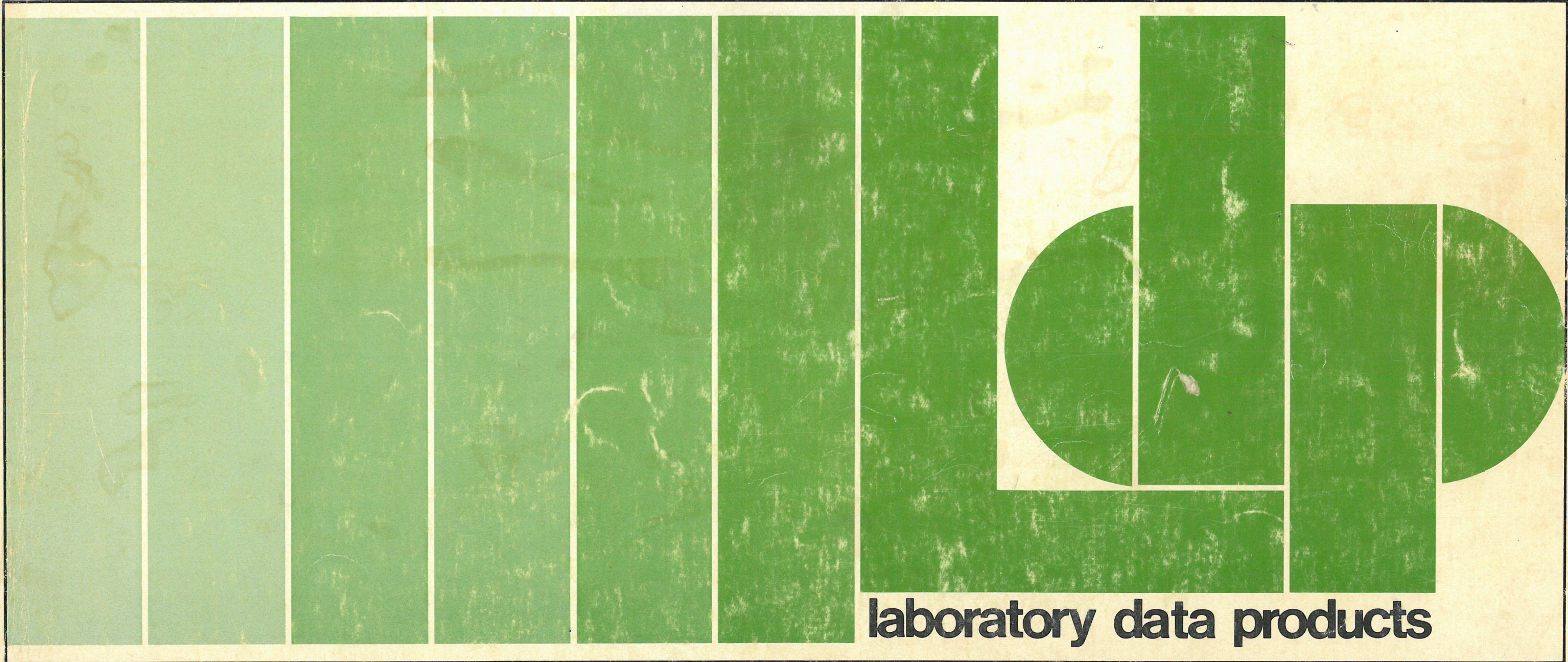
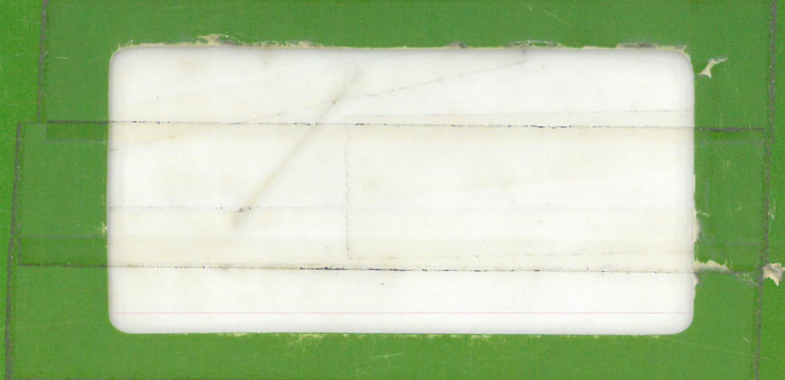


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Digital Equipment Corporation  
Maynard, Massachusetts



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**PDP-12  
maintenance manual  
volume III  
system drawings**



2nd Printing, December 1970  
3rd Printing (rev), June, 1972

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DIGITAL	COMPUTER LAB



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## ENGINEERING DRAWINGS

Number	Option
PDP-12-0	PDP-12 System
EP12-0	PDP-12 Processor
EM12-0	Basic 4K Memory
MC12-0	Memory Extension Control
TC12-0	LINC Tape Control
VC12-0	LINC Scope Control
KF12-0	Automatic Priority Interrupt
DM12-0	3 Channel Data Break MUX
KE12-0	Arithmetic Operation
XY12-0	Plotter Control
KT12-0	PDP-12 Time Sharing Option
DP12-A	TTY/Dataphone
DP12-B	TTY/Dataphone (EIA Level)
KP12-0	Power Fail/Restart
KW12-0	Real Time Clock
TC12-F	8 Tape Control
AD12-0	Analog to Digital Converter
AG12-0	A-D Additional Preamps
AM12-0	Expanded Multiplexer
DR12-0	Relays and Control
724-0-1	Power Supply 724
7005983-0-0	Fan Housing Assembly

## ILLUSTRATIONS

Figure Number	Art Number	Title	Page
1	12-0181	Drawing Identification Code	1
2	12-0182	AND Gate Symbol, AND Function, and Truth Table	2
3	12-0183	NAND Gate	2
4	12-0184	OR Gate Symbol, OR Function, and Truth Table	3
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6	12-0187	Flip-Flop	3
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## Foreword

The *PDP-12 Maintenance Manual* published in four separate volumes, is a guide for Field Service Engineers or other personnel involved with the care and maintenance of the PDP-12 Computer. The Maintenance Manual is organized as follows:

### **VOLUME I PRINCIPLES OF OPERATION**

This volume contains a description of PDP-12 logic. An overall view of the system is presented in seven chapters entitled Central Processor, Memory, Input/Output, Teletype, LINC Devices, Tape Processor, and Prewired I/O Bus Options. The text describes logical relationships among the various elements of the PDP-12.

### **VOLUME II INSTALLATION AND MAINTENANCE**

The first chapters of this volume describe the unpacking, installation, and preliminary check-out procedures for the PDP-12. The remainder of the book comprises procedures used in the day-to-day maintenance, adjustment, and repair of the computer.

### **VOLUME III LOGIC SCHEMATICS**

Volume III consists primarily of flow charts and block schematics that describe the PDP-12. The block schematics, lists, and flow charts in Volume III are reduced (11 in. x 17 in.) versions of the engineering drawings.

### **VOLUME IV MODULE SCHEMATICS**

The circuit schematics in Volume IV describe all the module types used in the PDP-12, including both the regular production DEC modules and those designed especially for the PDP-12.



# PDP-12 System Drawings

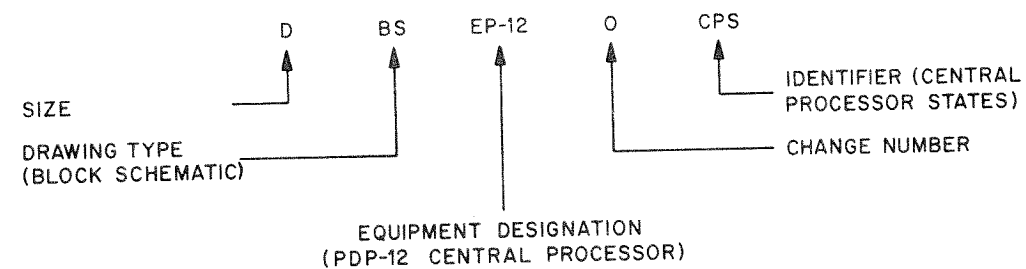
## INTRODUCTION

This volume contains all block schematics and flow diagrams for the PDP-12A. The PDP-12A system configuration is the largest of three standard PDP-12 system configurations: PDP-12A, PDP-12B, and PDP-12C. Engineering Drawing D DI PDP-12-0-1 indicates the block schematics and flow diagrams that apply to each particular system configuration. Module circuit diagrams for the PDP-12 are located in Volume 4 of the PDP-12 Maintenance Manual (DEC-12-HR4A-D).

All drawings that appear in this volume are included in the set previously supplied with the equipment. Individual drawings in the original equipment set may differ from those printed in this manual because of changes and updating. In such cases, the original equipment drawings are to be used.

## DRAWING NOMENCLATURE

Each DEC drawing is identified by a short descriptive title and a five-part alphanumeric code. An example of the code is given in Figure 1.



12-0181

Figure 1 Drawing Identification Code

### Size

The first letter indicates the size of the drawing: A, B, C, or D. Size A is the smallest.

### Type

The next two letters identify the type of drawing, using the following code:

AD	Assembly Drawing
AR	Arrangement Drawing
BS	Block Schematic (logic and circuitry)
CD	Cable Diagram
CL	Cable List
CS	Circuit Schematic (electrical components)
DI	Drawing Index
FD	Flow Diagram
KS	Key Slot
ML	Master Drawing List
MU	Module Utilization (rack locations)
PL	Parts List
PW	Power Wiring
RS	Replacement Schematic
TD	Timing Diagram
UA	Unit Assembly
WD	Wiring Diagram
WL	Wiring List

### Equipment

The third part of the drawing code specifies the device, component, or other discrete part of the PDP-12A to which the information on that drawing applies.

Examples:	VC12	CRT Display Control
	TU55	LINCtape Transport
	7005983	Fan Housing Assembly
	H951	Cabinet Assembly

### Change Number

The next digit reflects major design changes in the equipment described on the drawing.

### Drawing Identifier

The final portion of the alphanumeric code identifies the drawing itself, either by a three-letter abbreviation or a series number. The abbreviation usually suggests the full title of the drawing.

Examples:	MPG	MEM Page Extn Control
	IPC	Interprocessor Cables

## SIGNAL NAMES

Every signal on a block schematic is given a name that identifies the origin, nature, and assertion level of the signal. When the signal originates from a flip-flop, the output side (1 or 0) is given in parentheses.

- Examples:
- CYI ADD NDX H**  
The origin of the signal ADD NDX is found on drawing D-BS-EPI2-0-CYL. The signal level is HIGH (H) for assertion. If the signal is a pulse, H would indicate that the signal is positive-going.
  - CPS EXECUTE (1) H**  
The signal originates from the EXECUTE flip-flop on drawing D-BS-EPI2-0-CPS. It is taken from the 1 output and is asserted when that output is HIGH.

## MODULE IDENTIFICATION

Inside each logic symbol on a block schematic is a name code. The name code identifies the type of module on which the element is found and the location of that module in the logic rack. The modules are arranged on the rack in two groups in vertical rows, upper (memory) and lower (processor). The rows are identified by capital letters from right to left on the wiring side of the logic rack. The upper rows are labeled, A, B, C, D, E, F; the lower rows are labeled H, J, K, L, M, N.

Each row contains 40 module slots, numbered 1 through 40 from top to bottom.

- Example: **M119 H26**  
This gate is on an M119 DEC module located in row H, slot 26.

Many flip-flops have a descriptive name in addition to a location code.

- Example: **CPS FETCH M216 K06; FLK LINK M216 J12.**  
The first part of a descriptive name identifies the drawing.

All DEC module connector blocks have 18 pin positions. The pin positions are identified by capital letters A through V (G, I, O, and Q are omitted), reading from right to left on the wiring side of the logic rack. All modules used in the PDP-12 are double-sided; thus, each pin position provides two pin terminals. There are a total of 36 connections to each module. On the block schematics, each pin is identified by a letter-number code outside the logic symbol, adjacent to its associated signal. The letter specifies the pin position. The number indicates which side of the module is used (side 1 is the component side).

- Examples: **M2** Pin position M, side 2  
**H1** Pin position H, side 1

Some of the modules used in the PDP-12 are double-width and occupy two slots in adjacent rows of the rack. An individual element on such a module is coded in a normal manner; the location number specifies only the row and slot to which the element is connected. On some drawings (such as those for the memory axis selectors), an entire circuit is identified collectively; in this case, both slot locations are identified.

- Examples: **G611 C06 D06**  
This double-width module is found at slot 06 in rows C and D.

## LOGIC SYMBOLOGY

The logic symbols used in these drawings conform basically to MIL-STD-806B.

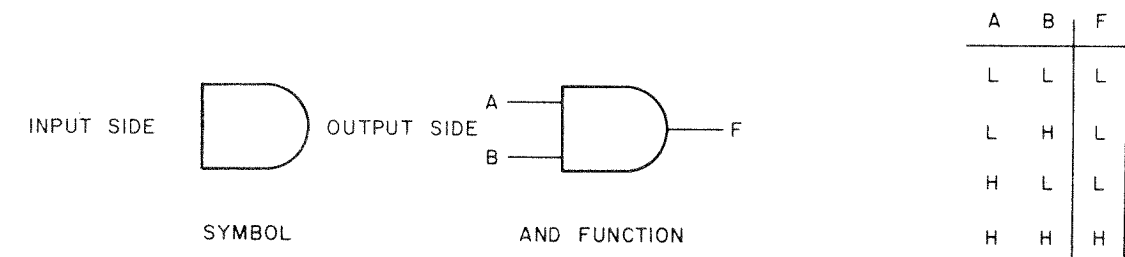
## Assertion Levels

In the truth tables, H represents a HIGH (+3V) assertion level or a positive-going pulse, and L represents a LOW (0V) level or a negative-going pulse.

On the drawings, a small circle at the input to a function indicates that the signal must be LOW for assertion. If there is no circle, the assertion level is HIGH. Similarly, a small circle at the output of a function indicates that the output level is LOW when the function is TRUE. If there is no circle, the TRUE output is HIGH.

## AND, NAND

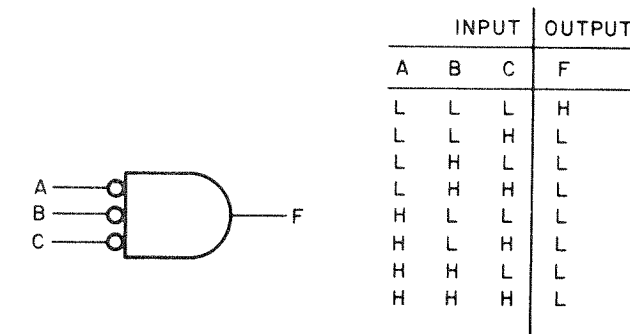
Figure 2 shows the symbol for an AND gate and the general form of a pure AND function. The output of an AND function is HIGH only if all the inputs are HIGH.



12-0182

Figure 2 AND Gate Symbol, AND Function, and Truth Table

Figure 3 shows a 3-input version of a NAND (Negated AND) function. The output is LOW only if all inputs are HIGH.



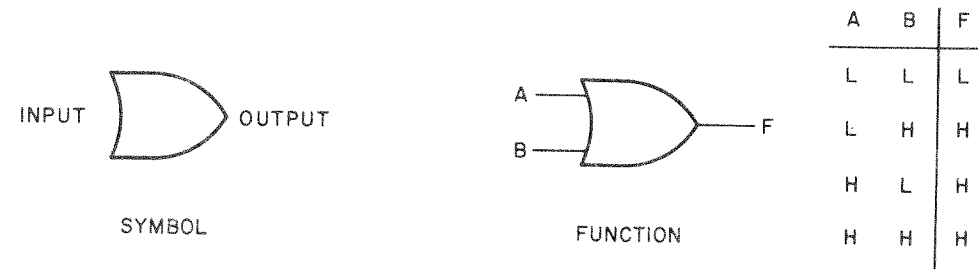
12-0183

Figure 3 NAND Gate



**OR, NOR**

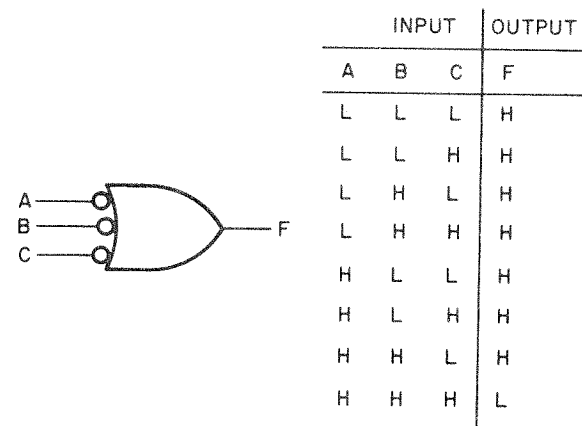
Figure 4 shows the symbol for an OR gate and the general form of a pure OR function. The output of an OR function is HIGH if any or all inputs are HIGH.



12-0184

Figure 4 OR Gate Symbol, OR Function, and Truth Table

Figure 5 shows a 3-input version of the NOR (Negated OR) function. The output is HIGH when any or all inputs are LOW.



12-0185

Figure 5 NOR Gate

Note that the NOR truth tables are the same as those for NAND; however, the signal levels are reversed. Different gates are used for design convenience and circuit function simplification. A NOR gate is used to emphasize that any input or combination of inputs will activate the function (make it TRUE). A NAND gate is used to emphasize that all inputs must be asserted to activate the function. The NOR and NAND gates are schematic representations of DeMorgan's Law.

**Flip-Flops**

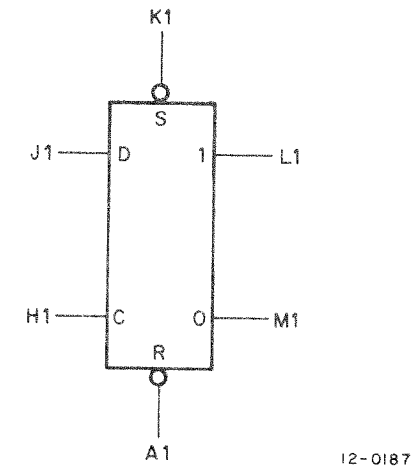
Figure 6 illustrates a flip-flop. A flip-flop has four inputs: SET (S), RESET (R), DATA (D), and CLOCK (C). Each flip-flop has two outputs, 1 and 0. The flip-flop is bistable: it remains in one of its two logic states (1 or 0) until an input condition causes it to change.

A flip-flop is set to the 1 state if either of the following conditions occurs:

- a. A negative-going pulse appears at the SET input.
- b. The DATA input is HIGH, and a positive-going pulse appears at the CLOCK input.

A flip-flop is set to the 0 state if either of the following conditions occurs:

- a. A negative-going pulse appears at the RESET input.
- b. The DATA input is LOW, and a positive-going pulse appears at the CLOCK input.



12-0187

Figure 6 Flip-Flop

When a flip-flop is in the 1 state, the 1 output is HIGH and the 0 output is LOW. When a flip-flop is in the 0 state, the 0 output is HIGH and the 1 output is LOW.

**Redefined Flip-Flops**

Figure 7 illustrates a "redefined" flip-flop. The redefined flip-flop is physically identical to the flip-flop shown in Figure 6. The difference, however, is the manner in which the inputs: S (SET), R (RESET), and D (DATA) and the outputs: 1 and 0 are logically defined. In Figure 7, note that the pin numbering of the S and R inputs and the 1 and 0 outputs are opposite those shown in Figure 6; in addition, the D input is shown with a small circle to indicate that a low signal enables the change of state, thereby identifying the flip-flop as redefined.

Normally, the S and R inputs of a redefined flip-flop are high; a change from a high state to a low state at either of these inputs causes the flip-flop to SET or RESET respectively. If the D input is LOW and a pulse is applied to the C input, the redefined flip-flop goes to its logical 1 (SET) state and, conversely, to 0 (RESET) in the opposite case.

### One-Shot Delay

The symbol for a one-shot delay function is shown in Figure 8. When the delay is not activated, it remains in the 0 state, and the output is LOW.

When any of the inputs goes from HIGH to LOW (level change or pulse), the output goes HIGH and remains HIGH until the specified delay time has elapsed. The delay-time range can be determined from the pin connections and the proper table in the DEC Logic Handbook (M302 module).

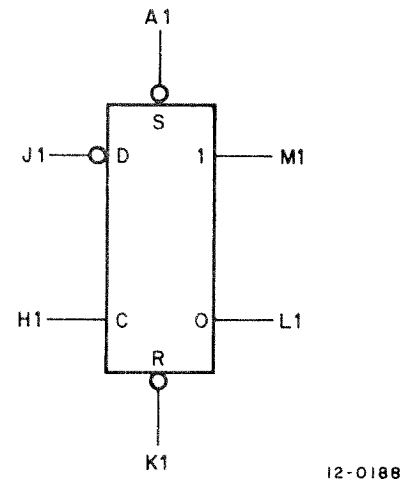


Figure 7 "Redefined" Flip-Flop

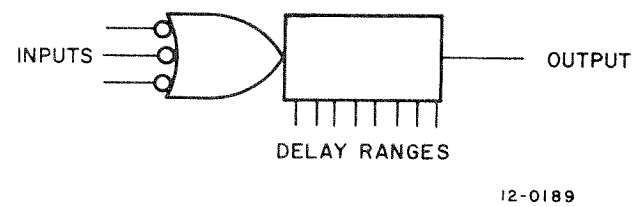


Figure 8 One-Shot Delay

### Delay Lines

The symbol in Figure 9 represents a tapped delay line.

The outputs are arranged in two rows, from left to right: J2 to N2 on the top, and P2 to U2 on the bottom. The taps provide delays from 50 ns (J2) to 500 ns (U2) in 50 ns steps.

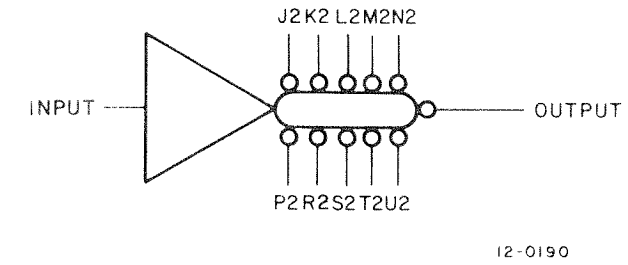


Figure 9 Delay Line

### Schmitt Trigger

The symbol for a Schmitt Trigger function is shown in Figure 10.

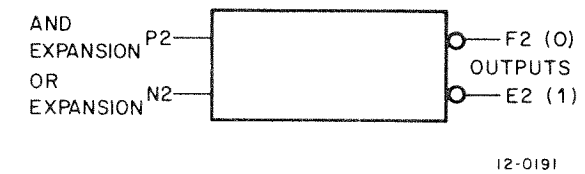


Figure 10 Schmitt Trigger

When the function is inactive, the 0 output is HIGH, and the 1 output is LOW. When the input level rises from below the lower voltage threshold to above the upper voltage threshold, the outputs reverse state. The outputs remain in this state until the input voltage falls below the lower voltage threshold again.

### Amplifiers

The symbol in Figure 11 represents a current or voltage amplifier.

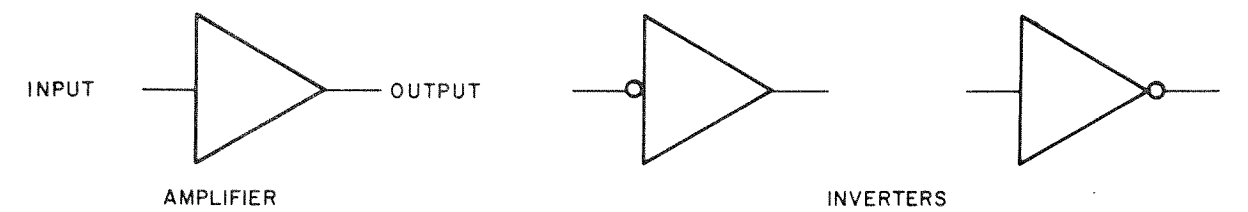


Figure 11 Amplifier and Inverters

If a small circle appears at either the input or output (but not both), the gate functions as a signal inverter.



## Other Functions

A rectangle is used to represent many circuit functions (such as pulse amplifiers, inhibit drivers, clocks, etc.). Normally the circuit context or the element name clarifies the function intended. For specific uses, refer to the particular module schematic in Volume 4 of this manual, or to the DEC Logic Handbook.

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## MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-UA-PDP 12-0-0	M	2	PDP 12 SYSTEM
A-PL-PDP 12-0-0	M	4	PDP 12 SYSTEM (PARTS LIST)
D-DI-PDP 12-0-1	Y	5	DRAWING INDEX
D-AR-PDP 12-0-2	H	5	PDP 12 CONFIGURATION
D-IC-PDP 12-0-3	A	1	POWER WIRING & SIGNAL CABLES
<del>A-SP-PDP 12-0-4</del>			<del>SHIPPING &amp; INSTALLATION SPEC</del>
A-SP-PDP 12-0-5	REF	23	ACCEPTANCE SPEC.
A-SP-PDP 12-0-6	REF	1	SYSTEM SPECIFICATIONS
A-AL-PDP 12-0-7	REF	1	HARDWARE KIT
A-SP-PDP 12-0-8	REF	1	SPARE PARTS
A-SL-PDP 12-0-9	REF	5	SOFTWARE KIT
D-ED-PDP 12-0-10	E	1	MANUAL TIMING FUNCTION PART 1
D-ED-PDP 12-0-11	B	1	MANUAL TIMING FUNCTION PART 2
D-ED-PDP 12-0-12	D	1	LINC FETCH 1A
D-ED-PDP 12-0-13	E	1	LINC FETCH 1B
D-ED-PDP 12-0-14	C	1	LINC FETCH 2
D-ED-PDP 12-0-15		1	LINC DEFER
D-ED-PDP 12-0-16	B	1	LINC EXECUTE
D-ED-PDP 12-0-17	B	1	LINC EXECUTE
D-ED-PDP 12-0-18	C	1	LINC EXECUTE
D-ED-PDP 12-0-19	A	1	LINC EXECUTE
D-ED-PDP 12-0-20	B	1	EXECUTE 2 & INTERRUPT
D-ED-PDP 12-0-21	B	1	PDP-8 MODE FETCH
D-ED-PDP 12-0-22	B	1	PDP-8 MODE DEFER & EXECUTE
D-ED-PDP 12-0-23	C	1	BREAK
A-ML-EP12-0	II	2	PDP 12 PROCESSOR
A-ML-EM12-0	II	1	BASIC 4K MEMORY
A-ML-MC12-0	II	1	MEMORY EXTENSION CONTROL
A-ML-TC12-0	II	2	LINC TAPE CONTROL
A-ML-VC12-0	II	2	DISPLAY CONTROLS
A-ML-KE12-0	II	2	ARITHMETIC OPERATION
A-ML-XY12-0	II	1	PLOTTER CONTROL
A-ML-KT12-0	II	1	PDP 12 TIME SHARING OPTION

REVISIONS				DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>	TITLE
REV.	DATE	CHG. NO.	APP'D.	CHK'D.	DATE		
U	1/70	12-50	L.G.	J. Aprea	3/10/69	PDP-12 SYSTEM	
V	1/70	12-51	L.G.	R. Hutnack	3/69		
W	2/70	EP12-20	L.G.	L. Gale	3/10/69		
Y	2/70	12-57	L.G.	PROJ. ENG.	DATE		
Z	2/70	12-60	L.G.	L. Gale	3/10/69		
AA	2/70	EM12-30	L.G.	PROD.	DATE		
AB	2/70	12-64	R.B.	L. Gale	3/10/69		
AC	3/70	EM12-35	L.G.				
AD	4/70	H950-72	C.G.				
AE	4/70	VR12-24	R.B.				
AF	6/70	12-73	R.B.				
AG	6/70	EP12-23	L.C.				
AJ	6/70	12-76	L.G.				
AK	8/70	12-79	L.G.				
AL	8/70	12-83	C.B.				
AM	9/70	12-85	L.G.				

FIRST USED ON		SIZE	CODE	NUMBER	REV.
PDP-12		A	ML	PDP 12-0	AV
SCALE					
SHEET 1 OF 2		DIST.			

## MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-DP12-A	#	1	TTY DATA PHONE
A-ML-DP12-B	#	1	TTY DATA PHONE BIA LEVELS
A-ML-KP12-0	#	1	POWER FAIL/RESTART
A-ML-KW12-0	#	2	REAL TIME CLOCK
<del>A-ML-KW12-B</del>			<del>SIMPLE CLOCK</del>
<del>A-ML-KW12-C</del>			<del>SIMPLE CLOCK</del>
A-ML-TC12-F	##	1	8 TAPE CONTROL
A-ML-AD12-0	##	1	ANALOG TO DIGITAL CONVERTER
A-ML-AG12-0	##	1	ADDITIONAL PRE-AMPS
A-ML-AM12-0	##	1	MULTIPLEXER EXPANDER
D-CS-724-0-1	#	1	724 P/S SCHEMATIC
D-AD-7005983-0-0	#	2	FAN HSG ASS'Y
C-CS-5408112-0-1	#	1	SWITCH BD. CIRCUIT SCHEMATIC
C-CS-5408114-0-1	#	1	LIGHT BD. CIRCUIT SCHEMATIC
C-CS-5408124-0-1	#	1	RELAY BD. CIRCUIT SCHEMATIC
D-CS-7005963-0-1	##	1	RELAY PANEL CIRCUIT SCHEMATIC
D-CS-7005964-0-1	##	1	ANALOG PANEL CIRCUIT SCHEMATIC
D-CS-7006046-0-1	##	1	ANALOG EXT. PANEL CKT SCHEMATIC
A-PL-SC12-0-0	REF	1	COLOR KITS FOR PDP-12
A-ML-TU56-0	##	1	TU56-0 50/60 HZ
A-ML-VR14-0	REF	1	VR14 50/60 HZ (ANY AC VOLTAGE)
<del>A-ML-VC12-C</del>			<del>COLOR SCOPE CONTROL</del>
A-ML-LT33-0	REF	2	ASR-33 TTY
A-ML-KF12-0	#	1	AUTO PRIORITY INTERRUPT
A-ML-AG12-A	REF	1	KNOB/PREAMPS
<del>D-BS-AG12-A-03</del>			<del>PREAMP/KNOB FOR A-D CHAN 0-7</del>
A-ML-FPP12-0	REF	4	FLOATING POINT PROCESSOR
A-ML-DM12-0	##	1	DATA BREAK MULTIPLEXER
<del>A-ML-PDP12-10</del>			<del>PDP12-10 CONFIGURATION</del>
<del>A-ML-PDP12-20</del>			<del>PDP12-20 CONFIGURATION</del>
<del>A-ML-PDP12-30</del>			<del>PDP12-30 CONFIGURATION</del>
<del>A-ML-PDP12-40</del>			<del>PDP12-40 CONFIGURATION</del>
A-SP-724-0-4	#	3	SPECIFICATIONS-724 POWER SUPPLY
A-ML-DR12-0	#	1	RELAY BUFFER

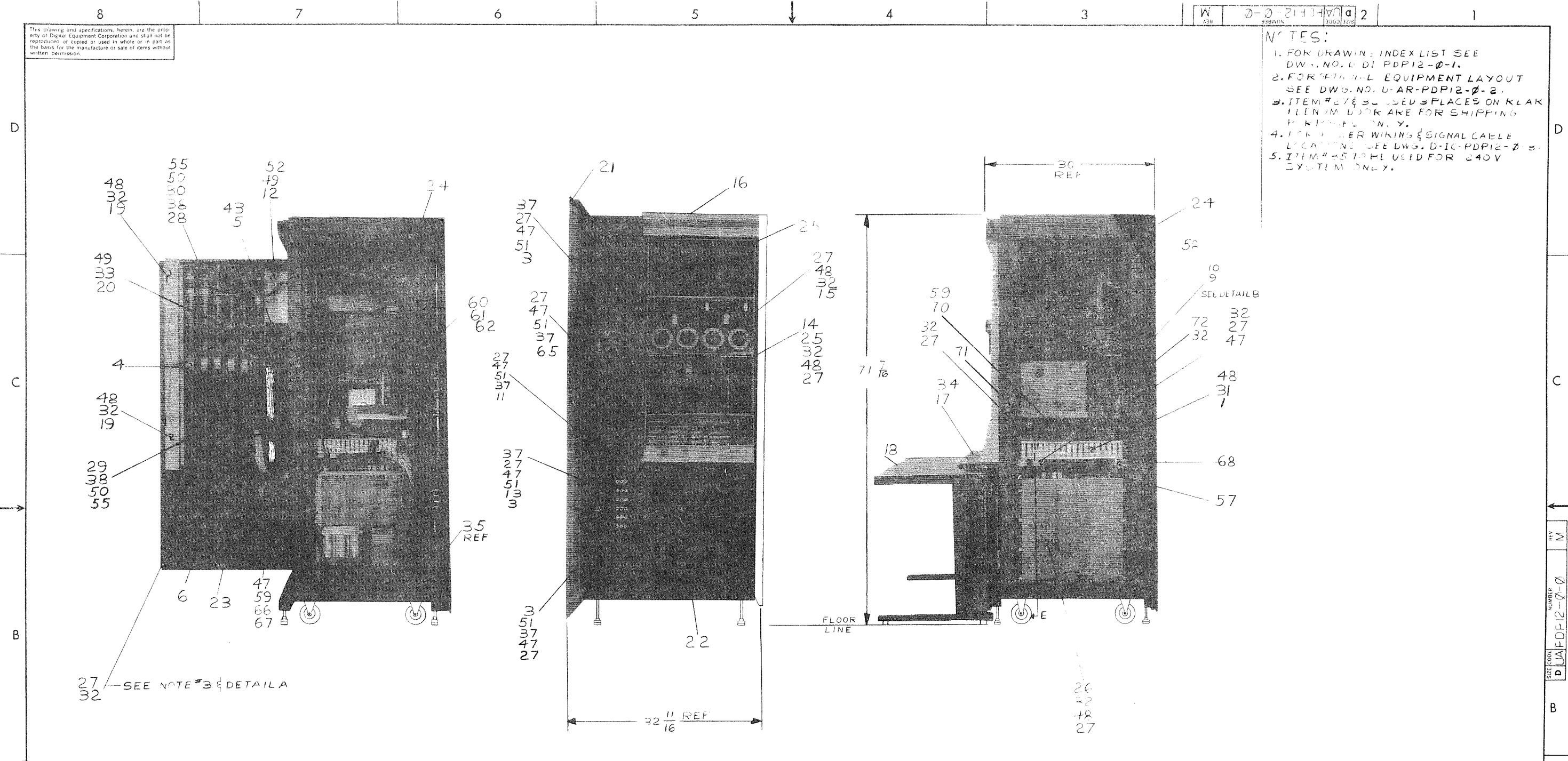
REVISIONS				DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>	TITLE
REV.	DATE	CHG. NO.	APP'D.	CHK'D.	DATE		
AN	11/70	12-00088	D.M.	J. Aprea	3/10/69	PDP-12 SYSTEM	
AP	3/71	12-00092	J.S.	R. Hutnack	3/69		
AR	4/71	12-00093	J.S.	L. Gale	3/10/69		
AS	7/71	12-00095	F.V.	PROJ. ENG.	DATE		
AT	8/71	EM12-31	R.M.	L. Gale	3/10/69		
AU	10/71	EP12-24	R.M.	PROD.	DATE		
AV	1/72	12-00094	R.M.	L. Gale	3/10/69		
FIRST USED ON		SIZE	CODE	NUMBER	REV.		
PDP-12		A	ML	PDP 12-0			
SCALE							
SHEET 2 OF 2		DIST.					



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 43R 3303 325

- NOTES:
1. FOR DRAWING INDEX LIST SEE DWG. NO. D-IC-PDPI2-0-1.
  2. FOR FIELD EQUIPMENT LAYOUT SEE DWG. NO. U-AR-PDPI2-0-2.
  3. ITEM #27 & 32 USED IN PLACES ON KRAK PLINUM DOOR ARE FOR SHIPPING PURPOSE ONLY.
  4. FOR POWER WIRING & SIGNAL CABLE LOCATION SEE DWG. D-IC-PDPI2-0-3.
  5. ITEM #25 TO BE USED FOR 240V SYSTEM ONLY.



