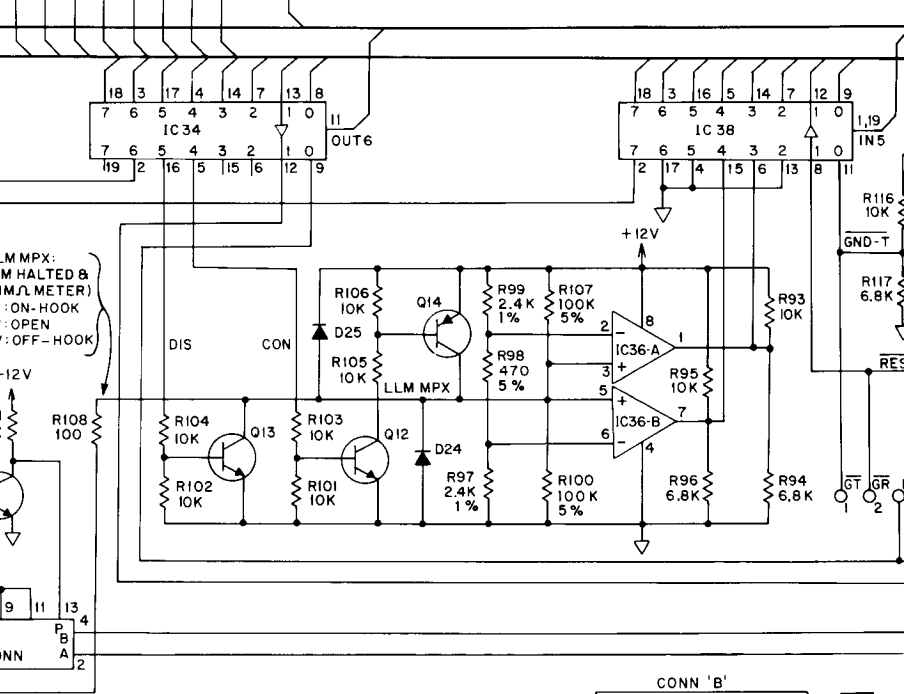
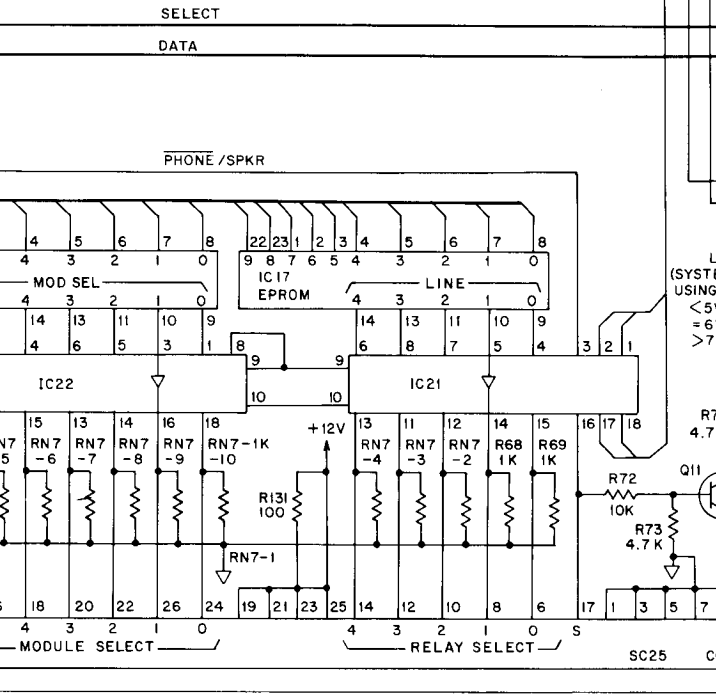
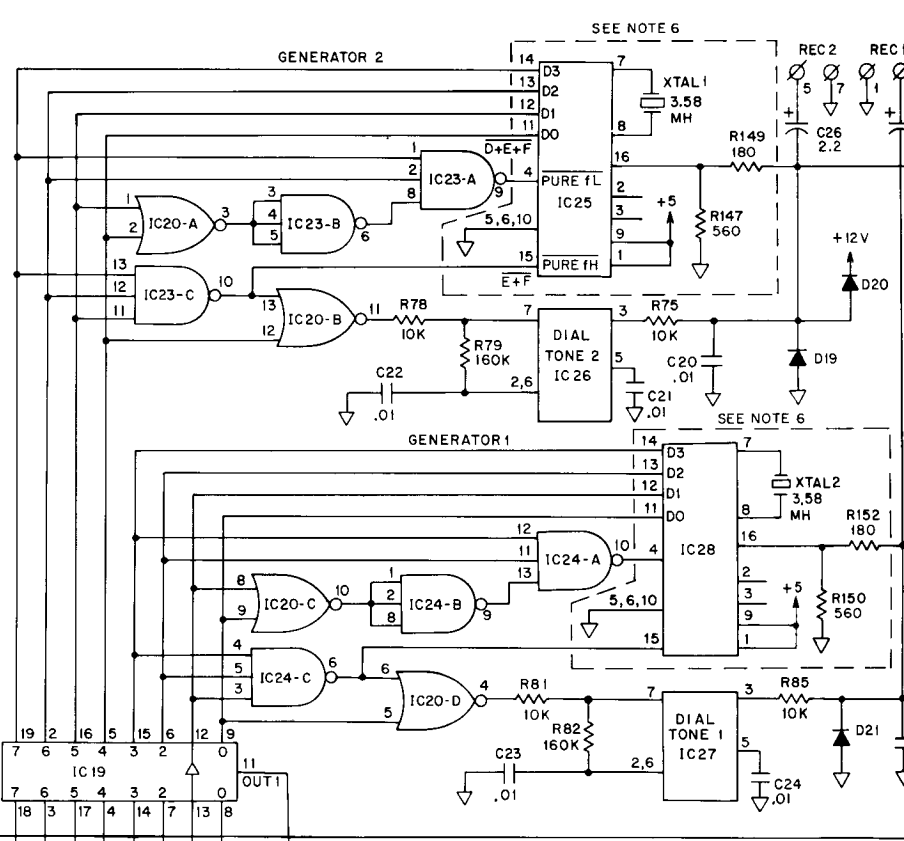
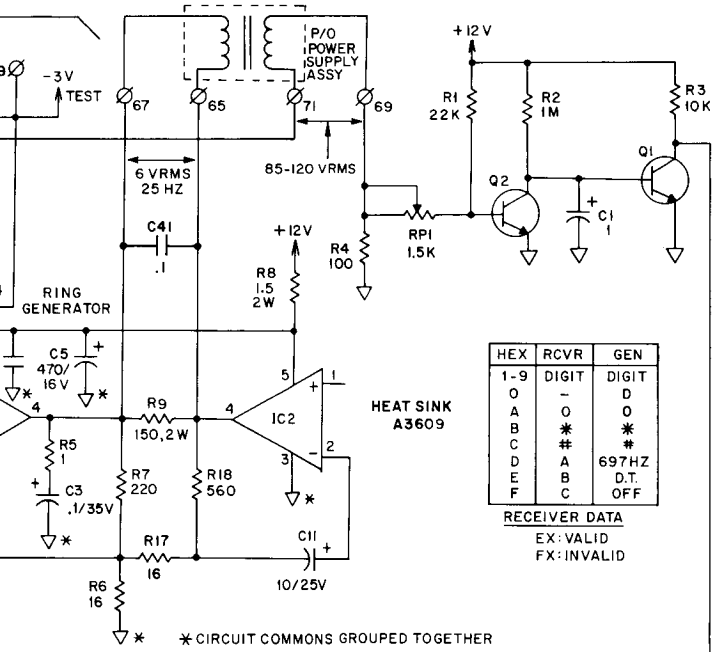


NO LOAD RING
VOLTAGE: 80VRMS(MIN)

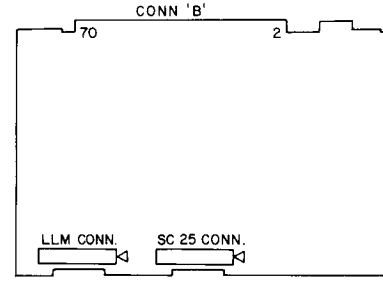
REFERENCE DESIGNATION	DESCRIPTION	TYPE	SUPPLY PIN			RAULAND PART NO.
