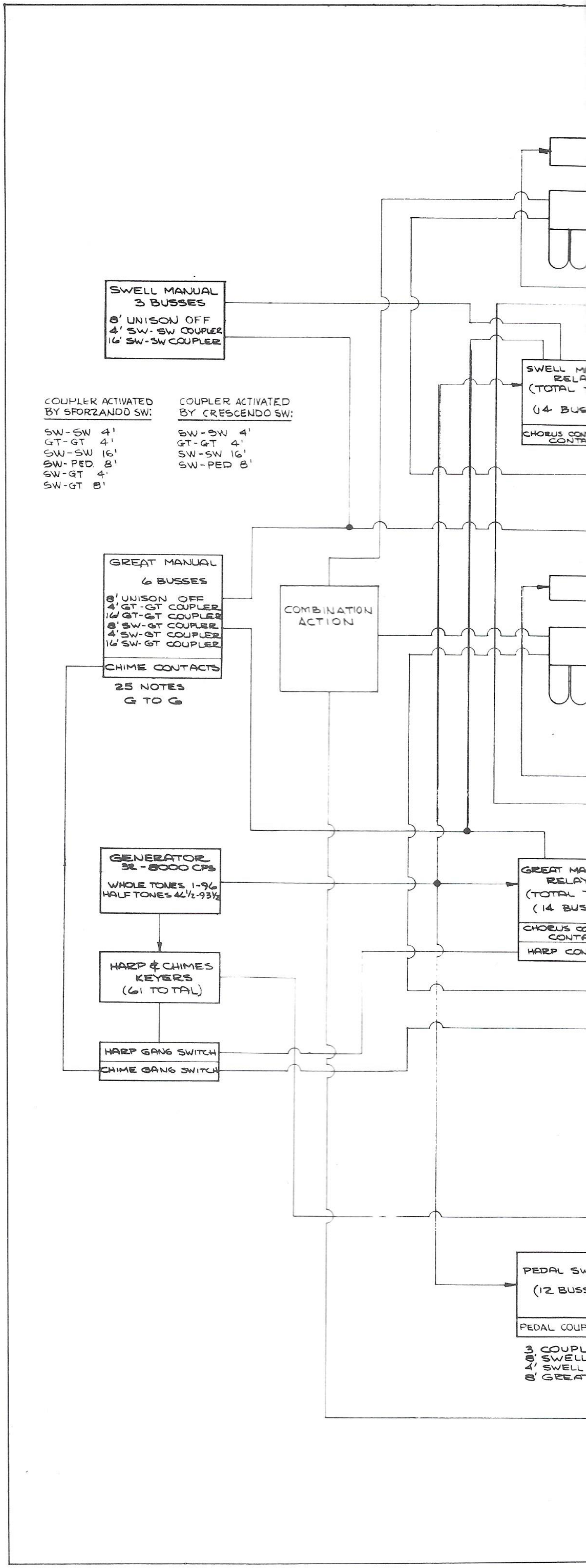
SERVICE MANUAL

HAMMOND GRAND 100

Part 2

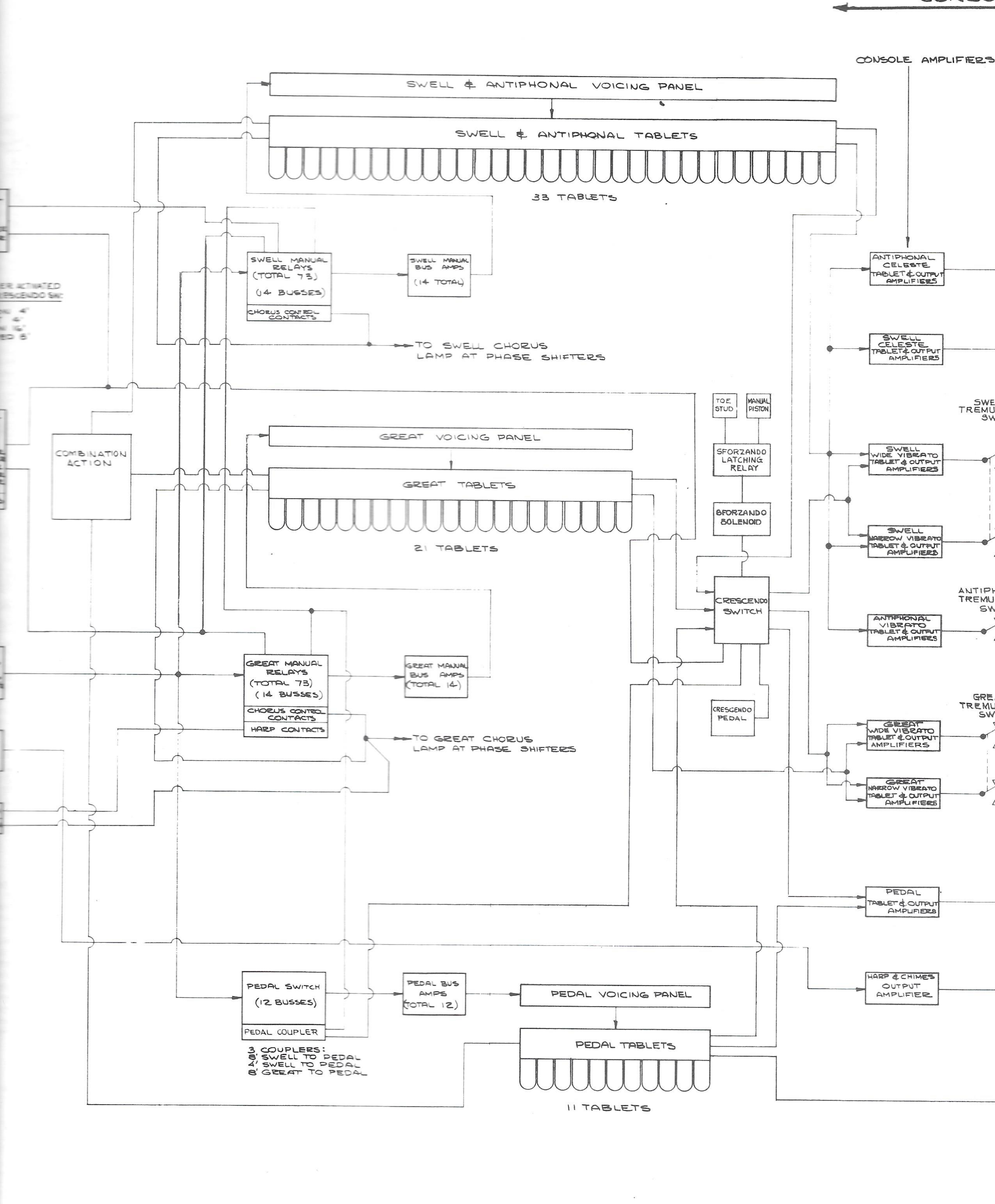
HO-5502

HAMMOND ORGAN COMPANY
DIVISION OF HAMMOND CORPORATION
11700 Copenhagen Court • Franklin Park, Ill. 60131
312—766-6950

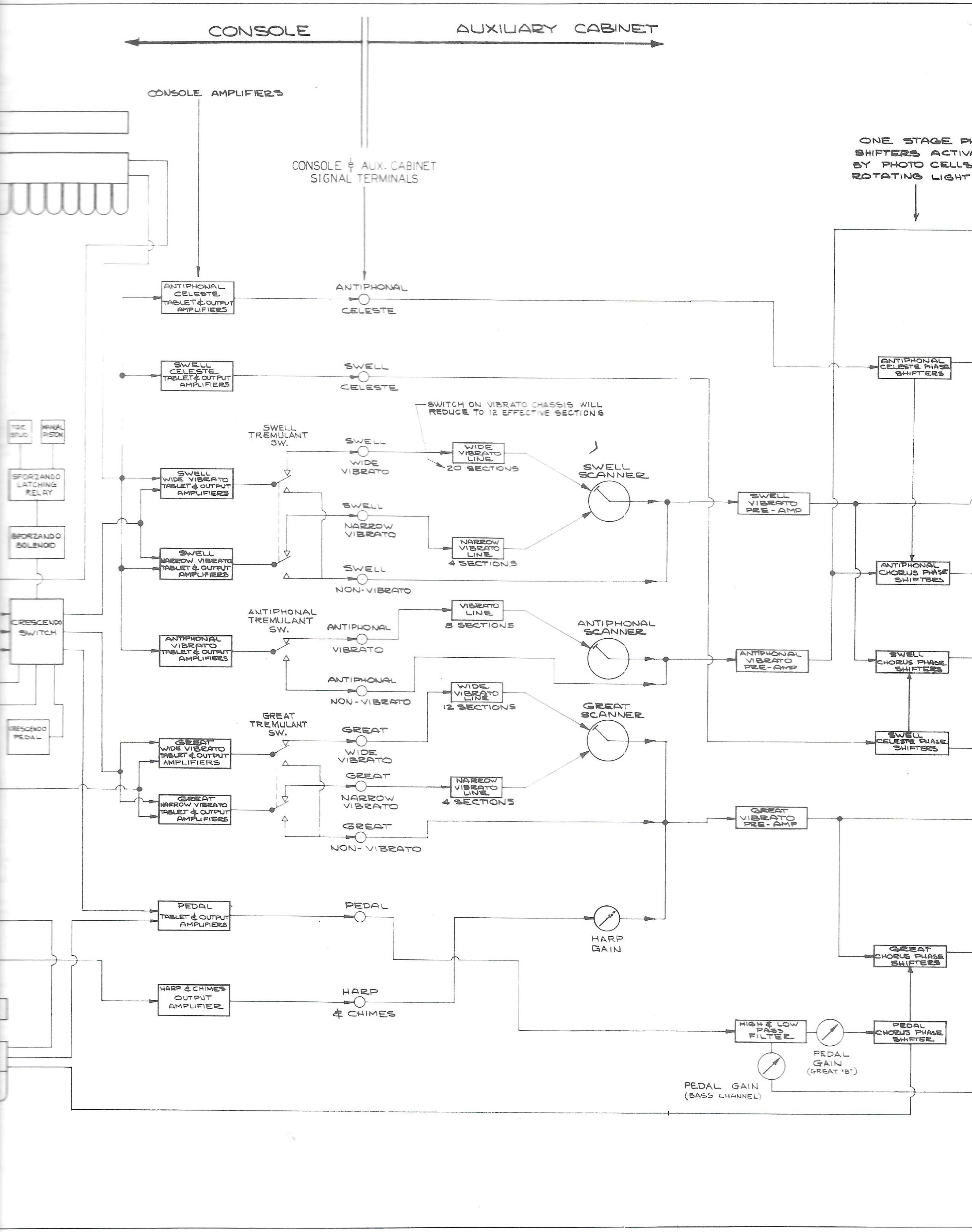


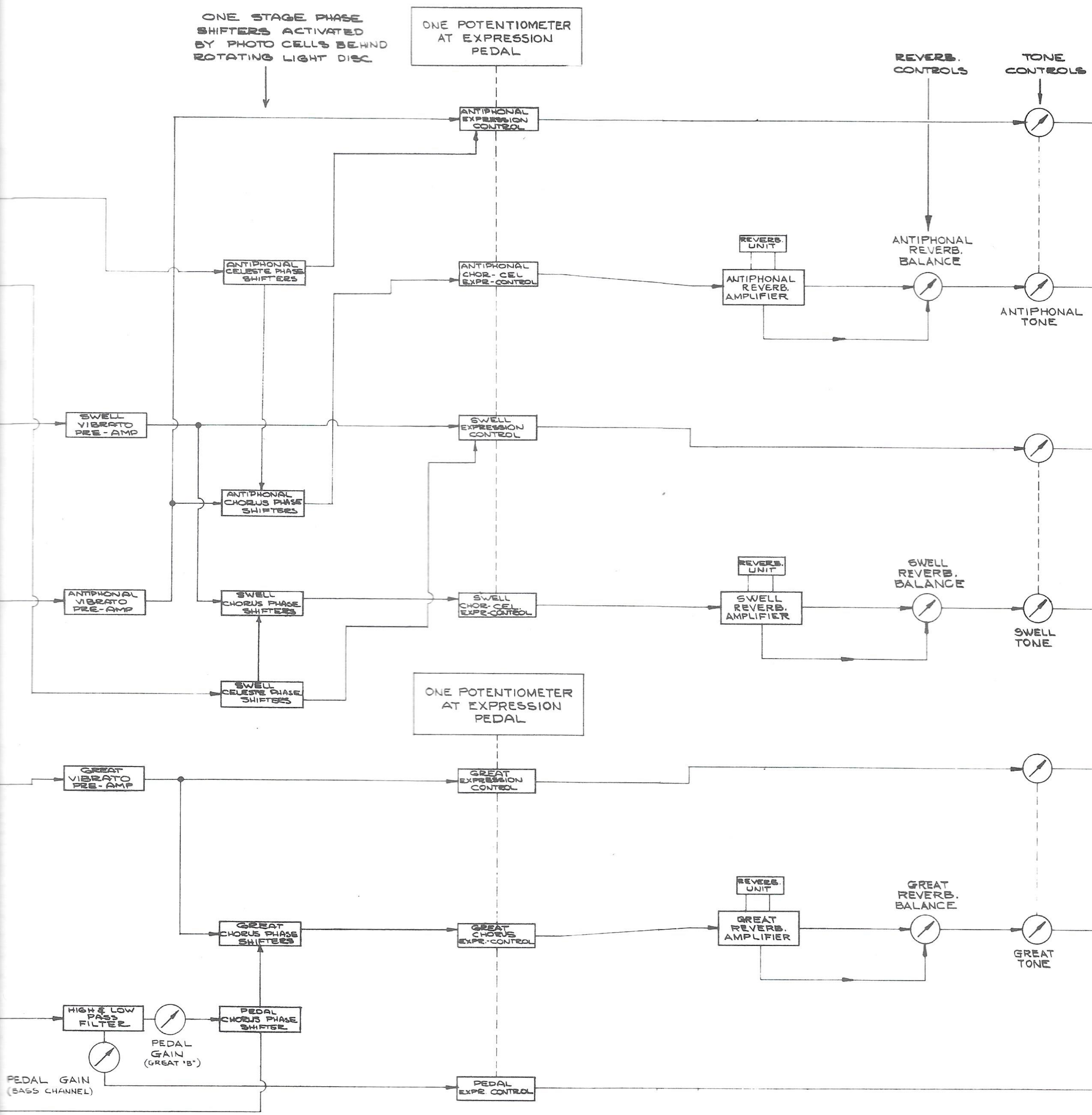
SWELL MANUAL
3 BUSSES
8' UNISON OFF
4' SW-SW COUPLER
16' SW-SW COUPLER
COUPLER ACTIVATED BY SFORZANDO SW:
SW-SW 4'
GT-GT 4'
SW-SW 16'
SW-PED. 8'
SW-GT 4'
SW-GT 8'
COUPLER ACTIVATED BY CRESCENDO SW:
SW-SW 4'
GT-GT 4'
SW-SW 16'
SW-PED 8'
GREAT MANUAL
6 BUSSES
8' UNISON OFF
4' GT-GT COUPLER
16' GT-GT COUPLER
8' SW-GT COUPLER
4' SW-GT COUPLER
16' SW-GT COUPLER
CHIME CONTACTS
25 NOTES
G TO G
COMBINATION ACTION
GENERATOR
32 - 8000 CPS
WHOLE TONES 1-96
HALF TONES 42½-93½
HARP & CHIMES KEYERS
(61 TOTAL)
HARP GANG SWITCH
CHIME GANG SWITCH

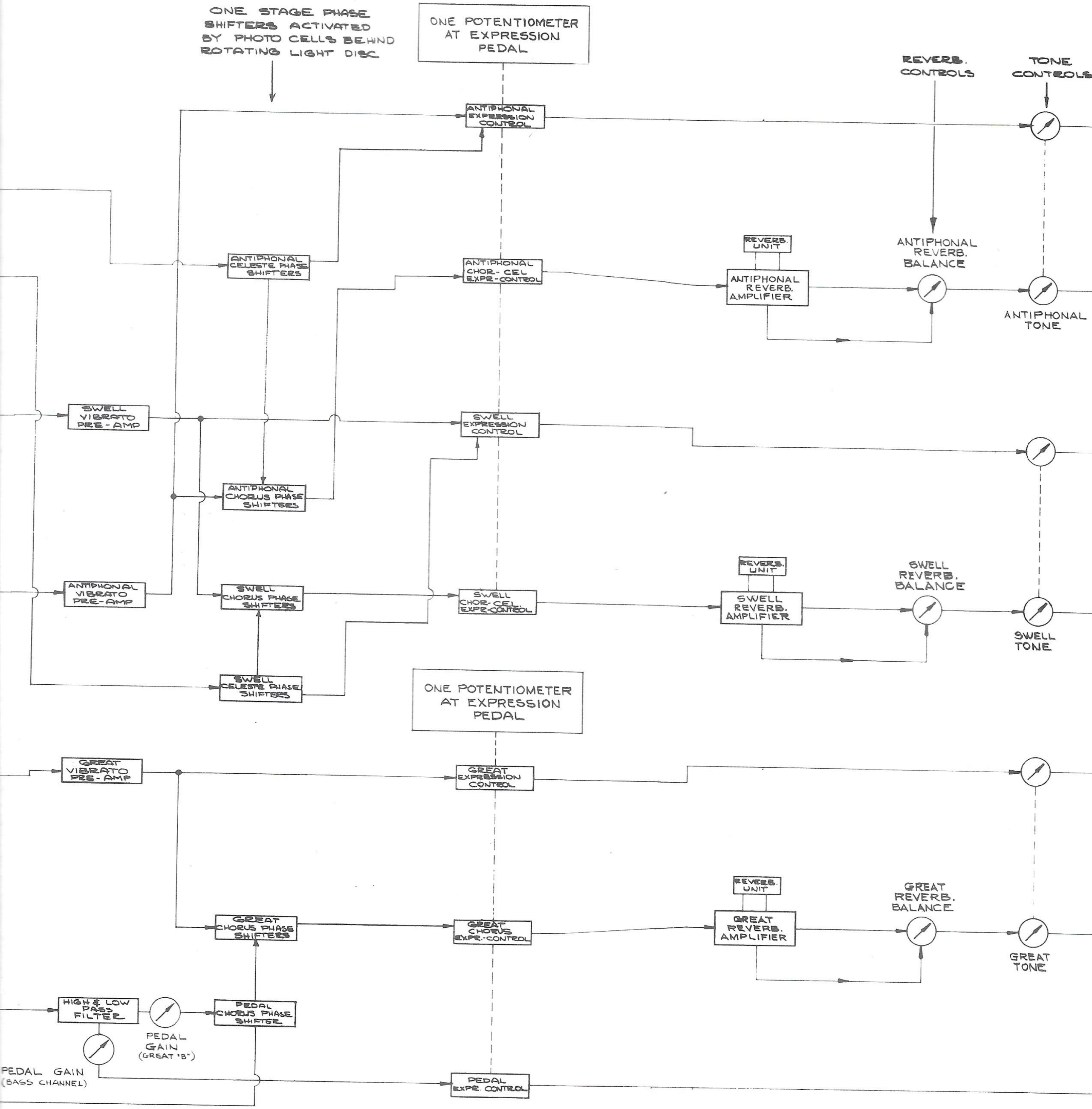
CONSO



CONSOLE AMPLIFIERS
SWELL & ANTIPHONAL VOICING PANEL
SWELL & ANTIPHONAL TABLETS
33 TABLETS
SWELL MANUAL RELAYS (TOTAL 73) (14 BUSSES)
CHORUS CONTROL CONTACTS
SWELL MANUAL BUS AMPS (14 TOTAL)
TO SWELL CHORUS LAMP AT PHASE SHIFTERS
COMBINATION ACTION
GREAT VOICING PANEL
GREAT TABLETS
21 TABLETS
GREAT MANUAL RELAYS (TOTAL 73) (14 BUSSES)
CHORUS CONTROL CONTACTS
HARP CONTACTS
GREAT MANUAL BUS AMPS (TOTAL 14)
TO GREAT CHORUS LAMP AT PHASE SHIFTERS
TOE STUD
MANUAL PISTON
SFORZANDO LATCHING RELAY
SFORZANDO SOLENOID
CRESCENDO SWITCH
CRESCENDO PEDAL
ANTIPHONAL CELESTE TABLET & OUTPUT AMPLIFIERS
SWELL CELESTE TABLET & OUTPUT AMPLIFIERS
SWELL WIDE VIBRATO TABLET & OUTPUT AMPLIFIERS
SWELL NARROW VIBRATO TABLET & OUTPUT AMPLIFIERS
ANTIPHONAL VIBRATO TABLET & OUTPUT AMPLIFIERS
GREAT WIDE VIBRATO TABLET & OUTPUT AMPLIFIERS
GREAT NARROW VIBRATO TABLET & OUTPUT AMPLIFIERS
PEDAL TABLET & OUTPUT AMPLIFIERS
HARP & CHIMES OUTPUT AMPLIFIER
PEDAL SWITCH (12 BUSSES)
PEDAL COUPLER
3 COUPLERS:
8' SWELL TO PEDAL
4' SWELL TO PEDAL
8' GREAT TO PEDAL
PEDAL BUS AMPS (TOTAL 12)
PEDAL VOICING PANEL
PEDAL TABLETS
11 TABLETS


CONSOLE
AUXILIARY CABINET
CONSOLE AMPLIFIERS
CONSOLE & AUX. CABINET SIGNAL TERMINALS
ONE STAGE PH
SHIFTERS ACTIVA
BY PHOTO CELLS
ROTATING LIGHT
ANTIPHONAL CELESTE TABLET & OUTPUT AMPLIFIERS
ANTIPHONAL CELESTE
SWELL CELESTE TABLET & OUTPUT AMPLIFIERS
SWELL CELESTE
SWITCH ON VIBRATO CHASSIS WILL REDUCE TO 12 EFFECTIVE SECTIONS
TOE STUD
MANUAL PISTON
SFORZANDO LATCHING RELAY
SFORZANDO SOLENOID
SWELL TREMULANT SW.
SWELL WIDE VIBRATO
WIDE VIBRATO LINE
20 SECTIONS
SWELL SCANNER
SWELL WIDE VIBRATO TABLET & OUTPUT AMPLIFIERS
SWELL NARROW VIBRATO
NARROW VIBRATO LINE
4 SECTIONS
SWELL NARROW VIBRATO TABLET & OUTPUT AMPLIFIERS
SWELL NON-VIBRATO
SWELL VIBRATO PRE-AMP
ANTIPHONAL CELESTE PHASE SHIFTERS
ANTIPHONAL CHORUS PHASE SHIFTERS
CRESCENDO SWITCH
ANTIPHONAL TREMULANT SW.
ANTIPHONAL VIBRATO
VIBRATO LINE
8 SECTIONS
ANTIPHONAL SCANNER
ANTIPHONAL VIBRATO TABLET & OUTPUT AMPLIFIERS
ANTIPHONAL NON-VIBRATO
ANTIPHONAL VIBRATO PRE-AMP
SWELL CHORUS PHASE SHIFTERS
WIDE VIBRATO LINE
12 SECTIONS
GREAT SCANNER
GREAT TREMULANT SW.
CRESCENDO PEDAL
GREAT WIDE VIBRATO TABLET & OUTPUT AMPLIFIERS
GREAT WIDE VIBRATO
SWELL CELESTE PHASE SHIFTERS
GREAT NARROW VIBRATO
NARROW VIBRATO LINE
4 SECTIONS
GREAT NARROW VIBRATO TABLET & OUTPUT AMPLIFIERS
GREAT NON-VIBRATO
GREAT VIBRATO PRE-AMP
PEDAL TABLET & OUTPUT AMPLIFIERS
PEDAL
HARP GAIN
GREAT CHORUS PHASE SHIFTERS
HARP & CHIMES OUTPUT AMPLIFIER
HARP & CHIMES
HIGH & LOW PASS FILTER
PEDAL CHORUS PHASE SHIFTER
PEDAL GAIN (GREAT "B")
PEDAL GAIN (BASS CHANNEL)


ONE STAGE PHASE SHIFTERS ACTIVATED BY PHOTO CELLS BEHIND ROTATING LIGHT DISC
ONE POTENTIOMETER AT EXPRESSION PEDAL
REVERB. CONTROLS
TONE CONTROLS
ANTIPHONAL EXPRESSION CONTROL
ANTIPHONAL CELESTE PHASE SHIFTERS
ANTIPHONAL CHOR-CEL EXPR-CONTROL
REVERB. UNIT
ANTIPHONAL REVERB. AMPLIFIER
ANTIPHONAL REVERB. BALANCE
ANTIPHONAL TONE
SWELL VIBRATO PRE-AMP
SWELL EXPRESSION CONTROL
ANTIPHONAL CHORUS PHASE SHIFTERS
ANTIPHONAL VIBRATO PRE-AMP
SWELL CHORUS PHASE SHIFTERS
SWELL CHOR-CEL EXPR-CONTROL
REVERB. UNIT
SWELL REVERB. AMPLIFIER
SWELL REVERB. BALANCE
SWELL TONE
SWELL CELESTE PHASE SHIFTERS
ONE POTENTIOMETER AT EXPRESSION PEDAL
GREAT VIBRATO PRE-AMP
GREAT EXPRESSION CONTROL
GREAT CHORUS PHASE SHIFTERS
GREAT CHORUS EXPR-CONTROL
REVERB. UNIT
GREAT REVERB. AMPLIFIER
GREAT REVERB. BALANCE
GREAT TONE
HIGH & LOW PASS FILTER
PEDAL GAIN (GREAT "B")
PEDAL CHORUS PHASE SHIFTER
PEDAL GAIN (BASS CHANNEL)
PEDAL EXPR CONTROL


ONE STAGE PHASE SHIFTERS ACTIVATED BY PHOTO CELLS BEHIND ROTATING LIGHT DISC
ONE POTENTIOMETER AT EXPRESSION PEDAL
REVERB. CONTROLS
TONE CONTROLS
ANTIPHONAL EXPRESSION CONTROL
ANTIPHONAL CELESTE PHASE SHIFTERS
ANTIPHONAL CHOR-CEL EXPR-CONTROL
REVERB. UNIT
ANTIPHONAL REVERB. AMPLIFIER
ANTIPHONAL REVERB. BALANCE
ANTIPHONAL TONE
SWELL VIBRATO PRE-AMP
SWELL EXPRESSION CONTROL
ANTIPHONAL CHORUS PHASE SHIFTERS
ANTIPHONAL VIBRATO PRE-AMP
SWELL CHORUS PHASE SHIFTERS
SWELL CHOR-CEL. EXPR-CONTROL
REVERB. UNIT
SWELL REVERB. AMPLIFIER
SWELL REVERB. BALANCE
SWELL TONE
SWELL CELESTE PHASE SHIFTERS
ONE POTENTIOMETER AT EXPRESSION PEDAL
GREAT VIBRATO PRE-AMP
GREAT EXPRESSION CONTROL
GREAT CHORUS PHASE SHIFTERS
GREAT CHORUS EXPR-CONTROL
REVERB. UNIT
GREAT REVERB. AMPLIFIER
GREAT REVERB. BALANCE
GREAT TONE
HIGH & LOW PASS FILTER
PEDAL GAIN (GREAT "B")
PEDAL CHORUS PHASE SHIFTER
PEDAL GAIN (BASS CHANNEL)
PEDAL EXPR. CONTROL

