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Z	1		1A8, 108
Y	1		1A8, 108
X	1		1E4, 1G3
W	1		APP FIGS. 1,2,4,8,9,10, 12,14,15,16,134,165, 184,185,1C3,1C5, 1E2,1E3,1E4,1G2,3C2, 3D2,3E1,3F2,3F3,3F5
Y	1		APP FIGS. 1,2,5,7,9,10, 11,15,16,146,184, 185,186,1C3,1C5,1E2, 1E3,1E4,1G2,3C2,3D2, 3E1,3F2,3F3,3F5
U	NO 3		APP FIG. 1
T	1		APP FIGS. 1,7,8,13,14, 181,182,183,181,1C2, 1C3,1D2,1E1,1E2,2C2,2D2
S	1		APP FIGS. 1,5,6,11,12, 181,183,181,182,1C2,1C3, 1D2,1E1,1E2
R	1		APP FIG. 2,3E7
Q	1		APP FIGS. 1,5,6,11,12, 181,183,181,182,1C2, 1C3,1D2,1E1,1E2
P	NO 3		APP FIGS. 5,6,7,8
N	1		APP FIGS. 1,2,3,4,5,6, 7,8,9,17,186,1A4,1A5, 1A7,1B4,188,1C5,1D9, 1D9,1E4,1F2,1G2,1G5, 1H5,1E1
M	1		3E3,3F1
K	1		3E3,3F1
J	1		APP FIG. 3,2D6,2D7,
I	STD 3		APP FIGS. 5,6,7,8

OPTION INDEX (CONT)			
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F	1		APP FIGS. 1,2,3,11, 12,13,14,15,16,1A4, 1A5,1A6,1A7,1B4,185, 186,188,1D3,1D5,1E4, 1F2,1F5,1G2,1G3,3F7,
E	1		APP FIG. 4, 1C2, 1E4,1E9,1G3
D	DA 6		APP FIG. 1
B	1		APP FIG. 17,188,2A5
A	1		APP FIGS. 9,15,1A5, 1C5,1E7,1E8,1E9
ZA	1		APP FIGS. 10,16,1A4, 1A5,1A6,185,186,1C5
ZB	NO 3		APP FIGS. 5,6,7,8,9, 15,1A4,1A5,184,1C5
ZC	STD 3		APP FIGS. 5,6,7,8, 181
ZD	NO 3		APP FIGS. 2,3F6,3F7
ZE	STD 3		APP FIGS. 2,3F6,3F7
ZF	STD 3		APP FIGS. 13,14
ZG	NO 3		APP FIGS. 5-14
ZH	DA 5		APP FIGS. 5-14
ZI	NO 3		APP FIG. 12
ZJ	STD 3		APP FIG. 12
ZK	DA 5		APP FIGS. 5,6,7,8,9, 10,11,12,13,14
ZL	AVAIL 5		APP FIGS. 5,6,7,8,9, 10,11,12,13,14
ZM	DA 5		APP FIG. 2
ZN	AVAIL 5		APP FIG. 2
ZO	AVAIL 5		APP FIGS. 1,2,3
ZP	AVAIL 5		APP FIGS. 1,2,3
ZQ	DA 5		APP FIG. 1, 187,1C6
ZR	AVAIL 5		APP FIG. 1, 187,1C6
ZU	AVAIL 5		APP FIGS. 11-14, 1A4
ZV	AVAIL 6		APP FIG. 1,1A5,1A6, 186,1C6
ZW	AVAIL 6		APP FIG. 1
ZX	DA 6		APP FIG 1, 185
ZY	AVAIL 6		APP FIG 1,1E5,1G4
ZZ	DA 6		APP FIG 1
YA	AVAIL 6		APP FIG 1
YB	AVAIL 7		APP FIG 1
YC	AVAIL 7		APP FIG 1
YD	DA 9		APP FIG 1
YE	AVAIL 9		APP FIG 1
YF	AVAIL 9		APP FIG 1
YD	AVAIL 13		APP FIG 1

DWG NO.	CD	DATE	BY	CHKD
1	1	5-8-89	WJF	WJF
2A	APP 1A	6-17-89		
3B	APP 2B	6-17-89		
4A	APP 3A	6-28-89		
5A	APP 4A	6-28-89		
6A	APP 5A	6-28-89		
7M	APP 6M	3-24-90		
8A	APP 7A	9-28-90	EC	
9B	APP 8B	9-29-90	WJF	
10M	1	11-12-90	WJF	
11M		04-17-91	WJF	
12A	1	8-3-92	WJF	
13M	1	11-10-92	WJF	

SYSTEM USED ON	DESIGN CONTROL
POWER	WJF/PK

SUPPORTING INFORMATION	
CATEGORY	NO.
PRODUCT MANUAL	115-014
OPERATING METHODS	ATP-169-790-104

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UNITO

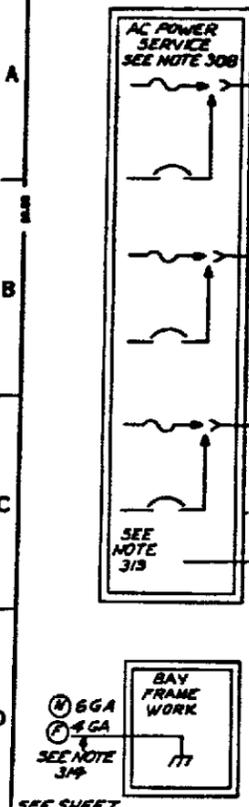
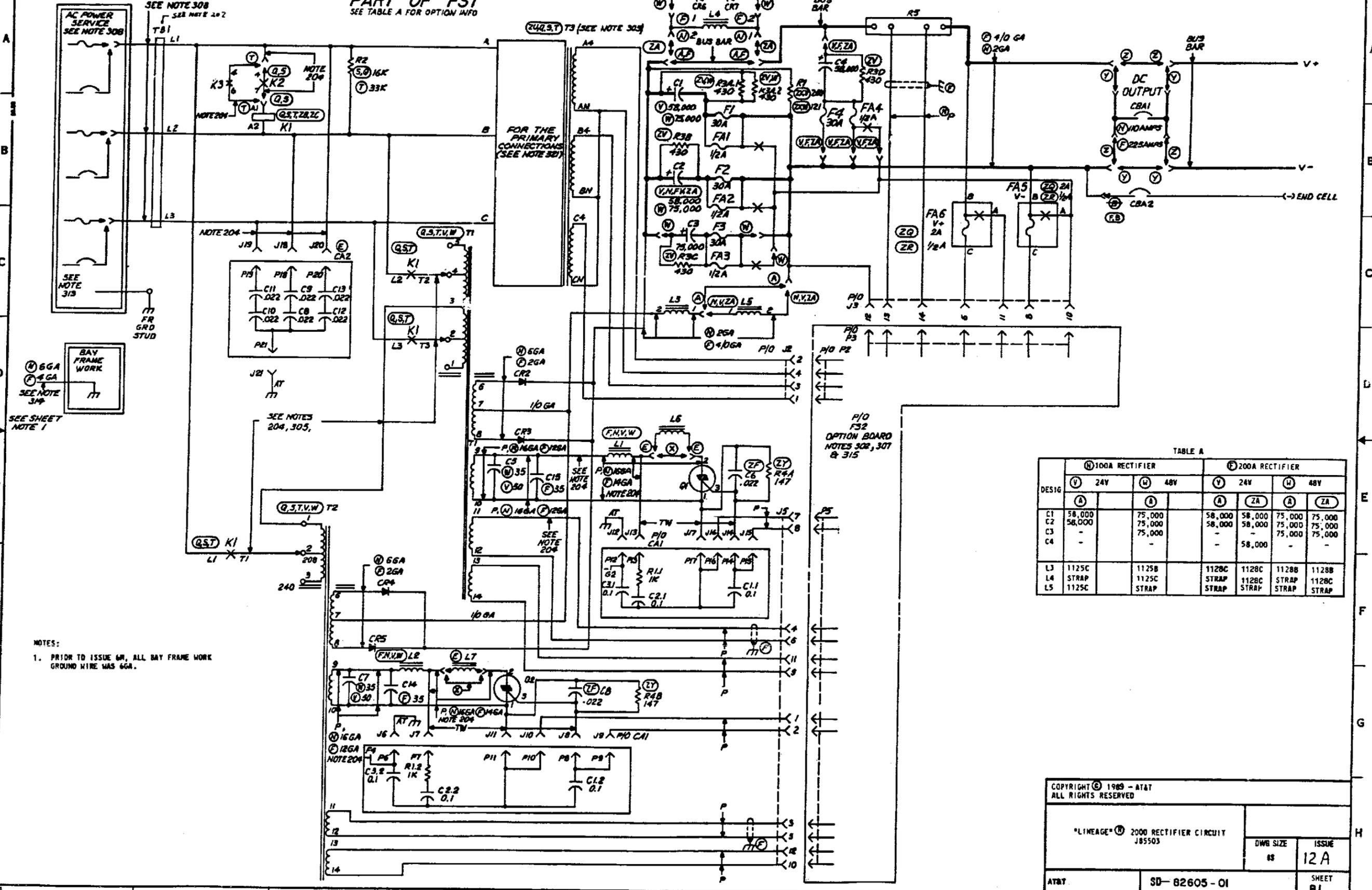
POWER SYSTEMS
"LINEAR" 2000 RECTIFIER CIRCUIT
208/240/480 VOLT, 60Hz, 3 PHASE INPUT
24 OR 48 VOLT, 100 OR 200 AMPERE OUTPUT
J85503A & B

