

SHEET INDEX

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CAD 1,2,3,4,5	G1	6

OPTION INDEX

APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION
Z	1		1A6, 1A7, 1B6, 1B7, 3A7, 3A8, 3B7, 3B8
Y	1		1A6, 1A7, 1B6, 1B7, 3A7, 3A8, 3B7, 3B8
W	1		APP FIG. 2, 5, 7, 1B2, 1C2, 1D2, 1F0, 1F1, 2D5, 2D6, 2D8, 2F2, 2F8, 3A4, 3B3, 3B4, 3C3, 3E3, 3F3, 4D5, 4D6, 4D8, 4F2, 4F8
Y	1		APP FIG. 2, 4, 6, 1B2, 1C2, 1E2, 1F0, 1F1, 2D5, 2D6, 2D8, 2F2, 2F8, 3B3, 3B4, 3E3, 4D5, 4D6, 4D8, 4F2, 4F8
T	1		2F2, 4D3
S	1	204, 305	APP FIG. 1, 1D1, 1E1, 3G2
R	1	204, 305	APP FIG. 1, 1D1, 1E1, 3G2
U	1		2F3, 4E1, 4F4
P	STD 2		APP FIG. 2, 2B3, 4B3
N	1		APP FIG. 1, 2, 4 & 5, SHEET B1, 2E1, SHEET B3, 4F1
M	1		2F4, 4F4
K	1		APP FIG. 1, 2, 6 & 7, SHEET B1, 2E0, SHEET B3, 4F0
J	1		APP FIG. 3, 1F7, 1F8, 1G8, 1G9, 3F8, 3F9, 3G8, 3G9

OPTION INDEX

APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION
F	1		APP FIG. 2, 2F0, 4F0
E	MD 2		APP FIG. 2, 2F0
D	STD 2		APP FIG. 2, 2F0
B	MD 2		APP FIG. 1, 1A4, 1D1, 1E1
A	STD 2		APP FIG. 1, 3A4, 3B2, 3C2, 3D1
ZA	1		2F4, 2F5, 4F4, 4F5
ZB	DA 4		APP FIG. 1, 1E2, 1F2, 3C3, 3D3
ZC	AVAIL 4		APP FIG. 1, 1E2, 1F2, 3C3, 3D3
ZD	AVAIL 4		APP FIG. 1, 2, 1C7, 1D3, 1E3, 3C7, 3E4, 3E5, 4B1, 4B3, 4B8
ZE	AVAIL 4		APP FIG. 1, 2, 1C7, 1D3, 1E3, 3C7, 3E4, 3E5, 4B1, 4B3, 4B8
ZF	DA 4		APP FIG. 2, 2D7, 2E1, 2F0, 2F1, 2F6, 4E0, 4F0
ZG	AVAIL 4		APP FIG. 2, 4D7, 4F0, 4F7
ZH	DA 4		APP FIG. 1, 1B6, 3B6, 3B7
ZI	AVAIL 4		APP FIG. 1, 1B6, 3B6, 3B7
ZJ	AVAIL 4	308	4E2
ZK	AVAIL 4		APP FIG. 2, 4E2
ZL	DA 5		APP FIG. 7, 1C2, 1E2, 3B3, 3B4, 3C3
ZM	AVAIL 5		APP FIG. 7, 1C2, 1D2, 1E2, 3B3, 3B4, 3C3
ZN	DA 5	320	APP FIG. 2, 2B3
ZO	AVAIL 5		APP FIG. 2, 2B3, 4B2
ZP	AVAIL 5	317	APP FIG. 2, 1D5, 2A4, 3G5
ZQ	AVAIL 5	317	APP FIG. 2, 1D5, 3D5, 4A4
ZR	DA		APP FIG. 7, 3B3
ZS	AVAIL		APP FIG. 7, 3B3
ZT	DA 6		APP FIG. 1, 2E1
ZU	AVAIL 6		APP FIG. 1, BE1
ZV	DA 6		APP FIG. 1, 501
ZW	AVAIL 6		APP FIG. 1, 501
ZX	DA 6		APP FIG. 1, 3A6, 1G5
ZY	AVAIL 6		APP FIG. 1, 3A6, 1G5
ZZ	6	321, 322	APP FIG. 1, 1G5, 3A6
YA	AVAIL 7	323	APP FIG. 1, 5A2
YB	AVAIL 7		
YC	AVAIL 8		APP FIG. 1, 1F5, 5D4, 3F6
YE	AVAIL 8		APP FIG. 1, 1F5, 5D4, 3F6

APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION
YE	DA 10		5F6

DWG ISSUE	CD ISSUE	DATE ISSUED	BY	CHKD	APPV
1	1	2-8-85	WF		
2B	1	1-2-86			
3A	1	3-8-86			
4M	1	6-19-87			
5M	1	11-13-87			
6M	1	12-1-88			
7M	1	7-18-88			
8M	1	9-27-88	EC		
9M	1	4-26-89	GM		
10AC	1	3-11-90	AEM	WLF	

SYSTEM USED ON	DESIGN CONTROL
POWER	PS

SUPPORTING INFORMATION

CATEGORY	NO.
AT&T PRACTICE OPERATING AND MAINTENANCE	169-790-106
PRODUCT MANUAL	169-790-122 169-790-123
MANUFACTURING TESTING REQUIREMENTS	X-80059 AND X-80011

1. ONLY THE LATEST ISSUE, OR ISSUES IF CONCURRENT, ARE SHOWN IN THE INDEX.
2. FOR REISSUES, A CHANGED OR NEW SHEET IS ASSIGNED THE SAME ISSUE NUMBER AS SHEET 1.
3. THE ISSUE NUMBER OF SHEET 1 IS RECOGNIZED AS THE ISSUE NUMBER OF THE WHOLE DRAWING.