			+12V	+5V	-0V	
IC1,2	POWER AMP	TDA 2003	—	—	—	ECO175
IC3	OP AMP	741	—	—	4	ECO013
IC4	-5 V CONV	S17661	—	8	3	ECO191
IC5	5V REG	7805	—	2	CASE	ECO049
IC6,10,11,15,16,19,34	OUTPUT PORT	74 HC273	—	1,20	10	ECO195
IC7,8,32,38	IN PORT	74 HC244	—	20	10	ECO192
IC9	OPEN COL	ULN 2803A	—	—	9	ECO189
IC12	RY DRIVER	2982	9	—	10	ECO076
IC13,14,21,22	OCTAL BUFFER	6118	10	—	9	ECO197
IC17	EPROM	2716 (PROG.)	—	21,24	12,18,19,20	ED0017
IC20,35	QUAD NOR	4001	—	14	7	ECO111
IC18	EPROM	2716 (PROG.)	—	21,24	18,12,20	ED0018

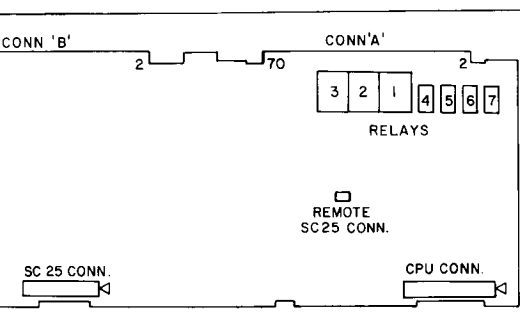