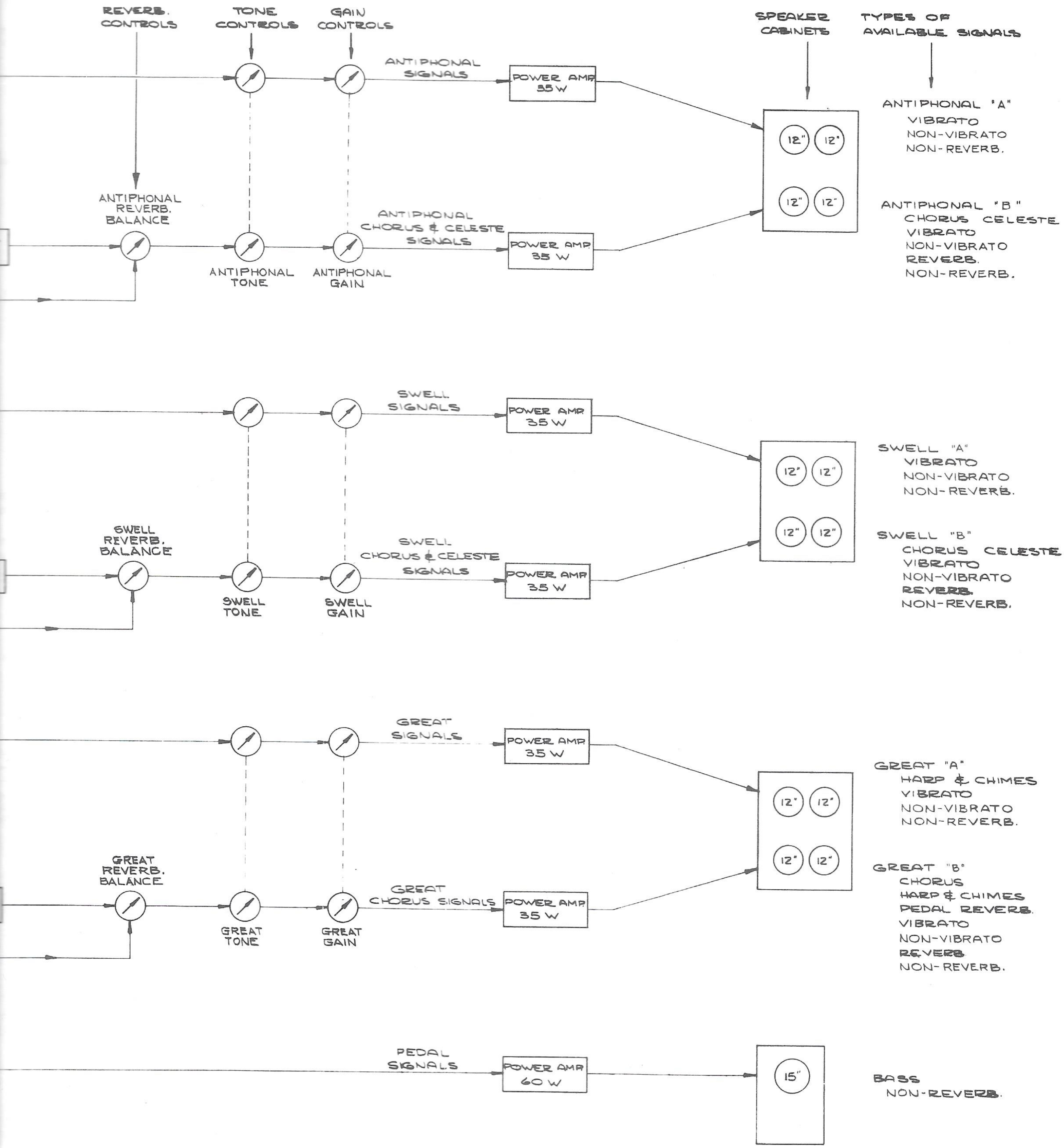


FIGURE 1 BLOCK DIAGRAM

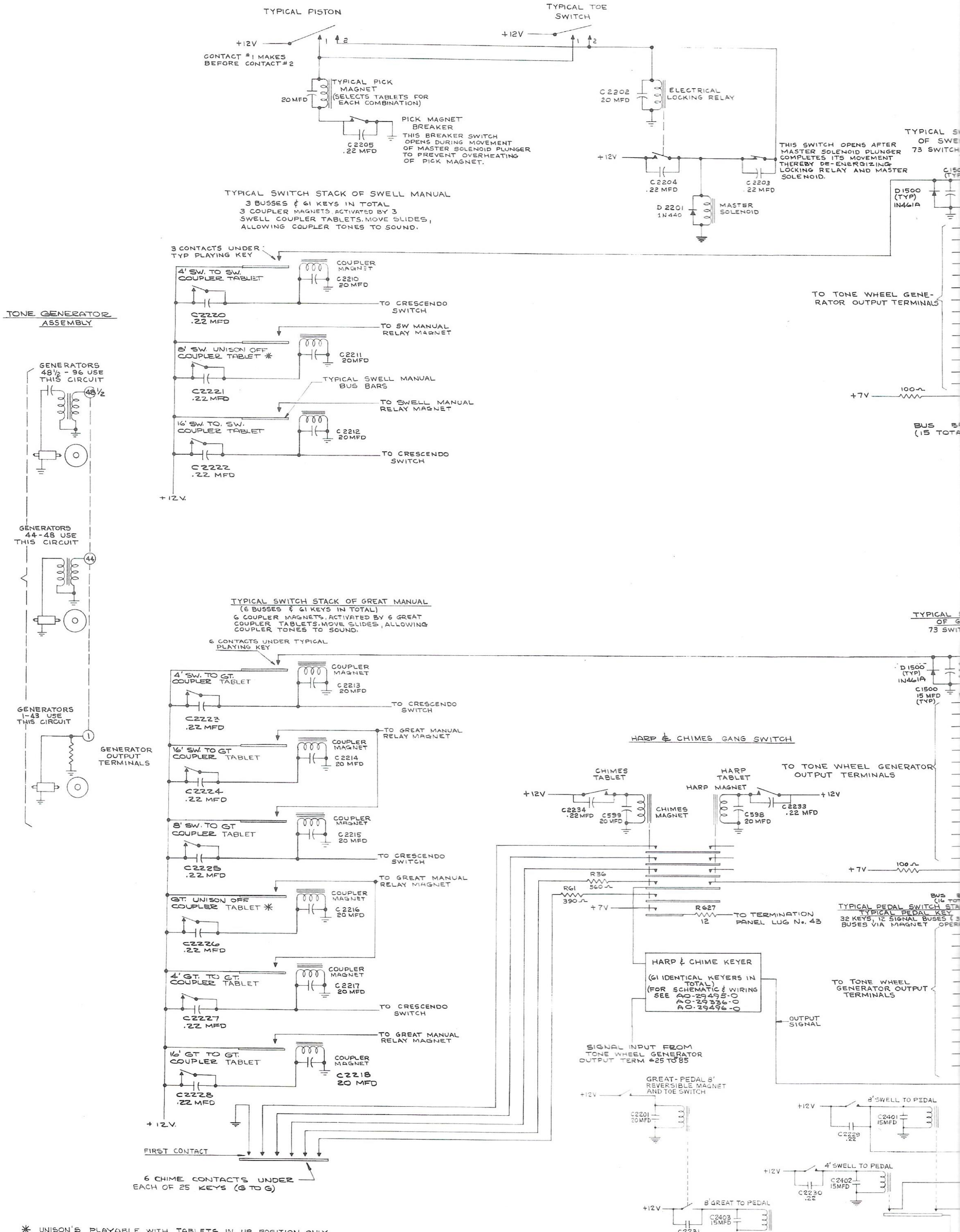
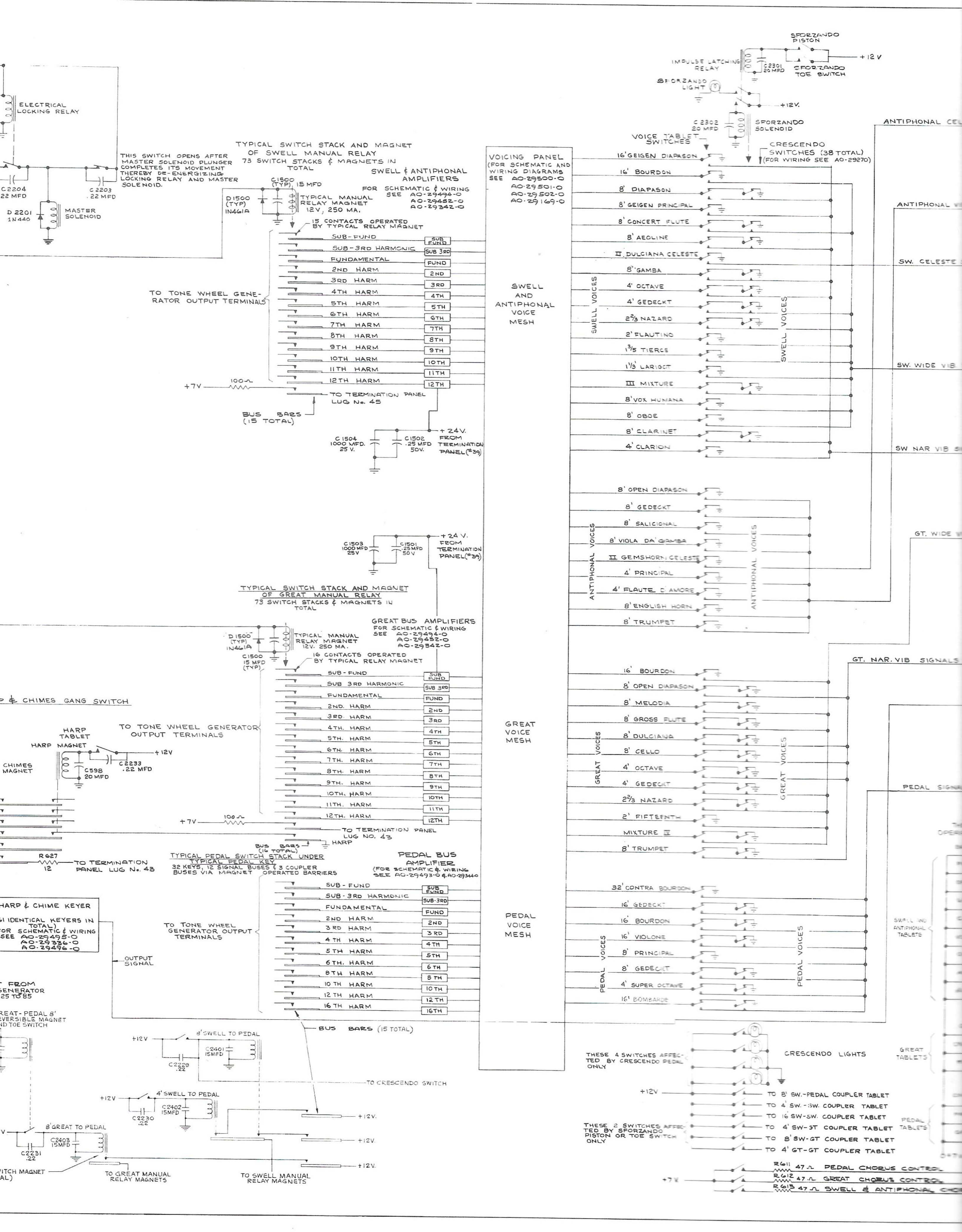
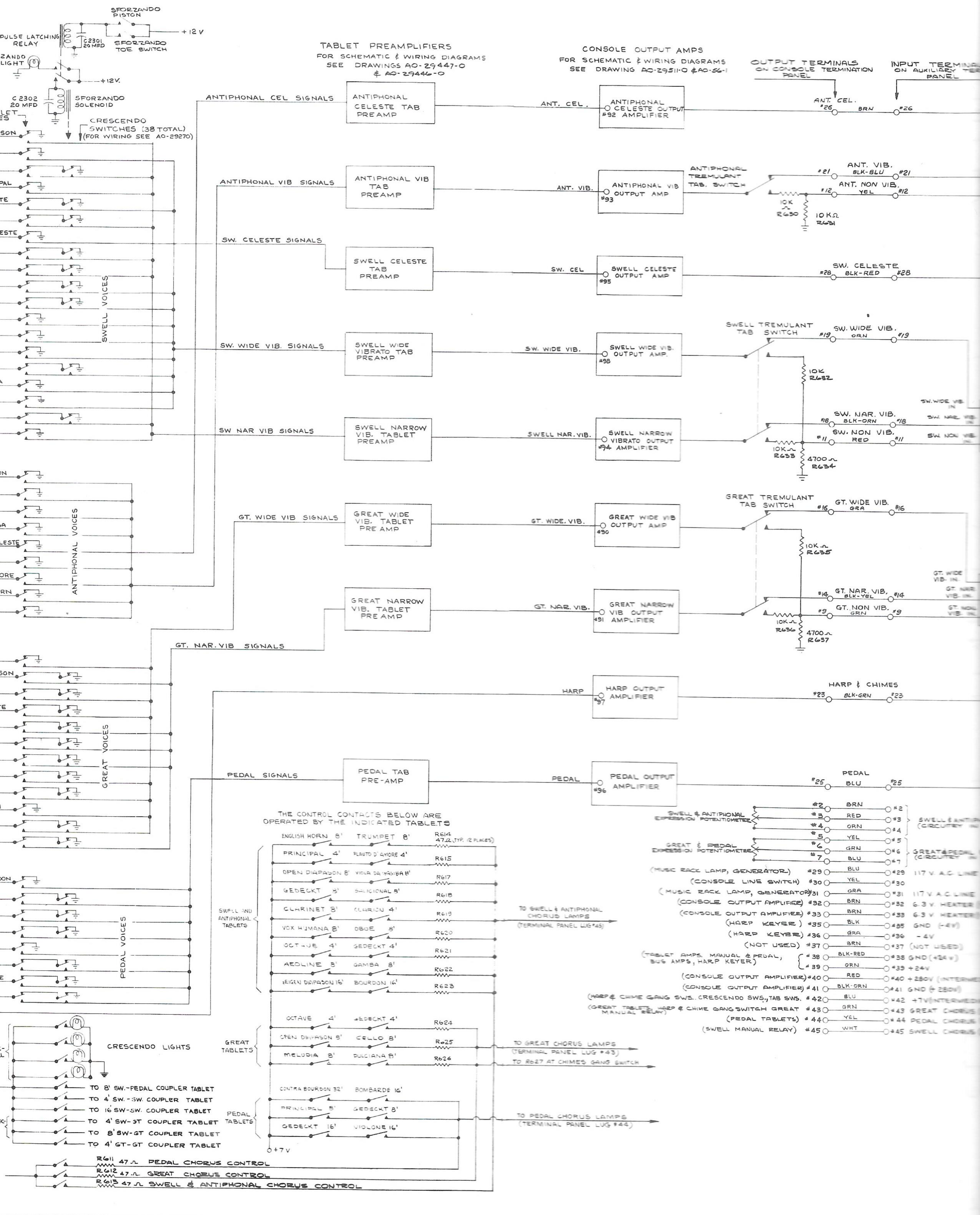
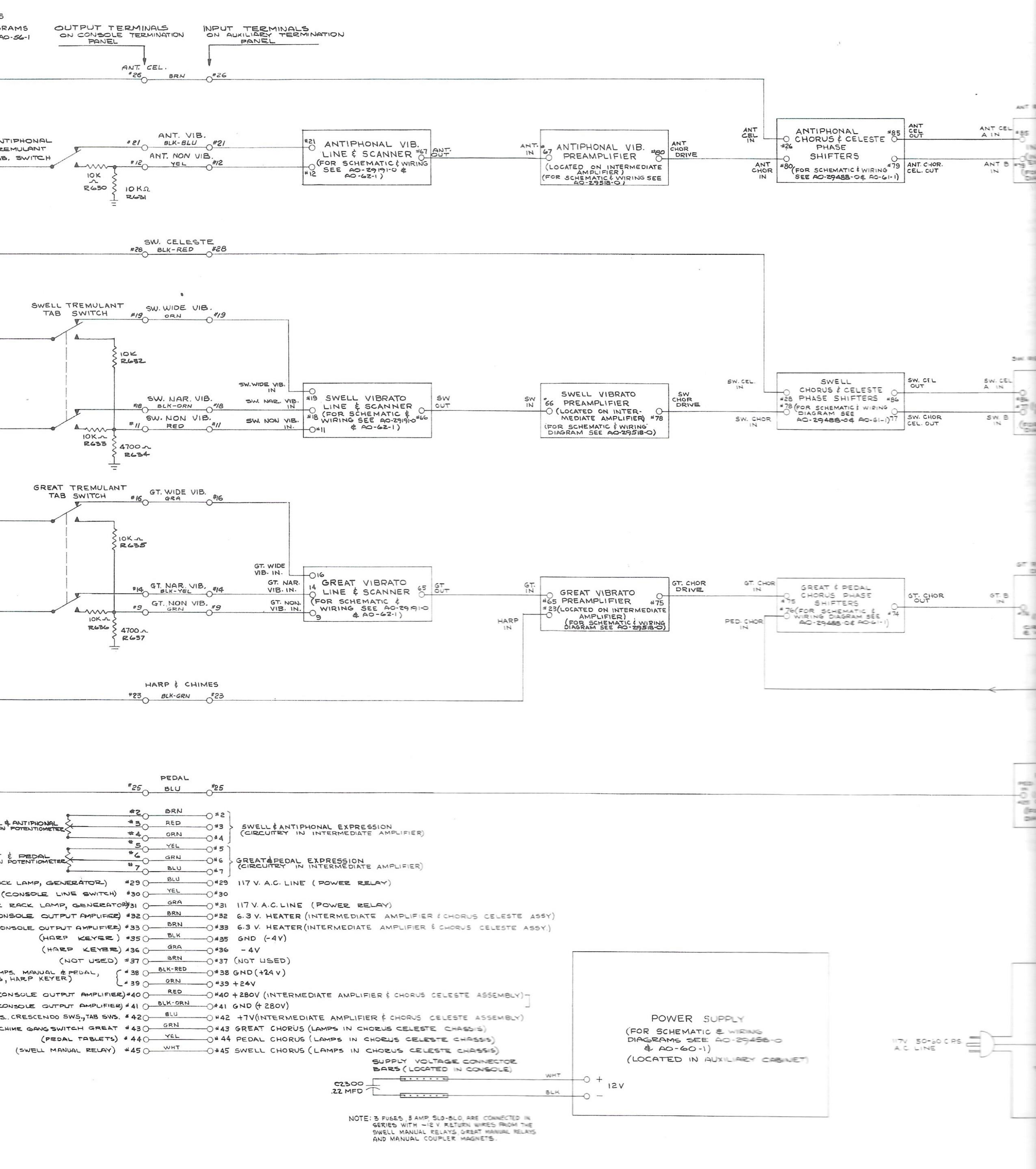


FIGURE 2 SCHEMATIC DIAGRAM

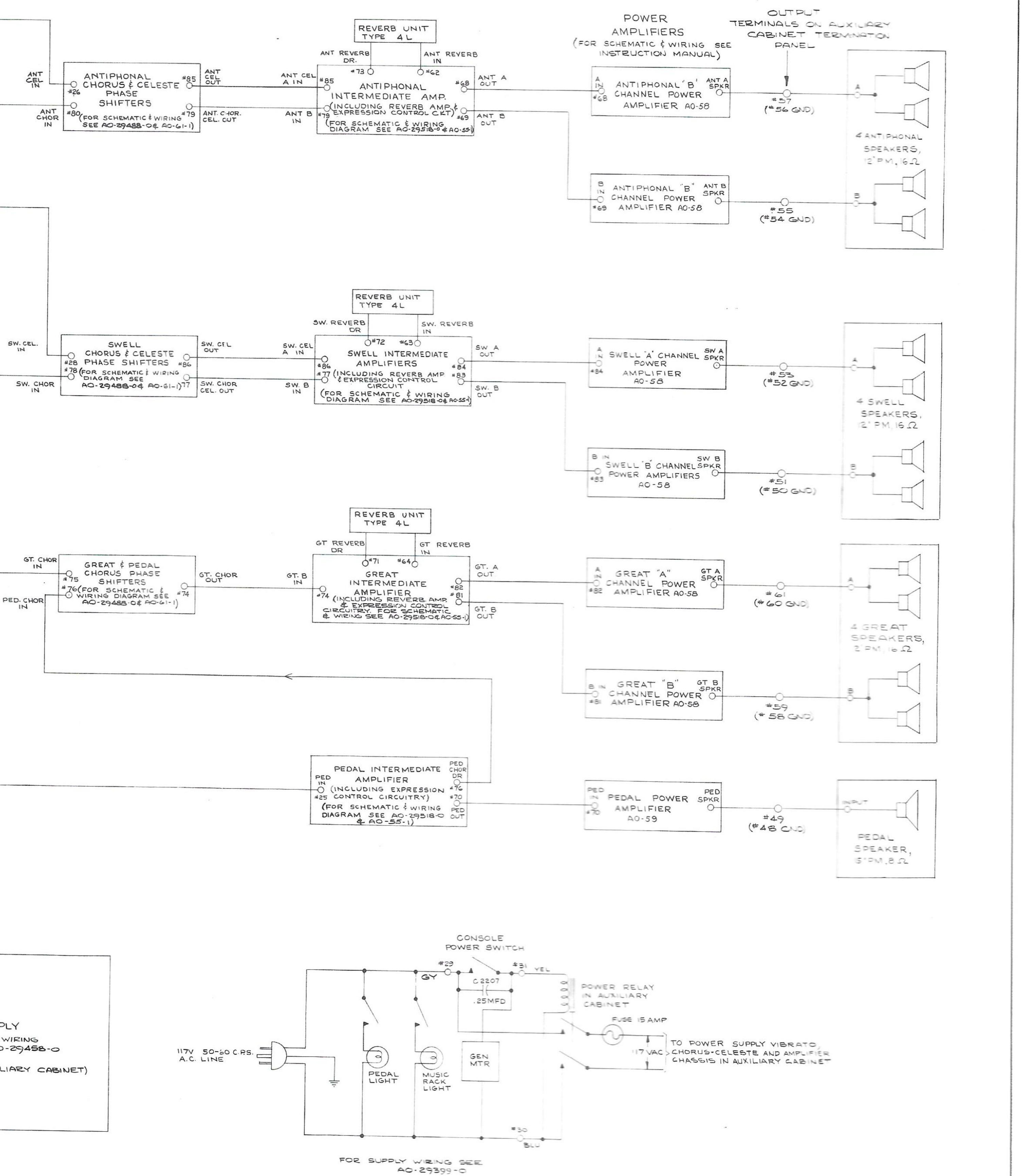


SFORZANDO PISTON
+12 V
IMPULSE LATCHING RELAY
C2301 20 MFD
SFORZANDO TOE SWITCH
SFORZANDO LIGHT
+12V.
C 2302 20 MFD
SFORZANDO SOLENOID
ANTIPHONAL CELESTE
ELECTRICAL LOCKING RELAY
VOICE TABLET SWITCHES
CRESCENDO SWITCHES (38 TOTAL) (FOR WIRING SEE AO-29270)
TYPICAL SWITCH STACK AND MAGNET OF SWELL MANUAL RELAY
73 SWITCH STACKS & MAGNETS IN TOTAL
THIS SWITCH OPENS AFTER MASTER SOLENOID PLUNGER COMPLETES ITS MOVEMENT THEREBY DE-ENERGIZING LOCKING RELAY AND MASTER SOLENOID.
C 2204 .22 MFD
C 2203 .22 MFD
D 2201 1N440
MASTER SOLENOID
C1500 (TYP), 15 MFD
D1500 (TYP) IN461A
TYPICAL MANUAL RELAY MAGNET 12V, 250 MA.
SWELL & ANTIPHONAL AMPLIFIERS
FOR SCHEMATIC & WIRING SEE AO-29494-0 AO-29452-0 AO-29342-0
VOICING PANEL (FOR SCHEMATIC AND WIRING DIAGRAMS SEE AO-29500-0 AO-29501-0 AO-29502-0 AO-29169-0
15 CONTACTS OPERATED BY TYPICAL RELAY MAGNET
SUB-FUND
SUB-3RD HARMONIC
FUNDAMENTAL
2ND HARM
3RD HARM
4TH HARM
5TH HARM
6TH HARM
7TH HARM
8TH HARM
9TH HARM
10TH HARM
11TH HARM
12TH HARM
SUB FUND
SUB 3RD
FUND
2ND
3RD
4TH
5TH
6TH
7TH
8TH
9TH
10TH
11TH
12TH
TO TONE WHEEL GENERATOR OUTPUT TERMINALS
+7V
100 Ω
TO TERMINATION PANEL LUG No. 45
BUS BARS (15 TOTAL)
C 1504 1000 MFD. 25 V.
C1502 .25 MFD 50V.
+ 24V. FROM TERMINATION PANEL (#39)
SWELL AND ANTIPHONAL VOICE MESH
SWELL VOICES
16' GEIGEN DIAPASON
16' BOURDON
8' DIAPASON
8' GEIGEN PRINCIPAL
8' CONCERT FLUTE
8' AEOLINE
II DULCIANA CELESTE
8' GAMBA
4' OCTAVE
4' GEDECKT
2 2/3 NAZARD
2' FLAUTINO
1 3/5 TIERCE
1 1/3 LARIGOT
III MIXTURE
8' VOX HUMANA
8' OBOE
8' CLARINET
4' CLARION
ANTIPHONAL VIB
SW. CELESTE
SW. WIDE VIB
SW NAR VIB
8' OPEN DIAPASON
8' GEDECKT
8' SALICIONAL
8' VIOLA DA GAMBA
II GEMSHORN CELESTE
4' PRINCIPAL
4' FLAUTE D' AMORE
8' ENGLISH HORN
8' TRUMPET
ANTIPHONAL VOICES
GT. WIDE VIB
C1503 1000 MFD 25V
C1501 .25 MFD 50V
+ 24 V. FROM TERMINATION PANEL (#39)
TYPICAL SWITCH STACK AND MAGNET OF GREAT MANUAL RELAY
73 SWITCH STACKS & MAGNETS IN TOTAL
GREAT BUS AMPLIFIERS
FOR SCHEMATIC & WIRING SEE AO-29494-0 AO-29452-0 AO-29342-0
D1500 (TYP) IN461A
TYPICAL MANUAL RELAY MAGNET 12V. 250 MA.
C1500 15 MFD (TYP)
16 CONTACTS OPERATED BY TYPICAL RELAY MAGNET
GT. NAR. VIB SIGNALS
SUB - FUND
SUB 3RD HARMONIC
FUNDAMENTAL
2ND. HARM
3RD. HARM
4TH. HARM
5TH. HARM
6TH. HARM
7TH. HARM
8TH. HARM
9TH. HARM
10TH. HARM
11TH. HARM
12TH. HARM
TO TONE WHEEL GENERATOR OUTPUT TERMINALS
HARP & CHIMES GANG SWITCH
HARP TABLET
HARP MAGNET
CHIMES MAGNET
C598 20 MFD
C2233 .22 MFD
+12V
+7V
100 Ω
TO TERMINATION PANEL LUG NO. 43
BUS BARS (16 TOTAL)
HARP
R627 12
TO TERMINATION PANEL LUG No. 43
GREAT VOICE MESH
GREAT VOICES
16' BOURDON
8' OPEN DIAPASON
8' MELODIA
8' GROSS FLUTE
8' DULCIANA
8' CELLO
4' OCTAVE
4' GEDECKT
2 2/3 NAZARD
2' FIFTEENTH
MIXTURE III
8' TRUMPET
PEDAL SIGNALS
TYPICAL PEDAL SWITCH STACK UNDER TYPICAL PEDAL KEY
32 KEYS, 12 SIGNAL BUSES & 3 COUPLER BUSES VIA MAGNET OPERATED BARRIERS
PEDAL BUS AMPLIFIER (FOR SCHEMATIC & WIRING SEE AO-29493-0 & AO-29340)
HARP & CHIME KEYER
61 IDENTICAL KEYERS IN TOTAL) FOR SCHEMATIC & WIRING SEE AO-29495-0 AO-29336-0 AO-29496-0
OUTPUT SIGNAL
TO TONE WHEEL GENERATOR OUTPUT TERMINALS
SUB - FUND
SUB - 3RD HARMONIC
FUNDAMENTAL
2ND HARM
3 RD HARM
4 TH HARM
5 TH HARM
6 TH HARM
8 TH HARM
10 TH HARM
12 TH HARM
16 TH HARM
16TH
PEDAL VOICE MESH
PEDAL VOICES
32' CONTRA BOURDON
16' GEDECKT
16' BOURDON
16' VIOLONE
8' PRINCIPAL
8' GEDECKT
4' SUPER OCTAVE
16' BOMBARDE
SWELL AND ANTIPHONAL TABLETS
FROM GENERATOR 25 TO 85
GREAT-PEDAL 8' REVERSIBLE MAGNET AND TOE SWITCH
BUS BARS (15 TOTAL)
+12V
8' SWELL TO PEDAL
C2401 15MFD
C2229 .22
TO CRESCENDO SWITCH
4' SWELL TO PEDAL
C2402 15MFD
C2230 .22
8' GREAT TO PEDAL
C2403 15MFD
C2231 .22
+12V.
TO GREAT MANUAL RELAY MAGNETS
TO SWELL MANUAL RELAY MAGNETS
THESE 4 SWITCHES AFFECTED BY CRESCENDO PEDAL ONLY
CRESCENDO LIGHTS
GREAT TABLETS
+12V
TO 8' SW.-PEDAL COUPLER TABLET
TO 4' SW.-SW. COUPLER TABLET
TO 16' SW-SW. COUPLER TABLET
TO 4' SW-GT COUPLER TABLET
TO 8' SW-GT COUPLER TABLET
TO 4' GT-GT COUPLER TABLET
THESE 2 SWITCHES AFFECTED BY SFORZANDO PISTON OR TOE SWITCH ONLY
PEDAL TABLETS
R611 47 Ω PEDAL CHORUS CONTROL
R612 47 Ω GREAT CHORUS CONTROL
R613 47 Ω SWELL & ANTIPHONAL CHORUS
+7V

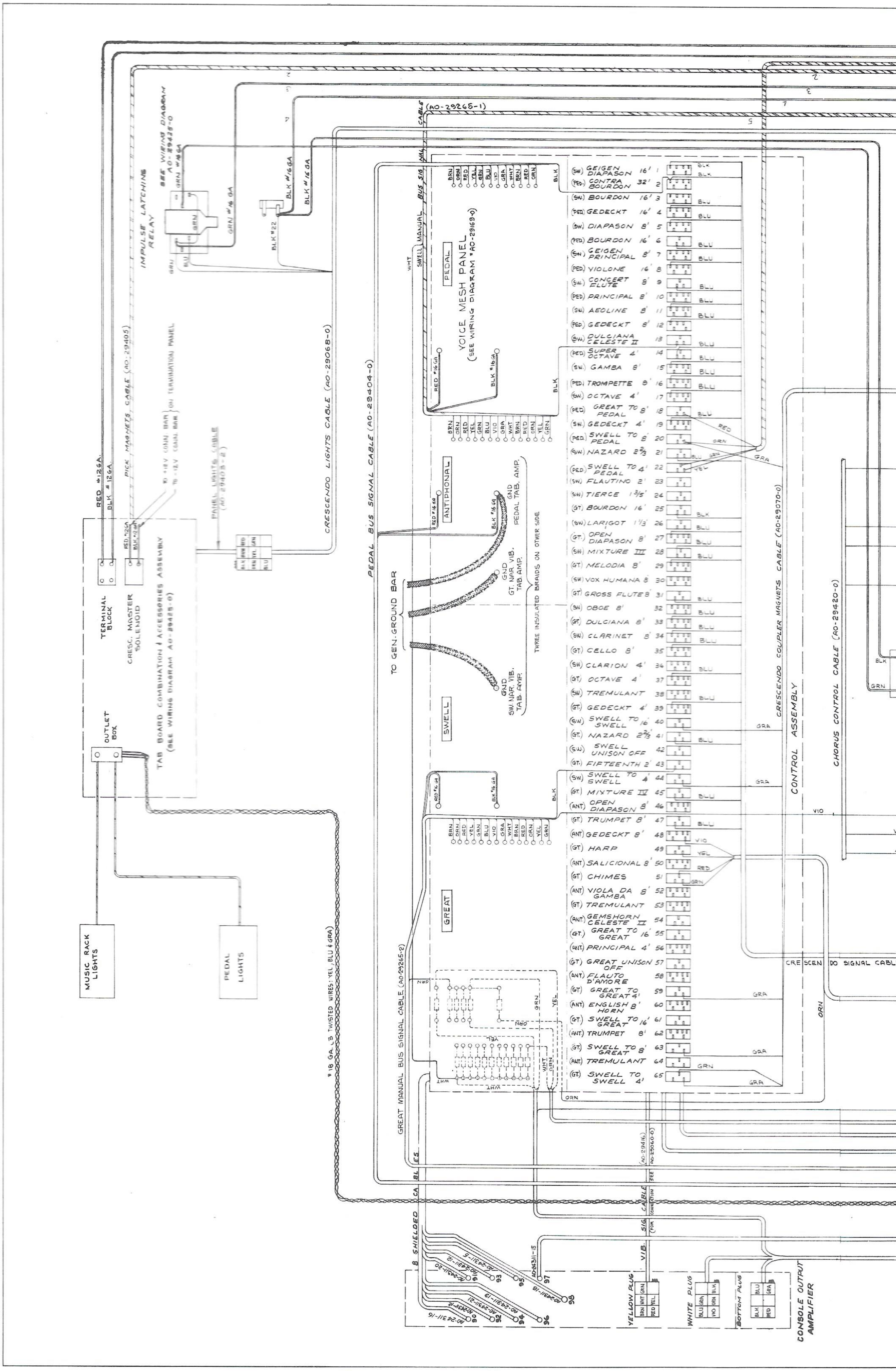

SFORZANDO PISTON
+12 V
PULSE LATCHING RELAY
C2301 20 MFD
SFORZANDO TOE SWITCH
+12V.
C 2302 20 MFD
SFORZANDO SOLENOID
CRESCENDO SWITCHES (38 TOTAL) (FOR WIRING SEE AO-29270)
SWELL VOICES
ANTIPHONAL VOICES
GREAT VOICES
PEDAL VOICES
TABLET PREAMPLIFIERS
FOR SCHEMATIC & WIRING DIAGRAMS SEE DRAWINGS AO-29447-0 & AO-29446-0
CONSOLE OUTPUT AMPS
FOR SCHEMATIC & WIRING DIAGRAMS SEE DRAWING AO-29511-0 & AO-56-1
OUTPUT TERMINALS ON CONSOLE TERMINATION PANEL
INPUT TERMINALS ON AUXILIARY TERMINAL PANEL
ANTIPHONAL CEL SIGNALS
ANTIPHONAL CELESTE TAB PREAMP
ANT. CEL.
ANTIPHONAL CELESTE OUTPUT #92 AMPLIFIER
ANT. CEL. #26 BRN #26
ANTIPHONAL VIB SIGNALS
ANTIPHONAL VIB TAB PREAMP
ANT. VIB.
ANTIPHONAL VIB OUTPUT AMP #93
ANTIPHONAL TREMULANT TAB. SWITCH
ANT. VIB. #21 BLK-BLU #21
ANT. NON VIB. #12 YEL #12
10K R630
10 KΩ R631
SW. CELESTE SIGNALS
SWELL CELESTE TAB PREAMP
SW. CEL
SWELL CELESTE OUTPUT AMP #95
SW. CELESTE #28 BLK-RED #28
SWELL TREMULANT TAB SWITCH
SW. WIDE VIB. SIGNALS
SWELL WIDE VIBRATO TAB PREAMP
SW. WIDE VIB.
SWELL WIDE VIB. OUTPUT AMP. #98
SW. WIDE VIB. #19 ORN #19
10K R632
SW. WIDE VIB IN
SW. NAR VIB IN
SW. NON VIB IN
SW NAR VIB SIGNALS
SWELL NARROW VIB. TABLET PREAMP
SWELL NAR. VIB.
SWELL NARROW VIBRATO OUTPUT #94 AMPLIFIER
SW. NAR. VIB. #18 BLK-ORN #18
SW. NON VIB. #11 RED #11
10K R633
4700 Ω R634
GREAT TREMULANT TAB SWITCH
GT. WIDE VIB SIGNALS
GREAT WIDE VIB. TABLET PRE AMP
GT. WIDE. VIB.
GREAT WIDE VIB OUTPUT AMP #90
GT. WIDE VIB. #16 GRA #16
10K Ω R635
GT. WIDE VIB. IN
GT. NAR VIB. IN
GT. NON VIB. IN
GREAT NARROW VIB. TABLET PRE AMP
GT. NAR. VIB.
GREAT NARROW VIB OUTPUT #91 AMPLIFIER
GT. NAR. VIB. #14 BLK-YEL #14
GT. NON VIB. #9 GRN #9
10K Ω R636
4700 Ω R637
GT. NAR. VIB SIGNALS
HARP
HARP OUTPUT AMPLIFIER #97
HARP & CHIMES #23 BLK-GRN #23
PEDAL SIGNALS
PEDAL TAB PRE-AMP
PEDAL
PEDAL OUTPUT AMPLIFIER #96
PEDAL #25 BLU #25
SWELL & ANTIPHONAL EXPRESSION POTENTIOMETER
#2 BRN #2
#3 RED #3
#4 ORN #4
SWELL & ANTIPHONAL (CIRCUITRY IN
GREAT & PEDAL EXPRESSION POTENTIOMETER
#5 YEL #5
#6 GRN #6
#7 BLU #7
GREAT & PEDAL (CIRCUITRY IN
(MUSIC RACK LAMP, GENERATOR) #29 BLU #29 117 V. A.C. LINE
(CONSOLE LINE SWITCH) #30 YEL #30
(MUSIC RACK LAMP, GENERATOR) #31 GRA #31 117 V. A.C. LINE
(CONSOLE OUTPUT AMPLIFIER) #32 BRN #32 6.3 V. HEATER
(CONSOLE OUTPUT AMPLIFIER) #33 BRN #33 6.3 V. HEATER
(HARP KEYER) #35 BLK #35 GND (-4V)
(HARP KEYER) #36 GRA #36 -4V
(NOT USED) #37 BRN #37 (NOT USED)
(TABLET AMPS, MANUAL & PEDAL, BUS AMPS, HARP KEYER) #38 BLK-RED #38 GND (+24 V)
#39 ORN #39 +24V
(CONSOLE OUTPUT AMPLIFIER) #40 RED #40 +280V (INTERMEDIATE)
(CONSOLE OUTPUT AMPLIFIER) #41 BLK-ORN #41 GND (+280V)
(HARP & CHIME GANG SWS., CRESCENDO SWS., TAB SWS. #42 BLU #42 +7V (INTERMEDIATE)
(GREAT TABLETS, HARP & CHIME GANG SWITCH GREAT MANUAL RELAY) #43 GRN #43 GREAT CHORUS
(PEDAL TABLETS) #44 YEL #44 PEDAL CHORUS
(SWELL MANUAL RELAY) #45 WHT #45 SWELL CHORUS
THE CONTROL CONTACTS BELOW ARE OPERATED BY THE INDICATED TABLETS
SWELL AND ANTIPHONAL TABLETS
ENGLISH HORN 8' TRUMPET 8' R614 47 Ω (TYP. 12 PLACES)
PRINCIPAL 4' FLAUTO D'AMORE 4' R615
OPEN DIAPASON 8' VIOLA DA GAMBA 8' R617
GEDECKT 8' SALICIONAL 8' R618
CLARINET 8' CLARION 4' R619
VOX HUMANA 8' OBOE 8' R620
OCTAVE 4' GEDECKT 4' R621
AEOLINE 8' GAMBA 8' R622
GEIGEN DIAPASON 16' BOURDON 16' R623
TO SWELL & ANTIPHONAL CHORUS LAMPS (TERMINAL PANEL LUG #45)
GREAT TABLETS
OCTAVE 4' GEDECKT 4' R624
OPEN DIAPASON 8' CELLO 8' R625
MELODIA 8' DULCIANA 8' R626
TO GREAT CHORUS LAMPS (TERMINAL PANEL LUG #43)
TO R627 AT CHIMES GANG SWITCH
PEDAL TABLETS
CONTRA BOURDON 32' BOMBARDE 16'
PRINCIPAL 8' GEDECKT 8'
GEDECKT 16' VIOLONE 16'
TO PEDAL CHORUS LAMPS (TERMINAL PANEL LUG #44)
+7 V
CRESCENDO LIGHTS
TO 8' SW.-PEDAL COUPLER TABLET
TO 4' SW.-SW. COUPLER TABLET
TO 16' SW-SW. COUPLER TABLET
TO 4' SW-GT COUPLER TABLET
TO 8' SW-GT COUPLER TABLET
TO 4' GT-GT COUPLER TABLET
R611 47 Ω PEDAL CHORUS CONTROL
R612 47 Ω GREAT CHORUS CONTROL
R613 47 Ω SWELL & ANTIPHONAL CHORUS CONTROL