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BNI0

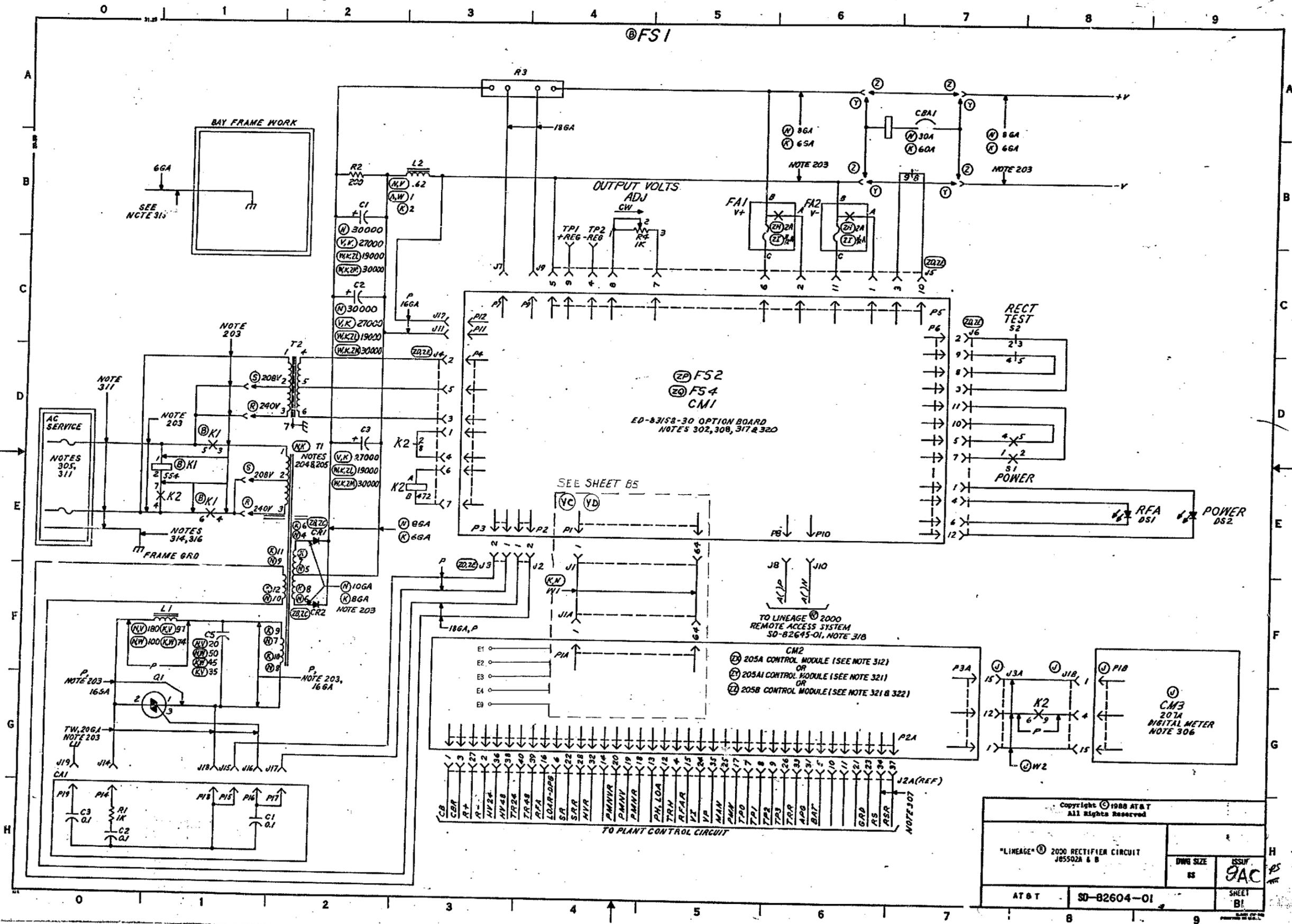
POWER SYSTEMS

"LIMEGE" 2000 RECTIFIER CIRCUIT

INPUT: 208 OR 240 VOLTS, 60 Hz
OUTPUT: 24 VOLTS OR 48 VOLTS
25 OR 50 AMPERES
J05502A & B

WVG SIZE	ISSUE
08	10 AC

AT&T SD-82604-01 SHEET A1 OF 12

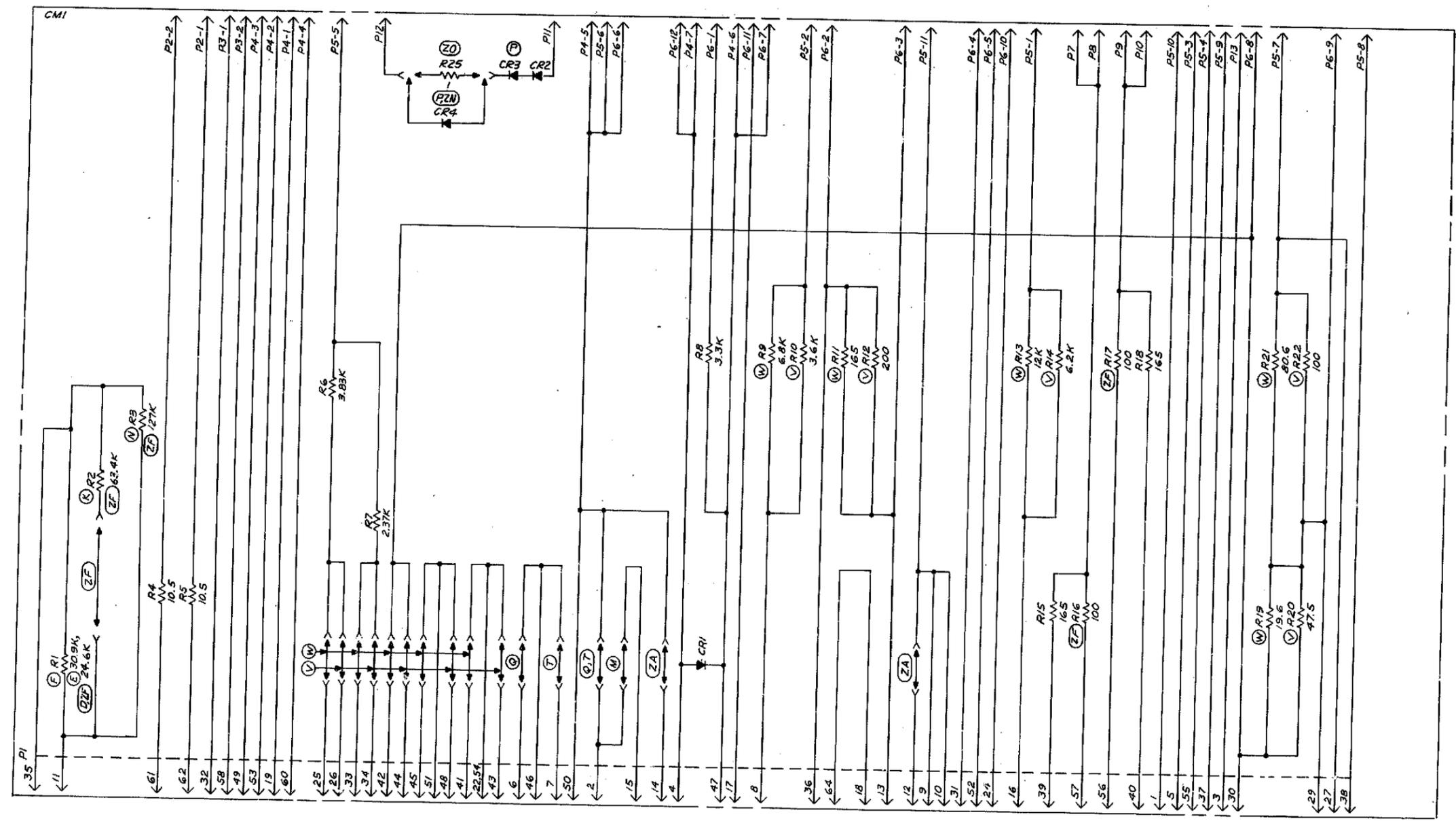


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"LINEAGE" 2000 RECTIFIER CIRCUIT
J65502A & B

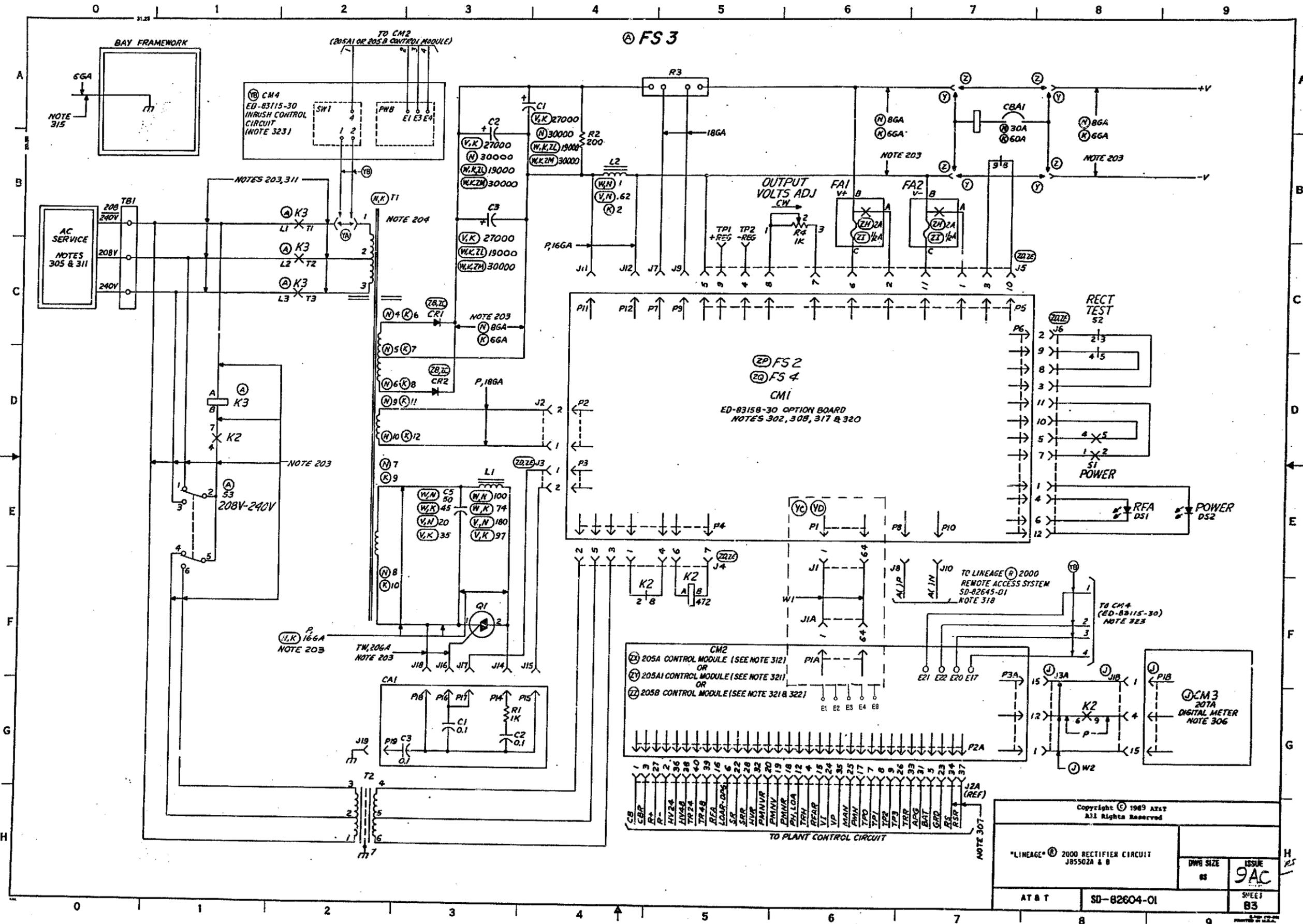
DWG SIZE	ISSUE
85	9AC
AT&T	SHEET
SD-82604-01	B1