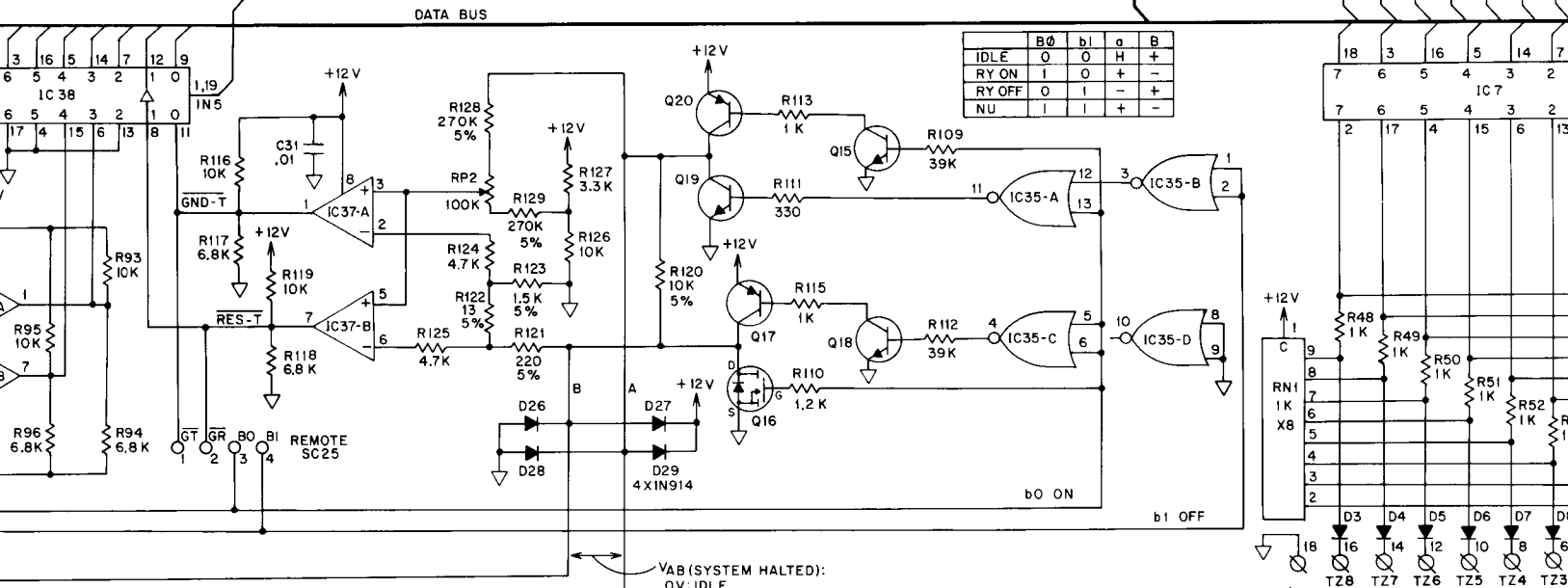
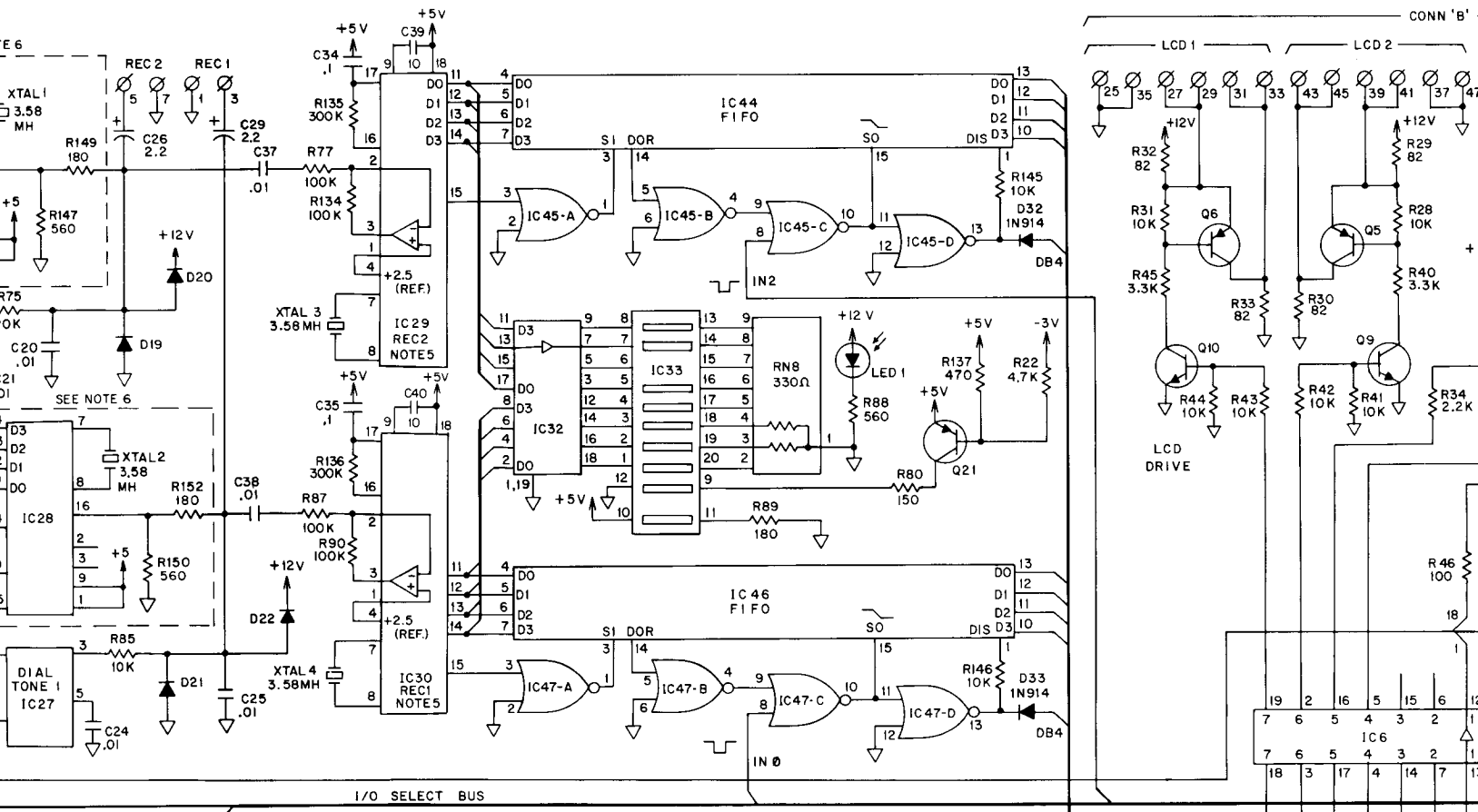
REFERENCE DESIGNATION	DESCRIPTION	TYPE	SUPPLY PIN		
			+12V	+5V	-
IC23,24	TRIP NAND	4023	—	14	—
IC25,28	DTMF GEN	S2579	—	—	—
IC26,27	TIMER	555	—	4,8	—
IC29,30	DTMF REC	M8870	—	10,18	5
IC33	DECADE LED DIST	HDSP-4820	—	10	—
IC36,37	HIGH SPD. COMPAR	LM 393	8	—	—
IC40	TRIP NOR	4025	—	14	—
IC42,43	ADDR DECOR	74HC138	—	16	—
IC44,46	HIGH-SPEED FIFO	74HC40105	—	16	—
IC45,47	QUAD NOR	74HC02	—	14	—



ON	TYPE	SUPPLY PIN			RAULAND PART NO.
