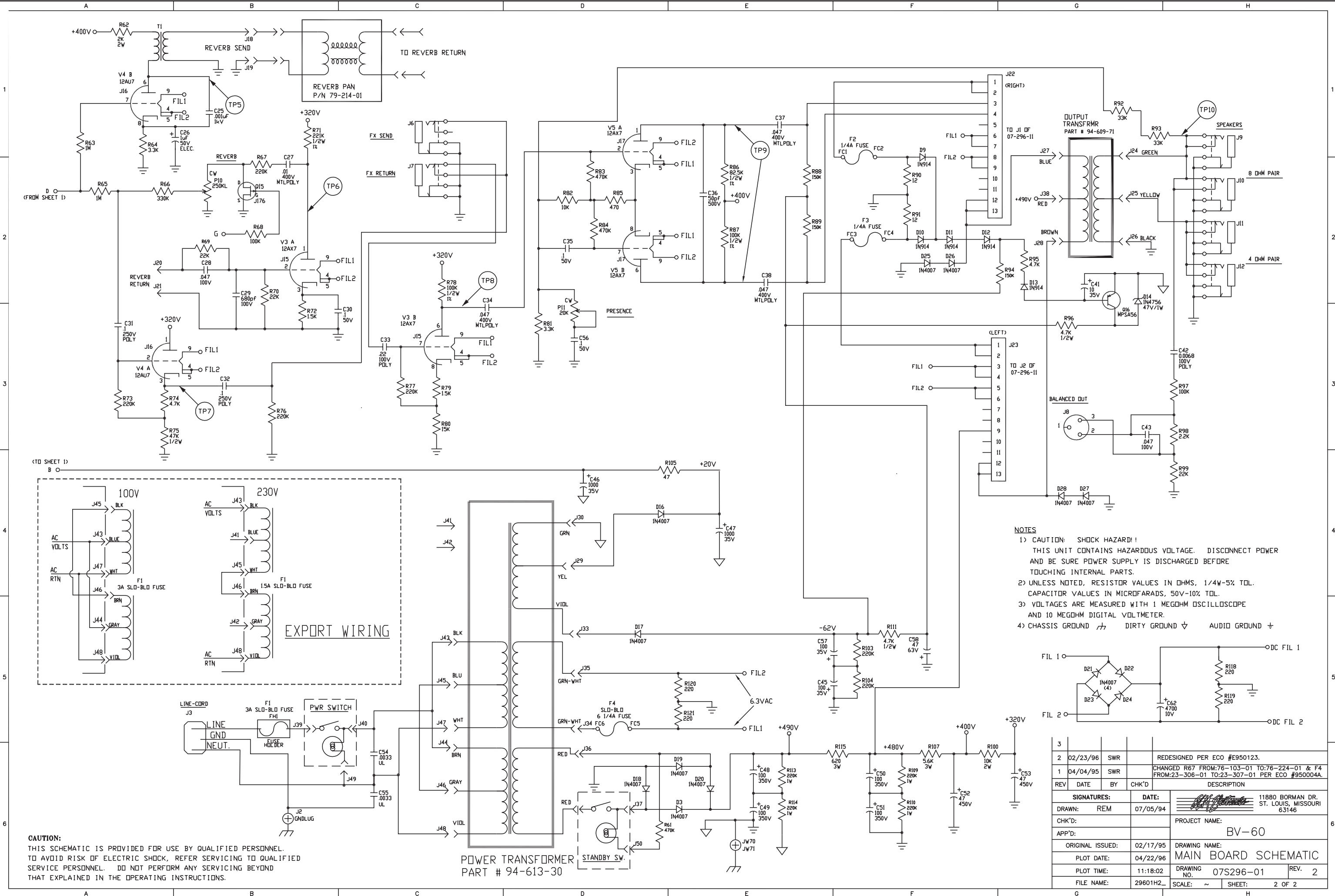
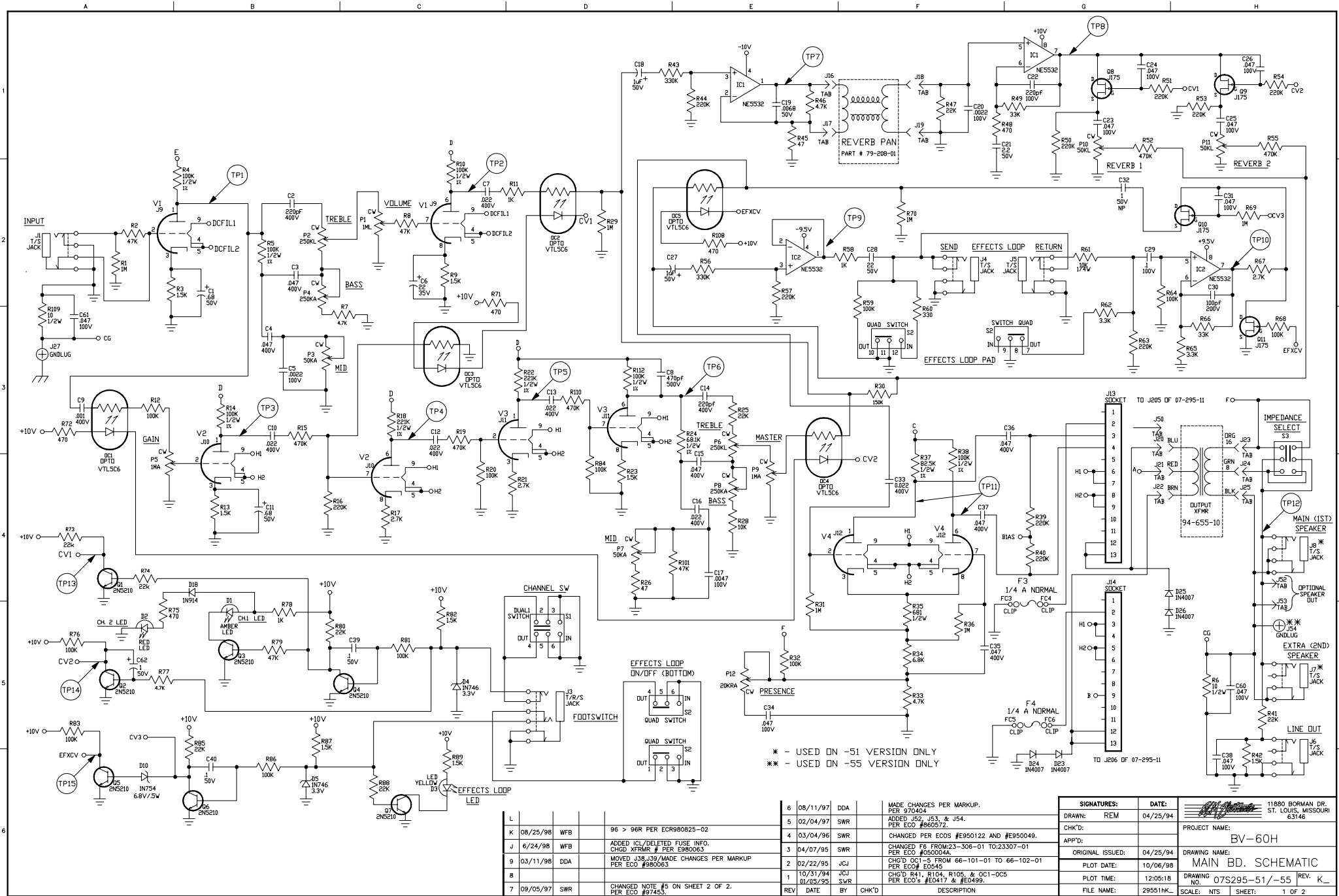




