

JOHANNUS

SCHEMATIC DIAGRAMS

OPUS 1210

ALSO USABLE FOR OPUS 1220

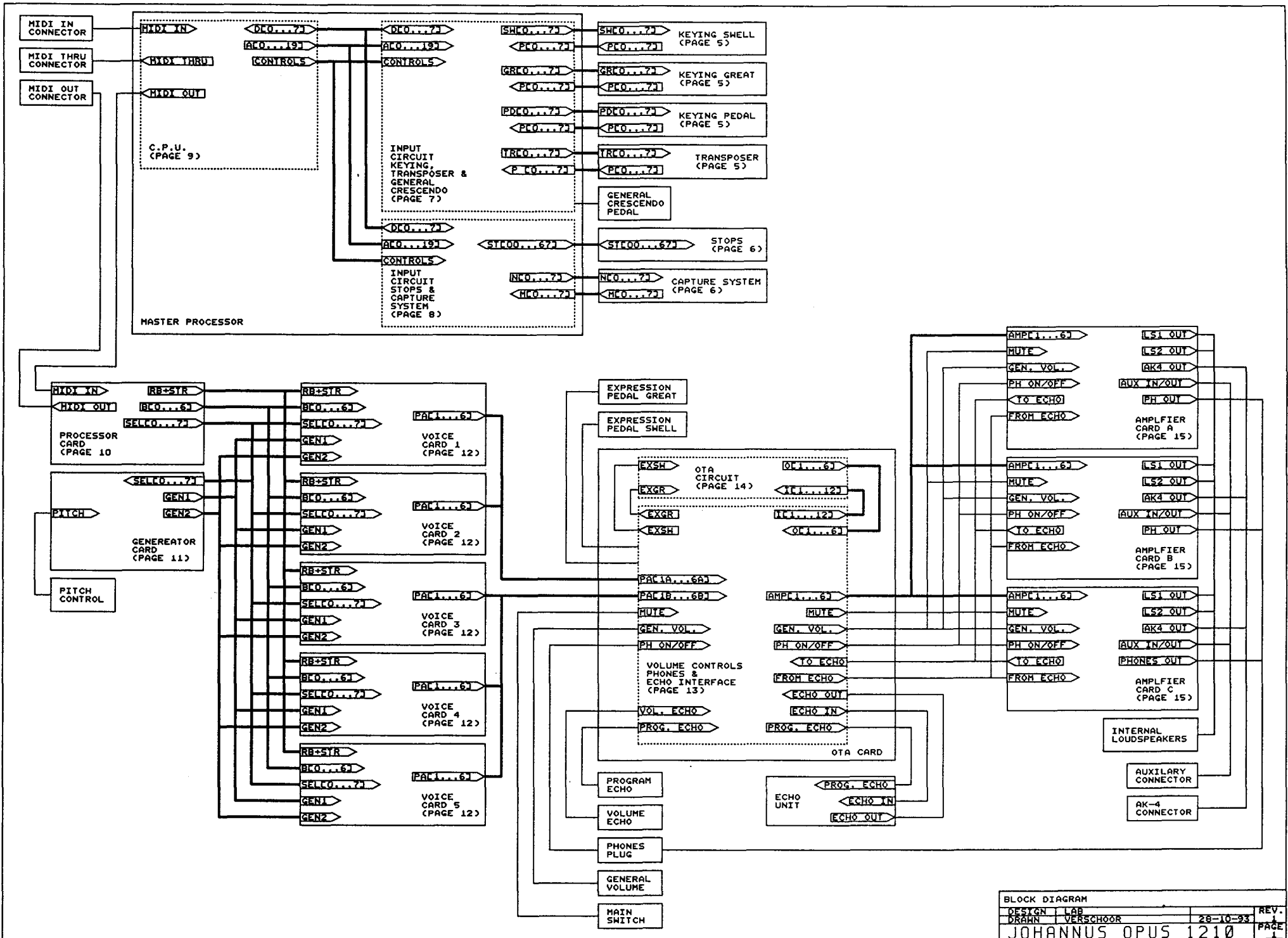
ALTERATIONS RESERVED

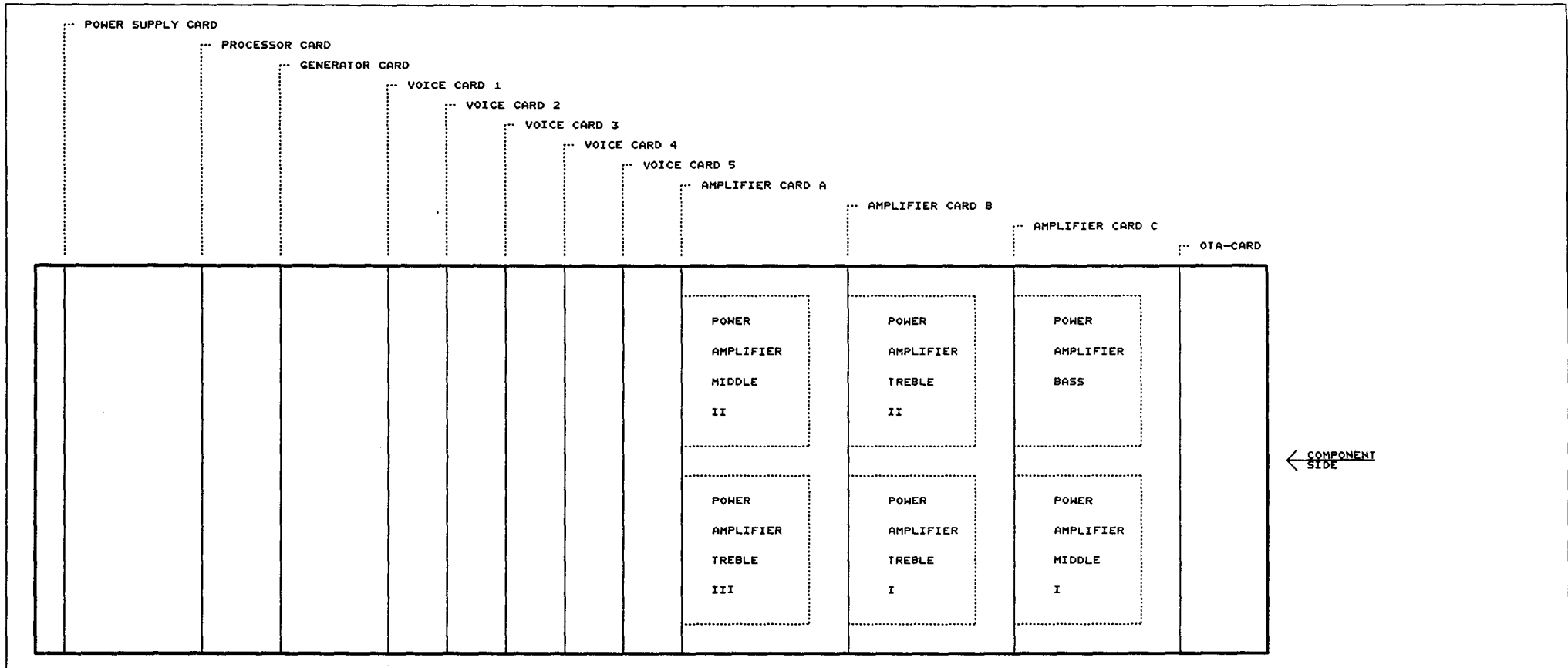
JOHANNUS Orgelbouw b.v.

