HEWLETT hp PACKARD
SIGNAL ANALYZER 5480AB WITH 5485A 5486AB,5487A,5488A PLUG-INS
SERVICE VOL. II III & IV SERIAL PFX ALL SERIALS
PART NO. 05480-90013 (MANUAL) 05480-90016 (FICHE)
APRIL 1971 5 of 8

A7 INTERFACE BOARD (05485-60009)

The 05485-60009 Board is a collection of Circuits for sloping and receiving back panel signals. The input/output circuitry for the point plotter, the MCS and sample. Input circuits, the Synch pulse output circuits, the sweep voltage output circuits, and circuits for interfacihg with a point plotter, are all contained on this board.

CHANGES FOR OLDER BOARDS

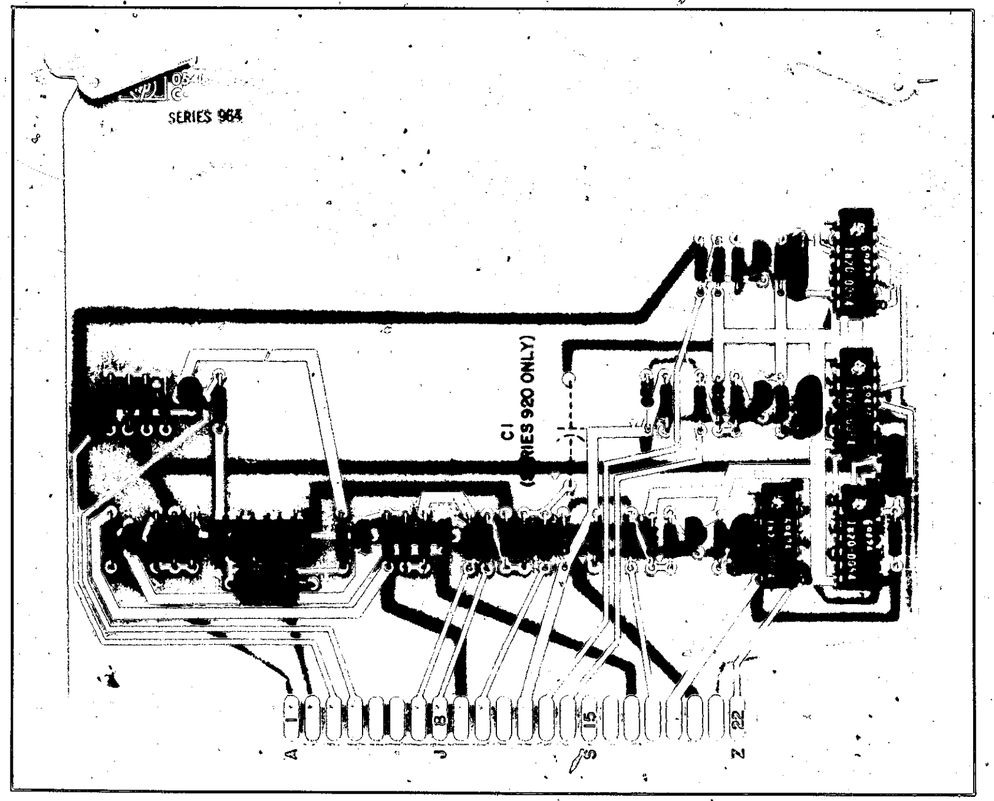
Current Series: 964

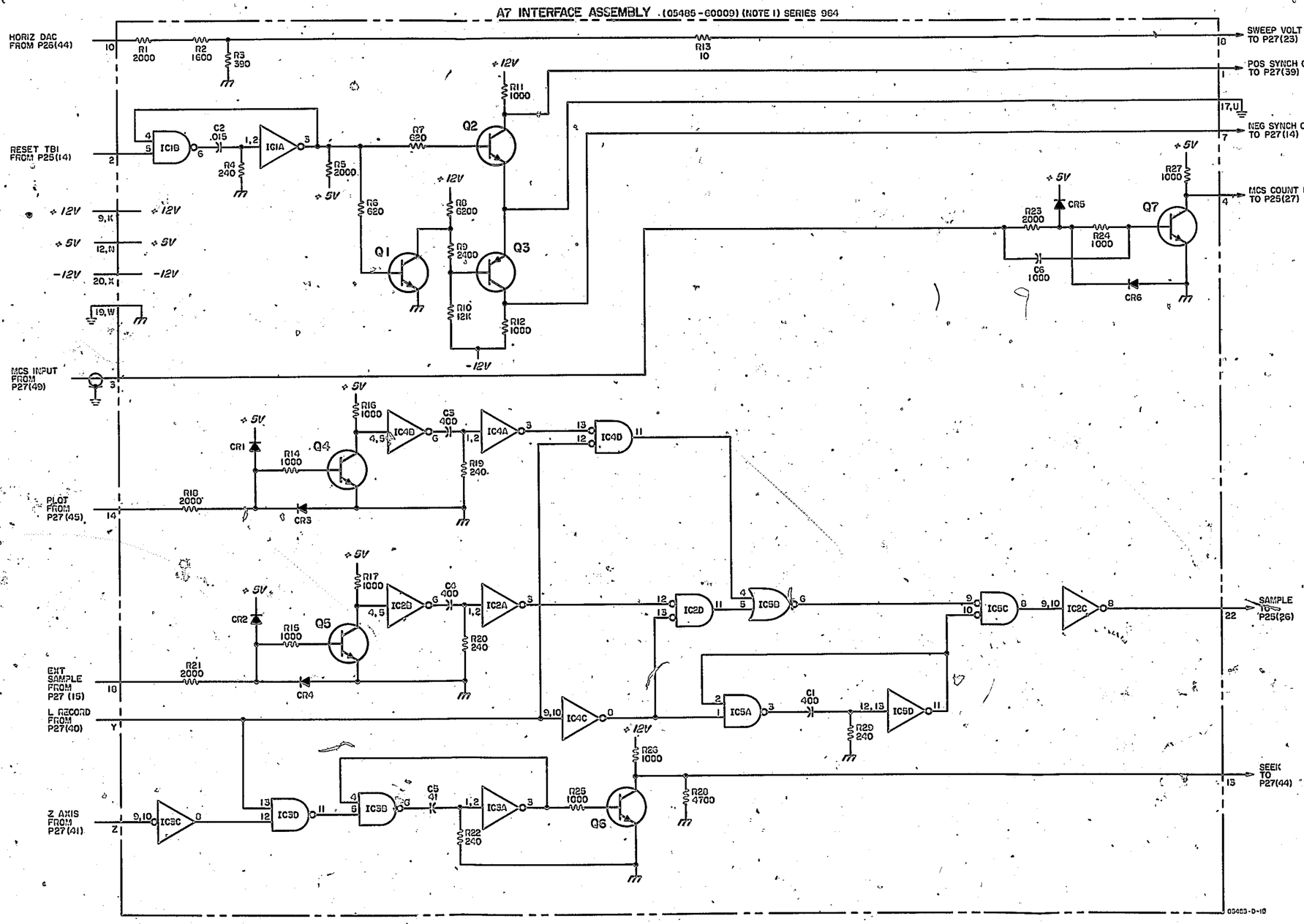
Older Series: 832, 920

The current series board may be used a direct replacement for either older board series.

The only difference between Series 964 and Series 920 boards is that the Series 920 board had a capacitor, C1, 1.0 μF, between the R1-R2 junction and ground.

The schematic diagram for the series 832 board is given in Figure 3-13.





NOTES

1. REFERENCE DESIGNATIONS WITHIN THIS ASSEMBLY ARE ABBREVIATED. ADD ASSEMBLY NUMBER TO ABBREVIATION FOR COMPLETE DESCRIPTION.
2. UNLESS OTHERWISE INDICATED: RESISTANCE IN OHMS; CAPACITANCE IN PICOFARADS.

