

[illegible][illegible]

DWG ISSUE	CD ISSUE	DATE ISSUED	Drawn	APPD
1	1	2-6-80	ha	RO
2B	1 APP 15	2-7-80	ha	RO F.S.

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING. ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

SUPPORTING INFORMATION

CATEGORY	NO.
MFR TEST REQUIREMENTS	L-502497
PLANT SPECIFICATION	J-86470
	J-86872
	J-87261
BSP OPERATING METHODS	169-745-302
BSP TROUBLE LOCATING	169-745-312

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OF THE BELL TELEPHONE LABORATORIES

ITT-NORTH ELECTRIC CO. SD-439 2527
GALION, OHIO

SD-82401-01	1M99
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POWER SYSTEMS
RECTIFIER CIRCUIT
FERRORESONANT TYPE
48 VDC 100 AMP
AUTOMATIC REGULATION
KS-20493

BELL TELEPHONE LABORATORIES
INCORPORATED

1499

②

65

AT & T CO
STANDARD

SC-82401-01-A1
17 SHEETS

ISSUE
2B

CIRCUIT PACKS		
DESIG	APP FIG	
	NO	SH NO
CP1	2	C3
CP2	2	C3
CP3	2	C3
CP4	2	C3
CP5	2	C3

DESIG	LOCATION		
	FS	APP FIG	EQUIP
CAPACITOR			
C1-C5	1E6	1	
C6	1F5	1	
C7-C11	1E5	1	

CIRCUIT BREAKER			
CB1	1C6 2B0	1	

CONNECTOR			
J1	5A8	1	
P1	5A8	1	
TP1	+ OUTPUT 1F8	1	
TP2	- VOLTAGE 1F8	1	
TP3	+ CURRENT 4H6	1	
TP4	- LIMIT 4B9	1	
P2		2	
P3	SEE SHT	2	
P4	C3	2	
P5		2	

DIODE			
CR1	1D6	1	
CR2	1C6	1	
CR3	5D0	1	

FUSE			
F1	BIAS	1C2	1
F2	SUPPLY	1C2	1
F3	OUTPUT VOLTS	1C7	1
F4	OUTPUT	1C6	1
F5	CAPACITOR	1C6	1
F6-F8		1E5	1
F9		1B7	1

INDUCTOR			
L1	1C7	1	
L2	1F5	1	

DESIG	LOCATION		
	FS	APP FIG	EQUIP
LAMP			
DS1	RECT FAIL	5A1	1
DS2	LOCAL SNS	5A2	1
DS3	POWER ON	5A3	1
DS4	POWER OFF	5A4	1
DS5	SIMULATED OUTPUT CURRENT	5A4	1
DS6		5A5	1

METER			
M1	OUTPUT CURRENT	2H5	1

RELAY, CONTACTOR			
ST1	1E1	1	
ST2	5E0 1B2 1C2	1	

RESISTOR			
R1	1E7	1	
R2	1F5	1	
R3	1E7	1	
R4	2G5	1	
R4A	2G5	1	
R6	2A5	1	
R7	1A6	1	
R8	2B1	1	
R9	1B6	1	

RHEOSTAT			
RC OUTPUT VOLTS ADJUST	4D9	1	

SWITCH			
S1	POWER ON/OFF	SEE APP FIG	1
S2	SIMULATED OUTPUT CURRENT	SEE APP FIG	1

TRANSFORMER			
T1	1A4 2B0	1	
T2	1F1	1	
ACCT	1C5 2E1	1	

DESIG	LOCATION		
	FS	APP FIG	EQUIP
TRIAC			
Q1	1F6	1	

DESIG	LOCATION	
	FS	CAD
AC INPUT		
L1	1C7	1
L2	1F5	1
FR GRD	1C3	1

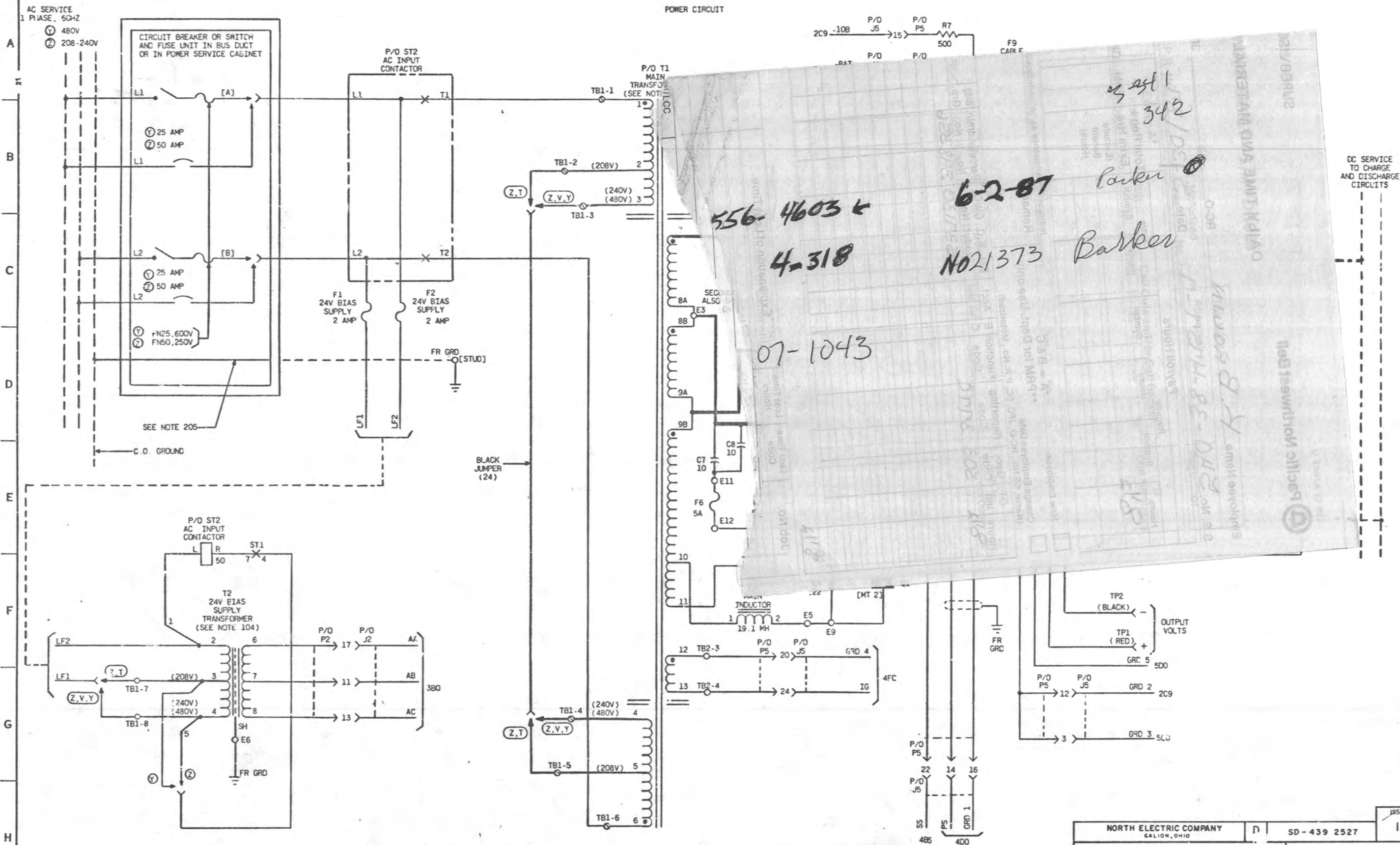
CHARGE AND DISCHARGE CKT		
BAT	1C7	1
GRD	1E7	1

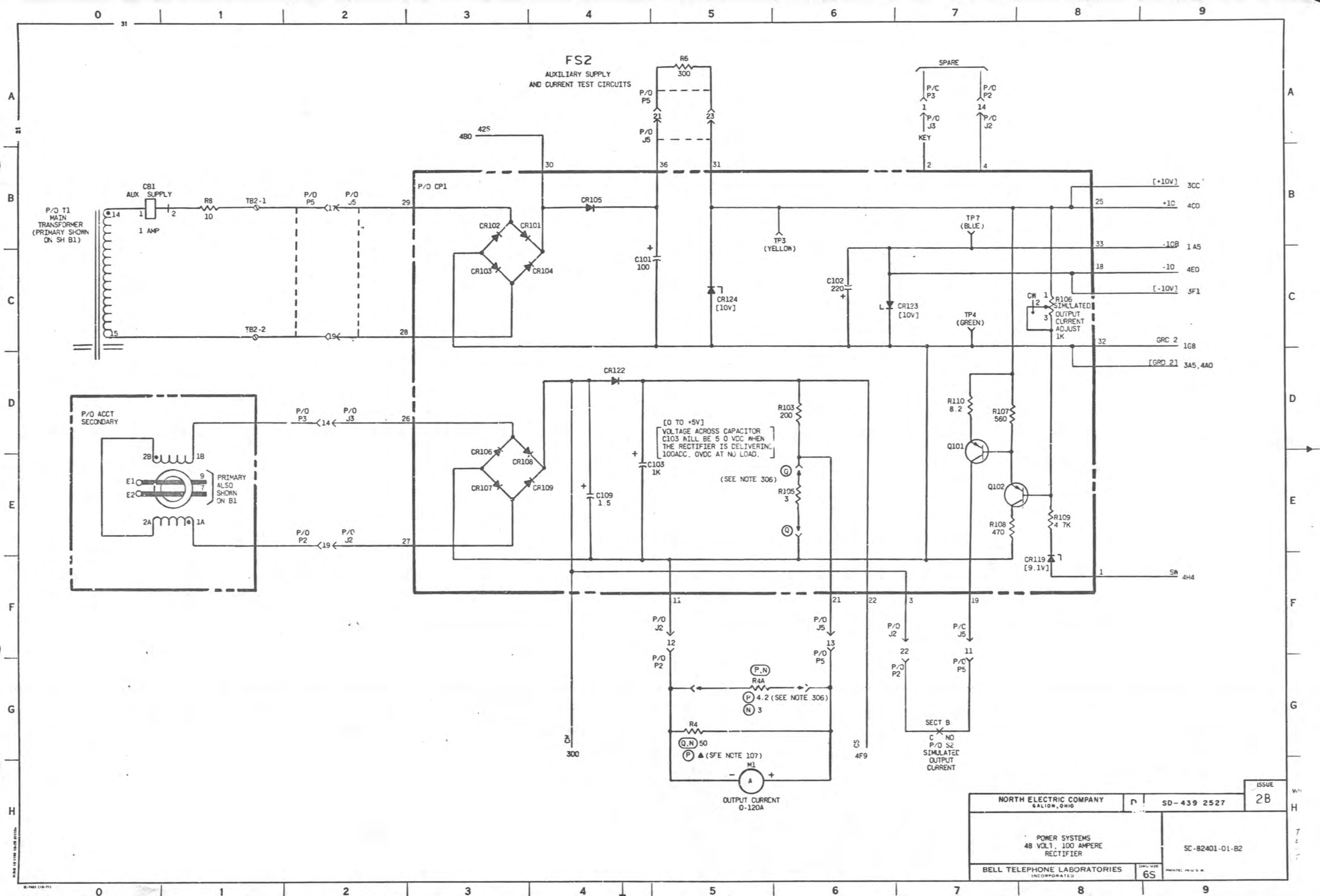
PLANT CONTROL CKT		
CA	5A8	1
CB	5A8	1
CBS	5A8	1
CFA	5C8	1
HV	5B8	1
RB	5C8	1
RG	5C8	1
RFA	5C8	1
RFA-RTN	5B8	1
TR	5C8	1
RS	5B8	1
RSR	5B8	1