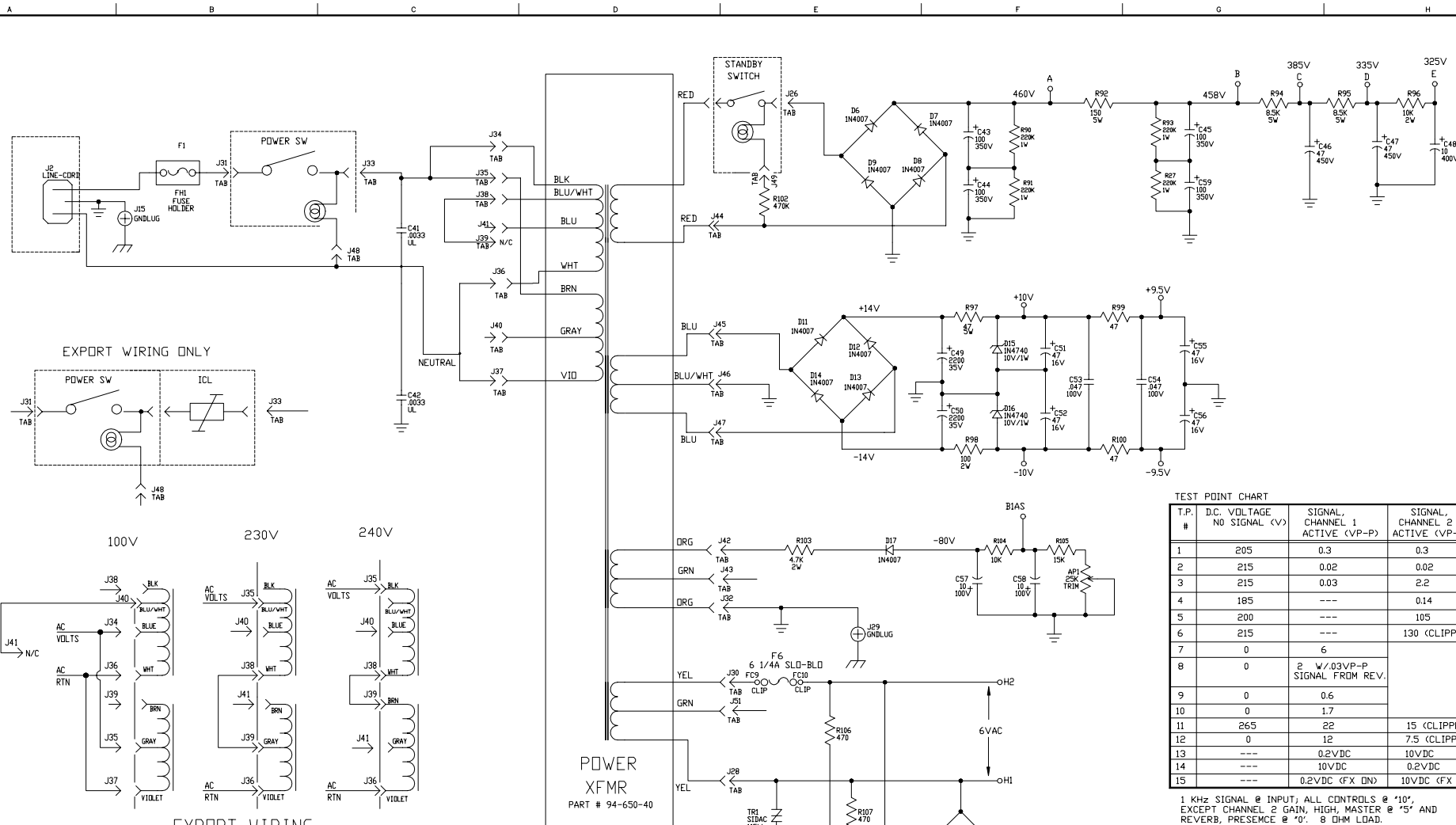


L	08/25/98	WFB	96 > 96R PER ECR980825-02
K	06/24/98	WFB	ADDED ICL/DELETED FUSE INFO. CHGD XFMRM # PER E980063
J	03/11/98	DDA	MOVED J38, J39/MADE CHANGES PER MARKUP PER ECO #980063
I	09/05/97	SWR	CHANGED NOTE #5 ON SHEET 2 OF 2. PER ECO #97453

6	08/11/97	DDA	MADE CHANGES PER MARKUP. PER S70454
5	02/04/97	SWR	ADDED J52, J53, & J54. PER ECO #860572
4	03/04/96	SWR	CHANGED PER ECOS #E950122 AND #E950049.
3	04/07/95	SWR	CHANGED F6 FROM 23-306-01 TO 23307-01 PER ECO #950044
2	02/22/95	JCJ	CHG'D OC1-5 FROM 66-101-01 TO 66-102-01 PER ECO# E545
1	10/31/94	JCJ	CHG'D R41, R104, R105, & OC1-OC5 PER ECO's #E0417 & #E0499.
REV	DATE	BY	CHK'D DESCRIPTION

SIGNATURES:	DATE:	PROJECT NAME:
DRAWN: REM	04/25/94	BM-60H
CHK'D:		
APP'D:		
ORIGINAL ISSUED:	04/25/94	DRAWING NAME:
PLOT DATE:	10/06/98	MAIN BD. SCHEMATIC
PLOT TIME:	12:05:18	DRAWING NO. 07S295-51/-55
FILE NAME:	29551H	SCALE: NTS
		SHEET: 1 OF 2

11880 BORMAN DR.
ST. LOUIS, MISSOURI
63146



T.P. #	D.C. VOLTAGE NO SIGNAL (V)	SIGNAL, CHANNEL 1 ACTIVE (VP-P)	SIGNAL, CHANNEL 2 ACTIVE (VP-P)
1	205	0.3	0.3
2	215	0.02	0.02
3	215	0.03	2.2
4	185	---	0.14
5	200	---	105
6	215	---	130 (CLIPPED)
7	0	6	15 (CLIPPED)
