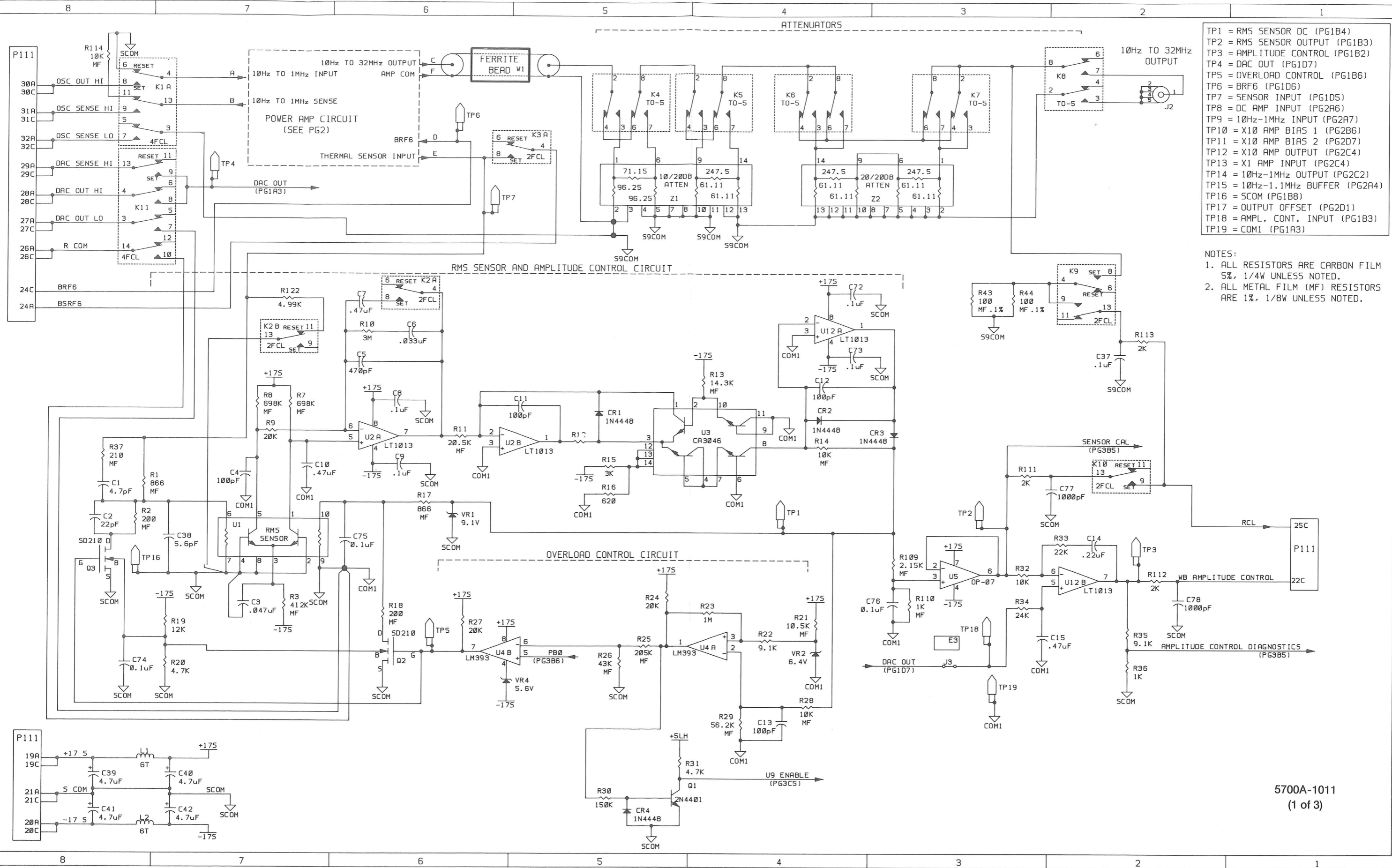


5700A-7611

Figure 7-5. A5 Wideband Output PCA (Option -03)

SCHEMATIC DIAGRAMS



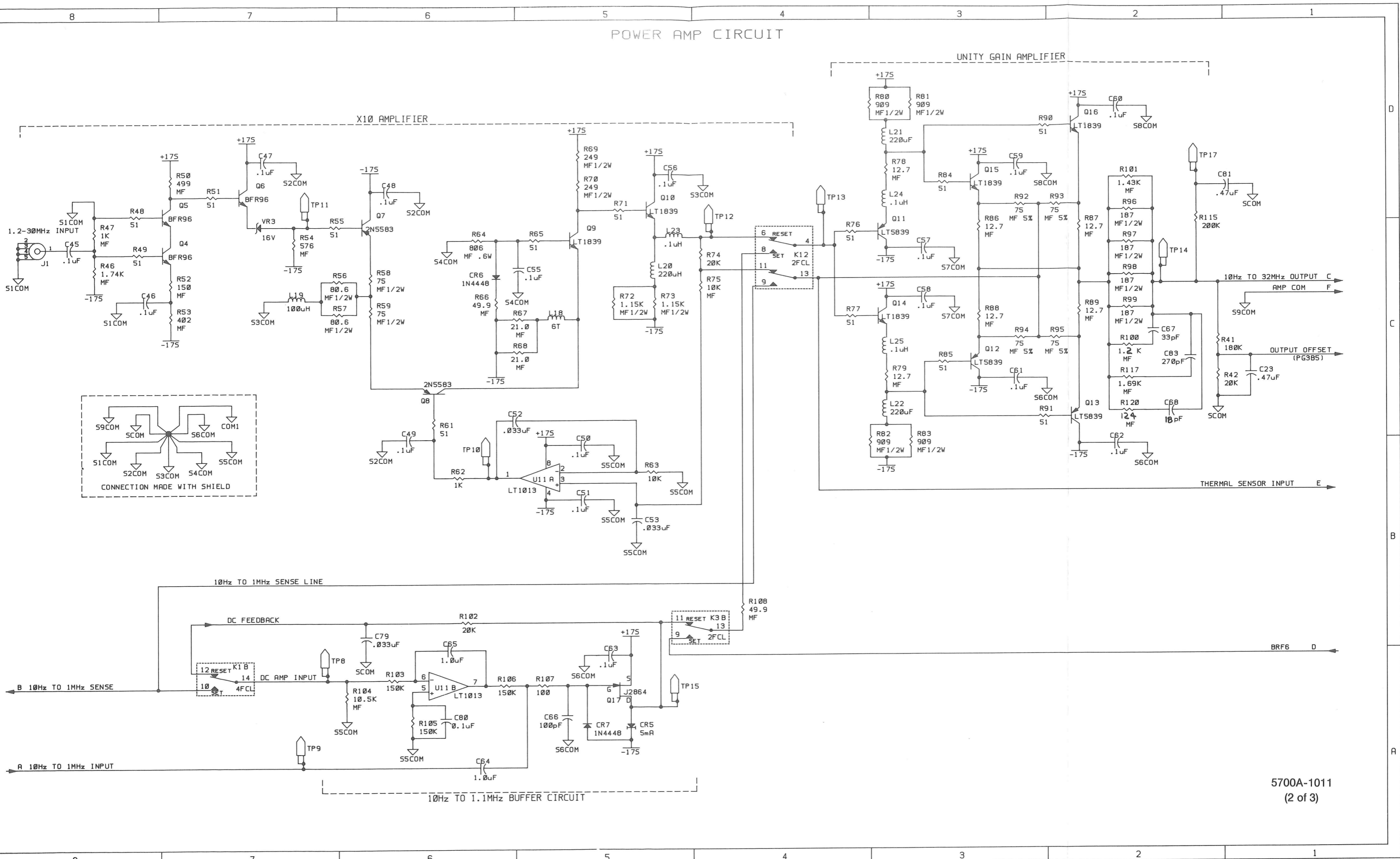
- TP1 = RMS SENSOR DC (PG1B4)
 TP2 = RMS SENSOR OUTPUT (PG1B3)
 TP3 = AMPLITUDE CONTROL (PG1B2)
 TP4 = DAC OUT (PG1D7)
 TP5 = OVERLOAD CONTROL (PG1B6)
 TP6 = BRF6 (PG1D6)
 TP7 = SENSOR INPUT (PG1D5)
 TP8 = DC AMP INPUT (PG2A6)
 TP9 = 10Hz-1MHz INPUT (PG2A7)
 TP10 = X10 AMP BIAS 1 (PG2B6)
 TP11 = X10 AMP BIAS 2 (PG2D7)
 TP12 = X10 AMP OUTPUT (PG2C4)
 TP13 = X1 AMP INPUT (PG2C4)
 TP14 = 10Hz-1MHz OUTPUT (PG2C2)
 TP15 = 10Hz-1.1MHz BUFFER (PG2A4)
 TP16 = SCOM (PG1B8)
 TP17 = OUTPUT OFFSET (PG2D1)
 TP18 = AMPL. CONT. INPUT (PG1B3)
 TP19 = COM1 (PG1A3)

- NOTES:
 1. ALL RESISTORS ARE CARBON FILM 5%, 1/4W UNLESS NOTED.
 2. ALL METAL FILM (MF) RESISTORS ARE 1%, 1/8W UNLESS NOTED.

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Figure 7-5. A5 Wideband Output PCA (Option -03) (cont)

POWER AMP CIRCUIT



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Figure 7-5. A5 Wideband Output PCA (Option -03) (cont)

SCHEMATIC DIAGRAMS

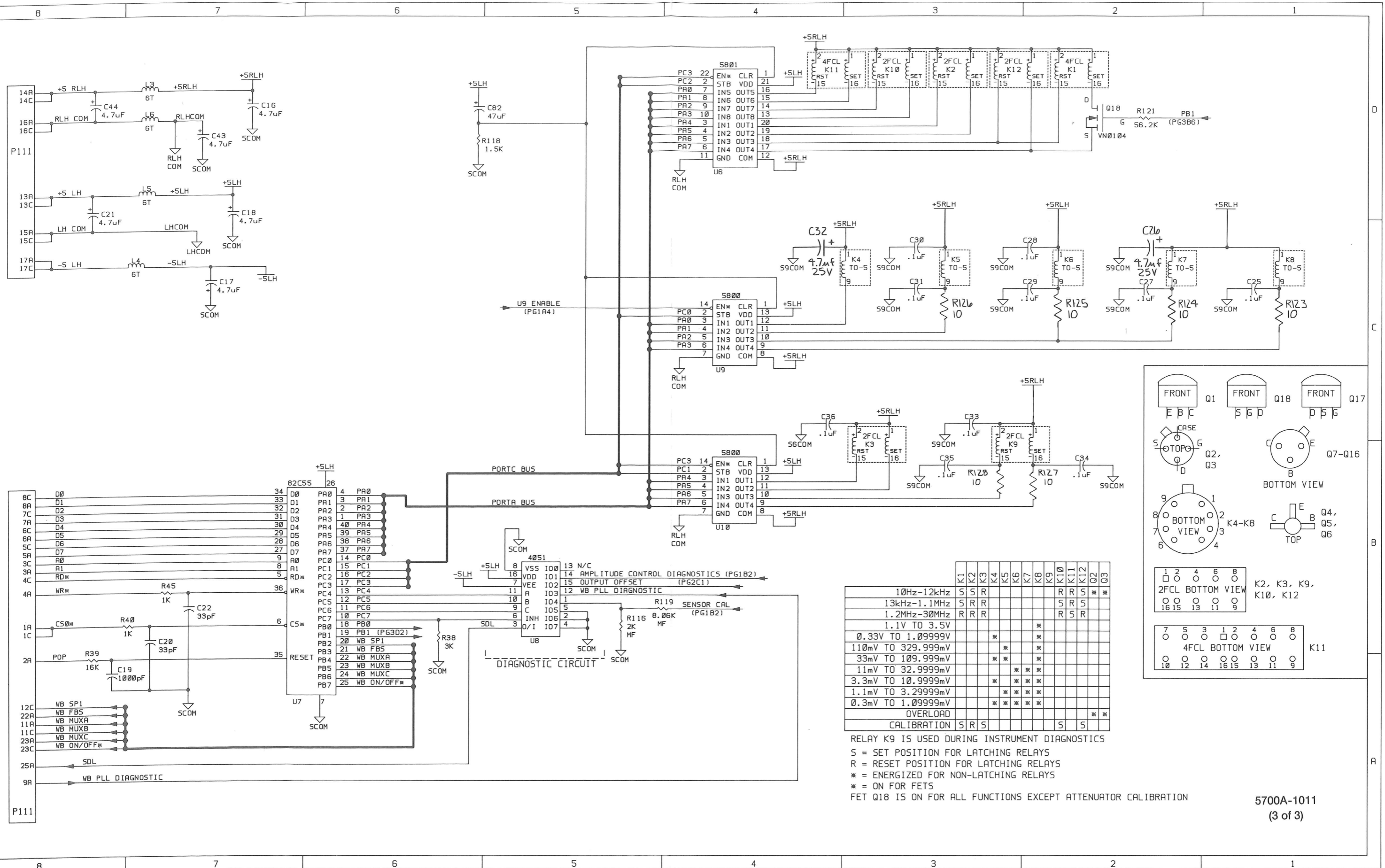
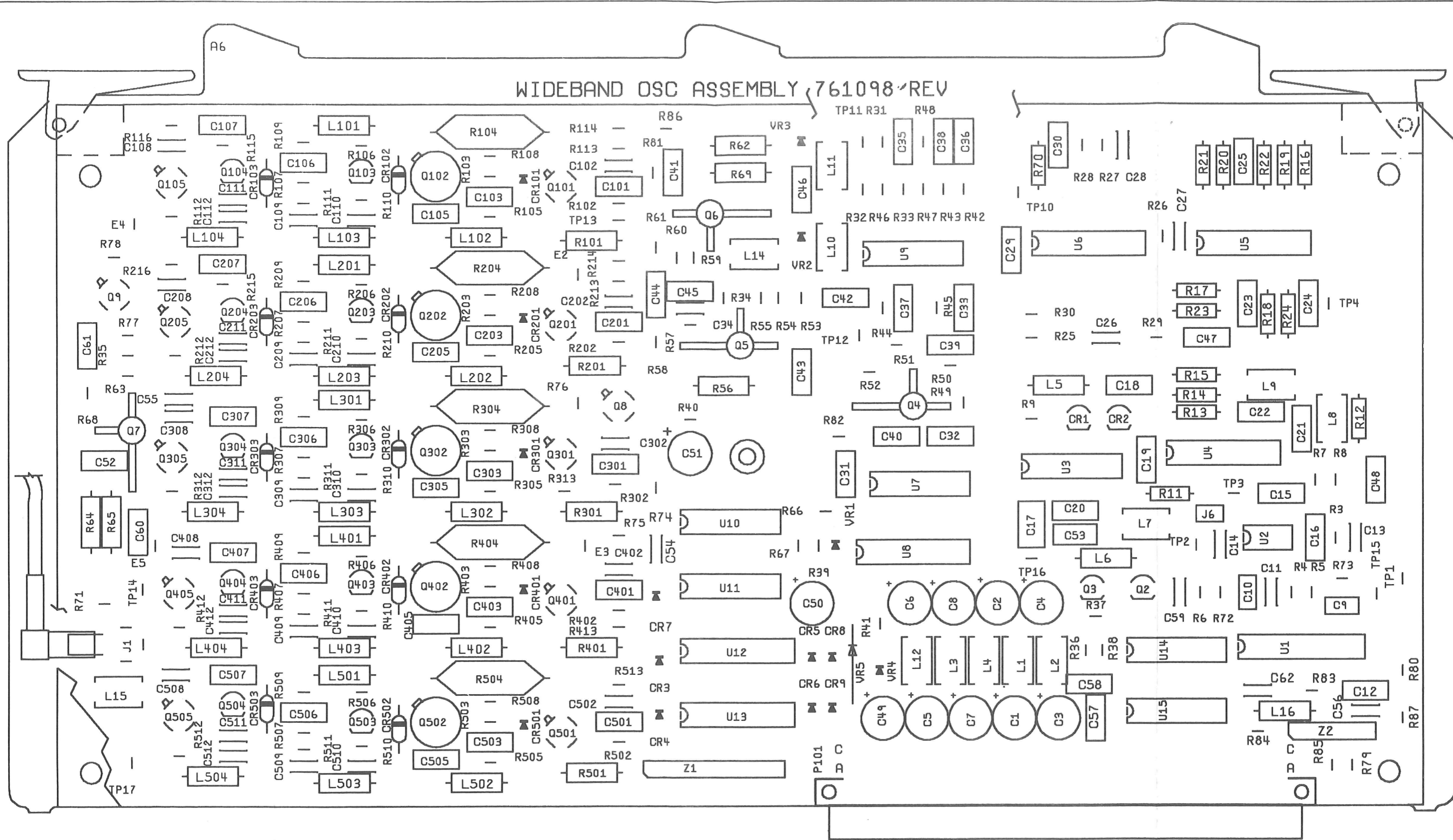


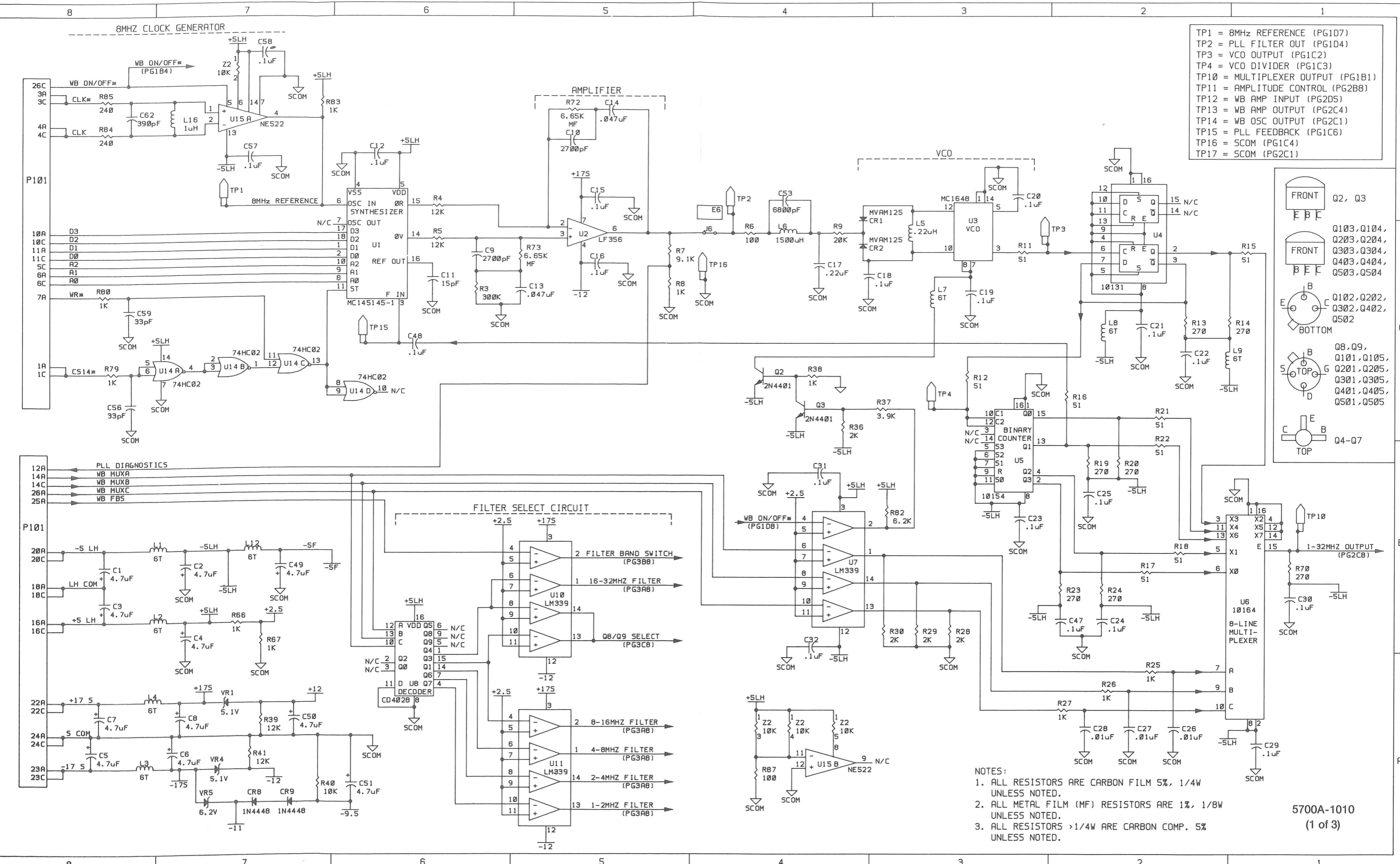
Figure 7-5. A5 Wideband Output PCA (Option -03) (cont)



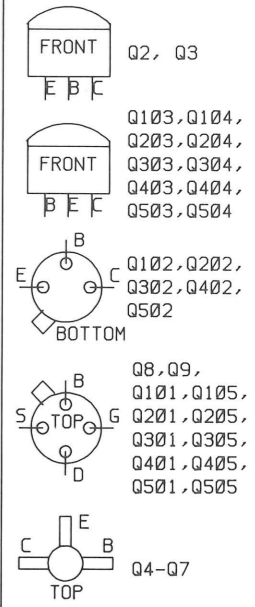
5700A-7610

Figure 7-6. A6 Wideband Oscillator PCA (Option -03)

SCHEMATIC DIAGRAMS



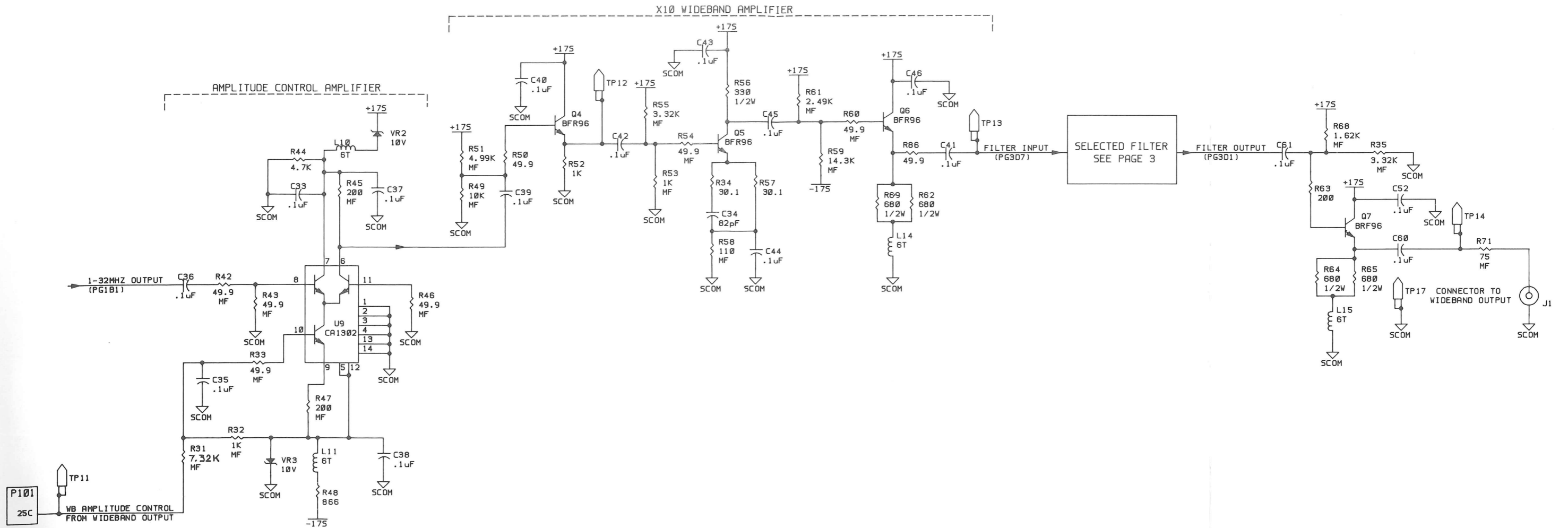
TP1 = 8MHz REFERENCE (PG1D7)
 TP2 = PLL FILTER OUT (PG1D4)
 TP3 = VCO OUTPUT (PG1C2)
 TP4 = VCO DIVIDER (PG1C3)
 TP10 = MULTIPLEXER OUTPUT (PG1B1)
 TP11 = AMPLITUDE CONTROL (PG2B8)
 TP12 = WB AMP INPUT (PG2D5)
 TP13 = WB AMP OUTPUT (PG2C4)
 TP14 = WB OSC OUTPUT (PG2C1)
 TP15 = PLL FEEDBACK (PG1C6)
 TP16 = SCOM (PG1C4)
 TP17 = SCOM (PG2C1)



NOTES:
 1. ALL RESISTORS ARE CARBON FILM 5%, 1/4W UNLESS NOTED.
 2. ALL METAL FILM (MF) RESISTORS ARE 1%, 1/8W UNLESS NOTED.
 3. ALL RESISTORS >1/4W ARE CARBON COMP. 5% UNLESS NOTED.

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Figure 7-6. A6 Wideband Oscillator PCA (Option -03)



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Figure 7-6. A6 Wideband Oscillator PCA (Option -03) (cont)

SCHMATIC DIAGRAMS

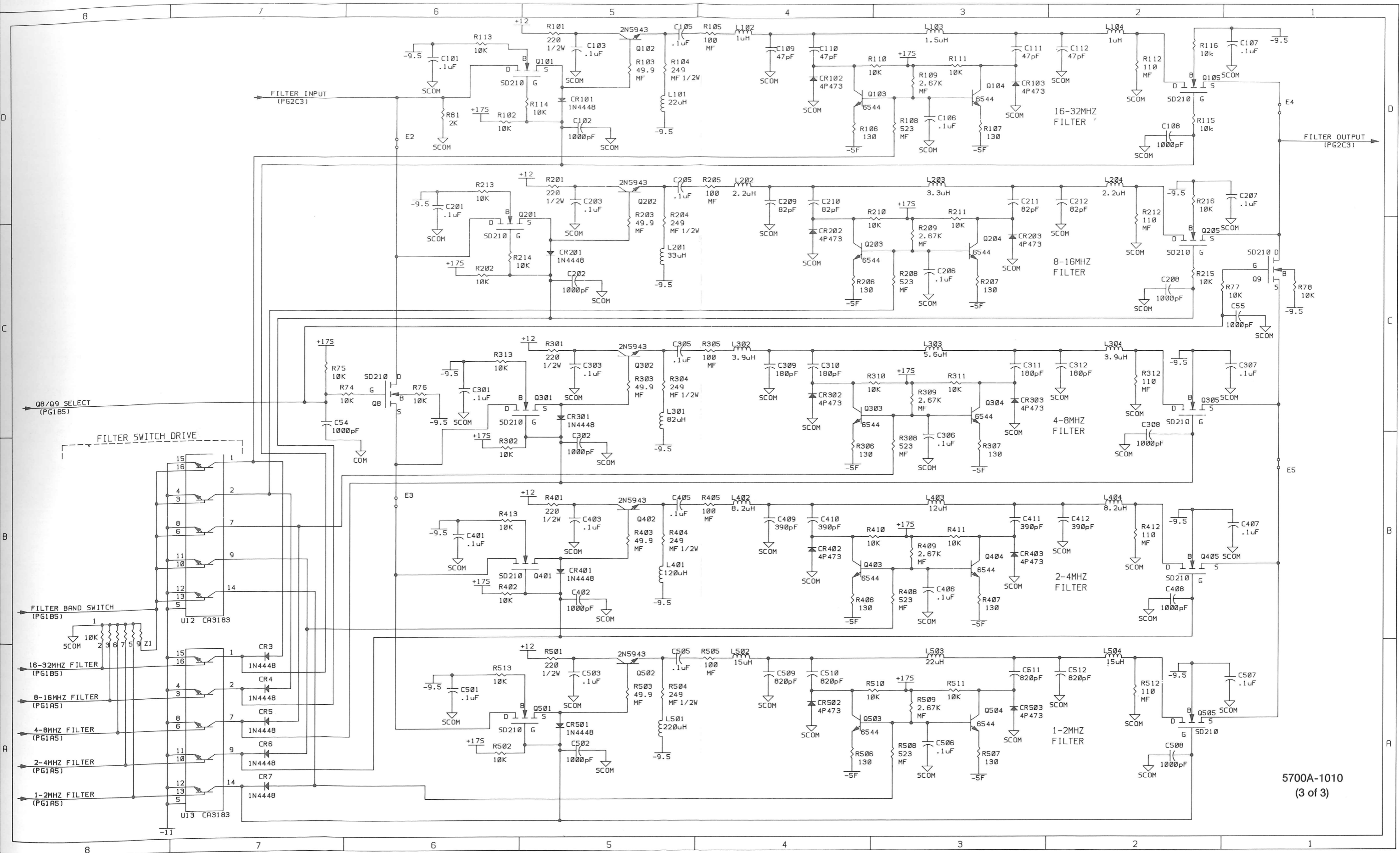
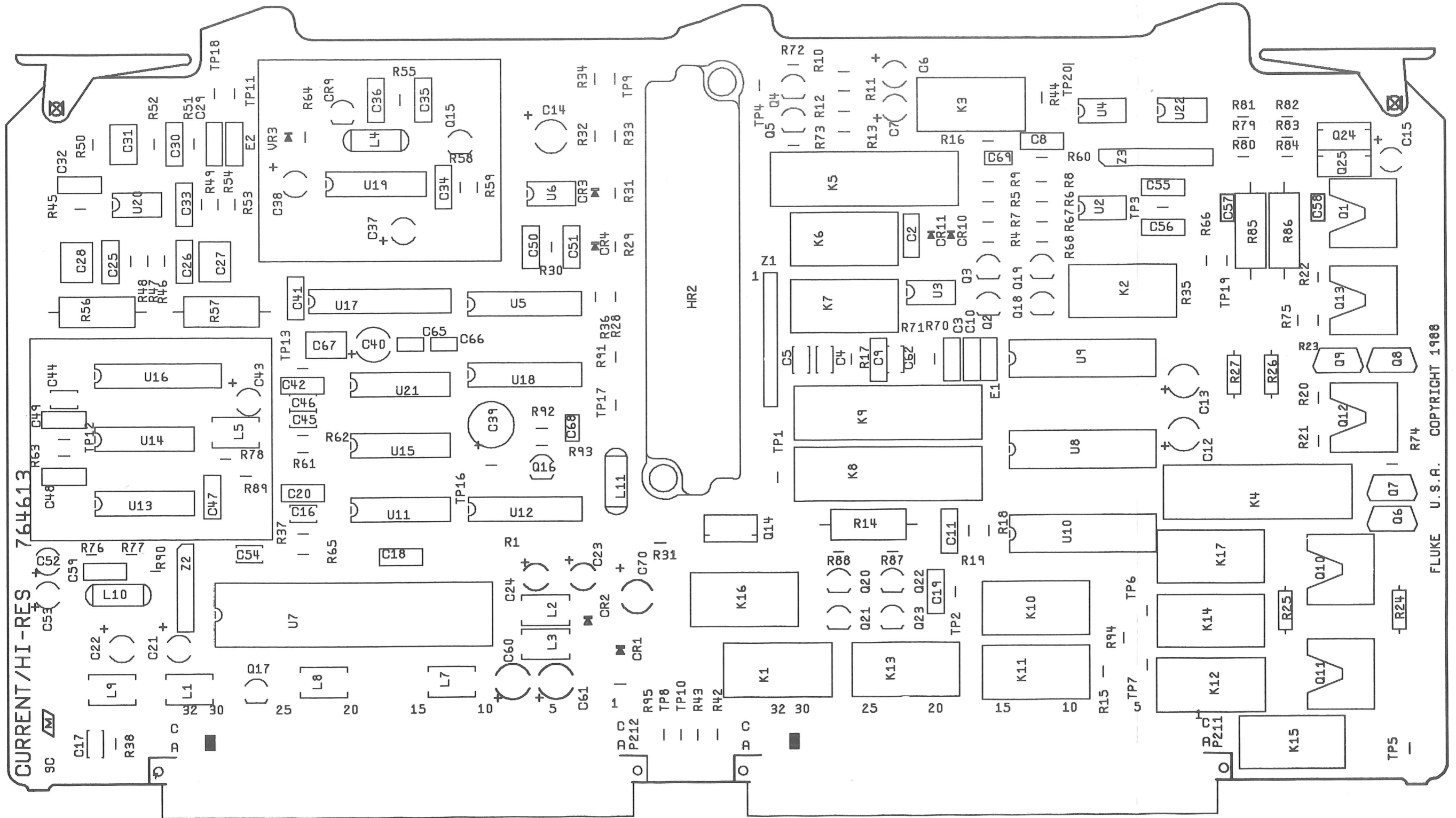


Figure 7-6. A6 Wideband Oscillator PCA (Option -03) (cont)



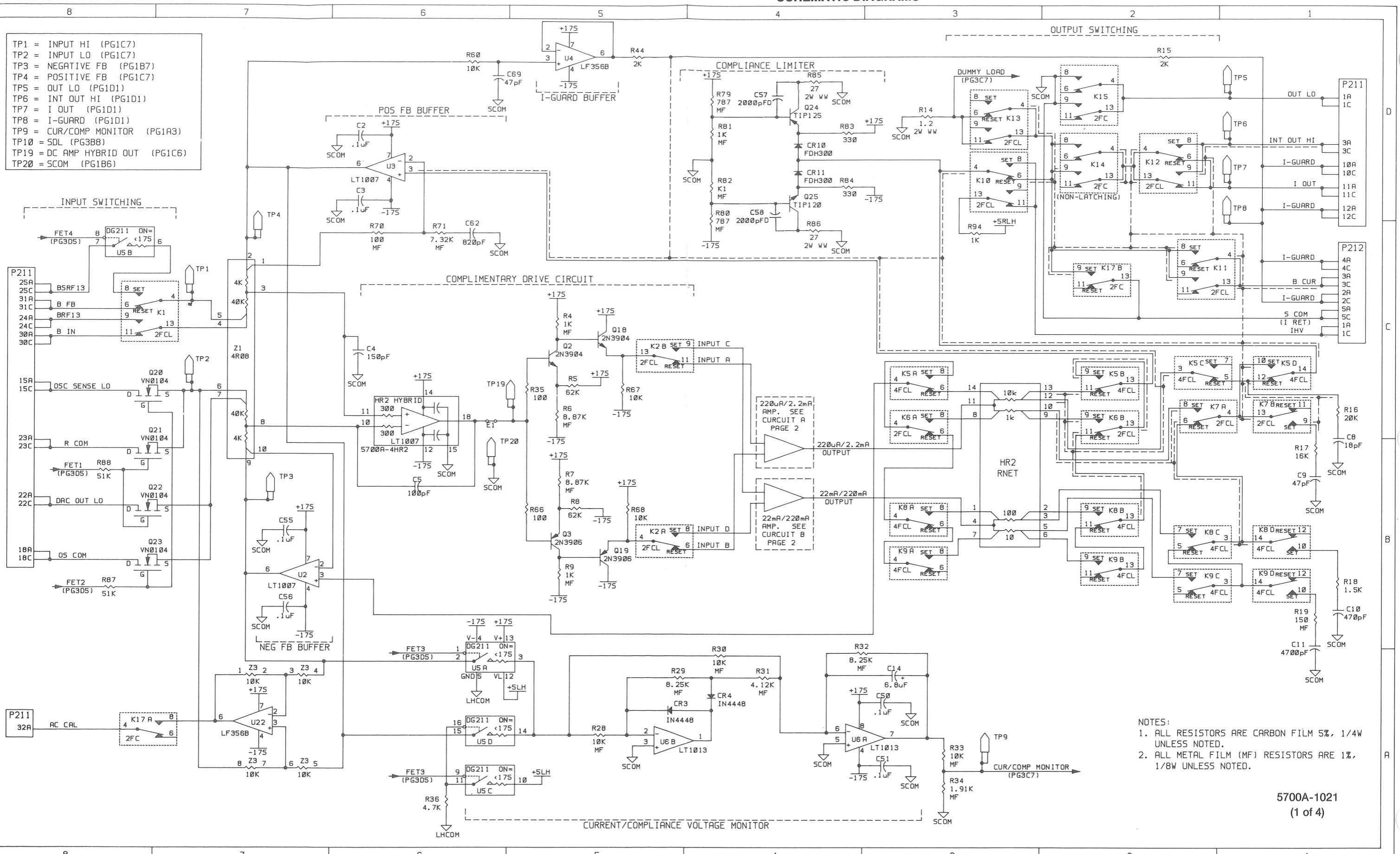
FLUKE U.S.A. COPYRIGHT 1988

5700A-7621

Figure 7-7. A7 Current/High-Resolution Oscillator PCA

SCHEMATIC DIAGRAMS

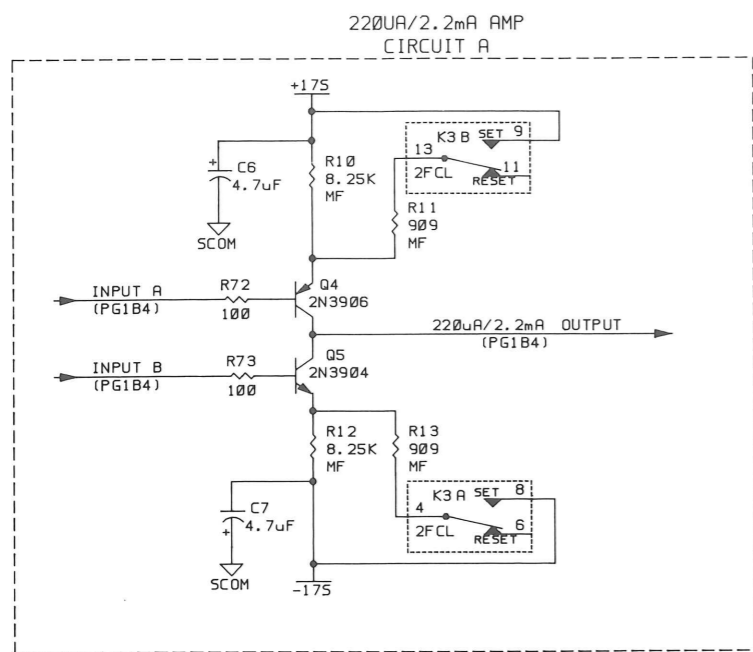
- TP1 = INPUT HI (PG1C7)
- TP2 = INPUT LO (PG1C7)
- TP3 = NEGATIVE FB (PG1B7)
- TP4 = POSITIVE FB (PG1C7)
- TP5 = OUT LO (PG1D1)
- TP6 = INT OUT HI (PG1D1)
- TP7 = I OUT (PG1D1)
- TP8 = I-GUARD (PG1D1)
- TP9 = CUR/COMP MONITOR (PG1A3)
- TP10 = SDL (PG3B8)
- TP19 = DC AMP HYBRID OUT (PG1C6)
- TP20 = SCOM (PG1B6)



- NOTES:
1. ALL RESISTORS ARE CARBON FILM 5%, 1/4W UNLESS NOTED.
 2. ALL METAL FILM (MF) RESISTORS ARE 1%, 1/8W UNLESS NOTED.