DWG SIZE: 88

ISSUE: 13M

AT&T SD-82605-01 SHEET A1 OF 11

PART OF FSI
SEE TABLE A FOR OPTION INFO



NOTES:
1. PRIOR TO ISSUE 6A, ALL BAY FRAME WORK GROUND WIRE WAS 6GA.

TABLE A

DESIGN	100A RECTIFIER		200A RECTIFIER			
	V 24V	H 48V	V 24V	H 48V	A	ZA
	A	A	A	ZA	A	ZA
C1	58,000	75,000	58,000	58,000	75,000	75,000
C2	58,000	75,000	58,000	58,000	75,000	75,000
C3	-	75,000	-	-	75,000	75,000
C4	-	-	-	58,000	-	-
L3	1125C	1125B	1120C	1128C	1128B	1128B
L4	STRAP	1125C	STRAP	1128C	STRAP	1128C
L5	1125C	STRAP	STRAP	STRAP	STRAP	STRAP

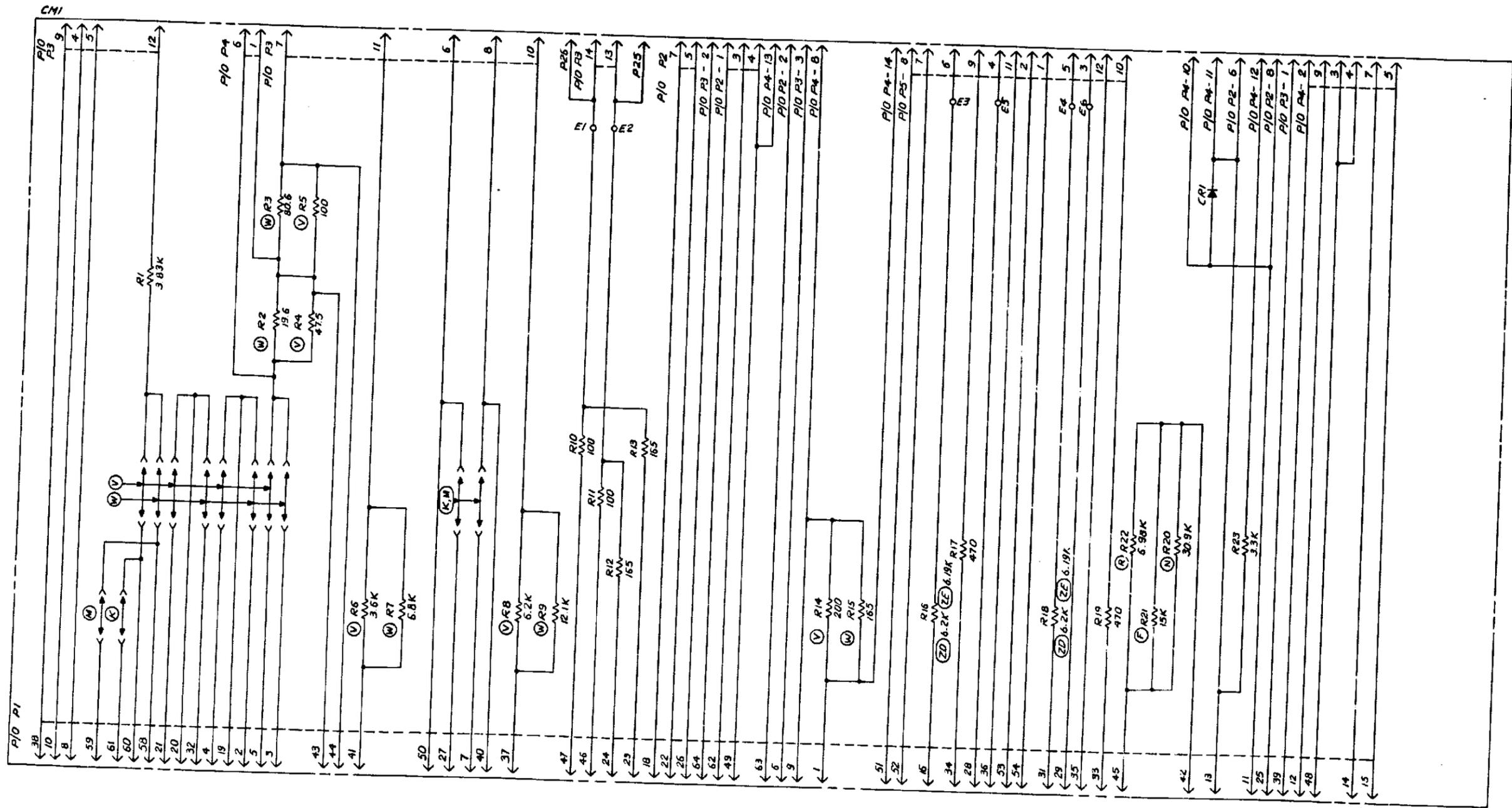
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"LINEAGE" © 2000 RECTIFIER CIRCUIT
J85503

