

WARNING! - Please Read this Information Carefully:

The project described in these pages utilizes **POTENTIALLY FATAL HIGH VOLTAGES**. If you are in any way unfamiliar with high voltage circuits or are uncomfortable working around high voltages, **PLEASE DO NOT RISK YOUR LIFE BY BUILDING THEM**. Seek help from a competent technician before building any unfamiliar electronics circuit. While efforts are made to ensure accuracy of these circuits, no guarantee is provided, of any kind!

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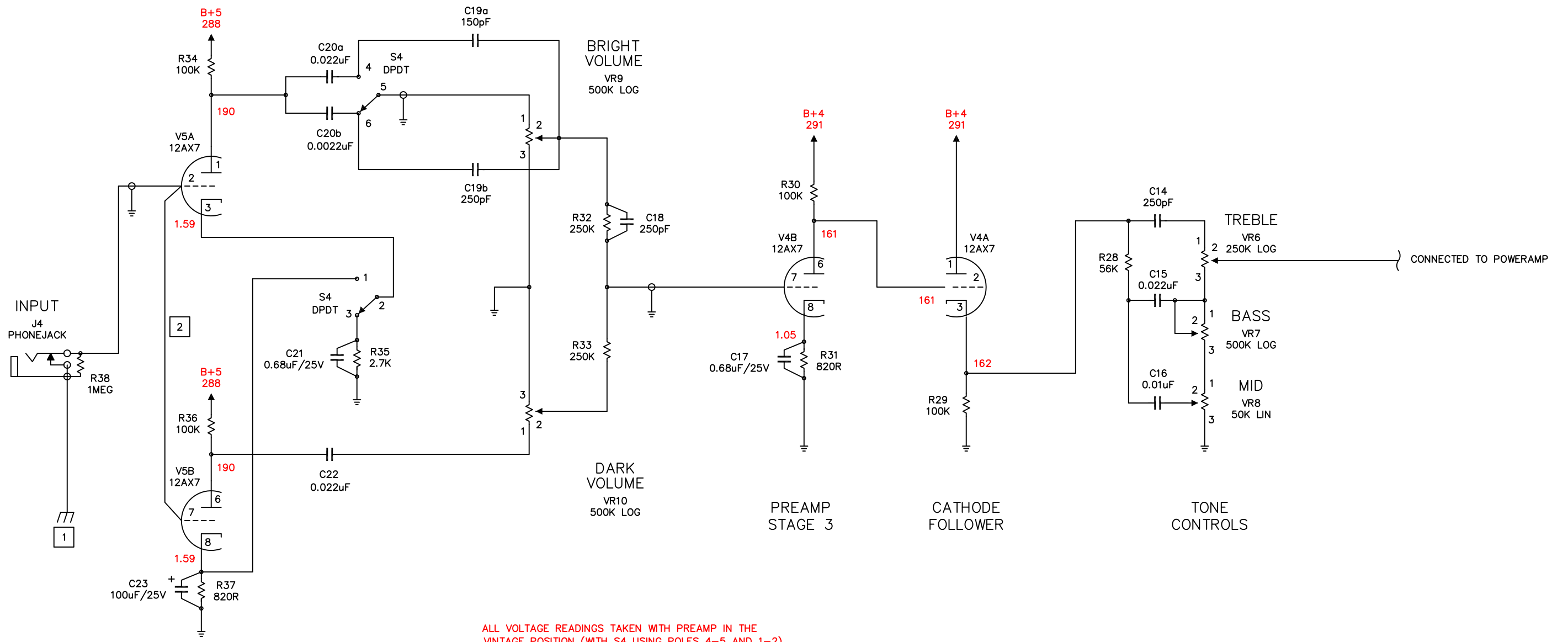
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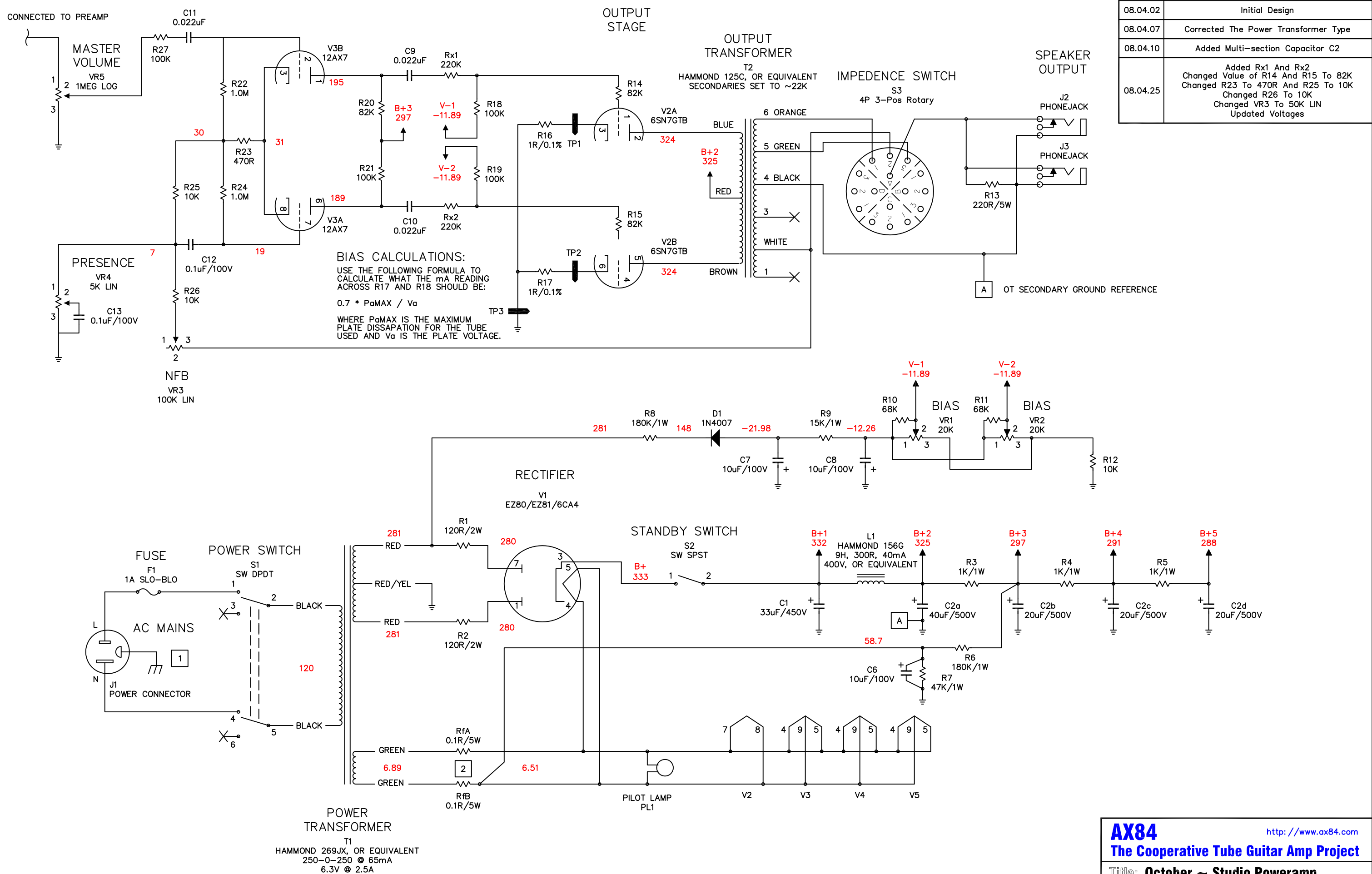
Revision	Description
08.04.02	Initial Design
08.04.07	Corrected The Power Transformer Type
08.04.10	Added Multi-section Capacitor C2
08.04.25	Added Rx1 And Rx2 Changed Value of R14 And R15 To 82K Changed R23 To 470R And R25 To 10K Changed R26 To 10K Changed VR3 To 50K LIN Updated Voltages



ALL VOLTAGE READINGS TAKEN WITH PREAMP IN THE VINTAGE POSITION (WITH S4 USING POLES 4-5 AND 1-2).

