

TECHN. DATA		APPARATUS DESIGNAT	SCHEMATIC DIAGRAM
MINIATURE CIRCUIT BREAKER MAKE : ABB			
S271 K2 (2A)	-F100	M1.1	
S271 K6 (6A)	-F106	M1.1	
MINIATURE CIRCUIT BREAKER MAKE : ABB			
S273 K2 (2A) 3POLE	-F405	S2.2-S2.3	
FUSE - LINK MAKE : TYPE : SAKSI 0.1A			
	-F407	S2.2	
	-F408	S2.3	
LONG DIFF. PROTECTION MAKE : REYROLLE TYPE : SOLKOR R1 RATING : 5A			
	-F305	S1.1 - S1.3	

TECHN. DATA		APPARATUS DESIGNAT	SCHEMATIC DIAGRAM
SEMAPHORE INDICATOR MAKE : BERGER TYPE : Bq 30V DC		-HO	
NEON POTENTIAL INDICATOR MAKE : RAFI TYPE : E10		-H450	
		-H451	S2.2
		-H452	S2.2
			S2.3
AMMETER SELECTOR SWITCH MAKE : BLUE LINE TYPE : B9048		-S400	
AMMETER MAKE : GOSSEN TYPE : V-AQS 96-90' RANGE : 0-300/600A 0-500/1000A		-P401	
CUBICLE HEATER MAKE : CE TYPE : FH1 230V AC 50W		-R121	
		-R122	Q1.8
			Q1.8
PUSH BUTTON FOR NEON IND. MAKE : RAFI		-S450	

Rev.

Date

Rel.

Title

LIST OF ITEMS
PUB INCOMING 2

Project

UNITED CEMENT
22KV SWITCHGEAR TYPE ZS/VD4

D04 0153 402

ABB ASEA BROWN BOVERI PTE LTD

Scale

Drawn PC 14.3.95

Checked ASX

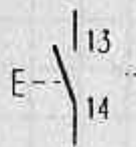
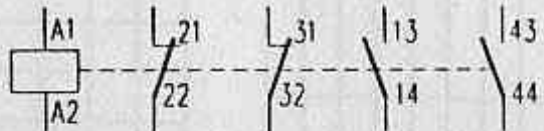
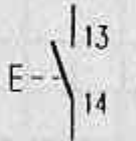
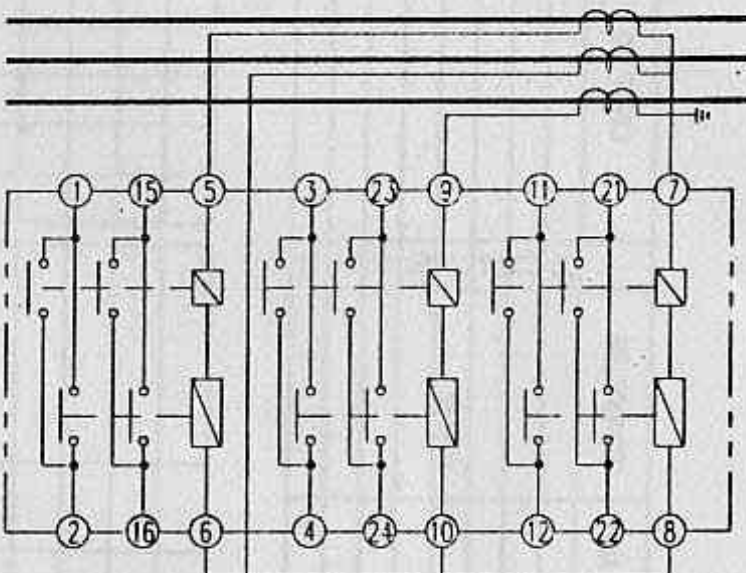
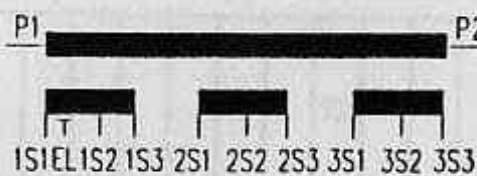


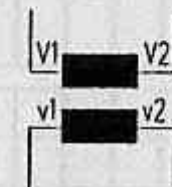
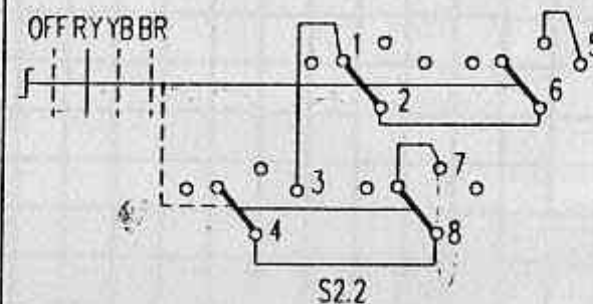
Resp. Dept. K.S.

Released ASX

Format 3

Sheet 22

Cont. 23

TECHN. DATA		APPARATUS DESIGNAT	SCHEMATIC DIAGRAM		TECHN. DATA		APPARATUS DESIGNAT	SCHEMATIC DIAGRAM	
A	OFF PUSH BUTTON (RED) (0) MAKE : BPETEP TYPE : PT10+V40+50					AUX. RELAY MAKE : ABB TYPE : KC6-22Z RATED VOLTAGE 30V DC			
		-SOA		M1.4			-C2	Q1.3 Q1.7	
B	ON PUSH BUTTON (BLACK) (1) MAKE : BPETEP TYPE : PT10+V40+50					OVERCURRENT & EARTH FAULT RELAY MAKE : REYROLLE TYPE : 2TJM11/2TJM11/2TJM11 CURRENT SETTING : 2.5 - 10A HI SETTING : 20 - 80A EARTH FAULT SETTING : 1 - 4A HI SETTING : 5 - 20A			
		-SOE		M1.4			-F301	M1.6 Q1.4 S1.4 M1.5 Q1.5 S1.5 M1.5 Q1.5 S1.5	
C	CURRENT TRANSFORMER MAKE : MPGES TYPE : ASS24-05 RATIO : 500-300/5/5/5A CORE 1 : CLY CORE 2 : 15VA SP10 CORE 3 : 5VA CL1					VOLTMETER MAKE : GOSSEN TYPE : V-AQS 96-90° RANGE : 0-30KV			
		-TIL1	S1.1 S1.4 S1.6			-P405	S2.3		
		-TIL2	S1.2 S1.4 S1.7						
D	PING CURRENT TRANSFORMER MAKE : FITZ TYPE : KS0506 RATIO : 100-50/5A OUTPUT : 15VA CL0.5								
		-TIL3	S1.2 S1.5 S1.8						
E	VOLTAGE TRANSFORMER MAKE : MPGES TYPE : VZN24-01 RATIO : 22KV/110V OUTPUT : 180VA, CL1								
		-TSL1-L2	S2.2						
		-TSL2-L3	S2.2						
	VOLTMETER SELECTOR SWITCH MAKE : BLUE LINE TYPE : A004-621								
		-S410		S2.2					

Rev.	A					Title	Project	D04 0153 402	Scale	Drawn	PC 14.3.95	Resp. Dept.	K.S.	Format	3
Date	16.10.95					LIST OF ITEMS PUB INCOMING 2	UNITED CEMENT 22KV SWITCHGEAR TYPE ZS/VD4	ABB ASEA BROWN BOVERI PTE LTD	Checked	ASK		Released	ASK	Sheet	23
Rel.	VL													Cont.	01

UDOC223

Title	TERMINAL DIAGRAM AC & DC CONTROL CIRCUIT PUB INCOMING 2	Project	UNITED CEMENT 22KV SWITCHGEAR TYPE ZS/VD4	D04 0153 402	Scale	Drawn PC 14.3.95	Resp. Dept. K.S.	Format J
				ABB ASEA BROWN BOVERI PTE LTD		Checked ASK	Released ASK	Sheet G1
								Cont. 02

[illegible][illegible]

1					9					17		
2					10					18		
3					11					19		
4					12					20		
5					13	PANEL LEFT			4sqmm	21		
6					14					22		
7					15					23		
8					16					24		
	CABLE NO.	TYPE	CONDUCTOR		CABLE NO.	TYPE	CONDUCTOR		CABLE NO.	TYPE	CONDUCTOR	

Cont. 02

A
B
C
D
E
F

1 2 3 4 5 6 7 8

CONNECTION NO		TERMINAL BLOCK		CONNECTION NO
-TIL1 - 1S3	100			104
-TIL1 - 1S2	101			
	102			109
	103			101
-F305 - 10	104			
-TIL2 - 1S3	105			
	106			110
-TIL2 - 1S2	107			
	108			
115	109			103
	110			107
-F305 - 9	111			
-TIL3 - 1S3	112			
	113			116
-TIL3 - 1S2	114			
109	115			118
	116			113
-F305 - 8	117			
-F305 - 7	118			115
	119			122
-TIL1 - 1S1	120			
-TIL2 - 1S1	121			
-TIL3 - 1S1	122			119
-TIL1 - 2S3	123			
127	124			
-TIL1 - 2S2	125			
134	126			
124	127			
-F301 - 5	128			
-F301 - 6	129			
136	130			
-TIL2 - 2S3	131			
135	132			
-TIL2 - 2S2	133			
126	134			140
132	135			
130	136			144
-TIL3 - 2S3	137			
141	138			
-TIL3 - 2S2	139			
147	140			134
138	141			
-F301 - 9	142			
-F301 - 10	143			
	144			136
-F301 - 7	145			
-F301 - 8	146			147
140	147			146
-TIL1 - 2S1	148			
-TIL2 - 2S1	149			
-TIL3 - 2S1	150			

CABLE NO		TYPE	CONDUCTOR
9			17
10			18
11			19
12			20
13			21
14			22
15			23
16			24


Rev.		Title TERMINAL DIAGRAM CURRENT TRANSFORMER CIRCUIT PUB INCOMING 2	Project UNITED CEMENT 22KV SWITCHGEAR TYPE ZS/VD4	D04 0153 402 ABB ASEA BROWN BOVERI PTE LTD	Scale	Drawn	PC 14395	Resp. Dept.	K.S.	Format	3
Date					Checked	ASK	Released	ASK	8/2	Sheet	02
Ref.										Cont.	03

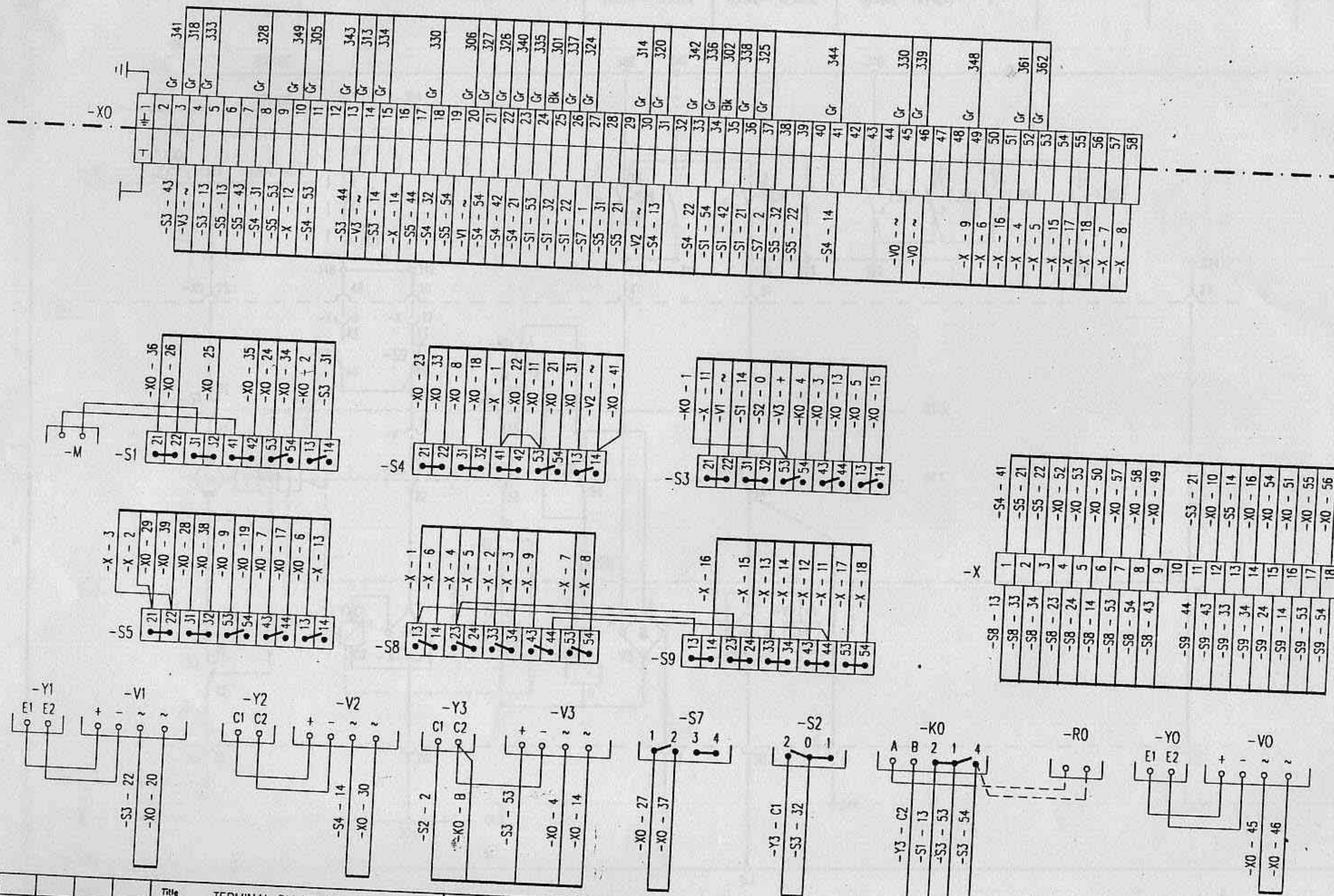
U00C202

[illegible]

[illegible][illegible][illegible]

1				9					17		
2				10					18		
3				11					19		
4				12					20		
5				13					21		
6				14					22		
7				15					23		
8				16					24		
	CABLE NO	TYPE	CONDUCTOR		CABLE NO	TYPE	CONDUCTOR		CABLE NO	TYPE	CONDUCTOR

Rev.					Title TERMINAL DIAGRAM VOLTAGE TRANSFORMER CIRCUIT PUB INCOMING 2	Project UNITED CEMENT 22KV SWITCHGEAR TYPE ZS/VD4	D04 0153 402	Scale 	Drawn PC 14.3.95	Resp. Dept. K.S.	Format J
Date							ABB ASEA BROWN BOVERI PTE LTD		Checked ASK	Released ASK	Sheet 05
Rel.									Cont. 06		



Title
TERMINAL DIAGRAM
CIRCUIT BREAKER CIRCUIT
PUB INCOMING 2

Project
UNITED CEMENT
22KV SWITCHGEAR TYPE ZS/VD4

ABB

D04 0153 402

ASEA BROWN BOVERI PTE LTD

Scale

Drawn

PC 14.3.95

Resp. Dept.

K.S.

Format 3

Checked

ASK

Released

ASK

Sheet 08

Cont. 09

8K

UDOC208

DESCRIPTION OF DRAWING

SHEETS

SINGLE LINE DIAGRAM AND INDEX OF DRAWINGS

A1

CIRCUIT BREAKER CONTROL

M1

SIGNALLING

Q1

CURRENT TRANSFORMER CIRCUIT

S1

NEON POTENTIAL INDICATOR CIRCUIT

S2

VOLTAGE TRANSFORMER CIRCUIT

S3

LIST OF ITEMS

Z1

LIST OF ITEMS

Z2

LIST OF ITEMS

Z3

TERMINAL DIAGRAM - AC & DC CONTROL CIRCUIT

01

TERMINAL DIAGRAM - CURRENT TRANSFORMER CIRCUIT

02

TERMINAL DIAGRAM - CURRENT TRANSFORMER CIRCUIT

03

TERMINAL DIAGRAM - PUB METERING CIRCUIT

04

TERMINAL DIAGRAM - VOLTAGE TRANSFORMER CIRCUIT

05

TERMINAL DIAGRAM - CONTROL & SIGNALLING CIRCUIT

06

TERMINAL DIAGRAM - CONTROL & SIGNALLING CIRCUIT

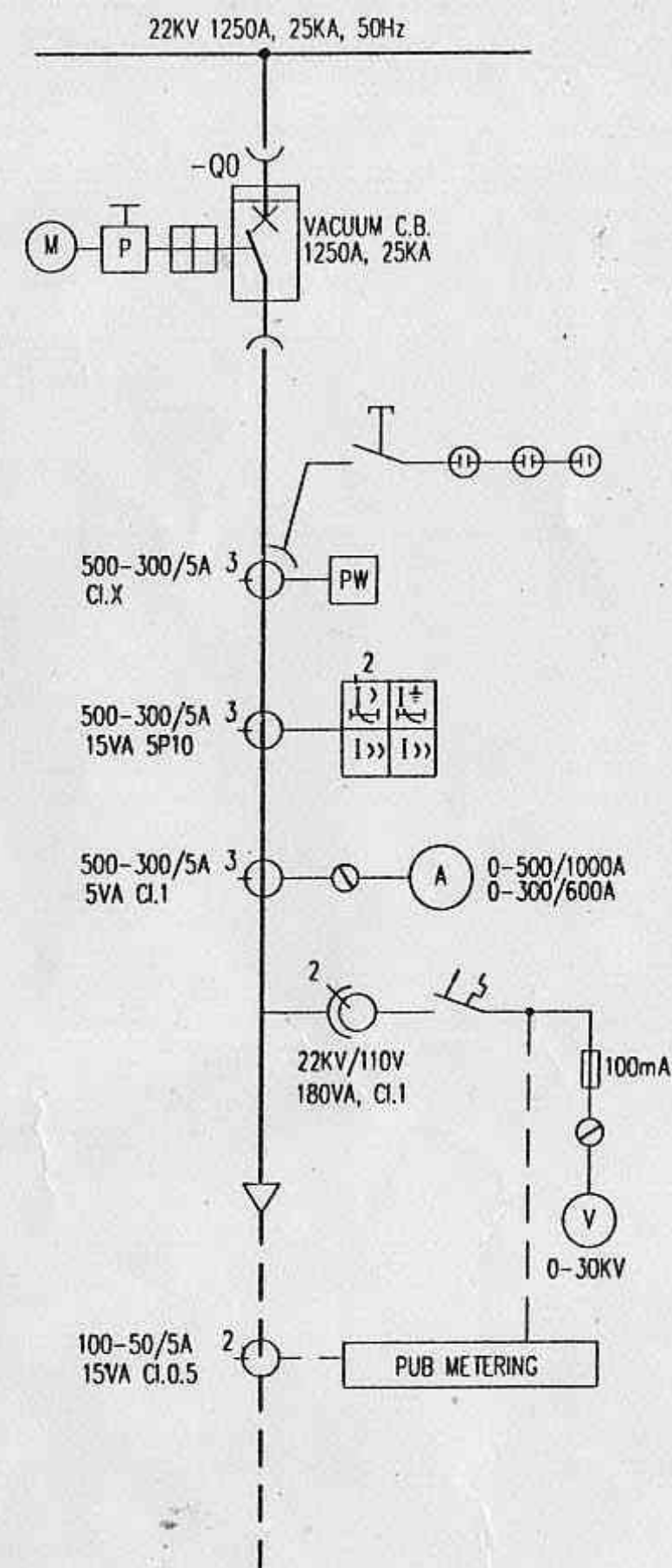
07

TERMINAL DIAGRAM - CIRCUIT BREAKER CIRCUIT

08

TERMINAL DIAGRAM - COMPONENT CIRCUIT

09



Rev.					
Date					
Rel.					

Title

SINGLE LINE DIAGRAM & INDEX
PUB INCOMING 2

Project

UNITED CEMENT
22KV SWITCHGEAR TYPE ZS/VD4

ABB

D04 0153 402

ASEA BROWN BOVERI PTE LTD

Scale

Drawn

PC 14.3.95

Resp. Dept.

K.S.

UOC2A1

Format 3

Sheet A1

Cont. M1

Checked

ASK

Released

ASK

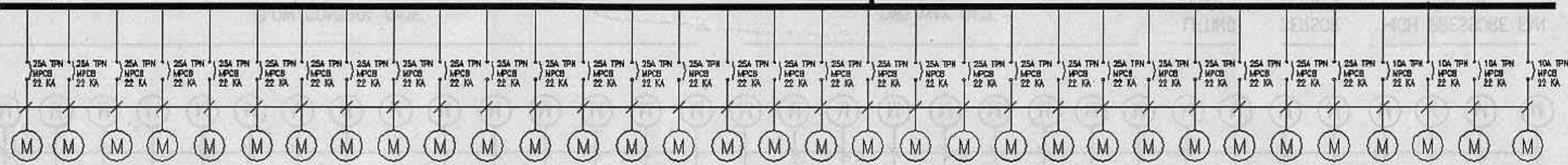
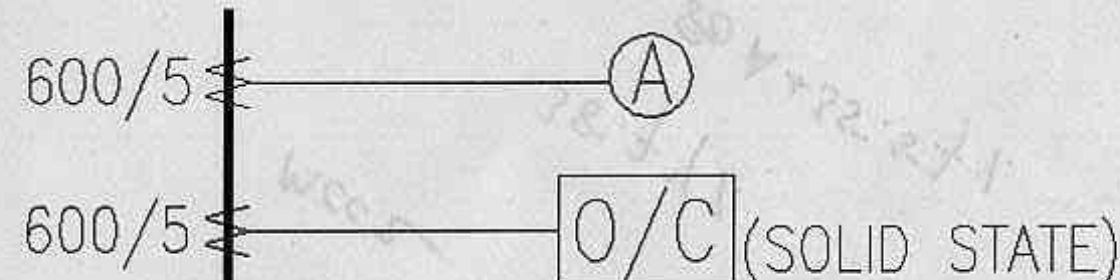
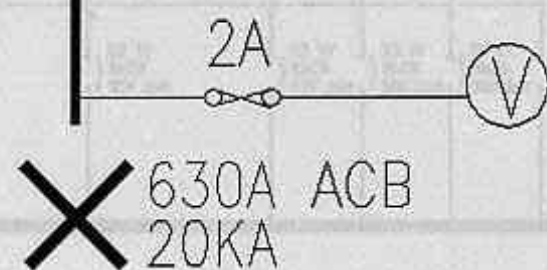
United Cement Pte, Ltd.
no. 33, Tuas Crescent.
Spore 2263.

Proposed electrical installation to
Bulk terminal on lots 1533 & 1534
Palau Damar lot land.
Spore 2262

Single line diagram for MCC
Sub Discharge.
pg. 1/310 E-505

to
MK6 Plot 3P6
BUK Loading &
(E-505-R)

4 NOS. 630A CU. BUSBAR



FLOW CONTROL GATE
450 VA

TWO WAY GATE
700 VA

LIFTING
HOIST
0.55 KW

SENSOR
BLOWER
0.12 KW

HIGH PRESSURE FAN
3.0 KW

4 NOS 630A CU BUSBAR

1 - 2.5mm²/4c PVC/SWA/PVC cable
+ 2.5mm² ECC

HIGH PRESSURE FAN 3.0 KW

HIGH PRESSURE FAN 4.0 KW

HIGH PRESSURE FAN 4.0 KW

BLOWER SILO 1 11 KW

FAN

BLOWER CHAMBER SILO 1 15 KW

FAN

BLOWER SILO 2 11 KW

FAN

BLOWER SILO 3 11 KW

FAN

BLOWER SILO 4 11 KW

FAN

BLOWER SILO 5 7.5 KW

FAN

BLOWER SILO 6 7.5 KW

FAN

BLOWER SILO 7 7.5 KW

FAN

COMPRESSOR 7.5 KW

COMPRESSOR 7.5 KW

COMPRESSOR 7.5 KW

BLOWER 7.5 KW

FAN

LIFTING HOIST 0.55 KW

SENSOR BLOWER 0.12 KW

BLOWER 15.0 KW

BLOWER 7.5 KW

BLOWER 7.5 KW

1 - 10mm²/4c PVC/SWA/PVC cable + 10mm² ECC

1 - 6mm²/4c PVC/SWA/PVC cable + 6mm² ECC

1 - 2.5mm²/4c PVC/SWA/PVC cable + 2.5mm² ECC

1 - 4mm²/4c PVC/SWA/PVC cable + 4mm² ECC

4 NOS. 630A CU. BUSBAR

1 - 2.5mm²/4c PVC/SWA/PVC cable + 2.5mm² ECC

FLOW CONTROL GATE 450 VA

TWO WAY GATE 700 VA

LIFTING HOIST 0.55 KW

SENSOR BLOWER 0.12 KW

HIGH PRESSURE FAN 3.0 KW

600/5 A

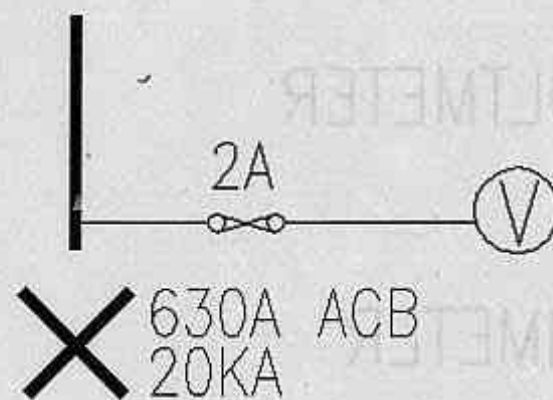
600/5 A

4 NOS. 630A CU. BUSBAR

38.74%
50A+55.57%
MCC2

United Cement Pte. Ltd.
 no. 33, Tras Crescent. S'pore 2263.
 # Proposed Electrical Installation to Cement Bulk terminal on lots 1543 & 1544
 no 6 plot 7P6, Pulau Damar Laut
 S'pore 2262.
 # Single line Diagram for mee silo feeding (E-505-1) ~~Electrical~~

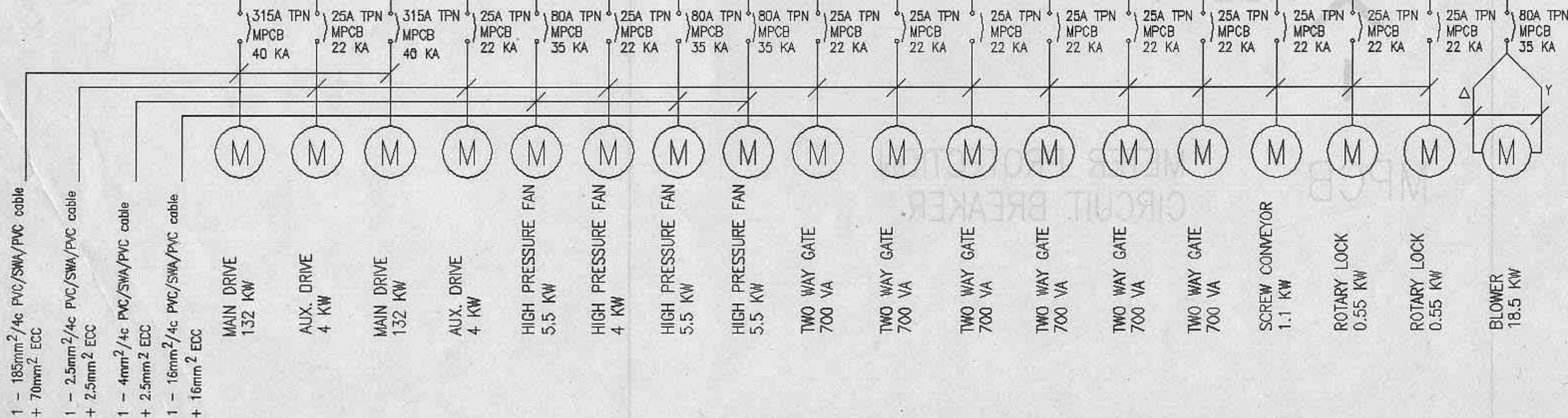
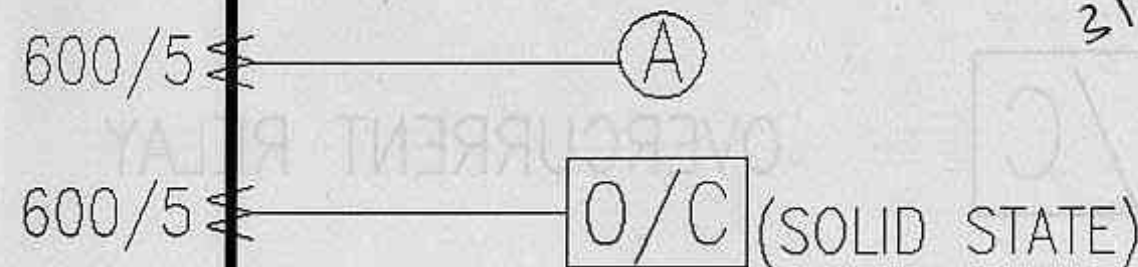
Silo Discharge at top of silo



mech 1

$$\frac{50.4}{315A + 33.69A}$$

4 NOS. 630A CU. BUSBAR

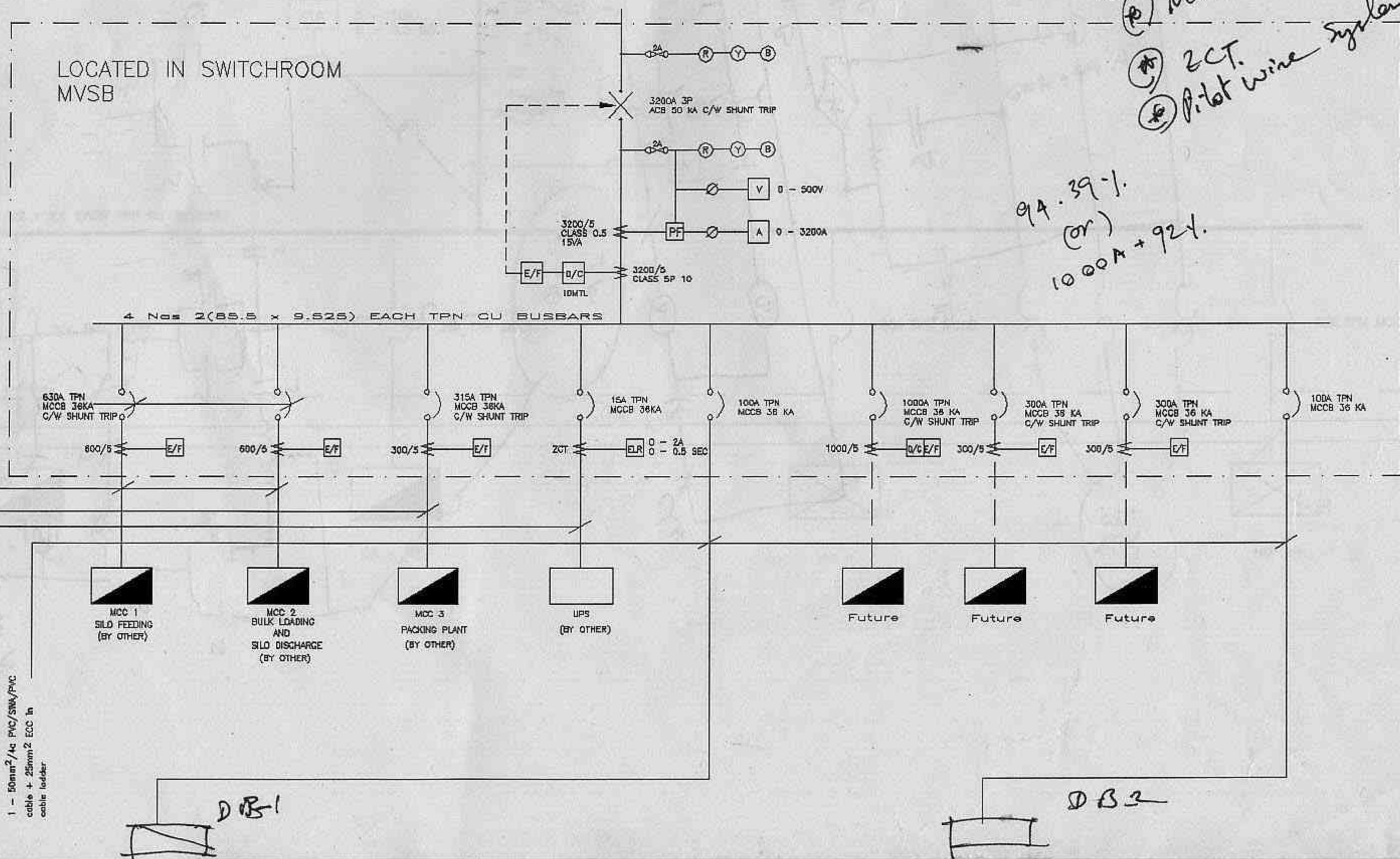


- # United Cement Pte. Ltd.
no. 33, Tuas Crescent, Singapore 2263.
- # Proposed Electrical Installation to Cement Bldg Terminal on lots 155-3 & 155-4
MK6 plot 3PG, Palau Damar Landfill. S'pore 2262

PT. 5100/505

- ⊛ CT. class. 5 (0.5, 5P10)
- ⊛ ELR setting / E/F setting.
- ⊛ A.C. relay (10MTL)
- ⊛ MCB.
- ⊛ Meter
- ⊛ 2CT.
- ⊛ Pilot wire system.

94.39-1.
(or)
1000A + 921.



- 4 - 500mm²/1c PVC/ANW/PVC cable + 70mm² ECC
- 1 - 100mm²/4c PVC/5W/PVC cable + 35mm² ECC in cable ladder
- 1 - 4mm²/4c PVC/5W/PVC cable + 4mm² ECC in cable ladder
- 1 - 50mm²/1c PVC/5W/PVC cable + 25mm² ECC in cable ladder

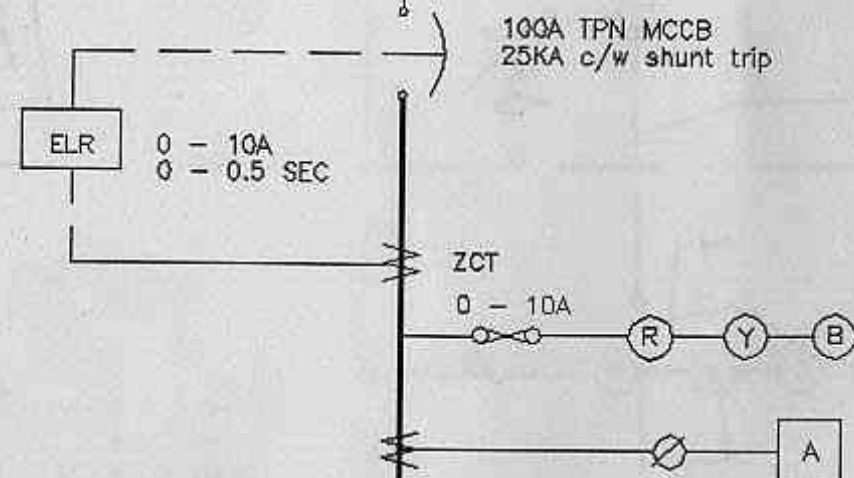
PT / S140 / 805.
 # United Cement Pte Ltd. 8/10/2003.
 No. 33 Trans Crescent; 15/10/2003.
 # Proposed Electrical Installation to connect
 Bulk terminal on Plot 155-3 & 155-4
 'Mak & Plot 5 P6, Palmar Damour Land'.
 DB - 1

66.67%
 (or)
 60A + 44.4%

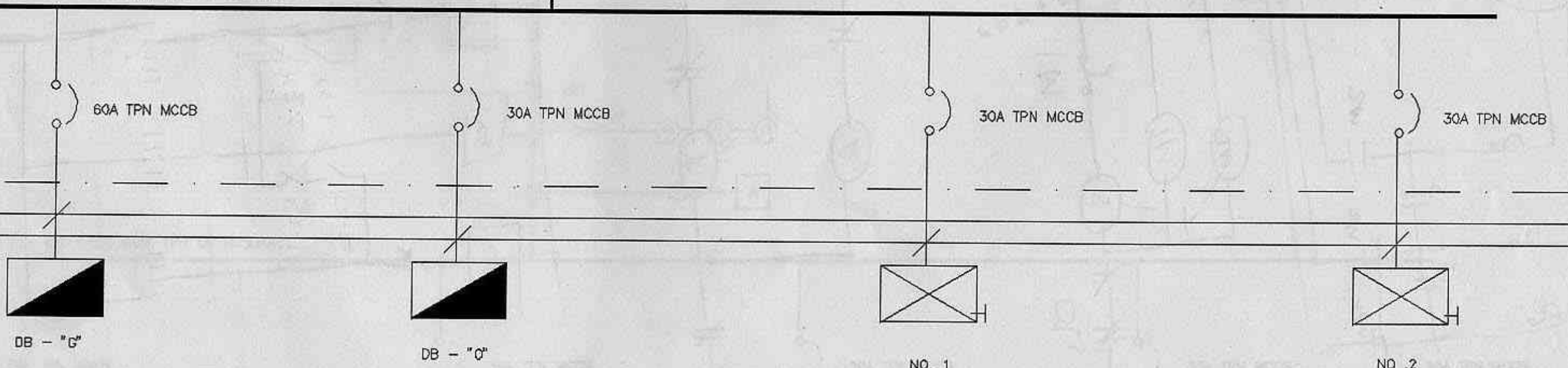
LOCATED IN SWITCHROOM

1 - 10 cable + cable lac
 1 - 4m cable + cable la
 1 - 50m cable + cable lad

1 - 25mm²/4c PVC/SWA/PVC cable + 16mm² EDC
 1 - 6mm²/4c PVC/SWA/PVC cable + 4mm² EDC



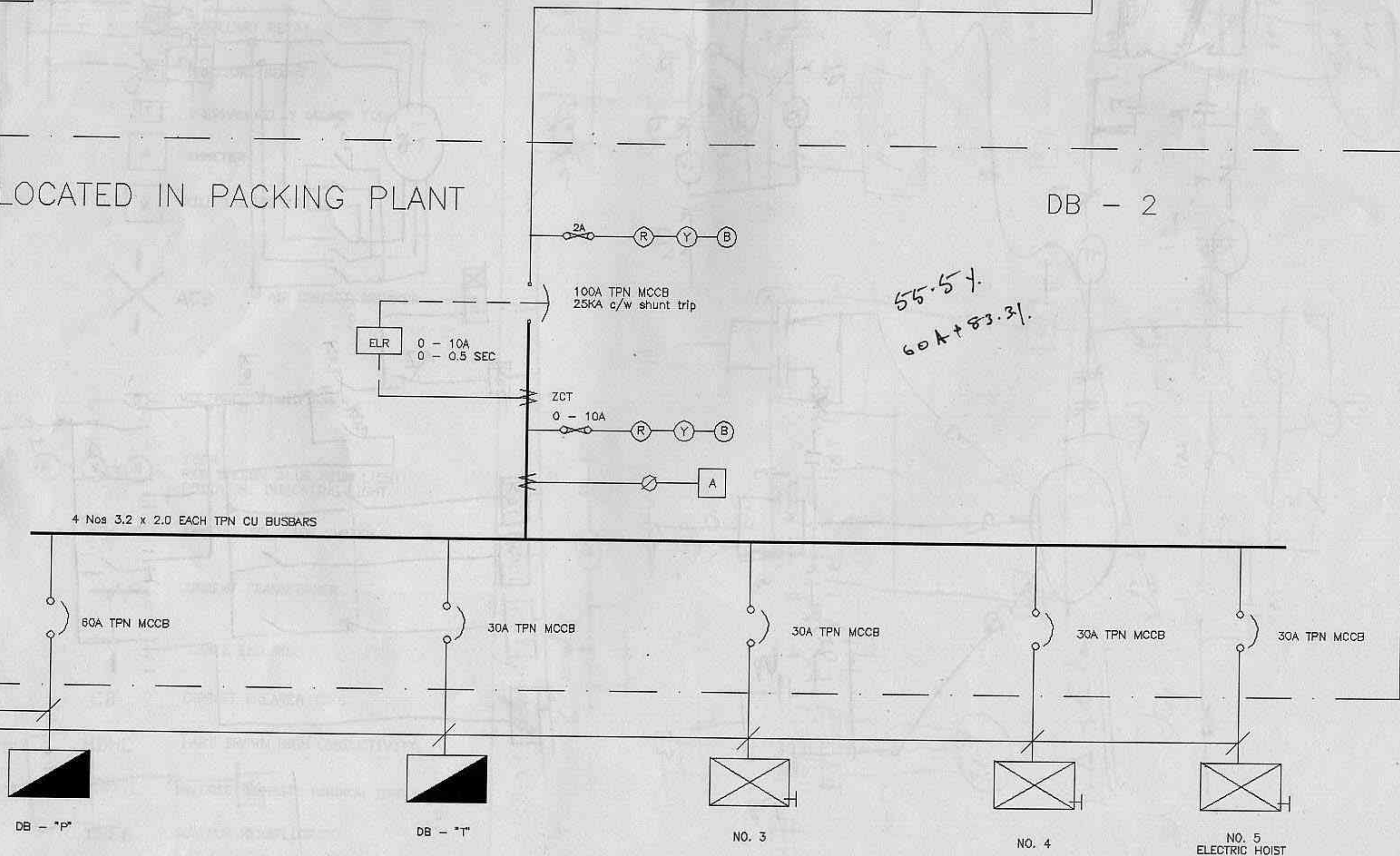
4 Nos 3.2 x 2.0 EACH TPN CU BUSBARS



$\frac{1-6 \text{ mm}^2}{4c} \text{ pvc} / \text{swa} / \text{pvc}$ cable + 4 mm² E.C.C.
 $\rightarrow \frac{1-25 \text{ mm}^2}{4c} \text{ pvc} / \text{swa} / \text{pvc}$ cable + 16 mm² E.C.C.