REFERENCE DESIGNATIONS

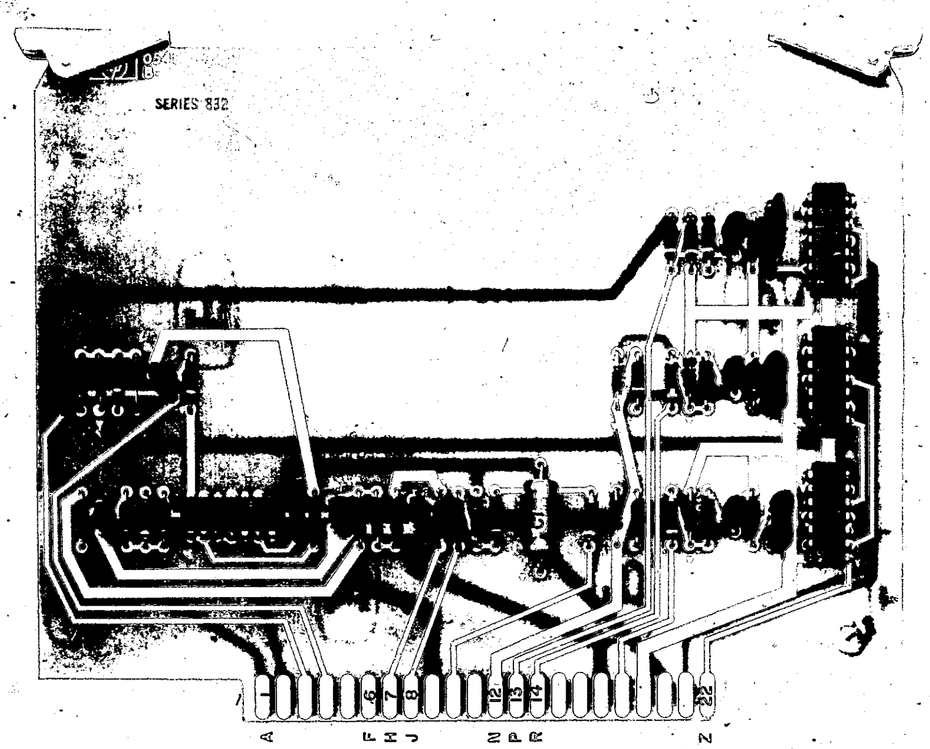
A7
C1-6 CR1-6 IC1-5 Q1-7 R1-29

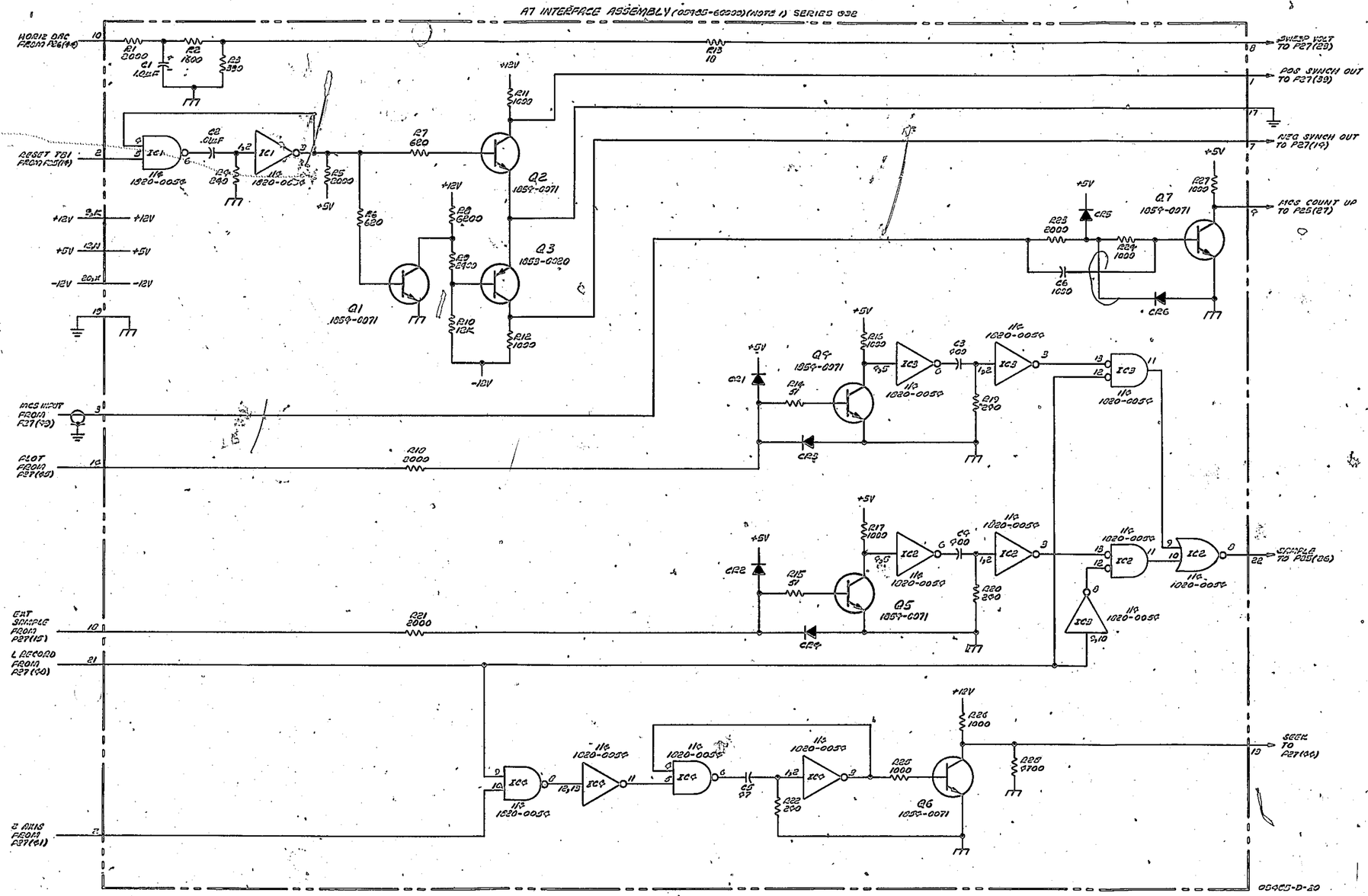
TABLE

REFERENCE DESIGNATIONS	HP PART NUMBERS
CR1-6	
IC1-5	1820-0054
Q1, 2, 4-7	1854-0071
Q3	1853-0020

Figure 3-12
A7 Interface Assembly Series 964, 920

See Figure 3-12 for Board description.





NOTES

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2. UNLESS OTHERWISE INDICATED:
   RESISTANCE IN OHMS;
   CAPACITANCE IN PICOFARADS;

REFERENCE DESIGNATIONS

A7
C1-6 CR1-6 IC1-9 Q1-7 R1-28

Figure 3-13
A7 Interface Assembly Series 832

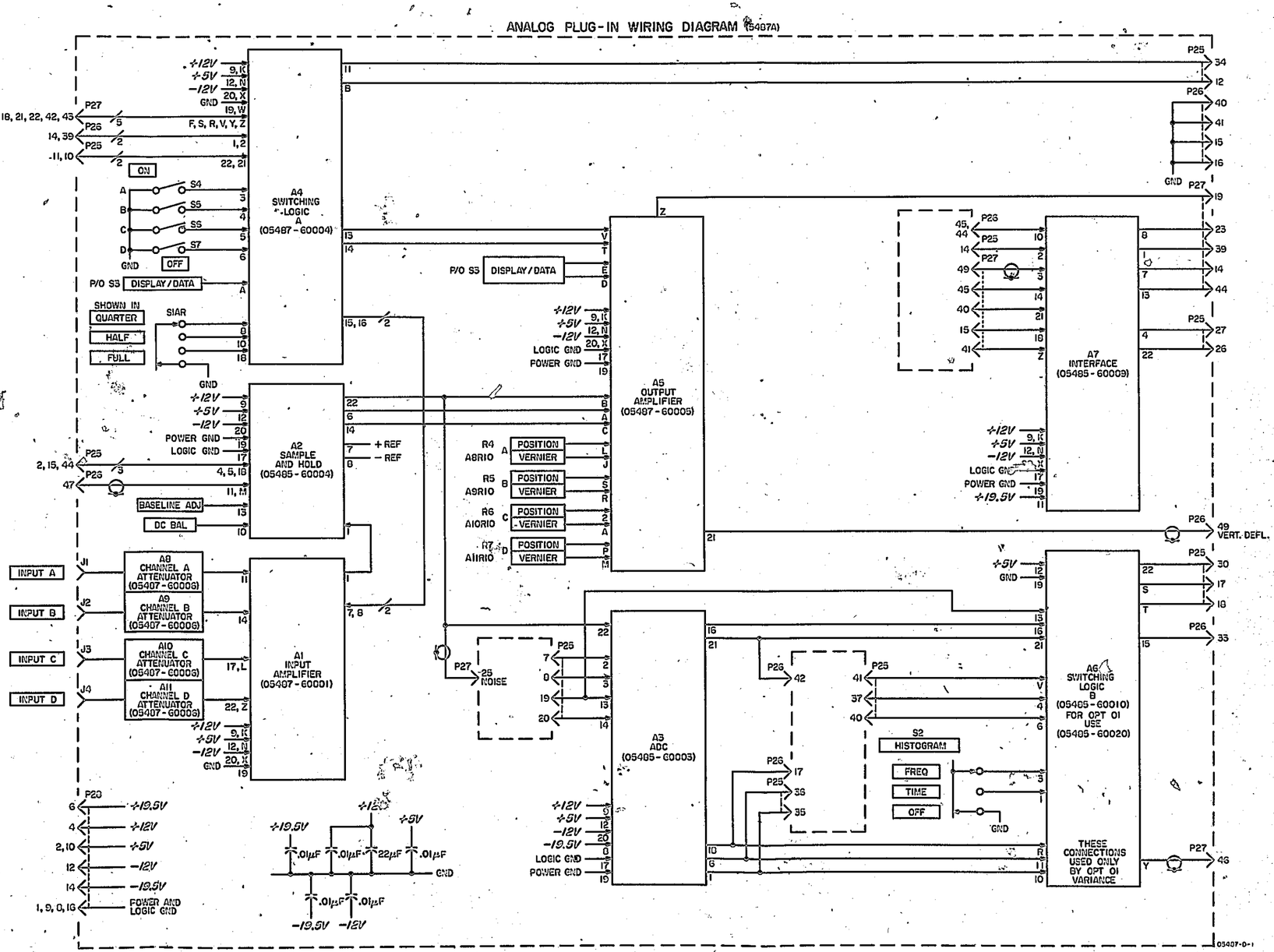
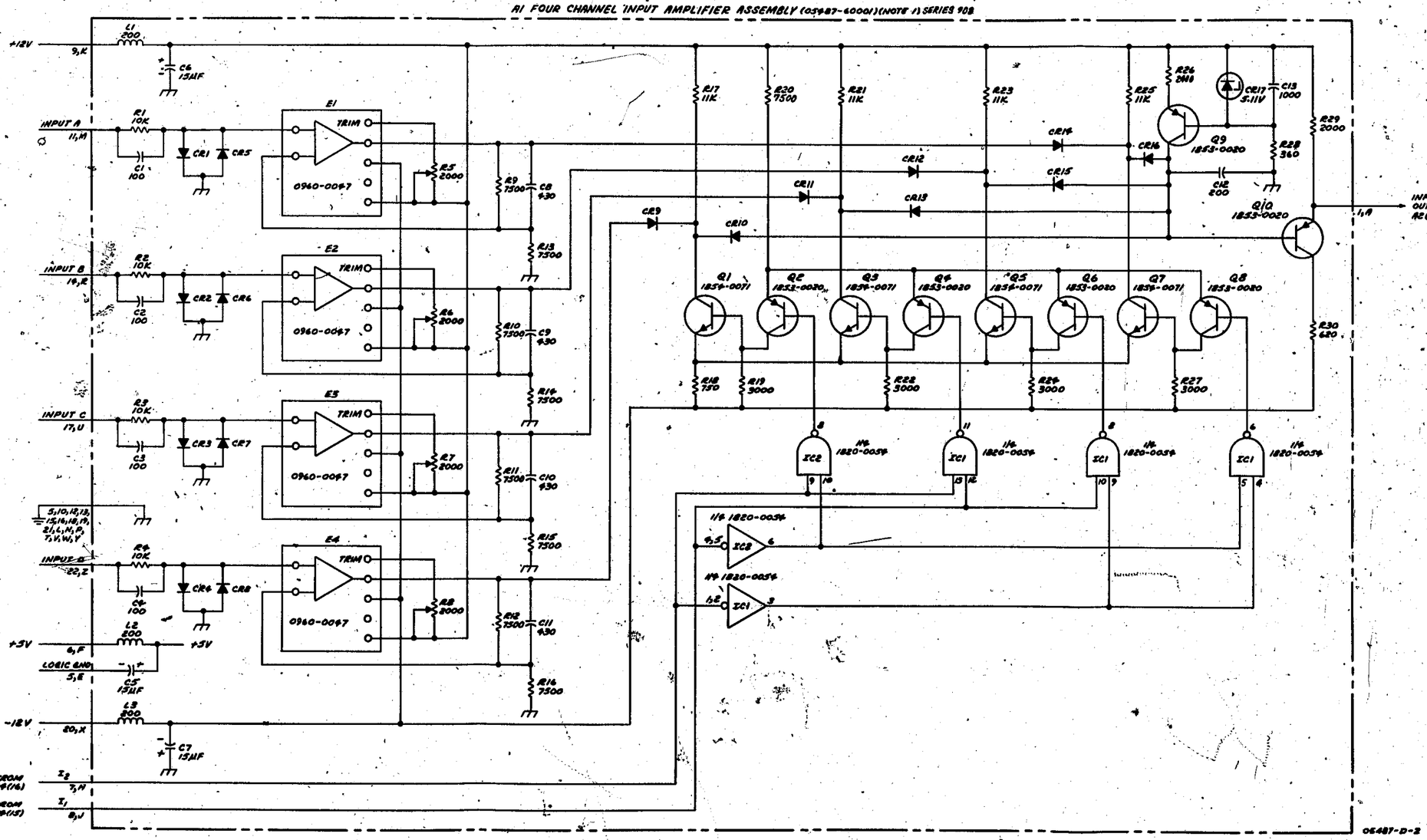


