TECHNICAL MANUAL

HARRIS

HARRIS CORPORATION Broadcast Group
P.O. Box 4290 Quincy, Illinois 62305-4290

INSTRUCTION BOOK

FOR

GATESWAY II

TRANSISTOR CONSOLE

M-6541B

Price: $15.00

888 1085 001

GATES RADIO COMPANY

QUINCY, ILLINOIS

WARNING

THE CURRENTS AND VOLTAGES IN THIS EQUIPMENT ARE DANGEROUS. PERSONNEL MUST AT ALL TIMES OBSERVE SAFETY REGULATIONS.

This manual is intended as a general guide for trained and qualified personnel who are aware of the dangers inherent in handling potentially hazardous electrical/electronic circuits. It is not intended to contain a complete statement of all safety precautions which should be observed by personnel in using this or other electronic equipment.

The installation, operation, maintenance and service of this equipment involves risks both to personnel and equipment, and must be performed only by qualified personnel exercising due care. HARRIS CORPORATION shall not be responsible for injury or damage resulting from improper procedures or from the use of improperly trained or inexperienced personnel performing such tasks.

During installation and operation of this equipment, local building codes and fire protection standards must be observed. The following National Fire Protection Association (NFPA) standards are recommended as references:

- Automatic Fire Detectors, No. 72E
- Installation, Maintenance, and Use of Portable Fire Extinguishers, No. 10
- Halogenated Fire Extinguishing Agent Systems, No. 12A

WARNING

ALWAYS DISCONNECT POWER BEFORE OPENING COVERS, DOORS, ENCLOSURES, GATES, PANELS OR SHIELDS. ALWAYS USE GROUNDING STICKS AND SHORT OUT HIGH VOLTAGE POINTS BEFORE SERVICING. NEVER MAKE INTERNAL ADJUSTMENTS, PERFORM MAINTENANCE OR SERVICE WHEN ALONE OR WHEN FATIGUED.

Do not remove, short-circuit or tamper with interlock switches on access covers, doors, enclosures, gates, panels or shields. Keep away from live circuits, know your equipment and don't take chances.

WARNING

IN CASE OF EMERGENCY ENSURE THAT POWER HAS BEEN DISCONNECTED.

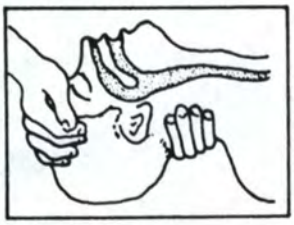
Treatment of Electrical Shock

1. If victim is not responsive follow the A-B-Cs of basic life support.

PLACE VICTIM FLAT ON HIS BACK ON A HARD SURFACE

(A) AIRWAY

IF UNCONSCIOUS,
OPEN AIRWAY



LIFT UP NECK
PUSH FOREHEAD BACK
CLEAR OUT MOUTH IF NECESSARY
OBSERVE FOR BREATHING

(B) BREATHING

IF NOT BREATHING,
BEGIN ARTIFICIAL
BREATHING

TILT HEAD
PINCH NOSTRILS
MAKE AIRTIGHT SEAL

4 QUICK FULL BREATHS

REMEMBER MOUTH TO MOUTH RESUSCITATION
MUST BE COMMENCED AS SOON AS POSSIBLE

CHECK CAROTID PULSE

IF PULSE ABSENT,
BEGIN ARTIFICIAL
CIRCULATION

(C) CIRCULATION

DEPRESS STERNUM 1 1/2" TO 2"

APPROX. 80 SEC. { ONE RESCUER
15 COMPRESSIONS
2 QUICK BREATHS

APPROX. 60 SEC. { TWO RESCUERS
5 COMPRESSIONS
1 BREATH

NOTE: DO NOT INTERRUPT RHYTHM OF COMPRESSIONS
WHEN SECOND PERSON IS GIVING BREATH

Call for medical assistance as soon as possible.

2. If victim is responsive.

   a. keep them warm
   b. keep them as quiet as possible
   c. loosen their clothing
      (a reclining position is recommended)

FIRST-AID

Personnel engaged in the installation, operation, maintenance or servicing of this equipment are urged to become familiar with first-aid theory and practices. The following information is not intended to be complete first-aid procedures, it is brief and is only to be used as a reference. It is the duty of all personnel using the equipment to be prepared to give adequate Emergency First Aid and thereby prevent avoidable loss of life.

Treatment of Electrical Burns

1. Extensive burned and broken skin

   a. Cover area with clean sheet or cloth. (Cleanest available cloth article.)
   b. Do not break blisters, remove tissue, remove adhered particles of clothing, or apply any salve or ointment.
   c. Treat victim for shock as required.
   d. Arrange transportation to a hospital as quickly as possible.
   e. If arms or legs are affected keep them elevated.

NOTE

If medical help will not be available within an hour and the victim is conscious and not vomiting, give him a weak solution of salt and soda: 1 level teaspoonful of salt and 1/2 level teaspoonful of baking soda to each quart of water (neither hot or cold). Allow victim to sip slowly about 4 ounces (a half of glass) over a period of 15 minutes. Discontinue fluid if vomiting occurs. (Do not give alcohol.)

2. Less severe burns - (1st & 2nd degree)

   a. Apply cool (not ice cold) compresses using the cleanest available cloth article.
   b. Do not break blisters, remove tissue, remove adhered particles of clothing, or apply salve or ointment.
   c. Apply clean dry dressing if necessary.
   d. Treat victim for shock as required.
   e. Arrange transportation to a hospital as quickly as possible.
   f. If arms or legs are affected keep them elevated.

REFERENCE: ILLINOIS HEART ASSOCIATION

AMERICAN RED CROSS STANDARD FIRST AID AND PERSONAL SAFETY MANUAL (SECOND EDITION)

MAINTENANCE SUPPLEMENT

Attenuator Cleaning Instructions

1. Use lint free cloth or Kem-Wipes when cleaning or lubricating attenuators. Use each cloth once and discard.

2. Use denatured alcohol as a cleaning agent.

   WARNING: DO NOT use carbon tetrachloride. It causes noise and the fumes may cause injury to personnel.

3. Use a soft clean pencil eraser to remove spots or noisy areas not cleaned in Step 2.

4. Lubricate with a pure, high grade vaseline.

5. Clean and lubricate each control on a regular schedule. This function should be performed every 50,000 cycles of operation or every three months, whichever occurs first.

ADDENDUM

CAUTION – To prevent severe ground loops, all wiring connected to this console must be free from ground connections in the source and load equipment (microphones, turntables, tape players, recorders, speakers, etc.). An ohmmeter check is necessary to be certain that each wire is not grounded before connecting it to the console. If any source or load equipment has a grounded connection wire, an isolating transformer must be used between that equipment and the console.

A final ohmmeter check is recommended: After all system connections are made, temporarily disconnect the station ground from the console and measure the resistance (ohms) from the console ground stud to the station ground. A very high resistance is normal – a low reading indicates a ground loop. All ground loops must be eliminated before operating the console. Be sure to re-attach the station ground to the console after testing.

1-15-71

Gates Radio Company
Quincy, Illinois

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SPECIFICATIONS

MICROPHONE TO REGULAR PROGRAM LINE OUT

Maximum Gain:	100 dB ±2 dB at 1,000 Hz
Response:	±1.0 dB from 20 to 20,000 Hz
Distortion:	0.5% or less from 20 to 20,000 Hz at +18 dBm out
Noise:	64 dB below +8 dBm output with −60 dBm output. The equivalent input noise is −124 dBm or better. (20 to 20 kHz) 3 dB points
Crosstalk:	In the noise with normal levels and control positions

MEDIUM LEVEL INPUTS

(Remote, Tape, Net and Turntable Inputs to Regular Program Line Out)

Maximum Gain:	60 dB ±2 dB at 1,000 Hz
Response:	±1.0 dB from 20 to 20,000 Hz
Distortion:	0.5% or less from 20 to 20,000 Hz at +18 dBm output
Noise:	64 dB below +8 dBm output with −20 dBm input

MONITOR CIRCUITS

Maximum Gain:	118 dB ±2 dB Mic−Aud to monitor out 132 dB ±2 dB from Mic−Pgm to monitor out 57 dB ±2 dB from Ext to monitor out
Response:	±1 dB from 20 to 20,000 Hz at +30 dBm
Distortion:	1% or less from 20 to 20,000 Hz at +40 dBm (10 watts)

POWER REQUIREMENTS

Primary Power:	105/125 volts RMS, 50/60 cycles 40 watts (approximately)

MECHANICAL SPECIFICATONS

Console:	48−¼" wide, 17" deep, 8−3/4" high
Transformer Panel:	5" x 19" Panel, overall depth

INTRODUCTION

The Gatesway II console is a monophonic console providing all the necessary functions and facilities for the AM or FM station that broadcasts monophonic programs. The console is capable of feeding a flat response signal to the line or by switching a program equalizer into the circuit, the response may be altered for special effects or line correction.

The first three channels are microphone input channels. Input switching is provided for control room and studio microphone feeds. Channels four, five, six, seven, and eight are medium level inputs used for turntable, tape, network, and remote programming.

All medium level inputs except network and remote are switchable into two separate input channels.

The monitor amp input is switchable into three sources. These are audition buss output, program line and external monitor input. Headphone monitoring is provided by an external jack plate mounted at a location suitable to the user. A phone selector switch for the above jack is provided for program, cue, network, and external input monitoring. In addition, a phone jack is located on the right end of the console and connected to the output of the monitor amplifier.

INSTALLATION

A. UNPACKING INSTRUCTIONS

The console is shipped in several boxes or cartons. The following main items will be enclosed:

1. Gatesway II Console with all amplifiers installed.
2. Transformer Panel.
3. Decal Kit.
4. Stick-on Labels.
5. Instruction Book.
6. Four Speaker Transformers.

The shipping container should be unpacked carefully and inspected for shipping damage. If damage is found, contact the shipper immediately. After he has approved the damage report, which indicates he will accept your billing for the damage, order new parts from Gates Radio Company. Our billing of these parts plus transportation expense will be your claim to the Transportation Company.

The Gatesway II Console is covered under the Standard Gates Warranty, a copy of which may be had on request from Gates Radio Company, 30th and Wisman Lane, Quincy, Illinois 62301.

B. AUDIO SYSTEM INSTALLATION INFORMATION

Before any actual installation is started, the following points should be studied carefully, physical location of all components should be decided and cable routing should be determined. Only after these plans have been completed, may installation be made in an orderly manner.

The transformer panel is 5–1/4" x 19" and can be rack mounted. If desired, it may be mounted in a small wall box or under the base of a desk. Ample ventilation must be provided since the unit generates some heat. When rack mounted, the panel is designed for natural convection cooling. If the ambient temperature of the rack is below 50° C. (122° F.), the rack does not need forced air ventilation.

Cable routing or external connections of various signal levels is of prime importance. The low level mic input cables should be cabled separate from all the other level cables.

If it is necessary to use cables of different levels in a common conduit, the difference between the lowest and the highest level in the two cables should not be greater than 40 dB.

Physical isolation is the best way to avoid trouble between parallel cables. Six inches or more spacing is preferred.

The console grounding system is based on the one point ground. Different circuit grounds are insulated from the chassis and go directly to the ground STUD located at the left end of the cabinet. Connect the station ground to the cabinet ground stud. External grounds connected to circuit grounds in the console will destroy this system.

A shield ground buss is provided beside both the input and output terminal blocks of the console. All incoming and outgoing shields must be connected to these busses.

C. INSTALLATION PROCEDURE

1. Power Connections

See installation drawing No. 852-6264-001 at rear of this book.

Input power connections are made on the transformer panel block TBX–2. Terminal 1 for 117 volts AC RMS and Terminal 2 for 117 volts common.

Interconnecting power cables, between console and transformer panel are supplied with the transformer panel. Connections can be made by following wire color code shown on Installation Drawing.

2. Warning Lights

117 V AC for the warning lights should be connected as follows:

Terminal Nos. TBX1-7 and TBX2-2 are for the control room warning lights.
Terminal Nos. TBX1-8 and TBX2-2 are for Studio A warning lights.
Terminal Nos. TBX1-9 and TBX2-2 are for Studio B warning lights.

Warning light circuits should not be grounded at any point and should not draw more than 2 amps of current.

3. Input Connections to Console

a. See installation drawing No. 852-6264-001 at rear of this book.

b. A shield ground buss is provided beside the input terminal block of this console. All incoming shields must be connected to this buss.

Twisted shielded pairs are to be used for all circuits, balanced or unbalanced. The shields are to be grounded at the shield buss in the console and nowhere else.

Channel ONE has provisions for two different microphone inputs. Front panel switching is provided.

Channel TWO has provisions for two different microphone inputs. Front panel switching is provided.

Channel THREE has provisions for two different microphone inputs. Front panel switching is provided.

Channel FOUR has provisions for four different turntable inputs. Front panel switching is provided.

Channel FIVE has provisions for any of the same four turntables inputs that are available to Channel FOUR. Front panel switching is provided.

Channel SIX has provisions for four different tape inputs. Front panel switching is provided.

Channel SEVEN has provisions for any of the same four tape inputs that are available to Channel SIX. Front panel switching is provided.

Channel EIGHT has provisions for three different remote inputs or a network input. Front panel switching is provided.

For operating impedances, levels, modes, and other associated information, see Table 1, page 9.

Turntable and tape inputs are unbalanced and the common side is grounded. Therefore, only use circuits with ungrounded outputs. If the external source has an unbalanced output, an isolation transformer such as Gates A-21 must be used.

4. Output Connections to Console

   a. See installation drawing No. 852-6264-001 at rear of this book.

   b. A shield ground buss is provided beside the output terminal block of this console. All outgoing shields must be connected to this buss. Do not ground them at any other point.

   The output line cables from this console are medium level and should be routed carefully to prevent crosstalk back into low level input circuits.

All speaker wiring is high level and must be run in separate conduit away from low level program circuits. Monitoring is provided for all studios as well as external lobby speakers. 45 to 16/8/4 ohm speaker matching transformers are supplied for matching 16, 8, or 4 ohm speakers to the output of the monitor amplifier. Because of the Remote Lines, the Talkback circuits and Intercom speakers must be 600 ohms. This is accomplished by using a 600 to 16/8 ohm transformer at the external Intercom speakers. Speaker connections are shown in the Installation Drawing.

The muting has been pre-assigned as indicated on the Block Diagram and shown on Page 8. For re-assignment of muting see Page 8.

