

SHEET INDEX

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OPTION INDEX

APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION
Z			APP FIG. 1, 1A1, 1A2, 1A3, 1B1, 1B3, 1C1, 1C3, 1C5, 1D1, 1D2, 1E1, 1E2, 1F1
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E			APP FIG. 1, 1D3, 1D4, 1G2, 1G3, 1A3, 2D3, 1C6
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C			APP FIG. 1, 1A5, 1A6
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A			APP FIG. 1, 1A3
ZA			APP FIG. 1, 1A3
ZB			APP FIG. 1, 1A3

OPTION INDEX (CONT)

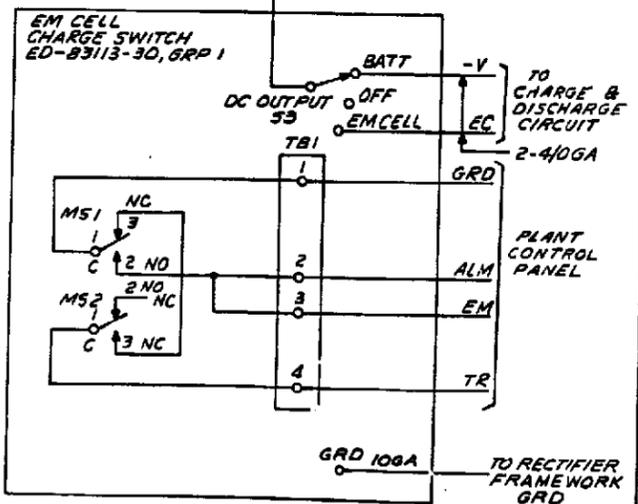
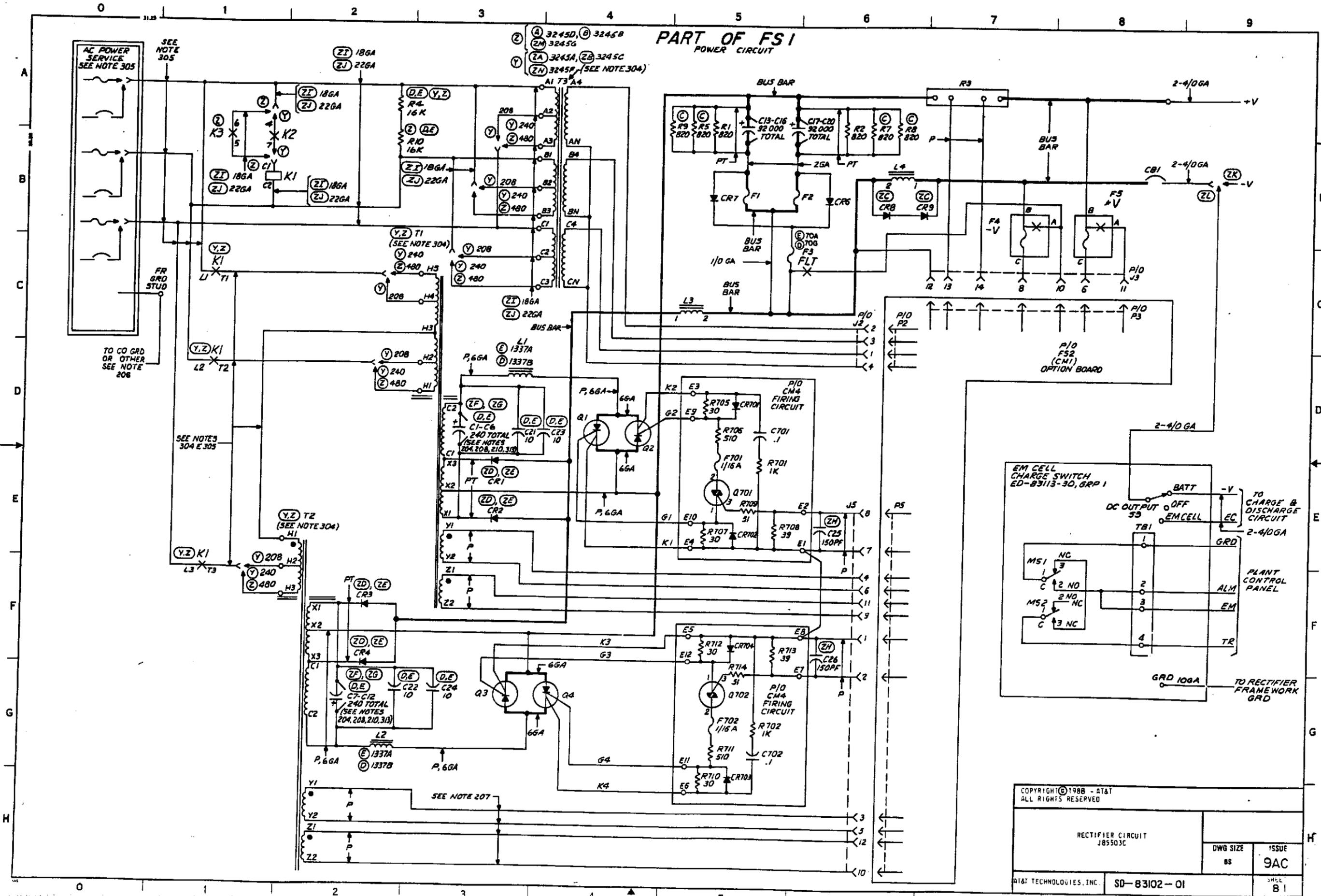
APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION
ZC			APP FIG. 1, 1B6
ZD			APP FIG. 1, 1E3, 1F2
ZE			APP FIG. 1, 1E3, 1F2
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ZH			APP FIG. 1, 1E6, 1F6
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ZM			APP FIG. 1, 1A4
ZN			APP FIG. 1, 1A4
ZP			APP FIG. 1, 2A6
ZQ			APP FIG. 1, 2A6
ZR			APP FIG. 1, 2A4, 2C5
ZS			APP FIG. 1, 2A4, 2C5

DWG ISSUE	CD ISSUE	DATE ISSUED	BY	CHKD
1	1	5-9-85	ZEN	STK
			WF	JWA
2AC	2AC	12-3-86	ZEN	AS
			WF	JWA
3B	2AC	5-21-87		
	APPX 1B			
4A	2AC	9-2-87		
	APPX 2A			
5B	2AC	9-2-87		
	APPX 3B			
6M	2AC	4-28-87		
	APPX 4M			
7A	2AC	8-3-89	EJC	
	APPX 5A			
8M	2AC	3-28-91	MC	JCM
	APPX 6M			
9AC	2AC	4-4-91	MC	JCM
	APPX 7A			