Figure 3-14
5487A Wiring Diagram

SERIES 805
PHILBRICK/NEXUS
QFT-5
TRIM
OUT
-15
+15
+IN
-IN
PHILBRICK/NEXUS
QFT-5
TRIM
OUT
-15
+15
A
F
H
J
N 12
P 13
R 14
Z 22
A1



NOTES

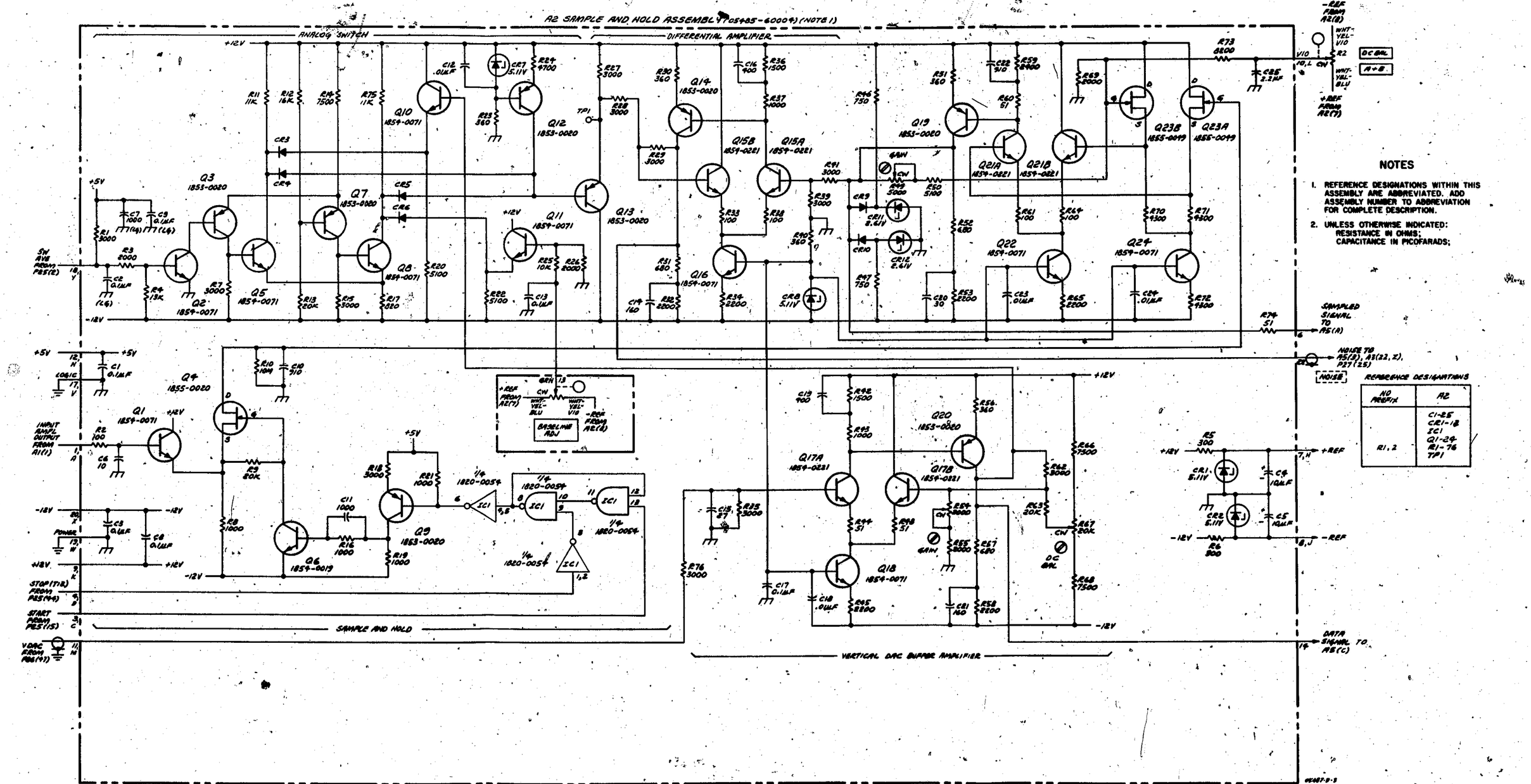
1. REFERENCE DESIGNATIONS WITHIN THIS ASSEMBLY ARE ABBREVIATED. ADD ASSEMBLY NUMBER TO ABBREVIATION FOR COMPLETE DESCRIPTION.
2. UNLESS OTHERWISE INDICATED: RESISTANCE IN OHMS; CAPACITANCE IN PICOFARADS; INDUCTANCE IN MICROHENRIES

REFERENCE DESIGNATIONS

A1
C1-18 CR1-17 E1-4 IC1,2 L1-3 Q1-10 R1-30

Figure 3-15
A1 Four Channel Input Amplifier Series 908

See Figure 3-5 for A2 Board description and Component Locator.



NOTES

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2. UNLESS OTHERWISE INDICATED: RESISTANCE IN OHMS; CAPACITANCE IN PICOFARADS;

REFERENCE DESIGNATIONS

NO PREFIX	A2
R1, 2	C1-25 CR1-18 IC1 Q1-24 R1-76 TP1

Figure 3-16
A2 Sample and Hold

See Figure 3-6 for A3 Board description and Component Locator.

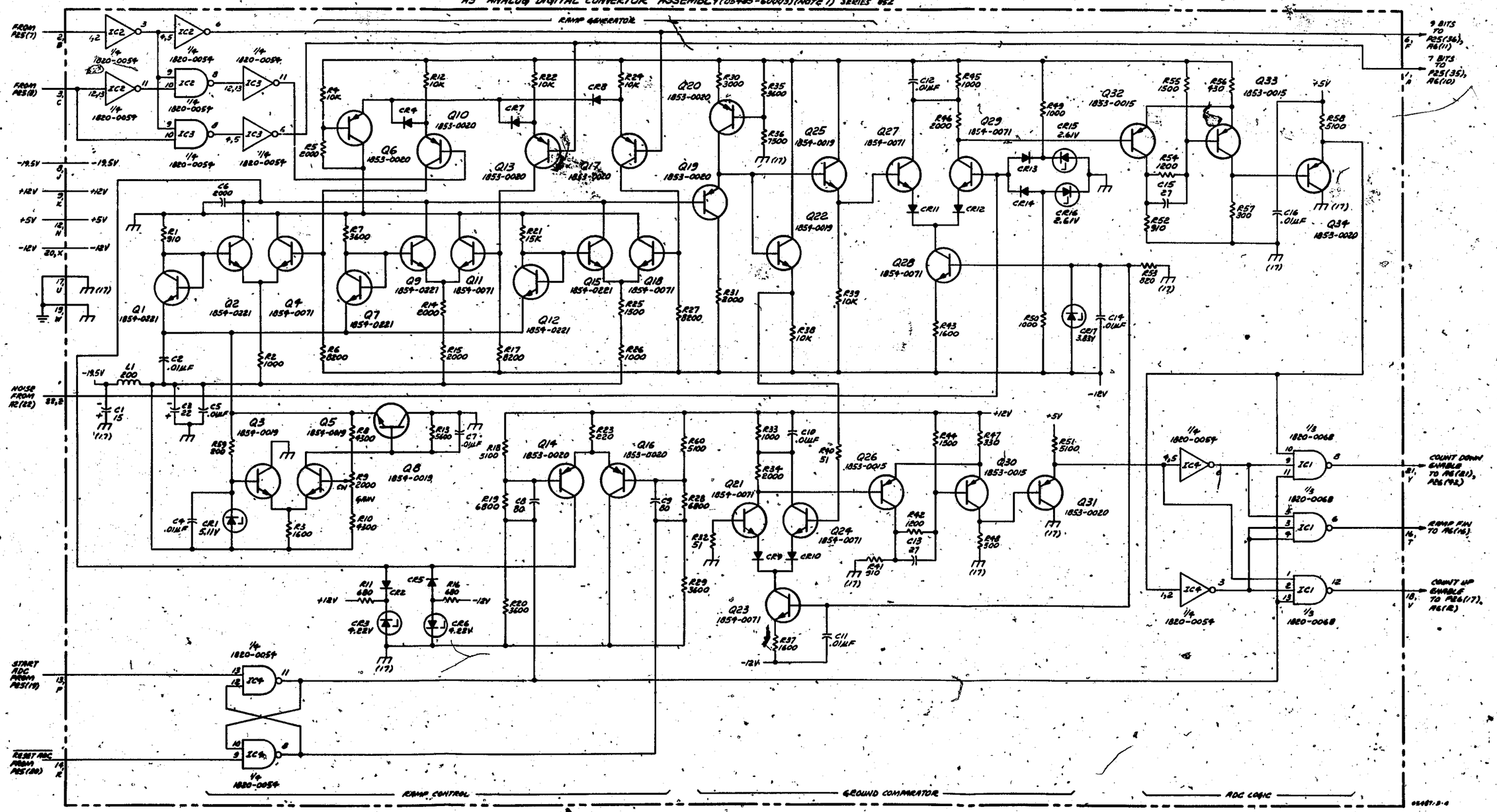
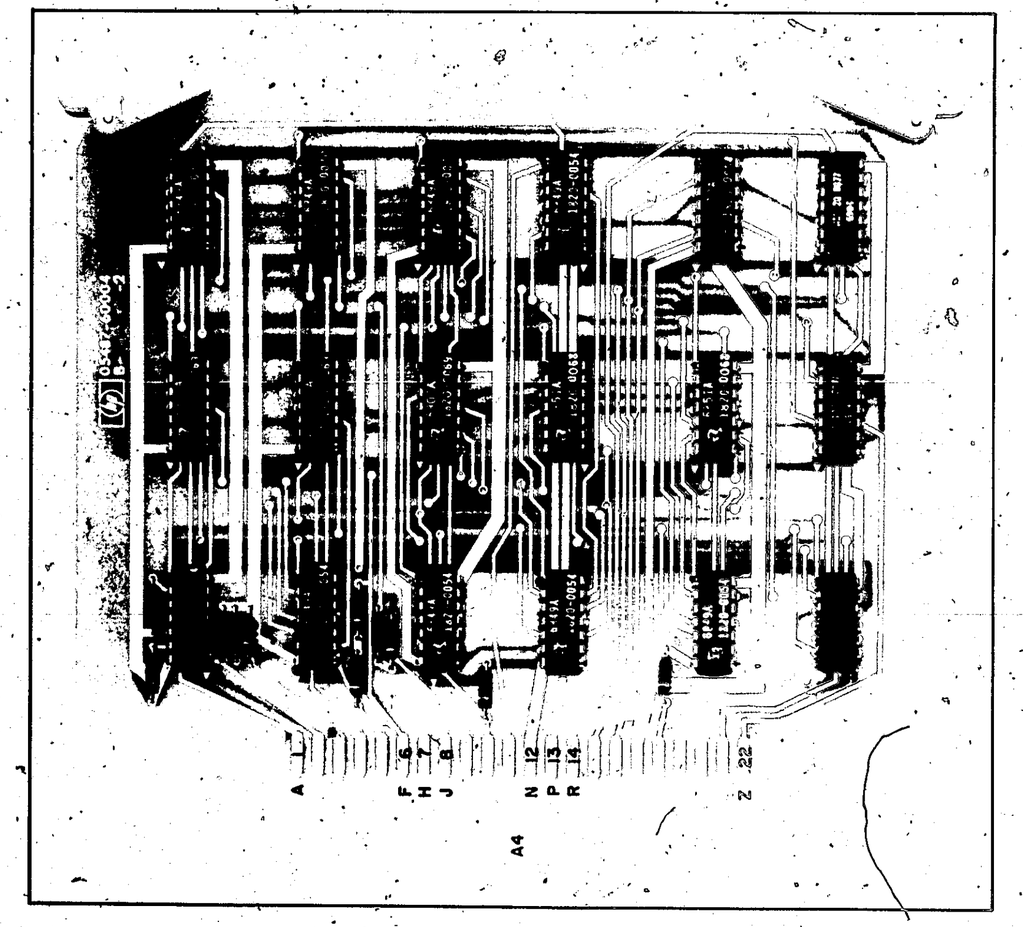


