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NAVY NAVELEX 0967 462 8060

This copy Is a reprint which Includes current pages from Changes 1 through 3.

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

AUTOMATIC TELEPHONE

CENTRAL OFFICES

AN/TTC-38(V)1
(NSN 5805-00-186-0681)

AND

AN/TTC-38(V)2
(NSN 5805-00-186-0640)

DEPARTMENTS OF THE ARMY AND THE NAVY

FEBRUARY 1974

TM 11-5805-628-34-6
NAVELEX 0967.LP-462-8063
TO 31W2-2TTC38-12-6
C3

CHANGE
NO. 3

DEPARTMENTS OF THE ARMY,
THE NAVY, AND THE AIR FORCE
Washington DC, 13 May 1983

Direct Support and General Support Maintenance Manual

AUTOMATIC TELEPHONE CENTRAL OFFICES
AN/TTC-38(V)1 (NSN 5805-00-186-0681)
AND
AN/TTC-38(V)2 (NSN 5805-00-186-0640)

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ARN: None

USAR: None.
For explanation of abbreviations used, see AR 310 - 50.

CHANGE
No. 2

DEPARTMENTS OF THE ARMY,
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WASHINGTON, DC, *27 February 1980*

Direct Support and General Support Maintenance Manual

AUTOMATIC TELEPHONE CENTRAL OFFICES
AN/TTC-38(V)1 (NSN 5805-00-186 0681)
AND
AN/TTC-38(V)2 (NSN 5805-00-186-0640)

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C1

CHANGE }
NO. 1 }

DEPARTMENTS OF THE ARMY,
THE NAVY, AND THE AIR FORCE
WASHINGTON, DC,*24 October 1975*

Direct Support and General Support Maintenance Manual

AUTOMATIC TELEPHONE CENTRAL OFFICES

AN / TTC-38(V) 1 AND AN / TTC-38(V)2

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11-33 and 11-34	11-33 and 11-34
11-45 and 11-46	11-45 and 11-46
11-51 and 11-52	11-51 and 11-52
11-59 through 11-62	11-59 through 11-62
11-83 through 11-86	11-83 through 11-86
11-149 through 11-154	11-149 through 11-154
11-157 and 11-158	11-157 and 11-158
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Ft Richardson (ECOM Ofc) (1)	Units org under fol TOE
Ft Gillem (10)	11-15 (1)
Ft Carson (5)	29-134 (1)
Ft Huachuca (5)	29-136 (1)

ARNG & USAR: None

For explanation of abbreviations used, see AR 310-50.

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TECHNICAL MANUAL
NO. 11-5805-628-34-6
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DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

AUTOMATIC TE LE PHON E CENTRAL OFFICES

AN / TTC-38(V)1 AND AN / TTC-38(V)2

There are seven manuals in this series. Each manual has a separate contents.

LIST OF ILLUSTRATIONS

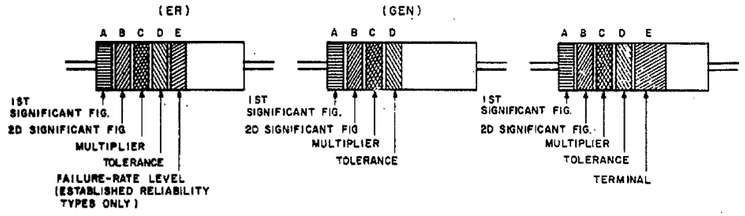
CHAPTER 11

SCHEMATIC DIAGRAMS

11-1. General

This chapter contains schematic diagrams for assemblies and printed circuit cards in AN / TTC 38(V)(*). Diagrams are arranged in assembly reference designator order. Where schematic is identical for several assemblies or printed circuit cards, only the drawing for the lowest numbered reference designator is provided.

11-2. Schematic Diagrams



COLOR CODE MARKING FOR COMPOSITION TYPE RESISTORS.

COLOR-CODE MARKING FOR FILM-TYPE RESISTORS.

TABLE I
COLOR CODE FOR COMPOSITION TYPE AND FILM TYPE RESISTORS.

BAND A		BAND B		BAND C		BAND D		BAND E		
COLOR	FIRST SIGNIFICANT FIGURE	COLOR	SECOND SIGNIFICANT FIGURE	COLOR	MULTIPLIER	COLOR	RESISTANCE TOLERANCE (PERCENT)	COLOR	FAILURE RATE LEVEL	TERM.
BLACK	0	BLACK	0	BLACK	1			BROWN	M=1.0	
BROWN	1	BROWN	1	BROWN	10			RED	P=0.1	
RED	2	RED	2	RED	100			ORANGE	R=0.01	
ORANGE	3	ORANGE	3	ORANGE	1,000			YELLOW	S=0.001	
YELLOW	4	YELLOW	4	YELLOW	10,000	SILVER	±10 (COMP. TYPE ONLY)	WHITE		SOLDERABLE
GREEN	5	GREEN	5	GREEN	100,000	GOLD	±5			
BLUE	6	BLUE	6	BLUE	1,000,000	RED	±2 (NOT APPLICABLE TO ESTABLISHED RELIABILITY).			
PURPLE (VIOLET)	7	PURPLE (VIOLET)	7							
GRAY	8	GRAY	8	SILVER	0.01					
WHITE	9	WHITE	9	GOLD	0.1					

BAND A — THE FIRST SIGNIFICANT FIGURE OF THE RESISTANCE VALUE (BANDS A THRU D SHALL BE OF EQUAL WIDTH.)

BAND B — THE SECOND SIGNIFICANT FIGURE OF THE RESISTANCE VALUE.

BAND C — THE MULTIPLIER (THE MULTIPLIER IS THE FACTOR BY WHICH THE TWO SIGNIFICANT FIGURES ARE MULTIPLIED TO YIELD THE NOMINAL RESISTANCE VALUE.)

BAND D — THE RESISTANCE TOLERANCE.

BAND E — WHEN USED ON COMPOSITION RESISTORS, BAND E INDICATES ESTABLISHED RELIABILITY FAILURE-RATE LEVEL (PERCENT FAILURE PER 1,000 HOURS). ON FILM RESISTORS, THIS BAND SHALL BE APPROXIMATELY 1-1/2 TIMES THE WIDTH OF OTHER BANDS, AND INDICATES TYPE OF TERMINAL.

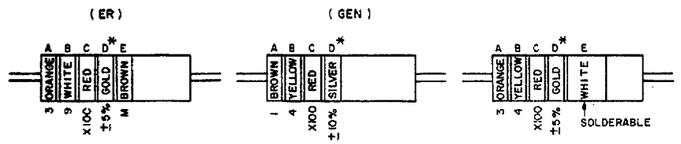
RESISTANCES IDENTIFIED BY NUMBERS AND LETTERS
(THESE ARE NOT COLOR CODED)

SOME RESISTORS ARE IDENTIFIED BY THREE OR FOUR DIGIT ALPHA NUMERIC DESIGNATORS. THE LETTER R IS USED IN PLACE OF A DECIMAL POINT WHEN FRACTIONAL VALUES OF AN OHM ARE EXPRESSED. FOR EXAMPLE:

2R7 = 2.7 OHMS 10R0 = 10.0 OHMS

FOR WIRE-WOUND-TYPE RESISTORS COLOR CODING IS NOT USED, IDENTIFICATION MARKING IS SPECIFIED IN EACH OF THE APPLICABLE SPECIFICATIONS.

EXAMPLES OF COLOR CODING



NOMINAL RESISTANCE 3,900 OHMS
RESISTANCE TOLERANCE ±5%
FAILURE RATE LEVEL M

NOMINAL RESISTANCE 1,400 OHMS
RESISTANCE TOLERANCE ±10%

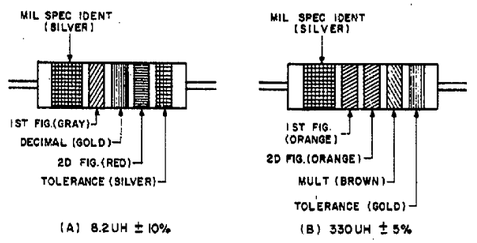
NOMINAL RESISTANCE 3,400 OHMS
RESISTANCE TOLERANCE ±5%
TERMINAL SOLDERABLE

COMPOSITION-TYPE RESISTORS

FILM-TYPE RESISTORS

* IF BAND D IS OMITTED, THE RESISTOR TOLERANCE IS ±20% AND THE RESISTOR IS NOT MIL-STD.

A. COLOR CODE MARKING FOR MILITARY STANDARD RESISTORS.



(A) 8.2UH ± 10%

(B) 330UH ± 5%

COLOR CODING FOR TUBULAR ENCAPSULATED R.F. CHOKES. AT A, AN EXAMPLE OF OF THE CODING FOR AN 8.2UH CHOKE IS GIVEN. AT B, THE COLOR BANDS FOR A 330UH INDUCTOR ARE ILLUSTRATED.

TABLE 2
COLOR CODING FOR TUBULAR ENCAPSULATED R.F. CHOKES.

COLOR	SIGNIFICANT FIGURE	MULTIPLIER	INDUCTANCE TOLERANCE (PERCENT)
BLACK	0	1	
BROWN	1	10	1
RED	2	100	2
ORANGE	3	1,000	3
YELLOW	4		
GREEN	5		
BLUE	6		
VIOLET	7		
GRAY	8		
WHITE	9		
NONE			20
SILVER			10
GOLD	DECIMAL POINT		5

MULTIPLIER IS THE FACTOR BY WHICH THE TWO COLOR FIGURES ARE MULTIPLIED TO OBTAIN THE INDUCTANCE VALUE OF THE CHOKE COIL.

B. COLOR CODE MARKING FOR MILITARY STANDARD INDUCTORS.

EL5805-628-34-TM-20 (1)

Figure 11-1①. Standard color codes (sheet 1)

CAPACITORS, FIXED, VARIOUS-DIELECTRICS, STYLES CM, CN, CY, AND CB.

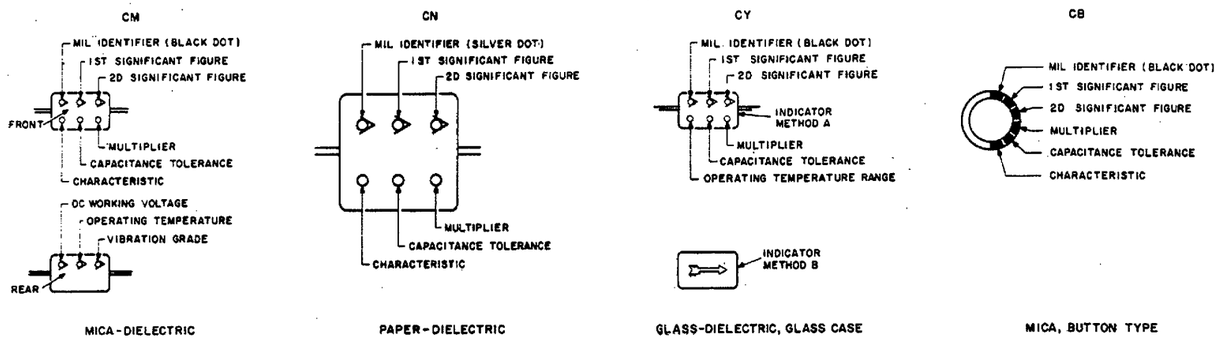


TABLE 3 — FOR USE WITH STYLES CM, CN, CY AND CB.

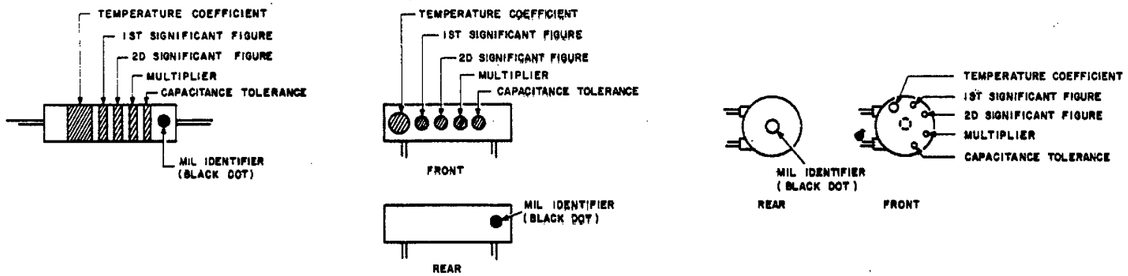
COLOR	MIL ID	1ST SIG FIG.	2D SIG FIG.	MULTIPLIER[1]	CAPACITANCE TOLERANCE				CHARACTERISTIC[2]			DC WORKING VOLTAGE	OPERATING TEMP RANGE	VIBRATION GRADE
					CM	CN	CY	CB	CM	CN	CB	CM	CY, CM	CM
BLACK	CM, CY CB	0	0	1			±20%	±20%		A			-55°C TO +70°C	10-55 HZ
BROWN		1	1	10					B	E	B			
RED		2	2	100	±2%		±2%	±2%	C				-55°C TO +85°C	
ORANGE		3	3	1,000		±30%			D		D	300		
YELLOW		4	4	10,000					E				-55°C TO +125°C	10-2,000HZ
GREEN		5	5		±5%				F			500		
BLUE		6	6										-55°C TO +150°C	
PURPLE (VIOLET)		7	7											
GRAY		8	8											
WHITE		9	9											
GOLD				0.1			±5%	±5%						
SILVER	CN			0.01	±10%	±10%	±10%	±10%						

TABLE 4 — TEMPERATURE COMPENSATING, STYLE CC.

COLOR	TEMPERATURE COEFFICIENT[4]	1ST SIG FIG.	2D SIG FIG.	MULTIPLIER[1]	CAPACITANCE TOLERANCE		MIL ID
					CAPACITANCES OVER 10 UUF	CAPACITANCES 10 UUF OR LESS	
BLACK	0	0	0	1		±2.0 UUF	CC
BROWN	-30	1	1	10	±1%		
RED	-80	2	2	100	±2%	±0.25 UUF	
ORANGE	-150	3	3	1,000			
YELLOW	-220	4	4				
GREEN	-330	5	5		±5%	±0.5 UUF	
BLUE	-470	6	6				
PURPLE (VIOLET)	-750	7	7				
GRAY		8	8	0.01*			
WHITE		9	9	0.1*	±10%		
GOLD	+100			0.1		±1.0 UUF	
SILVER				0.01			

1. THE MULTIPLIER IS THE NUMBER BY WHICH THE TWO SIGNIFICANT (SIG) FIGURES ARE MULTIPLIED TO OBTAIN THE CAPACITANCE IN UUF.
2. LETTERS INDICATE THE CHARACTERISTICS DESIGNATED IN APPLICABLE SPECIFICATIONS: MIL-C-5, MIL-C-25D, MIL-C-11272B, AND MIL-C-10950C RESPECTIVELY.
3. LETTERS INDICATE THE TEMPERATURE RANGE AND VOLTAGE-TEMPERATURE LIMITS DESIGNATED IN MIL-C-11015D.
4. TEMPERATURE COEFFICIENT IN PARTS PER MILLION PER DEGREE CENTIGRADE.

* OPTIONAL CODING WHERE METALLIC PIGMENTS ARE UNDESIRABLE.



C. COLOR CODE MARKING FOR MILITARY STANDARD CAPACITORS.

Figure 11-1②. Standard color codes (sheet 2)

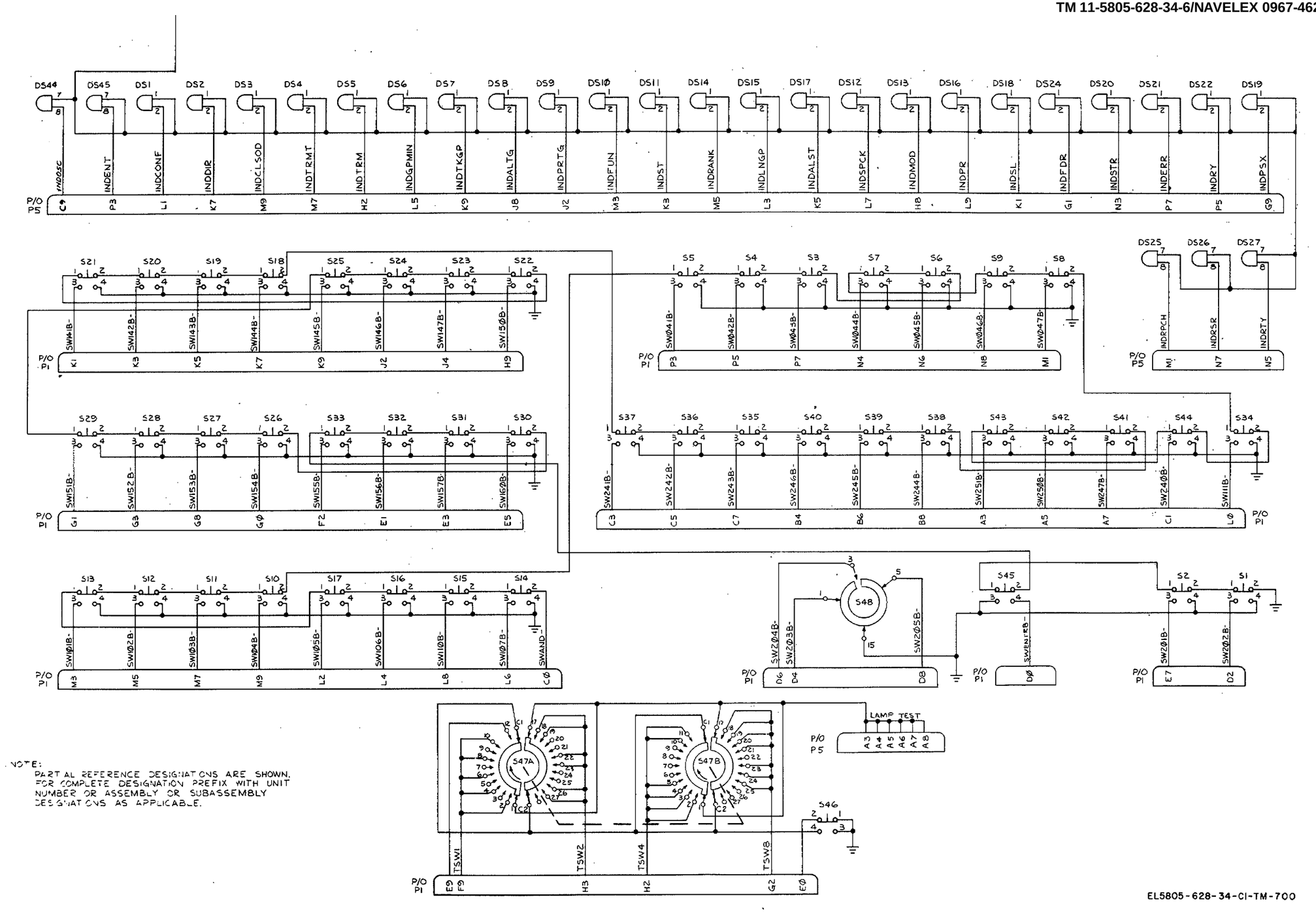


Figure 11-2. FACP panel schematic.

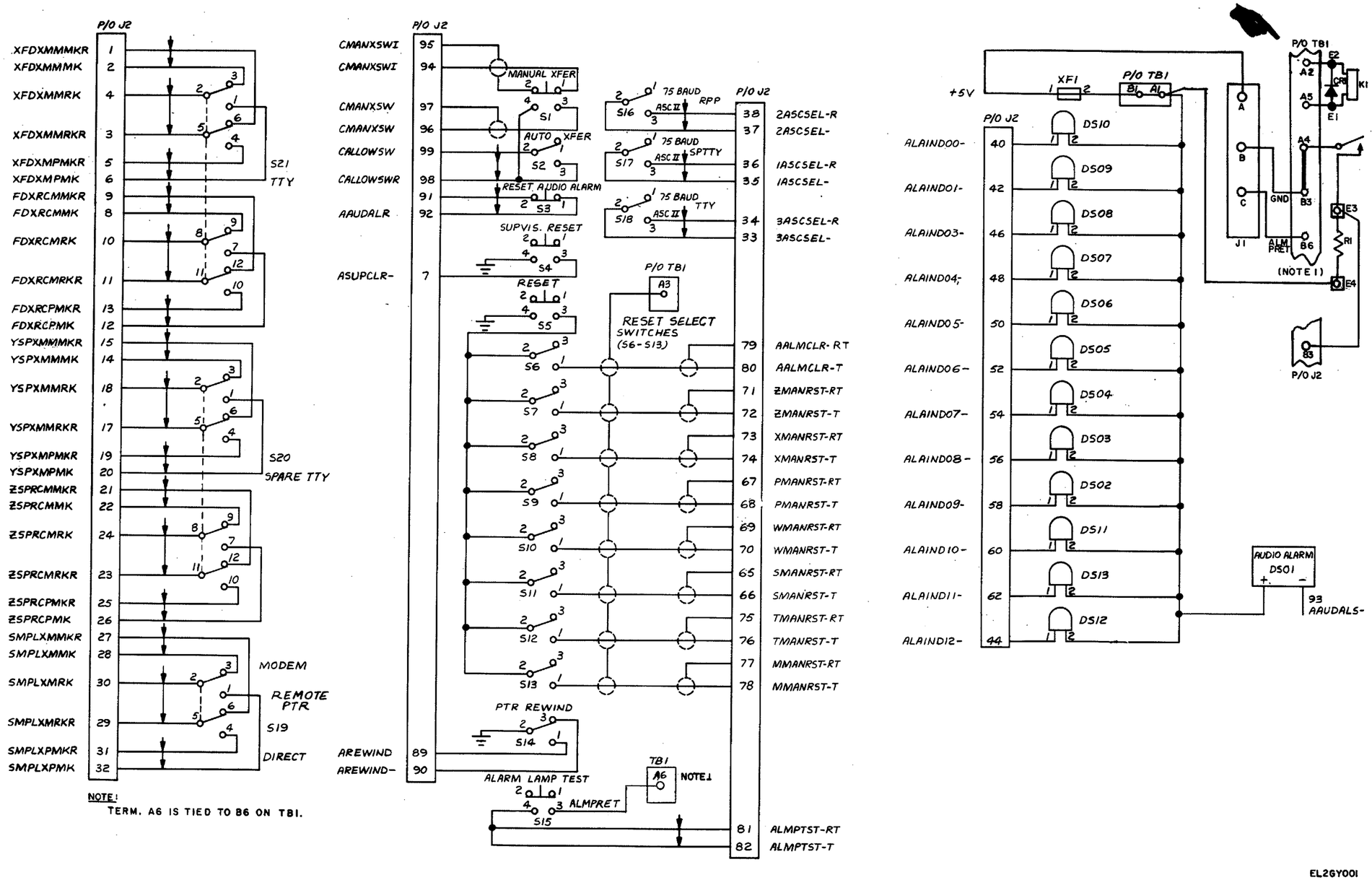


Figure No. 11-4. SSP panel schematic

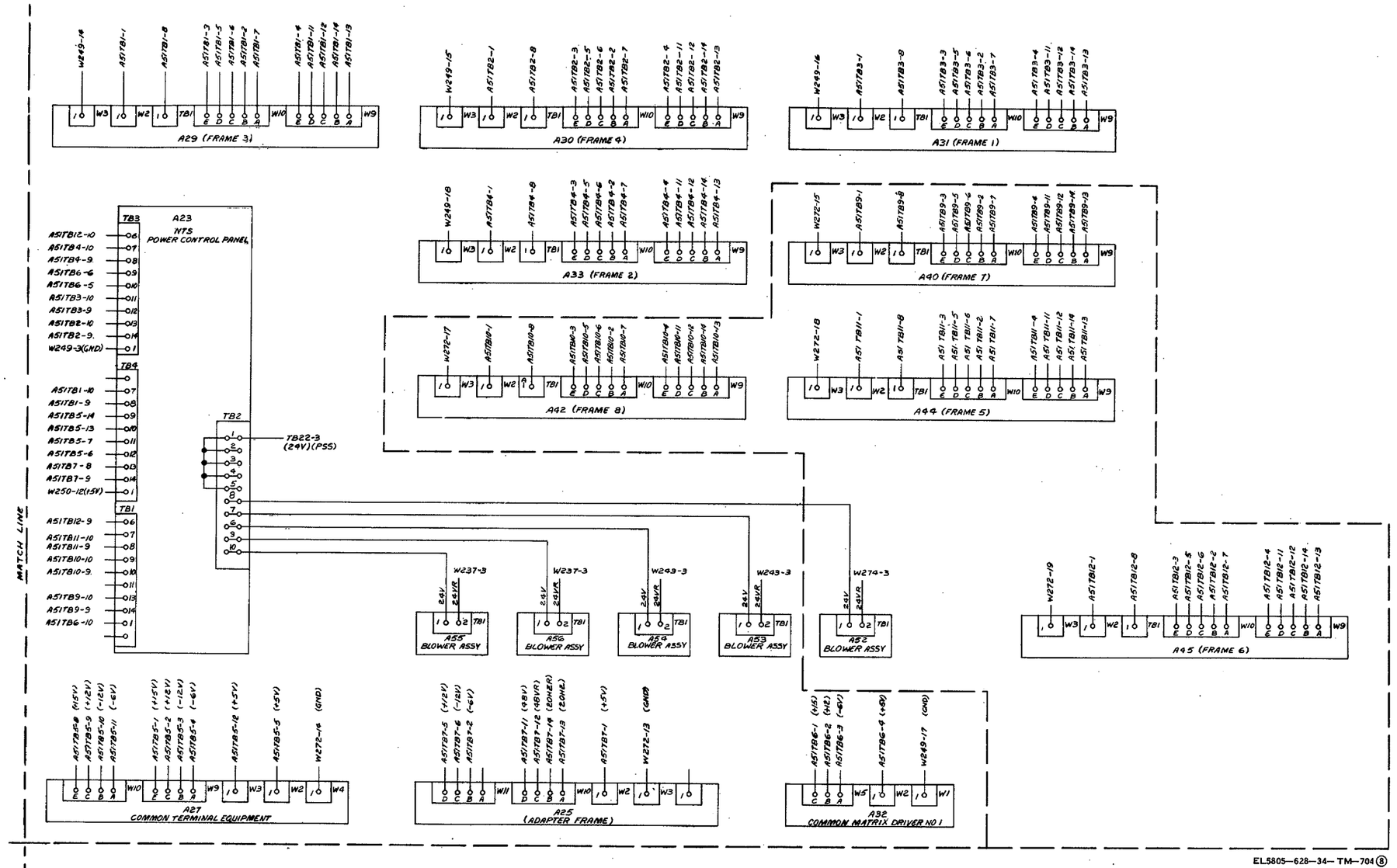


Figure 11-6 ⑧ Schematic diagram power system (sheet 8)

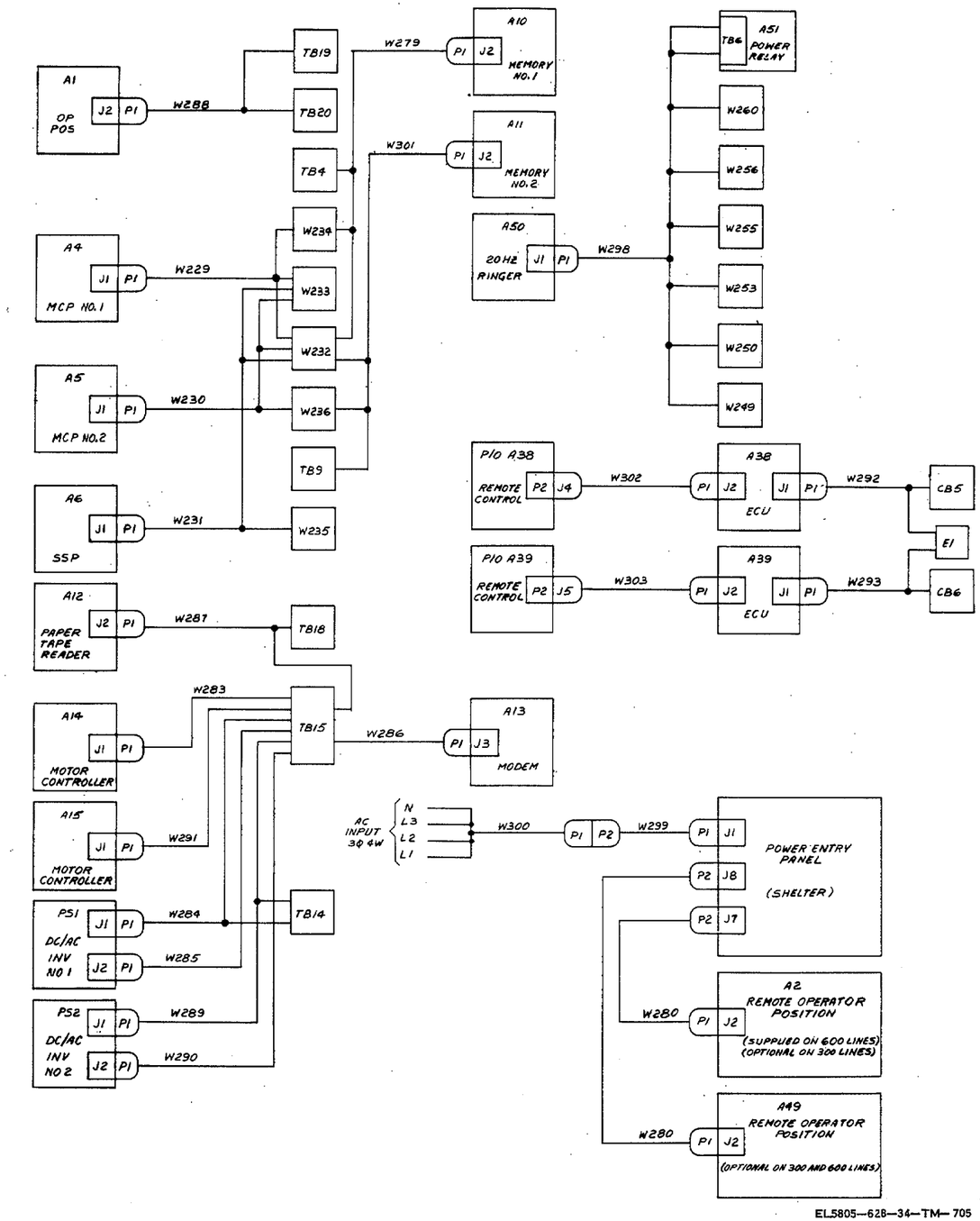


Figure 11-7 Interconnecting cable diagram power shelter

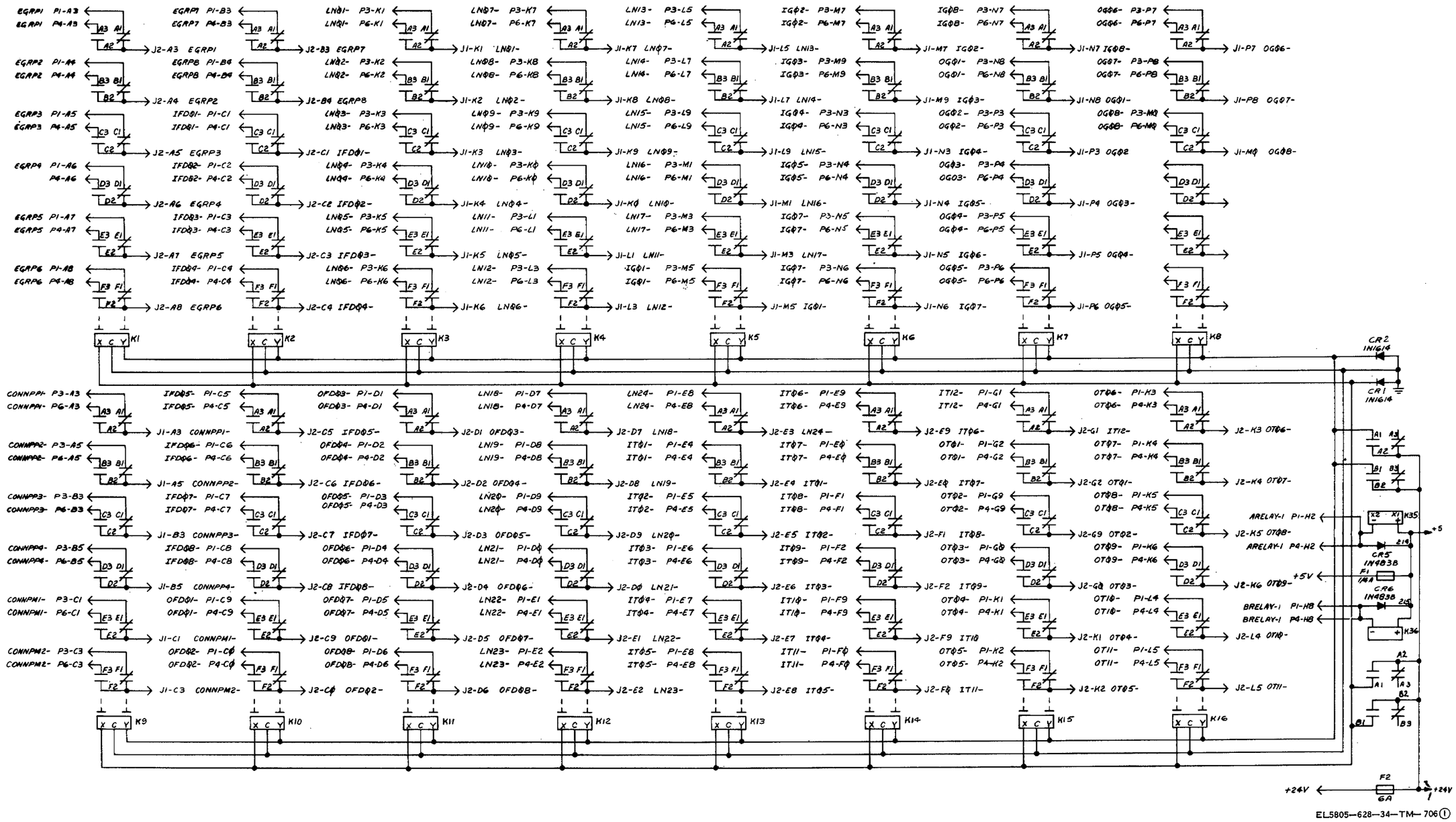


Figure 11-8 ① Control transfer relay Schematic diagram (sheet1)

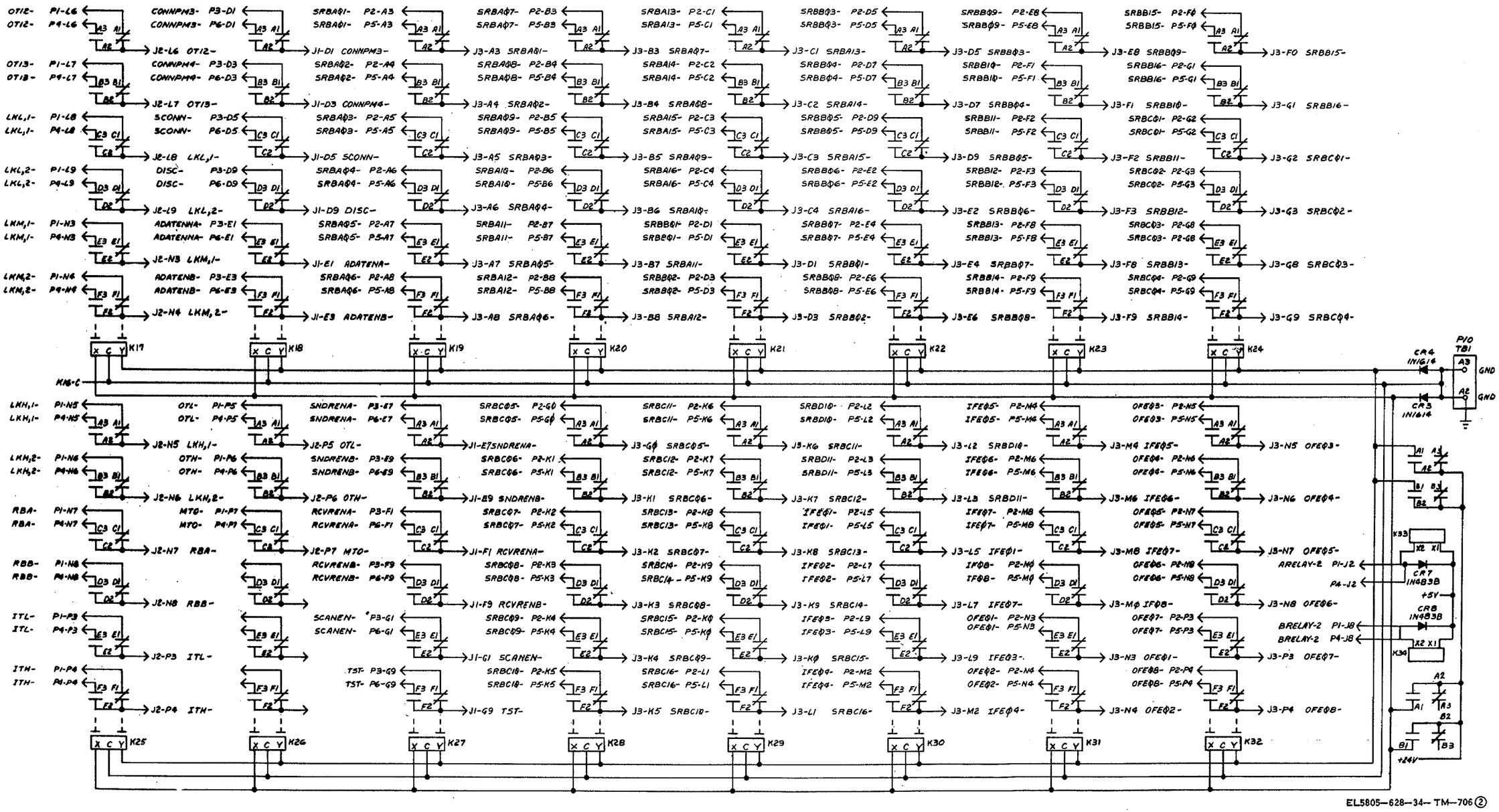
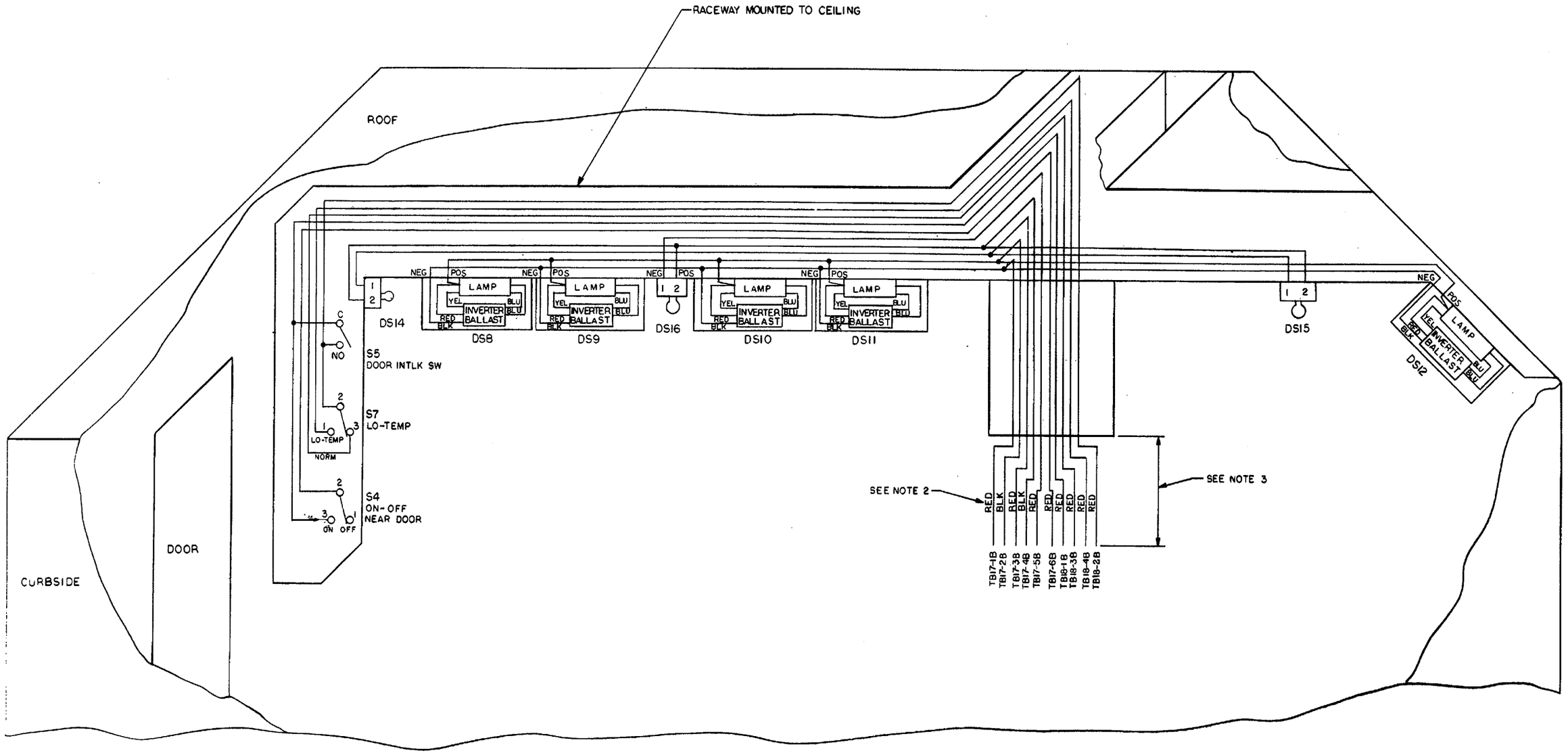


Figure 11-8 ②. Control transfer relay schematic diagram (sheet 2)

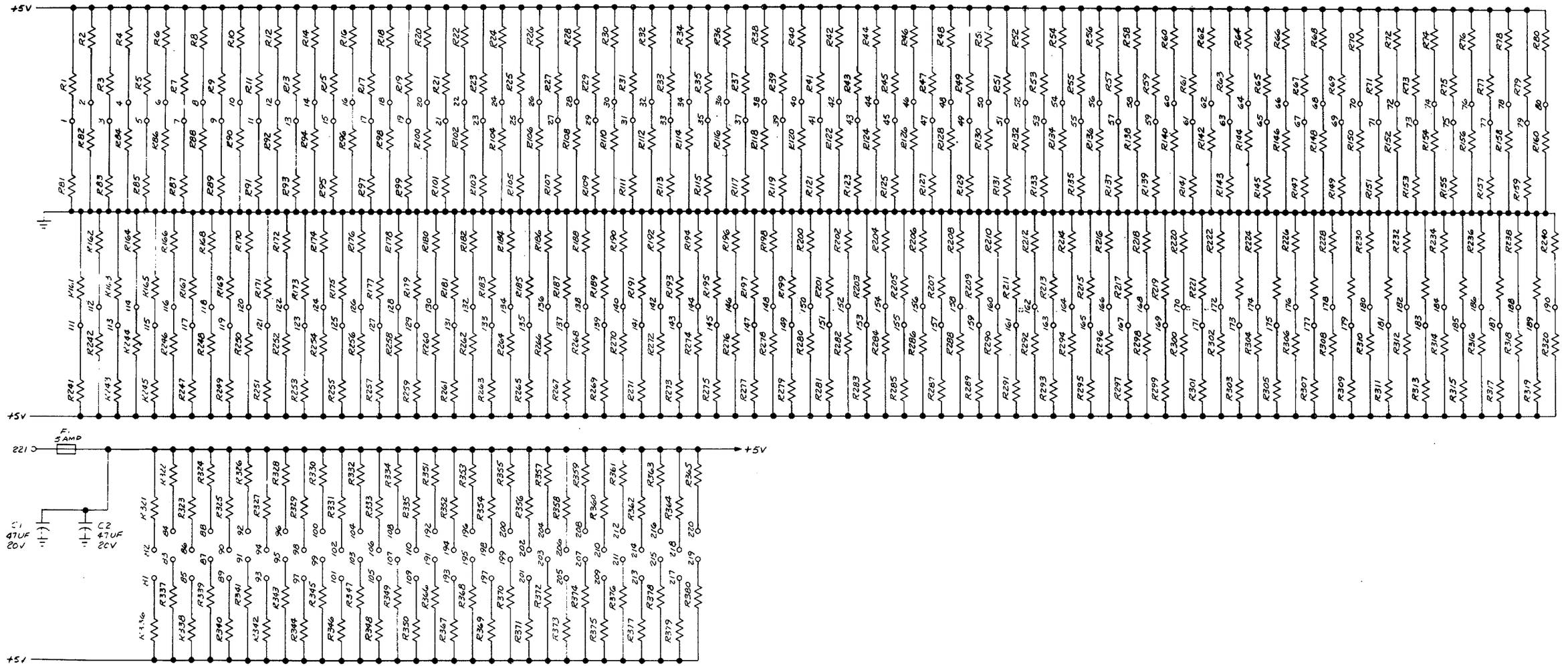


NOTES:

1. S5 IS IN NORMALLY OPEN POSITION WHEN SHELTER DOOR IS OPEN.
2. ALL WIRE TO BE MIL-W-16878/4, TYPE E, 12 AWG.
3. WIRES TO EXTEND 12 FEET FROM END OF RACEWAY AND BE IDENTIFIED.

EL5805—628—34— TM—707

Figure 11-9. Wiring diagram-shelter pictorial



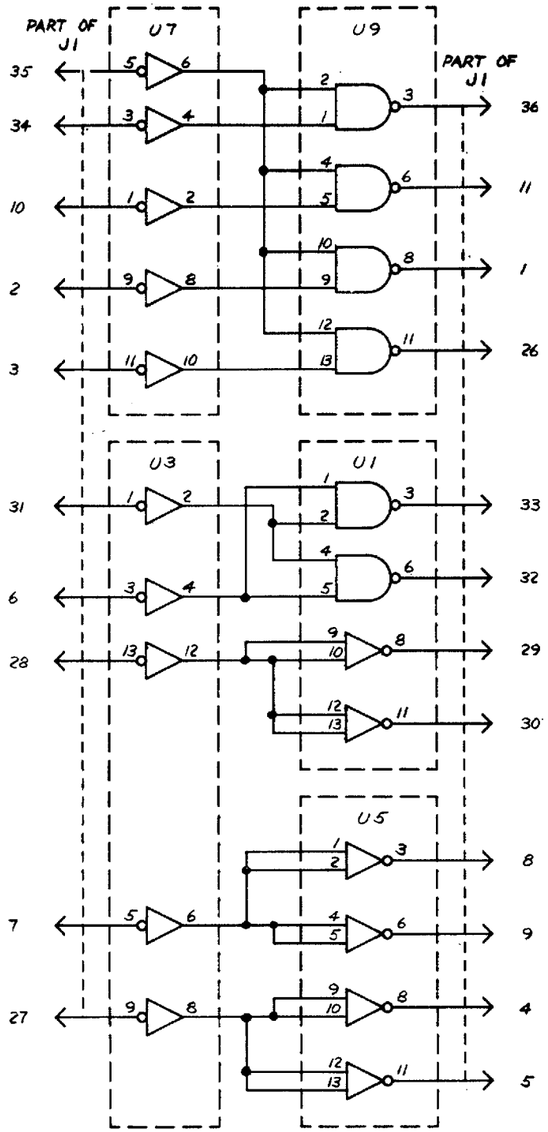
NOTES

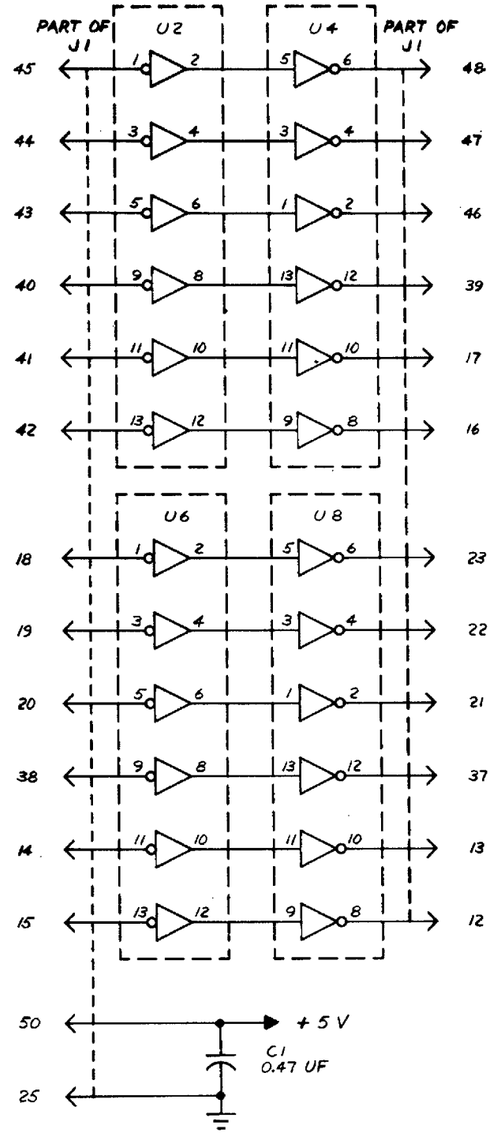
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.

2. RESISTOR VALUES ARE AS FOLLOWS
   R1 THRU R80 AND R241 THRU R320. 330 OHMS, ±5 %, 1/4 WATT.
   R81 THRU R240. 390 OHMS, ±5 %, 1/4 WATT.
   R321 THRU R380. 360 OHMS, ±5 %, 1/4 WATT.

EL5805—628—34—TM—708

Figure 11-10. Distribution panel resistor board schematic.





NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. U1, U5 AND U9 ARE TYPE SM-A-742832-1. U2, U3, U4, U6, U7 AND U8 ARE TYPE SM-A-742824-1.
3. U1 THRU U9, PIN 14 IS +5V, PIN 7 IS GND.

EL5805—628— 34— TM—709

Figure 11-11. Terminal interface.

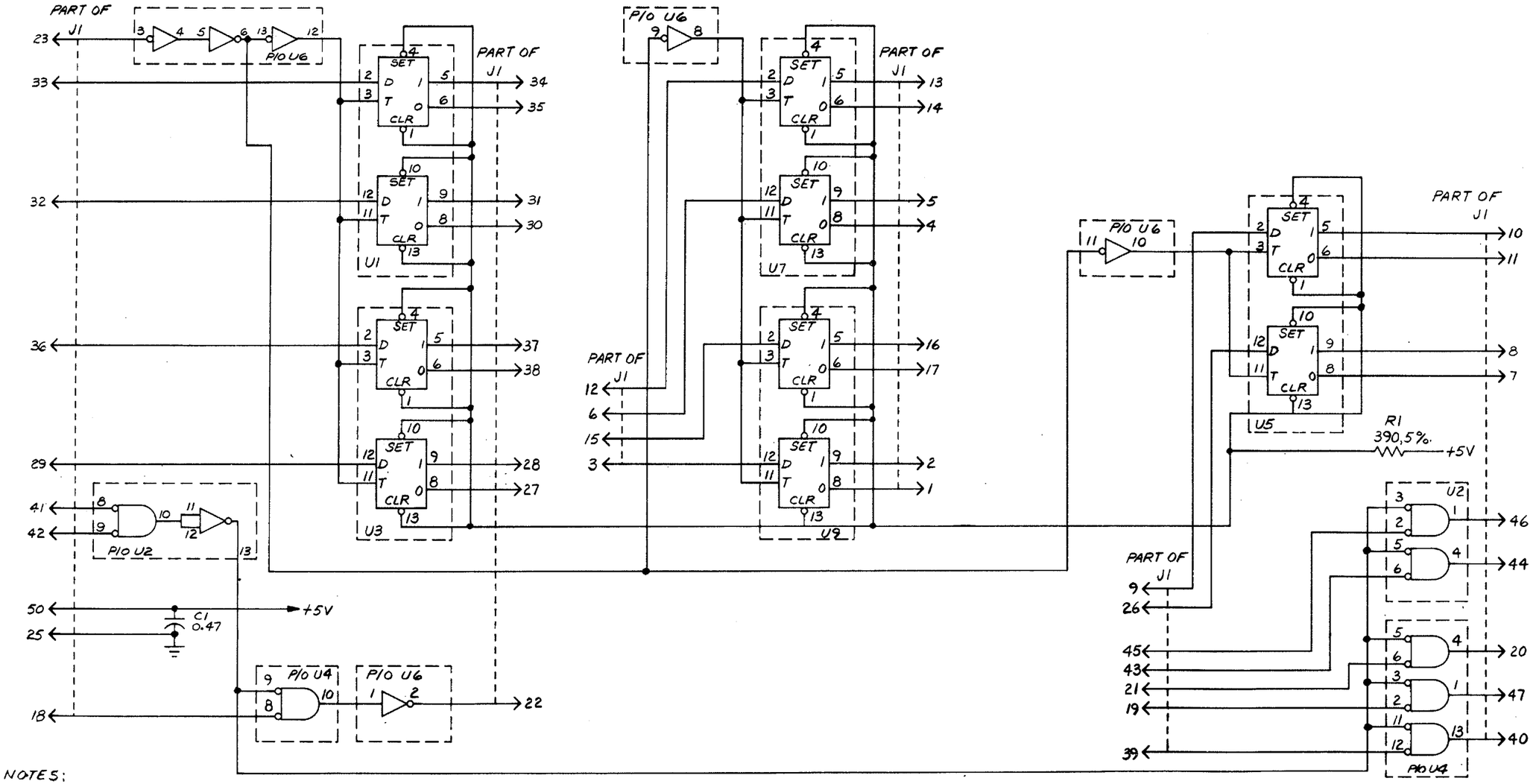
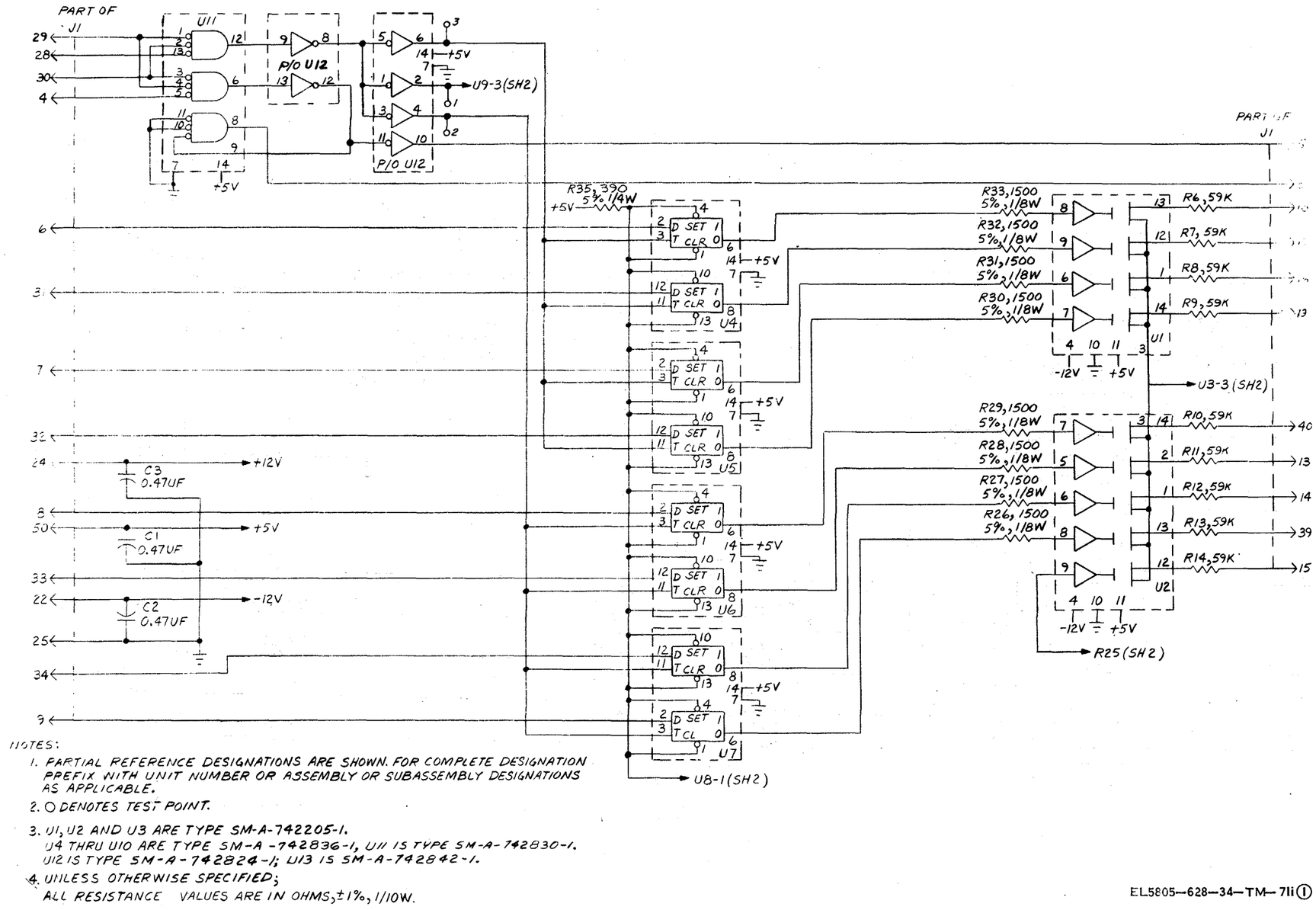


Figure 11-12. Scan Control.



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. ○ DENOTES TEST POINT.
3. U1, U2 AND U3 ARE TYPE SM-A-742205-1. U4 THRU U10 ARE TYPE SM-A-742836-1, U11 IS TYPE SM-A-742830-1. U12 IS TYPE SM-A-742824-1; U13 IS SM-A-742842-1.
4. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±1%, 1/10W.

EL5805—628—34—TM—7li①

Figure 11-13 ①. Auxiliary sender/receiver (S) (sheet 1)

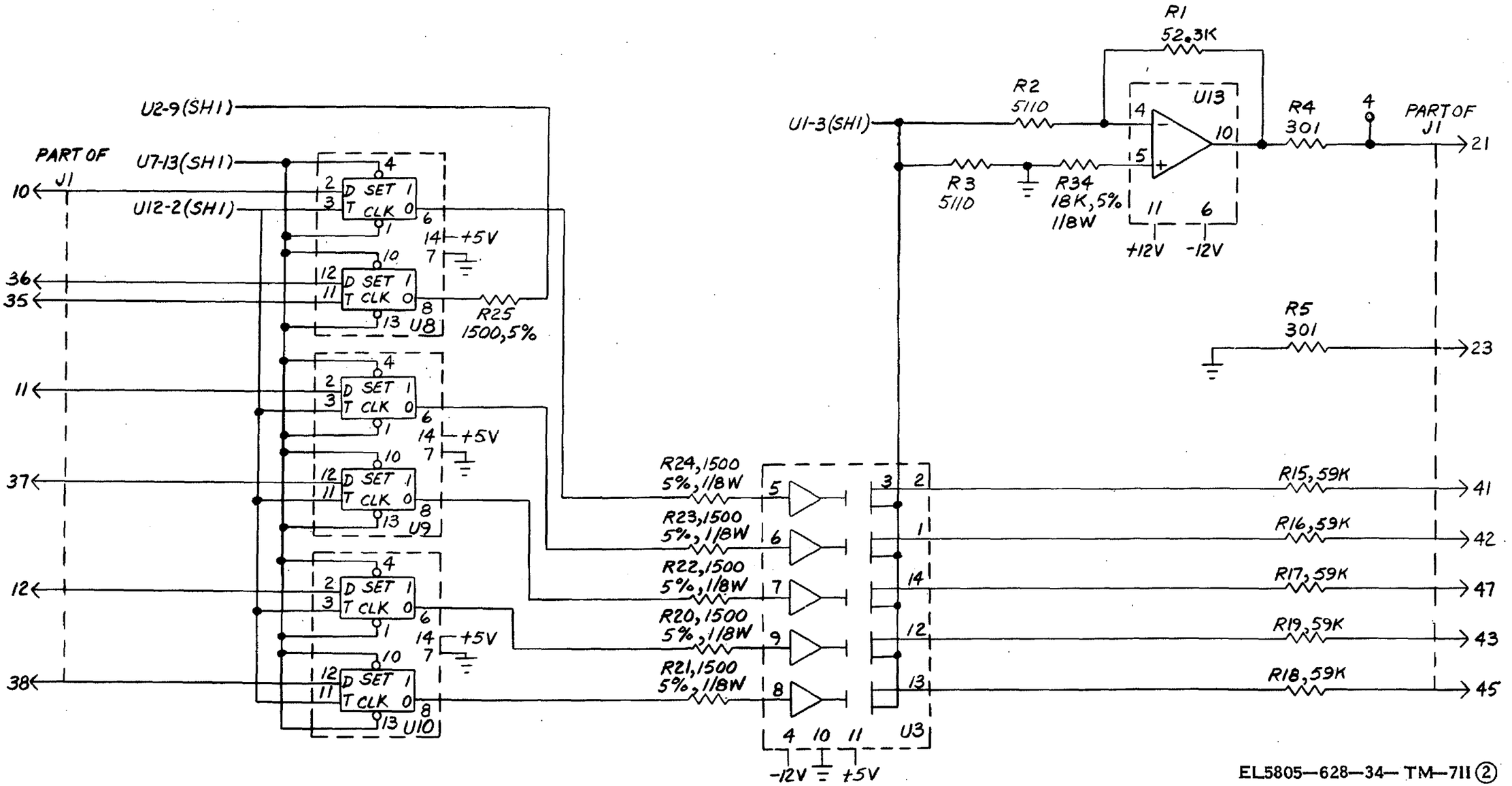
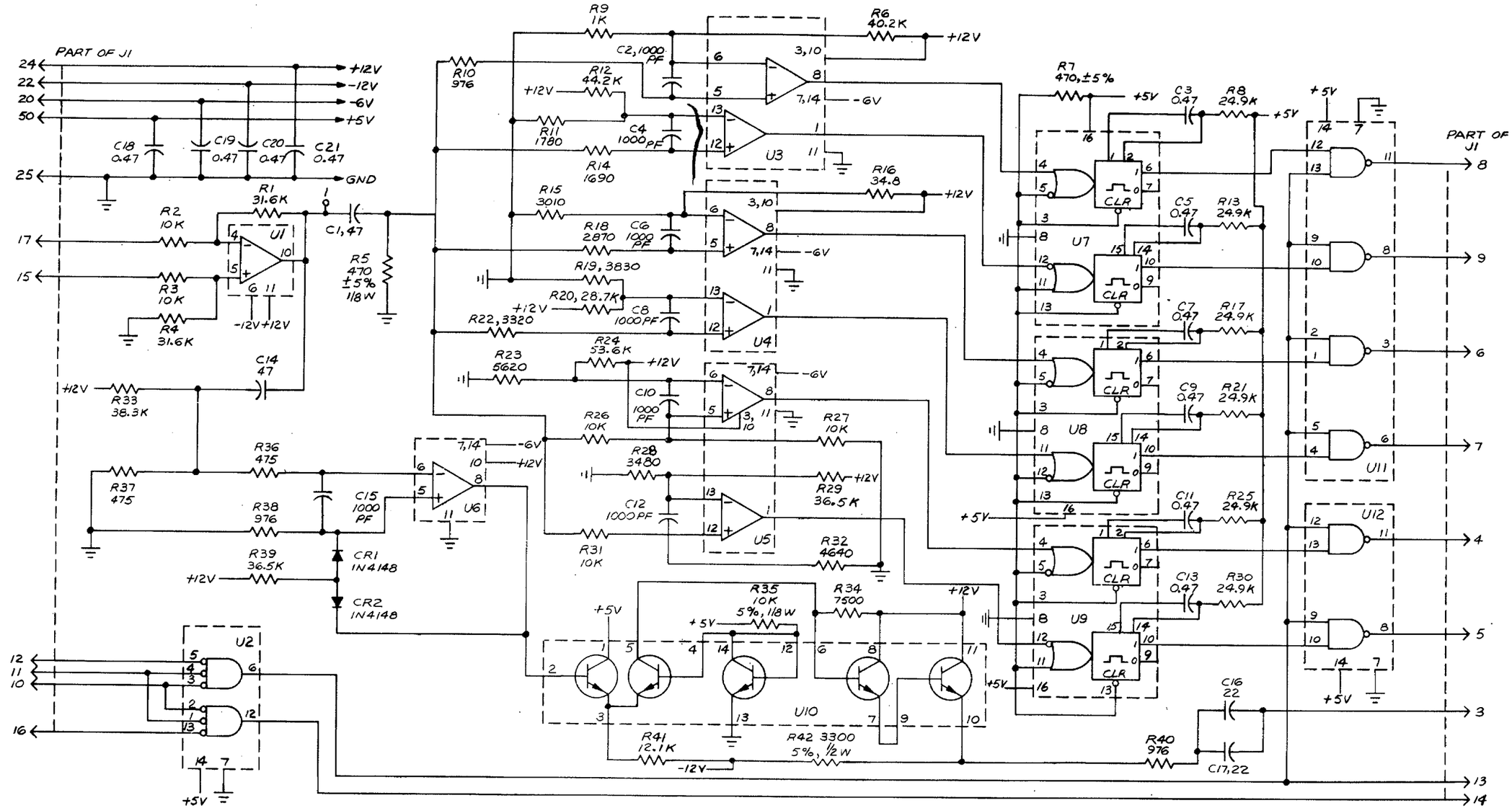


Figure 11-13 ①. Auxiliary sender/receiver (S) (sheet 2)

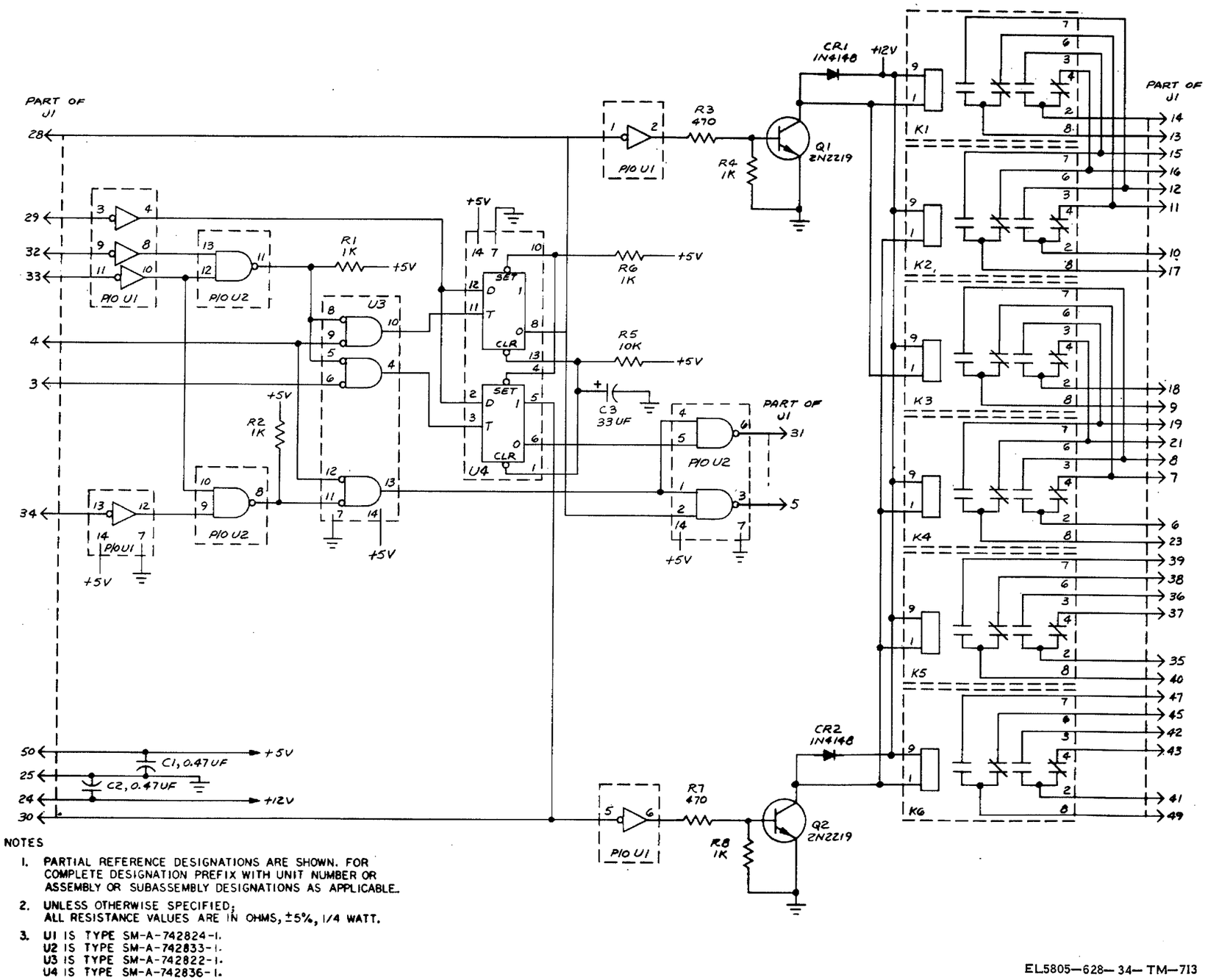


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. ○ DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED: ALL RESISTANCE VALUES ARE IN OHMS, ±1%, 1/8 WATT. ALL CAPACITANCE ARE IN MICROFARADS.
4. U1 IS TYPE SM-A-742842-1. U2 IS TYPE SM-A-742830-1. U3 THRU U6 ARE TYPE SM-A-742443-1. U7, U8 AND U9 ARE TYPE SM-A-742436-1. U10 IS TYPE SM-A-742435-1. U11 AND U12 ARE TYPE SM-A-742833-1.

EL5805—628—34—TM— 712

Figure 11-14. Auxiliary, sender/receiver amplifier.



NOTES

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±5%, 1/4 WATT.
3. U1 IS TYPE SM-A-742824-1.
   U2 IS TYPE SM-A-742833-1.
   U3 IS TYPE SM-A-742822-1.
   U4 IS TYPE SM-A-742836-1.

EL5805—628—34—TM—713

Figure 11-15. Bus crossover A.

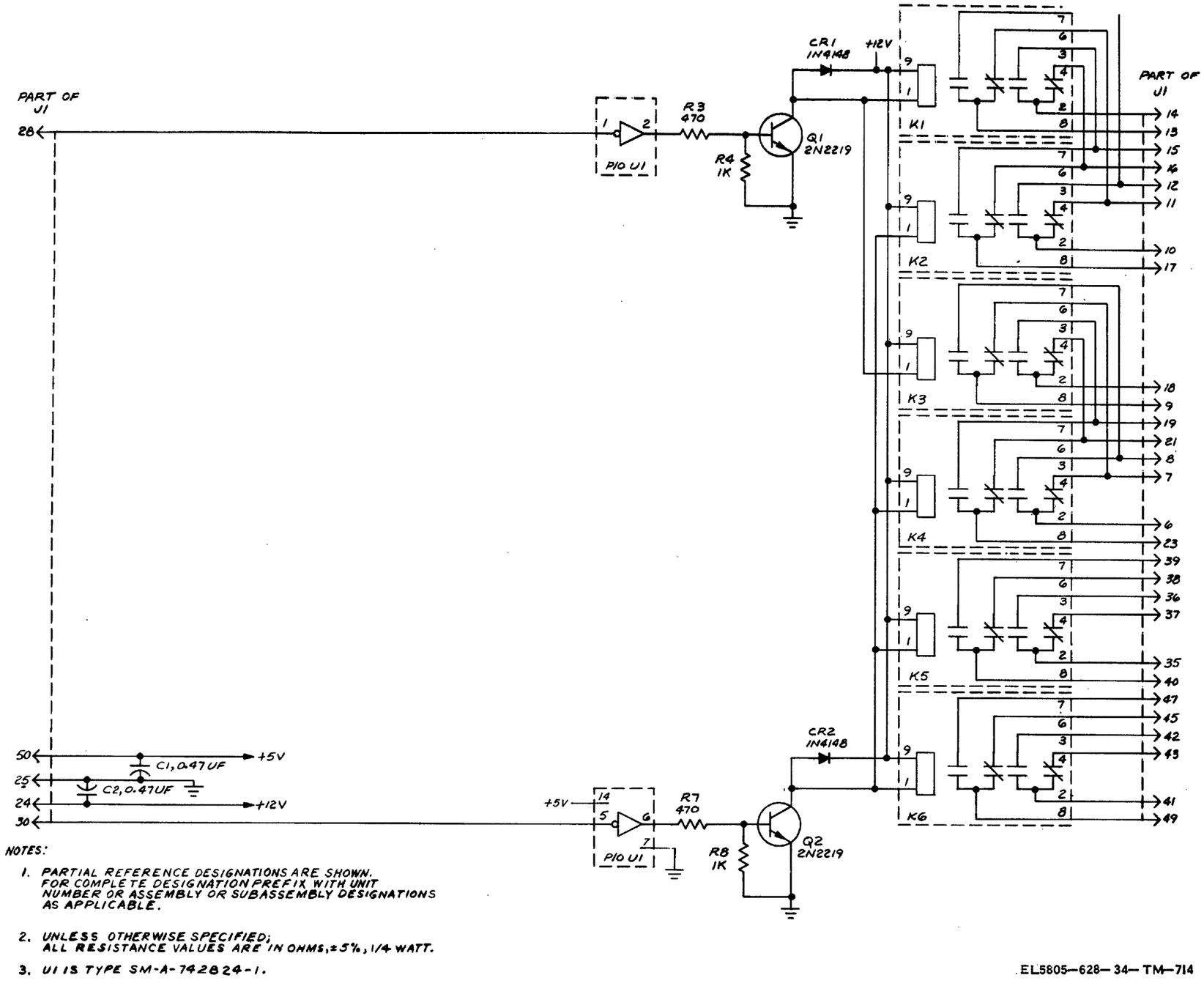
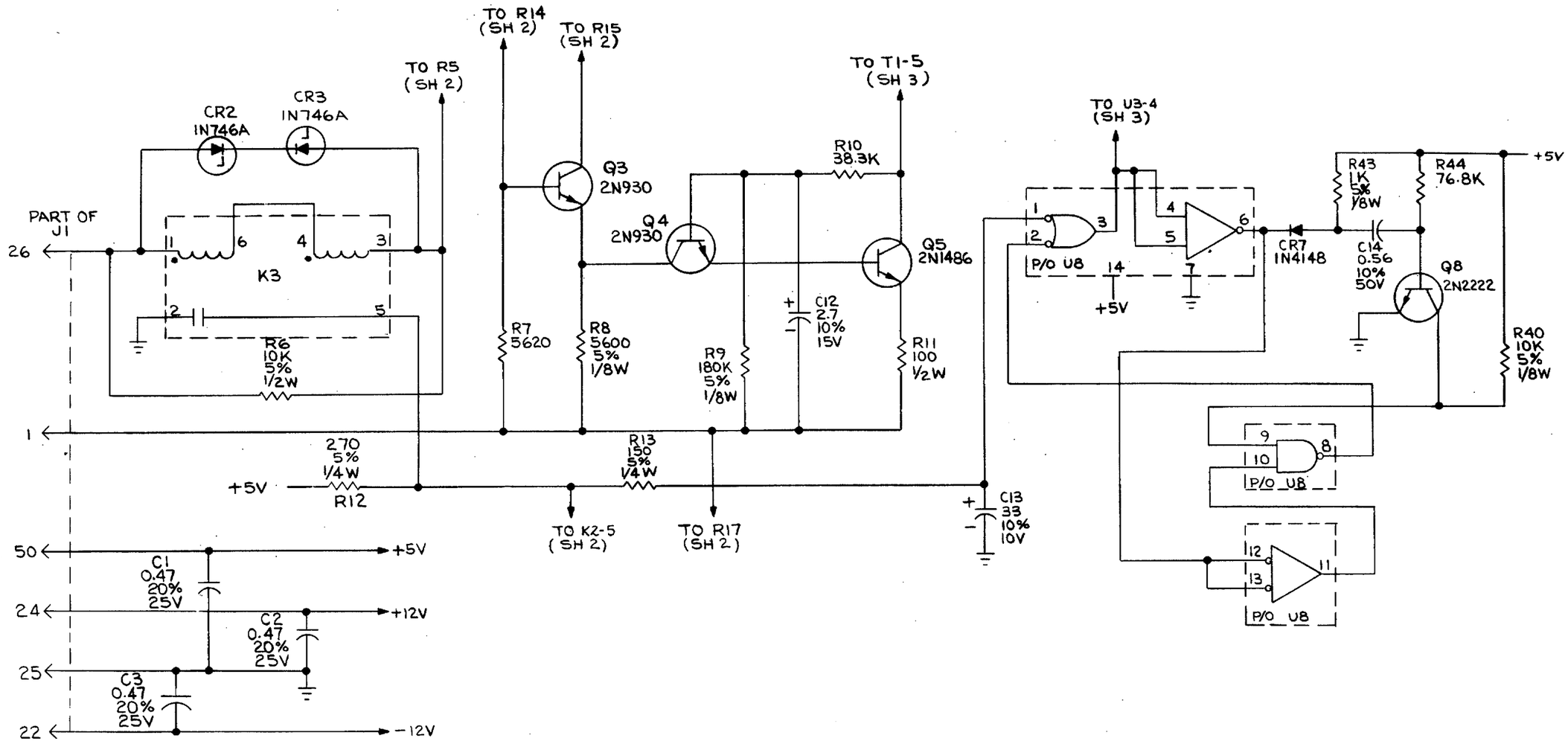


Figure 11-16. Bus crossover B.



NOTES.

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE VALUES ARE IN OHMS, ±1% 1/10 W.
   ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. o DENOTES TEST POINT.
4. U1 IS TYPE SM-A-742824-1. U2 IS TYPE SM-A-742828-1. U3, U4 AND U8 ARE TYPE SM-A-742486-1. U5 AND U6 ARE TYPE SM-A-742842-1. U7 IS TYPE SM-A-742205-2.

EL5805—628— 34— TM—715①

Figure 1117 ①. Common battery line adapter (sheet 1).

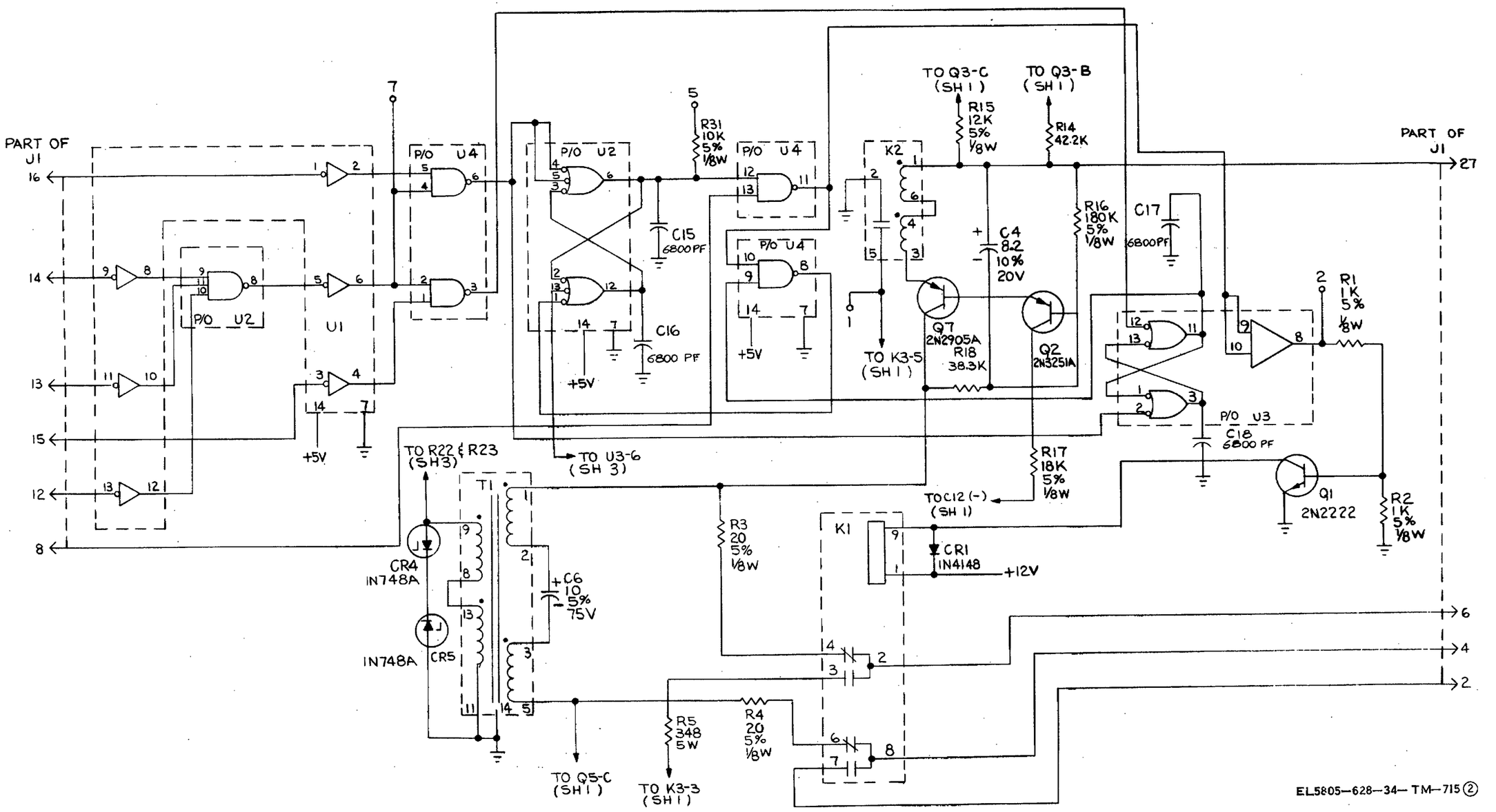


Figure 11-17 ②. Common battery line adapter (sheet 2)..

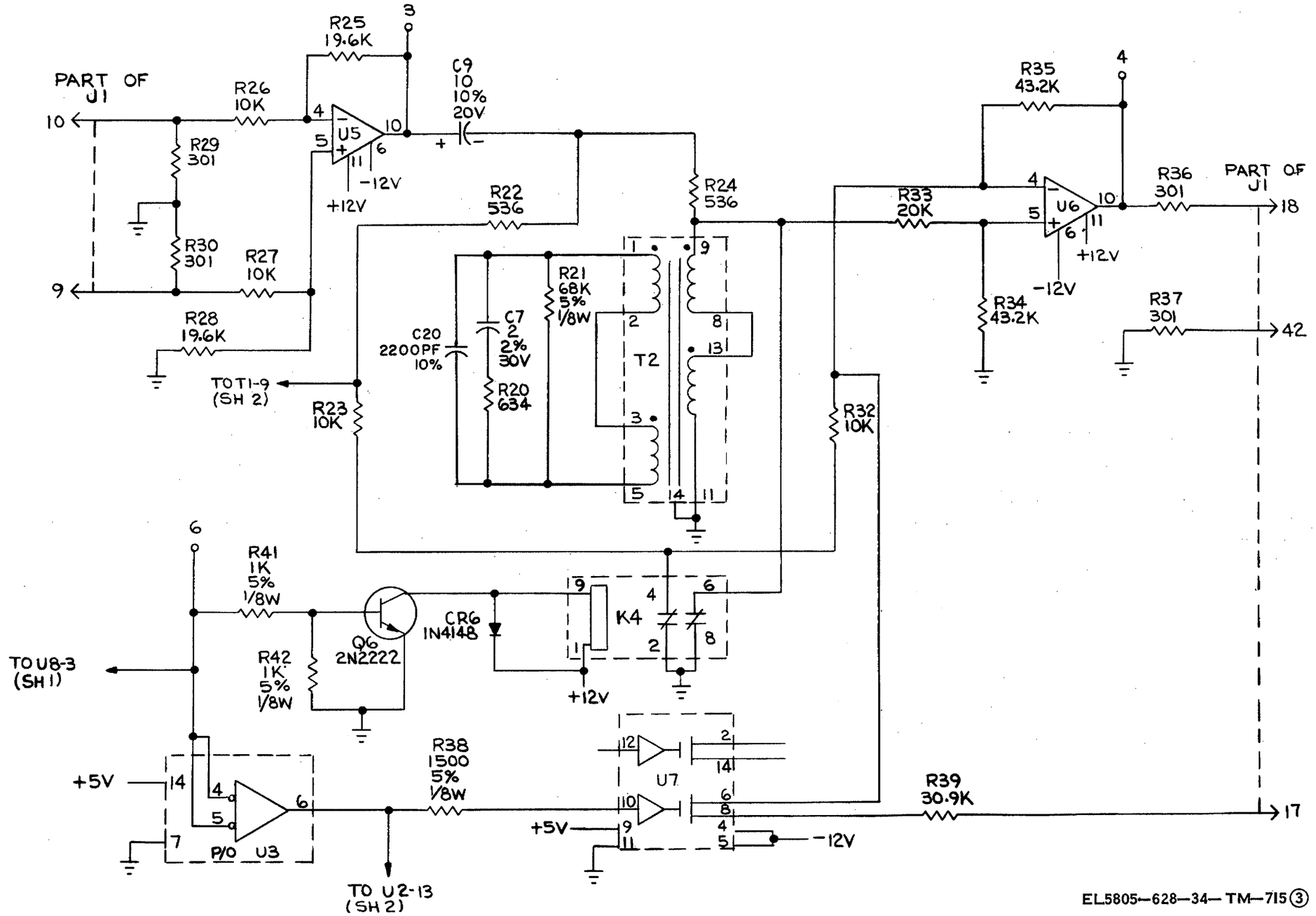
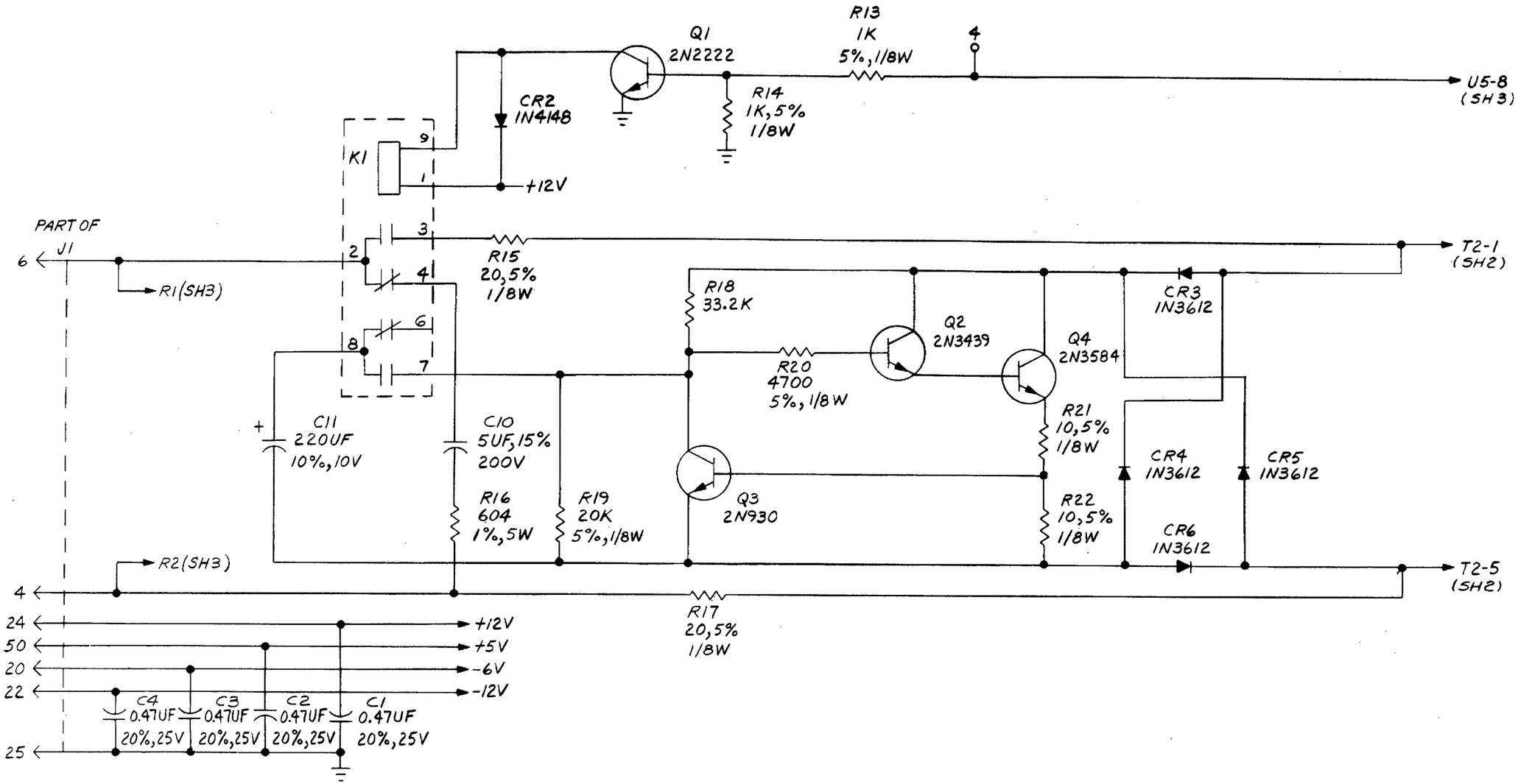


Figure 11-17 ③. Common battery line adapter (sheet 3).



