

D52 Y1 & Y2 AMPLIFIERS  
S52 X & Y AMPLIFIERS

D52 Y1 & Y2 AMPLIFIERS  
S52 X & Y AMPLIFIERS contd.

Cct. ref.	Part number	Value	Description	Tol. %	Rating
R1	319-0005-01	900k	HS	1	$\frac{1}{4}$
R2	319-0119-00	990k	HS	1	$\frac{1}{4}$
R3	319-0096-00	111k	HS	1	$\frac{1}{4}$
R4	319-0120-00	10.1k	HS	1	$\frac{1}{4}$
R5	319-0112-00	500k	HS	1	$\frac{1}{4}$
R6	319-0118-00	800k	HS	1	$\frac{1}{4}$
R7	319-0031-01	1M	HS	1	$\frac{1}{4}$
R8	319-0103-00	250k	HS	1	$\frac{1}{4}$
R9	319-0031-01	1M	HS	1	$\frac{1}{4}$
R10	316-0104-01	100k	C		
R11	316-0820-01	82	C		
R12	316-0180-00	18	C		
R21	316-0222-01	2.2k	C		
R22	316-0222-01	2.2k	C		
RV23	311-0723-00	500	CP	20	$\frac{1}{4}$
R24	316-0222-01	2.2k	C		
R25	316-0222-01	2.2k	C		
R26	316-0125-01	1.2M	C		
*R27	316-0223-01	22k	C		
R28	308-0484-00	7.5	WW	5	2
R29	316-0683-01	68k	C		
R30	316-0106-01	10M	C		
RV31	311-0783-00	100k	CP	20	$\frac{1}{4}$
R32D Y1	316-0224-01	220k	C		
Y2	316-0824-01	820k	C		
S Y	316-0274-01	270k	C		
X	316-0105-01	1M	C		
RV33	311-1002-00	100k	CV	20	$\frac{1}{4}$
R34	307-0159-00	6.8k	MO	5	2
R35D	303-0822-01	8.2k	C	5	1
S	303-0153-01	15k	C	5	1
R36D	316-0562-01	5.6k	C		
S	316-0153-01	15k	C		

\* One component per instrument, common to both amplifiers

Carbon resistors are 10%  $\frac{1}{4}$ W unless otherwise shown

Cct. ref.	Part number	Value	Description	Tol. %	Rating
R37D	316-0154-01	150k	C		
S	316-0394-01	390k	C		
RV38	311-0734-00	5k	CP	30	0.1
R39D	316-0154-01	150k	C		
S	316-0394-01	390k	C		
R40	316-0331-01	330	C		
R41D	316-0562-01	5.6k	C		
S	316-0153-01	15k	C		
R42D	303-0822-01	8.2k	C	5	1
S	303-0153-01	15k	C	5	1
R43	316-0180-01	18	C		
R44	316-0180-01	18	C		
R45D	307-0158-00	3.3k	MO	5	2
S	307-0166-00	4.7k	MO	5	$3\frac{1}{4}$
R46D	307-0166-00	4.7k	MO	5	$3\frac{1}{4}$
S	308-0474-00	12k	WW	5	$3\frac{1}{2}$
R47D	307-0166-00	4.7k	MO	5	$3\frac{1}{4}$
S	308-0474-00	12k	WW	5	$3\frac{1}{2}$
R48	316-0101-01	100	C		
R49	316-0101-01	100	C		
R50	316-0153-01	15k	C		
R51	316-0153-01	15k	C		
R52D	307-0183-00	2.7k	MO	5	$3\frac{1}{4}$
S	305-0562-01	5.6k	C	5	2
R53D	307-0183-00	2.7k	MO	5	$\frac{1}{4}$
S	305-0562-01	5.6k	C	5	2
R54S	316-0683-01	68k	C		
* RV55	311-0787-00	1.5k	WWP	10	$\frac{1}{4}$
R56	316-0153-01	15k	C		
R57	316-0153-01	15k	C		
R58	316-0106-01	10M	C		
R59	316-0106-01	10M	C		
* R60	316-0223-01	22k	C		
R61	316-0101-01	100	C		
R62	316-0101-01	100	C		

\* One component per instrument, common to both amplifiers

D52 Y1 & Y2 AMPLIFIERS  
S52 X & Y AMPLIFIERS contd.

Cct. ref.	Part number	Value	Description	Tol. %	Rating
C1	285-0772-00	0.1	PE	20	400
C2	281-0137-00	6-30p	CT		350
C3	281-0137-00	6-30p	CT		350
C4	281-0137-00	6-30p	CT		350
C5	281-0137-00	6-30p	CT		350
C6	285-0854-00	100p	PS	2p	350
C7	285-0850-00	1,000p	PS	5	125
C8	281-0137-00	6-30p	CT		350
C9	281-0137-00	6-30p	CT		350
C10	285-0842-00	15p	PS	1p	500
C11	285-0867-00	20p	PS	1p	500
C12	281-0137-00	6-30p	CT		350
C13	281-0137-00	6-30p	CT		350
C14	285-0843-00	30p	PS	2p	500
C15	283-0662-00	7.5p	SM	1/2p	350
C16	285-0769-00	0.01	PE	20	400
C21	281-0128-00	0.7-3p	CT		500
C22	285-0845-00	68p	PS	2p	500
C23	285-0791-00	0.47	PE	10	125
C24	290-0379-00	32	E		275
C25	290-0113-01	8	E		150
C26	285-0796-00	0.1	PE	20	250
C27	285-0796-00	0.1	PE	20	250
C28D	281-0676-00	2.2p	CER	0.1p	500
S	281-0711-00	3.9p	CER	1/4p	750
C29D	281-0676-00	2.2p	CER	0.1p	500
S	281-0711-00	3.9p	CER	1/4p	750
L21D	114-0256-00	15-33μH	Variable, 50 turns		
S	114-0260-00	22-51μH	Variable, 70 turns		
L22	114-0260-00	22-51μH	Variable, 70 turns		
L23D	114-0261-00	39-120μH	Variable, 100 turns		
S	114-0261-00	39μH	Fixed, 100 turns		
L24D	114-0261-00	39-120μH	Variable, 100 turns		
S	114-0261-00	39μH	Fixed, 100 turns		

D52 Y1 & Y2 AMPLIFIERS  
S52 X & Y AMPLIFIERS contd.

Cct. ref.	Part number	Value	Description	Tol. %	Rating
* MR21	152-0062-01		1N914 Si		
* MR22	152-0062-01		1N914 Si		
S1	260-0926-00		Slide		
S2	260-0953-00		Rotary		
S21	260-0972-00		Push		
FR1	151-0244-00		2N3702 Texas Si		
TR2	151-0244-00		2N3702 Texas Si		
V1	154-0187-01		ECC88/6DJ8		
V2	154-0187-01		ECC88/6DJ8		
V3	154-0187-01		ECC88/6DJ8		
V4	154-0187-01		ECC88/6DJ8		

\* One component per instrument, common to both amplifiers

D52 & S52 TIMEBASE

<u>Cct. ref.</u>	<u>Part number</u>	<u>Value</u>	<u>Description</u>	<u>Tol. %</u>	<u>Rating</u>
R100	316-0106-01	10M	C		
R101	316-0105-01	1M	C		
R102	316-0101-01	100	C		
R103	316-0682-01	6.8k	C		
R104	316-0332-01	3.3k	C		
R105	316-0222-01	2.2k	C		
R106	316-0101-01	100	C		
R107	316-0105-01	1M	C		
RV108	311-0740-00	100k	CV (with RV161 & S104)	20	2
R109	316-0275-01	2.7M	C		
R110	316-0823-01	82k	C		
R111	316-0275-01	2.7M	C		
R112	316-0101-01	100	C		
R113	316-0180-01	18	C		
R114	303-0183-01	18k	C	5	1
R115	316-0103-01	10k	C		
R116	316-0334-01	330k	C		
R117	316-0684-01	680k	C		
R118	316-0104-01	100k	C		
R119	316-0101-01	100	C		
R120	316-0273-01	27k	C		
R121	316-0563-01	56k	C		
R122	316-0474-01	470k	C		
R123	316-0222-01	2.2k	C		
RV124	311-0725-00	500	CP	30	0.1
R125	316-0102-01	1k	C		
R126	303-0183-01	18k	C	5	1
R127	316-0104-01	100k	C		
R128	316-0101-01	100	C		
R129	316-0103-01	10k	C		
R130	316-0180-01	18	C		
R131	316-0563-01	56k	C		
RV132	311-0760-00	50k	CP	30	0.1

Carbon resistors are 10%  $\frac{1}{4}$ W unless otherwise shown

D52 & S52 TIMEBASE contd.