DWG SIZE	ISSUE
AS	12A

AT&T SD-82605-01 SHEET B1

FS 2
OPTION BOARD



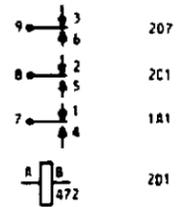
COPYRIGHT © 1987 - AT&T ALL RIGHTS RESERVED		"LINEAGE" ® 2000 RECTIFIER CIRCUIT J85503	
AT&T		DWG SIZE B3	ISSUE 5M
SD-82605-01		SHEET B3	

APP FIG. 1

RELAY

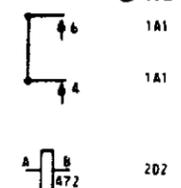
AZ83KX252 STRUTHERS-DUNN INC

K2



KUP305K24 POTTER & BRUMFIELD

K3



CABLE ASSEMBLY

DESIG	LOC	CODE
W1	2C2	(N) 843787408 (F) 845367473

DESIG	LOC	CODE
J1	2C3	1-499571-4, AMP
J1A	2C3	1-499571-4, AMP

COMPONENT ASSEMBLY

DESIG	LOC	CODE
CA1	1E5, 1G4	ED-83162-30, GRP 1, NOTE 1

CAPACITOR

DESIG	LOC	CODE
C1.1	1F5	542L, 0.1
C1.2	1H4	542L, 0.1
C2.1	1F4	KS-14980, L26, 0.1
C2.2	1H3	KS-14980, L26, 0.1
C3.1	1F4	542L, 0.1
C3.2	1F2	542L, 0.1

CONNECTOR

DESIG	LOC	CODE
P6	1G2	836, ZIERICK
P7	1G3	836, ZIERICK
P8	1G4	836, ZIERICK
P9	1G4	836, ZIERICK
P10	1G3	836, ZIERICK
P11	1G3	836, ZIERICK
P12	1F4	836, ZIERICK
P13	1F4	836, ZIERICK
P14	1F5	836, ZIERICK
P15	1F5	836, ZIERICK
P16	1F5	836, ZIERICK
P17	1F5	836, ZIERICK

RESISTOR

DESIG	LOC	CODE
R1.1	1F4	KS-20289, L6C, 1K
R1.2	1H3	KS-20289, L6C, 1K

CIRCUIT MODULE

DESIG	LOC	CODE
CM2	2E4	208A (YB) 208C (YC) SEE NOTE 3B

CONNECTOR

DESIG	LOC	CODE
J2	105	(ZQ) 640440-8, AMP (ZP) 102241-6, AMP 1-102241-8, AMP. (NOTE 2)
J2A	2E2	(ZQ) 1-641190-4, AMP (ZS) 1-102241-2, AMP (ZQ) 1-640440-5, AMP (ZP) 1-102241-3, AMP
J3	1C6, 2A5, 286	(ZQ) 1-641190-2, AMP (ZP) 1-102241-0, AMP 1-350819-2, AMP 2-520183-2, AMP
J4	2A4, 2B5, 286	(ZQ) 1-641190-2, AMP (ZP) 1-102241-0, AMP 1-350819-2, AMP 2-520183-2, AMP
J5	1E5	(ZQ) 1-641190-2, AMP (ZP) 1-102241-0, AMP 1-350819-2, AMP 2-520183-2, AMP
J6	1G2	1-350819-2, AMP 2-520183-2, AMP
J7	1G3	1-350819-2, AMP 2-520183-2, AMP
J8	1G4	2-520183-2, AMP
J9	1G4	2-520183-2, AMP
J10	1G5	2-520183-2, AMP
J11	1G3	2-520183-2, AMP
J12	1E4	1-350819-2, AMP
J13	1E4	2-520183-2, AMP
J14	1E5	2-520183-2, AMP
J15	1E5	2-520183-2, AMP
J16	1E5	2-520183-2, AMP
J17	1E5	2-520183-2, AMP
J18	1C1	2-520183-2, AMP

CONNECTOR (CONT)

DESIG	LOC	CODE
J19	1C1	2-520183-2, AMP
J20	1C2	2-520183-2, AMP
J21	1D1	2-520183-2, AMP

DIODE, LIGHT EMITTING

DESIG	LOC	CODE
DS1	2A4	7544, 531A
DS2	2C5	7544, 531A
DS3	2C5	7544, 531B

FUSE

DESIG	LOC	CODE
FA5	1B7	(ZQ) 708 (ZR) 70G (ZQ) 708 (ZR) 70G
FA6	1C6	

POTENTIOMETER

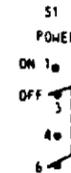
DESIG	LOC	CODE
R6	2A5	(ZQ) 35405-701-102, 1K, BOURNS (ZD) M22510, 1K, 405591082 MFCPC/CDPAL

RESISTOR

DESIG	LOC	CODE
R1	1A5	(ZM) KS-8512, L8A, 200, (ZM) KS-8512, L13, 121
R2	1A2	(O, S) KS-20084, L9A, 16K (T) KS-20084, L9A, 33K
R3A.1	1A5	KS-14603, L240, 430
R3A.2	1A5	KS-14603, L240, 430
R3B	1B4	KS-14603, L240, 430
R3C	1C4	KS-14603, L240, 430
R3D	1A6	KS-14603, L240, 430

SWITCH

DESIG	LOC	CODE
S1	2C5, 2C7	U21-J21-Z0E-3-2, WITH RED LEVER, C&K
S2	2B4, 2B7	U215-J21-Z0E-1-2, WITH WHITE LEVER, C&K



TEST POINT

DESIG	LOC	CODE
TP1	2B6	KS-20667, L2
TP2	2B6	KS-20667, L2

THYRISTOR

DESIG	LOC	CODE
Q1	1E5	(N, U) SC260M21357, G. E. CO.
Q2	1G3	(F, N, D) MAC25-10, MOTOROLA (Z, W) MAC25A-10, MOTOROLA (Y, F) T2512MK, RAYTHEON (Y, D) BTA40-800B, SPS THOMPSON

NOTES:

- P6 AND P12 ARE NOT STRAPPED ON THE ED-83162-30 GRP1, ISS L2 CIRCUIT ASSEMBLIES OF THE EARLY PRODUCTION.
- J2A CONNECTOR WILL BE FURNISHED AS A PART OF THE PLANT CABLE PER SD-82588-01. THE CODE IS FOR A REFERENCE ONLY.

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"LINERULE" 200G RECTIFIER CIRCUIT
J85503

OWN SIZE 68	ISSUE 13M
AT&T	SD-82605-01
	SHEET C1

APP FIG. 2

CIRCUIT MODULE

DESIG	LOC	CODE
CM1	3E4	ED-83159-30
		ED-83159-30, GRP 2
		ED-83159-30, GRP 1
		ED-83159-30, GRP 1A

NOTE 315

CONNECTOR

DESIG	LOC	CODE
P1	2C3, 3G0	1-499900-2, AMP
P2	106, 2C1	640456-8, AMP
		102202-5, AMP
P3	106, 2B5, 2B6	1-641126-4, AMP
		1-102202-1, AMP
P4	2B4, 2B6, 2C5	1-640456-5, AMP
		1-102202-2, AMP
P5	1E6	1-641126-2, AMP
		1-102202-9, AMP