APP OR WRG	LOCATION
Z	APP FIG 1, 1A0, 1G0, 1G1 1G3, 1F3, 1C3, 1B3
Y	APP FIG 1, 1G0, 1F3, 1C3 1A0
V	APP FIG 1, 1G0, 1F3, 1C3
T	APP FIG 1, 1G0, 1C3, 1B3
S	5E6
R	5E6
Q	APP FIG 1, 2G5, 2E6
P	APP FIG 1, 2G5
N	APP FIG 1, 2G5

NORTH ELECTRIC COMPANY GALION, OHIO		SD-439 2527	ISSUE 2B
POWER SYSTEMS 48 VOLT, 100 AMPERE RECTIFIER		SD-82401-01-A2	
BELL TELEPHONE LABORATORIES INCORPORATED		DWG NO 6S	PRINTED IN U.S.A.

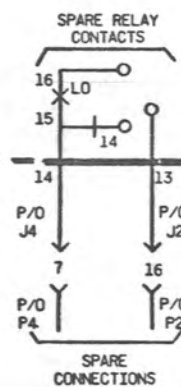
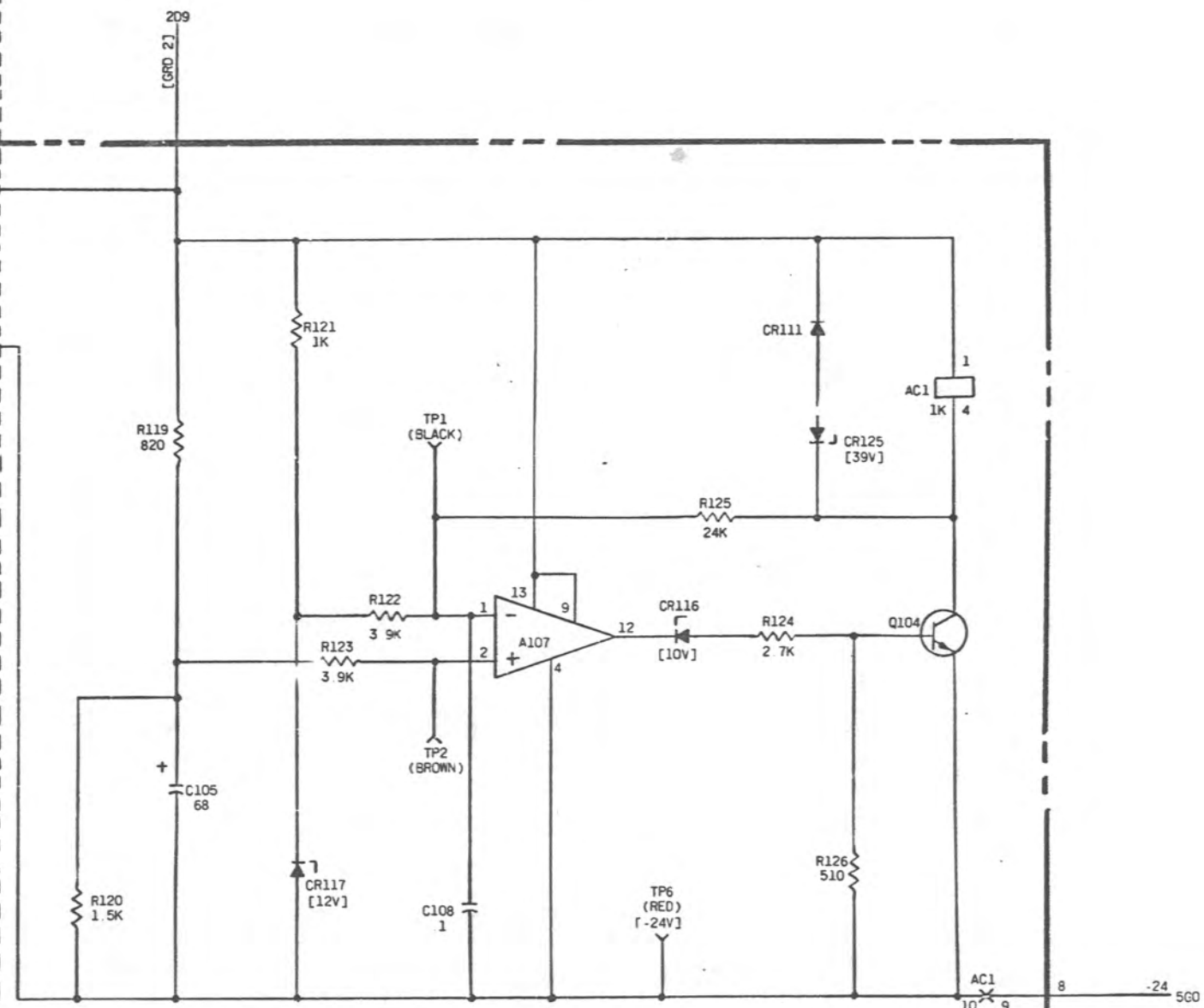
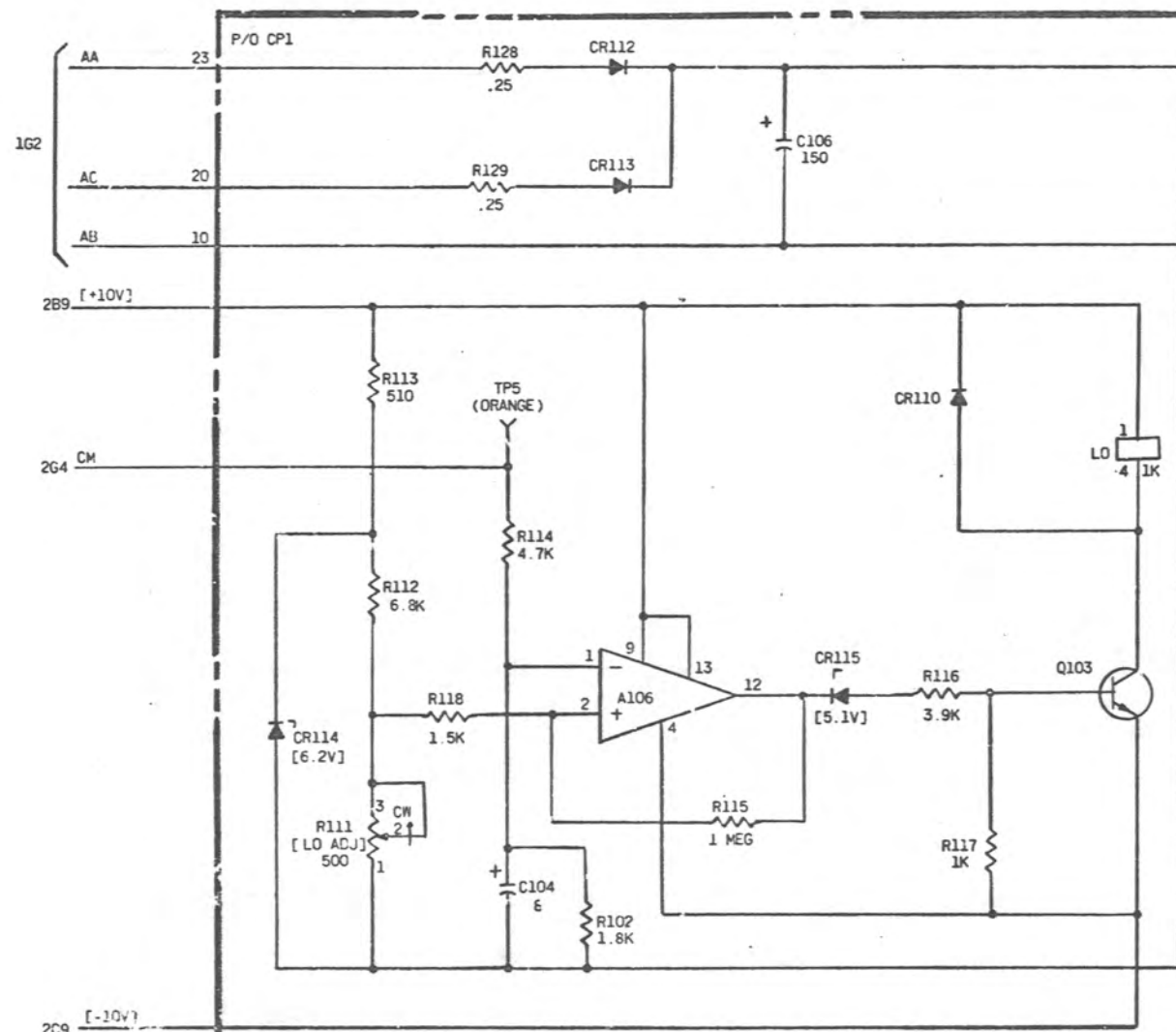
FSI POWER CIRCUIT