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS ARE APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE VALUES ARE IN OHMS, ±1%, 1/10W.
3. o DENOTES TEST POINT.
4. SEMICONDUCTOR TYPES:
   U1 - SM-A-742443-1
   U2 - SM-A-742824-1
   U3 - SM-A-742828-1
   U4, U5 - SM-A-742486-1
   U6, U7 - SM-A-742842-1
   U8 - SM-A-742205-2

EL5805—628—34— TM—716①

Figure 11-18 ①. DC closure line adapter card A (sheet 3).

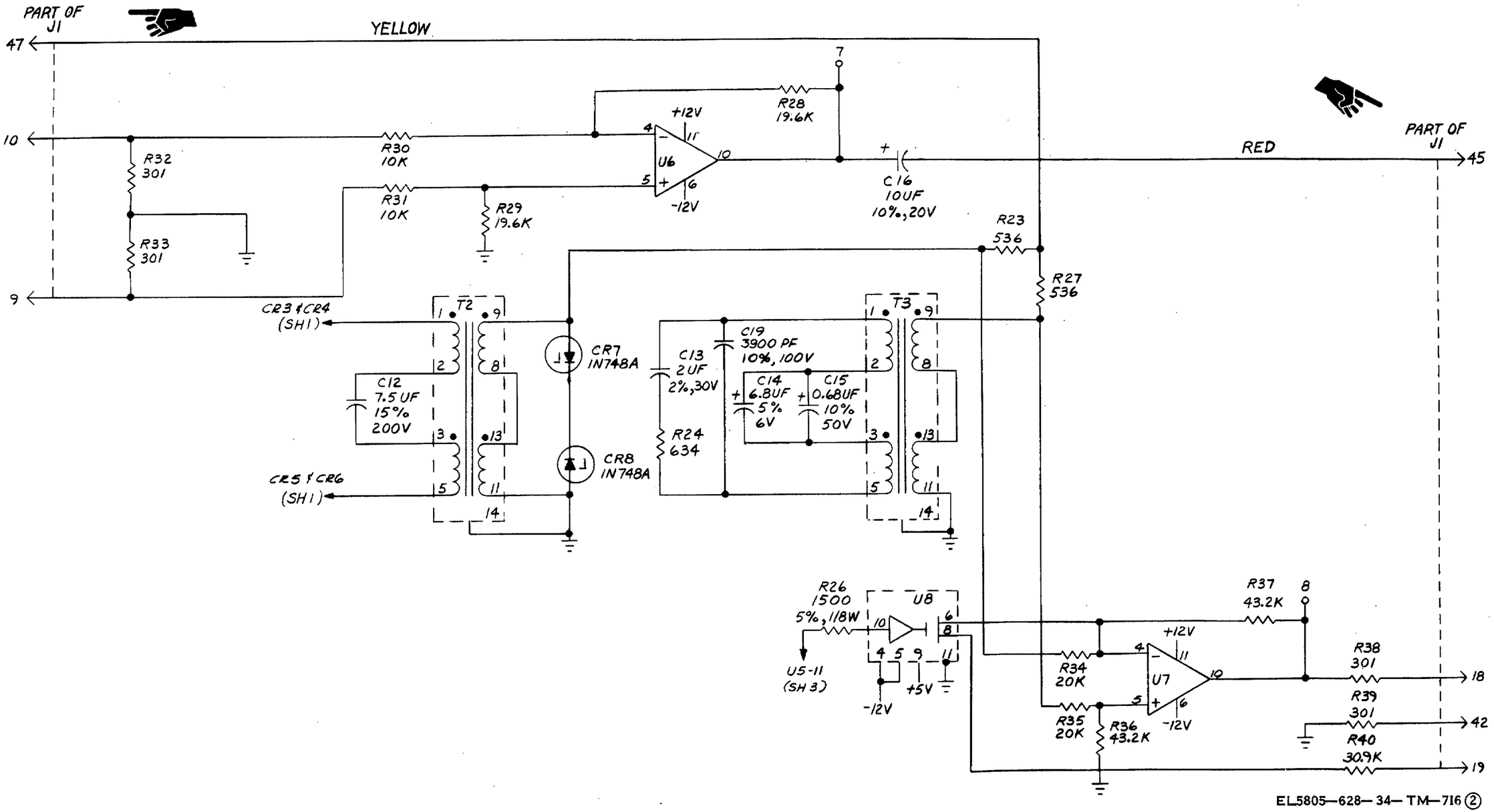
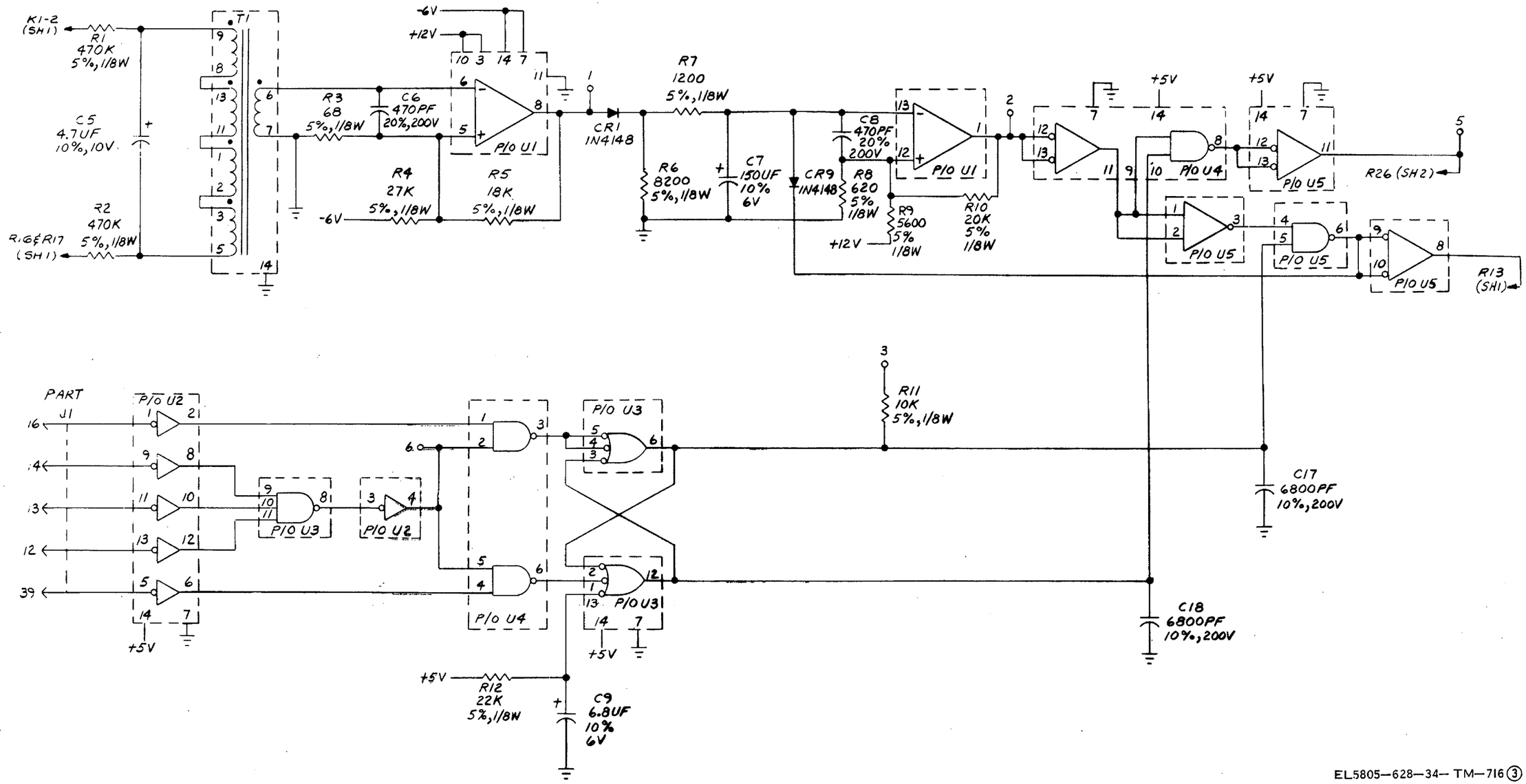
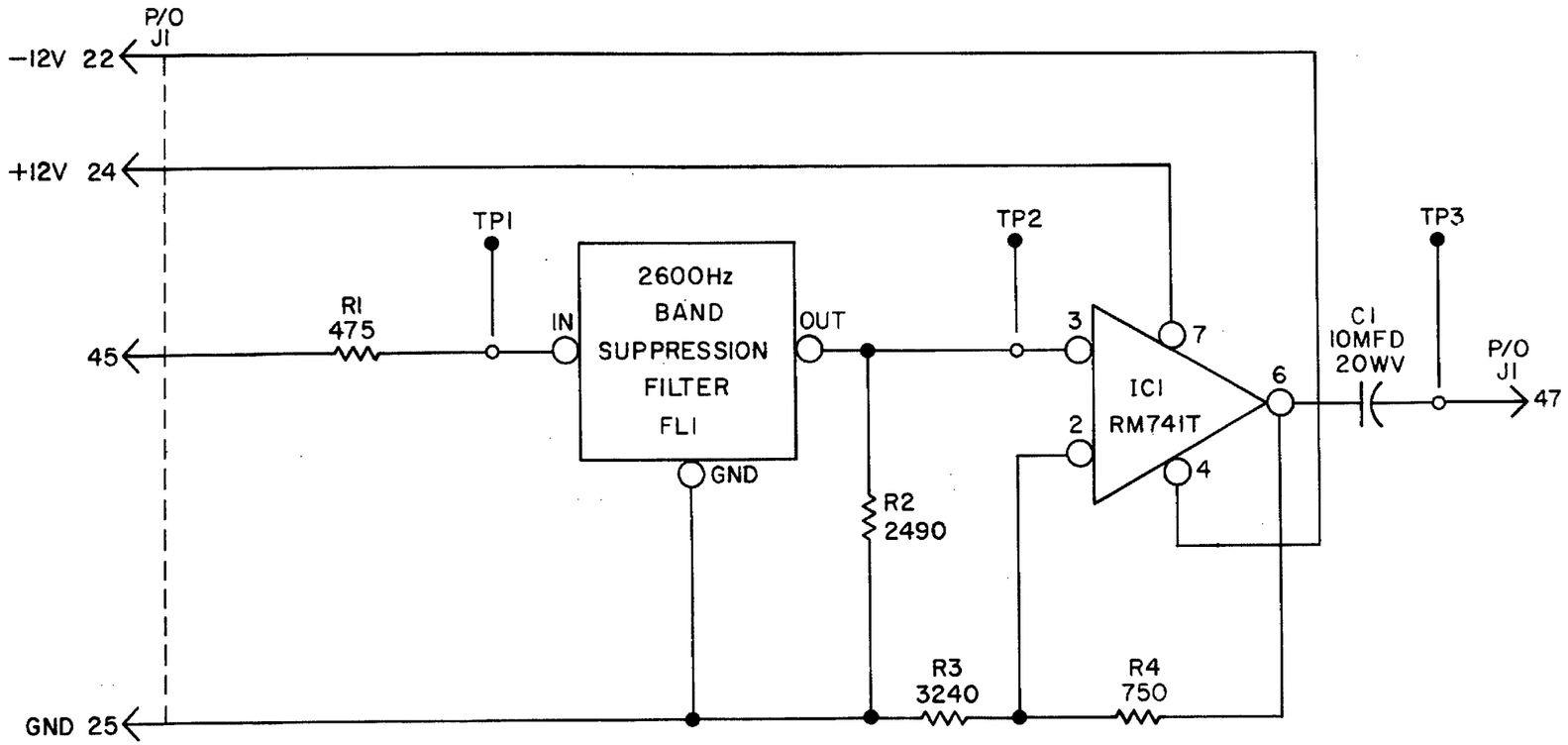


Figure 11-18 ②. DC closure line adapter card A (sheet 2).



EL5805—628—34— TM—716 ③

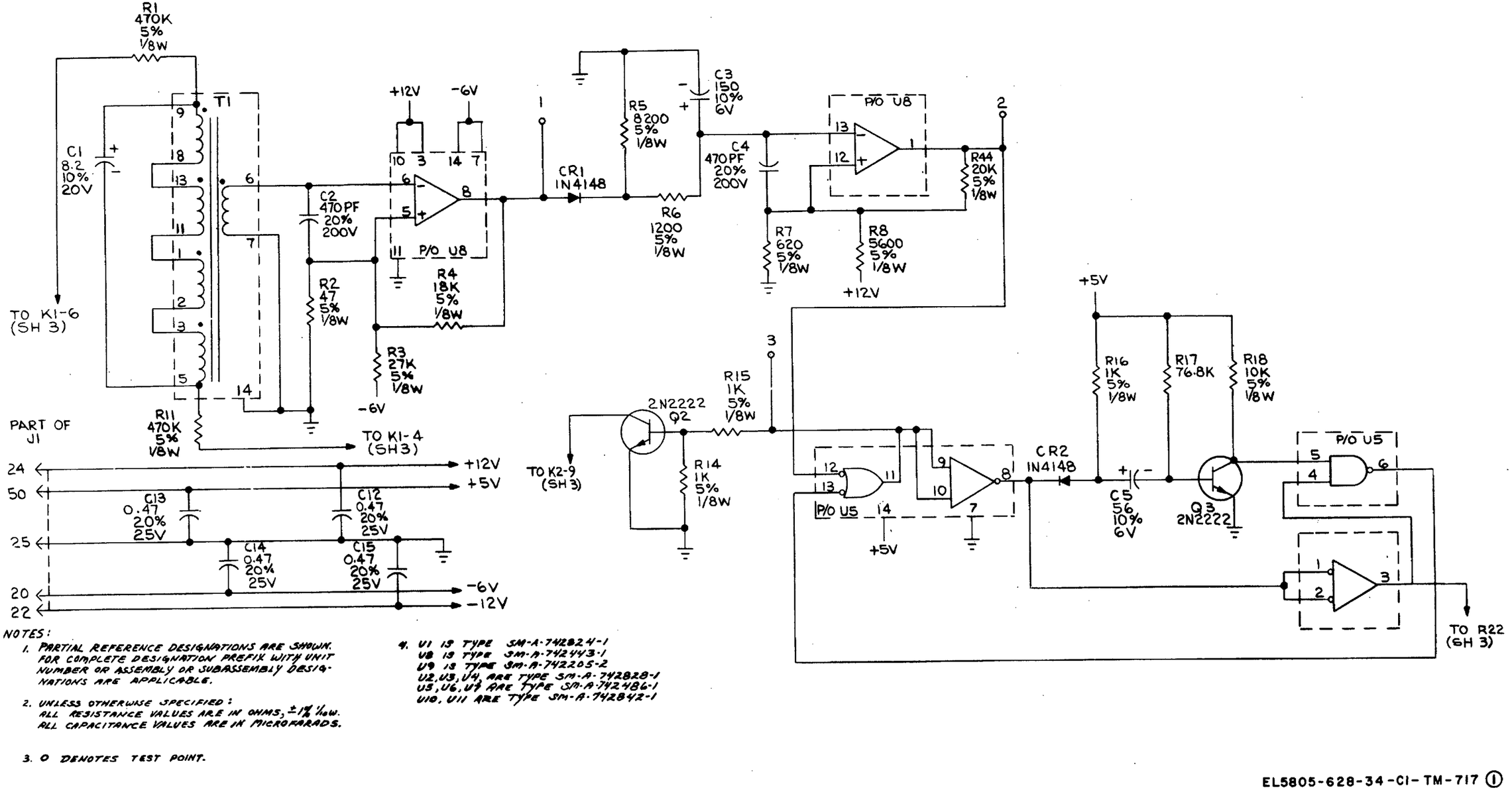
Figure 11-18 ③. DC closure line adapter card A (sheet 3).



NOTE: ALL RESISTANCE VALUES ARE IN OHMS, ±1%, 1/8 WATT.

EL2GY005

Figure 1--18 ④. DC closure line adapter card A (sheet 3).



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS ARE APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED: ALL RESISTANCE VALUES ARE IN OHMS, ±1% ½W. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. O DENOTES TEST POINT.
4. U1 IS TYPE SM-A-742824-1
   U8 IS TYPE SM-A-742443-1
   U9 IS TYPE SM-A-742205-2
   U2, U3, U4, ARE TYPE SM-A-742828-1
   U5, U6, U7 ARE TYPE SM-A-742486-1
   U10, U11 ARE TYPE SM-A-742842-1

EL5805-628-34-CI-TM-717 ①

Figure 1--19 ①. 20 Hz ringdown line adapter (sheet 1).

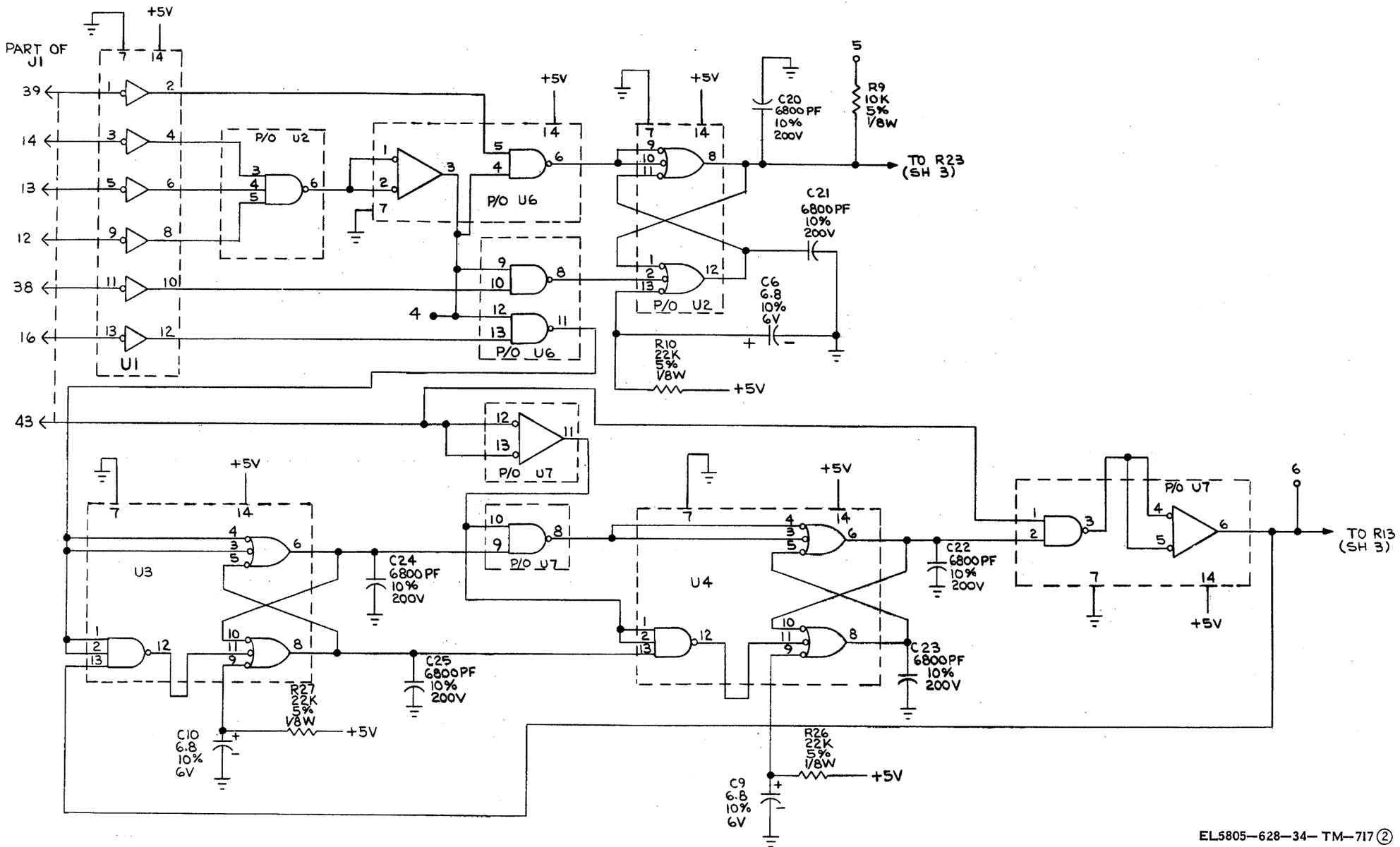


Figure 11-19 ②. 20 Hz ringdown line adapter (sheet 2).

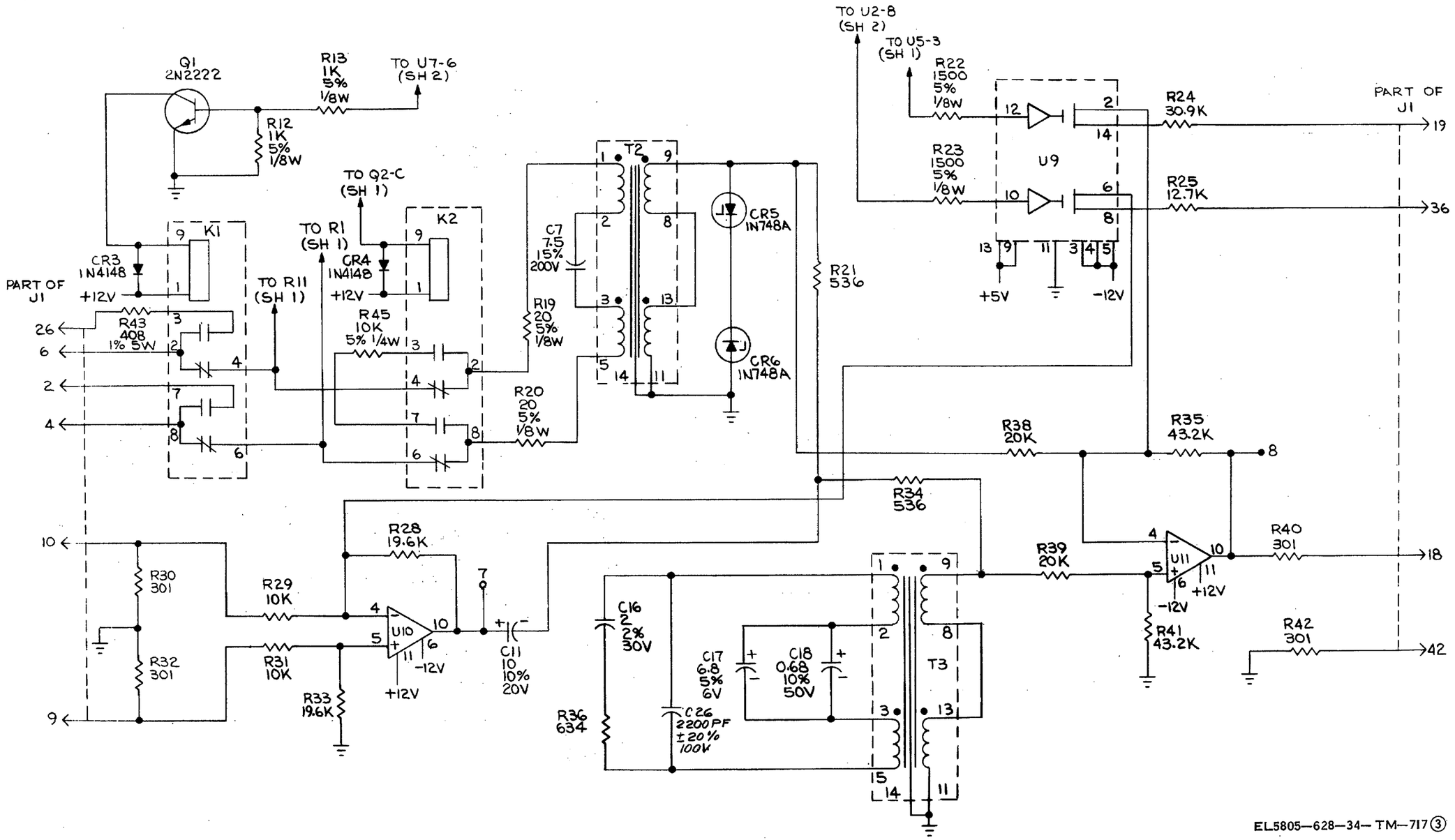
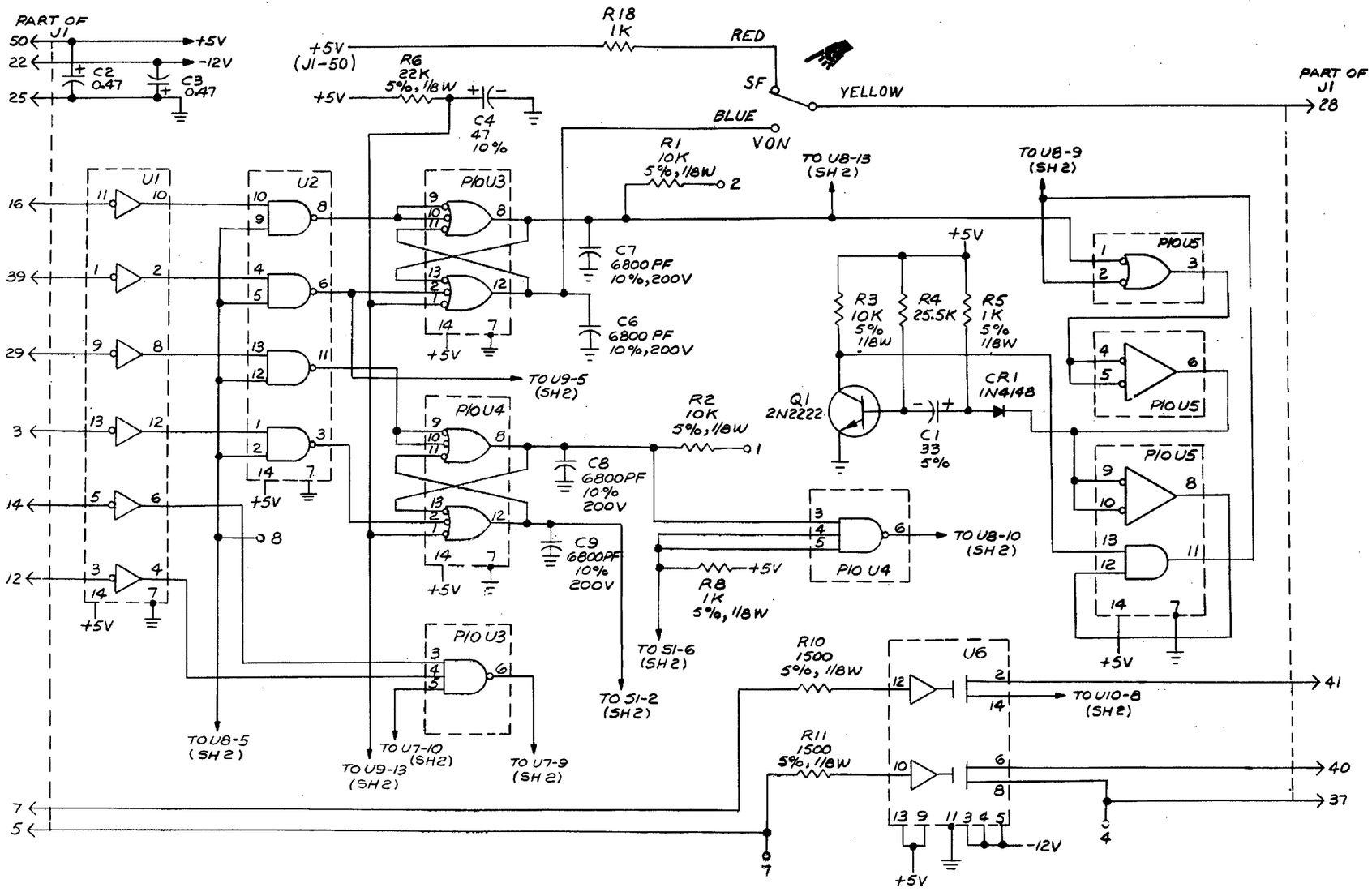


Figure 11-19 ③. 20 Hz ringdown line adapter (sheet 3).



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. 0 DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ± 1%, 1/10 WATT. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
4. SEMICONDUCTOR TYPES:
   U1, U7 -SM-A-742824-1
   U2, U5, U8 -SM-A-742486-1
   U3, U4, U9 -SM-A-742828-1
   U6, U10 -SM-A-742205-1

EL5805-628-34- TM-718①

Figure 11-20 ①. AUTOVON/SF adapter card B (Sheet 1).

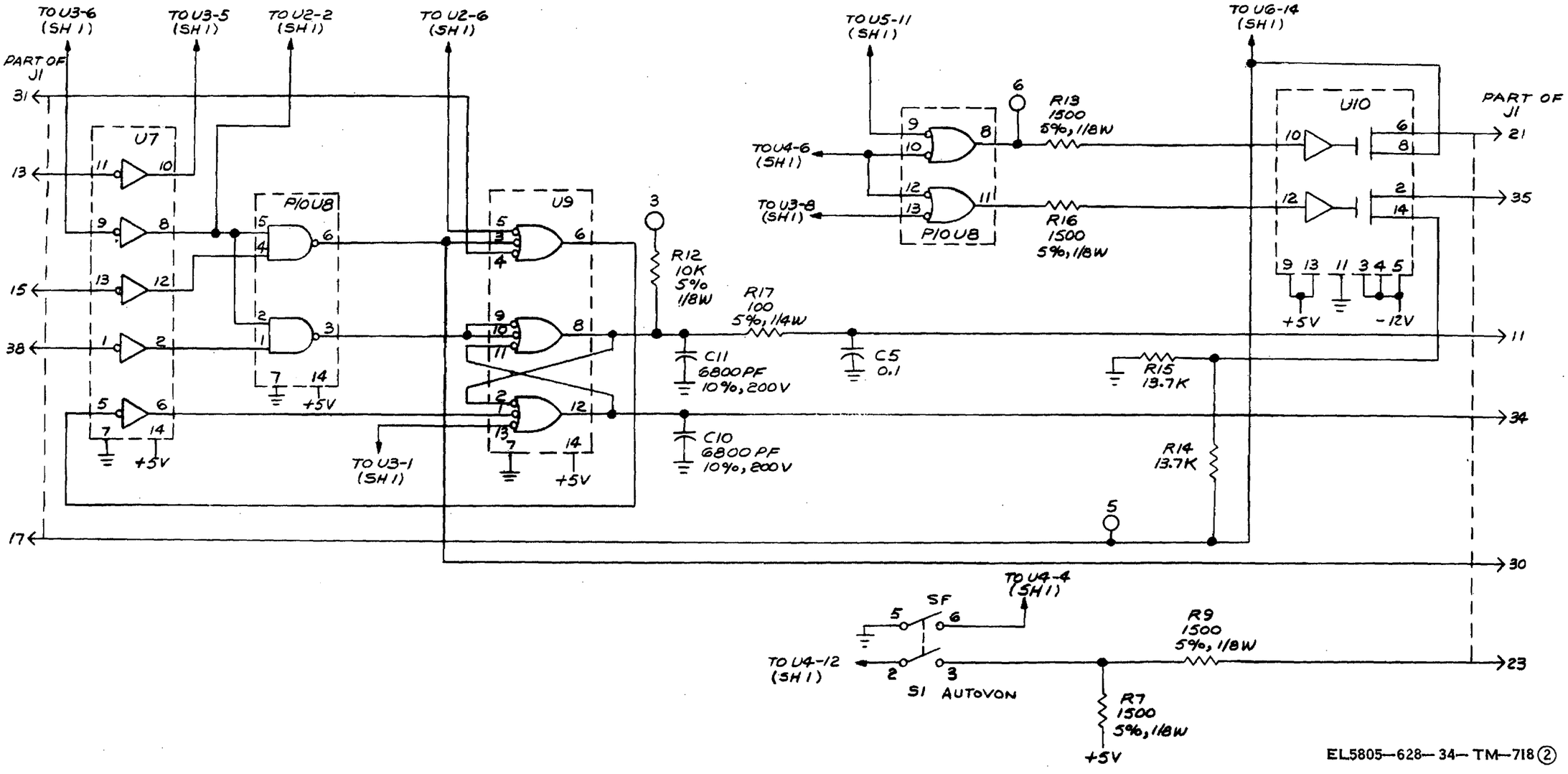
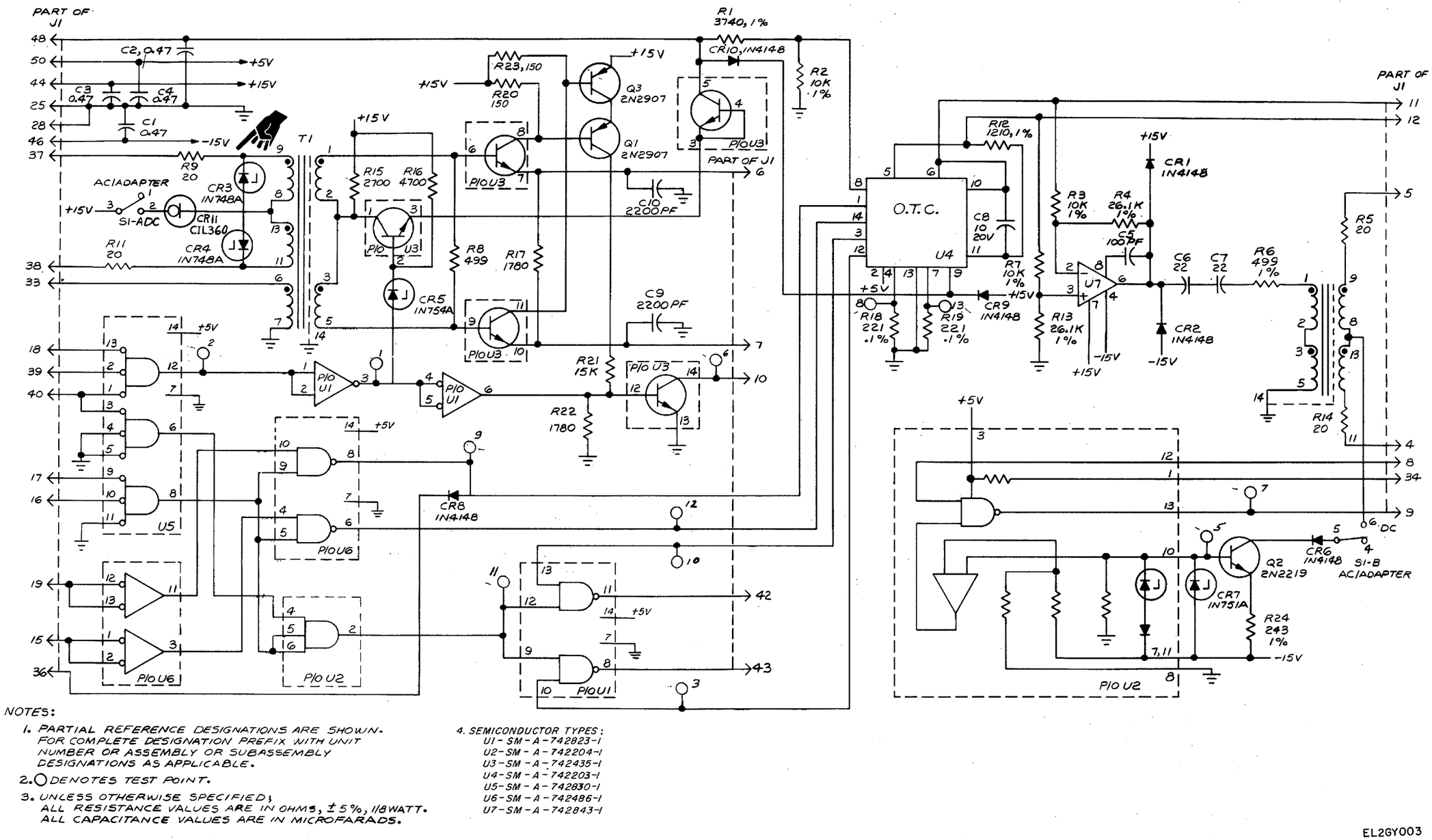


Figure 11-20 ①. AUTOVON/SF adapter card B (sheet 2).

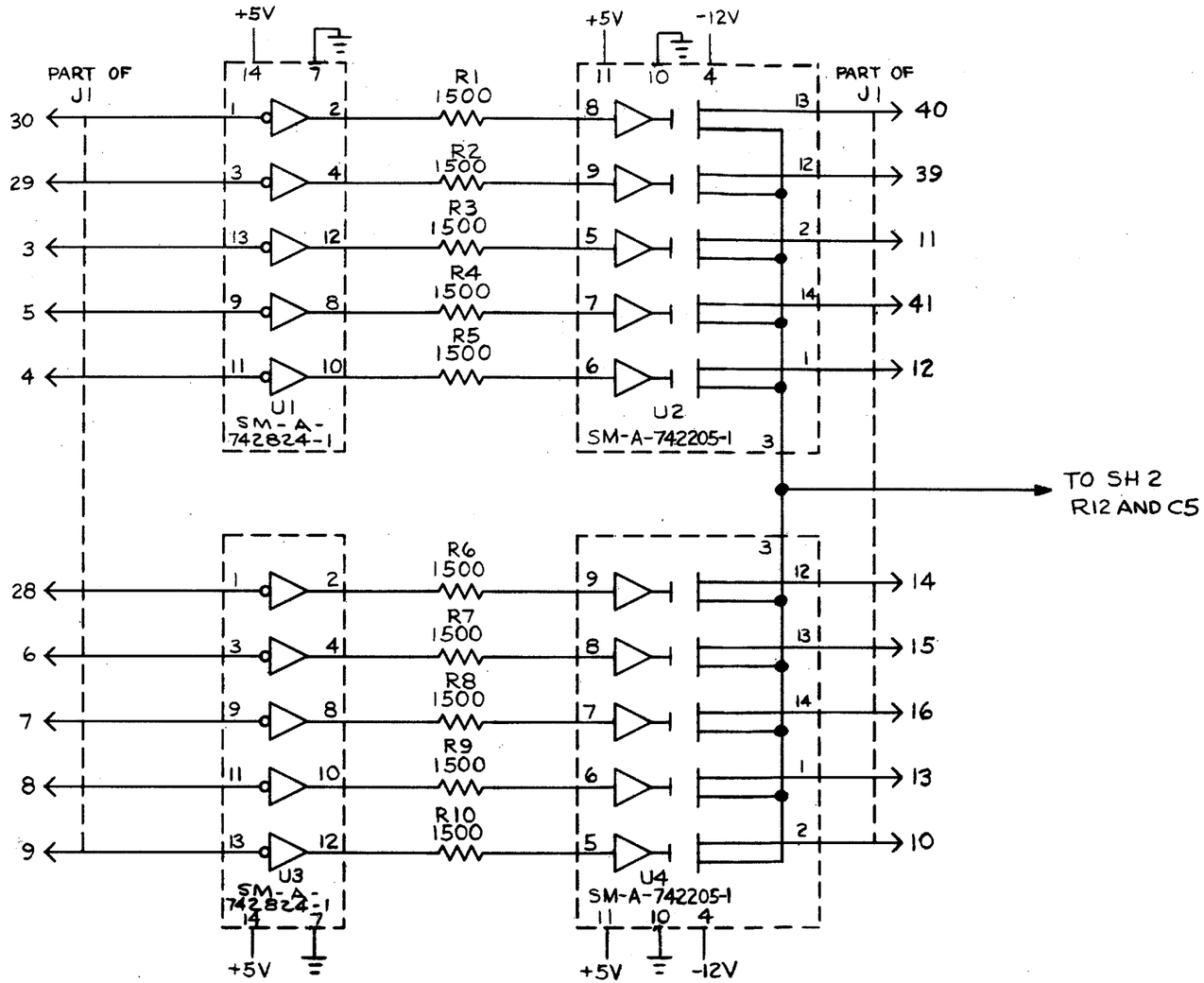


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. ○ DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±5%, 1/8 WATT. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
4. SEMICONDUCTOR TYPES:
   U1 - SM-A-742823-1
   U2 - SM-A-742204-1
   U3 - SM-A-742435-1
   U4 - SM-A-742203-1
   U5 - SM-A-742830-1
   U6 - SM-A-742486-1
   U7 - SM-A-742843-1

EL2GY003

Figure No. 11-21. SF/DC terminal.



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY AS APPLICABLE.
2. ○ DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED: ALL RESISTANCE VALUES ARE IN OHMS, ±5%, 1/8 WATT.

EL5805—628—34— TM—720(1)

Figure No. 11-22 (1). Scan receiver (R) (sheet 1 of 2).

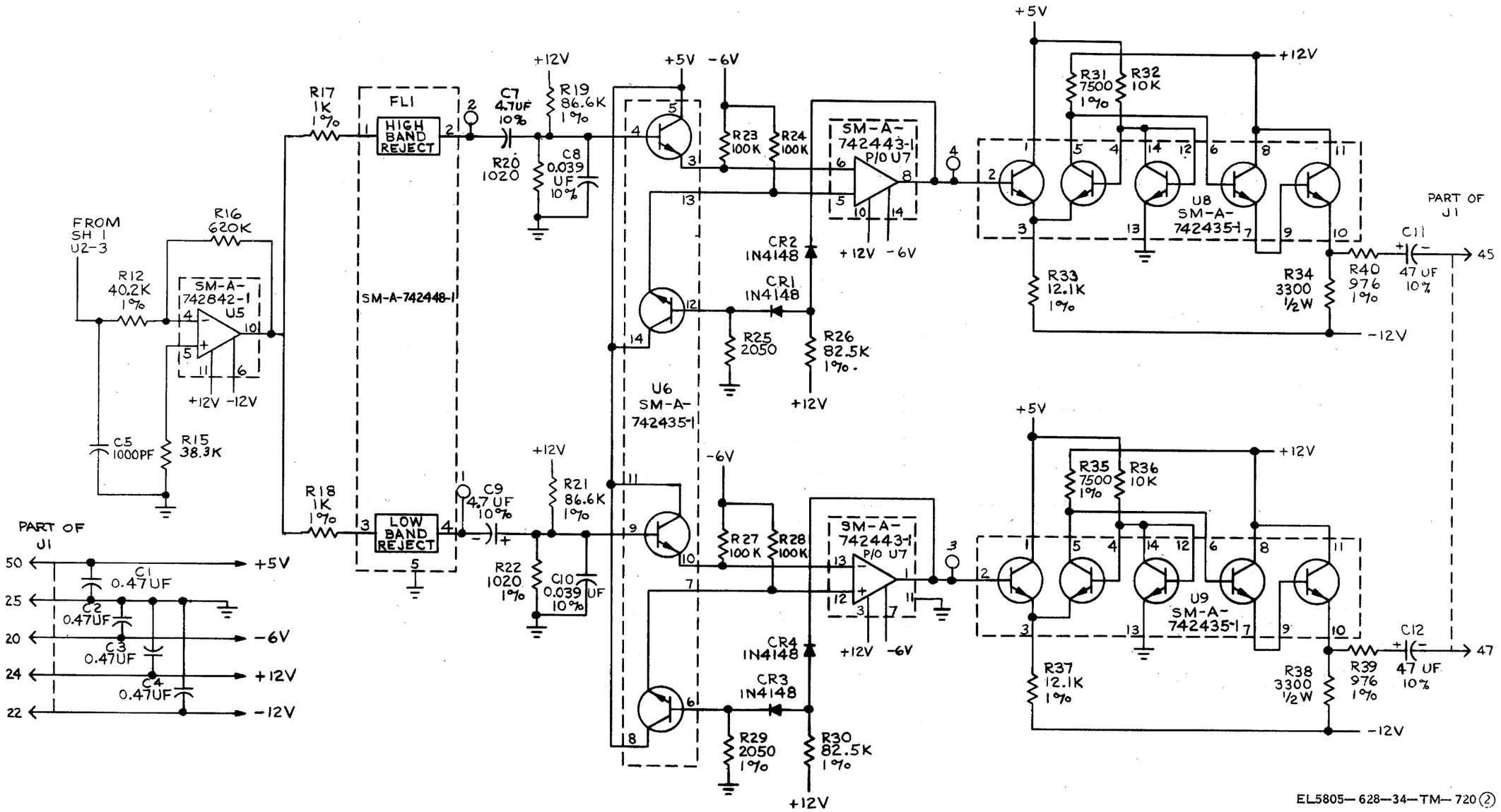
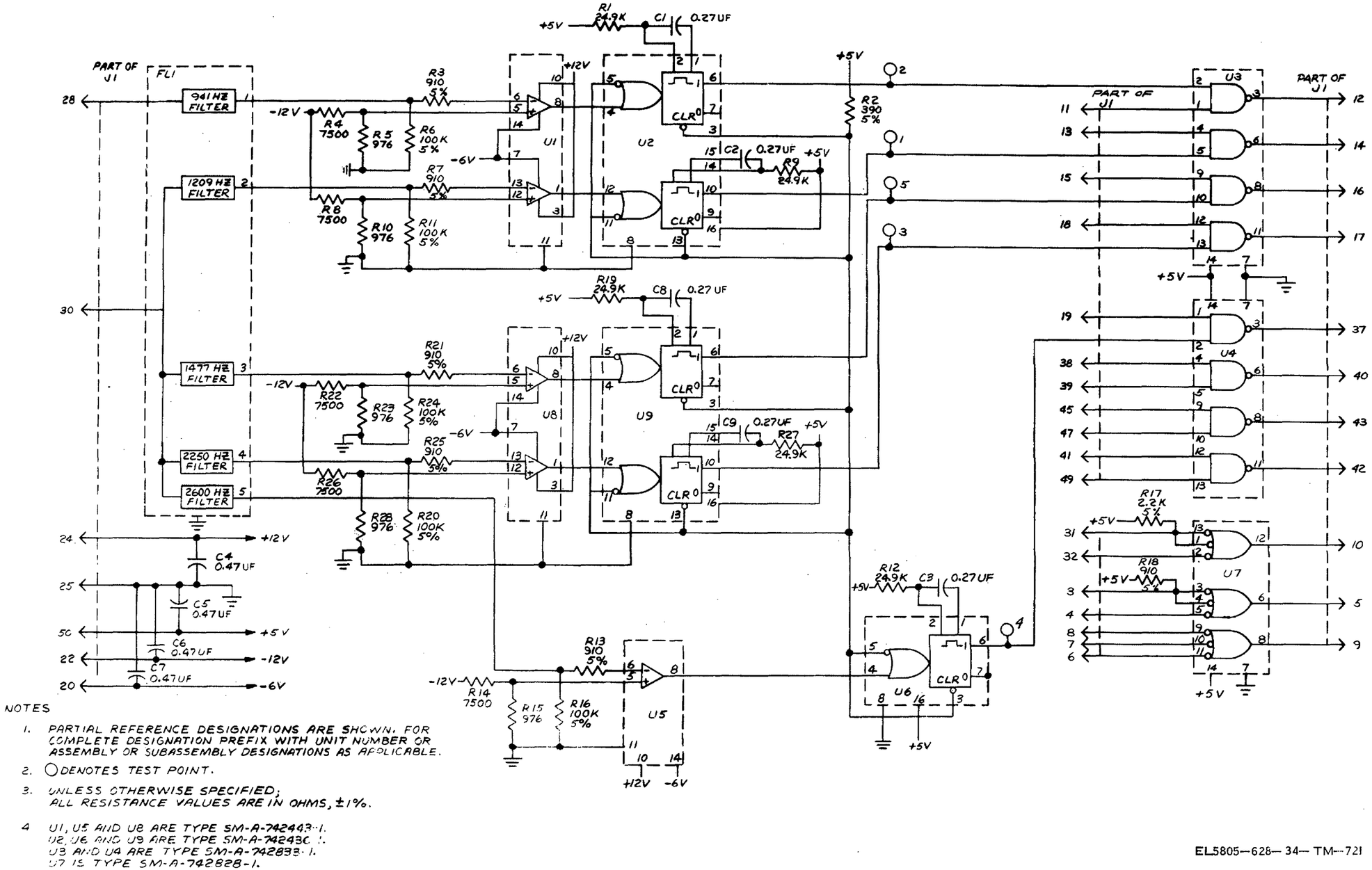


Figure 11-22 (2). Scan receiver (R) (sheet 2).

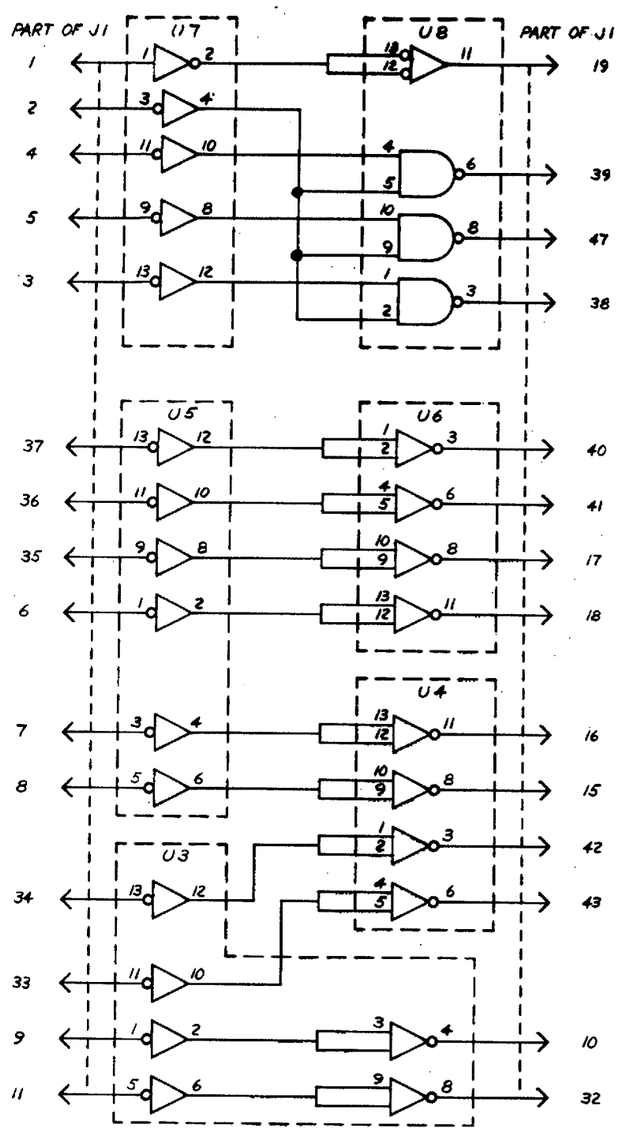


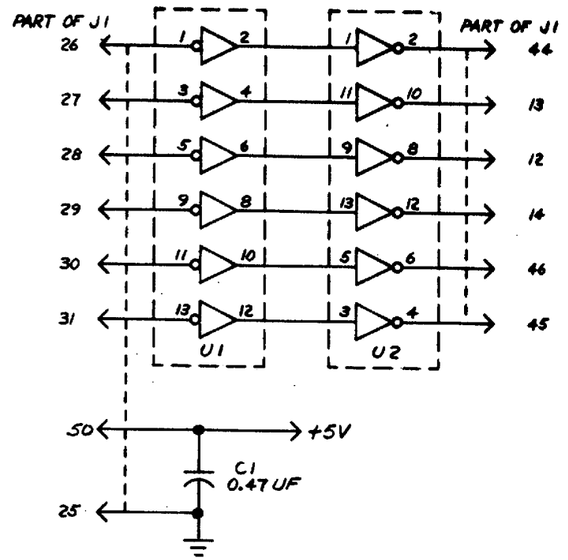
NOTES

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. ○ DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED: ALL RESISTANCE VALUES ARE IN OHMS, ±1%.
4. U1, U5 AND U8 ARE TYPE SM-A-742443-1. U2, U6 AND U9 ARE TYPE SM-A-742430-1. U3 AND U4 ARE TYPE SM-A-742833-1. U7 IS TYPE SM-A-742828-1.

EL5805—628— 34— TM—721

Figure 11-23. Scan receiver (D).



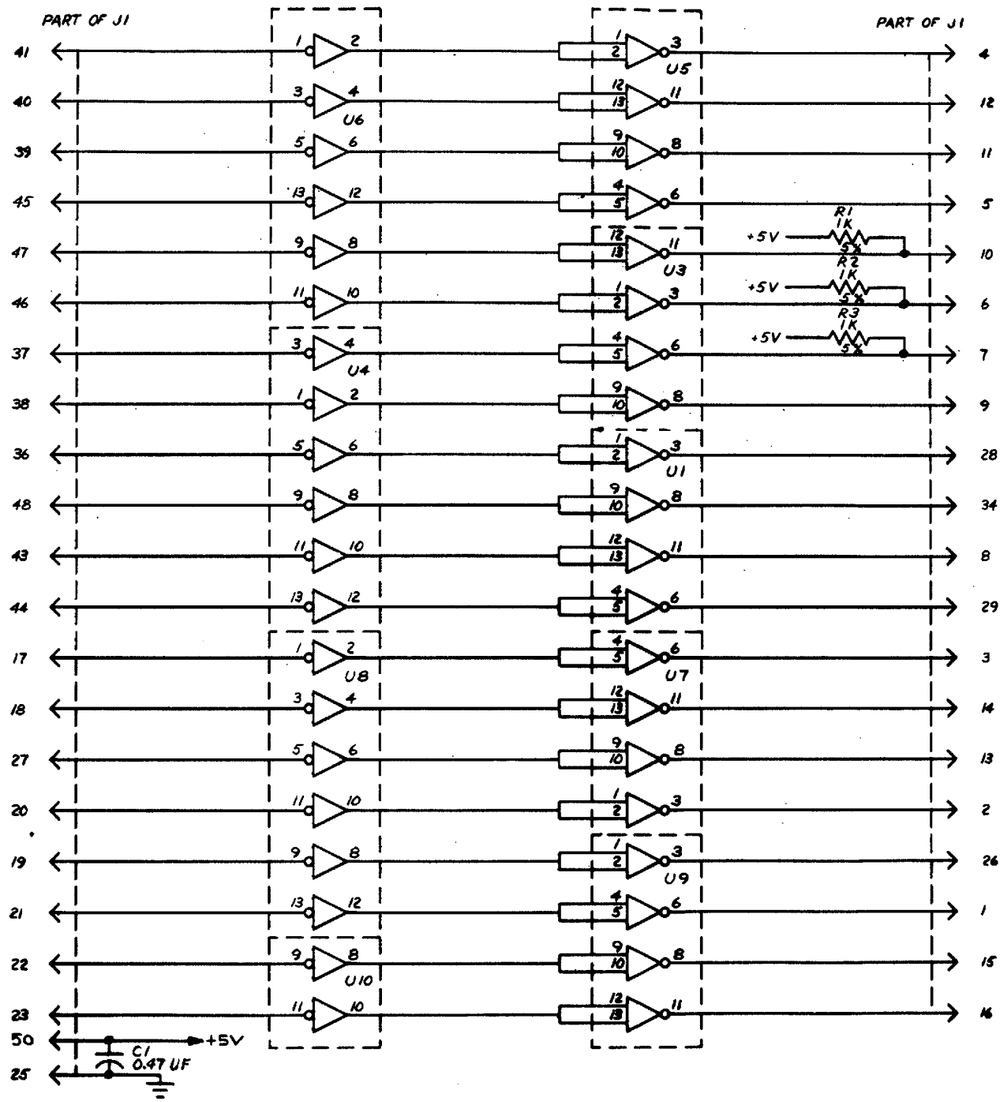


NOTES

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. U1, U2, U3, U5 AND U7 ARE TYPE SN-A-742824-1. U4, U6 AND U8 ARE TYPE SN-A-742832-1.
3. U1 THRU U8, PIN 7 IS GND AND PIN 14 IS +5V.

EL5805-628-34-TM-722

Figure 11-24. Common equipment/adapter interface.

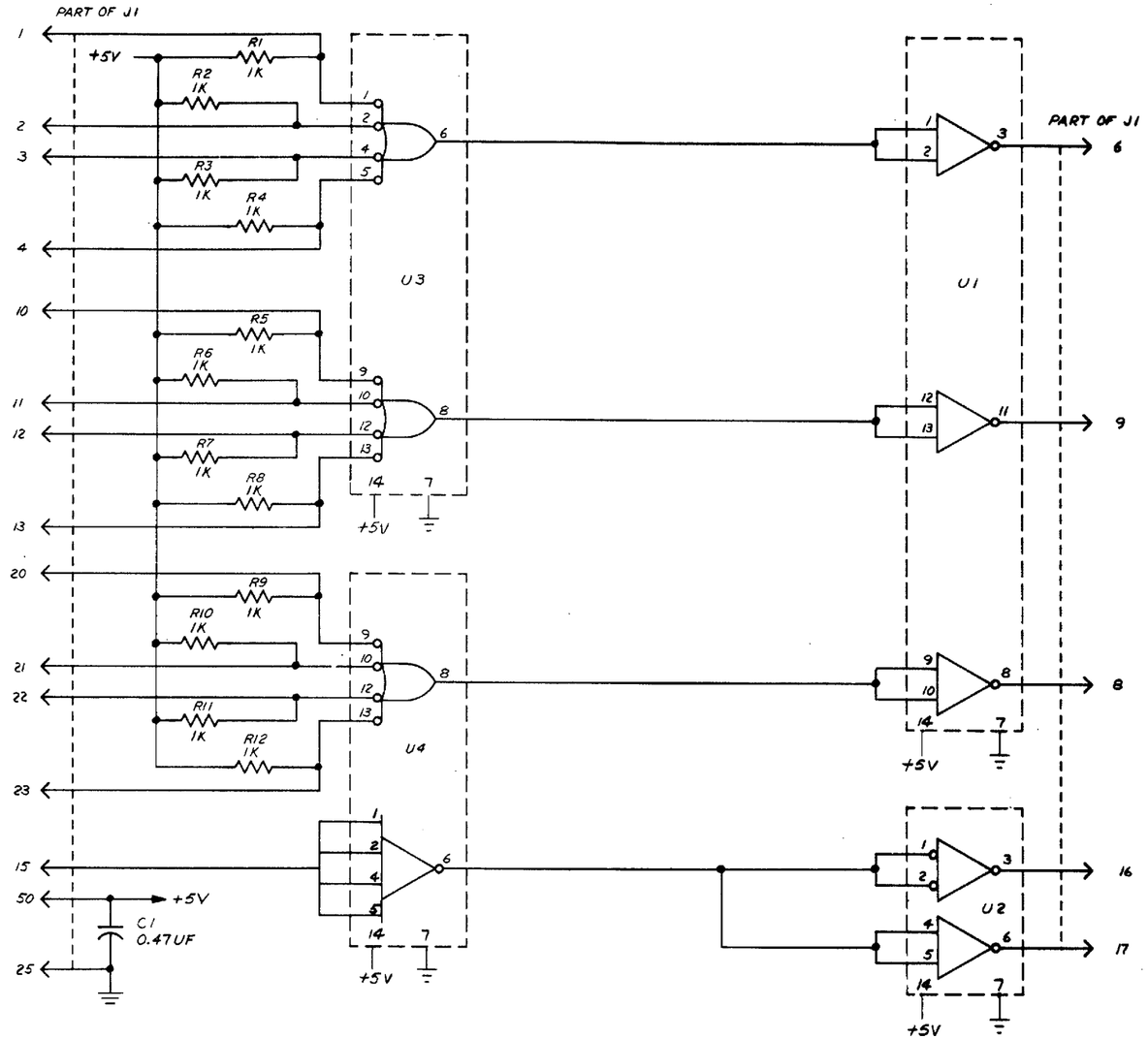


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. U1, U3, U7, AND U9 ARE TYPE SM-A-742833-1. U4, U6, U8 AND U10 ARE TYPE SM-A-742824-1. U5 IS TYPE SM-A-742832-1.

EL5805-628-34-TM-723

Figure 11-25. Common equipment interface.

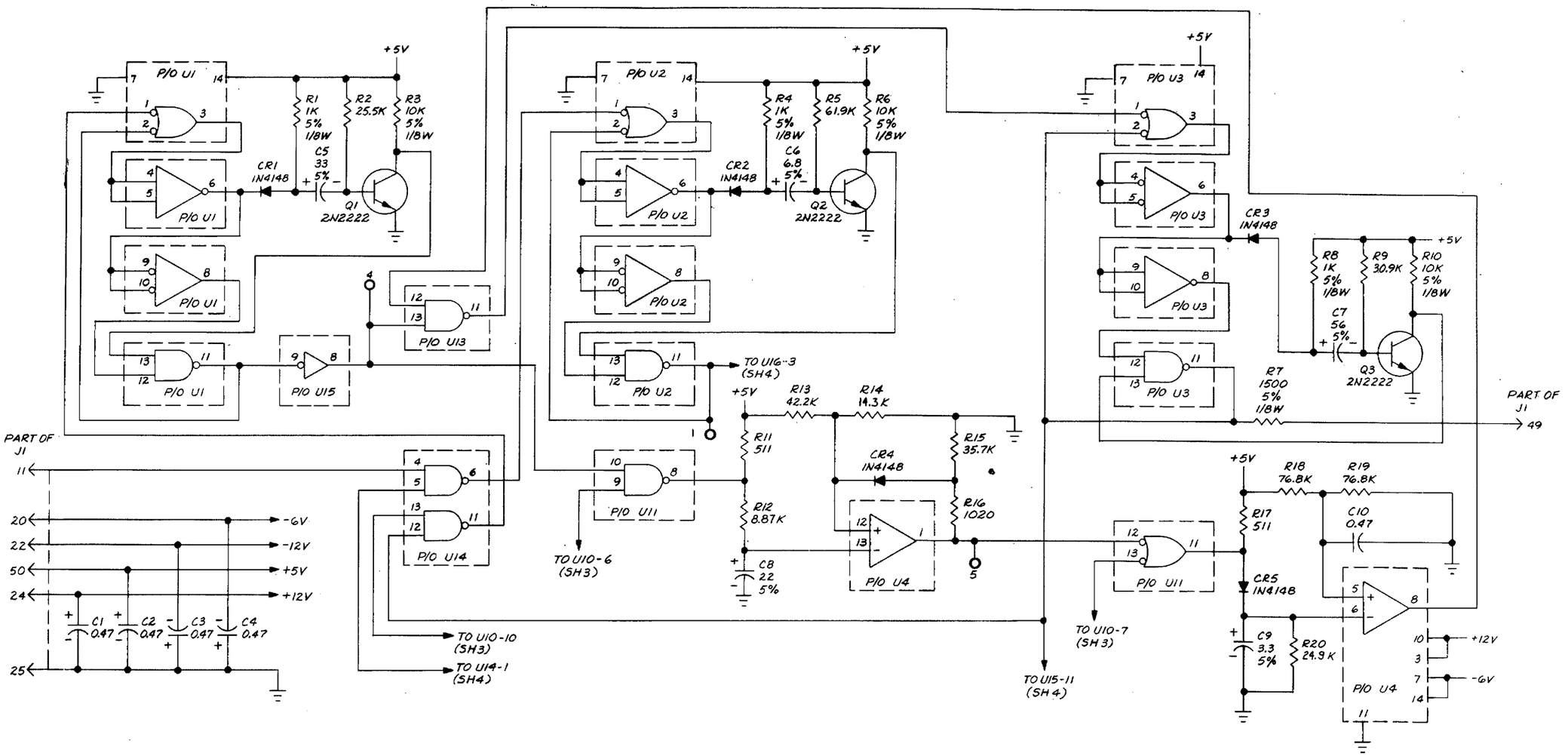


NOTES

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±5%.
3. U1 IS TYPE SM-A-742833-1. U2 IS TYPE SM-A-742832-1. U3 AND U4 ARE TYPE SM-A-742829-1.

EL5805—628—34—TM—724

Figure 11-26. Terminal staus return.



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±1%, 1/10W. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ○ DENOTES TEST POINT.
4. U1, U2, U3, U13 AND U14 ARE TYPE SM-A-742486-1. U4, U6, U9 AND U12 ARE TYPE SM-A-742443-1. U5, U7 AND U8 ARE TYPE SM-A-742435-1. U10 IS TYPE SM-A-742436-1. U11 IS TYPE SM-A-742823-1. U15 IS TYPE SM-A-742824-1. U16 IS TYPE SM-A-742828-1.

EL5820—628—34— TM—725①

Figure 11-27 (1). AUTOVON/SF adapter card C (sheet 1).

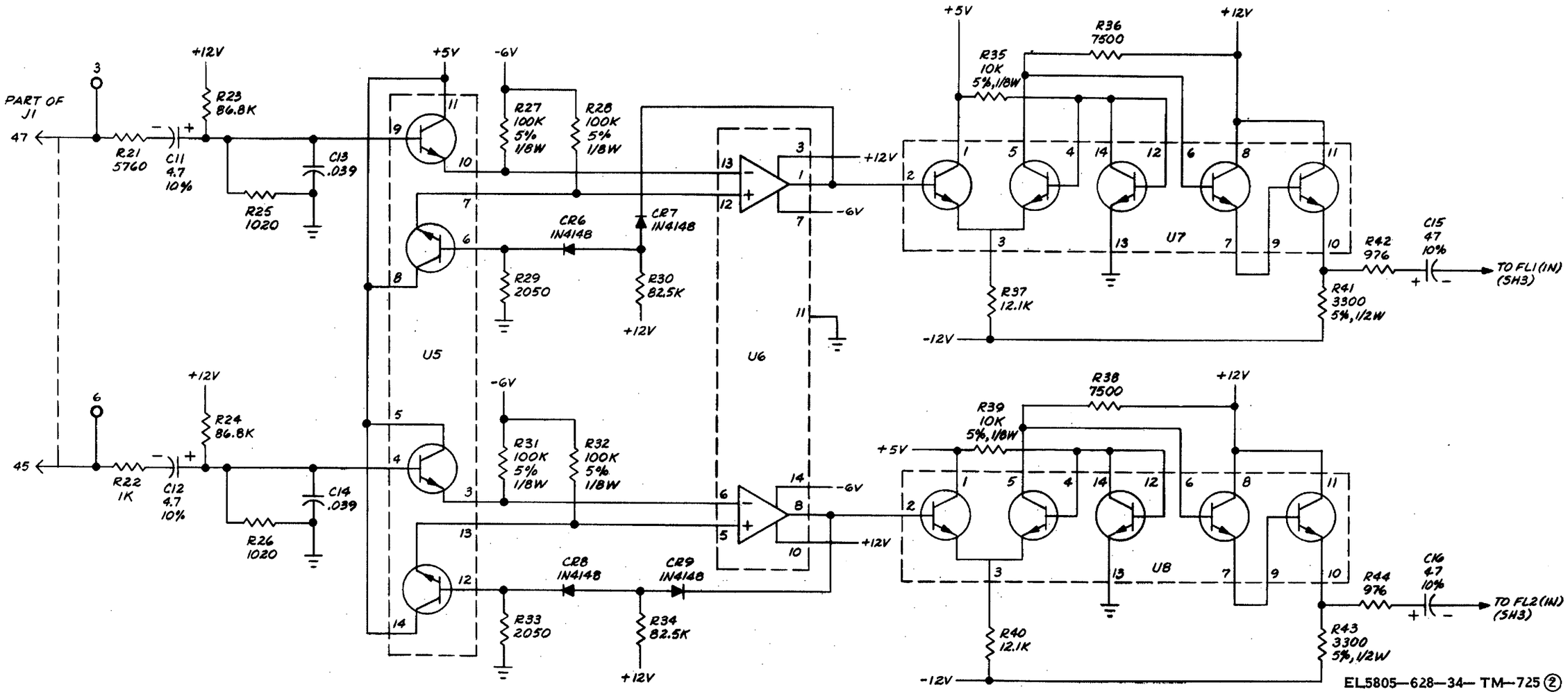


Figure 11-27 (2). AUTOVON/SF adapter card C (sheet 2).

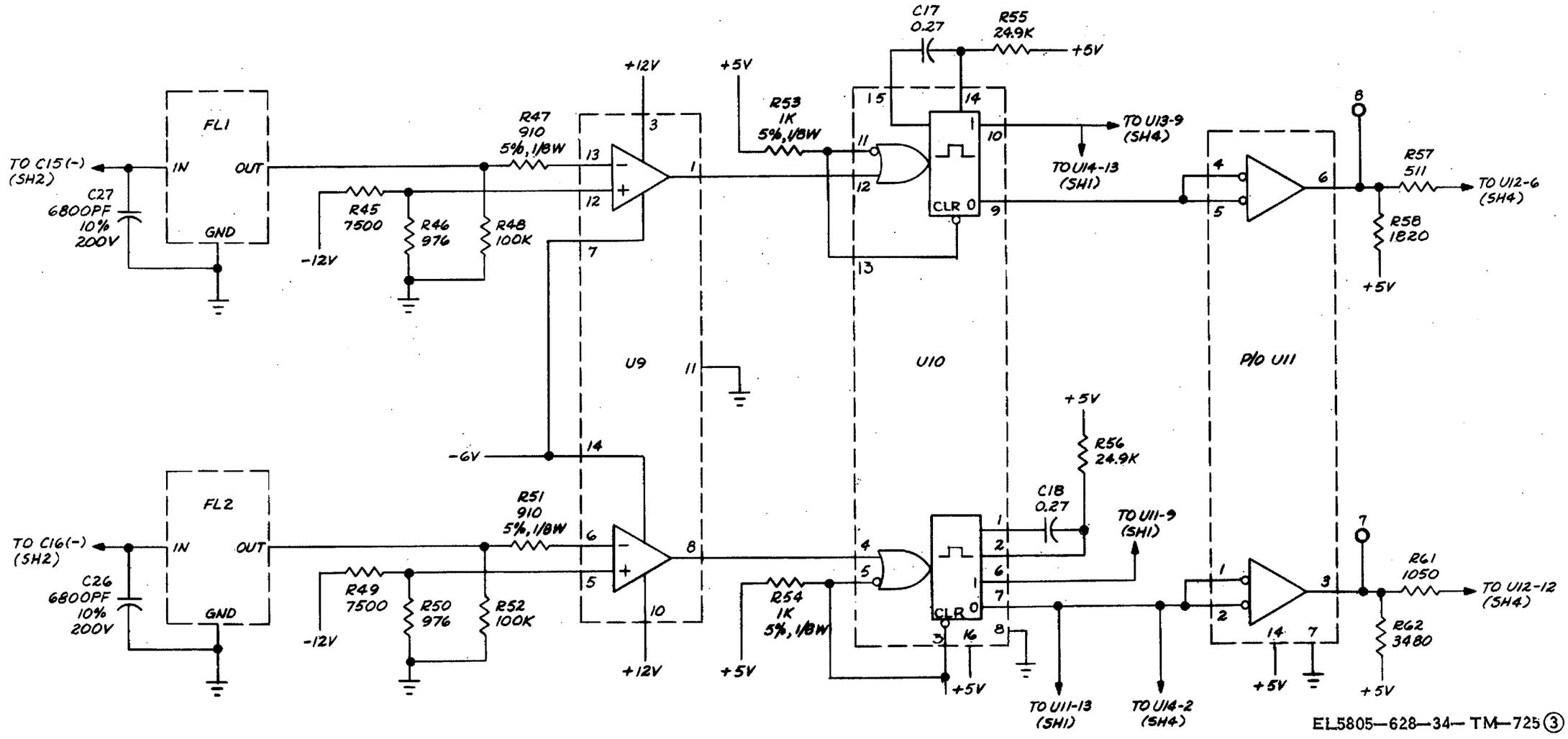


Figure 11-27 (3). AUTOVON/SF adapter card C (sheet 3).

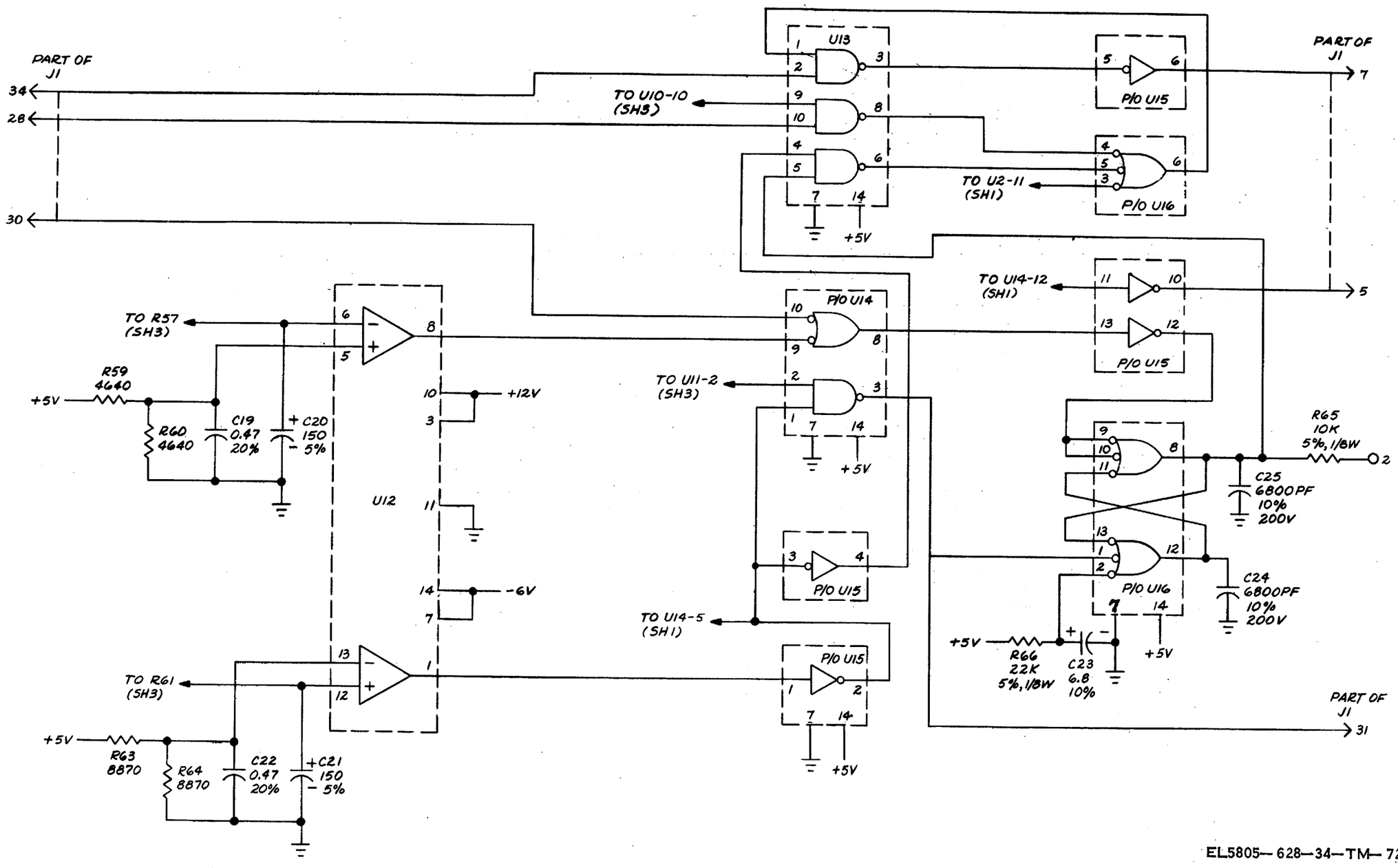
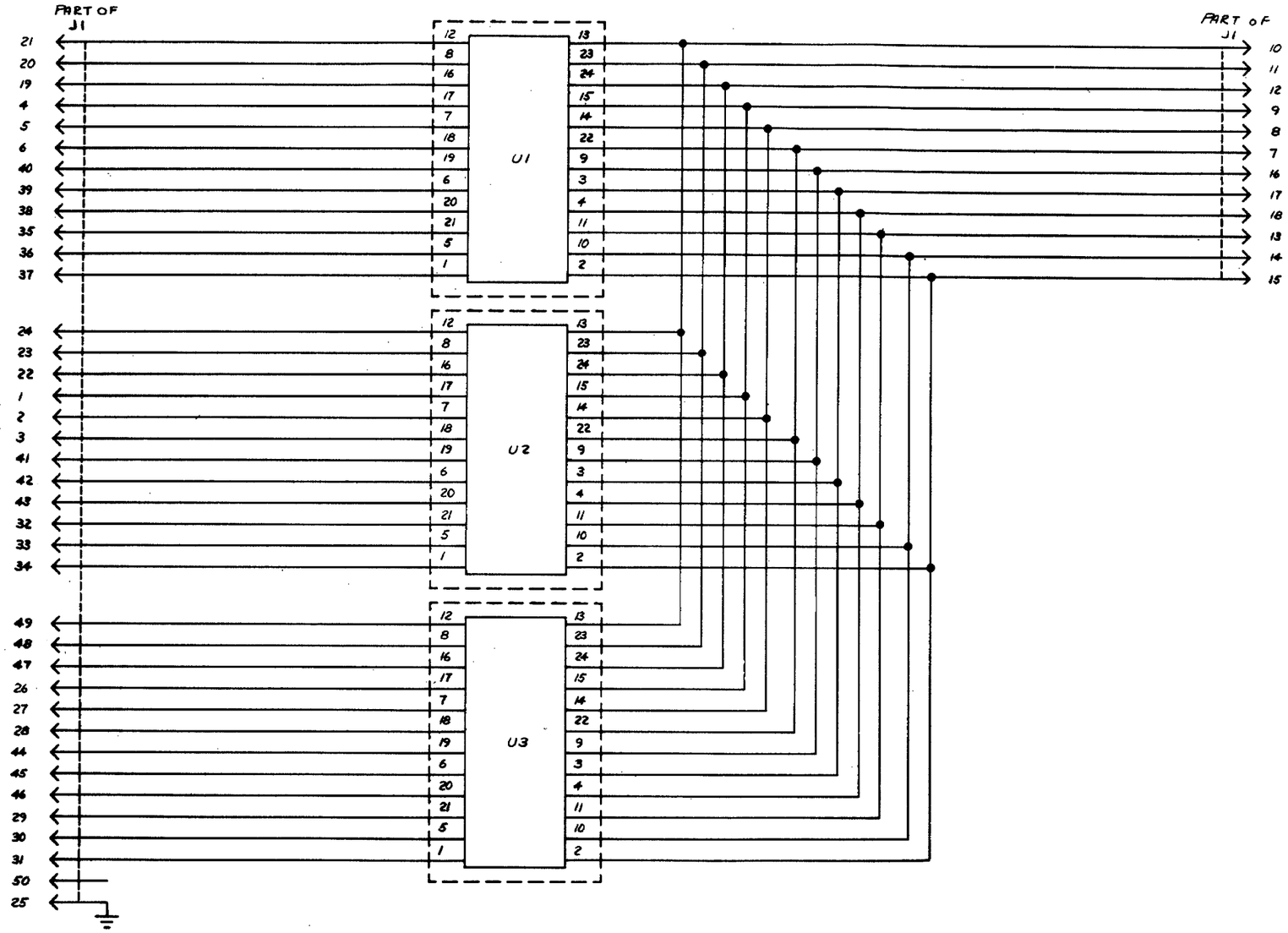


Figure 11-27 (4). AUTOVON/SF adapter card C (sheet 4).



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. U1 THRU U3 ARE TYPE SM-A-742216-2.

EL5805—628—34—TM—726

Figure 11-28. Matrix A.

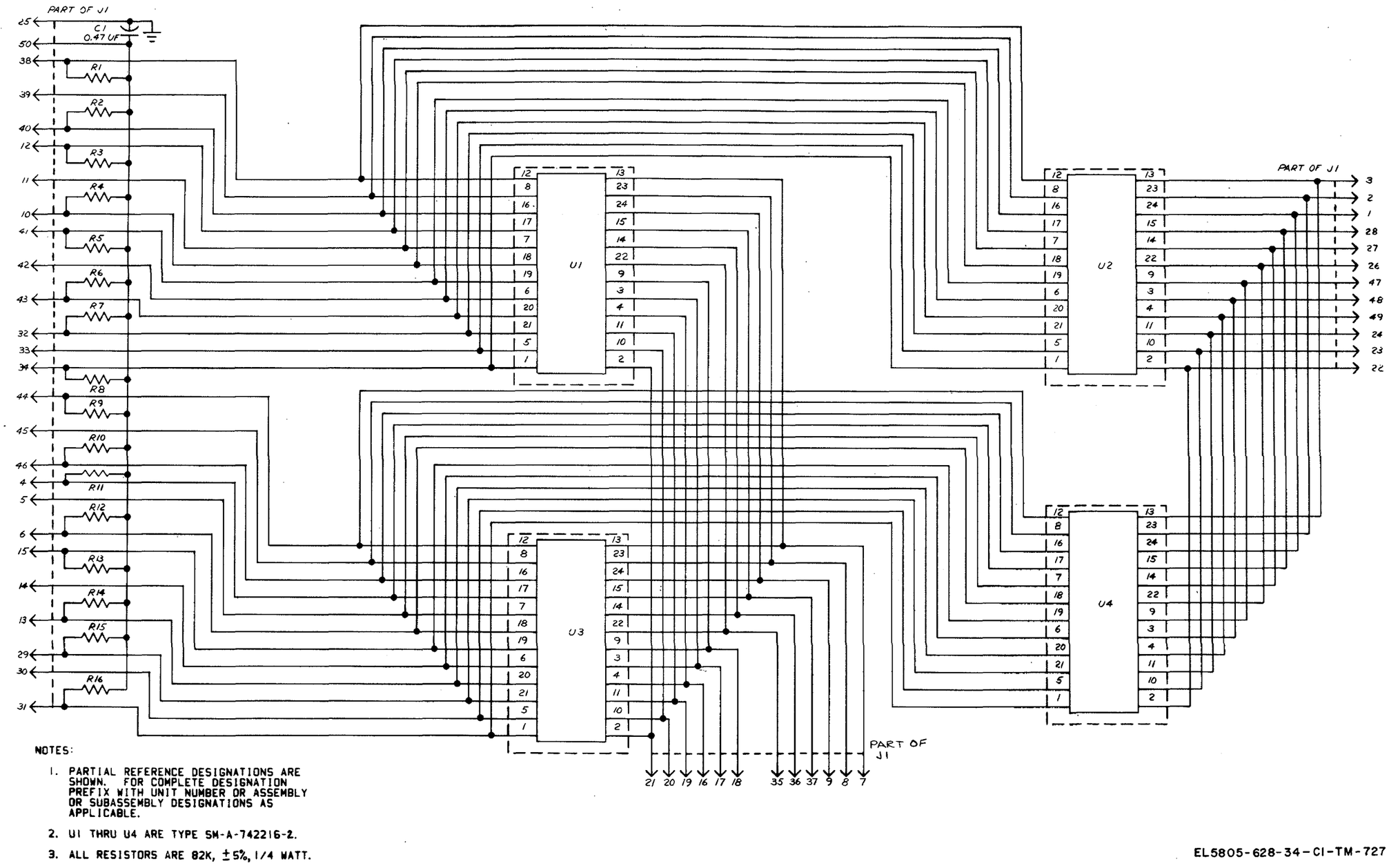


Figure 11-29. Matrix B.