8	0	2 W/03VP-P SIGNAL FROM REV.	
9	0	0.6	
10	0	1.7	15 (CLIPPED)
11	265	22	
12	0	12	7.5 (CLIPPED)
13	---	0.2VDC	10VDC
14	---	10VDC	0.2VDC
15	---	0.2VDC (FX ON)	10VDC (FX OFF)

1 KHZ SIGNAL @ INPUT; ALL CONTROLS @ '10', EXCEPT CHANNEL 2 GAIN, HIGH, MASTER @ '5' AND REVERB, PRESENCE @ '0'. 8 OHM LOAD.

SEE SHEET 1 OF 2 FOR REVISION HISTORY

SIGNATURES:	DATE:	11880 BORMAN, DR.
DRAWN: REM	04/25/94	ST. LOUIS, MISSOURI
CHK'D:		63146
APP'D:		PROJECT NAME:
ORIGINAL ISSUED:	04/25/94	REV. K
PLOT DATE:	10/06/98	NO. 075295-51/-55
PLOT TIME:	12:05:18	SCALE: NTS
FILE NAME:	29551H	SHEET: 2 OF 2

NOTES

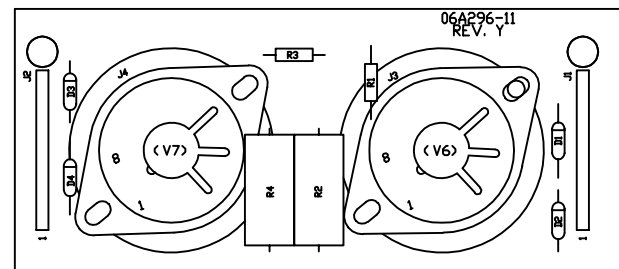
- 1) CAUTION: SHOCK HAZARD!!
THIS UNIT CONTAINS HAZARDOUS VOLTAGE. DISCONNECT POWER AND BE SURE POWER SUPPLY IS DISCHARGED BEFORE TOUCHING INTERNAL PARTS.
- 2) UNLESS NOTED, RESISTOR VALUES IN OHMS, 1/4W-5% TOL. CAPACITOR VALUES IN MICROFARADS, 50V-10% TOL.
- 3) VOLTAGES ARE MEASURED WITH 1 MEGOHM OSCILLOSCOPE AND 10 MEGOHM DIGITAL VOLT-METER.
- 4) CHASSIS GROUND $\neq$ DIRTY GROUND $\neq$ SIGNAL GROUND $\neq$
- 5) BLU/VHT LEAD NOT ON EARLY PRODUCTION 94-650-21 TRANSFORMERS WHEN USING THE 94-650-21 FOR 230V, WIRE THE TRANSFORMER BLACK LEAD TO J35.