REV	CHANGE NO	BY	DATE
12	00093	K	
REVISED & REDRAWN			
M. O'NEILL 12-1-71			
SCANLAN 12-1-71			
12-00095 12-1-71			
5-11-69 7-30-71			
R. MOORE 8-1-71			
12-00099			
R. MOORE			

FIRST USED ON OPTION / MODEL  
 PDPI2

DO NOT SCALE DRAWING  
 UNLESS OTHERWISE SPECIFIED  
 DIMENSION IN INCHES  
 TOLERANCES  
 DECIMALS FRACTIONS ANGLES  
 ±.005 ±.1/64 ±.030  
 FINAL SURFACE QUALITY /  
 REMOVE BURRS AND BREAK SHARP CORNERS

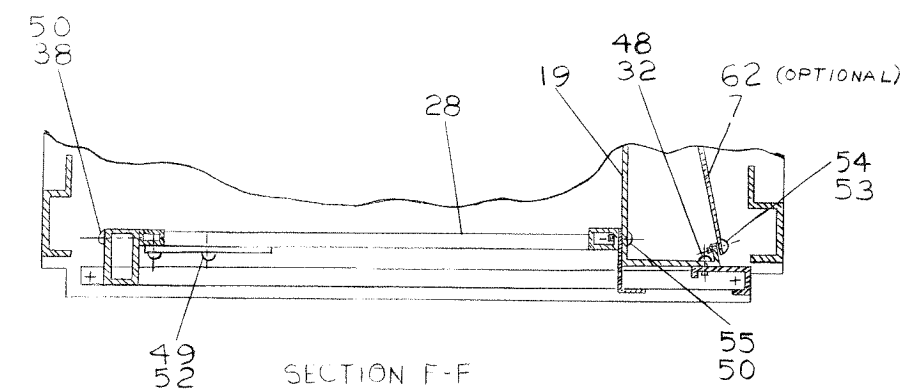
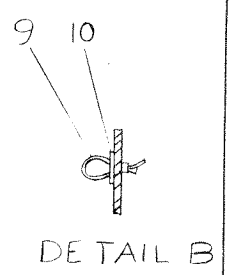
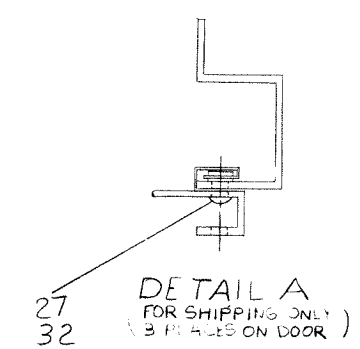
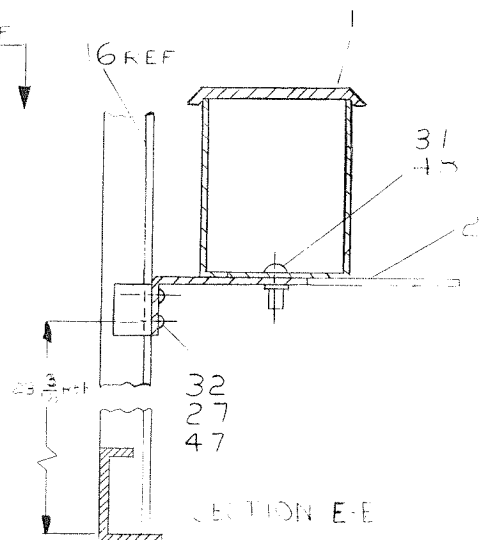
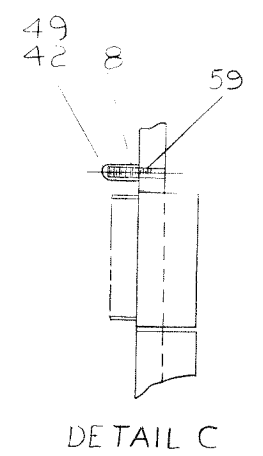
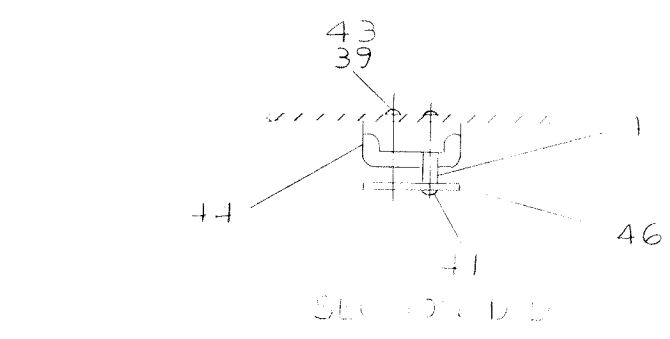
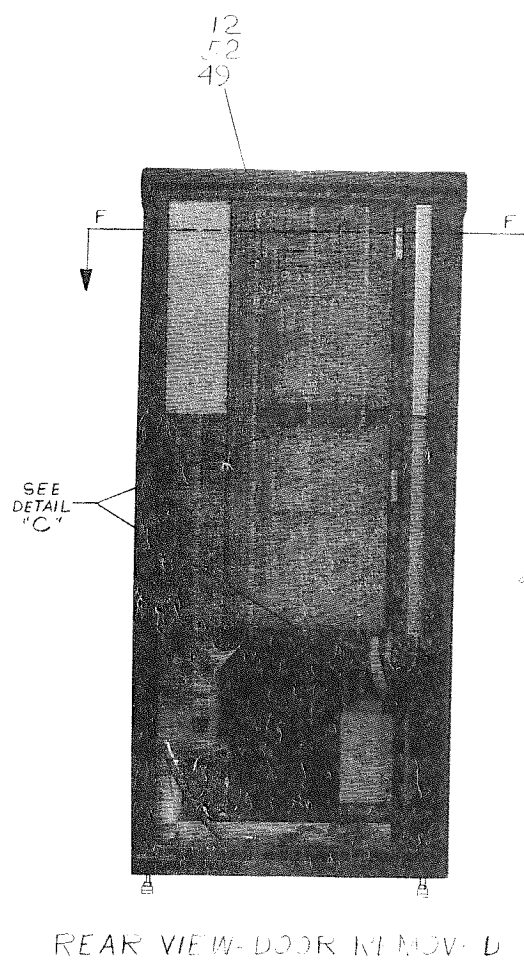
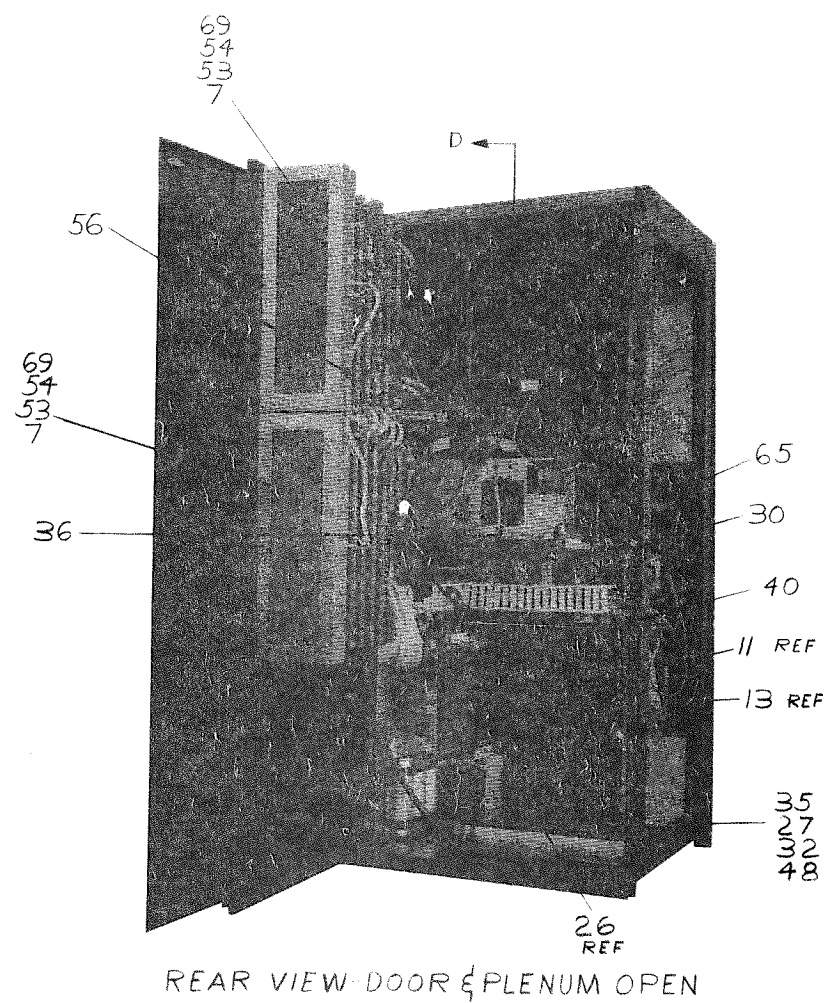
QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DRN.	J. FLEMING	DATE	8-22-69
CHK'D.	K. RUSSELL	DATE	8-5-69
ENG.		DATE	8-11-69
PROJ. ENG.		DATE	8-11-69
PROD.	D. CALL	DATE	8-16-69
NEXT HIGHER ASSY			
SCALE NONE		SIZE CODE	NUMBER
SHEET 1 OF 2		DUA	PDPI2-0-0
		DIST.	
			REV. M

digital EQUIPMENT CORPORATION  
 MAYNARD, MASSACHUSETTS

TITLE  
 PDPI2 ASSEMBLY

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730 83BAFL 3000 325 2 1



REV	
CHANGE NO	
CHK	

FIRST USED ON OPTION / MODEL  
FDPI2

DO NOT SCALE DRAWING  
UNLESS OTHERWISE SPECIFIED  
DIMENSION IN INCHES  
TOLERANCES  
DECIMALS FRACTIONS ANGLES  
± .005 ± 1/64 ± 0°30'  
FINAL SURFACE QUALITY /  
REMOVE BURRS AND BREAK SHARP  
CORNERS  
MATERIAL  
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DRN	J FLEMING	DATE 8-22-69	<b>digital</b> EQUIPMENT CORPORATION <small>WATYARD, MASSACHUSETTS</small> TITLE <b>FDPI2 ASSEMBLY</b> SIZE / CODE NUMBER REV. <b>DUAL FDPI2-0-0 M</b>
CHK'D	KRUSS	DATE 8-2-69	
ENG.	L GALE	DATE 8-11-69	
PROJ. ENG.	L GALE	DATE 8-11-69	
PROD.	D CALL	DATE 8-12-69	
NEXT HIGHER ASSY			
SCALE NONE		SCALE	
SHEET 2 OF 2		DIST.	



# DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST

MADE BY J. FLEMING  
 DATE 5/15/69  
 ENG *S. Dale*  
 DATE 8/11/69

CHECKED K. RUSS  
 DATE 8/11/69  
 PROD *adCall*  
 DATE 8/11/69

SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION
1	C-MD-7406898-0-0	DUCT CABLE
2	C-IA-7406900-0-0	BRACKET, DUCT
3	C-MD-7406844-0-0	PANEL BLANK (NARROW)
4	C-IA-7006111-0-0	PDP 12 LOGIC CABLES
5	1203185-2	PRECISION POWER SUPPLY #15V
6	D-IA-7006186-0-0	CABLE LOGIC POWER
7	D-IA-7407277-0-0	SCREEN, FAN
8	<del>9008258</del>	SPACER 1/4 AF X 1-3/8 LG #8-32
9	9007032	TIE WRAP SST-2-B (PANDUIT)
10	9006714	WASHER .250 X .500 X .062 THK
11	D-AD-7005964-0-0	ANALOG PANEL ASSY
12	C-IA-7406947-0-0	PANEL, CONN
13	D-AD-7005963-0-0	RELAY PANEL ASSY
14	D-UA-VR14-0-0	VR14 DISPLAY
15	D-IA-TU156-0-0	TAPE UNIT TU56
<del>15</del>	<del>D-IA-TU55-A-0</del>	<del>TAPE UNIT TU55 (50 Hz)</del>
16	E-AD-7005950-0-0	CAB FRAME ASSY
17	E-AD-7005955-0-0	CONSOLE ASSY
18	E-AD-7005958-0-0	TABLE ASSY
19	D-AD-7005983-0-0	FAN HOUSING ASSY
20	C-AD-7006045-0-0	POWER SUPPLY BRKT ASSY
21	D-UA-H951-TB-0	NARROW DOOR

TITLE PDP 12 ASSEMBLY

ASSY NO. D-UA-PDP12-0-0

SIZE CODE A PL

SHEET 1 OF 4

DIST. 4

NUMBER PDP12-0-0

REV. M

REV. 12

REV. 00099

			QUANTITY / VARIATION						
			PDP12-A	PDP12-B	PDP12-C	PDP12-10	PDP12-20	PDP12-30	PDP12-40
2	2	2				2	2	2	2
2	2	2				2	2	2	2
4	5	5				4	4	3	3
1	1	1				1	1	1	1
1	1	0				1	1	1	1
2	2	2				2	2	2	2
2	2	2				2	2	2	2
2	2	2				2	2	2	2
A/RA/RA/R	A/RA/RA/R	A/RA/RA/R				A/RA/RA/R	A/RA/RA/R	A/RA/R	A/RA/R
1	1	1				1	1	1	1
2	2	2				2	2	2	2
1	-	-				1	1	1	1
1	1	-				-	1	1	1
1	1	-				-	1	1	1
2	2	2							
1	1	1				1	1	1	1
1	1	1				1	1	1	1
1	1	1				1	1	1	1
2	2	2				2	2	2	2
1	1	-				-	1	1	1
1	1	1				1	1	1	1

# DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST

MADE BY J. FLEMING  
 DATE 5/15/69  
 ENG *S. Dale*  
 DATE 8/11/69

CHECKED K. RUSS  
 DATE 8/11/69  
 PROD *adCall*  
 DATE 8/11/69

SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION
22	D-UA-H950-HB-0	SHORT DOOR ASSY
23	D-UA-H951-BA-0	30" FULL DOOR ASSY
24	D-UA-H952-A-0	END PANEL
25	D-UA-H952-Q-0	COVER PANEL 10 1/2"
26	D-UA-724-0-0	POWER SUPPLY 724
27	9007786	SPEED NUT #10-32 TINNEMANN
28	EM12-0	BASIC 4K MEMORY
29	EP12-0	PDP12 PROCESSOR
30	D-IA-7006231-0-0	LINC TAPE D.C PWR HARNESS
31	9006071-3	SCR PHL HD TRUSS #10-32 X 3/8 LG
32	9006074-3	SCR PHL HD TRUSS #10-32 X 5/8 LG
33	9006039-1	SCR PHL HD PAN #8-32 X 1/2 SST
34	9006071-2	SCR PHL HD FLAT #10-32 X 3/8 LG
<del>35</del>	<del>D-AD-7006060-0-0</del>	<del>ASSY XFMR MITG PANEL 50 CYCLE ONLY</del>
36	D-IA-7006238-0-0	INTERNAL SCOPE CABLE
37	9006712	WASH .250 I.D X .375 OD X .032 THK
38	9006063-3	SCR PHL HD TRUSS 1/4-20 X 1 3/4 LG
39	9006026-1	SCR PHL HD PAN #6-32 X 3/4 LG
40	1201265	POWER CORD
41	9006020-1	SCR PHL HD PAN #6-32 X 1/4 LG
42	9008208	SCR PHL HD PAN #8-32 X 1/2 LG NYLON
43	9006560	NUT KEPS #6-32 SST

TITLE PDP 12 ASSEMBLY

ASSY NO. D-UA-PDP12-0-0

SIZE CODE A PL

SHEET 2 OF 4

DIST. 4

NUMBER PDP12-0-0

REV. M

REV. 12

REV. 00099

			QUANTITY / VARIATION						
			PDP12-A	PDP12-B	PDP12-C	PDP12-10	PDP12-20	PDP12-30	PDP12-40
1	1	1				1	1	1	1
1	1	1				1	1	1	1
2	2	2				2	2	2	2
1	1	3				-	1	1	1
1	1	1				1	1	1	1
69	69	69				69	71	71	71
1	1	1				1	1	1	1
1	1	1				1	1	1	1
1	1	1				1	1	1	1
4	4	4				4	4	4	4
49	49	49				49	54	54	54
4	4	-				-	4	4	4
4	4	4				4	4	4	4
1	1	-				-	1	1	1
24	24	24				24	24	24	24
6	6	6				6	6	6	6
4	4	4				4	4	4	4
2	2	-				-	2	2	2
2	2	2				2	2	2	2
2	2	2				2	2	2	2
8	8	4				8	8	8	8

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**PARTS LIST**

MADE BY	J. FLEMING	CHECKED	K. RUSS	SECTION	
DATE	5/15/69	DATE	8/11/69	ISSUED SECT.	1
ENG	L. GALE	PROD	D. CALL		
DATE	8/11/69	DATE	8/18/69		

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY	VARIATION
44	9006902	TERM STRIP #4-541 CINCH JONES	1	1
45	9006851	SPACER 1/4AF X 1/2 #6-32 AL	2	2
46	B-MD-7404721-0-0	PROTECTION COVER 541 (4 TERM)	1	1
47	9006635	WASH INT TOOTH #10	30	30
48	9007651	WASH EXT TOOTH #10	44	44
49	9006634	WASH INT TOOTH #8	11	11
50	9006724	WASH EXT TOOTH 1/4	12	12
51	9007630-3	SCR PHL HD TRUSS #10-32 X 3/4 BLK PASS	24	24
52	9006040-1	SCR PHL HD PAN #8-32 X 5/8 LG	9	9
53	9006022-1	SCR PHL HD PAN #6-32 X 3/8 LG	5	5
54	9006633	WASH INT TOOTH #6	5	5
55	9006058-3	SCR PHL HD TRUSS 1/4-20 X 3/4 LG	5	5
56	E-IA-7006037-0-0	MAIN FRAME HARNESS 120 YAC	6	6
57	E-IA-7006038-0-0	MAIN FRAME HARNESS DC	1	1
58	9107673-03	CORD #14/3 WIRE <del>GRY</del>	2	2
59	9006077-3	SCR PHL HD TRUSS #10-32 X 1 LG	4	4
60	7408322	BRACKET MOUNTING BLOCK	2	2
61	7408321	MOUNTING BRACKET TU56	1	1
62	9006073-3	SCR PHL HD TRUSS #10-32 X 1/2 LG	2	2
63	<del>9-UA-7408321-A-0</del>	<del>FIBER ASSY</del>		
REF	D-IC-PDP12-0-3	POWER WIRING & SIGNAL CONN.		
64	1809804	LABEL, <del>100L WIRE, W/EAR</del>		

TITLE: PDP 12 ASSEMBLY

ASSY NO.: D-UA-PDP12-0-0

SIZE CODE: A PL

SHEET 3 OF 4

QUANTITY	VARIATION
PDP12-A	
PDP12-B	
PDP12-C	
PDP12-10	
PDP12-20	
PDP12-30	
PDP12-40	

REV ECO NO: M

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**PARTS LIST**

MADE BY	J. FLEMING	CHECKED	K. RUSS	SECTION	
DATE	5/15/69	DATE	8/11/69	ISSUED SECT.	1
ENG	L. GALE	PROD	D. CALL		
DATE	8/11/69	DATE	8/18/69		

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY	VARIATION
65	<del>D-AD-7006335-0-0</del>	<del>CLOCK CONTROL PANEL ASSY</del>		
66	C-IA-7408980-0-0	BRACKET, EXTRUSION	1	1
67	C-IA-7408981-0-0	BRACKET, HOLDDOWN	2	2
68	7408983	BRACKET, SMALL DUCT	1	1
69	1205748	FILTER, MESH	2	2
70	9007772-13	PLASTIC CLAMP, DAKOTA		
71	D-IA-7409121-0-0	BAR, CABLE MOUNTING		
72	9007772-9	PLASTIC CLAMP, DAKOTA		
73	TC12-0	LINC TAPE CONTROL	1	1
74	VC12-0	LINC SCOPE CONTROL	1	1
75	AD12-0	ANALOG TO DIGITAL CONVERTER	1	1
76	KF12-0	AUTOMATIC PRIORITY INTERRUPT		
77	KW12-A	REAL TIME CLOCK		
78	MC12-0	MEMORY EXTENSION CONTROL		
79	DR12-0	RELAY BUFFER		
80	LT33-DC	ASR33 TTY (115V 60HZ)	1	1
81	LT33-DD	ASR33 TTY (230V 50Hz)	(1 per 115V 60Hz Systems)	
82	LT33-DE	ASR33 TTY (100V 50Hz)	(1 per 230V 50Hz Systems)	
83	FPP12-0	FLOATING POINT PROCESSOR	(1 per 100V 50Hz Systems)	

TITLE: PDP 12 ASSEMBLY

ASSY NO.: D-UA-PDP12-0-0

SIZE CODE: A PL

SHEET 4 OF 4

REV ECO NO: M

QUANTITY	VARIATION
PDP12-A	
PDP12-B	
PDP12-C	
PDP12-10	
PDP12-20	
PDP12-30	
PDP12-40	

REV ECO NO: M

TITLE: PDP 12 ASSEMBLY

ASSY NO.: D-UA-PDP12-0-0

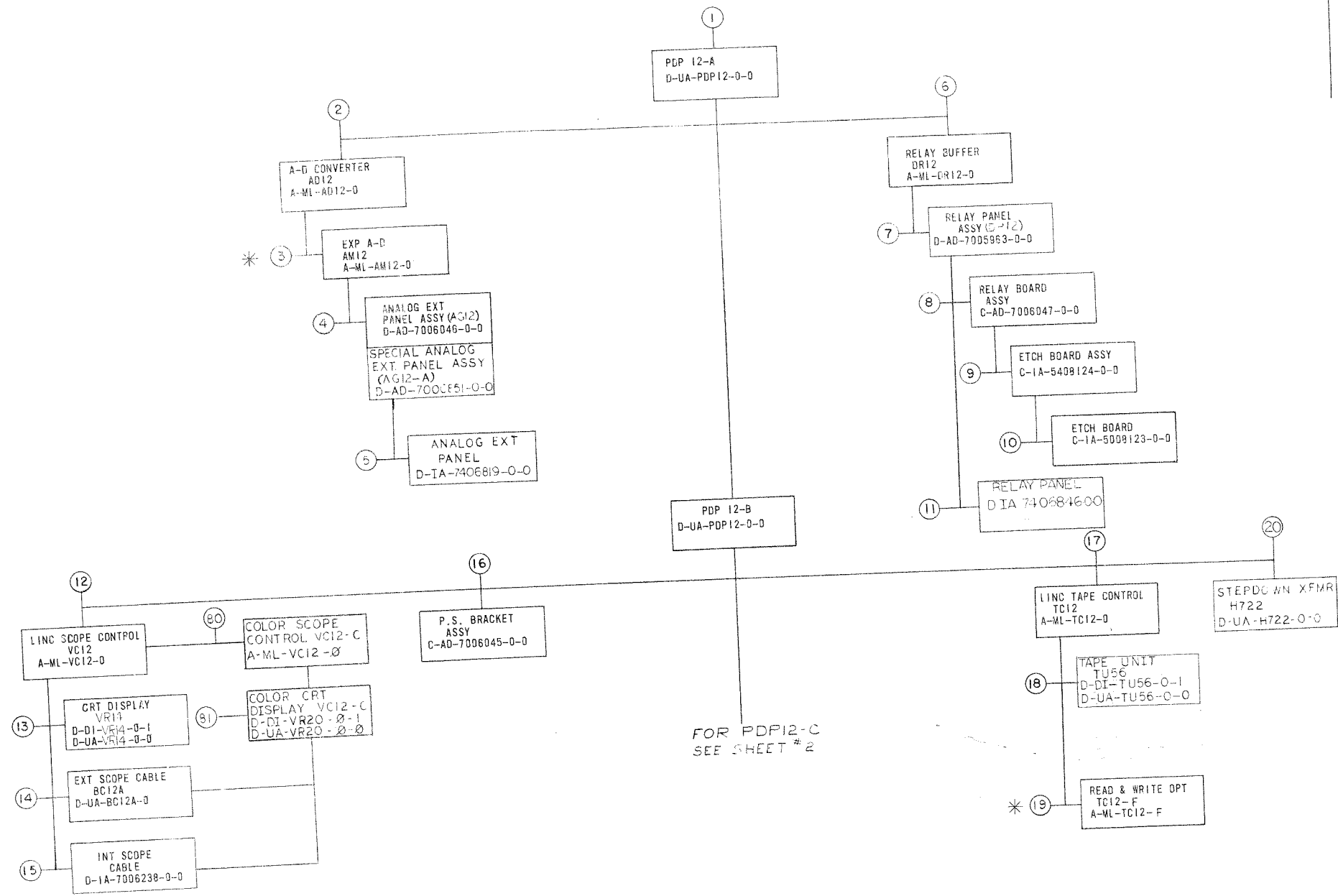
SIZE CODE: A PL

SHEET 4 OF 4

REV ECO NO: M

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NOTES:  
 1. \* ASTERISK INDICATES OPTIONS AVAILABLE.  
 2. LETTER DESIGNATION ABOVE BLOCK INDICATES THAT PART IS USED ONLY ON THAT SYSTEM WITH SAME LETTER DESIGNATION.



FOR PDP12-C  
SEE SHEET #2

REV	CHG	NO	REV	DATE	BY	DESCRIPTION	QTY	DESCRIPTION	PART NO.	ITEM NO.
12-00031	A									
12-00032	B									
12-00033	C									
12-00034	D									
12-00035	E									
12-00036	F									
12-00037	G									
12-00038	H									
12-00039	I									
12-00040	J									
12-00041	K									
12-00042	L									
12-00043	M									
12-00044	N									
12-00045	O									
12-00046	P									
12-00047	Q									
12-00048	R									
12-00049	S									
12-00050	T									
12-00051	U									
12-00052	V									
12-00053	W									
12-00054	X									
12-00055	Y									
12-00056	Z									

FIRST USED ON OPTION/MODEL  
PDP12

DO NOT SCALE DRAWING  
 UNLESS OTHERWISE SPECIFIED  
 DIMENSION IN INCHES  
 TOLERANCES  
 DECIMALS FRACTIONS ANGLES  
 = .005 = 1/64 = 0°30'  
 FINAL SURFACE QUALITY  
 REMOVE BURRS AND BREAK SHARP CORNERS

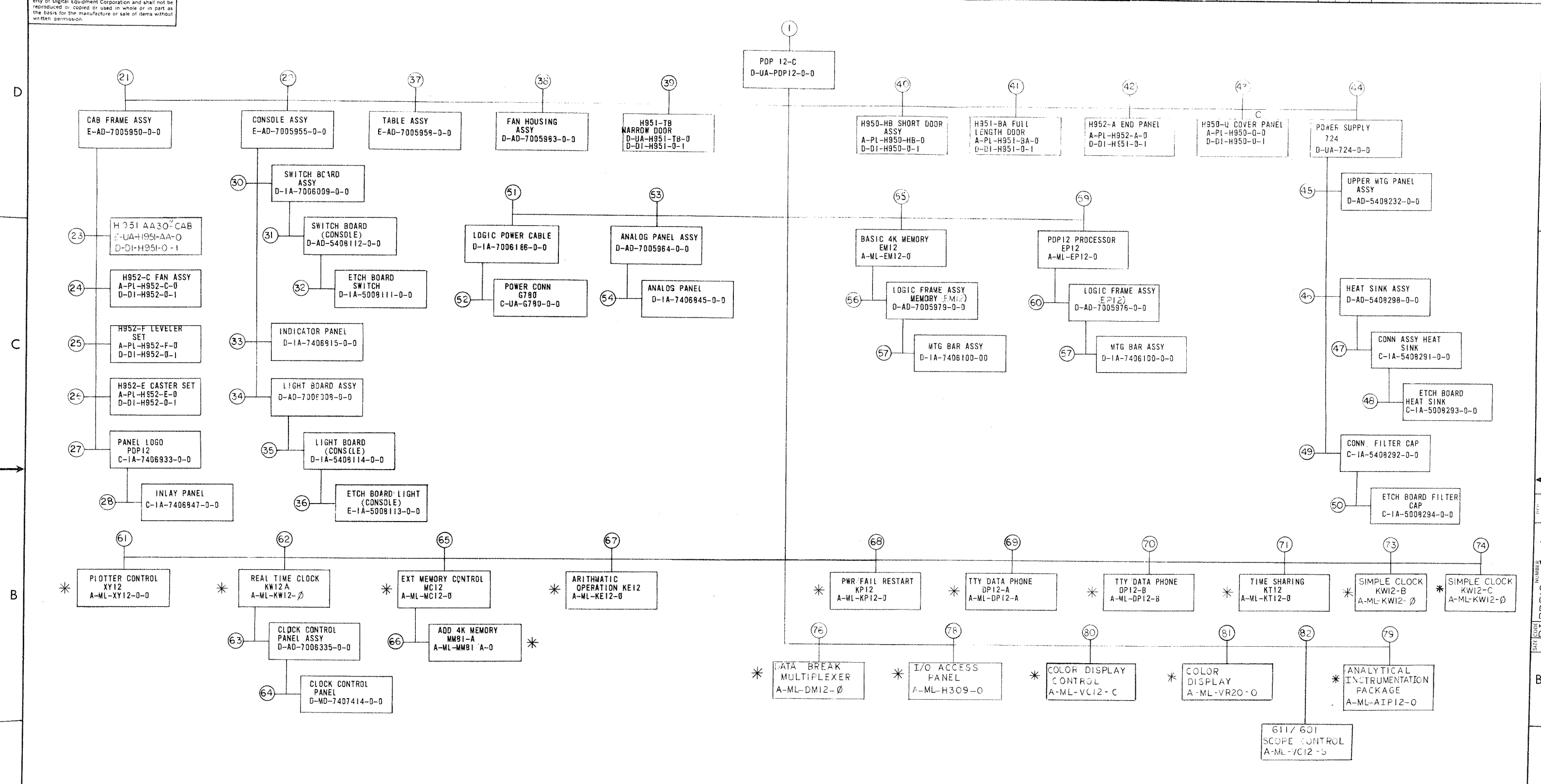
DRN. J. J. Gony  
 CHK'D. J. J. Gony  
 ENG. J. J. Gony  
 PROD. J. J. Gony  
 DATE 5-29-63  
 DATE 8/1/64  
 DATE 8/1/64  
 DATE 8/1/64

digital EQUIPMENT CORPORATION  
 MAYNARD, MASSACHUSETTS  
 TITLE  
 DRAWING INDEX  
 LIST (PDP12)  
 SIZE CODE  
 DDI PDP12-0-1  
 NUMBER  
 Y



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1-0-PDP12-D 2



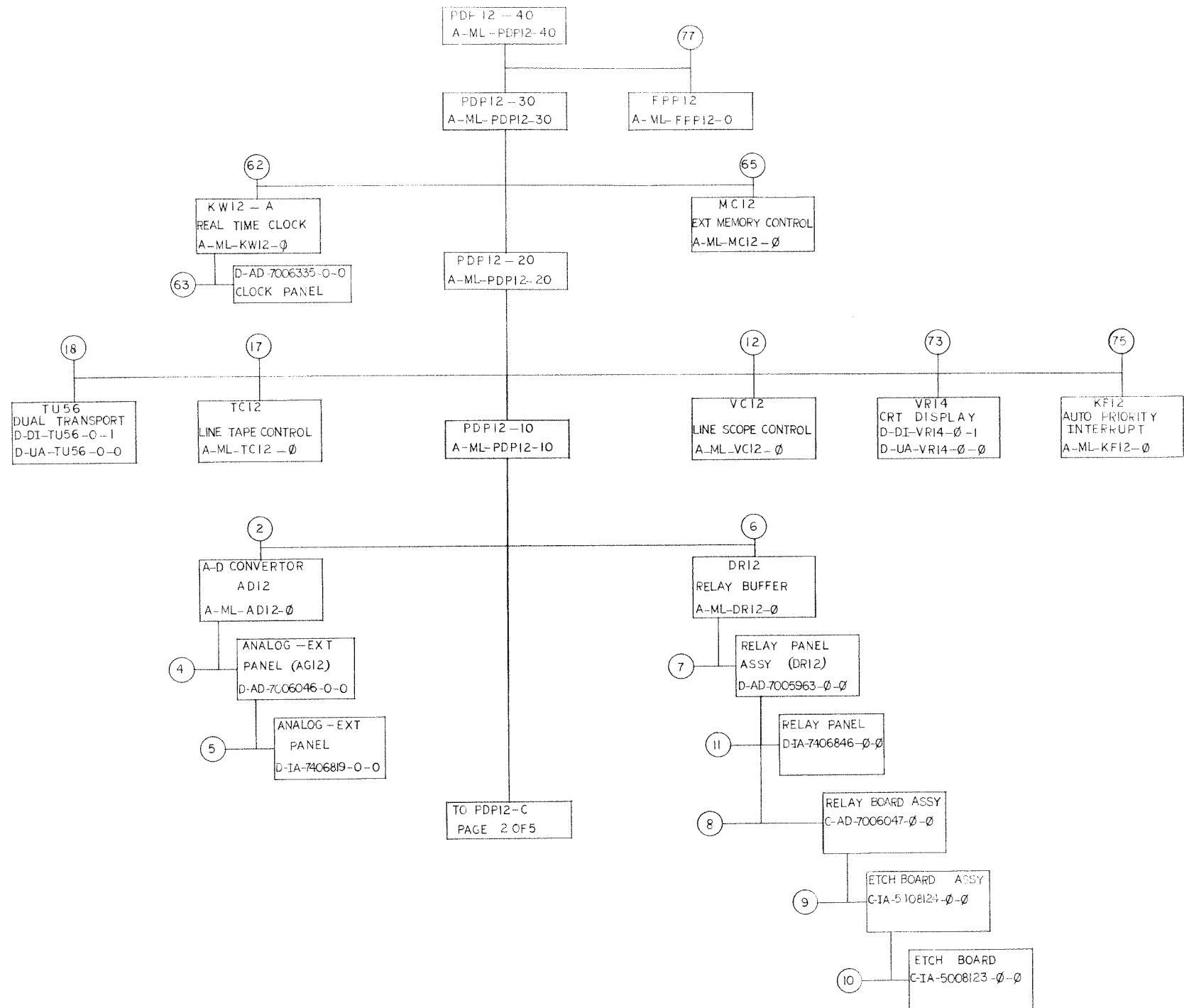
REVISIONS	CHK	CHANGE NO.	REV
		12-00099	Y
R. MOORE			
DATE: 12-1-72			

FIRST USED ON OPTION/MODEL  
PDP12

DO NOT SCALE DRAWING	UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES	DECIMALS FRACTIONS ANGLES
	= .005 = 1/64 = 0°30'
	FINAL SURFACE QUALITY
	REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL	++
FINISH	++

QTY.	DESCRIPTION	PART NO.	ITEM NO.												
PARTS LIST															
<table border="1"> <tr> <td>DRN.</td> <td>DATE</td> <td>CHK'D.</td> <td>DATE</td> </tr> <tr> <td>ENG.</td> <td>DATE</td> <td>PROJ. ENG.</td> <td>DATE</td> </tr> <tr> <td>PROD.</td> <td>DATE</td> <td></td> <td></td> </tr> </table>				DRN.	DATE	CHK'D.	DATE	ENG.	DATE	PROJ. ENG.	DATE	PROD.	DATE		
DRN.	DATE	CHK'D.	DATE												
ENG.	DATE	PROJ. ENG.	DATE												
PROD.	DATE														
<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS															
<b>DRAWING INDEX LIST (PDP12)</b>															
SIZE CODE	NUMBER	REV.													
D D I P D P 1 2 - 0 - 1	Y														
DIST.															