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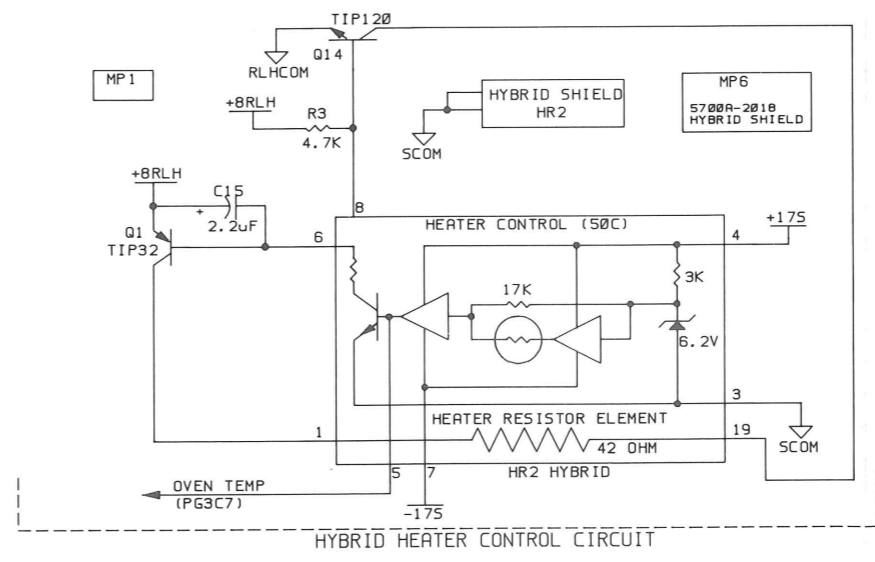
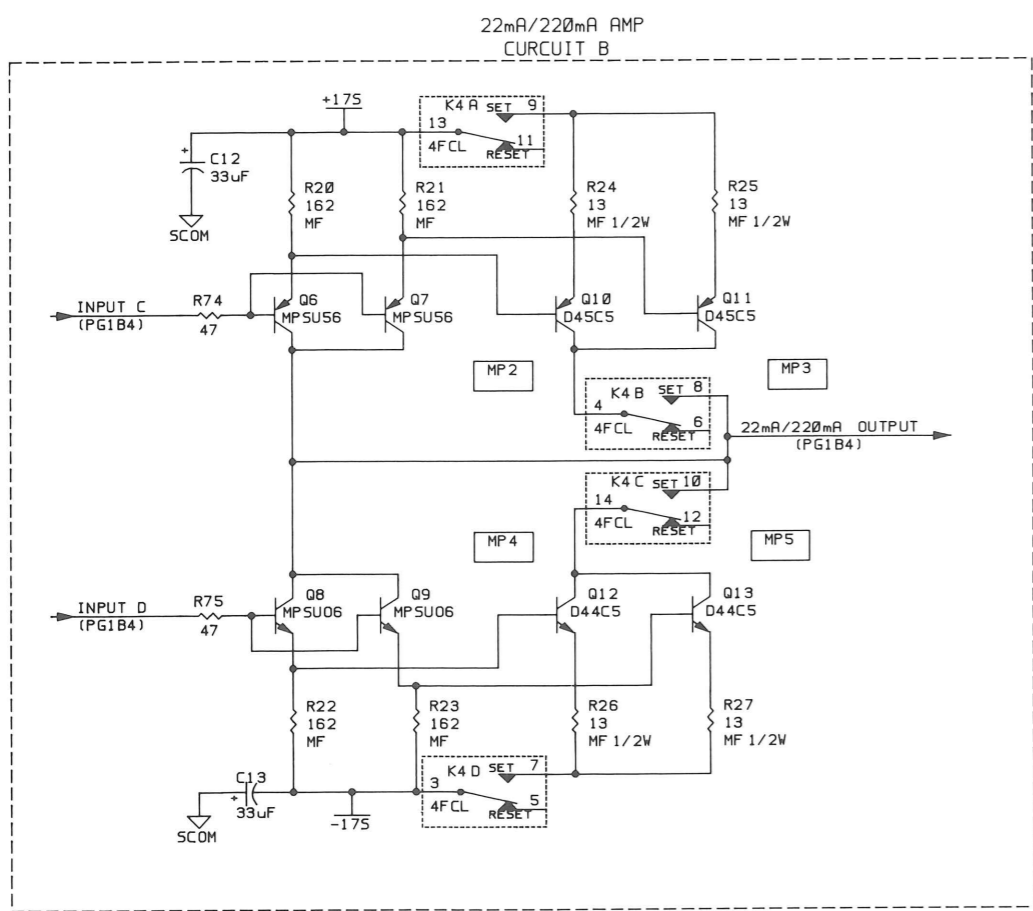
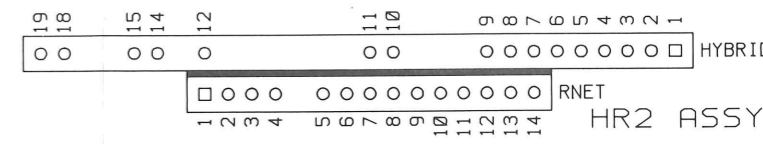
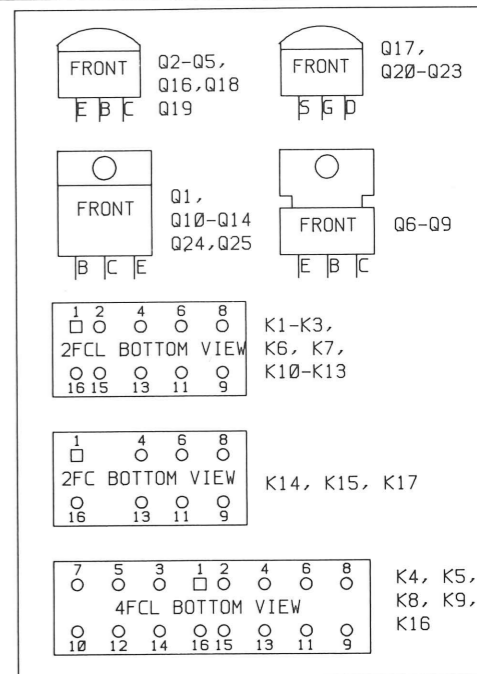
Figure 7-7. A7 Current/High-Resolution Oscillator PCA (cont)



PWR-UP / RESET	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11	K12	K13	K14	K15	K16	K17	Q20/Q23	Q21/Q22	USA/USC	USD
DC 220uA RANGE														*	*			*			
DC 2.2mA RANGE			S		S	S	S							*	*			*			
DC 22mA RANGE			S		S		S							*	*			*			
DC 220mA RANGE			S		S			S		S	S			*	*			*			
DC 2.2A RANGE			S		S					S	S			*	*			*			
AC 220uA RANGE														*	*			*			
AC 2.2mA RANGE			S		S	S	S							*	*			*			
AC 22mA RANGE			S		S			S		S	S			*	*			*			
AC 220mA RANGE			S		S			S						*	*			*			
AC 2.2A RANGE			S		S					S	S			*	*			*			

ALL RELAYS SHOWN IN THE RESET OR NON-LATCHING POSITION
 S = SET POSITION OF LATCHING RELAYS
 * = ENERGIZED FOR NON-LATCHING RELAYS
 * = ON FOR FETS
 K1 IS SET DURING CURRENT GAIN CALIBRATION
 K12 IS SET WHEN CURRENT OUTPUT IS AT THE OUT HI BINDING POST OR RESET WHEN CURRENT OUTPUT IS AT THE AUX I OUT BINDING POST
 K13 CONNECTS A DUMMY LOAD TO THE OUTPUT CURRENT WHEN RESET. THIS IS DONE DURING DIAGNOSTICS AND CURRENT RANGE SWITCHING

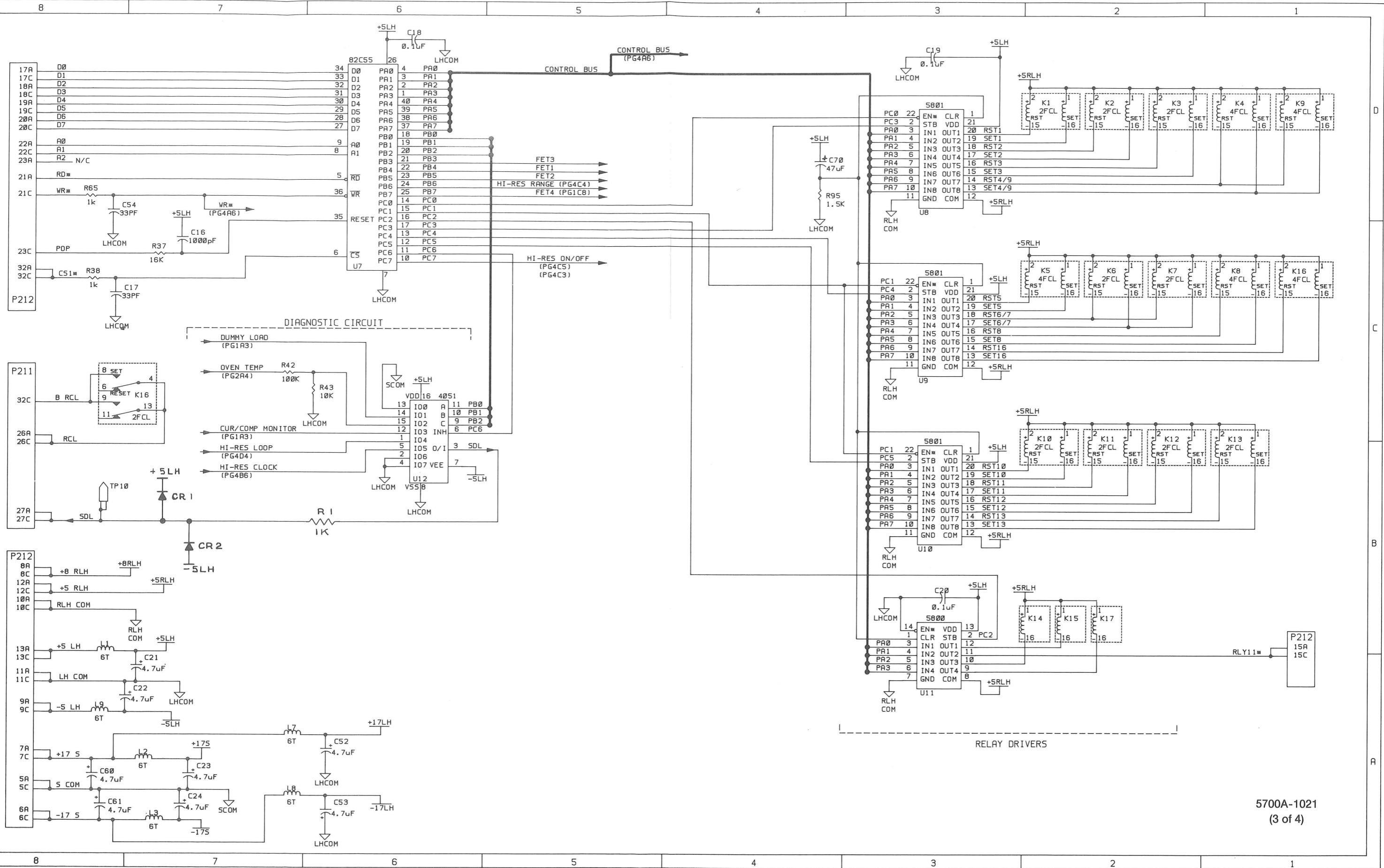
K16 IS SET DURING BOOST AMPLIFIER CALIBRATION
 K17 IS ENERGIZED DURING AC CURRENT FLATNESS CHARACTERIZATION



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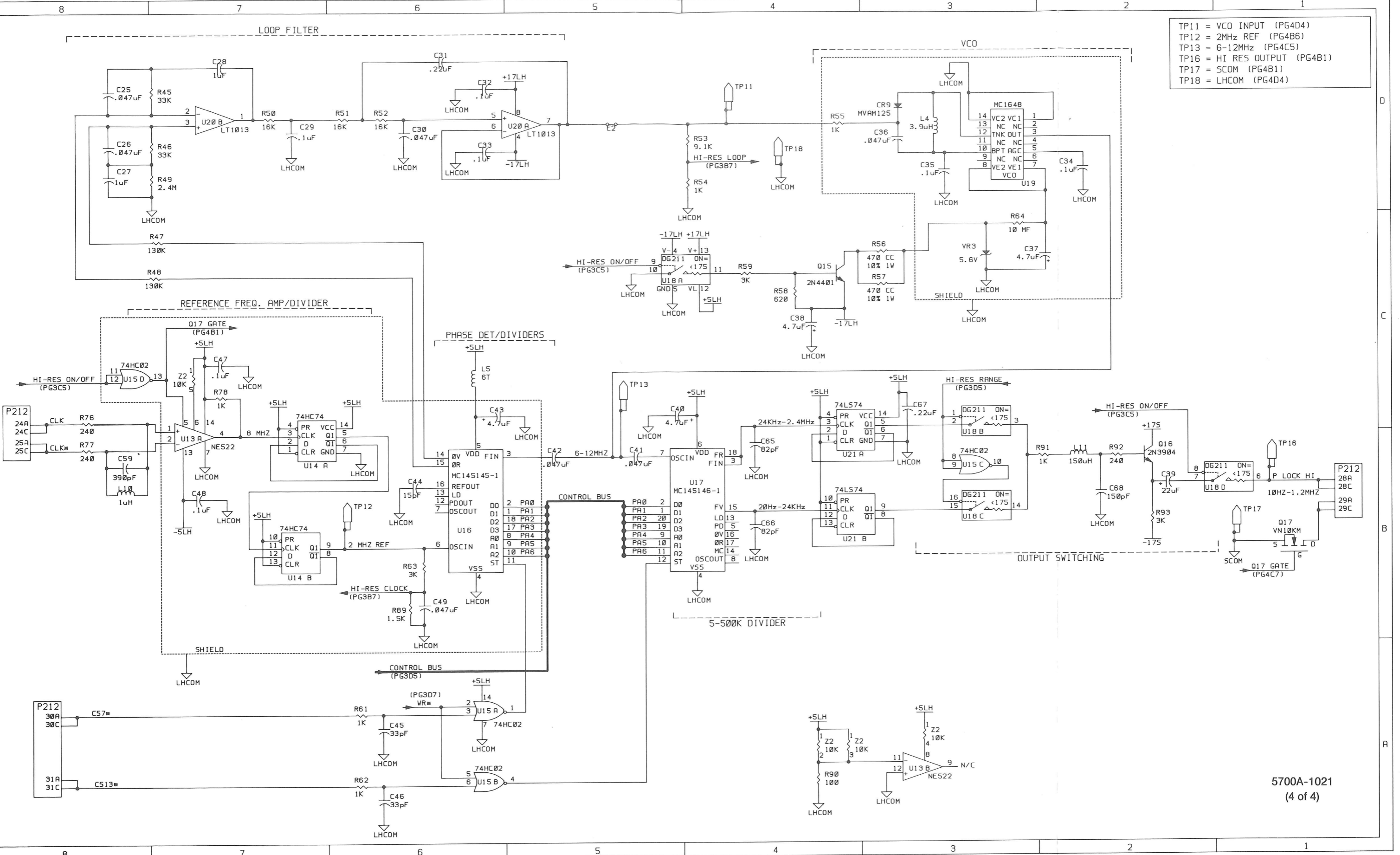
Figure 7-7. A7 Current/High-Resolution Oscillator PCA (cont)

SCHEMATIC DIAGRAMS



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Figure 7-7. A7 Current/High-Resolution Oscillator PCA (cont)

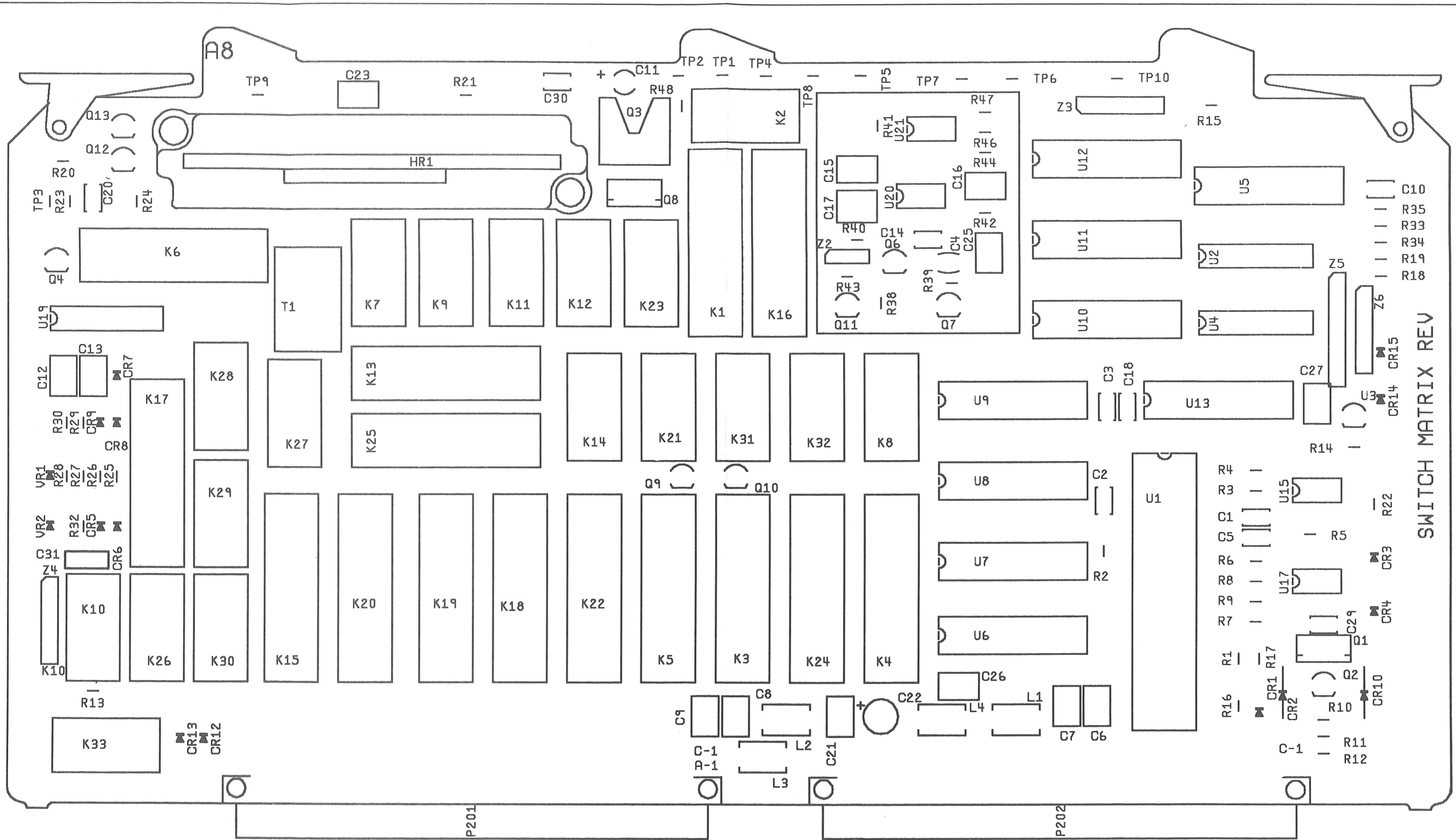


TP11 = VCO INPUT (PG4D4)
 TP12 = 2MHz REF (PG4B6)
 TP13 = 6-12MHz (PG4C5)
 TP16 = HI RES OUTPUT (PG4B1)
 TP17 = SCOM (PG4B1)
 TP18 = LHCOM (PG4D4)

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Figure 7-7. A7 Current/High-Resolution Oscillator PCA (cont)

SCHEMATIC DIAGRAMS



SWITCH MATRIX REV

5700A-7620

Figure 7-8. A8 Switch Matrix PCA

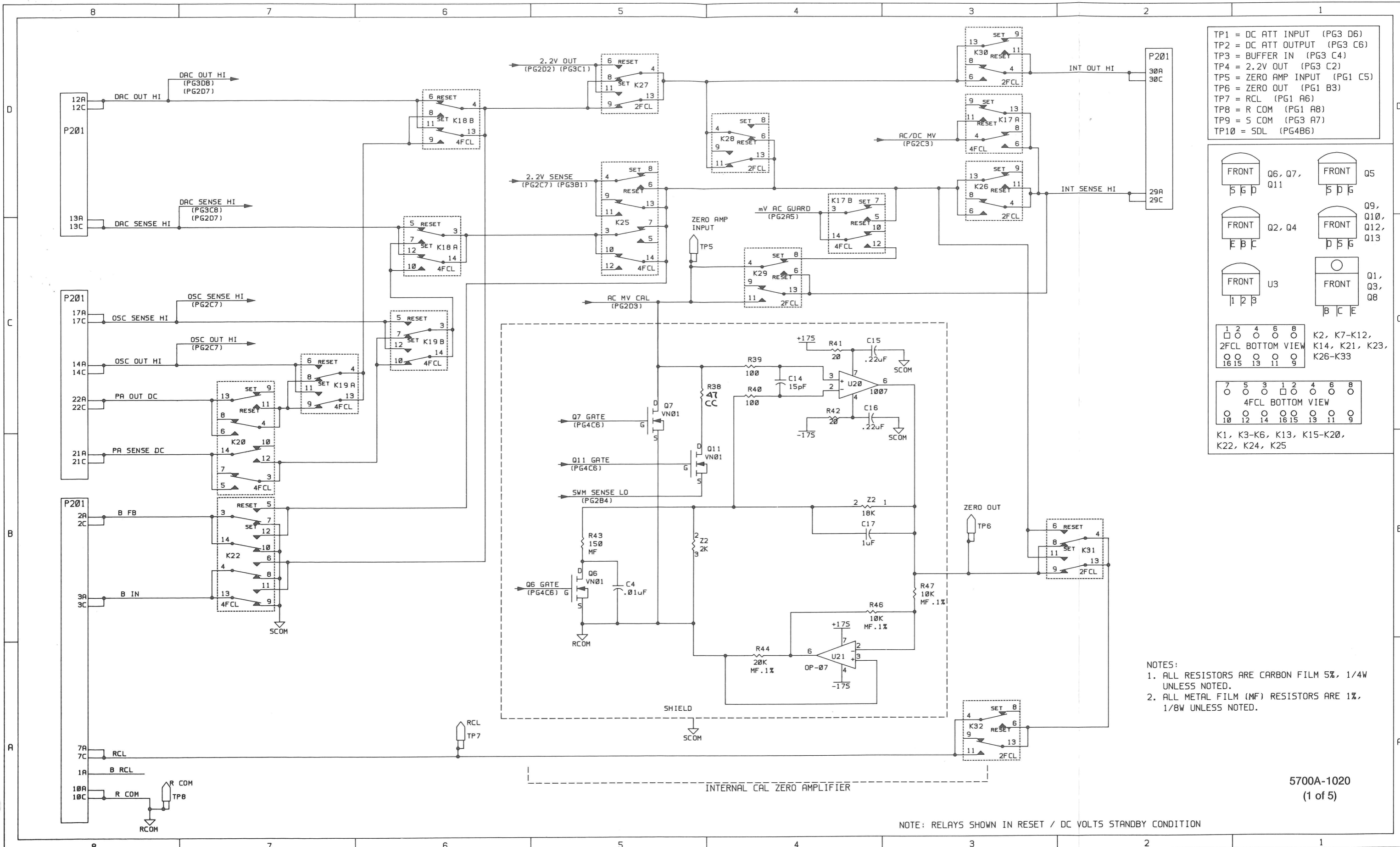
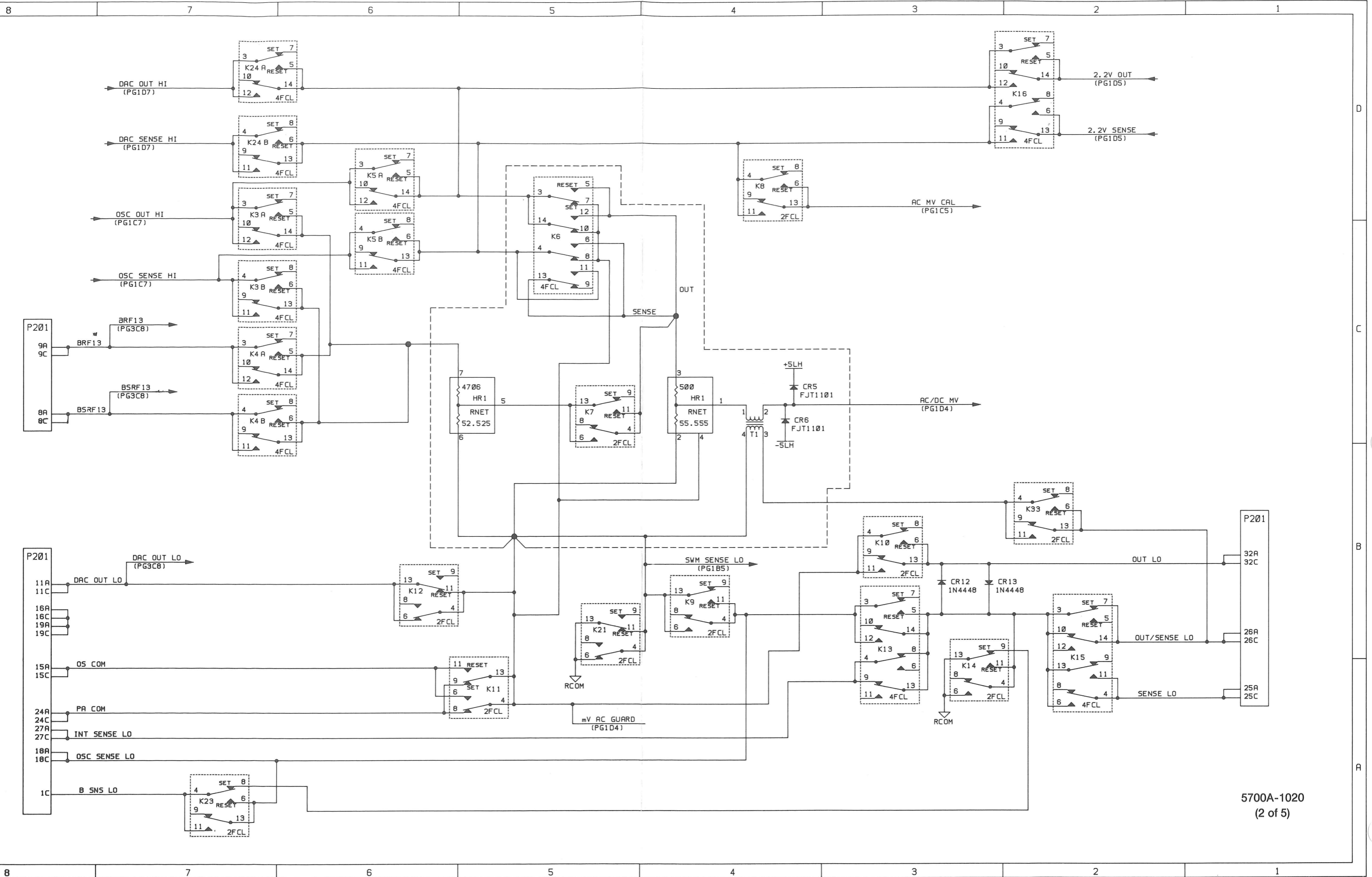


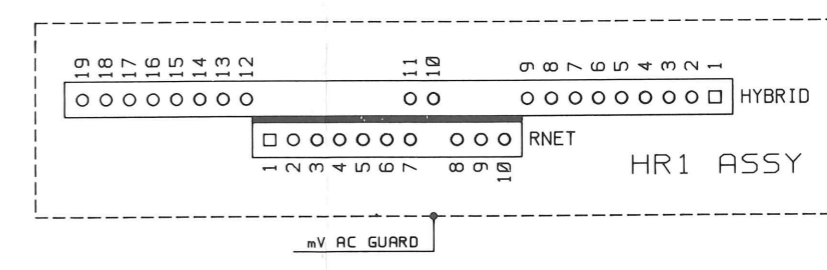
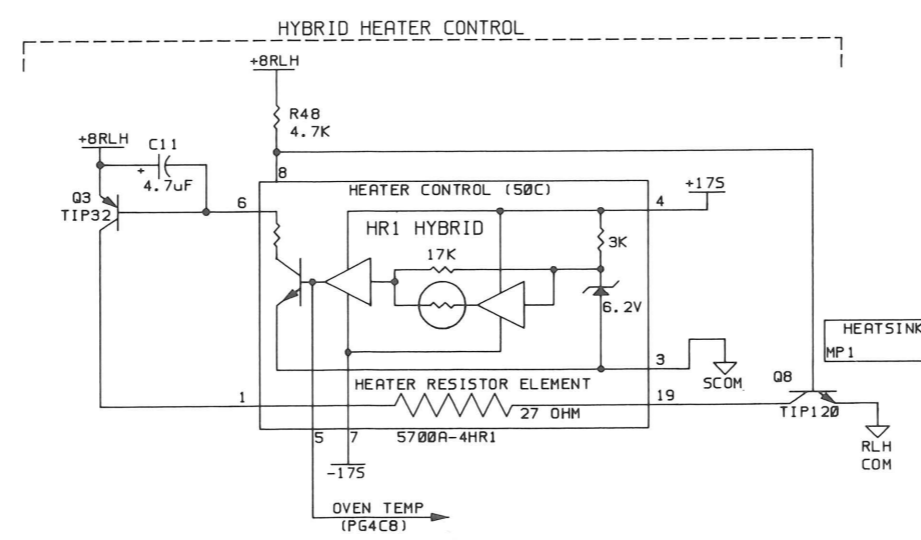
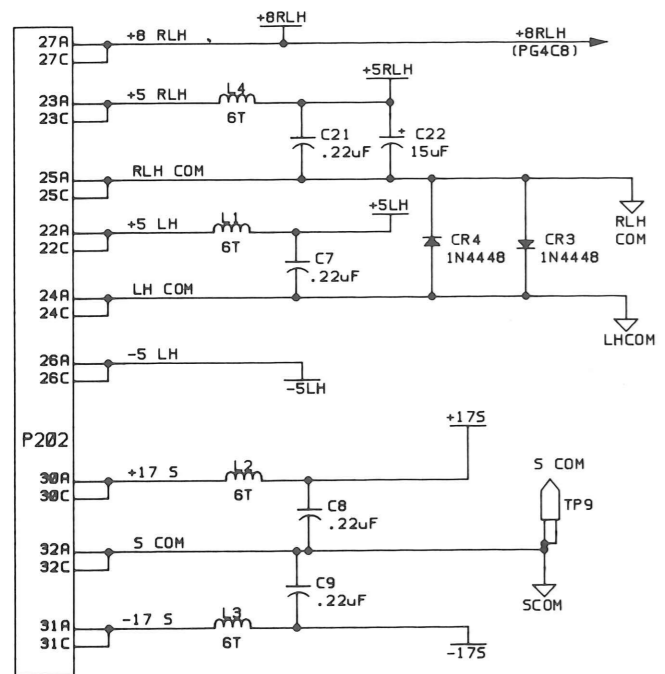
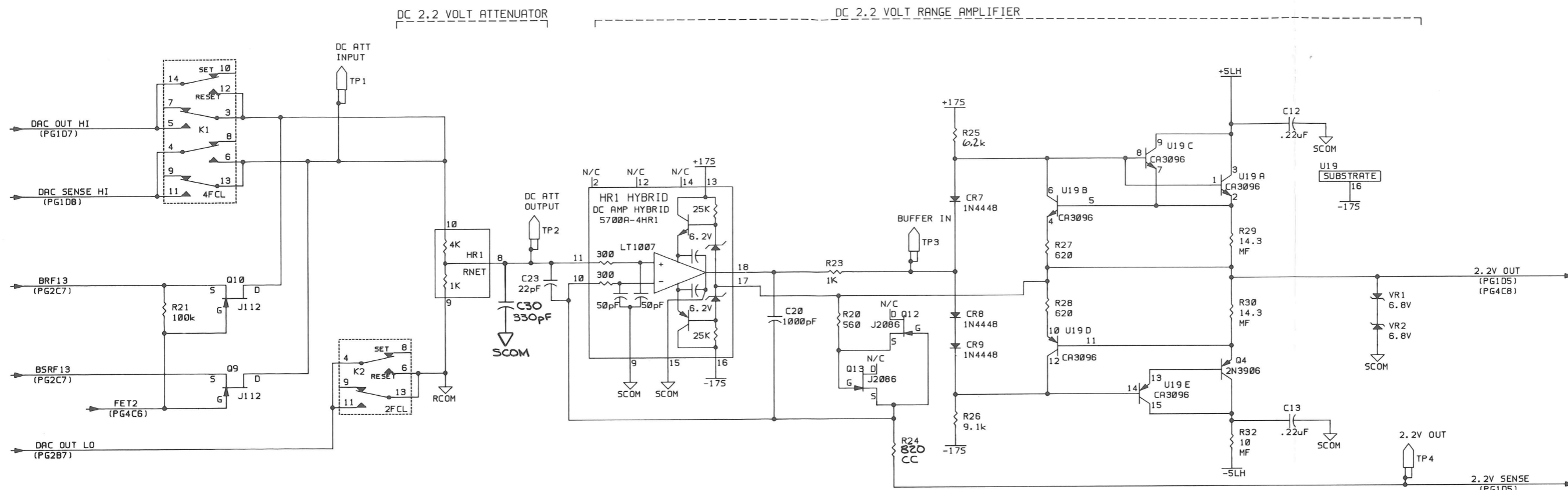
Figure 7-8. A8 Switch Matrix PCA (cont)

SCHEMATIC DIAGRAMS



5700A-1020
(2 of 5)

Figure 7-8. A8 Switch Matrix PCA (cont)



5700A-1020
(3 of 5)

Figure 7-8. A8 Switch Matrix PCA (cont)

SCHEMATIC DIAGRAMS

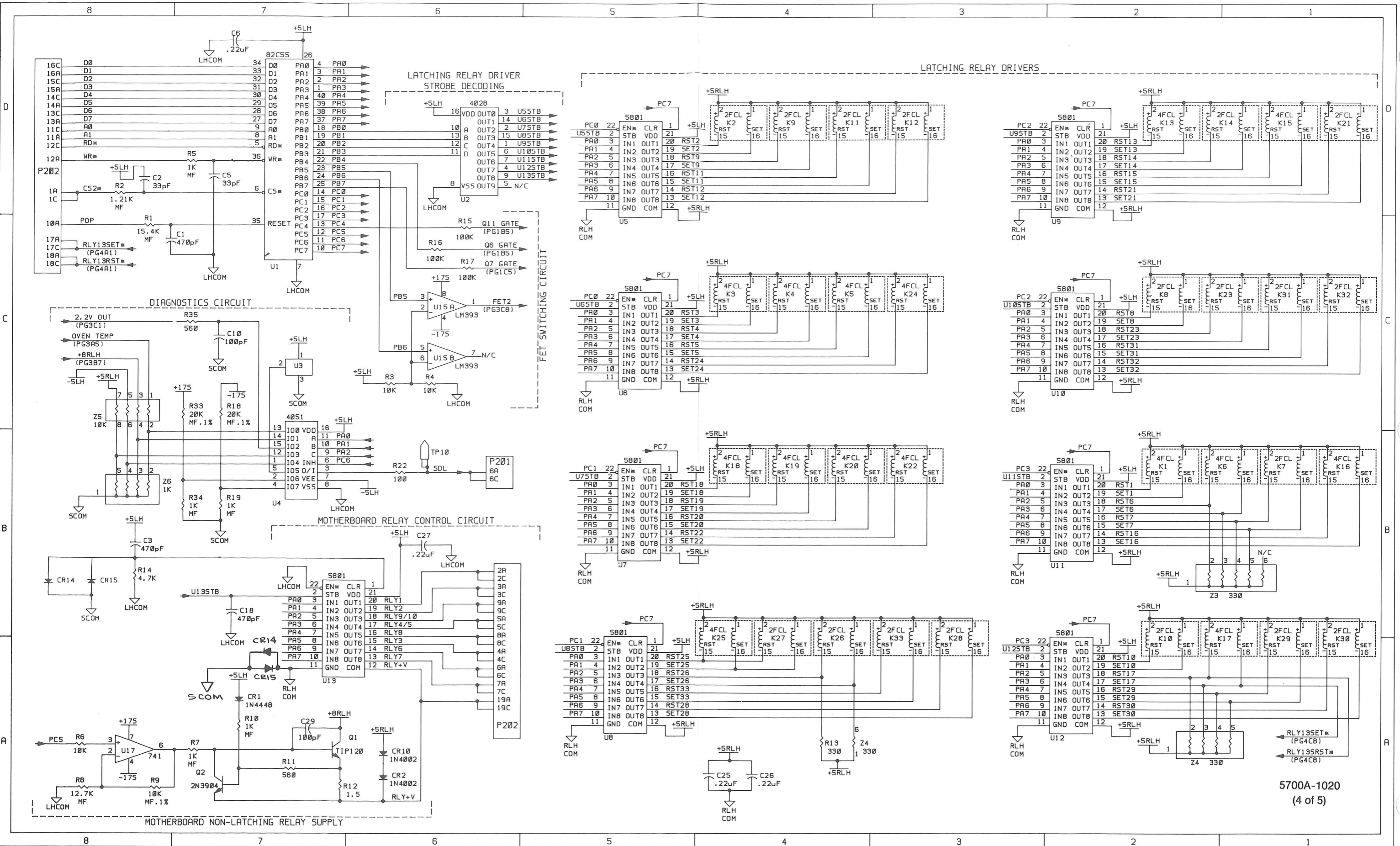
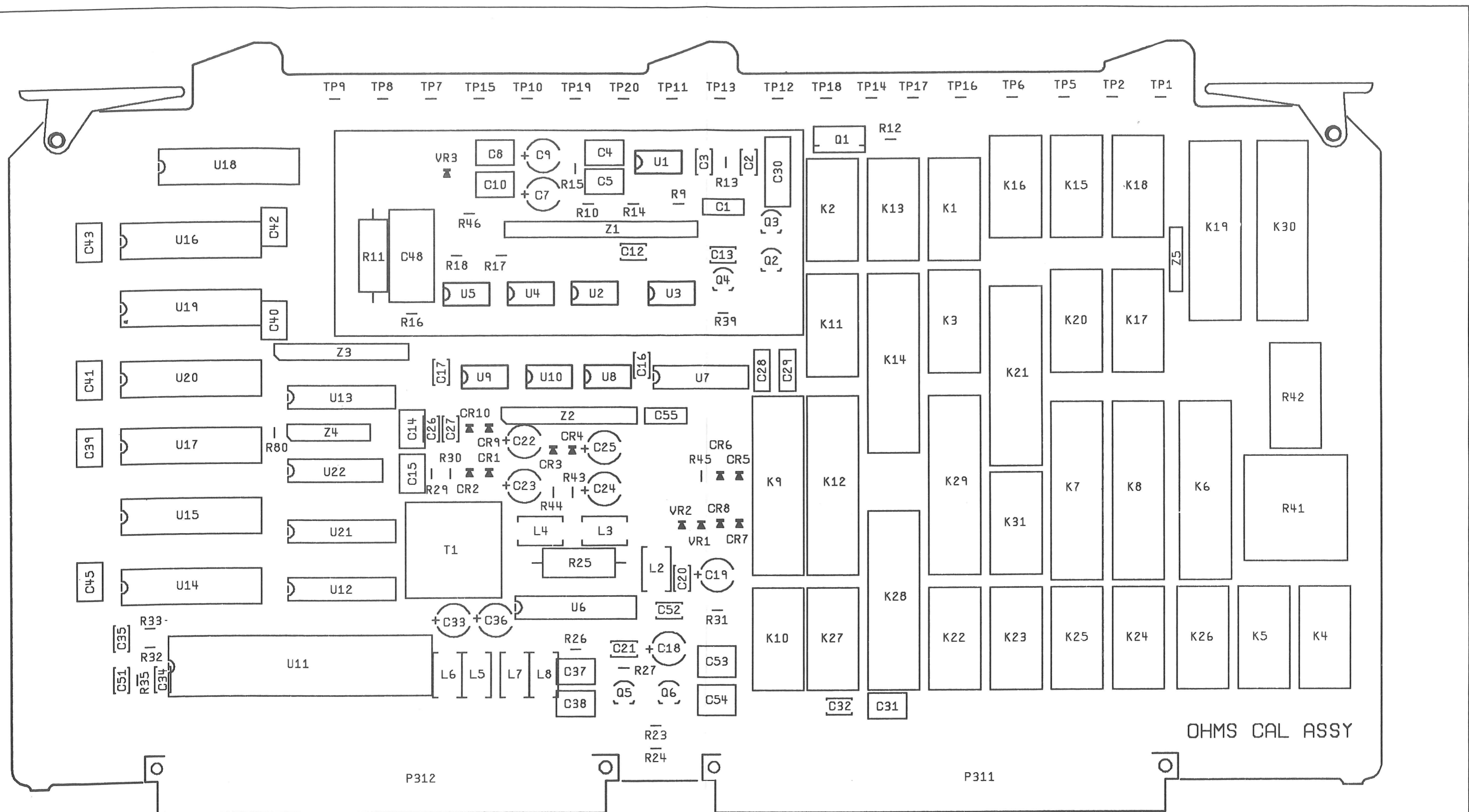


Figure 7-8. A8 Switch Matrix PCA (cont)

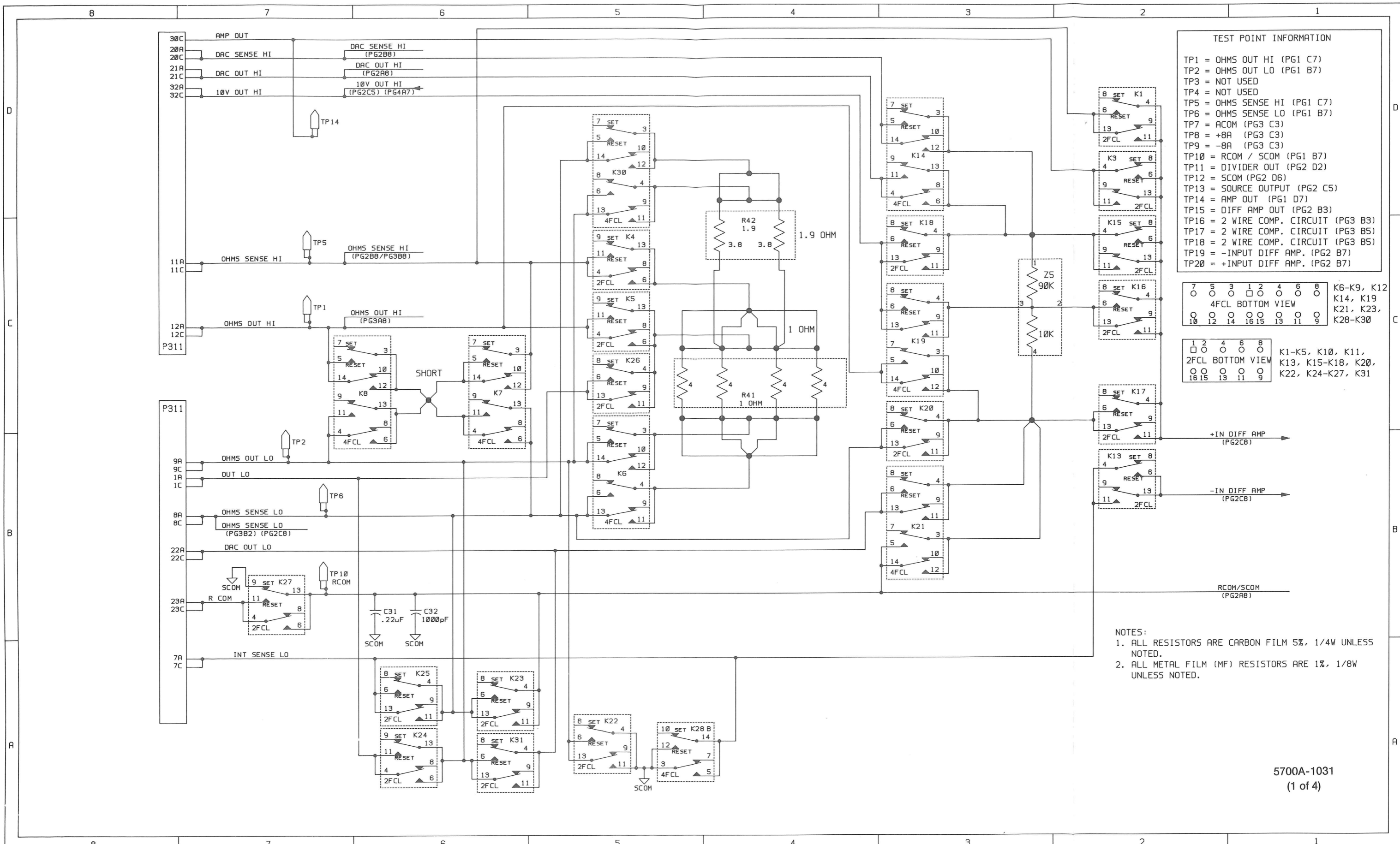
5700A-1020
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SCHEMATIC DIAGRAMS



5700A-7631

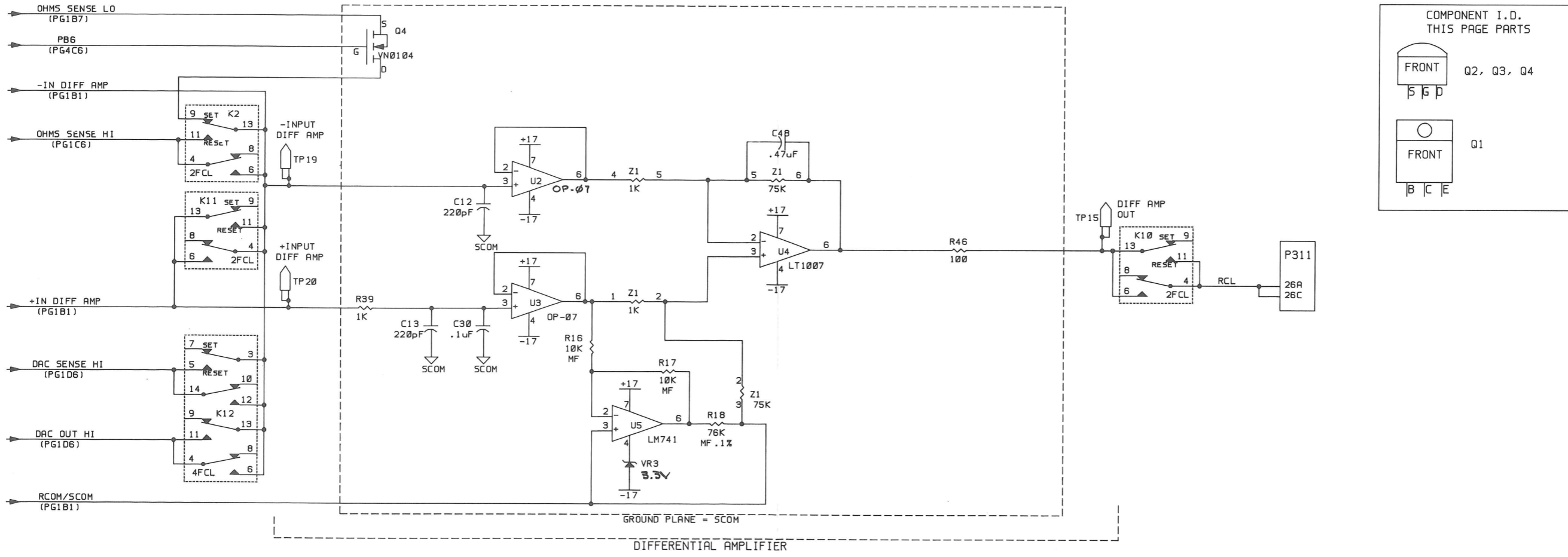
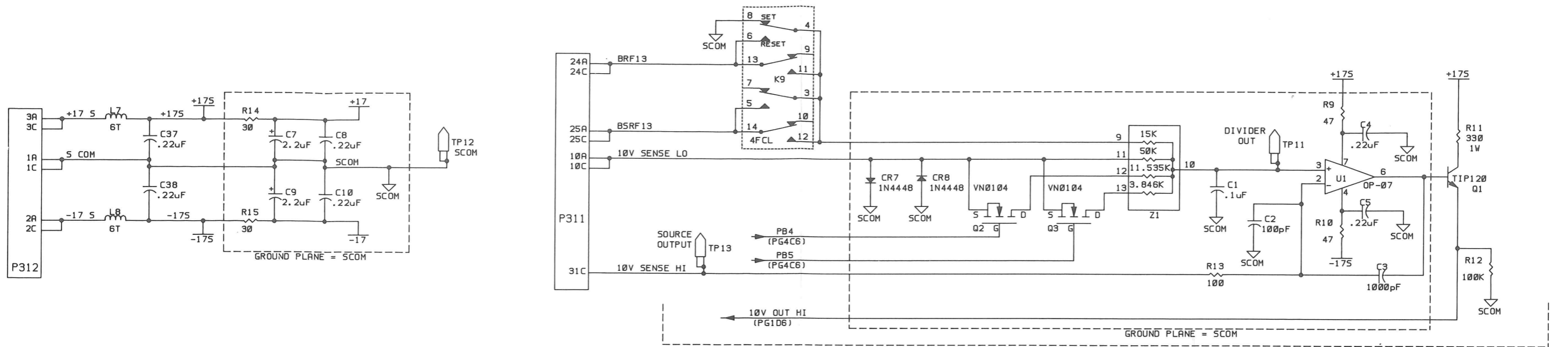
Figure 7-9. A9 Ohms Cal PCA



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Figure 7-9. A9 Ohms Cal PCA (cont)

SCHMATIC DIAGRAMS



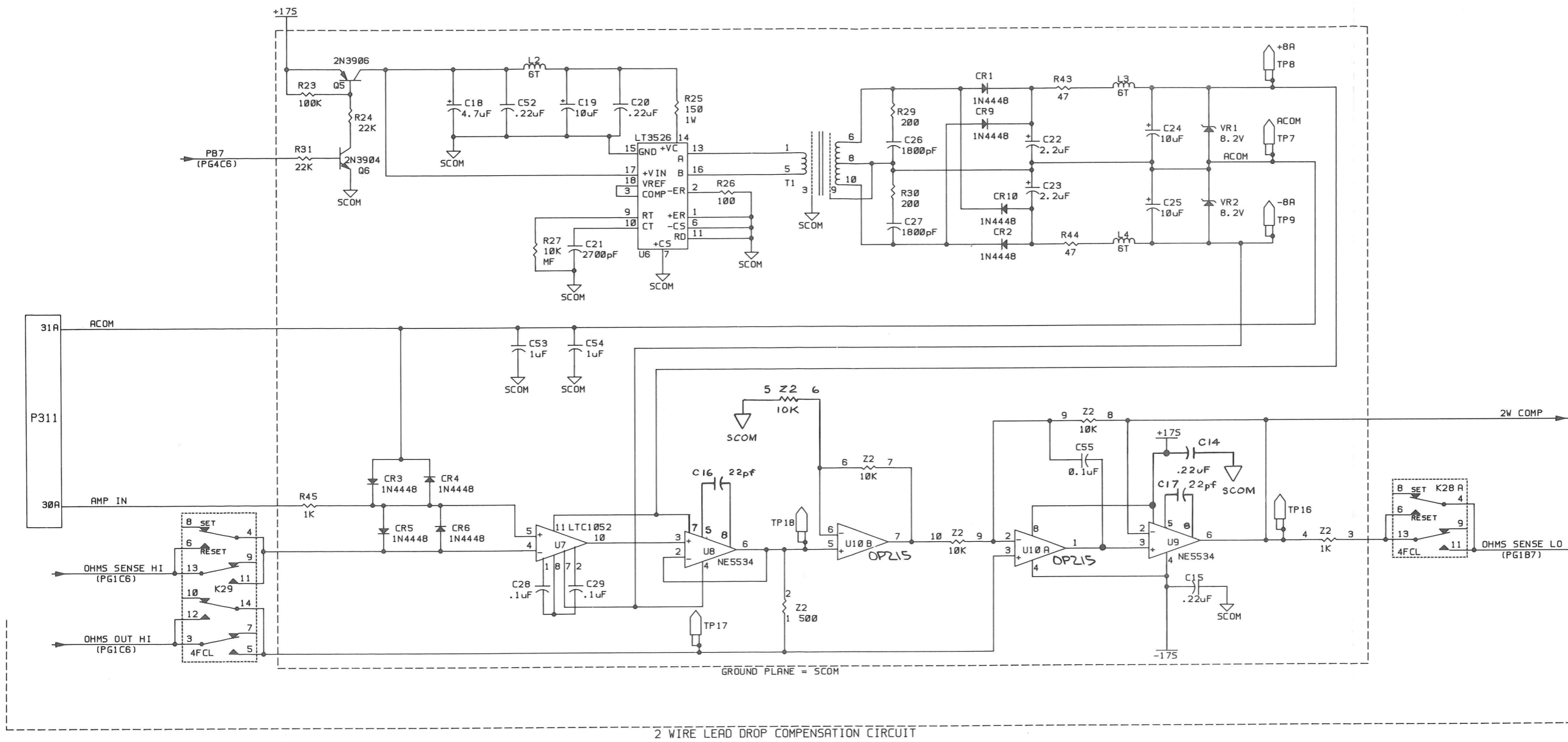
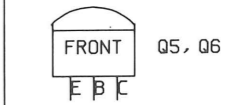
COMPONENT I.D.
THIS PAGE PARTS