Morsestraat 28 - 6716 AH Ede - Tel. (08380) 37403 - Fax (08380) 22238

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INTERNAL POTENTIOMETERS





1. NOT CONNECTED
2. NOT CONNECTED
3. NOT CONNECTED
4. +5V MIDI IN
5. MIDI IN



MIDI IN

1. NOT CONNECTED
2. NOT CONNECTED
3. NOT CONNECTED
4. +5V MIDI THRU
5. MIDI THRU



MIDI THRU

1. NOT CONNECTED
2. NOT CONNECTED
3. NOT CONNECTED
4. +5V MIDI OUT
5. MIDI OUT



MIDI OUT

SOLDERING SIDE VIEW

1. AK-4 OUT CHANNEL A
2. GROUND
3. NOT CONNECTED
4. AK-4 OUT CHANNEL B
5. NOT CONNECTED



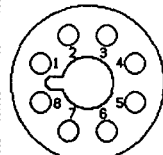
AK-4
OUT

1. AUX OUT CHANNEL A
2. GROUND
3. AUX IN CHANNEL A
4. AUX OUT CHANNEL B
5. AUX IN CHANNEL B



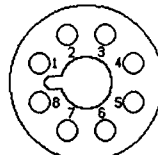
AUX
IN/OUT

1. - MIDDLE II AMPLIFIER
 2. + MIDDLE II AMPLIFIER
 3. - TREBLE I AMPLIFIER
 4. + TREBLE I AMPLIFIER
 5. - TREBLE II AMPLIFIER
 6. + TREBLE II AMPLIFIER
 7. - TREBLE III AMPLIFIER
 8. + TREBLE III AMPLIFIER
1. - BASS AMPLIFIER
 2. + BASS AMPLIFIER
 3. - MIDDLE I AMPLIFIER
 4. + MIDDLE I AMPLIFIER



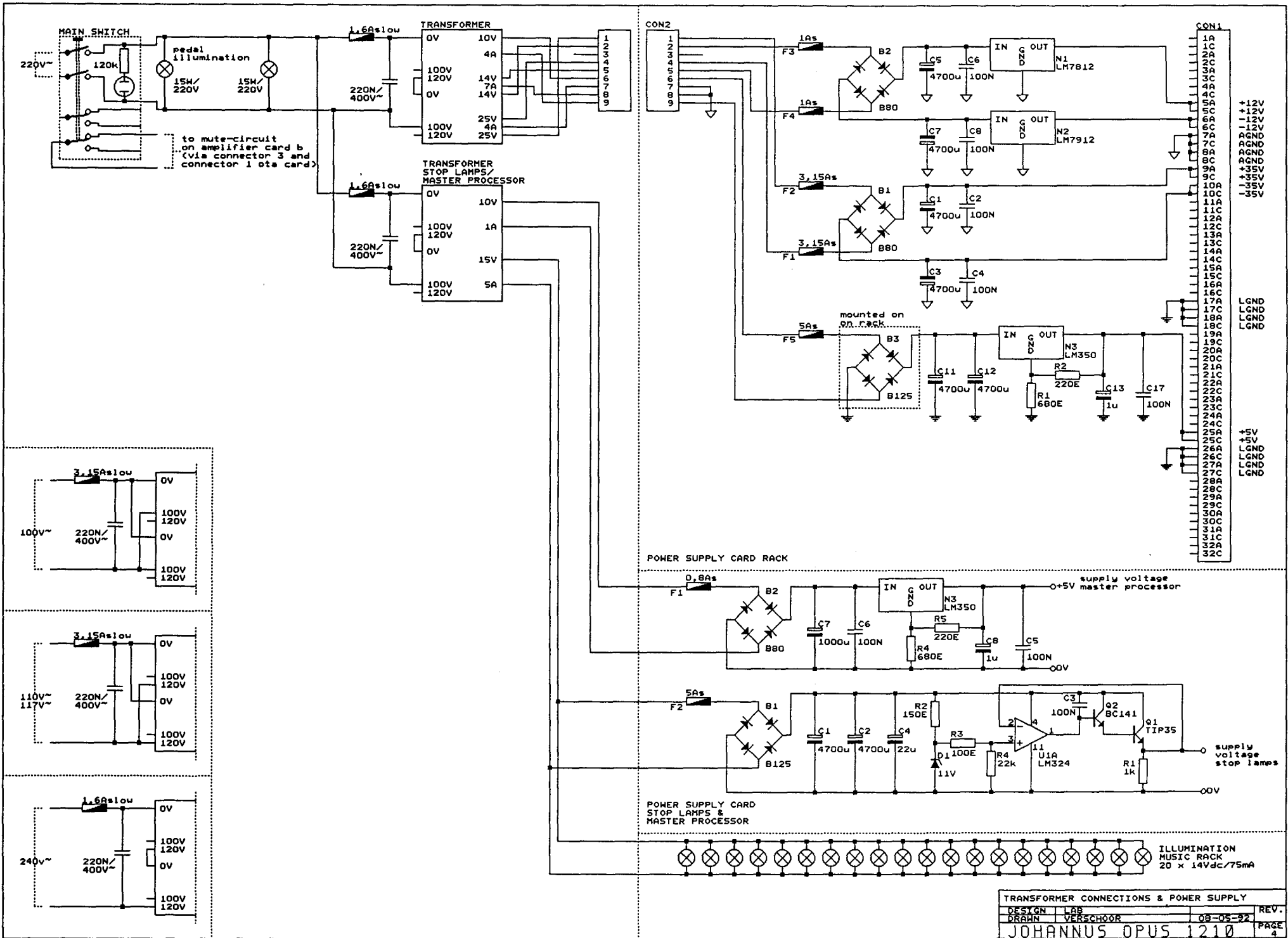
LS OUT A

(OPTIONAL)

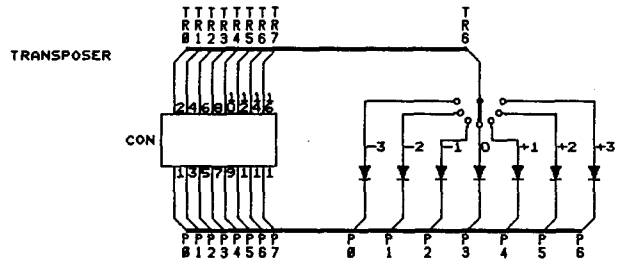
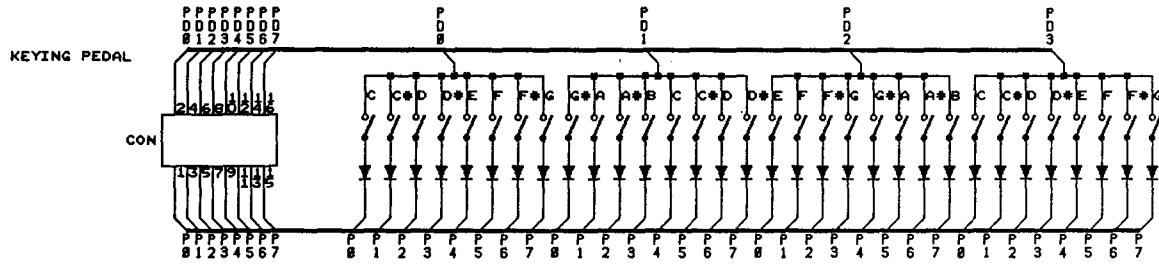
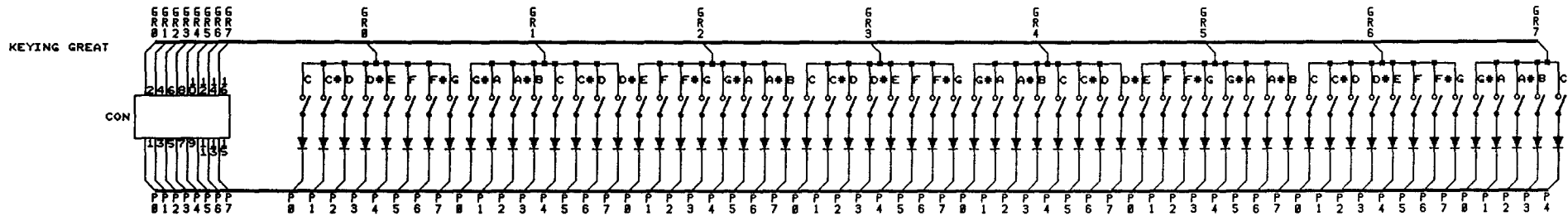
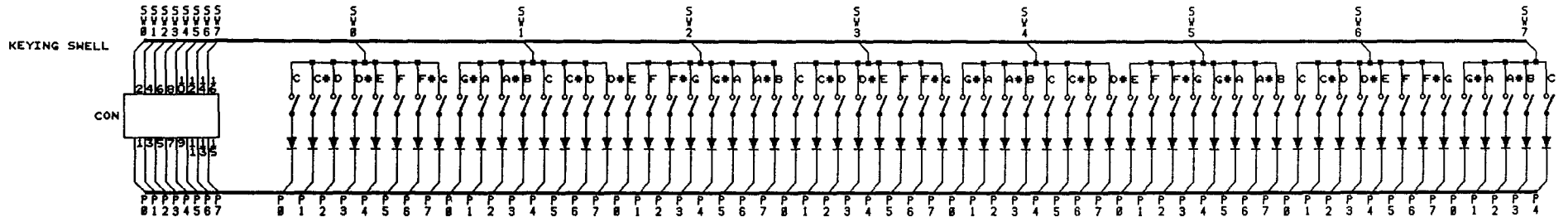