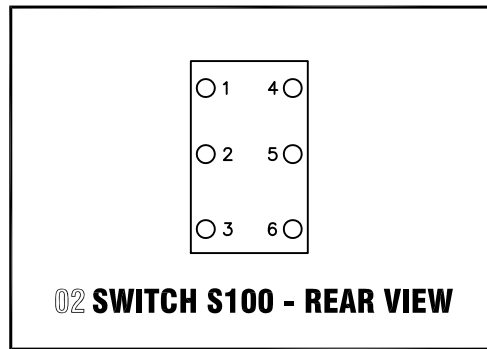
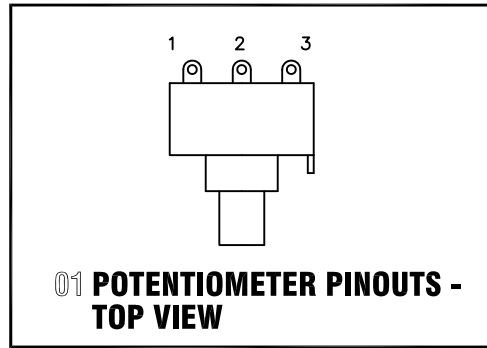
PREAMP STAGE 1 AND 2

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BIAS CALCULATIONS:
 USE THE FOLLOWING FORMULA TO
 CALCULATE WHAT THE mA READING
 ACROSS R17 AND R18 SHOULD BE:
 $0.7 * P_{aMAX} / V_a$
 WHERE P_{aMAX} IS THE MAXIMUM
 PLATE DISSIPATION FOR THE TUBE
 USED AND V_a IS THE PLATE VOLTAGE.

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GENERAL NOTES:

1. ALL RESISTORS 1/2W MINIMUM UNLESS OTHERWISE NOTED.
2. ALL COUPLING CAPACITORS 400V OR GREATER.
3. VOLTAGE READINGS ARE THOSE TAKEN WITH MY TUBE SET. THE USE OF DIFFERENT TUBE SETS WILL ALTER THE READINGS.
4. THE  SYMBOL REPRESENTS SHIELDED CABLE.

CONSTRUCTION NOTES:

- 1 THIS IS A GROUND CONNECTION TO THE CHASSIS. THE MAINS SAFETY CONNECTION SHOULD BE MADE AS CLOSE AS POSSIBLE TO THE POINT WHERE AC ENTERS THE CHASSIS. THE CIRCUIT CONNECTION SHOULD BE MADE AS CLOSE AS POSSIBLE TO THE INPUT JACK. IDEALLY, THE JACK ITSELF SHOULD BE USED AS THE CONNECTION POINT BY NOT ISOLATING IT FROM THE CHASSIS.
- 2 THESE TWO 0.1R/5W RESISTORS ARE OPTIONAL, AND ARE NEEDED ONLY WHEN YOUR MAINS VOLTAGES ARE GREATER THAN THAT WHICH THE POWER TRANSFORMER WAS WOUND FOR. THE VALUES SHOWN SHOULD BE CORRECT FOR A 115V PT USED WITH 120V MAINS. THE PURPOSE OF THESE TWO RESISTORS IS TO INSURE THAT THE FILAMENT VOLTAGE STAYS WITHIN +/- 10% OF 6.3VAC.

VOLTAGE READING NOTES:

1. THE VOLTAGE READINGS ON THIS SCHEMATIC ARE SIMULATED BASED ON THE USE OF A HAMMOND 269JX WITH 120V MAINS.
2. DIFFERENT TUBES DRAW DIFFERENT AMOUNTS OF CURRENT, NO TWO ARE ALIKE UNLESS THEY ARE MATCHED. THE AMOUNT OF CURRENT DRAWN BY ALL THE TUBES IN THE AMP WILL AFFECT VOLTAGE READINGS THROUGHOUT THE AMP.

