

FIELD MAINTENANCE PRINT SET

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M9312
M9312-YA

Digital Equipment Corporation

digital

M9312 FIELD MAINTENANCE
PRINT SET

NUMBER
M9312-0-2

REV.
A

DIST.

M9312

FIELD SERV.

DATE

23 JUN 78

DATE

DATE

DATE

SHEET I OF 1

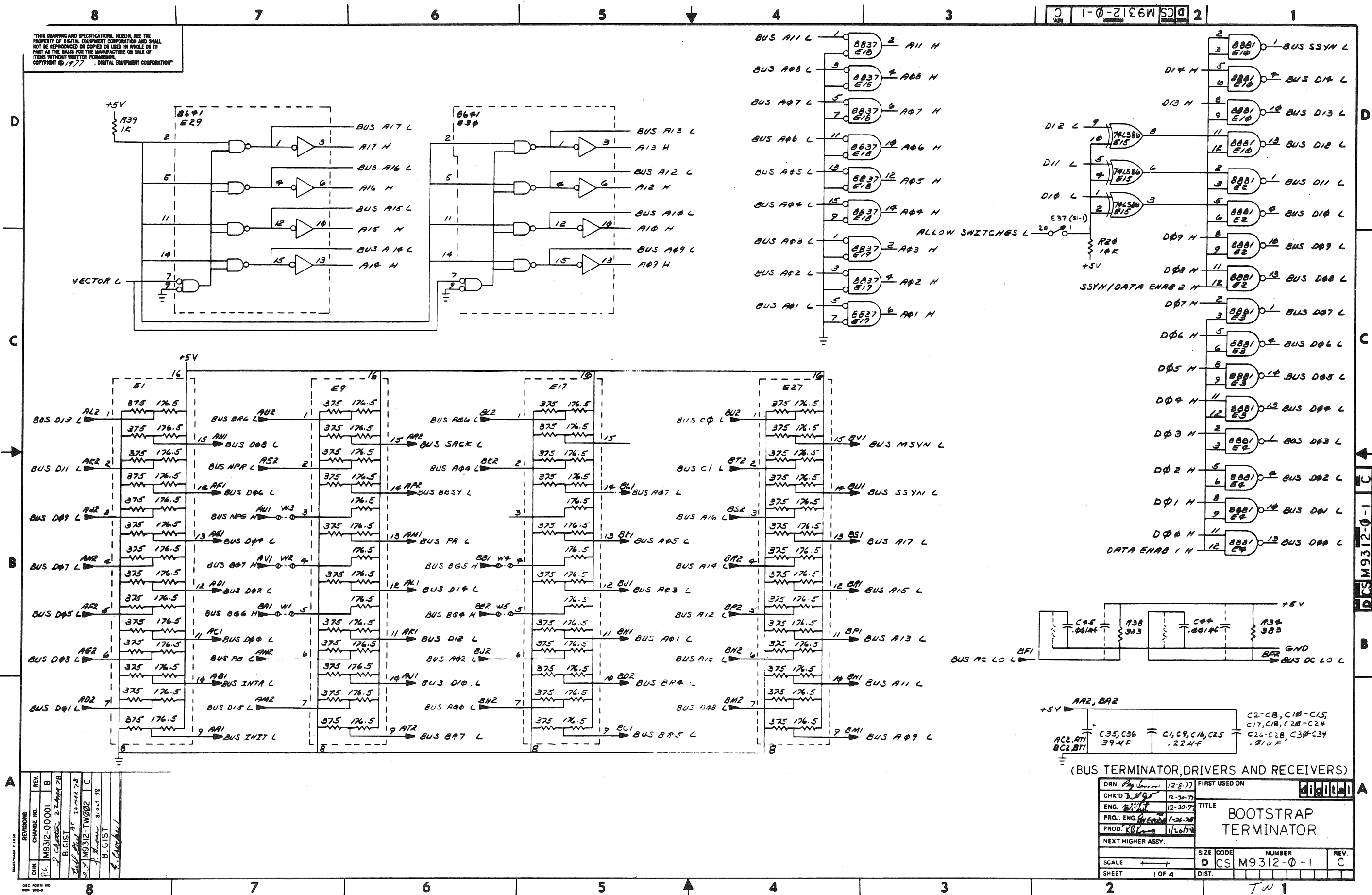
REVISIONS

EN-01124-18-N675-(327

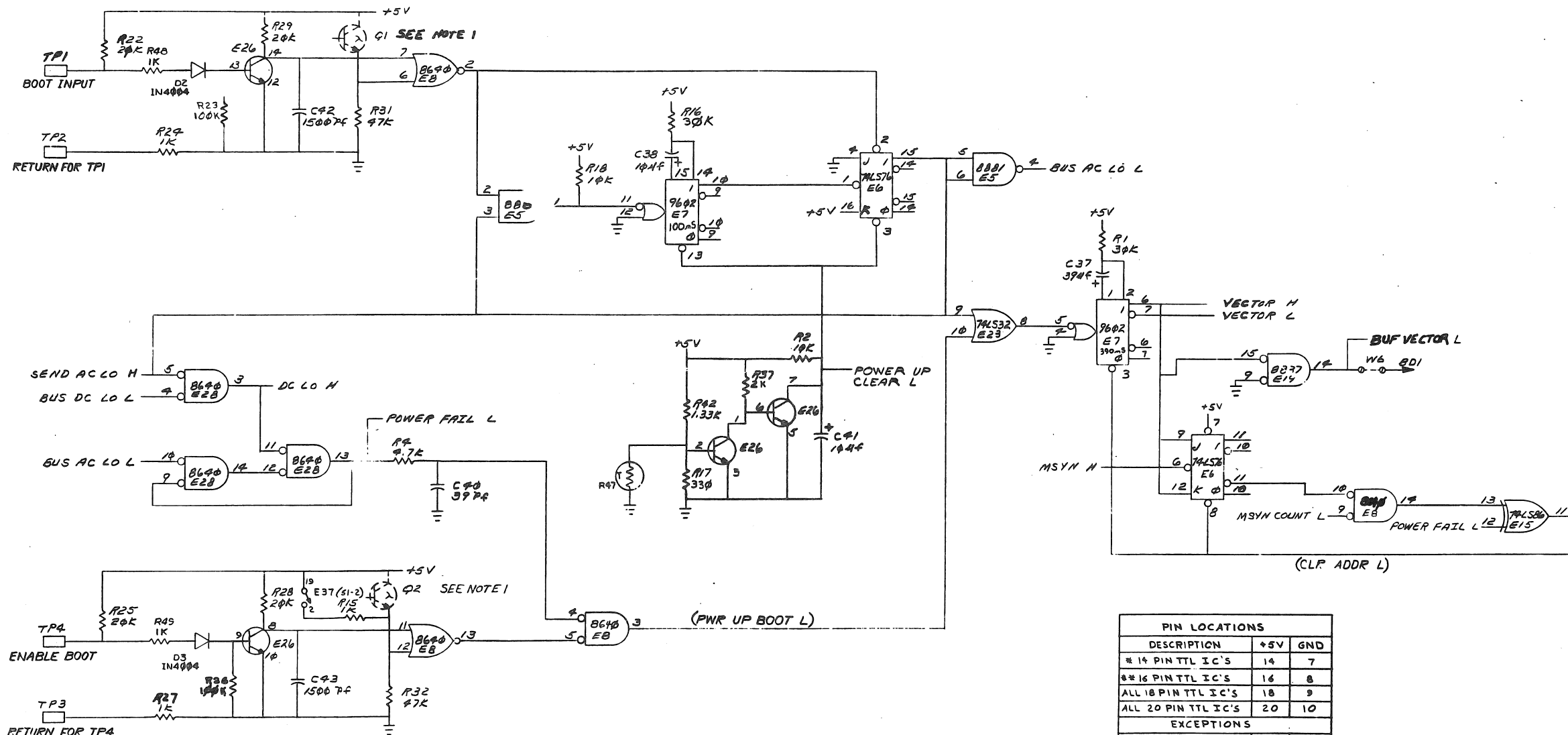
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NOTES: 1. PHOTO TRANSISTORS Q1 AND Q2
DO NOT APPEAR ON THE PARTS LIST.
THEY ARE INTENDED FOR FUTURE
APPLICATIONS.