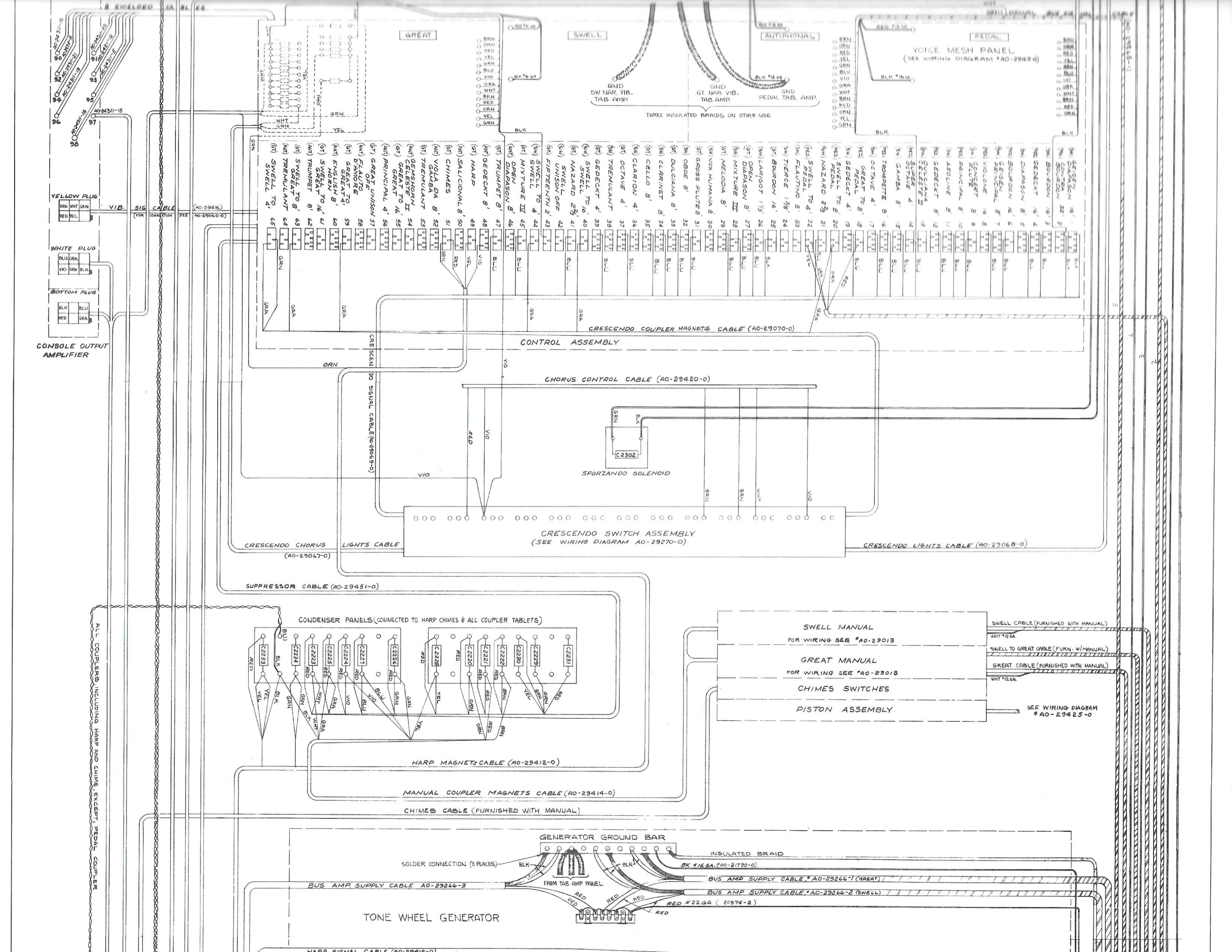
OUTPUT TERMINALS ON CONSOLE TERMINATION PANEL
INPUT TERMINALS ON AUXILIARY TERMINATION PANEL
ANT. CEL. #26 BRN #26
ANT. VIB. #21 BLK-BLU #21
ANT. NON VIB. #12 YEL #12
10K R630
10 KΩ R631
ANTIPHONAL VIB. LINE & SCANNER (FOR SCHEMATIC & WIRING SEE AO-29191-0 & AO-62-1)
ANTIPHONAL VIB. PREAMPLIFIER (LOCATED ON INTERMEDIATE AMPLIFIER) (FOR SCHEMATIC & WIRING SEE AO-29518-0)
ANT. CHOR DRIVE
ANTIPHONAL CHORUS & CELESTE PHASE SHIFTERS (FOR SCHEMATIC & WIRING SEE AO-29488-0 & AO-61-1)
ANT CEL OUT
ANT. CHOR. CEL. OUT
SW. CELESTE #28 BLK-RED #28
SWELL TREMULANT TAB SWITCH
SW. WIDE VIB. #19 ORN #19
10K R632
SW. NAR. VIB. #18 BLK-ORN #18
SW. NON VIB. #11 RED #11
10K R633
4700 R634
SWELL VIBRATO LINE & SCANNER (FOR SCHEMATIC & WIRING SEE AO-29191-0 & AO-62-1)
SW OUT
SWELL VIBRATO PREAMPLIFIER (LOCATED ON INTERMEDIATE AMPLIFIER) (FOR SCHEMATIC & WIRING DIAGRAM SEE AO-29518-0)
SW CHOR DRIVE
SWELL CHORUS & CELESTE PHASE SHIFTERS (FOR SCHEMATIC & WIRING DIAGRAM SEE AO-29488-0 & AO-61-1)
SW. CEL OUT
SW. CHOR CEL. OUT
GREAT TREMULANT TAB SWITCH
GT. WIDE VIB. #16 GRA #16
10K R635
GT. NAR. VIB. #14 BLK-YEL #14
GT. NON VIB. #9 GRN #9
10K R636
4700 R637
GREAT VIBRATO LINE & SCANNER (FOR SCHEMATIC & WIRING SEE AO-29191-0 & AO-62-1)
GT OUT
GREAT VIBRATO PREAMPLIFIER (LOCATED ON INTERMEDIATE AMPLIFIER) (FOR SCHEMATIC & WIRING DIAGRAM SEE AO-29518-0)
GT. CHOR DRIVE
HARP IN
GREAT & PEDAL CHORUS PHASE SHIFTERS (FOR SCHEMATIC & WIRING DIAGRAM SEE AO-29488-0 & AO-61-1)
GT. CHOR OUT
PED. CHOR IN
HARP & CHIMES #23 BLK-GRN #23
PEDAL #25 BLU #25
SWELL & ANTIPHONAL EXPRESSION (CIRCUITRY IN INTERMEDIATE AMPLIFIER)
GREAT & PEDAL EXPRESSION (CIRCUITRY IN INTERMEDIATE AMPLIFIER)
#29 117 V. A.C. LINE (POWER RELAY)
#31 117 V. A.C. LINE (POWER RELAY)
#32 6.3 V. HEATER (INTERMEDIATE AMPLIFIER & CHORUS CELESTE ASSY)
#33 6.3 V. HEATER (INTERMEDIATE AMPLIFIER & CHORUS CELESTE ASSY)
#35 GND (-4V)
#36 -4V
#37 (NOT USED)
#38 GND (+24 V)
#39 +24V
#40 +280V (INTERMEDIATE AMPLIFIER & CHORUS CELESTE ASSEMBLY)
#41 GND (+280V)
#42 +7V (INTERMEDIATE AMPLIFIER & CHORUS CELESTE ASSEMBLY)
#43 GREAT CHORUS (LAMPS IN CHORUS CELESTE CHASSIS)
#44 PEDAL CHORUS (LAMPS IN CHORUS CELESTE CHASSIS)
#45 SWELL CHORUS (LAMPS IN CHORUS CELESTE CHASSIS)
SUPPLY VOLTAGE CONNECTOR BARS (LOCATED IN CONSOLE)
C2300 .22 MFD
12V
POWER SUPPLY (FOR SCHEMATIC & WIRING DIAGRAMS SEE AO-29456-0 & AO-60-1) (LOCATED IN AUXILIARY CABINET)
117V 50-60 C.P.S. A.C. LINE
NOTE: 3 FUSES, 5 AMP SLO-BLO, ARE CONNECTED IN SERIES WITH -12 V RETURN WIRES FROM THE SWELL MANUAL RELAYS, GREAT MANUAL RELAYS AND MANUAL COUPLER MAGNETS.



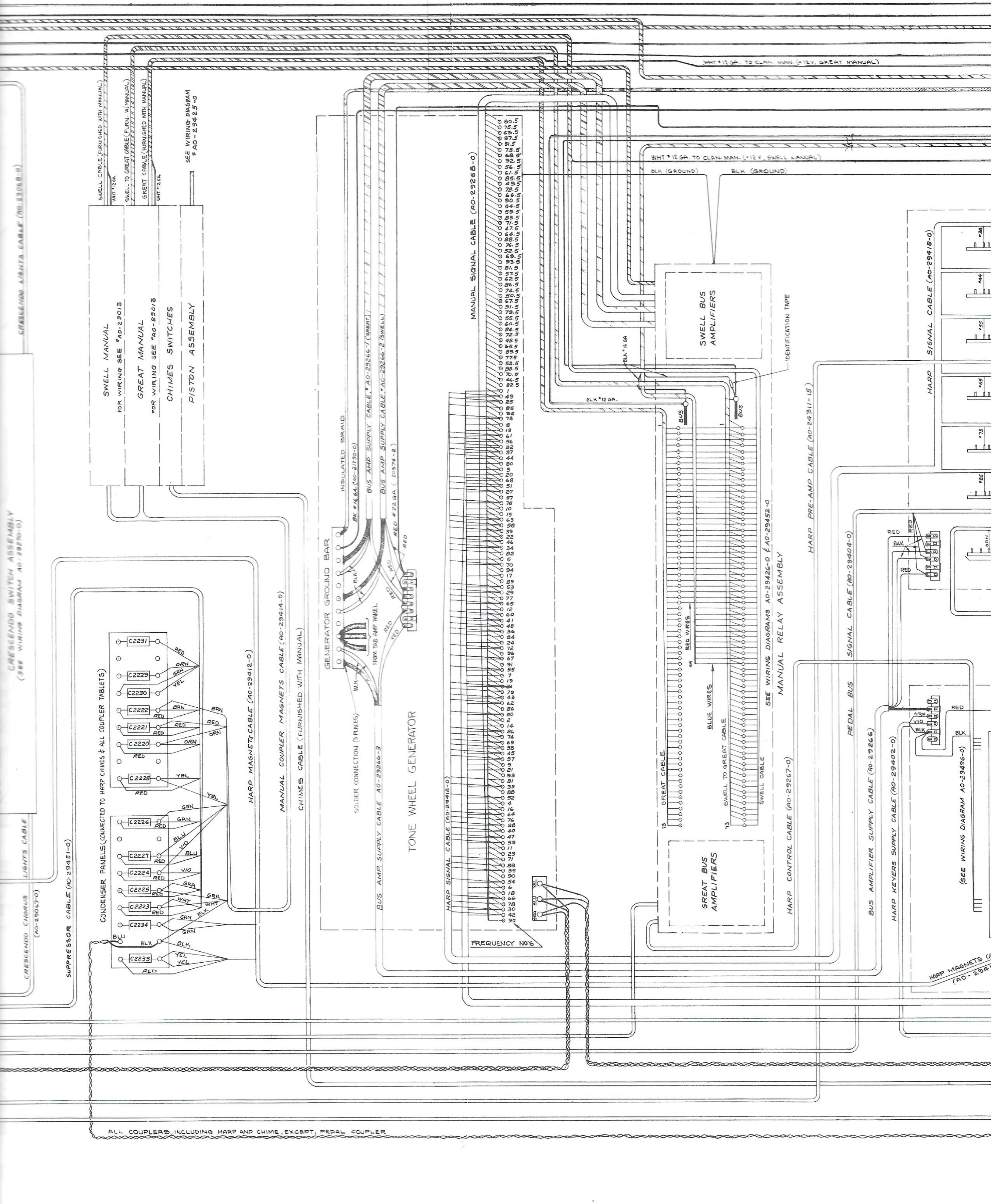
Schematic Diagram

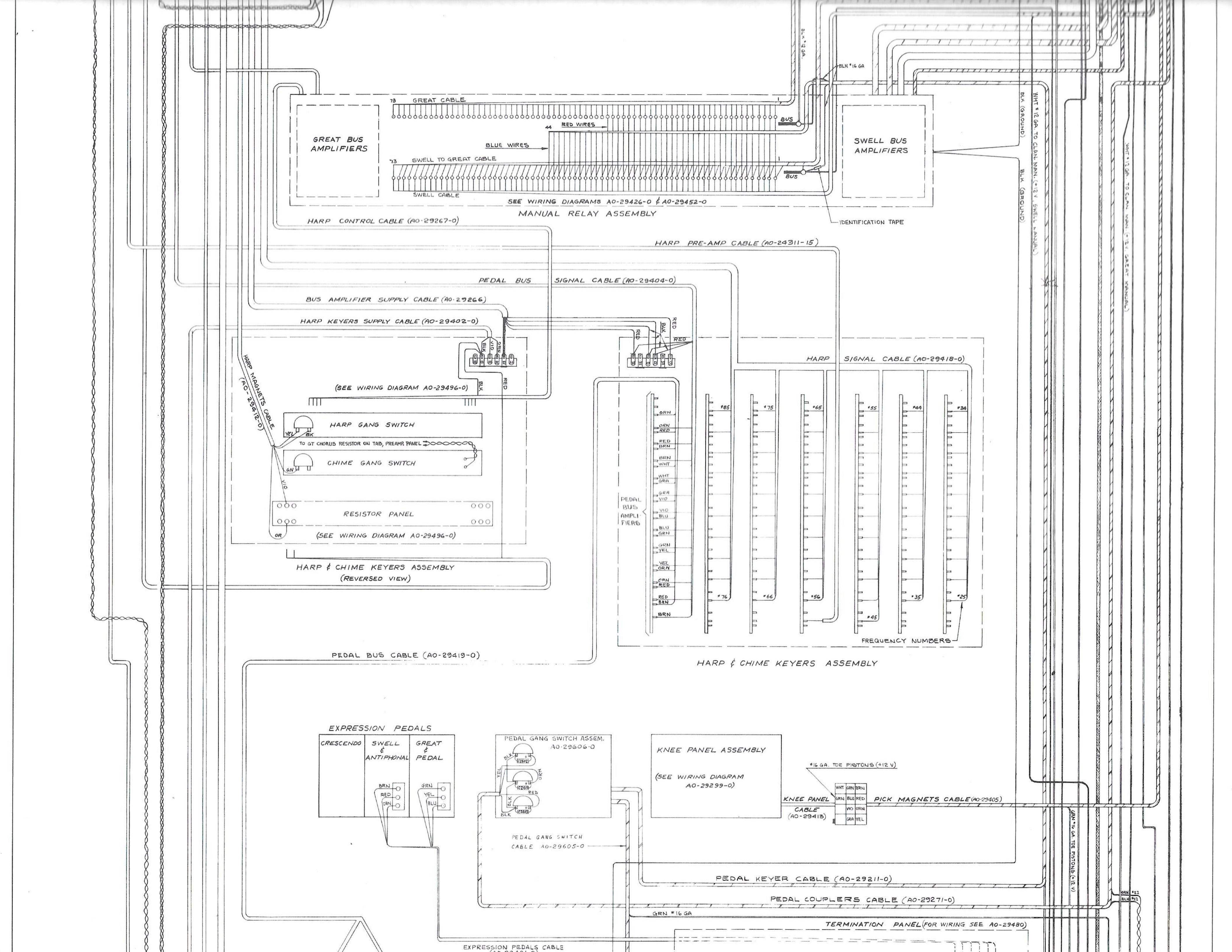


(SW) GEIGEN DIAPASON 16' 1
(PED) CONTRA BOURDON 32' 2
(SW) BOURDON 16' 3
(PED) GEDECKT 16' 4
(SW) DIAPASON 8' 5
(PED) BOURDON 16' 6
(SW) GEIGEN PRINCIPAL 8' 7
(PED) VIOLONE 16' 8
(SW) CONCERT FLUTE 8' 9
(PED) PRINCIPAL 8' 10
(SW) AEOLINE 8' 11
(PED) GEDECKT 8' 12
(SW) DULCIANA CELESTE II 13
(PED) SUPER OCTAVE 4' 14
(SW) GAMBA 8' 15
(PED) TROMPETTE 8' 16
(SW) OCTAVE 4' 17
(PED) GREAT TO PEDAL 8' 18
(SW) GEDECKT 4' 19
(PED) SWELL TO PEDAL 8' 20
(SW) NAZARD 2 2/3 21
(PED) SWELL TO PEDAL 4' 22
(SW) FLAUTINO 2' 23
(SW) TIERCE 1 3/5' 24
(GT) BOURDON 16' 25
(SW) LARIGOT 1 1/3' 26
(GT) OPEN DIAPASON 8' 27
(SW) MIXTURE III 28
(GT) MELODIA 8' 29
(SW) VOX HUMANA 8' 30
(GT) GROSS FLUTE 8' 31
(SW) OBOE 8' 32
(GT) DULCIANA 8' 33
(SW) CLARINET 8' 34
(GT) CELLO 8' 35
(SW) CLARION 4' 36
(GT) OCTAVE 4' 37
(SW) TREMULANT 38
(GT) GEDECKT 4' 39
(SW) SWELL TO SWELL 16' 40
(GT) NAZARD 2 2/3' 41
(SW) SWELL UNISON OFF 42
(GT) FIFTEENTH 2' 43
(SW) SWELL TO SWELL 4' 44
(GT) MIXTURE IV 45
(ANT) OPEN DIAPASON 8' 46
(GT) TRUMPET 8' 47
(ANT) GEDECKT 8' 48
(GT) HARP 49
(ANT) SALICIONAL 8' 50
(GT) CHIMES 51
(ANT) VIOLA DA GAMBA 8' 52
(GT) TREMULANT 53
(ANT) GEMSHORN CELESTE II 54
(GT) GREAT TO GREAT 16' 55
(ANT) PRINCIPAL 4' 56
(GT) GREAT UNISON OFF 57
(ANT) FLAUTO D'AMORE 58
(GT) GREAT TO GREAT 4' 59
(ANT) ENGLISH HORN 8' 60
(GT) SWELL TO GREAT 16' 61
(ANT) TRUMPET 8' 62
(GT) SWELL TO GREAT 8' 63
(ANT) TREMULANT 64
(GT) SWELL TO SWELL 4' 65
VOICE MESH PANEL
(SEE WIRING DIAGRAM #AO-29169-0)
PEDAL
SWELL
GREAT
ANTIPHONAL
TO GEN. GROUND BAR
GND PEDAL TAB. AMP.
GND GT. NAR. VIB. TAB. AMP.
GND SW. NAR. VIB. TAB. AMP.
THREE INSULATED BRAIDS ON OTHER SIDE
CONTROL ASSEMBLY
CRESCENDO COUPLER MAGNETS CABLE (AO-29070-0)
CHORUS CONTROL CABLE (AO-29420-0)
CRESCENDO SIGNAL CABLE
PEDAL BUS SIGNAL CABLE (AO-29404-0)
SWELL MANUAL BUS SIG. CABLE (AO-29265-1)
GREAT MANUAL BUS SIGNAL CABLE (AO-29265-2)
CRESCENDO LIGHTS CABLE (AO-29068-0)
PICK MAGNETS CABLE (AO-29405)
IMPULSE LATCHING RELAY
SEE WIRING DIAGRAM AO-29428-0
TO +12V CONN. BAR
TO -12V CONN. BAR ON TERMINATION PANEL
PANEL LIGHTS CABLE (AO-29403-2)
TERMINAL BLOCK
CRESC. MASTER SOLENOID
TAB BOARD COMBINATION & ACCESSORIES ASSEMBLY
(SEE WIRING DIAGRAM AO-29428-0)
OUTLET BOX
MUSIC RACK LIGHTS
PEDAL LIGHTS
#18 GA. 3 TWISTED WIRES: YEL, BLU & GRA
8 SHIELDED CABLES
VIB. SIG. CABLE (FOR CONNECTION SEE AO-29060-0)
(AO-29416)
YELLOW PLUG
WHITE PLUG
BOTTOM PLUG
CONSOLE OUTPUT AMPLIFIER
RED #12 GA
BLK #12 GA
BLK #16 GA
GRN #16 GA
BLK #22



8 SHIELDED CABLES
GREAT
SWELL
ANTIPHONAL
PEDAL
VOICE MESH PANEL
(SEE WIRING DIAGRAM #AO-29169-0)
GND SW. NAR. VIB. TAB. AMP.
GND GT. NAR. VIB. TAB. AMP.
GND PEDAL TAB. AMP.
THREE INSULATED BRAIDS ON OTHER SIDE
YELLOW PLUG
WHITE PLUG
BOTTOM PLUG
CONSOLE OUTPUT AMPLIFIER
VIB. SIG. CABLE (FOR CONNECTION SEE AO-29416) (AO-29060-0)
(GT) SWELL TO SWELL 4' 65
(ANT) TREMULANT 64
(GT) SWELL TO 8' GREAT 63
(ANT) TRUMPET 8' 62
(GT) SWELL TO 16' GREAT 61
(ANT) ENGLISH HORN 8' 60
(GT) GREAT TO GREAT 4' 59
(ANT) FLAUTO D'AMORE 58
(GT) GREAT UNISON OFF 57
(ANT) PRINCIPAL 4' 56
(GT) GREAT TO 16' GREAT 55
(ANT) GEMSHORN CELESTE II 54
(GT) TREMULANT 53
(ANT) VIOLA DA GAMBA 8' 52
(GT) CHIMES 51
(ANT) SALICIONAL 8' 50
(GT) HARP 49
(ANT) GEDECKT 8' 48
(GT) TRUMPET 8' 47
(ANT) OPEN DIAPASON 8' 46
(GT) MIXTURE IV 45
(SW) SWELL TO 4' SWELL 44
(GT) FIFTEENTH 2' 43
(SW) SWELL UNISON OFF 42
(GT) NAZARD 2 2/3' 41
(SW) SWELL TO 16' SWELL 40
(GT) GEDECKT 4' 39
(SW) TREMULANT 38
(GT) OCTAVE 4' 37
(SW) CLARION 4' 36
(GT) CELLO 8' 35
(SW) CLARINET 8' 34
(GT) DULCIANA 8' 33
(SW) OBOE 8' 32
(GT) GROSS FLUTE 8' 31
(SW) VOX HUMANA 8' 30
(GT) MELODIA 8' 29
(SW) MIXTURE III 28
(GT) OPEN DIAPASON 8' 27
(SW) LARIGOT 1 1/3' 26
(GT) BOURDON 16' 25
(SW) TIERCE 1 3/5' 24
(SW) FLAUTINO 2' 23
(PED) SWELL TO 4' PEDAL 22
(SW) NAZARD 2 2/3' 21
(PED) SWELL TO 8' PEDAL 20
(SW) GEDECKT 4' 19
(PED) GREAT TO 8' PEDAL 18
(SW) OCTAVE 4' 17
(PED) TROMPETTE 8' 16
(SW) GAMBA 8' 15
(PED) SUPER OCTAVE 4' 14
(SW) DULCIANA CELESTE II 13
(PED) GEDECKT 8' 12
(SW) AEOLINE 8' 11
(PED) PRINCIPAL 8' 10
(SW) CONCERT FLUTE 8' 9
(PED) VIOLONE 16' 8
(SW) GEIGEN PRINCIPAL 8' 7
(PED) BOURDON 16' 6
(SW) DIAPASON 8' 5
(PED) GEDECKT 16' 4
(SW) BOURDON 16' 3
(PED) CONTRA BOURDON 32' 2
(SW) GEIGEN DIAPASON 16' 1
CRESCENDO COUPLER MAGNETS CABLE (AO-29070-0)
CONTROL ASSEMBLY
CRESCENDO SIGNAL CABLE (AO-29069-0)
CHORUS CONTROL CABLE (AO-29420-0)
C2302
SFORZANDO SOLENOID
CRESCENDO SWITCH ASSEMBLY
(SEE WIRING DIAGRAM AO-29270-0)
CRESCENDO CHORUS LIGHTS CABLE (AO-29067-0)
CRESCENDO LIGHTS CABLE (AO-29068-0)
SUPPRESSOR CABLE (AO-29451-0)
CONDENSER PANELS (CONNECTED TO HARP CHIMES & ALL COUPLER TABLETS)
C2233 C2234 C2223 C2225 C2224 C2227 C2226 C2228 C2220 C2221 C2222 C2230 C2229 C2231
SWELL MANUAL
FOR WIRING SEE #AO-29013
GREAT MANUAL
FOR WIRING SEE #AO-29018
CHIMES SWITCHES
PISTON ASSEMBLY
SWELL CABLE (FURNISHED WITH MANUAL)
SWELL TO GREAT CABLE (FURN. W/MANUAL)
GREAT CABLE (FURNISHED WITH MANUAL)
WHT #12 GA.
SEE WIRING DIAGRAM #AO-29425-0
HARP MAGNETS CABLE (AO-29412-0)
MANUAL COUPLER MAGNETS CABLE (AO-29414-0)
CHIMES CABLE (FURNISHED WITH MANUAL)
ALL COUPLERS, INCLUDING HARP AND CHIME, EXCEPT, PEDAL COUPLER
GENERATOR GROUND BAR
INSULATED BRAID
SOLDER CONNECTION (3 PLACES)
FROM TAB. AMP. PANEL
BK #16 GA. (AO-21790-0)
BUS AMP. SUPPLY CABLE, #AO-29266-1 (GREAT)
BUS AMP. SUPPLY CABLE, #AO-29266-2 (SWELL)
BUS AMP. SUPPLY CABLE AO-29266-3
RED #22 GA (20376-2)
TONE WHEEL GENERATOR
HARP SIGNAL CABLE (AO-29418-0)


WHT #12 GA. TO CLAN. MAN. (+12V. GREAT MANUAL)
WHT #12 GA. TO CLAN. MAN. (+12V. SWELL MANUAL)
BLK (GROUND)
BLK (GROUND)
SWELL BUS AMPLIFIERS
IDENTIFICATION TAPE
BLK #16 GA
BLK #12 GA.
BUS
BUS
SWELL CABLE (FURNISHED WITH MANUAL)
SWELL TO GREAT CABLE (FURN. W/ MANUAL)
GREAT CABLE (FURNISHED WITH MANUAL)
SEE WIRING DIAGRAM #AO-29425-0
SWELL MANUAL
FOR WIRING SEE #AO-29013
GREAT MANUAL
FOR WIRING SEE #AO-29013
CHIMES SWITCHES
PISTON ASSEMBLY
MANUAL SIGNAL CABLE (AO-29268-0)
INSULATED BRAID
BK #16 GA. (AO-21790-0)
BUS AMP SUPPLY CABLE, #AO-29266-1 (GREAT)
BUS AMP SUPPLY CABLE, #AO-29266-2 (SWELL)
RED #22 GA. (20576-2)
GENERATOR GROUND BAR
FROM TAB AMP PANEL
SOLDER CONNECTION (3 PLACES)
BUS AMP SUPPLY CABLE AO-29266-3
TONE WHEEL GENERATOR
HARP SIGNAL CABLE (AO-29418-0)
FREQUENCY NO'S
RED WIRES
BLUE WIRES
GREAT CABLE
SWELL TO GREAT CABLE
SWELL CABLE
SEE WIRING DIAGRAMS AO-29426-0 & AO-29452-0
MANUAL RELAY ASSEMBLY
GREAT BUS AMPLIFIERS
HARP CONTROL CABLE (AO-29267-0)
HARP PRE-AMP CABLE (AO-24311-15)
PEDAL BUS SIGNAL CABLE (AO-29404-0)
BUS AMPLIFIER SUPPLY CABLE (AO-29266)
HARP KEYERS SUPPLY CABLE (AO-29402-0)
(SEE WIRING DIAGRAM AO-29496-0)
HARP SIGNAL CABLE (AO-29418-0)
HARP MAGNETS CABLE (AO-2941…)
CRESCENDO LIGHTS CABLE (AO-29068-0)
CRESCENDO SWITCH ASSEMBLY
(SEE WIRING DIAGRAM AO-29270-0)
CRESCENDO CHORUS LIGHTS CABLE (AO-29047-0)
SUPPRESSOR CABLE (AO-29451-0)
CONDENSER PANELS (CONNECTED TO HARP CHIMES & ALL COUPLER TABLETS)
C2231
C2229
C2230
C2222
C2221
C2220
C2228
C2226
C2227
C2224
C2225
C2223
C2234
C2233
HARP MAGNETS CABLE (AO-29412-0)
MANUAL COUPLER MAGNETS CABLE (AO-29414-0)
CHIMES CABLE (FURNISHED WITH MANUAL)
ALL COUPLERS, INCLUDING HARP AND CHIME, EXCEPT, PEDAL COUPLER



GREAT BUS AMPLIFIERS
GREAT CABLE
RED WIRES
BLUE WIRES
SWELL TO GREAT CABLE
SWELL CABLE
BUS
SWELL BUS AMPLIFIERS
SEE WIRING DIAGRAMS A0-29426-0 & A0-29452-0
MANUAL RELAY ASSEMBLY
IDENTIFICATION TAPE
BLK #16 GA
BLK #12 GA.
BLK (GROUND)
WHT #12 GA. TO CLAN. MAN. (+12 V, SWELL MANUAL)
WHT #12 GA. TO CLAN. MAN. (+12 V, GREAT MANUAL)
HARP CONTROL CABLE (A0-29267-0)
HARP PRE-AMP CABLE (A0-24311-15)
PEDAL BUS SIGNAL CABLE (A0-29404-0)
BUS AMPLIFIER SUPPLY CABLE (A0-29266)
HARP KEYERS SUPPLY CABLE (A0-29402-0)
HARP MAGNETS CABLE (A0-29412-0)
(SEE WIRING DIAGRAM A0-29496-0)
HARP GANG SWITCH
TO GT CHORUS RESISTOR ON TAB, PREAMP. PANEL
CHIME GANG SWITCH
RESISTOR PANEL
(SEE WIRING DIAGRAM A0-29496-0)
HARP & CHIME KEYERS ASSEMBLY
(REVERSED VIEW)
HARP SIGNAL CABLE (A0-29418-0)
PEDAL BUS AMPLIFIERS
FREQUENCY NUMBERS
HARP & CHIME KEYERS ASSEMBLY
PEDAL BUS CABLE (A0-29419-0)
EXPRESSION PEDALS
CRESCENDO
SWELL & ANTIPHONAL
GREAT & PEDAL
PEDAL GANG SWITCH ASSEM. A0-29606-0
PEDAL GANG SWITCH CABLE A0-29605-0
KNEE PANEL ASSEMBLY
(SEE WIRING DIAGRAM A0-29299-0)
#16 GA. TOE PISTONS (+12 V)
KNEE PANEL CABLE (A0-29413)
PICK MAGNETS CABLE (A0-29405)
GRN #16 GA. TOE PISTONS (+12 V)
PEDAL KEYER CABLE (A0-29211-0)
PEDAL COUPLERS CABLE (A0-29271-0)
GRN #16 GA
TERMINATION PANEL (FOR WIRING SEE A0-29480)
EXPRESSION PEDALS CABLE