DB - 2

55.57.
60A + 83.31



ELECTRICAL LEGEND

OC OVERCURRENT RELAY

EF KASUGA EARTH FAULT RELAY

PW PILOT WIRE RELAY

PF AUXILLARY RELAY

P PRESSURE RELAY

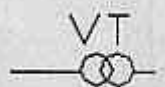
T THERMAL RELAY (ALARM TRIP)

A AMMETER

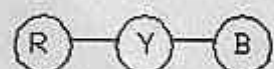
V KILO-VOLTMETER



ACB AIR CIRCUIT BREAKER



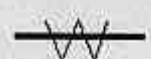
VT VOLTAGE TRANSFORMER



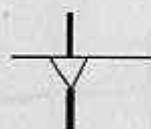
IZUMI
RED YELLOW BLUE NEON LIGHT
POTENTIAL INDICATING LIGHT



AMMETER SELECTOR SWITCH



CURRENT TRANSFORMER



CABLE END BOX

CB

CIRCUIT BREAKER YSF6

HDHC

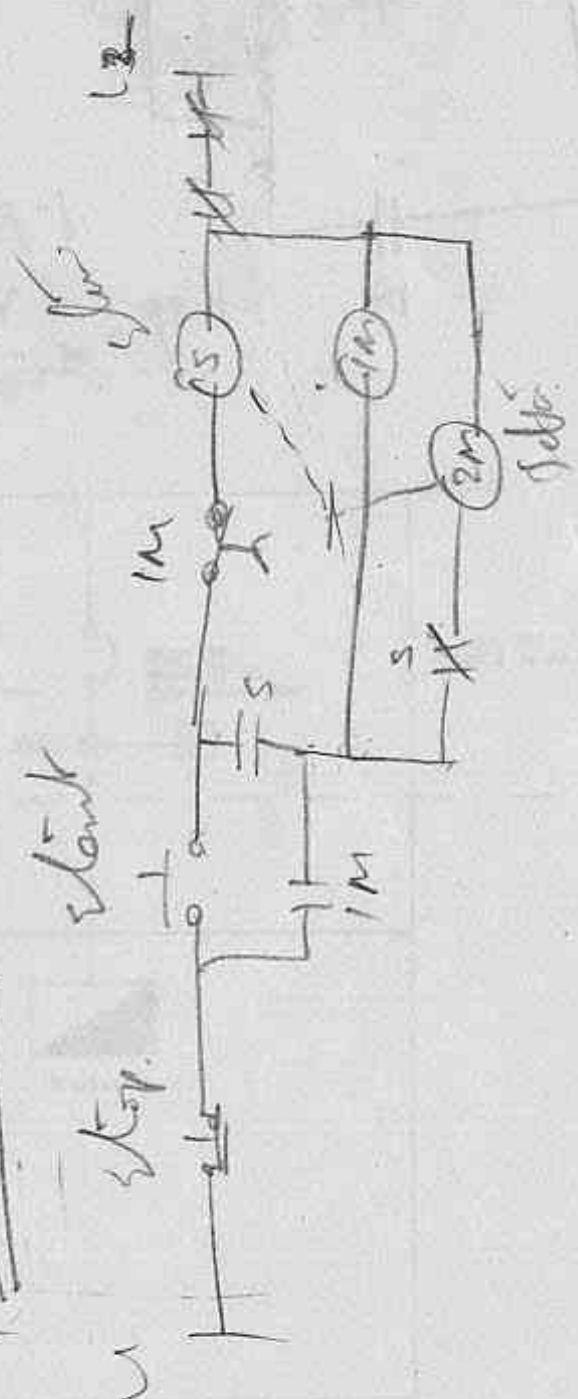
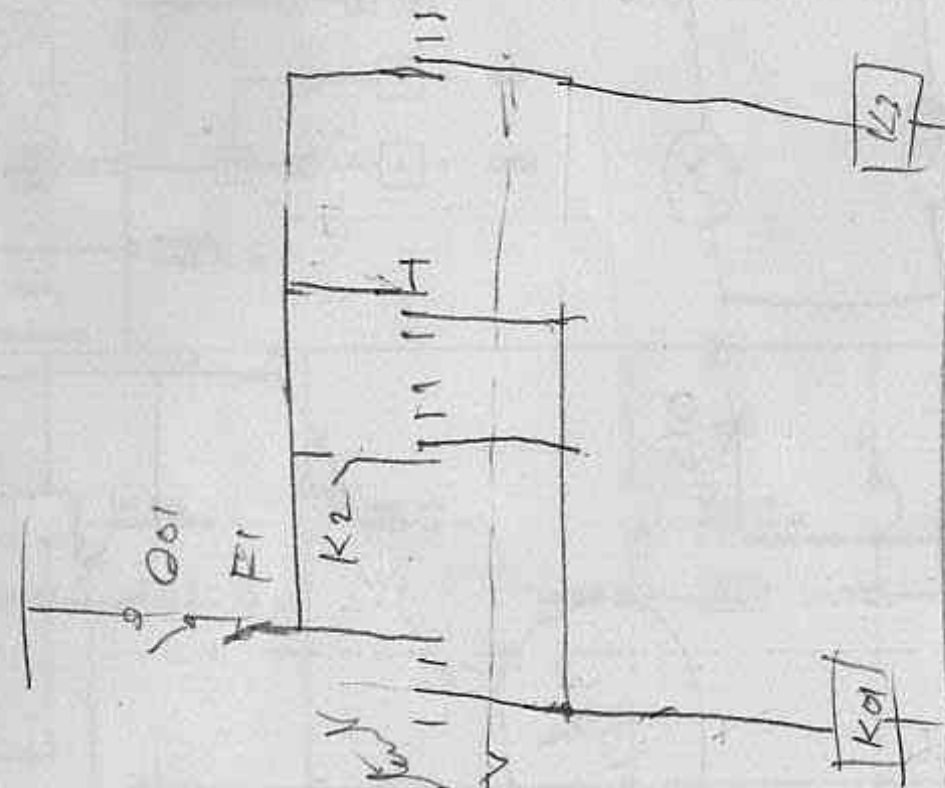
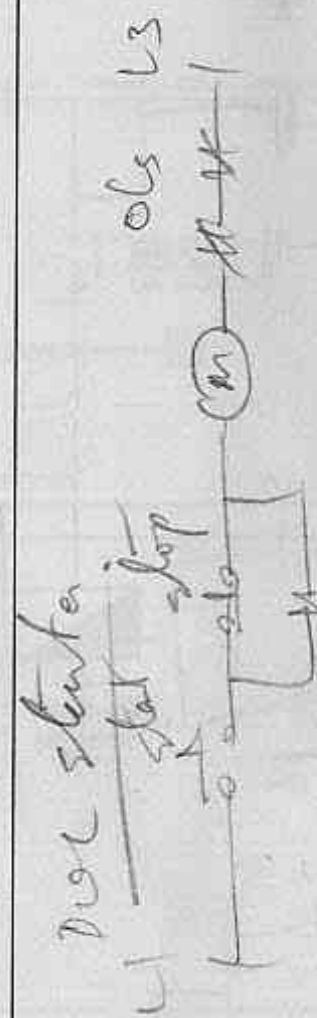
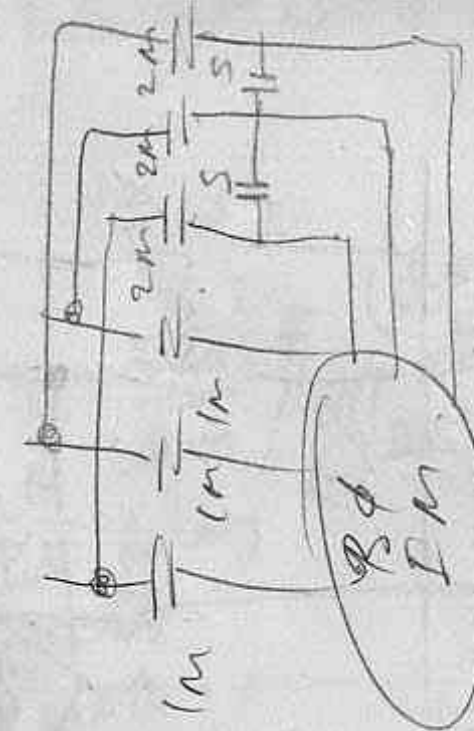
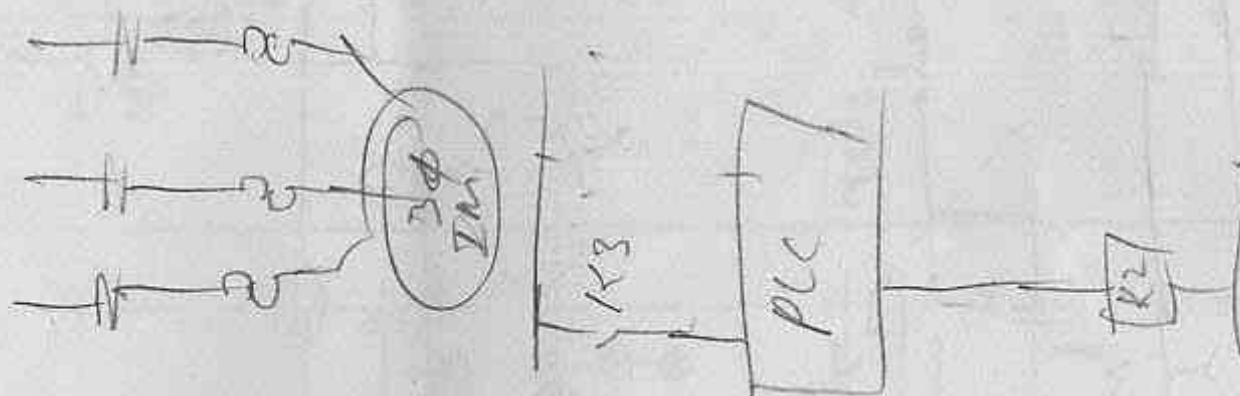
HARD DRAWN HIGH CONDUCTIVITY

IDMTL

INVERSE DEFINITE MINIMUM TIME LAG

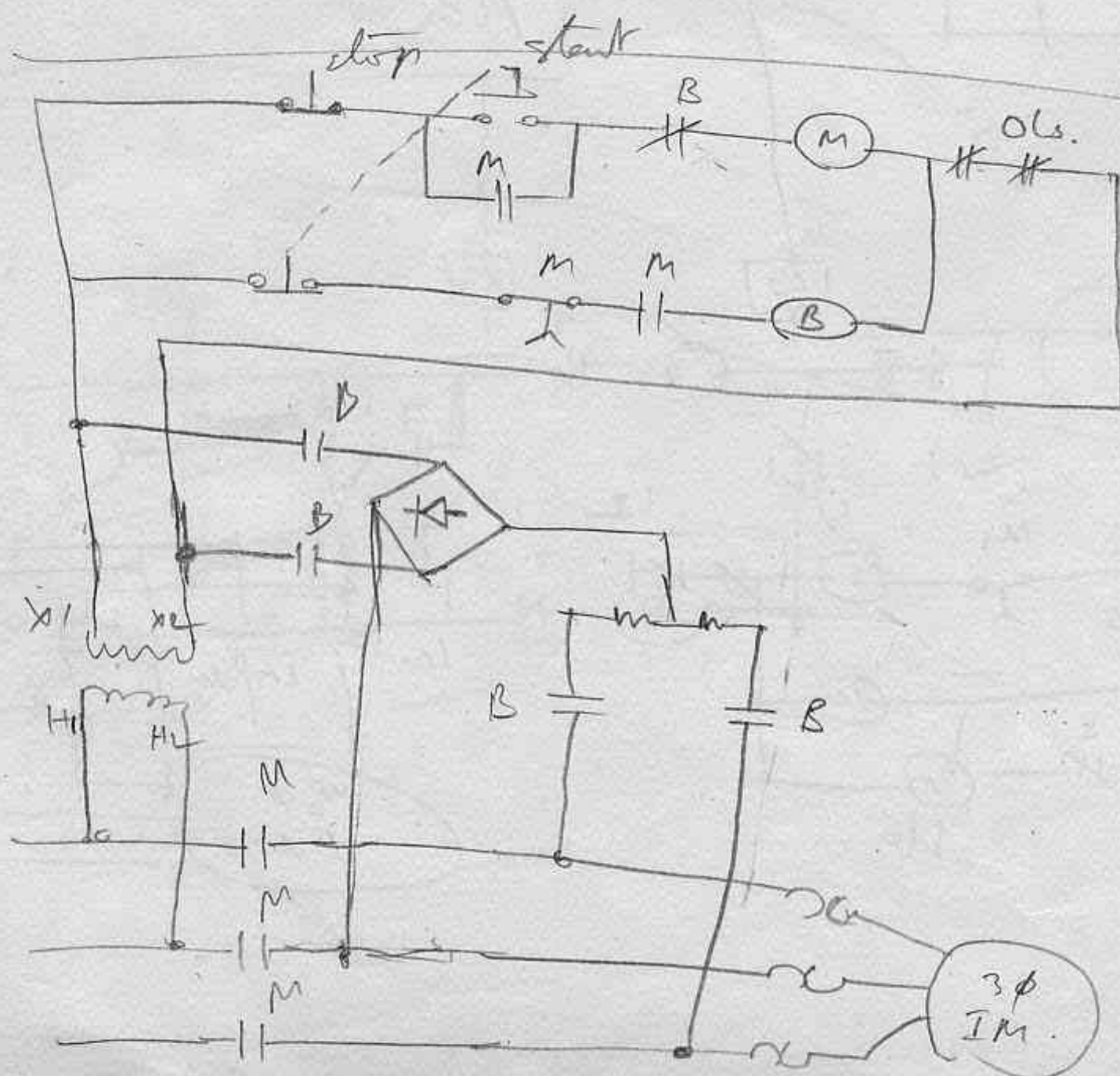
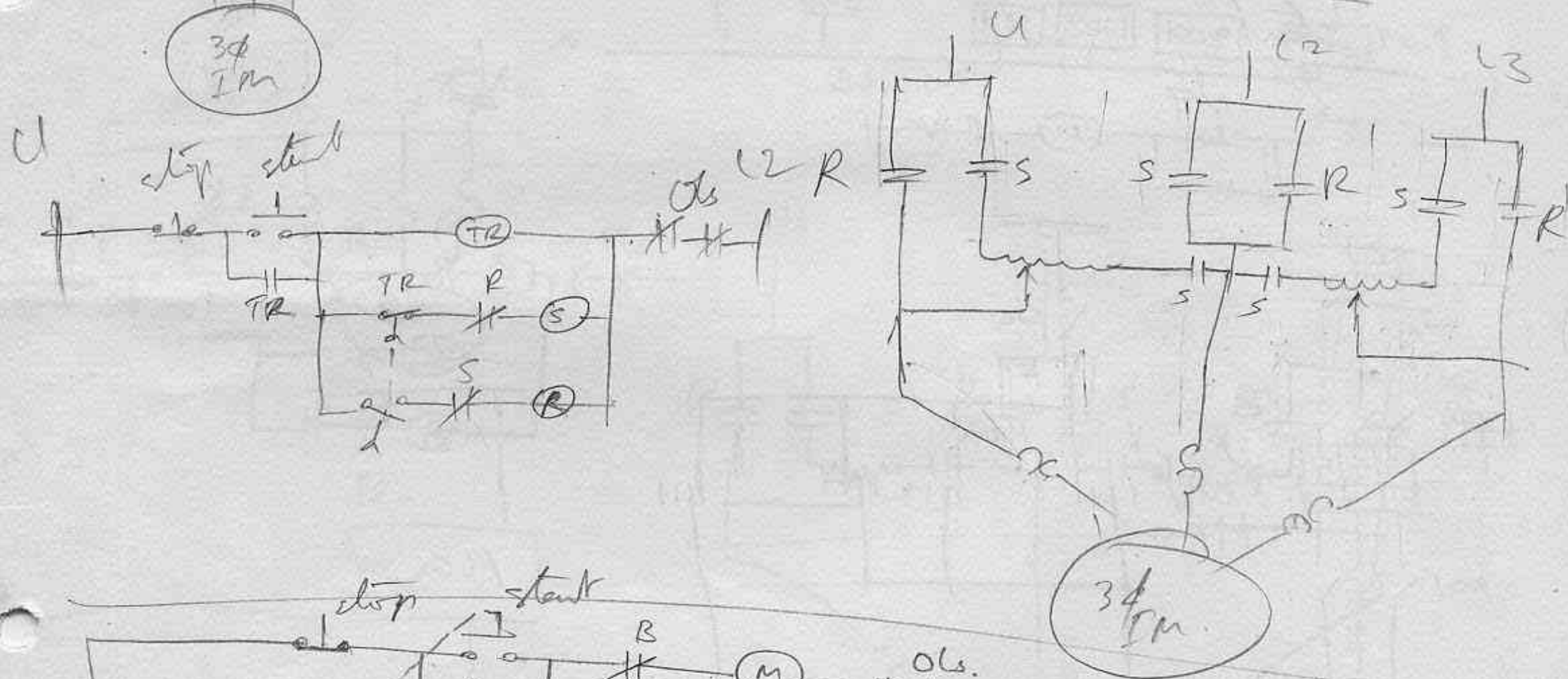
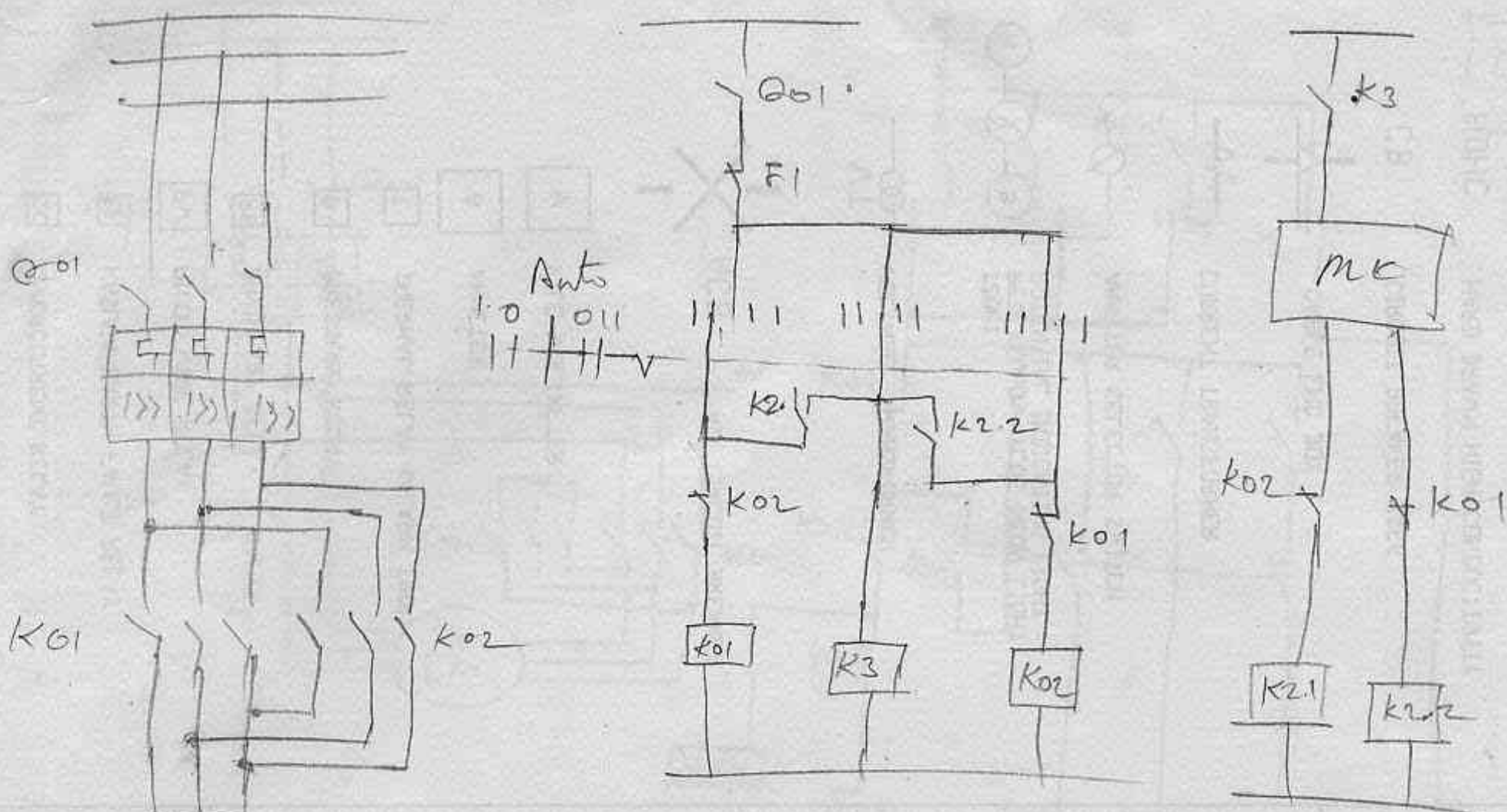
YSF6

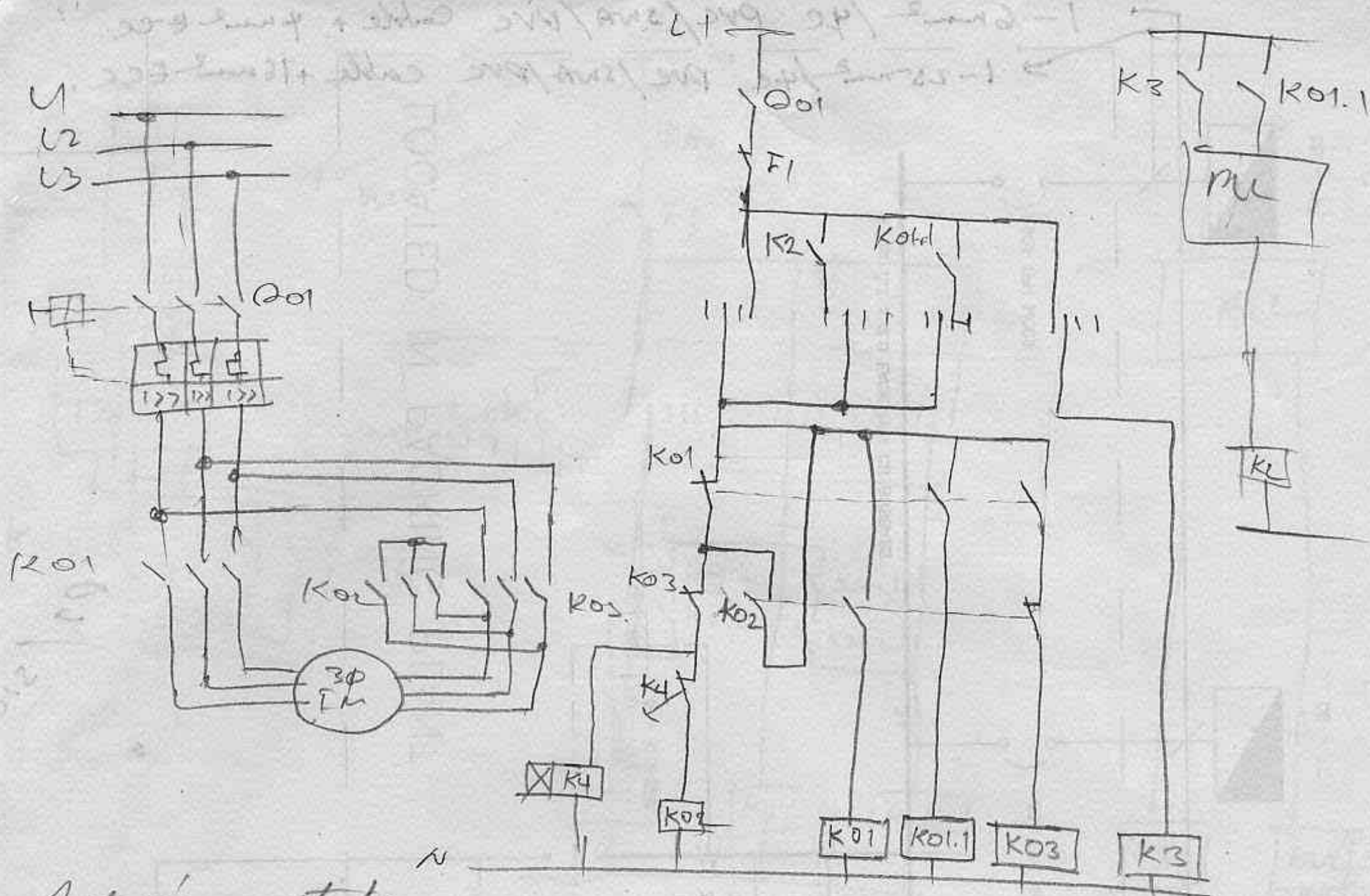
SULPHUR HEXAFLUORIDE



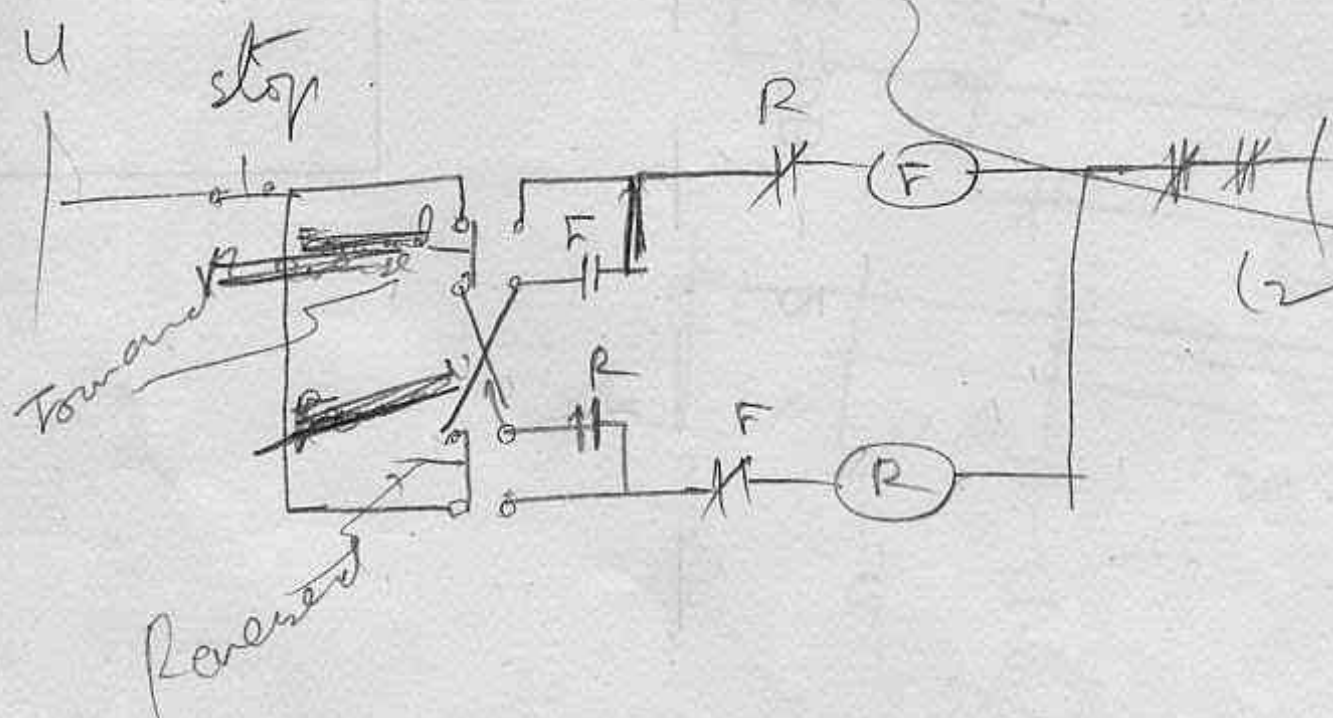
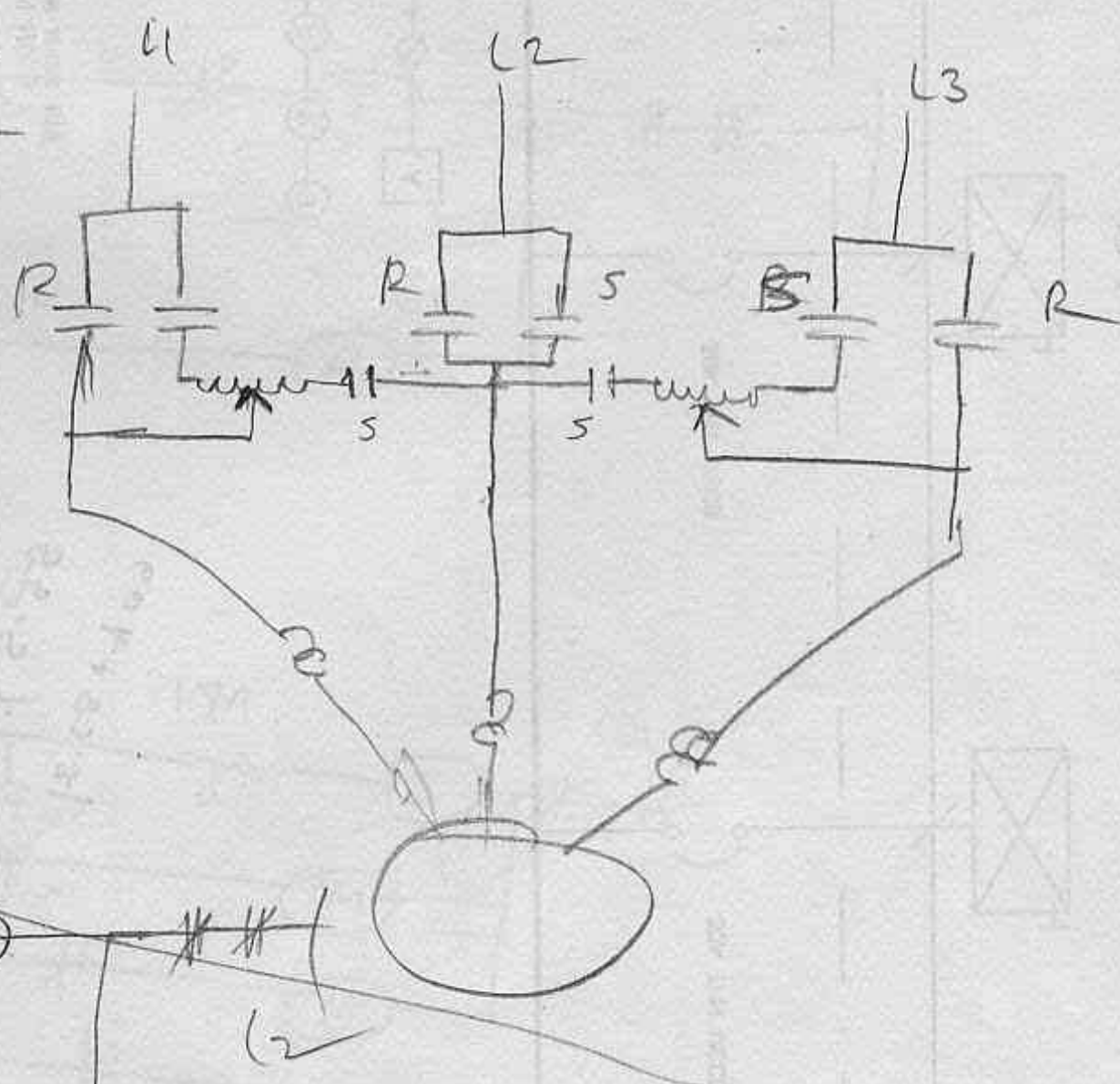
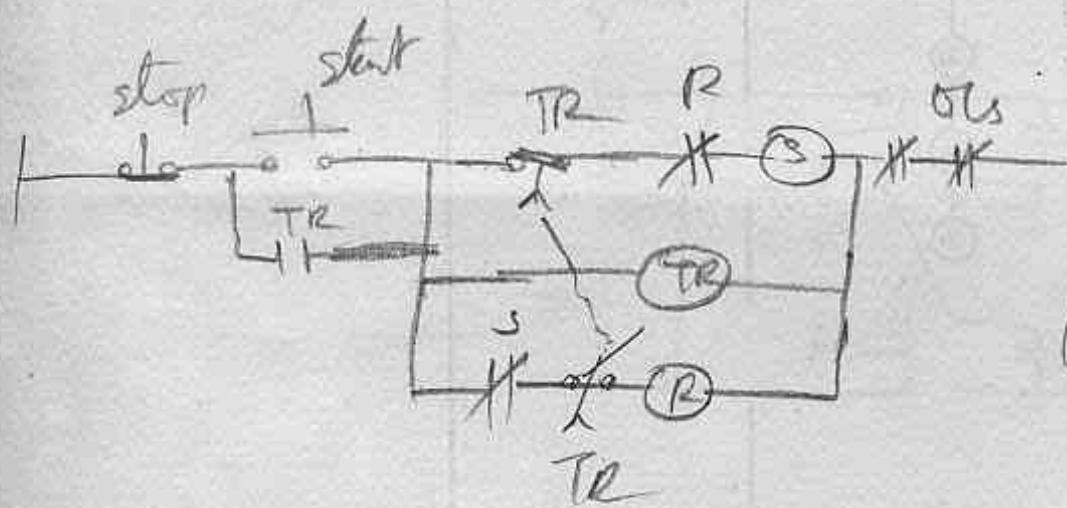
Forward Reverse starter

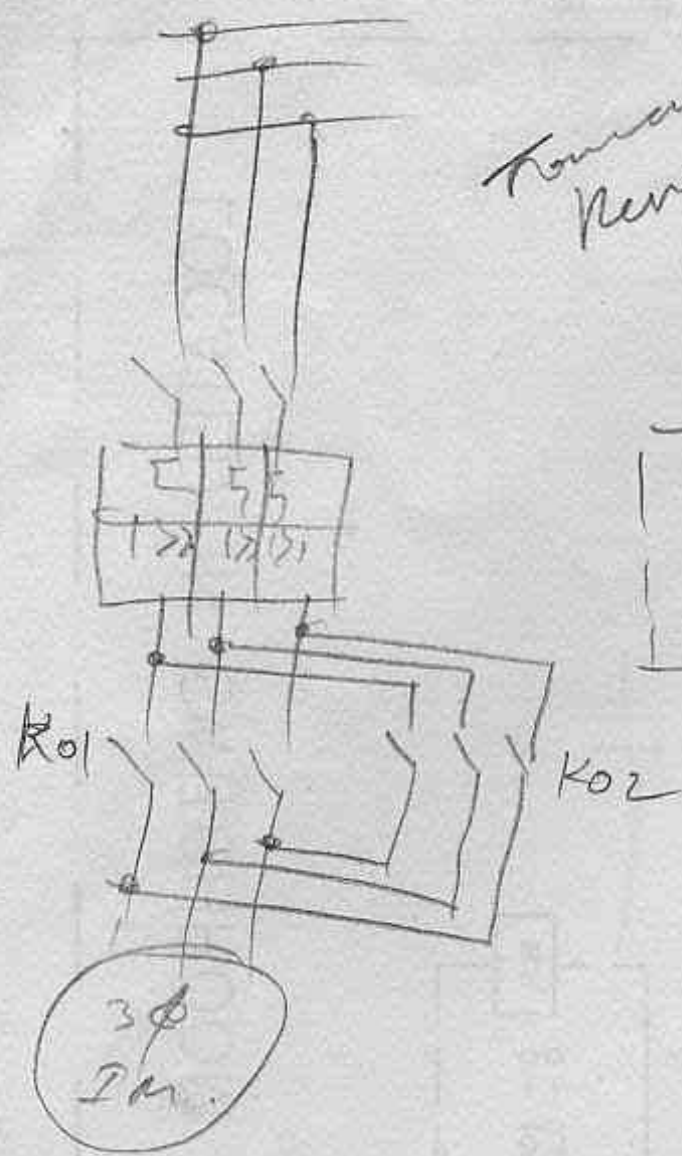
11011



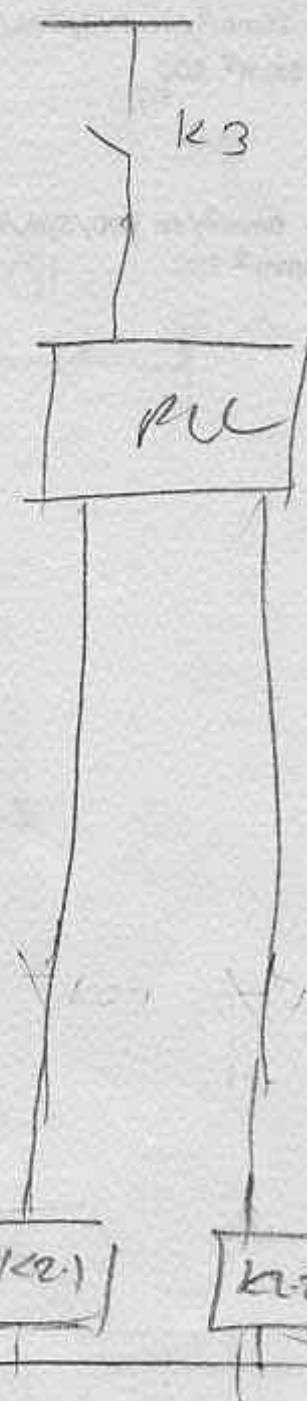
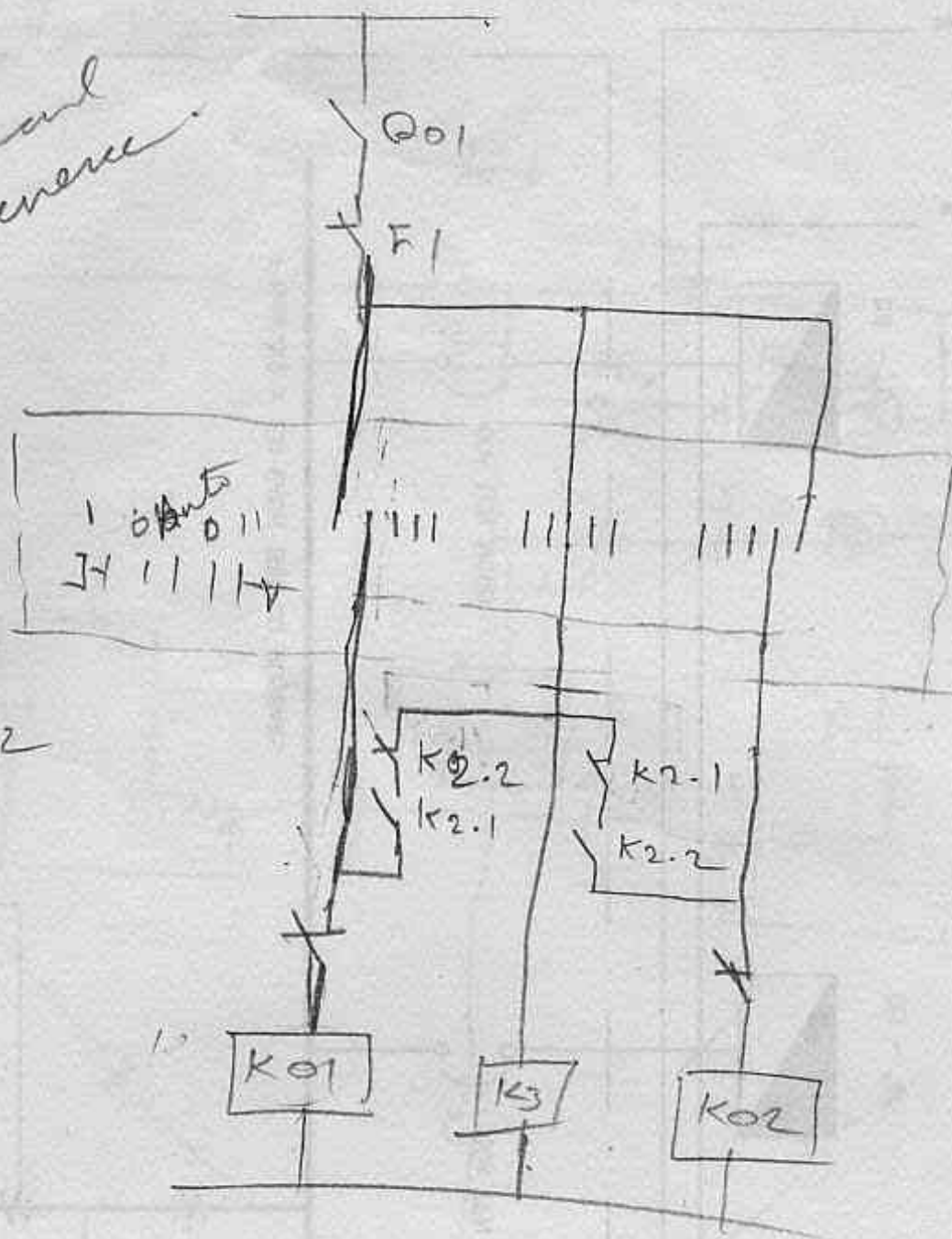