FRONT	Q2, Q3, Q4
FRONT	Q1

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(2 of 4)

Figure 7-9. A9 Ohms Cal PCA (cont)

COMPONENT I.D. THIS PAGE PARTS

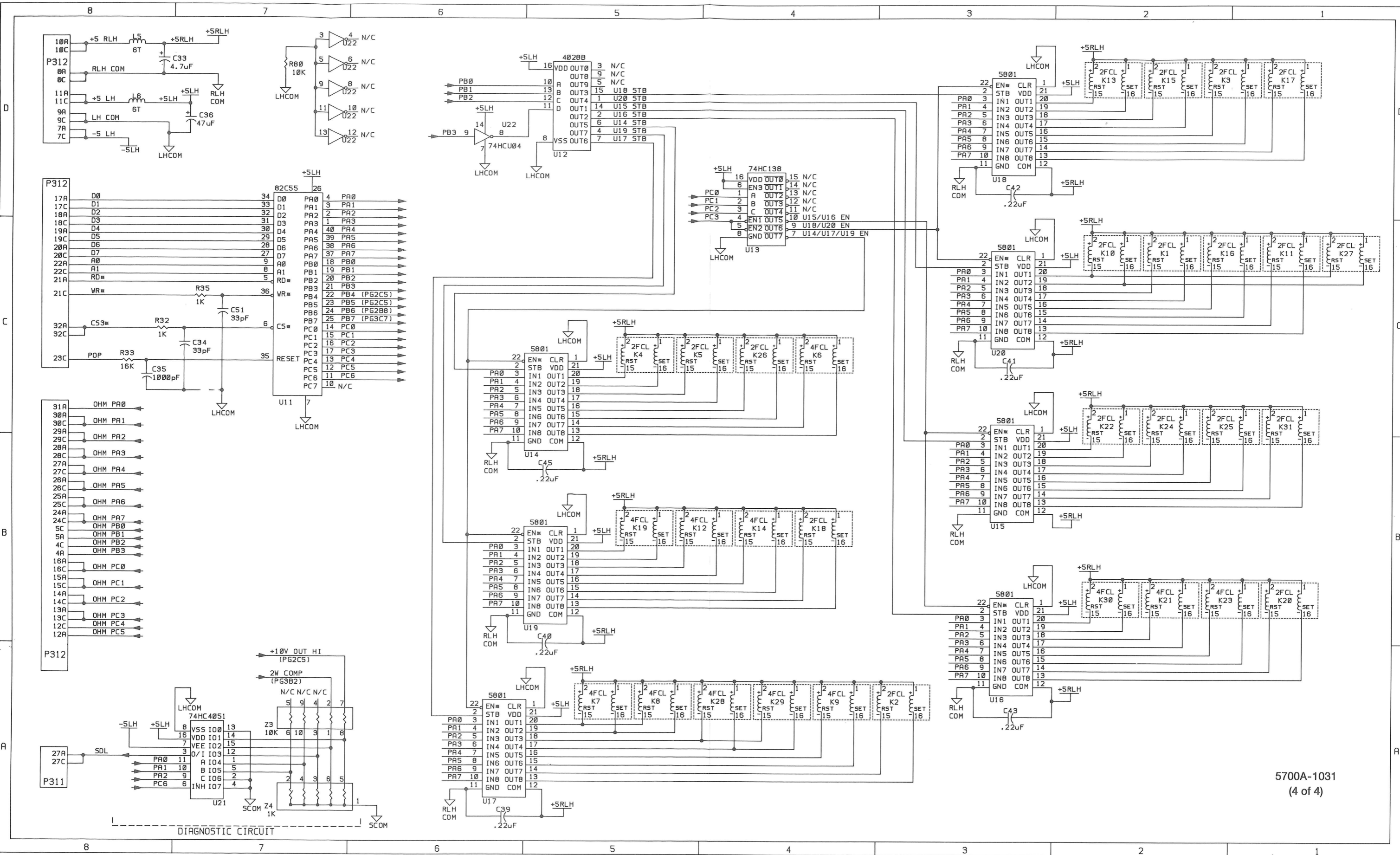


2 WIRE LEAD DROP COMPENSATION CIRCUIT

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(3 of 4)

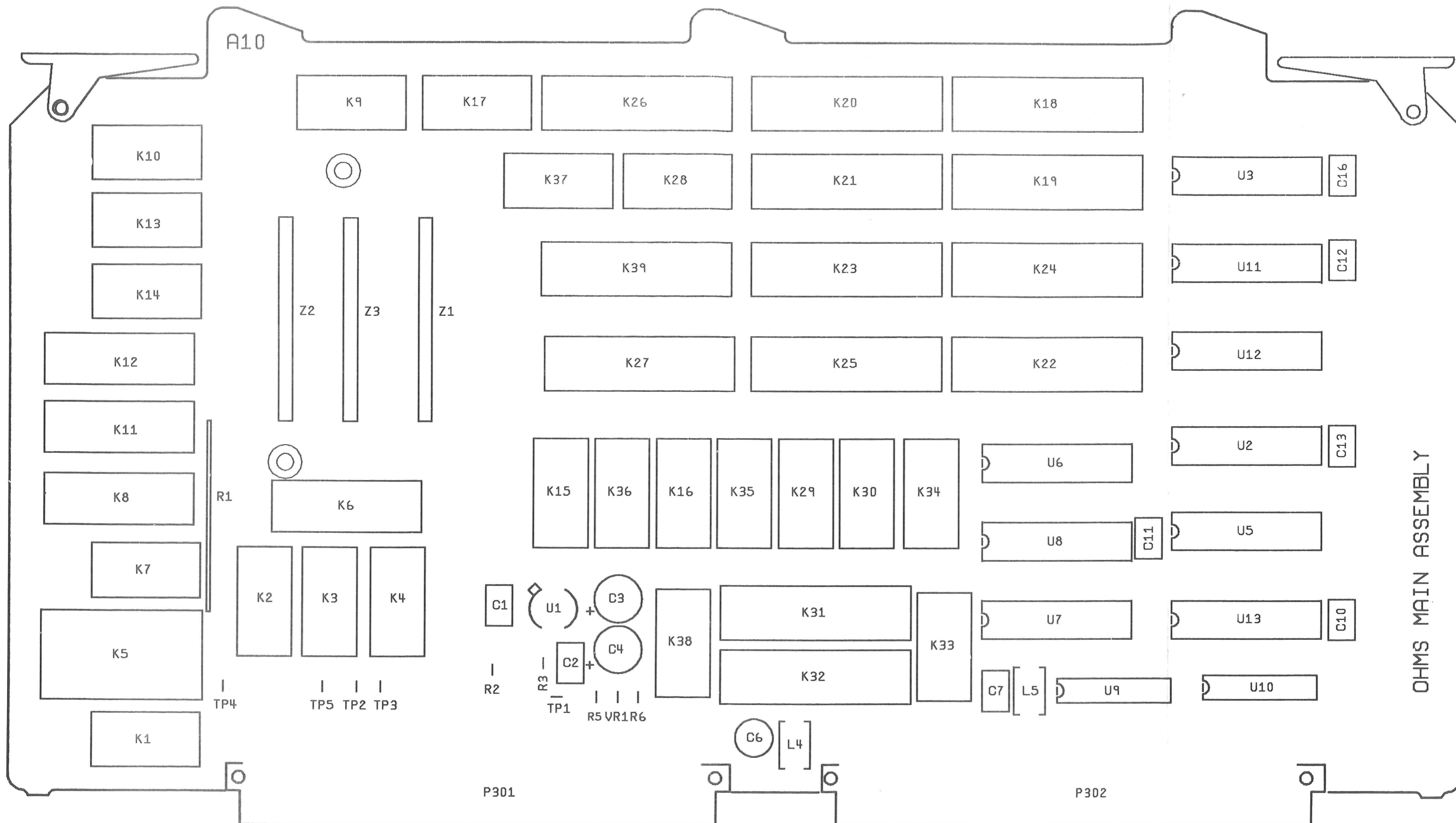
Figure 7-9. A9 Ohms Cal PCA (cont)

SCHMATIC DIAGRAMS



5700A-1031
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Figure 7-9. A9 Ohms Cal PCA (cont)



5700A-7630

Figure 7-10. A10 Ohms Main PCA (cont)

SCHMATIC DIAGRAMS

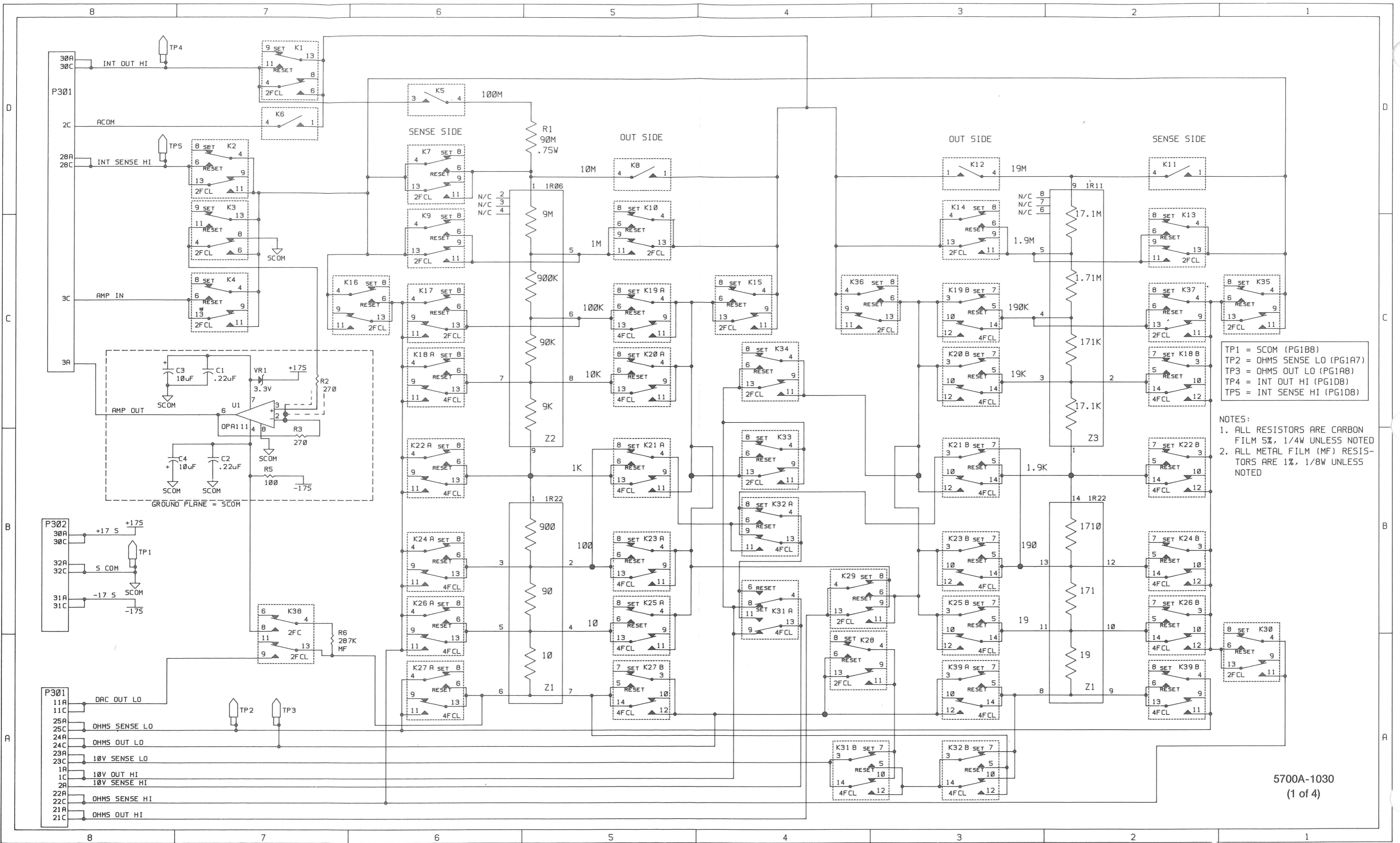


Figure 7-10. A10 Ohms Main PCA (cont)

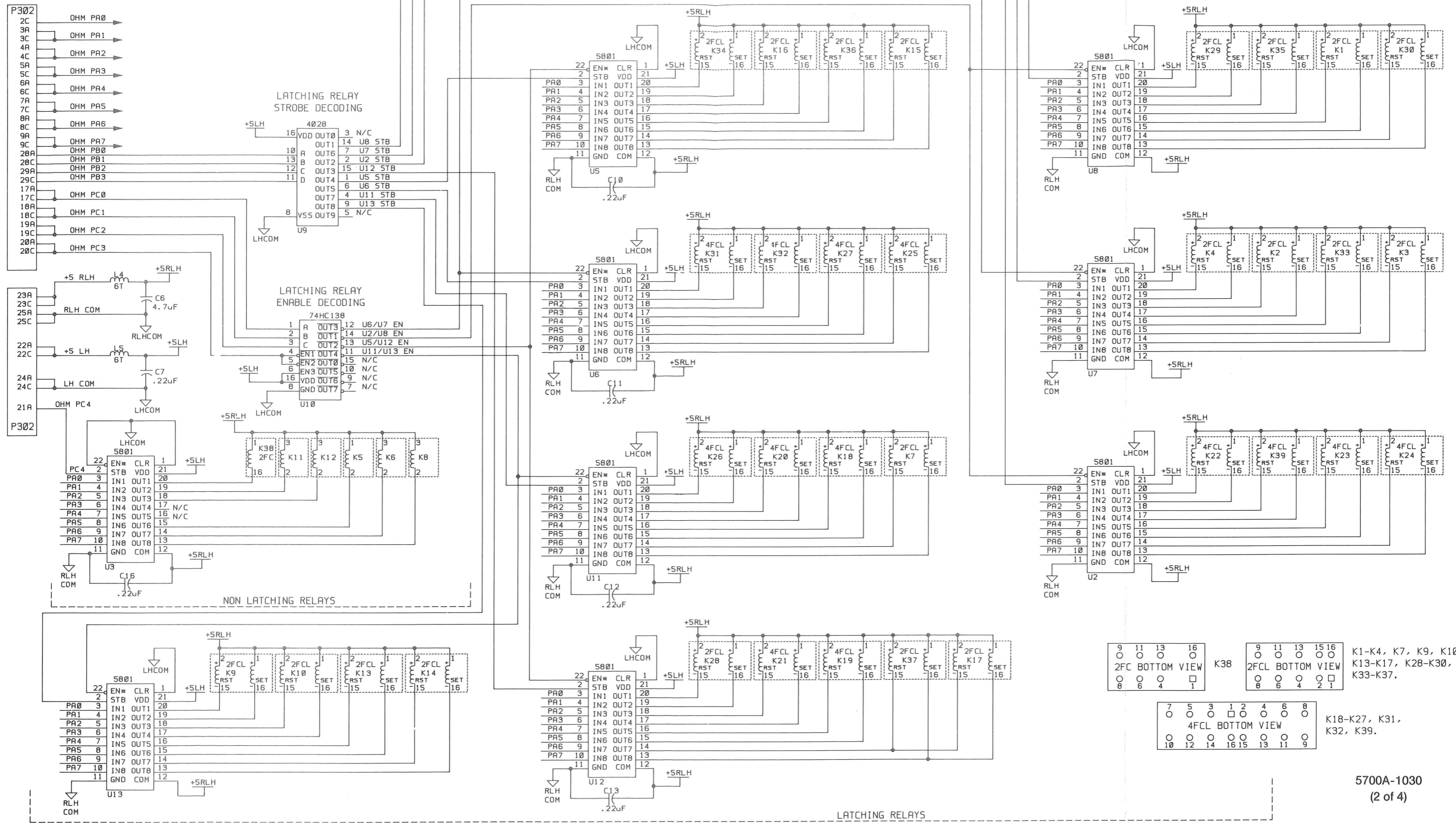
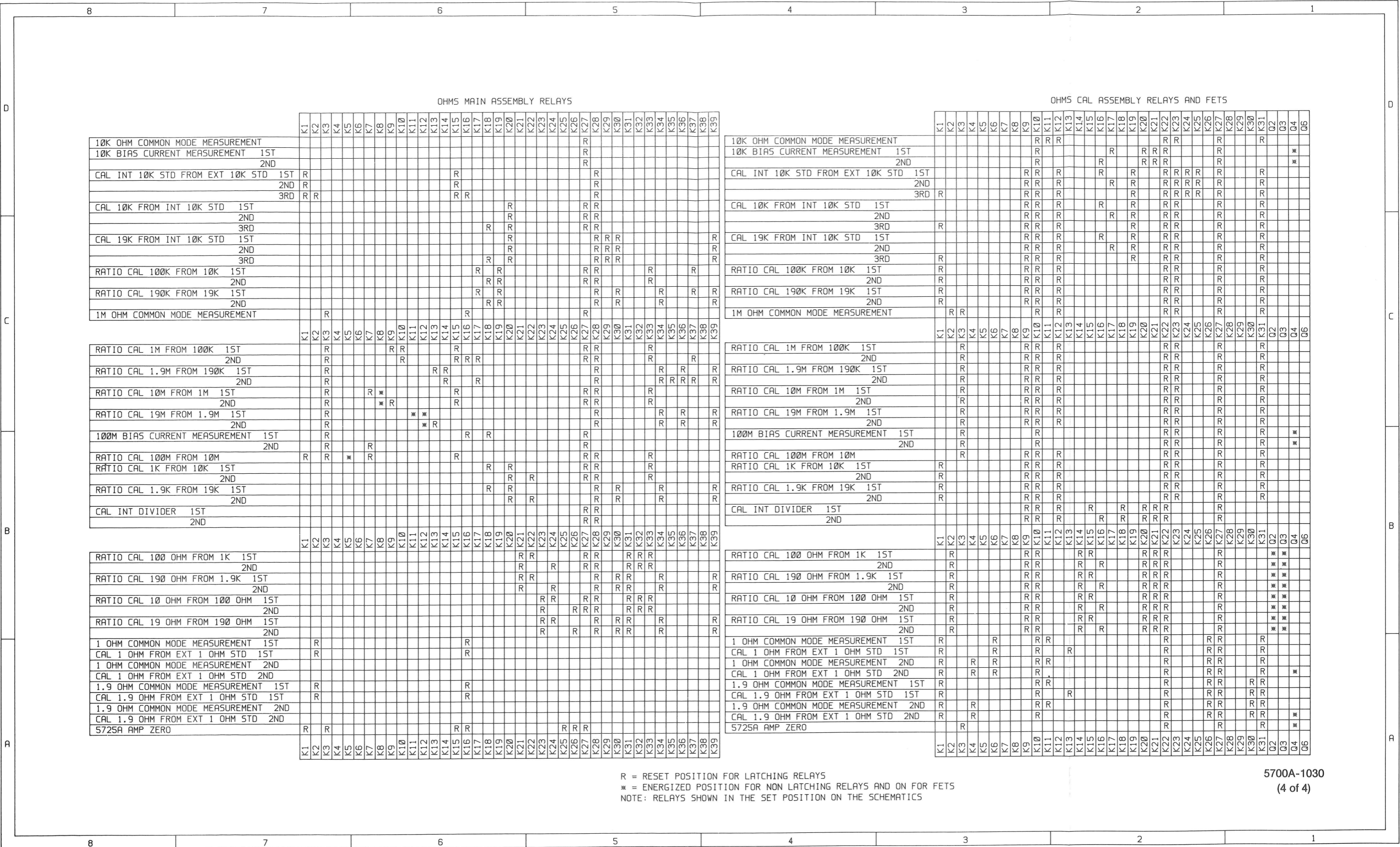


Figure 7-10. A10 Ohms Main PCA (cont)

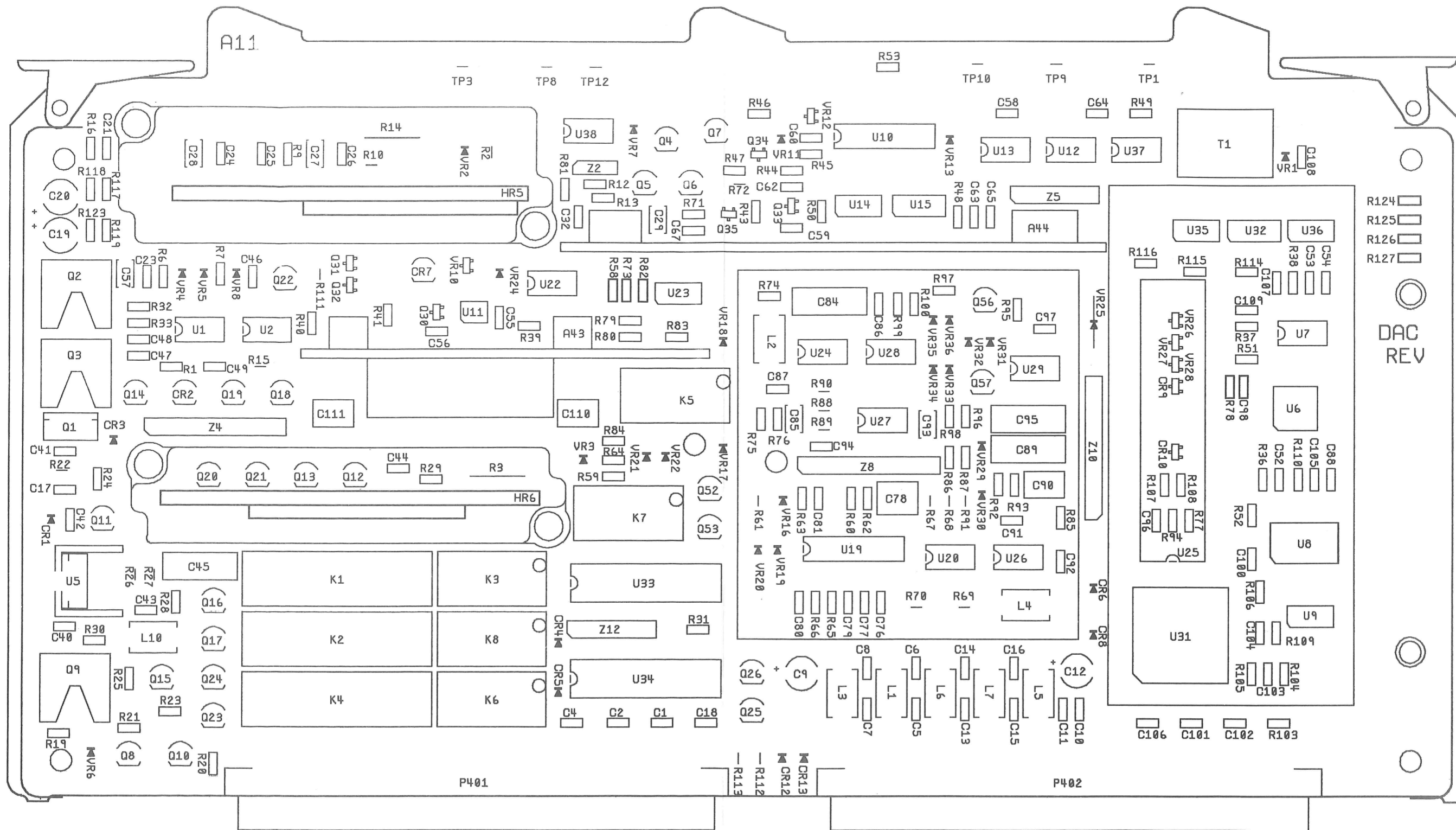


R = RESET POSITION FOR LATCHING RELAYS
 * = ENERGIZED POSITION FOR NON LATCHING RELAYS AND ON FOR FETS
 NOTE: RELAYS SHOWN IN THE SET POSITION ON THE SCHEMATICS

5700A-1030
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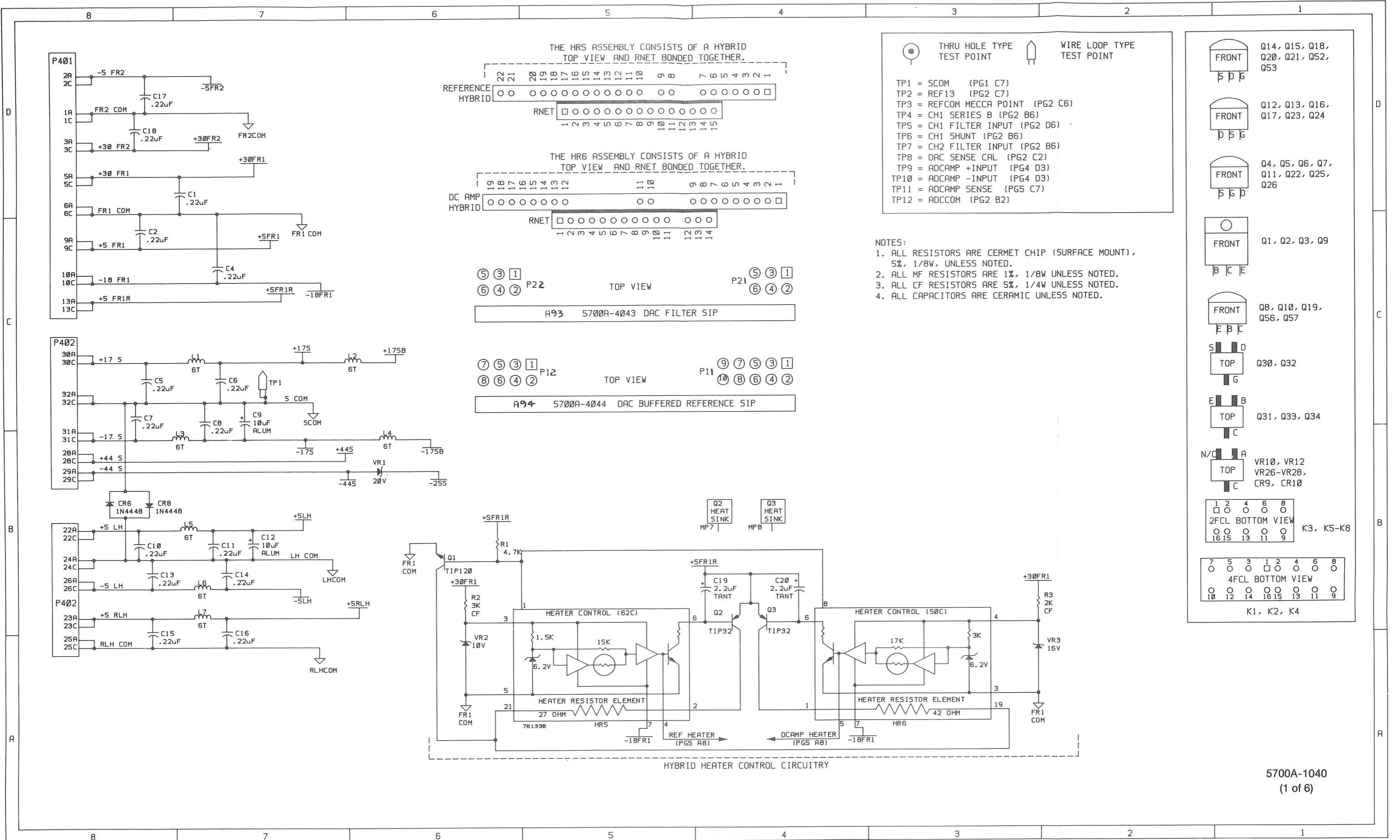
Figure 7-10. A10 Ohms Main PCA (cont)

SCHEMATIC DIAGRAMS



5700A-7640

Figure 7-11. A11 DAC PCA



5700A-1040
(1 of 6)

Figure 7-11. A11 DAC PCA (cont)

SCHEMATIC DIAGRAMS

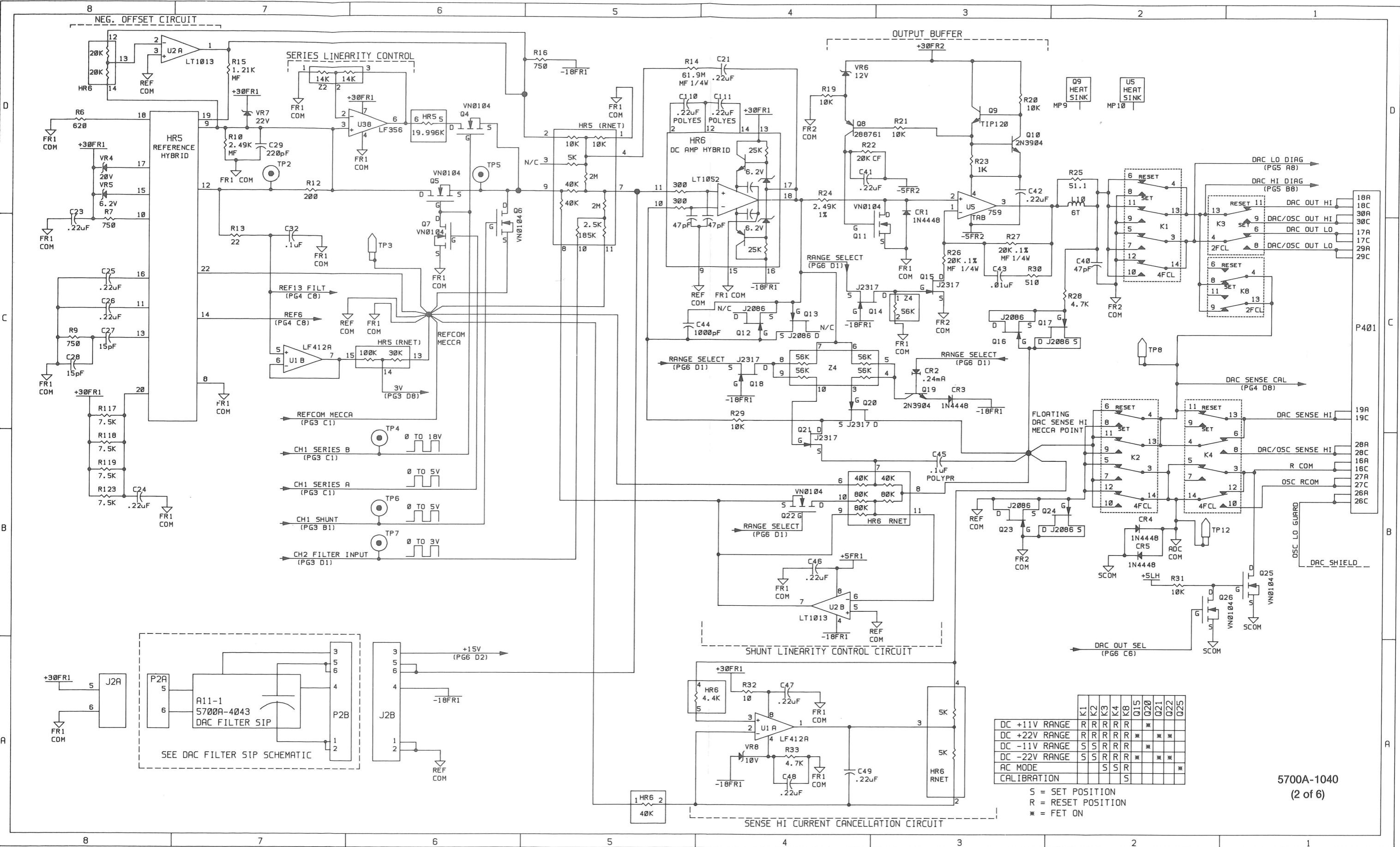
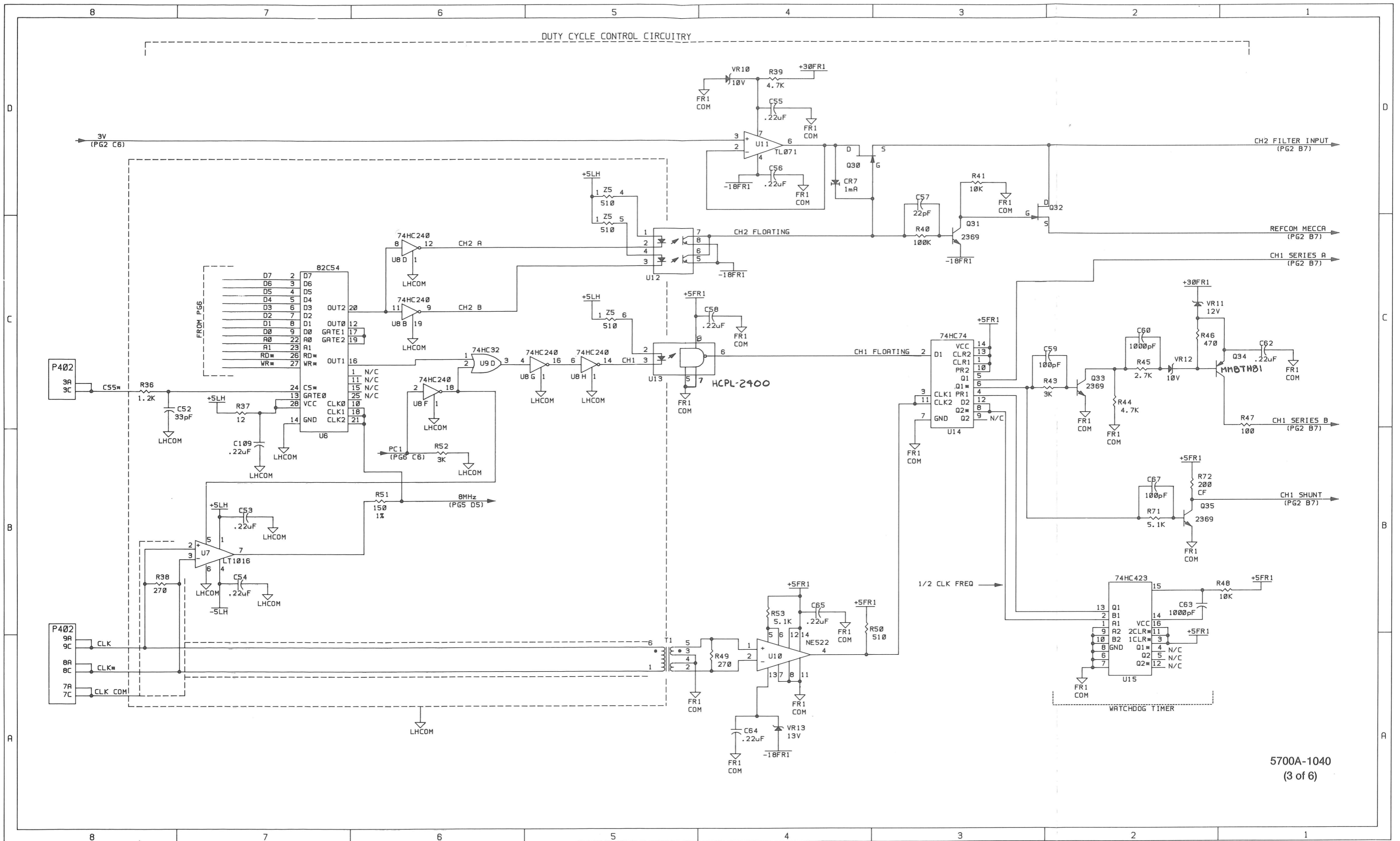


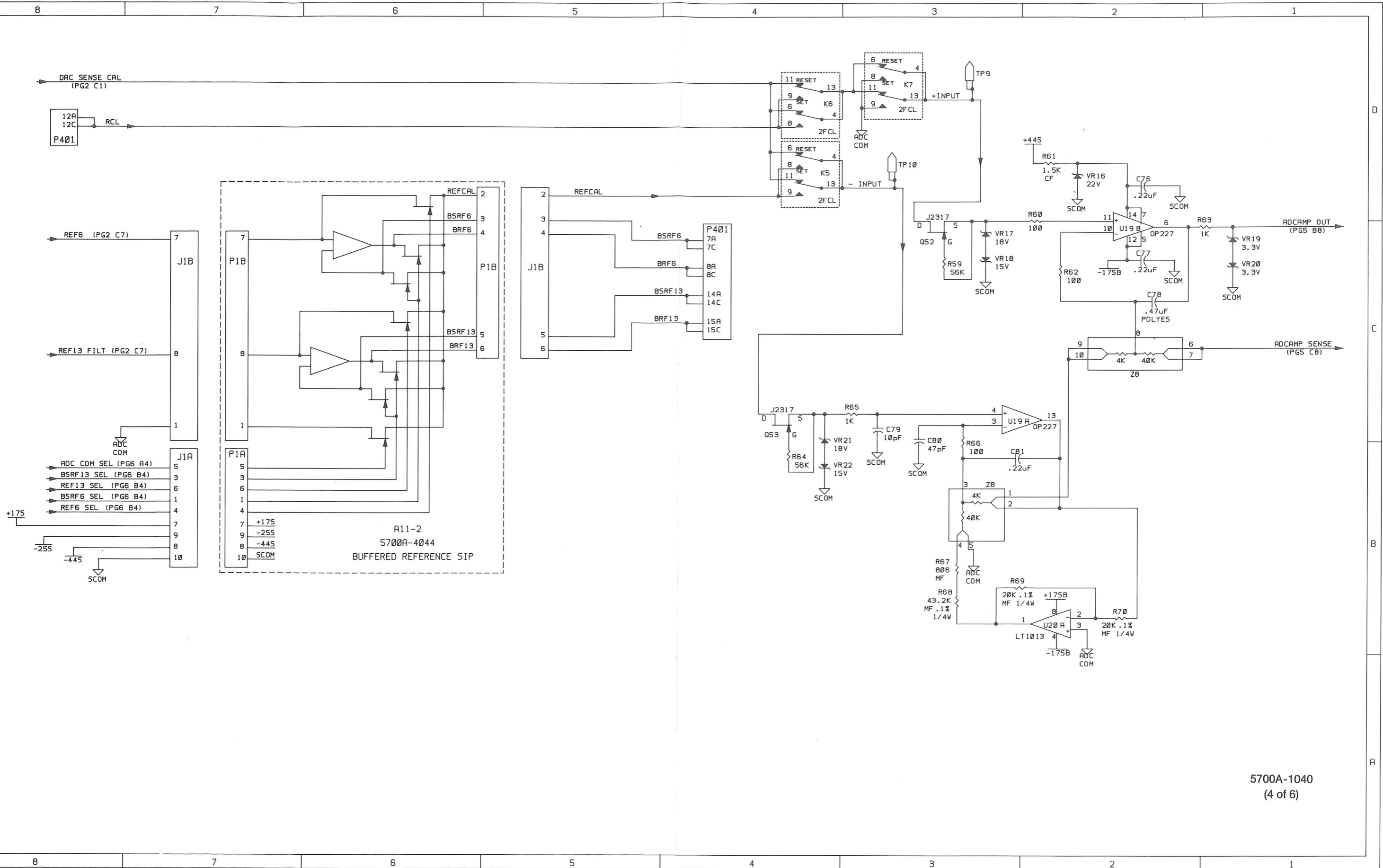
Figure 7-11. A11 DAC PCA (cont)



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(3 of 6)

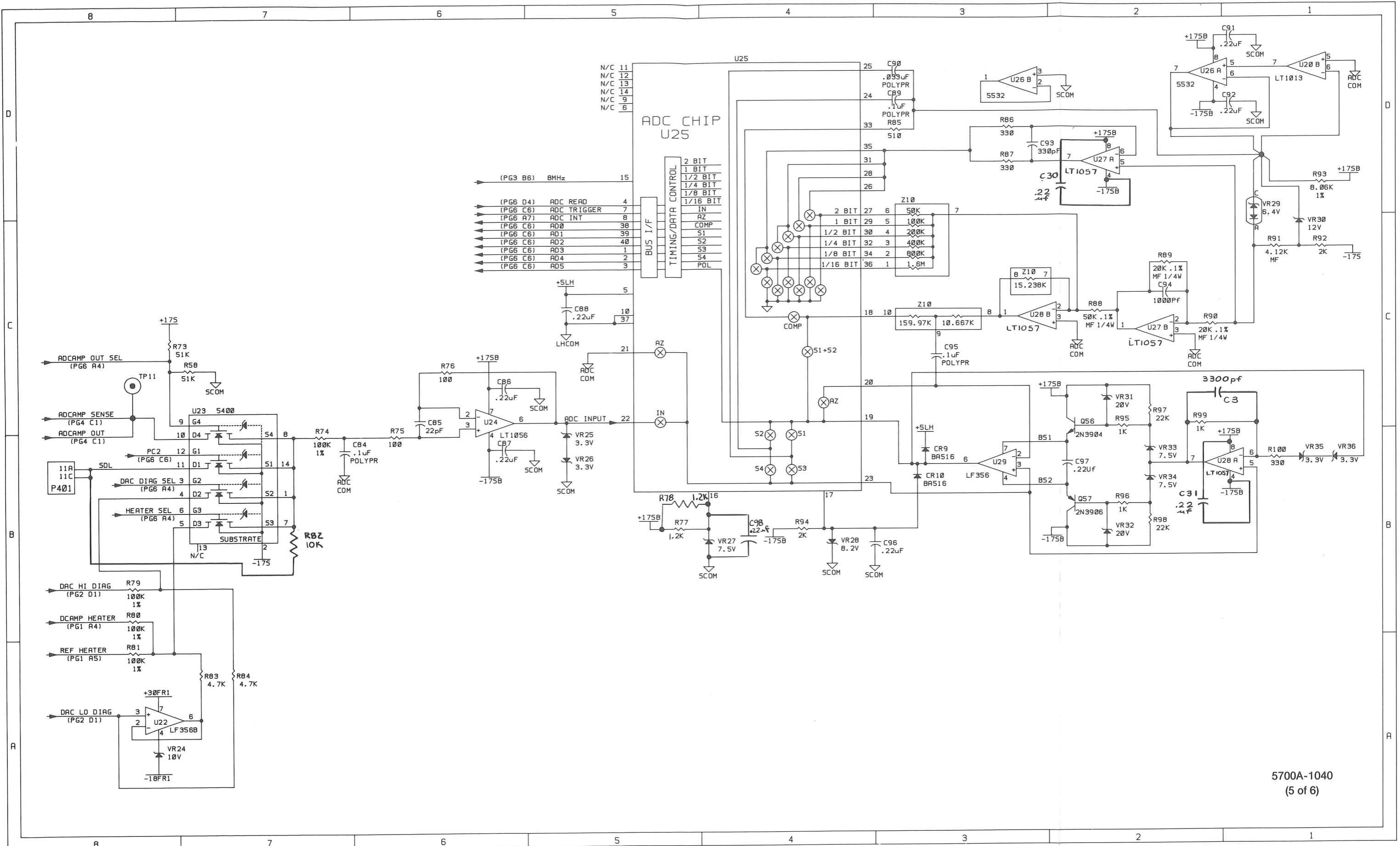
Figure 7-11. A11 DAC PCA (cont)

SCHEMATIC DIAGRAMS



5700A-1040
(4 of 6)