<u>Cct. ref.</u>	<u>Part number</u>	<u>Value</u>	<u>Description</u>	<u>Tol. %</u>	<u>Rating</u>
R133	316-0105-01	1M	C		
R134	316-0101-01	100	C		
R135	302-0683-01	68k	C	10	$\frac{1}{2}$
R136	316-0473-01	47k	C		
R137	316-0332-01	3.3k	C		
R138	316-0153-01	15k	C		
R139	316-0101-01	100	C		
R141	316-0184-01	180k	C		
R143	316-0154-01	150k	C		
R144	316-0683-01	68k	C		
RV145	311-0770-00	100k	CP	30	0.1
R146	316-0563-01	56k	C		
R147	316-0101-01	100	C		
R148	316-0334-01	330k	C		
R149	316-0101-01	100	C		
R151	316-0105-01	1M	C		
R152	316-0180-01	18	C		
R153	303-0103-01	10k	C	5	1
R154	303-0562-01	5.6k	C	5	1
R155	315-0334-01	330k	C	5	$\frac{1}{4}$
R156	315-0684-01	680k	C	5	$\frac{1}{4}$
R157	316-0273-01	27k	C		
R158	315-0514-01	510k	C	5	$\frac{1}{4}$
RV159	311-0741-00	50k	CV (with RV168)	20	2
RV161	311-0740-00	10k	CV (with RV108 & S104)	20	2
R162	316-0153-01	15k	C		
R163	316-0101-01	100	C		
R164	307-0162-00	15k	MO	5	$3\frac{1}{4}$
R165	316-0101-01	100	C		
R166	304-0103-01	10k	C	10	1
RV167	311-0747-00	25k	CP	20	$\frac{1}{4}$
RV168	311-0741-00	10k	CV (with RV159)	20	2
R169	316-0101-01	100	C		
R171	316-0101-01	100	C		
R172	304-0103-01	10k	C	10	1

D52 & S52 TIMEBASE contd.

Cct. ref.	Part number	Value	Description	Tol. %	Rating
R173	316-0334-01	330k	C		
R174	315-0134-01	130k	C	5	$\frac{1}{4}$
R175	316-0180-01	18	C		
R176	307-0162-00	15k	MO	5	$3\frac{1}{4}$
R177	319-0002-01	150k	HS	1	$\frac{1}{4}$
R178	319-0082-00	91k	HS	1	$\frac{1}{4}$
R179	316-0101-01	100	C		
R276	316-0475-01	4.7M	C		
R277	316-0334-01	330k	C		
R278	316-0474-01	470k	C		
R279	319-0031-01	1M	HS	1	$\frac{1}{4}$
R280	319-0031-01	1M	HS	1	$\frac{1}{4}$
R281	319-0054-01	3M	HS	1	$\frac{1}{4}$
R282	316-0225-01	2.2M	C		
R283	316-0125-01	1.2M	C		
RV284	311-0817-00	1M	CV (with S103)	20	$\frac{1}{4}$
R285	316-0105-01	1M	C		
C100	285-0772-01	0.1	PE	10	400
C101	285-0769-00	0.01	PE	10	400
C102	285-0769-00	0.01	PE	10	400
C103	285-0796-00	0.1	PE	20	250
C104	285-0796-00	0.1	PE	20	250
C105	285-0796-00	0.1	PE	20	250
C106	285-0796-00	0.1	PE	20	250
C108	285-0874-00	470p	PS	5	125
C109	285-0842-00	15p	PS	1p	350
C111	285-0854-00	100p	PS	2p	350
C112	285-0773-00	0.1	PE	20	400
C113	285-0842-00	15p	PS	1p	350
C114	285-0866-00	10p	PS	1p	350
C115	285-0843-00	30p	PS	2p	350
C116	281-0132-00	10-40p	CT		250
C117	285-0773-00	0.1	PE	20	400
C118	285-0790-00	0.01	PE	20	125

D52 & S52 TIMEBASE contd.

Cct. ref.	Part number	Value	Description	Tol. %	Rating
C119	285-0773-00	0.1	PE	20	400
C121	290-0374-00	50	E		150
C122	285-0799-00	0.033	PE	20	250
C123	285-0796-00	0.1	PE	20	250
C276	285-0839-00	0.2	PE	2	160
C277	285-0802-00	2	PE	2	160
C278	285-0778-00	0.02	PE	1	350
C279	285-0860-00	2,000p	PS	2	350
C280	285-0872-00	180p	PS	2	350
C281	281-0137-00	6-30p	CT		350
MR101	152-0062-01		1N914 Si		
MR102	152-0062-01		1N914 Si		
MR103	152-0062-01		1N914 Si		
MR104	152-0062-01		1N914 Si		
MR105	152-0062-01		1N914 Si		
MR106	152-0062-01		1N914 Si		
MR107	152-0062-01		1N914 Si		
MR108	152-0062-01		1N914 Si		
S101	260-0966-00		Push (3- button)		
S102	260-0967-00		Push (3- button)		
S103	311-0817-00		Rotary (with RV284)		
S104	311-0740-00		Rotary (with RV108 & 161)		
S276	260-0950-00		Rotary (18-position)		
V101	154-0278-01		ECF80/6BL8		
V102	154-0278-01		ECF80/6BL8		
V103	154-0187-01		ECC88/6DJ8		
V104	154-0187-01		ECC88/6DJ8		
V105	154-0534-00		EB91/6AL5		
V106	154-0278-01		ECF80/6BL8		
V107	154-0278-01		ECF80/6BL8		

D52 & S52 CRT CIRCUIT

D52 & S52 POWER SUPPLY

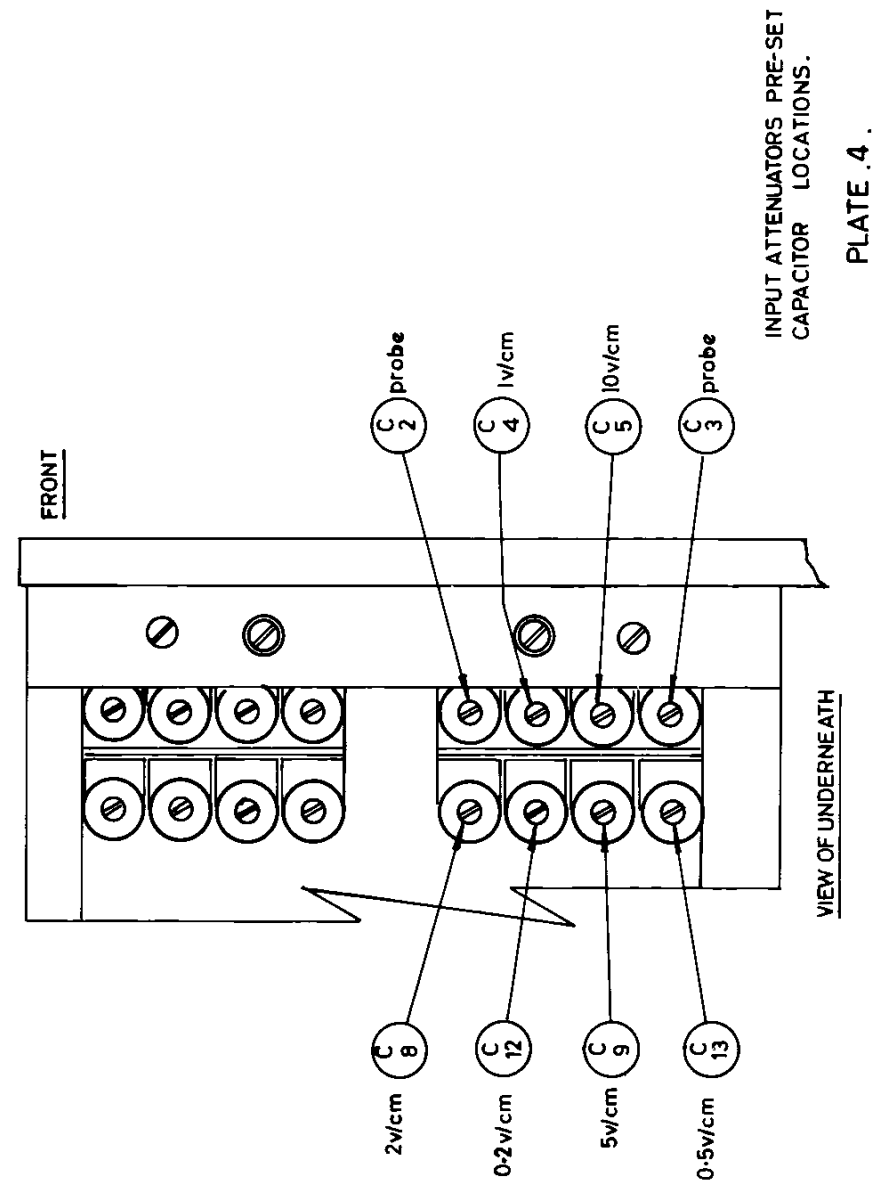
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RV300	311-0752-00	1M	CP	30	0.1
RV301 )	311-0824-00	( 1M	CV	20	$\frac{1}{4}$
RV303 )		( 1M	CV (with S401)	20	$\frac{1}{4}$
R302D	316-0274-01	270k	C (for E13-12 CRT)		
	316-0105-01	1M	C (for 55451 CRT)		
S	316-0274-01	270k	C		
R304	316-0155-01	1.5M	C		
R305	316-0105-01	1M	C		
R306	316-0104-01	100k	C		
RV307	311-0760-00	50k	CP	30	0.1
R308	316-0473-01	47k	C		
RV309	311-0799-00	250k	CP	30	0.1
R310	316-0334-01	330k	C		
RV311	311-0799-00	250k	CP	30	0.1
R312	316-0124-01	120k	C		
R313D	316-0102-01	1k	C		
S	316-0272-01	2.7k	C		
R314	316-0106-01	10M	C		
C301	281-0677-00	0.01	CER		1.5k
C302	285-0773-00	0.1	PE	20	400
C303	285-0796-00	0.1	PE	20	250
N301	150-0069-00	60V	Neon 3L		
N302	150-0069-00	60V	Neon 3L		
S301S	260-0955-00		Slide (2-position)		
CRTD	154-0532-00	P31	E13-12GH (12 pin)		
	154-0554-00	P31	55451GH (14 pin)		
	154-0553-00	P7	E13-12GM (12 pin)		
	154-0558-00	P7	55451GM (14 pin)		
	154-0556-00	P11	E13-12BE (12 pin)		
S	154-0522-00	P31	D13-30GH		
	154-0552-00	P7	D13-30GM		
	154-0557-00	P11	D13-30BE		