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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN J FLEMING	DATE 5-29-69	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small> TITLE <b>DRAWING INDEX</b> <b>LIST (PDP12)</b>
DECIMALS	ANGLES	CHK'D K RUSS	DATE 7-21-69	
.XXX = .005	± 0° 30'	ENG. L GALE	DATE 8-11-69	
.XX = .02		PROJ. ENG. L GALE	DATE 8-11-69	
.X = .1		PROD. D CALL	DATE 8-18-69	
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	SCALE NONE		D	DI PDP12-0-1
SHEET 3 OF 5		DIST.		REV. Y

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MECHANICAL				MECHANICAL				MECHANICAL				MECHANICAL			
FIND NO	DESCRIPTION	DWG NUMBER	DEPT USAGE	FIND NO	DESCRIPTION	DWG NUMBER	DEPT USAGE	FIND NO	DESCRIPTION	DWG NUMBER	DEPT USAGE	FIND NO	DESCRIPTION	DWG NUMBER	DEPT USAGE
1	PDP12 SYSTEM PDP12 (PL) DUCT, CABLE BRACKET, DUCT PANEL BLANK (NARROW) PDP12 LOGIC CABLE PRECISION POWER SUPPLY SCREEN, FAN PANEL CONN HARNESS MAIN FRAME 120 VAC HARNESS MAIN FRAME DC HARNESS LINC TAPE DC PWR PROTECTION COVER 541 (4TERM) SHIPPING BRKT TU55	D-UA-PDP12-0-0 A-PL-PDP12-0-0 C-MD-7406899-0-0 C-IA-7406900-0-0 C-MD-7406944-0-0 C-IA-7406111-0-0 1203195-0-0 D-IA-7407277-0-0 C-IA-7406947-0-0 E-IA-7406037-0-0 E-IA-7006038-0-0 D-IA-7006231-0-0 B-MD-7407271-0-0 C-MD-7407759-0-0 A-ML-AD12-0		19	TAPE UNIT (TU56) TAPE UNIT (TU56) (PL) DRAWING INDEX LIST TAPE UNIT (TU55-A) TAPE UNIT (TU55-A) (FLY- DRY WING INDEX *19 READS WRITE OPT TC12-F 20 XFMR STEPDOWN XFMR STEPDOWN (PL) PANEL XFMR MFG COVER PROTECTION (541) 6 TERM	D-UA-TU56-0-0 A-PL-TU56-0-0 D-DI-TU56-0-1 D-UA-TU55-A-0 A-PL-TU55-A-0 D-DI-TU55-A-1 A-ML-TC12-F D-UA-H722-0-0 A-PL-H722-0-0 D-IA-7407072-0-0 B-MD-7405436-0-0		34	LIGHT BOARD ASSY LIGHT BOARD ASSY (PL) LOGIC DECALS	D-AD-7006008-0-0 A-PL-7006008-0-0 A-DC-7407193-0-0		40	CONN. FILTER CAP	C-IA-5408292-0-0	
2	A-D CONVERTER (AD12)	A-ML-AD12-0		21	PDP12 CABINET FRAME ASSY PDP12 CABINET FRAME ASSY (PL) POST 19" DOOR, PLENUM PIN DOOR RETAINER, DOOR PIN BRACKET CONTROL PANEL R.H. BRACKET CONTROL PANEL L.H. PLENUM, SPACER COVER CONSOLE BOTTOM	E-AD-7005950-0-0 A-PL-7005950-0-0 D-IA-7406796-0-0 E-IA-7407648-0-0 B-MD-7406670-0-0 C-IA-7407093-2-0 C-IA-7407093-1-0 A-MD-7406288-0-0 C-MD-7407260-0-0		35	LIGHT BOARD (CONSOLE)	D-IA-5408114-0-0		50	ETCH BOARD, FILTER CAP ASSY DRILLING HOLE LAYOUT X-Y COORDINATE HOLE LAYOUT	C-IA-5008294-0-0 C-AH-5408292-0-5 K-CO-5008294-0-4	
3	EXPANDED A-D (AM12)	A-ML-AM12-0		23	H951-AA30" CABINET ASSY H951-AA 30" CABINET ASSY H951 DRAWING INDEX LIST	E-UA-H951-AA-0 A-PL-H951-AA-0 D-DI-H951-0-1		36	ETCH BOARD, LIGHT (CONSOLE) ASSY DRILLING HOLE LAYOUT PRINTED CIRCUIT LAYOUT	E-IA-5008113-0-0 C-AH-5408114-0-0 PC-5008113-0-0		51	CABLE LOGIC POWER	D-IA-7006196-0-0	
4	ANALOG EXT PANEL ASSY (AG12) ANALOG EXT PANEL ASSY (PL) LOGIC DECALS SPECIAL ANALOG EXT. PANEL ASSY (AG12-A) SPECIAL ANALOG EXT. PANEL ASSY (PL)	D-AD-7006046-0-0 A-PL-7006046-0-0 A-DC-7407143-0-0 D-AD-7006451-0-0 A-PL-7006851-0-0		24	H952-C FAN H952 DRAWING INDEX LIST	A-PL-H952-C-0 D-DI-H952-0-1		37	TABLE ASSY TABLE ASSY (PL) TOP, TABLE FRAME, TABLE	E-AD-7005958-0-0 A-PL-7005958-0-0 D-IA-7406836-0-0 E-IA-7406839-0-0		52	POWER CONN G780 TAB FASTON INTERLOCK, POWER CONN ETCH BOARD	C-UA-G780-0-0 A-MD-7407196-0-0 B-MD-7406959-0-0 D-IA-5008253-0-0	
5	ANALOG EXT PANEL ANALOG EXT PANEL SILK SCREEN BRACKET, CABLE	D-IA-7406819-0-0 C-SS-7406819-0-1 B-MD-7406901-0-0		25	H952-F LEVELER SET H952 DRAWING INDEX LIST	A-PL-H952-F-0 D-DI-H952-0-1		38	FAN HOUSING ASSY FAN HOUSING ASSY (PL) CHASSIS, FAN HOUSING TERMINAL STRIP COVER, FAN HOUSING FAN DECALS	D-AD-7005983-0-0 A-PL-7005983-0-0 E-IA-7407254-0-0 C-IA-7405083-0-0 D-MD-7406948-0-0 A-DC-7406999-0-0		53	ANALOG PANEL ASSY ANALOG PANEL ASSY (PL) INSULATOR MICROSWITCH SWITCH ROTARY LOGIC DECAL G783 CABLE ASSY	D-AD-7005964-0-0 A-PL-7005964-0-0 B-MD-7407049-0-0 B-MD-7407195-0-0 A-DC-7407193-0-0 C-IA-7006029-1-0	
6	RELAY BUFFER (DR12)	A-ML-DR12-0		26	H952-E CASTER SET H952-E DRAWING INDEX LIST	A-PL-H952-E-0 D-DI-H952-0-1		39	H951-TB NARROW DOOR H951-TB NARROW DOOR (PL) H951 DRAWING INDEX LIST	D-UA-H951-TB-0 A-PL-H951-TB-0 D-DI-H951-0-1		54	ANALOG PANEL ANALOG PANEL SILK SCREEN	D-IA-7406945-0-0 C-SS-7406845-0-1	
7	RELAY PANEL ASSY (DR12) RELAY PANEL ASSY (PL) BRACKET, CABLE CABLE ASSY (G783) LOGIC DECALS W228 CABLE ASSY	D-AD-7005963-0-0 A-PL-7005963-0-0 B-MD-7406901-0-0 C-IA-7006028-1-0 A-DC-7407193-0-0 D-IA-7007005-0-0		27	PANEL LOGO PDP12 PANEL FRAME H950-L H950 DRAWING INDEX	C-IA-7406933-0-0 D-UA-H950-L-0 D-DI-H950-0-1		40	H950-HB SHORT DOOR ASSY H950-HB SHORT DOOR ASSY (PL) H950 DRAWING INDEX LIST	D-UA-H950-HB-0 A-PL-H950-HB-0 D-DI-H950-0-1		55	BASIC 4K MEMORY (EM12)	A-ML-EM12-0	
8	RELAY BOARD ASSY RELAY BOARD ASSY	C-AD-7006047-0-0 A-PL-7006047-0-0		28	PANEL INLAY PDP12 LOGO (BRITE CHARTREUSE) LOGO (LIME PEEL)	C-IA-7406847-0-0 C-SS-7406847-0-1 C-SS-7406847-0-2		41	H951-BA FULL LENGTH DOOR 30" H951-BA-FULL LENGTH DOOR 30" (PL) H951 DRAWING IND X LIST	D-UA-H951-BA-0 A-PL-H951-BA-0 D-DI-H951-0-1		56	LOGIC ASSY MEMORY (EM12) LOGIC ASSY MEMORY (PL) 298 PIN CONN BLOCK LOGIC FRAME DECALS LOGIC FRAME	D-AD-7005979-0-0 A-PL-7005979-0-0 E-SC-1205348-0-0 A-DC-7406370-0-0 D-IA-7407207-0-0	
9	ETCH BOARD ASSY	C-IA-5408124-0-0		29	CONSOLE ASSY CONSOLE ASSY (PL) COVER, SWITCH BEZEL, CONSOLE SUPPORT, GLASS	E-AD-7005955-0-0 A-PL-7005955-0-0 D-MD-7407173-0-0 E-MD-7407125-0-0 D-IA-7407103-0-0		42	H952-A END PANEL H952-A END PANEL (PL) H952 DRAWING INDEX LIST	D-UA-H952-A-0 A-PL-H952-A-0 D-DI-H952-0-1		57	MTG BAR ASSY MTG BAR	D-IA-7406100-0-0 C-MD-7405035-0-0	
10	ETCH BOARD, RBLAY FLIP CHIP MODULE (BLANK) ASSY DRILLING HOLE LAYOUT PRINTED CIRCUIT LAYOUT	C-IA-5008123-0-0 D-MD-1402230-0-0 C-AH-5408124-0-5 PC-5008123		30	SWITCH BOARD ASSY LOGIC DECALS	D-IA-7006009-0-0 A-DC-7407193-0-0		43	H950-Q COVER PANEL (PL) H950-Q COVER PANEL (PL) H950 DRAWING INDEX LIST	D-UA-H950-Q-0 A-PL-H950-Q-0 D-DI-H950-0-1		58	CRT DISPLAY (COLOR) CRT DISPLAY (COLOR) DRAWING INDEX LIST	D-UA-VR20-0-0 A-PL-VR20-0-0 D-DI-VR20-0-1	
11	RELAY PANEL RELAY PANEL, SILK SCREEN	D-IA-7406846-0-0 C-SS-7406846-0-1		31	SWITCH BOARD (CONSOLE) SWITCH BOARD (CONSOLE) (PL) SPACER BAR, SWITCH BOARD (LIME PEEL) ROCKER SWITCH RS-9-3-FB (CHARTREUSE) ROCKER SWITCH RS-9-3-FB (LIME PEEL) ROCKER SW RS-5-0-FB-PC (CHARTREUSE) ROCKER SW RS-5-0-FB-PC	D-AD-5408112-0-0 A-PL-5408112-0-0 C-MD-7406823-0-0 PC C-AD-5404413-1-0 PC C-AD-5404413-12-0 C-AD-5404331-11-0 C-AD-5404331-12-0		44	POWER SUPPLY 724 POWER SUPPLY 724 (PL) 724 POWER SUPPLY DECALS WIRE HARNESS 724 P.S. SCREEN COVER CHASSIS, P.S. PLATE COVER TRANSFORMER COVER BRACKET HOLD DOWN CAUTION CHECK LABEL SPECS, 724 P.S.	D-UA-724-0-0 A-PL-724-0-0 B-DC-5308247-0-0 E-IA-7006244-0-0 D-IA-5308206-0-0 E-IA-5308197-0-0 C-MD-5304562-0-0 B-MD-5304563-0-0 C-MD-5304561-0-0 A-DC-5308410-0-0 A-SP-724-0-4		59	KW12 CONTROL PANEL	D-AD-7006335-0-0	
12	LINC SCOPE CONTROL (VC12)	A-ML-VC12-0		32	ETCH BOARD, SWITCH ASSY DRILLING HOLE LAYOUT PRINTED CIRCUIT LAYOUT	D-IA-5008111-0-0 C-AH-5408112-0-5 PC5008111-0-0		45	UPPER MTG PANEL ASSY UPPER MTG PANEL ASSY (PL) UPPER MTG PANEL	D-AD-5408232-0-0 A-PL-5408232-0-0 E-IA-5308205-0-0		60	COLOR SCOPE CONTROL (VC12-C)	A-ML-VC12-C-0	
13	CRT DISPLAY CRT DISPLAY DRAWING INDEX LIST	D-UA-VR14-0-0 A-PL-VR14-0-0 D-DI-VR14-0-1		33	INDICATOR PANEL IND PNL SILK SCREEN STEP#1 IND PNL SILK SCREEN STEP#2 IND PNL SILK SCREEN STEP#3 IND PNL SILK SCREEN STEP#4 IND PNL SILK SCREEN STEP#5	D-IA-7406815-0-0 C-SS-7406815-0-1 C-SS-7406815-0-2 C-SS-7406815-0-3 C-SS-7406815-0-4 C-SS-7406815-0-5		46	HEAT SINK ASSY HEAT SINK ASSY (PL) INSULATOR, HEAT SINK HEAT SINK	D-AD-5408298-0-0 A-PL-5408298-0-0 B-MD-5308300-0-0 C-SC-1209474-0-0		61	CRT DISPLAY (COLOR) CRT DISPLAY (COLOR) DRAWING INDEX LIST	D-UA-VR20-0-0 A-PL-VR20-0-0 D-DI-VR20-0-1	
14	EXT SCOPE CABLE (BC12A)	D-UA-BC12A-0-0						47	CONN ASSY HEAT SINK	C-IA-5408291-0-0					
15	INT SCOPE CABLE W228 CABLE ASSY	D-IA-7006238-0-0 D-IA-7007005-0-0						48	ETCH BOARD, HEAT SINK ASSY DRILLING HOLE LAYOUT X-Y COORDINATE HOLE LOC	C-IA-5008293-0-0 C-AH-5408293-0-5 K-CO-5008294-0-4					
16	P.S. BRACKET ASSY P.S. BRACKET ASSY (PL) BRACKET, MTG PRECISION P.S. CABLE LOGIC DECALS	C-AD-7006045-0-0 A-PL-7006045-0-0 C-MD-7407058-0-0 C-IA-7006167-0-0 A-DC-7407193-0-0													
17	LINC TAPE CONTROL (TC12)	A-ML-TC12-0													

REV	CHK	REVISIONS CHANGE NO.	FIRST USED ON OPTION / MODEL PDP12		DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		DRN / F. Gony	DATE 6-11-69	digital EQUIPMENT CORPORATION MILFORD, MASSACHUSETTS	
			TOLERANCES		CHK D. / J. Gony	DATE 7/1/69	TITLE			
			DECIMALS FRACTIONS ANGLES	ENG. / J. Gony	DATE 8/1/69	DRAWING INDEX LIST (PDP12)				
			± .005 ± 1/64 ± 0°30'	PROJ. ENG. / J. Gony	DATE 8/1/69					
MATERIAL		NEXT HIGHER ASSY		SCALE NONE		SHEET 4 OF 5		SIZE CODE DD1	NUMBER PDP12-0-1	REV Y



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MECHANICAL				ELECTRICAL				ELECTRICAL				ELECTRICAL											
FIND NO	DESCRIPTION	PART NO.	DEPT USAGE	FIND NO	DESCRIPTION	PART NO.	DEPT USAGE	FIND NO	DESCRIPTION	PART NO.	DEPT USAGE	FIND NO	DESCRIPTION	PART NO.	DEPT USAGE								
59	PDP12 PROCESSOR (EP12)	A-ML-EP12-0		1.	PDP 12 PDP12 CONFIGURATION POWER WIRING <del>SHIPPING &amp; INSTALLATION SPEC</del> ACCEPTANCE SPLC SYSTEMS SPEC HARDWARE KIT SPARE PARTS SOFTWARE KIT MANUAL TIMING FUNCTION PT1 MANUAL TIMING FUNCTION PT2 LINC FETCH 1A LINC FETCH 1B LINC FETCH 2 LINC DEFER LINC EXECUTE LINC EXECUTE LINC EXECUTE LINC EXECUTE EXECUTE 2 & INTERRUPT POP-B MODE FETCH POP-B MODE DEFER & EXECUTE BREAK	A-ML-PDP12-0 D-AR-PDP12-0-2 D-IC-PDP12-0-3 A-SP-PDP12-0-4 A-SP-PDP12-0-5 A-SP-PDP12-0-6 A-AL-PDP12-0-7 A-SP-PDP12-0-8 A-SL-PDP12-0-9 D-FD-PDP12-0-10 D-FD-PDP12-0-11 D-FD-PDP12-0-12 D-FD-PDP12-0-13 D-FD-PDP12-0-14 D-FD-PDP12-0-15 D-FD-PDP12-0-16 D-FD-PDP12-0-17 D-FD-PDP12-0-18 D-FD-PDP12-0-19 D-FD-PDP12-0-20 D-FD-PDP12-0-21 D-FD-PDP12-0-22 D-FD-PDP12-0-23		18.	TAPE UNIT TU 56 <del>TAPE UNIT 50 HZ</del>	A-ML-TU56-0 A-ML-TU55-1		59	SET/RESTORE FIELDS SPECIAL LEVELS 1 TTI TELETYPE RECEIVER TTI TELETYPE TRANSMITTER WIRE LIST D.C. POWER PROCESSOR LOGIC WIRED ASSY (EP12) WIRED ASSY (PL) PLOTTER CONTROL (XY12) CLOCK (KW12-A)	D-BS-EP12-0-SRF D-BS-EP12-0-SLA D-BS-EP12-0-TTI D-BS-EP12-0-TTO K-ML-EP12-0-3 A-ML-EP12-0-3 D-AD-7005976-0-0 A-PL-7005976-0-0 A-ML-XY12-0 A-ML-KW12-0 D-CS-7006335-0-1									
60	LOGIC ASSEMBLY (EP12) LOGIC ASSEMBLY (PL) 298 PIN CONN BLOCK LOGIC FRAME JEGALS LOGIC FRAME	D-AD-7005976-0-0 A-PL-7005976-0-0 E-SC-1205343-1-0 A-DC-7406370-0-0 D-IA-7407207-0-0		2	A-D CONVERTER A-D CONVERTER YADA CHAN 1D-17 YADB CHAN 2D-37 YADC A-D CONTROL	A-ML-AD12-0 D-BS-AD12-0-YAD D-BS-AD12-0-YADA D-BS-AD12-0-YADB D-BS-AD12-0-YADC		19.	READ & WRITE OPTION	A-ML-TC12-F		60	D.C. POWER PROCESSOR LOGIC WIRED ASSY (EP12)	D-AD-7005976-0-0									
62	REAL TIME CLOCK (KW12)	A-ML-KW12-0		3	EXPANDED A-D	A-ML-AM12-0		31.	SWITCH BOARD ASSY CIRCUIT SCHEMATIC	D-AD-5409112-0-0 D-CS-5409112-0-1		61	PLOTTER CONTROL (XY12)	A-ML-XY12-0									
63	CLOCK CONTROL PANEL (KW12) CLOCK CONTROL PANEL SWITCH ROTARY CLOCK CONTROL PANEL CLOCK CONTROL PANEL SCREEN	D-AD-7006335-0-0 A-PL-7006335-0-0 B-MD-7407540-0-0 D-IA-7407414-0-0 D-SS-7407414-0-1		4	ADDITIONAL PREAMPS	A-ML-AG12-0		35.	LIGHT BOARD ASSY CIRCUIT SCHEMATIC	D-IA-5409114-0-0 D-CS-5409114-0-1		62	CLOCK (KW12-B)	A-ML-KW12-0									
64				5	KNOB/PREAMPS	A-ML-AG12-A		38.	FAN HOUSING ASSY	D-AD-7005993-0-0		63	CLOCK CONTROL CIRCUIT SCHEMATIC	D-CS-7006335-0-1									
				6	RELAY BUFFER	A-ML-DR12-0		44	724 POWER SUPPLY CIRCUIT SCHEMATIC	D-UA-724-0-0 D-CS-724-0-1		65	EXT MEMORY CONTROL (MC12)	A-ML-MC12-0									
				7	RELAY PANEL ASSY CIRCUIT SCHEMATIC	D-AD-7005963-0-0 C-CS-7005963-0-1		52.	POWER CONN G790 CIRCUIT SCHEMATIC	C-UA-G790-0-0 B-CS-G790-0-1		66	ADDITIONAL 4K MEMORY (MM91 A)	A-ML-MM91 A-0									
				9	ETCH BOARD ASSY CIRCUIT SCHEMATIC	C-IA-5409124-0-0 C-CS-5409124-0-1		53.	ANALOG PANEL ASSY CIRCUIT SCHEMATIC	D-AD-7005964-0-0 C-CS-7005964-0-1		67	ARITHMETIC OPERATION (KE12)	A-ML-KE12-0									
				12	LINC SCOPE CONTROL LINC-B SCOPE DISPLAY DIS INTENSITY REGULATOR DSC DISPLAY CONTROL DSX HORIZONTAL D-A DSY VERTICAL D-A DISPLAY INT REG	A-ML-VC12-0 D-FD-VC12-0-4 D-BS-VC12-0-DIS D-BS-VC12-0-DSC D-BS-VC12-0-DSX D-BS-VC12-0-DSY D-BS-VC12-0-DSI		55	BASIC 4K MEMORY	A-ML-EM12-0		68	PWR FAIL RESTART (KP12)	A-ML-KP12-0									
				13	CRT DISPLAY CIRCUIT SCHEMATIC	A-ML-VR14-0 D-CS-VR14-0-1		56	MODULE UTILIZATION RACK A-D MODULE UTILIZATION (PL) MODULE UTILIZATION RACK E-F MODULE UTILIZATION (PL) WIRE LIST POWER WIRE LIST MCS SENSE AMPS & INHIBIT DRIVERS X-AXIS SELECTION Y-AXIS SELECTION MEMORY CONTROL INTER PROC CABLES WIRED ASSY PL WIRED ASSY PL	D-WU-EM12-0-1 A-PL-EM12-0-1 D-WU-EM12-0-2 A-PL-EM12-0-2 K-ML-EM12-0-3 A-ML-EM12-0-4 D-BS-EM12-0-MCS D-BS-EM12-0-MCX D-BS-EM12-0-MCY D-BS-EM12-0-MCT D-BS-EM12-0-IPCM D-AD-7005979-0-0 A-PL-7005979-0-0 A-ML-EP12-0 D-WU-EP12-0 A-PL-EP12-0-1 D-WU-EP12-0-1 A-PL-EP12-0-2		69	TTY DATAPHONE (DP12-A)	A-ML-DP12-A									
				17	LINC TAPE CONTROL TAPE PROCESSOR MJR. ST. FLOW TAPE INST SETUP TIMING SEARCH TIMING BLOCK MODE READING BLOCK MODE WRITE BLOCK MODE CHECKING MARK TIMING INTERPROCESSOR SIGNALS TAPE CONTROL STATES TAPE EXTENDED OPERATIONS TAPE EXTENDED FIELDS TAPE GROUP COUNTER TAPE INSTRUCTION TAPE UNIT AND MOTION TAPE REG ENABLE CONTROL TAPE REG LOAD CONTROL TRANSPORT CONTROL TAPE DELAYS TAPE MAINT TAPE MAINT REG TAPE READERS-WRITERS LTRA BITS 0 & 1 LTRB BITS 2 & 3 LTRC BITS 4 & 5 LTRD BITS 6 & 7 LTRY BITS 8 & 9 LTRF BITS 10 & 11 TAPE STATES TAPE TIME PULSES TAPE MARK WINDOW	A-ML-TC12-0 D-FD-TC12-0-10 D-FD-TC12-0-11 D-FD-TC12-0-12 D-FD-TC12-0-13 D-FD-TC12-0-14 D-FD-TC12-0-15 D-FD-TC12-0-16 D-BS-TC12-0-LIP D-BS-TC12-0-LCS D-BS-TC12-0-LCX D-BS-TC12-0-LCXF D-BS-TC12-0-LGP D-BS-TC12-0-LIN D-BS-TC12-0-LWU D-BS-TC12-0-LRE D-BS-TC12-0-LRL D-BS-TC12-0-LTC D-BS-TC12-0-LTU D-BS-TC12-0-LTM D-BS-TC12-0-LTWR D-BS-TC12-0-LTR D-BS-TC12-0-LTRA D-BS-TC12-0-LTRB D-BS-TC12-0-LTRC D-BS-TC12-0-LTRD D-BS-TC12-0-LTRY D-BS-TC12-0-LTRF D-BS-TC12-0-LTS D-BS-TC12-0-LTT D-BS-TC12-0-LWN		59.	PDP12 PROCESSOR MODULE UTILIZATION RACK H-H MODULE UTILIZATION (PL) MODULE UTILIZATION RACK H-N MODULE UTILIZATION (PL)	D-WU-EP12-0 A-PL-EP12-0 D-WU-EP12-0 A-PL-EP12-0		70	TTY DATAPHONE (DP12-B)	A-ML-DP12-B		71	TIME SHARING (KT12)	A-ML-KT12-0					
								59.	CONSOLE STARTS CONSOLE INDICATORS CENTRAL PROCESSOR RUN CENTRAL PROCESSOR STATES CP TIME STATES CENTRAL PROCESSOR TIME PULSES CONSOLE SWITCH INPUTS CARRY INSERTS FLOW & END SHIFT LINK LOGIC IO & EXT MEM CABLES INSTRUCTION REGISTER INSTRUCTIONS INPUT TO PART A I/O INPUT TO PART B I/O IO CONTROL & TIMING IO OUTPUT BUFFERS RELAY BUFFER INTER PROC CABLES MEM EXTN AC INPUTS MEM PAGE EXTN CONTROLS PROCESSOR MISC A PROCESSOR MISC B PRA PROCESSOR BITS 0 & 1 PRB PROCESSOR BITS 2 & 3 PRC PROCESSOR BITS 4 & 5 PRD PROCESSOR BITS 6 & 7 PRE PROCESSOR BITS 8 & 9 PRF PROCESSOR BITS 10 & 11 REGISTER CONTROL A REG IN ENABLE 2 REGISTER CONTROL C REG ENABLE 4 REG SHIFT & MU INPUTS PROCESSOR REGISTER LOAD CONTROL SKIP FF & H BITS EP12 BITS MULQUOTIENT PROCESSOR REGISTER GATING	D-BS-EP12-0-CST D-BS-EP12-0-CIN D-BS-EP12-0-CPR D-BS-EP12-0-CPS D-BS-EP12-0-CPT D-BS-EP12-0-CPTP D-BS-EP12-0-CPI D-BS-EP12-0-CYI D-BS-EP12-0-FIE D-BS-EP12-0-FIK D-BS-EP12-0-ICB D-BS-EP12-0-INR D-BS-EP12-0-INS D-BS-EP12-0-IOA D-BS-EP12-0-IOB D-BS-EP12-0-IOC D-BS-EP12-0-IOO D-BS-EP12-0-IOR D-BS-EP12-0-IPC D-BS-EP12-0-MEA D-BS-EP12-0-MPG D-BS-EP12-0-PMA D-BS-EP12-0-PMB D-BS-EP12-0-PRA D-BS-EP12-0-PRB D-BS-EP12-0-PRC D-BS-EP12-0-PRD D-BS-EP12-0-PRE D-BS-EP12-0-PRF D-BS-EP12-0-RCA D-BS-EP12-0-RCB D-BS-EP12-0-RCC D-BS-EP12-0-RUD D-BS-EP12-0-RCS D-BS-EP12-0-RCL D-BS-EP12-0-SKH D-BS-EP12-0-SKI D-BS-EP12-0-MQR D-BS-EP12-0-PRG		72	CLOCK (KW12-C)	A-ML-KW12-0		73	TTY DATAPHONE (DP12-C)	A-ML-DP12-C		74	TIME SHARING (KT12)	A-ML-KT12-0	
												75	ANALYTICAL INSTRUMENTATION PACKAGE	A-ML-AIP12-0									
												76	CLOCK (KW12-D)	A-ML-KW12-0									
												77	ARITHMETIC OPERATION (KE12)	A-ML-KE12-0									
												78	TTY DATAPHONE (DP12-A)	A-ML-DP12-A									
												79	TTY DATAPHONE (DP12-B)	A-ML-DP12-B									
												80	TIME SHARING (KT12)	A-ML-KT12-0									
												81	CLOCK (KW12-B)	A-ML-KW12-0									
												82	ARITHMETIC OPERATION (KE12)	A-ML-KE12-0									
												83	TTY DATAPHONE (DP12-A)	A-ML-DP12-A									
												84	TTY DATAPHONE (DP12-B)	A-ML-DP12-B									
												85	TIME SHARING (KT12)	A-ML-KT12-0									
												86	CLOCK (KW12-C)	A-ML-KW12-0									
												87	ANALYTICAL INSTRUMENTATION PACKAGE	A-ML-AIP12-0									
												88	CLOCK (KW12-D)	A-ML-KW12-0									
												89	ARITHMETIC OPERATION (KE12)	A-ML-KE12-0									
												90	TTY DATAPHONE (DP12-A)	A-ML-DP12-A									
												91	TTY DATAPHONE (DP12-B)	A-ML-DP12-B									
												92	TIME SHARING (KT12)	A-ML-KT12-0									
												93	CLOCK (KW12-B)	A-ML-KW12-0									
												94	ARITHMETIC OPERATION (KE12)	A-ML-KE12-0									
												95	TTY DATAPHONE (DP12-A)	A-ML-DP12-A									
												96	TTY DATAPHONE (DP12-B)	A-ML-DP12-B									
												97	TIME SHARING (KT12)	A-ML-KT12-0									
												98	CLOCK (KW12-C)	A-ML-KW12-0									
												99	ANALYTICAL INSTRUMENTATION PACKAGE	A-ML-AIP12-0									
												100	CLOCK (KW12-D)	A-ML-KW12-0									

REV. NO.	CHANGE NO.	CHK	REV
1			

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12				

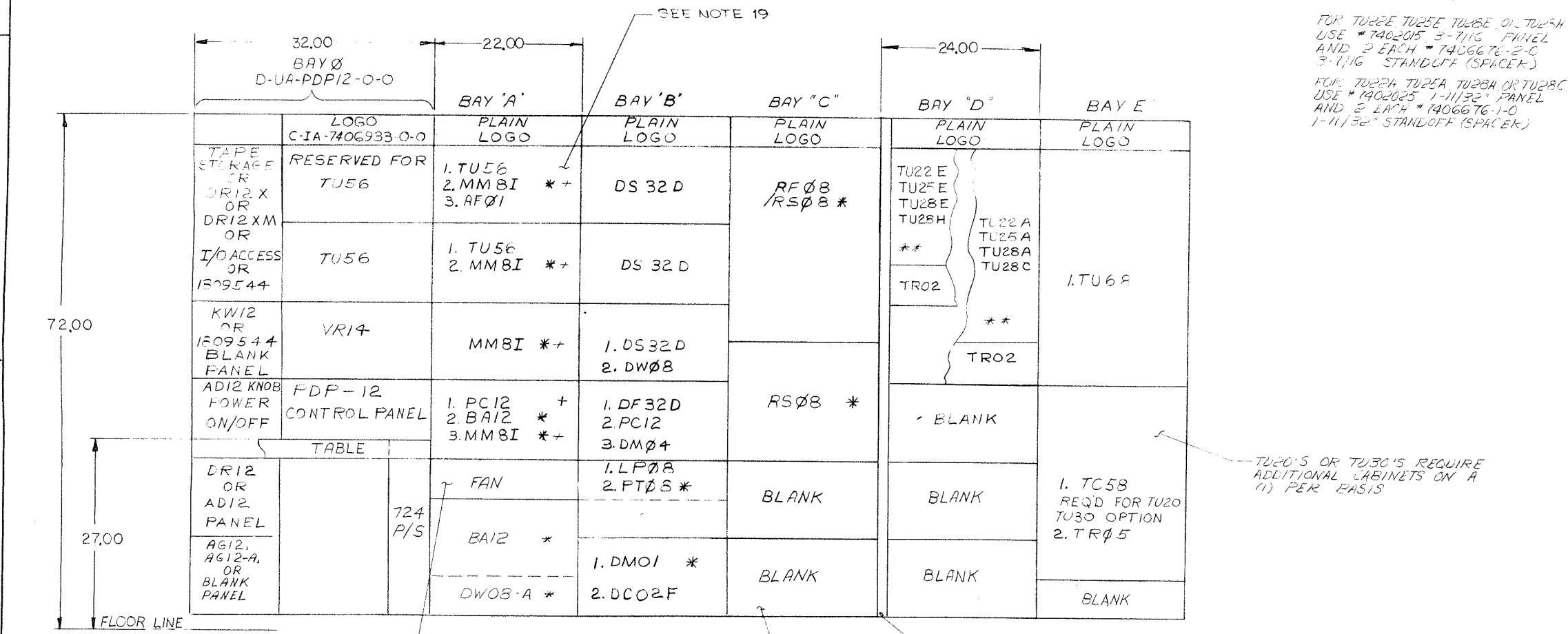
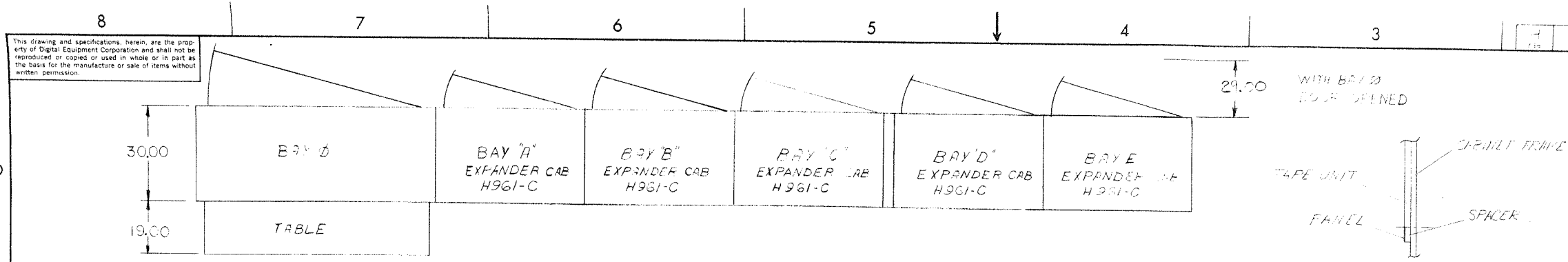
UNLESS OTHERWISE SPECIFIED	DRN	DATE	
DIMENSION IN INCHES	CHK'D	DATE	
TOLERANCES	ENG	DATE	
DECIMALS FRACTIONS ANGLES	PROJ. ENG	DATE	
= .005 ± .154 ± 0°30'	PROD.	DATE	

MATERIAL	FINISH
+	+

SCALE NONE	SHEET 5 OF 5
------------	--------------

TITLE	DRAWING INDEX LIST (PDP 12)
SIZE CODE	NUMBER
DJI PDP12-0-1	Y

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FRONT VIEW  
 SEE NOTE 19  
 SEE NOTE 3  
 FILLER STRIP (C-MD-7407470-0-0) REQ'D WHEN USING TU22/25/28/58/6A OPTIONS.

- NOTES:**
- COVER PANELS AND DOORS
- IF OPTION IS NOT REQUIRED IN PRIORITY AREA OR BLANK IS LISTED FOR CAB 'A' THRU 'D' USE PANEL H950-QA
  - \* ASTERISK DESIGNATES OPTIONS THAT REQUIRE H950-QA COVER PANEL
  - A MAXIMUM OF (2) RSØ8 OPTIONS AND (1) RFØ8 OPTION CAN BE USED PER CABINET
  - TC58 OR DF/DS 32 OPTIONS IN ANY EXPANDER BAY REQUIRE \*740655-0-0 DOOR
- CABLING AND OPTION PLACEMENT CONSIDERATIONS
- I/O CABLES TO MM8I OPTION TO BE KEPT AS SHORT AS POSSIBLE
  - I/O CABLES SHOULD NOT CROSS OVER EACH OTHER. FOR CABLE LENGTHS AVAILABLE AND PREFERRED ROUTING SEE SHEET #3 DETAIL A
  - PC12 OPTION SHOULD ALWAYS BE IMMEDIATELY ABOVE BA12 OPTION, ALSO CONVENIENT FOR THE OPERATOR.
  - DS32 SHOULD ALWAYS BE ABOVE DF32
  - TU56'S SHOULD ALWAYS BE MTD NEAR TOP OF OPTION BAYS FOR OPERATOR'S CONVENIENCE
  - SHOULD A CONFLICT OCCUR FOR A GIVEN OPTION LOCATION RELOCATE LOWER PRIORITY OPTION DIRECTLY ACROSS IN BAY 'B'
- PWR CONTROL AND POWER SUPPLY PLACEMENT AND REQUIREMENT CONSIDERATIONS
- PWR SUPPLIES ALWAYS MOUNT ON THE REAR PLENUM DOOR BUT MUST NOT BE ADJACENT TO DF/DS32 DISC OPTIONS.
  - A 734B VARIABLE PWR SUPPLY IS REQUIRED TO MARGIN THE DF/DS32 DISC OPTION.
  - A 783 P/S MUST BE DEDICATED TO THE DS/DF32 DISC SECTION.
  - ONE OR MORE 783 P/S WILL BE USED TO HANDLE OTHER OPTIONS IN BAY 'A'
  - AN 854 PWR CONTROL SEPARATE 20 AMP SERVICE (ON SAME PHASE AS COMPUTER) IS USED FOR THE FIRST OPTION CAB AND WILL HANDLE AS WELL OTHER BAYS
  - THE RS/RFØ8 AND MAG TAPE CABS WHICH ARE COMPLETELY DEFINED IN OTHER PRINT SETS USE THEIR OWN POWER CONTROL AND WILL REQUIRE SEPARATE 20 AMP SERVICES.
- OTHER CONSIDERATIONS
- A FULL LENGTH DOOR MAY BE USED ON THE FRONT OF AN OPTION CABINET WHICH IS COMPLETELY FILLED WITH LOGIC AND WITHOUT OPERATOR CONTROLS.
  - ALWAYS USE COVER PANELS FOR OPTION CABINETS WHICH MAY HAVE LOGIC ADDED AT A LATER TIME.
  - USE 7006115-1 OR 7005530-1 FAN ASSEMBLY FOR OPTION DESIGNATED BY SYSTEM LAYOUT.
  - USE (1) 5-1/4" \* 7005909 AC SERVICE RECEPTACLE ASSEMBLY FOR SYSTEMS HAVING MORE THAN 2 TTY'S.
  - \*\* DENOTES UNITS REQUIRING FILLER STRIPS. (SEE DETAIL A)
  - "GRAIN OF WHEAT" LAMPS, PNE3-8793, SHOULD BE USED FOR BAY OWN USE DETAIL A ON ALL OPTION LOGIC. ONE LAMP SHOULD BE PLACED FROM #5 TO #8 ON THE #1 LINE AND ONE FROM #10 TO #13 ON THE #2 LINE.

REV	CHG	NO	DATE	BY	APP
A	12-00051	1	12-14-69	GALE	
B	12-00060	2	12-14-69	GALE	
C	12-00079	3	12-14-69	GALE	
D	12-00088	4	12-14-69	GALE	
E	12-00093	5	12-14-69	GALE	
F	12-00043	6	12-14-69	GALE	
G	12-00059	7	12-14-69	GALE	

FIRST USED ON OPTION/MODEL  
 PDP12

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES ±.005 ±.164 ±.030 FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL		NEXT HIGHER ASSY	
FINISH		SCALE	
SHEET 1 OF 5		DIST.	

