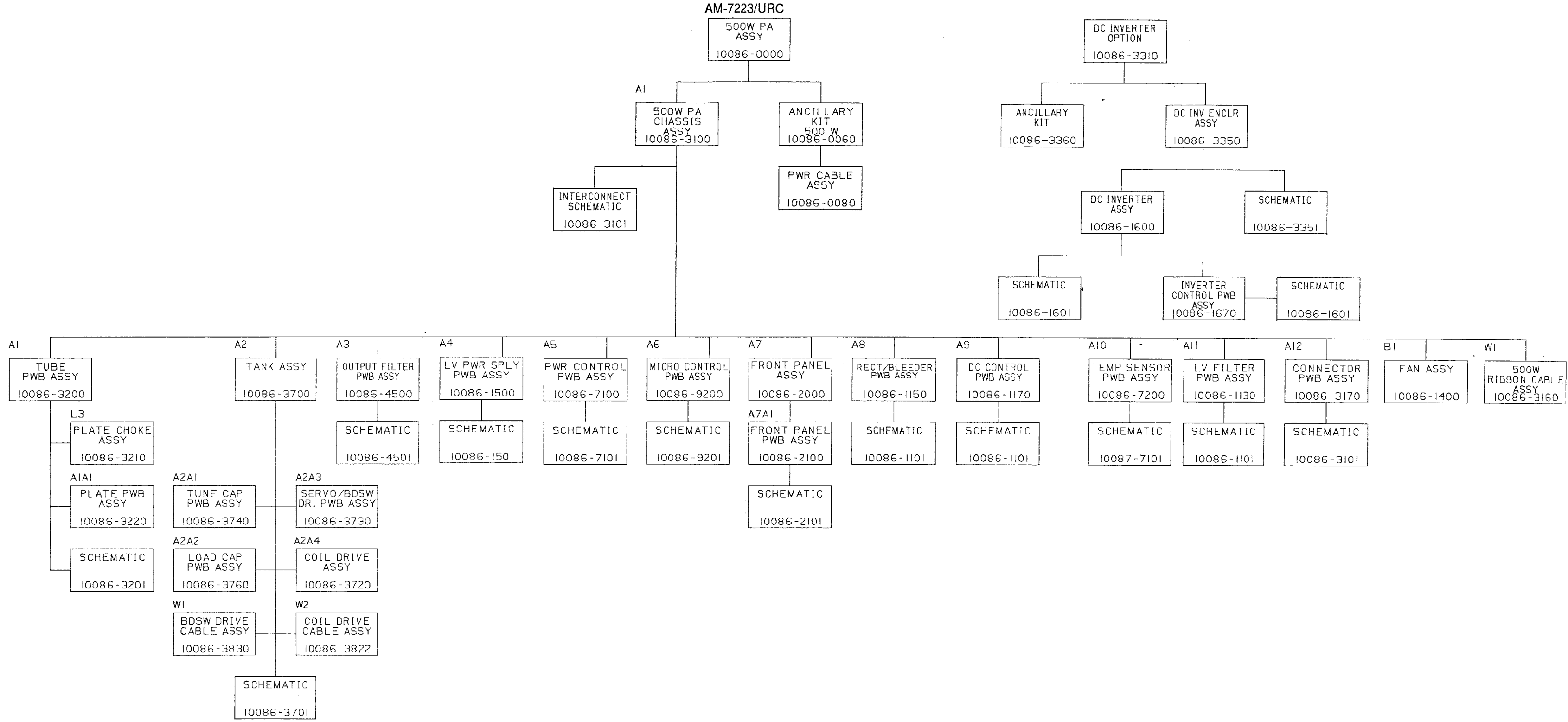


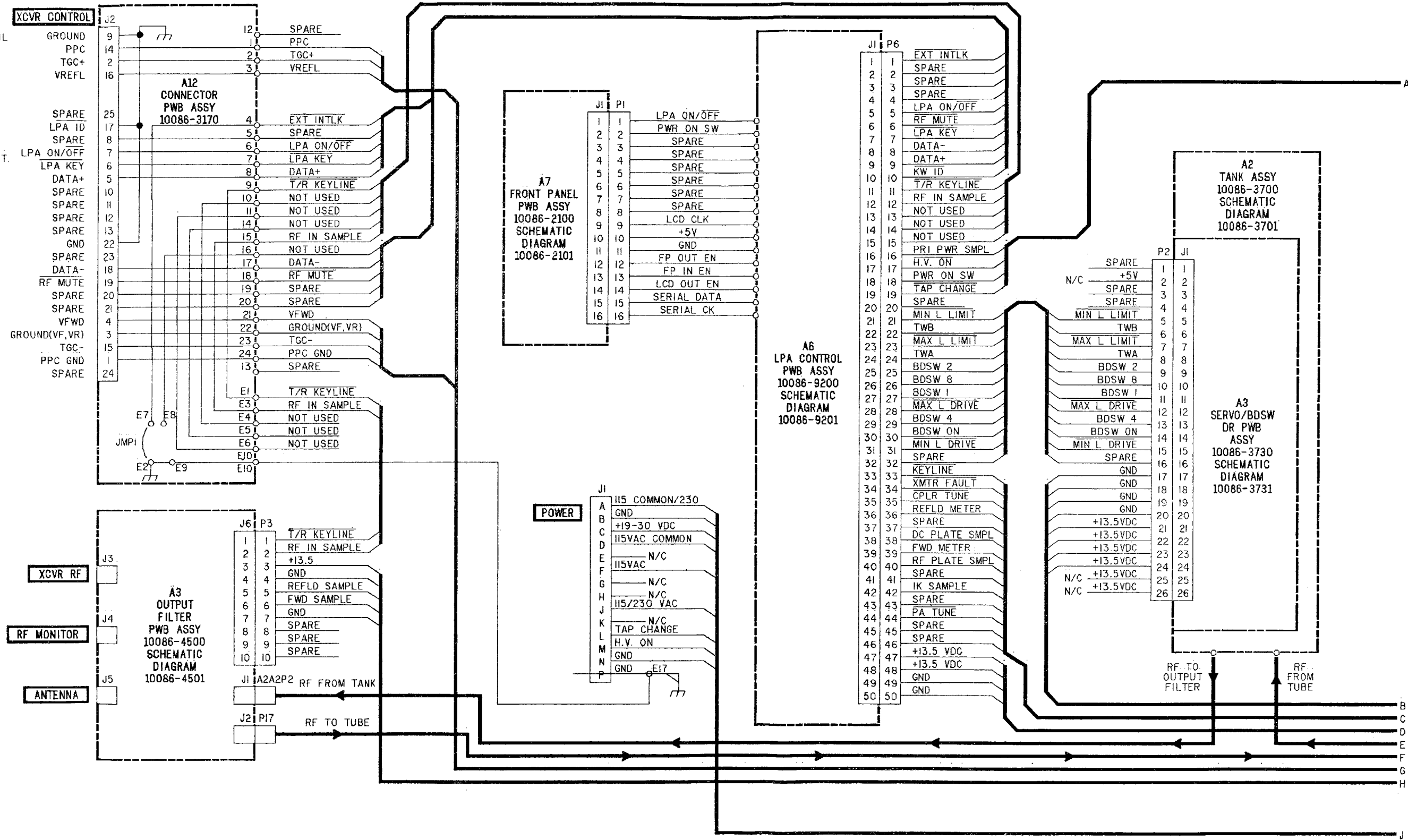


FO-1. Family Tree 500 Watt LPA

NOTE: UNLESS OTHERWISE SPECIFIED:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR DETAIL PARTS. PREFIX THESE WITH UNIT NO. AND/OR ASSEMBLY DESIGNATIONS SHOWN ON DRAWING TO OBTAIN COMPLETE DESIGNATIONS.
2. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, ±5%.
3. ALL CAPACITOR VALUES ARE IN MICROFARADS (UF).
4. ALL INDUCTANCE VALUES ARE IN MILLIHENRIES (MH).
5. VENDOR PART NO. CALLOUTS ARE FOR REFERENCE ONLY. COMPONENTS ARE SUPPLIED PER PART NO. IN PARTS LIST.
6. DC RESISTANCES OF INDUCTIVE ELEMENTS (CHOKES, COILS, MOTOR WINDINGS, ETC.) ARE LESS THAN 1 OHM.
7. PANEL DECALS ARE INDICATED BY BOLD TYPE IN A BOLD BOX, E.G., **ON/OFF**.
8. ALL RELAYS ARE SHOWN IN THE DE-ENERGIZED STATE.