AX84 October Studio Amplifier BOM

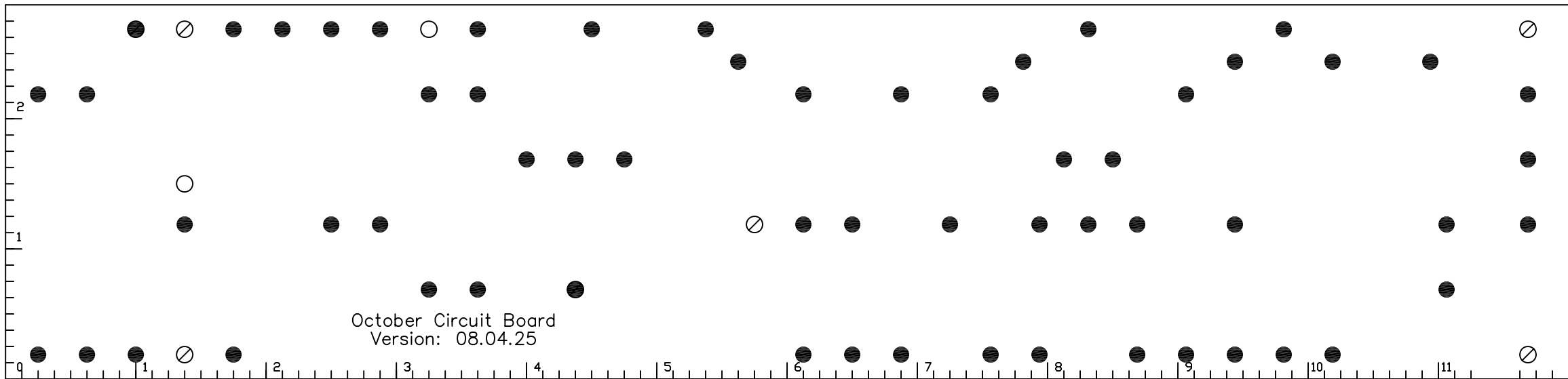
Revision: 08.04.25

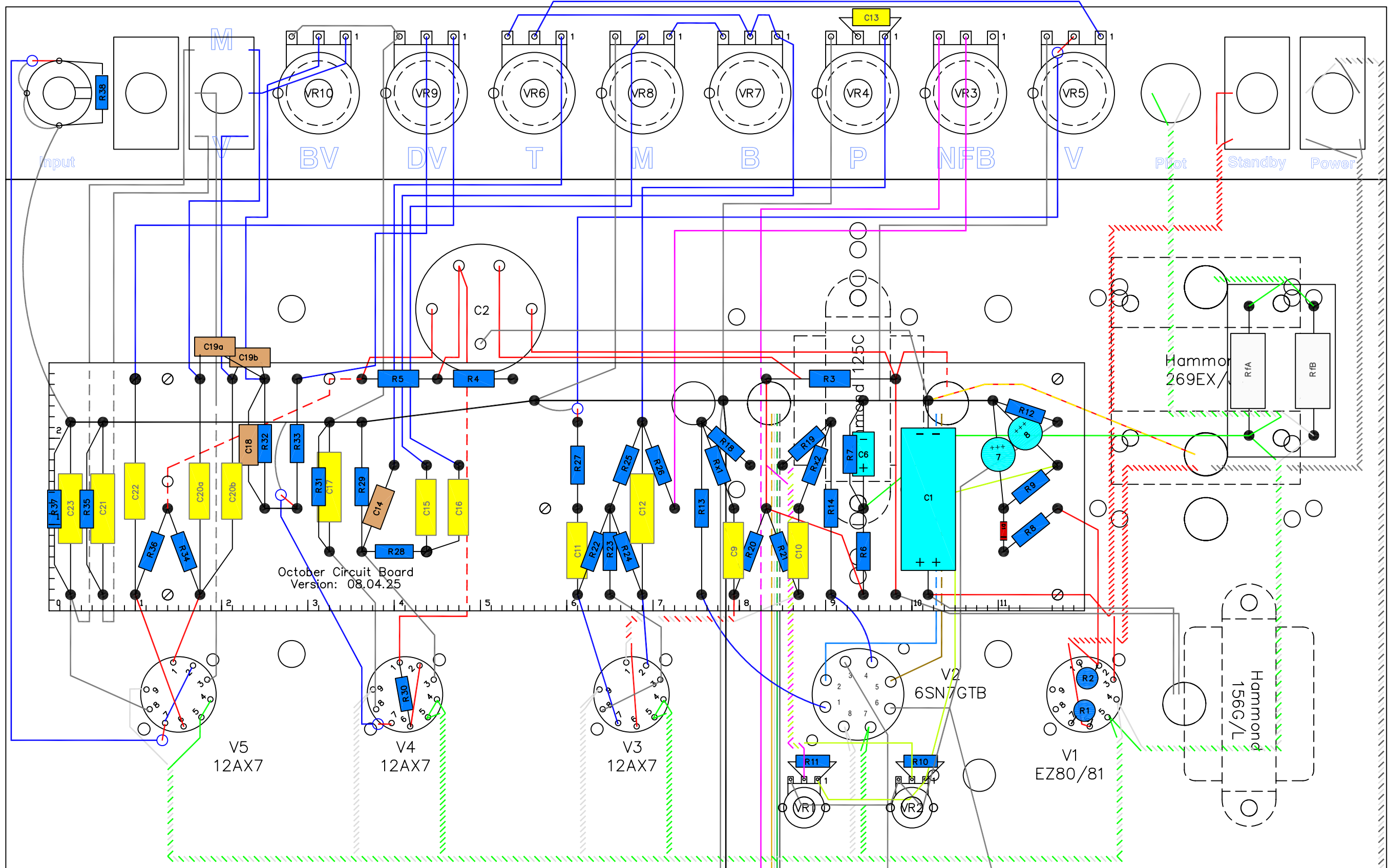
NOTE: Parts for options are not included on this bill of materials.

