER SUPPLY

SER. NO.	ITEM	DESCRIPTION / RATING	MAKE	QTY	NO.	LOCATION
14	2MCCB4	MCB 3P/76A	SIEMENS/BCH	1		ON CRAB
13	2B11, 2B12	BRAKE CONTACTOR 10AMPS, 110VAC	SIEMENS/BCH	2		
12	2TR	TRANSFORMER 900 VA 385/415V	REF. UICD	1		
11	2M	75 KW SR MOTOR 3PH 415VAC	CUSTOMER	1		
10	2B1	THRUSTER BRAKE	SCOPE	1		
9	2LS1, 2LS2	ROTARY LIMIT SWITCH 40A GRI S/4B/2SH	SM/SDC/OMEGA	2		
8	2MC	MASTER CONTROLLER 4steps, 10amps	SM/SDC/OMEGA	1		
7	2r	4 STEPS RESISTANCE BOX SS PUNCHED GRID TYPE	SM/SDC/OMEGA/SMT	1		
6	2r1	MINI RATING SUITABLE FOR KVA MOTOR	SM/SDC/OMEGA/SMT	1		
5	2MCCB1	THERMAL OVL RELAY 140-700	SM/SDC/OMEGA/SMT	1		
4	2MCCB3	MCB 3P/100A	SIEMENS/BCH	1		
3	2T1, 2T3	ON-DELAY TIMER 110VAC 0.05-10secs	SIEMENS/BCH	1		
2	2C40, 2C42	ROTARY CONTACTOR 110 VAC COIL	SIEMENS/BCH	1		PHI
1	2C1, 2C2	STATOR CONTACTOR 205 AMPS, 110VAC	SIEMENS/BCH	2		PANEL ON PLATFORM

POWER DIAGRAM OF MAIN HOIST

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EO1 CRANE 60/10T

PP/10A

250 219 220

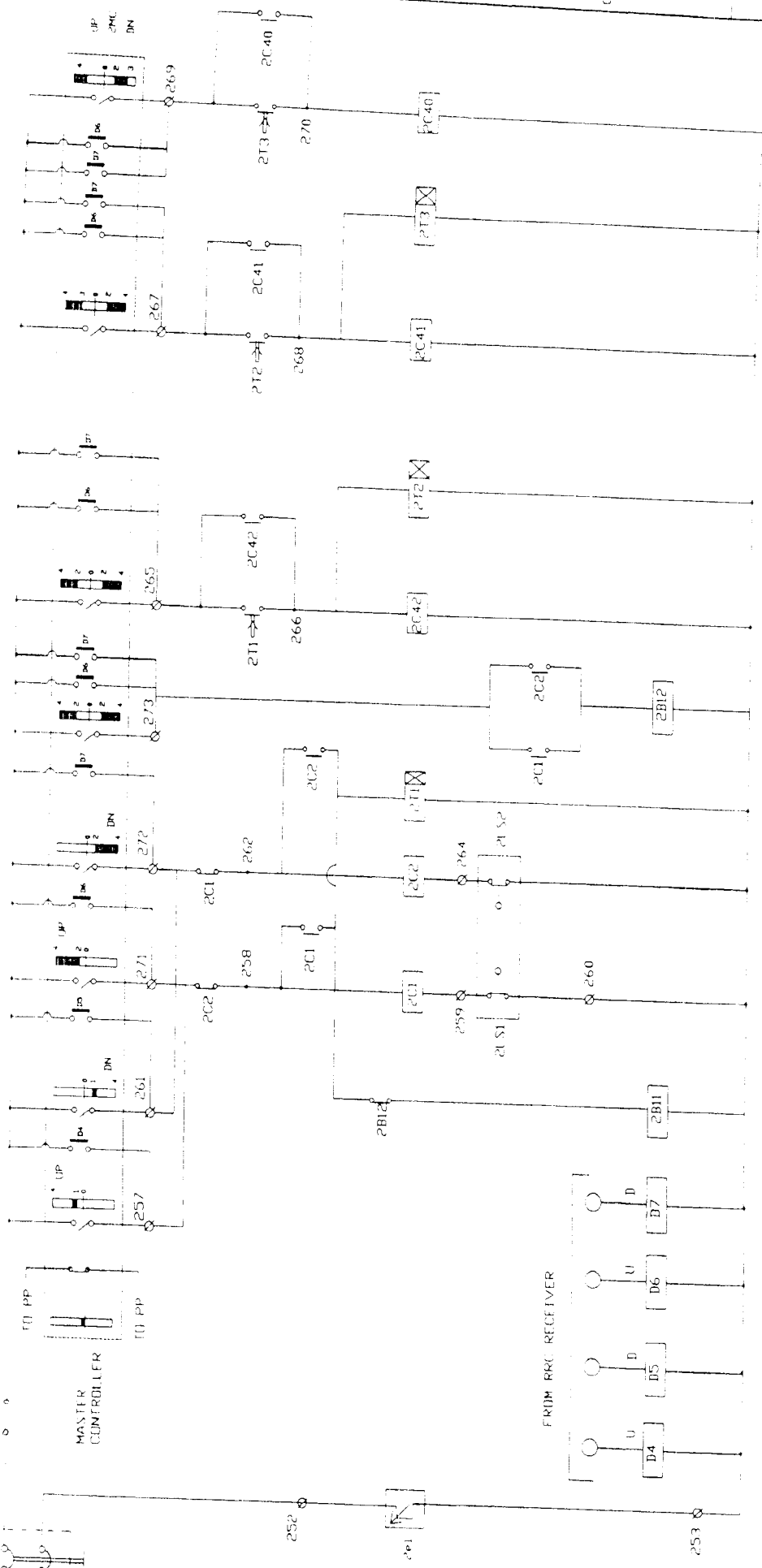
MASTER CONTROLLER

FROM PROTECTIVE PANEL

FROM REC RECEIVER

MH CONTROL CIRCUIT

5/15

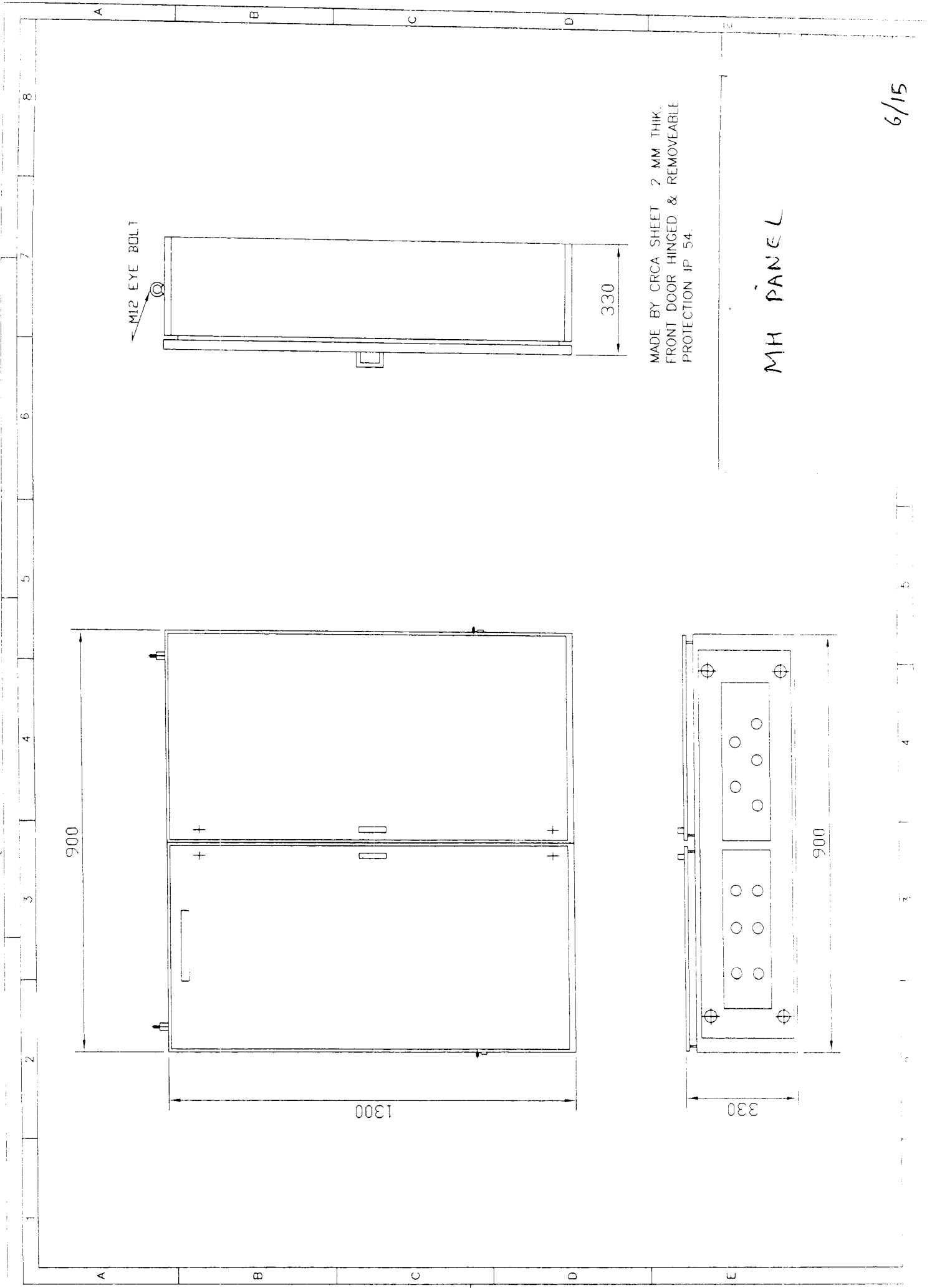


CONTACTOR SEQUENCE

CONTACTOR	2C1	2C2	2C42	2C41	2C40	2B11	2B12
4	○	○	●	●	●	●	●
3	○	○	●	●	●	●	●
2	○	○	●	●	●	●	●
1	○	○	○	○	○	○	○
0	○	○	○	○	○	○	○
1	○	○	○	○	○	○	○
2	○	○	○	○	○	○	○
3	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○