The earphone jack for both the cue-intercom and the line monitoring circuits is mounted externally on a jack panel. The panel should be mounted in a convenient location in the room and shielded twisted pairs should be used to connect to the console. See Installation Drawing.

OPERATION

On the upper left side of the panel above channel mixer 1, 2, and 3 are three switches. These switches perform input switching functions for each channel. This selector switch is used to switch between microphones in two studios. With the lever key of channels 1, 2, and 3 in program position, the microphone preamp feeds the program buss or the audition buss with the lever key in audition position.

The four medium level switches, above mixers 4 and 5, select the desired input to each mixer. When the input switches, above mixer 4, are in the "OFF" position, the inputs are normalled through to the mixer 5 switches. When any of the switches in channel 4 are switched "ON", the input will appear at the output of mixer 4. Moving the channel 4 mixer lever key to the program position will bring up the medium level input on the program buss. Moving the desired input switch to the "ON" position, above mixer 5, will switch the desired turntable or tape into this mixer. Switching is arranged so that a turntable or tape cannot be switched into mixer 5, if it is already switched into mixer 4. This prevents loading the turntable or tape output by paralleling it into two console inputs. Cueing facilities are provided for by turning either mixer fader fully counterclockwise. This connects the turntable or tape into the cue-intercom amp. Cueing can be accomplished by using the panel mounted speaker or headphone (plugged into the phone jack). The above explanation is also valid for channel 6 and 7. When the lever key is switched to program position, the desired turntable or tape is fed into the program buss.

The first three lever switches, located above mixer 8, control three remote inputs. The remote switches provide talkback and cueing facilities to the remote operator. In the center position, the remote operator receives the program cue signal from the monitoring amplifier. This signal is fed back to the remote operator to allow him to start his program at the proper time. The lower position is the "MIX" position and connects the remote program into the program buss through mixer 8. The upper position of the switches have a terminating load for the remote lines and provides talkback functions. The remote lines are not tied together when any or all of the remote keys are in the talkback position.

The network input is connected to mixer 8 when the net input switch is in the "MIX" position. Preview monitoring of the network is provided by either turning the mixer control fully counterclockwise into the "CUE" position or rotating the cue selector switch to the net position.

The monitor input selector is located on the lower center of the panel. Input switching allows monitoring of the audition program, or external signal source.

The gain of the monitor amplifier is controlled by the gain control located just below the monitor input selector.

The program equalizer is located below the VU meter on the lower center section of the panel. The lever switch in the center is used to switch the equalizer into the program circuit either continuously or momentarily. The rotary switch on the left is used for boost or roll-off of the low frequencies. A maximum of approximately 10 dB of boost or roll-off can be obtained in 5 equal steps at 100 Hz. The rotary switch on the right is used for boost or roll-off of the high frequencies. A maximum of 10 dB of boost or roll-off can be obtained in 5 equal steps at 10,000 Hz. With both rotary switches in the zero position, no boost or roll-off will be obtained and the response shall be flat from 20 to 20,000 Hz.

a. Gain Adjustment

For proper level and gain adjustment each of the channel mixers shall be turned out 16 dB (approximately 1 O'Clock). Then the master gain control can be adjusted for 0 VU indication on VU meter. The master gain control is located on the upper center section of the panel. All of the equipment feeding the console shall have an output level that corresponds to the input level shown on the block diagram.

b. Cue-Intercom System

The cue controls are located on the lower center section of the panel.

A cue-intercom input selector switch is provided with input positions. The first position (net) is used for monitoring the input network line. Talkback is not possible in the network position. Next, the remote 1, 2, and 3 positions tie the cue-intercom amp to the 1, 2, or 3 remote lines. For talkback facilities, the intercom selector is switched to the desired remote line and the appropriate remote input switch is placed in the "TB" position. The incoming remote signal will then be heard in the panel mounted speaker. When the control room operator desires to talk out on the remote line, he simply pushes the red "TALK" button in the center of the panel and speaks into the panel speaker.

"ST–A" and "ST–B" positions allow listening and talkback into Studios A and B if intercom units have been installed in them.

Turntable and tape cueing circuits are connected directly to the input of the cue-intercom amp and may be used regardless of the position of the cue-intercom input selector. However, in the "CUE" position nothing else is connected to the input.

The cue-intercom speaker on the console is set up to be muted by the channel 1 lever key, however, this muting does not disable the cue phone jack, so it is still possible to cue a record by monitoring the cue circuit with headphones.

Another headphone jack is located on the right end of the console cabinet. This jack is connected to the monitor output for headphone monitoring.

Speaker muting is accomplished by using a solid state muting circuit and no relays are used for muting. Solid state muting is very fast and the chance of feedback between monitor speaker and microphone is very small.

TROUBLESHOOTING

When troubleshooting, it may be necessary to make voltage measurements, these are given on the schematic diagrams of the various amplifiers. It is recommended that, after the console is installed and operating satisfactorily, these readings should be checked and recorded on the schematic. This will provide the station engineer with a record of the actual voltage readings in his installation, using his meter. If trouble later develops, he will then be better able to judge whether or not a particular circuit is operating properly since he will have available a record of the various readings of his particular equipment. DC readings were taken with a 20,000 ohm/voltmeter as indicated on the schematic. RMS signal voltages are shown in parenthesis and must be measured with a vacuum tube voltmeter. If a VTVM is used to measure DC voltages, slightly higher readings may be obtained.

TROUBLESHOOTING GUIDE

1. No indication on the VU meter and the monitor only operates from the audition channel and the external input.

   a. Interchange the program amp with monitor amp.
   b. Check for 33 volts between terminals 3 and 5 of the booster board and terminals 3 and 9 of the output board.

2. No signal on the program output line but indication on the VU meter.

   a. Check external cable connections on TB–2.
   b. Check S18 and output pad board.

3. No signal can be heard from any of the monitor speakers but the program channel operates O.K.

   a. Interchange the monitor amp with the program amp.
   b. Check for 33 volts between terminals 3 and 5 of the booster board and 43 volts between terminals 3 and 9 of the output board.

4. No signal can be heard from the cue speaker.

   a. Interchange the cue amp with either the program or monitor amp.
   b. Check for 33 volts between terminals 3 and 5 of the booster board and terminal 3 and 9 of the output board.
   c. Check cue speaker.

5. No indication can be seen on the VU meter when talking into the control room or studio microphones but the medium level channels operate O.K.

   a. Interchange preamps if only one channel shows no indication.
   b. Check for 33 volts between terminals 7 and 8.
   c. Check contacts on switch S1.
   d. Check cable terminations on TB1 and microphone.

6. No indication can be seen on the VU meter when feeding one of the medium level inputs.

   a. Check the input switch, the channel mixer, and program/audition lever key.

7. The control room or studio monitors will not operate but the lobby speakers operate O.K.

   a. Check for 33 volts between terminals 7 and 9 of power supply 3.
   b. Check contacts on switches S1, S2, S3, S24, S25, and S26.
   c. Check each transistor on both the muting module boards.

8. Headphones will not operate when plugged into headphone monitor.

   a. Check the contacts on switch S33 and the phone jacks.
   b. Check the headphones.

9. Talkback circuit will not operate but the cue circuit operates O.K.

   a. Check relay K1.
   b. Check the contacts on switch S34.
   c. Check each transistor on the muting module boards.
   d. Check the studio talkback speakers.

SPECIAL CONDITIONS

When servicing the muting modules it may be necessary to replace the 40310 transistors. If so, just any ordinary 40310 transistor cannot be used. This transistor can be supplied by Gates or selected from your own stock. This transistor shall have an $I_{EBO} \leq 10$ uA at $V_{EB} =$ 15 volts. If a transistor with a higher I_{EBO} is used, then muting will not occur at higher output levels.

ACCESSORIES

The Gatesway II Console has a provision to add a remote ON/OFF control to microphone channel No. 2. If the user desires to install this control, he may order it from Gates by specifying an Announcer Remote ON/OFF Relay Kit, M-6565.

The medium level inputs of the Gatesway II Console are 150 ohm unbalanced. If a balanced input or another input impedance (50 or 600 ohms) is desired a line matching and isolation transformer may be ordered from Gates. Order Gates 478-0278-000 transformer and 358-0893-000 mounting bracket.

The external intercom speakers must be 600 ohms. These are available from Gates by ordering the M-6424 Studio Cue-Intercom Speaker Unit. Order one unit for each studio position. The 600 to 45 ohm transformer (only) is available as Gates 478-0274-000.

MUTING CIRCUIT DIAGRAM AND REASSIGNMENT INSTRUCTIONS

The Gatesway II Console employs solid state muting and is so designed that it can be selected. Muting occurs when the current path is opened. Tie strips TS–10, TS–11, and TS–12 are located on the front panel above each of the microphone input selector switches. Figure 1 shows the muting as wired at the factory. Channels 1–A, 2–A, and 3–A will mute studio A, channels 1–B and 2–B will mute studio B, and channel 3–B will mute the control room.

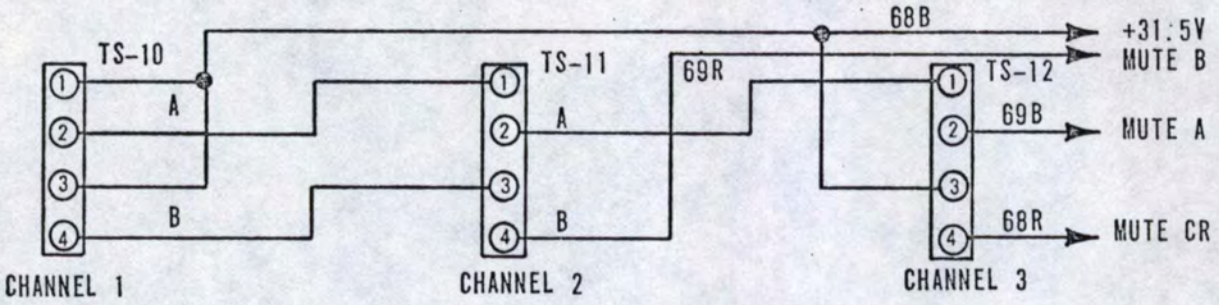


FIG. 1

Figures 2 and 3 show examples where other reassignment is required.

EXAMPLE 1: Suppose it is desired to change the muting so that channels 1–A and 2–A will mute studio A, channels 1–B and 3–A will mute studio B, and channels 2–B and 3–B will mute the control room. Figure 2 shows the correct wiring to accomplish this.

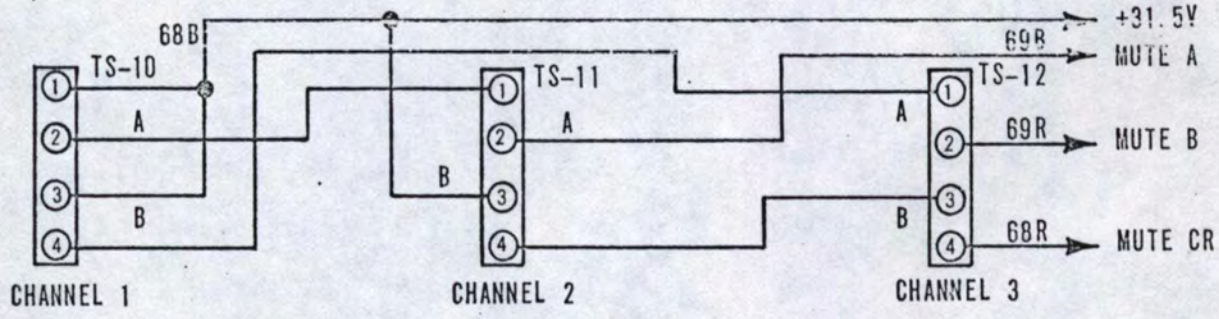


FIG. 2

EXAMPLE 2: Channel 1–A to mute the control room, channel 1–B, 2–A, and 3–A to mute studio A, and channels 2–B and 3–B to mute studio B. The wiring should then correspond to Figure 3 for this reassignment.

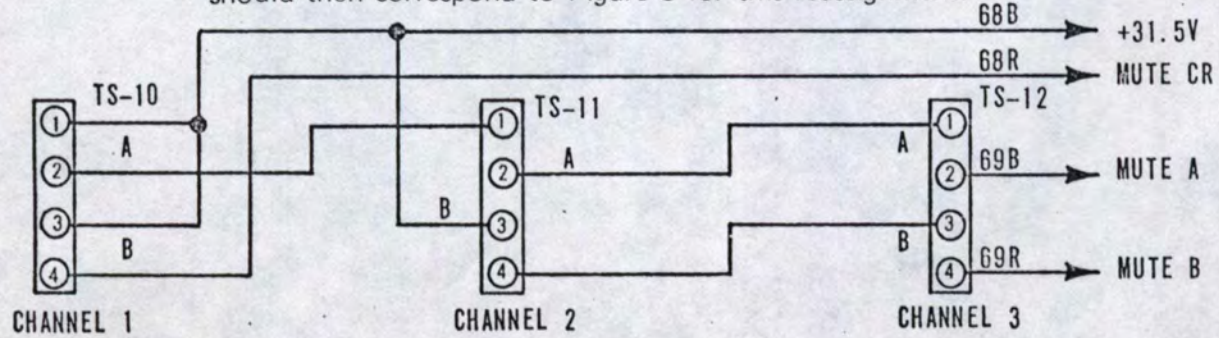


FIG. 3

CHANNEL	1	2	3	4	5	6	7	8
NORMAL IMPEDANCE	150 OHM (1) BAL	150 OHM BAL	150 OHM BAL	150 OHM UNBAL	150 OHM UNBAL	150 OHM UNBAL	150 OHM UNBAL	600 OHM BAL
MAXIMUM INPUT LEVEL	−17 dBm*	−17 dBm*	−17 dBm	−4 dBm**	−4 dBm**	−4 dBm**	−4 dBm**	+2 dBm**
NOMINAL INPUT LEVEL	−60 dBm	−60 dBm	−60 dBm	−20 dBm	−20 dBm	−20 dBm	−20 dBm	−14 dBm
SPECIAL IMPEDANCE	37.5 OHM(2) See Preamp 1	37.5 OHM See Preamp 2	37.5 OHM See Preamp 3	AS REQUIRED	AS REQUIRED	AS REQUIRED	AS REQUIRED	200 OHM(3) 50 OHM See T1
REQUIRED MODI–FICATIONS	XFORMER UNSOLDER Red & Yellow Wire SOLDER Red to Blue Yellow to Brown	XFORMER UNSOLDER Red & Yellow Wire SOLDER Red to Blue Yellow to Brown	XFORMER UNSOLDER Red & Yellow Wire SOLDER Red to Blue Yellow to Brown	PAD OR XFORMER	PAD OR XFORMER	PAD OR XFORMER	PAD OR XFORMER	200 OHM Change incoming wires from 1&3 to 1&2 50 OHM Change incoming wires from 1&3 to 2&3