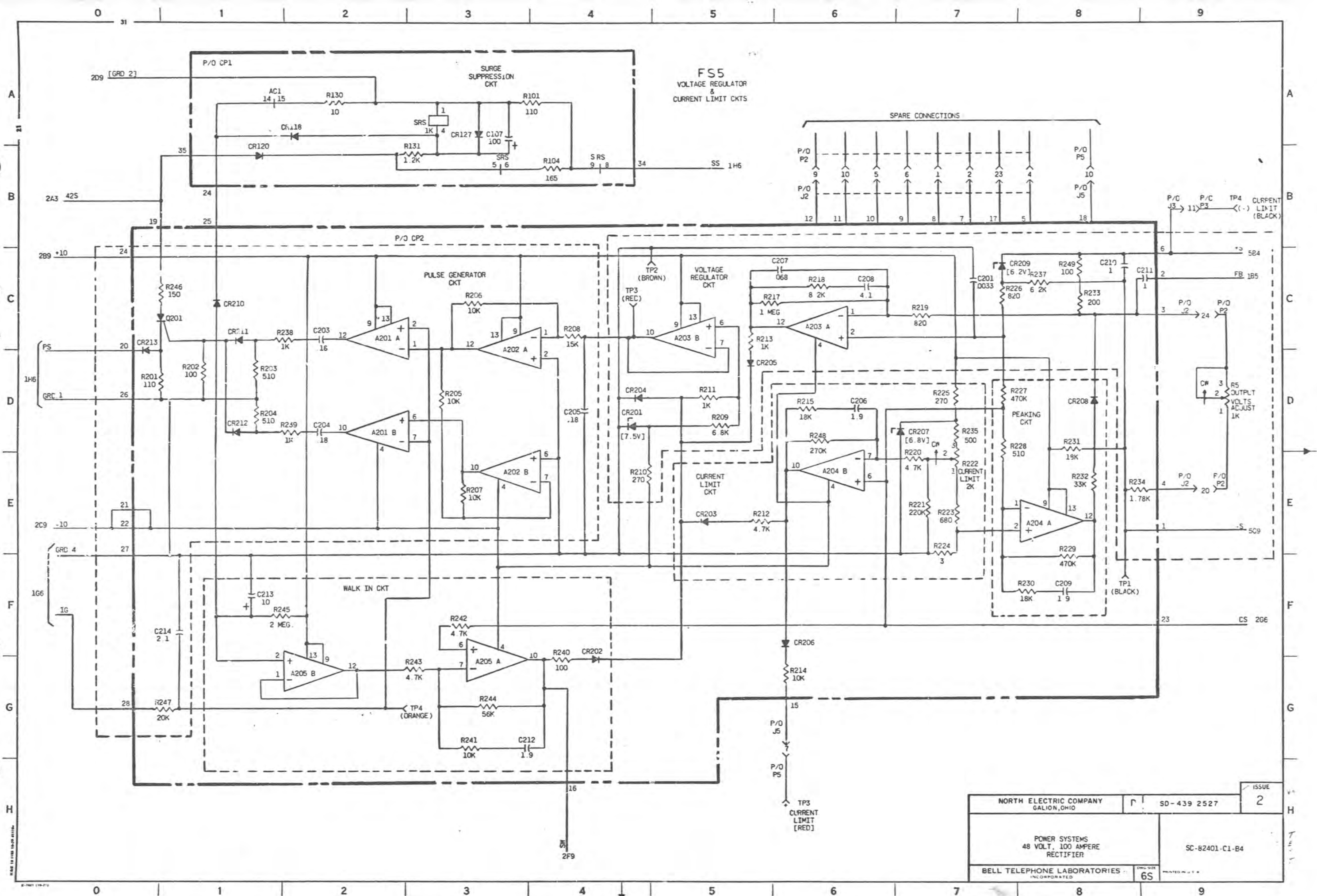


FS3 LOW OUTPUT CURRENT DETECTOR CIRCUIT

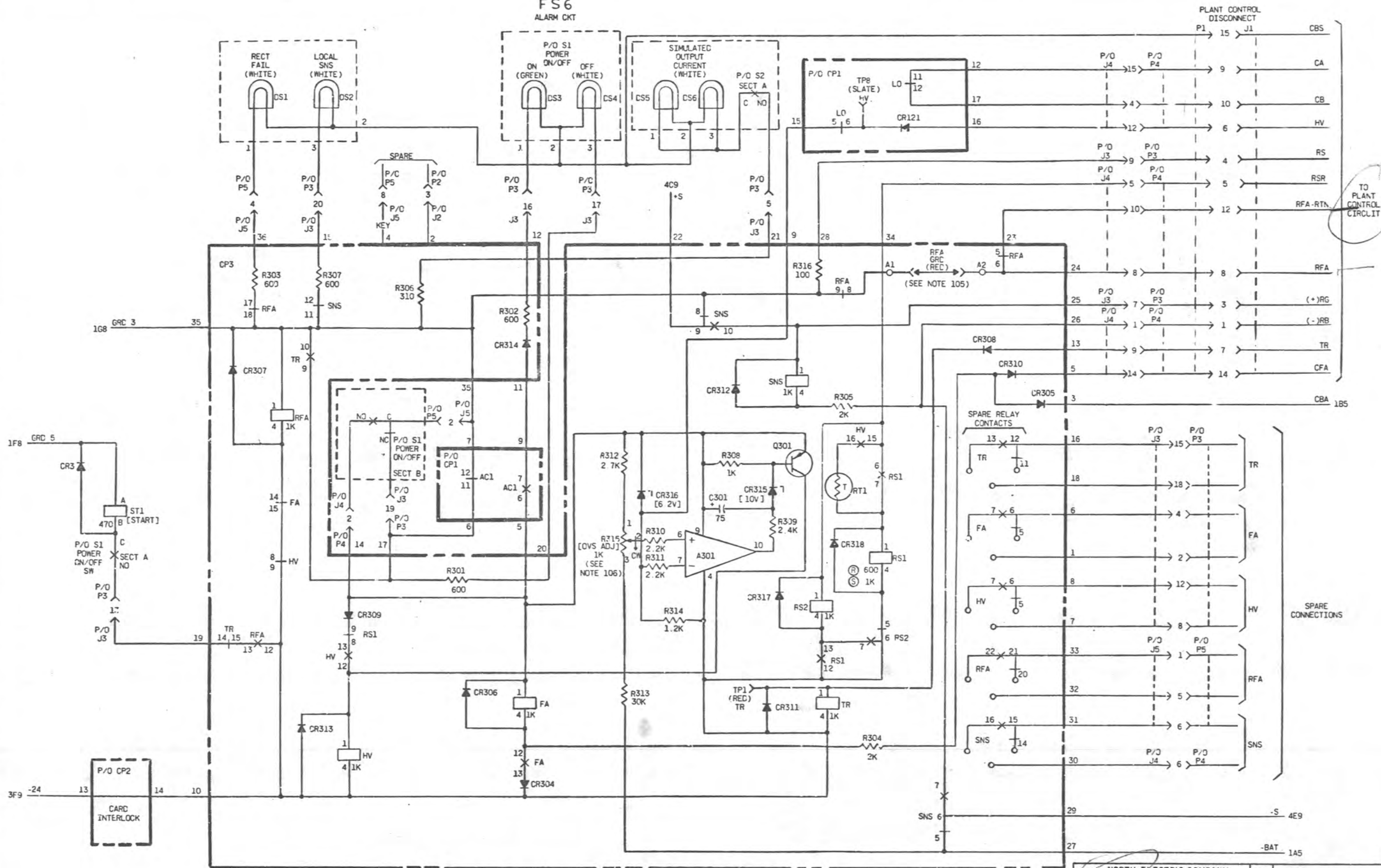
FS4 AC INPUT MONITOR CIRCUIT



NORTH ELECTRIC COMPANY GALION, OHIO	SD-439 2527	ISSUE 1
POWER SYSTEMS 48 VOLT, 100 AMPERE RECTIFIER		SC-82401-01-B3
BELL TELEPHONE LABORATORIES INCORPORATED	6S	PRINTED IN U.S.A.

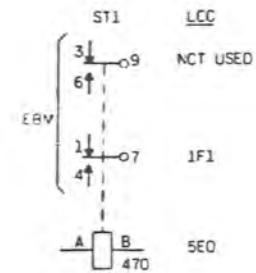


FS6 ALARM CKT

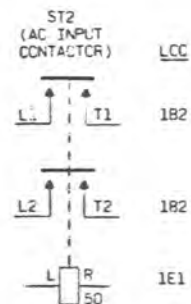


PART OF APP FIG 1
(SEE NOTE 304)

RELAY	NORTH CODE	MFR CODE	RATING
DESIG			
ST1 [START]	339 C555	PCTTER-BRUMFIELD KUP11055-24	24V CCIL 2C CONTACTS

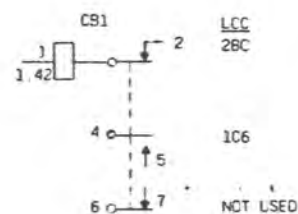


DESIG	NORTH CODE	MFR CODE	RATING
ST2	307 C173	CLTLER-HAMMER 956C-H15E0	6CA CONTACTS



CAPACITOR	DESIG	LCC	NORTH CODE	MFR CODE	RATING
C1-5	1E6	304 2759	SANGAMO	10C233UC75-DF28	23K, +75-10%, 75VDC
C6	1F5	304 1102	SPRAGUE	196P22491054	22, ±10%, 100VDC
C7-11	1E5	304 3231	GE	21L6021	10, ±10%, 660VAC

CIRCUIT BREAKER	DESIG	NORTH CODE	MFR CODE	RATING
CB1	305 C415	ETA 46-40C		250VAC, 1A



CB1 IS SHOWN HERE IN THE NON-TRIPPED CONDITION. TERMINALS 4 AND 5 COMPRISE THE BREAK CONTACT, AND TERMINALS 6 AND 7 COMPRISE THE MAKE CONTACT.

CONNECTOR	DESIG	LCC	NORTH CODE	MFR CODE	RATING
J1	5A8	309 C923	CINCH (TRA)	S-315-CCT-63A-SB, 15CKT, FEMALE	
P1	5A8	309 C922	CINCH (TRA)	P-315-SB, 15CKT, MALE	
TP1(R)	1F8	333 C106	E. F. JOHNSON	105-6C2	
TP2(BK)	1F8	333 C104	E. F. JOHNSON	105-6C3	
TP3(R)	4H6	333 C106	E. F. JOHNSON	105-6C2	
TP4(BK)	4B9	333 C104	E. F. JOHNSON	105-6C3	
P2, P5	309	0730	AMP	1-350246-9	
P3	309	0724	AMP	1-350245-9	
P4	309	0718	AMP	1-350244-9	

SEE NOTE 1

DIODE	DESIG	LCC	NORTH CODE	MFR CODE	RATING
CR1	1D6	337 1267	INTERNATIONAL RECTIFIER	1N3737F	250A, 300V
CR2	1D6	337 1267	GENERAL ELECTRIC	1N3737R	
CR3	5D0	058 6256	GENERAL INSTRUMENT	GP 10G-C17	1A, 400V
			MOTOROLA	SR2006K-4	

FUSE	DESIG	LCC	NORTH CODE	MFR CODE	RATING
F1, 2	1C2	315 C42C	BUSMAN	BBS-2	2A, 600V
F3	1D7	315 C384	WECC	7CP	1/1CA, 300V
F4	1D6	315 C531	WECC	7CB	2A, 300V
F5	1D6	315 C397	CHASE-SHAMMUT	A132 150	15CA, 130V
F6, 7, 8	1E5	130 2501	BUSMAN	FUSIBLE WIRE	5A
F9	1B7	315 C531	WECC	7CB	2A, 300V

INDUCTOR	DESIG	LCC	NORTH CODE	MFR CODE	RATING
L1	1C7	622 1150	NORTH ELECTRIC		800MHY @ 100 AMP DC
L2	1F5	622 1114	NORTH ELECTRIC		19.1M, 21.5AAC

LAMP	DESIG	LCC	NORTH CODE	MFR CODE	RATING
DS1 (RECT FAIL)	5A1	322 0054	CHICAGO MINIATURE	OW327-LSV	28V, 60MA
DS2 (LOCAL SAS)	5A2				
DS3 (POWER ON)	5A3				
DS4 (POWER OFF)	5A4				
DS5, 6 (SIMULATED OUTPUT CURRENT)	5A5				

DS3 AND DS4 ARE MOUNTED IN SWITCH S1.
DS5 AND DS6 ARE MOUNTED IN SWITCH S2.