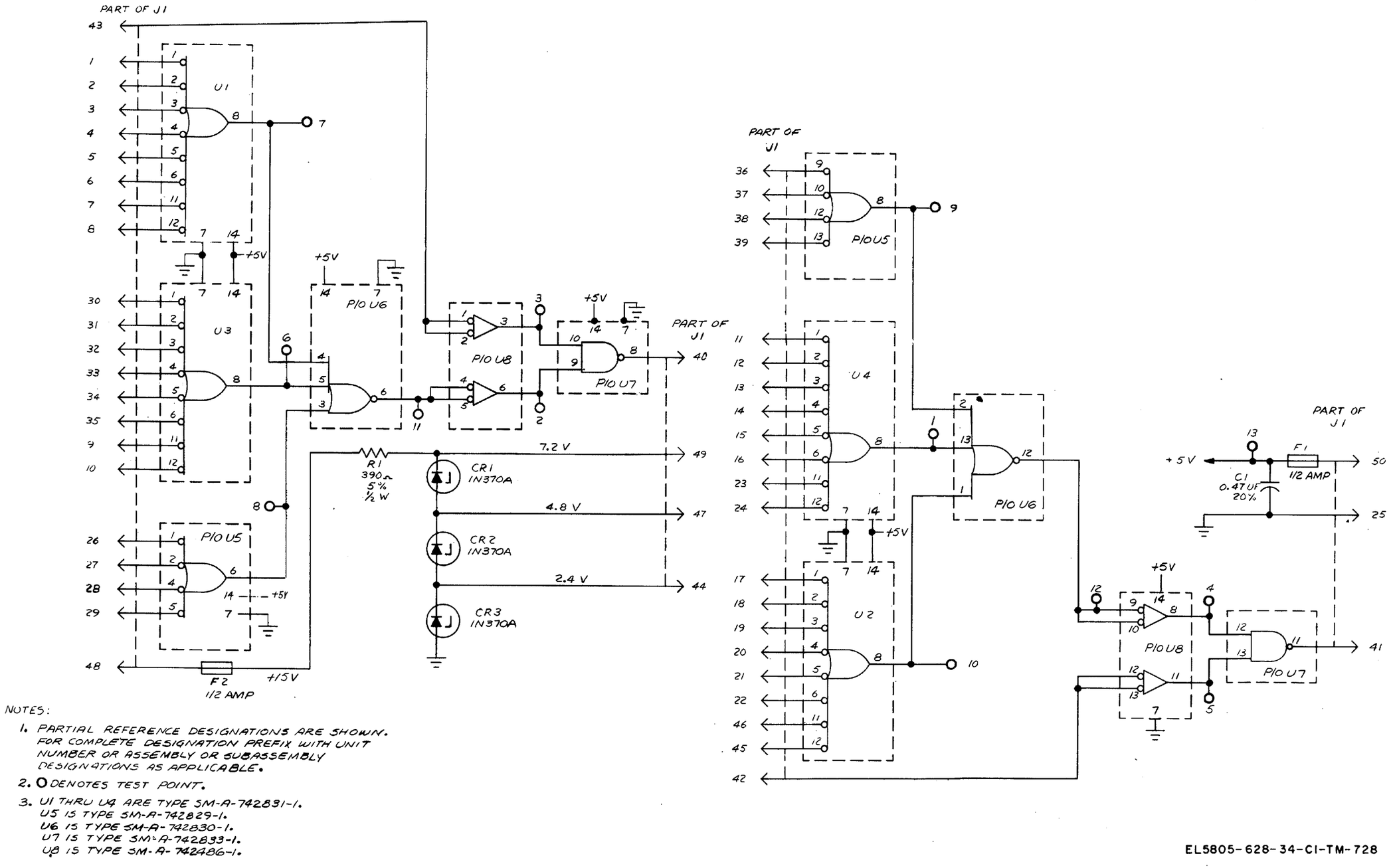
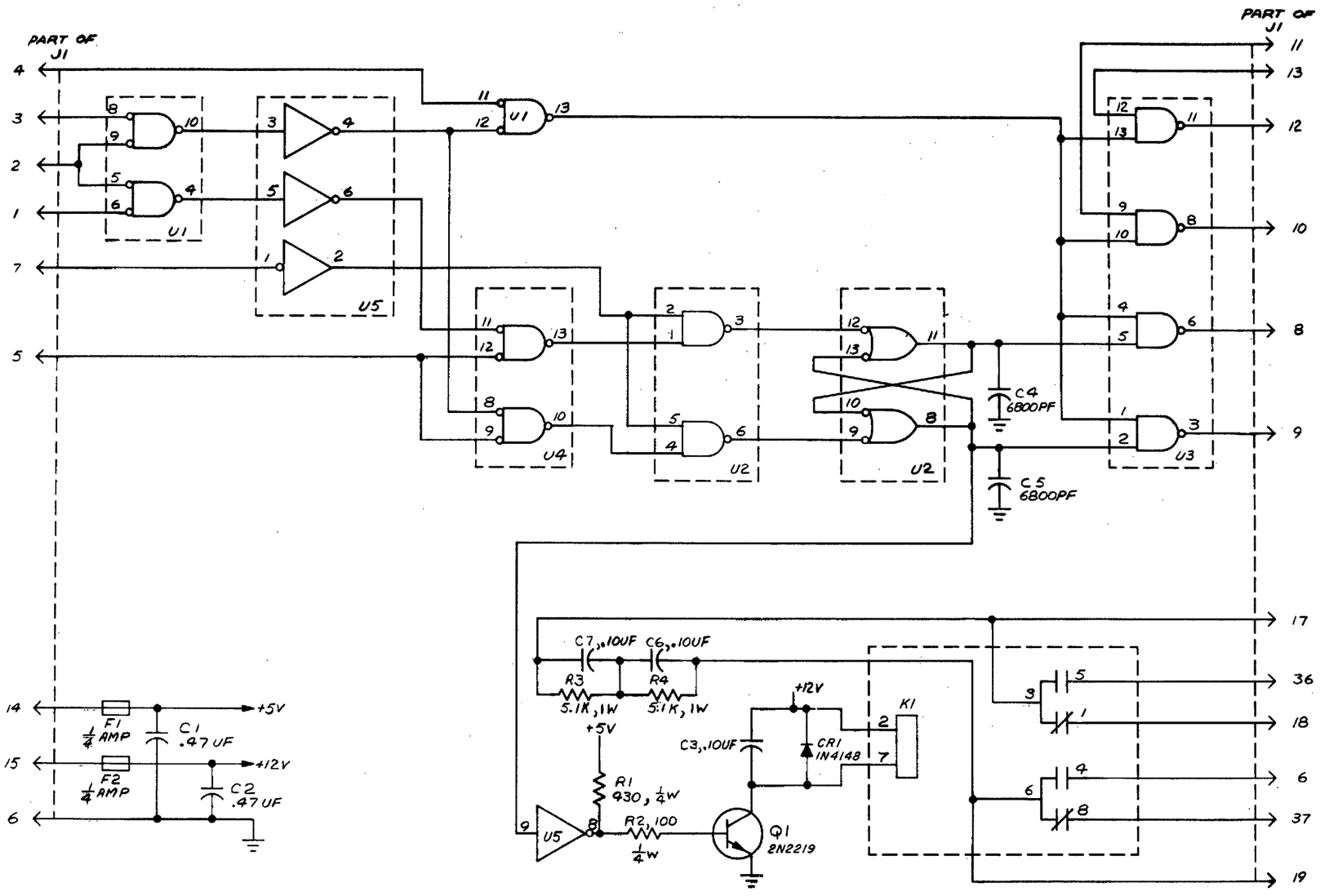


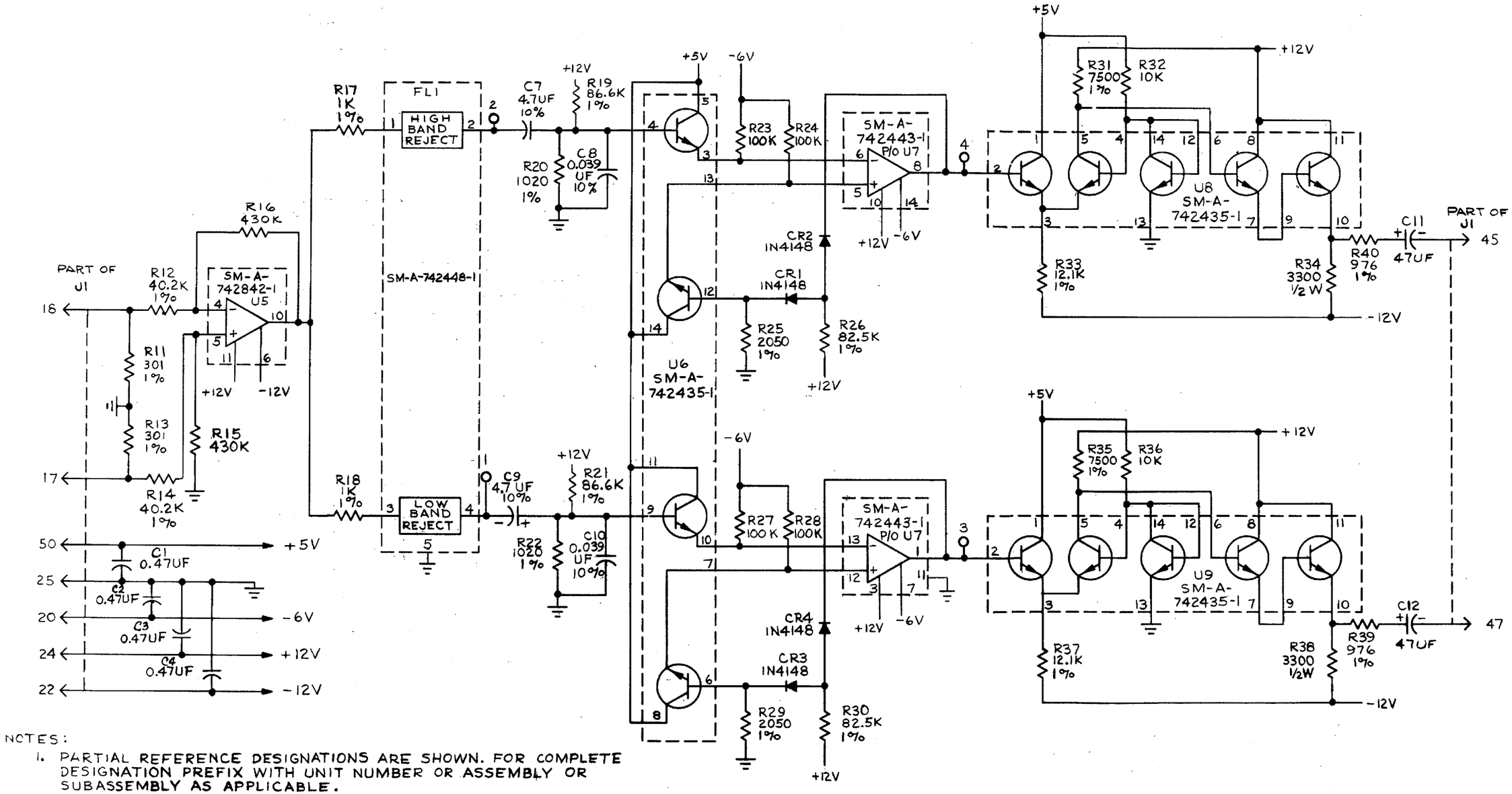
Figure 11-30. Error return summary card.



NOTES:
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. ALL RESISTANCE VALUES ARE IN OHMS ± 5% .
3. U1 AND U4 ARE TYPE SM-A-742822-1
   U2 AND U3 ARE TYPE SM-A-742486-1
   U5 IS TYPE SM-A-742824-1 (PIN 14 IS +5V, PIN 7 IS GND)

EL5805—628—34—TM—729

Figure 11-31. 20Hz generator relay.

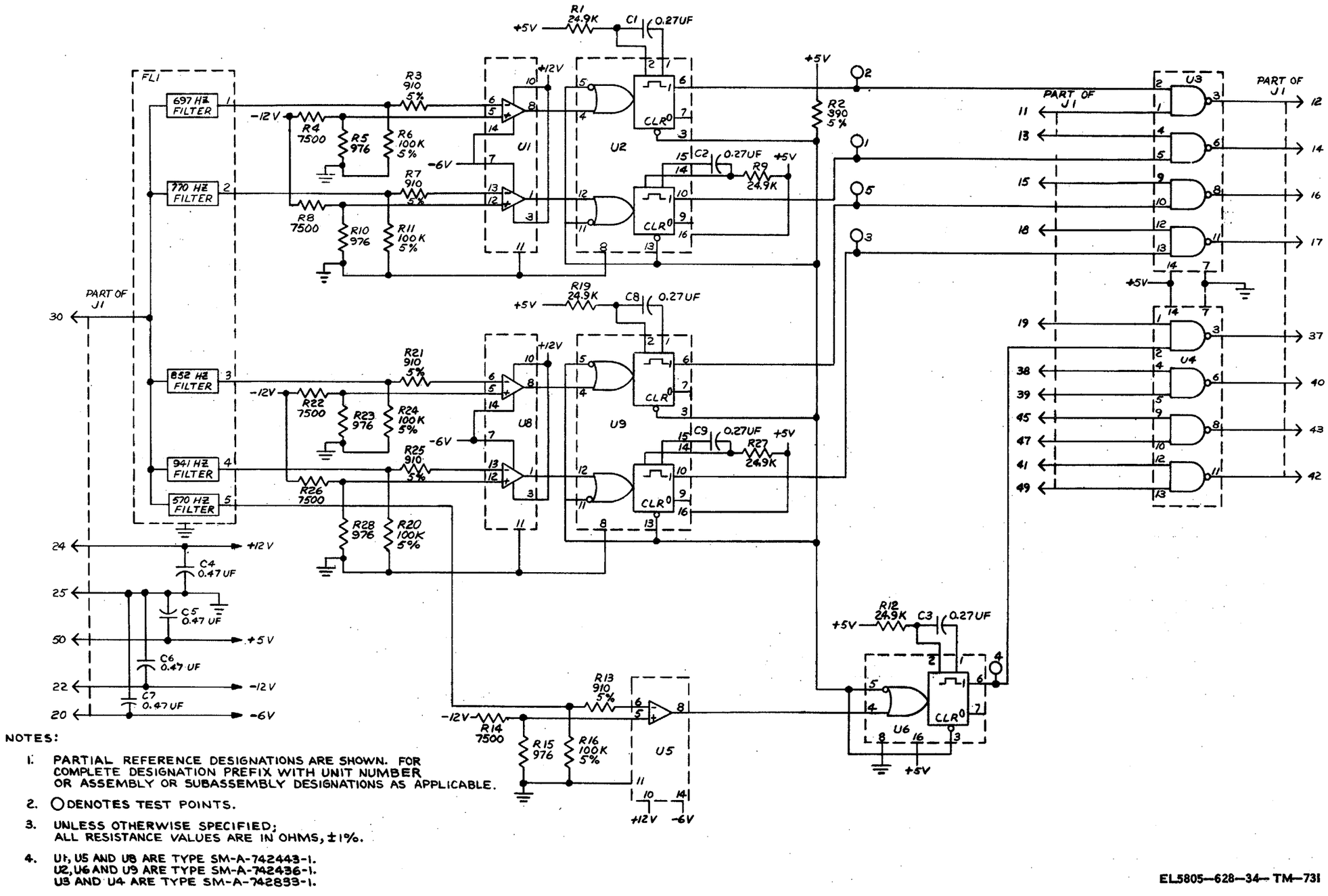


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY AS APPLICABLE.
2. O DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED: ALL RESISTANCE VALUES ARE IN OHMS, ±5%, 1/8 WATT.

EL5805-628-34-TM-730

Figure 11-32. Sender/ receiver (R).

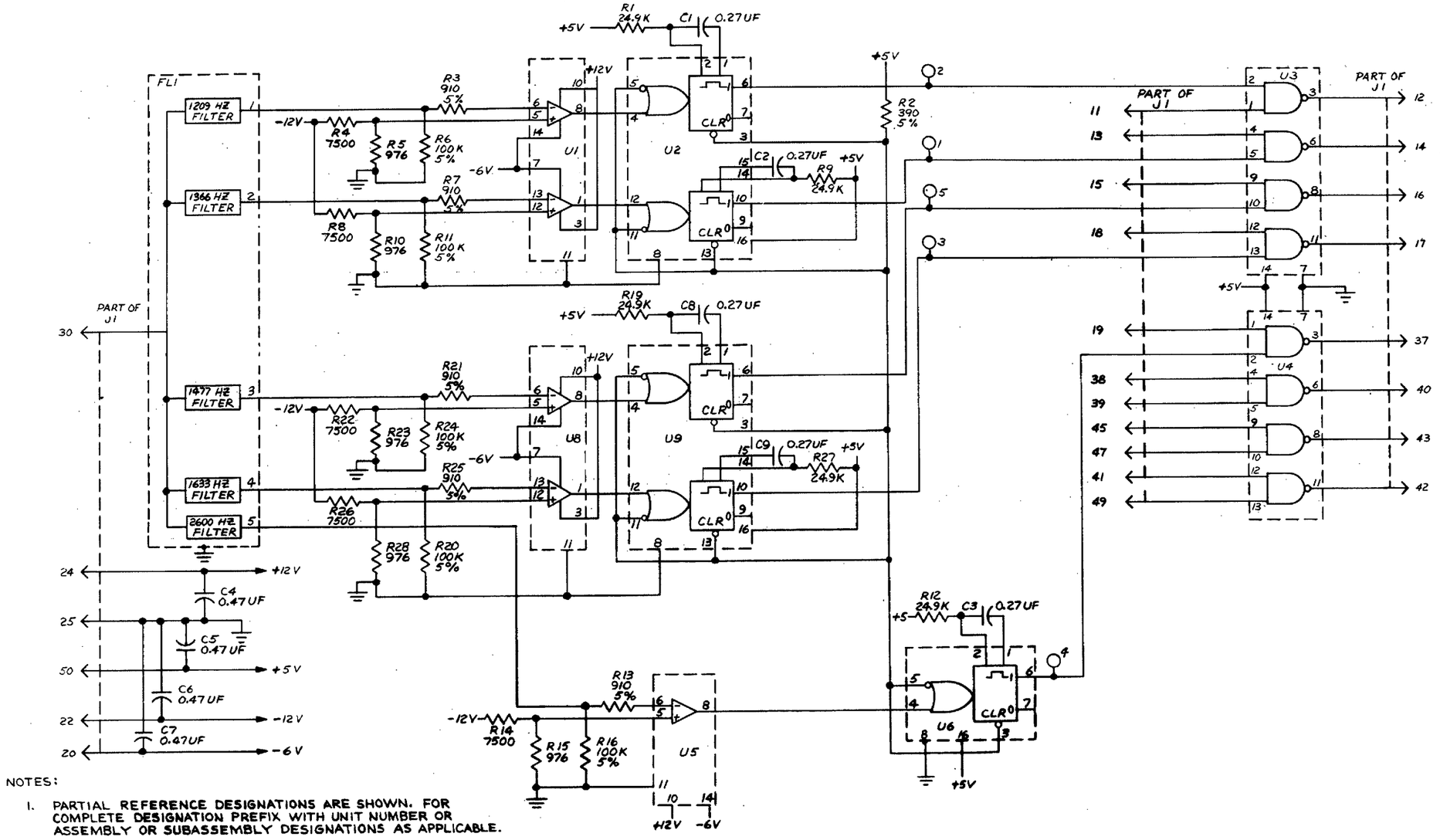


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. ○ DENOTES TEST POINTS.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±1%.
4. U1, U5 AND U8 ARE TYPE SM-A-742443-1.
   U2, U6 AND U9 ARE TYPE SM-A-742436-1.
   U3 AND U4 ARE TYPE SM-A-742833-1.

EL5805—628—34— TM—731

Figure 11-33. Sender/receiver(DL).

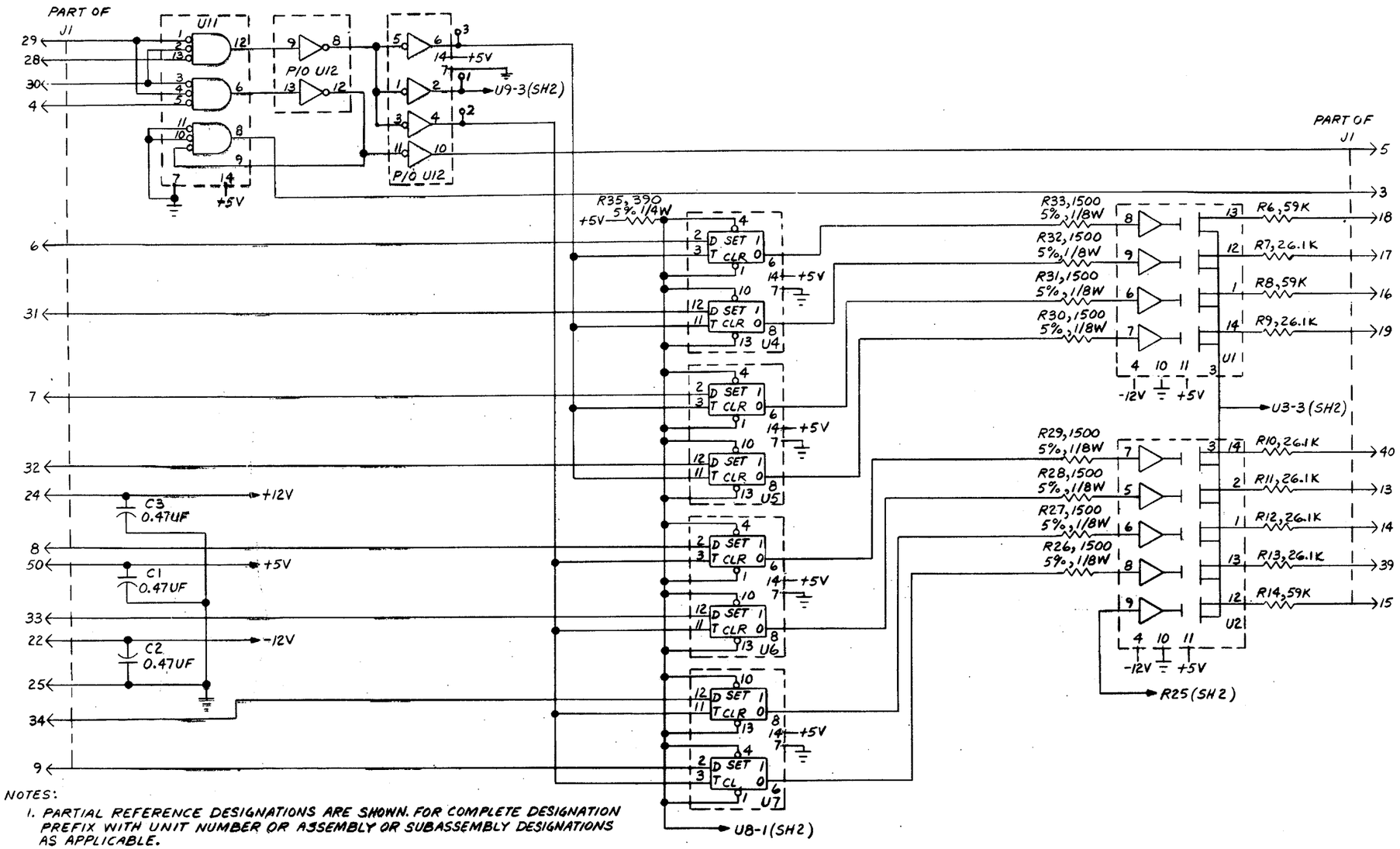


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. ◯ DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±1%.
4. U1, U5 AND U8 ARE TYPE SM-A-742443-1.
   U2, U6 AND U9 ARE TYPE SM-A-742436-1.
   U3 AND U4 ARE TYPE SM-A-742833-1.

EL5805—628—34—TM—732

Figure 11-34. Sender/receiver (DH).



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. O DENOTES TEST POINT.
3. U1, U2 AND U3 ARE TYPE SM-A-742205-1. U4 THRU U10 ARE TYPE SM-A-742836-1, U11 IS TYPE SM-A-742830-1. U12 IS TYPE SM-A-742824-1; U13 IS SM-A-742842-1.
4. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±1%, 1/10W.

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Figure 11-35. ① Sender/receiver (S) (sheet 1).

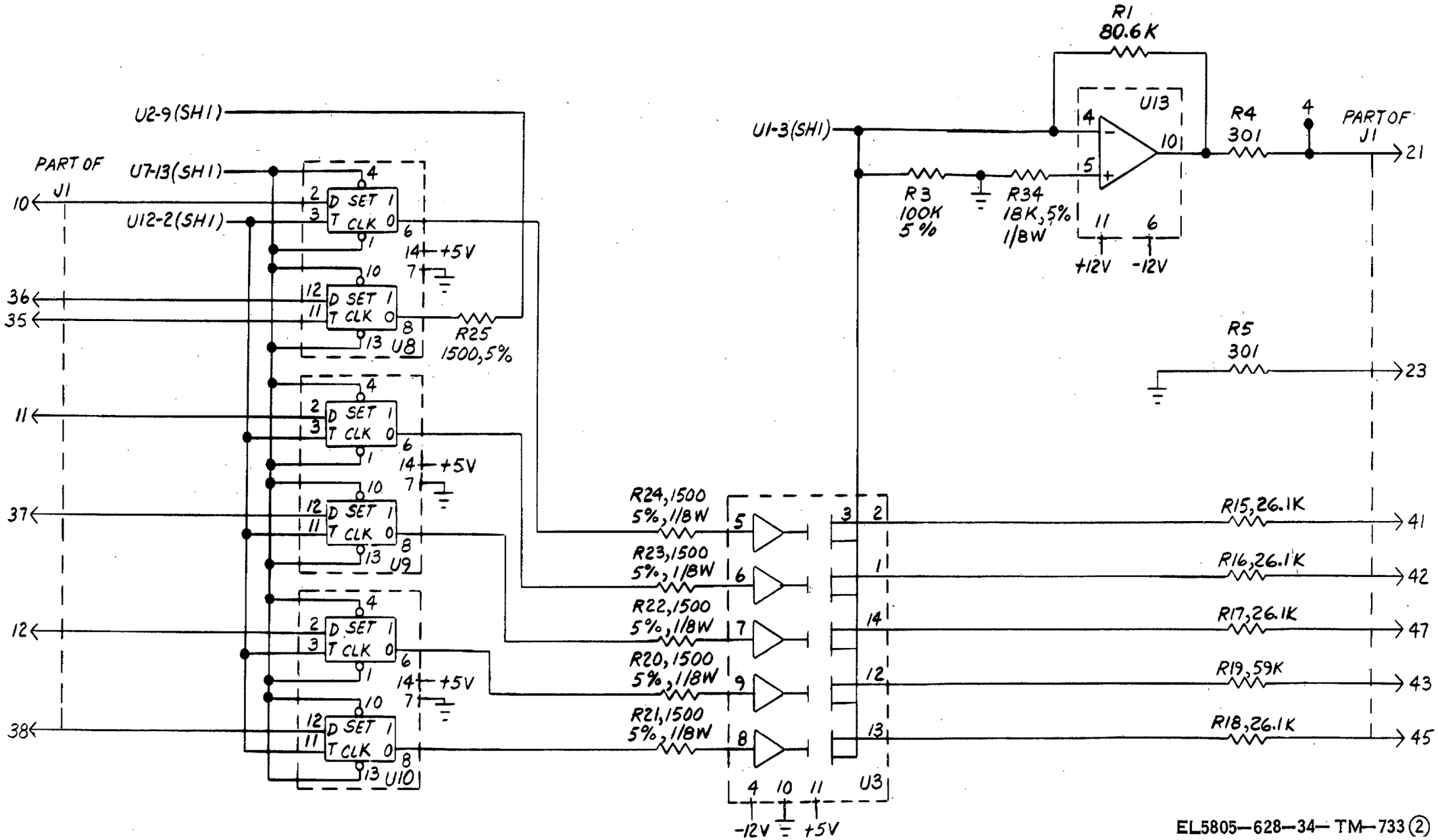
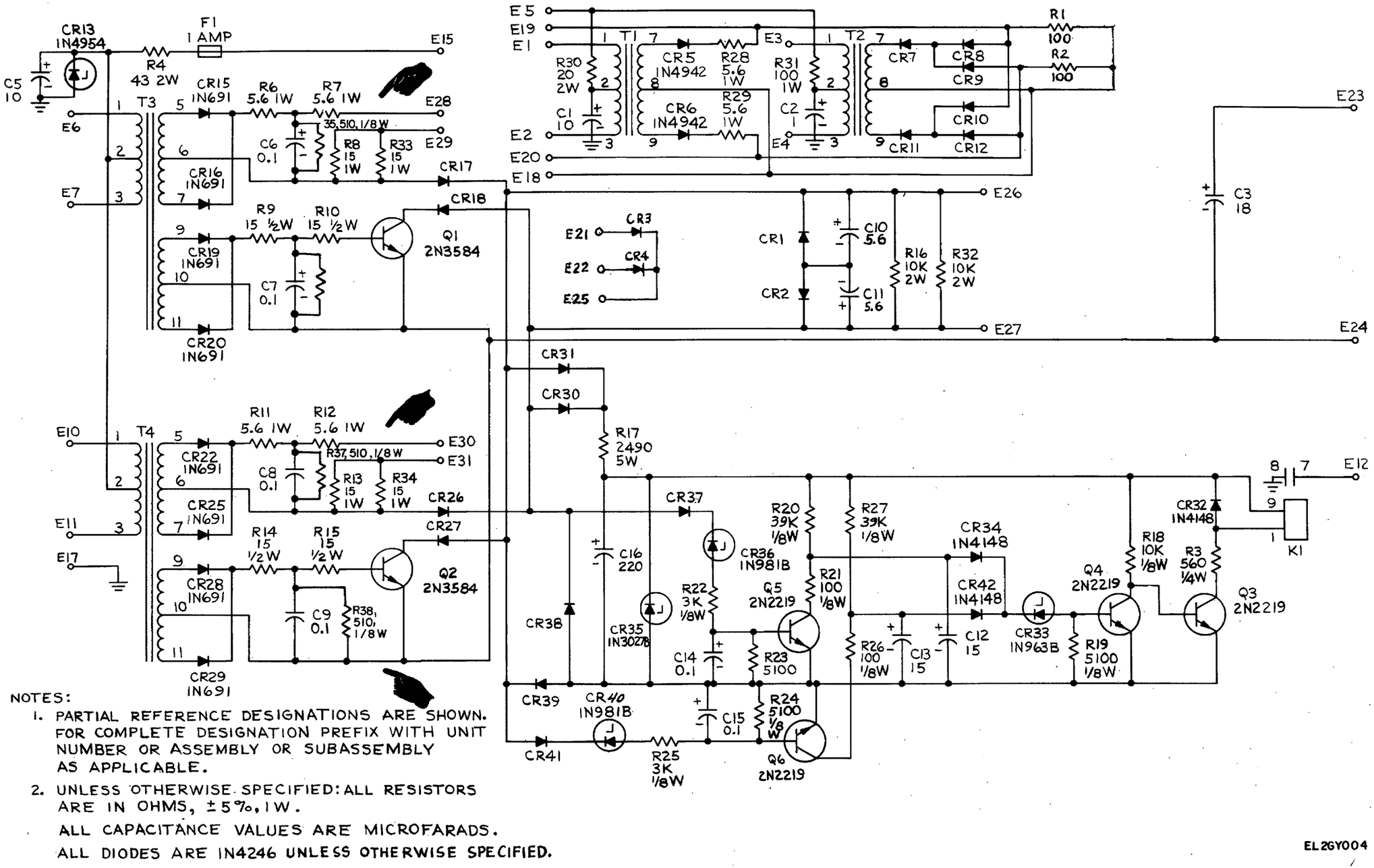


Figure 11-35. ② Sender/receiver(S) (sheet 2).



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED: ALL RESISTORS ARE IN OHMS, ±5%, 1W.

   ALL CAPACITANCE VALUES ARE MICROFARADS.

   ALL DIODES ARE IN4246 UNLESS OTHERWISE SPECIFIED.

EL2GY004

Figure 11-36. 20 Hz generator A.

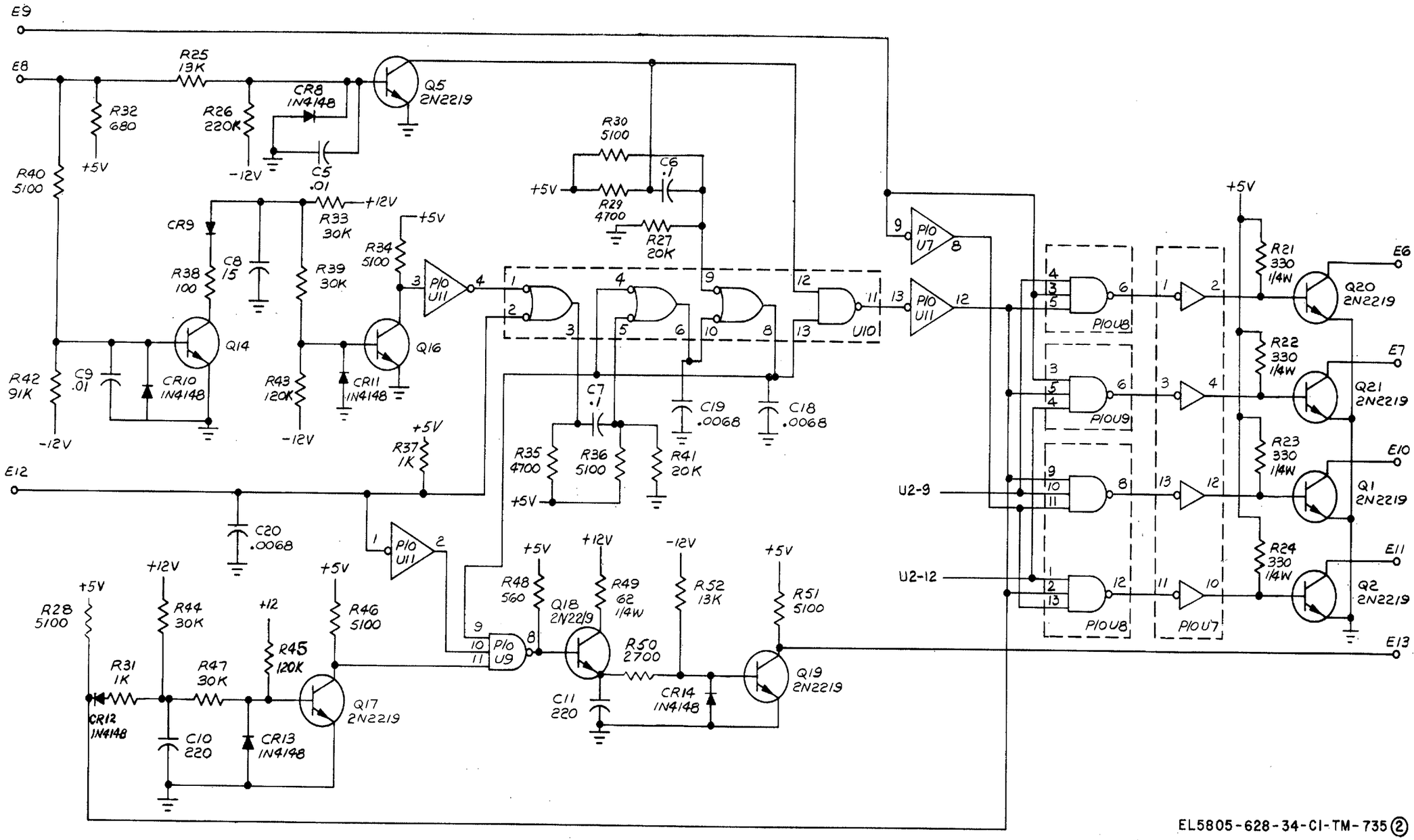
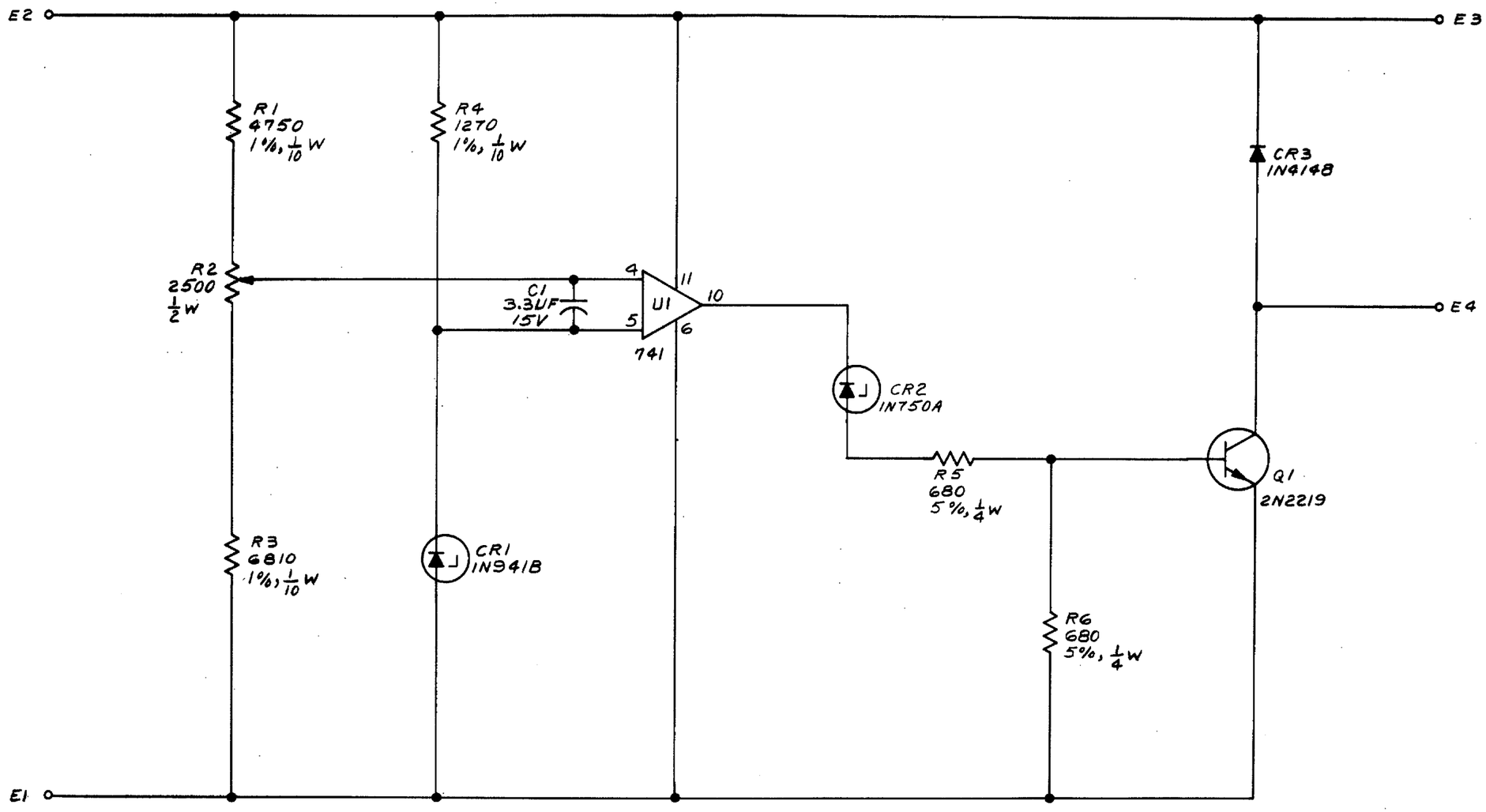


Figure 11-37 ②. 20 Hz generator B (sheet 2).

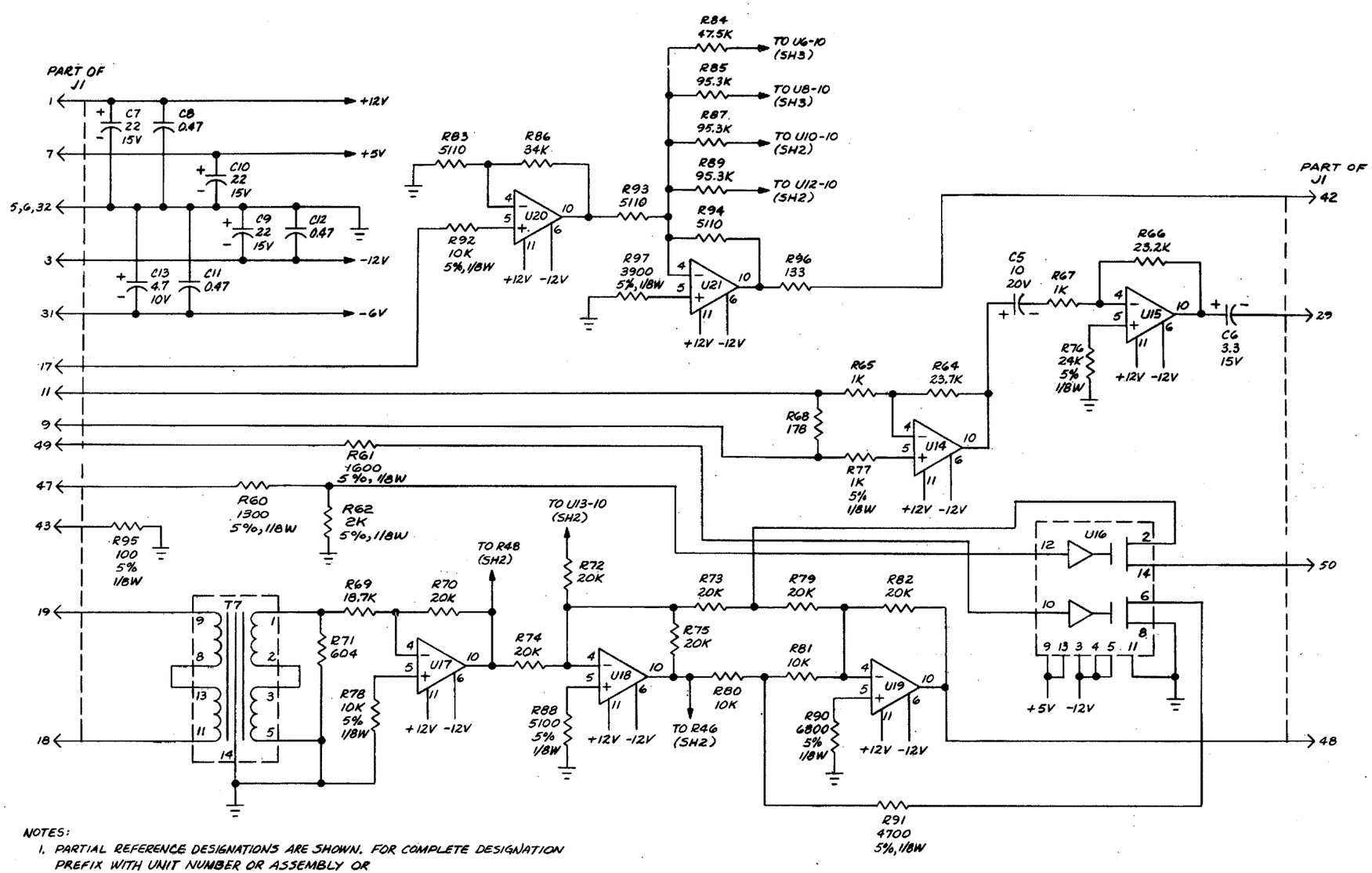


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED;
   ALL RESISTANCE VALUES ARE IN OHMS, ±1%, 1/10 WATT.
   ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. U1 IS TYPE SM-A-742842-1.

EL5805—628—34—TM—736

Figure 11-38. Low voltage detector.



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS ARE APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE VALUES ARE IN OHMS, ±1%, 1/10W.
   ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ○ DENOTES TEST POINT.
4. U1, U3 AND U4 ARE TYPE SM-A-742435-1.
   U2 IS TYPE SM-A-742443-1. U5, U6, U8, U10, U12, U13, U14, U15, U17, U18, U19, U20 AND U21 ARE TYPE SM-A-742842-1.
   U7, U9, U11 AND U16 ARE TYPE SM-A-742205-2.

EL5805—628—34— TM—737①

Figure 11-39 ①. Operator position, 3-voice (sheet 1).

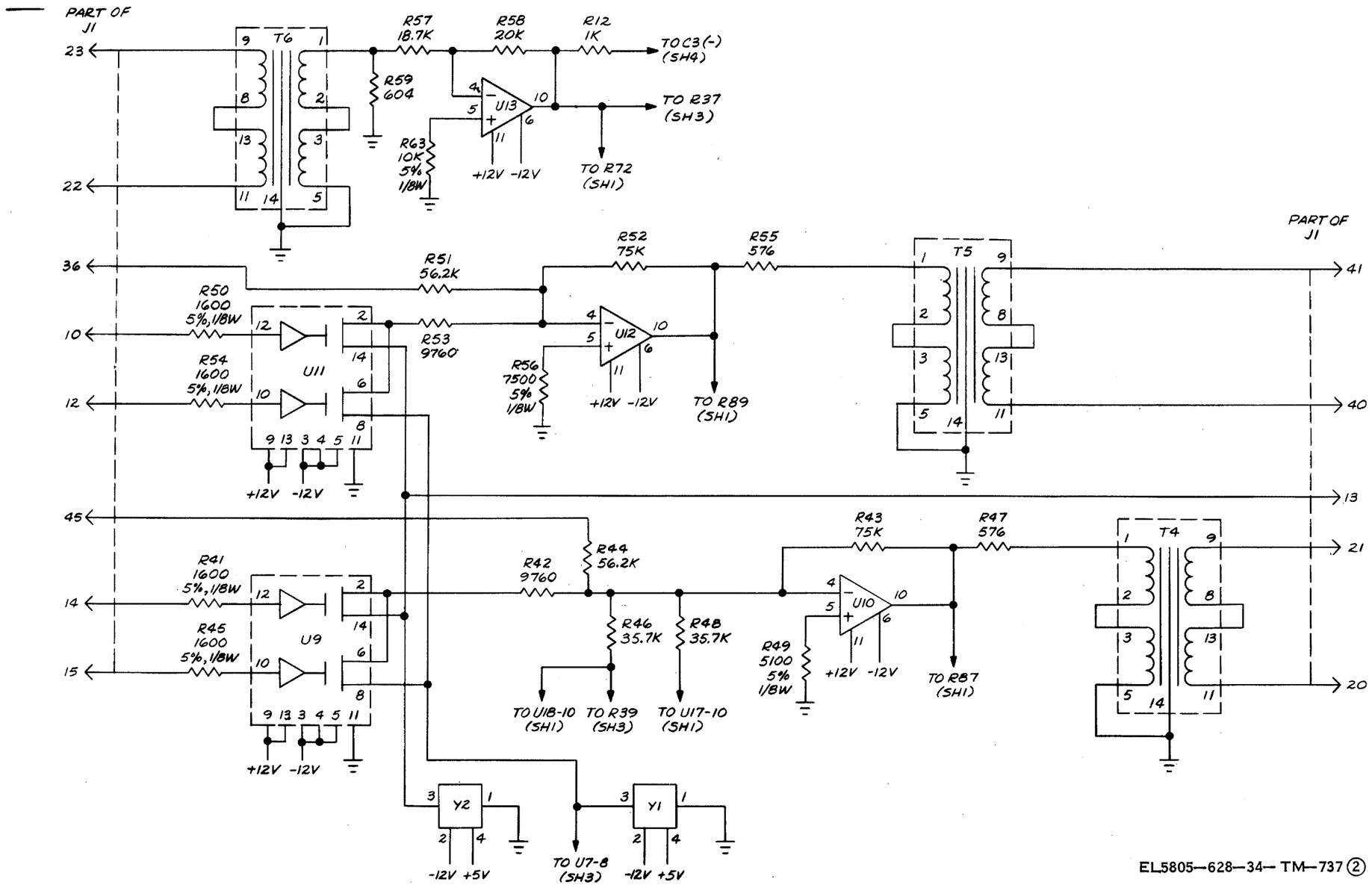


Figure 11-39 ②. Operator position, 3-voice (sheet 2).

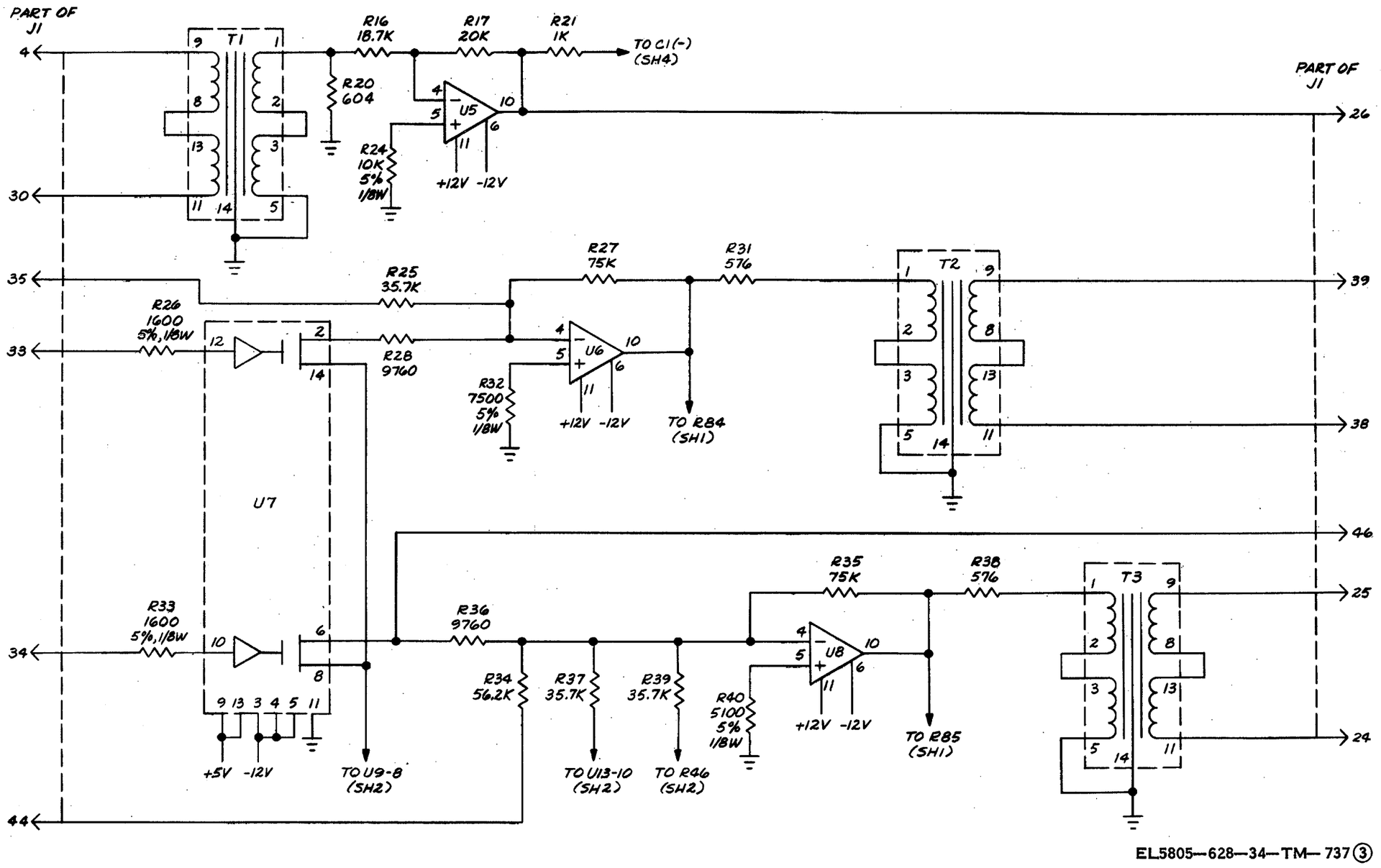


Figure 11-39 ③. Operator position, 3-voice (sheet 3).

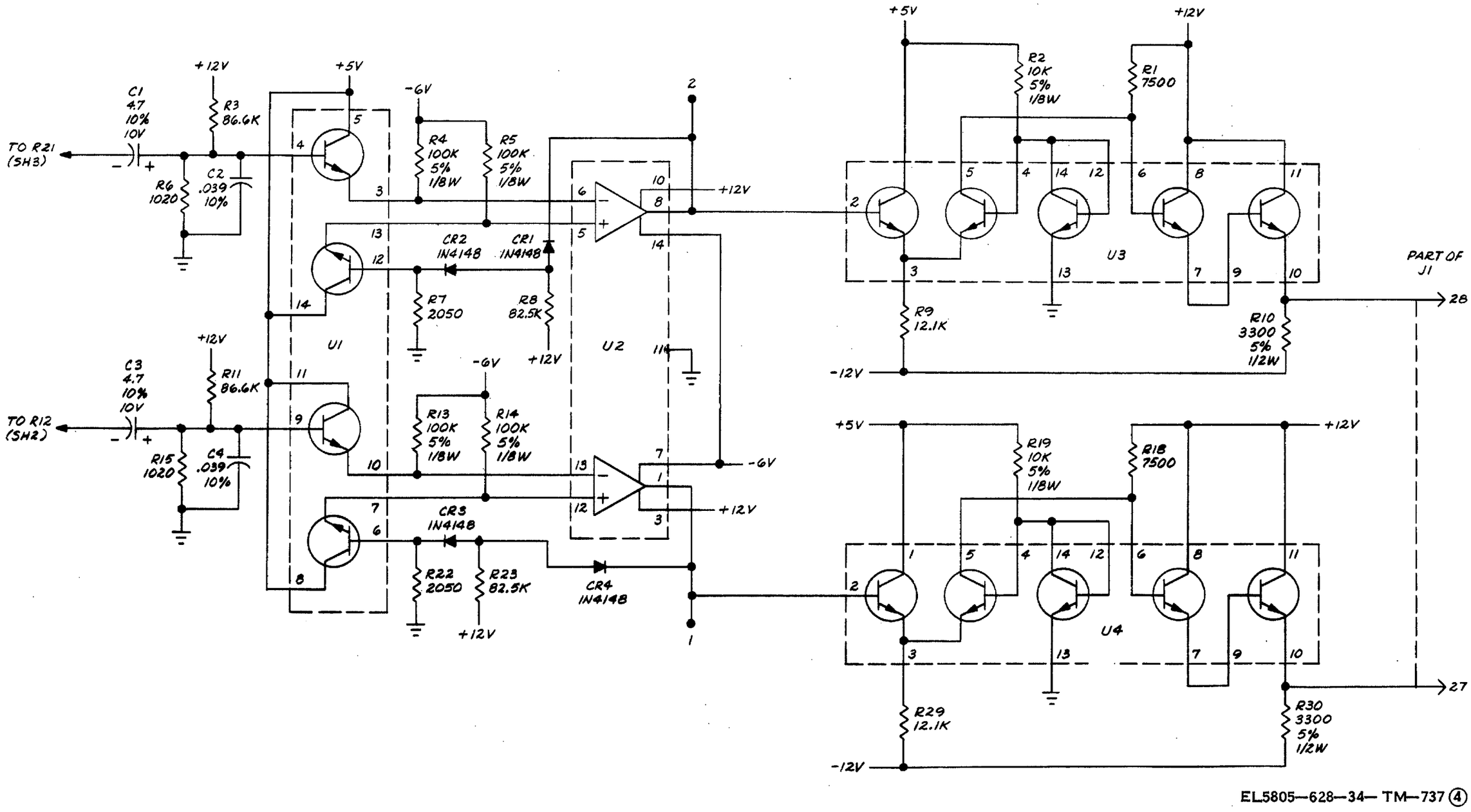


Figure 11-39 ④. Operator position, 3-voice (sheet 4).

NOTES

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. O DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±1%.
4. U1 IS TYPE SM-A-742443-1. U2 IS TYPE SM-A-742436-1. U3 AND U4 ARE TYPE SM-A-742842-1.
5. THE FOLLOWING RESISTORS ARE 5%; R5, R7, R8, R11, R13, R17, R18, R25, R26, R30, R35, R36, R38, R41-R50, R54, R55, R57 AND R58.

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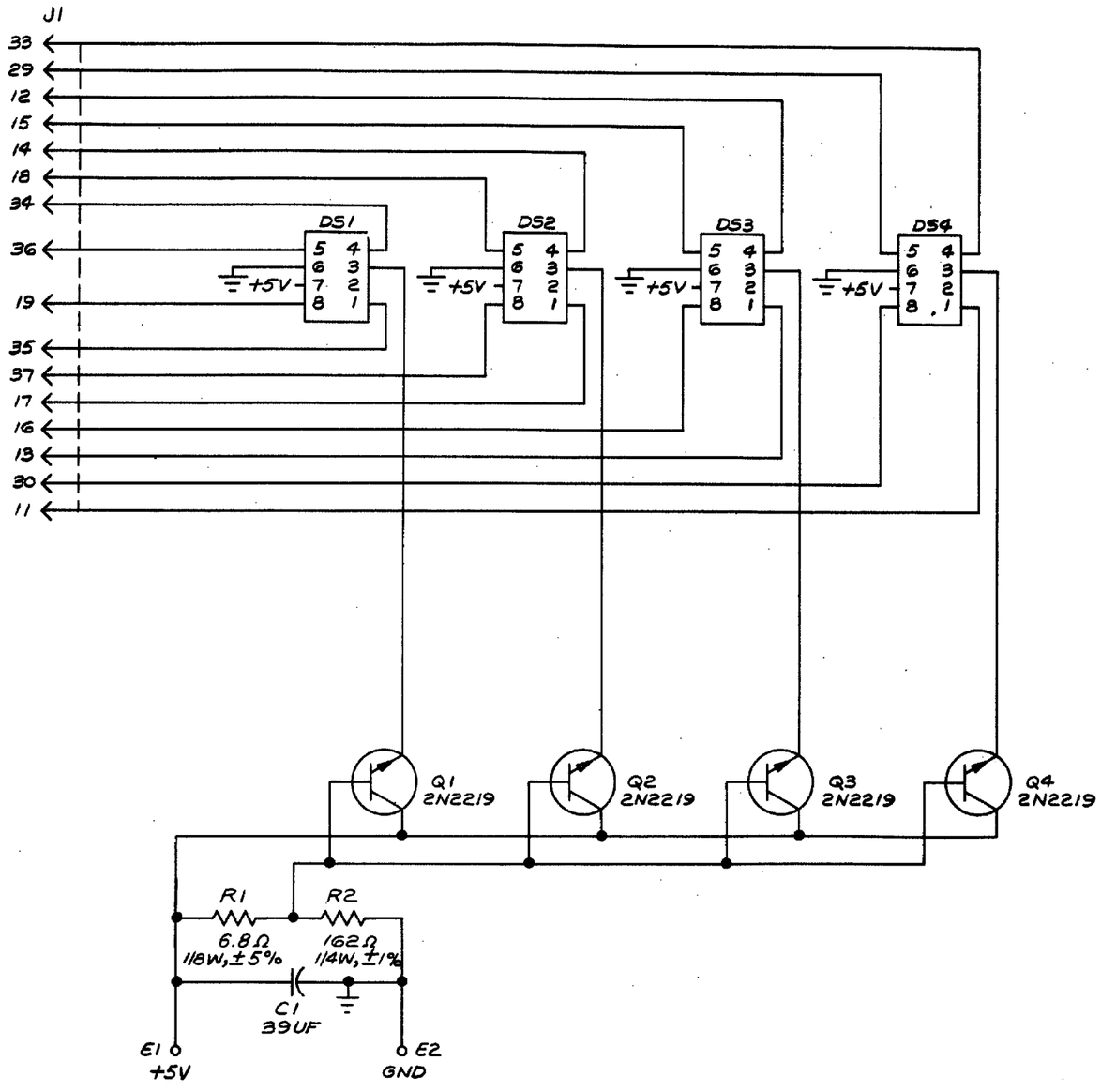
Figure 11-40. Operator position, 4.

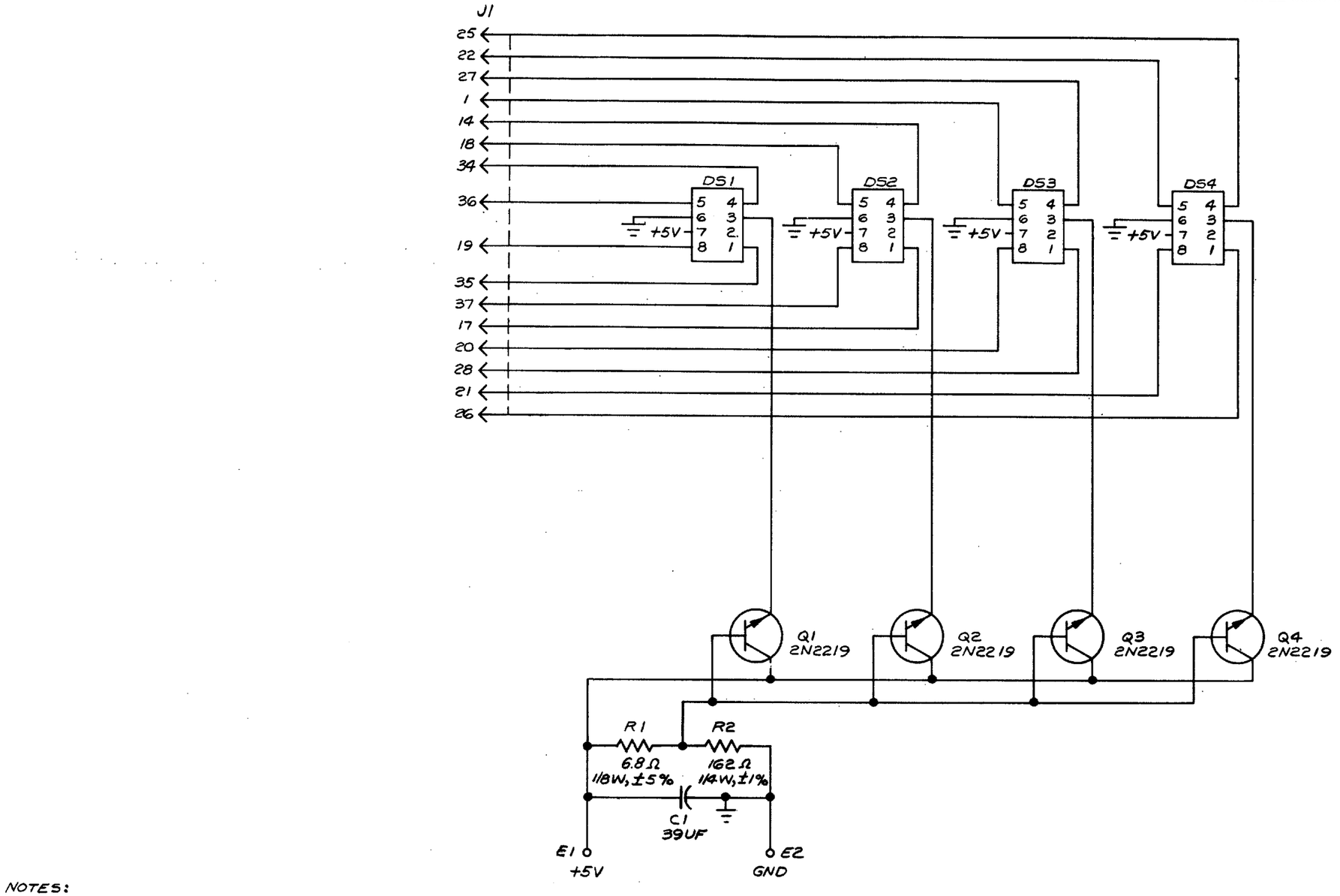


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. DS1 THRU DS4 ARE DECIMAL READOUT DISPLAYS.

EL5805—628—34—TM— 739

Figure 11-41. Display module, type 1.

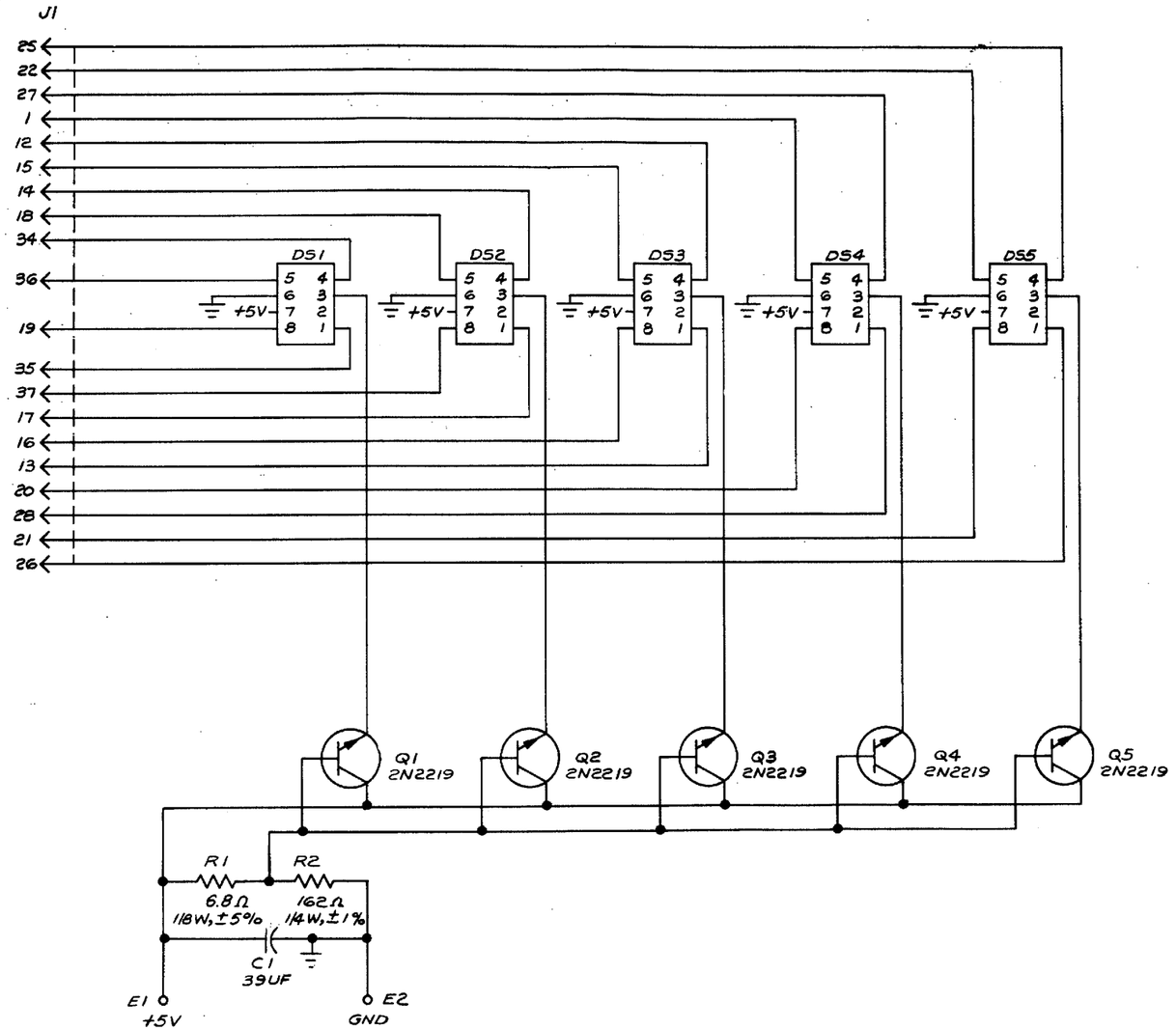


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. DS1 THRU DS4 ARE DECIMAL READOUT DISPLAYS.

EL5805—628—34—TM—740

Figure 11-42. Display module, type 2.

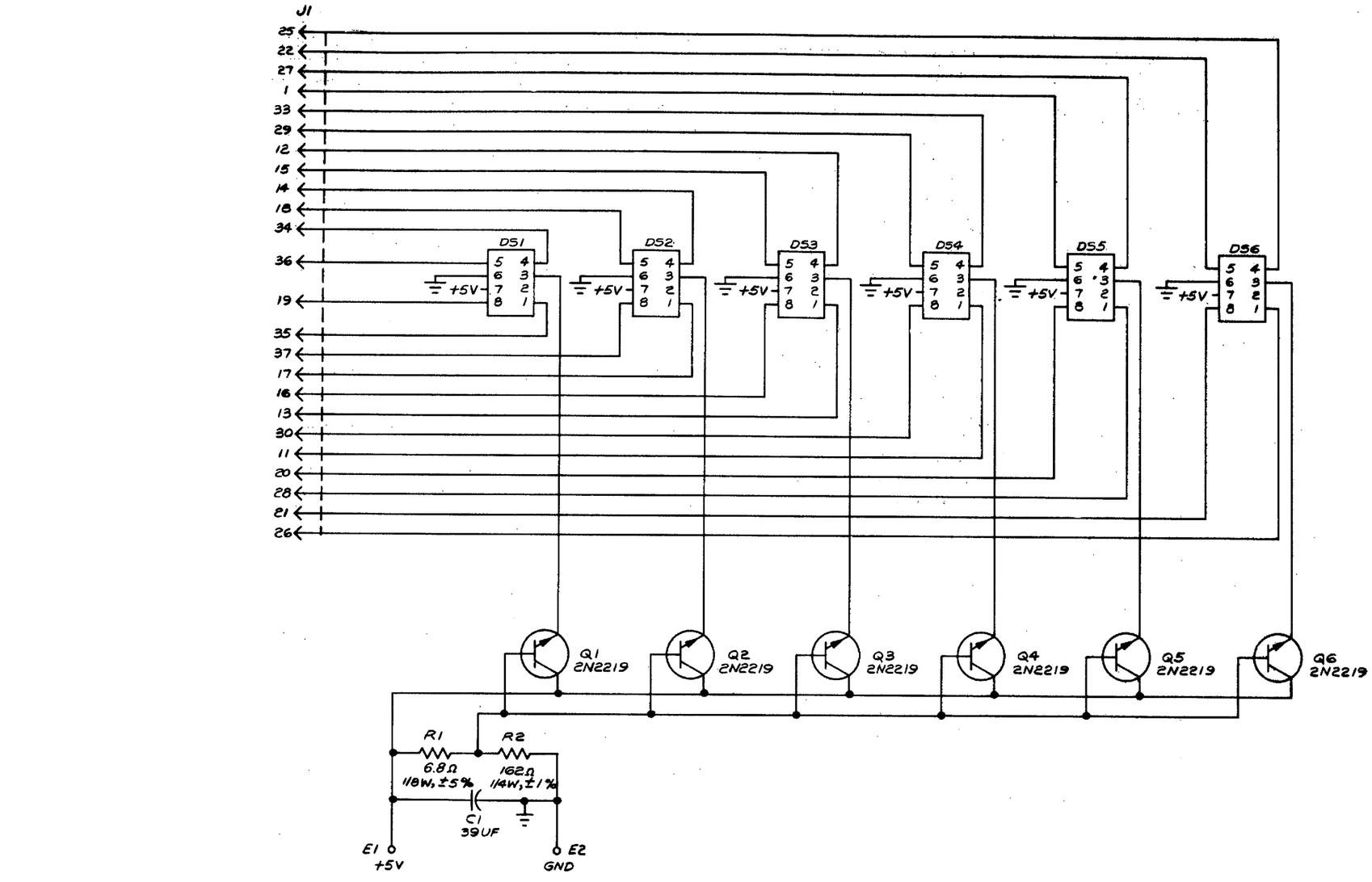


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. DS1 THRU DS5 ARE DECIMAL READOUT DISPLAYS.

EL5805—628—34—TM—741

Figure 11-43. Display module, type 3.



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. DS1 THRU DS6 ARE DECIMAL READOUT DISPLAYS.

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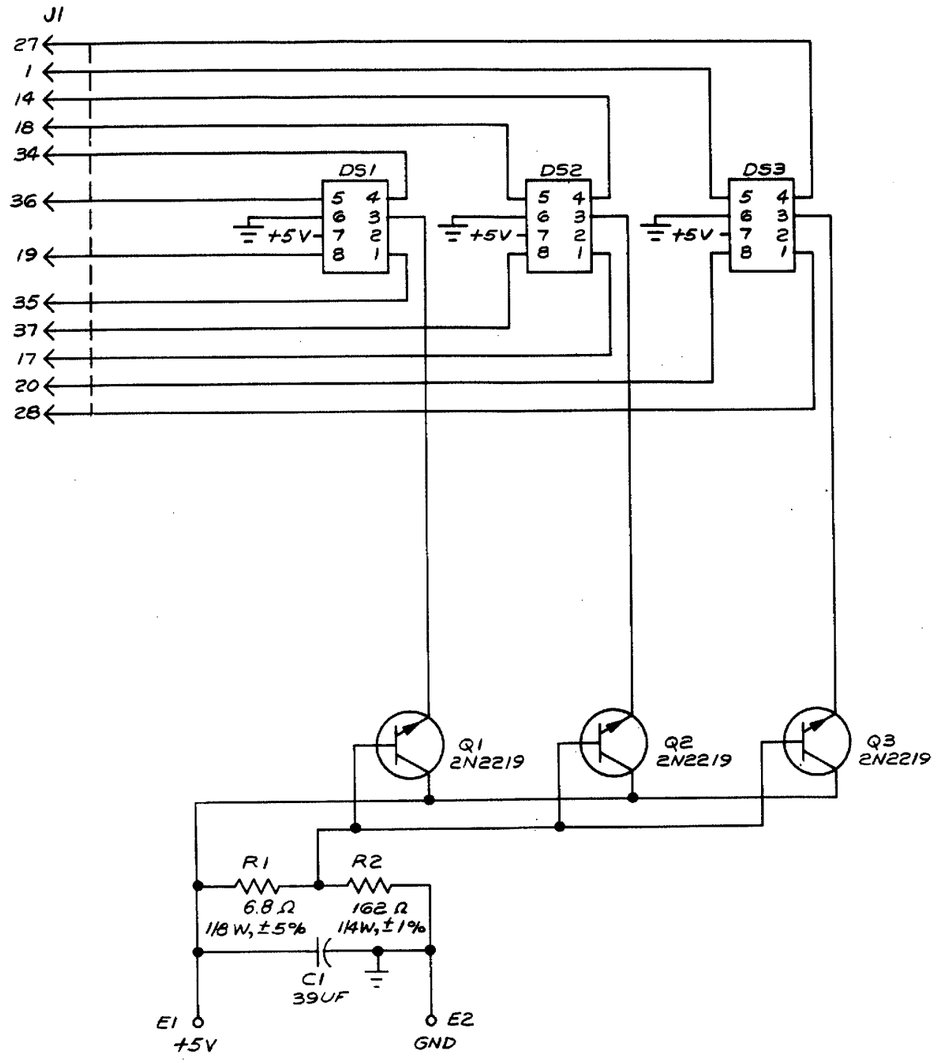
Figure 11-44. Display module, type 4.



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. DS1 THRU DS3 ARE DECIMAL READOUT DISPLAYS.

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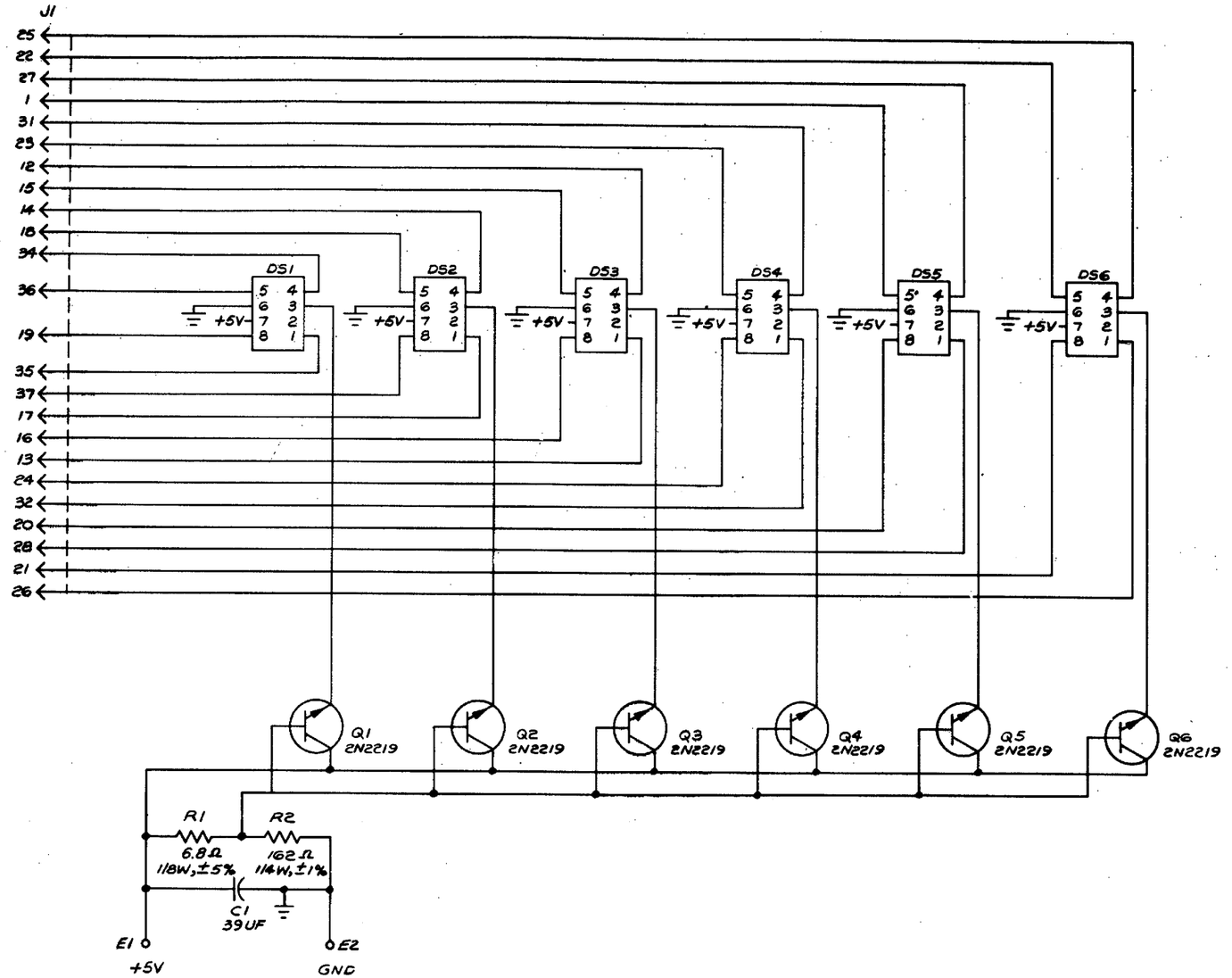
Figure 11-45. Display module, type 5.

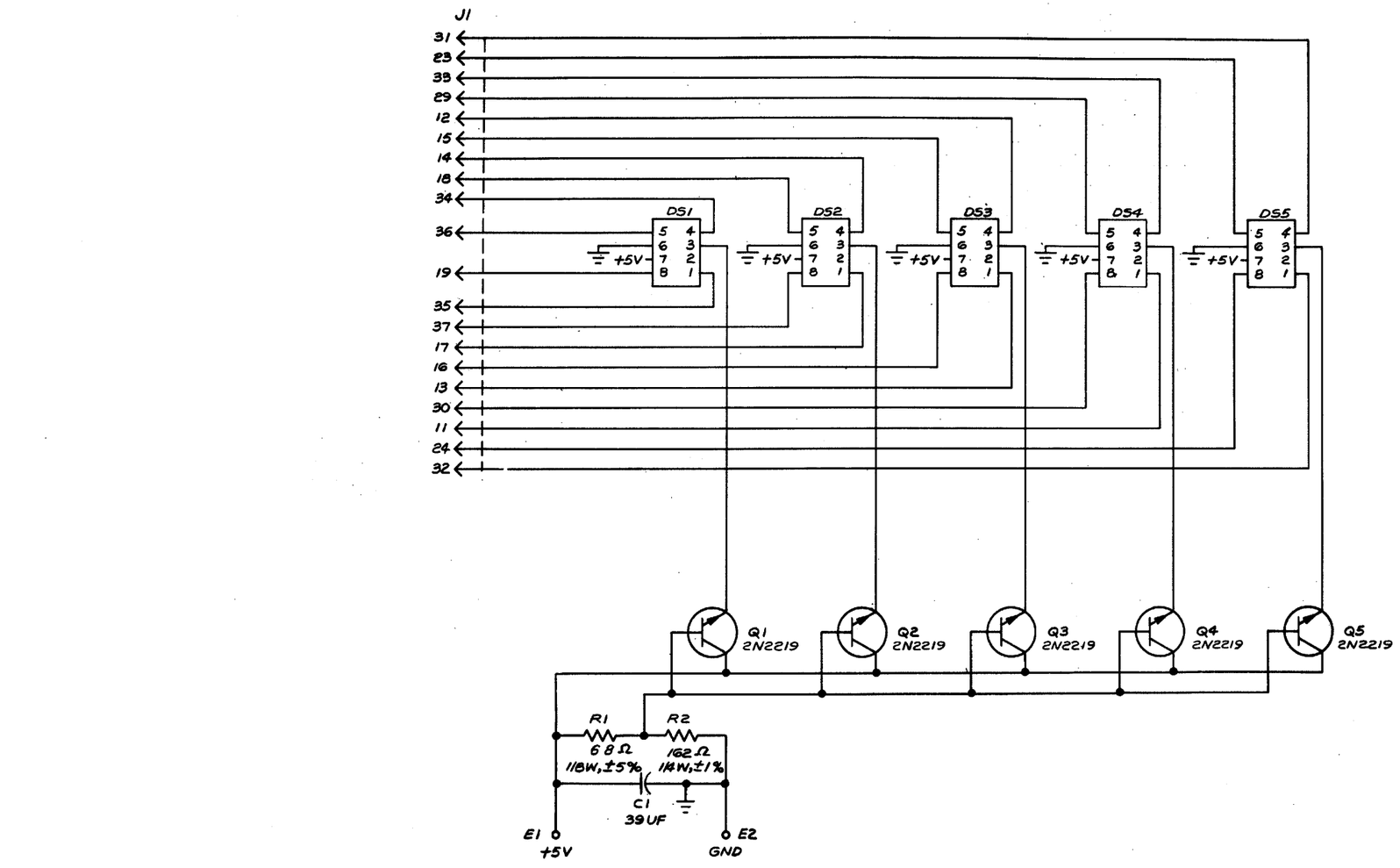


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. DS1 THRU DS6 ARE DECIMAL READOUT DISPLAYS.

EL5805—628— 34— TM—744

Figure 11-46. Display module, type 6.

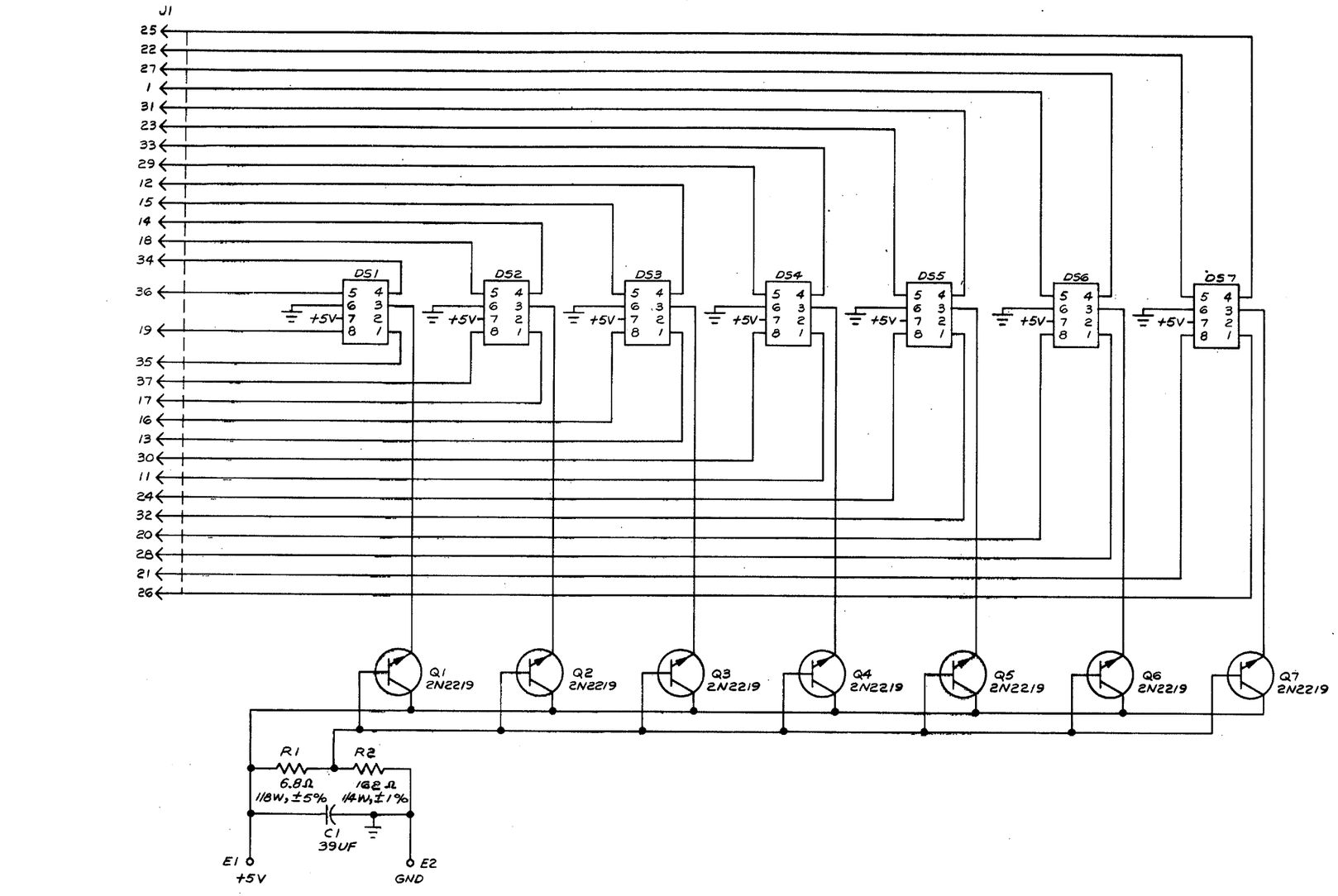


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. DS1 THRU DS5 ARE DECIMAL READOUT DISPLAYS.