HIGHEST REFERENCE DESIGNATION			
REFERENCE DESIGNATIONS NOT USED			

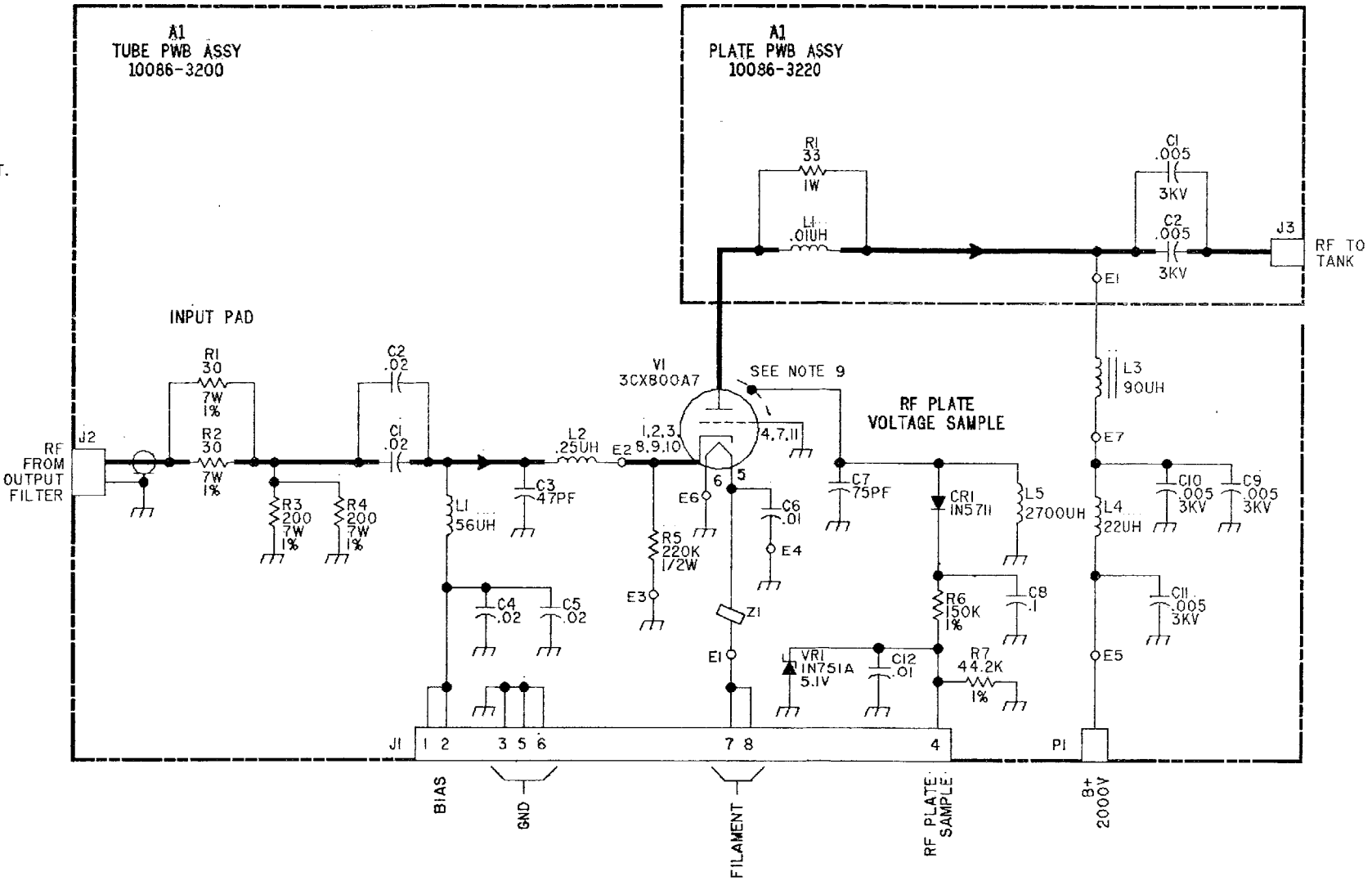


FO-2. Interconnection Diagram
(Sheet 1 of 2)

NOTE: UNLESS OTHERWISE SPECIFIED:

- 1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR DETAIL PARTS. PREFIX THESE WITH UNIT NO. AND/OR ASSEMBLY DESIGNATIONS SHOWN ON DRAWING TO OBTAIN COMPLETE DESIGNATIONS.
- 2. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, ±5%.
- 3. ALL CAPACITOR VALUES ARE IN MICROFARADS (UF).
- 4. ALL INDUCTANCE VALUES ARE IN MILLIHENRIES (MH).
- 5. VENDOR PART NO. CALLOUTS ARE FOR REFERENCE ONLY. COMPONENTS ARE SUPPLIED PER PART NO. IN PARTS LIST.
- 6. DC RESISTANCES OF INDUCTIVE ELEMENTS (CHOKES, COILS, MOTOR WINDINGS, ETC.) ARE LESS THAN 1 OHM.
- 7. PANEL DECALS ARE INDICATED BY BOLD TYPE IN A BOLD BOX, E.G., **ON/OFF**.
- 8. ALL RELAYS ARE SHOWN IN THE DE-ENERGIZED STATE.
- 9. CAPACITOR IS BETWEEN V1 ANODE AND COPPER PLANE ON PWB.

HIGHEST REFERENCE DESIGNATION				
A1	C11	CRI	J3	L5
R7	VI	Z1	PI	
REFERENCE DESIGNATIONS NOT USED				



FO-3. Tube PWB Assy, A1

10. ROTATION OF LI FOR MIN. L IS CW FROM DRIVEN END

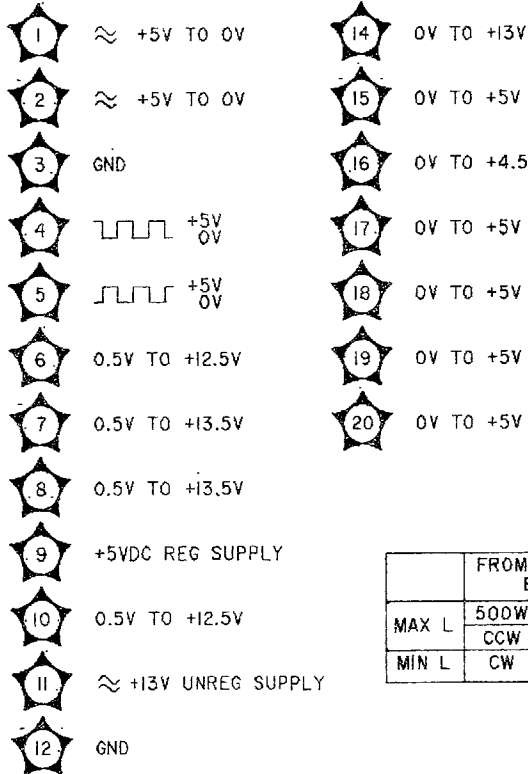
VIEW A4S1
FROM REAR



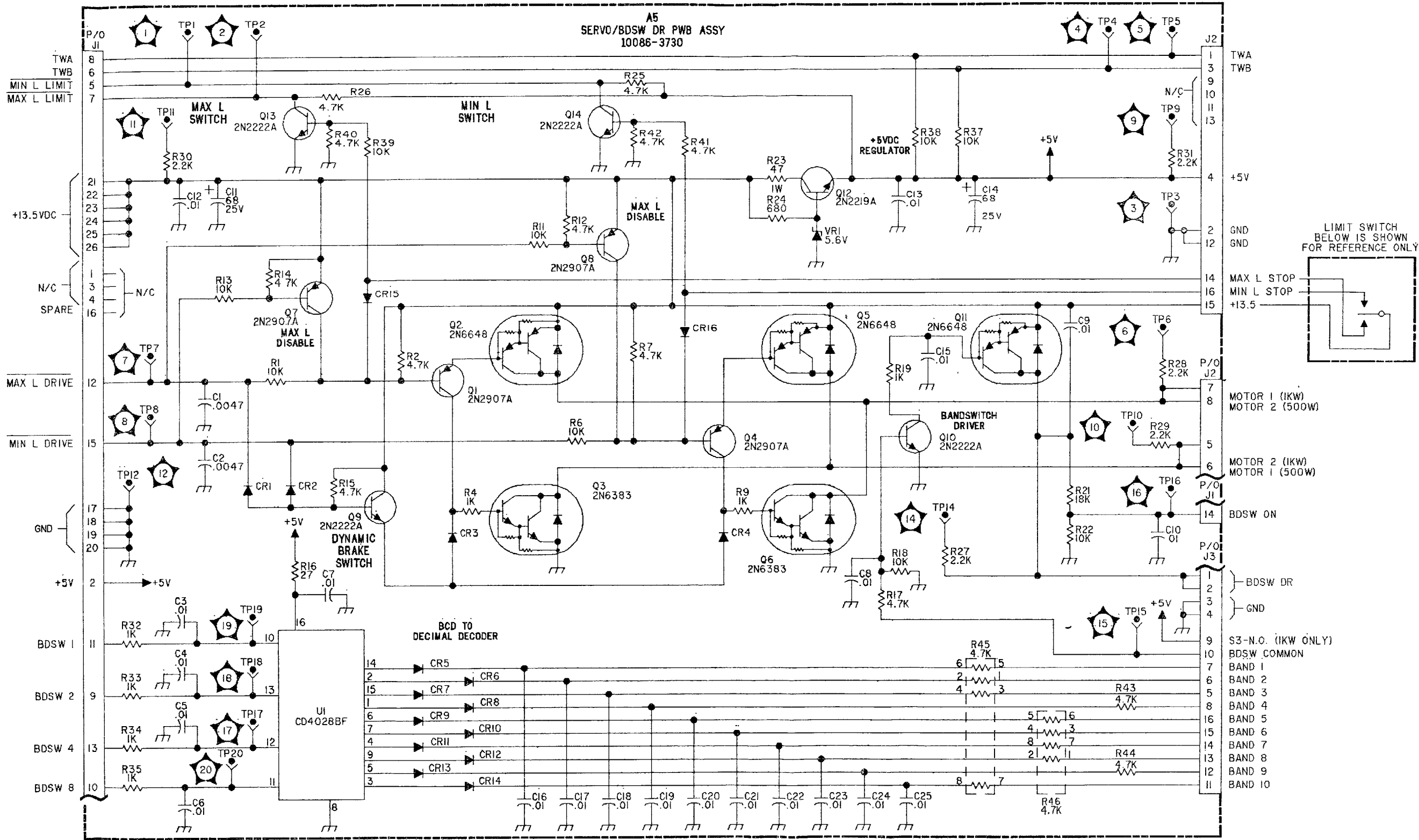
NOTE: UNLESS OTHERWISE SPECIFIED:

- PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR DETAIL PARTS. PREFIX THESE WITH UNIT NO. AND/OR ASSEMBLY DESIGNATIONS SHOWN ON DRAWING TO OBTAIN COMPLETE DESIGNATIONS.
- ALL RESISTOR VALUES ARE IN OHMS, 1/4W, $\pm 5\%$.
- ALL CAPACITOR VALUES ARE IN MICROFARADS (UF).
- ALL INDUCTANCE VALUES ARE IN MILLIHENRIES (MH).
- VENDOR PART NO. CALLOUTS ARE FOR REFERENCE ONLY. COMPONENTS ARE SUPPLIED PER PART NO. IN PARTS LIST.
- DC RESISTANCES OF INDUCTIVE ELEMENTS (CHOKES, COILS, MOTOR WINDINGS, ETC.) ARE LESS THAN 1 OHM.
- PANEL DECALS ARE INDICATED BY BOLD TYPE IN A BOLD BOX. E.G., **ON/OFF**.
- ALL RELAYS ARE SHOWN IN THE DE-ENERGIZED STATE.
- PART NO.'S OF CRI THRU CRI4 ARE IN4454.

