

TECHNICAL MANUAL
AND
SERVICE INFORMATION
FOR

RODGERS®
Rodgers Instruments LLC

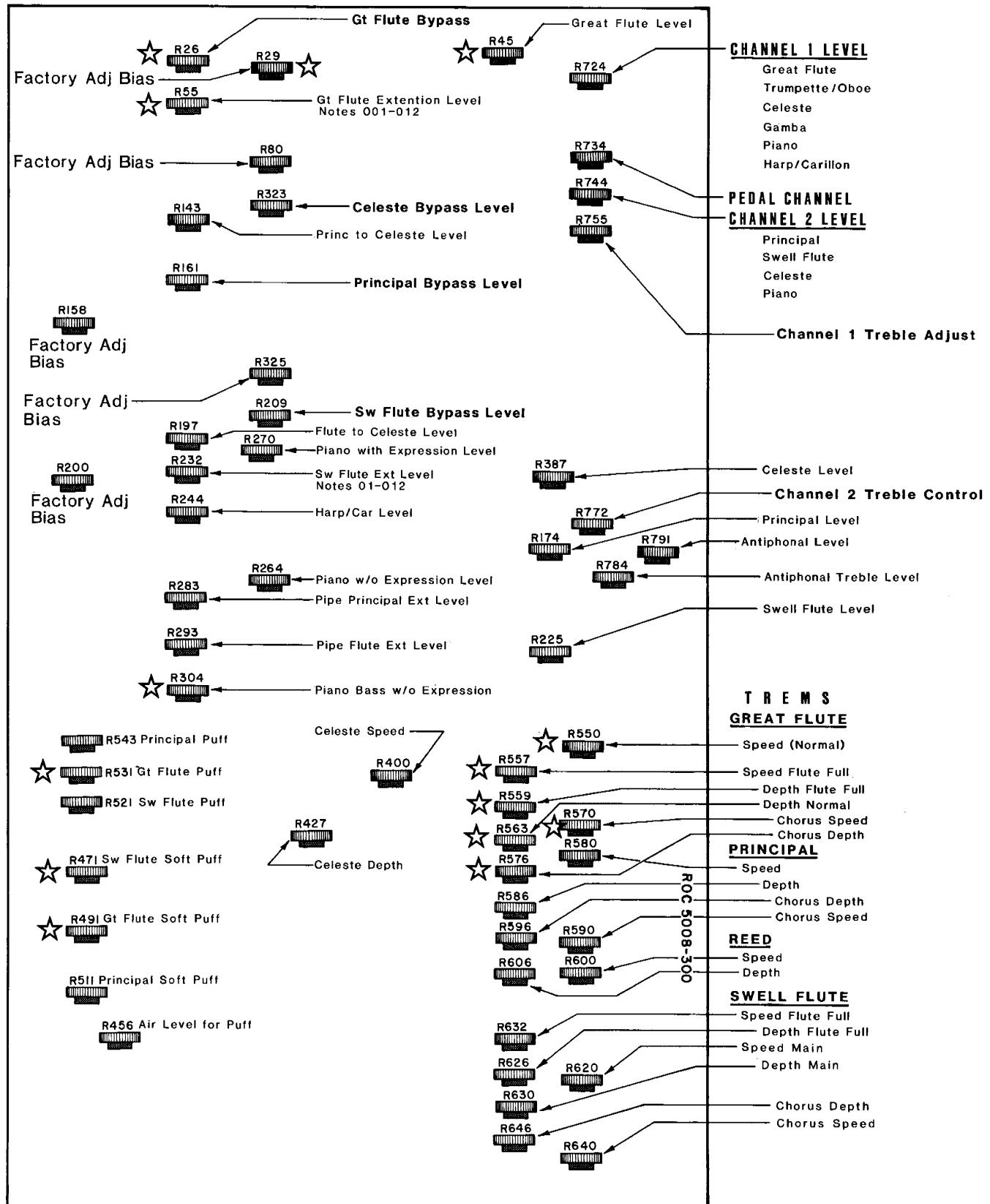
650 YORK
705 KENT
740 GLASGOW

**CAUTION: THESE SERVICING INSTRUCTIONS ARE FOR
USE BY QUALIFIED SERVICE PERSONNEL ONLY !**

RODGERS INSTRUMENTS LLC
1300 NE 25TH AVE. **HILLSBORO** **OREGON 97124**

650,705,740 LEVEL LOCATIONS

CAUTION : DO NOT TOUCH POTS MARKED "Factory Adj Bias" AS MISADJUSTMENT WILL CAUSE DISTORTION.



650, 705, 740, 770, & 780 SUMMARY OF TEST FUNCTIONS

Test mode is entered by holding in the SET piston and pressing the POWER SWITCH.

- A. 1. Lamp Test
2. Check CMOS Memory
3. NOT USED
4. Key note 25. PRESS again for keying percussion
5. Test puff keyers. Keys 1-6 great key each puff keyer

While holding SET (SLIDE SWITCH ON MULTIFUNCTION BOARD MUST BE UP)

- B. 1. Adjust levelable stops (Flashing=LOUD)
2. Set Chiff. For each stop, key a note and adjust chiff level on transposer.
3. Select pipe options. Stops on great (Principal 8' and Bourdon 8') select which ranks, Octave 8' and Flute 8' on Pedal select 8' extensions. Pipes OFF ON selects all electronic.
4. Burn-in test.
5. Set factory presets for memories, chiff, stop levels, pipe options.

Slide switch down on multifunction board to lock in stop levels, pipe options, etc.

To open memories, eliminating "LOCK"

1. Flashing Power from magnet.
2. Touch M-1, Touch SET
3. Touch M-2, Touch SET

CONSOLE TO PIPE INTERFACE INSTRUCTIONS

Push up the slide switch accessible through the hole in the CPU box.

Turn the organ on. Holding in the SET piston and press the POWER switch. Keep holding the SET piston and press a 3 piston.

Turn off the PIPES OFF tab.

If you have two single ranks, leave the Great PRINCIPAL and BOURDON 8' tabs on.

If you have just one rank, turn off the Great tab corresponding to the rank you do not have.

If you have four ranks, turn on the POSITIV PRINCIPAL 4'. If you want the Positiv on one chest and the Great on the other, leave the Great PRINCIPAL 8' on, otherwise turn it off.

If you have a Principal 8' Extension, turn on the Pedal OCTAVE 8'.

If you have a Gedackt or Rohrflote 8' Extension, turn on the Pedal FLUTE 8'.

If you have a Koppelflote 8' Extension, turn on the Positiv BOURDON 8'.

Now press the POWER switch, it should stop flashing.

The organ should not play the pipes correctly.

If you have made a mistake, start again from Step 2.

Otherwise, turn off the organ, slide the switch on the CPU box down and screw the back on.

These instructions apply to the 650, 705, 740, 770, & 780 ONLY.

You cannot put four ranks on the 650 or 705.

February, 1984

PIANO SET-UP

I. PIANO TUNING ADJUST (All operations done to the fully stuffed keyer).

ORGAN MUST BE TUNED

- A. Disable "Organ Tuning Control" (located on keyboard panel) by pushing the knob in.
- B. Set R196 for 14.9 VDC (take measurement from the mounting tab of Q196).
- C. Set R138 (range) for 2.65 VDC (measurement taken from arm of pot to ground).
- D. Set R134 (tune) for 6.1 VDC (same as above).
- E. Set R154 (tracking) for 1.8 VDC (same as above).
- F. Set R123 (balance) to mid pot.
- G. With a clip lead, ground the top of R14, Note #25 (ROC 5014-001) or Note #37 (ROC 5014-002). This should allow Note #25 to sound continuously when the 8' Piano stop is on.
- H. Turn on the Great 8' Principal and the 8' Piano, depress Note #25 (middle C) and "zero beat" the two notes by adjusting R138.
- I. Next, pull out the "Organ Tuning Control" and adjust to the extreme flat position. Once again, "zero beat" the two notes by adjusting R154.
- J. Adjust "Organ Tuning Control" to the extreme sharp position and "zero beat" by adjusting R134.
- K. Repeat steps H, I, and J until Note #25 of the 8' Principal and 8' Piano track evenly over the full range of the "Organ Tuning Control".

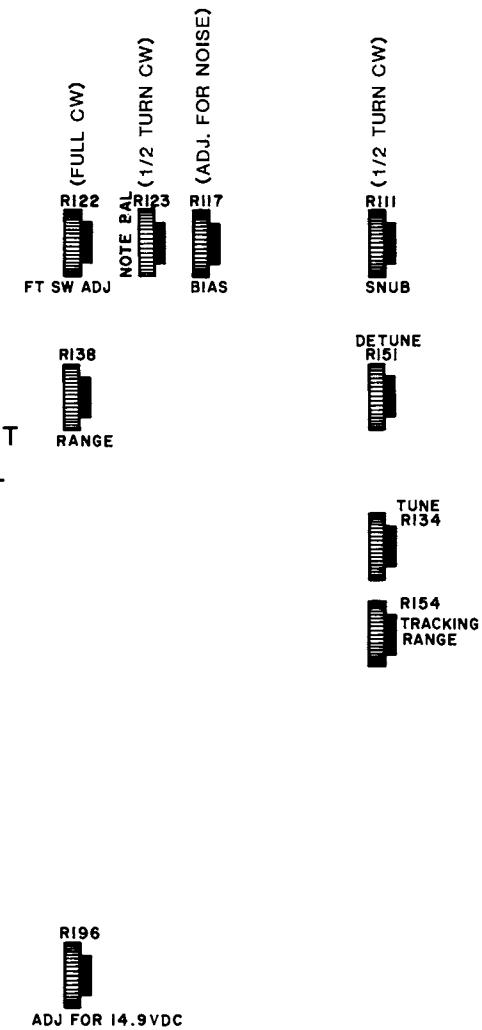
II PIANO SUSTAIN ADJUST

- A. Bias adjust (pot R117):
The bias adjust pot will affect the sustain length. Adjust it by turning on the 8' Piano stop and adjusting the bias pot (R117) until you hear notes sounding without playing the keys. Then back off the pot until this singing sound stops - then add just a touch more or to suit.
- B. Foot switch feed through pot (R122):
When the foot switch located on the expression shoe is engaged a singing sound will occur without keys being played. Adjust R122 until this stops.

III PIANO VOICING

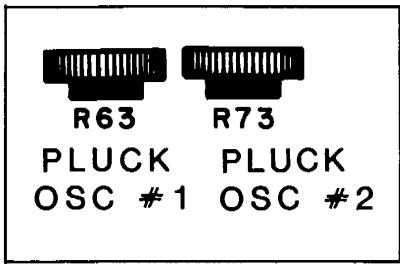
- A. R177: Harpsichord level adjust.
- B. R201: Bass adjust (set approx. mid position).
- C. R205: Treble adjust (set approx. mid position).
- D. R207: Is a factory adjustment (set at 1/4 pot).
- E. R174: Harpsichord pluck adjust (set at slightly under half pot).
- F. R63 and R73: are factory adjustments for the pluck frequency.

PIANO KEYER SET
ROC 5014-30 _



ROC5028-30

Factory Adj



(1/2 TURN CW)



R174
HARPSICHORD
PLUCK CONTROL
(1/3 TURN CW)



R201
BASS CONTROL
(1/2 TURN CW)

(2/3 TURN CW)



R177
HARPSI
CONTROL
LEVEL



TREBLE CONTROL (2/3 TURN CW)

R205



R207

FACTORY LEVEL CONTROL
(1/4 TURN CW)

FLOATING 16' PIANO

The 16' Piano may play in either the Pedal or Great divisions.

To select which division:

1. Press and hold the SET piston.
2. Press and Piano 8' tab (it will start flashing).
3. Press a key on the Great keyboard or the Pedalboard. (The tab will stop flashing.)

The selected division does not change on General Cancel, nor when the POWER is turned off and on again.

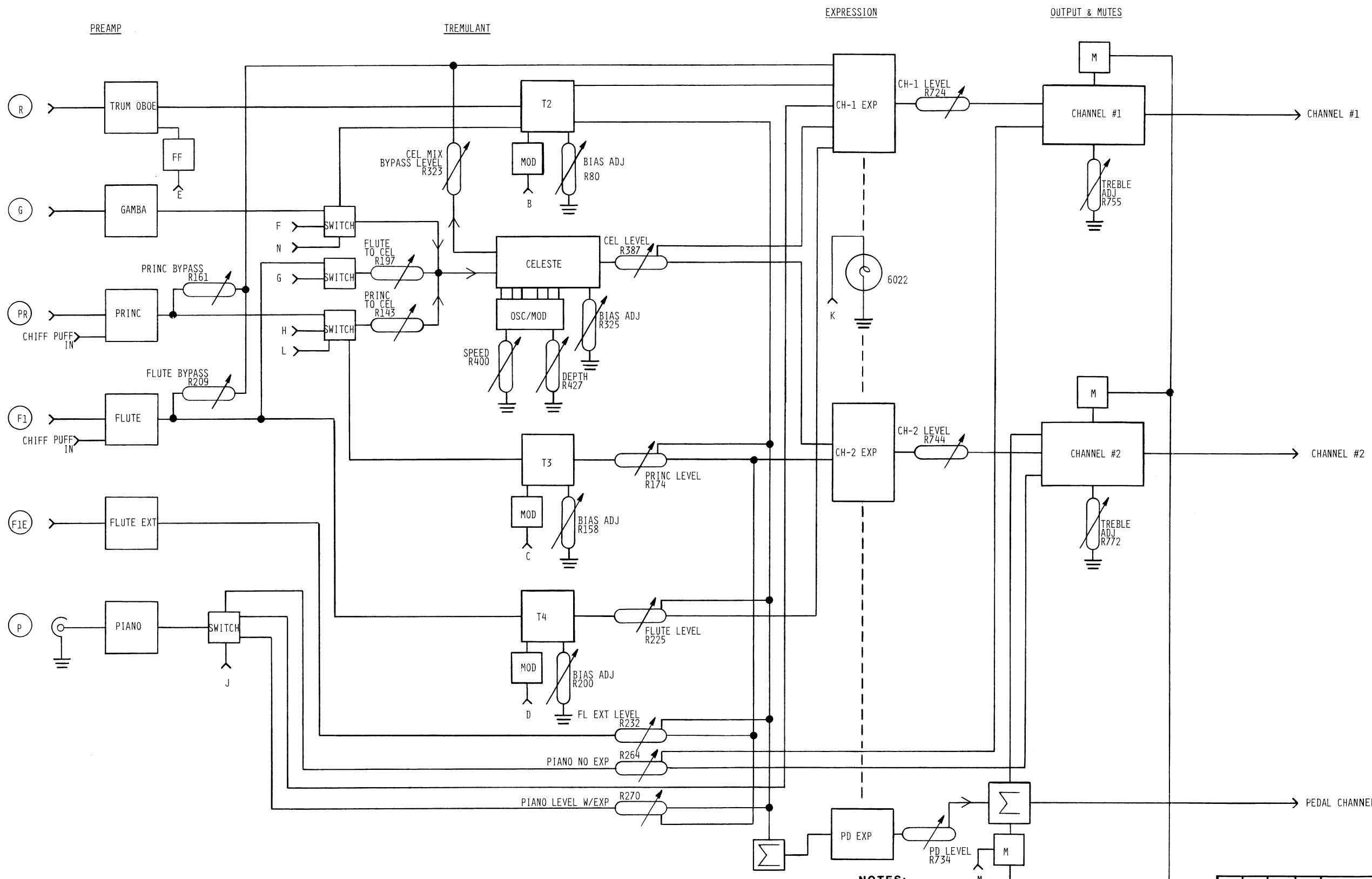
When the 16' Piano is in the Pedal, and the Harpsichord stop is on, the Harpsichord plays at both 8' and 4' in the Pedal (if the Piano 16' tab is on) and/or the Great (if the Piano 8' tab is on). Otherwise, the Harpsichord plays at 8' and/or 4' depending on the setting of the Piano 16' and the Piano 8' tabs.

November, 1983

INDEX OF SCHEMATIC DRAWINGS
RODGERS 650 / 705 / 740 ORGANS

<u>DRAWING No.</u>	<u>TITLE</u>
1948	100 AUDIO BLOCK DIAGRAM (SHT 1 THRU 2)
1950	100 AUDIO RACK LAYOUT
1951	IC PINOUTS (SHT 1 THRU 9)
1952	100 CONSOLE SPECIFICATIONS
1949	100 LOGIC BLOCK DIAGRAM
1954	650 / 705 AUDIO BLOCK DIAGRAM (SHT 1 THRU 2)
1955	650 / 705 LOGIC BLOCK DIAGRAM
1956	650 RACK ASSEMBLY
1957	705 RACK ASSEMBLY
1959	M-3 SPEAKER CROSSOVER ASSEMBLY
1961	650 / 705 CONSOLE SPECIFICATIONS
1962	100 / 650 / 705 OUTPUT PREAMP POT IDENTIFICATION
1964	740 RACK ASSEMBLY
5000-301	PRINCIPAL KEYER, GREAT
5000-302	STOPPED FLUTE KEYER
5002-301	PULSE KEYER (SHT 1 THRU 2)
5003-300	EXTENSION KEYER (SHT 1 THRU 2)
5004-300	ENCODER, STOPTAB, 16 BIT (SHT 1 THRU 2)
5008-304	650 / 705 OUTPUT PREAMP (SHT 1 THRU 6)
5008-305	740 OUTPUT PREAMP (SHT 1 THRU 6)
5011-302	OSCILLATOR, NOTES 01 - 24 & 85
5012-301	MULIFUNCTION BOARD (SHT 1 THRU 2)
5013-302	TYPE 18 POWER SUPPLY ASSEMBLY
5014-301	PIANO KEYER, NOTES 26 - 61 (SHT 1 THRU 5)
5014-302	PIANO KEYER, NOTES 01 - 25 (SHT 1 THRU 5)
5018-301	ENCODER, STOPTAB, 16 BIT (SHT 1 THRU 4)
5019-300	KEYBOARD ENCODER, KEYS 1 - 32
5020-300	KEYBOARD ENCODER, KEY 33 - 61
5021-301	2-SPEED PIPE TREM DRIVER
5026-301	650 / 705 SPEAKER CROSSOVER
5027-300	TRANSPOSER SWITCH ASS'Y
5028-301	PIANO PREAMP FILTER (SHT 1 THRU 3)
5035-301	REMOTE POWER SUPPLY

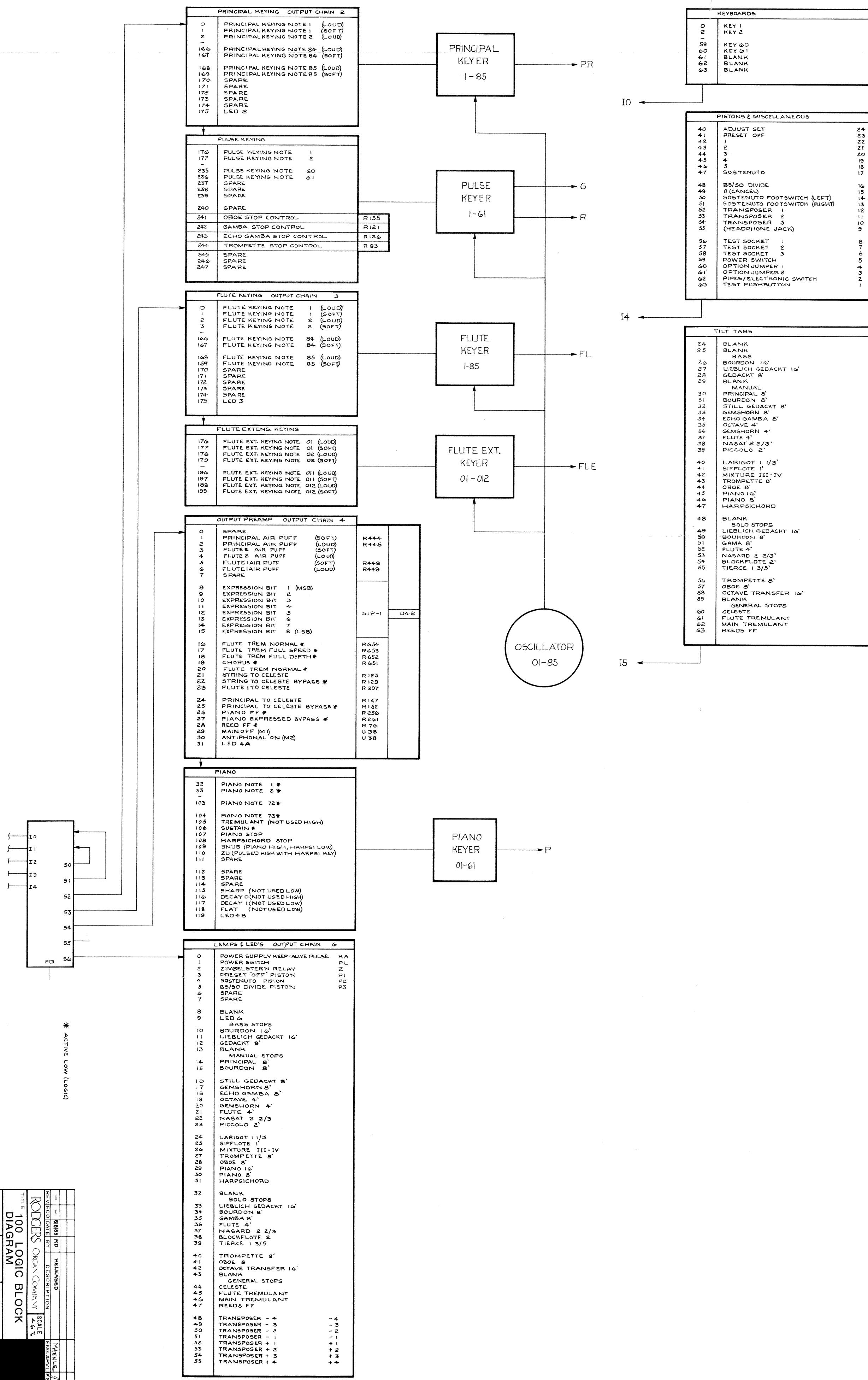
5039-300	PIPE CHEST INTERCONNECT, SINGLE RANK
5040-300	CRESCEDO INDICATOR
5041-300	TRANSPOSER INDICATOR
5046-302	GLOCKENSPIEL POWER & LOGIC
5047-300	1 RANK PIPE MAGNET LATCH DRIVERS
5055-300	PIPE OFFSET DRIVERS
5057-301	HARP & CARILLON KEYER
5060-300	S102 POWER AMPLIFIER
6112-631	LC OSCILLATOR, NOTES 25 - 84
6112-770	3 CHANNEL POWER AMPLIFIER

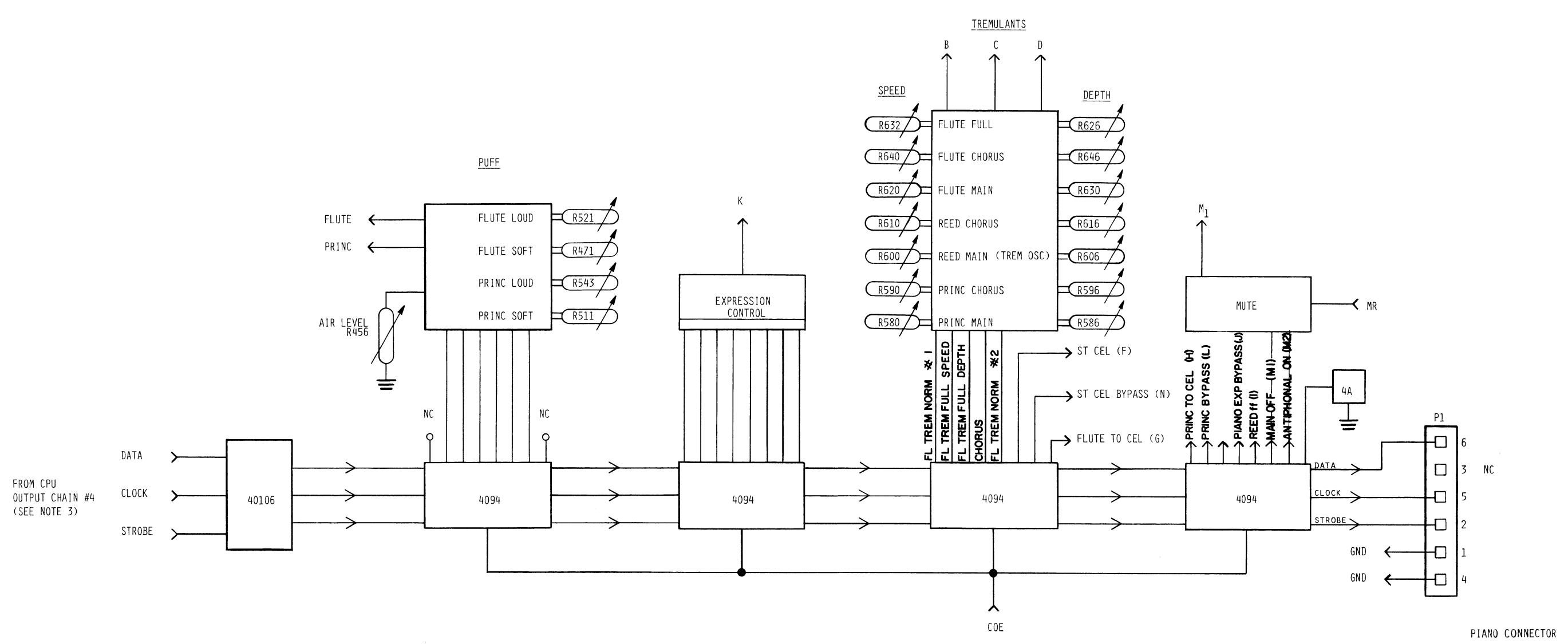


NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
- (3) FOR AN EXPLANATION OF LETTERS B TO M, SEE SHEET 2.

—	6/30/83 RD	RELEASED	MENILE J.R.J.
REV. ECO DATE	BY	DESCRIPTION	ENG. APVL FS. APVL
RODGERS ORGAN COMPANY		SCALE	50%
TITLE 100 AUDIO BLOCK DIAGRAM			
SHT 1 OF 2			
DRAWN BY	CHECKER	DWG. NUMBER	
R. DOUGHERTY	SCHWALL 9-1-83	1948	

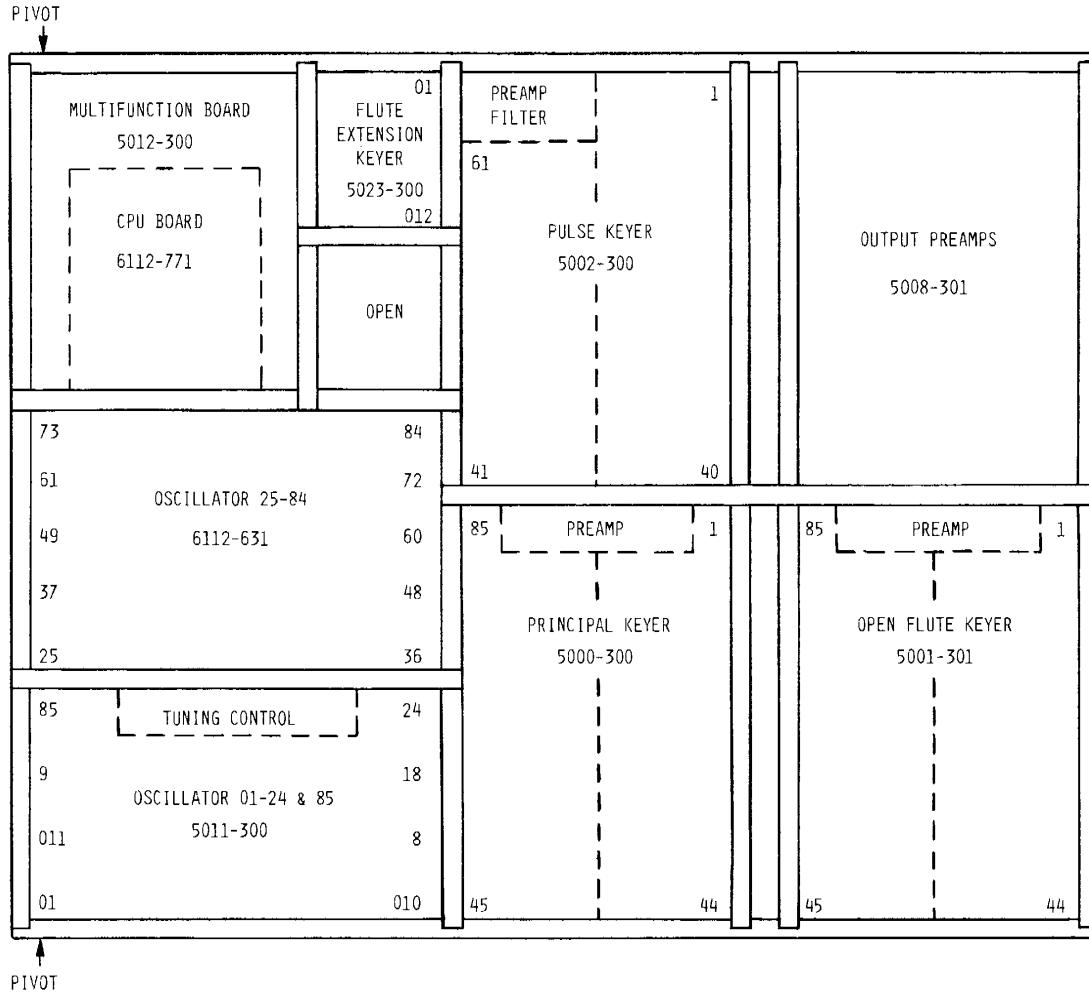




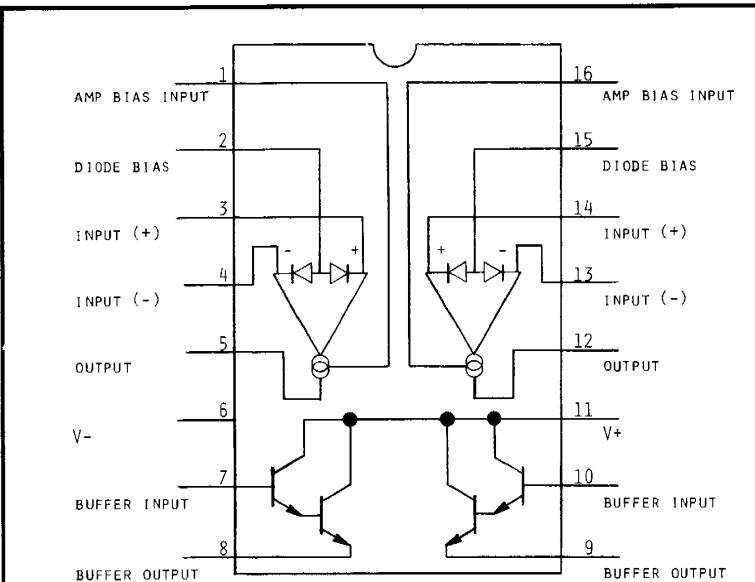
NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
- (3) REFER TO LDS CPU SOFTWARE (OUTPUT CHAIN #4).

8/30/83	RD	RELEASED	WENDELL J. W.
REV. ECO	DATE BY	DESCRIPTION	ENG. APV / F.S. APV
RODGERS Organ Company			SCALE 50%
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SHT 2 OF 2			
DRAWN BY	CHECKER	DWG. NUMBER	1948
R. DOUGHERTY	ECHALE 9-1-83		

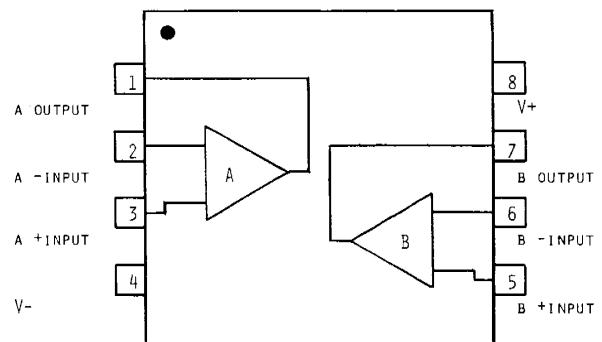


7-6-83 RD RELEASED				MHENLE [Signature]
REV.	ECO	DATE	BY	DESCRIPTION
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TITLE 100 RACK LAYOUT				
DRAWN BY R. DOUGHERTY	CHECKER SCHALK 7-6-83	DWG. NUMBER 1950		

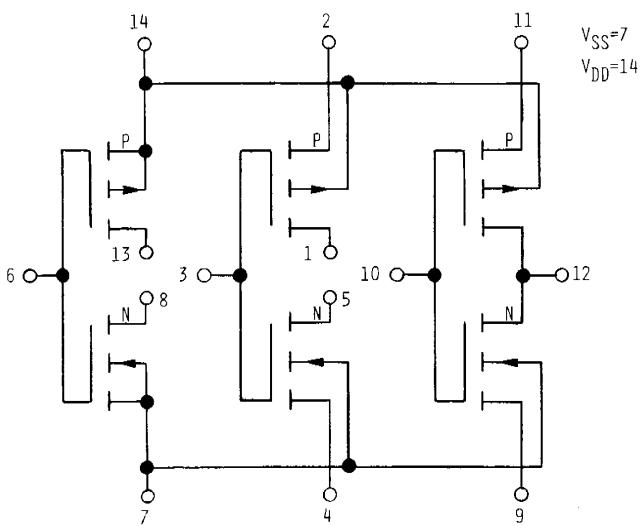


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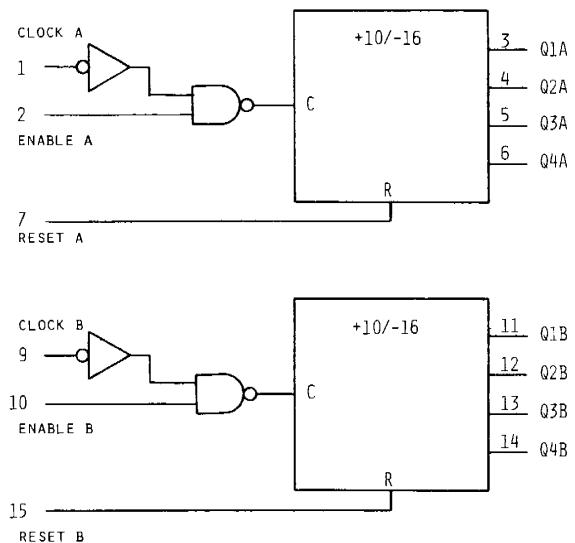
DUAL IN-LINE PACKAGE
(TOP VIEW)



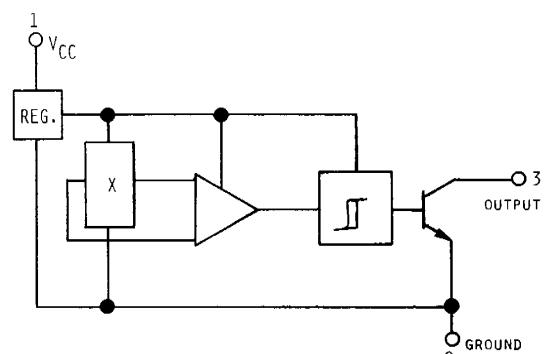
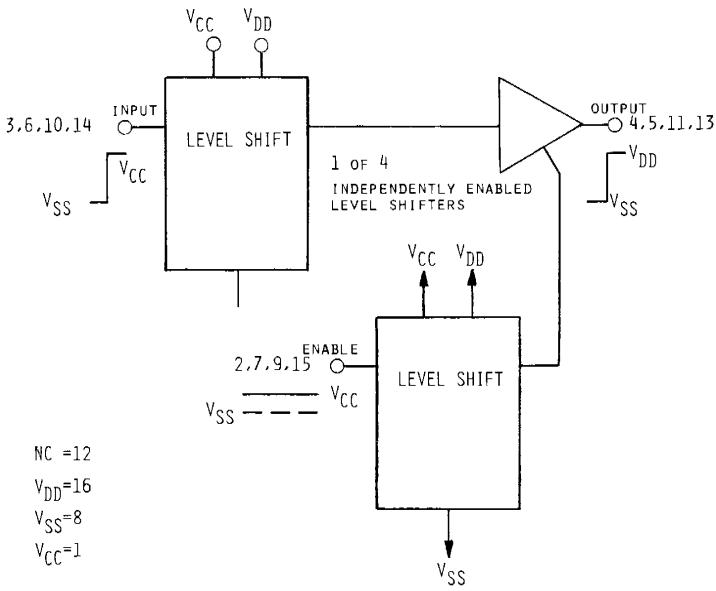
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ROC P/N 1415-005 (CD4520B) ICD,CNTR,BIN,4STB,DUAL,4520

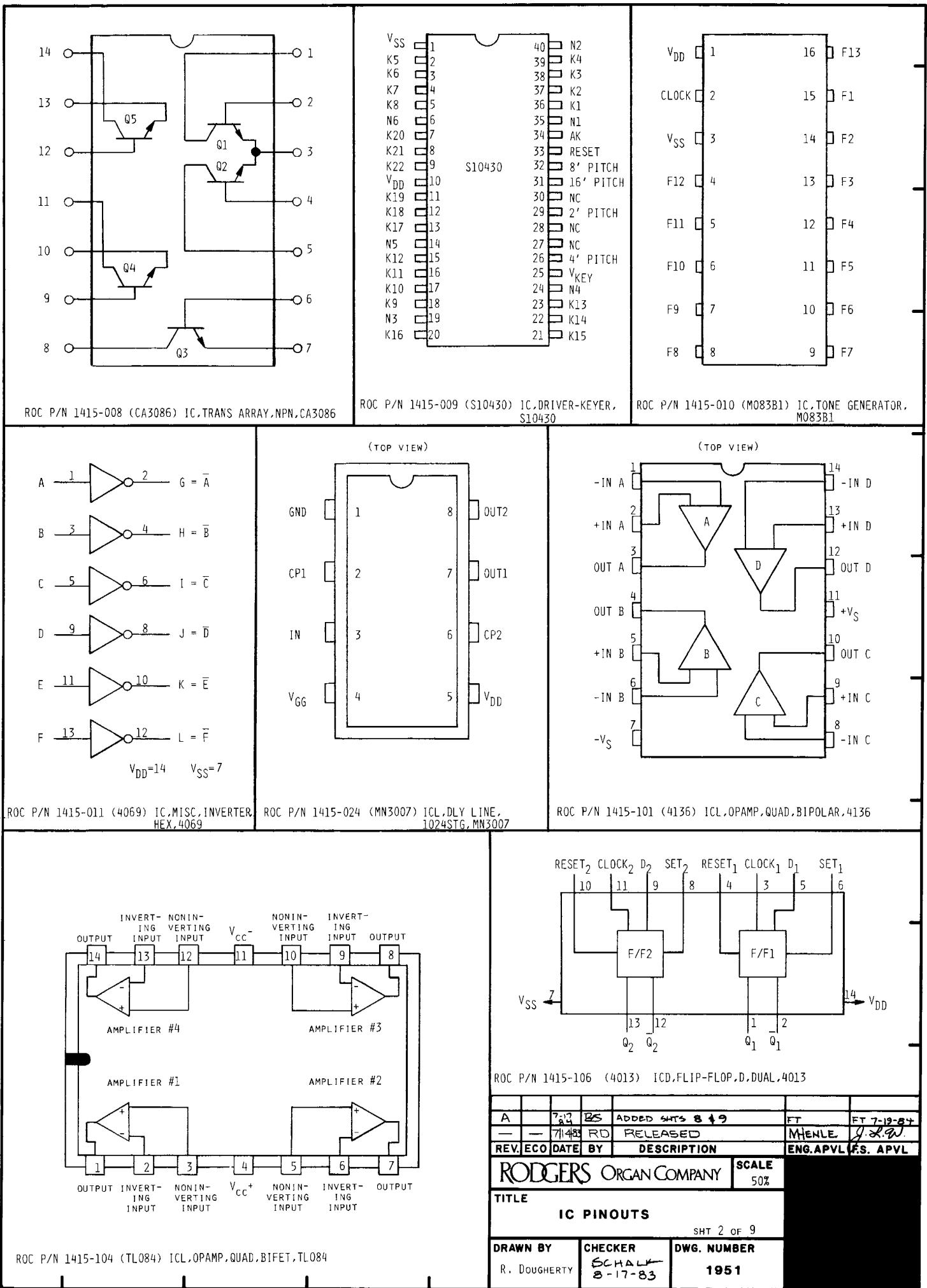


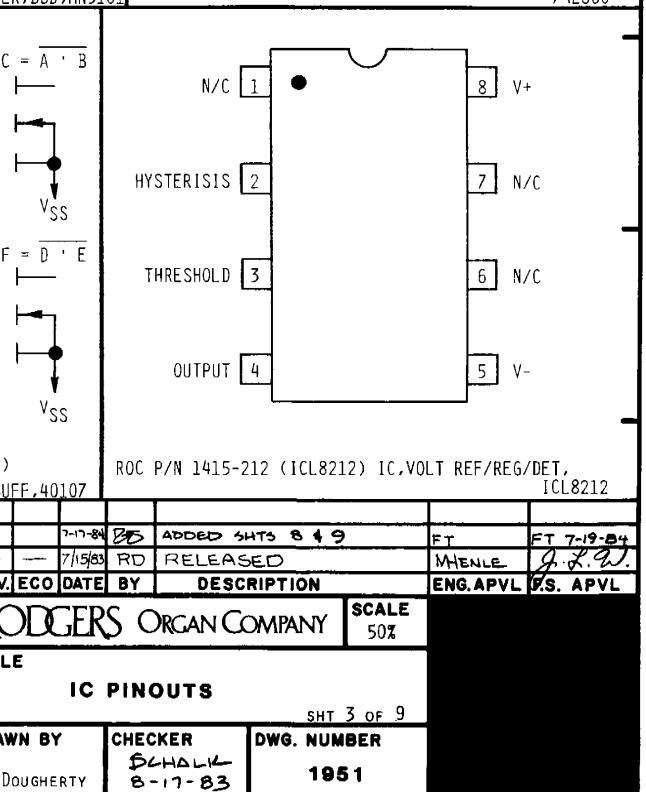
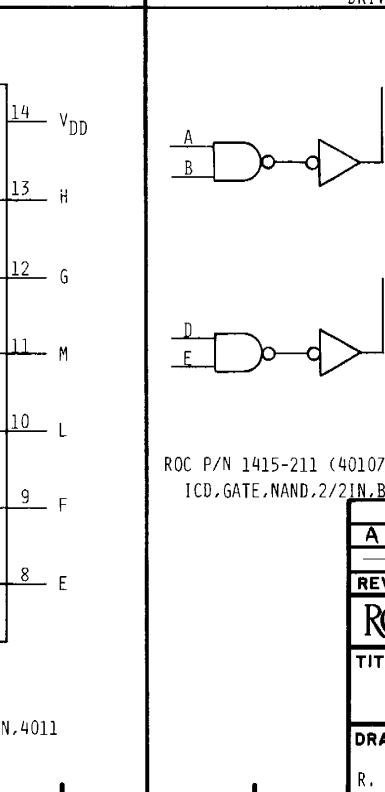
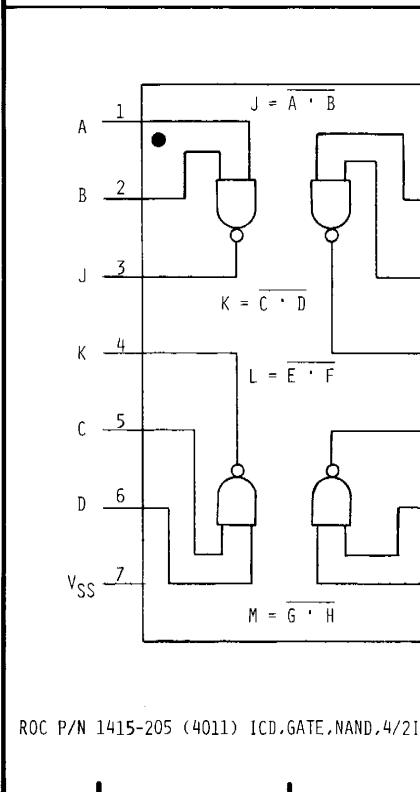
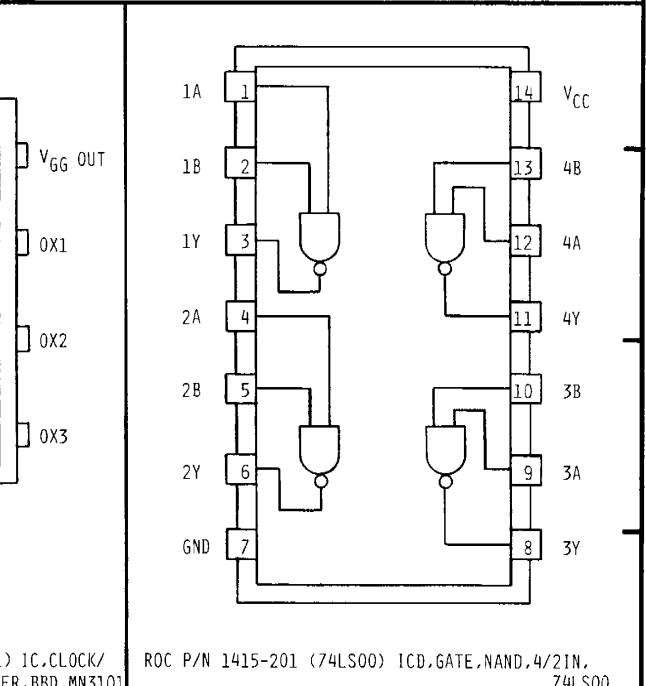
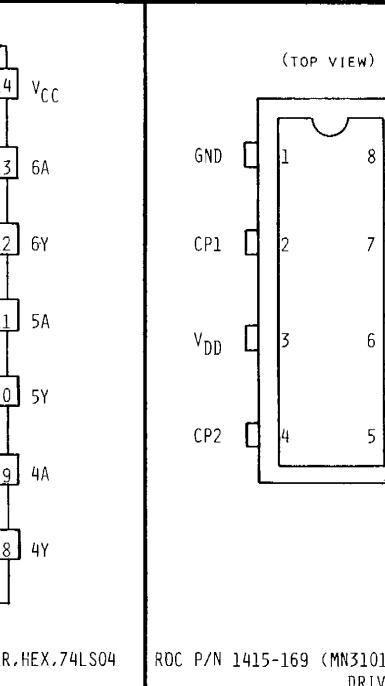
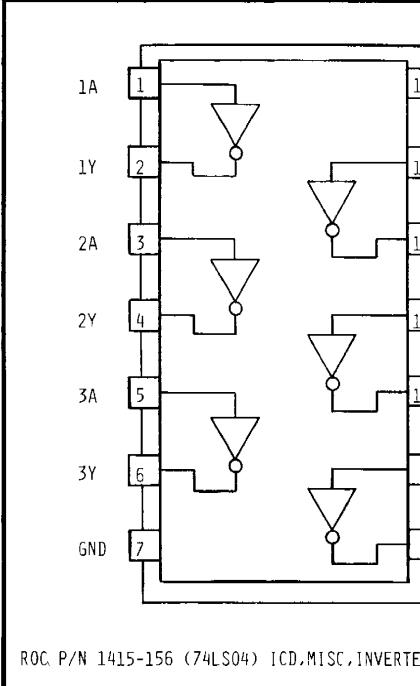
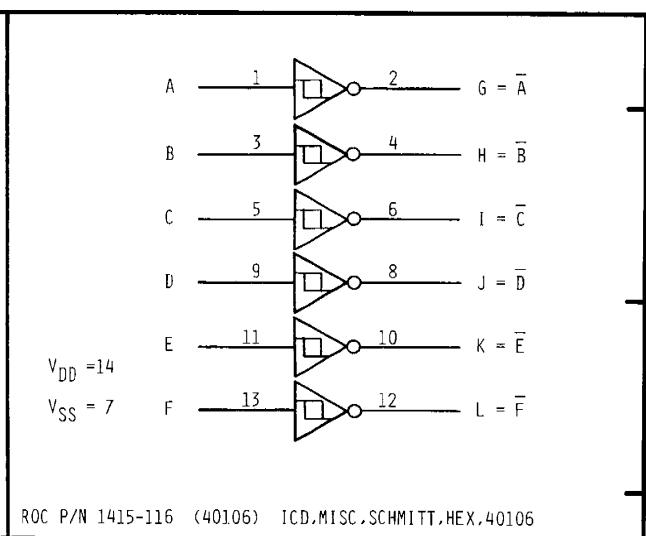
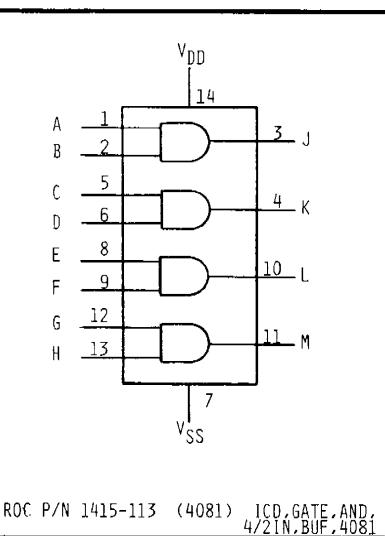
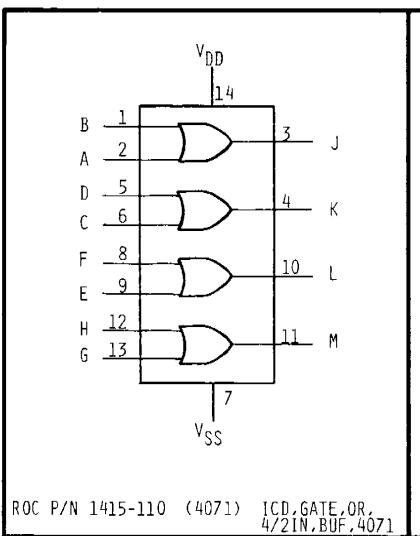
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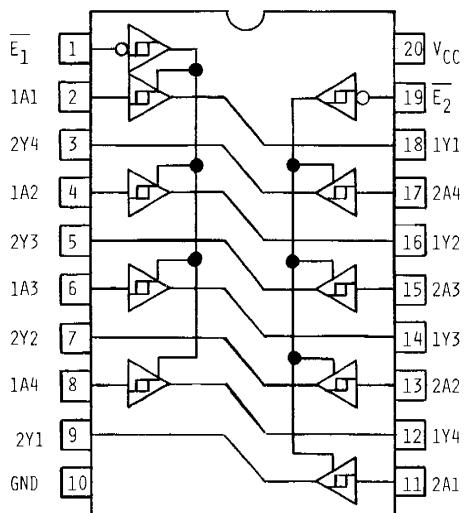