TABLE 1

NOTES:

* *Overload point of microphone preamp.*

** *End of linear portion of level control (approximately 9 o'clock).*

1. *Nominal input impedance of 150 ohm will accommodate 150 ohm to 200 ohm mikes.*
2. *Nominal input impedance of 37.5 ohm will accommodate 30 ohm to 50 ohm mikes.*
3. *Nominal input impedance of 200 ohm will accommodate 150 ohm to 200 ohm sources and 50 ohm nominal impedance will accommodate 30 ohm to 50 ohm sources.*

PARTS LIST

GATESWAY II CONSOLE

994 6549 004 PREAMPLIFIER

SYMBOL	DESCRIPTION	GATES PART NO.
C1	Cap 25 uF 6 V	522 0178 000
C2	Cap 250 uF 3 V	522 0164 000
C3	Cap 25 uF 25 V	522 0242 000
C4	Cap 75 pF 500 V	500 0822 000
C5	Cap 35 uF 25 V	522 0243 000
C6	Same as C1	
C7	Cap 330 pF 1 kV	516 0038 000
C8	Cap 220 uF 25V	522 0505 000
C9	Cap 100 pF 500V	500 0759 000
C10	Cap 470 pF 1 kV	516 0043 000
C11	Cap .01 uF 600 V	516 0080 000
C12, C13	Cap .002 uF 1 kV	516 0063 000
Q1, Q2	Transistor TN323	380 0092 000
Q3	Transistor 2N697	380 0042 000
Q4	Transistor 40319	380 0044 000
R1	Res 36 K ohm ½ W 5%	540 1108 000
R2	Res 6200 ohm ½ W 5%	540 1106 000
R3	Res 24K ohm ½ W 5%	540 1143 000
R4	Res 110 ohm ½ W 5%	540 1103 000
R5	Res 510 ohm ½ W 5%	540 0042 000
R6	Res 9100 ohm ½ W 5%	540 0072 000
R7	Res 1000 ohm ½ W 5%	540 0049 000
R8	Res 3000 ohm ½ W 5%	540 0060 000
R9	Pot (Selected)	
R10	Res 100 ohm ½ W 5%	540 1102 000
R11	Same as R7	
R12	Res 2000 ohm ½ W 5%	540 1104 000
R13	Res 5100 ohm ½ W 5%	540 1105 000
R14, R15	Res 10 ohm ½ W 5%	540 0001 000
R16	Res 51 ohm ½ W 5%	540 0018 000
T1	Transformer Input	478 0285 000
XQ1, XQ2	Transistor Socket	404 0066 000
XQ3, XQ4	Transipad	404 0198 000
Z1, Z2	Ferrite Bead	414 0007 000

994 6550 004 - OUTPUT MODULE

SYMBOL	DESCRIPTION	GATES PART NO.
Q5	Transistor 40310	380 0062 000
Q6	Transistor 2N3740	380 0066 000
XQ5, XQ6	Power Transistor Socket	404 0206 000

WARNING, disconnect primary power prior to servicing

PARTS LIST

992 2225 001 - OUTPUT AMPLIFIER

SYMBOL	DESCRIPTION	GATES PART NO.
C1	Cap 25 uF 6 V	522 0178 000
C2	Cap 25 uF 25 V	522 0242 000
C3,C4, C5	Cap 250 uF 6 V	522 0188 000
C6	Cap 150 pF 500 V 5%	500 0761 000
C7	Cap 270 pF 500 V 5%	500 0755 000
C8	Cap .1 uF 75 V	516 0357 000
C9	Cap 35 uF 50 V	522 0257 000
C10	Cap 2500 pF 500 V 5%	500 0879 000
C11	Cap 500 pF 1 kV	516 0045 000
Q1	Transistor 2N3391A	380 0099 000
Q2	Transistor 40314	380 0053 000
Q3	Transistor 40317	380 0050 000
Q4	Transistor 40319	380 0044 000
R1	Res 8.2 K ohm ½ W 5%	540 0071 000
R2	Res 12 K ohm ½ W 5%	540 0075 000
R3	Res 82 ohm ½ W 5%	540 0023 000
R4	Res 9.1 K ohm ½ W 5%	540 0072 000
R5	Res 15 K ohm ½ W 5%	540 0077 000
R6	Res 1200 ohm 1 W 5%	540 0334 000
R7	Res 220 ohm ½ W 5%	540 0033 000
R8	Res 130 ohm ½ W 5%	540 0028 000
R9	Thermistor 500 ohm	559 0014 000
R10	Res (Selected)	
R11	Res 150 ohm ½ W 5%	540 0029 000
R12	Res (Selected)	
R13	Res 18 ohm ½ W 5%	540 0007 000
R14, thru R16	Same as R11	
R17, R18	Res .51 ohm 2 W 5%	542 1072 000
R19	Res 680 ohm ½ W 5%	540 0045 000
R20	Res 3900 ohm ½ W 5%	540 0063 000
R21	Res 15 ohm ½ W 5%	540 0005 000
R22	Same as R7	
XQ1 thru XQ4	Transipad	404 0198 000

WARNING, disconnect primary power prior to servicing.

PARTS LIST

992 2224 001 - BOOSTER AMPLIFIER

SYMBOL	DESCRIPTION	GATES PART NO.
C1	Cap 25 uF 6 V	522 0178 000
C2, C3	Cap 500 uF 3 V	522 0167 000
C4	Cap 25 uF 25 V	522 0242 000
C5	Cap .001 uF 1 kV	516 0054 000
C6	Cap 100 uF 6 V	522 0185 000
C7	Cap 100 uF 25 V	522 0246 000
C8	Cap .0015 uF 1 kV	516 0059 000
C9	Cap 24 pF 500 V	500 0810 000
C10, C11	Cap 470 pF 1 kV	516 0043 000
C12, C13	Cap .025 uF 500 V	516 0393 000
Q1, Q2	Transistor TN323	380 0092 000
Q3	Transistor 2N697	380 0042 000
R1	Res 30 K ohm ½ W 5%	540 1131 000
R2	Res 6200 ohm ½ W 5%	540 1106 000
R3	Res 20 K ohm ½ W 5%	540 1107 000
R4	Res 68 ohm ½ W 5%	540 1110 000
R5	Res 1300 ohm ½ W 5%	540 0052 000
R6	Res 9100 ohm ½ W 5%	540 0072 000
R7	Res 5600 ohm ½ W 5%	540 0067 000
R8	Res 100 ohm ½ W 5%	540 1102 000
R9	Res 1000 ohm ½ W 5%	540 0049 000
R10	Res 11 K ohm ½ W 1%	548 0171 000
R11	Res 10 ohm ½ W 5%	540 0001 000
R12	Res 1200 ohm ½ W 5%	540 0051 000
R13	Res 620 ohm ½ W 5%	540 0044 000
R14	Res 1000 ohm ¼ W 5%	540 0912 000
XQ3	Transipad	404 0198 000
Z1, Z2	Ferrite Bead	414 0087 000

994 6551 002

30 V. REGULATED POWER SUPPLY

SYMBOL	DESCRIPTION	GATES PART NO.
C1	Cap 25 uF 25 V	522 0242 000
C2	Cap 50 uF 50 V	522 0258 000
C3	Cap .002 uF 1 kV	516 0063 000
CR1 thru CR4	Diode, 1N2069	384 0018 000
CR5	Zener Diode 6.8 V 10%	386 0019 000
CR6	Zener Diode 20 V 10% 1 W	386 0109 000
Q1, Q2	Transistor 40310	380 0062 000
Q3	Transistor 40319	380 0044 000
Q4	Transistor 2N697	380 0042 000
R1	Res 8200 ohm ½ W 5%	540 0071 000
R2	Res 2 ohm 20 W (WW)	542 1105 000
R3	Res 680 ohm ½ W 5%	540 0045 000
R4	Res 1500 ohm ½ W 5%	540 0053 000
R5	Res 1000 ohm ½ W 5%	540 0049 000

WARNING, disconnect primary power prior to servicing.

PARTS LIST

SYMBOL	DESCRIPTION	GATES PART NO.
994 6551 002 - 30 V. REGULATED POWER SUPPLY (CONT'D)		
R6	Pot 750 ohm	550 0300 000
R7	Res 3000 ohm ½ W 5%	540 0060 000
XQ1, XQ2	Transistor Socket	404 0206 000
XQ3, XQ4	Transipad	404 0198 000
994 6552 001 - 43 V. REGULATED POWER SUPPLY		
C1	Cap 500 uF 50 V	522 0346 000
CR1 thru CR4	Diode 1N2069	384 0018 000
CR5	Diode Zener 1N4755A	386 0361 000
Q1, Q2	Transistor 40310	380 0062 000
R1	Res 1500 ohm 1 W 10%	540 0470 000
R2	Res 50 ohm 5 W 10%	542 1067 000
R3	Res 2 ohm 20 W 5%	542 1105 000
XQ1, XQ2	Transistor Socket	404 0206 000

SYMBOL	DESCRIPTION	GATES PART NO.
994-6553-002 - MUTING MODULE		
Q1 thru Q3	Transistor Special Tested	914 5419 001
R1 thru R3	Res 1000 ohm 5 W 10%	542 1102 000
XQ1 thru XQ3	Power Transistor Socket	404 0206 000

WARNING, disconnect primary power prior to servicing.

PARTS LIST

BASIC GATESWAY II CONSOLE

SYMBOL		DESCRIPTION	GATES PART NO.
		Knob, Red (Lever Switch)	650 0134 000
		Knob, Black (Lever Switch)	650 0129 000
		Knob, Top Hat Black, (Small)	650 0136 000
		Knob, Top Hat Red	650 0133 000
		Knob, Top Hat Black	650 0128 000
		Attenuation Knob	650 0130 000
		Knob (Channel Switch)	650 0127 000
A1, A2		Lamp, 28 V	396 0168 000
AT1 thru AT3		Attenuator 150/300 ohm	554 0188 000
AT4 thru AT8		Attenuator 150/300 ohm w/cue	554 0182 000
AT9 thru AT11		Pot 10 K ohm ½ W	550 0282 000
Qty.	1	Cap .0056 uF 1 kV	516 0076 000
	1	Cap .025 uF 200 V	516 0393 000
	3	Cap 1 uF 35 V	526 0004 000
	1	Cap .22 uF 100 V	508 0287 000
	6	Cap .01 uF 1 kV	516 0081 000
	1	Cap .22 uF 3 V	516 0386 000
	1	Cap 25 uF 25 V	522 0242 000
C1, C2		Cap 2500 uF 50 V	524 0113 000
C3		Cap 35 uF 50 V	522 0257 000
C4 thru C6		Cap 1000 uF 75 V	524 0123 000
		Diode, 1N2069	384 0018 000

SYMBOL		DESCRIPTION	GATES PART NO.
J1		Phone Jack	612 0279 000
K1		Relay 4 PDT 24 V DC Plug-In	574 0103 000
		R.F. Choke 1 mH	494 0114 000
LS1		Cue Speaker 2 inch 45 ohm	722 0049 000
M1		VU Meter Scale B	630 0121 000
Qty.	1	Res 18 K ohm ½ W 5%	540 0079 000
	3	Res 3000 ohm ½ W 5%	540 0060 000
	7	Res 620 ohm ½ W 5%	540 0044 000
	2	Res 2000 ohm ½ W 5%	540 0056 000
	8	Res 150 ohm ½ W 5%	540 0029 000
	8	Res 270 ohm ½ W 5%	540 0035 000
	2	Res 100 ohm ½ W 5%	540 0025 000
	8	Res 5100 ohm ½ W 5%	540 0066 000
	1	Res 47 ohm ½ W 5%	540 0017 000
	1	Res 2700 ohm ½ W 5%	540 0059 000
	1	Res 750 ohm ½ W 5%	540 0046 000
	1	Res 51 ohm ½ W 5%	540 0018 000
	1	Res 270 ohms 2 W 5% (Meter Lamps)	540 0597 000

PARTS LIST

BASIC GATESWAY II CONSOLE - CONT'D.