SUPPORTING INFORMATION

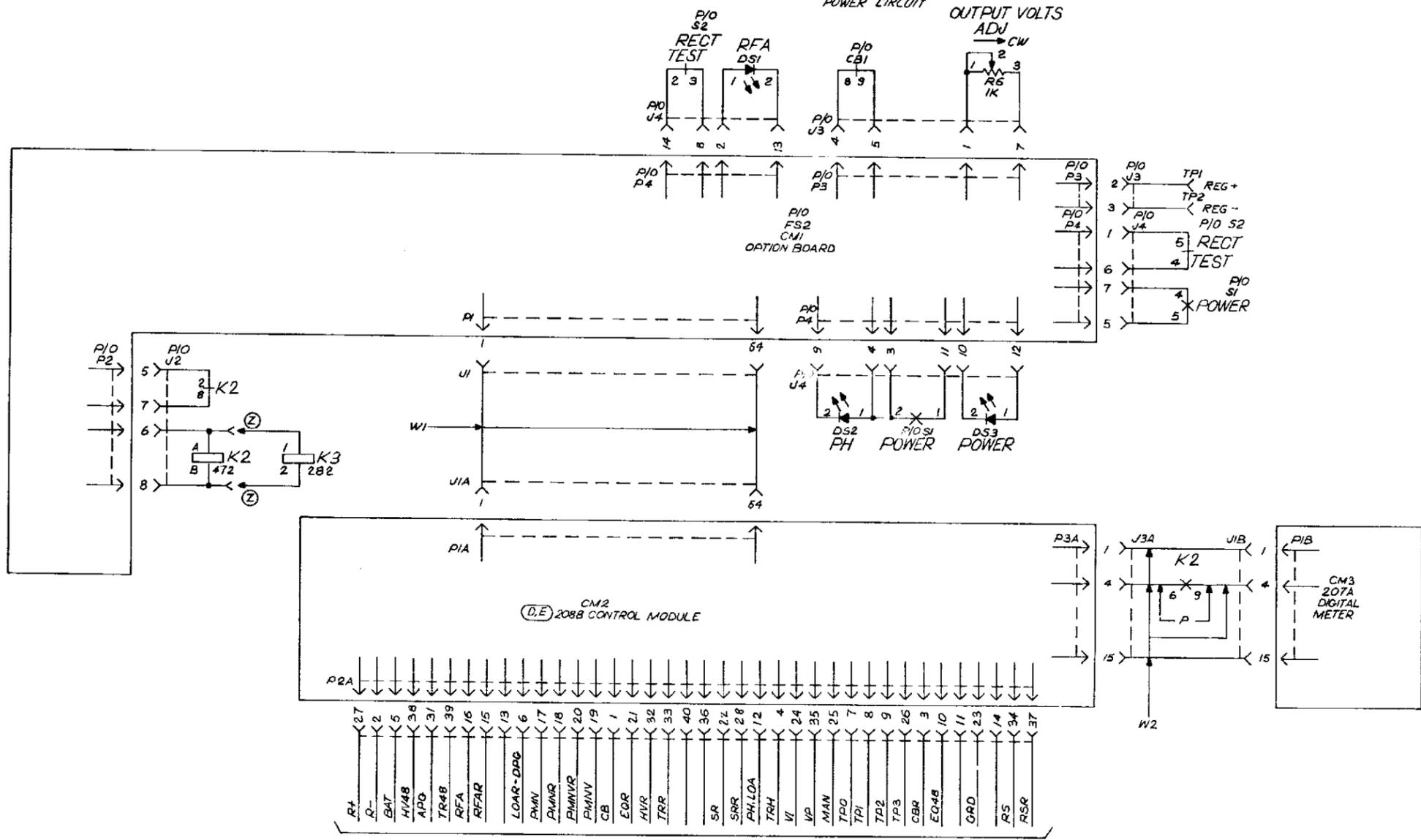
CATEGORY	NO.	COPYRIGHT © 1989 - AT&T ALL RIGHTS RESERVED	
AT&T PRACTICE (MAINTENANCE T.O.P.S.)	169-790-106		
		8M99	
		POWER SYSTEMS RECTIFIER CIRCUIT 208/240 OR 480 VOLT, 60HZ INPUT 48 VOLT, 400 AMPERE OUTPUT J85503C	
		DWG SIZE 68	ISSUE 9AC
AT&T TECHNOLOGIES, INC.		SD-83102-01	SHEET A1 OF 10

**PART OF FS1  
POWER CIRCUIT**



**PART OF FS1**

POWER CIRCUIT OUTPUT VOLTS

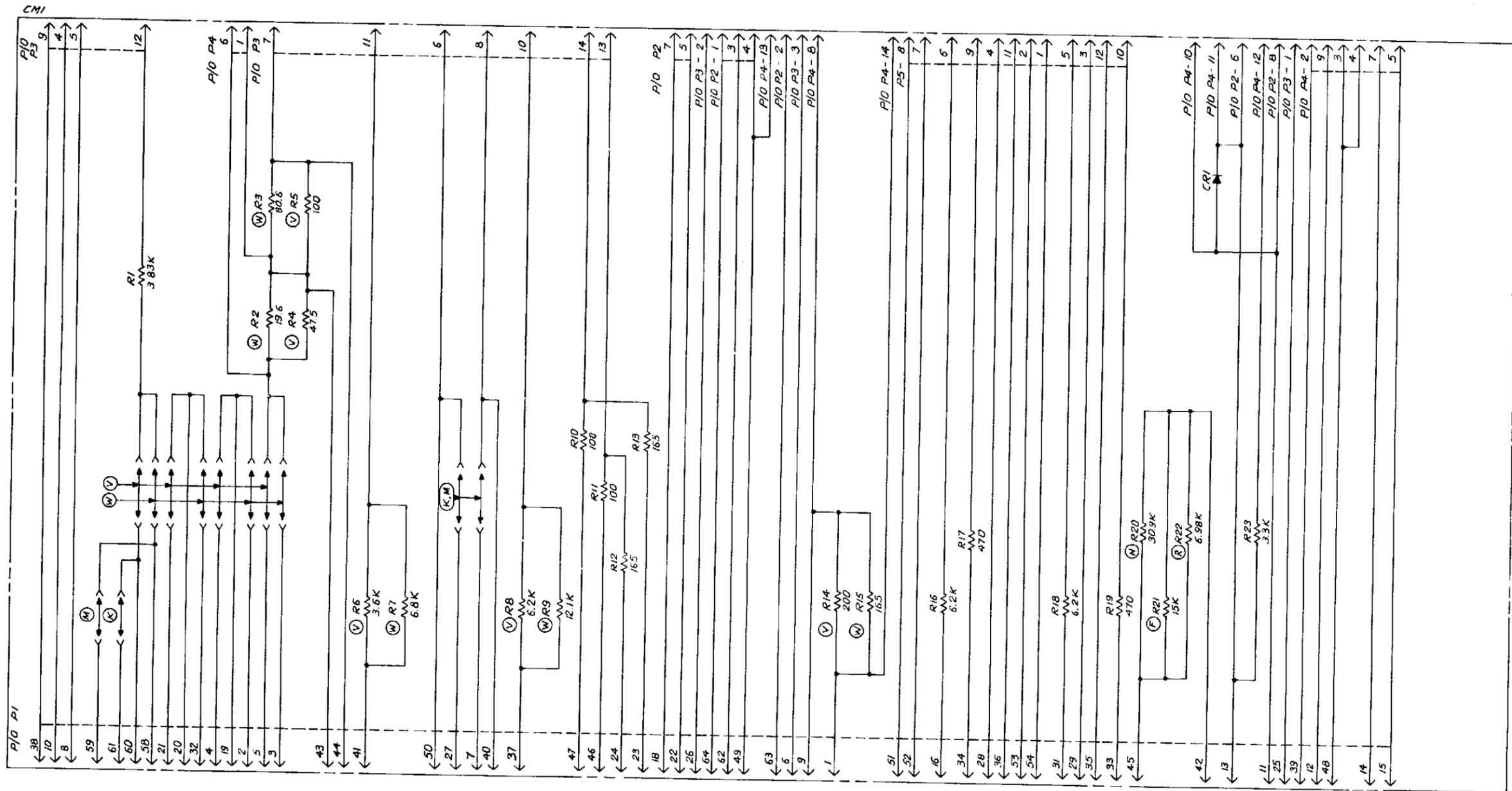


TO PLANT CONTROL CIRCUIT  
PART OF H-285-224, LIST 43 CABLE ASSEMBLY

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RECTIFIER CIRCUIT J85503C	DWG SIZE 8S	ISSUE 2AC
AT&T TECHNOLOGIES, INC.	SD-83102-01	SHEET B2