○ CONTACTOR ENERGISED
● CONTACTOR ENERGISED AT DELAY TIME DELAY

EOT CRANE 60/10T

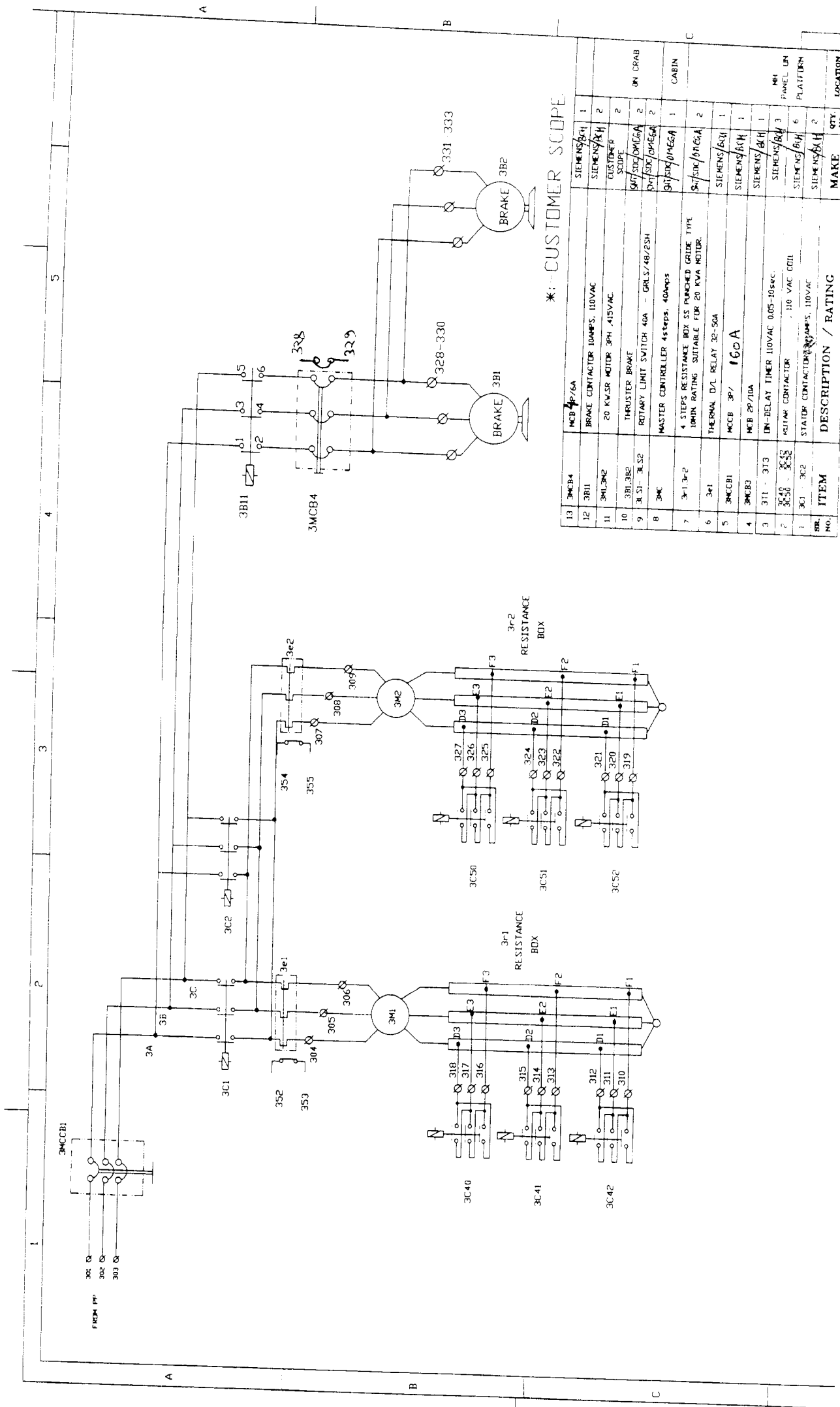


MADE BY CRCA SHEET 2 MM THIK.
 FRONT DOOR HINGED & REMOVEABLE
 PROTECTION IP 54.

MH PANEL

6/15

ECOT CRANE 60/10T

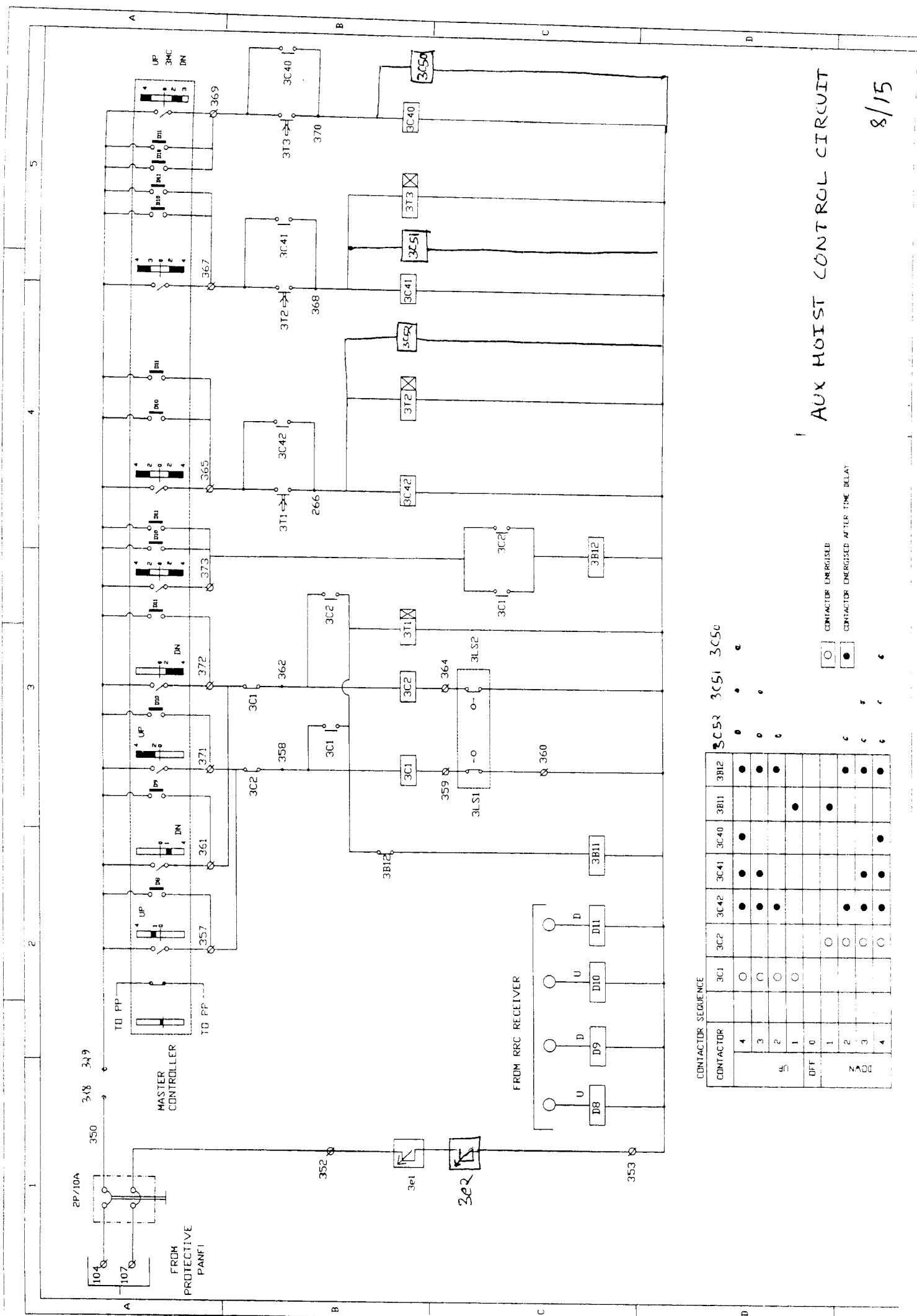


*: CUSTOMER SCOPE

SER. NO.	ITEM	DESCRIPTION / RATING	MAKE	QTY.	NO.	LOCATION
13	3MCCB4	MCCB 4P/6A	SIEMENS/3AH	1		
12	3B11	BRAKE CONTACTOR 10AMPS. 110VAC	SIEMENS/3AH	2		
11	3M2	20 KW 3R MOTOR 3PH 415VAC	CUSTOMER SCOPE	2		ON CRAB
10	3B1, 3B2	THRUSTER BRAKE	SIEMENS/3AH	2		
9	3R1, 3R2	ROTARY LIMIT SWITCH 40A - GRLS/48/2SH	SIEMENS/3AH	2		
8	3M2	MASTER CONTROLLER 4steps. 40amps	SIEMENS/3AH	1		CABIN
7	3r-1, 3r-2	4 STEPS RESISTANCE BOX SS PUNCHED GRID TYPE 10MVA RATING SUITABLE FOR 20 KVA MOTOR.	SIEMENS/3AH	2		
6	3r1	THERMAL O/L RELAY 32-50A	SIEMENS/3AH	1		
5	3MCCB1	MCCB 3P/ 160A	SIEMENS/3AH	1		
4	3MCCB3	MCCB 2P/10A	SIEMENS/3AH	1		
3	3T1 - 3T3	DM-DELAY TIMER 110VAC 0.05-10sec.	SIEMENS/3AH	3		NR PANEL UN
2	3C50 - 3C53	MELFAM CONTACTOR	SIEMENS/3AH	6		PLATFORM
1	3C1 - 3C2	STATOR CONTACTOR 110VAC	SIEMENS/3AH	2		