DIODE

DESIG	LOC	CODE
CR1	3C7	WP-90015, L3

RESISTOR

DESIG	LOC	CODE
R1	3C1	WP-90033, L1, 3.83K
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	3E4	WP-90033, L1, 100
		KS-16311, L4F, 100
R11	3E4	WP-90033, L1, 100
		KS-16311, L4F, 100
R12	3F4	WP-90033, L1, 165
R13	3F3	WP-90033, L1, 165
R14	3F5	WP-90033, L1, 200
R15	3F5	WP-90033, L1, 165
R16	3F6	WP-90020, L1, 6.2K
		KS-20616, L1A, 6.19K
R17	3E6	WP-90020, L1, 470
R18	3F6	WP-90020, L1, 6.2K
		KS-20616, L1A, 6.19K
R19	3F7	WP-90020, L1, 470
R20	3E7	KS-20616, L1A, 30.9K
		KS-16311, L4F, 50.9K
R21	3F7	KS-20616, L1A, 15K
		KS-16311, L4F, 15K
R22	3E7	KS-20616, L1A, 6.98K
		KS-16311, L4F, 6.98K
R23	3E8	WP-90020, L1, 3.3K

APP FIG. 3

CABLE ASSEMBLY

DESIG	LOC	CODE
W2	2E6	NJ 843782665
		F.J.ZP 845367473
		F.J.ZD 343782665

CONNECTOR

DESIG	LOC	CODE
J1B	2D7	I-640440-5, AMP
J3A	2D6	I-640440-5, AMP

CIRCUIT MODULE

DESIG	LOC	CODE
CM3	2D7	2C7A

APP FIG. 4

COMPONENT ASSEMBLY

DESIG	LOC	CODE
CA2	1C2	ED-83183-30

CAPACITOR

DESIG	LOC	CODE
C8	1C2	PME289MB5220M, .022, R1FA
C9	1C2	PME289MB5220M, .022, R1FA
C10	1C1	PME289MB5220M, .022, R1FA
C11	1C1	PME289MB5220M, .022, R1FA
C12	1C2	PME289MB5220M, .022, R1FA
C13	1C2	PME289MB5220M, .022, R1FA

CONNECTOR

DESIG	LOC	CODE
P18	1C2	401799721
P19	1C1	401799721
P20	1C2	401799721
P21	1D1	401799721

INDUCTOR

DESIG	LOC	CODE
L6	1D4	1214A
L7	1F3	1214A

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LINEAGE 2000 RECTIFIER CIRCUIT
J85503

DWG SIZE
85

ISSUE
5M

AT&T SD-82605-01

SHEET
C2

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APP. FIG.			5	6	7	8	11	12	13	14	REMARKS
OPTION			N,Q,S,V	N,Q,S,W	N,T,V	N,T,W	F,Q,S,V	F,Q,S,W	F,T,V	F,T,W	
COMPONENT	DESIG	LOC	CODE	CODE	CODE	CODE	CODE	CODE	CODE	CODE	
RELAY	K1	1B3, 1C3, 1D3, 1E1	(ZB) 425CX106 (ZB) 425CX107	(ZC) ACC-330-8089C ARROW-HART	(ZB) 425CX108 (ZC) ACC-330-8089D ARROW-HART	ACC430-8070C ARROW-HART 2200E83308A-4-11-9 (LINE)	ACC430-8070C ARROW-HART 2200E83308A-9 (LINE)-15-(ALL)	ACC430-8070D ARROW-HART 2200E83308A-63-11-9 (LINE) (TELEMECHANIQUE)	ACC430-8070D ARROW-HART 2200E83308A-63-11-9 (LINE) (TELEMECHANIQUE)	FOR TERMINAL NUMBERING SEE NOTES 1, 3 & 7	
CAPACITOR	C5	1E3	97F325L 97F5165AA6,35 GECO NOTE 5	97F3136 97F5165AA6,35 GECO NOTE 5	97F325L 97F5165AA6,35 GECO NOTE 5	97F3136 97F5165AA6,35 GECO NOTE 5	97F3150 97F5205AA6,35 GECO NOTE 5	97F3208 97F5205AA6,35 GECO NOTE 5	97F3150 97F5165AA6,35 GECO NOTE 5	97F3208 97F5205AA6,35 GECO NOTE 5	
	C7	1G2	97F9009,50	97F9250,35	97F9009,50	97F9250,35	97F9009,50	97F9250,35	97F9009,50	97F9250,35	
	C14	1G2					97F3136 97F5165AA6,35 GECO NOTE 5	97F3136 97F5165AA6,35 GECO NOTE 5	97F3136 97F5165AA6,35 GECO NOTE 5	97F9250,35	
	C15	1E4					97F3136 97F5165AA6,35 GECO NOTE 5	97F3136 97F5165AA6,35 GECO NOTE 5	97F3136 97F5165AA6,35 GECO NOTE 5	97F9250,35	
	C6	1E5									
	C8	1G4							(ZF) WP-90004, L5, .022		
CIRCUIT BREAKER	C8A1	1B8	KS-22010, L38				KS-22012, L51				
DIODE	CR2	1D3	(ZK) (P) 7ZHF20, INTERNATIONAL RECTIFIER CORP, NOTE 2 (C) KS-19404, L1				(ZK) IN4047 OR IN2057, WESTINGHOUSE OR INTERNATIONAL RECTIFIER CORP. NOTE 4.				
	CR3	1D3									
	CR4	1F2									
	CR5	1F2	(ZL) KS-19404, L58 ISOK80A, INTERNATIONAL RECTIFIER				(ZL) WP-91147, L88S				
INDUCTOR	L1	1E4	1126G	1126F	1126G	1126F	1375A	1373B	1375A	1373B	
	L2	1G2	1126G	1126F	1126G	1126F	1375A	1373B	1375A	1373B	
RESISTOR	R4A	1E5					(Z7) WP-90033, L1, 147R				
	R4B	1G4								SEE NOTE 8	
SHUNT	R5	1A6	125-50, TYPE A, EMPRO CORP				250-50 TYPE A, EMPRO CORP				
TRANSFORMER	T1	1C3	3107A	3106A	3107D	3106D	3260A	3261A	3260C	3261C	
	T2	1E2	3107B	3106B	3107E	3106E	3260B	3261B	3260D	3261D	
	T3	1A4	(ZG) 3245A (ZH) 3245C	(ZU) 3245F	(ZG) 3245B (ZH) 3245D	(ZU) 3245G	(ZG) 3245A (ZH) 3245C	(ZU) 3245F	(ZG) 3245B (ZH) 3245D	(ZU) 3245G	FOR TERMINAL NUMBERING SEE NOTE 6

- NOTES:
- TERMINAL NUMBERING FOR 425CX106, 425CX107 AND 425CX108 RELAYS IS:
 - EARLY PRODUCTION MAY USE WP-90160, L1 DIODE.
 - THE TERMINAL LOCATIONS FOR THE ARROW-HART RELAYS ARE:
 - THE CR2-CR5 DIODES SHALL BE OF THE SAME CODE AND SOURCE.
 - THE LINED OUT CODES IN STOCK MAY BE USED ONLY IF THEIR CAPACITANCE MEASURES TO WITHIN ±6% OF THE NOMINAL.
 - THE TERMINAL LOCATIONS OF THE TRANSFORMERS ARE:
 - THE PREFERRED CONTACTOR IS THE TELEMECHANIQUE BUT THE ARROW-HART IS AN APPROVED SUBSTITUTE.
 - EARLY PRODUCTION UNITS MAY USE 487D OR 140D.