BIAS CALIBRATION PROCEDURE

- 1) CONNECT UNIT TO PROPER AC LINE VOLTAGE.
- 2) ALLOW UNIT TO WARM UP AT LEAST 5 MINUTES.
- 3) WITH NO SIGNAL APPLIED ADJUST AP1 FOR 85 WATTS (0.8A DOMESTIC) DRAW FROM THE LINE.
- 4) ALTERNATE METHOD: WITH ENOUGH SIGNAL (CLEAN) TO JUST CLIP OUTPUT ADJUST AP1 FOR SLIGHT CROSSOVER DISTORTION VISIBLE ON OSCILLOSCOPE TRACE.

CAUTION:

THIS SCHEMATIC IS PROVIDED FOR USE BY QUALIFIED PERSONNEL.
TO AVOID RISK OF ELECTRIC SHOCK, REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL. DO NOT PERFORM ANY SERVICING BEYOND
THAT EXPLAINED IN THE OPERATING INSTRUCTIONS.



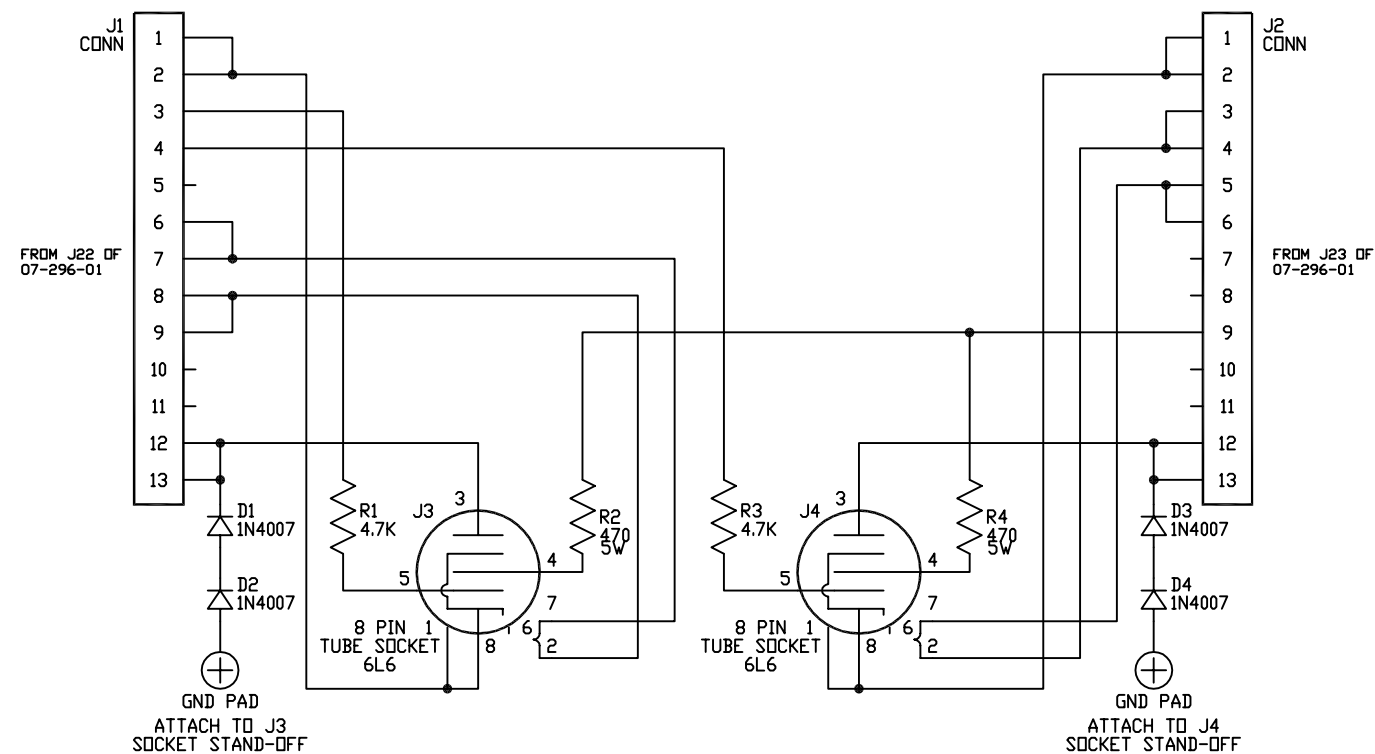
DESIGNATOR	PART NUMBER	DESCRIPTION	
D1	21A407-01	1N4007	
D2	21A407-01	1N4007	
D3	21A407-01	1N4007	
D4	21A407-01	1N4007	
J1	17-101-13	13 PIN	CONNECTOR
J2	17-101-13	13 PIN	CONNECTOR
J3	17-450-08	8 PIN	TUBE SOCKET
J4	17-450-08	8 PIN	TUBE SOCKET
R1	76-472-01	4. 7K	
R2	78-471-05	470	5W
R3	76-472-01	4. 7K	
R4	78-471-05	470	5W
V6	97-916-02	TESTED 6L6GT	TUBES
V7	97-916-02	TESTED 6L6GT	TUBES
MISC.			
(1)	06A296-11	PC BOARD	
(8)	30-638-53	SCREW	
(4)	85-133-01	HEX STAND-OFF	