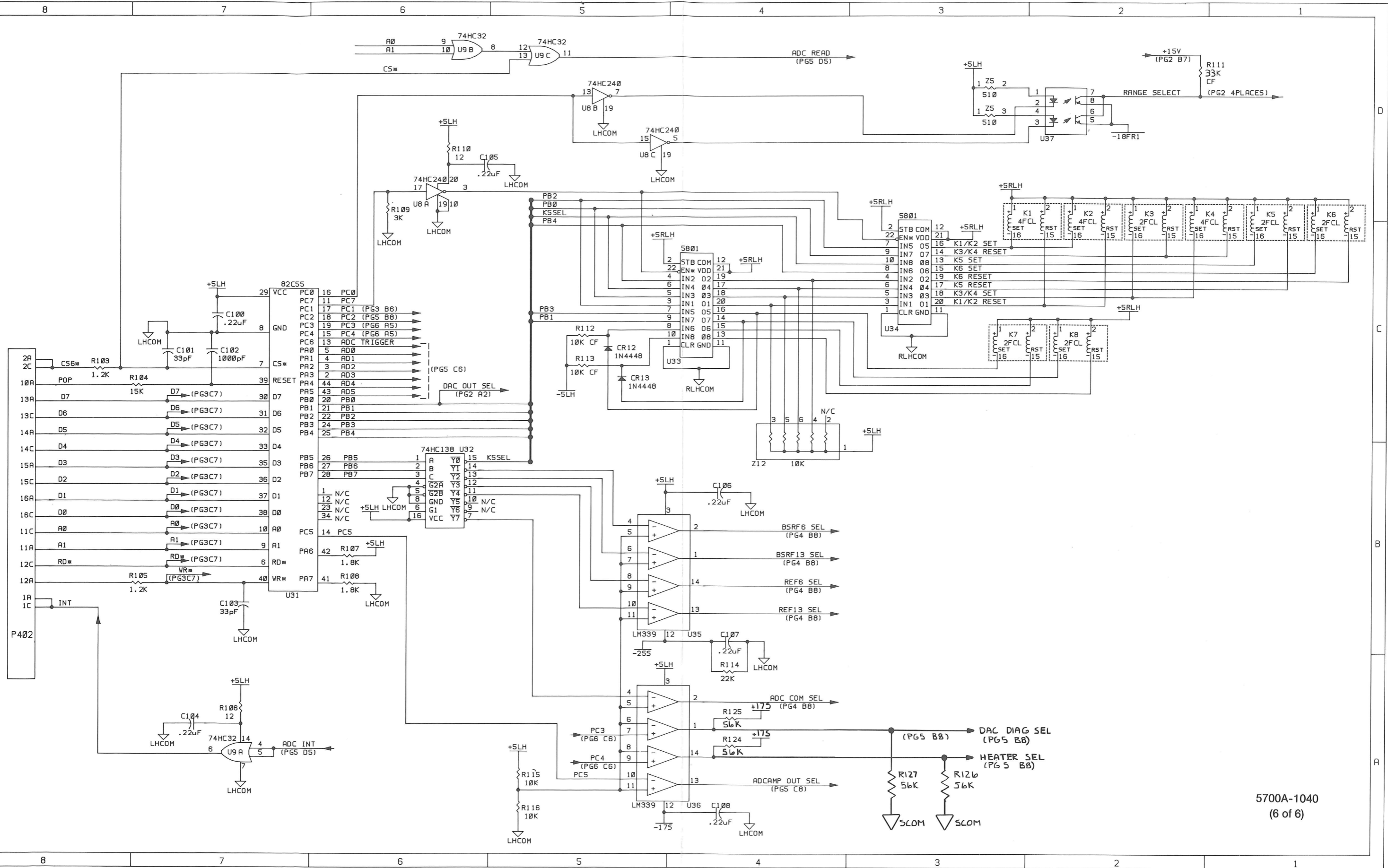
Figure 7-11. A11 DAC PCA (cont)



5700A-1040
(5 of 6)

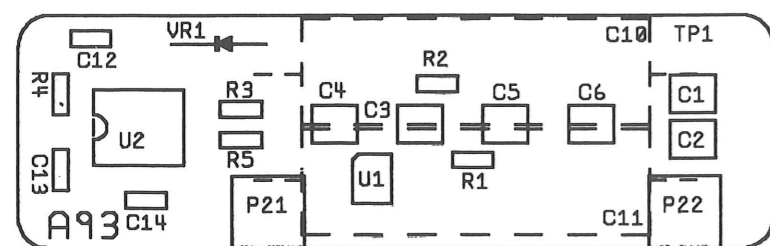
Figure 7-11. A11 DAC PCA (cont)

SCHEMATIC DIAGRAMS

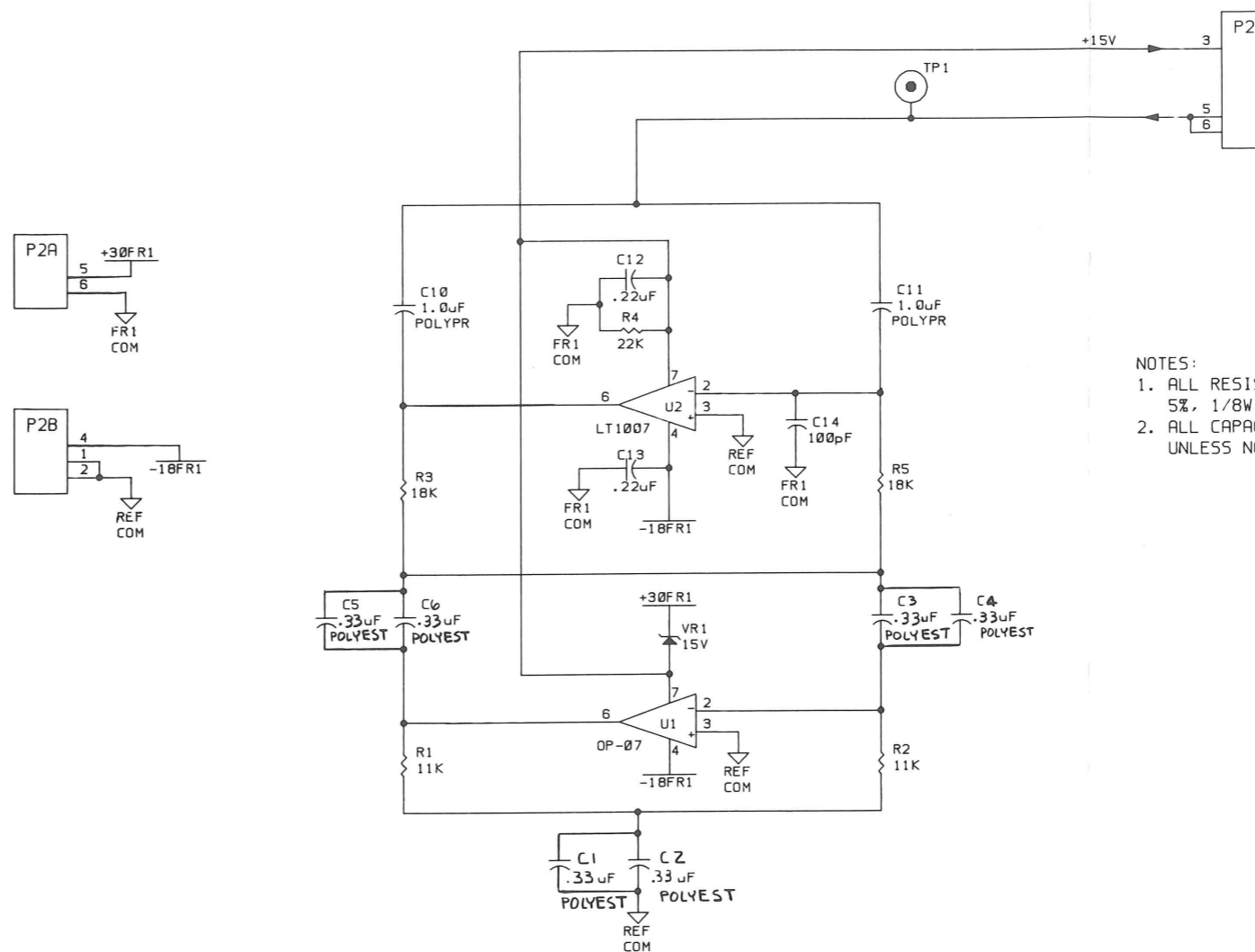


5700A-1040
(6 of 6)

Figure 7-11. A11 DAC PCA (cont)



5700A-7643

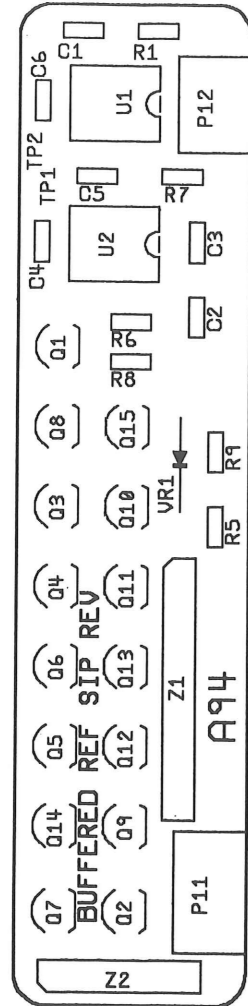


- NOTES:
1. ALL RESISTORS ARE CERMET CHIP (SURFACE MOUNT), 5%, 1/8W UNLESS NOTED.
 2. ALL CAPACITORS ARE CERAMIC (SURFACE MOUNT), UNLESS NOTED.

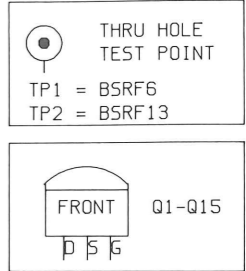
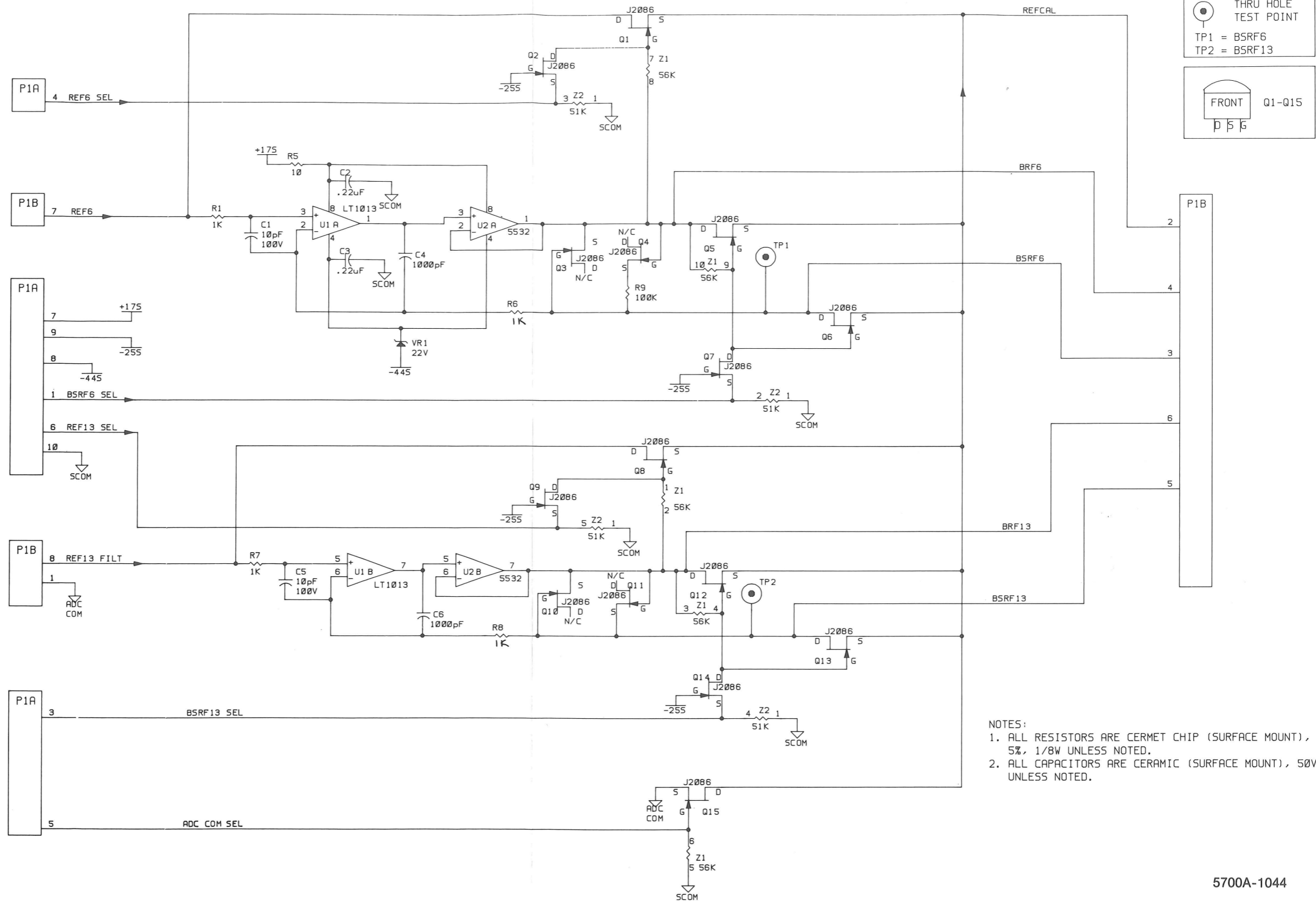
5700A-1043

Figure 7-12. A11A1 DAC Filter SIP PCA

SCHEMATIC DIAGRAMS



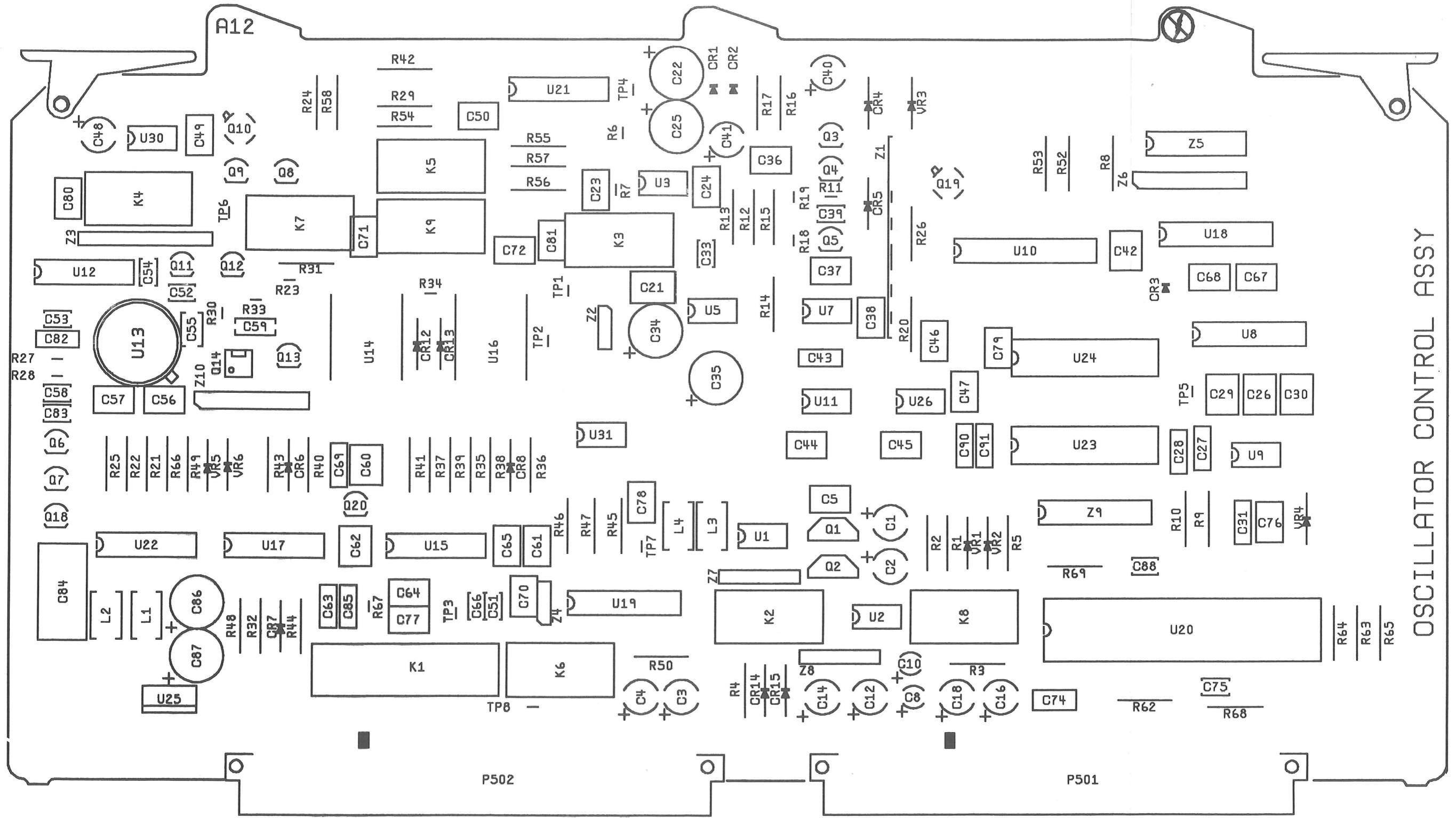
5700A-7644



- NOTES:
1. ALL RESISTORS ARE CERMET CHIP (SURFACE MOUNT), 5%, 1/8W UNLESS NOTED.
 2. ALL CAPACITORS ARE CERAMIC (SURFACE MOUNT), 50V UNLESS NOTED.

5700A-1044

Figure 7-13. A11A2 DAC Buffered Reference SIP PCA



5700A-7650

Figure 7-14. A12 Oscillator Control PCA (cont)

SCHMATIC DIAGRAMS

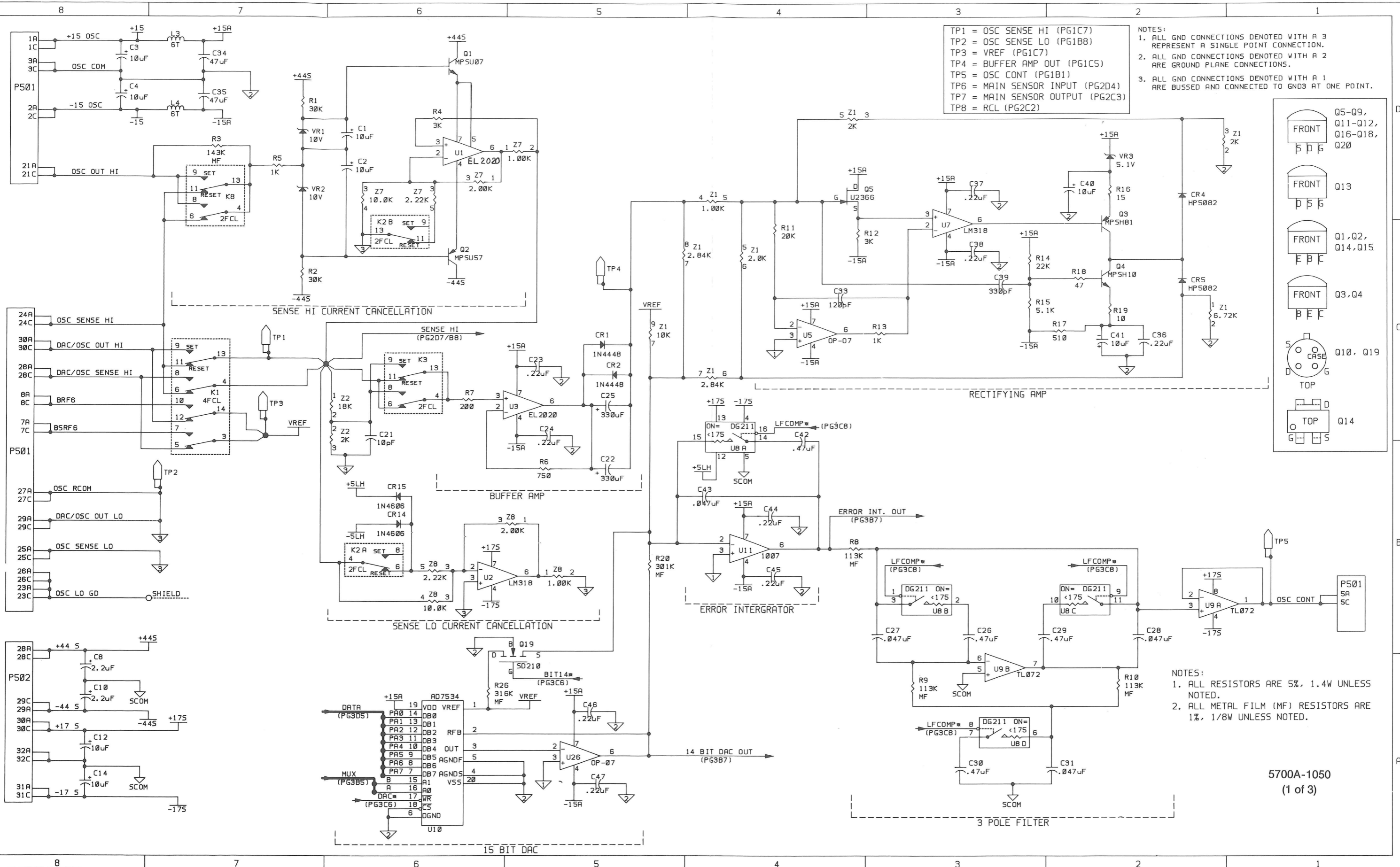
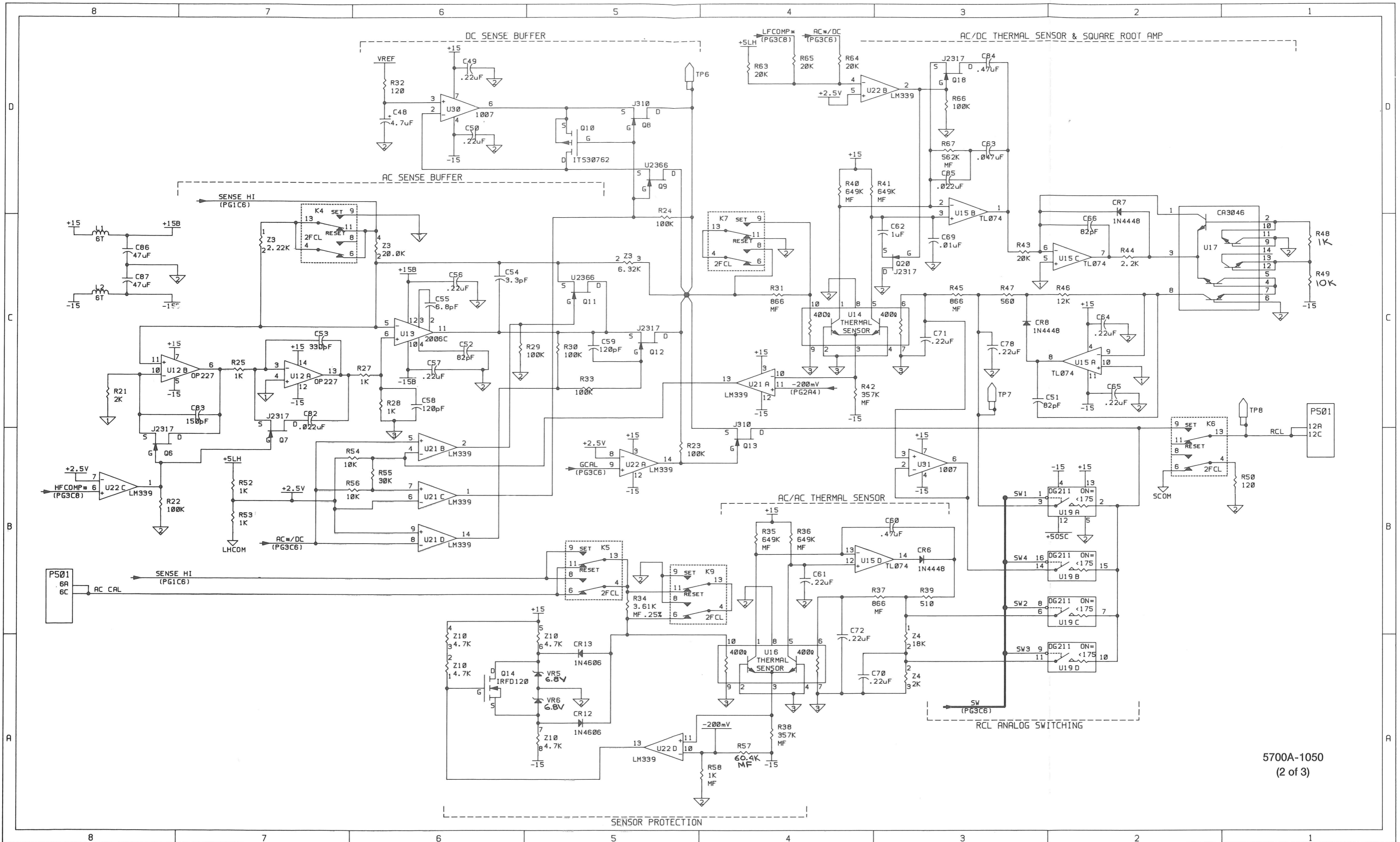


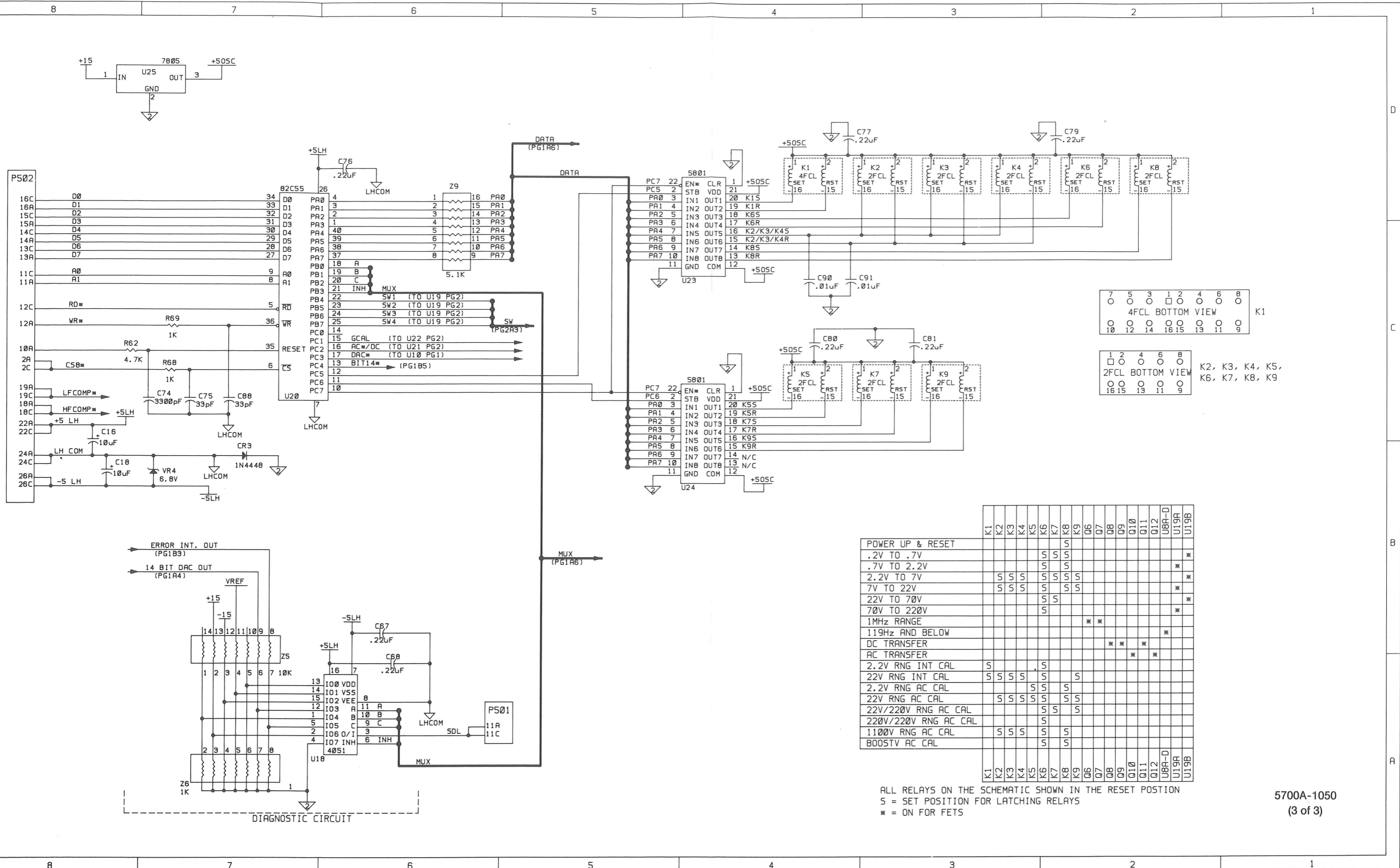
Figure 7-14. A12 Oscillator Control PCA (cont)



5700A-1050
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Figure 7-14. A12 Oscillator Control PCA (cont)

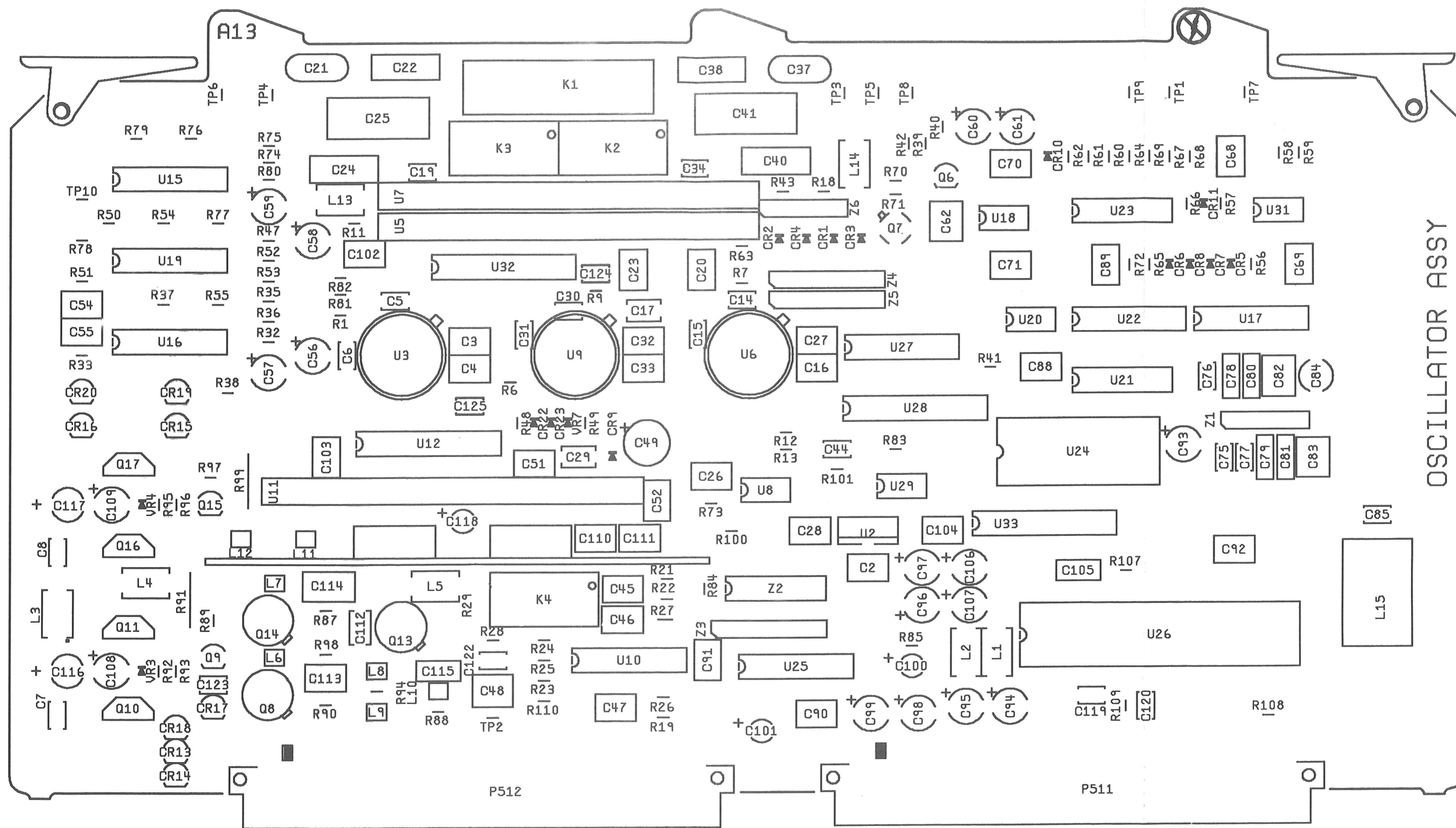
SCHEMATIC DIAGRAMS



	K1	K2	K3	K4	K5	K6	K7	K8	K9	Q6	Q7	Q8	Q9	Q10	Q11	Q12	U8A-D	U19A	U19B
POWER UP & RESET																			
.2V TO .7V						S	S	S											
.7V TO 2.2V						S	S	S											
2.2V TO 7V		S	S	S	S	S	S	S											
7V TO 22V		S	S	S	S	S	S	S											
22V TO 70V						S	S												
70V TO 220V						S													
1MHz RANGE											*	*							
119Hz AND BELOW																			*
DC TRANSFER													*	*	*	*			
AC TRANSFER															*	*			
2.2V RNG INT CAL		S				S													
22V RNG INT CAL		S	S	S	S	S			S										
2.2V RNG AC CAL						S	S	S											
22V RNG AC CAL		S	S	S	S	S	S	S											
22V/220V RNG AC CAL						S	S	S	S										
220V/220V RNG AC CAL						S													
1100V RNG AC CAL		S	S	S		S			S										
BOOSTV AC CAL						S	S												

ALL RELAYS ON THE SCHEMATIC SHOWN IN THE RESET POSITION
 S = SET POSITION FOR LATCHING RELAYS
 * = ON FOR FETS

Figure 7-14. A12 Oscillator Control PCA (cont)



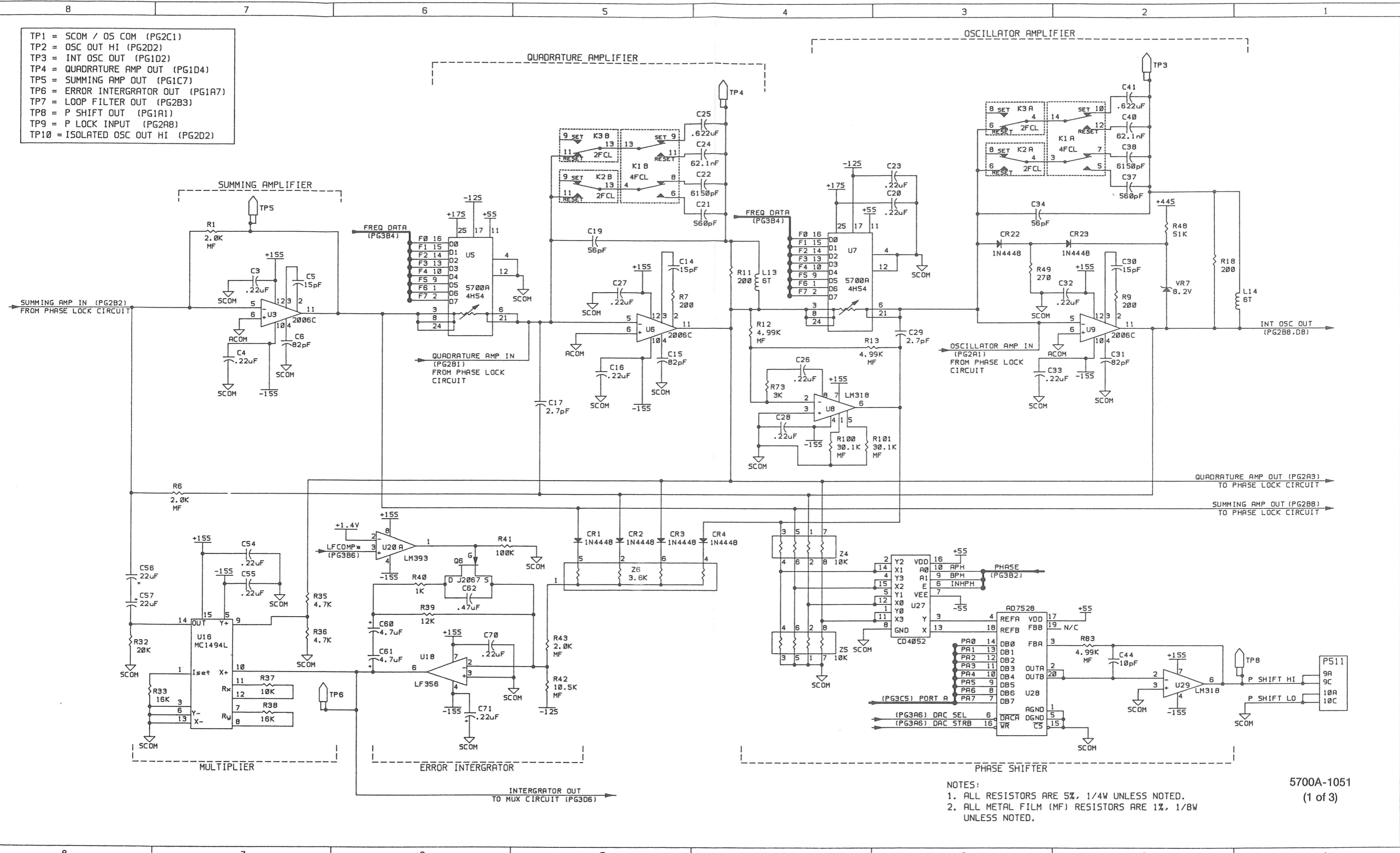
OSCILLATOR ASSY

5700A-7651

Figure 7-15. A13 Oscillator Output PCA

SCHMATIC DIAGRAMS

- TP1 = SCOM / OS COM (PG2C1)
- TP2 = OSC OUT HI (PG2D2)
- TP3 = INT OSC OUT (PG1D2)
- TP4 = QUADRATURE AMP OUT (PG1D4)
- TP5 = SUMMING AMP OUT (PG1C7)
- TP6 = ERROR INTERGRATOR OUT (PG1A7)
- TP7 = LOOP FILTER OUT (PG2B3)
- TP8 = P SHIFT OUT (PG1A1)
- TP9 = P LOCK INPUT (PG2A8)
- TP10 = ISOLATED OSC OUT HI (PG2D2)



NOTES:
 1. ALL RESISTORS ARE 5%, 1/4W UNLESS NOTED.
 2. ALL METAL FILM (MF) RESISTORS ARE 1%, 1/8W UNLESS NOTED.

5700A-1051
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Figure 7-15. A13 Oscillator Output PCA (cont)

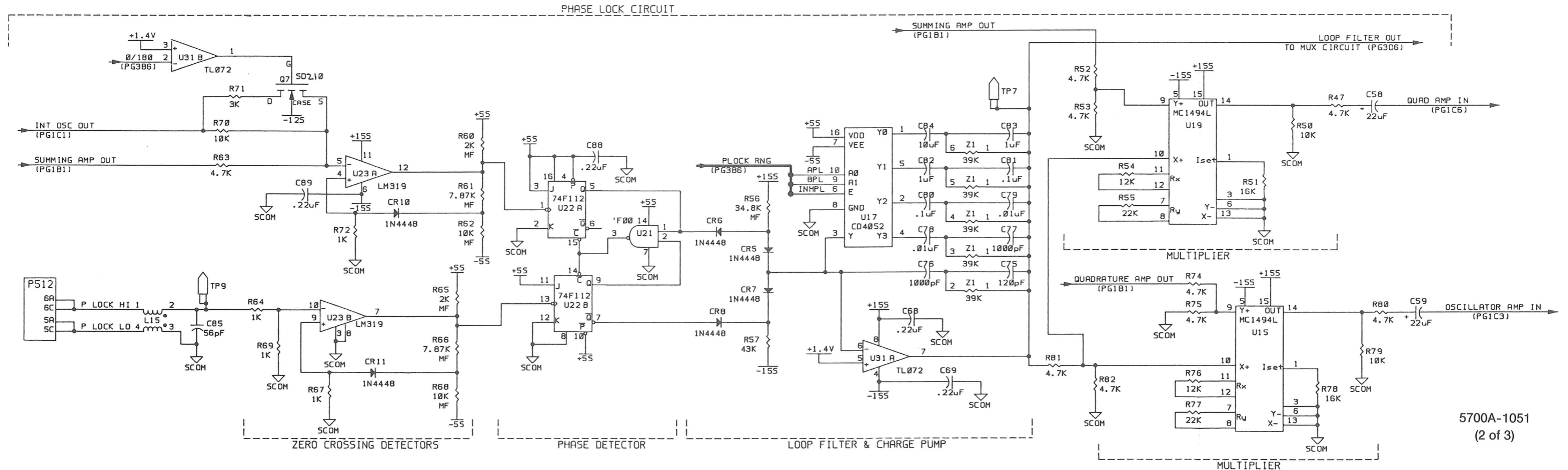
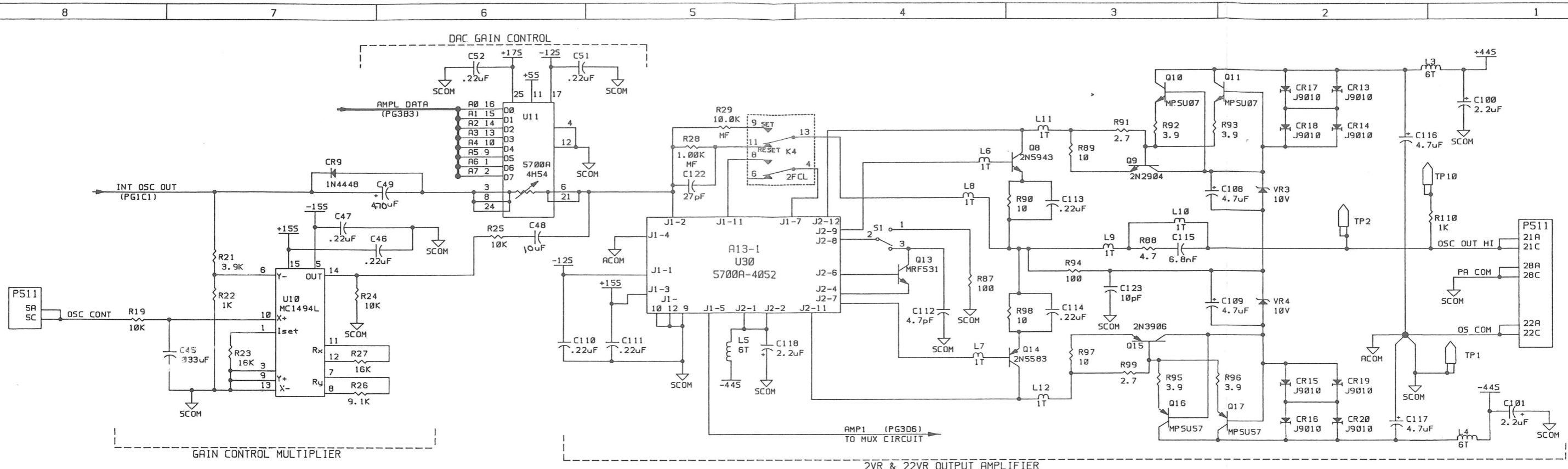
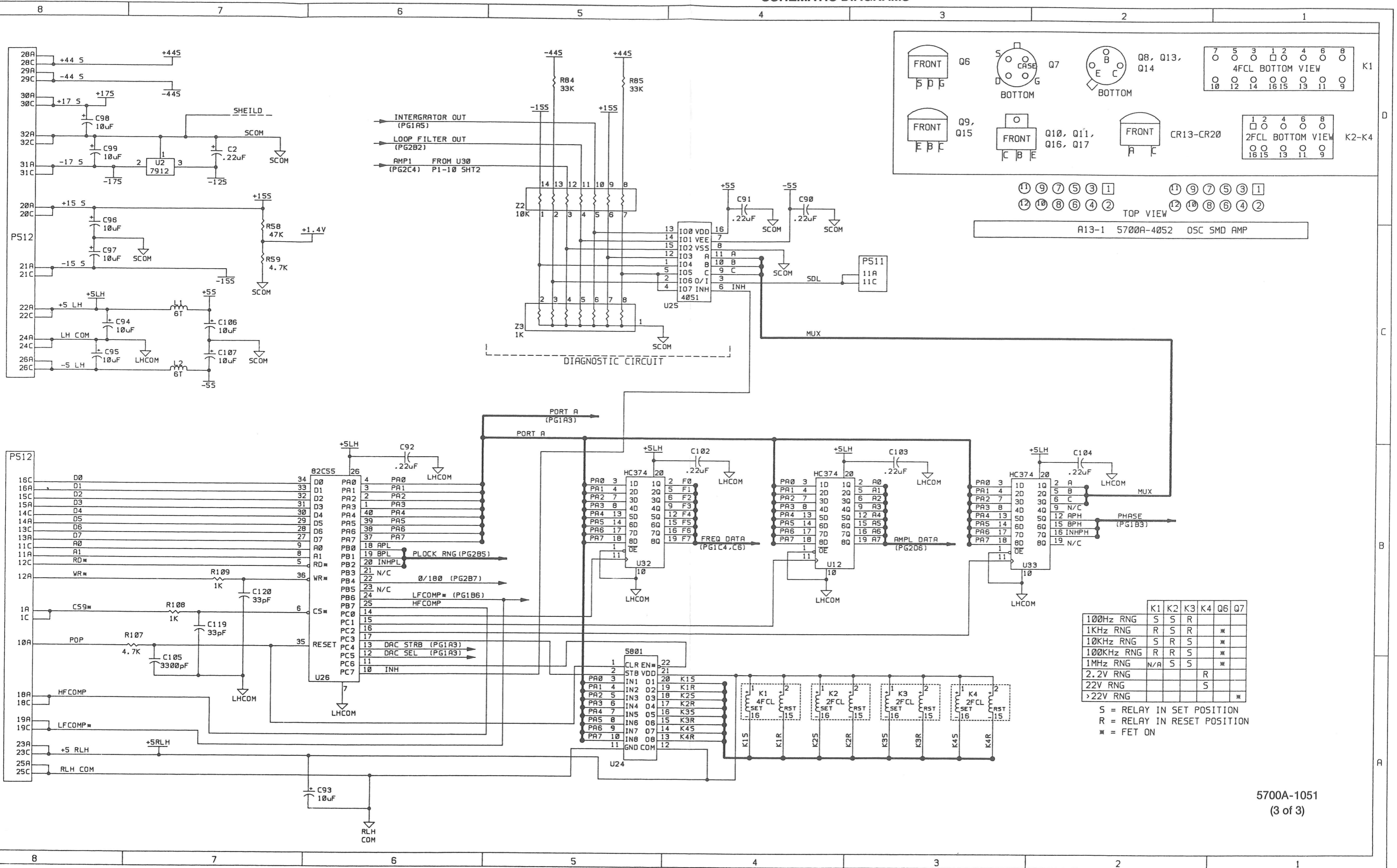