LAMPHOLDER	DESIG	NORTH CODE	MFR CODE
DS1, 2	366 C581	MASTER SPECIALTIES	90C1ACC5G21(WA)-16

NOTE

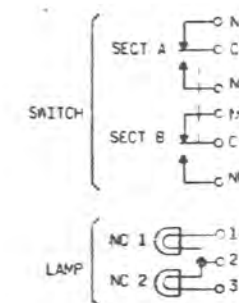
1. P2-P5 ARE MATING CONNECTORS J2-J5 CONNECTORS MOUNTED ON CP5. FOR LOCATION OF TERMINALS SEE APP FIG 2.

METER	DESIG	LCC	NORTH CODE	MFR CODE	RATING
M1 (OUTPUT CURRENT)	2H5	327 C322	WESTON	2031T	0-12CADC

RESISTOR	DESIG	LCC	NORTH CODE	MFR CODE	RATING
R1	1E7	340 7611	MALLORY	4-1 2V	150, 5%, 50W (WA)
R2	1F5	340 7234	MEMCOR	FR10	1 1K, 5%, 10W (WA)
R3	1E7	340 7612	CALE	HL-65-06Z	200, 5%, 50A (WA)
R4	2G5	340 1664	TEPRO	TS-5W	50, 1%, 5W (WA) (SEE NOTE 107)
R6	2A5	340 7224	MEMCOR	FR10	300, 5%, 10W (WA)
R7	1A6	340 7228	MEMCOR	FR10	500, 5%, 10W (WA)
R8	2B1	340 7407	MALLORY	2L	10, 10%, 25W
R9	1C6	340 7233	MEMCOR	FR10	1K, 5%, 10W
R4A	2G5	340 5940	TEPRO	TS-1A	4, 2, 1%, 3/4W (WA)
		340 4376	SPRAGUE	233E	3, 1%, 1W (WA)

RHEOSTAT	DESIG	LCC	NORTH CODE	MFR CODE	RATING
R5 (OUTPUT VOLTS ADJUST)	4C9	341 C887	SPECTROL	534	1K 5%, 2W

SWITCH	DESIG	NORTH CODE	MFR CODE	RATING
S1 (POWER ON/OFF)	366 C582	MASTER SPECIALTIES	90C1A3C4G21(WA)-16	3A, 115VAC
S2 (SIMULATED OUTPUT CURRENT)	366 C598	MASTER SPECIALTIES	90C1A3C2G2C(WA)-14	



SWITCH			
DESIG	SECT	LCC	CONTACT
S1	A	5C2	MAKE
	B	5C2	TRANSFER (EEM)
S2	A	5A5	MAKE
	B	2G7	MAKE

LAMP		
DESIG	NC	LCC
DS3	1	5A3
DS4	2	5A4
DS5	1	5A4
DS6	2	5A5

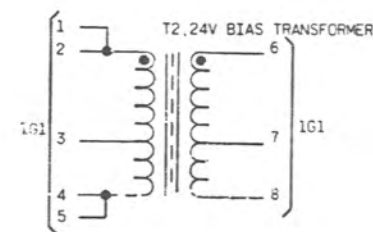
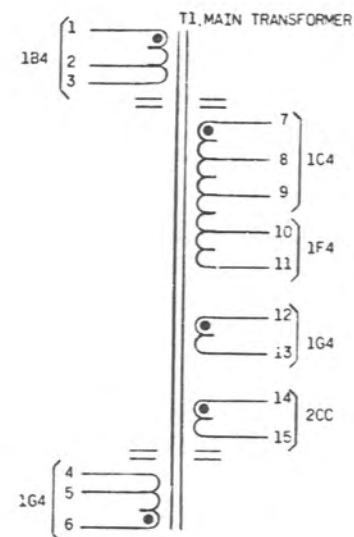
DS3 AND DS4 ARE MOUNTED IN SWITCH S1.
DS5 AND DS6 ARE MOUNTED IN SWITCH S2.

NORTH ELECTRIC COMPANY GALION, OHIO		SC-439 2527	ISSUE 2B
POWER SYSTEMS 48VOLT, 100AMPERE RECTIFIER		SC-824C1-01-C1	
BELL TELEPHONE LABORATORIES INCORPORATED		6S	PRINTED IN U.S.A.

PART OF APP FIG 1
(SEE NOTE 304)

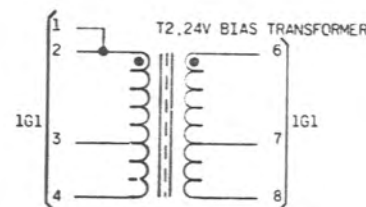
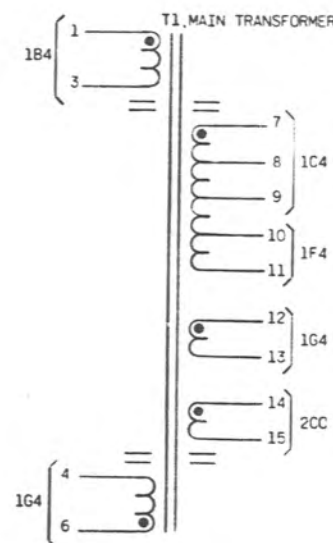
TRANSFORMER

DESIG	NORTH CODE	MFR CODE
② T1	612 1C30	NORTH ELECTRIC
T2	601 2928	



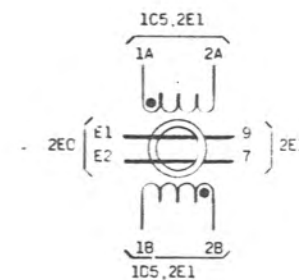
TRANSFORMER

DESIG	NORTH CODE	MFR CODE
⑤ T1	612 1165	NORTH ELECTRIC
T2	601 3005	



TRANSFORMER, CURRENT

DESIG	NORTH CODE	MFR CODE
ACCT	601 2790	NORTH ELECTRIC



TRIAC

DESIG	LCC	NORTH CODE	MFR CODE	RATING
Q1	1F6	337 1802	INTERNATIONAL RECTIFIER 50AC60A	50A, 600V

NORTH ELECTRIC COMPANY GALION, OHIO		D	SC-439 2527	ISSUE 1
POWER SYSTEMS 48VCLT, 100AMPERE RECTIFIER		SC-824C1-01-C2		
BELL TELEPHONE LABORATORIES INCORPORATED		6S	PRINTED IN U.S.A.	

APP FIG 2

CIRCUIT PACK

DESIG		CP1		CP2		CP3		CP4		CP5								DESIG	
CODE		620 1363		620 1364		620 1365		620 1367		620 1366								CODE	
OPTION																		OPTION	
ELEMENT IDENT		TERM		TERM		TERM		TERM		J2		J3		J4		J5		ELEMENT IDENT	
TERM	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	TERM		
36		2B5				5C1											36		
35	42S	4B1			GRD 3	5C1											35		
34	SS	4B4			RSR	5C6											34		
33	-10B	2B8				5F7											33		
32	GRD 2	2C8				5F7											32		
31		2B5				5G7											31		
30	42S	2B4				5G7											30		
29		2B5			-S	5G7											29		
28		2C3	IG	4G4	RC	5C5											28		
27		2E3	GRD 4	4EC	-BAT	5H7											27		
26		2C3	GRD 1	4DC	(-)RB	5C7											26		
25	+1C	2B8			4B1	(+)RG	5C7										25		
24		4B1	+1C	4C0	RFA	5C7				4C9				IG	1G5		24		
23	AA	3B1	CS	4F9	RFA-RTN	5C7		SPARE	4B7						2A5		23		
22	CS	2F6	-1C	4E0	+S	5C4			2F7					SS	1G6		22		
21		2F6	-1C	4E0		5C5									2A5		21		
20	AC	3B1	FS	4CC		5E3			4E9		5B2			GRD 4	1F5		20		
19		2F7	42S	4B0		5F1			2E2		5E2				2C2		19		
18	-1C	2C8	SPARE	4B3		5E7					5E8						18		
17	CB	5A6	SPARE	4B7		5E2		AA	1F2		5B4				2B2		17		
16	HV	5B6	SW	4H 1		5D7			3H4		5B3			GRD 1	1G6		16		
15		1-35		4G6		5C2					5C8	CA	5A7	-1CB	1A6		15		
14		3G4	-24	5G0		5E2		SPARE	2A7		2D2	CFA	5D7	FS	1G6		14		
13		3G4	-24	5G0	TR	5C7		AC	1G2		5FC				2G6		13		
12	CA	5A6	SPARE	4B6		5C3			2G5		5E8	HV	5B7	GRD 2	1G7		12		
11		2F5	SPARE	4B6		5D3		AB	1G2		4B9				2F7		11		
10	AB	3C1	SPARE	4B6	-24	5G1		SPARE	4B6	RS	5B7	RFA-RTN	5B7	SPARE	4B8		10		
9		5D3	SPARE	4B7		5C5		SPARE	4B6	RS	5B7	TR	5C7				9		
8	-24	3F9	SPARE	4B7		5E7					5F8	RFA	5C7	SPARE	5B2		8		
7	GRD 3	5D3	SPARE	4B7		5F7				(+)RG	5C7		3H4		4G6		7		
6		5E3	+S	4C9		5E7		SPARE	4B7	FB	1A6		5G8		5G8		6		
5		5E3	SPARE	4B8	CFA	5D7		IFARE	4B6		5B5	RSR	5B7		5F8		5		
4	SPARE	2B7		4E9	KEY	5C2		SPARE	4B8		5E8	CB	5A7		5B1		4		
3		2F7		4C9	CBA	5D7		SPARE	5B2	CBA	1B6	-BAT	1A6	GRD 3	1G7		3		
2	KEY	2B7	FB	4C9	SPARE	5B2		SPARE	4B7		5E8		5E2	GRD 3	5C3		2		
1	SW	2F8	-S	4E9		5E7		SPARE	4B7	SPARE	2A7	(-)PB	5C7		5F8		1		

CP4 IS AN EXTENDER BOARD AND IS NOT SHOWN IN AN FS.