PIN LOCATIONS		
DESCRIPTION	+5V	GND
* 14 PIN TTL IC'S	14	7
** 16 PIN TTL IC'S	16	8
ALL 18 PIN TTL IC'S	18	9
ALL 20 PIN TTL IC'S	20	10
EXCEPTIONS		
* E8, E28 (DEC 8690)	8	1
** E6 (74LS76)	5	13

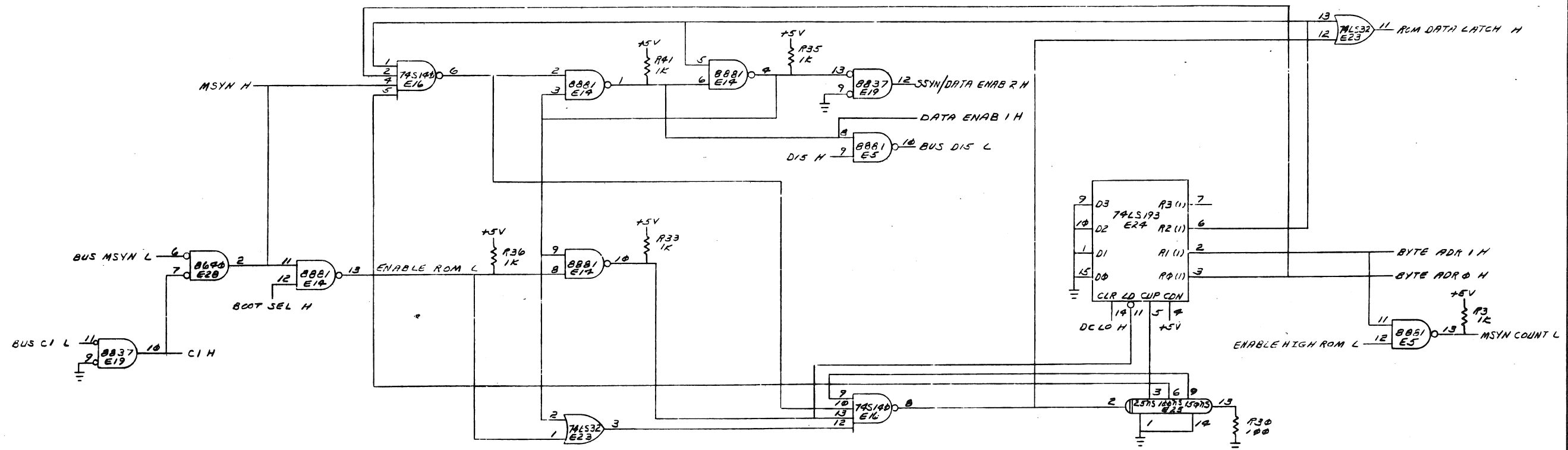
(SWITCH FILTERS AND AC LO GENERATION)

TITLE	SIZE/CODE	NUMBER	REV.
BOOTSTRAP TERMINATOR	D	CS M9312-0-1	C
SCALE	SHEET	2 OF 4	

REV.

T. 1

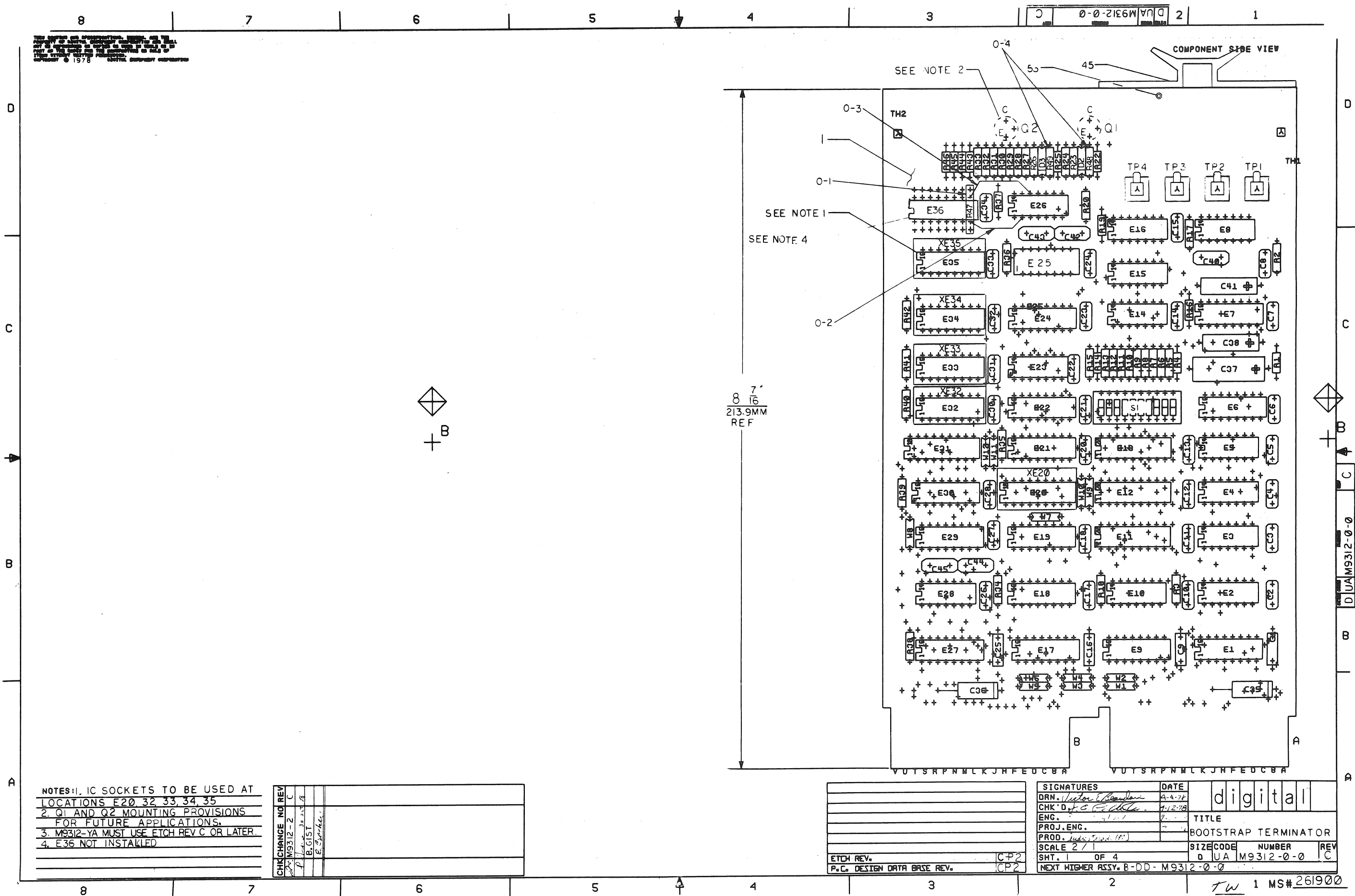
TW 1



REVISIONS		
CHK	CHANGE NO.	REV.