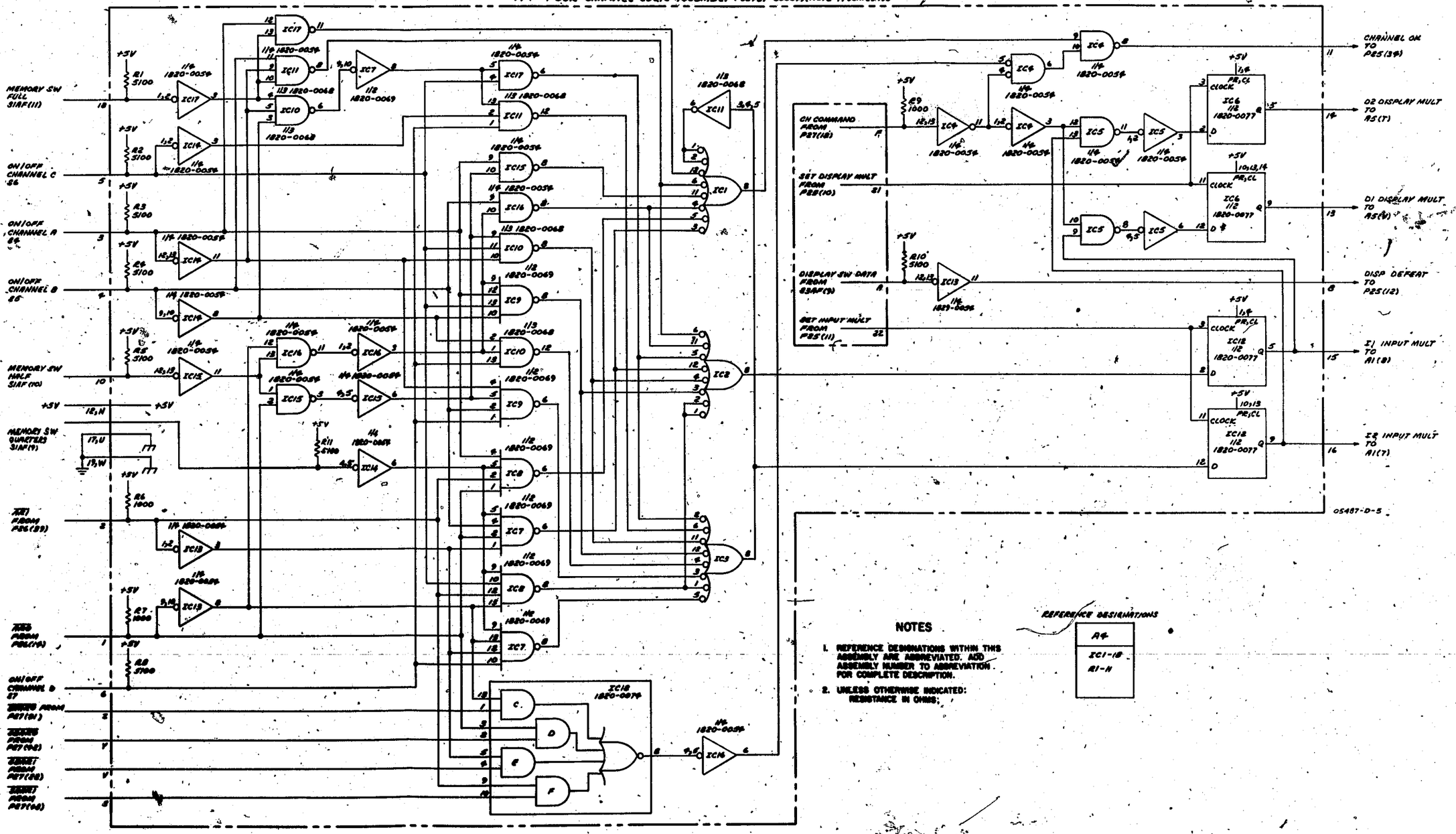
Figure 3-17
A3 ADC Series 852

A4 FOUR CHANNEL LOGIC (05487-60004)

DESCRIPTION

The 05487-60004 Board decades the Memory Selector Switches on the front panel and the two least-significant bits of the address register in the 5486A/B to drive the input and display multiplexers on the 05487-60001 and 05487-60005 Boards respectively. Additional output signals, like "Display Defeat" and "Channel OK", are sent to the 5486A/B to alter programs for special-case front panel switch settings.