NORTH ELECTRIC COMPANY SALON O-H		SD-439 2527	ISSUE 1
POWER SYSTEMS 48VOLT, 100AMPERE RECTIFIER		SD-82401-01-C3	
BELL TELEPHONE LABORATORIES INCORPORATED		6S	PRINTED IN U.S.A.

CIRCUIT NOTES:

DESIG	FUSE AMP	POTENTIAL	QUANTITY	SEE NOTE 203
A, B	FN50	(2) 250V (INPUT)	2 PER RECT	
	FN25	(7) 600V (INPUT)	2 PER RECT	
CHG	FN150	-48V (OUTPUT)	1 PER RECT	
CHG ALM	70G	-48V (OUTPUT)	1 PER RECTIFIER	
CONTR	70C	-48V (OUTPUT)	1 PER RECTIFIER	

FEATURE OR OPTION	PROVIDE		
	APP FIG	APP OR WRG	QUANTITY
CONSTANT VOLTAGE -48V, 100AMP PER KS-20493, L21 RECTIFIER FOR CHARGING 23 OR 24 CELL BATTERY PLANTS, 208-240 VAC VERSION	1, 2	Z	ONE PER RECTIFIER
CONSTANT VOLTAGE -48V, 100AMP PER KS-20493, L22 RECTIFIER FOR CHARGING 23 OR 24 CELL BATTERY PLANTS, 480 VAC VERSION	1, 2	Y	ONE PER RECTIFIER
208 VAC INPUT		Z, T	
240 VAC INPUT		Z, V	

RECORD OF FIGURES, WIRING AND APPARATUS CHANGES						
CHANGED ON ISSUE	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT		
				STE	A & M	MD
28	R OR S	S	305	R		S
	N, P OR Q	Q	107, 306	P	N	Q

104 Z-OPTION RECTIFIERS ARE SHIPPED FROM THE FACTORY WITH THE MAIN TRANSFORMER, T1 AND 24V BIAS SUPPLY TRANSFORMER, T2 CONNECTED FOR 240V INPUT. FOR 208V INPUT INSTALLATIONS, RECONNECT T1 AND T2 PER THE TABLES BELOW.

(T1) MAIN TRANSFORMER CONNECTIONS FOR 208V OR 240V INPUT

NOMINAL AC INPUT	ABSOLUTE AC VOLTAGE RANGE	CONNECT BLACK 8GA JUMPER (24) BETWEEN
208V	186-221V	TB1-2 AND TB1-5
240V	216-253V	TB1-3 AND TB1-4

(T2) 24V BIAS SUPPLY TRANSFORMER CONNECTIONS FOR 208V OR 240V INPUT

NOMINAL AC INPUT	ABSOLUTE AC VOLTAGE RANGE	RECONNECT 16GA BLUE LEAD	
		ON	TO
208V	186-221V	TB1-8	TB1-7
240V	216-253V	TB1-7	TB1-8

105 IF PLANT REQUIRES RECTIFIER GRD FOR RFA ALARM, INSTALLER SHALL CONNECT PLANT CONTROL RFA LEAD TO TERMINAL 8 OF PLANT CONTROL DISCONNECT CONNECTOR (J1). IF PLANT REQUIRES RFA ALARM "LOOP CLOSURE", INSTALLER SHALL DISCONNECT (CUT OUT) RED JUMPER WIRE (RFA GRD) BETWEEN STAND-OFF TERMINALS A1-A2 ON 3, ALARM CIRCUITS BOARD, AND CONNECT PLANT CONTROL LEADS RFA AND RFA-RTN TO TERMINALS 8 AND 12, RESPECTIVELY, OF PLANT CONTROL DISCONNECT CONNECTOR (J1).

106 R315 [OVS ADJ] POTENTIOMETER (CP3) SHALL BE SET FOR SHUTDOWN AND LOCKOUT AT 57.5VDC ± 0.2 VDC. WHEN RECTIFIER IS USED IN POWER PLANTS FOR ESS AND FOR NORMAL CHARGE AND FLOAT OPERATION, IN OTHER PLANTS WHEN END CELL AND 2.3 VOLTS/CELL CHARGING IS REQUIRED, RESET R315 FOR SHUTDOWN AT 68 ± 0.2 VDC AND RESET TO 57.5 ± 0.2 VDC WHEN CHARGING IS COMPLETED.

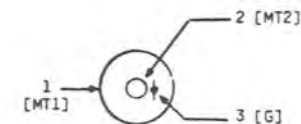
107 R4 RESISTOR, FURNISHED PER THE P-OPTION, IS A FACTORY SELECTED VALUE BETWEEN 7 AND 16 OHMS. (SEE NOTE 306)

EQUIPMENT NOTES:

- 201 WIRES SHALL BE AS SPECIFIED ON THE LATEST ISSUE OF T-82401-90.
- 202 EACH DC OUTPUT TERMINAL, BAT (B) AND GRD (G), IS ARRANGED TO ACCOMMODATE ONE, 1/0 AWC CABLE LUG PER KS-15977, LIST 5 OR APPROVED EQUIVALENT.
- 203 FUSES DESIGNATED FN SHALL BE OF THE MULTIPLE ELEMENT (TIME DELAY) TYPE.
- 204 PLANT CONTROL DISCONNECT, J1 CONNECTOR IS FURNISHED BY SUPPLIER AND SHIPPED ATTACHED TO FRAME MOUNTED P1 CONNECTOR. J1 CONNECTOR WILL ACCEPT NO. 16 AWG SOLID COPPER WIRE.
- 205 FRAME GROUNDING SHALL BE IN ACCORDANCE WITH SECTION 802-001-180.
- 206 INPUT AC FEEDERS CONNECT TO SADDLE-TYPE CABLE LUGS FURNISHED ON THE AC INPUT CONTACTOR (ST2). LUGS WILL ACCEPT CLASS B STRANDED NO. 4 TO NO. 14 AWG COPPER WIRE.

INFORMATION NOTES:

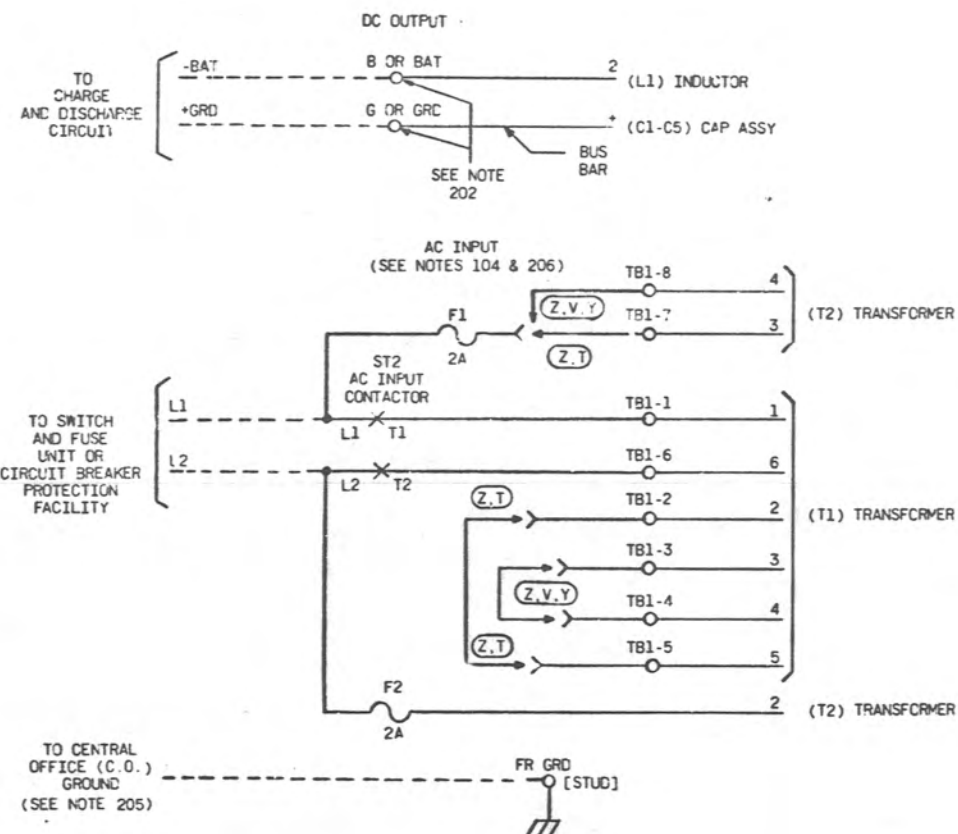
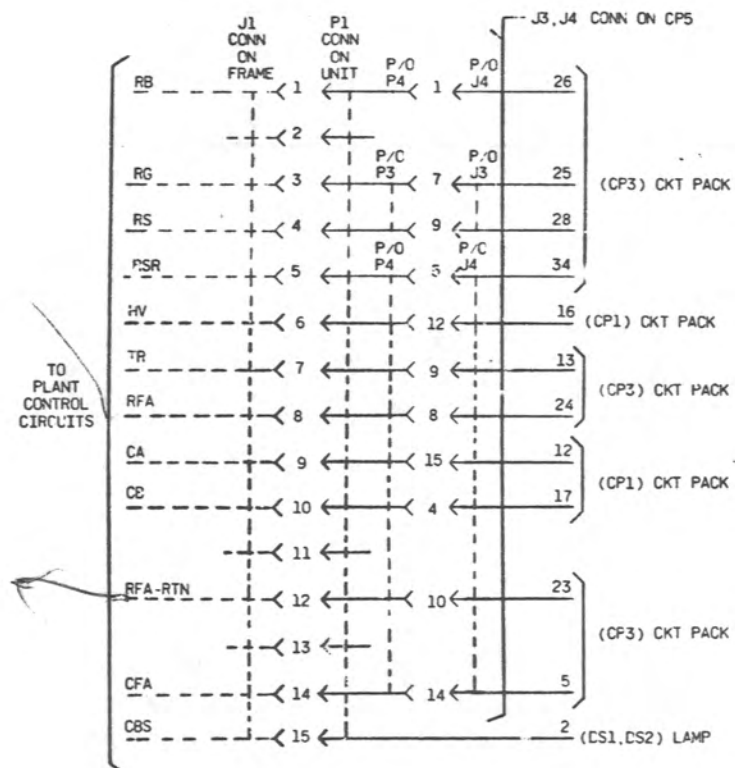
- 301 UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS.
- 302 INFORMATION IN BRACKETS [] IS FOR REFERENCE ONLY.
- 303 THE TERMINAL NUMBER ASSIGNMENT FOR TRIAC Q1 IS:



- 304 FOR OTHER APPROVED SOURCES SEE LATEST ISSUE OF THE ELECTRICAL COMPONENTS LIST IN MANUAL KS-20493, L601.
- 305 R-OPTION FURNISHED ON RECTIFIERS WITH SER NO. 500 AND HIGHER.
- 306 P-OPTION FURNISHED ON Z-OPTION RECTIFIERS BEGINNING WITH S/N 248 AND ON Y-OPTION RECTIFIERS WITH S/N 402. FOR RECTIFIERS EQUIPPED WITH Q-OPTION, PROCEED AS FOLLOWS WHEN REPLACEMENT OF CP1 OR M1 IS REQUIRED:
- (A) WHEN CP1 IS REPLACED, FURNISH THE N-OPTION RESISTOR VALUE OF R4A IF THE NEW CP1 DOES NOT FURNISH THE Q-OPTION. THIS RESISTOR WILL MOUNT ACROSS THE M1, METER TERMINALS.
- (B) WHEN THE M1 METER IS REPLACED, THE P-OPTION, R4 AND R4A RESISTORS WILL BE FURNISHED ON THE NEW M1 METER. INSTALLER SHALL REMOVE THE R105 RESISTOR FROM CP1.