CAUTION:

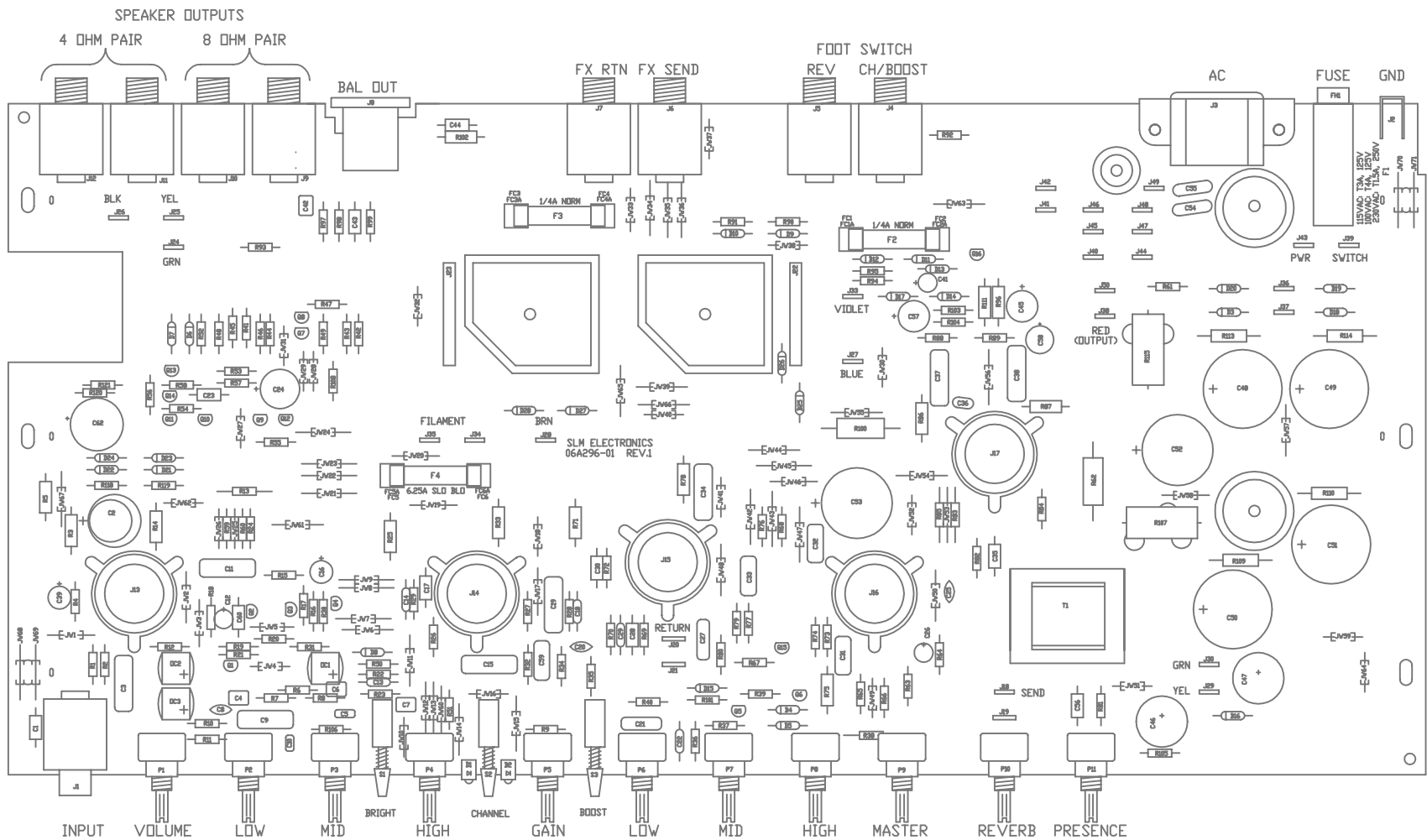
THIS SCHEMATIC IS PROVIDED FOR USE BY QUALIFIED PERSONNEL.
TO AVOID RISK OF ELECTRIC SHOCK, REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL. DO NOT PERFORM ANY SERVICING BEYOND
THAT EXPLAINED IN THE OPERATING INSTRUCTIONS.