EL5805—628— 34— TM—745

Figure 11-47. Display module, type 7.



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. DS1 THRU DS7 ARE DECIMAL READOUT DISPLAYS.

EL5805—628—34—TM—746

Figure 11-48. Display module, type 8.

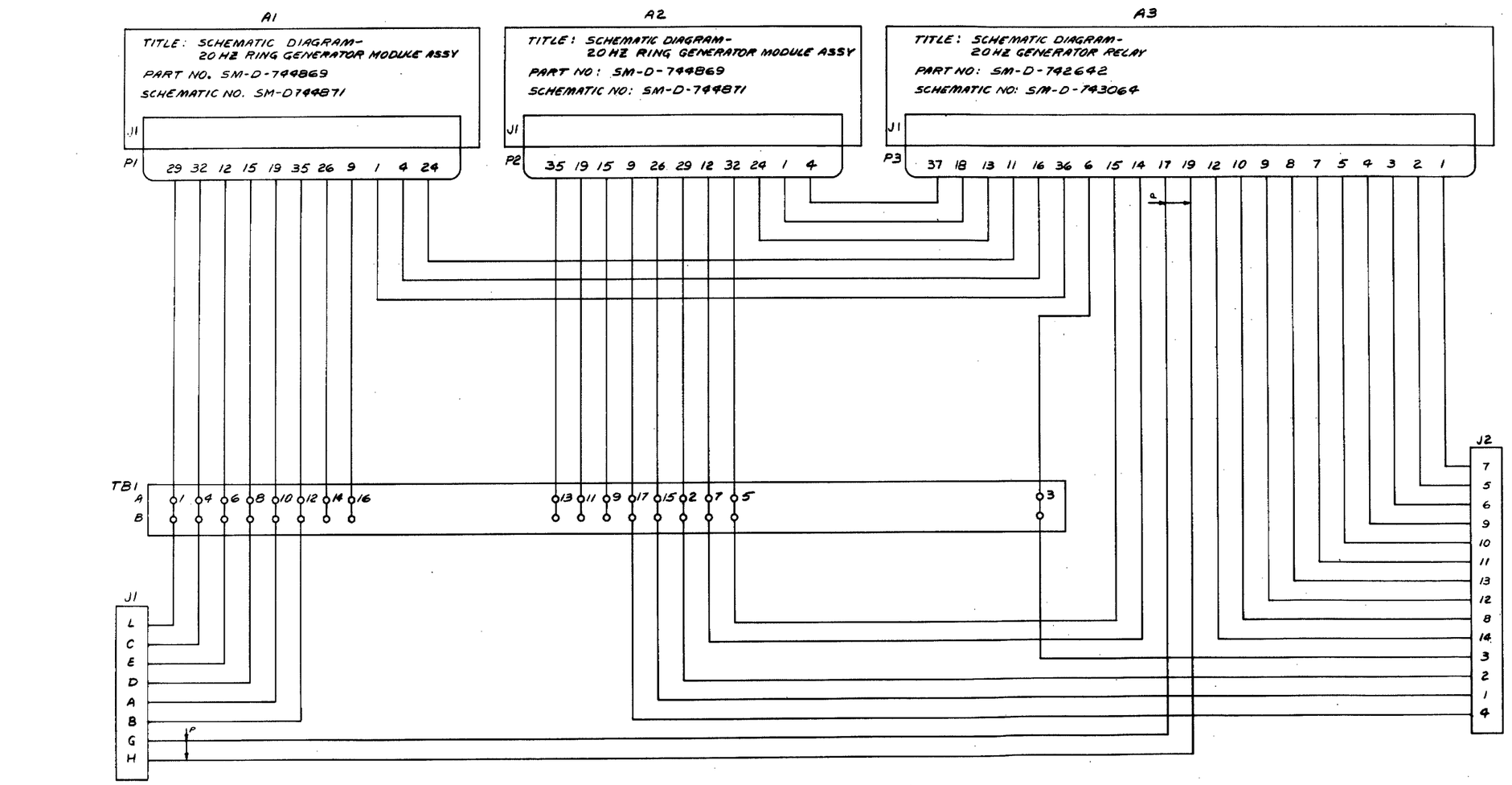
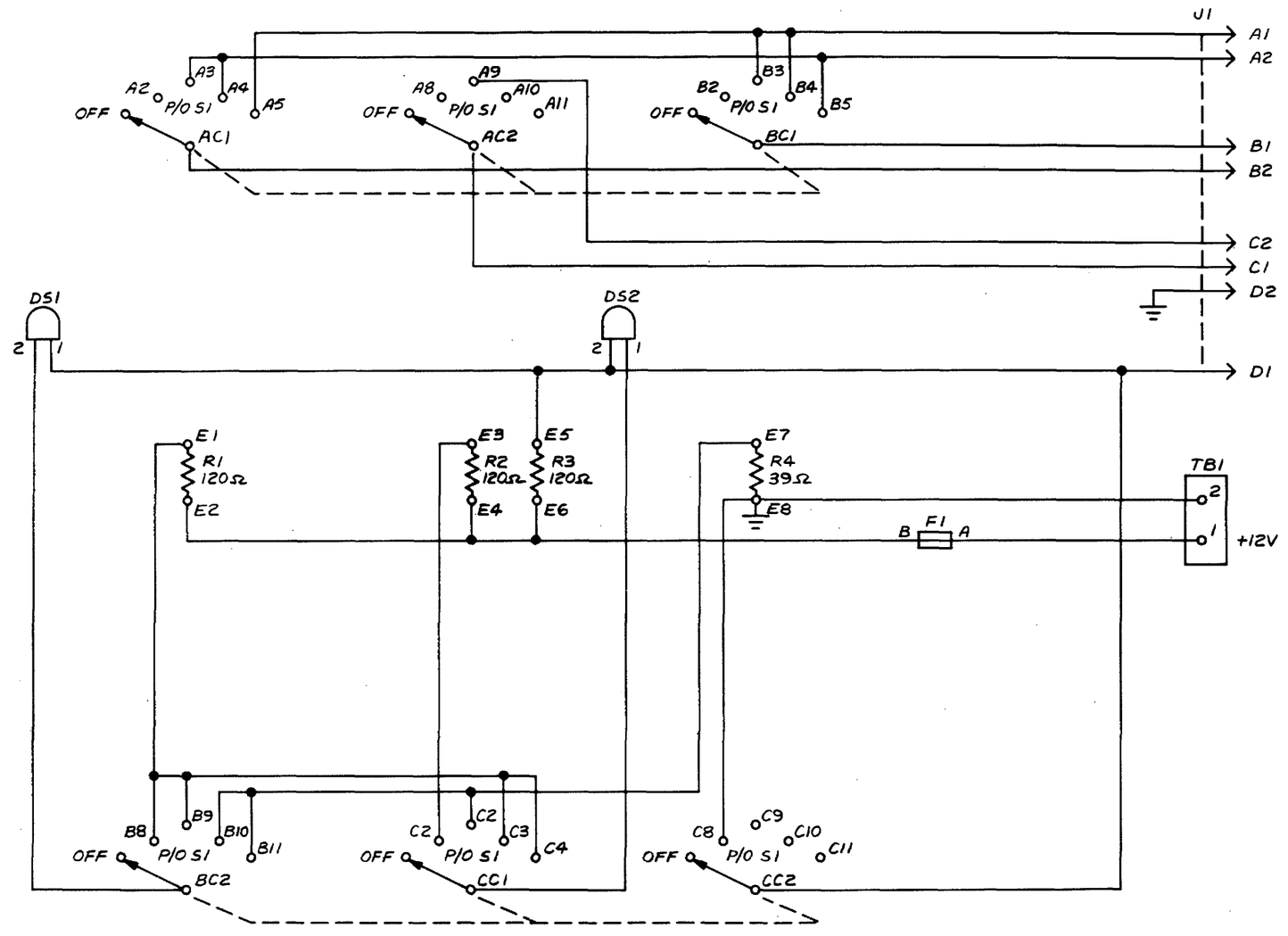


Figure 11-49. 20 Hz ring generator.

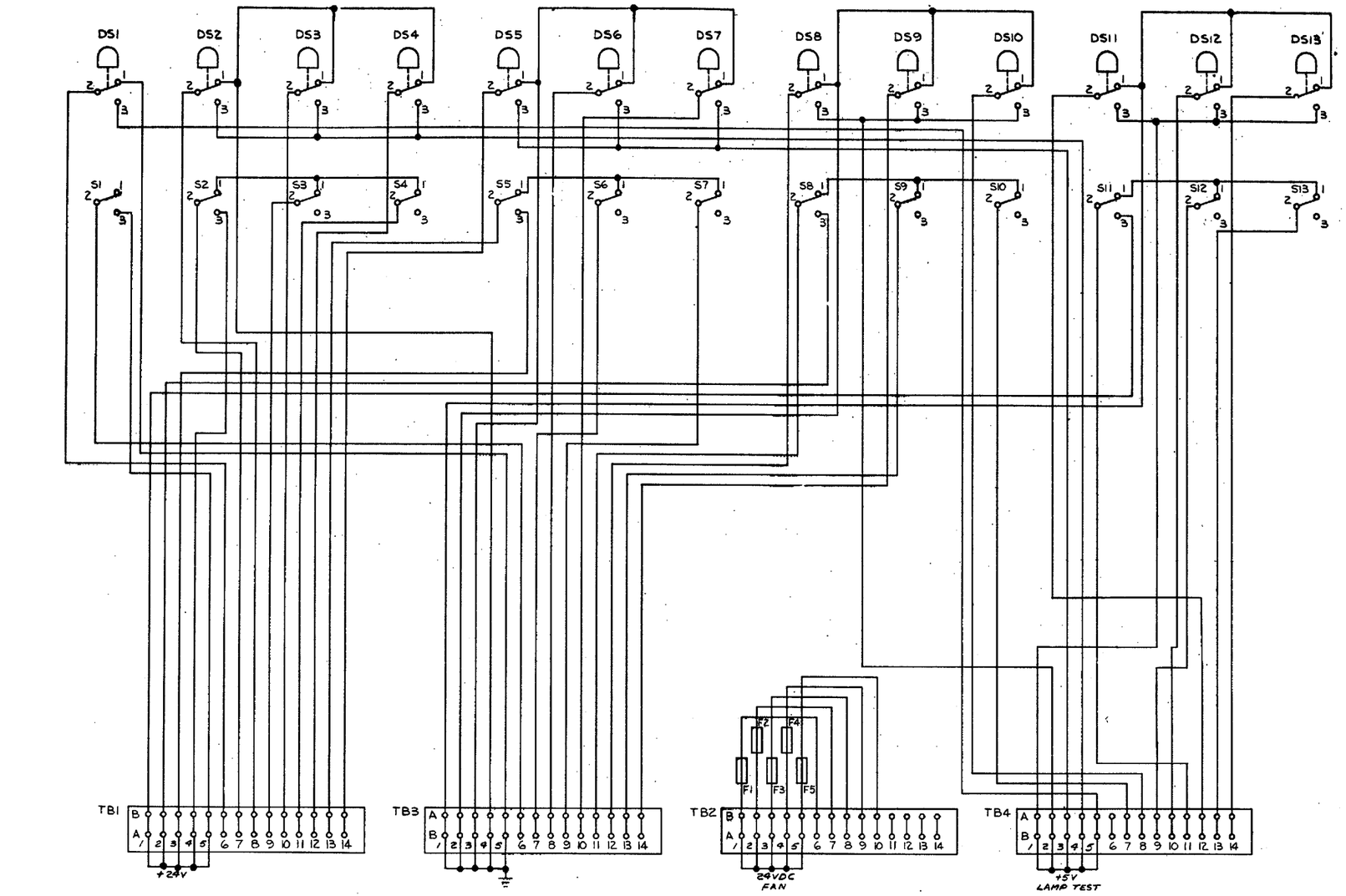


NOTE:

PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.

EL5805—628—34—TM—757

Figure No. 11-51. Patch plug/cable tester.



NOTE:
PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER AND ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.

Figure 11-52. NTS power control panel assembly.

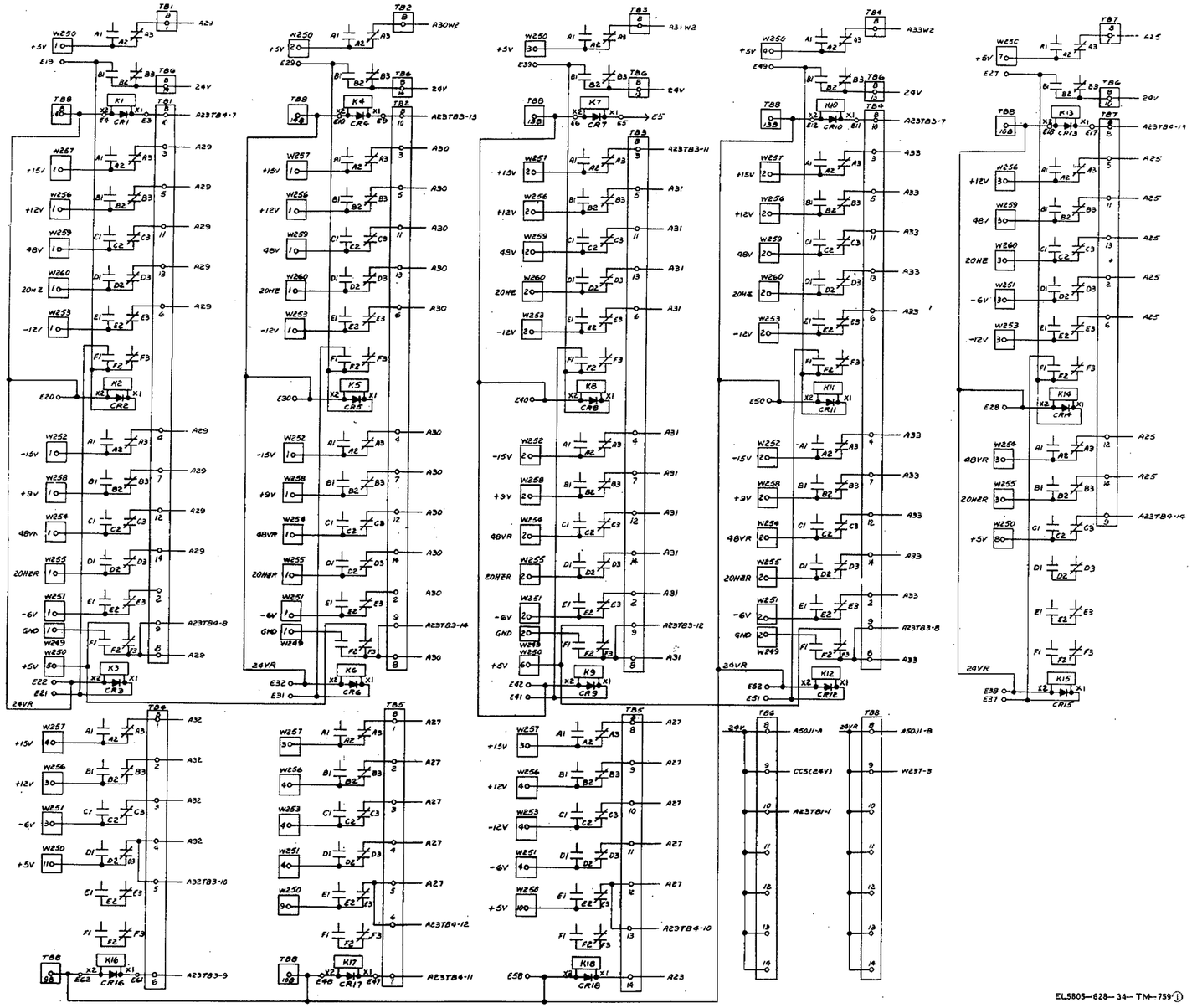


Figure 11-53 ①. Power relay assembly AN / TTC-38 (V) 2 (sheet 1).

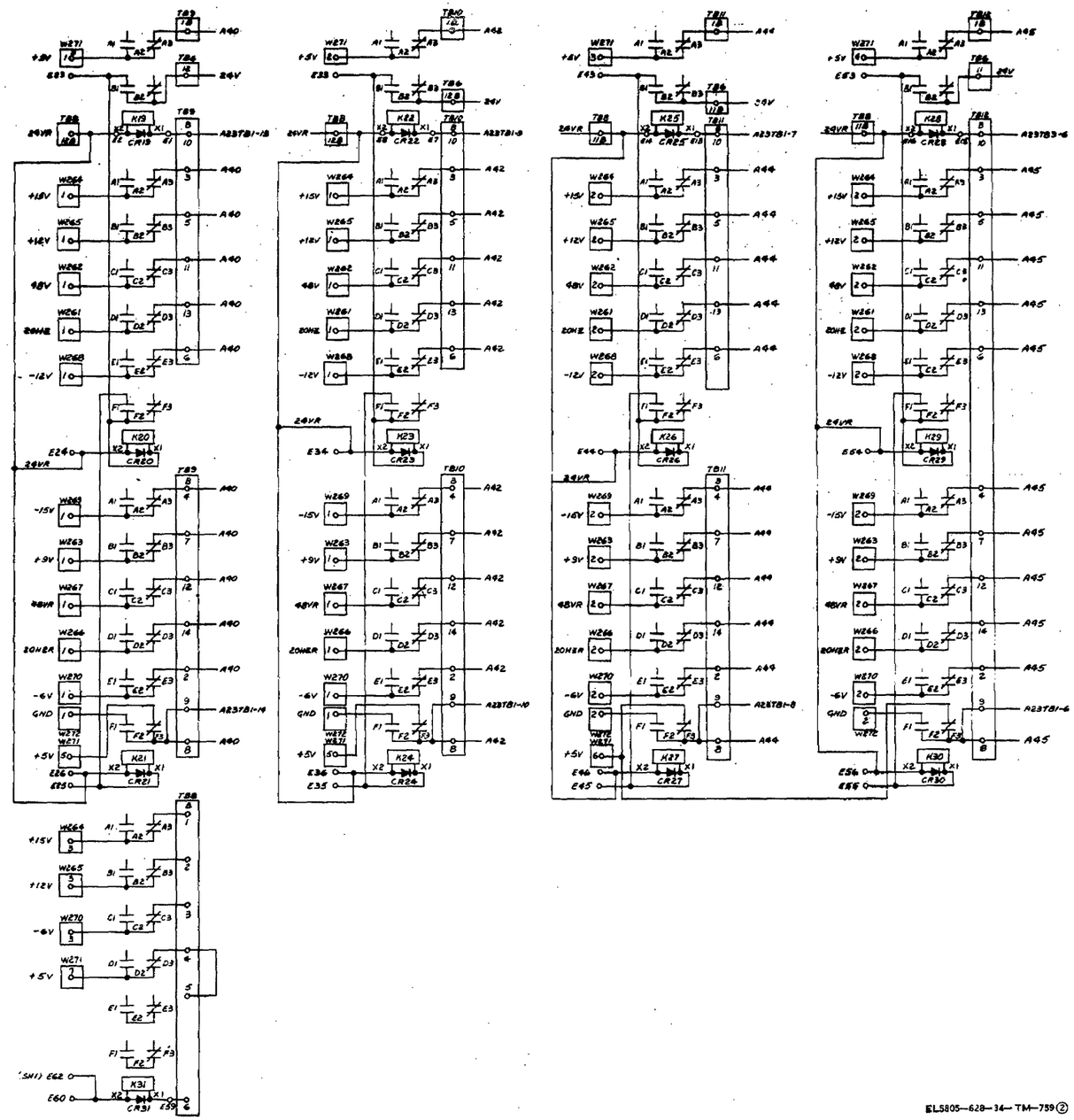


Figure 11-53 ②. Power relay assembly AN / TTC-38(V)2 (sheet 2).

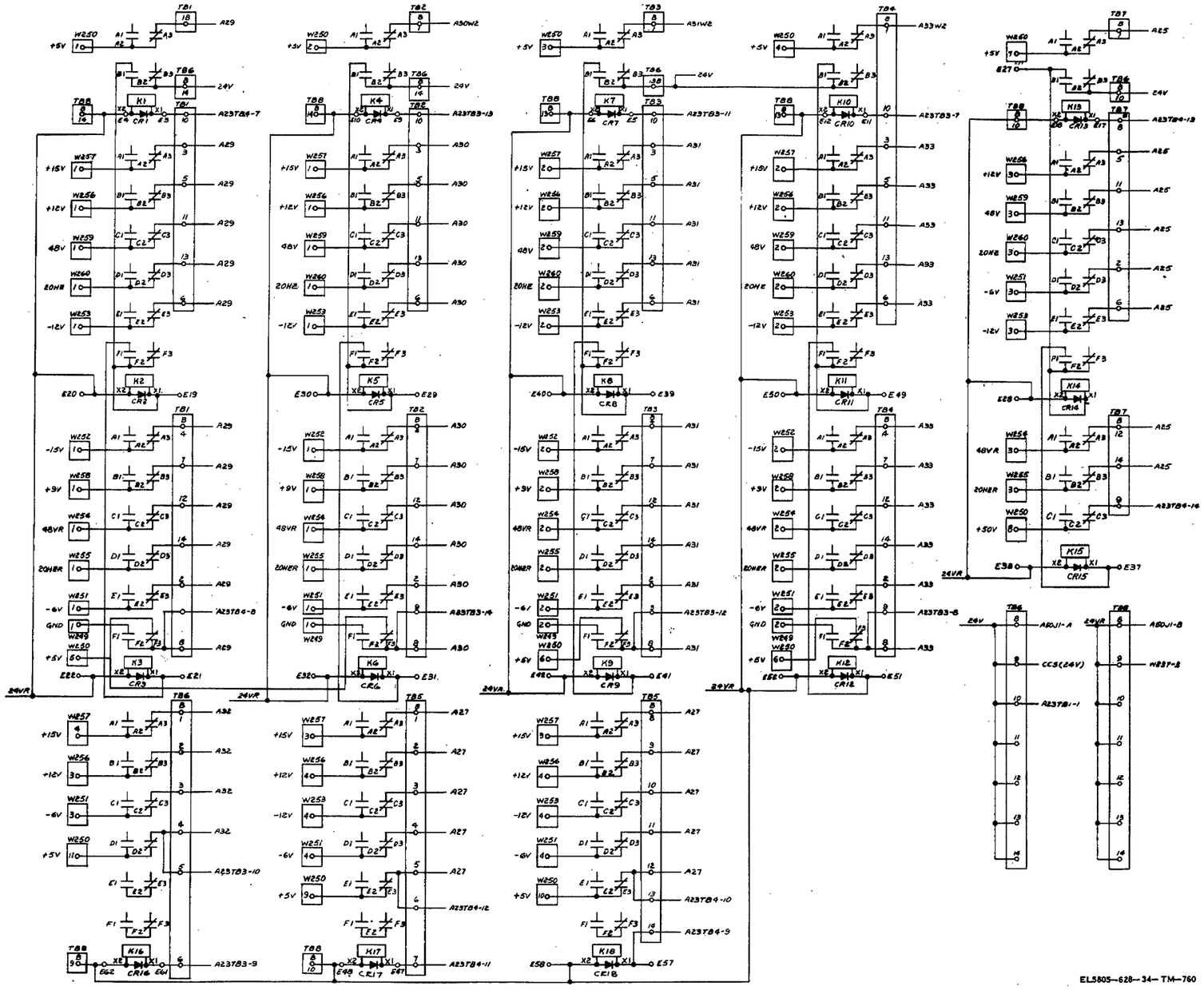


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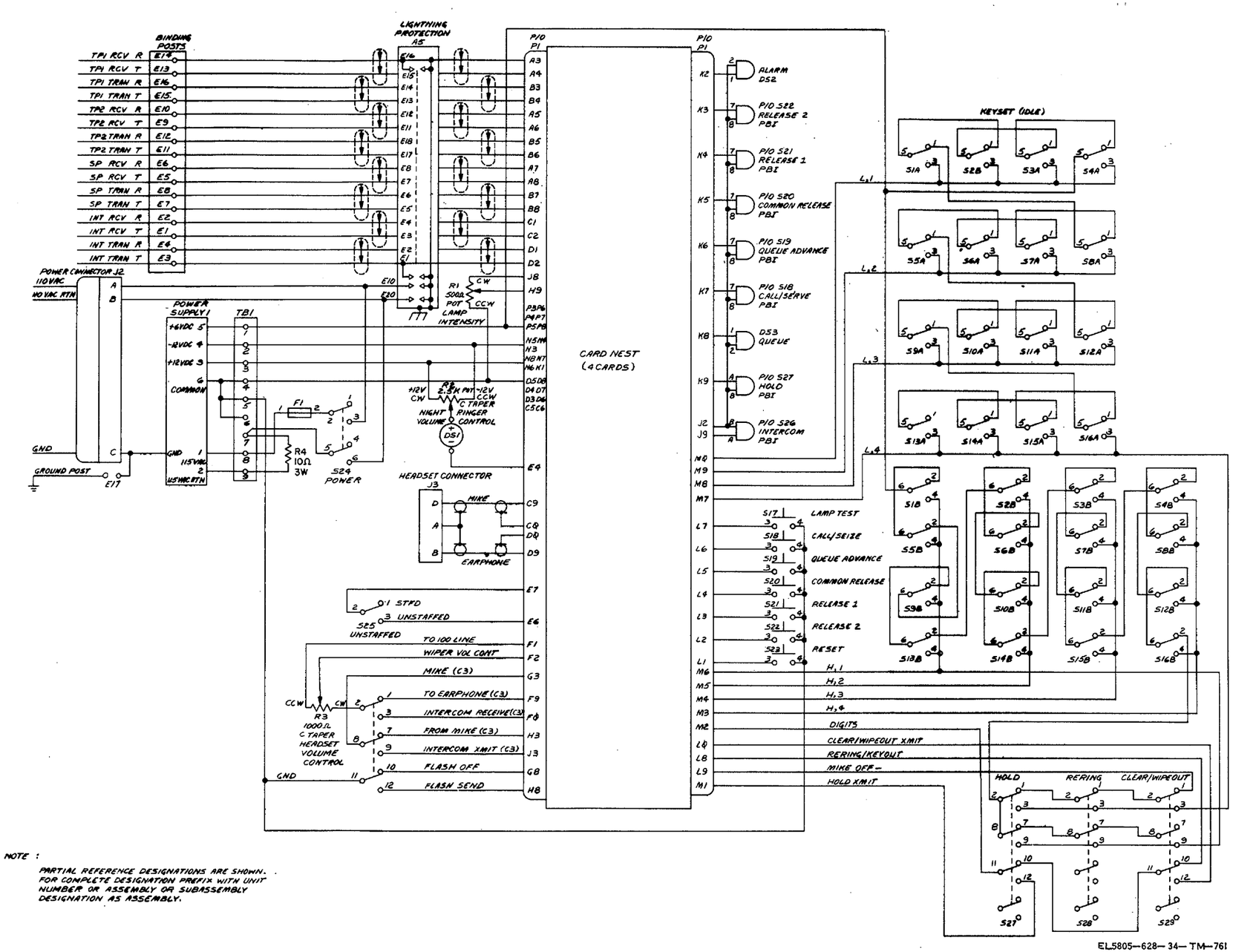
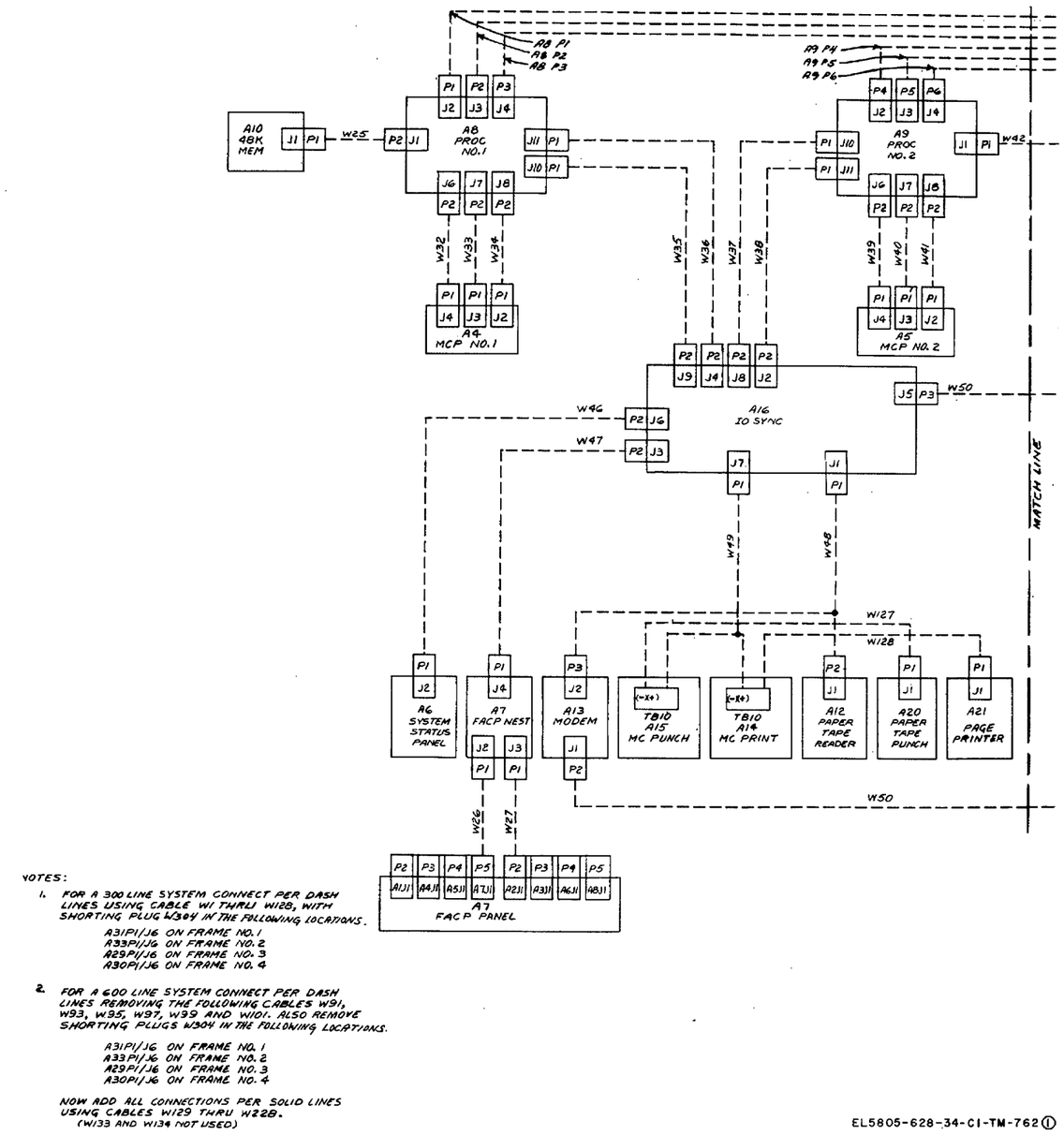
Figure 11-54. Power relay assembly AN / TTC-38(V) 1.



NOTE :

PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATION AS ASSEMBLY.

Figure 11-55. Operator position.



NOTES:

1. FOR A 300 LINE SYSTEM CONNECT PER DASH LINES USING CABLE W1 THRU W128, WITH SHORTING PLUG W304 IN THE FOLLOWING LOCATIONS.
   - A31P1/J6 ON FRAME NO. 1
   - A33P1/J6 ON FRAME NO. 2
   - A29P1/J6 ON FRAME NO. 3
   - A30P1/J6 ON FRAME NO. 4

2. FOR A 600 LINE SYSTEM CONNECT PER DASH LINES REMOVING THE FOLLOWING CABLES W91, W93, W95, W97, W99 AND W101. ALSO REMOVE SHORTING PLUGS W304 IN THE FOLLOWING LOCATIONS.
   - A31P1/J6 ON FRAME NO. 1
   - A33P1/J6 ON FRAME NO. 2
   - A29P1/J6 ON FRAME NO. 3
   - A30P1/J6 ON FRAME NO. 4

   NOW ADD ALL CONNECTIONS PER SOLID LINES USING CABLES W129 THRU W228. (W133 AND W134 NOT USED)

Figure 11-56 ①. Interconnecting signal cable diagram - shelter (sheet 1).

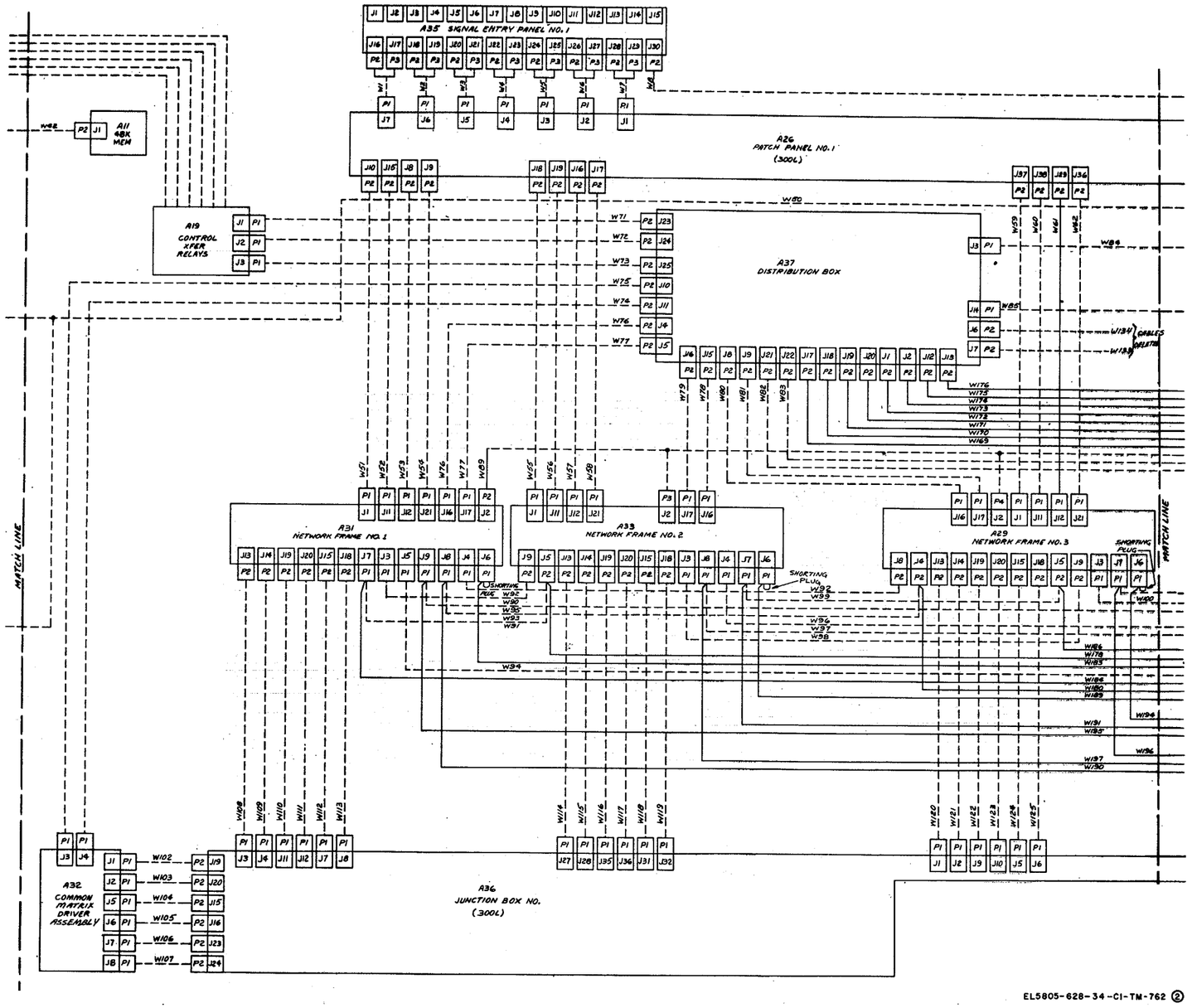


Figure 11-56 ②. Interconnecting signal cable diagram - shelter (sheet 2).

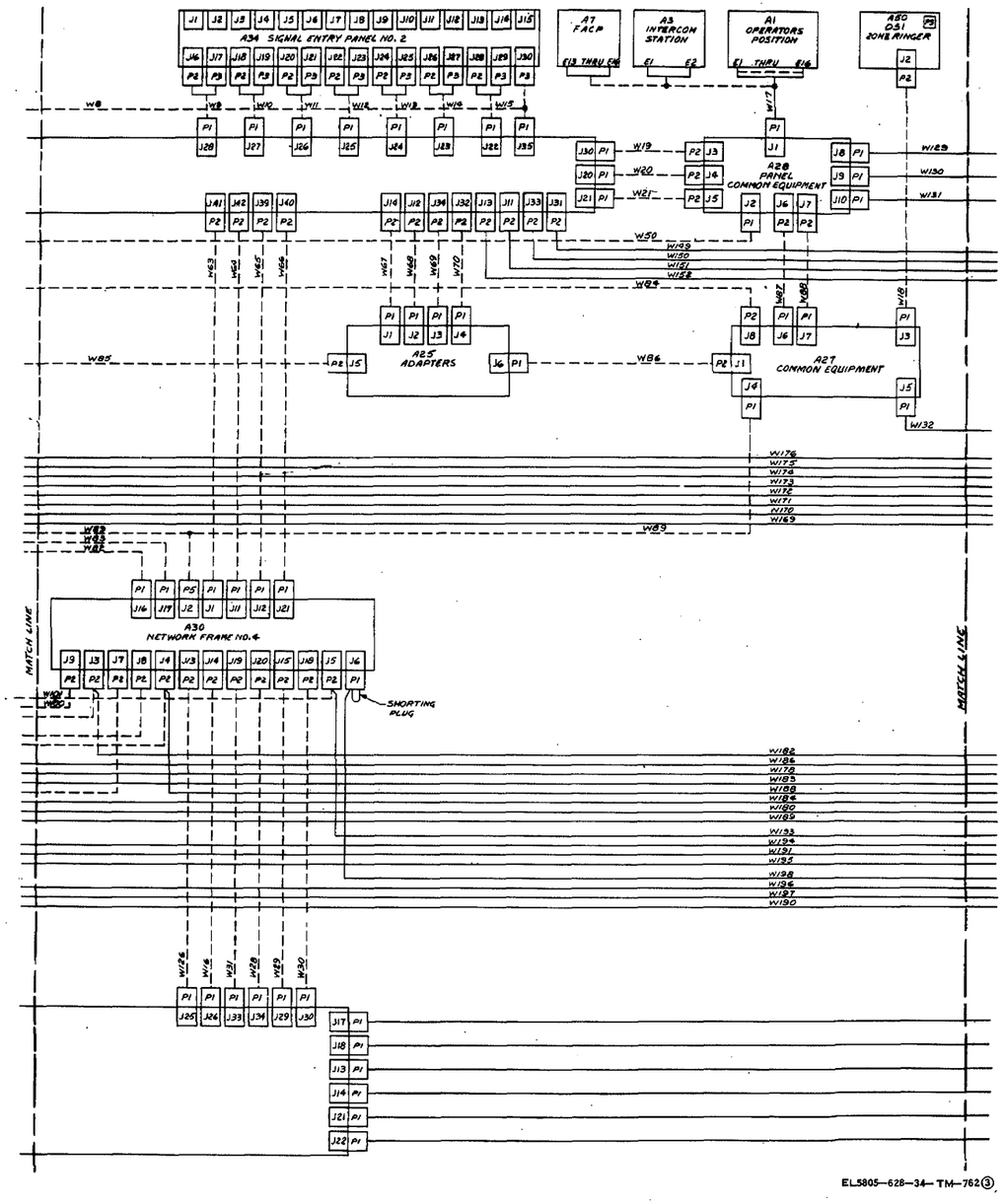


Figure 11-56③. Interconnecting signal cable diagram - shelter (sheet 3).

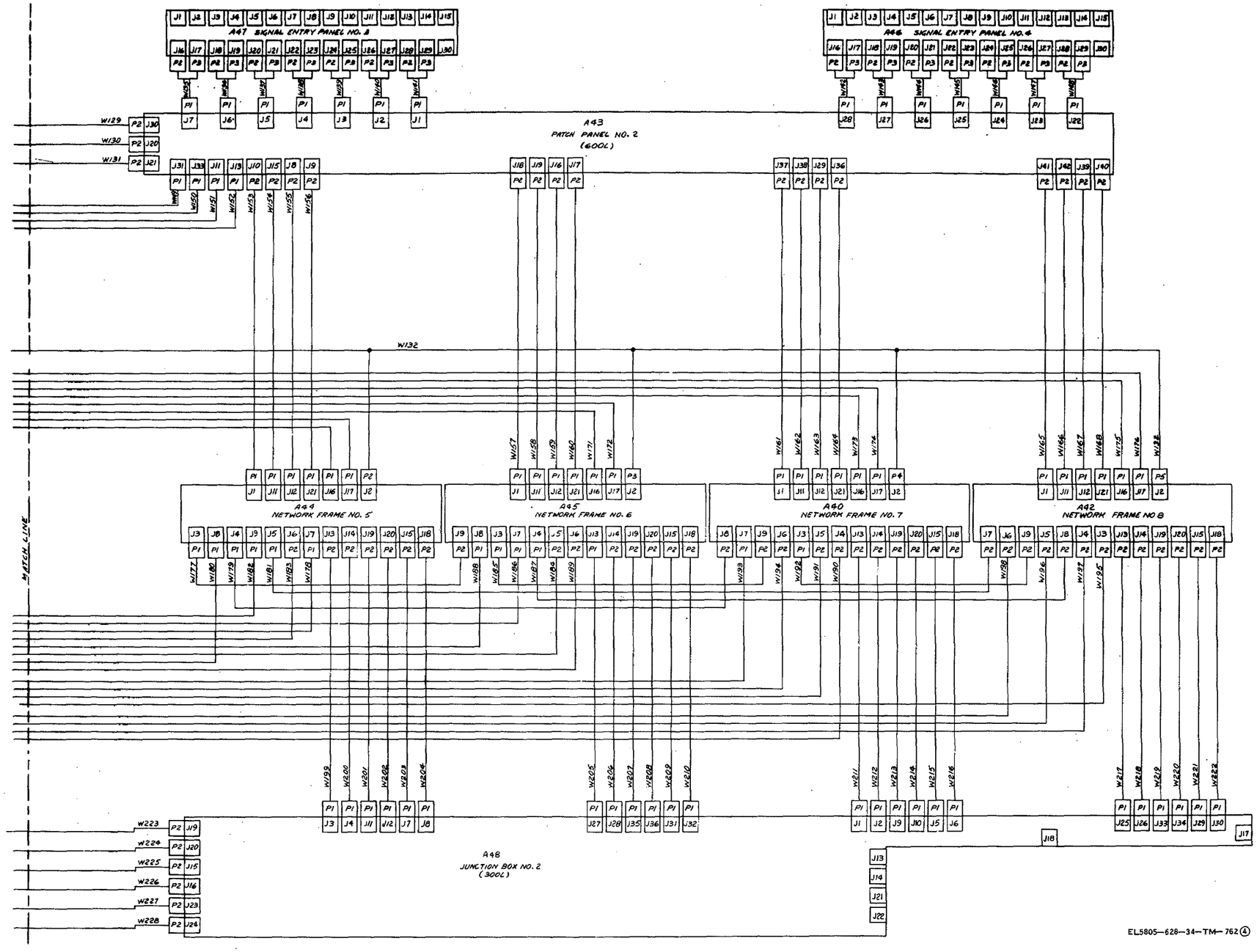


Figure 11-56. ④. Interconnecting signal cable diagram - cable (sheet 4)

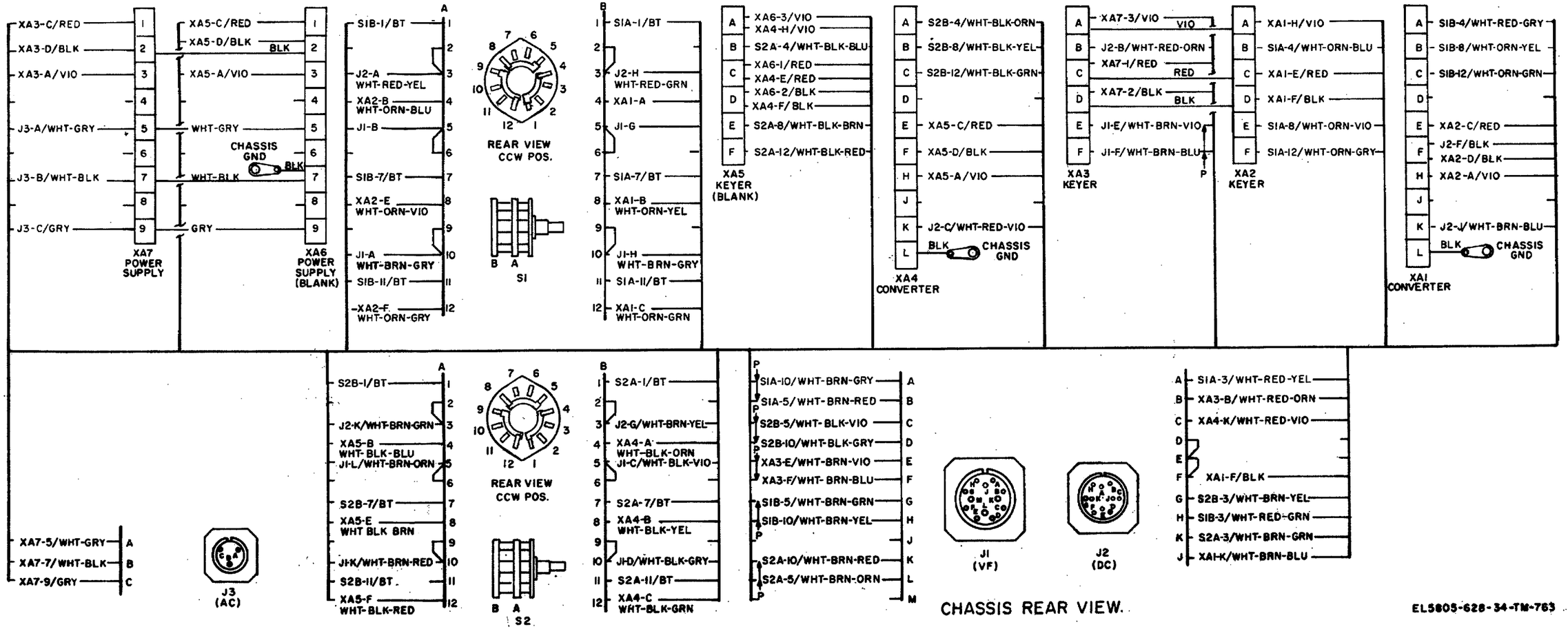


Figure 11-57. Modem wiring diagram.

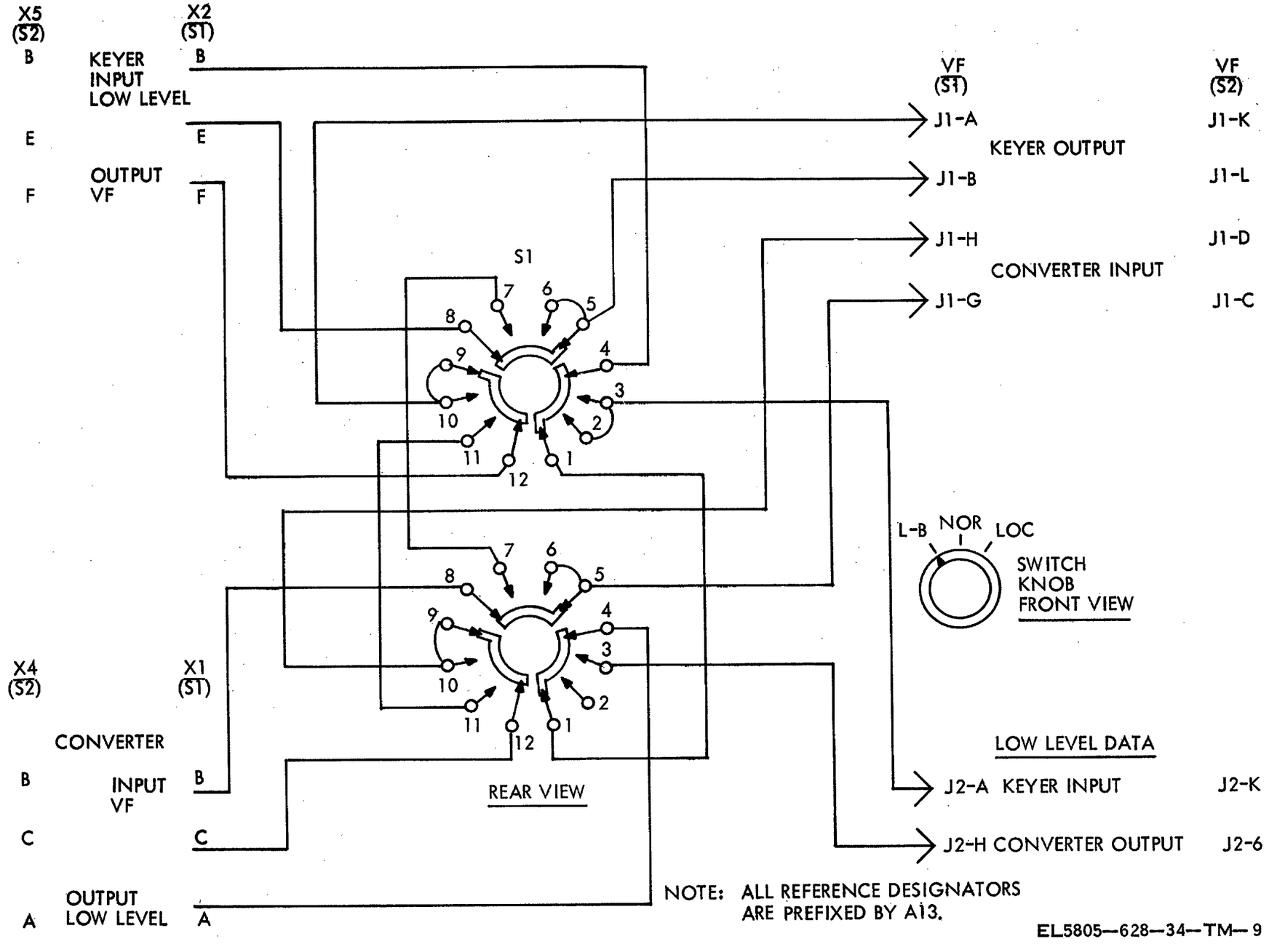
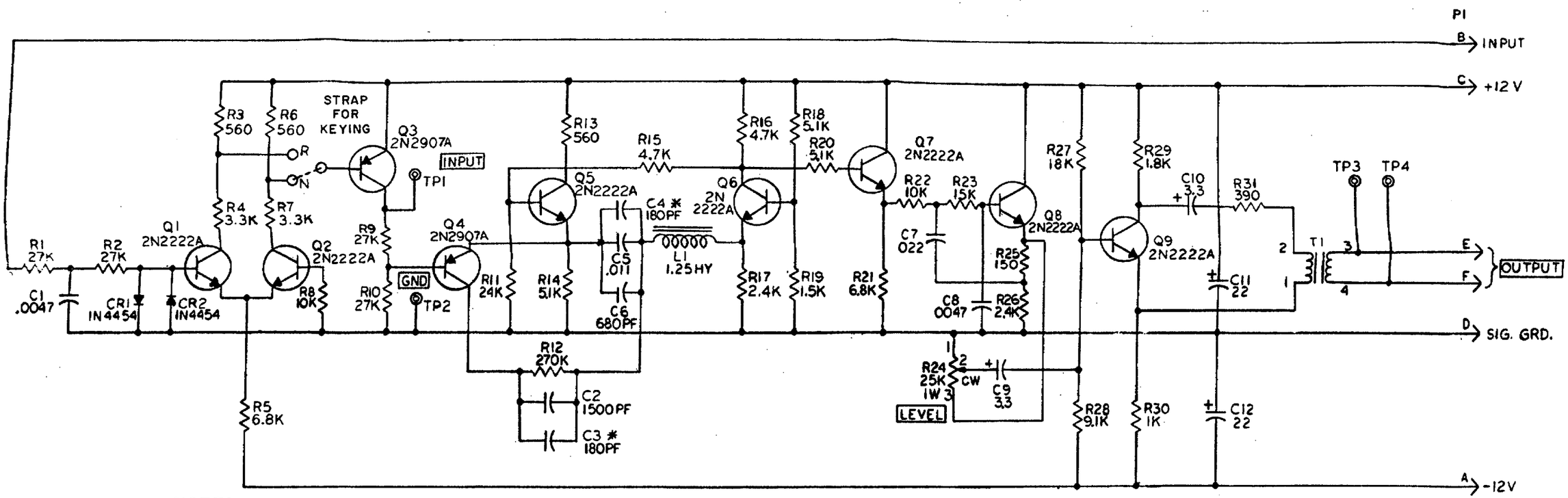


Figure 11-58. Modem selector switch wiring diagram.



NOTES:

1. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, 5% 1/4 WATT. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
2. ▭ INDICATES EQUIPMENT MARKINGS.
3. * INDICATES VALUES TO BE DETERMINED DURING TEST.

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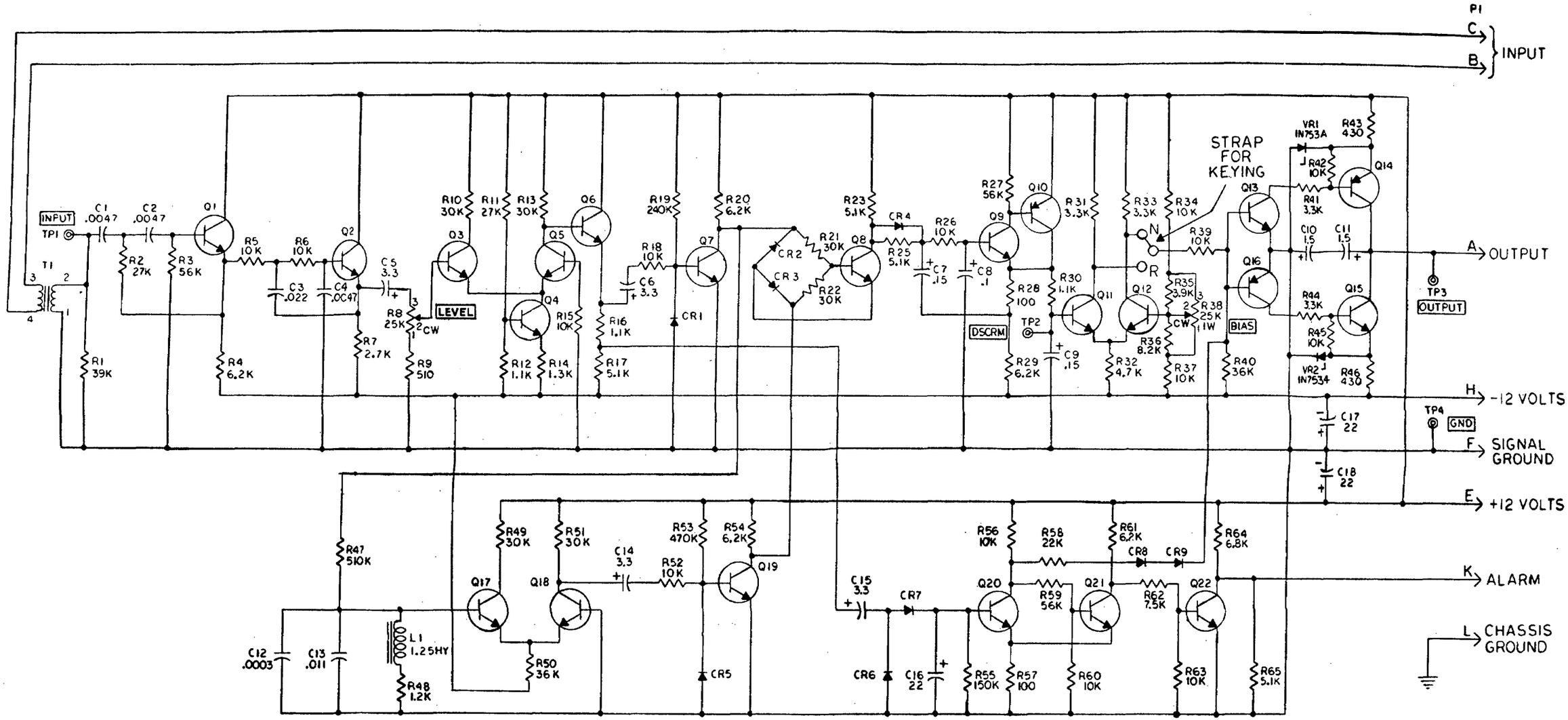
Figure 11-59. Schematic diagram. Modem keyer.



NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS, 5%, 1/4 WATT. ALL CAPACITANCE VALUES ARE IN MICRO-FARADS. ALL TRANSISTORS ARE 2N2222A EXCEPT Q10, Q14, AND Q16 ARE ZN2907A. ALL DIODES ARE IN4454.
2. ▭ INDICATES EQUIPMENT MARKING.
3. R24 DESIGNATION NOT USED.

EL5805—628—34—TM—765

Figure 11-60. Schematic diagram. Modem converter.

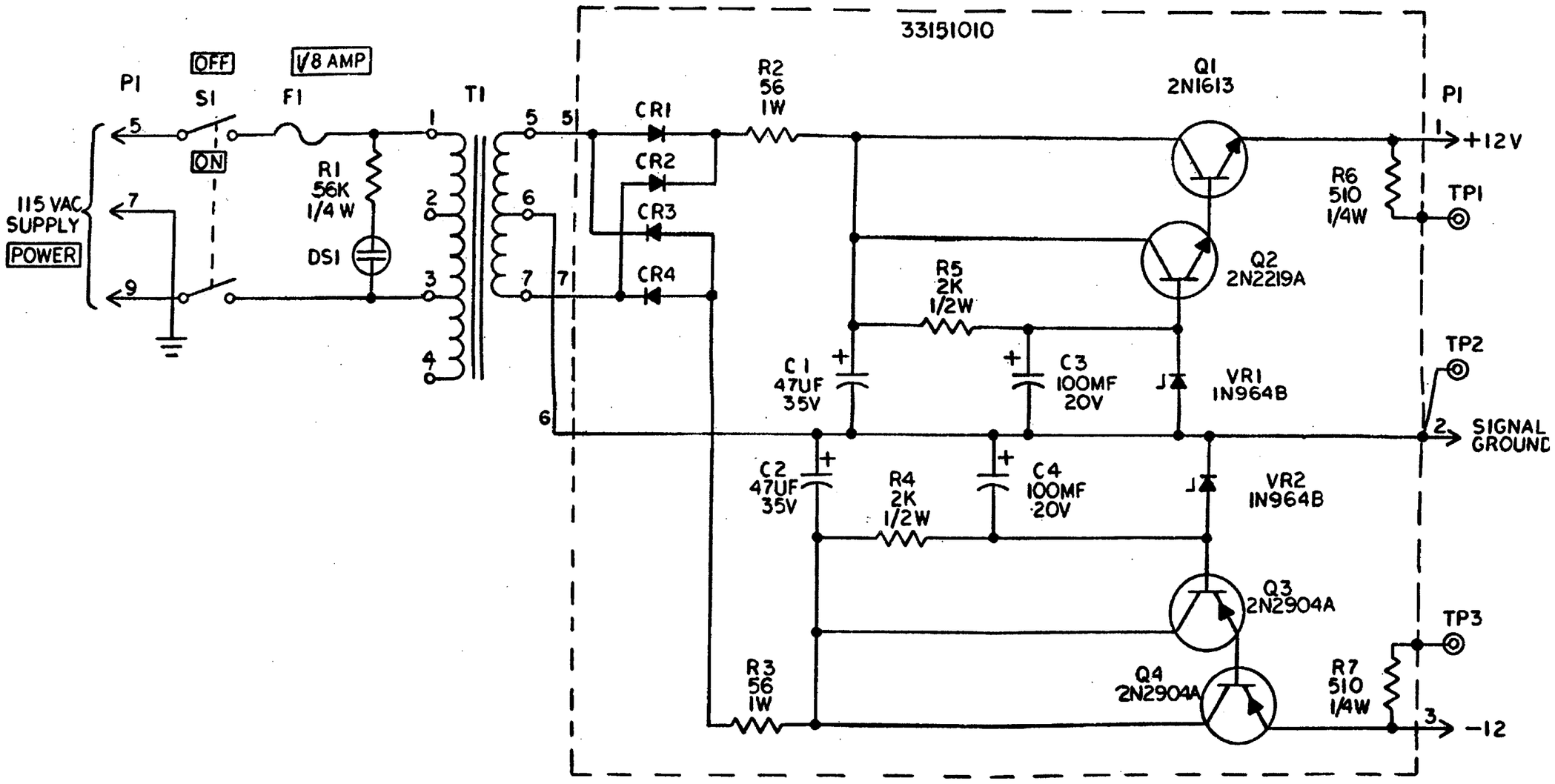


Figure 11-61. Schematic diagram. Modem power supply.

Figure 11-62. Deleted

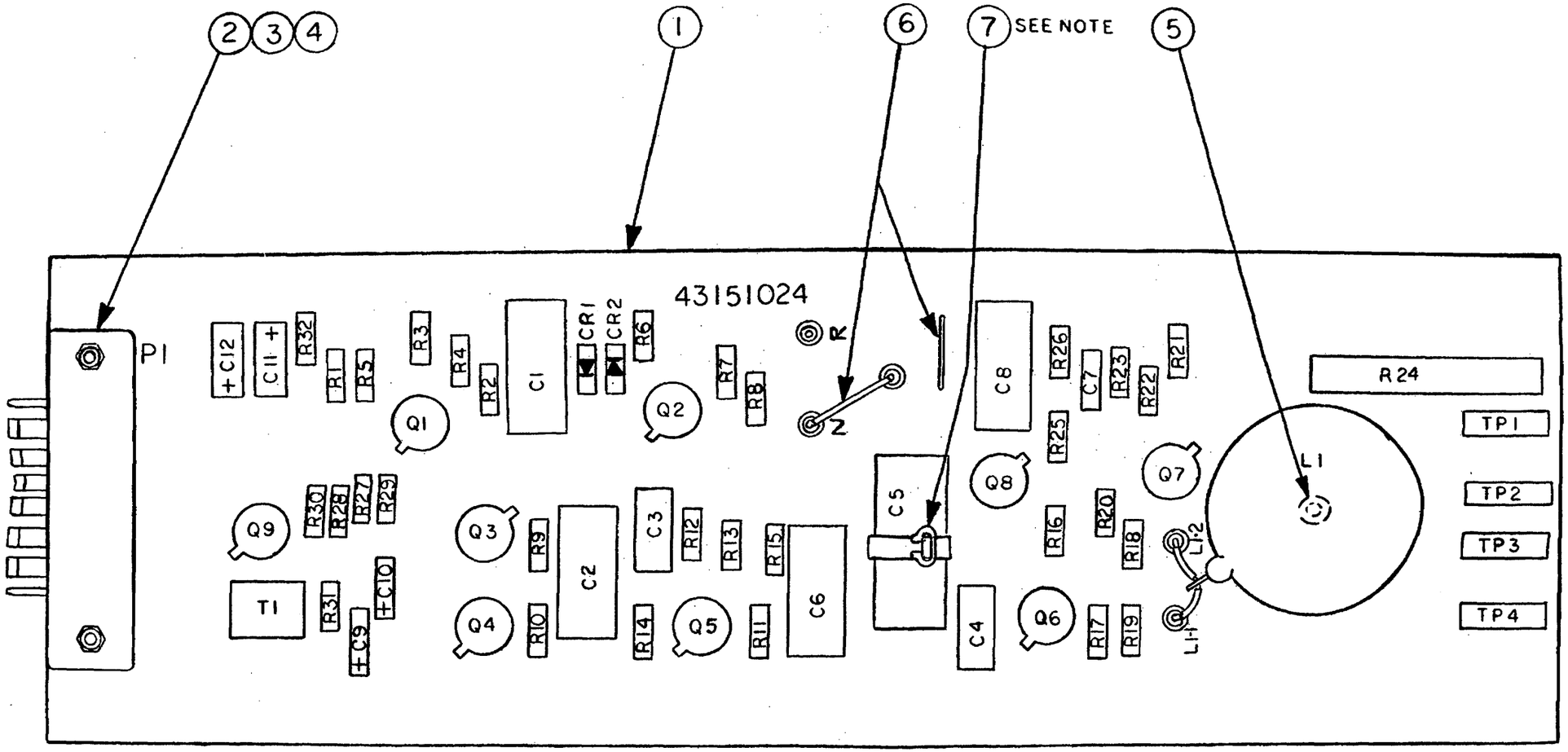


Figure 11-63. Modem keyer assembly.

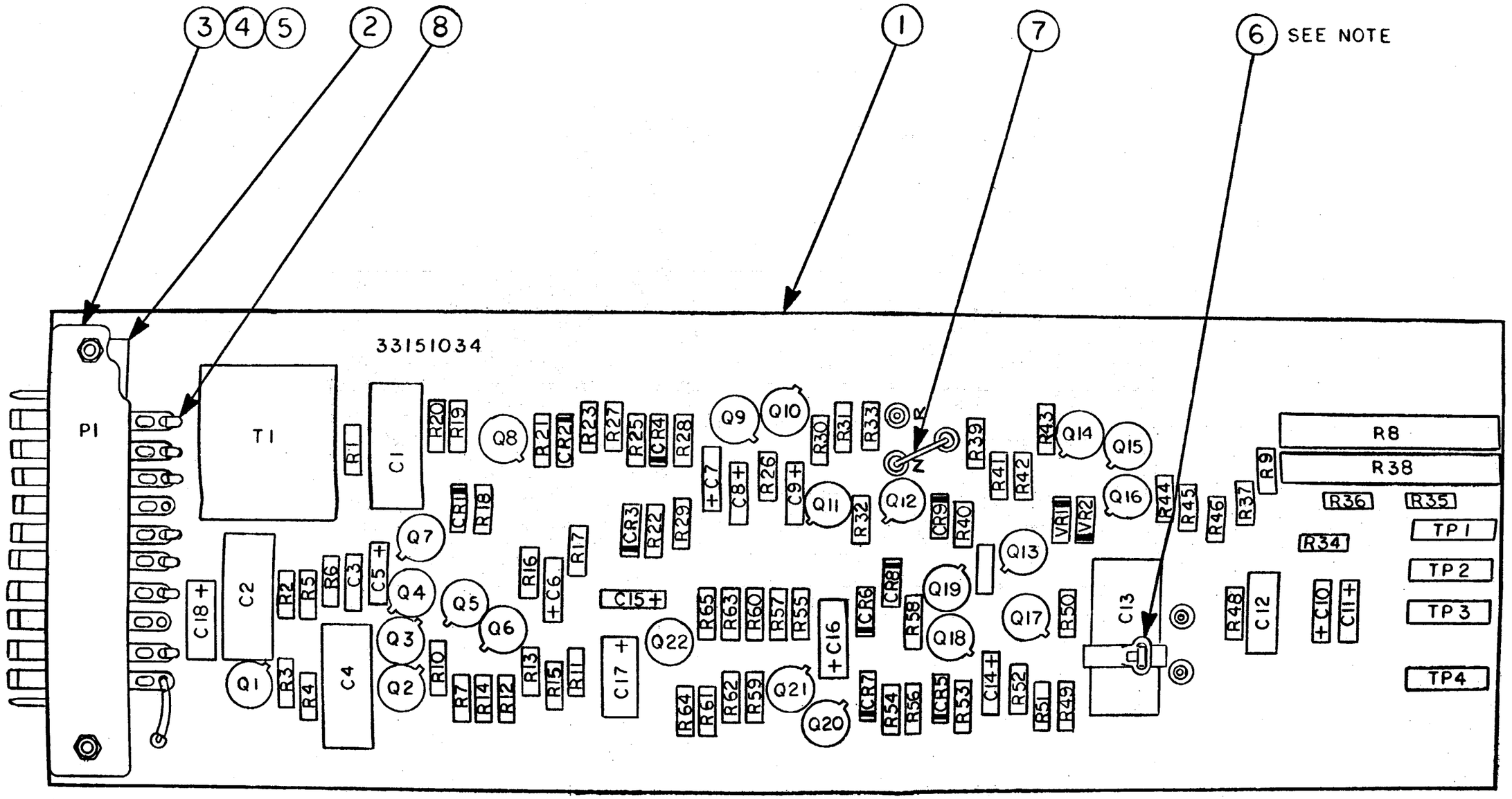
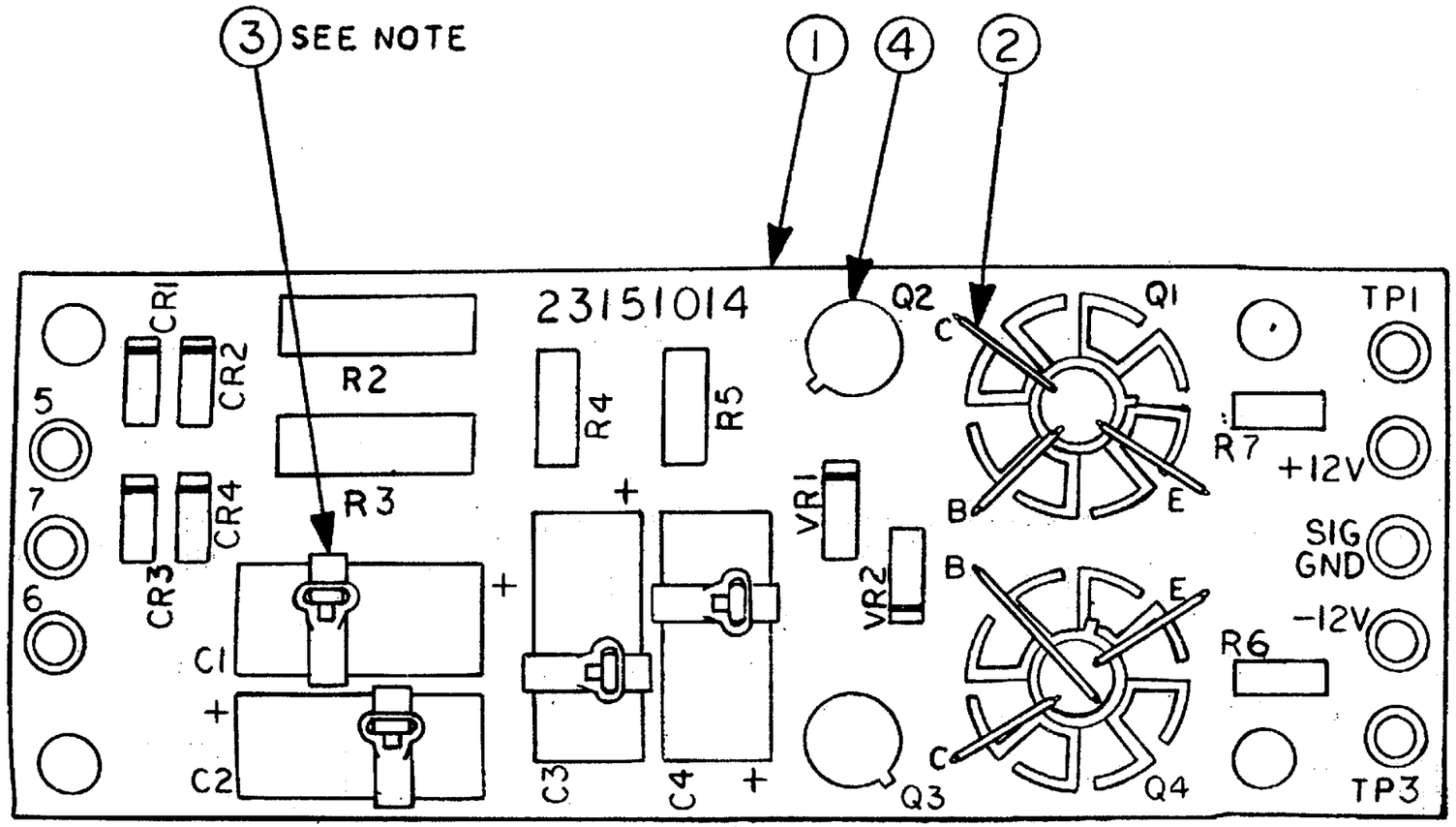


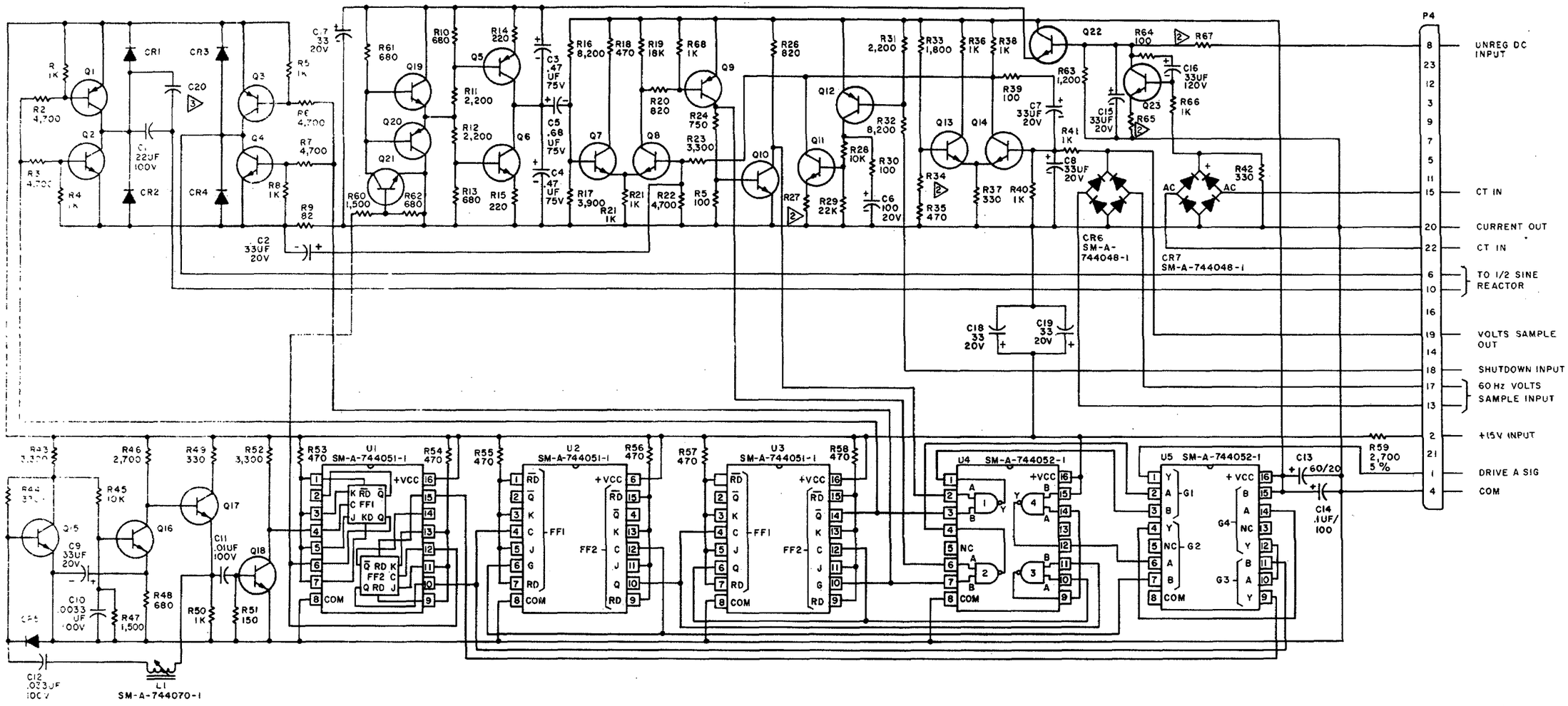
Figure 11-64. Modem converter assembly.



NOTE:
CAPACITORS C1, C2, C3, AND C4 ARE TIEWRAPPED TO BOARD AFTER SOLDERING

EL5805—628—34—TM—770

Figure 11-65. Modem power supply assembly.



NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DEVICES ARE AS FOLLOWS:
   NPN TRANSISTORS = 2N2219A/JAN
   PNP TRANSISTORS = 2N2905A/JAN
   DIODES (DO-7 PKG) = 1N3600/JAN (75V, 200MA, 4 NSEC)
   RESISTORS = 1/2 W, 2% METAL FILM (ER), RLR20CXXXGR TYPE
   RESISTOR MARKED 5% (R59) = 1/2W, 5% COMPOSITION (ER), RCR20GXXXJP TYPE
   CAPACITORS ARE IN MICROFARADS, AND RESISTANCE IS IN OHMS.
2. (2) INDICATES RESISTANCE VALUES TO BE DETERMINED DURING TEST;
   R27-1.3K NOMINAL (RANGE 820-3.3K), R34-150 NOMINAL (RANGE 0-330),
   R65-390 NOMINAL (RANGE 180-680), R67-1.3K NOMINAL (RANGE 820-1.8K).
3. (3) CAPACITOR C20 IS SELECTED DURING TEST. NOMINAL VALUE 0.01UF (RANGE 0.001-0.047)/100VDC.

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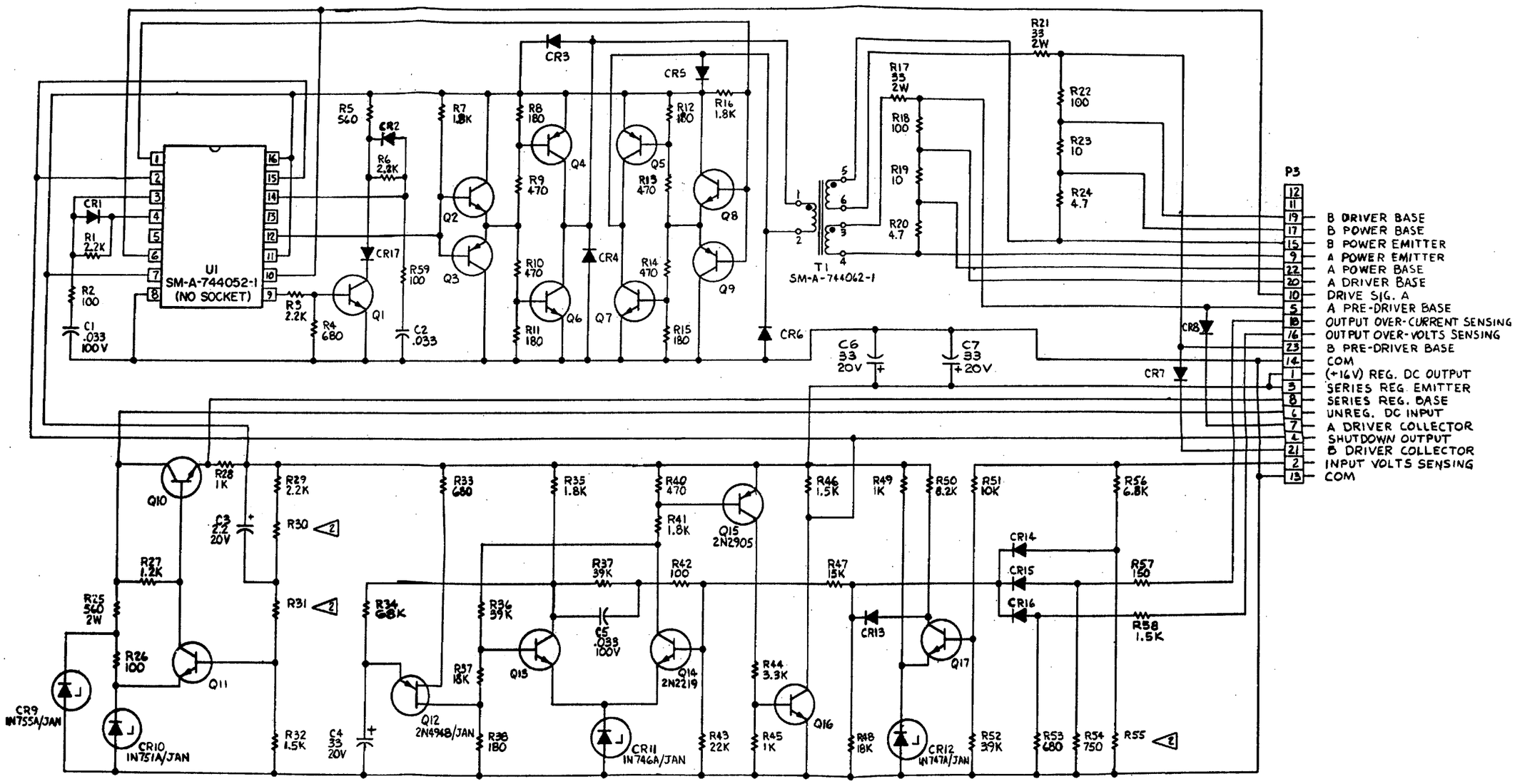
Figure 11-66. Schematic diagram, inverter logic and regulator circuit.



NOTES:

1. UNLESS OTHERWISE SPECIFIED; NPN TRANSISTORS ARE 2N2219A/JAN, PNP TRANSISTORS ARE 2N2905A/JAN, DIODES ARE IN3600/JAN, RESISTANCE VALUES ARE IN OHMS, 2%, 1/2 WATT EXCEPT RESISTORS MARKED 2 WATTS WHICH ARE 5%, CAPACITANCE IS IN MICROFARADS.
2. ⚠2 RESISTANCE VALUES SELECTED DURING TEST; R30-220 NOMINAL (RANGE 150-470), R31-100 NOMINAL (RANGE 82-150), R55 2K NOMINAL (RANGE 1.6K-2.2K).

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Figure 11-67. Schematic diagram, inverter low voltage power supply shutdown and drive circuit.

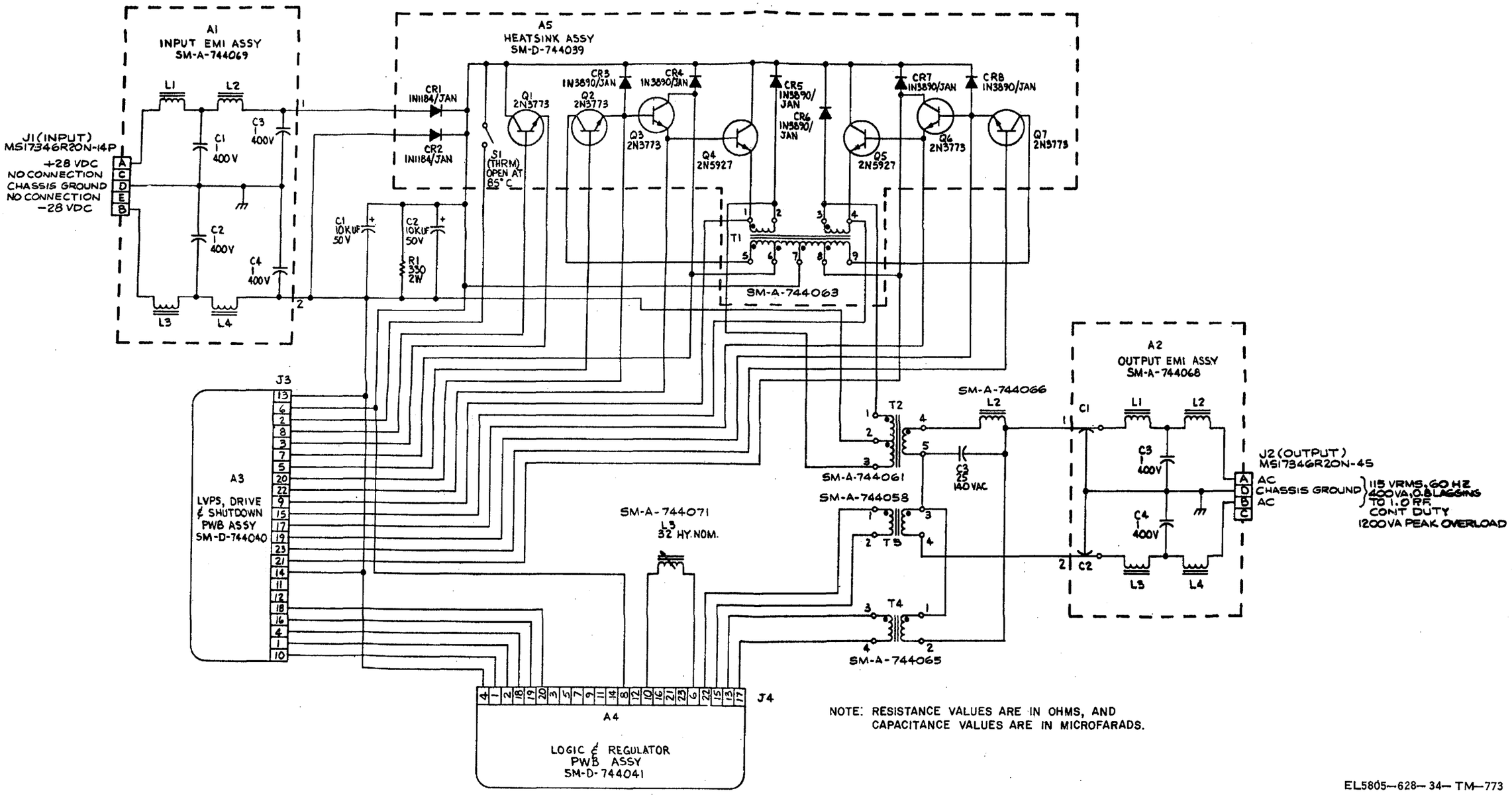


Figure 11-68. Schematic diagram, inverter, power, static.