Auto starter



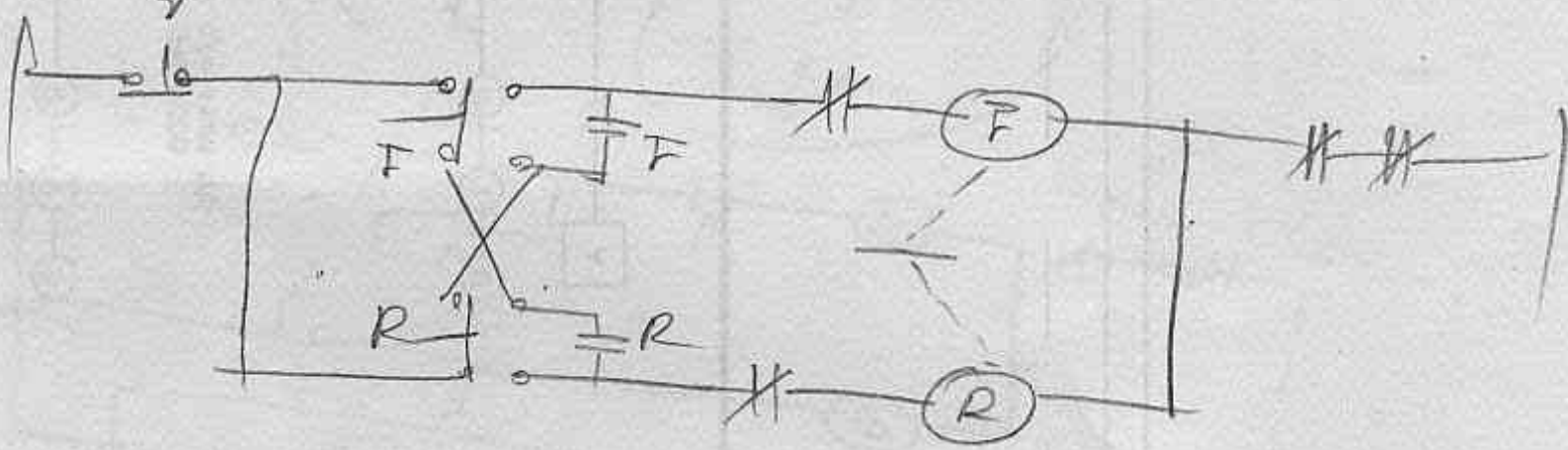


Toward Reverse



Toward

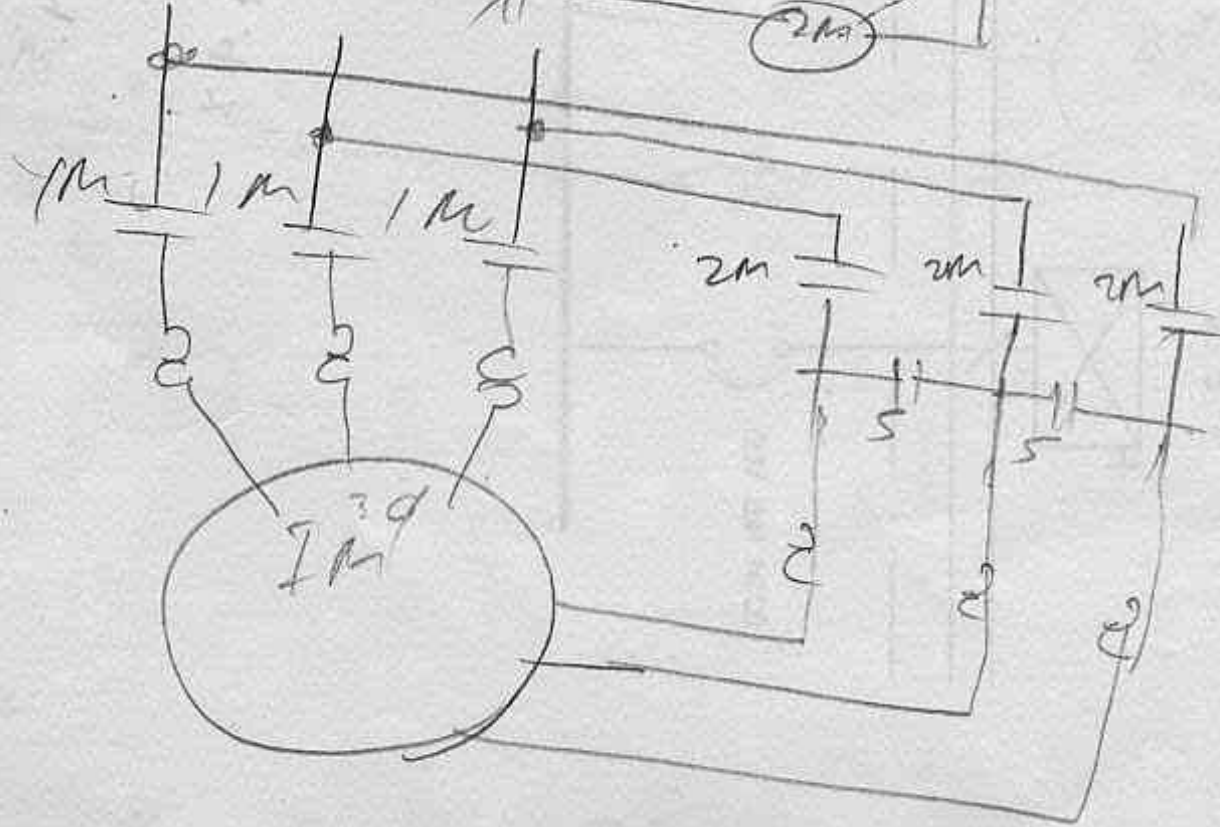
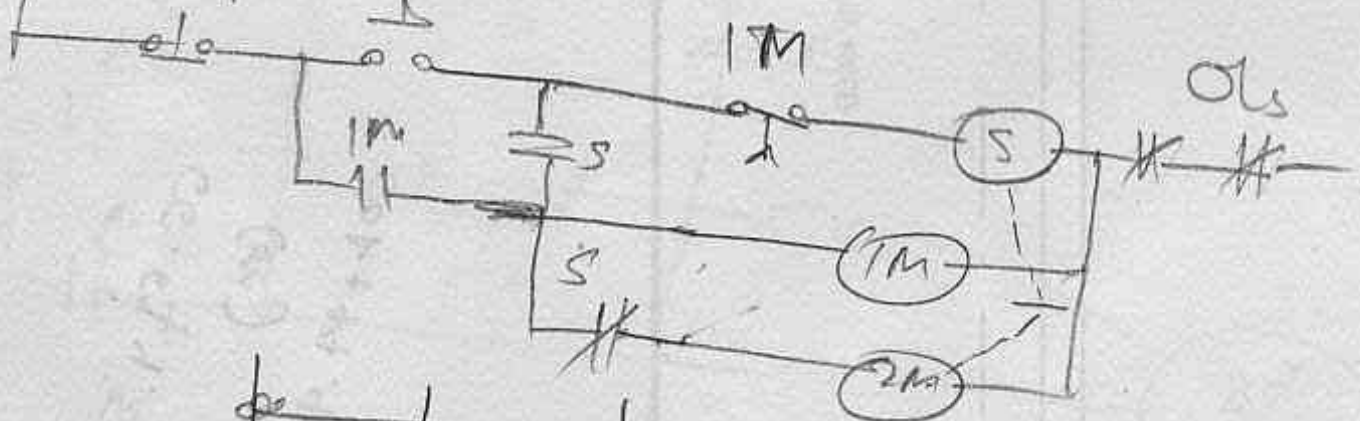
stop



Reverse

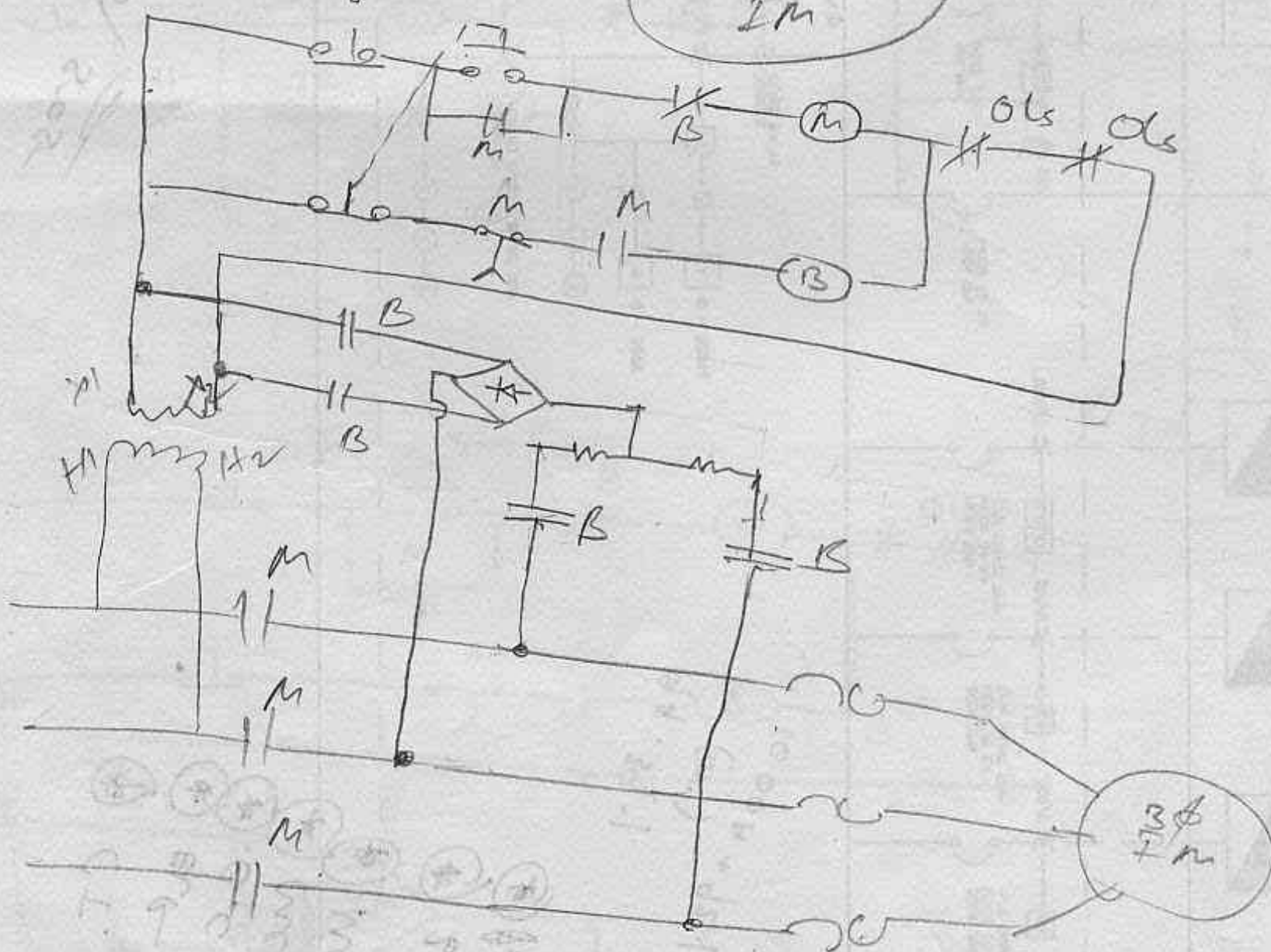
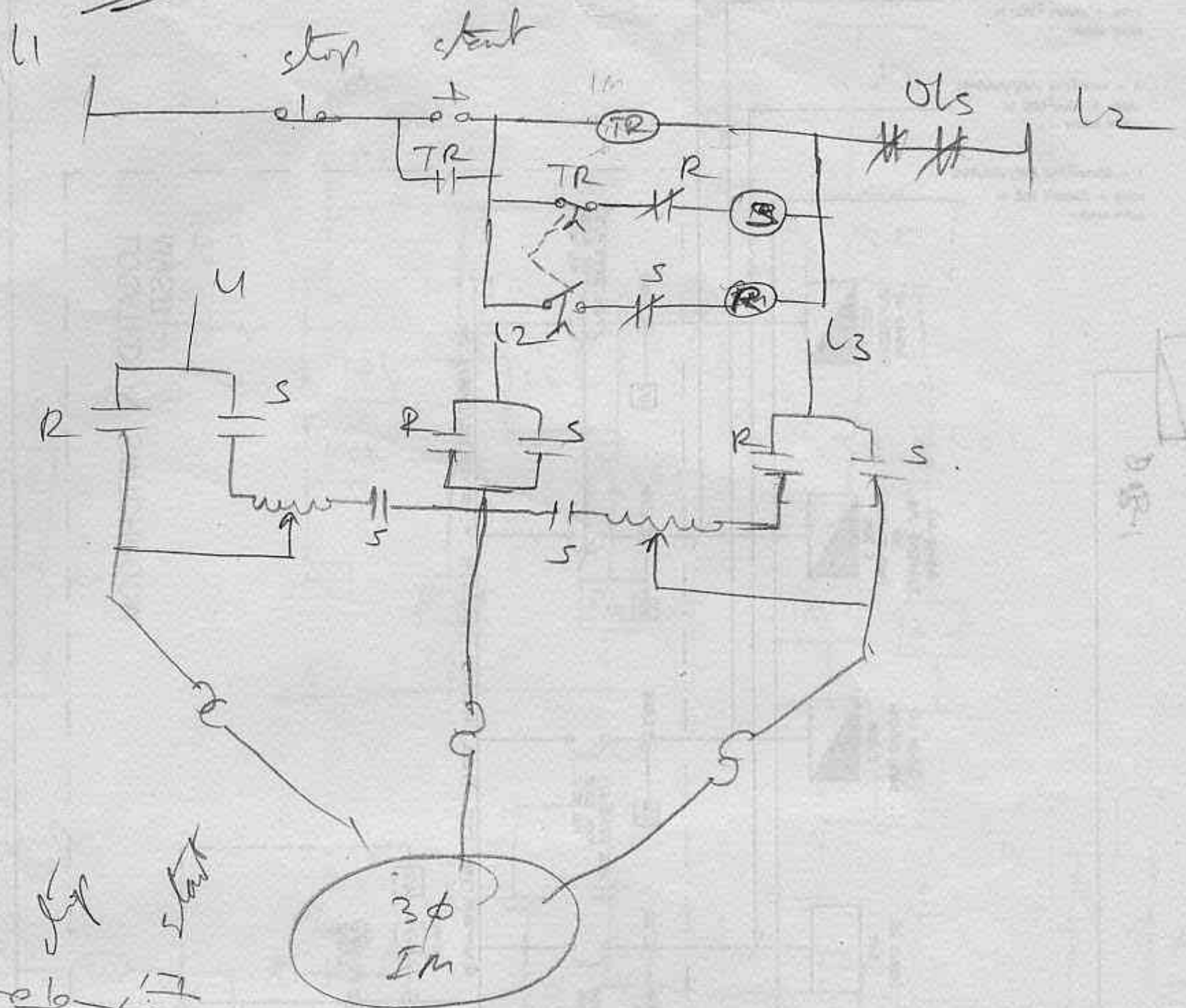
stop

start



Handwritten notes on the left margin, including '62', '12 12 12', and '3H 11 11 11'.

Auto start



Handwritten notes on the left margin, including "Auto start" and "3φ 7M".

METER PANEL (BY PUB)
LOCATED IN PUB METERING KIOSK

SUMMATOR

KWH

MD


KWH


OVERCURRENT RELAY	OR
KASUGA EARTH FAULT RELAY	EF
PILOT WIRE RELAY	PV
AUXILIARY RELAY	AR
PRESSURE RELAY	PR
THERMAL RELAY (WINDUP TRIP)	TR
AMMETER	A
KILO-VOLTMETER	V
GCB -- GAS CIRCUIT BREAKER	X
VOLTAGE TRANSFORMER	VT
POTENTIAL INDICATING LIGHT (RED YELLOW BLUE GREEN LIGHT)	Y
AMMETER SELECTOR SWITCH	Q
CURRENT TRANSFORMER	CT
CABLE END BOX	Y
CIRCUIT BREAKER TEST	CB
AIR CIRCUIT BREAKER	ACB
HARD BRAWN HIGH CONDUCTIVITY	HBHC
INVERSE DEFERITE WINDUP (DE LAB)	LDMT
SULPHUR HEXAFLUORIDE	YSEF


ELECTRICAL LEGEND

 OVERCURRENT RELAY


 KASUGA EARTH FAULT RELAY

 PILOT WIRE RELAY


 AUXILLARY RELAY

 PRESSURE RELAY

 THERMAL RELAY (ALARM TRIP)


 AMMETER

 KILO-VOLTMETER

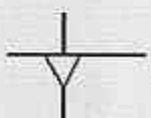
 GCB - GAS CIRCUIT BREAKER

 VOLTAGE TRANSFORMER

 IZUMI
RED YELLOW BLUE NEON LIGHT
POTENTIAL INDICATING LIGHT

 AMMETER SELECTOR SWITCH

 CURRENT TRANSFORMER

 CABLE END BOX

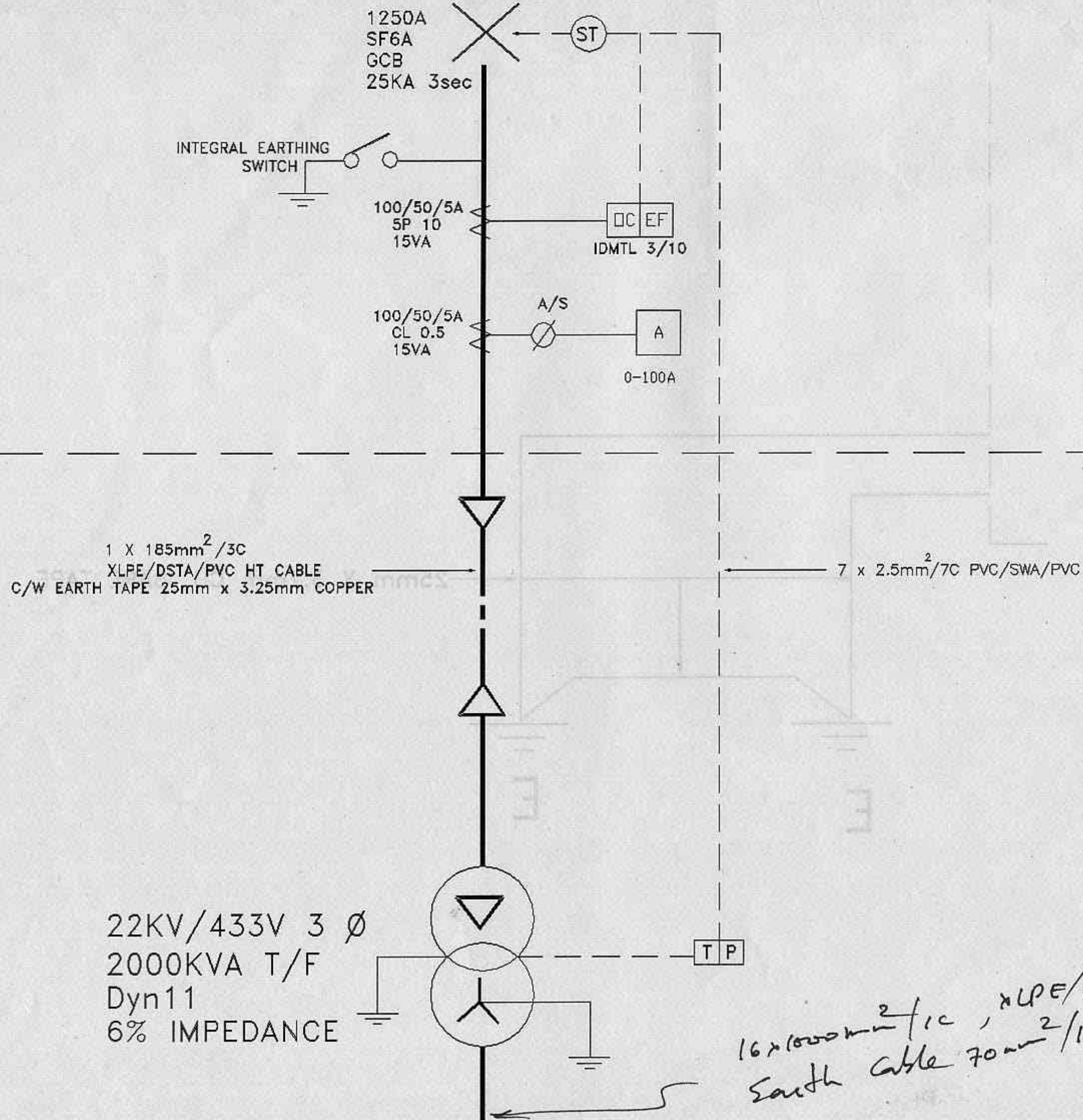
CB CIRCUIT BREAKER YSF6

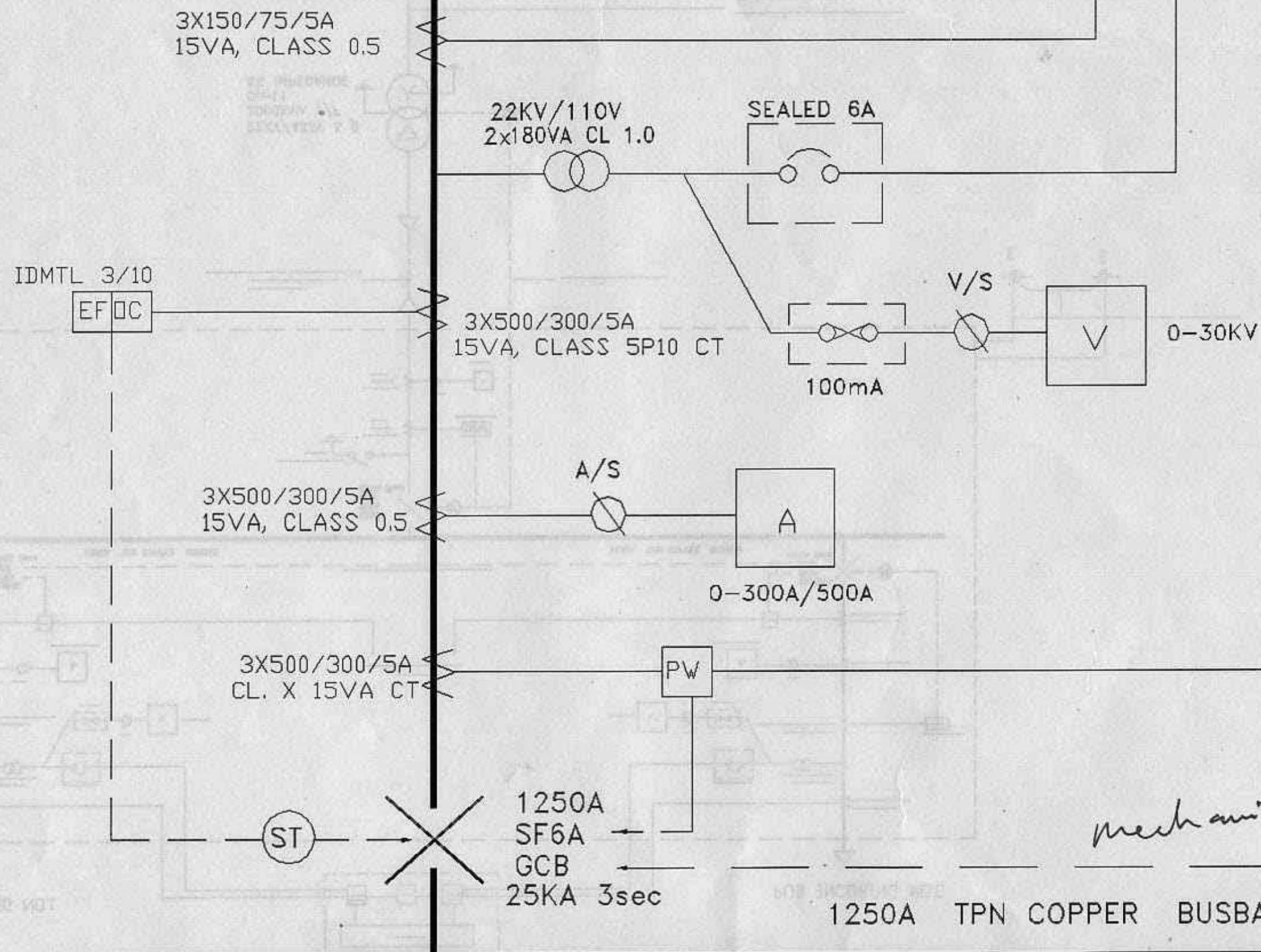
ACB AIR CIRCUIT BREAKER

HDHC HARD DRAWN HIGH CONDUCTIVITY

IDMTL INVERSE DEFINITE MINIMUM TIME LAG

YSF6 SULPHUR HEXAFLUORIDE





~~Draw~~ H.T. Main. Single line Diagram.



☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☒ _____

☐ _____

LEASEHOLD

HT MAIN SINGLE-LINE
DIAGRAM

UNITED CEMENT PTE LTD
NO.33 TUAS CRESCENT
SINGAPORE 2263

**HYTECH Mechanical & Electrical
Services Pte Ltd**

NO. 36 Holland Green Road
Singapore 1027
Tel : 4886667
Fax : 4889355

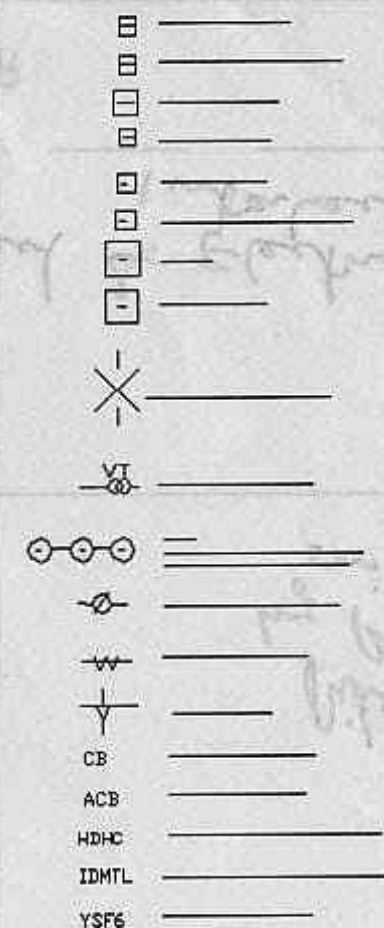
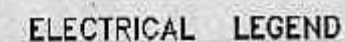
APRIL '94

NTS

THANT ZIN

EL/01

~~Draw~~ H.T. Main. Single line Diagram.



PROPOSED ELECTRICAL INSTALLATION
TO CEMENT BULK TERMINAL ON
LOTS 1553 & 1554 MK 8 PLOT JPS
PULAU DAMAR LAUT
SINGAPORE 2262
FOR UNITED CEMENT PTE LTD

LEASEHOLD

HT MAIN SINGLE-LINE
DIAGRAM

UNITED CEMENT PTE LTD

NO.33 TUAS CRESCENT
SINGAPORE 2283

**HYTECH Mechanical & Electrical
Services Pte Ltd**

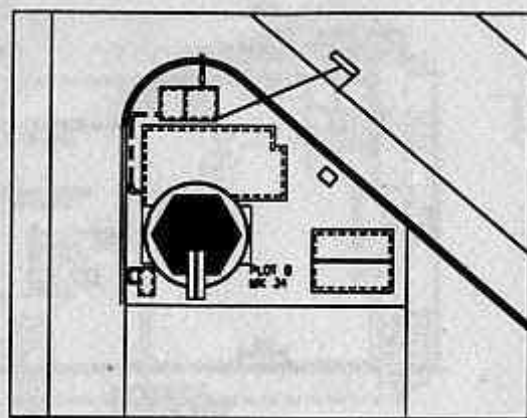
NO. 36 Holland Grove Road
Singapore 1027
Tel : 4686667
Fax : 4688365

APRIL '94

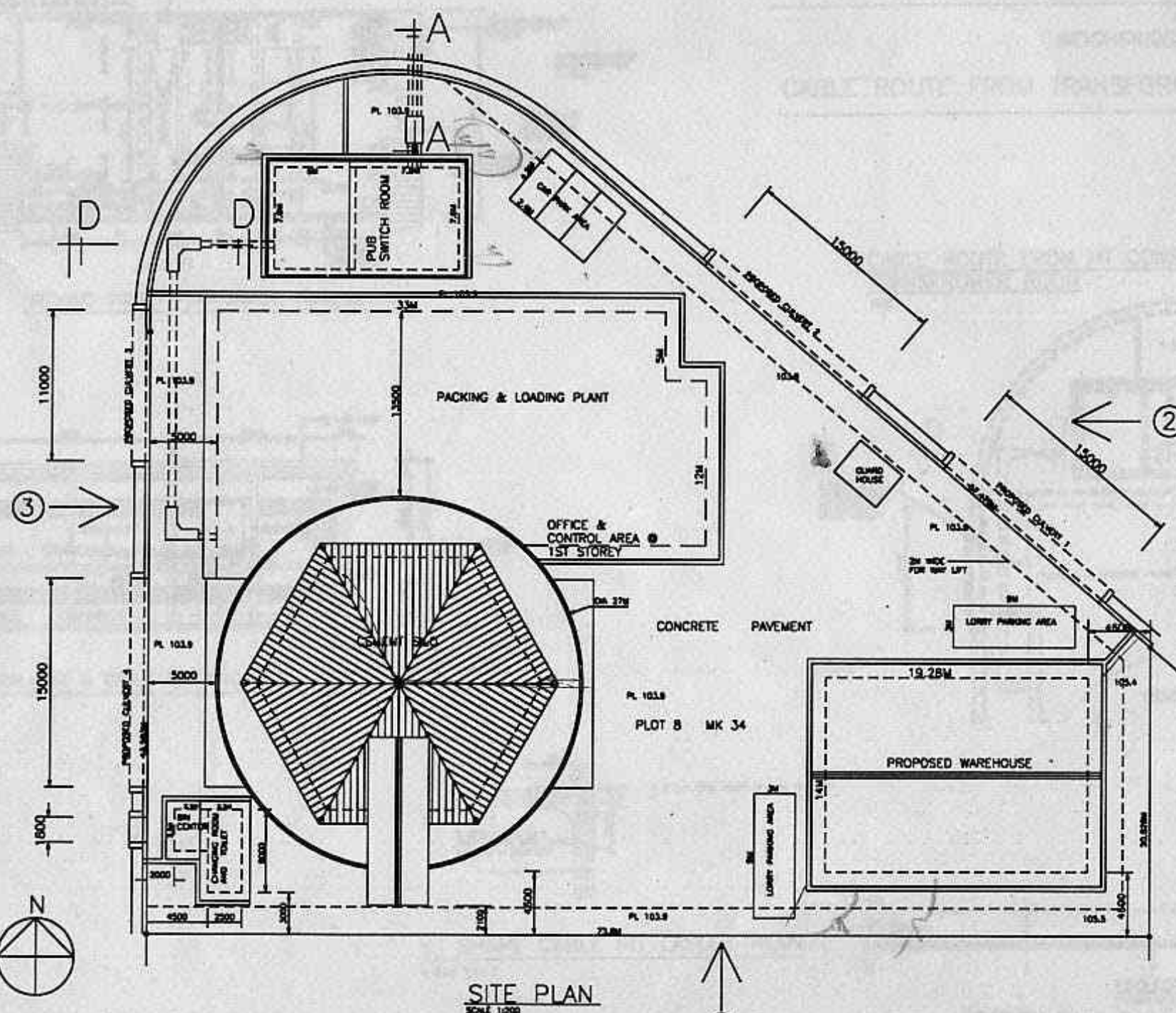
NTS

THANT ZIN

EL/01



LOCATION PLAN
SCALE 1:1000



SITE PLAN
SCALE 1:100

GENERAL NOTES:

- 1) SITE TO BE DEMARCATED BY SURVEYOR BEFORE WORK COMMENCES.
- 2) ALL 115 THE BRICKS TO BE REINFORCED WITH CEMENT AT EVERY 4TH COURSE.
- 3) CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCEMENT OF WORKS AND ANY DISCREPANCIES TO BE REPORTED TO THE ARCHITECTS OR PROFESSIONAL ENGINEERING FOR RECTIFICATION.
- 4) PROVIDE GPC TO ALL EXTERNAL WALL IN ACCORDANCE WITH REG. 26 OF LOCAL CODE (BASIC REG. 1974).
- 5) ALL NEW WORKS SHOWN IN COLOUR.
- 6) ALL EXISTING WORKS SHOWN IN YELLOW (DOTTED) ARE TO BE DEMOLISHED & DELETED.

D & BCD REQUIREMENTS:

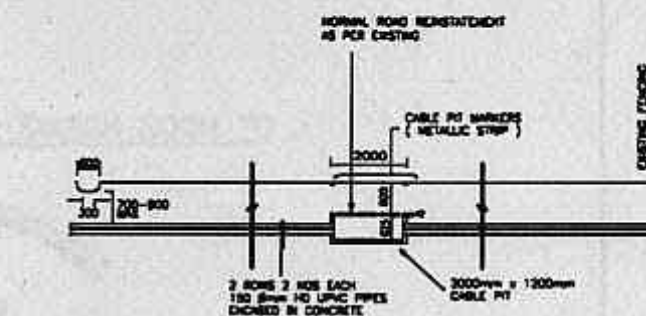
- 1) THE APPLICANT SHALL APPOINT A PROFESSIONAL ENGINEERING TO INSPECT & CERTIFY TO THE ANY LAND HAVING A DIFFERENCE IN PLATFORM LEVELS WITHIN THE PROPOSED SITE AND/OR BETWEEN THE PROPOSED SITE ANY SINKING ALLOWING LOTS AFFECTED BY THE PROPOSED WORKS IN THE APPLICATION FOR PERMIT TO CONDUCE WORKS WHERE EXISTING FEATURES OF ANY LAND FORMATION ARE FWD NECESSARY A PROFESSIONAL ENGINEER IS TO DESIGN AND SUPERVISE THE CARRYING OUT OF SUCH MEASURES.

BCD REQUIREMENTS:

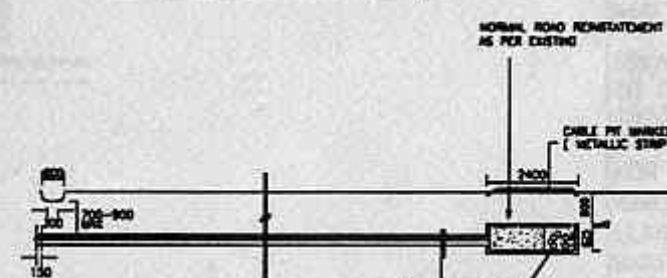
- 1) TO COMPLY ALL THE RELEVANT REQUIREMENTS AS MARKED IN THE BCD CHECKLIST.

C.B.P.U. REQUIREMENTS:

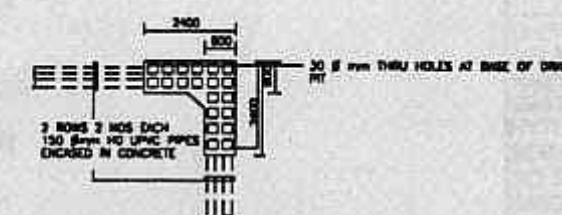
- 1) THE PLANNING, DESIGN AND CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH THE CURRENT CODE OF PRACTICE ON SURFACE WATER DRAINAGE AND THE SURFACE WATER DRAINAGE REGULATIONS 1979.
 - 2) THERE ARE NO FENCE, RETAINING WALL OR STRUCTURE LOCATED WITHIN THE DRAINAGE ADVANCE/DRAINAGE RIGHT OFWAY, OTHER THAN THOSE APPROVED BY DRAINAGE COMMITTEE.
 - 3) THERE IS NO EXISTING DRAIN FROM ADJACENT LOTS AND EXISTING DRAINAGE DISCHARGING INTO THE PROPOSED SITE OTHER THAN THOSE SHOWN ON THE SUBMITTED PLANS INCLUDING SURVEY PLAN IF ANY.
 - 4) THE PROPOSED GROUND LEVELS ARE HIGHER THAN THE SURROUNDING PLATFORM LEVEL OR 150MM ABOVE THE FLOOD LEVEL, SPECIFIED BY DRAINAGE COMMITTEE.
 - 5) THE DRAIN (EXISTING AND PROPOSED) WITHIN THE DEVELOPMENT LOT ARE ABLE TO DISCHARGE INTO THE PROPOSED DRAINAGE/OUTLET DRAINAGE CONDUIT AS SHOWN ON THE SUBMITTED PLANS.
 - 6) THE RUNOFF WITHIN, UPSTREAM OF AND ADJACENT TO THE DEVELOPMENT LOT CAN BE EFFECTIVELY DRAINED AWAY WITHOUT CAUSING FLOODING WITHIN THE LOT OR IN AREAS OUTSIDE THE LOT.
- REFERENCE:
- 1) THE DESIGN AND CONSTRUCTION OF THE SANITARY PLUMBING AND DRAINAGE SYSTEM SHALL COMPLY WITH THE SANITARY PLUMBING & DRAINAGE SYSTEM BOOK REGULATION 1976 & THE CODE OF PRACTICE ON SANITARY PLUMBING AND DRAINAGE SYSTEM.
 - 2) THIS BUILDING PLAN SHALL COMPLY WITH THE REQUIREMENTS AS STATED IN THE SEWERAGE PROCEDURES AND REQUIREMENTS BOOKS, DRAINAGE/CD/15/2/31.
 - 3) CODE OF PRACTICE ON ENVIRONMENTAL HEALTH, 1980.



SECTION A - A (SCALE 1:100)



SECTION D - D (SCALE 1:100)



'L' SHAPE CABLE PIT LAYOUT PLAN
(SCALE 1:100)

PROJECT
PROPOSED ELECTRICAL INSTALLATION
TO CEMENT BULK TERMINAL ON LOTS
& 1554 MK 6 PLOT JP6
PULAU DAMAR LAUT SINGAPORE 2262
FOR UNITED CEMENT PTE LTD

TYPE OF LAND
LEASEHOLD

DRAWING TITLE
SITE PLAN, KEY PLAN
& LOCATION PLAN.

OWNER'S SIGNATURE & ADDRESS

UNITED CEMENT PTE LTD
NO.33 TUAS CRESCENT
SINGAPORE 2263.