NORTH ELECTRIC COMPANY GALION, OHIO		D	SD-439 2527	ISSUE 28
POWER SYSTEMS 48 VOLT, 100 AMPERE RECTIFIER		SC-82401-01-C1		
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CAD I (FOR APP FIG. 1 & 2)



NORTH ELECTRIC COMPANY GALION, OHIO	D	SD-439 2527	ISSUE I
POWER SYSTEMS 48 VOLT, 100 AMPERE RECTIFIER		SC-82401-01-G1	
BELL TELEPHONE LABORATORIES INCORPORATED		6S	PRINTED IN U.S.A.

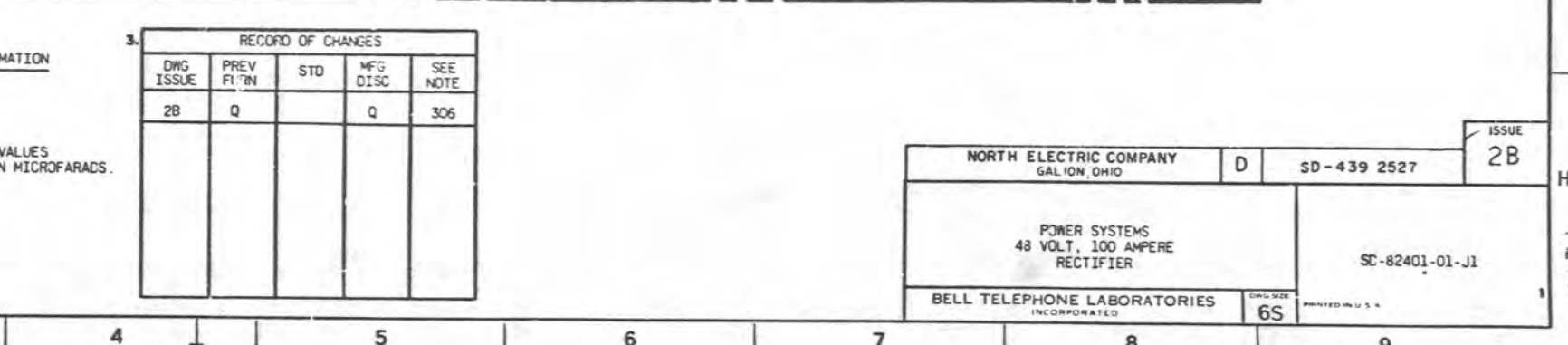
0-7421 (1-8-71)

0 1

CIRCUIT DESCRIPTION AND INPUT-OUTPUT INFORMATION
FOR THIS INFORMATION SEE CD-82401-01.

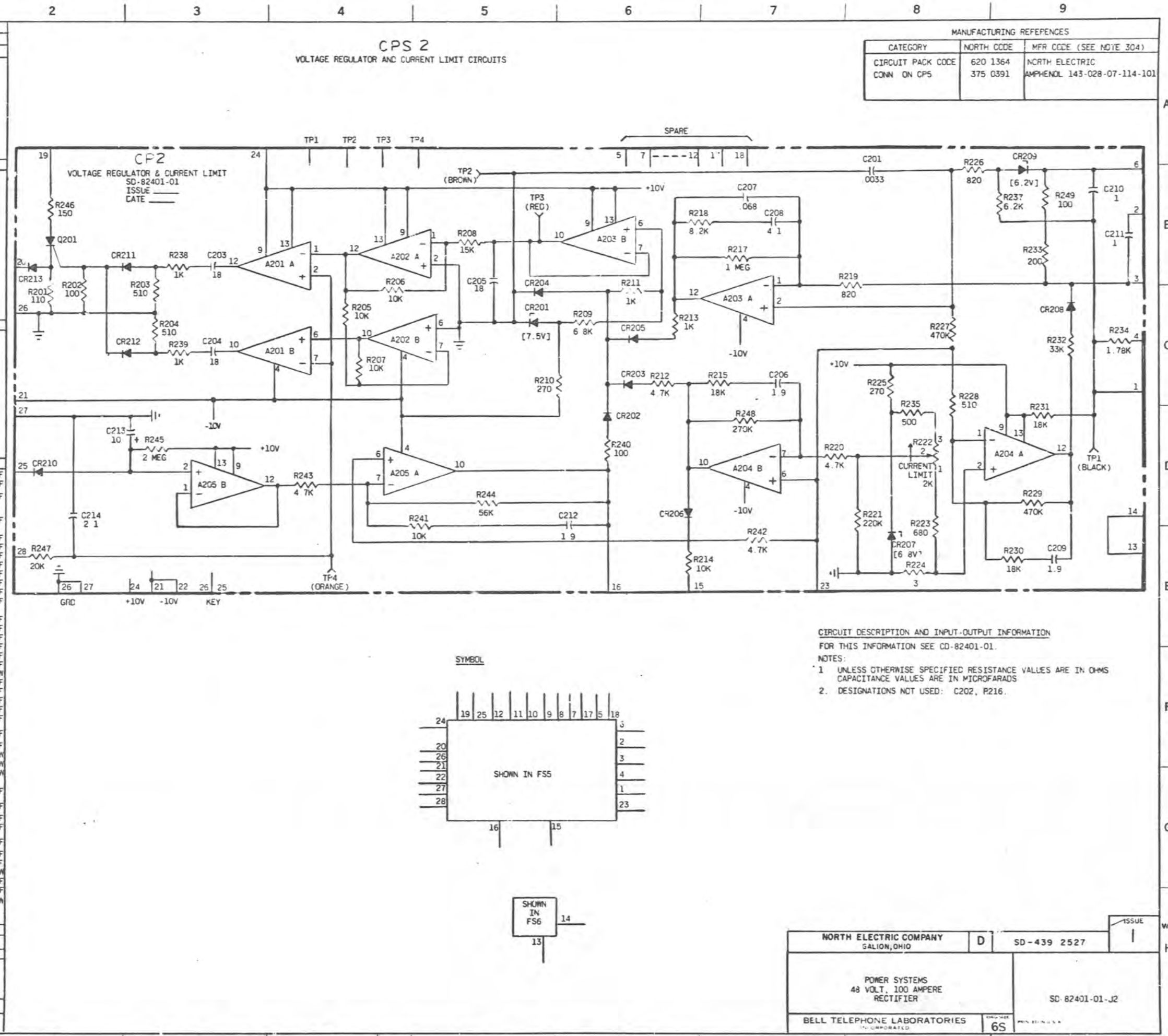
NOTES:

1. UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN P.F.
2. DESIGNATIONS NOT USED: CR126, R127.

[illegible]

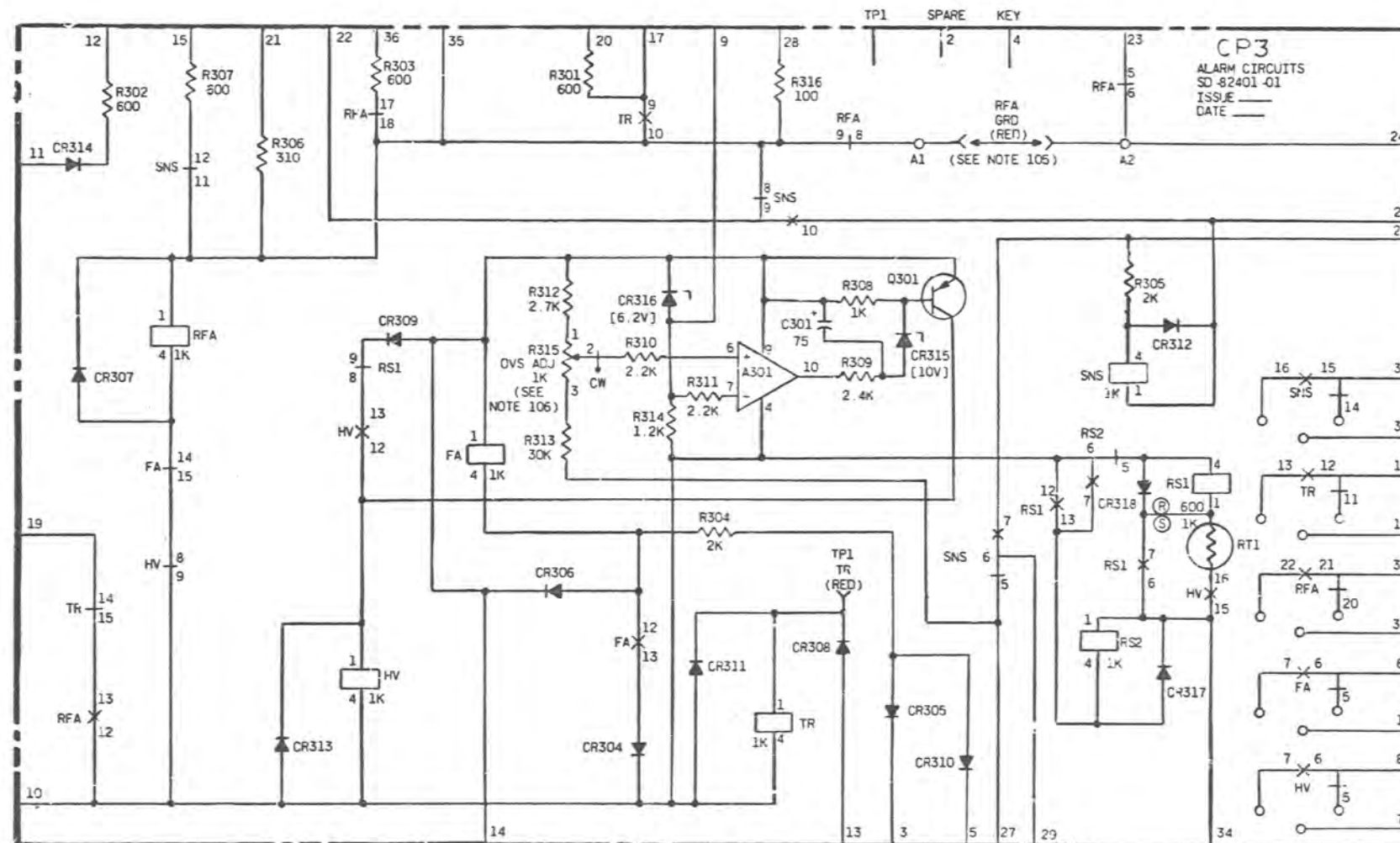
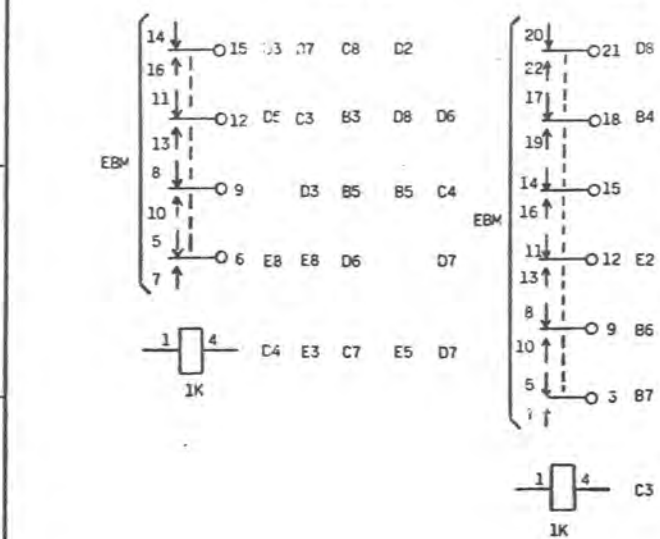
NORTH ELECTRIC COMPANY GALION, OHIO		D	SD - 439 2527	ISSUE 2B
POWER SYSTEMS 48 VOLT, 100 AMPERE RECTIFIER			SC-82401-01-J1	
BELL TELEPHONE LABORATORIES INCORPORATED		DRG. SIZE 6S	PRINTED IN U. S. A.	