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J85503

DWG SIZE: 85
ISSUE: 11M

AT&T SD-82605-01 SHEET C3

0 1 2 3 4 5 6 7 8 9

A
B
C
D
E
F
G
H

APP FIG			9	10	15	16	NOTE		
OPTION			N,A,V	N,A,W	F,A,V	F,A,W		F,ZA,V	F,ZA,W
COMP	DESIG	LOC	CODE	CODE	CODE	CODE			
CAPACITOR	C1	1A4	(V) KS-20133, L114, 58000 (W) KS-22688, L3, 75000						
	C2	1B4	(W) KS-22688, L3, 75000	(V) KS-20133, L114, 58000					
	C3	1C5	(W) KS-22688, L3, 75000						
	C4	1A6				(V) KS-20133, L114, 58000			
DIODE	CR6	1A5	(W) WP-91362, L2AR D75NR400B MOD 1 (E,W)		(W) WP-91362, L2AR D75NR400B MOD 1 (E,W)		SEE NOTE 1		
	CR7	1A5	(W) WP-91362, L2A D75N400B MOD 1 (E,W)		(W) WP-91362, L2A D75N400B MOD 1 (E,W)		SEE NOTE 1		
FUSE	F1	1B5	KS-19780, L6, 30A						
	F2	1B5							
	F3	1C5	(W) KS-19780, L6, 30A						
	F4	1B5				(V) KS-19780, L6, 30A			
	FA1	1B5	70G						
	FA2	1B5							
	FA3	1C5	(W) 70G						
	FA4	1B6				(V) 70G			
INDUCTOR	L3	1C4	(V) 1125C (W) 1125B		(V) 1128C (W) 1128B				
	L4	1A5	(W) 1125C			1128C			
	L5	1C5	(V) 1125C						

(F.B) APP. FIG. 17

CIRCUIT BREAKER
 DESIG LOC CODE
 CBA2 1B8 KS-22012, L51 SEE NOTE 324

NOTES:
 1. EARLY PRODUCTION UNITS MAY USE WP91362, L2AR OR 72 HFR20 FOR CR6 AND WP91362, L2A OR 72HF20 FOR CR7.

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LINEAGE 2000 RECTIFIER CIRCUIT
 J85503

DWB SIZE 83 ISSUE 9B

AT&T SD-82605-01 SHEET C4

0 1 2 3 4 5 6 7 8 9

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER

BATTERY SYMBOL	VOLTAGE RANGE
----------------	---------------

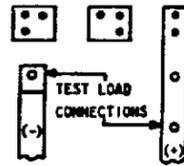
FOR AC REQUIREMENT, SEE NOTE 308.

EQUIPMENT NOTES:

- 201. ALL 2GA AND 4/0 WIRE SHALL BE KS-20921, L1.
- 202. ALL WIRING SHALL BE KS-22247, L4 STRANDED UNLESS OTHERWISE SPECIFIED.
- 203. ALL WIRING OF UNSPECIFIED SIZE SHALL BE 22GA.
- 204. THIS WIRING SHALL BE KS-22247, L5 STRANDED.
- 205.

J85503B OUTPUT CONNECTIONS

BATTERY POLARITY	OUTPUT LEAD LOCATIONS		
NEG BATTERY WITH END CELLS (2, D)	END CELL	BAT	GRD
POS. BATTERY (T)	NOT EQUIPPED	GRD	BATT
NEG. BATTERY (Z)	NOT EQUIPPED	BAT	GRD



- 206. USING RELEASABLE CABLE TIES PROVIDED WITH THE RECTIFIER, SECURE THE PLANT CONTROL CABLE TO THE ONE UPPER MOST TIE ANCHOR ON THE LEFT SIDE PANEL AND THE THREE UPPER MOST TIE ANCHORS ON THE DOOR.

207. T&B NOT USED ON J85503B-1. INPUT CONDUCTORS CONNECT DIRECTLY TO KI.

325. IF LOCAL CODES PERMIT AND THE CUSTOMER DESIRES TO CONNECT OVERHEAD AC RACEWAY TO THE RECTIFIER WITH FLEX STEEL CONDUIT, A FLEX STEEL CONDUIT KIT MAY BE ORDERED FOR J85503B-1 L2 & L4. ORDER KIT 8032771 WHICH CONSISTS OF 17 INCHES OF 1 1/4 INCHES FLEX STEEL CONDUIT, (2) KS20766L30 CONNECTORS & (2) KS20766 L114 INSULATING BUSHINGS. FOR J85503B-1 L1, L3 & L5, ORDER KIT 8032772 WHICH CONSISTS OF 17 INCHES OF 3/4 INCH FLEX STEEL CONDUIT, (2) T&B 3718 CONNECTORS, (2) T&B 3707 REDUCING WASHERS & (2) T&B 223 INSULATING BUSHINGS.

326. REMOVE THE PROPER WIRE STRAPS AND RESISTORS ON (CM) OPTION BOARD PER THE FOLLOWING TABLE:

ED 8358-30 GROUP 1A OR 2 (CM) BOARD OPTIONS FOR J85503A AND J85503B-1		
OPTION	KEEP STRAPS OR RESISTORS MARKED WITH	REMOVE STRAPS OR RESISTORS MARKED WITH
100-AMPERE OUTPUT (J85503A-1)	N	F, R
200-AMPERE OUTPUT (J85503B-1)	F	N, R
24 VDC OUTPUT	V	W
48 VDC OUTPUT	W	V
EM CELL CHARGING (L17) OF J85503A-1 OR J85503B-1	EQUIPPED	K, M & "K, M"
	NOT EQUIPPED	K, M & "K, M"

NOTE: FOR INITIAL BATTERY CHARGING, REMOVE STRAPS MARKED "K" AND "M" (NOT "K, M"). WHEN COMPLETED, REPLACE THE STRAPS.

INFORMATION NOTES: (CONT)

315. DIFFERENT VERSIONS OF THE CM1 OPTION BOARD HAVE OPTIONS INCLUDED AND SHOULD BE USED IN DIFFERENT RECTIFIERS AS FOLLOWS:

VERSION	OPTIONS	RECTIFIER	
		100A	200A
ED-83159-30	ZM, ZD	OK	NO
ED-83159-30 GRP1			
ED-83159-30 GRP1A	ZM, ZD	NO	OK
ED-83159-30 GRP2	ZM, ZP	NO	OK

316. THE P25 AND P26 CONNECTORS PROVIDE A DC SIGNAL PROPORTIONAL TO THE RECTIFIER OUTPUT CURRENT. P25-P26 ARE NOT INCLUDED IN EARLY PRODUCTION.

317. THE 200 AMPERE RECTIFIERS MUST USE 207A DIGITAL METER, SERIES 3 OR HIGHER.

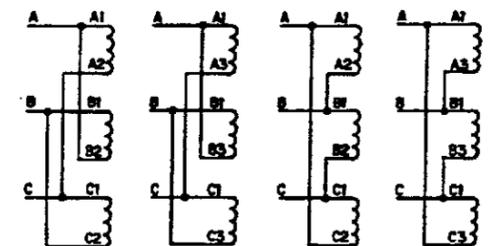
318. 200A RECTIFIER USED FOR BATTERYLESS OPERATION MUST USE 208C CONTROL MODULE (OPTION VC). ALL OTHER 200A RECTIFIERS MUST USE 208A CONTROL MODULE, SERIES 5 OR HIGHER.

319. PRIOR TO ISSUE 5A, COLUMNS HEADED "STD", "NO", ETC., CONVEYED APPLICATION INFORMATION. AT ISSUE 5A, COLUMNS HEADED "AVAIL" AND "DA" NOW INDICATE THE AVAILABILITY OF THE PRODUCT.