# FS 2

OPTION BOARD  
SEE NOTE 1

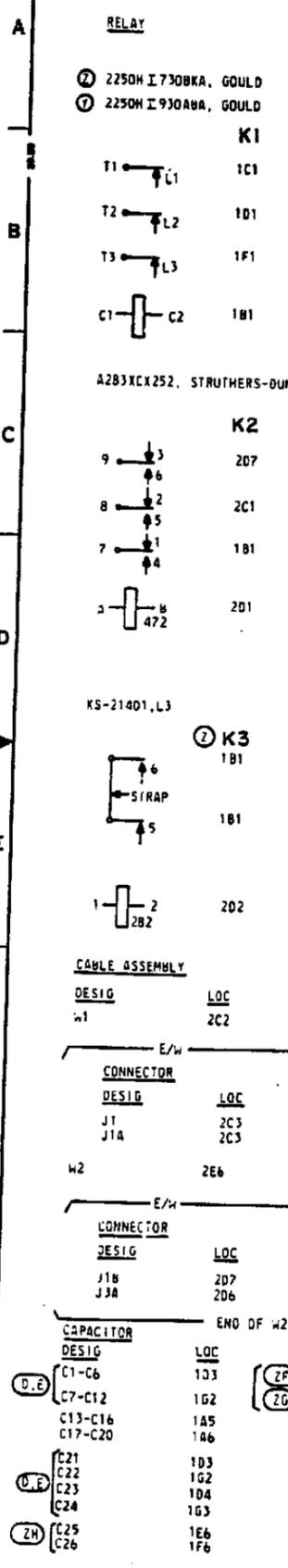


NOTES:

1. THIS FIGURE IS FOR INFORMATION ONLY. THE CONTROLLING DRAWING ARE BED-83159-01 AND SD-82685-01. FOR APPLICATION IN THIS RECTIFIER, SEE MODIFICATION REQUIREMENTS IN INFORMATION NOTES 302 AND 306.

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RECTIFIER CIRCUIT J85583C	
DWG SIZE 8S	ISSUE 2AC
AT&T TECHNOLOGIES, INC.	SD-83102-01
	SHEET 83

APP FIG.1



**CIRCUIT BREAKER**

DESIG	LOC	CODE
CB1	1B8, 2A5	KS-22012, L45

**CIRCUIT MODULE**

DESIG	LOC	CODE
② CM2	2E4	208B, CONTROL MODULE
CM3	2D7	207A, DIGITAL METER
CM4	1D5, 1G5	ED-83103-30, GRI, FIRING CIRCUIT

**CAPACITOR**

DESIG	LOC	CODE
C701	1G5	PKM10P1, CORNELL-DUBILIER OR 715P1045B03, SPRAGUE 1000VDC
C702	1G5	

**DIODE**

DESIG	LOC	CODE
CR701	1D5	813D
CR702	1E5	813D
CR703	1H5	813D
CR704	1F5	813D

**FUSE**

DESIG	LOC	CODE
F701	1E5	AGC TYPE -1/16 AMP, BUSSMANN
F702	1G5	AGC TYPE -1/16 AMP, BUSSMANN

**RESISTOR**

DESIG	LOC	CODE
R701	1E5	KS-14603, L1AC, 1K
R702	1G5	KS-14603, L1AC, 1K
R705	1D5	KS-14603, L3AC, 30.0
R706	1D5	KS-14603, L3AC, 51.0
R707	1E5	KS-14603, L3AC, 30.0
R708	1E5	KS-14603, L3AC, 39.0
R709	1E5	KS-14603, L3AC, 51.0
R710	1H5	KS-14603, L3AC, 30.0
R711	1G5	KS-14603, L3AC, 510.0
R712	1F5	KS-14603, L3AC, 30.0
R713	1F5	KS-14603, L3AC, 39.0
R714	1F5	KS-14603, L3AC, 51.0

**THYRISTOR**

DESIG	LOC	CODE
Q701	1E5	SC142M, GE SEE NOTE 312
Q702	1G5	SC142M, GE SEE NOTE 312

**CONNECTOR**

DESIG	LOC	CODE
J2	1C6	640440-8, AMP
J3	1C8, 2A5, 2B6	1-641190-4, AMP
J4	2A4, 2B5, 2B6	1-640440-5, AMP
J5	1E6	1-641190-2, AMP

**DIODE**

DESIG	LOC	CODE
CR1	1E3	② A390C, GE ② A390C, GE ② A390C, GE ② A390C, GE
CR2	1F3	
CR3	1F2	
CR4	1F2	
CR6	1B6	② 813D ② 813D ② 1N3289A ② 1N3289A
CR7	1B5	
CR8	1B6	
CR9	1B6	

**DIODE, LIGHT EMITTING**

DESIG	LOC	CODE
DS1		② 531A ② 531A ② 531B
DS2		
DS3		

**FUSE**

DESIG	LOC	CODE
F1	1B5	BUSSMANN, NON 60 TYPE-60 AMP BUSSMANN, NON 60 TYPE-60 AMP ② 70A-11/3 AMP ② 70G-1/2 AMP ② 70G-1/2 AMP SEE NOTE 320
F2	1B6	
F3	1C6	
F4	1B7	
F5	1B8	

**INDUCTOR**

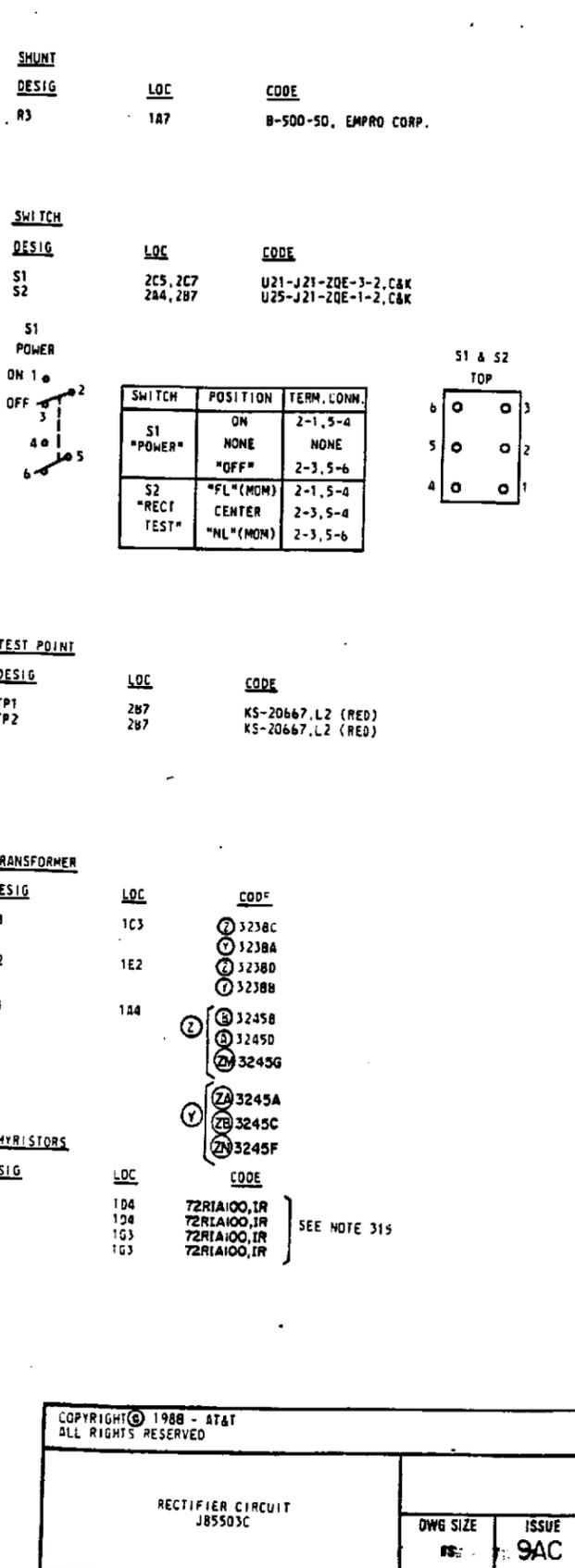
DESIG	LOC	CODE
L1	1D3	② 1337A ② 1337A ② 1338A ② 1338B
L2	1D2	
L3	1C5	
L4	1B6	