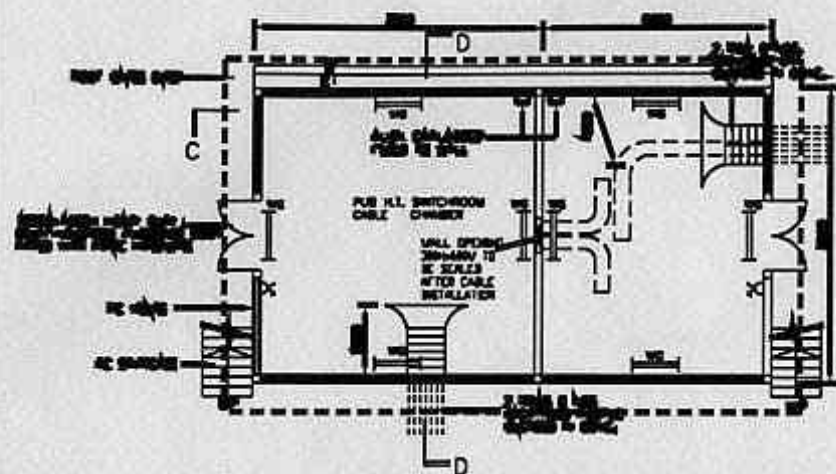
CONSULTANT
HYTECH MECHANICAL & ELECTRICAL
SERVICES PTE LTD
36 HOLLAND GROVE ROAD
SINGAPORE 1027
TEL: 4696667

DATE
MARCH'94
DRAWN BY
THANT ZIN

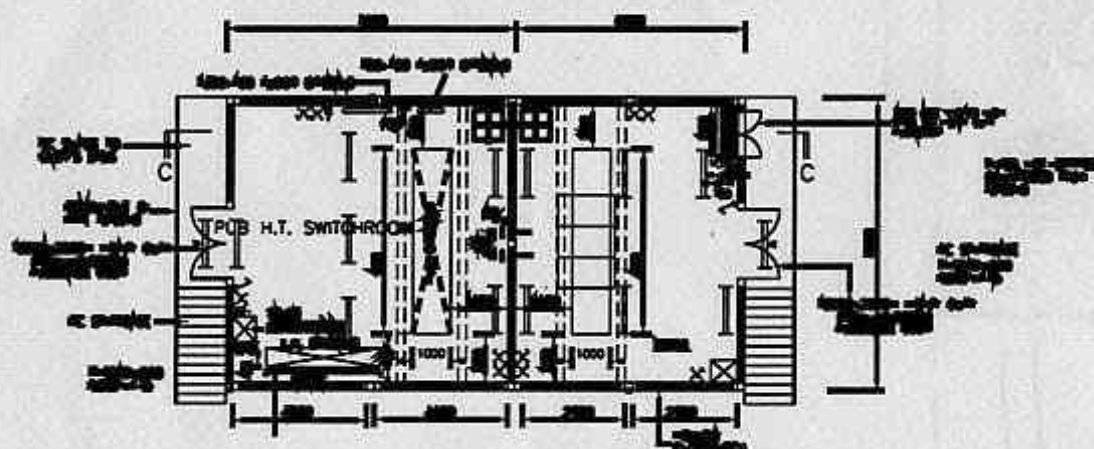
SCALE
STATED
CHECKED BY

DRAWING NO.
EL/SP

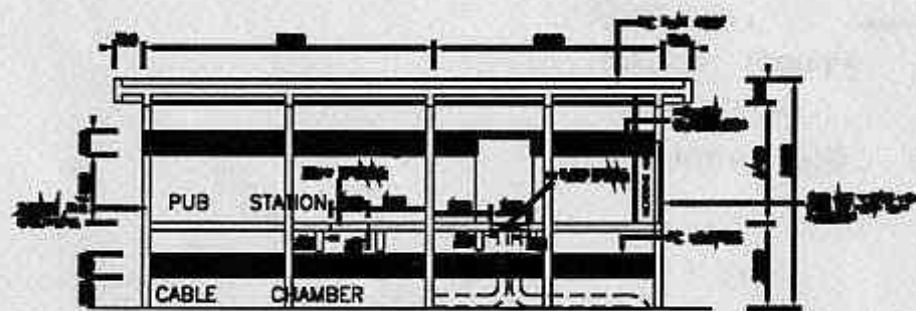
C:\P5\SILO\ELSP.DWG.



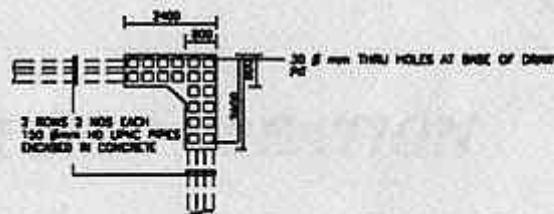
CABLE ROUTE IN CONSUMER CHAMBER



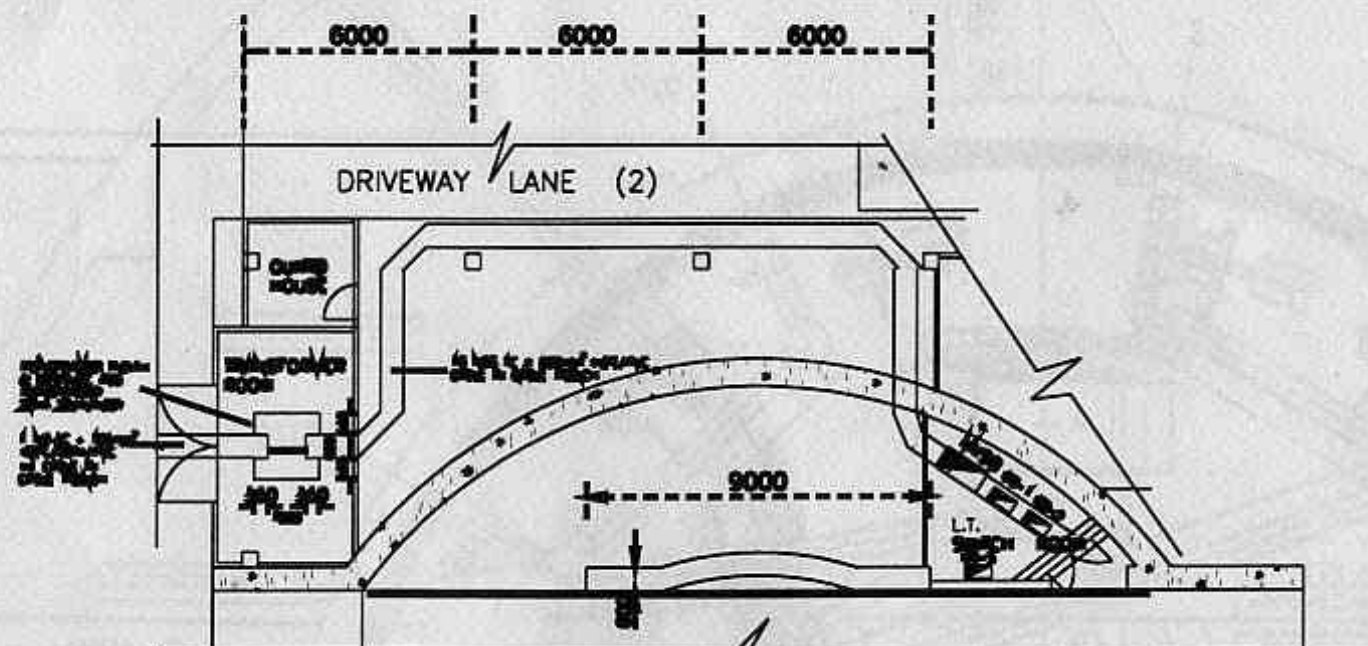
SECOND STOREY PLAN SWITCH GEAR LAYOUT



SECTION C-C & CABLE ENTERING TO HT SWITCHGEAR



'L' SHAPE CABLE PIT LAYOUT PLAN
(SCALE 1:100)

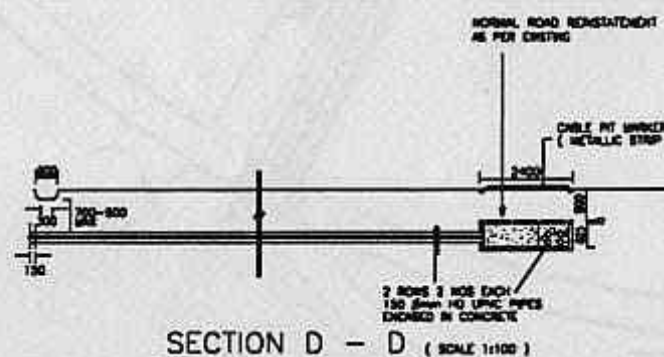
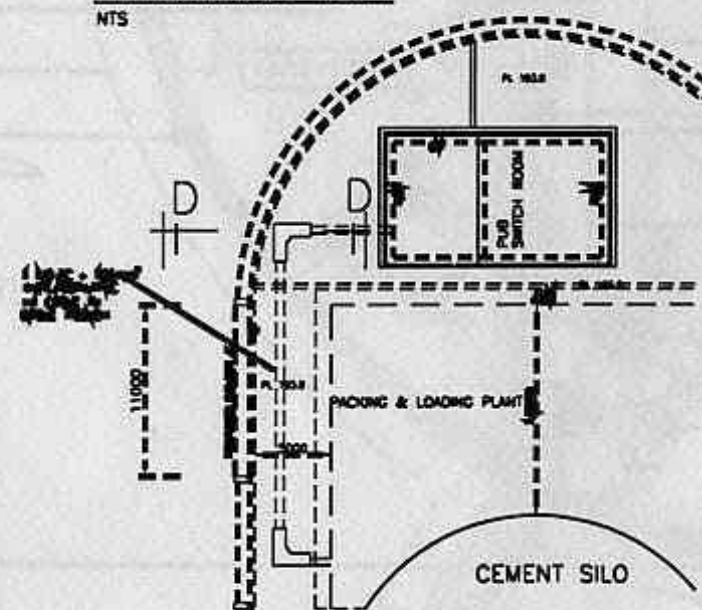


WEIGHBRIDGE (A)

CABLE ROUTE FROM TRANSFORMER ROOM TO LT SWITCH ROOM

CABLE ROUTE FROM HT CONSUMER SWITCH ROOM TO TRANSFORMER ROOM

NTS



SECTION D - D (SCALE 1:100)

LEGEND

- 1 x 40W BATTEN TYPE FLOOR, L.T. FTL.
- 1 x 40W WEATHER PROOF TYPE FLOOR, L.T. FTL.
- 1 x 40W FLOOR, L.T. FTL. C/W 3 HRS SELF CONTAINED SMOKE BATTERY POWER PACK
- 2 x 40W FLOOR, L.T. FTL.
- 3 x 40W FLOOR, L.T. FTL.
- 3 x 40W WEATHER PROOF TYPE FLOOR, L.T. FTL.
- 1 WWP LIGHTING SWITCH
- 1 x 1.5A S/S/O
- 20A DP ISOLATOR
- 20A DP SWITCH/FUSE

PROJECT

PROPOSED ELECTRICAL INSTALLATION TO CEMENT BULK TERMINAL ON LOTS 1553 & 1554 MK6 PLOT JP6 AT PULAU DAMAR LAUT SINGAPORE 2262 FOR UNITED CEMENT PTE LTD.

LEASEHOLD

1ST STOREY PLAN, ROOF PLAN, 2ND STOREY PLAN, SECTION, FRONT ELEVATION & SIDE ELEVATION. FOR SUB-STATION.

DIRECTOR'S SIGNATURE & ADDRESS

UNITED CEMENT PTE LTD
NO.33 TUAS CRESCENT
SINGAPORE 2263.

CONSULTANT
HYTECH MECHANICAL & ELECTRICAL SERVICES PTE LTD.
NO.36 HOLLAND GROVE ROAD
SINGAPORE 1027.

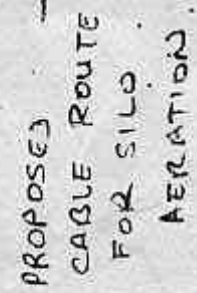
TEL : 4595567 FAX : 4599365

DATE MARCH'94 SCALE STATED

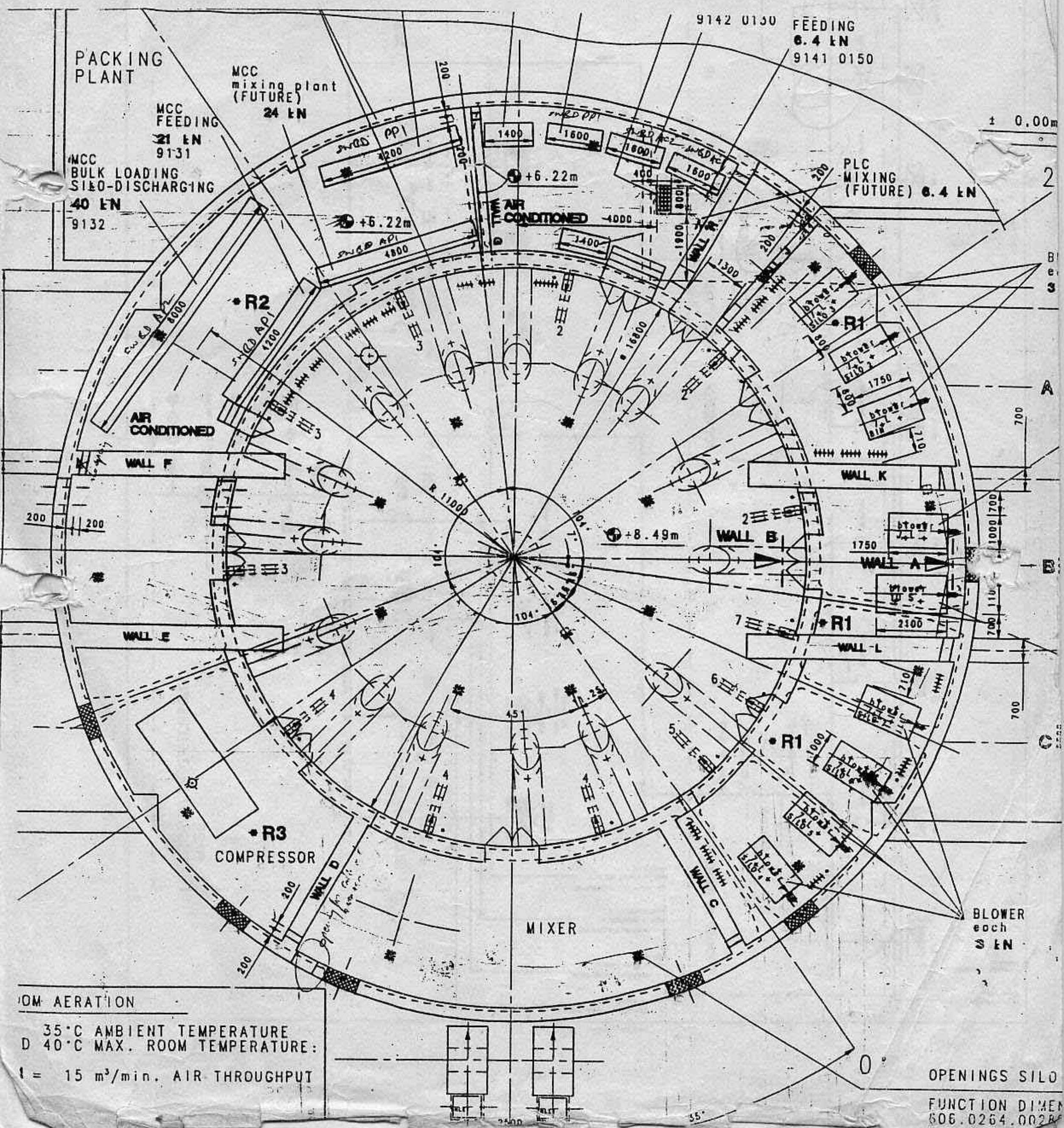
DRAWN BY THANT ZIN CHECKED BY H.K.ONG

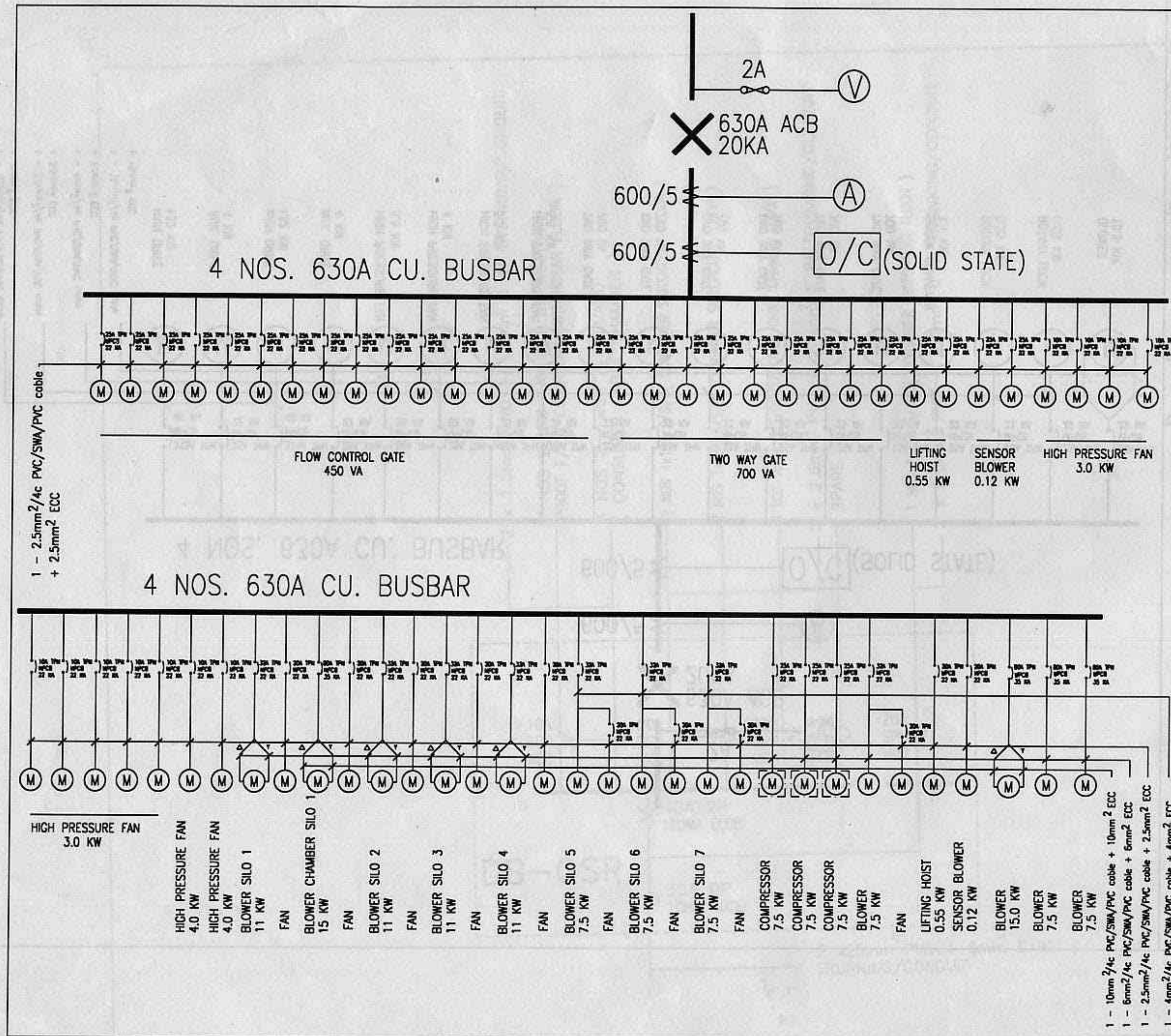
DRAWING NO. EL/02

20
1 MEN
00288



PROPOSED CABLE ROUTE FOR SILO AREATION
(LEVEL +8.49M)





ELECTRICAL LENGEND

Ⓥ	VOLTMETER
Ⓐ	AMMETER
O/C	OVERCURRENT RELAY
✕	ACB AIR CIRCUIT BREAKER
MPCB	METER PROTECTION CIRCUIT BREAKER

OWNER

UNITED CEMENT PTE LTD
NO. 33 TUAS CRESCENT
SINGAPORE 2263

PROJECT TITLE

PROPOSED ELECTRICAL INSTALLATION
TO CEMENT BULK TERMINAL ON
LOTS 1553 & 1554 MK 6 PLOT JP6
PILAU DAMAR LAUT
SINGAPORE 2262

DRAWING TITLE

SINGLE LINE DIAGRAM FOR MCC
BILK LOADING AND SILO DISCHARGE

CONSULTANT

HYTECH MECHANICAL &
ELECTRICAL SERVICES PTE LTD

No. 36 HOLLAND GROVE ROAD
SINGAPORE 1027 TEL: 4696667 FAX: 4689365

DATE

OCTOBER '94

SCALE

NTS

DRAWN BY

TL WONG

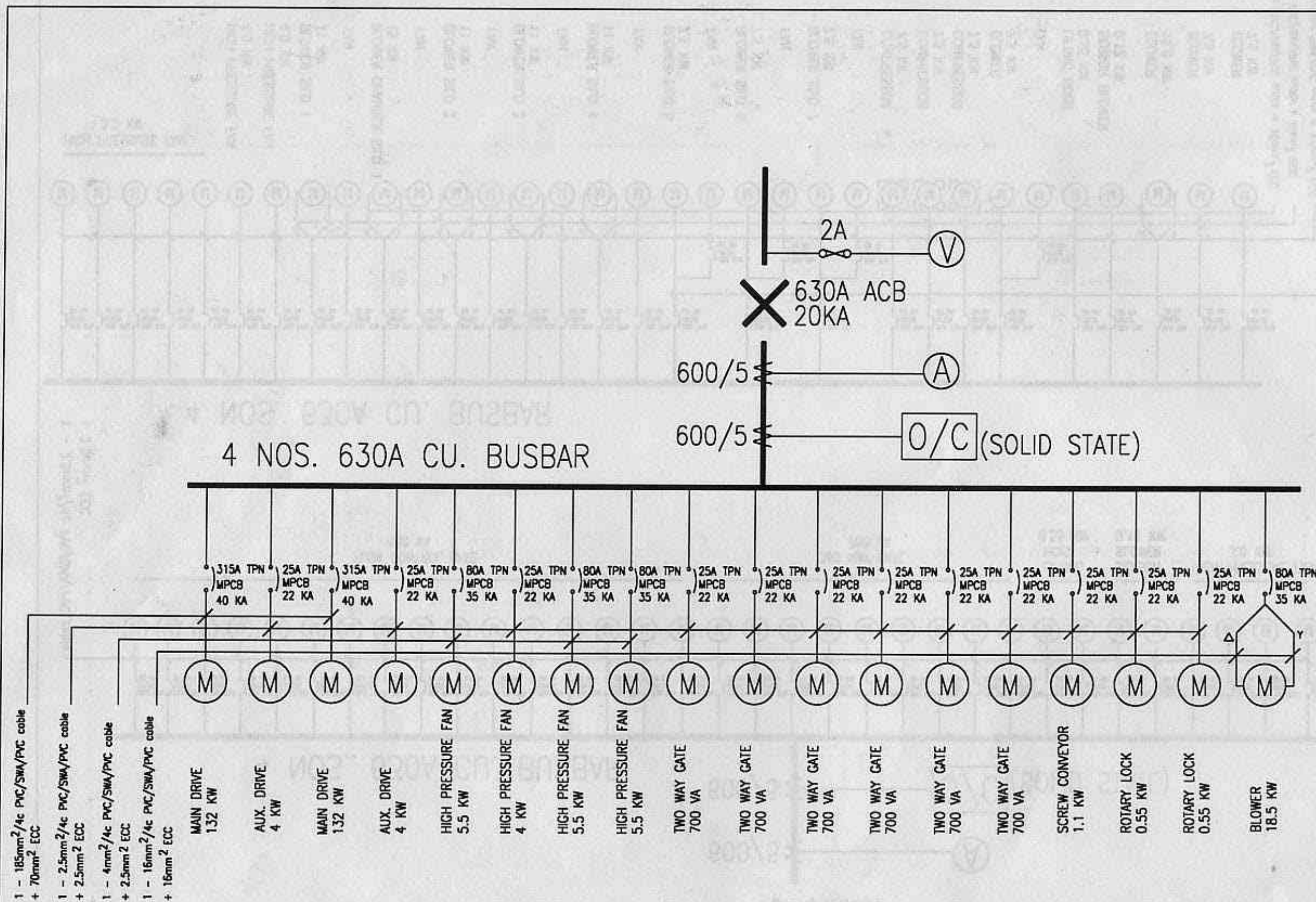
CHECKED BY

JOHNNY ONG

DRAWING NO.

HY/EL/94/E-505-2

C:\PTI Silo 1 ESOB.DWG.



ELECTRICAL LENGEND

- Ⓥ VOLT METER
- Ⓐ AMMETER
- ⓪/Ⓒ OVERCURRENT RELAY
- ✕ ACB AIR CIRCUIT BREAKER
- Ⓜ MPCB METER PROTECTION CIRCUIT BREAKER

OWNER
UNITED CEMENT PTE LTD
NO. 33 TUAS CRESCENT
SINGAPORE 2263

PROJECT TITLE
PROPOSED ELECTRICAL INSTALLATION
TO CEMENT BULK TERMINAL ON
LOTS 1553 & 1554 MK 6 PLOT JP6
PILAU DAMAR LAUT
SINGAPORE 2262

DRAWING TITLE
SINGLE LINE DIAGRAM FOR
MCC SILO FEEDING

CONSULTANT
**HYTECH MECHANICAL &
ELECTRICAL SERVICES PTE LTD**
No. 36 HOLLAND GROVE ROAD
SINGAPORE 1027 TEL: 4896667 FAX: 4899385

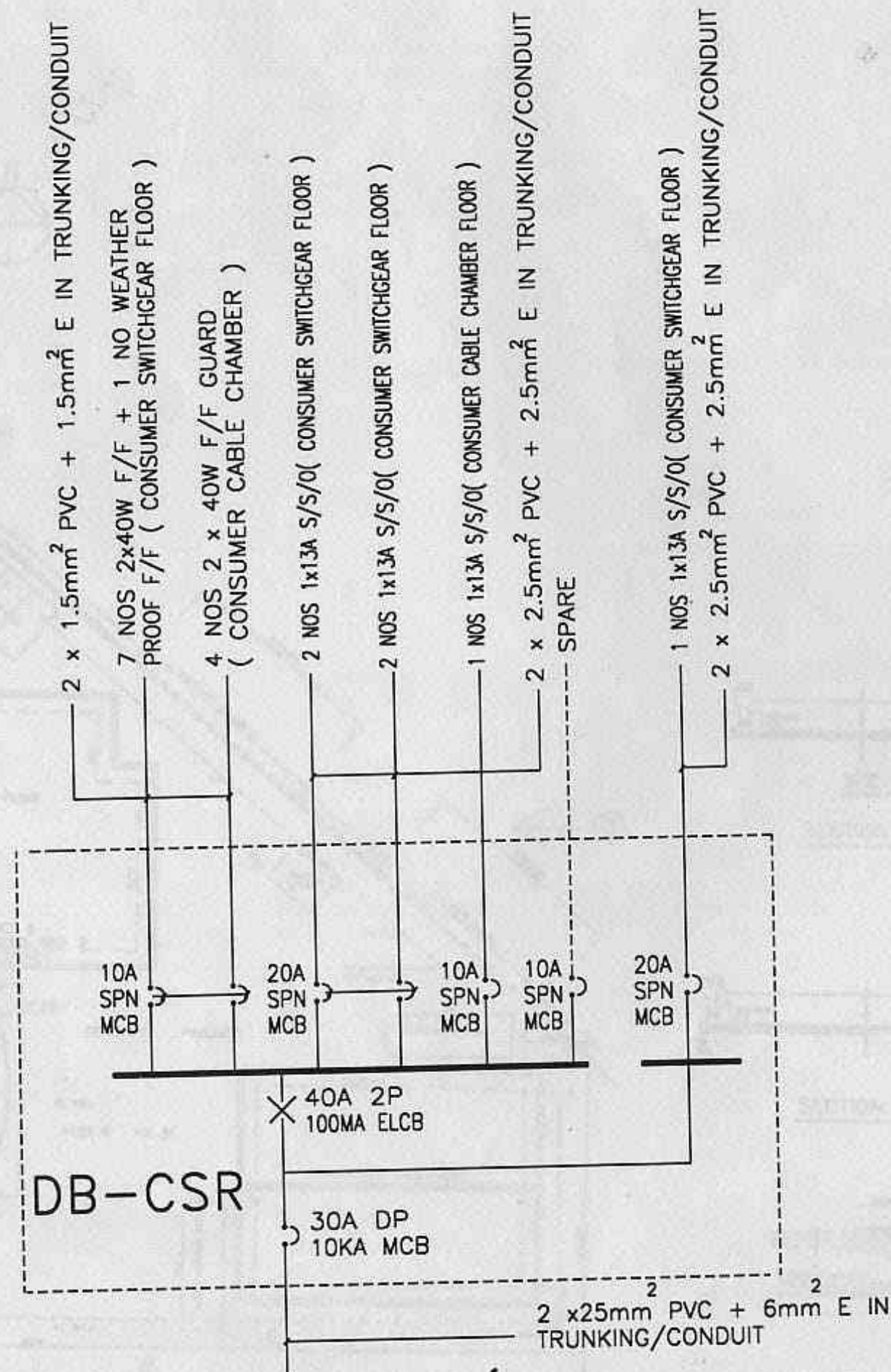
DATE
OCTOBER '94

SCALE
NTS

DRAWN BY
TL WONG

CHECKED BY
JOHNNY ONG

DRAWING NO.
HY/EL/94/E-505-1



PROJECT
PROPOSED ELECTRICAL INSTALLATION
TO CEMENT BULK TERMINAL ON LOTS
1553 & 1554 MK 6 PLOT JP 6 AT
PULAU DAMAR LAUT SINGAPORE 2262
FOR UNITED CEMENT PTE LTD.

TENURE OF LAND
LEASEHOLD

DRAWING TITLE
ELECTRICAL SINGLE LINE DIAGRAM

OWNER
UNITED CEMENT PTE LTD

NO.33 TUAS CRESCENT
SINGAPORE 2263.

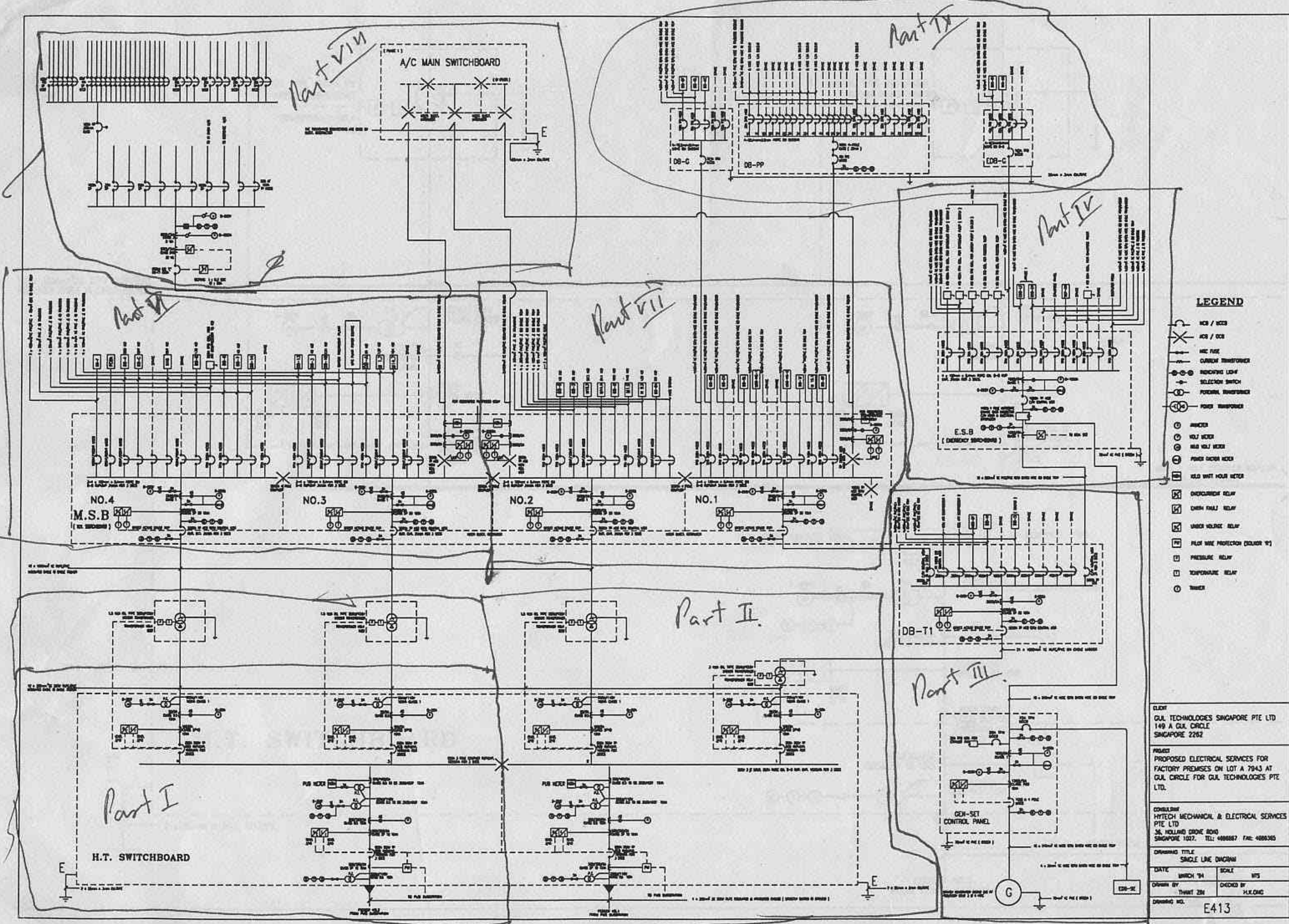
CONSULTANT
HYTECH MECHANICAL & ELECTRICAL
SERVICES PTE LTD.
NO.36 HOLLAND GROVE ROAD
SINGAPORE 1027.

TEL : 4698667 FAX : 4689365

DATE SCALE NTS

DRAWN BY CHECKED BY

DRAWING NO.
E-UC-002



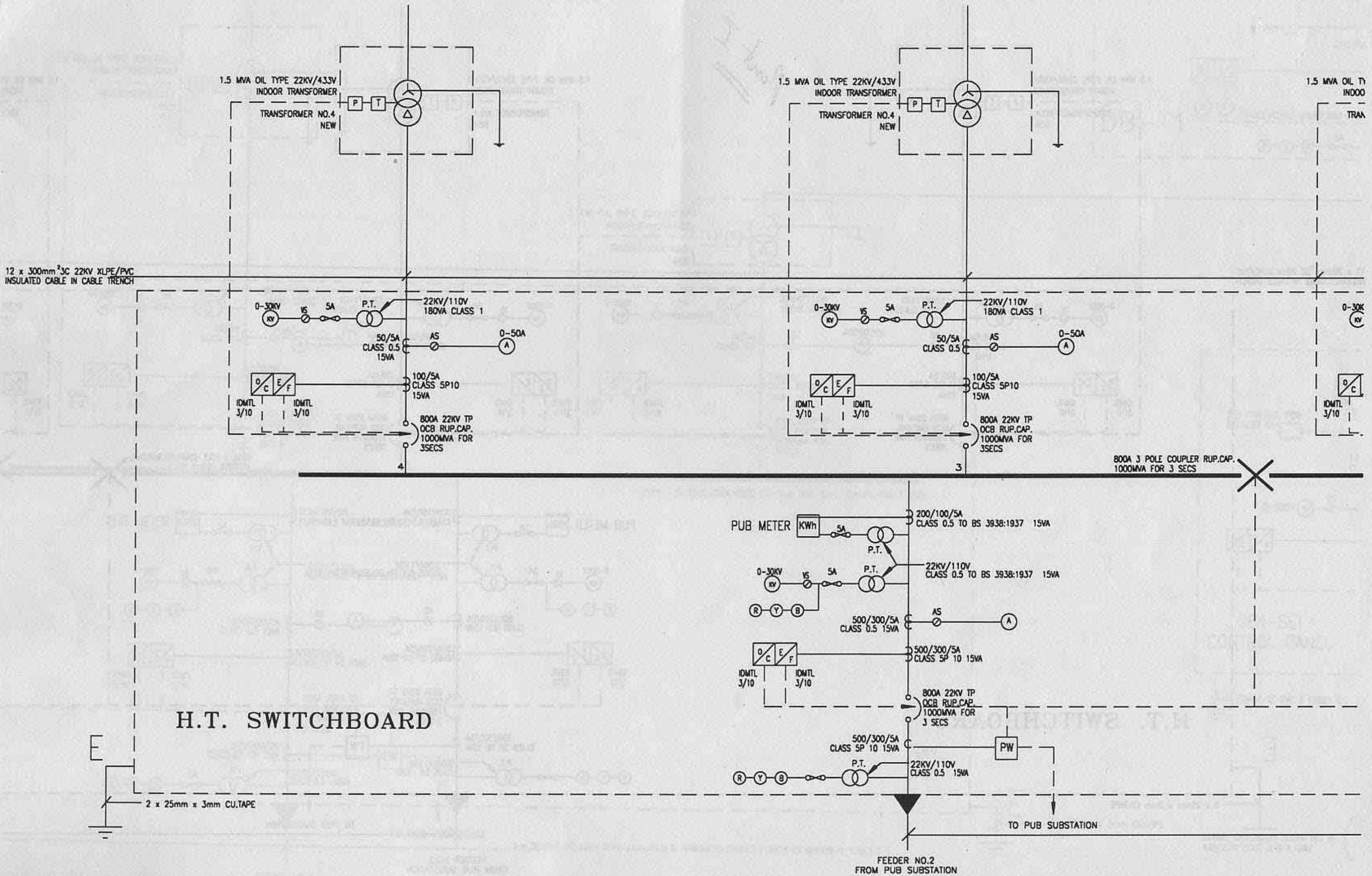
CLIENT
GUL TECHNOLOGIES SINGAPORE PTE LTD
149 A GUL CIRCLE
SINGAPORE 2262

PROJECT
PROPOSED ELECTRICAL SERVICES FOR
FACTORY PREMISES ON LOT A 7943 AT
GUL CIRCLE FOR GUL TECHNOLOGIES PTE LTD.

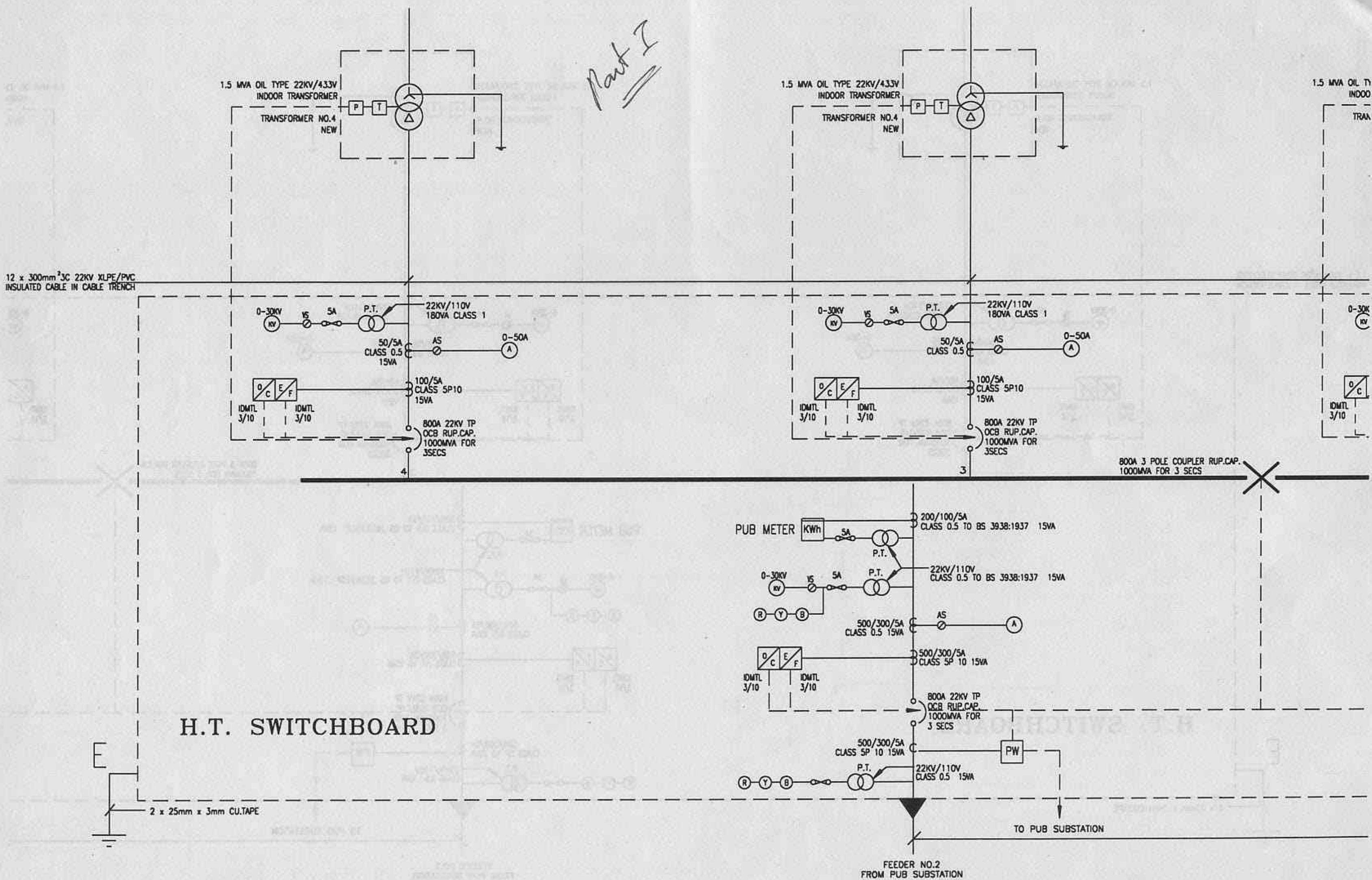
CONSULTANT
HYTECH MECHANICAL & ELECTRICAL SERVICES
PTE LTD
36, HOLLAND CIRCLE ROAD
SINGAPORE 1027. TEL: 4888887 FAX: 4888365

DRAWING TITLE
SINGLE LINE DIAGRAM
DATE: MARCH '94 SCALE: NTS
DRAWN BY: THIRU ZEN CHECKED BY: H.Y. CHAN
DRAWING NO. E413

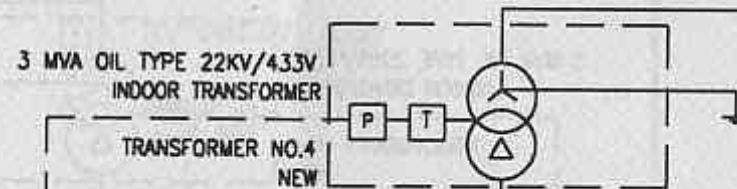
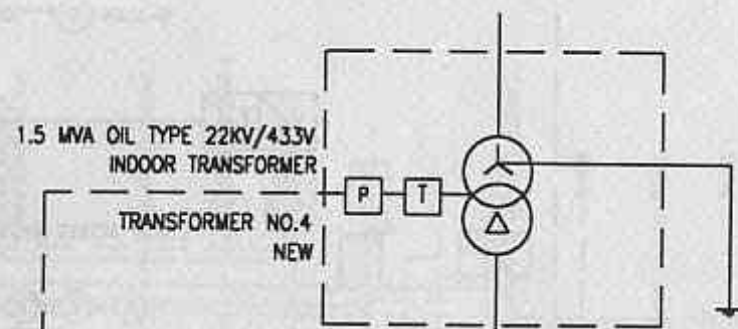
Part I of C:\LYP\DRAWING\ E413.DWG.