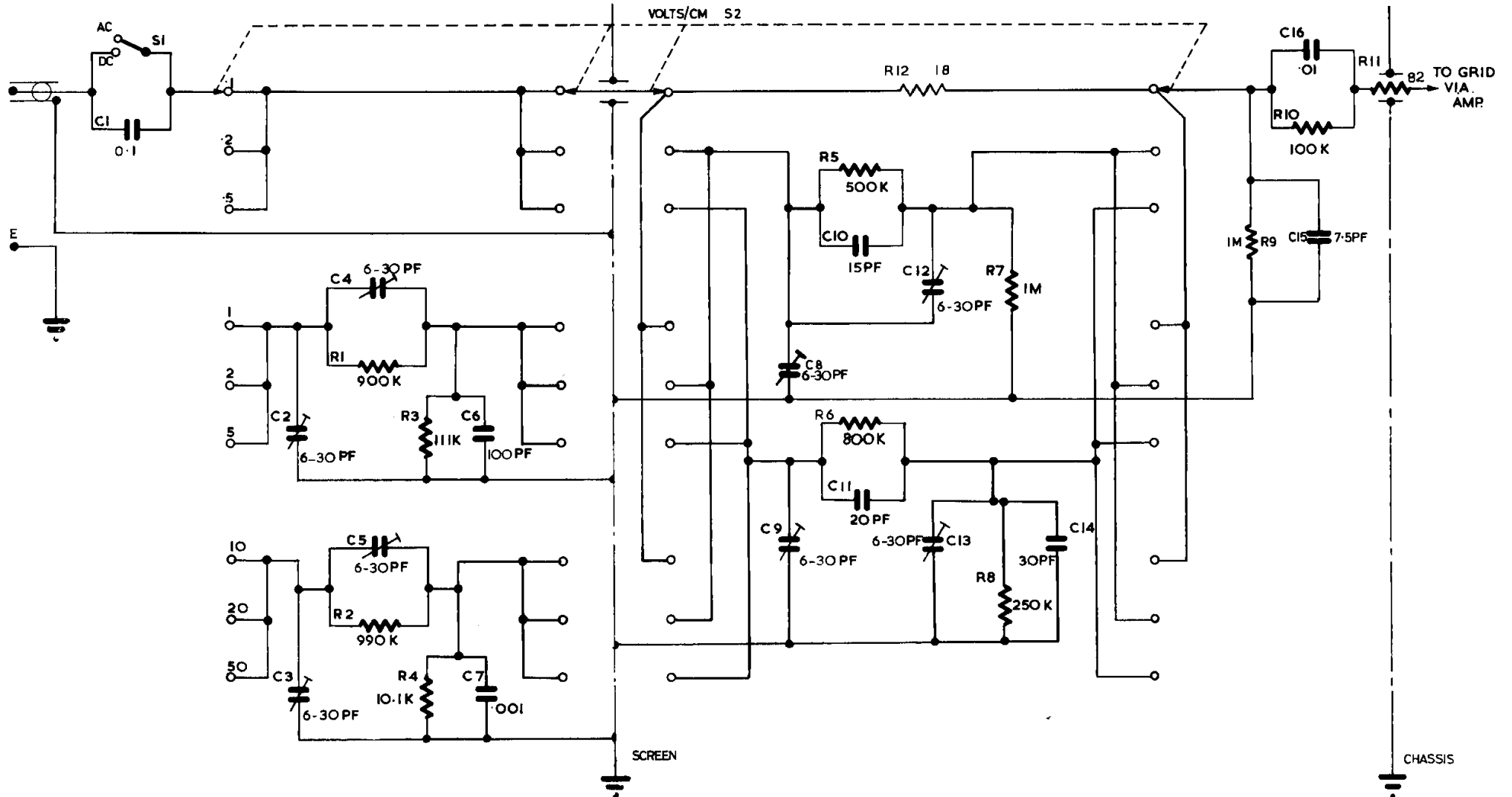
<u>Cct. ref.</u>	<u>Part number</u>	<u>Value</u>	<u>Description</u>	<u>Tol. %</u>	<u>Rating</u>
R401	316-0224-01	220k	C		
R402	322-0670-00	100k	MF	5	$\frac{1}{4}$
R403	319-0105-00	3.6k	HS	1	$\frac{1}{4}$
RV404	311-0763-00	2.5k	CP	30	0.1
R405	316-0181-01	180	C		
R406D	308-0482-00	620	WW	5	2
S	302-0101-01	100	C	10	$\frac{1}{2}$
R407D	308-0482-00	620	WW	5	2
S	302-0101-01	100	C	10	$\frac{1}{2}$
R408D	308-0479-00	1.8k	WW	5	2
S	308-0487-00	820	WW	5	2
R409D	308-0479-00	1.8k	WW	5	2
S	308-0487-00	820	WW	5	2
R411	316-0102-01	1k	C		
R412	308-0487-00	820	WW	5	2
R413	308-0487-00	820	WW	5	2
R414	316-0221-01	220	C		
R415	316-0182-01	1.8k	C		
C401	285-0773-00	0.1	PE	20	400
C402D	285-0766-00	0.05	P	10	2k
C403	285-0773-00	0.1	PE	20	400
C404	290-0351-00	120	E		200
C405	290-0351-00	120	E		200
C406	290-0365-00	16	E		450
C407	290-0365-00	16	E		450
C408	290-0365-00	16	E		450
C409D	285-0765-00	0.05	P	10	3.5k
S	285-0763-00	0.05	P	10	2.5k
C410	290-0385-00	2,000	E (1,000 + 1,000)		18
C411	285-0792-00	4,700p	PE	20	125
C412a)		( 32 )			
b)	290-0446-00	( 32 )	E		450
c)		( 32 )			

Carbon resistors are 10%  $\frac{1}{4}$ W unless otherwise shown

D52 & S52 POWER SUPPLY contd.

<u>Cct. ref.</u>	<u>Part number</u>	<u>Value</u>	<u>Description</u>	<u>Tol. %</u>	<u>Rating</u>
C413a)	290-0373-00	( 40 )	E		350
b)		( 40 )			
C414a)	290-0373-00	( 40 )	E		350
b)		( 40 )			
C415	290-0386-00	250	E		18
C416	290-0386-00	250	E		18
F401	159-0073-00	1A	Fuse $1\frac{1}{4}$ in 200-250V		
	159-0069-00	2A	Fuse $1\frac{1}{4}$ in 100-125V		
LP401	150-0074-00	6.5V	Lamp L.E.S.		0.15A
MR401	152-0341-00	450V	Si rectifier		0.5A
MR402	152-0341-00	450V	Si rectifier		0.5A
MR403	152-0352-00	800V	Si rectifier		0.2A
MR404	152-0352-00	800V	Si rectifier		0.2A
MR405	152-0352-00	800V	Si rectifier		0.2A
MR406	152-0346-00	11V	Si zener		0.33W
MR407	152-0339-00	50V	Si rectifier		0.5A
MR408D	152-0351-00	3.4kV	Se rectifier		5mA
MR409	152-0351-00	3.4kV	Se rectifier		5mA
S401	311-0824-00		Rotary (with RV301 & 303)		
T401	120-0542-00		Power transformer		
TR401	151-0243-00		ACY22 Mullard Ge		