Figure 7-15. A13 Oscillator Output PCA (cont)

SCHMATIC DIAGRAMS

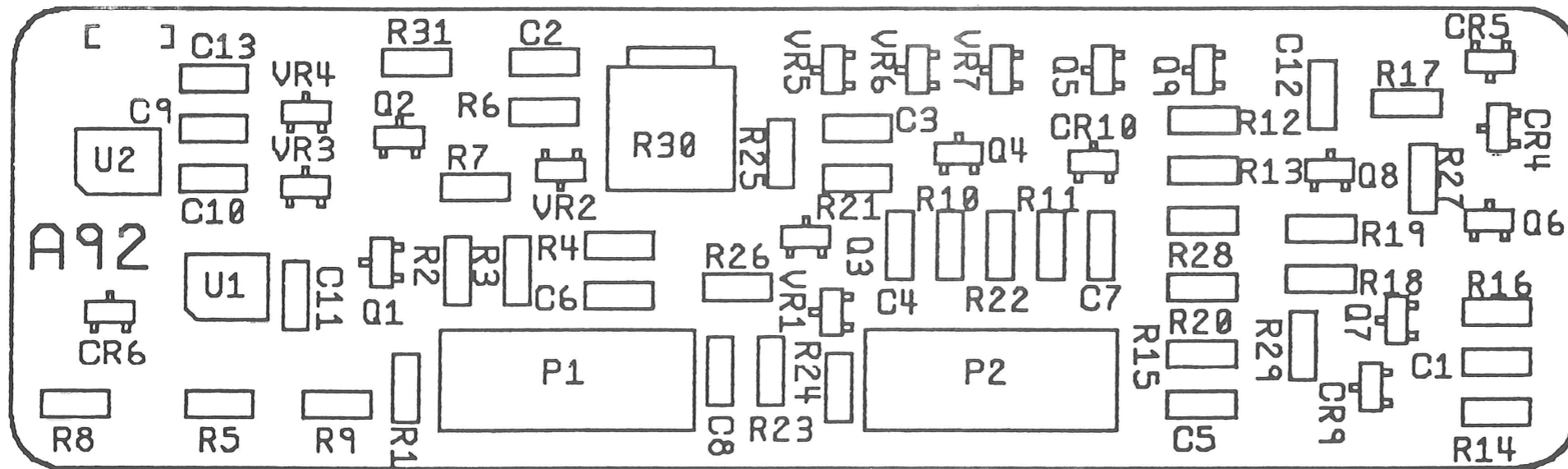


	K1	K2	K3	K4	Q6	Q7
100Hz RNG	S	S	R			
1KHz RNG	R	S	R		*	
10KHz RNG	S	R	S		*	
100KHz RNG	R	R	S		*	
1MHz RNG	N/A	S	S		*	
2.2V RNG				R		
22V RNG				S		
>22V RNG						*

S = RELAY IN SET POSITION
R = RELAY IN RESET POSITION
* = FET ON

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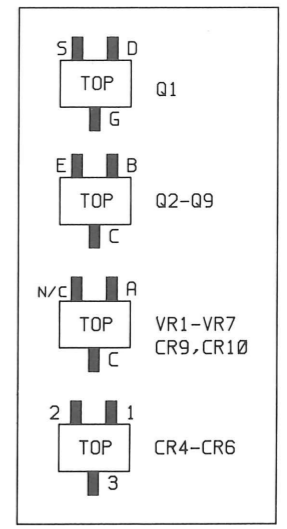
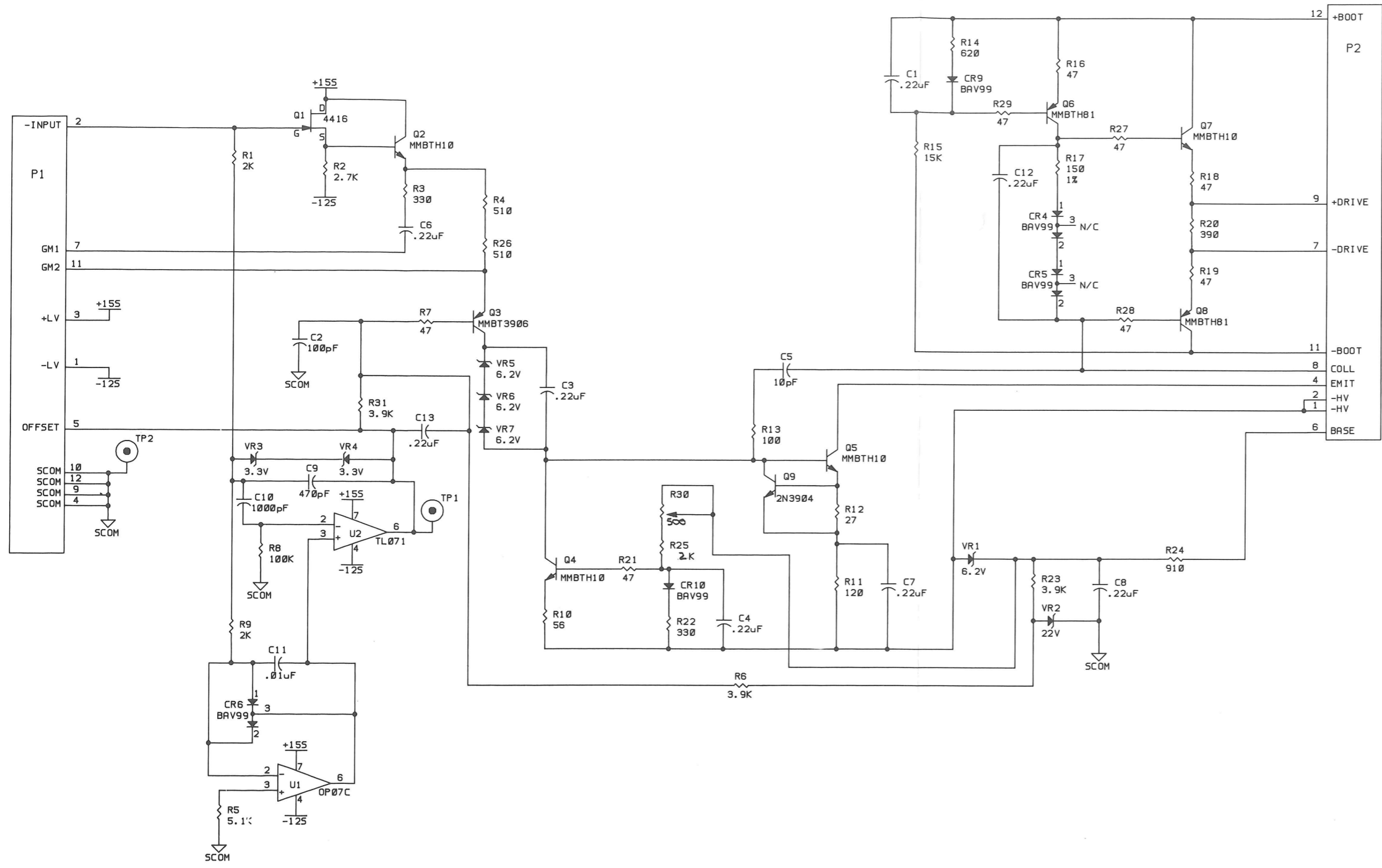
Figure 7-15. A13 Oscillator Output PCA (cont)



5700A-7652

Figure 7-16. A13A1 Oscillator Wideband SMD PCA

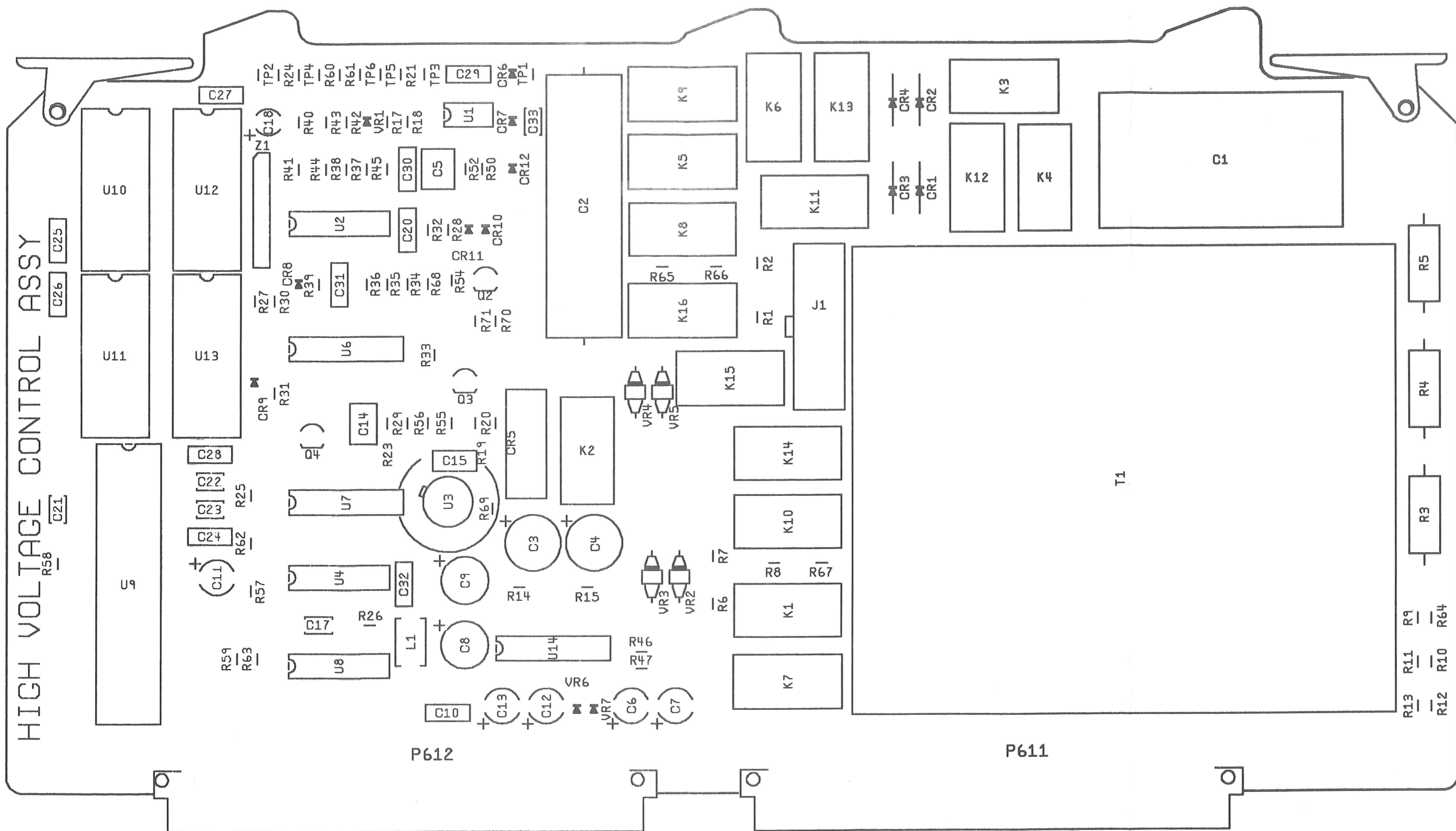
SCHMATIC DIAGRAMS



NOTES:
 1. ALL RESISTORS ARE CERMET CHIP (SMT)
 5%, 1/8W UNLESS NOTED.

5700A-1052

Figure 7-16. A13A1 Oscillator Wideband SMD PCA (cont)



5700A-7661

Figure 7-17. A14 High Voltage Control PCA (cont)

SCHEMATIC DIAGRAMS

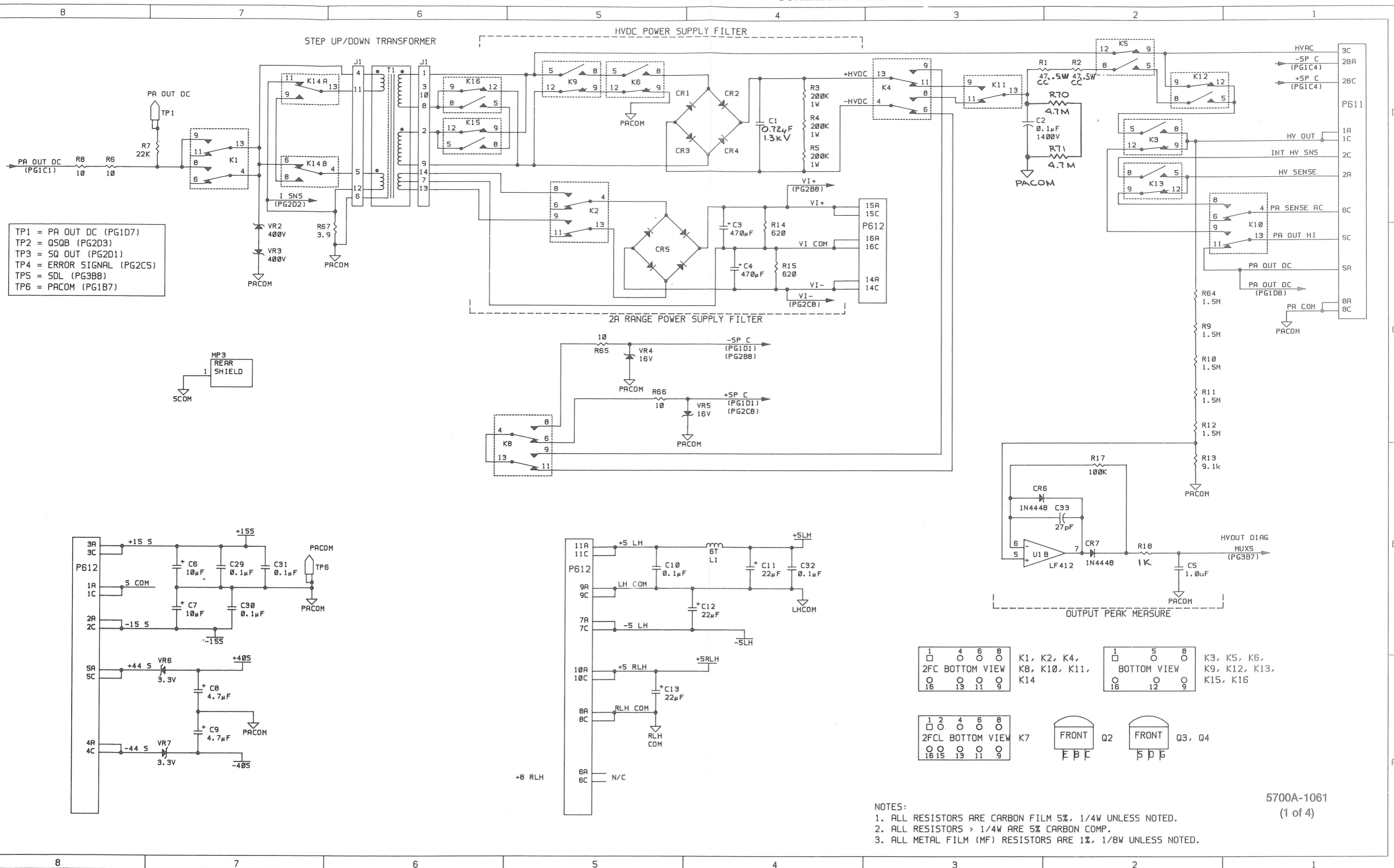
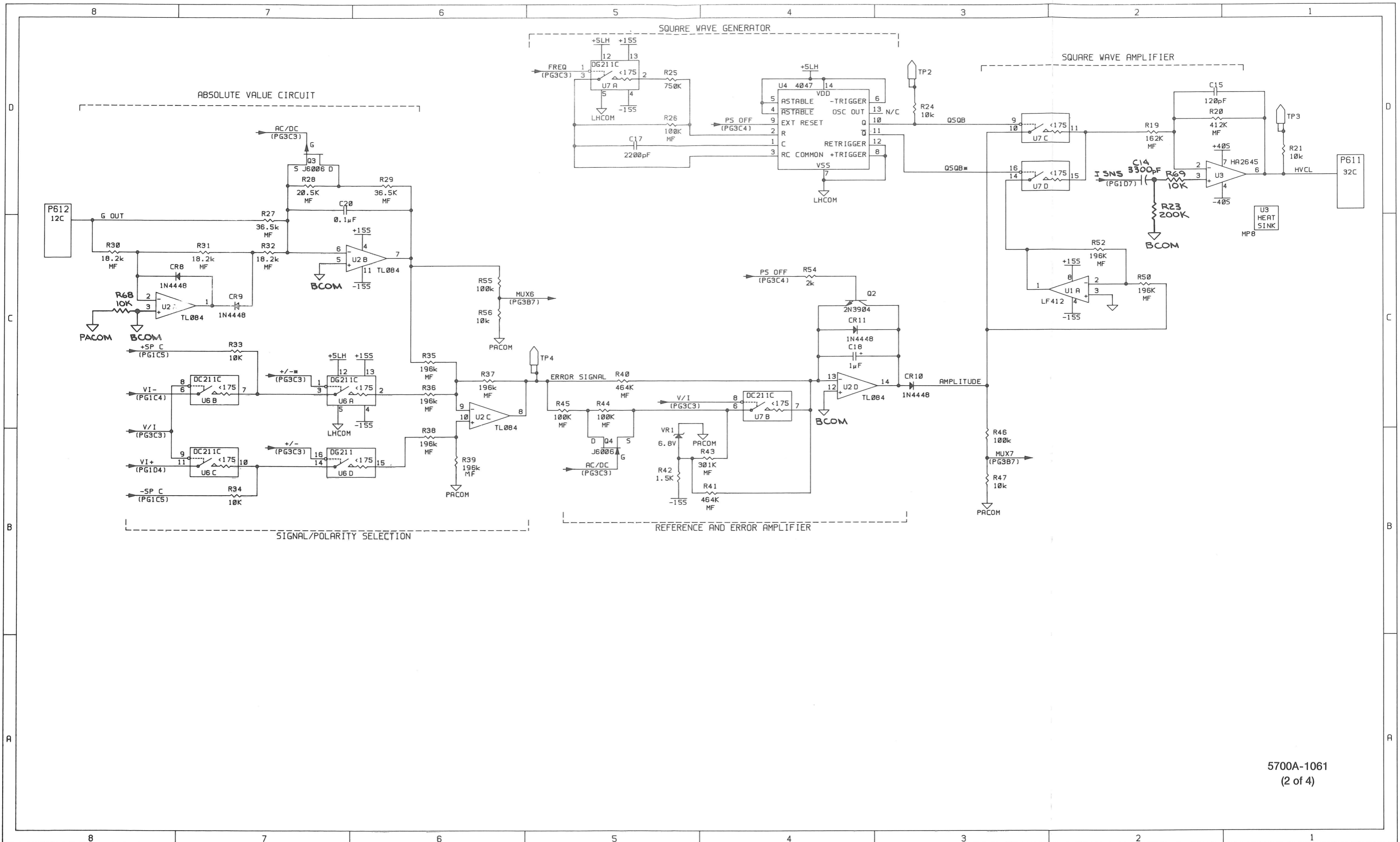


Figure 7-17. A14 High Voltage Control PCA (cont)



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Figure 7-17. A14 High Voltage Control PCA (cont)

SCHMATIC DIAGRAMS

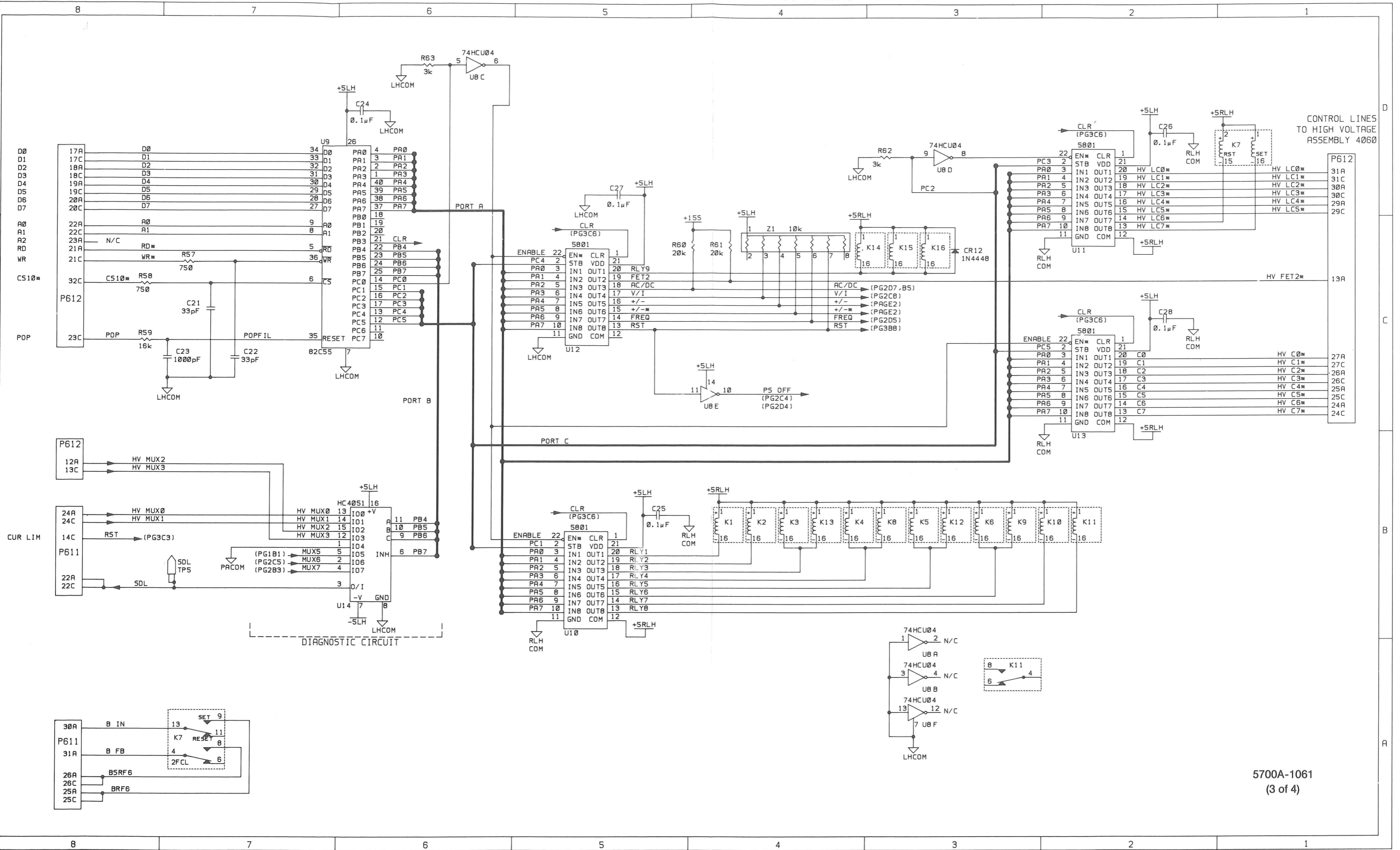


Figure 7-17. A14 High Voltage Control PCA (cont)

	HIGH VOLTAGE A15 ASSEMBLY										HIGH VOLTAGE CONTROL A14 ASSEMBLY														
	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11	K12	K13	K14	K15	K16	Q3	Q4	U6A	U6B	U6C	U6D	U7A	U7B	
DORMANT	R	R	R																						
AC 220V RANGE	R	R	R																						
DC 220V RANGE	R	R	R																						
AC 1100V RANGE	R	R	R	*		*																			
DC +1100V RANGE	S	R	S		*	*	*																		
DC -1100V RANGE	S	R	S		*	*	*																		
AC 2.2A RANGE	R	R	R																						
DC +2.2A RANGE	R	R	R																						
DC -2.2A RANGE	R	R	R																						
OFFSET CAL HR7 RNET	S	R	S		*		*		*																
GAIN CAL HR7 RNET	R	S	S				*																		
AC 220V AC FREQ CHAR	R	R	R																						
AC 1100V AC FREQ CHAR	R	R	R	*		*		*																	
OFFSET CAL CURRENT RNET	R	R	R																						
GAIN CAL CURRENT RNET	R	R	R																						

R = RESET POSITION FOR LATCHING RELAYS
 S = SET POSITION FOR LATCHING RELAYS
 * = ENERGIZED FOR NON-LATCHING RELAYS
 * = ON FOR FETS
 1 = ENERGIZED DURING OPERATION BELOW 120Hz ONLY
 RELAY K7 IS SET DURING CALIBRATION OF THE 1.9 OHM ON THE OHMS CAL ASSEMBLY

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Figure 7-17. A14 High Voltage Control PCA (cont)

SCHEMATIC DIAGRAMS

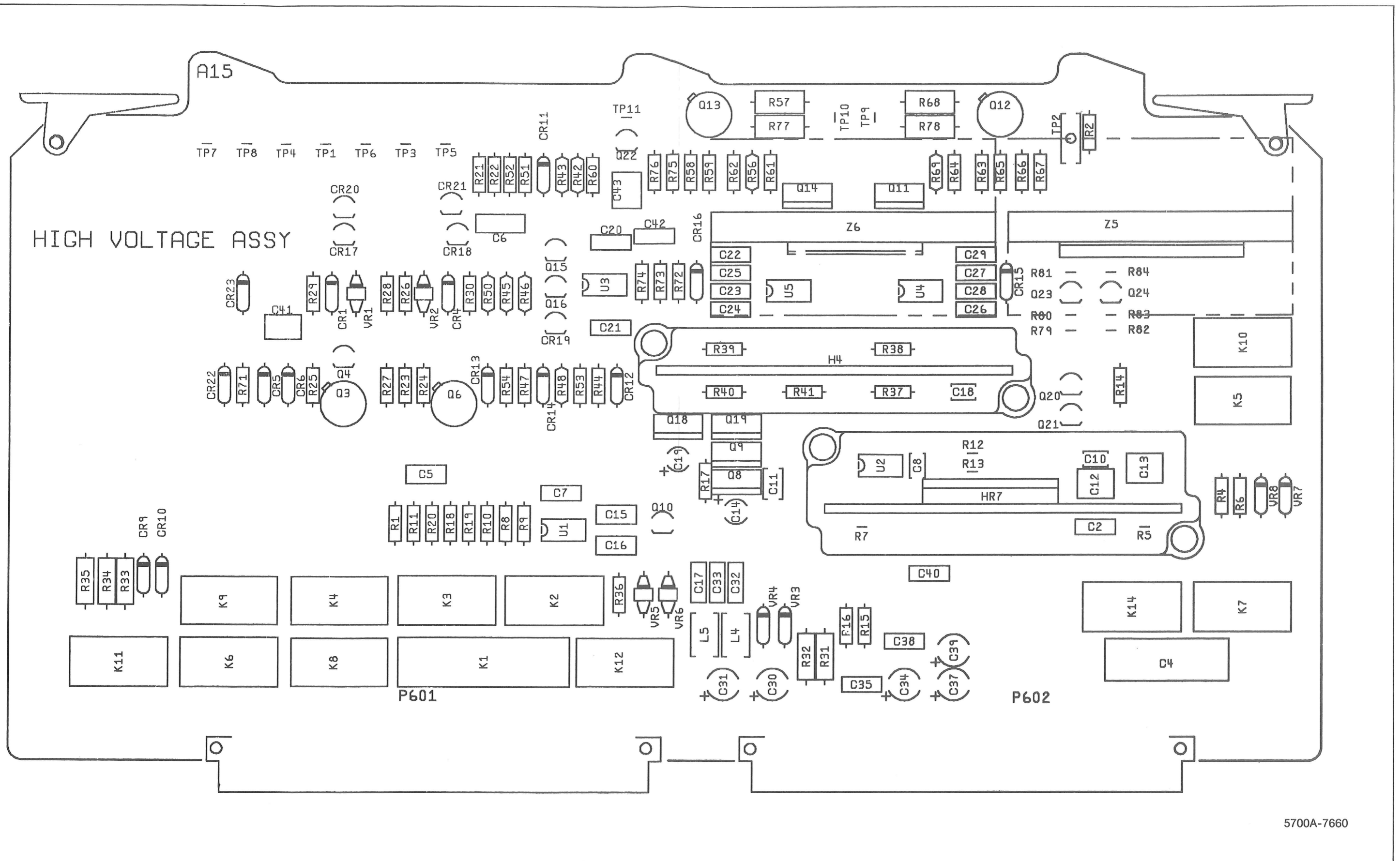


Figure 7-18. A15 High Voltage/High Current PCA

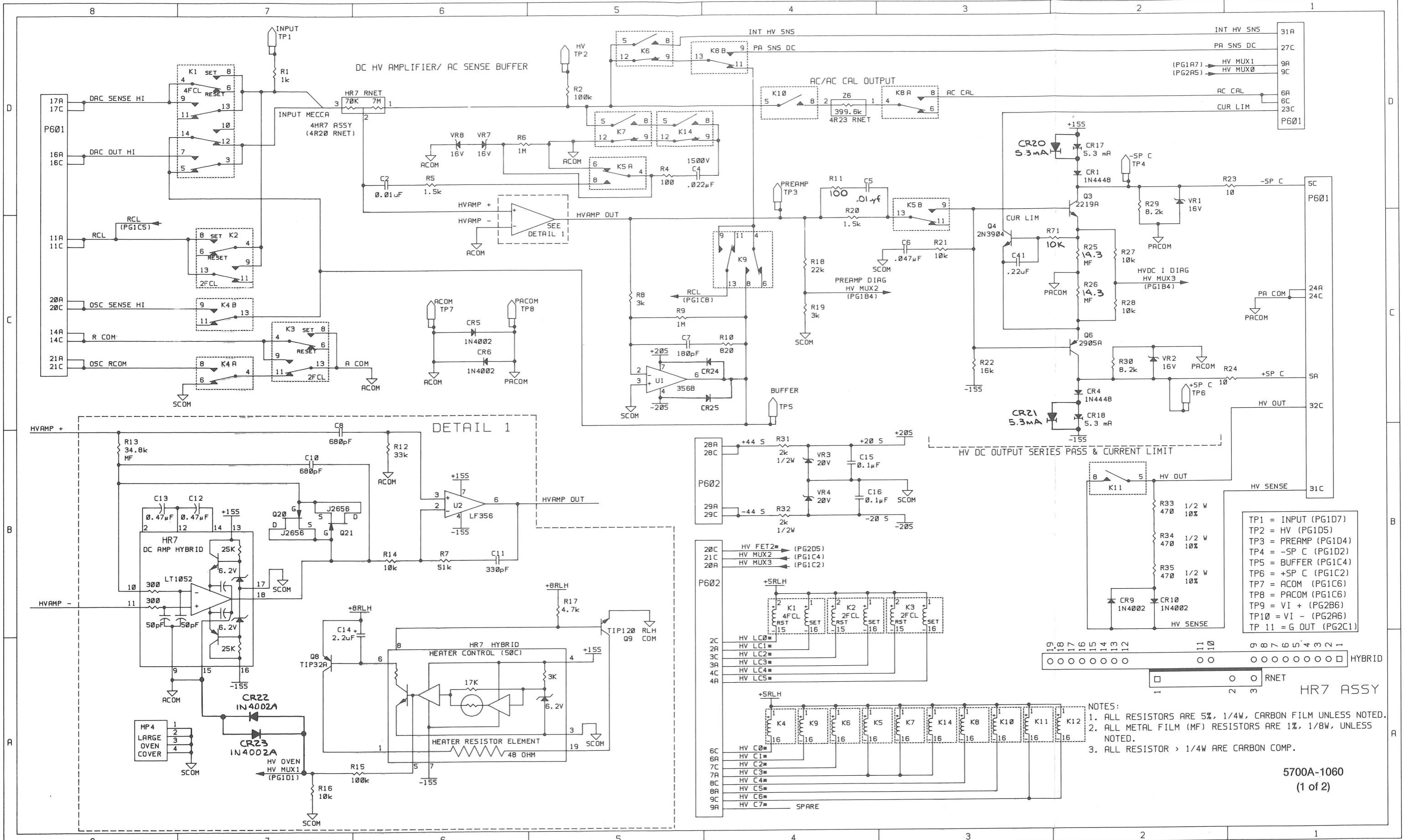


Figure 7-18. A15 High Voltage/High Current PCA (cont)

SCHEMATIC DIAGRAMS

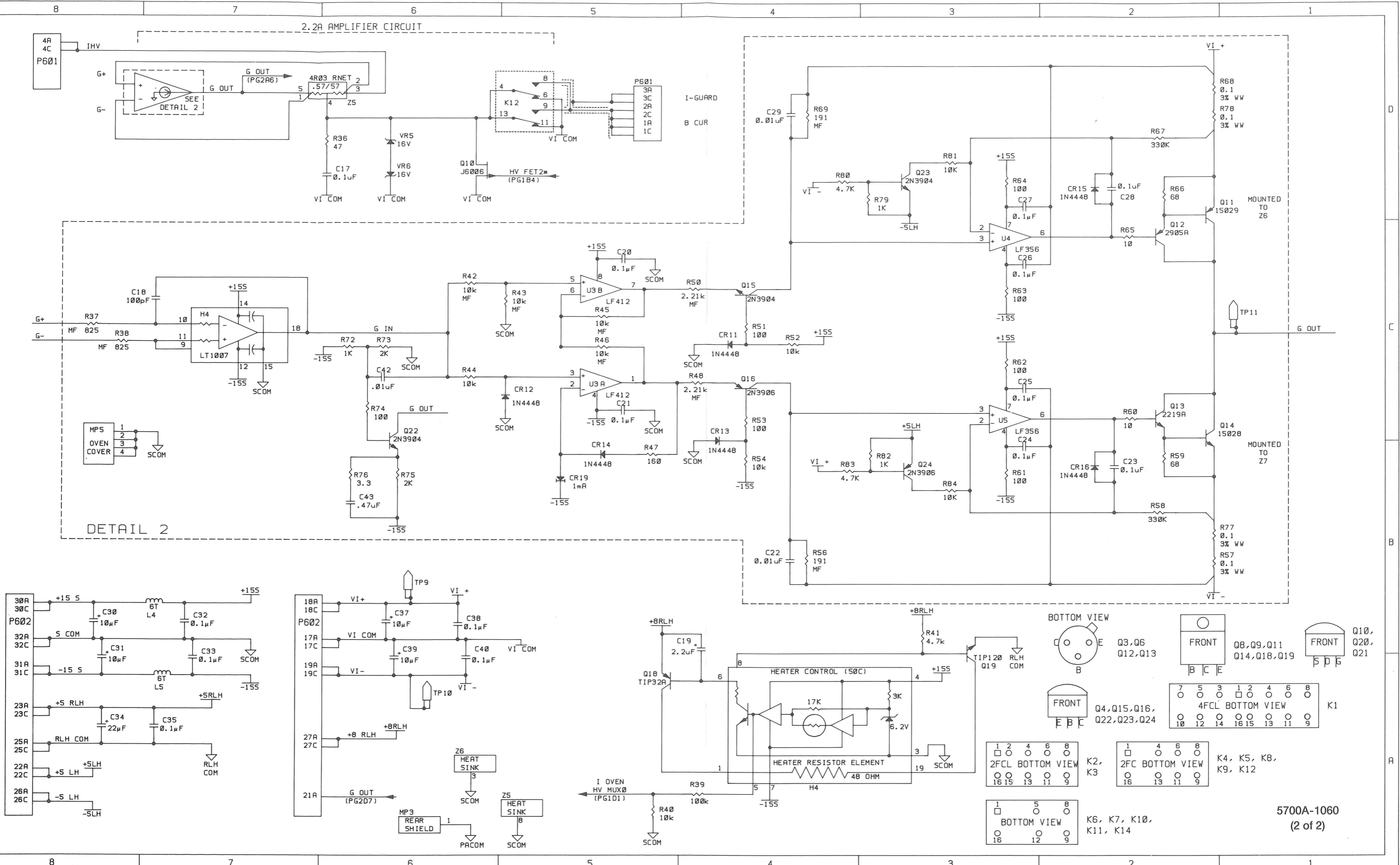
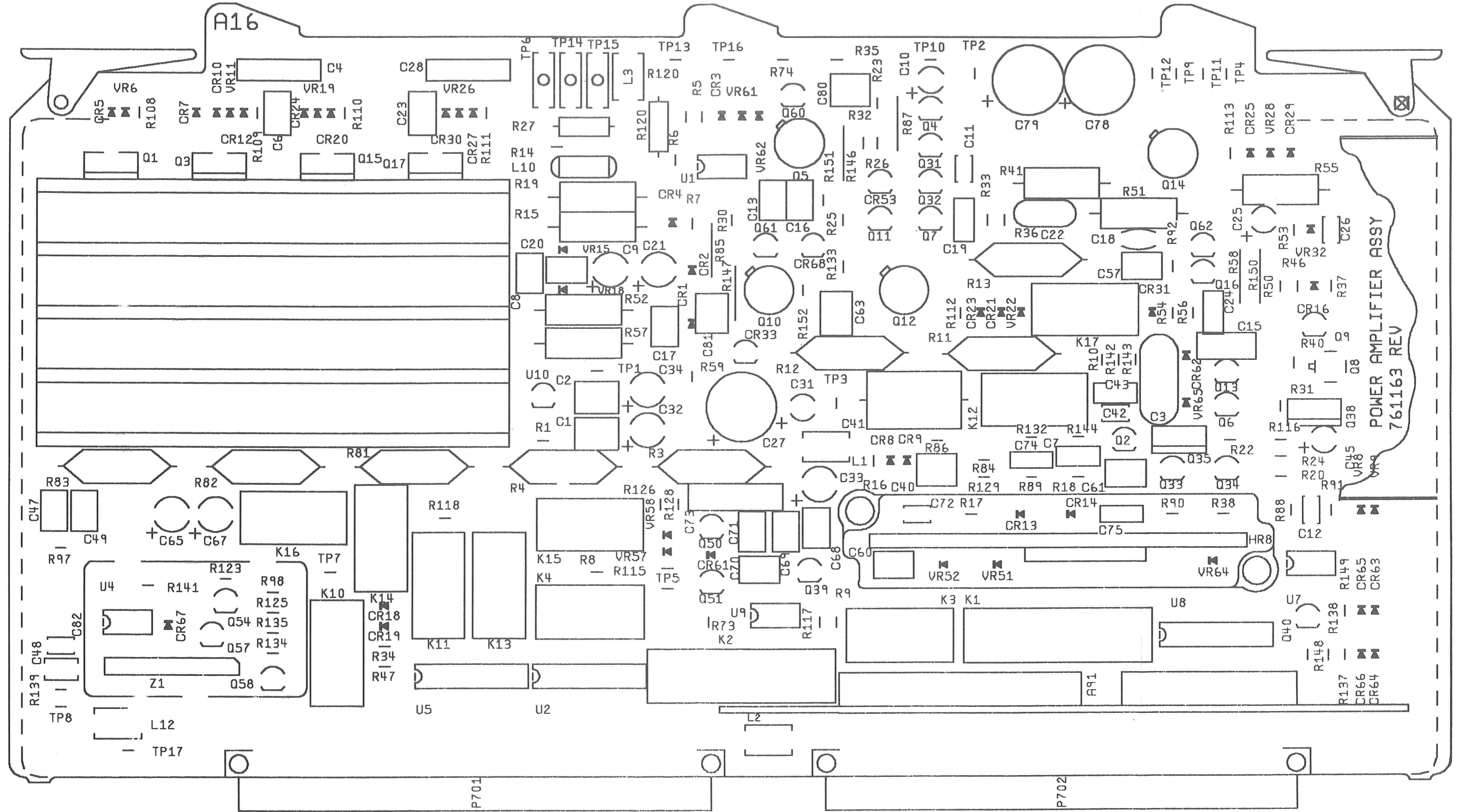


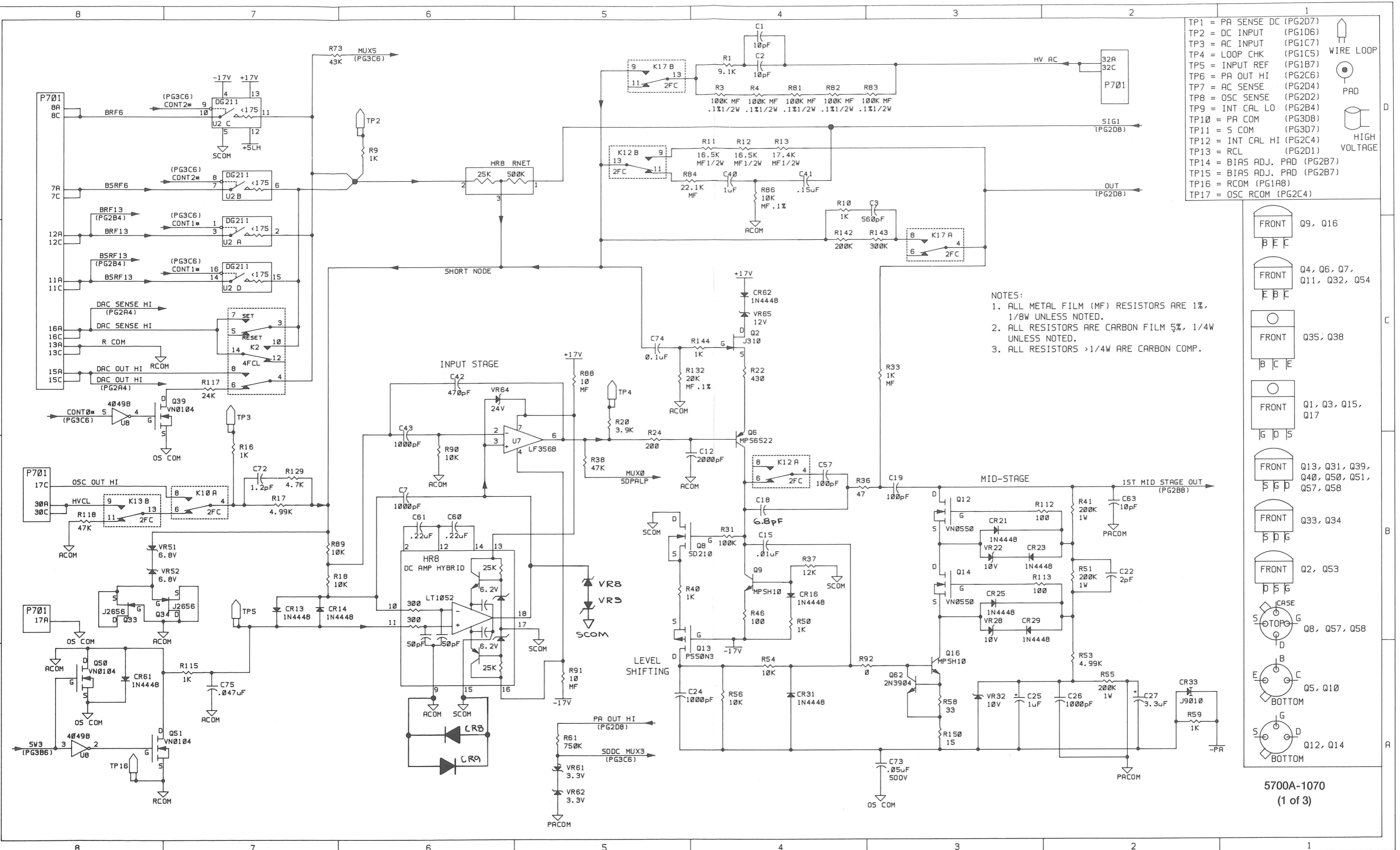
Figure 7-18. A15 High Voltage/High Current PCA (cont)



5700A-7670

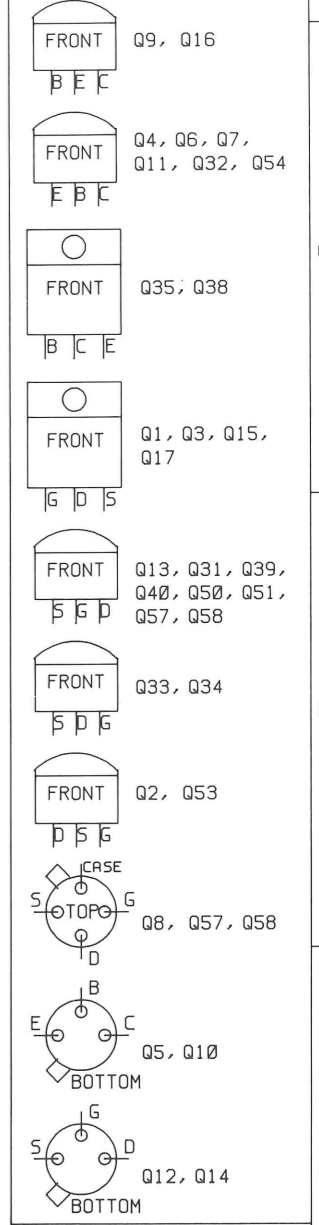
Figure 7-19. A16 Power Amplifier PCA

SCHEMATIC DIAGRAMS



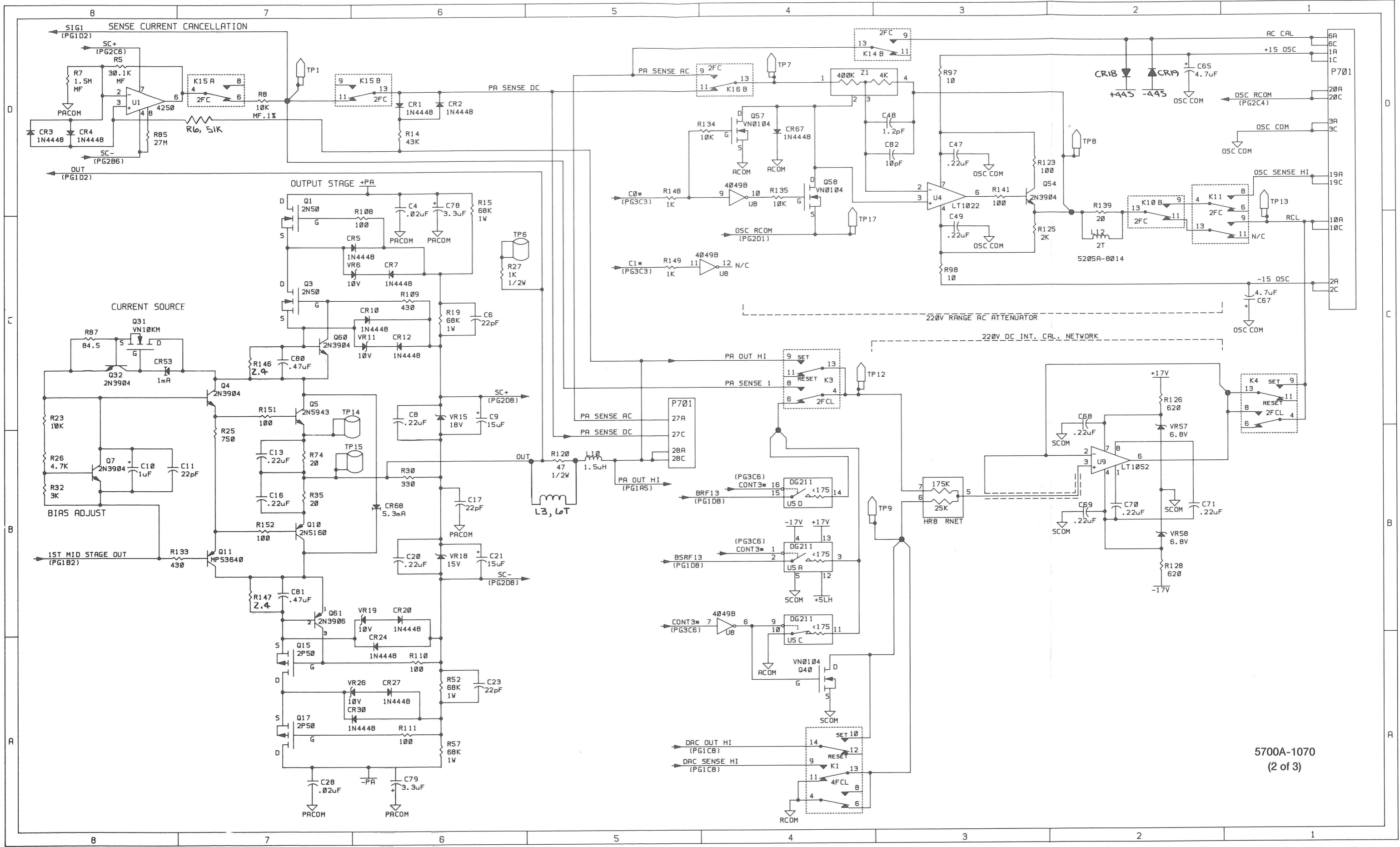
- TP1 = PA SENSE DC (PG2D7)
- TP2 = DC INPUT (PG1D6)
- TP3 = AC INPUT (PG1C7)
- TP4 = LOOP CHK (PG1C5)
- TP5 = INPUT REF (PG1B7)
- TP6 = PA OUT HI (PG2C6)
- TP7 = AC SENSE (PG2D4)
- TP8 = OSC SENSE (PG2D2)
- TP9 = INT CAL LO (PG2B4)
- TP10 = PA COM (PG3D8)
- TP11 = S COM (PG3D7)
- TP12 = INT CAL HI (PG2C4)
- TP13 = RCL (PG2D1)
- TP14 = BIAS ADJ. PAD (PG2B7)
- TP15 = BIAS ADJ. PAD (PG2B7)
- TP16 = RCOM (PG1A8)
- TP17 = OSC RCOM (PG2C4)

- NOTES:
1. ALL METAL FILM (MF) RESISTORS ARE 1%, 1/8W UNLESS NOTED.
 2. ALL RESISTORS ARE CARBON FILM 5%, 1/4W UNLESS NOTED.
 3. ALL RESISTORS >1/4W ARE CARBON COMP.