SYMBOL	DESCRIPTION	GATES PART NO.
S1 thru S19	Lever Switch 4 Pole, 2 Pos.	602 0007 000
S20 thru S23	Lever Switch 2 Pole, 3 Pos.	602 0005 000
S25 thru S27	Lever Switch 3 Pos.	602 0092 000
S28 thru S32	Lever Switch 3 Pos.	602 0088 000
S33	Selector Switch 2 Pole, 4 Pos.	600 0435 000
S34	Selector Switch 4 Pole, 11 Pos. (Mod.)	914 8509 001
S35	Selector Switch 2 Pole, 3 Pos.	600 0442 000
S36	Red Pushbutton Switch, SPST	604 0230 000
S39	Lever Switch 3 Pos. shorting pos. Spring return	602 0065 000
S40 thru S43	Same as S1	
T1	Line Transformer	478 0009 000
T3	Program Output Transformer	478 0276 000
T4	Remote Cue Transformer	478 0274 000
T5	Same as T1	
TB1	Terminal Block 80 Term.	914 5208 001
TB2	Terminal Block 40 Term.	914 5209 001
TB3	Terminal Board	614 0034 000

SYMBOL	DESCRIPTION	GATES PART NO.
TP1	Ceramic Standoff Terminal	614 0438 000
TP2 thru TP5	Standoff Terminal	614 0347 000
TP6	Same as TP1	
TP7, TP8	Same as TP2	
TP9	Same as TP1	
TP10	Same as TP2	
XA1, XA2	Meter Lamp Socket	406 0366 000
XK1	Relay Socket	404 0160 000
XK2	Relay Socket	404 0256 000

PARTS LIST

992 1894 001 - RIGHT MIXING BUS

SYMBOL	DESCRIPTION	GATES PART NO.
R13,R15, R16,R18, R19,R21, R22,R24	Res 620 ohm ½ W 5%	540 0044 000
R14,R17, R20,R23	Res 300 ohm ½ W 5%	540 0036 000

992 1893 001 - LEFT MIXING BUS

SYMBOL	DESCRIPTION	GATES PART NO.
R1,R3, R4,R6 R7,R9, R10,R12	Res 620 ohm ½ W 5%	540 0044 000
R2,R5, R8,R11	Res 300 ohm ½ W 5%	540 0036 000
T2	Input Transformer	478 0285 000

992 1892 001 - EQUALIZER BOOSTER AMP. & METER PAD

SYMBOL	DESCRIPTION	GATES PART NO.
C1	Cap 25 uF 6 V	522 0178 000
C3, C4	Cap 25 uF 25 V	522 0242 000
Q1, Q2	Transistor 2N3391A	380 0099 000
R1	Res 3300 ohm ½ W 5%	540 0061 000
R2	Res 16 K ohm ½ W 5%	540 0078 000
R3	Res 3900 ohm ½ W 5%	540 1137 000
R4	Res 20 K ohm ½ W 5%	540 1107 000
R5	Res 2000 ohm ½ W 5%	540 1104 000
R6	Res 5600 ohm ½ W 5%	540 0067 000
R7	Res 3000 ohm ½ W 5%	540 1138 000
R8	Same as R5	
R9	Res 7500 ohm ½ W 5%	540 0070 000
R10, R11	Res 2700 ohm ½ W 5%	540 0059 000
R12	Same as R6	
R13	Res 2000 ohm ½ W 5%	540 0056 000
R14, R15	Res 100 ohm ½ W 5%	540 0025 000
R16	Res 820 ohm ½ W 5%	540 0047 000
R17, R18	Same as R14	
R19	Res 1500 ohm ½ W 5%	540 0053 000
R20	Res 150 ohm ½ W 5%	540 0029 000
R21	Same as R19	
XQ1, XQ2	Transistor Socket	404 0066 000

PARTS LIST

PROGRAM EQUALIZER

SYMBOL	DESCRIPTION	GATES PART NO.
C1	Cap .068 uF 100 V	508 0292 000
C2	Cap .0062 uF 500 V	516 0371 000
C3	Cap .025 uF 200 V	516 0393 000
C4	Cap 3.9 uF 35 V Tantalum	526 0012 000
C5	Cap .003 uF 1 kV	516 0067 000
L1	Toroidal Inductor 5 Hy.	492 0337 000
R1	Res 9100 ohm ½ W 5%	540 0072 000
R2	Res 6800 ohm ½ W 5%	540 0069 000
R3	Res 4700 ohm ½ W 5%	540 0065 000
R4	Res 20 K ohm ½ W 5%	540 0080 000
R5	Res 3300 ohm ½ W 5%	540 0061 000
R6	Res 15 K ohm ½ W 5%	540 0077 000
R7	Res 5600 ohm ½ W 5%	540 0067 000
R8	Res 8200 ohm ½ W 5%	540 0071 000
R9	Same as R1	
R10	Res 5100 ohm ½ W 5%	540 0066 000
R11	Res 2200 ohm ½ W 5%	540 0057 000
R12	Res 560 ohm ½ W 5%	540 0043 000
R13, R14	Res 910 ohm ½ W 5%	540 0048 000
R15, R16	Res 1500 ohm ½ W 5%	540 0053 000
R17	Res 510 ohm ½ W 5%	540 0042 000
R18	Res 470 ohm ½ W 5%	540 0041 000
R19	Res 2700 ohm ½ W 5%	540 0059 000
R20	Res 2000 ohm ½ W 5%	540 0056 000
R21	Res 13 K ohm ½ W 5%	540 0076 000
R22	Res 18 K ohm ½ W 5%	540 0079 000
R23, R24	Same as R15	
R25, R26	Same as R13	
R27, R28	Same as R12	
R30	Same as R22	
R31	Same as R1	
R32	Same as R21	
R33	Same as R7	
R34	Same as R2	
R35	Same as R5	
R36	Same as R3	
R37	Same as R19	
R38	Res 1100 ohm ½ W 5%	540 0050 000
R39	Res 620 ohm ½ W 5%	540 0044 000
R40	Same as R7	
R41	Same as R12	
R42	Res (Det. by Freq Response)	540 0045 000
Qty. 1	Res 20 K ohm ½ W 5%	540 0080 000
S37, S38	Selector Switch 4 Pole, 11 Pos. (Mod.)	914 8509 002

PARTS LIST

RELAY AND SOLID STATE MUTING DRIVER

SYMBOL	DESCRIPTION	GATES PART NO.
CR1, CR2	Diode 1N2069	384 0018 000
Q1 thru Q4	Transistor 40319	380 0044 000

SYMBOL	DESCRIPTION	GATES PART NO.
R1	Res 1600 ohm 1 W 5%	540 0337 000
R2	Res 470 ohm ½ W 5%	540 0041 000
R3	Res 100 ohm ½ W 5%	540 0025 000
R4	Same as R2	
R5	Same as R3	
R6	Same as R2	
R7	Same as R3	
R8	Same as R2	
R9	Same as R3	
R10	Res 300 ohm 2 W 5%	540 0598 000
XQ1 thru XQ4	Transipad 10020	404 0198 000

TRANSFORMER PANEL

SYMBOL	DESCRIPTION	GATES PART NO.
	Cap .05 uF	516 0087 000
CB1	Circuit Breaker 1 A	606 0116 000
CR1 thru CR6	Diode 1N2069	384 0018 000
F1 thru F3	Fuse 1.0 Amp Visual Indicating	398 0326 000
K1 thru K3	Relay 2500 ohm	574 0140 000

SYMBOL	DESCRIPTION	GATES PART NO.
T1, T2	Power Transformer	472 0570 000
T3	Power Transformer	472 0569 000
TB1, TB2	Terminal Board	614 0010 000
XF1 thru XF3	Fuseholder	402 0103 000

600/600 ohms "T" pads

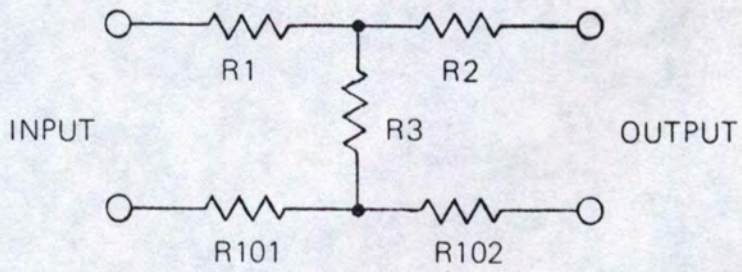
dB loss	R1–R2 ohms	R3 ohms
2	68	2700
4	130	1200
6	200	820
8	270	510
10	330	390
15	430	220
20	470	120
25	510	68

150/150 ohms "T" pads

dB loss	R1–R2 ohms	R3 ohms
2	18	750
4	36	330
6	51	200
8	62	120
10	82	100
15	110	56
20	120	30
25	130	16

600/150 ohms "T" pads

dB loss	R1 ohms	R2 ohms	R3 ohms
12 (min)	510	6.8	160
15	510	51	110
20	560	100	62
25	560	120	33

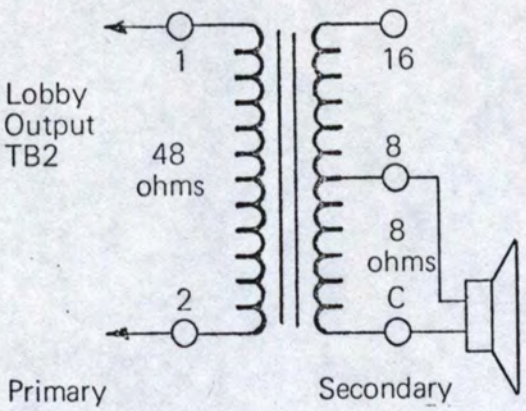


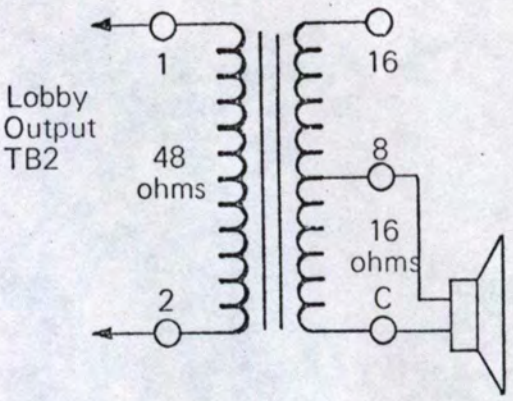
NOTE: *This chart may be used for H pads by halving R1 and making R101 equal to half of R1, and by halving R2 and making R102 equal to half of R2. For T pads, simply short out R101 and R102 and use R1 and R2 values directly.*

LOSS PAD CHART

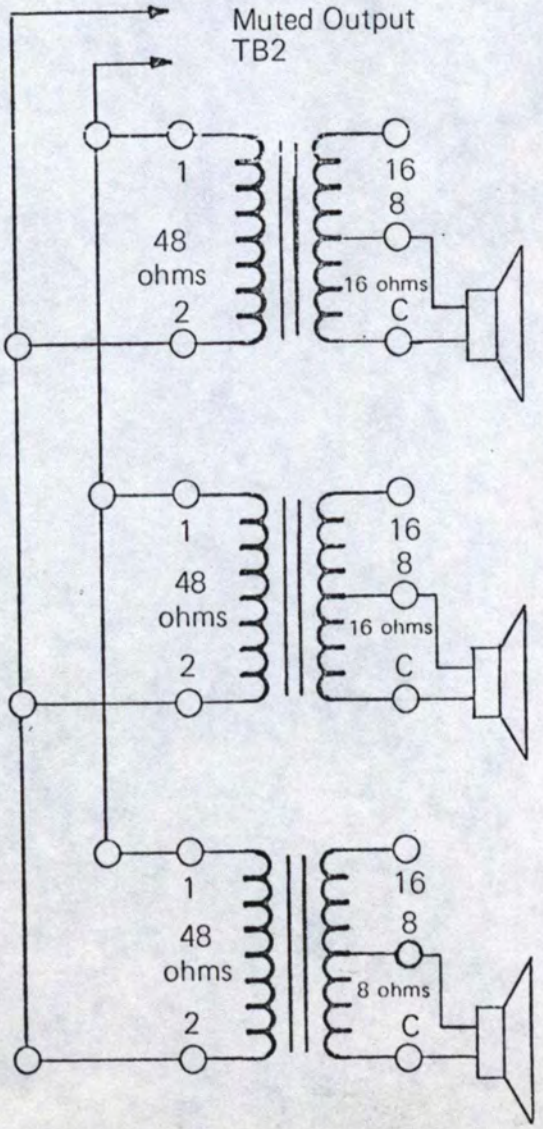
Speaker matching transformer information using Gates 478-0291-000 transformer. Shown below are some typical installations.

(A) Lobby speakers, 8 or 16 ohms.





(B) Muted outputs, using 8 and 16 ohms speakers.



(C) Amplifier Loading

The load impedance of the monitor amplifier is 8 ohms. Speaker loads of 4 to 16 ohms may be used. Loading the amplifier lower than 4 ohms may damage the unit. Some suggested loads are listed below.

1. One 8 ohms speaker.
2. Two 16 ohms speakers connected in parallel.
3. From one to six speakers using Gates 478-0291-000 speaker matching transformers.

CAUTION: *It is extremely important to the proper operation of this console that the external wiring between TB2 and the speaker/matching transformer not be grounded.*

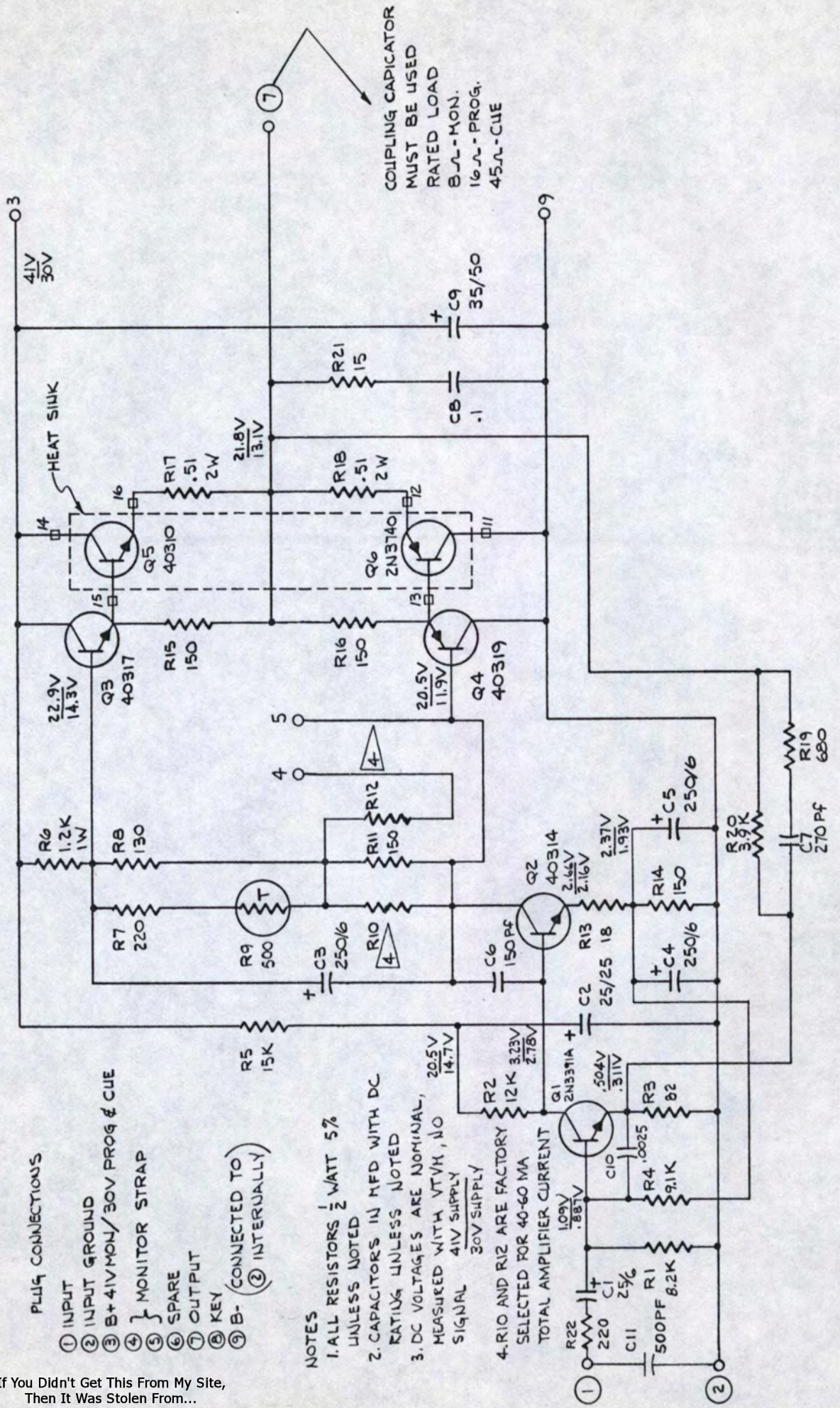
1. PIN CONNECTIONS COMPONENTS SIDE, LEFT TO RIGHT.
2. ALL RESISTORS 1/2 WATT 5%, ★ DENOTES LOW NOISE.
3. CAPACITORS IN MFD WITH D.C. RATING, UNLESS SPECIFIED.
4. COMPONENT VALUES SHOWN ARE NOMINAL VALUES. SLIGHT CHANGES MAY BE NECESSARY TO COMPENSATE FOR PRODUCTION TOLERANCES.
5. THE BOOSTER AMPLIER IS PHYSICALLY LOCATED IN THE EXTRUDED HOUSING OF THE OUTPUT MODULE.
6. D.C. VOLTAGES ARE NOMINAL, MEASURED WITH A VTVM, NO SIGNAL.
7. VOLTAGES IN (V) ARE SIGNAL LEVELS FOR +8DBM(600Ω) OUTPUT, 1000HZ.