		+12V	+5V	-0V	
	4023	-	14	7	ECO034
	S2579	-	-	6	
	555	-	4,8	1	ECO004
	M8870	-	10,18	5,6,9	ECO187
ST	HDSP-4820	-	10		JL0085
PAR	LM 393	8	-	4	ECO196
	4025	-	14	7	ECO035
	74HC138	-	16	8	ECO179
O	74HC40105	-	16	8	ECO254
	74HC02	-	14	7	ECO205

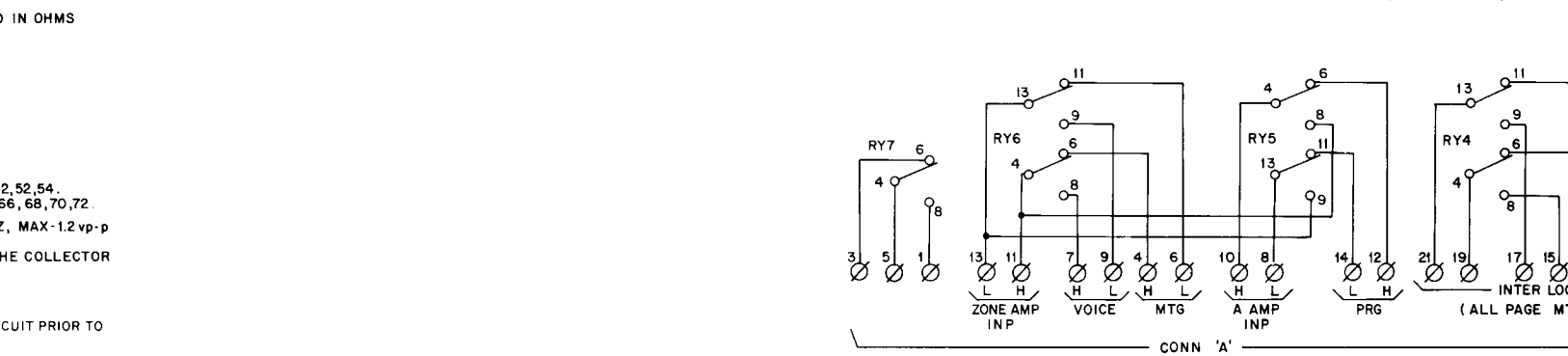
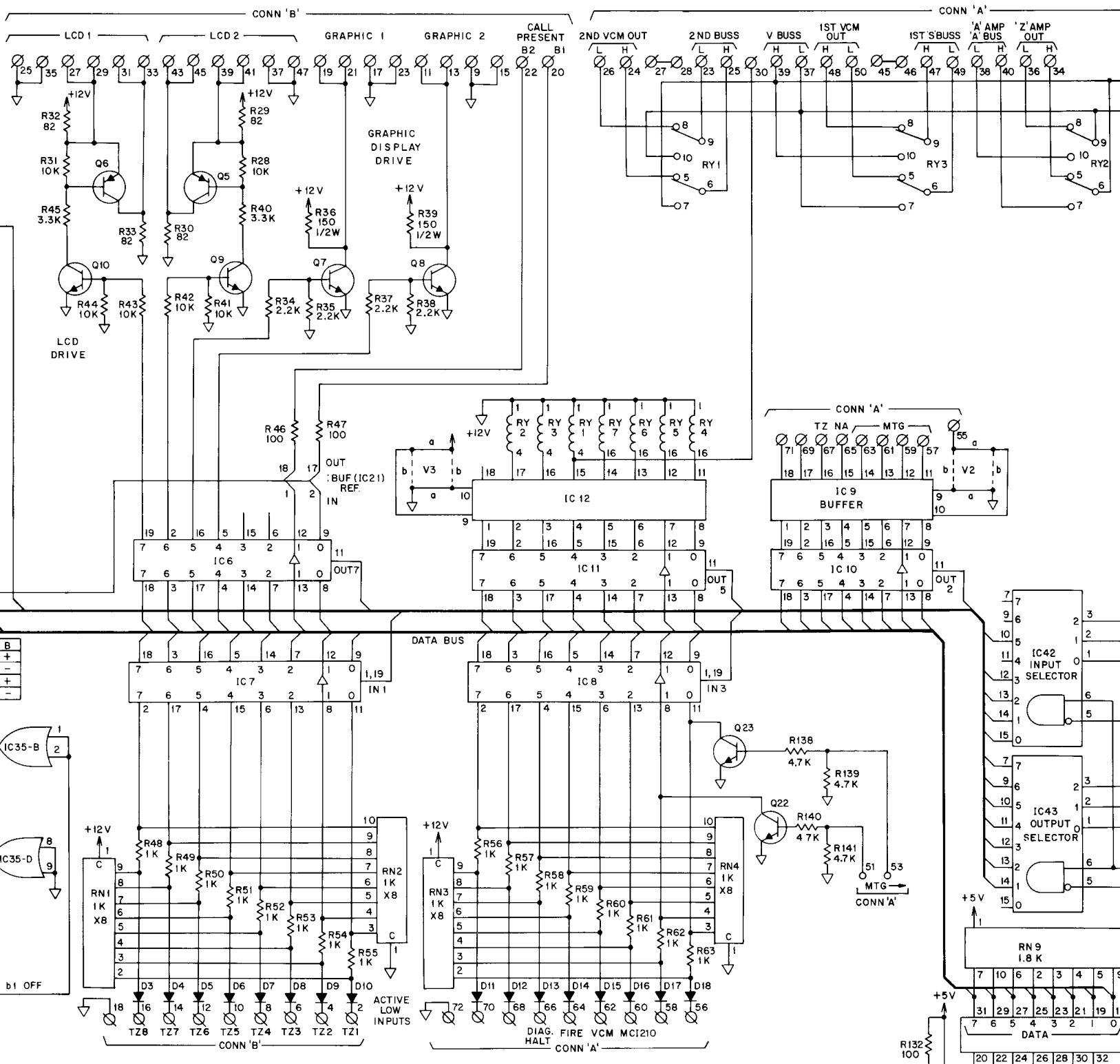
REFERENCE DESIGNATION	DESCRIPTION	TYPE	RAULAND PART NO.
