Table 5.19 - GPIB Performance Test

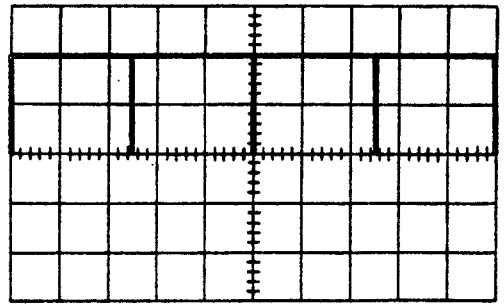
Input and Control Setting	Signal Nomenclature	Reference Designation	Test Point	Illustration Reference	Performance Standard
Set All Rear Panel GPIB Switches to their Lower Position. Turn DMM's Power Off and then On again.	All measurements in this table are referenced to TP4, Digital Common.				
Disconnect all Cables from GPIB Connector	GPIB Data/Control Lines	J201 Pins 1-11 and Pins 13-17		Rear Panel Connector	+2.5 to +3.7V
	68488 GPIB I/O Lines	U44 Pins 16-23, Pins 25,26 Pins 29-36	8		+2.5 to +5.25V
DMM in "HOLD" Mode (Press "SINGLE" Key) Set Scope Trigger to Internal, – Slope, Channel 1	$\overline{\text{ASE}}$	U45 Pin 1 and/or Pin 15	9		GPIB Waveform # 1
DMM set to Internal Trigger (Press "Track" Key) 4 1/2 Digit Mode (Toggle "RESOL" Key if necessary) Talk Only (Set Rear Panel "talk only" Switch to "up" position) Set Scope Trigger to Internal, + Slope, Channel 1	Momentary Output Holdoff Pulse from μP (1 per Reading)	U39 Pin 8	10		GPIB Waveform # 2

Table 5.19 - **GPIB Performance Test continued**

Input and Control Setting	Signal Nomenclature	Reference Designation	Test Point	Illustration Reference	Performance Standard
DMM Set to Internal Trigger (Press "Track" Key) 4 1/2 Digit Mode (Toggle "RESOL" Key if necessary) Talk Only (Set Rear Panel "talk only" Switch to "up" position) Set Scope Trigger to Internal, + Slope, Channel 1	RFD	U44 Pin 18	8		GPIB Waveform # 3
DMM Set to Internal Trigger (Press "Track" Key) 4 1/2 Digit Mode (Toggle "RESOL" Key if necessary) Talk Only (Set Rear Panel "talk only" Switch to "up" position) Set Scope Trigger to Internal, + Slope, Channel 1	RFD $\overline{\text{GPIRQ}}$	U44 Pin 18 U44 Pin 40	8		GPIB Waveform # 4 Channel 1 GPIB Waveform # 4 Channel 2

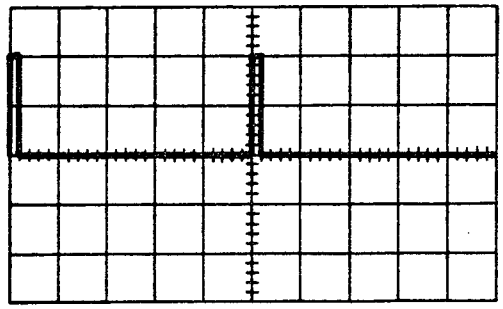
Table 5.19 - **GPIB Performance Test continued**

1 (NO.)



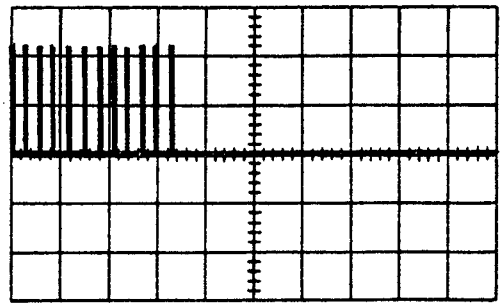
5mS (S/DIV)

2 (NO.)



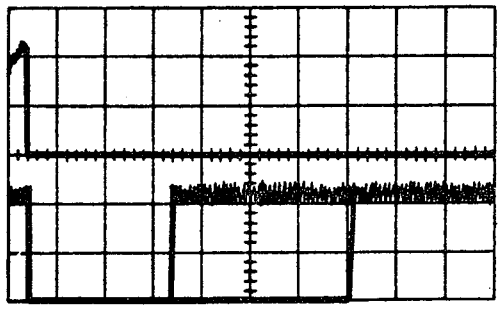
5mS (S/DIV)

3 (NO.)



0.5mS (S/DIV)

4 (NO.)



10μS (S/DIV)

Table 5.20 - **Digitizer Performance Test**

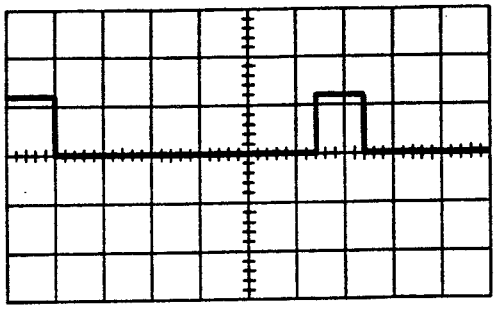
Input and Control Setting	Signal Nomenclature	Reference Designation	Test Point	Illustration Reference	Performance Standard
All measurements made in this table referenced to "Mecca" TP1. Instrument in 0.1V Range DC,input shorted. Internal Trig. (Hit "Track" Key) Scope Trigger set to: Ch. 2, +, internal	D1 - D5	U10 Pins 3-8			Waveforms # 2-6
	D6	U10 Pin 8			Waveform # 1
Instrument in 0.1V Range DC,input shorted. Internal Trig. (Press "Track" Key) Scope Trigger set to: Ch. 1, +, internal	1 KHz Clock	U10 Pin 28			Waveform # 7
Instrument in 0.1V Range DC, input shorted, internal trigger (Press "Track" Key) Scope trigger set to: Ch. 1, +, internal	2.5 MHz Clock	U10 Pin 14			Waveform # 8
Instrument in 0.1V Range DC, input shorted, internal trigger (Press "Track" Key) Scope Trigger set to: Normal, +, internal	E.O.C.	U10 Pin 19			Waveform # 9
Instrument in 0.1V Range DC, input shorted, internal trigger (Press "Track" Key) Scope Trigger set to: Normal, +, internal	M.Z.	U10 Pin 20			Waveform # 10
Instrument in 1V Range DC, +2V in internal trigger (Press "track" key) Scope Trigger set to: Normal, –, internal	M.Z. Switch	U26 Pin 4			Waveform # 11
Instrument in 1V Range DC, –2V in internal trigger (press track key) Scope trigger set to: Normal, +, internal	M.Z. Switch	U26 Pin 4			Waveform # 12

Table 5.20 - **Digitizer Performance Test continued**

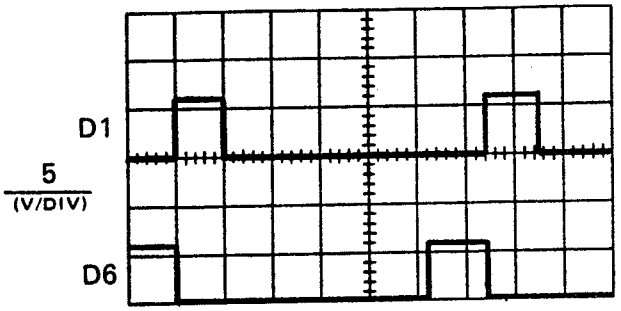
Input and Control Setting	Signal Nomenclature	Reference Designation	Test Point	Illustration Reference	Performance Standard
Instrument in .1V Range DC, input shorted, internal triggered (Press "track" key) + probe on: –probe on:	A-D Converter Reference Voltage	U11, Pin 10 Mecca TP-1			+7V ± 0.4V
Instrument in 0.1V Range DC, input shorted, internal trigger (Press "Track" Key) + Probe on: –probe on:	V_{STRG} (Auto-Zero Voltage)	AR3, pin 6			–2.6V ± 1V

Table 5.20 - Digitizer Performance Test continued

1 (NO.)



2 (NO.)



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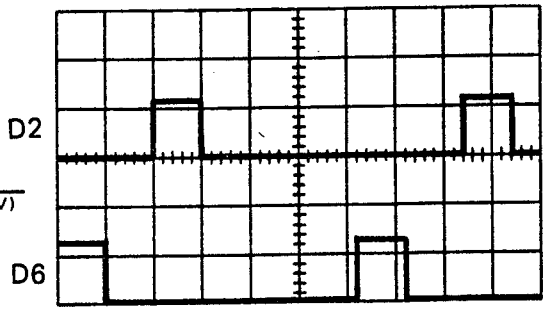

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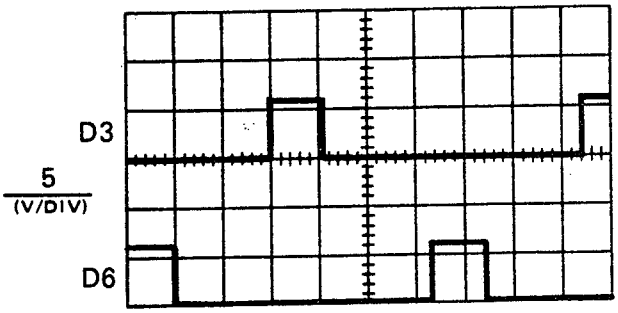

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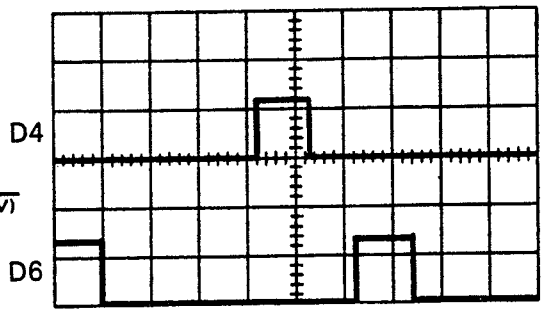

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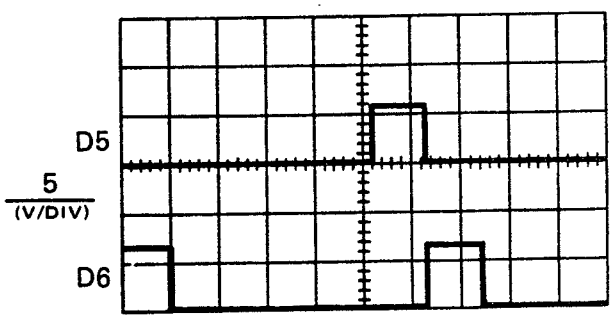

Table 5.20 - Digitizer Performance Test continued

7
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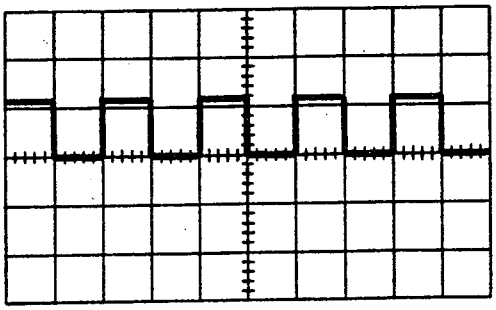
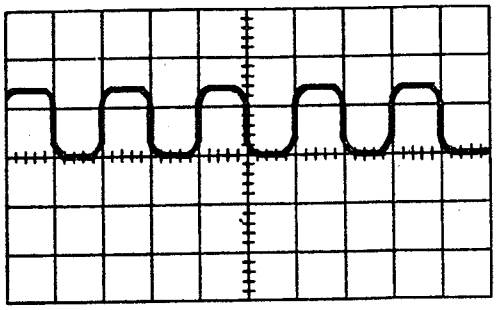


8
(NO.)



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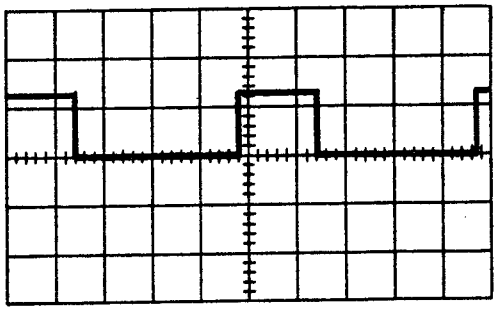

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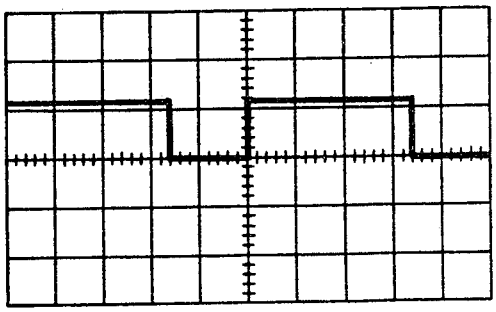

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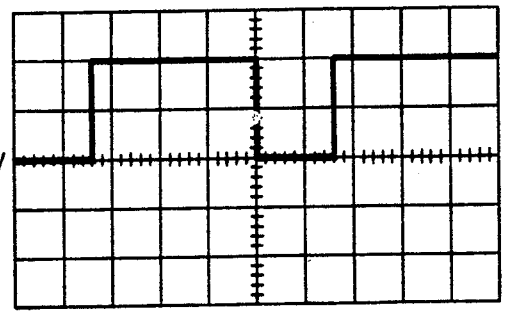
(NO.)



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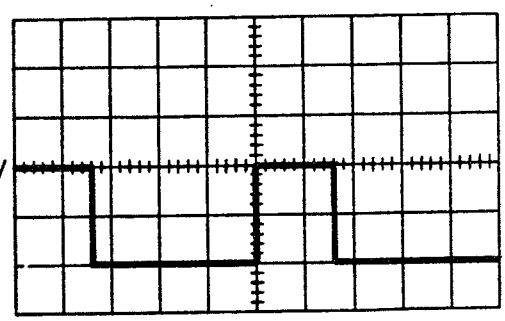
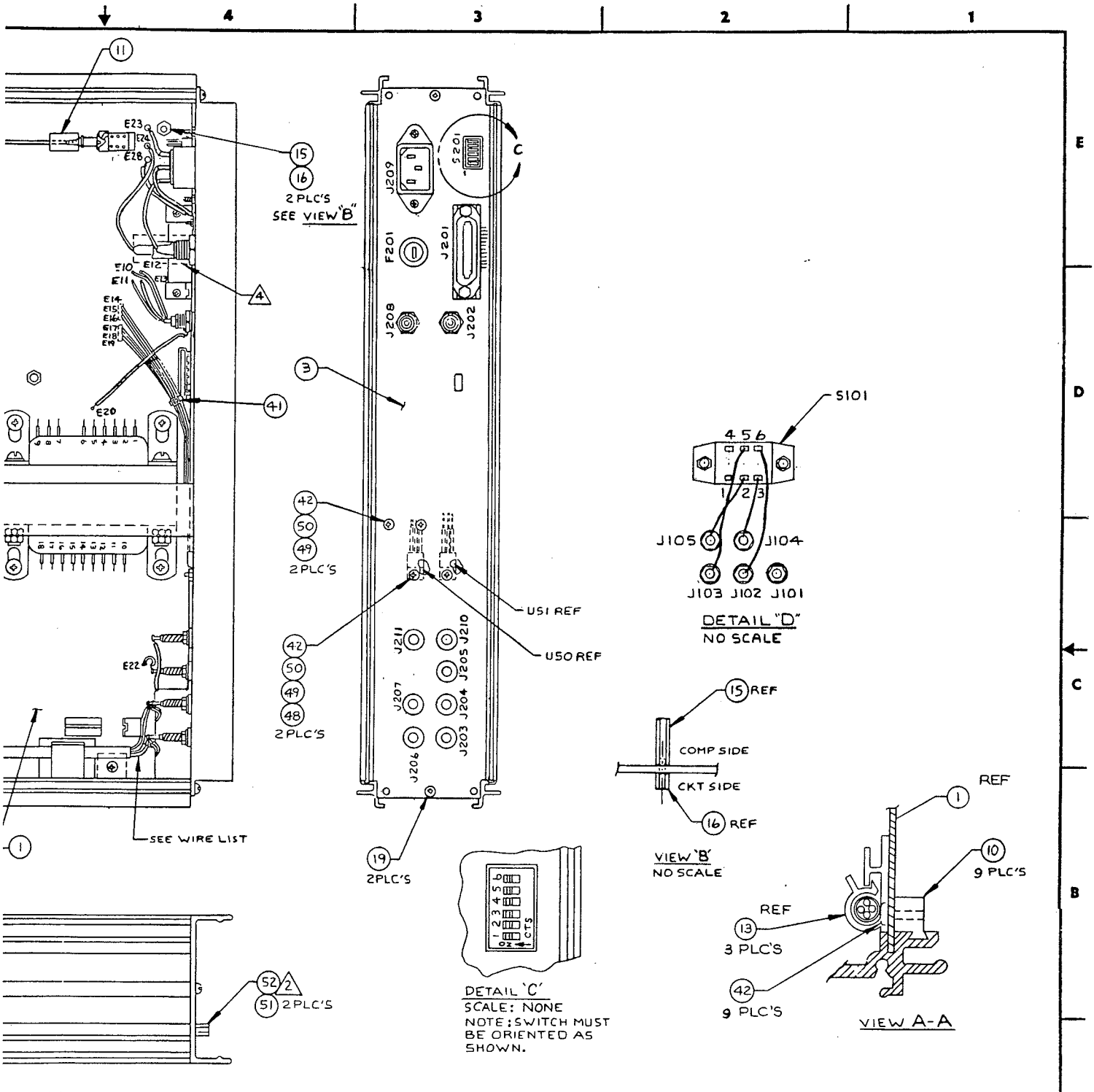
(NO.)



SECTION 6 DRAWINGS

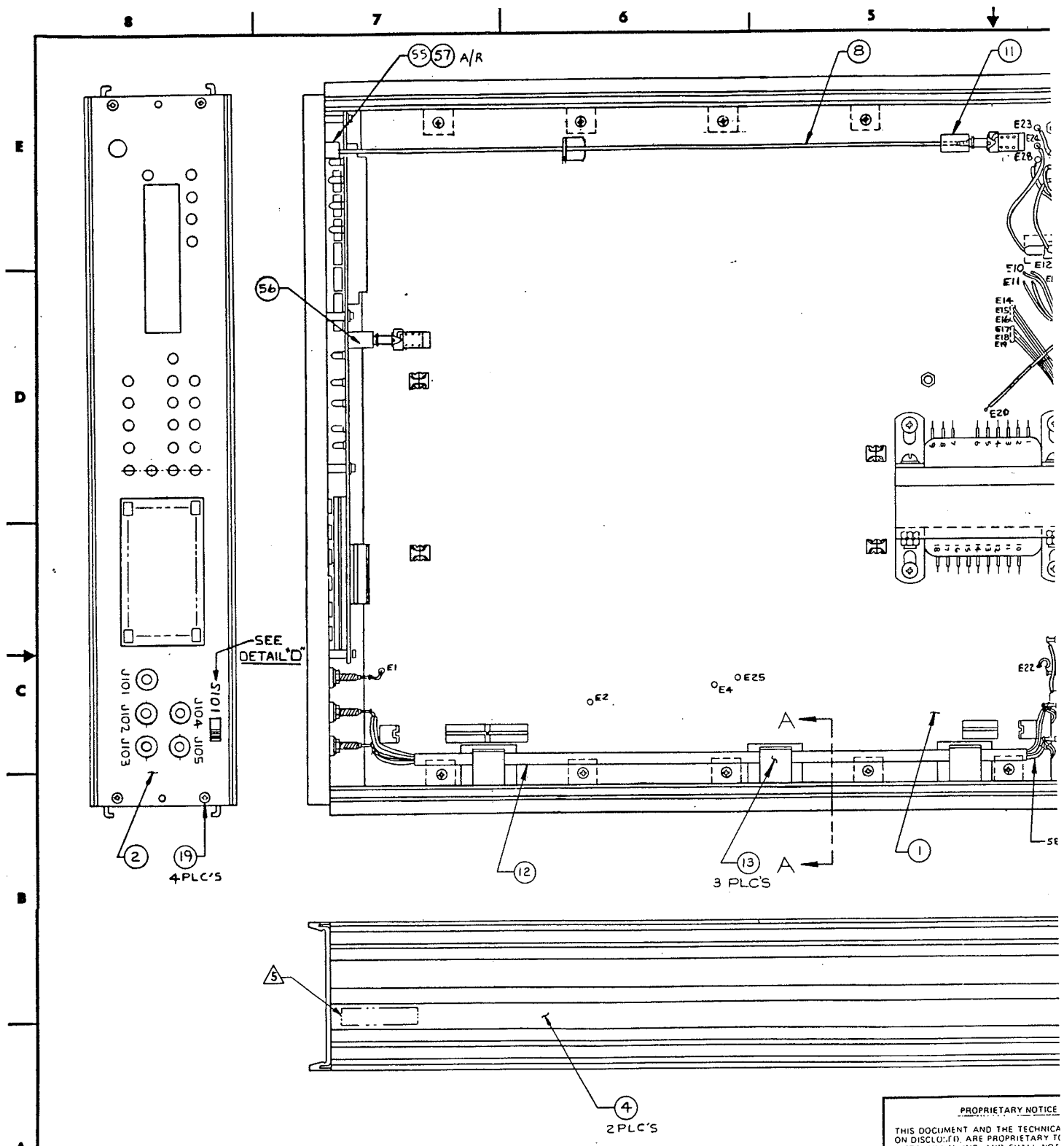
Chassis (404136, 404200) 6-2
PCB Assy., Motherboard (401659) 6-3
Schematic, Motherboard (431659) 6-5
PCB Assy., Display (401651) 6-16
Schematic, Display (431651) 6-17
PCB Assy., AC Converter (404107) 6-18
Schematic, AC Converter (432131) 6-19
PCB Assy., RMS Converter (404106) 6-20
Schematic, RMS Converter (432130) 6-21