(TIMING AND CONTROL)

TITLE		SIZE CODE		NUMBER		REV.	
BOOTSTRAP TERMINATOR		D CSI		M9312-0-1		C	
SCALE		SHEET 4 OF 4		DIST.			



NOTES: 1. IC SOCKETS TO BE USED AT LOCATIONS E20, 32, 33, 34, 35

2. Q1 AND Q2 MOUNTING PROVISIONS FOR FUTURE APPLICATIONS.

3. M9312-YA MUST USE ETCH REV C OR LATER.

4. E36 NOT INSTALLED

CHK	CHANGE NO	REV
12	M9312-2	C
13	12-30-17	A
14	B, GIST	
15	E, 2nd-4th	
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		SIGNATURES		DATE		digital	
		DRN. Victor E. Bandman		4-4-78			
		CHK'D. J. C. [Signature]		4-12-78			
		ENG. [Signature]		4-12-78			
		PROJ. ENG. [Signature]		4-12-78			
		PROD. Ludwig [Signature]		4-12-78			
		SCALE 2 / 1		SIZE CODE		NUMBER	
ETCH REV.		C P 2		0 UA		M9312-0-0	
P.C. DESIGN DATA BASE REV.		C P 2		NEXT HIGHER ASSY. 8-DD-M9312-0-0		REV. C	

TW 1 MS# 261900

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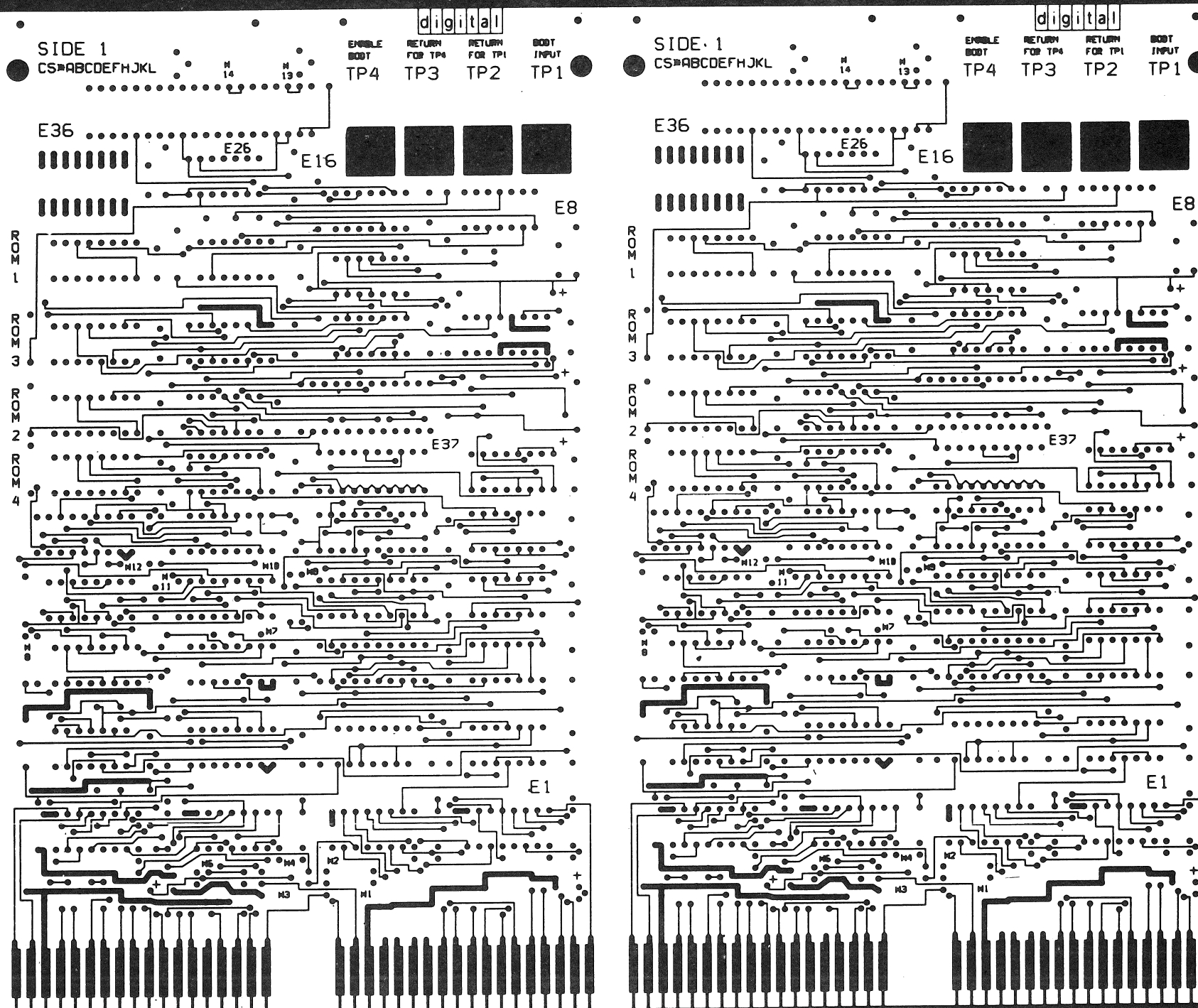
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M9312 5013263 C-P2 L1

M9312 5013263 C-P2 L1

LAYER 1



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE
BOOTSTRAP TERMINATORSIZE CODE
DUANUMBER
M9312-0-0REV.
C

SCALE

++

SHEET 2 OF 4

DIST.

MAYPAGE 1-11

DEC FORM NO
000 137

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TW 1

REV. C
NUMBER M9312-0-0
DUA

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L4

83411J

L4

5013263 C-P2

5013263 C-P2

● BOOTSTRAP TERMINATOR

M9312

SIDE 2

● BOOTSTRAP TERMINATOR

M9312

SIDE 2

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
BOOTSTRAP TERMINATOR		D UA	M9312-0-0	C
SCALE	++	SHEET	3 OF 4	DIST.