LS OUT B

CON1	CON2	CON3	CON4-5	CON6-8	CON9-10	CON11	CON12
018 020 030 040 +12V 050 -12V 060 AGND 070 AGND 080 +35V 090 -35V 010 0120 0130 0140 0150 0160 0170 0180 0190 0200 0210 0220 0230 0240 0250 0260 0270 0280 0290 0300 0310 0320 0322	018 020 030 040 +12V 050 -12V 060 AGND 070 AGND 080 +35V 090 -35V 010 0120 0130 0140 0150 0160 0170 0180 0190 0200 0210 0220 0230 0240 0250 0260 0270 0280 0290 0300 0310 0320 0322	018 020 030 040 +12V 050 -12V 060 AGND 070 AGND 080 +35V 090 -35V 010 0120 0130 0140 0150 0160 0170 0180 0190 0200 0210 0220 0230 0240 0250 0260 0270 0280 0290 0300 0310 0320 0322	018 020 030 040 +12V 050 -12V 060 AGND 070 AGND 080 +35V 090 -35V 010 0120 0130 0140 0150 0160 0170 0180 0190 0200 0210 0220 0230 0240 0250 0260 0270 0280 0290 0300 0310 0320 0322	018 020 030 040 +12V 050 -12V 060 AGND 070 AGND 080 +35V 090 -35V 010 0120 0130 0140 0150 0160 0170 0180 0190 0200 0210 0220 0230 0240 0250 0260 0270 0280 0290 0300 0310 0320 0322	018 020 030 040 +12V 050 -12V 060 AGND 070 AGND 080 +35V 090 -35V 010 0120 0130 0140 0150 0160 0170 0180 0190 0200 0210 0220 0230 0240 0250 0260 0270 0280 0290 0300 0310 0320 0322	018 020 030 040 +12V 050 -12V 060 AGND 070 AGND 080 +35V 090 -35V 010 0120 0130 0140 0150 0160 0170 0180 0190 0200 0210 0220 0230 0240 0250 0260 0270 0280 0290 0300 0310 0320 0322	018 020 030 040 +12V 050 -12V 060 AGND 070 AGND 080 +35V 090 -35V 010 0120 0130 0140 0150 0160 0170 0180 0190 0200 0210 0220 0230 0240 0250 0260 0270 0280 0290 0300 0310 0320 0322
PA1B PA3B PA5B +12V -12V AGND AGND +35V -35V LGND LGND +5V LGND LGND	PA1B PA3B PA5B +12V -12V AGND AGND +35V -35V LGND LGND +5V LGND LGND	PA1B PA3B PA5B +12V -12V AGND AGND +35V -35V LGND LGND +5V LGND LGND	PA1B PA3B PA5B +12V -12V AGND AGND +35V -35V LGND LGND +5V LGND LGND	PA1A PA3A PA5A +12V -12V AGND AGND +35V -35V LGND LGND +5V LGND LGND	AMP1 AMP3 TO ECHO +12V -12V AGND AGND +35V -35V VOLUME PHONES LGND LGND +5V LGND LGND	AMP3 AMP5 TO ECHO +12V -12V AGND AGND +35V -35V VOLUME PHONES LGND LGND +5V LGND LGND	AMP1 AMP3 AMP5 FROM ECHO A +12V -12V AGND AGND +35V -35V VOLUME PHONES PASA PAGA PA3A PA4A PA1A PA2A PA5B PA6B PA3B PA4B PA1B PA1A +5V LGND LGND
POWER SUPPLY CARD	PROCESSOR CARD	GENERATOR CARD	VOICE CARD 1-2	VOICE CARD 3-5	AMPLIFIER CARD A & B	AMPLIFIER CARD C	OTA CARD