HIGHEST REFERENCE DESIGNATION				
C25	CRI4	J3	Q12	R36
UI	VRI			
REFERENCE DESIGNATIONS NOT USED				
R3	R5	R8	R10	R20



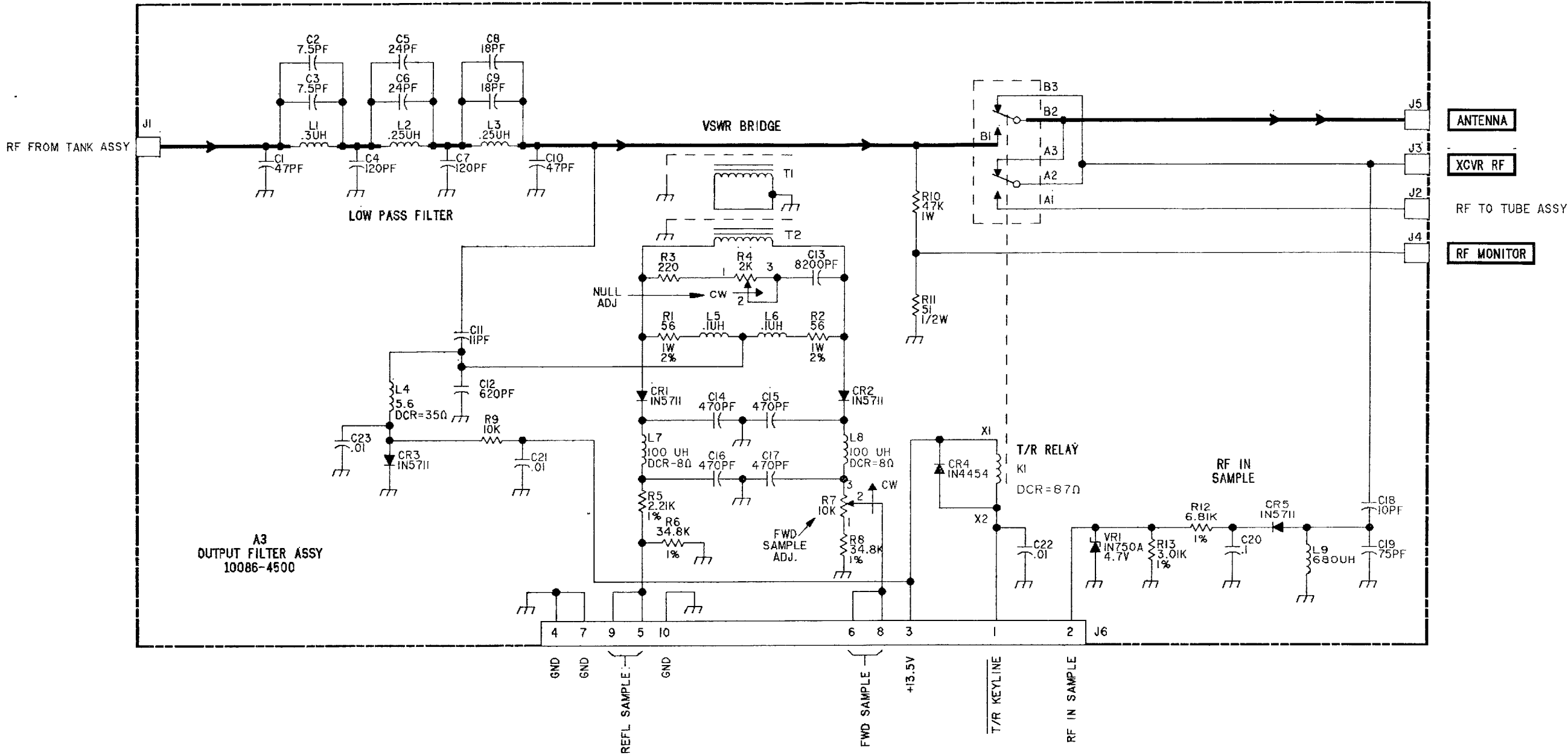
	FROM DRIVEN END	
MAX L	500W	1KW
CCW	CW	CW
MIN L	CW	CCW



FO-5. Servo/Band Switch Drive PWB Assy, A2A3

- NOTE: UNLESS OTHERWISE SPECIFIED:
- 1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR DETAIL PARTS. PREFIX THESE WITH UNIT NO. AND OR ASSEMBLY DESIGNATIONS SHOWN ON DRAWING TO OBTAIN COMPLETE DESIGNATIONS.
 - 2. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, ±5%.
 - 3. ALL CAPACITOR VALUES ARE IN MICROFARADS (UF).
 - 4. ALL INDUCTANCE VALUES ARE IN MILLIHENRIES (MH).
 - 5. VENDOR PART NO. CALLOUTS ARE FOR REFERENCE ONLY. COMPONENTS ARE SUPPLIED PER PART NO. IN PARTS LIST.
 - 6. DC RESISTANCES OF INDUCTIVE ELEMENTS (CHOKES, COILS, MOTOR WINDINGS, ETC.) ARE LESS THAN 1 OHM.
 - 7. PANEL DECALS ARE INDICATED BY BOLD TYPE IN A BOLD BOX, E.G., **ON/OFF**.
 - 8. ALL RELAYS ARE SHOWN IN THE DE-ENERGIZED STATE.

HIGHEST REFERENCE DESIGNATION				
C23	CR5	J6	K1	L8
R12	T1			
REFERENCE DESIGNATIONS NOT USED				

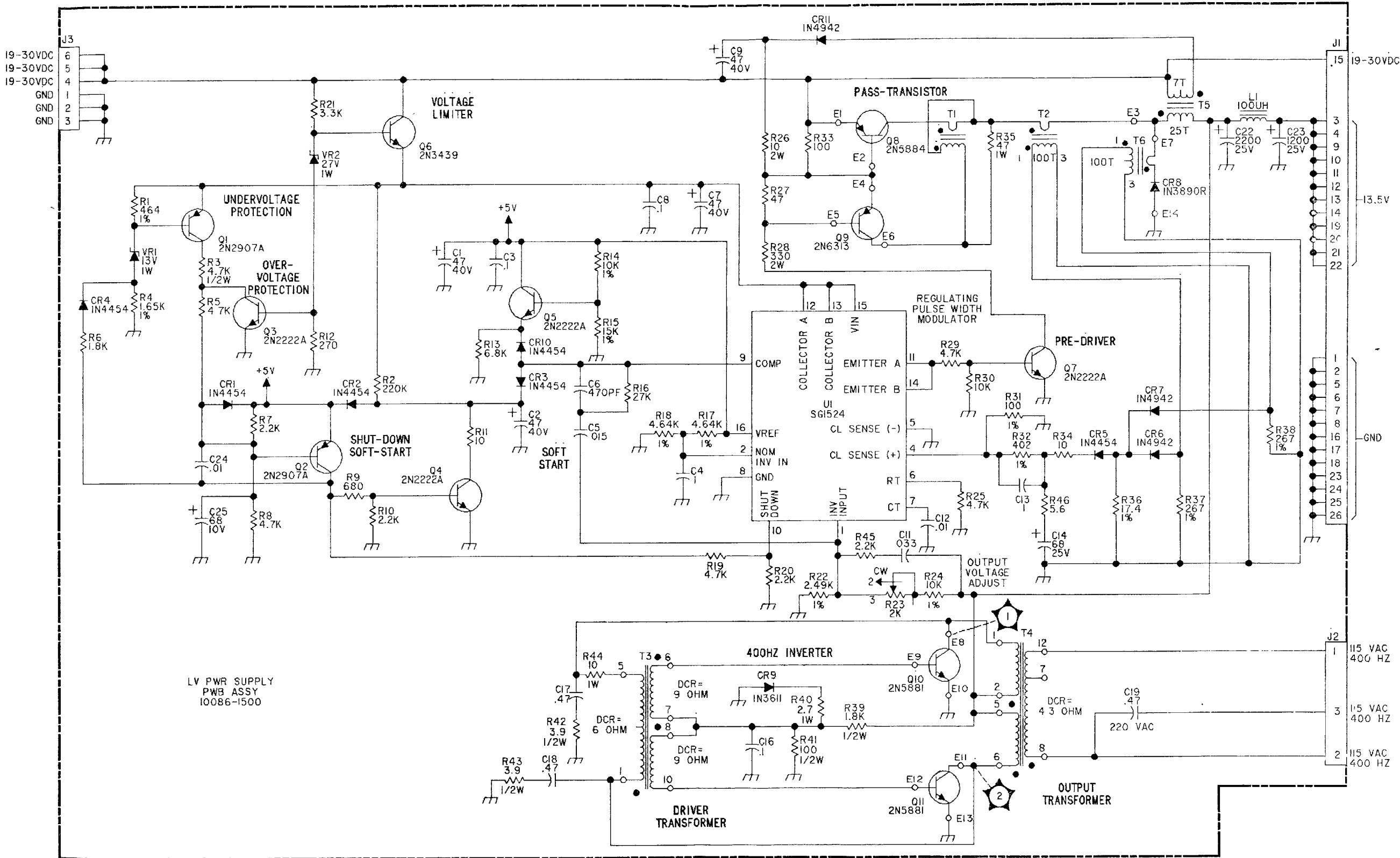
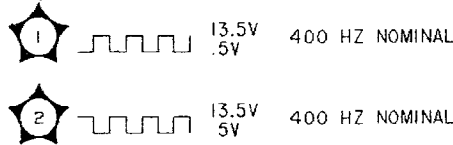