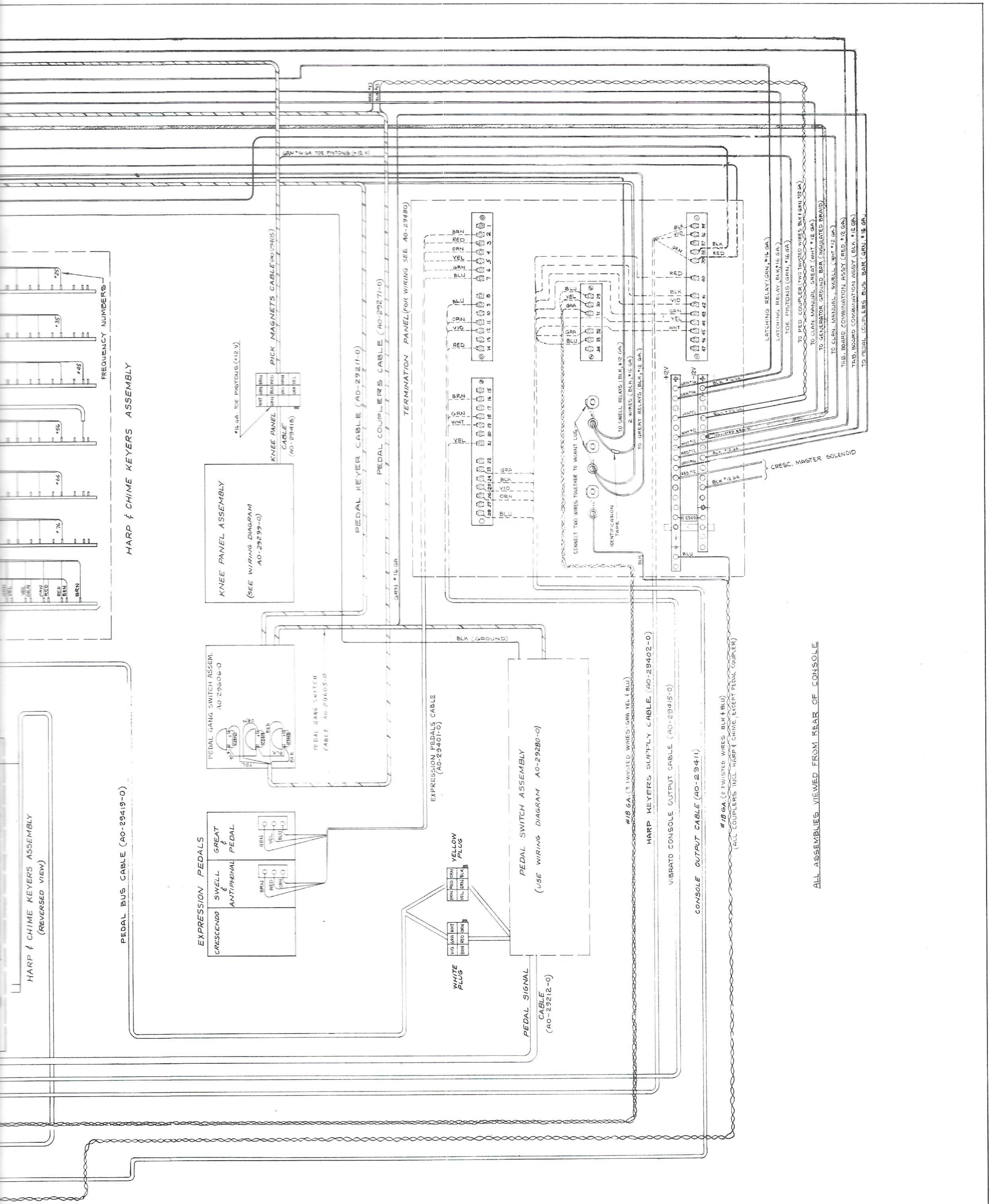
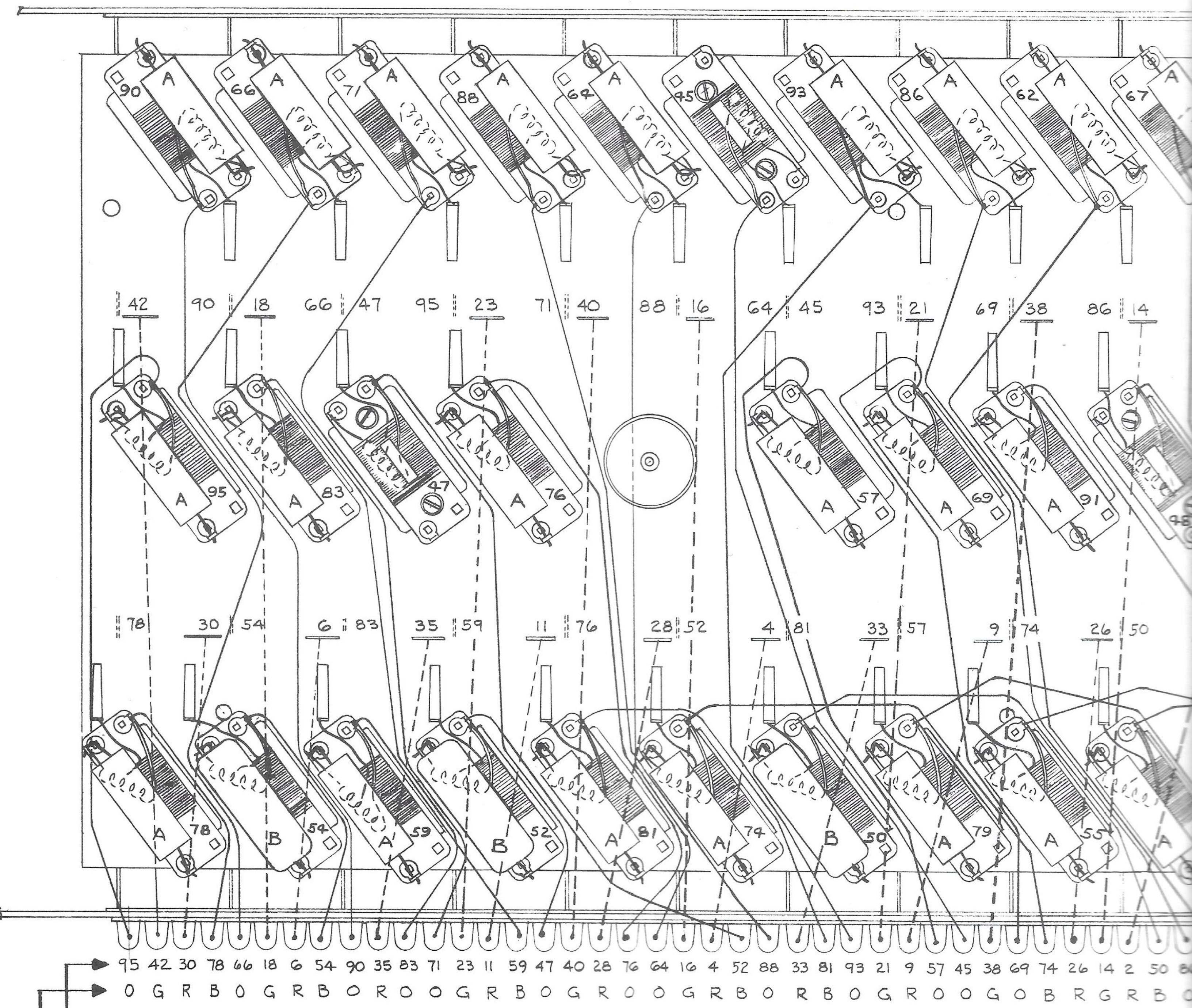


FIGURE 3 CONSOLE WIRING DIAGRAM



Code
B = BROWN
R = RED
O = ORANGE
G = GREEN

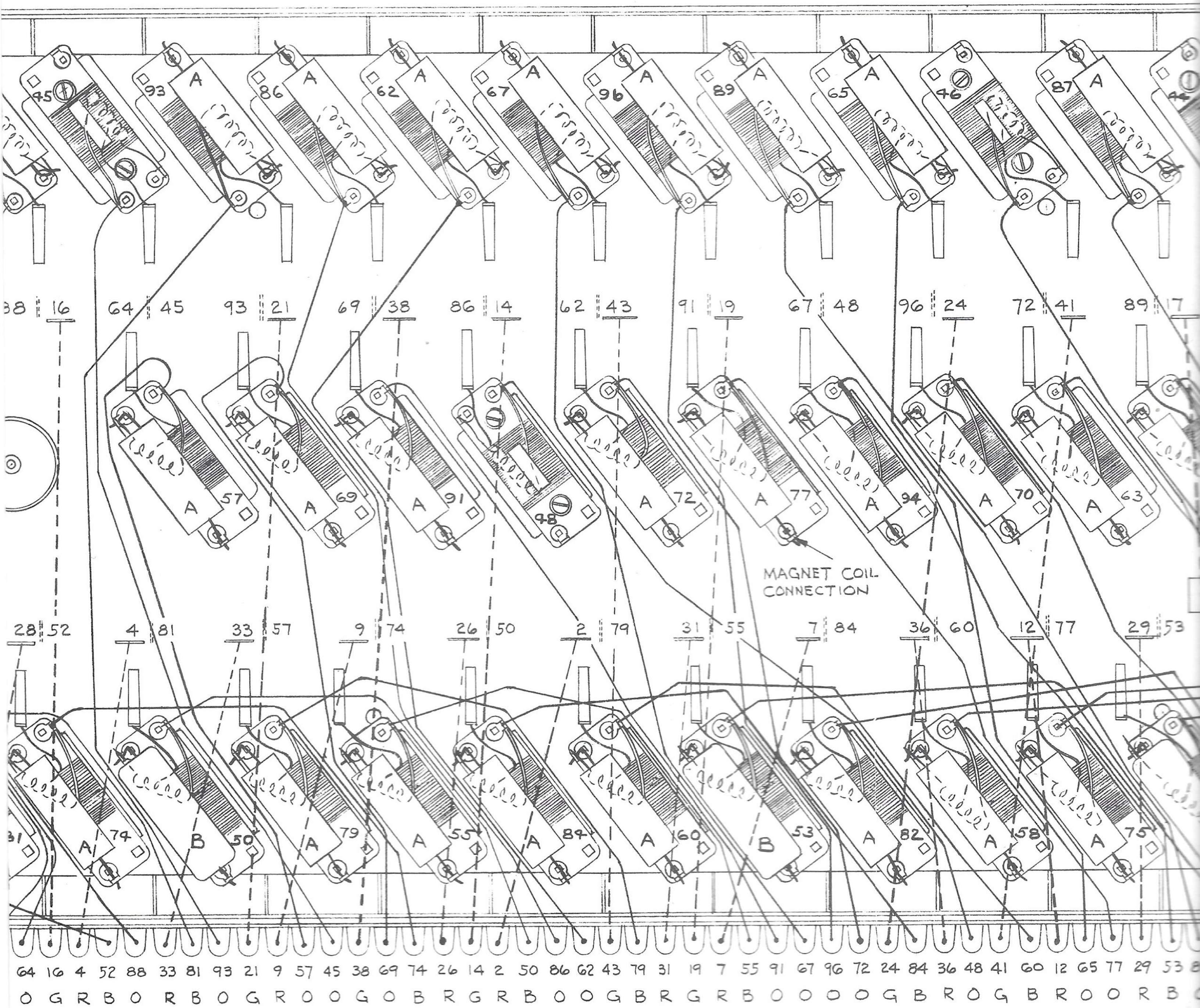
GREEN LEADS TO RUN PARALLEL TO ADJACENT BEARING PLATE AS FAR AS REAR EDGE OF GENERATOR COVER

ALL ORANGE LEADS TO FOLLOW A DIRECT COURSE FROM COILS TO TERMINALS AS POSSIBLE. ORANGE LEADS TO RUN ABOVE BROWN LEADS IN DRESSING TO TERMINALS.

FIGURE 4 GENERATOR WIRING SHEET 1

SEE
MAG
USE

FRONT

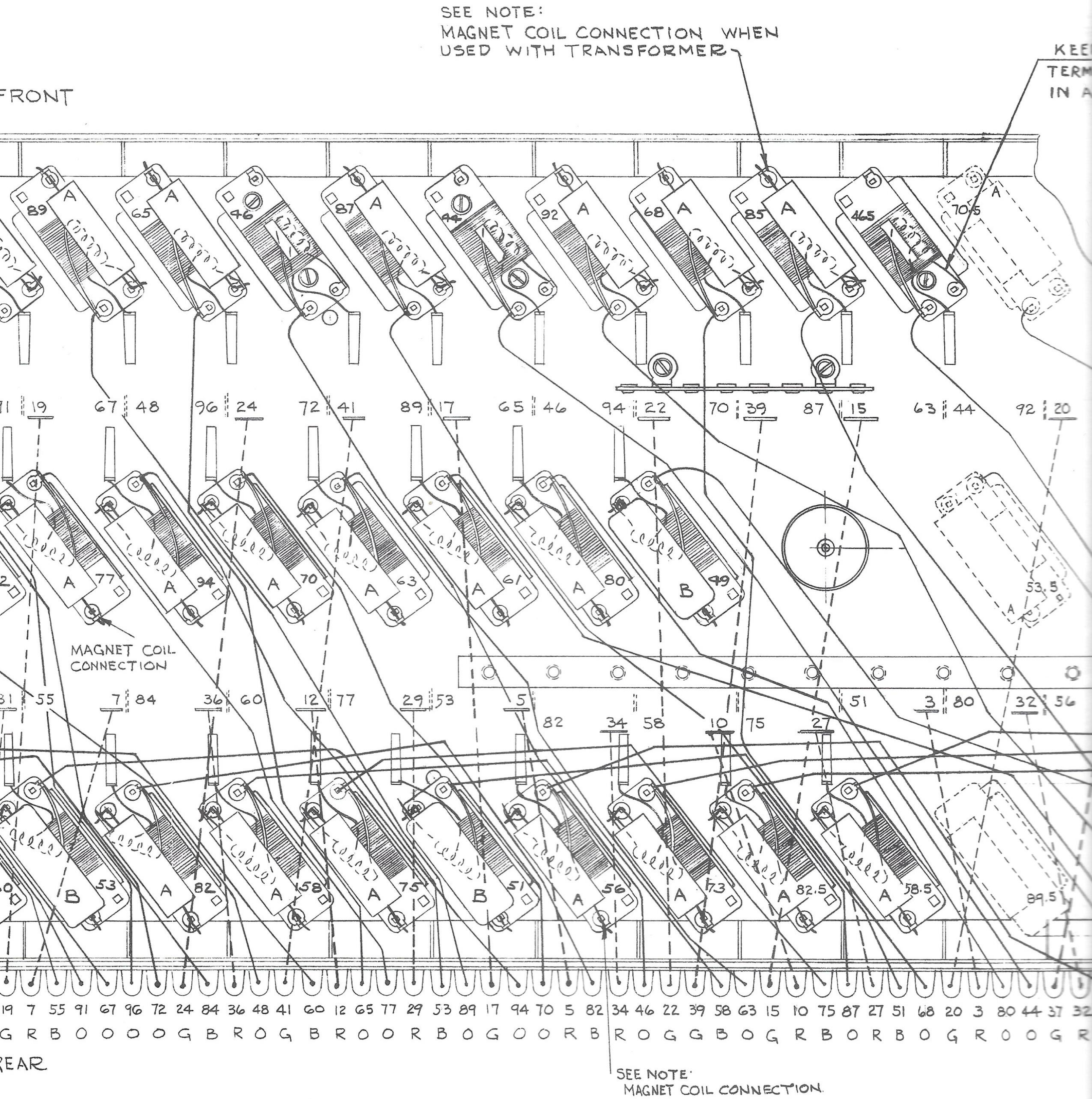


REAR

NT BEARING PLATE AS FAR
E
COURSE FROM COILS TO
RUN ABOVE BROWN LEADS

CONDENSER	PAR
"A"	AO-
"B"	AO-

FOR SELECTION OF ALL CONDENSERS, S



NOTE:

SEE DRAWING AO-29/27-0 F

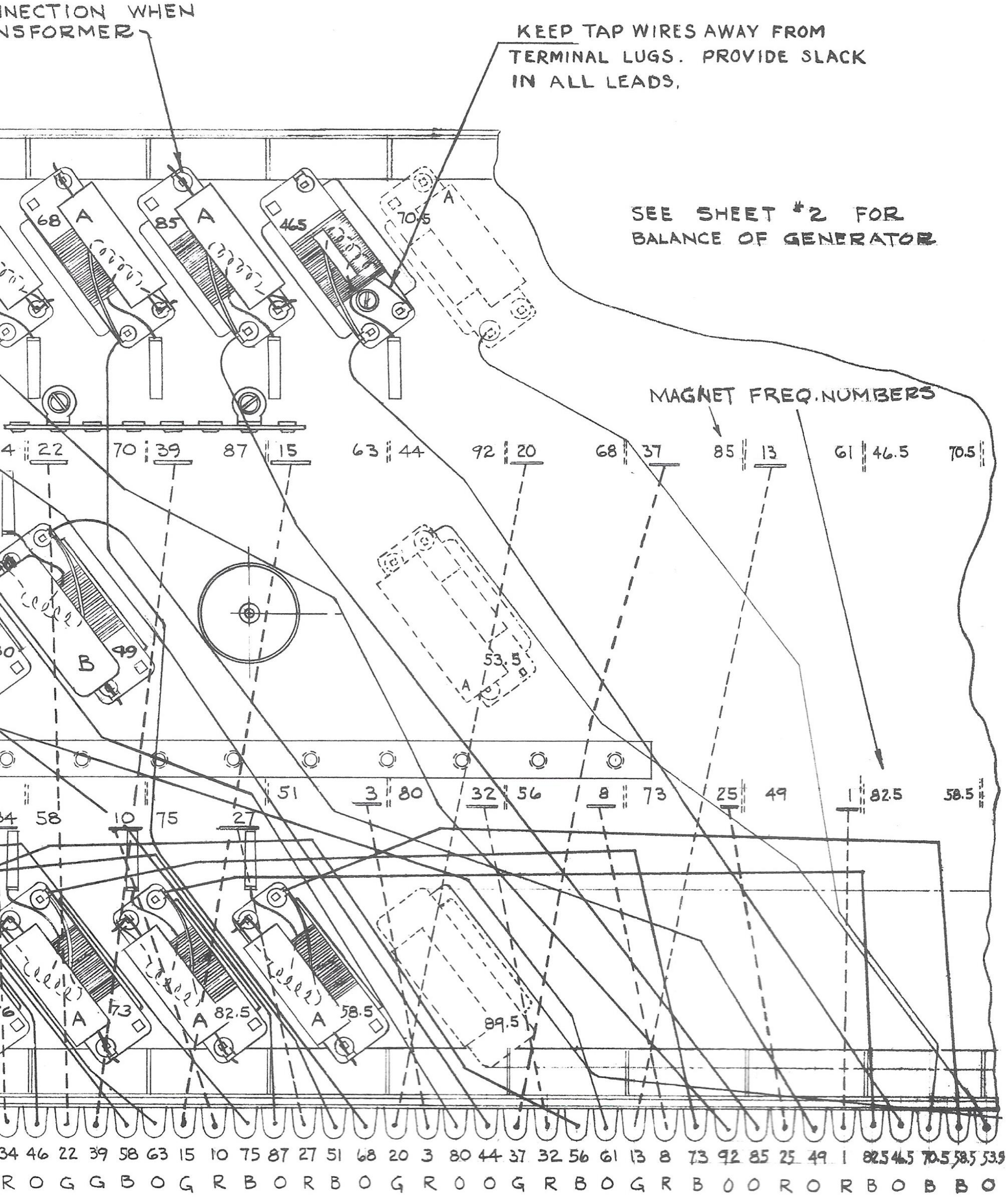
SEE DRAWING AO-29/28-0 F

LEAD FROM MAGNET COIL

LEAD TERMINAL AS NOTE

CONDENSER	PART NUMBER
"A"	AO-506-13
"B"	AO-506-18

FOR SELECTION OF ALL CONDENSERS, SEE IN-21680

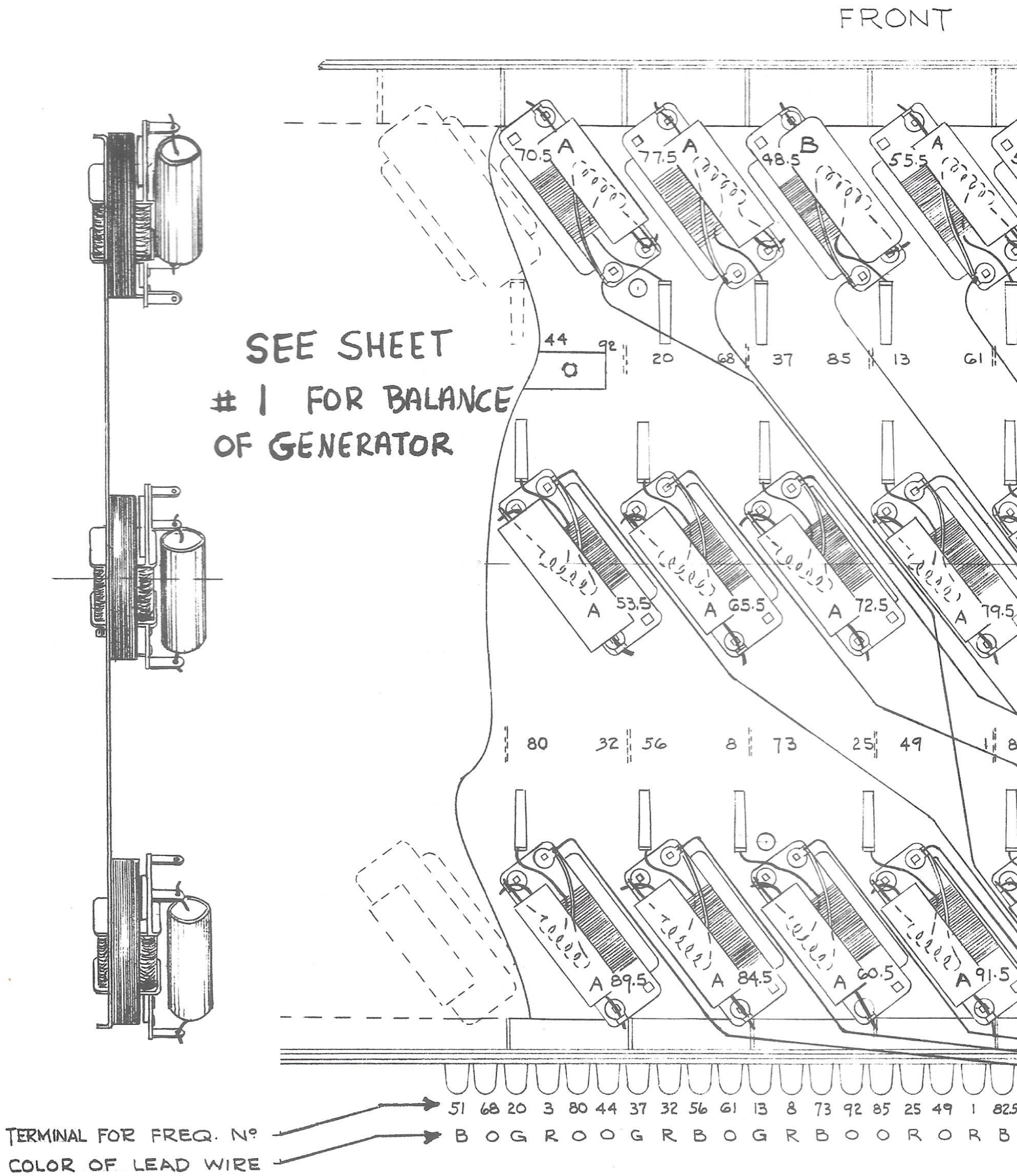


SEE NOTE
MAGNET COIL CONNECTION.

NOTE:

SEE DRAWING AO-29/27-0 FOR MAGNET LOCATION (FRONT)
SEE DRAWING AO-29/28-0 FOR MAGNET LOCATION (REAR)

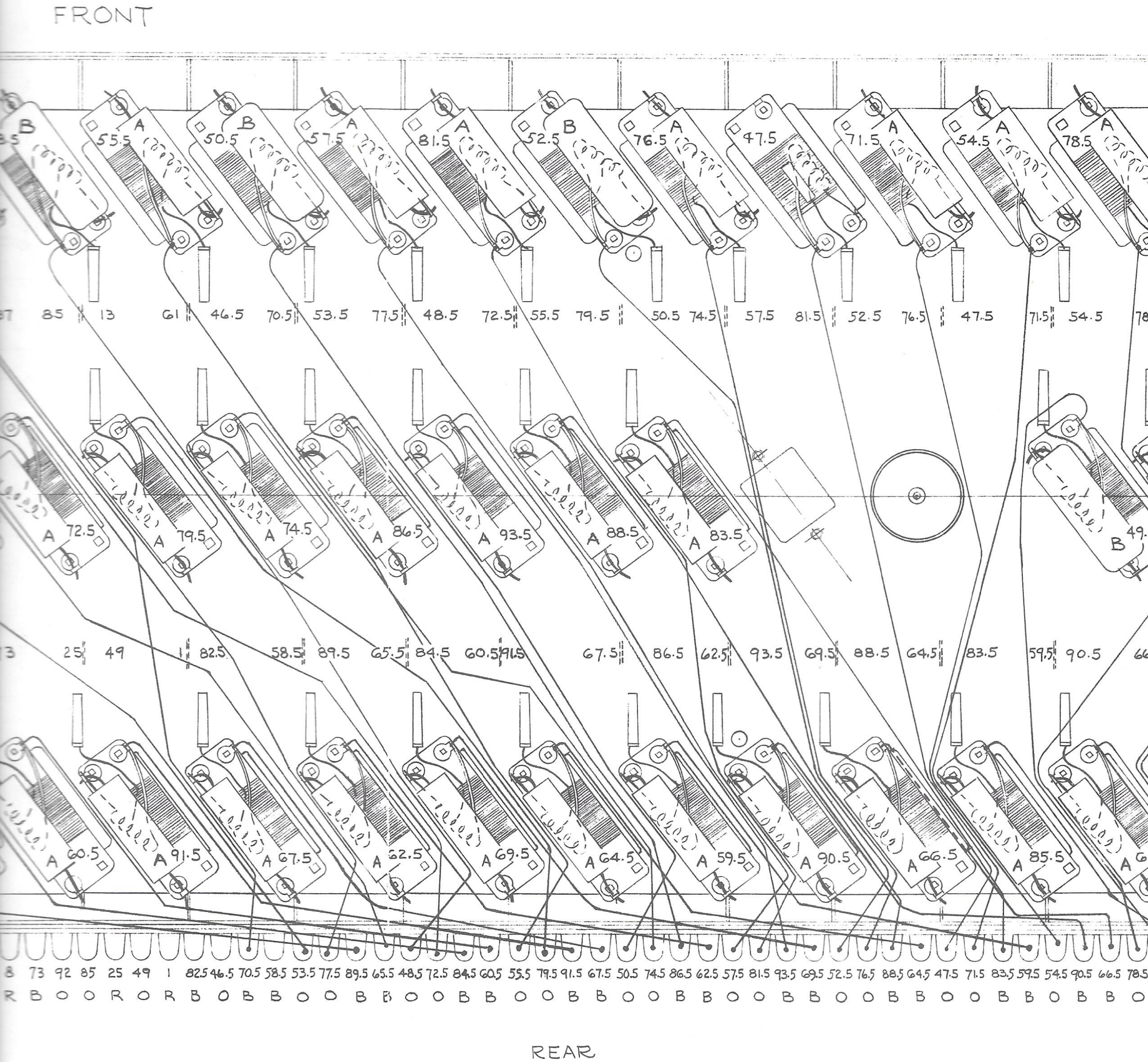
LEAD FROM MAGNET COIL TO CONNECT TO CONDENSER
LEAD TERMINAL AS NOTED.



CODE
B = BROWN
R = RED
O = ORANGE
G = GREEN

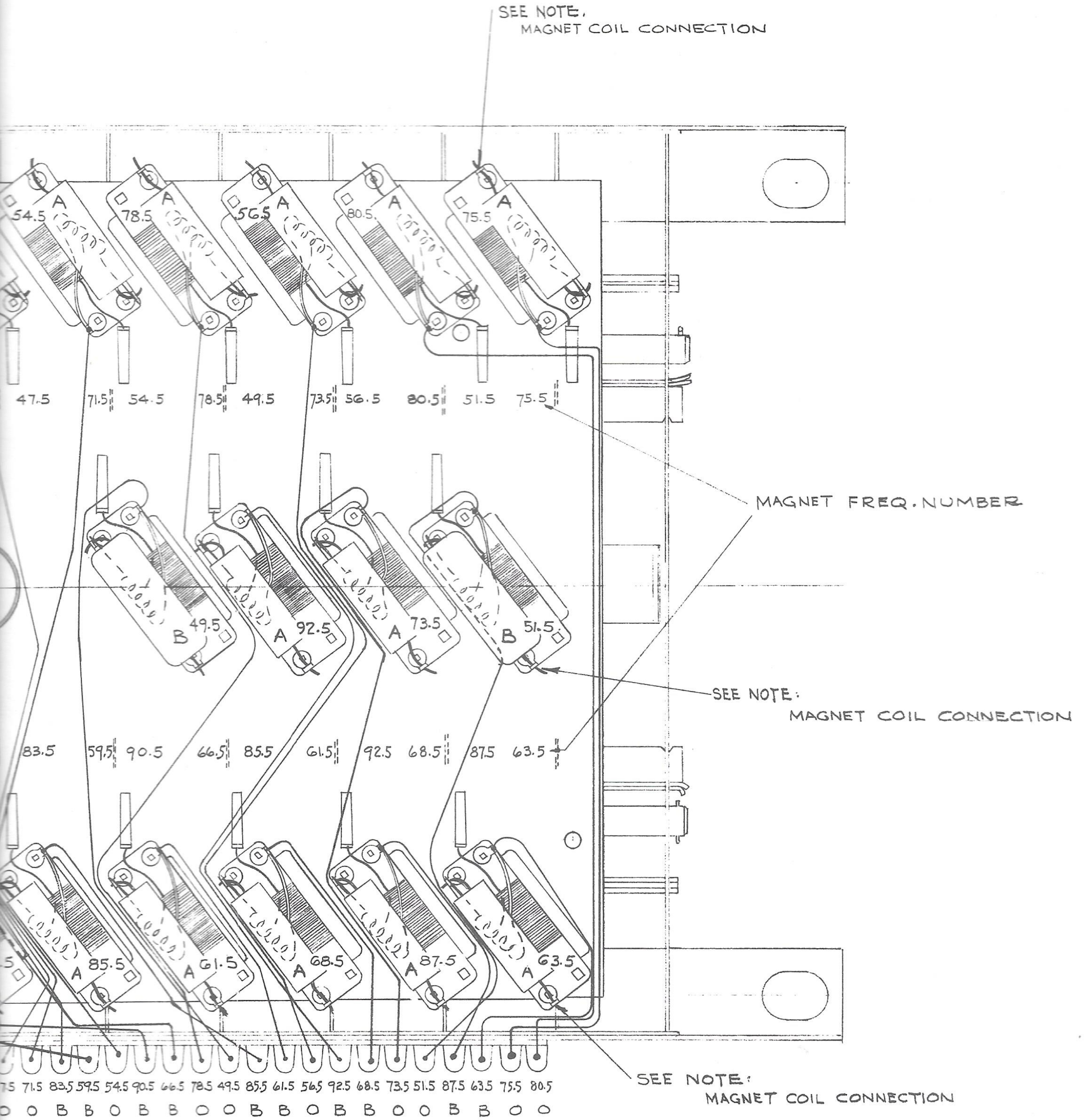
GREEN LEADS TO RUN PA
BEARING PLATE AS FAR A
GENERATOR COVER

ALL ORANGE LEADS TO FO
COILS TO TERMINALS AS
TO RUN ABOVE BROWN L
TERMINALS.



EN LEADS TO RUN PARALLEL TO ADJACENT
RING PLATE AS FAR AS REAR EDGE OF
ERATOR COVER

ORANGE LEADS TO FOLLOW A DIRECT COURSE FROM
S TO TERMINALS AS POSSIBLE. ORANGE LEADS
RUN ABOVE BROWN LEADS IN DRESSING TO
MINALS.