CHASSIS ASSEMBLY

SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	404136	J

SCALE: NONE SHEET 1 OF 7



5 FOR PROPER SIDE PANEL ORIENTATION RACAL-DANA P/N MUST APPEAR AT FRONT END OF INSTRUMENT.

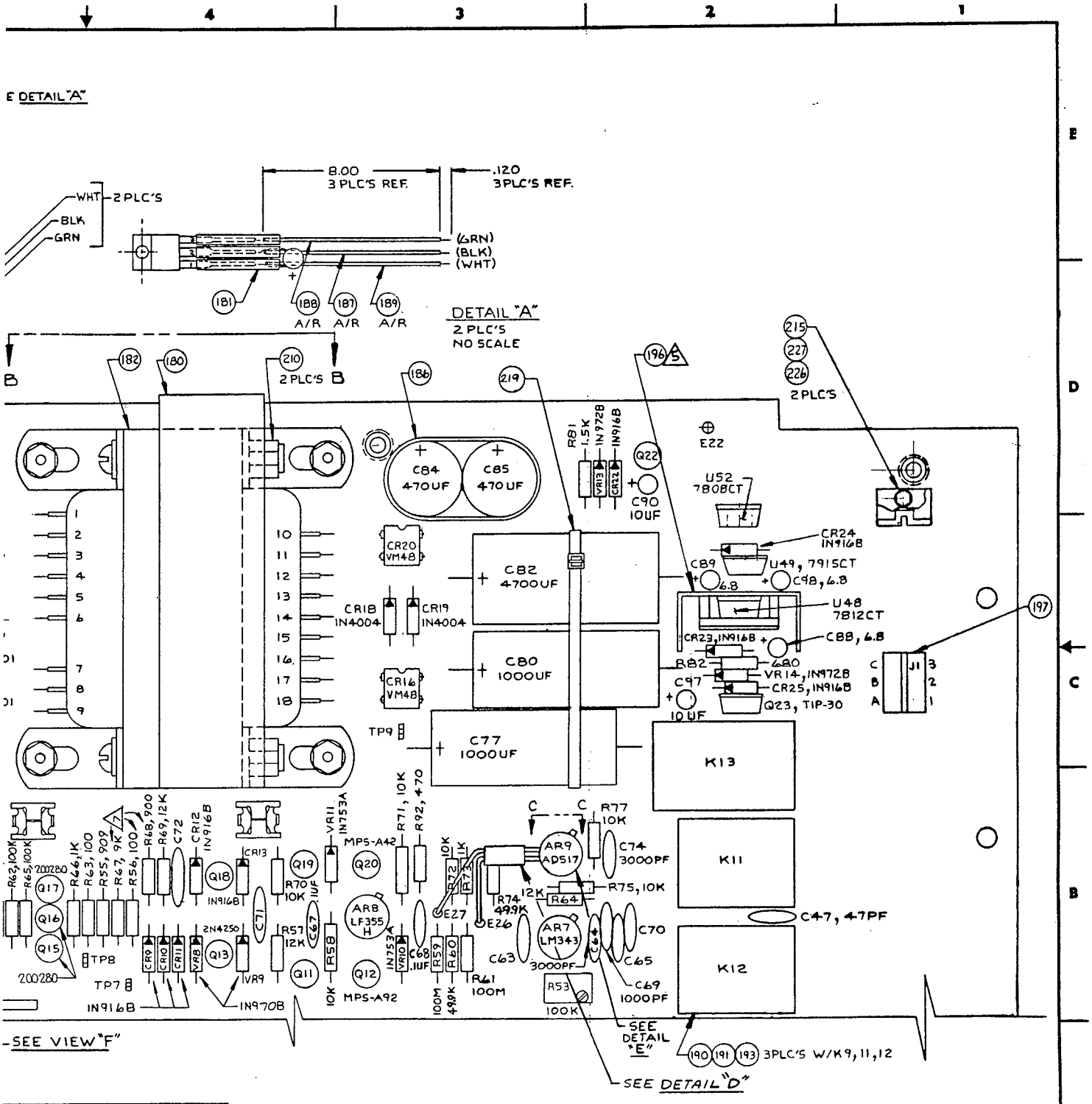
4 INSTALL SHRINK TUBING OVER FUSEHOLDER AFTER WIRES ARE SOLDERED TO TERMINALS

3. SEE WIRE LIST FOR INDIVIDUAL WIRE LENGTHS & TERMINATION POINTS; USE SHRINK TUBING AS REQUIRED.

2 DISCARD LOCKWASHERS & WASHERS SUPPLIED WITH ITEM 52.

1. ASSEMBLY PROCESSES + PROCEDURES TO CONFORM TO RACAL-DANA STANDARD.

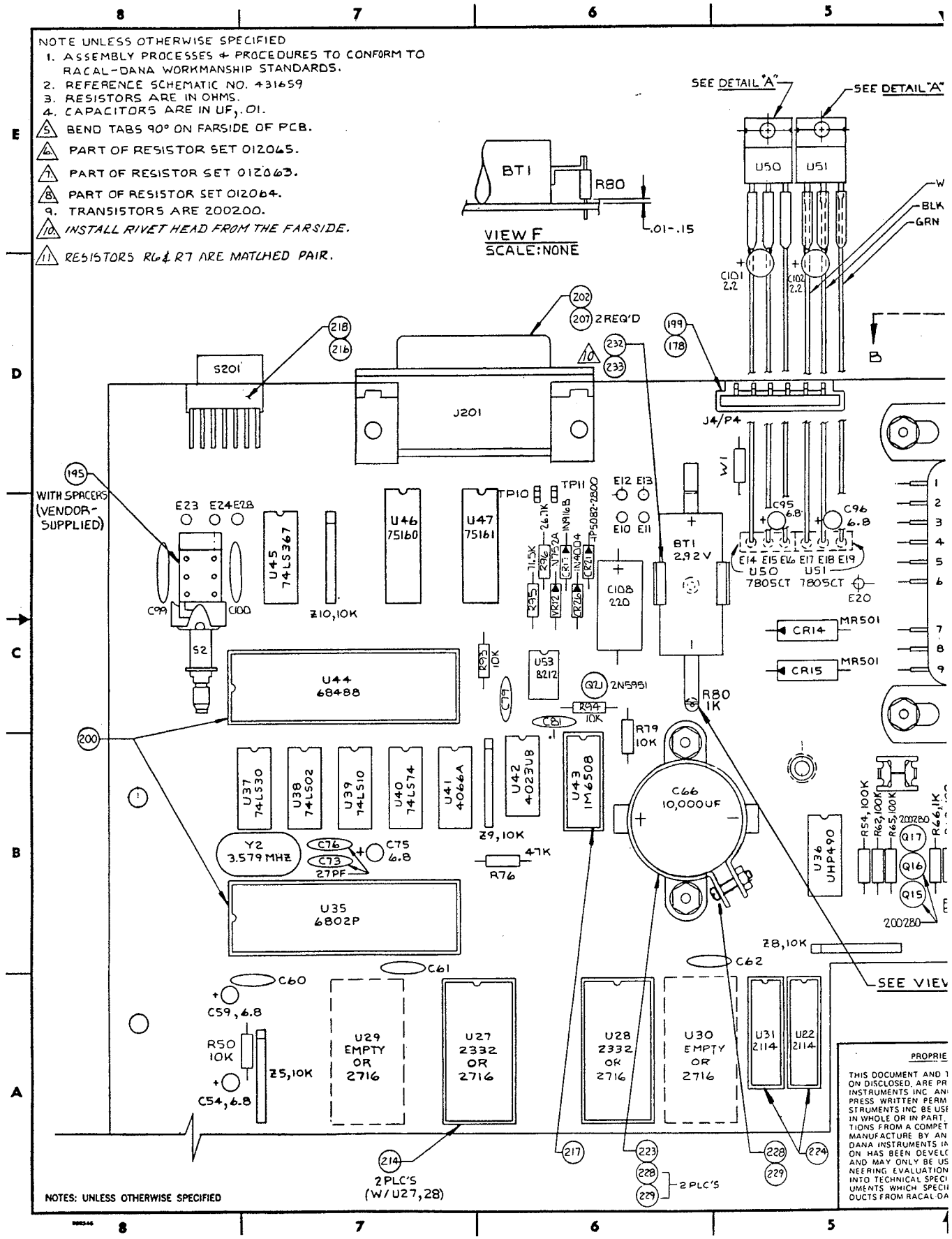
NOTES: UNLESS OTHERWISE SPECIFIED



P.C.B ASSY
MOTHERBOARD

SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	401659	T

SCALE 2/1 SHEET 1 OF 15


NOTE UNLESS OTHERWISE SPECIFIED
1. ASSEMBLY PROCESSES & PROCEDURES TO CONFORM TO RACAL-DANA WORKMANSHIP STANDARDS.
2. REFERENCE SCHEMATIC NO. 431659
3. RESISTORS ARE IN OHMS.
4. CAPACITORS ARE IN UF, .01.
5. BEND TABS 90° ON FARSIDE OF PCB.
6. PART OF RESISTOR SET 012065.
7. PART OF RESISTOR SET 012063.
8. PART OF RESISTOR SET 012064.
9. TRANSISTORS ARE 200200.
10. INSTALL RIVET HEAD FROM THE FARSIDE.
11. RESISTORS R6 & R7 ARE MATCHED PAIR.
VIEW F
SCALE: NONE
SEE DETAIL "A"
SEE DETAIL "A"
BT1
R80
.01-.15
U50
U51
W
BLK
GRN
C101 2.2
C102 2.2
202
207
2 REQ'D
218
216
232
233
199
178
S201
J201
J4/P4
195
WITH SPACERS (VENDOR-SUPPLIED)
E23 E24-E28
U45 74LS367
Z10,10K
U46 75160
U47 75161
TP10
TP11
E12 E13
E10 E11
C99
C100
S2
U44 68488
R95 10K
U53 8212
Q2 2N5951
R94 10K
C79
C81
R80 1K
R79 10K
C108 220
BT1 2.92V
W1
C95 6.8
C96 6.8
E14 E15 E16 E17 E18 E19
U50 7805CT
U51 7805CT
E20
CR14 MR501
CR15 MR501
200
U37 74LS30
U38 74LS02
U39 74LS10
U40 74LS74
U41 4066A
U42 4023UB
U43 1M6508
Z9,10K
R76 47K
C66 10,000UF
U36 UHP490
R54,100K
R63,100K
R65,100K
Q17
Q16
Q15
200280
Y2 3.579 MHZ
C76
C73 27PF
C75 6.8
U35 6802P
Z8,10K
C62
C61
C60
C59, 6.8
R50 10K
Z5,10K
C54, 6.8
U29 EMPTY OR 2716
U27 2332 OR 2716
U28 2332 OR 2716
U30 EMPTY OR 2716
U31 2114
U32 2114
SEE VIEW
214
2 PLC'S (W/U27,28)
217
223
228
229
2 PLC'S
224
NOTES: UNLESS OTHERWISE SPECIFIED
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ON DISCLOSED, ARE PR
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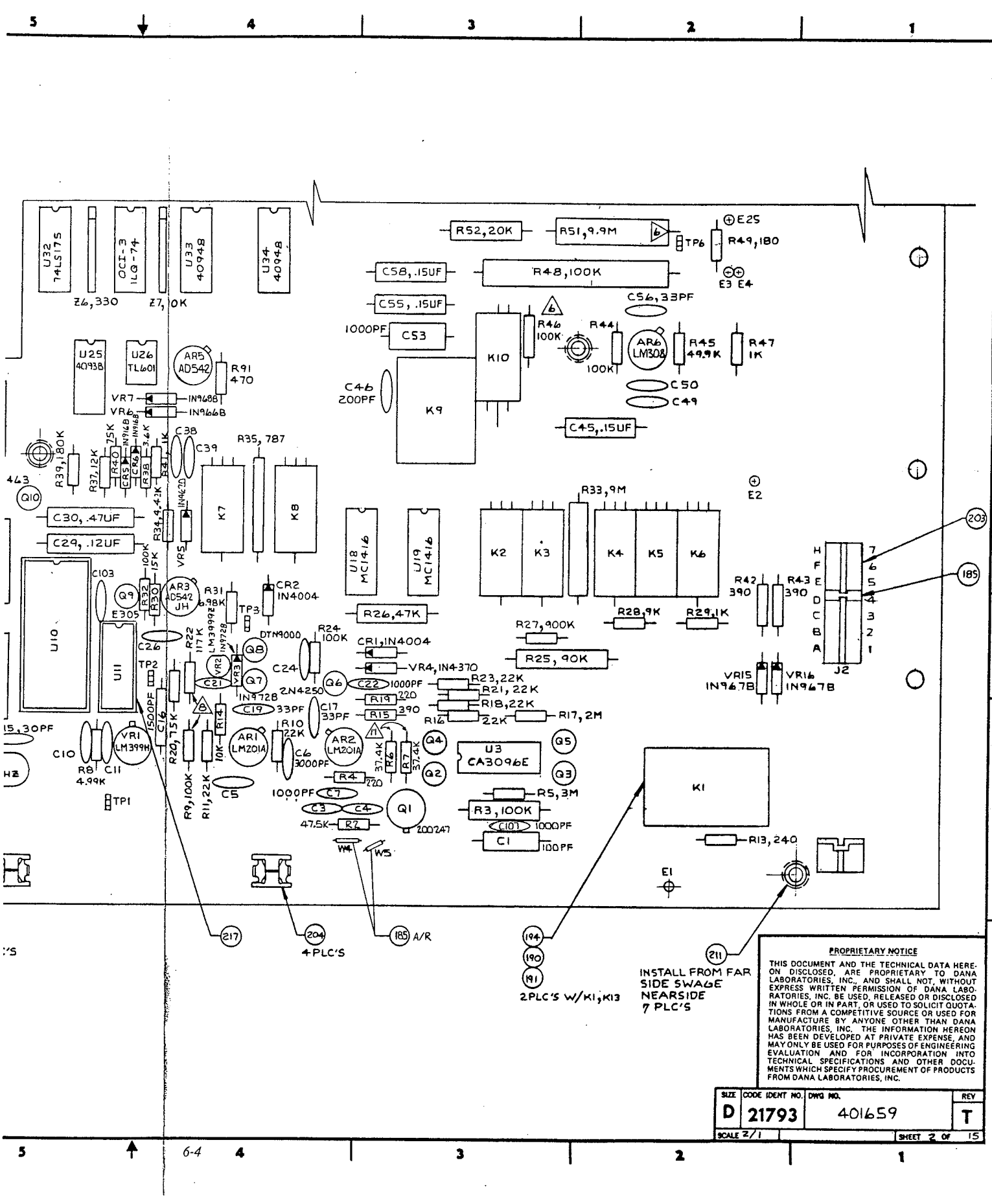

SIZE	CODE IDENT NO.	DWG NO.	REV
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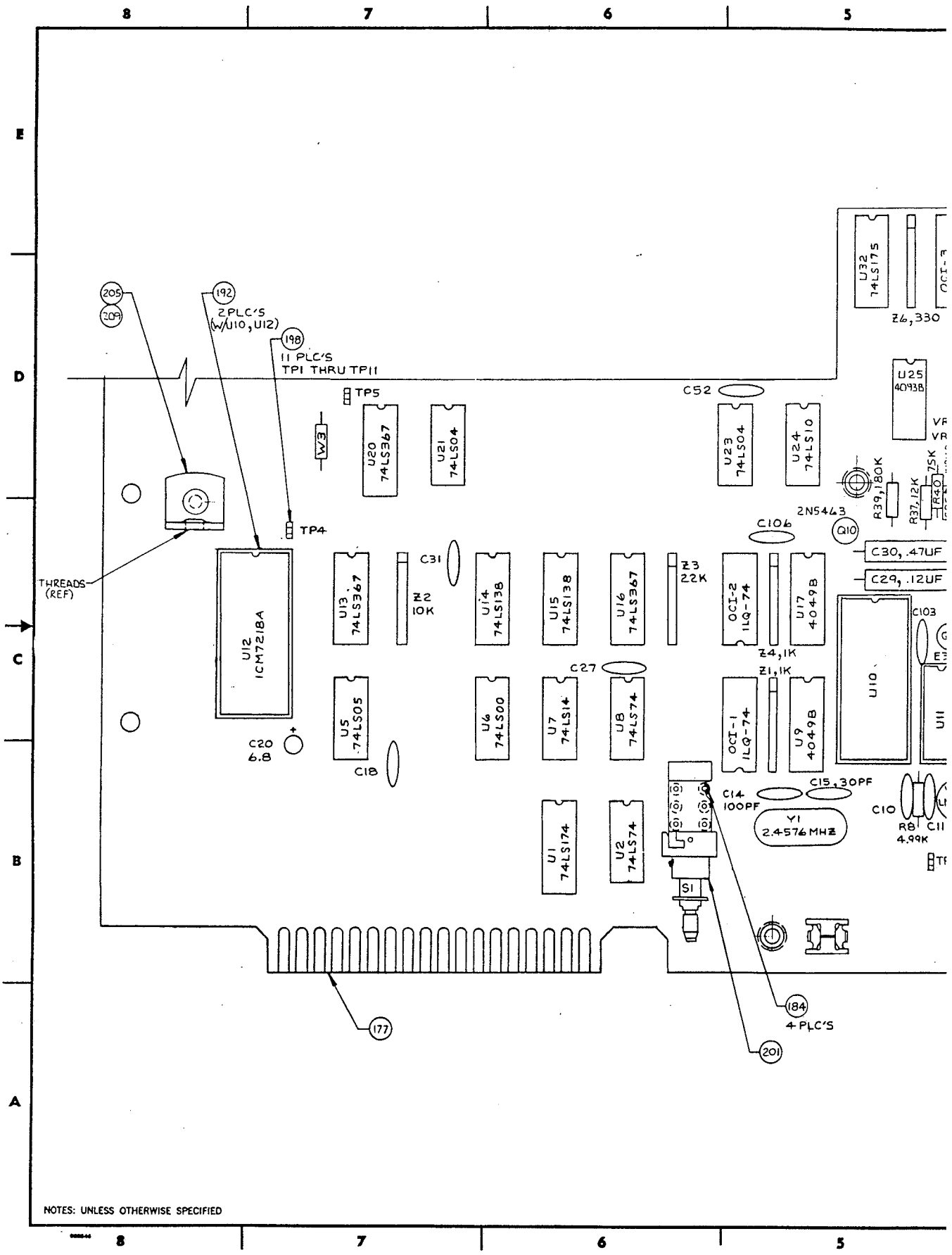
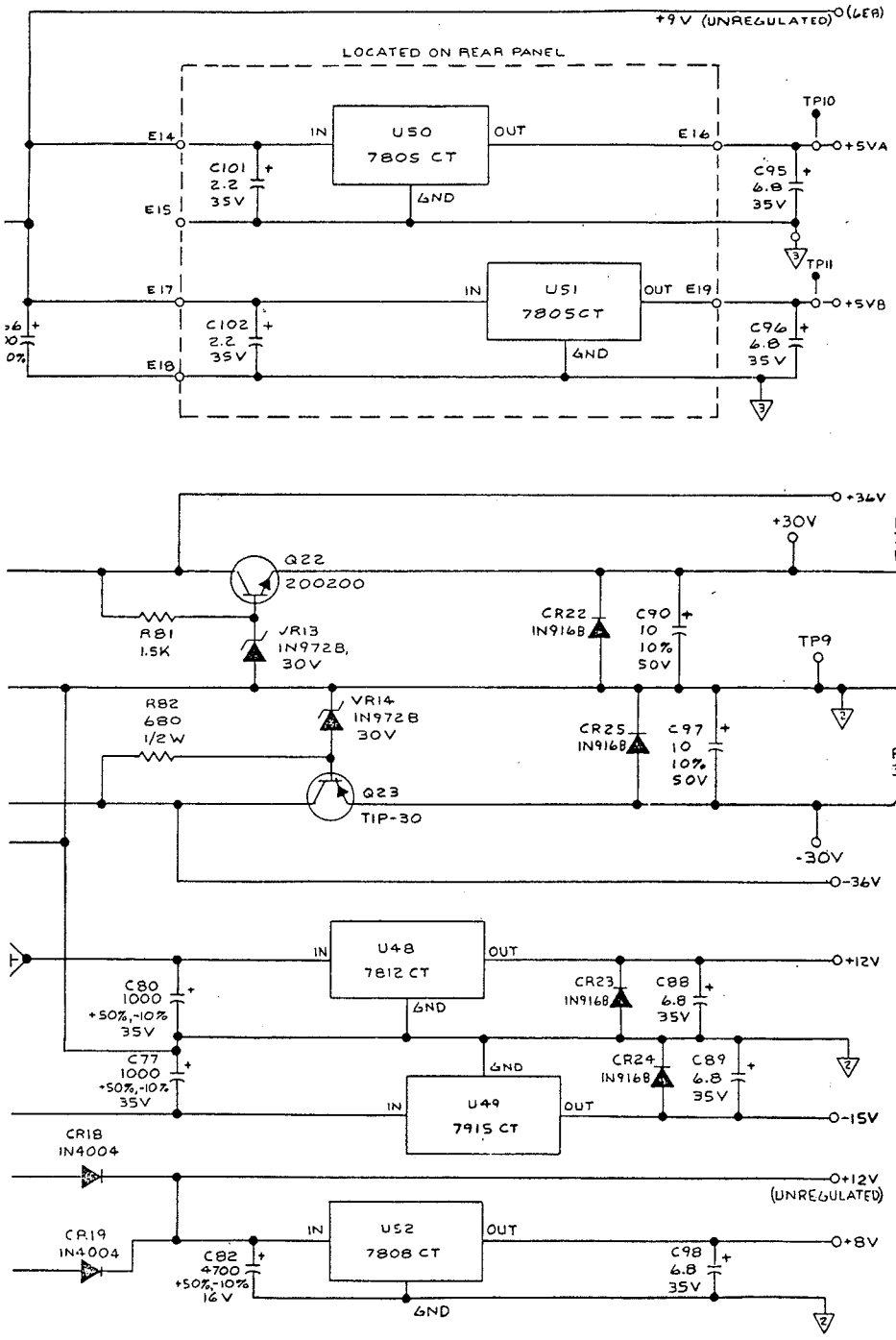
SCALE 2/1		SHEET 2 OF 15	



NOTES: UNLESS OTHERWISE SPECIFIED



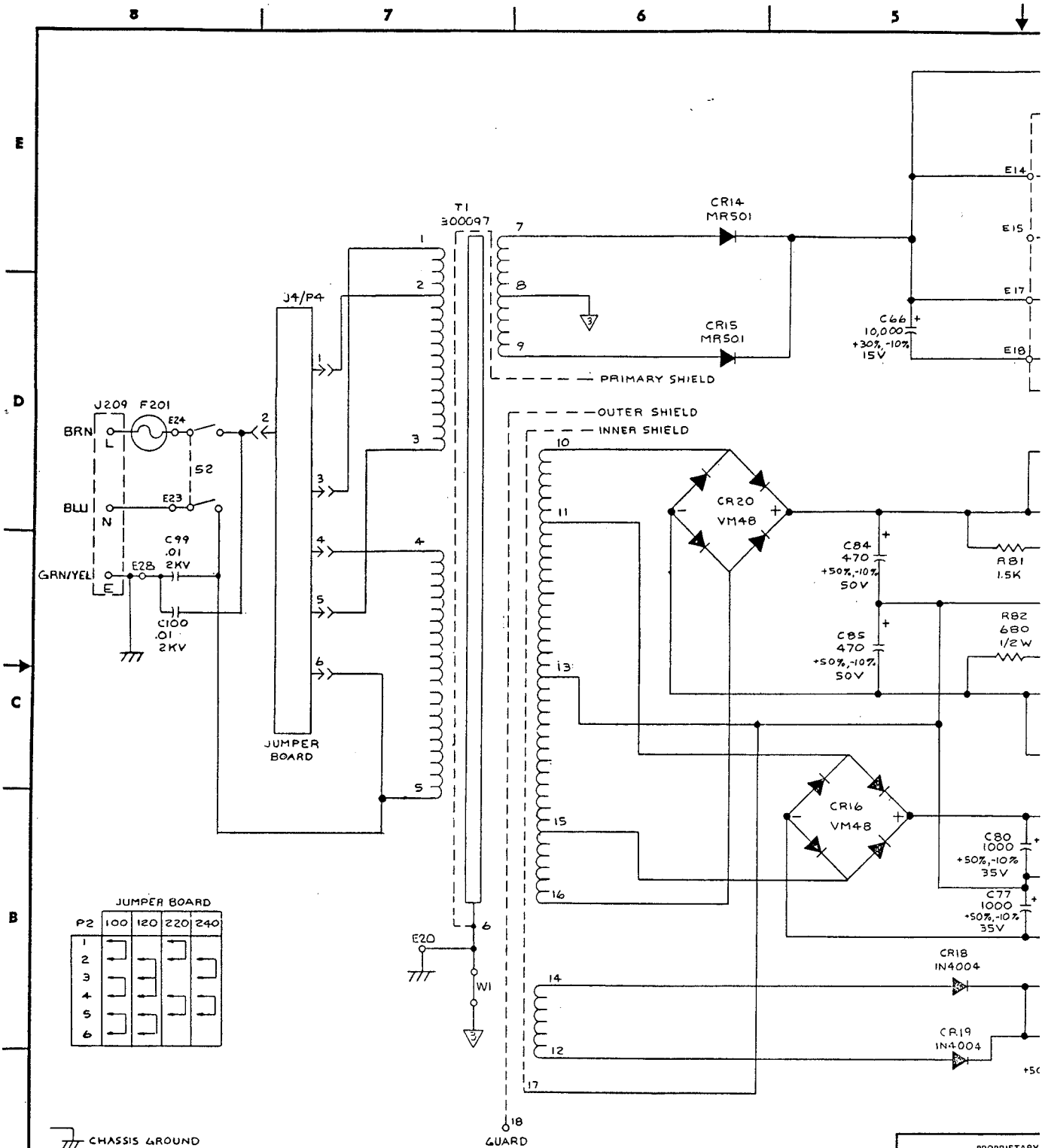
W3	W2
Z10	
VR16	
U53	U4,29,30
TP11	
T1	
S201	
S2	
R96	R12,36,78,83-90
Q23	Q14
OC13	
K13	
J201	
J4/P4	
CR26	CR3,4,7,8,
C108	C2,8,9,12,13,23,28,25
	32,33,34,35,36,37,40,
	41,42,43,44,48,51,57,
	78,83,86,87,91,92,93,
	94,104,105,
E28	
BT1	
AR9	AR4
LAST	NOT USED