TW1

LINE ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
1	1	1000010-00	39.0 MMF 100V 5%200PPM DM15S (10-00	1	C40
2	2	1000043-00	1000.0 MMF 250V 20% Y5F DISC	2	C44,C45
3	3	1000054-00	1500.0 MMF 250V 10% Z5P DISC	2	C42,C43
4	4	1000076-00	39 MFD 10V 10% 150D S.TA (10-00	2	C35,C36
5	5	1001610-01	.01 MFD 100V OR 50V Z5U DISC/800PF MIN	28	C2-C8,C10-C15,C17,C18,C20-C24,
				CONT	C26-C28,C30-C34
6	6	1004813-00	10 MFD 20V 10% 150D S.TA (10-00	2	C38,C41
7	7	1005335-00	39 MFD 20V 10% 150D S.TA (10-00	1	C37
8	8	1010274-01	.22 MFD 50V X% 3C023 CER.	4	C1,C9,C16,C25
9	9	1100113-00	D 662 OS 600PCR(STABISTOR)	2	D2,D3
10	10	1211164-06	SW,DIF 1P 1A 10POS	1	S1
11	11	1215006-02	SOCKET 16PIN IC LOW PROFILE	4	E32-E35
12	12	1215006-03	SOCKET 18PIN IC LOW PROFILE	1	E20
13	13	1300229-00	100 1/4W 5% CC (13-00	1	R30
14	14	1300365-00	1 K 1/4W 5% CC (13-00	11	R3,R15,R23,R24,R26,R27,R33,
				CONT	R35,R36,R39,R41
15	15	1300447-00	4.7 K 1/4W 5% CC (13-00	1	R4
16	16	1300479-00	10 K 1/4W 5% CC (13-00	15	R5-R14,R18-R20,R40,R2
17	17	1302177-00	47 K 1/4W 5% CC (13-00	2	R31,R32
18	18	1302391-00	20 K 1/4W 5% CC (13-00	5	R22,R25,R28,R29,R37
19	19	1302394-00	30 K 1/4W 5% CC (13-00	2	R1,R16
20	20	1302873-00	261 1/4W 1% RN55D-F 100PPM (13-00	1	R17
21	21	1305125-00	383 1/4W 1% RN55D-F 100PPM (13-00	2	R34,R38
22	22	1310630-00	1.33 K 1/4W 1% RN55D-F 100PPM (13-00	1	R42
23	23	1312628-00	R NETWORK 14-176.5 14-375	2	E1,E27
24	24	1312628-01	R NETWORK 14-176.5 11-375	2	E9,E17
25	25	1513265-00	3725 QUAD CORE DRIVER	1	E26
26	26	1611243-00	DELAY=25-250NS,10TAPS RCL#L-183 E PE#9829	1	E25
27	27	1909705-00	DEC 8881-INAND GATE-QUAD 2IN,OPN COLL.	6	E2,E3,E4,E5,E10,E14
28	28	1910546-00	74S140 NAND GATE-DUAL 4INPUT,BUFFER	1	E16

REVISION HISTORY			VARIATIONS FOR THIS ASSY.		FIRST USED ON: M9312-00		DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
CHK	ECO NO	REV							
---	INIT	A	00		MADE BY: D SIREEN		DATE: 02-DEC-77		TITLE
PG	00001	B							PARTS LIST
					CHECKED: F SMART		DATE: 02-DEC-77		BOOTSTRAP TERMINATOR
					DSN.ENG.: BILL GIST		DATE: 29-DEC-77		
					PROD.: BOB KING		DATE: 30-DEC-77		SIZE CODE DOCUMENT NUMBER REV
					RESP.ENG.: RAY GRUDA		DATE: 29-DEC-77		K FL M9312-0-0 B
							ASSY.NO.: D-UA-M9312-0-0		EDIT# 8
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LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
29	29		1910951-00	9602 ONE SHOT-DUAL	1	E7
30	30		1911116-00	DEC 8837 RECEIVER,BUS,HEX,UNIBUS	2	E18,E19
31	31		1911469-00	DEC 8640 RECEIVER,BUS,QUAD,UNIBUS,Q-BU	2	E8,E28
32	32		1911579-00	8641 TRANSCEIVER,BUS,QUAD,UNIBUS	2	E29,E30
33	33		1912816-00	LS32 OR GATE-QUAD 2IN,POSITIVE	1	E23
34	34		1912825-00	LS76 FF-JK DUAL W/PRESET & CLEAR	1	E6
35	35		1912829-00	LS86 X-OR GATE-QUAD 2IN	1	E15
36	36		1912846-00	LS155 DECODER,2 OF 4(DUAL) & DEMUX	1	E22
37	37		1912854-00	LS193 COUNTER,SYNCHR,4BIT,UP/DN,BINA	1	E24
38	38		1913777-00	LS240 DRIVER,LINE,OCTAL,TRI-ST	1	E13
39	39		1914214-00	LS374 FF-D OCTAL EDGE TRIGGER	2	E11,E12
40	40		23217F1-00	F1-01	1	E31
41	41		23690A9-00	A9-04	1	E21
42	42	D-MD-5013263-0-0	5013263-00	ETCH BOARD FOR M9312	1	
43	43		9006732-00	EYELET, ROLLED FLANGE, .121 OD X .219 LG	2	
44	44		9007112-00	TERM QUICK 1POS ADAPTER	4	TP1,TP2,TP3,TP4
45	45		9008337-06	HANDLE, FLIP CHIP, MAGENTA	1	
46	46		9009000-00	EYELET, ROLLED FLANGE, .121 OD X .156 LG	4	
47	47		9009157-00	ADHESIVE, PERMABOND #101	A/R	
48	48		9009185-00	JUMPER, WIRE, INSULATED, BLACK BAND	3	W7,W9,W10
49	49		9105740-55	WIRE(WRAP)30AWG UL1423 (91-00 A/R		

50 NOTE: I C SPARE LOCATIONS INCLUDE E36

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE PARTS LIST BOOTSTRAP TERMINATOR	SIZE K	CODE PL	DOCUMENT NUMBER M9312-0-0	REV B
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REVISION HISTORY			VARIATIONS FOR THIS ASSY.		FIRST USED ON: M9312		DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS				
CHK	ECO NO	REV					TITLE	SIZE	CODE	DOCUMENT NUMBER	REV
					MADE BY: R CRAMM	DATE: 1 AUG 78	SETUP AND INSTALLATION PROCEDURE				
					CHECKED: N POLLITT	DATE: 17 AUG 78					
					DSN.ENG.: B GIST	DATE: 1 AUG 78					
					PROD.: D PETERSON	DATE: 17 AUG 78	K	SP		M9312-0-4	B
					RESP.ENG.: E CROCKER	DATE: 1 AUG 78	ASSY. #:				EDIT NO: 7
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SCOPE

THIS DOCUMENT OUTLINES THE FOLLOWING:

SECTION 1. JUMPER W1-W12 CONFIGURATION-----	PAGE 4
SECTION 2. ROM INSTALLATION(BOOT ROMS, AND DIAGNOSTIC ROMS)--	PAGE 7
SECTION 3. CONNECTING FAST-ON TABS TP1-TP4.-----	PAGE 9
SECTION 4. ROM CROSS-REFERENCE TABLE-----	PAGE 11
SECTION 5. ROM IDENTIFICATION TABLE-----	PAGE 14
SECTION 6. S1 SWITCH SETTING FOR CPU DIAGNOSTIC ROM-----	PAGE 16
SECTION 7. S1 SWITCH SETTING FOR PERIPHERAL BOOT ROMS-----	PAGE 19
SECTION 8. S1 SWITCH SETTING FOR COMMUNICATION BOOT ROMS-----	PAGE 33

USEAGE

THE M9312 IS CURRENTLY USED 4 WAYS.