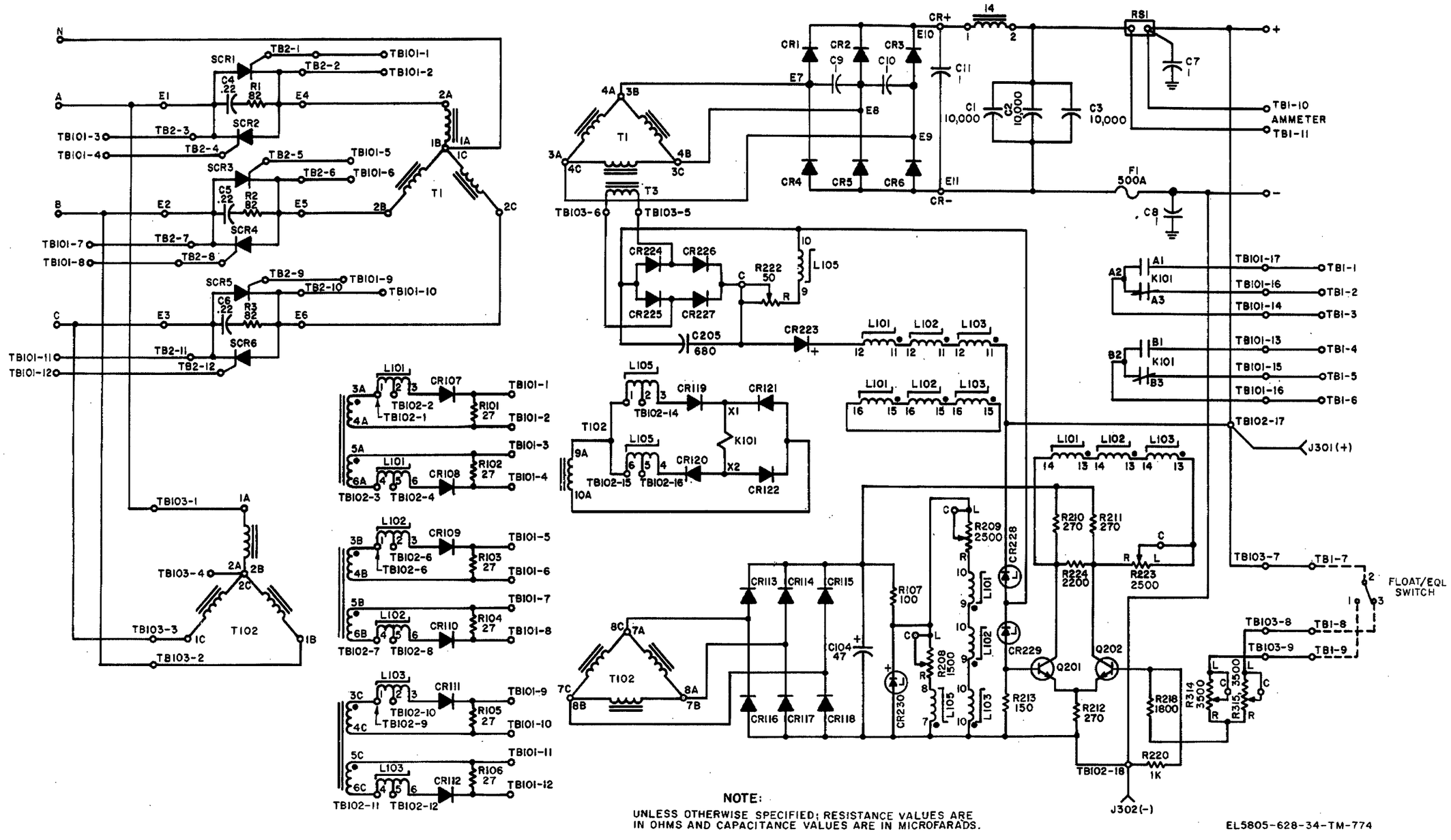
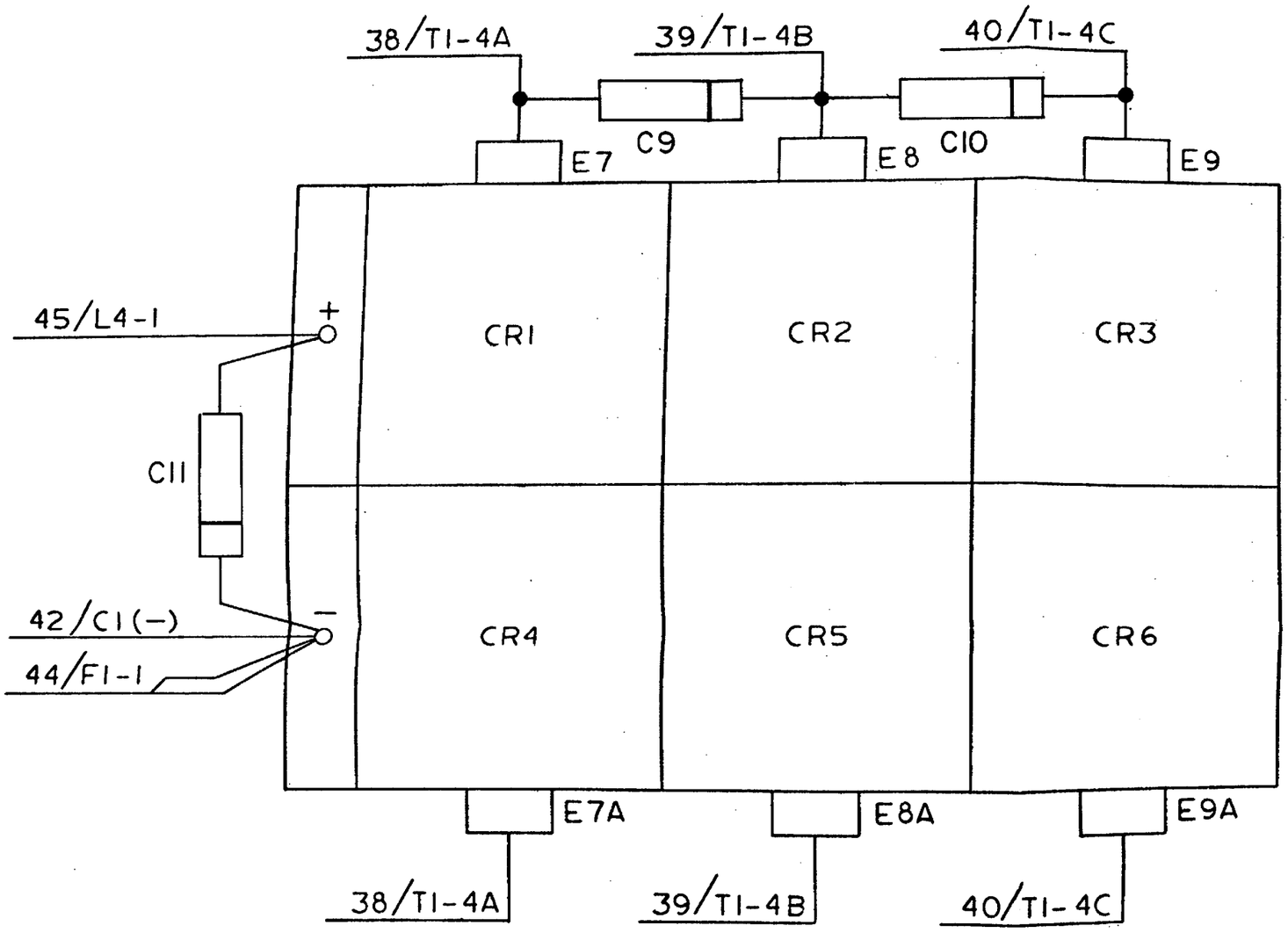


Figure 11-69. Schematic diagram, battery charger.



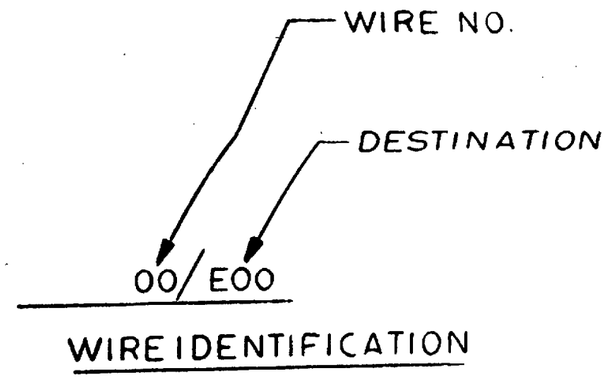


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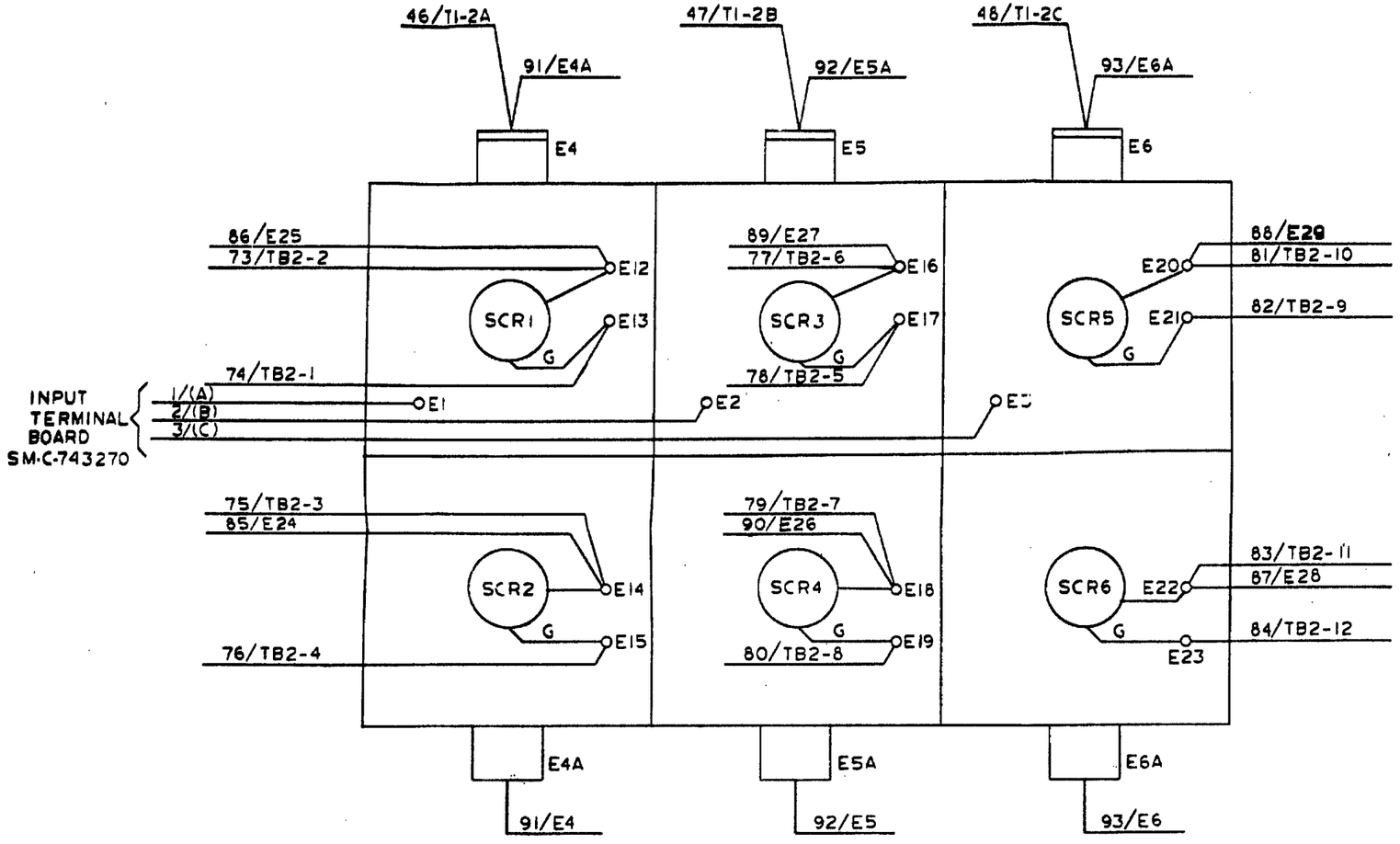
Figure 11-70. Battery charger CR assembly, wiring diagram.



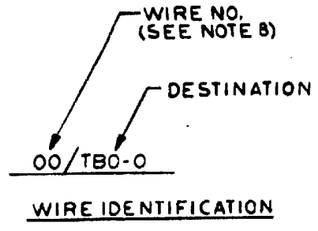


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Figure 11-71. Battery charger wiring diagram.

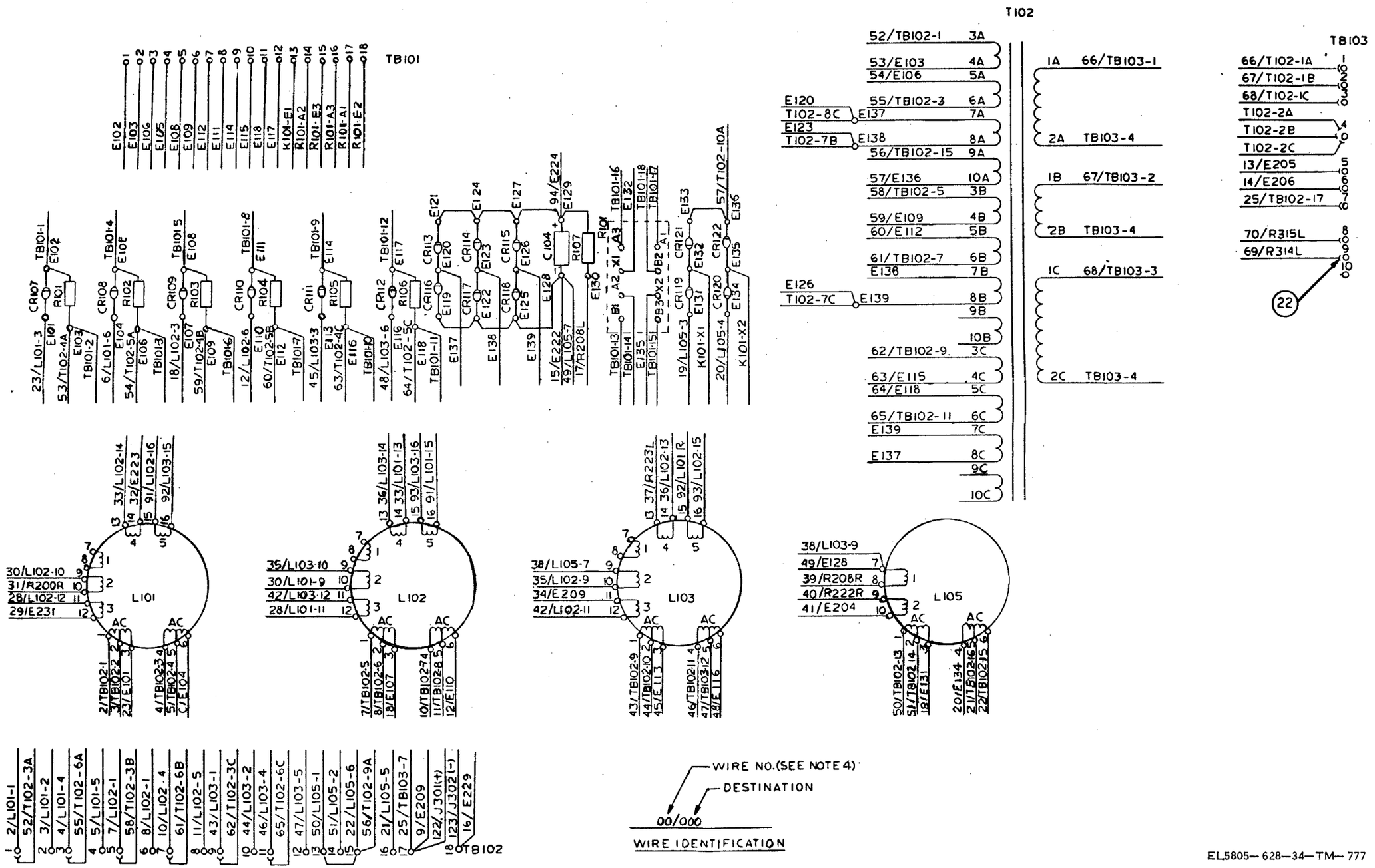


Figure 11-72. Battery charger control board No. 1 wiring diagram.

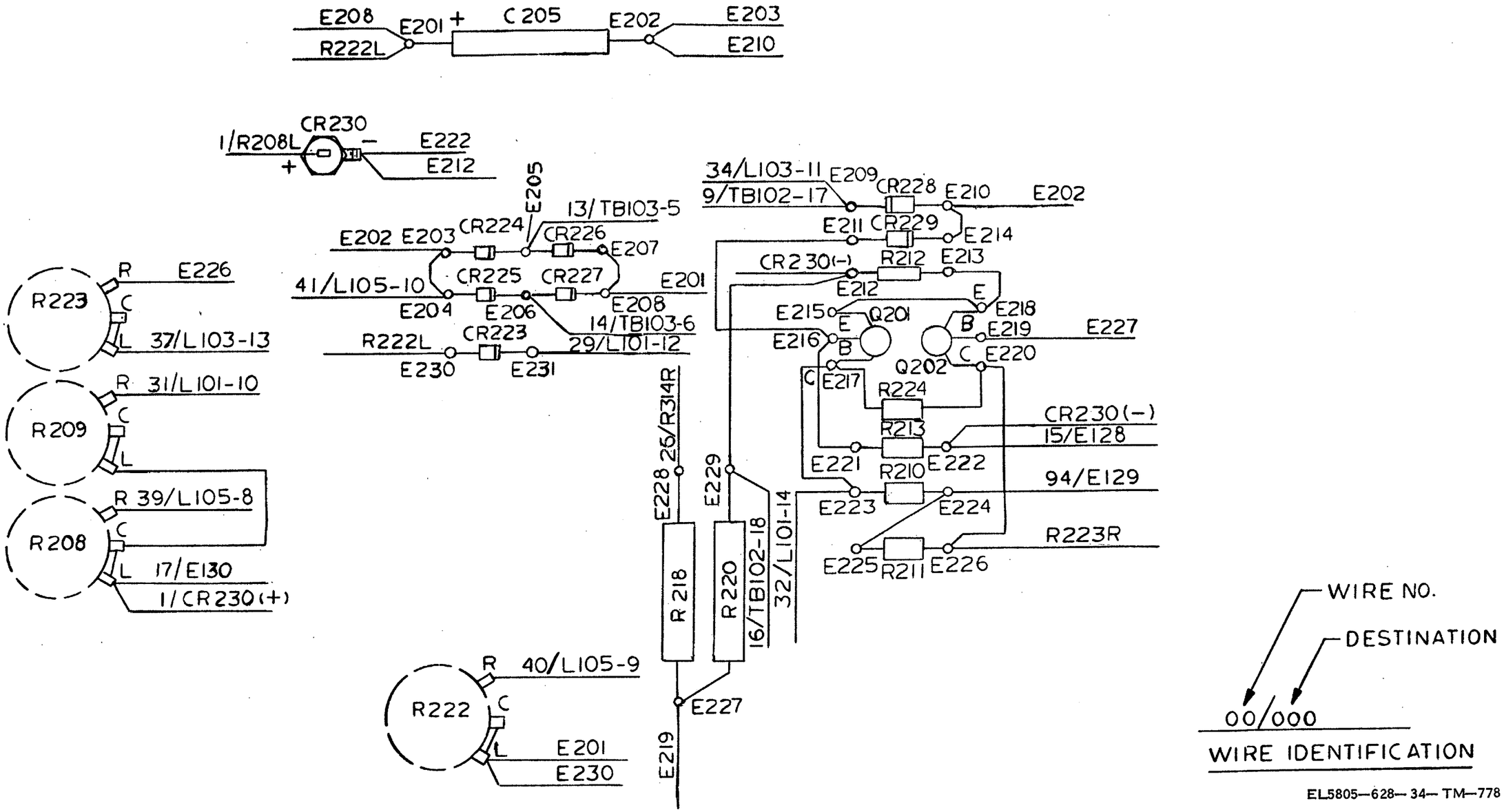
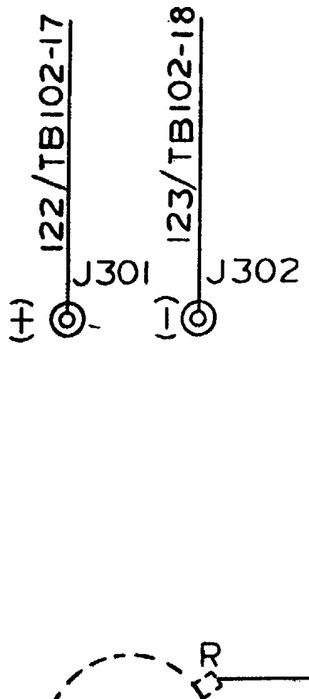
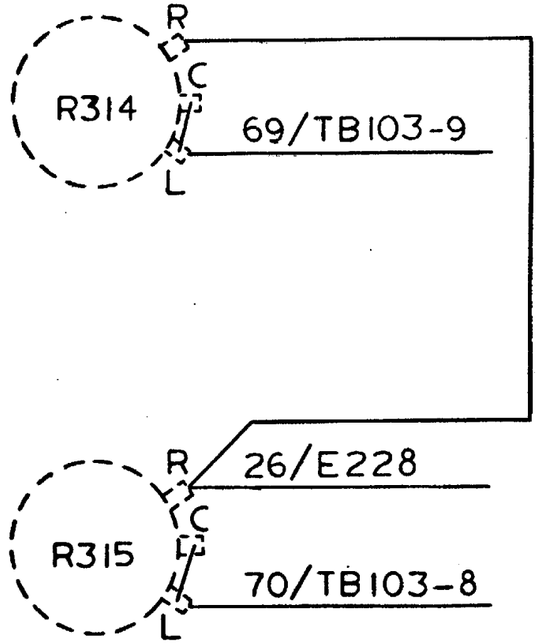


Figure 11-73. Battery charger control board No. 2 wiring diagram.





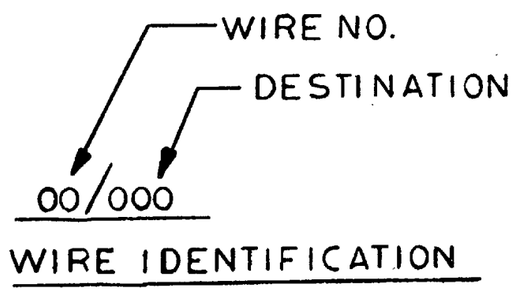


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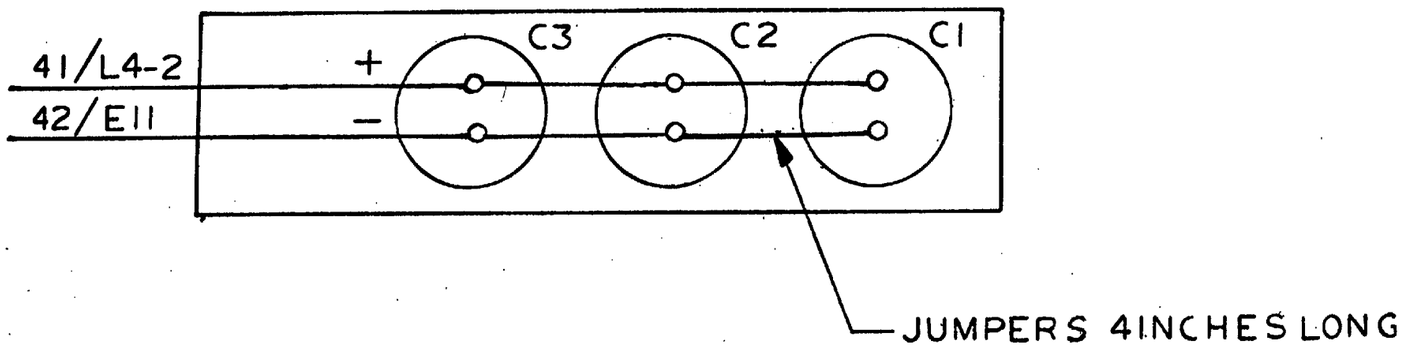
Figure 11-74. Battery charger control board No. 3 wiring diagram.



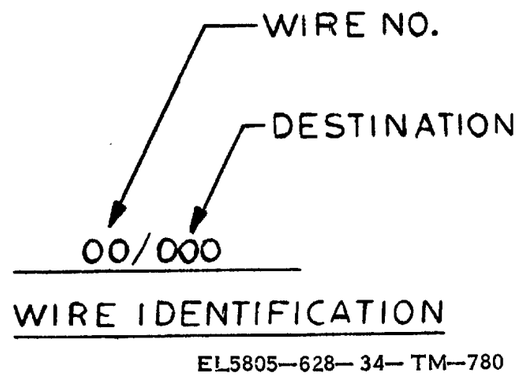


Figure 11-75. Battery charger capacitor panel wiring diagram.

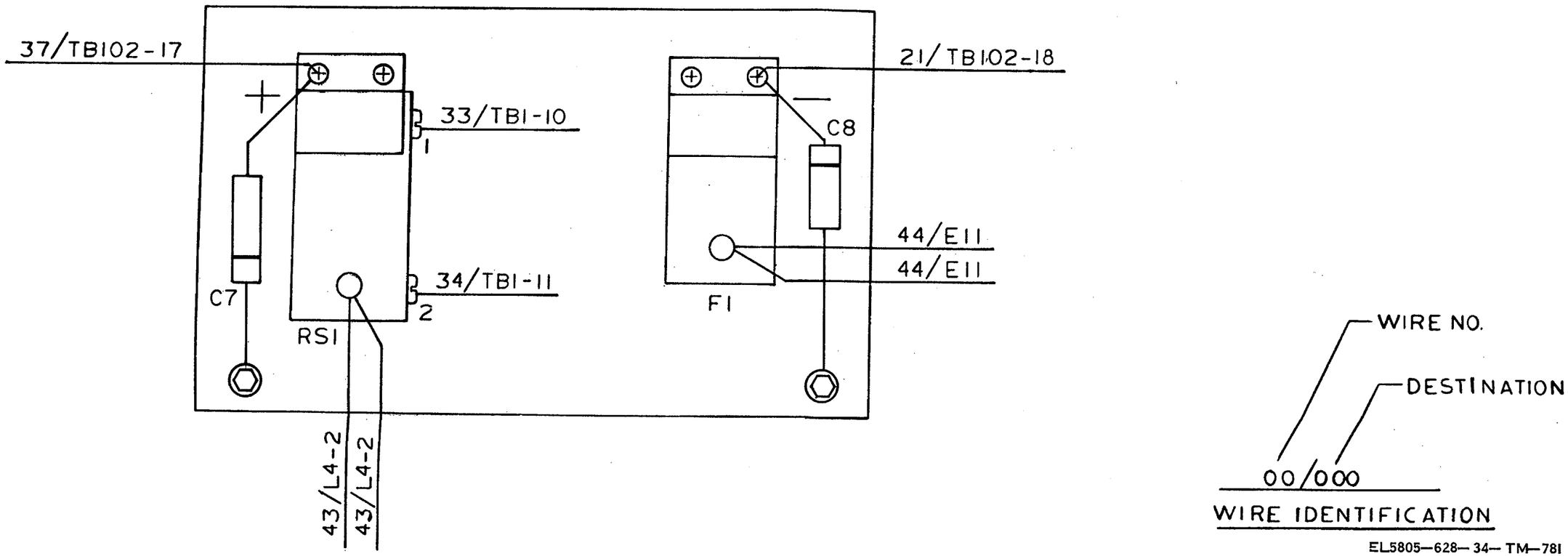


Figure 11-76. Battery charger output panel wiring diagram.

Figure 11-77. Battery charger input panel wiring diagram.

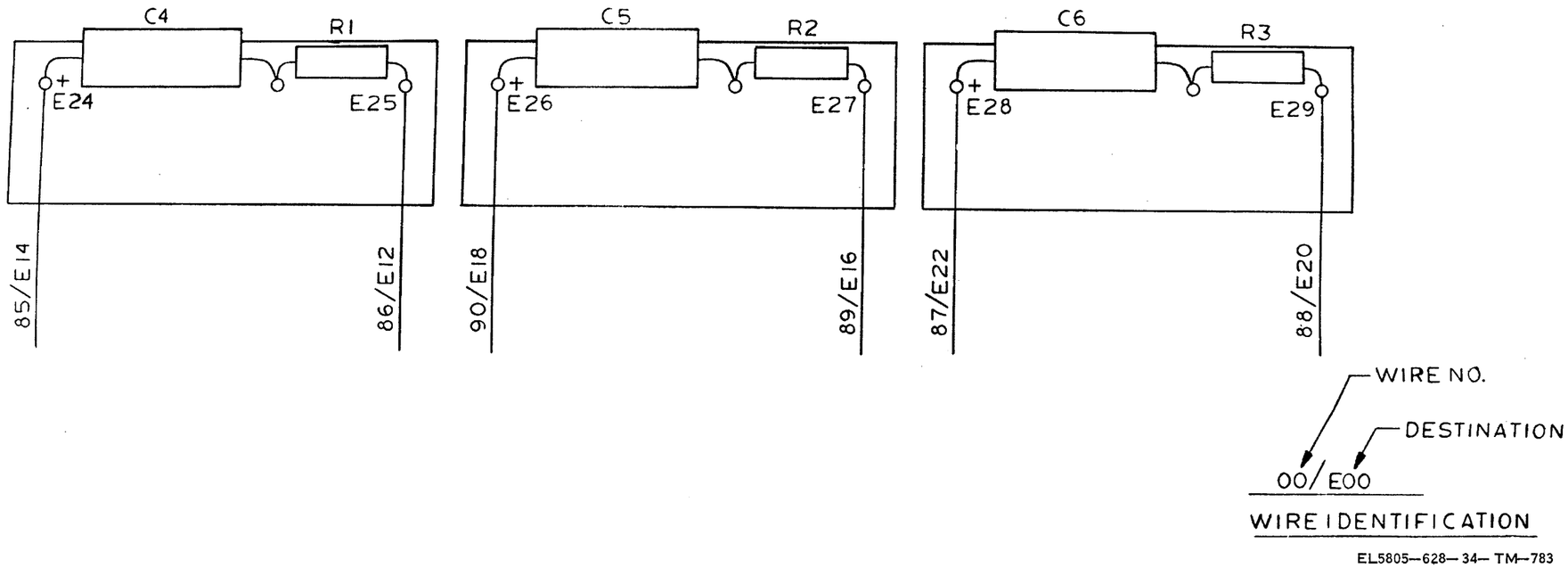


Figure 11-78. Battery charger SCR transient suppresser wiring diagram.

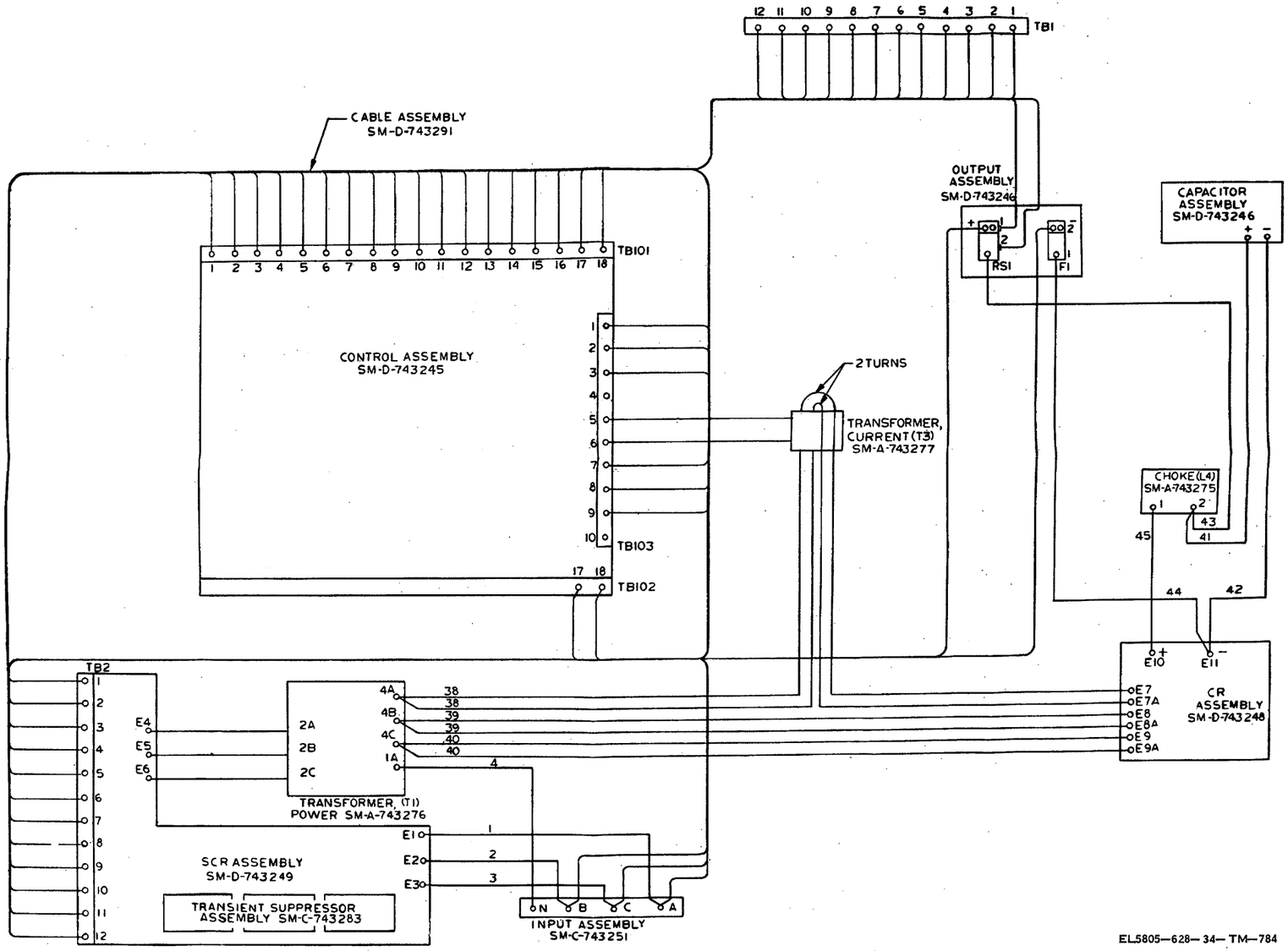


Figure 11-79. Battery charger interconnection diagram.

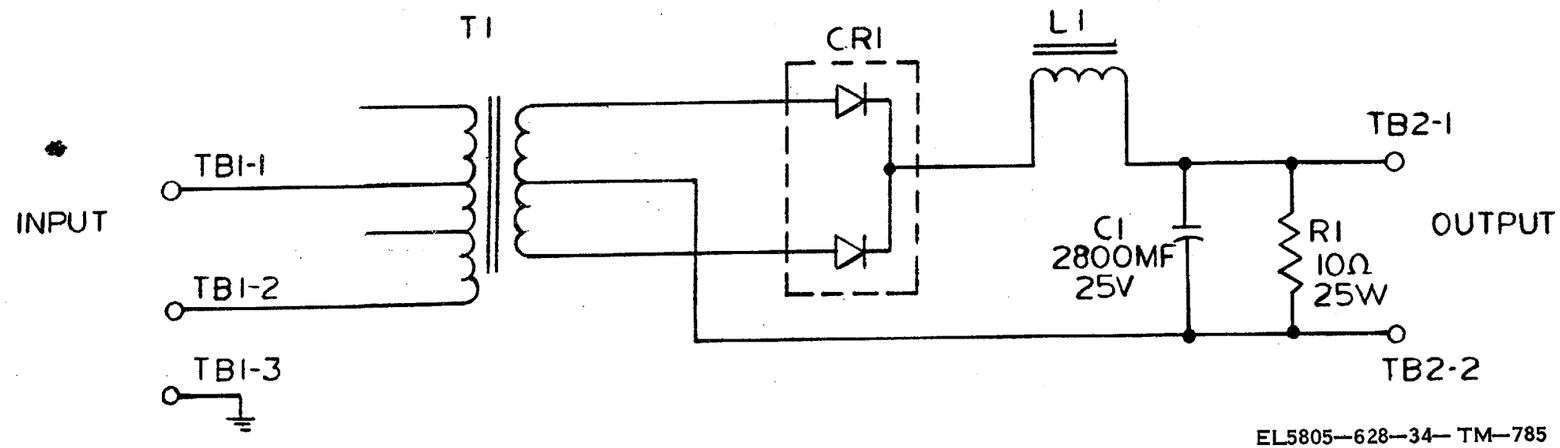
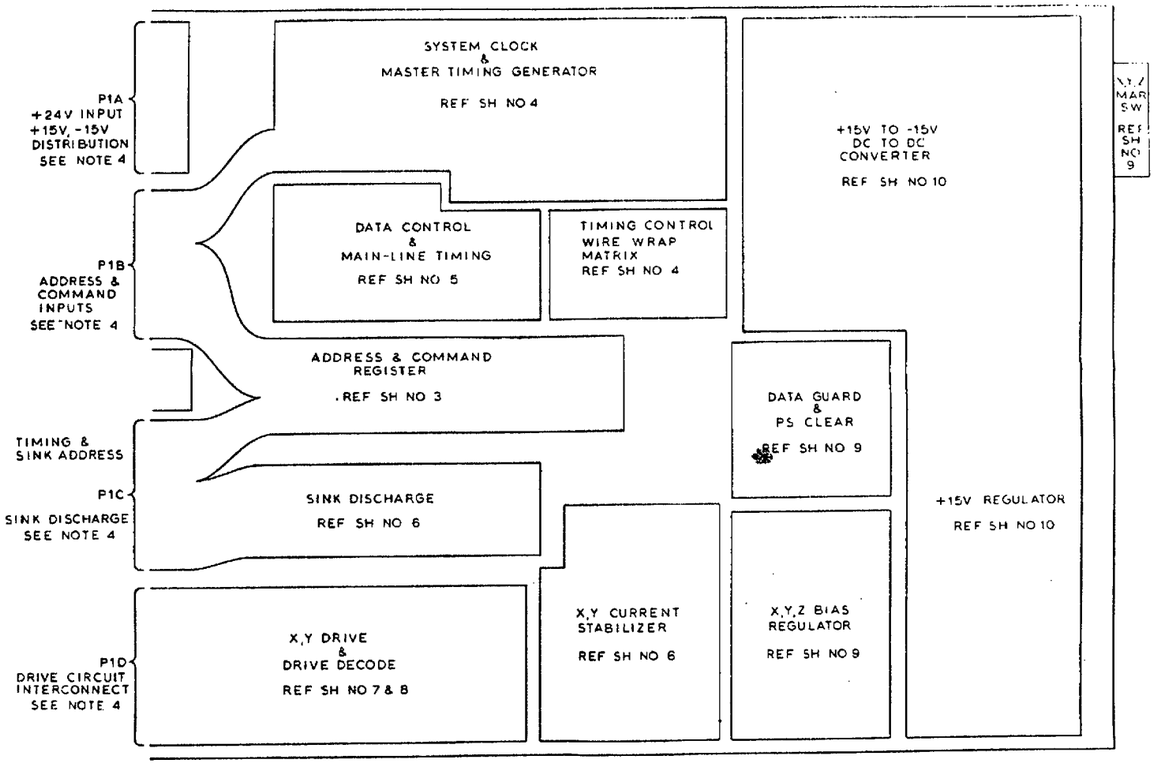


Figure 11-80. Schematic diagram, power supply, AC-DC (PS24).

NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION, PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED, ALL CAPACITORS ARE IN MICROFARADS ±10%, 35 VOLTS.
3. UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE IN OHMS, ±5% 1/4 WATT.
4. SEE SHEET 2 FOR PIN OUT IDENTIFICATION.
5. "BLANK" IN THE SIGNAL NAME COLUMNS DENOTES PINS REMOVED FROM BASE PLATE.
6. COMPONENTS SHOWN ARE FOR TEST PURPOSES ONLY.
7. COMPONENTS SHOWN ARE INSTALLED ONLY WHEN MH OPTION IS REQUIRED.
8. PARTIAL REFERENCE DESIGNATION "E" DESIGNATES TEST POINT OR TERMINAL.
9. DLI TAPS ARE SHOWN IN SEQUENTIAL ORDER.
10. INTEGRATED CIRCUITS HAVE GND ON PIN 7 AND +5V ON PIN 14.
11. SEE CHART FOR SEMICONDUCTOR REFERENCE DESIGNATORS.

REF DES	TYPE
CR1	JAN 2N1771A
CR2, CR3	JAN IN754I6
CR4, CR5, CR7, CR8	JAN IN4150
CR6	JAN IN756A
CR9	JAN IN966B
CR10, CR26, CR29, CR55, CR57, CR64	SM-A-744825-1
CR27, CR28	JAN IN757A
CR65	JAN IN964B
CR66	JAN IN749A
CR67	JAN IN751A
CR68	JAN IN754A
Q1, Q2	SM-A-745065
Q3, Q4	JAN 2N3771
Q5	JAN 2N3055
Q6, Q7	JAN 2N2222A
Q8, Q58, Q60, Q65 Q66, Q68, Q69	JAN 2N2907A
Q9, Q12	JAN 2N2369A
Q13, Q16	JAN 2N3735
Q59, Q61-Q64, Q67	JAN 2N3737
Q70, Q71	JAN 2N3441
U1	JM38510/00303BCC
U2, U5, U16, U21, U26	SM-A-745039-1
U3, U4, U6, U7, U13, U14 U30, U34-U39, U41	JM38510/02203BCB
U8, U40	JM38510/00301BCC
U9, U11, U12, U18 U29, U32, U33	JM38510/02302BCB
U15, U17, U19, U20 U22, U50	JM38510/02304BCB
U23, U24, U27, U28	JM38510/02303BCB
U25, U31, U47	JM38510/02305BCB
U42-U46	JM38510/00501BCB
U48	SM-A-742842-1
U49, U55	SM-A-745027-1
U51-U54	JM38510/00803BCB
U56-U59	SM-A-745036
U60, U62	SM-A-745126-1
U61, U63	SM-A-745126-2
U64, U65	SM-A-745126-4
U66	SM-A-745126-3
U67, U69, U71, U74	SM-A-745030-12
U68, U70, U72, U73	SM-A-745030-8
U75	SM-A-745030-9



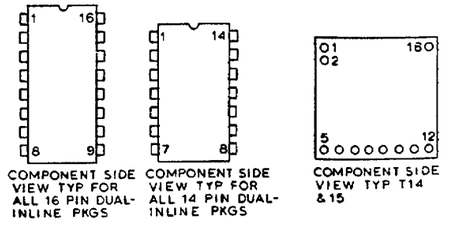


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Figure 11-81(1). Schematic diagram, memory timing and control (sheet 1).

P1A			
SIGNAL NAME	PIN NO.		SIGNAL NAME
BLANK	26	1	BLANK
	27	2	
	28	3	
	29	4	
BLANK	30	5	BLANK
BLANK	31	6	BLANK
+24V SUPPLY	32	7	+24V SUPPLY
	33	8	
	34	9	
+24V SUPPLY	35	10	+24V SUPPLY
GND 2, 3	36	11	GND 2, 3
	37	12	
	38	13	
	39	14	
GND 2, 3	40	15	GND 2, 3
ØPEN	41	16	ØPEN
ØPEN	42	17	ØPEN
GND 2, 3	43	18	GND 2, 3
ØPEN	44	19	ØPEN
ØPEN	45	20	ØPEN
GND 2, 3	46	21	GND 2, 3
-15V SUPPLY	47	22	-15V SUPPLY
+15V SUPPLY	48	23	+15V SUPPLY
+15V SUPPLY	49	24	+15V SUPPLY
+15V SUPPLY	50	25	+15V SUPPLY

P1B			
SIGNAL NAME	PIN NO.		SIGNAL NAME
+15V	26	1	+15V
+15V	27	2	+15V
+15V	28	3	+15V
-15V	29	4	-15V
ØPEN	30	5	MEMORY BUSY
GND 2, 3	31	6	GND 2, 3
ØPEN	32	7	CMCLL
ØPEN	33	8	CSR4L
GND 2, 3	34	9	GND 2, 3
CW/RZ	35	10	CSR3L
ØPEN	36	11	CSR2L
GND 2, 3	37	12	GND 2, 3
AIOZ	38	13	CSR1L
AI2Z	39	14	AO2Z
GND 2, 3	40	15	GND 2, 3
AO6Z	41	16	AO4Z
ØPEN	42	17	AO8Z
GND 2, 3	43	18	GND 2, 3
AIIZ	44	19	AI3Z
AO5Z	45	20	AO9Z
GND 2, 3	46	21	GND 2, 3
AO7Z	47	22	AO3Z
AOOZ	48	23	AOIZ
GND 2, 3	49	24	GND 2, 3
+5V	50	25	+5V

P1C			
SIGNAL NAME	PIN NO.		SIGNAL NAME
-6V	26	1	-6V
+5V	27	2	+5V
GND 2, 3	28	3	GND 2, 3
GND 2, 3	29	4	GND 2, 3
GND 2, 3	30	5	GND 2, 3
JBS+	31	6	JBS-
ØPEN	32	7	ØPEN
TDISL	33	8	TINDL
TINSH	34	9	TMRCL
TDØSL	35	10	TSASH
TSWH	36	11	TSRH
TSKOL	37	12	TSKIL
TSKIL	38	13	TSK3L
AYSIZ	39	14	AYSOZ
AXS3Z	40	15	AXS2Z
AXSIZ	41	16	AXSOZ
INH MAR	42	17	X, Y, + INH MAR
INH TP1	43	18	INH TP2
QXSCP	44	19	SXSVP
QYSAN	45	20	SYSVP
QYSCP	46	21	SYSVN
QYSAN	47	22	SYSVN
X, Y, TP1	48	23	X, Y, TP2
ØPEN	49	24	JVRT-
JRTR-	50	25	JRT-

P1D			
SIGNAL NAME	PIN NO.		SIGNAL NAME
XYDCA12	26	1	XYDCA14
XYDCA08	27	2	XYDCA10
XYDCA04	28	3	XYDCA06
XYDCA00	29	4	XYDCA02
ØPEN	30	5	ØPEN
XYDCC02	31	6	XYDCC00
XYDCC06	32	7	XYDCC04
XYDCC10	33	8	XYDCC08
XYDCC14	34	9	XYDCC12
ØPEN	35	10	ØPEN
XYDCA13	36	11	XYDCA15
XYDCA09	37	12	XYDCA11
XYDCA05	38	13	XYDCA07
XYDCA01	39	14	XYDCA03
ØPEN	40	15	OPEN
XYDCC03	41	16	XYDCC01
XYDCC07	42	17	XYDCC05
XYDCC11	43	18	XYDCC09
XYDCC15	44	19	XYDCC13
BLANK	45	20	BLANK
	46	21	
	47	22	
	48	23	
	49	24	
BLANK	50	25	BLANK

LAST REF DESIGNATION USED
C41
CR68
DL1
DS2
E11
LS2
Q71
R134
S2
T16
U75
REF DESIGNATION NOT USED
CR56
R10, R14
E15 THRU E100, E112 THRU E200, E212 THRU E300, E312 THRU 400

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Figure 11-81(2). Schematic diagram, memory timing and control (sheet 2).

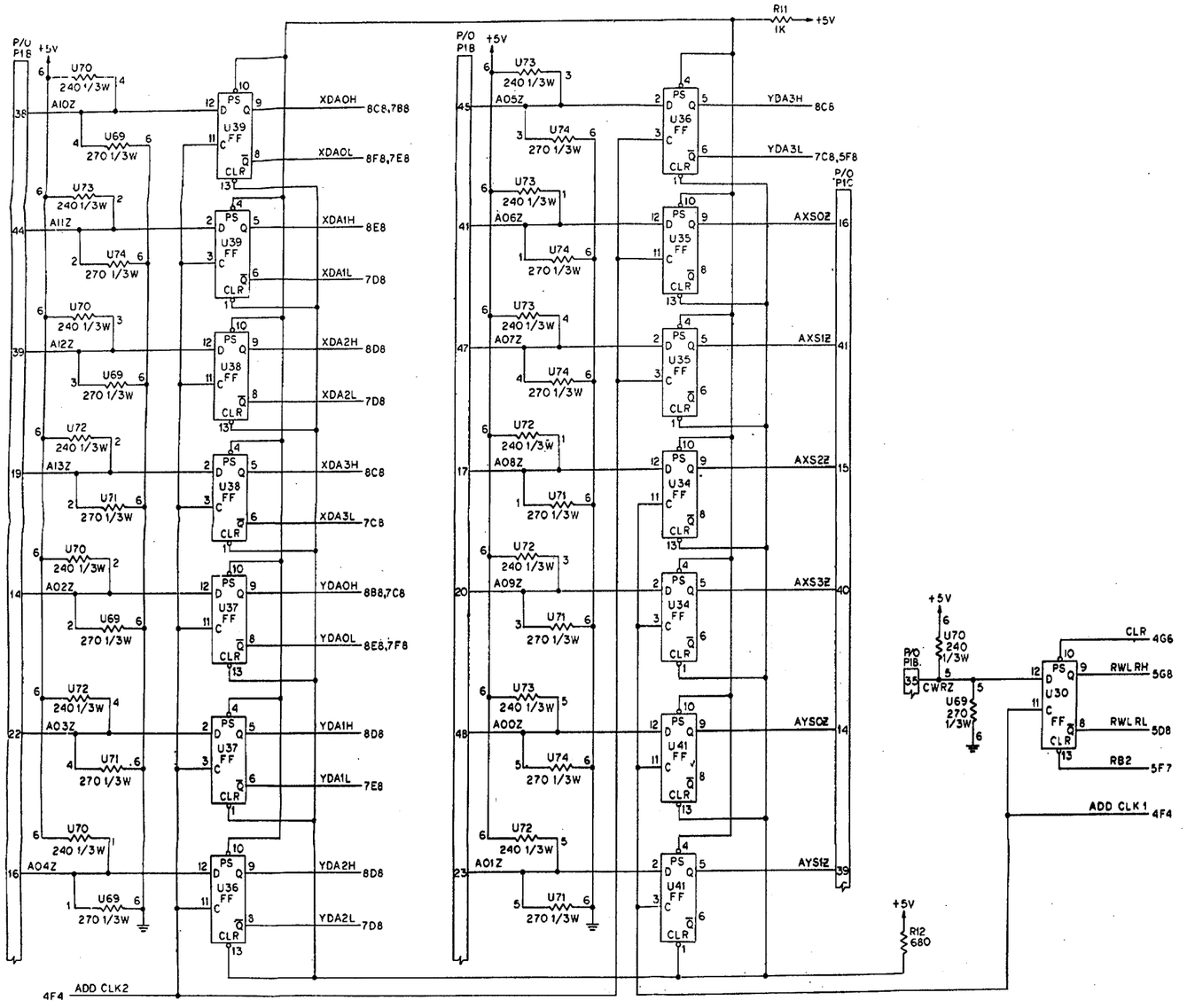

Figure 11-81(3). Schematic diagram, memory timing and control (sheet 3)

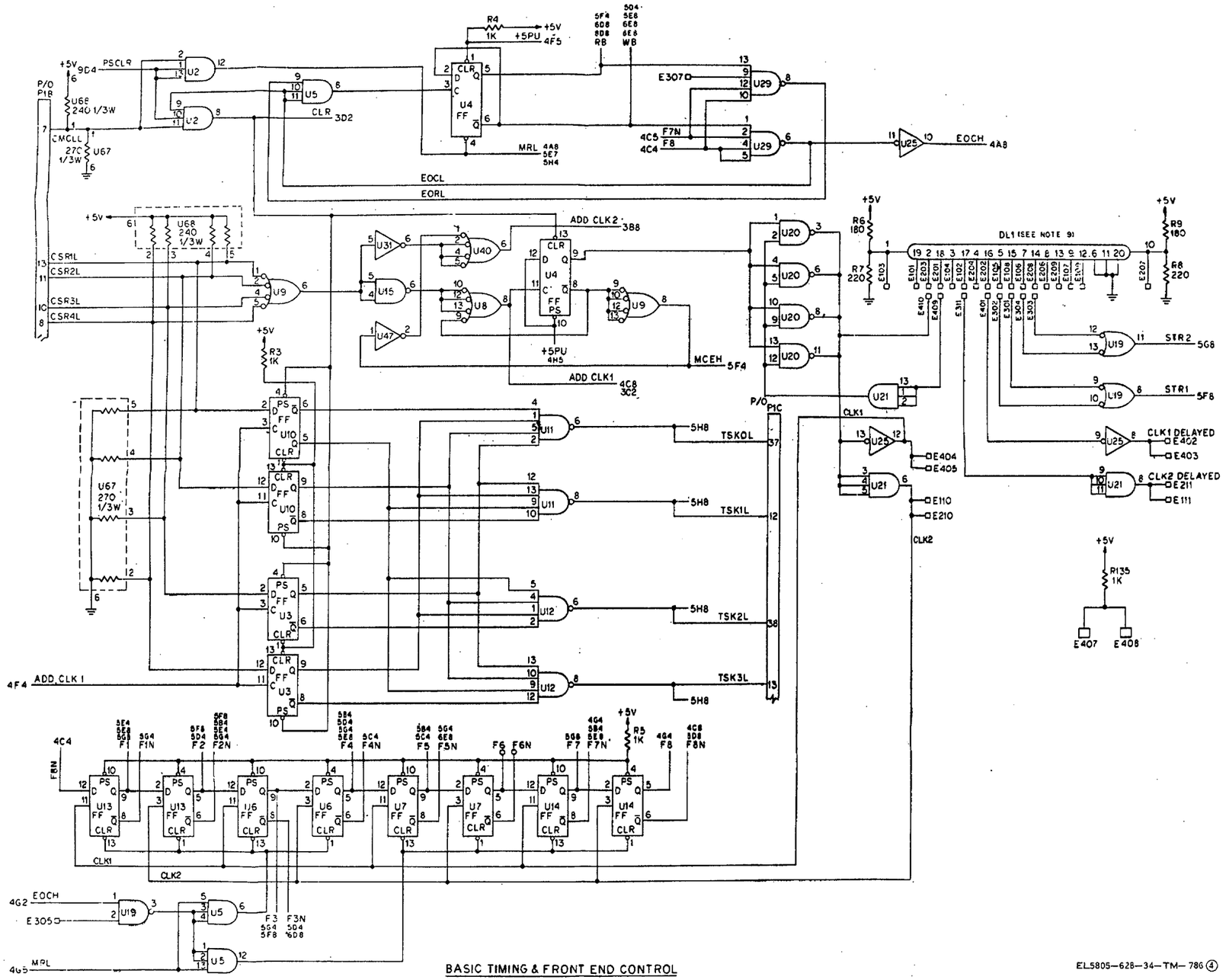

Figure 11-81④. Schematic diagram, memory timing and control (sheet 4).

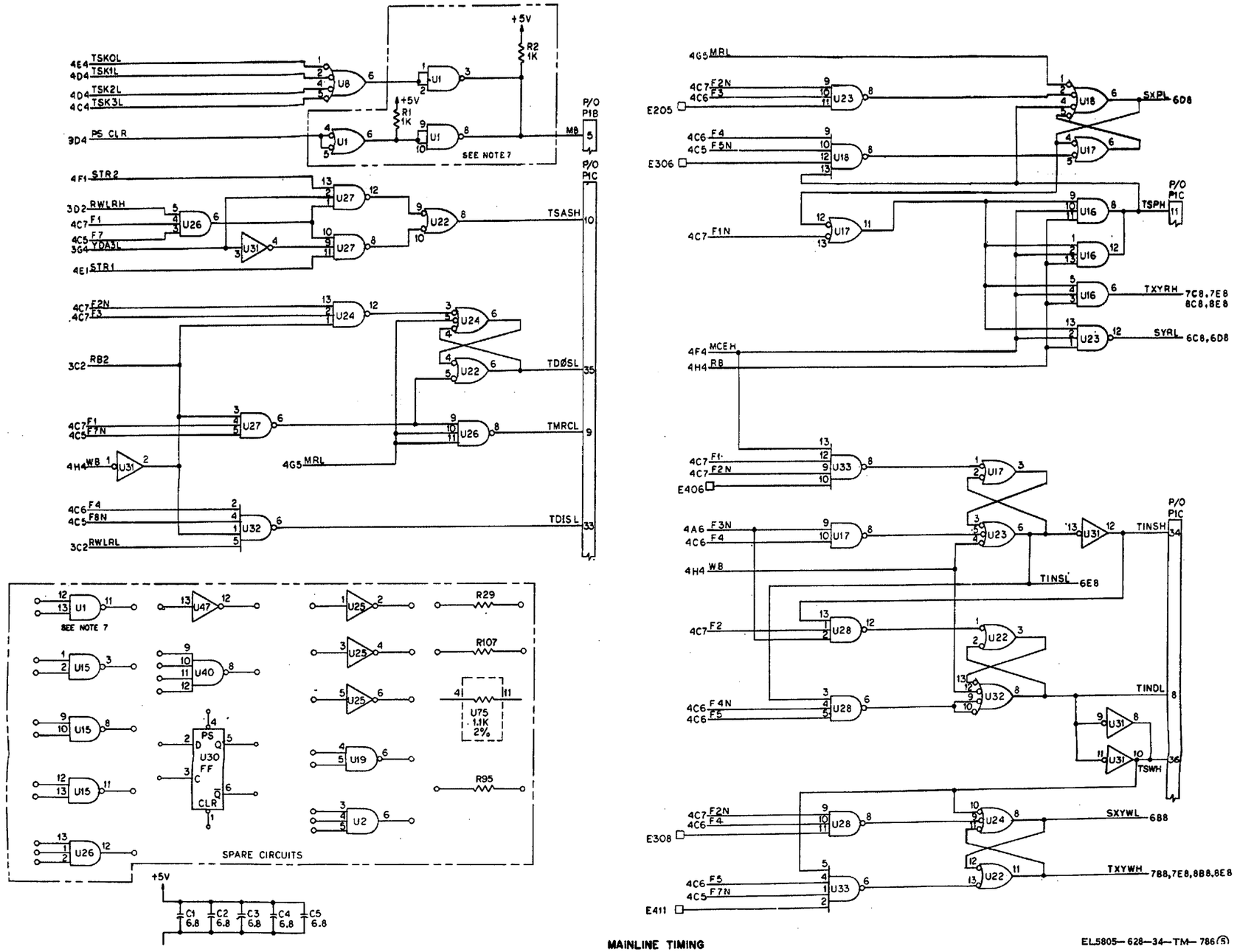

Figure 11-81⑤ Schematic diagram , memory timing and control (sheet 5).

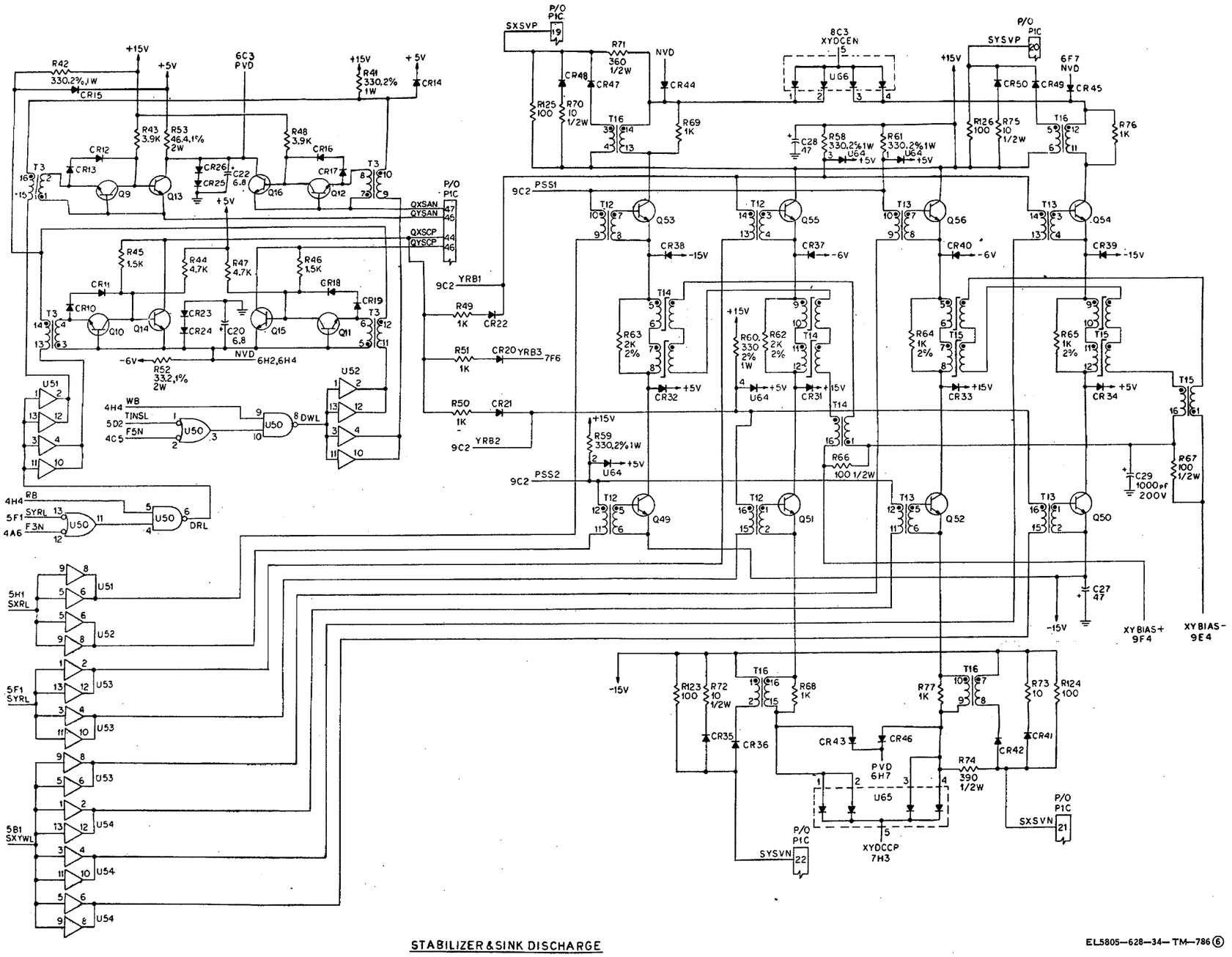

Figure 11-81.(6.) Schematic diagram, memory timing and control (sheet 6).

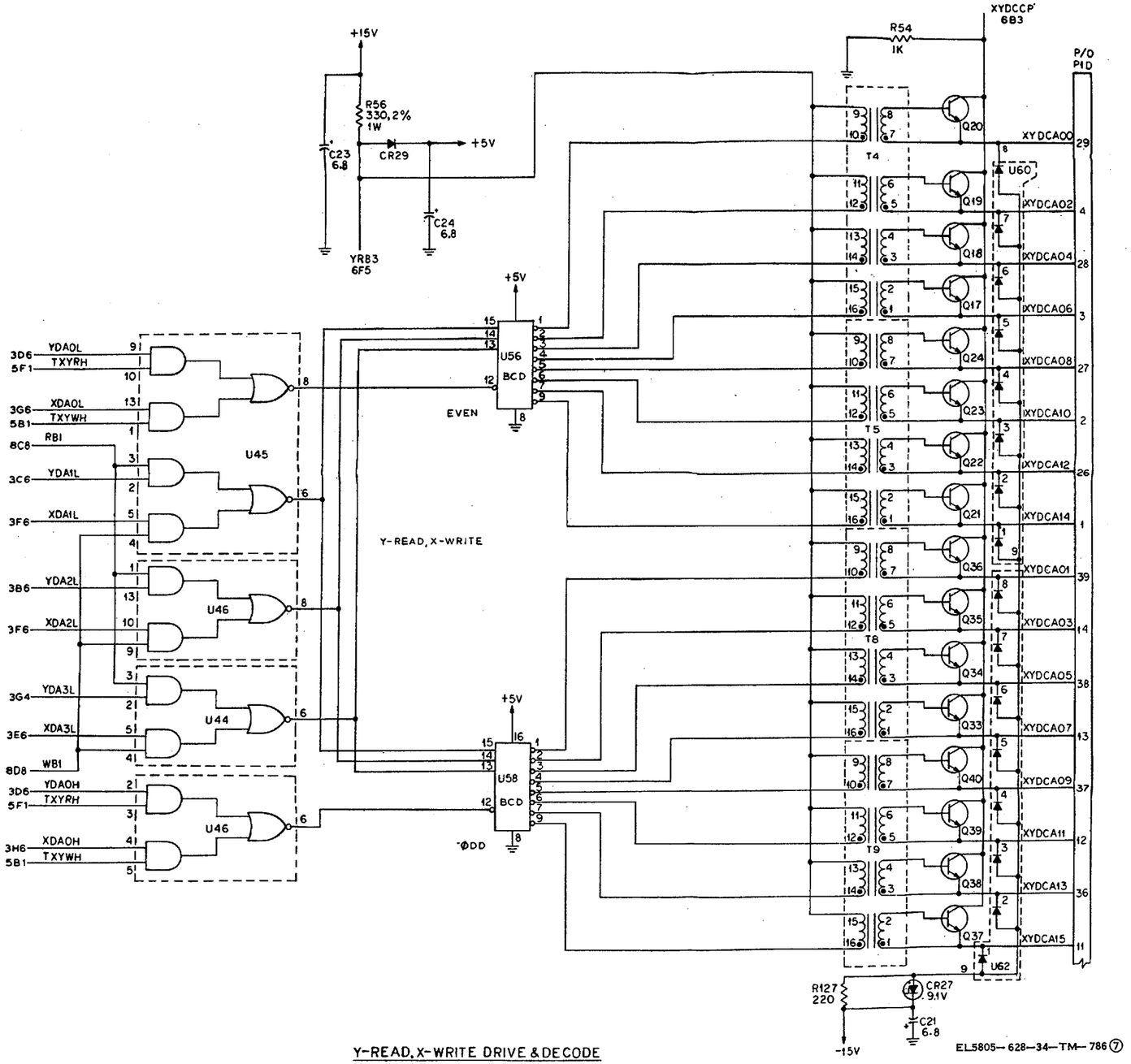

Figure 11-81⑦. Schematic diagram, memory timing and control (sheet 7).

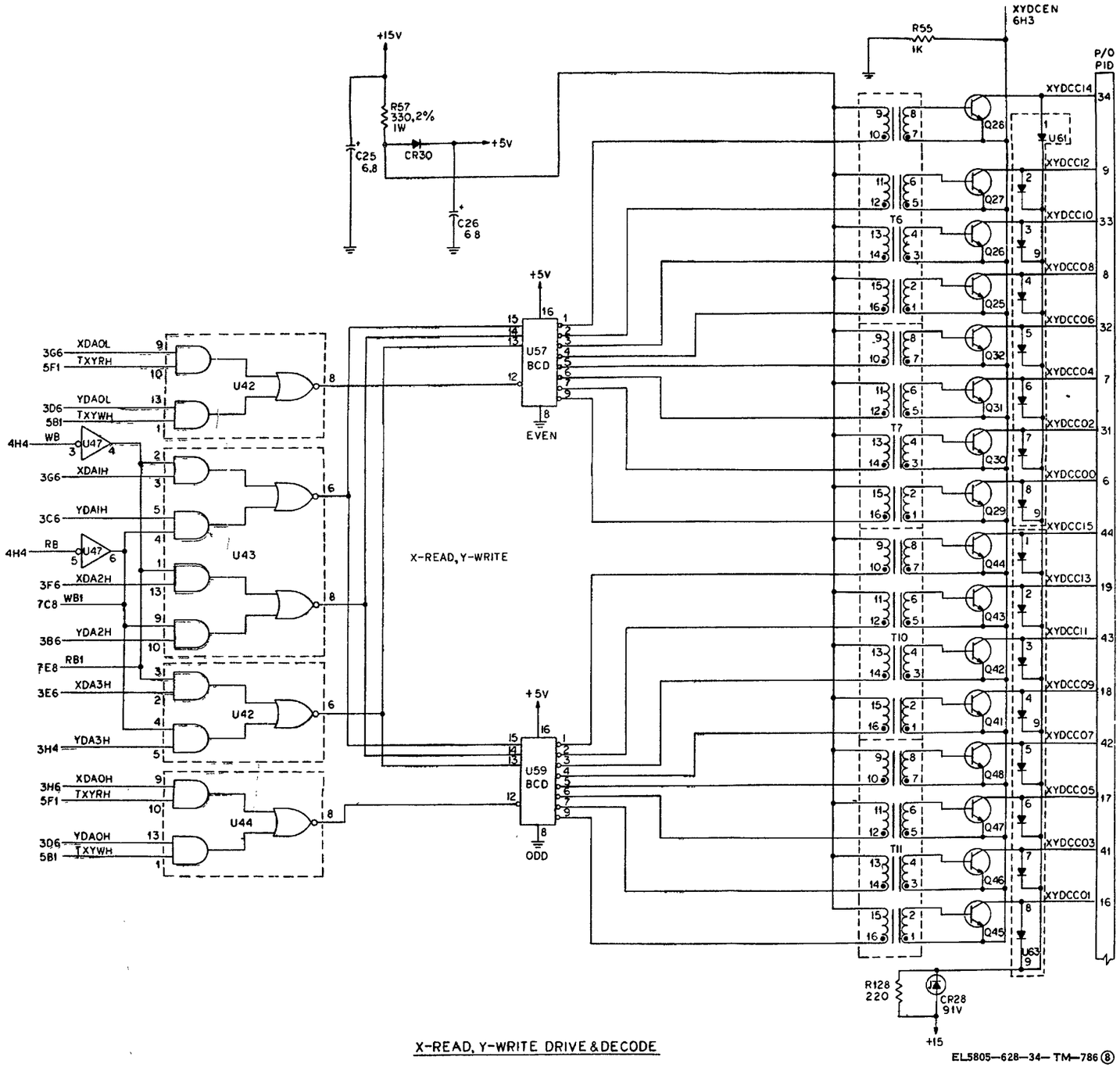

Figure 11-81 (8). Schematic diagram, memory timing and control (sheet 8).

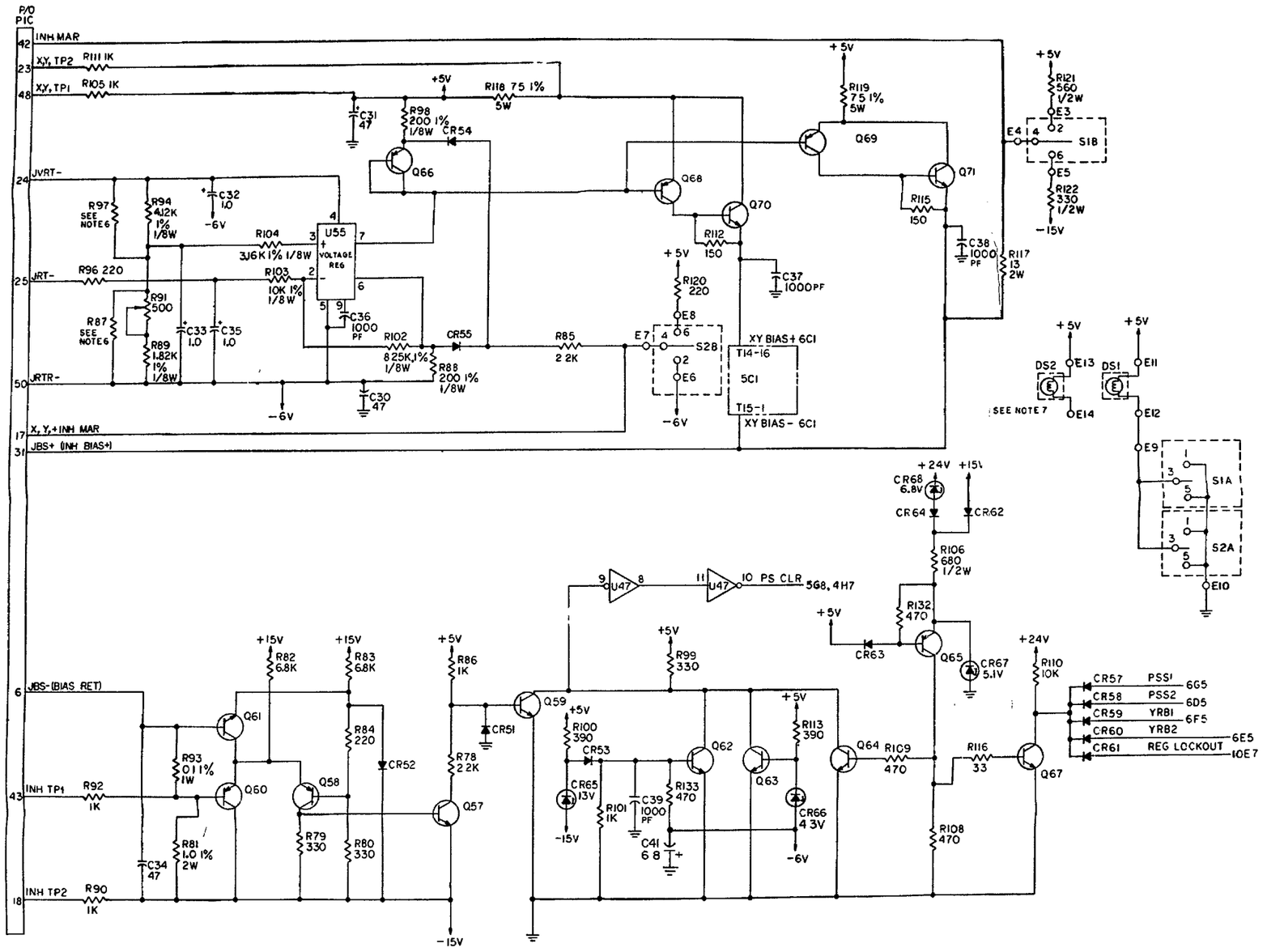

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Figure 11-81 (9). Schematic diagram, memory timing and control (sheet 9)

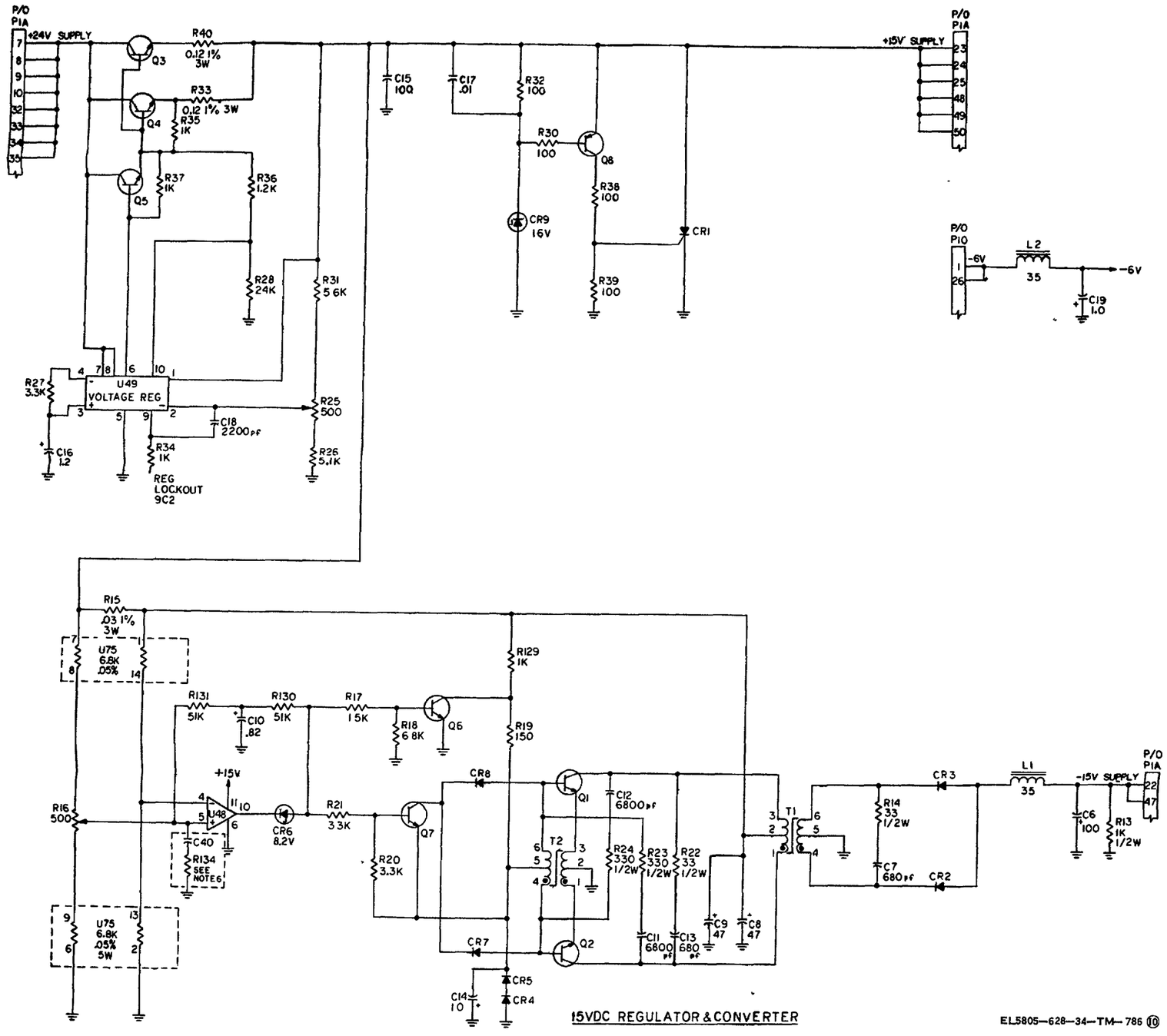


Figure 11-81 (10) . Schematic diagram, memory timing and control (sheet 10).

NOTES

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION, PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED, ALL CAPACITORS ARE IN MICROFARADS ±10%, 35 VOLTS.
3. UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE IN OHMS, ±5% 1/4 WATT.
4. SEE SHEET 2 FOR PIN OUT IDENTIFICATION.
5. "BLANK" IN THE SIGNAL NAME COLUMNS DENOTES PINS REMOVED FROM BASE PLATE.
6. R52 AND R53 ARE OPTIONAL RESISTORS, USED FOR TEST PURPOSES ONLY.
7. ALL INTERGRATED CIRCUITS USE +5V ON PIN 14 AND GRD ON PIN 7.
8. THESE ARE STACK SIGNAL DESIGNATIONS.
9. SEE CHART FOR SEMICONDUCTOR REFERENCE DESIGNATORS.

REF DES	TYPE
CR1, CR10-CR13	JAN IN751A
CR2-CR9, CR14-CR70	SM-A-744825-1
Q1-Q54	JAN 2N3735
Q55	JAN 2N2905A
U1-U13	SM-A-745028-1
U14-U22, U66	JM38510/02305BCB
U23, U25, U27, U29 / U31, U33, U35	JM38510/00303BCC
U24, U26, U28, U30 / U32, U34, U36, U38 / U40, U42, U44, U46, U48	JM38510/00109BCC
U37, U39, U41, U43, / U45, U47, U49	JM38510/02304BCB
U50-U57	JM38510/00803BCB
U58-U62	SM-A-745036
U63	JM38510/00501BCB
U64, U65	JM38510/02302BCB
U67-U73, U80-U85	SM-A-745126-4
U74-U79, U86-U91	SM-A-745126-3
U92-U101	SM-A-742219-1
U102-U111, U136	SM-A-745030-4
U112-U116, U135	SM-A-745030-10
U117-U122	SM-A-745030-11
U123-U126, U128, U129	SM-A-745030-7
U127, U130-U134	SM-A-745030-5

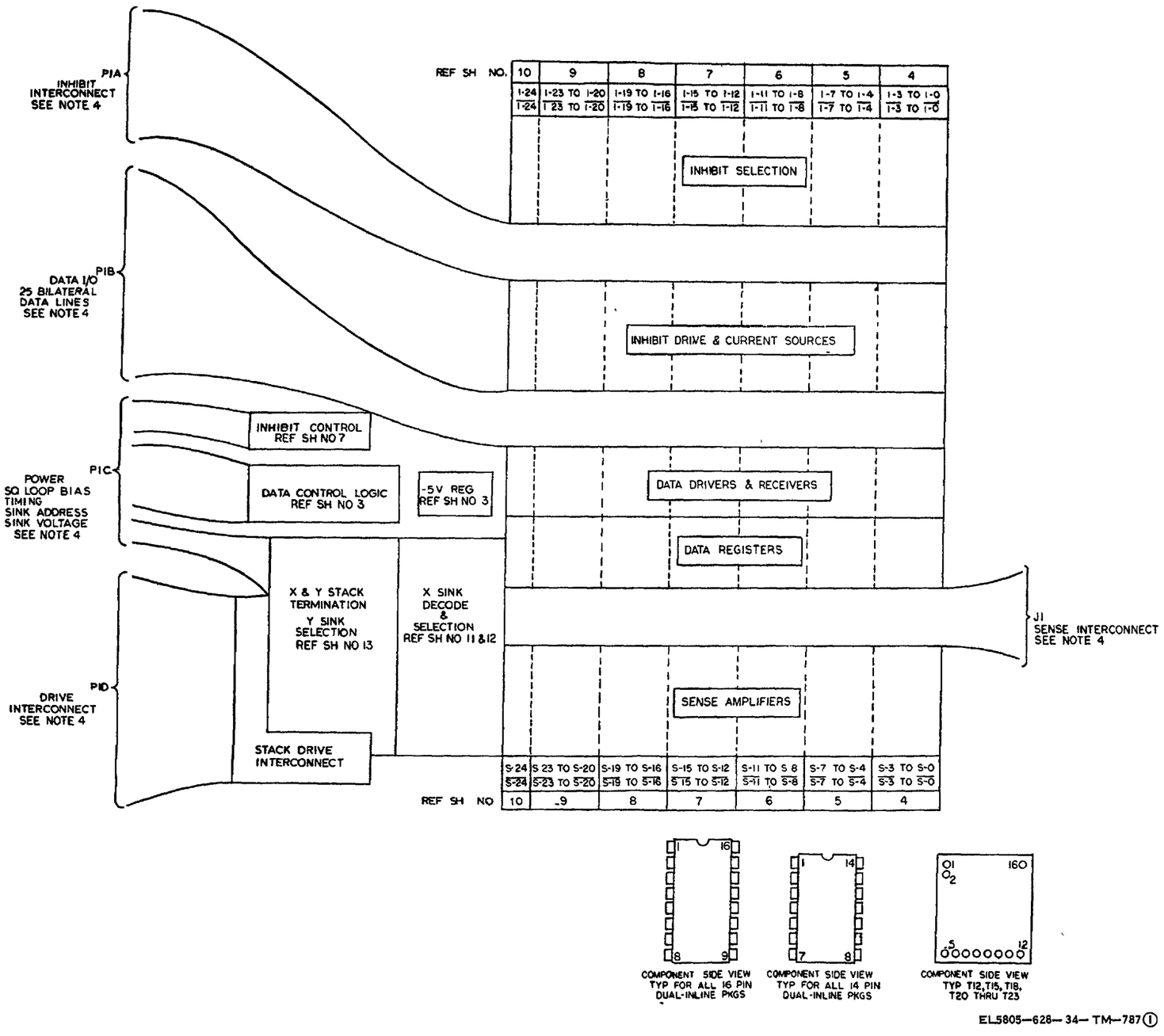


Figure 11-82(1). Schematic diagram, memory data loop prime (sheet 1).