INPUT ATTENUATOR

S52 & D52 FIG 3.1

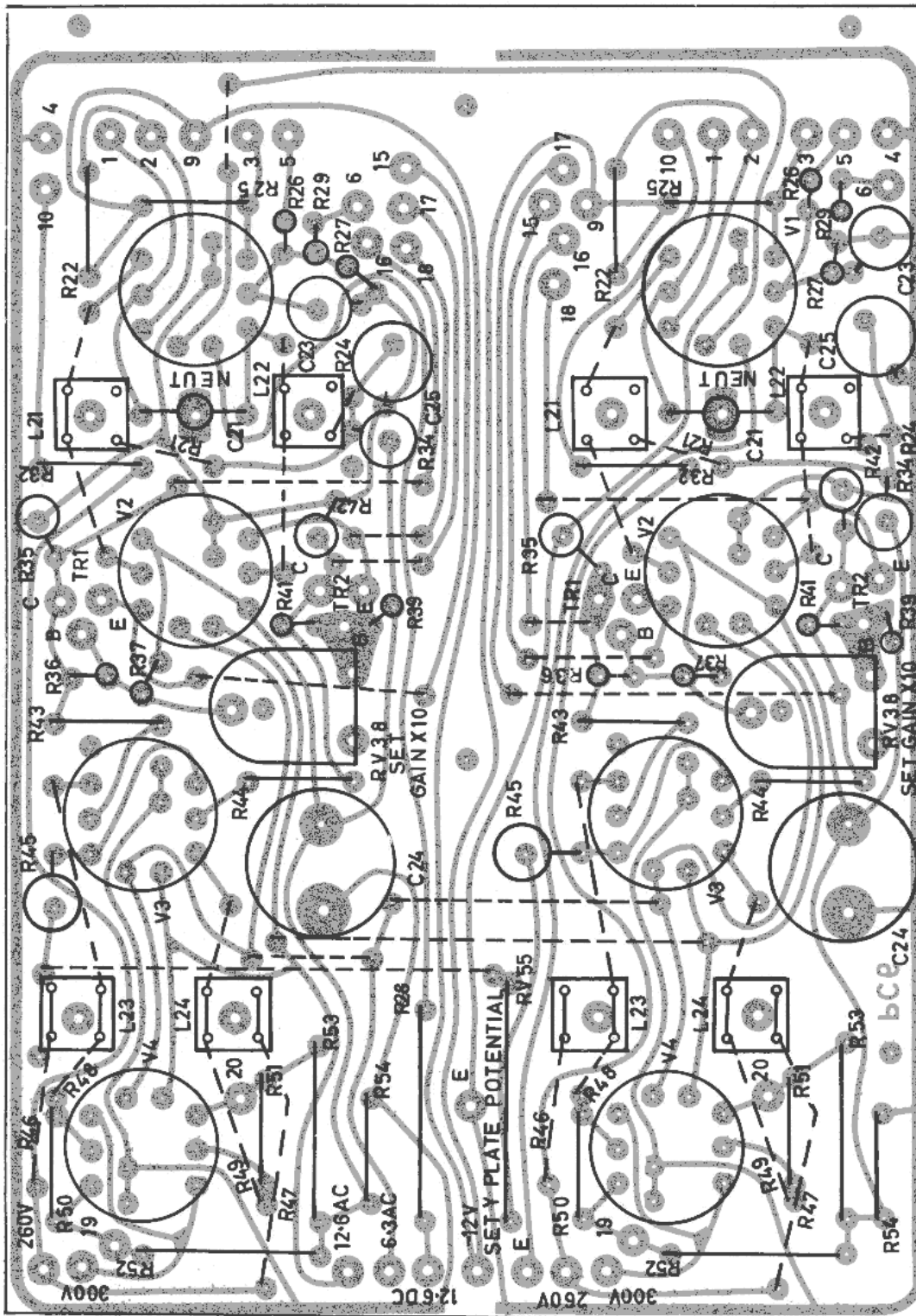
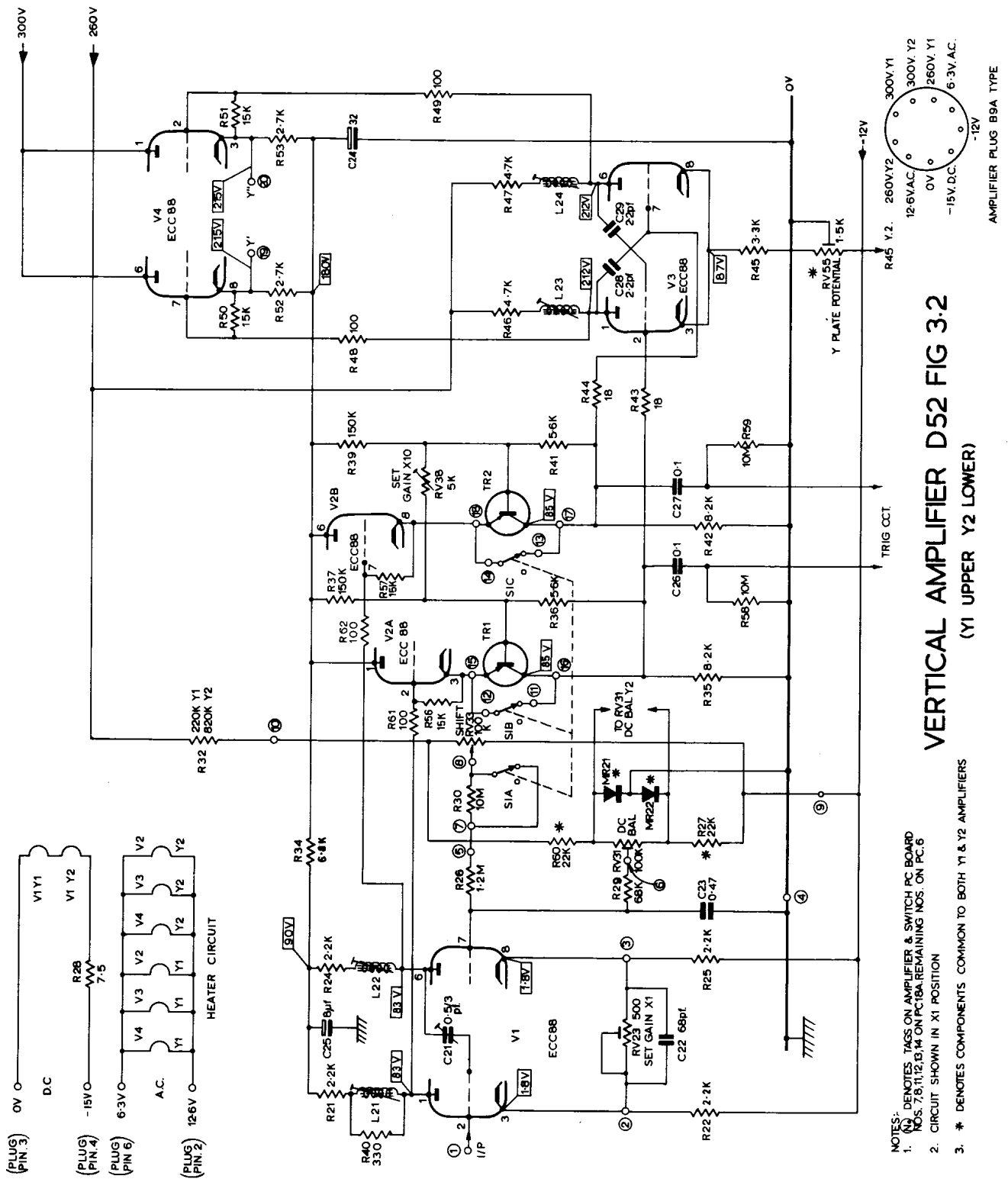
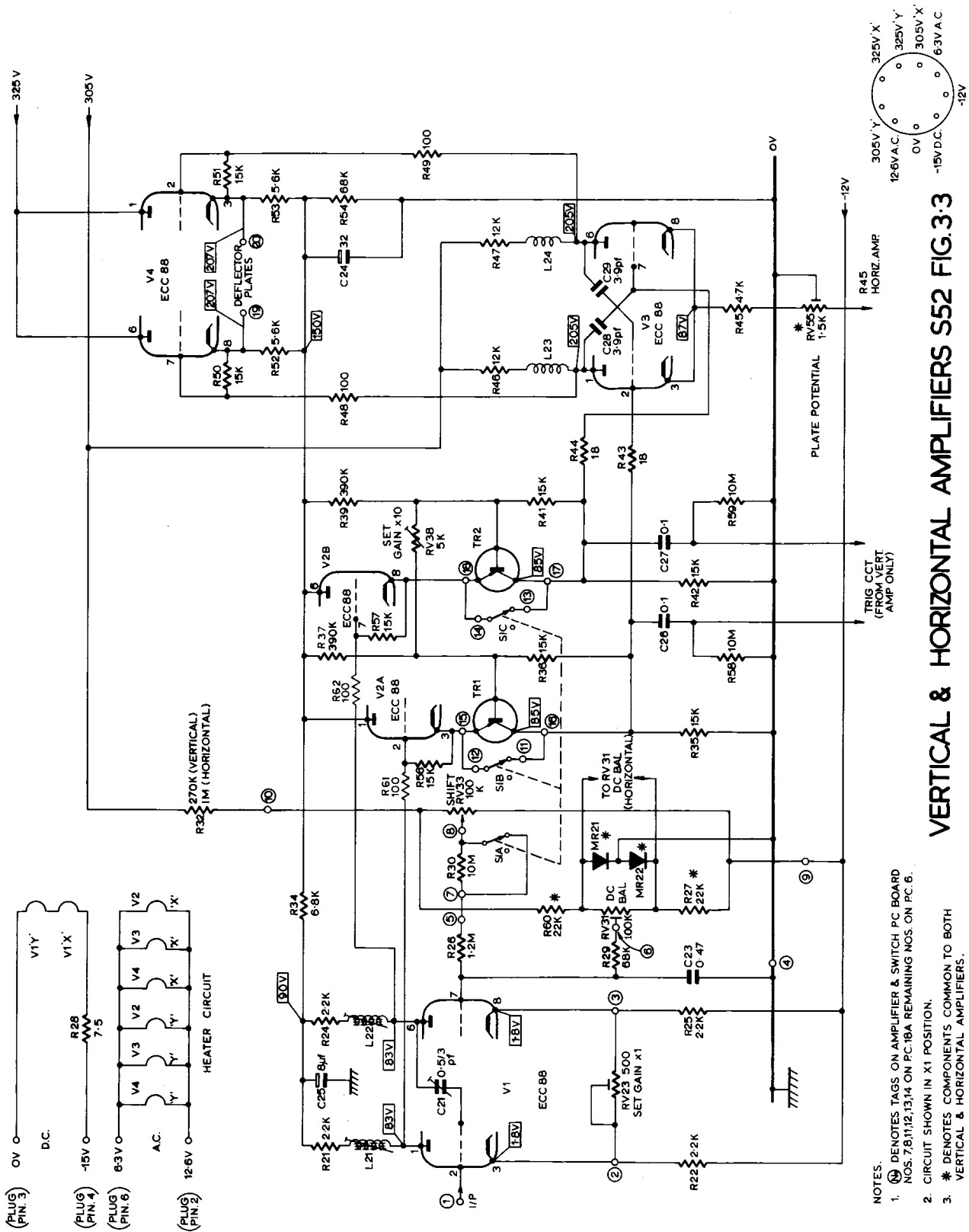