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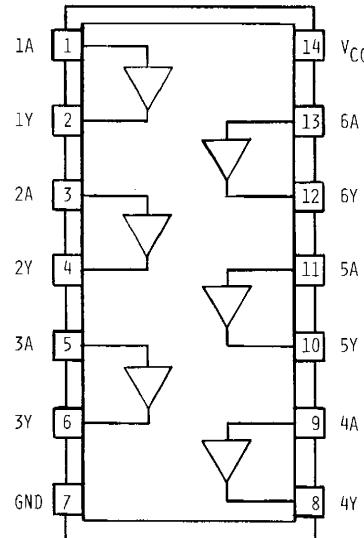
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TITLE				
IC PINOUTS				
DRAWN BY R. DOUGHERTY		CHECKER SCHALE 8-16-83	DWG. NUMBER	1951
SHT 1 OF 9				



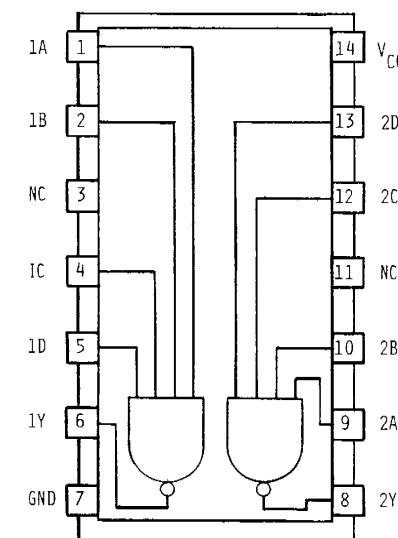




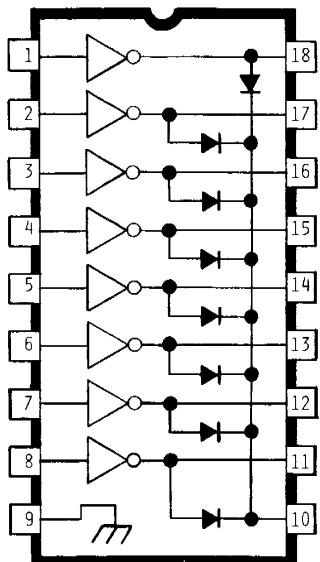
ROC P/N 1415-384 AND
ROC P/N 1415-244 (74S244) ICD,BUFF,NINV,OCT,TRIST,74S244



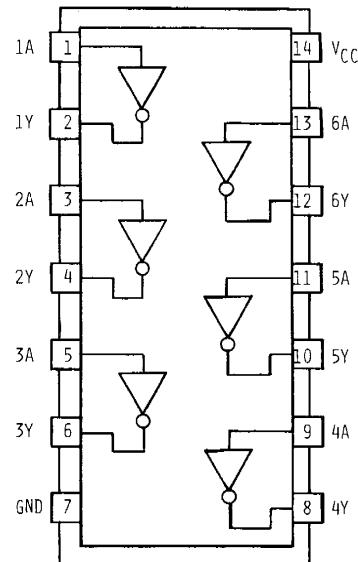
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HVOOUT,7417



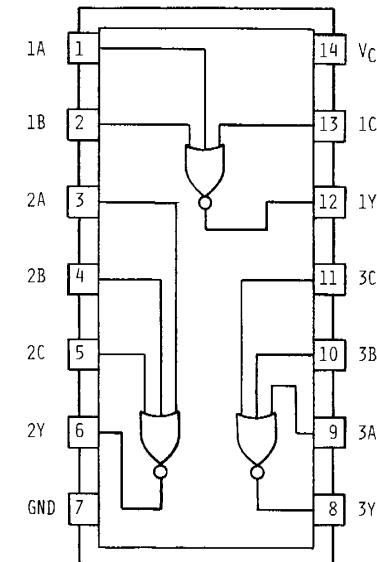
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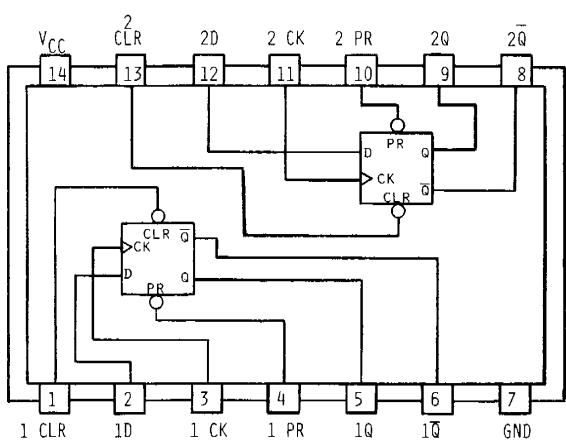
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ROC P/N 1415-308 (7416) ICD,BUFF,INV,HEX,
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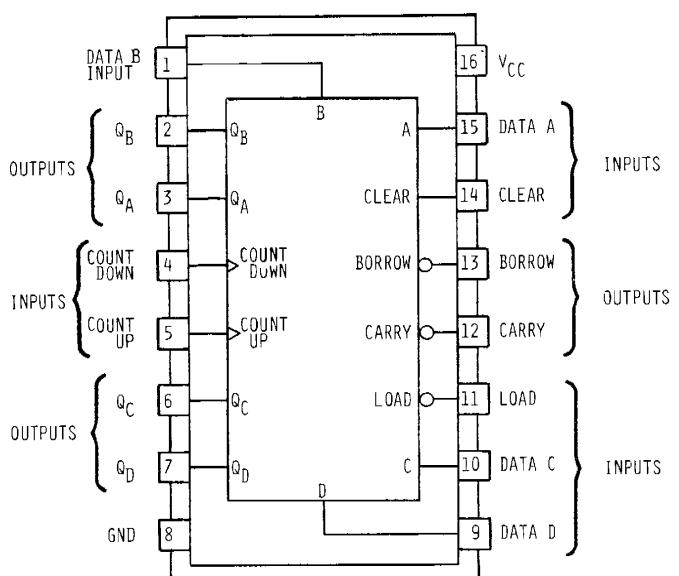


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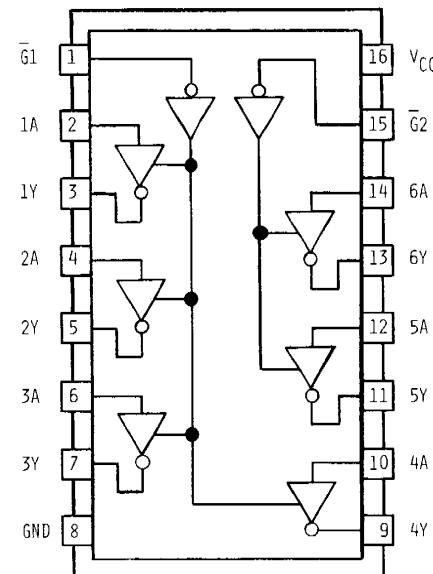


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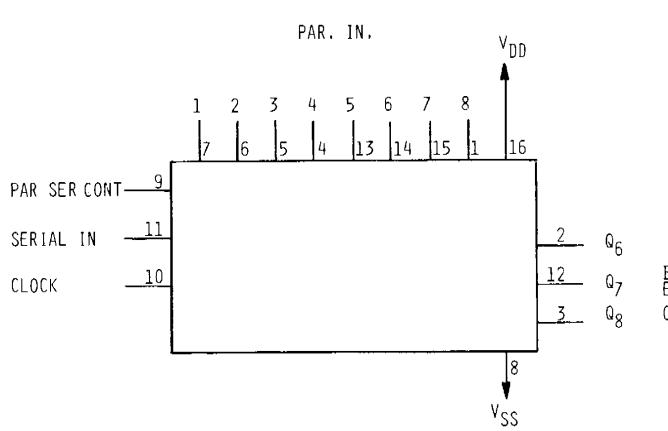
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	7/19/83	RD	RELEASED	MHENLE	J.L.W.
REV. ECO	DATE	BY	DESCRIPTION	ENG.APVL (E.S. APVL)	
RODGERS ORGAN COMPANY					
TITLE					
IC PINOUTS					
SHT 4 OF 9					
DRAWN BY	CHECKER	DWG. NUMBER			
R. DOUGHERTY	SCHALK	1951			



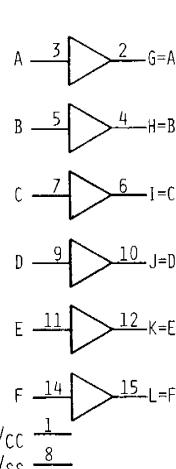
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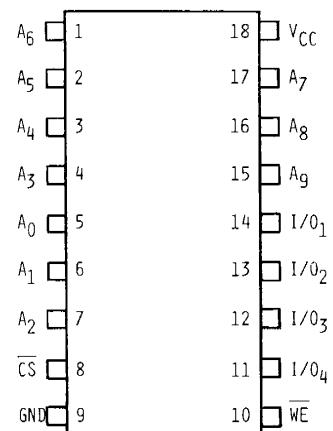
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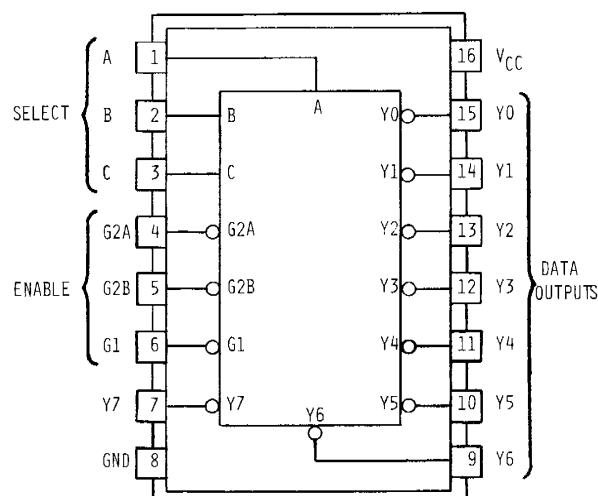
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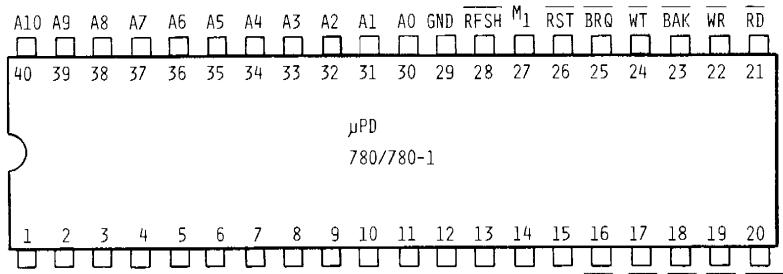
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ROC P/N 1415-322 (2114) ICM,RAM,NMOS, 1024x4,200NS,2114

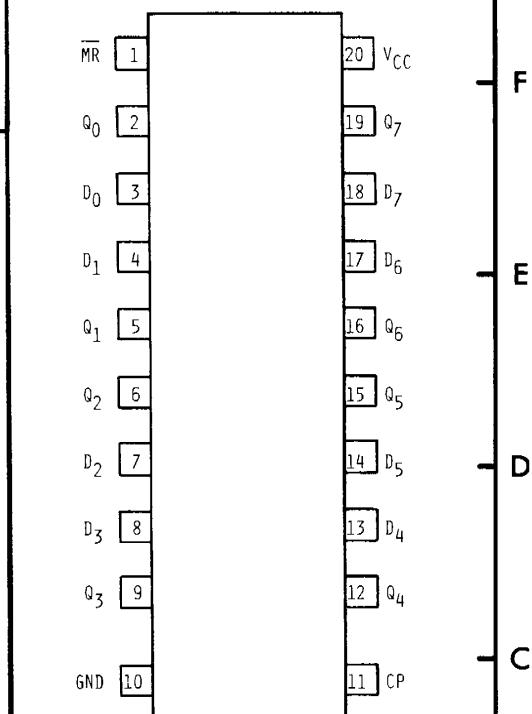
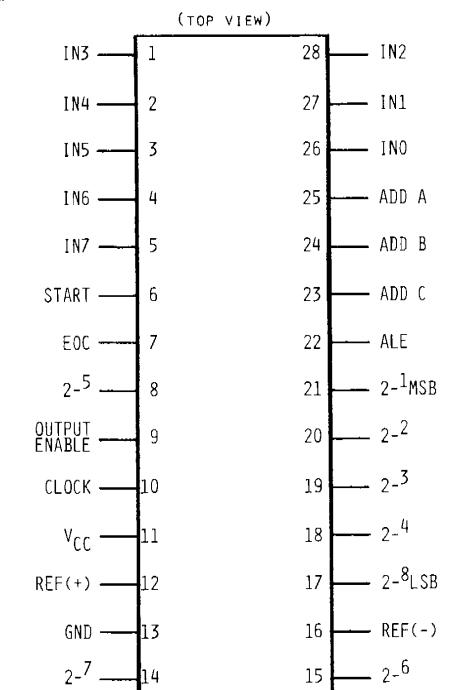
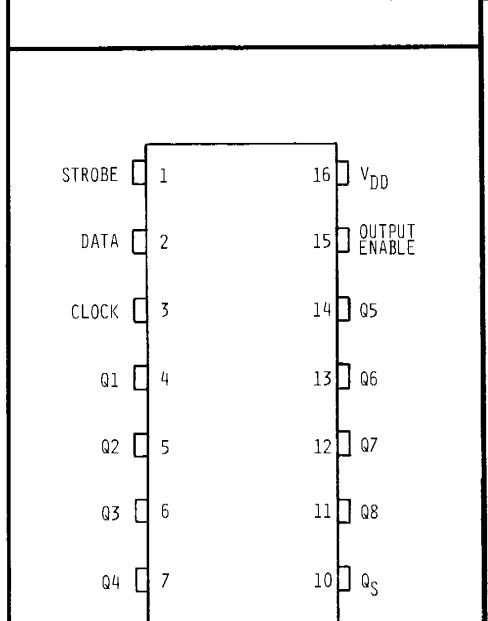
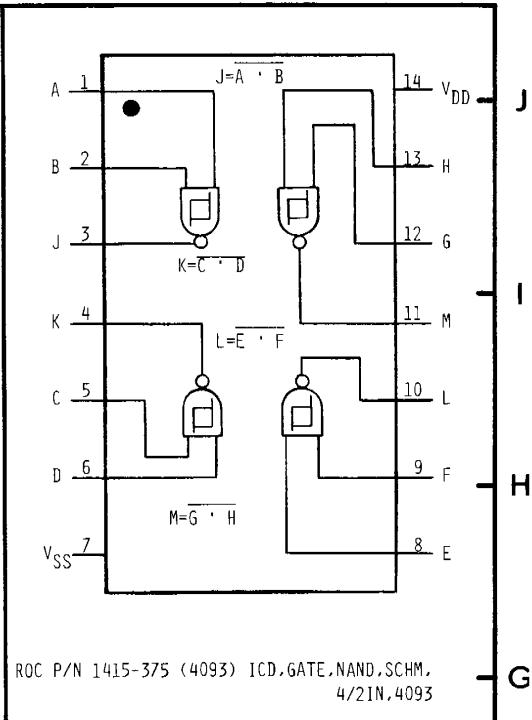
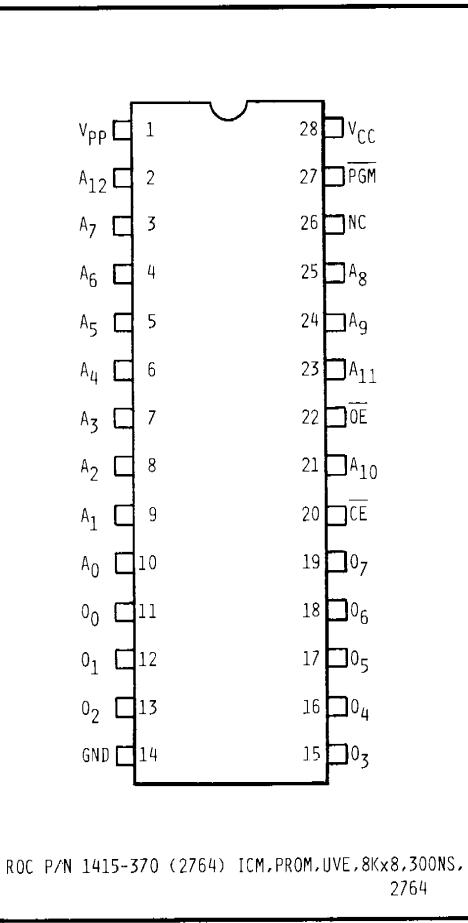
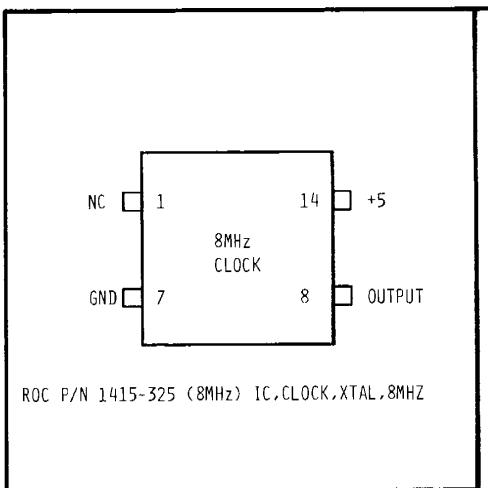


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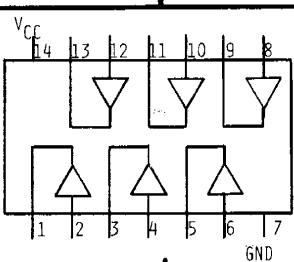
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REV.	ECO	DATE	BY	RELEASED
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TITLE				
IC PINOUTS				
SHT 5 OF 9				
DRAWN BY	CHECKER	DWG. NUMBER		
R. DOUGHERTY	SCHALE 8-17-83	1951		

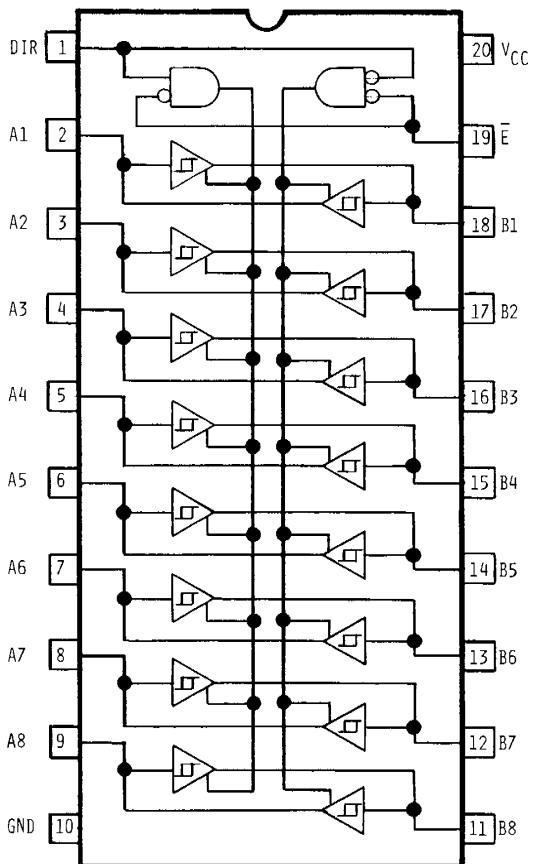
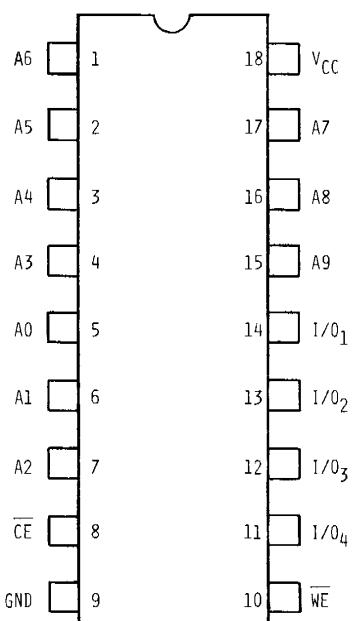


ROC P/N 1415-377 (4094) ICD,SHFT RG,8BIT,
P OUT/LA, 4094

ROC P/N 1415-327 (74C906)
HEX OPEN DRAIN N-CHANNEL BUFFER

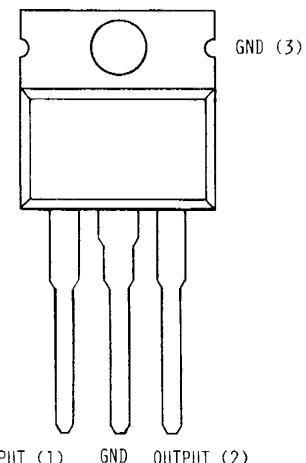
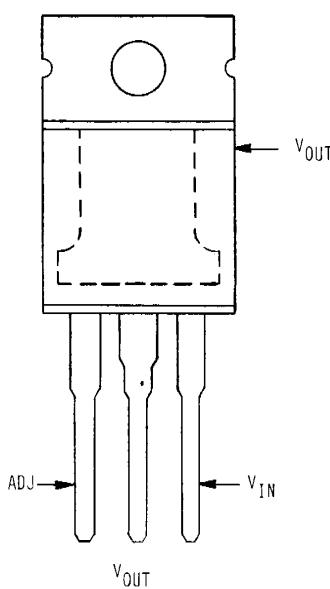


A	7-17-85 7/2088 RD	ADDED SHTS 8-12 RELEASED REV. ECO DATE BY	ET FT 7-19-84 MHENLE J.R.G.
DESCRIPTION		TITLE RODGERS ORGAN COMPANY SCALE 50%	
IC PINOUTS			
DRAWN BY R. DOUGHERTY	CHECKER SCHAFF 8-17-83	DWG. NUMBER	1951
SHT 6 OF 9			



ROC P/N 1415-381 (5514) ICM, RAM, CMOS, 1Kx4, 300NS, 5514

ROC P/N 1415-385 (74LS245) IC, BUFF, NINV, OCT, TRST, 74LS245



ROC P/N 1418-100 (LM340T12) ICL, VOLT REG, +12V, 1.5A, LM340T12
ROC P/N 1418-105 (LM340T5) ICL, VOLT REG, +5V, 1.5A, LM340T5

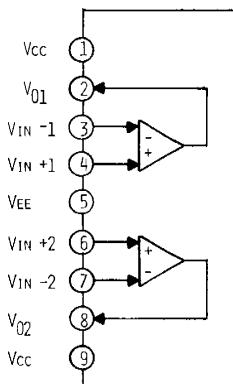
A	7-17	25	ADDED SHOTS B & 9	FT	FT 7-19-84
—	7R8	RD	RELEASED	M-HENLE	J.H.W.
REV.	ECO	DATE	BY	DESCRIPTION	ENG. APVL F.S. APVL

RODGERS ORGAN COMPANY SCALE
TITLE 50%

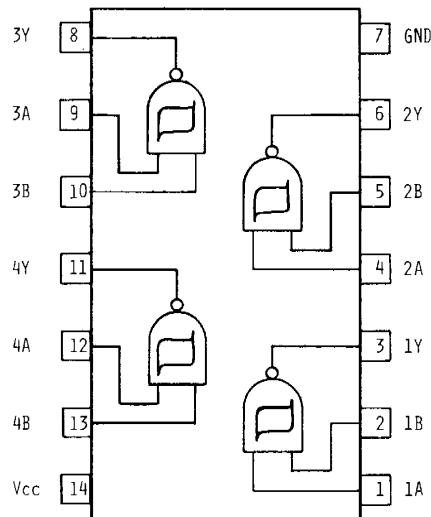
SHT 7 OF 9

DRAWN BY	CHECKER	DWG. NUMBER
R. DOUGHERTY	E.SCHAFFER 8-17-83	1951

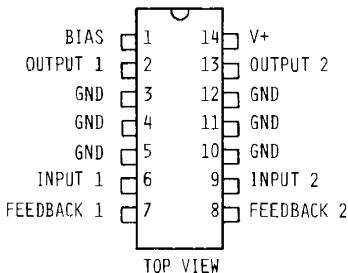
ROC P/N 1418-102 (LM317T) ICL, VOLT REG, ADJ, 1.5A, LM317T



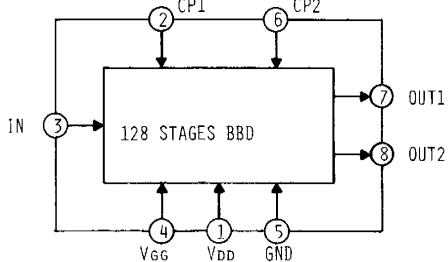
ROC P/N 1415-012 (AN6551) ICL, OPAMP,
DUAL, LOW NOISE, 6551



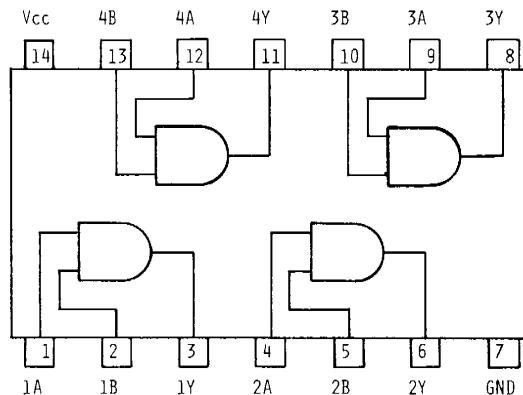
ROC P/N 1415-015, (74HC132) ICD, NAND SCHM, 4/2IN, 74HC132



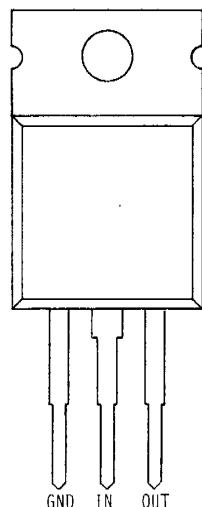
ROC P/N 1415-080, (LM377), ICL, PWRAMP, DUAL, 2 WATT,
LM377



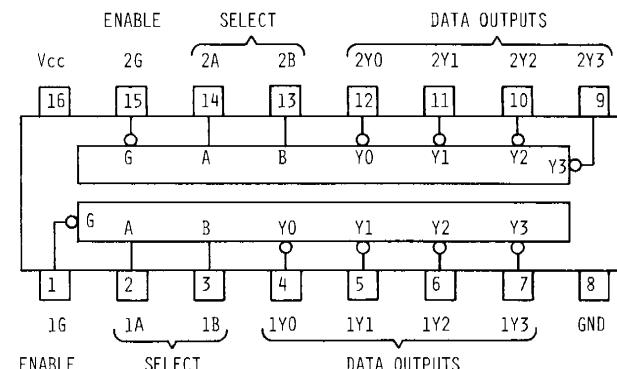
ROC P/N 1415-128, (MM3006), ICL, DLY LINE, 128 STG, MM3006



ROC P/N 1415-204, (74LS08), ICD, GATE, AND, 4/2 IN, 74LS08



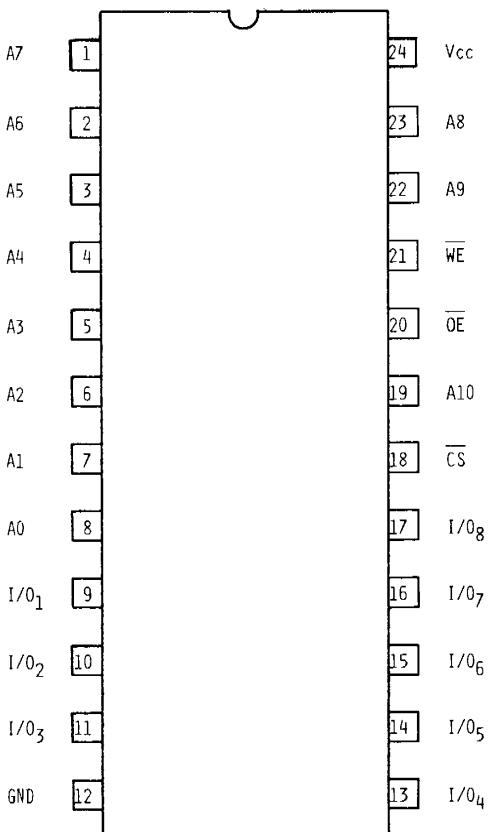
INPUT



ROC P/N 1415-303, (74LS139), ICL, DUAL 10F4, DMUX, 74LS139

ROC P/N 1418-104 (LM320T) ICL, VOLT REG, -12V, 1.5A, LM320T

A REV.	7-17 ECO	B DATE	ADDED SHT 8 OF 9 BY	DESCRIPTION	F T FT 7-19-84
RODGERS ORGAN COMPANY					SCALE
TITLE IC PINOUTS					SHT 8 OF 9
DRAWN BY SCHALK 7-17-84	CHECKER	DWG. NUMBER 1951			ENG. APVL FS. APVL



TOP VIEW

SYMBOL	NAME
A ₀ THRU A ₃	COLUMN ADDRESS INPUTS
A ₄ THRU A ₁₀	ROW ADDRESS INPUTS
CS	CHIP SELECT INPUT
WE	WRITE ENABLE INPUT
I/O ₁ THRU I/O ₈	DATA INPUT/OUTPUT
OE	OUTPUT ENABLE INPUT
Vcc	POWER (5V)
GND	GROUND

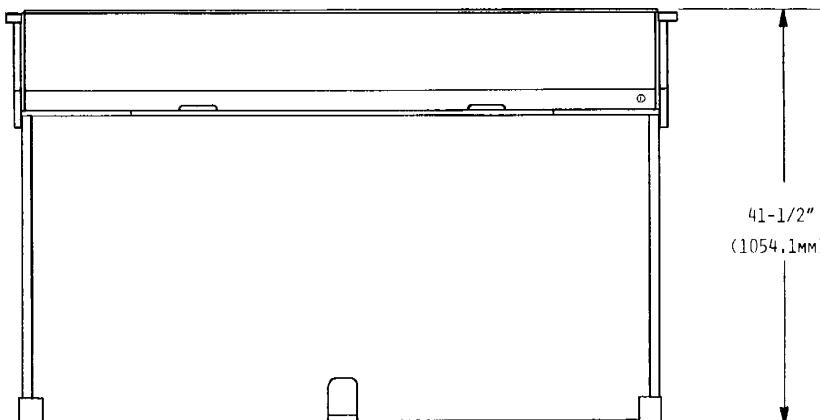
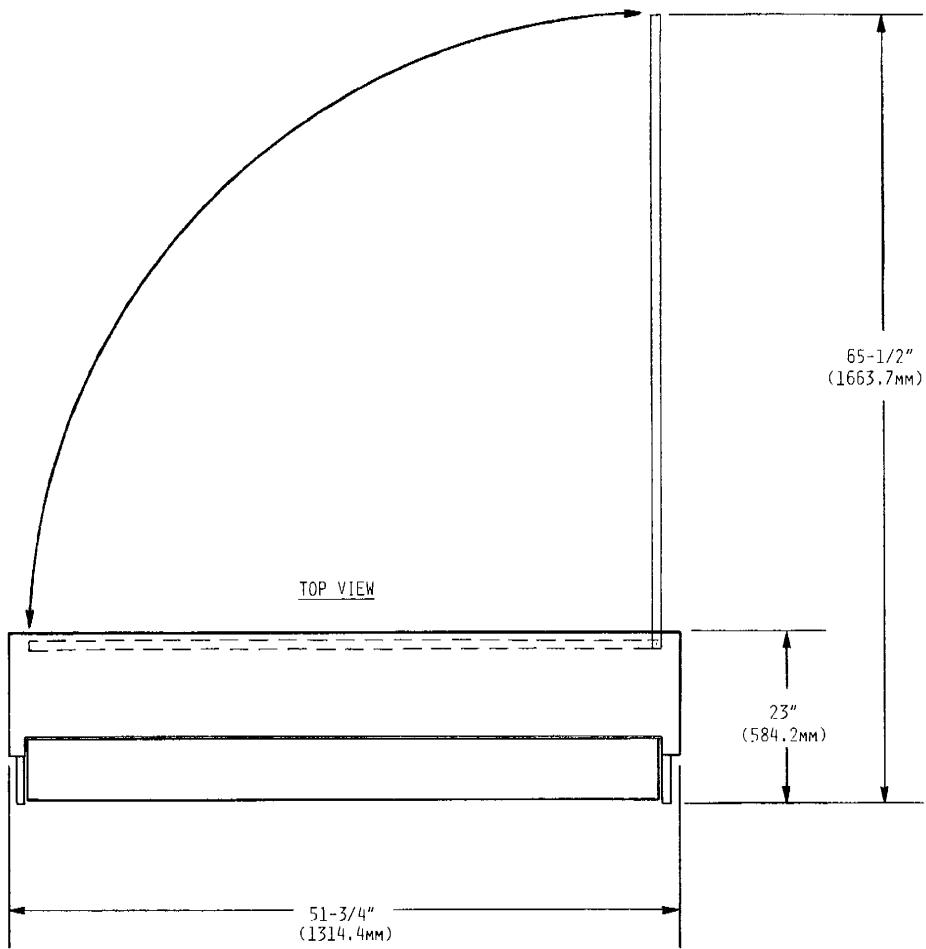
ROC P/N 1415-016, (2016), 2K x 8, 200NS, 2016

ROC P/N 1415-017, (2016C0, 2K x 8, 300NS, 2016C

NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

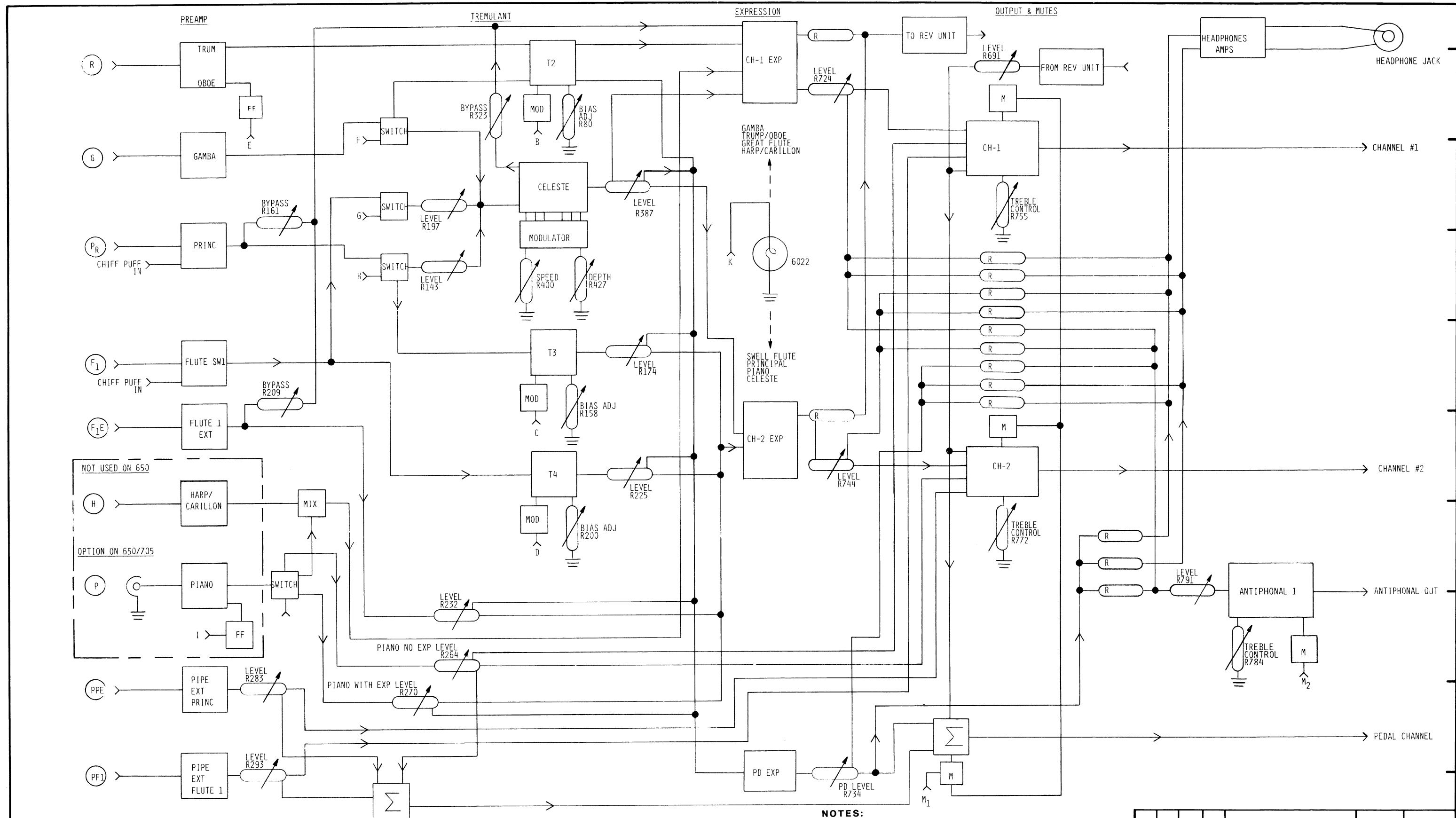
A	7-17 8-4	25	ADDED SHTS 8 & 9	F T	FT 7-19-84
REV.	ECO	DATE	BY	DESCRIPTION	
RODGERS ORGAN COMPANY					
SCALE					
TITLE					
IC PINOUTS					
SHT 9 OF 9					
DRAWN BY	CHECKER	DWG. NUMBER			
SCHALK 7-17-84		1951			



NOTES:

1. WEIGHT (CONSOLE ONLY): 230 LBS
 2. WEIGHT (COMPLETE): 350 LBS
 3. MAX POWER CONSUMPTION: 350 WATTS
 4. IDLING POWER CONSUMPTION: 100 WATTS

7/18 RD		RELEASED		
REV.	ECO	DATE BY	DESCRIPTION	
RODGERS ORGAN COMPANY				SCALE 50%
TITLE 100 CONSOLE SPECIFICATIONS				
DRAWN BY R. DOUGHERTY	CHECKER SCHALK 7-6-83	DWG. NUMBER 1952		



NOTES:

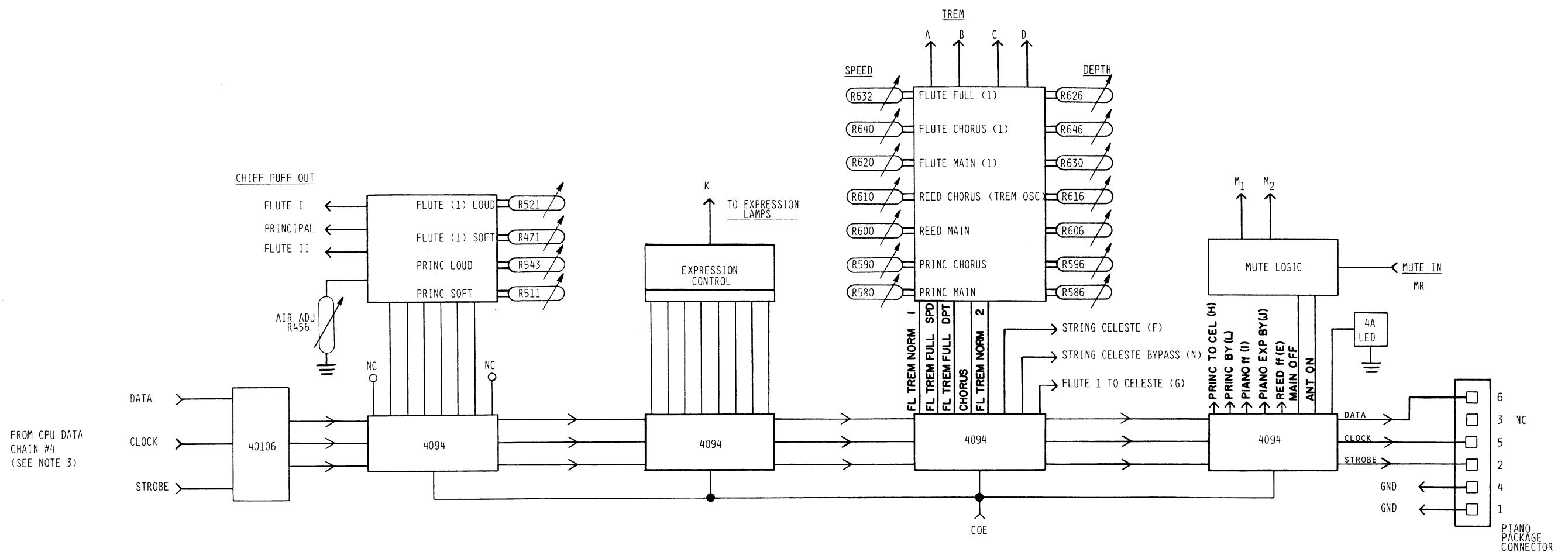
- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS
OTHERWISE LABELED.**

(2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

(3) FOR AN EXPLANATION OF LETTERS B TO M, SEE SHEET 2.

(4) FOR RESISTOR IDENTIFIERS AND VALUES, REFER TO OUTPUT PREAMP
SCHEMATIC #5008-302.

—	—	8/26/83 RD	RELEASED	M HENRY
REV.	ECO	DATE	BY	DESCRIPTION
RODGERS ORGAN COMPANY				SCALE 50%
TITLE 650/705 AUDIO BLOCK DIAGRAM				
SHT 1 OF 2				
DRAWN BY	CHECKER	DWG. NUMBER		
R. DOUGHERTY	EXACAD 9-1-83	1954		



NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS
OTHERWISE LABELED.**

(2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

(3) REFER TO 650/705 CPU SOFTWARE (OUTPUT CHAIN #4).