COMPONENT LIST				
DESIG	NORTH CODE	LOC	OPT	RATING
AMPLIFIER				
A201	A	B3		
A202	A	B4		
A203	A	B6		
A204	A	B7		
A205	A	B8		
CAPACITORS				
C201	304	308	B8	AEROVOX MC60CK06 .0033, ±20%, 200VDC
C203	054	2219	B3	TRW (GOODALL) X663F .18, ±10%, 200VDC
C204	304	1904	B7	SPRAGUE TYPE 151D 1.9, ±10%, 20VDC
C205	304	0966	B7	TRW TYPE 663UM .068, ±10%, 100VDC
C206	304	1967	B7	KEMET T111 SERIES 4.1, ±10%, 20VDC
C207	304	1904	E9	SPRAGUE TYPE 151D 1.9, ±10%, 20VDC
C208	053	8287	B9	TRW (GOODALL) 663UM .1, 100VDC
C209	304	0562	B9	TRW TYPE 663UM 1, ±10%, 100VDC
C210	304	1904	D6	SPRAGUE TYPE 151D 1.9, ±10%, 20VDC
C211	304	1624	C2	SPRAGUE TYPE 40C 10, ±10%, 25VDC
C212	053	9460	C2	TRW TYPE X663F 2.1, ±5%, 100VDC
DIODES				
CR201	337	1764	C5	MOTOROLA 1N755A 7.5V 400MW
CR202	058	6256	B5	MOTOROLA SR2006K-4 400 PIV 1A
CR203	337	1355	E8	MOTOROLA 1N754A 5.8V 400MW
CR204	058	6256	C9	MOTOROLA SR2006K-4 400 PIV 1A
CR205	337	1253	A9	MOTOROLA 1N825 6.2V 400MW
CR206	058	6256	C2	MOTOROLA SR2006K-4 400 PIV 1A
CR207	058	6256	C2	MOTOROLA SR2006K-4 400 PIV 1A
CR208	058	6256	C2	MOTOROLA SR2006K-4 400 PIV 1A
CR209	058	6256	C2	MOTOROLA SR2006K-4 400 PIV 1A
CR210	058	6256	C2	MOTOROLA SR2006K-4 400 PIV 1A
CR211	058	6256	C2	MOTOROLA SR2006K-4 400 PIV 1A
CR212	058	6256	C2	MOTOROLA SR2006K-4 400 PIV 1A
CR213	058	6256	C2	MOTOROLA SR2006K-4 400 PIV 1A
RESISTORS				
R201	340	9176	C2	IRC TYPE RG42 110 5% 2W F
R202	340	1313	C2	TRW (IRC) TYPE RG20 100 5% 1/2W F
R203	340	1322	C3	TRW (IRC) TYPE RG20 510 5% 1/2W F
R204	340	1340	B4	TRW (IRC) TYPE RG20 10K 5% 1/2W F
R205	340	1342	B5	TRW (IRC) TYPE RG20 15K 5% 1/2W F
R206	340	1338	C6	TRW (IRC) TYPE RG20 6.8K 5% 1/2W F
R207	340	1313	C5	TRW (IRC) TYPE RG20 270 5% 1/2W F
R208	340	1326	B6	TRW (IRC) TYPE RG20 1K 5% 1/2W F
R209	340	1335	C6	TRW (IRC) TYPE RG20 4.7K 5% 1/2W F
R210	340	1326	C6	TRW (IRC) TYPE RG20 1K 5% 1/2W F
R211	340	9071	E6	IRC TYPE RG32 10K 5% 1W F
R212	340	1343	C7	TRW (IRC) TYPE RG20 18K 5% 1/2W F
R213	340	67	B7	IRC TYPE RG20 1MEG 2% 1/2W F
R214	340	1339	B6	TRW (IRC) TYPE RG20 8.2K 5% 1/2W F
R215	340	1325	B7	TRW (IRC) TYPE RG20 820 5% 1/2W F
R216	340	1335	C7	TRW (IRC) TYPE RG20 4.7K 5% 1/2W F
R217	340	1356	D8	TRW (IRC) TYPE RG20 220K 5% 1/2W F
R218	340	9044	D8	IRC TYPE RG32 680 5% 1W F
R219	340	4576	E8	SPRAGUE TYPE 239C 3 1% 1W WW
R220	340	1318	C8	TRW (IRC) TYPE RG20 270 5% 1/2W F
R221	340	1325	B8	TRW (IRC) TYPE RG20 820 5% 1/2W F
R222	340	1360	C8	TRW (IRC) TYPE RG20 470K 5% 1/2W F
R223	340	1322	C8	TRW (IRC) TYPE RG20 510 5% 1/2W F
R224	340	1360	D9	TRW (IRC) TYPE RG20 470K 5% 1/2W F
R225	340	1343	D9	TRW (IRC) TYPE RG20 18K 5% 1/2W F
R226	340	1346	C9	TRW (IRC) TYPE RG20 33K 5% 1/2W F
R227	340	0493	B	DALE ELEC. TYPE RS-1A 200 1% 3/4W-WW
R228	340	5411	C9	DALE ELEC. RW 79U 1.78K 1% 3W WW
R229	340	0496	D8	DALE TYPE RS-1A 500 1% 3/4W-WW
R230	340	9066	B9	IRC TYPE RG32 6.2K 5% 1W F
R231	340	1326	B3	TRW (IRC) TYPE RG20 1K 5% 1/2W F
R232	340	1313	D6	TRW (IRC) TYPE RG20 100 5% 1/2W F
R233	340	1340	D4	TRW (IRC) TYPE RG20 10K 5% 1/2W F
R234	340	1335	D4	TRW (IRC) TYPE RG20 4.7K 5% 1/2W F
R235	340	1349	D5	TRW (IRC) TYPE RG20 56K 5% 1/2W F
R236	340	0226	D3	ALLEN BRADLEY TYPE EB 2MEG 5% 1/2W F
R237	340	2092	B2	DALE ELEC. TYPE RS-1038 150 1% 10W WW
R238	340	6884	E2	IRC TYPE RG20 1K 2% 1/2W F
R239	340	1357	C7	TRW (IRC) TYPE RG20 2.1K 5% 1/2W F
R240	340	0382	B9	DALE ELEC. TYPE RS-1A 100 1% 3/4W-WW
RHEOSTAT				
R222	341	0861	D8	BOURNS TYPE 3010P 2K 5% 1W
TEST JACKS				
TP1	333	0152	C9	BLACK
TP2	333	0153	B5	BROWN
TP3	333	0151	B5	RED
TP4	333	0155	E4	ORANGE
THYRISTOR				
Q201	337	1429	B2	(SCR) GE C6A 1.6A 100PRV



COMPONENT LIST					
DESIG	NORTH CODE	LOC	OPT	MFR CODE (SEE NOTE 304)	RATING
AMPLIFIER					
A301	061 7930	C5		TEXAS INSTR SN72747J	DUAL OP-AMP
CAPACITOR					
C301	304 3036			GENERAL ELECTRIC 84F	75, +75-100, 40VDC
DIODE					
CR304		E5			
CR305		E6			
CR306		D4			
CR307		C2			
CR308		D6			
CR309	058 6256	C3		GEN INSTR GP10G-017	400PIV 1A
CR310		E6			
CR311		E5			
CR312		E3			
CR313		B2			
CR314	337 1490	C6		MOTOROLA 1N758A	ZENER 10V
CR315	337 1253	C5		MOTOROLA 1N825	ZENER 6.2V
CR316					
CR317	058 6256	E7		GEN INSTR GP10G-017	400PIV 1A
CR318	058 6256	L7			
RESISTOR					
R301		B5			
R302		B2			
R303		B4			
R304		D5			
R305	340 9206	C7		IRC ELEC TYPE RG42	2K 5% 2W F
R306	340 1741	B3		SPRAGUE 281E	310, 5% 6-1/2W WM
R307	340 8028	B3		MALLORY TYPE 5AE	600 5% 5W WM
R308	340 1326	C6		CORNING TYPE CS20	1K 5% 1/2W F
R309	340 1331	C6		I.R.C. TYPE RG20	2.4K 5% 1/2W F
R310	340 1330	C5		CORNING TYPE CS20	2.2K 5% 1/2W F
R311	340 1330	C5		CORNING TYPE CS20	2.2K 5% 1/2W F
R312	340 1332	C4		CORNING TYPE CS20	2.7K 5% 1/2W F
R313	340 6638	C4		I.R.C. TYPE RG20	30K 2% 1/2W F
R314	340 6151	C5		I.R.C. TYPE RG32	1.2K 5% 1W F
R315	340 1313	B5		CORNING TYPE CS20	100 5% 1/2W F
RHEOSTAT					
R315	341 0569	C4		AMPHENOL TYPE 2850P	2K 5% 1W
TEST JACKS					
TP1	333 0251	D6		UCINITE 119437	REL
THERMISTOR					
RT1	369 0003	D7		WESTERN ELECTRIC 8F	THERMISTOR
TRANSISTOR					
Q301	054 3995			MOTOROLA SS1167	SILICON 2N2904A