PLATE 2. Y AMPLIFIER PRINTED CIRCUIT BOARD.



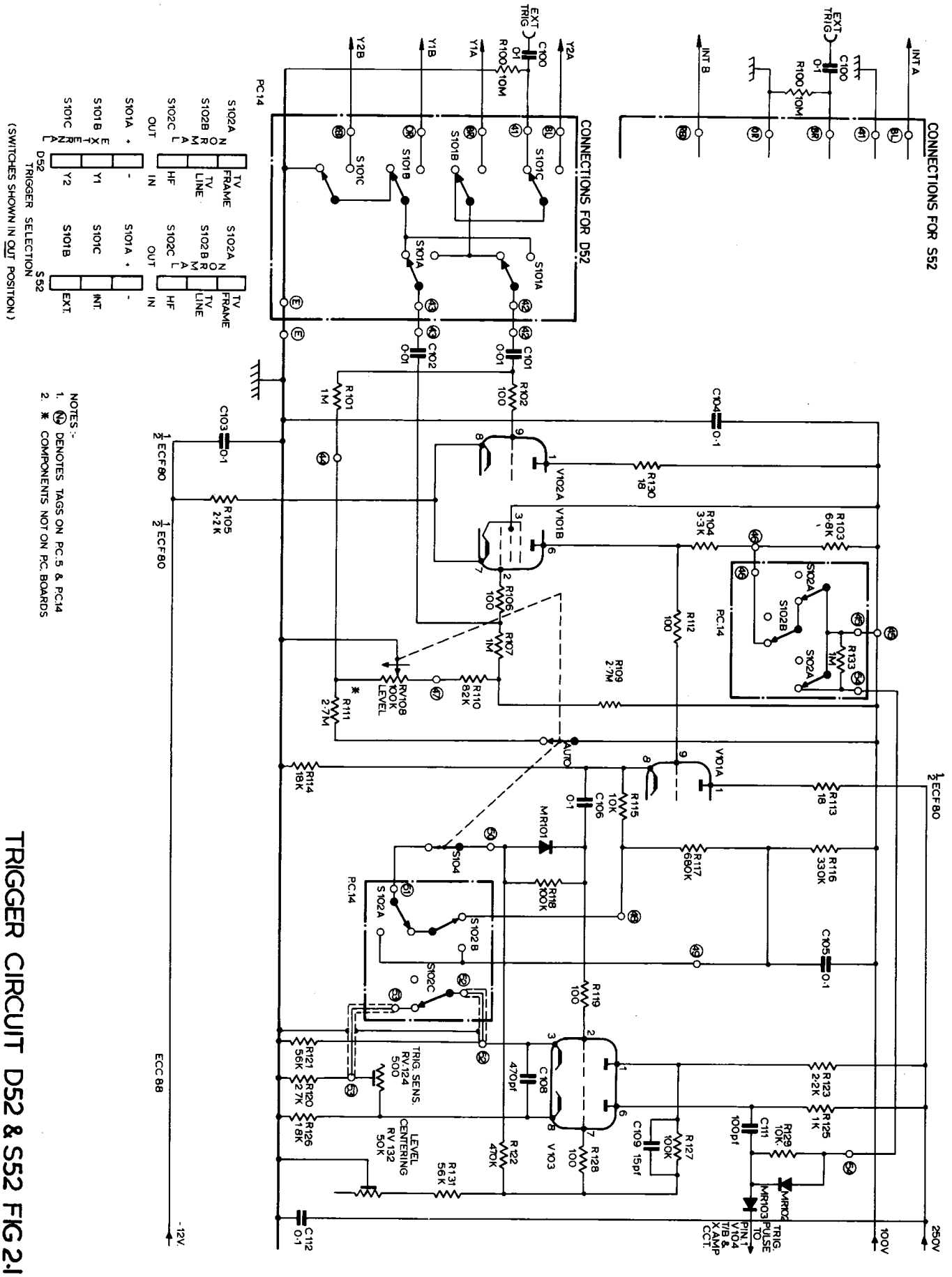


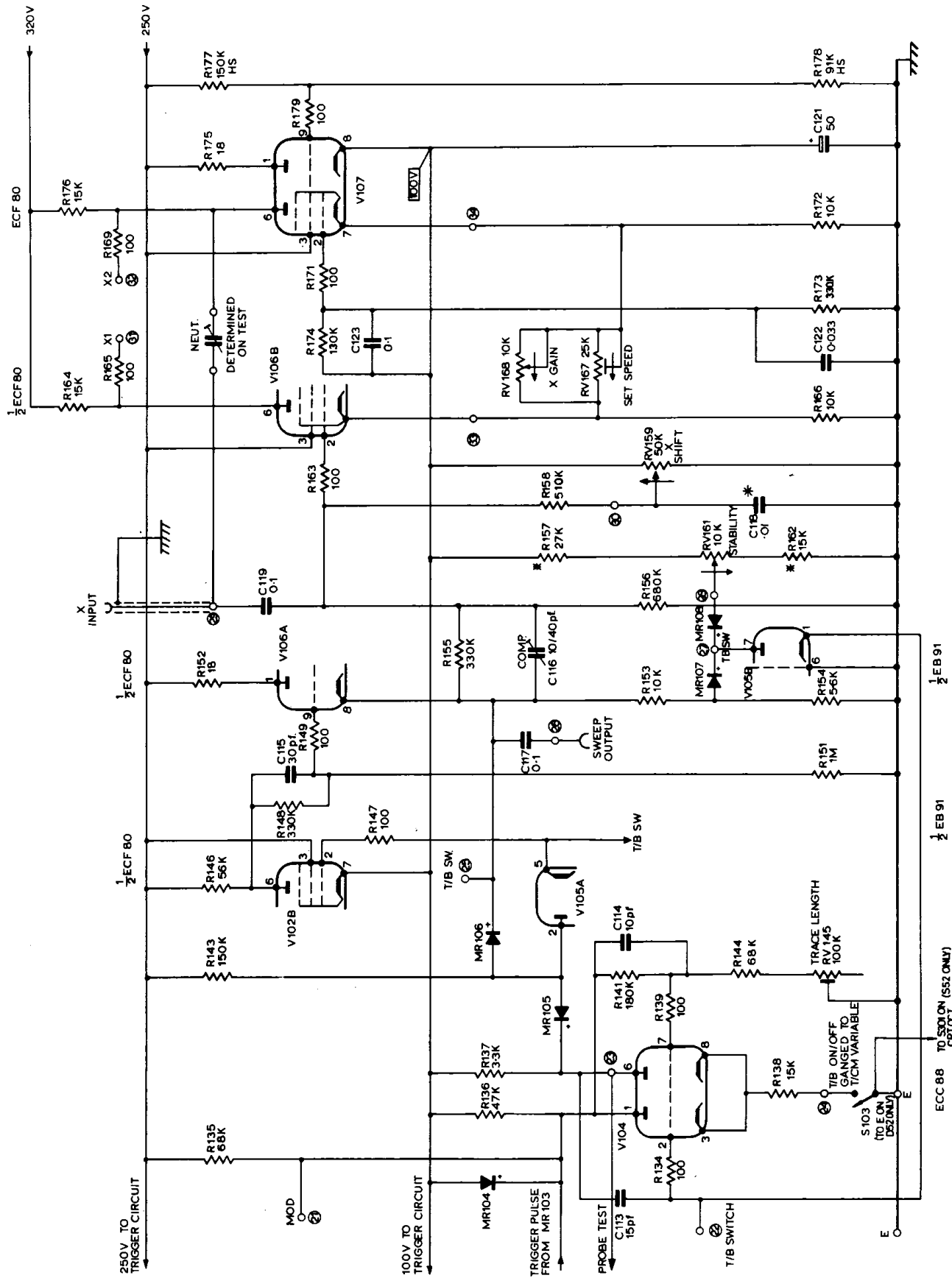


**VERTICAL & HORIZONTAL AMPLIFIERS S52 FIG.3.3**

- NOTES.
1. Ⓜ DENOTES TAGS ON AMPLIFIER & SWITCH PC BOARD NOS. 7,8,11,12,13,14 ON P.C.18A REMAINING NOS. ON P.C. 6.
  2. CIRCUIT SHOWN IN X1 POSITION.
  3. \* DENOTES COMPONENTS COMMON TO BOTH VERTICAL & HORIZONTAL AMPLIFIERS.