DRN: R. GALE DATE: 12-9-69

CHK'D: DATE: 12-14-69

ENG: DATE: 12-14-69

PROJ. ENG. DATE: 12-17-69

PROD. DATE: 12-17-69

**digital EQUIPMENT CORPORATION**  
 MAYNARD, MASSACHUSETTS

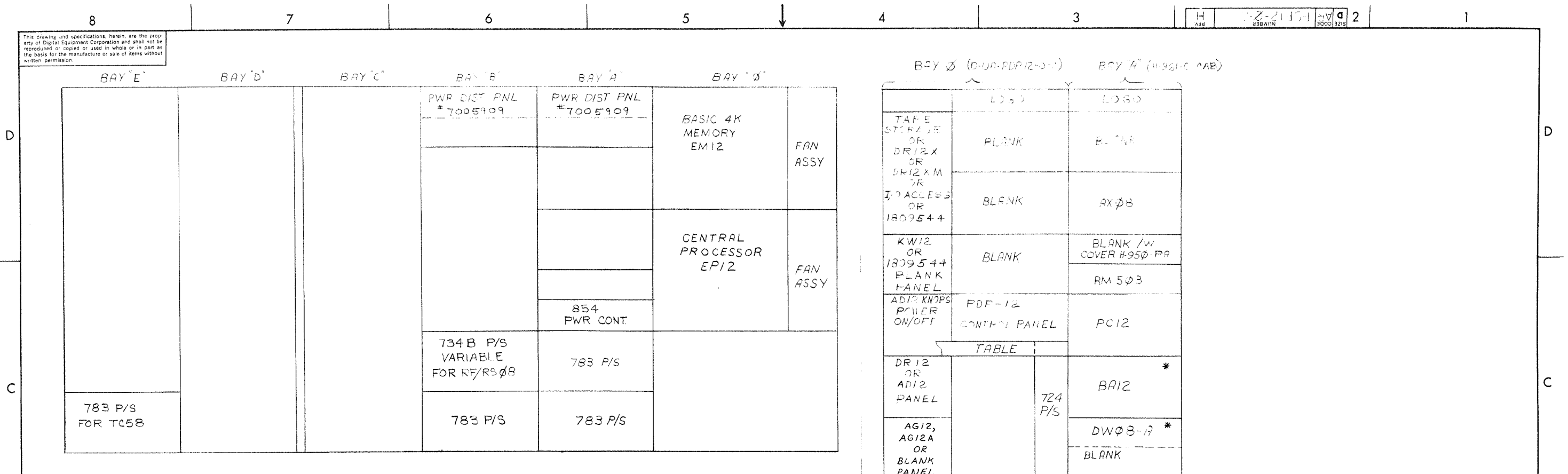
**EQUIPMENT LAYOUT (PDP12)**

SIZE CODE: NUMBER: DIST.:

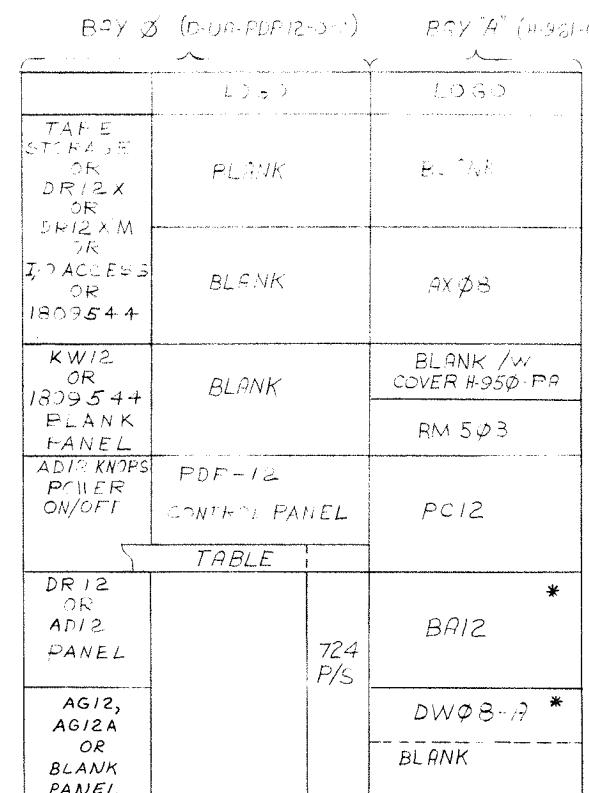
D 12-0012-0-2

REV. H

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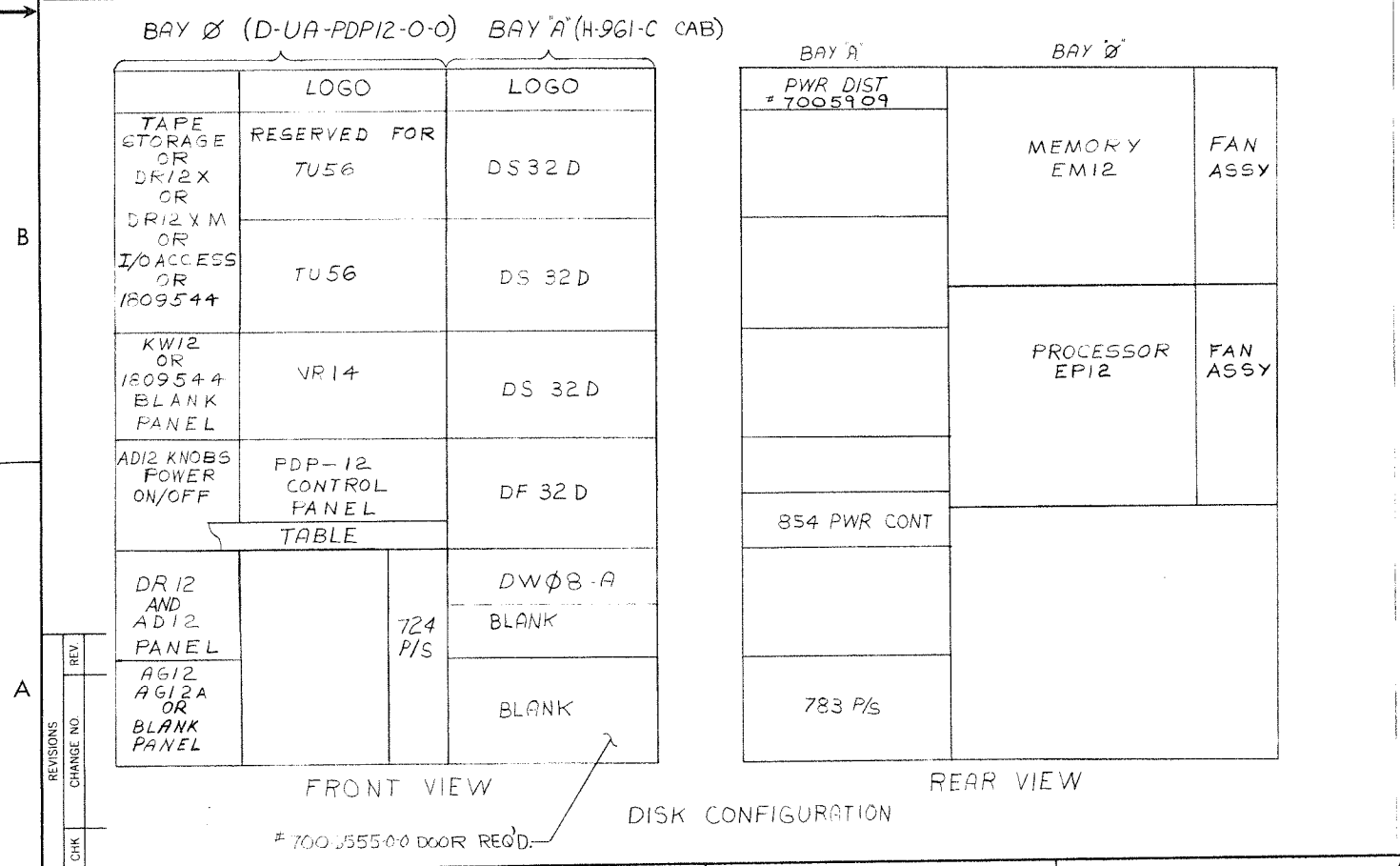


REAR VIEW



FRONT VIEW (LAB-8 CONFIGURATION)

(1) 783 P/S & 854 PWR CONT REQ'D ON BOTTOM OF REAR DOOR



FRONT VIEW

REAR VIEW

DISK CONFIGURATION

# 70035550-0 DOOR REQ'D.

REVISIONS  
 CHANGE NO.  
 REV.  
 CHK

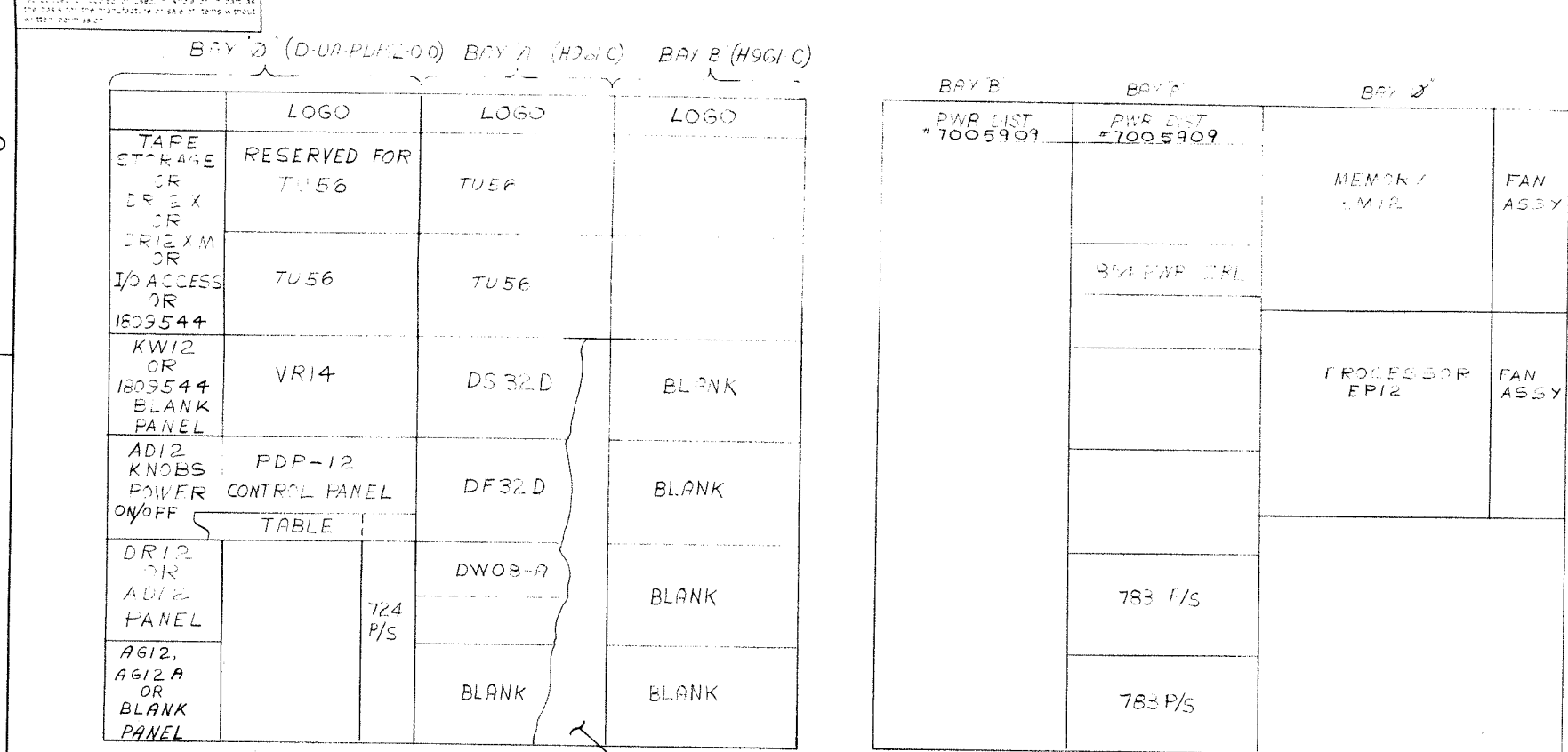
QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES ±.005 ±.1/64 ±0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS			
FIRST USED ON OPTION/MODEL PDP12	DRN: [Signature]	DATE: [Date]	DATE: [Date]
	CHK'D: [Signature]	DATE: [Date]	DATE: [Date]
	ENG: [Signature]	DATE: [Date]	DATE: [Date]
	PROJ. ENG: [Signature]	DATE: [Date]	DATE: [Date]
	PROD: [Signature]	DATE: [Date]	DATE: [Date]
	NEXT HIGHER ASSY		
MATERIAL			
FINISH			
SCALE			
SHEET	2 OF 2		

SIZE CODE	NUMBER	REV.
DAR	FDP12-Ø-2	H
DIST.		

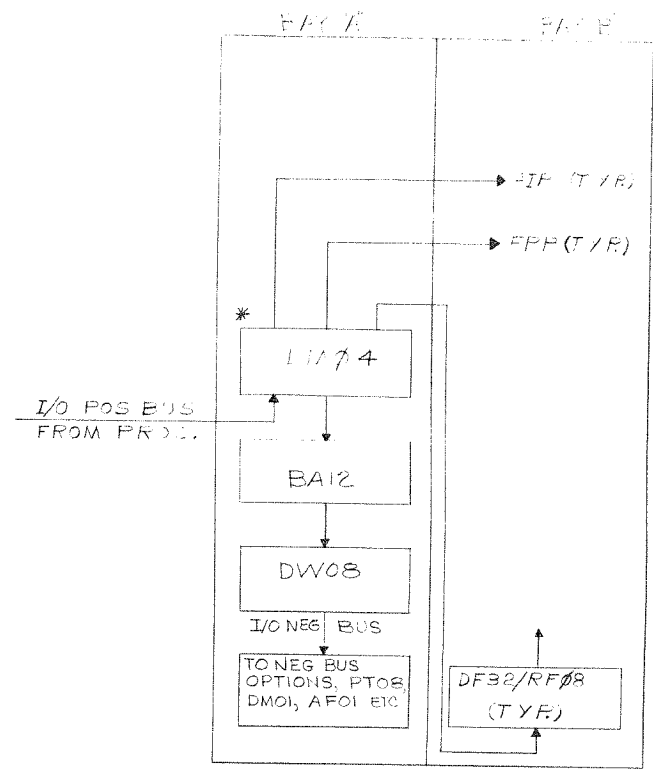
REV. I  
 NUMBER  
 D AR FDP12-Ø-2

B

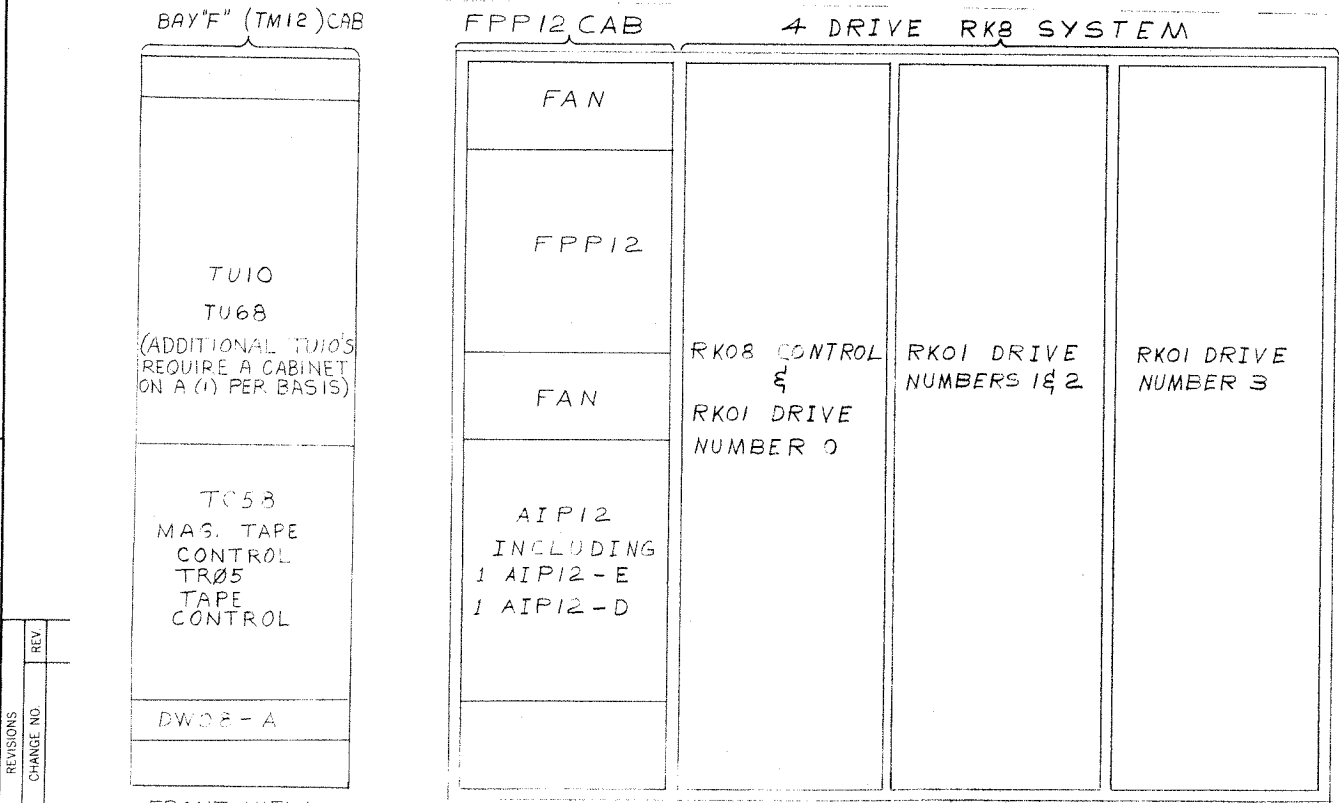
A



FRONT VIEW REAR VIEW H950-H (SERIES) DOOR REQ'D TAPE UNIT CONFIGURATION



DETAIL-A \*DM04 MAY BE REPLACED BY DM12 IF INSTALLED.

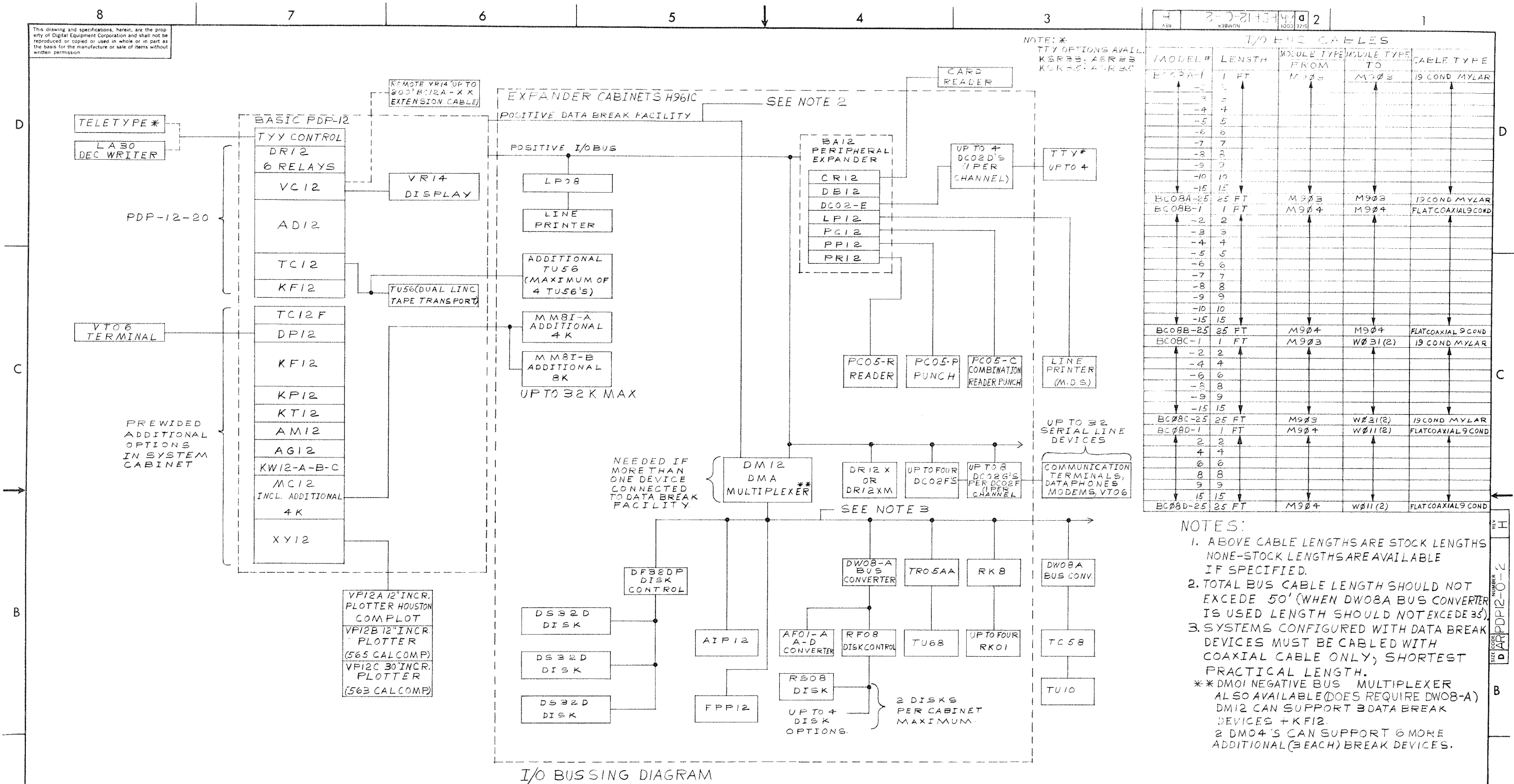


FRONT VIEW

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
FIRST USED ON OPTION/ MODEL PDP12			
DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES ±.005 ± 1/64 ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS			
DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D	DATE	TITLE	
ENG	DATE	EQUIPMENT LAYOUT PDP12	
PROJ. ENG.	DATE	SIZE CODE: D	NUMBER: AR PDP12-0-2
PROD.	DATE	SCALE: 1/4" = 1"	REV. H
MATERIAL		NEXT HIGHER ASSY	
FINISH		SHEET 3 OF 5	



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MODEL #	LENGTH	MODULE TYPE FROM	MODULE TYPE TO	CABLE TYPE
BC02A-1	1 FT	M903	M903	19 COND MYLAR
-2	2			
-3	3			
-4	4			
-5	5			
-6	6			
-7	7			
-8	8			
-9	9			
-10	10			
-15	15			
BC08A-25	25 FT	M903	M903	19 COND MYLAR
BC08B-1	1 FT	M904	M904	FLAT COAXIAL 9 COND
-2	2			
-3	3			
-4	4			
-5	5			
-6	6			
-7	7			
-8	8			
-9	9			
-10	10			
-15	15			
BC08B-25	25 FT	M904	M904	FLAT COAXIAL 9 COND
BC08C-1	1 FT	M903	W031(2)	19 COND MYLAR
-2	2			
-4	4			
-6	6			
-8	8			
-9	9			
-15	15			
BC08C-25	25 FT	M903	W031(2)	19 COND MYLAR
BC08D-1	1 FT	M904	W011(2)	FLAT COAXIAL 9 COND
2	2			
4	4			
6	6			
8	8			
9	9			
15	15			
BC08D-25	25 FT	M904	W011(2)	FLAT COAXIAL 9 COND

NOTES:  
 1. ABOVE CABLE LENGTHS ARE STOCK LENGTHS NONE-STOCK LENGTHS ARE AVAILABLE IF SPECIFIED.  
 2. TOTAL BUS CABLE LENGTH SHOULD NOT EXCEED 50' (WHEN DWOBA BUS CONVERTER IS USED LENGTH SHOULD NOT EXCEED 35').  
 3. SYSTEMS CONFIGURED WITH DATA BREAK DEVICES MUST BE CABLED WITH COAXIAL CABLE ONLY; SHORTEST PRACTICAL LENGTH.  
 \*\*DM01 NEGATIVE BUS MULTIPLEXER ALSO AVAILABLE (DOES REQUIRE DWOB-A) DM12 CAN SUPPORT 3 DATA BREAK DEVICES + KF12. 2 DM04'S CAN SUPPORT 6 MORE ADDITIONAL (3 EACH) BREAK DEVICES.

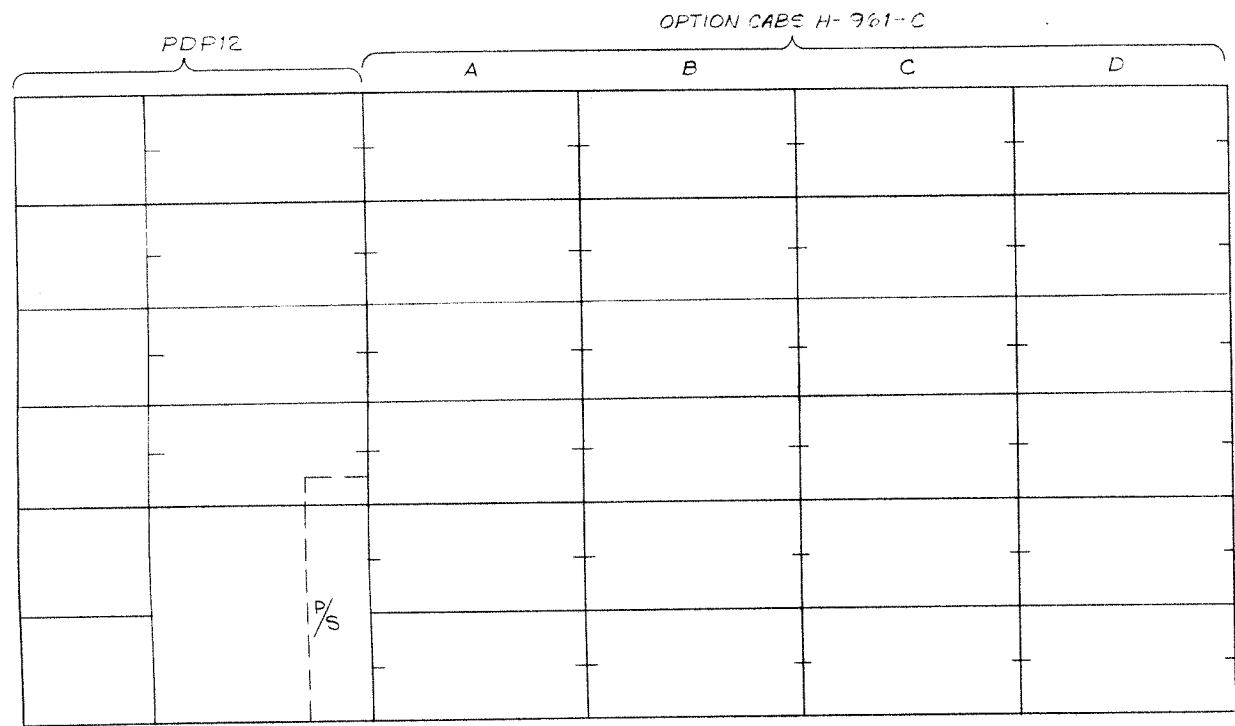
I/O BUSING DIAGRAM

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. 6-GIANOULIS	DATE 10-10-67	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D K- RUSS	DATE 10-15-67		
ANGLES	ENG. L- GALE	DATE 10-17-67		
xxx = .005 xx = .02 .x = .1	PROJ. ENG. L- GALE	DATE 10-17-67		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. D-CALL	DATE 10-17-67	TITLE <b>EQUIPMENT LAYOUT (PDP-12)</b>	
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	SCALE	DAR PDP12-0-2		H
	SHEET 4 OF 5	DIST. 16		

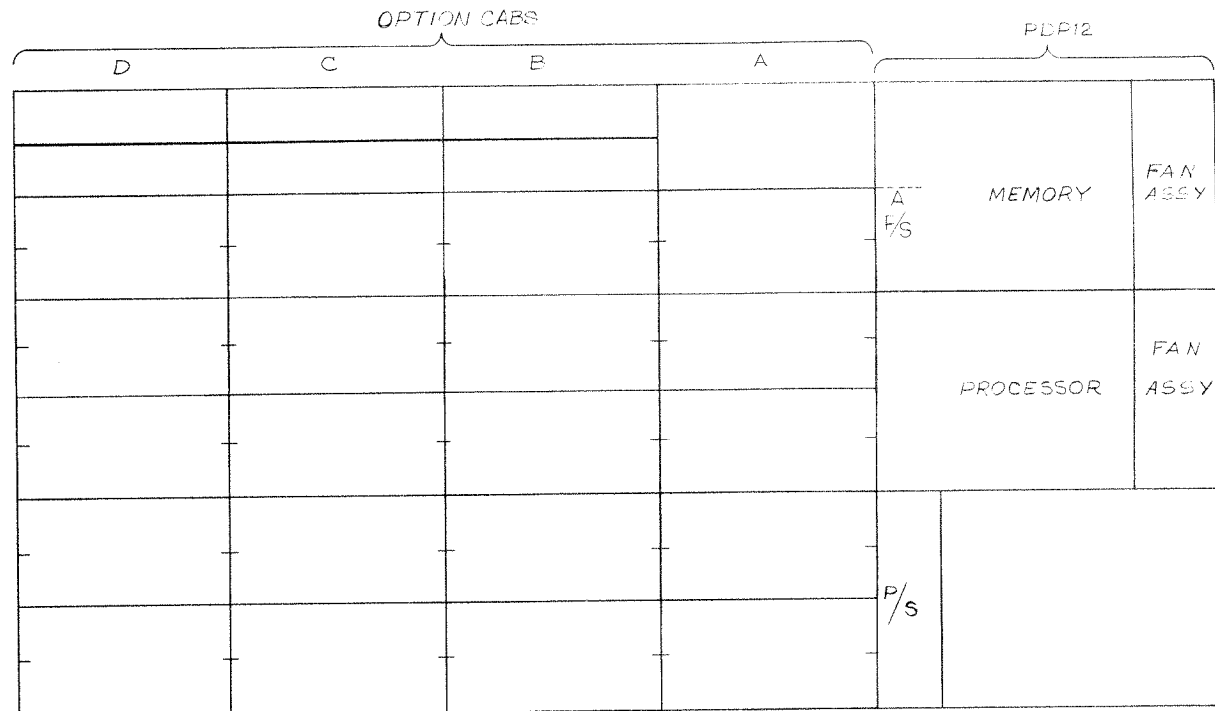
REV	
CHANGE NO	
CHK	

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REV. CODE NUMBER 2



FRONT VIEW



REAR VIEW

FIRST USED ON OPTION/MODEL  
PDP12

DO NOT SCALE DRAWING  
UNLESS OTHERWISE SPECIFIED  
DIMENSION IN INCHES  
TOLERANCES  
DECIMALS FRACTIONS ANGLES  
± .005 ± 1/64 ± 0'30"  
FINAL SURFACE QUALITY  
REMOVE BURRS AND BREAK SHARP  
CORNERS  
MATERIAL  
FINISH

DRN. R. RIFFIN DATE 10-18-69  
CHK'D. R. KU DATE 10-15-69  
ENG. DATE 10-15-69  
PROJ. ENG. DATE 10-15-69  
PROD. DATE 10-15-69  
NEXT HIGHER ASSY  
SCALE  
SHEET OF

PARTS LIST  
digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS  
TITLE  
EQUIPMENT LAYOUT  
PDP12  
SIZE CODE D IAR NUMBER PDP12-0-2 REV. H  
DIST.

REV. H  
NUMBER PDP12-0-2  
SIZE CODE D IAR

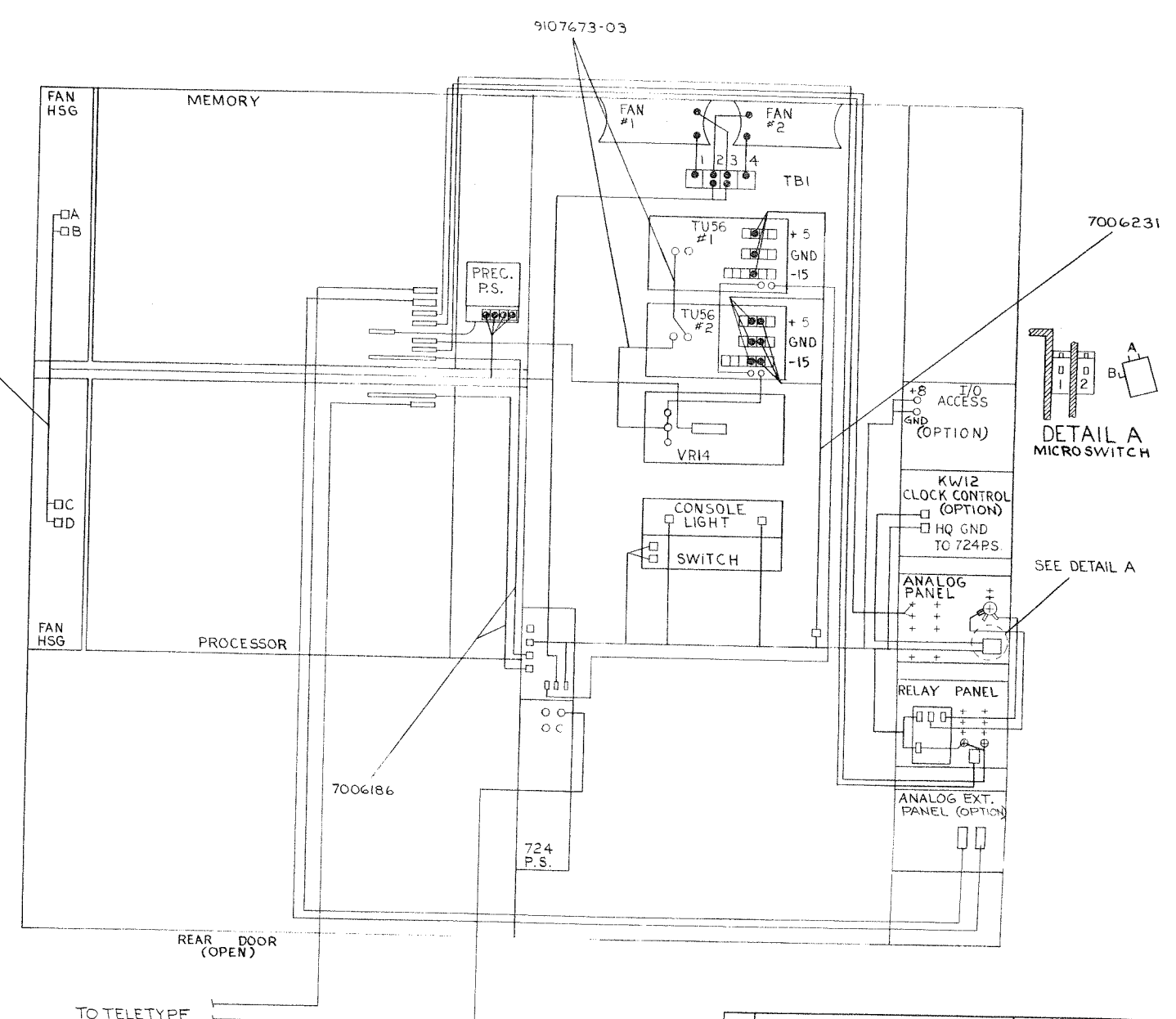
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SIZE CODE: D I C PDP12-0-3  
 NUMBER: 2  
 REV: A

**POWER WIRING & CABLES**

**SIGNAL CABLE CONNS.**

PART NO.	COLOR	FROM/HARNESS LEAD NO.	TO SYS. LOC.	REMARKS	PART	FROM	TO	REMARKS
7006039		P1	724 P'S CONSOLE CONN	POWER CABLE D.C.	7006238	VR12 AMP CONN	LOGIC F 38	INTERNAL SCOPE CABLE
	BLU	9	724 P'S CONSOLE SWITCH		ANALOG PNL	ANALOG PANEL CHAN 0-7	LOGIC F 33	
	BLU	9	S# BD-15V TAB		RELAY PNL	RELAY PNL CHAN 10-17	LOGIC F 32	
	BLK	10	S# BD-15V PANEL 10		RELAY PNL	RELAY PNL SCP C61	LOGIC F 39	
	BLK	11	LIGHT BD GND TAB		REF	TU55(#1) - AB02	TU55(#2) AB02	INFO CONN
	ORN	12	" " GND TAB		REF	TU55(#1) AB03	LOGIC EF06	" "
	ORN	13	" " +15V TAB		REF	TU55(#1) AB05	TU55(#2) AB05	COMMAND CONN
	ORN	14	" " +15V TAB		REF	TU55(#1) AB6	LOGIC E05	" "
	BLK	15	RELAY BD +15V TAB		CONSOLE	CONSOLE SWITCHES	LOGIC N 33	" "
	WHT	16	RELAY BD GND TAB				N 34	
	RED	17	MICRO SW. 2B(COM)				N 35	
	BLU	18	" " 2A(N.O.)				N 36	
	BLU	19	" " 1A(N.O.)				N 29	
	BLU	19	" " 1B(COM)				N 30	
7006039		P3	LINC TAPE D.C.	POWER CABLE D.C.				
7006231		P1	CABLE 7006231-P1	LINC TAPE D.C.	CONSOLE	CONSOLE LIGHT BD	LOGIC N 32	
			PWR CABLE D.C.		RELAY PNL	RELAY BOARD	LOGIC N 29	
			7006039-P3		REF	TELETYPE	LOGIC N02	
	BLK	1	TU56 (2) GND		ANALOG EXT	ANALOG EXT CHAN 20-27	LOGIC F 31	OPTION
	RED	2	" +5		ANALOG EXT	ANALOG EXT CHAN 30-37	LOGIC F 30	OPTION
	BLU	3	" -15					
	RED	7	" (1) +5					
	BLU	8	" -15					
	BLK	9	" GND					
	BLU	10	" (2) -15					
	RED	11	" +5					
7006231	BLK	12	" GND	LINC TAPE D.C.				
7006037		P1	FAN HSG CONN B	MAIN FRAME 120 VAC				
		P2	" " " A					
		P3	724 P'S 115 VAC AU.TA					
	WHT	7	TB1 - 2					
	RED	9	TB1 - 3					
	WHT	9	PREC. P'S - WHT					
	RED	10	" " RED					
	WHT	11	" " WHT					
	RED	12	" " RED					
		P4	FAN HSG CONN D					
7006037		P5	" " " C	MAIN FRAME 120 VAC				
7006186			724 P'S MEMORY	LOGIC EF 40				LOGIC PWR CABLE
7006186			724 P'S PROCESSOR	LOGIC MN 01				LOGIC PWR CABLE
REF	GRN		RELAY PANEL JAX	RELAY BD GND TAB				PANEL LEAD WIRE
REF	ORN		ANALOG PNL RID-1	RELAY BD SPKR #1				PANEL LEAD WIRE
REF	VIO		" RID-3	" " SPKR #3				PANEL LEAD WIRE
REF			PRECISION P'S	LOGIC E 35				LOGIC PWR CABLE
REF	BLK		FAN #1	TB1 - 1				
REF	BLK		FAN #1	TB1 - 3				
REF	BLK		FAN #2	TB1 - 2				
REF	BLK		FAN #2	TB1 - 4				
REF			TRIAD XMFR INPUT	724 P'S SERV. RECP.				240 VAC SYS. ONLY
1201265			TRIAD XMFR OUTPUT	TU55 (1) AC INPUT				240 VAC SYS. ONLY
9107673-03	GRY		TU55 (1) AC OUTPUT	TU55 (2) AC INPUT				
9107673-03	GRY		TU55(2) AC OUTPUT	VR12 AC INPUT				
1201265			724 P'S SERV RECP	TU55(1) AC INPUT				115 VAC SYS. ONLY
REF	RED		KW12 CLOCK PNL	MICRO SW 2A (N.O.)				PANEL LEAD WIRE
REF			TELETYPE	724 PS SERV RECP				POWER CORD
REF	WHT		KW12 PNL	724 P.S.				HQ GND