1. MUD MACHINE BEGINNING OF BUS TERMINATOR 11/04/34/34A
2. 11/70 BEGINNING OF BUS TERMINATOR
3. 11/60 BEGINNING OF BUS TERMINATOR
4. OTHER UNIBUS PDP 11'S BEGINNING OR END OF BUS TERMINATOR
(IF A UNIBUS REPEATER IS USED IN THE SYSTEM, THE M9312
MUST BE ON THE PROCESSOR SIDE OF THE REPEATER.)

SECTION 1.

JUMPER W1-W12 CONFIGURATION

M9312 SET UP AND INSTALLATION PROCEDURE (K-SP-M9312-0-4)

THE NORMAL JUMPER SETUP IS SHOWN BELOW

USEAGE	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
11/04/34/34A (MUD MACHINE) M9312 IN SLOT AB2,3,4 OF PROCESSOR BACKPLANE	OUT	OUT	OUT	OUT	OUT	OUT	IN	OUT	IN	IN	OUT	OUT
11/70 WITH M9312 IN SLOT EF1 OF PROCESSOR BACKPLANE (SEE NOTES 1,2,3)	IN	IN	IN	IN	IN	IN	IN	OUT	IN	IN	OUT	OUT
11/60 WITH M9312 IN THE LAST AB SLOT OF THE LAST MEMORY BACKPLANE(SEE NOTE 2,3)	OUT	OUT	OUT	OUT	OUT	OUT	IN	OUT	OUT	OUT	IN	IN
OTHER UNIBUS CPU'S WITH M9312 IN PLACE OF M930 (OR EQUIVALENT)	IN	IN	IN	IN	IN	OUT	IN	IN	IN	IN	OUT	OUT

NOTES :

- 1 FOR BOOT ON POWER UP THE 11/70 REQUIRES THE FOLLOWING.
 - 1.1. 7010329 BACKPLANE ECO 8 (WIRE LIST REV J OR LATER)
 - 1.2. M8130 ECO'S 1,2 AND 3 (CS REV C OR LATER)
M8130 JUMPERS SET AS FOLLOWS: W1-IN,W2-OUT,W3-IN,W4-OUT,W5-OUT,W6-OUT,W7-OUT,W8-IN,W9-OUT
 - 1.3. M8138 ECO 5 (CS REVS C1 OR E OR LATER)
 - 1.4. M9312 ECO 1 (CS REV B OR LATER)
2. TO BOOT ON POWER UP FROM THE MK11 MEMORY THE CABLE SHOULD BE CONNECTED TO TABS 3 AND 4 ALSO THE SWITCH S1-2 HAS TO BE OFF
3. IF A REMOTE INITIALIZER PANEL IS USED THE CABLES FROM THE PANEL TO THE M9312 CAN NOT HAVE ANY RESISTORS OR CAPS ON IT

EXPLANATION OF JUMPER FUNCTIONS

JUMPER	! FUNCTION PERFORMED
W1	! PULL UP FOR BUS BG6 H (WHEN IN)
W2	! PULL UP FOR BUS BG7 H (WHEN IN)
W3	! PULL UP FOR BUS NPG H (WHEN IN)
W4	! PULL UP FOR BUS BG5 H (WHEN IN)
W5	! PULL UP FOR BUS BG4 H (WHEN IN)
W6	! BUF VECTOR L (IN FOR 11/70)
W7	! RESERVED (ALWAYS IN)
W8	! LO ROM ENABLE (WHEN OUT)
W9,W10	! POWER UP BOOT TO 773024 (IN FOR ALL CPU'S EXCEPT 11/60)
W11,W12	! POWER UP BOOT TO 773224 (IN FOR 11/60 ONLY)

SECTION 2.

ROM INSTALLATION (BOOT ROM, AND DIAGNOSTIC ROMS)

ROM INSTALLATION

THERE ARE 5 SOCKETED LOCATIONS ON THE M9312. THESE ARE E20, E32, E33, E34, AND E35 (M9312 ETCH REV B AND C). THESE LOCATIONS EACH ACCEPT A ROM. ROMS USED WITH THE M9312 ARE SEPARATED INTO TWO CLASSIFICATIONS.

1. DIAGNOSTIC ROM (CPU SPECIFIC)

THIS ROM ALWAYS PLUGS INTO LOCATION "E20".
IT IS ONLY POSSIBLE TO INSTALL ONE OF THESE PER M9312.
THIS ROM CAN BE IDENTIFIED BY THE LAST 2 CHARACTERS OF THE PATTERN NUMBER THAT IS STAMPED ON THE ROM. THEY WILL ALWAYS BE "F1".

2. BOOTSTRAP ROMS

THESE ROMS ARE USED TO BOOT VARIOUS MEDIAS.
FOR M9312 ETCH REV B AND C, THEY ARE PLUGGED IN TO LOCATIONS E32, E33, E34, AND E35.
FROM THIS POINT ON IN THIS DOCUMENT E32, E33, E34, AND E35 WILL BE REFERRED TO AS ROM 4, ROM 2, ROM 3 AND ROM 1 RESPECTIVELY.
IT IS NOT REQUIRED THAT A PARTICULAR DEVICE BOOT GO INTO A PARTICULAR SOCKET BUT THE ORDER IN WHICH THE BOOT ROM SOCKETS ARE FILLED IS EXTREMELY IMPORTANT, AND FOR CONFIGURATION CONSISTENCY ROMS WILL BE INSTALLED IN ALPHABETIC ORDER BY THEIR FIRST TWO LETTER MNEMONIC. (SEE PAGE 12 AND 14) A TABLE IS PROVIDED BELOW WHICH OUTLINES THE ORDER IN WHICH THE ROMS SHOULD BE INSERTED.
NOTE THAT BOOT ROMS CAN BE DISTINGUISHED FROM DIAGNOSTIC ROMS BY THE LAST 2 CHARACTERS OF THE PATTERN NUMBER PRINTED ON THE ROM. THE BOOT ROMS ALWAYS END WITH "A9".

```

-----!
TABLE FOR ROM INSTALLATION ORDER!
-----!
ORDER OF!
INSTAL- !-----!
LATION ! LOC. ! (IC NUMBER) !
-----!-----!-----!
FIRST * ! ROM 1 ! (E35) !
-----!-----!-----!
SECOND ! ROM 2 ! (E33) !
-----!-----!-----!
THIRD ! ROM 3 ! (E34) !
-----!-----!-----!
FOURTH ! ROM 4 ! (E32) !
-----!

```

* ON 11/60, IF THERE IS ONLY ONE ROM, IT MUST BE INSTALLED IN ROM 2 SOCKET TO DO A POWER-UP BOOT.