FS 2
 OPTION BOARD
 ED-8315B-30 (GRP 1 OR GRP 2)
 (SEE NOTES 317 & 320)



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"LINEAGE" 2000 RECTIFIER CIRCUIT J85502A & B		DWG SIZE 8S
		ISSUE 5M
AT&T	SD-82604-01	SHEET 82

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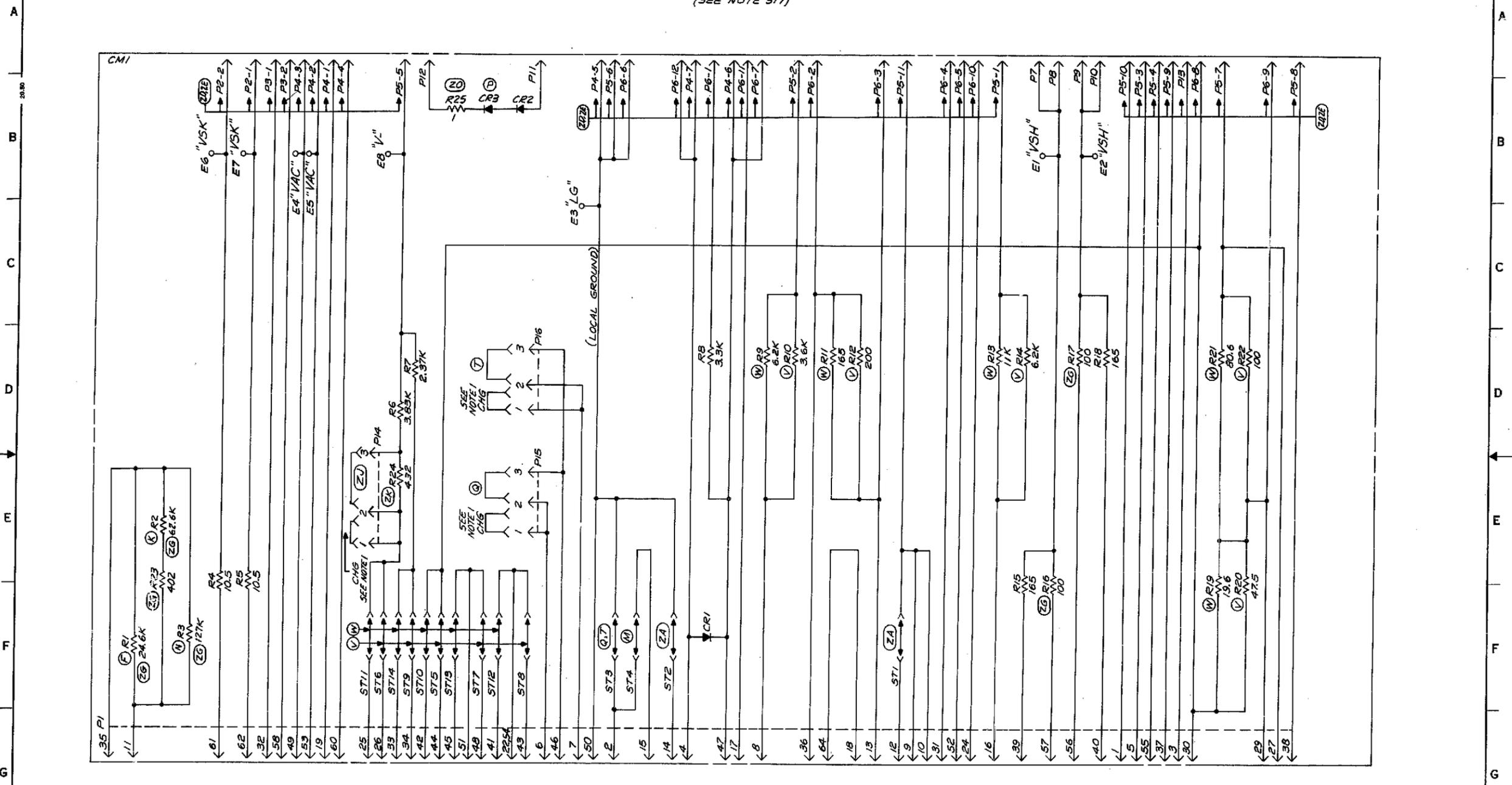


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"LINEAGE" 2000 RECTIFIER CIRCUIT
 J85502A & B

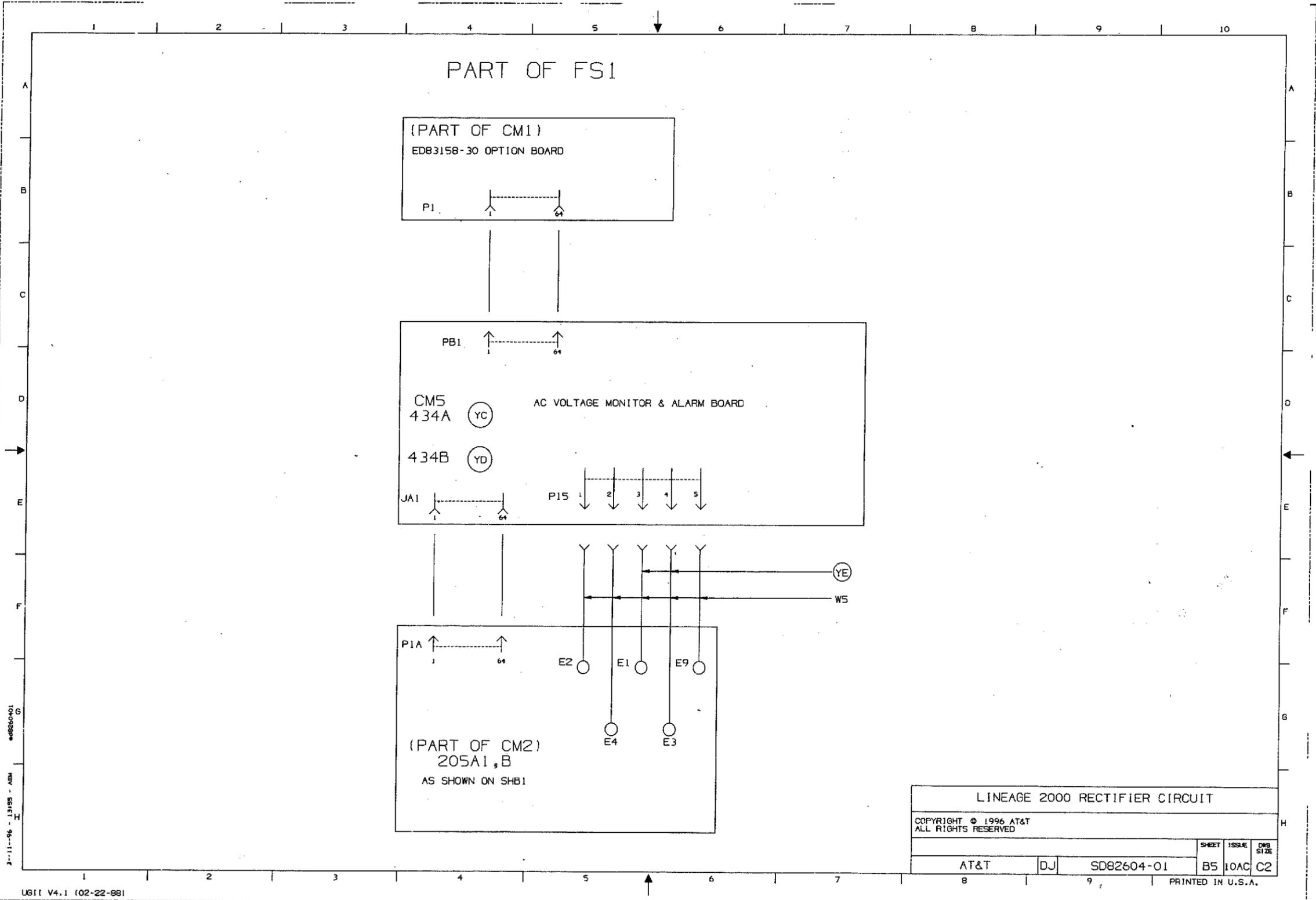
DWG SIZE	ISSUE
8 1/2	9AC
AT & T	SHEET
SD-82604-01	83