POWER DIAGRAM OF AUX. HOIST
7/15

EOT CRANE 60/10T



CONTACTOR SEQUENCE

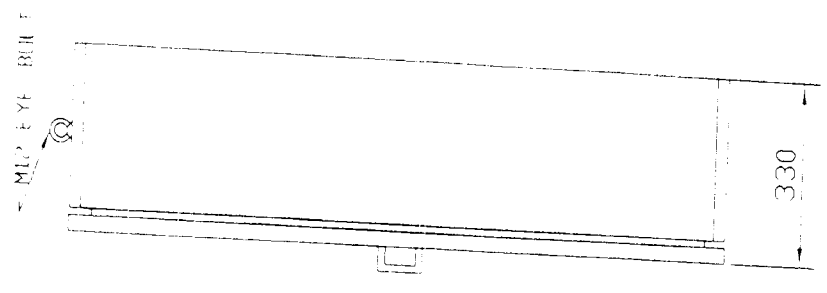
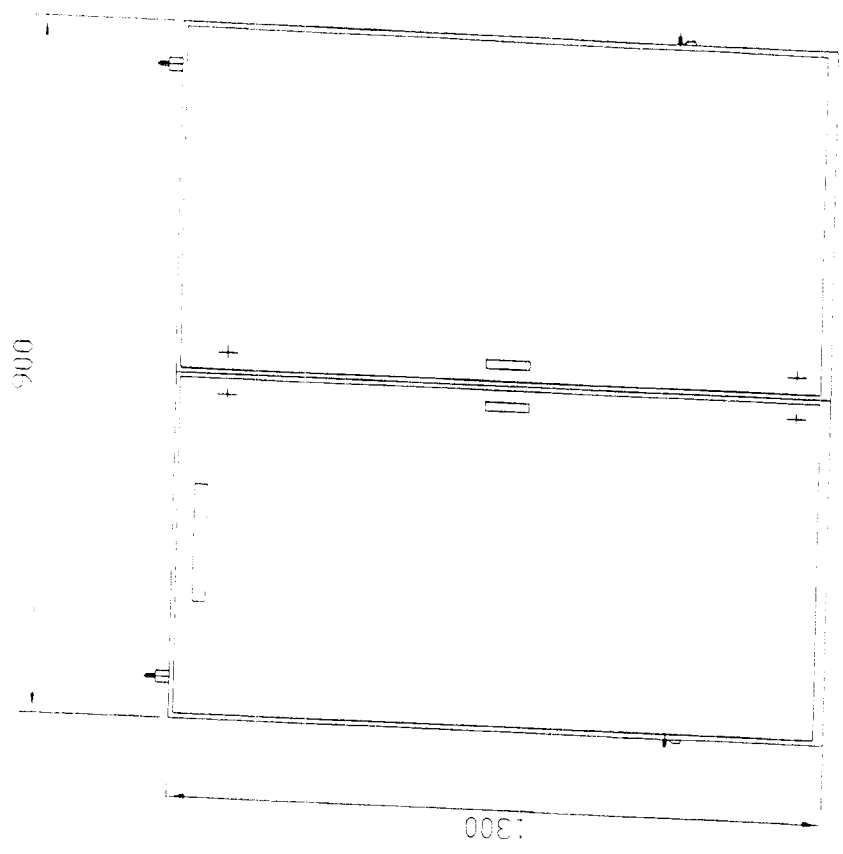
CONTACTOR	3C1	3C2	3C42	3C41	3C40	3B12	3B11	3C50	3C51	3C52
4	○			●		●		●	●	●
3	○		●	●		●		●	●	●
2	○		●	●		●	●	●	●	●
1	○						●	●	●	●
OFF		○								
DN		○								
UP		○								