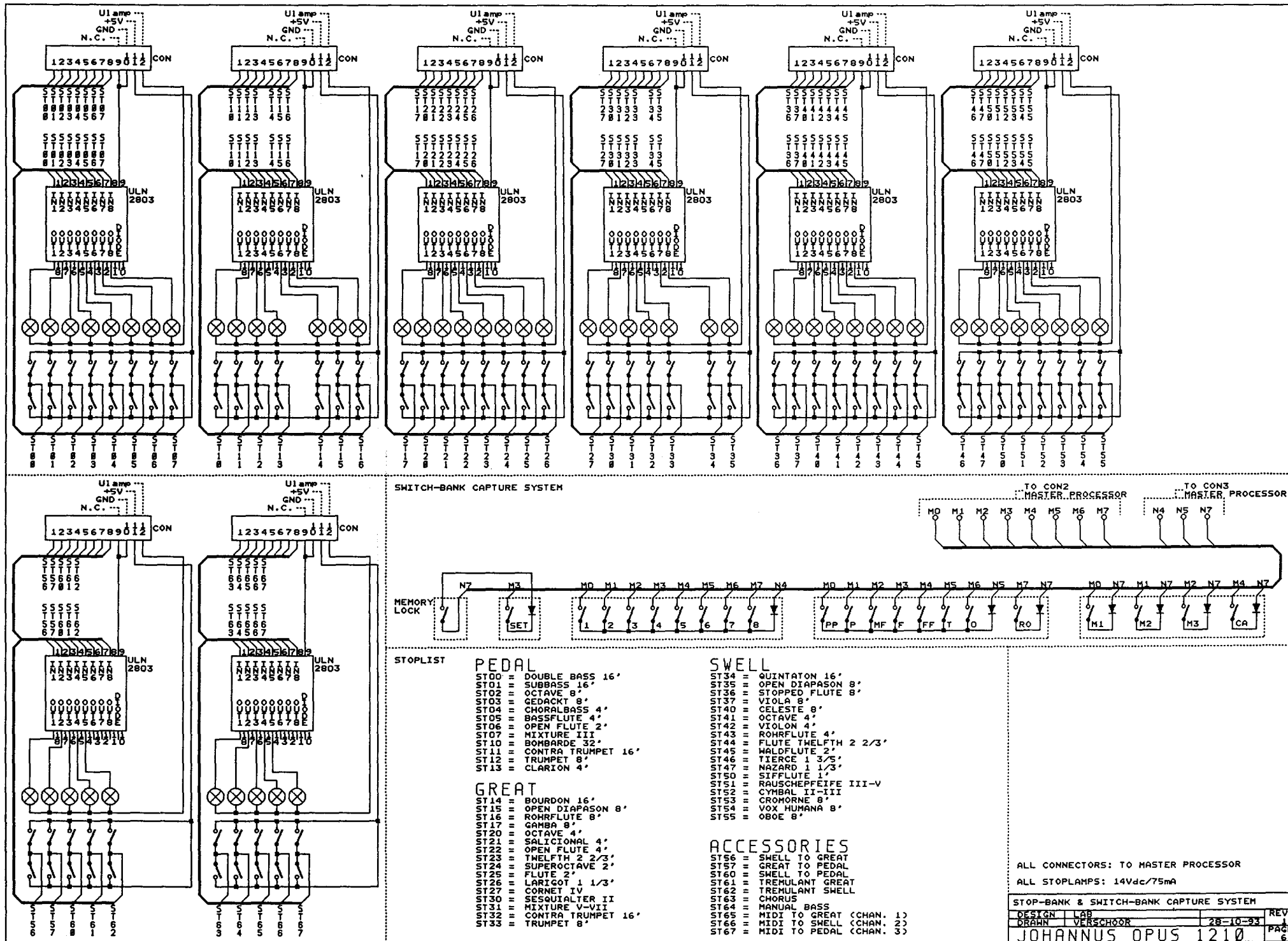


TRANSFORMER CONNECTIONS & POWER SUPPLY			
DESIGN	LAB		REV.
DRAWN	VERSCHOOR	08-05-92	PAGE 4
JOHANNUS OPUS 1210			



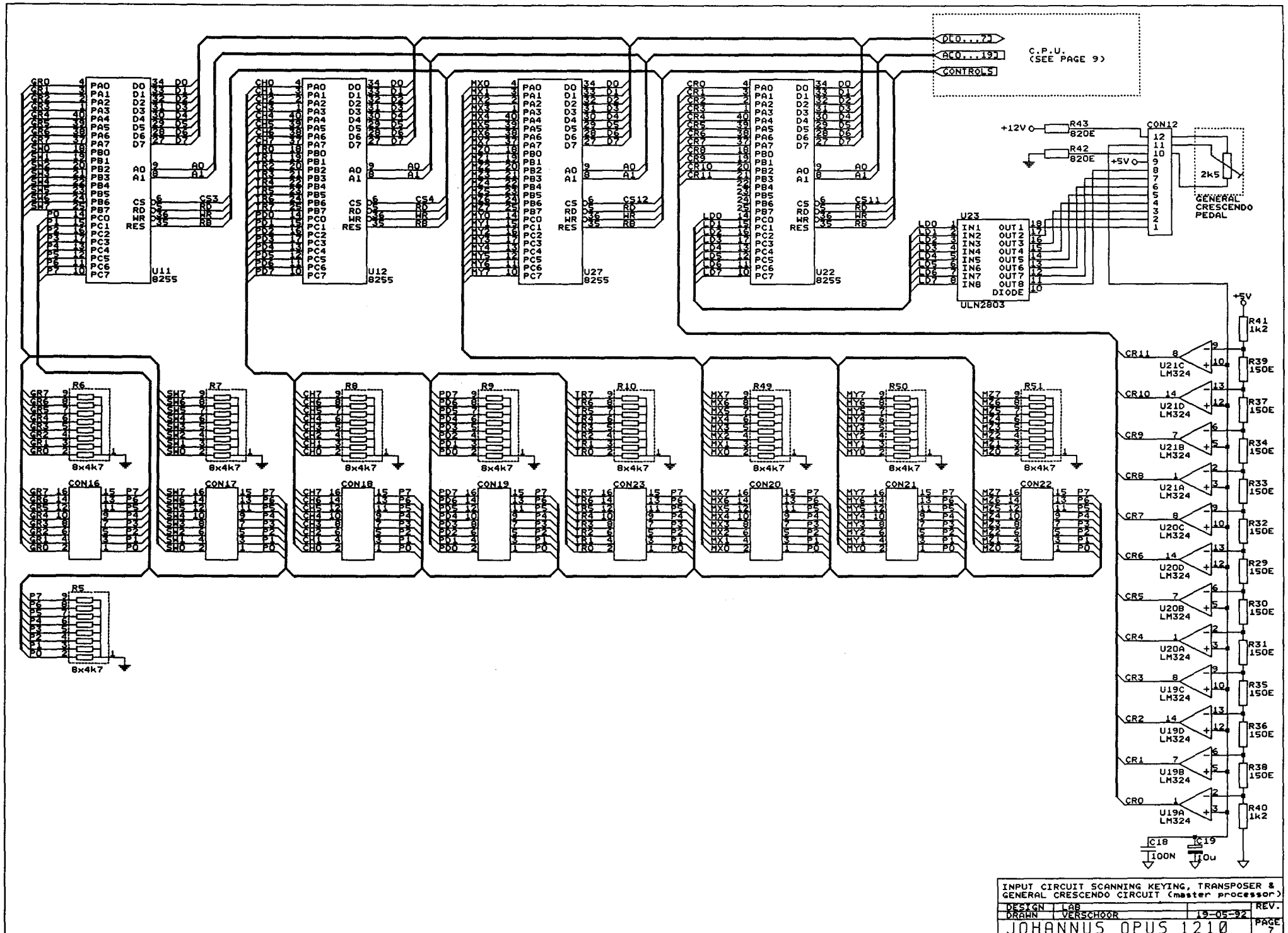
ALL CONNECTORS: TO MASTER PROCESSOR
 ALL DIODES: 1N4148

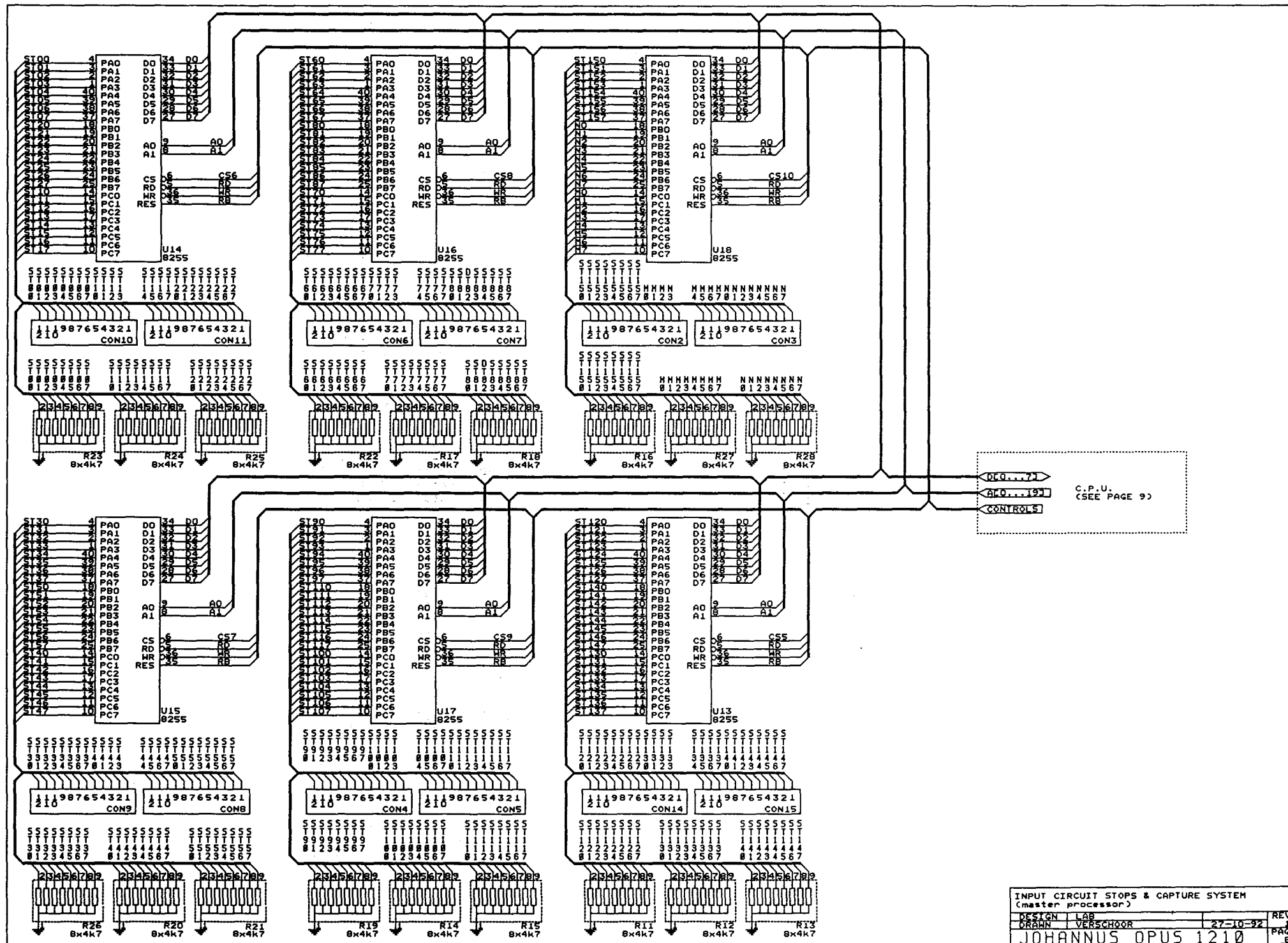
SCANNING KEYING & TRANSPOSER			REV.
DESIGN	LAB		
DRAWN	VERSCHOOR	13-05-92	PAGE 5
JOHANNUS OPUS 1210			