(2Q) FS 4
 OPTION BOARD
 ED-8315B-30 (GRP 2A OR GRP 3)
 (SEE NOTE 317)



NOTES:
 1. IN APPLICATIONS WHERE EXTERNAL HIGH VOLTAGE SHUTDOWN SIGNAL IS NOT AVAILABLE (OPTIONS Q OR T), TO RAISE LEVEL OF BACKUP HIGH-VOLTAGE SHUTDOWN VOLTAGE DURING INITIAL CHARGE, MOVE CONNECTORS P14, P15 & P16 TO CHG POSITION UNDER NORMAL OPERATION WHERE EXTERNAL HIGH SHUTDOWN SIGNAL IS AVAILABLE (OPTION M). P15 & P16 CONNECTORS ARE ALREADY IN CHG POSITION. IN THIS CASE, INITIAL CHARGE CAN BE ACCOMPLISHED BY MOVING CONNECTOR P14 TO CHG POSITION.

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"LINEAGE" 2000 RECTIFIER CIRCUIT J855024 & B.	DWG SIZE 6S
AT&T	ISSUE 5M
SD-82604-01	SHEET B4



PART OF FS1

(PART OF CM1)
EDB3158-30 OPTION BOARD

PB1

CMS 434A (YC) AC VOLTAGE MONITOR & ALARM BOARD

434B (YD)

JA1

P15 1 2 3 4 5

P1A

(PART OF CM2)
205A1,B
AS SHOWN ON SHB1

E2 E1 E9

E4 E3

LINEAGE 2000 RECTIFIER CIRCUIT			
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AT&T	DJ	SD82604-01	SHEET ISSUE DRG SIZE B5 10AC C2

104082604-01 REV - 55/ST - 96-11-96

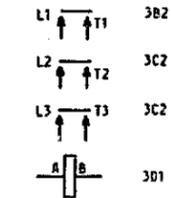
APP FIG. 1

RELAY

(N,K,R,B) 4258XX215
(H,K,S,D) 4258XX216 STRUTHERS-DUNN (NOTE 2)

(A) ACC230-8060C
ARROW-HART

K3



K1



1E1

1D1

1E1

283XCK252,
STRUTHERS-DUNN

K2



1G8, 3G8

1D3, 3F4

1E1, 3D1



1E3, 3F5

CABLE ASSEMBLY

DESIG	LOC	COMCODE
W1	1F4, 3F6	(N) 845197987 (K) 845199215

DESIG	E/W	LOC	CODE
J1		1F4, 3E6	1-499571-A, AMP
J1A		1F4, 3F6	1-499571-A, AMP
W5		1F5, 3F6	847381050

NOTES:

- THIS RESISTOR MUST BE RAISED OFF BOARD 1/8 INCH.
- EARLY PRODUCTION MODELS MAY USE (N,R) 4258XX205 OR (H,S) 4258XX211.

CIRCUIT MODULE

DESIG	LOC	CODE
CM2	1G3, 3G6	(ZY) 205A (ZY) 205A1 (ZY) 205B

DESIG	LOC	CODE
FS2 (CM1)	1D5, 3D6	ED-83158-30
CM4	3A2	(YB) ED-83115-30
CM5	5E6	434 A
CM5	5E6	434 B

COMPONENT ASSEMBLY

DESIG	LOC	CODE
CA1	1H0, 3G2	ED-83156-30, GRP1

E/W

CAPACITOR

DESIG	LOC	CODE
C1	1H1, 3G3	542L, 0.1
C2	1H1, 3G3	KS-14980, L26, 0.1
C3	1H0, 3G3	542L, 0.1

CONNECTOR

DESIG	LOC	CODE
P14-P19	1H1, 3G3	ZIERICK 836

RESISTOR

DESIG	LOC	CODE
R1	1H1, 3G3	XS-20289, L6C, 1K, NOTE 1

CONNECTOR

DESIG	LOC	CODE
J2	1F4, 3D4	641148-2, AMP
J3	1F3, 3E4	641190-2, AMP
J4	1D3, 3E5	(ZD) 640440-8, AMP, (ZE) 102241-1, AMP
J5	1C7, 3C7	(ZD) 1-641190-1, AMP, (ZE) 102241-9, AMP
J6	1C7, 3C8	(ZD) 1-641190-2, AMP, (ZE) 1-102241-0, AMP
J7	1C3, 3C5	2-520183-4, AMP
J8	1E6, 3E6	
J9	1C3, 3C5	2-520183-4, AMP
J10	1E6, 3E7	
J11	1C3, 3C4	3-520116-2, AMP
J12	1C3, 3C4	3-520116-2, AMP

DIODE

DESIG	LOC	CODE
CR1	1E2, 3C3	(ZB,N) HP9016D, L1
CR2	1F2, 3D3	(ZC,N) HP9080A, L5 (ZB,R) KS-1940A, L1 (ZC,R) KS-1940A, L6B

DIODE (LIGHT EMITTING)

DESIG	LOC	CODE
DS1	1E8, 3E8	531D
DS2	1E9, 3E9	531E

FUSE

DESIG	LOC	CODE
FA1	185, 3B6	(ZH) 70B, 2 AMP
FA2	186, 3B7	(ZH) 70B, 2 AMP (ZJ) 70G, 1/2 A (ZJ) 70G, 1/2 A

TEST POINT

DESIG	LOC	CODE
TP1	1C4, 3B5	KS-20667, L2
TP2	1C4, 3B5	KS-20667, L2

THYRISTOR

DESIG	LOC	CODE
Q1	1G1, 3F3	SC260M2X357, GE

POTENTIOMETER

DESIG	LOC	CODE
R4	1C4, 3C6	(ZY) 35405-701-102, 1K, BOURNS (ZW) R22S10, 1K, NEPCO/COPAL

TRANSFORMER

DESIG	LOC	CODE
T2	1G2, 3G2	(ZT) 2291C (ZU) 2291E

RESISTOR

DESIG	LOC	CODE
R2	1B2, 3B4	KS-8512, LFA, 200

SWITCH

DESIG	LOC	CODE
S1	1E7, 3D8	U21-J21-Z0E-3-2 WITH RED LEVER, C&K
S2	1C7, 3C8	U215-J21-Z0E-1-2 WITH WHITE LEVER, C&K
S3	3E1	82611P, ARROW-HART

S2 RECT TEST

SW POS	TERMS CONN
NL (CENTER)	2-3, 5-6
FL	2-3, 4-5
	1-2, 4-5

S3 208V-240V

SW POS	TERMS CONN
208V	1-2, 4-5
240V	2-3, 5-6

S1 POWER



S1 & S2 TOP



S3



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"LINEAGE"® 2000 RECTIFIER CIRCUIT
J05502A & B