FO-6. Output Filter PWB Assy, A3

NOTE UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR DETAIL PARTS. PREFIX THESE WITH UNIT NO. AND/OR ASSEMBLY DESIGNATIONS SHOWN ON DRAWING TO OBTAIN COMPLETE DESIGNATIONS.
2. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, ±5%.
3. ALL CAPACITOR VALUES ARE IN MICROFARADS (UF).
4. ALL INDUCTANCE VALUES ARE IN MILLIHENRIES (MH).
5. VENDOR PART NO. CALLOUTS ARE FOR REFERENCE ONLY. COMPONENTS ARE SUPPLIED PER PART NO. IN PARTS LIST.
6. DC RESISTANCES OF INDUCTIVE ELEMENTS (CHOKES, COILS, MOTOR WINDINGS, ETC.) ARE LESS THAN 1 OHM.
7. PANEL DECALS ARE INDICATED BY BOLD TYPE IN A BOLD BOX, E.G., **ON/OFF**.
8. ALL RELAYS ARE SHOWN IN THE DE-ENERGIZED STATE

HIGHEST REFERENCE DESIGNATION				
C23	CR11	E7	J3	L1
Q11	R45	T6	U1	VR3
REFERENCE DESIGNATIONS NOT USED				

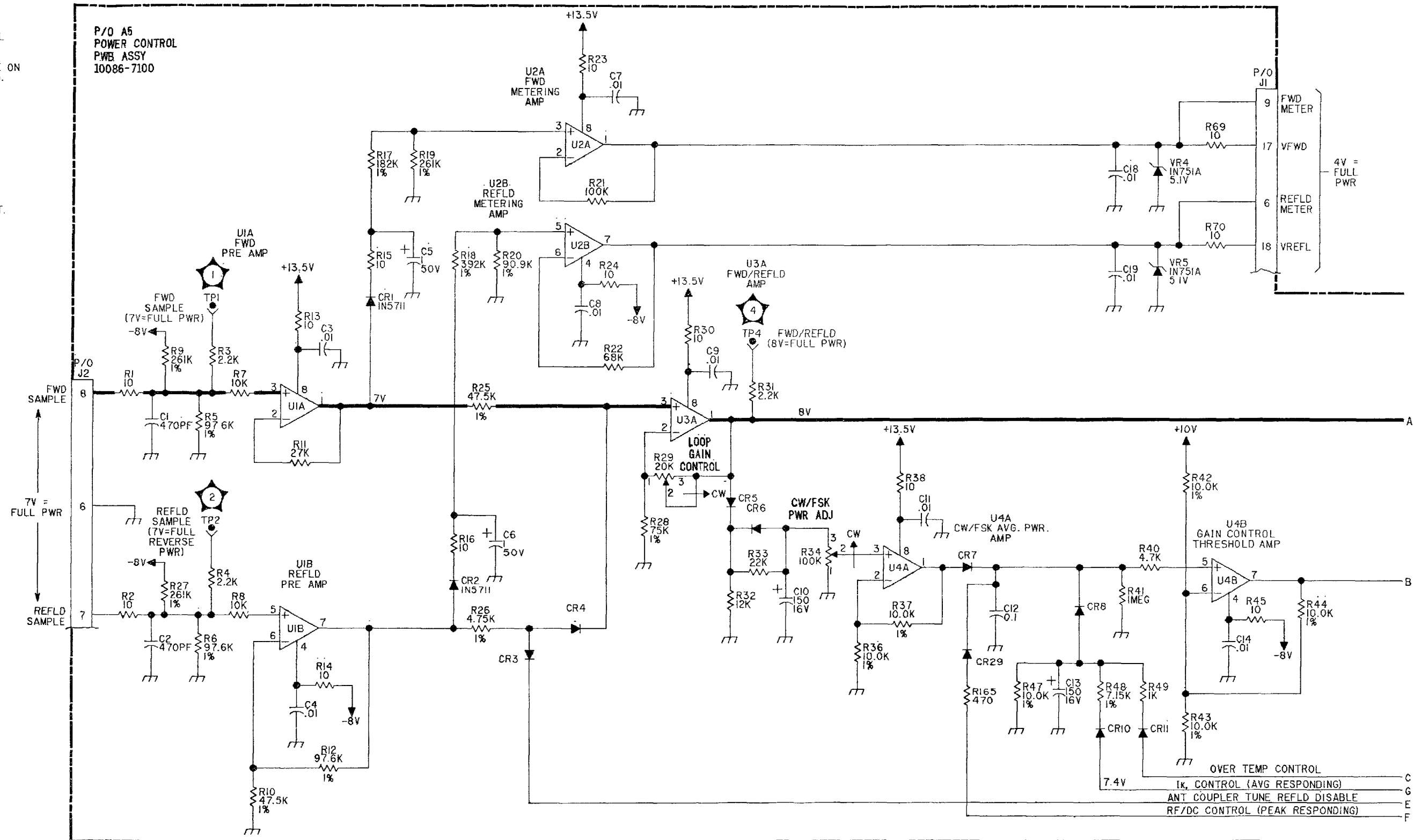


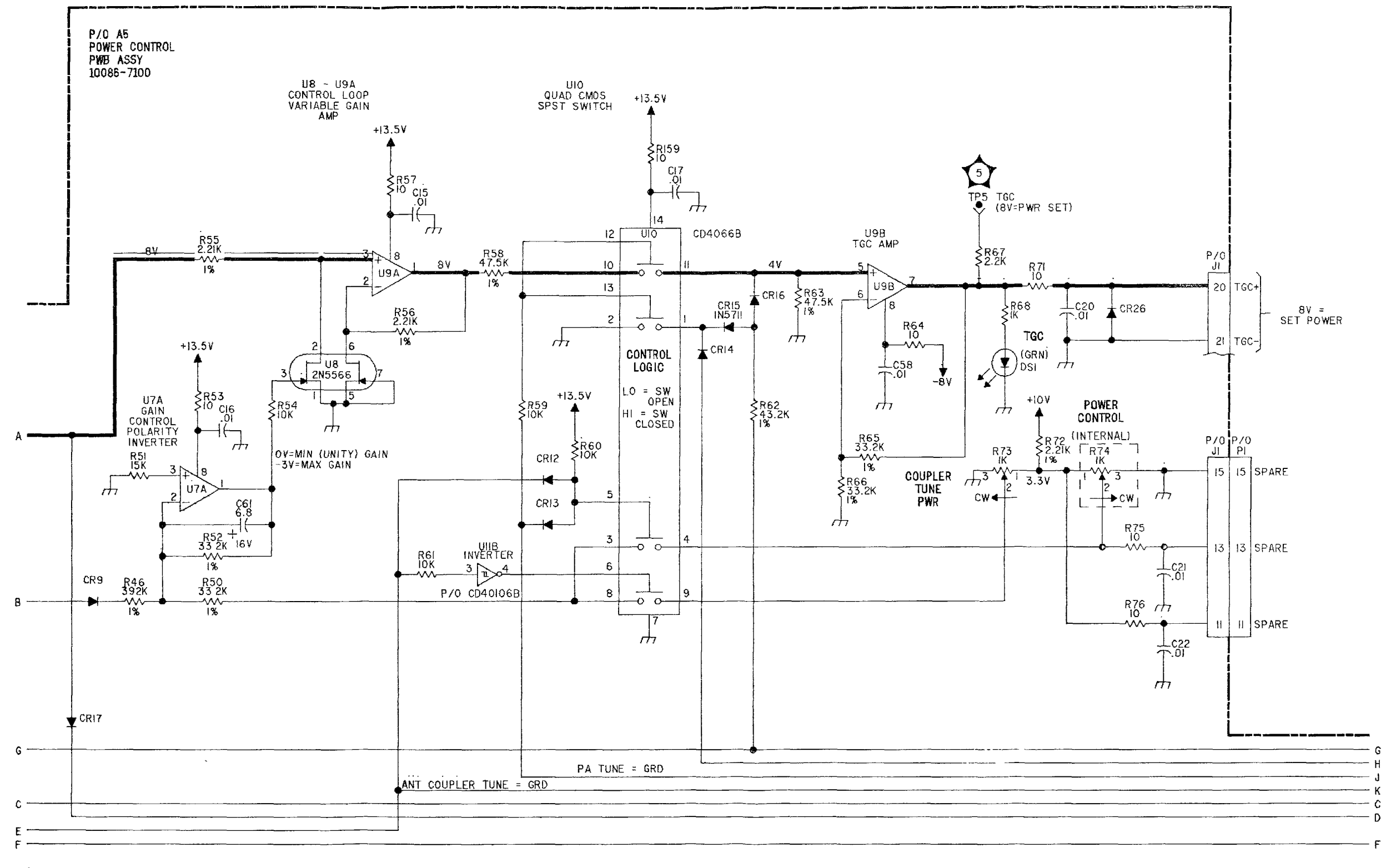
NOTE: UNLESS OTHERWISE SPECIFIED:

- PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR DETAIL PARTS. PREFIX THESE WITH UNIT NO. AND/OR ASSEMBLY DESIGNATIONS SHOWN ON DRAWING TO OBTAIN COMPLETE DESIGNATIONS. AS/AIO REF DESIGNATORS ARE AT ZONE 7E ON SHEET 4 OF 4. PREFIX ALL OTHER COMPONENTS WITH A5.
- ALL RESISTOR VALUES ARE IN OHMS, 1/4W, $\pm 5\%$.
- ALL DIODES ARE TYPE IN4454
- ALL CAPACITOR VALUES ARE IN MICROFARADS (UF).
- ALL IC'S ARE TYPE MC1558U.
- ALL INDUCTANCE VALUES ARE IN MILLIHENRIES (MH).
- VENDOR PART NO. CALLOUTS ARE FOR REFERENCE ONLY. COMPONENTS ARE SUPPLIED PER PART NO. IN PARTS LIST.
- DC RESISTANCES OF INDUCTIVE ELEMENTS (CHOKES, COILS, MOTOR WINDINGS, ETC.) ARE LESS THAN 1 OHM.
- PANEL DECALS ARE INDICATED BY BOLD TYPE IN A BOLD BOX, E.G., **ON/OFF**.
- ALL RELAYS ARE SHOWN IN THE DE-ENERGIZED STATE.