RELAY		FA	HV	SNS	TR	RS1	RFA
		POTTER BRUMFIELD	POTTER BRUMFIELD				POTTER BRUMFIELD
		R10-E2-Y4-J1.0K	R10-E2-Y4-J1.0K				R10-E2-Y6-J1.0K
		(339 0646)	(339 0646)				(339 0647)

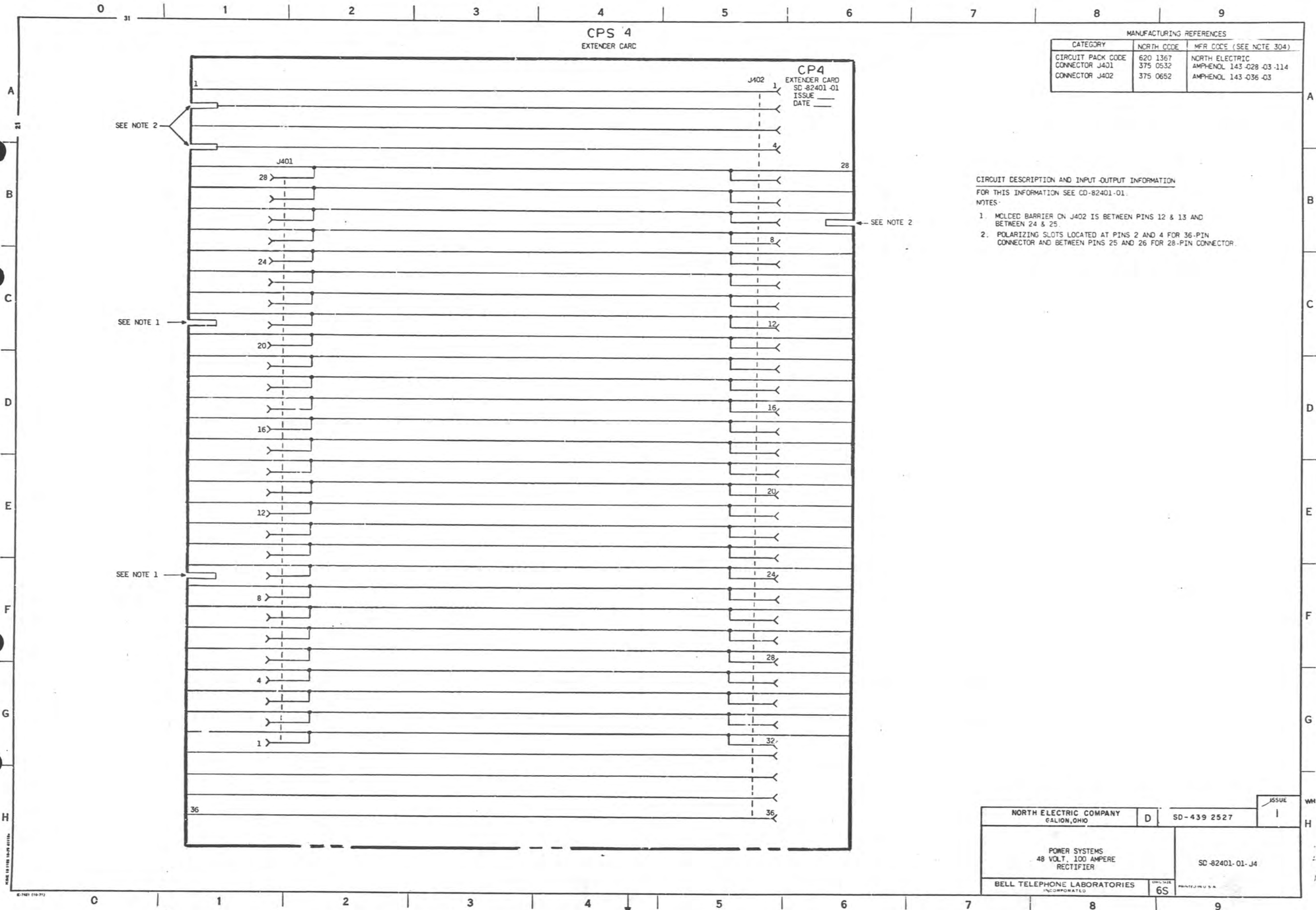


MANUFACTURING REFERENCES		
CATEGORY	NORTH CODE	MFR CODE (SEE NOTE 304)
CKT	620 1365	
PACK	375 0653	
CONN		
ON CP5		
		NORTH ELECTRIC
		AMPHENOL 143-036-07-101

CIRCUIT DESCRIPTION AND INPUT-OUTPUT INFORMATION
FOR THIS INFORMATION SEE CD-82401-01.
NOTES:
1. UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS

RECORD OF CHANGES				
DWG	PREV	STD	MFR	SEE
ISS	FURN		DISC	NOTE
28	S	R	S	305

NORTH ELECTRIC COMPANY GALION, OHIO		D	SD-439 2527	ISSUE 28
POWER SYSTEMS 48 VOLT, 100 AMPERE RECTIFIER		SD-82401-01-J3		
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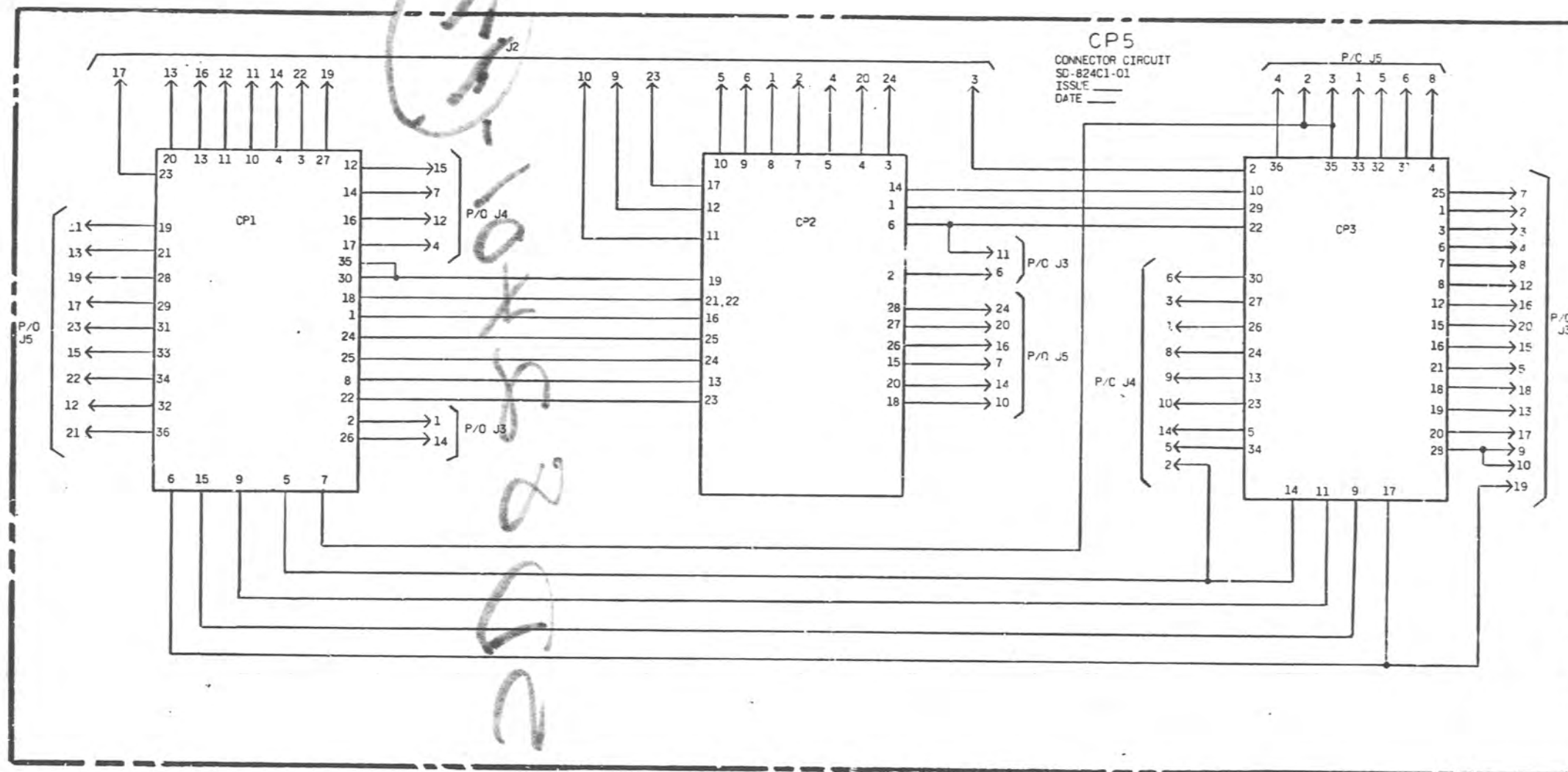


COMPONENT LIST		
DESIG	NORTH CODE	MFR CODE (SEE NOTE 304)
CIRCUIT PACK		
CP1	62C 1363	NORTH ELECTRIC
CP2	62C 1364	
CP3	62C 1365	
CONNECTOR		
J2	309 0807	AMP 9-350273-2
J3	309 0806	AMP 9-350270-2
J4	309 0805	AMP 9-350267-2
J5	309 0807	AMP 9-350273-2

CPS 5 CONNECTOR CIRCUIT

MANUFACTURING REFERENCES		
CATEGORY	NORTH CODE	MFR CODE (SEE NOTE 304)
CIRCUIT PACK CODE	62C 1366	NORTH ELECTRIC

NOTES:
1. TERMINALS NOT USED:
J2-7, 8, 15, 18, 21
J4-11, 13
J5-9, 18



NORTH ELECTRIC COMPANY GALION, OHIO		D	SD-439 2527	ISSUE 1
POWER SYSTEMS 48 VOLT, 100 AMPERE RECTIFIER		SD-82401-01-J5		
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