DWG SIZE: 85
ISSUE: 9AC

AT&T SD-82604-01 SHEET CI

APP FIG. 2

CIRCUIT MODULE
DESIG LOC CODE
CM1 1D5, 2B0, 3D5 ED-83158-30, SEE NOTES 317 & 320 E/W

CONNECTOR			RESISTOR		
DESIG	LOC	CODE	DESIG	LOC	CODE
P1	260	1-499900-2, AMP	R1	2F0	KS-20616, L1A, (E) 30.9K, (D,ZH) 24.6K
P2-1	281	641119-2, AMP	R2	2E0	(ZF) KS-20616, L1A, 63.4K
P2-2	281	641119-2, AMP	R3	2D1	(ZF) KS-20616, L1A, 127K
P3-1	281	641126-2, AMP	R4	2F1	WP90033, L1, 10.5
P4-1	282	640456-8, AMP	R5	2F1	WP90033, L1, 10.5
P4-2	281	640456-8, AMP	R6	2D2	WP90033, L1, 3.83K
P4-3	281	640456-8, AMP	R7	2E2	WP90033, L1, 2.37K
P4-4	282	640456-8, AMP	R8	2D4	WP90020, L1, 3.3K
P4-5	283	640456-8, AMP	R9	2D5	WP90020, L1, 6.8K
P4-6	284	640456-8, AMP	R10	2D5	WP90020, L1, 3.6K
P4-7	284	640456-8, AMP	R11	2D5	WP90033, L1, 165
P5-1	286	1-641126-1, AMP	R12	2D5	WP90033, L1, 200
P5-2	285	1-641126-1, AMP	R13	2D6	WP90020, L1, 12K
P5-3	287	1-641126-1, AMP	R14	2D6	WP90020, L1, 6.2K
P5-4	287	1-641126-1, AMP	R15	2F6	WP90033, L1, 165
P5-5	282	1-641126-1, AMP	R16	2F6	(ZF) WP90033, L1, 100
P5-6	283	1-641126-1, AMP	R17	2D7	(ZF) WP90033, L1, 100
P5-7	288	1-641126-1, AMP	R18	2D7	WP90033, L1, 165
P5-8	288	1-641126-1, AMP	R19	2F8	WP90033, L1, 19.6
P5-9	287	1-641126-1, AMP	R20	2F8	WP90033, L1, 47.5
P5-10	287	1-641126-1, AMP	R21	2D8	WP90033, L1, 80.6
P5-11	285	1-641126-1, AMP	R22	2D8	WP90033, L1, 100
P6-1	284	1-641126-2, AMP	R25	2B3	KS-14603, L1A0, 1
P6-2	285	1-641126-2, AMP			
P6-3	285	1-641126-2, AMP			
P6-4	286	1-641126-2, AMP			
P6-5	286	1-641126-2, AMP			
P6-6	286	1-641126-2, AMP			
P6-7	284	1-641126-2, AMP			
P6-8	287	1-641126-2, AMP			
P6-9	288	1-641126-2, AMP			
P6-10	286	1-641126-2, AMP			
P6-11	284	1-641126-2, AMP			
P6-12	284	1-641126-2, AMP			
P7	286	#836, ZIERICK			
P8	287	#836, ZIERICK			
P9	287	#836, ZIERICK			
P10	287	#836, ZIERICK			
P11	282	#836, ZIERICK			
P12	283	#836, ZIERICK			
P13	287	#836, ZIERICK			

DIODE

DESIG	LOC	CODE
CR1	2F4	WP90015, L3
CR2	283	60S1 INTERNATIONAL
CR3	283	60S1 RECTIFIER CORP.
CR4	283	60S1 OR MICROSEMI CORP.

CIRCUIT MODULE
DESIG LOC CODE
CM1 1D5, 3D5, 4B0 ED-P3158-30, SEE NOTES 317 & 320 E/W

CONNECTOR			RESISTOR		
DESIG	LOC	CODE	DESIG	LOC	CODE
P1	460	1-499900-2, AMP	R1	4F0	KS-16311, L4F, 24.6K
P2-1	481	641119-2, AMP	R2	4E0	(ZF) KS-16311, L4F, 62.6K
P2-2	481	641119-2, AMP	R3	4F1	KS-16311, L4F, 127K
P3-1	481	641126-2, AMP	R4	4F1	WP90033, L1, 10.5
P3-2	481	641126-2, AMP	R5	4F1	WP90033, L1, 10.5
P4-1	482	640456-8, AMP	R6	4D2	WP90033, L1, 3.83K
P4-2	481	640456-8, AMP	R7	4D2	WP90033, L1, 2.37K
P4-3	481	640456-8, AMP	R8	4D4	KS-13490, L1, 3.3K
P4-4	482	640456-8, AMP	R9	4D5	KS-13490, L1, 6.2K
P4-5	483	640456-8, AMP	R10	4D5	KS-13490, L1, 3.6K
P4-6	484	640456-8, AMP	R11	4D5	WP90033, L1, 165
P4-7	484	640456-8, AMP	R12	4D5	WP90033, L1, 200
P5-1	486	1-641126-1, AMP	R13	4D6	KS-13490, L1, 11K
P5-2	485	1-641126-1, AMP	R14	4D6	KS-13490, L1, 6.2K
P5-3	497	1-641126-1, AMP	R15	4F6	WP90033, L1, 165
P5-4	487	1-641126-1, AMP	R16	4F6	(ZF) KS-1633, L4F, 100
P5-5	482	1-641126-1, AMP	R17	4D7	KS-16311, L4F, 100
P5-6	483	1-641126-1, AMP	R18	4D7	WP90033, L1, 165
P5-7	488	1-641126-1, AMP	R19	4F8	WP90033, L1, 19.6
P5-8	488	1-641126-1, AMP	R20	4F8	WP90033, L1, 47.5
P5-9	487	1-641126-1, AMP	R21	4D8	WP90033, L1, 80.6
P5-10	487	1-641126-1, AMP	R22	4D8	WP90033, L1, 100
P5-11	485	1-641126-1, AMP	R23	4F0	WP90033, L1, 402
P6-1	484	1-641126-2, AMP	R24	4E2	WP90033, L1, 432
P6-2	485	1-641126-2, AMP	R25	4B2	KS-14603, L1A0, 1
P6-3	485	1-641126-2, AMP			
P6-4	486	1-641126-2, AMP			
P6-5	486	1-641126-2, AMP			
P6-6	486	1-641126-2, AMP			
P6-7	484	1-641126-2, AMP			
P6-8	487	1-641126-2, AMP			
P6-9	488	1-641126-2, AMP			
P6-10	486	1-641126-2, AMP			
P6-11	484	1-641126-2, AMP			
P6-12	484	1-641126-2, AMP			
P7	486	#836, ZIERICK			
P8	487	#836, ZIERICK			
P9	487	#836, ZIERICK			
P10	487	#836, ZIERICK			
P11	482	#836, ZIERICK			
P12	483	#836, ZIERICK			
P13	487	#836, ZIERICK			
P14	4E2	65568-103, BERG			
P15	4E3	65568-103, BERG			
P16	4D3	65568-103, BERG			

TERMINAL

DESIG	LOC	CODE
E1	4B6	640967-2, AMP
E2	4B7	640967-2, AMP
E3	4E3	640967-2, AMP
E4	4B1	640967-2, AMP
E5	4B1	640967-2, AMP
E6	4B1	640967-2, AMP
E7	4B1	640967-2, AMP
E8	4B2	640967-2, AMP

DIODE

DESIG	LOC	CODE
CR1	4F4	WP90015, L3
CR2	4B2	60S1 INTERNATIONAL
CR3	4B3	60S1 RECTIFIER CORP. OR MICROSEMI CORP.

APP FIG. 3

CABLE ASSEMBLY

DESIG	LOC	CODE
M2	168, 368	843782657

E/W

CONNECTOR

DESIG	LOC	CODE
J16	168, 368	1-640440-5, AMP
J3A	168, 368	1-640440-5, AMP

CIRCUIT MODULE

DESIG	LOC	CODE
CM3	169	207A

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"LINEAGE" 2000 RECTIFIER CIRCUIT
J85502A & B

DWG SIZE	ISSUE
8S	5M

AT&T SD-82604-01 SHEET C2

APP FIG.			4	5	6	7	NOTE	
OPTION			V,N	M,N	V,K	M,K		
COMPONENT	DESIG	LOC	CODE	CODE	CODE	CODE		
CAPACITOR	C1	1B2, 3A4	KS-20443, L88, 30,000	KS-20443, L88, 30,000	KS-20443, L90, 27,000	(L) KS-20443, L91, 19,000	(Z) 36DE3036060F28 SPRAGUE 30,000	1
	C2	1C2, 3A3	KS-20443, L88, 30,000	KS-20443, L88, 30,000	KS-20443, L90, 27,000	(L) KS-20443, L91, 19,000	(Z) 36DE3036060F28 SPRAGUE 30,000	1
	C3	1D2, 3B3	-	-	KS-20443, L90, 27,000	(L) KS-20443, L91, 19,000	(Z) 36DE3036060F28 SPRAGUE 30,000	1
	C4	1F1, 3E3	97F4527, 20, GE CO	97F3251, 50, GE CO	97F3205, 35, GE CO	(Z) 97F3247, 45, GE CO	(Z) 97F5288, 45, GE CO	2
					Z26P3745MO AEROVOX	IA2	Z26P3745MO- IA2, AEROVOX	
CIRCUIT BREAKER	CB1	1B7, 3B7	KS-22009, L4 30A	KS-22009, L4 30A	KS-22010, L33, 60A	KS-22010, L33, 60A		
INDUCTOR	L1	1F1, 3E3	1181M	1181L	11266	1126F		
	L2	1B3, 3B4	1122F	10 oK	1219A	1219A		
SHUNT	R3	1A3, 3A5	MLA 31.25-50, EMPRO CORP.	MLA 31.25-50, EMPRO CORP.	MLA 62.50-50, EMPRO CORP.	MLA 62.50-50, EMPRO CORP.		
TRANSFORMER	T1	1E2, 3B2	3229A	3109A	3107C	3106C		

NOTES:
1. EARLY PRODUCTION UNITS (M,K) MAY HAVE C1, C2, C3 AS KS-20443, L91, 19,000 (Z)
NOW RATED DA REPLACED BY SPRAGUE 36DE3036060F28, 30,000 (Z).