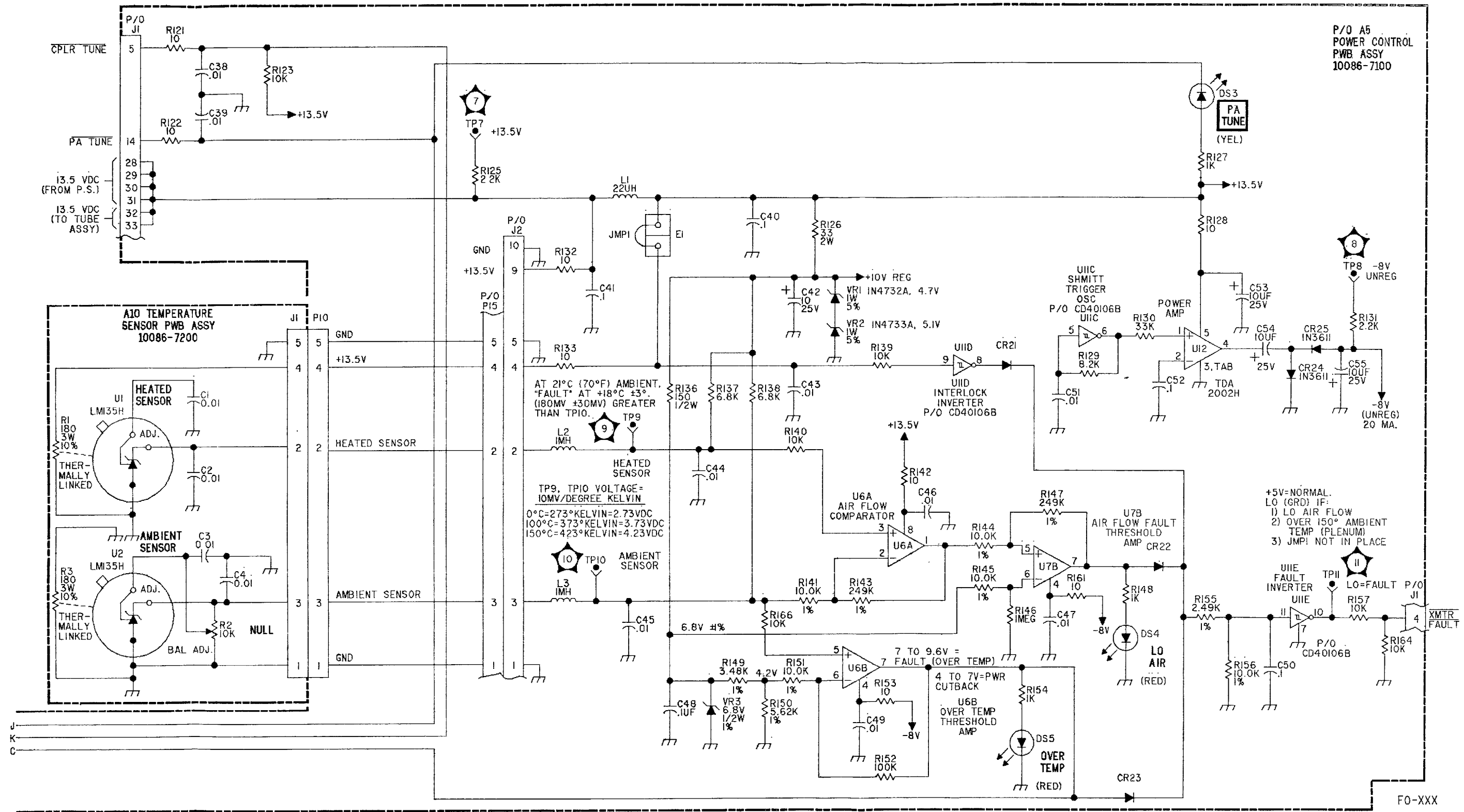
HIGHEST REFERENCE DESIGNATION				
C61	CR29	DS6	J2	L1
Q4	R166	TP11	U13	VR7
REFERENCE DESIGNATIONS NOT USED				
CR17	CR26	R35	R81	R104
R105				

- 1 7V = FULL POWER
- 2 7V = FULL REVERSE PWR
- 3 UNKEY ≈ 24 VDC, KEYED (500W LPA ≈ 5 VDC), KEYED (1KW LPA ≈ 10 VDC)
- 4 8V = FULL PWR
- 5 8V = PWR SET
- 6 0 TO 5V = NORMAL, >5 V = EXCITER CUTBACK
- 7 +13.5VDC
- 8 -8V UNREG
- 9 AT 21°C (70°F) AMBIENT "FAULT" AT 18°C $\pm 3^\circ$ (180MV ± 30 MV) GREATER THAN TP10
- 10 TP10 VOLTAGE = 10MV/DEGREE KELVIN
 0°C = 273° KELVIN = 2.73VDC
 100°C = 373° KELVIN = 3.73VDC
 150°C = 423° KELVIN = 4.23VDC
- 11 LOW = FAULT, +5V = NORMAL

FO-8. Power Control PWB Assy, A5
(Sheet 1 of 4)



FO-8. Power Control PWB Assy, A5
(Sheet 2 of 4)

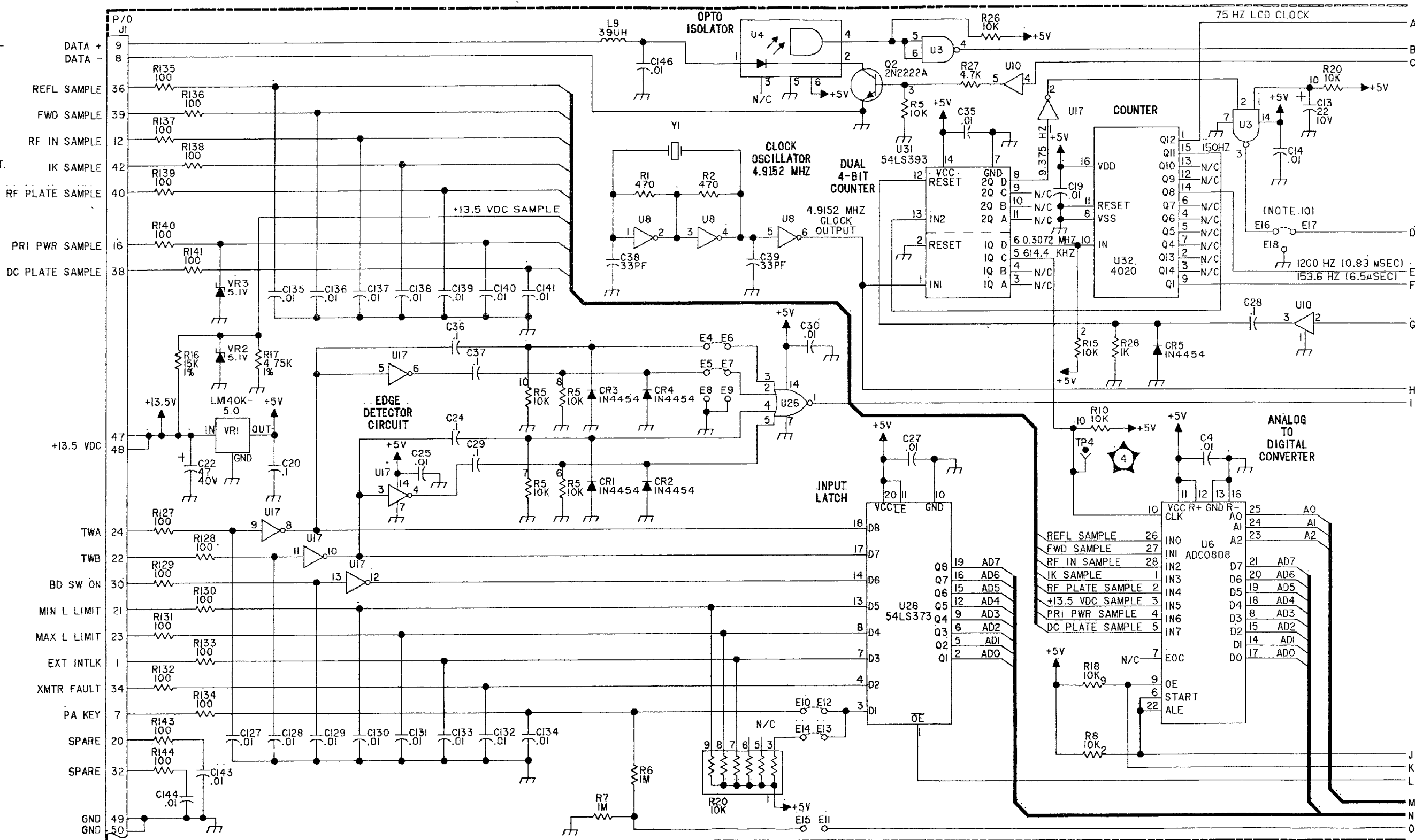
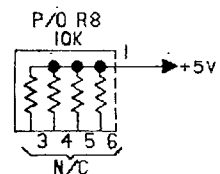
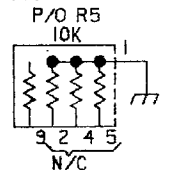
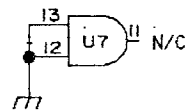
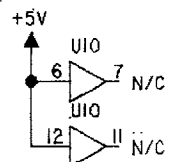