**POTENTIOMETER**

DESIG	LOC	CODE
R6	2A5	② 3540S-701-102, 1K, BOURNS ② M22S10, 1K, MEPCO/COPAL

**RESISTOR**

DESIG	LOC	CODE
R1	1A5	KS-14603, L2AA, 820 KS-14603, L2AA, 820 KS-20289, L2A, 16K KS-14603, L2AA, 820 KS-14603, L2AA, 820 KS-14603, L2AA, 820 KS-14603, L2AA, 820 KS-14603, L2AA, 820 KS-14603, L2AA, 820 KS-20289, L2A, 16K
R2	1A6	
R4	1A3	
R5, R6	1A5	
R7	1A6	
R8	1A6	
R9	1A5	
R10	1A3	



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RECTIFIER CIRCUIT  
J85503C

DWG SIZE	ISSUE
9S	9AC

AT&T TECHNOLOGIES, INC. SD-83102-01 SHEET C1

APP FIG. 2

OPTION BOARD  
(SEE NOTE 1)

APP FIG. 3

CIRCUIT MODULE

DESIG	LOC	CODE
CM1	3B0	ED-83159-30, GR1 "OPTION BOARD"

SWITCH

DESIG	LOC	CODE
S3	1F9	ED-83113-30, CR1

CONNECTOR

DESIG	LOC	CODE
P1	2C3,3G0	1-499900-2, AMP
P2	1C6,2C1,3B4, 3B5,3B8	1-640456-8, AMP
P3	1C8,2B5,2B6, 3B0,3B2,3B4, 3B5,3B8	1-641126-4, AMP
P4	2B4,2B6,2C3, 3B1,3B5,3B8	1-640456-5, AMP
P5	1E6,3B6	1-641126-2, AMP

DIODE

DESIG	LOC	CODE
CR1	3C7	JP-90015, L3

RESISTOR

DESIG	LOC	CODE
R1	3C1	WP-90033, L1, 3.03K
R2	3D2	WP-90033, L1, 19.6
R3	3C2	WP-90033, L1, 80.6
R4	3D2	WP-90033, L1, 47.5
R5	3C2	WP-90033, L1, 100
R6	3F2	WP-90020, L1, 3.6K
R7	3F2	WP-90020, L1, 6.8K
R8	3F3	WP-90020, L1, 6.2K
R9	3F3	WP-90020, L1, 12.1K
R10	3E3	WP-90033, L1, 100
R11	3E4	WP-90033, L1, 100
R12	3F4	WP-90033, L1, 165
R13	3E4	WP-90033, L1, 165
R14	3F5	WP-90033, L1, 200
R15	3F5	WP-90033, L1, 165
R16	3F6	WP-90020, L1, 6.2K
R17	3E6	WP-90020, L1, 470
R18	3F6	WP-90020, L1, 6.2K
R19	3F7	WP-90020, L1, 470
R20	3E7	WP-20616, L1A, 30.9K
R21	3F7	KS-20616, L1A, 15K
R22	3E7	KS-20616, L1A, 6.99K
R23	3E8	WP-90020, L1, 3.3K

NOTES:

1. THIS FIGURE IS FOR INFORMATION ONLY. THE CONTROLLING DRAWINGS ARE ED-83159-30 AND SD-82605-01. FOR APPLICATION IN THIS RECTIFIER, SEE MODIFICATION REQUIREMENTS IN INFORMATION NOTES 302 AND 306.

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RECTIFIER CIRCUIT J85583C	DWG SIZE 8S
AT&T TECHNOLOGIES, INC.	ISSUE EB
SD-83102-01	SHEET C2

CIRCUIT NOTES:

DESIG	FUSE AMP	POTENTIAL	ONE PER
BATTERY SYMBOL		VOLTAGE RANGE	

FOR AC REQUIREMENT, SEE NOTE 305

EQUIPMENT NOTES:

201. ALL WIRING TERMINATING IN AMP MTA-100 HOUSING ASSEMBLIES THAT ARE NOT PART OF ANY PREFORMED CODED CABLE ASSEMBLY SHALL BE KS-22247,L4, 22 AWG. PROVIDE AN AMP STRAIN RELIEF COVER ON EACH MTA-100 HOUSING CONNECTOR. WHEN MAKING WIRE TERMINATIONS ON THE AMP MTA-100 HOUSING CONNECTOR, IT IS A REQUIREMENT THAT ONLY THE RECOMMENDED AMP TOOL BE USED.
202. ALL WIRING NOT SPECIFIED SHALL BE KS-22247,L5, 20 AWG.
203. WHEN MEPCO/ELECTRA CAPACITOR PART NO. 3195GH2337075AM01 IS NO LONGER AVAILABLE, USE MEPCO/ELECTRA EQUIVALENT REPLACEMENT CAPACITOR, PART NO. 3186GH2337075AM01.
204. THE CAPACITORS C1-C6, C7-C12 AND C21-C24 ARE INTERCONNECTED WITH 10GA STRANDED WIRE, KS-22247,L5.
205. AC EQUIPMENT GROUND CONDUCTOR SHALL BE PROVIDED AS SPECIFIED IN ATTP-802-001-180 (ATTP-802-001-198).
206. PROVIDE A NO. 2 AWG KS-5482-01 FRAME GROUNDING CONDUCTOR FROM THE BAY FRAMEWORK THAT CONNECTS THE RECTIFIER TO THE MAIN GROUNDING SYSTEM IN ACCORDANCE WITH FRAME GROUNDING REQUIREMENTS PER ATTP-802-001-180. WHEN THE MAIN GROUNDING SYSTEM IS NOT INSTALLED IN THE OFFICE AND THE RECTIFIER IS ASSOCIATED WITH:
  - A. AN ESS DEDICATED POWER PLANT, HAVING AN INSULATED DISCHARGE GROUND BUS, THE CONDUCTOR SHALL BE CONNECTED TO THE GROUND WINDOW, OR TO THE SAME GROUND POINT THAT THE ESS GROUND WINDOW BUS IS GROUND TO.
  - B. A NON-ESS POWER PLANT, THE CONDUCTOR SHALL BE CONNECTED TO THE POWER PLANT DISCHARGE GROUND BUS. WHEN MORE THAN ONE RECTIFIER BAY REQUIRES GROUNDING, A SINGLE CONDUCTOR MAY BE MULTIPLIED TO GROUND ALL RECTIFIER BAYS.
207. THE Y1,Y2,Z1,Z2 WIRES FROM THE T2 TRANSFORMER SHOULD BE DRESSED AS FAR AWAY AS POSSIBLE FROM THE Q1-Q4 THYRISTORS AND THE CMA FIRING CIRCUIT BOARD. CONNECT VIA TY-WRAPPS TO RESONANT CAPACITOR JUMPER WIRES.
208. NOMINAL VALUES OF RESONATING CAPACITORS WHEN USED WITH 1337A AND 1337B INDUCTORS. RECTIFIERS WIRED PER THE (E) OPTION MAY HAVE EITHER 250uF OR 260uF CONNECTED BETWEEN TERMINALS X1 AND C2 OF BOTH T1 AND T2 TRANSFORMERS. THE TOTAL NUMBER OF MICROFARADS, WHICH IS DETERMINED DURING FACTORY TEST, MUST BE THE SAME IN BOTH CASES.