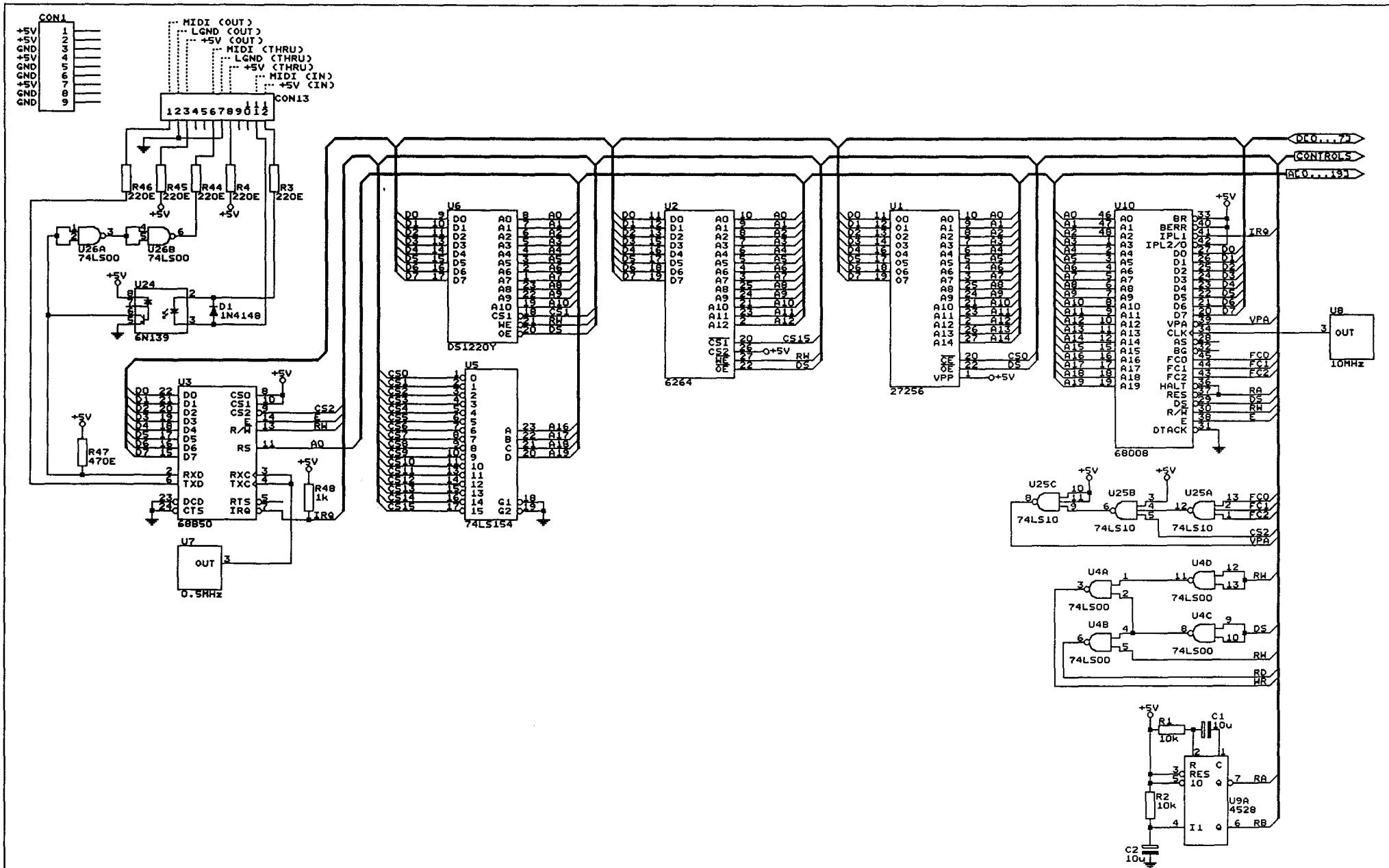
ALL CONNECTORS: TO MASTER PROCESSOR
ALL STOPLAMPS: 14Vdc/75mA

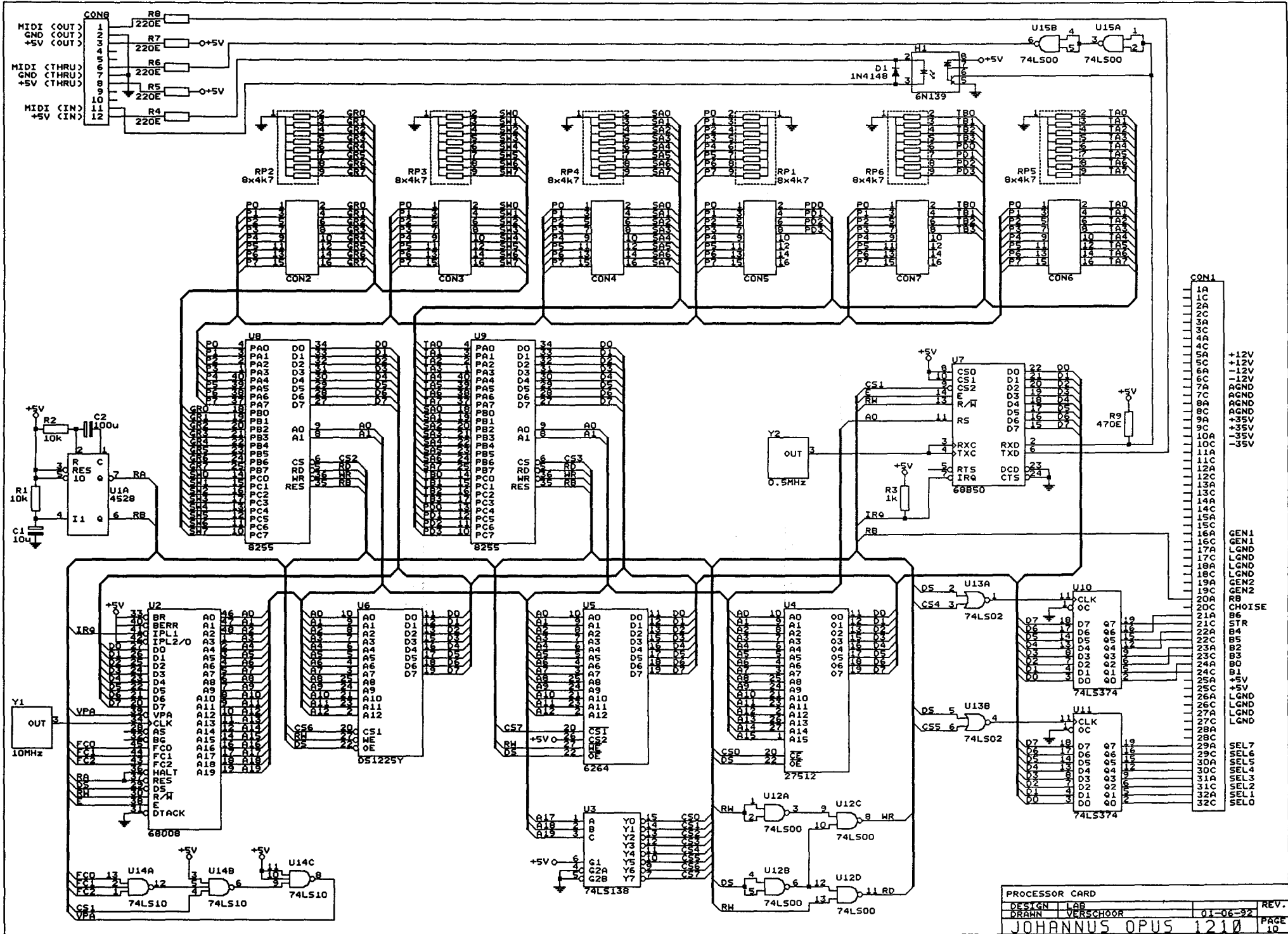
SWITCH-BANK & SWITCH-BANK CAPTURE SYSTEM			
DESIGN	LAB		REV.
DRAWN	VERSCHOOR	28-10-93	PAGE
JOHANNUS OPUS 1210			6