Part I

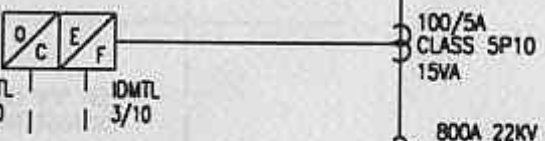
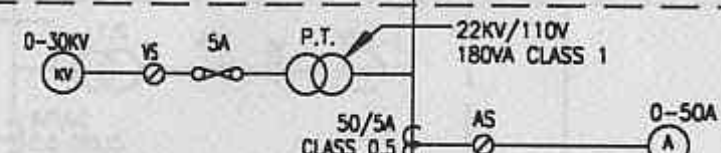
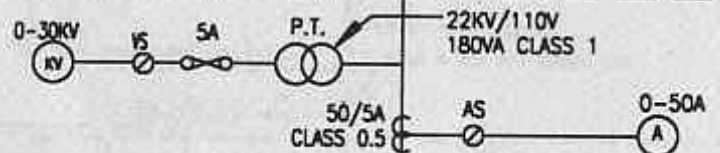
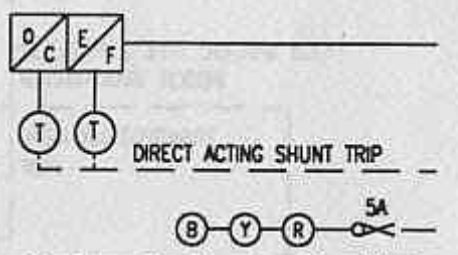


Part II of C:\LVP\DRAW\ONG\E\13.DWG.



DB-T1

0-500V V 5000/5A



800A 22KV TP OCB RUP.CAP. 1000MVA FOR 3SECS

800A 22KV TP OCB RUP.CAP. 1000MVA FOR 3SECS

22KV 3 Ø 50HZ. 800A HUDC CU. B-B RUP. CAP. 1000MVA FOR 3 SECS

PUB METER KWh 200/100/5A CLASS 0.5 TO BS 3938:1937 15VA

22KV/110V CLASS 0.5 TO BS 3938:1937 15VA

500/300/5A CLASS 0.5 15VA

500/300/5A CLASS 5P 10 15VA

800A 22KV TP OCB RUP.CAP. 1000MVA FOR 3 SECS

500/300/5A CLASS 5P 10 15VA

22KV/110V CLASS 0.5 15VA

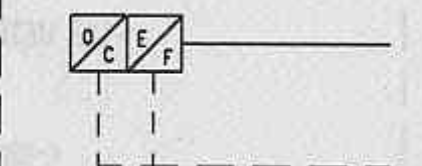
TO PUB SUBSTATION

1 x 300mm² 3C 22KV XLPE INSULATED & ARMoured CABLES (DIRECTLY BURIED IN GROUND)

FEEDER NO.1 FROM PUB SUBSTATION

20A TPN ISOL FOR EXHAUST FAN 20A MCCB 12 CL

0-500V V VS



GEN-SET CONTROL PANEL

70mm² 1C PVC (GREEN)

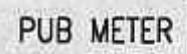
2 x 25mm x 3mm CU.TAPE

STANBY GENERATOR 500KW 0.8 PF 400/230V 50HZ 3 Ø 4 WIRE

Part II



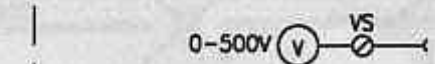
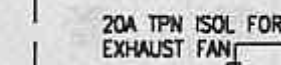
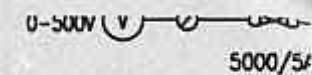
22KV 3 ϕ 50HZ. 800A HUDC CU. B-B RUP. CAP. 1000MVA FOR 3 SECS



TO PUB SUBSTATION

1 x 300mm² 3C 22KV XLPE INSULATED & ARMoured CABLES (DIRECTLY BURIED IN GROUND)

FEEDER NO.1
FROM PUB SUBSTATION



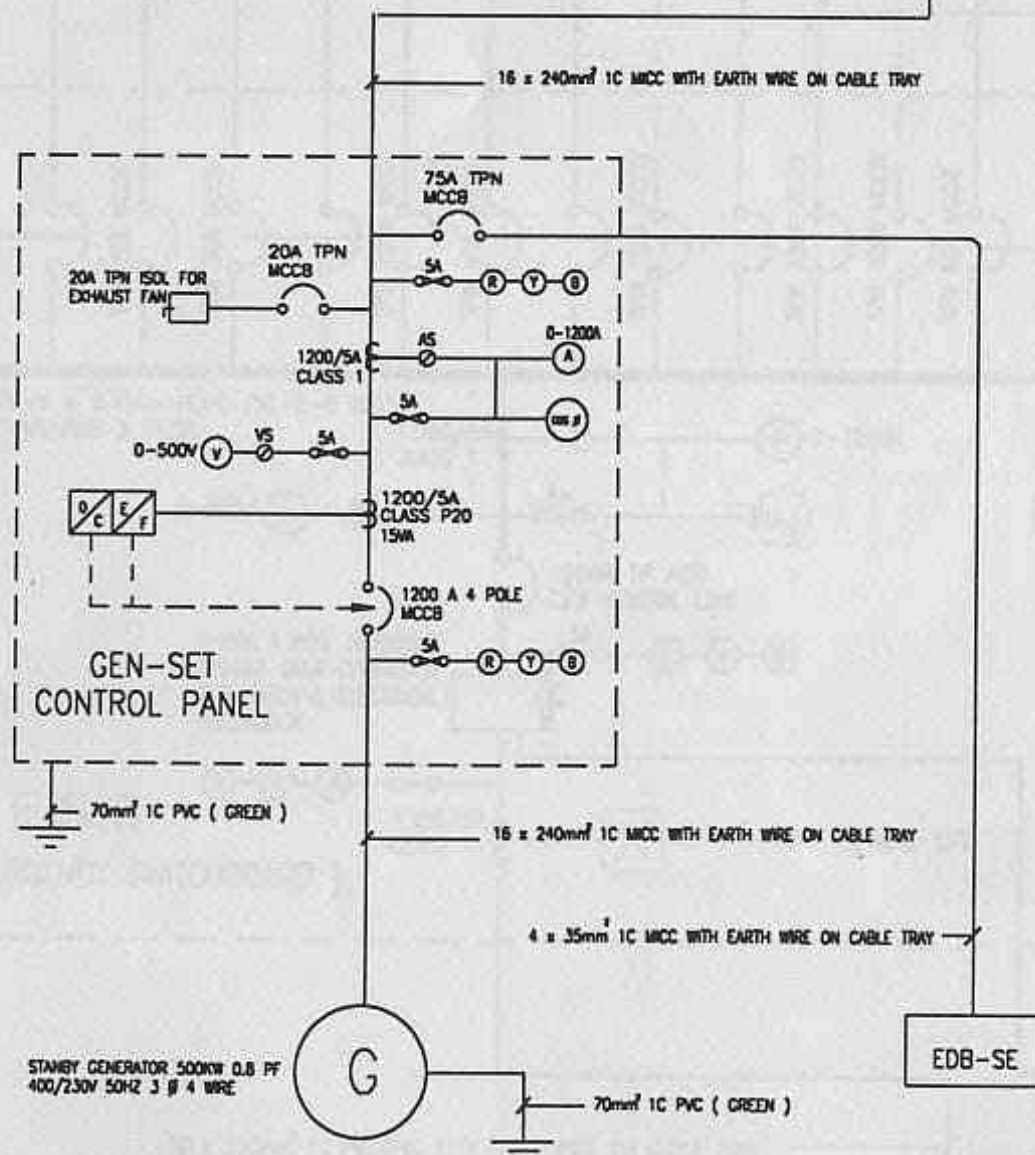
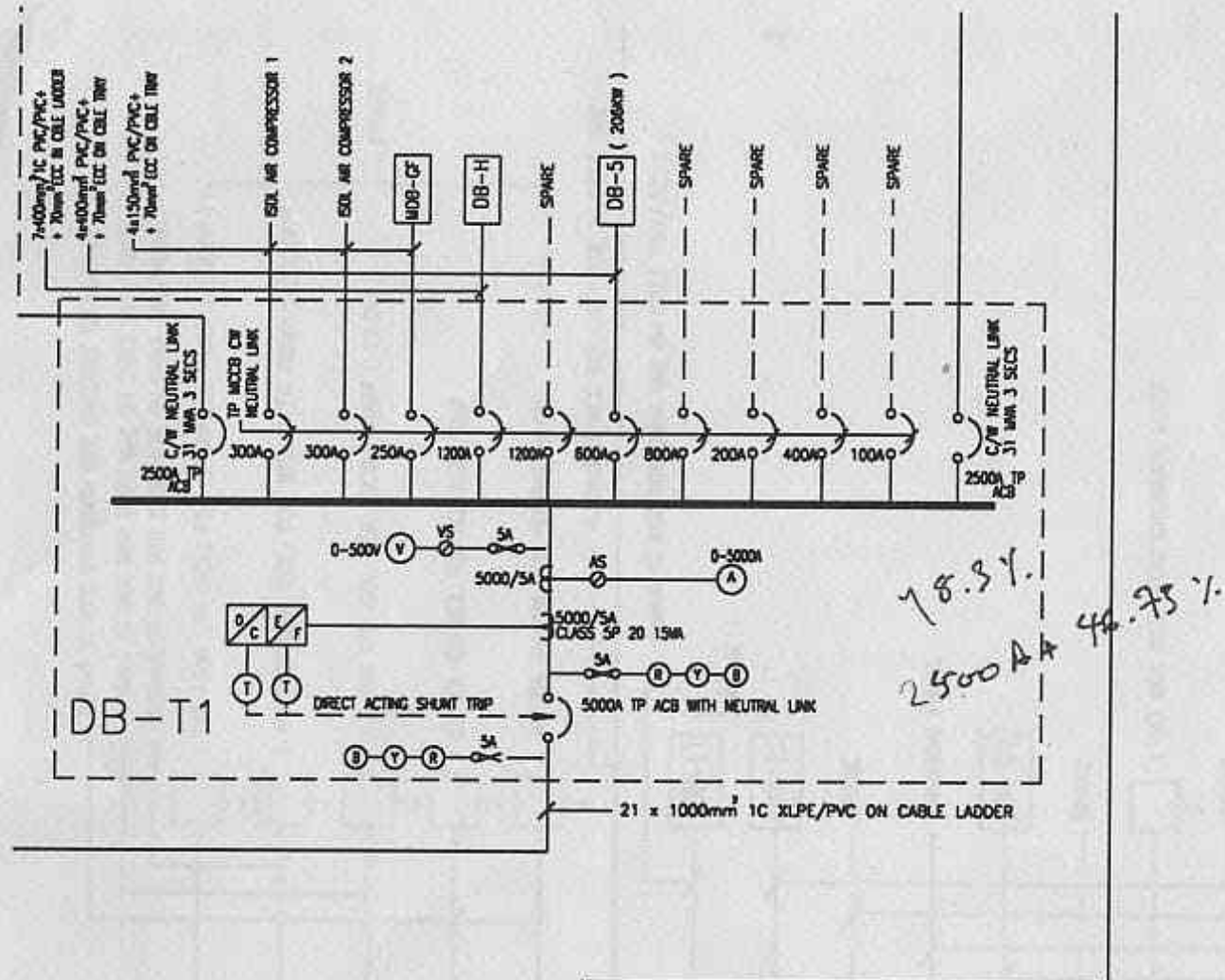
GEN-SET
CONTROL PANEL

70mm² 1C PVC (GREEN)

— 2 x 25mm x 3mm CU.TAPE

STANBY GENERATOR 500KW 0.8 PF
400/230V 50HZ 3 Ø 4 WIRE

Part III of C:\LTP\DRAWING\ E413.DWG.



- ☒ OVERCURRENT RELAY
- ☒ EARTH FAULT RELAY
- ☒ UNDER VOLTAGE RELAY
- ☒ PILOT WIRE PROTECTION (SOLKOR 'R')
- ☐ PRESSURE RELAY
- ☐ TEMPERATURE RELAY
- ☐ TIMER

CLIENT
GUL TECHNOLOGIES SINGAPORE PTE LTD
149 A GUL CIRCLE
SINGAPORE 2262

PROJECT
PROPOSED ELECTRICAL SERVICES FOR
FACTORY PREMISES ON LOT A 7943 AT
GUL CIRCLE FOR GUL TECHNOLOGIES PTE LTD.

CONSULTANT
HYTECH MECHANICAL & ELECTRICAL SERVICES
PTE LTD
36, HOLLAND GROVE ROAD
SINGAPORE 1027. TEL: 4696667 FAX: 4689365

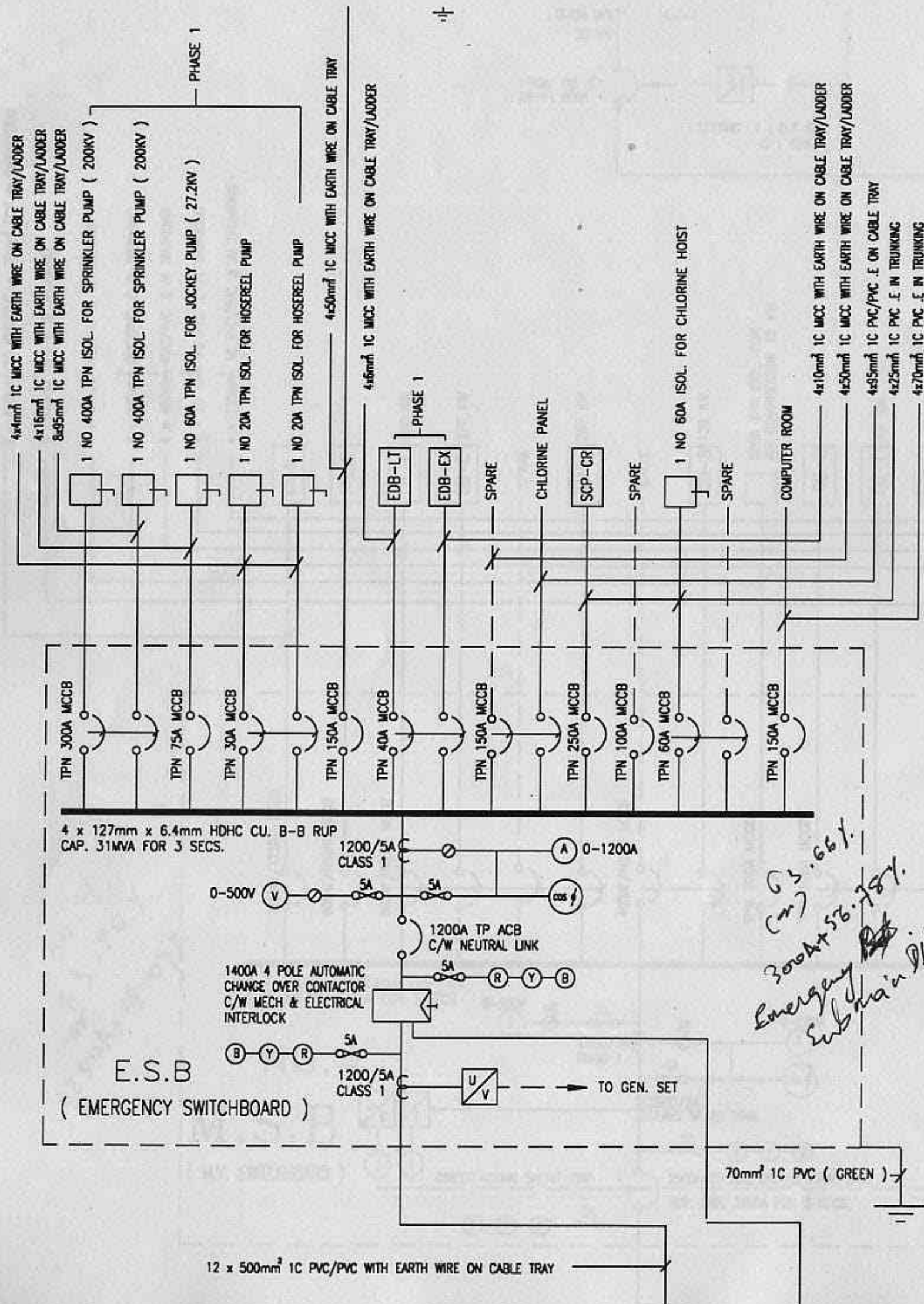
DRAWING TITLE
SINGLE LINE DIAGRAM

DATE MARCH '94 SCALE NTS

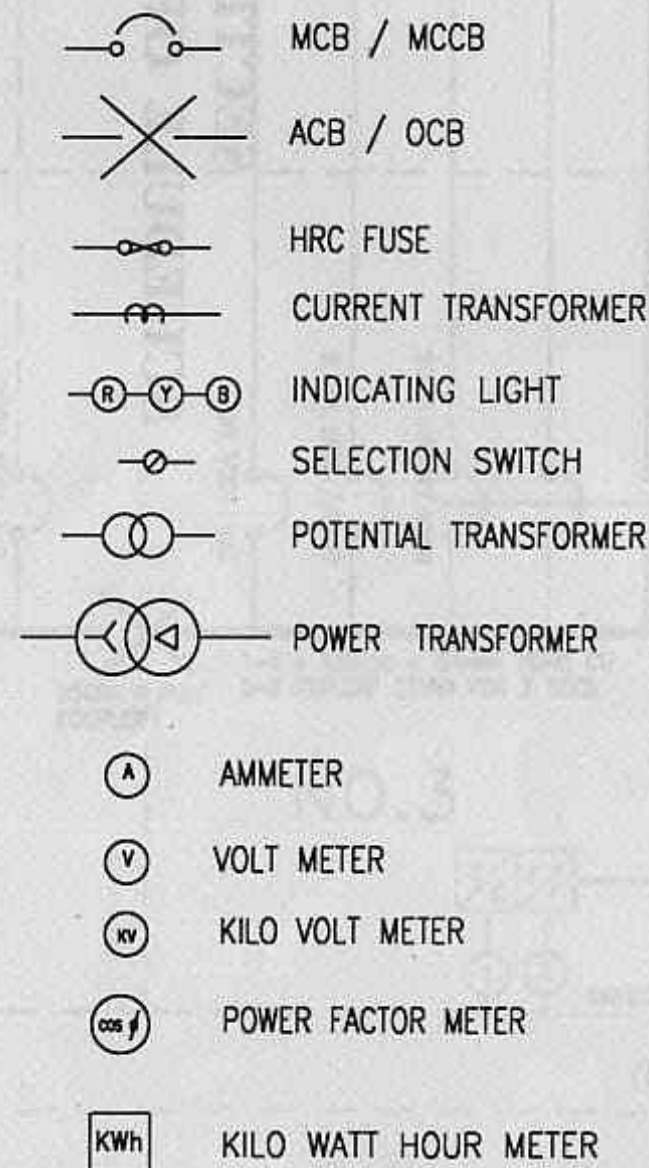
DRAWN BY THANT ZIN CHECKED BY H.K.ONG

DRAWING NO. E413

Part IV of C:\LYP\DRAW\ONG\E413.DWG.



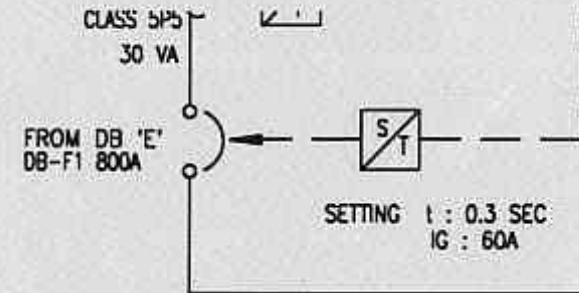
LEGEND



Part VI

7

LYP \ DRAW \ ONG \ E413. DWG



Part VI

7 x 400mm² 1C PVC/PVC + 70mm² ECG IN CABLE TRAY

4 x 50mm² PVC .E IN TRUNKING

4 x 95mm² PVC/PVC .E IN TRUNKING

4 x 240mm² PVC/PVC .E IN TRUNKING

4 x 400mm² PVC/PVC .E IN TRUNKING

4 x 25 mm² 1C PVC .E IN TRUNKING

4 x 150mm² 1C PVC/PVC .E IN TRUNKING

DB-F

PCBA

DB-4 280 KW

DB-C 277 KW

SPARE

M16 257 KW

SPARE

DB-8 139 KW

200A TPN ISOL. FOR
AIR COMPRESSOR 15 KW

DB-6

DB-7 40 KW

DB-14

SPARE

DB-13

DB-3 46 KW

DB-10 231 KW

WATER TREATMENT PLANT

MFG PLANT POWER CENTRE

DB-A 91 KW

M 1.7 137 KW

M14.7 154 KW

SPARE

SPARE

8x1000mm² 1C XLPE/PVC INSULATED CABLE IN CABLE TRENCH

1250AF/1250AT MCCB

600AF/600AT MCCB

600AF/600AT MCCB

400AF/400AT MCCB

TPN 200A MCCB

TPN 100A MCCB

TPN 150A MCCB

TPN 100A MCCB

225AF/125AT MCCB

600AF/500AT MCCB

TPN 400A MCCB

400AF/300AT MCCB

225AF/200AT MCCB

2500A 4 POLE COUPLER

TPN 100A MCCB

225AF/125AT MCCB

600AF/500AT MCCB

TPN 400A MCCB

400AF/300AT MCCB

225AF/200AT MCCB

2500A 4 POLE COUPLER

TPN 100A MCCB

225AF/125AT MCCB

600AF/500AT MCCB

TPN 400A MCCB

400AF/300AT MCCB

225AF/200AT MCCB

2500A 4 POLE COUPLER

TPN 100A MCCB

225AF/125AT MCCB

600AF/500AT MCCB

3-4 x 127mm x 6.4mm HDHC CU
B-B RUP.CAP 31MVA FOR 3 SECS

NO.4

M.S.B

(M.V. SWITCHBOARD)



2500A TP ACB WITH NEUTRAL LINK
RUP. CAP. 31MVA FOR 3 SECS

5A

0-500V

VS

5A

2500/5A CLASS 1

AS

5A

2500/5A CLASS 5P 20 15VA

5A

5A

5A

0-2500A

AS

5A

2500/5A CLASS 5P 20 15VA

5A

5A

5A

0-2500A

AS

5A

2500/5A CLASS 5P 20 15VA

5A

5A

5A

0-2500A

AS

5A

2500/5A CLASS 5P 20 15VA

5A

5A

5A

0-2500A

AS

5A

2500/5A CLASS 5P 20 15VA

5A

5A

5A

0-2500A

AS

5A

2500/5A CLASS 5P 20 15VA

5A

5A

5A

0-2500A

AS

5A

2500/5A CLASS 5P 20 15VA

5A

5A

5A

0-2500A

(M.V. SWITCHBOARD)

DIRECT ACTING SHUNT TRIP

2500A TP ACB WITH NEUTRAL LINK
RUP. CAP. 31MVA FOR 3 SECS

5A

5A

5A

5A

5A

5A

5A

3-4 x 127mm x 6.4mm HDHC CU
B-B RUP.CAP 31MVA FOR 3 SECS

NO.3



2500A TP ACB WITH NEUTRAL LINK
RUP. CAP. 31MVA FOR 3 SECS

5A

5A

5A

5A

5A

5A

5A

0-500V

VS

5A

2500/5A CLASS 1

AS

5A

2500/5A CLASS 5P 20 15VA

5A

5A

5A

0-2500A

AS

5A

2500/5A CLASS 5P 20 15VA

5A

5A

5A

0-2500A

AS

5A

2500/5A CLASS 5P 20 15VA

5A

5A

5A

5A

5A

5A

5A

5A

5A

5A

FOR RECORDING PURPOSES

KWh

2000/5A

2000/5A

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

2000A TP ACB WITH NEU. LINK

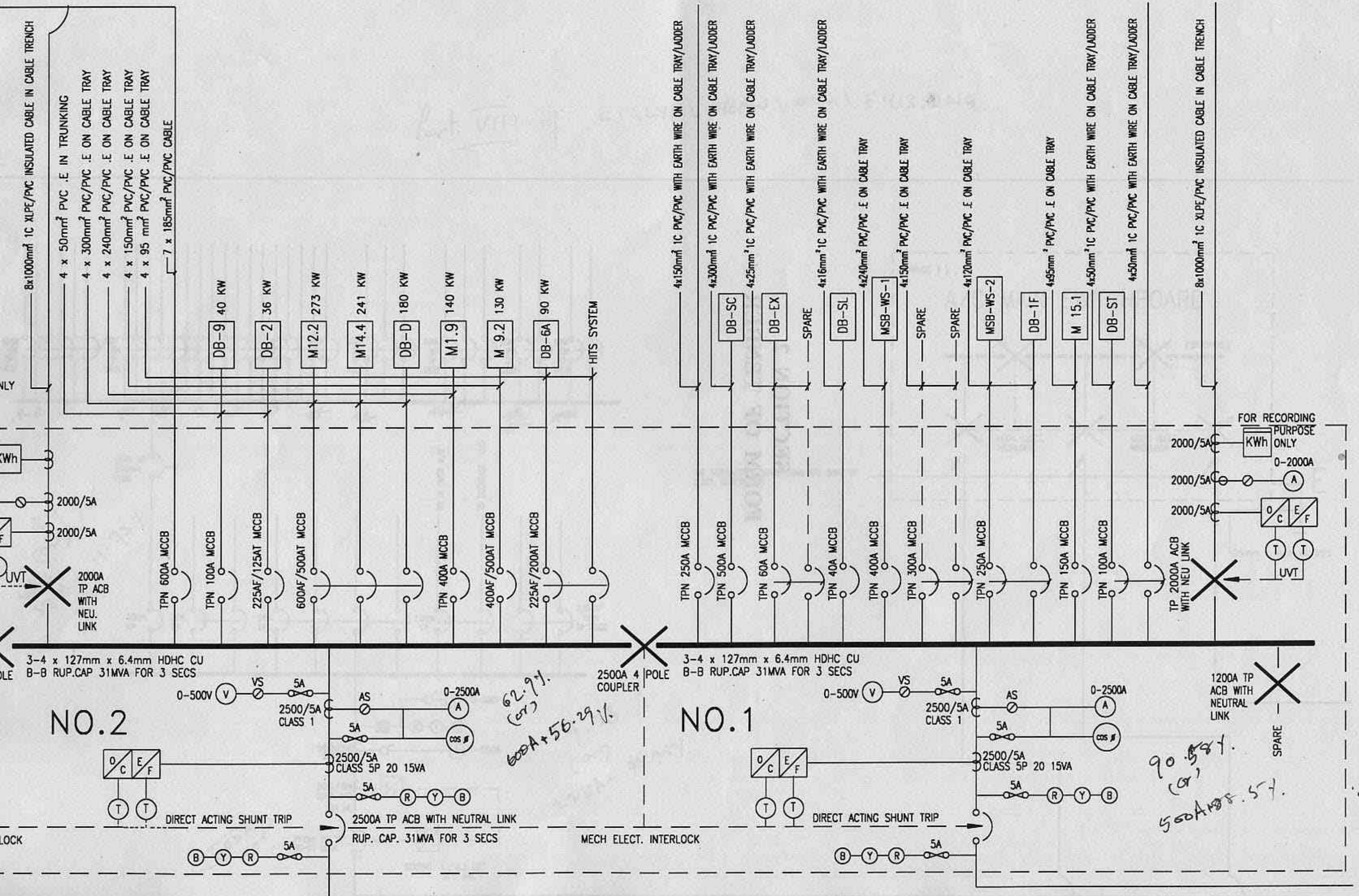
2000A TP ACB WITH NEU. LINK

20.4
23.86%
(250A + 29.09%)

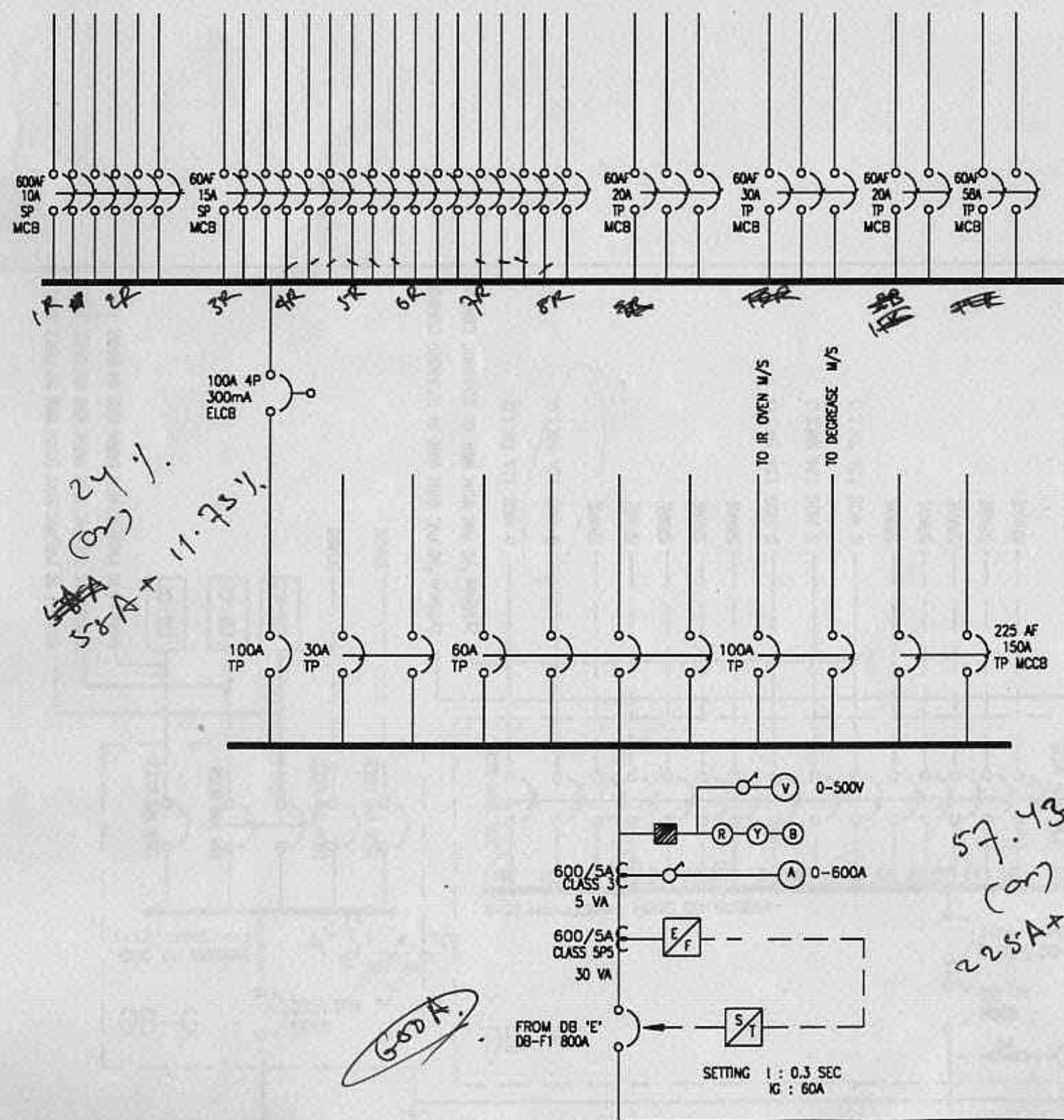
66.22%
600A + 59.84%

MECH ELECT. INTE

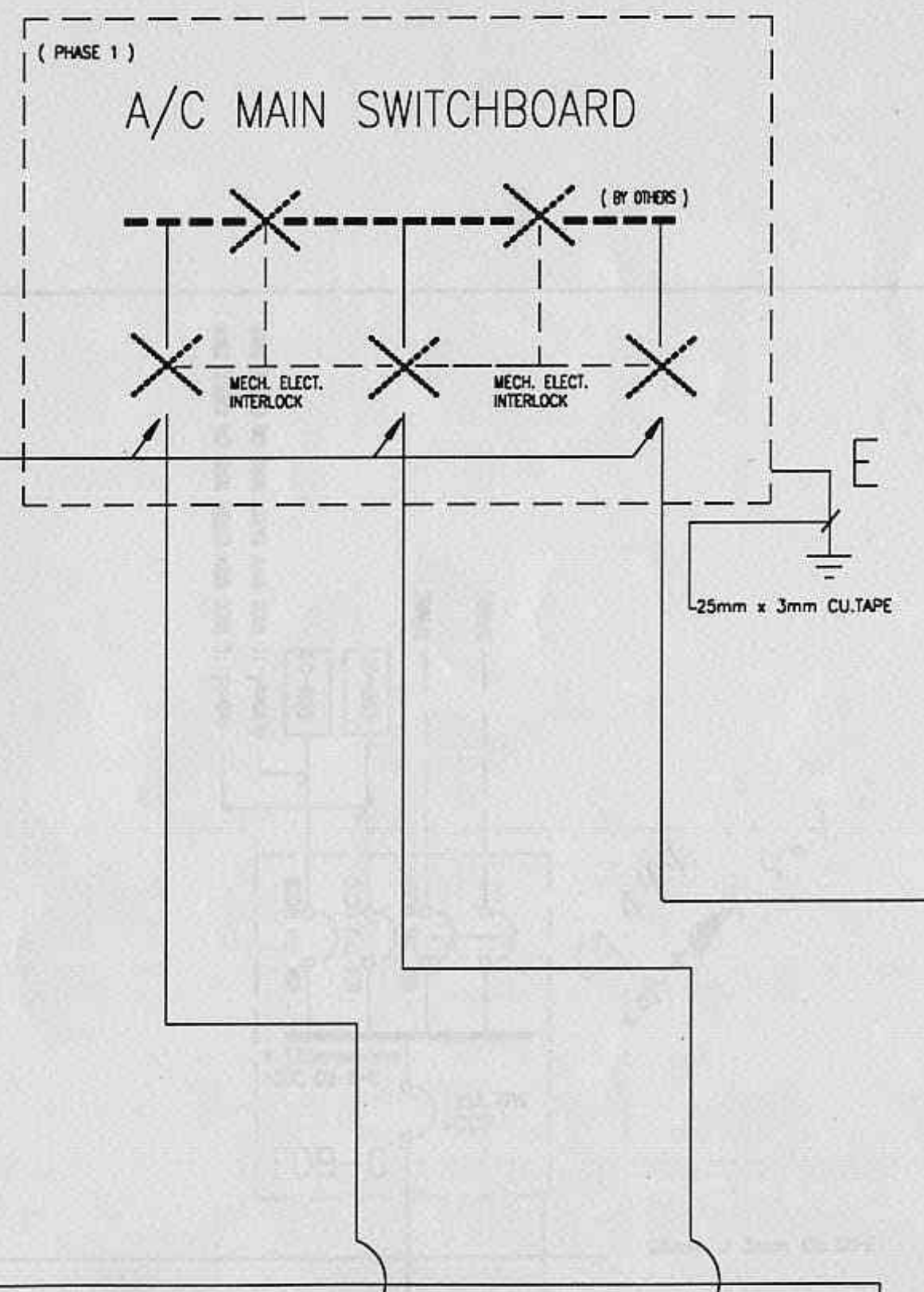
Part of C: LYP / DRAWING / 5413.DWG.



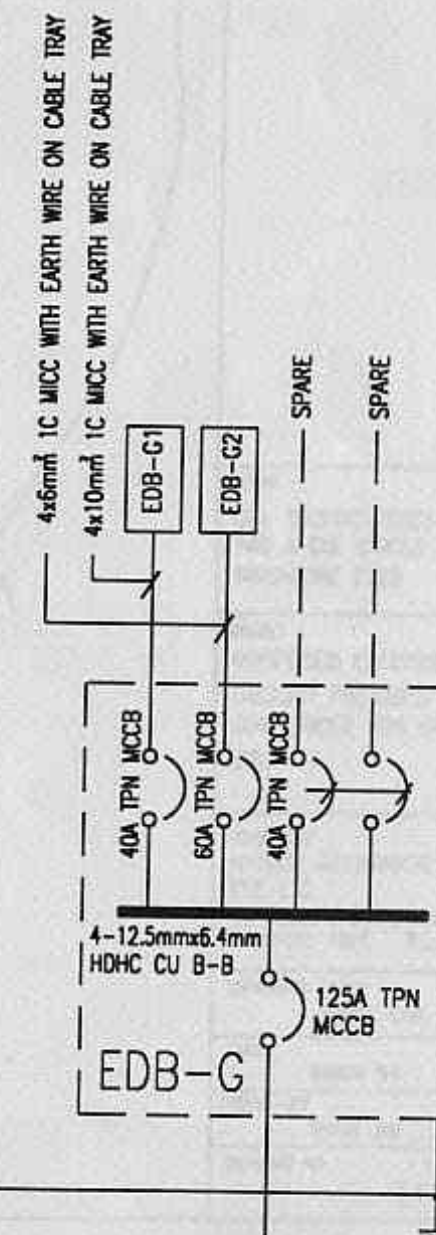
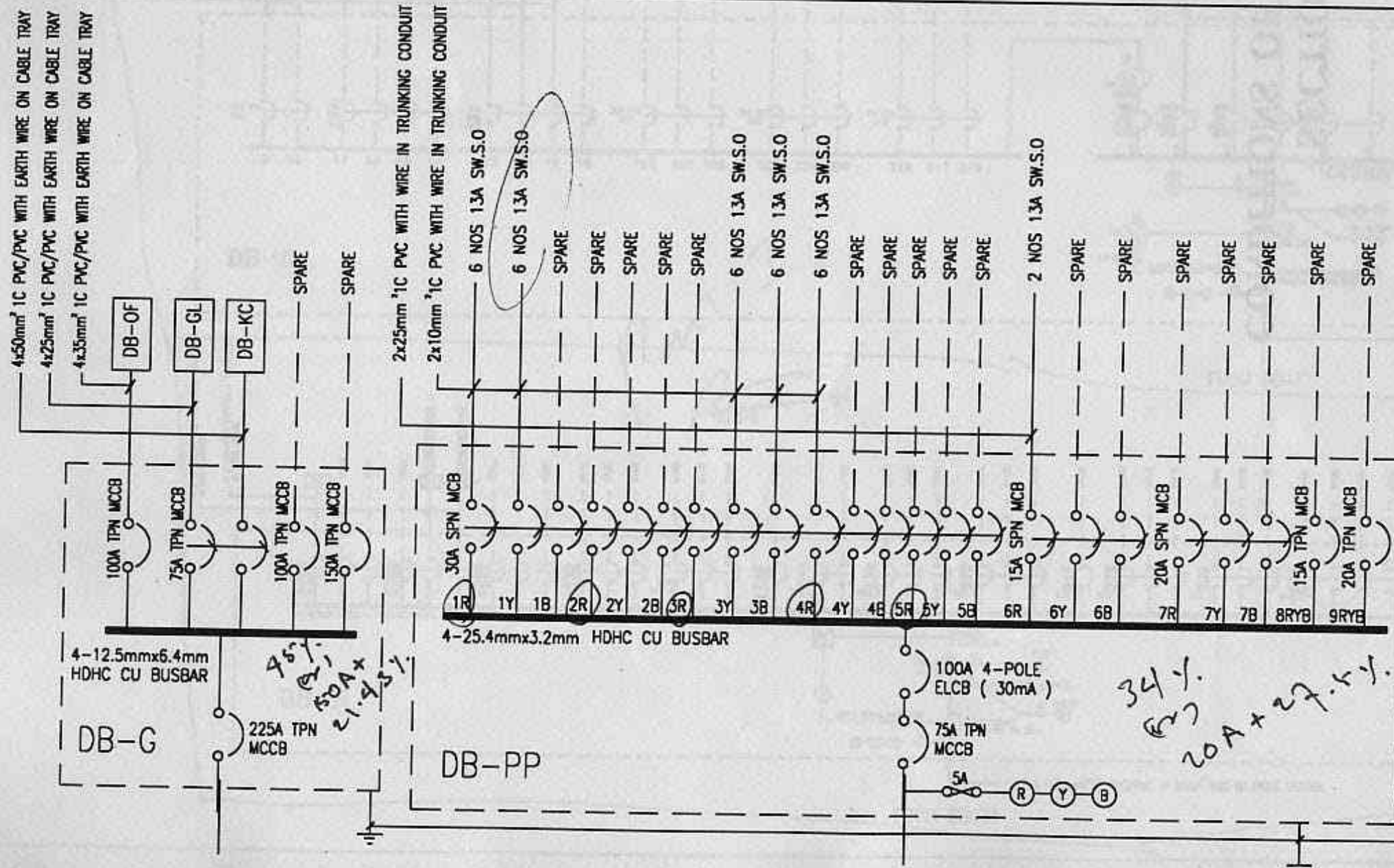
Part VIII of C:\LYPE\DRAW\ONG\E413.DWG.