SECTION 3

FAST-ON TAB CONNECTION

THE FAST-ON TABS ARE DEFINED IN THE TABLE BELOW.

FAST-ON ! FUNCTION PERFORMED	
TP1	! BOOT INPUT
TP2	! RETURN FOR BOOT INPUT
TP3	! RETURN FOR ENABLE BOOT ON POWER UP
TP4	! ENABLE BOOT ON POWER UP

IT WOULD BE IMPOSSIBLE TO LIST ALL THE DIFFERENT WAYS TO CONNECT THESE POINTS, FOR A SPECIFIC APPLICATION OF THE MODULE, SYSTEM DOCUMENTATION MUST BE CONSULTED.

ONE OF THE FREQUENT APPLICATIONS OF THE M9312 IS TO REPLACE THE M9301. A TABLE IS PROVIDED BELOW THAT OUTLINING HOW THIS SUBSTITUTION CAN BE MADE WITH RESPECT TO THE FAST-ON CONNECTIONS.

WIRE CONNECTION				
FROM		TO		
MODULE	FAST-ON	MODULE	FAST-ON	COLOR
M9301	TP1	M9312	TP4	BLK
M9301	TP2	M9312	TP1	RED
M9301	TP3	M9312	TP3	CLEAR

NOTES:

1. IF A REMOTE INITIALIZER PANEL IS USED THE CABLE FROM THE PANEL TO THE M9312 CAN NOT HAVE ANY RESISTORS OR CAPS ON IT
2. TO BOOT ON POWER UP FROM THE MK11 MEMORY THE CABLE SHOULD BE CONNECTED TO TABS 3 AND 4 ALSO THE SWITCH S1-2 HAS TO BE OFF

SECTION 4

ROM CROSS-REFERENCE TABLES

ROM CROSS-REFERENCE TABLES

CROSS REFERENCE ROM P/N TO ROM TABLE NUMBER					
PART NUMBER	FUNCTION PERFORMED BY ROM				SEE TABLE
23-					
616F1	DIAGNOSTIC FOR 11/60/70 ROM ID=B0				1-1
248F1	ASCII CONSOLE AND DIAGNOSTIC FOR 11/04/05/34/35/40/45/50/55 ROM ID=A0				1-2
***** THE FOLLOWING ROMS ARE BOOTSTRAP ROMS *****					
***** BOOTABLE DEVICES *****					
MNEMON- IC		FIRST DEVICE IN ROM	MNEMON- IC		SECOND DEVICE IN ROM
751A9	DL	RL01	NA	NA	2-1
752A9	DM	RK06/07	NA	NA	2-2
753A9	DX	RX01	NA	NA	2-3
811A9	DY	RX02	NA	NA	2-11
755A9	DP	RP02/03	DB	RP04/5/6 RM02/3	2-4
756A9	DK	RK03/05	DT	TU55/56	2-5
757A9	MM	TU16/45/77/E16	NA	NA	2-6
758A9	MT	TU10/E10,TS03	NA	NA	2-7
759A9	DS	RS03/04	NA	NA	2-8
760A9	PR	PC05	TT	LO SPD RDR	2-9
761A9	CT	TU60	NA	NA	2-10
764A9	MS	TS04	NA	NA	2-12
765A9	DD	TU58	NA	NA	2-13
862A9	XM	DMC-11	NA	NA	2-14
863A9					
864A9					

CROSS REFERENCE DEVICE TO CONTROLER	
DEVICE	CONTROLER
RL01	RL11
RK06/07	RK611
RX01	RX11
RX02	RX211
RP02/03	RP11C/E
RP04/05/06 RM02/03	RH11/70
RK03/05	RK11C/D
TU55/56	TC11
TU16/U45/U77/E16	RH11/70
TU10/E10,TS03	TM11/A11/B11
RS03/04	RH11/70
PC05 (HI SPD RDR)	PC11/R11
LO SPD RDR (ASR33)	DL11A/W
TU60	TA11
TS04	TS11
TU58	DL11-W
MODEM	DMC-11
MODEM	DU11
MODEM	DUP-11

ROM CROSS-REFERENCE TABLES

[illegible][illegible]

SECTION 5

ROM IDENTIFICATION TABLE

1. The user should refer to the M9312
Installation Manual for the correct
cable connections and the correct
cable lengths. The correct cable
lengths are listed in the M9312
Installation Manual.

SECTION 6

S1 SWITCH SETTING FOR CPU DIAGNOSTIC ROM

TABLE 1-1
ROM P/N 23-616F1

11/60/70 DIAGNOSTIC ROM

THERE ARE NO SPECIAL M9312 SWITCH SETTINGS THAT PERTAIN TO THIS ROM.
THE ONLY WAY THESE DIAGNOSTICS CAN BE EXECUTED IS BY ENTERING A BOOTSTRAP
AT AN ENTRY POINT THAT CALLS FOR DIAGNOSTICS TO BE RUN.

THIS ROM ALLOWS BOOTING VIA CONSOLE SWITCH REGISTER.
THIS CAN BE DONE AS FOLLOWS:

- 1.LOAD ADDRESS 765744
- 2.SET SWITCH REGISTER AS SHOWN BELOW

15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00
NA	NA	NA	NA												
				OCTAL UNIT				SWR CODE FROM BOOT ROM TABLES							
				NUMBER											

- 3.NOW START

TABLE 1-2
ROM P/N 23-248F1

ASCII CONSOLE AND DIAGNOSTIC ROM FOR USE WITH 11/04/05/34/35/40/45/50/55

THIS ROM CONTAINS CPU DIAGNOSTICS AND AN ASCII CONSOLE. TO ENTER THE ASCII CONSOLE VIA POWER-UP BOOT OR PUSH-BUTTON BOOT, THE M9312 SWITCH SETTINGS MUST BE AS SHOWN BELOW.

FUNCTION TO BE BOOTED	ROM LOC.	DIAG-NOSTIC	MANUAL STARTING ADDR.	S1 SWITCH SETTINGS FOR PUSH-BUTTON OR POWER FAIL BOOT									
				1	2	3	4	5	6	7	8	9	10
CONSOLE EMULATOR	E20	NO	165144	ON	*	OFF	OFF	ON	ON	OFF	OFF	ON	OFF
CONSOLE EMULATOR	E20	YES	165020	ON	*	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF

* S1-2: WHEN ON, POWER-UP BOOT IS ENABLED; WHEN OFF, POWER-UP BOOT IS DISABLED.

THE CONSOLE EMULATOR CAN PERFORM THE FOLLOWING FUNCTIONS:

1. LOAD ADDRESS
2. EXAMINE
3. DEPOSIT
4. START
5. BOOT A DEVICE

A FULL DESCRIPTION OF THE FIRST FOUR FUNCTIONS IS GIVEN IN THE M9312 BOOTSTRAP/TERMINATOR MODULE TECHNICAL MANUAL, EK-M9312-TM-001.