320. ON EARLY PRODUCTION UNITS, IF THE 3245C OR D TRANSFORMERS ARE BEING REPLACED BY A 3245F OR G, A WIRING KIT WILL BE FURNISHED TO FACILITATE REPLACEMENT. ON 100 AMPERE RECTIFIERS, USE OF THE 3245F OR G TRANSFORMERS REQUIRES THAT THE CONTROL CIRCUIT BE UPGRADED TO 208A SERIES 5 OR HIGHER.

321. OPTIONS FOR EACH CODE ARE APPLICABLE TO TRANSFORMER T3 OF FS1.

- (ZG, Q) 3245A
- (ZG, S) 3245A (ZM, Q) 3245C (ZU, Q) 3245F
- (ZM, S) 3245C (ZM, T) 3245D (ZU, S) 3245F (ZU, T) 3245G



322. IN THE J85503A (100A) RECTIFIER, ALL LIST 1, LIST 2, LIST 3 & LIST 4 UNITS WHICH CONTAIN THE ZG OPTION 3245A TRANSFORMER, MUST HAVE THEM REPLACED BY THE ZU OPTION 3245F TRANSFORMER. ALL LIST 5 & LIST 6 WHICH CONTAIN THE ZG OPTION 3245B TRANSFORMER MUST HAVE THEM REPLACED BY THE ZU OPTION 3245G TRANSFORMER.

323. IF 531A (DS1 & DS2) OR 531B (DS3) LED REQUIRES FIELD REPLACEMENT, ORDER WP-80184, L5 (COMCODE 405477977) FOR DS1 & DS2 OR WP-80184, L6 (COMCODE 405049854) 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.

324. CB42 IS ONLY OFFERED FOR 200 AMP RECTIFIER. FOR 100 AMP RECTIFIER, END CELL CHARGING CAPABILITY IS OFFERED WITHOUT ADDITIONAL CIRCUIT BREAKER. J85503A-1 E/W L17 CAN ONLY BE USED IN RECTIFIER BAY EQUIPPED WITH EXTERNAL EM CELL CHARGING BUS SWITCH, SUCH AS J87248 4-PACK RECTIFIER BAY OF 302A OR 302B PLANT.

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"LINEAGE" ® 2000 RECTIFIER CIRCUIT J85503		DWG SIZE	ISSUE
		68	12A
AT&T	SD-82605-01	SHEET 01	

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 307 AND 308.

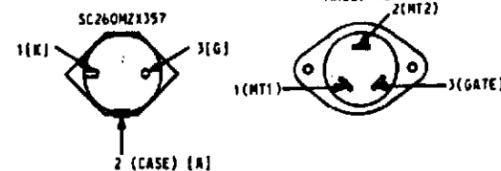
FEATURE OR OPTION	PROVIDE			
	APP FIG	APP OR HRG	QUANTITY	
OUTPUT GROUND	NEGATIVE	1, 2	1	
	POSITIVE	2	1	
EMI FILTERING FOR AUTOPLEX APPLICATIONS (NOTE 312)	EQUIPPED	4	E	
	NOT EQUIPPED	-	X	
100 AMPERE OUTPUT W/O END CELL CHARGING	208VAC INPUT	24V OUTPUT	5	V, S
		48V OUTPUT	6	A, S
		24V	5	V, Q
		48V	6	H, Q
	240VAC	24V	7	V, T
		48V	8	A, T
	480VAC	24V	9	V, A
		48V	8	H, A
	OUTPUT FILTER	STD	9	V, A
				H, A
	METER	DIGITAL	3	J
		NONE	-	-
		3	J, F	
200 AMPERE OUTPUT NOTES 317 & 318	208VAC INPUT	24V	11	V, S
		48V	12	H, S
		24V	11	V, Q
		48V	12	H, Q
	240VAC	24V	13	V, T
		48V	14	H, T
	480VAC	24V	15	V, A
		48V	16	H, A
	OUTPUT FILTER	STD	15	V, A
				H, A
		SPL	16	V, ZB
				A, ZB
END CELL CHARGING	EQUIPPED	17	B	
	NOT EQUIPPED	-	K, H	
BATTERYLESS OPERATION	208VAC INPUT	SPL OUTPUT FILTER	1, 12, 16	W, S, ZA, YC
400 AMPERE OUTPUT (FS 2 ONLY)				R

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			
				STD	AAP	ND	
3B	D OR U	U		D		U	
	G OR P	P		G		P	
	ZC OR ZB	ZB		ZC		ZB	
	ZE OR ZD	ZD		ZE		ZD	
	-	NONE		ZF			
	ZG OR ZH	ZG		ZH		ZG	
	ZI OR ZJ	ZI		ZJ		ZI	
				AVAIL		DA	
	5M SEE NOTE 319	ZO OR ZP	ZO	315	ZP		ZO
		ZQ OR ZR	ZQ		ZR		ZQ
ZS OR ZT		ZS	315	ZT		ZS	
ZU		ZU	320	ZU		ZU	
6M	ZV OR ZX	ZX		ZV		ZX	
		NONE		ZY			
	ZZ OR YA	ZZ		YA		ZZ	
	D OR ZH	D		ZM		D	
7M	YB OR YC	YB	318	YB, YC			
8A	ZG OR ZU	ZG	322	ZU		ZG	
9M	YD OR YE	YD	323	YE		YD	
	ZW OR YF	ZW		YF		ZW	
10M	YB OR YC	YB		YB		YC	
13A	YF OR YB	YF		YB		YF	

304. THE TERMINAL NUMBER ASSIGNMENTS OF THE SC260MZX357, GE CO. & M4C25-10, -M4F0806A THYRISTOR ARE:



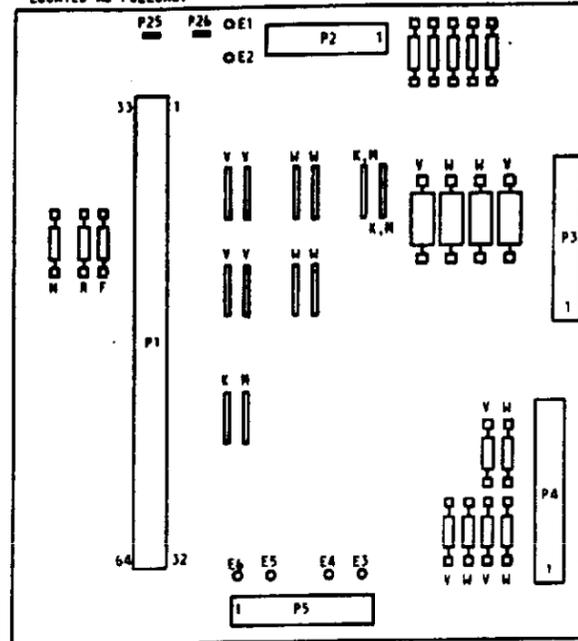
305.

TAPS	LINE VOLTAGE RANGE	NOM VOLTAGE
S, Q OPTION		
A ₂ , B ₂ , C ₂	184-220	208
A ₃ , B ₃ , C ₃	212-254	240
T OPTION		
A ₃ , B ₃ , C ₃	424-508	480
TAPS		
S, Q OPTION		
2	184-220	208
3	212-254	240
T OPTION		
3	424-508	480
TAPS		
S, Q OPTION		
2, 4	184-220	208
1, 5	212-254	240
T OPTION		
1, 5	424-508	480

INFORMATION NOTES: (CONT)

306. DO NOT PARALLEL WITH THE RS LEADS OF J87434 OR J87435 RECTIFIERS.

307. ON THE CM1 OPTION BOARD THE OPTION STRAPS AND RESISTORS ARE LOCATED AS FOLLOWS:



308.