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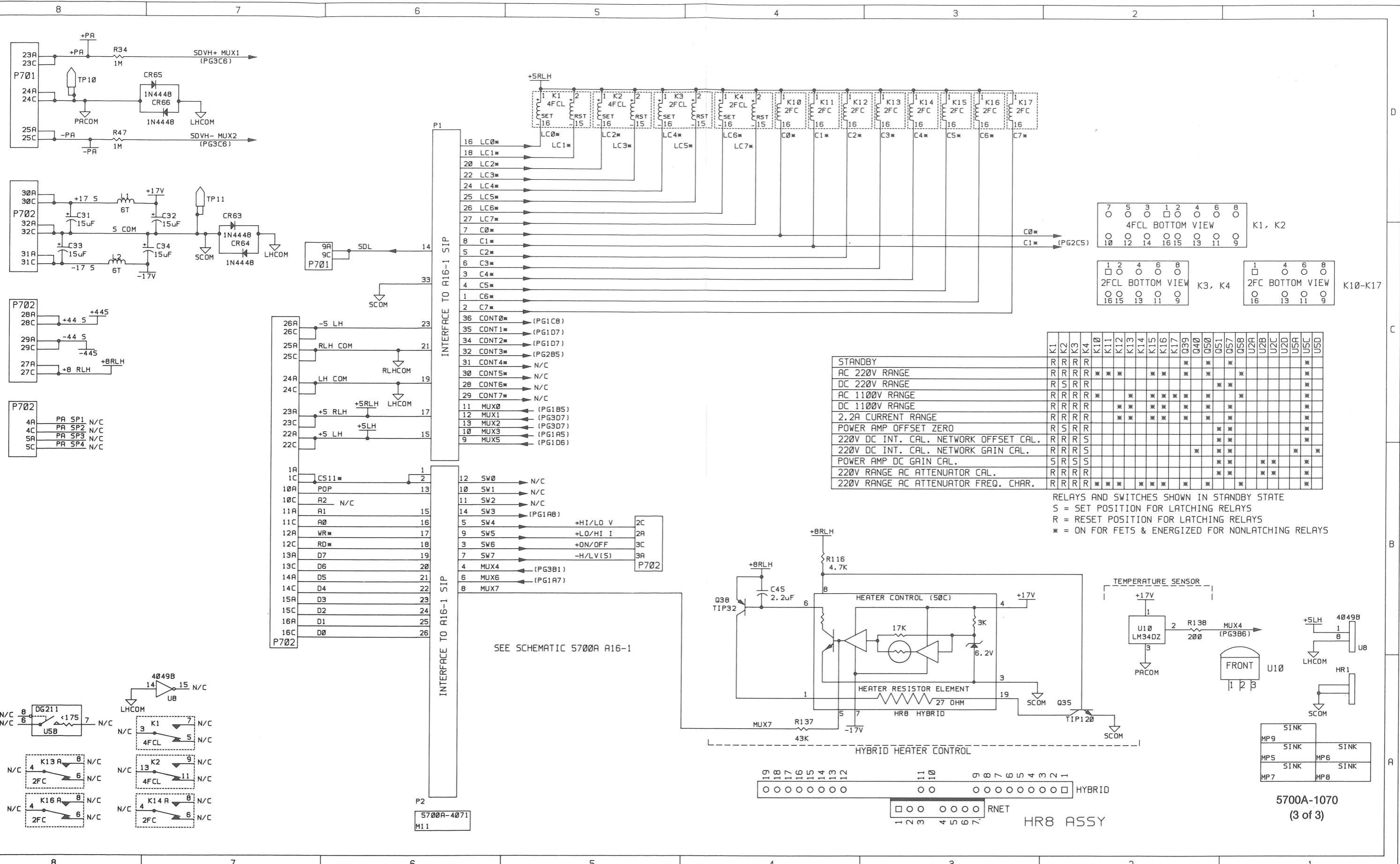
Figure 7-19. A16 Power Amplifier PCA (cont)



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Figure 7-19. A16 Power Amplifier PCA (cont)

SCHEMATIC DIAGRAMS



	K1	K2	K3	K4	K10	K11	K12	K13	K14	K15	K16	K17	Q39	Q40	Q50	Q51	Q57	Q58	U2A	U2B	U2C	U2D	U5A	U5C	U5D
STANDBY	R	R	R	R									*	*	*	*	*	*							
AC 220V RANGE	R	R	R	R	*	*	*			*	*	*	*	*	*	*	*	*							*
DC 220V RANGE	R	S	R	R													*	*							*
AC 110V RANGE	R	R	R	R	*	*	*			*	*	*	*	*	*	*	*	*							*
DC 110V RANGE	R	R	R	R						*	*	*	*	*	*	*	*	*							*
2.2A CURRENT RANGE	R	R	R	R						*	*	*	*	*	*	*	*	*							*
POWER AMP OFFSET ZERO	R	S	R	R												*	*	*							*
220V DC INT. CAL. NETWORK OFFSET CAL.	R	R	R	S												*	*	*							*
220V DC INT. CAL. NETWORK GAIN CAL.	R	R	R	S												*	*	*							*
POWER AMP DC GAIN CAL.	S	R	S	S												*	*	*							*
220V RANGE AC ATTENUATOR CAL.	R	R	R	R												*	*	*							*
220V RANGE AC ATTENUATOR FREQ. CHAR.	R	R	R	R	*	*	*	*	*	*	*	*	*	*	*	*	*	*							*

RELAYS AND SWITCHES SHOWN IN STANDBY STATE
 S = SET POSITION FOR LATCHING RELAYS
 R = RESET POSITION FOR LATCHING RELAYS
 * = ON FOR FETS & ENERGIZED FOR NONLATCHING RELAYS

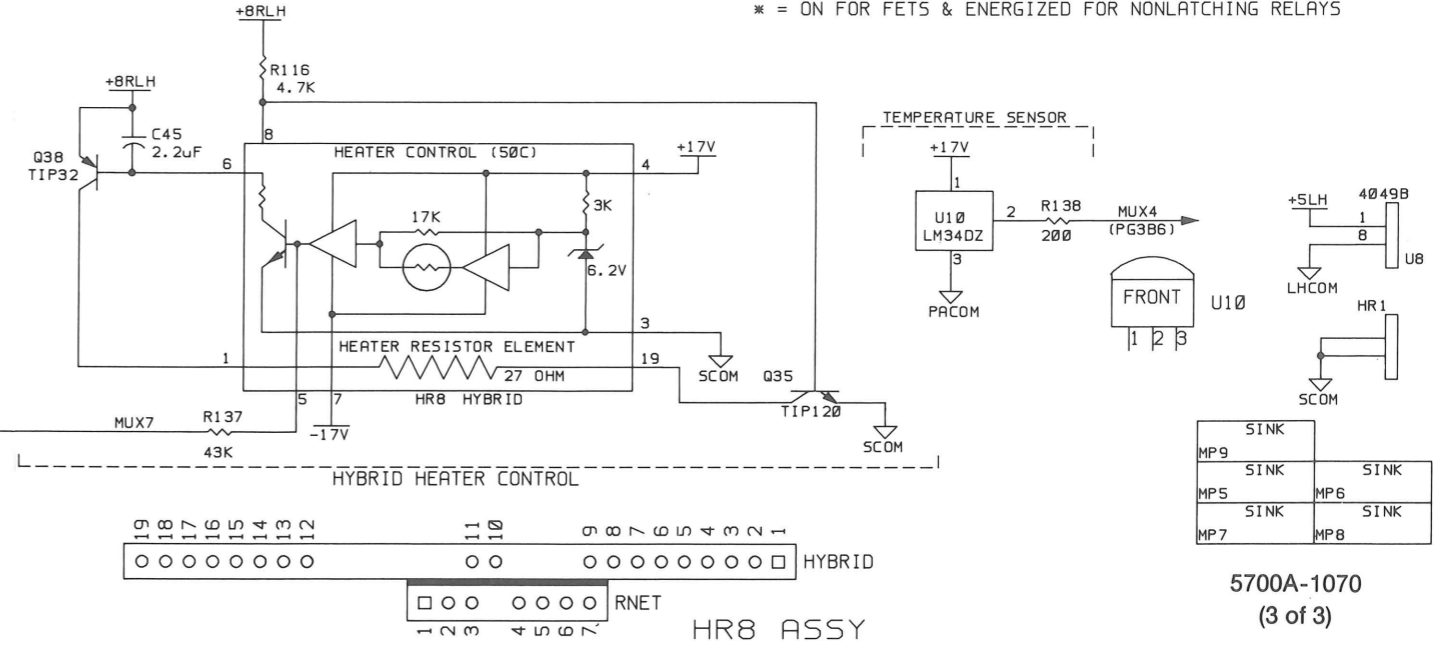
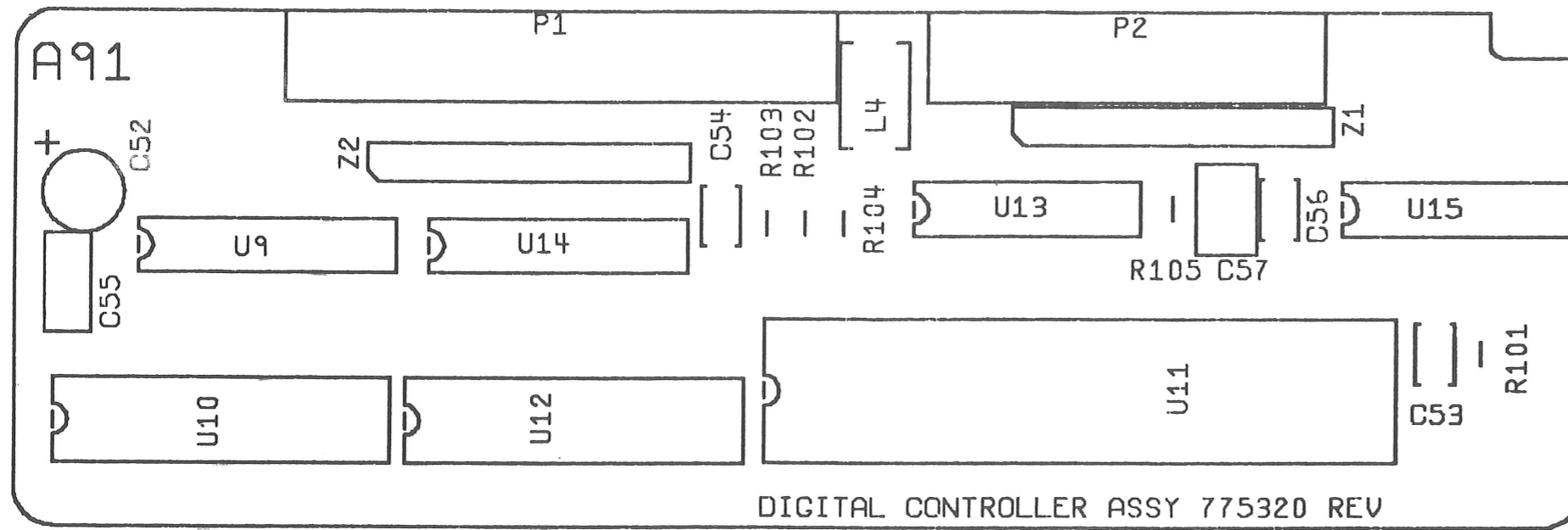


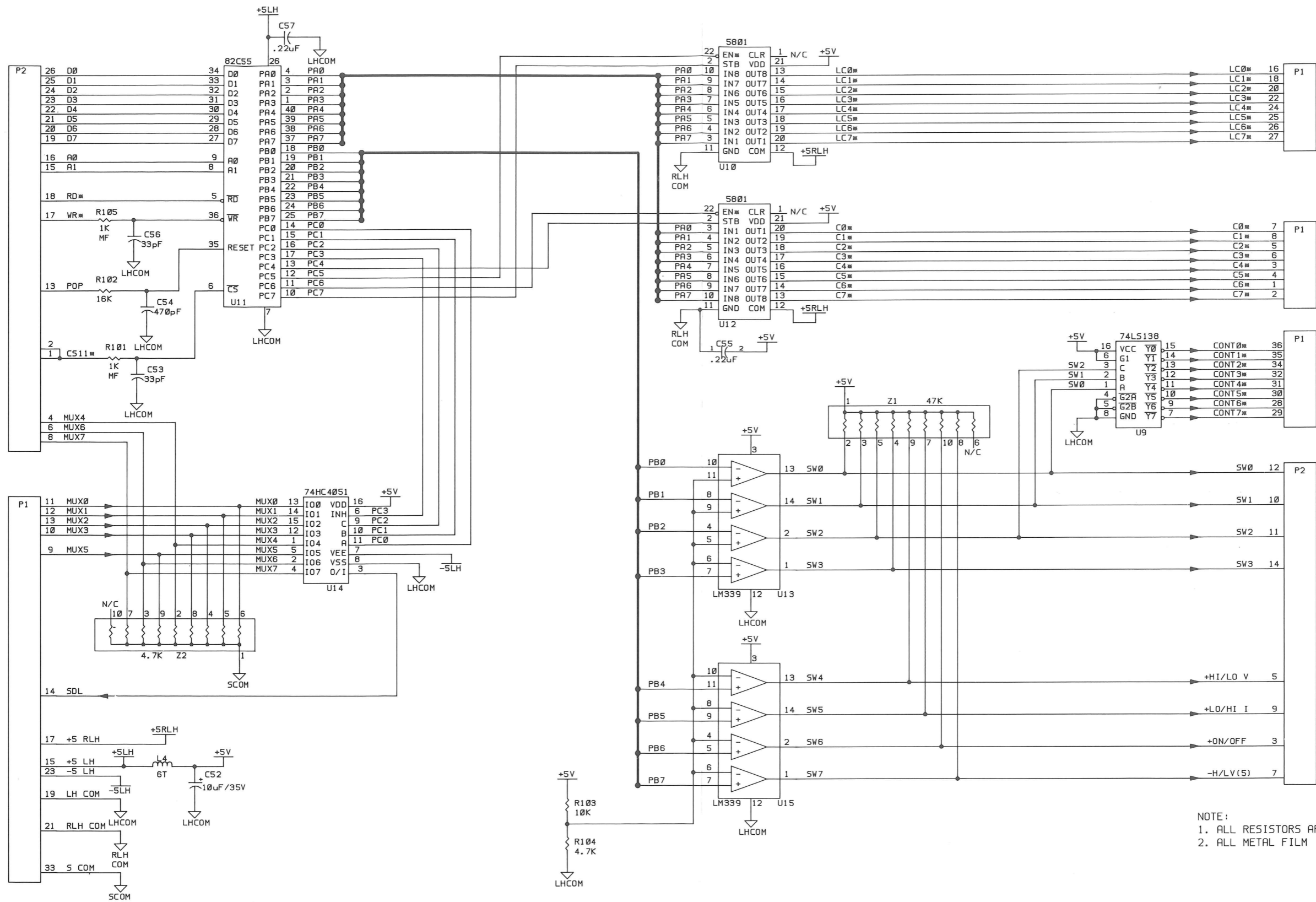
Figure 7-19. A16 Power Amplifier PCA (cont)



5700A-7671

Figure 7-20. A16A1 Power Amplifier Digital Control SIP PCA

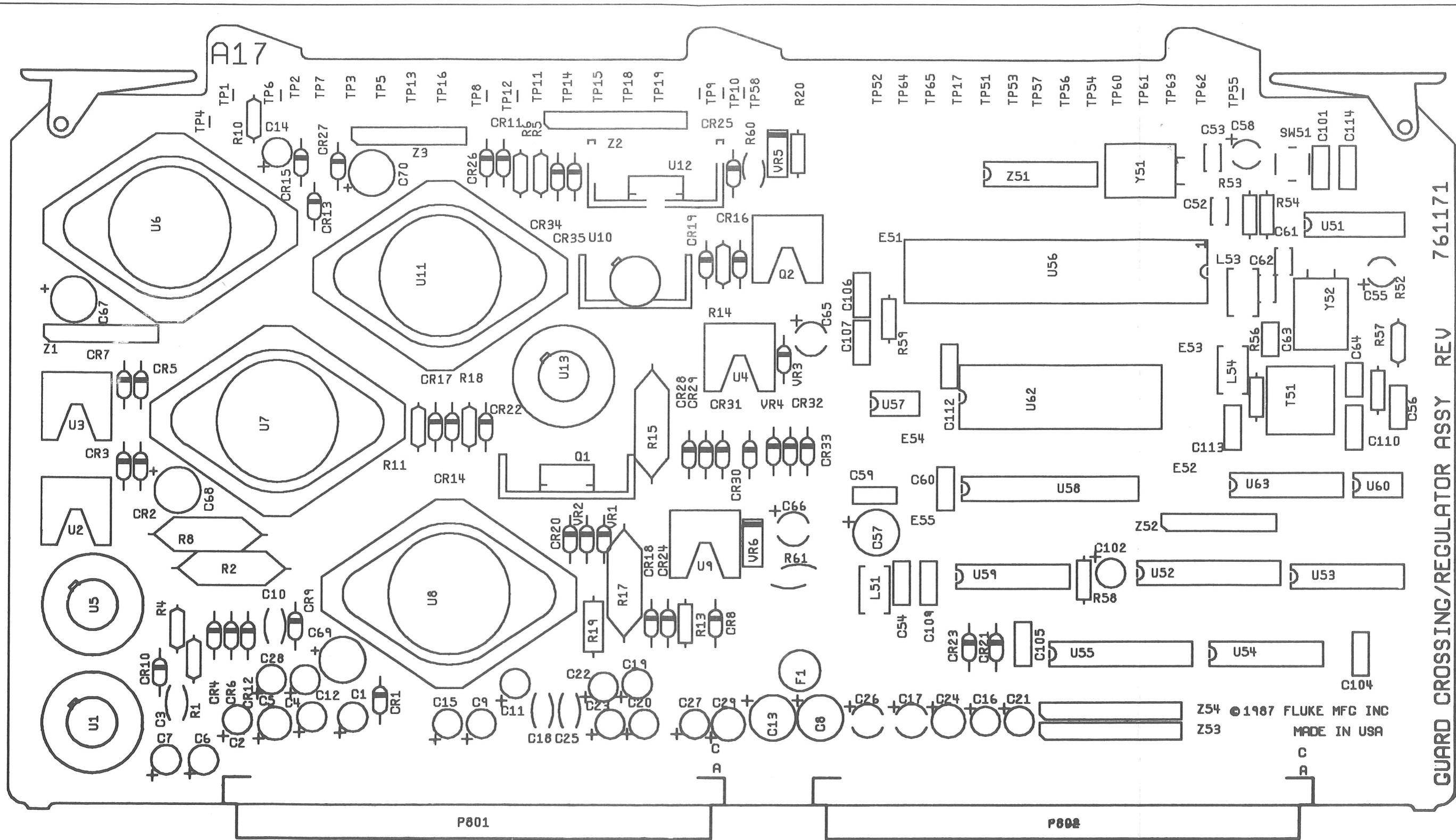
SCHMATIC DIAGRAMS



NOTE:
 1. ALL RESISTORS ARE 1/4W 5% CF UNLESS NOTED.
 2. ALL METAL FILM (MF) RESISTORS ARE 1% 1/8W.

5700A-1071

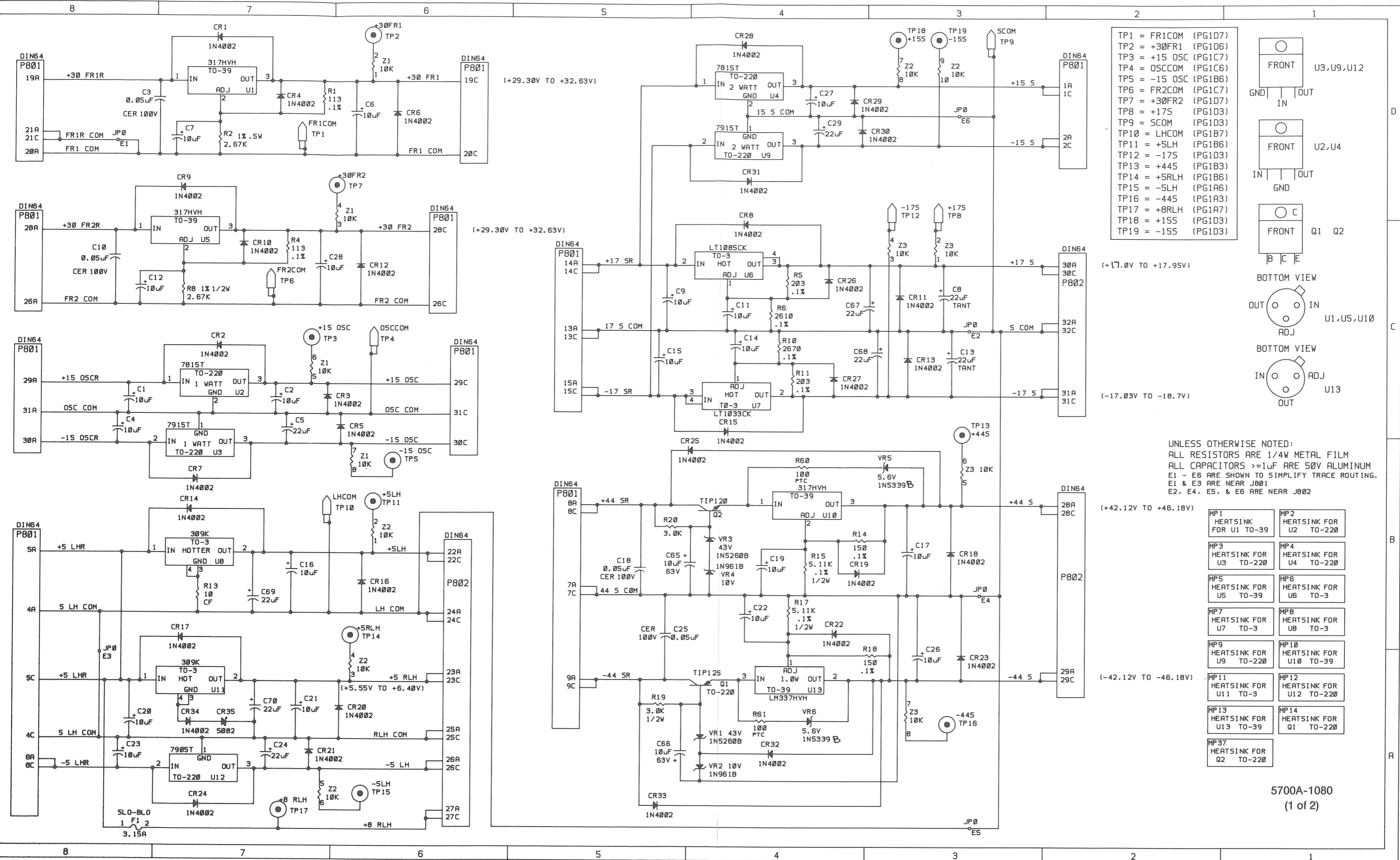
Figure 7-20. A16A1 Power Amplifier Digital Control SIP PCA (cont)



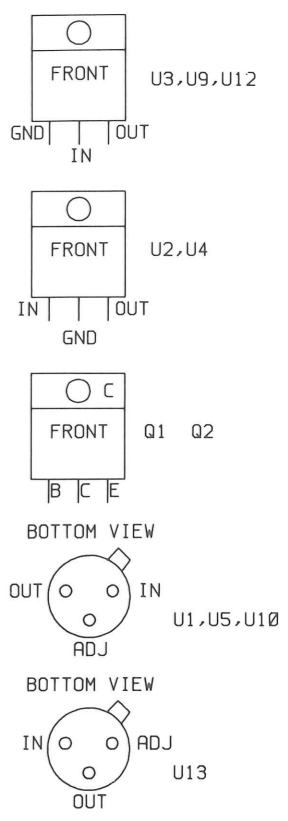
5700A-7680

Figure 7-21. A17 Regulator/Guard Crossing PCA

SCHEMATIC DIAGRAMS



- TP1 = FR1COM (PG1D7)
- TP2 = +30FR1 (PG1D6)
- TP3 = +15 OSC (PG1C7)
- TP4 = OSCCOM (PG1C6)
- TP5 = -15 OSC (PG1B6)
- TP6 = FR2COM (PG1C7)
- TP7 = +30FR2 (PG1D7)
- TP8 = +17S (PG1D3)
- TP9 = SCOM (PG1D3)
- TP10 = LHCOM (PG1B7)
- TP11 = +5LH (PG1B6)
- TP12 = -17S (PG1D3)
- TP13 = +44S (PG1B3)
- TP14 = +5RLH (PG1B6)
- TP15 = -5LH (PG1A6)
- TP16 = -44S (PG1A3)
- TP17 = +8RLH (PG1A7)
- TP18 = +15S (PG1D3)
- TP19 = -15S (PG1D3)

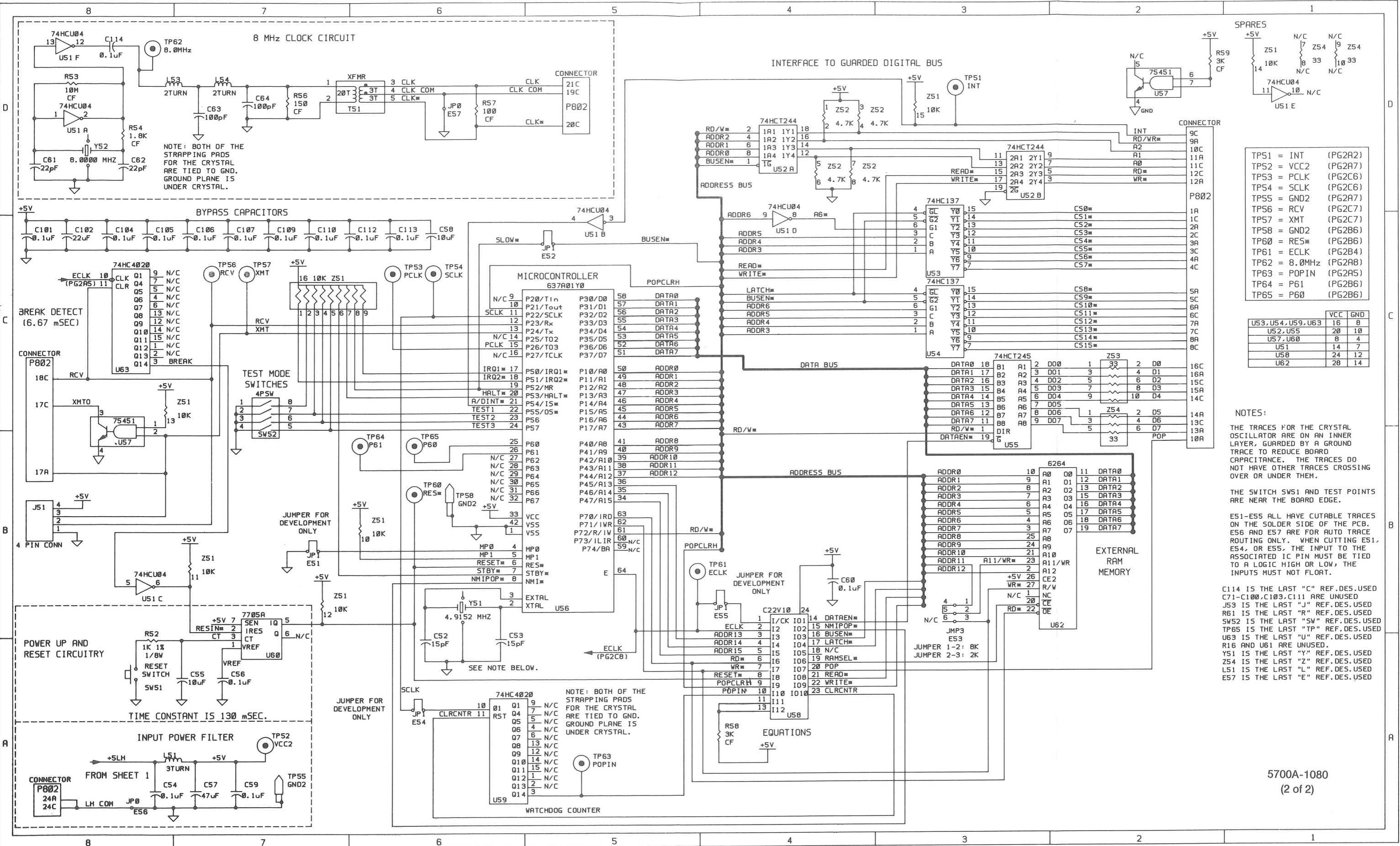


UNLESS OTHERWISE NOTED:
ALL RESISTORS ARE 1/4W METAL FILM
ALL CAPACITORS >=1uF ARE 50V ALUMINUM
E1 - E6 ARE SHOWN TO SIMPLIFY TRACE ROUTING.
E1 & E3 ARE NEAR J801
E2, E4, E5, & E6 ARE NEAR J802

- MP1 HEATSINK FOR U1 TO-39
- MP2 HEATSINK FOR U2 TO-220
- MP3 HEATSINK FOR U3 TO-220
- MP4 HEATSINK FOR U4 TO-220
- MP5 HEATSINK FOR U5 TO-39
- MP6 HEATSINK FOR U6 TO-3
- MP7 HEATSINK FOR U7 TO-3
- MP8 HEATSINK FOR U8 TO-3
- MP9 HEATSINK FOR U9 TO-220
- MP10 HEATSINK FOR U10 TO-39
- MP11 HEATSINK FOR U11 TO-3
- MP12 HEATSINK FOR U12 TO-220
- MP13 HEATSINK FOR U13 TO-39
- MP14 HEATSINK FOR Q1 TO-220
- MP37 HEATSINK FOR Q2 TO-220

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Figure 7-21. A17 Regulator/Guard Crossing PCA (cont)



- TP51 = INT (PG2A7)
 TP52 = VCC2 (PG2A7)
 TP53 = PCLK (PG2C6)
 TP54 = SCLK (PG2C6)
 TP55 = GND2 (PG2A7)
 TP56 = RCV (PG2C7)
 TP57 = XMT (PG2C7)
 TP58 = GND2 (PG2B6)
 TP60 = RES# (PG2B6)
 TP61 = ECLK (PG2B4)
 TP62 = 8.0MHz (PG2A8)
 TP63 = POPIN (PG2A5)
 TP64 = P61 (PG2B6)
 TP65 = P60 (PG2B6)

	VCC	GND
U53, U54, U59, U63	16	8
U52, U55	20	10
U57, U60	8	4
U51	14	7
U58	24	12
U62	28	14

NOTES:
 THE TRACES FOR THE CRYSTAL OSCILLATOR ARE ON AN INNER LAYER, GUARDED BY A GROUND TRACE TO REDUCE BOARD CAPACITANCE. THE TRACES DO NOT HAVE OTHER TRACES CROSSING OVER OR UNDER THEM.
 THE SWITCH SW51 AND TEST POINTS ARE NEAR THE BOARD EDGE.
 ES1-ESS ALL HAVE CUTTABLE TRACES ON THE SOLDER SIDE OF THE PCB. ES6 AND ES7 ARE FOR AUTO TRACE ROUTING ONLY. WHEN CUTTING ES1, ES4, OR ES5, THE INPUT TO THE ASSOCIATED IC PIN MUST BE TIED TO A LOGIC HIGH OR LOW, THE INPUTS MUST NOT FLOAT.
 C114 IS THE LAST "C" REF. DES. USED
 C71-C100, C103, C111 ARE UNUSED
 J53 IS THE LAST "J" REF. DES. USED
 R61 IS THE LAST "R" REF. DES. USED
 TP65 IS THE LAST "TP" REF. DES. USED
 SW52 IS THE LAST "SW" REF. DES. USED
 U63 IS THE LAST "U" REF. DES. USED
 R16 AND U61 ARE UNUSED.
 Y51 IS THE LAST "Y" REF. DES. USED
 Z54 IS THE LAST "Z" REF. DES. USED
 L51 IS THE LAST "L" REF. DES. USED
 E57 IS THE LAST "E" REF. DES. USED

Figure 7-21. A17 Regulator/Guard Crossing PCA (cont)

SCHEMATIC DIAGRAMS

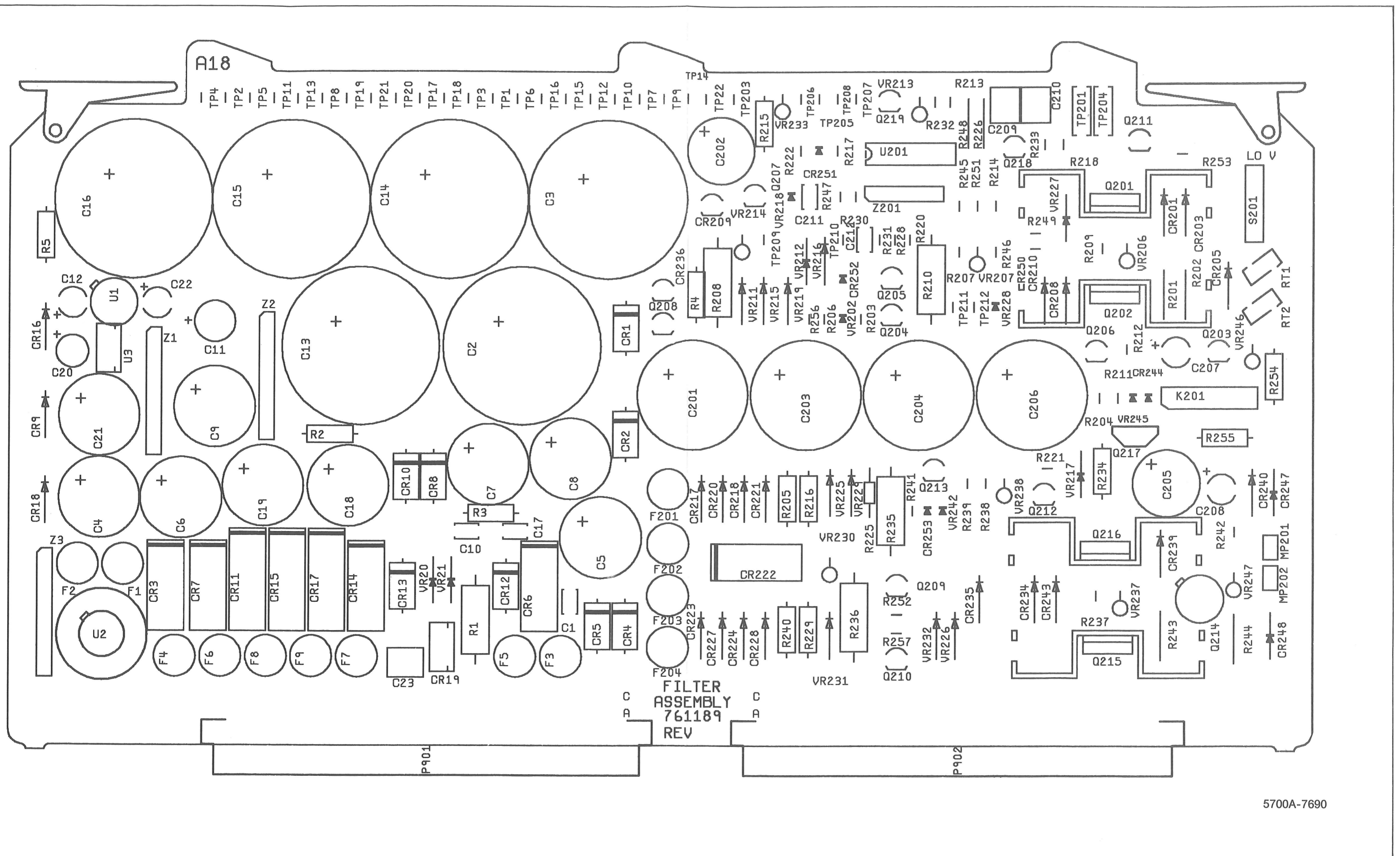
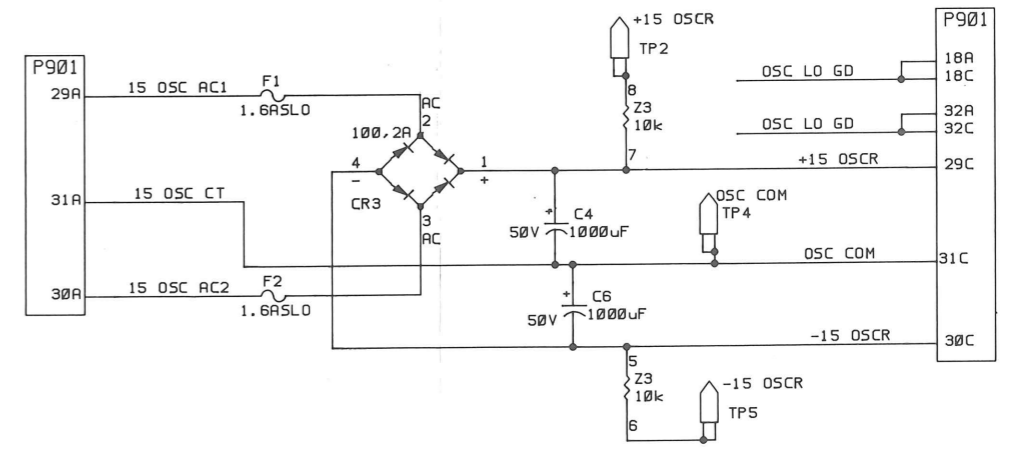
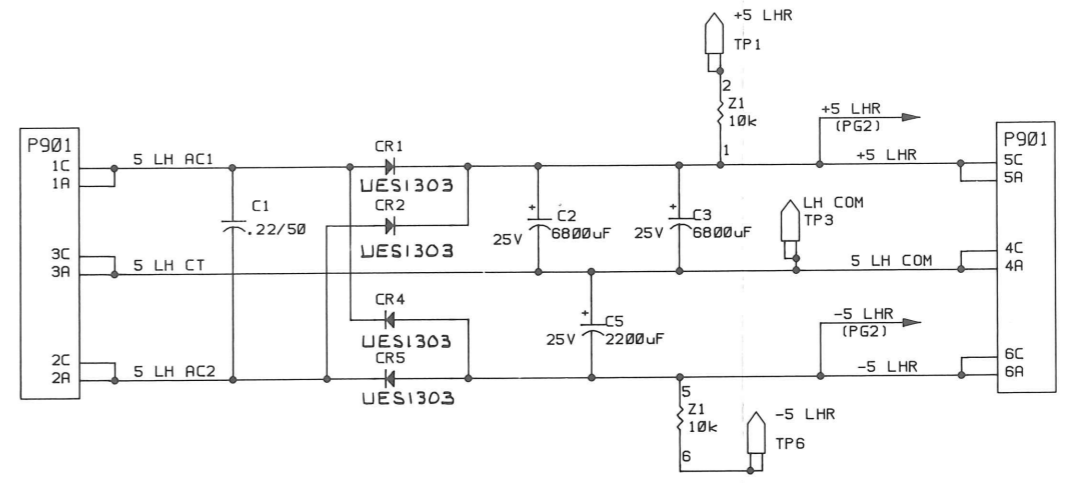
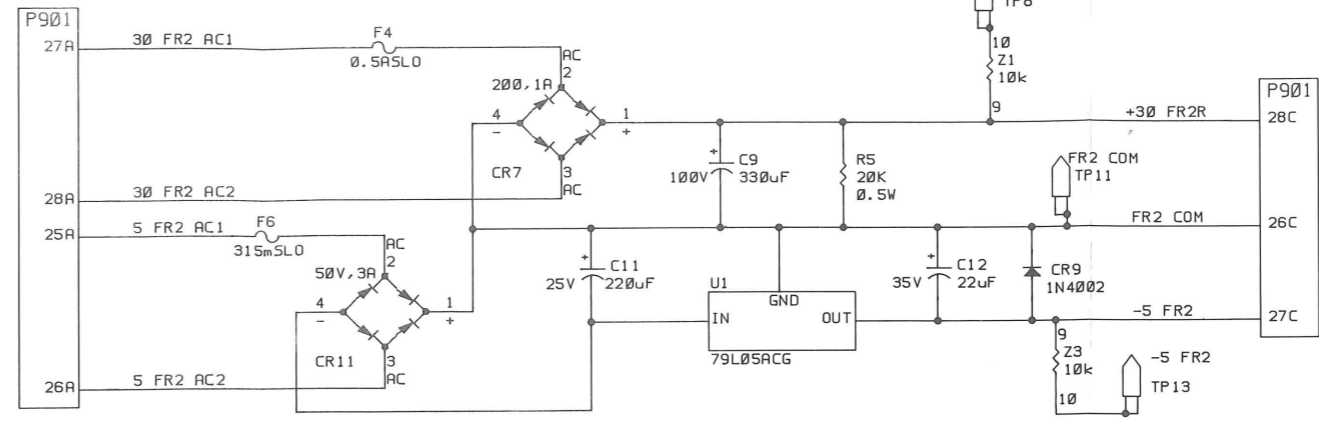
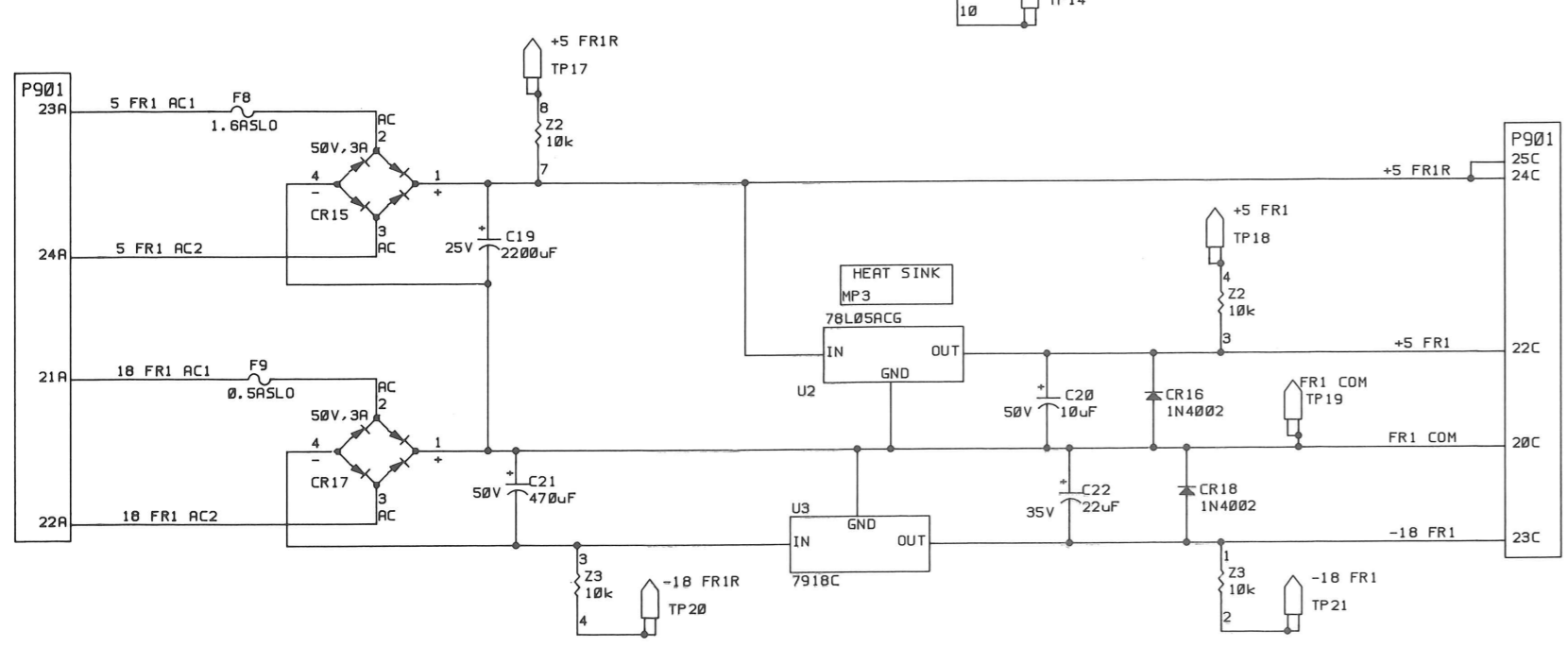
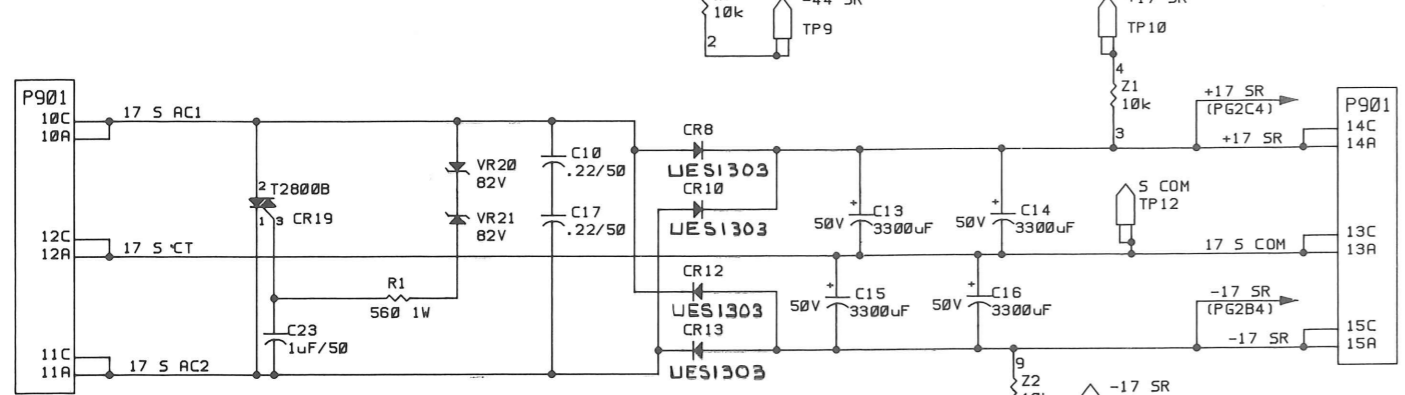
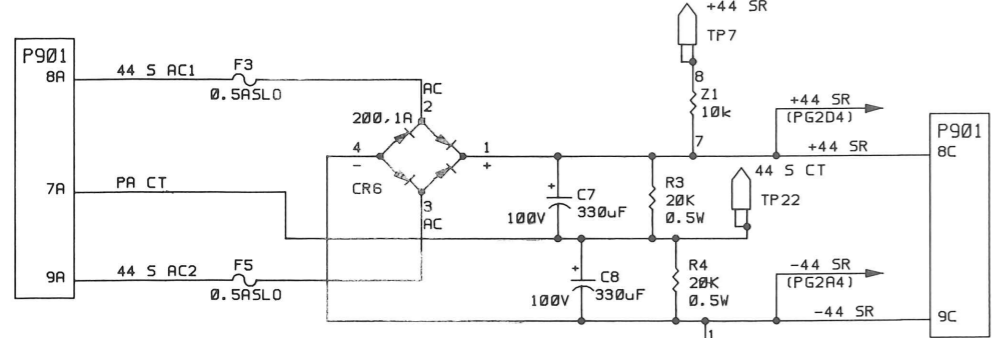
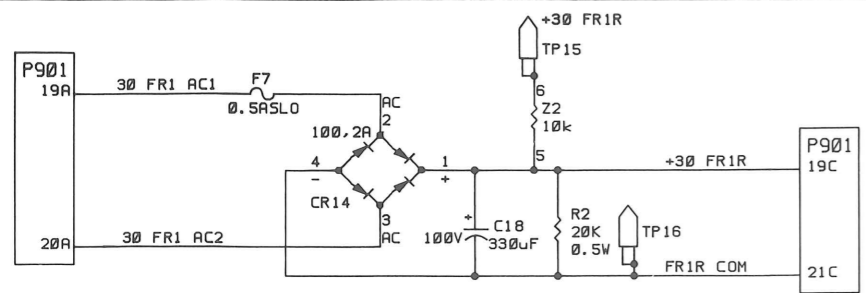
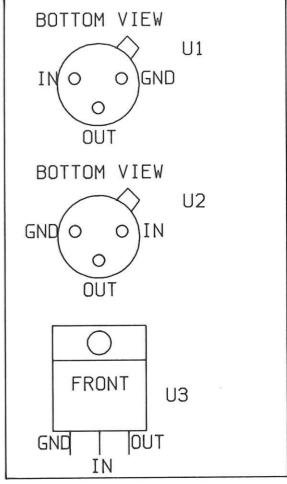