NOTE:

SEE DRAWING AO-29127-0 FOR MAGNET LOCATION (FRONT)
SEE DRAWING AO-29128-0 FOR MAGNET LOCATION (REAR)

* LEAD FROM MAGNET COIL TO CONNECT TO CONDENSER LEAD TERMINAL AS NOTED

FIGURE 5 GENERATOR WIRING SHEET 2

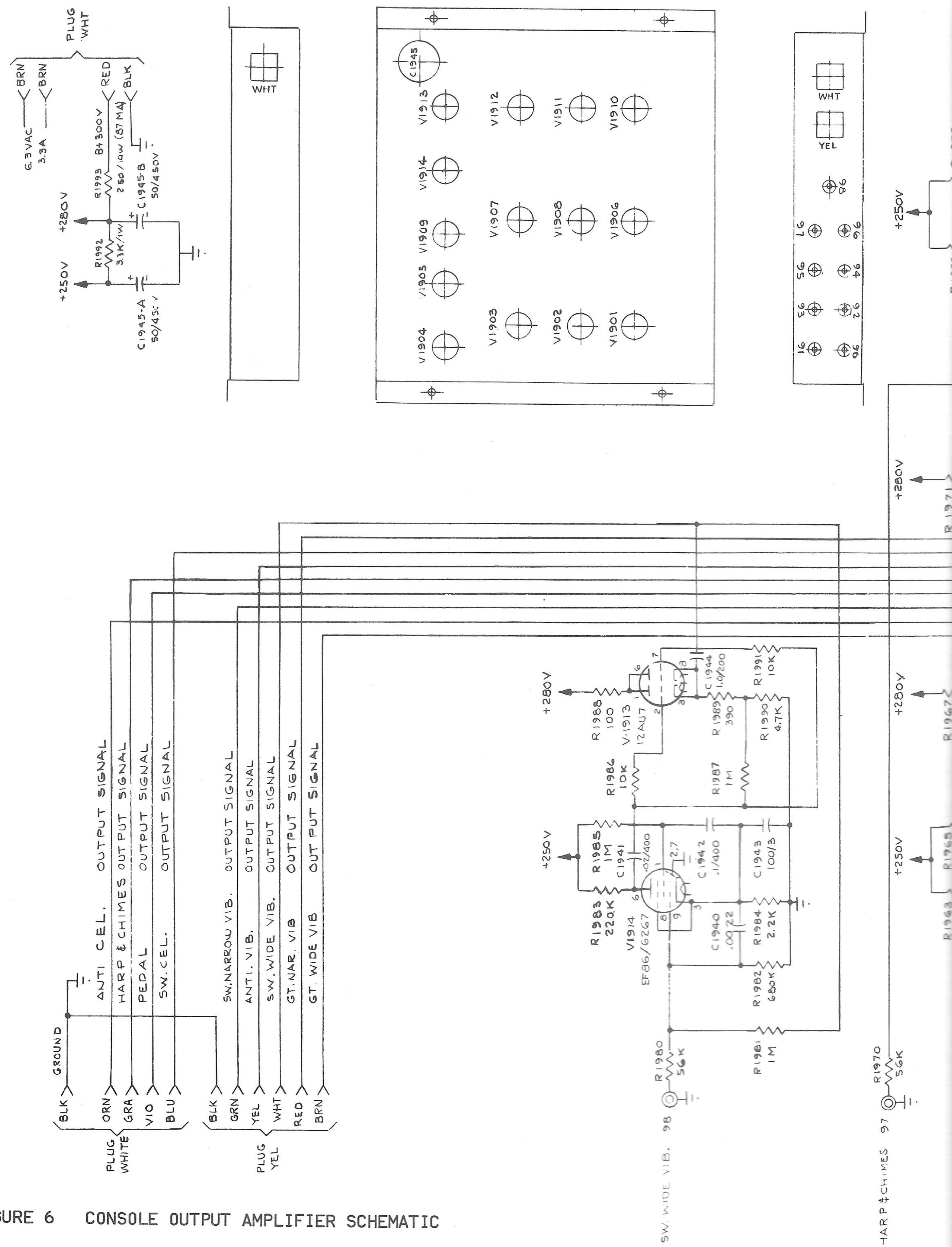
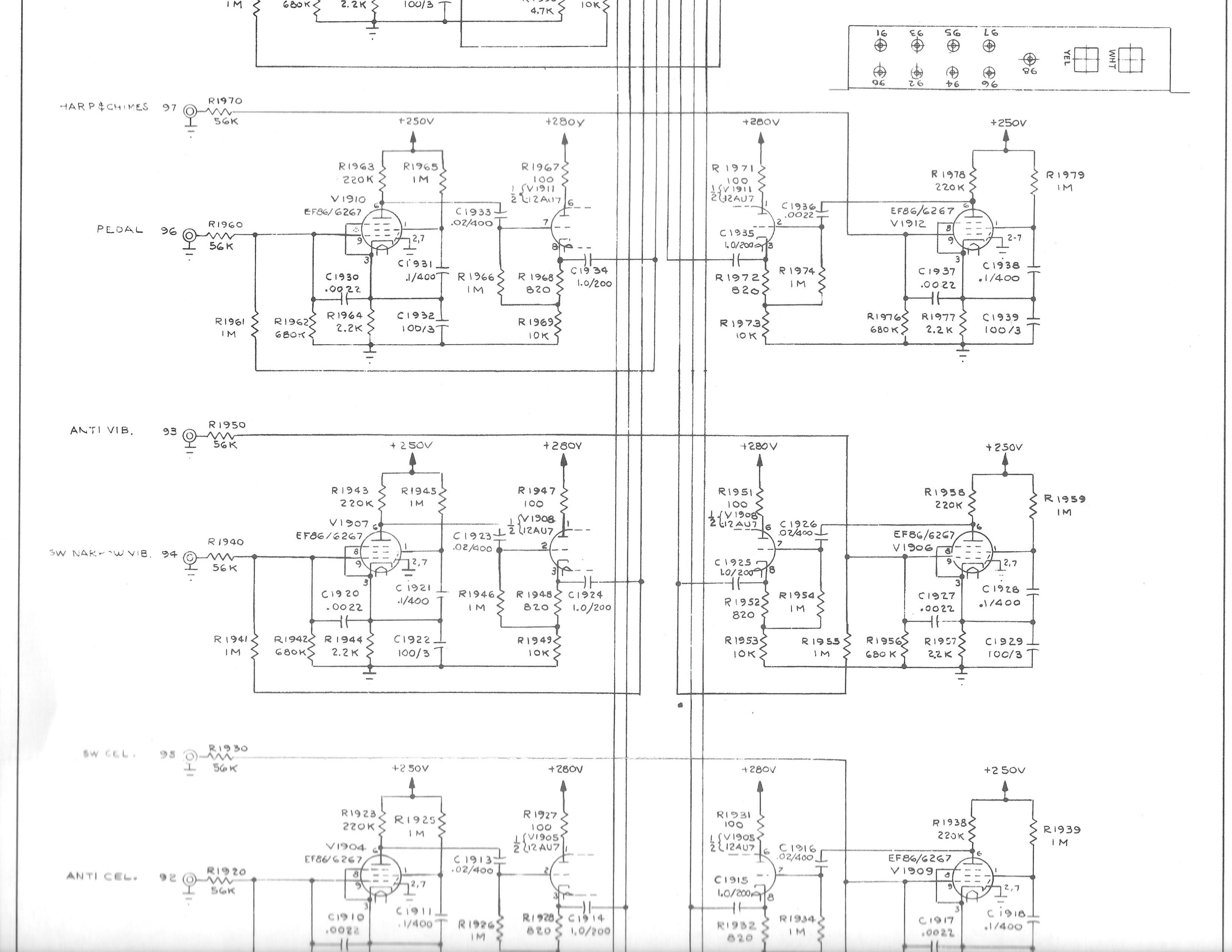
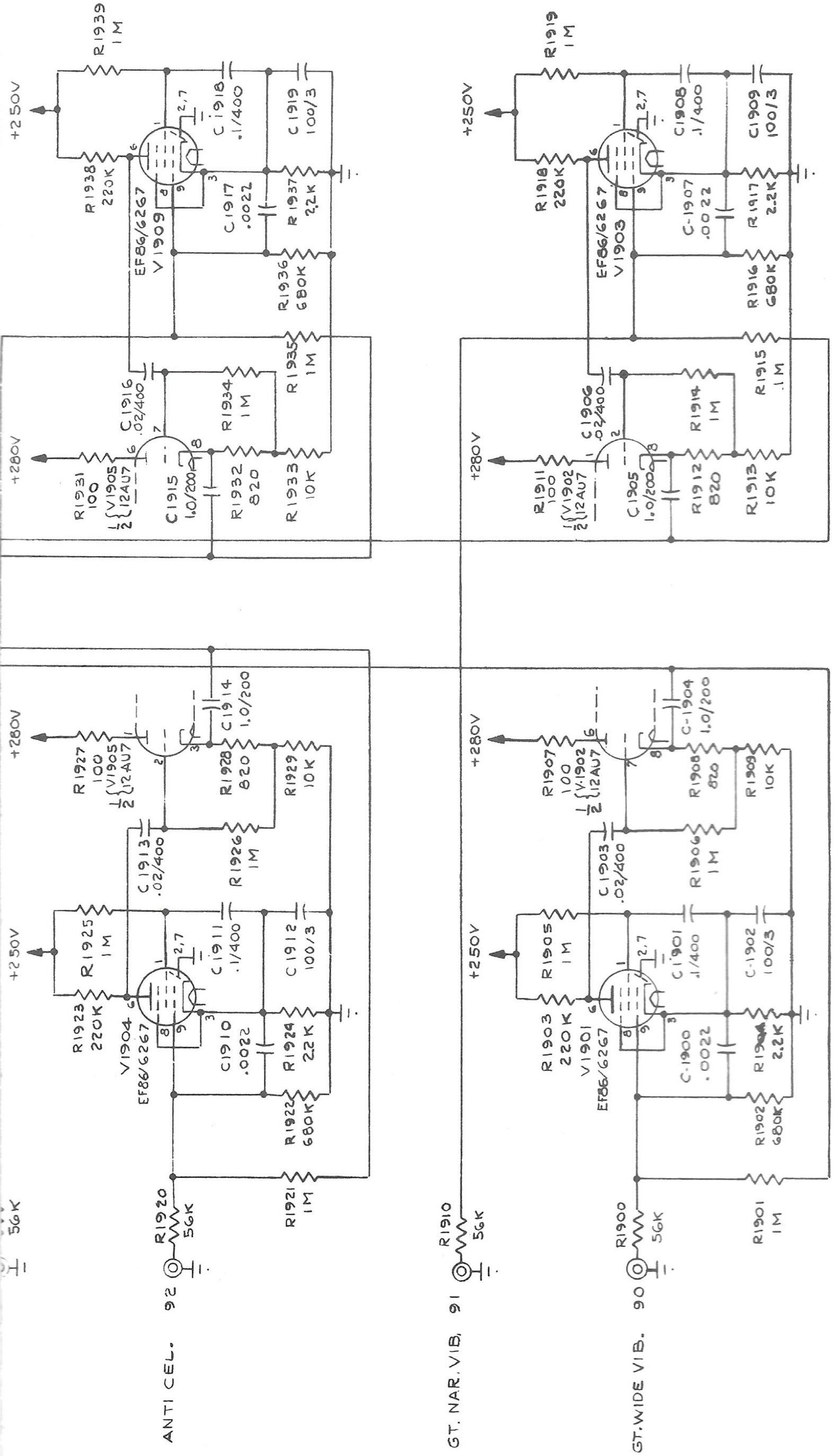


FIGURE 6 CONSOLE OUTPUT AMPLIFIER SCHEMATIC



HARP & CHIMES 97
R1970 56K
PEDAL 96
R1960 56K
ANTI VIB. 93
R1950 56K
SW NARROW VIB. 94
R1940 56K
SW CEL. 95
R1930 56K
ANTI CEL. 92
R1920 56K
+250V
+280V
R1963 220K
R1965 1M
V1910 EF86/6267
C1930 .0022
C1931 .1/400
R1961 1M
R1962 680K
R1964 2.2K
C1932 100/3
C1933 .02/400
R1967 100
1/2 V1911 12AU7
R1966 1M
R1968 820
C1934 1.0/200
R1969 10K
R1971 100
C1935 1.0/200
C1936 .0022
R1972 820
R1973 10K
R1974 1M
R1978 220K
R1979 1M
V1912
C1937 .0022
C1938 .1/400
R1976 680K
R1977 2.2K
C1939 100/3
R1943 220K
R1945 1M
V1907 EF86/6267
C1920 .0022
C1921 .1/400
R1941 1M
R1942 680K
R1944 2.2K
C1922 100/3
C1923 .02/400
R1947 100
1/2 V1908 12AU7
R1946 1M
R1948 820
C1924 1.0/200
R1949 10K
R1951 100
C1925 1.0/200
C1926 .02/400
R1952 820
R1953 10K
R1954 1M
R1955 1M
R1958 220K
R1959 1M
V1906 EF86/6267
C1927 .0022
C1928 .1/400
R1956 680K
R1957 2.2K
C1929 100/3
R1923 220K
R1925 1M
V1904 EF86/6267
C1910 .0022
C1911 .1/400
C1913 .02/400
R1927 100
1/2 V1905 12AU7
R1926 1M
R1928 820
C1914 1.0/200
R1931 100
C1915 1.0/200
C1916 .02/400
R1932 820
R1934 1M
R1938 220K
R1939 1M
V1909 EF86/6267
C1917 .0022
C1918 .1/400
1M
680K
2.2K
100/3
4.7K
10K
91 93 95 97
96 92 94 96
98
YEL
WHT



Schematic Console Output Amplifier

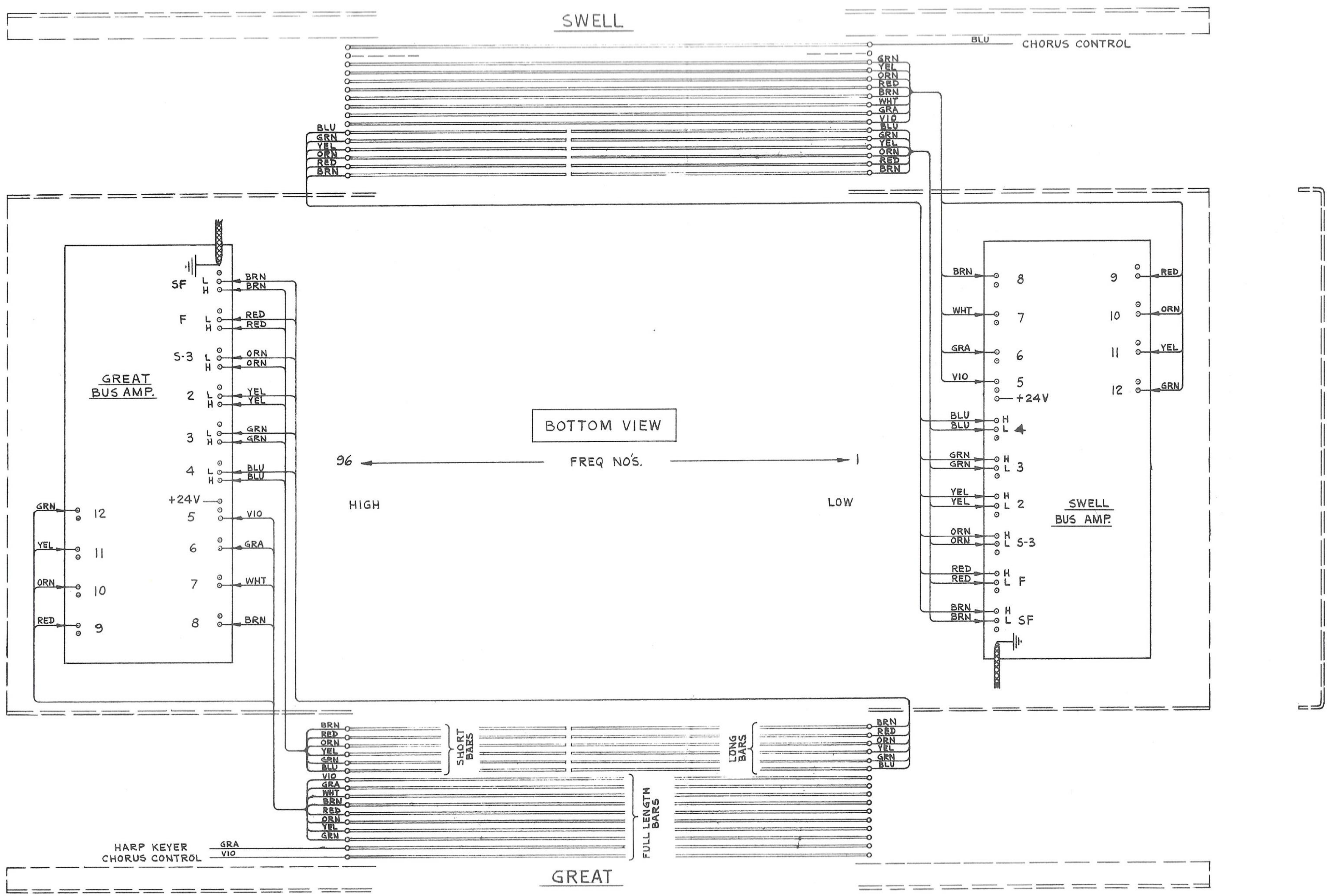


FIGURE 7 Bus Wiring Diagram Manual Relay Assembly

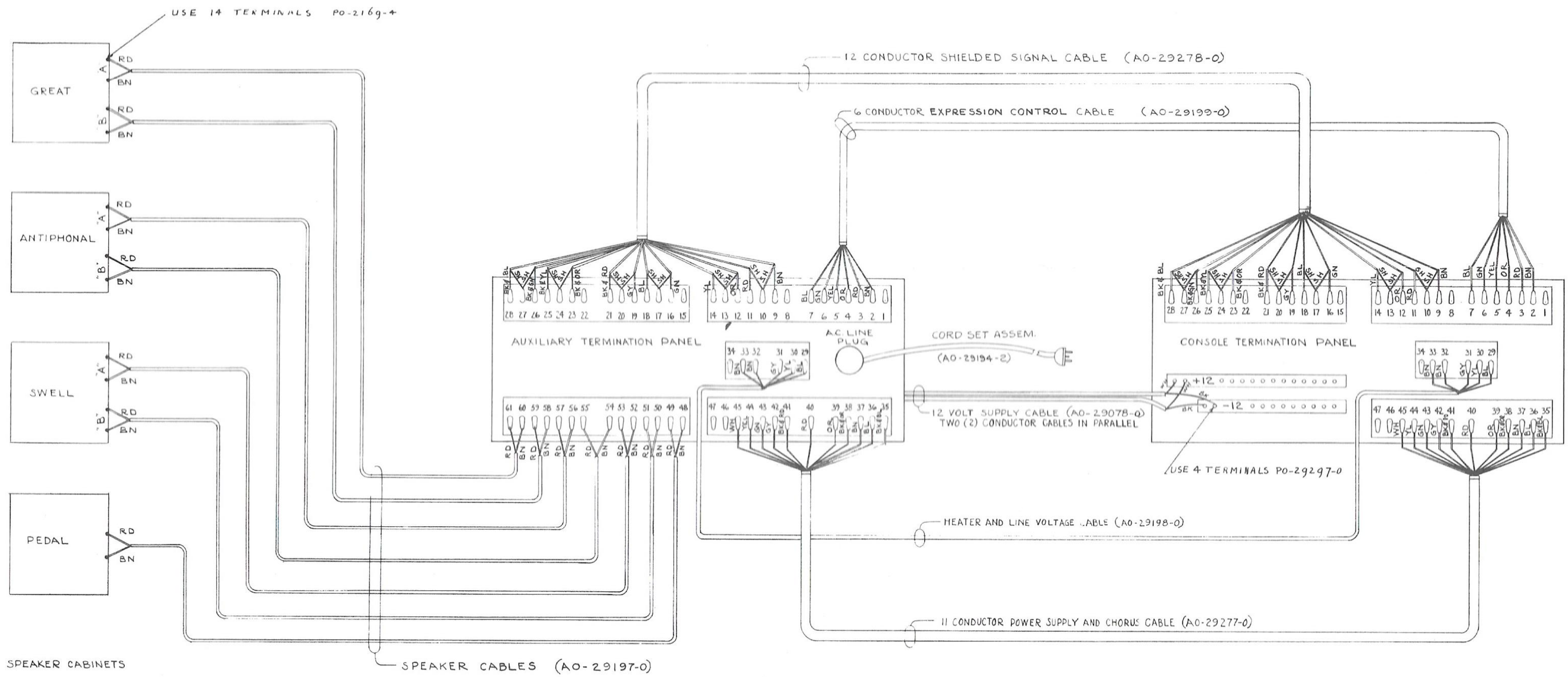
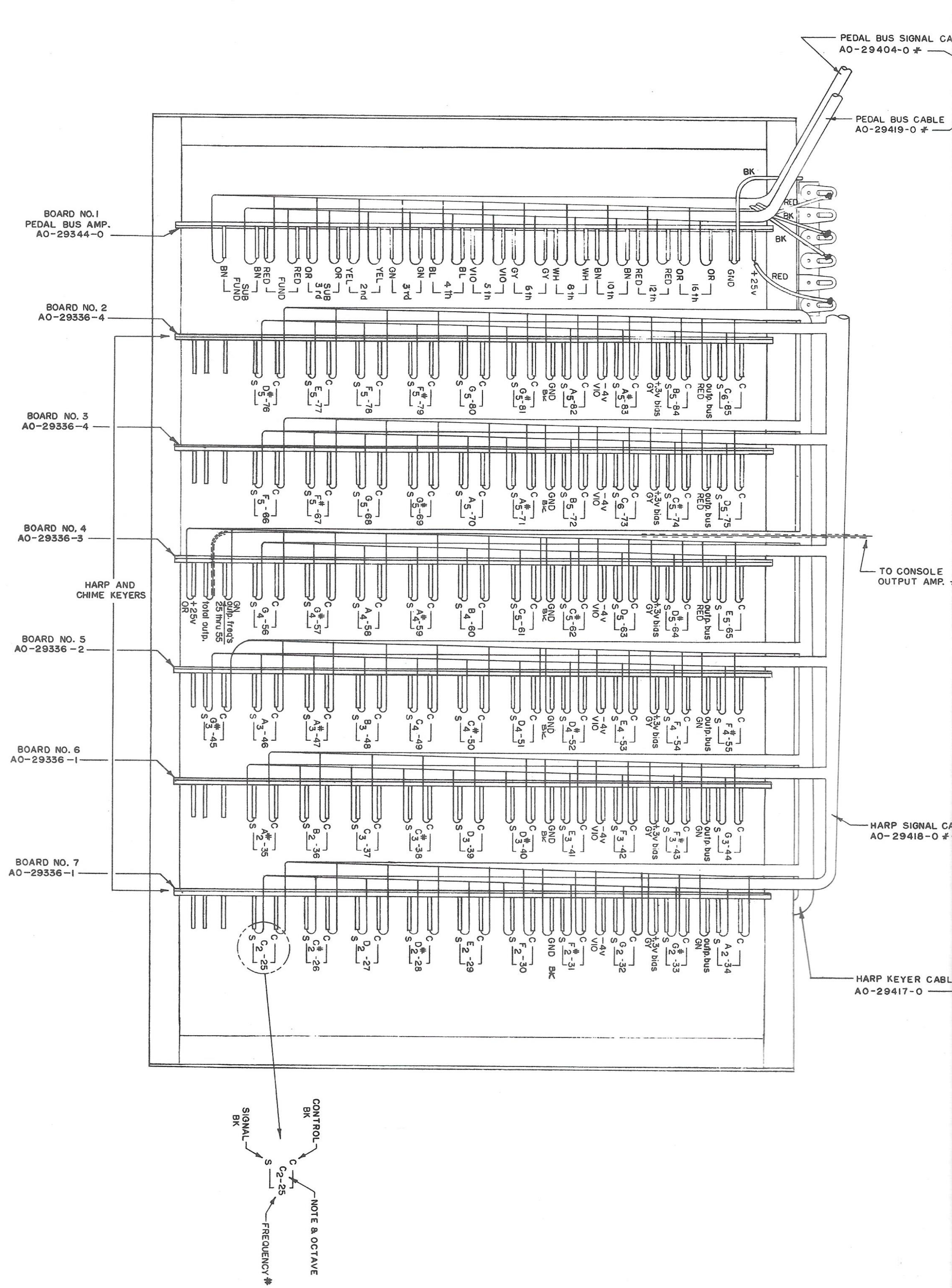
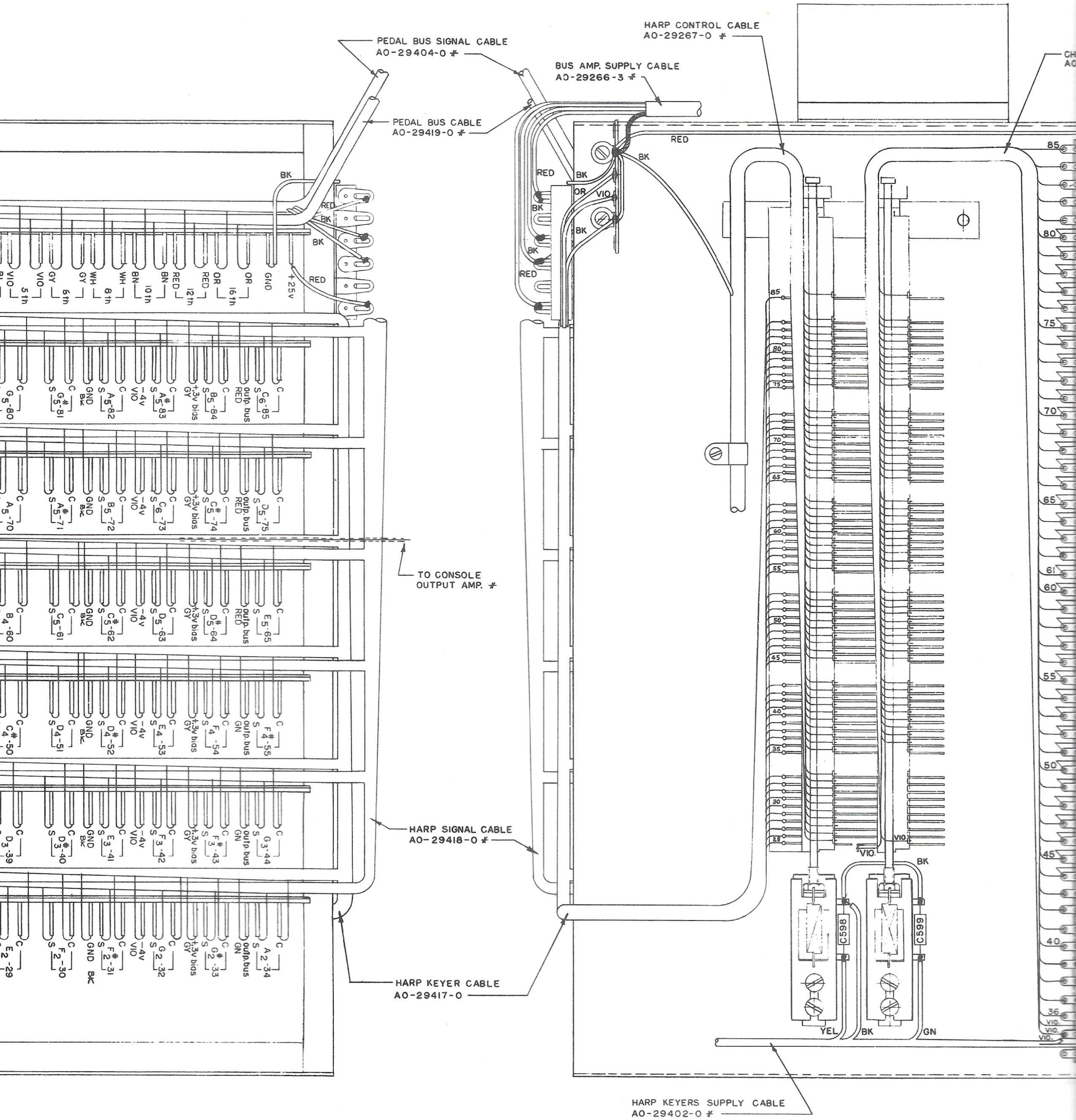


FIGURE 8 System Wiring Diagram


PEDAL BUS SIGNAL CA
AO-29404-0 *
PEDAL BUS CABLE
AO-29419-0 *
BOARD NO. 1
PEDAL BUS AMP.
AO-29344-0
BOARD NO. 2
AO-29336-4
BOARD NO. 3
AO-29336-4
BOARD NO. 4
AO-29336-3
HARP AND
CHIME KEYERS
BOARD NO. 5
AO-29336-2
BOARD NO. 6
AO-29336-1
BOARD NO. 7
AO-29336-1
TO CONSOLE
OUTPUT AMP.
HARP SIGNAL CA
AO-29418-0 *
HARP KEYER CABL
AO-29417-0
BK
RED
CONTROL
BK
SIGNAL
BK
NOTE & OCTAVE
FREQUENCY *


PEDAL BUS SIGNAL CABLE
AO-29404-0 *
PEDAL BUS CABLE
AO-29419-0 *
BUS AMP. SUPPLY CABLE
AO-29266-3 *
HARP CONTROL CABLE
AO-29267-0 *
TO CONSOLE
OUTPUT AMP. *
HARP SIGNAL CABLE
AO-29418-0 *
HARP KEYER CABLE
AO-29417-0
HARP KEYERS SUPPLY CABLE
AO-29402-0 *
C598
C599