AC POTENTIAL	OUTPUT		LINE FUSES**		INPUT CONDUCTORS	
	VOLTS	AMPS	TYPE FN	UL APP'D FUSE, BUSSMANN	KS-54B2-D1	KS-207B5H
208, 220	24	100	15	FRN-R 15	4-#14	3-#14
		200	30	FRN-R 30	4-#10	3-#10
		400	60	FRN-R 60	4-#10	3-#10
	48	100	25	FRN-R 25	4-#10	3-#10
		200	50	FRN-R 50	3-#6, 1-#10	3-#6
		400	100	FRN-R 100	3-#6, 1-#10	3-#6
230, 240	24	100	15	FRN-R 15	4-#14	3-#14
		200	25	FRN-R 25	4-#10	3-#10
		400	50	FRN-R 50	4-#10	3-#10
	48	100	25	FRN-R 25	4-#10	3-#10
		200	45	FRN-R 45	3-#6, 1-#10	3-#6
		400	90	FRN-R 90	3-#6, 1-#10	3-#6
480	24	100	15	FRS 10	4-#14	3-#14
		200	15	FRS-R 15	4-#14	3-#14
		400	30	FRS-R 30	4-#14	3-#14
	48	100	15	FRS-R 15	4-#14	3-#14
		200	25	FRS-R 25	4-#10	3-#10
		400	50	FRS-R 50	4-#10	3-#10

* KS-207B5 COMES EQUIPPED WITH A BARE GROUND CONDUCTOR.
 ** CIRCUIT BREAKERS WITH SAME RATING AS FUSE CAN BE USED.

309. THE PLANT CONNECTION IS MADE WITH M285-224, L () CABLE ASSEMBLY PER SD-82588-01.

INFORMATION NOTES: (CONT)

310. THE ISOLATED CURRENT MEASURING CIRCUIT ON THE 208A OR 208C CIRCUIT MODULE CAN BE ADJUSTED IN AN OPERATING RECTIFIER BY FOLLOWING THE PROCEDURE OUTLINED BELOW:

1. THE "E" TEST POINTS SHALL ALWAYS BE POSITIVE WITH RESPECT TO EITHER E17 OR E14 TERMINALS FOR ALL VOLTAGE REQUIREMENTS.
2. WITH THE RECTIFIER TURNED ON AND DELIVERING CURRENT, ADJUST ITS OUTPUT VOLTS ADJ POTENTIOMETER SO THAT THE OUTPUT AMMETER INDICATES ZERO CURRENT.
3. USING A DVM MEASURE THE VOLTAGE APPEARING BETWEEN TEST POINT E5 AND E14. THIS VOLTAGE SHALL BE LESS THAN 0.5 VOLTS.
4. MEASURE AND RECORD THE VOLTAGE AT E6 WITH RESPECT TO E17. THIS VOLTAGE SHALL BE 5.59 TO 6.41 VOLTS. THIS VOLTAGE WILL BE REFERRED TO AS V6.
5. MEASURE THE VOLTAGE AT E11 WITH RESPECT TO E14 AND IF NECESSARY, ADJUST POTENTIOMETER R07 SO THAT THE VOLTAGE AT E11 = (1.1667 x V6) - 1. THE V6 VOLTAGE IS THAT WHICH WAS OBTAINED IN STEP 4.
6. CONNECT THE DVM ACROSS E7 AND E17 AND ADJUST POTENTIOMETER R06 SO THAT THIS VOLTAGE IS 2.0 VOLTS. IF THIS ADJUSTMENT IS NOT POSSIBLE, THEN IT WILL BE NECESSARY TO REPEAT THIS PROCEDURE STARTING WITH STEP 2.
7. ADJUST THE VOLTS ADJ POTENTIOMETER SO THAT THE RECTIFIER IS DELIVERING APPROXIMATELY 10 AMPERES AS READ ON THE OUTPUT AMMETER. THIS CAN BE MEASURED MORE ACCURATELY BY MEASURING THE VOLTAGE APPEARING ACROSS THE SHUNT TERMINALS. THE VOLTAGE READ WILL BE IN MILLIVOLTS. EACH AMPERE READ ON THE METER IS EQUAL TO 2.5 AMP/100 ON 100 AMPERE RECTIFIERS AND 5 AMP/100 ON 200 AMPERE RECTIFIERS.
8. BASED ON THE READING OBTAINED IN STEP 7, MEASURE THE VOLTAGE APPEARING ACROSS E7 AND WITH RESPECT TO E17. THIS VOLTAGE SHALL BE: $V7 = 2V + (V \text{ SHUNT} \times 160)$. THE TABLE BELOW SHOWS SAMPLE MEASUREMENTS.

SHUNT VOLTAGE MILLIVOLTS	OUTPUT CURRENT		VOLTAGE ACROSS E5 TO E14	VOLTAGE ACROSS E7 TO E17
	100A	200A		
10.0	25A	50A	800mV ± 2%	3.60V ± 2%
20.0	50A	100A	1.60V ± 2%	5.20V ± 2%
30.0	75A	150A	2.40V ± 2%	6.80V ± 2%
40.0	100A	200A	3.20V ± 2%	8.40V ± 2%

NOTES:

1. THE FOLLOWING EQUIPMENT IS NEEDED TO PERFORM THE TESTS SHOWN ABOVE:
 - (a) DIGITAL METER
 - (b) CALCULATOR
 - (c) TRIMPOT SCREWDRIVER
2. THE VOLTAGE APPEARING ACROSS E5 TO E14 IS 80 TIMES THE MILLIVOLT READING OBTAINED ACROSS THE SHUNT (10%).
311. WHEN THE CM3 DIGITAL METER IS FIRST INSTALLED IN RECTIFIER, ADJUST THE R15 POTENTIOMETER ON CM3 TO OBTAIN 1.000 VOLT BETWEEN E1 AND E2. USE KS-22861, L1 METER OR EQUIVALENT.
312. THE EMI FILTERING PER E OPTION IS ONLY FOR THE 200 AMP, 24V RECTIFIERS WHEN USED IN THE AUTOPLEX APPLICATIONS.
313. AC EQUIPMENT GROUND CONDUCTOR SHALL BE PROVIDED AS SPECIFIED IN ATTP 802-001-180 (ATTP 802-001-198).
314. PROVIDE A NO. 4 (F OPTION) OR A NO. 6 (W OPTION) ANG KS-54B2-D1 FRAME GROUNDING CONDUCTOR FROM THE BAY FRAMEWORK THAT MOUNTS THE RECTIFIER TO THE C.O. GRD SYSTEM IN ACCORDANCE WITH FRAME GROUNDING REQUIREMENTS PER ATTP 802-001-180. WHEN THE C.O. GRD SYSTEM IS NOT INSTALLED IN THE OFFICE AND THE RECTIFIER IS ASSOCIATED WITH: (A SINGLE CONDUCTOR MAY BE MULTIPLIED TO GROUND ALL RECTIFIER BAYS.)
 - A) AN ESS DEDICATED POWER PLANT HAVING AN INSULATED DISCHARGE GROUND BUS, THE CONDUCTOR SHALL BE CONNECTED TO THE GROUND WINDOW, IF NEARER, OR TO THE SAME GROUND POINT (IE, WATER PIPE) THAT THE ESS GROUND WINDOW BUS IS GROUNDED TO OR,
 - 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.