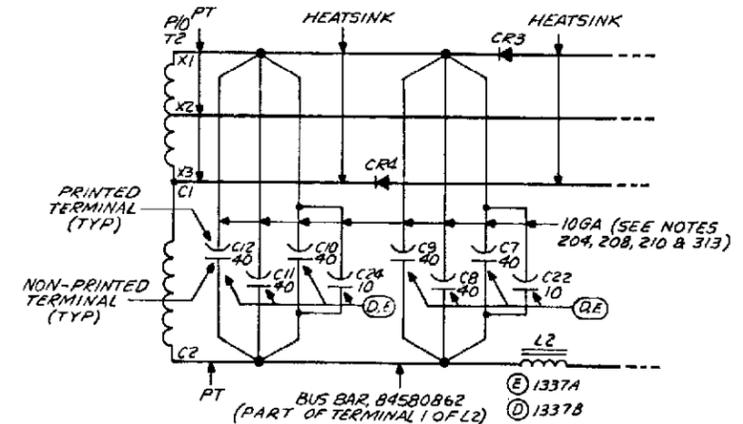
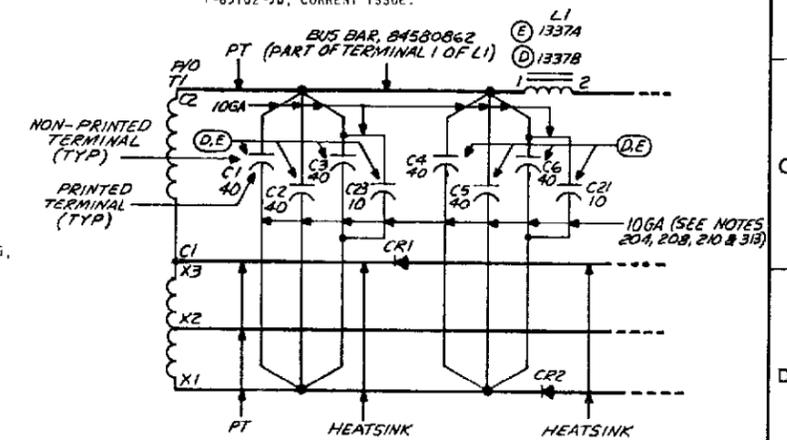
OPTION	DESIG	Y,E	Z,E	Y,D	Z,D
CAPACITOR	C1-C5	200uF	200uF	200uF	200uF
	C6	40uF	40uF	-	-
	C8-C12	200uF	200uF	200uF	200uF
	C7	40uF	40uF	-	-
	C21	10uF	10uF	10uF	10uF
	C22	10uF	10uF	10uF	10uF
	C23	-	10uF	-	10uF
	C24	-	10uF	-	10uF
INDUCTOR	L1	1337A	1337A	1337B	1337B
	L2	1337A	1337A	1337B	1337B

NOTE: (1) OPTION IS 208/240V INPUT.  
(2) OPTION IS 480V INPUT.

209. ALL LEADS WIRED IN THE VICINITY OF POWER COMPONENTS HOT SURFACES, RESISTORS, ETC., SHALL BE DRESSED AT LEAST ONE INCH AWAY FROM THE BODY OF THE COMPONENTS.

EQUIPMENT NOTES (CONT):

210. ALL WIRES FROM THE PRINTED TERMINALS OF CAPACITORS C1-C6 ARE TO BE INDIVIDUALLY TERMINATED ON THE CATHODE SIDE OF CR2 HEATSINK, 845197466. CONNECTION POINTS. ALL WIRES FROM THE NON-PRINTED TERMINALS OF CAPACITORS C1-C6 ARE TO BE INDIVIDUALLY TERMINATED ON THE BUS BAR ASSEMBLY, 84580862, WHICH IS MOUNTED ON INDUCTOR L1. TERMINAL 1. ALL WIRES FROM THE PRINTED TERMINALS OF CAPACITORS C7-C12 ARE TO BE INDIVIDUALLY TERMINATED ON THE CATHODE SIDE OF CR3 HEATSINK, 845197466. CONNECTION POINTS. ALL WIRES FROM THE NON-PRINTED TERMINALS OF CAPACITORS C7-C12 ARE TO BE INDIVIDUALLY TERMINATED ON THE BUS BAR ASSEMBLY, 84580862, WHICH IS MOUNTED ON INDUCTOR L2, TERMINAL 1. DAISY-CHAINING CAPACITORS C3 WITH C23, C6 WITH C21, C7 WITH C22 AND C10 WITH C24 IS PERMITTED IN ACCORDANCE WITH RECTIFIER OPTIONS SHOWN IN EQUIPMENT NOTE 208. THIS FOREGOING METHOD OF WIRING WILL PREVENT EXCESSIVE CURRENT FROM FLOWING THROUGH THE TERMINALS OF THE AC CAPACITORS. DAISY-CHAINING THE 40 uF CAPACITORS, 97F5349FA, TOGETHER IS NOT PERMITTED. FOR DETAILED WIRING INFORMATION REFER TO DRAWING, T-83102-30, CURRENT ISSUE.



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RECTIFIER CIRCUIT  
J85503C

DWG SIZE  
BS

ISSUE  
4A

AT&T TECHNOLOGIES, INC. S0-83102-01

SHEET  
DI

INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED:  
RESISTANCE VALUES ARE IN OHMS.  
CAPACITANCE VALUES ARE IN MICROFARADS.  
INDUCTANCE VALUES ARE IN MILLIHENRIES.  
VALUES PRECEDED BY THE SYMBOL + (PLUS)  
OR - (MINUS) ARE IN VOLTS.
302. CM1 IS MANUFACTURED WITH ALL OPTION STRAPS AND RESISTORS IN PLACE. CUT UNNECESSARY STRAPS AND REMOVE EXTRA RESISTORS AS REQUIRED. REFER TO NOTE 306.