FIGURE

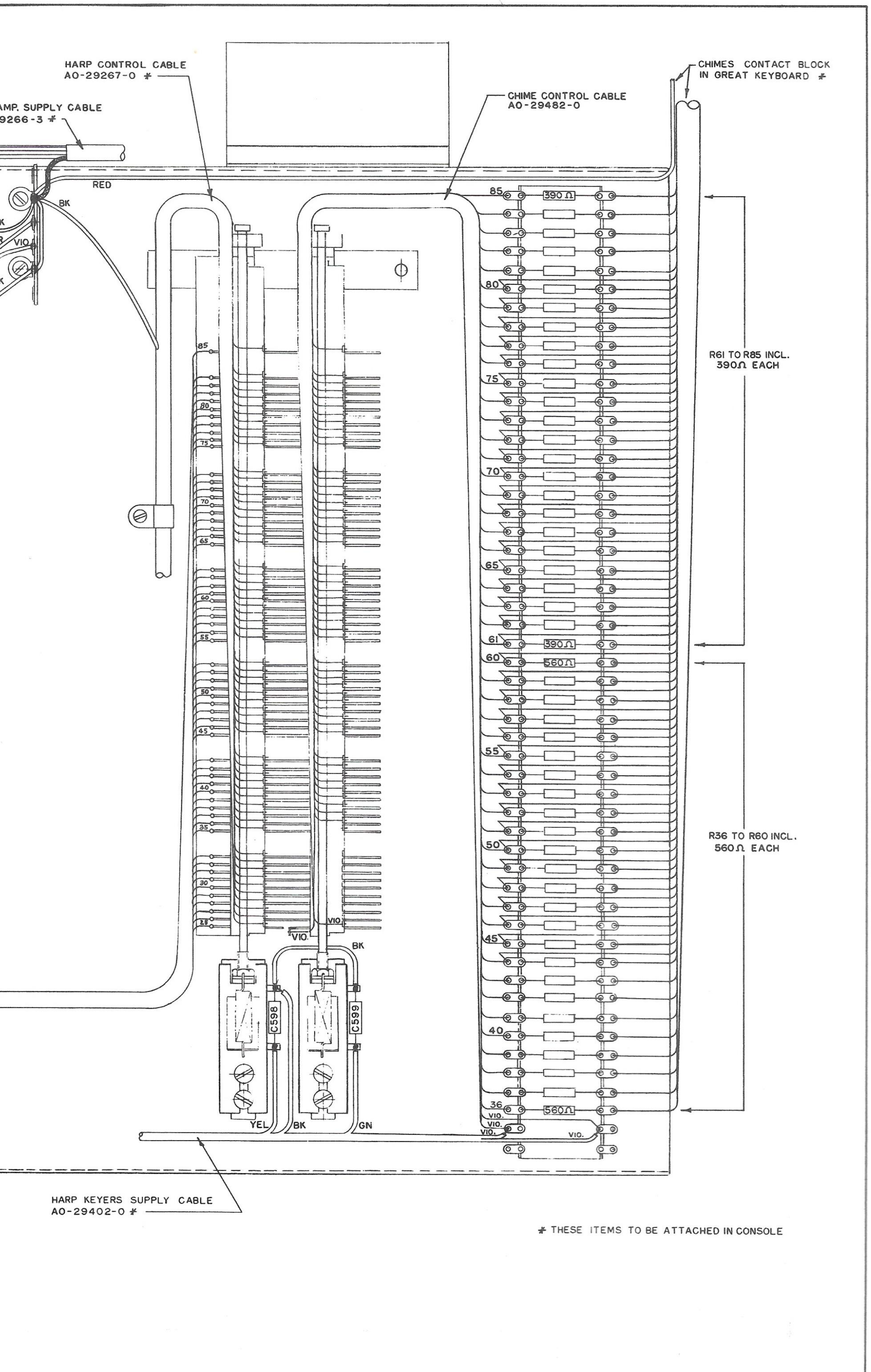
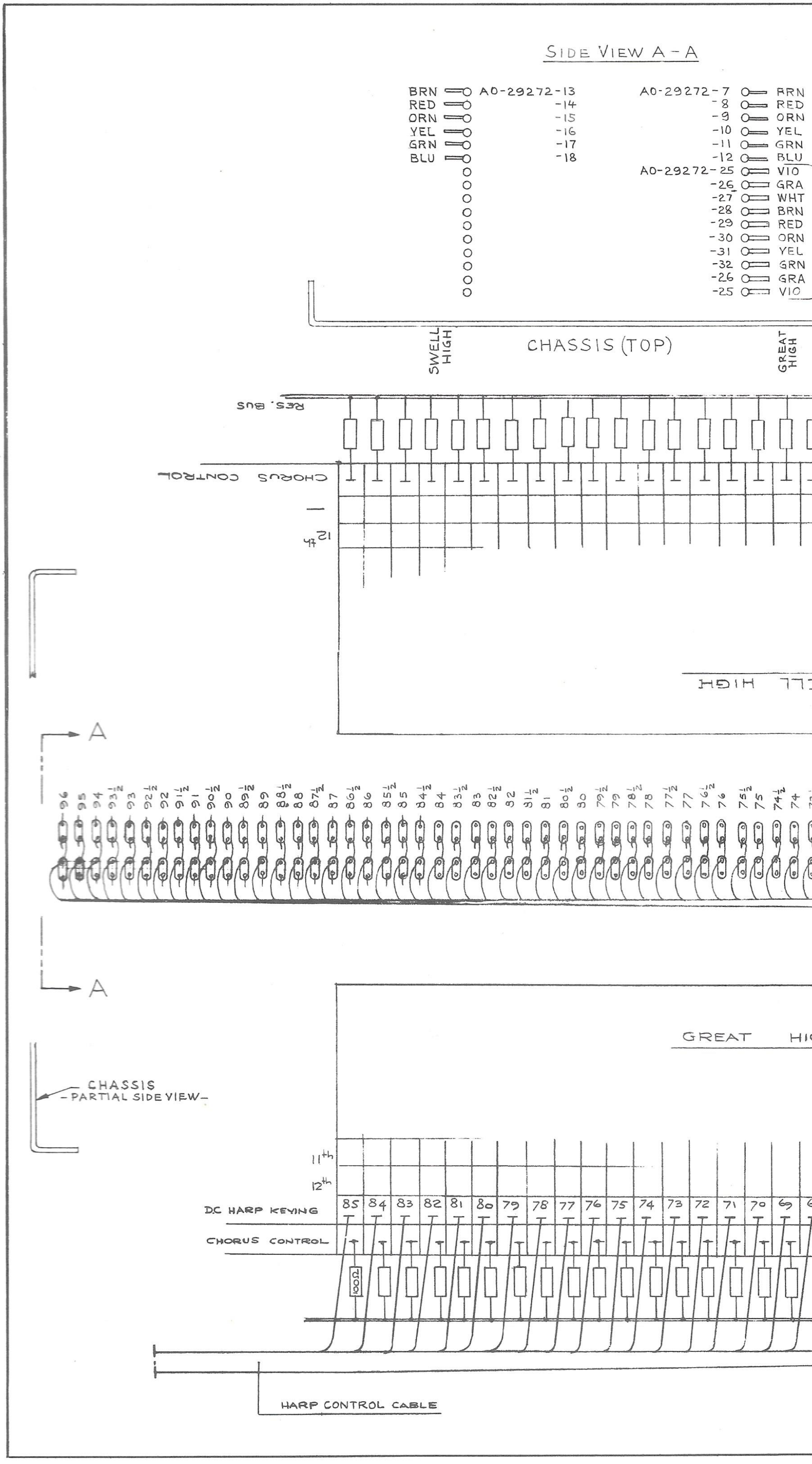
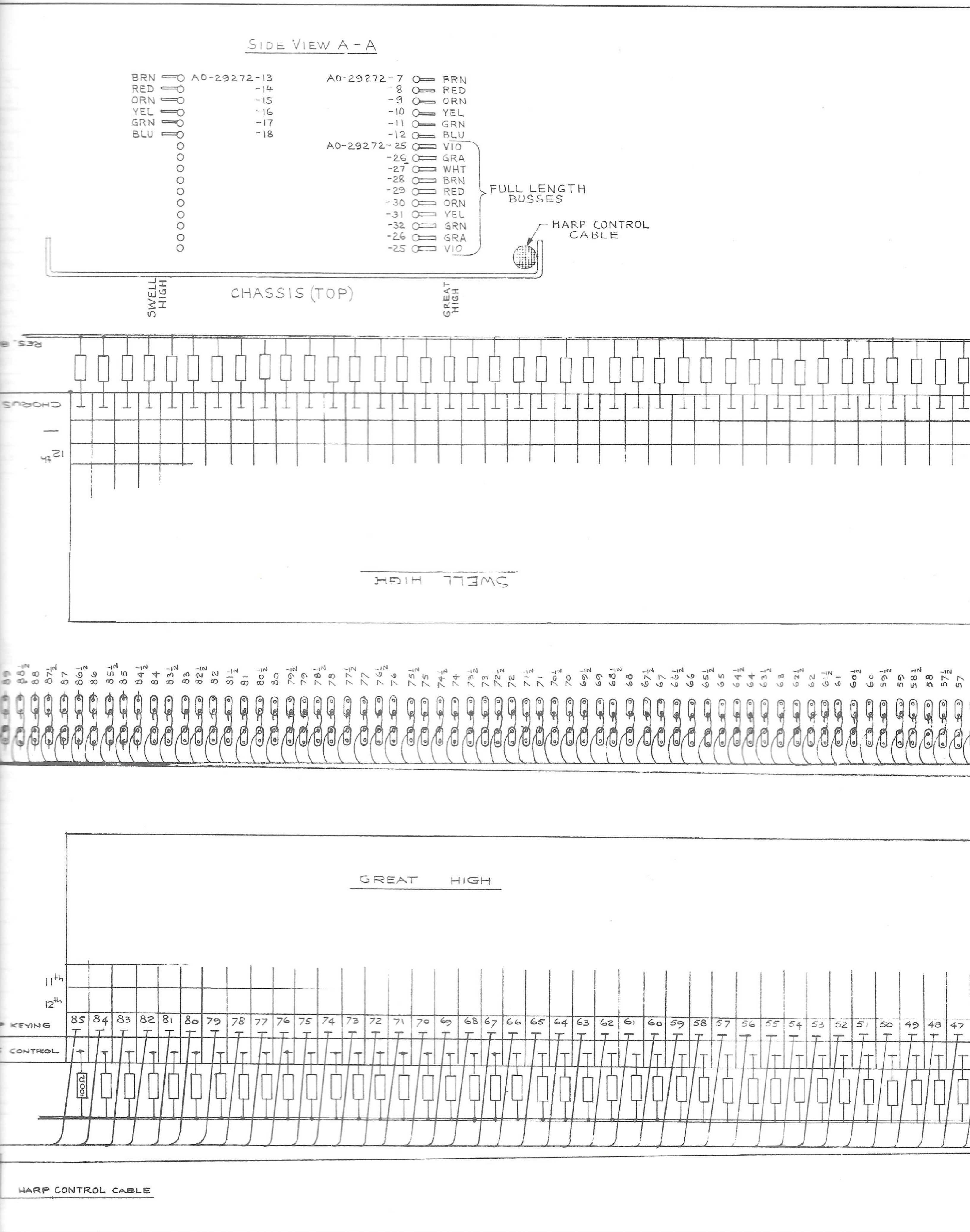


FIGURE 9 Wiring Diagram Manual Relays


SIDE VIEW A-A
BRN RED ORN YEL GRN BLU
A0-29272-13 -14 -15 -16 -17 -18
A0-29272-7 -8 -9 -10 -11 -12
BRN RED ORN YEL GRN BLU
A0-29272-25 -26 -27 -28 -29 -30 -31 -32 -26 -25
VIO GRA WHT BRN RED ORN YEL GRN GRA VIO
SWELL HIGH
CHASSIS (TOP)
GREAT HIGH
RES. BUS
CHORUS CONTROL
12th
A
A
CHASSIS
- PARTIAL SIDE VIEW -
GREAT
11th
12th
D.C HARP KEYING
85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69
CHORUS CONTROL
100Ω
HARP CONTROL CABLE



SIDE VIEW A-A
BRN RED ORN YEL GRN BLU
A0-29272-13 -14 -15 -16 -17 -18
A0-29272-7 -8 -9 -10 -11 -12
BRN RED ORN YEL GRN BLU
A0-29272-25 -26 -27 -28 -29 -30 -31 -32 -26 -25
VIO GRA WHT BRN RED ORN YEL GRN GRA VIO
FULL LENGTH BUSSES
HARP CONTROL CABLE
CHASSIS (TOP)
SWELL HIGH
GREAT HIGH
RES. B
CHORUS
12th
SWELL HIGH
GREAT HIGH
11th
12th
KEYING
CONTROL
85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47
100Ω
HARP CONTROL CABLE

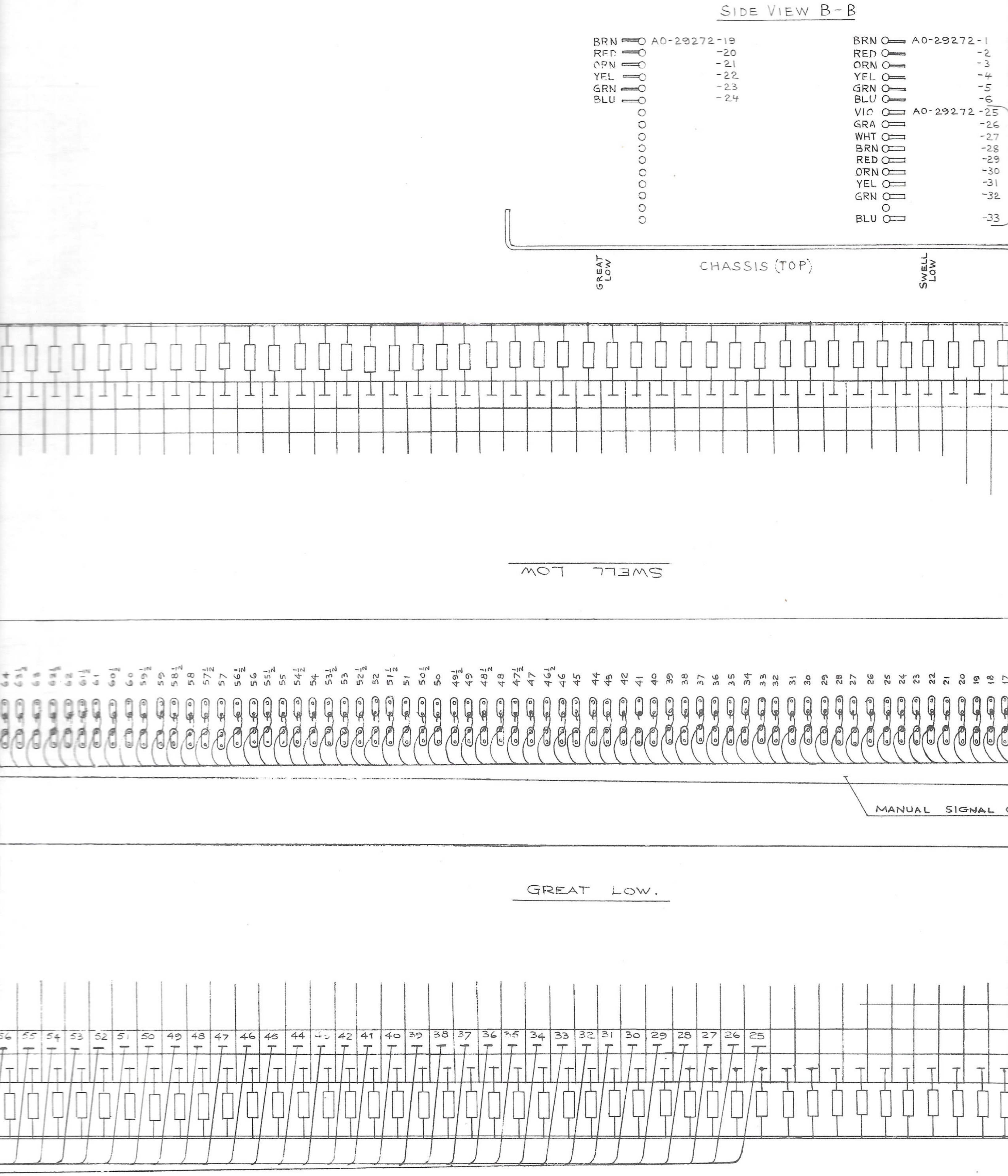


FIGURE 10 Harp and Chimes Keyer Ass

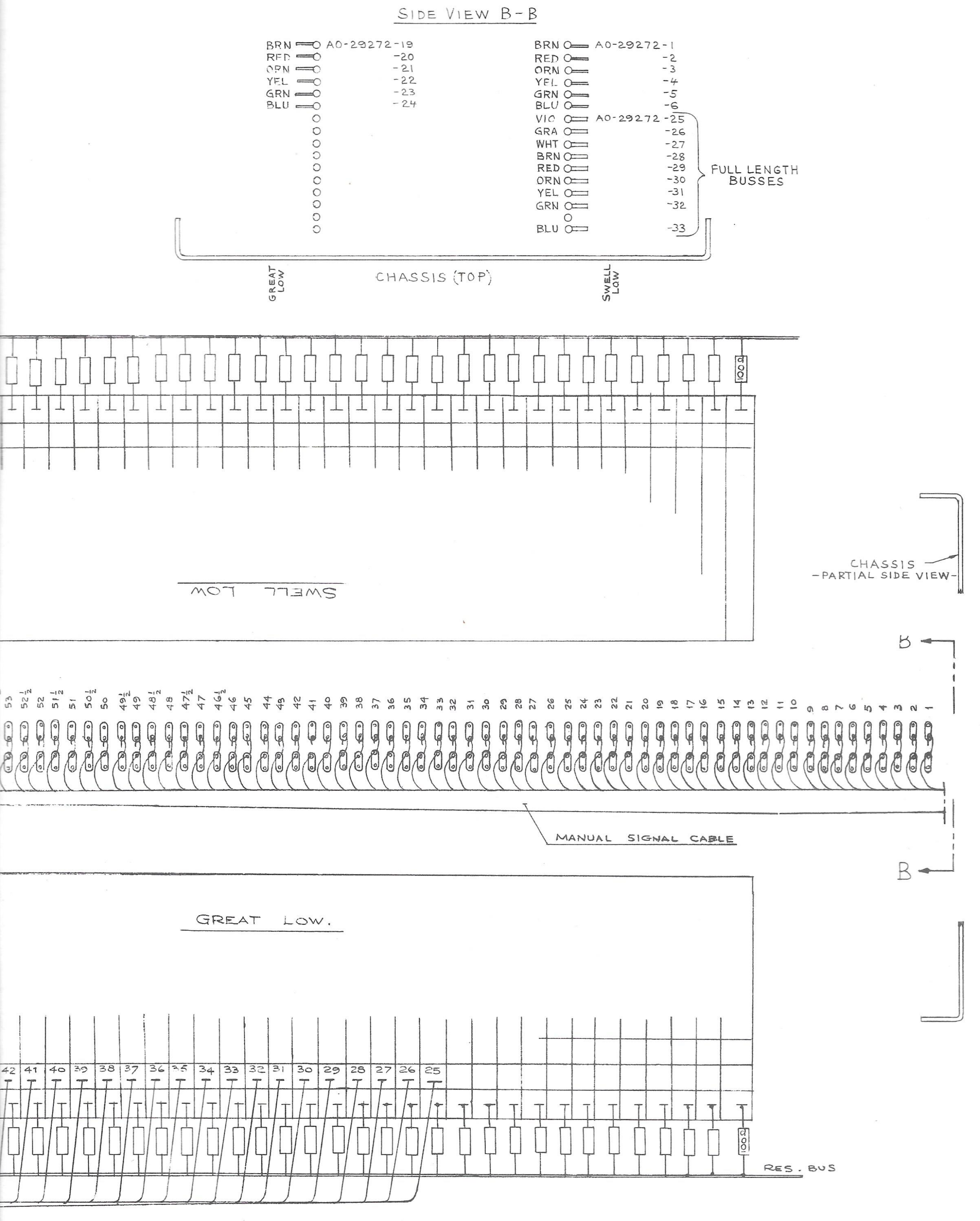


FIGURE 10 Harp and Chimes Keyer Assembly Wiring Diagram

(A0-29074-7) 101Ω | (A0-29074-6) 68Ω

C	B	A#	A	G#	G	F#	F	E	D#	D	C#	C	B	A#	A	G#	G	F#	F	E	D#	D	C#	C
25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13
44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44
70½	69½	68½	67½	66½	65½	64½	63½	62½	61½	60½	59½	58½	57½	56½	55½	54½	53½	52½	51½	50½	49½	48½	47½	46½
73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	59	56	55	54	53	52	51
77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
78½	77½	76½	75½	74½	73½	72½	71½	70½	69½	68½	67½	66½	65½	64½	63½	62½	61½	60½	59½	58½	57½	56½	55½	54½
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56
37	36	35	34	33	32	31	30	29	28	27	26	25												
cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc

72	72½	73	73½	74	74½	75	75½	76	76½	77	77½	78	78½	79	79½	80	80½	81	81½	82	82½	83	83½	84	84½	85	85½	86	86½	87	87½	88	88½	89	89½	90	90½	91	91½	92	92½	93	93½	94	95	96

50½ Ω (A0-29074-5) | 34 Ω (A0-29074-4)

G#	A	A#	B	C	C#	D	D#	E	F	F#	G	G#	A	A#	B	C		
57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	SUB. FUND.	
69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	FUNDAMENTAL	
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	SUB. 3RD	
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	85	2 ND.	
88	89	90	91	92	93	94	95	96	85	86	87	88	89	90	91	92	3 RD.	
93	94	95	96	85	86	87	88	89	90	91	92	93	94	95	96	85	4 TH	
85	86	87	38	89	90	91	92	93	94	95	96						5 TH.	
88	89	90	91	92	93	94	95	96	90	91	92	93	94	95	84	85	6 TH.	
																	7 TH.	
93	94	95	96	85	86	87	88	89	90	91	92	93	94	95	96	85	8 TH.	
																	9 TH.	
88	89	90	91	92	93	94	95										10 TH.	
																	11 TH.	
88	89	90	91	92	93	94	95	96	90	91	92	93	94	83	84	85	12 TH.	
cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	CHORUS CONTROL	

FIGURE 11 Wiring Chart Manual Relays

(Ao-29074-6) 68Ω

(Ao-29074-7) 101Ω

G#	G	F#	F	E	D#	D	C#	C	B	A#	A	G#	G	F#	F	E	D#	D	C#	C	B	A#	A	G#	G	F#	F	E	D#	D	C#	C	B	A#	A	G#	G	F#	F
57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42
88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
85	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58
88	87	86	85	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61
									93½	92½	91½	90½	89½	88½	87½	86½	85½	84½	83½	82½	81½	80½	79½	78½	77½	76½	75½	74½	73½	72½	71½	70½	69½	68½	67½	66½	65½	64½	63½
93	92	91	90	89	88	87	86	85	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66
											96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68
88	96	95	94	93	92	91	90	89	88	87	86	85	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70
																	93½	92½	91½	90½	89½	88½	87½	86½	85½	84½	83½	82½	81½	80½	79½	78½	77½	76½	75½	74½	73½	72½	71½
88	87	86	85	96	95	94	93	92	91	90	89	88	87	86	85	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73
69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc

50½Ω (Ao-29074-5)

GREAT MANUAL
REAR VIEW – UPSIDE DOWN

46½	47	47½	48	48½	49	49½	50	50½	51	51½	52	52½	53	53½	54	54½	55	55½	56	56½	57	57½	58	58½	59	59½	60	60½	61	61½	62	62½	63	63½	64	64½	65	65½	66	66½	67	67½	68	68½	69	69½	70	70½	71	71½	72	72½	73	73½	74	74½	75	75½	76	76½	77

68Ω (Ao-29074-6)

50½Ω (Ao-29074-5)

C	C#	D	D#	E	F	F#	G	G#	A	A#	B	C	C#	D	D#	E	F	F#	G	G#	A	A#	B	C	C#	D	D#	E	F	F#	G	G#	A	A#	B	C	C#	D
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	85	86	87
65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	85	86	87	88	89	90	91
68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	85	86	87	88	89	90	91	92	93	94
70½	71½	72½	73½	74½	75½	76½	77½	78½	79½	80½	81½	82½	83½	84½	85½	86½	87½	88½	89½	90½	91½	92½	93½															
73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	85	86	87	88	89	90	91	92	93	94	95	96	85	86	87
75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96																	
77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	85	86	87	88	89	90	91	92	93	94	95	96	88	89	90	91	92	93	94
78½	79½	80½	81½	82½	83½	84½	85½	86½	87½	88½	89½	90½	91½	92½	93½																							
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	85	86	87	88	89	90	91	92	93	94	95	96	85	86	87	88	89	90	91	92	93	94
cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc

50½Ω (Ao-29074-5)

SWELL MANUAL
REAR VIEW - UPSIDE DOWN

		(AO-29074-4) 34Ω						(AO-29074-5) 50½Ω												(AO-					
		C	B	A#	A	G#	G	F#	F	E	D#	D	C#	C	B	A#	A	G#	G	F#	F	E	D#	D	C
	SUB. FUND.	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	5
	FUNDAMENTAL	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	6
	SUB. 3 RD.	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	6
	2 ND.	85	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	7
	3 RD.	92	91	90	89	88	87	86	85	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	8
	4 TH.	85	96	95	94	93	92	91	90	89	88	87	86	85	96	95	94	93	92	91	90	89	88	87	8
	5 TH.						96	95	94	93	92	91	90	89	88	87	86	85	96	95	94	93	92	91	9
	6 TH.	85	84	95	94	93	92	91	90	96	95	94	93	92	91	90	89	88	87	86	85	96	95	94	9
	7 TH.																								
	8 TH.	85	96	95	94	93	92	91	90	89	88	87	86	85	96	95	94	93	92	91	90	89	88	87	8
	9 TH																								
	10 TH.										95	94	93	92	91	90	89	88	96	95	94	93	92	91	9
	11 TH.																								
	12 TH.	85	84	83	94	93	92	91	90	96	95	94	93	92	91	90	89	88	87	86	85	96	95	94	9
	D.C. HARP KEYING	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	6
	CHORUS CONTROL	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	c

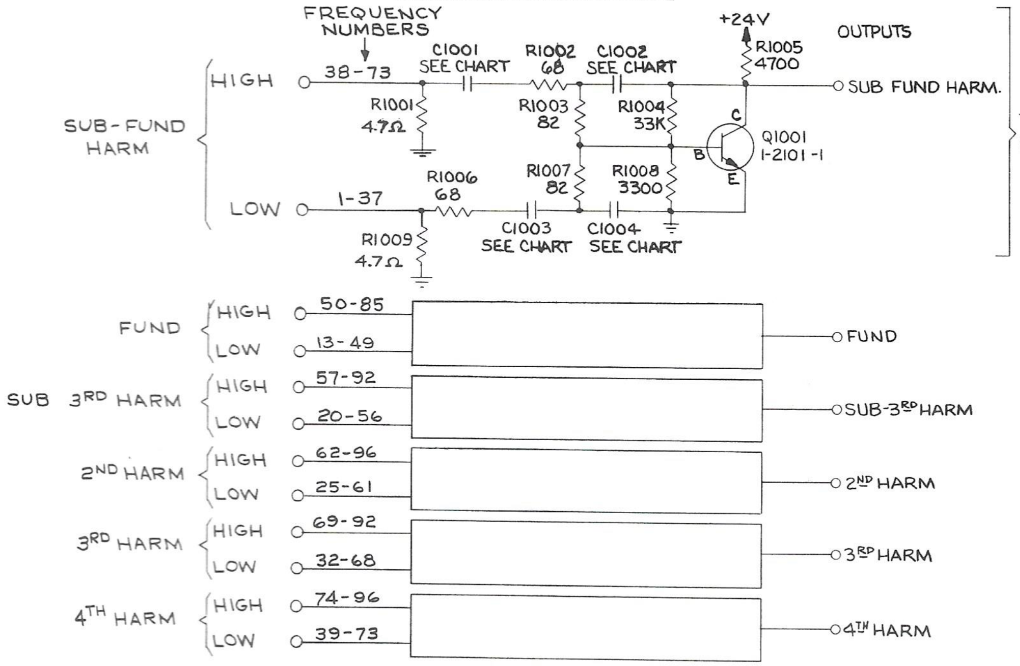
50½Ω
(AO-29074-5)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	46½	47	47½	48	48½	49	49½	50	50½	51	51½

FREQ. CONNECTIONS AT TERMINAL STRIP

68Ω (AO-29074-6)							101Ω (AO-29074-7)																							
C	C#	D	D#	E	F	F#	G	G#	A	A#	B	C	C#	D	D#	E	F	F#	G	G#	A	A#	B	C	C#	D	D#	E	F	F#
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
46½	47½	48½	49½	50½	51½	52½	53½	54½	55½	56½	57½	58½	59½	60½	61½	62½	63½	64½	65½	66½	67½	68½	69½	70½	71½	72½	73½	74½	75½	76½
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
54½	55½	56½	57½	58½	59½	60½	61½	62½	63½	64½	65½	66½	67½	68½	69½	70½	71½	72½	73½	74½	75½	76½	77½	78½	79½	80½	81½	82½	83½	84½
56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc

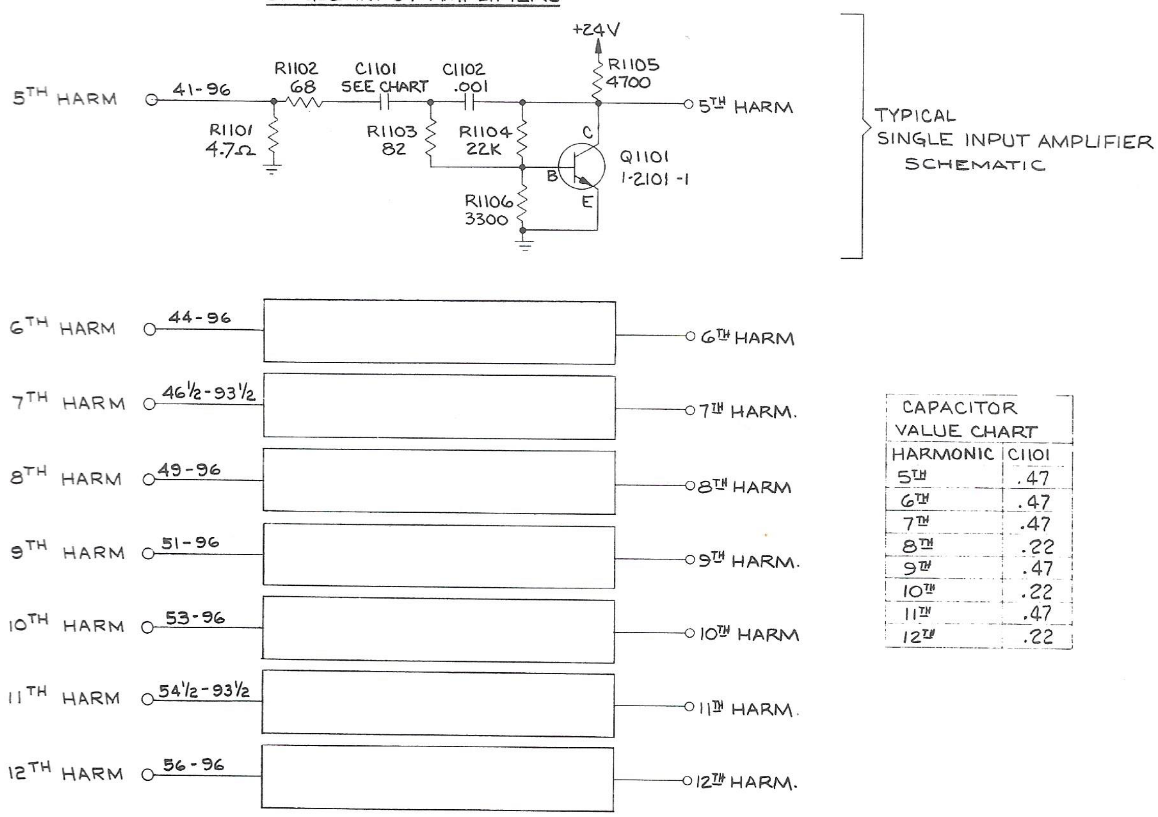
DUAL INPUT AMPLIFIERS



CAPACITOR VALUE CHART				
HARMONIC	C1001	C1002	C1003	C1004
SUB-FUND	3.3	.0047	33	2.2
FUND	2.2	.0022	15	2.2
SUB-3RD	1.0	.0015	4.7	1.0
2ND	1.0	.001	2.2	1.0
3RD	.47	.001	1.5	.47
4TH	.47	.001	1.0	.47

NOTE:
1. ALL CAPACITOR VALUES ARE IN MICROFARADS
2. ALL RESISTOR VALUES ARE IN OHMS

SINGLE INPUT AMPLIFIERS



CAPACITOR VALUE CHART	
HARMONIC	C1101
5TH	.47
6TH	.47
7TH	.47
8TH	.22
9TH	.47
10TH	.22
11TH	.47
12TH	.22

FIGURE 12 Schematic Manual Bus Amplifier Assembly

PEDAL AC SIGNAL TERM. STRIP IDENTIFIED BY FREQ. NO. → 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75

SW. SPRING ASSY. AO-29074-2 96 REQ'D

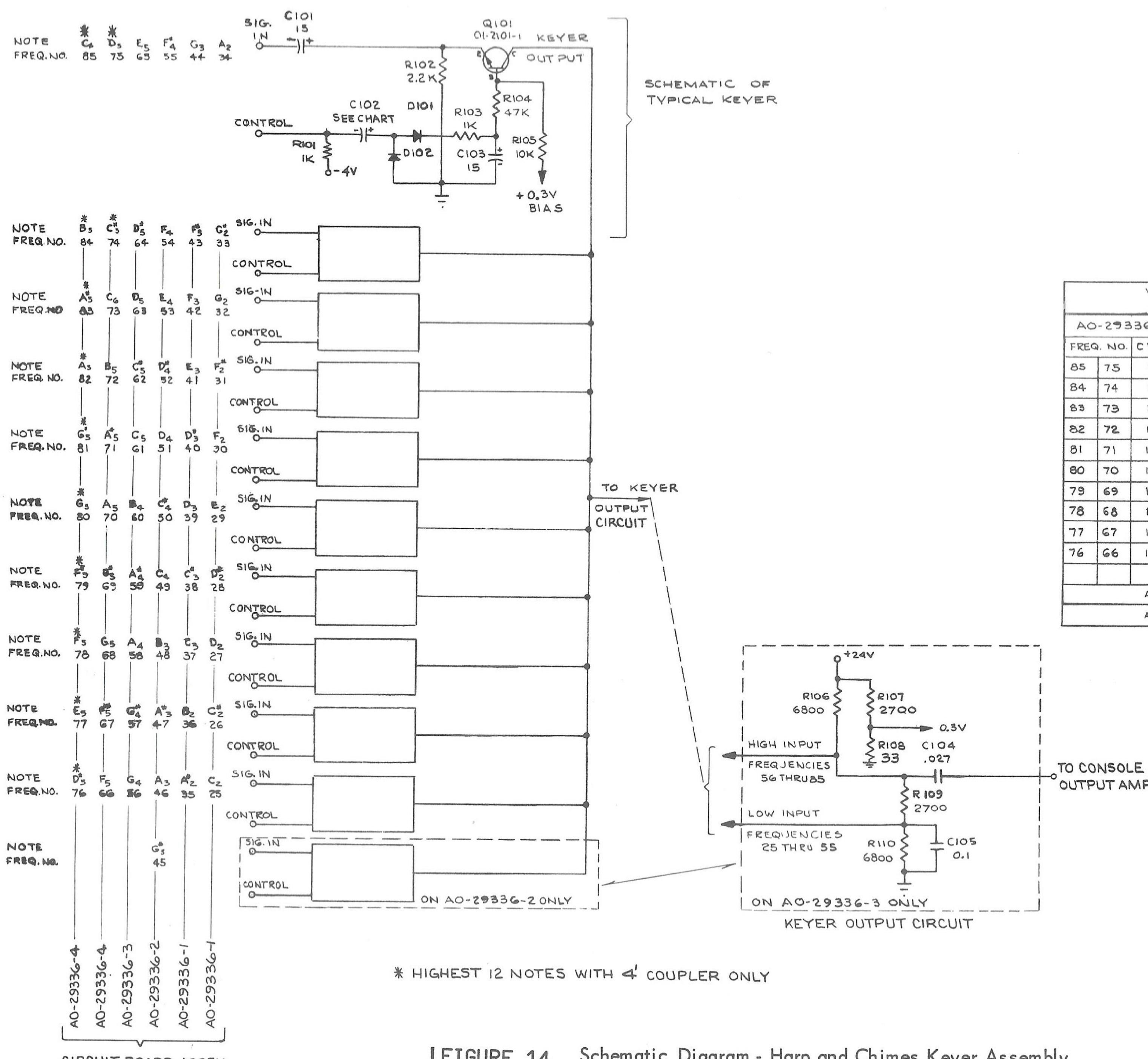
BUS NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	BUS WIRE COLOR		BUS. PART NO
16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	GRN	8' GREAT PEDAL	AO-29239
15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	GRN	8' SWELL PEDAL	AO-29239
14	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	GRN	4' SWELL PEDAL	AO-29239
13	AO-29074-9 (15Ω, GREEN) 14 REQUIRED												AO-29074-9 (15 Ω, GREEN) 7 REQUIRED							AO-29074-1 (22.5 Ω) 312 REQ'D									AO-29074-10, 14 REQ'D. (15 Ω, BROWN)					NOT USED	
1	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	BRN	SUB FUND	AO-29236-3
2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	RED	FUND	AO-29236-2
3	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	OR	SUB 3RD	AO-29236-1
4	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	YEL	2ND	AO-29236-9
5	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	GRN	3 RD	AO-29236-8
6	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	BLUE	4 TH	AO-29236-7
7	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	VIO	5TH	AO-29236-6
8	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	GRAY	6 TH	AO-29236-5
9	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	WHITE	8 TH	AO-29236-4
10	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	BRN	10 TH	AO-29236-3
11	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	RED	12TH	AO-29236-2
12	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75						OR	16 TH	AO-29236-1
PEDAL KEY NO. →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			