○ CONTACTOR ENERGISED
● CONTACTOR ENERGISED AFTER TIME DELAY

AUX HOIST CONTROL CIRCUIT

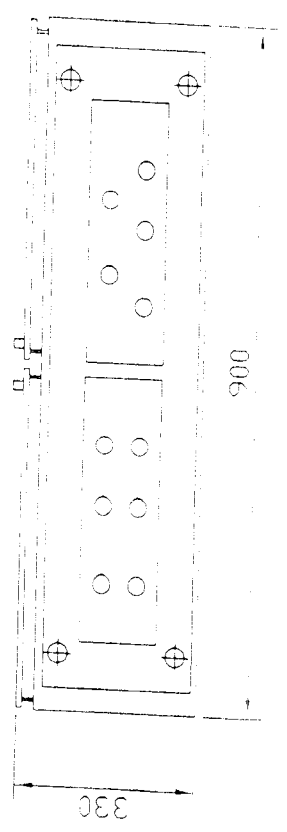
8/15

EOT CRANE 60/10T



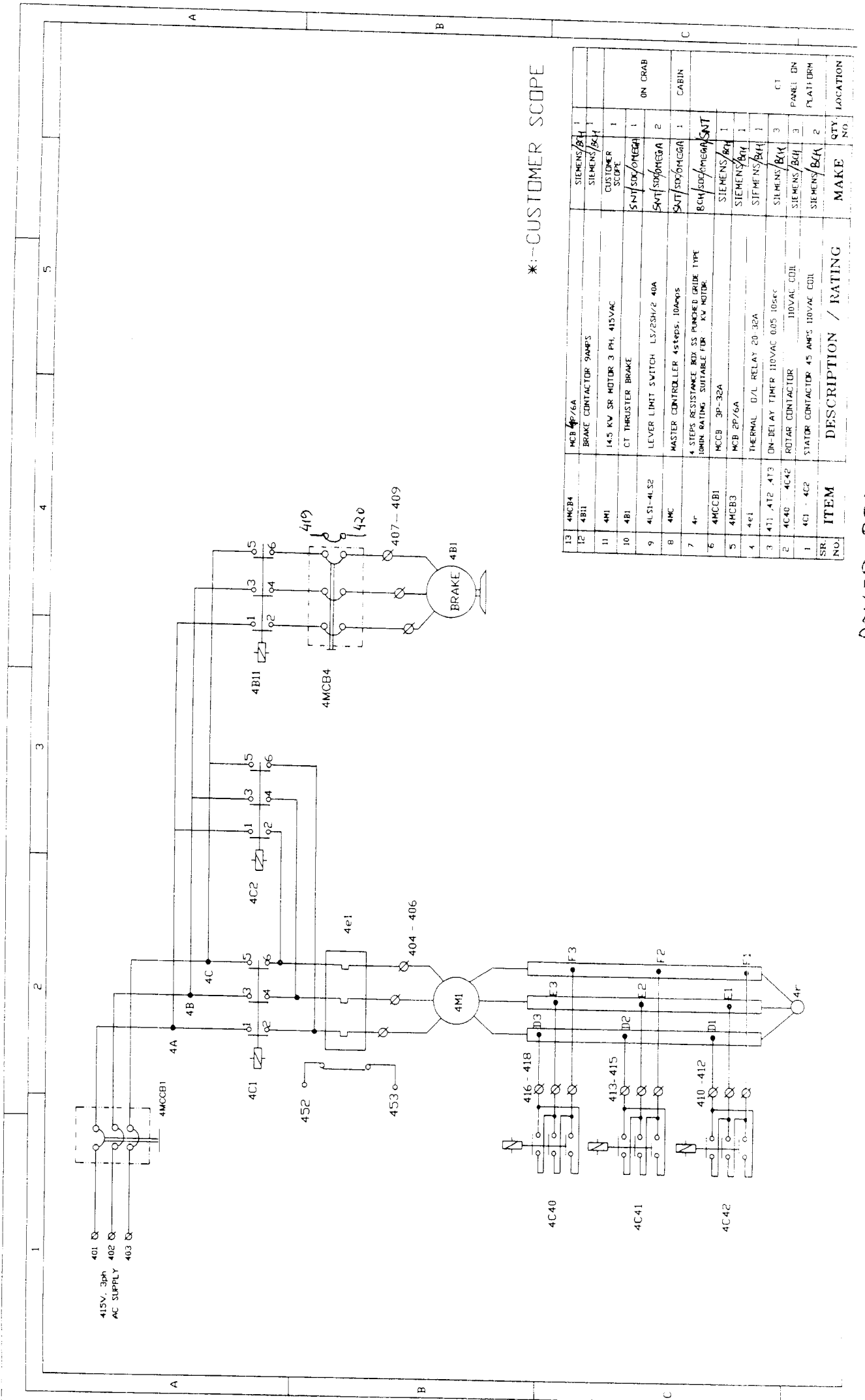
MADE BY CRCA SHEET 2 MM THICK
 FRONT DOOR HINGED & REMOVEABLE
 PROTECTION IP 54

AH PANEL



9/15

ECOT CRANE 60/10T



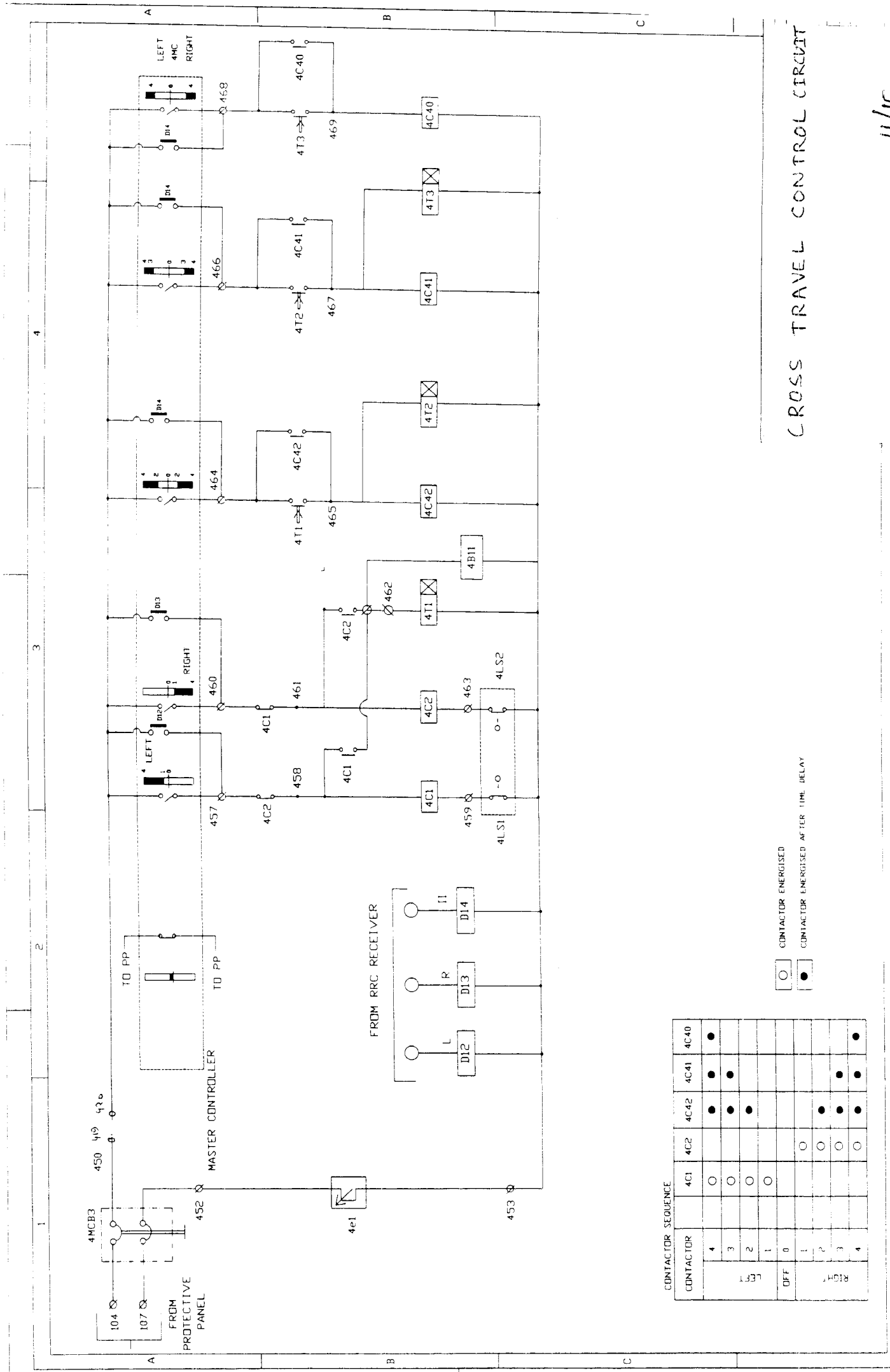
*:--CUSTOMER SCOPE

Sr. No.	ITEM	DESCRIPTION / RATING	MAKE	QTY	NO.	LOCATION
13	4MCB4	MCB 4P/6A	SIEMENS/BCH	1		
12	4B1	BRAKE CONTACTOR 90A/PS	SIEMENS/BCH	1		
11	4M1	14.5 KV SR MOTOR 3 PH, 415VAC	CUSTOMER SCOPE	1		
10	4B1	CT THRUSTER BRAKE	SANT/SD/OMEGA	1		ON CRAB
9	4LSI-4LS2	LEVER LIMIT SWITCH LS/2SH/2 40A	SANT/SD/OMEGA	2		
8	4MC	MASTER CONTROLLER 4steps, 10Amps	SANT/SD/OMEGA	1		CABIN
7	4r	4 STEPS RESISTANCE BOX SS PUNCHED GRID TYPE DIMA RATING, SUITABLE FOR KW MOTOR.	8CH/SD/OMEGA/SANT	1		
6	4MCCB1	MCCB 3P-32A	SIEMENS/BCH	1		
5	4MCB3	MCB 2P/6A	SIEMENS/BCH	1		
4	4e1	THERMAL D/L RELAY 20-32A	SIPMENS/BCH	1		
3	4T1, 4T2, 4T3	DN-DELAY TIMER 110VAC 0.05-10sec	SIEMENS/BCH	3		CT
2	4C40, 4C42	ROTAR CONTACTOR 110VAC COIL	SIEMENS/BCH	3		PANEL DN
1	4C1, 4C2	STATOR CONTACTOR 45 AMPS 110VAC COIL	SIEMENS/BCH	2		PLATFORM

POWER DIAGRAM OF CROSS TRAVEL

10/15

ECT CRANE 60/10T



CONTACTOR SEQUENCE

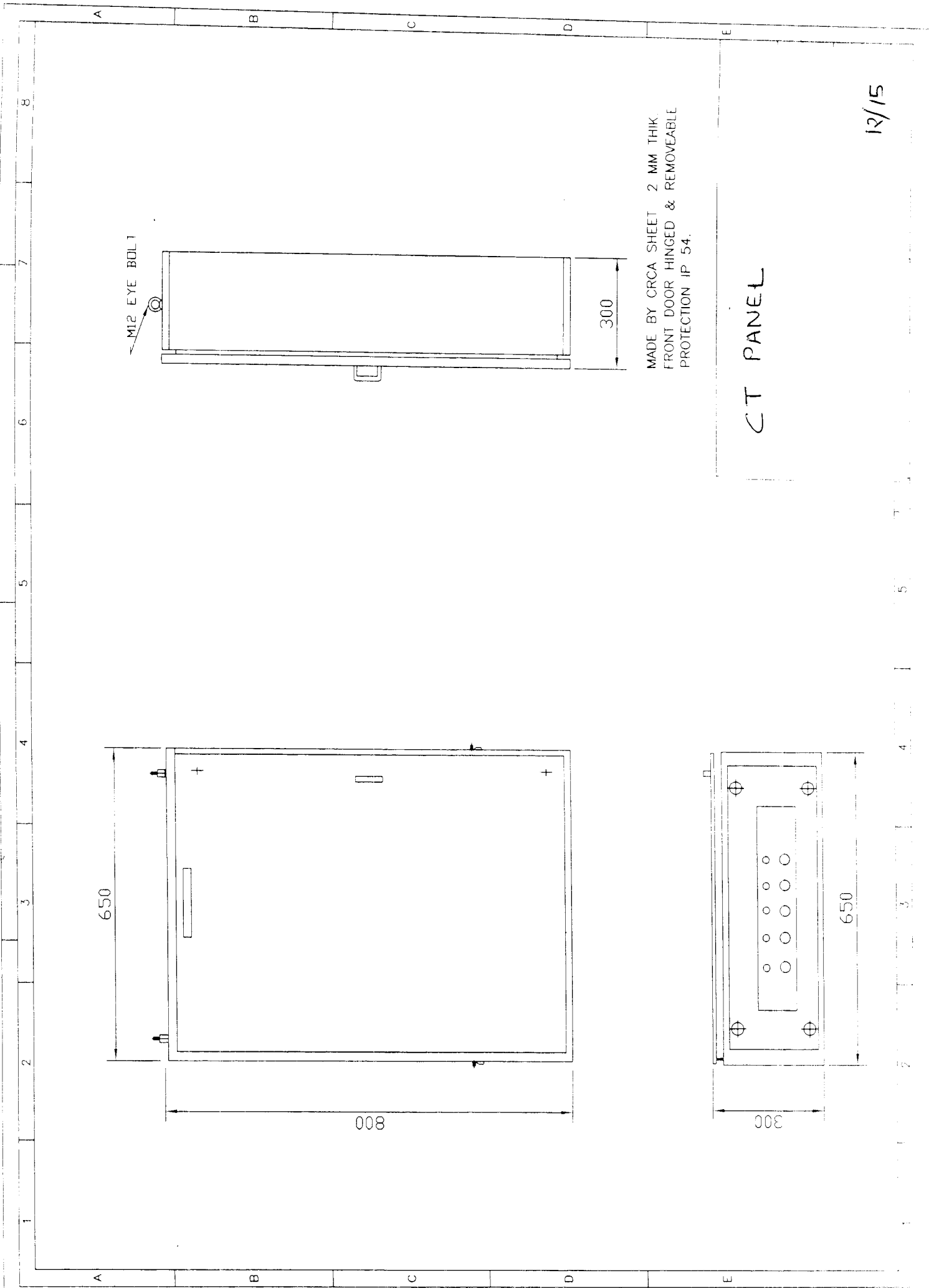
CONTACTOR	4C1	4C2	4C42	4C41	4C40
4	○		●	●	●
3	○		●	●	
2	○		●		
1	○				
OFF	○				
1		○			
2		○			
3		○	●	●	●
4		○	●	●	●