NOTE: UNLESS OTHERWISE SPECIFIED:

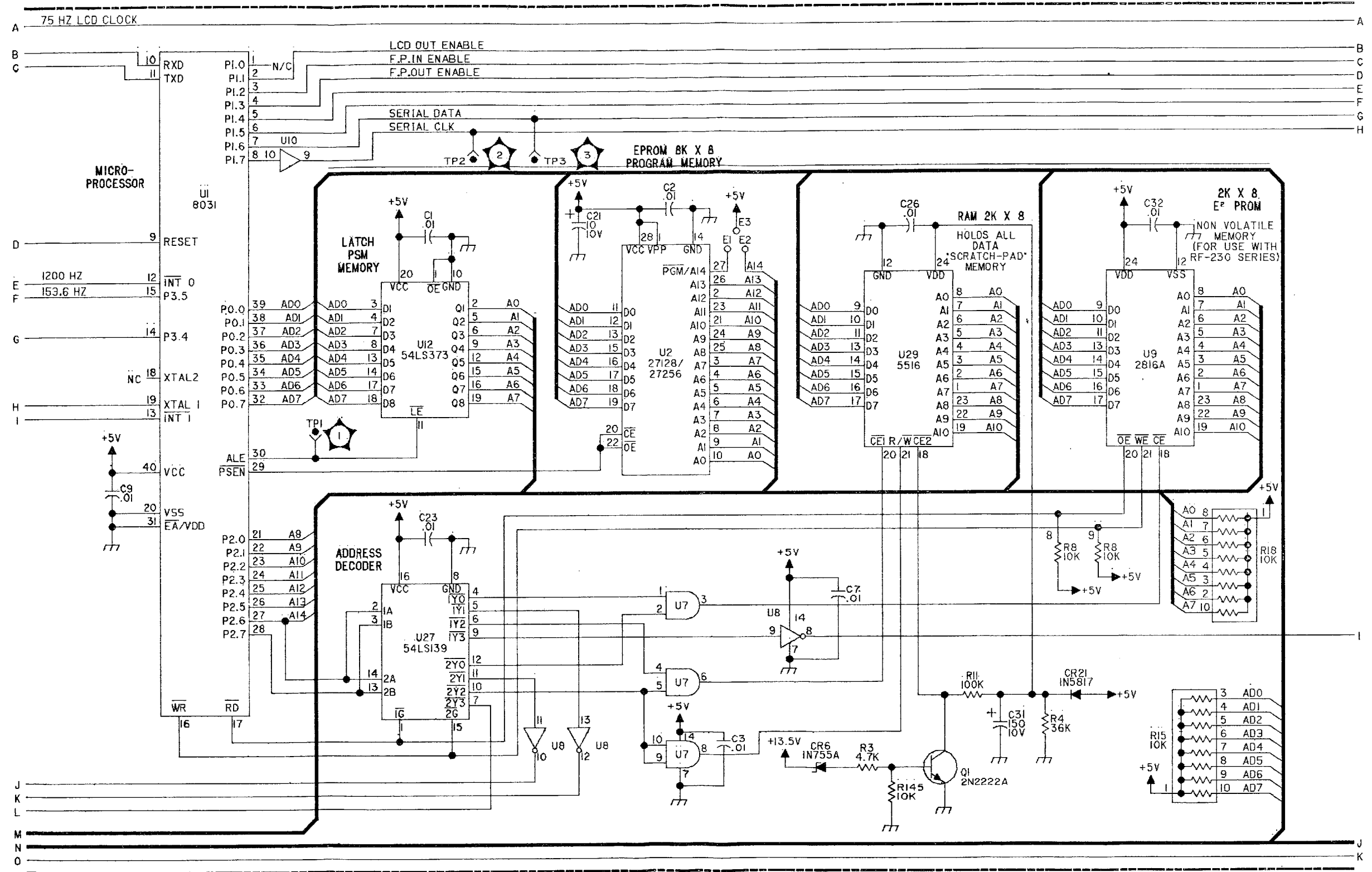
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR DETAIL PARTS. PREFIX THESE WITH UNIT NO. AND/OR ASSEMBLY DESIGNATIONS SHOWN ON DRAWING TO OBTAIN COMPLETE DESIGNATIONS.
2. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, $\pm 5\%$.
3. ALL CAPACITOR VALUES ARE IN MICROFARADS (UF).
4. ALL INDUCTANCE VALUES ARE IN MILLIHENRIES (MH).
5. VENDOR PART NO. CALLOUTS ARE FOR REFERENCE ONLY. COMPONENTS ARE SUPPLIED PER PART NO. IN PARTS LIST.
6. DC RESISTANCES OF INDUCTIVE ELEMENTS (CHOKES, COILS, MOTOR WINDINGS, ETC.) ARE LESS THAN 1 OHM.
7. PANEL DECALS ARE INDICATED BY BOLD TYPE IN A BOLD BOX, E.G., **ON/OFF**.
8. ALL RELAYS ARE SHOWN IN THE DE-ENERGIZED STATE.

HIGHEST REFERENCE DESIGNATION			
REFERENCE DESIGNATIONS NOT USED			

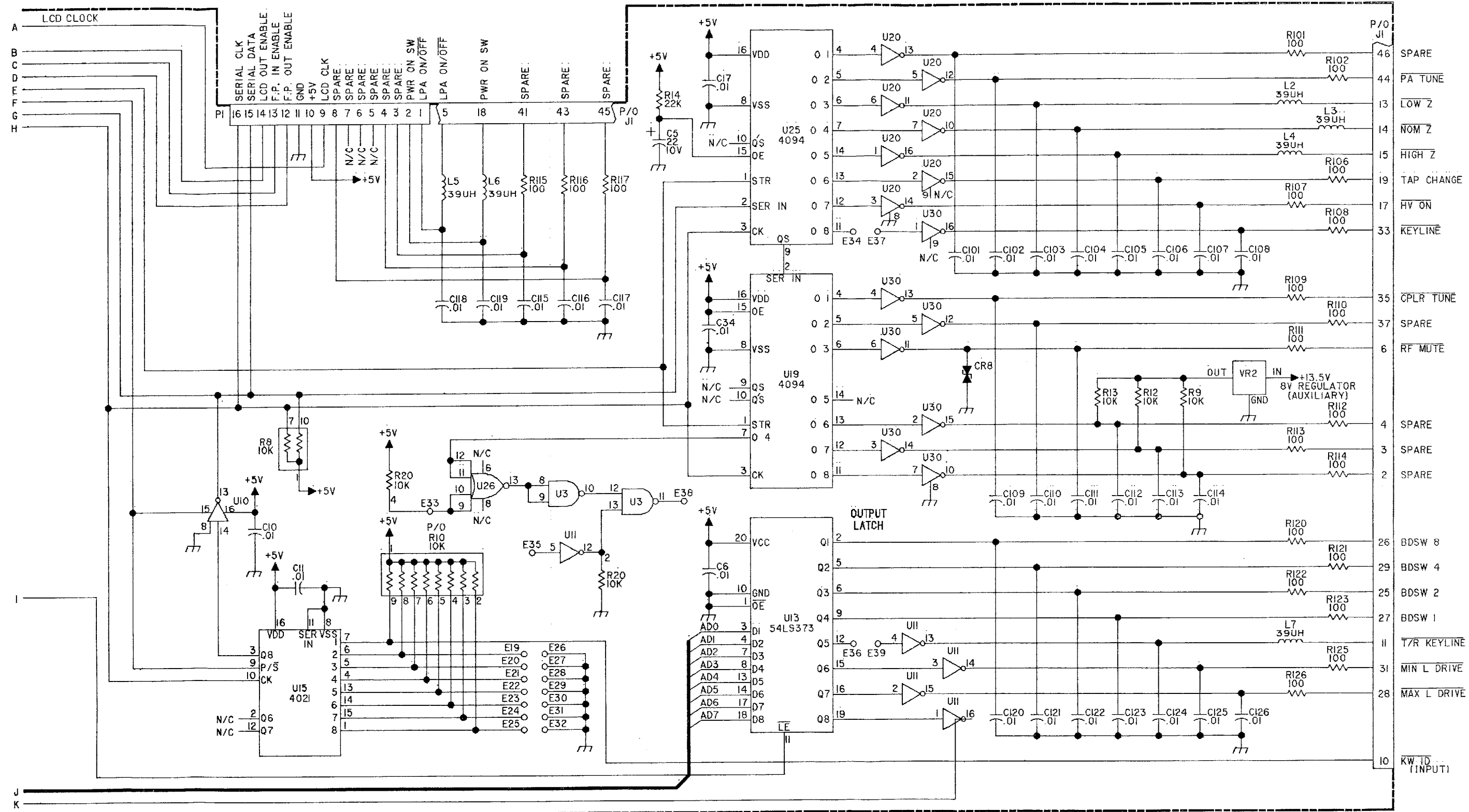
UNUSED GATES



FO-9. Micro Control PWB Assy, A6
(Sheet 1 of 3)



FO-9. Micro Control PWB Assy, A6
(Sheet 2 of 3)



FO-9. Micro Control PWB Assy, A6
(Sheet 3 of 3)

I. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR DETAIL PARTS. PREFIX THESE WITH UNIT NO. AND/OR ASSEMBLY DESIGNATIONS SHOWN ON DRAWING TO OBTAIN COMPLETE DESIGNATIONS.