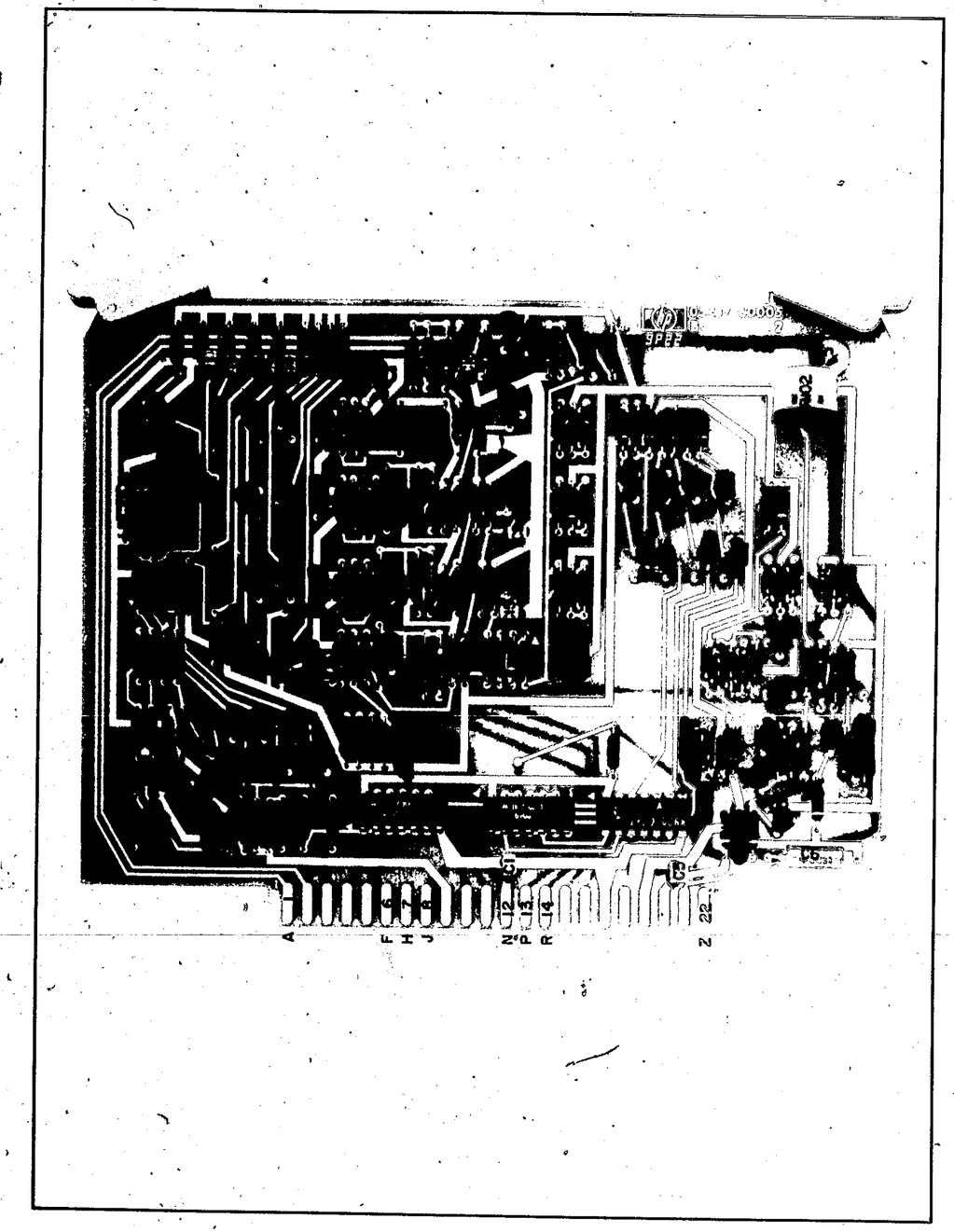
NOTES

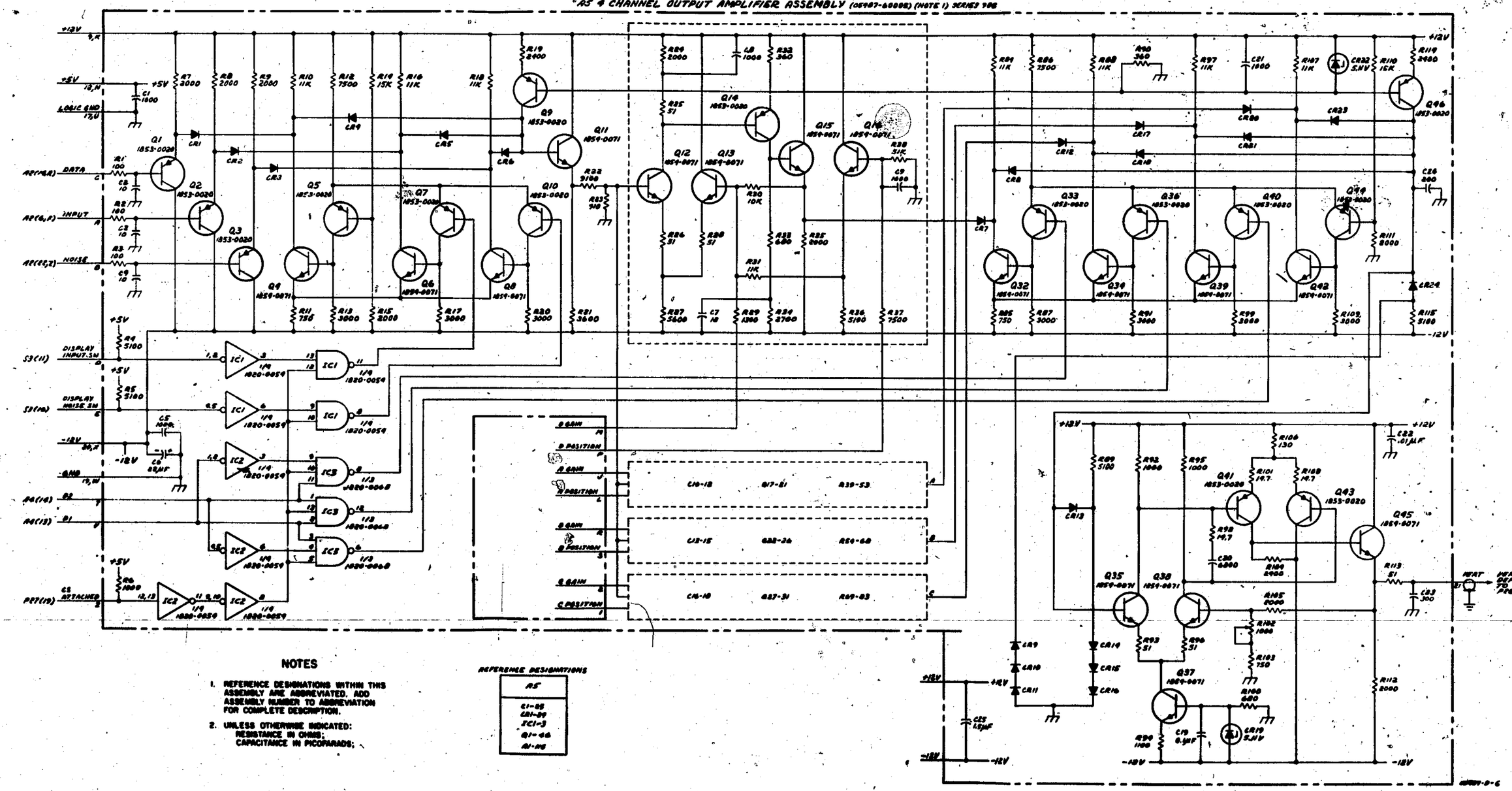
1. REFERENCE DESIGNATIONS WITHIN THIS ASSEMBLY ARE ABBREVIATED. ADD ASSEMBLY NUMBER TO ABBREVIATION FOR COMPLETE DESCRIPTION.
2. UNLESS OTHERWISE INDICATED: RESISTANCE IN OHMS;

REFERENCE DESIGNATIONS

A4
IC1-18
R1-11

Figure 3-18
A4 Four Channel Logic Series 908


A
F
H
J
N
P
R
Z
12
13
14
22



NOTES

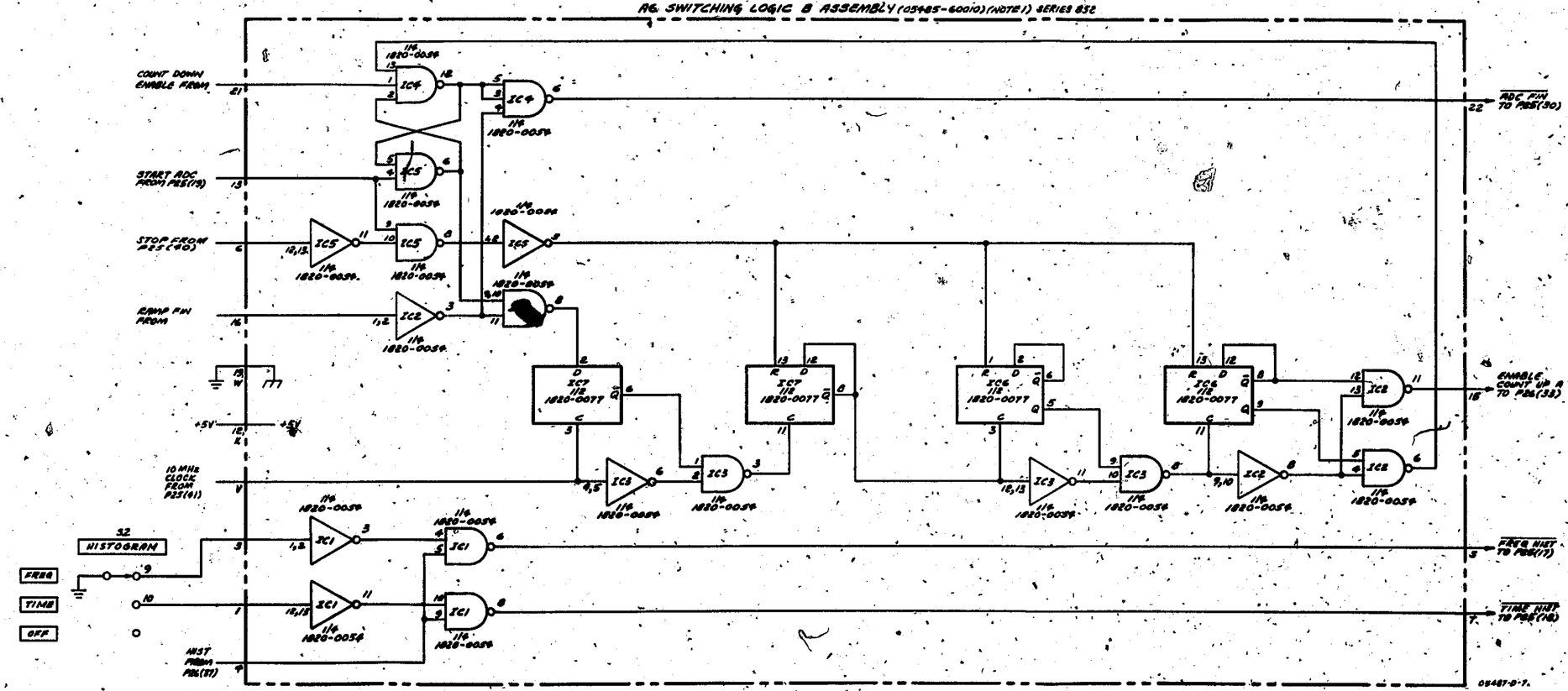
1. REFERENCE DESIGNATIONS WITHIN THIS ASSEMBLY ARE ABBREVIATED. ADD ASSEMBLY NUMBER TO ABBREVIATION FOR COMPLETE DESCRIPTION.
2. UNLESS OTHERWISE INDICATED: RESISTANCE IN OHMS; CAPACITANCE IN PICOFARADS;

REFERENCE DESIGNATIONS

A5
C1-85
CR1-29
IC1-3
Q1-46
R1-215

Figure 3-19
A5 Four Channel Output Amplifier Series 908

See Figure 3-10 for A6 Board description and Component Locator.



NOTES

1. REFERENCE DESIGNATIONS WITHIN THIS ASSEMBLY ARE ABBREVIATED. ADD ASSEMBLY NUMBER TO ABBREVIATION FOR COMPLETE DESCRIPTION.

REFERENCE DESIGNATIONS

NO PREFIX	A6
32	IC1-7

Figure 3-20
A6 Switching Logic B (Standard) Series 852, 832

See Figure 3-11 for A6 Board description and Component Locator.