TO BOOT A DEVICE VIA THE CONSOLE EMULATOR, DO THE FOLLOWING:

1. START THE CONSOLE EMULATOR
THIS CAN BE DONE BY SETTING UP THE M9312 SWITCHES AS OUTLINED IN THE TABLE ABOVE, THEN POWER FAILING THE CPU (S1-2 MUST BE ON TO DO THIS), OR PRESSING THE BOOT SWITCH (IF ONE IS AVAILABLE). ANOTHER WAY OF STARTING THE CONSOLE EMULATOR IS BY MANUALLY LOADING AND STARTING VIA CONSOLE SWITCH REGISTER (IF ONE IS AVAILABLE), USING THE MANUAL STARTING ADDR. SUPPLIED IN THE TABLE ABOVE.
2. TYPE IN THE APPROPRIATE BOOT COMMAND.
ONCE THE CONSOLE EMULATOR IS RUNNING, TYPE IN THE TWO LETTER MNEMONIC OF THE DEVICE TO BE BOOTED, FOLLOWED BY A CARRIAGE RETURN; OR TYPE IN THE TWO LETTER DEVICE MNEMONIC FOLLOWED BY AN OCTAL UNIT NUMBER, THEN A CARRIAGE RETURN. (TWO LETTER DEVICE MNEMONICS CAN BE FOUND IN THE FOLLOWING BOOT ROM TABLES.)

SECTION 7

S1 SWITCH SETTING FOR PERIPHERAL BOOT ROMS

TABLE 2-1
ROM P/N 23-751A9

THE TABLE BELOW CONTAINS THE FOLLOWING:

- 1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
- 2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.

NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG- NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
RL01	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RL01	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
RL01	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RL01	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
RL01	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RL01	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
RL01	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RL01	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
RL01	DL	0-3	774400

TABLE 2-2
ROM P/N 23-752A9

THE TABLE BELOW CONTAINS THE FOLLOWING:
1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.
NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG- NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
RK06/07	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RK06/07	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
RK06/07	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RK06/07	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
RK06/07	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RK06/07	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
RK06/07	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RK06/07	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
RK06/07	DM	0-7	777440

TABLE 2-3
ROM P/N 23-753A9

THE TABLE BELOW CONTAINS THE FOLLOWING:
1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.
NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG- NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
RX01	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RX01	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
RX01	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RX01	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
RX01	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RX01	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
RX01	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RX01	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
RX01	DX	0-1	777170

TABLE 2-4
ROM P/N 23-755A9

THE TABLE BELOW CONTAINS THE FOLLOWING:

- 1.M9312 SWITCH SETTINGS FOR DEFAULT BOOT OF DEVICES SUPPORTED BY THIS ROM.
- 2.THE STARTING ADDRESS FOR MANUALLY BOOTING DEVICES SUPPORTED BY THIS ROM

NOTES:

- 1.IF DIAGNOSTIC IS TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20 AND JUMPER W8 MUST BE OUT
- 2. *=CAN BE ON OR OFF. FOR S1-2 ON=BOOT ON POWER UP OFF=DO NORMAL POWER UP

DEVICE TO BE BOOTED	ROM LOC.	DIAG- NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
RP02/03	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RP02/03	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
RP02/03	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RP02/03	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
RP02/03	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RP02/03	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
RP02/03	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RP02/03	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612
RP04/5/6 RM02/3	ROM 1	NO	0	173050	OFF	*	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	NA
RP04/5/6 RM02/3	ROM 1	YES	0	173052	OFF	*	OFF	OFF	OFF	ON	OFF	ON	OFF	ON	056
RP04/5/6 RM02/3	ROM 2	NO	0	173250	OFF	*	OFF	ON	OFF	ON	OFF	ON	OFF	OFF	NA
RP04/5/6 RM02/3	ROM 2	YES	0	173252	OFF	*	OFF	ON	OFF	ON	OFF	ON	OFF	ON	256
RP04/5/6 RM02/3	ROM 3	NO	0	173450	OFF	*	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	NA
RP04/5/6 RM02/3	ROM 3	YES	0	173452	OFF	*	ON	OFF	OFF	ON	OFF	ON	OFF	ON	456
RP04/5/6 RM02/3	ROM 4	NO	0	173650	OFF	*	ON	ON	OFF	ON	OFF	ON	OFF	OFF	NA
RP04/5/6 RM02/3	ROM 4	YES	0	173652	OFF	*	ON	ON	OFF	ON	OFF	ON	OFF	ON	656

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
RP02/03	DP	0-7	776714
RP04/5/6 RM02/3	DB	0-7	776700

TABLE 2-5
ROM P/N 23-756A9

THE TABLE BELOW CONTAINS THE FOLLOWING:
1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.
NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG-NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
RK03/05	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RK03/05	ROM 1	NO	2	173164	OFF	*	OFF	OFF	ON	ON	ON	OFF	ON	OFF	NA
RK03/05	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
RK03/05	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RK03/05	ROM 2	NO	2	173364	OFF	*	OFF	ON	ON	ON	ON	OFF	ON	OFF	NA
RK03/05	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
RK03/05	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RK03/05	ROM 3	NO	2	173564	OFF	*	ON	OFF	ON	ON	ON	OFF	ON	OFF	NA
RK03/05	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
RK03/05	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RK03/05	ROM 4	NO	2	173764	OFF	*	ON	ON	ON	ON	ON	OFF	ON	OFF	NA
RK03/05	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612
TU55/56	ROM 1	NO	0	173034	OFF	*	OFF	OFF	OFF	OFF	ON	ON	ON	OFF	NA
TU55/56	ROM 1	YES	0	173036	OFF	*	OFF	OFF	OFF	OFF	ON	ON	ON	ON	042
TU55/56	ROM 2	NO	0	173234	OFF	*	OFF	ON	OFF	OFF	ON	ON	ON	OFF	NA
TU55/56	ROM 2	YES	0	173236	OFF	*	OFF	ON	OFF	OFF	ON	ON	ON	ON	242
TU55/56	ROM 3	NO	0	173434	OFF	*	ON	OFF	OFF	OFF	ON	ON	ON	OFF	NA
TU55/56	ROM 3	YES	0	173436	OFF	*	ON	OFF	OFF	OFF	ON	ON	ON	ON	442
TU55/56	ROM 4	NO	0	173634	OFF	*	ON	ON	OFF	OFF	ON	ON	ON	OFF	NA
TU55/56	ROM 4	YES	0	173636	OFF	*	ON	ON	OFF	OFF	ON	ON	ON	ON	642

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
RK03/05	DK	0-7	777404
TU55/56	DT	0-7	777342

TABLE 2-6
ROM P/N 23-757A9

THE TABLE BELOW CONTAINS THE FOLLOWING:

1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.

2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.

NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG- NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
TU16/45/77/E16	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
TU16/45/77/E16	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
TU16/45/77/E16	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
TU16/45/77/E16	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
TU16/45/77/E16	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
TU16/45/77/E16	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
TU16/45/77/E16	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
TU16/45/77/E16	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
TU16/45/77/E16	MM	0-7	772440

TABLE 2-7
ROM P/N 23-758A9

THE TABLE BELOW CONTAINS THE FOLLOWING:

- 1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
- 2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.

NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG-NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
TU10/E10,TS03	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
TU10/E10,TS03	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
TU10/E10,TS03	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
TU10/E10,TS03	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
TU10/E10,TS03	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
TU10/E10,TS03	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
TU10/E10,TS03	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
TU10/E10,TS03	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
TU10/E10,TS03	MT	0-7	772522

TABLE 2-8
ROM P/N 23-759A9

THE TABLE BELOW CONTAINS THE FOLLOWING:
1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.
NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG- NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
RS03/04	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RS03/04	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
RS03/04	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RS03/04	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
RS03/04	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RS03/04	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
RS03/04	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RS03/04	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
RS03/04	DS	0-7	772040

TABLE 2-9
ROM P/N 23-760A9

THE TABLE BELOW CONTAINS THE FOLLOWING:

1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.

2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.

NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG-NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
PC05	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
PC05	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
PC05	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
PC05	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
PC05	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
PC05	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
PC05	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
PC05	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612
LO SPD RDR	ROM 1	NO	0	173034	OFF	*	OFF	OFF	OFF	OFF	ON	ON	ON	OFF	NA
LO SPD RDR	ROM 1	YES	0	173036	OFF	*	OFF	OFF	OFF	OFF	ON	ON	ON	ON	042
LO SPD RDR	ROM 2	NO	0	173234	OFF	*	OFF	ON	OFF	OFF	ON	ON	ON	OFF	NA
LO SPD RDR	ROM 2	YES	0	173236	OFF	*	OFF	ON	OFF	OFF	ON	ON	ON	ON	242
LO SPD RDR	ROM 3	NO	0	173434	OFF	*	ON	OFF	OFF	OFF	ON	ON	ON	OFF	NA
LO SPD RDR	ROM 3	YES	0	173436	OFF	*	ON	OFF	OFF	OFF	ON	ON	ON	ON	442
LO SPD RDR	ROM 4	NO	0	173634	OFF	*	ON	ON	OFF	OFF	ON	ON	ON	OFF	NA
LO SPD RDR	ROM 4	YES	0	173636	OFF	*	ON	ON	OFF	OFF	ON	ON	ON	ON	642

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
PC05	PR	N/A	777550
LO SPD RDR	TT	N/A	777560

TABLE 2-10
ROM P/N 23-761A9

THE TABLE BELOW CONTAINS THE FOLLOWING:
1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.
NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG- NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
TU60	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
TU60	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
TU60	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
TU60	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
TU60	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
TU60	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
TU60	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
TU60	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED,WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
TU60	CT	0-1	777550

TABLE 2-11
ROM P/N 23-811A9

THE TABLE BELOW CONTAINS THE FOLLOWING:

- 1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
 - 2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.
- NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG-NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
RX02	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RX02	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
RX02	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RX02	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
RX02	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
RX02	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
RX02	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
RX02	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
RX02	DY	0-1	777170

TABLE 2-12
ROM P/N 23-764A9

THE TABLE BELOW CONTAINS THE FOLLOWING:

1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.

2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.

NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG-NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
TS04	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
TS04	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
TS04	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
TS04	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
TS04	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
TS04	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
TS04	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
TS04	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
TS04	MS	0-3	772520

TABLE 2-13
ROM P/N 23-765A9

THE TABLE BELOW CONTAINS THE FOLLOWING:

- 1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
- 2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.

NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG- NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
TU58	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
TU58	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
TU58	ROM 2	NO	0	173204	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
TU58	ROM 2	YES	0	173206	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	212
TU58	ROM 3	NO	0	173404	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
TU58	ROM 3	YES	0	173406	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	412
TU58	ROM 4	NO	0	173604	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
TU58	ROM 4	YES	0	173606	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	612

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
TU58	DD	0-1	776500

SECTION 8

S1 SWITCH SETTING FOR COMMUNICATION BOOT ROMS

TABLE 2-14
ROM P/N 23-862A9,863A9,864A9

THE TABLE BELOW CONTAINS THE FOLLOWING:

- 1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
- 2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.

NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG-NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
DMC-11	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
DMC-11	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
DMC-11	ROM 1	NO	1	173030	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
DMC-11	ROM 1	YES	1	173032	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	012
DMC-11	ROM 2	NO	0	173204	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
DMC-11	ROM 2	YES	0	173206	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	212
DMC-11	ROM 2	NO	1	173230	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
DMC-11	ROM 2	YES	1	173232	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	212

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
DMC-11	XM	0-1	!760010

TABLE 2-15
ROM P/N 23-865A9,866A9,867A9

THE TABLE BELOW CONTAINS THE FOLLOWING:
1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.
NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG-NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
DU11	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
DU11	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
DU11	ROM 1	NO	1	173030	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
DU11	ROM 1	YES	1	173032	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	012
DU11	ROM 2	NO	0	173204	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
DU11	ROM 2	YES	0	173206	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	212
DU11	ROM 2	NO	1	173230	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
DU11	ROM 2	YES	1	173232	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	212

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
DU11	XU	0-1	760010

TABLE 2-16
ROM P/N 23-868A9,869A9,870A9

THE TABLE BELOW CONTAINS THE FOLLOWING:
1.M9312 SWITCH SETTINGS FOR POWER-UP BOOT OR PUSH-BUTTON BOOT OF DEVICE.
2.THE START ADDRESS FOR THE CONSOLE LOAD AND START SEQUENCE.
NOTES IF DIAGNOSTIC ARE TO BE RUN,A CPU DIAGNOSTIC ROM MUST BE IN LOCATION E20, AND JUMPER W8 MUST BE OUT.

DEVICE TO BE BOOTED	ROM LOC.	DIAG-NOSTIC	UNIT	START ADDR.	SWITCH SETTINGS S1-										SWR CODE
					1	2	3	4	5	6	7	8	9	10	
DUP-11	ROM 1	NO	0	173004	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
DUP-11	ROM 1	YES	0	173006	OFF	*	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	012
DUP-11	ROM 1	NO	1	173030	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
DUP-11	ROM 1	YES	1	173032	OFF	*	OFF	ON	OFF	OFF	OFF	OFF	ON	ON	012
DUP-11	ROM 2	NO	0	173204	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	NA
DUP-11	ROM 2	YES	0	173206	OFF	*	ON	OFF	OFF	OFF	OFF	OFF	ON	ON	212
DUP-11	ROM 2	NO	1	173230	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	NA
DUP-11	ROM 2	YES	1	173232	OFF	*	ON	ON	OFF	OFF	OFF	OFF	ON	ON	212

* S1-2: WHEN ON,POWER-UP BOOT IS ENABLED;WHEN OFF,POWER-UP BOOT DISABLED.(MUST BE OFF FOR 11/60.SEE 11/60 DOCUMENTATION FOR POWER-UP BOOT)

WHEN BOOTING FROM THE CONSOLE EMULATOR,A DEVICE MNEMONIC AND UNIT NUMBER ARE REQUIRED. IF UNIT NUMBER IS NOT ENTERED, IT IS ASSUMED TO BE ZERO.LISTED BELOW ARE THE DEVICE MNEMONIC AND UNIT NUMBERS SUPPORTED BY THIS ROM,AND THE DEVICE CSR ADDRESS ASSUMED BY THE BOOT CODE.

DEVICE	MNEMONIC	UNIT	CSR
DUP-11	XW	0-1	760010