○ CONTACTOR ENERGISED
● CONTACTOR ENERGISED AFTER TIME DELAY

CROSS TRAVEL CONTROL CIRCUIT

11/15

ECT CRANE GC/10T



M12 EYE BOLT

300

MADE BY CRCA SHEET 2 MM THICK.
FRONT DOOR HINGED & REMOVEABLE
PROTECTION IP 54.

CT PANEL

12/15

650

800

300

650

8

7

6

5

4

3

2

1

A

B

C

D

E

4

3

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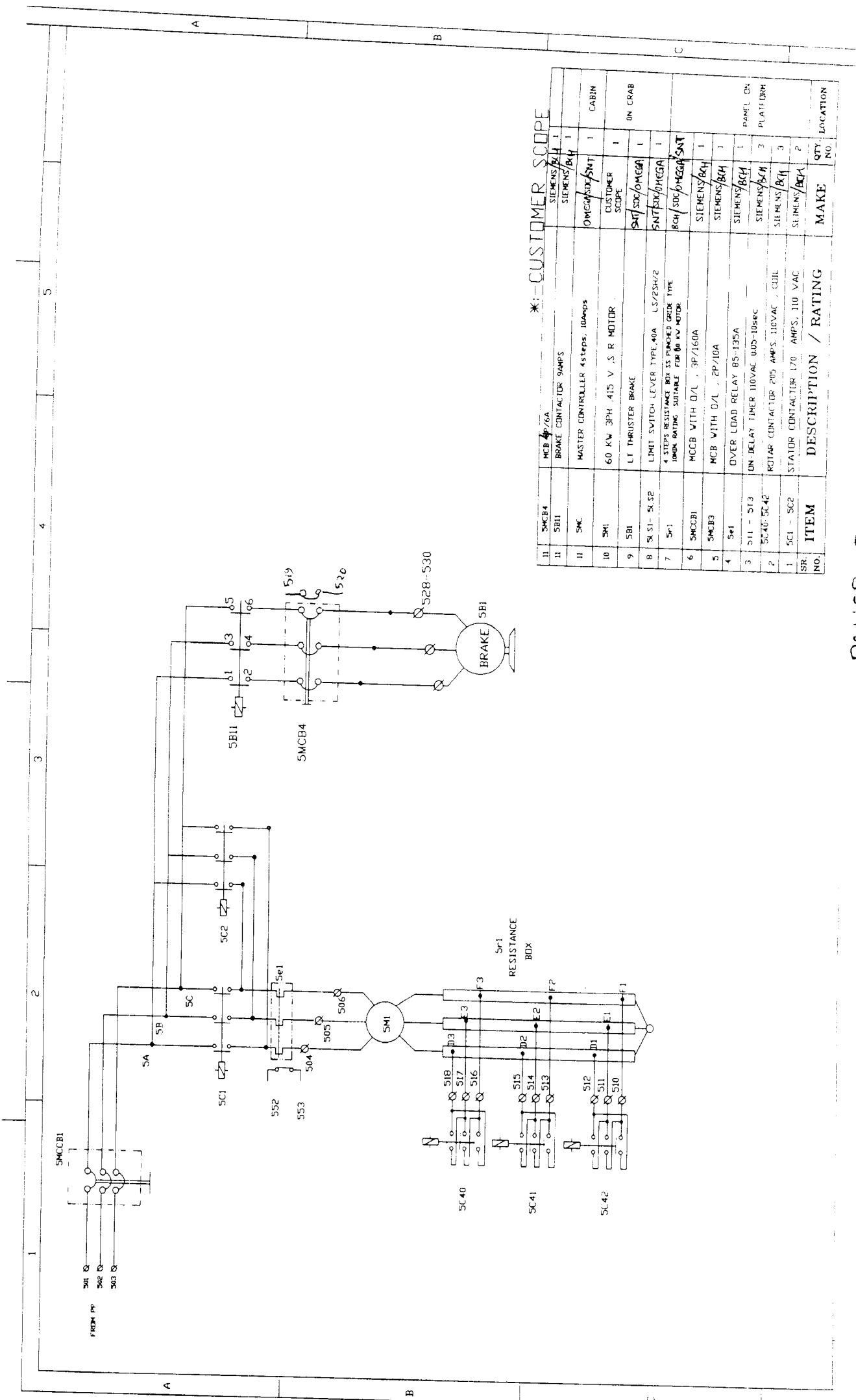
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3