REVISIONS

CHK	CHANGE NO.	REV
1	12-00093	A
BY: [Signature]		
DATE: 1/14/71		

FIRST USED ON OPTION/MODEL  
**PDP12**

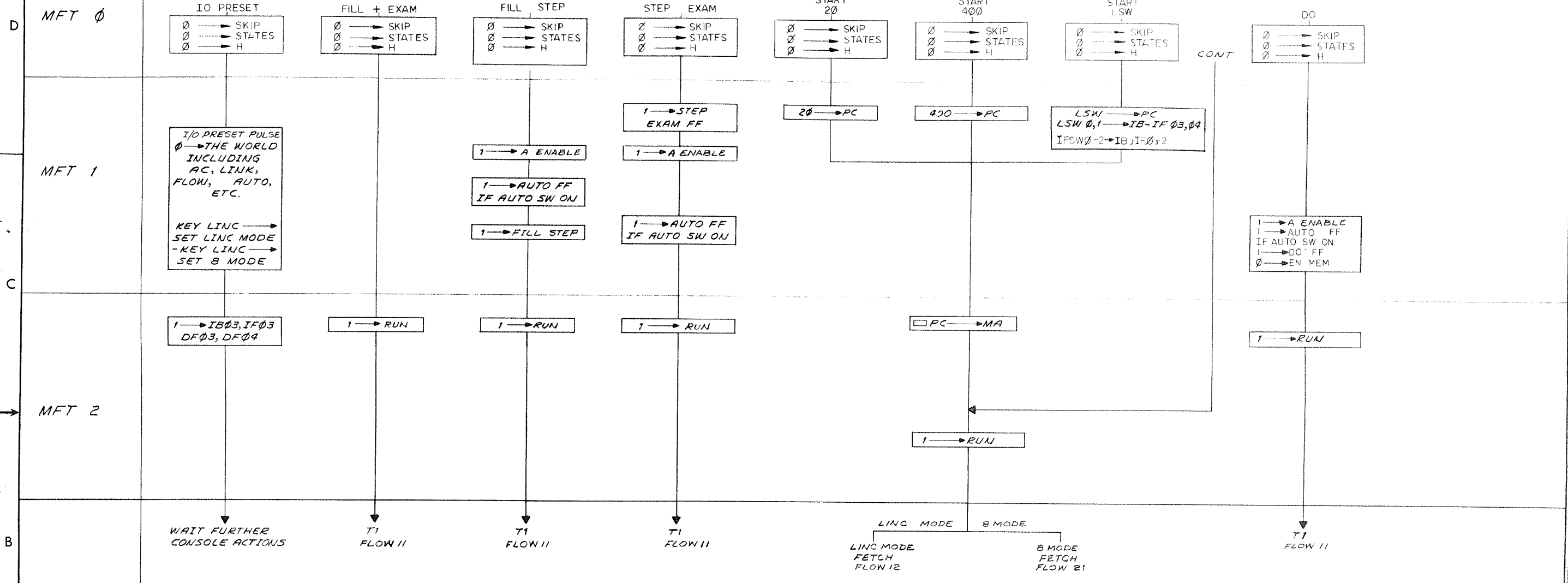
DO NOT SCALE DRAWING  
 UNLESS OTHERWISE SPECIFIED  
 DIMENSION IN INCHES  
 TOLERANCES  
 DECIMALS FRACTIONS ANGLES  
 = .005 = 1/64 = 0°30'  
 FINAL SURFACE QUALITY  
 REMOVE BURRS AND BREAK SHARP CORNERS

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
DRN	[Signature]	DATE	6/27/69
CHK'D	[Signature]	DATE	7/8/69
ENG	[Signature]	DATE	8/11/69
PROJ. ENG.	[Signature]	DATE	8/11/69
PROD.	[Signature]	DATE	8/11/69
NEXT HIGHER ASSY C-UA-PDP12-0-1			
SCALE NONE			
SHEET OF			
TITLE <b>POWER WIRING &amp; SIGNAL CABLES</b>		NUMBER <b>D I C PDP12-0-3</b>	REV <b>A</b>
DIST. [ ]		[ ]	

### MANUAL TIME PULSE FUNCTIONS

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**MANUAL FUNCTION TIMING CHAIN**  
 IS STARTED IF RUN=0 AND ONE OF THESE KEYS ARE DEPRESSED OR RUN=1 AND INTERNAL PAUSE=1 AND IN PROGRES=1 AND KEY I/O PRESET



LINC MODE { PC 2-11 → MA 2-11  
                   IF 3-4 → MA 0-1  
 B MODE PC 0-11 → MA 0-11

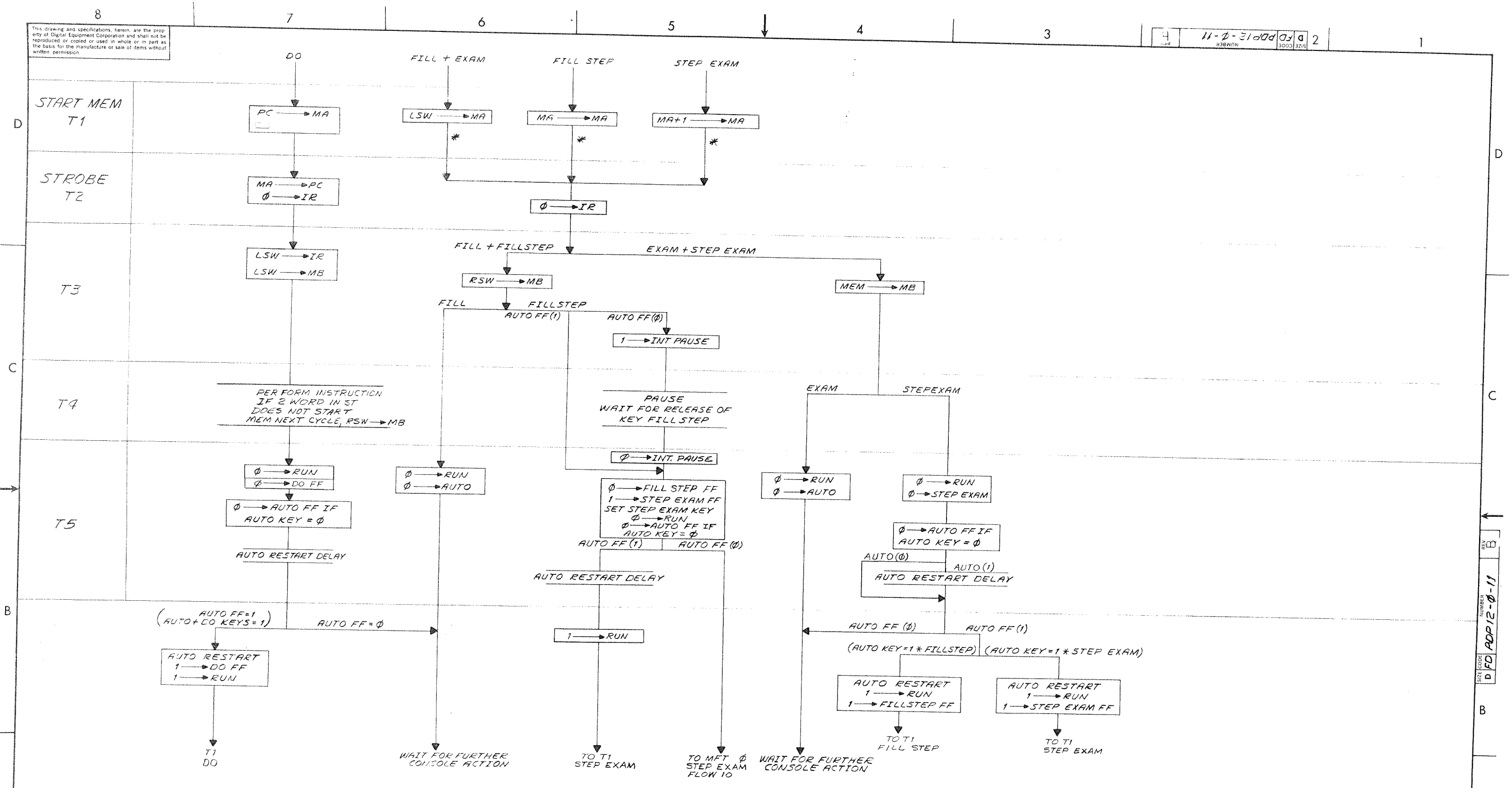
REV	CHANGE NO.	DATE	BY	CHKD
A	EPI2-00003	5-29-69	T. Quill/W	
B	EPI2-00004		GALE	
C	EPI2-00006	7/15/69	L. GALE	
D	EPI2-00015	8-13-69	L. GALE	
E	FV 12-00085	10-12-69	L. GALE	
			GALE	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRN: <i>Joe O'Neil</i> DATE: 9-24-68 CHK'D: <i>Joe O'Neil</i> DATE: 2/18/69 ENG: <i>Joe O'Neil</i> DATE: 2/18/69 PROJ. ENG: <i>Joe O'Neil</i> DATE: 2/18/69 PROD: <i>W. Galle</i> DATE: 2/18/69	
UNLESS OTHERWISE SPECIFIED		DIMENSION IN INCHES TOLERANCES DECIMALS ± .005    FRACTIONS ± 1/64    ANGLES ± 0'30" FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	
MATERIAL		FIRST USED ON	
FINISH		SCALE	
SHEET 1 OF 1		DIST	
TITLE		digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS MANUAL TIMING FUNCTIONS PART 1	
SIZE CODE		NUMBER	
D		DFD PDP12-0-10	
REV		E	

SIZE CODE: DFD PDP12-0-10 NUMBER: 1003 REV: 2



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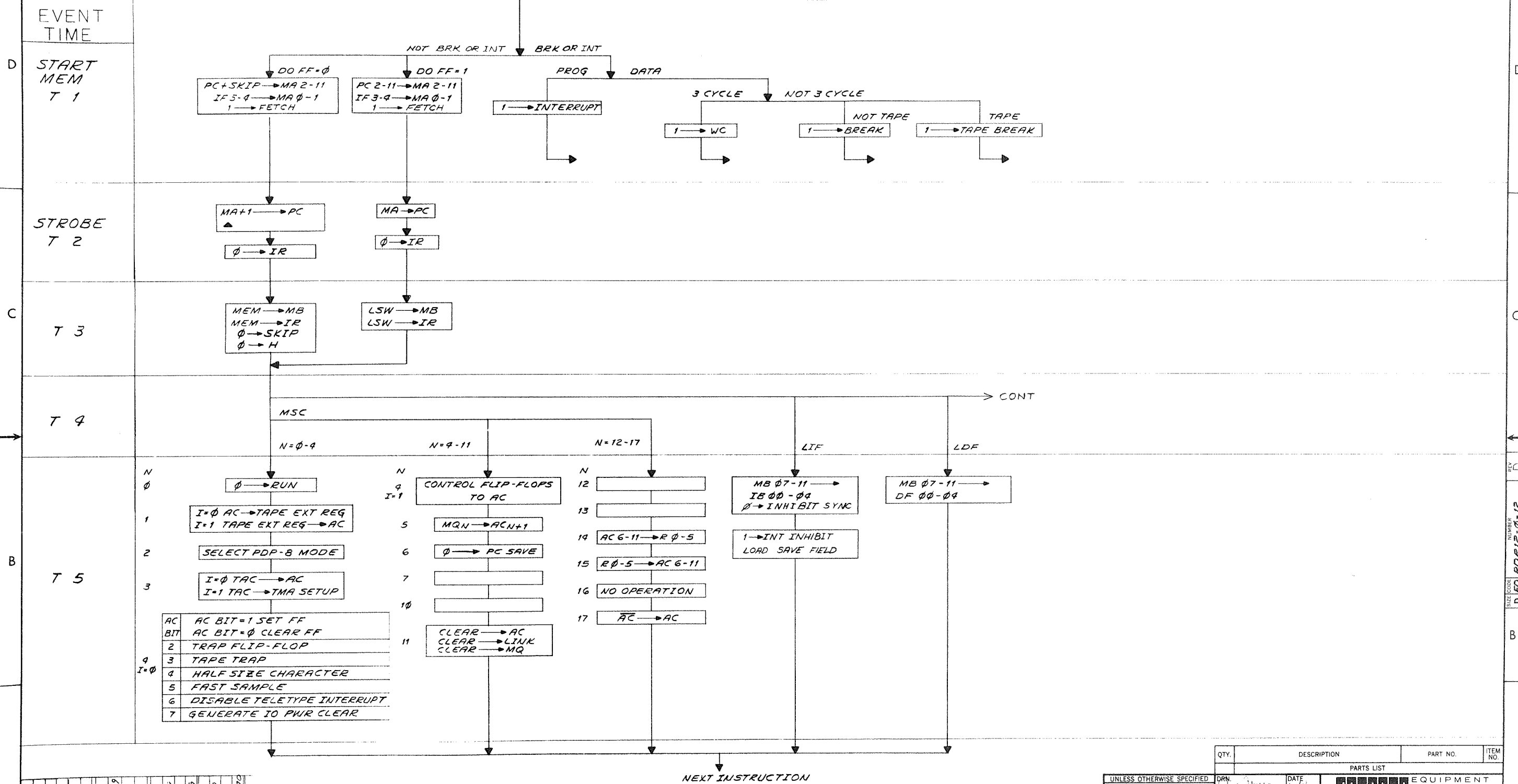
LINC MODE { PC 2-11 → MA 2-11  
 IF 3-4 → MA φ-1  
 B MODE PC φ-11 → MA φ-1  
 \* GNI IS DISABLED THEREFORE NO MAJOR STATE

REV	CHANGE NO.	DATE	BY	CHK
A	00015	2-16-67	L. GALE	
B	00085	10-17-65	L. GALE	
C	00085	10-17-65	L. GALE	
D	00085	10-17-65	L. GALE	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
= .005 = 1/64 = 0°30'			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FINISH			
DRN	DATE	PARTS LIST	
Joe D'Amico	9-26-68	digital EQUIPMENT CORPORATION	
CHKB	DATE	WAYNARD MASSACHUSETTS	
2/19/69		TITLE	
ENG	DATE	MANUAL TIMING	
2/19/69		FUNCTIONS	
PRGJ. ENG.	DATE	PART 2	
2/19/69		SIZE CODE NUMBER	
PROD	DATE	D F D PDP12-0-11	
2/19/69		REV. E	
FIRST USED ON	SCALE	SHEET 1 OF 1	
HLP-12		DIST.	

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ENTER HERE FROM END OF PREVIOUS INSTRUCTION (GNI TRUE)



AC BIT=1	SET FF
AC BIT=0	CLEAR FF
2	TRAP FLIP-FLOP
3	TAPE TRAP
4	HALF SIZE CHARACTER
5	FAST SAMPLE
6	DISABLE TELETYPE INTERRUPT
7	GENERATE IO PWR CLEAR

▲ INDICATES 10 BIT ADDITION (BITS 2-11)

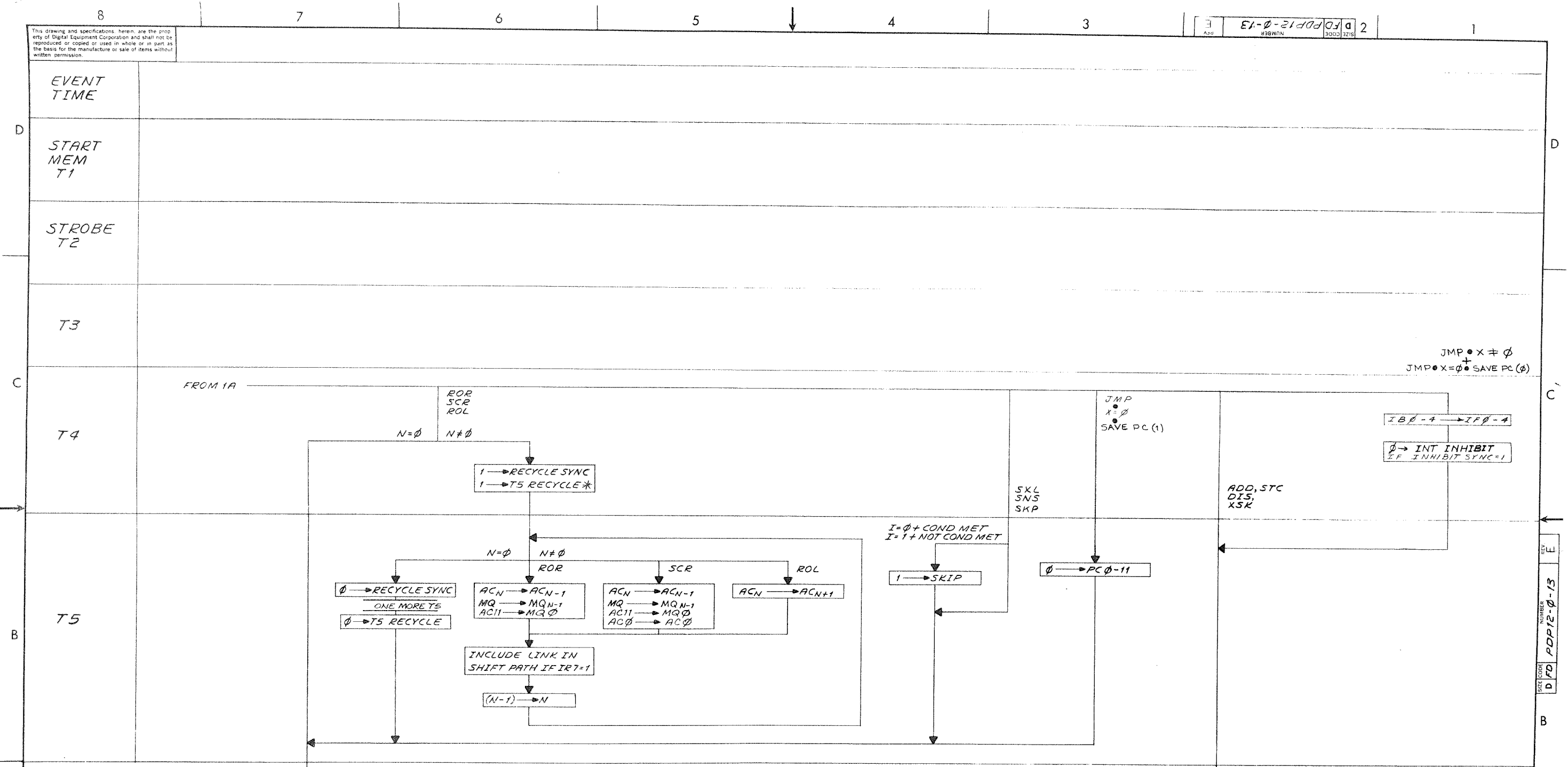
REVISIONS	CHANGE NO.	REV.
1	EPI2-00002	A
2	J. SCANLON	B
3	EPI2-00003	B
4	T. GALE	5-30-69
5	L. GALE	6/20/69
6	L. GALE	8/12/69
7	L. GALE	9-17-69
8	FV 12-00085	D
9	T. GALE	9-23-70
10	T. GALE	9-28-70

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED	DATE	digital EQUIPMENT CORPORATION	
DIMENSION IN INCHES	2/18/69	MAYNARD, MASSACHUSETTS	
TOLERANCES	DATE	TITLE	
DECIMALS = .005	2/19/69	LINC FETCH	
FRACTIONS = 1/64	DATE	1A	
ANGLES = 0°30'	DATE	REV. D	
FINAL SURFACE QUALITY	DATE	SIZE CODE	
REMOVE BURRS AND BREAK SHARP CORNERS	DATE	NUMBER	
MATERIAL	DATE	D FD PDP12-0-12	
FIRST USED ON	DATE	REV.	
PDP-12	DATE	D	
FINISH	DATE	SCALE	
	DATE	SHEET 1 OF 1	
	DATE	DIST.	

D FD PDP12-0-12

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EI-0-21-00101 2  
898W011

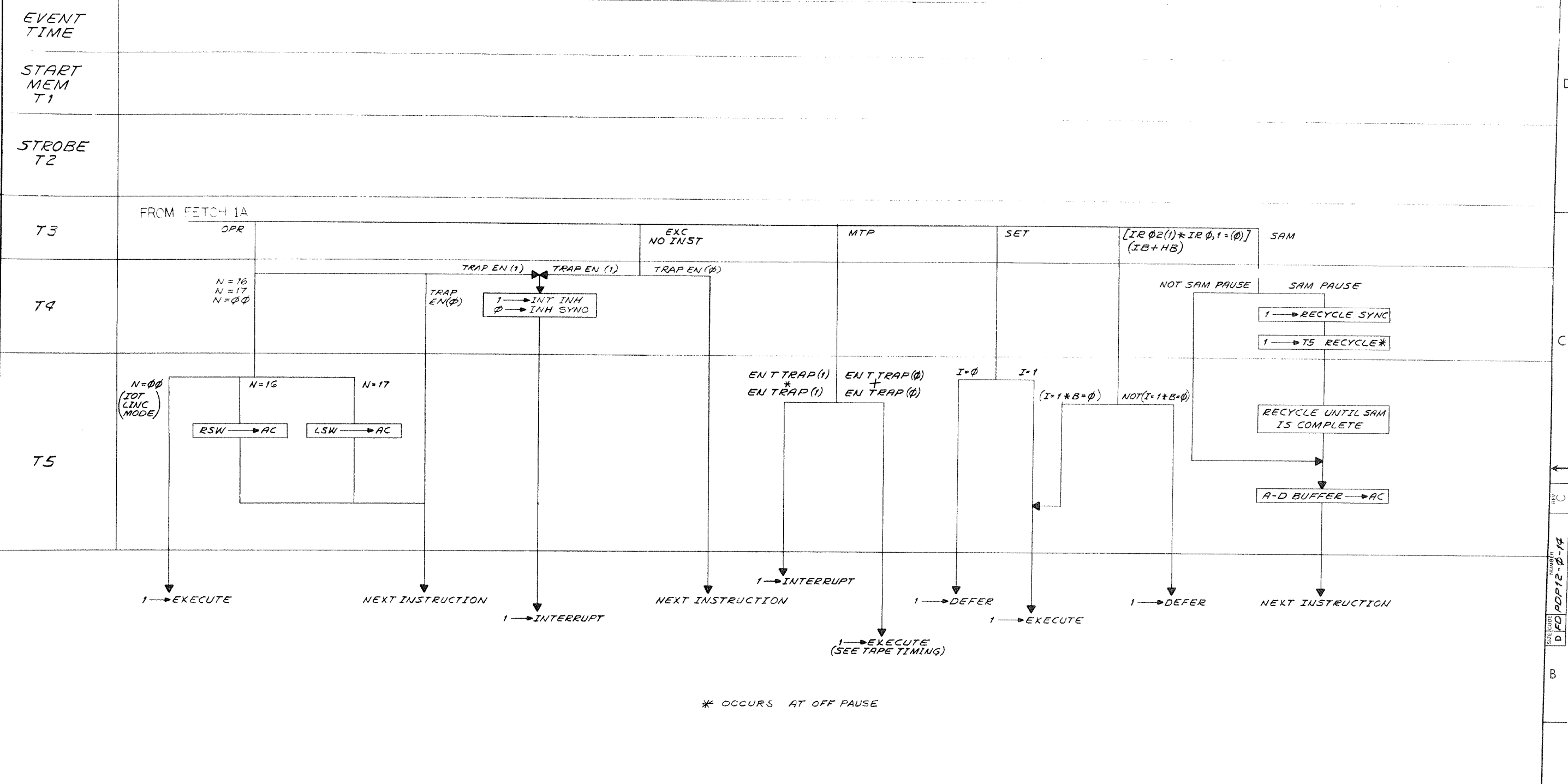


\* OCCURS AT OFF PAUSE

REV	CHG NO	REV
A	EPI2-0002	A
B	EPI2-0003	B
C	EPI2-0016	C
D	EPI2-0030	D
E	EPI2-0085	E

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		TITLE <b>LINC FETCH 1B</b>	
TOLERANCES DECIMALS FRACTIONS ANGLES $\pm .005 \pm 1/64 \pm 0'30''$		FIRST USED ON <b>PDP-12</b>	
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS		SCALE <b>DFO PDP12-0-13</b>	
MATERIAL		SHEET 1 OF 1	
FINISH		DIST.	

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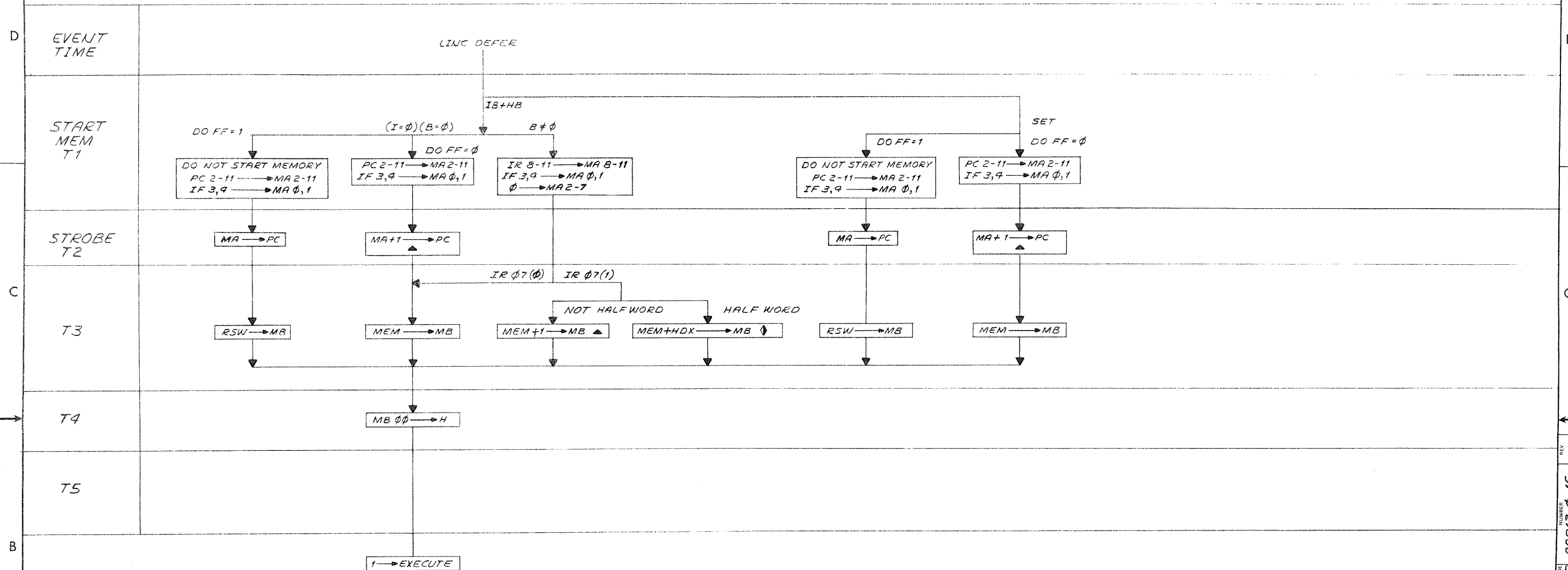


REV	CHANGE NO.	DATE	BY
A	EPI2-00003	2-2-69	J. Quinn
B	EPI2-00015	6/20/69	L. GALE
C	12-00085	7-7-69	L. GALE
D	12-00170	7-22-70	L. GALE
E	12-00210	9-22-70	L. GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRN: <i>See above</i> DATE: 10-5-68	
UNLESS OTHERWISE SPECIFIED		CHKD: <i>J. Quinn</i> DATE: 2/18/69	
DIMENSION IN INCHES		ENGR: <i>L. GALE</i> DATE: 6/20/69	
TOLERANCES		PROD. ENG: <i>L. GALE</i> DATE: 7/22/70	
DECIMALS ± .005		PROD. DATE: 3/1/69	
FRACTIONS ± 1/64		TITLE: LINC FETCH 2	
ANGLES ± 0°30'		NUMBER: DFD PDP12-0-14	
FINAL SURFACE QUALITY		REV: C	
REMOVE BURRS AND BREAK SHARP CORNERS		SCALE: SHEET 1 OF 7	
MATERIAL		DIST.	
FINISH		FIRST USED ON: PDP-12	



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$\blacktriangle$  INDICATES 10 BIT ADDITION (BITS 2-11)  
 $\blacktriangledown$  HALF WORD INDEXING

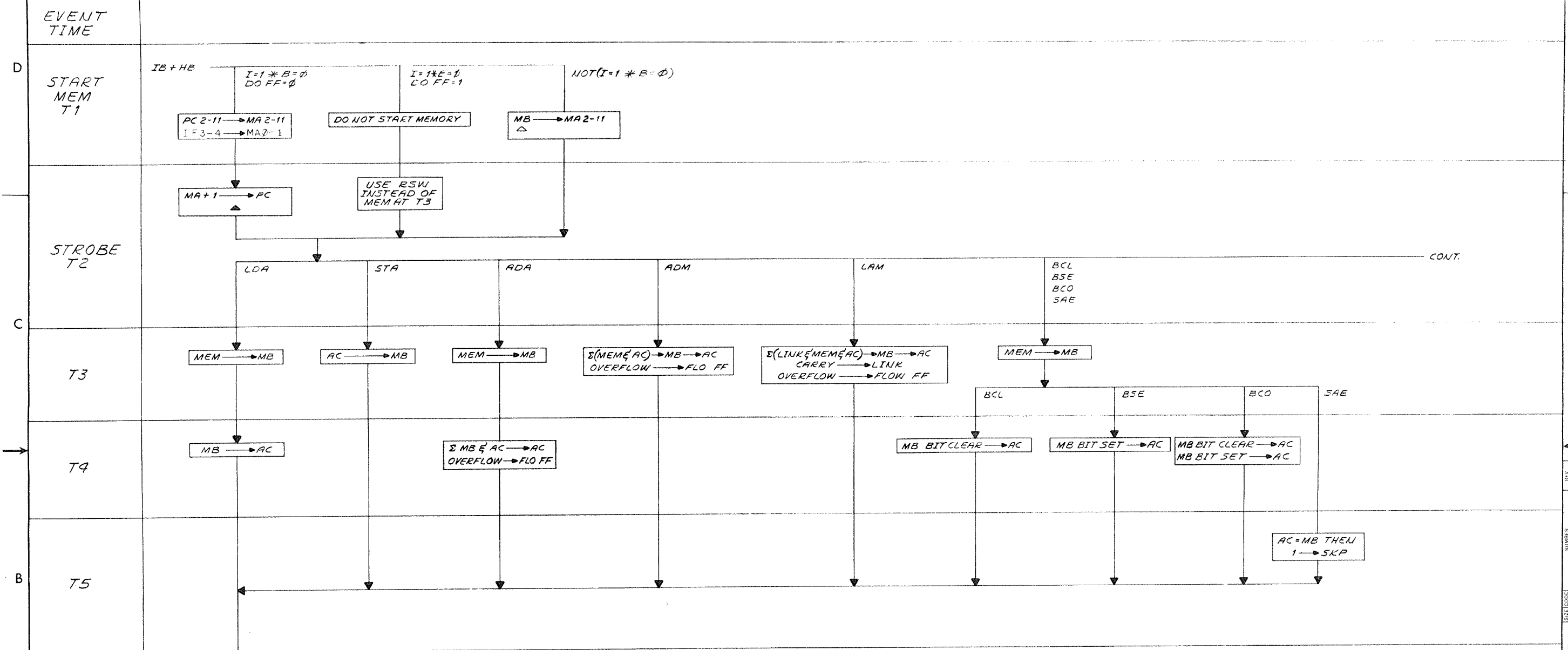
REV	CHANGING NO	REVISIONS

UNLESS OTHERWISE SPECIFIED	DRN	DATE	24 AUG 68	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED	CHKD	DATE	2/10/69	
DIMENSION IN INCHES	ENG	DATE	2/27/69	
TOLERANCES	PROJ. ENG.	DATE	2/27/69	
DECIMALS FRACTIONS ANGLES	PROD.	DATE	2/27/69	TITLE
$\pm .005$ $\pm .0164$ $\pm .0150$				LINC DEFER
FINAL SURFACE QUALITY				FIRST USED ON
REMOVE BURRS AND BREAK SHARP CORNERS				PDP-12
				SCALE
				SHEET OF
				SIZE CODE NUMBER
				D FD PDP12-0-15
				REV.