J1			
SIGNAL NAME	PIN NO.		SIGNAL NAME
GND 2	26	1	ES24
	27	2	ES23
	28	3	ES22
	29	4	ES21
	30	5	ES20
	31	6	ES19
	32	7	ES18
	33	8	ES17
	34	9	ES16
	35	10	ES15
	36	11	ES14
	37	12	ES13
	38	13	ES12
	39	14	ES11
	40	15	ES10
	41	16	ES09
	42	17	ES08
	43	18	ES07
	44	19	ES06
	45	20	ES05
	46	21	ES04
	47	22	ES03
	48	23	ES02
	49	24	ES01
GND 2	50	25	ES00

P1A			
SIGNAL NAME	PIN NO		SIGNAL NAME
BLANK	26	1	BLANK
	27	2	
	28	3	
	29	4	
	30	5	
BLANK	31	6	BLANK
SPARE	32	7	IE06
IE05	33	8	IE07
GND 3	34	9	GND 3
IE15	35	10	IE04
GND 3	36	11	GND 3
IE14	37	12	IE13
IE23	38	13	IE12
GND 3	39	14	GND 3
IE21	40	15	IE22
IE02	41	16	IE20
GND 3	42	17	GND 3
IE03	43	18	IE00
IE01	44	19	IE11
GND 3	45	20	GND 3
IE10	46	21	IE09
IE08	47	22	IE18
GND 3	48	23	GND 3
IE17	49	24	IE19
IE16	50	25	IE24

P1B			
SIGNAL NAME	PIN NO.		SIGNAL NAME
+15V	26	1	+15V
+15V	27	2	+15V
+15V	28	3	+15V
−15V	29	4	−15V
SB01	30	5	SB00
GND 2	31	6	GND 2
SB03	32	7	SB02
SB05	33	8	SB04
GND 2	34	9	GND 2
SB07	35	10	SB06
SB09	36	11	SB08
GND 2	37	12	GND 2
SB11	38	13	SB10
SB13	39	14	SB12
GND 2	40	15	GND 2
SB15	41	16	SB14
SB17	42	17	SB16
GND 2	43	18	GND 2
SB19	44	19	SB18
SB21	45	20	SB20
GND 2	46	21	GND 2
SB23	47	22	SB22
SPARE	48	23	SB24
GND 2	49	24	GND 2
+5V	50	25	+5V

P1C			
SIGNAL NAME	PIN NO		SIGNAL NAME
−6V	26	1	−6V
+5V	27	2	+5V
GND 2	28	3	GND 2
GND 2	29	4	GND 2
GND 2	30	5	GND 2
BIAS +	31	6	BIAS −
ØPEN	32	7	ØPEN
TDISL	33	8	TINDL
TINSH	34	9	TMRCL
TDØSL	35	10	TSASH
TSWH	36	11	TSRH
ØPEN	37	12	TSKOL
ØPEN	38	13	ØPEN
AYS1Z	39	14	AYSOZ
AXS3Z	40	15	AXS2Z
AXS1Z	41	16	AXSOZ
ØPEN	42	17	ØPEN
ØPEN	43	18	ØPEN
QXSCP	44	19	SXSVP
QYSAN	45	20	SYSVP
QYSCP	46	21	SXSVN
QXSAN	47	22	SYSVN
ØPEN	48	23	ØPEN
ØPEN	49	24	VRT
RT RET	50	25	RT

P1D			
SIGNAL NAME	PIN NO		SIGNAL NAME
XYDCA12	26	1	XYDCA14
XYDCA08	27	2	XYDCA10
XYDCA04	28	3	XYDCA06
XYDCA00	29	4	XYDCA02
ØPEN	30	5	ØPEN
XYDCC02	31	6	XYDCC00
XYDCC06	32	7	XYDCC04
XYDCC10	33	8	XYDCC08
XYDCC14	34	9	XYDCC12
ØPEN	35	10	ØPEN
XYDCA13	36	11	XYDCA15
XYDCA09	37	12	XYDCA11
XYDCA05	38	13	XYDCA07
XYDCA01	39	14	XYDCA03
ØPEN	40	15	ØPEN
XYDCC03	41	16	XYDCC01
XYDCC07	42	17	XYDCC05
XYDCC11	43	18	XYDCC09
XYDCC15	44	19	XYDCC13
BLANK	45	20	BLANK
	46	21	
	47	22	
	48	23	
	49	24	
BLANK	50	25	BLANK

LAST REF DESIGNATION USED
C70
CR70
L1
Q55
R55
T39
U136

REF DESIGNATION NOT USED
R42

DLP PIN CONNECTOR CHARTS

EL5805—628—34—TM—787 (2)

Figure 11-82 (2). Schematic diagram, memory data loop prime (sheet 2).

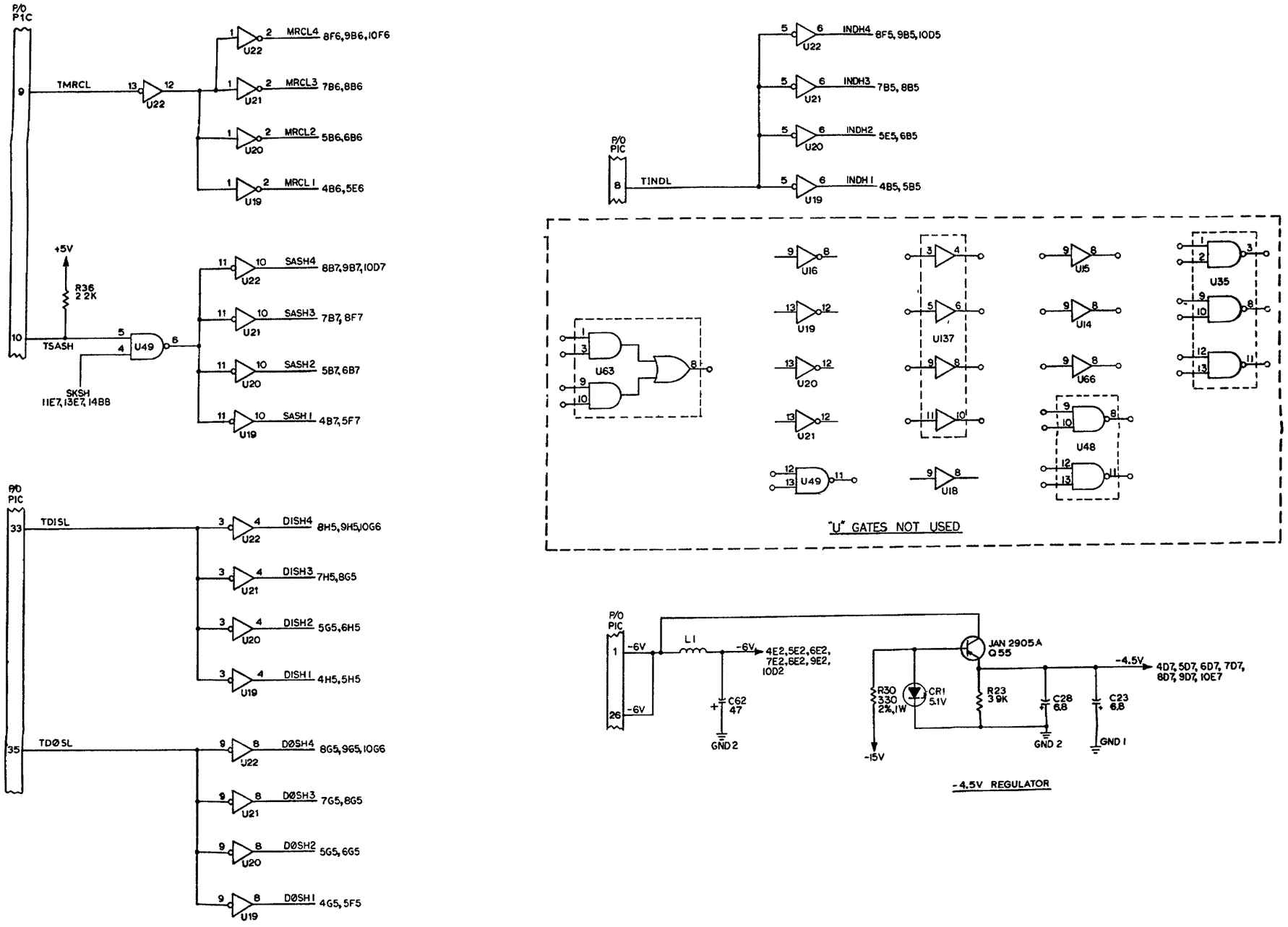


Figure 11-82 (3). Schematic diagram, memory data loop prime (sheet 3).

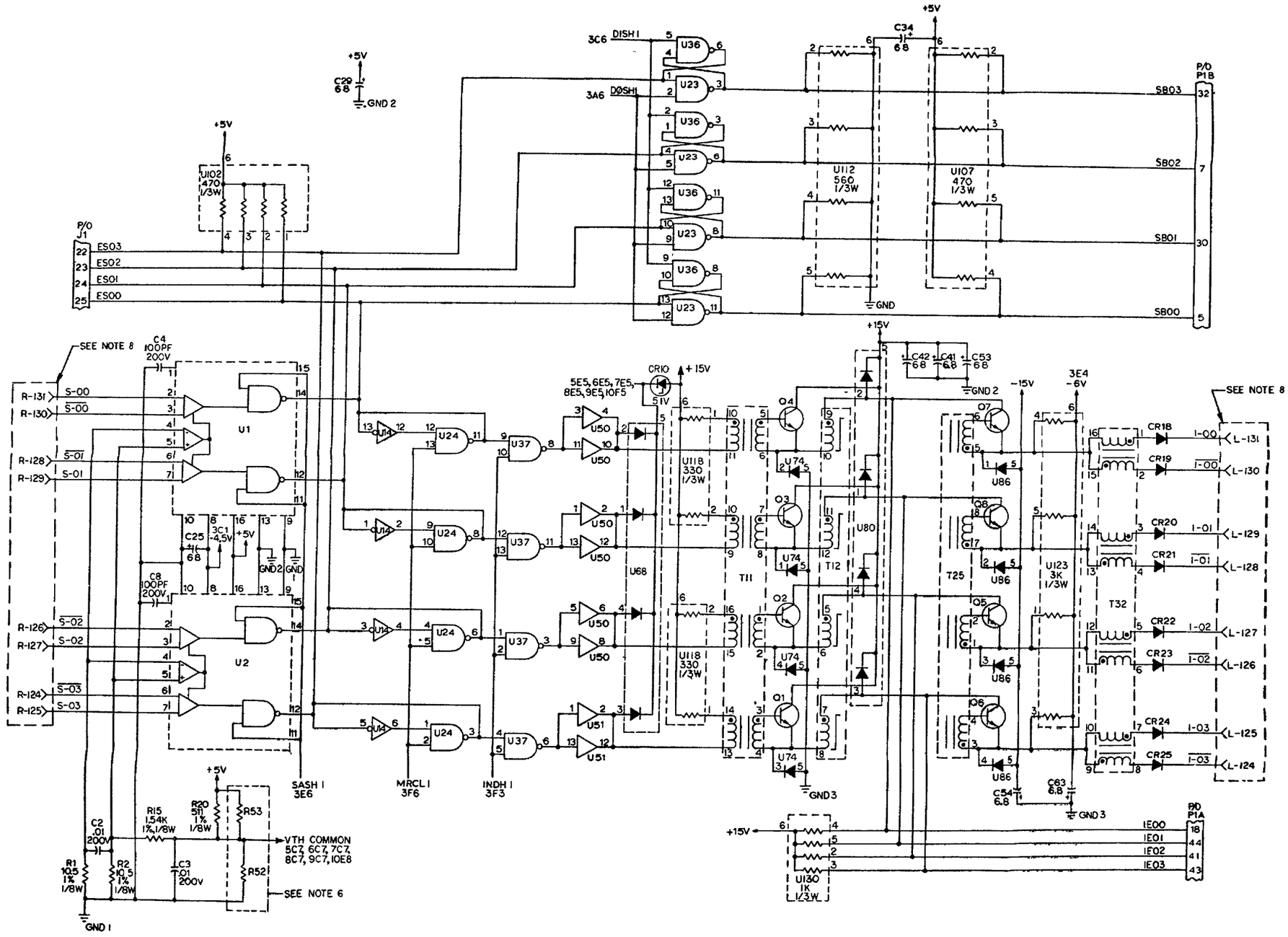
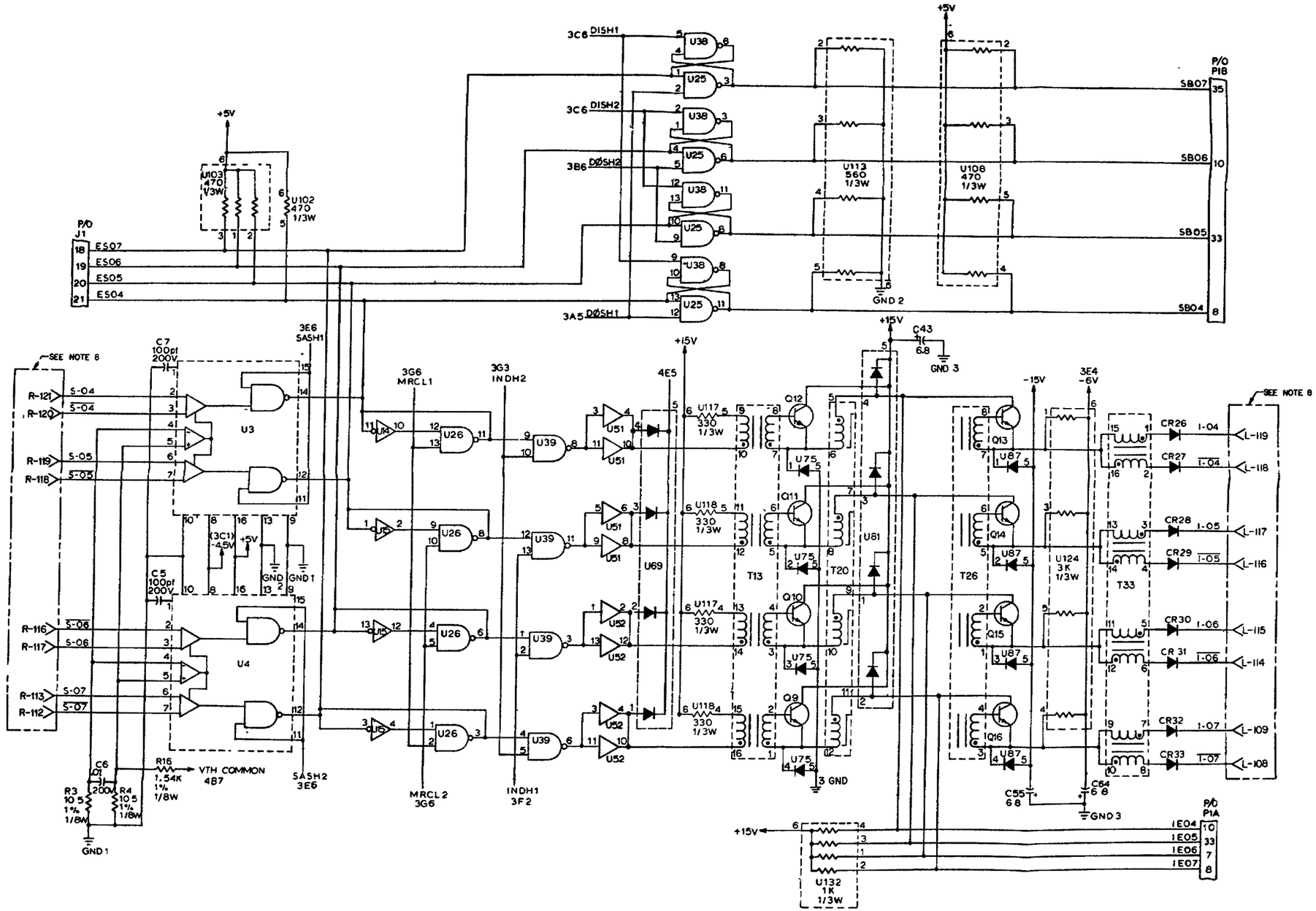


Figure 11-82 (4). Schematic diagram, memory data loop prime (sheet 4).



DATA CHANNELS 04 - 07

EL5805—628—34— TM—787(5)

Figure 11-82(5). Schematic diagram, memory data loop prime (sheet 5).

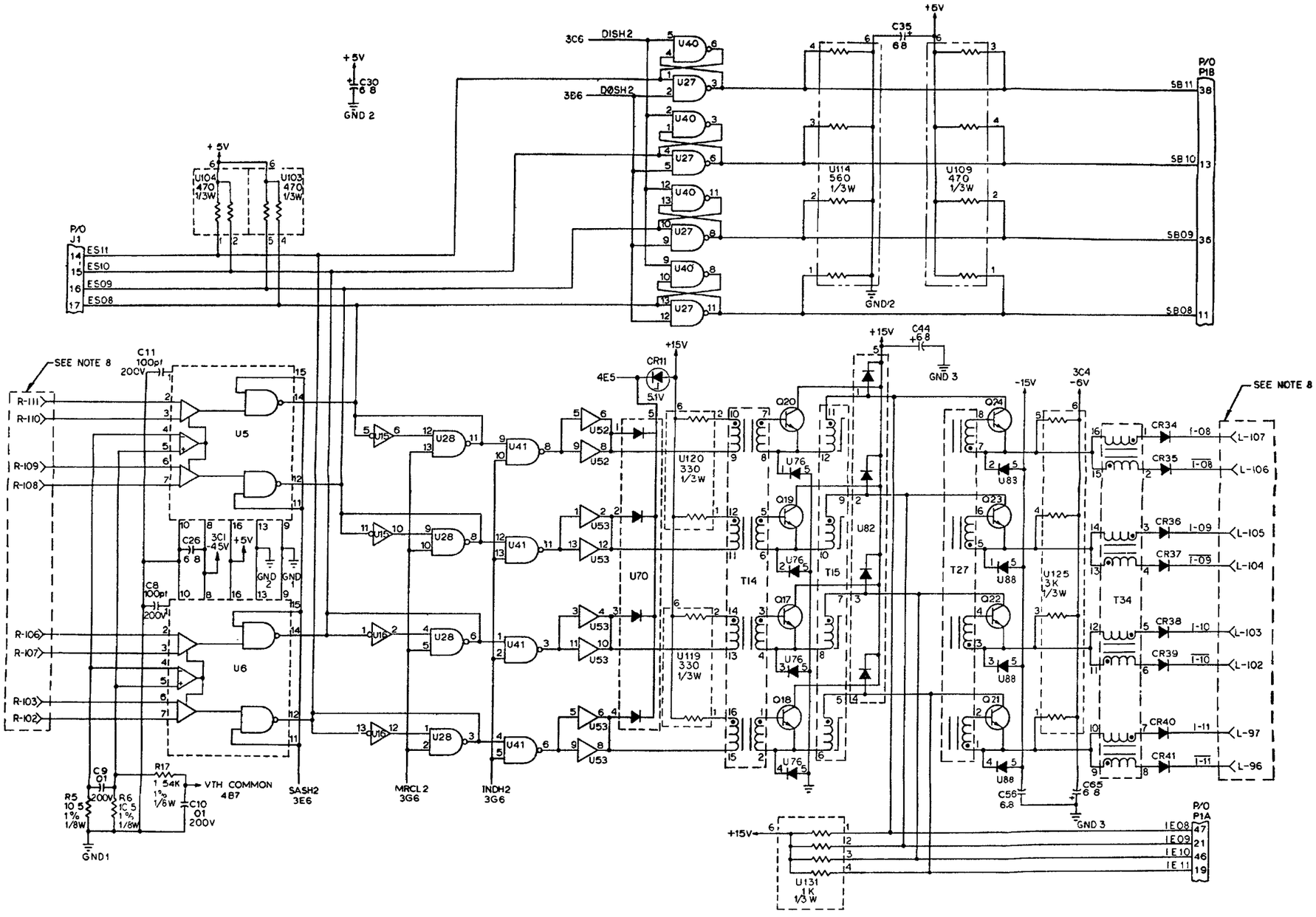
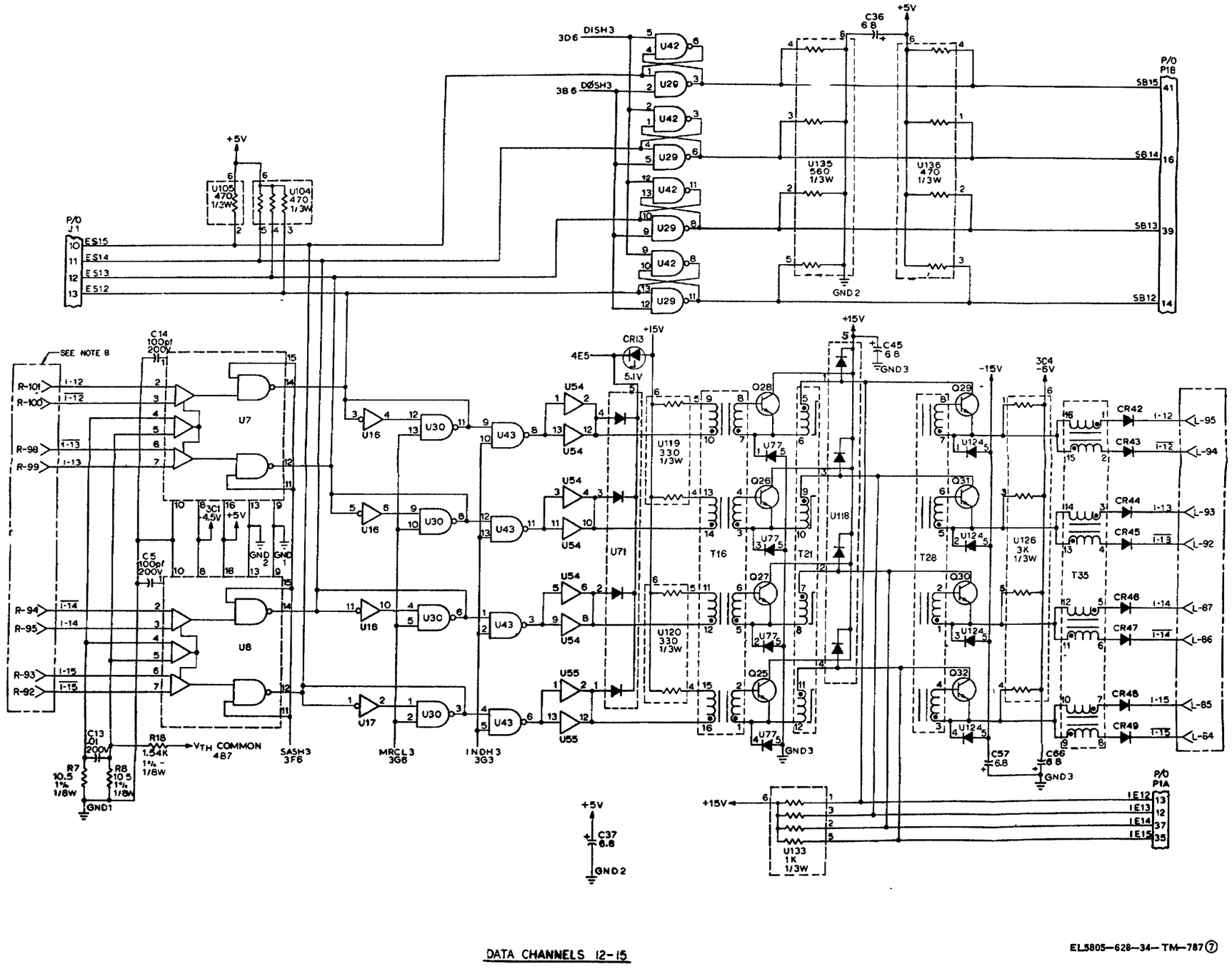


Figure 11-82 (6). Schematic diagram, memory data loop prime (sheet 6).



DATA CHANNELS 12-15

EL5805—628—34—TM—787⑦

Figure 11-82⑦. Schematic diagram, memory data loop prime (sheet 7).

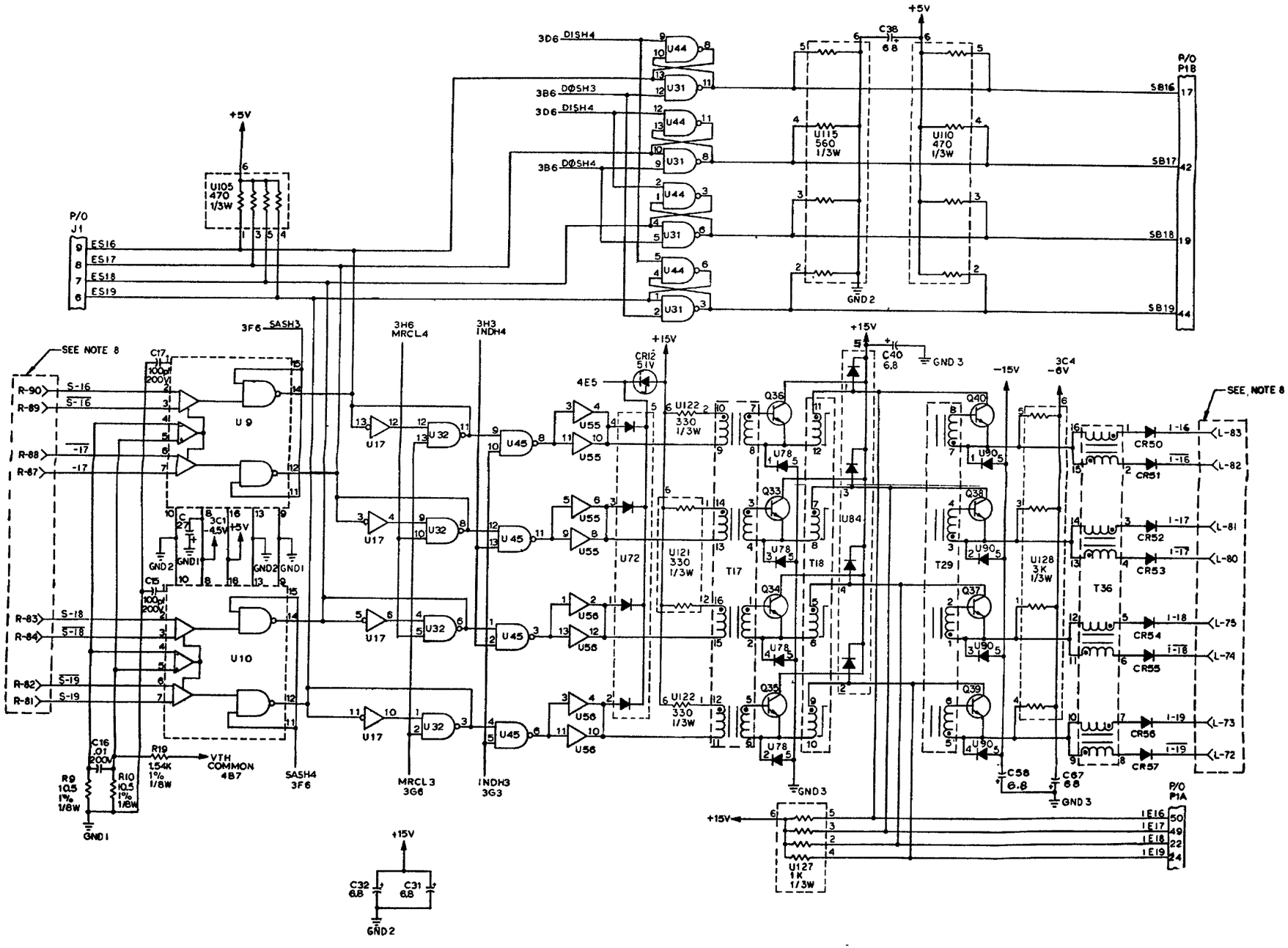


Figure 11-82 (8). Schematic diagram, memory data loop prime (sheet 8).

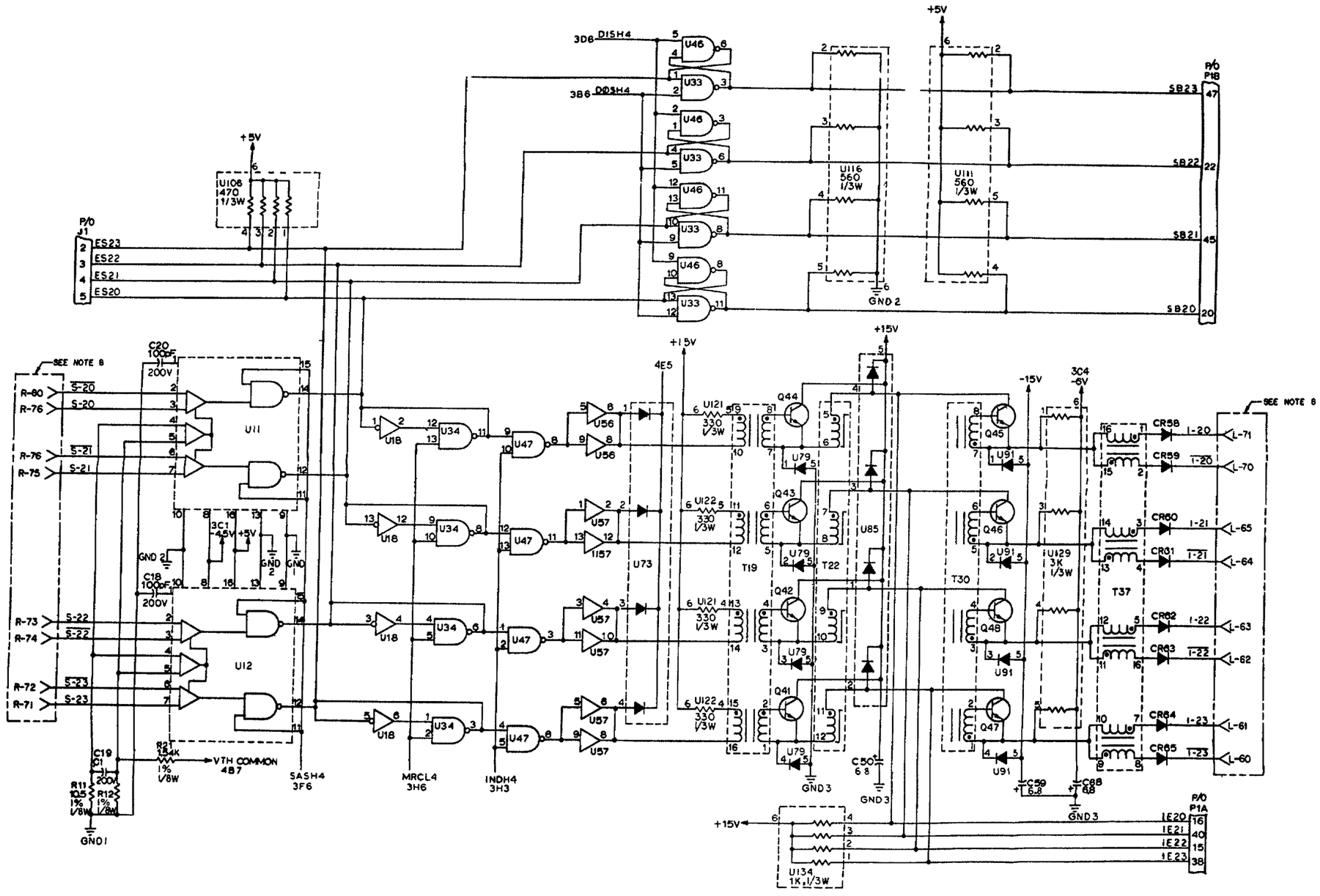


Figure 11-82(9). Schematic diagram, memory data loop prime (sheet 9).

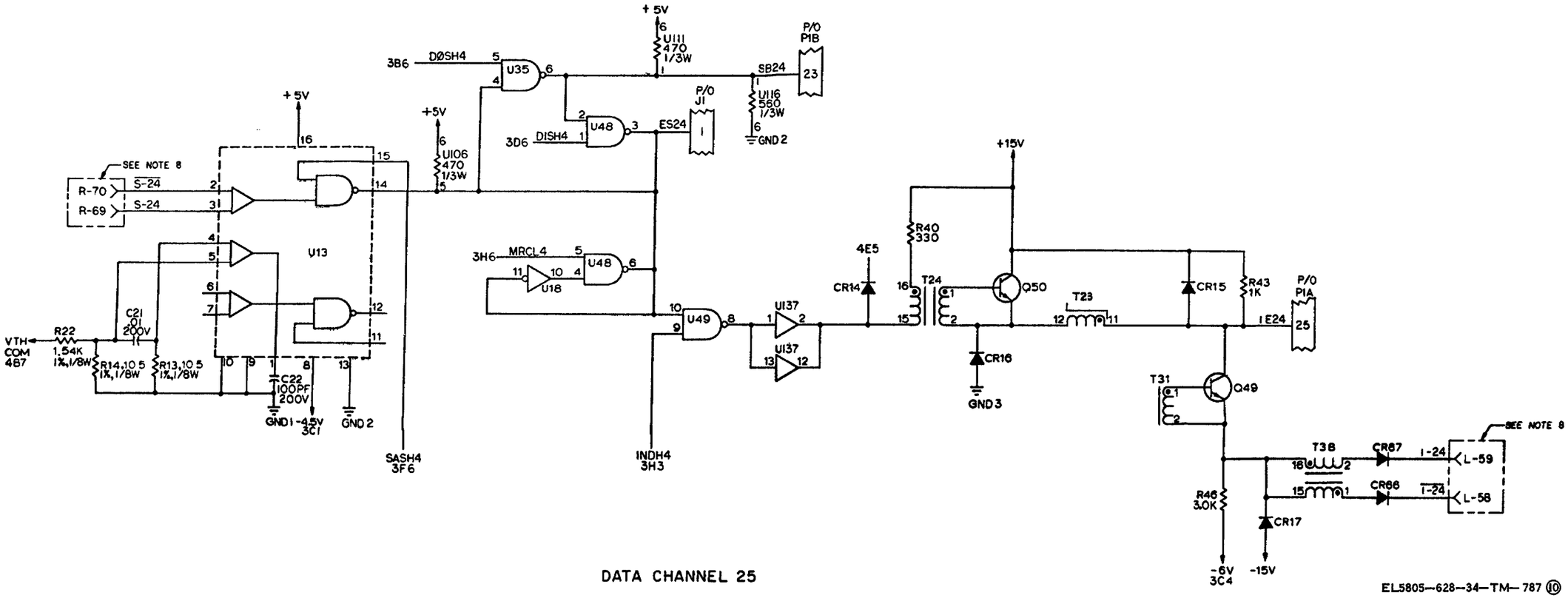


Figure 11-82 (10). Schematic diagram, memory data loop prime (sheet 10).

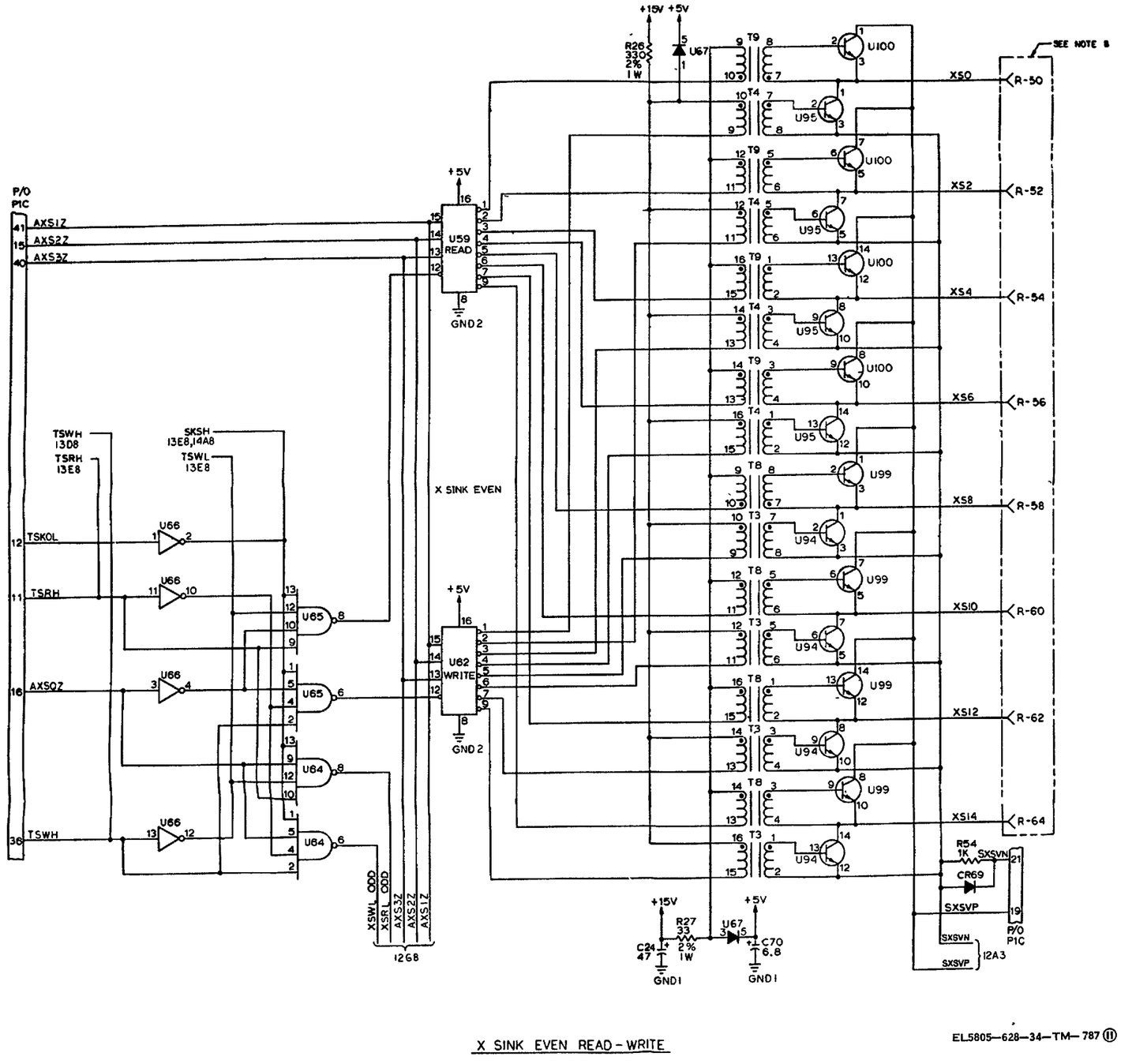


Figure 11-82 (11). Schematic diagram, memory data loop prime (sheet 11).

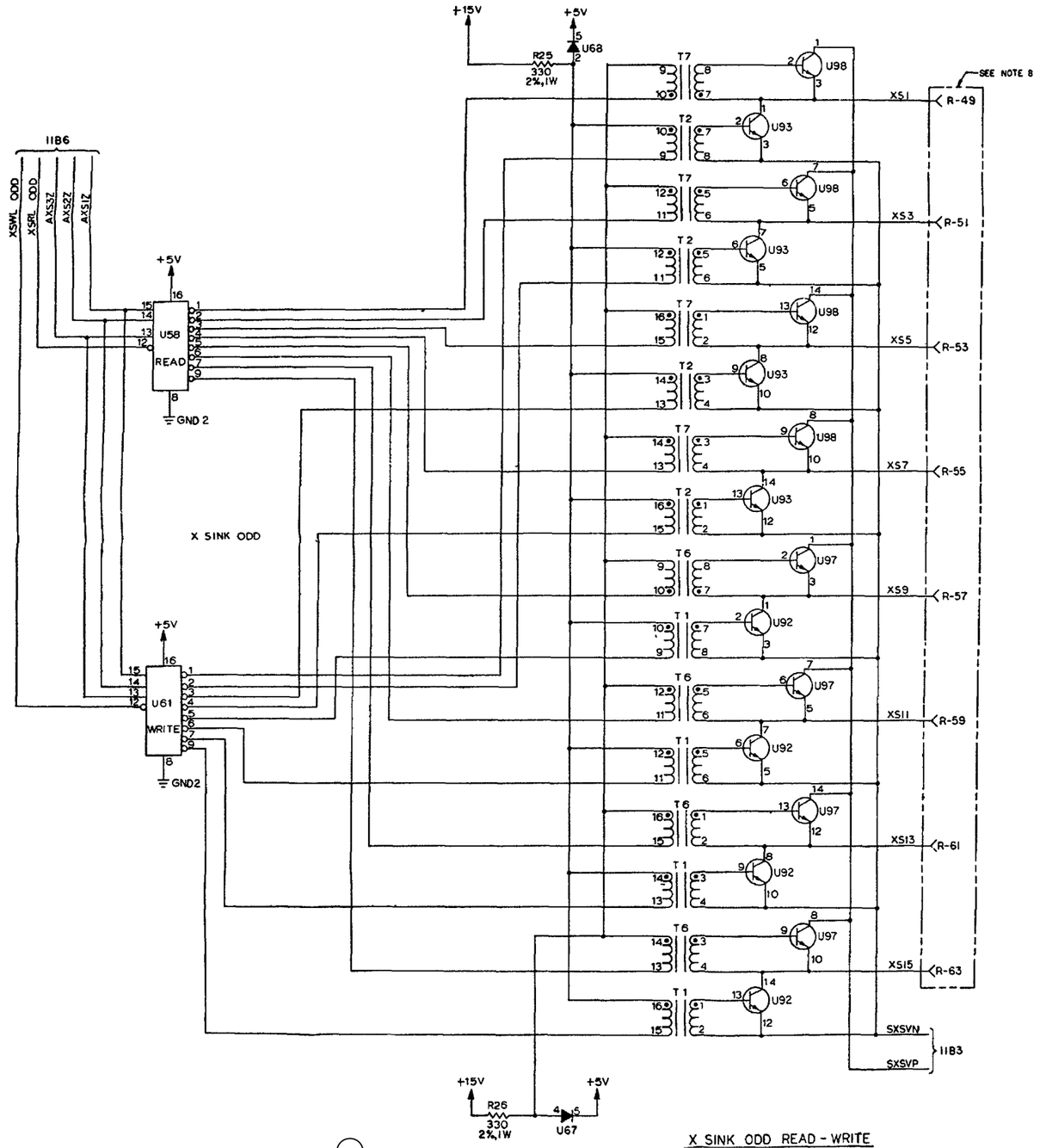
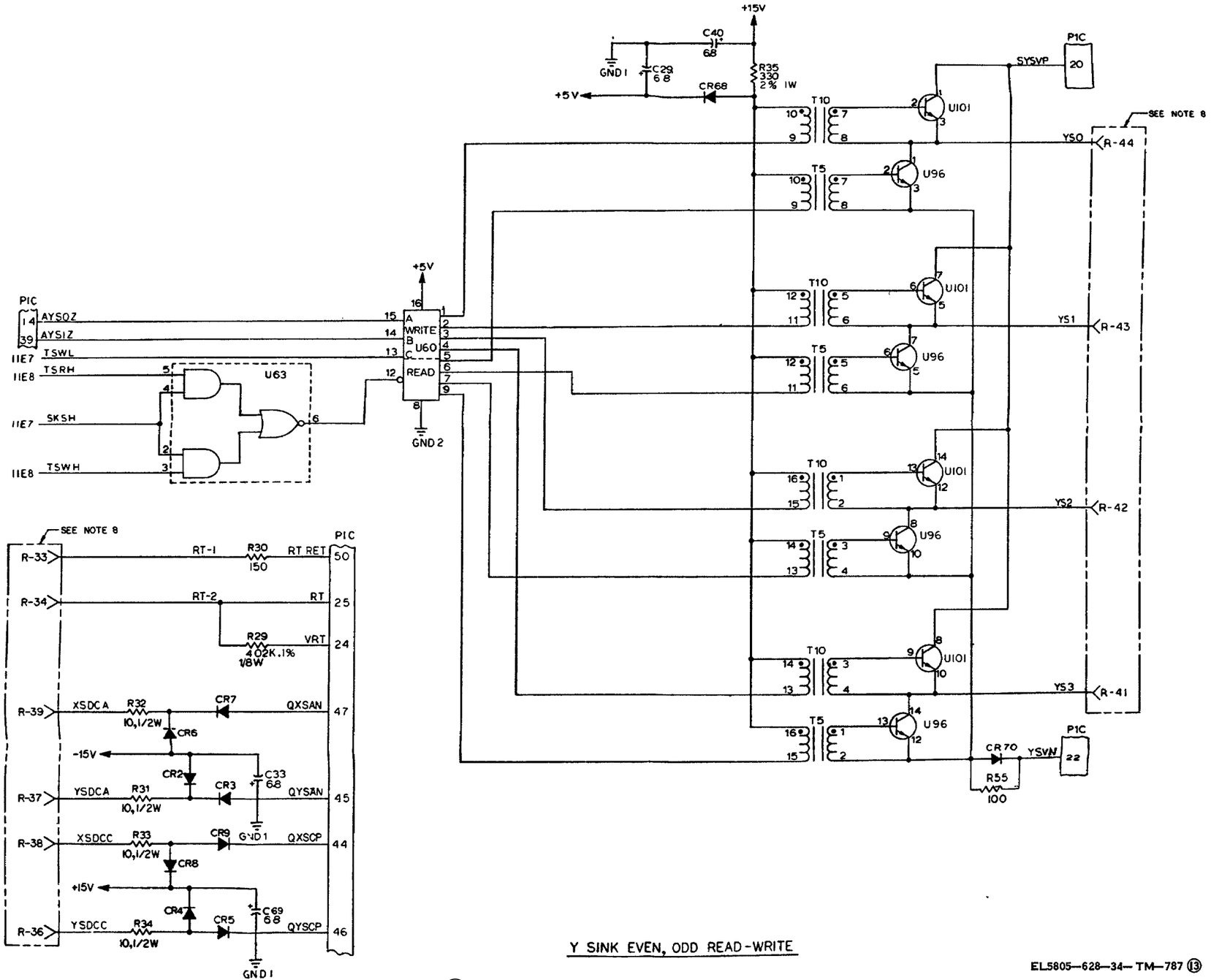


Figure 11-82 (12). Schematic diagram, memory data loop prime (sheet 12).



Y SINK EVEN, ODD READ-WRITE

EL5805—628—34— TM—787 (13)

Figure 11-82 (13). Schematic diagram, memory data loop prime (sheet 13).

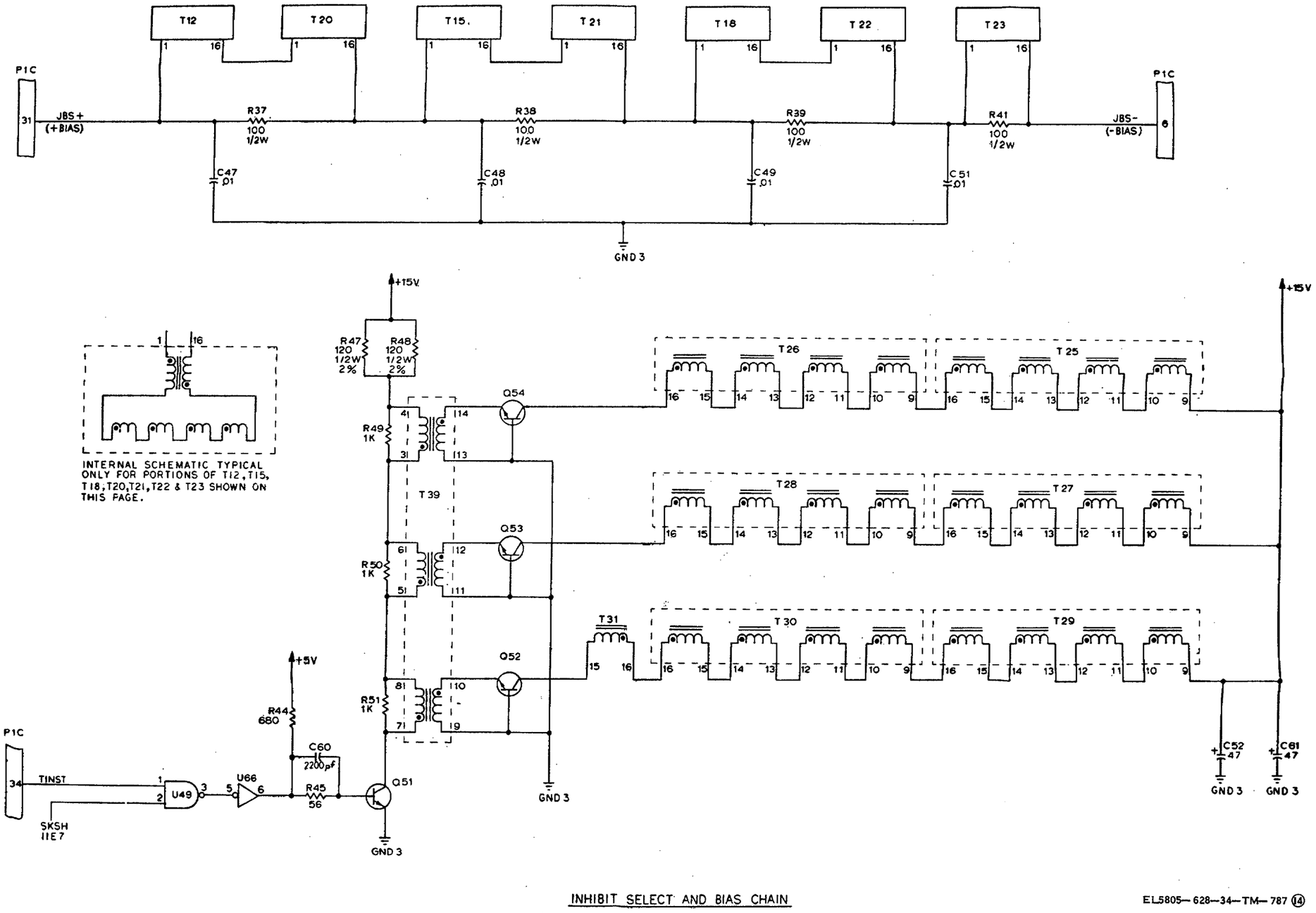


Figure 11-82 (14) Schematic diagram, memory data loop prime (sheet 14).

NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION, PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED, ALL CAPACITORS ARE IN MICROFARADS ±10%, 35 VOLTS.
3. UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE IN OHMS, ±5% 1/4 WATT.
4. SEE SHEET 2 FOR PIN OUT IDENTIFICATION.
5. "BLANK" IN THE SIGNAL NAME COLUMNS DENOTES PINS REMOVED FROM BASE PLATE.
6. R52 AND R53 ARE OPTIONAL RESISTORS, USED FOR TEST PURPOSES ONLY.
7. ALL INTERGRATED CIRCUITS USE +5V ON PIN 14 AND GND ON PIN 7.
8. THESE ARE STACK SIGNAL DESIGNATIONS.
9. SEE CHART FOR SEMICONDUCTOR REFERENCE DESIGNATORS.

REF DES	TYPE
CR1	JAN IN751A
CR2-CR9, CR15	SM-A-744825-1
CR17-CR70	
Q5-Q8, Q13-Q16, Q21-Q24, Q29-Q32, Q37-Q40, Q45-Q49, Q51-Q54	JAN 2N3735
Q55	JAN 2N2905A
UI-UI3	SM-A-745028-1
UI4, U66	JM38510/02305BCB
U49	JM38510/02304BCB
U53-U62	SM-A-745036
U63	JM38510/00501BCB
U64, U65	JM38510/02302BCB
U67, U80-U85	SM-A-745126-4
U86-U91	SM-A-745126-3
U92-UI01	SM-A-744219-1
UI23-UI26, UI28, UI29	SM-A-745030-7

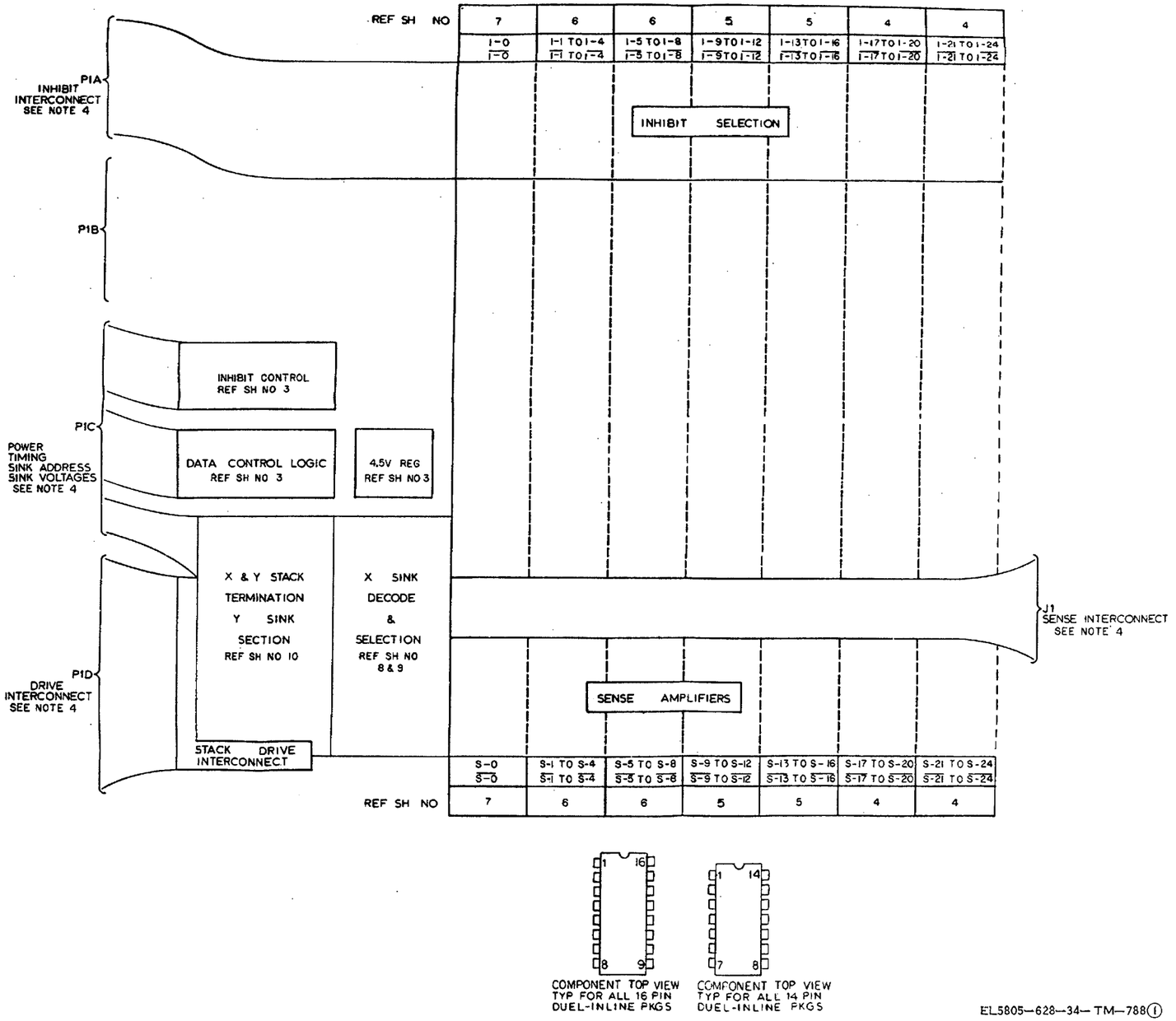


Figure 11-83 (1). Schematic diagram, memory data loop expansion.

J1			
SIGNAL NAME	PIN NO.		SIGNAL NAME
GND 2	26	1	ES24
	27	2	ES23
	28	3	ES22
	29	4	ES21
	30	5	ES20
	31	6	ES19
	32	7	ES18
	33	8	ES17
	34	9	ES16
	35	10	ES15
	36	11	ES14
	37	12	ES13
	38	13	ES12
	39	14	ES11
	40	15	ES10
	41	16	ES09
	42	17	ES08
	43	18	ES07
	44	19	ES06
	45	20	ES05
	46	21	ES04
	47	22	ES03
	48	23	ES02
	49	24	ES01
GND 2	50	25	ES00

P1A			
SIGNAL NAME	PIN NO.		SIGNAL NAME
BLANK	26	1	BLANK
	27	2	
	28	3	
	29	4	
	30	5	
BLANK	31	6	BLANK
SPARE	32	7	IE06
IE05	33	8	IE07
GND 3	34	9	GND 3
IE15	35	10	IE04
GND 3	36	11	GND 3
IE14	37	12	IE13
IE23	38	13	IE12
GND 3	39	14	GND 3
IE21	40	15	IE22
IE02	41	16	IE20
GND 3	42	17	GND 3
IE03	43	18	IE00
IE01	44	19	IE11
GND 3	45	20	GND 3
IE10	46	21	IE09
IE08	47	22	IE18
GND 3	48	23	GND 3
IE17	49	24	IE19
IE16	50	25	IE24

P1B			
SIGNAL NAME	PIN NO.		SIGNAL NAME
+15V	26	1	+15V
+15V	27	2	+15V
+15V	28	3	+15V
-15V	29	4	-15V
BLANK	30	5	BLANK
	31	6	
	32	7	
	33	8	
	34	9	
	35	10	
	36	11	
	37	12	
	38	13	
	39	14	
	40	15	
	41	16	
	42	17	
	43	18	
	44	19	
	45	20	
	46	21	
	47	22	
BLANK	48	23	BLANK
GND 2	49	24	GND 2
+5V	50	25	+5V

P1C			
SIGNAL NAME	PIN NO.		SIGNAL NAME
-6V	26	1	-6V
+5V	27	2	+5V
GND 2	28	3	GND 2
GND 2	29	4	GND 2
GND 2	30	5	GND 2
ØPEN	31	6	ØPEN
ØPEN	32	7	ØPEN
ØPEN	33	8	ØPEN
TINSH	34	9	ØPEN
ØPEN	35	10	TSASH
TSWH	36	11	TSRH
SPARE	37	12	CSKSL
ØPEN	38	13	ØPEN
AYS1Z	39	14	AYS2Z
AXS3Z	40	15	AXS2Z
AXS1Z	41	16	AXS0Z
ØPEN	42	17	ØPEN
ØPEN	43	18	ØPEN
QXSCCP	44	19	SXSVP
QYSCAN	45	20	SYSVP
QYSCCP	46	21	SXSVN
QXSCAN	47	22	SYSVN
ØPEN	48	23	ØPEN
ØPEN	49	24	VRT
RT RET	50	25	RT

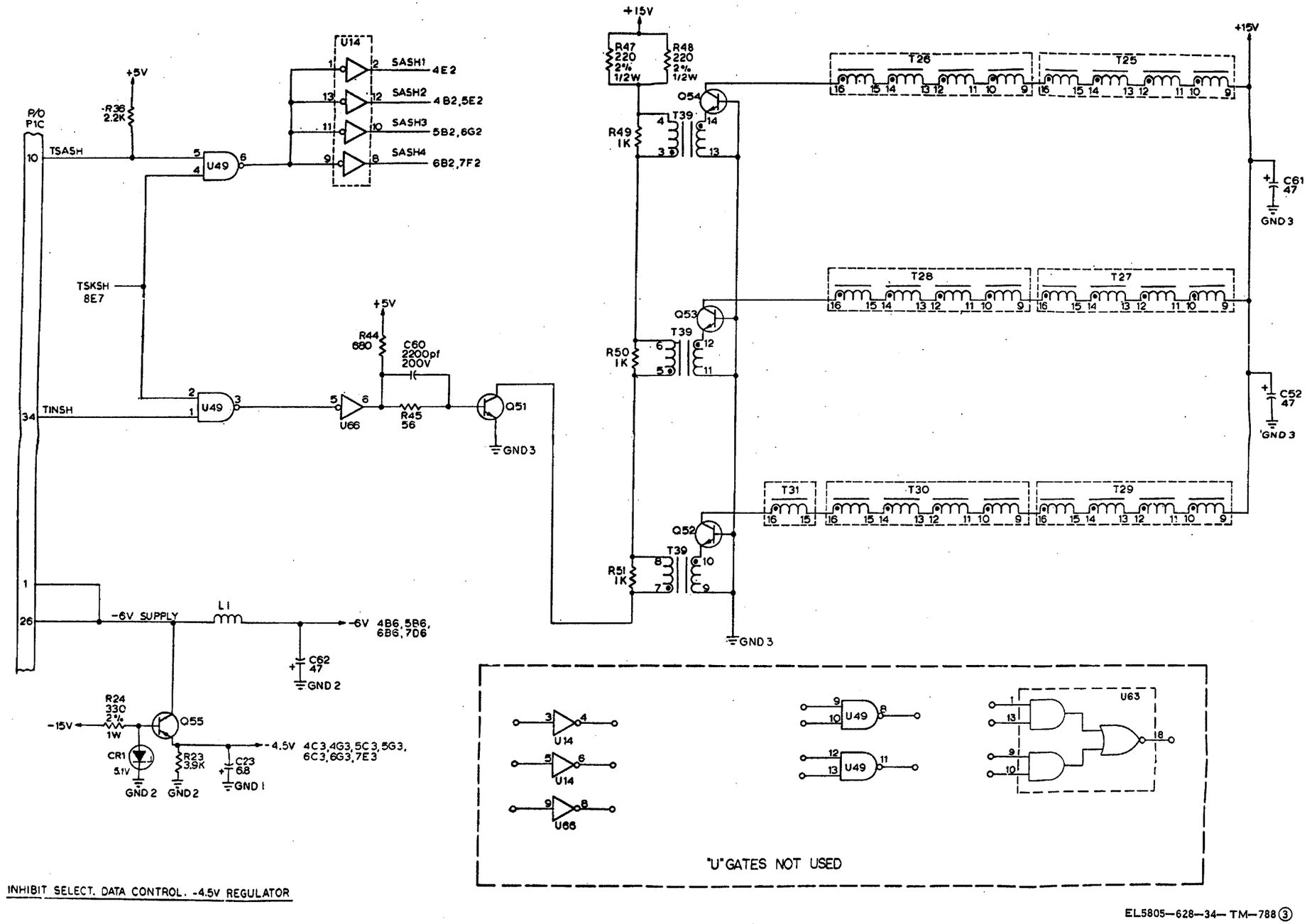
P1D			
SIGNAL NAME	PIN NO.		SIGNAL NAME
XYDCA12	26	1	XYDCA14
XYDCA08	27	2	XYDCA10
XYDCA04	28	3	XYDCA06
XYDCA00	29	4	XYDCA02
ØPEN	30	5	ØPEN
XYDCC02	31	6	XYDCC00
XYDCC06	32	7	XYDCC04
XYDCC10	33	8	XYDCC08
XYDCC14	34	9	XYDCC12
ØPEN	35	10	ØPEN
XYDCA13	36	11	XYDCA15
XYDCA09	37	12	XYDCA11
XYDCA05	38	13	XYDCA07
XYDCA01	39	14	XYDCA03
ØPEN	40	15	ØPEN
XYDCC03	41	16	XYDCC01
XYDCC07	42	17	XYDCC05
XYDCC11	43	18	XYDCC09
XYDCC15	44	19	XYDCC13
BLANK	45	20	BLANK
	46	21	
	47	22	
	48	23	
	49	24	
BLANK	50	25	BLANK

LAST REF DESIGNATION USED
C70
CR70
L1
Q55
R55
T39
U129

REF DESIGNATION NOT USED
C28,32,34-38
CR10-14,16
R37-43
T11-24
U15-48,50-58,68-79,102-122,127

DLX PIN-SIGNAL REFERENCE CHARTS

Figure 11-83 ②. Schematic diagram, memory data loop expansion (sheet 2).



INHIBIT SELECT, DATA CONTROL, -4.5V REGULATOR

EL5805—628—34— TM—788 ③

Figure 11-83 ③. Schematic diagram, memory data loop expansion (sheet 3).

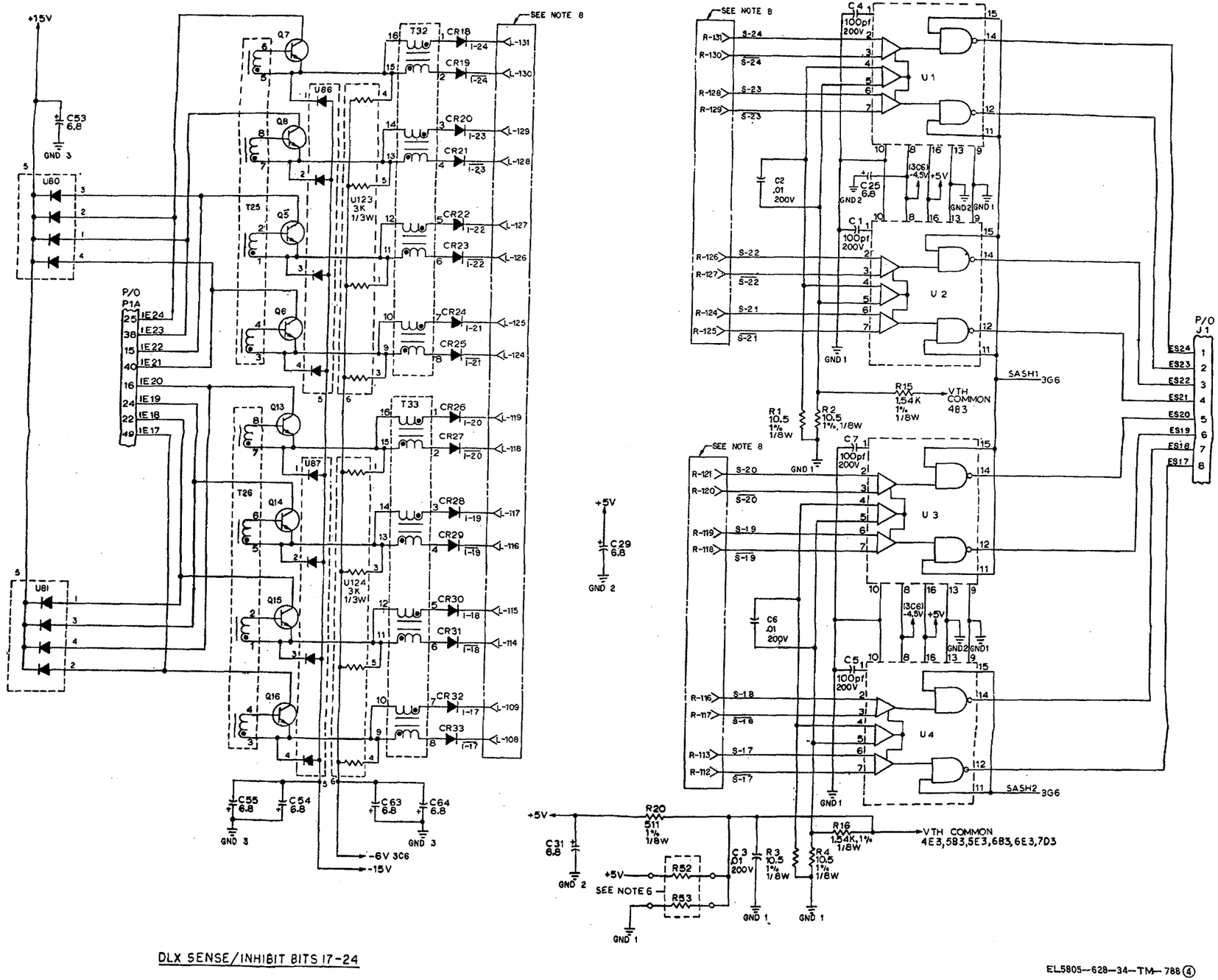
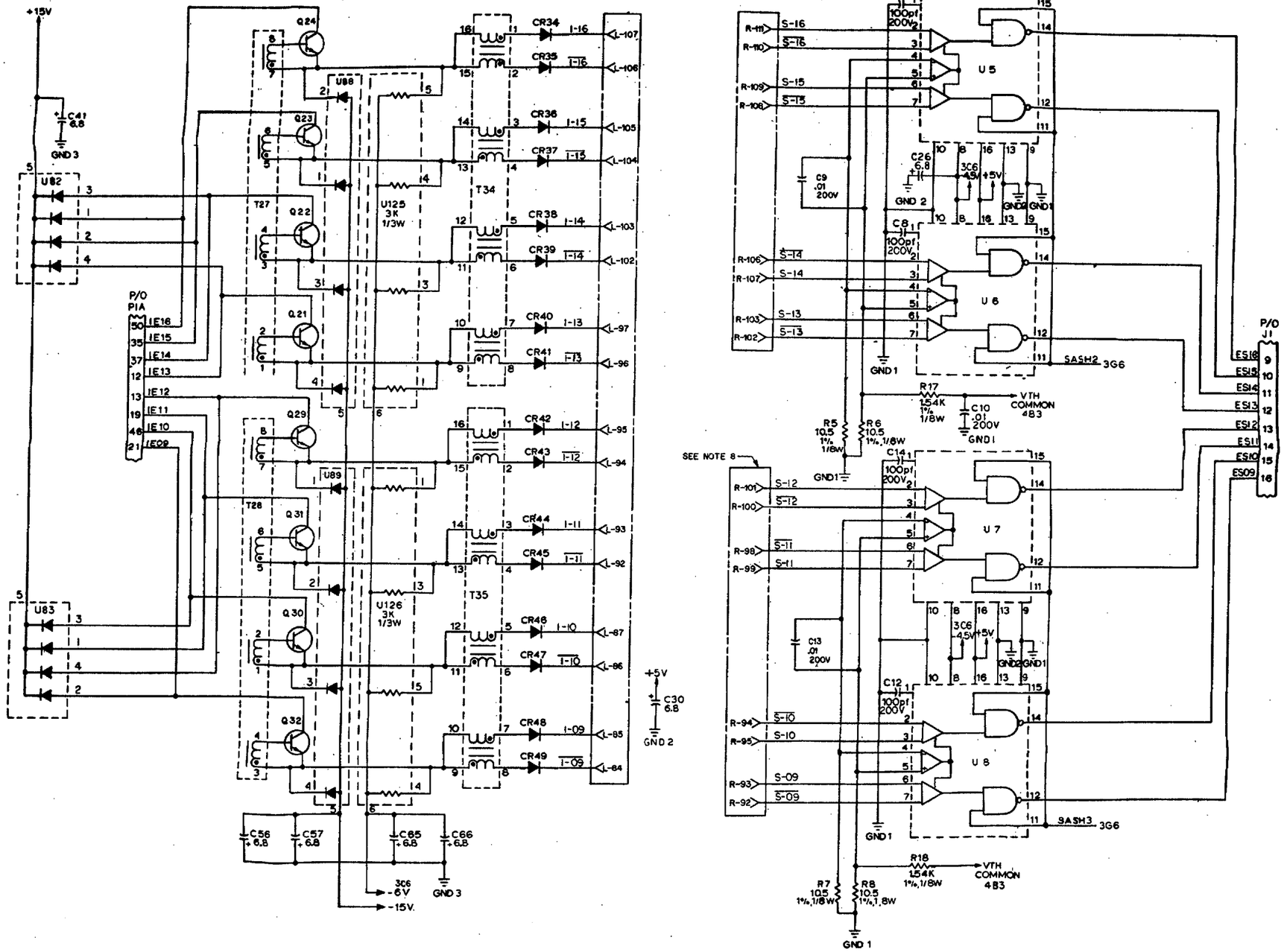


Figure 11-83 ④. Schematic diagram, memory data loop expansion (sheet 4).



DLX SENSE/INHIBIT BITS 09-16

EL5805-628-34-TM-788 (5)

Figure 11-83 (5). Schematic diagram, memory data loop expansion (sheet 5).

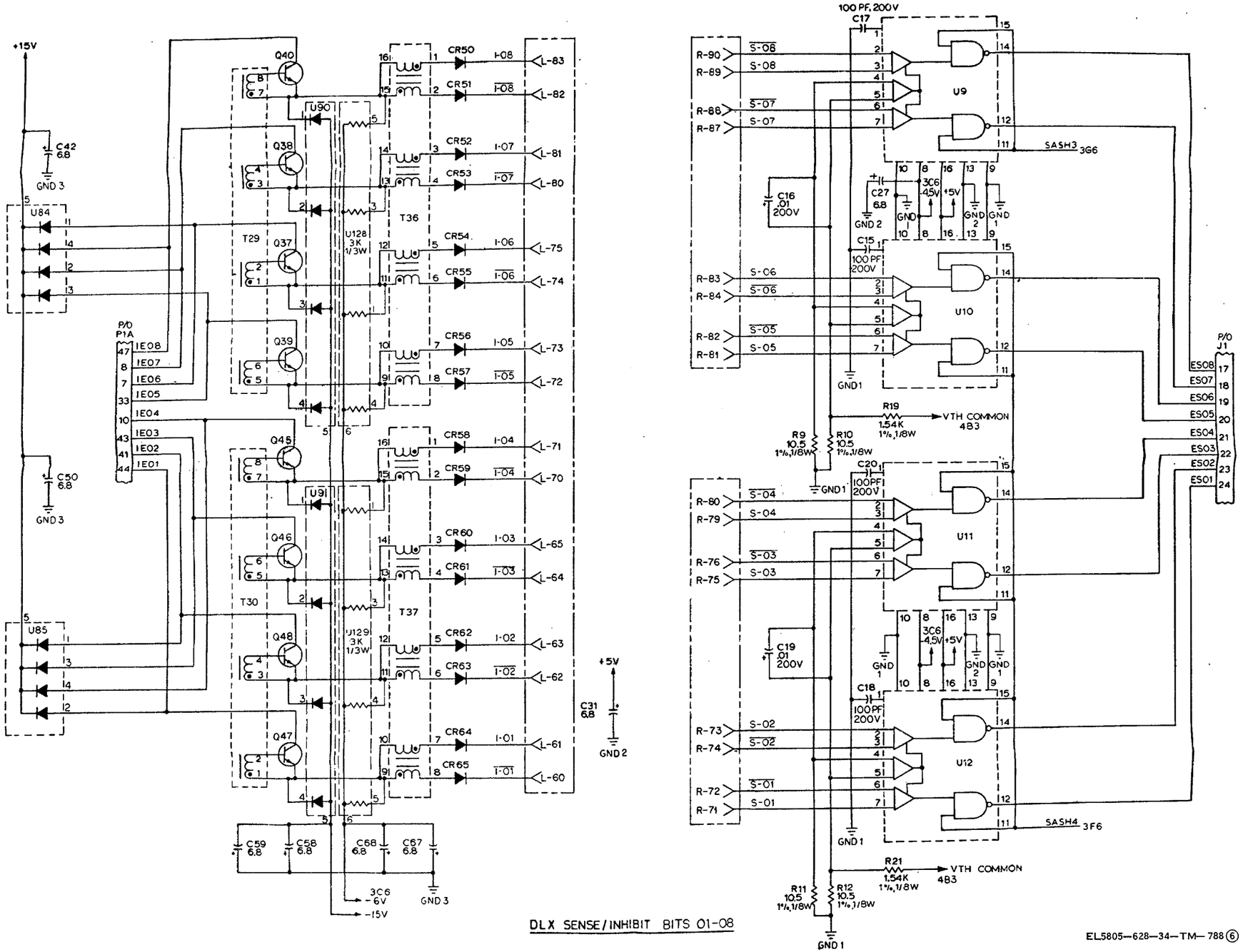


Figure 11-83 ⑥. Schematic diagram, memory data loop expansion (sheet 6).

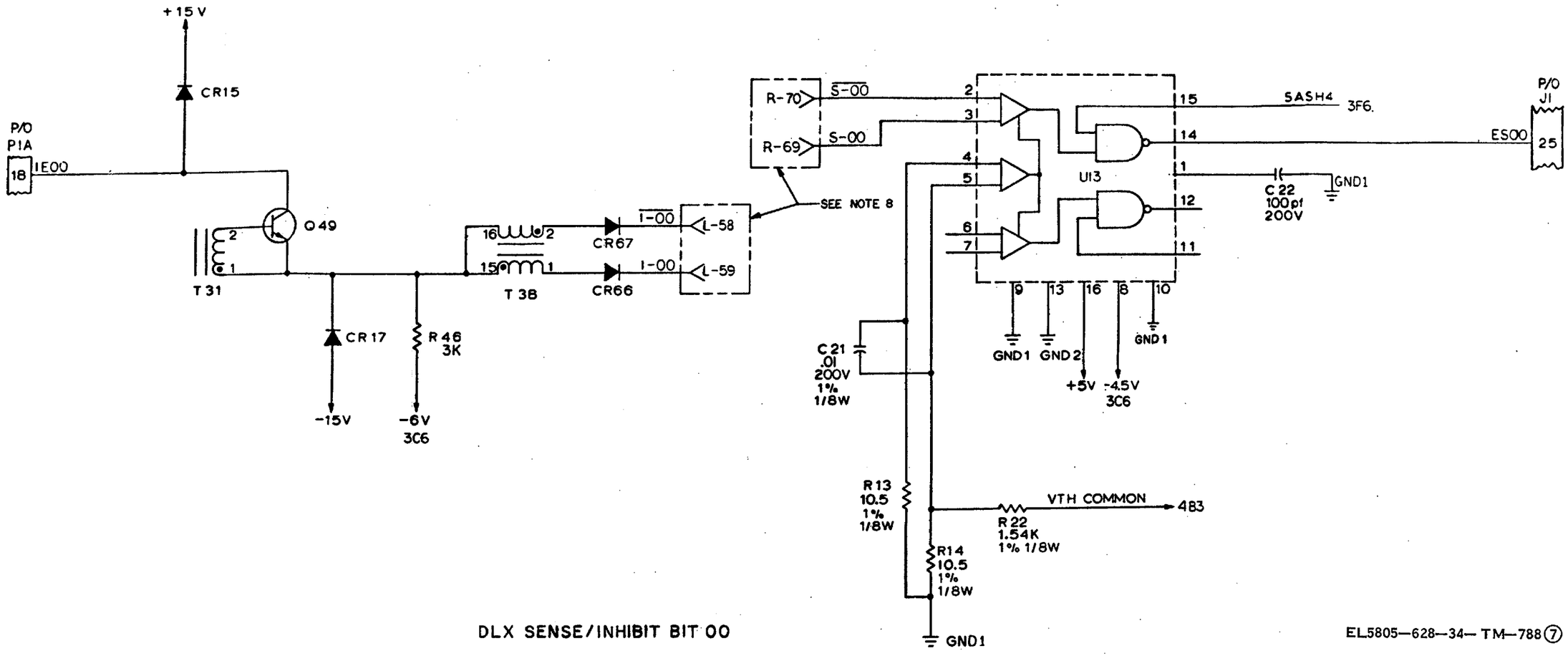


Figure 11-83 ⑦ Schematic diagram, memory data loop expansion (sheet 7).

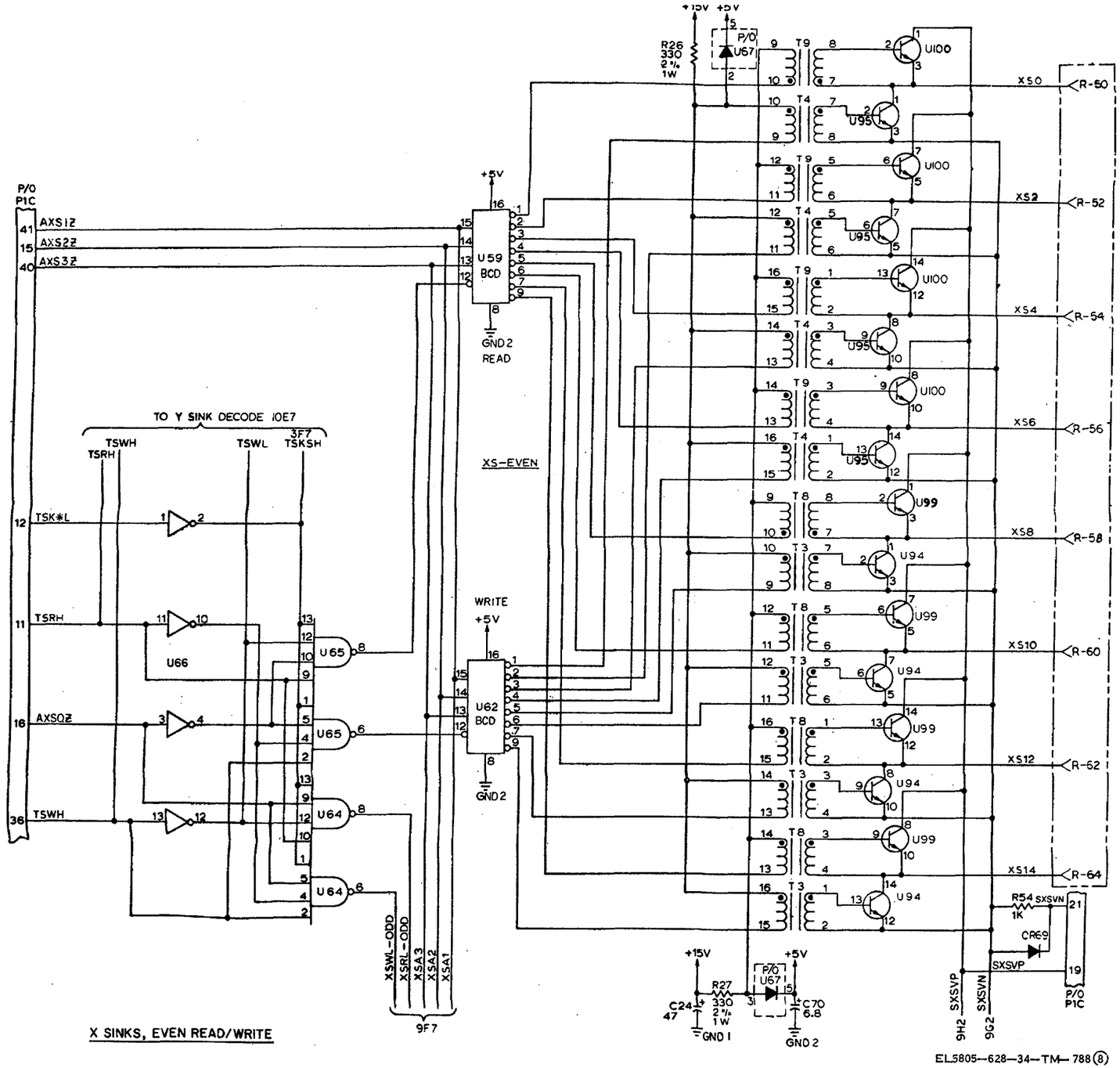


Figure 11-83 ⑧. Schematic diagram, memory data loop expansion (sheet 8).

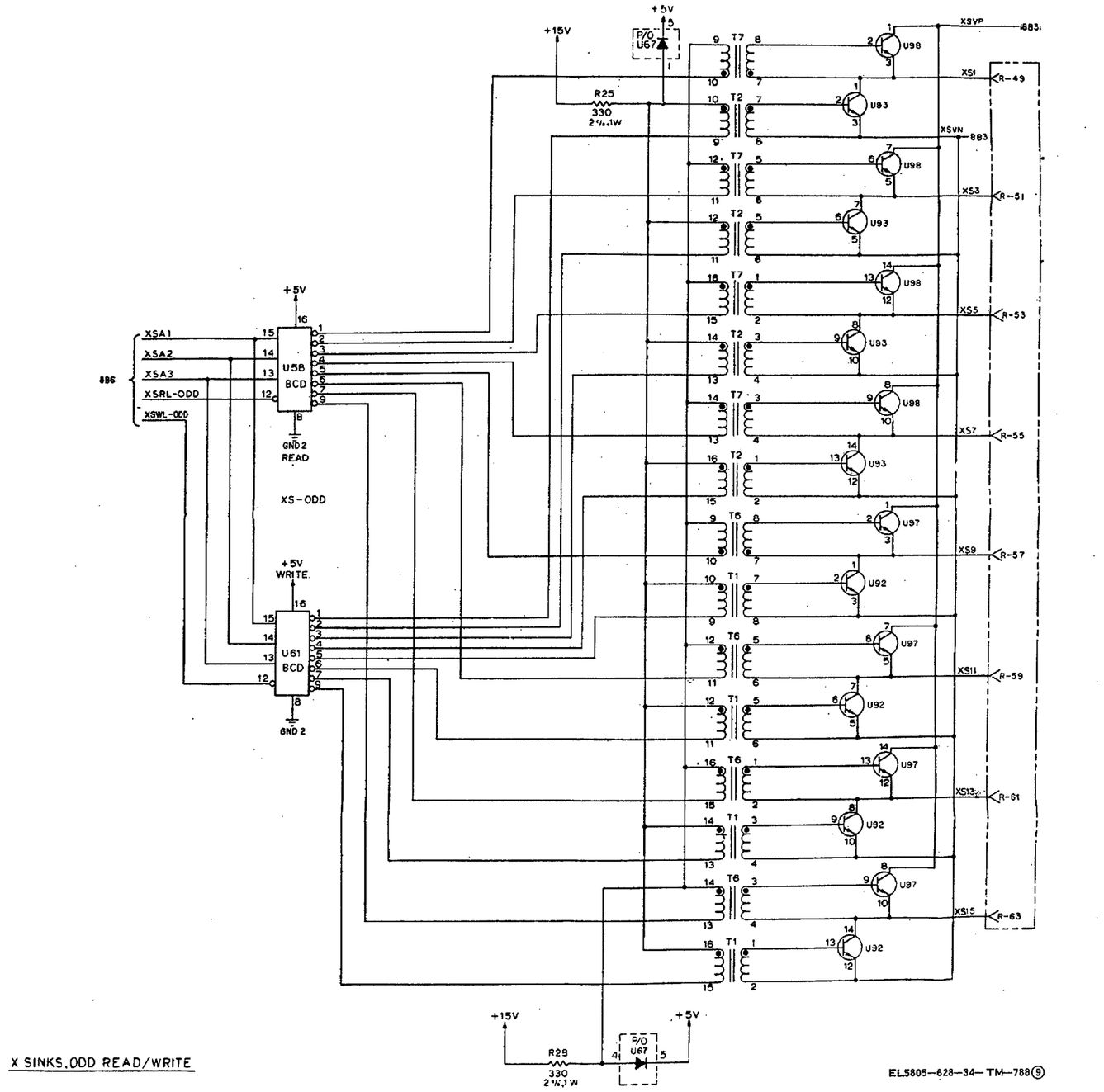
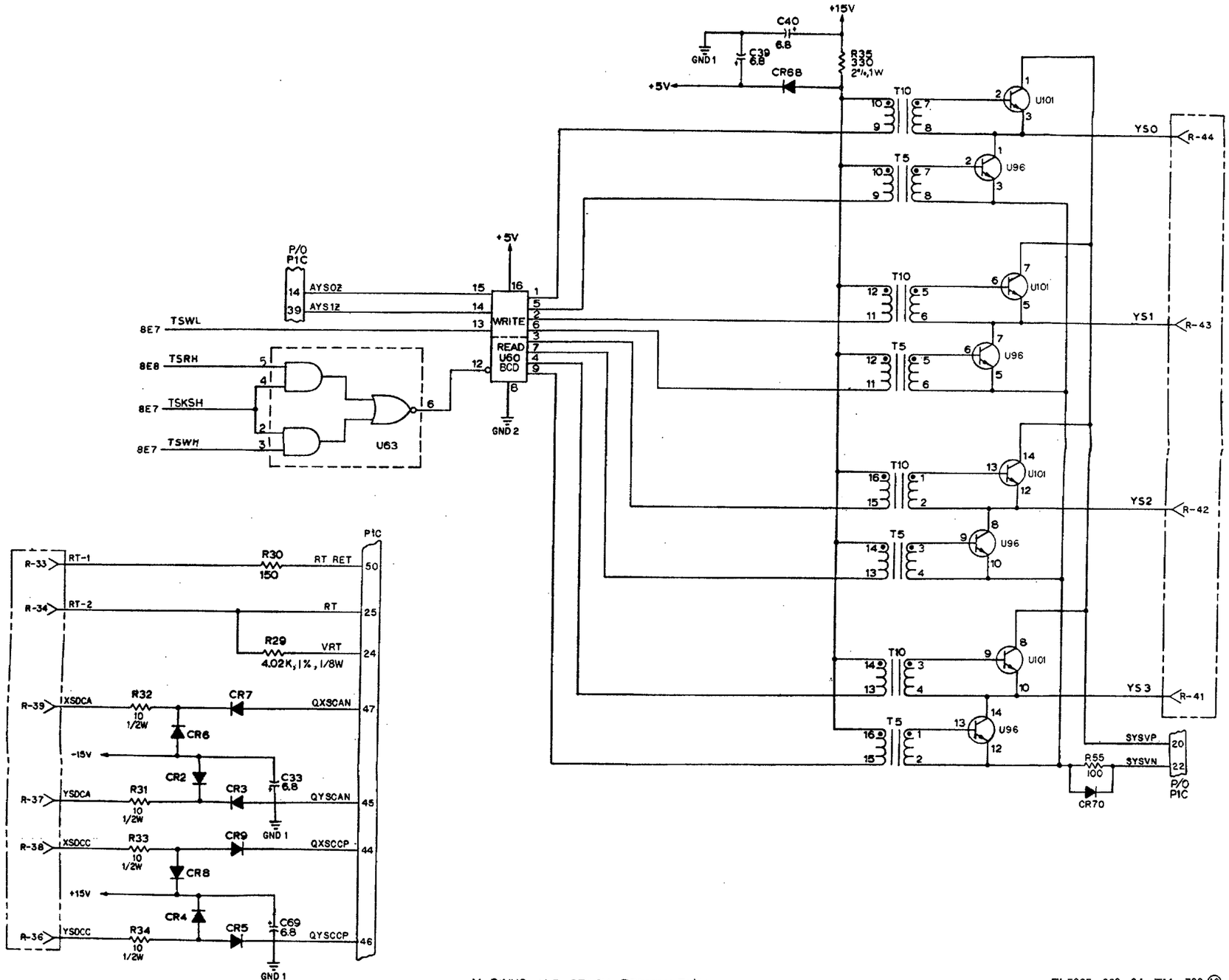


Figure 11-83 ⑨. Schematic diagram, memory data loop expansion (sheet 9).