DESIGNATORS

SCHEMATIC-
MOTHERBOARD

SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	431659	N

SCALE NONE | SHEET | OF 11


8
7
6
5
E
D
C
B
A
T1
300097
CR14
MR501
CR15
MR501
E14
E15
E17
E18
C66
10,000
+30%,-10%
15V
PRIMARY SHIELD
OUTER SHIELD
INNER SHIELD
J4/P4
J209
F201
E24
BRN
L
S2
BLU
N
E23
GRN/YEL
E
E28
C99
.01
2KV
C100
.01
2KV
JUMPER
BOARD
CR20
VM48
C84
470
+50%,-10%
50V
C85
470
+50%,-10%
50V
R81
1.5K
R82
680
1/2W
CR16
VM48
C80
1000
+50%,-10%
35V
C77
1000
+50%,-10%
35V
CR18
IN4004
CR19
IN4004
E20
W1
GUARD
JUMPER BOARD
P2
100
120
220
240
CHASSIS GROUND
DIGITAL GROUND
ANALOG COMMON
REFERENCE COMMON (MECCA)
3. RESISTOR NETWORKS ±2%.
2. CAPACITORS ARE IN MF, ±20%, 100V
1. RESISTORS ARE IN OHMS, ±5%, 1/4W
NOTES: UNLESS OTHERWISE SPECIFIED FOR PAGES I-II.
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ON HAS BEEN DEVELOPED
AND MAY ONLY BE USED F
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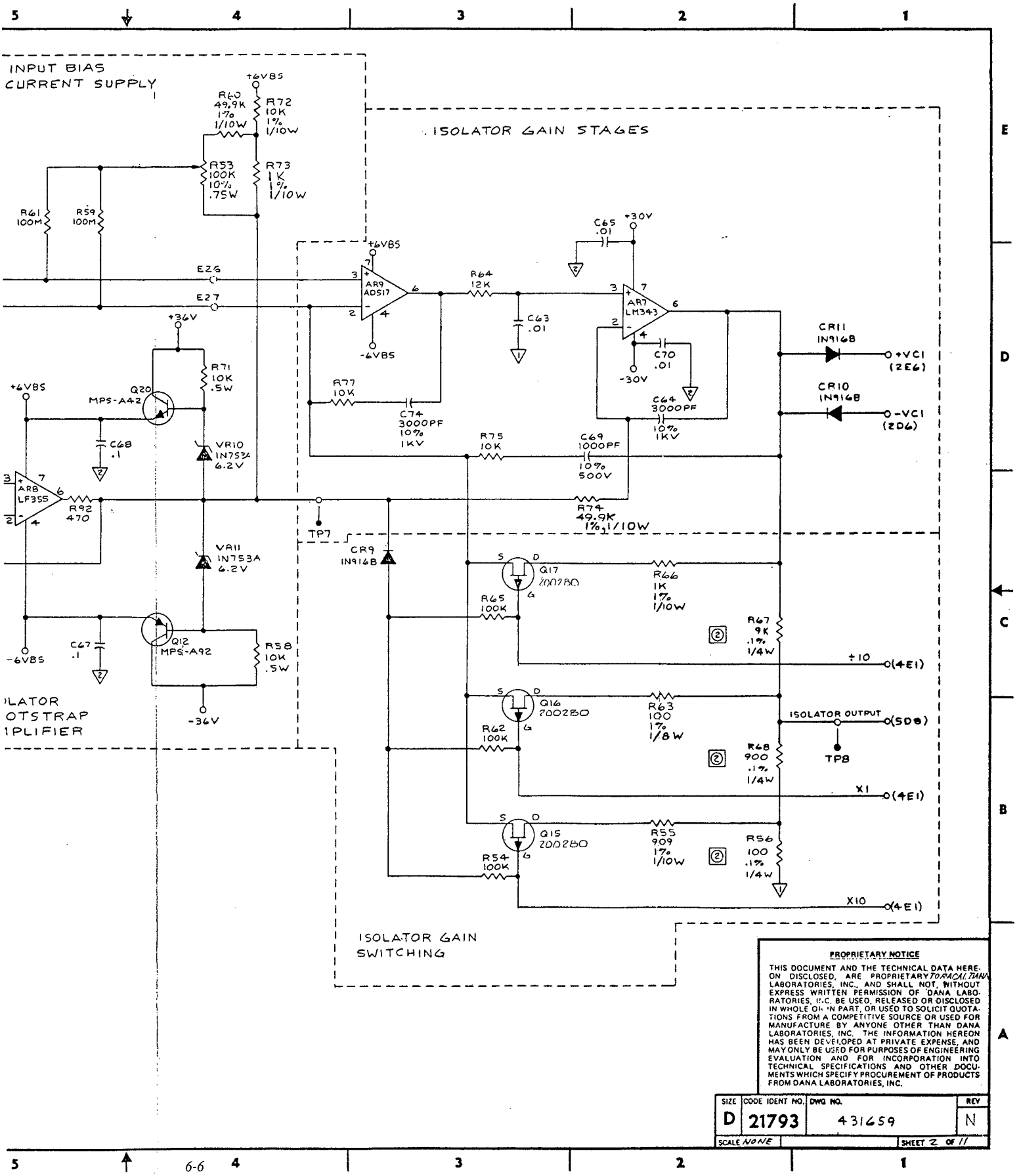
UMENTS WHICH SPECIFY PI
DUCTS FROM RACAL DANA I



SIZE	CODE IDENT NO.	DWG NO.	REV
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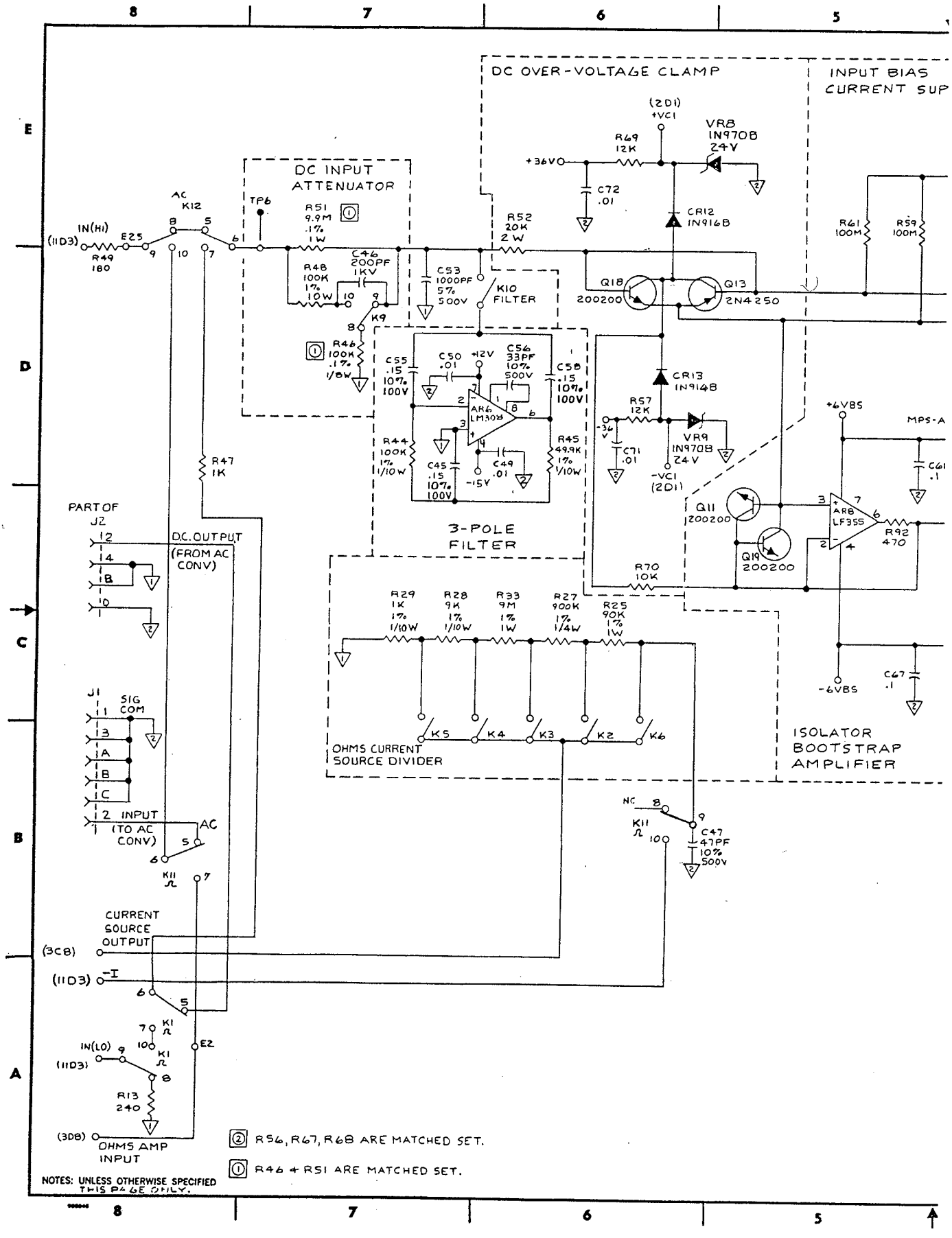
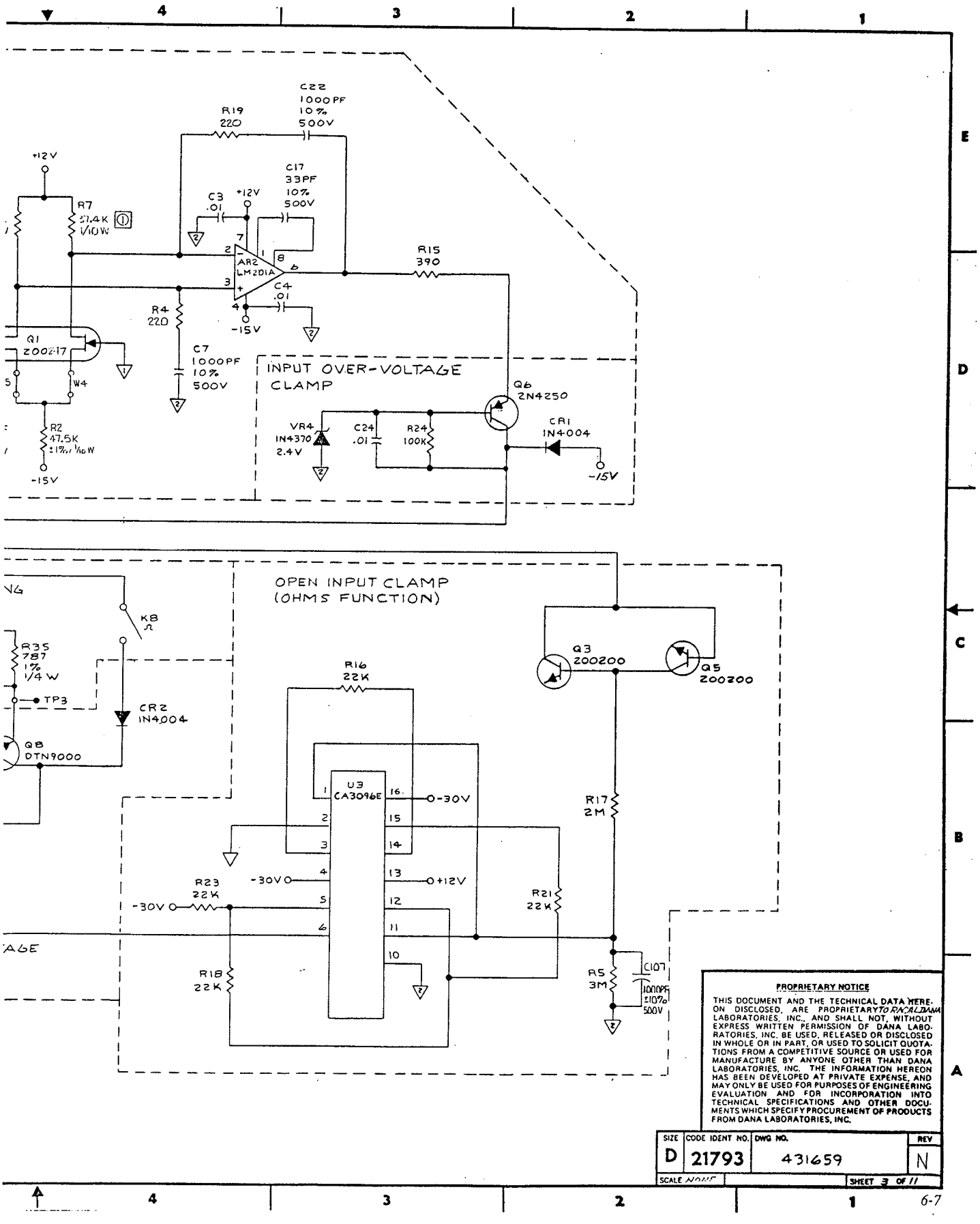
SCALE NONE			SHEET 2 OF 11


DC OVER-VOLTAGE CLAMP
INPUT BIAS CURRENT SUP
DC INPUT ATTENUATOR
3-POLE FILTER
OHMS CURRENT SOURCE DIVIDER
ISOLATOR BOOTSTRAP AMPLIFIER
IN(HI) (11D3)
IN(LO) (11D3)
PART OF J2
DC OUTPUT (FROM AC CONV)
J1
SIG COM
2 INPUT (TO AC CONV)
CURRENT SOURCE OUTPUT (3C8)
-I (11D3)
OHMS AMP INPUT (3D8)
+36VO
+12V
-15V
+VC1 (2D1)
-VC1 (2D1)
+6VBS
-6VBS
MPS-A
K1
K2
K3
K4
K5
K6
K9
K10 FILTER
K11
K12
AR6 LM308
AR8 LF355
Q11 200200
Q18 200200
Q19 200200
Q13 2N4250
VR8 IN970B 24V
VR9 IN970B 24V
CR12 IN916B
CR13 IN914B
R47 1K
R48 100K 1% 1/8W
R49 180
R51 9.9M 1% 1W
R52 20K 2W
R57 12K
R70 10K
R92 470
C45 .15 10% 100V
C46 200PF 1KV
C47 47PF 10% 500V
C49 .01
C50 .01
C53 1000PF 5% 500V
C55 .15 10% 100V
C56 33PF 10% 500V
C58 .15 10% 100V
C61 .1
C67 .1
C71 .01
C72 .01
R13 240
R44 100K 1% 1/10W
R45 49.9K 1% 1/10W
R46 100K .1% 1/8W
R49 12K
R59 100M
R61 100M
R25 90K 1% 1W
R27 900K 1% 1/4W
R28 9K 1% 1/10W
R29 1K 1% 1/10W
R33 9M 1% 1W
E25
E2
TP6
NOTES: UNLESS OTHERWISE SPECIFIED THIS PAGE ONLY.
② R54, R67, R68 ARE MATCHED SET.
① R46 & R51 ARE MATCHED SET.



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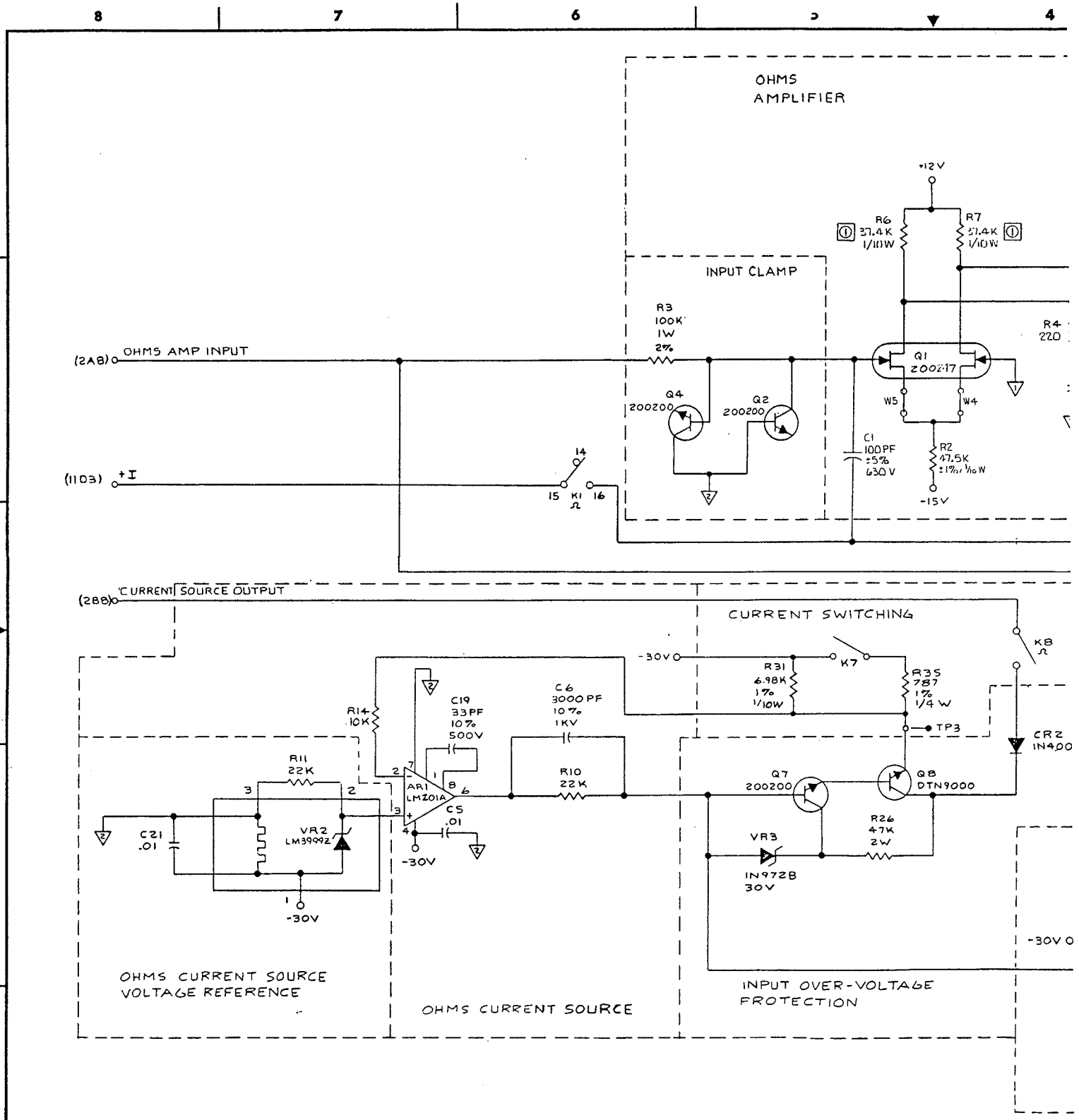
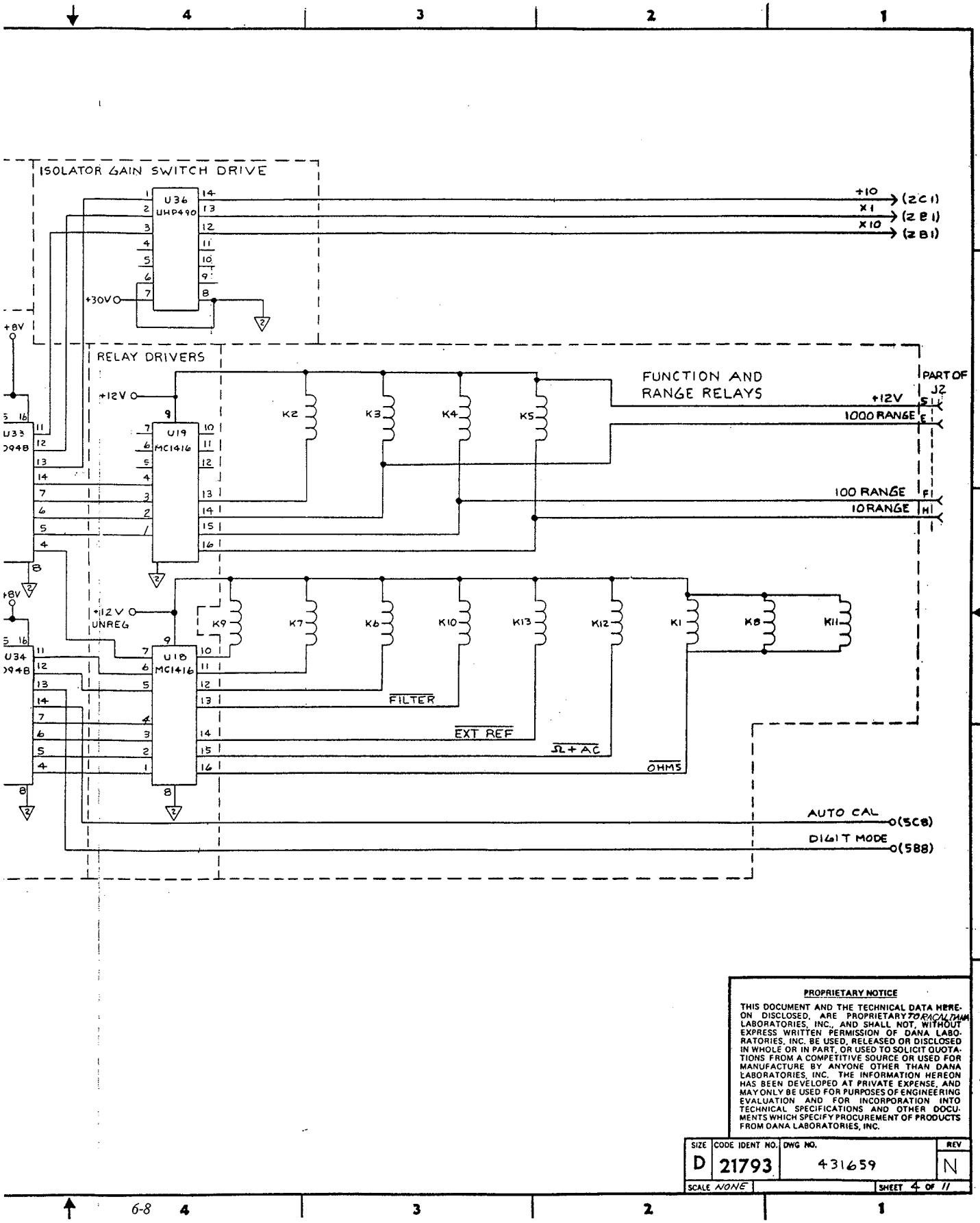
SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	431659	N
SCALE NONE		SHEET 3 OF 11	



① RESISTORS R6 & R7 ARE A MATCHED PAIR.