Figure 7-22. A18 Filter/PA Supply PCA



- TP1 = +5LHR
- TP2 = +15 OSCR
- TP3 = LH COM
- TP4 = OSC COM
- TP5 = -15 OSCR
- TP6 = -5LHR
- TP7 = +44SR
- TP8 = +30FR2
- TP9 = -44SR
- TP10 = +17SR
- TP11 = FR2 COM
- TP12 = 17S COM
- TP13 = -5 FR2
- TP14 = -17SR
- TP15 = +30FR1R
- TP16 = FR1R COM
- TP17 = +5FR1R
- TP18 = +5FR1
- TP19 = FR1 COM
- TP20 = -18 FR1R
- TP21 = -18FR1
- TP22 = 44 S CT

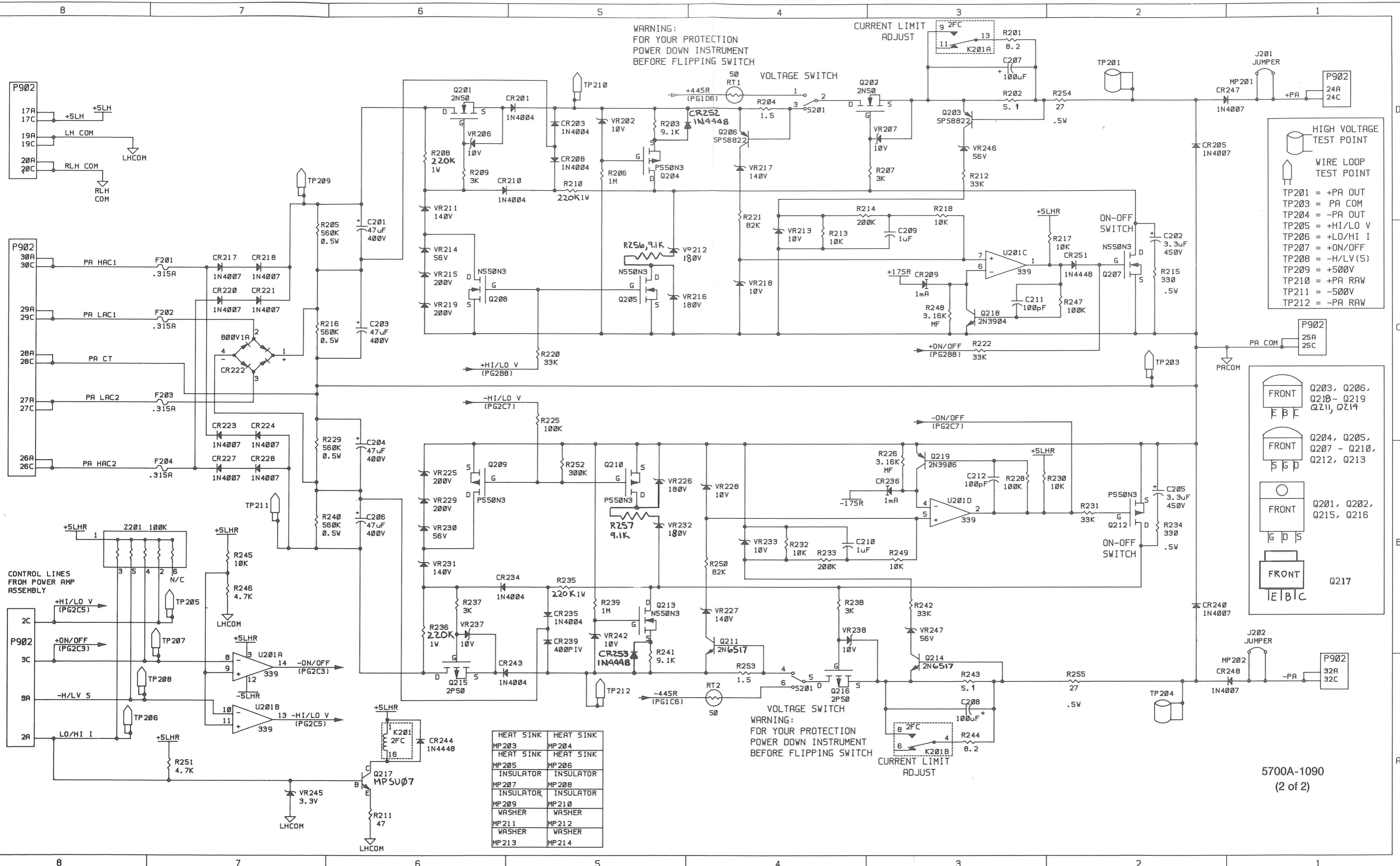


UNLESS OTHERWISE NOTED:
 ALL CAPACITORS >1uF ARE ALUMINUM ELECTROLYTIC
 ALL RESISTORS ARE 1/4W CARBON FILM.
 ALL RESISTORS > 1/4W ARE CARBON COMP.
 ALL METAL FILM (MF) RESISTORS ARE 1% 1/8W.

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Figure 7-22. A18 Filter/PA Supply PCA (cont)

SCHEMATIC DIAGRAMS



HIGH VOLTAGE TEST POINT

WIRE LOOP TEST POINT

TP201 = +PA OUT
 TP203 = PA COM
 TP204 = -PA OUT
 TP205 = +HI/LO V
 TP206 = +LO/HI I
 TP207 = +ON/OFF
 TP208 = -H/LV(S)
 TP209 = +500V
 TP210 = +PA RAW
 TP211 = -500V
 TP212 = -PA RAW

FRONT Q203, Q206, Q210 - Q219, Q214

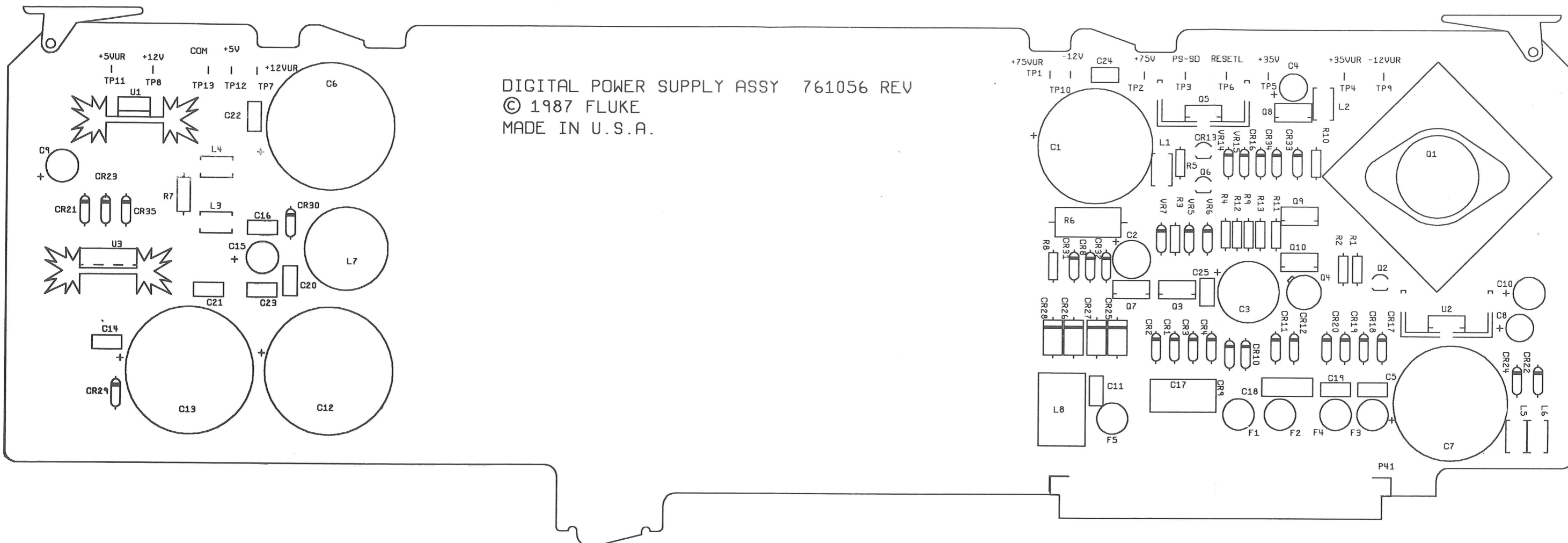
FRONT Q204, Q205, Q207 - Q210, Q212, Q213

FRONT Q201, Q202, Q215, Q216

FRONT Q217

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Figure 7-22. A18 Filter/PA Supply PCA (cont)



5700A-7604

Figure 7-23. A19 Digital Power Supply PCA

SCHMATIC DIAGRAMS

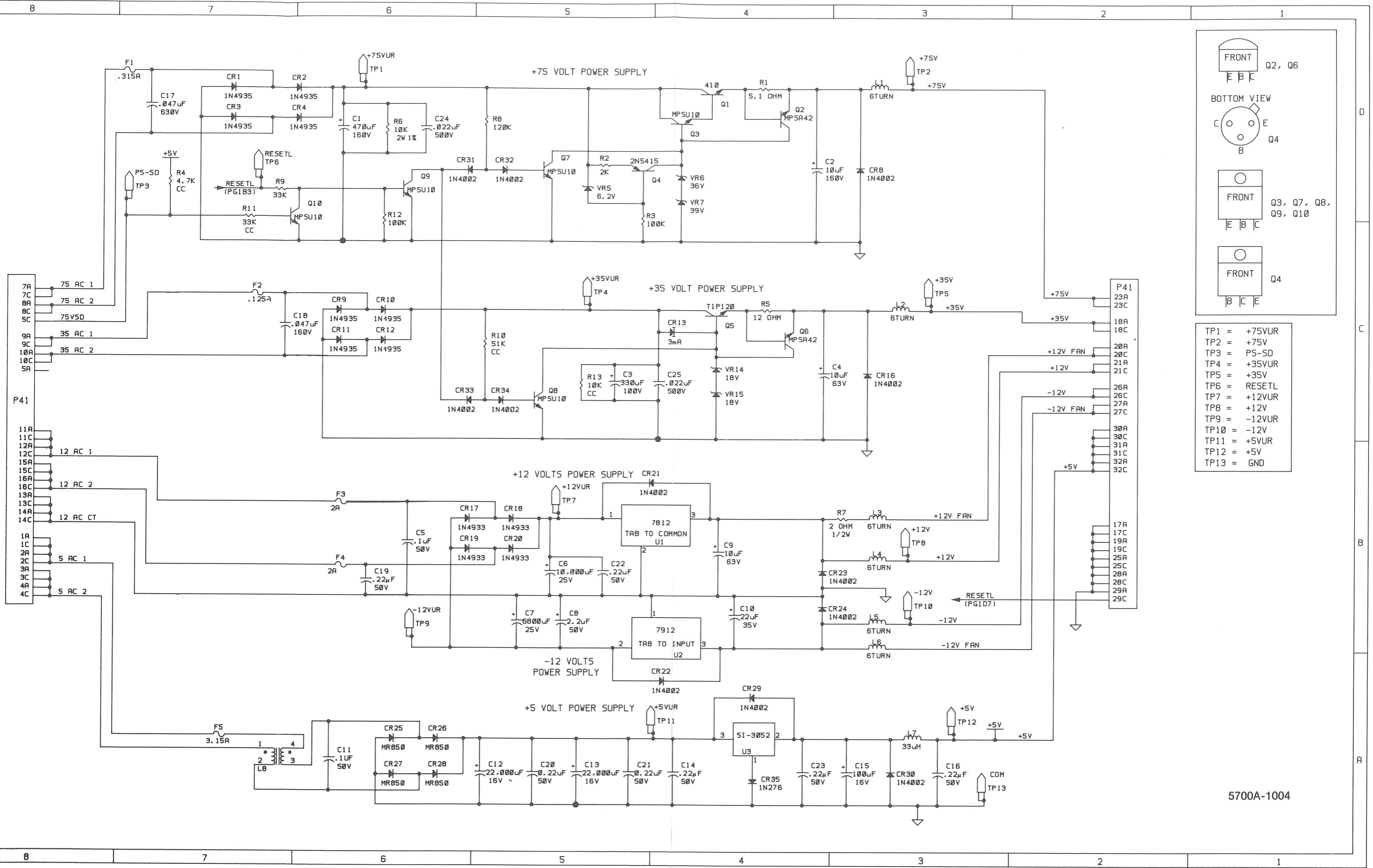
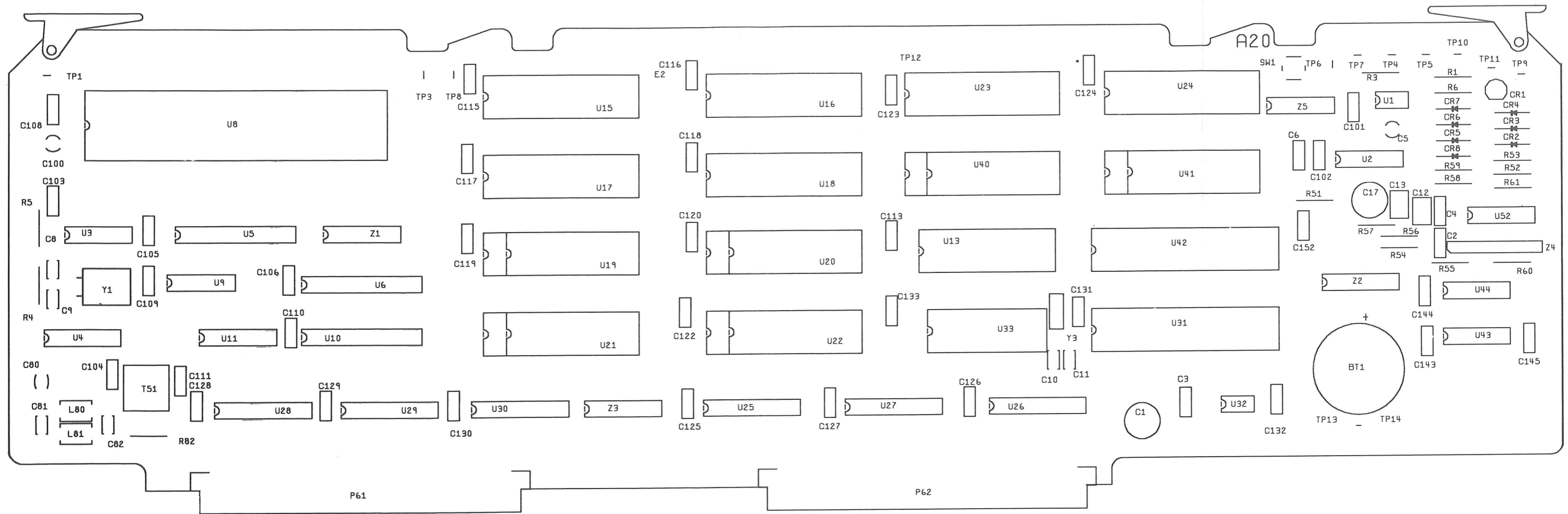


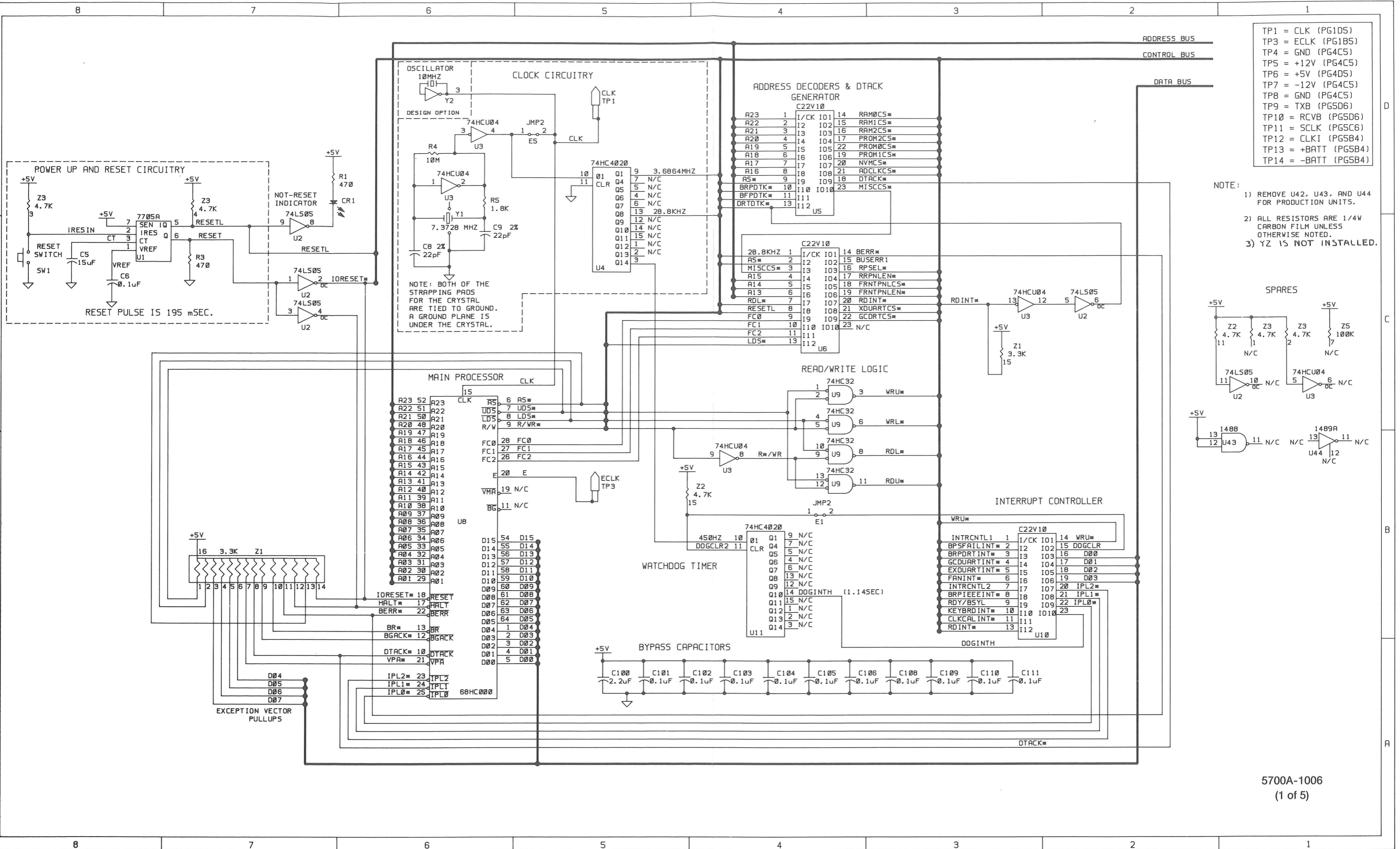
Figure 7-23. A19 Digital Power Supply PCA (cont)



5700A-7606

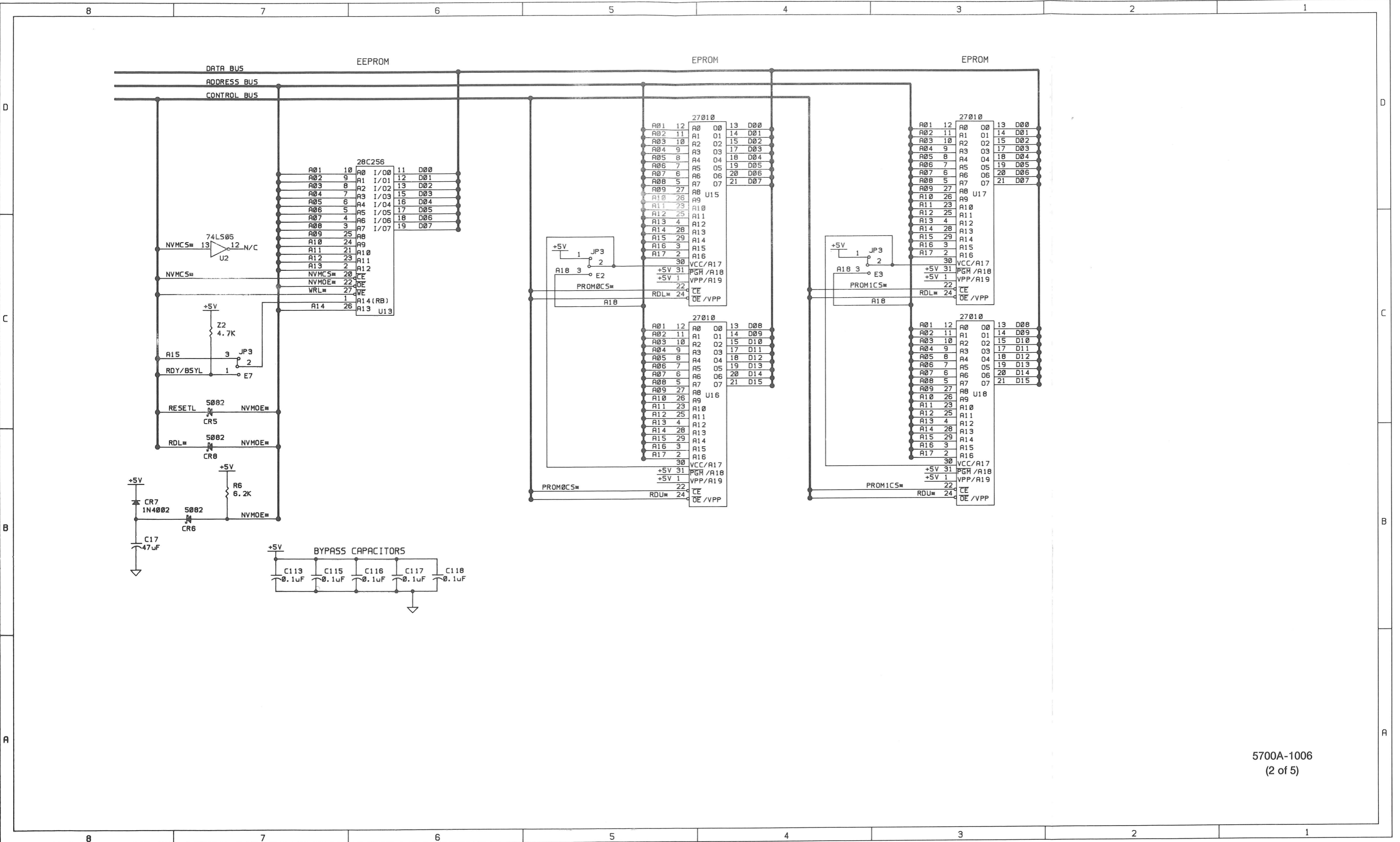
Figure 7-24. A20 CPU PCA

SCHMATIC DIAGRAMS



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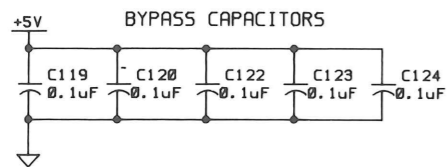
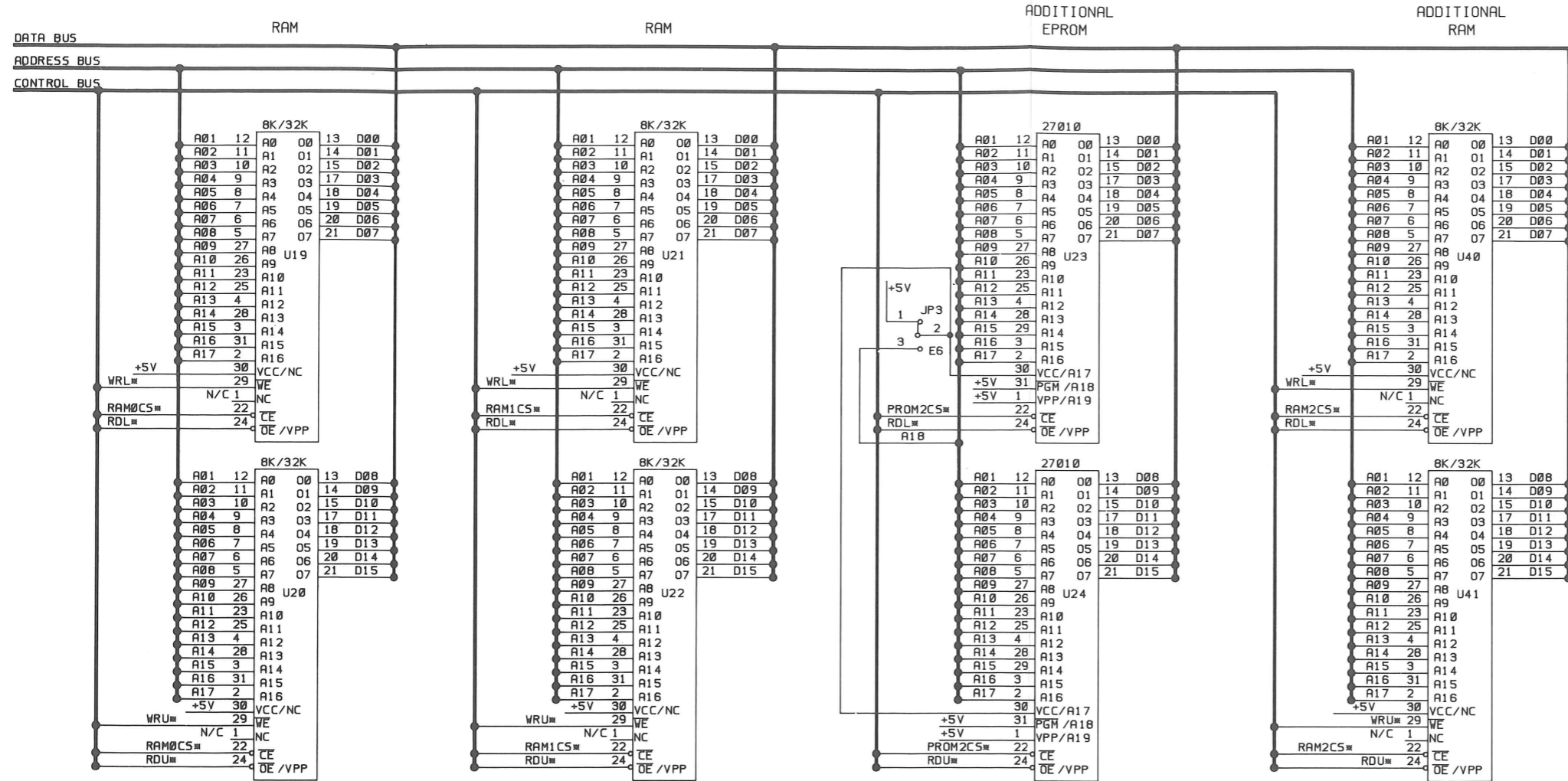
Figure 7-24. A20 CPU PCA (cont)



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Figure 7-24. A20 CPU PCA (cont)

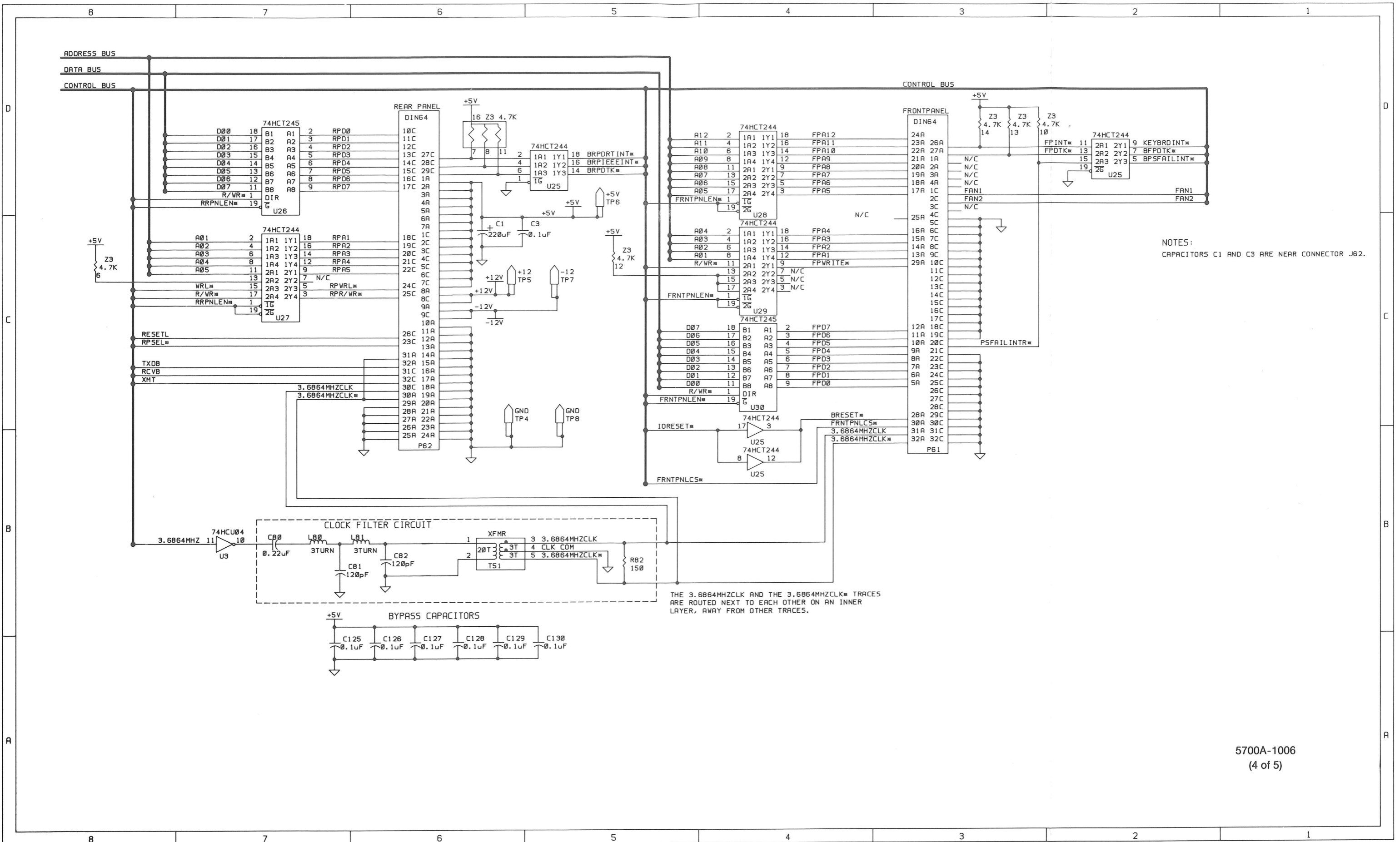
SCHMATIC DIAGRAMS



NOTE:
U23, U29, U40, AND U41 ARE NOT INSTALLED

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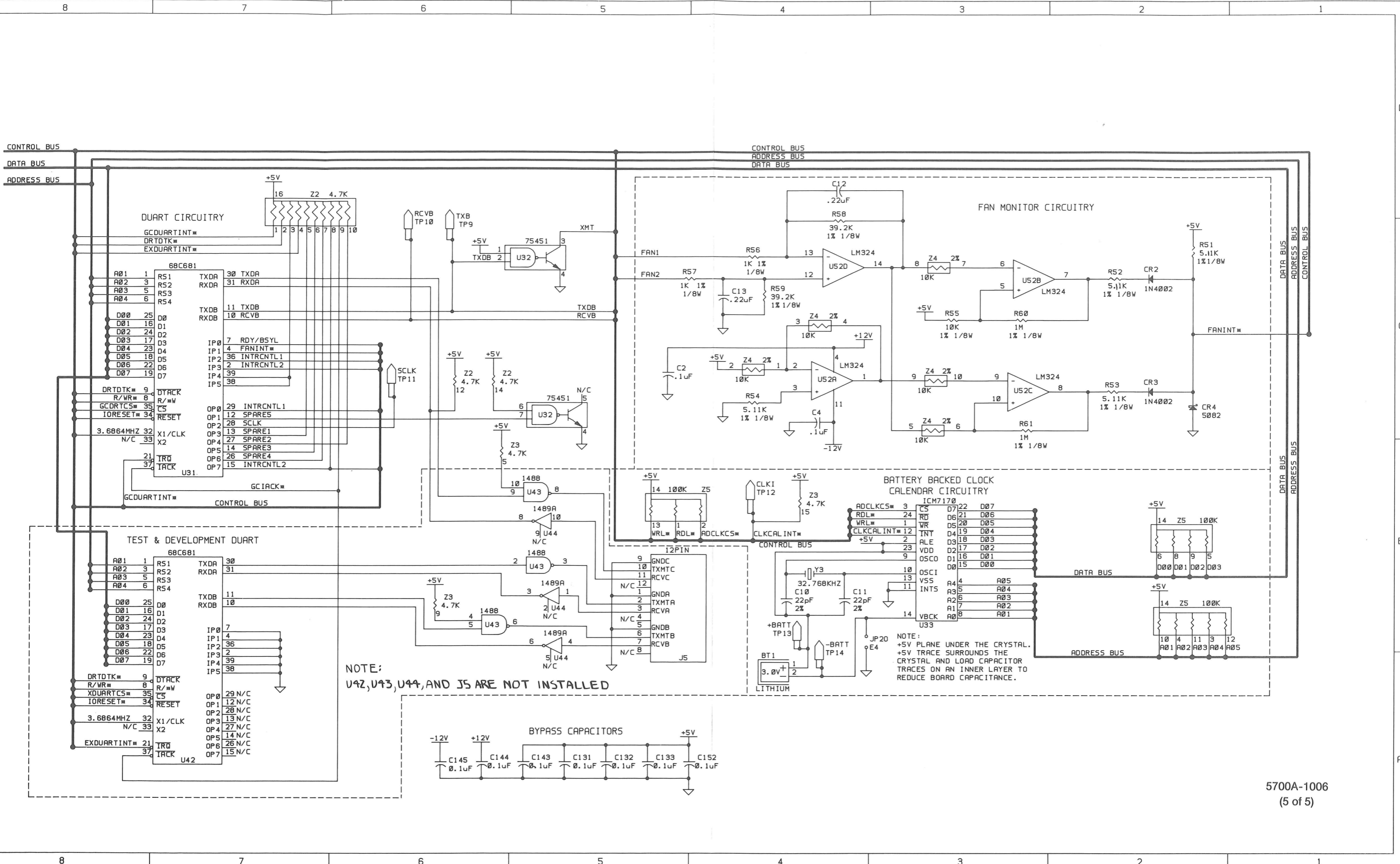
Figure 7-24. A20 CPU PCA (cont)



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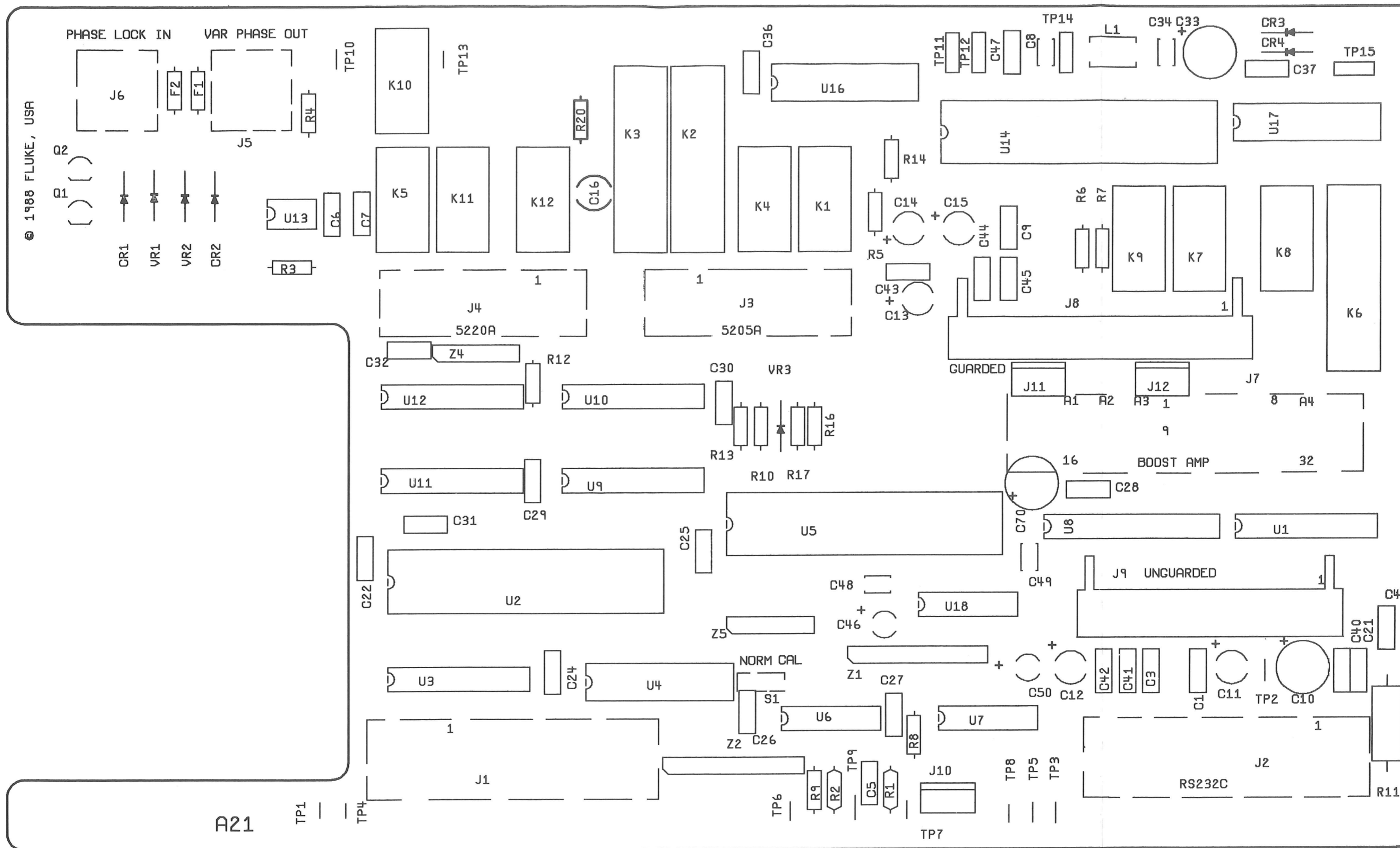
Figure 7-24. A20 CPU PCA (cont)

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Figure 7-24. A20 CPU PCA (cont)