HARRIS CORPORATION Gates Broadcast Equipment Division
123 Hampshire Street, Quincy, Illinois 62301

SCHEMATIC BOOSTER AMPLIFIER EDO 94479-5

827 3823 001

Warning, disconnect primary power prior to servicing.

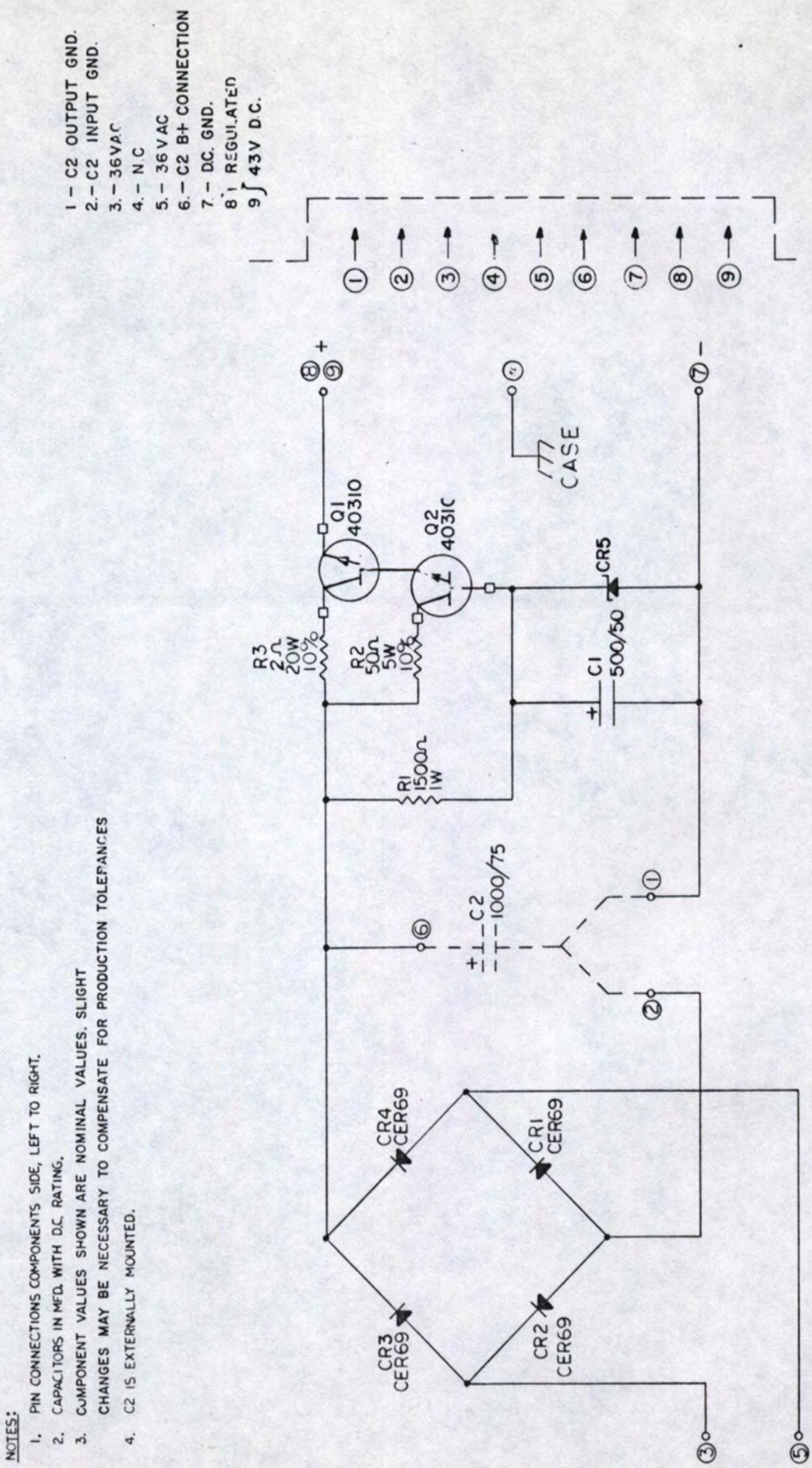


HARRIS CORPORATION Gates Broadcast Equipment Division
123 Hampshire Street, Quincy, Illinois 62301

SCHEMATIC PROGRAM-MONITOR-CUE AMP.

827 4088 001

Warning, disconnect primary power prior to servicing.



NOTES:

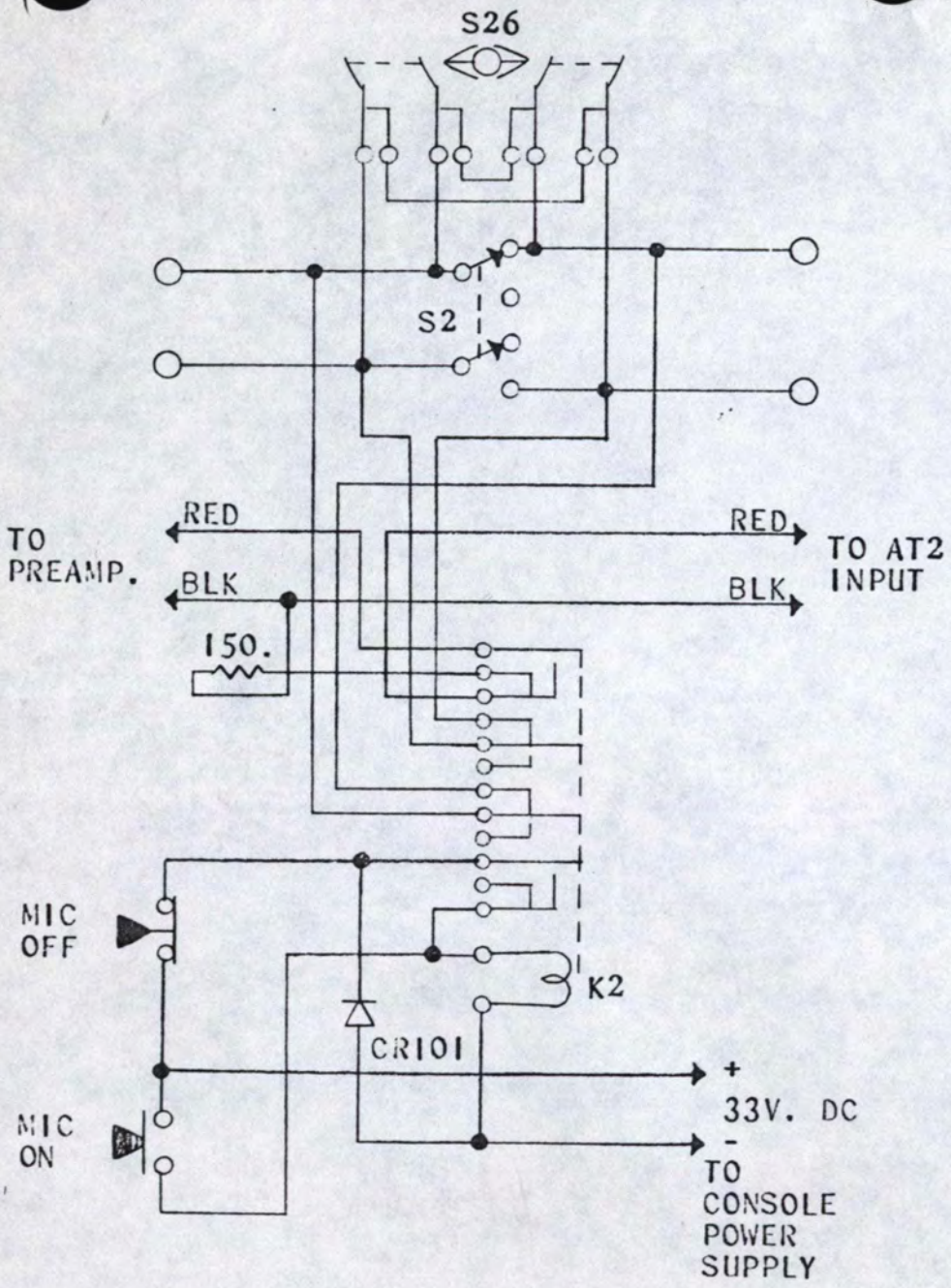
1. PIN CONNECTIONS COMPONENTS SIDE, LEFT TO RIGHT.
2. CAPACITORS IN MFD. WITH D.C. RATING.
3. COMPONENT VALUES SHOWN ARE NOMINAL VALUES. SLIGHT CHANGES MAY BE NECESSARY TO COMPENSATE FOR PRODUCTION TOLERANCES
4. C2 IS EXTERNALLY MOUNTED.

SCHEMATIC POWER SUPPLY PROGRAM-MONITOR-CUE AMP. M6552

HARRIS CORPORATION Gates Broadcast Equipment Division
123 Hampshire Street, Quincy, Illinois 62301

827 2385 001

Warning, disconnect primary power prior to servicing.



S26 - CHANNEL 2 LEVER KEY.

S2 - CHANNEL 2 INPUT SELECTOR SWITCH.

CR101 - IN2069 RECTIFIER, OR EQUIVALENT.

K2 - C. P. CLARE TYPE LBP0022K00 RELAY WITH 28.5 VOLT DC COIL, 2 SETS "D" AND 2 SETS "C" CONTACTS - GATES PART NO. 572 0137 000 RELAY.

NOTE: REMOVE JUMPERS ON EXISTING RELAY SOCKET AND CONNECT AS SHOWN AT LEFT.

NOTE: USE MOMENTARY TYPE PUSHBUTTON OR LEVER SWITCHES FOR "MIC ON" AND "MIC OFF" CONTROL TO REDUCE MECHANICAL NOISE IN MICROPHONE.

RELAY MOUNTING BRACKET: 814 4702 001.

RELAY MOUNTING SOCKET: 404 0208 000.

SCHEMATIC DIAGRAM OF ANNOUNCER CONTROL OF "MIC ON" AND "MIC OFF" FOR GATESWAY II CONSOLE.

814 6210 001

NOTES:

1. PIN CONNECTIONS COMPONENTS SIDE, LEFT TO RIGHT.
2. ALL RESISTORS 1/2 WATT 5%
3. CAPACITORS IN uF WITH D.C. RATING, UNLESS SPECIFIED.
4. *DENOTES LOW NOISE RESISTORS.
5. R9 SELECTED FOR TOTAL AMPLIFIER CURRENT TO BE 10-18 MA (NO SIGNAL). PARTS REPLACEMENT MAY REQUIRE CHANGE OF R9 VALUE.
6. D.C. VOLTAGES ARE NOMINAL, MEASURED WITH A VTVM, NO SIGNAL.
7. VOLTAGES IN (V) ARE SIGNAL LEVELS FOR +20dBm (150Ω) OUTPUT, 1000Hz.
8. PHASING-INPUT/OUTPUT TERMINALS "3" AND "9" ARE IN-PHASE