NOTES: UNLESS OTHERWISE SPECIFIED


4
3
2
1
E
D
C
B
A
ISOLATOR GAIN SWITCH DRIVE
U36
UHP490
+30V
+10
X1
X10
(2C1)
(2B1)
(2B1)
+8V
RELAY DRIVERS
+12V
U19
MC1416
K2
K3
K4
K5
FUNCTION AND
RANGE RELAYS
PART OF
J2
+12V
1000 RANGE
100 RANGE
10 RANGE
+12V
UNREG
U18
MC1416
K9
K7
K6
K10
K13
K12
K1
K8
K11
FILTER
EXT REF
Ω+AC
OHMS
AUTO CAL
(5C8)
DIGIT MODE
(588)
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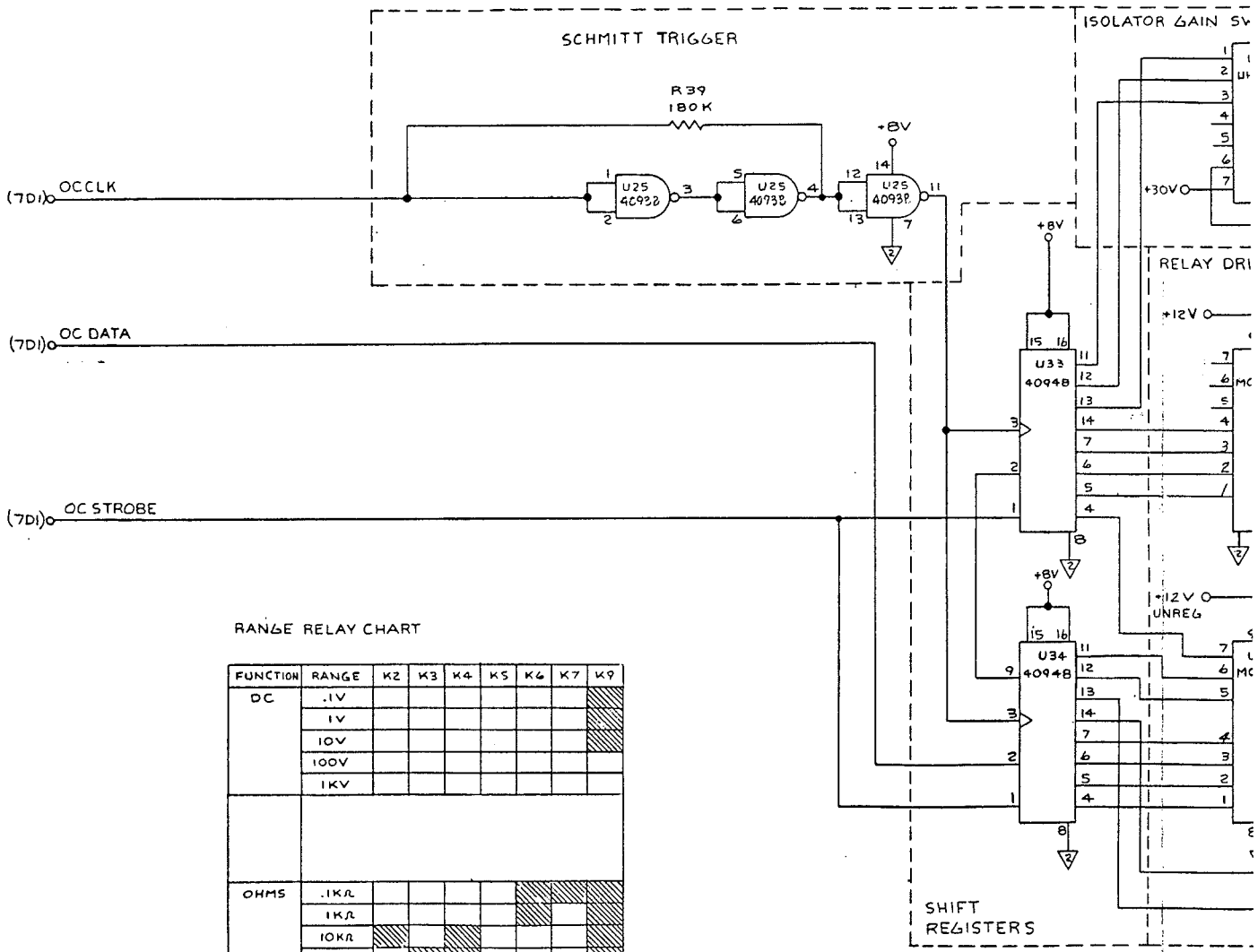
SIZE D
CODE IDENT NO. 21793
DWG NO. 431659
REV N
SCALE NONE
SHEET 4 OF 11
6-8

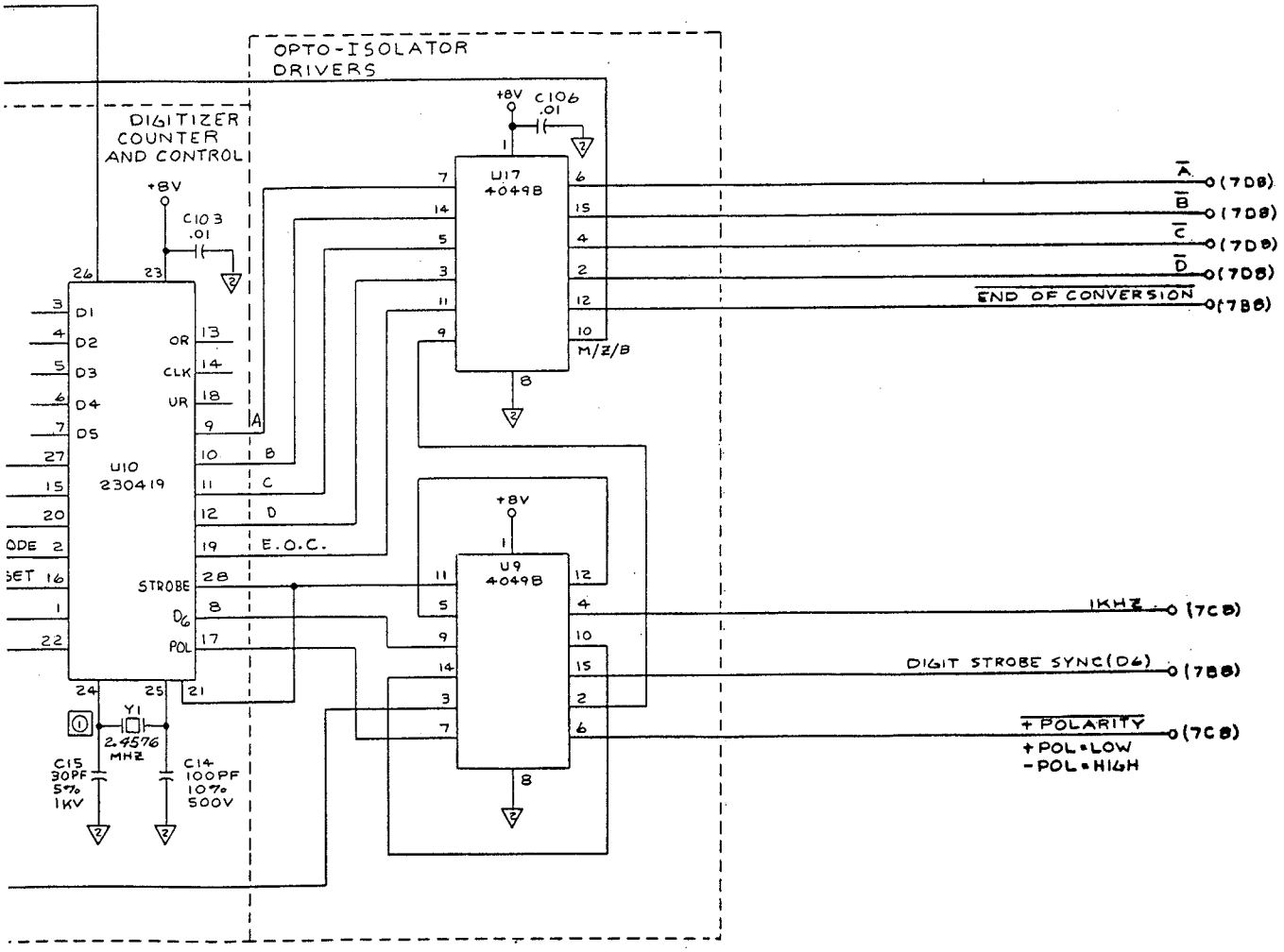


RANGE RELAY CHART

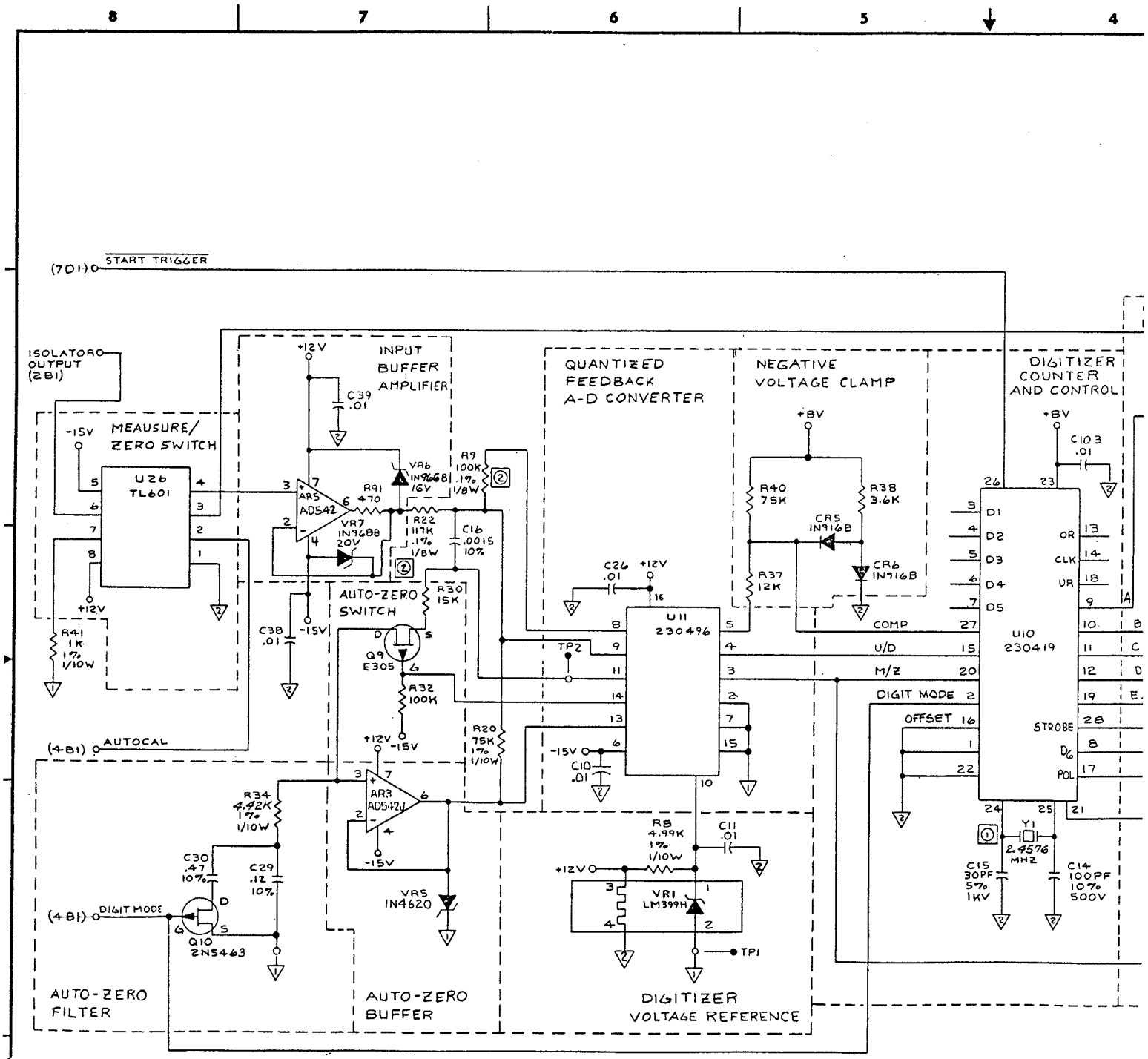
FUNCTION	RANGE	K2	K3	K4	K5	K6	K7	K9
DC	.1V							▨
	1V							▨
	10V							▨
	100V							
	1KV							
OHMS	.1KΩ					▨	▨	▨
	1KΩ					▨		▨
	10KΩ	▨		▨				▨
	100KΩ		▨	▨				▨
	1000KΩ			▨				▨
	10,000KΩ				▨			▨

▨ ENERGIZED

NOTES: UNLESS OTHERWISE SPECIFIED



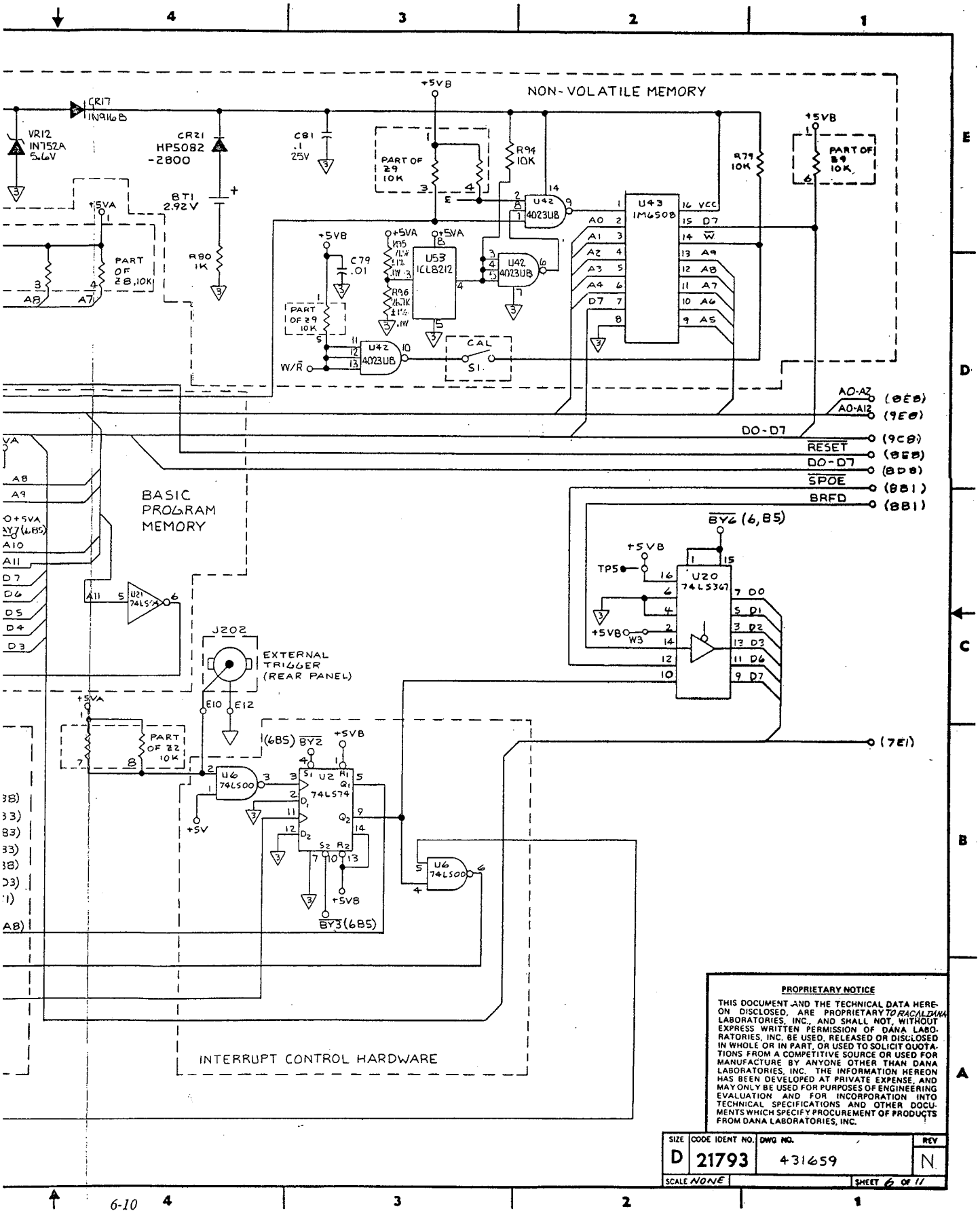
SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	431659	N
SCALE NONE			SHEET 5 OF 11



① R9 AND R22 IS MATCHED RESISTOR SET.

⓪ 2.4576 MHZ FOR 60HZ.
2.048 MHZ FOR 50HZ.

NOTES: UNLESS OTHERWISE SPECIFIED THIS PAGE ONLY.


NON-VOLATILE MEMORY
BASIC PROGRAM MEMORY
INTERRUPT CONTROL HARDWARE
EXTERNAL TRIGGER (REAR PANEL)
CR17 IN916B
VR12 IN752A 5.6V
CR21 HP5082 -2800
BT1 2.92V
C81 .1 25V
C79 .01
R80 1K
R94 10K
R79 10K
R96 2.7K ±1% .1W
PART OF 29 10K
PART OF 28 10K
PART OF 32 10K
PART OF 39 10K
U42 4023UB
U43 1M6508
U53 ICL8212
U21 74LS04
U6 74LS00
U2 74LS74
U20 74LS367
CAL
S1
W/R
W3
TP5
J202
+5VA
+5VB
+5V
A0-A2 (8E8)
A0-A12 (9E8)
D0-D7 (9C8)
RESET (8E8)
D0-D7 (8D8)
SPOE (8B1)
BRFD (8B1)
BY6 (6,85)
BY2 (685)
BY3 (685)
(7E1)
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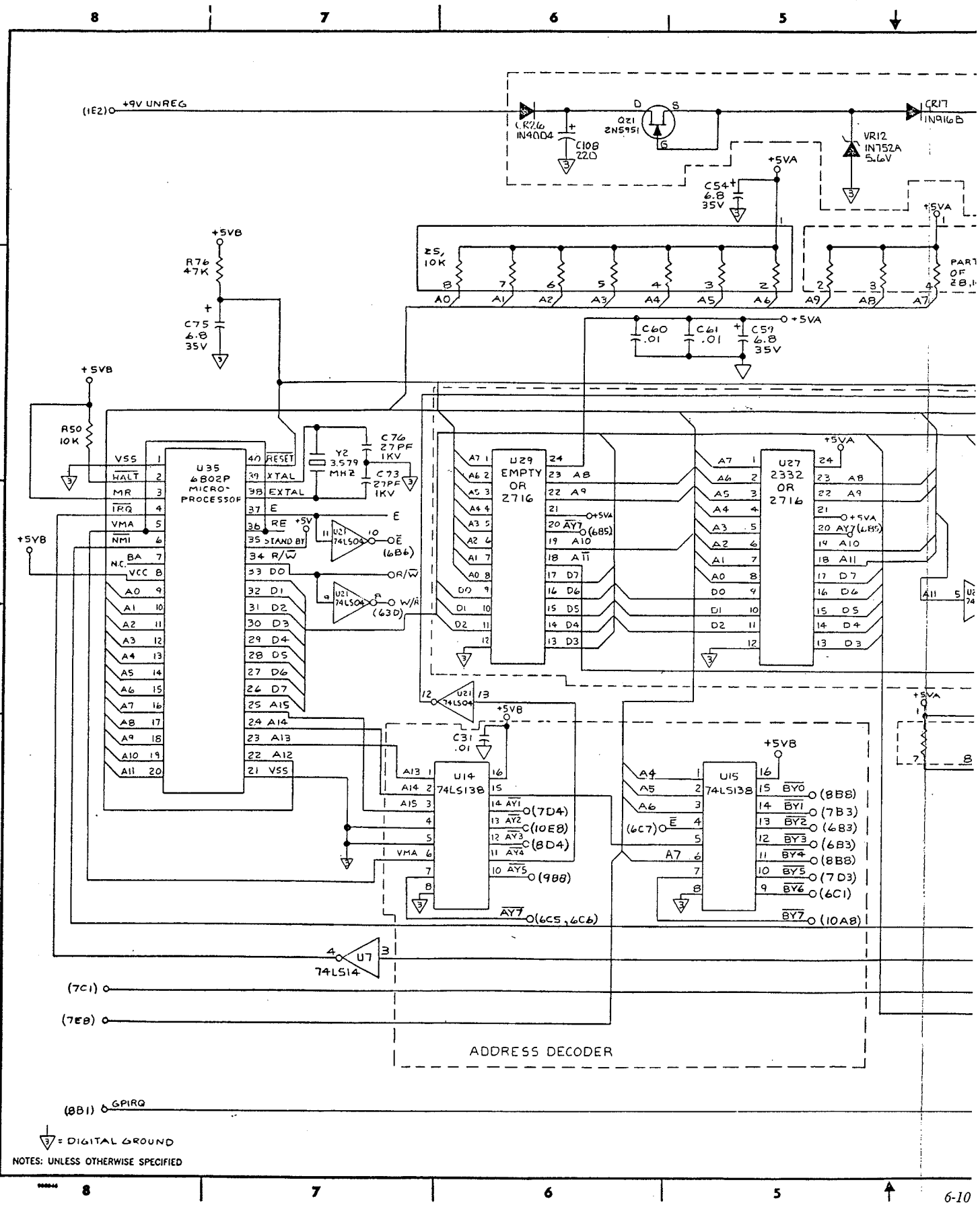
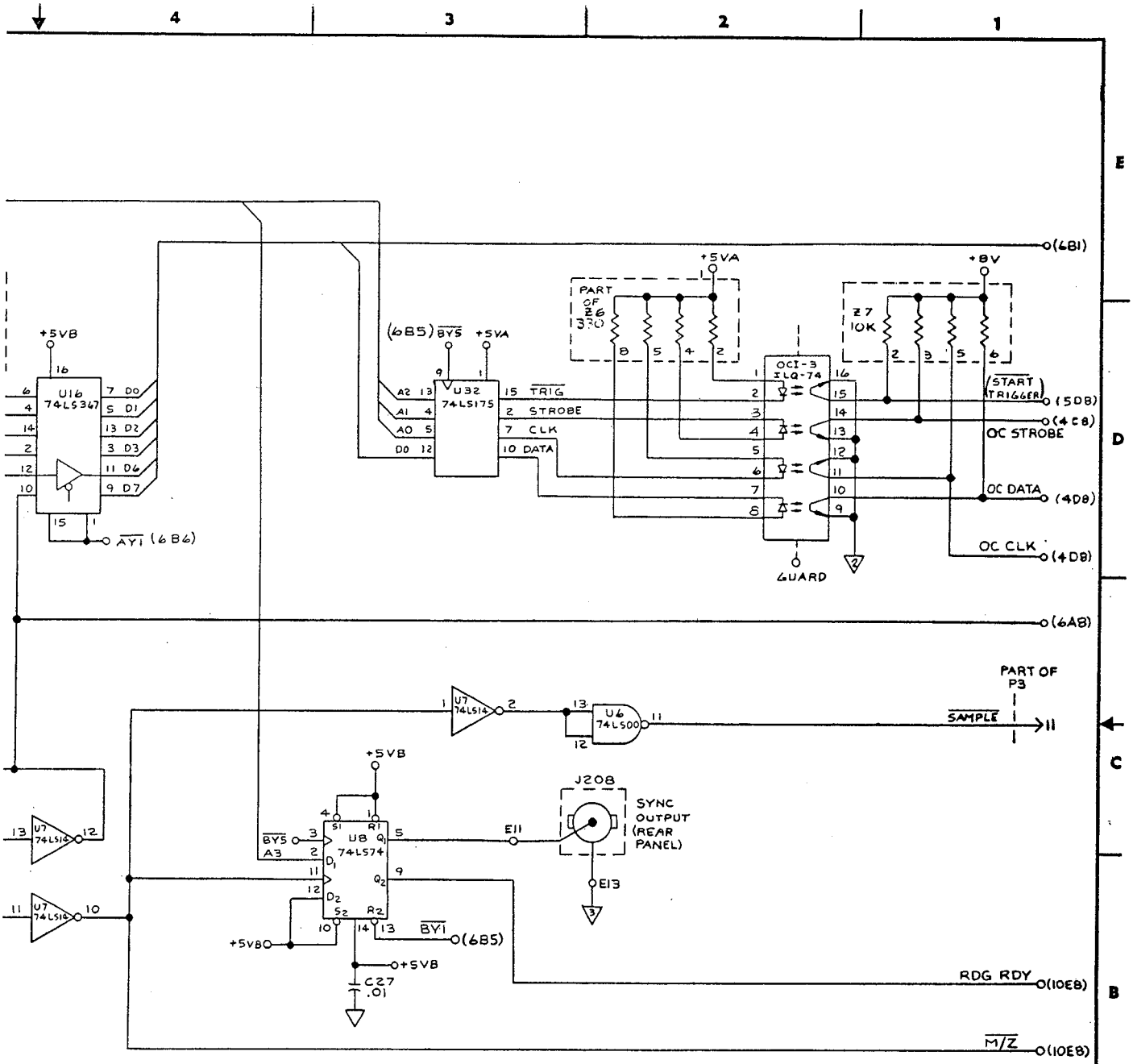
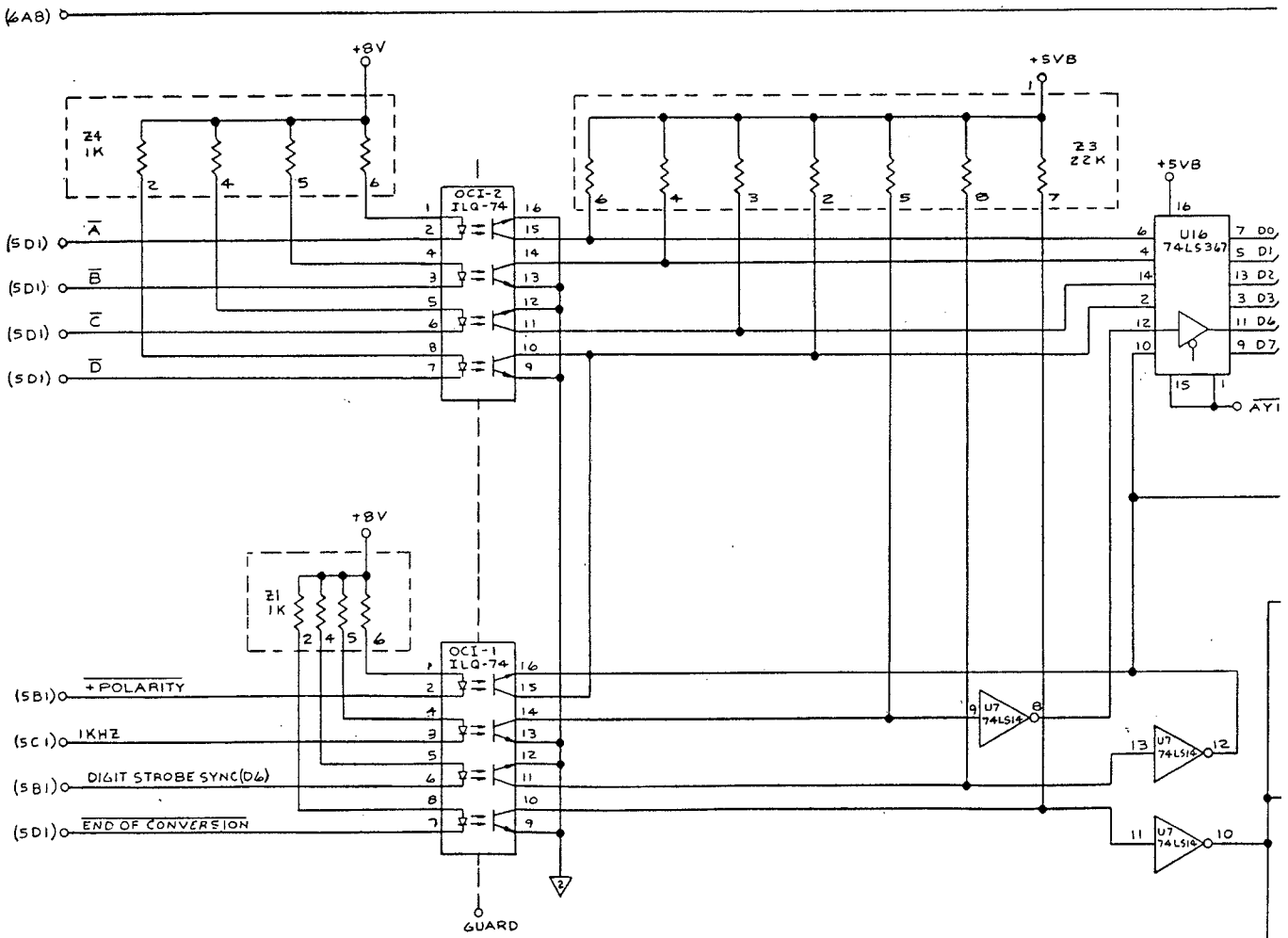
SIZE D
CODE IDENT NO. 21793
DWG NO. 431659
REV N
SCALE NONE
SHEET 6 OF 11