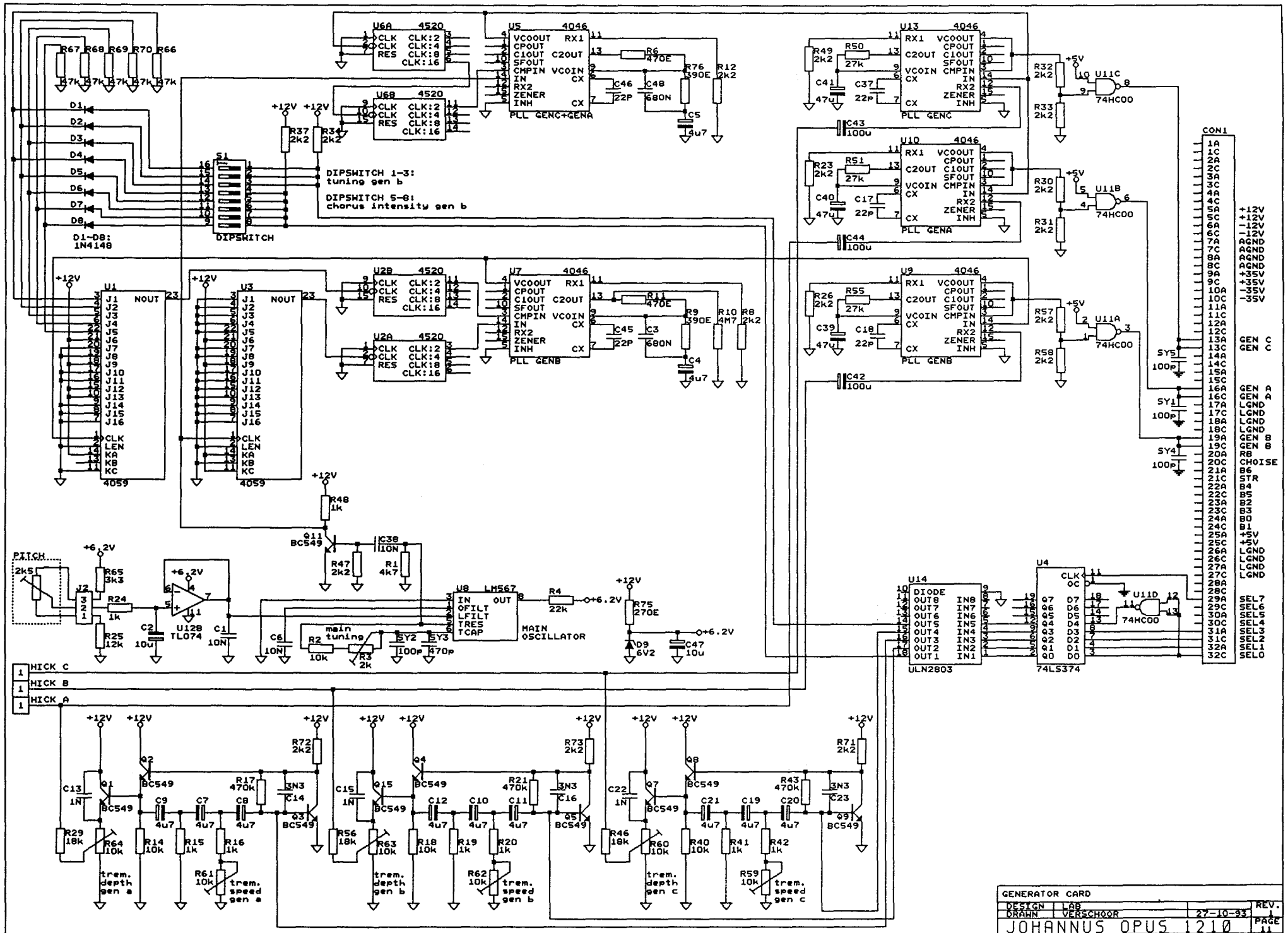


DCO...7
 DCO...19
 CONTROLS
 C.P.U.
 (SEE PAGE 9)