NOTES

- 1) CAUTION: SHOCK HAZARD!
THIS UNIT CONTAINS HAZARDOUS VOLTAGE. DISCONNECT POWER AND BE SURE POWER SUPPLY IS DISCHARGED BEFORE TOUCHING INTERNAL PARTS.
- 2) UNLESS NOTED, RESISTOR VALUES IN OHMS, 1/4W-5% TOL.
CAPACITOR VALUES IN MICROFARADS, 50V-10% TOL.
- 3) VOLTAGES ARE MEASURED WITH 1 MEGOHM OSCILLOSCOPE
AND 10 MEGOHM DIGITAL VOLTMETER.
- 4) CHASSIS GROUND  CIRCUIT GROUND 

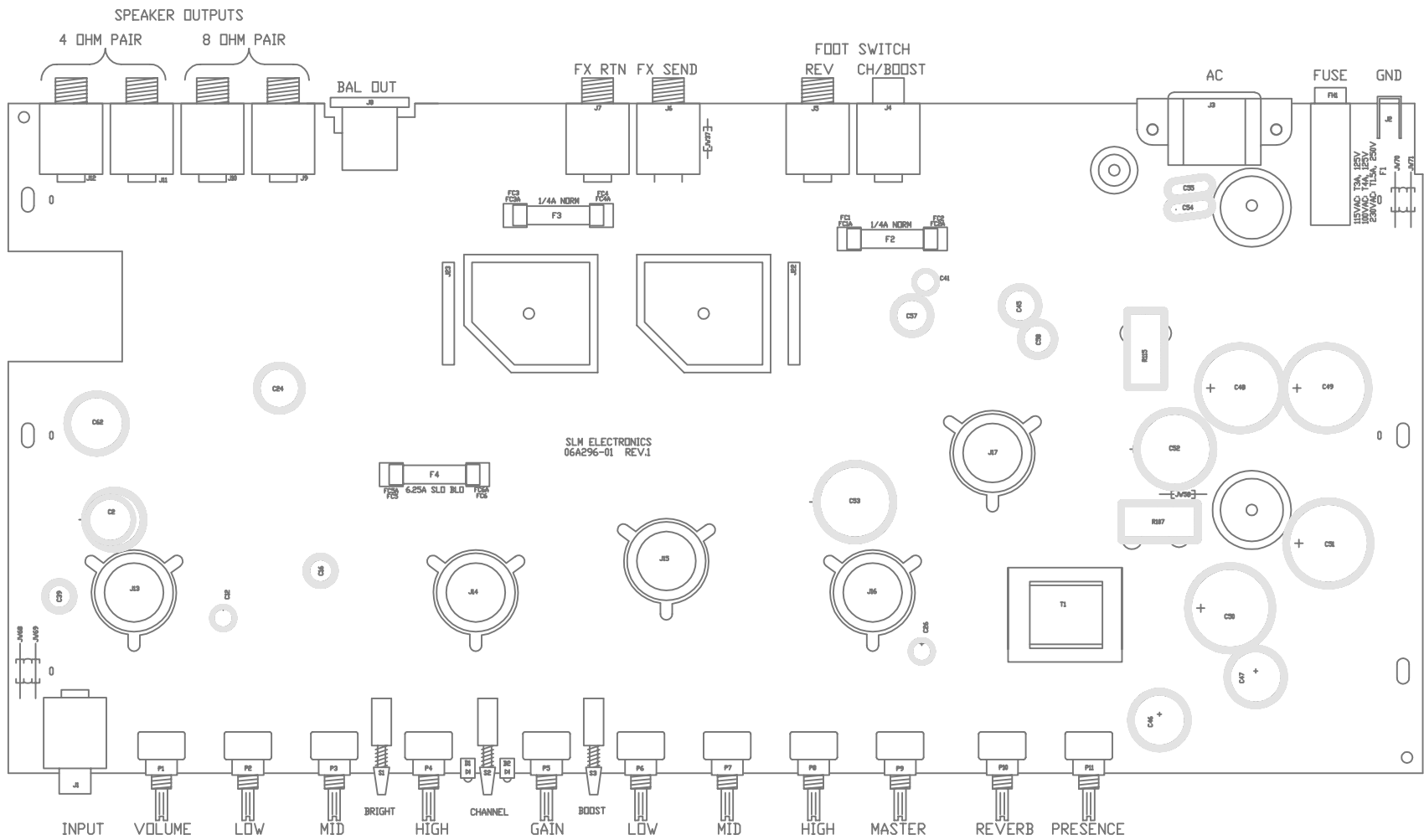


①	03/20/95	JCJ		SHORTENED STANDOFFS PER ECO# E0619
REV	DATE	BY	CHK'D	DESCRIPTION
SIGNATURES:		DATE:		 11880 BORMAN DR. ST. LOUIS, MISSOURI 63146
DRAWN: ERW		04/27/94		
CHK'D:				
APP'D:				PROJECT NAME: BV-60 TUBE BRD.
ORIGINAL ISSUED:		1		DRAWING NAME:
PLOT DATE:		03/20/95		SCHEMATIC
PLOT TIME:		11:08:14		DRAWING NO. 07P296-11
FILE NAME:		29611P1_		SCALE: 1:1
				SHEET: 1 OF 1
				REV. 1_



3				
②	02/23/96	SWR		REDESIGNED PER ECO #E950123
①	04/05/95	SWR		CHANGED R67 FROM:76-103-01 TO:76-224-01 & F4 FROM:23-306-01 TO:23-307-01 PER ECO #950004A.
REV	DATE	BY	CHK'D	DESCRIPTION
SIGNATURES:			DATE:	 11880 BORMAN DR. ST. LOUIS, MISSOURI 63146
DRAWN: REM		7/01/94		
CHK'D:			PROJECT NAME:	
APP'D:			BV-60	
ORIGINAL ISSUED:			02/17/95	DRAWING NAME:
PLOT DATE:			04/23/96	MAIN BD. PICTORIAL
PLOT TIME:			09:03:18	DRAWING NO. 07P296-01
FILE NAME:			29601P2_	REV. 2
			SCALE: 1:1	SHEET: 1 OF 3