FEATURE OR OPTION	PROVIDE	
	APP FIG.	APP OR WRG QUANTITY
208/240 VOLT INPUT	1	Y 1 PER CKT
480 VOLT INPUT	1	Z 1 PER CKT
48 VOLT OUTPUT NOT EQUIPPED FOR EM CELL CHARGING	1	H, K, M, ZK 1 PER CKT
400 AMPERE OUTPUT SEE NOTE 306		R 1 PER CKT
48 VOLT OUTPUT EQUIPPED FOR EM CELL CHARGING	1, 3	W, ZL 1 PER CKT

INFORMATION NOTES: (CONT)

303. RECORD OF APP FIGURES, WIRING AND APPARATUS CHANGES

CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT		
				AVAIL	LA	DA
2AC	D OR E	E OR NONE	313	D	E	
	C	NONE	313	C		
3B	B OR A	B		A		B
	ZA OR ZB	ZA		ZB		ZA
	ZC	NONE		ZC		
	ZD OR ZE	ZD		ZE		ZD
	ZF OR ZG	ZF		ZG		ZF
	ZH	NONE		ZH		
5B	ZI OR ZJ	ZI		ZJ		ZI
	ZK OR ZL	ZK		ZL		
6M	D OR E	E		E		D
	A OR ZM	A		ZM		A
	ZN OR ZB	ZB		ZN		ZB
7A	ZP OR ZQ	ZP		ZQ		ZP
	B OR ZM A OR ZN	B ZA	317 318	ZM ZN		B ZA
8M	ZR OR ZS	ZR	319	ZS		ZR
9AC	D OR E	E	320 321	E		D

INFORMATION NOTES: (CONT)

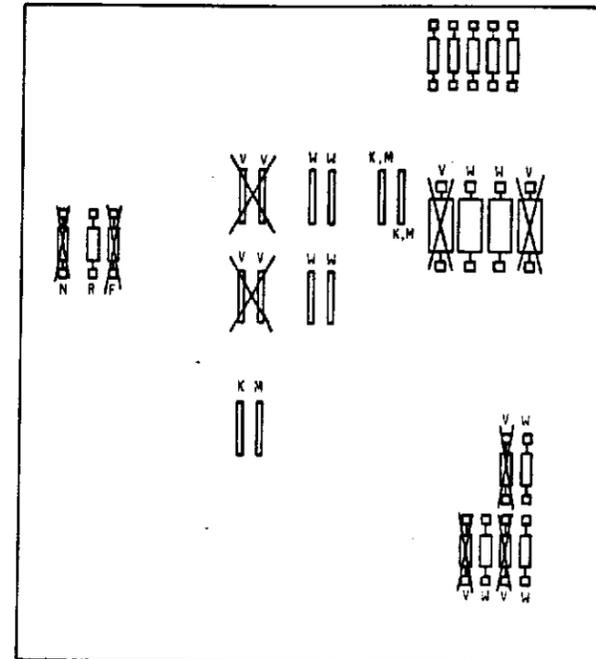
305.

AC INPUT	FUSE + IN AC SERVICE PANEL	CIRCUIT BREAKER IN AC SERVICE PANEL	INPUT CONDUCTORS		
			KS-20747	KS-5482-01	KS-20785
208V/240V	FR: DO, 250V	KS-22089, L310 100 AMP	3-#2, 1-#6	3-#2, 1-#6	3-#2
480V	FR550, 600V	KS-22089, L406 50 AMP	3-#6, 1-#10	3-#6, 1-#10	3-#6

\* KS-20785 COMES EQUIPPED WITH A BARE GROUND CONDUCTOR.

+ THREE PER RECTIFIER.

306. THE CM1 OPTION BOARD IS AVAILABLE ONLY EQUIPPED WITH ALL OPTION STRAPS AND RESISTORS IN PLACE. PRIOR TO APPLICATION IN THIS RECTIFIER, IT IS REQUIRED TO REMOVE ALL UNNECESSARY STRAPS AND RESISTORS AND STAMP A MODIFIED IDENTIFICATION ON THE ASSEMBLY, IN ACCORDANCE WITH ED-83159-30 AND SD-82605-01. STRAPS AND RESISTORS TO BE REMOVED ARE SHOWN WITH AN (X) DRAWN THROUGH THEM AND THE STRAPS AND RESISTORS TO BE RETAINED ARE SHOWN DESIGNATED N, R AND W. SEE NOTE 302.



304.

TAPS	LINE VOLTAGE RANGE	NOM AC VOLTAGE
Y OPTION		
A2, 92, C2	184-220	208
A3, B3, C3	212-254	240
Z OPTION		
A3, B3, C3	424-508	480
H OPTION		
H2	184-220	208
H3	212-254	240
Z OPTION		
H3	424-508	480
Y OPTION		
H2, H4	184-220	208
H1, H5	212-254	240
Z OPTION		
H1, H5	424-508	480

INFORMATION NOTES: (CONT)

307. THE FOLLOWING TABLE DOCUMENTS THE CONNECTIONS AVAILABLE FROM P2A OF THE CM2 CIRCUIT MODULE OF J85503C RECTIFIERS TO PLANT CONTROL CIRCUIT

TABLE A

DESIG.	FUNCTION	SEE NOTE
R+	POSITIVE VOLTAGE FROM POINT OF REGULATION	308
R-	NEGATIVE VOLTAGE FROM POINT OF REGULATION	308
HV	SELECTIVE HIGH VOLTAGE SIGNAL, SHUTDOWN WHEN BATTERY PLANT CONTROL CIRCUIT APPLIES GRD TO THIS LEAD AND RECTIFIER OUTPUT CURRENT EXCEEDS 10 PERCENT OF ITS RATING, RECTIFIER CONTROL SHUTDOWN SEQUENCE ACTIVATES DISCONNECT AND LOCKS OUT RECTIFIER FROM AC LINE. IF LESS THAN 8 AMPS, RECTIFIER CONTROL IGNORES GRD SIGNAL.	309
HVR	RETURN LEAD FOR HV GRD SIGNAL.	309
APG	ANALOG PLANT GROUND.	
DPG	DIGITAL PLANT GROUND	
TR	REMOTE SHUTDOWN SIGNAL, GRD SUPPLIED FROM INTERNAL SOURCE, CAUSES RECTIFIER CONTROL TO DISCONNECT RECTIFIER FROM AC LINE WITHOUT LOCK OUT. REMOVAL OF GRD SIGNAL RECONNECTS RECTIFIER TO AC LINE FOR NORMAL OPERATION.	
TRR	RETURN CONNECTION FOR THE TR LEAD.	
RFA & RFA-R	RECTIFIER FAILURE ALARM, SIGNAL TO THE BATTERY PLANT THAT THE RECTIFIER HAS SHUT DOWN AND LOCKED OUT. RETURN CONNECTION FOR RFA LEAD.	310
PH, LOA & LOA-R	SIGNAL INDICATING RECTIFIER IS SHUT DOWN DUE TO TR SIGNAL. RETURN CONNECTION FOR LOA LEAD.	
PMI & PMV	SIGNAL INDICATING RECTIFIER IS SHUT DOWN EXCEPT WHEN POWER SWITCH IS IN THE OFF POSITION.	311
PMNR & PMNR-R	RETURN LEAD FOR PMI & PMV CONTACT CLOSURE	
RS & RS-R	RESTART LEADS, ALLOWS RECTIFIER TO RESTART AND STAY ON AFTER A SHUTDOWN IF ORIGINAL CAUSE OF SHUTDOWN IS CLEARED. RETURN LEAD FOR RS CONTACT CLOSURE.	
CB	OUTPUT CIRCUIT BREAKER TRIP.	
BAT	BATTERY SUPPLY FOR TR, HIGH VOLTAGE SHUT DOWN	
VF	LOAD VOLTAGE MONITOR.	
VI	LOAD CURRENT MONITOR.	
TP0, TP1, TP2, TP3	CURRENT RATING OF RECTIFIER.	
MAN	MANUAL SHUTDOWN SIGNAL.	