INFORMATION NOTES CONTINUED ON SHEET 01.

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"LINEAGE" 2000 RECTIFIER CIRCUIT J85503		DWG SIZE	ISSUE
		W	13M
AT&T	SD-82605-01	SHEET 02	

THE FOLLOWING TABLE DOCUMENTS THE CONNECTIONS REQUIRED FROM P2A OF THE CM2 CIRCUIT PACK OF J85503 RECTIFIER TO SELECTED CONTROL UNITS.

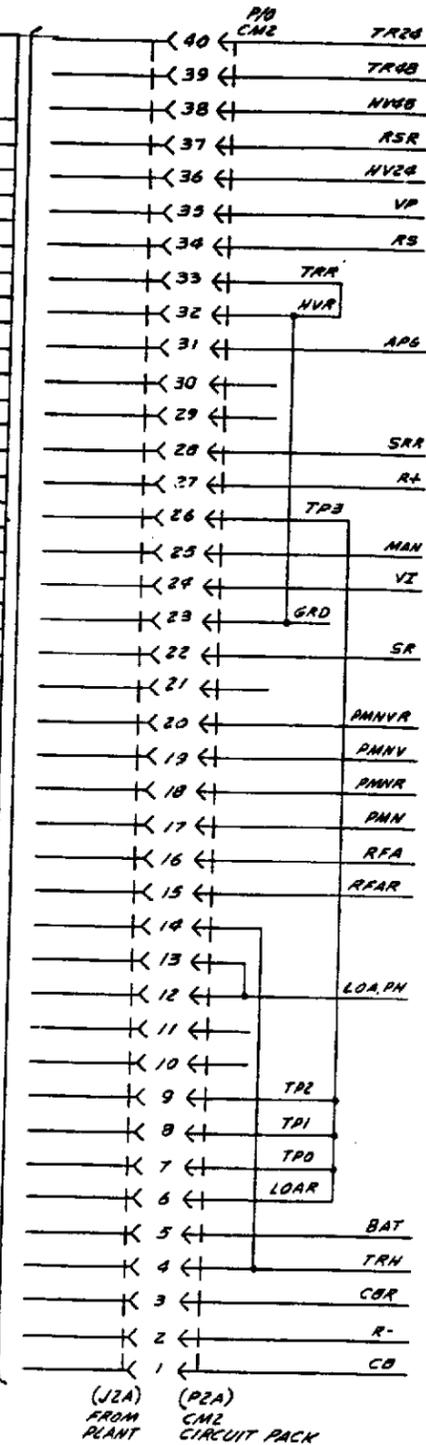
TABLE A

RECTIFIER CM2 CARD	CONTROL UNITS						BATTERYLESS OPERATION SEE NOTE 2
	MCS LINEAGE J85501A	CONVENTIONAL LINEAGE J85501A AND J85516 A,B,C	111A PLANT	326 PLANT	303A PLANT	LINEAGE J85501B	
1	CB	CB	RFA	RFA	RFA	CB	CB
2 NOTE 1	RG (RB)	RG (RB)	RG (RC)	RG (RB)	RG (RB)	RG (RB)	RG (RB)
3	CBR	CBR	(PLANT)GRD	(PLANT)GRD	(PLANT)GRD	CBR	CBR
4	TRH						
5	BAT	BAT	CBS	CONT	CBS BAT	BAT	BAT
6	DPG	LOAR				LOAR	LOAR
7	TPO						
8	TP1						
9	TP2						
10							
11							
12	PH	LOA				LOA	LOA
13		STRAP TO 14	STRAP TO 14	STRAP TO 14	STRAP TO 14	STRAP TO 14	STRAP TO 14
14		STRAP TO 13	STRAP TO 13	STRAP TO 13	STRAP TO 13	STRAP TO 13	STRAP TO 13
15	RFAR	RFAR				RFAR	RFAR
16	RFA	RFA				RFA	RFA
17		PMN	RFA	RFA	RFA	RFA	PMN
18		PMNR	(PLANT) GRD	(PLANT) GRD	(PLANT) GRD	PMNR	PMNR
19		PMNV				PMNV	PMNV
20		PMNVR				PMNVR	PMNVR
21							
22	STRAP TO 28	STRAP TO 28	STRAP TO 28	STRAP TO 28	STRAP TO 28	STRAP TO 28	STRAP TO 28
23		GRD				GRD	GRD
24	VI						
25	MAN						
26	TP3						
27 NOTE 1	RB (RG)	RB (RG)	RC (RG)	RB (RG)	RB (RG)	RB (RG)	RB (RG)
28	STRAP TO 22	STRAP TO 22	STRAP TO 22	STRAP TO 22	STRAP TO 22	STRAP TO 22	STRAP TO 22
29							
30							
31	APG						
32		HVR					HVR
33		TRR					TRR
34 NOTE 306	RS	FS		RS		TRR	RS
35	VP					RS	RS
36 (24V PLANT)	HV	IV	HV	HV	HV	HV	HV
37 NOTE 306	RSR	RSR		RSR		RSR	RSR
38 (48V PLANT)	HV	HV	HV	HV	HV	HV	HV
39 (48V PLANT)	TR	TR	TR	TR	TR	TR	TR
40 (24V PLANT)	TR	TR	TR	TR	TR	TR	TR

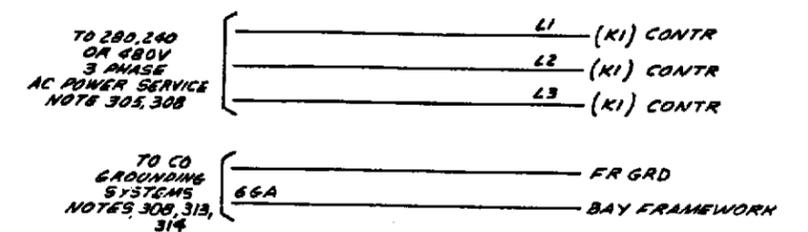
NOTES:

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).
2. FOR BATTERYLESS OPERATION, J85503-1 LISTS 2, 16 & G (48V 200A) RECTIFIER SHALL BE USED. THIS RECTIFIER IS EQUIPPED WITH 208C CONTROL BOARD (OPTION YC).

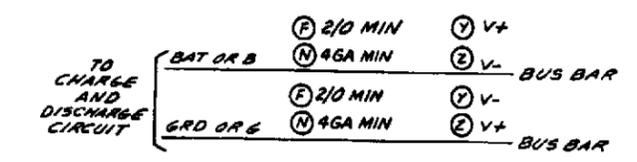
CAD 1
POWER PLANT CONNECTIONS
NOTE 306, 309



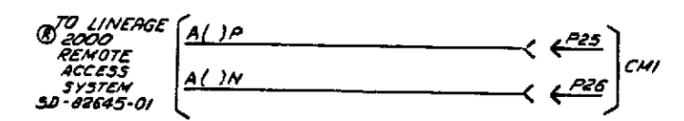
CAD 2



CAD 3
NOTE 205



CAD 4



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J85503

DWG SIZE: 85
ISSUE: 7M

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