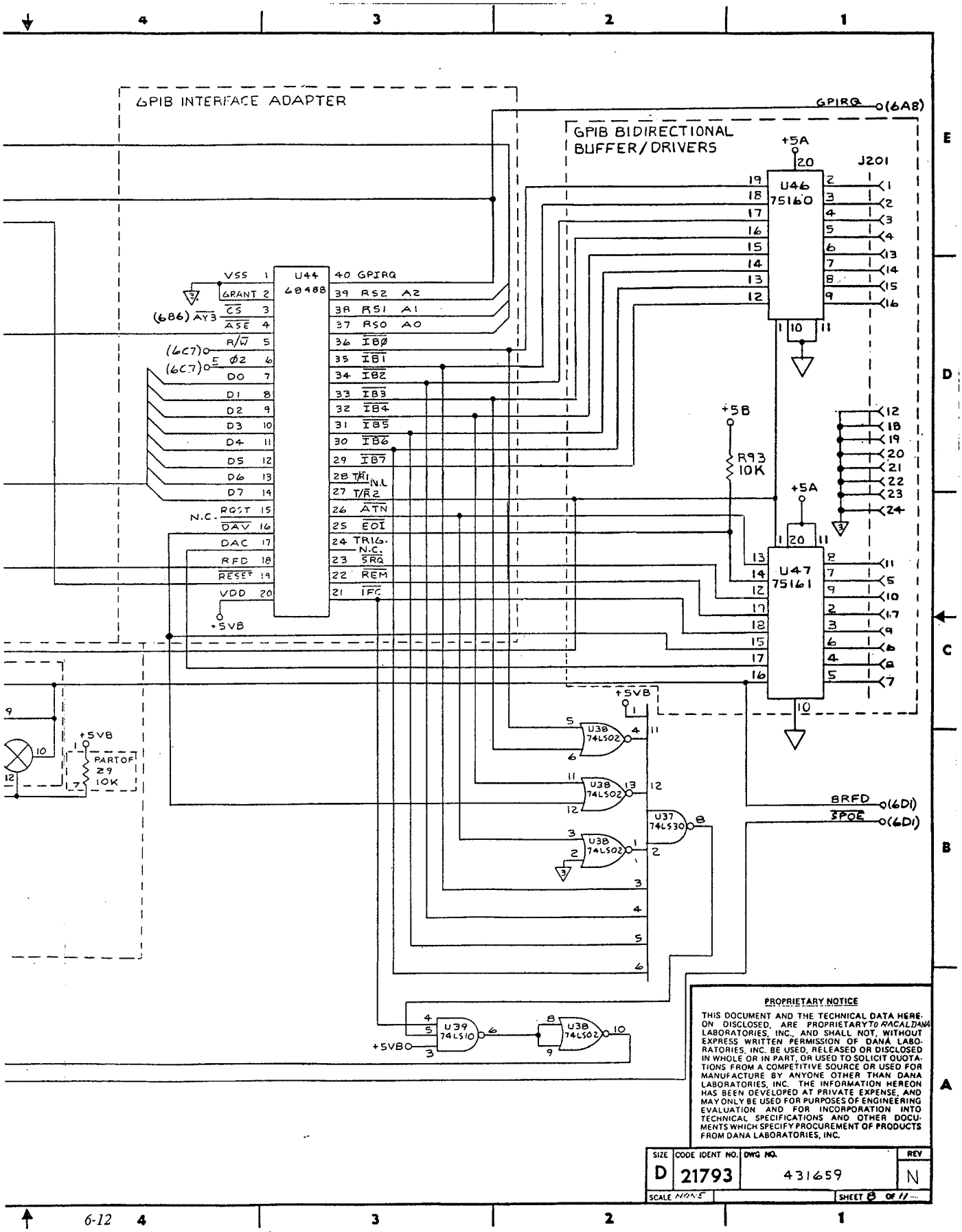

(1E2) +9V UNREG
CR26 IN4004
C108 220
Q21 2N5951
CR17 IN916B
VR12 IN752A 5.6V
C54 6.8 35V
+5VA
+5VB
R76 47K
C75 6.8 35V
RS, 10K
A0 A1 A2 A3 A4 A5 A6
A9 A8 A7
C60 .01
C61 .01
C59 6.8 35V
R50 10K
U35 6802P MICRO-PROCESSOR
VSS HALT MR IRQ VMA NMI BA N.C. VCC
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11
D0 D1 D2 D3 D4 D5 D6 D7
RESET XTAL EXTAL E RE STAND BY R/W
A14 A13 A12 VSS
Y2 3.579 MHZ
C76 27PF 1KV
C73 27PF 1KV
U21 74LS04
E (6B6)
R/W (63D)
W/R
U29 EMPTY OR 2716
U27 2332 OR 2716
AY7 (685)
U14 74LS138
U15 74LS138
C31 .01
AY1 (7D4)
AY2 (10E8)
AY3 (8D4)
AY4
AY5 (988)
AY7 (6C5, 6C6)
BY0 (8B8)
BY1 (7B3)
BY2 (4B3)
BY3 (6B3)
BY4 (8B8)
BY5 (7D3)
BY6 (6C1)
BY7 (10A8)
U7 74LS14
(7C1)
(7E8)
ADDRESS DECODER
(8B1) GPIRQ
= DIGITAL GROUND
NOTES: UNLESS OTHERWISE SPECIFIED



SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	431659	N
SCALE NONE			SHEET 7 OF 11



NOTES: UNLESS OTHERWISE SPECIFIED


GPIB INTERFACE ADAPTER
GPIB BIDIRECTIONAL BUFFER/DRIVERS
GPIRQ (6A8)
U44 68488
U46 75160
U47 75161
J201
+5A
+5B
+5VB
R93 10K
PART OF Z9 10K
U38 74LS02
U37 74LS30
U39 74LS10
BRFD (6D1)
SPOE (6D1)
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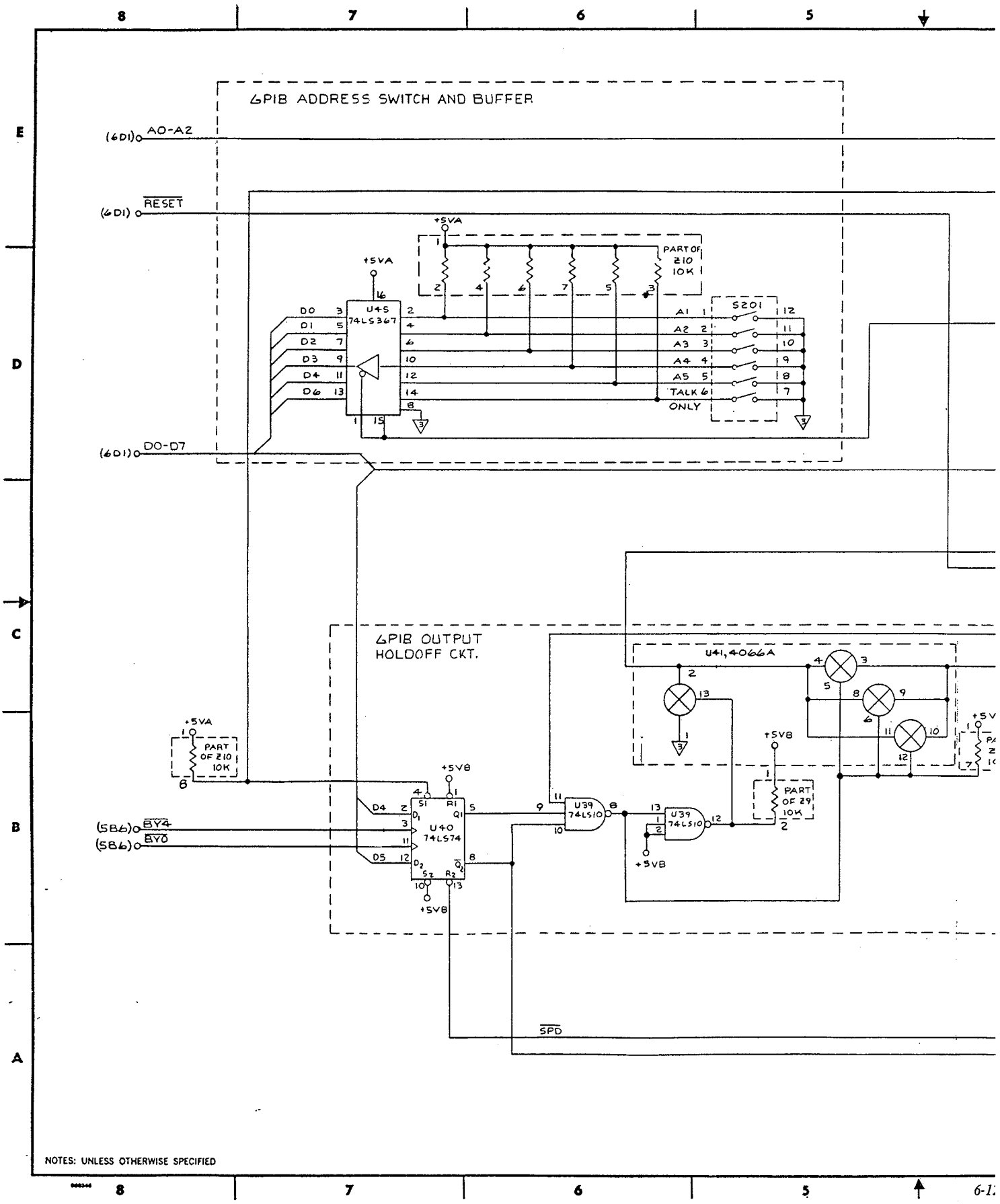
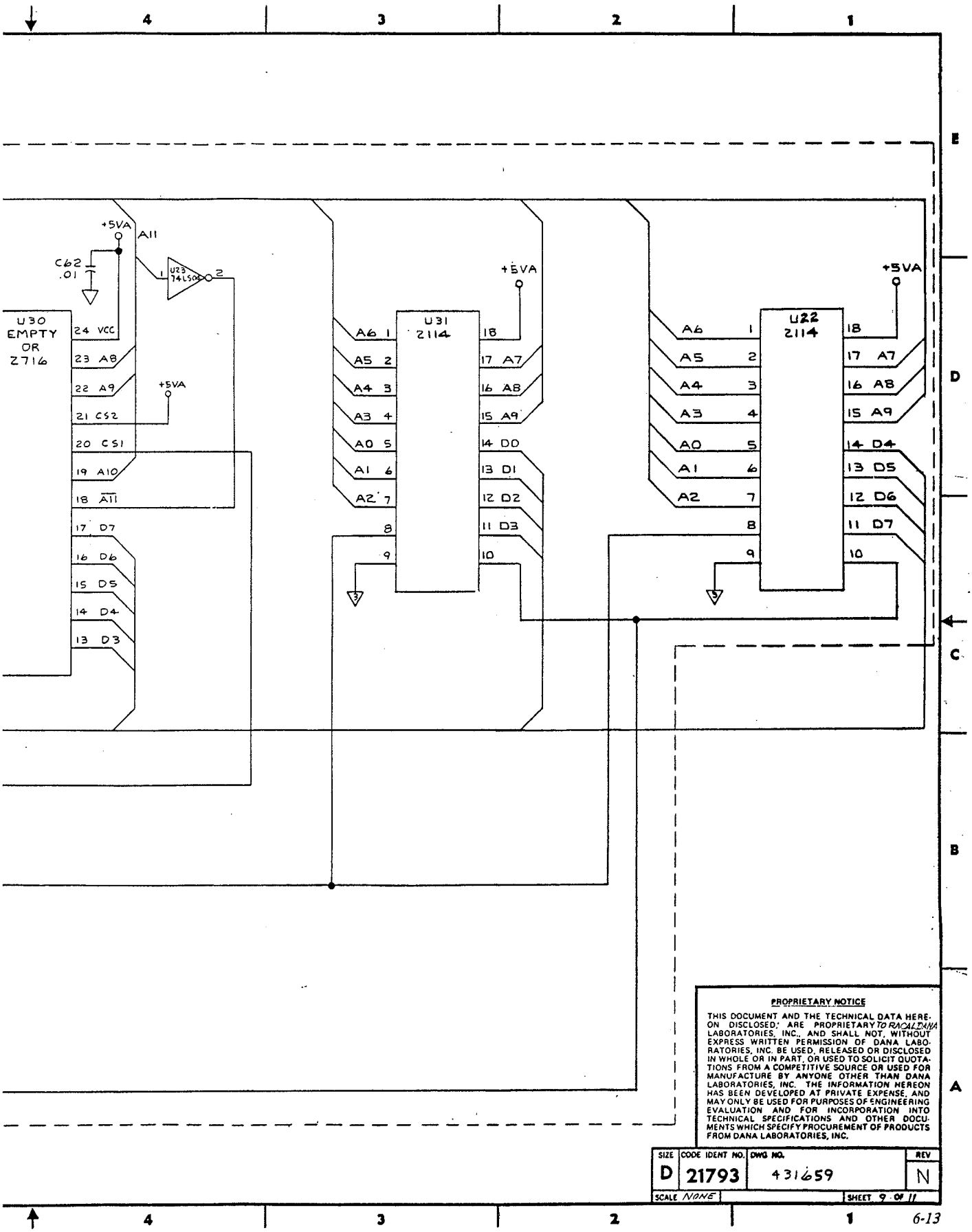
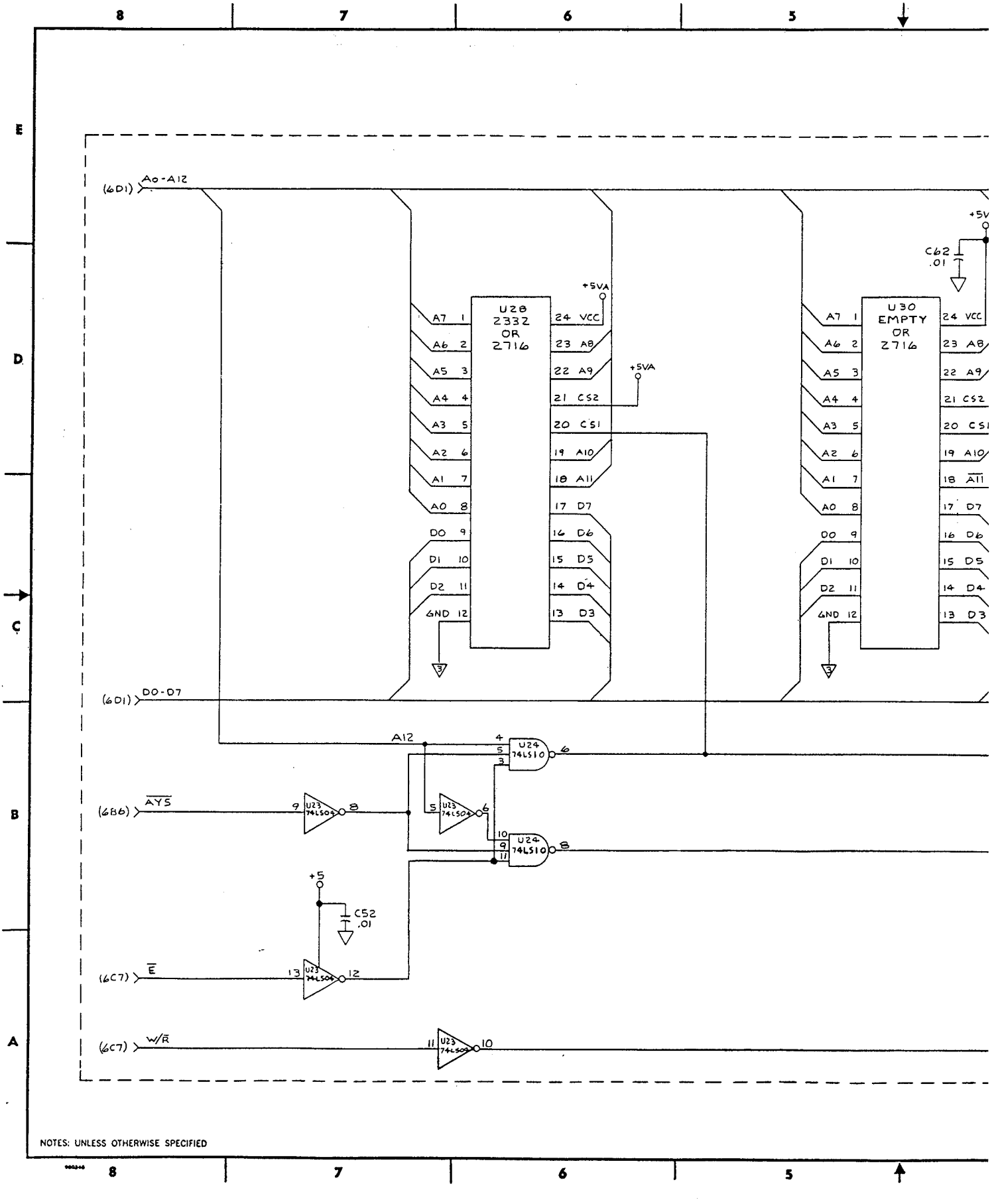
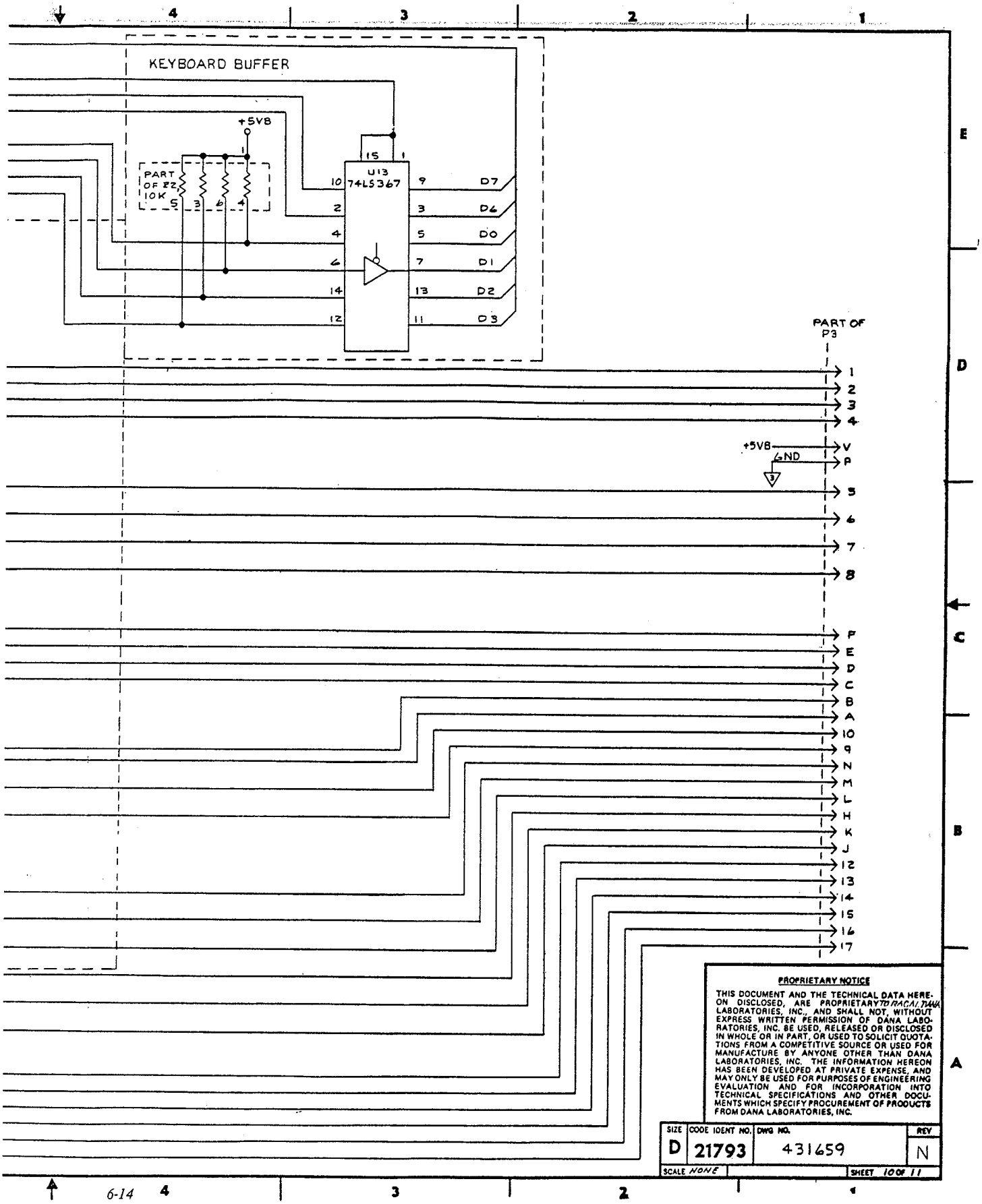
SIZE D
CODE IDENT NO. 21793
DWG NO. 431659
REV N
SCALE NONE
SHEET 8 OF 11


8
7
6
5
E
D
C
B
A
GPIB ADDRESS SWITCH AND BUFFER
(6D1) A0-A2
(6D1) RESET
(6D1) D0-D7
+5VA
PART OF Z10 10K
U45 74LS367
D0
D1
D2
D3
D4
D6
S201
A1
A2
A3
A4
A5
TALK & ONLY
GPIB OUTPUT HOLDOFF CKT.
U41, 4066A
+5VB
PART OF Z9 10K
U40 74LS74
U39 74LS10
(5B6) BY4
(5B6) BY0
SPD
NOTES: UNLESS OTHERWISE SPECIFIED
6-1



SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	431659	N
SCALE NONE		SHEET 9 OF 11	


8
7
6
5
E
D
C
B
A
(6D1) A0-A12
U28
2332
OR
2716
U30
EMPTY
OR
2716
+5VA
+5V
C62
.01
A7 1
A6 2
A5 3
A4 4
A3 5
A2 6
A1 7
A0 8
D0 9
D1 10
D2 11
GND 12
24 VCC
23 A8
22 A9
21 CS2
20 CS1
19 A10
18 A11
18 A11
17 D7
16 D6
15 D5
14 D4
13 D3
(6D1) D0-D7
A12
U24
74LS10
(6B6) AY5
U23
74LS04
+5
C52
.01
(6C7) E
(6C7) W/R
NOTES: UNLESS OTHERWISE SPECIFIED