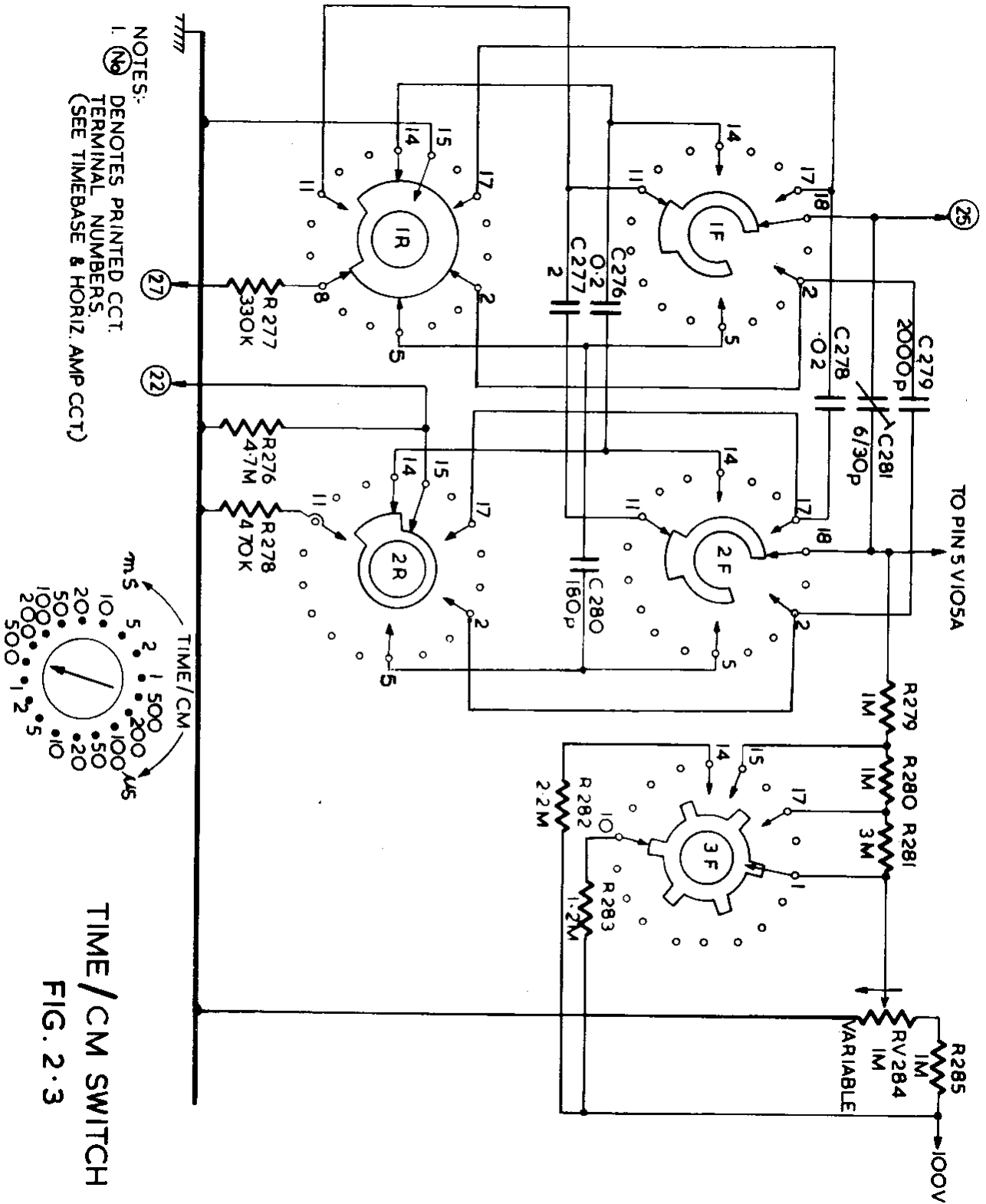
AMPLIFIER PLUG B9A TYPE

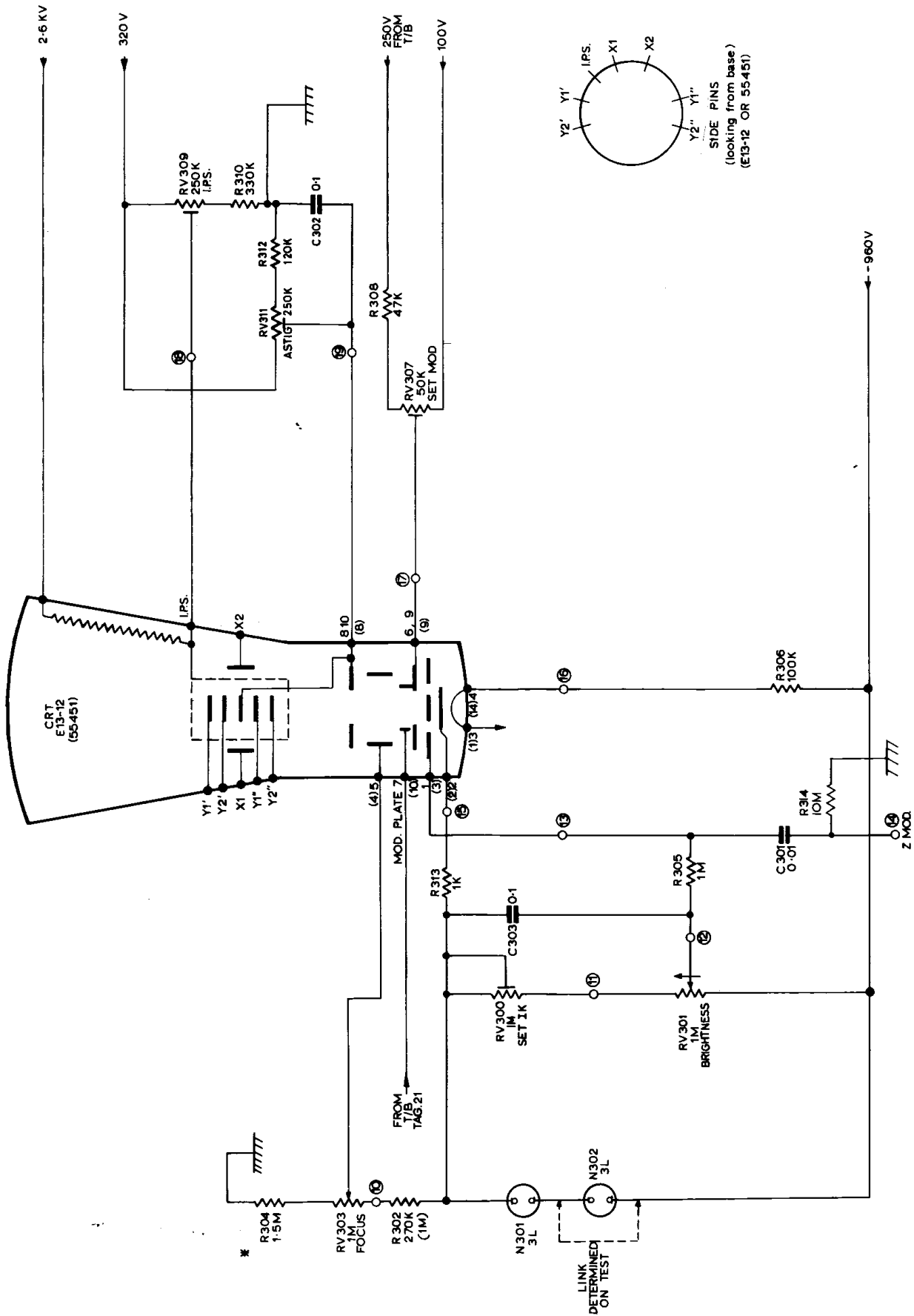




NOTES:  
 1. N. DENOTES TAGS ON PC. 5  
 2. \* DENOTES COMPONENTS NOT ON PC. 5

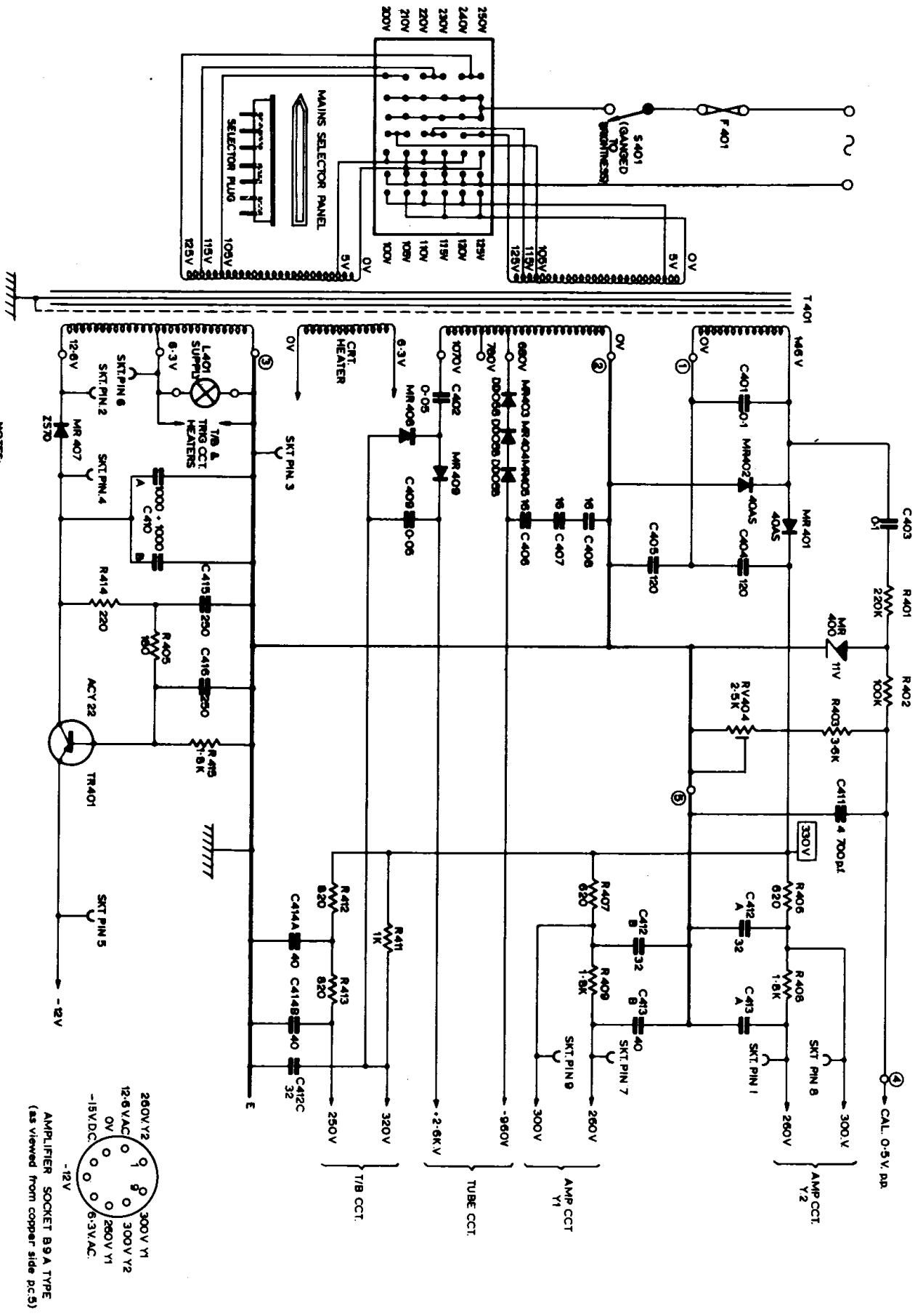