Item	Quantity	Reference	Value
1	1	C1	33uF/450V
2	1	C2	40/20/20/20 Multi-section Capacitor
3	3	C6, C7, C8	10uF/100V
4	6	C9, C10, C11, C15, C20a, C22	0.022uF/400V
5	2	C12, C13	0.1uF/100V
6	3	C14, C18, C19b	250pF/500V
7	1	C16	0.01uF/400V
8	2	C17, C21	0.68uF/25V
9	1	C19a	150pF/500V
10	1	C20b	0.0022uF/400V
11	1	C23	100uF/25V
12	2	Rfa, Rfb	0.1R/5W
13	2	R1, R2	120R/2W
14	3	R3, R4, R5	1K/1W
15	2	R6, R8	180K/1W
16	1	R7	47K/1W
17	1	R9	15K/1W
18	2	R10, R11	68K
19	3	R12, R25, R26	10K
20	1	R9	56K
21	1	R13	220R/5W
22	2	R14, R15	82K
23	2	R16, R17	1R/0.1%
24	8	R18, R19, R21, R27, R29, R30, R34, R36	100K
25	2	Rx1, Rx2	180K
26	1	R20	82K
27	3	R22, R24, R38	1.0M
28	1	R23	470R
29	2	R31, R37	820R
30	1	R25	47K
31	1	R28	56K
32	2	R32, R33	250K
33	1	R35	2.7K
34	1	F1	1A SLO-BLO
35	1	FH1	Fuse Holder
36	1	J1	Power Connector
37	3	J2, J3, J4	Phonejack
38	4	JW1, JW2, JW3, JW4	Phonejack Isolation Washer (if needed)
39	1	S1	SW DPDT
40	1	S2	SW SPST
41	1	S3	4P 3-Pos Rotary (Shorting)
42	1	D1	1N4007
43	1	PL1	Pilot Lamp Assembly And Bulb

44	1	T1	Hammond 269JX
45	1	T2	Hammond 125C
46	1	L1	Hammond 156G
47	4	SK1, SK3, SK4, SK5	9 Pin Tube Sockets
48	1	SK2	8 Pin Octal Socket
49	1	V1	EZ80/EZ81/6CA4
50	1	V2	6SN7GTB
51	3	V3, V4, V5	12AX7
52	2	VR1, VR2	20K LIN
53	1	VR3	50K LIN
54	1	VR4	5K LIN
55	1	VR5	1MEG LOG
56	1	VR6	250K LOG
57	3	VR7, VR9, VR10	500K LOG
58	1	VR8	50K LIN
59	1	CCImp	Clamp For Multi-section Cap C2
60	8	K1, K2, K3, K4, K5, K6, K7, K8	Knobs
61	1	CH1	Chassis

October Circuit Board
Version: 08.04.25





AX84 October ~ Studio Chassis Layout

Version: 08.04.25

AX84 Kit Chassis 1

Version: 08.04.10