THE TERMINATION CONNECTIONS ARE DONE BY ELECT. CONTRACTOR

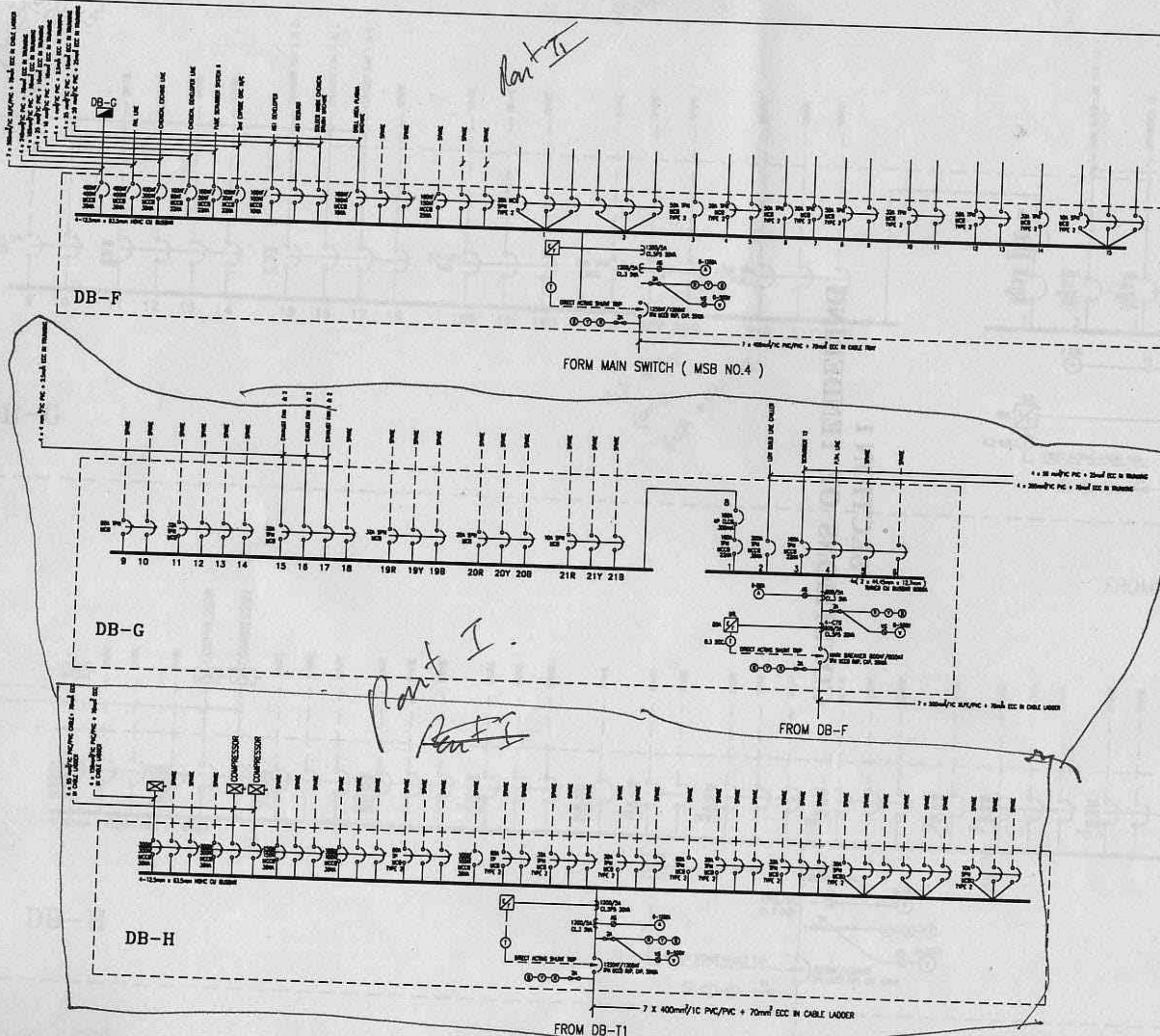


Part IX of C:\LYPI\DRAW\ONH\ EY13.DWG.



25mm x 3mm CU.TAPE

69.44%
 60A x 50%



LEGEND

- MCB / MCCB
- HRC FUSE
- CURRENT TRANSFORMER
- INDICATING LIGHT
- SELECTION SWITCH
- AMMETER
- VOLT METER
- OVERCURRENT RELAY
- EARTH FAULT RELAY
- TIMER

CLIENT
GUL TECHNOLOGIES SINGAPORE PTE LTD
149 A GUL CIRCLE
SINGAPORE 2262

PROJECT
PROPOSED ELECTRICAL SERVICES FOR
FACTORY PREMISES ON LOT A 7943 AT
GUL CIRCLE FOR GUL TECHNOLOGIES PTE LTD.

CONSULTANT
HYTECH MECHANICAL & ELECTRICAL SERVICES
PTE LTD
36, HOLLAND GROVE ROAD
SINGAPORE 1027. TEL: 4696667 FAX: 4689365

DRAWING TITLE
SINGLE LINE DIAGRAM

DATE
MARCH '94

SCALE
NTS

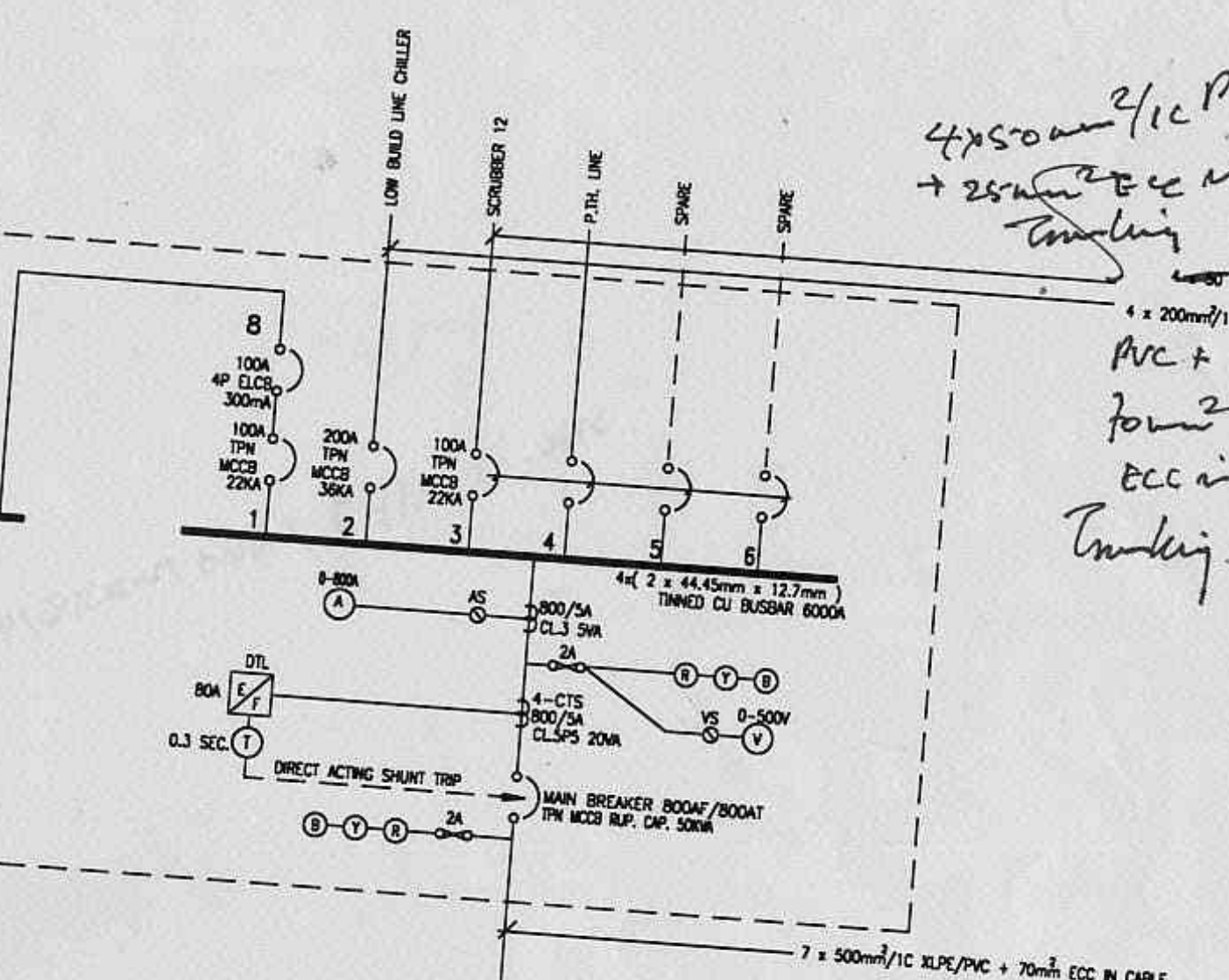
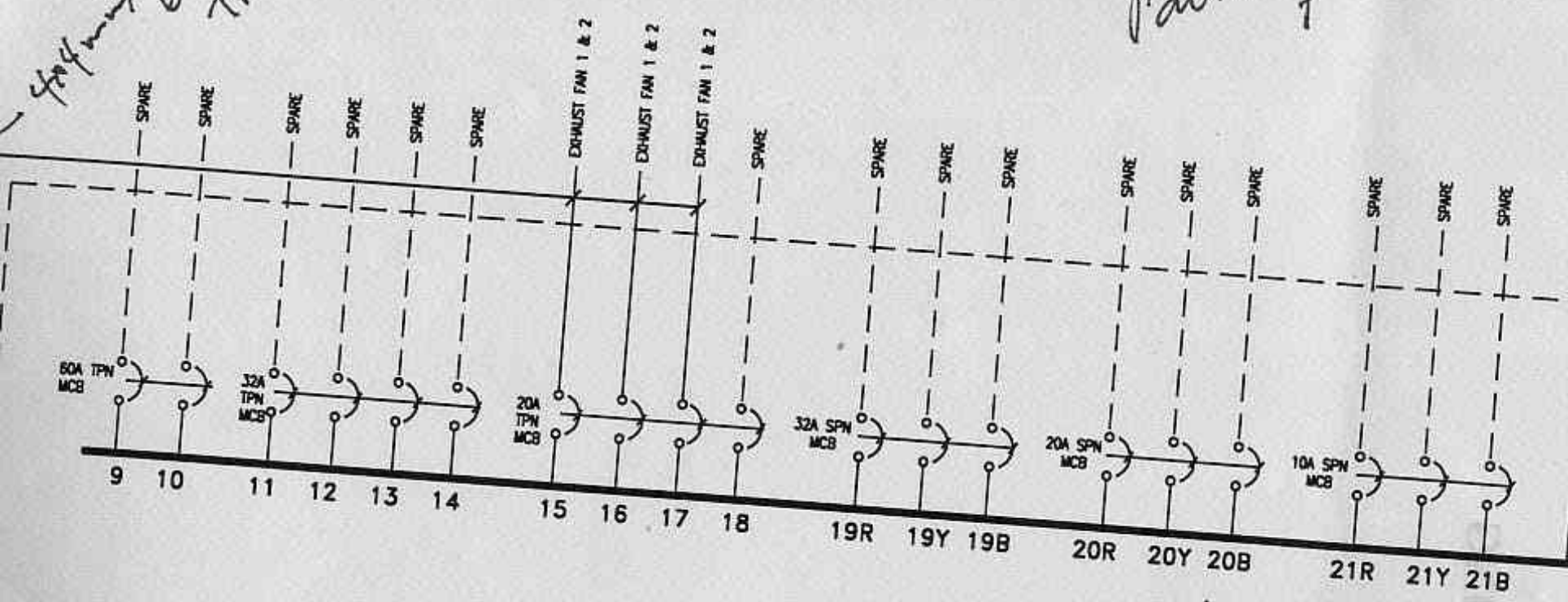
DRAWN BY
THANT ZIN

CHECKED BY
H.K.ONG

DRAWING NO.
E413/2

44mm² MCCB
ECC in
Trunking

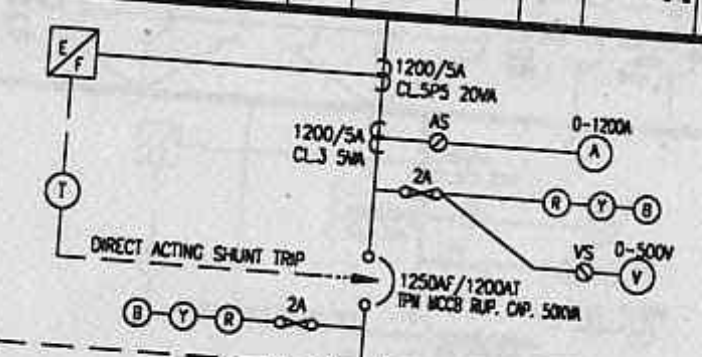
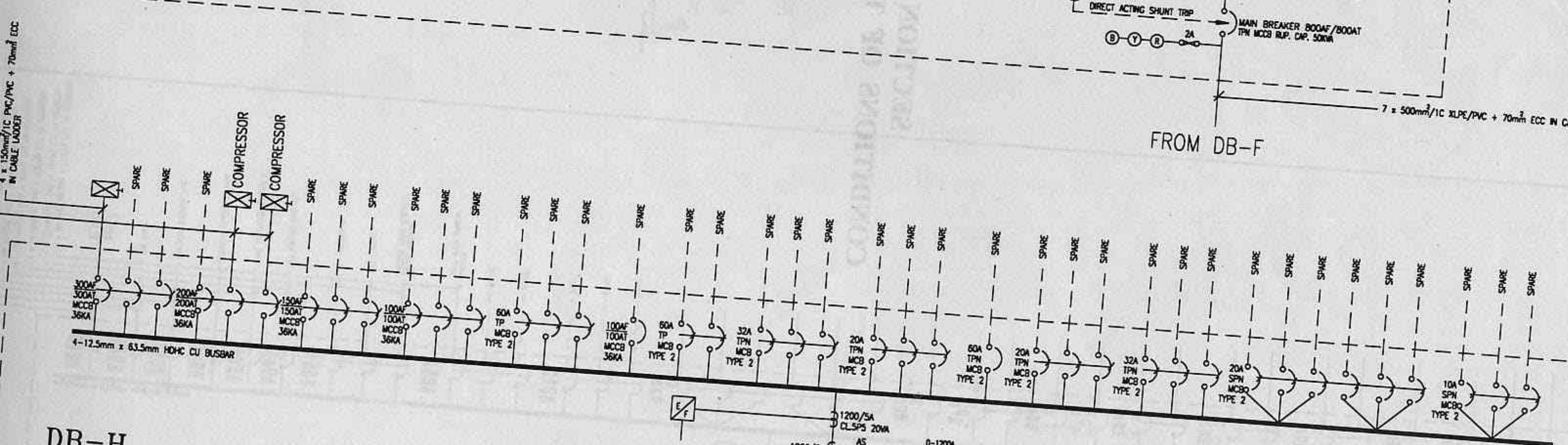
Part I of C:14P DRAW 1 DWA E413-2 DWA.



4x50mm²/1C PVC
+ 25mm² ECC in
Trunking
4x200mm²/1C
PVC +
70mm²
ECC in
Trunking

DB-G

25.641.
(or)
60A + 12.121.



DB-H

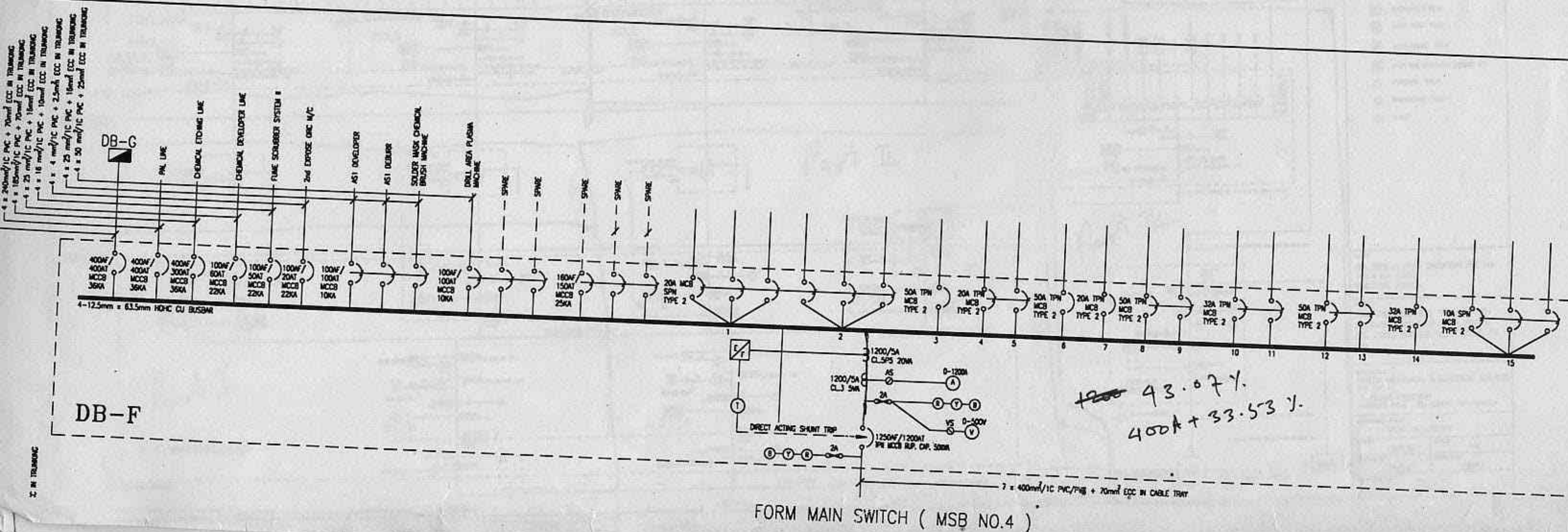
FROM DB-T1

4x150mm²/1C PVC/PVC + 70mm² ECC
IN CABLE LADDER

FROM DB-F

7 X 400mm²/1C PVC/PVC + 70mm² ECC IN CABLE LADDER

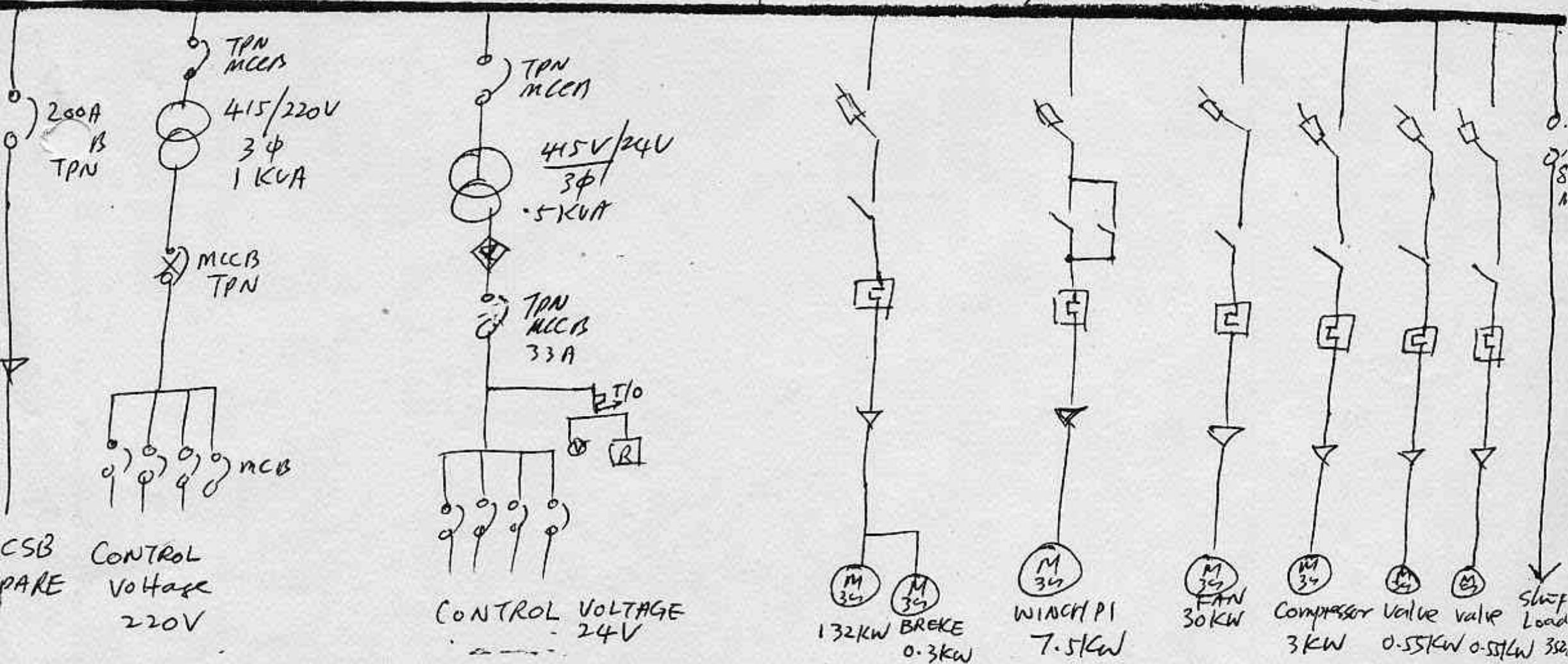
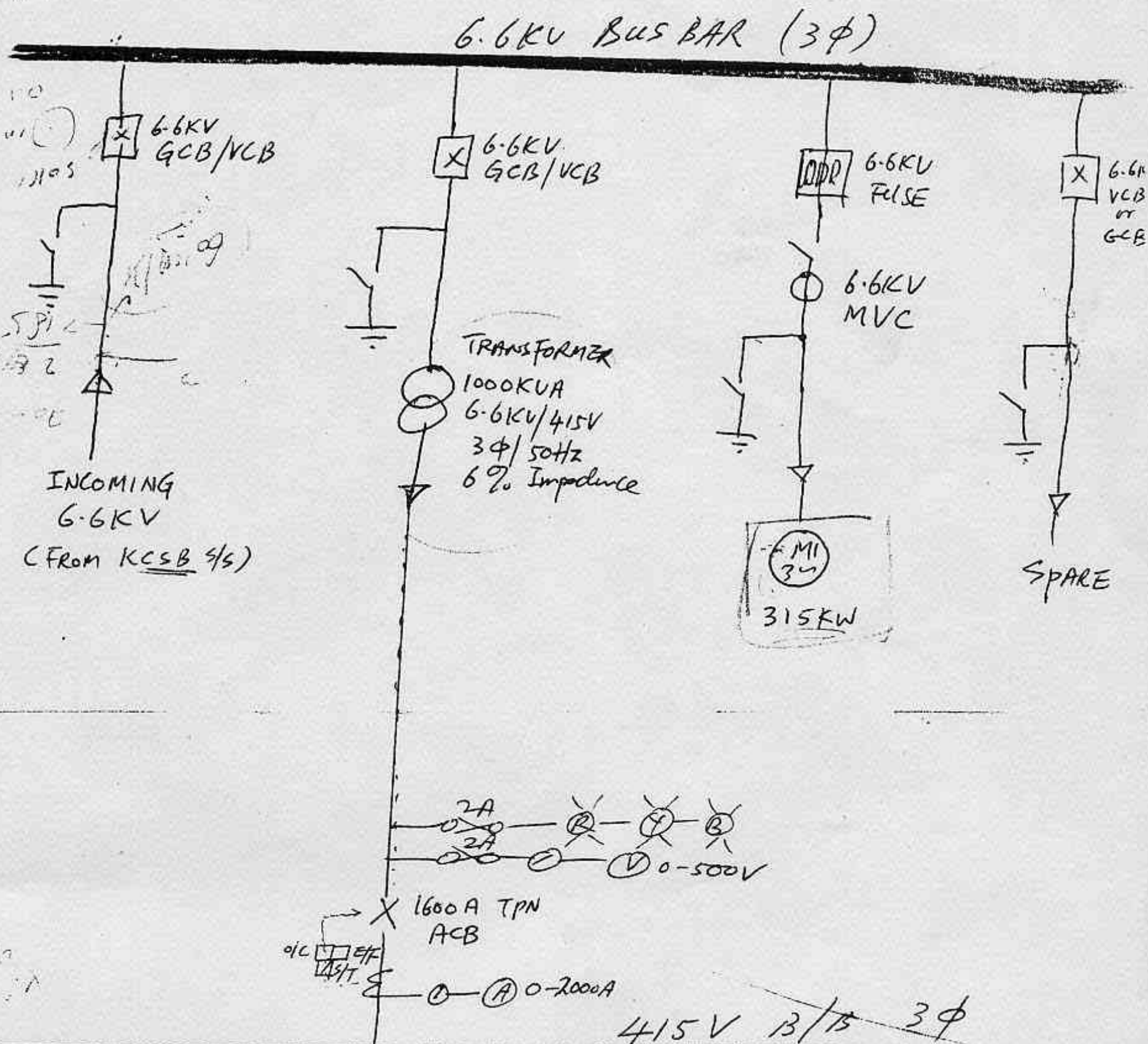
Plant II for E: LYP / DRAWING E413-2 .DWG.



C F Chang.
 Slung Electric Co.
 X-004-886-2-9044485
 M: Tay Ngonk / TCU FX4689365

KOCH PIPE CONVEYOR

Date: 2/6/94
 Mr. Chang C.F.
 FX 2-4291526
 Appreciate your
 offer of PLC,
 Motors AND
 SWITCHGEAR PANELS
 FROM SIMONS)
 THANKS.
 nh
 (TAY NGONK)

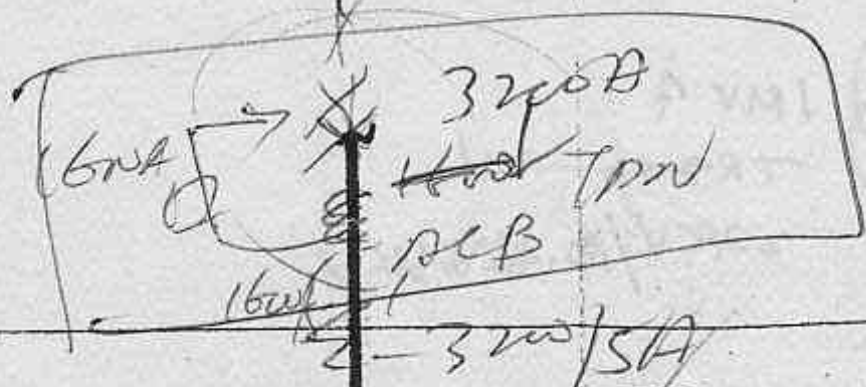


MOTOR LIST:
 315KW/3φ/6.6KV - 1NO.
 7.5KW/3φ/415V - 2NOS.
 0.3KW/3φ/415V - 2NOS.
 301KW/3φ/415V - 1NO.

0.55KW/3φ/415V - 2NOS.
 0.10KW/3φ/415V - 2NOS.
 132KW/3φ/415V - 1NO.

LIGHTINGS -
 2.4KW (2N)
 1.01KW (2N)

LV MSB ✓



7X500mm²/1C PVC/PVC IN TRENCH C/W EARTH TAPE

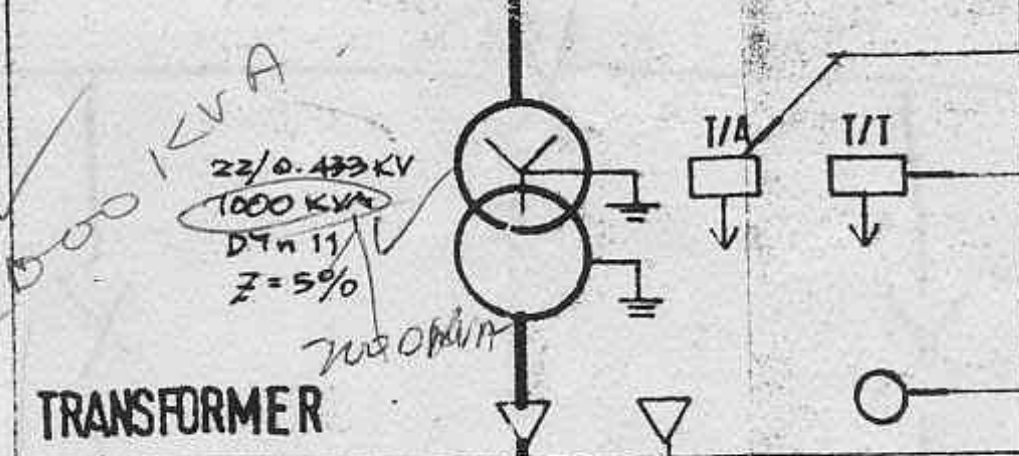
16X1000mm²/1C XLPE/PVC

in trench with formic acid

TEMPERATURE ALARM

TEMPERATURE TRIP

REMOTE TRIP EMERGENCY MUSHROOM BUTTON



7X25mm²/1C PVC/PVC

185mm² XLPE/DSTA/PVC
1X120mm²/3C SCREENED XLPE/SWA/PVC
C/W EARTH TAPE 25 MMX3.25 MM COPPER

185mm² XLPE/DSTA/PVC

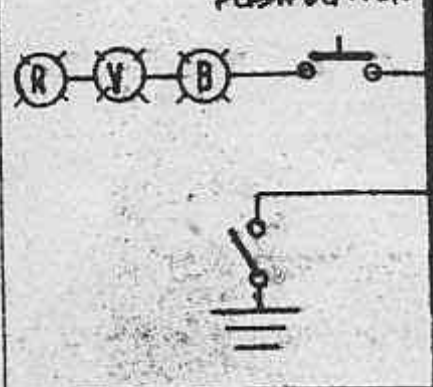
1250A

FLAG INDICATOR

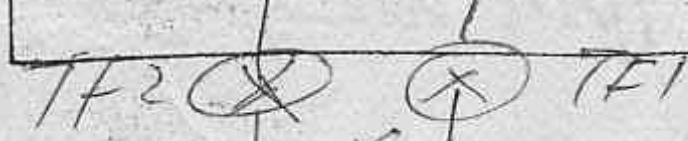


REMOTE TRIP

PUSH BUTTON



CONSUMER MAIN HT SWITCHBOARD



FROM PUB

FROM PUB

1 MV 4
TR 911-11
22KV/0.433KV

22KV/0.433KV

PUB
main
No 1

PUB
main
No 1

22/433

HA
& WA

Busbar - Signal PTH LIA

5 Tuar Ave 2

Spine 2263

TEL 1612901

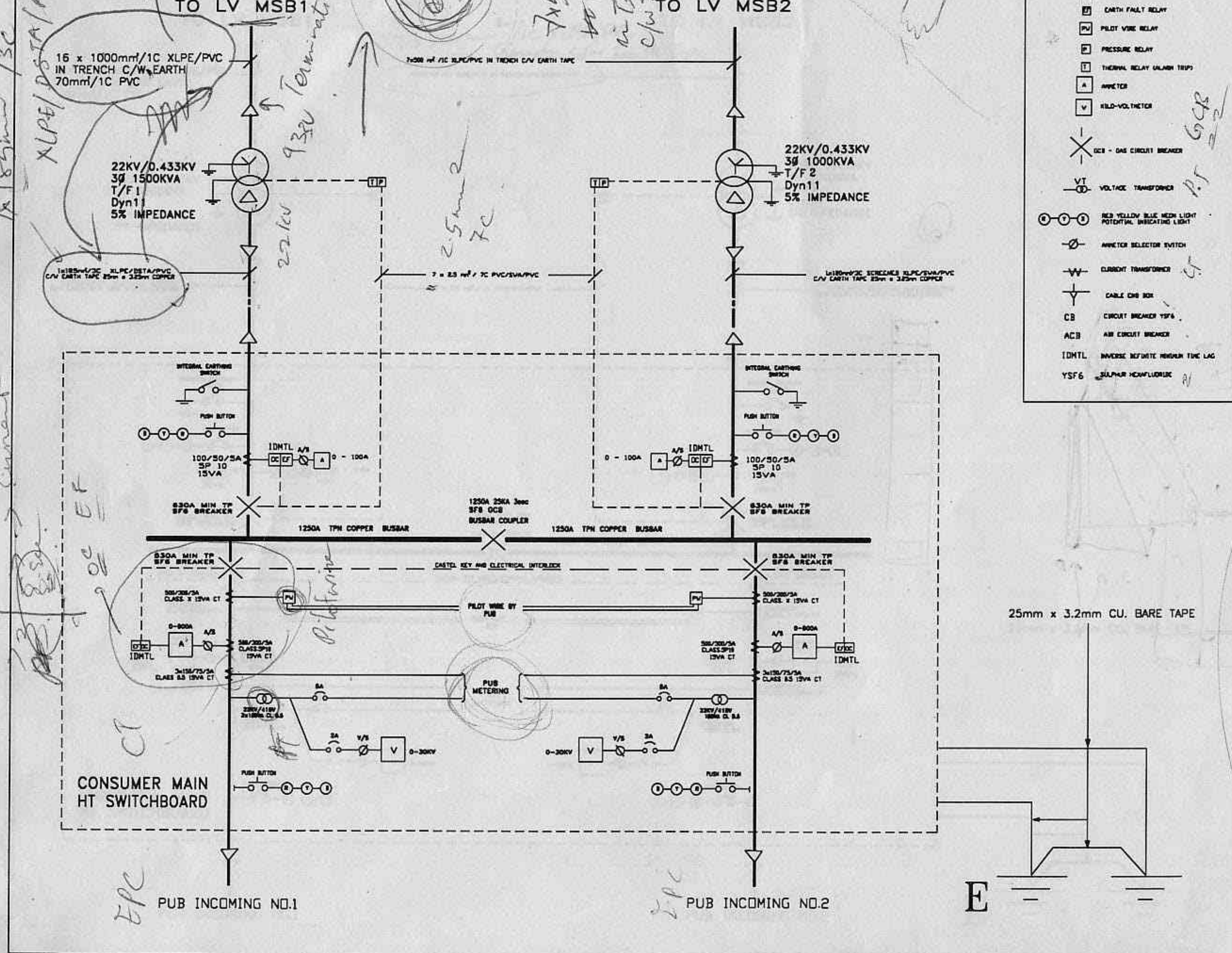
PUB main 1
HT

PUB main 2

22KV/0.433KV
PUB + 16KV
ECC

Insulpack - Styrotek. Pl. HT main
 C:\LTP\DRAW\ONG\E412.DWG

185mm²/3C
 XLPE/PSTA/PVC



PROJECT PROPOSED ELECTRICAL INSTALLATION FOR INSULPACK - STYROTEK PTE LTD. 5 TUAS AVE.2 SINGAPORE 2263	
FIGURE OF WORK HT MAIN SINGLE-LINE DIAGRAM	
OWNER INSULPACK - STYROTEK PTE LTD 5 TUAS AVE.2 SINGAPORE 2263	
CONSULTANT HYTECH Mechanical & Electrical Services Pte Ltd NO. 38 Holland Grove Road Singapore 1027 Tel : 4896667 Fax : 4896365	
DATE FEB'94	SCALE NTS
DRAWN BY THANT ZIN	CHECKED BY H.K. ONG
DRAWING NO. E412	



Insulpack - Styrotek. Pl. HT main
C:\LYP\DRAW\ONG\E412.DWG

TO LV MSB1

TO LV MSB2

16 x 1000mm²/1C XLPE/PVC
IN TRENCH C/W EARTH
70mm²/1C PVC

22KV/0.433KV
30 1500KVA
T/F 1
Dyn11
5% IMPEDANCE

22KV/0.433KV
30 1000KVA
T/F 2
Dyn11
5% IMPEDANCE

ELECTRICAL LEGEND

- OVERCURRENT RELAY
- EARTH FAULT RELAY
- PILOT WIRE RELAY
- PRESSURE RELAY
- THERMAL RELAY (ALARM TRIP)
- AMMETER
- WELD-VOLTMETER
- OCB - GAS CIRCUIT BREAKER
- VOLTAZ TRANSFORMER
- RED YELLOW BLUE NEON LIGHT POTENTIAL INDICATING LIGHT
- AMMETER SELECTOR SWITCH
- CURRENT TRANSFORMER
- CABLE END BOX
- CIRCUIT BREAKER (SF6)
- AIR CIRCUIT BREAKER
- INVERSE RESTARTABLE MEDIUM TIME LAG
- SULPHUR HEXAFLUORIDE

CONSUMER MAIN
HT SWITCHBOARD

PUB INCOMING NO.1

PUB INCOMING NO.2

25mm x 3.2mm CU. BARE TAPE

PROJECT
PROPOSED ELECTRICAL INSTALLATION
FOR INSULPACK - STYROTEK PTE
LTD.
5 TUAS AVE.2
SINGAPORE 2263

SCOPE OF WORK

DRAWING TITLE
HT MAIN SINGLE-LINE
DIAGRAM

OWNER
INSULPACK - STYROTEK PTE LTD
5 TUAS AVE.2
SINGAPORE 2263

CONSULTANT

HYTECH Mechanical & Electrical
Services Pte Ltd

NO. 36 Holland Grove Road
Singapore 1027
Tel : 4895667
Fax : 4895345

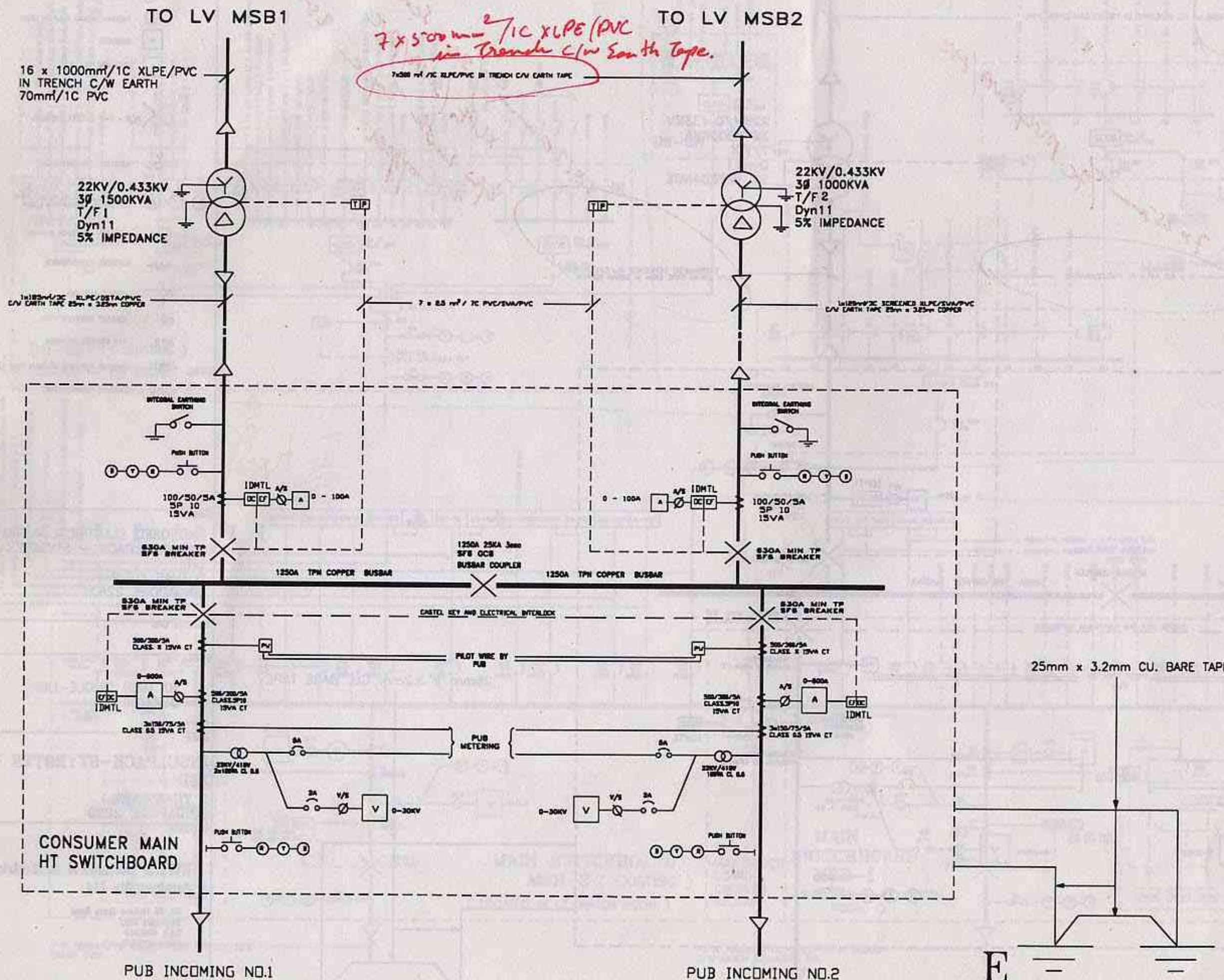
DATE
FEB'94
DRAWN BY
THANT ZIN

SCALE
NTS
CHECKED BY
H.K. ONG

DRAWING NO.
E412

HT Single Line Diagram

Insulpack - Styrotek P.L.
C:\Lyp\DRAW\ONC\ E112-1.DWG.