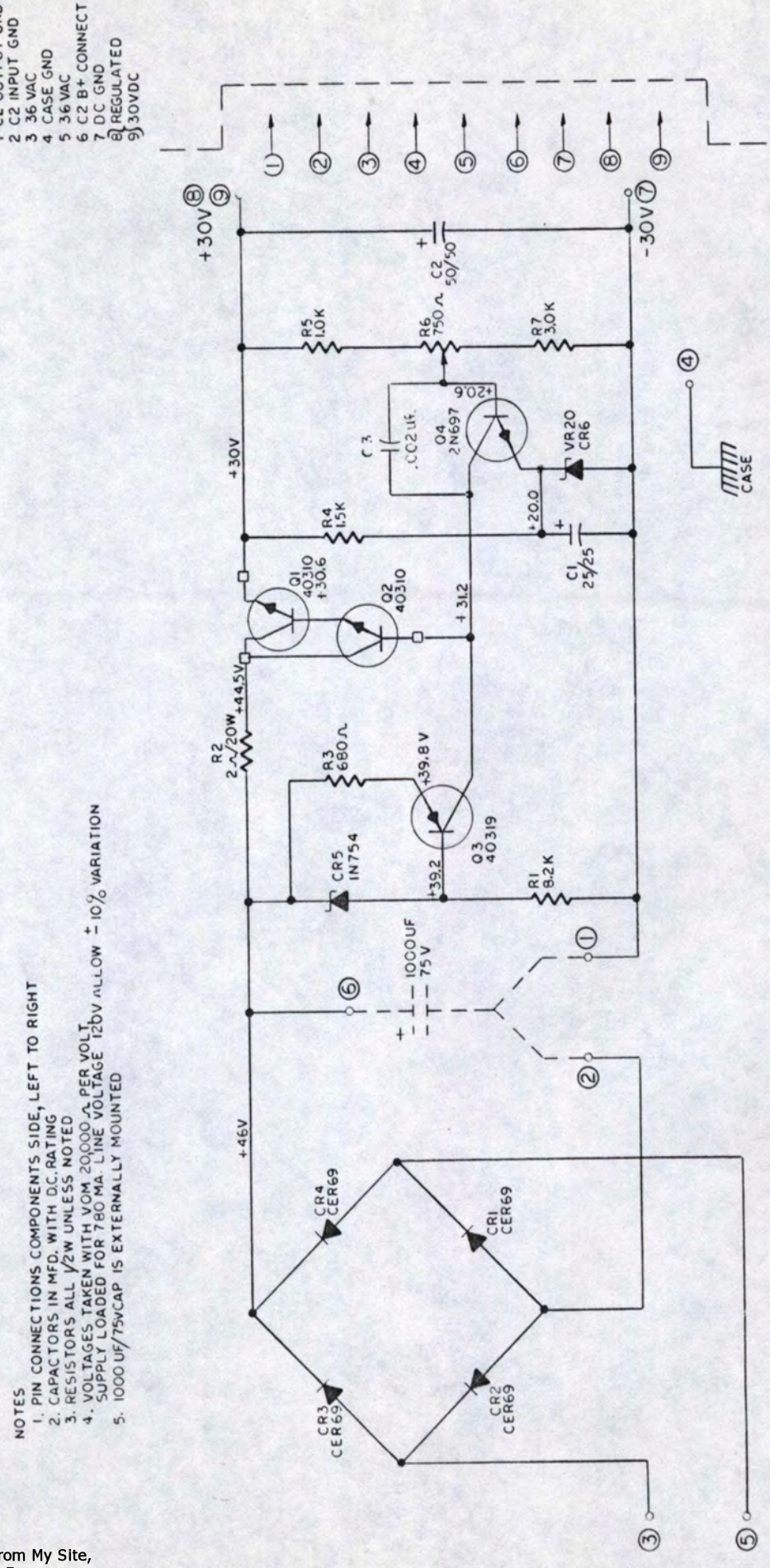
T1 PRIMARY CONNECTIONS

IMP	CT	JOIN	CONNECT TO
37.5Ω	R/Y	RED & BLU	BLU & YEL
		YEL & BRN	
150Ω	-	YEL & RED	BLU & BRN

GATES DIVISION
HARRIS-INTERTYPE CORPORATION
123 HAMPSHIRE STREET · QUINCY, ILLINOIS 62301 U.S.A.

SCHEMATIC-PRE AMP SOLID STATE CONSOLES
827 3822 001

Warning, disconnect primary power prior to servicing.

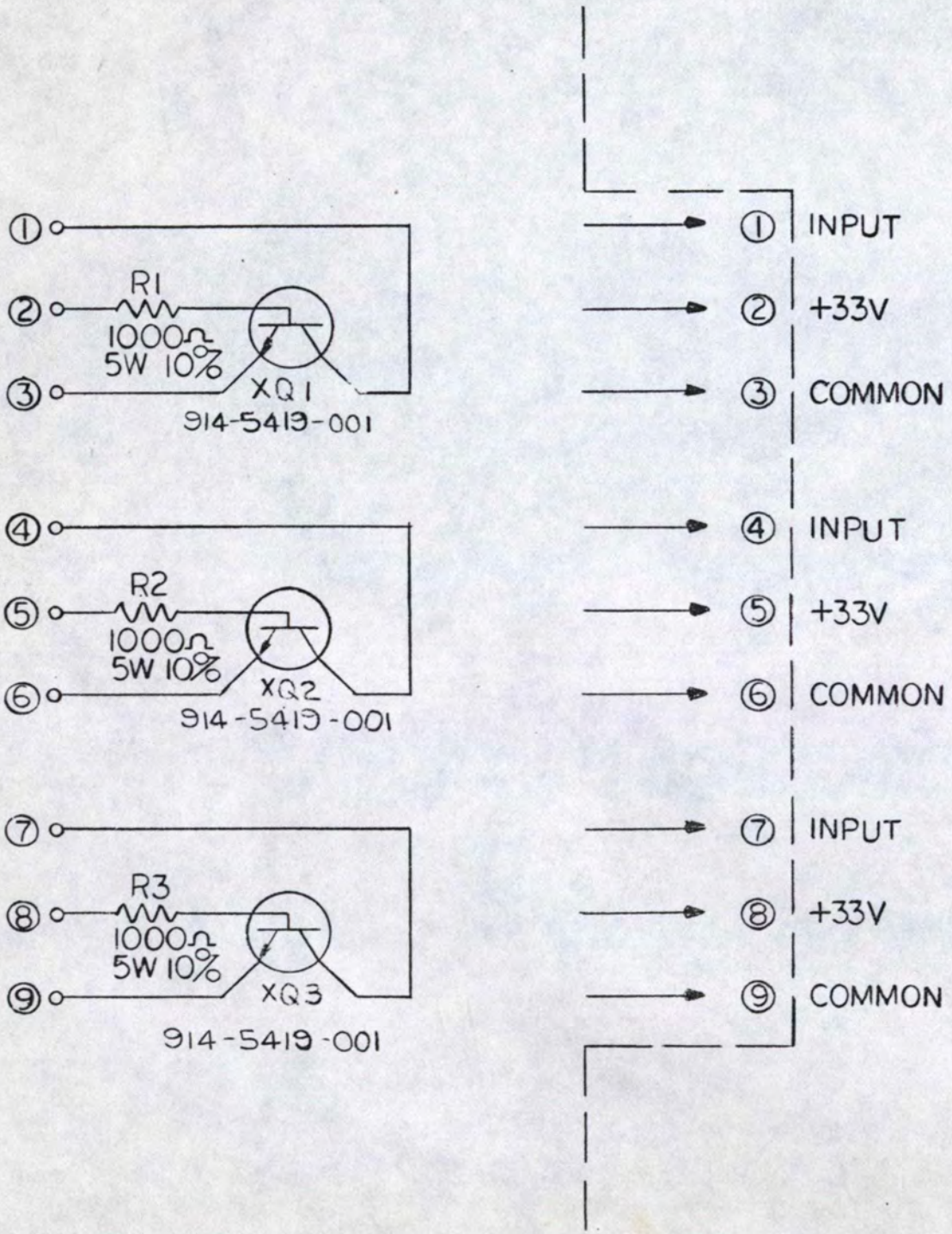


SCHEMATIC POWER SUPPLY-M6551A

HARRIS CORPORATION Gates Broadcast Equipment Division
123 Hampshire Street, Quincy, Illinois 62301

827 3890 001

Warning, disconnect primary power prior to servicing.

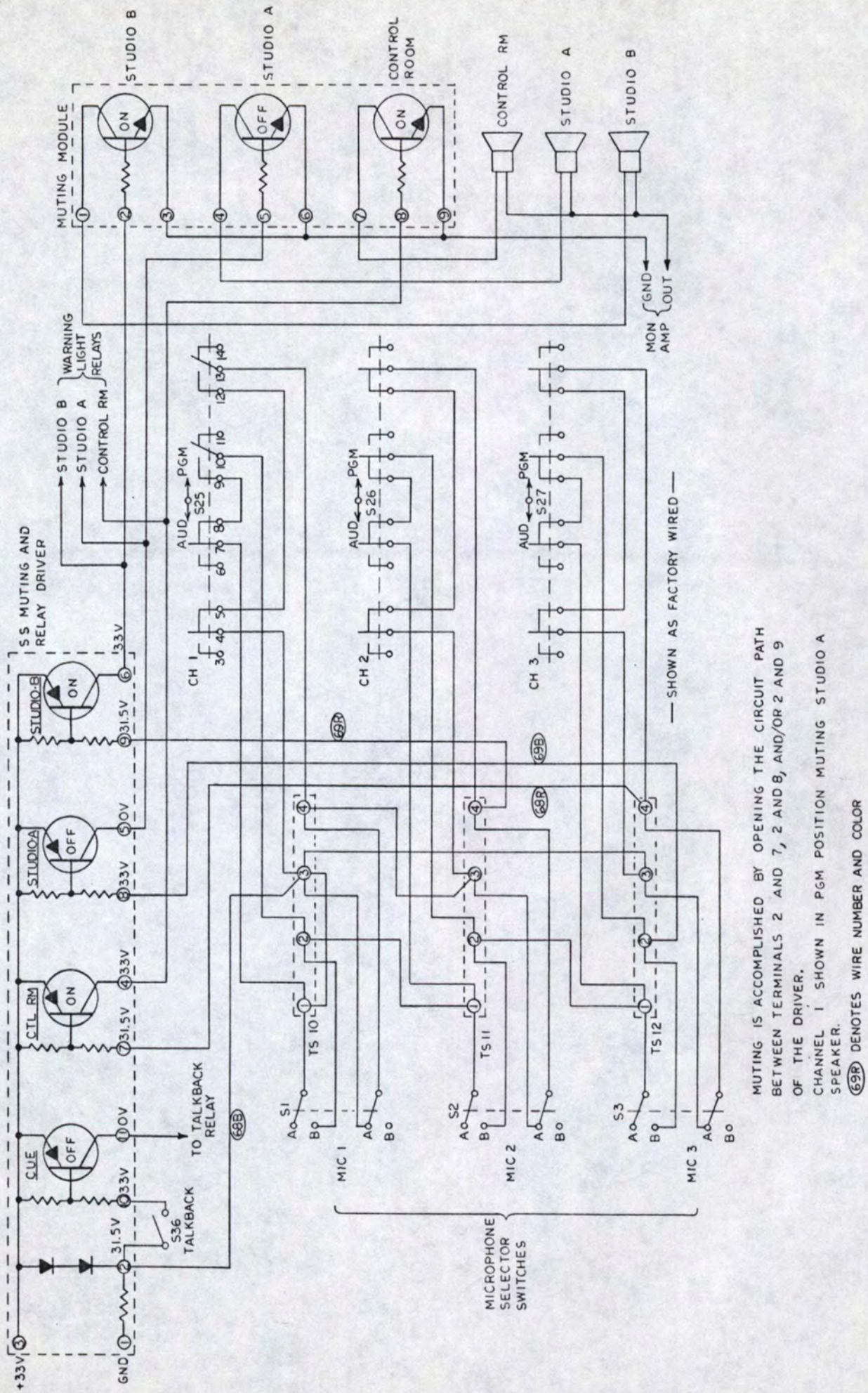


NOTES:

1. SINGLE SOLID STATE MUTING MODULE IS COMPOSED OF ONE BOARD IN ONE EXTRUSION ASS'Y. (M6553A)
2. DOUBLE SOLID STATE MUTING MODULE IS COMPOSED OF TWO BOARDS IN ONE EXTRUSION ASS'Y. (M6553B)
3. +33VOLTS IS APPLIED TO TURN ON THE MUTING DEVICE, TO TURN OFF, VOLTAGE IS REMOVED.
4. CURRENT PER MUTING DEVICE IS 50ma. MAX.
5. COMPONENT VALUES SHOWN ARE NOMINAL VALUES. SLIGHT CHANGES MAY BE NECESSARY TO COMPENSATE FOR PRODUCTION TOLERANCES.

SCHEMATIC MUTING MODULE
SOLID STATE M6553A, M6553B
814 4614 001

GATES RADIO COMPANY - QUINCY, ILLINOIS
A DIVISION OF HARRIS-INTERTYPE CORPORATION



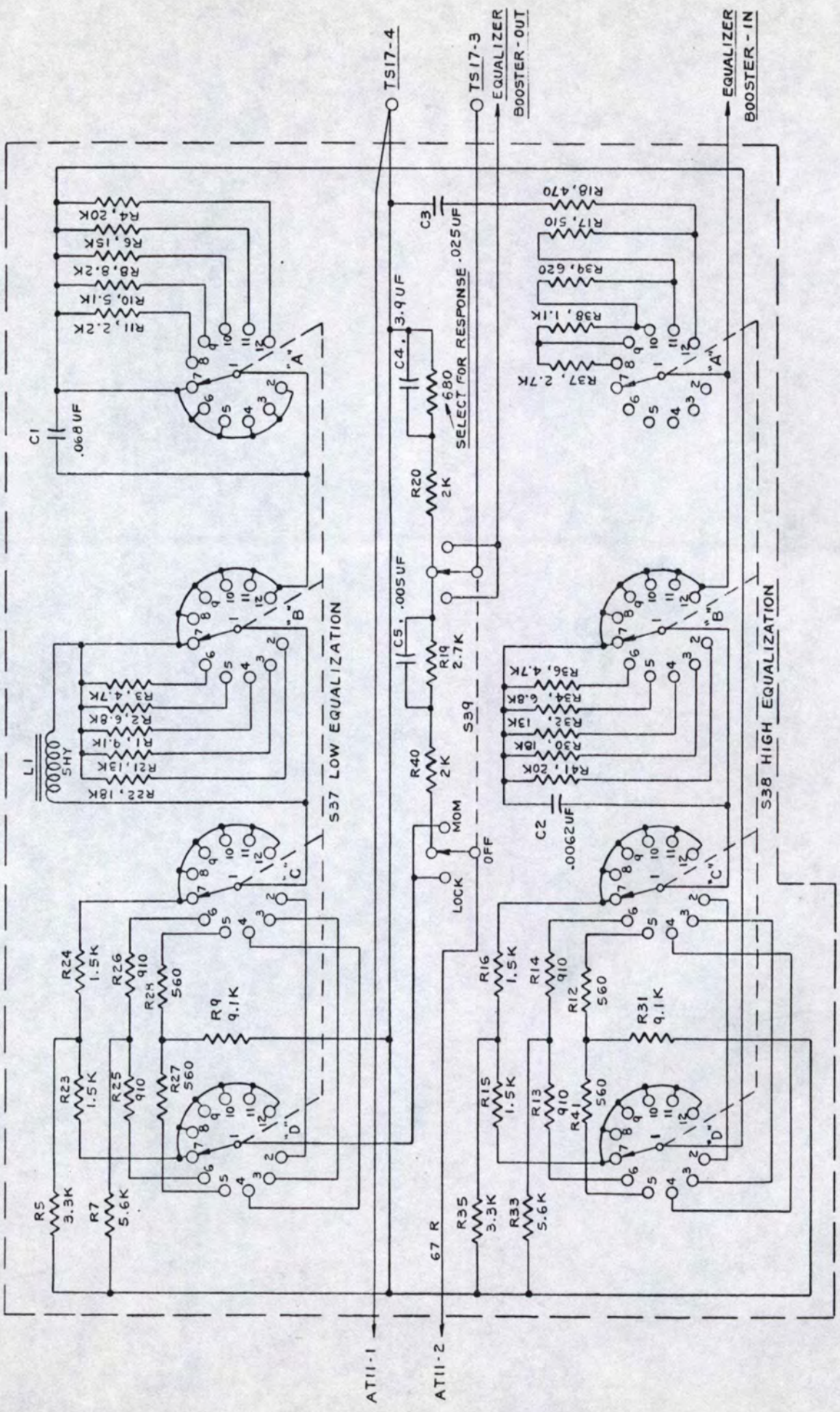
MUTING IS ACCOMPLISHED BY OPENING THE CIRCUIT PATH BETWEEN TERMINALS 2 AND 7, 2 AND 8, AND/OR 2 AND 9 OF THE DRIVER.