650/705 INPUT CHAINS
(0,1,3,4,6)

CHAIN #0: (SWELL KEYS)	
0	SWELL KEY 1
1	
40	SWELL KEY 61
61	BLANK
62	BLANK
63	BLANK

CHAIN #1: (GREAT KEYS)	
0	GREAT KEY 1
60	GREAT KEY 61
61	BLANK
62	BLANK
63	BLANK

CHAIN #3: (PEDAL KEYS)	
32	PEDAL KEY 1 PAD 32
63	PEDAL KEY 32 PAD 1

CHAIN #4: (PISTONS)	
32	SPARE PAD 32
33	SPARE PAD 31
34	SPARE PAD 30
35	SPARE PAD 29
36	SPARE PAD 28
37	SPARE PAD 27
38	SOSTENUTO PEDAL SWITCH PAD 26
39	SOSTENUTO PISTON PAD 25
40	COMB. REED LOCK SWITCH PAD 24
41	SET PAD 23
42	M-2 PAD 22
43	M-2 PAD 21
44	GENERAL * 1 PAD 20
45	GENERAL * 2 PAD 19
46	GENERAL * 3 PAD 18
47	GENERAL * 4 PAD 17
48	GENERAL * 5 PAD 16
49	CONTINUO PAD 15
50	SOLO PAD 14
51	GENERAL CANCEL PAD 13
52	TRANSPOSER * 1 PAD 12
53	TRANSPOSER * 2 PAD 11
54	TRANSPOSER * 3 PAD 10
55	HEADPHONE JACK PAD 9
56	TEST SOCKET 1 PAD 8
57	TEST SOCKET 2 PAD 7
58	TEST SOCKET 3 PAD 6
59	POWER SWITCH PAD 5
60	OPTION JUMPER 1 PAD 4
61	OPTION JUMPER 2 PAD 3
62	PIPS/ELECTRONIC SWITCH PAD 2
63	TEST PUSHBUTTON PAD 1

CHAIN #5: (STOP TABS)	
0	STOP RAIL (UPPER) (GENERAL)
1	CELESTE FLUTE TREM FULL
2	REEDS FF
3	MAIN CHORUS
4	- - -
5	BOURDON DOUX 16' (SWELL)
6	GEDACKT 8'
7	GAMBA 8'
8	PRINCIPAL 8'
9	NACHTHORN 8'
10	NASARD 2-2/3'
11	BLOCKFLÖTE 2'
12	TIERCE 1-3/5'
13	SIFFLÖTE 1'
14	PLEIN JEU IV
15	TROMPETTE 8'
16	OBOE 8'
17	SW TO SW 16'
18	SW UNION OFF
19	SW TO SW 4'
20	- - - (POSITIV)
21	BOURDON 8'
22	PRINCIPAL 4'
23	FLUTE 4'
24	OCTAVE 2'
25	QUINT 1-1/3'
26	SIFFLÖTE 1'
27	- - - (GENERAL)
28	MAIN OFF
29	ANTIPHONAL ON
30	PIPS OFF
31	ANCIILARY ON
32	STOP RAIL (LOWER) (PEDAL)
33	SUBBASS 16'
34	BOURDON DOUX 16'
35	OCTAVE 8'
36	CHORALBASS 4'
37	NACHTHORN 8'
38	FLUTE 2'
39	MIXTURE IV
40	GT TO PED 8'
41	SW TO PED 8'
42	SW TO PED 4'
43	- - - (GREAT)
44	PRINCIPAL 8'
45	BOURDON 8'
46	GEMSHORN 8'
47	OCTAVE 4'
48	FLUTE 4'
49	NASAT 2-2/3'
50	SUPEROCTAVE 2'
51	WALDFLÖTE 2'
52	MIXTURE IV
53	MAIN TREMULANT
54	SW TO GT 16'
55	SW TO GT 8'
56	SW TO GT 4'
57	HARP
58	CARILLON
59	GRAND PIANO 16'
60	PIANO 8'
61	HARPSICHORD
62	PIANO UNEXPRESSED
63	GLOCKENSPIEL

650/705 OUTPUT CHAINS
(2,3,4,5,6)

CHAIN #2: (PRINCIPAL & FLUTE EXT. KEYING)	
0	PRINCIPAL KEYING NOTE 1 (LOUD)
1	PRINCIPAL KEYING NOTE 1 (SOFT)
2	PRINCIPAL KEYING NOTE 2 (LOUD)
3	PRINCIPAL KEYING NOTE 2 (SOFT)
166	PRINCIPAL KEYING NOTE 84 (LOUD)
167	PRINCIPAL KEYING NOTE 84 (SOFT)
168	PRINCIPAL KEYING NOTE 85 (LOUD)
169	PRINCIPAL KEYING NOTE 85 (SOFT)
170	SPARE
171	SPARE
172	SPARE
173	SPARE
174	SPARE
175	LED 2

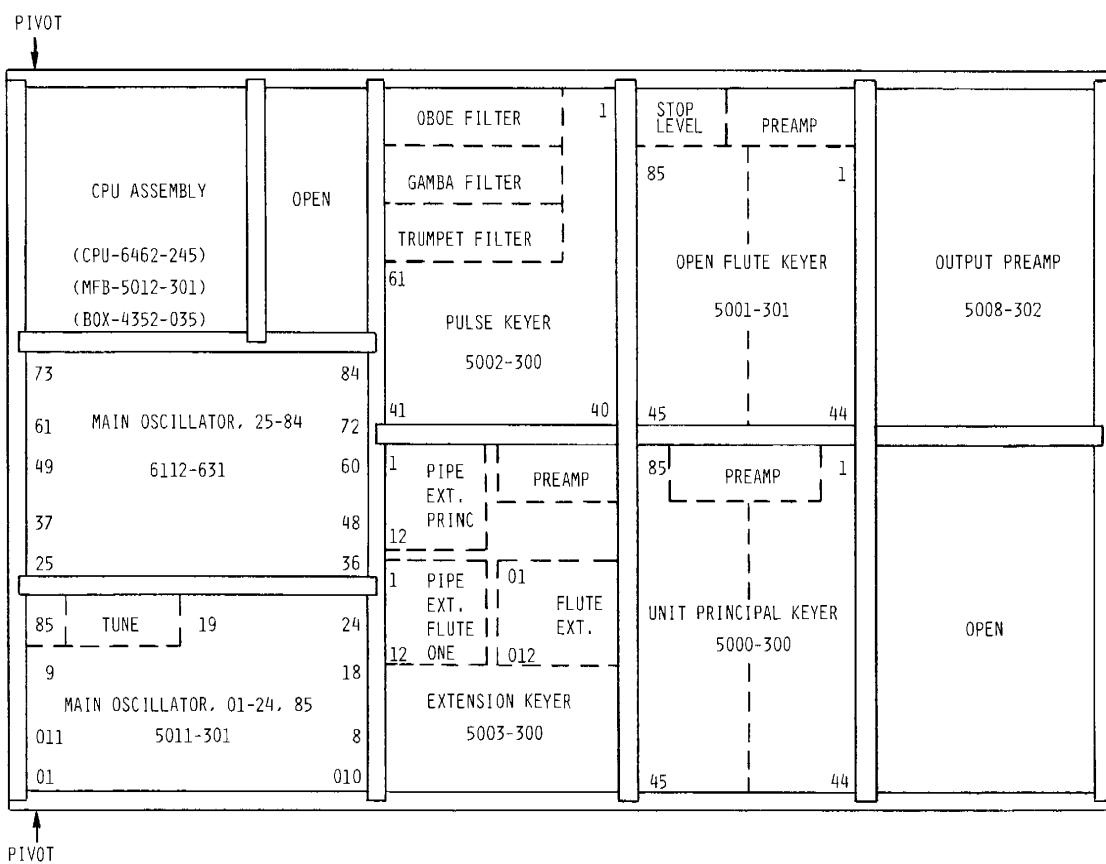
CHAIN #3: (FLUTE EXT. KEYING)	
176	FLUTE EXT. KEYING NOTE 01 (LOUD)
177	FLUTE EXT. KEYING NOTE 01 (SOFT)
178	FLUTE EXT. KEYING NOTE 02 (LOUD)
179	FLUTE EXT. KEYING NOTE 02 (SOFT)
196	FLUTE EXT. KEYING NOTE 011 (LOUD)
197	FLUTE EXT. KEYING NOTE 011 (SOFT)
198	FLUTE EXT. KEYING NOTE 012 (LOUD)
199	FLUTE EXT. KEYING NOTE 012 (SOFT)
200	FLUTE PIPE EXT. KEYING NOTE 1
201	FLUTE PIPE EXT. KEYING NOTE 2
210	FLUTE PIPE EXT. KEYING NOTE 11
211	FLUTE PIPE EXT. KEYING NOTE 12
212	SPARE
213	SPARE

CHAIN #4: (PRINC PIPE EXT. KEYING)	
0	PRINC. PIPE EXT. KEYING NOTE 1
1	PRINC. PIPE EXT. KEYING NOTE 2
234	PRINC. PIPE EXT. KEYING NOTE 11
235	PRINC. PIPE EXT. KEYING NOTE 12
236	SPARE
237	NOT USED
238	FLUTE EXT. KEYER LEVEL
239	LED 2

CHAIN #5: (FLUTE KEYING)	
0	FLUTE KEYING NOTE 1 (LOUD)
1	FLUTE KEYING NOTE 1 (SOFT)
2	FLUTE KEYING NOTE 2 (LOUD)
3	FLUTE KEYING NOTE 2 (SOFT)
166	FLUTE KEYING NOTE 84 (LOUD)
167	FLUTE KEYING NOTE 84 (SOFT)
168	FLUTE KEYING NOTE 85 (LOUD)
169	FLUTE KEYING NOTE 85 (SOFT)
170	SPARE
171	SPARE
172	SPARE
173	SPARE
174	SPARE
175	LED 3

CHAIN #6: (PULSE KEYING)	
0	PULSE KEYING NOTE 1
1	PULSE KEYING NOTE 2
2	PULSE KEYING NOTE 3
234	PULSE KEYING NOTE 59
235	PULSE KEYING NOTE 60
236	SPARE
237	SPARE
238	SPARE
239	SPARE
240	SPARE
241	OBOE FILTER R155
242	GAMBA R121
243	ECHO GAMBA R120
244	TROMPETTE R83
245	SPARE
246	SPARE
247	SPARE

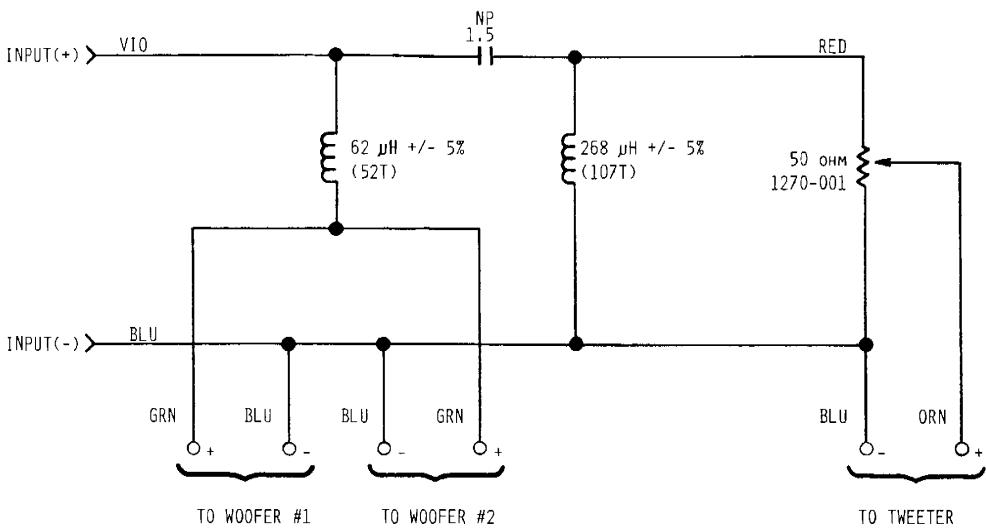
CHAIN #7: (OUTPUT PREAMP & PIANO)	
0	SPARE
1	PRINCIPAL AIR PUFF (SOFT)
2	PRINCIPAL AIR PUFF (LOUD)
3	FLUTE 2 AIR PUFF (SOFT)
4	FLUTE 2 AIR PUFF (LOUD)
5	FLUTE 1 AIR PUFF (SOFT)
6	FLUTE 1 AIR PUFF (LOUD)
7	SPARE
8	EXPRESSION BIT 1 (MSB)
9	EXPRESSION BIT 2
10	EXPRESSION BIT 3
11	EXPRESSION BIT 4
12	EXPRESSION BIT 5
13	EXPRESSION BIT 6
14	EXPRESSION BIT 7
15	EXPRESSION BIT 8 (LSB)
16	FLUTE TREM NORMAL #1 *
17	FLUTE TREM FULL SPEED *
18	FLUTE TREM FULL DEPTH *
19	CHORUS *
20	FLUTE TREM NORMAL #2 *
21	STRING TO CELESTE 1 O R125
22	FLUTE TO CELESTE 1 O R129
23	PRINC. TO CELESTE BYPASS O R147
24	PIANO FF *
25	PIANO EXPRESSED BYPASS *
26	PIANO EXPRESSED R256



COMPONENT SIDE

—	—	7/8/83	RD	RELEASED	MH	A.P.V.L.
REV.	ECO	DATE	BY	DESCRIPTION	ENG. APVL	F.S. APVL
RODGERS ORGAN COMPANY						SCALE 50%
TITLE 650 RACK ASSEMBLY						
DRAWN BY R. DOUGHERTY	CHECKER E.C.H.A.L.D. 7-18-83	DWG. NUMBER 1956				

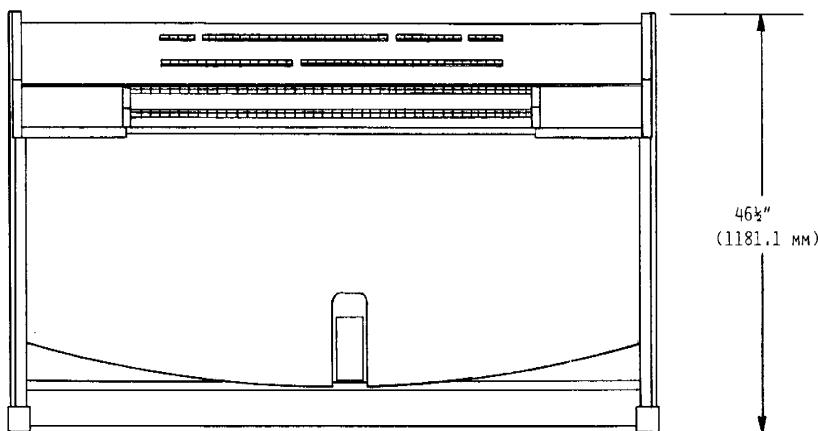
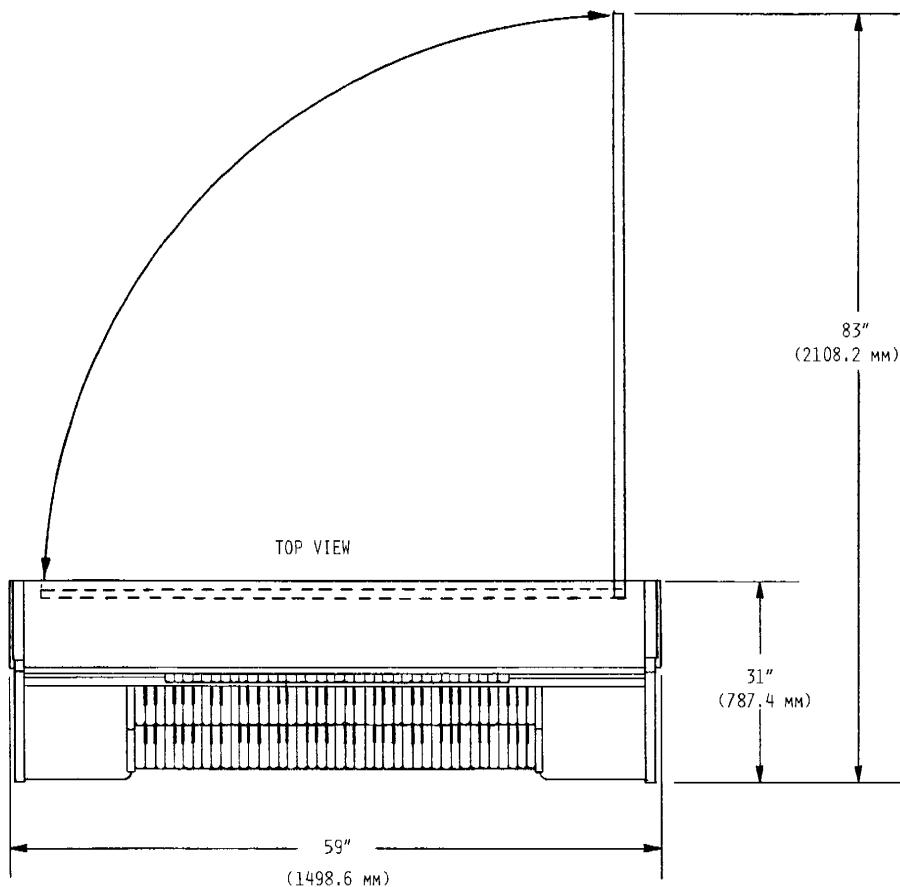
7 4 5 4 2 3 2 1



NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

A	9850	10100	RD	CHANGE COIL VALUES	M	10-18-83
---	---	81183	RD	RELEASED	M	HENLE
REV.	ECO	DATE	BY	DESCRIPTION	ENG. APVL	F.S. APVL
RODGERS ORGAN COMPANY						
SCALE 50 %						
TITLE M-3 SPEAKER CROSSOVER						
ASSEMBLY (6551-010)						
DRAWN BY	CHECKER	DWG. NUMBER				
R. DOUGHERTY	SCHAUK 8-15-83	1959				

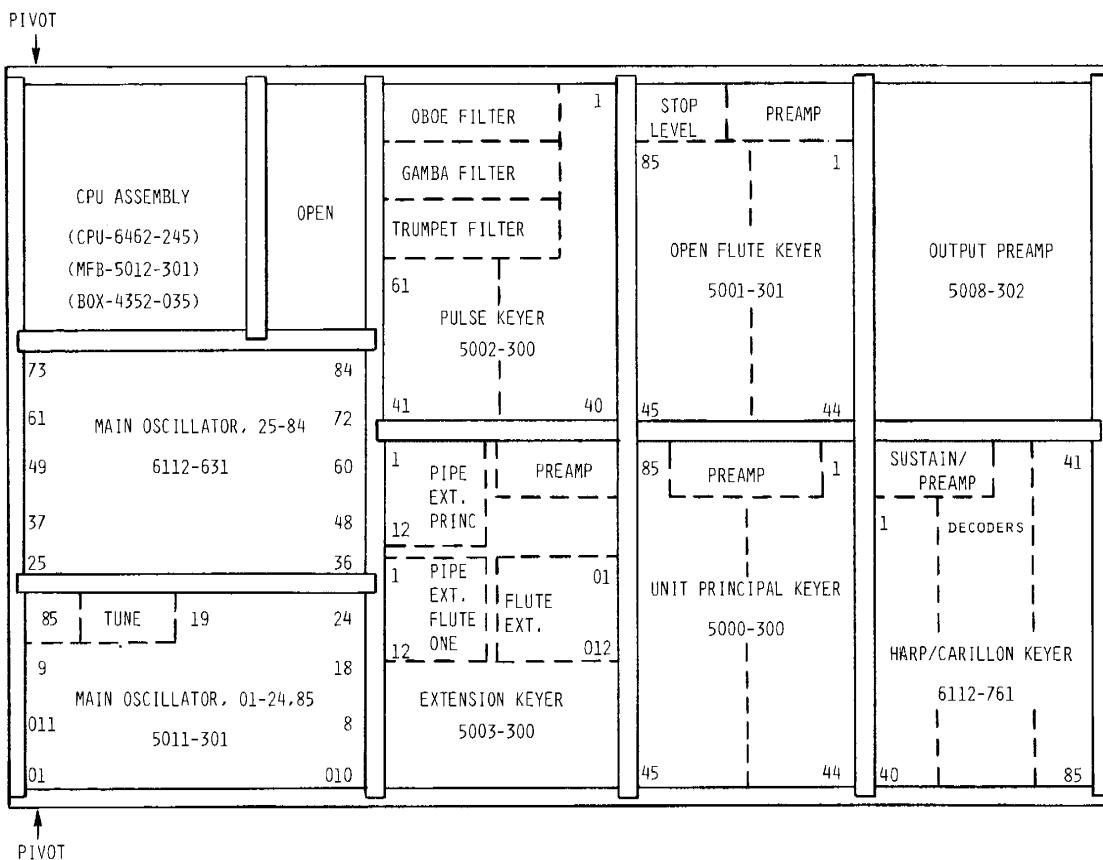


FRONT VIEW

NOTES:

1. WEIGHT: 600 LBS.
2. MAX POWER CONSUMPTION: 350 WATTS
3. IDLING POWER CONSUMPTION: 150 WATTS
4. DEPTH WITH PEDALBOARD: 49-3/4"

RELEASED				MENLE 2023
REV.	ECO	DATE	BY	DESCRIPTION
				RODGERS ORGAN COMPANY
SCALE 50%				
TITLE				
650/705 CONSOLE SPECIFICATIONS				
DRAWN BY	CHECKER	DWG. NUMBER		
R. DOUGHERTY	SCHALK 9-6-83	1961		



COMPONENT SIDE

7/8/83	R.D.	RELEASED	MH	J.L.Z.
REV. ECO DATE	BY	DESCRIPTION	ENG. APVL	FS. APVL
RODGERS ORGAN COMPANY SCALE 50%				
TITLE 705 RACK ASSEMBLY				
DRAWN BY R. DOUGHERTY	CHECKER SCHALK 7-15-83	DWG. NUMBER 1957		

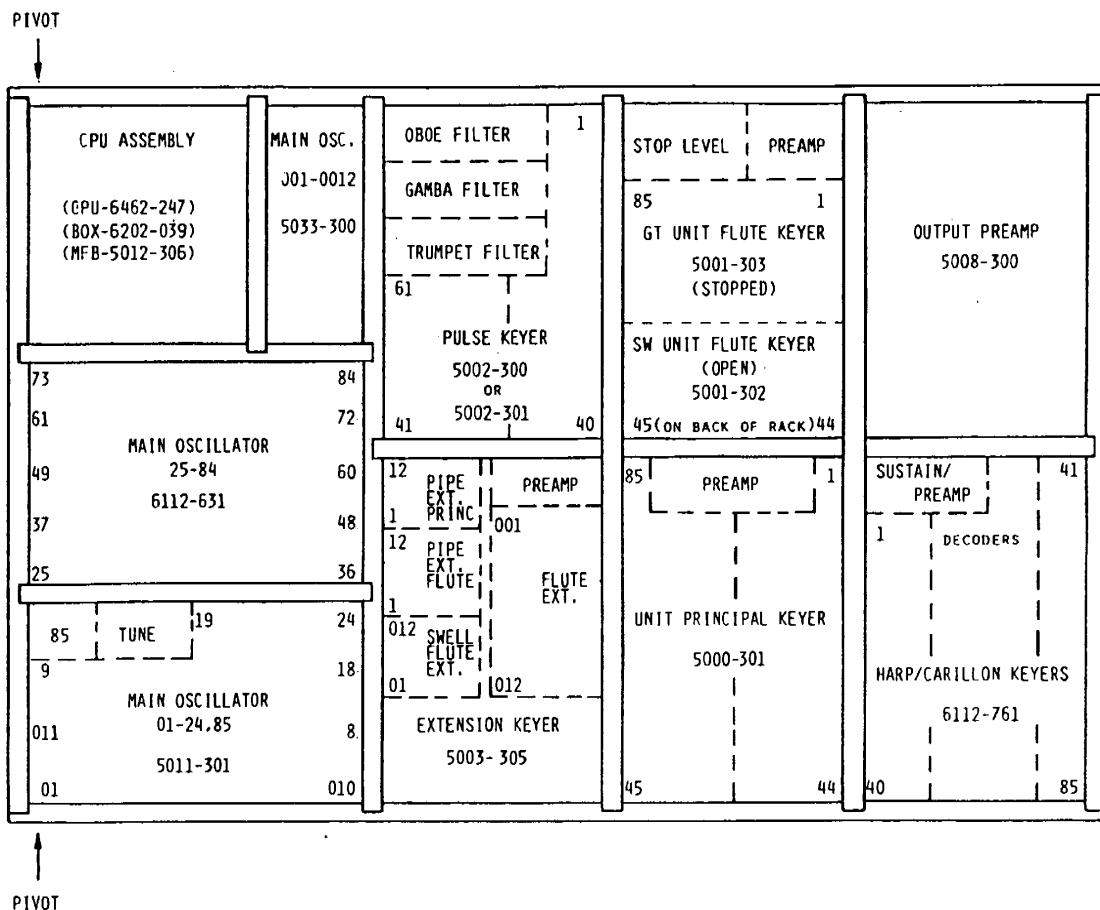
7 6 5 4 3 2 1

R26 FL BY / \ / R29 FL BIAS * R45 FL 2 / \ / CHAN. I
 LEVEL / \ / LEVEL LEVEL / \ / A724
 R55 F1 EXT / \ / R80 RP ST. BIAS R734 PD CHAN
 LEVEL / \ / / \ / ADJ
 R143 PRINC/CEL R325 CELESTE R744 CHAN ?
 LEVEL / \ / BY LEVEL LEVEL / \ /
 R161 PRINC BY REED * R96 TREBLE / \ / A755
 LEVEL / \ / LEVEL / \ / ADJ
 R158 PRINC BIAS R182 PRINC R325 CEL BIAS R742
 / \ / EX / \ / CEL BIAS
 R197 FL/CEL R203 FF1 BYPASS R278 PIANO R387 CEL
 LEVEL / \ / LEVEL / \ / V/ EXP / \ / LEVEL / \ / REV.
 R288 FL BIAS R232 FL/EXT R244 HARP R772 TREBLE
 / \ / LEVEL / \ / LEVEL / \ / LEVEL / \ / ADJ
 R285 PIPE R264 PIANO R174 PRINC R791
 PRINC / \ / VO / \ / LEVEL / \ / / \ / ANTIOPHONAL
 LEVEL / \ / EXP / \ / LEVEL / \ /
 R285 PIPE R225 FL 1 TREBLE / \ / A784
 F1 / \ / LEVEL / \ / LEVEL / \ / ADJ
 R384 PIPE R631 REVERB
 / \ / LEVEL / \ / / \ /
 R543 PRINC * R558 FL 2 MAIN
 / \ / PUFF / \ / SPEED ADJ / \ / Trem Sp Adj
 * R531 FL 2 CELESTE R490 * R557 FL 2 FULL
 / \ / AIR PUFF LEVEL / \ / SPEED ADJ / \ / Trem Sp Adj
 R521 FL 1 CELESTE R427 * R558 FL 2 CH
 PUFF / \ / AMPLITUDE / \ / FULL SP Adj / \ / SP Adj
 R471 FL 1 R559 * R563 FL 2 MAIN
 / \ / SOFT PUFF / \ / Trem DP Adj / \ / Trem DP Adj
 * R491 FL 2 R564 * R565 FL 2 CH
 / \ / SOFT PUFF / \ / Trem Depth Adj / \ / Depth Adj
 R511 PRINC R566 R566 PRINC MAIN
 / \ / SOFT PUFF / \ / CHORUS DEPTH / \ / Trem Depth
 R456 AIR R567 R567 REED MAIN
 / \ / LEVEL / \ / FULL SP / \ / Trem Depth / \ / Trem Speed
 R568 FL TREM R616 R616 REED CH
 FULL SP / \ / R568 R617 REED SP
 R626 FL TREM R617 R617 REED CH SP
 FULL DEPTH / \ / R626 R628 FL 1 MAIN
 R558 FL 1 MAIN / \ / Trem Depth / \ / Trem Sp
 R645 FL 1 CH R648 R648 FL 1 CH SP
 DEPTH / \ / / \ /
 D1

RODGERS-000

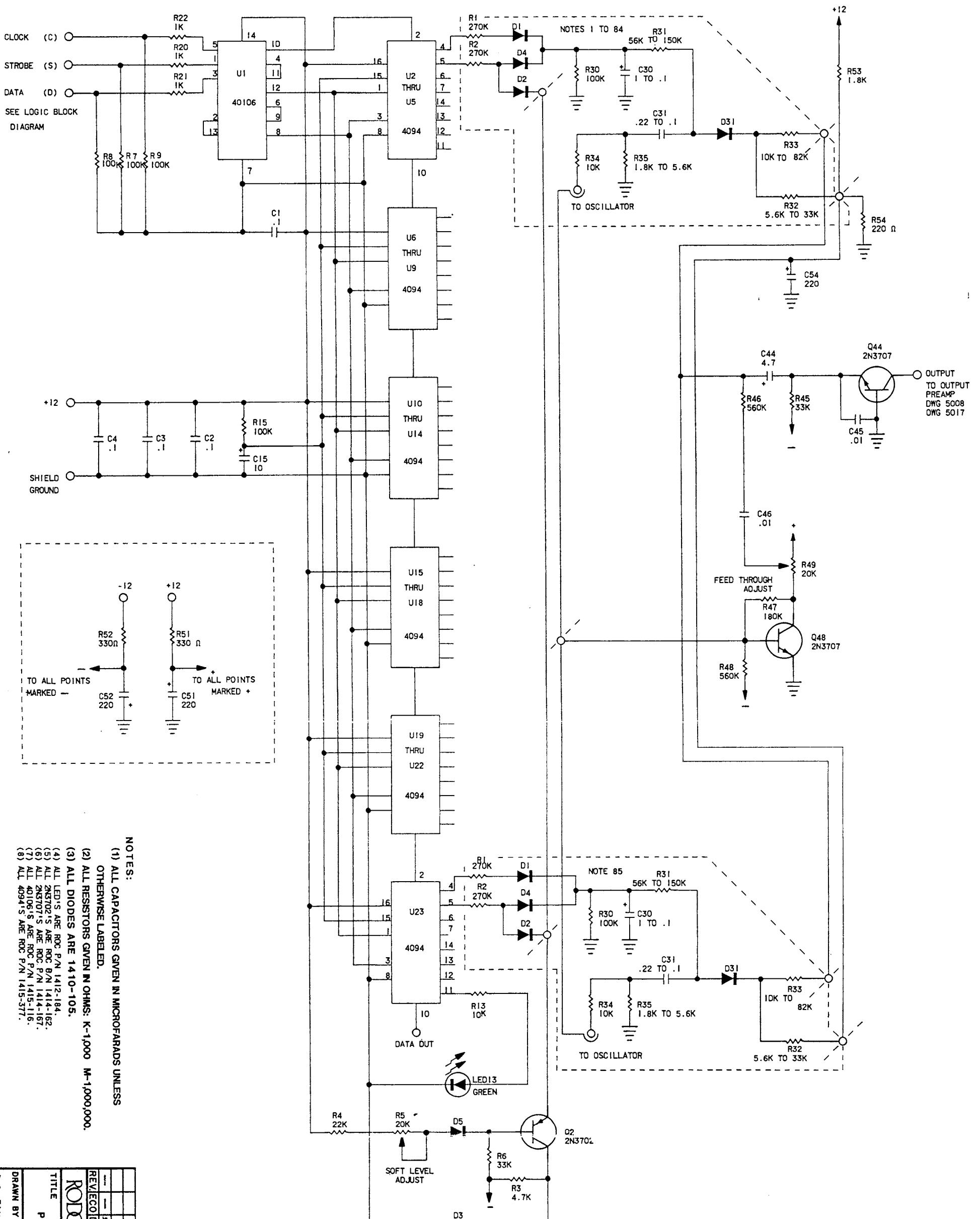
NOTE: * = NOT STUFFED ON LDS INSTRUMENT.

REV.	9-9-82	E.H.	RELEASED	J.S.W.
ECO		BY	DESCRIPTION	
			RODGERS ORGAN COMPANY	SCALE 50%
TITLE 100,650,705 OUTPUT PREAMP POT				
IDENTIFICATION				
DRAWN BY	CHECKER	DWG. NUMBER		
E.H.	D.LAWRENCE	9-9-83		
		1962		

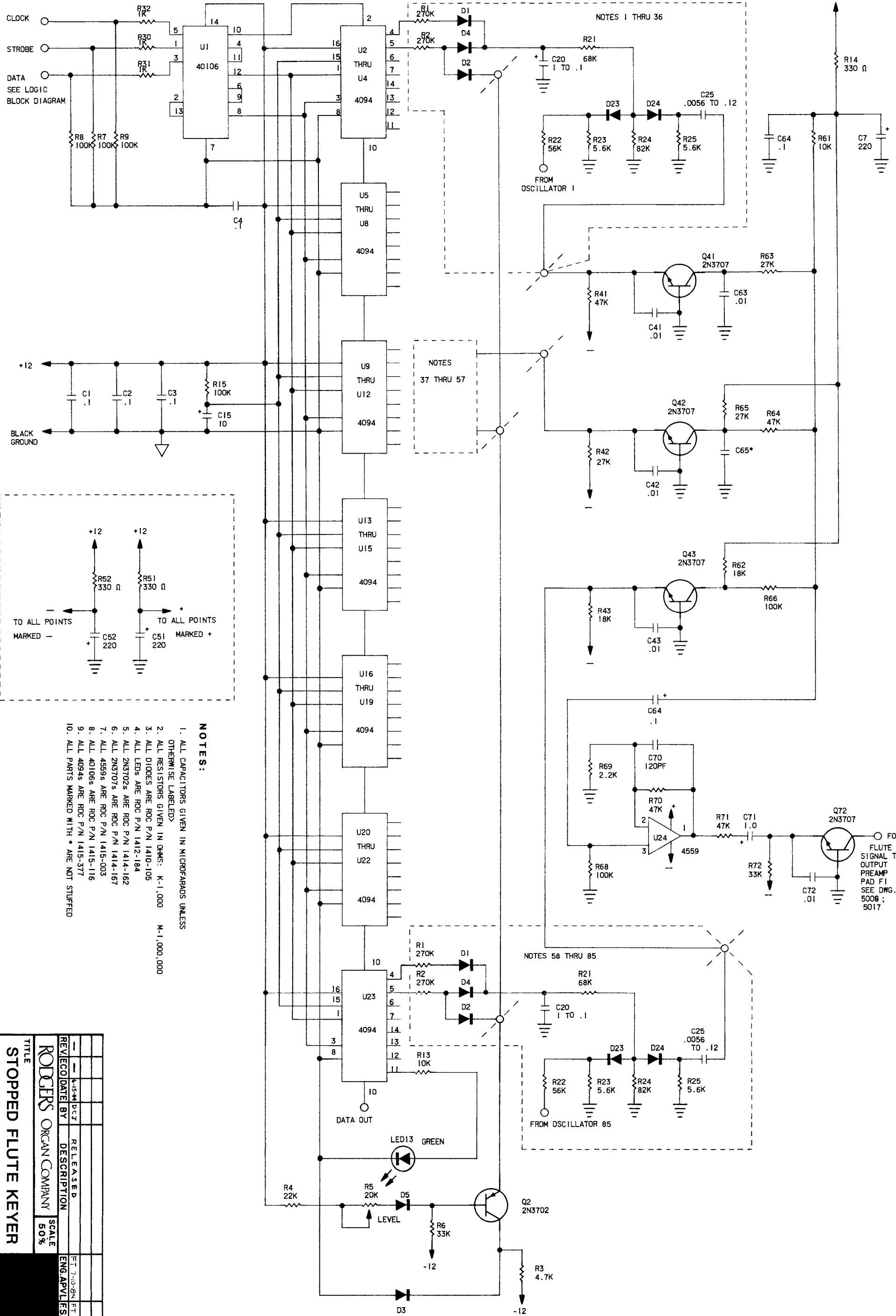


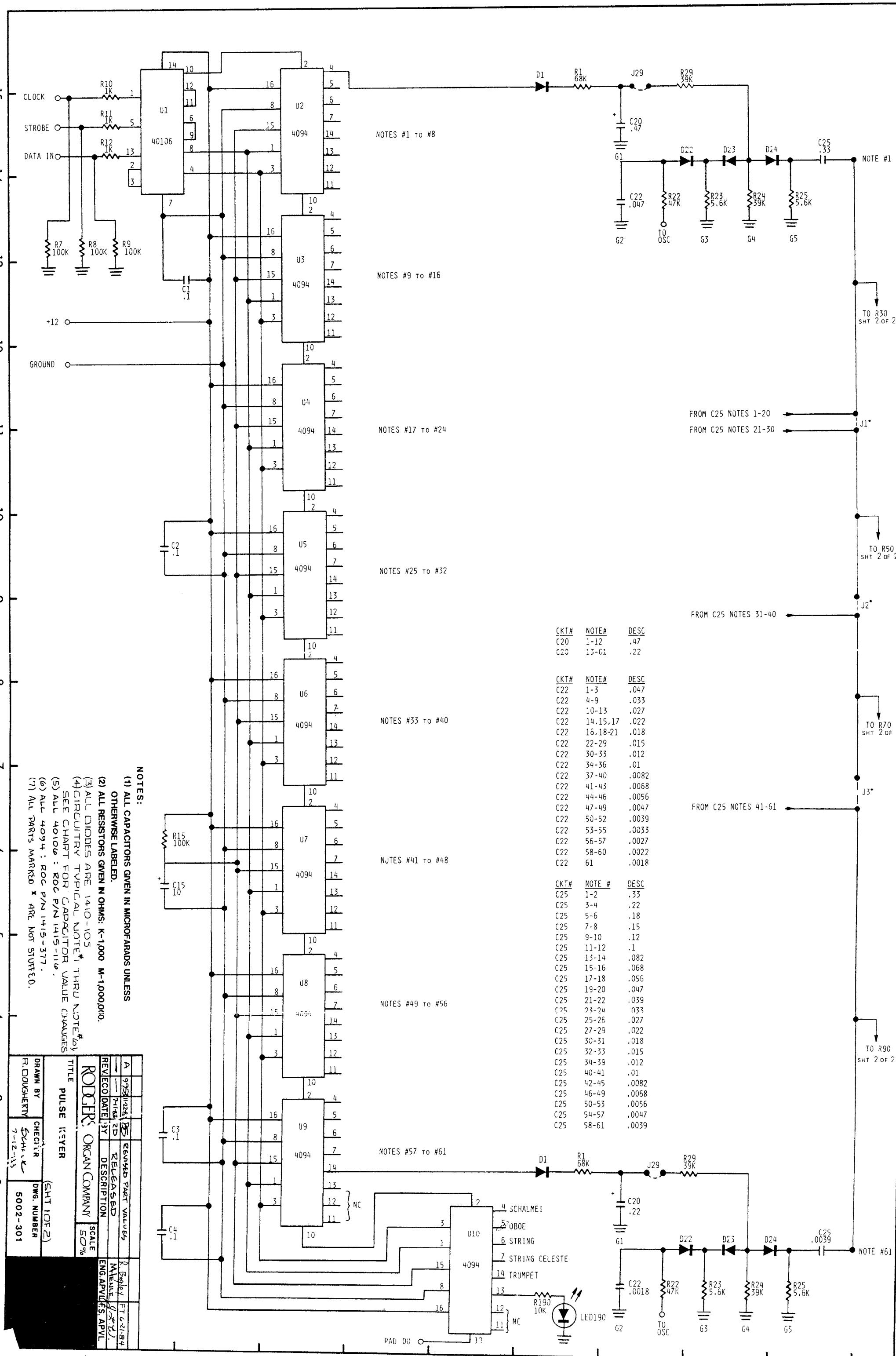
10-24	RD	RELEASED	RCB	12-1-83
REV. ECO DATE	BY	DESCRIPTION	ENG. APVL	E.S. APVL
RODGERS ORGAN COMPANY SCALE 50%				
TITLE 740 RACK INFORMATION				
DRAWN BY R. DOUGHERTY	CHECKER SCHALK 11-3-83	DWG. NUMBER 1964		

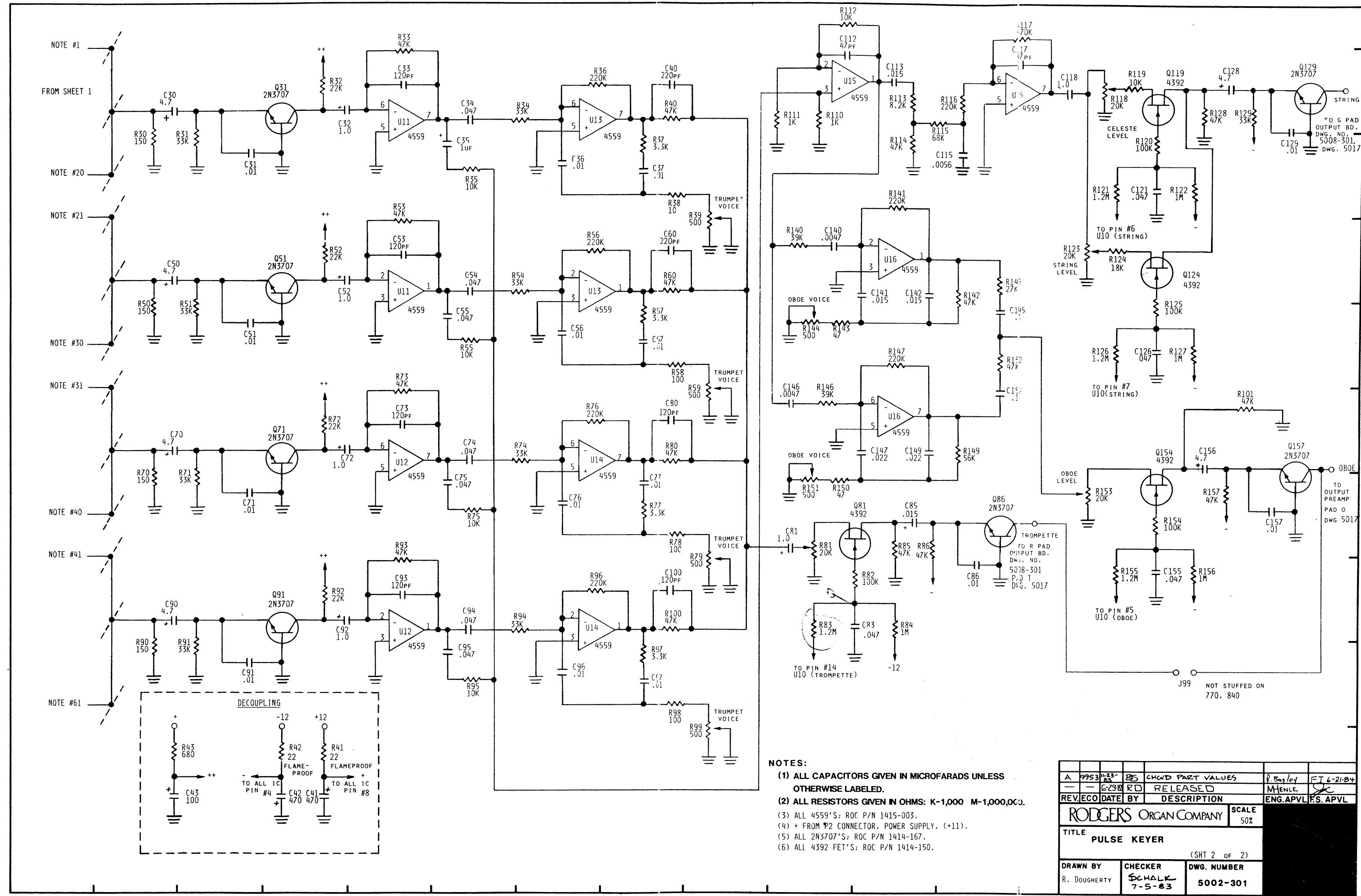
7 6 5 4 3 2 1

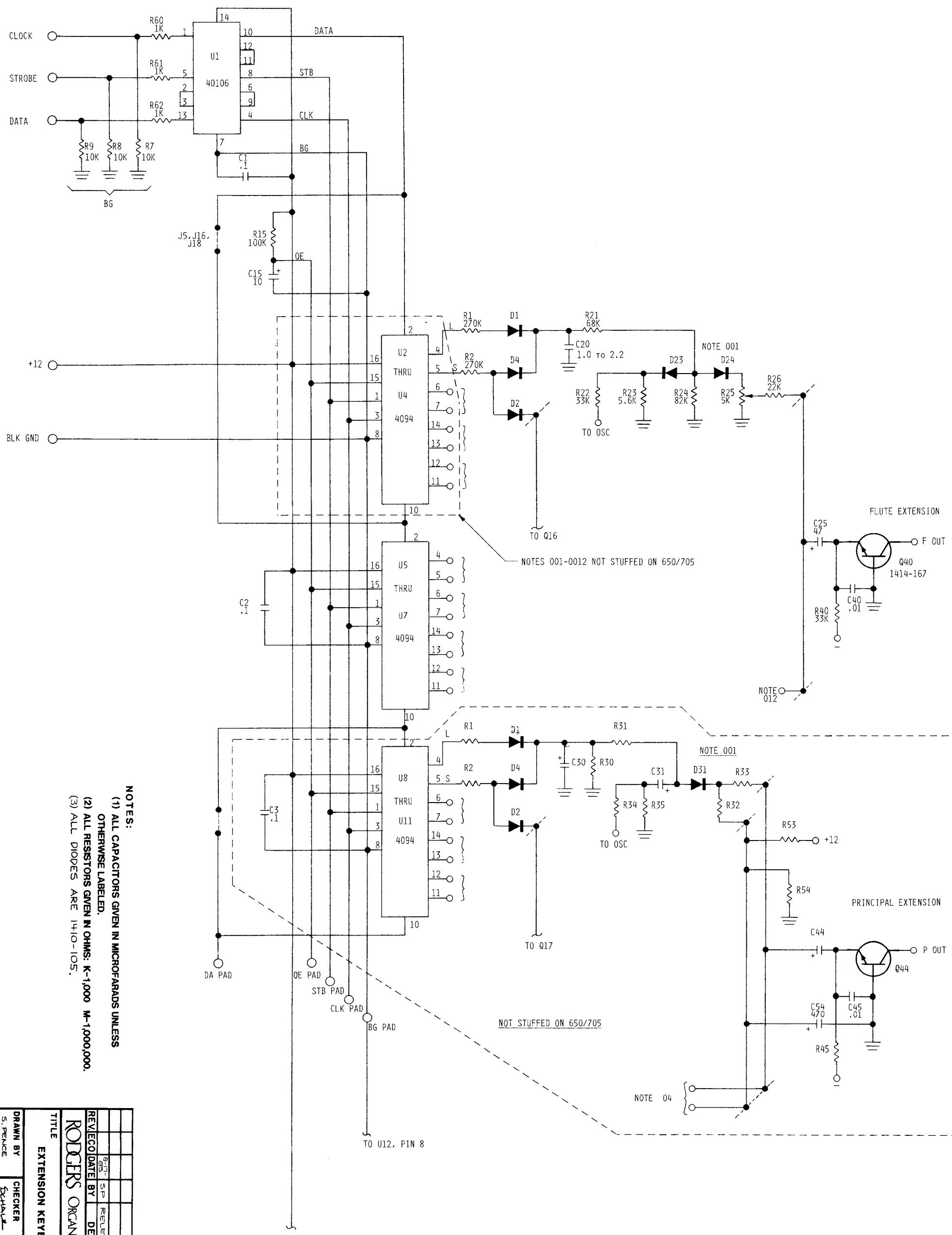


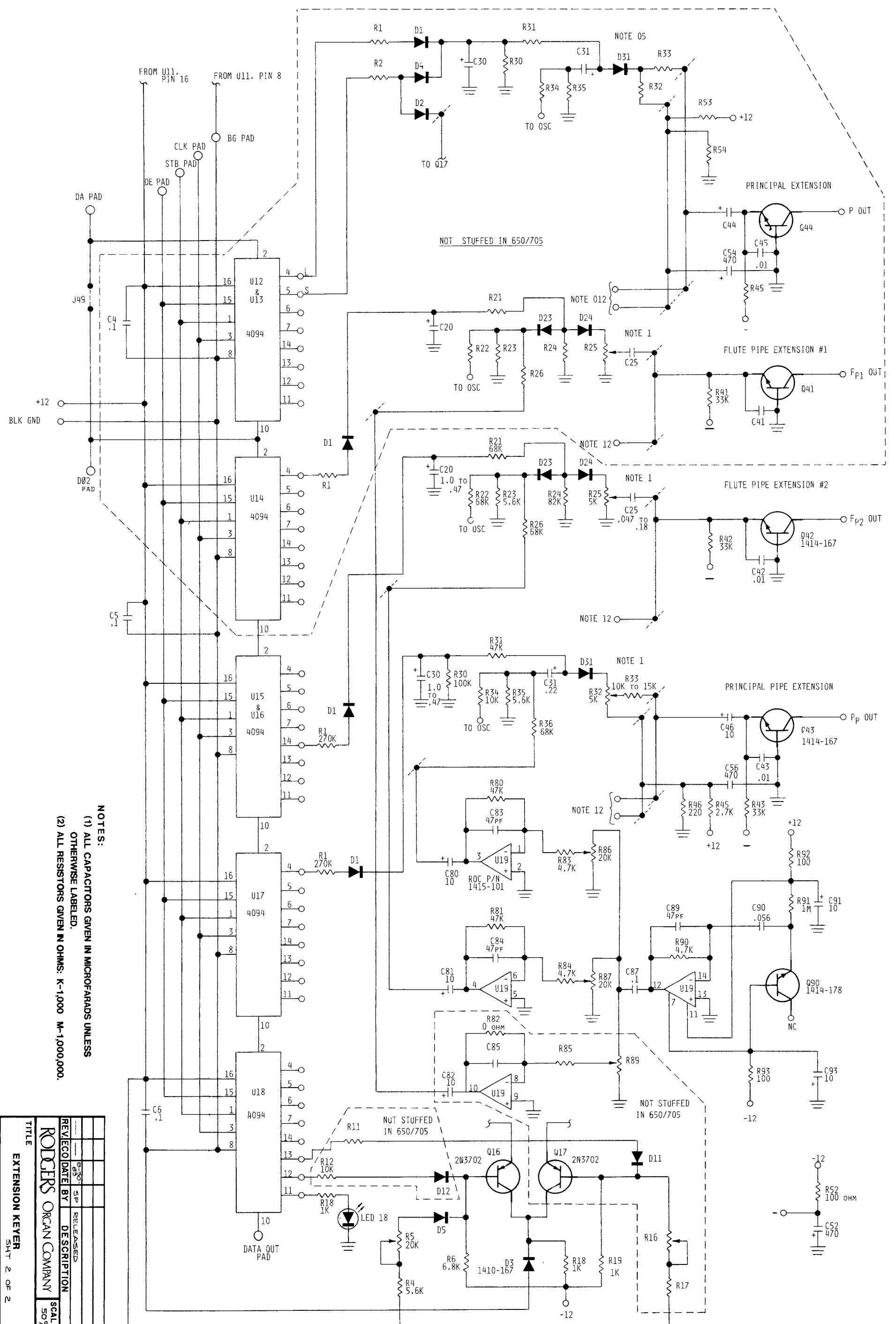
DRAWN BY	CHECKED	SCALE
D.C. JAMES		50%
		DWG. NUMBER
		5000-301
1412-R0-CJ	RELEASED	FT 7-10-84 FT 7-10-84
REVEO DATE BY	DESCRIPTION	ENG/APVL FS/APVL
RODERS ORGAN COMPANY		

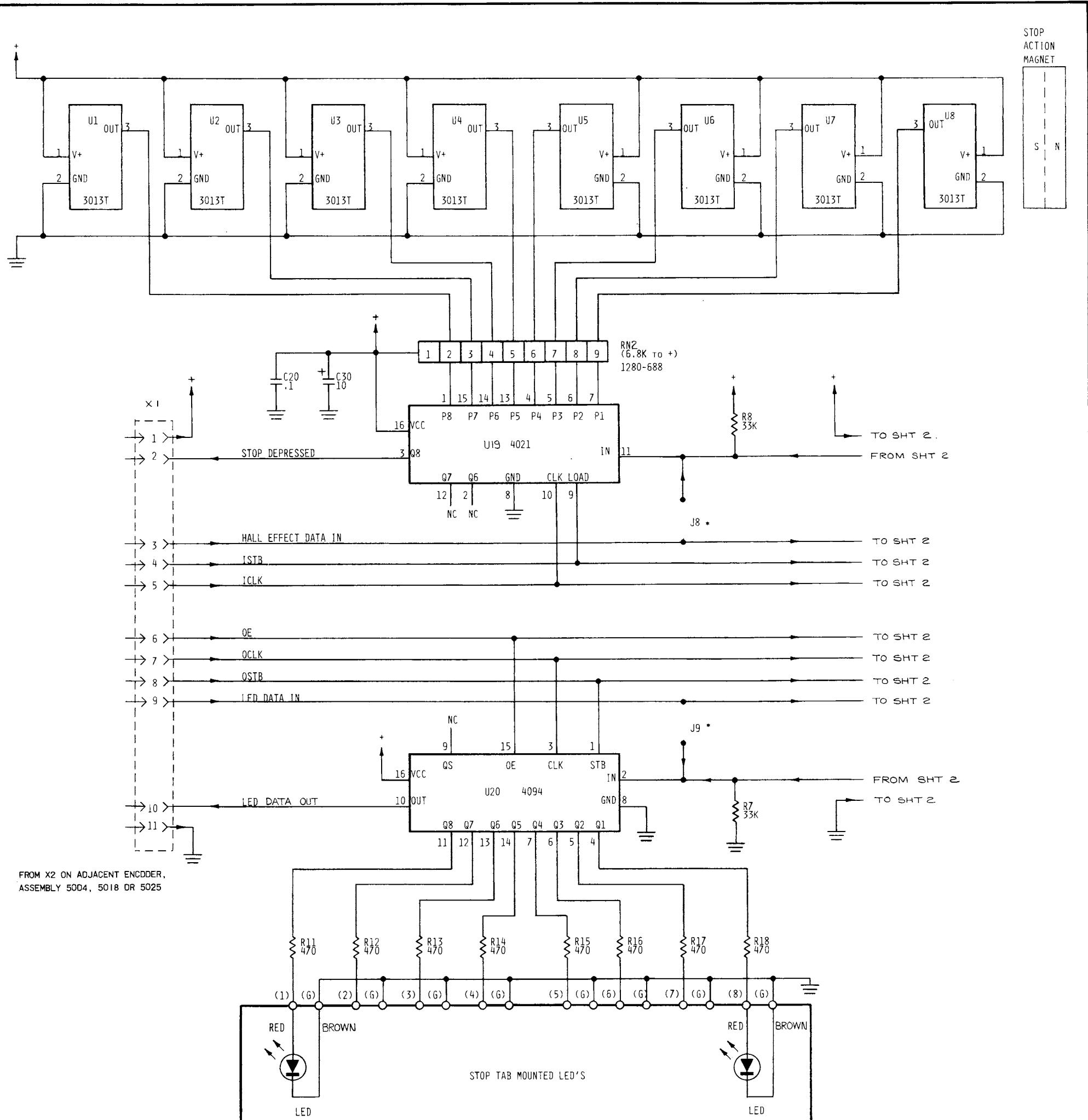




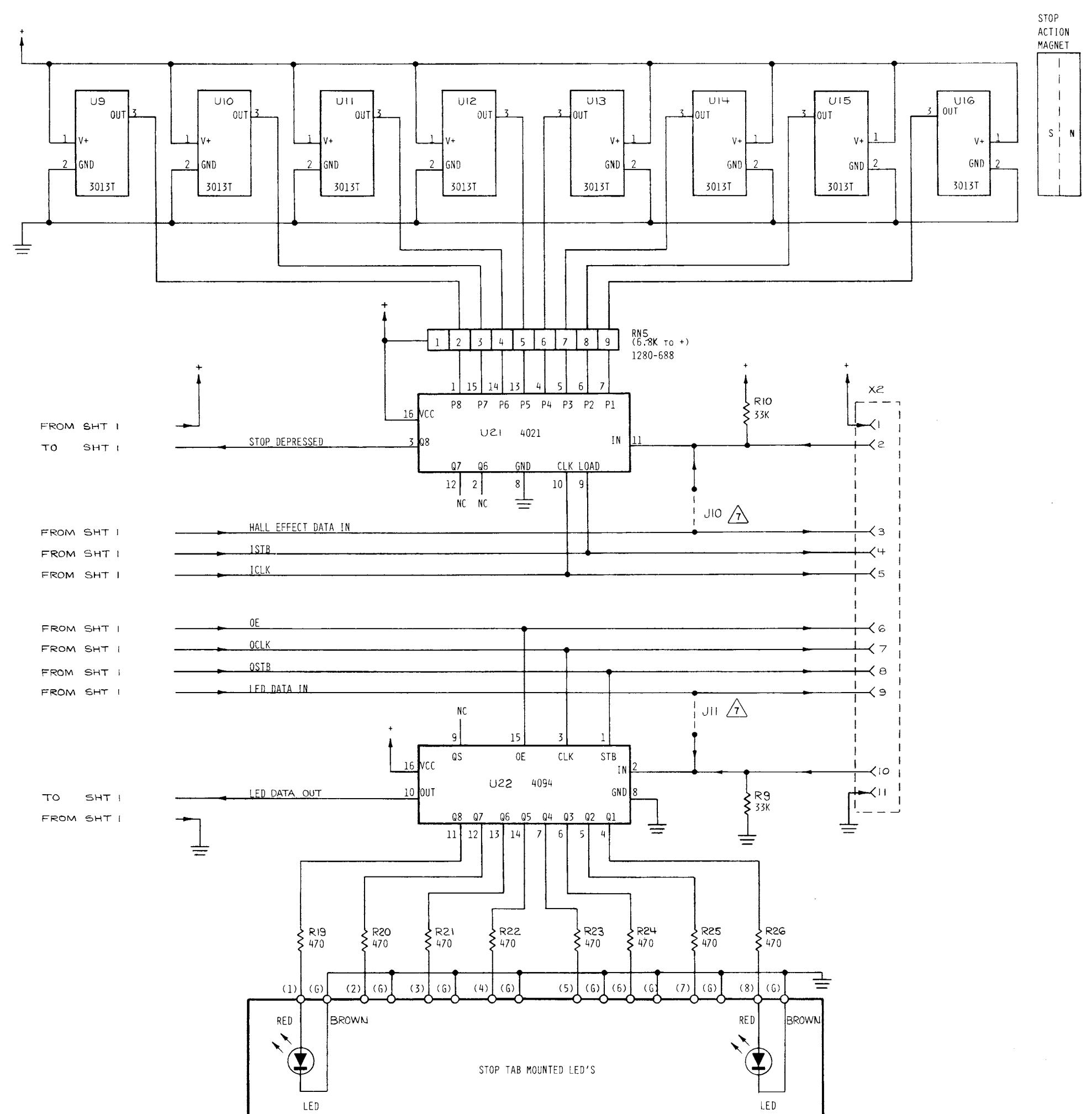








TITLE		SCALE	
DRAWN BY	CHECKED	DWG. NUMBER	ENG. APPROVED: S. APVL
S. PENICE 6-27-83	J. SCHAUER 6-27-83	5004-300	
ENCODER, STOP TAB, 16 BIT		SHT 1 of 2	