KEYBOARD BUFFER
+5VB
PART OF RZ1 10K
U13
74LS367
D7
D6
D0
D1
D2
D3
PART OF P3
+5VB
GND
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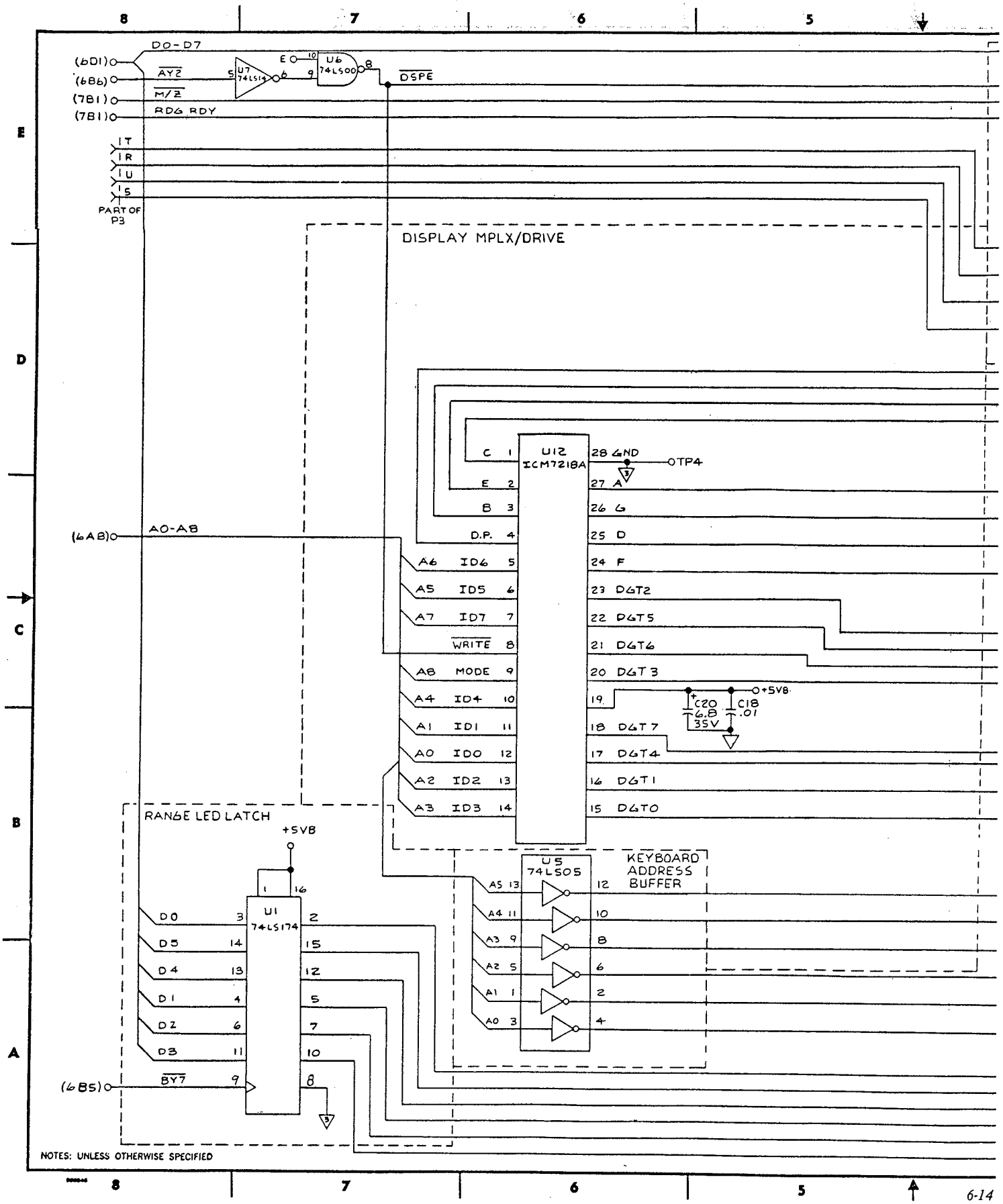
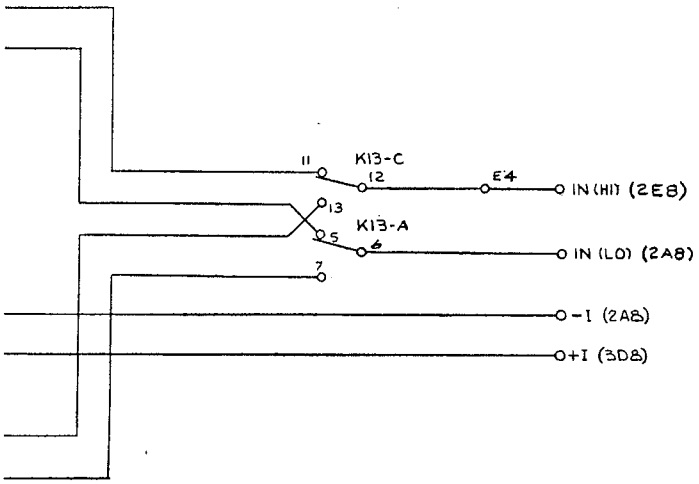
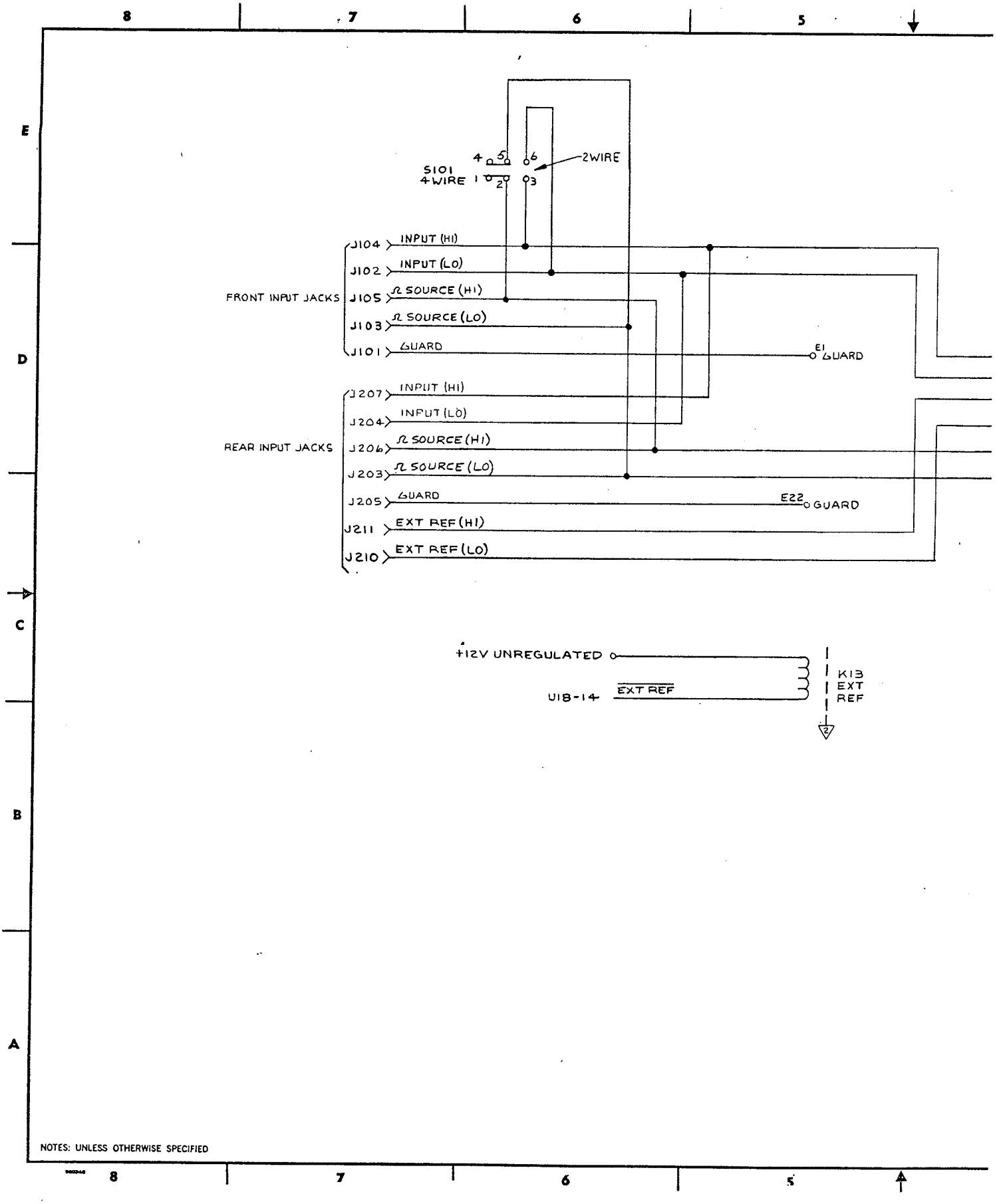
SIZE D
CODE IDENT NO. 21793
DWG NO. 431659
REV N
SCALE NONE
SHEET 10 OF 11

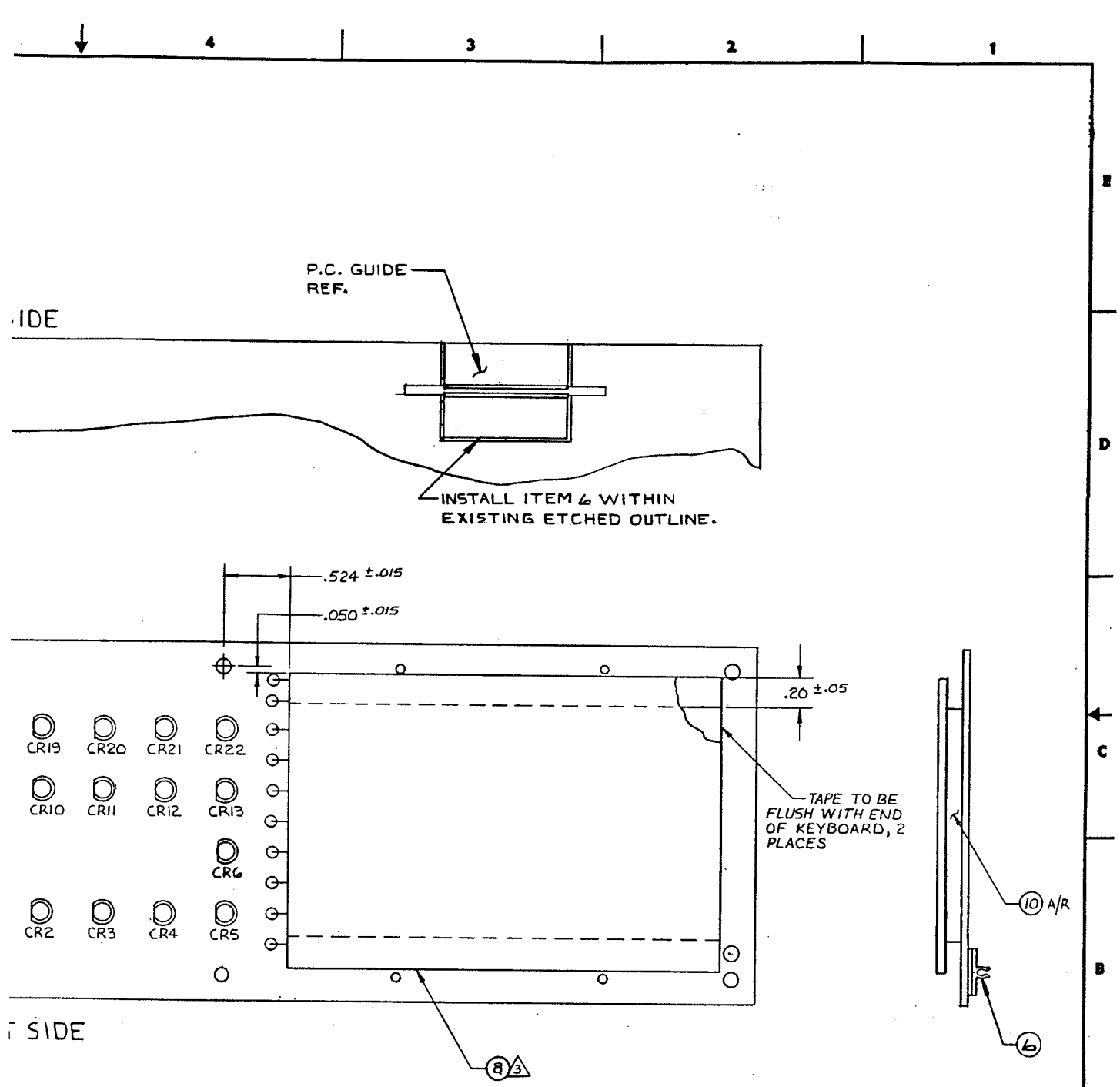

8
7
6
5
E
D
C
B
A
D0-D7
(6D1)
(6B6)
(7B1)
(7B1)
AY2
M/2
RDG RDY
U7 74LS14
U6 74LS00
DSPE
IT
IR
IU
IS
PART OF P3
DISPLAY MPLX/DRIVE
U12 ICM7218A
C 1
E 2
B 3
D.P. 4
A6 ID6 5
A5 ID5 6
A7 ID7 7
WRITE 8
A8 MODE 9
A4 ID4 10
A1 ID1 11
A0 ID0 12
A2 ID2 13
A3 ID3 14
28 GND
27 A
26 G
25 D
24 F
23 DGT2
22 DGT5
21 DGT6
20 DGT3
19
18 DGT7
17 DGT4
16 DGT1
15 DGT0
TP4
+5VB
C20 6.8 35V
C18 .01
(6AB)
A0-A8
RANGE LED LATCH
+5VB
U1 74LS174
D0 3
D5 14
D4 13
D1 4
D2 6
D3 11
BY7 9
(6B5)
2
15
12
5
7
10
8
U5 74LS05
KEYBOARD ADDRESS BUFFER
A5 13
A4 11
A3 9
A2 5
A1 1
A0 3
12
10
8
6
2
4
NOTES: UNLESS OTHERWISE SPECIFIED



SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	431659	N

SCALE NONE SHEET 11 OF 11


8
7
6
5
E
D
C
B
A
S101
4-WIRE
2-WIRE
FRONT INPUT JACKS
J104 INPUT (HI)
J102 INPUT (LO)
J105 Ω SOURCE (HI)
J103 Ω SOURCE (LO)
J101 GUARD
E1 GUARD
REAR INPUT JACKS
J207 INPUT (HI)
J204 INPUT (LO)
J206 Ω SOURCE (HI)
J203 Ω SOURCE (LO)
J205 GUARD
E22 GUARD
J211 EXT REF (HI)
J210 EXT REF (LO)
+12V UNREGULATED
U18-14 EXT REF
K13 EXT REF
NOTES: UNLESS OTHERWISE SPECIFIED

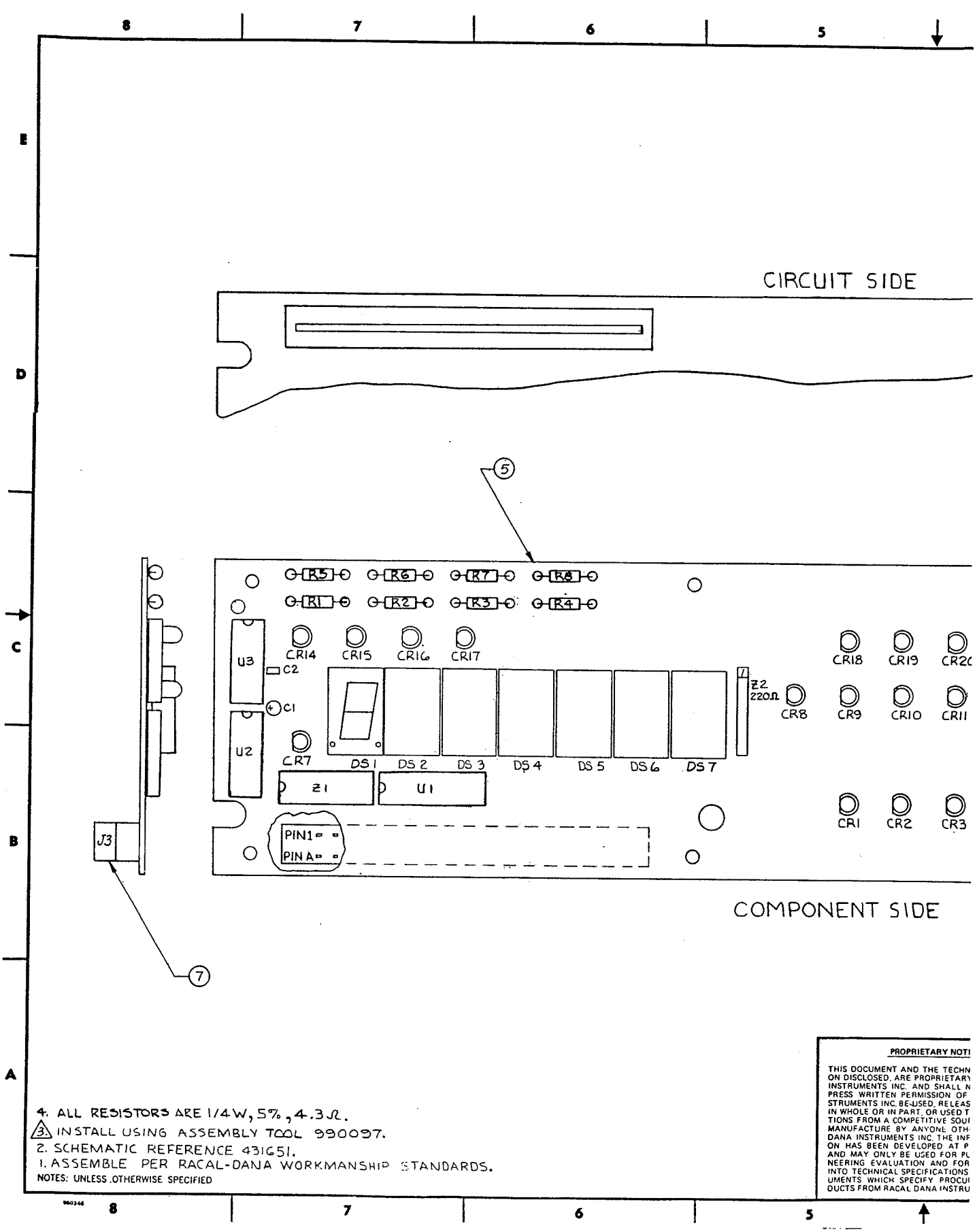


P.C.B. ASSY, DISPLAY

SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	401651	C

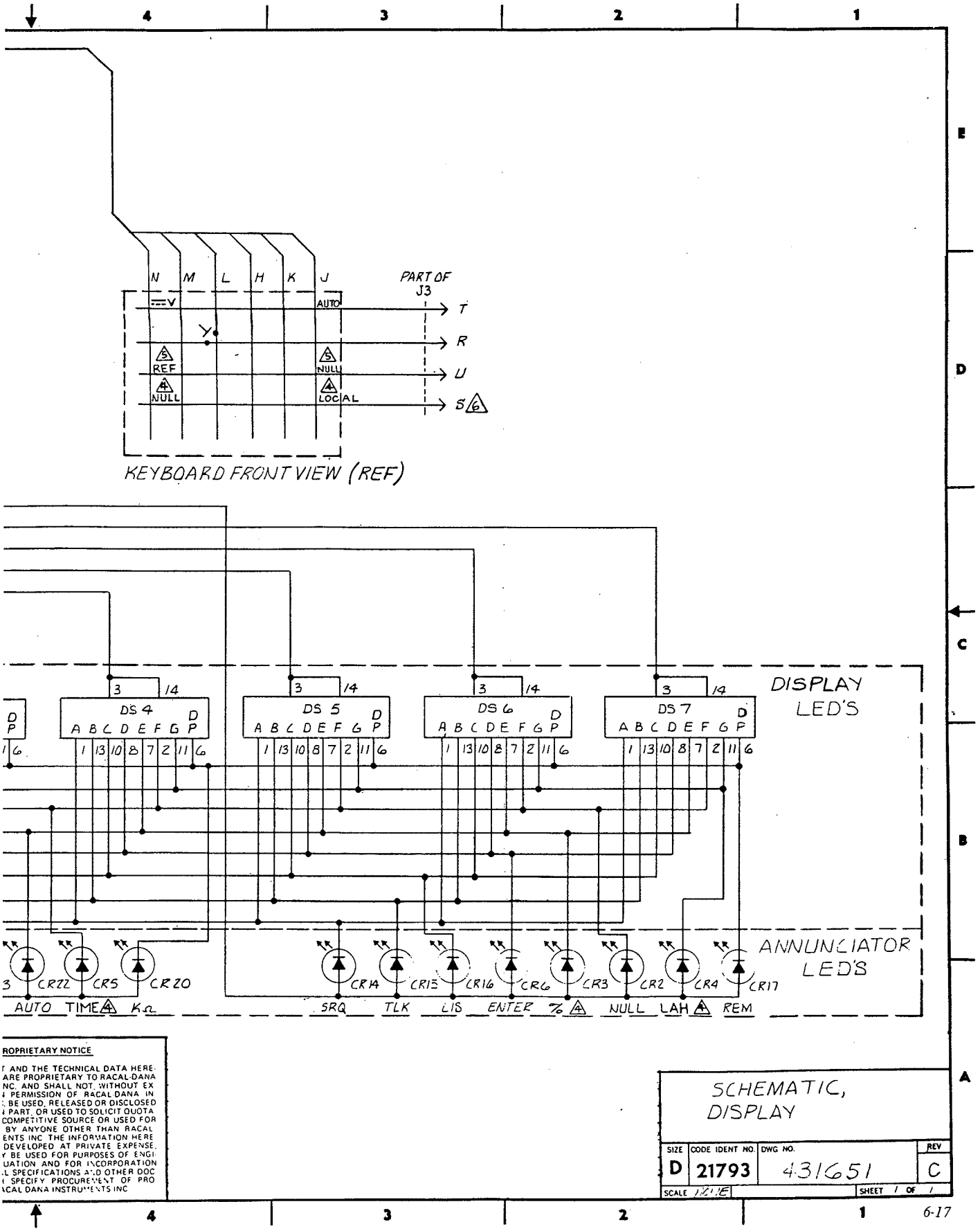
SCALE 2/1 SHEET 1 OF 2

6-16



4. ALL RESISTORS ARE 1/4W, 5%, 4.3Ω.
3. INSTALL USING ASSEMBLY TOOL 990097.
2. SCHEMATIC REFERENCE 431651.
1. ASSEMBLE PER RACAL-DANA WORKMANSHIP STANDARDS.

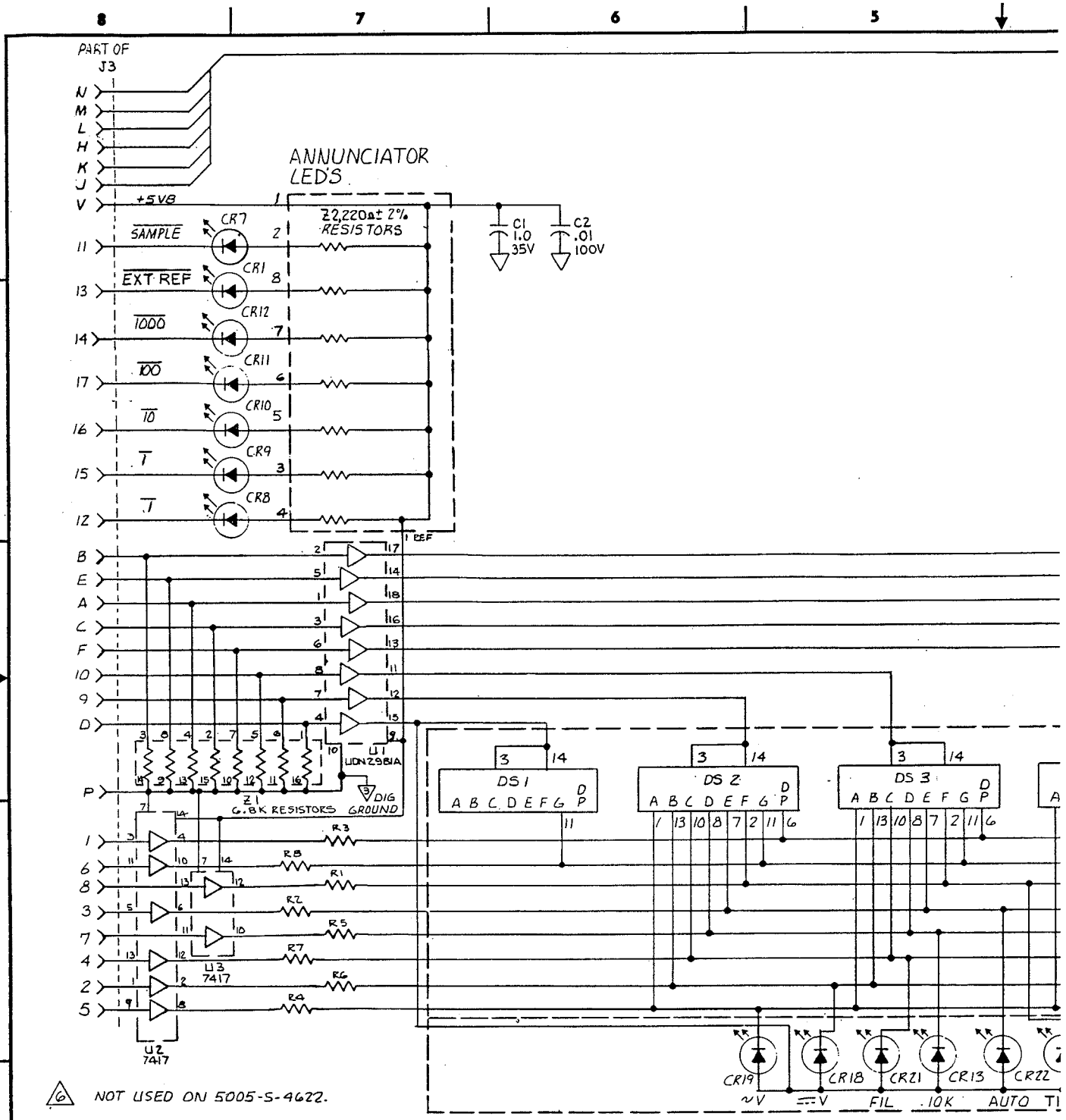
NOTES: UNLESS OTHERWISE SPECIFIED



SCHEMATIC, DISPLAY

SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	431651	C

SCALE NONE SHEET 1 OF 1



6 NOT USED ON 5005-S-4622.

5 5005-S-4622 ONLY.