Q 1,2,3,7,8,9,10,11,22,23	NPN	MPS6515	ETMPS6515
Q4,5,6,14,17,20,21	PNP	MPSA55	ETMPSA55
Q12,13,15,18	HI-B NPN	MPSA18	ETMPSA18
Q19		MPSA05	ETMPSA05
RY1,2,3	RELAY 800Ω	DPDT5A	DO253
RY4,5,6,7	RELAY 280Ω	DPDT2A	DO249
D1, D2	DIODE	1N457A	1N457A
D26,27,28,29,32,33	DIODE	1N914B	1N914B
D34	DIODE, 3 AMP	1N5401	JR0074
Q16	N-CHANNEL MOSFET	IRFFI21	ETSO41



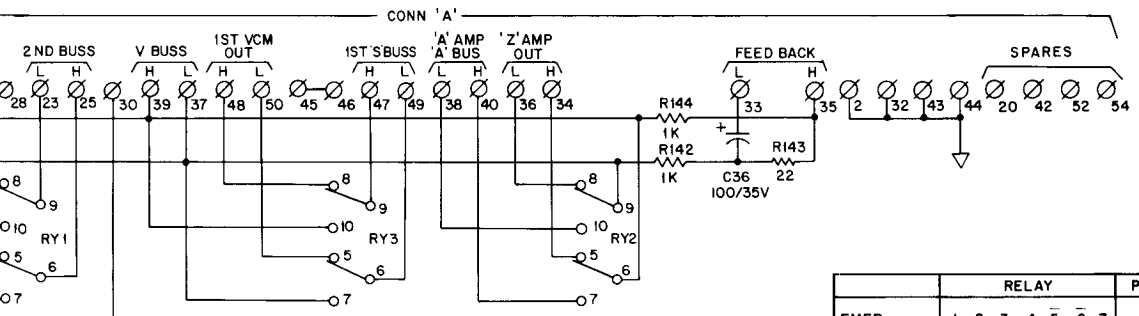


VAB (SYSTEM HALTED):