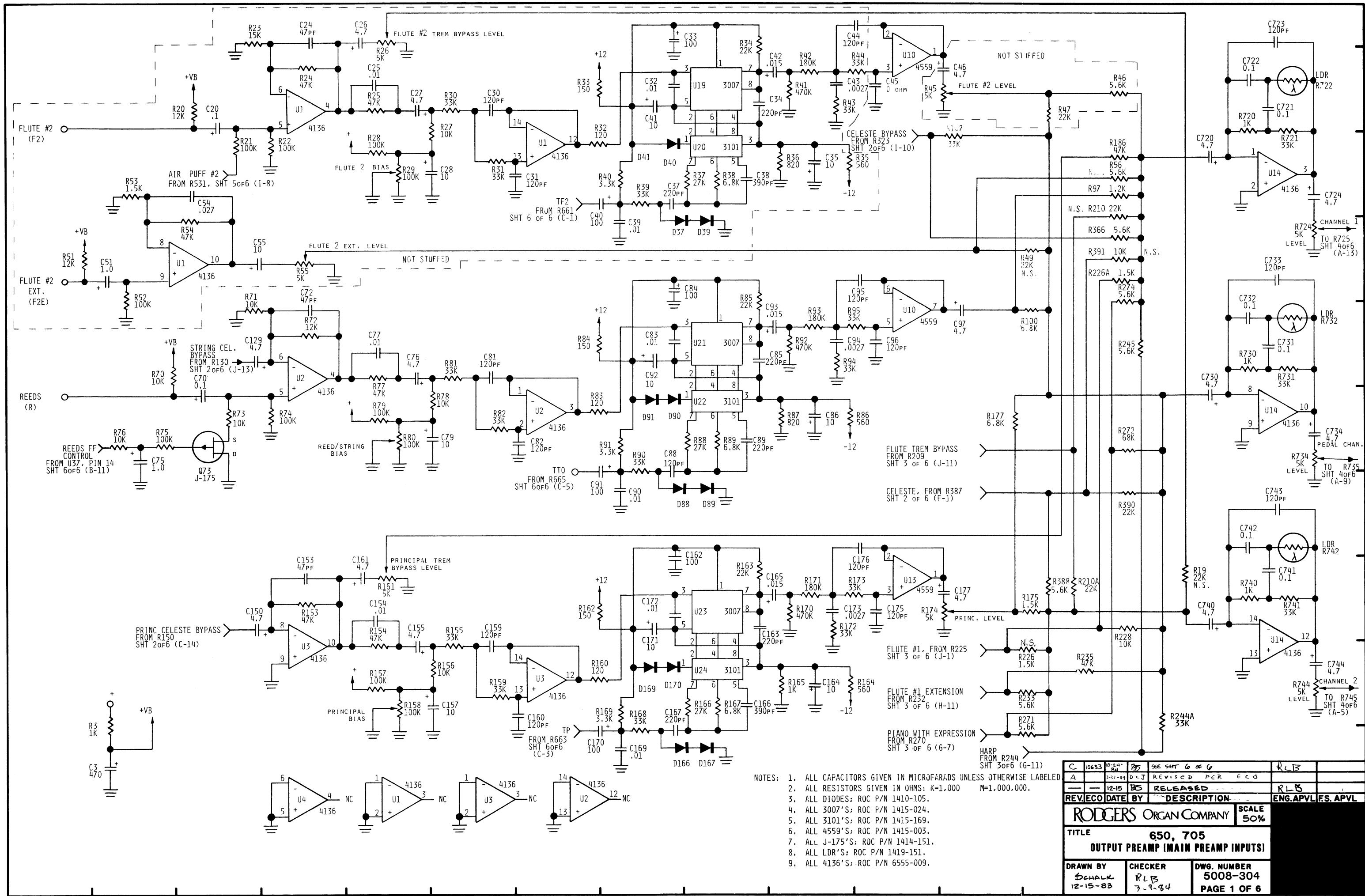


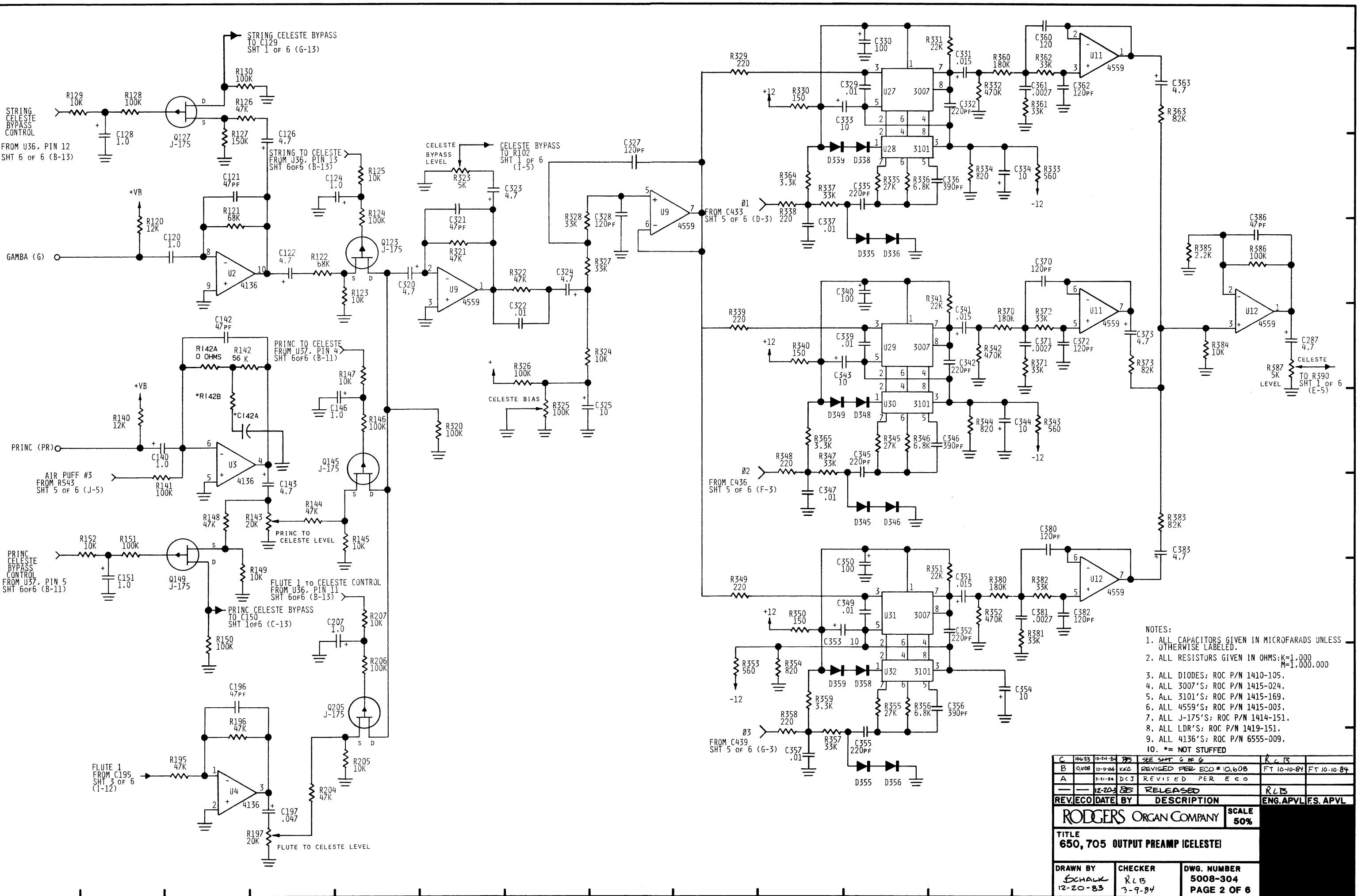
A	7-17-84	FT	ADDED	NOTES 4 TO 7	FT	FT 7-17-84
—	6-23-	SP	RELEASED		MHENIE	<i>J.R.C.</i>
REVISION DATE BY	ENCODER, STOPTAB, 16 BIT	DESCRIPTION		SCALE 50%	ENG APP'L'S	FS APP'L'S
RODGERS ORGAN COMPANY						
DRAWN BY S. PENICE	CHECKER <i>Schaw</i> 6-28-83	DWG. NUMBER		SHT 2 OF 2		
				5004-300		

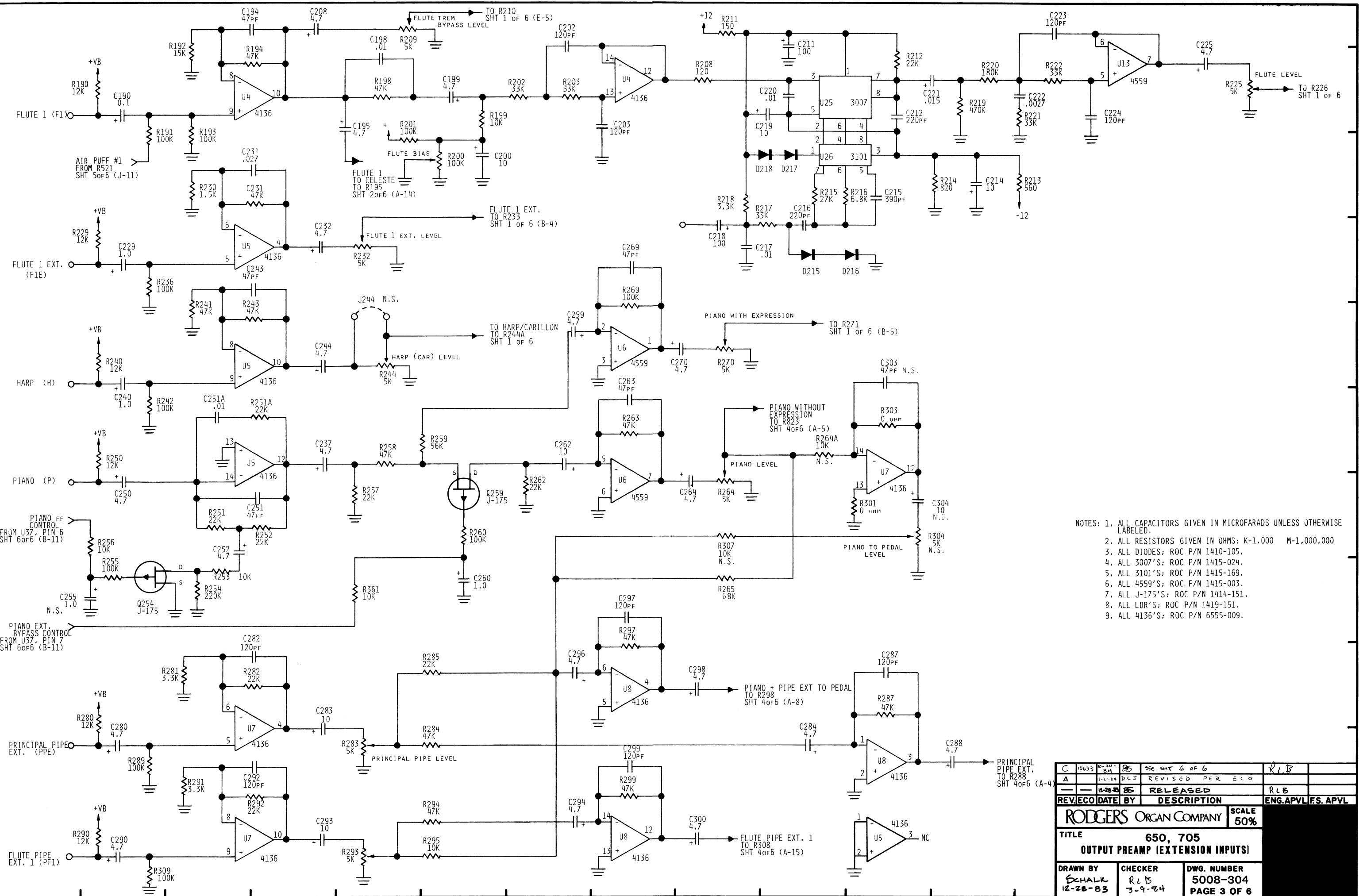
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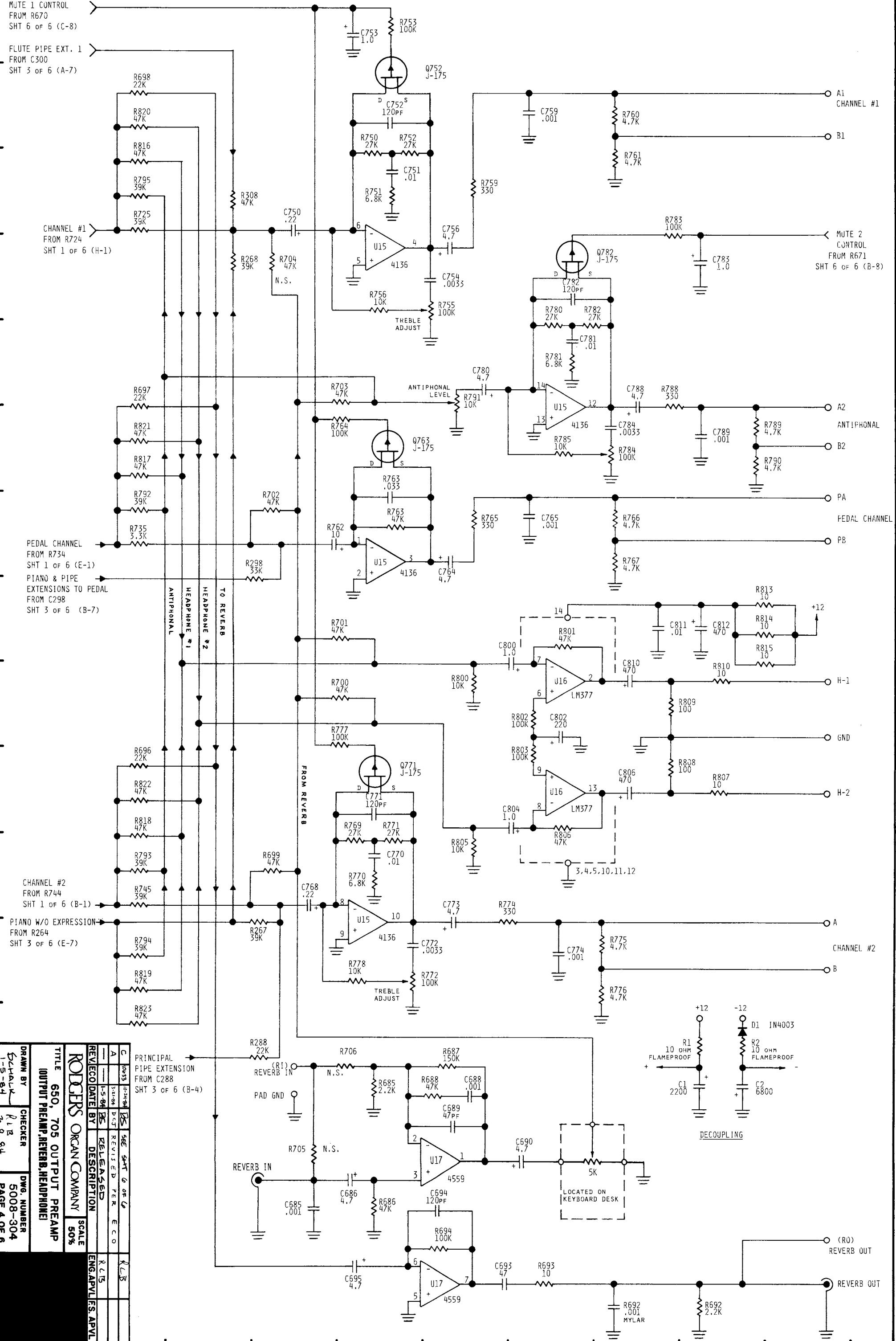
1. ALL CAPACITORS ARE GIVEN IN MICROFARADS UNLESS OTHERWISE NOTED.
 2. ALL RESISTORS GIVEN IN OHMS: K=1.000 M=1.000.000
 3. ALL DIODES ARE 1410-105
 4. ALL 3013T'S ARE ROC P/N 1415-007.
 5. ALL 4021'S ARE ROC P/N 1415-319.
 6. ALL 4094'S ARE ROC P/N 1415-377.

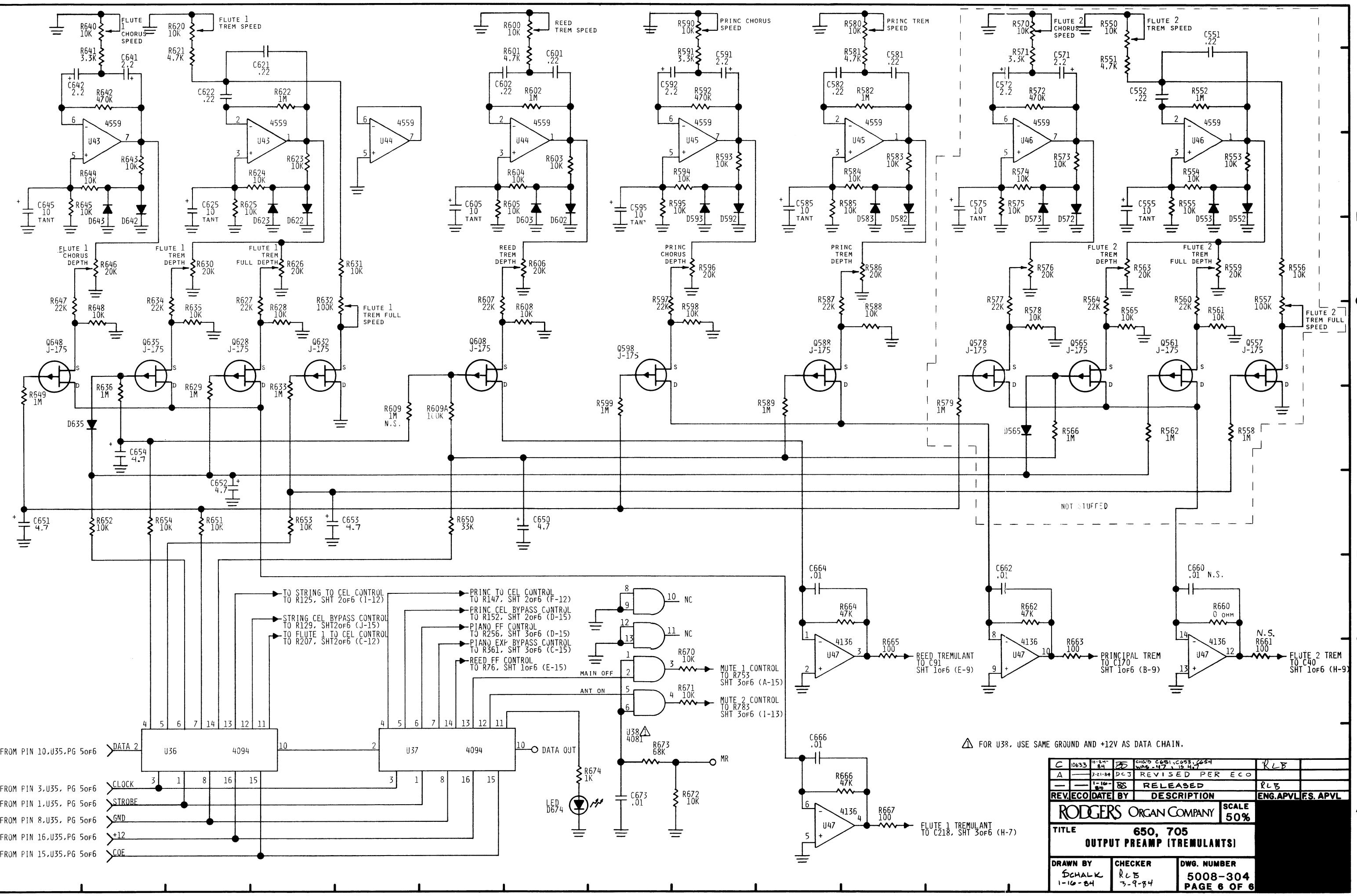
JUMPERS J10 AND J11 ON END BOARD ONLY.

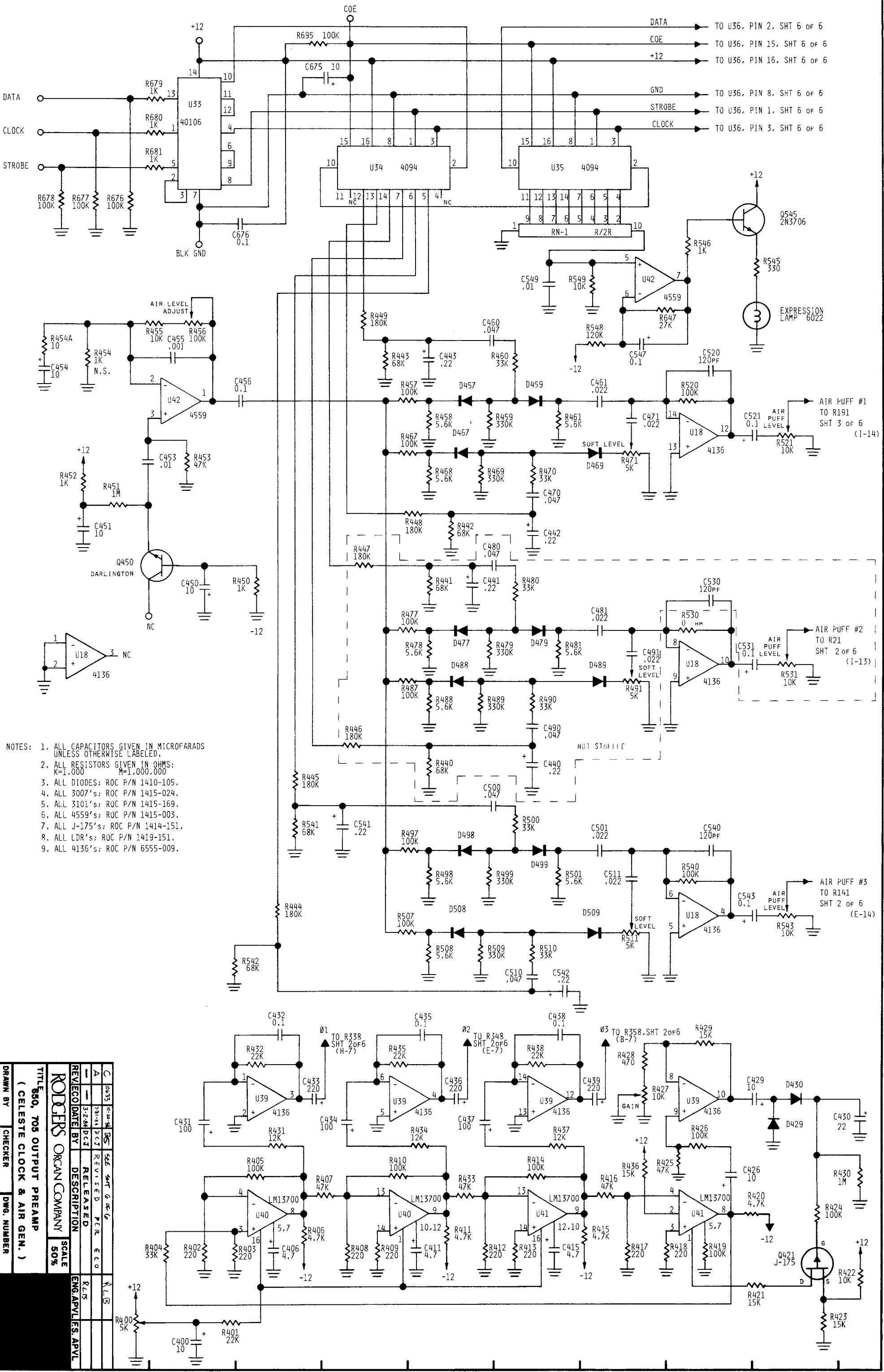


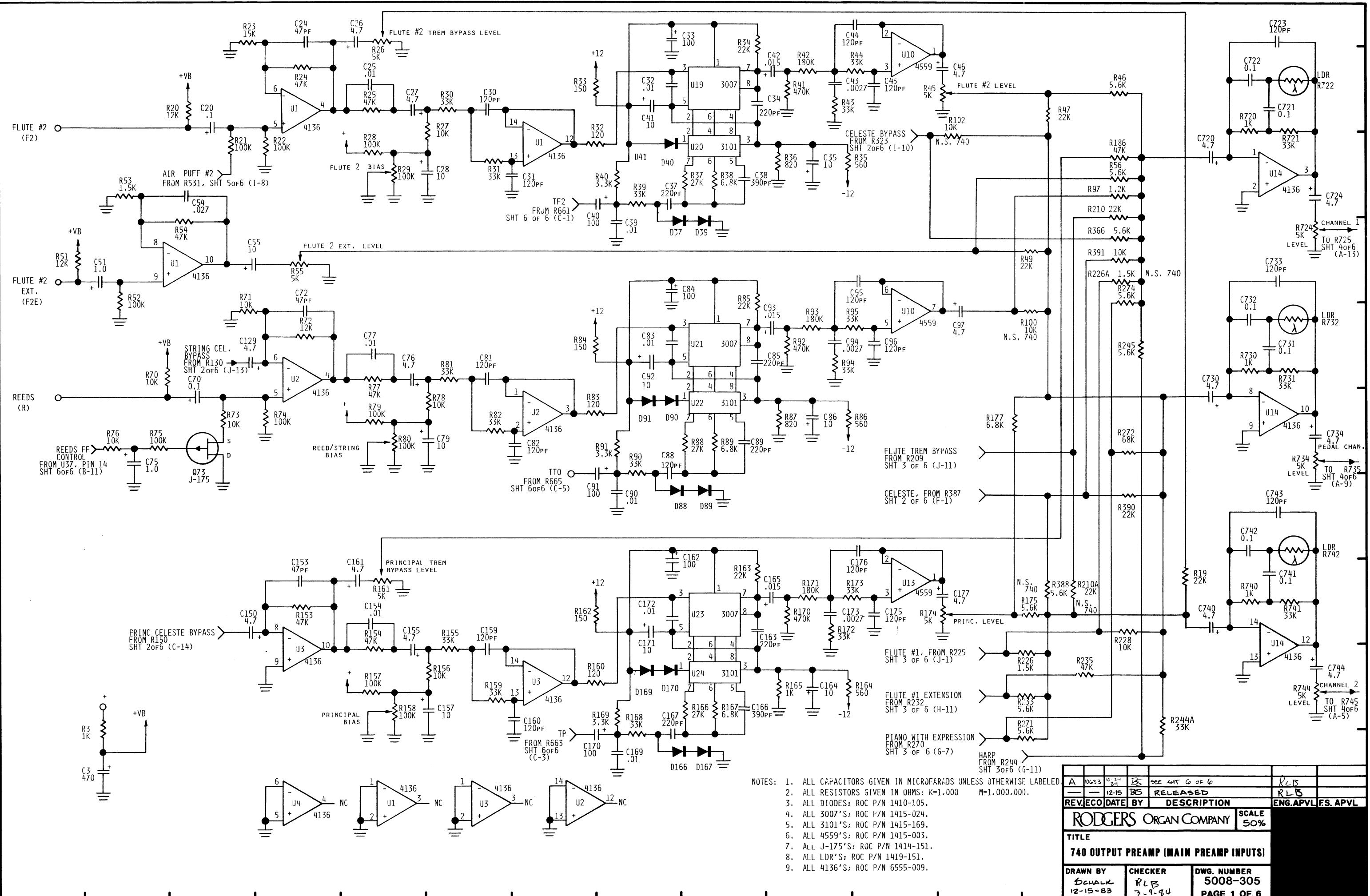


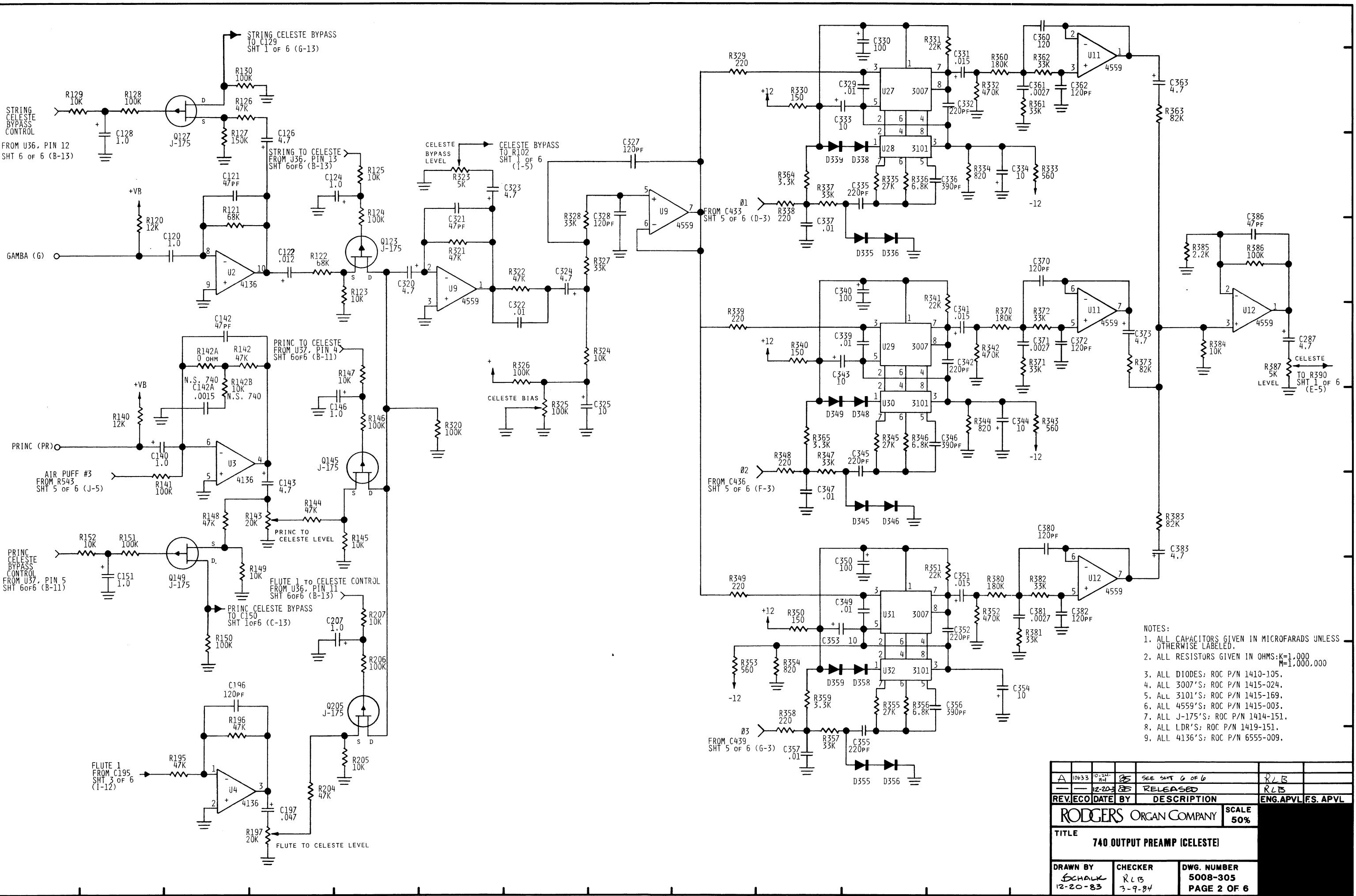


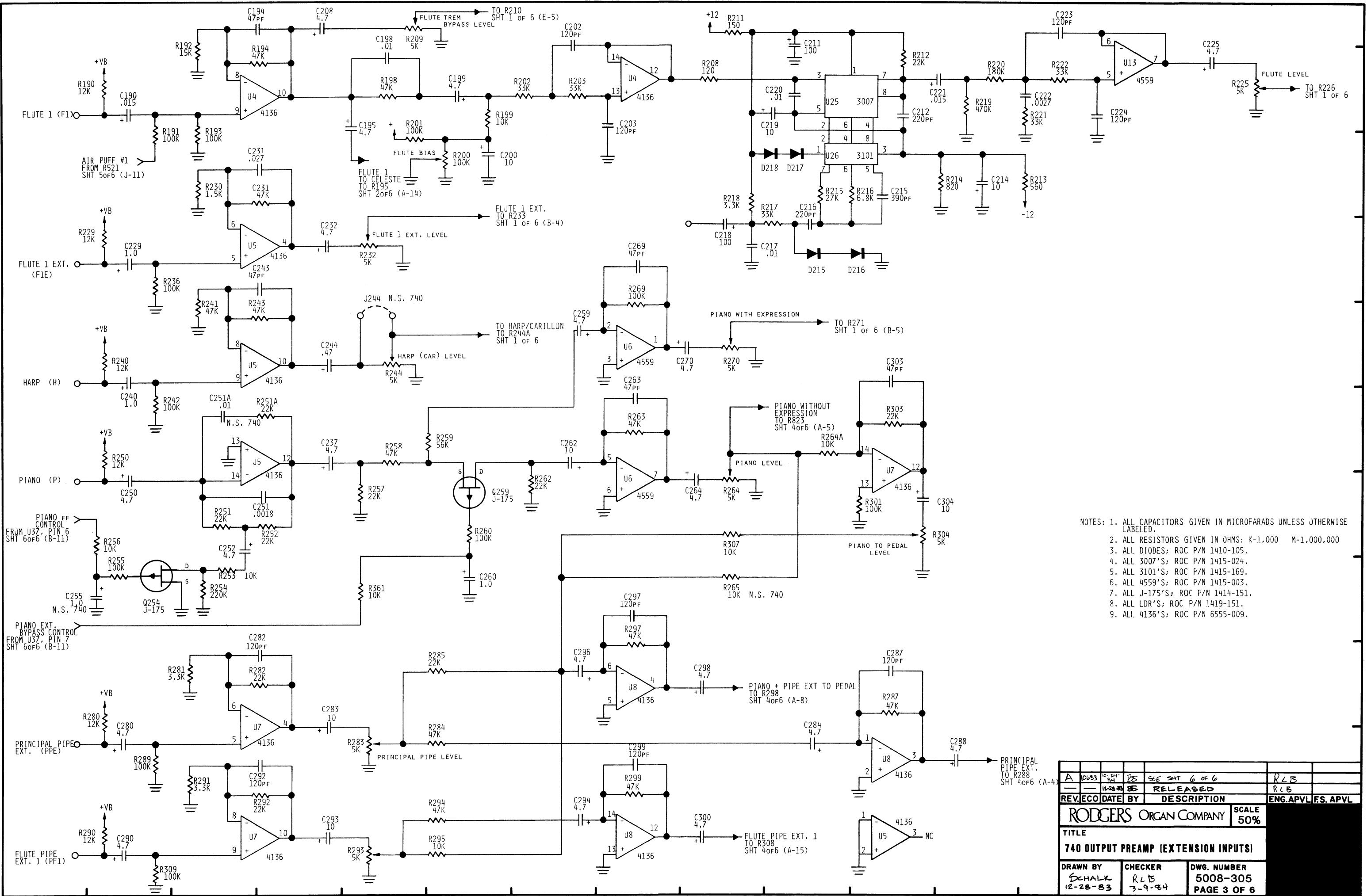


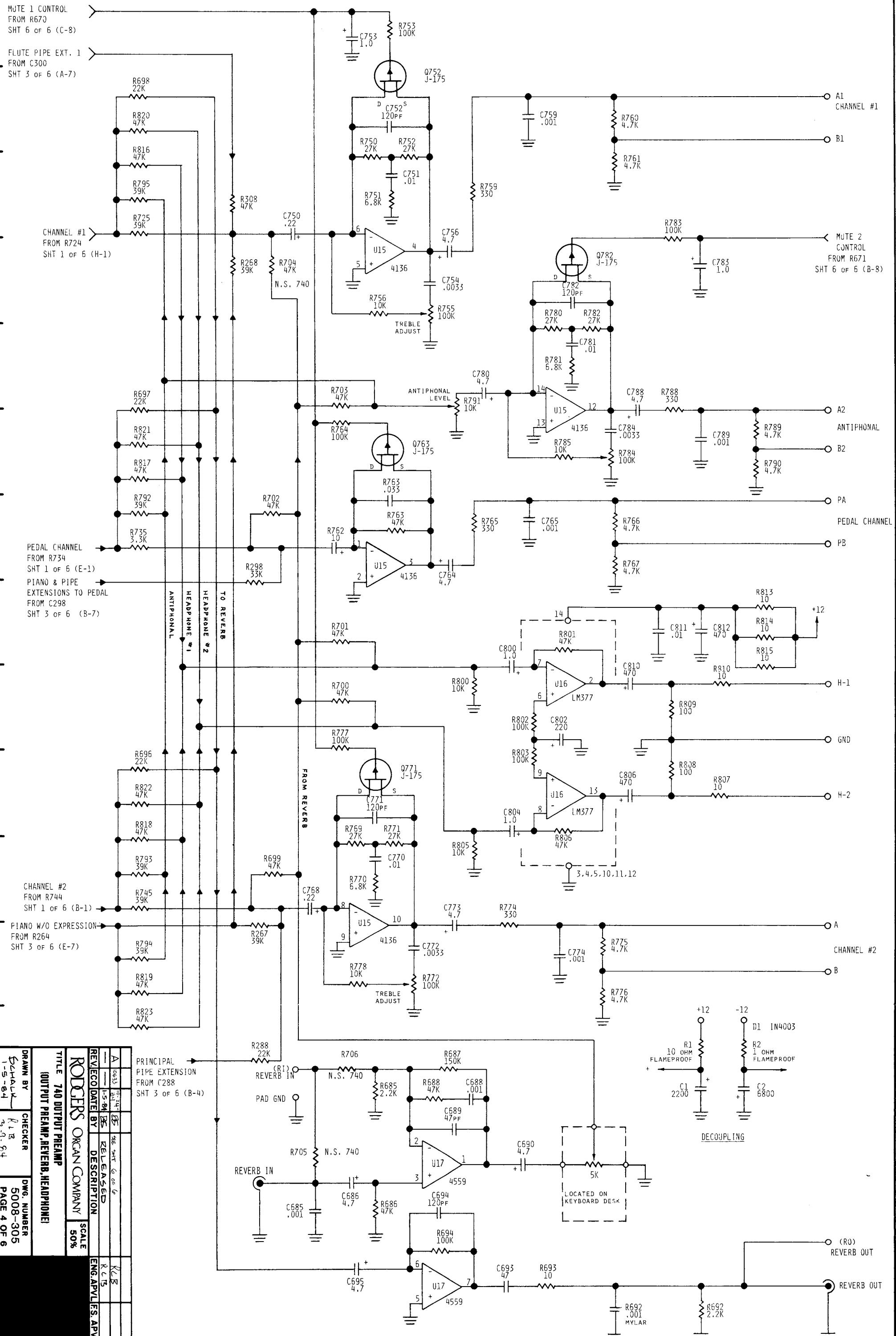


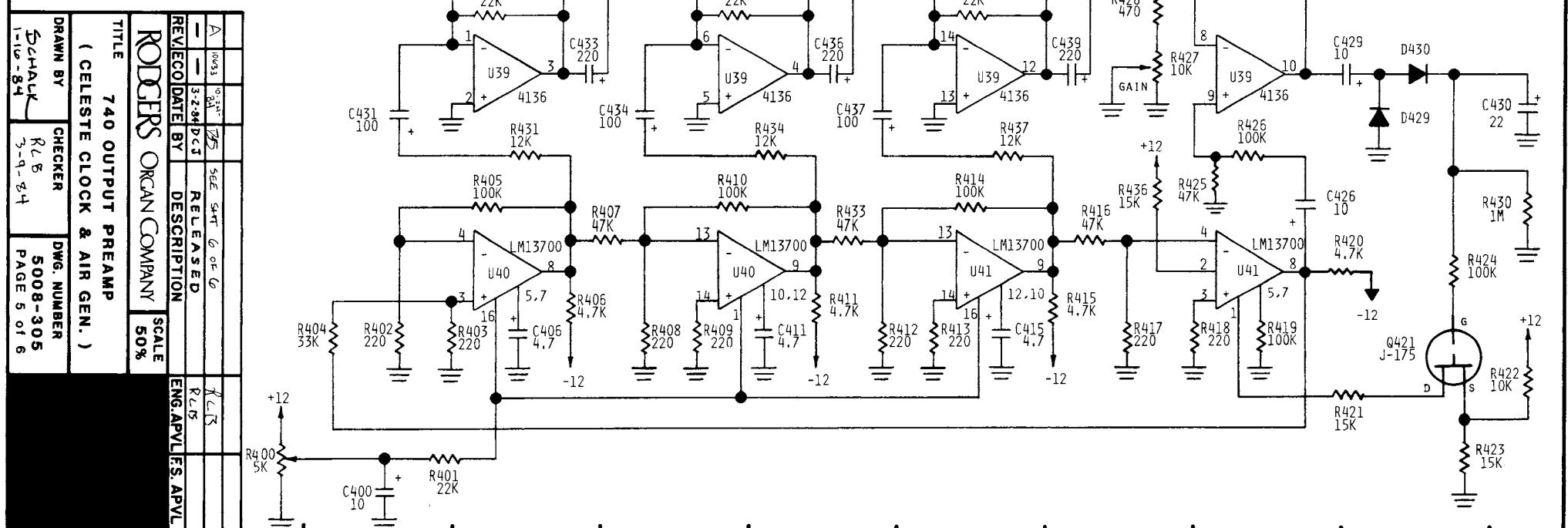
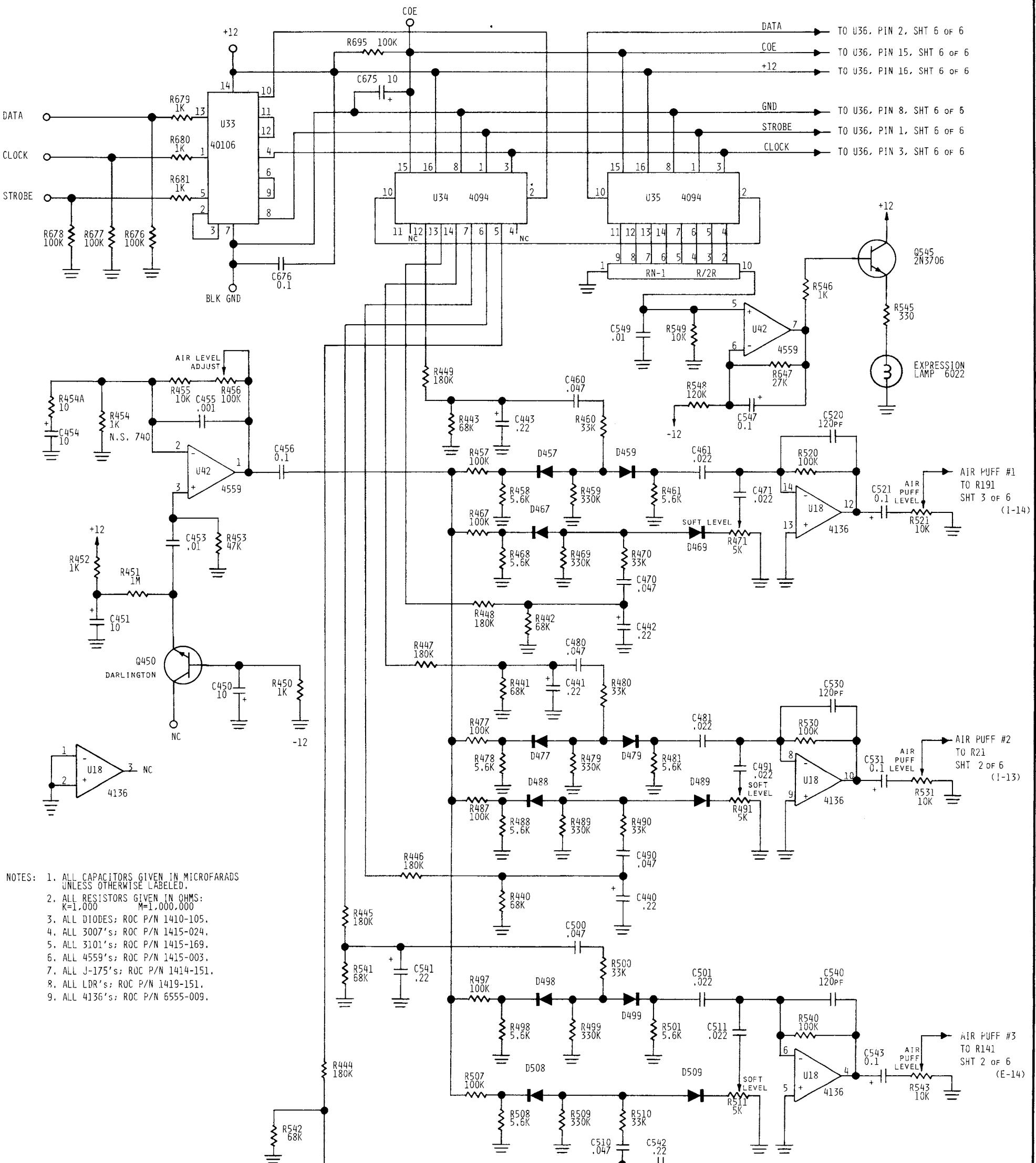