4 5005 ONLY.

3 CR1 THRU CR22 ARE 210072.

2 DS1 THRU DS7 ARE 210074.

1 R1-R8 ARE 1/4W, 5%, 4.3Ω

NOTES: UNLESS OTHERWISE SPECIFIED

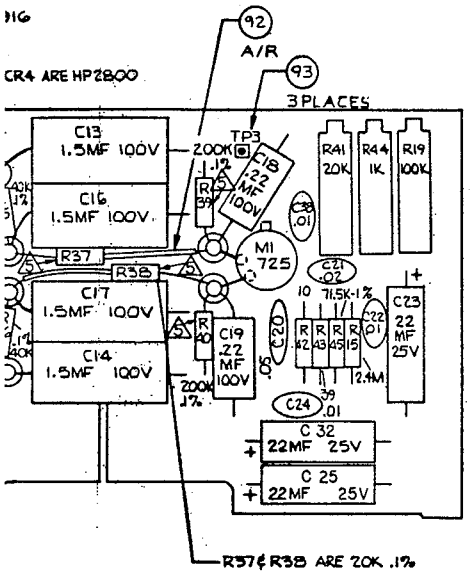
CAUTION

SEE NOTE 5 FOR SPECIAL ORDER OF MATCHED RESISTOR SETS.

F

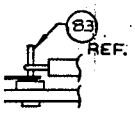
)IG

CR4 ARE HP2800



75

= SHIELD)

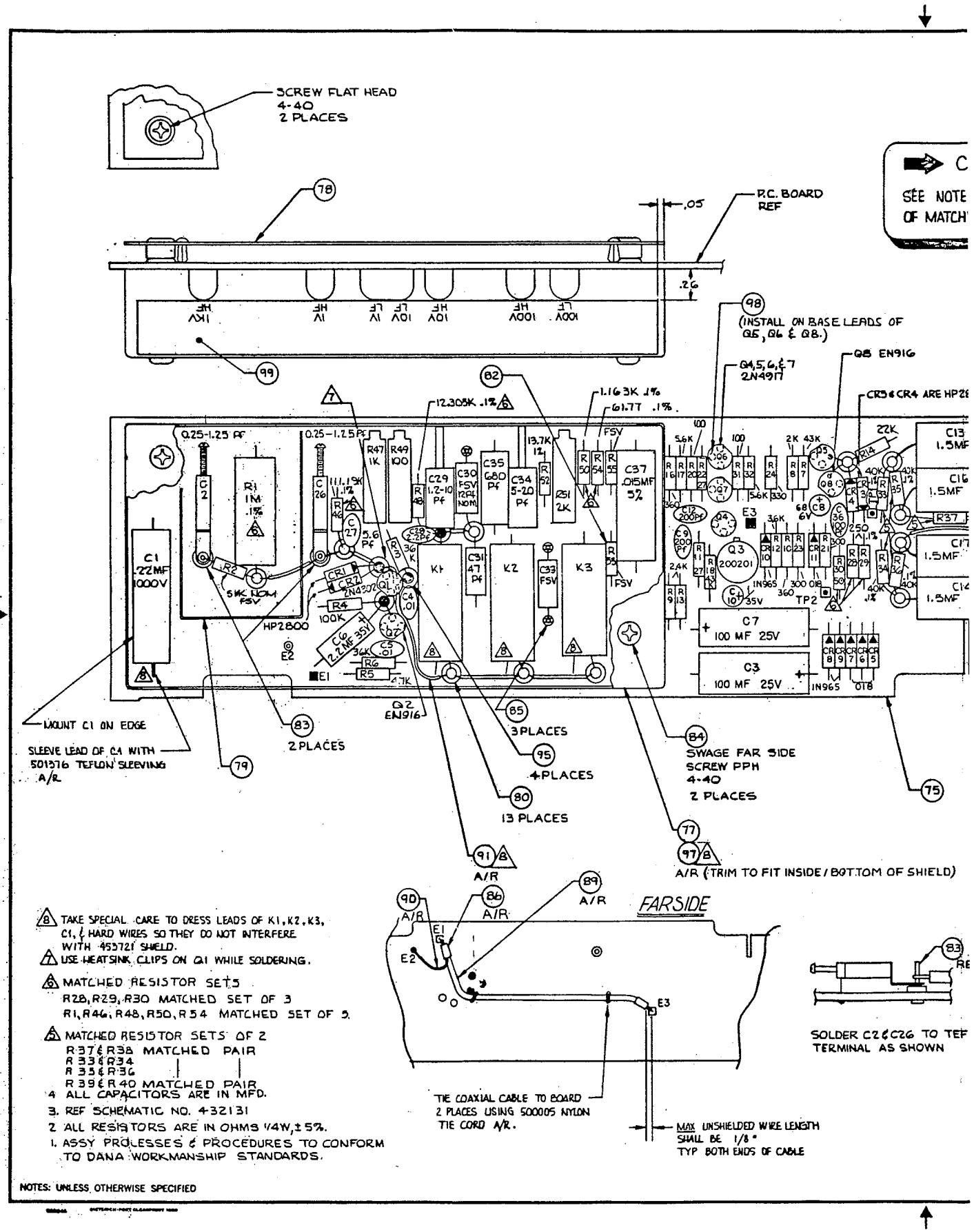


26 TO TEF SHOWN

PC.B ASSY, AC CONVERTER

SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	· 404107	A

SCALE 2/1 SHEET 1 OF 7



8 TAKE SPECIAL CARE TO DRESS LEADS OF K1, K2, K3, C1, & HARD WIRES SO THEY DO NOT INTERFERE WITH 453721 SHIELD.

7 USE HEATSINK CLIPS ON Q1 WHILE SOLDERING.

6 MATCHED RESISTOR SETS
R28, R29, R30 MATCHED SET OF 3
R1, R46, R48, R50, R54 MATCHED SET OF 5.

5 MATCHED RESISTOR SETS OF 2
R37 & R38 MATCHED PAIR
R33 & R34
R35 & R36
R39 & R40 MATCHED PAIR

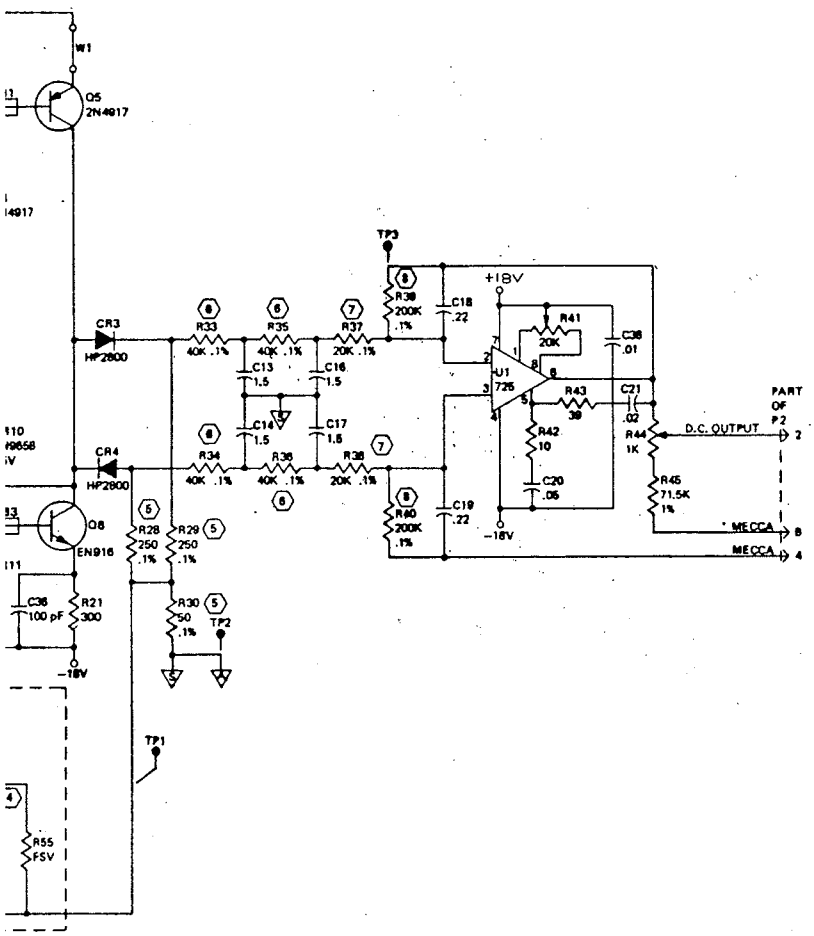
4 ALL CAPACITORS ARE IN MFD.

3. REF SCHEMATIC NO. 432131

2 ALL RESISTORS ARE IN OHMS 1/4W, ±5%.

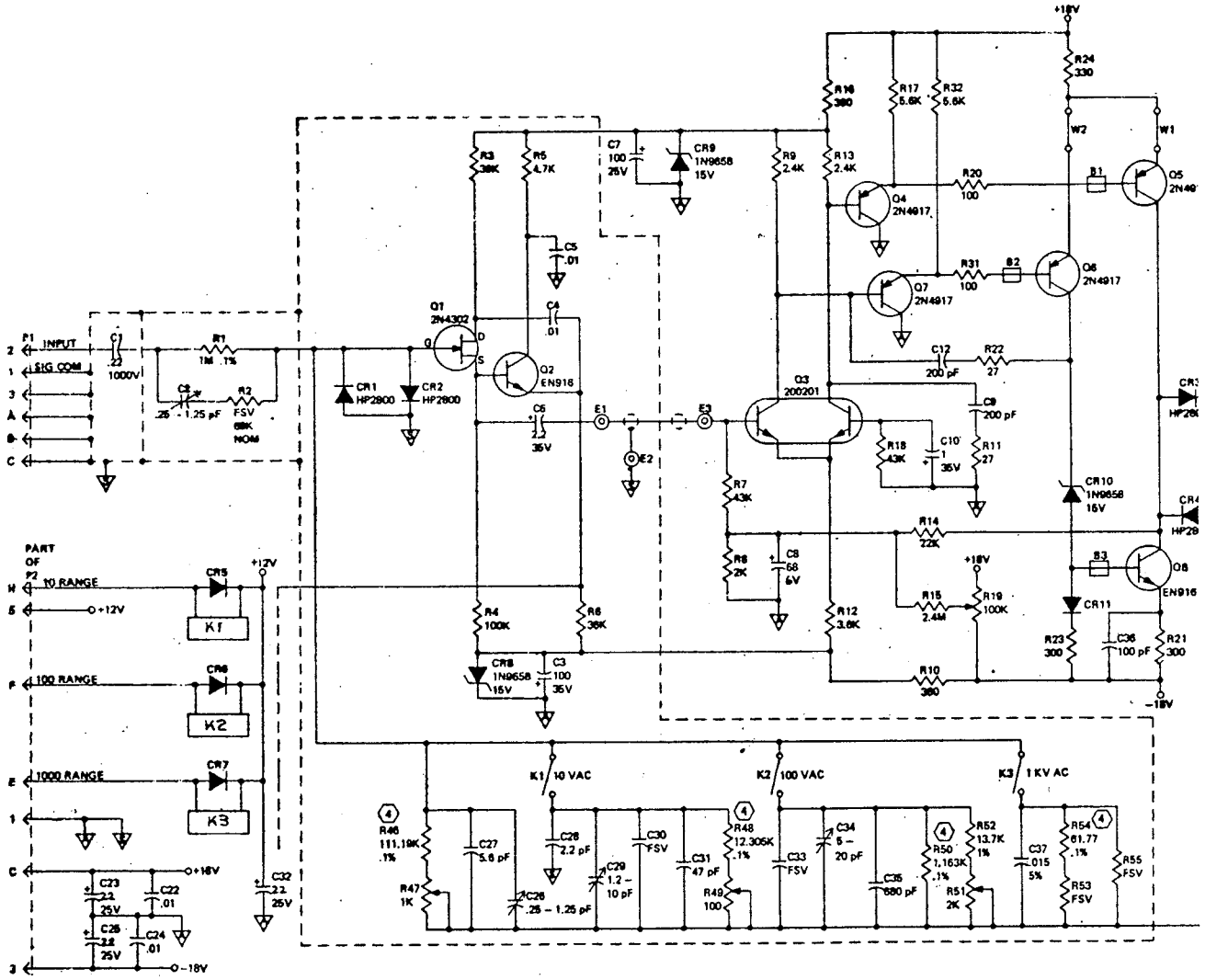
1. ASSY PROCESSES & PROCEDURES TO CONFORM TO DANA WORKMANSHIP STANDARDS.

NOTES: UNLESS OTHERWISE SPECIFIED



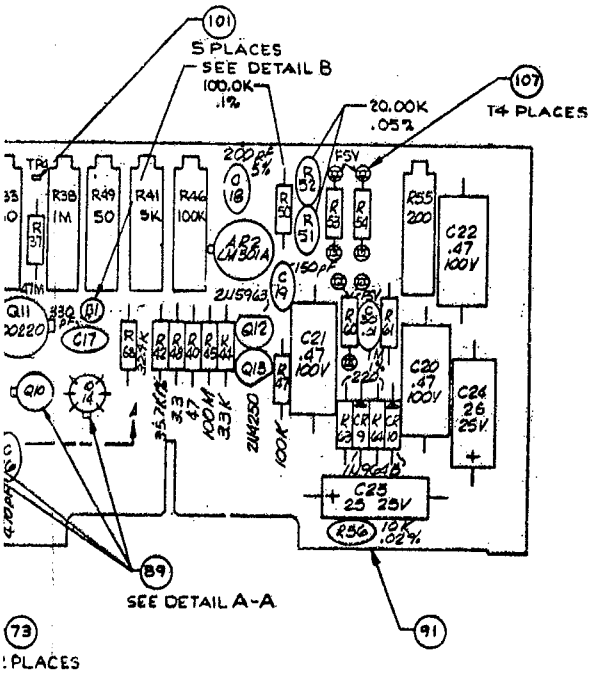
SCHEMATIC —
AC CONVERTER

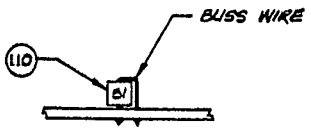
SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	432131	A
SCALE		SHEET 1 OF 1	

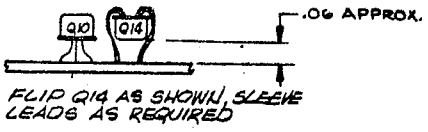


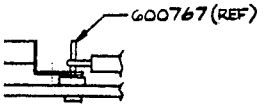
8. ASSY 404107
8. R39 AND R40 ARE RESISTOR SET 010792
7. R37 AND R38 ARE RESISTOR SET 010743
6. R33, R34, AND R35 ARE RESISTOR SET 010744
5. R28, R29, AND R30 ARE RESISTOR SET 010793
4. R46, R48, R50, AND R54 ARE RESISTOR SET 010794
3. DIODES ARE 018
2. CAPACITORS ARE IN μF
1. RESISTORS ARE IN OHMS, ±5%, 1/4W

NOTES: UNLESS OTHERWISE SPECIFIED







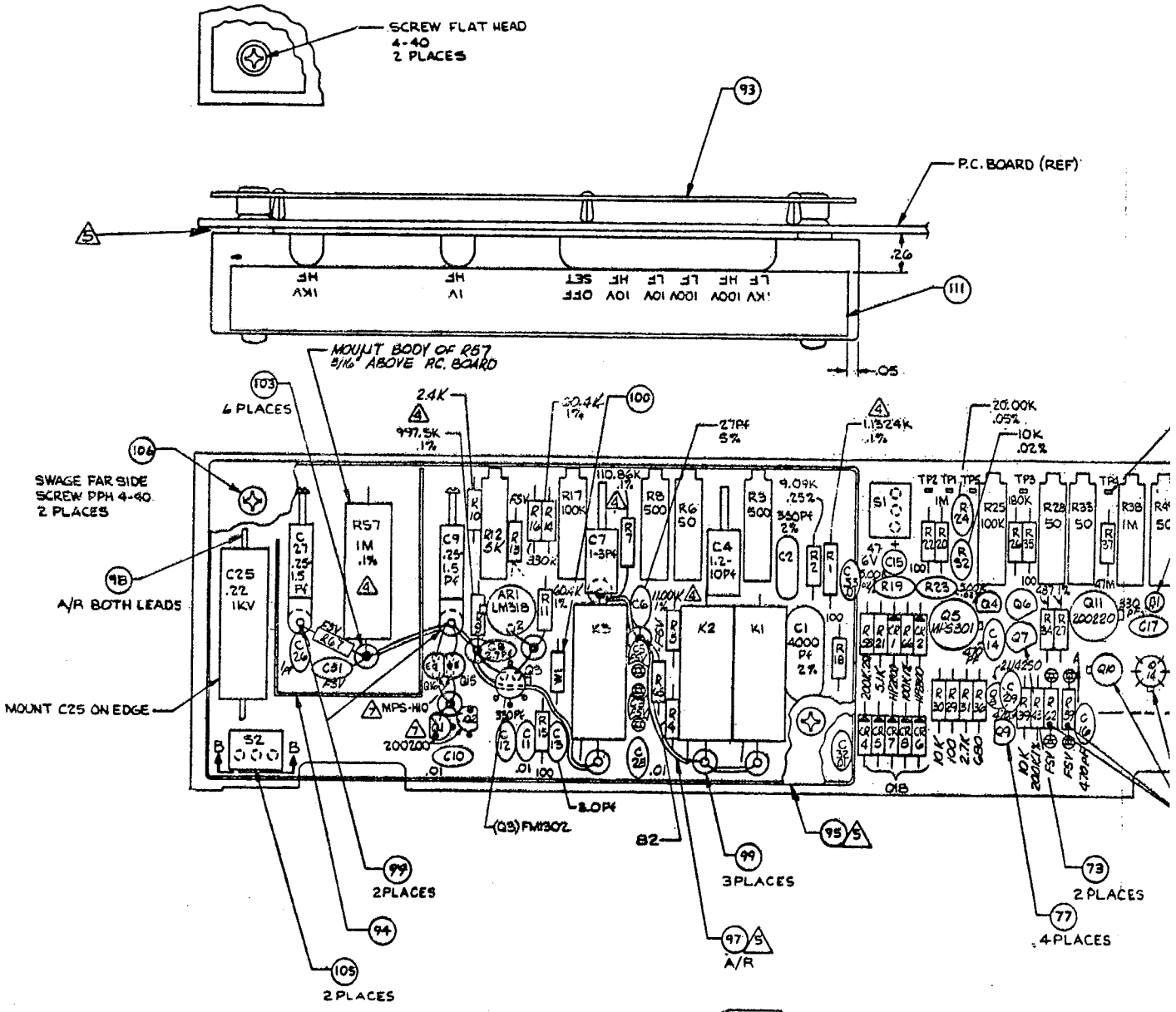


C9 & C27 TO TEF
AL AS SHOWN.

PCB ASSY
RMS CONVERTER

SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	404106	E

SCALE 2/1 SHEET 1 OF 7



7. CUT EMITTER LEADS OF Q2, Q2, Q15 & Q16 FLUSH TO BODY OF TRANSISTOR BEFORE INSTALLING

6. REF SCHEMATIC NO. 432130

5. TAKE SPECIAL CARE TO DRESS LEADS OF K1, K2 & K3 AWED WIRES SO THEY DO NOT INTERFERE WITH 463856 SHIELD. ADD POLYESTER TAPE 920782 TO EDGE OF SHIELD ALL SIDES BETWEEN SHIELD AND PCB. TO INSULATE SHIELD FROM CIRCUIT STRAPS.

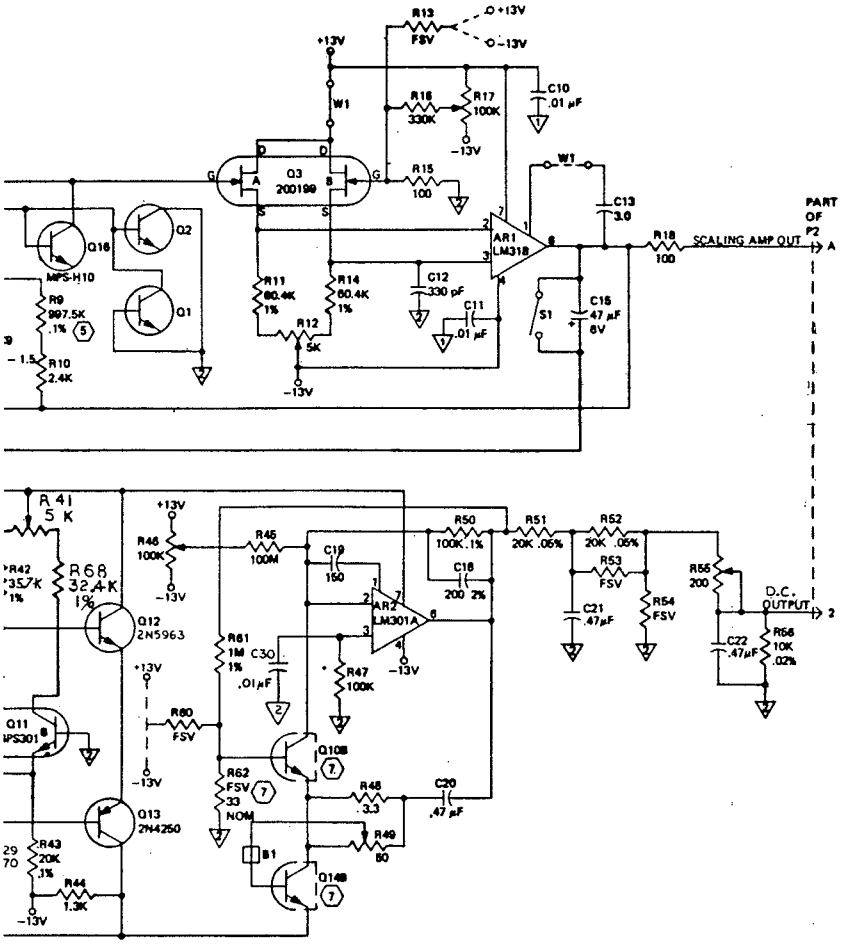
4. MATCHED RESISTOR SET OF 5
R1, R5, R7, K9, R57

3. ALL CAPACITORS ARE IN MFD. 100V.

2. ALL RESISTORS ARE IN OHMS 1/4W, ±5%.

1. ASSY PROCESSES & PROCEDURES TO CONFORM TO DANA WORKMANSHIP STANDARDS.

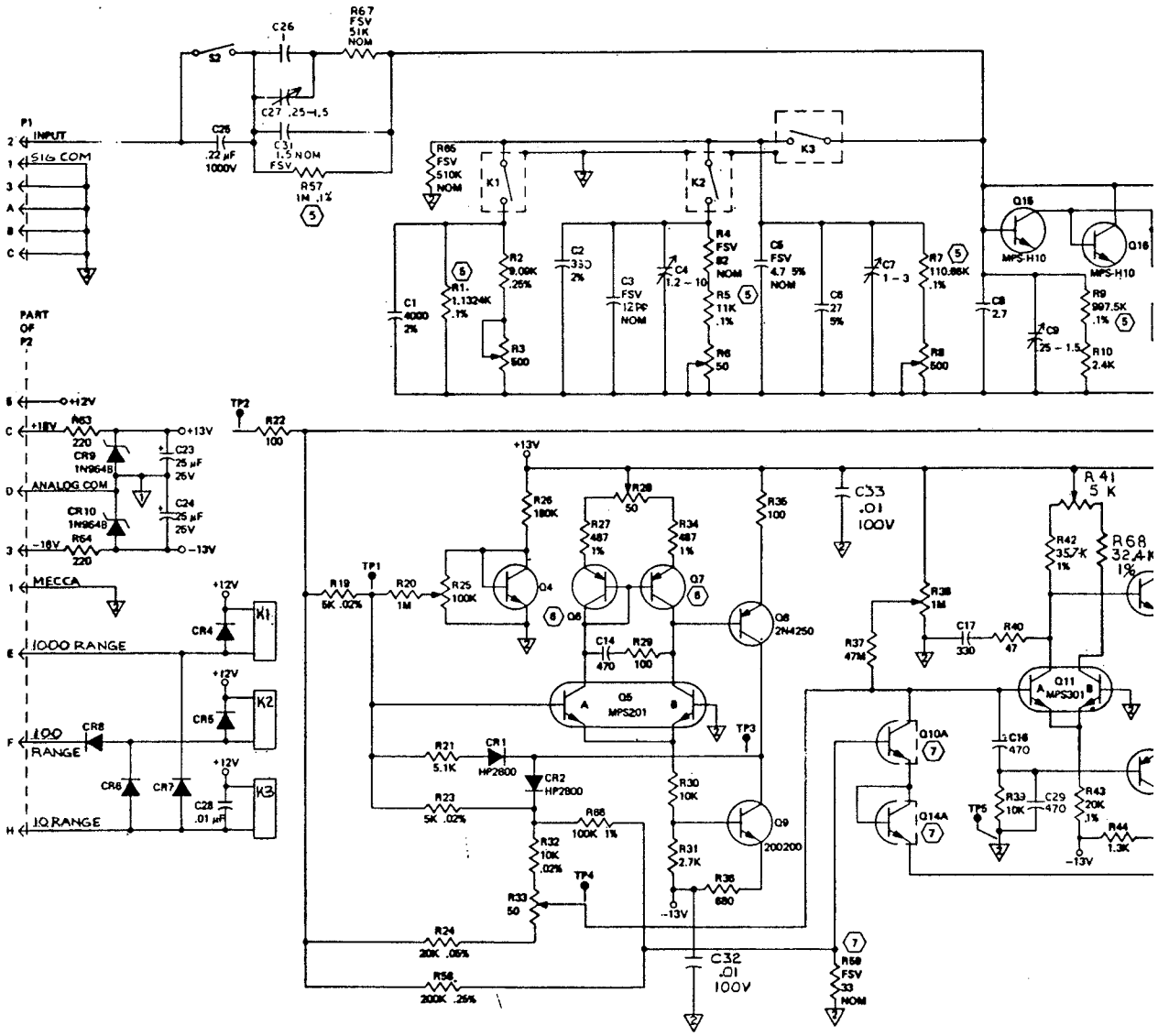
NOTES: UNLESS OTHERWISE SPECIFIED



SCHEMATIC –
RMS CONVERTER

SIZE	CODE IDENT NO.	DWG NO.	REV
D	21793	432130	A

SCALE | SHEET 1 OF 1



8 ASSY 404106

(7.) Q10 & Q14, R59 & R62 ARE LOG TRANSISTOR KIT 403865

(6.) Q6 & Q7 ARE MATCHED PAIR 200112

(5.) R1, R5, R7, R9 & R57 ARE RESISTOR SET 010721

4 TRANSISTORS ARE 200200

3. DIODES ARE 018

2. CAPACITORS ARE IN pF

1. RESISTORS ARE IN OHMS, ±5%, 1/4W

NOTES UNLESS OTHERWISE SPECIFIED

SECTION 7 PARTS LIST

7.1 This section contains lists of replaceable parts arranged in the order of the following subassemblies:

Chassis (404136, 404200) 7-3
Motherboard (401659) 7-4
Display (401651) 7-13
AC Converter (404107) 7-15
RMS Converter (404106) 7-18

7.2 Manufacturers are identified by FSC numbers listed in Table 7.1, "List of Suppliers". The code numbers are from the Federal Supply Code for Manufacturers Cataloging Handbooks H4-1, H4-2, and their supplements.