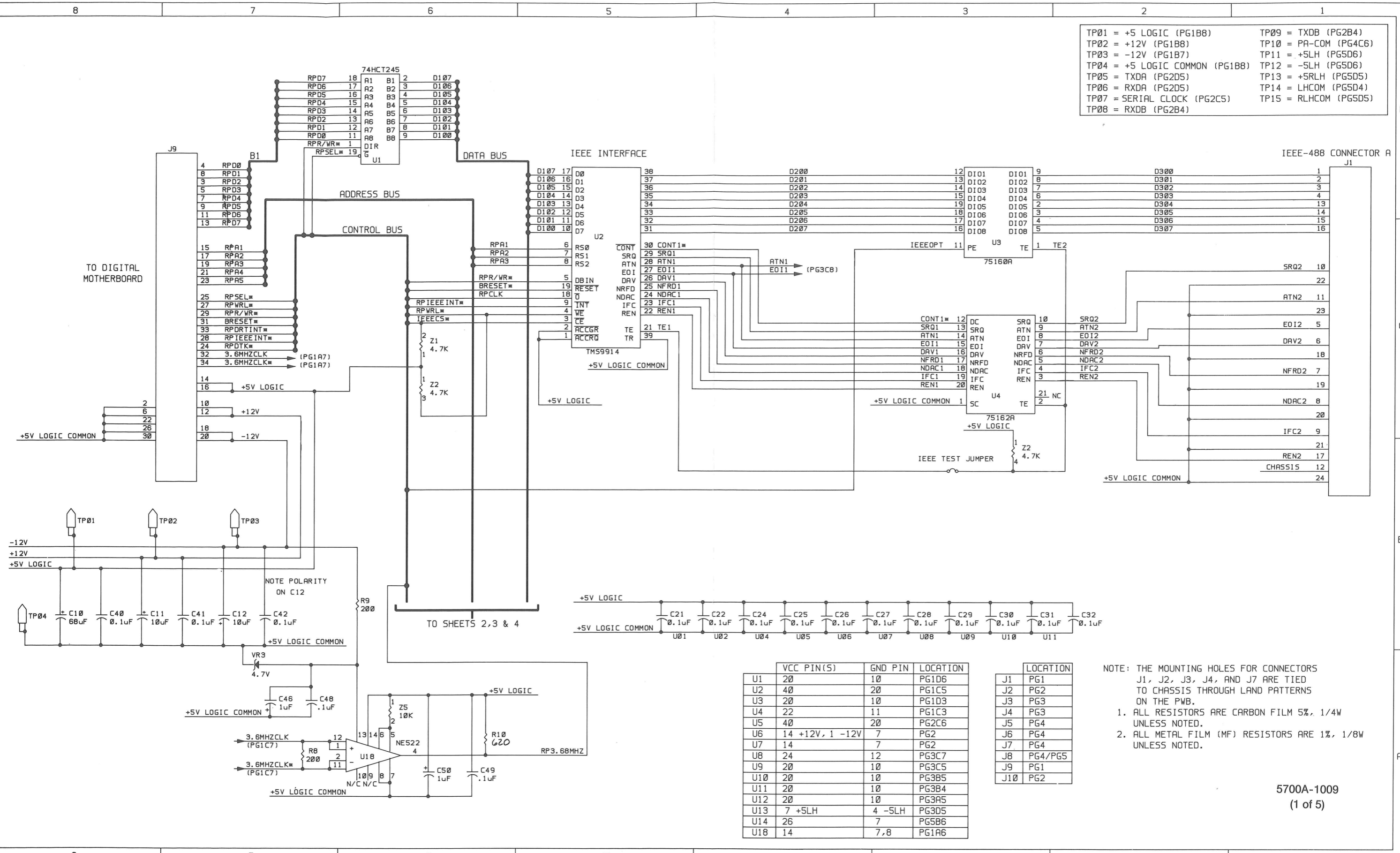
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5700A-7609

Figure 7-25. A21 Rear Panel PCA

SCHMATIC DIAGRAMS

TP01 = +5 LOGIC (PG1B8)	TP09 = TXDB (PG2B4)
TP02 = +12V (PG1B8)	TP10 = PA-COM (PG4C6)
TP03 = -12V (PG1B7)	TP11 = +SLH (PG5D6)
TP04 = +5 LOGIC COMMON (PG1B8)	TP12 = -SLH (PG5D6)
TP05 = TXDA (PG2D5)	TP13 = +5RLH (PG5D5)
TP06 = RXDA (PG2D5)	TP14 = LHCOM (PG5D4)
TP07 = SERIAL CLOCK (PG2C5)	TP15 = RLHCOM (PG5D5)
TP08 = RXDB (PG2B4)	



	VCC PIN(S)	GND PIN	LOCATION
U1	20	10	PG1D6
U2	40	20	PG1C5
U3	20	10	PG1D3
U4	22	11	PG1C3
U5	40	20	PG2C6
U6	14	+12V, 1 -12V	7 PG2
U7	14	7	PG2
U8	24	12	PG3C7
U9	20	10	PG3C5
U10	20	10	PG3B5
U11	20	10	PG3B4
U12	20	10	PG3A5
U13	7	+5LH	4 -5LH PG3D5
U14	26	7	PG5B6
U18	14	7,8	PG1A6

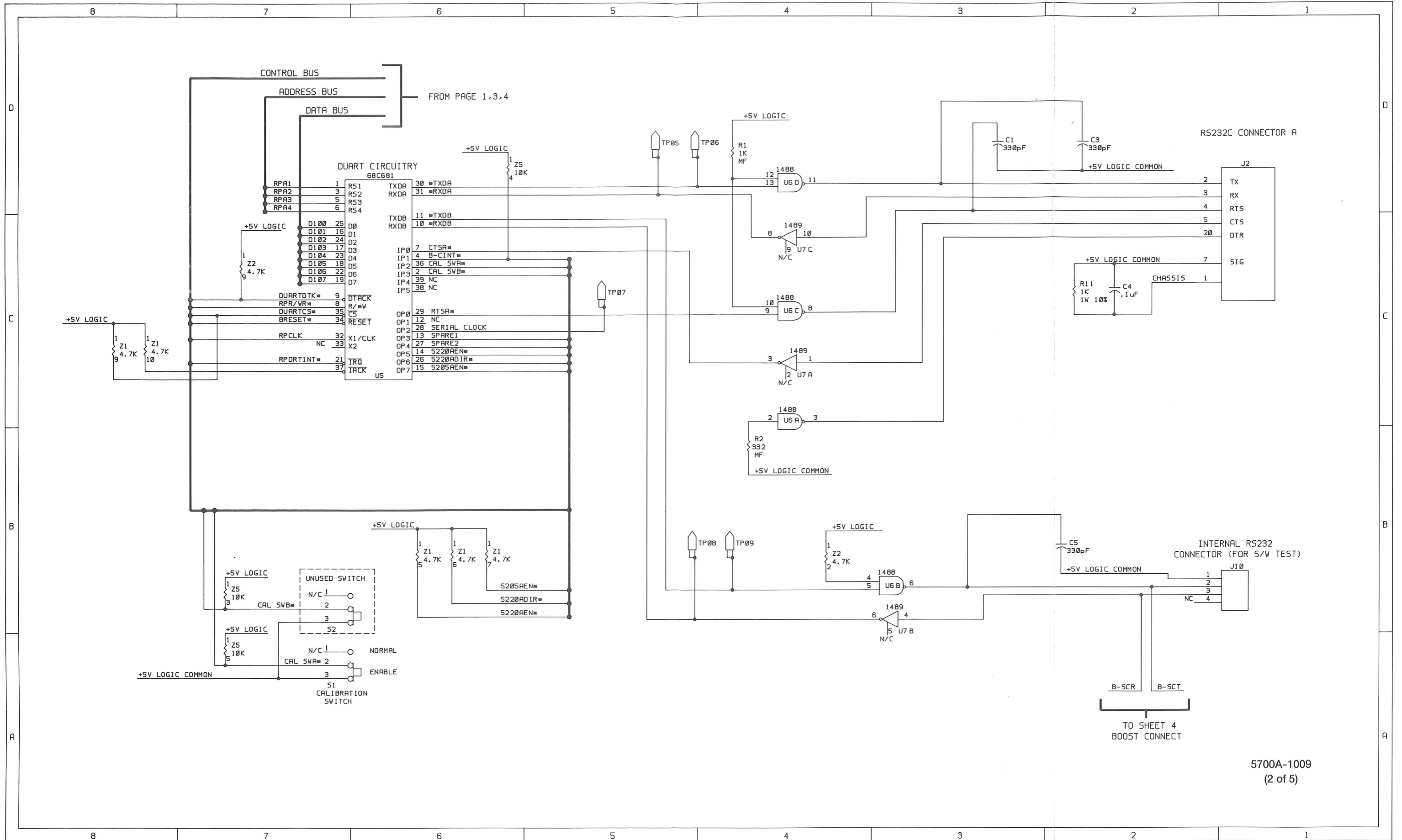
	LOCATION
J1	PG1
J2	PG2
J3	PG3
J4	PG3
J5	PG4
J6	PG4
J7	PG4
J8	PG4/PG5
J9	PG1
J10	PG2

NOTE: THE MOUNTING HOLES FOR CONNECTORS J1, J2, J3, J4, AND J7 ARE TIED TO CHASSIS THROUGH LAND PATTERNS ON THE PWB.

1. ALL RESISTORS ARE CARBON FILM 5%, 1/4W UNLESS NOTED.
2. ALL METAL FILM (MF) RESISTORS ARE 1%, 1/8W UNLESS NOTED.

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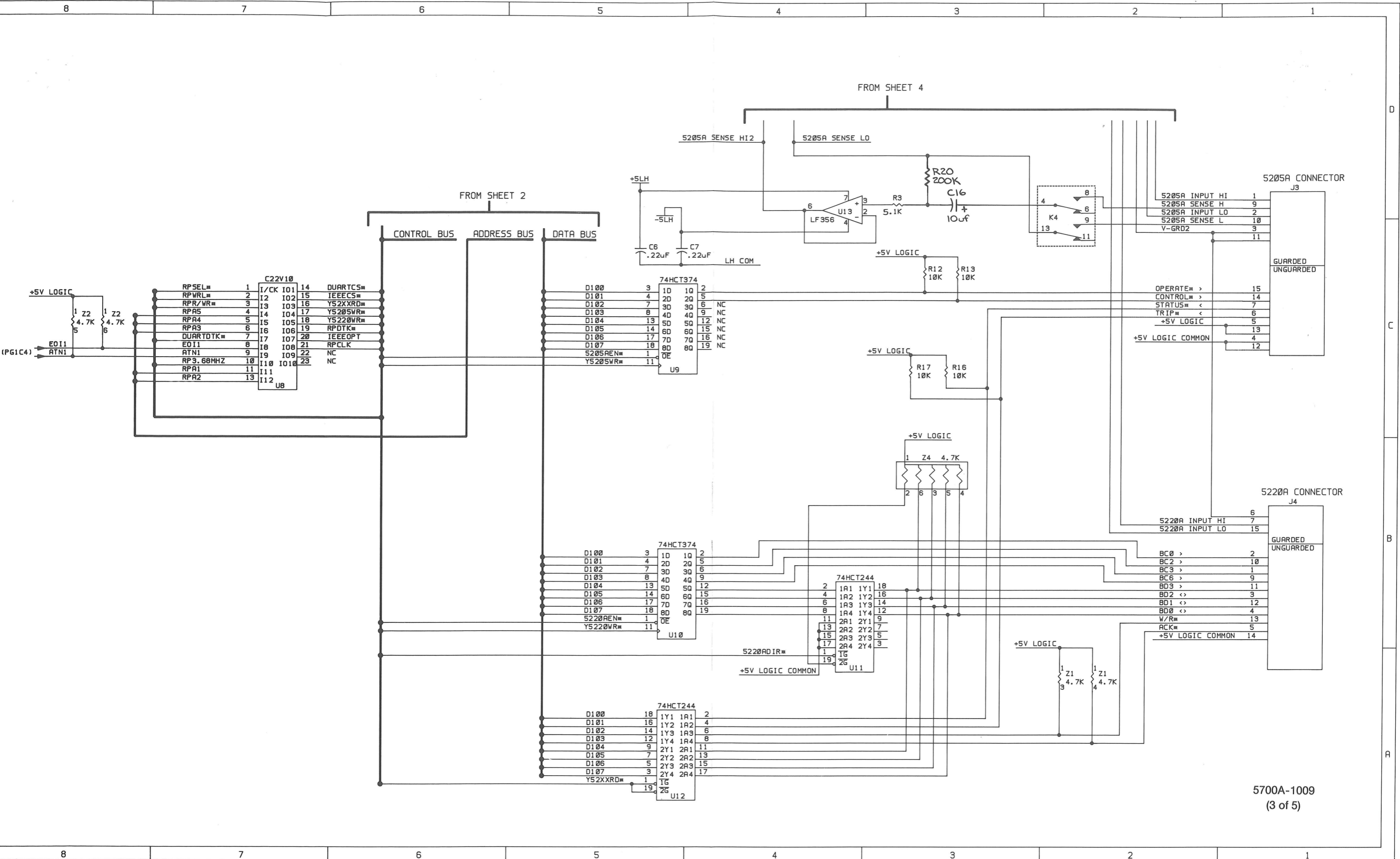
Figure 7-25. A21 Rear Panel PCA (cont)



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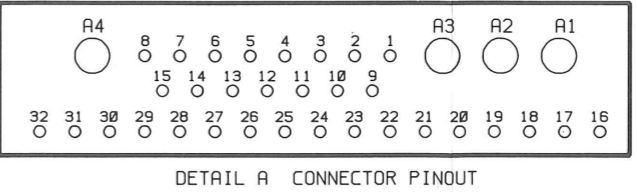
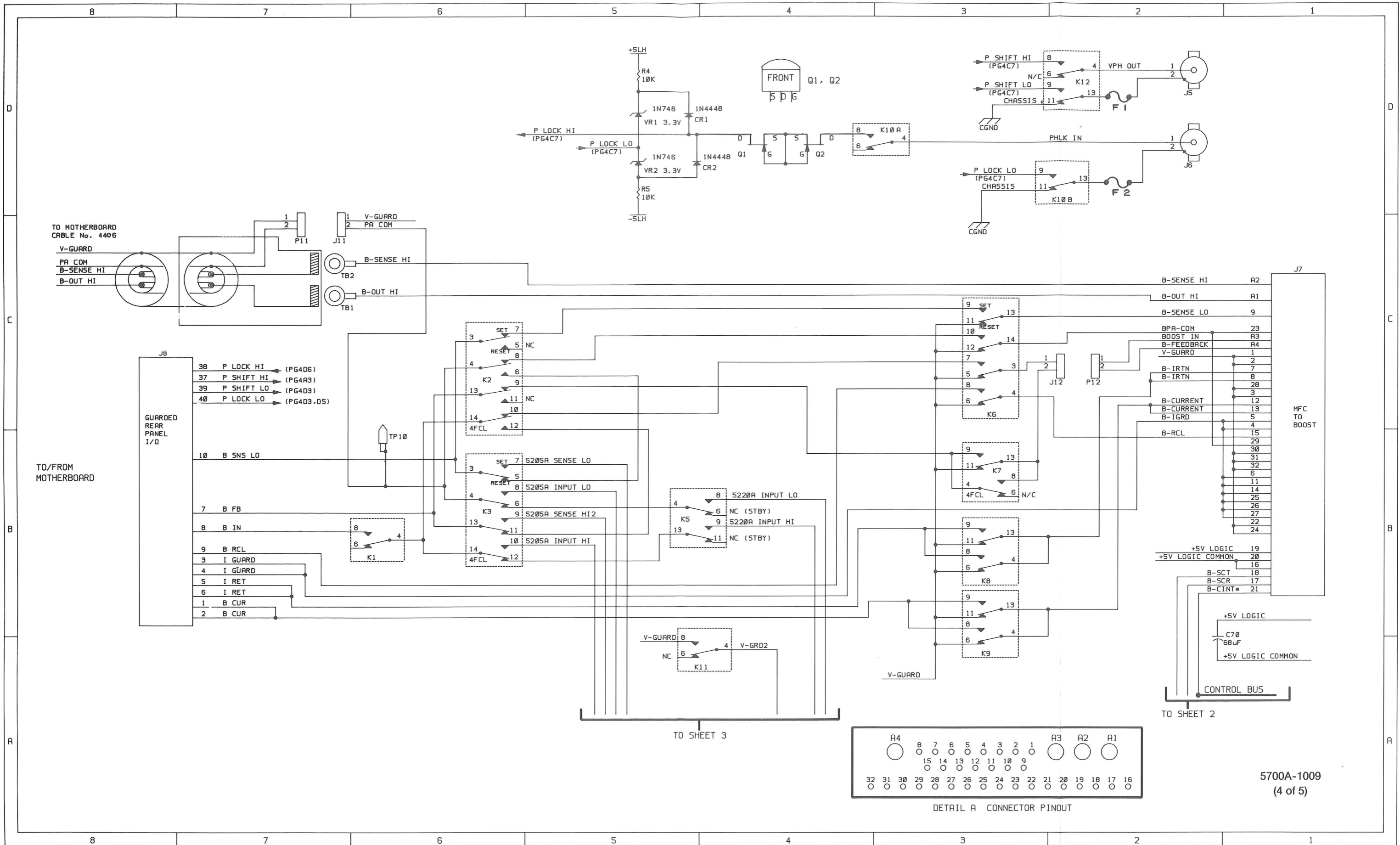
Figure 7-25. A21 Rear Panel PCA (cont)

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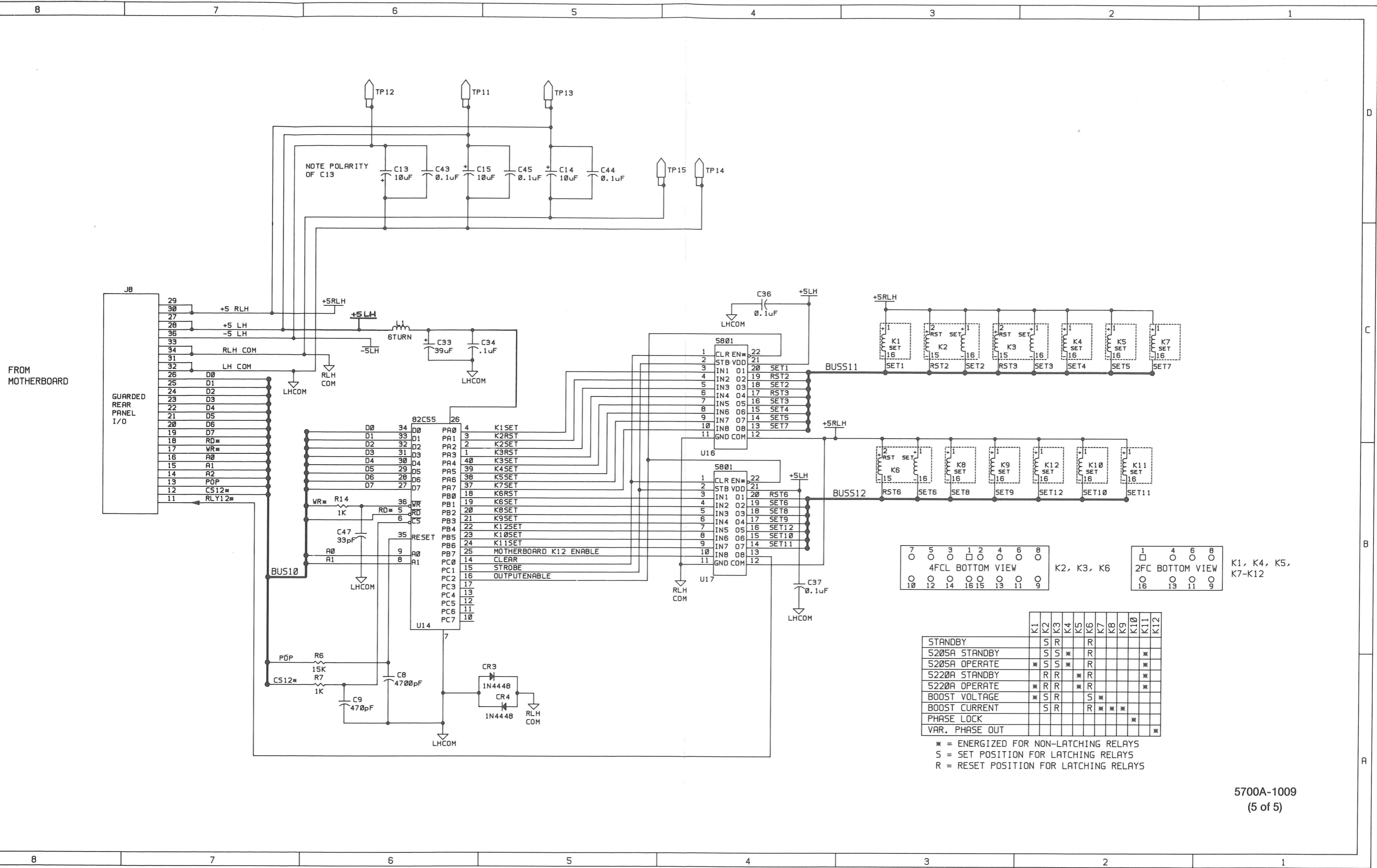
Figure 7-25. A21 Rear Panel PCA (cont)



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Figure 7-25. A21 Rear Panel PCA (cont)

SCHEMATIC DIAGRAMS



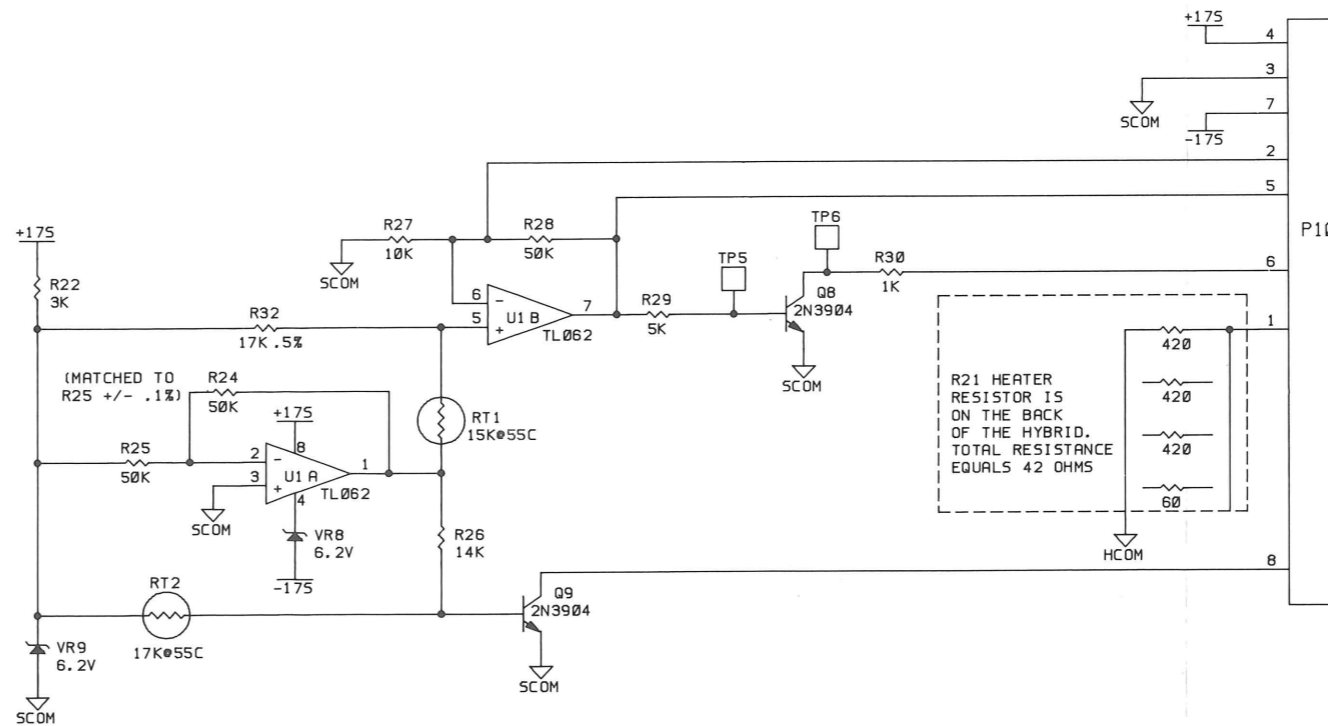
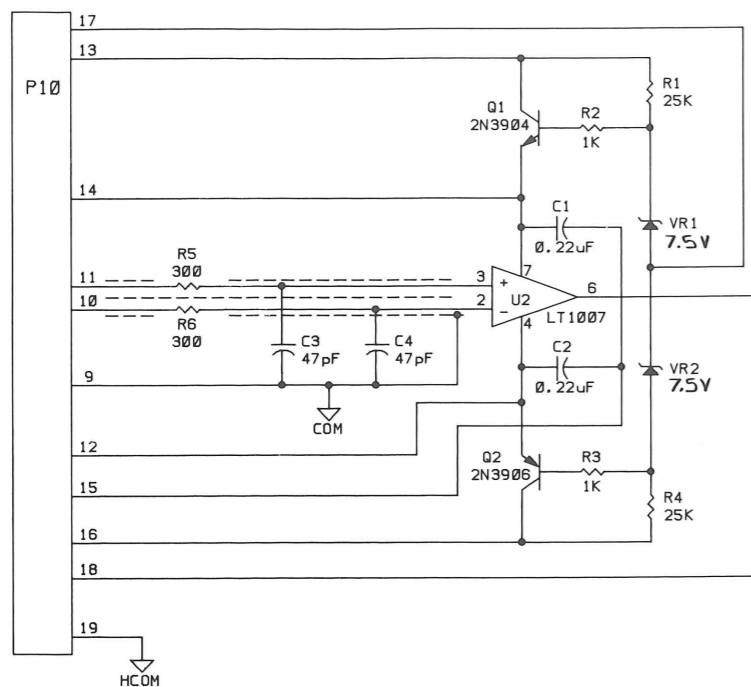
	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11	K12
STANDBY		S	R			R						
5205A STANDBY		S	S	*		R					*	
5205A OPERATE		*	S	S	*	R					*	
5220A STANDBY			R	R	*	R					*	
5220A OPERATE		*	R	R	*	R					*	
BOOST VOLTAGE		*	S	R		S	*				*	
BOOST CURRENT			S	R		R	*	*	*	*	*	
PHASE LOCK										*		
VAR. PHASE OUT												*

* = ENERGIZED FOR NON-LATCHING RELAYS
 S = SET POSITION FOR LATCHING RELAYS
 R = RESET POSITION FOR LATCHING RELAYS

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Figure 7-25. A21 Rear Panel PCA (cont)

- NOTES: (UNLESS OTHERWISE SPECIFIED)
1. ALL RESISTOR VALUES ARE IN OHMS, 5%.
 2. U2 IS A LT1007C (8 PIN PLASTIC DIP PACKAGE) TO BE MOUNTED FLUSH TO THE SUBSTRATE.
 3. SUBSTRATE THICKNESS = 25MIL.
 4. USE LA155 LEADS (S13622).
 5. USE LOW THERMAL MATERIAL ON LEADS (P10 - PINS 10 & 11).



HYBRID NAME	USED ON ASSEMBLY	REF DES	SCHEMATIC
2V DC HYBRID	Switch Matrix (A8)	HR1	1H03
CURRENT HYBRID	Current/Hi-Res Oscillator (A7)	HR2	1H04
REFERENCE HYBRID	DAC (A11)	HR5	1H42
DC AMP HYBRID	DAC (A11)	HR6	1H06
DC AMP HYBRID	High Voltage/High Current (A15)	HR7	1H06
DC AMP HYBRID	Power Amplifier (A16)	HR8	1H06
RES NET HYBRID	Oscillator Output (A13)	U5, U7, U11	1H54

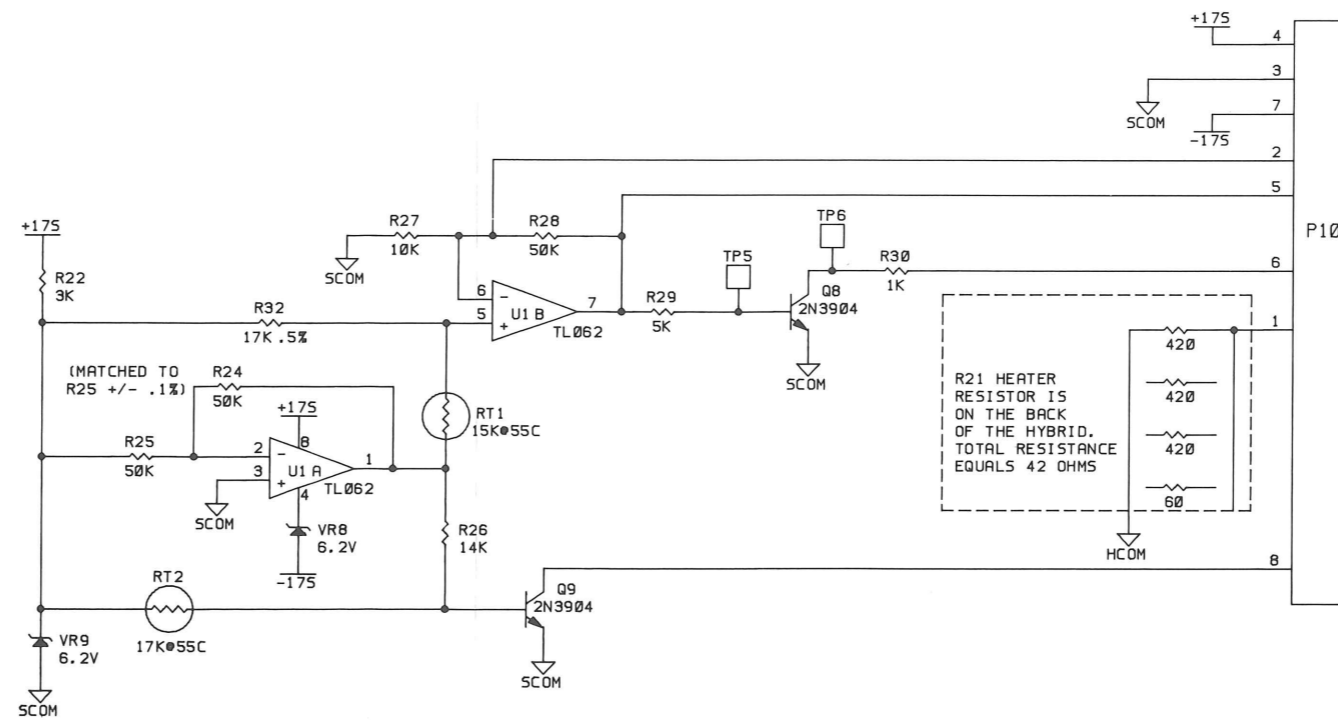
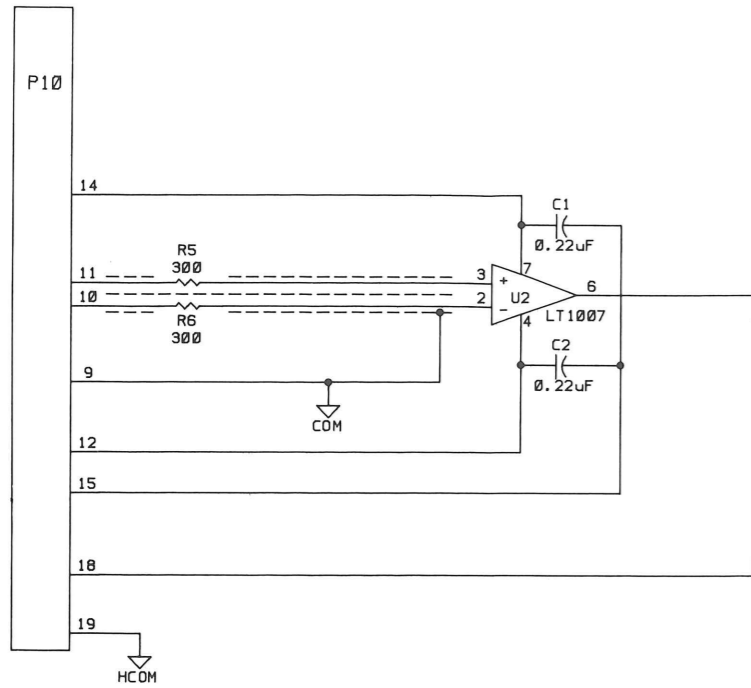
2V DC HYBRID
5700A-1H03

Figure 7-26. Hybrids

SCHEMATIC DIAGRAMS

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. ALL RESISTOR VALUES ARE IN OHMS, 5%.
2. U2 IS A LT1007C (8 PIN PLASTIC DIP PACKAGE) TO BE MOUNTED FLUSH TO THE SUBSTRATE.
3. SUBSTRATE THICKNESS = 25MIL.
4. USE LA155 LEADS (513622).
5. USE LOW THERMAL MATERIAL ON LEADS (P10 - PINS 10 & 11).

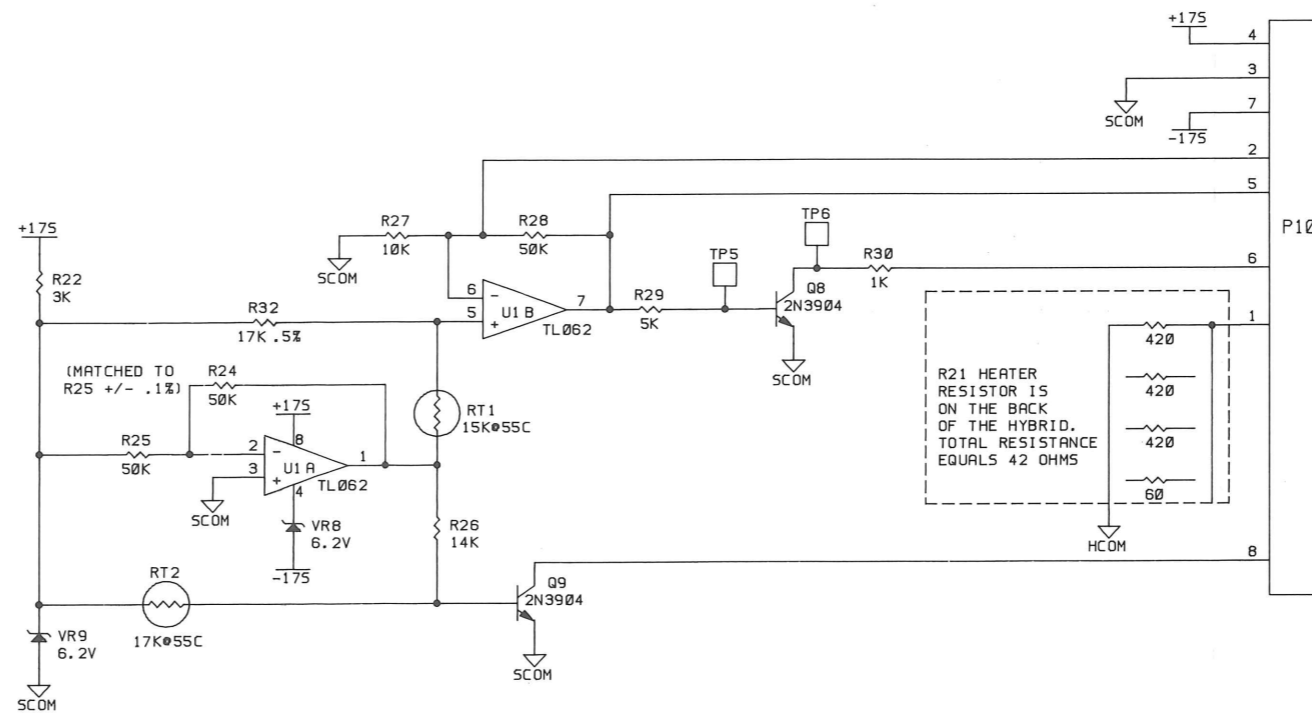
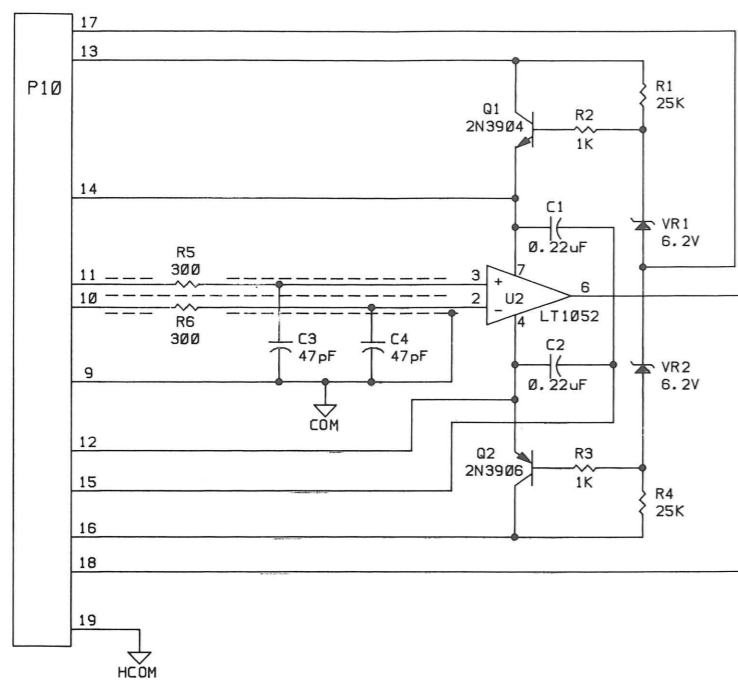


CURRENT HYBRID
5700A-1H04

Figure 7-26. Hybrids (cont)

NOTES: (UNLESS OTHERWISE SPECIFIED)

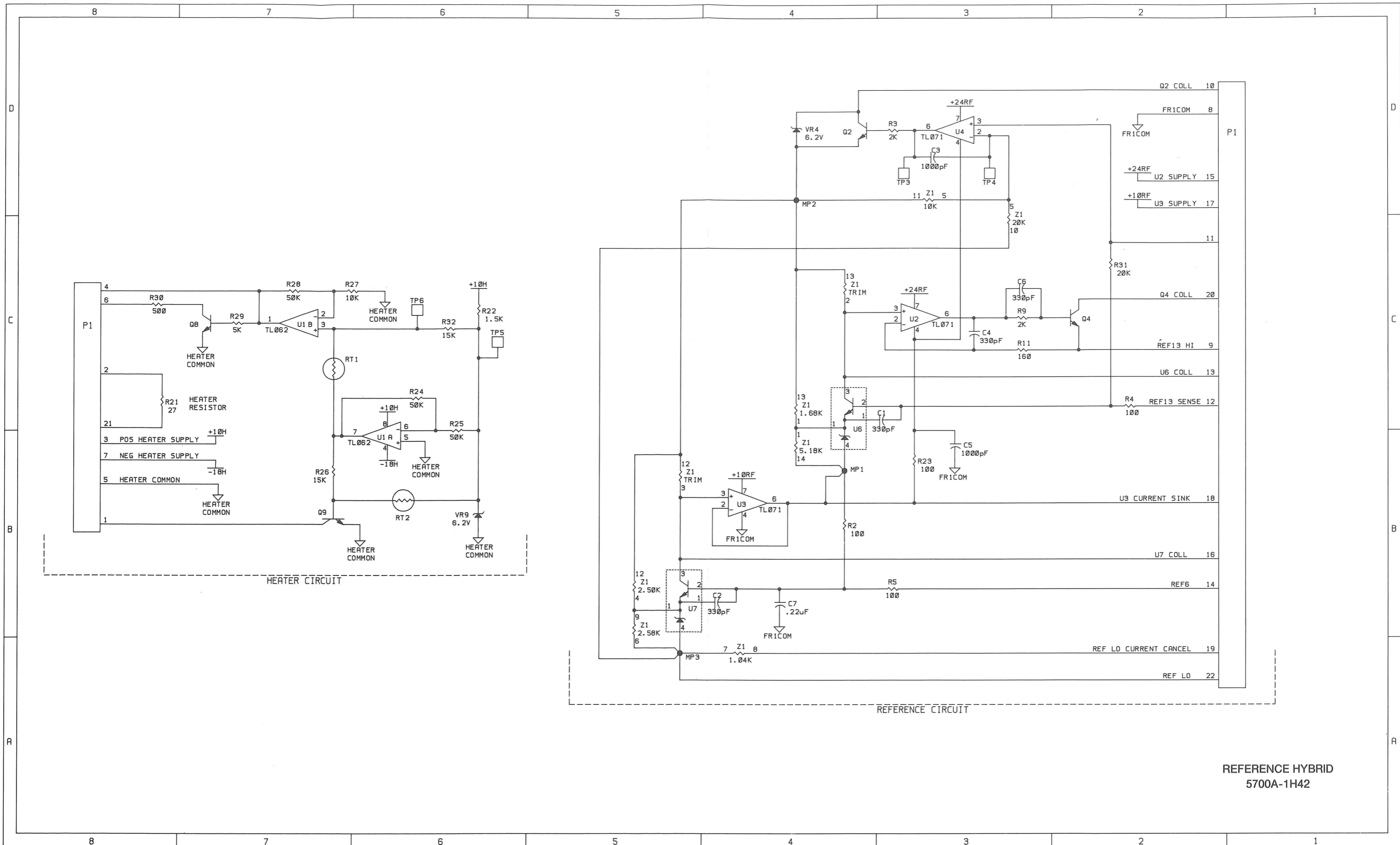
1. ALL RESISTOR VALUES ARE IN OHMS, 5%.
2. U2 IS A LTC1052C (8 PIN PLASTIC DIP PACKAGE) TO BE MOUNTED FLUSH TO THE SUBSTRATE.
3. SUBSTRATE THICKNESS = 25MIL.
4. USE LA155 LEADS (513622).
5. USE LOW THERMAL MATERIAL ON LEADS (P10 - PINS 10 & 11).



DC AMP HYBRID
5700A-1H06

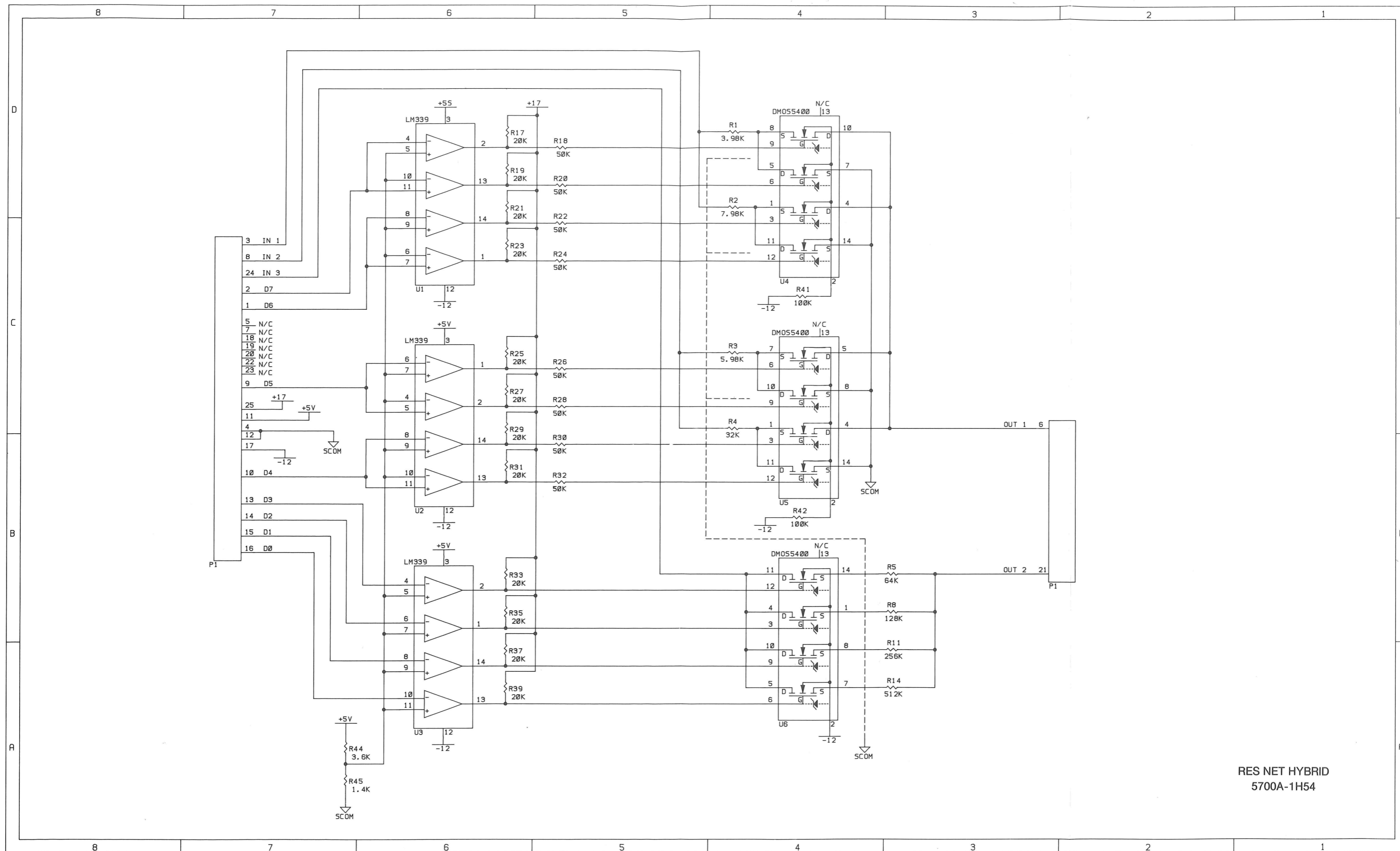
Figure 7-26. Hybrids (cont)

SCHMATIC DIAGRAMS



REFERENCE HYBRID
5700A-1H42

Figure 7-26. Hybrids (cont)



RES NET HYBRID
5700A-1H54

Figure 7-26. Hybrids (cont)