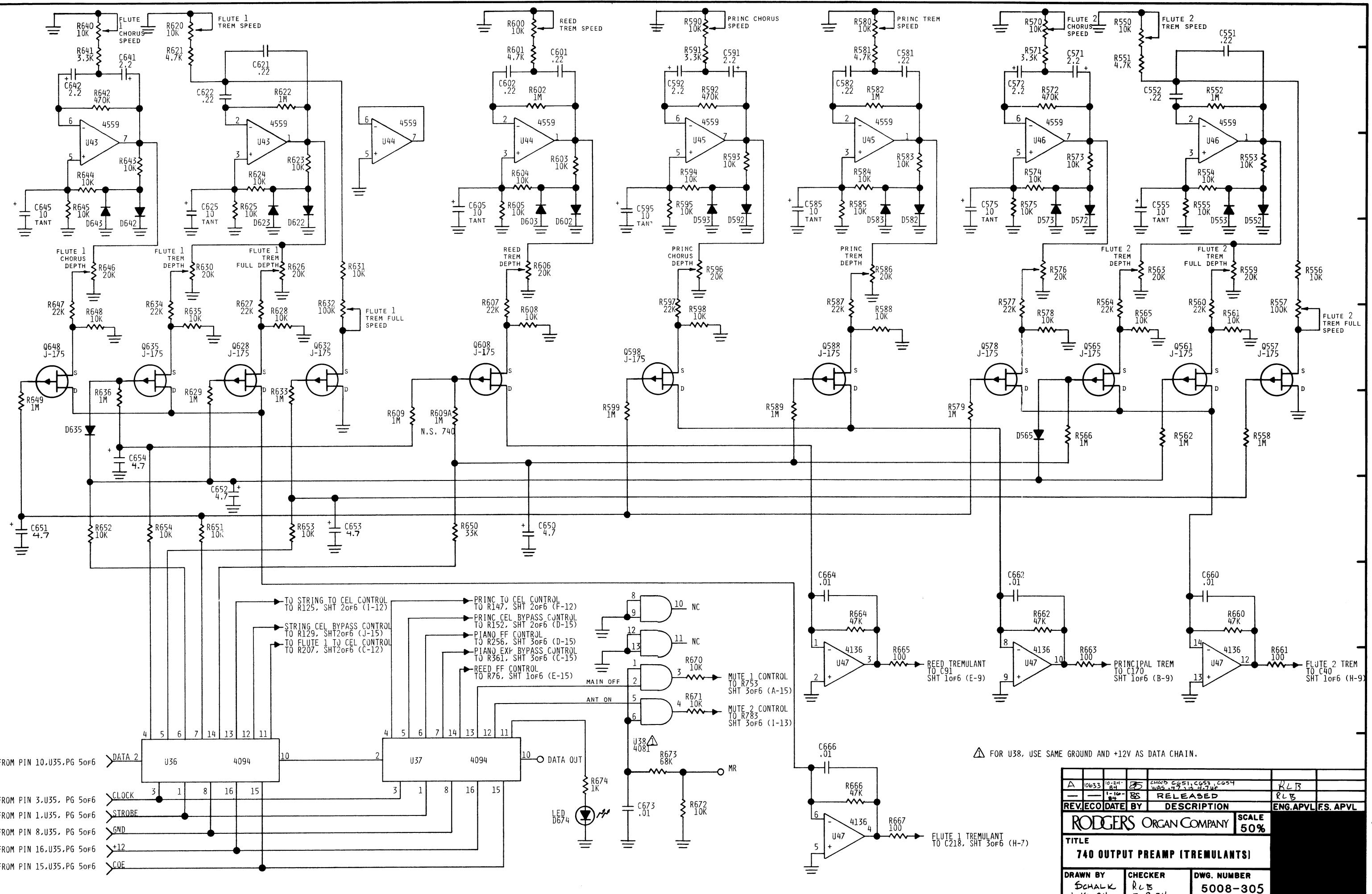


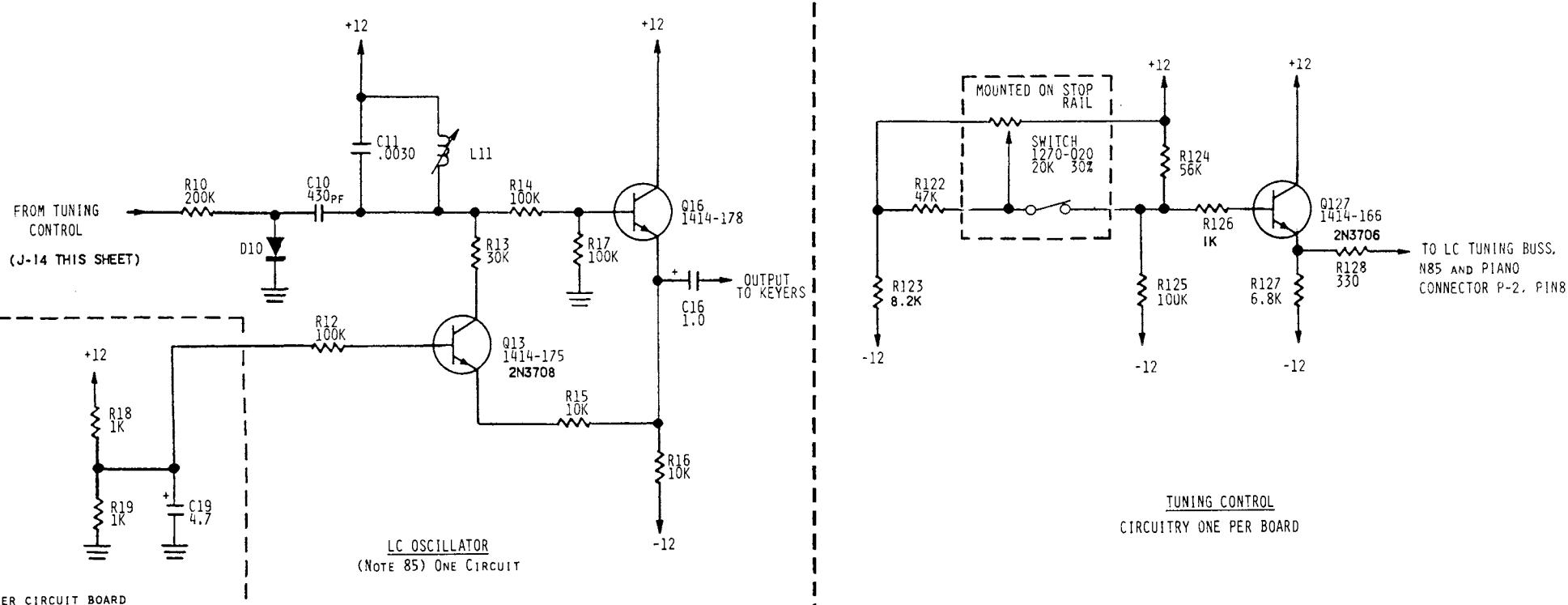




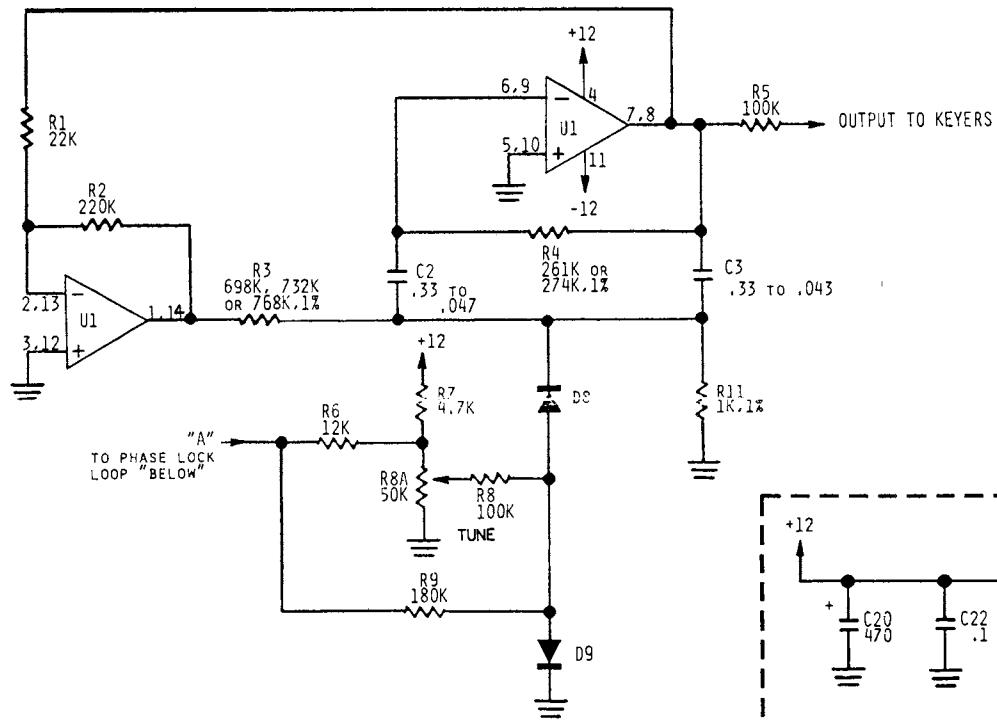




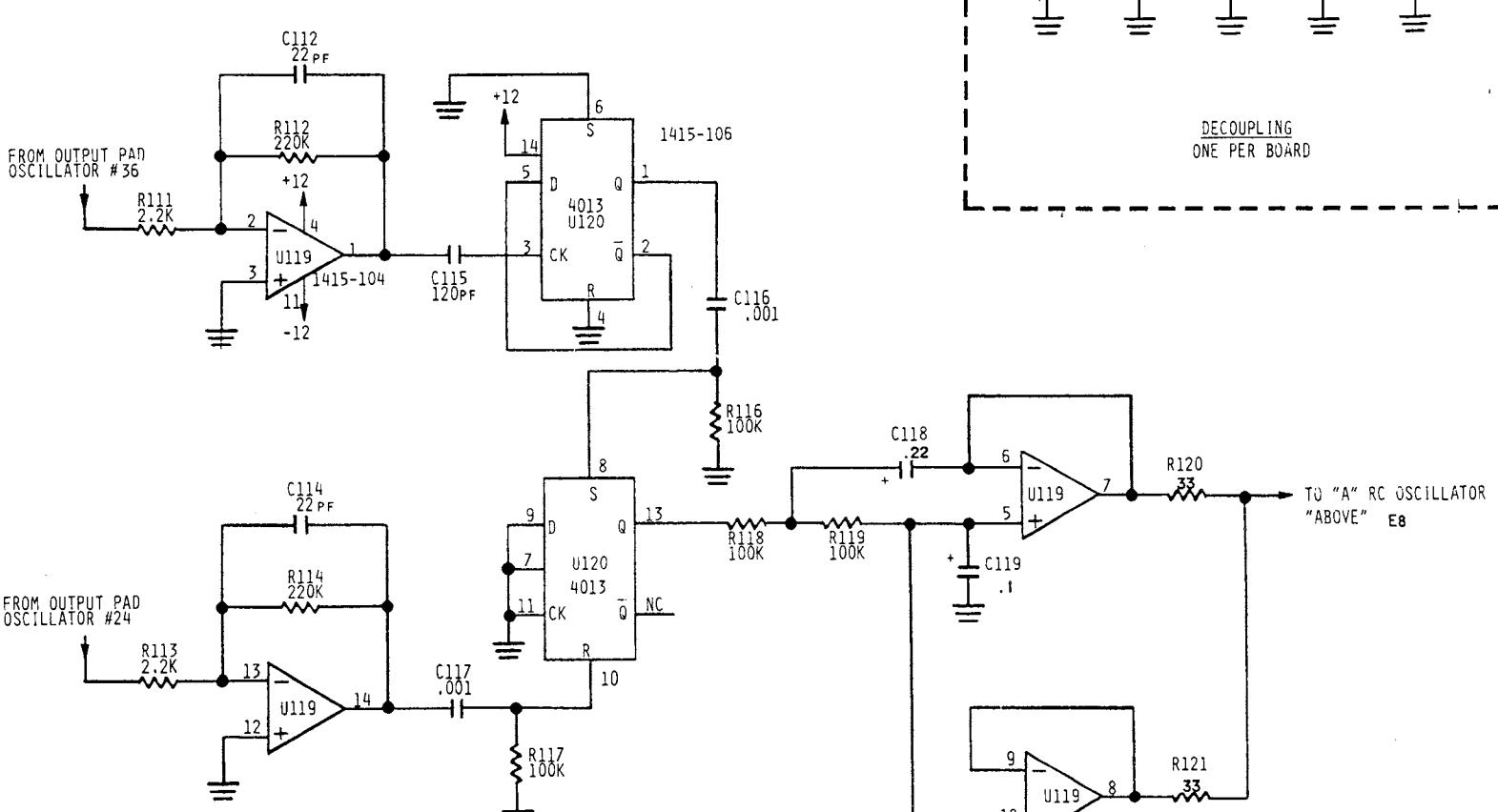




TUNE OSCILLATOR 36. ATTACH VOLTMETER TO RC OSCILLATOR TUNING BUS AT TOP OF R6 OR R9. ADJUST TUNING POT AT OSCILLATOR 24 FOR 5.5 TO 6.0 VOLTS. TUNE REMAINING OSCILLATORS; READJUSTING OSCILLATOR 24 OR 36 MAY MISTUNE 001 TO 23.

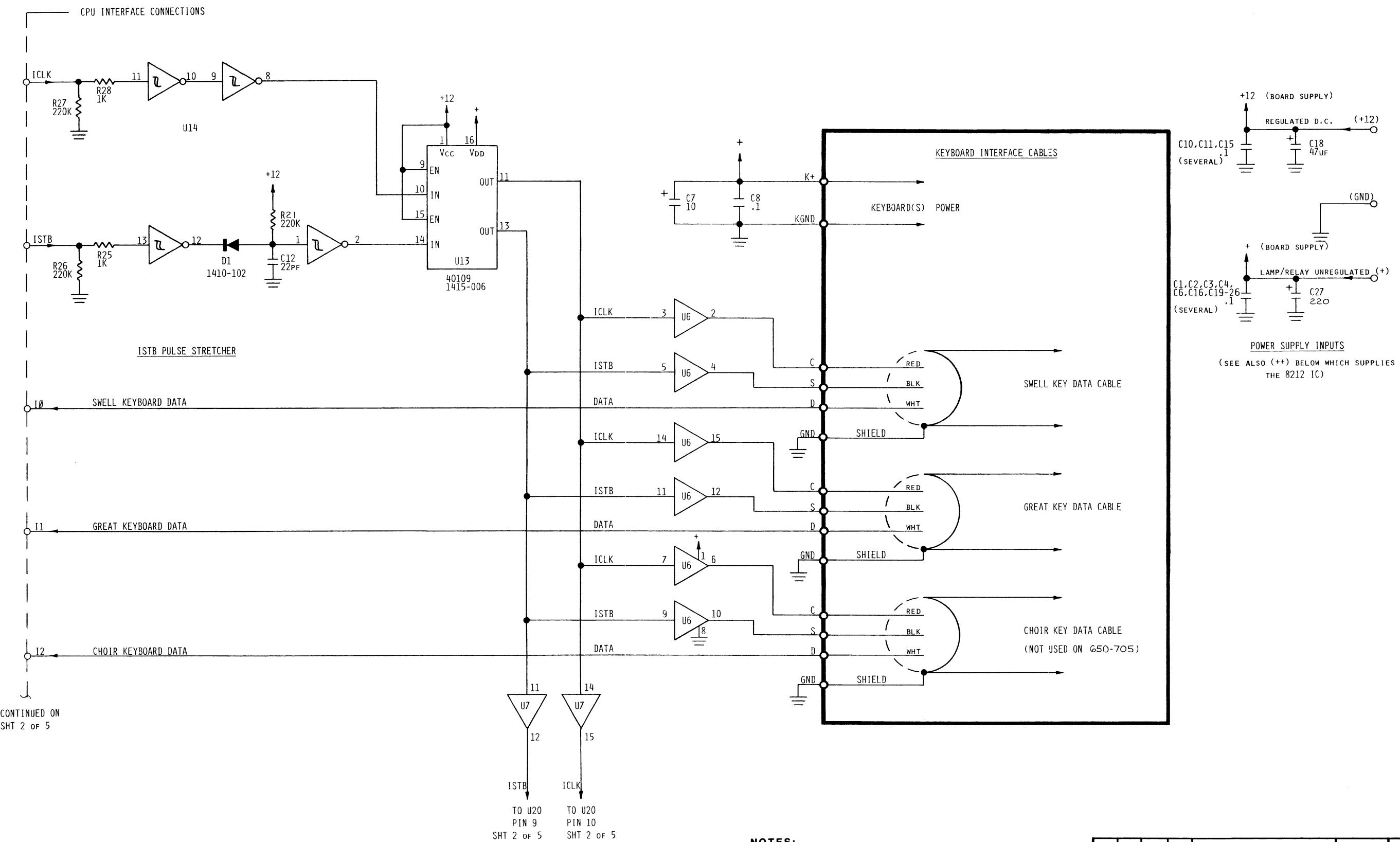


RC OSCILLATOR
CIRCUITRY 36 PER BOARD



PHASE LOCK LOOP
CIRCUITRY ONE PER BOARD

A	—	7-17-94	FT	ADJ. TUNING PROC.	FT	FT 7-17-94
—	—	7-5-95	KD	RELEASED	MANUVE.	(X)
REVEC'D DATE BY		DESCRIPTION		ENG. APPROV'D. S. APRV'L		
RODGERS ORGAN COMPANY				SCALE 50%		
TITLE OSCILLATOR, NOTES 01-24,85						
DRAWN BY R. DOUGHERTY 7-12-83	CHECKER <u>SCHWALB</u>	DWG. NUMBER 5011-302				



NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.**

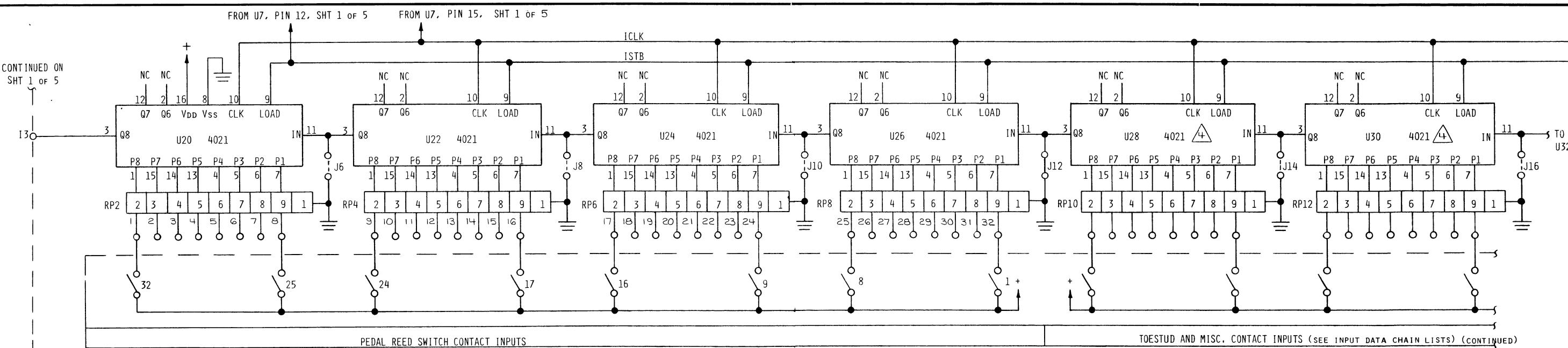
(2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

(3) + = (+11) FROM P2 CONNECTOR POWER SUPPLY.

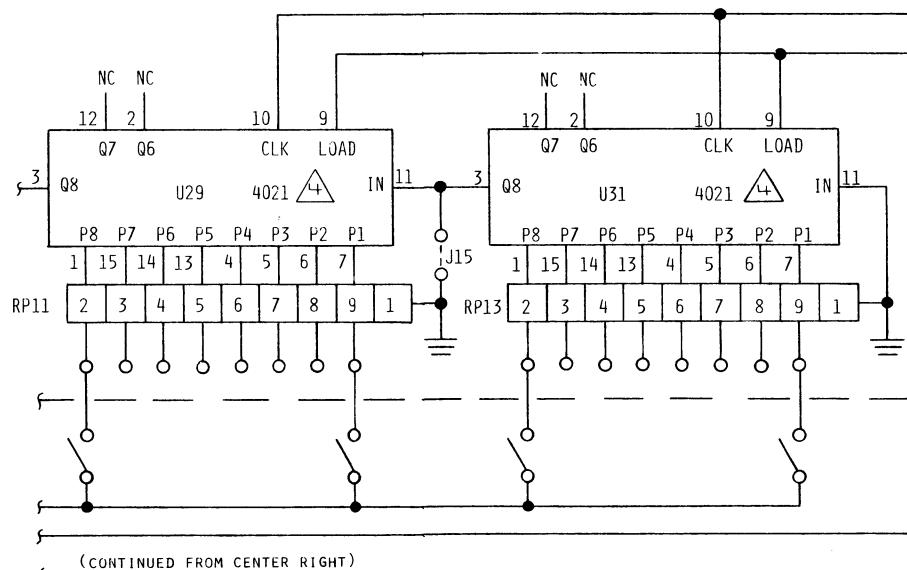
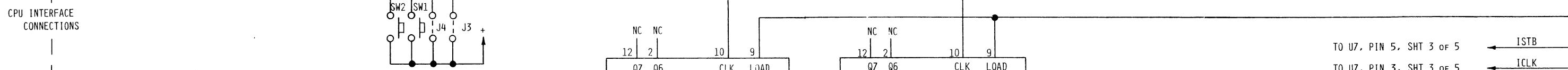
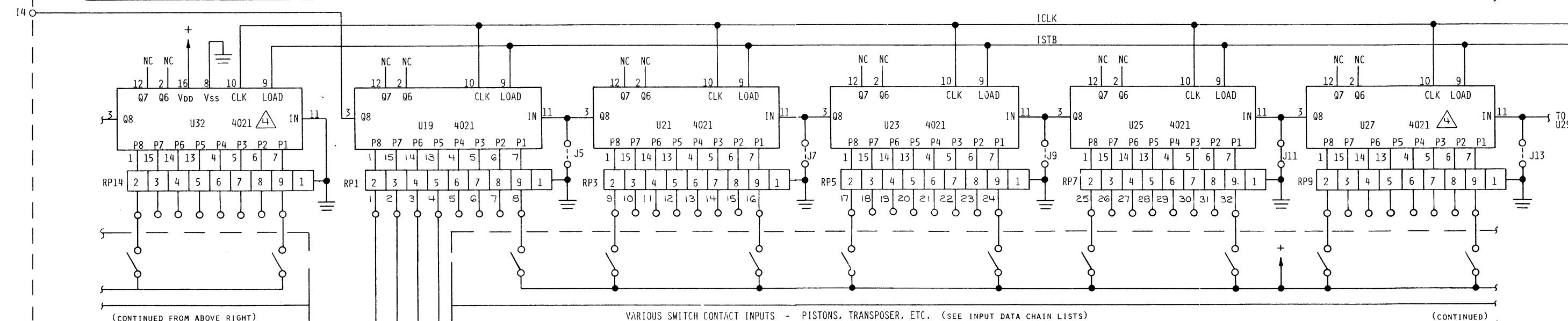
(4) ++ IS FROM P2 CONNECTOR, POWER SUPPLY, VOLTAGE SENSE.

(5) U14 IS A 40106, ROC PART NUMBER 1415-116.

(6) U6 AND U7 ARE 4050, ROC PART NUMBER 1415-321.

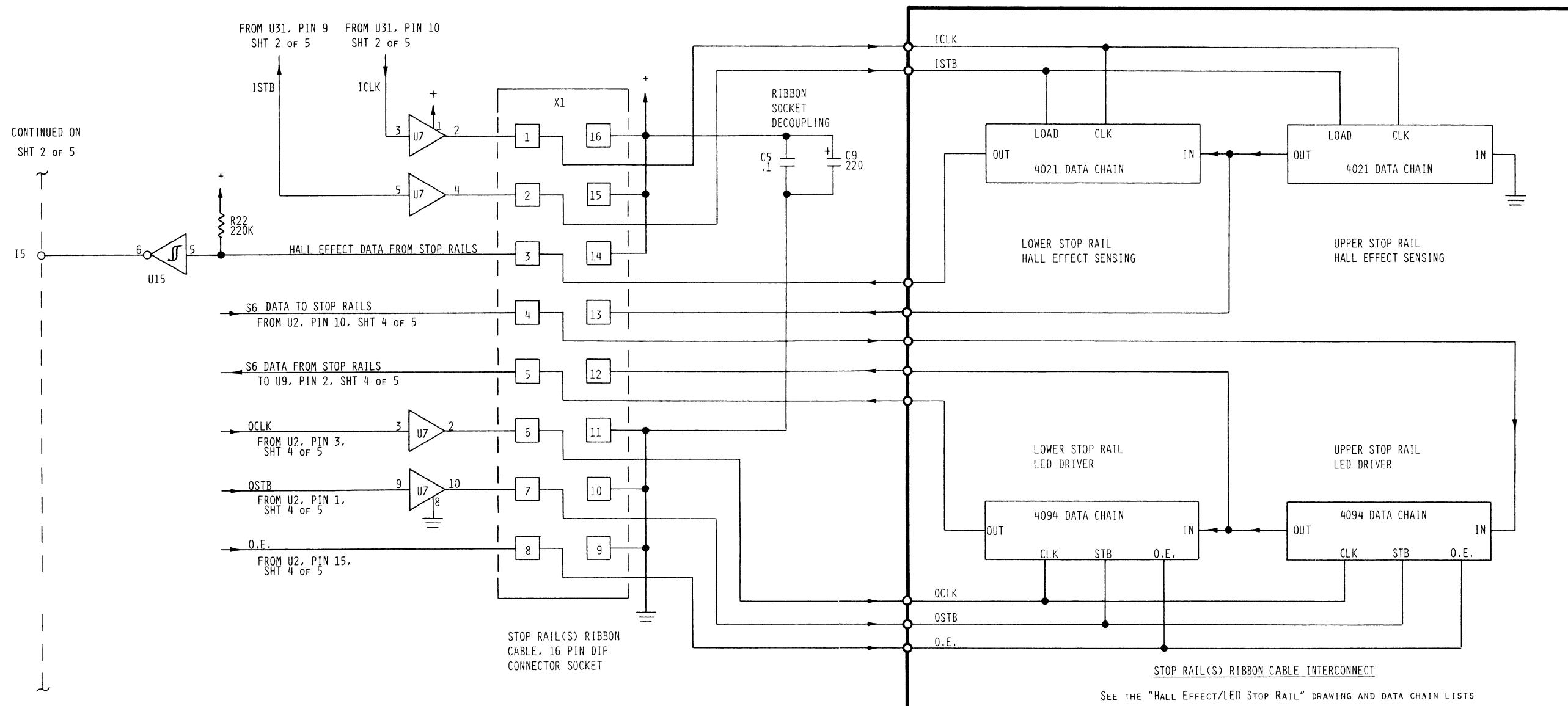


TOESTUD AND MISC. CONTACT INPUTS (SEE INPUT DATA CHAIN LISTS) (CONTINUED)



- NOTES:
1. ALL IC'S ARE ROC PART NUMBER 1415-319.
 2. + = (+11) FROM P2 CONNECTOR, POWER SUPPLY.
 3. RP2 to RP13 ARE 6.8K X 8 RESISTOR ARRAY, ROC P/N 1280-688
- \triangle NOT STUFFED IN 650-705.

7-14-83	SP	RELEASED	M-HENLE (J.L.A.)
REV. ECO DATE	BY	DESCRIPTION	ENG/APV/LFS/APVL
RODGERS ORGAN COMPANY SCALE 50%			
TITLE MULTIFUNCTION BOARD, 650-705 SHT 2 OF 5			
DRAWN BY S. PENCE	CHECKER SCHALK 7-21-83	DWG. NUMBER 5012-301	



NOTES:

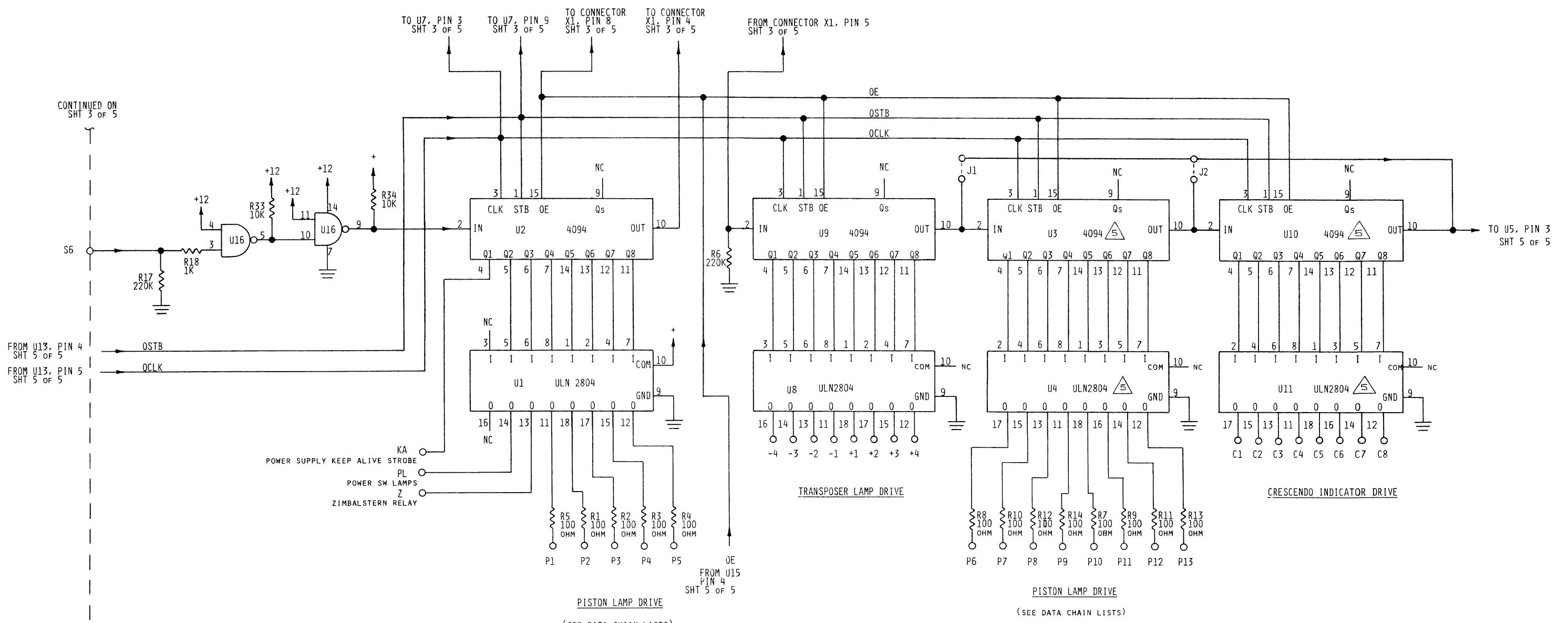
- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.**

(2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

(3) U7 IS A 4050, ROC PART NUMBER 1415-321

(4) U15 IS A 40106, ROC PART NUMBER 1415-116

—	—	7-15- BS	SP	RELEASED
REV.	ECO	DATE	BY	DESCRIPTION
RODGERS ORGAN COMPANY				SCALE 50%
TITLE MULTIFUNCTION BOARD, G50-705 SHT. 3 OF 5				
DRAWN BY S. PENCE	CHECKER SCHALK 7-21-83	DWG. NUMBER 5012-301		

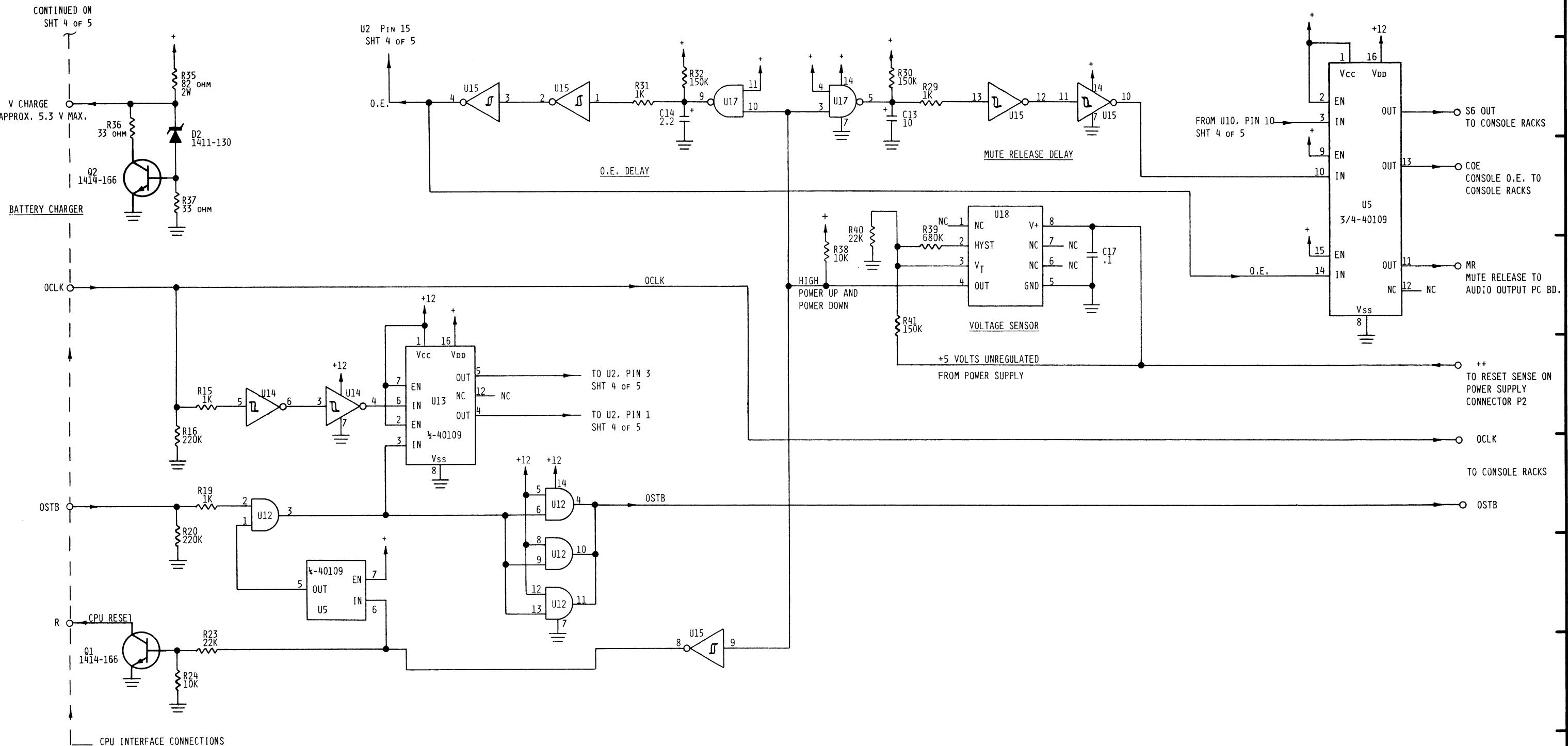


CONTINUED

NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
- (3) IC 4094 IS ROC PART NUMBER 1415-377.
- (4) IC ULN2804 IS ROC PART NUMBER 1415-305.
- (5) NOT STUFFED IN 650-705.

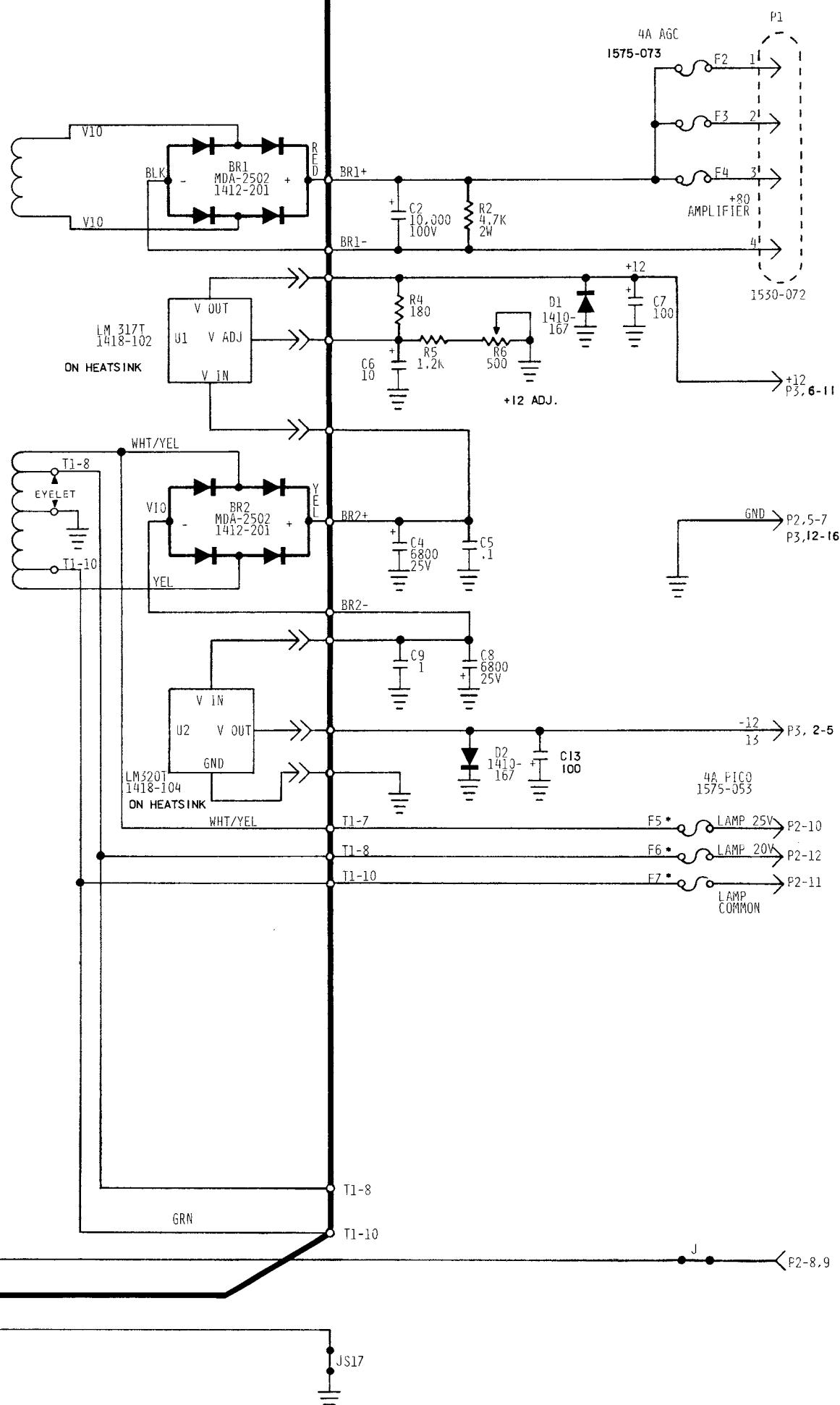
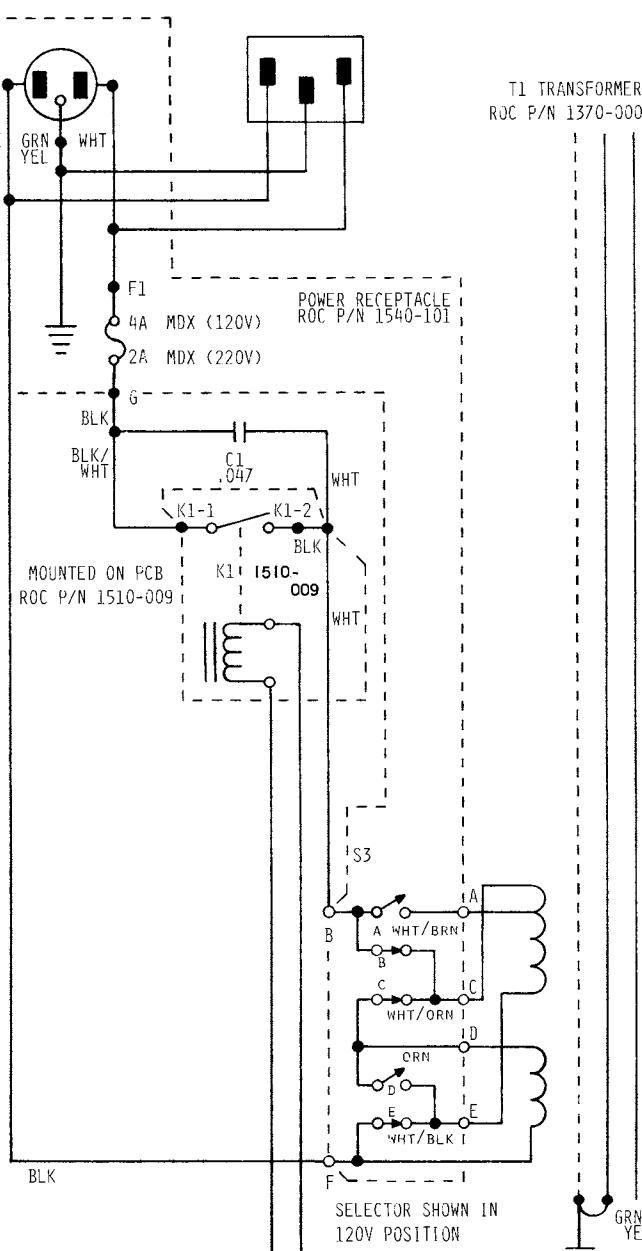
785-SP	RELEASED	MHENLE (J.W.)
REV. ECO DATE BY	DESCRIPTION	ENG.APV/LFS.APV
RODGERS ORGAN COMPANY		
SCALE 50%		
TITLE MULTIFUNCTION BOARD, 650-705		
SHT 4 OF 5		
DRAWN BY S.PENCE	CHECKER F.CHALK 8-9-83	DWG. NUMBER 5012-301



NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
- (3) U12 IS A 4081, ROC P/N 1415-113
- (4) U14 AND U15 IS A 40106, ROC P/N 1415-116
- (5) U17 IS A 40107, ROC P/N 1415-211
- (6) U18 IS AN 8212, ROC P/N 1415-212
- (7) U5 AND U13 ARE 40109, ROC P/N 1451-006

7-83	SP	RELEASED	MENLO 4-83
REV. ECO DATE BY	DESCRIPTION		ENG. APV/LES. APV
RODGERS ORGAN COMPANY			SCALE 50%
TITLE MULTIFUNCTION BOARD, 650-705 SHT 5 OF 5			
DRAWN BY S. PENCE	CHECKER E. CHALK 8-9-83	DWG. NUMBER 5012-301	



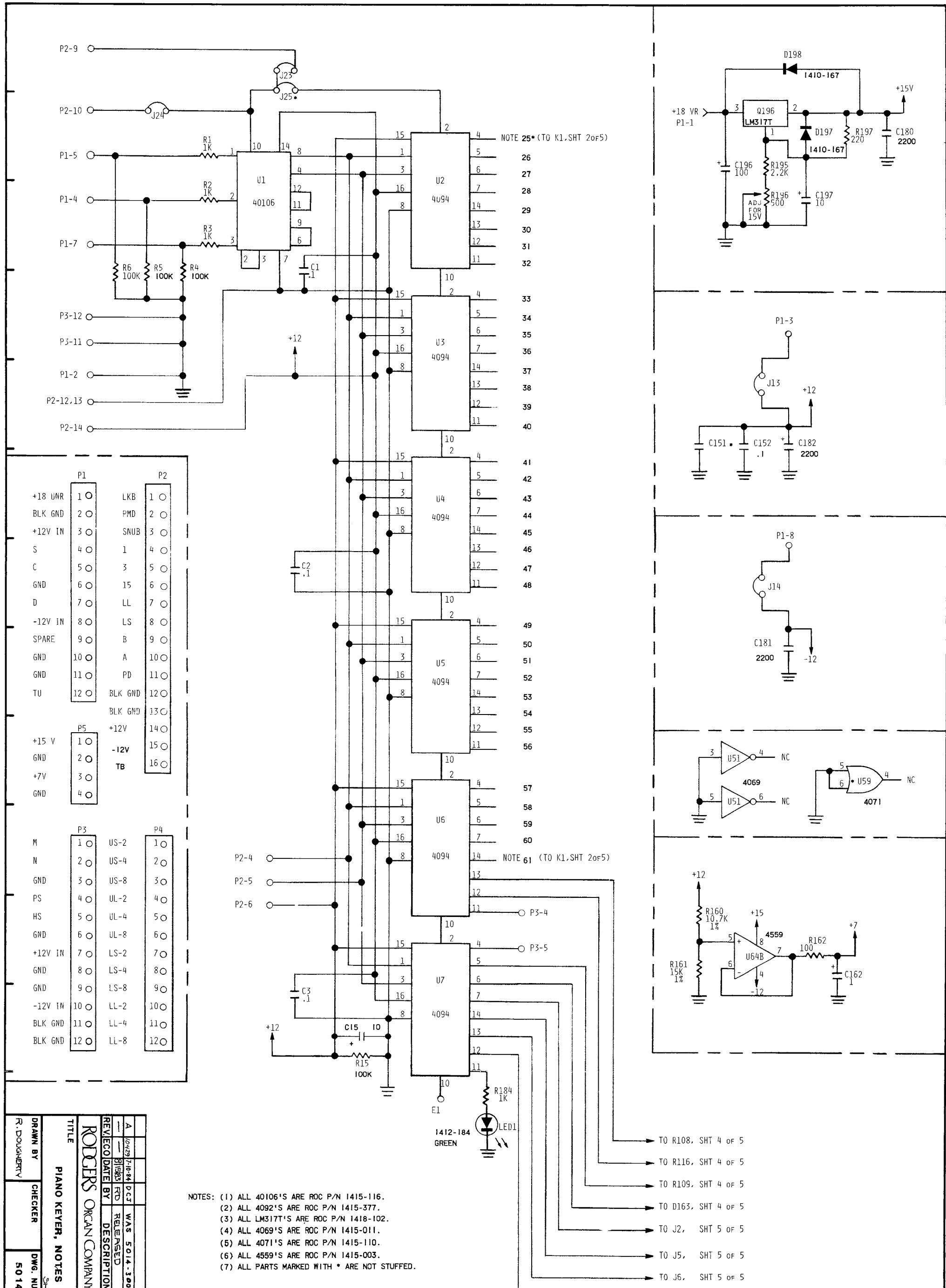
POWER SUPPLY PCA
ROC #5013-302

- NOTES:**
- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
 - (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
 3. ALL PARTS MARKED WITH * ARE NOT STUFFED.