3. ALL CAPACITOR VALUES ARE IN MICROFARADS (UF).

4. ALL INDUCTANCE VALUES ARE IN MILLIHENRIES (MH).

5. VENDOR PART NO. CALLOUTS ARE FOR REFERENCE ONLY.
COMPONENTS ARE SUPPLIED PER PART NO. IN PARTS LIST

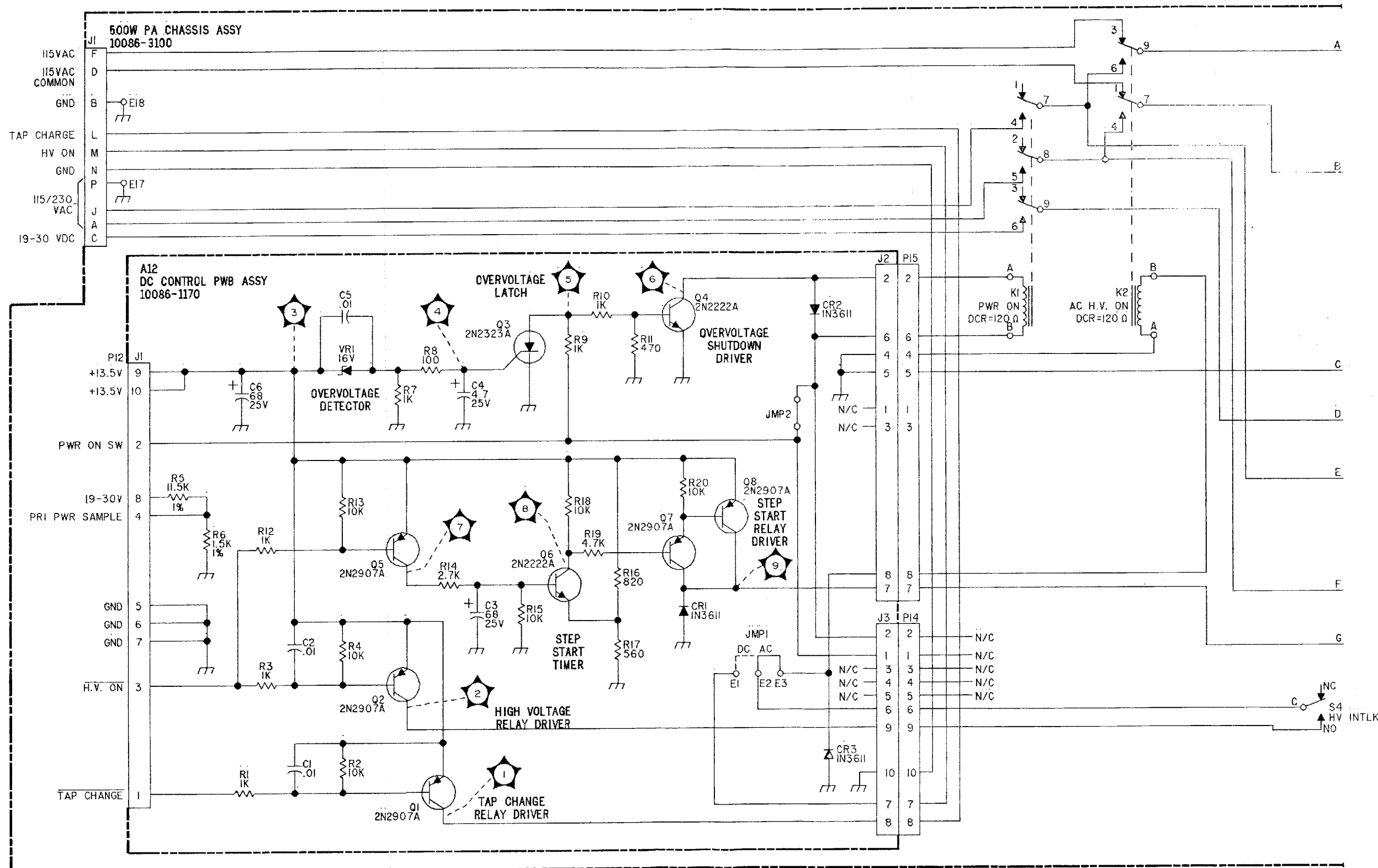
6. DC RESISTANCES OF INDUCTIVE ELEMENTS (CHOKES, COILS, MOTOR WINDINGS, ETC.) ARE LESS THAN 1 OHM.