2. EARLY PRODUCTION UNITS (M,K) MAY HAVE C4 AND C5 AS GE 97F3247, 45uF (Z)
NOW RATED DA BY VENDOR-REPLACED BY GE 97F5288, 45uF (Z).

AEROVOX Z26P3745MOIA2

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"LINEAGE"® 2000 RECTIFIER CIRCUIT J85502A & B		DWG SIZE	ISSUE
		85	9AC
AT&T	SD-62604-01	SHEET C3	

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CIRCUIT NOTES:

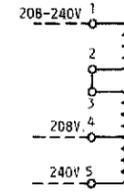
DESIG	FUSE AMP	POTENTIAL	ONE PER
BATTERY SYMBOL		VOLTAGE RANGE	

FOR INPUT FUSING, SEE NOTE 311.

EQUIPMENT NOTES:

- 201. ALL WIRING SHALL BE KS-22247, L4 STRANDED UNLESS OTHERWISE SPECIFIED.
- 202. ALL WIRING OF UNSPECIFIED SIZE SHALL BE 22 GA.
- 203. WIRING SHALL BE KS-22247, L5 STRANDED FOR WIRING UP TO 6 GA. THE 1/0 GA WIRING SHALL BE KS-20921, L1.

204. FOR S, R OPTIONS THE PRIMARY CONNECTIONS FOR THE T1 TRANSFORMER ARE:



205. NOT ASSIGNED.

206. WIRE SHALL BE UL RECOGNIZED AND CSA CERTIFIED AND SHALL BEAR MARKINGS AS SUCH. WIRE SHALL MEET THE 105°C TEMPERATURE AND 600V VOLTAGE RATING. KS-20921 WIRE IS RECOMMENDED.

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"LINEAGE"® 2000 RECTIFIER CIRCUIT J85502A & B		DWG SIZE BS
AT&T		ISSUE 4M
SD-82604-01		SHEET DI

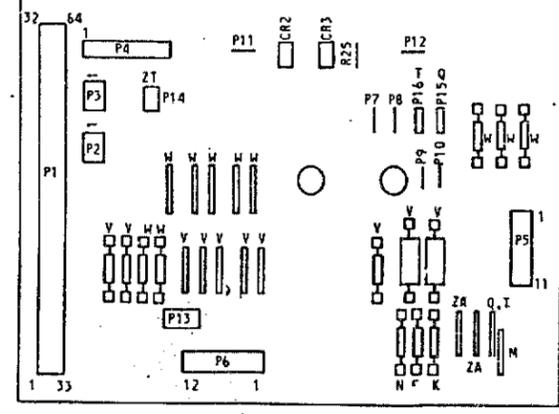
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INFORMATION NOTES:
 301. UNLESS OTHERWISE SPECIFIED:
 RESISTANCE VALUES ARE IN OHMS,
 CAPACITANCE VALUES ARE IN MICROFARADS,
 INDUCTANCE VALUES ARE IN MILLIHENRIES,
 VALUES PRECEDED BY THE SYMBOL + (PLUS)
 OR - (MINUS) ARE IN VOLTS.

302. CM1 IS MANUFACTURED WITH ALL OPTION STRAPS AND RESISTORS
 IN PLACE. REMOVE UNNECESSARY STRAPS AND EXTRA RESISTORS.
 REFER TO NOTE 308.

FEATURE OR OPTION	PROVIDE		
	APP FIG.	APP OR HRG	QUANTITY
OUTPUT GROUND	NEGATIVE	1, 2	1
	POSITIVE	Z	
METER	DIGITAL	3	1
	NONE	-	
25 AMPERE OUTPUT	208 VAC INPUT	24V OUTPUT	4 S, V
		48V OUTPUT	5 S, W
	240 VAC INPUT	24V OUTPUT	4 R, V
		48V OUTPUT	5 R, W
50 AMPERE OUTPUT	208 VAC INPUT	24V OUTPUT	6 S, V
		48V OUTPUT	7 S, W
	240 VAC INPUT	24V OUTPUT	6 R, V
		48V OUTPUT	7 R, W
EXTERNAL HV SHUTDOWN SIGNAL	NOT AVAILABLE	24V	Q
	AVAILABLE	-	T
EXTERNAL SENSING LEADS	NOT AVAILABLE	-	ZA
	AVAILABLE	-	-
125 AMPERE OUTPUT FS 4 ONLY SEE NOTE 317	-	-	F
HV SHUT DOWN LEVEL	NORMAL	-	Q, T, ZJ
	FOR INITIAL CHARGE	-	-
INHIBIT CONTROL CIRCUIT	NOT AVAILABLE	-	YA
	AVAILABLE	1	YB 1
PROVIDES AC/DC VOLTAGE MONITOR & SHUTDOWN CIRCUIT.	-	-	YC
PROVIDES AC/DC VOLTAGE MONITOR & SHUTDOWN CIRCUIT WITH AC VOLTAGE ALARM.	-	-	YD

308A. THE OPTIONS ON CM1 (GRP2A & GRP3) ARE LOCATED AS FOLLOWS:
 (CONT)

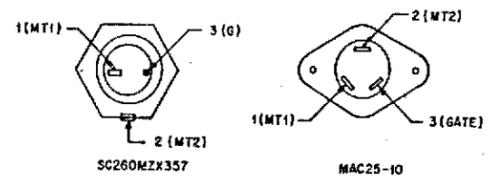


INFORMATION NOTES: (CONT)

303. RECORD OF FIGURES, WIRING AND APPARATUS CHANGES

CHANGES ON ISS	IF JOB RECURS DO NOT SPECIFY	THIS OPTION WAS FURNISHED	SEE NOTE	USE IN CIRCUIT		
				STD	A&M	MD
2B	-	NONE	317	P		
	D OR E	E	317	D		E
	A OR B	B		A		B
				AVAIL	A & M	DA
4M SEE NOTE 319	ZB OR ZC	ZB		ZC		ZB
	ZF OR ZG	ZF		ZG		ZF
	ZD OR ZE	ZD		ZE, ZD		
	ZH OR ZI	ZH		ZI		ZH
	ZK OR ZJ	-		ZK, ZJ		-
5M	ZL OR ZM	ZL		ZM		ZL
	ZN OR ZO	ZN	320	ZO		ZN
	ZP OR ZQ	ZP	317	ZP, ZQ		
	ZR OR ZS	ZR		ZS		ZR
6M	ZT OR ZU	ZT		ZU		ZT
	ZV OR ZW	ZV		ZW		ZV
	ZX OR ZY	ZX	321	ZY		ZX
	ZZ	-	321	ZZ		
7M	YA OR YB	YA	323	YA, YB		
8M	-	-	322	-		
9AC	YC OR YD	-		YC, YD		
10AC	YE	-		YE		

304. THE TERMINAL NUMBER ASSIGNMENT OF THE SC260MZX357 OR MAC 25-10 THYRISTOR IS:



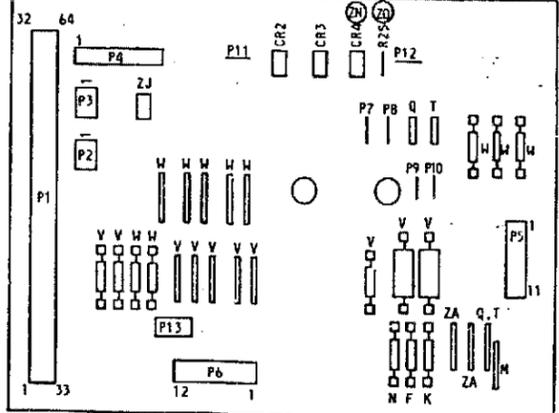
305.