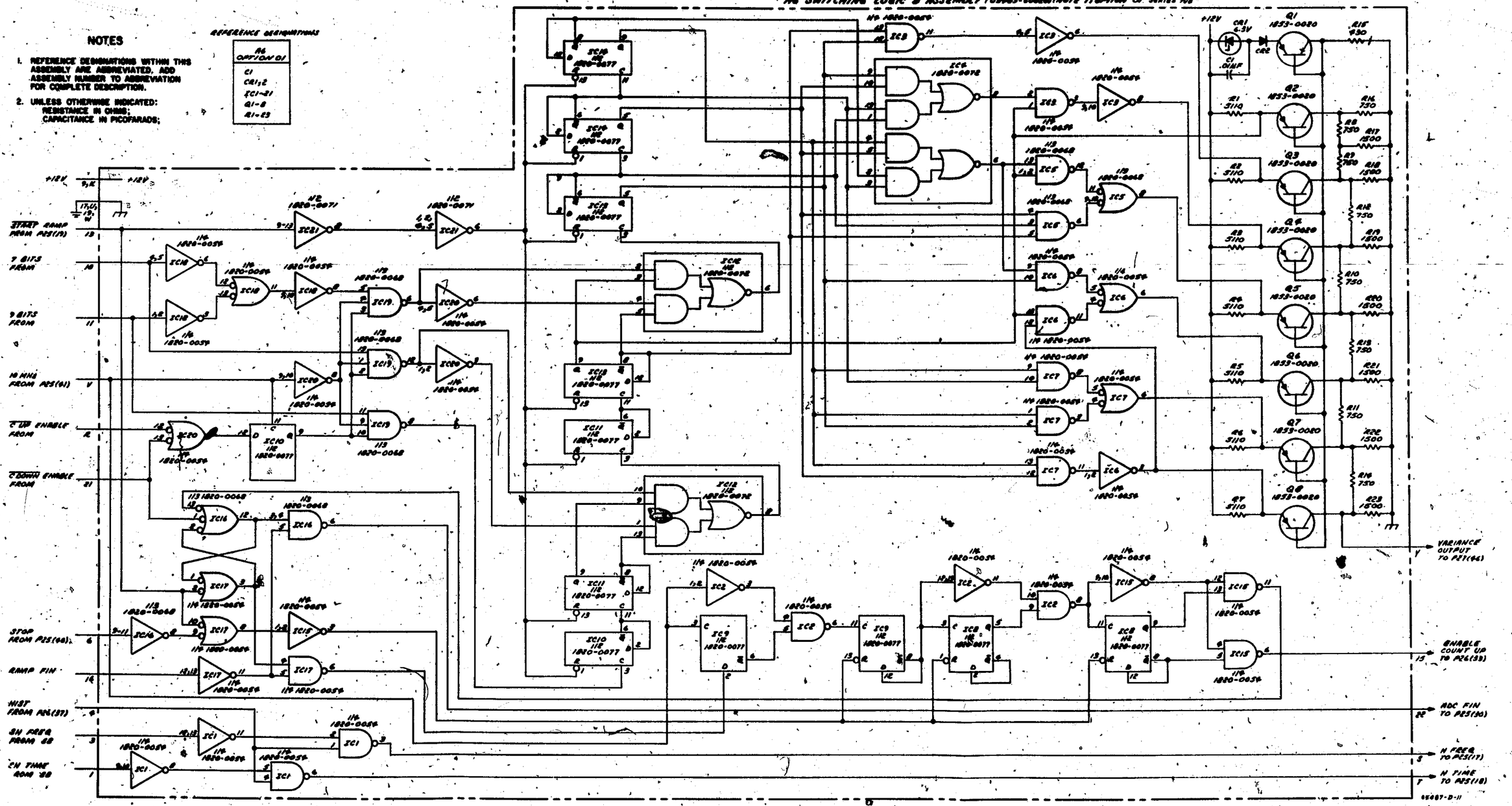
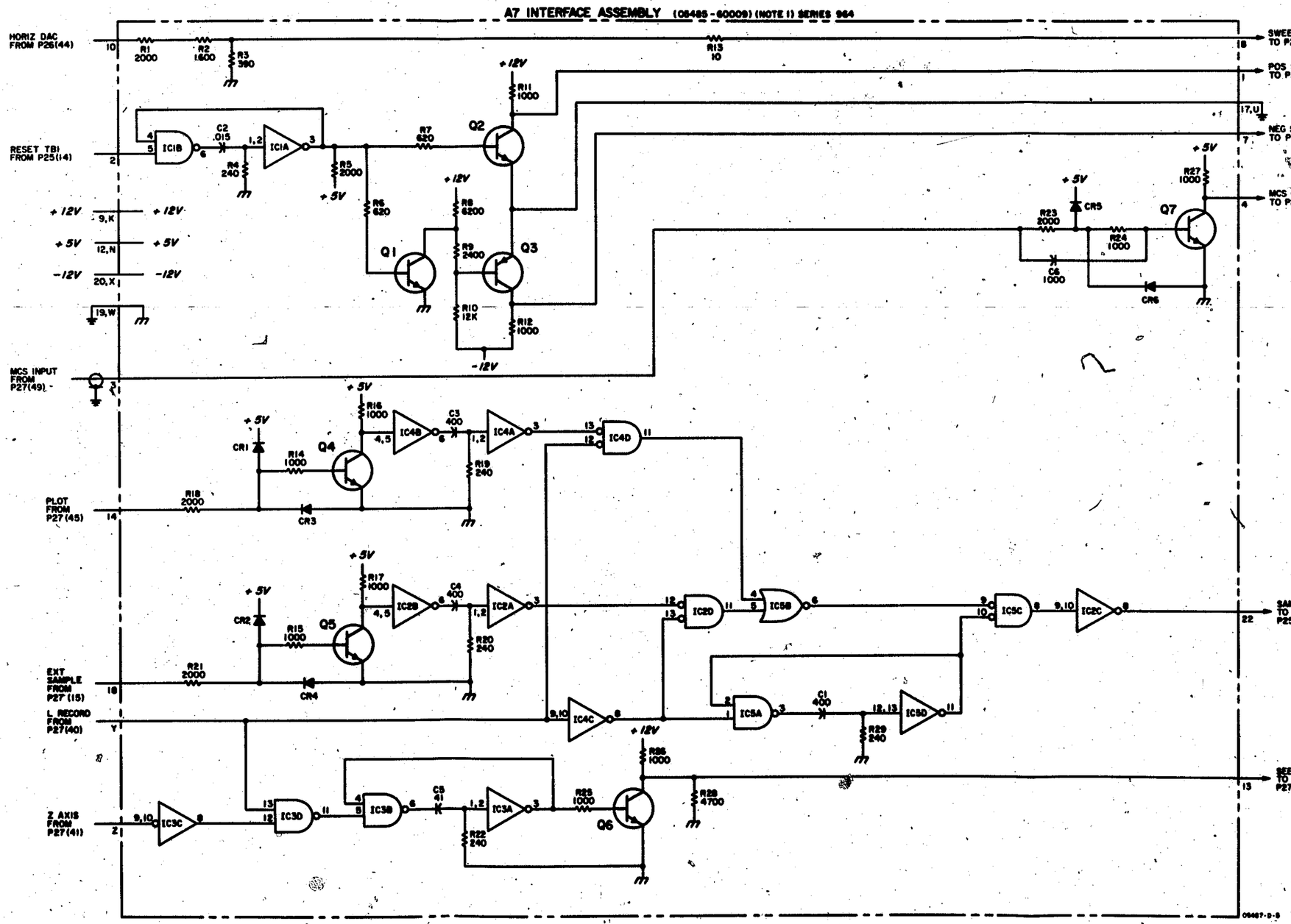


Figure 3-21
A6 Switching Logic B (Option 01) Series 908

See Figure 3-12 for A7 Board description and Component Locator.



NOTES

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2. UNLESS OTHERWISE INDICATED: RESISTANCE IN OHMS; CAPACITANCE IN PICOFARADS.

REFERENCE DESIGNATIONS

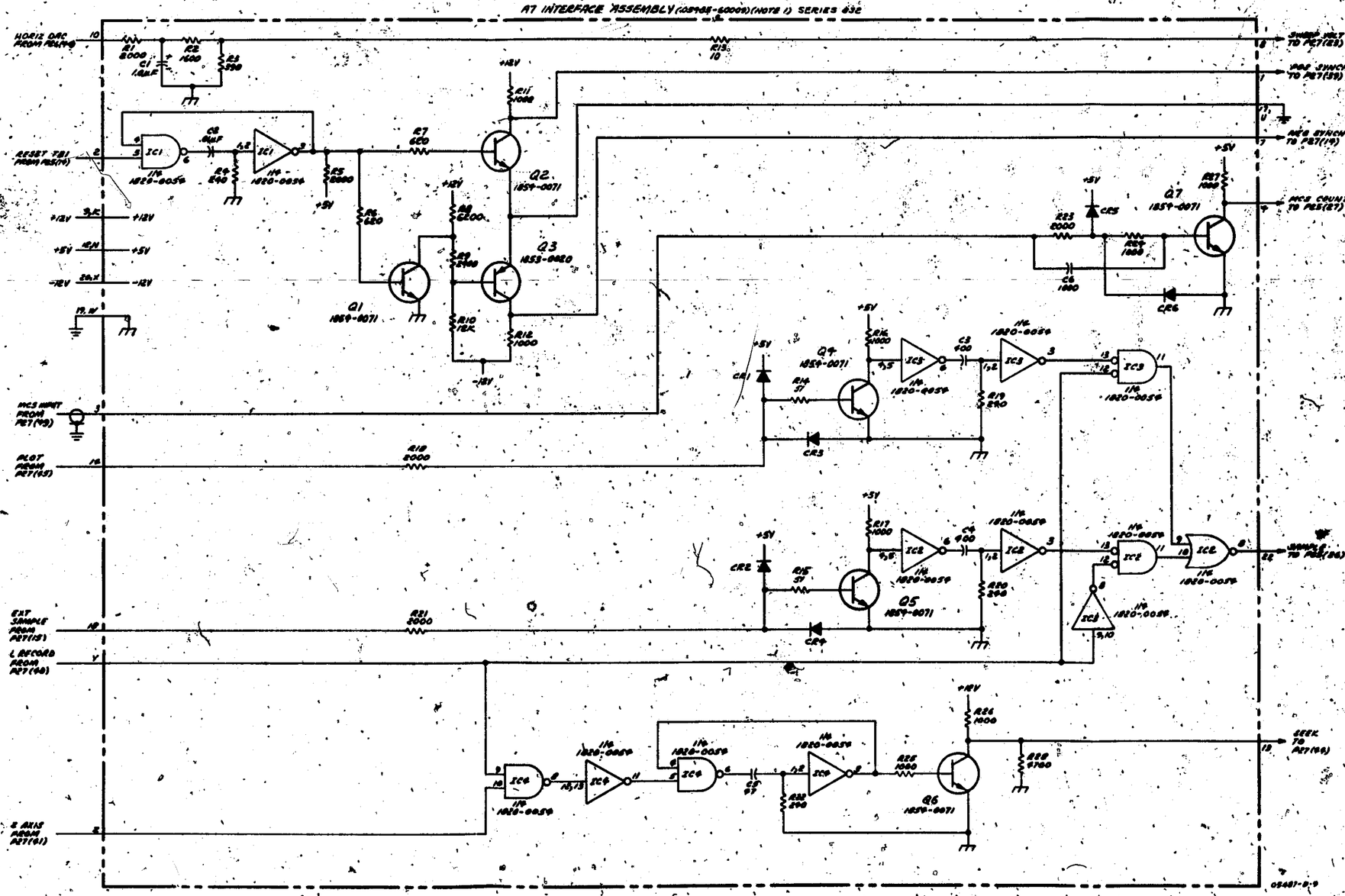
A7
C1-6
CR1-6
IC1-5
Q1-7
R1-29

TABLE

REFERENCE DESIGNATIONS	HP PART NUMBERS
CR1-6	
IC1-5	1820-0054
Q1, 2, 4-7	1854-0071
Q3	1853-0020

Figure 3-22
A7 Interface Series 964

See Figure 3-12 for A7 Board description.
See Figure 3-13 for A7 Component Locator.



NOTES

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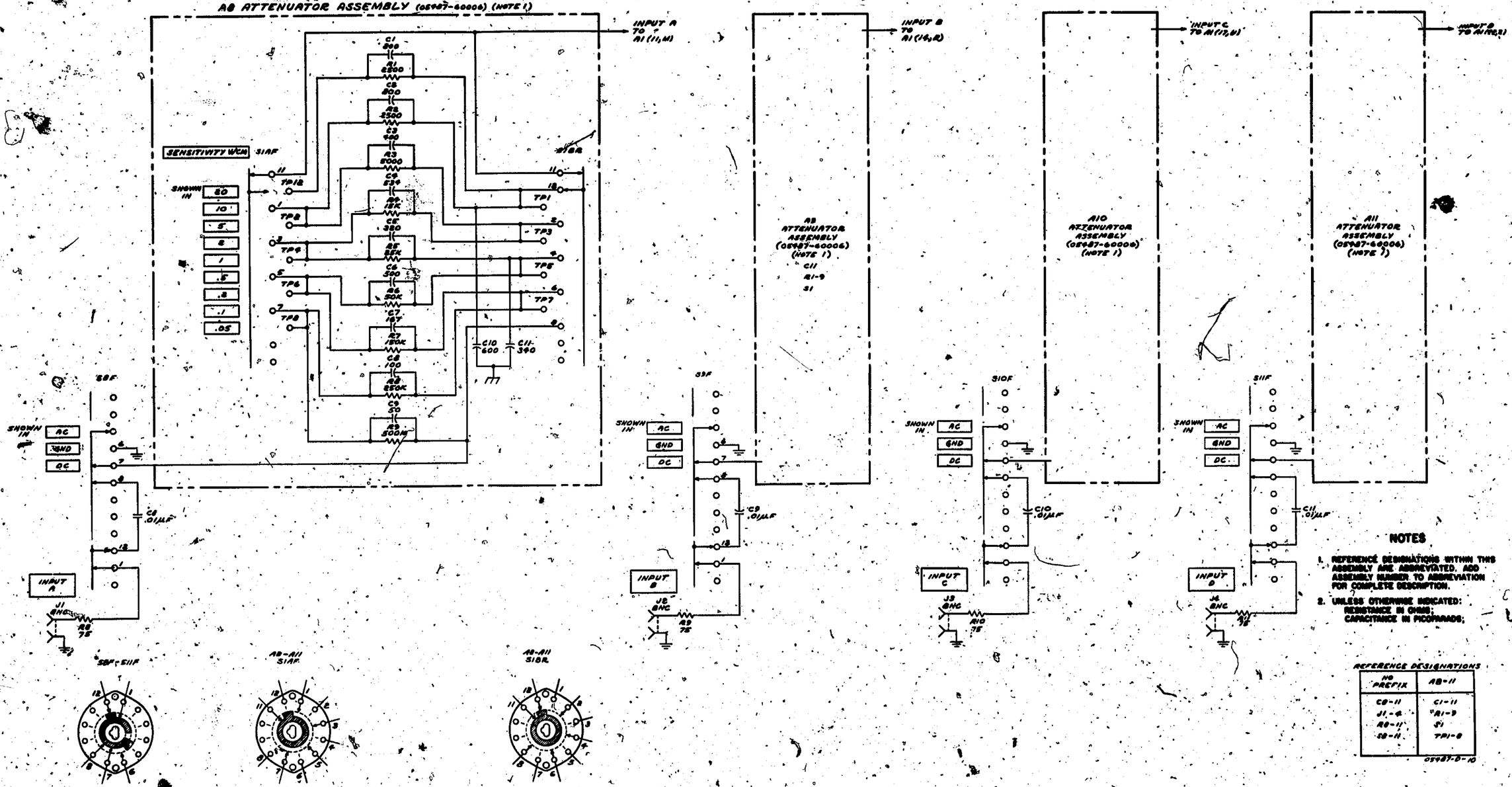
2. UNLESS OTHERWISE INDICATED: RESISTANCE IN OHMS; CAPACITANCE IN MICROFARADS;