TOP OF SWITCH

AO-29074-9, 32 REQ'D (15 Ω, GREEN)

THIS VIEW SHOWS SWITCH, REAR VIEW - UPSIDE DOWN

FIGURE 13 Pedal Switch Wiring Chart



VALUES OF TRANSFER CAPACITOR C102 AT VARYING FREQ. NUMBERS

AO-29336-4			AO-29336-3		AO-29336-2		AO-29336-1		
FREQ. NO.		C102	FREQ. NO.	C102	FREQ. NO.	C102	FREQ. NO.		C102
85	75	15	65	15	55	25	44	34	50
84	74	15	64	15	54	25	43	33	50
83	73	15	63	15	53	25	42	32	50
82	72	15	62	15	52	25	41	31	50
81	71	15	61	15	51	25	40	30	50
80	70	15	60	25	50	25	39	29	50
79	69	15	59	25	49	25	38	28	50
78	68	15	58	25	48	50	37	27	50
77	67	15	57	25	47	50	36	26	50
76	66	15	56	25	46	50	35	25	50
					45	50			
ALL CAPACITOR VALUES ARE IN MICROFARADS									
ALL RESISTOR VALUES ARE IN OHMS									

FIGURE 14 Schematic Diagram - Harp and Chimes Keyer Assembly

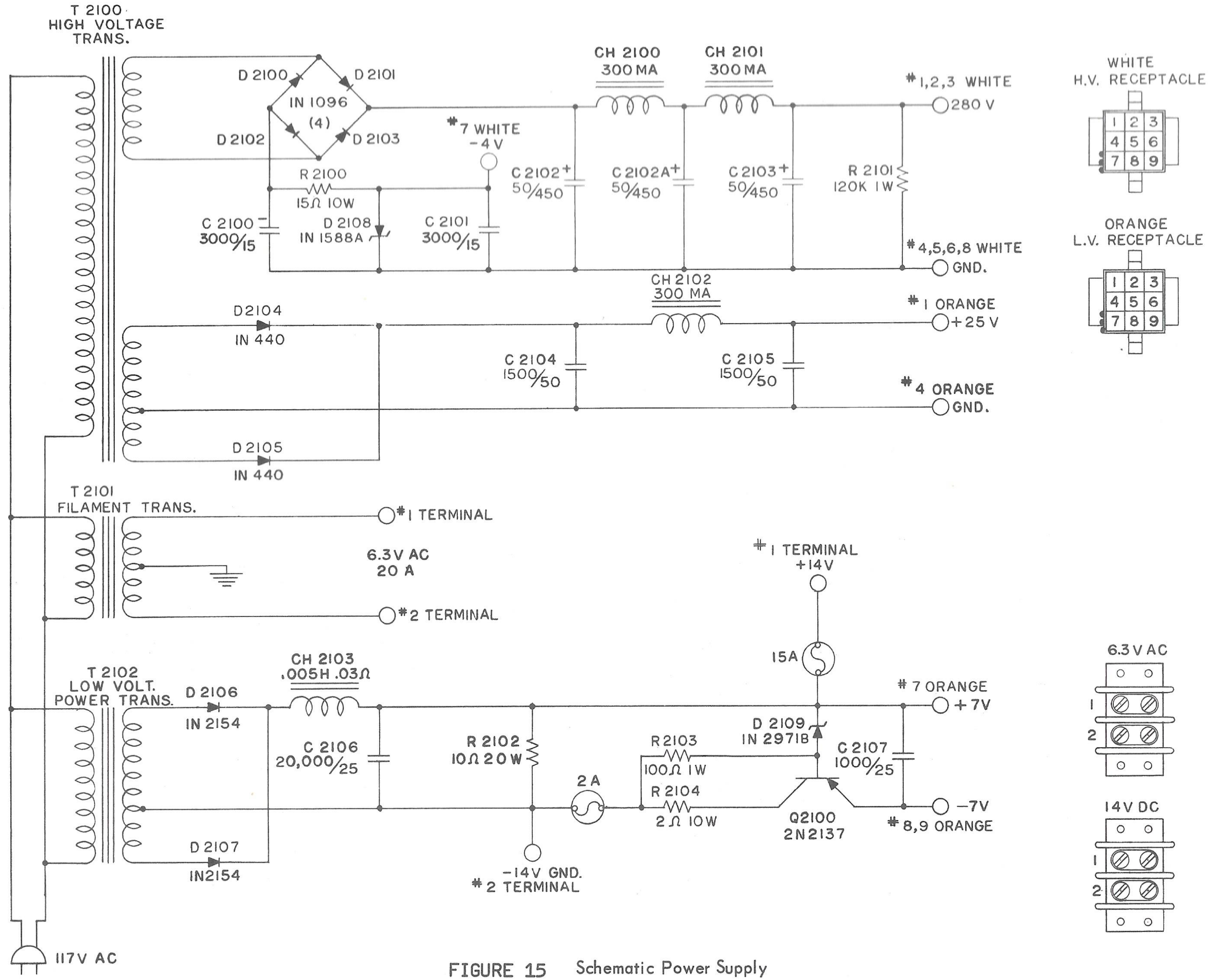


FIGURE 15 Schematic Power Supply

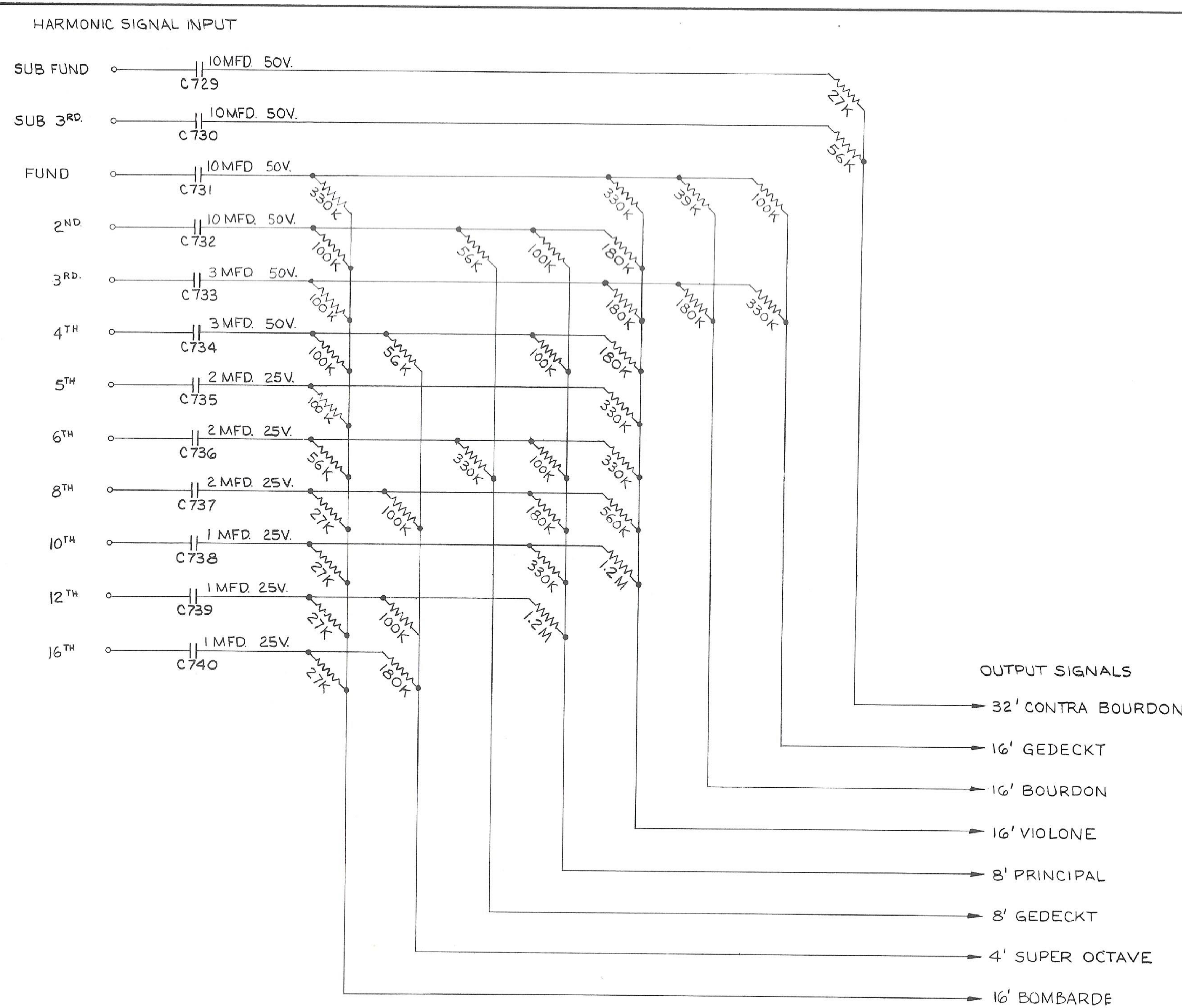


FIGURE – 16 Schematic Pedal Voice Mesh

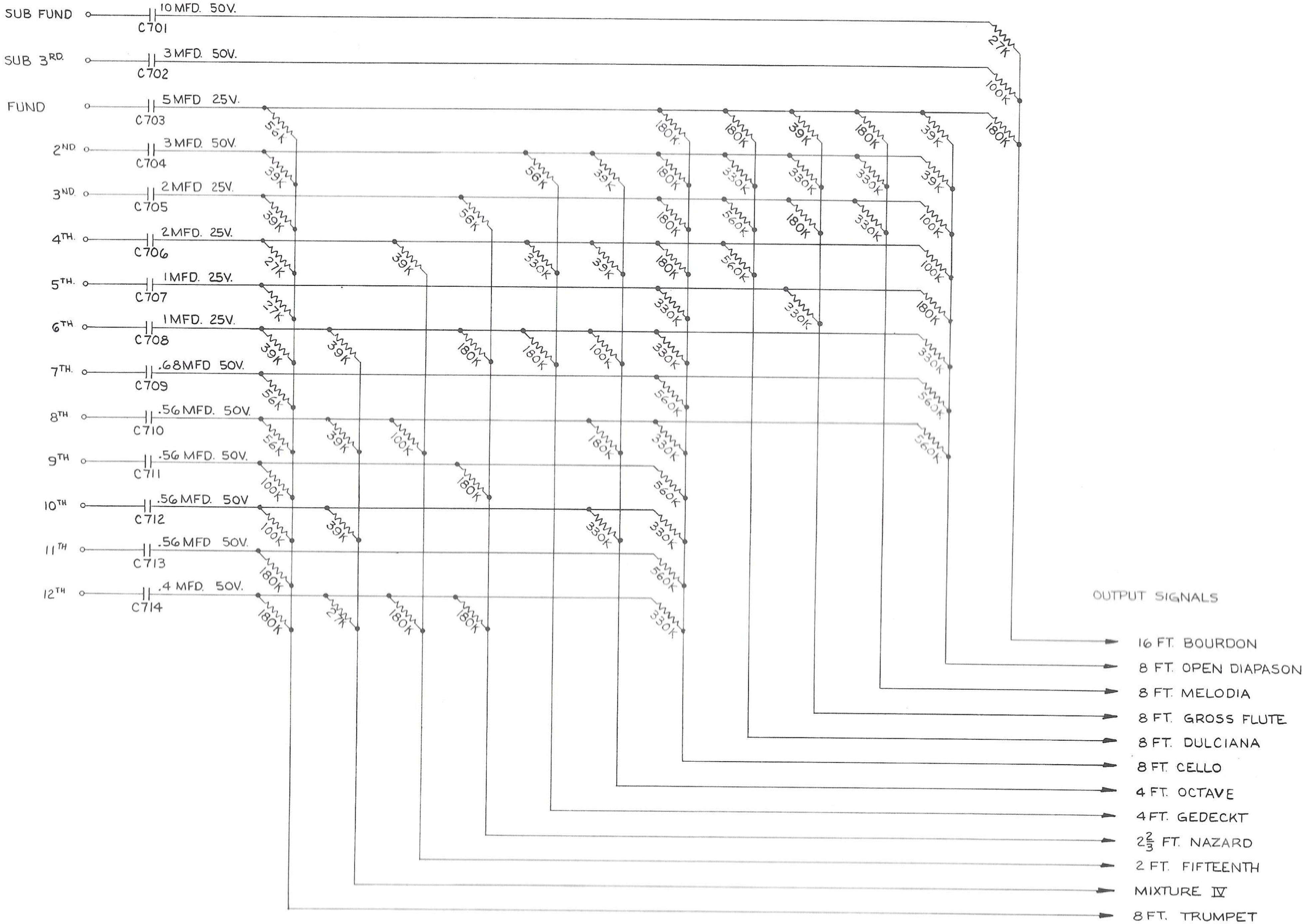
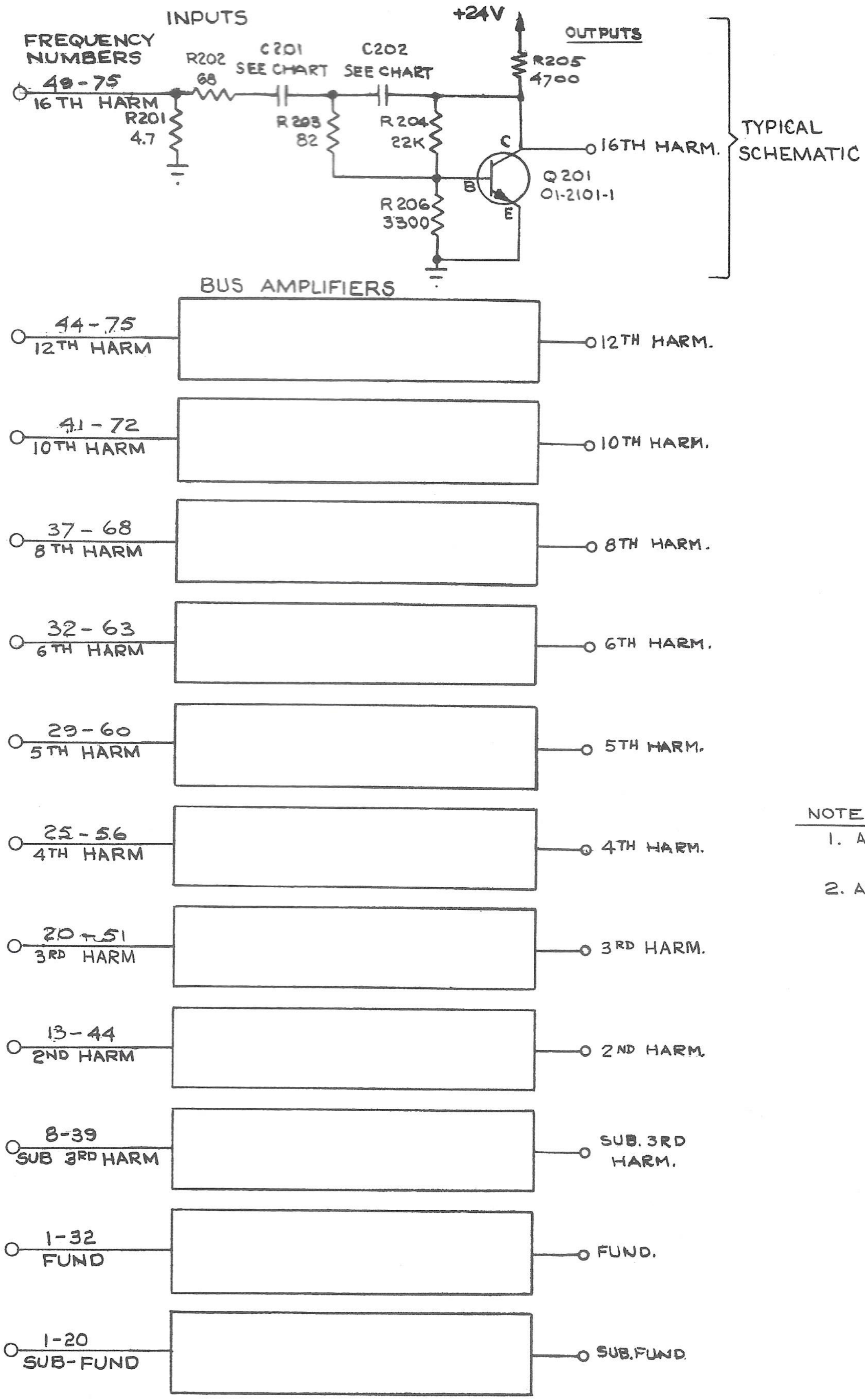


FIGURE 17 Schematic Great Voice Mesh



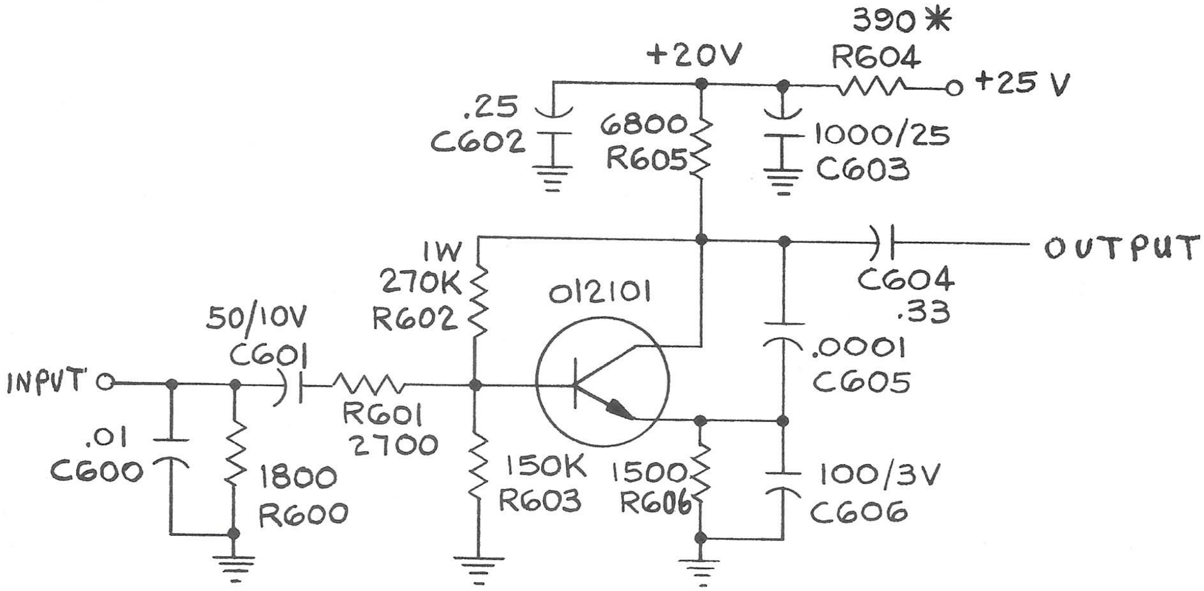
CAPACITOR VALUE CHART

PEDAL BUS	C201	C202
16TH HARM	5	.0047
12TH HARM	5	.0047
10TH HARM	5	.0047
8 TH HARM	10	.01
6 TH HARM	10	.01
5 TH HARM	10	.01
4 TH HARM	20	.01
3 RD HARM	20	.022
2 ND HARM	50	.047
SUB 3RD HARM	50	.1
FUND.	50	.1
SUB FUND	50	.22

NOTE.
1. ALL CAP. VALUES ARE IN MICROFARADS.
2. ALL RES. VALUES ARE IN OHMS.

FIGURE 18 Schematic Pedal Bus Amp. Assembly

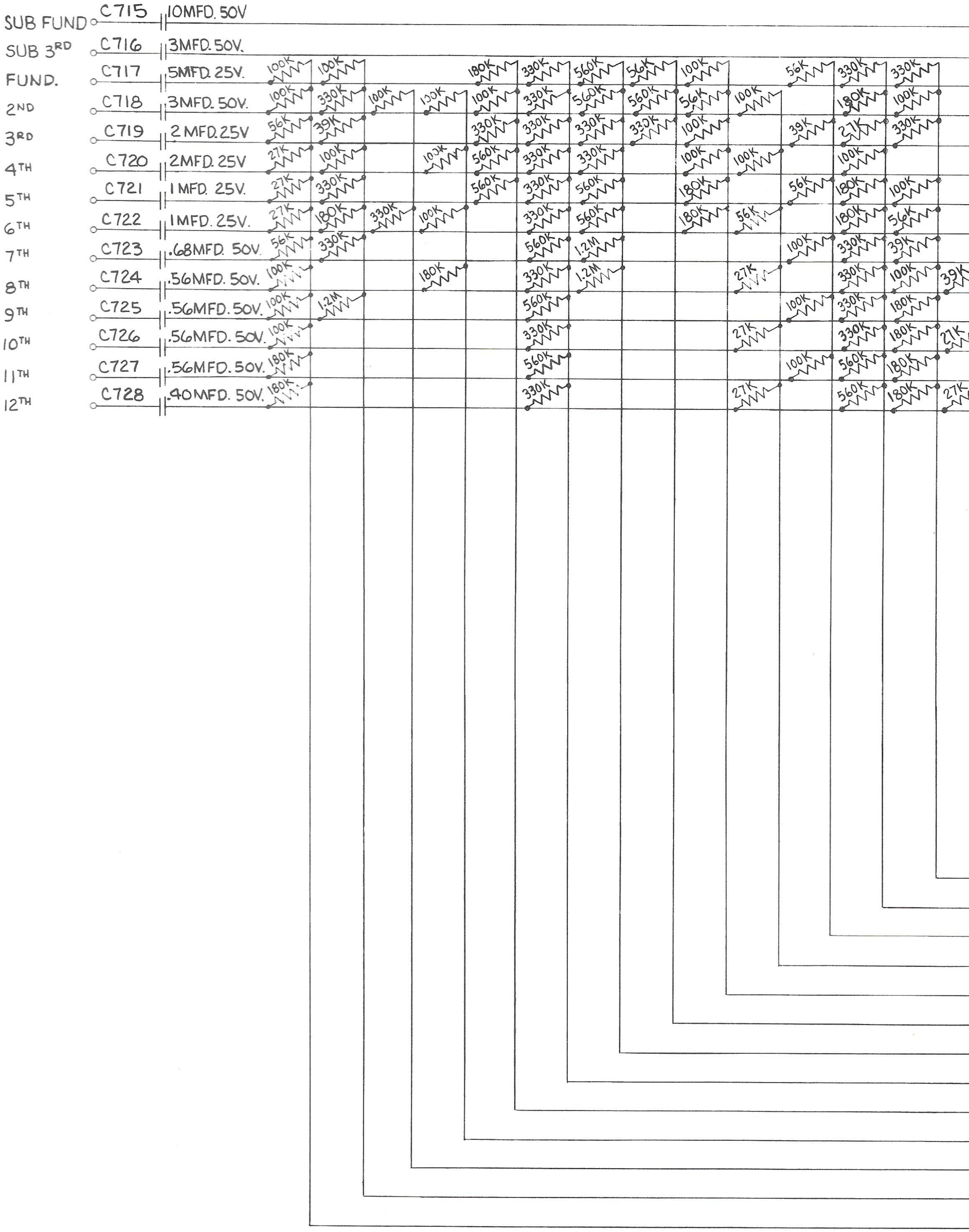
* ON SOME OF THE TABLET AMPLIFIERS R604 IS 1000 OHMS AND ON OTHERS IT IS 2200 OHMS.



(FOR COMPONENT LOCATION REFER TO TAB. PREAMP. ASSY. DRAWING AO-29446).

FIGURE 19 Schematic Tablet Pre-Amp.

HARMONIC SIGNAL INPUT



330K
330K
330K
330K
330K
330K
560K
330K
560K
330K
560K
330K
560K
560K
330K
330K
560K
560K
1.2M
1.2M
56K
560K
330K
100K
56K
100K
100K
180K
180K
100K
100K
56K
27K
27K
27K
56K
39K
56K
100K
100K
100K
330K
180K
27K
100K
180K
180K
330K
330K
330K
330K
560K
560K
330K
100K
330K
100K
56K
39K
100K
180K
180K
180K
180K
39K
27K
27K
100K
39K
39K
100K
27K
56K
39K
100K
560K
56K
330K
180K
56K
39K
100K
100K
330K
560K
180K
100K
180K
180K
180K
180K
330K
330K
560K
560K
1.2M
1.2M
180K
330K
560K
560K
560K
330K
560K
560K
560K
560K
560K
330K
560K
330K
560K
560K
27K
180K
330K
100K
180K
56K
100K
100K
180K

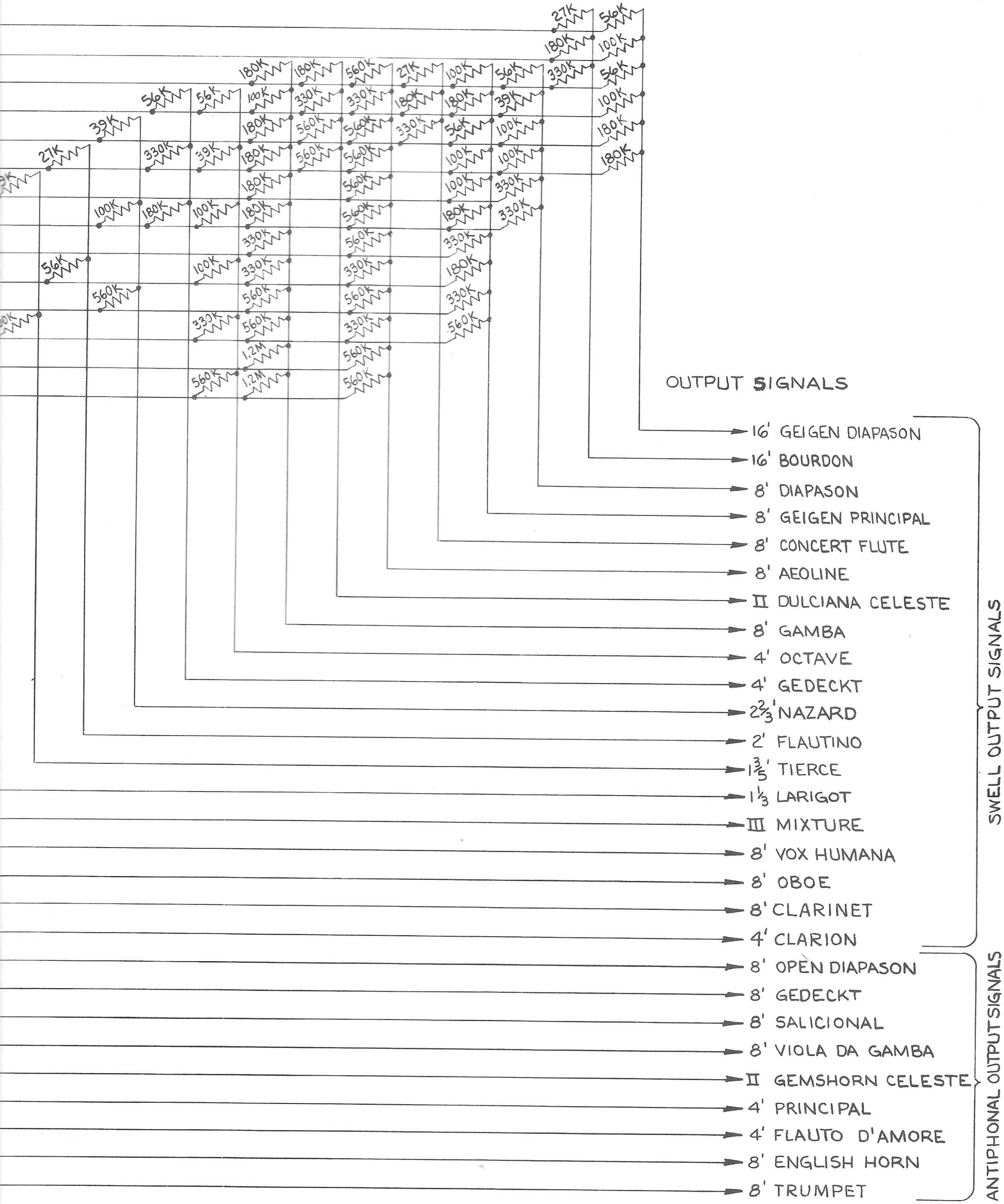
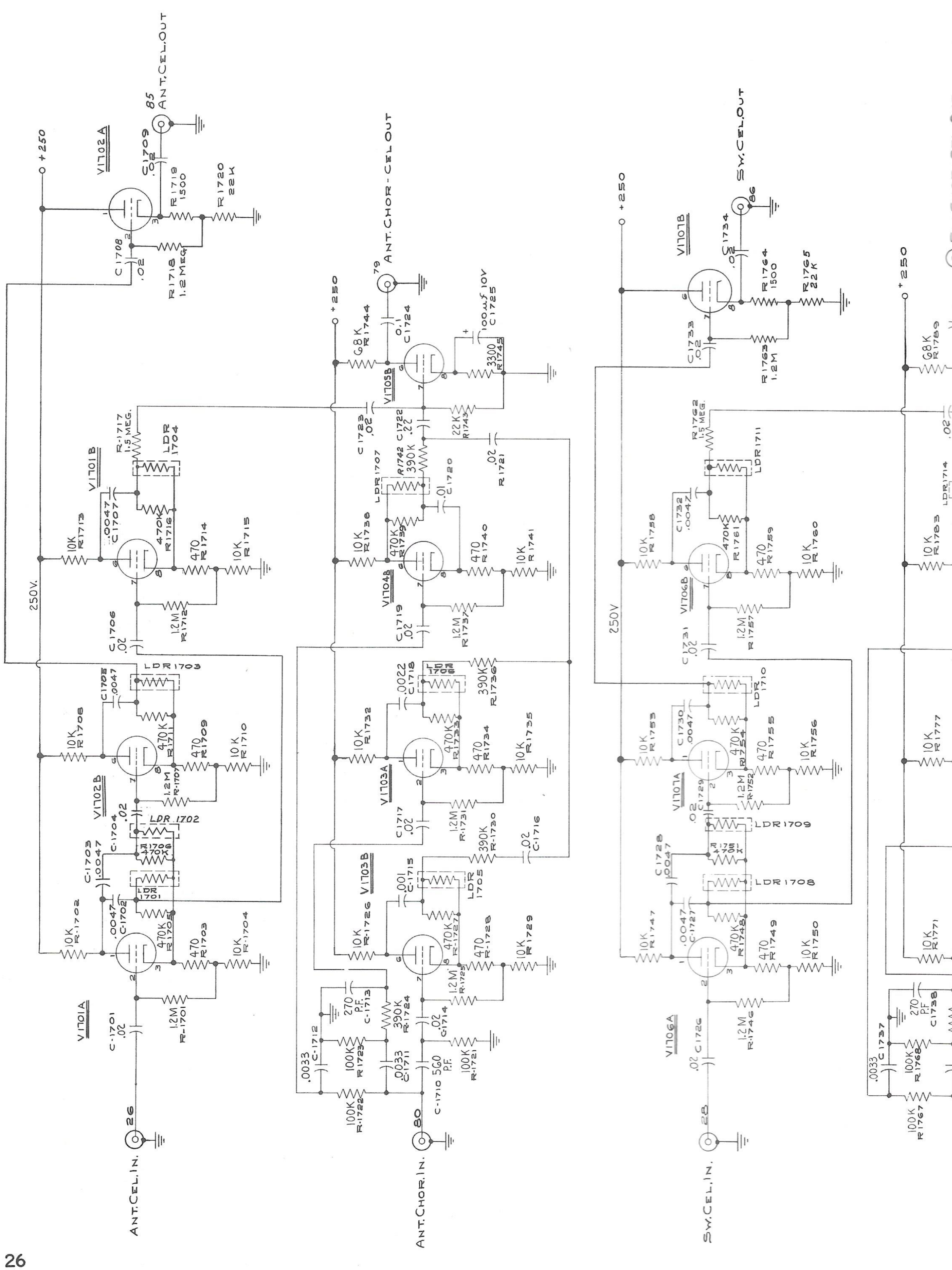
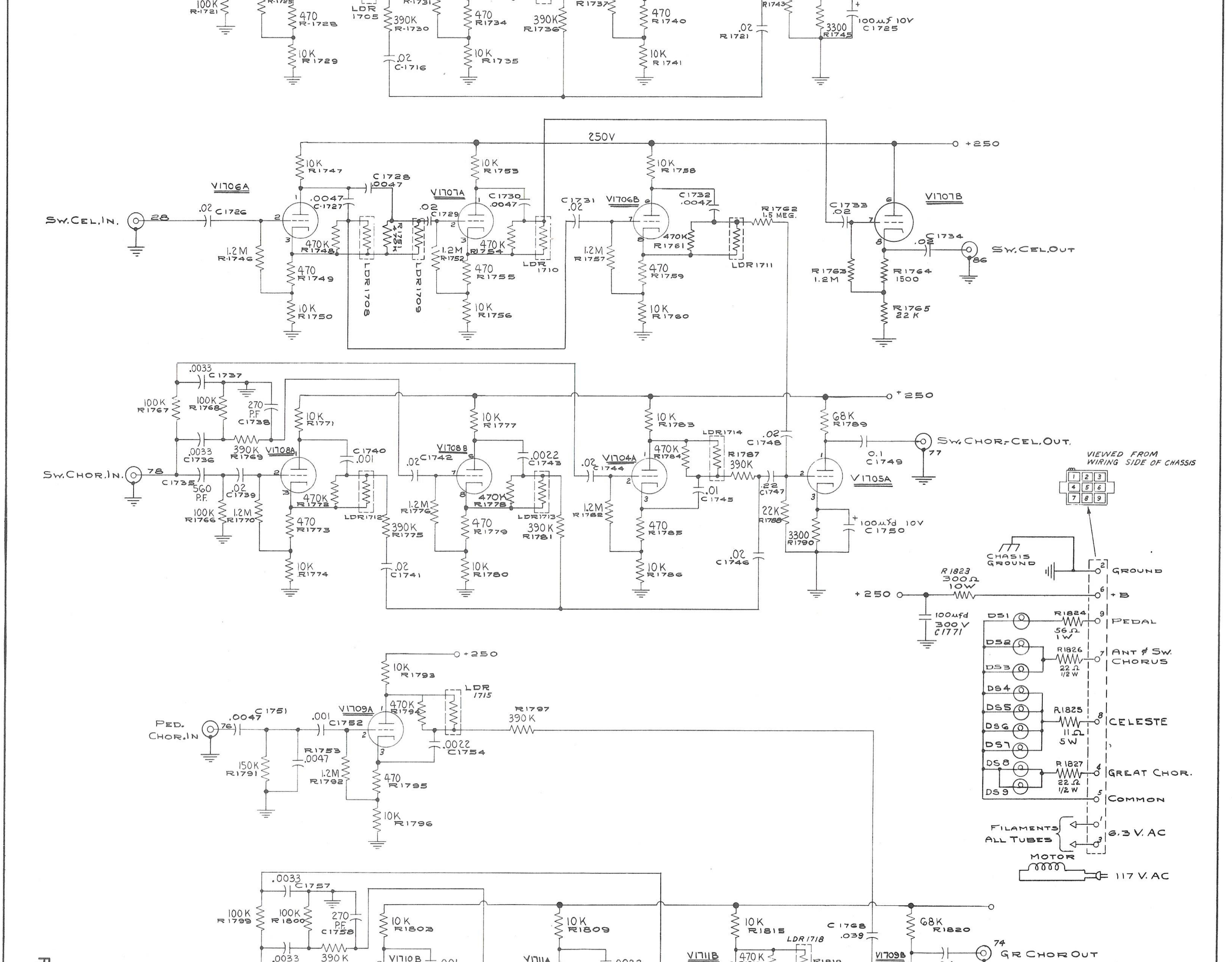


FIGURE 20 Schematic Swell and Antiphonal Voice Mesh


ANT.CEL.IN.
ANT.CEL.OUT
ANT.CHOR.IN.
ANT.CHOR-CEL OUT
SW.CEL.IN.
SW.CEL.OUT
V1701A
V1701B
V1702A
V1702B
V1703A
V1703B
V1704B
V1705B
V1706A
V1706B
V1707A
V1707B
+250
250V.