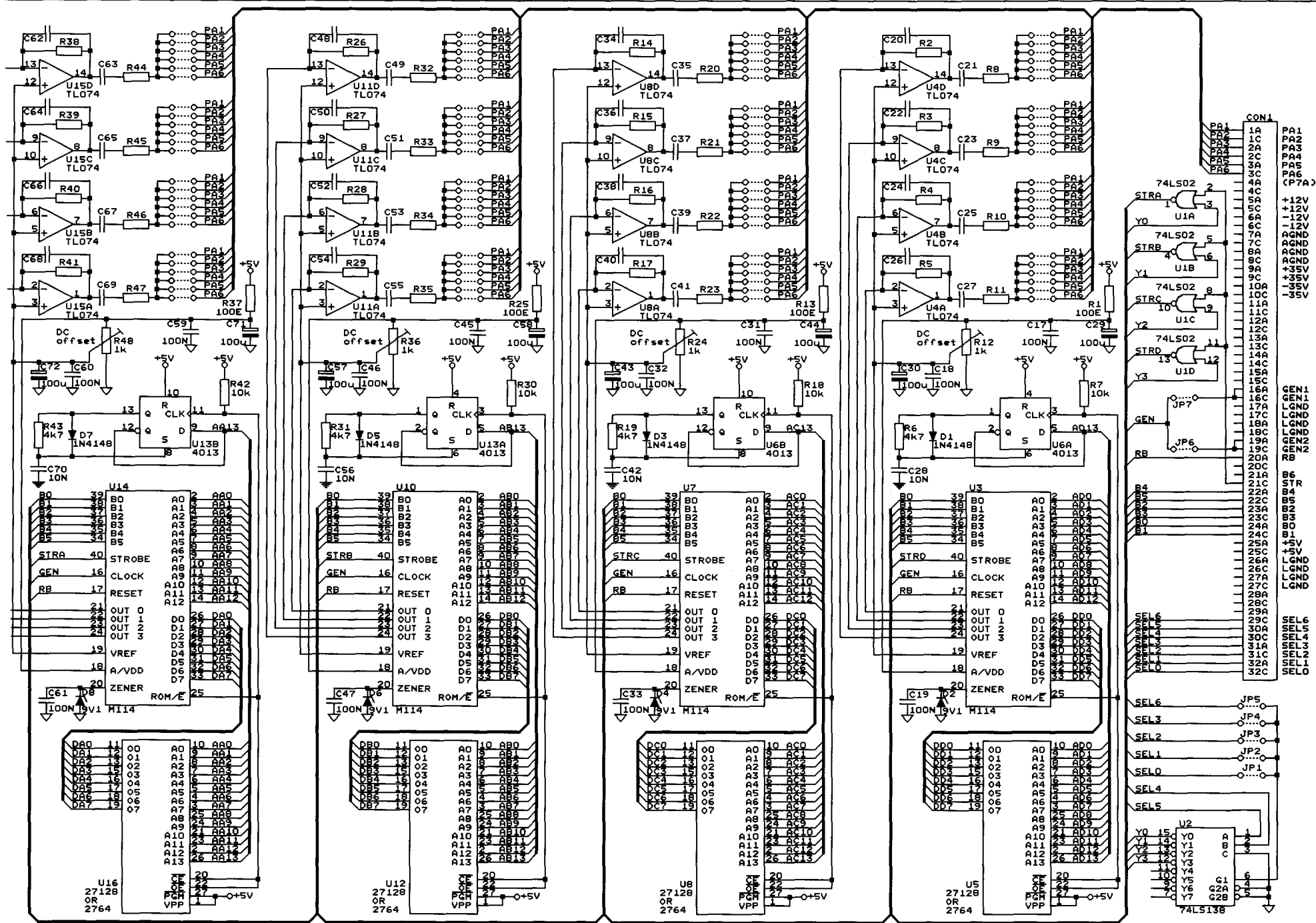




PROCESSOR CARD			
DESIGN	LAB		REV.
DRAWN	VERSCHOOR	01-06-92	PRICE
JOHANNUS OPUS 1210			10

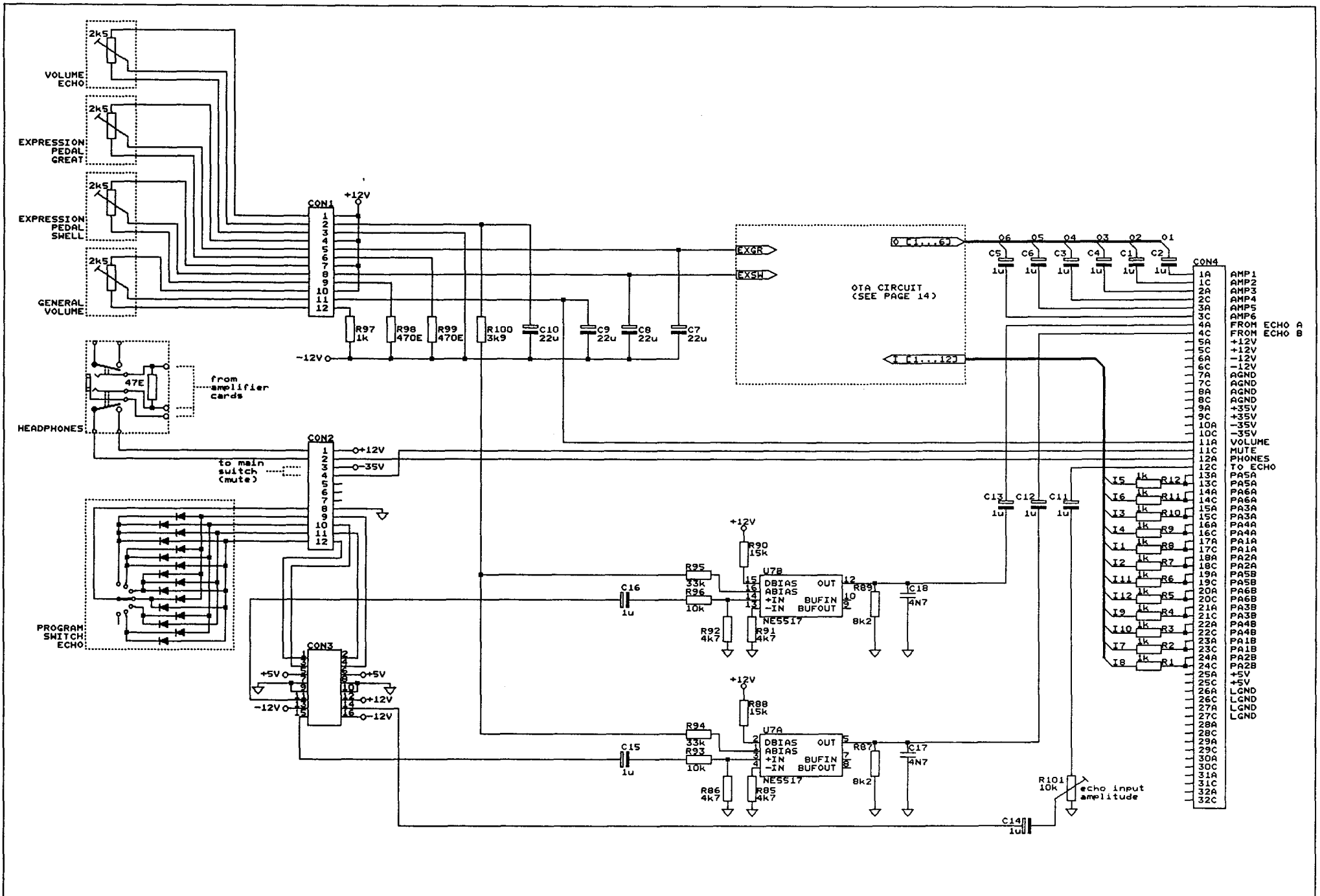


GENERATOR CARD			
DESIGN	LAB		REV.
DRAWN	VERSCHOOR	27-10-93	PAGE
JOHANNUS OPUS 1210			11

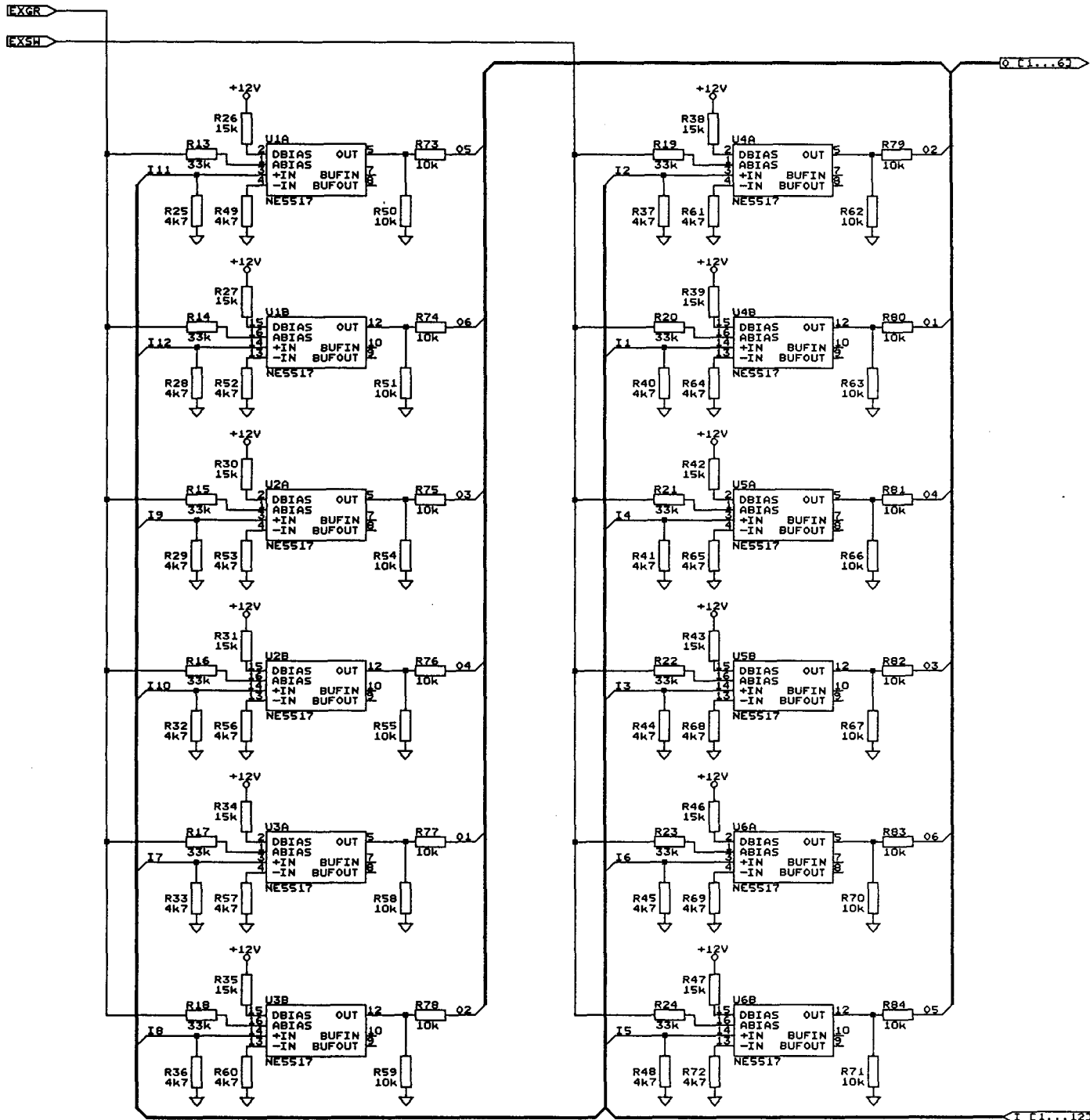


NOTE: IF FOR U5, U8, U12 OR U16 A 2764 EPROM IS PLACED INSTEAD OF A 27128 EPROM, THE 1/2 4013 (U6 AND U13) USED FOR SWITCHING THE UPPER 8K ROM AND THE LOWER 8K ROM, IS NOT NECESSARY.

VOICE CARD			
DESIGN	LAB	REV.	
DRANN	VERSCHOOR	09-06-92	PAGE 12
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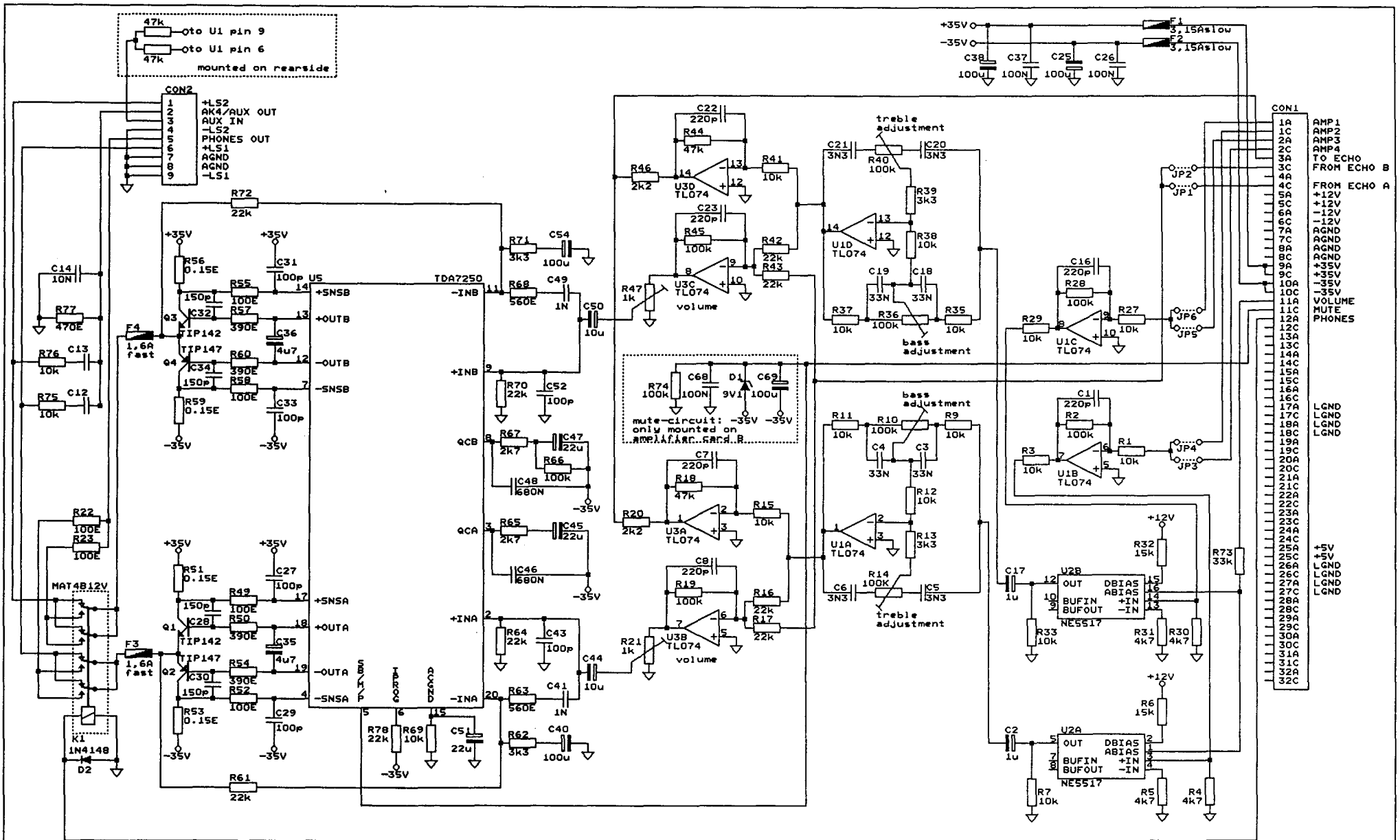
- 1A AMP1
- 1C AMP2
- 2A AMP3
- 2C AMP4
- 3A AMP5
- 3C AMP6
- 4A FROM ECHO A
- 4C FROM ECHO B
- 5A +12V
- 5C -12V
- 6A -12V
- 7A AGND
- 8A AGND
- 8C AGND
- 9A +35V
- 9C +35V
- 10A -35V
- 10C -35V
- 11A VOLUME
- 11C MUTE
- 12A PHONES
- 12C TO ECHO
- 13A PASA
- 13C PASA
- 14A PA6A
- 14C PA6A
- 15A PA3A
- 15C PA3A
- 16A PA4A
- 16C PA4A
- 17A PA1A
- 17C PA1A
- 18A PA2A
- 18C PA2A
- 19A PASB
- 19C PASB
- 20A PA6B
- 20C PA6B
- 21A PA3B
- 21C PA3B
- 22A PA4B
- 22C PA4B
- 23A PA1B
- 23C PA1B
- 24A PA2B
- 24C PA2B
- 25A +5V
- 25C +5V
- 26A LGND
- 26C LGND
- 27A LGND
- 27C LGND
- 28A
- 28C
- 29A
- 29C
- 30A
- 30C
- 31A
- 31C
- 32A
- 32C