TIME BASE & HORIZONTAL AMPLIFIER D52 & S52 FIG 2-2



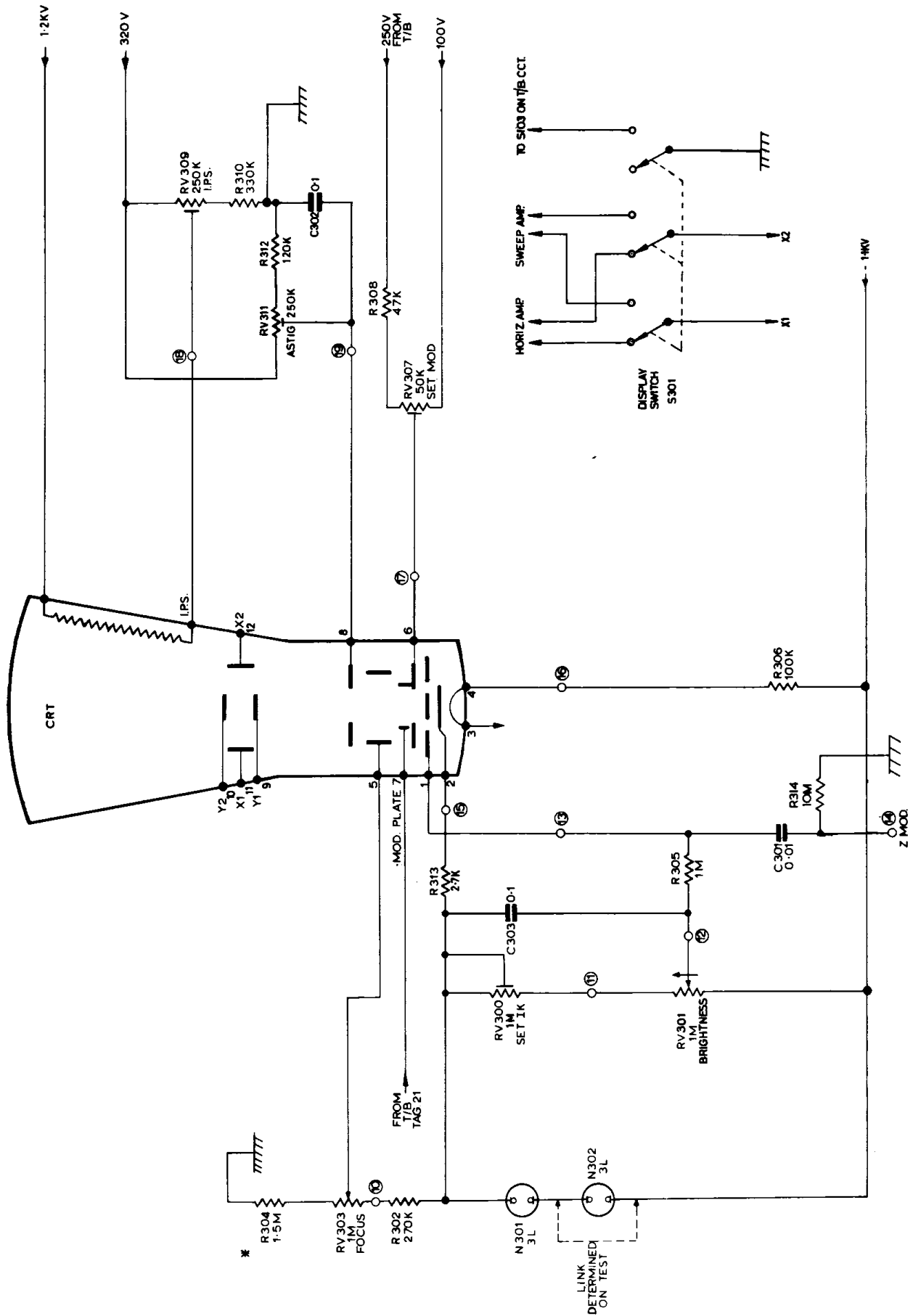


C.R.T. CIRCUIT D52 FIG 4.1

- NOTES:-
1. Ⓜ DENOTES TAGS ON PC.5
  2. \* DENOTES COMPONENTS NOT ON PC BOARD
  3. (N4) NUMBER DENOTES 14 PIN BASE CRT.