Y SINKS AND STACK TERMINATION

EL5805—628—34—TM—788 ⑩

Figure 11-83 ⑩. Schematic diagram, memory data loop expansion (sheet 10).

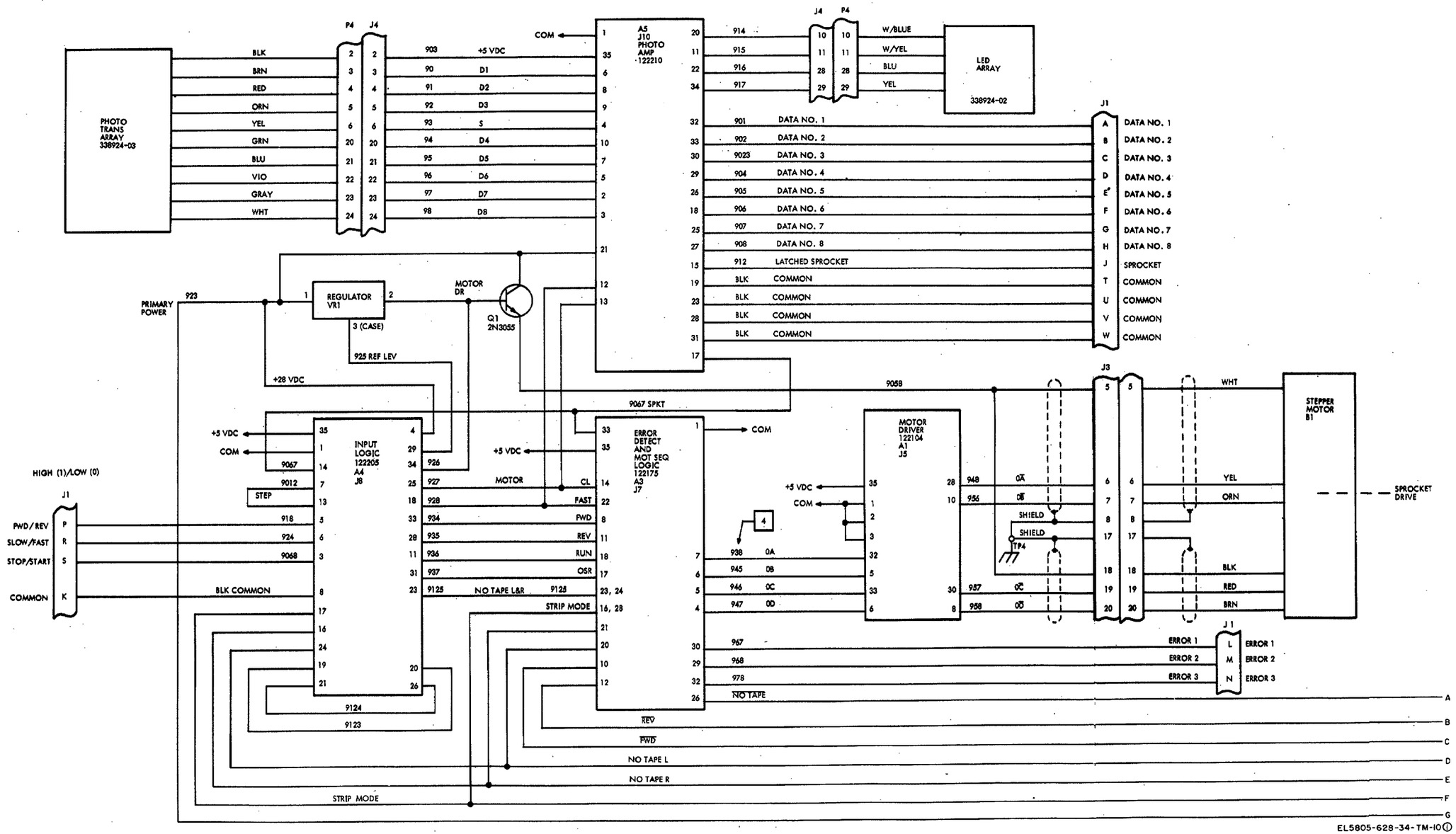


Figure 11-84 ①. Schematic diagram, tape reader (sheet 1).

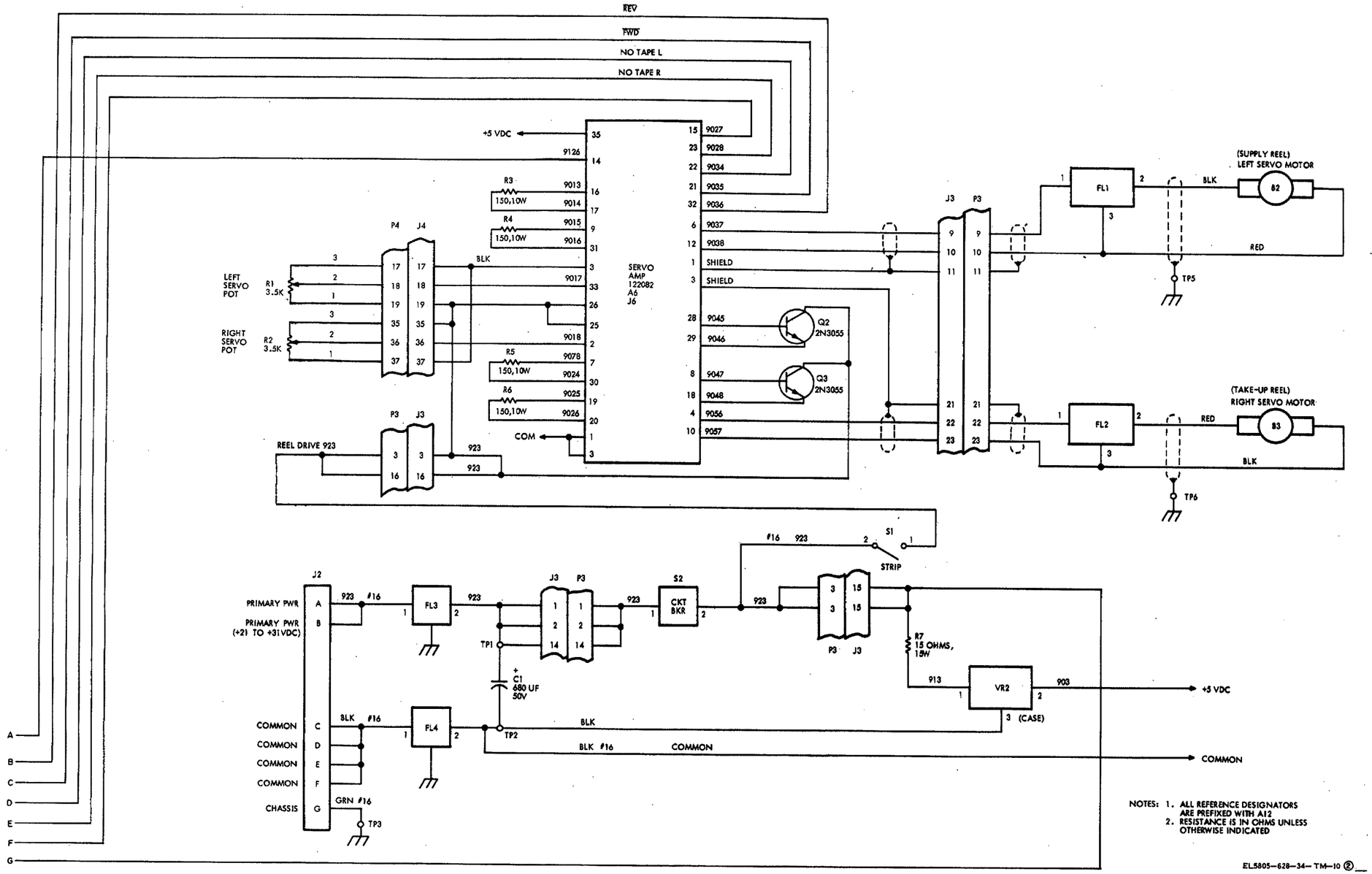


Figure 11-84 ② Schematic diagram, tape reader (sheet 2).

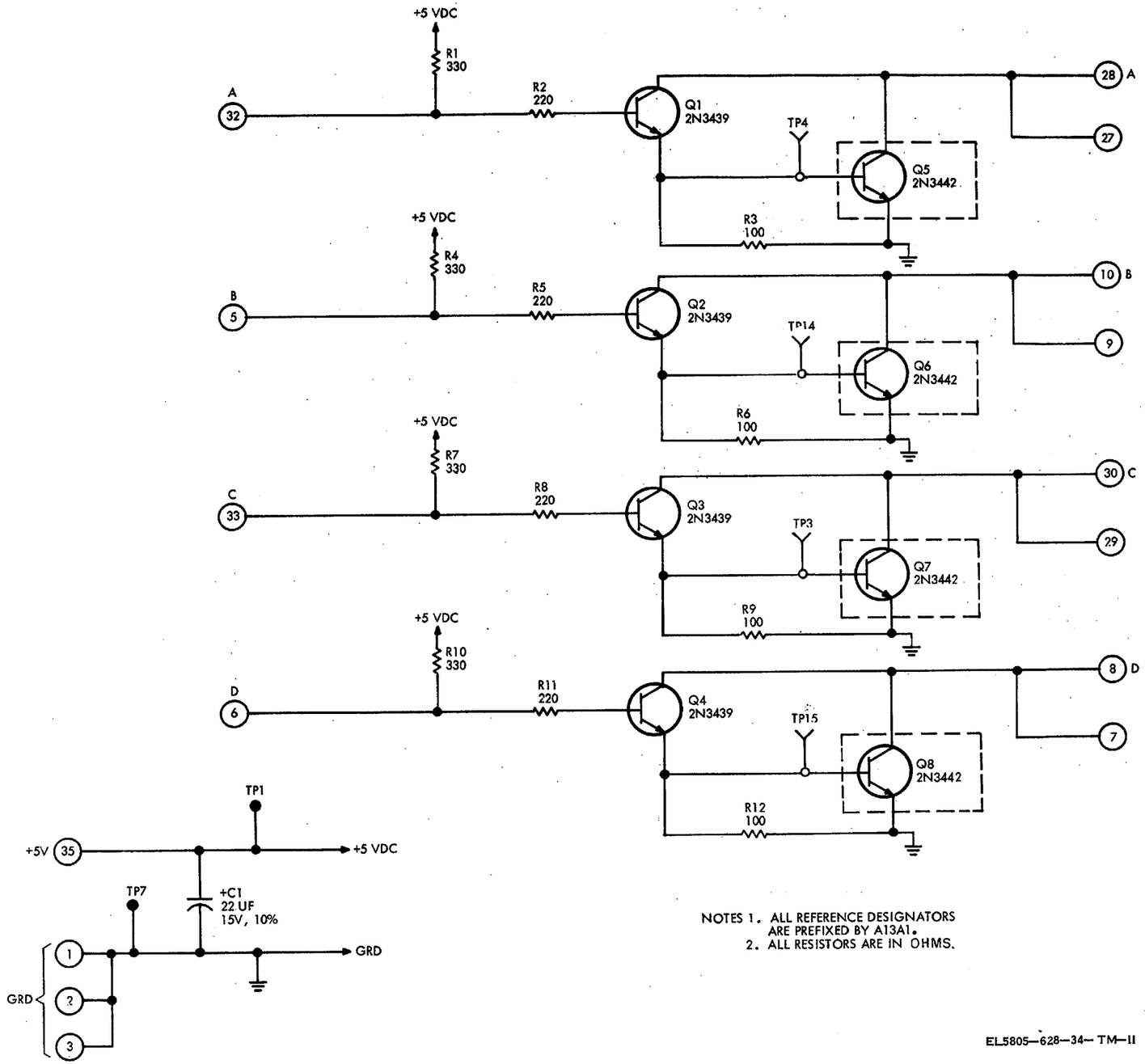


Figure 11-85. Schematic diagram, motor drive assembly.

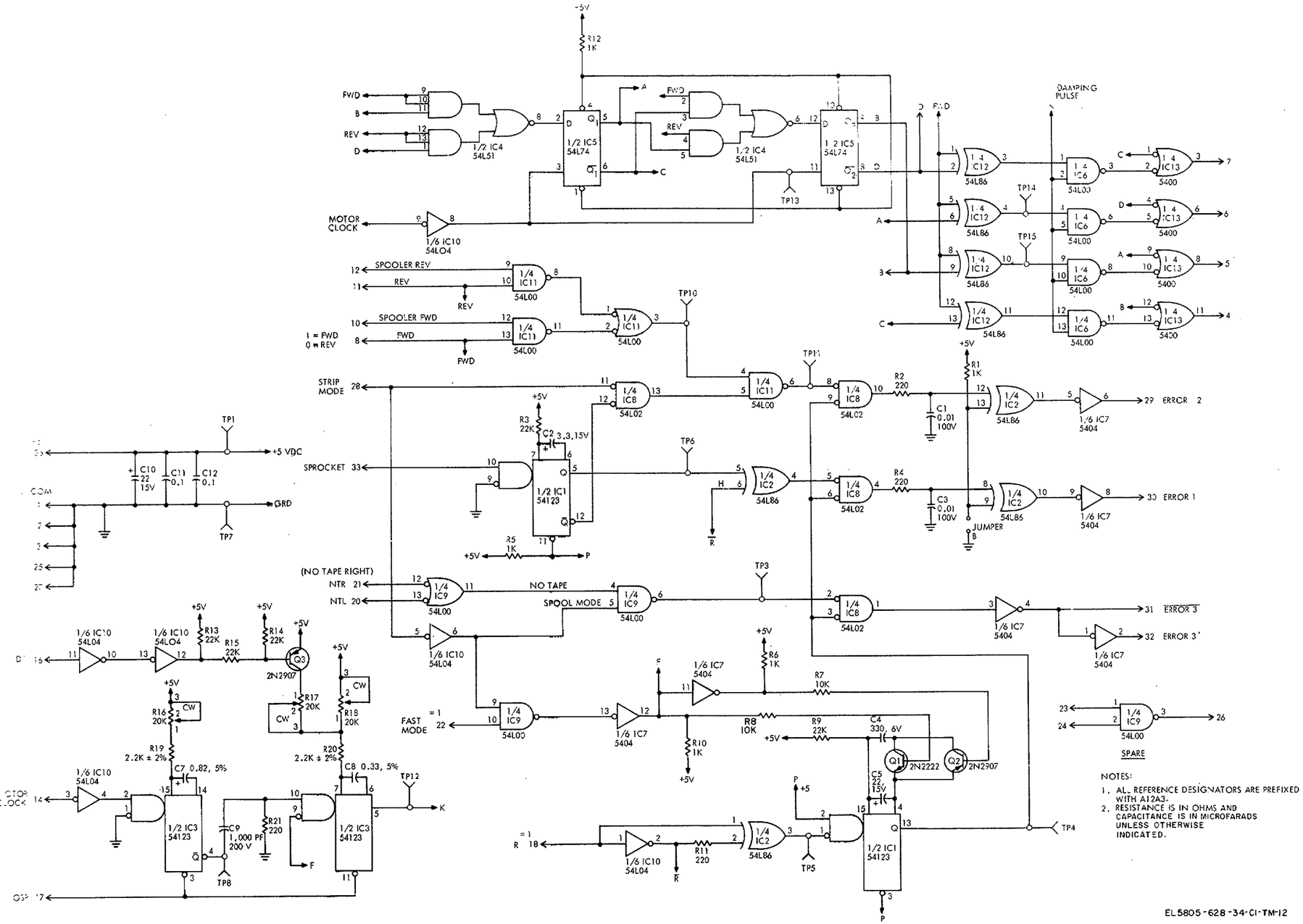


Figure 11-86. Schematic diagram, error detector and motor sequence logic.

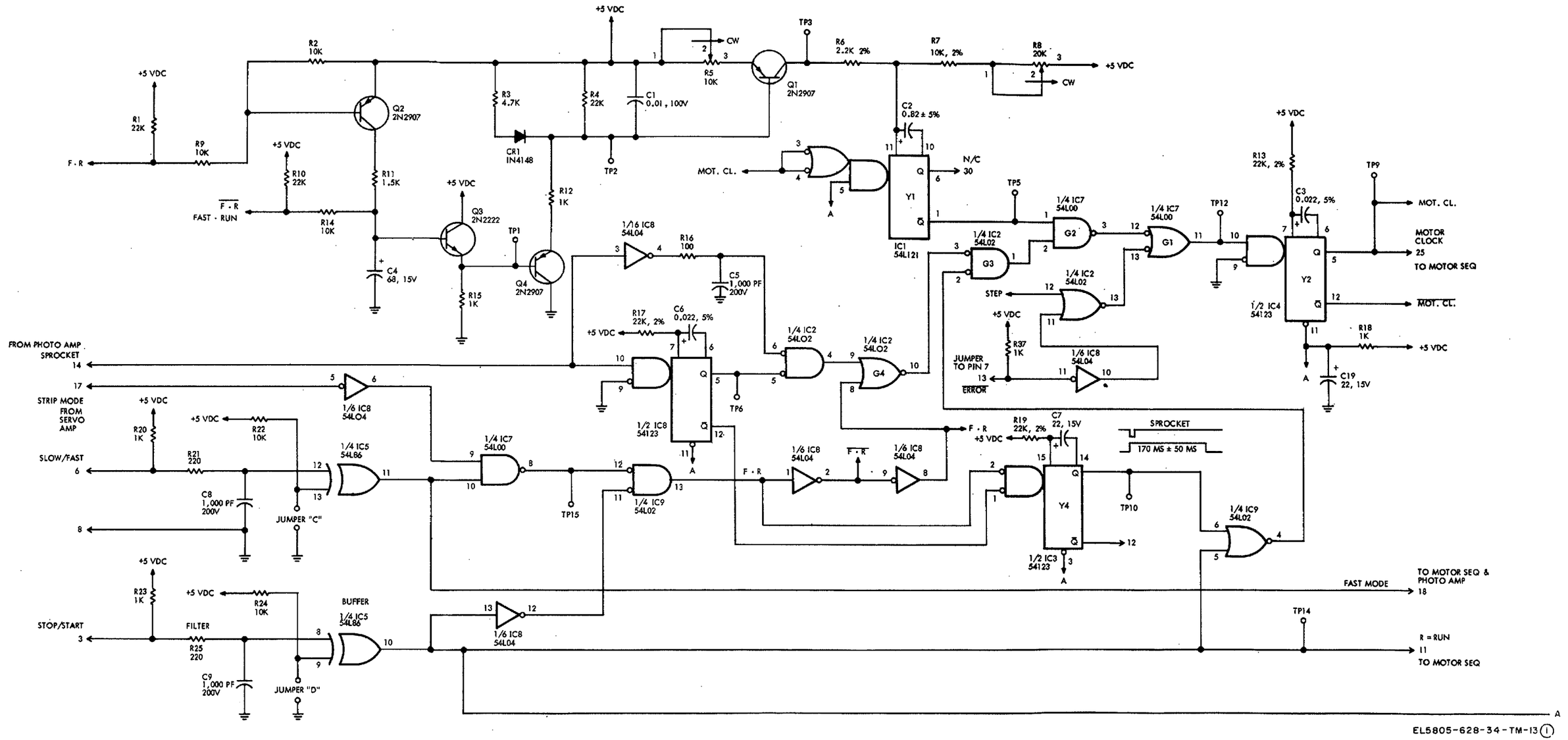
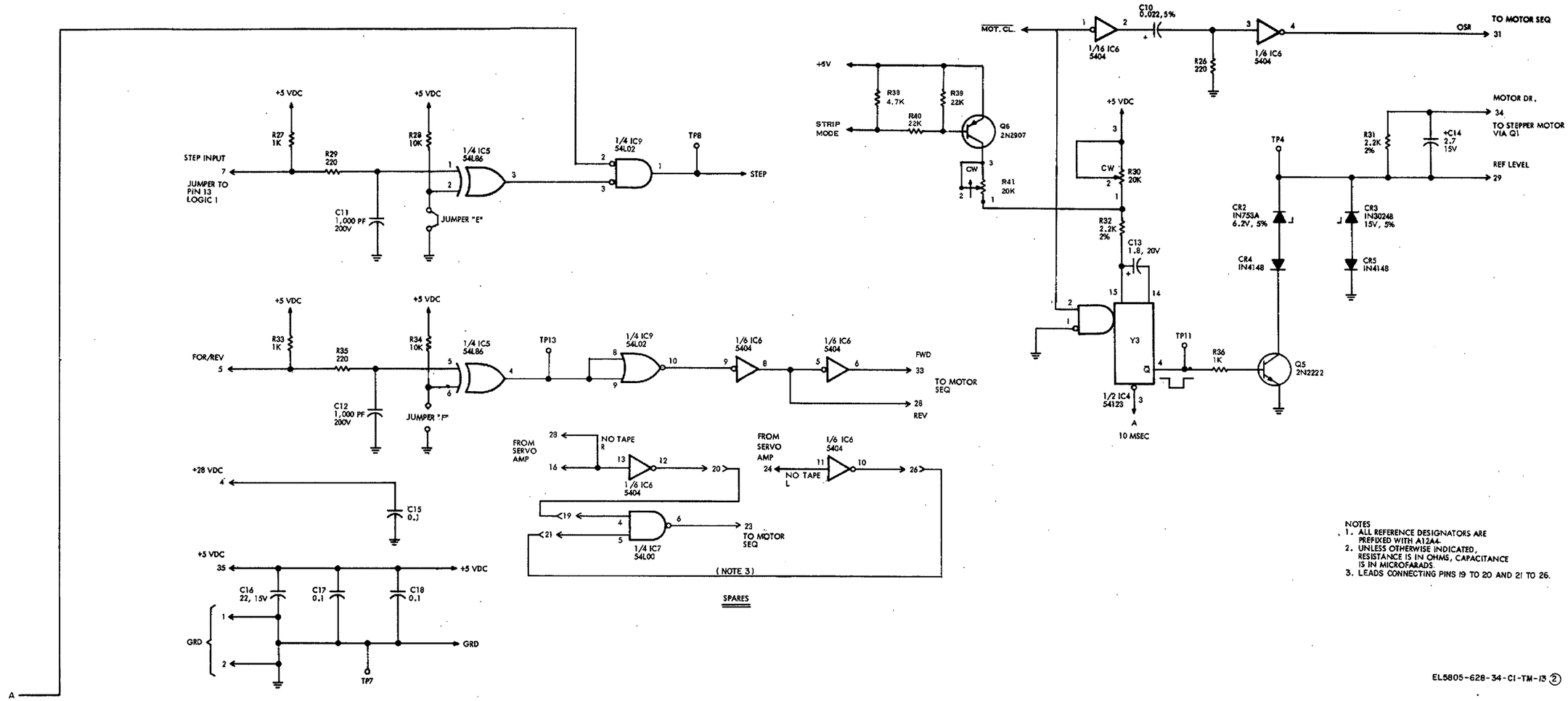


Figure 11-87 ①. Schematic diagram input logic (sheet 1).



NOTES
1. ALL REFERENCE DESIGNATORS ARE PREFIXED WITH A12A4.
2. UNLESS OTHERWISE INDICATED, RESISTANCE IS IN OHMS, CAPACITANCE IS IN MICROFARADS.
3. LEADS CONNECTING PINS 19 TO 20 AND 21 TO 26.

EL5805-628-34-CI-TM-13 ②

Figure 11-87 ②. Schematic diagram, input logic (sheet 2).

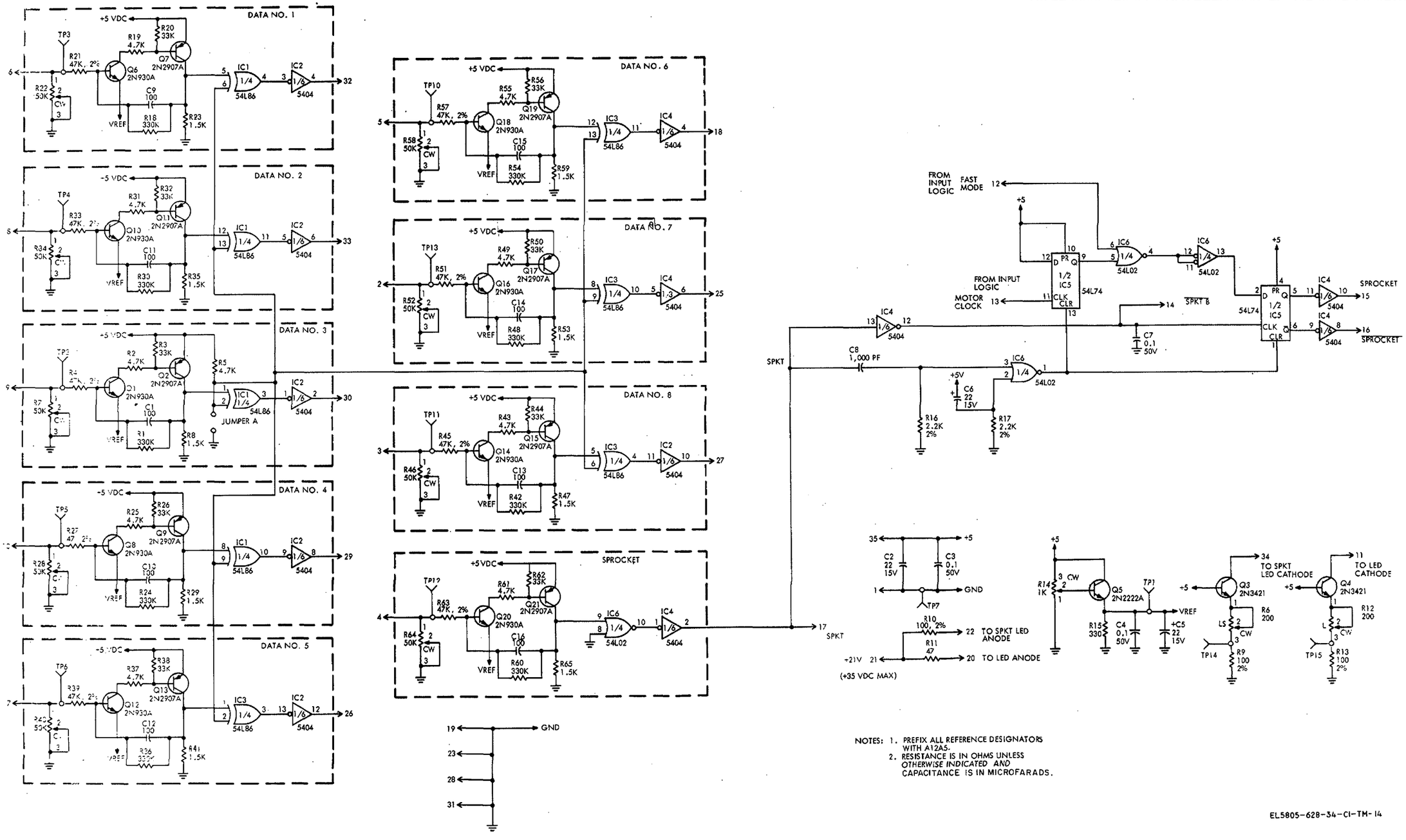


Figure 11-88. Schematic diagram, photo amplifier.

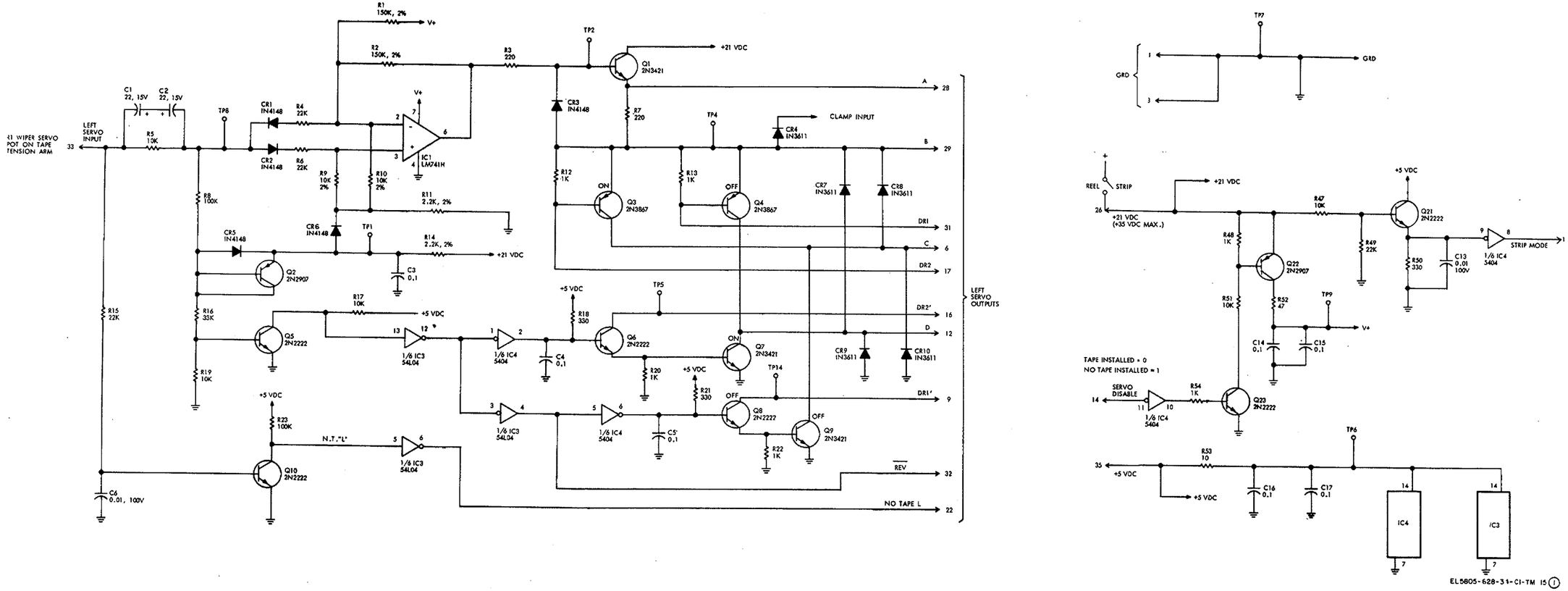


Figure 11-89 ①. Schematic diagram, servo amplifier (sheet 1).

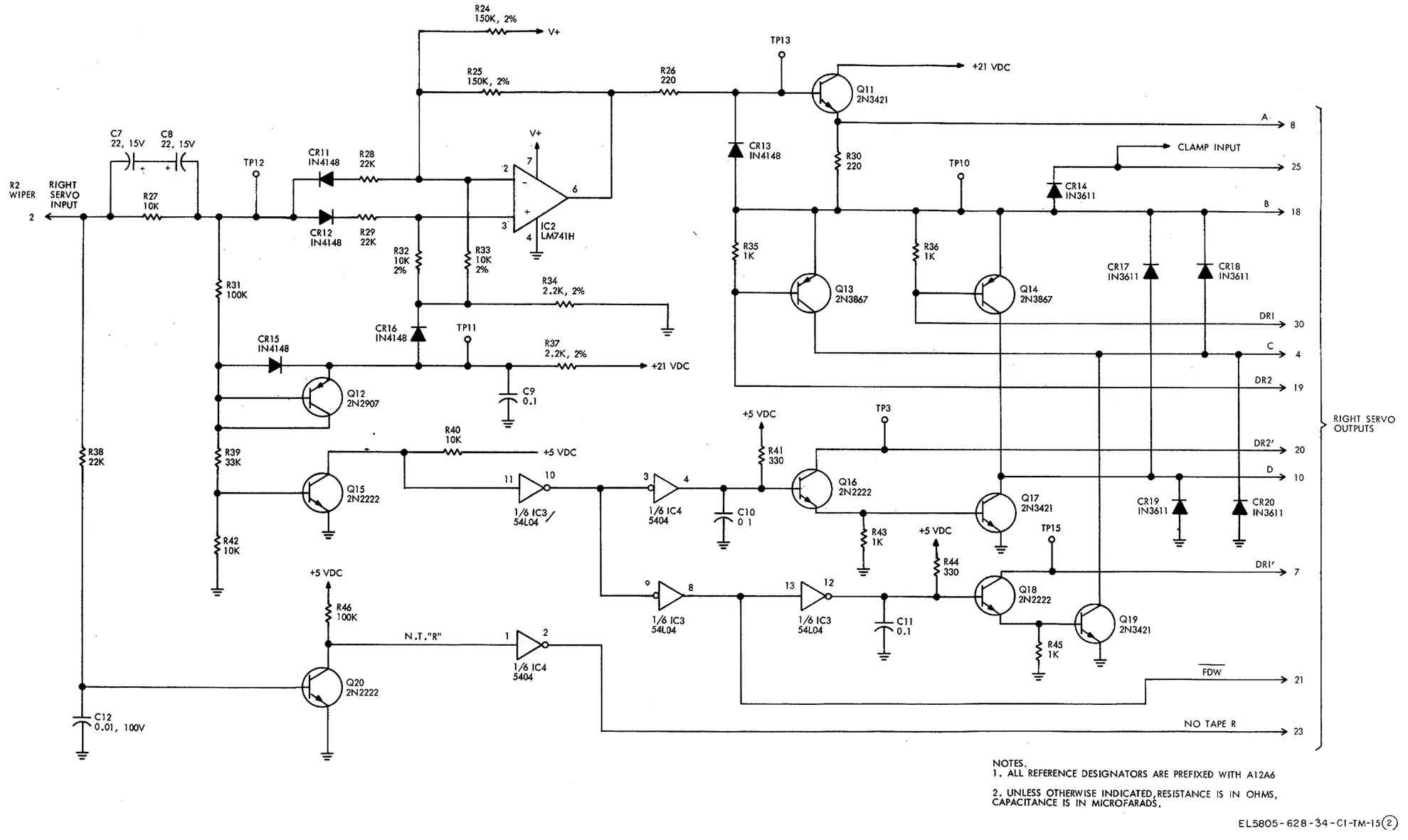
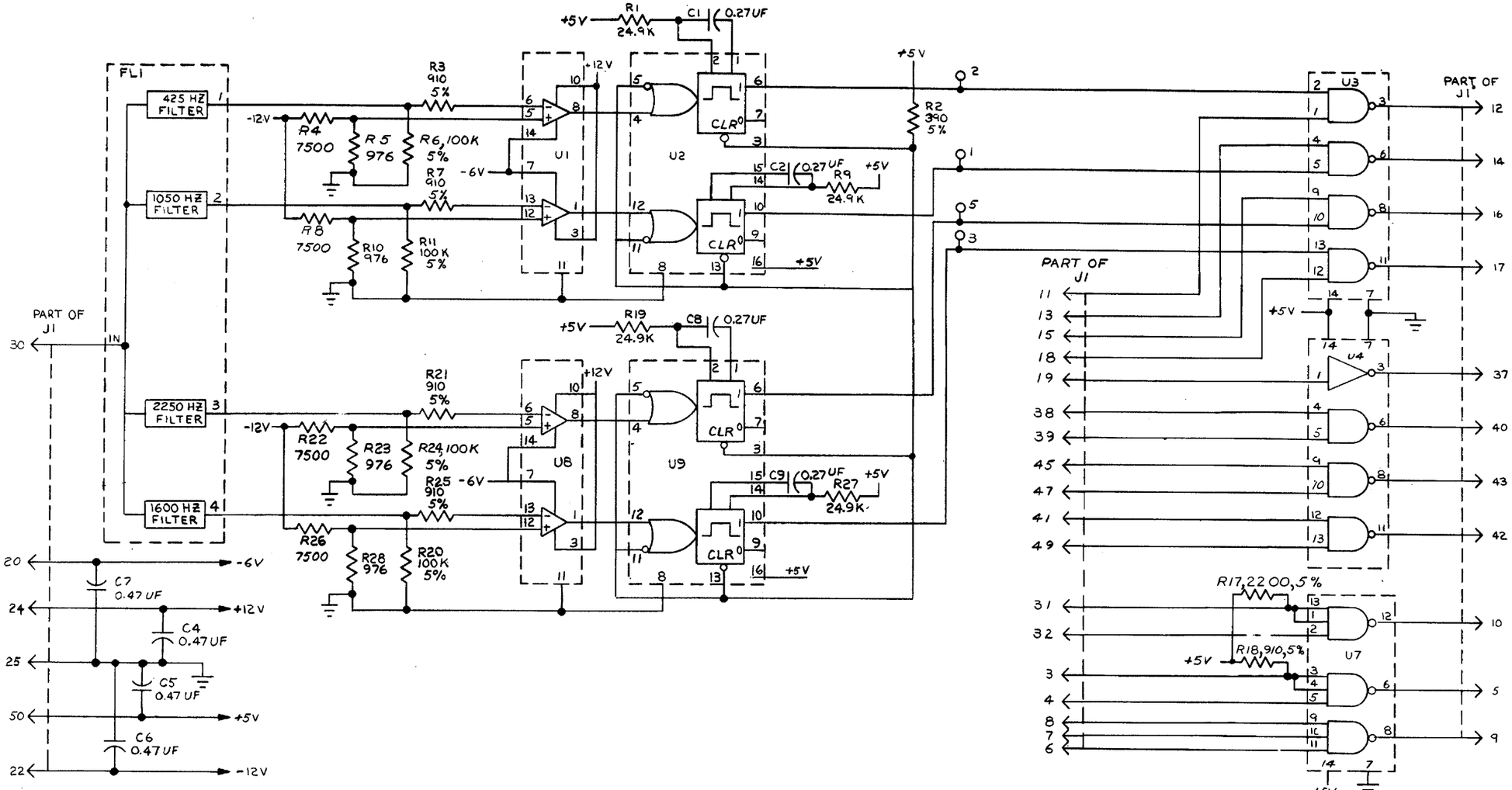


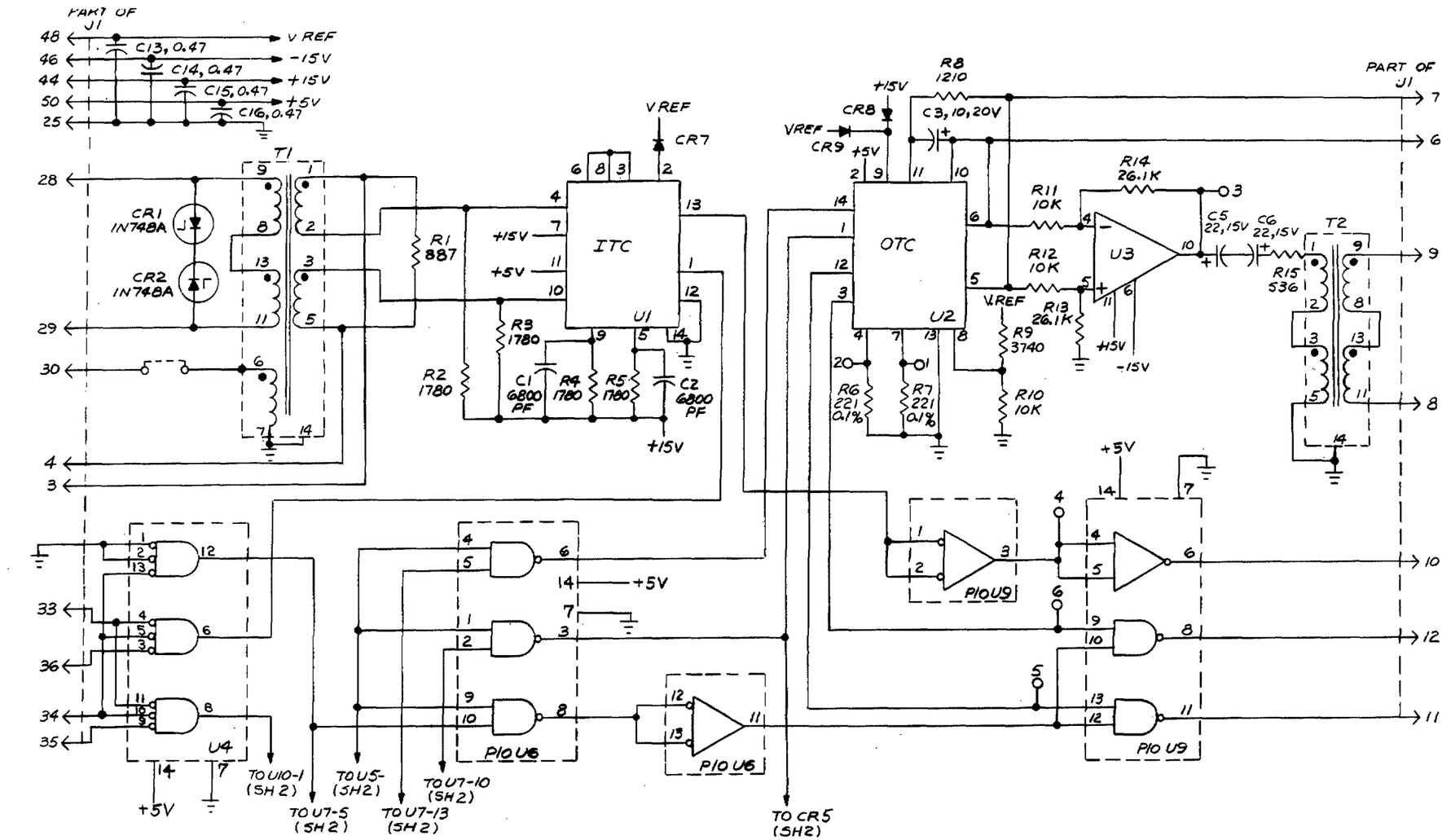
Figure 11-89 ②. Schematic diagram, servo amplifier (sheet 2).



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. O DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±1%.
4. U1 AND U8 ARE TYPE SM-A-742443-1.
   U2 AND U9 ARE TYPE SM-A-742436-1.
   U3 AND U4 ARE TYPE SM-A-742833-1.
   U7 IS TYPE SM-A-742828-1.

Figure 11-90. Schematic diagram, auxiliary sender/receiver (DM).



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. O DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ± 1%, 1/10 WATT. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
4. U1 AND U10 ARE TYPE SM-A-742202-2; U2 AND U11 ARE TYPE SM-A-742203-1. U3 AND U12 ARE TYPE SM-A-742842-1; U4 IS TYPE SM-A-742830-1. U5 IS TYPE SM-A-742822-1; U6 AND U7 ARE SM-A-742486-1. U8 AND U9 ARE TYPE SM-A-742823-1; CR5 THRU 12 ARE IN4148.

EL5805—628—34— TM—790①

Figure 11-91 ①. Schematic diagram, service terminal (sheet 1).

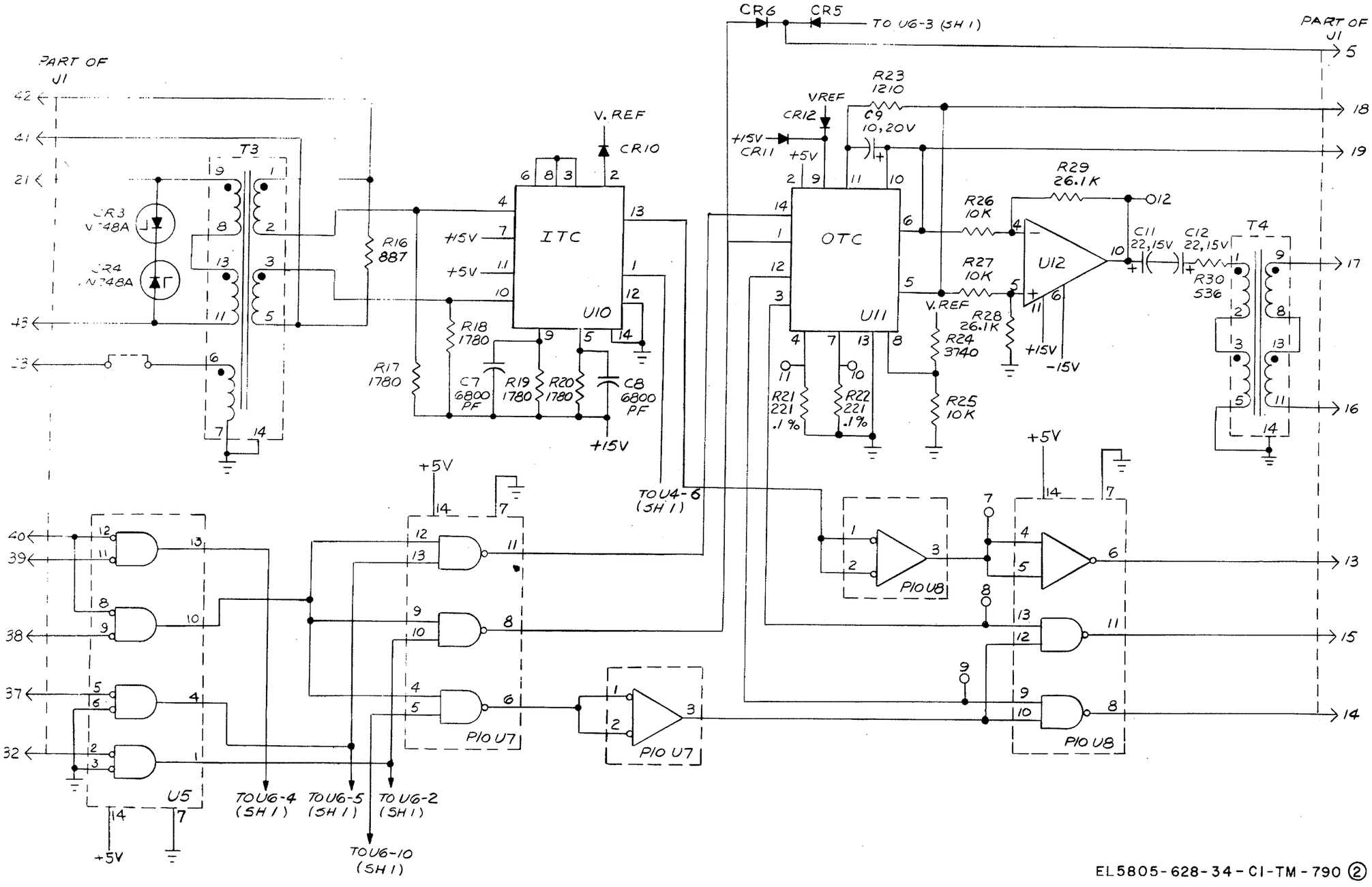
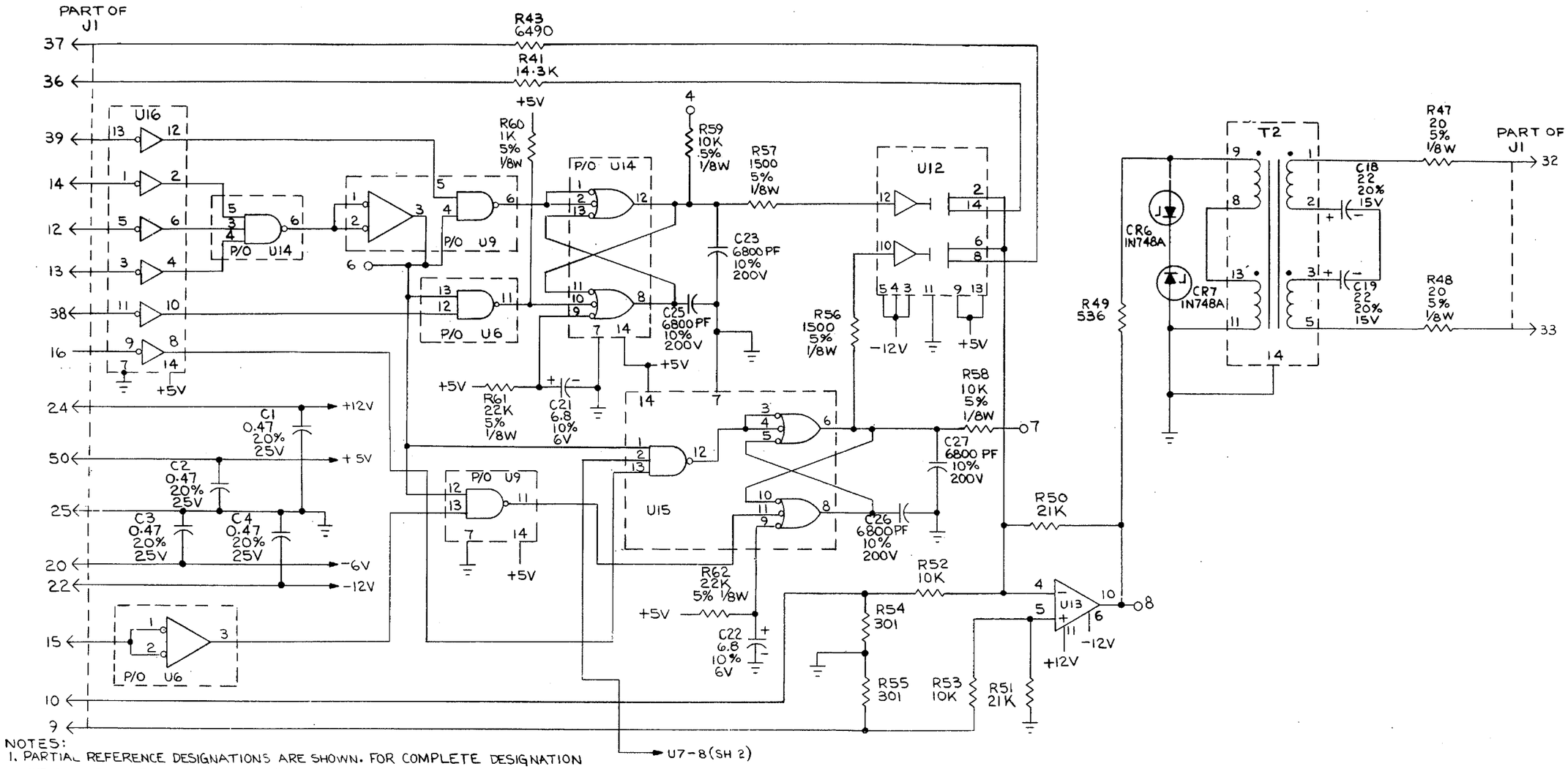


Figure 11-91 ②. Schematic diagram, service terminal (sheet 2).



NOTES:
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE VALUES ARE IN OHMS, ±1%, 1/10 W.
   ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. O DENOTES TEST POINT.
4. U1, U11 AND U13 ARE TYPE SM-A-742842-1. U2 AND U4 ARE TYPE SM-A-742435-1. U3 AND U7 ARE TYPE SM-A-742443-1. U5 IS TYPE SM-A-742436-1. U6 IS TYPE SM-A-742823-1. U8 AND U9 ARE TYPE SM-A-742486-1. U10 AND U12 ARE TYPE SM-A-742205-2. U14 AND U15 ARE TYPE SM-A-742828-1. U16 IS TYPE SM-A-742824-1.

EL5805—628—34— TM—79i①

Figure 11-92 ①. Schematic diagram, 1600Hz line/trunk adapter (sheet 1).

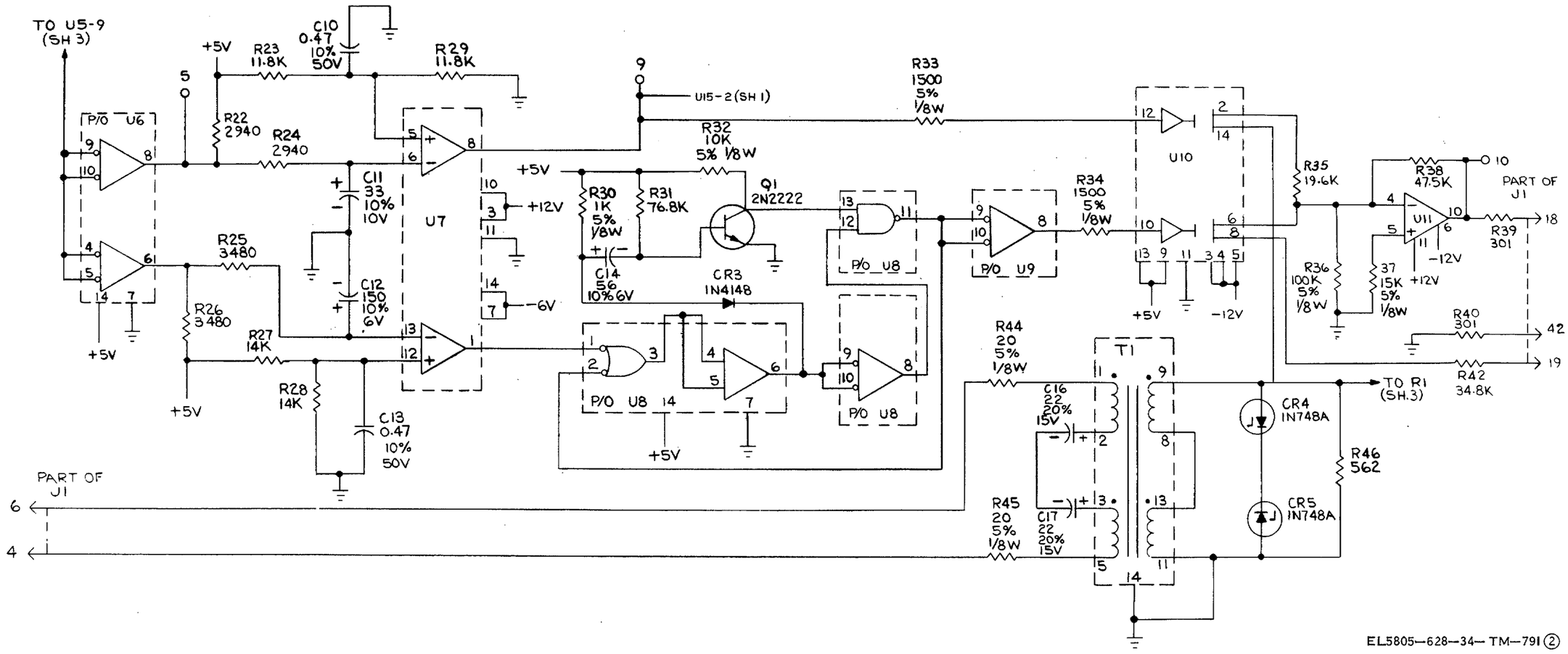


Figure 11-92 ②. Schematic diagram, 1600Hz line/trunk adapter (sheet 2).

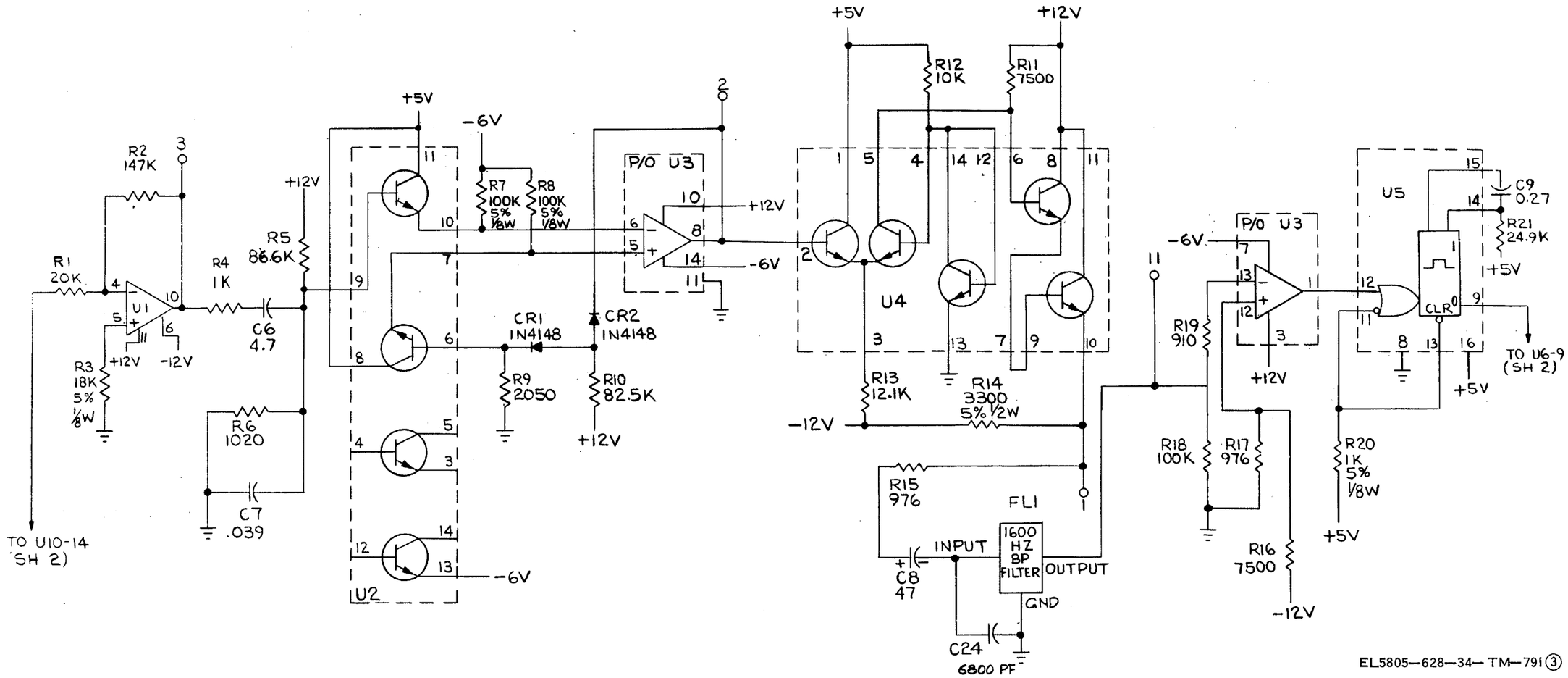
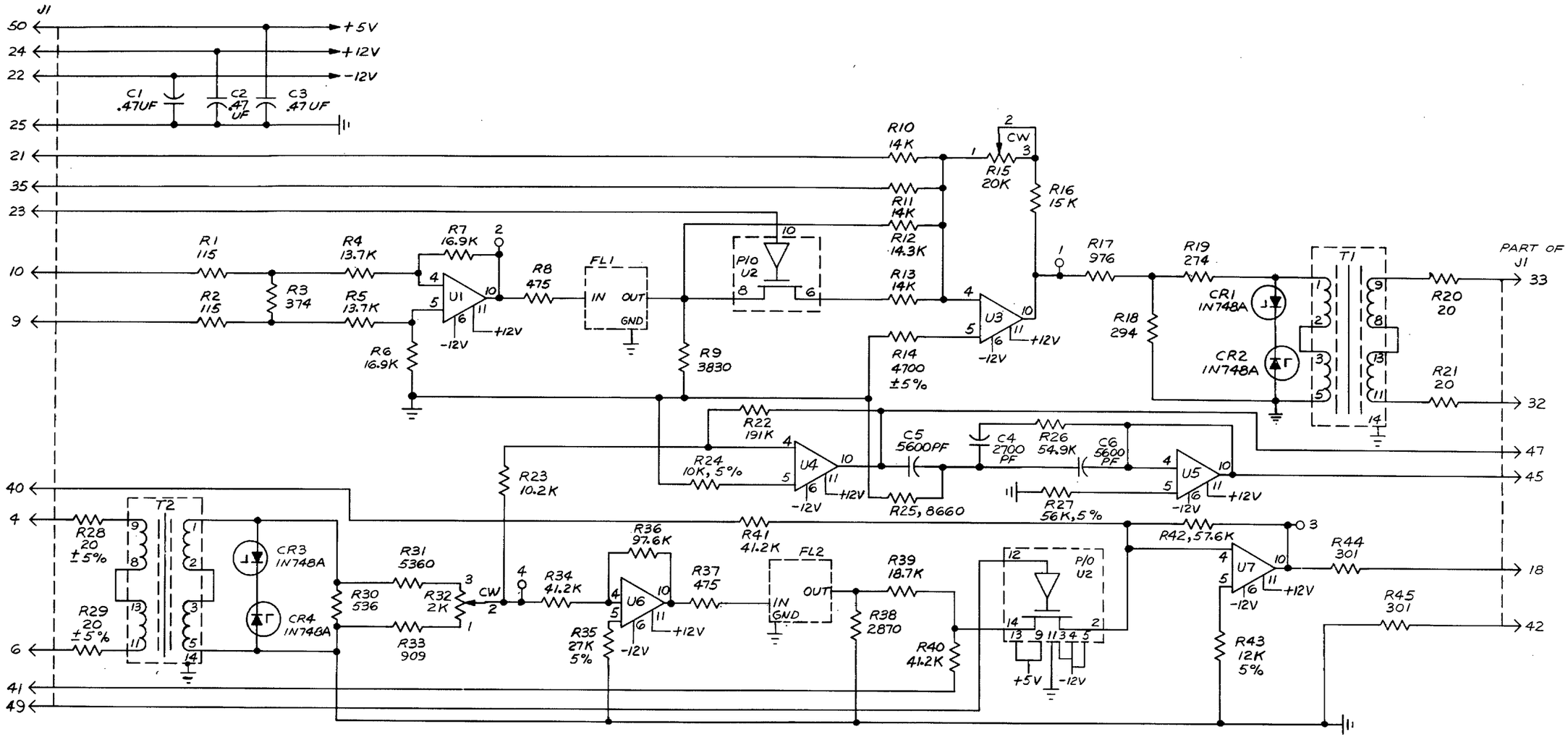


Figure 11-92 ③. Schematic diagram, 1600Hz line/trunk adapter (sheet 3).



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. O DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±1%.
4. U1 AND U3 THRU U7 ARE TYPE SM-A-742842-1. U2 IS TYPE SM-A-742205-2.

EL5805—628—34—TM—792

Figure No. 11-93. Schematic diagram, AUTOVON/SF card A.

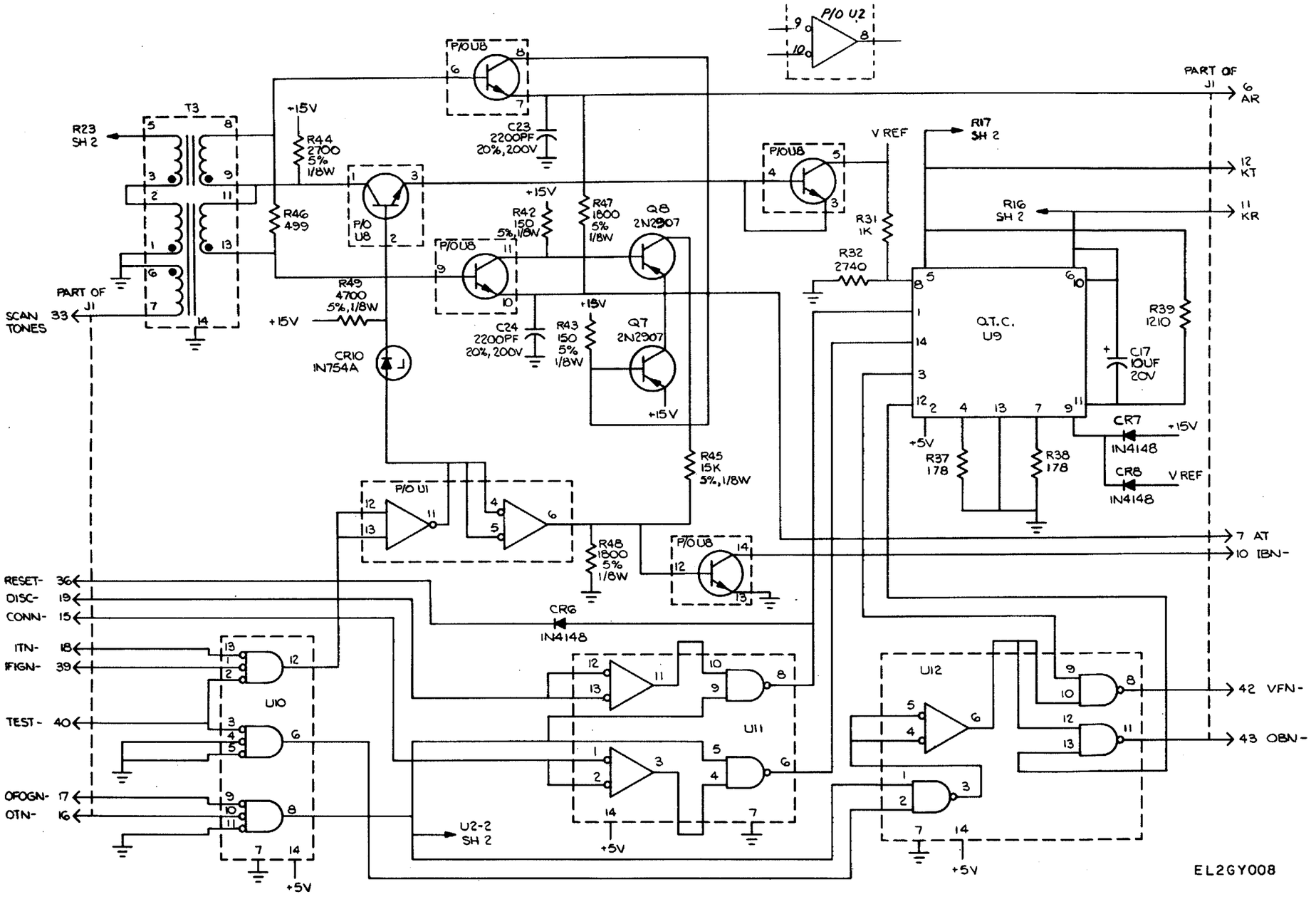
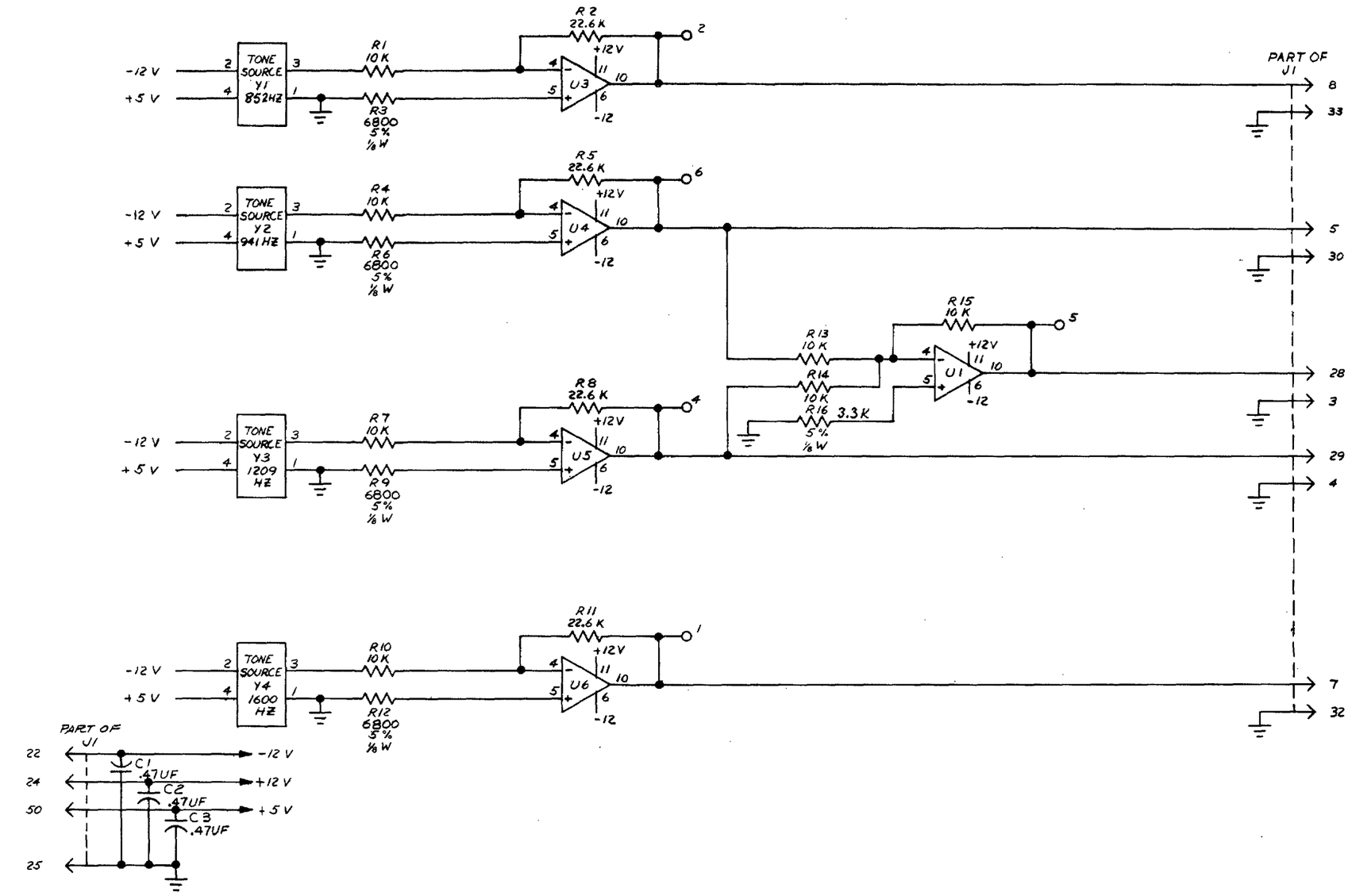


Figure No. 11-94 ③. Schematic diagram, commercial DTMF line circuit (sheet 3 of 3)

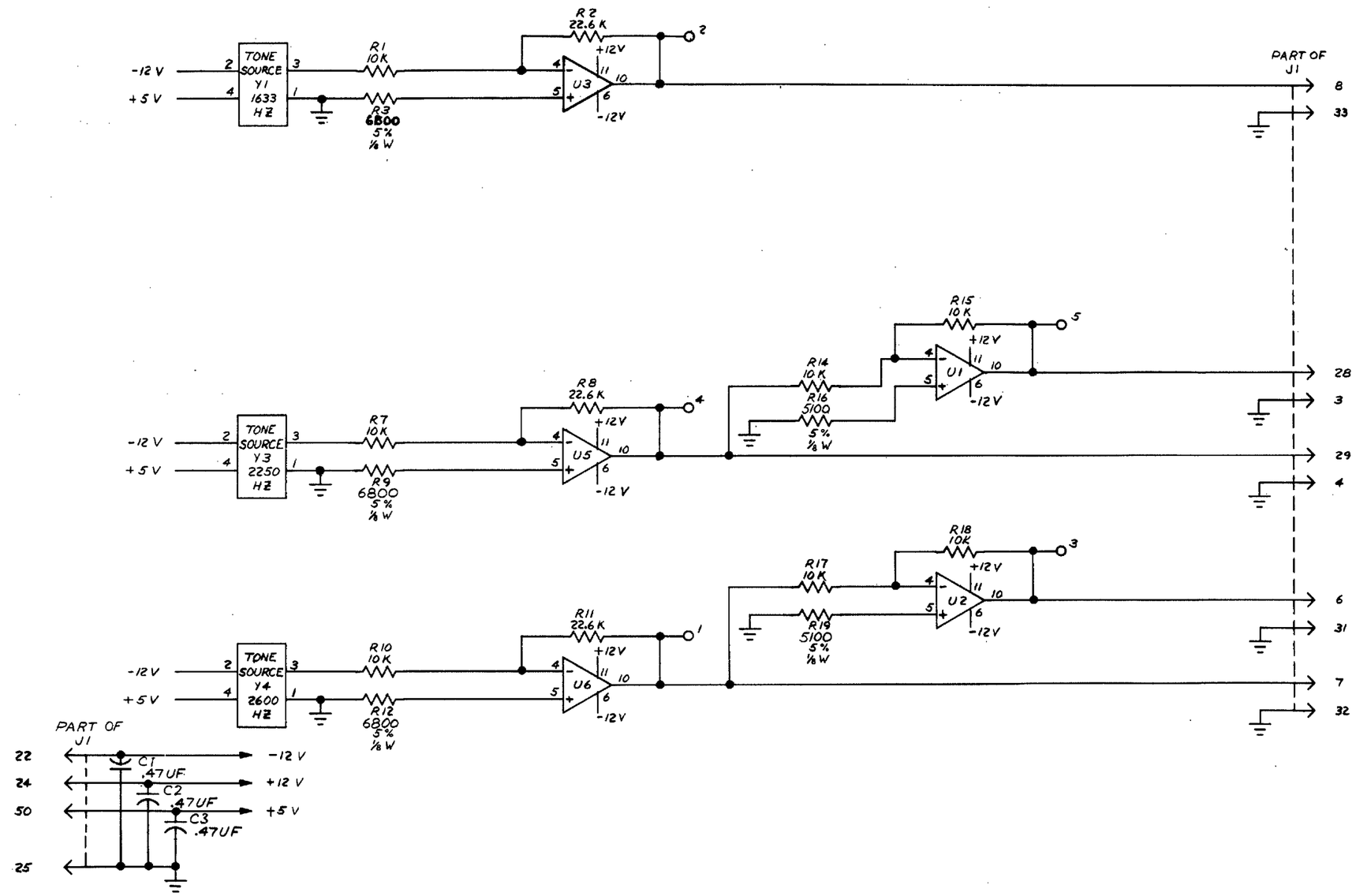


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. ○ DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ± 1%, 1/10 WATT.
4. U1, U3, U4, U5 AND U6 ARE TYPE SM-A-742842-1.

EL5805-628-34-TM-794

Figure 11-95. Schematic diagram, tone source A.



NOTES

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. O DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS. ± 1%. 1/10 WATT.
4. U1, U2, U3, U5 AND U6 ARE TYPE SM-A-742842-1.

EL5805—628—34— TM—795

Figure 11-96. Schematic Diagram, tone source B.

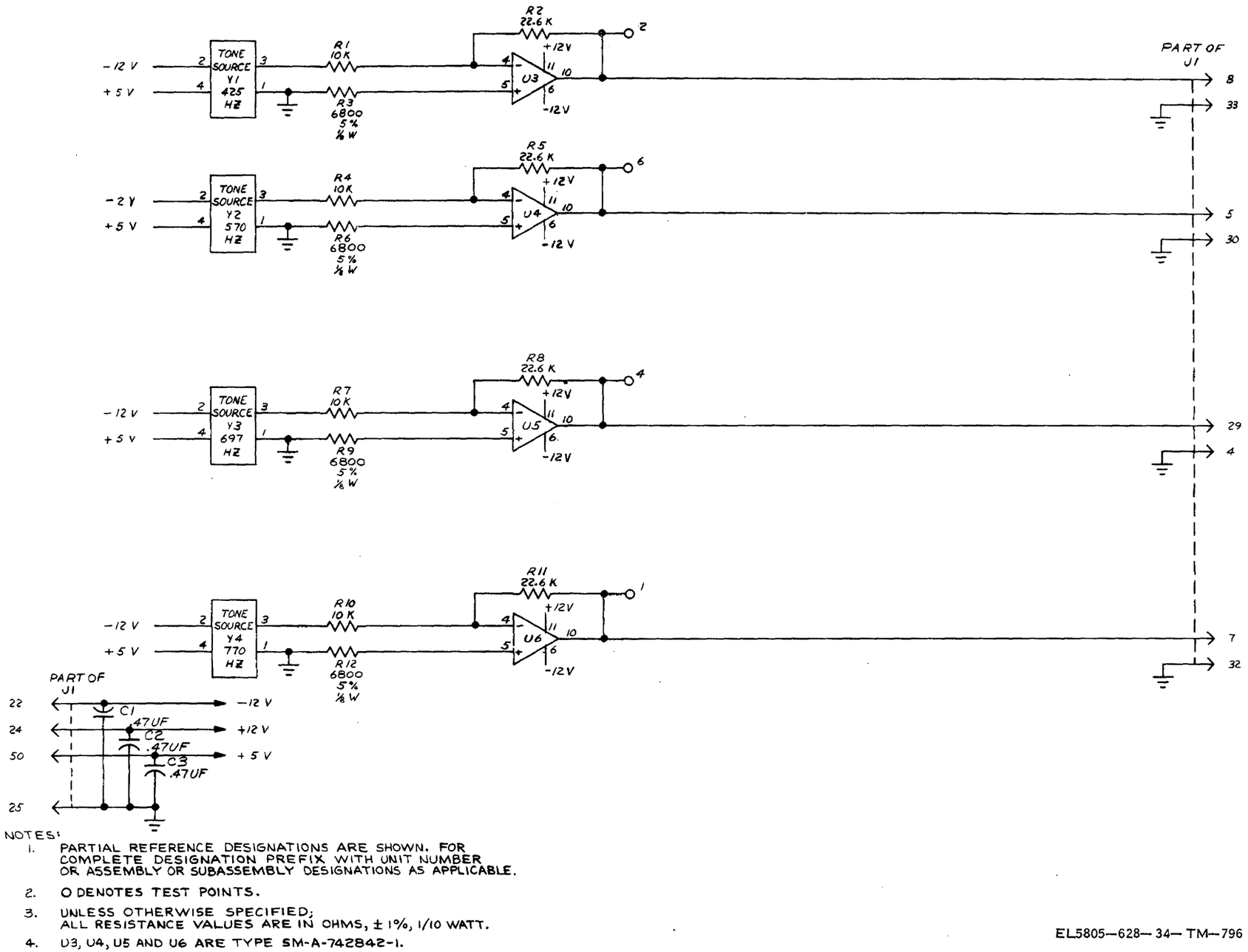


Figure 11-97. Schematic diagram, tone source C.

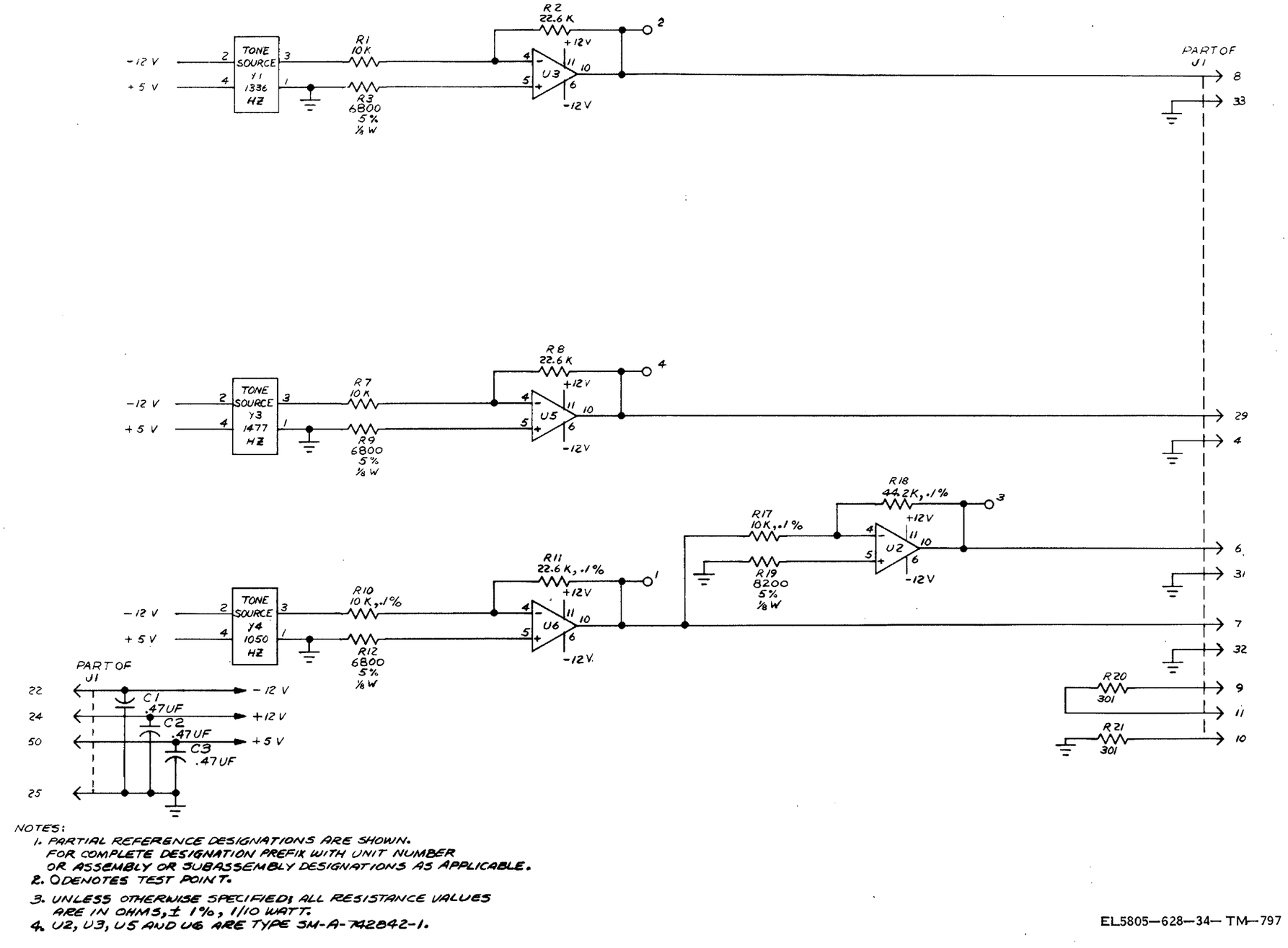
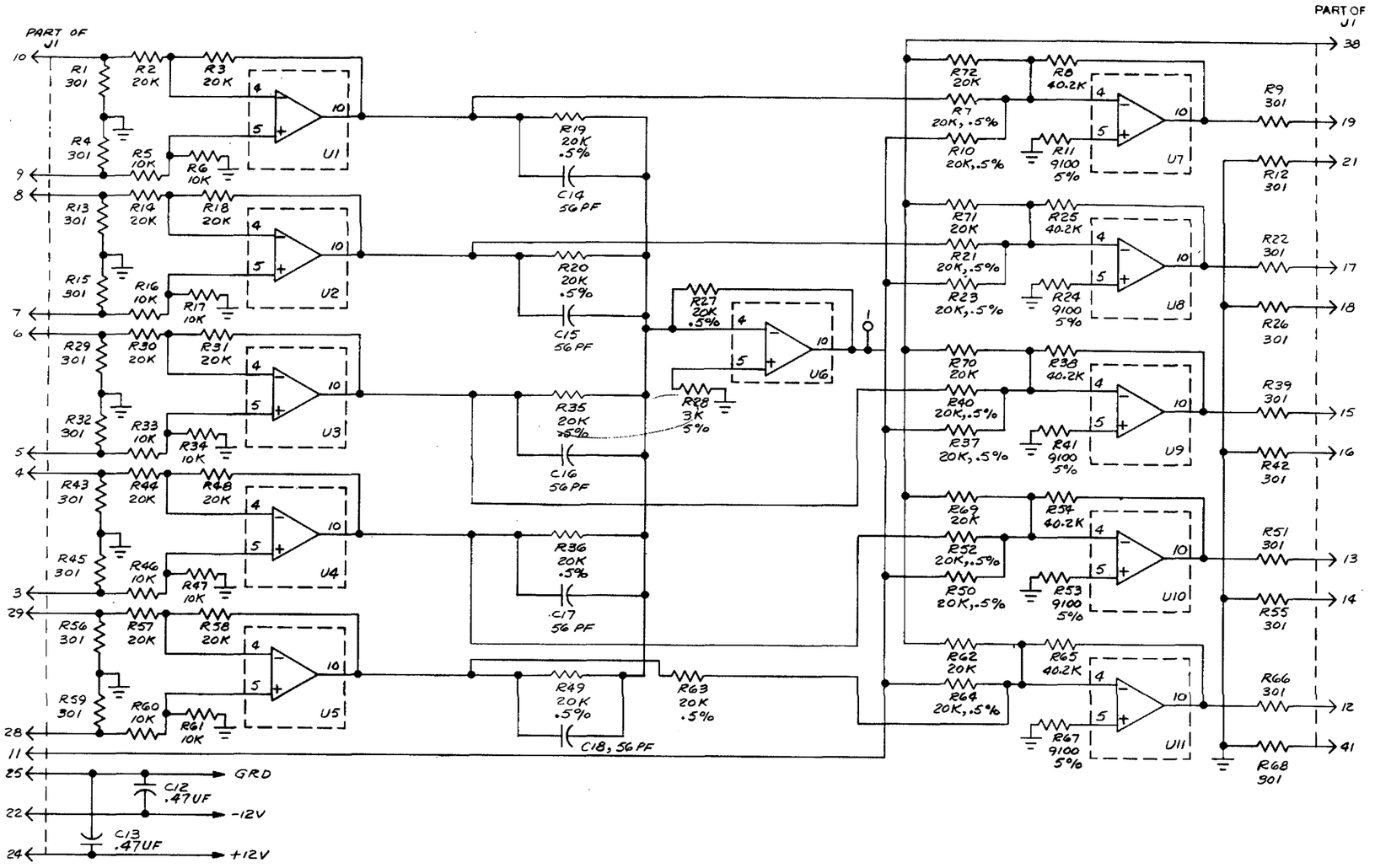


Figure 11-98. Schematic diagram, tone source D.