REFERENCE DESIGNATIONS

A7
C1-6
CR1-6
IC1-9
Q1-7
R1-28

Figure 3-23
A7 Interface Series 832



NOTES

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2. UNLESS OTHERWISE INDICATED:
   RESISTANCE IN OHMS;
   CAPACITANCE IN PICOFARADS;

REFERENCE DESIGNATIONS

NO PREFIX	A8-11
C8-11	C1-11
J1-6	R1-9
R8-11	S1
S8-11	TP1-8

05987-D-10

Figure 3-24
A8 Through A11, S8 Attenuator

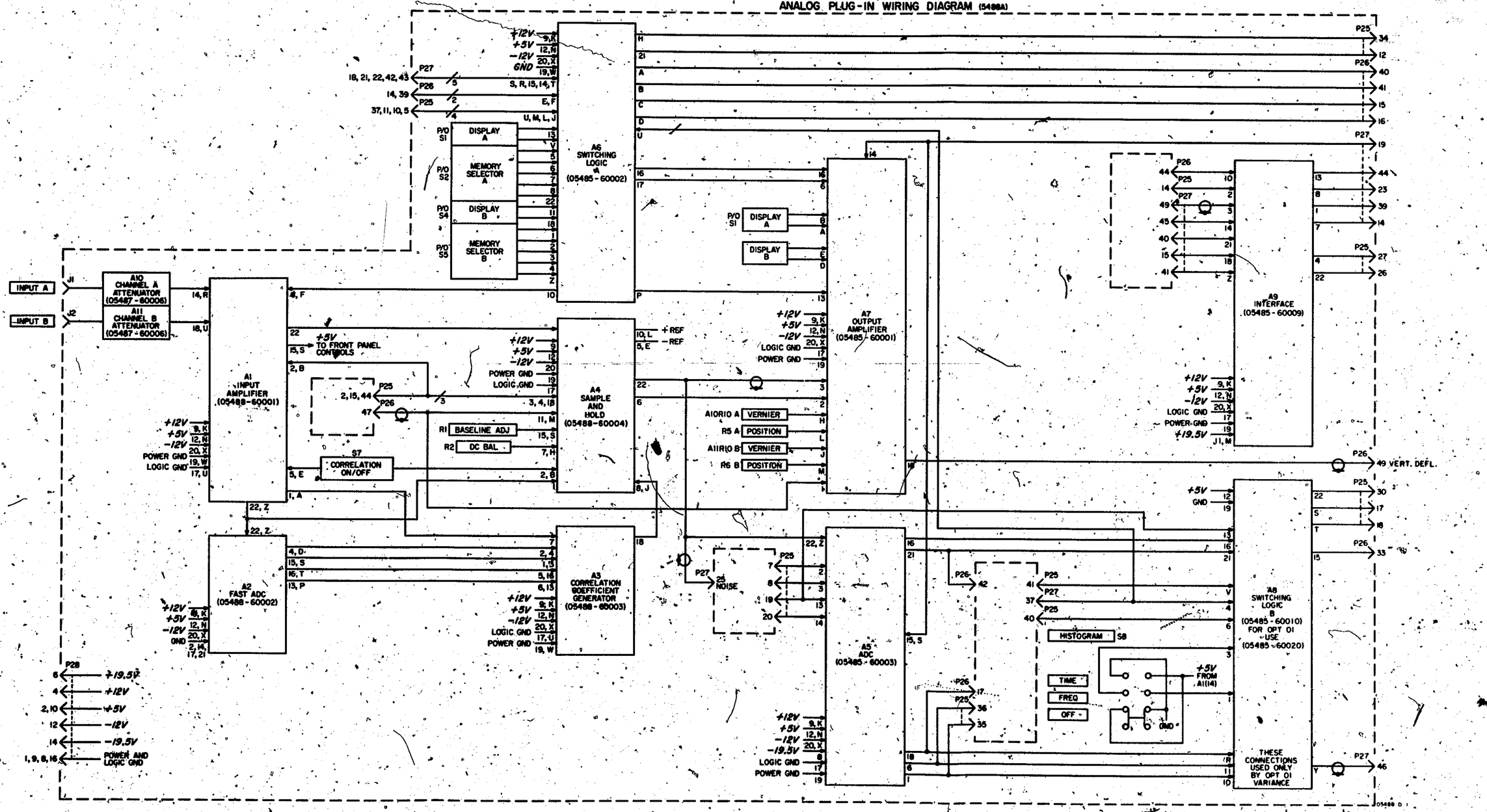


Figure 3-25
5488A Wiring Diagram

A1 INPUT AMPLIFIER BOARD (05488-60001)