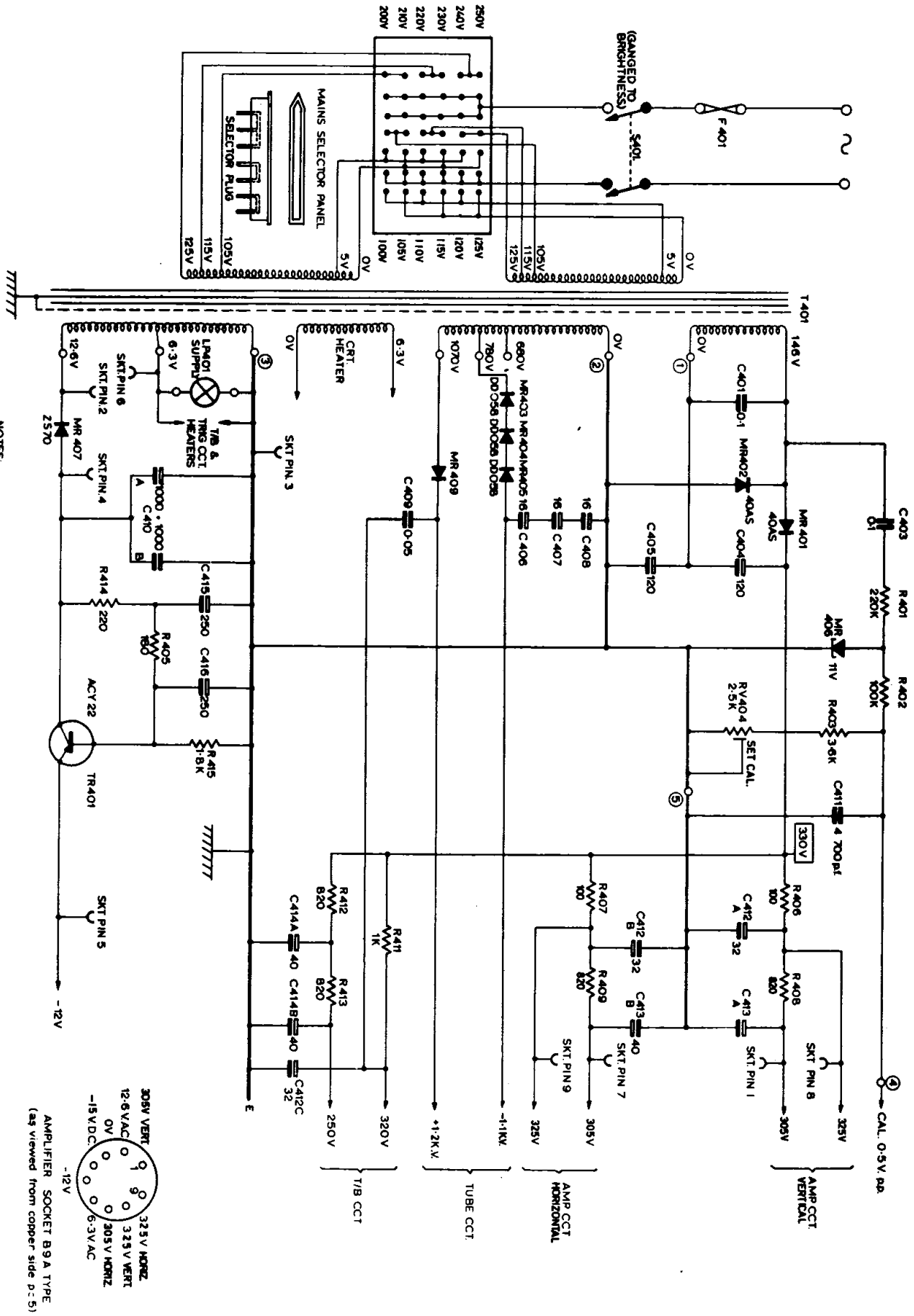
POWER SUPPLY CIRCUIT D52 FIG.5.1



C.R.T. CIRCUIT S52 FIG 4.2

- NOTES:-
1. Ⓜ DENOTES TAGS ON PC.5
  2. \* DENOTES COMPONENTS NOT ON PC BOARD
  3. DISPLAY SWITCH IN X-Y POSITION





POWER SUPPLY CIRCUIT S52 FIG 5.2

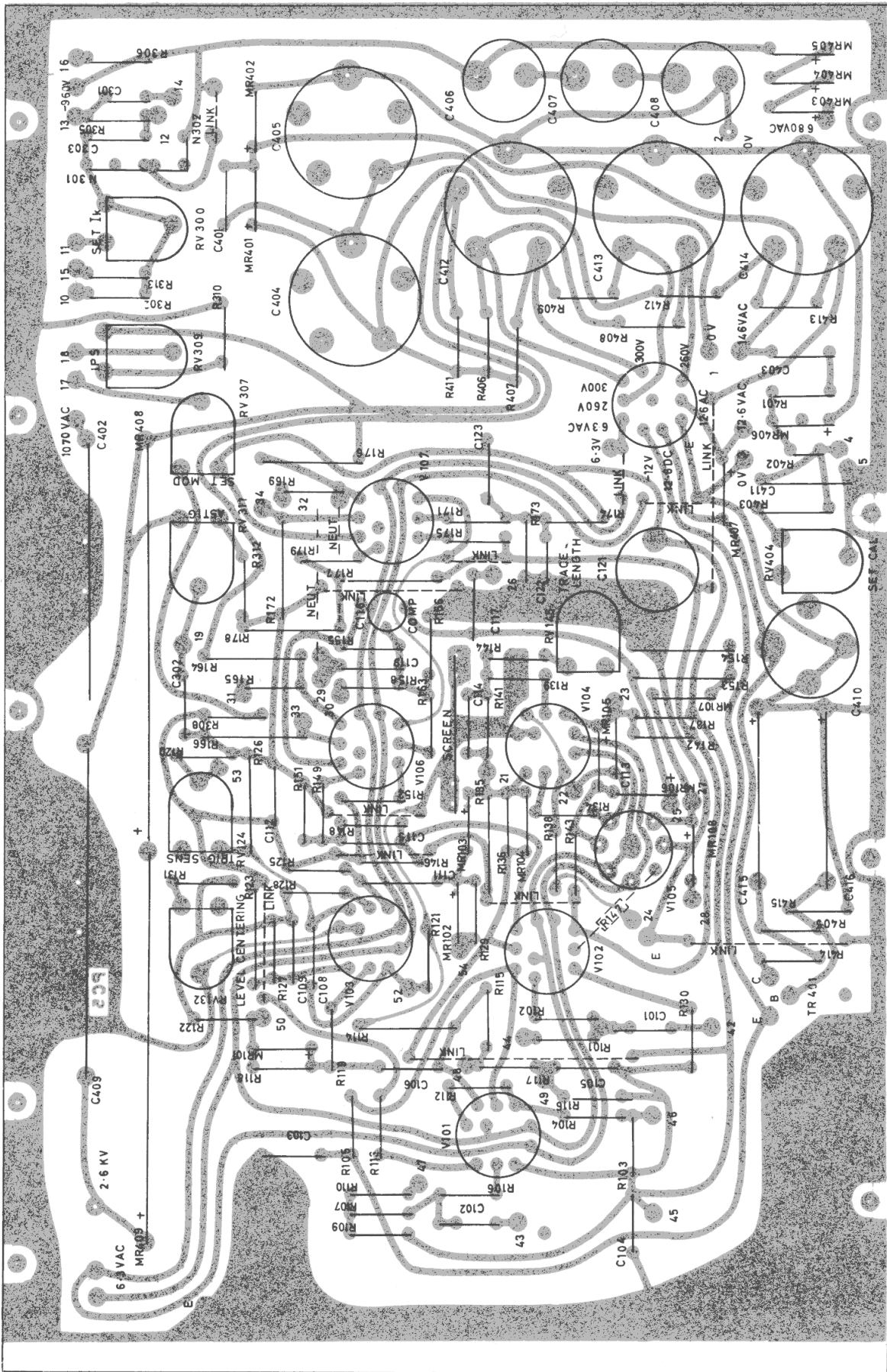


PLATE 3. TRIGGER, TIME BASE, CRT and H.T. PRINTED CIRCUIT BOARD.