Table 7.1 - List of Suppliers

FSC	NAME
00779	AMP, INC. HARRISBURG, PENNSYLVANIA
01121	ALLEN BRADLEY CO. MILWAUKEE, WISCONSIN
01281	TRW SEMICONDUCTORS LAWNDALE, CALIFORNIA
01295	TEXAS INSTRUMENTS, INC. DALLAS, TEXAS
02114	FERROXCUBE CORP. SAUGERTIES, NEW YORK
02660	AMPHENOL CORP. BROADVIEW, ILLINOIS
02735	RCA SOLID STATE DIV. SOMERVILLE, NEW JERSEY
03888	PYROFILM CORP. WHIPPANY, NEW JERSEY
04222	AEROVOX CORP. (HI-Q DIV.) MYRTLE BEACH, SOUTH CAROLINA
04713	MOTOROLA, INC. (SEMI-CONDUCTOR PRODUCTS DIV.) PHOENIX, ARIZONA
05276	POMONA ELECTRONICS CO., INC. POMONA, CALIFORNIA
05397	UNION CARBIDE CORP. (MATERIALS SYSTEMS DIV.) CLEVELAND, OHIO
06665	PRECISION MONOLITHICS SANTA CLARA, CALIFORNIA
07263	FAIRCHILD (SEMICONDUCTOR DIV.) MOUNTAIN VIEW, CALIFORNIA
08257	NPC ELECTRONICS CANOGA PARK, CALIFORNIA
09023	CORNELL-DUBILIER ELECTRONICS SANFORD, NORTH CAROLINA
11236	CTS OF BERNE, INC. BERNE, INDIANA

FSC	NAME
11237	CTS KEENE, INC. PASO ROBLES, CALIFORNIA
14298	AMERICAN COMPONENTS, INC. CONSHOHOCKEN, PENNSYLVANIA
15636	ELEC-TROL, INC. SAUGUS, CALIFORNIA
18612	VISHAY RESISTOR PRODUCTS MALVERN, PENNSYLVANIA
21317	ELECTRONIC APPLICATIONS CO. SO. EL MONTE, CALIFORNIA
21551	C-F ELECTRONICS, INC. VAN NUYS, CALIFORNIA
21793	RACAL-DANA INSTRUMENTS INC. IRVINE, CALIFORNIA
22045	JORDAN ELECTRIC COMPANY VAN NUYS, CALIFORNIA
24355	ANALOG DEVICES NORWOOD, MASSACHUSETTS
26625	MIAL USA, INC. NUTLEY, NEW JERSEY
26806	AMERICAN ZETTLER, INC. COSTA MESA, CALIFORNIA
27014	NATIONAL SEMI-CONDUCTOR CORP. SANTA CLARA, CALIFORNIA
27264	MOLEX PRODUCTS CO. DOWNERS GROVE, ILLINOIS
27556	IMB ELECTRONIC PRODUCTS, INC. SANTA FE SPRINGS, CALIFORNIA
27777	VARO ELECTRAN DEVICES, INC. GARLAND, TEXAS
32293	INTERSIL, INC. CUPERTINO, CALIFORNIA
34553	AMPEREX/MEPCO-ELECTRA (COMPONENT DIV.) HAUPPAUGE, NEW YORK

Table 7.1 - List of Suppliers continued

FSC	NAME
50434	HEWLETT-PACKARD CO. (HPA DIV.) PALO ALTO, CALIFORNIA
50579	LITRONIX, INC. CUPERTINO, CALIFORNIA
50857	DIONICS, INC. WESTBURY, NEW YORK
52763	STETTNER-TRUSH CAZENOVIA, NEW YORK
56289	SPRAGUE ELECTRIC CO. N. ADAMS, MASSACHUSETTS
71471	AEROVOX CORP. (CINEMA PLANT) MONCKS CORNER, SOUTH CAROLINA
71590	CENTRALAB ELECTRONICS MILWAUKEE, WISCONSIN
71707	COTO-COIL CO., INC. PROVIDENCE, RHODE ISLAND
71785	TRW ELECTRONIC COMPONENTS (CINCH DIV.) ELK GROVE VILLAGE, ILLINOIS
72136	ELECTRO-MOTIVE MANUFACTURING CO.,INC. WILLIAMANTIC, CONNECTICUT
72982	ERIE TECHNOLOGICAL PRODUCTS, INC. ERIE, PENNSYLVANIA
73138	BECKMAN INSTRUMENTS, INC. FULLERTON, CALIFORNIA
73445	AMPEREX ELECTRONIC CORP. HICKSVILLE, L.I., NEW YORK
74970	E. F. JOHNSON CO. WASECA, MINNESOTA
75915	LITTELFUSE, INC. DES PLAINES, ILLINOIS
79727	C–W INDUSTRIES WARMINSTER, PENNSYLVANIA
80131	ELECTRONICS INDUSTRIES ASSOC. WASHINGTON, D.C.
81349	MILITARY SPECIFICATION
82389	SWITCHCRAFT, INC. CHICAGO, ILLINOIS
90201	MALLORY CAPACITOR CO. INDIANAPOLIS, INDIANA
91637	DALE ELECTRONICS, INC. COLUMBUS, NEBRASKA

404136 404200 – CHASSIS ASSEMBLY (Includes Front Panel & Rear Panel)

REF DES	RACAL-DANA P/N	DESCRIPTION	FSC	MANU P/N
F201	920204	FUSE SLO .50 A (100V, 120V Operation)	75915	3AG1/2ASB
	920802	FUSE SLO .25 A (220V, 240V Operation)	75915	213.250
J101	600980	POST BINDING, BANANA JACK, BLACK	05276	2854-0
J102	600980	POST BINDING, BANANA JACK, BLACK	05276	2854-0
J103	600980	POST BINDING, BANANA JACK, BLACK	05276	2854-0
J104	600989	POST BINDING, BANANA JACK, WHITE	05276	2854-9
J105	600989	POST BINDING, BANANA JACK, WHITE	05276	2854-9
J201	600957	RECEPT 24 POS	00779	552791-1
J202	600808	CONN BNC	02660	31-010
J203	600980	POST BINDING, BANANA JACK, BLACK	05276	2854-0
J204	600980	POST BINDING, BANANA JACK, BLACK	05276	2854-0
J205	600980	POST BINDING, BANANA JACK, BLACK	05276	2854-0
J206	600989	POST BINDING, BANANA JACK, WHITE	05276	2854-9
J207	600989	POST BINDING, BANANA JACK, WHITE	05276	2854-9
J208	600808	CONN BNC	02660	31-010
J209	600619	CONN RECPTLE	82389	EAC-301
J210	600980	POST BINDING, BANANA JACK, BLACK	05276	2854-0
J211	600989	POST BINDING, BANANA JACK, WHITE	05276	2854-9
S101	600910	SWITCH, MINIATURE		GF-323-440/GF20-30/ G02-150
S201	600814	SWITCH 6 SPST	11237	206-6

401659 – Assy., PCB, MOTHERBOARD

REF DES	RACAL-DANA P/N	DESCRIPTION					FSC	MANU P/N
AR1	230411	IC	OP AMP		LM201A-H		27014	LM201A-H
AR2	230411	IC	OP AMP		LM201A-H		27014	LM201A-H
AR3	230543	IC	LINEAR				24355	542
AR5	230543	IC	LINEAR				24355	542
AR6	230103	IC					27014	LM308
AR7	230415	IC	HI VOLTAGE OP AMP				27014	LM343H
AR8	230331	IC					27014	LF355H
AR9	230470	IC	OP AMP		AD517KH		24355	AD517KH
BT1	920847	BATTERY 3 VOLT		LITHIUM ORGANIC			90201	L032S
C1	120034	CAP	POLY	100 PFD	630 V	5%	08257	KSO Series
C3	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C4	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C5	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C6	100043	CAP	CERAM	.003 PFD	1000 V	10%	71590	DD302
C7	101174	CAP	CERAM	.001 MFD	500 V	10%	04222	SCD-DI-2X5F-1000
C10	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C11	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C14	101145	CAP	CERAM	100 PFD	500 V	10%	04222	TCD-DI-1N5600-100
C15	100099	CAP	CERAM	30 PFD	1000 V	5%	56289	C030B102F300J
C16	121473	CAP	MYLAR	.0015 MFD	100 V	10%	09023	WMF1S47
C17	100012	CAP	CERAM	33 PFD	500 V	10%	71471	TCD-DI-1(N750)
C18	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C19	100012	CAP	CERAM	33 PFD	500 V	10%	71471	TCD-DI-1(N750)
C20	110126	CAP	TANTA	6.8 MFD	35 V	20%	05397	T368B685M035AS
C21	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C22	101174	CAP	CERAM	.001 MFD	500 V	10%	04222	SCD-DI-2X5F-1000
C24	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C26	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C27	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C29	120352	CAP	MYLAR	.12 μF	100 V	10%	09023	WMF1P12
C30	120026	CAP	MYLAR	.47 MFD	100 V	10%	27556	SAZB474K
C31	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C38	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C39	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C45	120351	CAP	POLY	.15 μF	50 V	10%	09023	MCR1P15
C46	100040	CAP	CERAM	200 PFD	1000 V	20%	56289	C023B102E201M
C47	101182	CAP	CERAM	47 PFD	500 V	10%	71471	TCD-DI-2(N750)

401659 – Assy., PCB, MOTHERBOARD continued

REF DES	RACAL-DANA P/N	DESCRIPTION					FSC	MANU P/N
C49	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C50	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C52	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C53	120004	CAP	POLY	.001 MFD	500 V	5%	08257	KSO Series
C54	110126	CAP	TANTA	6.8 MFD	35 V	20%	05397	T368B685M035AS
C55	120351	CAP	POLY	.15 μF	50 V	10%	09023	MCR1P15
C56	100012	CAP	CERAM	33 PFD	500 V	10%	71471	TCD-DI-I(N750)
C58	120351	CAP	POLY	.15 μF	50 V	10%	09023	MCR1P15
C59	110126	CAP	TANTA	6.8 MFD	35 V	20%	05397	T368B685M035AS
C60	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C61	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C62	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C63	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C64	100043	CAP	CERAM	.003 PFD	1000 V	10%	71590	DD302
C65	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C66	110197	CAP	ELECT	10,000 μF	16 V			VP16VB10000MC
C67	100027	CAP	CERAM	.1 MFD	100 V	20%	72982	845-000-X5V01042
C68	100027	CAP	CERAM	.1 MFD	100 V	20%	72982	845-000-X5V01042
C69	101174	CAP	CERAM	.001 MFD	500 V	10%	04222	SCD-DI-2X5F-1000
C70	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C71	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C72	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C73	100016	CAP	CERAM	27 PFD	1000 V	10%	71590	DD270
C74	100043	CAP	CERAM	.003 PFD	1000 V	10%	71590	DD302
C75	110126	CAP	TANTA	6.8 MFD	35 V	20%	05397	T368B685M035AS
C76	100016	CAP	CERAM	27 PFD	1000 V	10%	71590	DD270
C77	110192	CAP	ELECT	1000 MFD	35 V			35TAL1000
C79	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C80	110192	CAP	ELECT	1000 MFD	35 V			35TAL1000
C81	100024	CAP	CERAM	.1 MFD	25 V		72982	5815-000Y5U104Z
C82	110185	CAP	ELECT	4700 MFD	16 V			16TAL4700
C84	110194	CAP	ELECT	470 MFD	50 V	Radial Lead		See Description
C85	110194	CAP	ELECT	470 MFD	50 V	Radial Lead		See Description
C88	110126	CAP	TANTA	6.8 MFD	35 V	20%	05397	T368B685M035AS
C89	110126	CAP	TANTA	6.8 MFD	35 V	20%	05397	T368B685M035AS
C90	110158	CAP	TANTA	10 MFD	50 V	10%	05397	T362C106K050A
C95	110126	CAP	TANTA	6.8 MFD	35 V	20%	05397	T368B685M035AS
C96	110126	CAP	TANTA	6.8 MFD	35 V	20%	05397	T368B685M035AS
C97	110158	CAP	TANTA	10 MFD	50 V	10%	05397	T362C106K050A
C98	110126	CAP	TANTA	6.8 MFD	35 V	20%	05397	T368B685M035AS
C99	100111	CAP	CERAM	.01 MFD	2000 V		71471	HVD6-2KV

401659 – Assy., PCB, MOTHERBOARD continued

REF DES	RACAL-DANA P/N	DESCRIPTION					FSC	MANU P/N
C100	100111	CAP	CERAM	.01 MFD	2000 V		71471	HVD6-2KV
C101	110125	CAP	TANTA	2.2 MFD	35 V	20%	05397	T368B225M035AS
C102	110125	CAP	TANTA	2.2 MFD	35 V	20%	05397	T368B225M035AS
C103	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C106	100017	CAP	CERAM	.01 MFD	100 V	20%	56289	C023B101F103M
C107	101174	CAP	CERAM	.001 MFD	500 V	10%	04222	SCD-DI-2X5F-1000
C108	110183	CAP	ELECT	200 MFD	16 V		34533	ET221X106A6
CR1	210004	DIODE	SILICO				81349	1N4004
CR2	210004	DIODE	SILICO				81349	1N4004
CR5	211083	DIODE	SILICO		1N916B		81349	1N916B
CR6	211083	DIODE	SILICO		1N916B		81349	1N916B
CR9	211083	DIODE	SILICO		1N916B		81349	1N916B
CR10	211083	DIODE	SILICO		1N916B		81349	1N916B
CR11	211083	DIODE	SILICO		1N916B		81349	1N916B
CR12	211083	DIODE	SILICO		1N916B		81349	1N916B
CR13	211083	DIODE	SILICO		1N916B		81349	1N916B
CR14	210070	DIODE	POWER	3 AMP			04713	MR501
CR15	210070	DIODE	POWER	3 AMP			04713	MR501
CR16	230465	IC	DIODE BRIDGE		VM48		27777	VM48
CR17	211083	DIODE	SILICO		1N916B		81349	1N916B
CR18	210004	DIODE	SILICO				81349	1N4004
CR19	210004	DIODE	SILICO				81349	1N4004
CR20	230465	IC	DIODE BRIDGE		VM48		27777	VM48
CR21	210015	DIODE					50434	HP5082-2800
CR22	211083	DIODE	SILICO		1N916B		81349	1N916B
CR23	211083	DIODE	SILICO		1N916B		81349	1N916B
CR24	211083	DIODE	SILICO		1N916B		81349	1N916B
CR25	211083	DIODE	SILICO		1N916B		81349	1N916B
CR26	210004	DIODE	SILICO				81349	1N4004
J1	600689	CONN	3 P				00779	4-583486-8
J2	600690	CONN	7 P				00779	4-583486-4
J4	600821	CONN	6 P				27264	09-03-1062
J201	600957	RECEPT		24 POS			00779	552791-1
K1	310146	RELAY	CRADLE	4 FORM C			26806	AZ421-08-204
K2	310145	RELAY	REED	1 FORM A			71707	CR-4573
K3	310145	RELAY	REED	1 FORM A			71707	CR-4573
K4	310145	RELAY	REED	1 FORM A			71707	CR-4573
K5	310145	RELAY	REED	1 FORM A			71707	CR-4573
K6	310145	RELAY	REED	1 FORM A			71707	CR-4573
K7	310145	RELAY	REED	1 FORM A			71707	CR-4573

401659 – Assy., PCB, MOTHERBOARD continued

REF DES	RACAL-DANA P/N	DESCRIPTION	FSC	MANU P/N
K8	310145	RELAY REED 1 FORM A	71707	CR-4573
K9	310147	RELAY CRADLE 2 FORM C	26806	AZ420-08-205
K10	310144	RELAY REED 1 FORM A	21317	1A12R960DIAA
K11	310147	RELAY CRADLE 2 FORM C	26806	AZ420-08-205
K12	310147	RELAY CRADLE 2 FORM C	26806	AZ420-08-205
K13	310146	RELAY CRADLE 4 FORM C	26806	AZ421-08-204
OCI1	230456	IC QUAD OPTO-ISOLATOR	50579	ISO-L1TQ74
OCI2	230456	IC QUAD OPTO-ISOLATOR	50579	ISO-L1TQ74
OCI3	230456	IC QUAD OPTO-ISOLATOR	50579	ISO-L1TQ74
P4	410727	PCB ASSY LINE VOLTAGE SELECTOR	21793	410727
Q1	200247	TRANS FET DUAL	21793	200247
Q2	200200	TRANS NPN	21793	200200
Q3	200200	TRANS NPN	21793	200200
Q4	200200	TRANS NPN	21793	200200
Q5	200200	TRANS NPN	21793	200200
Q6	200068	TRANS PNP	80131	2N4250
Q7	200200	TRANS NPN	21793	200200
Q8	200267	TRANS NPN 400 V	50857	DTN9000
Q9	200230	TRANS FET N-CHAN, SIL JUNCTION		E305
Q10	200281	TRANS FET P-CHANNEL FALLOUT 2N5463	04713	2N5463
Q11	200200	TRANS NPN	21793	200200
Q12	200245	TRANS PNP HIGH VOLTAGE	04713	MPS-A92
Q13	200068	TRANS PNP	80131	2N4250
Q15	200280	TRANS FET P-CHANNEL GRADED 2N5463	04713	2N5463
Q16	200280	TRANS FET P-CHANNEL GRADED 2N5463	04713	2N5463
Q17	200280	TRANS FET P-CHANNEL GRADED 2N5463	04713	2N5463
Q18	200200	TRANS NPN	21793	200200
Q19	200200	TRANS NPN	21793	200200
Q20	200233	TRANS SILICO NPN	04713	MPS-A42
Q21	200265	TRANS FET 2N5951	01295	2N5951
Q22	200200	TRANS NPN	21793	200200
Q23	200139	TRANS POWER	01295	TIP30
R2	012081	RES METAL FILM 47.5 K 1% 1/8W	81349	RN55C4752F
R3	010838	RES CARBON 100 K 2% 1W	91637	SBF100K2%
R4	000221	RES CARBON 220 OHM 5% 1/4W	81349	RC07GF221J
R5	000305	RES CARBON 3 M 5% 1/4W	81349	RC07GF305J

401659 – Assy., PCB, MOTHERBOARD continued

REF DES	RACAL-DANA P/N	DESCRIPTION	FSC	MANU P/N
R6	012095	RES, METAL FILM 37.4 K MATCHED PR .1% 1/10W	14298	UAR-1/10 C-6
R7	012095	RES, METAL FILM 37.4 K MATCHED PR .1% 1/10W	14298	UAR-1/10 C-6
R8	010829	RES METAL 4.99 K 1% 1/10W	81349	RN55C4991F
R9	012064	RES SET 100K/117 K MF 0.1%	03888	A3DR24
R10	000223	RES CARBON 22 K 5% 1/4W	81349	RC07GF223J
R11	000223	RES CARBON 22 K 5% 1/4W	81349	RC07GF223J
R13	000241	RES CARBON 240 OHM 5% 1/4W	81349	RC07GF241J
R14	000103	RES CARBON 10 K 5% 1/4W	81349	RC07GF103J
R15	000391	RES CARBON 390 OHM 5% 1/4W	81349	RC07GF391J
R16	000223	RES CARBON 22 K 5% 1/4W	81349	RC07GF223J
R17	000205	RES CARBON 2 M 5% 1/4W	81349	RC07GF205J
R18	000223	RES CARBON 22 K 5% 1/4W	81349	RC07GF223J
R19	000221	RES CARBON 220 OHM 5% 1/4W	81349	RC07GF221J
R20	010679	RES METAL 75 K 1% 1/10W	81349	RN55C7502F
R21	000223	RES CARBON 22 K 5% 1/4W	81349	RC07GF223J
R22	012064	RES SET 100K/117 K MF 0.1%	03888	A3DR24
R23	000223	RES CARBON 22 K 5% 1/4W	81349	RC07GF223J
R24	000104	RES CARBON 100 K 5% 1/4W	81349	RC07GF104J
R25	012093	RES, METAL FILM 90 K 1% 1 W	14298	PME70T-B
R26	001816	RES CARBON 47 K 5% 2W	01121	See Description
R27	012092	RES, METAL FILM 900 K 1% 1/4 W	14298	UAR-1/4 C-6
R28	012090	RES, METAL FILM 9 K 1% 1/10W	14298	UAR-1/10 C-6
R29	012088	RES, METAL FILM 1 K OHM 1% 1/10W	14298	UAR-1/10 C6
R30	000153	RES CARBON 15 K 5% 1/4W	81349	RC07GF153J
R31	012089	RES, METAL FILM 6.98 K 1% 1/10W	14298	UAR-1/10 C6
R32	000104	RES CARBON 100 K 5% 1/4W	81349	RC07GF104J
R33	012094	RES, METAL FILM 9 M 1% 1 W	03888	PME70T-B
R34	010723	RES METAL 4.42 K 1% 1/10W	81349	RN55C4421F
R35	012091	RES, METAL FILM 787 OHM 1% 1/4 W	14298	UAR-1/10 C-6
R37	000123	RES CARBON 12 K 5% 1/4W	81349	RC07GF123J
R38	000362	RES CARBON 3.6 K 5% 1/4W	81349	RC07GF362J
R39	000184	RES CARBON 180 K 5% 1/4W	81349	RC07GF184J
R40	000753	RES CARBON 75 K 5% 1/4W	81349	RC07GF753J
R41	010704	RES METAL 1 K 1% 1/10W	81349	RN55D1001F
R42	001783	RES CARBON 390 OHM 5% 1/2W	81349	RC20GF391J
R43	001783	RES CARBON 390 OHM 5% 1/2W	81349	RC20GF391J
R44	010536	RES METAL 100 K 1% 1/10W	81349	RN55C1003F
R45	010621	RES METAL 49.9 K 1% 1/10W	81349	RN55C4992F
R46	012065	RES SET 9.9M/100 K 0.1%	03888	A3DR25
R47	000102	RES CARBON 1 K 5% 1/4W	81349	RC07GF102J
R48	030015	RES WW 100 K 1% 10W	21551	M-100
R49	000181	RES CARBON 180 OHM 5% 1/4W	81349	RC07GF181J