REVISION DATE	BY	DESCRIPTION	SCALE
A —	1-8-65 3-2-84 D.C. JONES	K.C. RELEASED R.L.B. R.L.B. F.T. 6-2-B-84 ENG. APPROVED F.S. APPV	50%

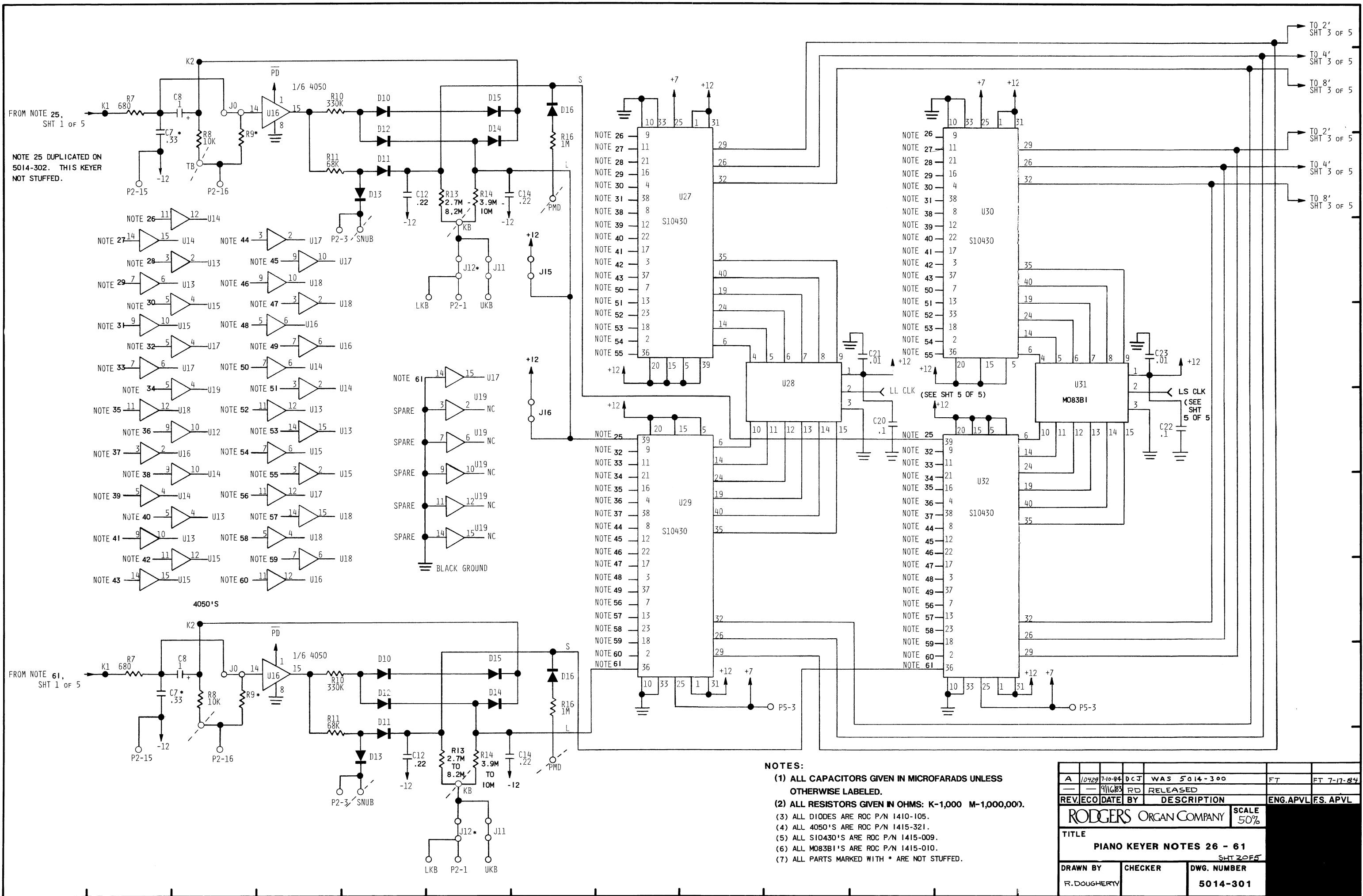
RODGERS ORGAN COMPANY
TITLE TYPE 18 POWER SUPPLY ASSEMBLY
(6551-132)

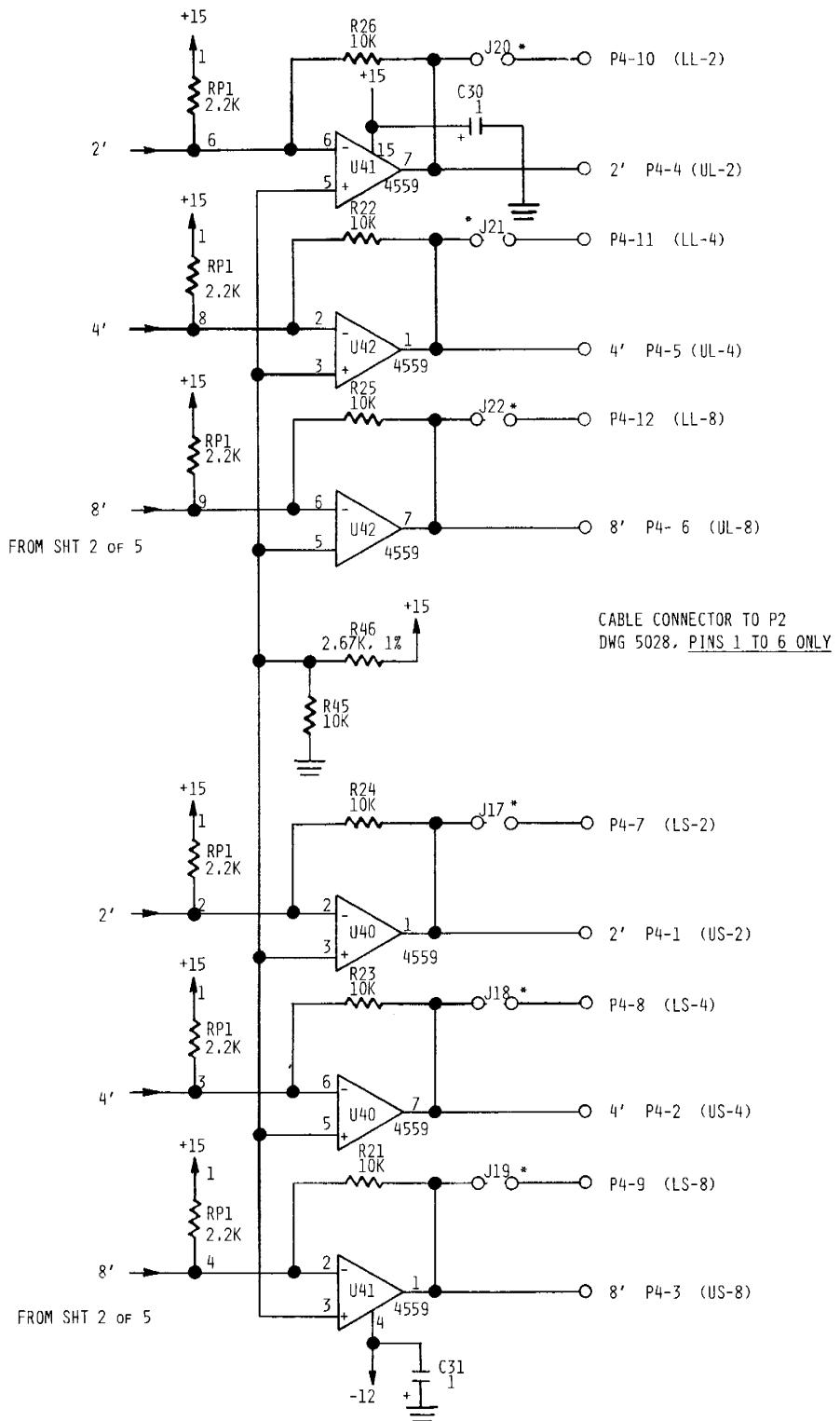
DRAWN BY	CHECKED	DWG. NUMBER
D.C. JONES 3-14-84		5013-302



NOTES: (1) ALL 40106'S ARE ROC P/N 1415-116.
(2) ALL 4092'S ARE ROC P/N 1415-377.
(3) ALL LM317T'S ARE ROC P/N 1418-102.
(4) ALL 4069'S ARE ROC P/N 1415-011.
(5) ALL 4071'S ARE ROC P/N 1415-110.
(6) ALL 4559'S ARE ROC P/N 1415-003.
(7) ALL PARTS MARKED WITH * ARE NOT STUFFED.

TITLE		PIANO KEYER, NOTES 26 - 61	
DRAWN BY	CHECKER	DWG. NUMBER	
R. DOUGHERTY		SH-1.QF-5	
		5014-301	

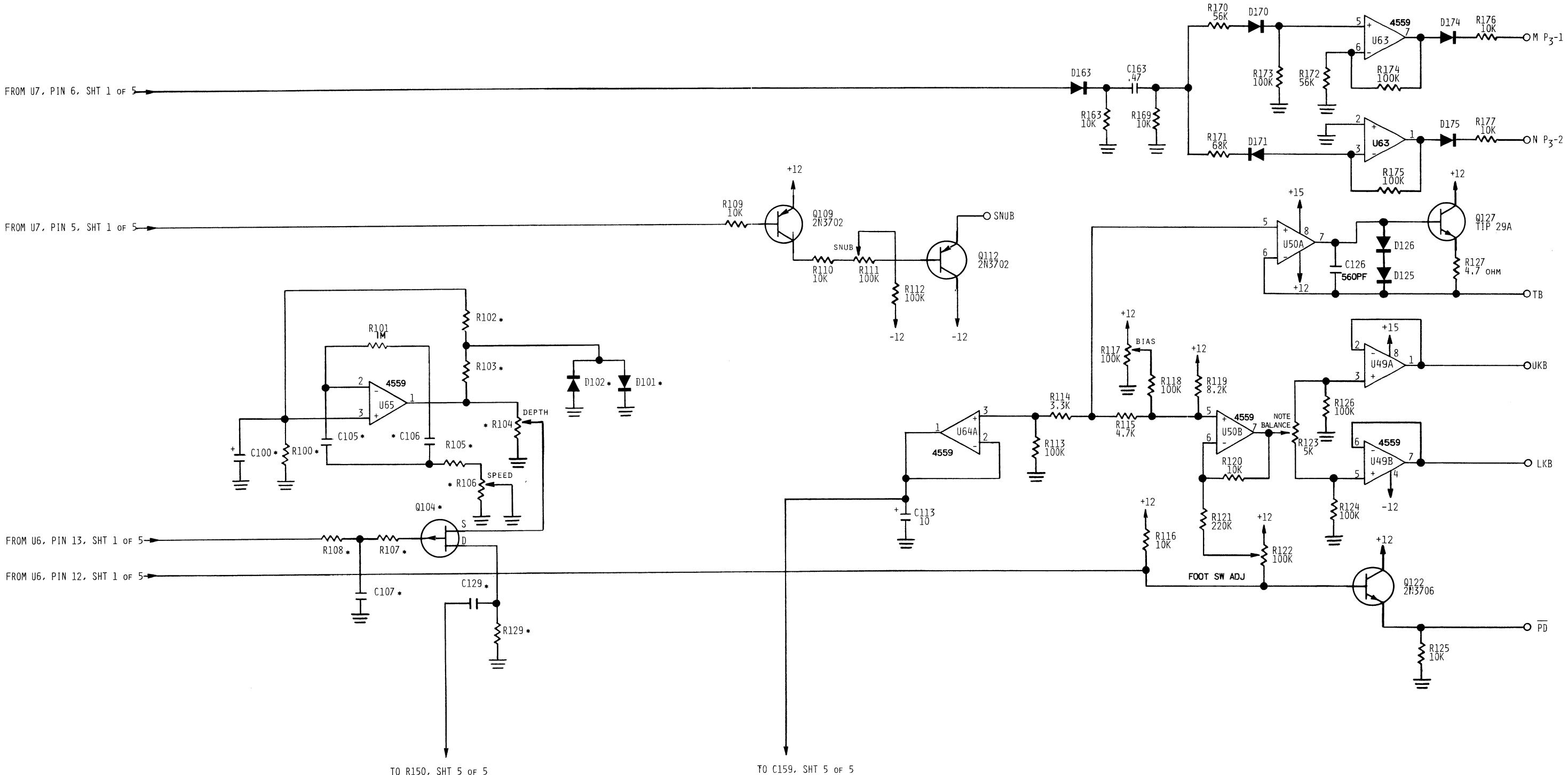




NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
- (3) ALL 2.2K BY 8 ARE ROC P/N 1280-222.
- (4) ALL 4559'S ARE ROC P/N 1415-003.
- (5) ALL PARTS MARKED WITH * ARE NOT STUFFED.

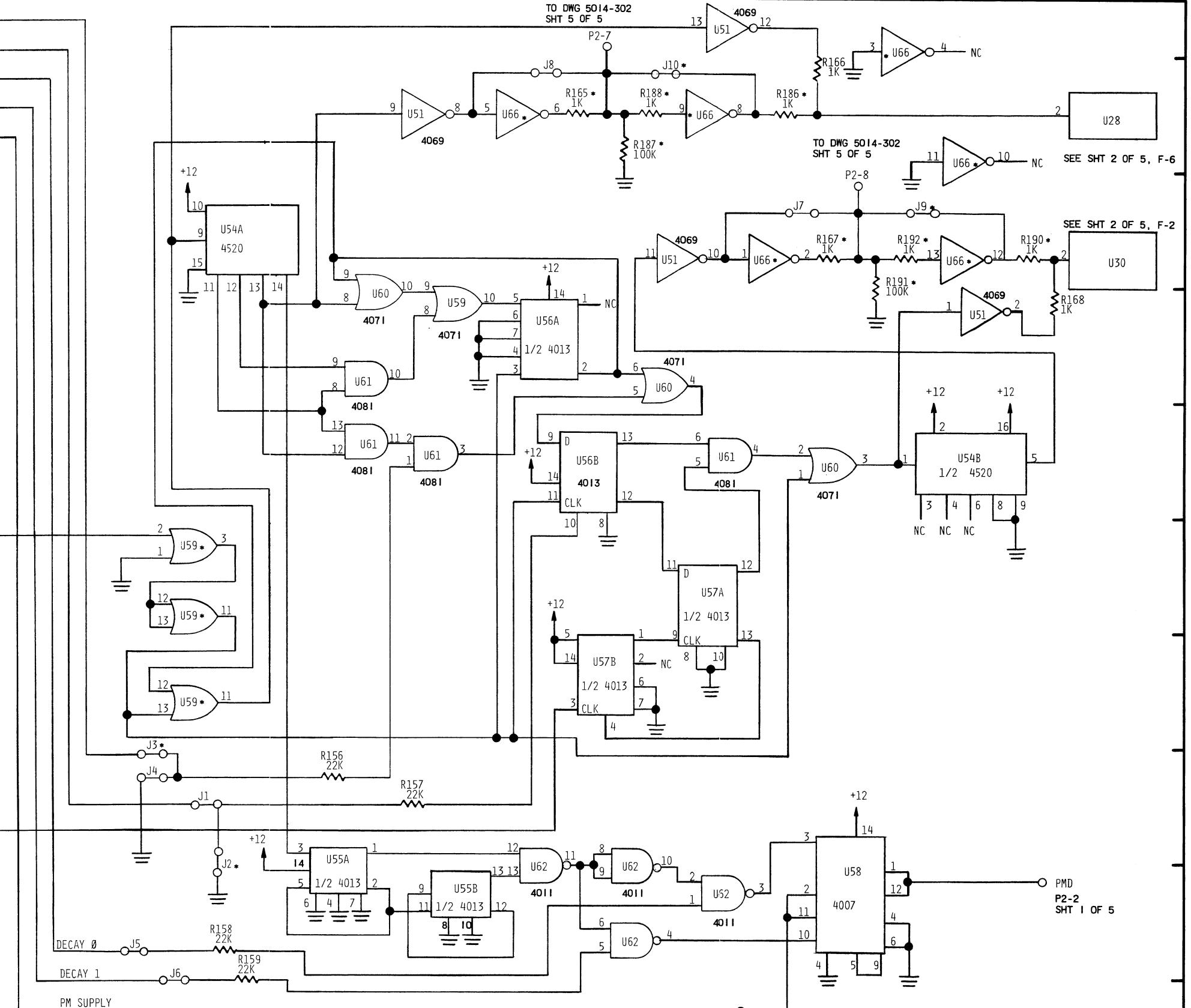
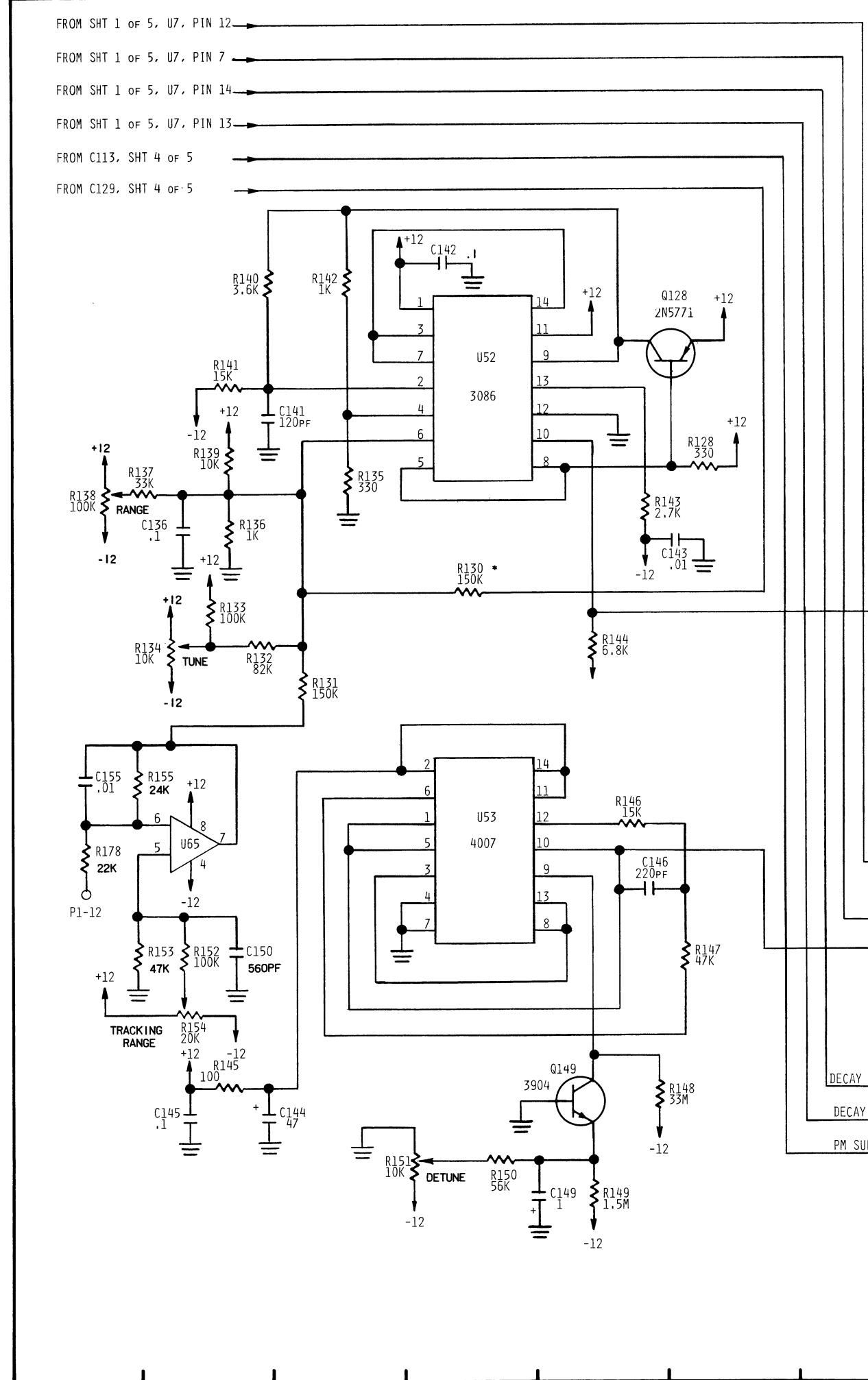
A	10429	740-84	DCJ	WAS 5014-300	FT	FT 7-17-B4
—	—	10/00 RD	RELEASED			
REV.	ECO	DATE	BY	DESCRIPTION	ENG. APVL	F.S. APVL
RODGERS ORGAN COMPANY						SCALE 50%
TITLE PIANO KEYER, NOTES 26 - 61 SHT 3 OF 5						
DRAWN BY	CHECKER		DWG. NUMBER			
R. DOUGHERTY			5014-301			



NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
- (3) ALL PARTS MARKED WITH * ARE NOT STUFFED
- (4) ALL 2N3702'S ARE ROC P/N 1414-162
- (5) ALL DIODES ARE ROC P/N 1410-105
- (6) ALL 4559'S ARE ROC P/N 1415-003
- (7) ALL TIP29A'S ARE ROC P/N 1414-140
- (8) ALL 3706'S ARE ROC P/N 1414-166

A 10429	7-10-84	DCJ	WAS 5014-300	FT	FT 7-17-84
-	-	-	-	-	-
REV. ECO DATE BY			RELEASED		
TITLE			DESCRIPTION	ENG. APVL	FS. APVL
RODGERS Organ Company			SCALE	50%	
PIANO KEYER, NOTES 26 - 61			SHT 4 OF 5		
DRAWN BY	CHECKER	DWG. NUMBER			
R. DOUGHERTY		5014-301			



NOTES

(12) ALL 4081'S ARE ROC P/N 1415-113
(13) ALL PARTS MARKED WITH * ARE NOT STUFFED

(1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.

(2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

(3) ALL 40111'S ARE ROC P/N 1415-205
(4) ALL 40131'S ARE ROC P/N 1415-106

(4) ALL 4013'S ARE ROC P/N 1415-106
(5) ALL 3904'S ARE ROC P/N 1414-169

(5) ALL 3904'S ARE ROC P/N 1414-169
(6) ALL 2N5771'S ARE ROC P/N 1414-141

(6) ALL 25311'S ARE ROC P/N 1414-141
(7) ALL 3086'S ARE ROC P/N 1415-008

(8) ALL 4007'S ARE ROC P/N 1415-004
(9) ALL 15221's ARE P22 P/N 1415-225

(9) ALL 4520'S ARE ROC P/N 1415-005
(10) ALL 4669'S ARE ROC P/N 1415-011

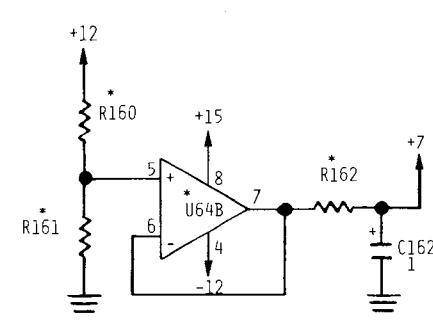
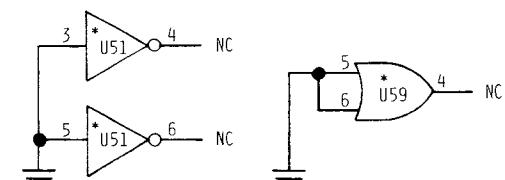
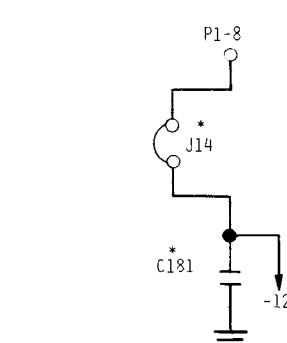
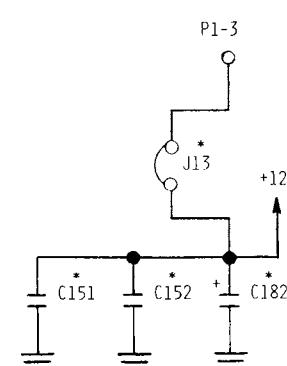
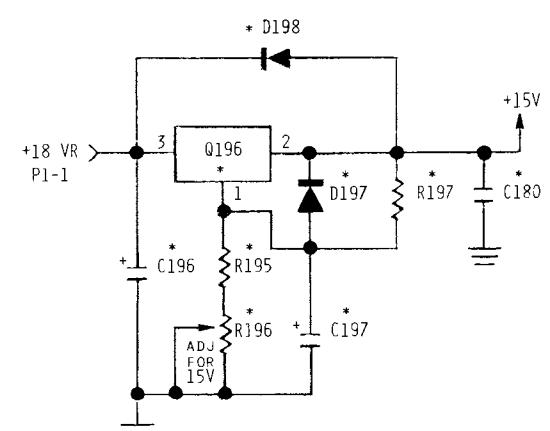
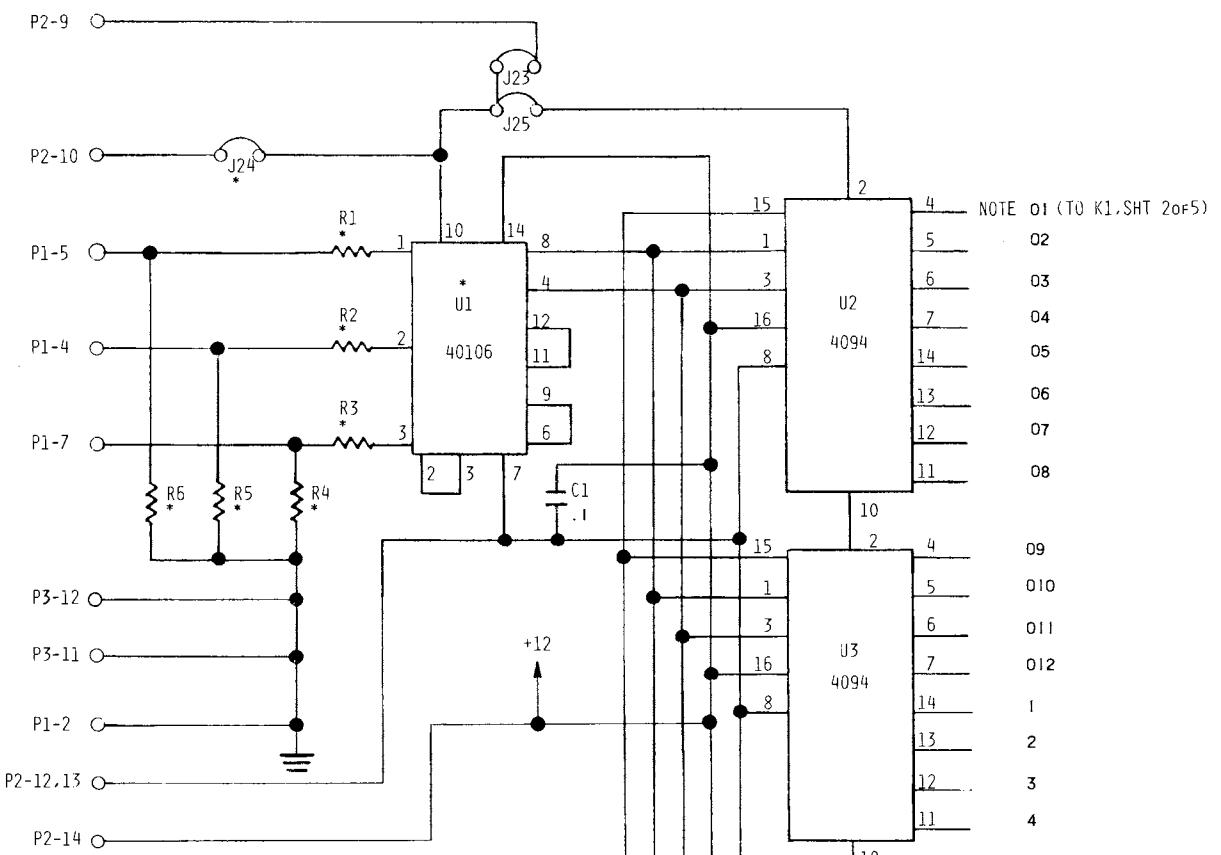
(10) ALL 4069'S ARE ROC P/N 1415-011
(11) ALL 4071'S ARE ROC P/N 1415-110

(11) ALL 4071'S ARE ROC P/N 1415-110

Figure 1. A schematic diagram of the experimental setup. The sample is a rectangular block of Fe_3O_4 with dimensions $10 \times 10 \times 10$ mm 3 . It is placed on a rotating stage, which is mounted on a magnetic stirrer. The stage is connected to a power source and a current meter. The sample is surrounded by a magnetic field generated by a solenoid coil. The coil is wound around the sample and is connected to a power source and a current meter. The sample is also connected to a power source and a current meter. The entire setup is placed on a wooden board.

7 / 5

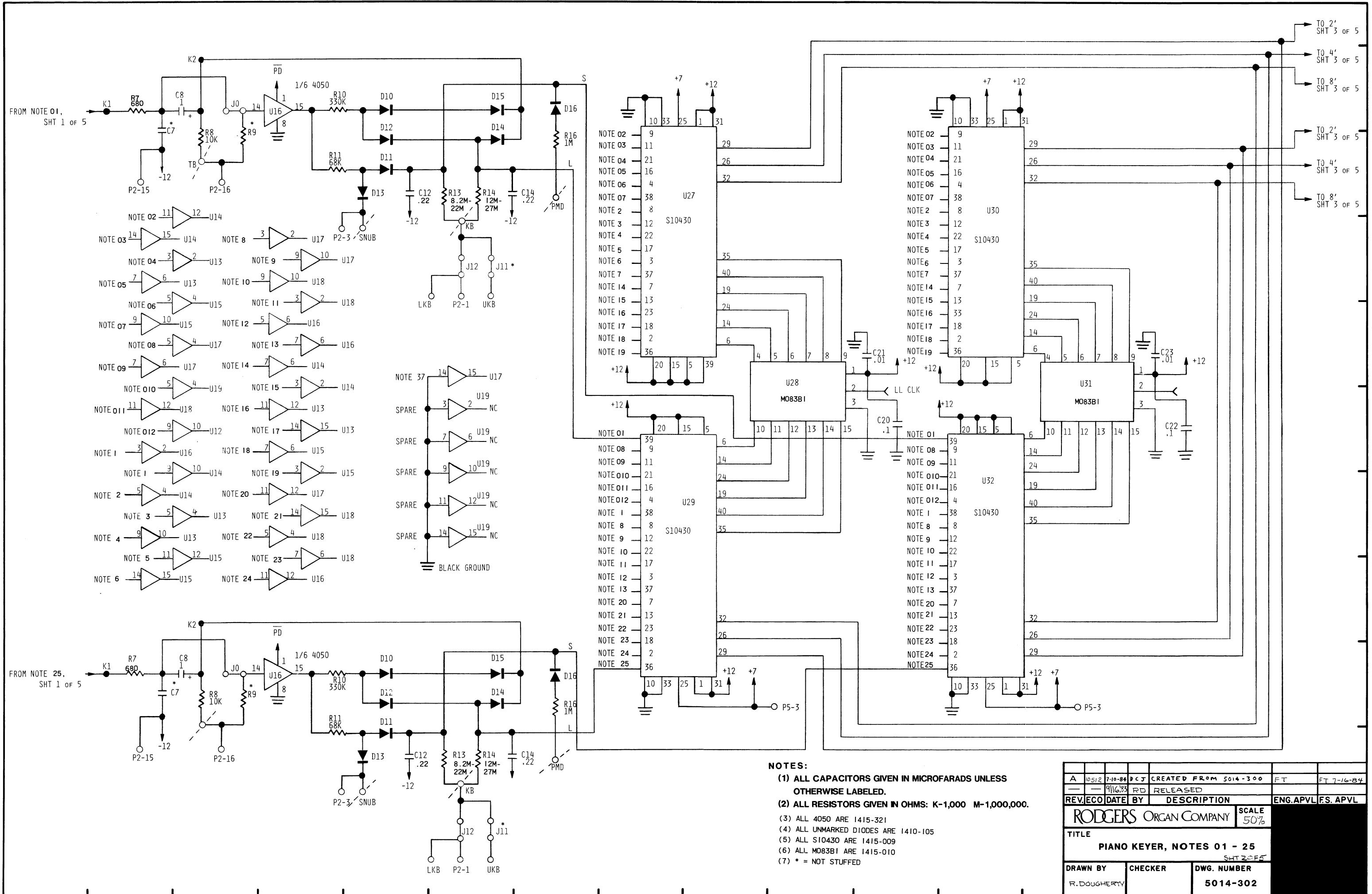
A	10429	7-10-84	DCJ	WAS 5014-300	FT	FT 7-17-84		
—	—	9/18/83	RD	RELEASED				
REV.	ECO	DATE	BY	DESCRIPTION	ENG.	APVL	F.S.	APVL
RODGERS ORGAN COMPANY					SCALE	50%		
TITLE								
PIANO KEYER, NOTES 26 - 61 SHT 5 OF 5								
DRAWN BY	CHECKER	DWG. NUMBER						
R. DOUGHERTY		5014-301						

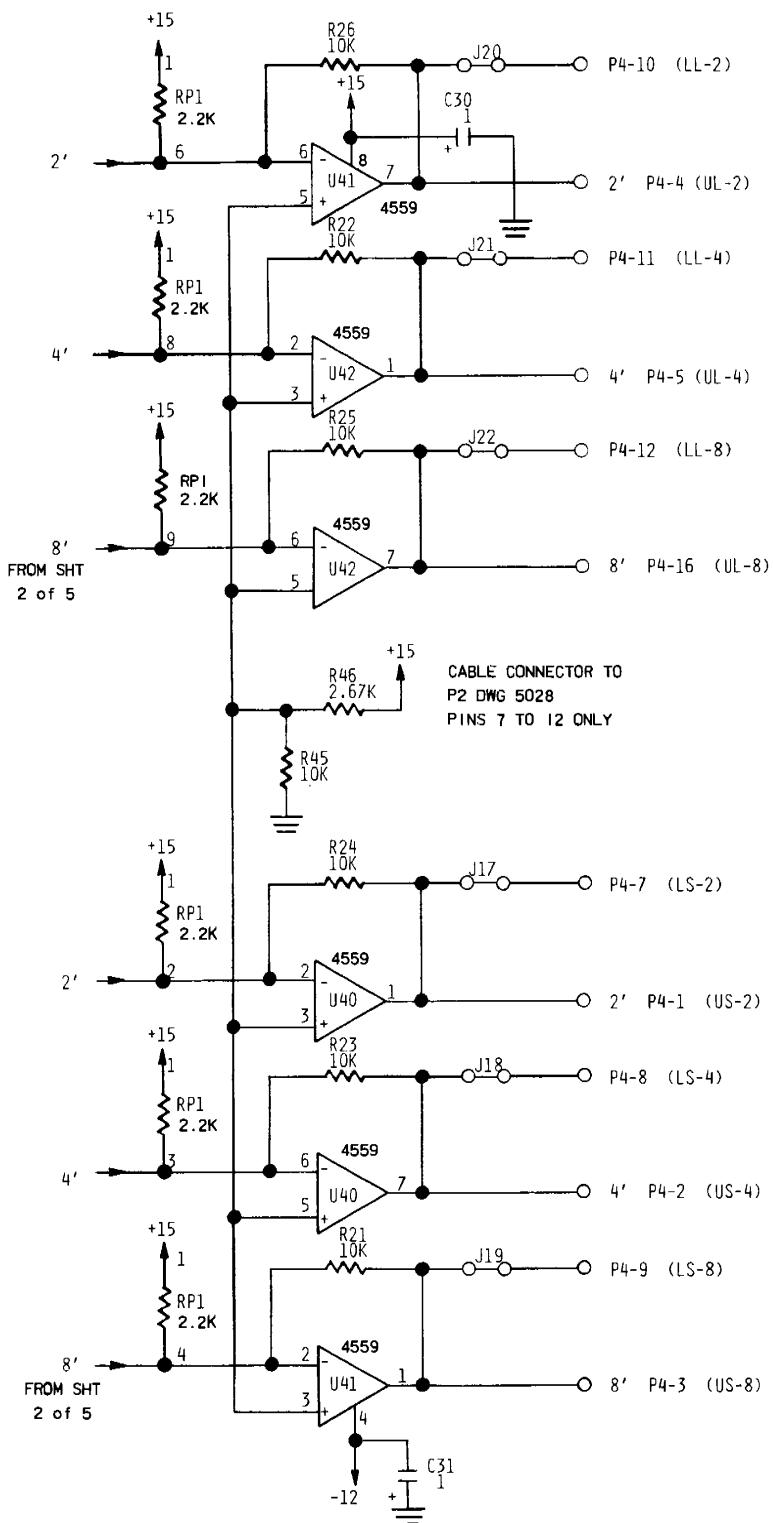


TO R108, SHT 4 of 5
TO R116, SHT 4 of 5
TO R109, SHT 4 of 5
TO D163, SHT 4 of 5
TO J2, SHT 5 of 5
TO J5, SHT 5 of 5
TO J6, SHT 5 of 5
TO J3, SHT 5 of 5

(1) ALL 4094s ARE ROC P/N 1415-377
(2) * NOT STUFFED

PIANO KEYER, NOTES 01 - 25		SCALE 50%
DRAWN BY	CHECKER	DWG. NUMBER
R. DOUGHERTY	SHT 4 of 5	5014-302





NOTES:

(1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE

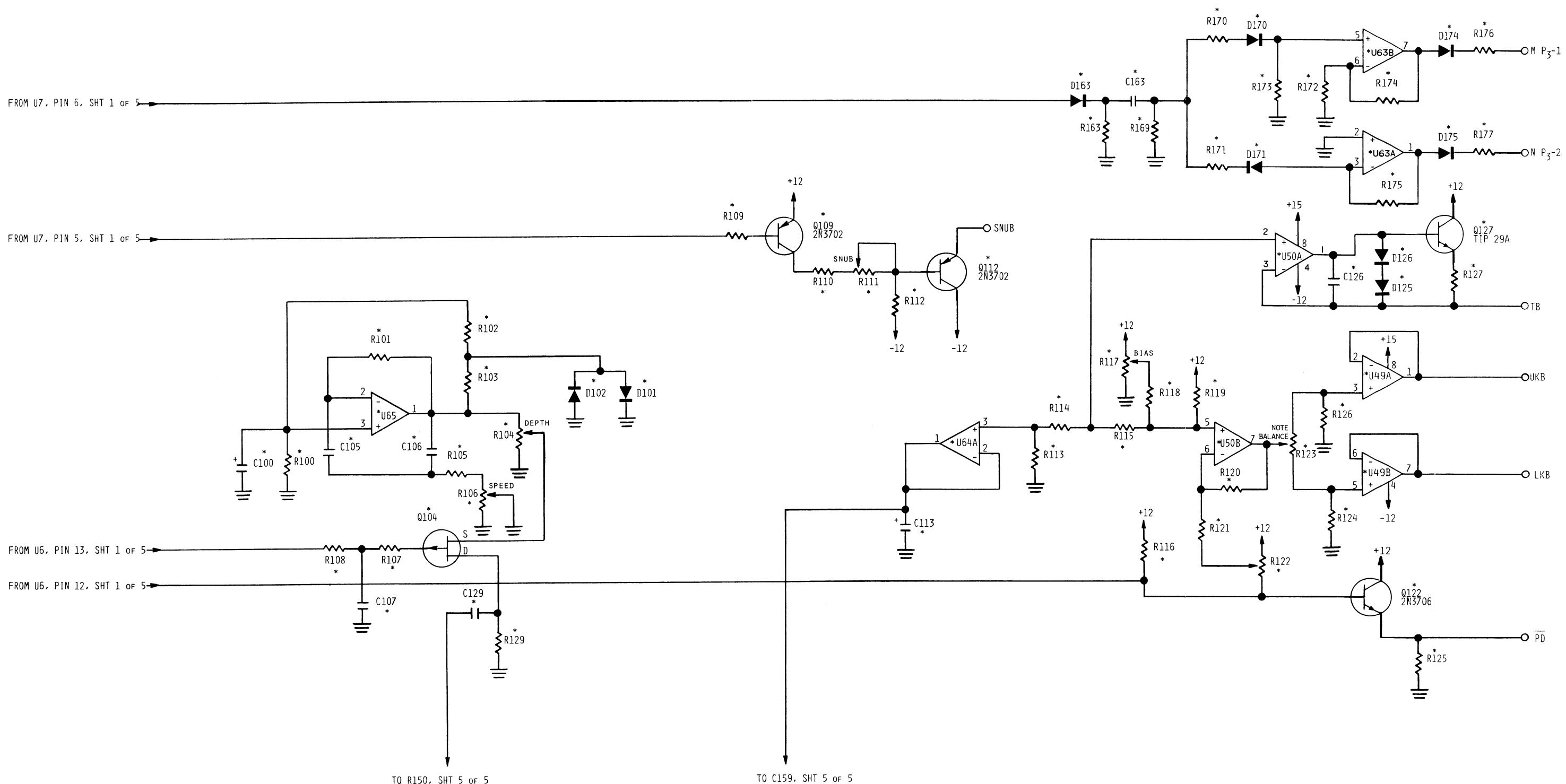
LABLED.

(2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

(3) ALL 4559s ARE 1415-003

(4) ALL 2.2K X 8 ARE ROC P/N 1280-222

A	0512	7-10-84	D C J	CREATED FROM 5014-300	FT	FT 7-16-84
—	—	1010 RD	RELEASED			
REV.	ECO	DATE	BY	DESCRIPTION	ENG. APVL	F.S. APVL
				RODGERS ORGAN COMPANY	SCALE 50%	
TITLE PIANO KEYER, NOTES 01 - 25 SHT 3 OF 5						
DRAWN BY R. DOUGHERTY	CHECKER	DWG. NUMBER 5014-302				



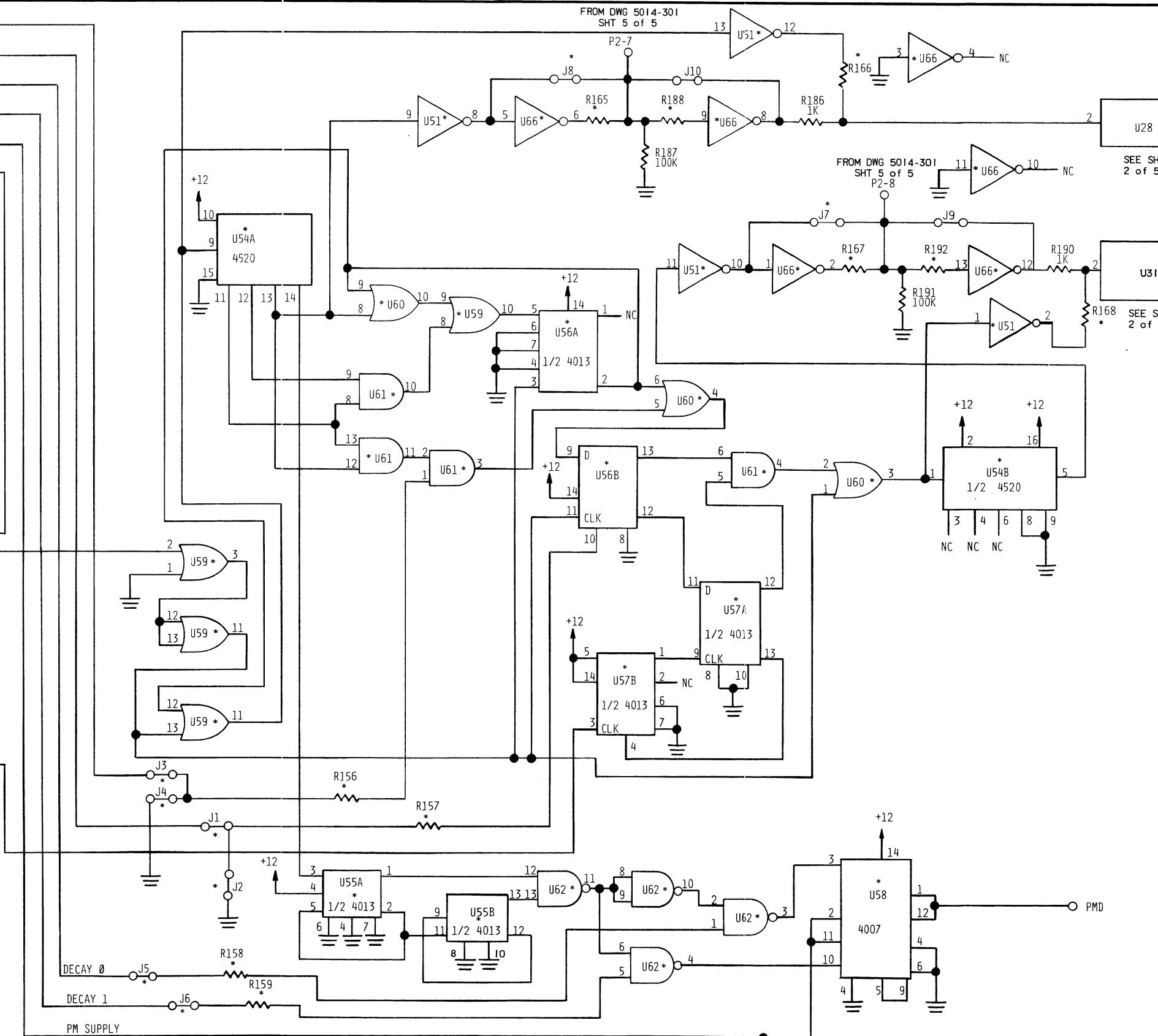
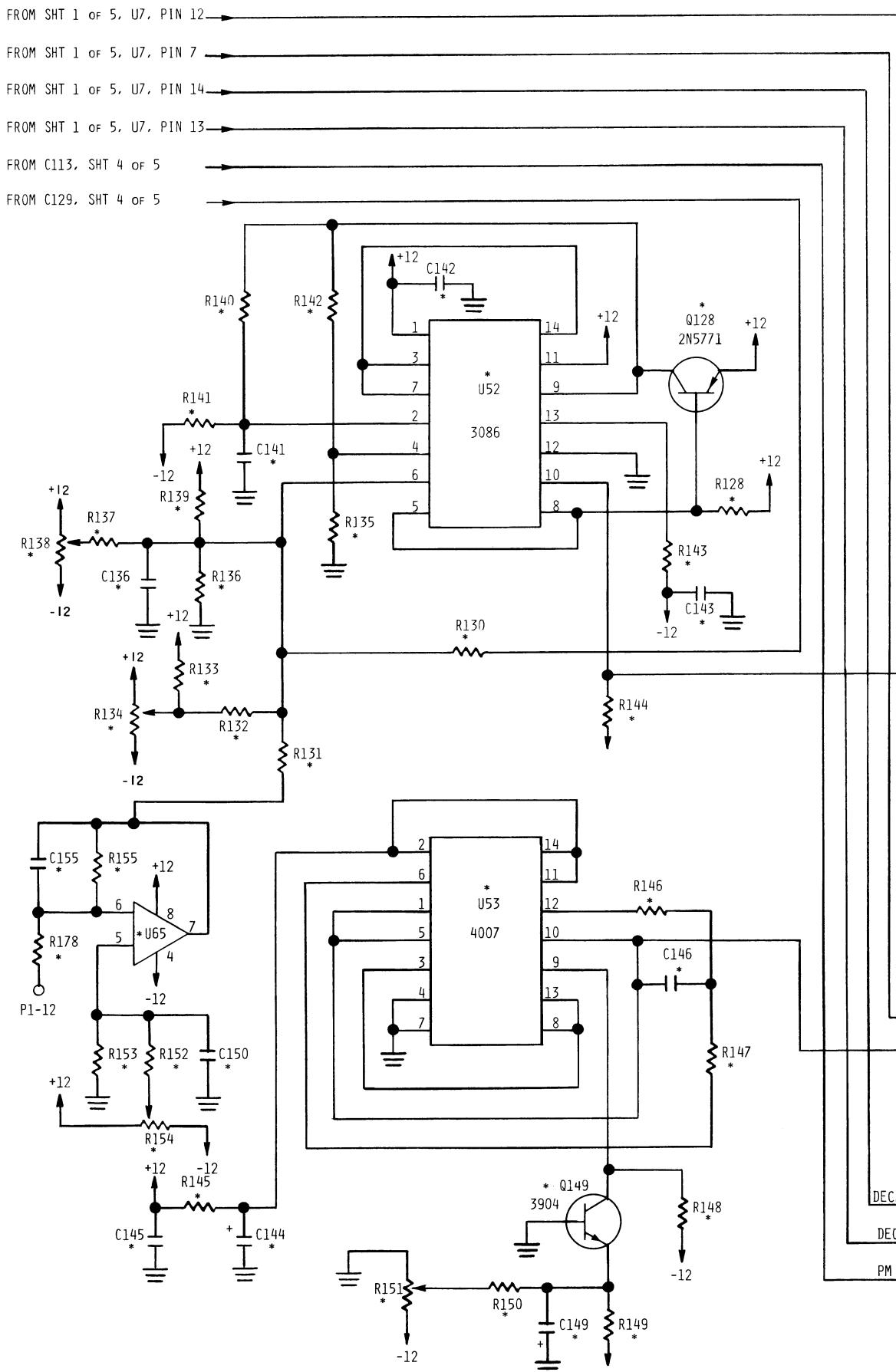
NOTES:

(1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.