 0V: IDLE
 200MV: RES GROUND
 600MV: HARD GROUND

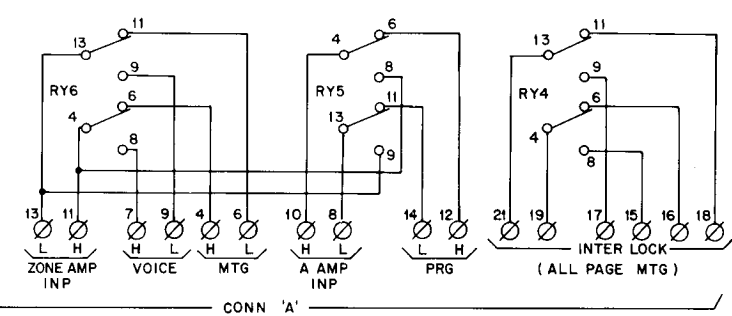
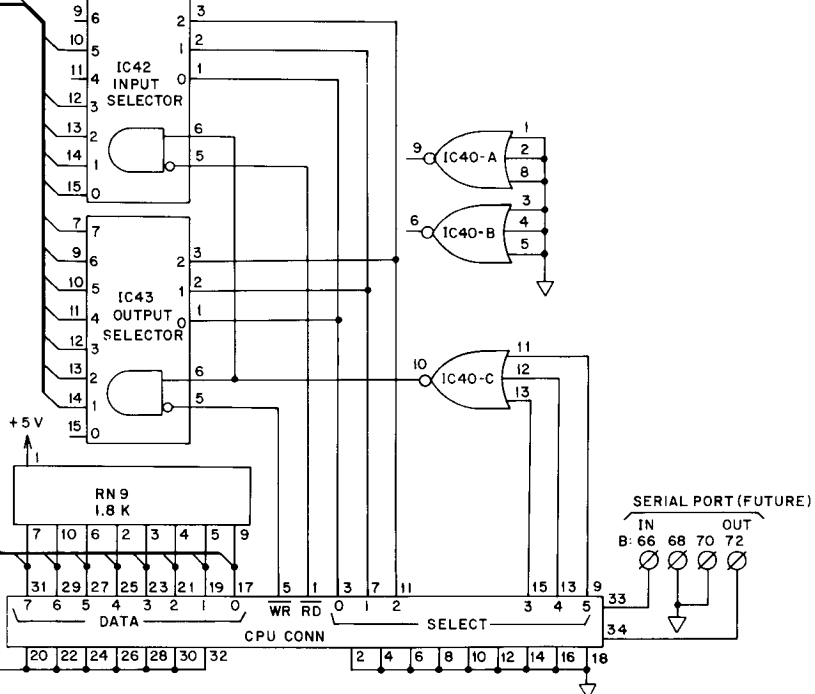
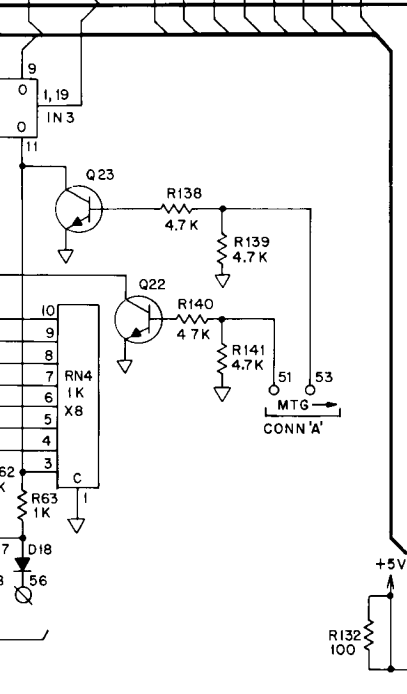
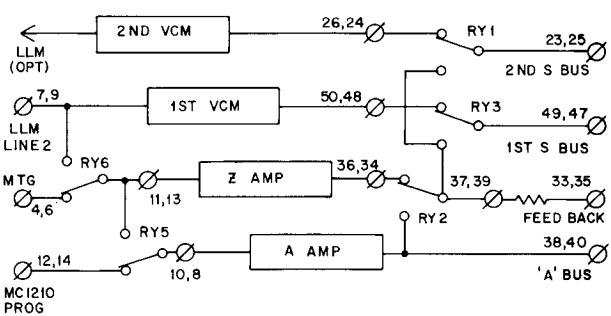
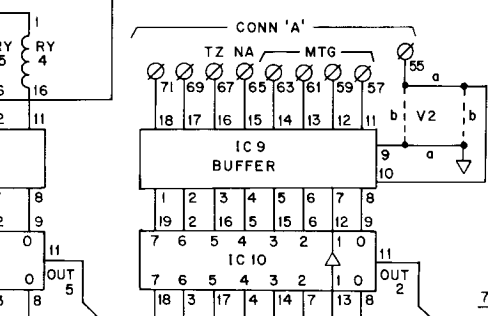
- UNLESS OTHERWISE SPECIFIED RESISTORS ARE RATED IN OHMS $\pm 5\%$ AND ARE 1/4 WATT. K=1,000 M=1,000,000 CAPACITORS ARE RATED IN MICROFARADS.