A				B				C				D				E			
DESIGNATOR	PART #	DESCRIPTION		FC1	23-926-01	FUSECLIP	R1	76-473-01	47K	1/2W	R73	76-224-01	220K	1/2W					
NOT USED				FC2	23-926-01	FUSECLIP	R2	76-105-01	1M		R74	76-472-01	4. 7K						
AP1				FC3	23-926-01	FUSECLIP	R3	77-104-02	100K		R75	77-473-01	47K						
C1	10A473-11	.047	100V	FC4	23-926-01	FUSECLIP	R4	76-152-01	1. 5K		R76	76-224-01	220K						
C2	12-106-95	.1	450V	FC5	23-926-01	FUSECLIP	R5	77-100-01	10		R77	76-224-01	220K						
C3	10-104-10	.1	400V	FC6	23-926-01	FUSECLIP	R6	76-473-01	47K		R78	77-104-02	100K						
C4	10R103-03	.01	100V	FH1	23-346-01	FUSEHOLDER	R7	76-224-01	220K		R79	76-152-01	1. 5K						
C5	10-102-03	.001	100V	F1	23-303-05	3 A FUSE	R8	76-224-01	220K		R80	76-153-01	15K						
C6	10R102-03	.001	POLY	F2	23-304-01	1/4 A FUSE	R9	76-224-01	220K		R81	76-332-01	3. 3K						
C7	10R472-01	.0047	100V	F3	23-304-01	1/4 A FUSE	R10	76-104-01	100K		R82	76-103-01	10K						
C8	10-221-04	220pf	400V	F4	23-307-01	6 1/4 A FUSE	R11	76-472-01	4. 7K		R83	76-474-01	470K						
C9	10-473-10	.047	400V	J1	39-119-01	T/S	R12	76-105-01	1M		R84	76-471-01	470K						
C10	10-332-03	.0033	100V	J2	51-149-01	GNDLUG	R13	76-223-01	22K		R85	76-471-01	470K						
C11	10-473-10	.047	400V	J3	17-604-01	LINE-CORD	R14	77-104-02	100K		R86	77-823-02	82. 5K						
C12	12R105-50	1uF	50V	J4	39-117-01	T/R/S	R15	76-224-01	220K		R87	77-104-02	100K						
C13	10A103-11	.01	100V	J5	39-116-01	T/S	R16	76-154-01	150K		R88	76-154-01	150K						
C14	10A152-11	.0015	100V	J6	39-116-01	T/S	R17	76-153-01	15K		R89	76-154-01	150K						
C15	10-473-10	.047	400V	J7	39-116-01	T/S	R18	76-152-01	1. 5K		R90	76-120-01	12						
C16	12R226-50	22	50V	J8	39-308-01	MALE	R19	76-104-01	100K		R91	76-120-01	12						
C17	10A104-01	.1	50V	J9	39-116-01	T/S	R20	76-104-01	100K		R92	76-333-01	33K						
C18	10A221-11	220pF	100V	J10	39-116-01	T/S	R21	76-104-01	100K		R93	76-333-01	33K						
C19	10-473-10	.047	400V	J11	39-116-01	T/S	R22	76-104-01	100K		R94	76-154-01	150K						
C20	10-471-52	470pF	500V	J12	39-116-01	T/S	R23	76-104-01	100K		R95	76-472-01	4. 7K						
C21	10-223-10	0. 022	400V	J13	17-451-09	TUBE_SOCKET	R24	76-104-01	100K		R96	77-472-01	4. 7K						
C22	10A682-01	.0068	100V	J14	17-451-09	TUBE_SOCKET	R25	77-224-02	221K		R97	76-104-01	100K						
C23	10A104-01	.1	50V	J15	17-451-09	TUBE_SOCKET	R26	76-274-01	270K		R98	76-222-01	2. 2K						
C24	12-227-02	220	50V	J16	17-451-09	TUBE_SOCKET	R27	76-334-01	330K		R99	76-223-01	22K						
C25	10-102-02	.001uF	1kV	J17	17-451-09	TUBE_SOCKET	R28	76-104-01	100K		R100	78-103-02	10K						
C26	12R105-50	1uF	50V	J18	17-894-01	TAB	R29	76-222-01	2. 2K		R101	76-104-01	100K						
C27	10-103-10	.01	400V	J19	17-894-01	TAB	R30	76-104-01	100K		R102	77-100-01	10						
C28	10A473-11	.047	100V	J20	17-894-01	TAB	R31	76-104-01	100K		R103	76-224-01	220K						
C29	10A681-11	680pF	100V	J21	17-894-01	TAB	R32	76-152-01	1. 5K		R104	76-224-01	220K						
C30	10A104-01	.1	50V	J22	17-104-13	. 100	R33	77-224-02	221K		R105	76-470-01	47						
C31	10-104-21	.1	250V	J23	17-104-13	. 100	R34	76-683-01	68K		R106	76-473-01	47K						
C32	10-104-21	.1	250V	J24	17-836-01	TAB	R35	76-104-01	100K		R107	78-562-03	5. 6K						
C33	10-224-03	.22	100V	J25	17-836-01	TAB	R36	76-753-01	75K		R108	76-222-01	2. 2K						