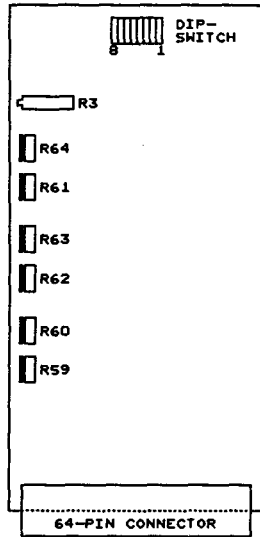
EXGR			
EXSH			
0 1...6			
+12V			
R26	15k	U1A	DBIAS
R25	4k7	U1A	ABIAS
R49	4k7	U1A	+IN
R73	10k	U1A	OUT
R50	10k	U1A	-IN
R27	15k	U1B	DBIAS
R28	4k7	U1B	ABIAS
R52	4k7	U1B	+IN
R74	10k	U1B	OUT
R51	10k	U1B	-IN
R30	15k	U2A	DBIAS
R29	4k7	U2A	ABIAS
R53	4k7	U2A	+IN
R75	10k	U2A	OUT
R54	10k	U2A	-IN
R31	15k	U2B	DBIAS
R32	4k7	U2B	ABIAS
R56	4k7	U2B	+IN
R76	10k	U2B	OUT
R55	10k	U2B	-IN
R34	15k	U3A	DBIAS
R33	4k7	U3A	ABIAS
R57	4k7	U3A	+IN
R77	10k	U3A	OUT
R58	10k	U3A	-IN
R35	15k	U3B	DBIAS
R36	4k7	U3B	ABIAS
R60	4k7	U3B	+IN
R78	10k	U3B	OUT
R59	10k	U3B	-IN
R38	15k	U4A	DBIAS
R37	4k7	U4A	ABIAS
R61	4k7	U4A	+IN
R79	10k	U4A	OUT
R62	10k	U4A	-IN
R39	15k	U4B	DBIAS
R40	4k7	U4B	ABIAS
R64	4k7	U4B	+IN
R80	10k	U4B	OUT
R63	10k	U4B	-IN
R42	15k	U5A	DBIAS
R41	4k7	U5A	ABIAS
R65	4k7	U5A	+IN
R81	10k	U5A	OUT
R66	10k	U5A	-IN
R43	15k	U5B	DBIAS
R44	4k7	U5B	ABIAS
R68	4k7	U5B	+IN
R82	10k	U5B	OUT
R67	10k	U5B	-IN
R46	15k	U6A	DBIAS
R45	4k7	U6A	ABIAS
R69	4k7	U6A	+IN
R83	10k	U6A	OUT
R70	10k	U6A	-IN
R47	15k	U6B	DBIAS
R48	4k7	U6B	ABIAS
R72	4k7	U6B	+IN
R84	10k	U6B	OUT
R71	10k	U6B	-IN
+12V			
0 1...12			

EXPRESSION PEDAL CIRCUIT (ota card)

DESIGN	LAB	REV.
DRAWN	VERSCHOOR	20-07-92
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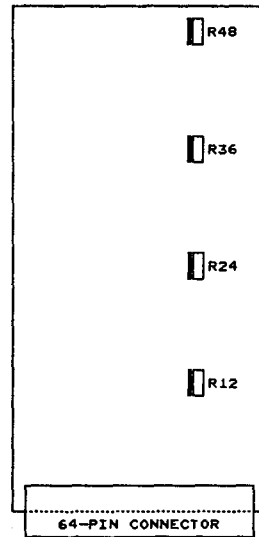


GENERATOR CARD
(COMPONENT-SIDE VIEW)



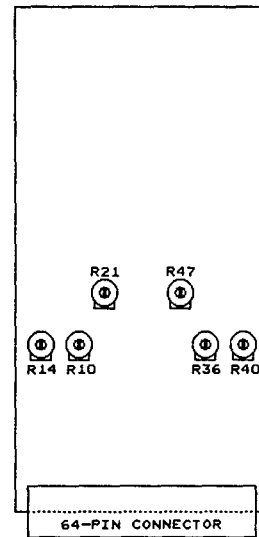
R3 = MAIN TUNING
 R64 = TREMULANT DEPTH GREAT
 R61 = TREMULANT SPEED GREAT
 R63 = TREMULANT DEPTH SWELL
 R62 = TREMULANT SPEED SWELL
 R60 = TREMULANT DEPTH CHOIR
 R59 = TREMULANT SPEED CHOIR
 DS1-DS3 = TUNING SWELL
 DS4-DS8 = CHORUS INTENSITY SWELL

VOICE CARD
(COMPONENT-SIDE VIEW)



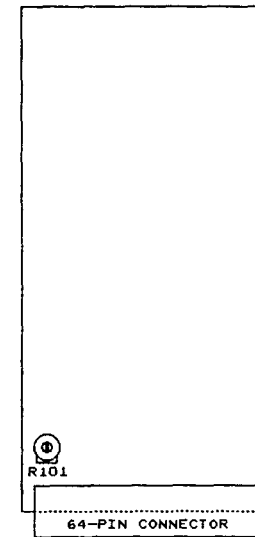
R12 = DC-OFFSET VOICE D
 (DISTORSION VOICE D)
 R24 = DC-OFFSET VOICE C
 (DISTORSION VOICE C)
 R36 = DC-OFFSET VOICE B
 (DISTORSION VOICE B)
 R48 = DC-OFFSET VOICE A
 (DISTORSION VOICE A)
 NOTE: R12-R24-R36-R48 ARE NOT
 FOR CHANGING VOLUMES!!
 TURNING THESE POTENTIOMETERS
 WILL GIVE DISTORSION!!

AMPLIFIER CARD
(COMPONENT-SIDE VIEW)



R10 = BASS LEFT AMPLIFIER
 R14 = TREBLE LEFT AMPLIFIER
 R21 = VOLUME LEFT AMPLIFIER
 R36 = BASS RIGHT AMPLIFIER
 R40 = TREBLE RIGHT AMPLIFIER
 R47 = VOLUME RIGHT AMPLIFIER

OTA CARD
(COMPONENT-SIDE VIEW)



R101 = INPUT AMPLITUDE ECHO