REV NUMBER PDP12-0-15

EXECUTE

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REV	CHG	NO	DATE	BY
A	0003	1	5-29-69	T. Guillot
B	0005	2	6-10-69	GALE
C	0008	3	9-23-70	GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
± .005 ± .004 ± .030			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL		FIRST USED ON	
FINISH		PDP-12	
SCALE		SIZE CODE	
SHEET 1 OF 1		D FD PDP12-0-16	
DIST.		NUMBER	
		REV. B	

REV. B D FD PDP12-0-16

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EVENT TIME

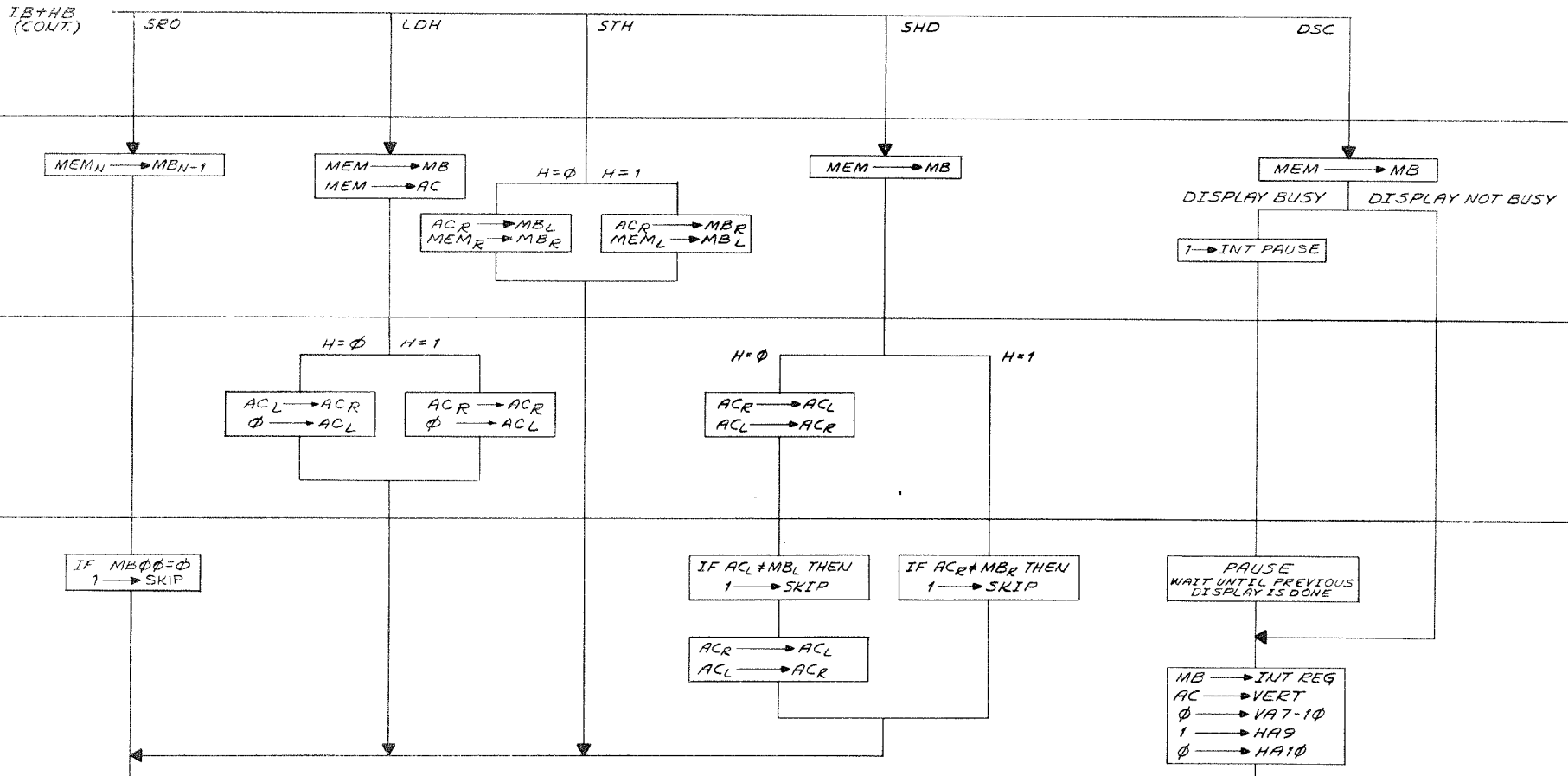
START MEM T1

STROBE T2

T3

T4

T5



NEXT INSTRUCTION

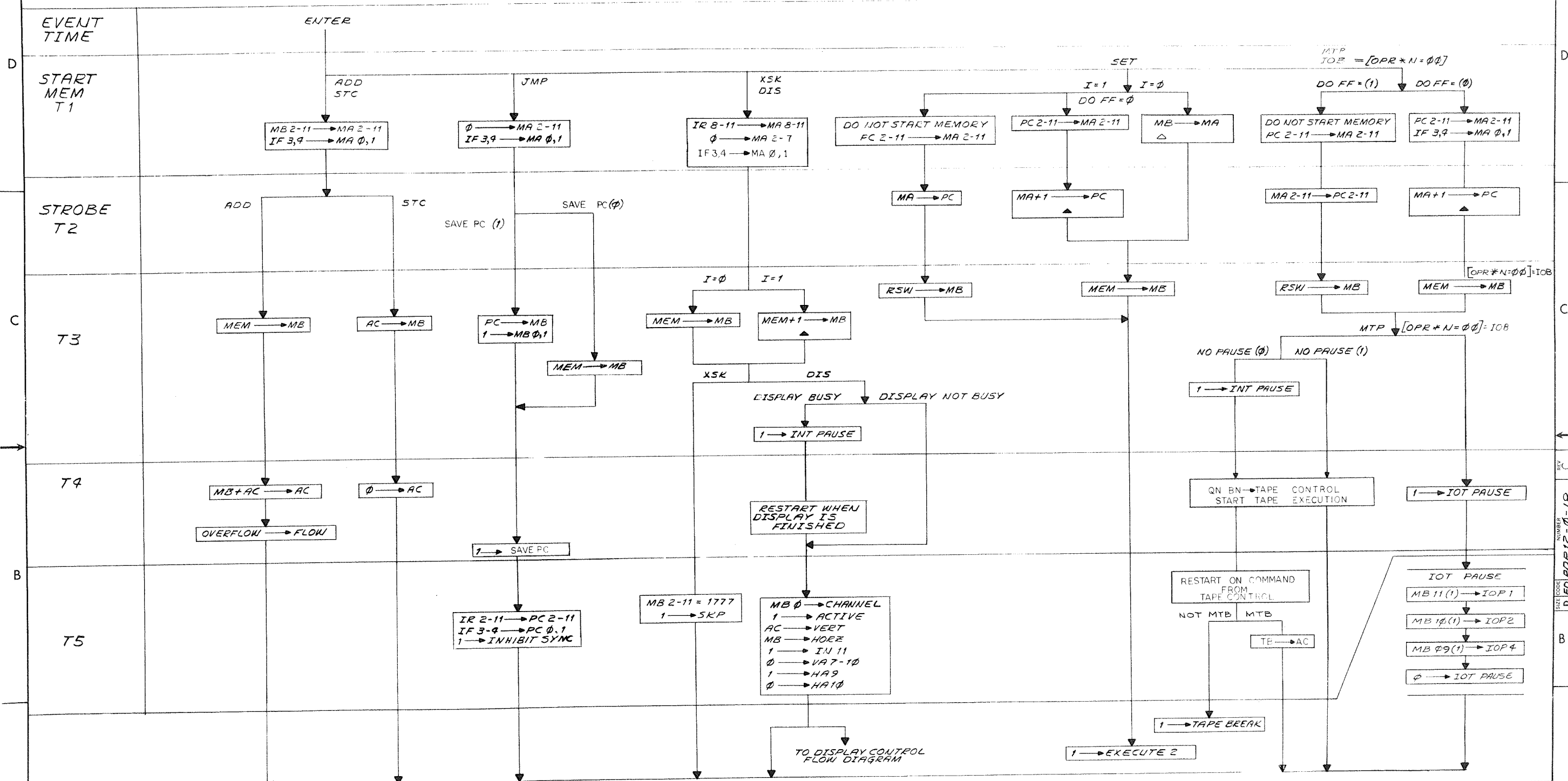
1 → EXECUTE 2

REV	CHANGE NO.	DATE	BY
A	EPI2-0003	12/18/67	GALE
B	12-0005	1/23/68	GALE
C	9-2070	7-28-70	GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		digital EQUIPMENT CORPORATION	
UNLESS OTHERWISE SPECIFIED		MAYNARD, MASSACHUSETTS	
DIMENSION IN INCHES		TITLE	
TOLERANCES		LINC EXECUTE	
DECIMALS = .005	FRACTIONS = 1/64	ANGLES = 0°30'	SCALE
FINAL SURFACE QUALITY		FIRST USED ON	
REMOVE BURRS AND BREAK SHARP CORNERS		PDP-12	
MATERIAL	FINISH	SCALE	SHEET 1 OF 1
DATE 12/18/67		DATE 1/23/68	DATE 7/28/70
DRN: [Signature]	CHKD: [Signature]	ENGR: [Signature]	PROD: [Signature]
SIZE CODE DFD		NUMBER PDP12-0-17	REV B

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# EXECUTE



▲ INDICATES 10 BIT ADDITION (BITS 2-11)  
 △ INDICATES LINC INDIRECT ADDRESS MB 2-11 → MA 2-11

IF MB 01 = 1 DF 3-9 → MA 0-1  
 IF MB 01 = 0 IF 3-9 → MA 0-1

REV	CHG	NO	DATE	BY
1	EP12-00002	A		
2	EP12-00003	B	5/22/67	J. SCANLON
3	EP12-00003	C	11/11/67	J. SCANLON
4	EP12-00003	D	1/20/68	GALE
5	EP12-00003	E	7/24/70	GALE
6	EP12-00003	F	1-22-70	GALE

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		DRN: Joe Quinn	DATE: 10/4/65	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TOLERANCES DECIMALS FRACTIONS ANGLES ± .005 ± 1/64 ± 0°30'		CHKD: J. Quinn	DATE: 2/18/69	
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS		ENG: J. Quinn	DATE: 2/18/69	TITLE: LINC EXECUTE
MATERIAL		PROJ. ENG: J. Quinn	DATE: 2/18/69	SIZE CODE: DFD PDP12-0-18
FINISH		PROD: J. Quinn	DATE: 2/18/69	NUMBER: 18
FIRST USED ON PDP 12		SHEET 1 OF 1		REV. C



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7  
A24  
61-0-2100  
02  
2  
3300  
325

D  
START  
MEM  
T1

STROBE  
T2

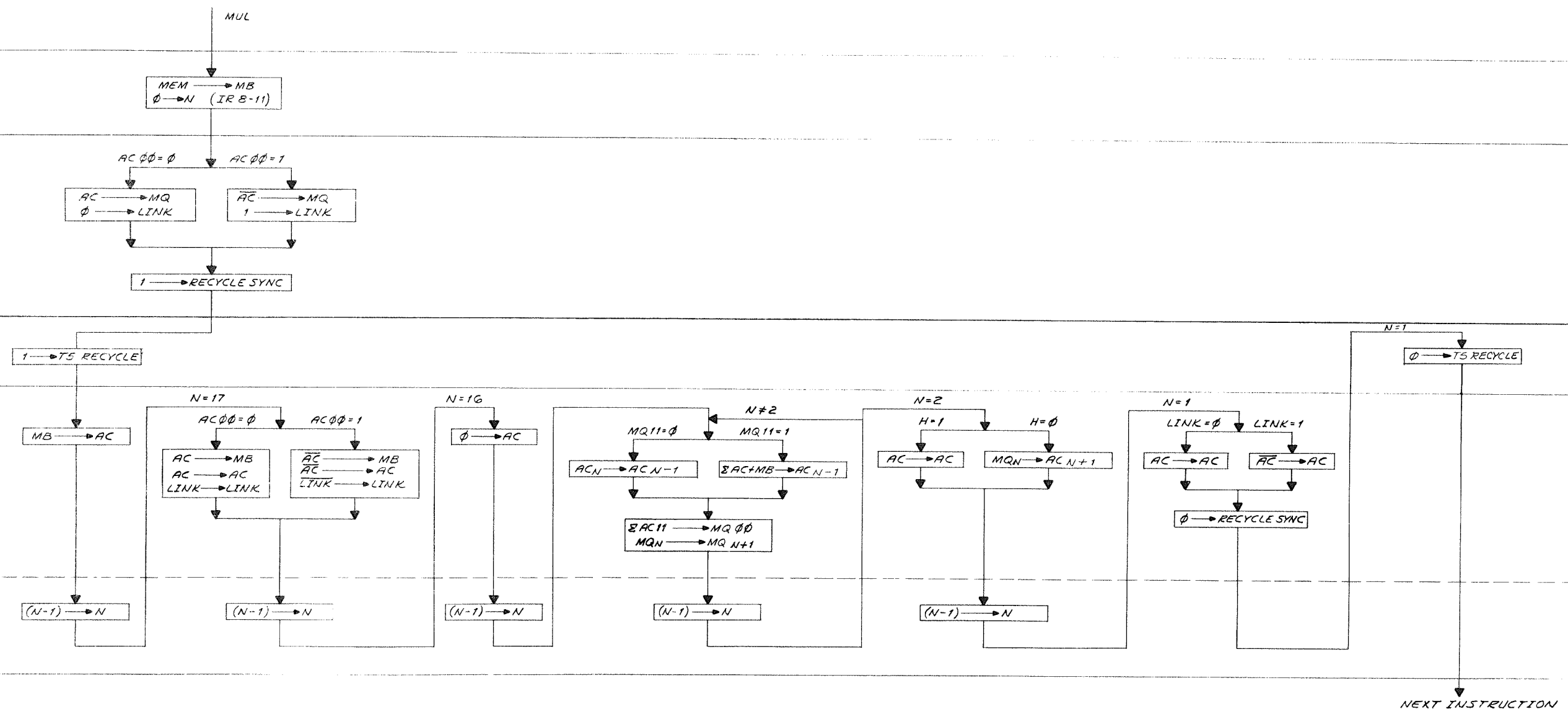
T3

C  
T4

OFF  
PAUSE

T5

T5D



REV. A  
NUMBER  
D FD PDP12-0-19  
SIZE CODE

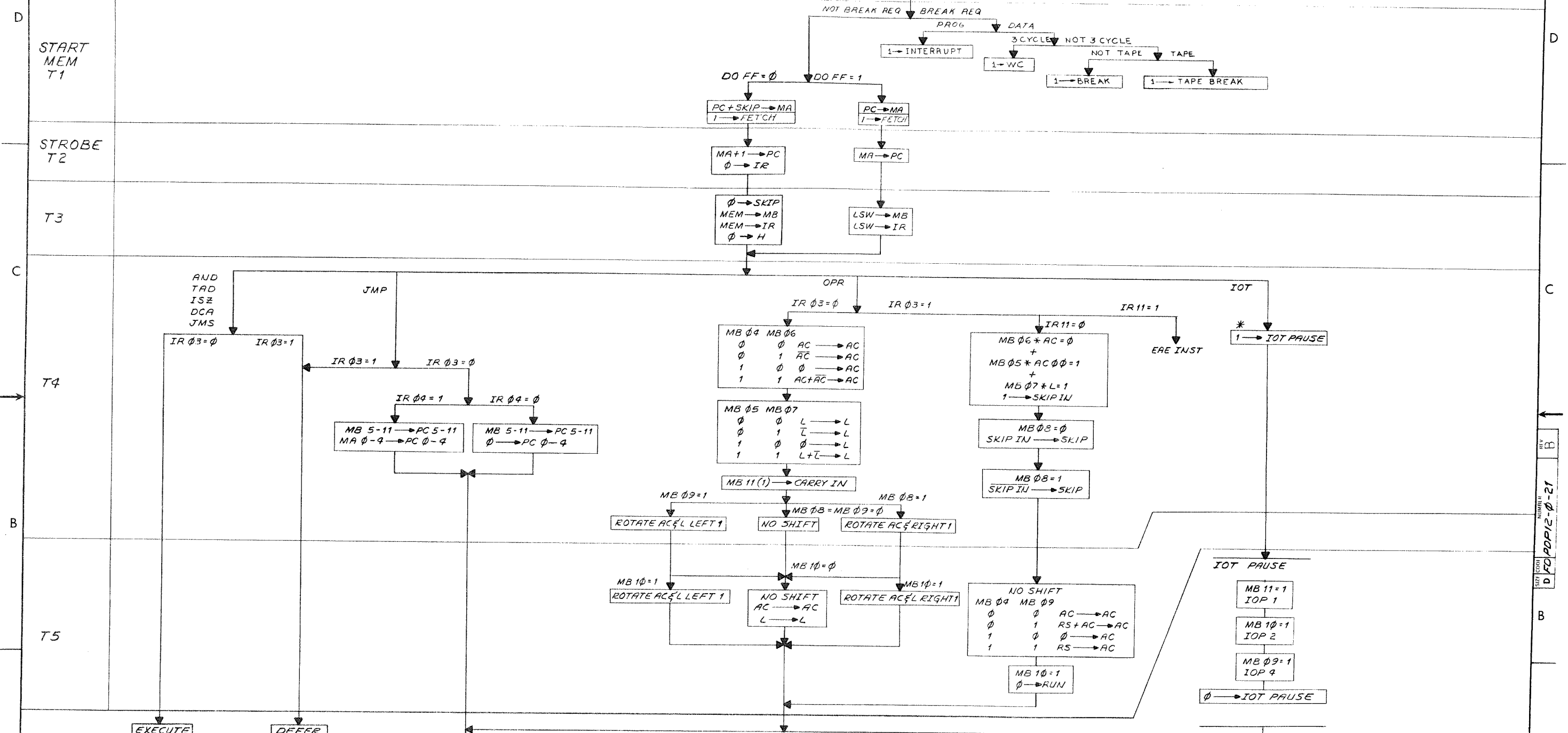
REV	CHG	NO	DATE
1	1	1	1/15/68
2	1	1	2/18/68
3	1	1	2/19/68
4	1	1	2/19/68
5	1	1	2/19/68
6	1	1	2/19/68
7	1	1	2/19/68
8	1	1	2/19/68
9	1	1	2/19/68
10	1	1	2/19/68

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS	FRACTIONS	ANGLES	
$\pm .005$	$\pm 1/64$	$\pm 0^{\circ}30'$	
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FIRST USED ON			
PDP-12			
SCALE			
SHEET 1 OF 1			
FINISH			
UNLESS OTHERWISE SPECIFIED			
DRN	DATE	PARTS LIST	
CHKD	DATE	digital EQUIPMENT CORPORATION	
ENG	DATE	MAYNARD, MASSACHUSETTS	
PRD1. ENG	DATE	TITLE	
PRD2. ENG	DATE	LINC EXECUTE	
FIRST USED ON		SIZE CODE	NUMBER
PDP-12		D FD	PDP12-0-19
SCALE		DIST.	REV.
SHEET 1 OF 1			A



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12-7-21-00  
938771  
2

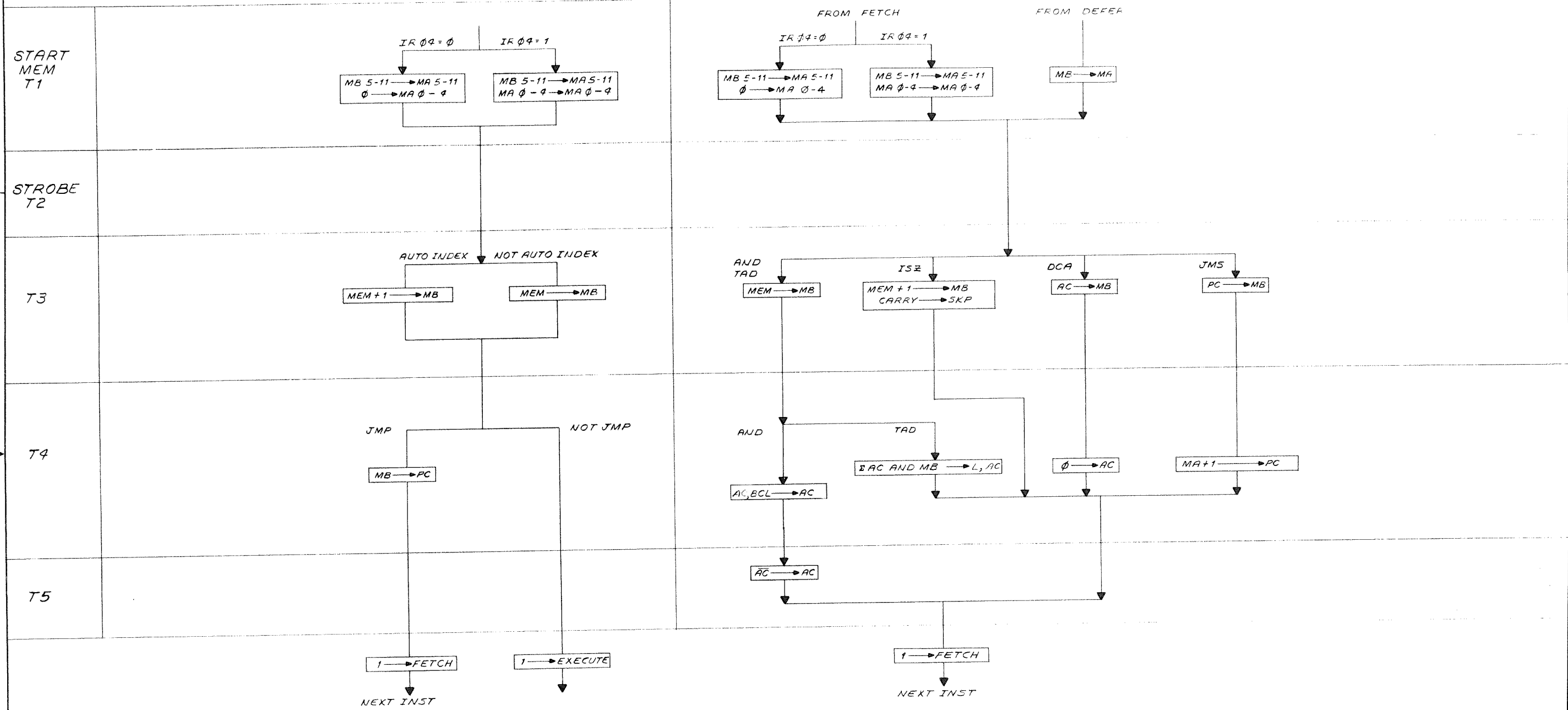


\* OCCURS AT OFF PAUSE

REV	CHG	NO	DATE	BY
A	1	000012		J. SCANLON
B	1	000085		GALE

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES = .005 = 1/64 = 0°00'	DRN. <i>[Signature]</i> CHKD. <i>[Signature]</i> ENG. <i>[Signature]</i> PROJ. ENG. <i>[Signature]</i> PROD. <i>[Signature]</i>	DATE 8-7-78 DATE 2/10/80 DATE 2/10/80 DATE 2/10/80 DATE 2/10/80	<b>digital</b> CORPORATION MAYNARD, MASSACHUSETTS
MATERIAL	FIRST USED ON PDI 12	TITLE PDP-8 MODE FETCH	SIZE CODE D FD PDP12-0-21
FINISH	SCALE SHEET 1 OF 1	NUMBER REV P	DIST.

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REV	CHG	NO	DATE	BY
A	EPI2-0002			J. SCANLON
B	12-00085			T. Quill 9-23-70
				GALE
				JM 1/18/70

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRN: <i>See Order</i> DATE: 28 AUG 68	
UNLESS OTHERWISE SPECIFIED		CHKD: <i>J. Scanlon</i> DATE: 9/18/69	
DIMENSION IN INCHES		ENG: <i>h</i> DATE: 2/19/68	
TOLERANCES		PROG. ENG: <i>h</i> DATE: 2/19/68	
DECIMALS FRACTIONS ANGLES		PROD: <i>h</i> DATE: 2/19/68	
= .005 = 1/64 = 0°30'		FIRST USED ON: PDP-12	
FINAL SURFACE QUALITY		SCALE: DFD PDP12-0-22	
REMOVE BURRS AND BREAK SHARP CORNERS		SHEET 1 OF 1	
MATERIAL:		DIST.:	
FINISH:		REV B	

digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE: PDP 8 MODE DEFER & EXECUTE

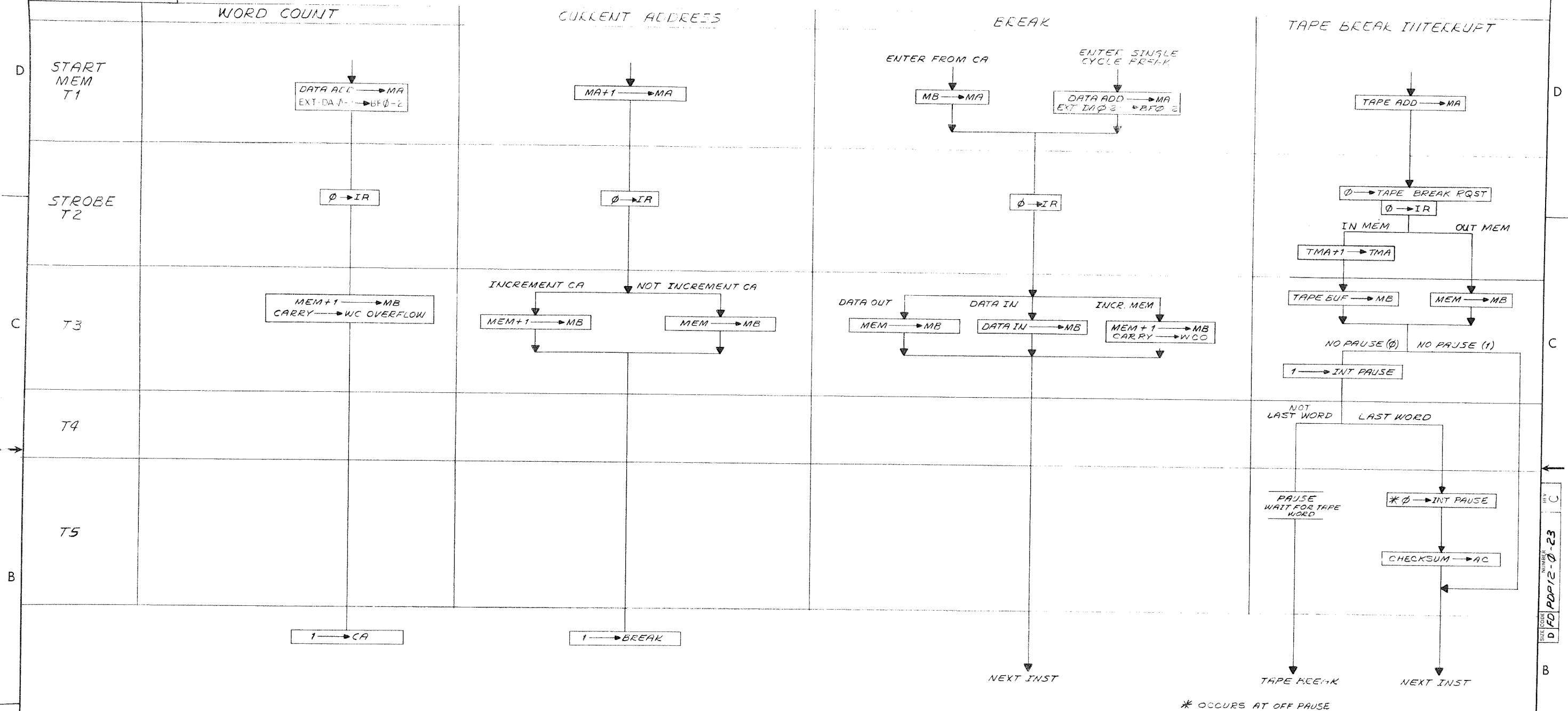
SIZE CODE: DFD NUMBER: PDP12-0-22

NUMBER: DFD PDP12-0-22

A



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REVISIONS

CHK	CHANGE NO.	REV
MS	EPI2-00009	A
	7-21-67	
	8-22-69	
	EPI2-00015	B
	10-17-69	
	12-00085	C
	7-28-70	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRN	DATE
UNLESS OTHERWISE SPECIFIED		CHKD	DATE
DIMENSION IN INCHES		ENG	DATE
TOLERANCES		PROJ. ENG.	DATE
DECIMALS ± .005		PROD.	DATE
FRACTIONS ± 1/64			
ANGLES ± 0'30"			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FINISH			
FIRST USED ON			
SCALE			
SHEET 7 OF 7			
digital EQUIPMENT CORPORATION		MAYNARD, MASSACHUSETTS	
TITLE			
EREAK			
SIZE CODE		NUMBER	REV
DFD PDP12-0-23			C
DIST.			

# MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0	REF		PDP-12 SYSTEM
D-BS-EP12-0-CIN	D	1	CONSOLE INDICATORS
D-BS-EP12-0-CPR	H	1	CENTRAL PROCESSOR RUN
D-BS-EP12-0-CPS	R	1	CENTRAL PROCESSOR STATES
D-BS-EP12-0-CPT	E	1	CP TIME STATES
D-BS-EP12-0-CPTP	F	1	CENTRAL PROCESSOR TIME PULSES
D-BS-EP12-0-CSI	C	1	CONSOLE SWITCH INPUTS
D-BS-EP12-0-CST	K	1	CONSOLE STARTS
D-BS-EP12-0-CYI	B	1	CARRY INSERTS
D-BS-EP12-0-FLE	C	1	FLOW & END SHIFT
D-BS-EP12-0-FLK	D	1	LINK LOGIC
D-BS-EP12-0-ICB	H	1	IO & EXT MEM CABLES
D-BS-EP12-0-INR	C	1	INSTRUCTION REGISTER
D-BS-EP12-0-INS	H	1	INSTRUCTIONS
D-BS-EP12-0-IOA	A	1	IO INPUT PART A
D-BS-EP12-0-IOB	F	1	IO INPUT PART B
D-BS-EP12-0-IOC	H	1	IO CONTROL & TIMING
D-BS-EP12-0-IOO	A	L	IO OUTPUT BUFFERS
D-BS-EP12-0-IOR	B	1	RELAY BUFFER
D-BS-EP12-0-IPC	K	1	INTER PROC CABLES
D-BS-EP12-0-MEA	H	1	MEM EXTN AC INPUTS
D-BS-EP12-0-MPG	L	1	MEM PAGE EXTN CONTROLS
D-BS-EP12-0-MOR	B	1	MUL QUOTIENT
D-BS-EP12-0-PMA	B	1	PROCESSOR MISCELLANEOUS A
D-BS-EP12-0-PMB	A	1	PROCESSOR MISCELLANEOUS B
D-BS-EP12-0-PRA	D	1	PRA PROCESSOR BITS 0 & 1
D-BS-EP12-0-PRB	C	1	PRB PROCESSOR BITS 2 & 3
D-BS-EP12-0-PRC	C	1	PRC PROCESSOR BITS 4 & 5
D-BS-EP12-0-PRD	C	1	PRD PROCESSOR BITS 6 & 7
D-BS-EP12-0-PRE	C	1	PRE PROCESSOR BITS 8 & 9
D-BS-EP12-0-PRF	C	1	PRF PROCESSOR BITS 10 & 11
D-BS-EP12-0-PRG	B	1	PROCESSOR REGISTER GATING

REVISIONS				DRN.	DATE	<b>EQUIPMENT CORPORATION</b> <small>MAYNARD, MASSACHUSETTS</small>			
REV.	DATE	CHG. NO.	APP'D.	CHK'D.	DATE				
AM	6/71	00040	D.M.	J. Aprea	030769	<b>TITLE</b>  PDP-12 PROCESSOR			
AN	6/71	00041	R.M.	R. Hutnak	030769				
AP	8/71	00042	R.M.	L. Gale	031069				
AR	10/71	00043	R.M.	PROJ. ENG.	DATE				
AS	1/72	00044	R.M.	L. Gale	031069				
AT	2/72	00045	R.M.	PROD.	DATE				
AU	7/72	00046	R.I.	D. Call	031069				
FIRST USED ON				PDP-12		SIZE	CODE	NUMBER	REV.
SCALE						A	ML	EP12-0	AU
SHEET 1 OF 2				DIST.					

# MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-BS-EP12-0-RCA	A	1	REGISTER CONTROL A
D-BS-EP12-0-RCB	D	1	REGISTER CONTROL B
D-BS-EP12-0-RCC	B	1	REGISTER CONTROL C
D-BS-EP12-0-RCD	D	1	REGISTER CONTROL D
D-BS-EP12-0-RCL	H	1	PROCESSOR REGISTER LOAD CONTROL
D-BS-EP12-0-RCS	B	1	REG SHIFT & MO INPUTS
D-BS-EP12-0-SKH	D	1	SKIP FF & H BITS
D-BS-EP12-0-SKL	C	1	EP12 SKIPS
D-BS-EP12-0-SLA	A	1	SPECIAL LEVELS 1
D-BS-EP12-0-TTI	B	1	TTI TELETYPE RECEIVER
D-BS-EP12-0-TTO		1	TTO TELETYPE TRANSMITTER
D-BS-EP12-0-SRF	A	1	SET & RESTORE FIELDS
A-WL-EP12-0-4	B	3	DC POWER PROCESSOR LOGIC
K-WL-EP12-0-3	AD		WIRE LIST
D-MU-EP12-0-1	M	2	MODULE UTILIZATION PROC
A-PL-EP12-0-1	M	3	MODULE UTILIZATION PROC (PARTS LIST)
D-AD-7005976-0-0	M	1	WIRED ASSY CP & IO (EP12)
A-PL-7005976-0-0	M	1	WIRED ASSY PL CP & IO (EP12)

REVISIONS				DRN.	DATE	<b>EQUIPMENT CORPORATION</b> <small>MAYNARD, MASSACHUSETTS</small>			
REV.	DATE	CHG. NO.	APP'D.	CHK'D.	DATE				
				J. Aprea	030769	<b>TITLE</b>  PDP-12 PROCESSOR			
				R. Hutnak	030769				
				L. Gale	031069				
				PROJ. ENG.	DATE				
				L. Gale	031069				
				PROD.	DATE				
				D. Call	031069				
FIRST USED ON				PDF-12		SIZE	CODE	NUMBER	REV.
SCALE						A	ML	EP12-0	AU
SHEET 2 OF 2				DIST.					

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M900  
N29

- A1 MPG DF 04 (1)L
- B1 PRB MA 03 (1)L
- C1 IDR R 00 (1)L
- D1 PRC PC 04 (1)L
- E1 INR IR 04 (1)L
- F1 IDR R 02 (1)L
- H1 PRB PC 03 (1)L
- J1 MPG DF 03 (1)L
- K1 INR IR 07 (1)L
- L1 IDR R 01 (1)L
- M1 INR IR 08 (1)L
- N1 INR IR 03 (1)L
- P1 PRB MA 02 (1)L
- R1 MXR IF 01 (1)L
- S1 INR IR 01 (1)L
- T1
- U1
- V1

M900  
N30

- A1 PRF PC 10 (1)L
- B1 PRE MA 09 (1)L
- C1 LCS SEARCH (1)L
- D1 PRF PC 11 (1)L
- E1 PRF MA 10 (1)L
- F1 CPS FETCH (1)L
- H1 PRE PC 09 (1)L
- J1 MQR MQ 00 (1)L
- K1 CPS EXECUTE (1)L
- L1 LCS IDLE (1)L
- M1 CPS DEFER (1)L
- N1 PRE MA 08 (1)L
- P1 PRC PC 05 (1)L
- R1 IDR R 04 (1)L
- S1 PRD PC 06 (1)L
- T1
- U1
- V1

M900  
N31

- A1 PRC AC 05 (1)L
- B1 PRC MB 04 (1)L
- C1 LCX EX ADD FORMAT (1)L
- D1 PRD AC 06 (1)L
- E1 PRC MB 05 (1)L
- F1 CPS BREAK (1)L
- H1 PRC AC 04 (1)L
- J1 MQR MQ 05 (1)L
- K1 MQR MQ 07 (1)L
- L1 MQR MQ 06 (1)L
- M1 LCX NO PAUSE (1)L
- N1 PRB MB 03 (1)L
- P1 PRA MB 00 (1)L
- R1 LCS CHK WRD (1)L
- S1 FLK LDK (1)L
- T1
- U1
- V1

M900  
N32

- A1 IDC INT EN (1)L
- B1 CPS EN TRAP (1)L
- C1 LIN TINR 11 (1)L
- D1 CPT INT PAUSE (1)L
- E1 CPT IOT PAUSE (1)L
- F1 CPR 8 MODE H
- H1 PRF MB 11 (1)L
- J1 MQR MQ 10 (1)L
- K1 CST AUTO (1)L
- L1 CPR RUN (1)L
- M1 CPR L MODE H
- N1 PRF AC 11 (1)L
- P1 PRD MB 07 (1)L
- R1 CPS T BREAK (1)L
- S1 PRE MB 08 (1)L
- T1
- U1
- V1

M900  
N29

- A2
- B2
- C2
- D2 INR IR 00 (1)L
- E2 PRB PC 02 (1)L
- F2 MPG IF 03 (1)L
- H2 PRA PC 00 (1)L
- J2 MXR IF 02 (1)L
- K2 MPG IF 04 (1)L
- L2 PRA MA 00 (1)L
- M2 PRA PC 01 (1)L
- N2 INR IR 06 (1)L
- P2 MXR DF 00 (1)L
- R2 INR IR 02 (1)L
- S2 MXR IF 00 (1)L
- T2 PRA MA 01 (1)L
- U2 MXR DF 02 (1)L
- V2 MXR DF 01 (1)L

M900  
N30

- A2
- B2
- C2
- D2 PRD MA 07 (1)L
- E2 PRE PC 08 (1)L
- F2 MQR MQ 01 (1)L
- H2 PRD PC 07 (1)L
- J2 IDR R 03 (1)L
- K2 MQR MQ 02 (1)L
- L2 PRD MA 06 (1)L
- M2 PRC MA 04 (1)L
- N2 LCS BLOCK (1)L
- P2 INR IR 11 (1)L
- R2 PRC MA 05 (1)L
- S2 IDR R 05 (1)L
- T2 INR IR 05 (1)L
- U2 INR IR 09 (1)L
- V2 INR IR 10 (1)L

M900  
N31

- A2
- B2
- C2
- D2 PRB AC 02 (1)L
- E2 PRB AC 03 (1)L
- F2 LIP PROGRESS (1)L
- H2 PRA AC 01 (1)L
- J2 CPS INTER (1)L
- K2 CPS WC (1)L
- L2 PRF MA 11 (1)L
- M2 PRA MB 01 (1)L
- N2 CPS CA (1)L
- P2 MQR MQ 04 (1)L
- R2 PRA AC 00 (1)L
- S2 LCS TURN ARND (1)L
- T2 PRB MB 02 (1)L
- U2 MQR MQ 03 (1)L
- V2 CPS EXC 2 (1)L

M900  
N32

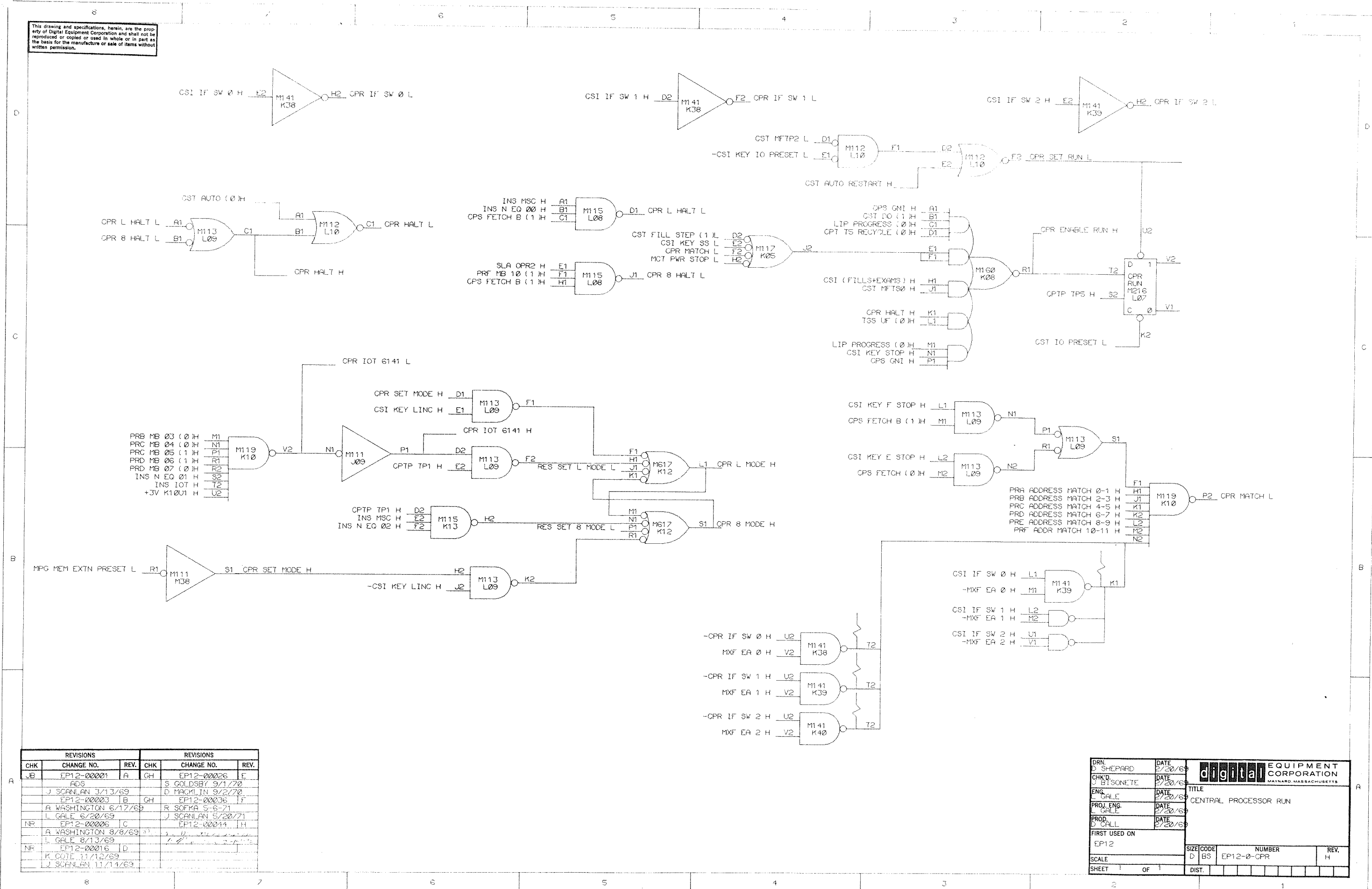
- A2
- B2
- C2
- D2 PRF AC 10 (1)L
- E2 PRF MB 10 (1)L
- F2 LIN TINR 10 (1)L
- H2 PRE MB 09 (1)L
- J2 MQR MQ 08 (1)L
- K2 FLE FLOW (1)L
- L2 PRE AC 09 (1)L
- M2 PRD MB 06 (1)L
- N2 MQR MQ 11 (1)L
- P2 MQR MQ 09 (1)L
- R2 PRE AC 08 (1)L
- S2 LIN TINR 09 (1)L
- T2 PRD AC 07 (1)L
- U2 LCX MARK (1)L
- V2 SKH SKIP (1)L

\*NOTE: THIS SIGNAL IS CONNECTED TO THE 'IP' LIGHT ON THE CONSOLE LIGHT PANEL.