CHANNEL 1 SHOWN IN PGM POSITION MUTING STUDIO A SPEAKER.

(69R) DENOTES WIRE NUMBER AND COLOR

GATES RADIO COMPANY - QUINCY, ILLINOIS
A DIVISION OF HARRIS-INTERTYPE CORPORATION

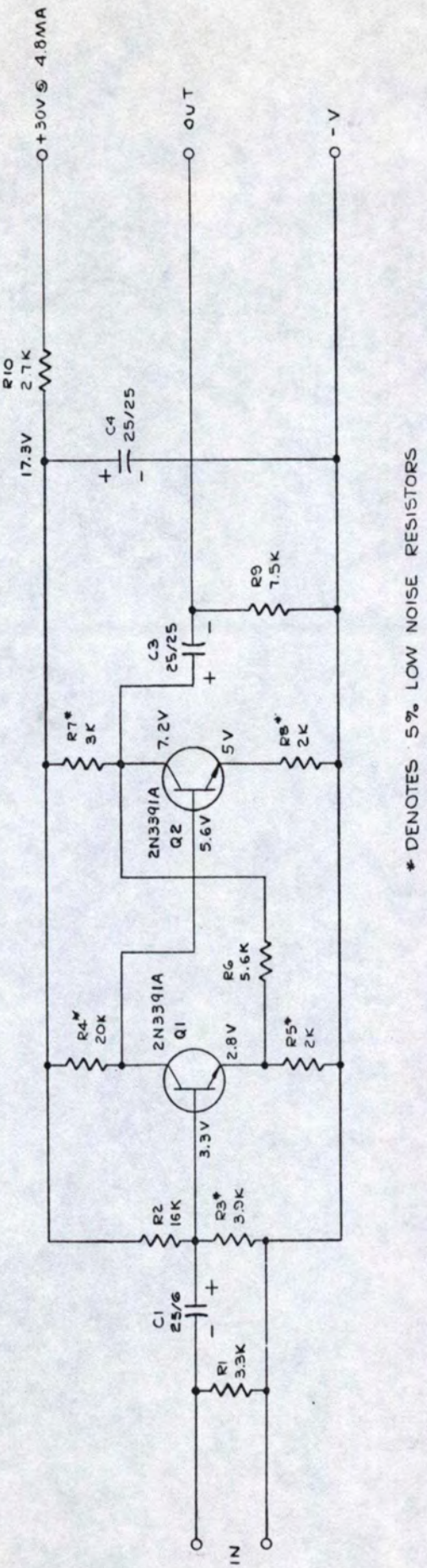
SOLID STATE MUTING GATESWAY II CONSOLE
827 5305 001



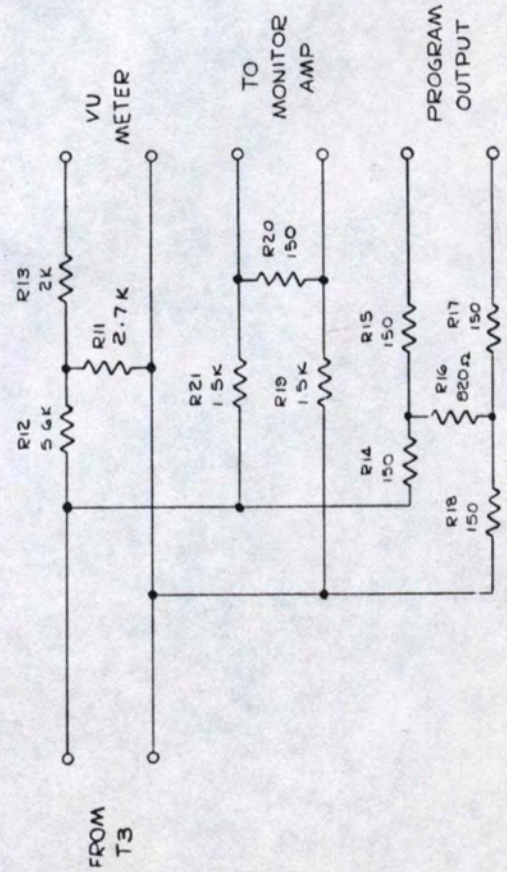
SCHEMATIC PROGRAM EQUALIZER GATESWAY II M6541

GATES RADIO COMPANY - QUINCY, ILLINOIS
A DIVISION OF HARRIS-INTERTYPE CORPORATION

827 3780 001



* DENOTES 5% LOW NOISE RESISTORS



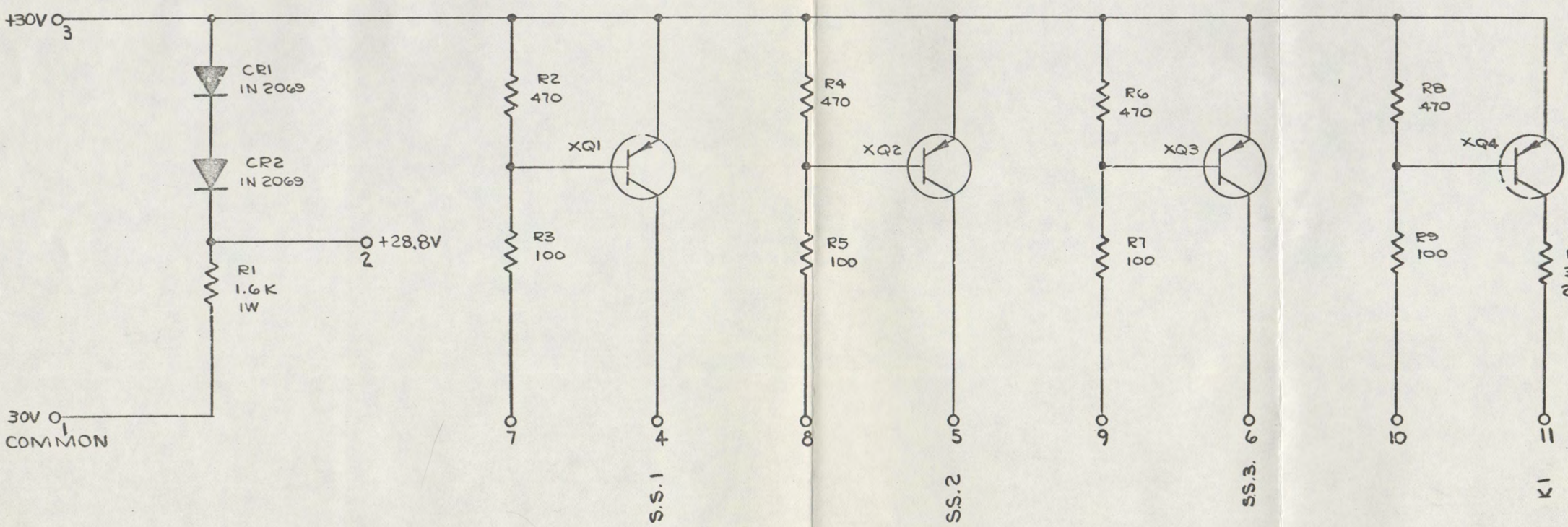
EQUALIZER BOOSTER AMP & METER PAD
SCHEMATI C GATESWAY II

827 2997 001

GATES RADIO COMPANY - QUINCY, ILLINOIS
A DIVISION OF HARRIS-INTERTYPE CORPORATION

827-3005-001

	LTR.	DATE	REVISION	DFTM	ENG	ECN
M	A	12/30/70	REVISED PERMARK-D PRINT	H.R		13312

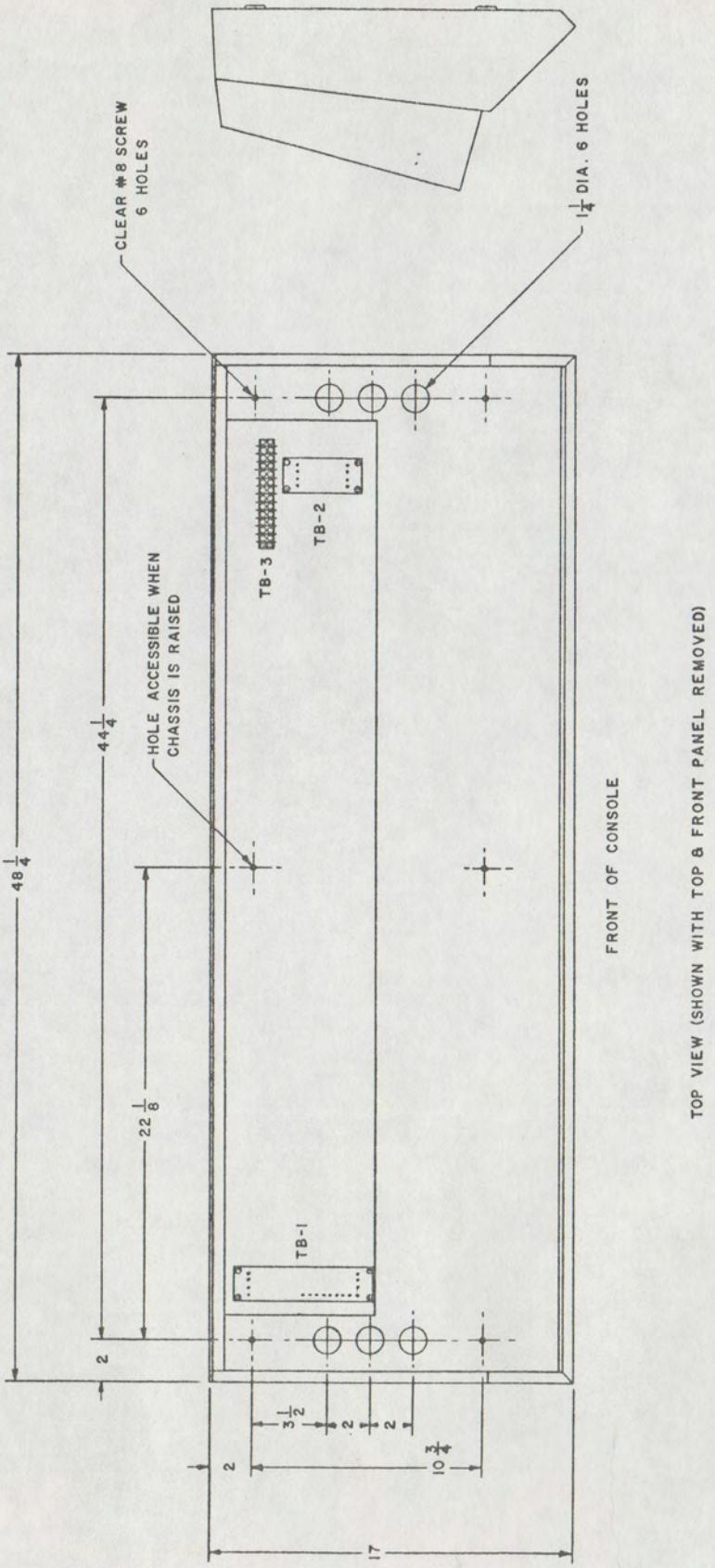


ALL TRANSISTORS 40319

REVISED 4-28-67 F.S.
REVISED 10-24-66 F.S.

TITLE: SCHEMATIC - DRIVERS FOR SS. MUTING AND RELAY DUALUX II GATESWAY II 94479-1			
GATES RADIO COMPANY QUINCY, ILLINOIS			
DR. BY HLR DATE 10-24-66	CH. BY N.R.K.	ENG.	DWG. NO. 827-3005-001

STANPAT CO. WHITESTONE, N.Y. U.S.A.

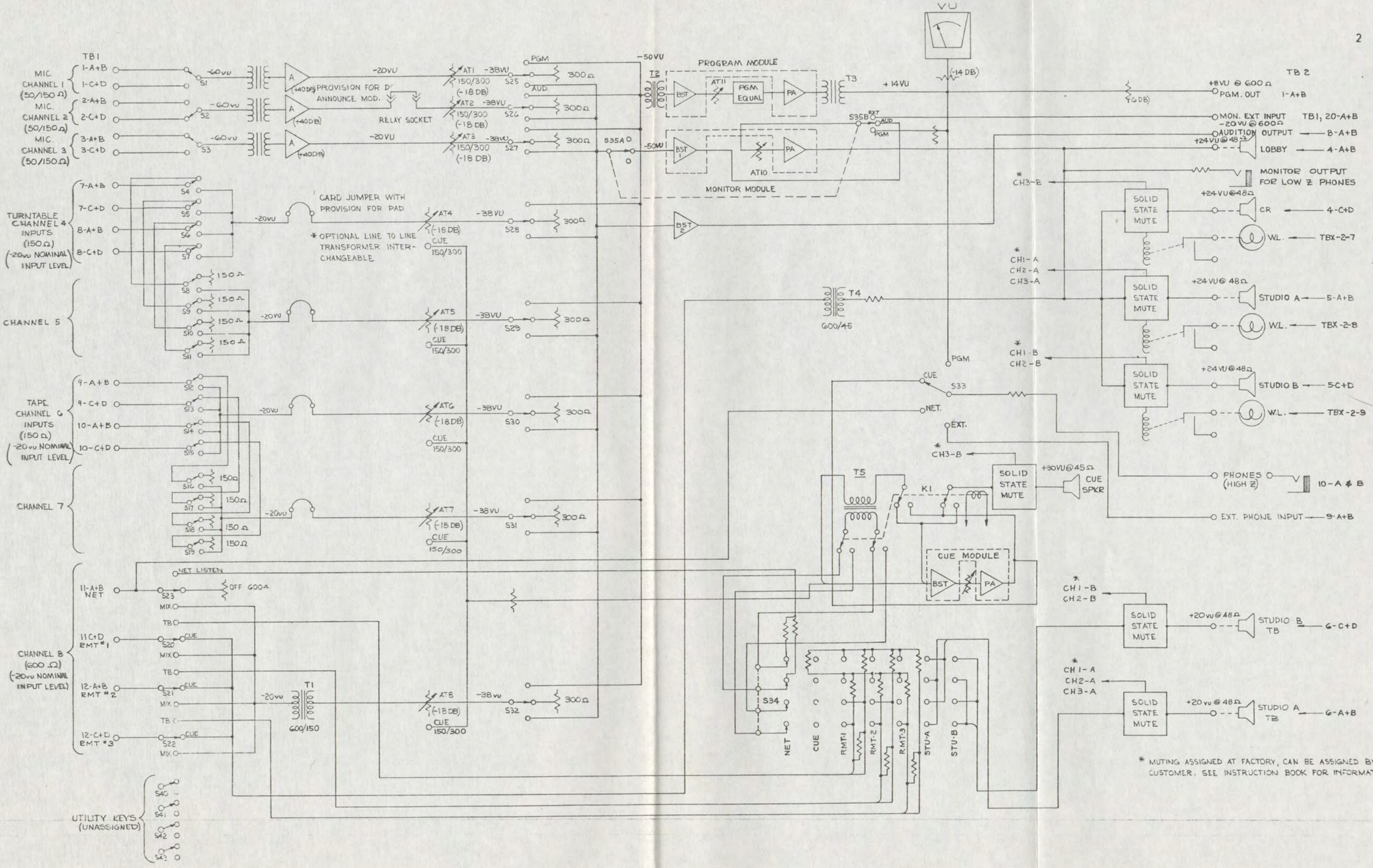


TOP VIEW (SHOWN WITH TOP & FRONT PANEL REMOVED)

GATES RADIO COMPANY - QUINCY, ILLINOIS
A DIVISION OF HARRIS-INTERTYPE CORPORATION

CABLE INLET & MOUNTING DIM. GATESWAY II CONSOLE M-6541

838 2668 001



* MUTING ASSIGNED AT FACTORY, CAN BE ASSIGNED BY CUSTOMER. SEE INSTRUCTION BOOK FOR INFORMATION.