2

1

EOT CRANE 60/10T

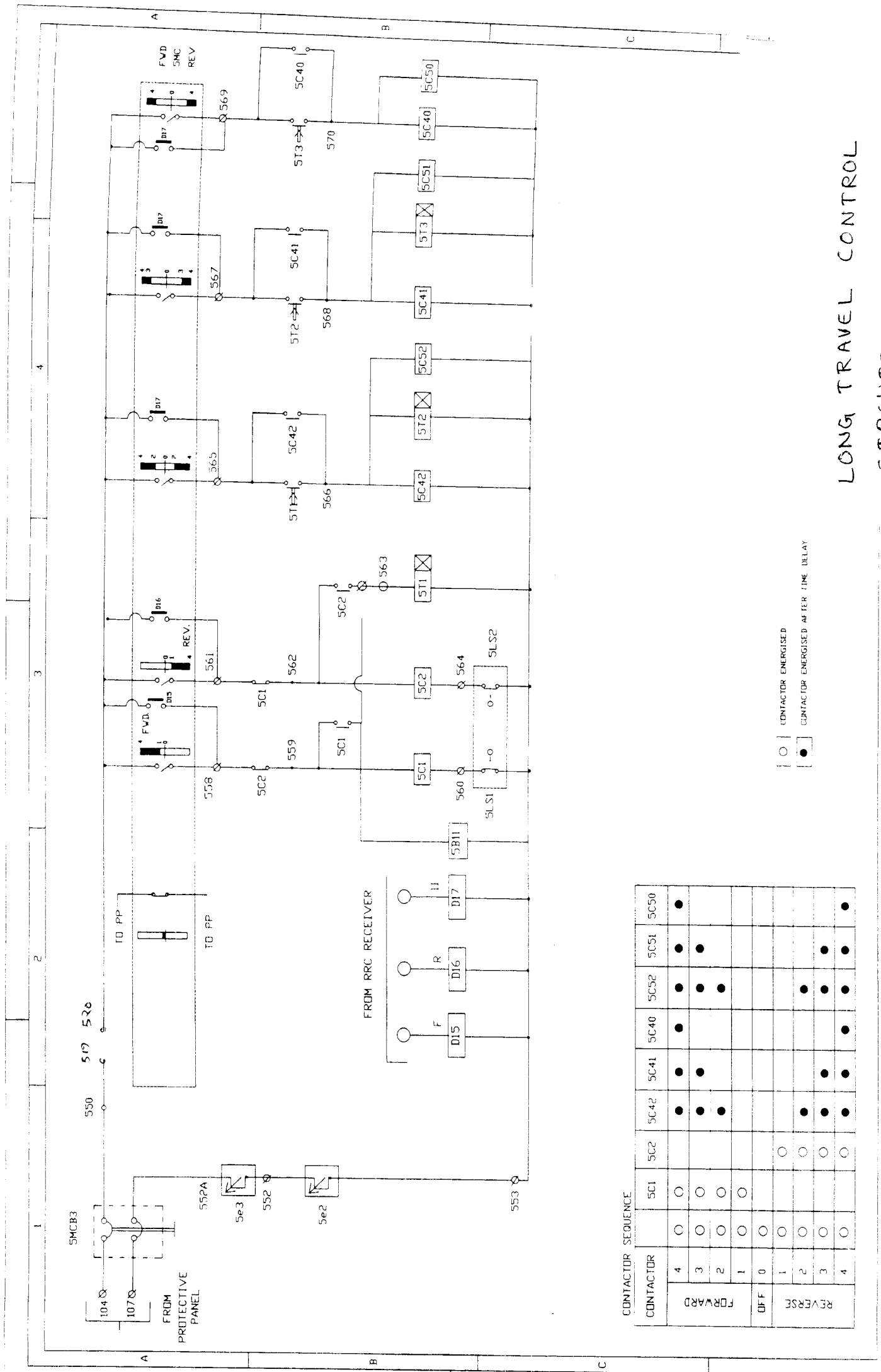


*: - CUSTOMER SCOPE

ITEM NO.	ITEM	DESCRIPTION / RATING	MAKE	QTY.	LOCATION
11	SMCB4	MCB 4P/6A	SIEMENS/BCH	1	
11	SB11	BRAKE CONTACTOR 9AMPS	SIEMENS/BCH	1	
11	SMC	MASTER CONTROLLER 4steps, 10AMPS	OMEGA/SNT	1	CABIN
10	SM1	60 KW 3PH .415 V .S R MOTOR	CUSTOMER SCOPE	1	ON CRAB
9	SBI	LT THRUSTER BRAKE	SNT/SDC/OMEGA	1	
8	5L31-5L32	LIMIT SWITCH LEVER TYPE 40A LS/2SH/2	SNT/SDC/OMEGA	1	
7	5P-1	4 STEPS RESISTANCE BOX SS PUNCHED CRANE TYPE 1000N RATING SUITABLE FOR 60 KW MOTOR	BCH/SDC/OMEGA/SNT	1	
6	SMCCB1	MCCB WITH D/L . 3P/160A	SIEMENS/BCH	1	
5	SMCB3	MCCB WITH D/L . 2P/10A	SIEMENS/BCH	1	
4	5s1	OVER LOAD RELAY BS-135A	SIEMENS/BCH	1	PANEL ON PLATFORM
3	511 - 513	ON-DELAY TIMER 110VAC 0.05-10sec	SIEMENS/BCH	3	
2	SC40, SC41, SC42	RESISTANCE CONTACTOR 200 AMPS 110VAC . CUIL	SIEMENS/BCH	3	
1	SC1 - SC2	STATOR CONTACTOR 170 AMPS 110 VAC	SIEMENS/BCH	2	

POWER DIAGRAM OF LONG TRAVEL 13/15

EOT CRANE 60/10T



○ CONTACTOR ENERGISED
 ● CONTACTOR ENERGISED AFTER TIME DELAY

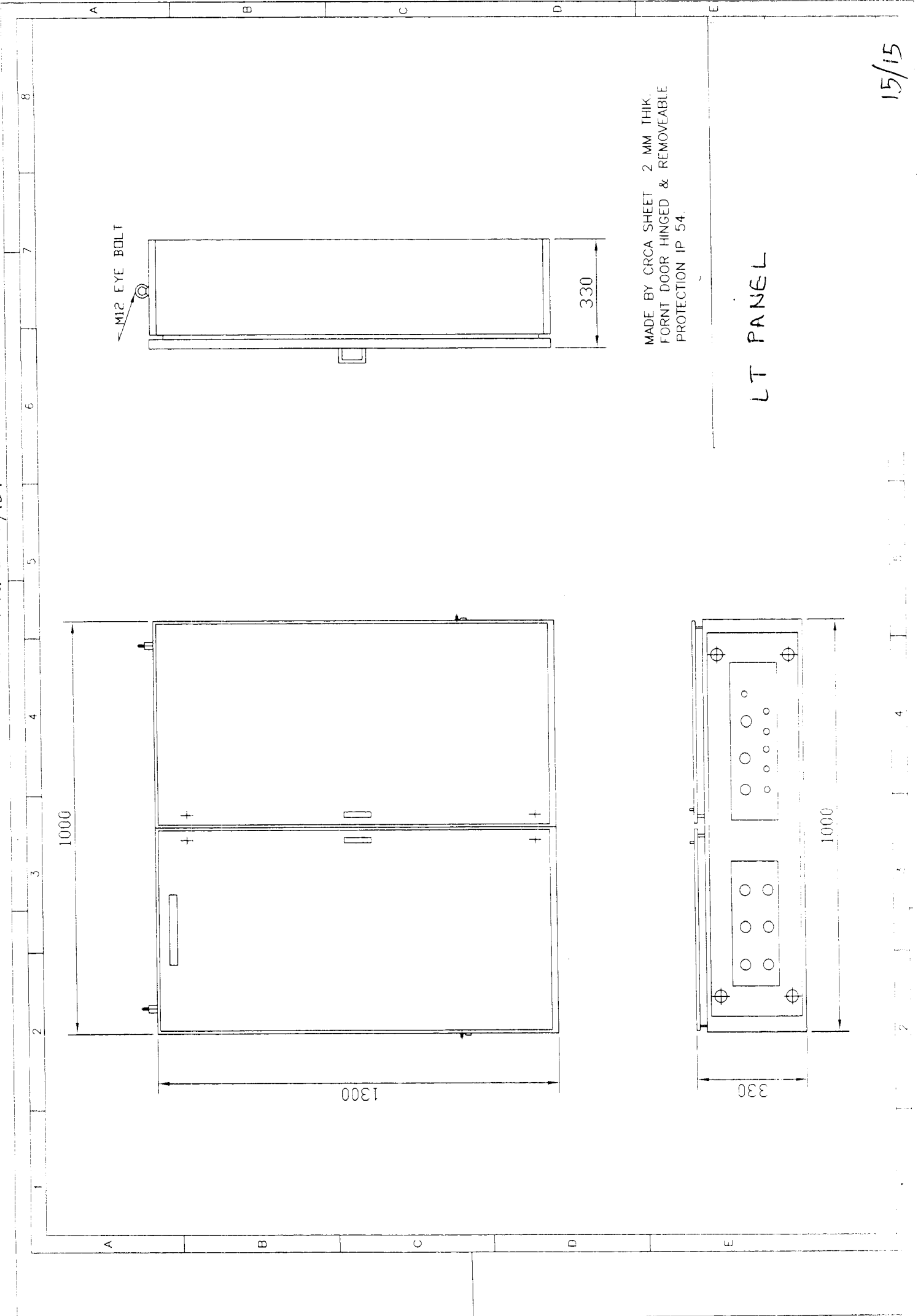
CONTACTOR SEQUENCE

CONTACTOR	5C1	5C2	5C42	5C41	5C40	5C52	5C51	5C50
FORWARD	○	○	●	●	●	●	●	●
OFF	○	○	○	○	○	○	○	○
REVERSE	○	○	●	●	●	●	●	●

LONG TRAVEL CONTROL
 CIRCUIT

14/15

ECT CRANE 60/10T



M12 EYE BOLT

330

1000

1300

330

1000

MADE BY CRCA SHEET 2 MM THIK.
FORNT DOOR HINGED & REMOVEABLE
PROTECTION IP 54.

LT PANEL

15/15

COMMERCIAL TERMS AND CONDITIONS FOR SUBMISSION OF OFFER**1.0 QUOTATIONS**

Bidders shall submit the offer in TWO INNER ENVELOPES as indicated below which shall be sealed in one outer envelope.

Envelope I: This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid. This envelope should be clearly marked “**Part I – Technical and Un-priced commercial bid**” Indicating Tender No., Due Date and Address & Reference of the Bidder.

Envelope II: This sealed envelope should contain price details this envelope should be clearly marked “**Part II - Price bid**” indicating Tender No., Due Date and Address & Reference of the Bidder.

Both the envelopes (Part I & II) shall be put in one cover, duly sealed, super scribing as Part I and Part II of Tender No., due date of opening and the address and reference of the Bidder

The above offer should reach this office on or before the due date by 14.00 Hrs (IST)
Tender should not be addressed to any Individuals name but only designation to

Sr. Manager (MM)
BHARAT HEAVY ELECTRICALS LIMITED
HEAVY PLATES & VESSELS PLANT
VISAKHAPATNAM - 530 012 (A P), INDIA.

Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in ENGLISH and accompanied by technical literature catalogue and detailed dimensional drawings in ENGLISH or otherwise the offers will not be considered.

2.0 PART I (TECHNICAL & UN-PRICED COMMERCIAL BID)**2.1 Technical**

This part shall include / indicate the following:

- 2.1.1. Offer should contain complete scope of supply with all technical details, specifications, delivery and other commercial terms and conditions.
- 2.1.2. Point by point confirmation for the Technical Specification enclosed is to be provided. If there are any deviations the same should be clearly specified. Offers received without conformation to our specification will be rejected.
- 2.1.3. List of customers to whom same or similar equipment have been supplied along with performance certificates to be enclosed.
- 2.1.4. Relevant catalogue to be attached.
- 2.1.5. List of spares parts (with part numbers) for two years operation and maintenance should be attached.

2.1.6. Information on shipping weight and cubage (length, width & height) to be provided

2.1.7. In case of foreign bidder offer, the Principal's technical offer only should be enclosed.

2.2 Un-Priced Commercial

This part shall include / indicate the following

2.2.1. Port of shipment / Station of dispatch

2.2.2. Terms of payment

2.2.3. FOB/FCA price along with freight charges up to Chennai port (for foreign bidders) Ex-works/FOR Dispatch Station price along with freight charges up to BHEL Visakhapatnam (for Indian bidders)

2.2.4. Taxes, Service tax & duties including Cess applicable.

2.2.5 Delivery Schedule

2.2.6. Filled-in check list to be enclosed

2.2.7. Offer validity

2.2.8. Country of origin

2.2.9. Percentage of agency commission if any along with a copy of Agency agreement The FOB/FCA/CFR Prices quoted shall include the agency commission.