7. PANEL DECALS ARE INDICATED BY BOLD TYPE IN A

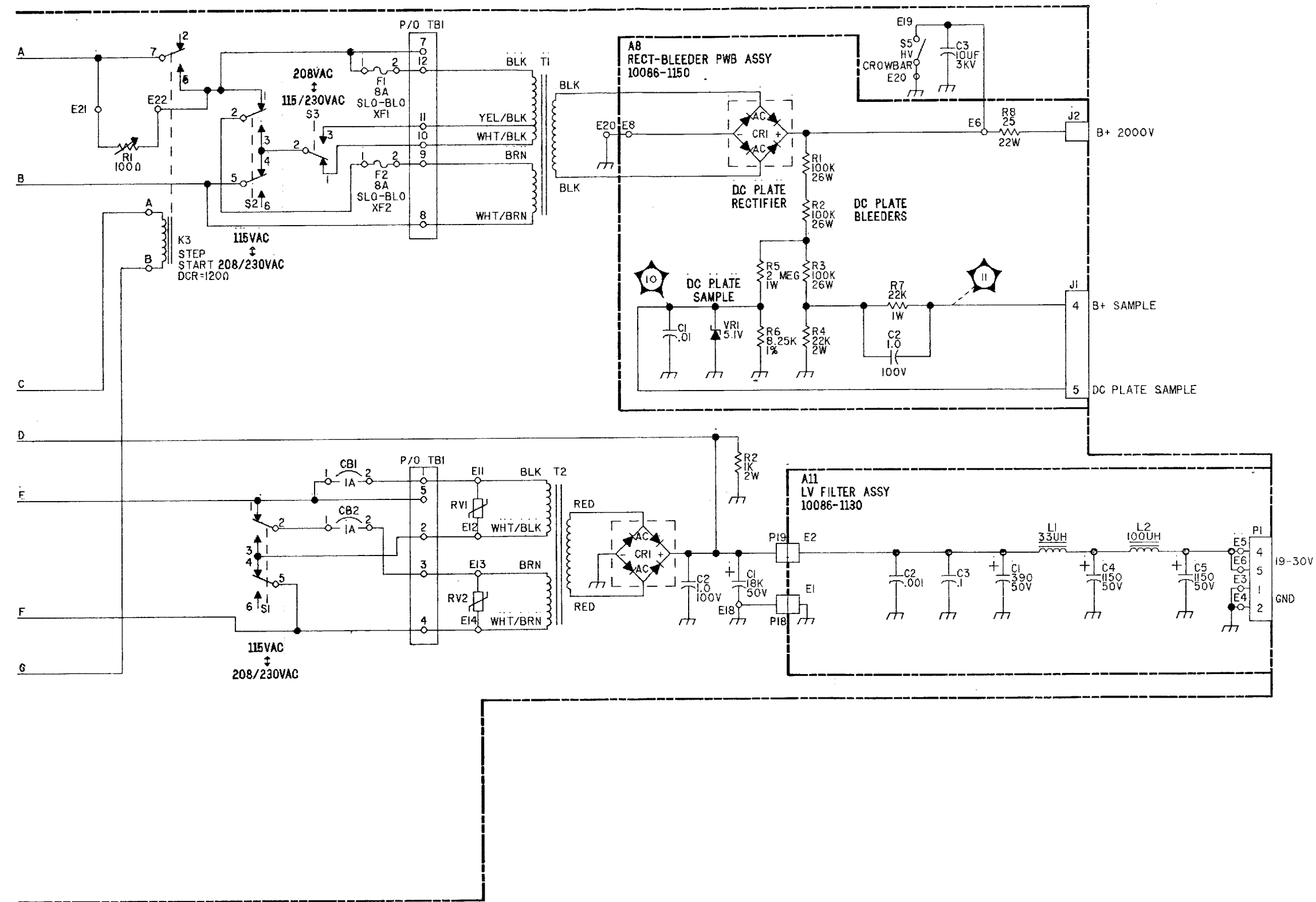
BOLD BOX, E.G., **ON/OFF**

8. ALL RELAYS ARE SHOWN IN THE DE-ENERGIZED STATE.

A12				
HIGHEST REFERENCE DESIGNATION				
R20	C6	Q8	VR1	CR3
REFERENCE DESIGNATIONS NOT USED				

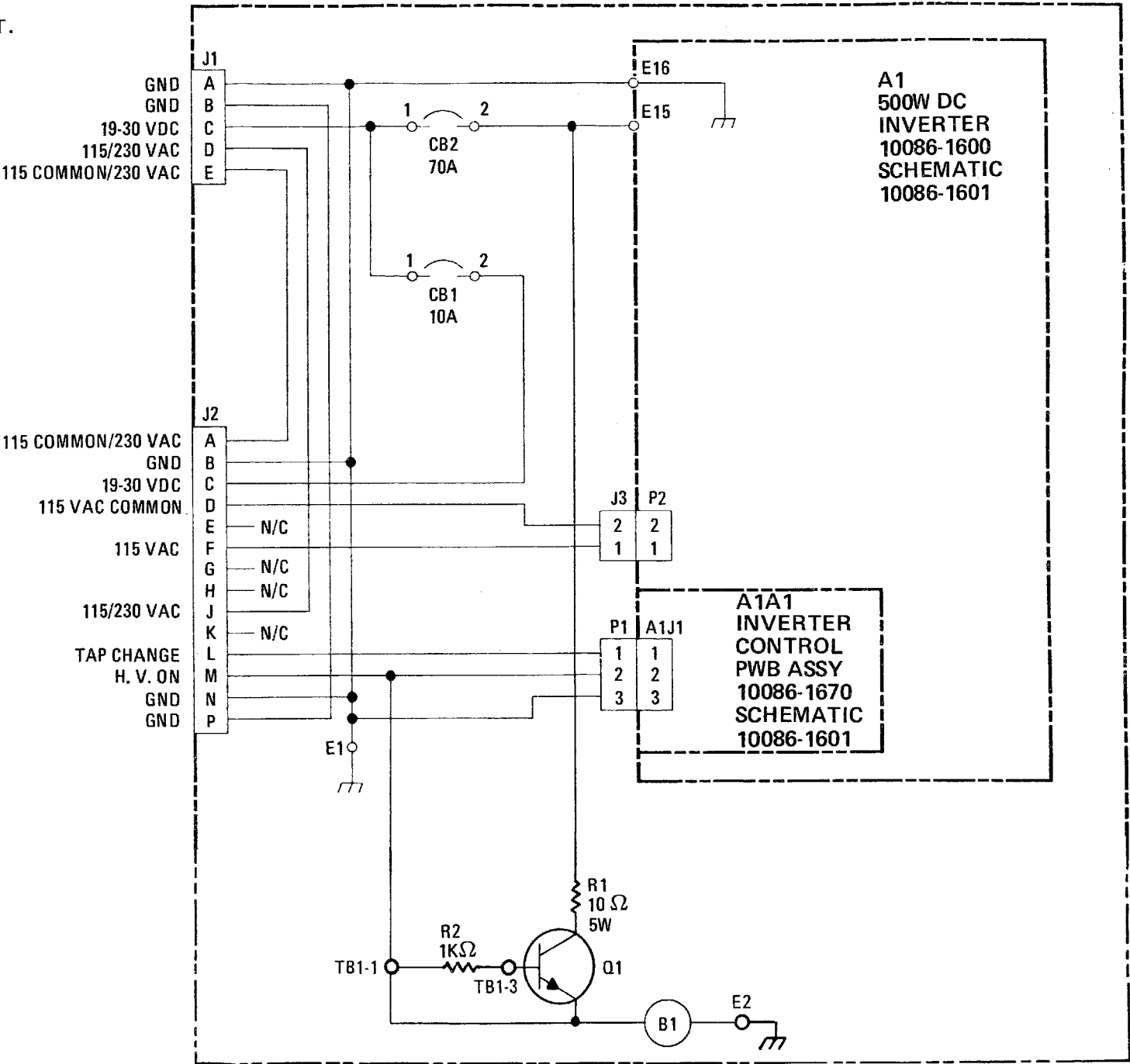


FO-11. 500 Watt Power Supply
(Sheet 1 of 2)



- NOTE: UNLESS OTHERWISE SPECIFIED:
- 1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN.
FOR A COMPLETE DESIGNATION, PREFIX WITH
UNIT NO. AND/OR ASSEMBLY NO. DESIGNATION.
 - 2. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, ±5%.
 - 3. ALL CAPACITOR VALUES ARE IN MICROFARADS.
 - 4. VENDOR PART NO. CALLOUTS ARE FOR REFERENCE ONLY.
COMPONENTS ARE SUPPLIED PER PART NO. IN PARTS LIST.

HIGHEST REFERENCE DESIGNATION				
REFERENCE DESIGNATIONS NOT USED				



FO-12. DC Inverter Option,
Interconnection Diagram

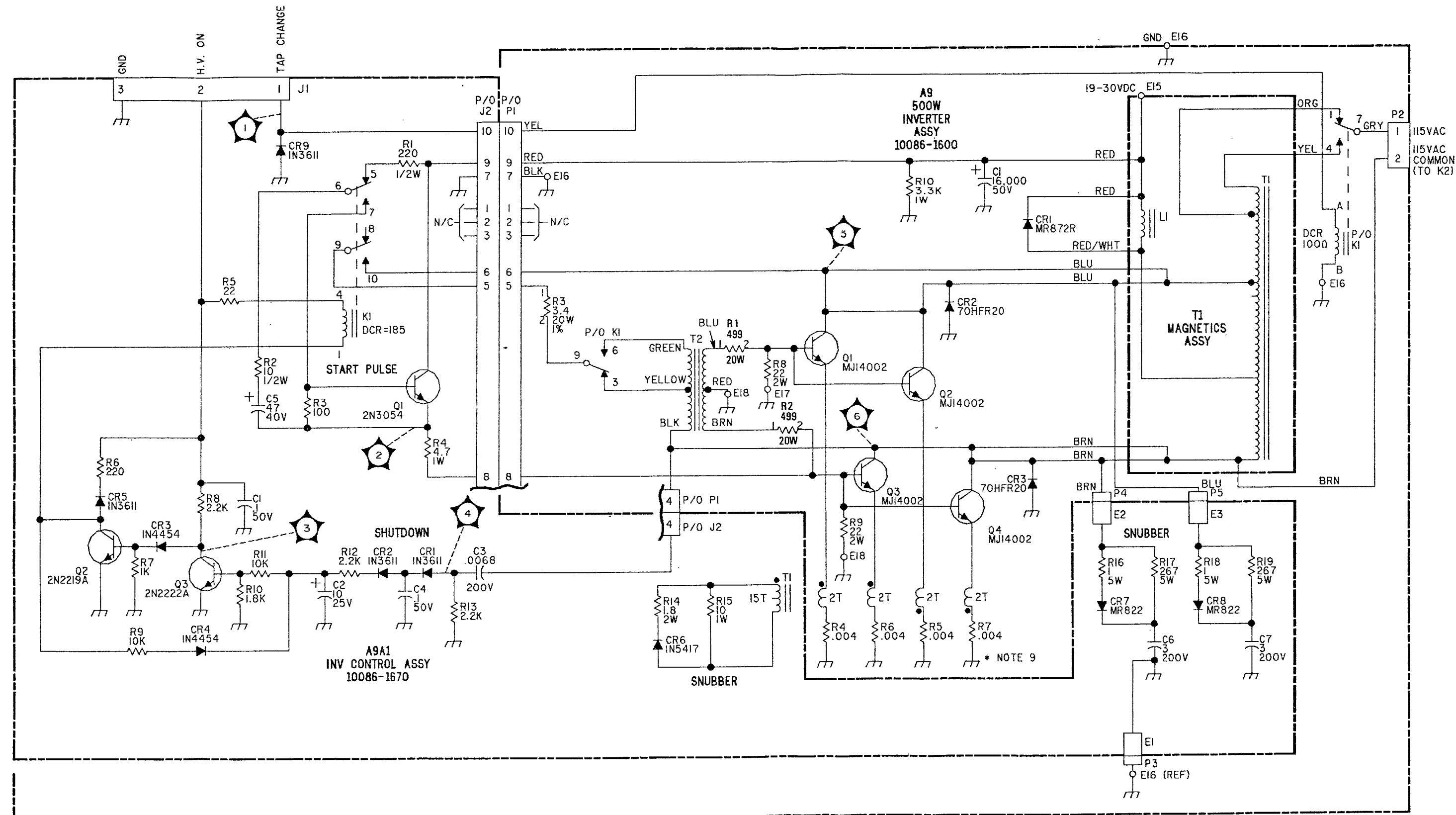
NOTE: UNLESS OTHERWISE SPECIFIED:

- PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR DETAIL PARTS. PREFIX THESE WITH UNIT NO. AND/OR ASSEMBLY DESIGNATIONS SHOWN ON DRAWING TO OBTAIN COMPLETE DESIGNATIONS.
- ALL RESISTOR VALUES ARE IN OHMS, 1/4W, $\pm 5\%$.
- ALL CAPACITOR VALUES ARE IN MICROFARADS (UF).
- ALL INDUCTANCE VALUES ARE IN MILLIHENRIES (MH).
- VENDOR PART NO. CALLOUTS ARE FOR REFERENCE ONLY. COMPONENTS ARE SUPPLIED PER PART NO. IN PARTS LIST.
- DC RESISTANCES OF INDUCTIVE ELEMENTS (CHOKES, COILS, MOTOR WINDINGS, ETC.) ARE LESS THAN 1 OHM.
- PANEL DECALS ARE INDICATED BY BOLD TYPE IN A BOLD BOX, E.G., **ON/OFF**
- ALL RELAYS ARE SHOWN IN THE DE-ENERGIZED STATE.
- R4,R5,R6,R7 ARE 18" OF #14 TEFLON WIRE.

HIGHEST REFERENCE DESIGNATION				
A3	CI	CB5	J2	KI
LI	P2	SI	TI	TBI
REFERENCE DESIGNATIONS NOT USED				
J1				

- 1 0V FOR 24-30 VDC INPUT VOLTAGE
13.5V FOR 19-24 VDC INPUT VOLTAGE
- 2 19-30 VDC APPROXIMATE 1MS PULSE AT INITIATION OF H.V. ON
- 3 1.4V NORMAL OPERATION
0V FREQ OF CONVERTER ABOVE 3 KHZ
- 4 19-30V
- 5 19-30V FREQ 300HZ FOR 20V PEAK SQUARE WAVE (15HZ PER VOLT PEAK)
- 6 19-30V

NOTE:
FREQUENCY OF POINTS OF TEST 4, 5 & 6
IS 300HZ FOR 20V PEAK SQUARE WAVE
WITH 15HZ PER VOLT PEAK INCREASE
(i.e. 330HZ FOR 22V PEAK SQUARE WAVE)



FO-13. DC Inverter Option, Heatsink Assembly, A1