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3/13/69	
NR	EP12-00015	B
	K. COTE 10/14/69	
	J. SCANLAN 10/17/69	
NR	EP12-00016	C
	K. COTE 11-12-69	
	J. SCANLAN 11-14-69	
TC	EP12-00023	D
	4/1/70	
	D. Maslin 7-2-70	

DRAWN	D. SHEPARD	DATE	2/20/69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D	J. BISONETE	DATE	2/20/69	
ENG.	L. GALE	DATE	2/20/69	TITLE
PROJ. ENG.	L. GALE	DATE	2/20/69	CONSOLE INDICATORS
PROD.	D. CALL	DATE	2/20/69	
FIRST USED ON	EP12	SIZE	CODE	NUMBER
SCALE	D BS			EP12-0-CIN
SHEET	1	OF	1	DIST.

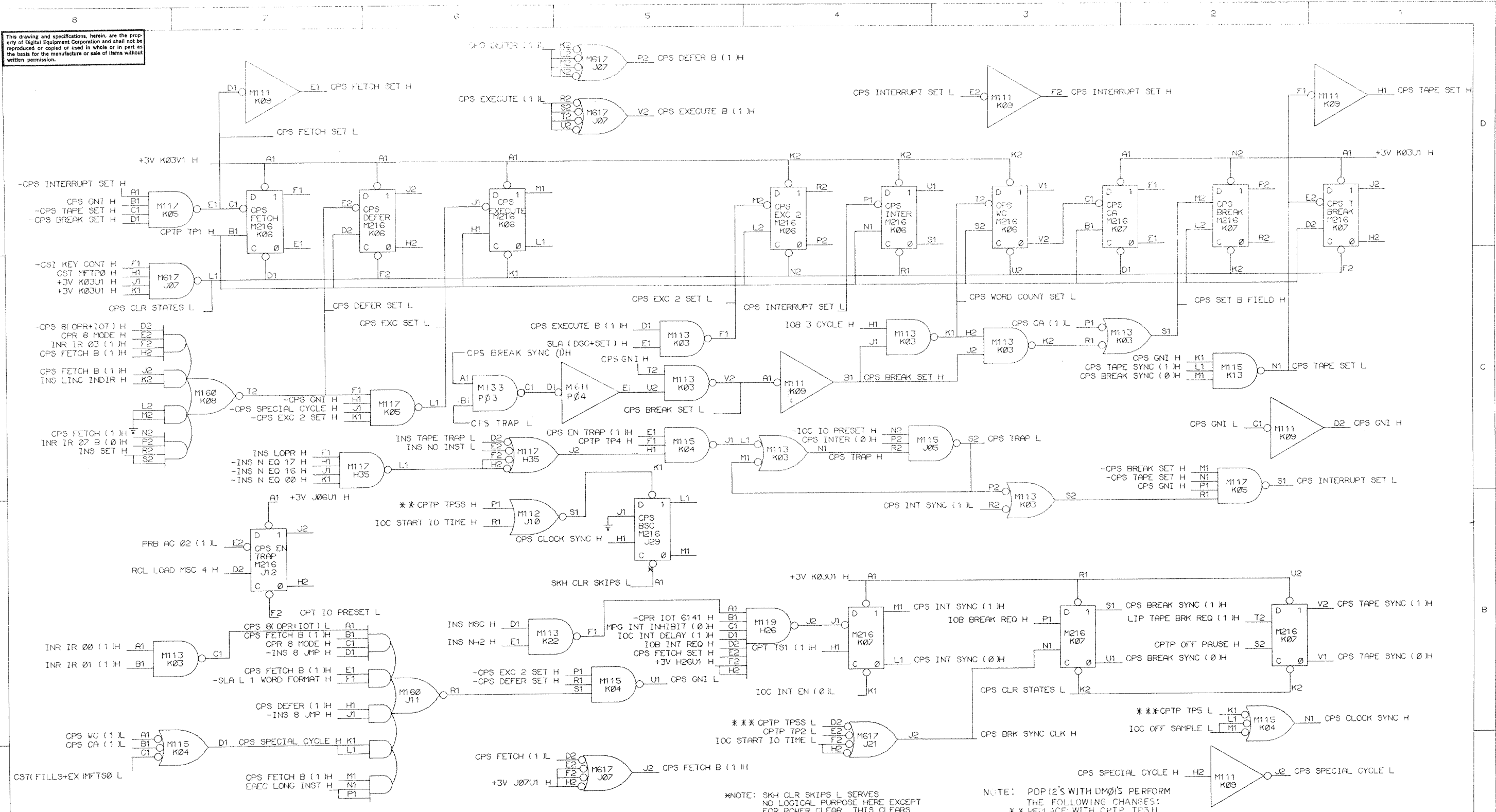
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REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	GH	EP12-00026	E
	ADS			S GOLDSBY 9/1/70	
	J SCANLAN 3/13/69			D MACALIN 9/2/70	
	EP12-00003	B	GH	EP12-00036	F
	A WASHINGTON 6/17/69			R SOFKA 5-6-71	
	L GALE 8/20/69			J SCANLAN 5/20/71	
	EP12-00006	C		EP12-00014	H
	A WASHINGTON 8/8/69				
	L GALE 8/13/69				
	EP12-00016	D			
	K COLE 11/12/69				
	J SCANLAN 11/14/69				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD. B BISONETE	DATE 2/20/69	
ENG. GALE	DATE 2/20/69	TITLE
PROJ. ENG. L GALE	DATE 2/20/69	CENTRAL PROCESSOR RUN
PROD. D CALL	DATE 2/20/69	
FIRST USED ON		
EP12		
SCALE	D B5	NUMBER
SHEET 1 OF 1	DIST.	REV. H

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REVISIONS			REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E	GH	EP12-00026	K		EP12-00044	P
				A WASHINGTON 8/15/69			S. GOLDSBY 9-1-70				
				L GALE 8/20/69			D. MACKLIN 9-2-70				
J	SCANLAN 3/13/69			EP12-00009	F	GH	EP12-00030	L		EP12-00046	R
				A WASHINGTON 5/20/69			K WALSH 11/18/70				
				L GALE 8/22/69			D MACKLIN 11/9/70				
J	SCANLAN 5/22/69			EP12-00021	H	JH	EP12-00036	M			
				A WASHINGTON 8/20/69			R. SOFKA 5-18-71				
				EP12-00004	C	FV	J. SCANLAN 5-20-71				
				A WASHINGTON 7/9/69			EP12-00037	N			
				D SOUTHER 6/6/70			G. WYATT 5-28-71				
				J. SCANLAN 6/17/70			EP12-00032				
NR	EP12-00006	D	TC	EP12-00023	J	GH					
				A WASHINGTON 8/6/69			J. SCANLAN 6-2-71				
				D SOUTHER 6/30/70							
				J. SCANLAN 8/20/69							
				D MACKLIN 7/2/70							

\*NOTE: SKH CLR SKIPS L SERVES NO LOGICAL PURPOSE HERE EXCEPT FOR POWER CLEAR. THIS CLEARS COMMON WITH FLIP FLOP ON SKH PRINT.

\*NOTE: PDP12'S WITH DM0'S PERFORM THE FOLLOWING CHANGES:  
 \*\* REPLACE WITH CPTP TP5H  
 \* \* \* REPLACE WITH CPTP TP5 L

DRN D SHEPARD	DATE 2/20/69	digital CORPORATION MAYNARD, MASSACHUSETTS
CHKD J BLISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE CENTRAL PROCESSOR STATES
PROJ. L GALE	DATE 2/20/69	
PROD. D CHALL	DATE 2/20/69	
FIRST USED ON EP12	SIZE CODE D BS	NUMBER EP12-0-CPS
SCALE		REV. R
SHEET 1 OF 1	DIST.	



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6

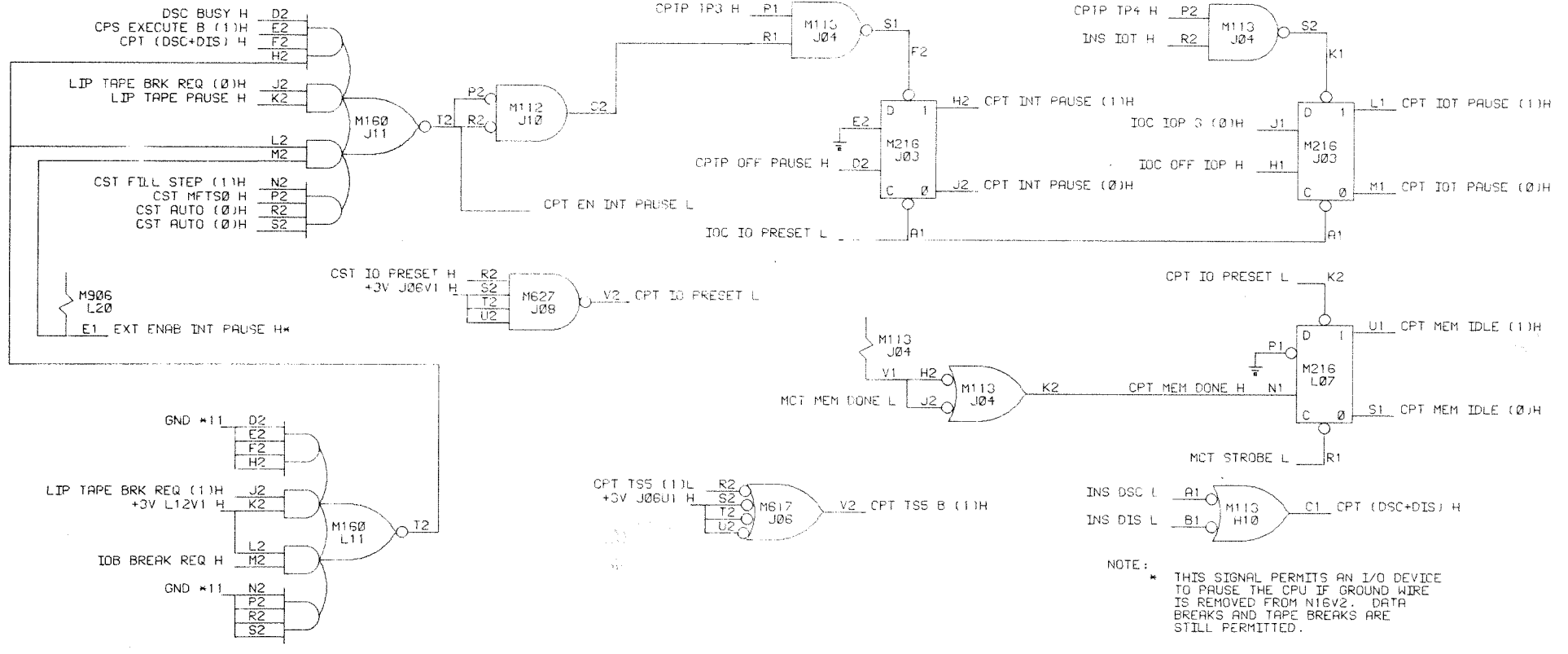
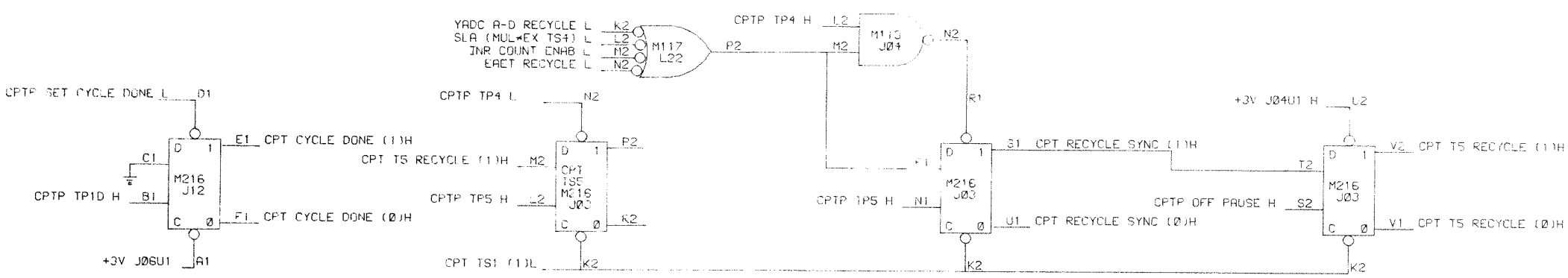
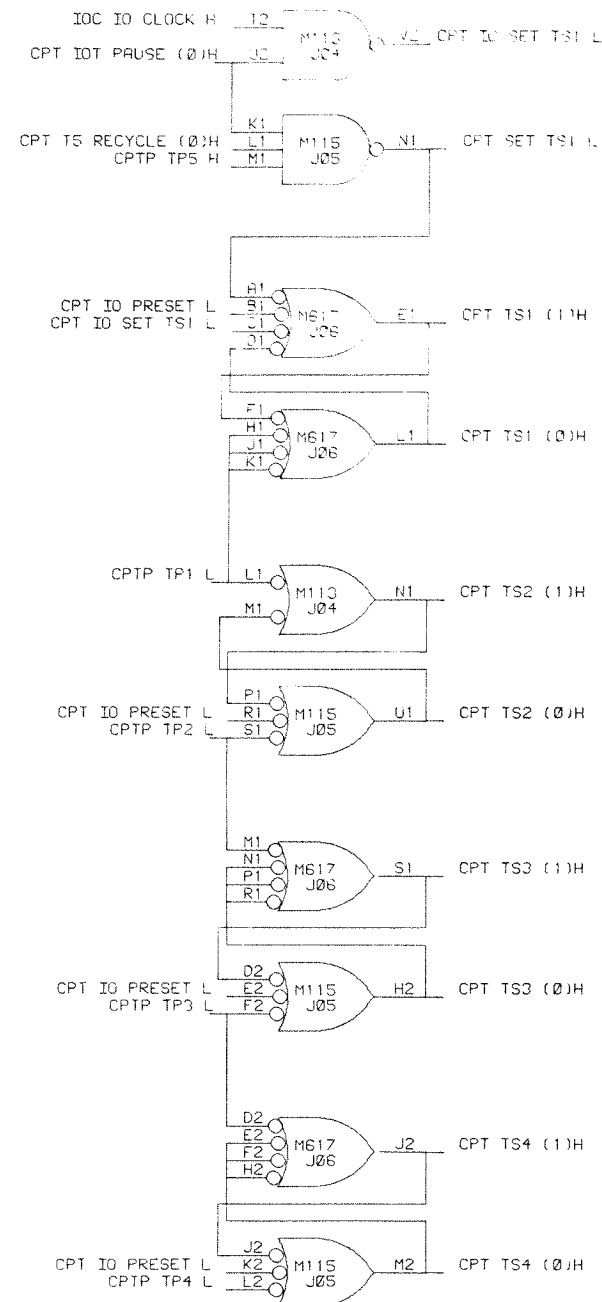
5

4

3

2

1



NOTE: \* THIS SIGNAL PERMITS AN I/O DEVICE TO PAUSE THE CPU IF GROUND WIRE IS REMOVED FROM N16V2. DATA BREAKS AND TAPE BREAKS ARE STILL PERMITTED.

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00001	A		EP12-00032	E
	ADS			K, ROSS	
	J. SCANLAN 6/2/69				
	EP12-00003	B			
	R. WASHINGTON 6/17/69				
	L. GALE 6/20/69				
	FV EP12-00021	C			
	D. SOUTHER 6/15/70				
	J. SCANLAN 6/17/70				
	GH EP12-00026	D			
	S. GOLDSBY 9/1/70				
	D. MACKLIN 9/2/70				

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE
PROJ. ENG. L. GALE	DATE 2/20/69	CP TIME STATES
PROD. D. CHILL	DATE 2/20/69	
FIRST USED ON		
FP12	SIZE CODE	NUMBER
SCALE	D RS	EP12-0-CPT
SHEET 1 OF 1	DIST.	REV. E

8

6

5

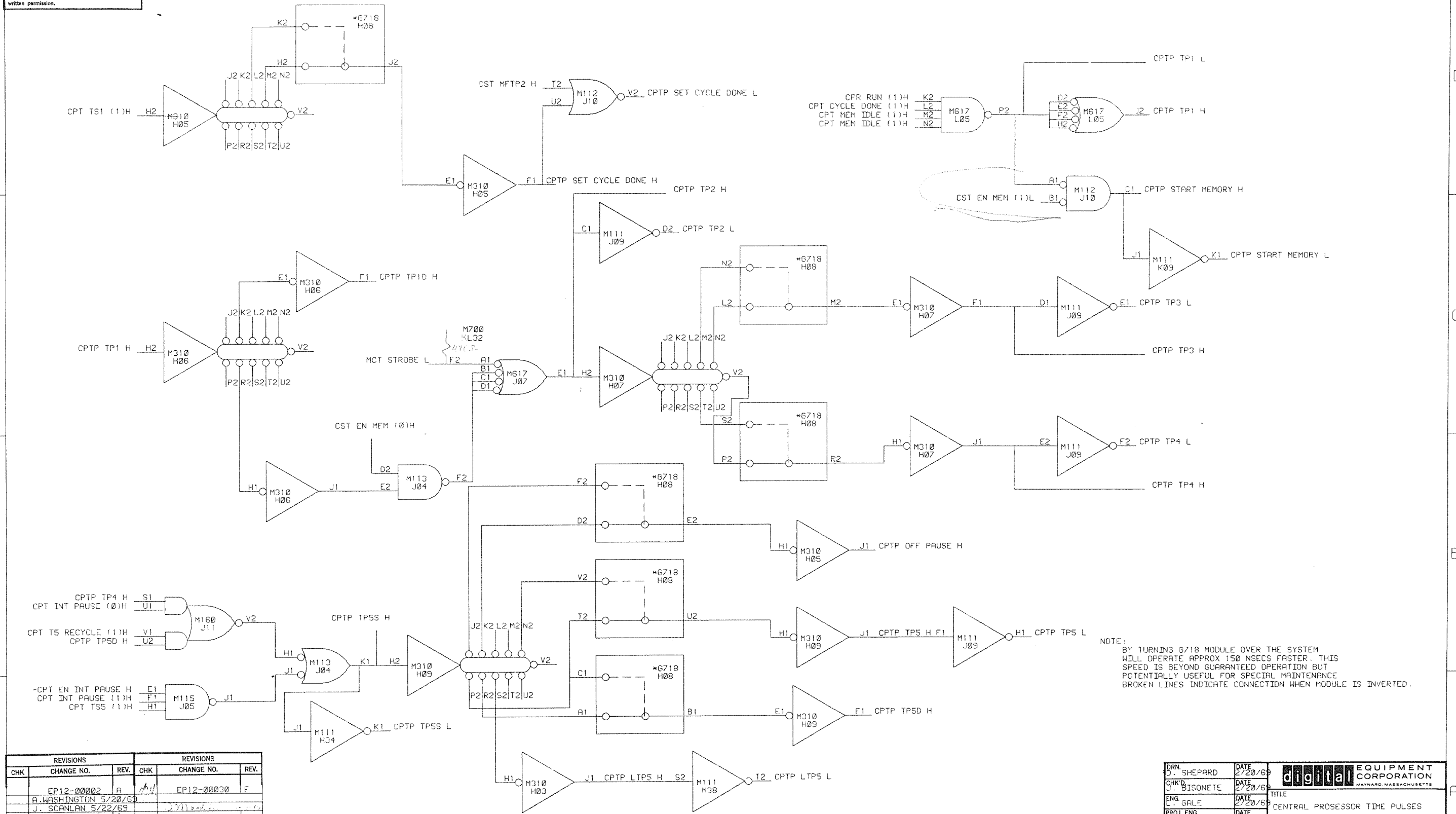
4

3

2

1

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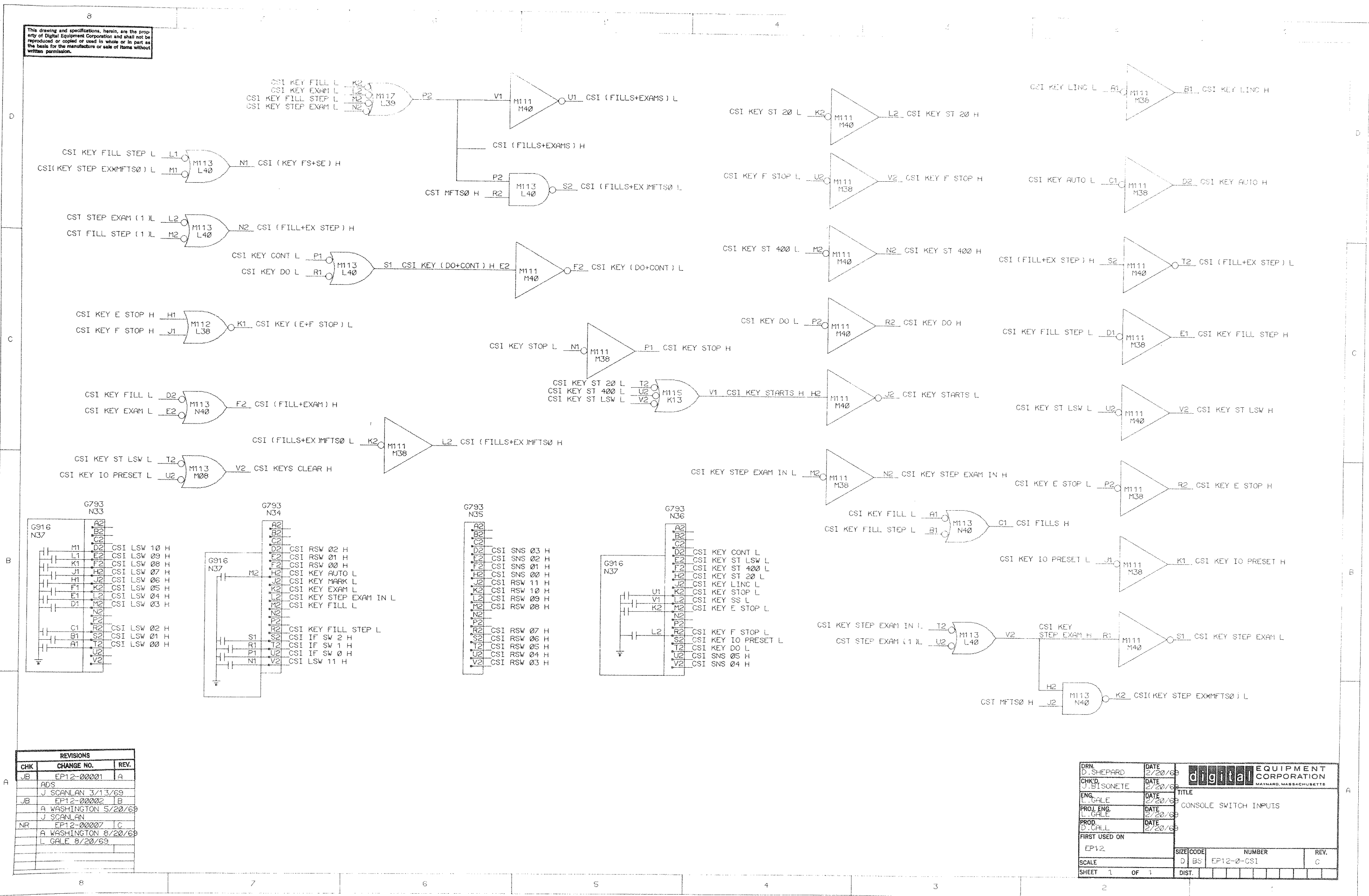


NOTE:  
 BY TURNING G718 MODULE OVER THE SYSTEM  
 WILL OPERATE APPROX 150 NSECS FASTER. THIS  
 SPEED IS BEYOND GUARANTEED OPERATION BUT  
 POTENTIALLY USEFUL FOR SPECIAL MAINTENANCE  
 BROKEN LINES INDICATE CONNECTION WHEN MODULE IS INVERTED.

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00002	A		EP12-00030	F
	A. WASHINGTON	5/20/69			
	J. SCANLAN	5/22/69			
NR	EP12-00007	C			
	A. WASHINGTON	8/15/69			
	L. GALE	3/20/69			
FV	EP12-00021	1D			
	D. SOUTHER	6/15/70			
	J. SCANLAN	6/17/70			
GH	EP12-00026	1E			
	S. GOLDSBY	9-1-70			
	D. MACKLIN	9-2-70			

DRN	D. SHEPARD	DATE	2/20/69	 CENTRAL PROCESSOR TIME PULSES
CHKD	J. BISONETE	DATE	2/20/69	
ENG	L. GALE	DATE	2/20/69	
PROJ. ENG	L. GALE	DATE	2/20/69	
PROD	L. CALL	DATE	2/20/69	
FIRST USED ON	EP12			
SCALE	D BS	SIZE CODE	NUMBER	REV.
SHEET	1	OF	1	F

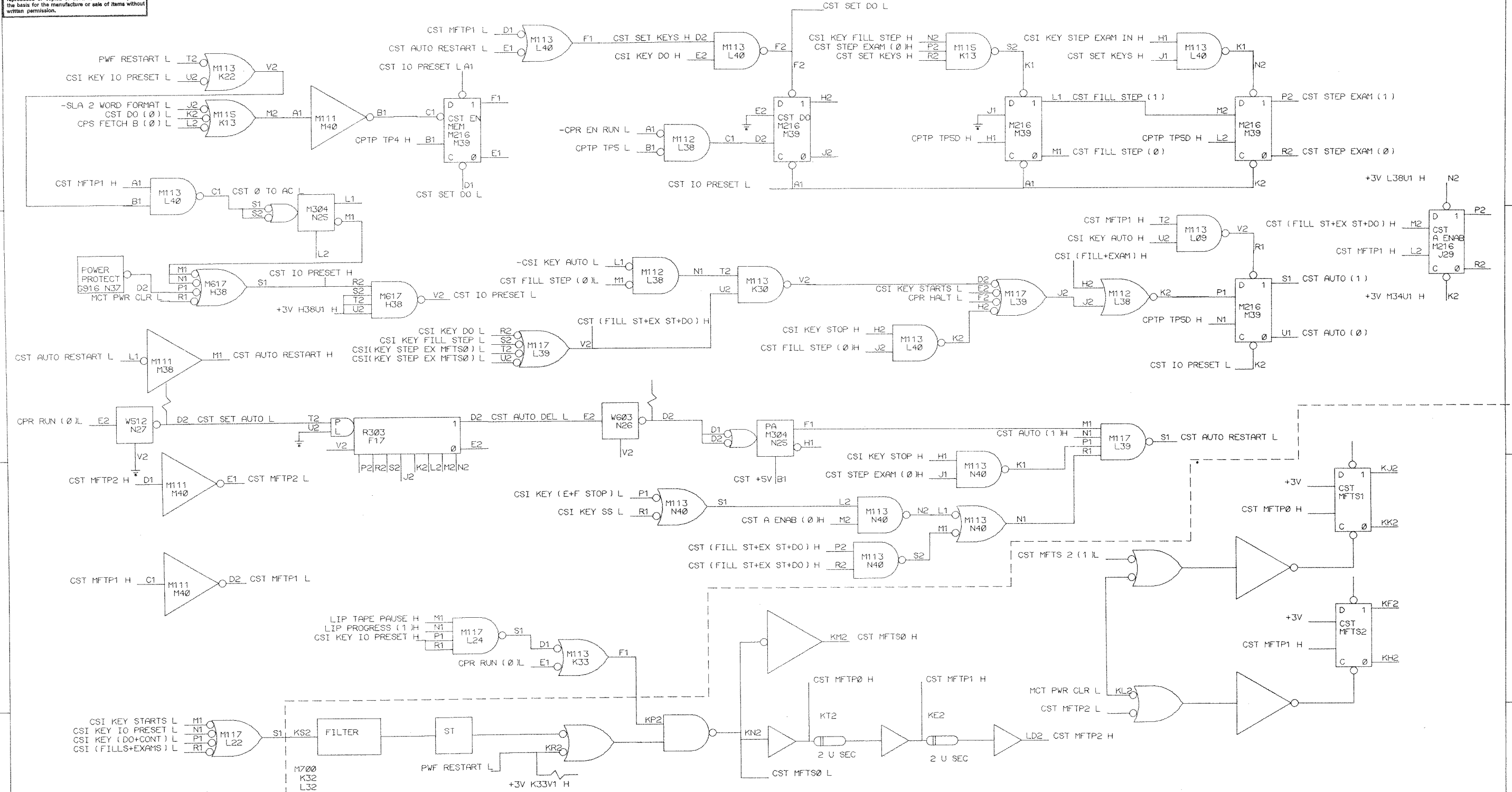
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REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
JB	EP12-00002	B
	A WASHINGTON 5/20/69	
	J SCANLAN	
NR	EP12-00007	C
	A WASHINGTON 8/20/69	
	L GALE 9/20/69	

DRN D. SHEPARD	DATE 2/20/69	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD J. BISONETE	DATE 2/20/69	
ENG L. GALE	DATE 2/20/69	TITLE CONSOLE SWITCH INPUTS
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON EP12	SCALE D BS	NUMBER EP12-0-CSI
SHEET 1 OF 1	DIST.	REV. C

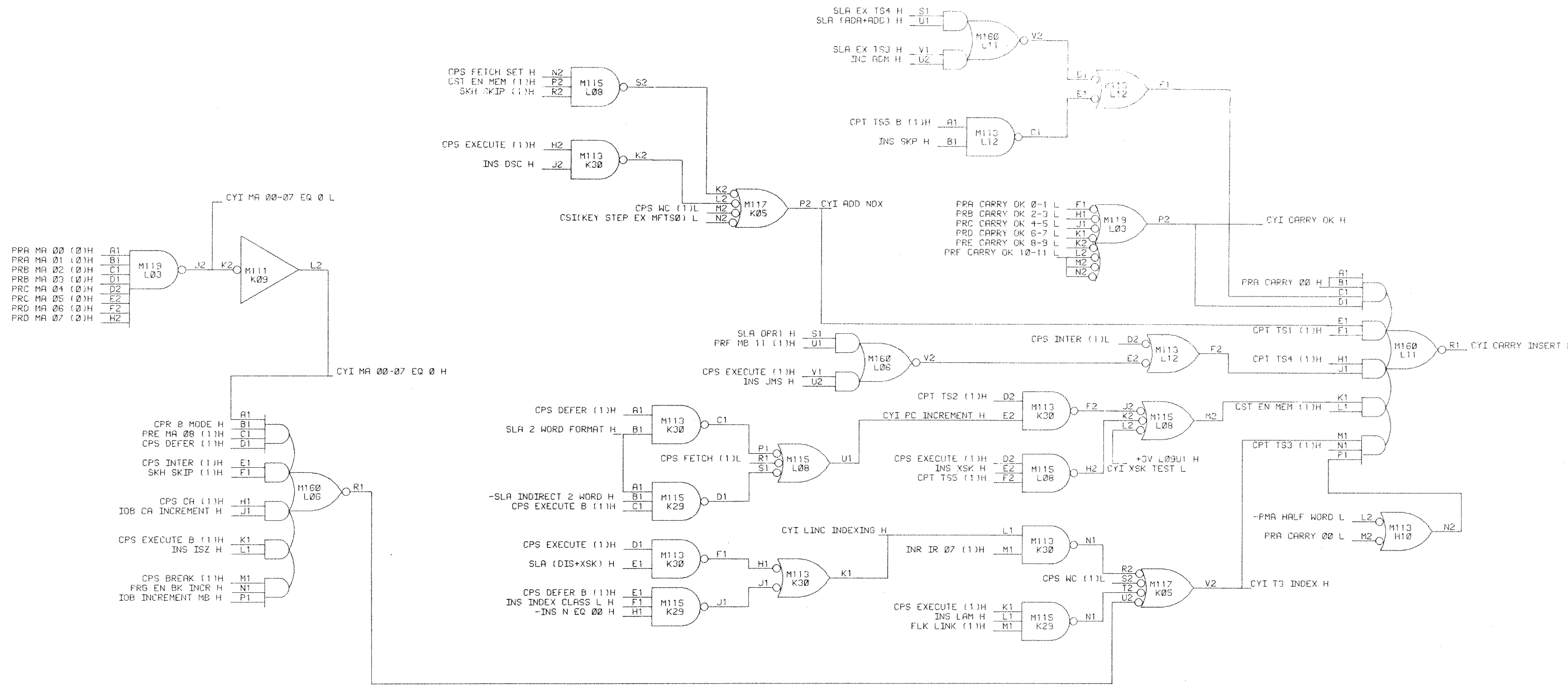
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JOB	EP12-00001	A	EP12-00007	E	RIE	EP12-00043	K
	ADS		A WASHINGTON 8/15/69			J. Walsh 11/5/70	
	J SCANLAN 3/13/69		L GALE 8/20/69			Paul Macklin 11-22-70	
	EP12-00002	IB	EP12-00015	IF			
	A WASHINGTON 5/20/69		K COTE 10/14/69				
	J SCANLAN 5/22/69		J SCANLAN 10/17/69				
	EP12-00003	IC	NR	EP12-00016	IH		
	A WASHINGTON 6/17/69		K. COTE 11-12-69				
	J SCANLAN 6/20/69		J. SCANLAN 11-14-69				
	EP12-00004	ID	NR	EP12-00030	IJ		
	A WASHINGTON 7/9/69		K WALSH 11/5/70				
	J SCANLAN 7/12/69		D MACKLIN 11/19/70				

DRN D SHEPARD	DATE 2/20/69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE CONSOLE STARTS
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D GALL	DATE 2/20/69	
FIRST USED ON EP12	SIZE CODE D BS	NUMBER EP12-0-CST
SCALE SHEET 1 OF 1	DIST.	REV. K