2.2.10. A copy of "Un-Priced Part II 'i.e., a copy of the Price Bid without the price details to be enclosed.

2.2.11 BHEL Visakhapatnam is eligible for availing CENVAT / VAT credit on both inputs and capital inputs. The suppliers invoice should separately indicate the amount of duty / taxes and should invariably mention the following details:

1. The Central excise registration number, range division and commission rate of the supplier's jurisdiction.
2. The rate of duty and 8 digit central excise tariff heading of the item supplied.
3. The TIN, VAT, CST registration number of the supplier.

The duplicate copy of the invoice is required for availing CENVAT credit and original copy for availing VAT credit, if purchased within the state.

In case of foreign bidders the duplicate copy of the electronic Bill of Entry along with TR6 challan should be made available for availing CENVAT credit on CVD, Cess (S) and SAD.

3.0 **PART II (PRICE – BID)**

This part should contain the schedule of price particulars and to be co-related to the technical details provided in Part-I

4.0 **OPENING OF TENDERS**

The Part I – Technical & un-priced commercial bid alone would be opened on the Tender opening date.

The Part II – Price bid of technically suitable Bidders alone would be opened. The Technically suitable Bidders would be informed about the Price Bid opening date. Clarifications if any required by BHEL Visakhapatnam FOR Technical evaluation / commercial evaluation would be sought from Bidders before opening of Part II – price bid.

GENERAL

5.1 Incomplete offers will not be considered.

5.2 **Fixed priced:** Prices quoted by the bidder shall be fixed and not subject to any escalation whatsoever during the period of bid validity and execution of the Purchase Order A bid submitted with an adjustable price will be treated as non- responsive and rejected Prices shall be written in words and figures. In the event of difference, the price in words shall be valid and binding. Unit prices shall be considered correct in the event of any discrepancy with regards to total price.

5.3 **Bid currency:** Indian bidders should submit the prices only in Indian Rupees. Foreign bidders may submit their bid in their home currency, which should be clearly indicated in the un-priced commercial bid as well as in the price bid. Price bid opening date/ RA date will be considered as effective date for considering exchange rate to evaluate the offers.

- 5.4 **Terms of Delivery:** Bidders are required to quote their best delivery period. Foreign Bidders should submit their offer for net FOB/ FCA – Nearest Sea Port / Air Port as well as CFR / Chennai Seaport/ Airport. Freight charges up to Chennai port to be indicated separately. Indian Bidders should submit their offer for Dispatching station as well as FOR BHEL Visakhapatnam basis. Freight charges from works to BHEL Visakhapatnam to be indicated separately. Delivery from the date of Letter of Intent to be mentioned in the offer.
- 5.5 **Taxes and Duties:** All Taxes and Duties payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No/ Tariff No. etc, failing which the purchaser will not be liable for payment of such Taxes and Duties (Our TIN No.28280189432, APGST No. VSP/04/1/1023 dated 24.08.1968. CST No.VSP/04/1/1012 dated 24.08.1968 & BHEL Visakhapatnam ECC No AAA CB 7076 N-XM001. Assessment circle Visakhapatnam.)
- 5.6 **Validity:** The offers for main equipment and spares shall be kept open for acceptance for a period of 120 days (one hundred and twenty days) from the dates of opening of the tender (part I)
- 5.7 **Terms of Payment:**
- 5.7.1 **Indian Bidders:**
100% payment will be made within 45 days of receipt of material at BHEL,Visakhapatnam and on submission of Performance Bank Guarantee for 10%.
- 5.7.2 **Foreign Bidders**
An Irrevocable letter of Credit shall be established for 80% of FOB/FCA/CFR/ (excluding Indian Agent's commission) 2 months prior to shipment and valid for 3 months for negotiation against shipment Letter of Credit shall be opened through a branch of State Bank of India in the country where order shall be placed. In case, in the country where order is placed, State Bank of India is not there, Letter of Credit will be confirmed by foreign banker. Balance 20% of FOB/FCA/CFR value shall be paid through sight draft on Commissioning & acceptance of the equipment at BHEL Visakhapatnam, against submission of 10% performance bank guarantee. All Bank charges outside India are to supplier's account. Lump sum erection and commissioning charges if any, shall be payable after satisfactory erection & commissioning of the equipment by sight draft against certificate issued by the competent authority.
- 5.7.3 **Common to both India & Foreign Bidders.**
Erection & Commissioning (E&C) charges will be released after deduction of Income Taxes as per the Govt. of India rules. The TDS certificate will be issued by BHEL. Applicable service tax on E&C charges will be payable extra. The liability of depositing the same to the Govt. will be of the supplier.
- 5.7.4 **Loading criteria common to both Indian and foreign bidders:** Vendor should accept the payment terms specified above. However for any deviation to the payment terms offered with reference to the above criterion will be loaded with prime lending rate of SBI prevailing on date of opening of price bid + 2%, which shall be computed for the differential period between BHEL Visakhapatnam terms of payment and the offered basic price.
- 5.8 DUNS number (allotted by M/s. DUN & Bradstreet) shall be mentioned in your offer.
- 5.9 **Guarantee:** The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier.
Offers from vendors not accepting to the requested guarantee period will be rejected.

- 5.10 **Contract Execution Bank Guarantee (CEBG):** The successful tenderer shall furnish a Bank Guarantee from any Nationalized Bank for 5% of Purchase Order value (FOR Dispatching station value – Excluding taxes, duties, freight & insurance – for Indian bidders) & (FOB/FCA value – excluding freight & insurance – for foreign bidders) confirming that the order will be executed as per the terms and conditions and this should be valid till final dispatch date (LR/GR/BL/AWB) with additional 2 months claim period. Letter of Credit will be processed only after receipt of CEBG. The CEBG is to be furnished within 3 weeks from the date of Purchase order.
Offers from vendors not accepting to submit CEBG will be rejected.
- 5.11 **Performance Bank Guarantee (PBG):** The supplier shall furnish a Bank guarantee from any Indian Nationalized Bank approved by BHEL Visakhapatnam in the format, given by BHEL Visakhapatnam along with purchase order for 10% of the Purchase Order value (FOR Dispatching station value – Excluding taxes, duties, freight & insurance – for Indian bidders) & (FOB/FCA value – excluding freight & insurance – for foreign bidders) valid for period of guarantee with additional claim period of 2 months.
Offers from vendors not accepting to submit PBG will be rejected.
- The CEBG & PBG shall be obtained from any Indian Nationalized Bank/ Scheduled Commercial Banks.
- 5.12 **Liquidated damages:** Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional penalty at the rate of ½% of the value of goods for each week of delay subject to a maximum of 10% of the Purchase Order value.
- 5.12.1 **Loading Criteria for Liquidated Damages:** Any deviation from above LD Clause to the extent for which LD is not agreed by the vendor i.e., differential % value will be loaded on basic price, e.g. If some vendor agrees for say maximum of 6% LD then his price will be loaded by 4% (10 – 6) of his quoted basic price.
- 5.13 **Risk purchase:** If the supplier fails to deliver the goods within the delivery specified in the Purchase Order, BHEL Visakhapatnam will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the delivery period mentioned in the Purchase Order.
Offers from vendors not accepting the above Risk Purchase terms will be rejected.
- 5.14 **Indian Agent & Agency commission:** An Indian Agent can represent only one Foreign Manufacturer against a particular Tender. The FOB/FCA/CFR price quoted by the Foreign bidder shall include the agency commission. However, the agency commission component payable to their Indian Agents shall be shown separately in the offer. This will be paid by BHEL Visakhapatnam in India Rupees, on satisfactory commissioning & acceptance of the equipment. Copies of current Agency Agreement / Authorization Letter in respect of Agency Commission shall be furnished along with offer. For calculation of Rupee equivalent of Agency Commission exchange rate as prevailing on the date of Purchase Order will be taken.
- 5.15 **Short shipment / Warranty replacement:** In case of any short shipment in the main equipment / spares, customs duty levied on such supplies, shall be borne by the supplier. Any warranty replacement during the warrantee period shall be on FOR, BHEL Visakhapatnam, basis.