OPTION	INPUT VOLTAGE	
	NOMINAL	RANGE
S	208	184-220
R	240	212-254

306. 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.

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

308A. THE OPTIONS ON CM1 (GRP1 & GRP2) ARE LOCATED AS FOLLOWS:



INFORMATION NOTES: (CONT)

309. THE PLANT CONNECTION IS MADE WITH H285-224, L1) CABLE ASSEMBLY PER SD-82588-01.

310. THIS CAD FIGURE SHOULD BE USED FOR INFORMATION ONLY. CABLE ASSEMBLY AND PLANT INTERCONNECTIONS WILL BE SPECIFIED BY PLANT SCHEMATIC.

311.

AC POTENTIAL	OUTPUT		LINE FUSES #3	INPUT CONDUCTORS		
	VOLTS	AMPS		TYPE FR	UL APP'D BUSSEMAN	KS-5482-01
208	24	25	10	FRN 10	3-#14	2-#14
240	24	25	10	FRN 10	3-#14	2-#14
208	48	25	15	FRN-R 15	3-#14	2-#14
240	48	25	15	FRN-R 15	3-#14	2-#14
208	24	50	15	FRN-R 15	3-#14	2-#14
240	24	50	15	FRN-R 15	3-#14	2-#14
208	48	50	20	FRN-R 20	3-#12	2-#12
240	48	50	20	FRN-R 20	3-#12	2-#12

- * KS-20785 COMES WITH A BARE GROUND WIRE.
- ** 140 PER RECTIFIER OR AN EQUIVALENT CIRCUIT BREAKER.
- *** KS-20747 MAY BE USED.
- **** APPROPRIATE CIRCUIT BREAKER (UL REC) MAYBE USED IN PLACE OF FUSES.

312. THE ISOLATED CURRENT MEASURING CIRCUIT ON THE 205A CONTROL 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 E15 OR E14 TERMINALS FOR ALL VOLTAGE MEASUREMENTS.
2. WITH THE RECTIFIER TURNED ON AND DELIVERING CURRENT, ADJUST THE OUTPUT VOLTS ADJ POTENTIOMETER SO THAT THE OUTPUT AMPMETER 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 E15. 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 R42 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 E15 AND ADJUST POTENTIOMETER R35 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 OUTPUT VOLTS ADJ POTENTIOMETER SO THAT THE RECTIFIER IS DELIVERING APPROXIMATELY 25% OF RATED CURRENT AS READ ON THE OUTPUT AMPMETER. MEASURE THE MILLIVOLT DROP ACROSS THE SHUNT. THE AMPMETER READING SHOULD BE:
 0.625 x SHUNT mV FOR 25A RECTIFIER
 1.25 x SHUNT mV FOR 50A RECTIFIER

INFORMATION NOTES: (CONT)

319. PRIOR TO ISSUE 4M, COLUMNS HEADED "STD", "MD", ETC., CONVEYED APPLICATION INFORMATION. AT ISSUE 4M, COLUMNS HEADED "AVAIL" AND "DA" NOW INDICATE THE AVAILABILITY OF THE PRODUCT.

320. EARLY PRODUCTION UNITS OF CM1 OPTION BOARD ED-83158-30 GRP 1 & GRP 2 MAY HAVE CRA (20) NOW RATED DA REPLACED BY R25, 1 (20). WHEN GRP 1 & GRP 2 CM1 OPTION BOARDS ARE EQUIPPED WITH (20) THEY SHALL BE STAMPED GRP 2B.

(INFORMATION NOTES CONTINUED ON SHEET D3)

INFORMATION NOTES: (CONT)

312. (CONT)

8. BASED ON THE READING OBTAINED IN STEP 7, MEASURE THE VOLTAGE APPEARING ACROSS E7 AND WITH RESPECT TO E15. 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 E15
	25A	50A		
10.0	6.25A	12.5A	0.00V±1%	3.60V±1%
20.0	12.5A	25A	1.60V±1%	5.20V±1%
30.0	18.75A	37.5A	2.40V±1%	6.80V±1%
40.0	25A	50A	3.20V±1%	8.40V±1%

NOTES:

1. THE FOLLOWING EQUIPMENT IS NEEDED TO PERFORM THE TESTS SHOWN ABOVE:

- (a) DIGITAL METER KS-22861, L1
- (b) CALCULATOR
- (c) TRIMPOT SCREWDRIVER

2. THE VOLTAGE APPEARING ACROSS E5 TO E14 IS 80 TIMES THE MILLIVOLT READING OBTAINED ACROSS THE SHUNT, ±1%.

313. OPERATION AND MAINTENANCE AT&T-169-609-311.

314. THE CHASSIS OF THE RECTIFIER SHALL BE GROUNDED PER REQUIREMENTS OF ATTP-802-001-180.

315. PROVIDE A NO. 6 AWG KS-5482-01 FRAME GROUNDING CONDUCTOR FROM THE BAY FRAMEWORK THAT MOUNTS THE RECTIFIER TO THE CO. GRD SYSTEM IN ACCORDANCE WITH FRAME GROUNDING REQUIREMENTS PER ATTP-802-001-180. WHEN THE CO. GRD 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, IF REARER, 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, A SINGLE CONDUCTOR MAY BE MULTIPLIED TO GROUND ALL RECTIFIER BAYS.

316. AC EQUIPMENT GROUND CONDUCTOR SHALL BE PROVIDED AS SPECIFIED IN ATTP-802-001-180.

317. DIFFERENT VERSIONS OF THE CM1 OPTION BOARD MAY BE USED IN RECTIFIERS AS FOLLOWS:

ASSIGNMENT OPTION	VERSION	OPTIONS INCLUDED ON BOARD	RECTIFIER RATING		
			25A	50A	125A
ZP	ED-83158-30 GRP 1	E	OK	NO	NO
ZP	ED-83158-30 GRP 2	P, D	OK	OK	NO
ZQ	ED-83158-30 GRP 2, A	P, D, ZG, ZJ, ZK, ZD	OK	OK	NO
ZQ	ED-83158-30 GRP 3	P, D, ZG, ZJ, ZE, ZK	NO	NO	OK

THE 125A RECTIFIER IS COVERED EXCLUSIVELY BY SD-82659-01

318. THE PB & P10 CONNECTORS PROVIDE A DC SIGNAL PROPORTIONAL TO THE RECTIFIER OUTPUT CURRENT. PB, P10 ARE NOT INCLUDED IN EARLY PRODUCTION.

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"LINEAGE"® 2000 RECTIFIER CIRCUIT
 J85502A & B

UWG SIZE: 8S
 ISSUE: 10AC

AT&T SD-82604-01 SHEET D2

- 31.25
321. THE ISOLATED CURRENT MEASURING CIRCUIT ON THE 205A1 OR 205B CONTROL MODULE CAN BE ADJUSTED IN AN OPERATING RECTIFIER BY FOLLOWING THE PROCEDURE OUTLINED BELOW:
1. THE TEST POINTS E5, E6 AND E11 ARE ALWAYS POSITIVE WITH RESPECT TO EITHER E17 OR E14 FOR ALL VOLTAGE MEASUREMENTS.
 2. WITH THE RECTIFIER TURNED ON AND DELIVERING CURRENT, ADJUST THE OUTPUT VOLTS ADJUST 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 5.99 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 R42 SO THAT THE VOLTAGE AT E11 = $(1.1667 \times V6) - 1$. THE V6 VOLTAGE IS THAT WHICH WAS OBTAINED IN STEP 4.
 6. CONNECT THE DVM ACROSS E7 AND E17 AND ADJUST POTENTIOMETER R35 SO THAT THE 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 OUTPUT VOLTS ADJUST POTENTIOMETER SO THAT THE RECTIFIER IS DELIVERING APPROXIMATELY 25% OF RATED CURRENT AS READ ON THE AMMETER READING SHOULD BE:
 0.625 X SHUNT MV FOR 25A RECTIFIER
 1.25 X SHUNT MV FOR 50A RECTIFIER
 8. BASED ON THE READING OBTAINED IN STEP 7 MEASURE THE VOLTAGE APPEARING ACROSS E7 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
	25A	50A		
10.0	6.25A	12.5A	800 MV \pm 1%	3.60V \pm 1%
20.0	12.5A	25A	1.60V \pm 1%	5.20V \pm 1%
30.0	18.75A	37.5A	2.40V \pm 1%	6.80V \pm 1%
40.0	25A	50A	3.20 \pm 1%	8.40V \pm 1%