ELECTRICAL LEGEND

- OVERCURRENT RELAY
- EARTH FAULT RELAY
- PILOT WIRE RELAY
- PRESSURE RELAY
- THERMAL RELAY ALARM TRIP
- AMMETER
- FIELD-VOLTMETER
- GCB - GAS CIRCUIT BREAKER
- VOLTAGE TRANSFORMER
- RED YELLOW BLUE NEON LIGHT
POTENTIAL INDICATING LIGHT
- AMMETER SELECTOR SWITCH
- CURRENT TRANSFORMER
- CABLE END BOX
- CB - CIRCUIT BREAKER YSF6
- ACB - AIR CIRCUIT BREAKER
- IDMTL - INVERSE DEFINITE MINIMUM TIME LAG
- YSF6 - SULPHUR HEXAFLUORIDE

PROJECT
PROPOSED ELECTRICAL INSTALLATION
FOR INSULPACK - STYROTEK PTE
LTD.
5 TUAS AVE.2
SINGAPORE 2263

ISSUE OF WORK

DRAWING TITLE

HT MAIN SINGLE-LINE
DIAGRAM

OWNER

INSULPACK-STYROTEK PTE
LTD
5 TUAS AVE.2
SINGAPORE 2263

CONSULTANT

HYTECH Mechanical & Electrical
Services Pte Ltd

NO. 36 Holland Grove Road
Singapore 1027
Tel : 4886667
Fax : 4886365

DATE

FEB'94

SCALE

NTS

DRAWN BY

THANT ZIN

CHECKED BY

H.K. ONG

DRAWING NO.

E412-1

TO LV MSB1

TO LV MSB2

16 x 1000mm²/1C XLPE/PVC
IN TRENCH C/W EARTH
70mm²/1C PVC

22KV/0.433KV
3Ø 1500KVA
T/F 1
Dyn11
5% IMPEDANCE

22KV/0.433KV
3Ø 1000KVA
T/F 2
Dyn11
5% IMPEDANCE

1x180mm²/3C XLPE/BSA/PVC
C/W EARTH TAPE 25mm x 3.25mm COPPER

7x500mm²/1C XLPE/PVC IN TRENCH C/W EARTH TAPE

7 x 25mm²/1C PVC/BSA/PVC

1x180mm²/3C SCREENED XLPE/BSA/PVC
C/W EARTH TAPE 25mm x 3.25mm COPPER

INTERNAL EARTHING SWITCH

PUSH BUTTON

100/50/5A
5P 10
15VA

IDMTL A/S

630A MIN TP
SFS BREAKER

1250A TPN COPPER BUSBAR

1250A 25KA 3sec
SFS OCB
BUSBAR COUPLER

1250A TPN COPPER BUSBAR

INTERNAL EARTHING SWITCH

PUSH BUTTON

100/50/5A
5P 10
15VA

IDMTL A/S

630A MIN TP
SFS BREAKER

CASTED KEY AND ELECTRICAL INTERLOCK

PILOT WIRE BY
PUB

PUB METERING

22KV/11KV
2x180mm² CL 0.3

PUSH BUTTON

CONSUMER MAIN
HT SWITCHBOARD

PUB INCOMING NO.1

PUB INCOMING NO.2

25mm x 3.2mm CU. BARE TAPE

E

- EARTH FAULT RELAY
- PV PILOT WIRE RELAY
- PRESSURE RELAY
- THERMAL RELAY (ALARM TRIP)
- AMPHETER
- KILLO-VOLTMETER
- OCB - GAS CIRCUIT BREAKER
- VT VOLTAGE TRANSFORMER
- RED YELLOW BLUE MEDIUM LIGHT POTENTIAL INDICATING LIGHT
- AMPHETER SELECTOR SWITCH
- CURRENT TRANSFORMER
- CABLE END BOX
- CB CIRCUIT BREAKER YSF6
- ACB AIR CIRCUIT BREAKER
- IDMTL INVERSE DEFINITE MEDIUM TIME LAG
- YSF6 SULPHUR HEXAFLUORIDE

PROJECT
PROPOSED ELECTRICAL INSTALLATION FOR INSULPACK - STYROTEK PTE LTD.
5 TUAS AVE.2
SINGAPORE 2263

TITLE OF DRAWING
HT MAIN SINGLE-LINE
DIAGRAM

OWNER
INSULPACK-STYROTEK PTE LTD
5 TUAS AVE.2
SINGAPORE 2263

CONSULTANT
HYTECH Mechanical & Electrical
Services Pte Ltd
NO. 38 Holland Road
Singapore 1027
Tel : 4696667
Fax : 4629365

DATE
FEB'94
SCALE
NTS
DRAWN BY
THANT 7IN
CHECKED BY
H K ONG

C. LYP 1 DRAWING E412-2.DWG
LT. Single line & Diagram

Part IV

Part III

ELECTRICAL LEGEND

- OVERCURRENT RELAY
- EARTH FAULT RELAY
- EARTH LEAKAGE CIRCUIT BREAKER
- EARTH LEAKAGE RELAY
- MCCB
- THermal RELAY
- AMMETER
- VOLTMETER
- ACB - AIR CIRCUIT BREAKER
- ISOLATOR
- RED YELLOW BLUE NEON LIGHT POTENTIAL INDICATING LIGHT
- AMMETER/VOLTMETER SELECTOR SWITCH
- CURRENT TRANSFORMER
- CABLE END BOX
- MCB
- MCCB
- ACB
- IDMTL

DB-OFF1 (EXISTING)
LOCATED IN 1ST STOREY OFFICE

Part I

Part II

MAIN SWITCHBOARD
MSB-2 (EXISTING)
(LOCATED IN LT SWITCH ROOM)

MAIN SWITCHBOARD
MSB-1
(LOCATED IN LT SWITCH ROOM)

FROM TRANSFORMER 2

FROM TRANSFORMER 1

PROJECT
PROPOSED ELECTRICAL INSTALLATION
FOR INSULPACK-STYROTEX PTE LTD
AT 5 TUAS AVE 2, SINGAPORE 2263

DRIVING TITLE
LT SINGLE-LINE DIAGRAM

OWNER
INSULPACK-STYROTEX PTE LTD.
5 TUAS AVE 2
SINGAPORE 2263

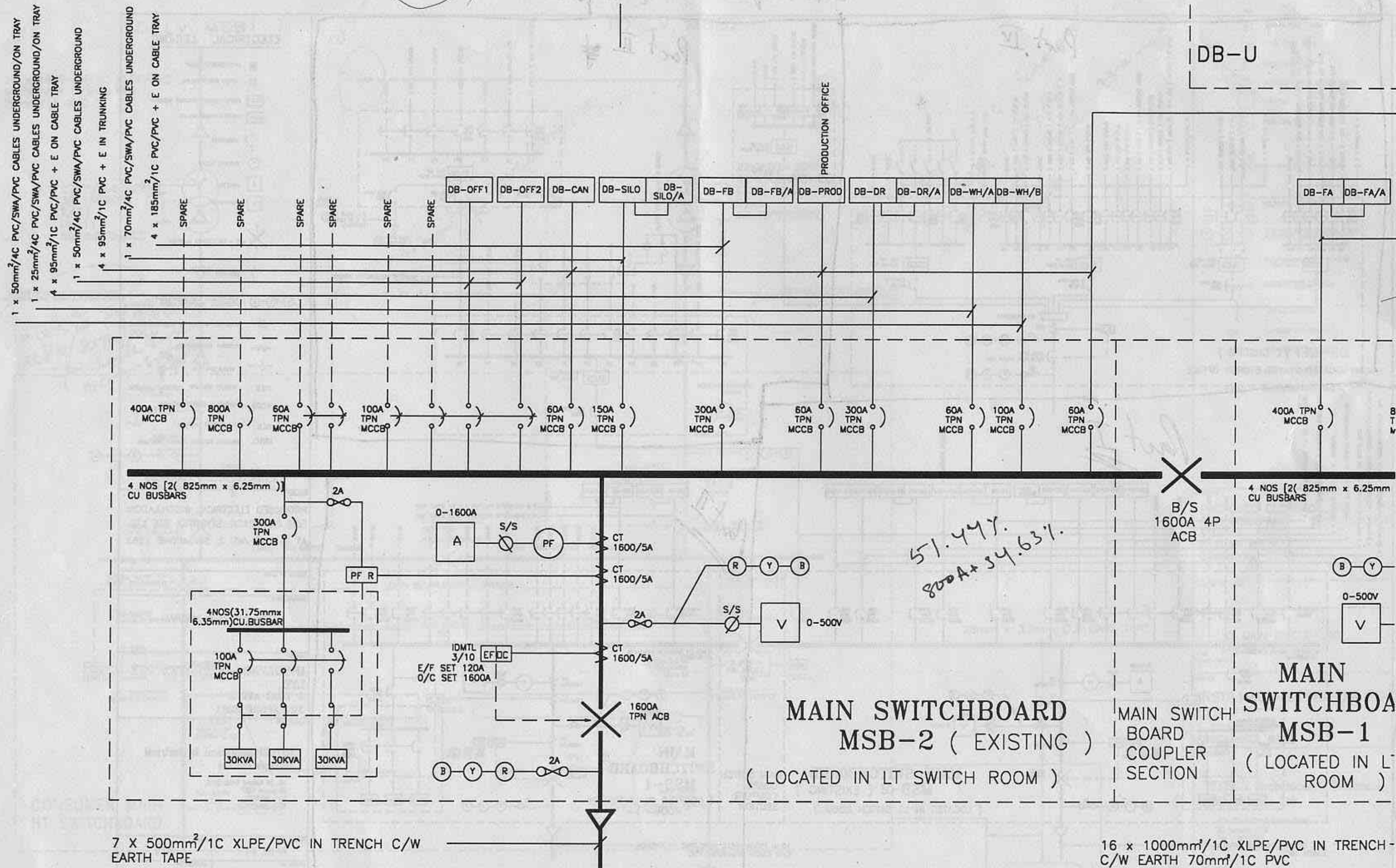
CONSULTANT
HYTECH Mechanical & Electrical
Services Pte Ltd
110, 36 Holland Grove Road
Singapore 1027
Tel : 4896667
Fax : 4899365

DATE
APRIL '94
DRAWN BY
THANT ZIN
CHECKED BY
H.K. ONG

SCALE
NTS
DRAWING NO.
E412-2

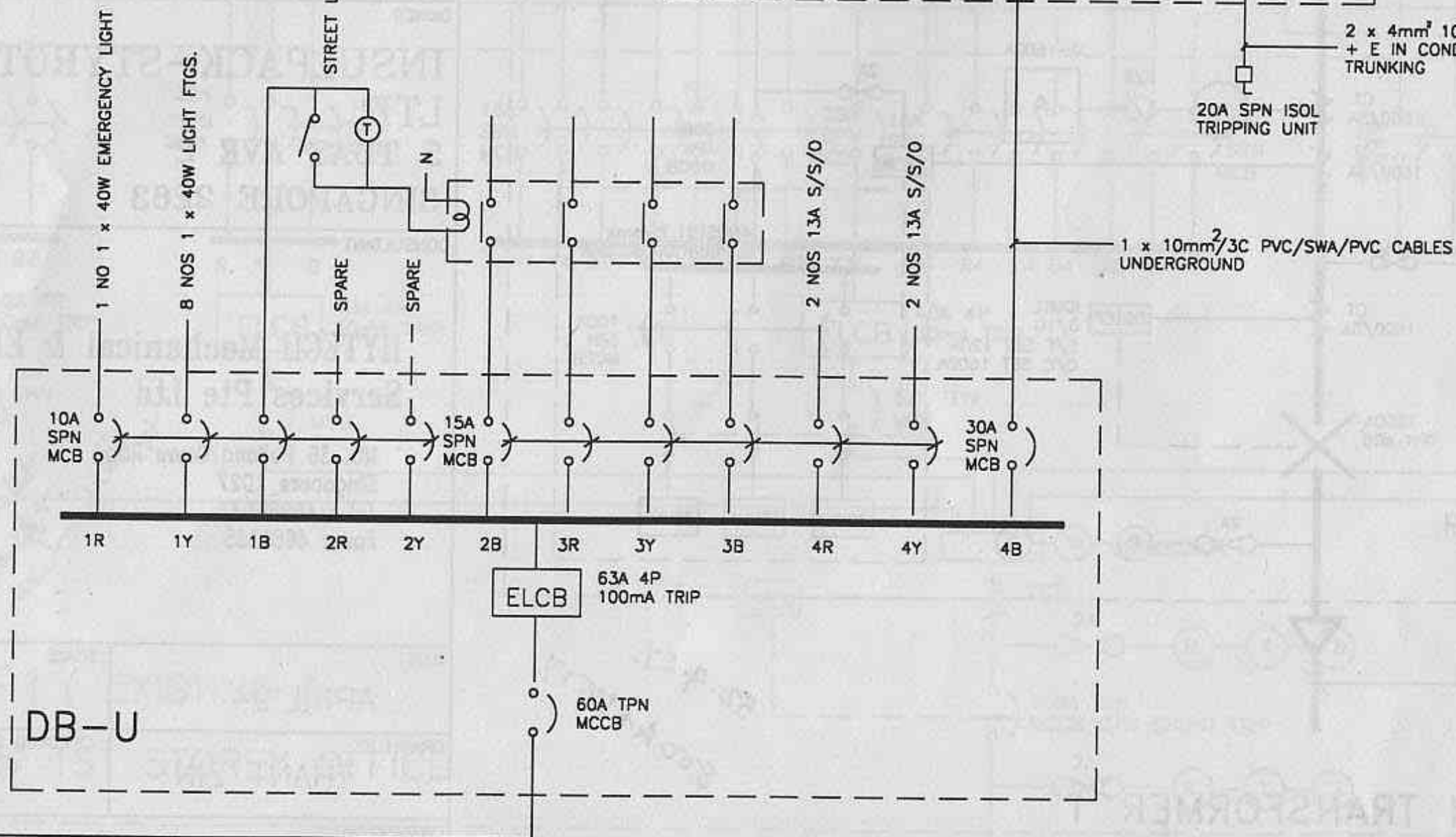
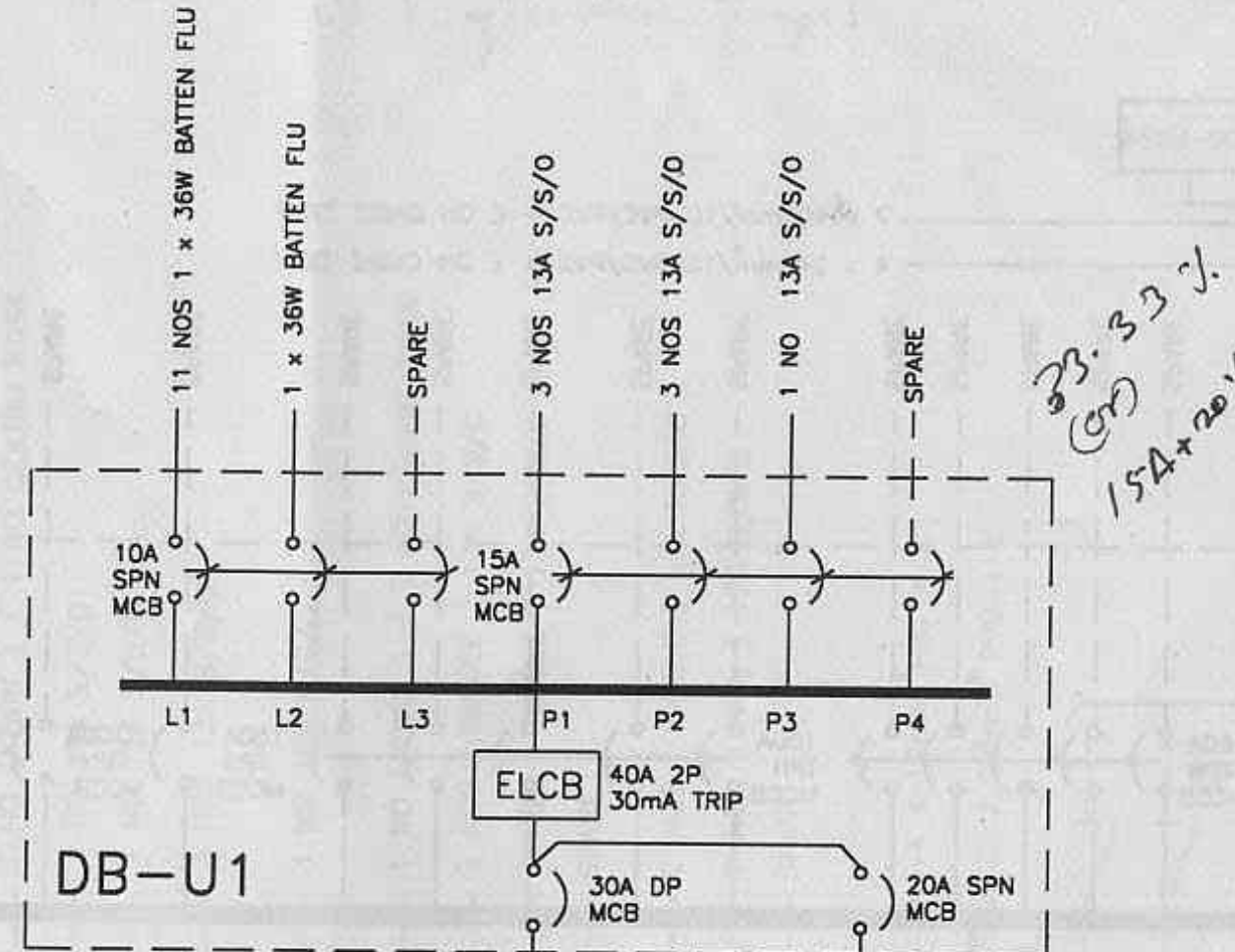
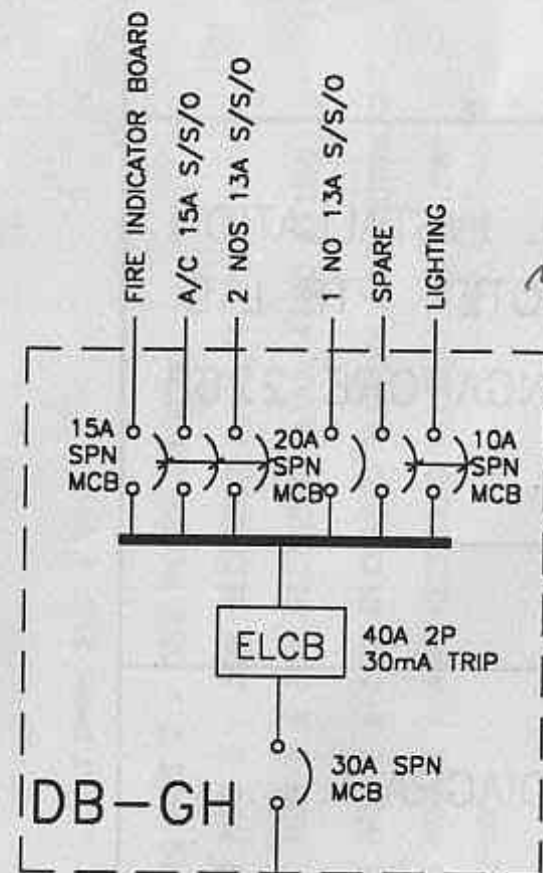
Part I

C:\LYP\DRAW\ENG\E412-2.DWG



FROM TRANSFORMER 2

Part III of C:\LYP\DRAW\ONG\H12-2.DWG.



ELECTRICAL LEC

OC OVERCURRENT RELAY

EF EARTH FAULT RELAY

ELCB EARTH LEAKAGE CIRCUIT

ELR EARTH LEAKAGE RELAY

MCB/MCCB

T THERMAL RELAY

A AMMETER

V VOLTMETER

ACB - AIR CIRCUIT BREAKER

ISOLATOR

R Y B RED YELLOW BLUE NEUTRAL POTENTIAL INDICATING

AMMETER/VOLT METER

CURRENT TRANSFORMER

CABLE END BOX



MCB CIRCUIT BREAKER

MCCB MINIATURE CIRCUIT BREAKER

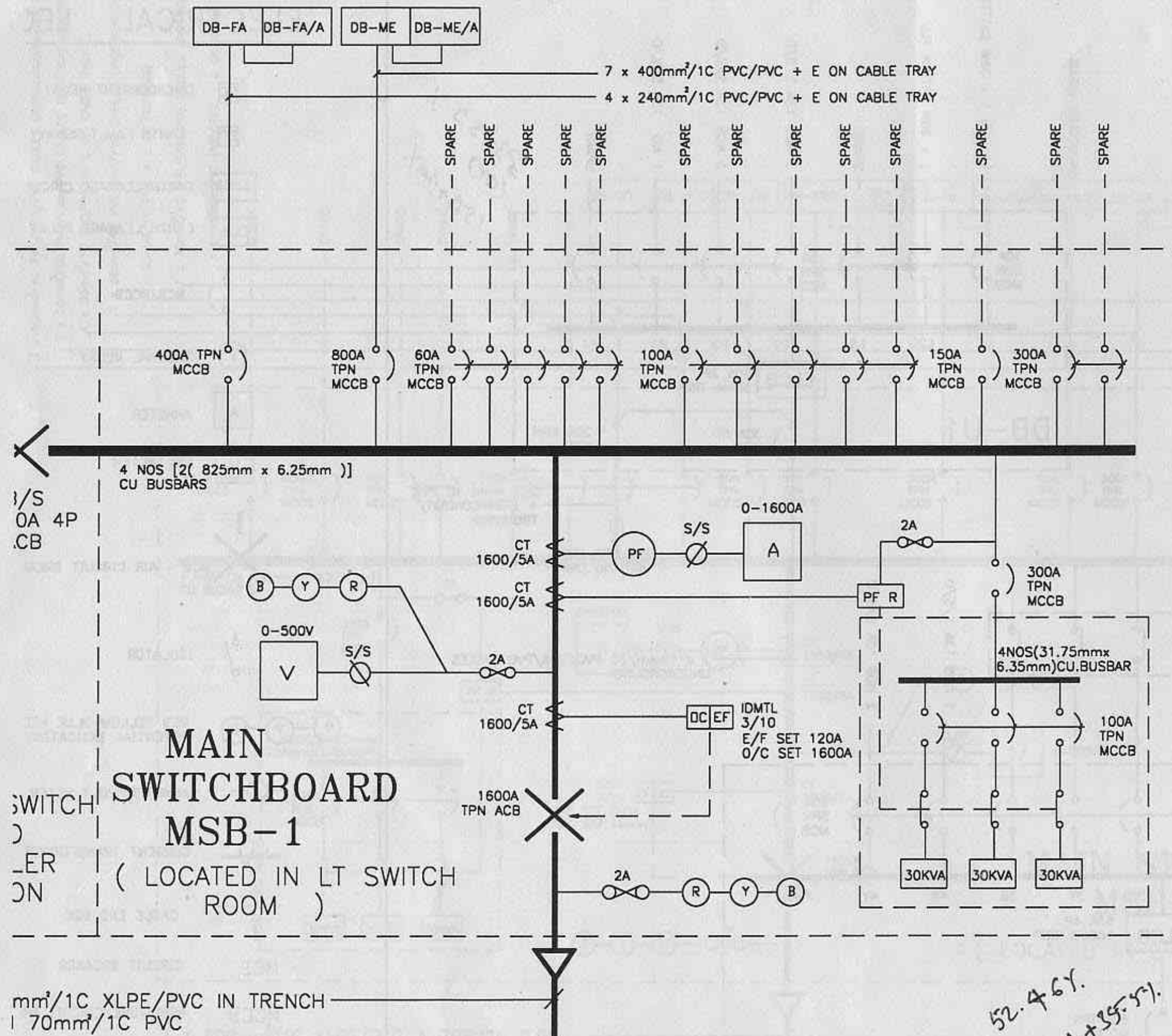
ACB AIR CIRCUIT BREAKER

IDMTL INVERSE DEFINITE MINIMUM TIME

The diagram illustrates the control circuit for the three-phase motor. It features three phase lines (R, Y, B) connected to three thermal relays (H450, H451, H452) through a common control circuit. The control circuit includes a stop button (S450) and a thermal relay reset button (H453). The thermal relays are connected to the phase lines through their respective thermal relays (H450, H451, H452) and are controlled by the stop button (S450) and the thermal relay reset button (H453).

Rev.						Title NEON POTENTIAL INDICATOR CIRCUIT PUB INCOMING 2	Project UNITED CEMENT 22KV SWITCHGEAR TYPE ZS/VD4	D04 0153 402		Scale	Drawn PC 14.3.95	Resp. Dept. K.S.	Format J
Date								ABB ASEA BROWN BOVERI PTE LTD			Checked ASK	Released ASK 	Sheet S2
Ref.													Cont. S3
1						2	3	4	5	6	7	8	

Part II of C:\LYP\DRAW\ONG\E 412-2.DWG.



mm²/1C XLPE/PVC IN TRENCH
1 70mm²/1C PVC

FROM TRANSFORMER 1

PROJECT

PROPOSED ELECTRICAL INSTALLATION
FOR INSULPACK-STYROTEX PTE LTD
AT 5 TUAS AVE 2, SINGAPORE 2263

TENURE OF LAND

DRAWING TITLE

LT SINGLE-LINE DIAGRAM

OWNER

INSULPACK-STYROTEX PTE
LTD.
5 TUAS AVE 2
SINGAPORE 2263

CONSULTANT

HYTECH Mechanical & Electrical
Services Pte Ltd

NO. 36 Holland Grove Road
Singapore 1027
Tel : 4696667
Fax : 4689365

DATE

APRIL '94

SCALE

NTS

DRAWN BY

THANT ZIN

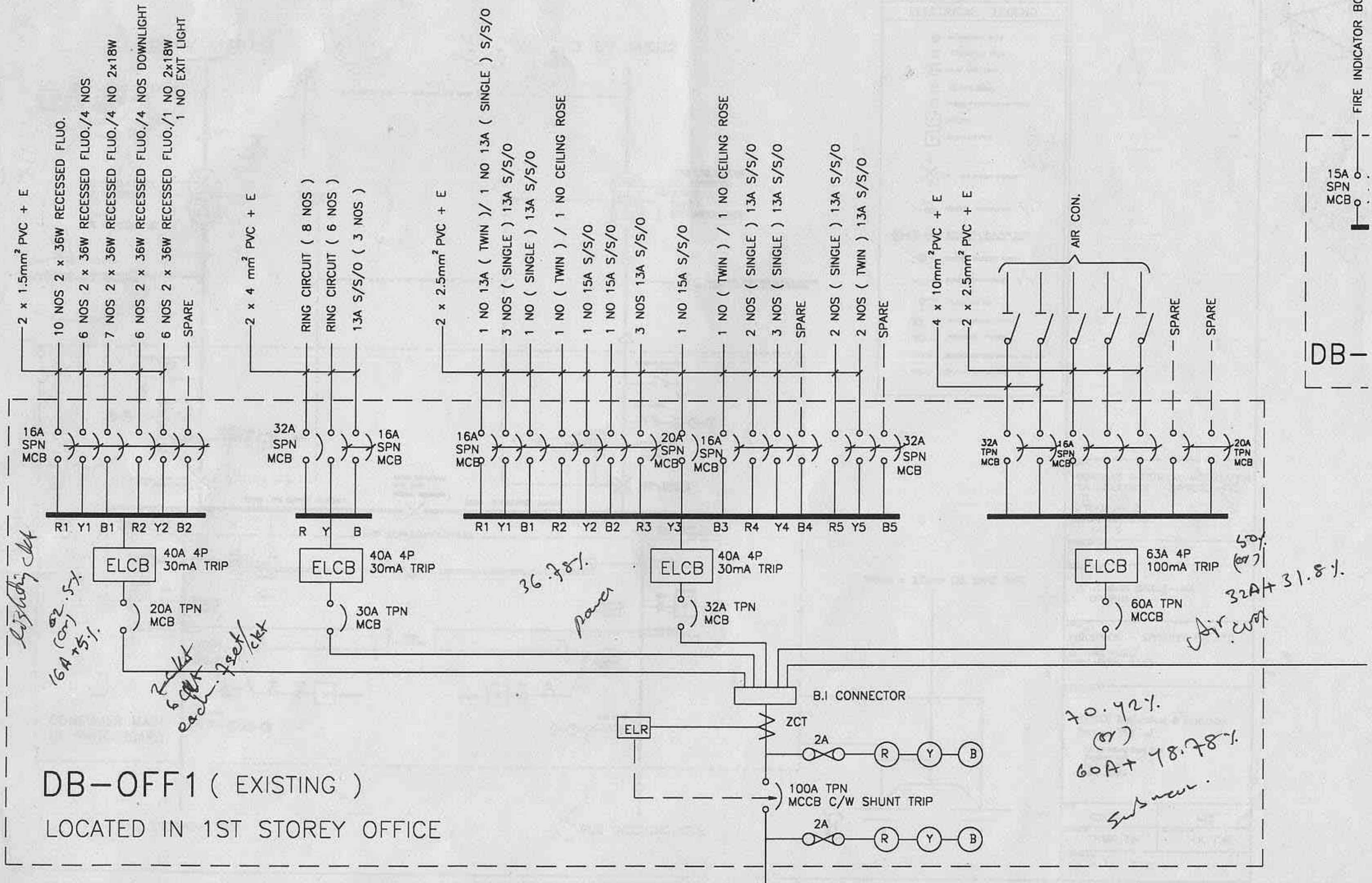
CHECKED BY

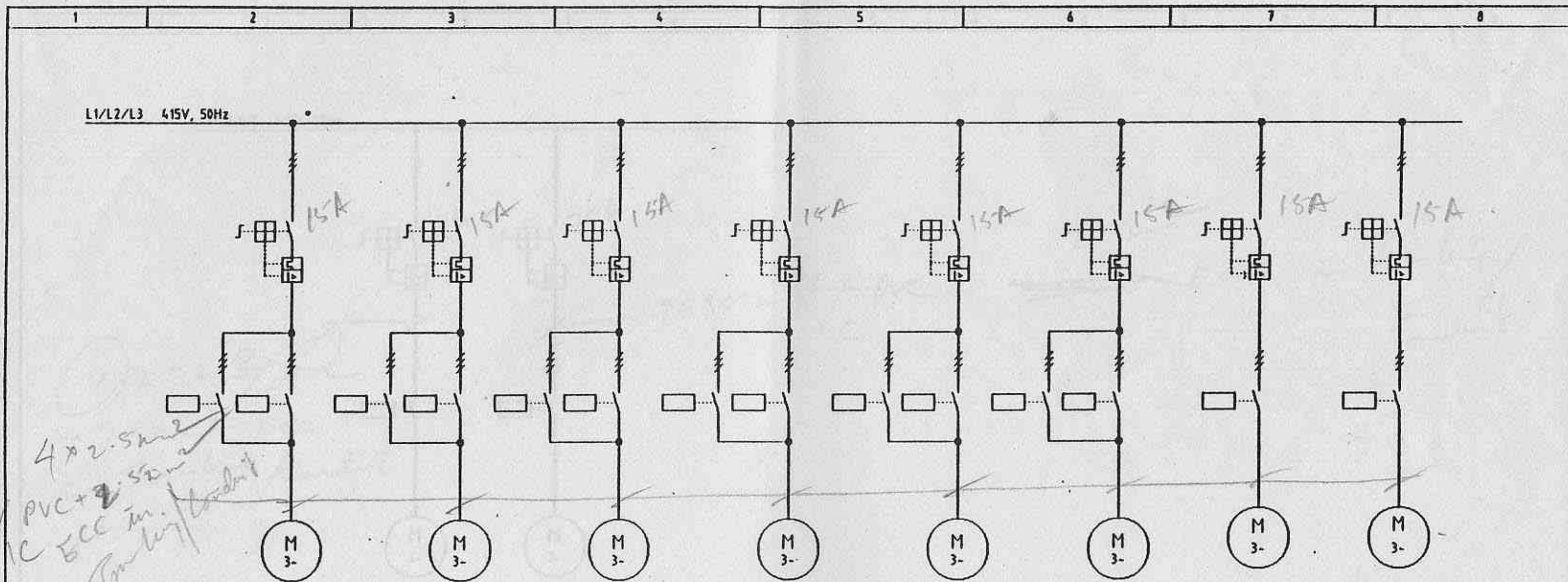
H.K. ONG

DRAWING NO.

52.461.
800A + 35.571.

Part IV of C:1 LYP DRAWING ON: E412-2.DWG.
LT. Single line drops:





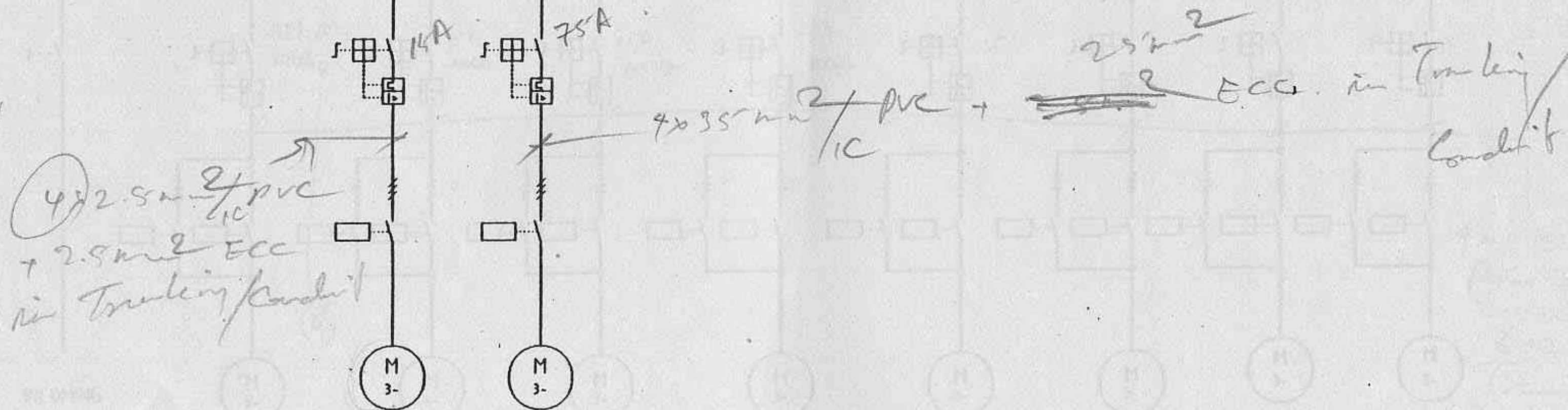
GROUP N°.	8.1.3.2.3A	8.1.3.2.3B	8.1.3.2.3C	8.1.3.2.3D	8.1.3.2.3E	8.1.3.2.3F	8.4.1.B	8.4.1.C
DESIGNATION	TWO WAY GATE						SCREW CONVEYOR	ROTARY LOCK
POWER	700 VA	700 VA	700 VA	700 VA	700 VA	700 VA	1,1 KW	0,55 KW

Preliminary 2. März 1994

1				Datus	28.1.1994	SINGLE LINE DIAGRAM	CPAG	MCC SILO FEEDING	UNITED CEMENT PTE LTD				
2				Skarb	Mid								
3				Gepr.									
	Revision	Datus	Name	Norm						01-1/H1.734-900/A		2	

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

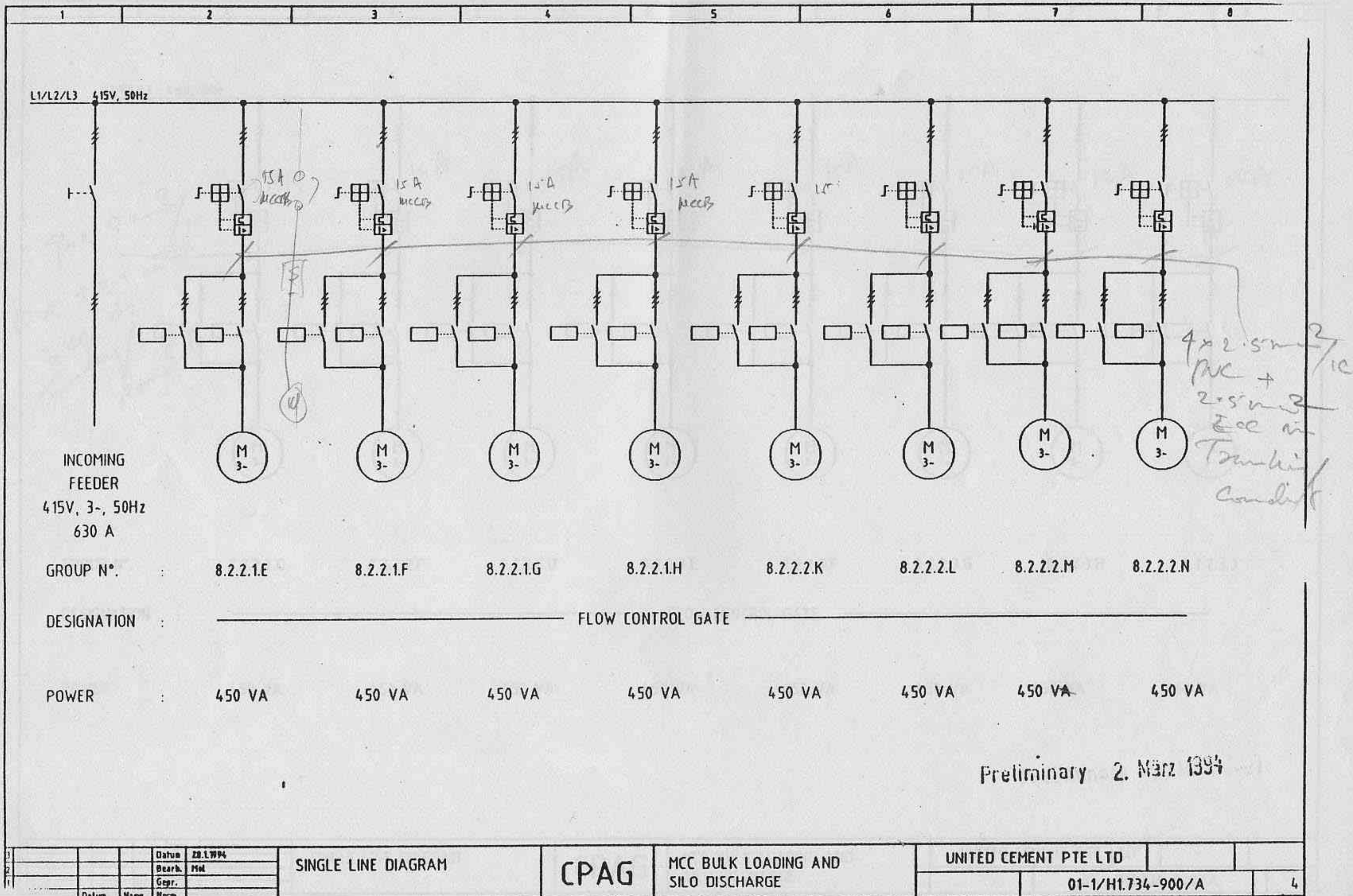
L1/L2/L3 415V, 50Hz

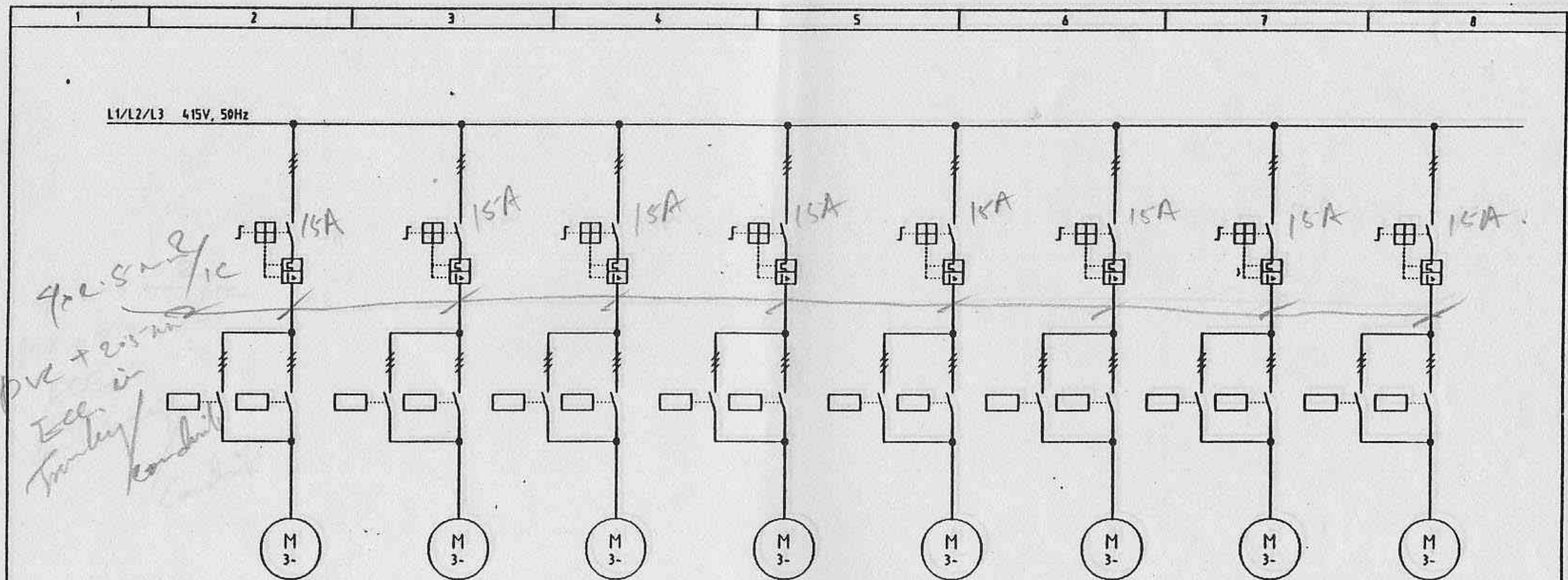


GROUP N° :	8.4.1.D	8.4.1.E
DESIGNATION :	ROTARY LOCK	BLOWER
POWER :	0,55 KW	18,5 KW

Preliminary 2. März 1994

1			Datum	28.1.1994	SINGLE LINE DIAGRAM	CPAG	MCC SILO FEEDING	UNITED CEMENT PTE LTD			
2			Bearb.	Mal							
3			Gepr.								
4	Revision	Datum	Name	Warn					01-1/H1.734-900/A		3