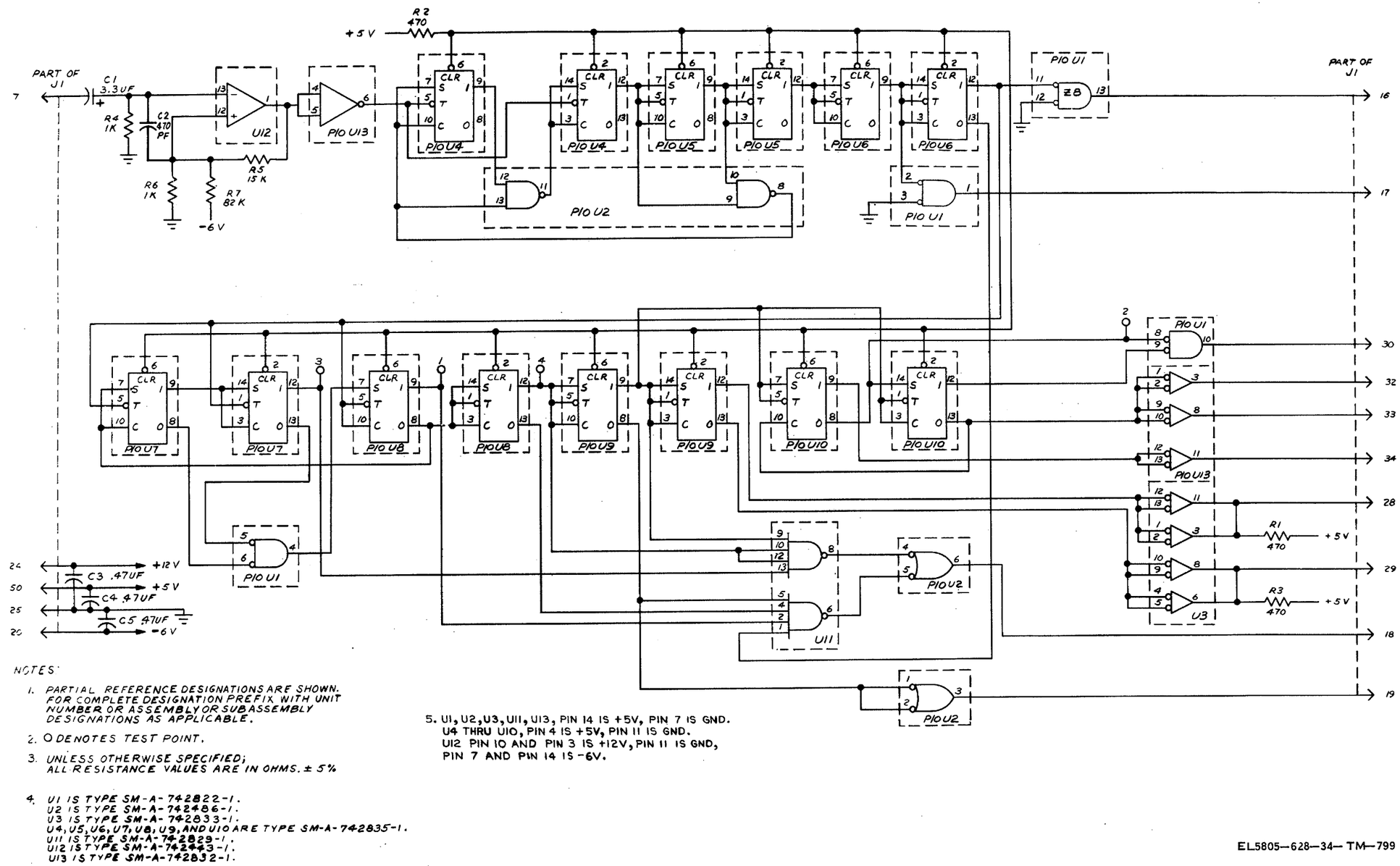


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±1%.
3. U1 THRU U11 ARE TYPE SM-A-742842-1.
4. PIN 11 OF U1 THRU U11 IS +12V. PIN 6 OF U1 THRU U11 IS −12V.
5. ODENOTES TEST POINT.

EL5805—628—34— TM—798

Figure 11-99. Schematic diagram, conference bridge.

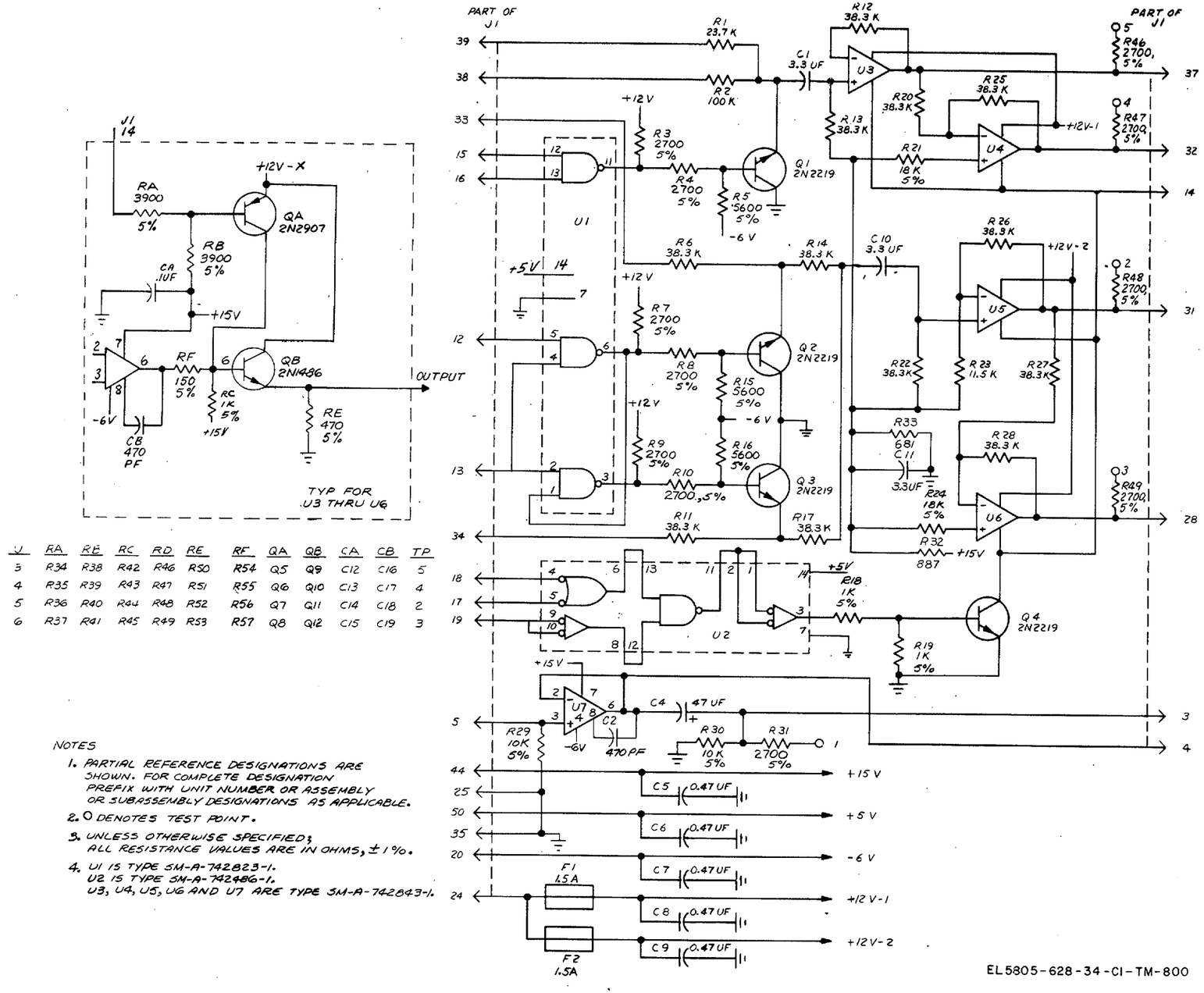


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. O DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS. ± 5%
4. U1 IS TYPE SM-A-742822-1.
   U2 IS TYPE SM-A-742486-1.
   U3 IS TYPE SM-A-742833-1.
   U4, U5, U6, U7, U8, U9, AND U10 ARE TYPE SM-A-742835-1.
   U11 IS TYPE SM-A-742829-1.
   U12 IS TYPE SM-A-742443-1.
   U13 IS TYPE SM-A-742832-1.
5. U1, U2, U3, U11, U13, PIN 14 IS +5V, PIN 7 IS GND. U4 THRU U10, PIN 4 IS +5V, PIN 11 IS GND. U12 PIN 10 AND PIN 3 IS +12V, PIN 11 IS GND, PIN 7 AND PIN 14 IS -6V.

EL5805—628—34— TM—799

Figure 11-100. Logic diagram, bus ringer timing.

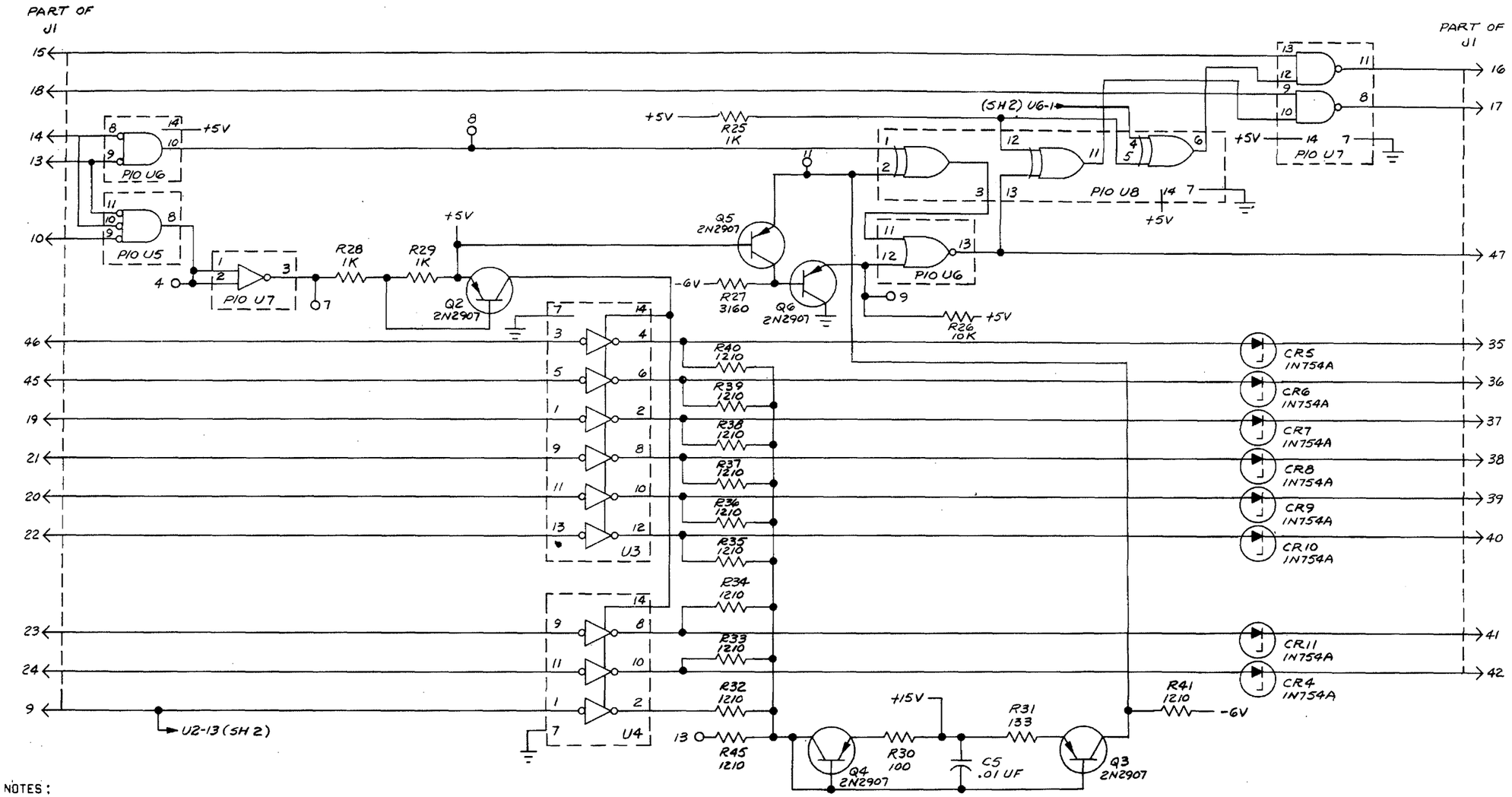


J	RA	RB	RC	RD	RE	RF	QA	QB	CA	CB	TP
3	R34	R38	R42	R46	R50	R54	Q5	Q9	C12	C16	5
4	R35	R39	R43	R47	R51	R55	Q6	Q10	C13	C17	4
5	R36	R40	R44	R48	R52	R56	Q7	Q11	C14	C18	2
6	R37	R41	R45	R49	R53	R57	Q8	Q12	C15	C19	3

NOTES

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. ○ DENOTES TEST POINT.
3. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±1%.
4. U1 IS TYPE SM-A-742823-1. U2 IS TYPE SM-A-742486-1. U3, U4, U5, U6 AND U7 ARE TYPE SM-A-742843-1.

Figure 11-101. Schematic diagram, bus ringer amplifier.



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. O DENOTES TEST POINT.
3. U1 AND U2 ARE TYPE SM-A-742826-1. U3 AND U4 ARE TYPE SM-A-742827-1. U5 IS TYPE SM-A-742830-1. U6 IS TYPE SM-A-742822-1. U7 IS TYPE SM-A-742833-1. U8 IS TYPE SM-A-742837-1. U9 IS TYPE SM-A-742443-1.
4. UNLESS OTHERWISE INDICATED, RESISTANCE IS IN OHMS, 1%.

EL5805—628—34— TM—801①

Figure 11-102 ①. Schematic diagram, crosspoint driver (sheet 1)..

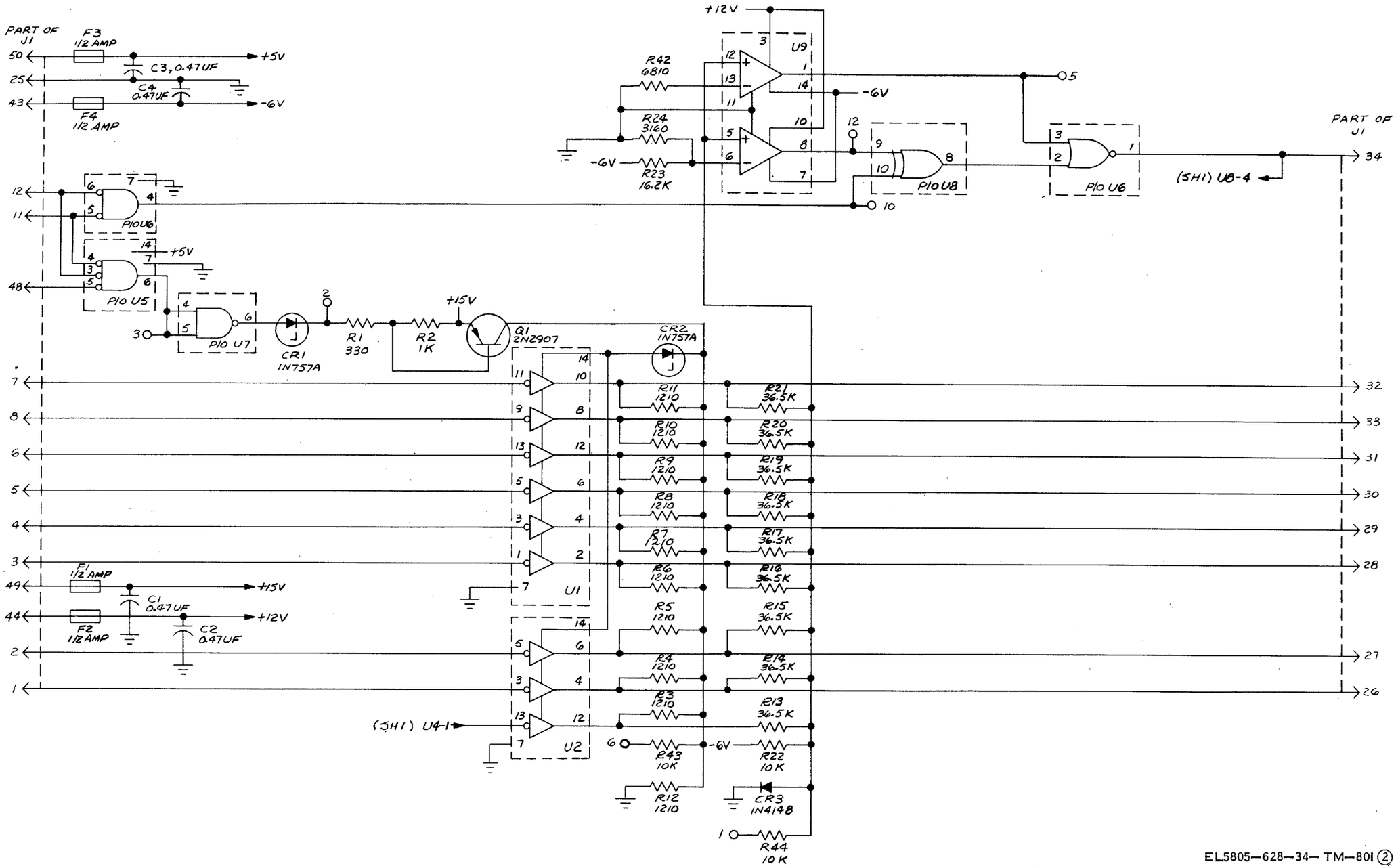
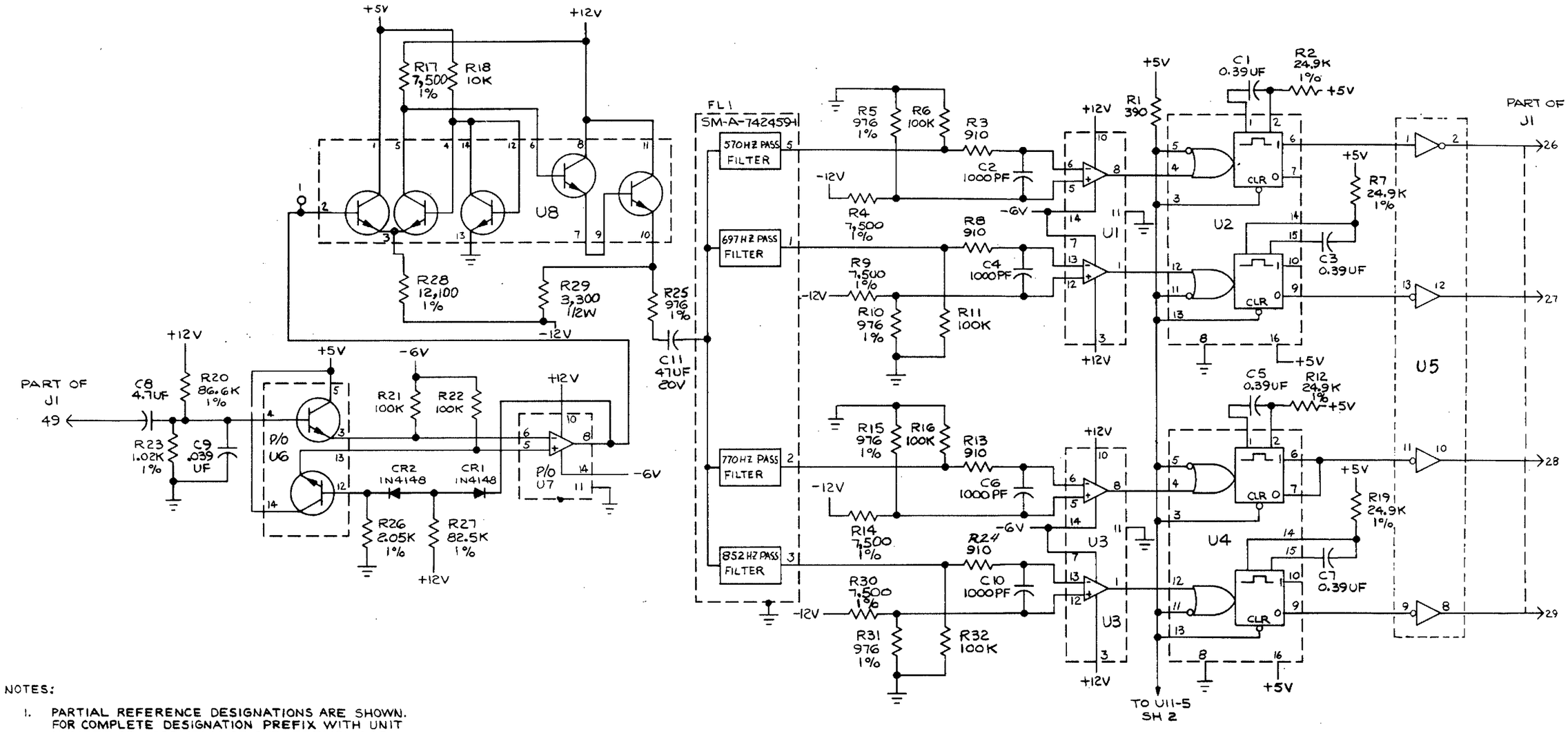


Figure 11-102 ②. Schematic diagram, crosspoint driver (sheet 2)..

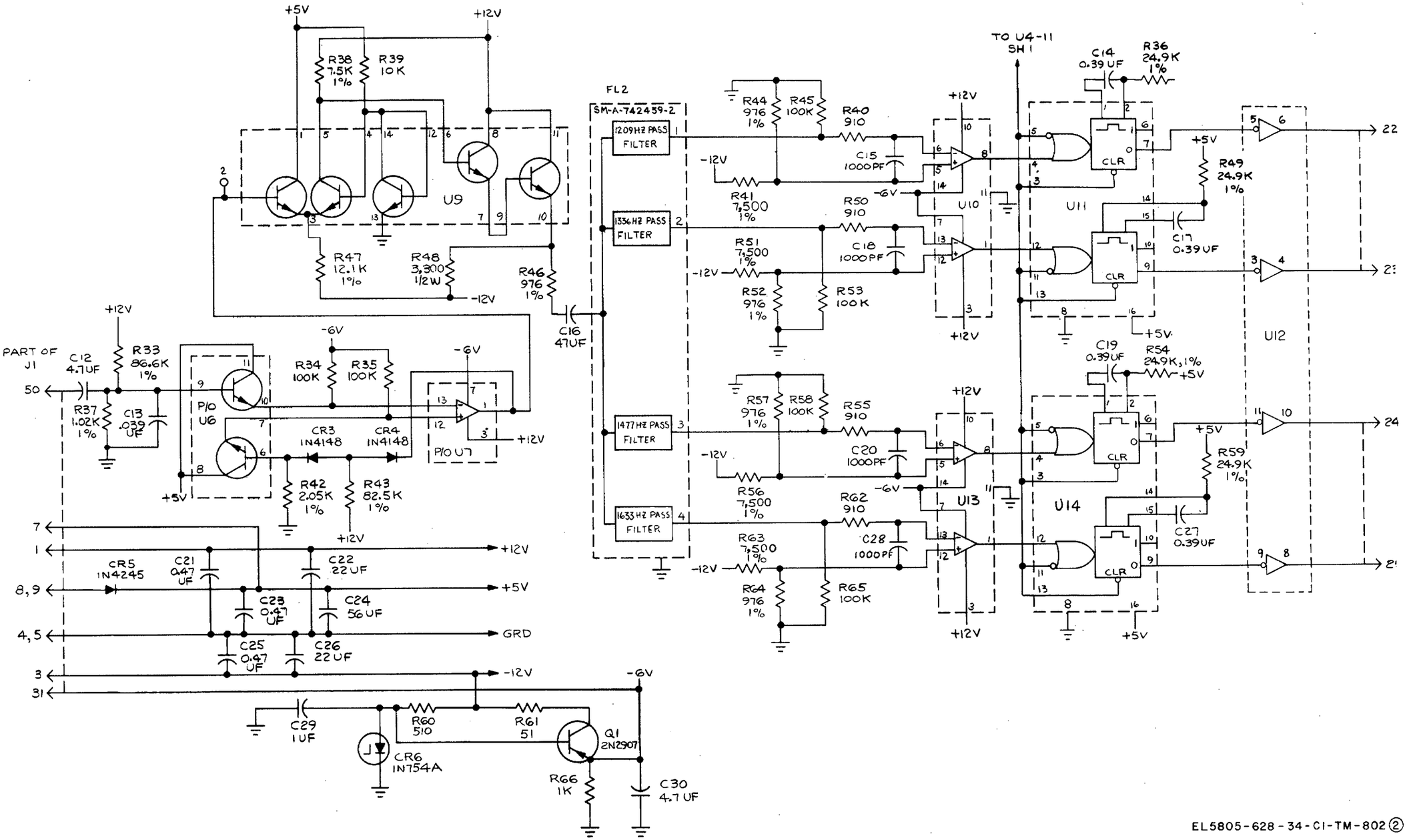


NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ±5%.
3. U1, U3, U7, U10 AND U13 ARE TYPE SM-A-742443-1.
   U2, U4 AND U11 ARE TYPE SM-A-742436-2.
   U5 AND U12 ARE TYPE SM-A-742824-1.
   U6, U8 AND U9 ARE TYPE SM-A-742435-1.
4. ○ DENOTES TEST POINT.

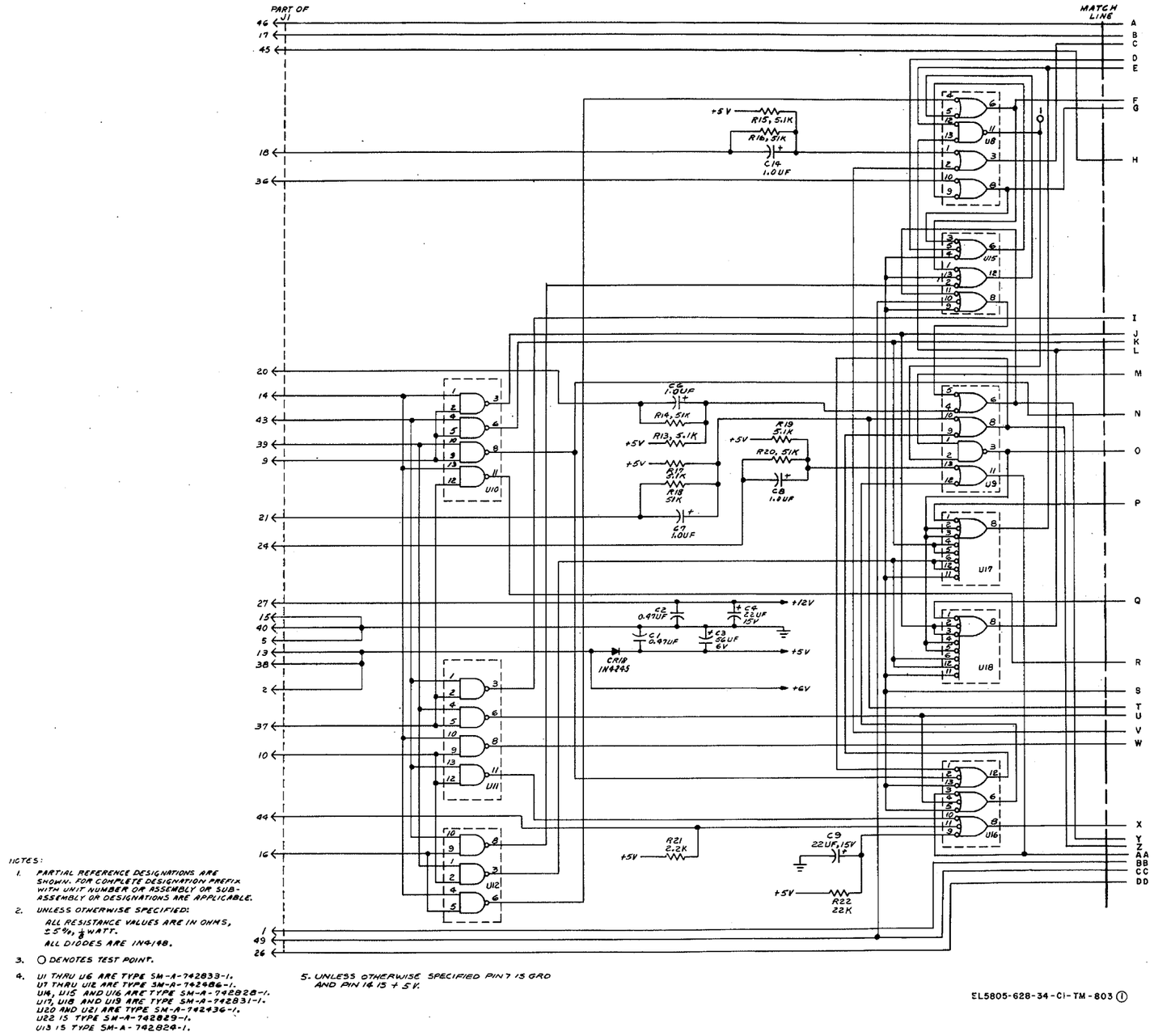
EL5805-628-34-CI-TM-802①

Figure 11-103 ①. Schematic diagram, operator position, DTMF receiver, card 2 (sheet 1).



EL5805-628-34-CI-TM-802 ②

Figure 11-103 ②. Schematic diagram, crosspoint driver (sheet 2)..



NOTES:

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUB-ASSEMBLY OR DESIGNATIONS ARE APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTANCE VALUES ARE IN OHMS, ±5%, ¼ WATT.
   ALL DIODES ARE IN4148.
3. ○ DENOTES TEST POINT.
4. U1 THRU U6 ARE TYPE SM-A-742833-1, U7 THRU U12 ARE TYPE SM-A-742836-1, U14, U15 AND U16 ARE TYPE SM-A-742828-1, U17, U18 AND U19 ARE TYPE SM-A-742831-1, U20 AND U21 ARE TYPE SM-A-742436-1, U22 IS TYPE SM-A-742829-1, U13 IS TYPE SM-A-742824-1.
5. UNLESS OTHERWISE SPECIFIED PIN 7 IS GRD AND PIN 14 IS +5V.

Figure 11-104 ①. Logic diagram, operator position No. 1 (sheet 1)..

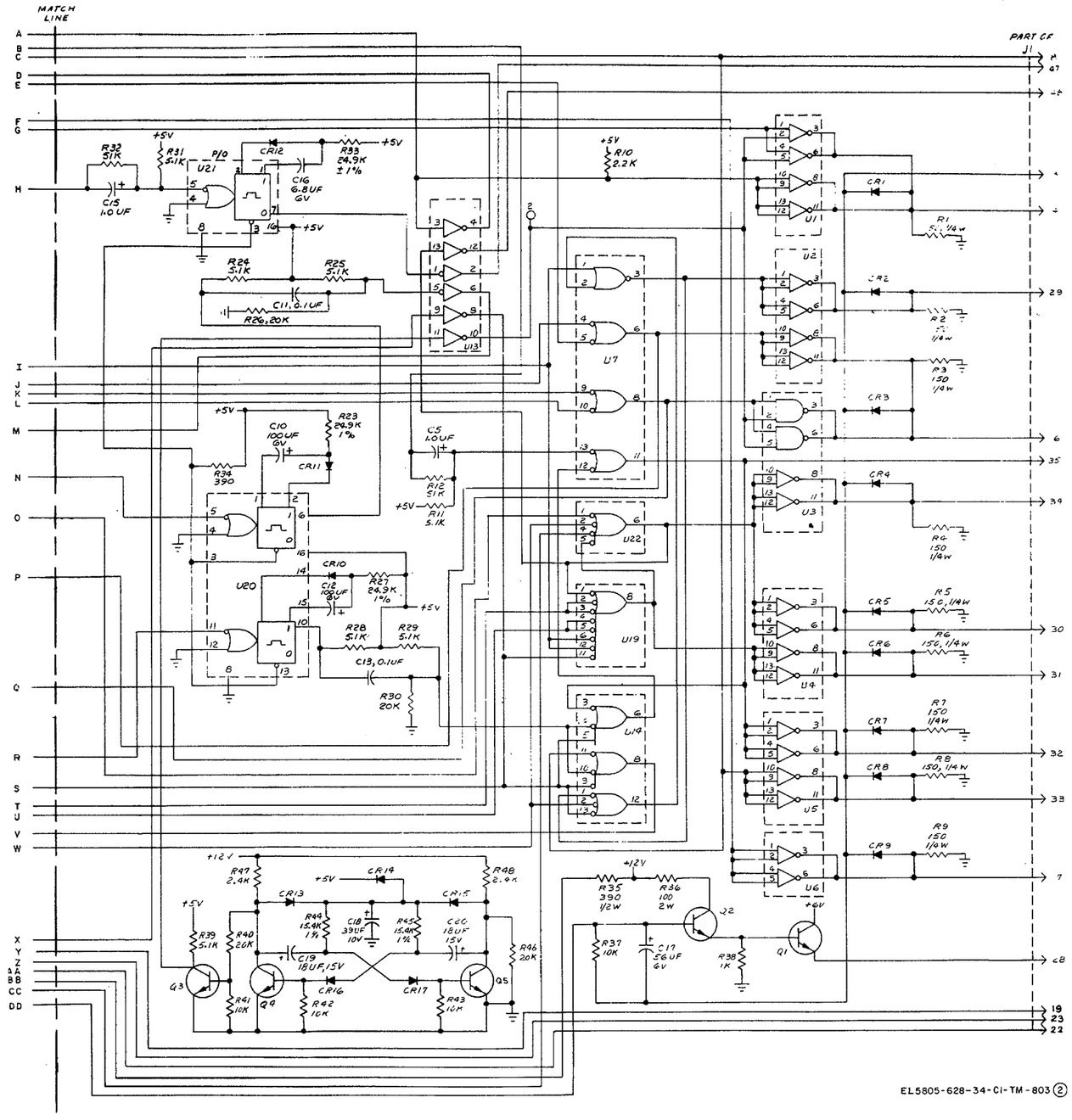


Figure 11-104 ②. Logic diagram, operator position No. 1 (sheet 2)..

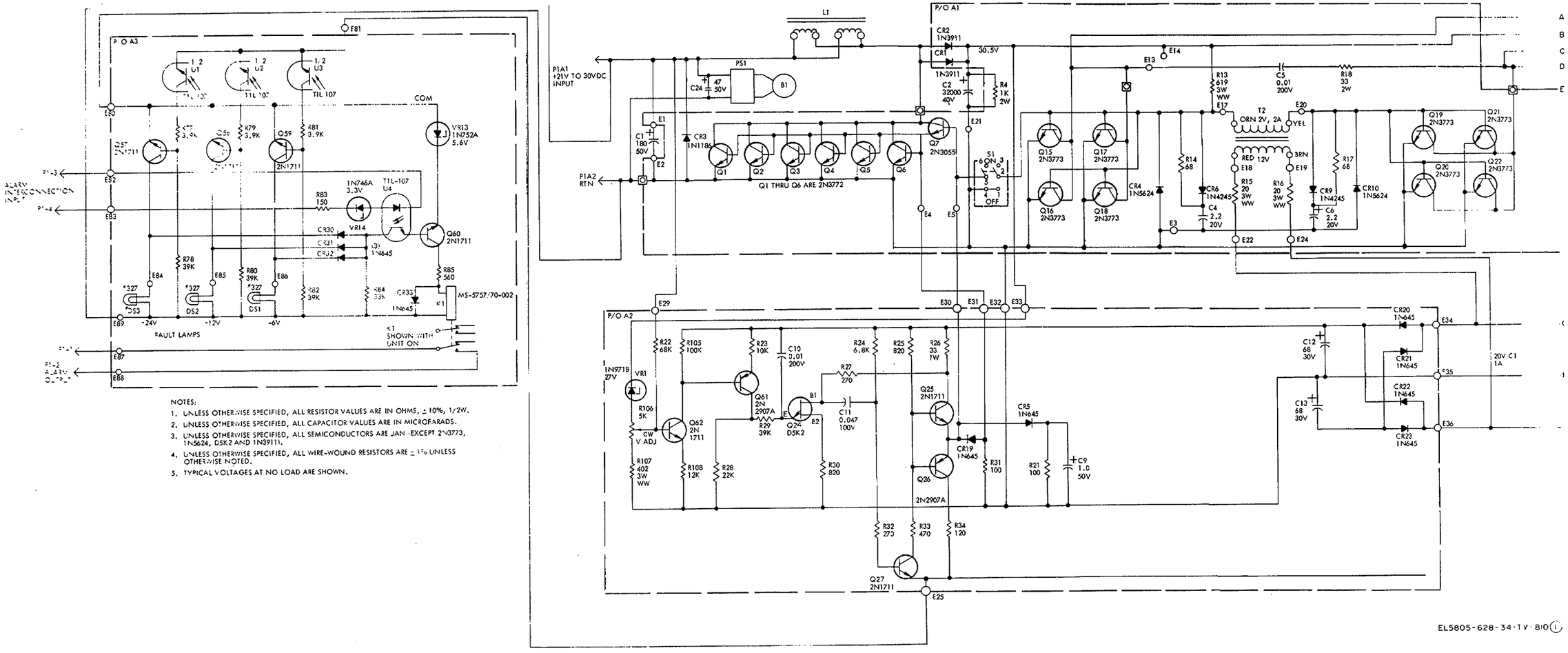


Figure 11-152 ①. Schematic diagram, type 1 DC-DC converter (sheet 1)..

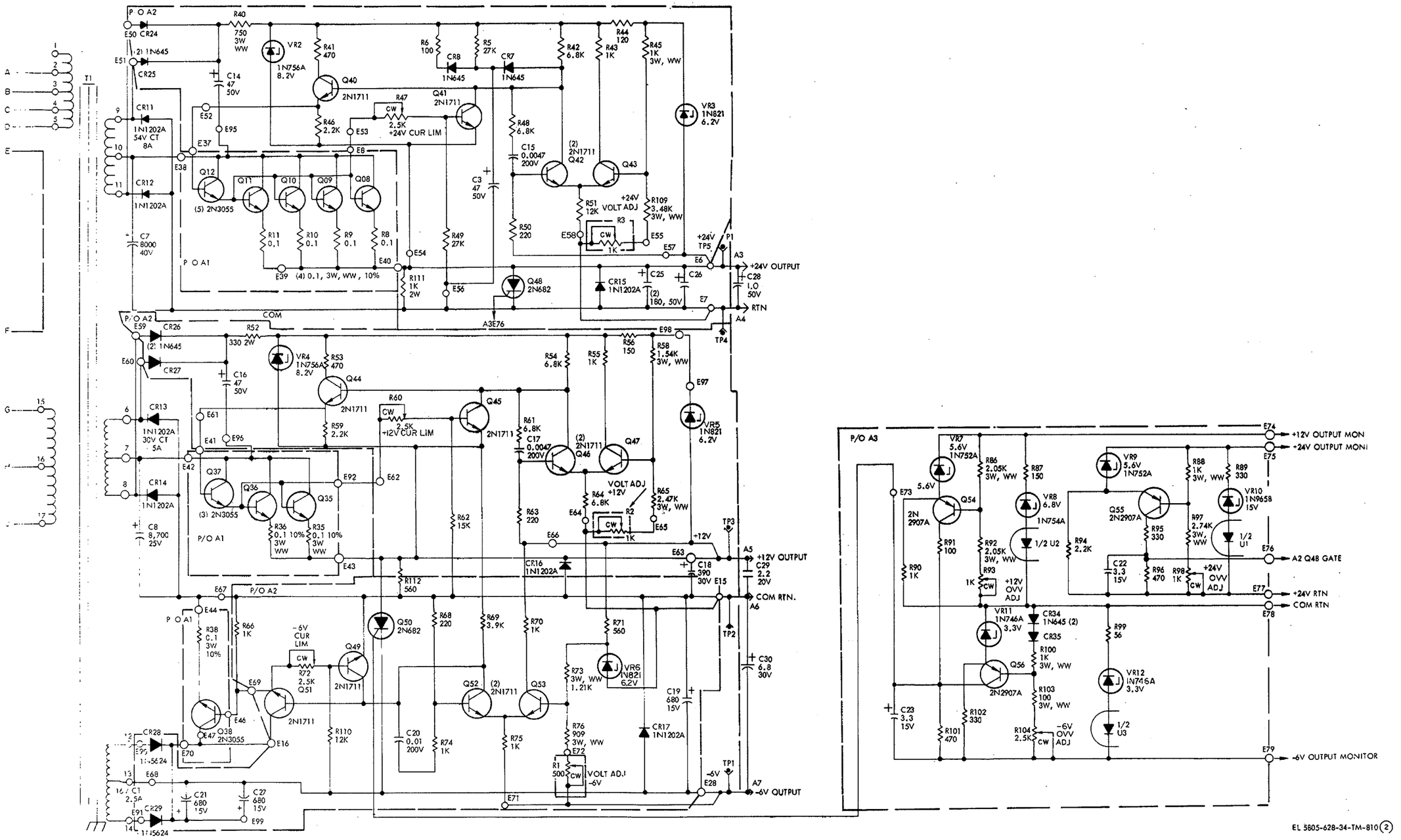


Figure 11-105 ②. Schematic diagram, type 1 DC-DC converter (sheet 2).

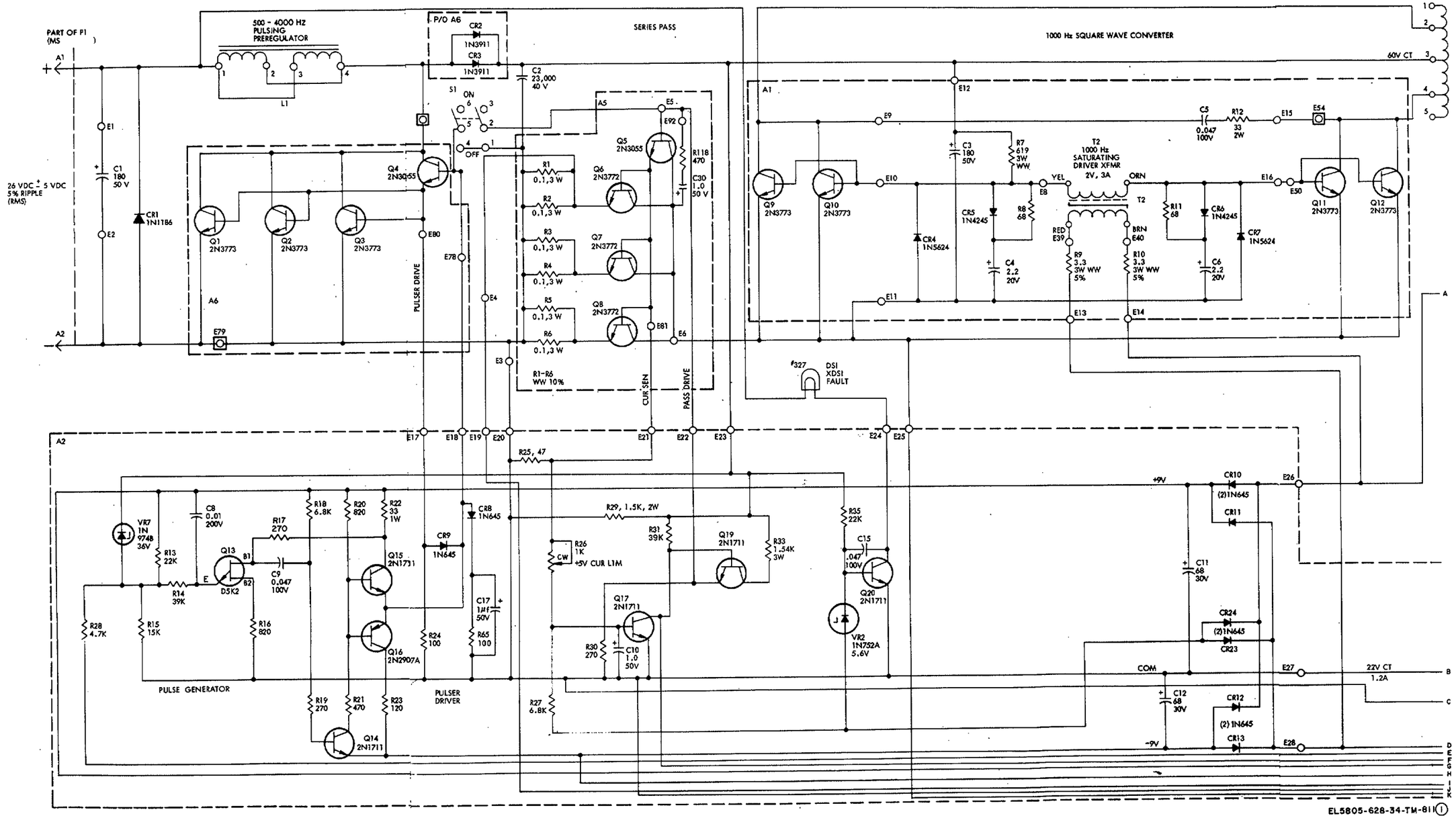


Figure 11-106 ①. Schematic diagram, type 2 DC-DC converter 1 (sheet 1).

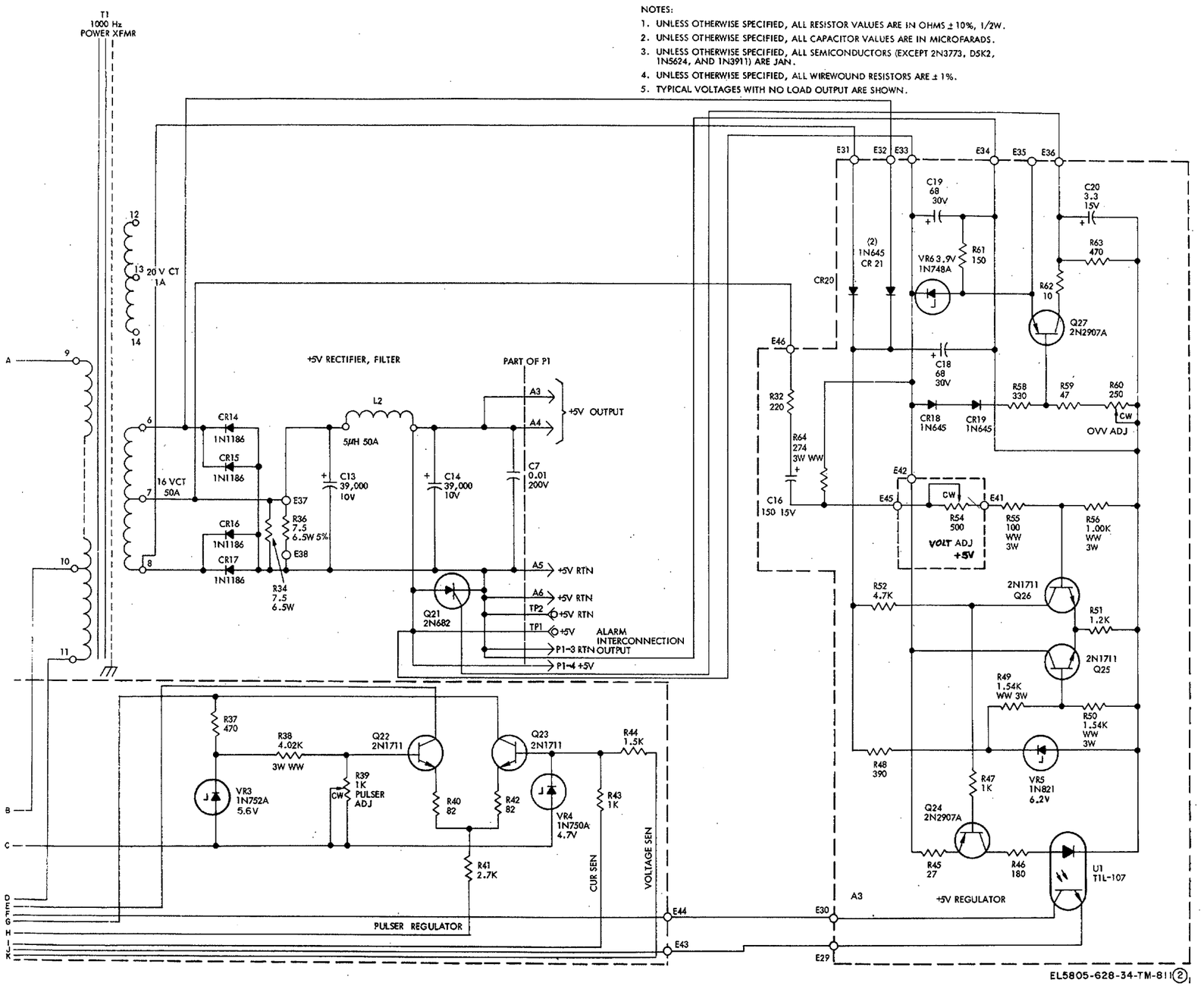


Figure 11-106 ②. Schematic diagram, type 2, DC-DC converter (sheet 2).

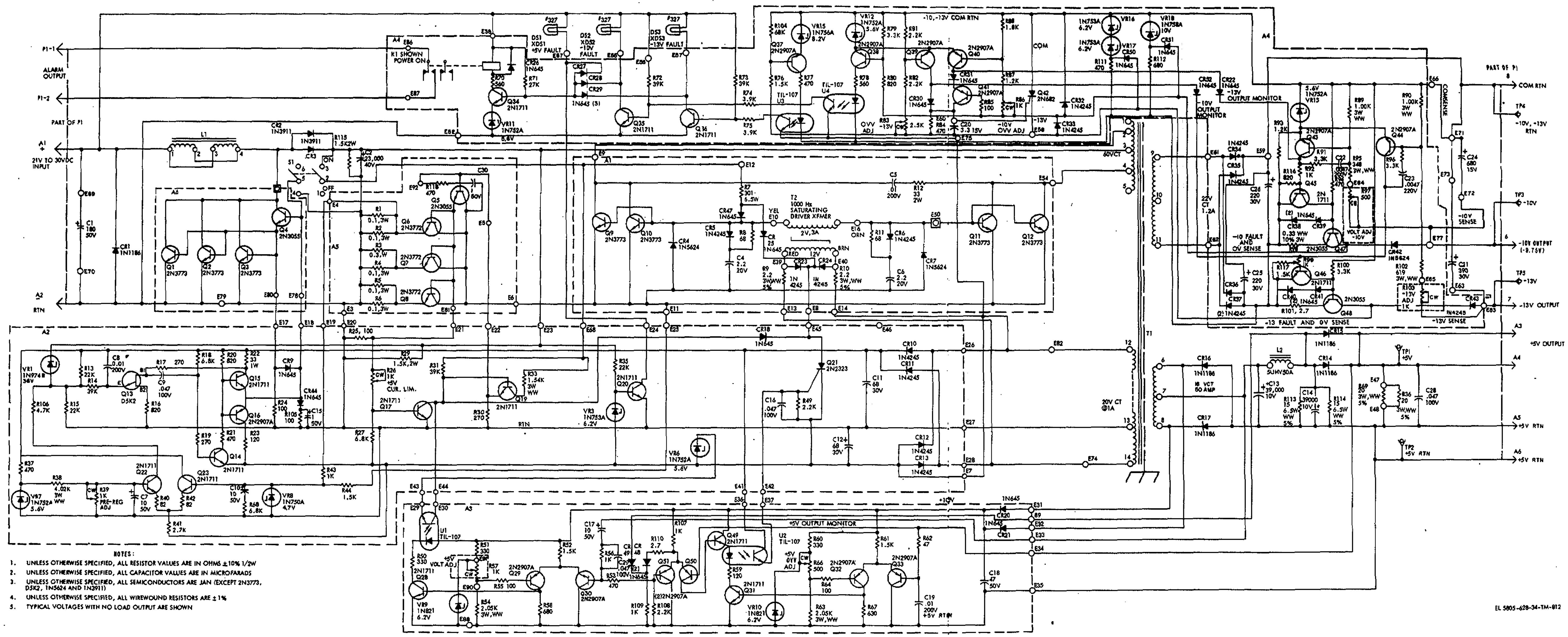


Figure 11-107. Schematic diagram, type 3 DC-DC converter.

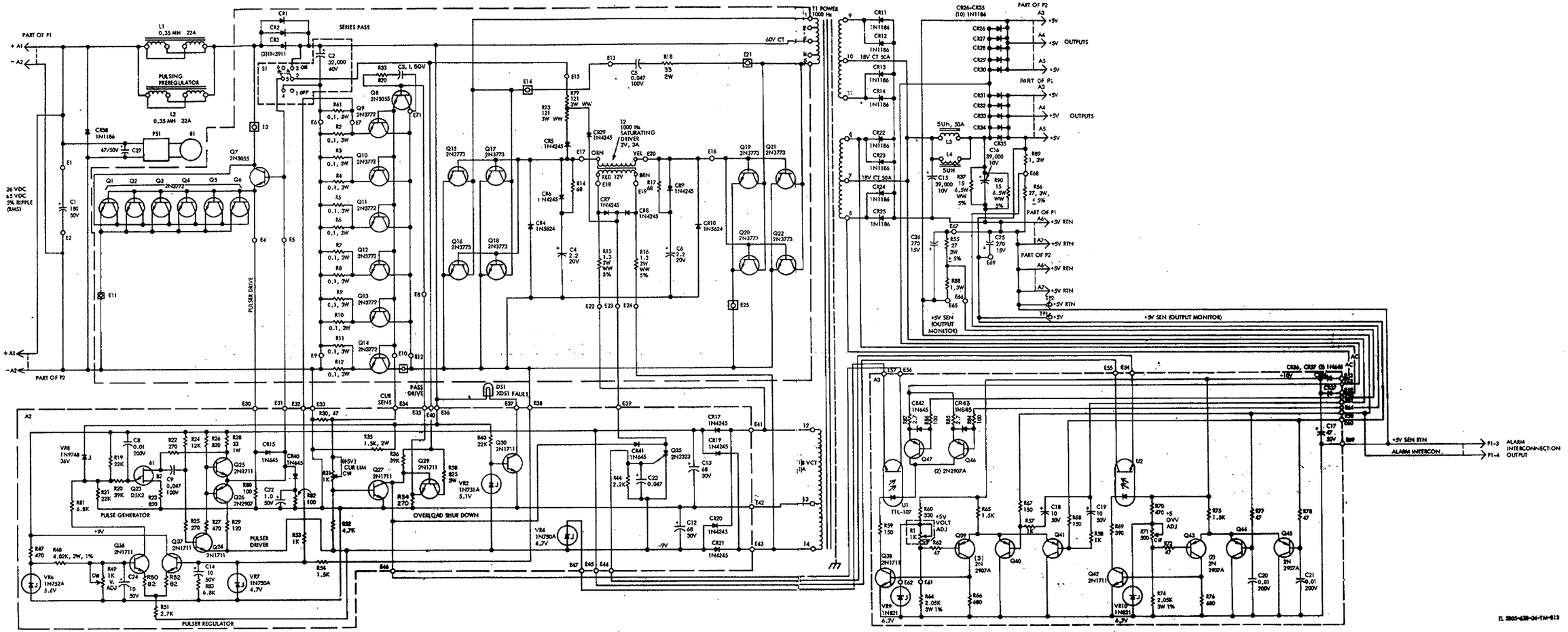


Figure 11-108. Schematic diagram, type 4 DC-DC converter.

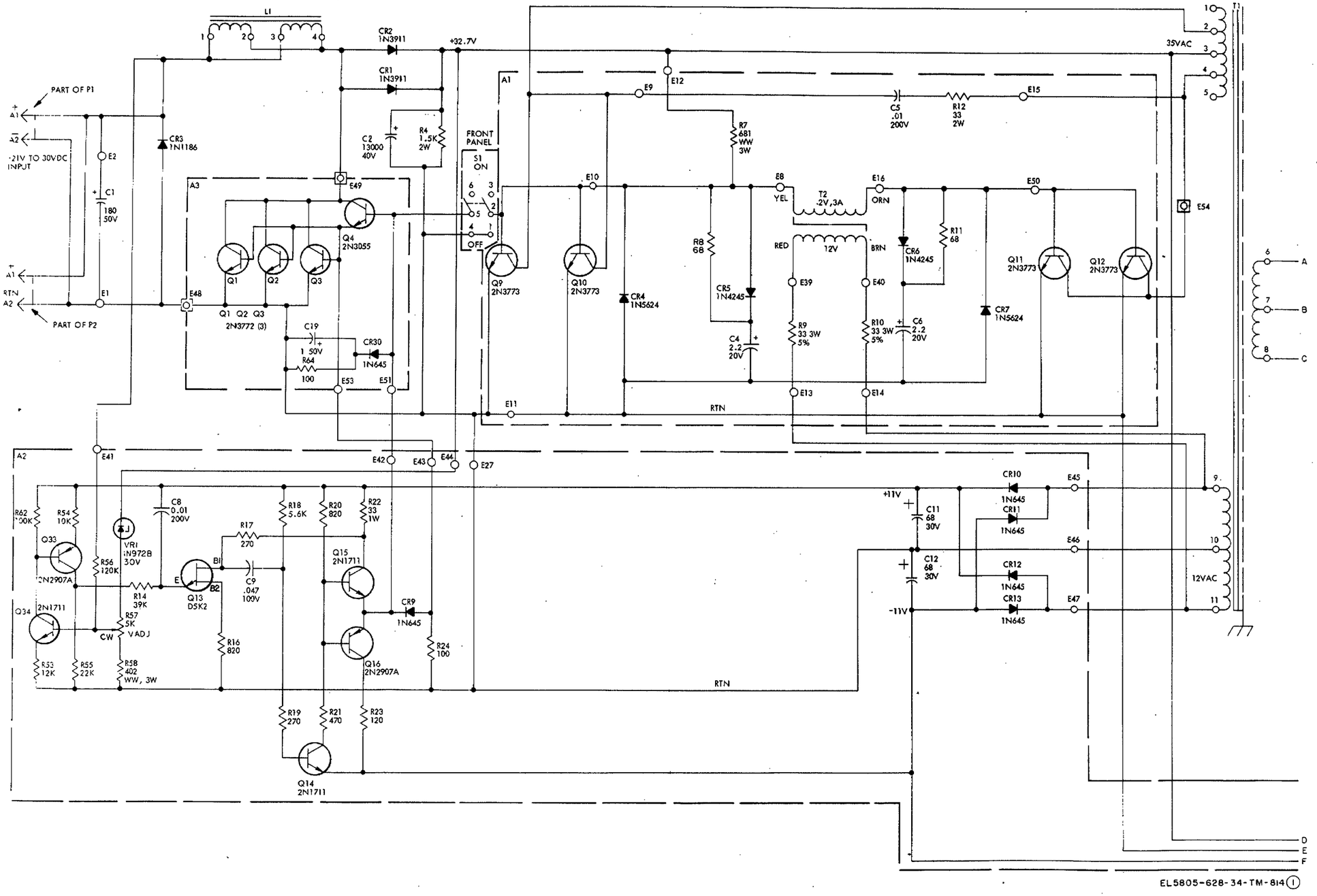


Figure 11-109 ①. Schematic diagram, type 5 DC-DC converter (sheet 1).

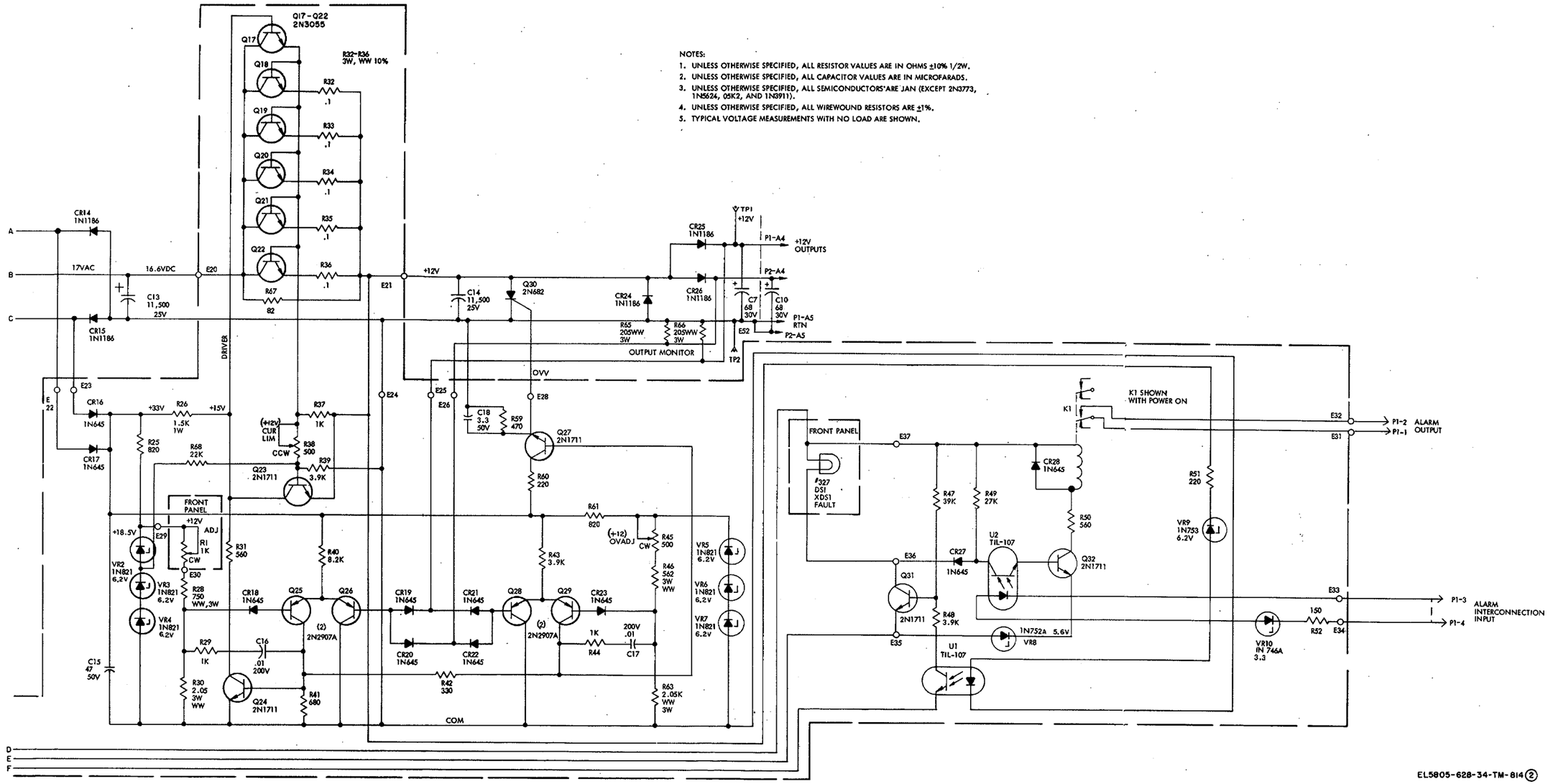


Figure 11-109 ② . Schematic diagram. Type 5 DC-DC converter (sheet 2).

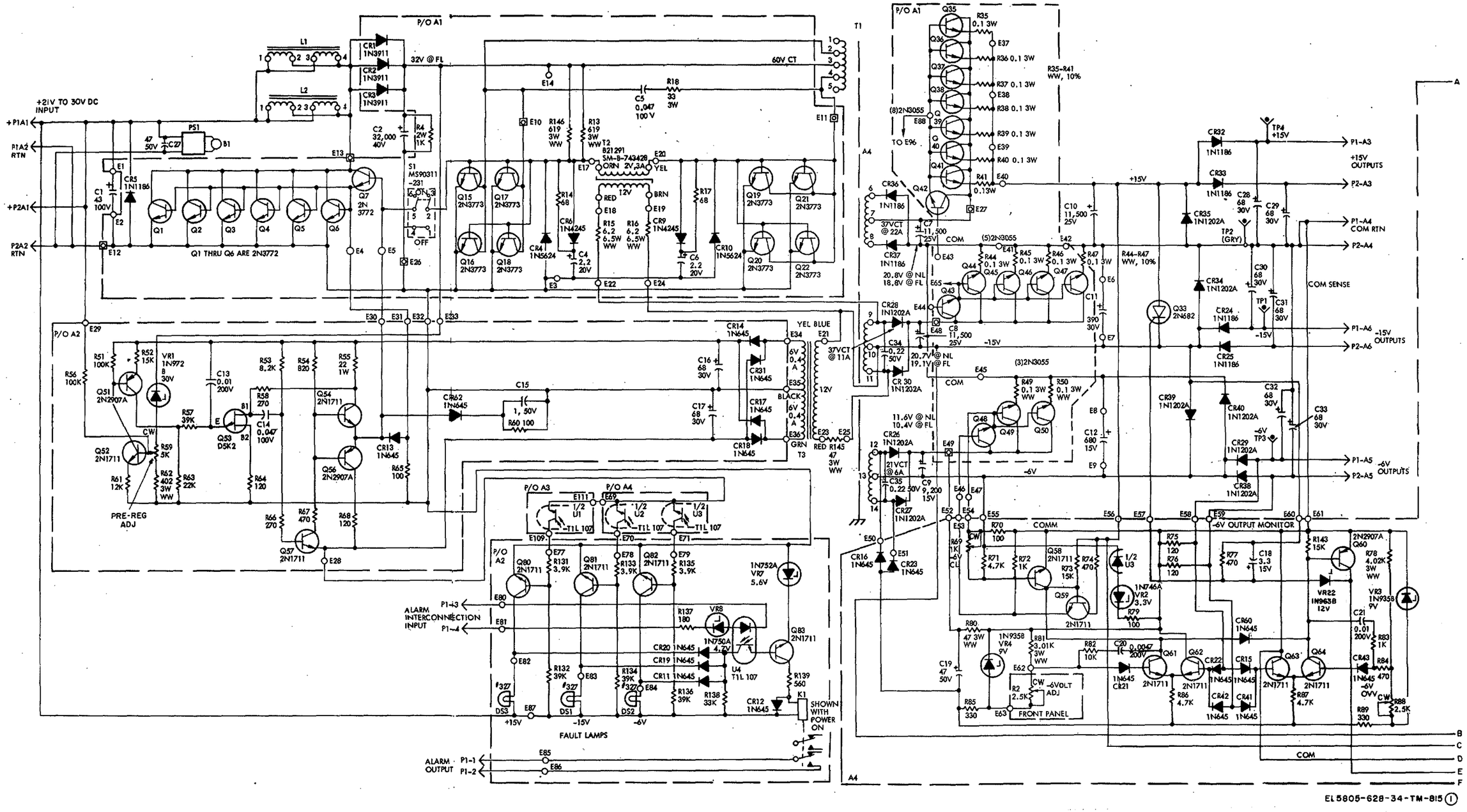
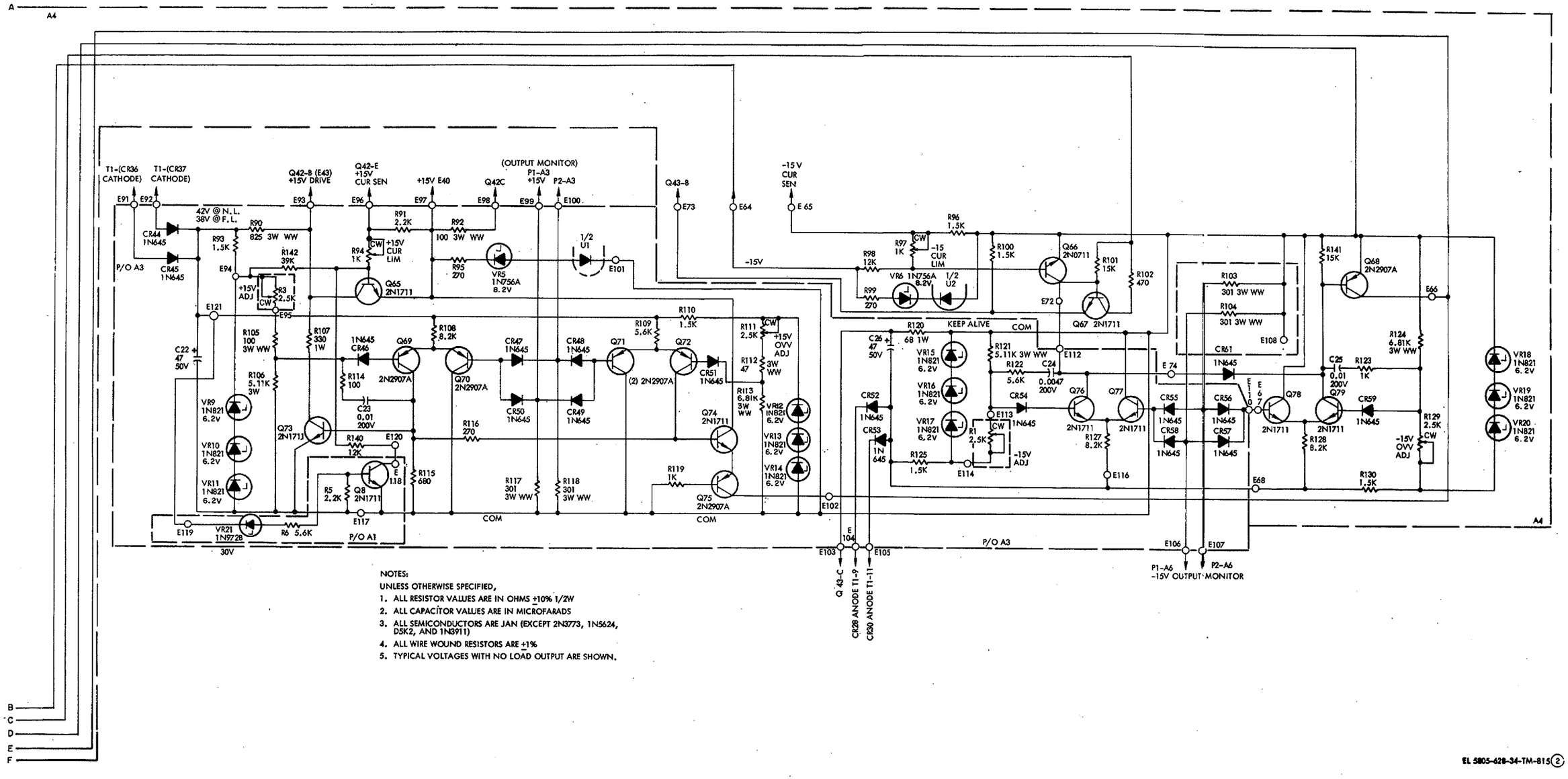


Figure 11-110 ① . Schematic diagram. Type 6 DC-DC converter (sheet 1).



NOTES:
UNLESS OTHERWISE SPECIFIED,
1. ALL RESISTOR VALUES ARE IN OHMS ±10% 1/2W
2. ALL CAPACITOR VALUES ARE IN MICROFARADS
3. ALL SEMICONDUCTORS ARE JAN (EXCEPT 2N3773, 1N5624, D5K2, AND 1N3911)
4. ALL WIRE WOUND RESISTORS ARE ±1%
5. TYPICAL VOLTAGES WITH NO LOAD OUTPUT ARE SHOWN.

EL 5805-628-34-TM-815 (2)

Figure 11-110 ② . Schematic diagram. Type 6 DC-DC converter (sheet 2).

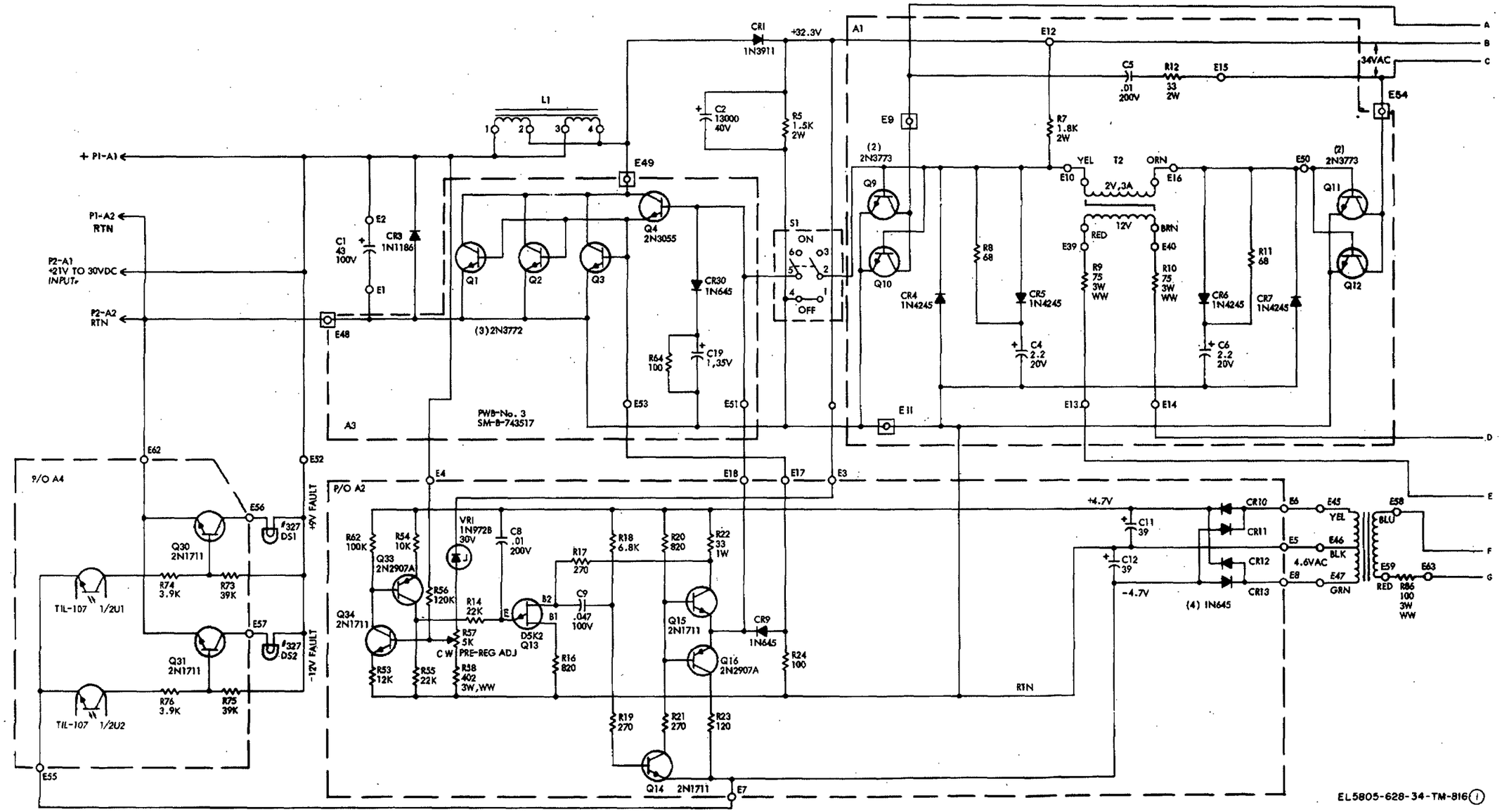


Figure 11-111 ① . Schematic diagram. Type 7 DC-DC converter (sheet 2).

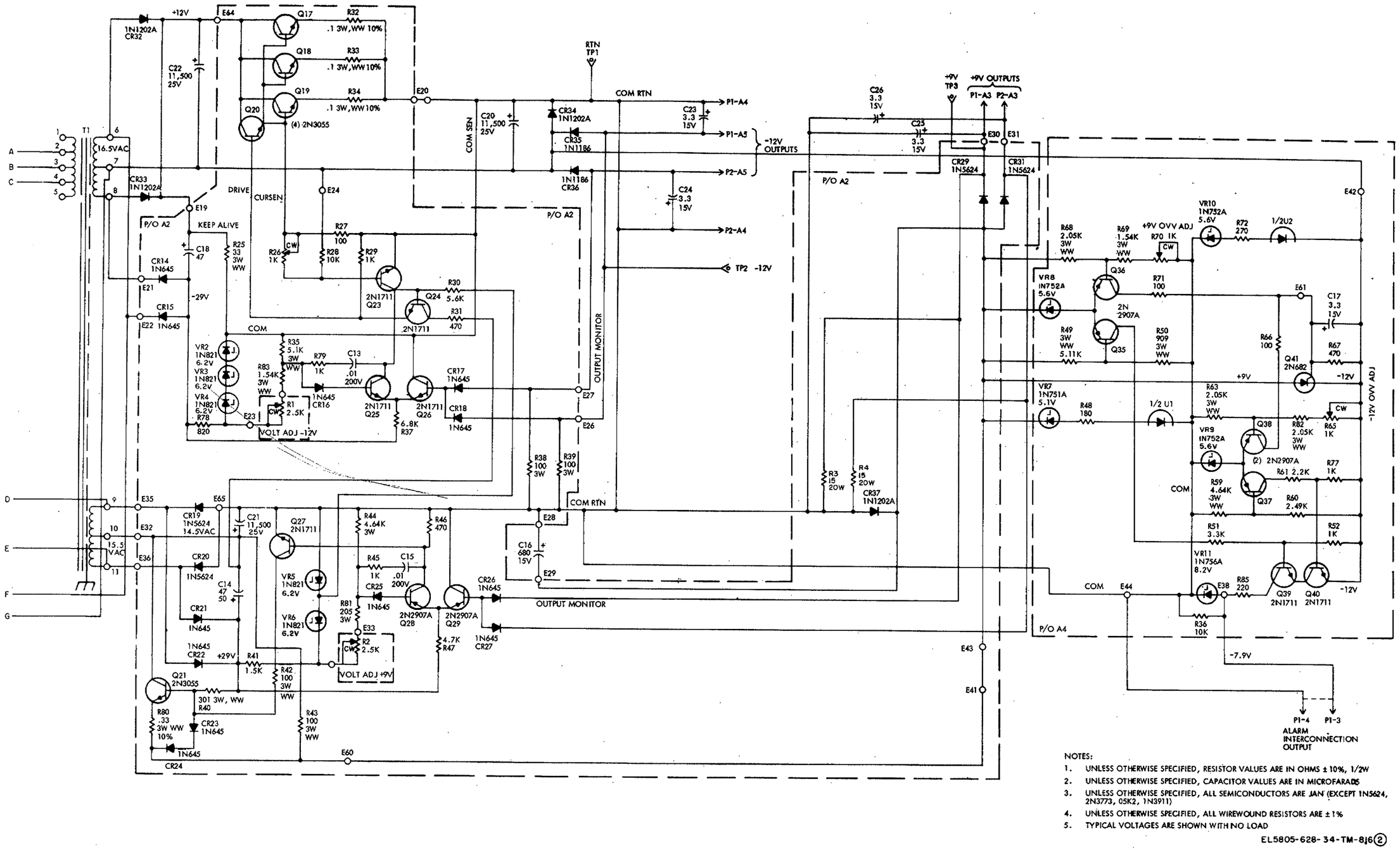


Figure 11-111 ② . Schematic diagram. Type 7 DC-DC converter (sheet 2).

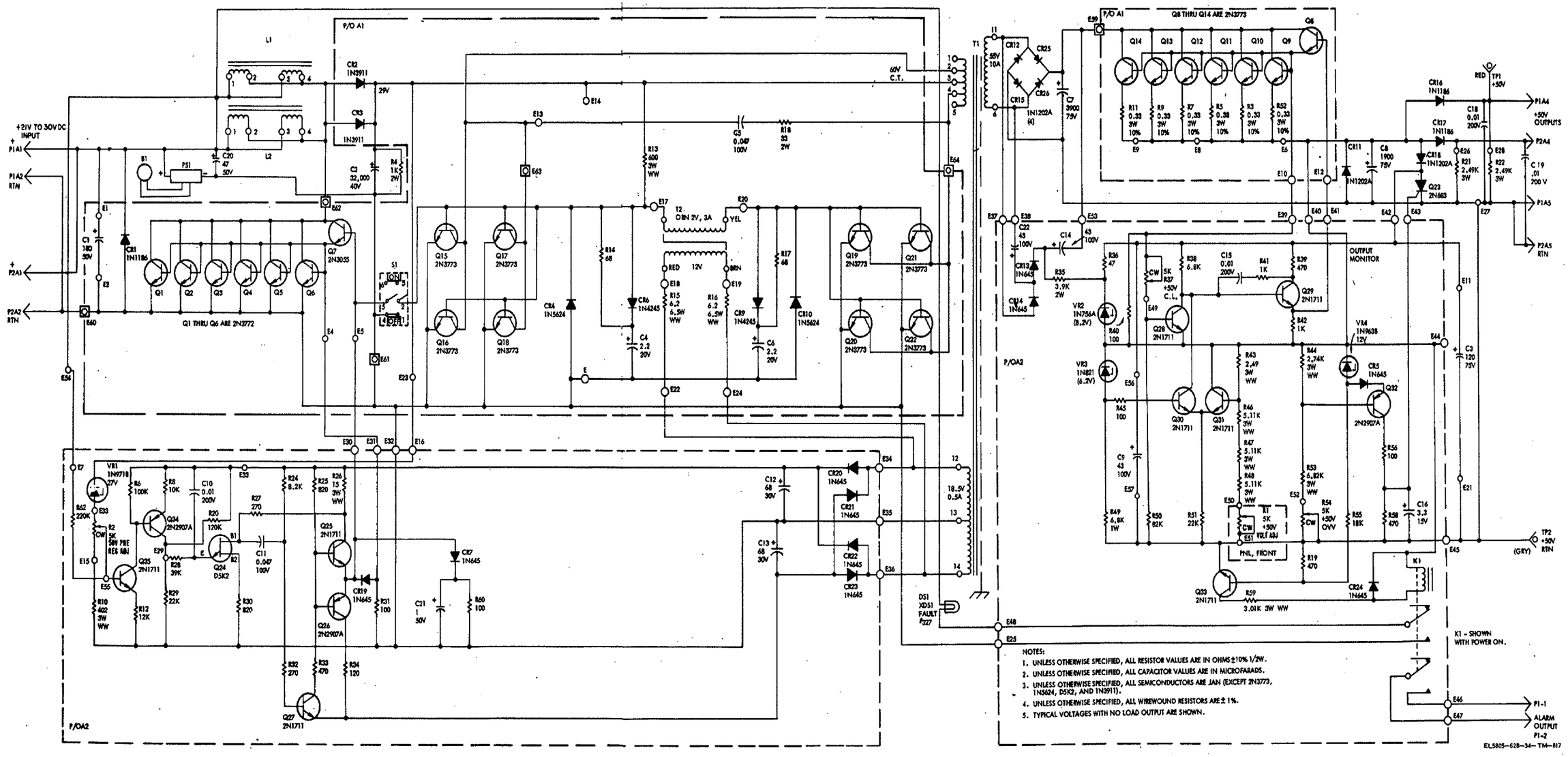


Figure 11-112. Schematic diagram type 8, DC-DC converter.

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NG: None

USAR: None

For explanation of abbreviations used, see AR 310-50.

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THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL.

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FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.

IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER	SIGN HERE

TEAR ALONG PERFORATED LINE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

PIN: 022081 000