(2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

(3) * = NOT STUFFED

A	10512	7-10-84	DCJ	CREATED FROM 5014-300	FT	FT 7-16-84
-	-	9/17/83	RD	RELEASED		
REV. ECO	DATE	BY	DESCRIPTION	ENG. APVL	F.S. APVL	
RODGERS	ORGAN COMPANY		SCALE			
			50%			
TITLE						
PIANO KEYER, NOTES 01 - 25						
SHT 4 OF 5						
DRAWN BY	CHECKER	DWG. NUMBER				
R. DOUGHERTY		5014-302				



NOTES

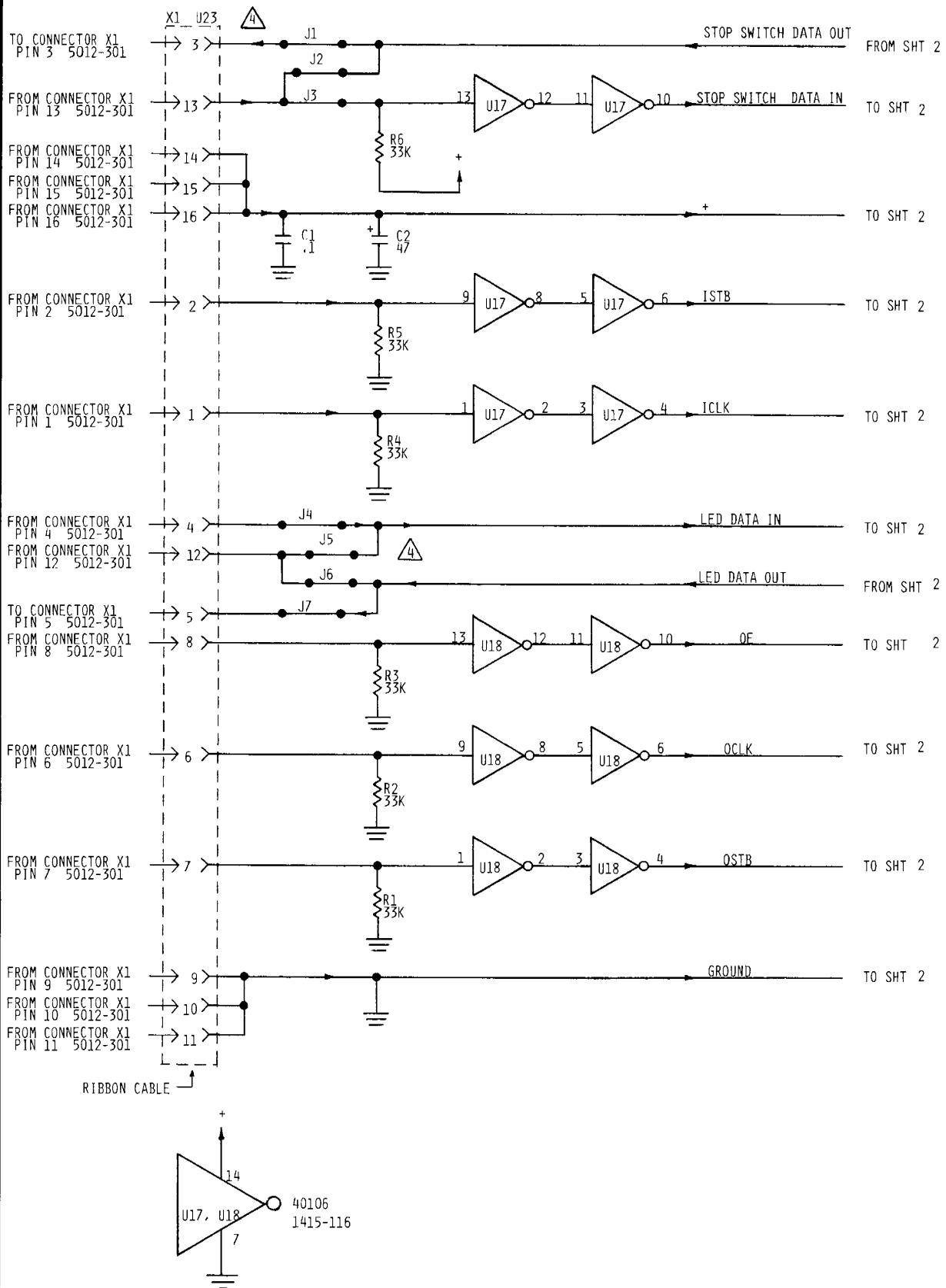
- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS
OTHERWISE LABELED.**

(2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000

(3) ALL S10430 ARE 1415-009

(4) * = NOT STUFFED

A	10512	7-10-84	DCJ	CREATED FROM 5014-300	FT	FT 7-16-84
—	—	9/18/83	RD	RELEASED		
REV.	ECO	DATE	BY	DESCRIPTION	ENG. APVL	F.S. APVL
RODGERS ORGAN COMPANY					SCALE 50%	
TITLE						
PIANO KEYER, NOTES 01 - 25 SHT 5 OF 5						
DRAWN BY	CHECKER	DWG. NUMBER				
R. DOUGHERTY		5014-302				



NOTES:

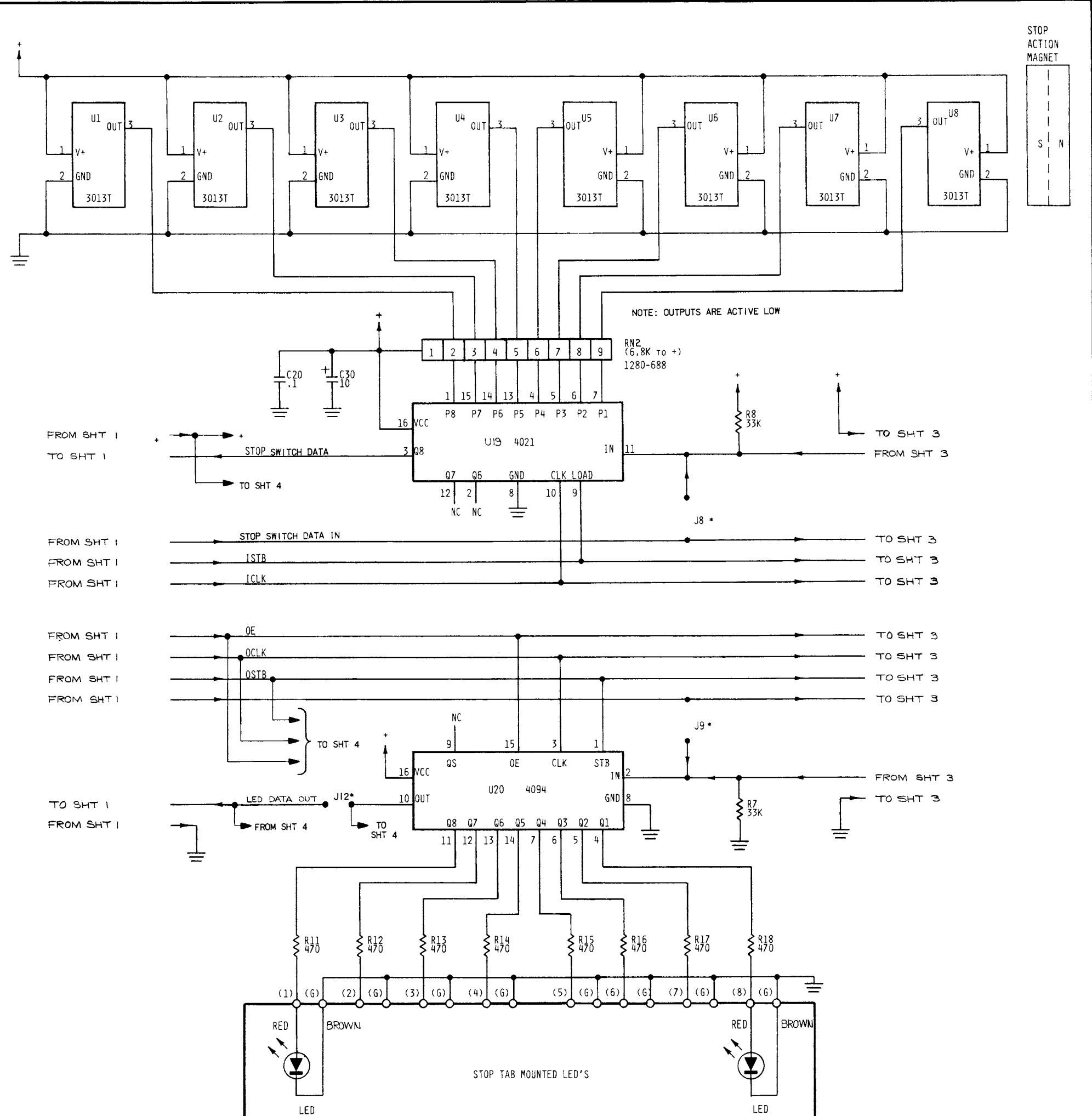
(1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.

(2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

3. + IS FROM THE MFB. IT IS THE UNREGULATED +11 ORIGINAL FROM, CONNECTOR P-2, POWER SUPPLY.

⚠ JUMPER J1, J3, J5 AND J7 ARE CUT ON TOP STOP RAIL; JUMPERS J2, J4 AND J6 ARE CUT ON BOTTOM STOP RAIL. SEE LOGIC BLOCK DIAGRAM

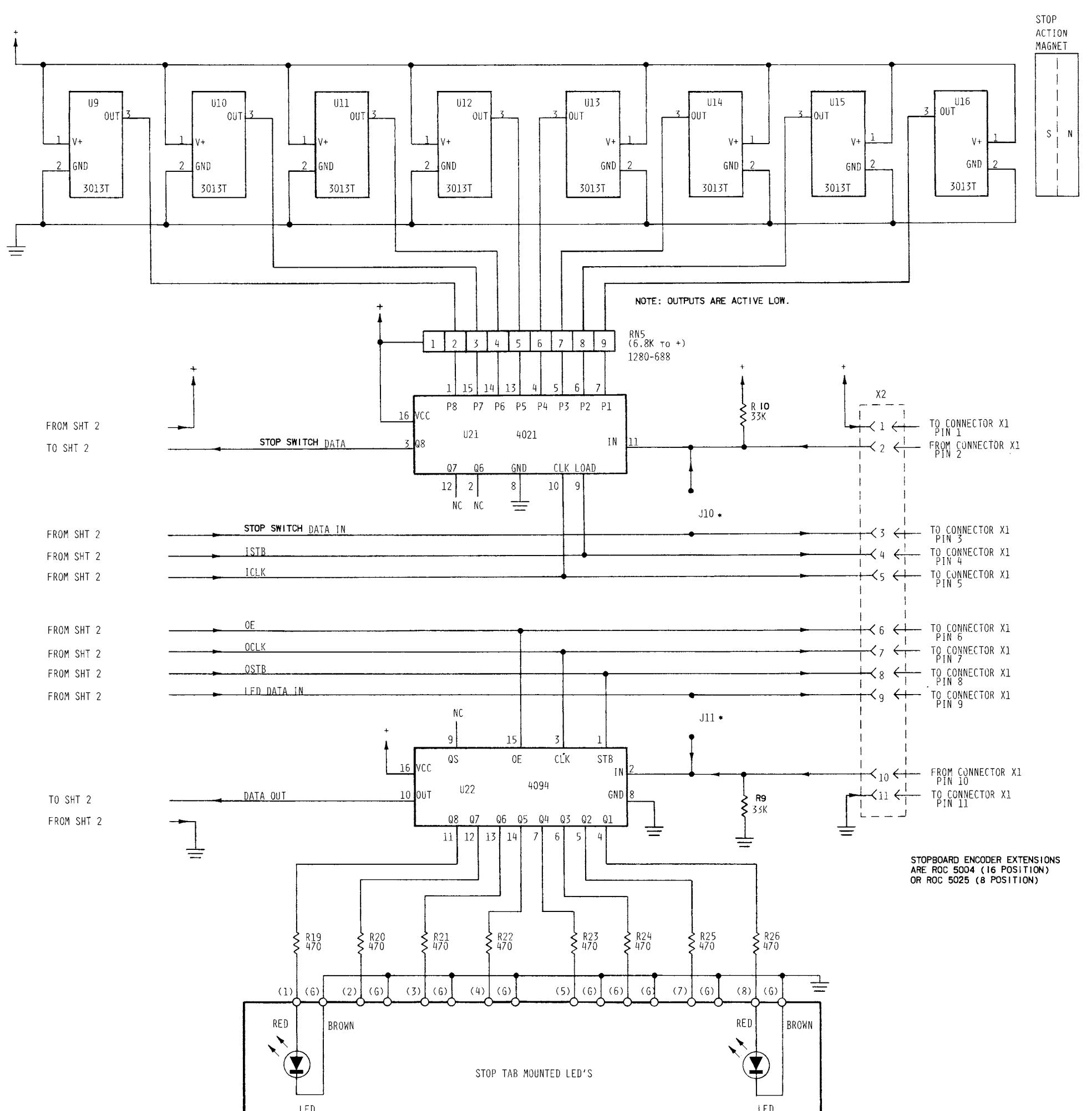
A	7-784 FT	ADDED NOTES	FT	FT 7-17-84
—	6-27-83 SP	RELEASED	MHENLE	J.X.E.
REV. ECO DATE	BY	DESCRIPTION	ENG. APVL	FS. APVL
RODGERS ORGAN COMPANY SCALE 50%				
TITLE ENCODER, STOPTAB, 16 BIT, BUFF				
1 of 4				
DRAWN BY	CHECKER	DWG. NUMBER		
SUSAN PENCE	SHAW	5018-301		



A	—	1-17-84	FT	ADDED	NOTES	FT	7-17-84
—	—	6-27-83	SP	RELEASED		MAINTENANCE	<i>Q.C.</i>
REVISION DATE BY	REVISION DATE BY	DESCRIPTION			SCALE 50%	ENG/APPLIES/APVL	
RODGERS	ORGAN COMPANY						
TITLE ENCODER, STOPTAB, 16 BIT, BUFF							
2 of 4							
DRAWN BY	CHECKER	DWG. NUMBER					
S. PENCE	<i>SC-HA-LK</i>	G-28-83			5018-301		

NOTES

1. ALL CAPACITORS ARE GIVEN IN MICROFARADS UNLESS OTHERWISE NOTED.
 2. ALL RESISTORS GIVEN IN OHMS: K=1,000 M=1,000,000
 3. + IS FROM THE MFB (UNREGULATED +11 ORIGINALLY FROM, CONNECTOR P2, POWER SUPPLY.)
 4. ALL 3013'S ARE ROC P/N 1415-007.
 5. ALL 4041'S ARE ROC P/N 1415-319.
 6. ALL 4094'S ARE ROC P/N 1415-377.
 7. ALL PARTS MARKED WITH * ARE NOT STUFFED.



NOTES: (1) ALL CAPACITORS ARE GIVEN IN MICROFARADS UNLESS OTHERWISE NOTES.
(2) ALL RESISTORS GIVEN IN OHMS: K=1,000 M=1,000,000

(3) + IS FROM THE MULTIFUNCTION BOARD. IT IS THE UNREGULATED +11, ORIGINALLY

(8) TO FRESH THE REAR FUNCTION BOARD. 11
FROM CONNECTOR P2, POWER SUPPLY

(4) ALL PARTS MARKED WITH * ARE NOT STU

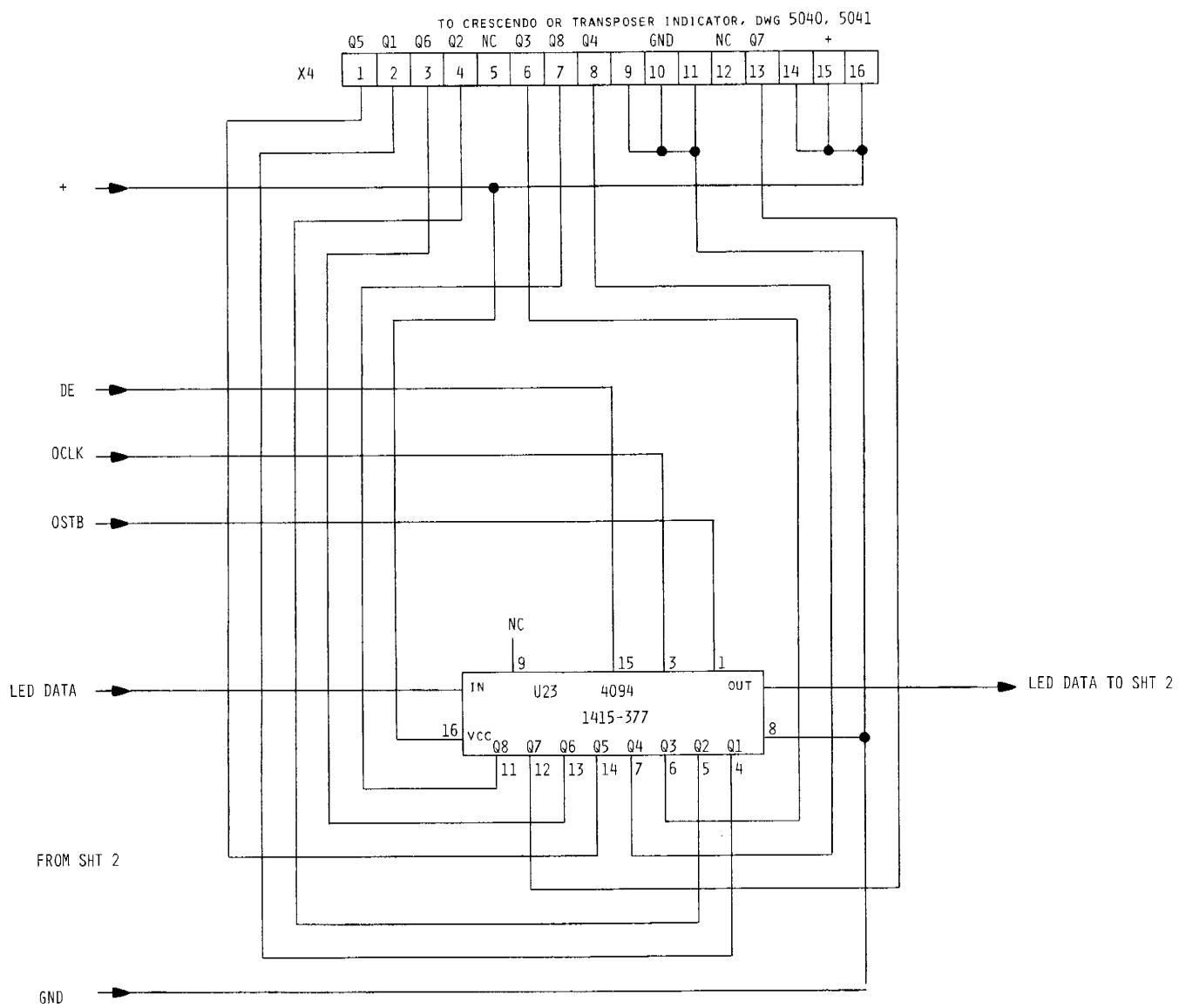
(5) ALL 4013'S ARE ROC P/N 1415-001

(7) ALL 4094'S ARE BOC P/N 1415-377

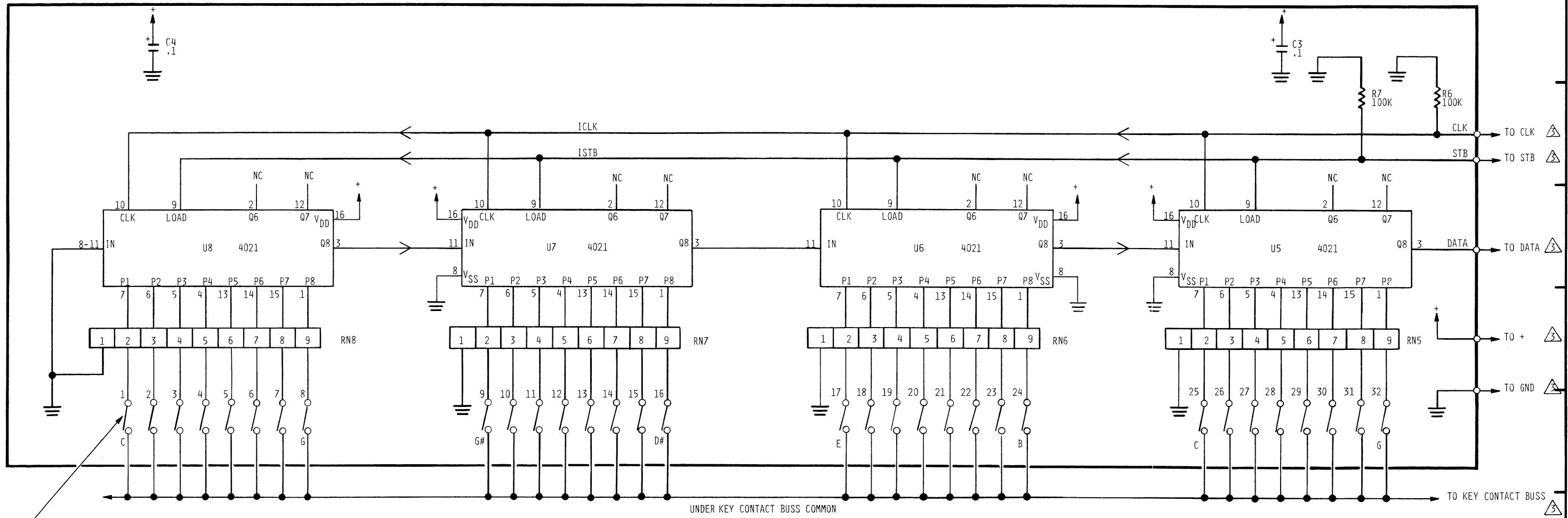
(7) ALL 4094'S ARE ROC 17N 1415-57

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—

三



A	7-17-84	FT	ADDED NOTES	FT	FT 7-17-84
REV.	ECO	DATE	BY	RELEASED	MHENLE J.J.W.
TITLE				ENG. APVL F.S. APVL	
RODGERS ORGAN COMPANY				SCALE	50%
DRAWN BY	CHECKER	DWG. NUMBER			
S. PENCE	SCHAHL 8-17-83	5018-301			

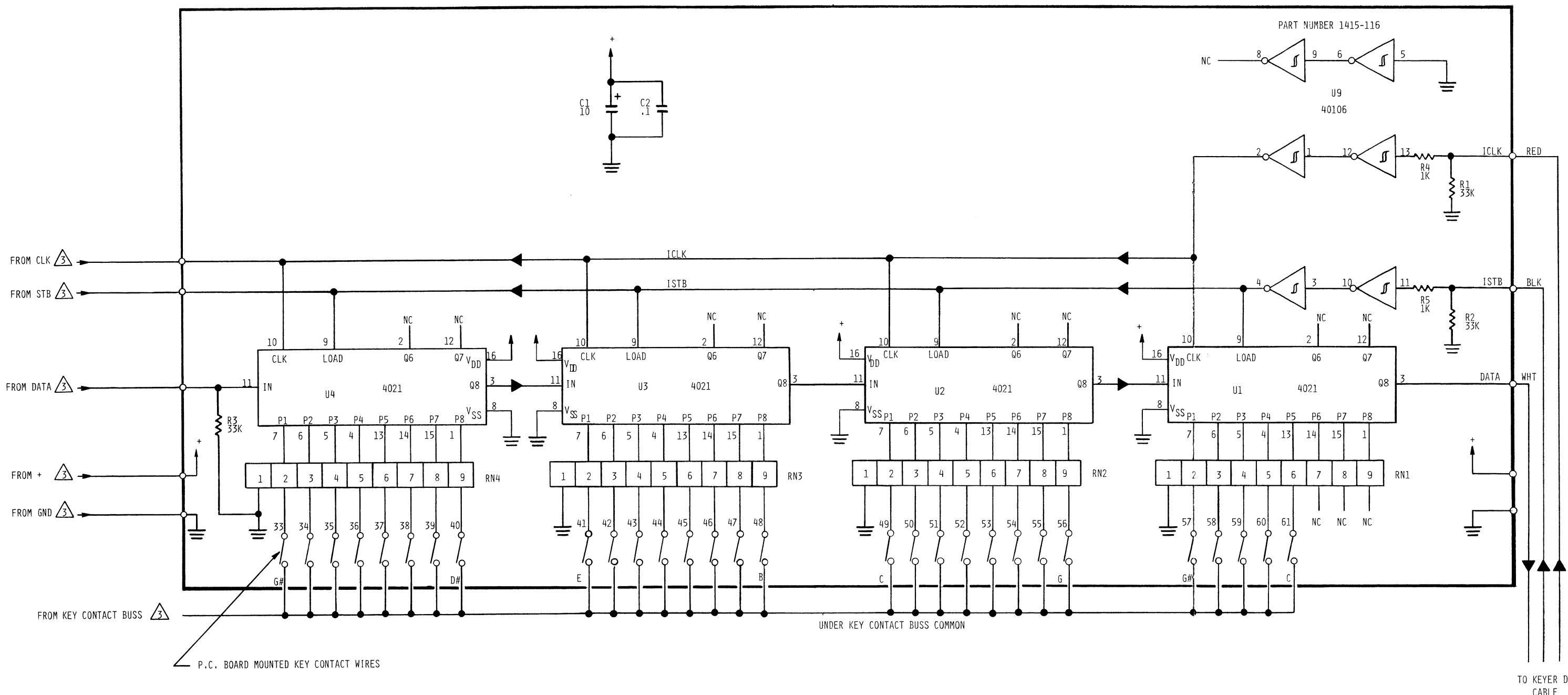


PC BOARD MOUNTED
KEY CONTACT WIRES

NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
- (3) ON PART NUMBER 5020 KEYBOARD ENCODER KEYS 33-61
- (4) + = (+11) FROM P2 CONNECTOR ON POWER SUPPLY.
- (5) ALL 4021'S ARE PART NUMBER 1415-319
- (6) RN5 TO RN8 IS A 6.8K X 8, ROC PART NUMBER 1280-688.

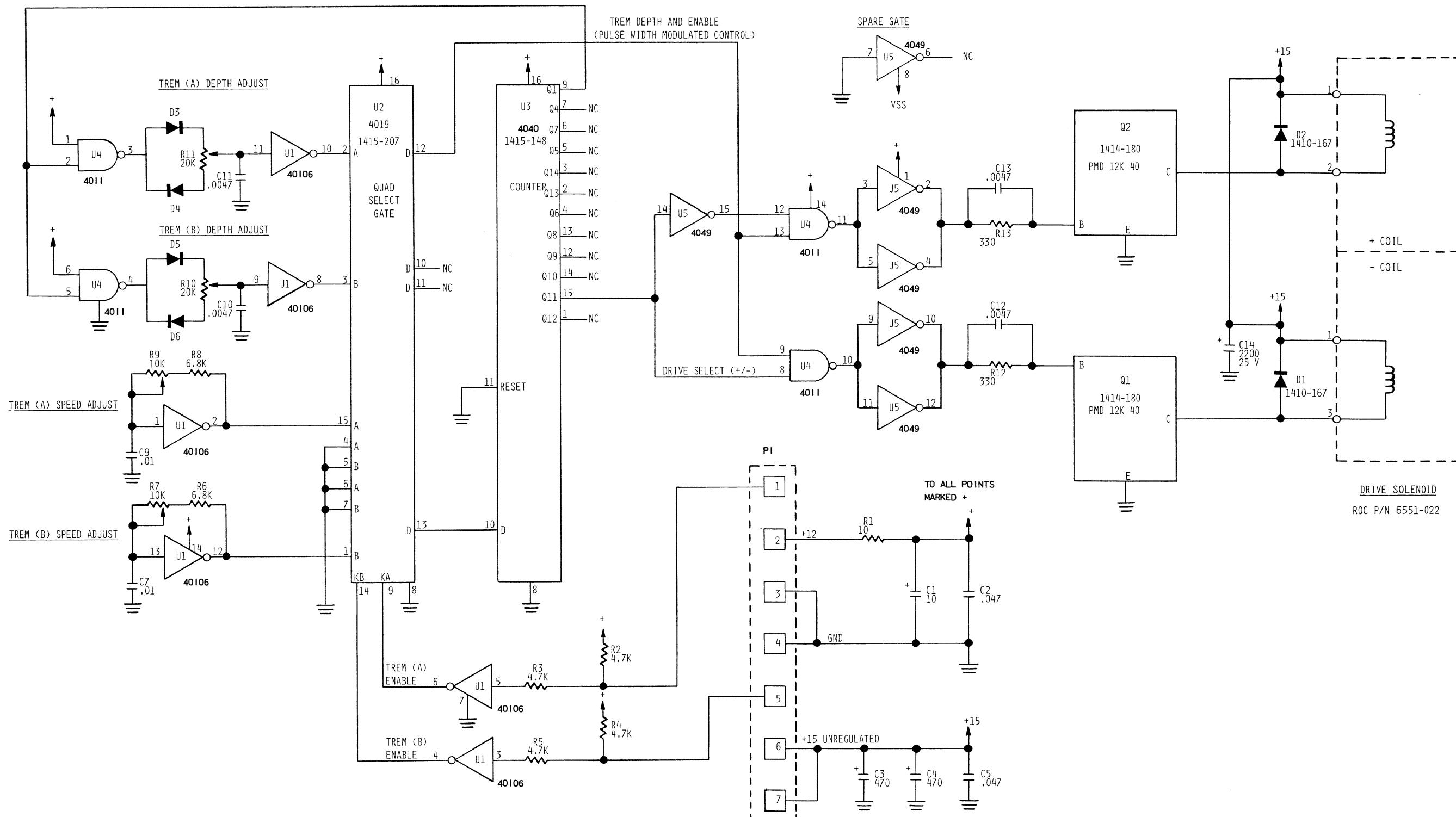
7/7/83 RD		RELEASED	M1	JLJ
REV/ECD	DATE BY	DESCRIPTION	ENG/APV/LFS/APV	
RODGERS ORGAN COMPANY				SCALE 50%
TITLE KEYBOARD ENCODER, KEYS 1-32				
DRAWN BY R. DOUGHERTY	CHECKER SCHALK 7-13-83	DWG. NUMBER 5019-300		



NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
- (3) ON PART NUMBER 5019 KEYBOARD ENCODER KEYS 1-32.
- (4) + = (+11) FROM P2 CONNECTOR ON POWER SUPPLY
- (5) ALL 4021 IC'S ARE ROC PART NUMBER 1415-319
- (6) ALL RESISTOR NETWORKS ARE ROC PART NUMBER 1280-688

7/7/83 RD RELEASED		MHENLE J.A.G.		
REV.ECO DATE BY	DESCRIPTION	ENG.APVL F.S. APVL		
RODGERS Organ Company SCALE 50%				
TITLE KEYBOARD ENCODER, KEYS 33-61				
DRAWN BY R. DOUGHERTY	CHECKER SCHALK 8-1-83	DWG. NUMBER 5020-300		



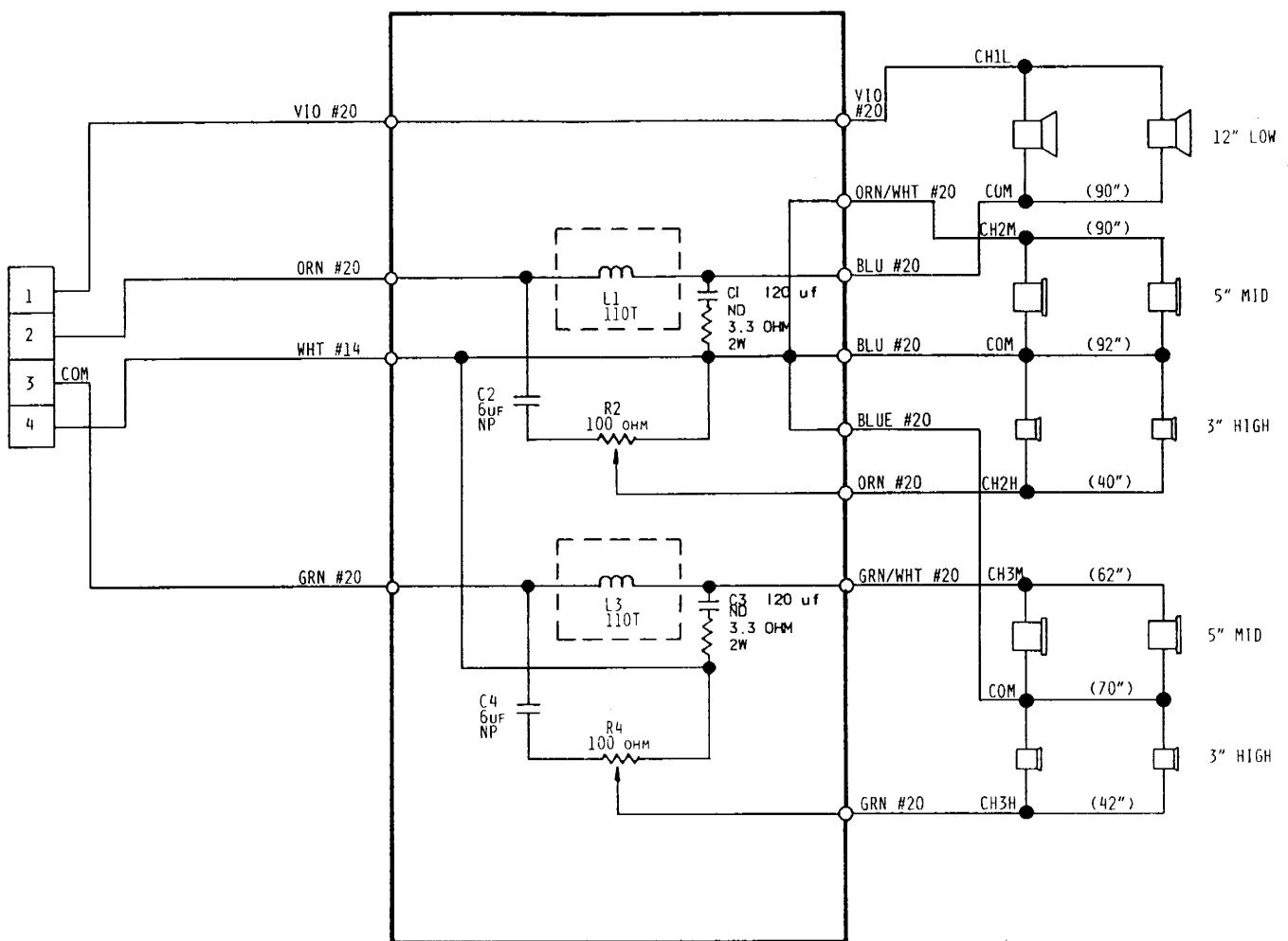
A - 7-12-84 D&J UPDATED TO BOM
 — — 9/8/83 RD RELEASED
 REV. ECO DATE BY DESCRIPTION
 ENG. APVL F.S. APVL

RODGERS ORGAN COMPANY SCALE
 50%

TITLE
 2-SPEED PIPE TREMOLO DRIVER

DRAWN BY CHECKER
 R. DOUGHERTY E. CHALMERS
 DRAWN BY CHECKER
 R. DOUGHERTY E. CHALMERS

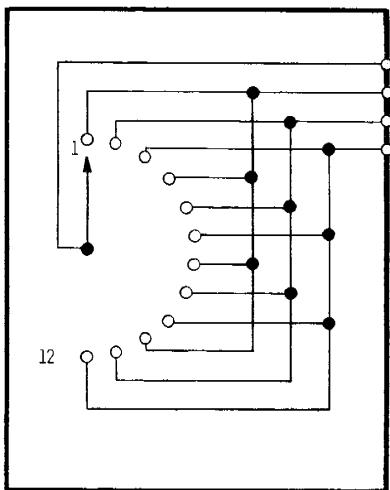
DWG. NUMBER
 5021-301



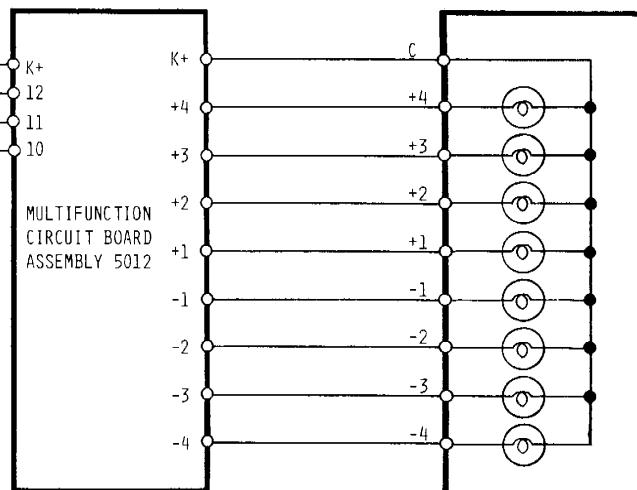
NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

A — REV. ECO	10,009 9-2-85	10-12 BB	Y6 RELEASED	ADD. 2-3.5 OHM. RES. BY C1, C3 RELEASER	FT 11-2-B4 M. HENLE J.P.W.
DATE	BY	DESCRIPTION	ENG. APVL RS. APVL		
RODGERS ORGAN COMPANY				SCALE 50%	
TITLE 650/705 SPEAKER CROSSOVER					
DRAWN BY SCHAIR 9-2-85	CHECKER	DWG. NUMBER 5026-301			



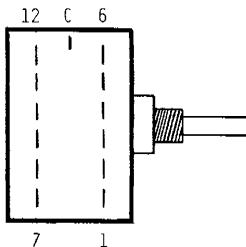
TRANSPOSER SWITCH ASSEMBLY 5027-300



MULTIFUNCTION CIRCUIT BOARD
ASSEMBLY 5012

TRANSPOSER LAMP
ASSEMBLY 6469-116

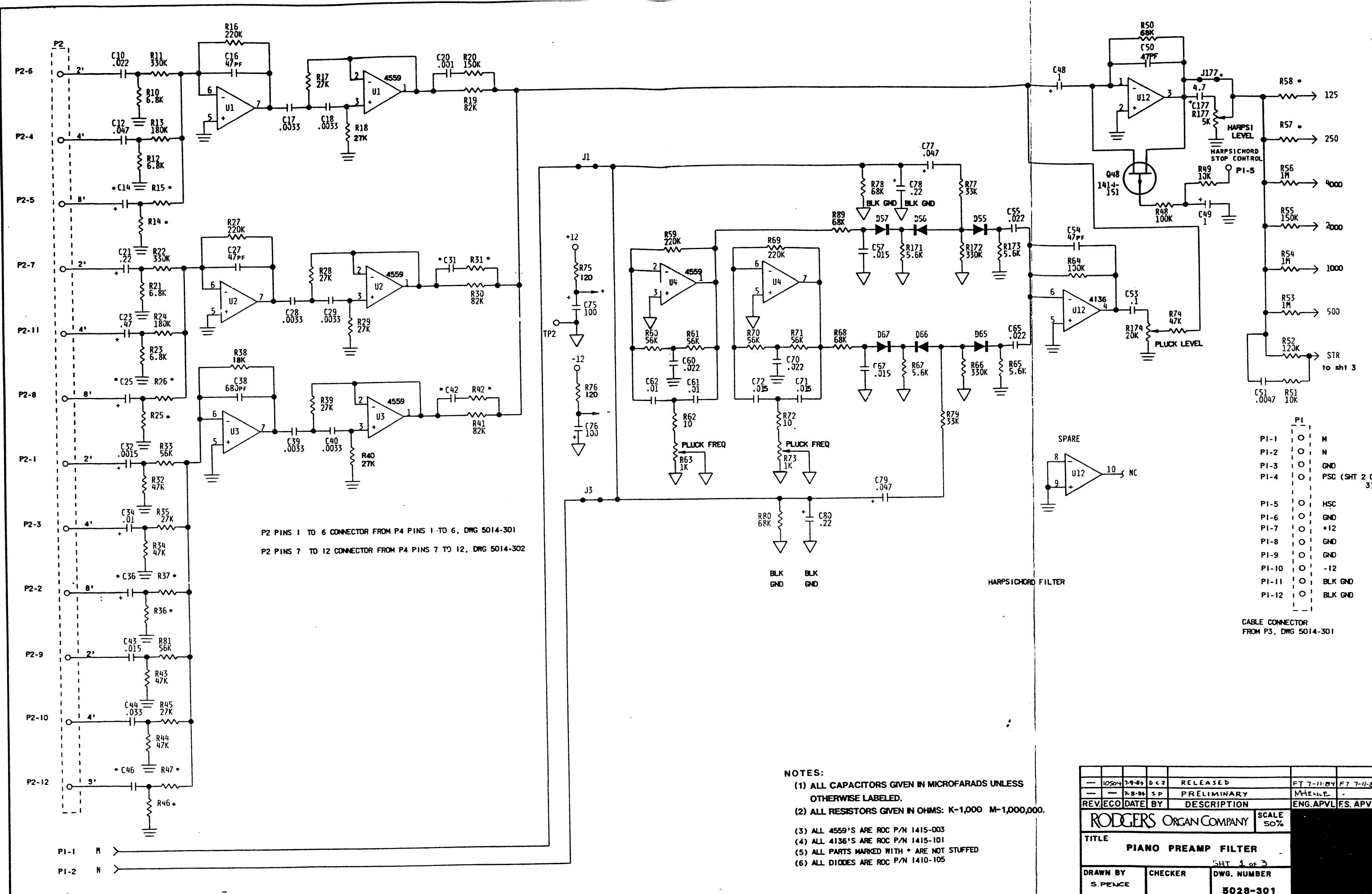
NOTE: IN LATER MODELS THE TRANSPOSER LAMP ASSEMBLY IS
PART NUMBER 5041-300 AND IS DRIVEN FROM THE STOPTAB
ENCODER PART NUMBER 5018-301. SEE DWG'S 5041 AND 5018.

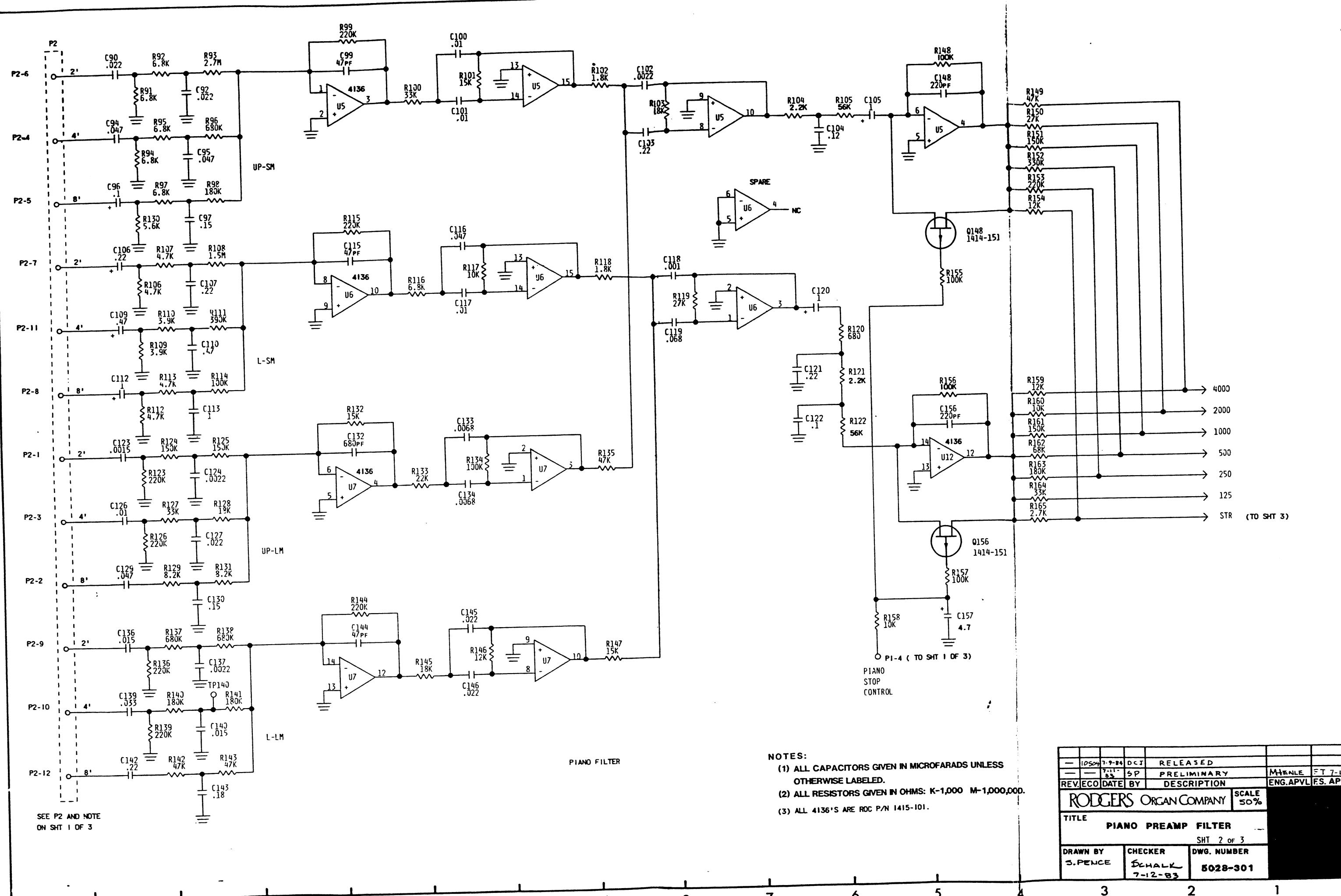


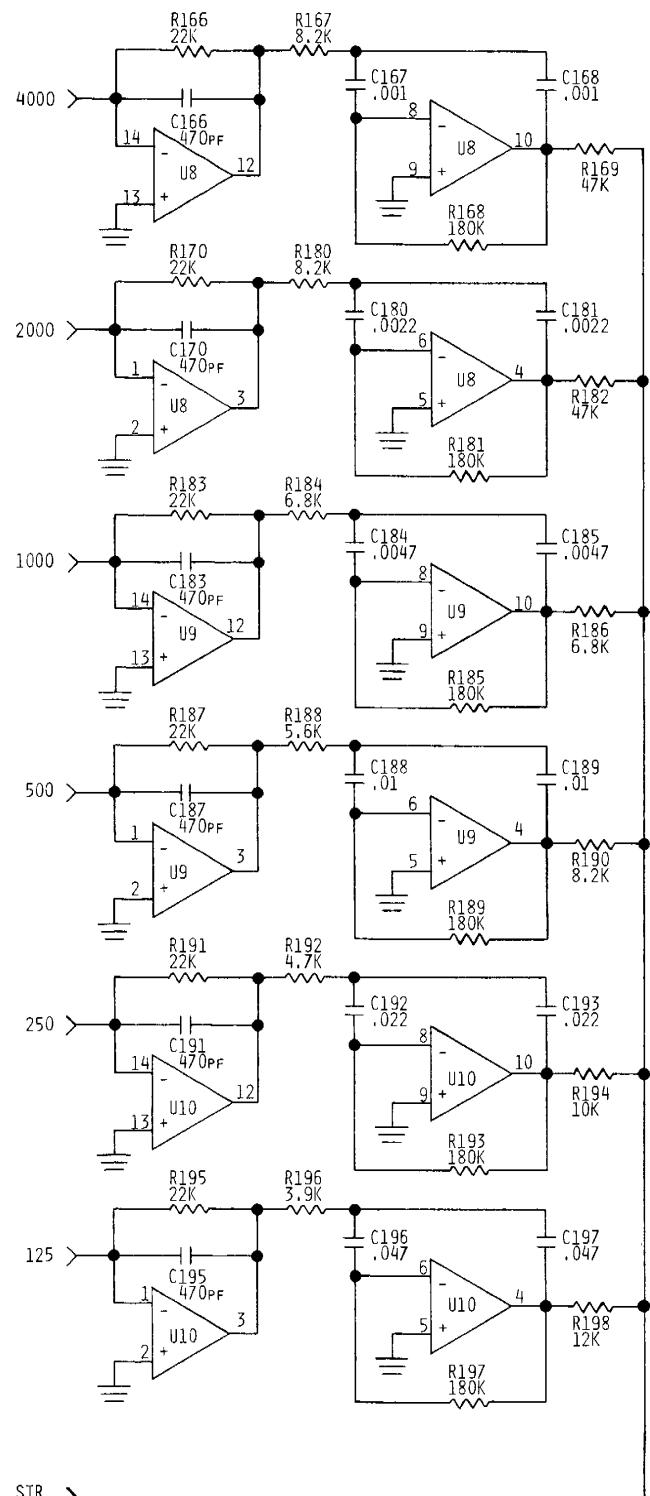
SWITCH, TOP VIEW

A	7-16-84	FT	ADDED NOTE 1	FT	FT 7-16-84
—	7-16-84	RD	RELEASED	M HENLE	J. L. D.
REV.	ECO	DATE	BY	DESCRIPTION	ENG. APVL
RODGERS ORGAN COMPANY					
SCALE 50%					
TITLE TRANSPOSER SWITCH ASS'Y					
DRAWN BY	CHECKER	DWG. NUMBER			
R. DOUGHERTY	SCHOLZ 7-16-83	5027-300			

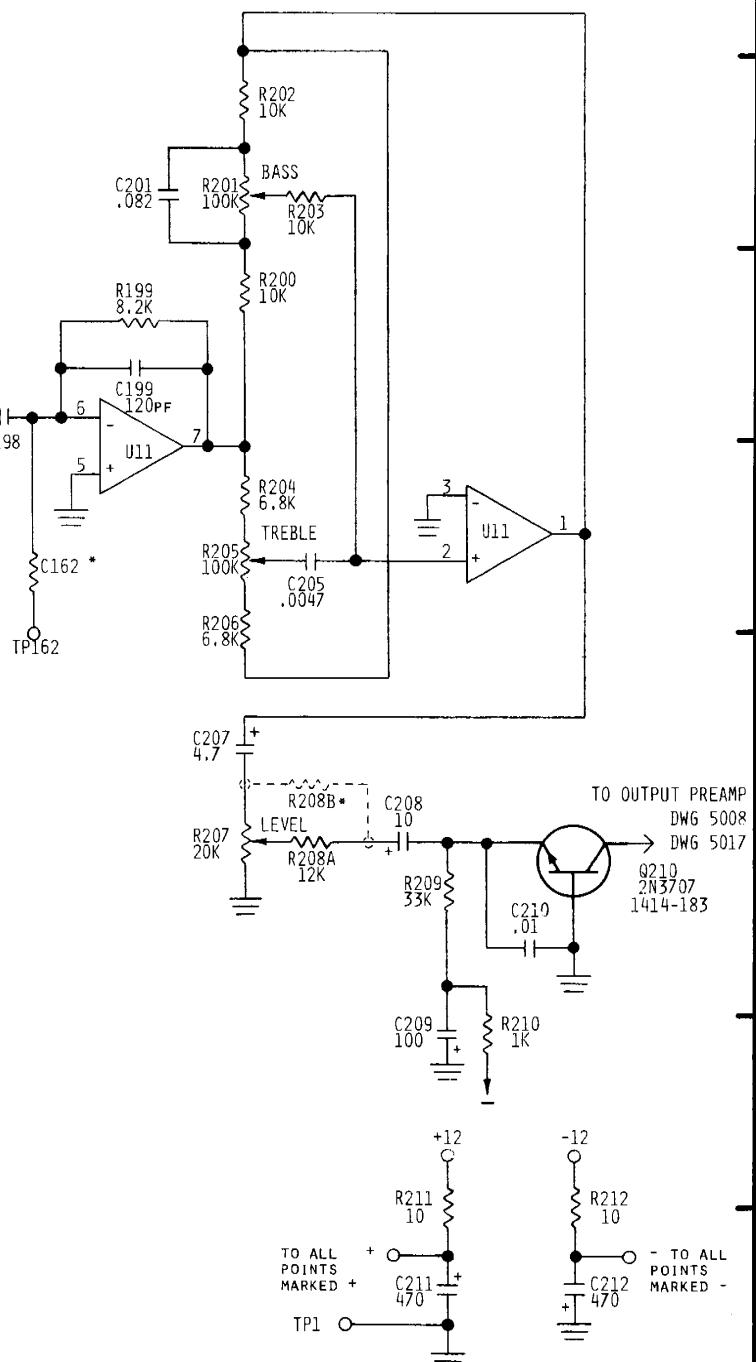
7 4 5 4 3 2 1







FROM SHT 1 AND SHT 2 OF 3



NOTES:

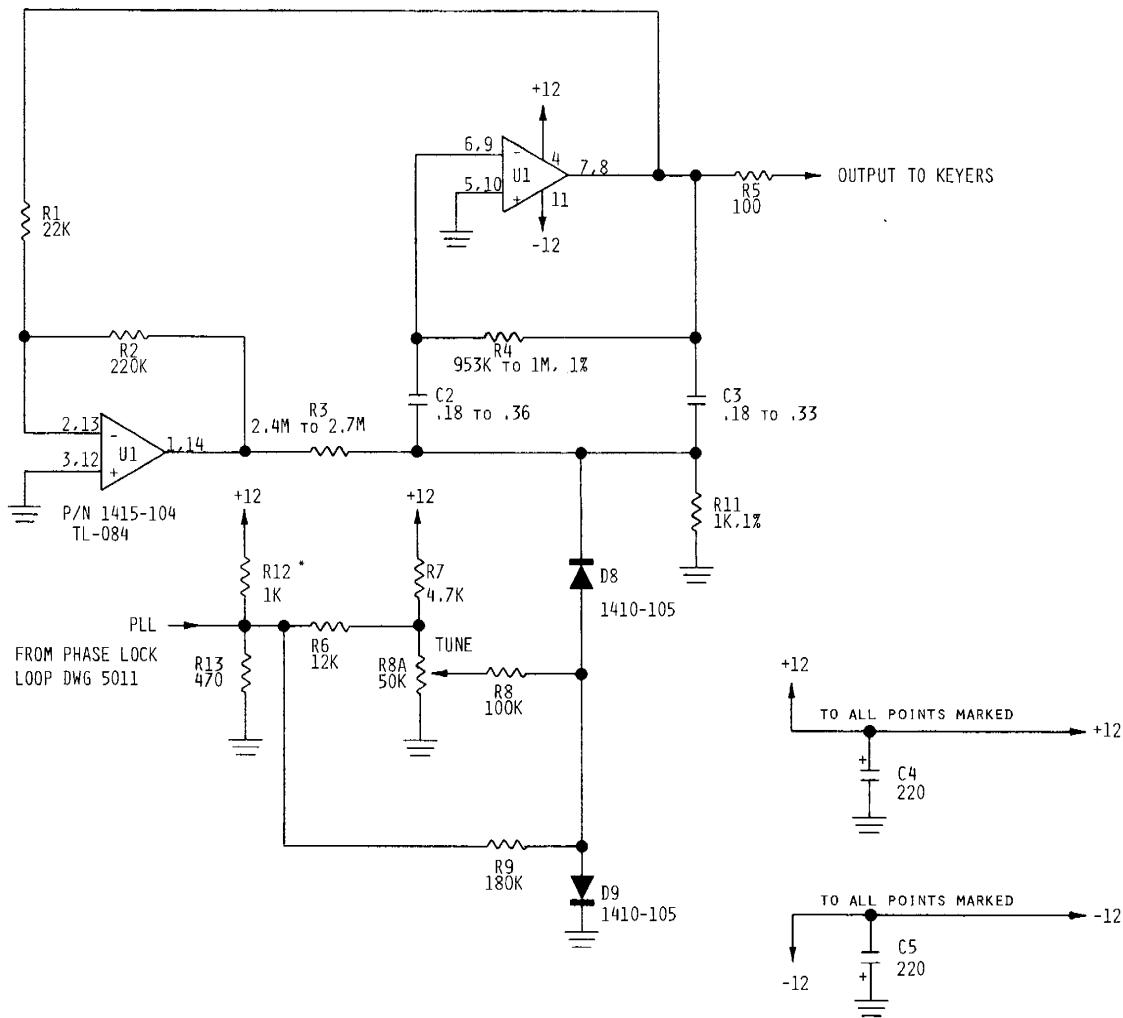
- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

3 U8, U9, AND U10 ARE 4136, PART NUMBER 1415-101

4 U11 IS 4559, PART NUMBER 1415-003

5 ALL PARTS MARKED WITH * ARE NOT STUFFED.

10504	7-9-84	PCJ	RELEASED	FT 7-10-84	FT 7-10-84
7-14-84	SP	PRELIMINARY	MENLE		
REV. ECO	DATE	BY	DESCRIPTION	ENG. APVL	FS. APVL
RODGERS ORGAN COMPANY					
SCALE 50%					
TITLE PIANO PREAMP FILTER					
SHT 3 OF 3					
DRAWN BY S. PENCE	CHECKER SCHALK 7-15-85	DWG. NUMBER 5028-301			

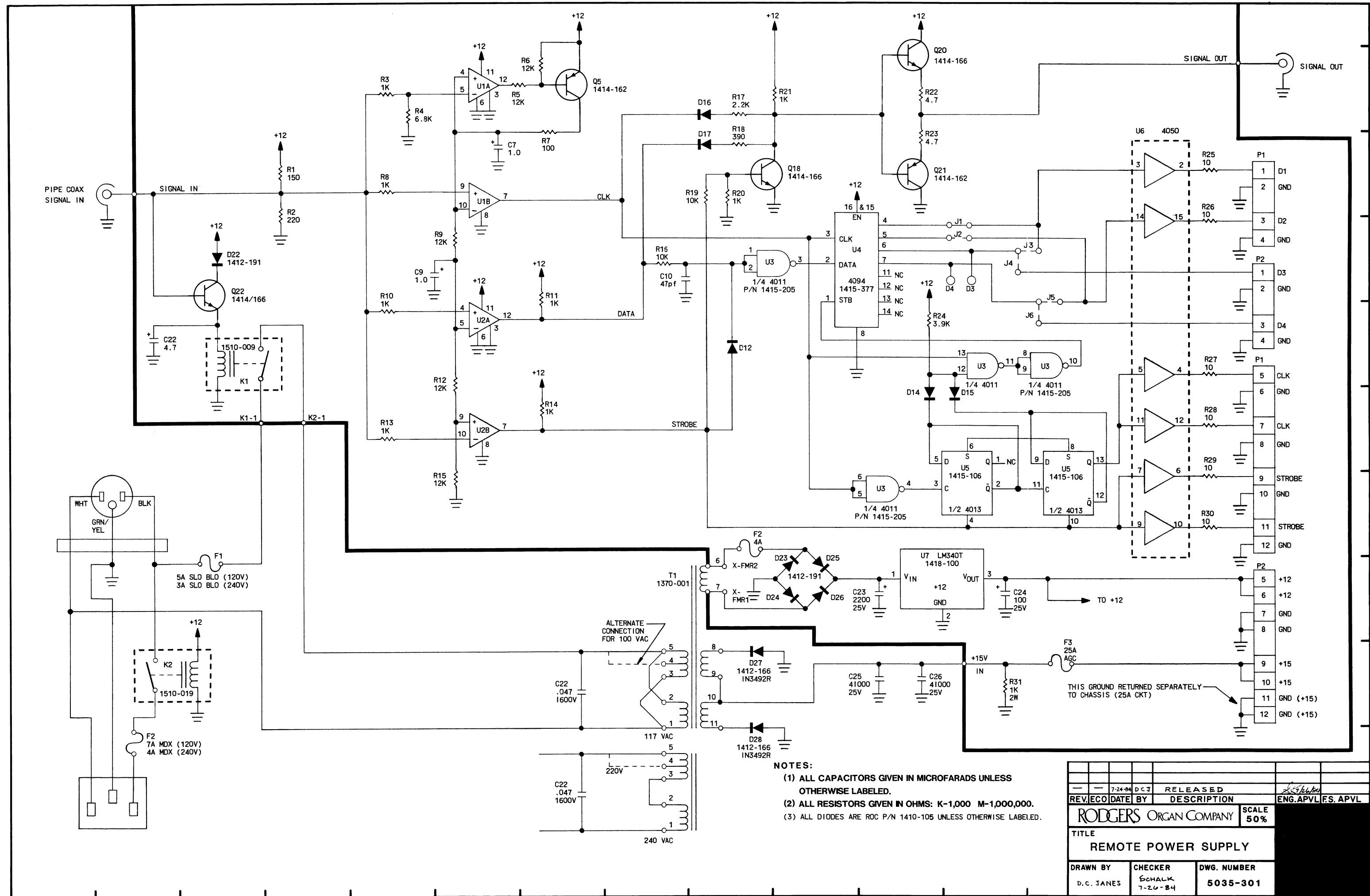


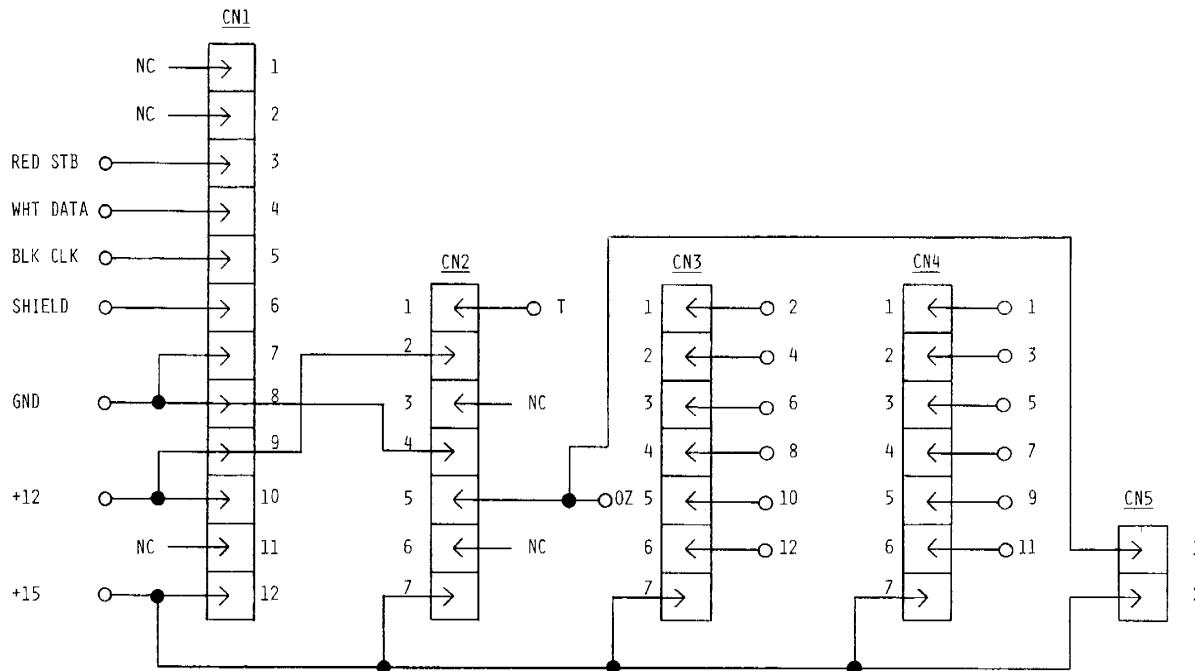
DECOUPLING

NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
- (3) ALL PARTS MARKED WITH * ARE NOT STUFFED.

A	-	7-12-84	DCJ	UPDATED TO B-O-M	FT	FT 7-12-84
—	—	B-1703	SP	RELEASED	MHENLE	J.L.W.
REV.	ECO	DATE	BY	DESCRIPTION	ENG. APVL	FS. APVL
RODGERS ORGAN COMPANY						SCALE 50%
TITLE OSCILLATOR, RC, NOTES 001-0012						
DRAWN BY S. PENCE	CHECKER E.SCHAFFER 8-15-83	DWG. NUMBER 5033-300				



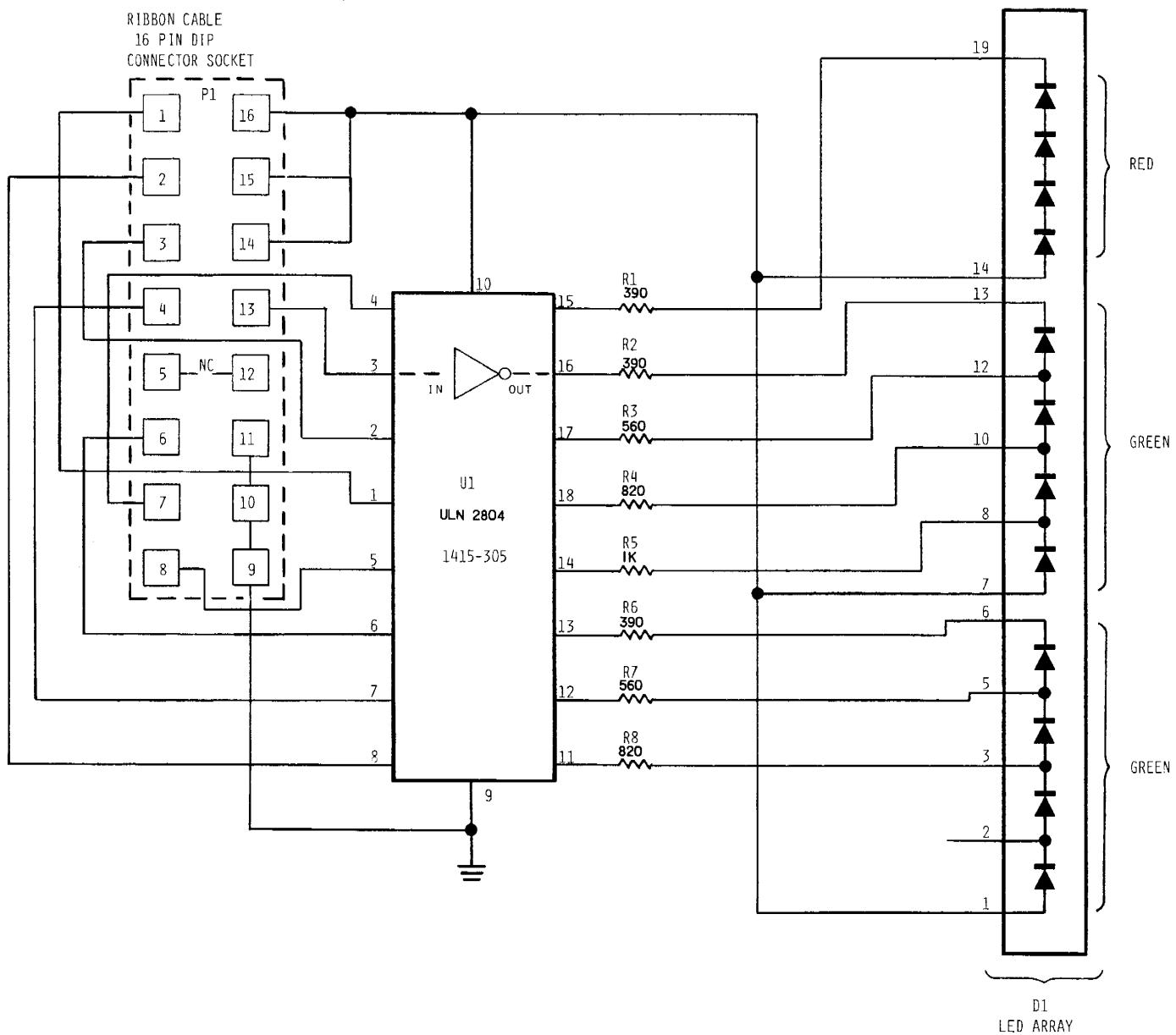


NOTES:

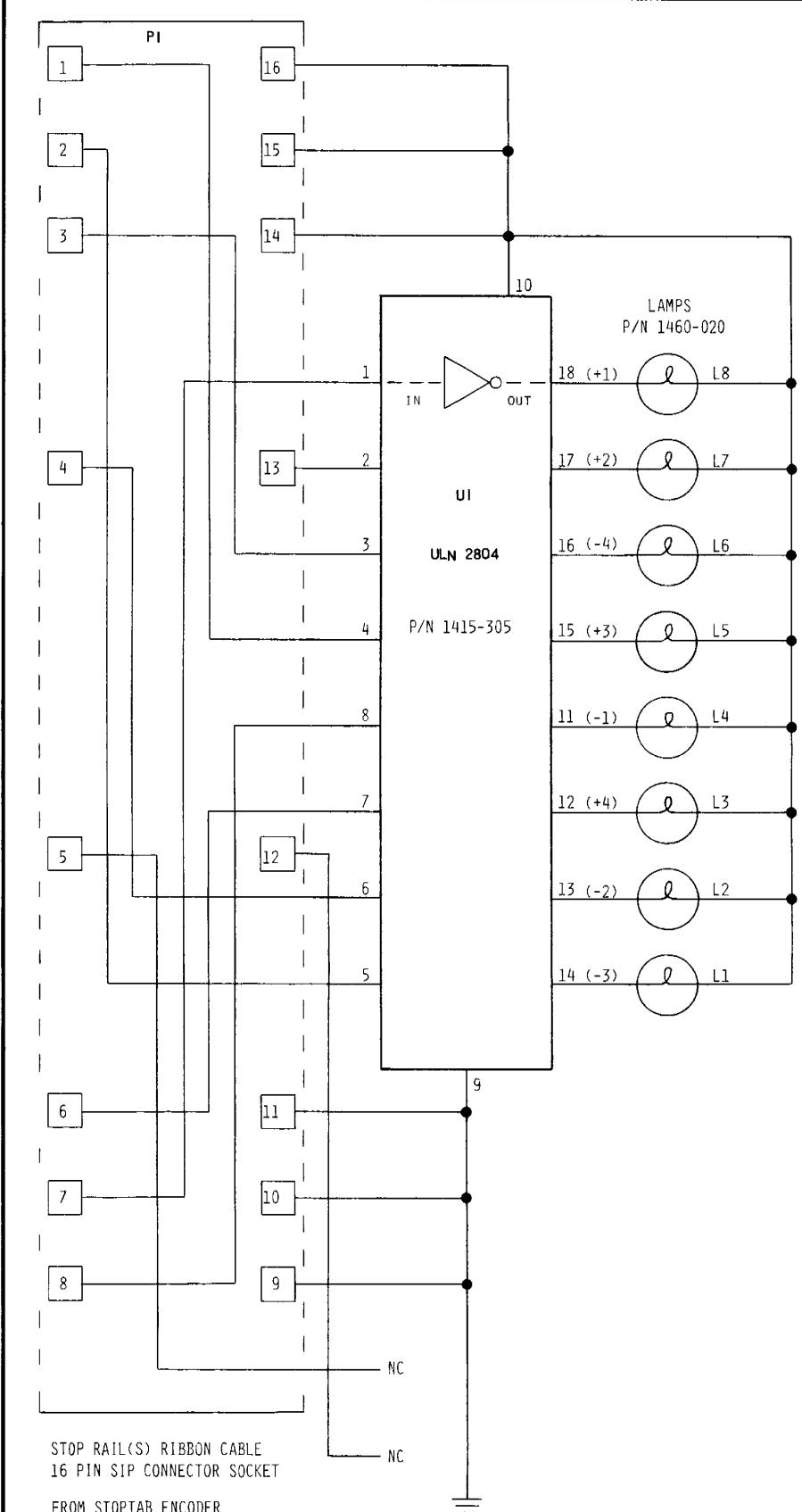
- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

REV.	ECO	DATE	RD	RELEASED	MENLE
		9-7-83	BY	DESCRIPTION	J.L.G.
RODGERS ORGAN COMPANY				SCALE	50%
TITLE PIPE CHEST INTERCONNECT, SINGLE RANK					
DRAWN BY	CHECKER	DWG. NUMBER			
R. DOUGHERTY	E. CHALK 9-7-83	5039-300			

(FROM STOPTAB ENCODER DWG 5018 SHT 4)



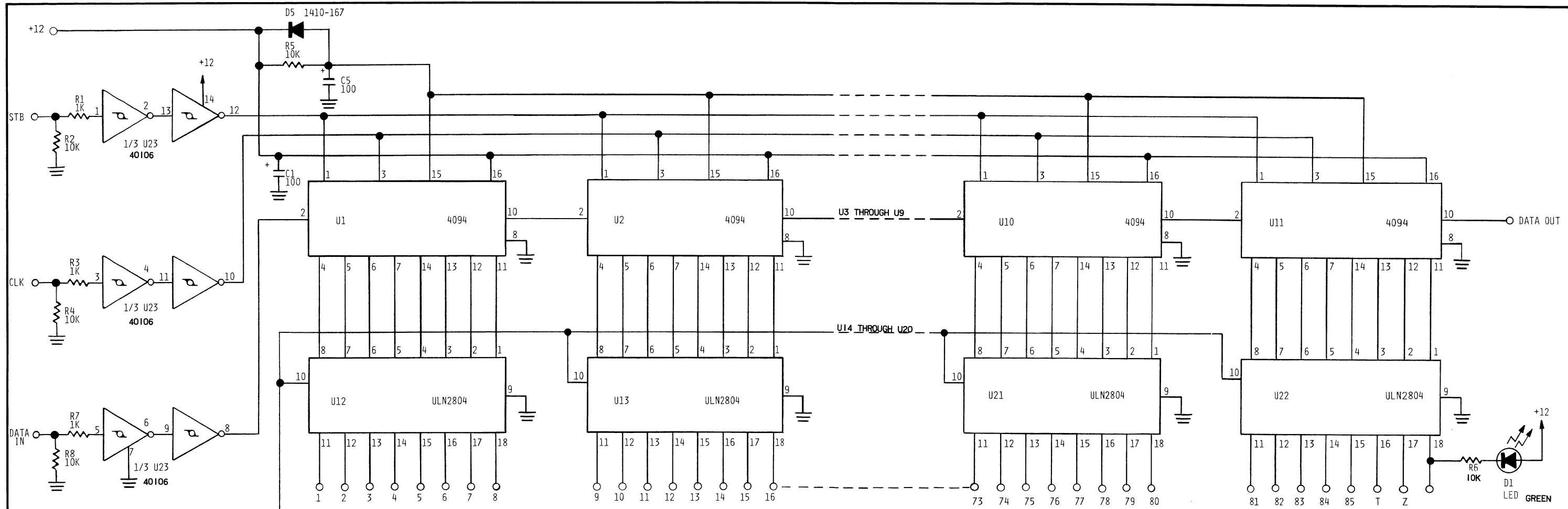
A	7-17	FT	ADD. NOTES	FT	FT 7-17-84
—	8/9/83	RD	RELEASED	MENLE	J.S.W.
REV. ECO DATE	BY	DESCRIPTION	ENG. APVL	F.S. APVL	
RODGERS ORGAN COMPANY					SCALE 50%
TITLE CRESCENDO INDICATOR					
DRAWN BY	CHECKER	DWG. NUMBER			
R. DOUGHERTY	SCHALK 8-16-83	5040-300			



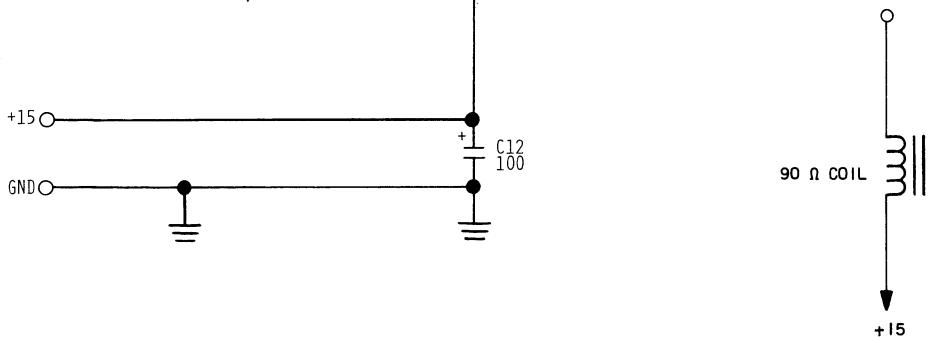
STOP RAIL(S) RIBBON CABLE
16 PIN SIP CONNECTOR SOCKET

FROM STOPTAB ENCODER
DWG 5018 SHT 4

A	-	7-17	FT	ADD NOTE	FT	FT 7-17-84
—	—	B-17-83	SP	RELEASED	MHENLE	<i>[Signature]</i>
REV.	ECO	DATE	BY	DESCRIPTION	ENG. APVL	F.S. APVL
RODGERS ORGAN COMPANY					SCALE 50%	
TITLE TRANSPOSER INDICATOR						
DRAWN BY SUSAN PENCE	CHECKER <i>S. HALL</i> 8-17-83	DWG. NUMBER 5041-300				



FROM POWER SUPPLY ASSEMBLY, DWG 5013

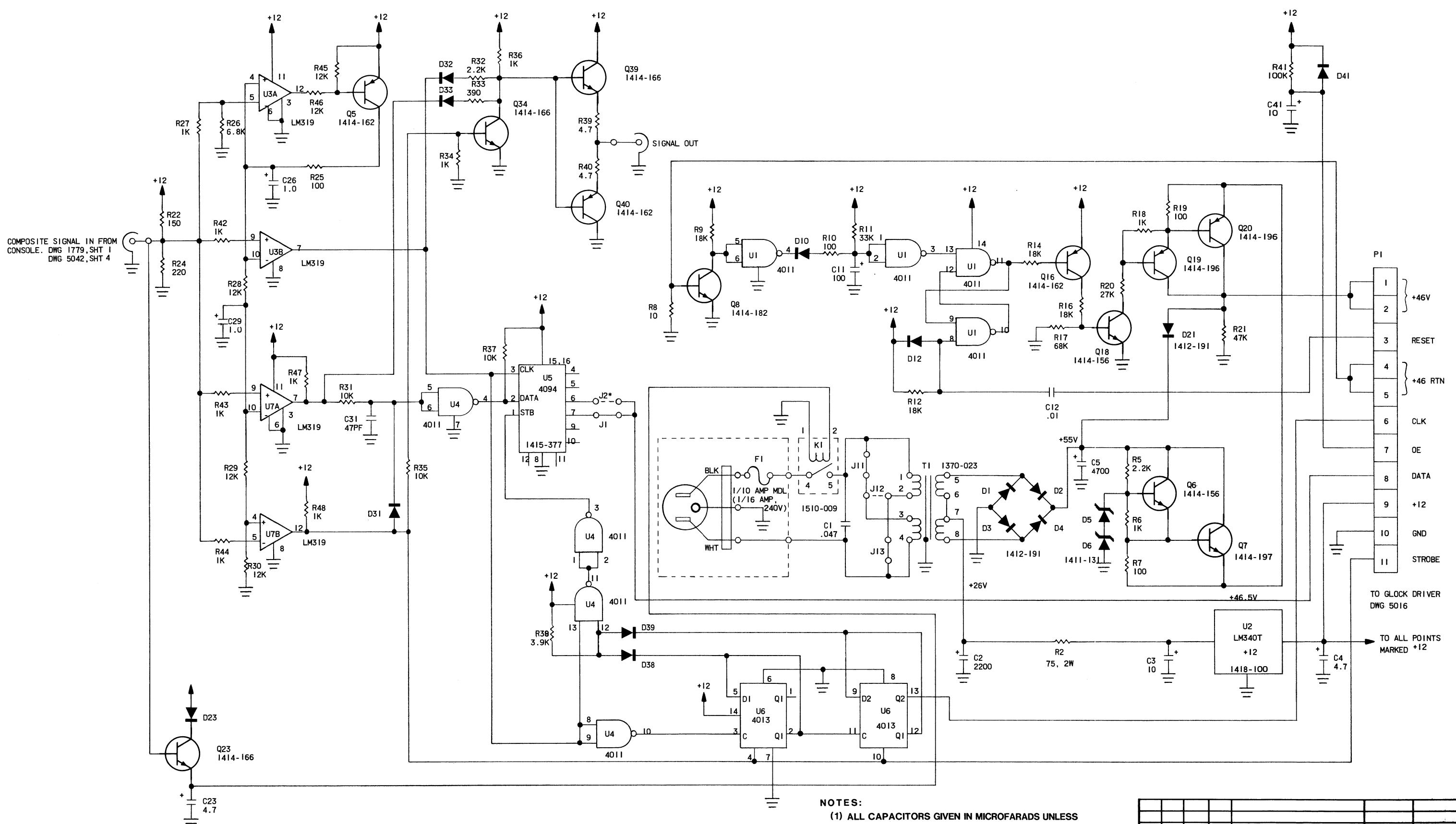


TYPICAL PIPE MAGNET
ROC P/N 1915-012 (3/4")
ROC P/N 1915-015 (1-1/4")

NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.
- (3) ALL 4094'S; ROC P/N 1415-377.
- (4) ALL 2804'S; ROC P/N 1415-305.
- (5) ALL 40106'S ARE ROC P/N 1415-116.
- (6) ALL LED'S ARE ROC P/N 1412-184.

A	7-12-84	DCJ	UPDATED PER BOM	FT	FT 7-12-84
-	11-65	RD	RELEASED	R25	FT 7-12-84
REV. ECO	DATE	BY	DESCRIPTION	ENG. APVL	F.S. APVL
			RODGERS ORGAN COMPANY	SCALE	50%
			TITLE		
			1 RANK PIPE MAGNET LATCH/DRIVERS		
DRAWN BY	CHECKER		DWG. NUMBER		
R. DOUGHERTY	E. SCHALL		5047-300		



REV.	ECO	DATE	BY	RELEASED
				FT 7-10-84 FT 7-10-84
				DESCRIPTION
				ENG. APVL F.S. APVL
RODGERS ORGAN COMPANY SCALE 50%				
TITLE GLOCKENSPIEL POWER & LOGIC				
DRAWN BY	CHECKER	DWG. NUMBER		
D.C.JANES		5046-302		

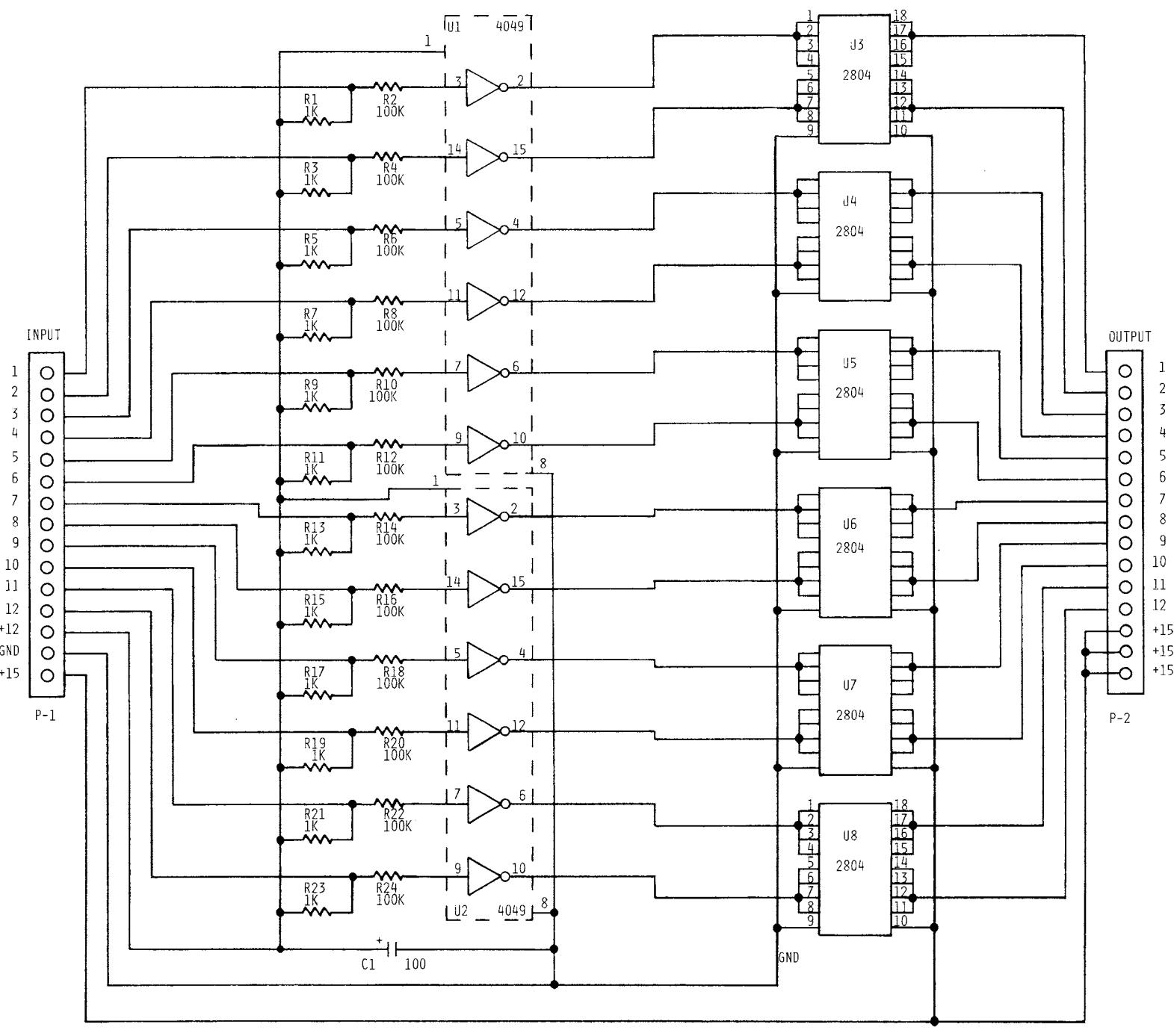
NOTES:

(1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.

(2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

3. ALL 3804'S ARE ROC P/N 1415-305.

4. ALL 4049'S ARE ROC P/N 1415-158.



DRAWN BY	CHECKER	DWG. NUMBER
D.C. JANES	J.D. HORN	5055-300

PIPE OFFSET DRIVERS

I

K

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4

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9

8

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6

5

4

3

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1

B

C

E

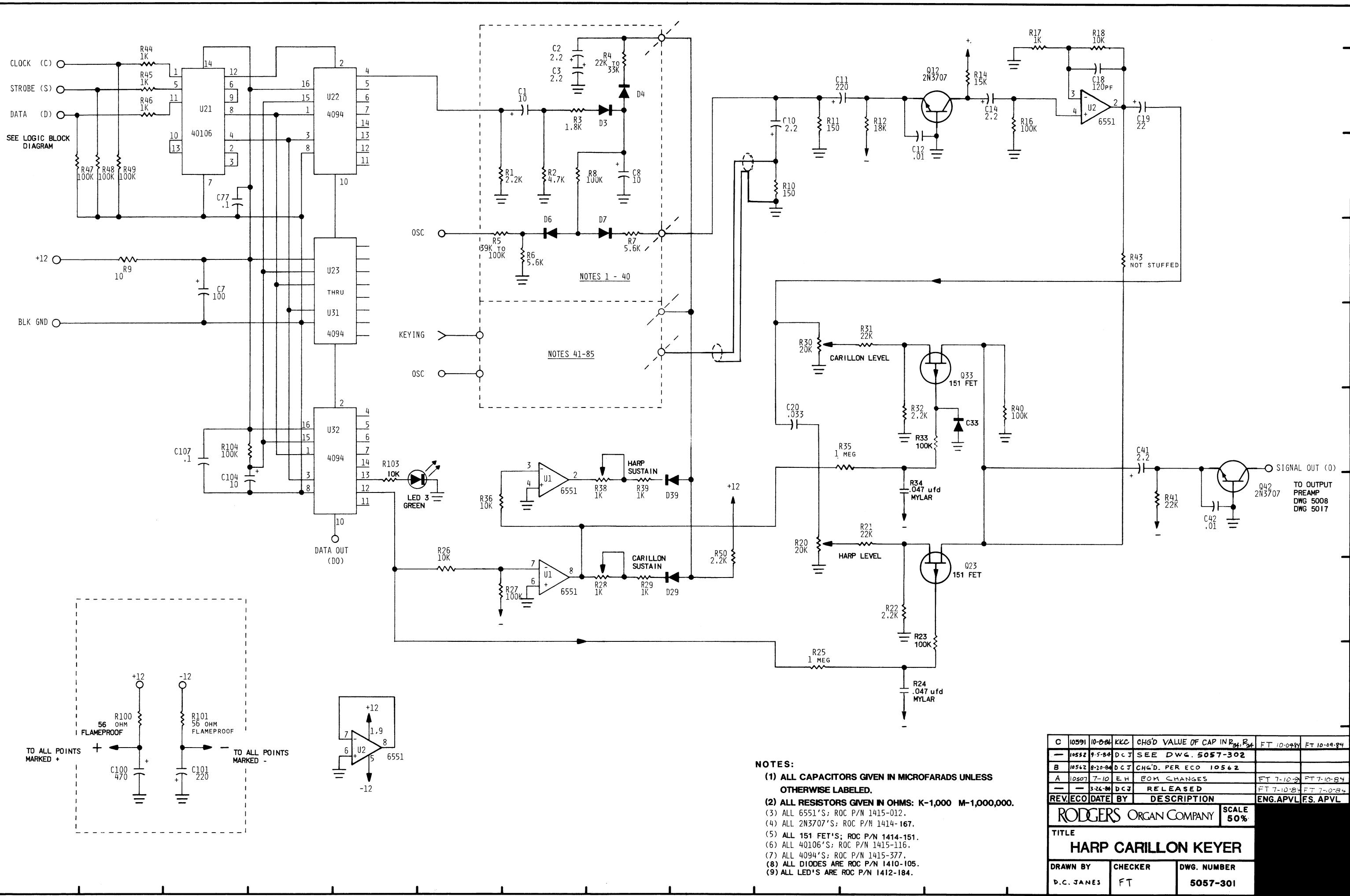
F

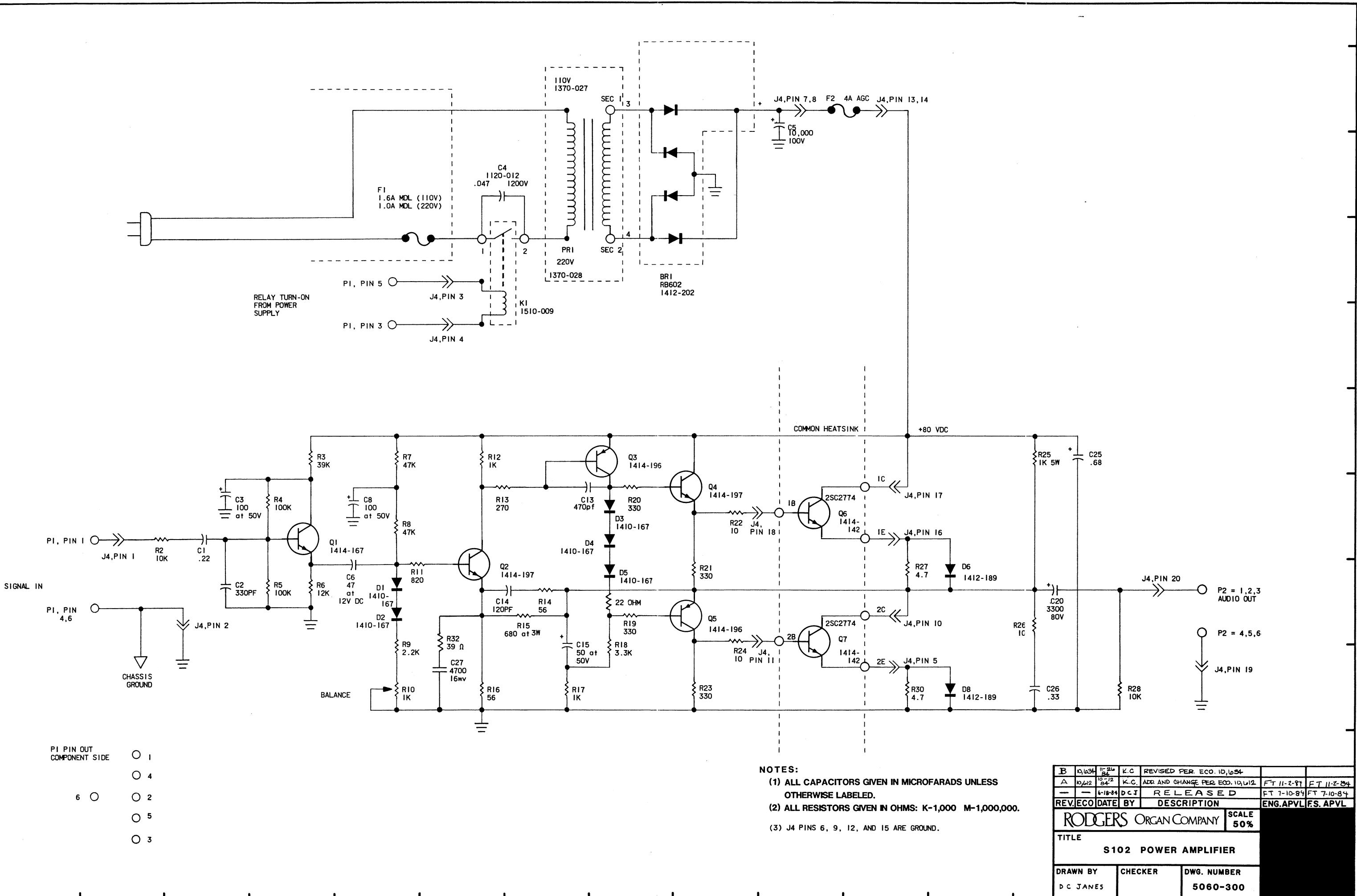
G

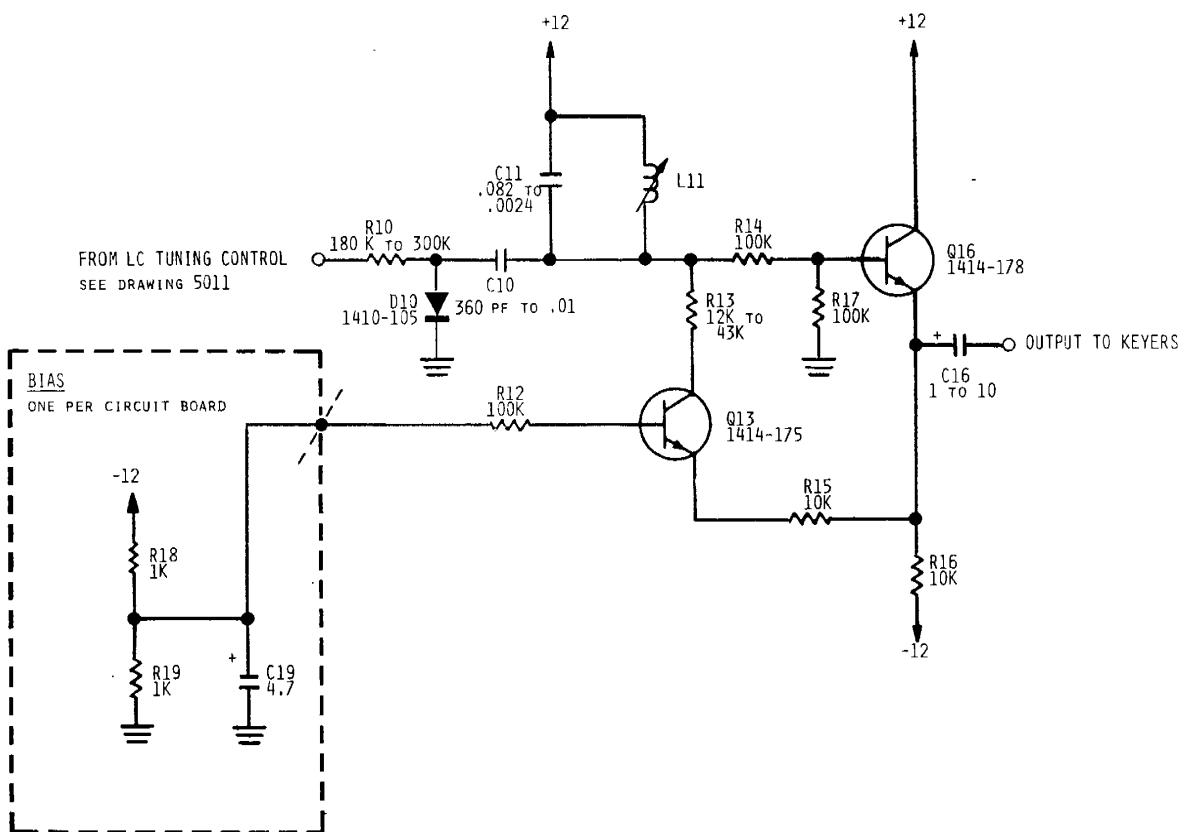
T

-

J



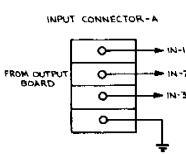
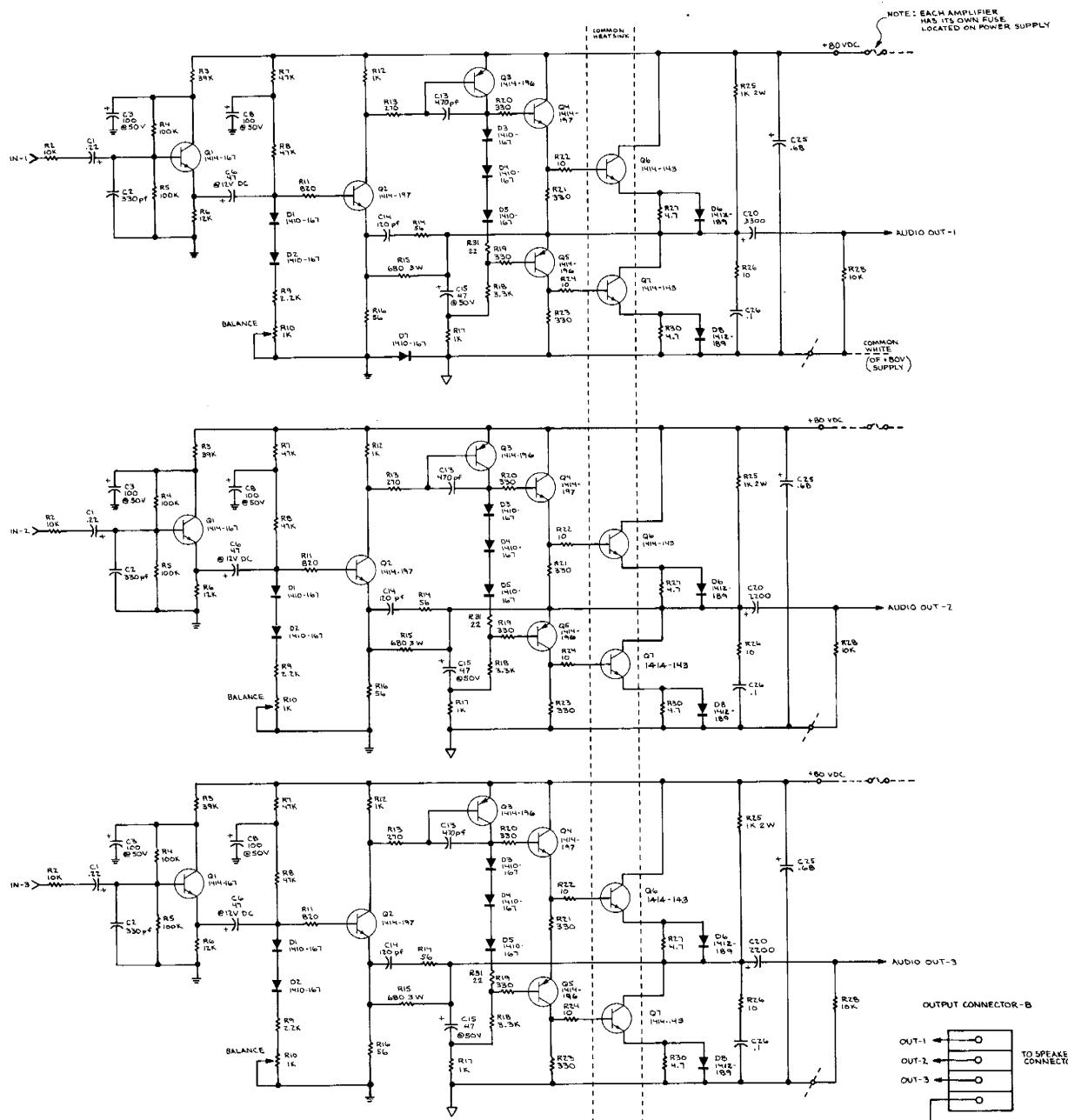




NOTES:

- (1) ALL CAPACITORS GIVEN IN MICROFARADS UNLESS OTHERWISE LABELED.
- (2) ALL RESISTORS GIVEN IN OHMS: K-1,000 M-1,000,000.

7-7-	RD	RELEASED	M4	J.L.W.
REV. ECO	DATE	BY	DESCRIPTION	
			ENG. APVL FS. APVL	
RODGERS ORGAN COMPANY				
SCALE 50%				
TITLE LC OSCILLATOR, NOTES 25-84				
DRAWN BY	CHECKER	DWG. NUMBER		
R. DOUGHERTY	E. CHALK 7-6-83	6112-631		



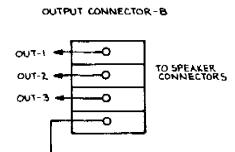
NOTES
ALL CAPACITORS GIVEN IN MICROFARADS
UNLESS OTHERWISE LABELED.

ALL RESISTANCES GIVEN IN OHMS;
K=1,000 M=1,000,000.

THIS BOARD IS RGC 1710

IMPORTANT:
VOLTAGE AMPLITUDE MEASUREMENTS AS SHOWN
REFLECT THE TOTAL VOLUME AND DIFFERENT
INSTRUMENTS AS WELL AS WITHIN THE INSTRUMENTS
ITSELF DUE TO NORMAL MANUFACTURING TOLERANCES
AND TRANSISTOR CHARACTERISTICS.

INDICATES DC VOLTAGE MEASUREMENTS
MADE WITH A 20,000 OHM PER VOLT DC
VOLTMETERS SUCH AS VTVM'S MAY GIVE
SLIGHTLY DIFFERENT READINGS.



D	10-17-64	KIC	ADD 22-DIM 100% IN DS DRAWING C10410 REV B1 FT 2-196
C	75-04	BGS	REVISED VALVE WAS SUBSTITUTED 1760 FT 7-1965
B	7-11-63	SP	ADDED LDS 650, 705, 740, 770, 785 AND 1N3605
A	2-2-62	CCC	REV / REL PER ENG R 2-1962
REV	DATE	BY	DESCRIPTION APPVD.
			REVISIONS
RODGERS ORGAN COMPANY			
DRAWN:	DATE:	CHECKED:	SCALE:
MB	4-1-61	HM	4-6 B1 24%
PROJ. ENG.:	DATE:	MODEL:	WGS. 650, 705, 740, 770, 785 650B, 705B, 740B, 770B, 785B DWG. NO. 6112-770
SET	4-1-61		
TITLE: POWER AMPLIFIER			