308. R+ AND R- ARE CONNECTED ACROSS THE TERMINALS OF THE BATTERY AT THE POINT IN THE BATTERY PLANT WHERE THE REGULATION REQUIREMENTS ARE TO BE MET. THE VOLTAGE AT THIS POINT IS SET BY MEANS OF AN OUTPUT VOLTS ADJ. POTENTIOMETER R6 SUPPLIED AS PART OF THE RECTIFIER CONTROL SYSTEM. CLOCKWISE ROTATION OF THE OUTPUT VOLTS ADJ. POTENTIOMETER SHALL CAUSE THE VOLTAGE MEASURED ACROSS R+ TO R- TO INCREASE IN MAGNITUDE. THE BATTERY PLANT MAY HAVE EITHER THE POSITIVE OR NEGATIVE TERMINAL OF THE BATTERY GROUNDED; CONSEQUENTLY EITHER R+ OR R- MAY BE AT GROUND POTENTIAL. AN OPEN CIRCUIT ON EITHER THE R+ OR R- LEAD SHALL CAUSE THE RECTIFIER TO REVERT TO INTERNAL VOLTAGE SENSING, THE VOLTAGE MEASURED AT THE SET POINT SHALL NOT CHANGE MORE THAN 2 VOLTS.

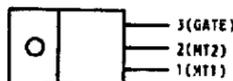
INFORMATION NOTES: (CONT)

309. THIS IS A SELECTIVE HIGH VOLTAGE SHUTDOWN FEATURE; WHENEVER THE VOLTAGE AT THE POINT OF REGULATION EXCEEDS 53.00±0.50 VOLTS, THE BATTERY PLANT CONTROL SYSTEM SENDS A HIGH VOLTAGE SHUTDOWN SIGNAL TO ALL THE RECTIFIERS. IT IS PRESUMED THAT THE HIGH BATTERY VOLTAGE CONDITION IS THE RESULT OF A FAILURE OR MISADJUSTMENT OF THE VOLTAGE FEEDBACK REGULATION LOOP IN ONE OR MORE RECTIFIERS CONNECTED TO THE BATTERY PLANT, AND THE OFFENDING RECTIFIER(S) OUTPUT CURRENT EXCEEDS 10 PERCENT OF ITS RATING. THUS, WHEN A RECTIFIER RECEIVES A HV SIGNAL AND ITS OUTPUT CURRENT EXCEEDS 10 PERCENT OF ITS RATING, THE UNION OF THESE TWO CONDITIONS SHALL CAUSE THE RECTIFIER'S CONTROL SYSTEM TO SHUT DOWN AND LOCK OUT THE RECTIFIER. THE MAXIMUM SHUTDOWN DELAY SHALL BE 150 MILLISECONDS.

310. THE RECTIFIER FAILURE ALARM IS INITIATED WHENEVER AN ANOMALOUS OPERATION OF THE RECTIFIER IS DETECTED AND THE RECTIFIER IS DISCONNECTED FROM THE AC LINE AND LOCKED OUT. FUSE OPERATION, HIGH VOLTAGE SHUTDOWN, ETC.

311. THIS IS A MINOR ALARM SIGNAL WHICH IS TRANSMITTED TO THE OFFICE ALARM NETWORK FOR PROCESSING.

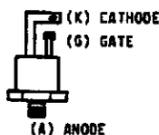
312. THE TERMINAL NUMBER ARRANGEMENT OF THE GE SC142M THYRISTOR IS: (AS VIEWED FROM FACE OF UNIT)



313. RECTIFIERS SHIPPED FROM THE FACTORY PRIOR TO 3-17-86 SHALL BE MODIFIED TO INCLUDE THE (C) AND (D) OPTIONS. RECTIFIERS SHIPPED FROM THE FACTORY 3-17-86 AND LATER SHALL BE MODIFIED TO INCLUDE THE (C) OPTION.

314. THE PLANT CONNECTION IS MADE WITH M205-224, L45 CABLE ASSEMBLY PER SD-82588-01.

315. THE TERMINAL NUMBER ARRANGEMENT OF THE GE, C45P THYRISTOR OR I.R. 72R2A100 THYRISTOR IS:



316. IF 3245C OR 3245D TRANSFORMER, (T3) REQUIRES FIELD REPLACEMENT IT IS NECESSARY TO ORDER A (T3)- TRANSFORMER FIELD REPLACEMENT KIT. REFER TO J85503C-1 DRAWING FOR ORDERING INFORMATION, SEE ENGINEERING NOTE 99 & 80.

317. IN THE LIST 6 (480V<sub>m</sub>) RECTIFIER, ALL UNITS WHICH CONTAIN THE B OPTION (3245B TRANSFORMER) MUST HAVE THEM REPLACED BY THE ZM OPTION (3245G TRANSFORMER).

318. IN THE LIST 2 (208V<sub>m</sub>) AND LIST 4 (240V<sub>m</sub>) RECTIFIERS, ALL UNITS WHICH CONTAIN THE ZA OPTION (3245A TRANSFORMER), MUST HAVE THEM REPLACED BY THE ZN OPTION (3245F TRANSFORMER).

319. IF 531A (DS1 & DS2) OR 531B (DS3) LED REQUIRES FIELD REPLACEMENT, ORDER WP-90184, L5 (COMCODE 403477977) FOR DS1 & DS2 OR WP-90184, L6 (COMCODE 409043654) FOR DS3. IT IS ALSO NECESSARY TO ORDER ONE KS-21320, L110 SLEEVE (COMCODE 408091439) FOR EACH DIODE BECAUSE THE OLD L.E.D SOCKET KS-21320, L-101 CAN NOT ACCOMMODATE THE NEW L.E.D.

320. ALL UNITS IN THE FIELD WHICH CONTAIN 1337B INDUCTORS (L1 & L2) PER SHEET 85 FIG. 1, 'D' OPTION MUST BE MODIFIED PER CN C100030J AS FOLLOWS:

A. REPLACE 70A FUSE (F3) WITH 70G FUSE PER SHEET 81, FIG. 1, 'D' OPTION.

B. REPLACE DESIGNATION PIN KS-14174 L-1 WITH KS-14174 L-7.

C. COVER STAMPINGS 1 1/2 AMP ON CONTROL PANEL 84536652 WITH LABEL 848717189.

USE 70G FUSE FOR FUTURE REPLACEMENTS ON THESE UNITS. FOR THE UNITS WHICH CONTAIN 1337A INDUCTORS (L1 & L2) PER SHEET 85, FIG. 1, 'E' OPTION, (F3) FUSE REMAINS TO BE 70A-1 1/2 AMP FUSE PER SHEET 81, FIG. 'E' OPTION.