- SYMBOLS CROSS REFERENCE:
 ∇ - CIRCUIT COMMON -0V
 ⊗ - WIRE WRAP PIN
 N.C. = NO CONNECTION
- ALL DIODES ARE IN4002 EXCEPTED WHERE NOTED.
- OPEN PINS ON 'A' CONNECTOR ARE: 20, 22, 31, 32, 41, 42, 52, 54. OPEN PINS ON 'B' CONNECTOR ARE: 48, 50 THRU 64, 66, 68, 70, 72.
- DTMF RECIVER SENSITIVITY: MIN-170 mvp-p AT 941 HZ, MAX-1.2 vp-p AT ANY FREQ.
 DTMF GENERATOR OUTPUT LEVEL AS MEASURED AT THE COLLECTOR OF THE DARLINGTON:
 DIAL TONE: 0.1 VP-P
 BUSY SIGNAL: 0.3 VP-P
- SEE DETAIL "A" (UPPER LEFT) FOR DTMF GENERATOR CIRCUIT PRIOR TO ISSUE "E" PCB.



2, 52, 54.
 56, 68, 70, 72.
 Z, MAX -1.2vp-p
 THE COLLECTOR
 CUIT PRIOR TO



	RELAY	PORT 5	PRIORITY
EMER	1 2 3 4 5 6 7	79H	1
TIME ZONE	1 2 3 4 5 6 7	31H	2
ALL PAGE	1 2 3 4 5 6 7	7FH	3
CONSOLE PG	1 2 3 4 5 6 7	47H	3
ZONE ANN	1 2 3 4 5 6 7	35H	4
MTG	1 2 3 4 5 6 7	7BH	5
INTERCOM	1 2 3 4 5 6 7	0	6



KC1461		N
DATE:	12-1-1984	
ISSUE	CHANGE	
A	ADDED C39, C40 & D34. 8-19-85	
B	R97 & R99 WERE 2K, 5%. R98 WAS 1.8K. R100 & R107 WERE 470K. 9-24-85	
C	R21 WAS 22K. R15, 16, 19, & 21 WERE 10%. 64 WAS "VCM;" 62 WAS "MC1210," 56 WAS "MTG." H & L WERE REVERSED IN "ZONE," "VOICE," "MTG.," "A AMP," & "PRG." ADDED VALUES TO R145, 146, RY1-7. PORT 5 WAS 70H, 56H, 54H, 50H, & 72H. R97 WAS 5%. ADDED 10K TO R81. ADDED NAND SYMBOL TO IC29 & 30. DESIGNATED D32, 33, 34. ADDED SUPPLY PIN 19 TO IC17. ADDED DIRECTIONS ABOUT SYSTEM BEING HALTED. 2-4-86	
D	C15 WAS 6800/25V. Q16 WAS ETMPSA05. 10-1-86	
E	DELETED Q24 & 25 (ETMPSA14). IC25 & 28 WERE TP53130, ECO162. D3 WAS PIN 16, D2 WAS 15, D1 WAS 14, D0 WAS 13. DELETED R66, 67, 148, 151. R147 & 150 WERE 1K. R149 & 152 WERE 680. REARRANGED R147, 149, 150, & 152. MOVED IC25 & IC28 AS THEY WERE (PRIOR TO REV. E) TO FORM DETAIL "A." ADDED NOTE 6. 12-5-86	
F	IC44 & 46 WERE FIFO, 40105, ECO199. 2-11-87	
G	ADDED C41. 8-10-87	
H	R120 WAS 47K, R128 & R129 WERE 1.3M, AND RP2 WAS 500K. 1-5-88	
J	R149 & R152 WERE 560. R147 & R150 WERE 180. 1-22-88	
K	EXPANDED RELAY TABLE TO INCLUDE CONSOLE PG & PRIORITIES. 3-4-88	
L	R19 WAS 4.7K. R21 WAS 18K. ADDED D1 & D2 TO TABLE. R'S WERE ±10%. 1-23-89	
M	R15 WAS 68K, 5%. R16 WAS 5%. R21 WAS 10K, 5%. 6-22-89	
N	ADDED REMOTE SC25 CONNECTOR. 9-6-89	

MODEL TC4
 MAIN I/O (MIO)
 RAULAND-BORG CORP.
 SKOKIE, ILL.
 KC1461 N