- 5.16 **Inspection & Testing:** All goods shall be subject to inspection by BHEL Visakhapatnam or its authorized representatives at supplier's works or at BHEL Visakhapatnam stores. The supplier will not charge for the facilities provided for inspection of goods. In case of machine tools the machine would be inspected and proved at supplier's works prior to dispatch however, final inspection and acceptance of the machine will be carried after installation of the machine at BHEL, Visakhapatnam.
- 5.17 **Operating and Maintenance manuals:** The Bidders shall clearly mention in their offer that Operating Maintenance Manuals as called for in the Technical Specification in the required number of copies will be provided.
- 5.18 **Cenvat & VAT credit. (for Indian Bidders only):** The quotation must indicate Tariff item number and rate of Excise Duty applicable. The original Excise Duty Gate Pass will be required to be furnished in case charges to us. If the bidder is availing Cenvat credit for his input materials, the effect of proforma credit should be passed on to the purchaser.
- 5.19 **Packing:** The Supplier shall arrange for packing suitably in all respects considering the peculiarity of the material involves for normal transport by sea / air / rail road and suitably protected against effect of tropical salt laden atmosphere in the event of shipment being delayed at ports.
- 5.20 **Salient Points of HSE** (Health, Safety & Environment) that are to be considered while submissions of offer are:
- 5.20.1 Consumption benchmarks related to output shall be provided wherever applicable for key input resources (energy/fuels/chemicals)
- 5.20.2 Competency requirements for operation, maintenance and calibration, if any, shall be communicated
- 5.20.3 If any Hazardous chemicals as per MSIHC (Manufacturing, Storage and import of Hazardous Chemicals) Rules 1989/94/2000 are used, the MSDS shall be provided, along with on site & OFF site emergency plan (as applicable).
- 5.20.4 The noise level at operator level shall be within 90 Db
- 5.20.5 OH&S (Occupational Health and Safety) control measures for safe working of machine as applicable shall be specified
- 5.20.6 The machine/equipment shall be fitted with guard for rolling and moving parts and shall comply with applicable OH&S legislations and Factories Act 1948
- 5.20.7 The supplier shall submit the layout drawing of operating controls, displays etc and operating instructions to enable ergonomics evaluation and approval
- 5.20.8 The recommended PPE (Personal Protective Equipment) for the equipment shall be furnished
- 5.20.9 Alarm System (both visual and audible) and Automatic switch off of the equipment shall be provided for any intrusion, overloading, short circuiting or any malfunctioning of the equipment.
- 5.20.10 Details of all hazardous / harmful substances discharges as by-products / wastes during operations of the machine / equipment, such as fumes, gases, dust particles, aerosols UV./IR (Ultra violet / Infra red) radiations, etc shall be furnished, along with their concentrations and their TLV, (Threshold Limit Value)

- 5.20.11 Appropriate pollution control measures shall be proposed to keep the emissions from the machinery / processes within the prescribed limit as stated in Environment Protection Rules 1986.
- 5.20.12 All furnaces, process units, DG sets, paint booths, shot blasting chambers, etc shall be provided with stack(s) of sufficient height as per guidelines laid down in the Environment Protection Rules 1986.
- 5.20.13 wherever industry specific standards are not available for control of pollutants, general emission standards shall be used
- 5.20.14 Chemicals banned due to their negative impact on the environment shall not be used on the process
- 5.20.15 Fuels with sulphur content less than 0.05% shall be proposed.
- 5.20.16 Details regarding nature of waste generated and appropriate disposal practices available shall be provided, along with the operation procedure of the plant / process.
- 5.20.17 Hazardous chemicals and flammable substances shall be transported only through authorized transporters and all safety practices as laid down in applicable legislative requirements such as Central Motor Vehicle Rules, Manufacture, Storage and Import of Hazardous Chemical 1989, etc. shall be followed.
- 5.20.18 Primary materials used in the equipment shall be specified and they shall be eco - friendly.
- 5.21 Evaluation of offers shall be on the basis of delivered cost (Net cash outflow to BHEL Visakhapatnam).
- 5.22 BHEL Visakhapatnam also reserves its right to allow to the Public Sector Enterprises ordering and price preference facilities as admissible under the existing policy.
- 5.23 BHEL Visakhapatnam reserves its right to reject a tender due to unsatisfactory past performance in the execution of a contract at another project / unit.
- 5.24 BHEL Visakhapatnam shall be at liberty to reject or accept any tender, part or in full, at their own discretion and any such action is not liable for any question or claim against BHEL Visakhapatnam.
- 5.25 BHEL Visakhapatnam reserves the right to go for a Reverse Auction (RA) instead of opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions governing RA are given below.

GENERAL TERMS AND CONDITIONS OF RA (REVERSE AUCTION)

Against this enquiry for the subject item/system with detailed scope of supply as per enquiry specifications. BHEL Visakhapatnam may resort to “REVERSE AUCTION PROCEDURE” i.e., ON LINE BIDDING ON INTERNET.

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. BHEL Visakhapatnam will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
3. BHEL Visakhapatnam will inform the vendor in writing in case of reverse auction, the details of service provider to enable them to contact & get trained.

4. Business rules like event date, time, start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
 5. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to participate in the event.
 6. BHEL Visakhapatnam will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL Visakhapatnam like Packing & Forwarding charges, taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL Visakhapatnam standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.
 7. Reverse auction will be conducted on scheduled date & time.
 8. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
 9. The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL Visakhapatnam through Service provider within 24 hours of Auction without fail.
 10. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL Visakhapatnam as per prevailing procedure.
 11. In case BHEL Visakhapatnam decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL Visakhapatnam shall be opened as per BHEL Visakhapatnam's standard practice.
- 5.26 **Force Majeure clause:** If at the time during the continuance of this contract the performance in whole or in part by either party of any obligations under this contract shall be prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events) then provided notice of happening of any such events is given by either party to other within twenty one days from the date of occurrence thereof neither party shall reason of such events be entitled to terminate this contract nor shall either party have any such non performance and delay is resumed as soon as practicable after such events has come to an end or ceased to exist, if the performance in whole or part of any obligation under this contract is prevented or delayed by reason or any such event claims for extension of time shall be granted for period considered reasonable by the purchaser subject to prompt notification by the seller to the purchaser of the particulars of the events and supply to the purchaser if required of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed to be a waiver of time in respect of remaining deliveries.

CHECK LIST

Bidder's acceptance to BHEL Visakhapatnam's Standard Commercial Terms & Conditions.

Applicable for Indian bidders

(To be submitted along with the offer – please do not change the format)

BHEL Visakhapatnam Tender No: & Date:	Bidders Confirmation / response
Prices have been quoted on "FIRM PRICE" basis only (Yes / No)	
Prices have been quoted on "F.O.R BHEL Visakhapatnam" basis only (Yes / No)	
P & F (Please confirm whether included or not)	
Freight (Please confirm whether included or not)	
Insurance (Please confirm whether included or not)	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – please Specify)	
Sales Tax (please Specify)	
Excise Duty (please Specify)	
Delivery period from the date of Purchase Order (please Specify). A loading @ ½ % of the Purchase Order value per week will be done for the grace period requested. For evaluation 4 weeks will be considered as one month. Vendors quoting a delivery period beyond the 'the requested delivery plus the allowed grace period' is liable for rejection.	
Liquidated damages as per clause 5.12 (we require acceptance to @ ½% per week subject to a maximum of 10%) (Yes / No)	
Risk Purchase as per clause 5.13 (Yes / No) (Offers from vendors not accepting the Risk Purchase terms will be rejected)	
Payment terms (As per Clause No. 5.7.1) (Yes / No)	
Contract Execution Bank Guarantee (CEBG) as per Clause 5.10 (Yes / No) (Offers from vendors not accepting to submit CEBG will be rejected)	
Performance Bank Guarantee (PBG) as per Clause 5.11 (Yes / No) (Offers from vendors not accepting to submit PBG will be rejected)	
Guarantee as per clause 5.9 (The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier) (Yes / No) (Offers from vendors not accepting to the guarantee period will be rejected)	
Inspection (please Specify the Place of Inspection)	
Erection & Commissioning/ Installation/ Training (Please confirm whether charges are included in the total cost or not)	
Approximate Net Weight of the total Consignment	
Approximate Gross Weight of the total Consignment	

Signature & Office Seal of the bidder

CHECK LIST

Bidder's acceptance to BHEL Visakhapatnam 's Standard Commercial Terms & Conditions.

Applicable for foreign bidders (To be submitted along with the offer – please do not change the format)

BHEL Visakhapatnam Tender No: & Date:	Bidders Confirmation / response
Prices have been quoted on "FIRM PRICE" basis only (Yes / No)	
Prices basis (FOB/CFR/CIF – Please Specify)	
Insurance (Please confirm whether included or not)	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – please Specify)	
Currency in which quoted (please Specify)	
Port of loading (please Specify)	
Country of Origin (please Specify)	
Delivery period from the date of Letter of Intent (please Specify) A loading @ ½ % of the Purchase Order value per week will be done for the grace period requested. For evaluation 4 weeks will be considered as one month. Vendors quoting a delivery period beyond the 'the requested delivery plus the allowed grace period' is liable for rejection.	
Liquidated damages as per clause 5.12 (we require acceptance to @ ½% per week subject to a maximum of 10%)	
Risk Purchase as per clause 5.13 (Offers from vendors not accepting the Risk Purchase terms will be rejected) (Yes / No)	
Payment terms (As per Clause No. 5.7.2)	
Agency commission (refer clause 5.14)	
Contract Execution Bank Guarantee (CEPG) as per Clause 5.10 (Yes / No) (Offers from vendors not accepting to submit CEBG will be rejected)	
Performance Bank Guarantee (PBG) as per Clause 5.11 (Yes / No) (Offers from vendors not accepting to submit PBG will be rejected)	
Guarantee as per clause 5.9 (The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier). (Offers from vendors not accepting to the requested guarantee period will be rejected) (Yes / No)	
Inspection (please Specify)	
Erection & Commissioning/ Installation/ Training (Please confirm whether charges are included in the total cost or not)	
Dimension of the Largest Part (please Specify)	
Packing Schedule (No of containers and their Sizes) (please Specify)	
Approximate Net Weight of the total Consignment (please Specify)	
Approximate Gross Weight of the total Consignment (please Specify)	

Signature & Office Seal of the bidder