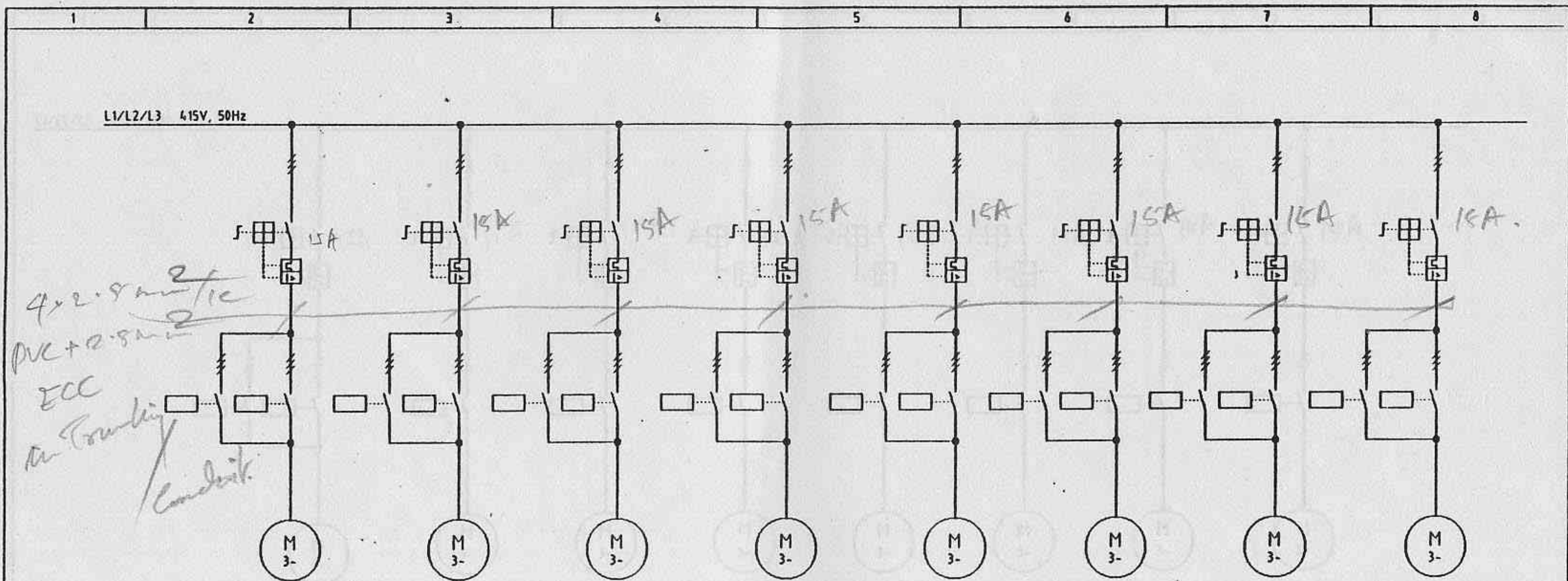




GROUP N°.	8.2.2.2.0	8.2.2.2.P	8.2.2.3.D	8.2.2.3.E	8.2.2.3.F	8.2.2.3.G	8.2.2.3.H	8.2.2.3.J
DESIGNATION	FLOW CONTROL GATE							
POWER	450 VA	450 VA	450 VA	450 VA	450 VA	450 VA	450 VA	450 VA

Preliminary 2. MAR 1994

1				Datum	28.1.1994	SINGLE LINE DIAGRAM	CPAG	MCC BULK LOADING AND SILO DISCHARGE	UNITED CEMENT PTE LTD				
2				Drawn	Mal								
3				Check									
4				Appr.					01-1/H1.734-900/A			5	
5	Revision	Date	Name	Notes									

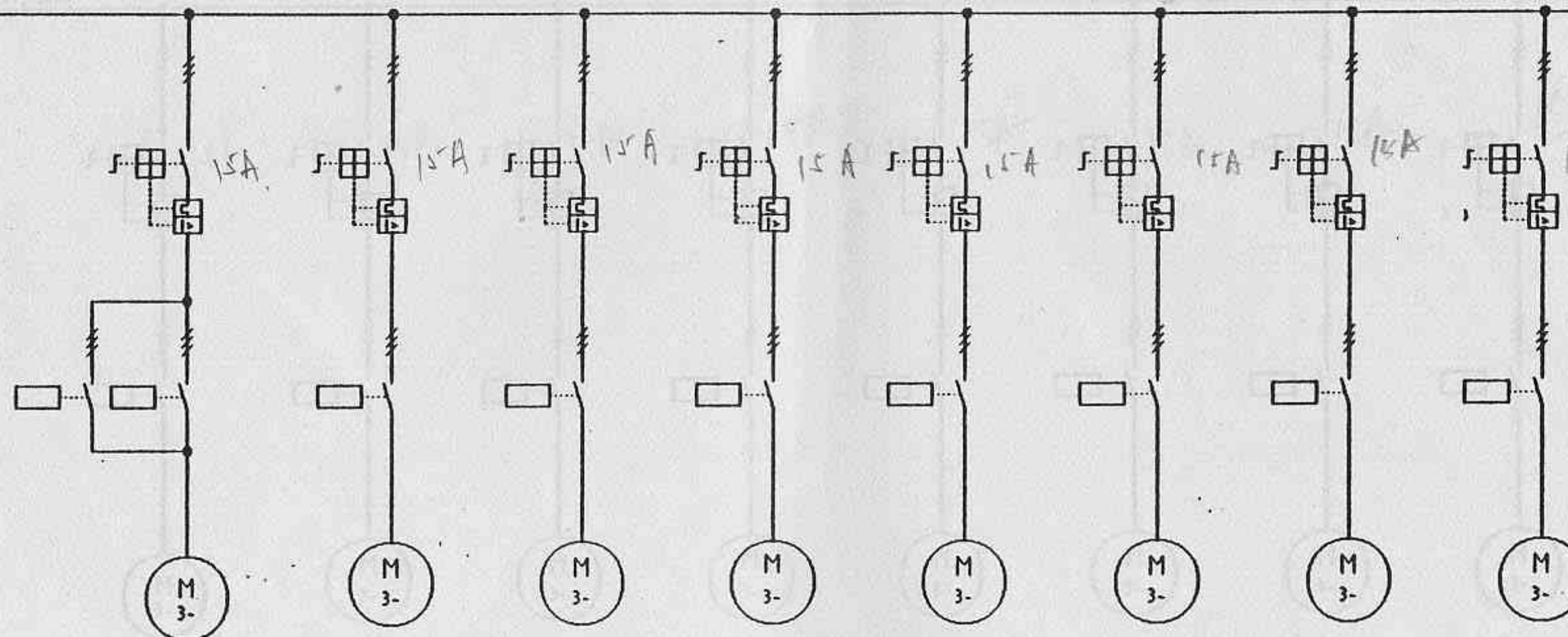


GROUP N°.	8.2.3.1.A	8.2.3.8A	8.2.3.8B	8.2.3.8C	8.2.3.9A	8.2.3.9B	8.2.3.9C	8.2.3.9D
DESIGNATION	TWO WAY GATE							
POWER	700 VA	700 VA	700 VA	700 VA	700 VA	700 VA	700 VA	700 VA

Preliminary 2. March 1991

3			Date	28.1.1994	SINGLE LINE DIAGRAM	CPAG	MCC BULK LOADING AND SILO DISCHARGE	UNITED CEMENT PTE LTD		
2			Drawn	Met						
1			Gepr.							
Revision	Date	Name	Norm					01-1/H1.734-900/A		6

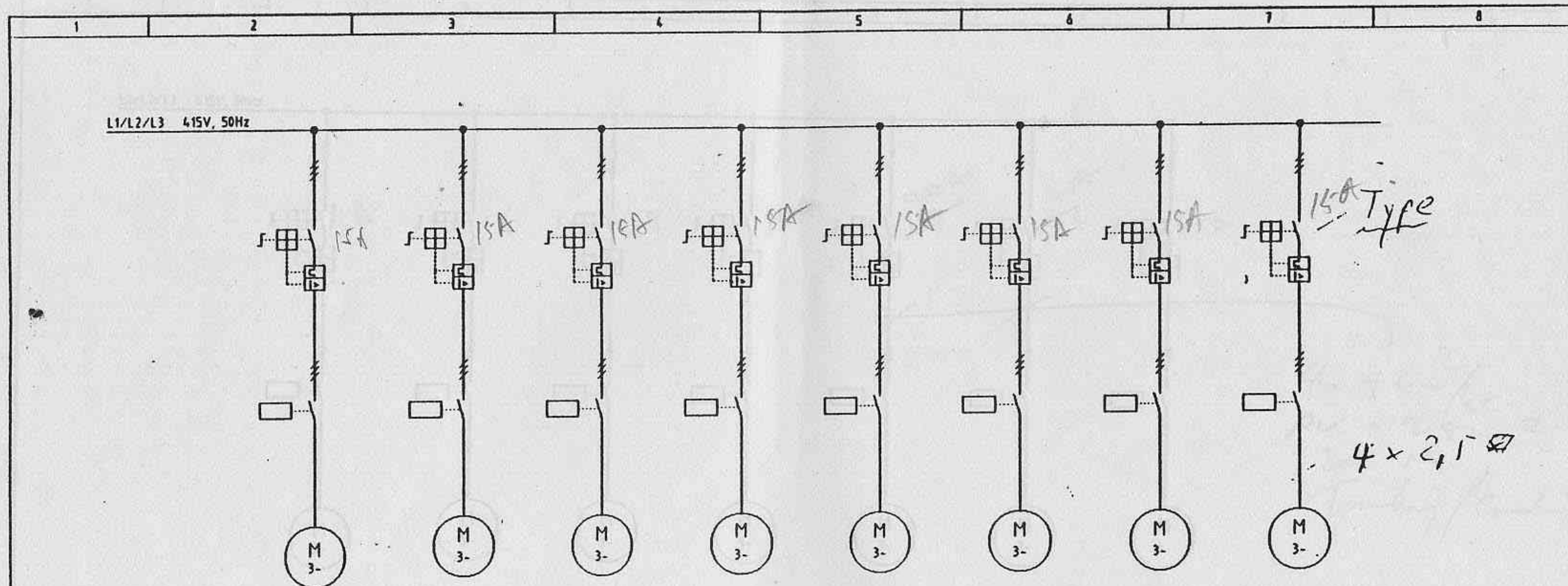
L1/L2/L3 415V, 50Hz



GROUP N°.	8.2.3.9E	8.2.4A	8.2.4B	8.2.4C	8.2.4D	8.2.5.2A	8.2.5.2B	8.2.5.2C
DESIGNATION	TWO WAY CHUTE	— LIFTING HOIST —	— LIFTING HOIST —	— SENSOR BLOWER —	— SENSOR BLOWER —	— SCREW SAMPLER —	— SCREW SAMPLER —	— SCREW SAMPLER —
POWER	350 VA	0,55 KW	0,55 KW	0,12 KW	0,12 KW	0,11 KW	0,11 KW	0,11 KW

Preliminary 2. März 1994

3			Date	28.1.1994	SINGLE LINE DIAGRAM	CPAG	MCC BULK LOADING AND SILO DISCHARGE	UNITED CEMENT PTE LTD			
2			Drawn	Hel							
1			Gepr.								
Revision	Date	Name	Norm					01-1/H1.734-900/A			7



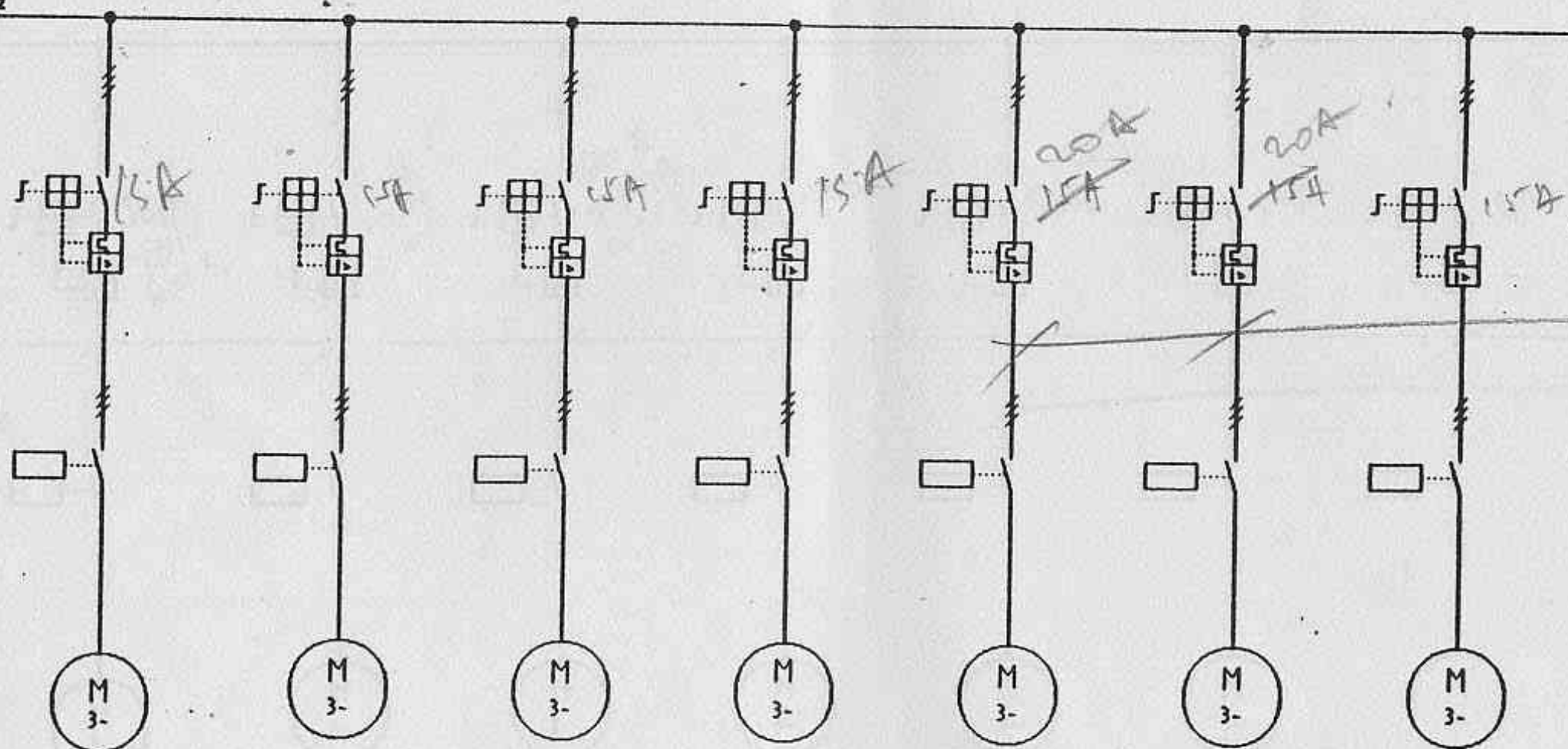
GROUP N°.	8.2.6.1B	8.2.6.1C	8.2.6.2A	8.2.6.3A	8.2.6.4A	8.2.6.4B	8.2.6.5A	8.2.6.6A
DESIGNATION	HIGH PRESSURE FAN							
POWER	2,2 KW	2,2 KW	2,2 KW	2,2 KW	2,2 KW	2,2 KW	2,2 KW	2,2 KW

Preliminary 2. März 1994

3				Datum	28.1.1994	SINGLE LINE DIAGRAM	CPAG	MCC BULK LOADING AND SILO DISCHARGE	UNITED CEMENT PTE LTD					
2				Bearb.	Mol									
1				Gepr.										
	Revision	Datum	Name	Norm					01-1/H1.734-900/A			8		

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

L1/L2/L3 415V, 50Hz



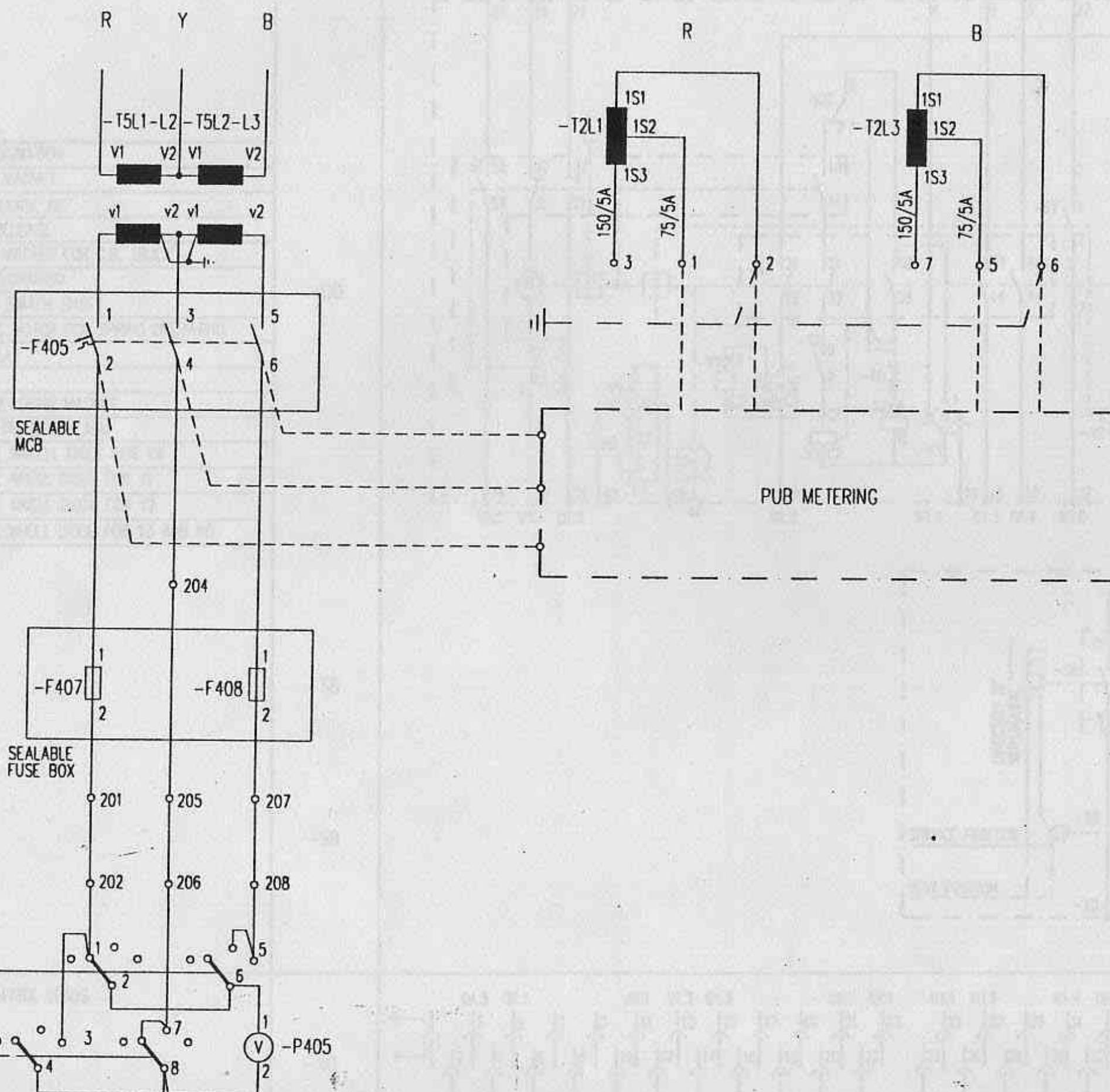
GROUP N°.	8.2.6.7A	8.2.6.8A	8.2.6.9A	8.2.6.9B	8.2.6.10A	8.2.6.10B	8.2.6.11A
DESIGNATION :	HIGH PRESSURE FAN						
POWER :	2,2 KW	3,0 KW	2,2 KW	2,2 KW	4,0 KW	4,0 KW	3,0 KW

Preliminary 2. März 1994

1				Date	28.1.1994	SINGLE LINE DIAGRAM	CPAG	MCC BULK LOADING AND SILO DISCHARGE	UNITED CEMENT PTE LTD			
2				Drawn	Mal				01-1/H1.734-900/A	9		
3				Gepr.								
Revision	Date	Name	Norm									

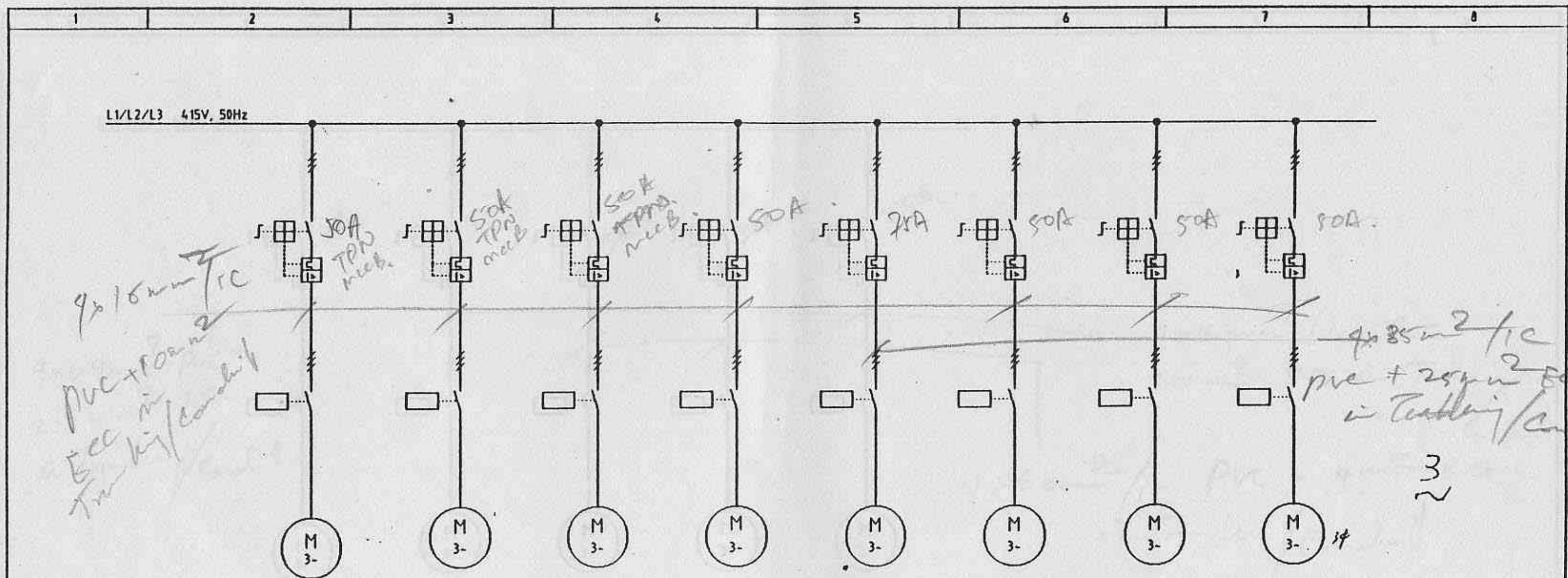
VOLTAGE TRANSFORMER
22KV/110V, 180VA CI.1
MCB, SECONDARY FUSE
VOLTMETER & VOLTMETER SELECTOR SW.

RING TYPE CURRENT T/F
100-50/5A, 15VA, CI.0.5



U00C253

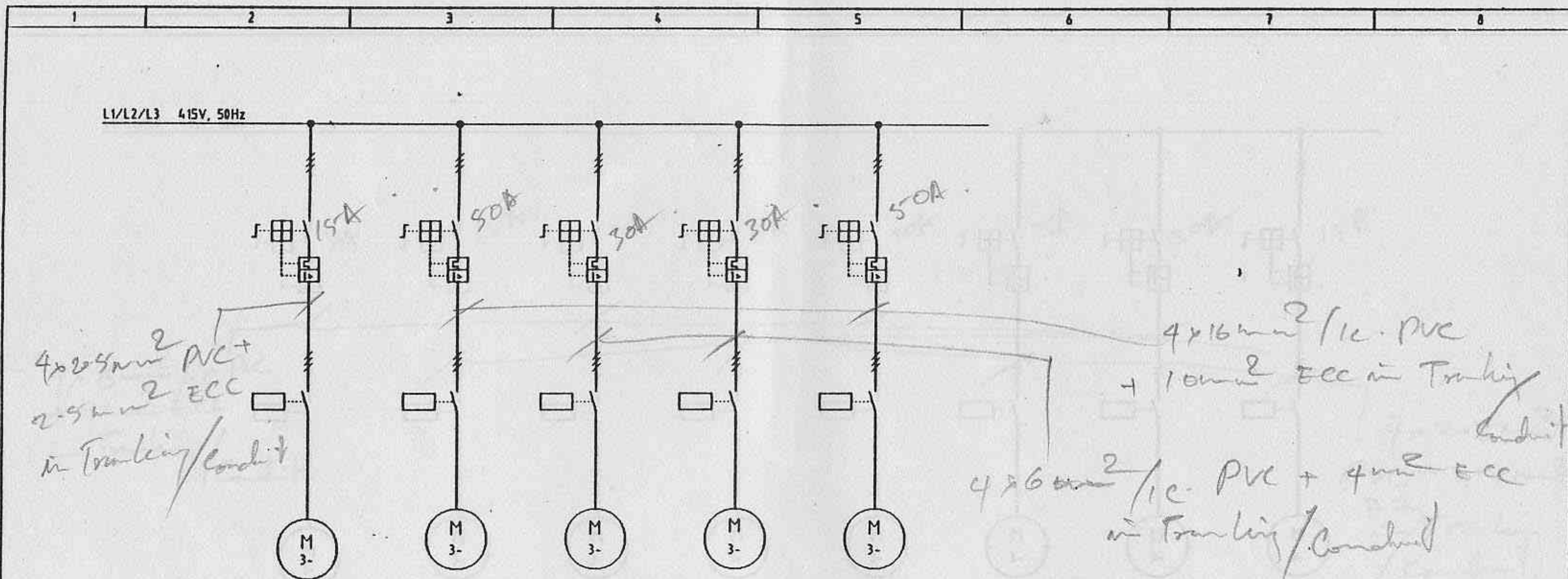
Rev.						Title	Project	D04 0153 402	Scale	Drawn	PC 14.3.95	Resp. Dept.	K.S.	Format	3
Date						VOLTAGE TRANSFORMER CIRCUIT PUB INCOMING 2	UNITED CEMENT 22KV SWITCHGEAR TYPE ZS/VD4	ABB	Checked	ASK	Released	ASK		Sheet	53
Rel.								ASEA BROWN BOVERI PTE LTD						Cont.	21



GROUP N° :	8.2.7.1A	8.2.7.1B	8.2.7.2A	8.2.7.2B	8.2.7.3A	8.2.7.4A	8.2.7.4B	8.2.7.4C
DESIGNATION :	BLOWER SILO 1	BLOWER CHAMBER SILO 1	SILO 2	SILO 3	BLOWER SILO 4	SILO 5	SILO 6	SILO 7
POWER :	15 KW	15 KW	11 KW	11 KW	18,5 KW	11 KW	11 KW	11 KW

Preliminary 2. März 1994

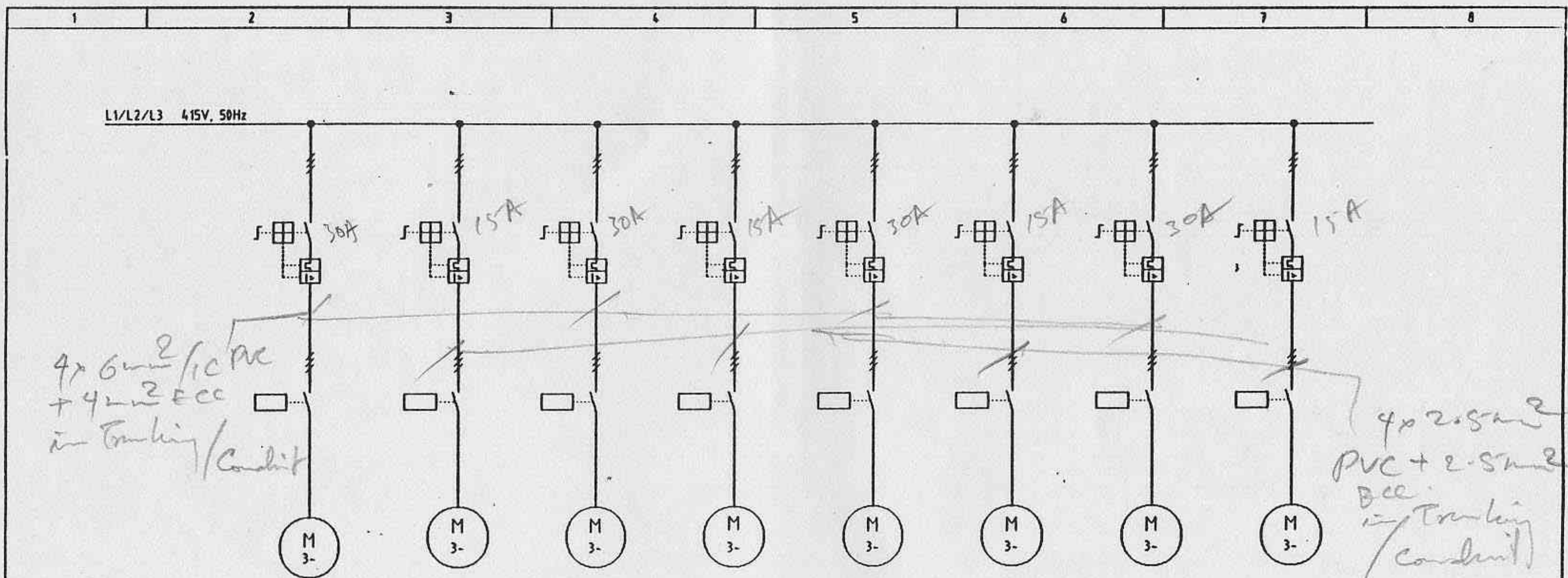
1				Datum	28.1.1994	SINGLE LINE DIAGRAM	CPAG	MCC BULK LOADING AND SILO DISCHARGE	UNITED CEMENT PTE LTD		
2				Bezeichnet	Mal						
1				Gepr.							
Revision	Datum	Name	Waren						01-1/H1.734-900/A		10



GROUP N°.	:	8.3.3.14C	8.5.2B	8.5.3B	8.5.3D	12.1.1A
DESIGNATION	:	SENSOR BLOWER	BLOWER			BUCKET ELEVATOR
POWER	:	0,12 KW	15,0 KW	7,5 KW	7,5 KW	15,0 KW (P.I.)

Preliminary 2. März 1994

3			Datum	28.1.1994	SINGLE LINE DIAGRAM	CPAG	MCC BULK LOADING AND SILO DISCHARGE	UNITED CEMENT PTE LTD		
2			Bearb.	Md						
1			Gepr.							
Revision	Datum	Hand	Norm					01-1/H1.734-900/A		12



GROUP N°.	8.2.8.1A	8.2.8.1B	8.2.8.3A	8.2.8.3B	8.2.8.4A	8.2.6.4B	8.3.3.12A	8.3.3.14A
DESIGNATION	COMPRESSOR	AIR DRYER	COMPRESSOR	AIR DRYER	COMPRESSOR	AIR DRYER	BLOWER	LIFTING HOIST
POWER	7,5 KW	0,26 KW	7,5 KW	0,26 KW	7,5 KW	0,26 KW	7,5 KW	0,55 KW

Preliminary 2. Nov 1991

REV				Date	28.1.1994	SINGLE LINE DIAGRAM	CPAG	MCC BULK LOADING AND SILO DISCHARGE	UNITED CEMENT PTE LTD			
				Drawn	Hot							
				Gepr.								
	Revision	Date	Name	Norm								
										01-1/H1.734-900/A		11

TECHN. DATA

APPARATUS
DESIGNAT

SCHEMATIC DIAGRAM

CIRCUIT BREAKER : ABB
MAKE : CALOR EMAG
TYPE : VD4
RATED CURRENT : 1250A
RATED VOLTAGE : 24KV
SERVICE CURRENT : 1250A
SERVICE VOLTAGE : 22KV

SYMBOL	DESIGNATION
-Y1	30V DC BLOCKING MAGNET
-Y2	30V DC SHUNT RELEASE OFF
-Y3	30V DC CLOSING RELEASE
-Y0	30V DC BLOCKING MAGNET FOR C.B. TRUCK
-S1	AUX SWITCH ON MECHANISM
-S3,-S4,-S5	AUX SWITCHES ON SWITCH SHAFT
-M	230V AC CHARGING MOTOR FOR SPRING OPERATING
-K0	ANTI-PUMPING RELAY
-R0	SERIES RESISTOR
-S2	AUX. SWITCH ON BLOCKING MAGNET
-S7	AUX. SWITCH FOR TROUBLE ALARM
-V0	RECTIFIER OR FREE WHEEL DIODE FOR Y0
-V1	RECTIFIER OR FREE WHEEL DIODE FOR Y1
-V2	RECTIFIER OR FREE WHEEL DIODE FOR Y2
-V3	RECTIFIER OR FREE WHEEL DIODE FOR Y3 AND K0

LIMIT SWITCH TEST POSITION

MAKE : CE
TYPE : XK4-550

LIMIT SWITCH SERVICE POSITION

MAKE : CE
TYPE : XK4-505

58-POLE PLUG AND SOCKET FOR CONTROL LEADS

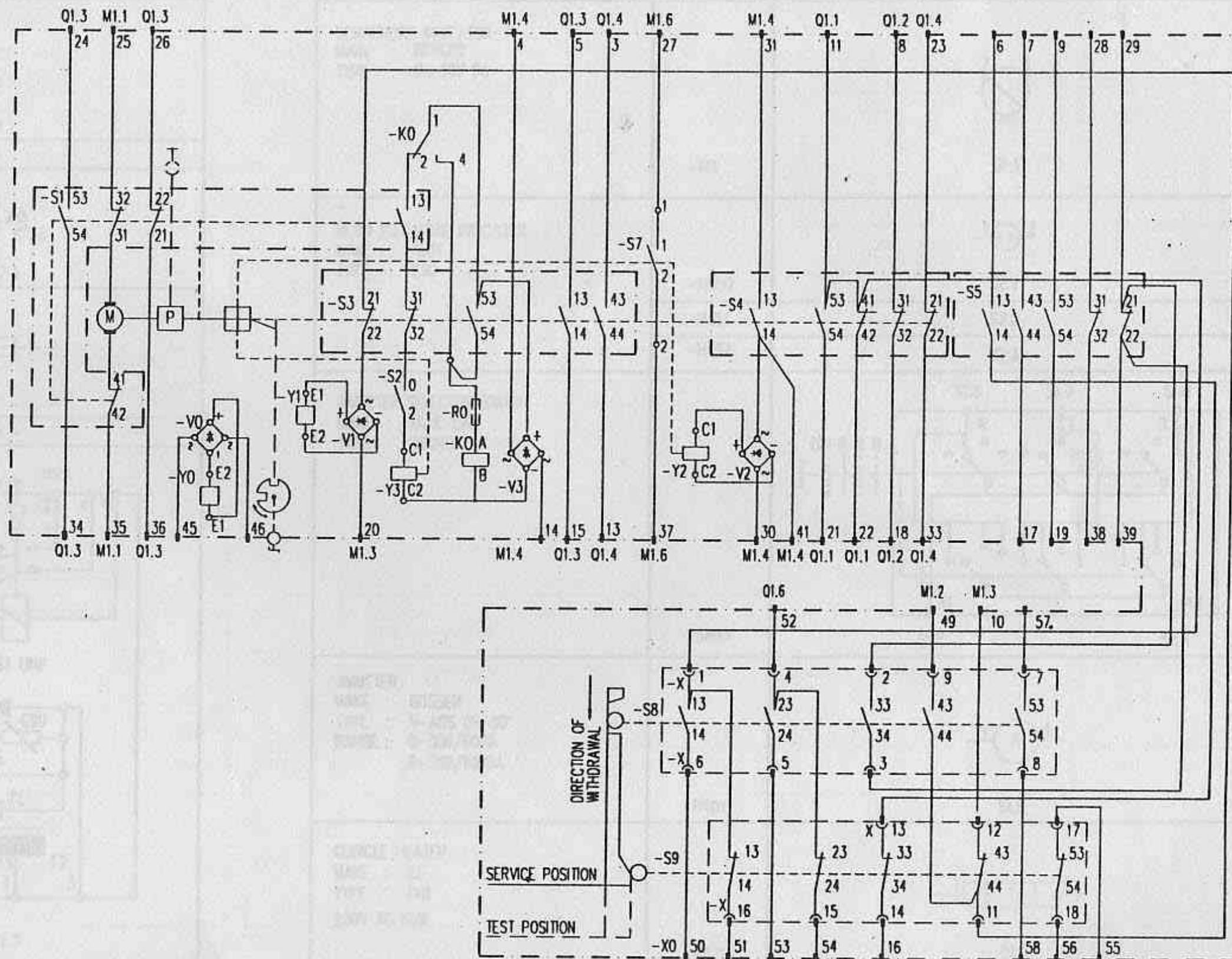
MAKE : CE
TYPE : Y1

-Q0

-S8

-S9

-X0



UDCC221

Title

LIST OF ITEMS
PUB INCOMING 2

Project

UNITED CEMENT
22KV SWITCHGEAR TYPE ZS/VD4

D04 0153 402

ABB

ASEA BROWN BOVERI PTE LTD

Scale

Drawn PC 14.3.95

Resp. Dept. K.S.

Format 3

Checked ASK

Released ASK

Sheet 21

Cont. 22