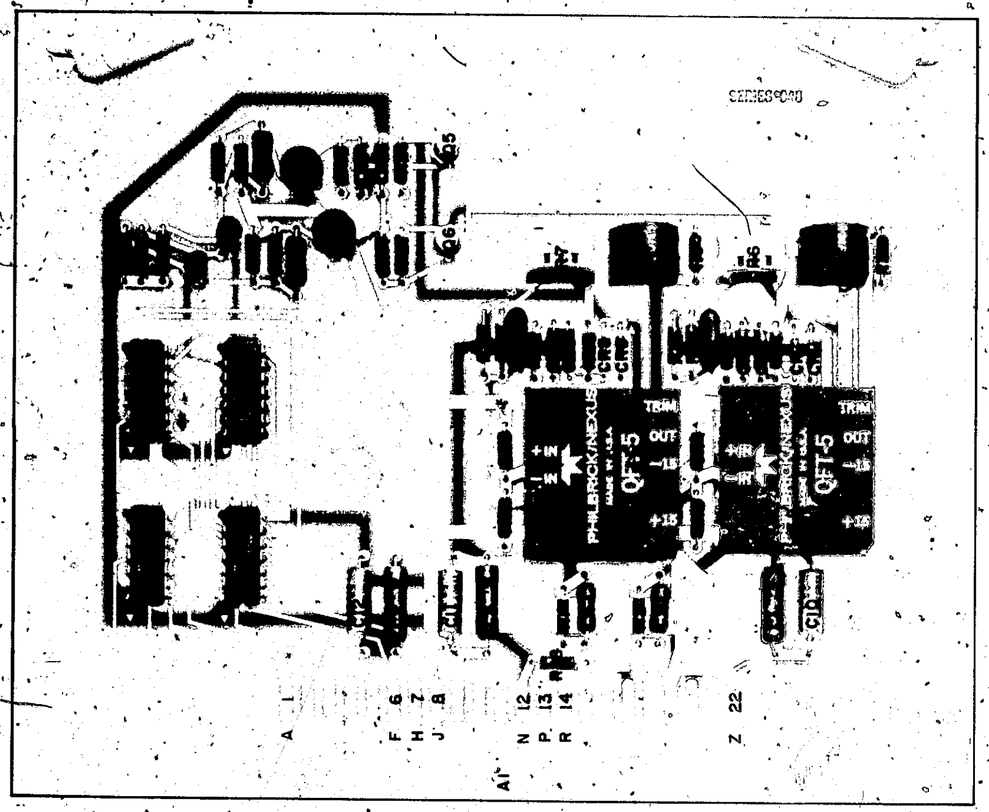
DESCRIPTION

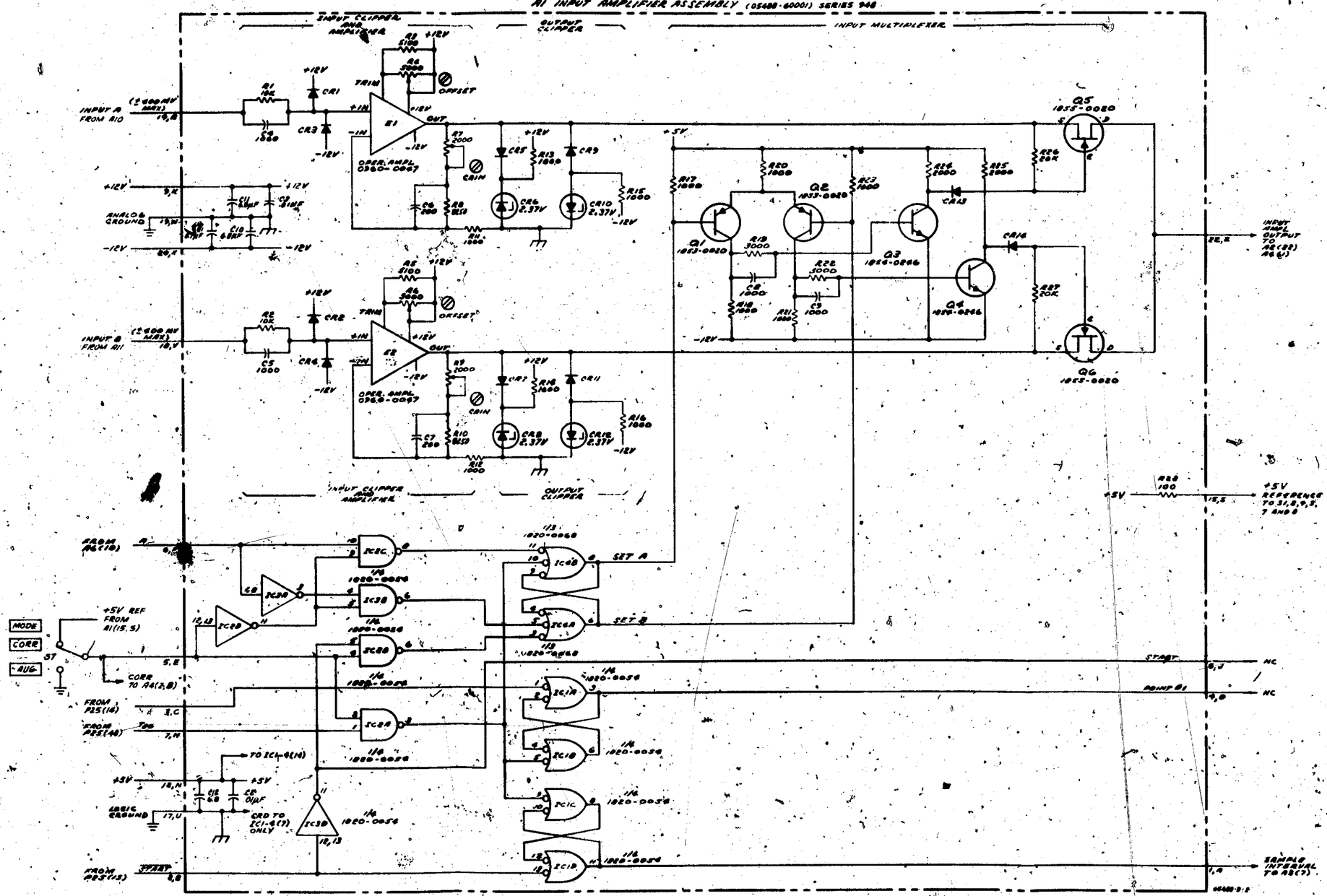
The 05488-60001 Input Amplifier Assembly consists of two independent amplifiers (A and B), the outputs of which are multiplexed to provide a common input to the Fast ADC Assembly (A2) and to the Sample and Hold Assembly (A4). The multiplexing logic is implemented on this board. In the following description, the parenthetical references apply to amplifier B; all other references apply to amplifier A.

E1 (E2) is an encapsulated FET input operational amplifier. Its input source is pin 14(18); R1, CR1, and CR3 (R2, CR2, and CR4) prevent the input from exceeding the power supply voltages. Its voltage gain is adjustable to 10 via potentiometer R7 (R9), and R4 (R6) provides an offset control. The amplifier output is clamped to ± 3 volts by CR5, CR6, CR9, and CR10 (CR7, CR8, CR11, and CR12).

IC4A and IC4B are interconnected as an RS flip/flop to control whether A or B is switched to the output. The drive for thw switch is provide by Q1, A2, Q3, and Q4. If IC4(8) is at a logical "1", then the collector of Q3 will rise to +5 volts, turning on FET switch Q5. Similarly, FET switch Q6 will be turned off, and the output at pin 22 will reflect A. If IC4(8) is at a logical "0", the FET switches will reverse states, and the output will reflect B.

IC1C and IC1D provide an 8 μs positive pulse to pin 1 every time a negative pulse is inputted to pin 2.





NOTES

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2. UNLESS OTHERWISE INDICATED: RESISTANCE IN OHMS, CAPACITANCE IN PICOFARADS.

REFERENCE DESIGNATIONS

A1
C1-12
CR1-10
E1, 2
IC1-6
Q1-6
R1-28

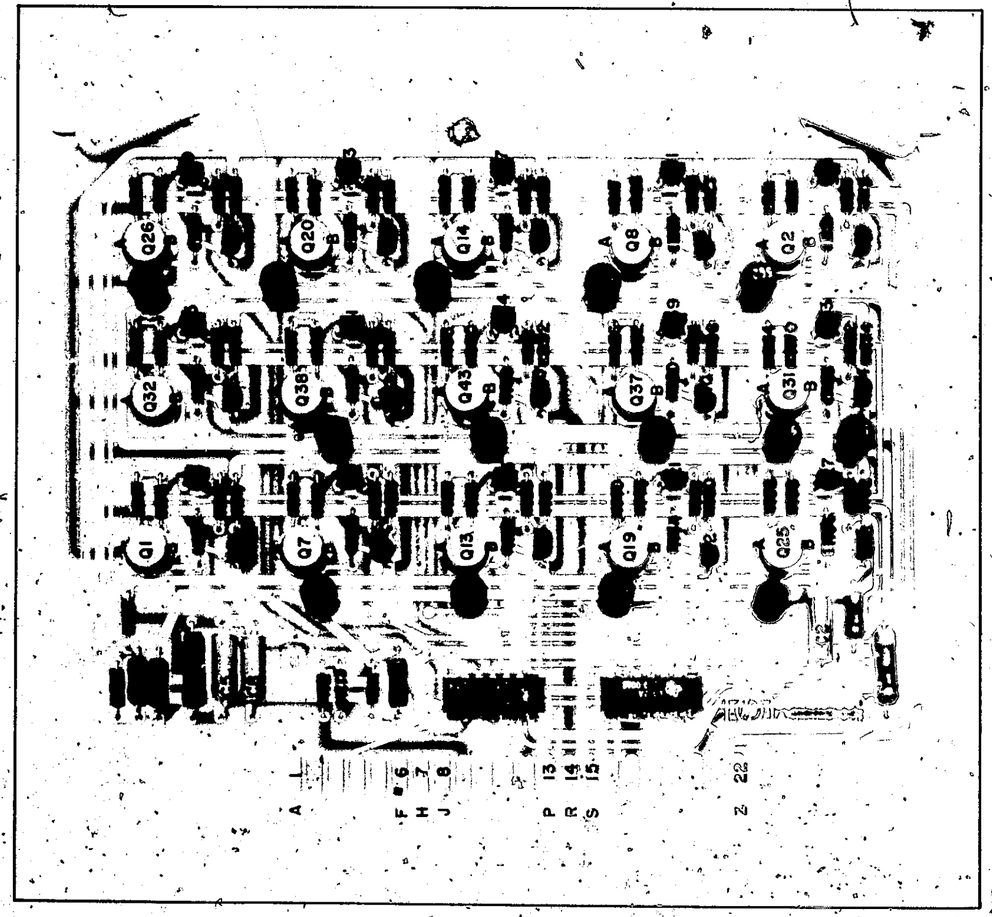
Figure 3-26
A1 Input Amplifier Series 948

A2 FAST ADC (05488-60002)

DESCRIPTION

The 05488-60002 Fast Analog-Digital Converter Assembly converts the analog input amplifier output (pin 22) to a four-bit Gray-coded digital number (pins 13, 16, 15, and 4).

The input is simultaneously compared with 15 reference voltages, equally spaced between plus and minus 3.1 volts nominal, as generated by CR1. Zero, one, or more of these comparators (Q1-Q45) will fire, according to the magnitude of the input. The 15 comparator outputs are Gray-coded by IC1 and IC2, so that at any instant of time no more than one output bit at a time will be changing.



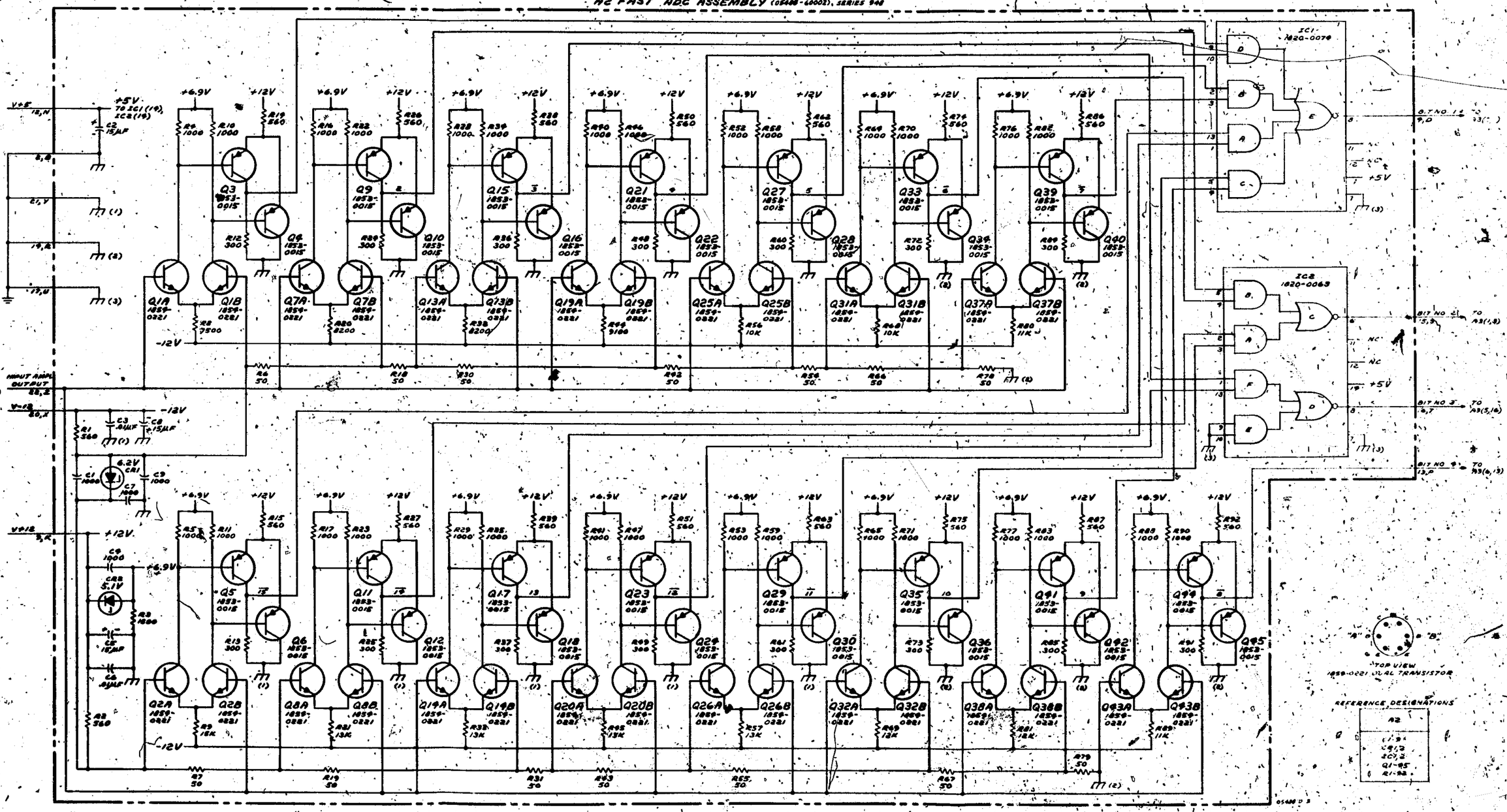


Figure 3-27
A2 Fast ADC Series 948