C34	10-473-10	.047	400V	J26	17-836-01	TAB	R37 <th>76-221-01</th> <th>220</th> <td></td> <th>R109</th> <th>78-224-01</th> <th>220K</th> <td></td> <td data-cs="4" data-kind="parent"></td> <td data-kind="ghost"></td> <td data-kind="ghost"></td> <td data-kind="ghost"></td>	76-221-01	220		R109	78-224-01	220K						
C35	10A104-01	.1	50V	J27	17-836-01	TAB	R38	76-104-01	100K		R110	78-224-01	220K						
C36	10-500-02	50pF	500V	J28	17-836-01	TAB	R39	76-104-01	100K		R111	77-472-01	4. 7K						
C37	10-473-10	.047	400V	J29	17-836-01	TAB	R40	76-222-01	2. 2K		R112	NOT USED							
C38	10-473-10	.047	400V	J30	17-836-01	TAB	R41	76-332-01	3. 3K		R113	78-224-01	220K						
C39	12R226-50	22	50V	J31	NOT USED		R42	76-222-01	2. 2K		R114	78-224-01	220K						
C40	NOT USED			J32	NOT USED		R43	76-222-01	2. 2K		R115	78-621-03	620						
C41	12R106-35	.10	35V	J33	17-836-01	TAB	R44	76-473-01	47K		R116	NOT USED							
C42	10R682-03	0. 0068	100V	J34	17-836-01	TAB	R45	76-105-01	1M		R117	NOT USED							
C43	10A473-11	.047	100V	J35	17-836-01	TAB	R46	76-473-01	47K		R118	76-221-01	220						
C44	10A473-11	.047	100V	J36	17-836-01	TAB	R47	76-474-01	470K		R119	76-221-01	220						
C45	12-107-32	100	35V	J37	17-836-01	TAB	R48	76-223-01	22K		R120	76-221-01	220						
C46	12-108-32	1000	35V	J38	17-836-01	TAB	R49	76-471-01	470		R121	76-221-01	220						
C47	12-108-32	1000	35V	J39	17-836-01	TAB	R50	76-152-01	1. 5K										
C48	12-107-94	100	350V	J40	17-836-01	TAB	R51	76-102-01	1K										
C49	12-107-94	100	350V	J41	17-836-01	TAB	R52	76-104-01	100K										
C50	12-107-94	100	350V	J42	17-836-01	TAB	R53	76-103-01	10K										
C51	12-107-94	100	350V	J43	17-836-01	TAB	R54	76-105-01	1M										
C52	12-476-42	47	450V	J44	17-836-01	TAB	R55	76-103-01	10K										
C53	12-476-42	47	450V	J45	17-836-01	TAB	R56	76-104-01	100K										
C54	10-332-01	.0033	UL	J46	17-836-01	TAB	R57	76-104-01	100K										
C55	10-332-01	.0033	UL	J47	17-836-01	TAB	R58	76-102-01	1K										
C56	10A104-01	.1	50V	J48	17-836-01	TAB	R59	76-102-01	1K										
C57	12-107-32	100	35V	J49	17-836-01	TAB	R60	76-102-01	1K										
C58	12-476-62	47	63V	J50	17-836-01	TAB	R61	76-474-01	470K										
C59	10-224-03	.22	100V	J51	17-836-01	TAB	R62	78-202-01	2K										
C60	10A104-01	.1	50V	DC1	66-102-01	VTL5C6	R63	76-105-01	1M										
C61	NOT USED			DC2	66-102-01	VTL5C6	R64	76-332-01	3. 3K										
C62	12-478-11	4700	10V	DC3	66-102-01	VTL5C6	R65	76-105-01	1M										
D1	21-502-01	GREEN	LED	P1	70-105-22	1M	R66	76-334-01	330K										
D2	21-501-01	RED	LED	P2	70-254-22	250KA	R67	76-224-01	220K										
D3	21A407-01	IN4007		P3	70-503-22	50KA	R68	76-104-01	100K										
D4	21A449-01	IN4749		P4	70-306-01	250KL	R69	76-223-01	22K										
D5	21A449-01	IN4749		P5	70-254-22	250KA	R70	76-223-01	22K										



GOOP AS PER USUAL PRACTICE

3				
②	02/23/96	SWR		REDESIGNED PER ECO #E950123
①	04/05/95	SWR		CHANGED R67 FROM:76-103-01 TO:76-224-01 & F4 FROM:23-306-01 TO:23-307-01 PER ECO #950004A.
REV	DATE	BY	CHK'D	DESCRIPTION
SIGNATURES:			DATE:	 11880 BORMAN DR. ST. LOUIS, MISSOURI 63146
DRAWN: REM		7/01/94		
CHK'D:				
APP'D:				
ORIGINAL ISSUED:			02/17/95	DRAWING NAME:
PLOT DATE:			04/23/96	GOOP DRAWING
PLOT TIME:			09:03:18	DRAWING NO. 07P296-01
FILE NAME:			29601P2_	REV. 2
			SCALE: 1:1	SHEET: 3 OF 3