SW. CEL. IN.
SW. CEL. OUT
SW. CHOR. IN.
SW. CHOR.-CEL. OUT.
PED. CHOR. IN
GR CHOR OUT
V1706A
V1707A
V1706B
V1707B
V1708A
V1708B
V1704A
V1705A
V1709A
V1709B
V1710B
V1711A
V1711B
250V
+250
LDR 1708
LDR 1709
LDR 1710
LDR 1711
LDR 1712
LDR 1713
LDR 1714
LDR 1715
LDR 1718
VIEWED FROM WIRING SIDE OF CHASSIS
CHASIS GROUND
GROUND
+B
PEDAL
ANT & SW. CHORUS
CELESTE
GREAT CHOR.
COMMON
FILAMENTS ALL TUBES
6.3 V. AC
MOTOR
117 V. AC
R1823 300Ω 10W
100µfd 300V C1771
R1824 56Ω 1W
R1826 22Ω 1/2W
R1825 11Ω 5W
R1827 22Ω 1/2W
DS1
DS2
DS3
DS4
DS5
DS6
DS7
DS8
DS9

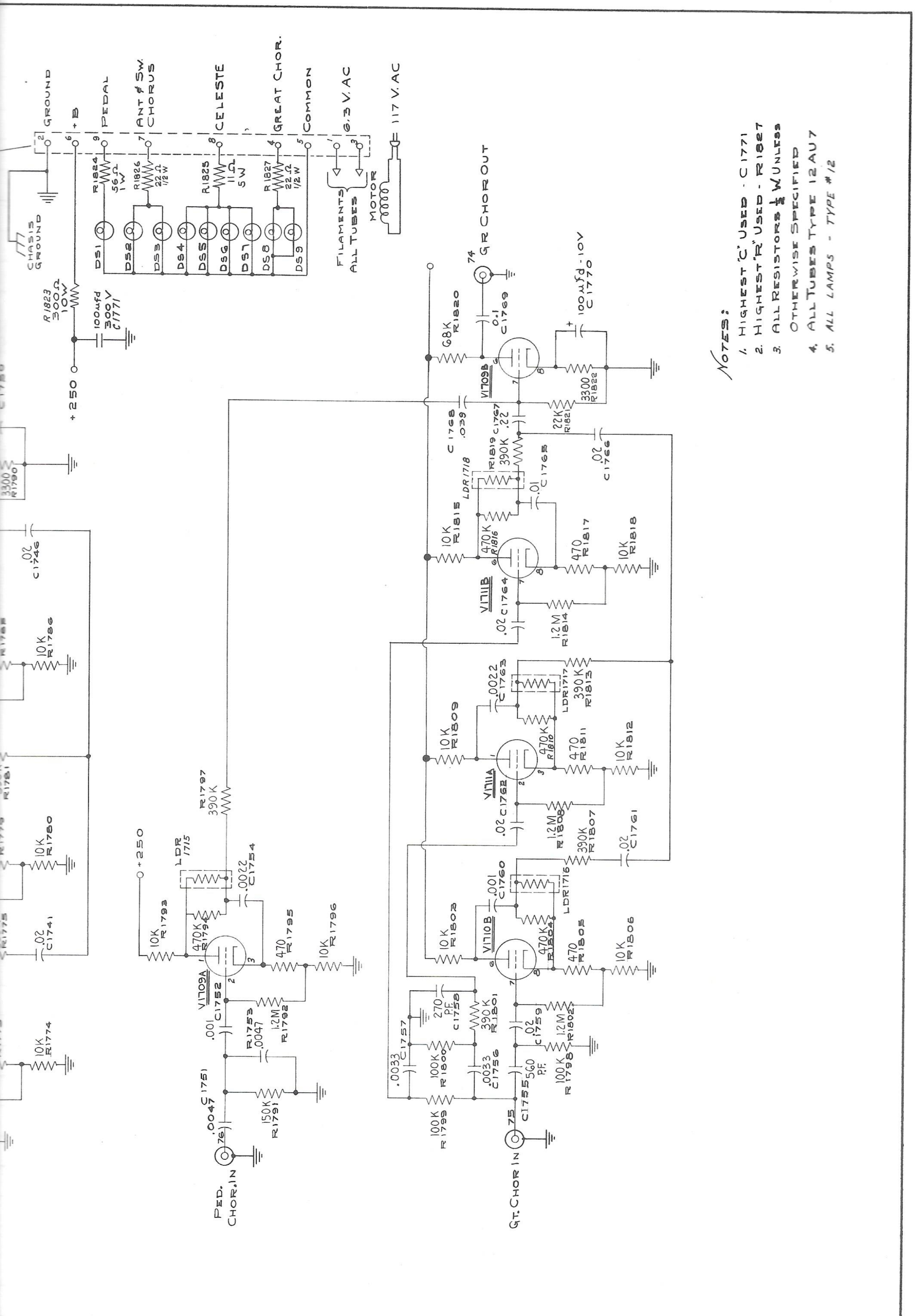
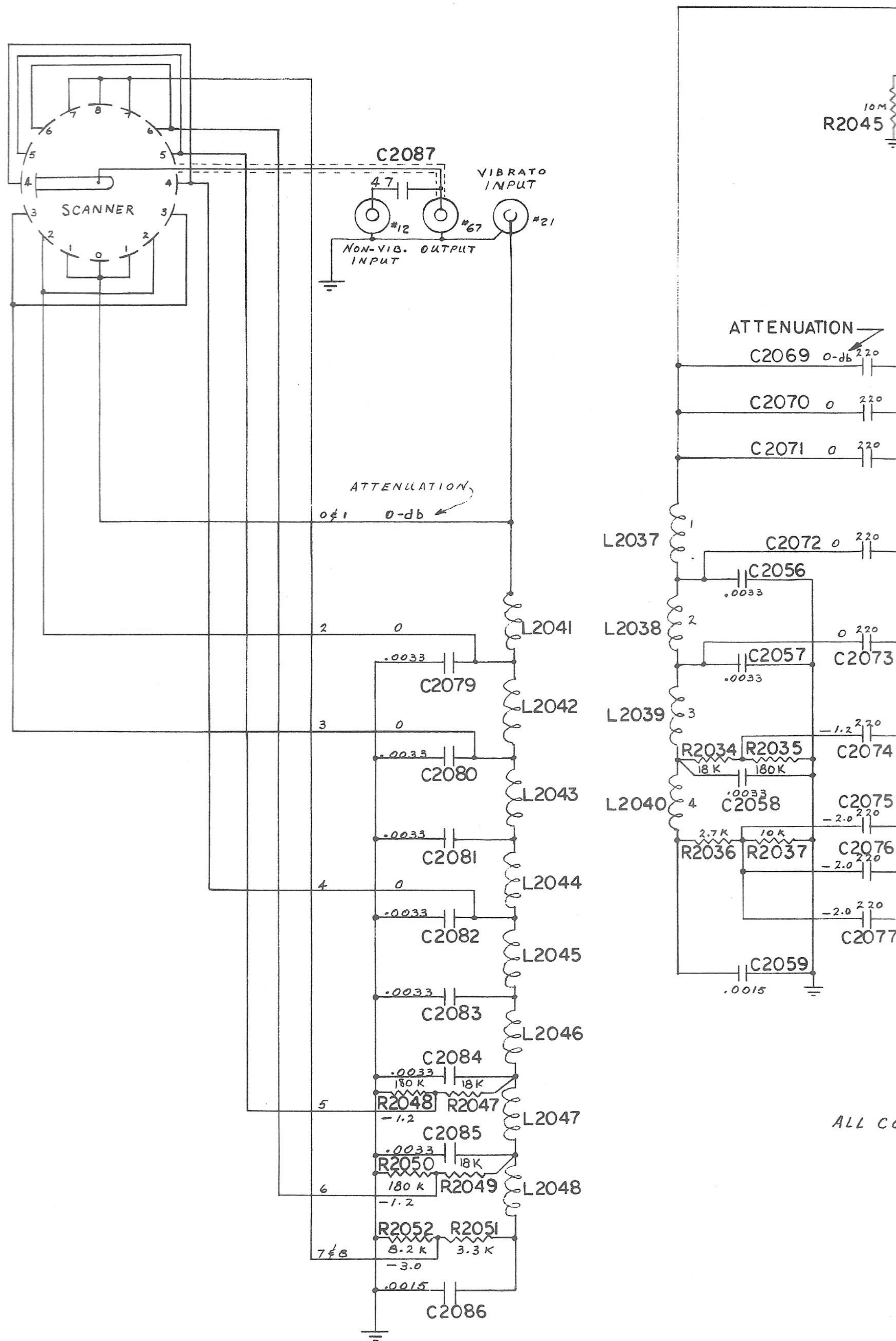


FIGURE 21 Schematic Chorus – Celeste

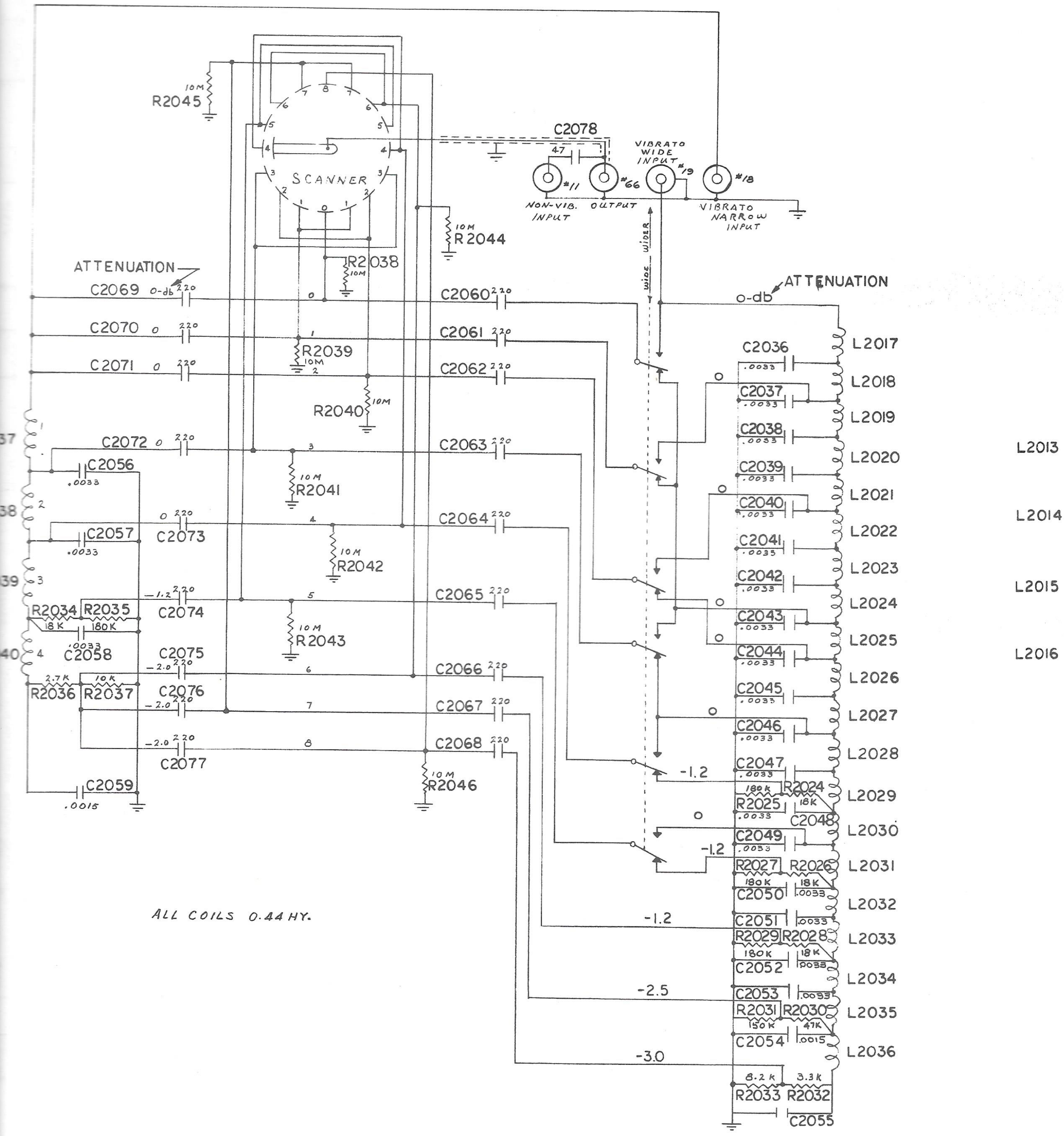
ANTIPHONAL



NOTE:

1. HIGHEST "R" US
2. HIGHEST "C" US
3. HIGHEST "L" US

SWELL



NOTE:

1. HIGHEST "R" USED R2052
2. HIGHEST "C" USED C2088
3. HIGHEST "L" USED L2048

GREAT

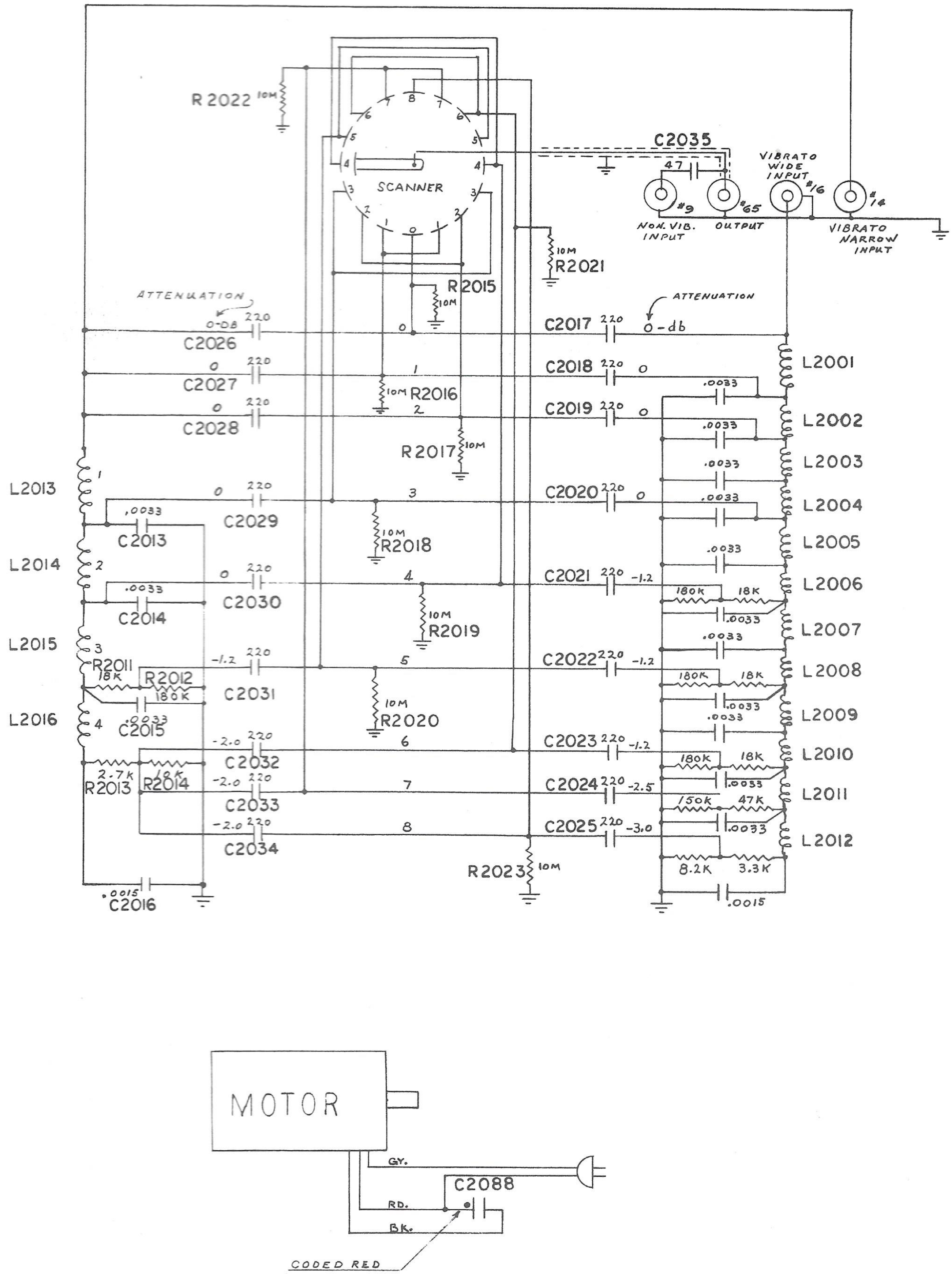
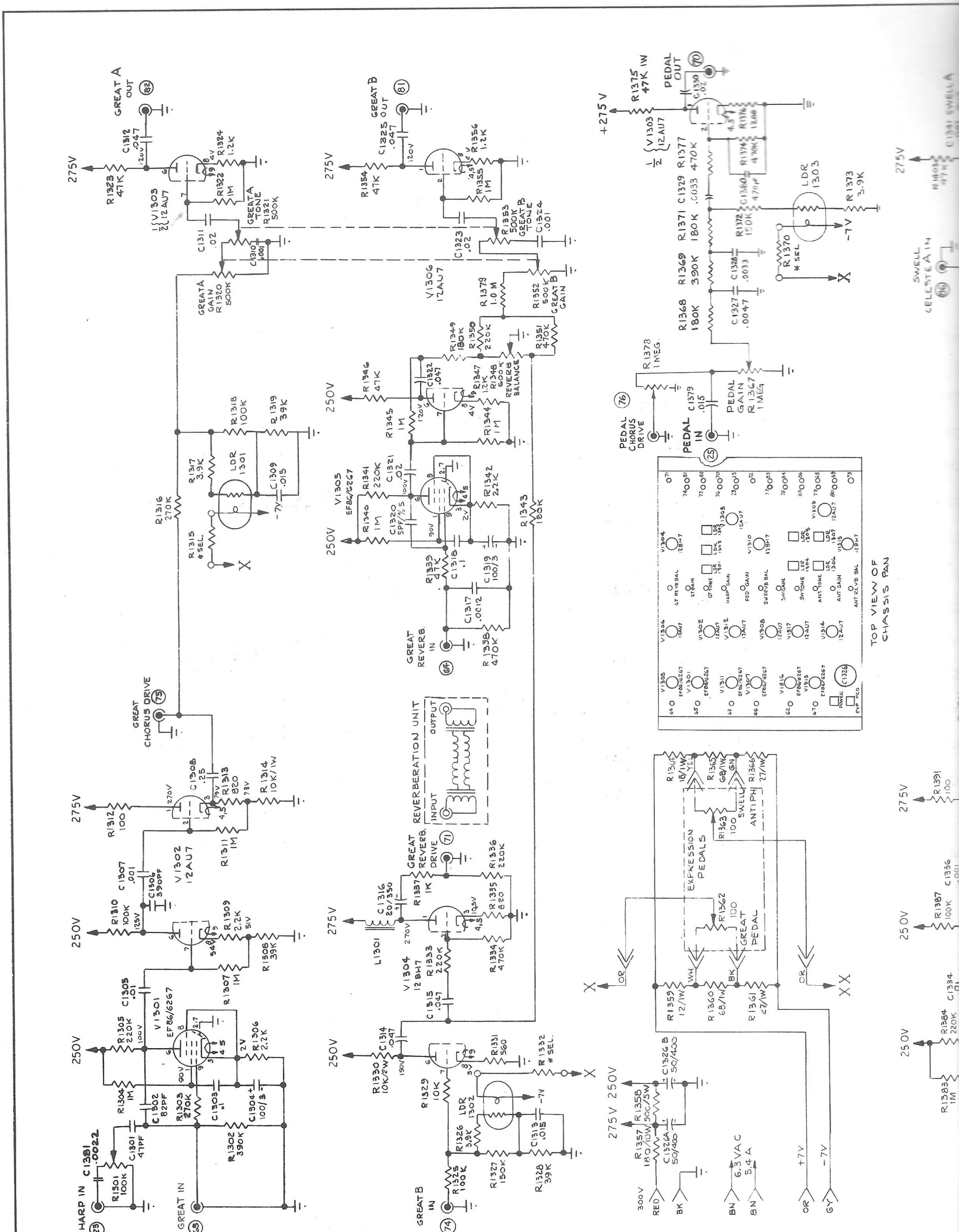


FIGURE 22 Schematic Vibrato Unit



HARP IN
GREAT IN
GREAT A OUT
GREAT B OUT
GREAT B IN
PEDAL OUT
PEDAL IN
PEDAL CHORUS DRIVE
GREAT CHORUS DRIVE
GREAT REVERB IN
GREAT REVERB DRIVE
REVERBERATION UNIT
INPUT
OUTPUT
EXPRESSION PEDALS
GREAT PEDAL
SWELL
ANTIPH
TOP VIEW OF CHASSIS PAN
SWELL CELESTE A IN
V1301 EF86/6267
V1302 12AU7
V1303 12AU7
V1304 12BH7
V1305 EF86/6267
V1306 12AU7
LDR 1301
LDR 1302
LDR 1303
L1301
GREAT A GAIN R1320 500K
GREAT A TONE R1321 500K
GREAT B TONE R1353 500K
GREAT B GAIN R1352 500K
REVERB BALANCE R1348 500K
PEDAL GAIN R1367 1 MEG
+275V
275V
250V
300V
-7V
+7V
6.3 VAC 5.4 A
RED
BK
BN
OR
GY

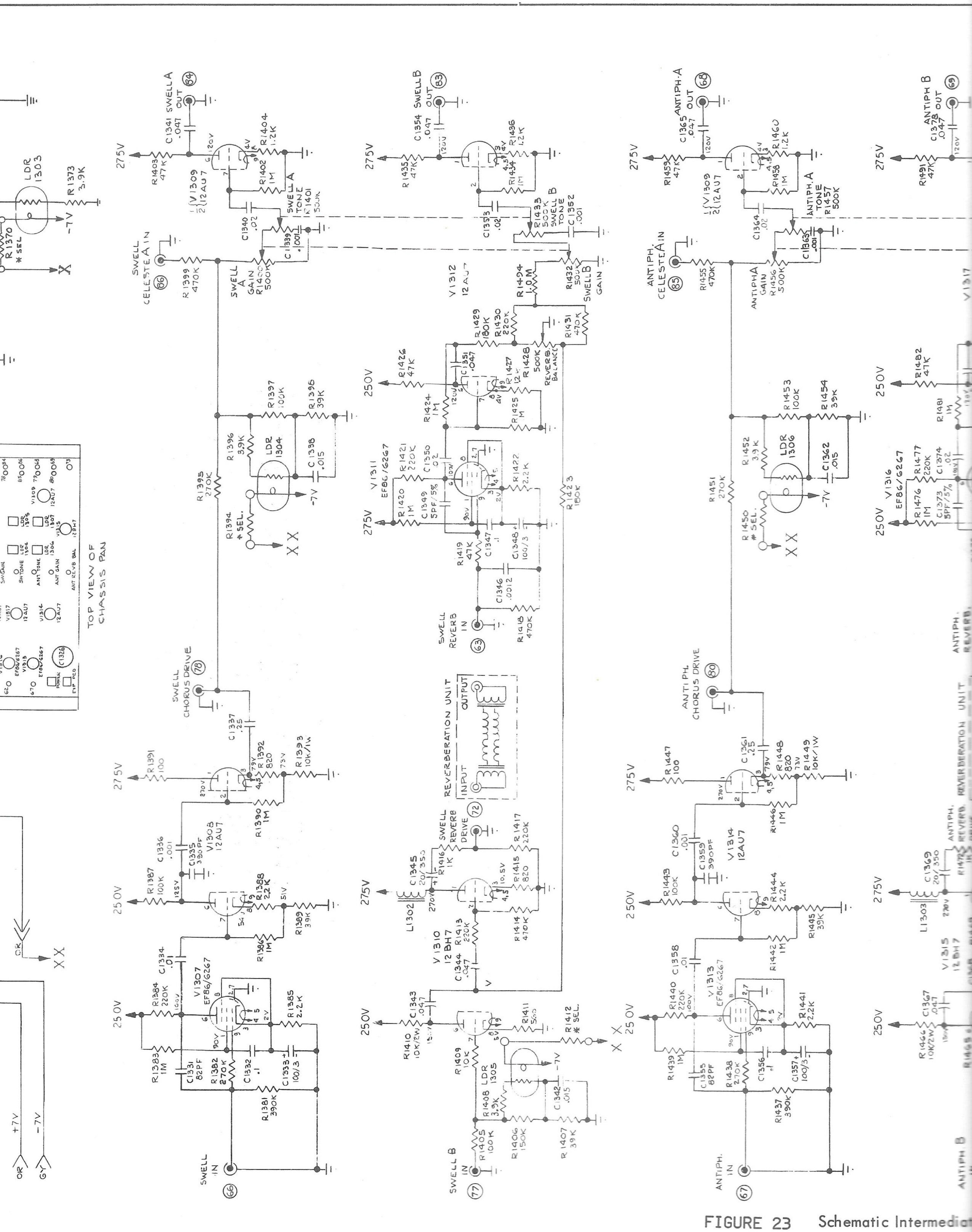
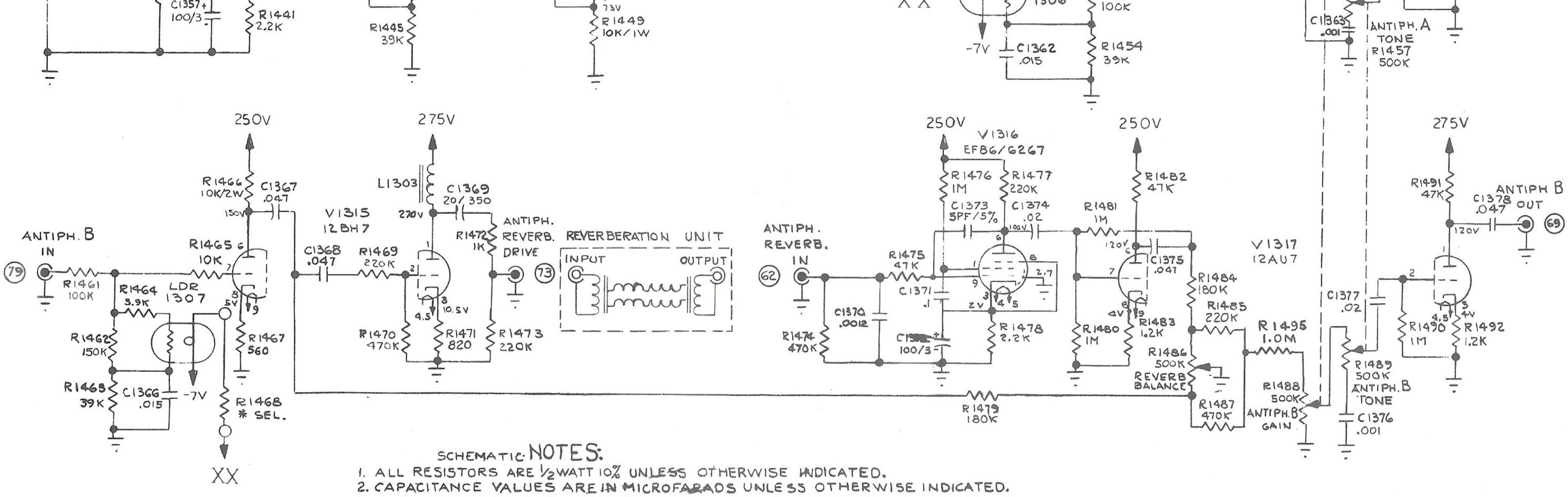


FIGURE 23 Schematic Intermediat



SCHEMATIC NOTES:

1. ALL RESISTORS ARE ½ WATT 10% UNLESS OTHERWISE INDICATED.
2. CAPACITANCE VALUES ARE IN MICROFARADS UNLESS OTHERWISE INDICATED.
3. * SEL. RESISTORS ARE FACTORY SELECTED TO GIVE PROPER STARTING POINT.
4. D.C. VOLTAGES ARE MEASURED TO GROUND WITH A 20,000 OHMS PER VOLT METER.
5. HIGHEST "C" NO. IS C1381 "R" NO. IS R-1496.

Schematic Intermediate Amplifier