321. IF IN THE FUTURE ANY 1337B INDUCTOR, (L1) OR (L2) PER SHEET 85, FIG. 1, 'D' OPTION REQUIRES FIELD REPLACEMENT, BOTH (L1) & (L2) MUST BE REPLACED WITH 1337A INDUCTORS SINCE 1337B INDUCTORS HAVE BEEN MANUFACTURE DISCONTINUED. FOR EACH UNIT, ORDER TWO (2) 1337A INDUCTORS (COMCODE 104154042), TWO (2) CAPACITORS, (G.E.) 97F5349 (COMCODE 405450222) AND ONE (1) WIRE SET WKB (COMCODE 845808252). INSTALL AS PER 'E' OPTION IN SHEET 85 FIG. 1, SHEET 88 FIG. C & FIG. D. IF (F3) FUSE HAS BEEN REPLACED WITH 70G FUSE PER NOTE 82, IT IS NOT NECESSARY TO CHANGE THE FUSE.

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RECTIFIER CIRCUIT J85503C	
DWG SIZE 88	ISSUE 9AC
AT&T TECHNOLOGIES, INC.	SD-83102-01
	SHEET D3

THE FOLLOWING TABLE DOCUMENTS THE CONNECTIONS REQUIRED FROM P2A OF THE CM2 CIRCUIT PACK OF J85503C RECTIFIERS TO SELECTED CONTROL UNITS.

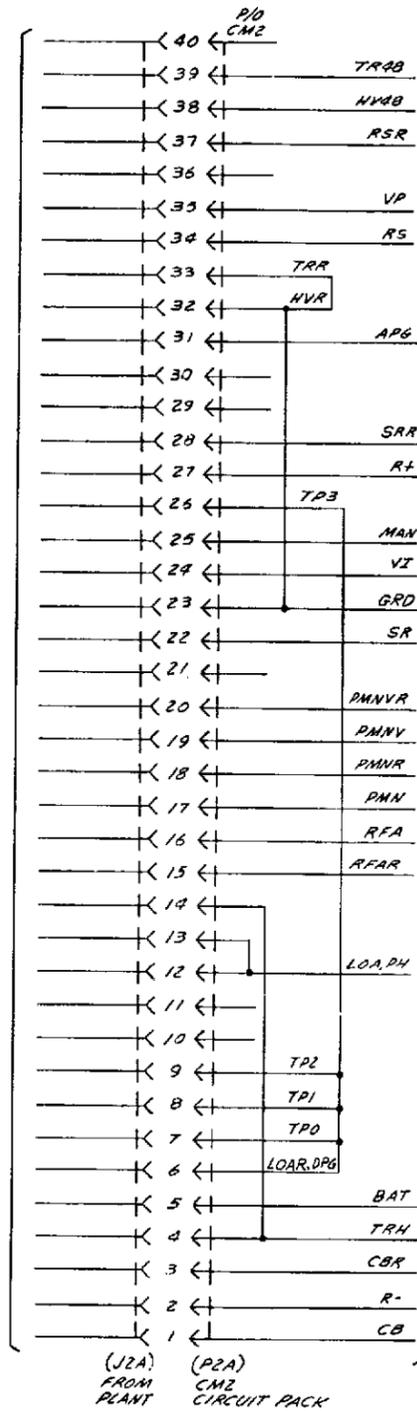
TABLE A

RECTIFIER CM2 CARD	CONTROL UNITS			
	MCS LINEAGE J85501A	CONVENTIONAL LINEAGE AND J85516 A,B,C	111A PLANT	326 PLANT
1	CB	CB	RFA	RFA
2 NOTE 1	RG (RB)	RG (RB)	RG (RC)	RG (RB)
3	CBR	CBR	(PLANT)GRD	(PLANT)GRD
4	TRH			
5	BAT	BAT	CBS	CONT
6	DPG	LOADR		
7	TPD			
8	TP1			
9	TP2			
10				
11				
12	PH	LOA		
13		STRAP TO 14	STRAP TO 14	STRAP TO 14
14		STRAP TO 13	STRAP TO 13	STRAP TO 13
15	RFR	RFR		
16	RFA	RFA		
17		PMN	RFA	RFA
18		PMNR	(PLANT) GRD	(PLANT) GRD
19		PMNV		
20		PMNVR		
21				
22	STRAP TO 28	STRAP TO 28	STRAP TO 28	STRAP TO 28
23		GRD		
24	VI			
25	MAN			
26	TP3			
27 NOTE 1	RB (RG)	RB (RG)	RC (RG)	RB (RG)
28	STRAP TO 22	STRAP TO 22	STRAP TO 22	STRAP TO 22
29				
30				
31	APG			
32		HVR		
33		TRR		
34	RS	RS		RS
35	VP			
36				
37	RSR	RSR		RSR
38 (48V PLANT)	HV	HV	HV	HV
39 (48V PLANT)	TR	TR	TR	TR
40				

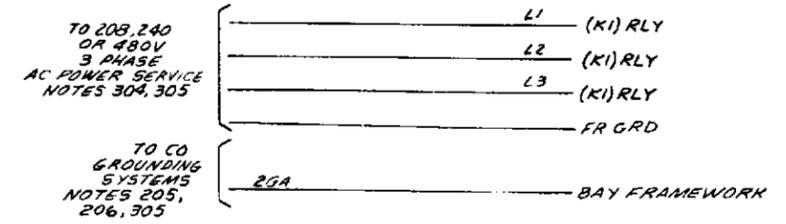
NOTES:

1. THE R- LEAD, PIN 2 OF P2A, MUST BE CONNECTED TO NEGATIVE VOLTAGE FROM THE POINT OF REGULATION. THE R+ LEAD, PIN 27 OF P2A, MUST BE CONNECTED TO A POSITIVE VOLTAGE FROM THE POINT OF REGULATION. THE PLANT LEAD DESIGNATIONS SHOWN WITHOUT BRACKETS ARE FOR A POSITIVE PLANT (NEGATIVE GROUND). THE PLANT LEAD DESIGNATIONS SHOWN IN BRACKETS ARE FOR A NEGATIVE PLANT (POSITIVE GROUND).

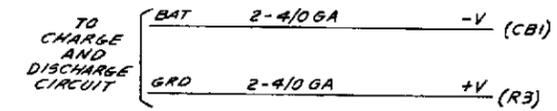
**CAD 1**  
POWER PLANT CONNECTIONS  
SEE NOTE 314



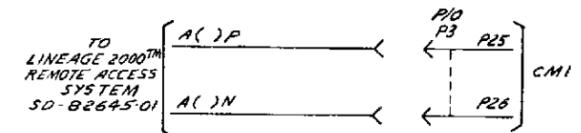
**CAD 2**



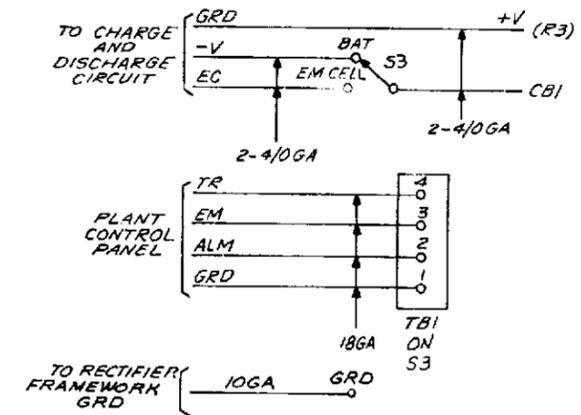
**CAD 3**



**CAD 4**



**CAD 5**



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RECTIFIER CIRCUIT

DWG SIZE  
8S

ISSUE  
5B

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SHEET  
G1