322. THE 205B CIRCUIT MODULE (OPTION ZZ) IS USED WITH THE 24 VOLT 50 AMPERE (OPTIONS V, K) J85502B RECTIFIER WHEN THIS RECTIFIER IS USED IN FAA/RCL PROJECT BATTERY-LESS APPLICATION. TO ADJUST THE ISOLATED CURRENT MEASURING CIRCUIT ON THE 205B CIRCUIT MODULE, FOLLOW PROCEDURE OUTLINED IN NOTE 321 ABOVE. THE 205B CIRCUIT MODULE (OPTION ZZ) IS STANDARD FOR ALL VERSIONS OF THE J85502B 50 AMPERE, RECTIFIER, 24V, 48V BATTERY AND BATTERY-LESS OPERATIONS AND WITH UNITS HAVING THE INRUSH-CURRENT CONTROL FEATURE. THE 205B CAN BE USED AS FIELD REPLACEMENT FOR THE 205A AND 205A1 CIRCUIT MODULES IN THE ABOVE MENTIONED 50-AMPERE UNITS.
323. THE ED-83115-30 BOARD (OPTION YB) MAY BE USED WITH THE 24 VOLT 50 AMPERE (OPTIONS V, K) J85502B RECTIFIER WHEN THIS RECTIFIER IS USED IN APPLICATIONS THAT REQUIRE INRUSH CURRENT CONTROL.

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"LINEAGE" ® 2000 RECTIFIER CIRCUIT
J85502A & B

DWG SIZE	ISSUE
6S	8M

AT & T SD-82604-01 SHEET D3

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THE FOLLOWING TABLE DOCUMENTS THE CONNECTIONS REQUIRED FROM P2A OF THE CM2 CIRCUIT PACK OF J85502 RECTIFIERS TO SELECTED CONTROL UNITS.

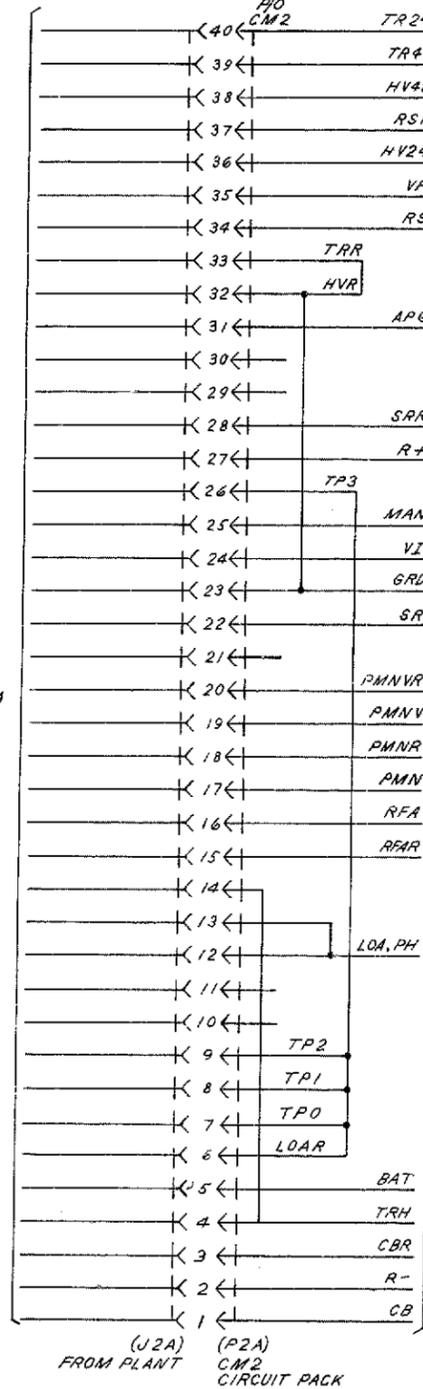
TABLE A

RECTIFIER CM2 CARD	CONTROL UNITS					
	WFS LINEAGE	CONVENTIONAL LINEAGE AND J85516 A,B,C	111A PLANT	326 PLANT	303A PLANT	FAA-RCL PLANT
1	CB	CB	RFA	RFA	RFA	
2 NOTE 1	RG(RB)	RG(RB)	RG(RC)	RG(RB)	RG(RB)	
3	CBR	CBR	(PLANT)GRD	(PLANT)GRD	(PLANT)GRD	
4	TRH					
5	BAT	BAT	CBS	CONT	CBS BAI	
6	DPG	LOAR				NACR
7	TPD					
8	TP1					
9	TP2					
10						
11						NAC
12	PH	LOA				
13		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	
15	RFA	RFA				RFA
16	RFA	RFA				RFA
17		PMN	RFA	RFA	RFA	
18		PMNR	(PLANT)GRD	(PLANT)GRD	(PLANT)GRD	
19		PMNV				
20		PMNVR				
21						
22	STRAP TO 28	STRAP TO 28	STRAP TO 28	STRAP TO 28	STRAP TO 28	SEE NOTE 2
23		GRD				
24	VI					
25	MAN					
26	TP3					
27 NOTE 1	RB(RG)	RB(RG)	RC(RG)	RB(RG)	RB(RG)	
28	STRAP TO 22	STRAP TO 22	STRAP TO 22	STRAP TO 22	STRAP TO 22	SEE NOTE 2
29						
30						
31	APG					
32		HVR				
33		TRR				
34 NOTE 307	RS	RS		RS		
35	VP					RS
36 (24V PLANT)	HV24	HV24	HV	HV	HV	
37 NOTE 307	RSR	RSR		RSR		RSR
38 (48V PLANT)	HV	HV	HV	HV	HV	
39 (48V PLANT)	TR	TR	TR	TR	TR	
40 (24V PLANT)	TR	TR	TR	TR	TR	
E1						+12
E14						GRD

NOTES: 1. THE R-LEAD, PIN 2 OF P2A, MUST BE CONNECTED TO A 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 FAA-RCL PLANT EQUIPPED WITH BATTERY, STRAP PINS 22 AND 28 TOGETHER.

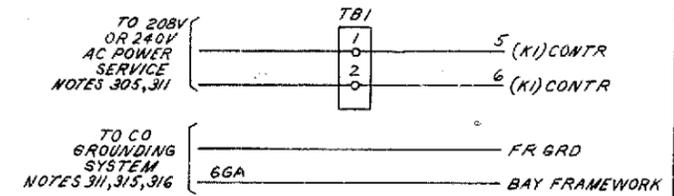
CAD 1

POWER PLANT CONNECTIONS
SEE NOTE 307, 309, 310



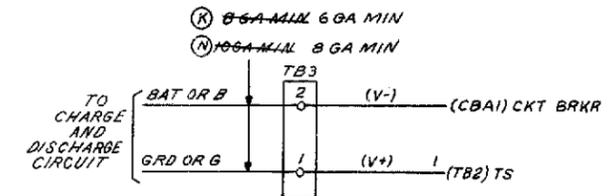
SEE TABLE A

CAD 2



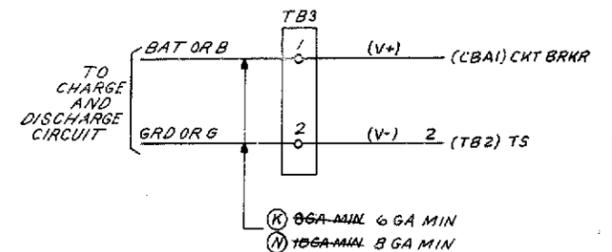
CAD 3

NOTE 206

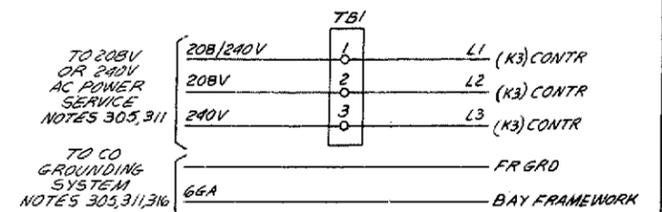


CAD 4

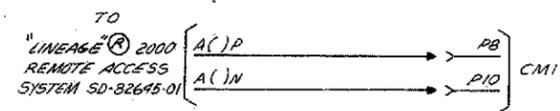
NOTES 206



CAD 5



CAD 6



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"LINEAGE" 2000 RECTIFIER CIRCUIT J85502A & B

DWG SIZE: 6S ISSUE: 6M

AT & T SD-82604-01 SHEET: G1