GATES RADIO COMPANY - QUINCY, ILLINOIS
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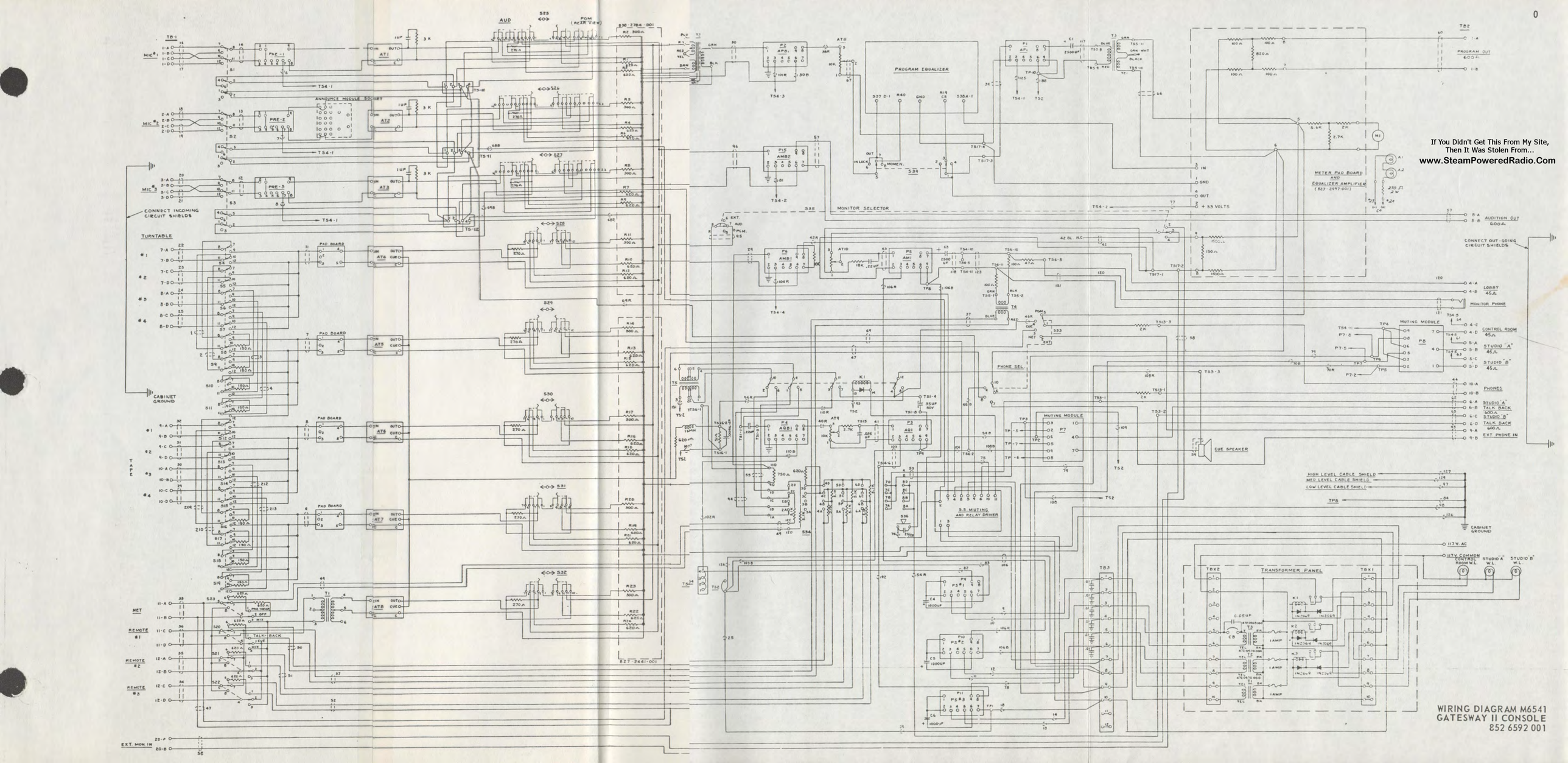
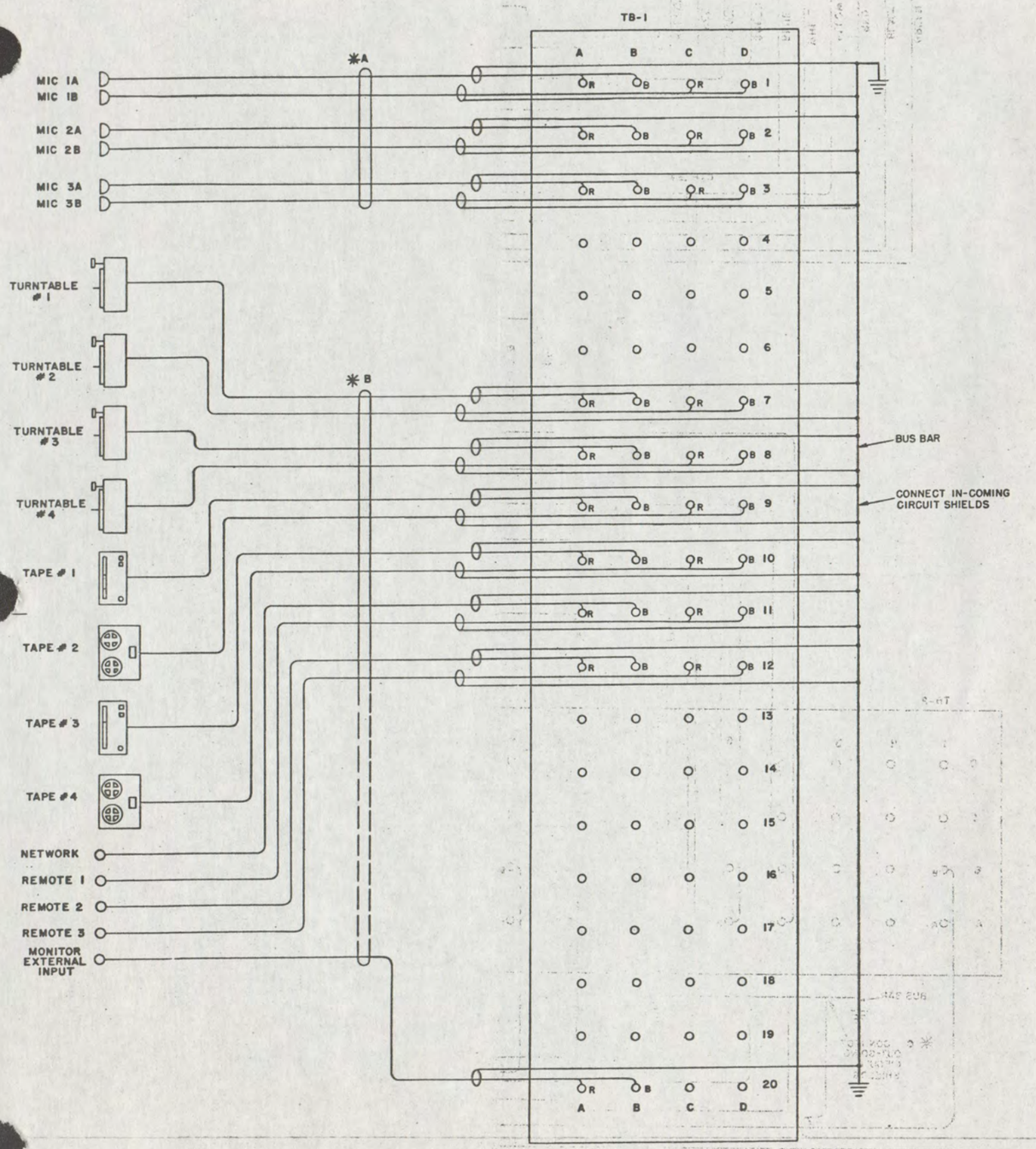
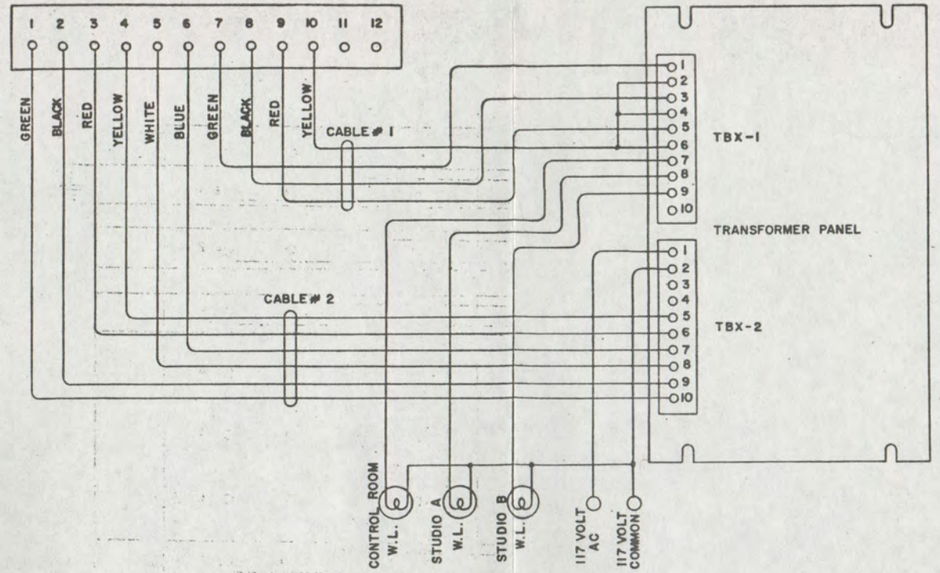
BLOCK DIAGRAM - GATESWAY II 8 CHANNEL AUDIO CONSOLE 94479

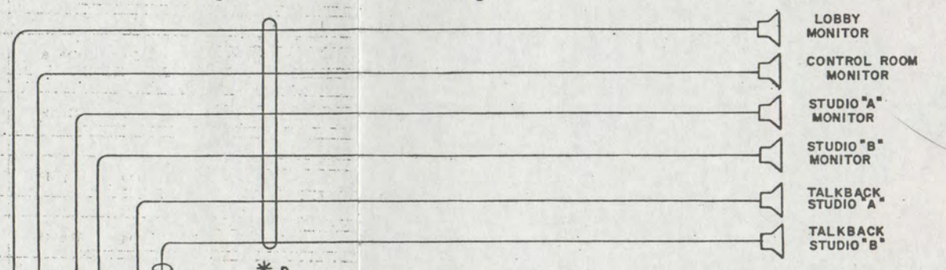
842 4956 001

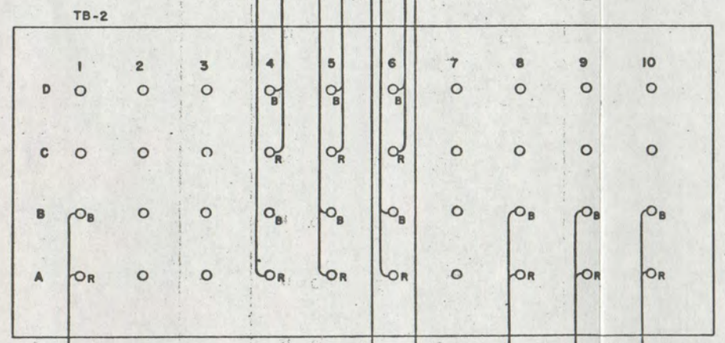


WIRING DIAGRAM M6541
GATEWAY II CONSOLE
852 6592 001

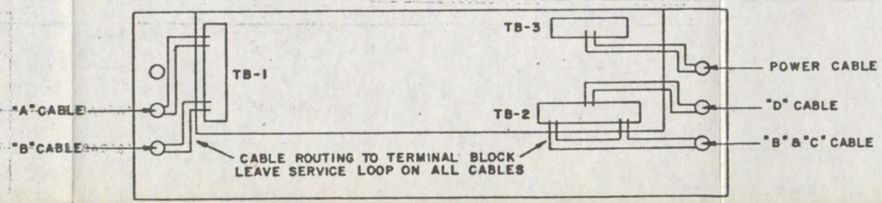








*INDICATES DIFFERENT CABLE LEVELS
"A" CABLE MICS – 60 VU
"B" CABLE –60 TO –20 VU
"C" CABLE –20 TO +20 VU
"D" CABLE +20 TO +40 VU



GATES RADIO COMPANY - QUINCY, ILLINOIS
A DIVISION OF HARRIS-INTERTYPE CORPORATION

INSTALLATION DRAWING GATESWAY II
CONSOLE M6541

852 6264 001