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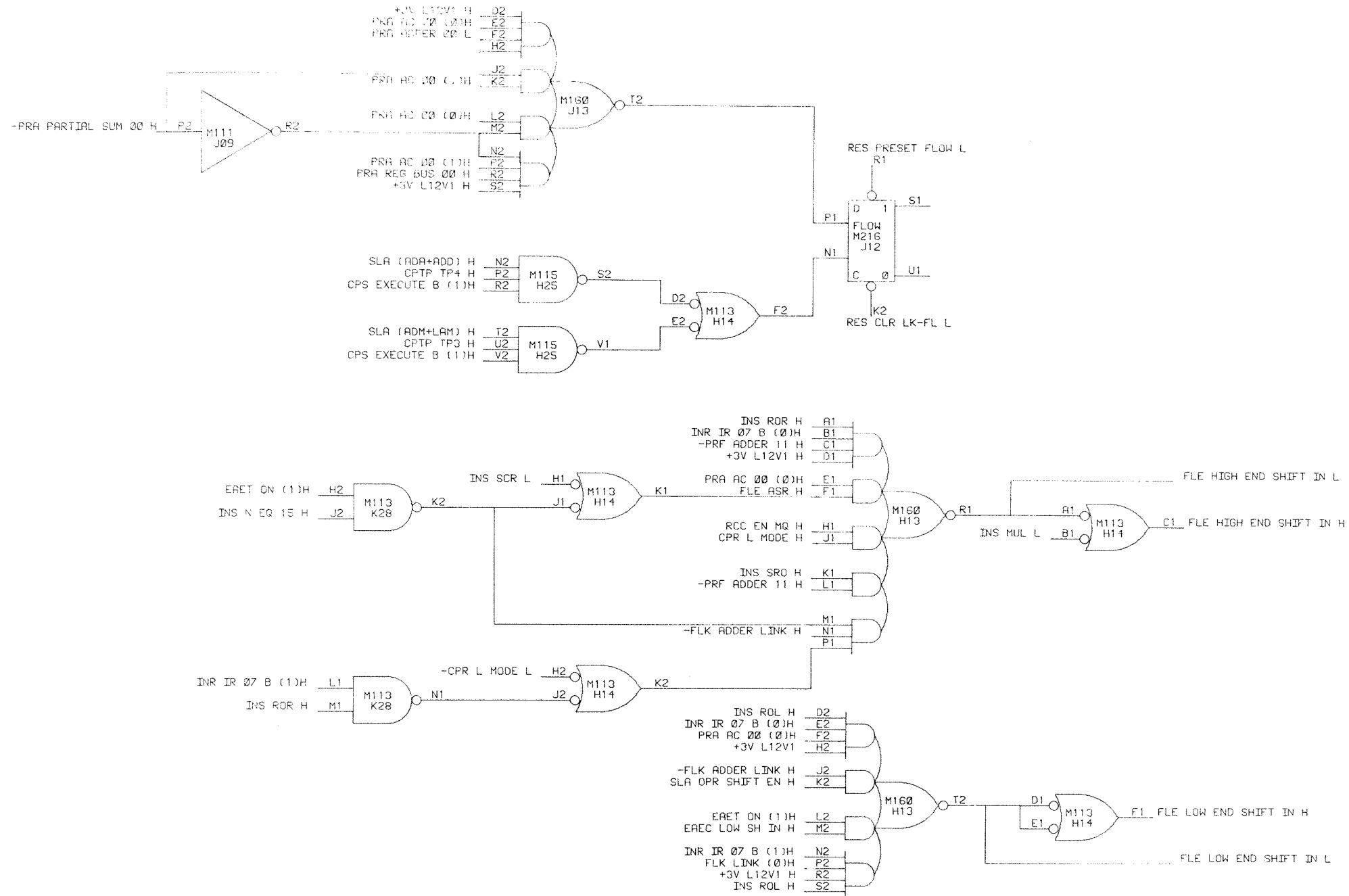


REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
ADS		
J. SCANLON	3-13-69	
	EP12-00008	B
George Wyatt	5-24-71	

DRN D. SHEPPARD	DATE 2-20-69	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J. BISSONNETTE	DATE 2-20-69	
ENG. L. GALE	DATE 2-20-69	
PROJ. ENG. L. GALE	DATE 2-20-69	
PROD. W. L. RAL	DATE 2-20-69	TITLE CARRY INSERT
FIRST USED ON EP12		SIZE (CODE) D. BS
SCALE	1 OF 1	NUMBER EP12-0-CYI
SHEET	1 OF 1	REV. B



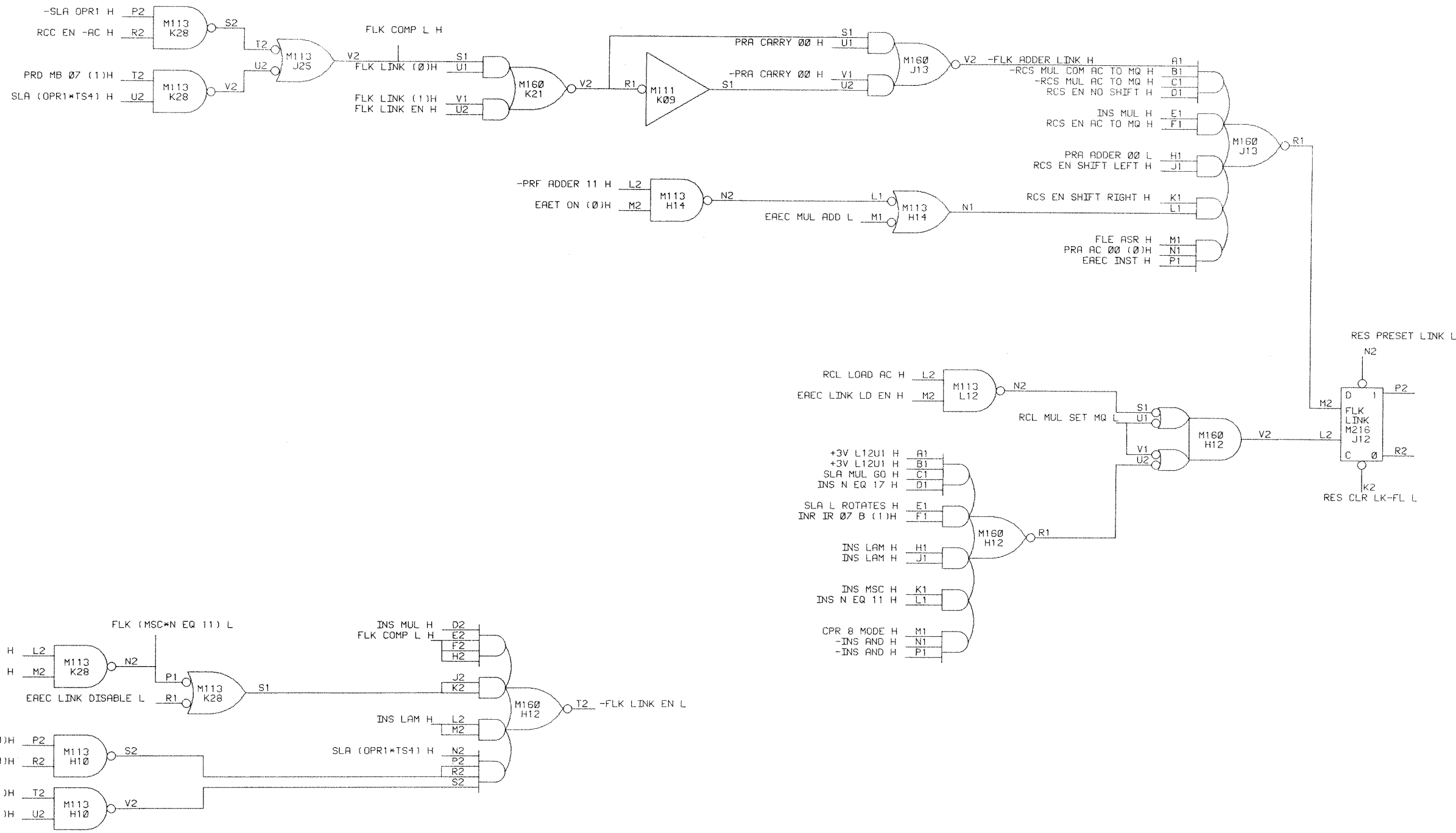
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REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3/13/69	
NR	EP12-00003	B
	A WASHINGTON 6/17/69	
	L GALE 6/20/69	
AV	EP12-00036	C

DRN D. SHEPARD	DATE 2/20/69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE FLOW & END SHIFT
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON EP12		
SCALE D BS	SHEET 1	OF 1
	DIST.	
	NUMBER EP12-0-FLE	REV. C

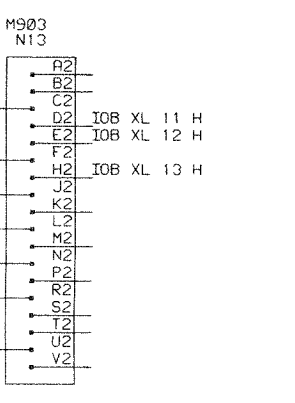
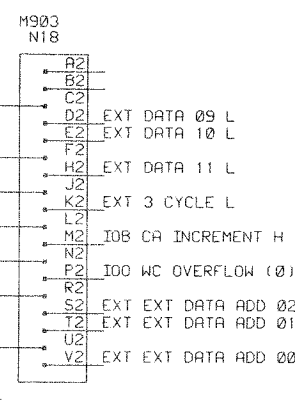
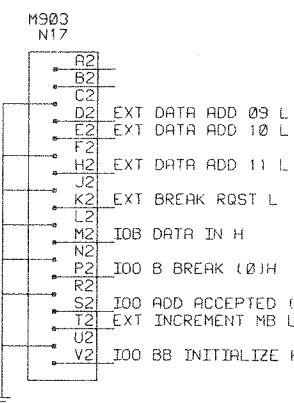
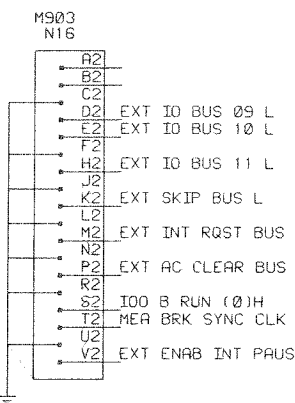
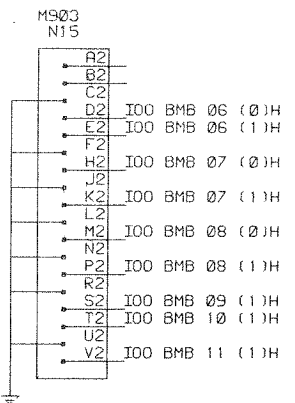
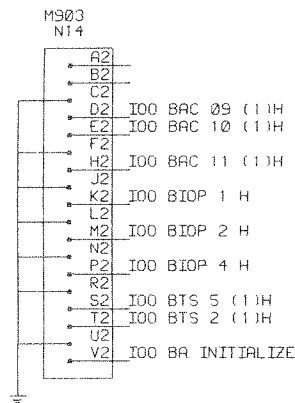
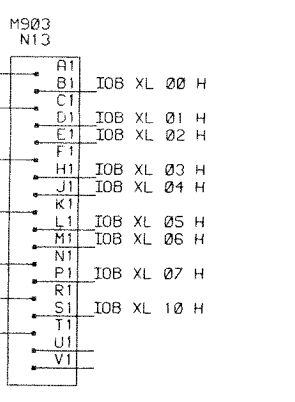
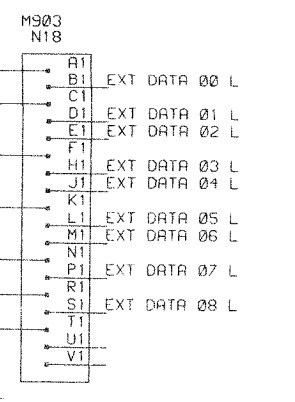
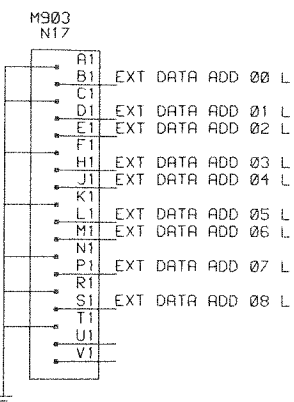
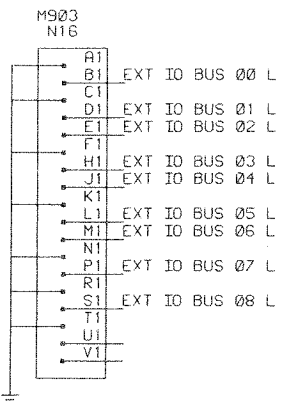
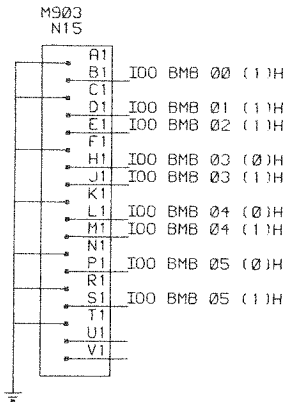
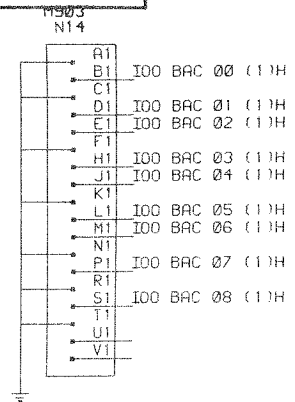
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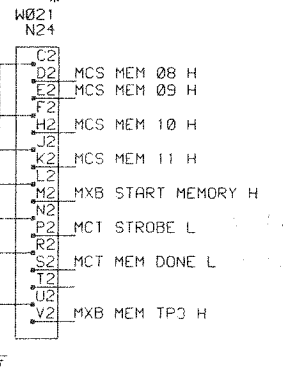
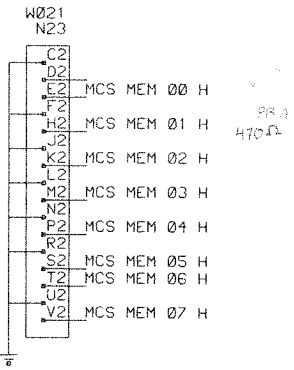
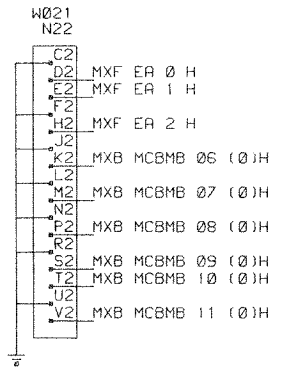
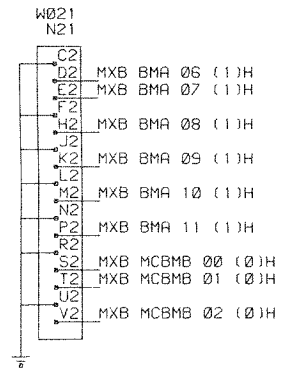
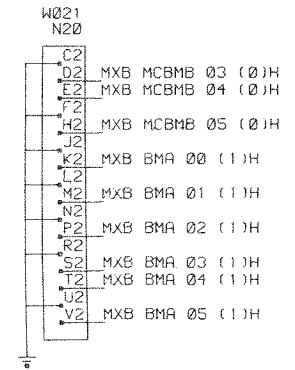
REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
J.	SCANLAN 3/13/69	
PD	EP12-00002	B
	A. WASHINGTON 6/20/69	
J.	SCANLAN 6/22/69	
GH	EP12-00003	C
	ADS	
J.	SCANLAN	
	EP12-00036	D
	R. H. GALE 11/11/69	
	ADS 11/11/69	

DRN.	D. SHEPARD	DATE	2/20/69	
CHK'D.	J. BISONETE	DATE	2/20/69	
ENG.	L. GALE	DATE	2/20/69	TITLE
PROJ. ENG.	L. GALE	DATE	2/20/69	LINK LOGIC
PROD.	D. CALL	DATE	2/20/69	
FIRST USED ON	EP12	SIZE	CODE	NUMBER
SCALE	D BS			EP12-0-FLK
SHEET	1	OF	1	REV.
				D

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NOTE:  
IF AN FPP12 IS NOT USED, ADD GROUND WIRE N16V2 TO N19T1. IF FPP12 IS ADDED TO BUS, GROUND MUST BE REMOVED.

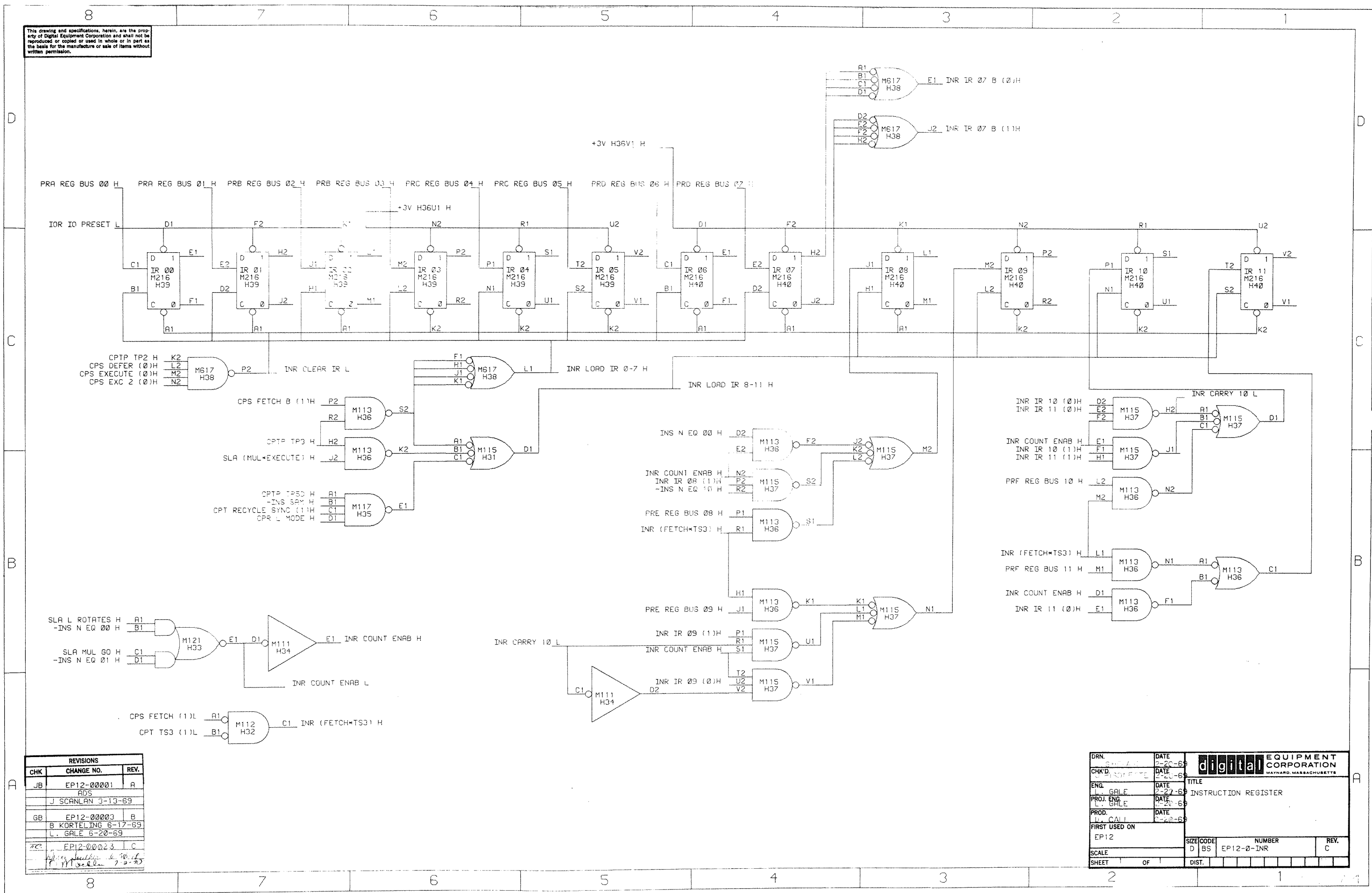


\* PLACE A M906 CABLE TERMINATOR MODULE AT THE END OF THIS BUS WHEN USING A MMBI. ADD +5V TO THE RESPECTIVE MODULE SLOT. (A32A2 OR D32A2)

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A		EP12-00032	E
ADS			K ROSS	1/15/71	
J SCANLAN	3/13/69		J SCANLAN	1/17/71	
PD	EP12-00002	B		EP12-00034	F
A WASHINGTON	5/20/69		K Ross	2/12/71	
J SCANLAN	5/22/69				
FV	EP12-00021	C		EP12-00046	H
D SOUTHER	6/15/70				
J SCANLAN	6/17/70				
GH	EP12-00026	D			
S GOLDSBY	9/1/70				
D MACKLIN	9/2/70				

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE IO & EXT MEM CABLES
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12	SIZE CODE D BS	NUMBER EP12-0-ICB
SCALE		REV. H
SHEET 1 OF 1	DIST.	

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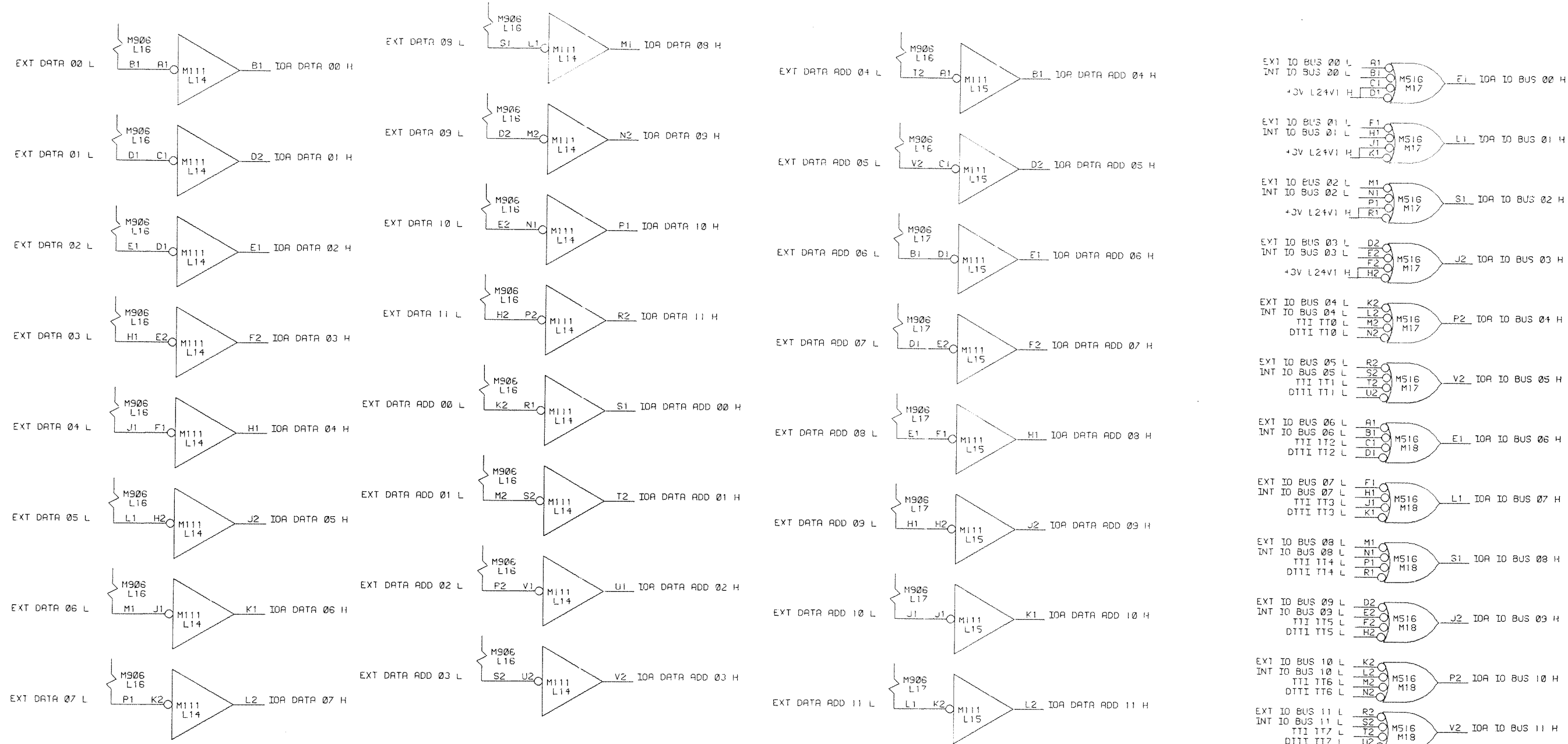
REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3-13-69	
GB	EP12-00003	B
	B. KORTELING 6-17-69	
	L. GALE 6-20-69	
MC	EP12-00023	C
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DRN.	DATE	 <small>WATNARD, MASSACHUSETTS</small>	TITLE
CHK'D.	DATE		INSTRUCTION REGISTER
ENG.	DATE		
PROJ. ENG.	DATE		
PROD.	DATE		
FIRST USED ON			
EP12		SIZE CODE	NUMBER
		D BS	EP12-0-INR
SCALE			REV.
SHEET	OF	DIST.	C





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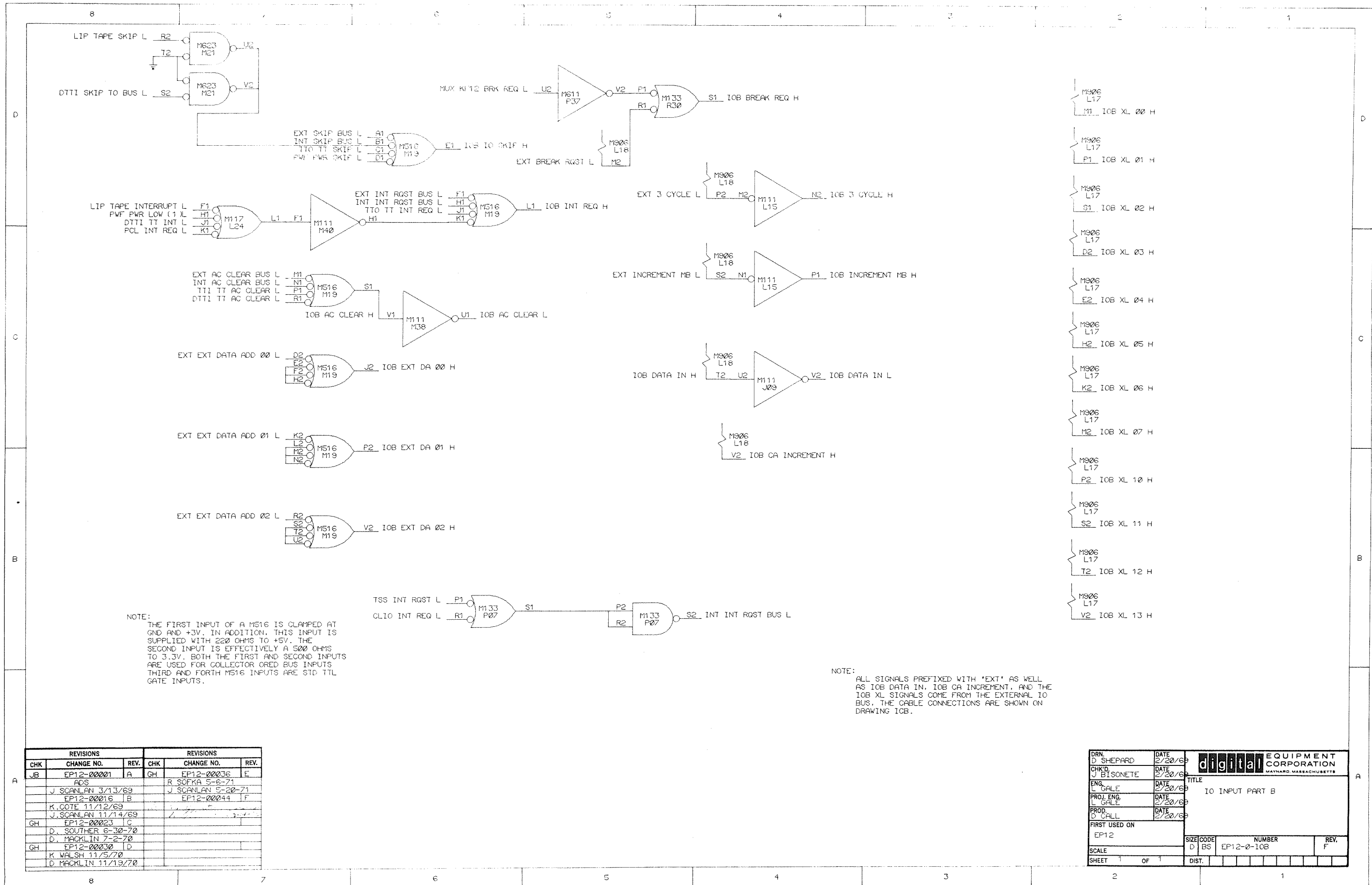


NOTE:  
ALL SIGNALS STARTING WITH 'EXT' COME FROM THE EXTERNAL IO BUS. THE CABLES ARE SHOWN ON DRAWING ICB. SEE DRAWING IOB FOR DESCRIPTION OF M516 INPUTS.

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	TITLE
PROJ. ENG.	DATE	IO INPUT PART A
PROD.	DATE	
FIRST USED ON		
EPI2		
SCALE		
SHEET 1 OF 1	DIST.	

REV B SHOWS PULL-UPS FROM L20 ON DTTI INPUTS.



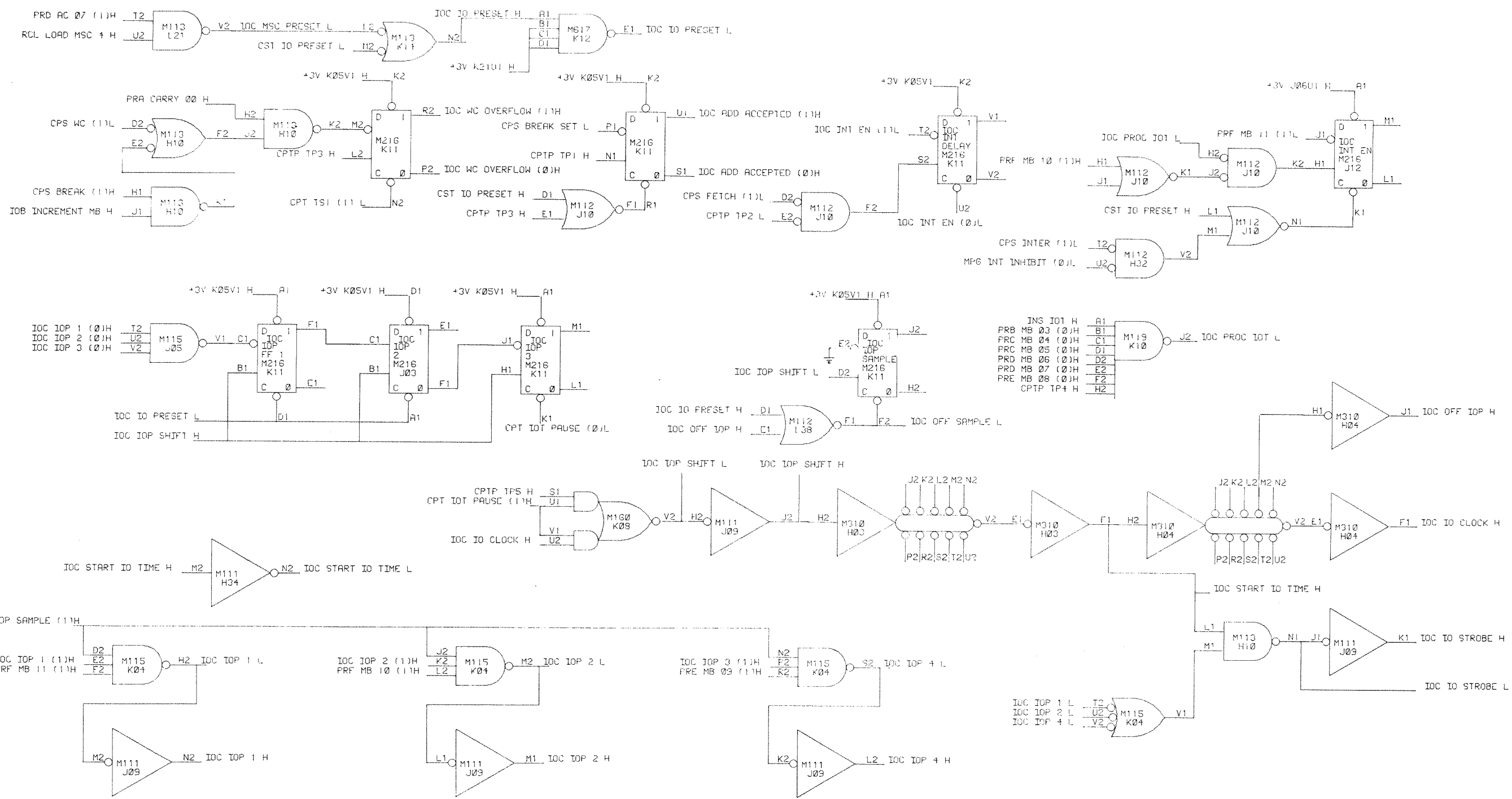
NOTE:  
 THE FIRST INPUT OF A M516 IS CLAMPED AT GND AND +3V. IN ADDITION, THIS INPUT IS SUPPLIED WITH 220 OHMS TO +5V. THE SECOND INPUT IS EFFECTIVELY A 500 OHMS TO 3.3V. BOTH THE FIRST AND SECOND INPUTS ARE USED FOR COLLECTOR ORED BUS INPUTS THIRD AND FORTH M516 INPUTS ARE STD TTL GATE INPUTS.

NOTE:  
 ALL SIGNALS PREFIXED WITH \*EXT\* AS WELL AS IOB DATA IN, IOB CA INCREMENT, AND THE IOB XL SIGNALS COME FROM THE EXTERNAL IO BUS. THE CABLE CONNECTIONS ARE SHOWN ON DRAWING ICB.

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	GH	EP12-00036	E
	ADS			R SOFKA 5-6-71	
	J. SCANLAN 3/13/69			J. SCANLAN 5-20-71	
	EP12-00016	B		EP12-00044	F
	K. COTE 11/12/69				
	J. SCANLAN 11/14/69				
GH	EP12-00023	C			
	D. SOUTHER 6-30-70				
	D. MACKLIN 7-2-70				
GH	EP12-00030	D			
	K. WALSH 11/5/70				
	D. MACKLIN 11/19/70				

DRAWN D. SHEPARD	DATE 2/20/69	 digital CORPORATION <small>MAYNARD, MASSACHUSETTS</small>
CHK'D J. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE IO INPUT PART B
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON EP12		
SCALE D BS	SIZE CODE 1 OF 1	NUMBER EP12-0-10B
SHEET 1	OF 1	REV. F

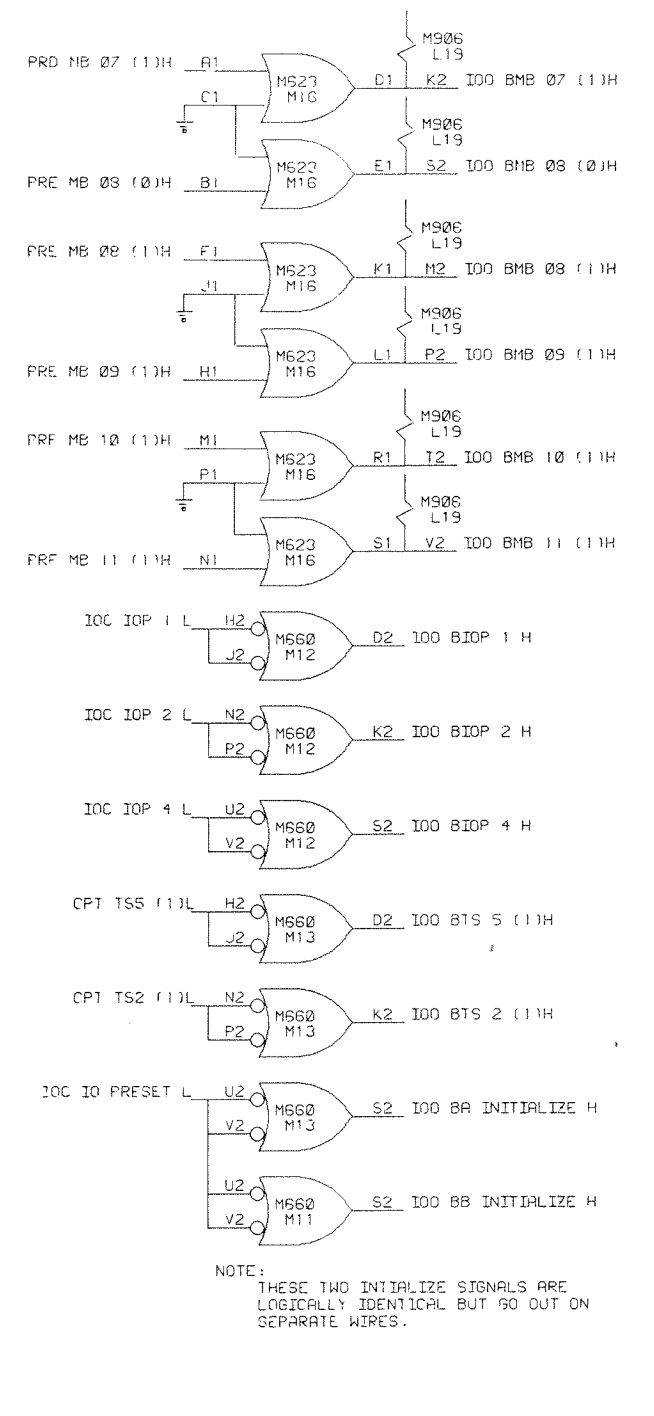
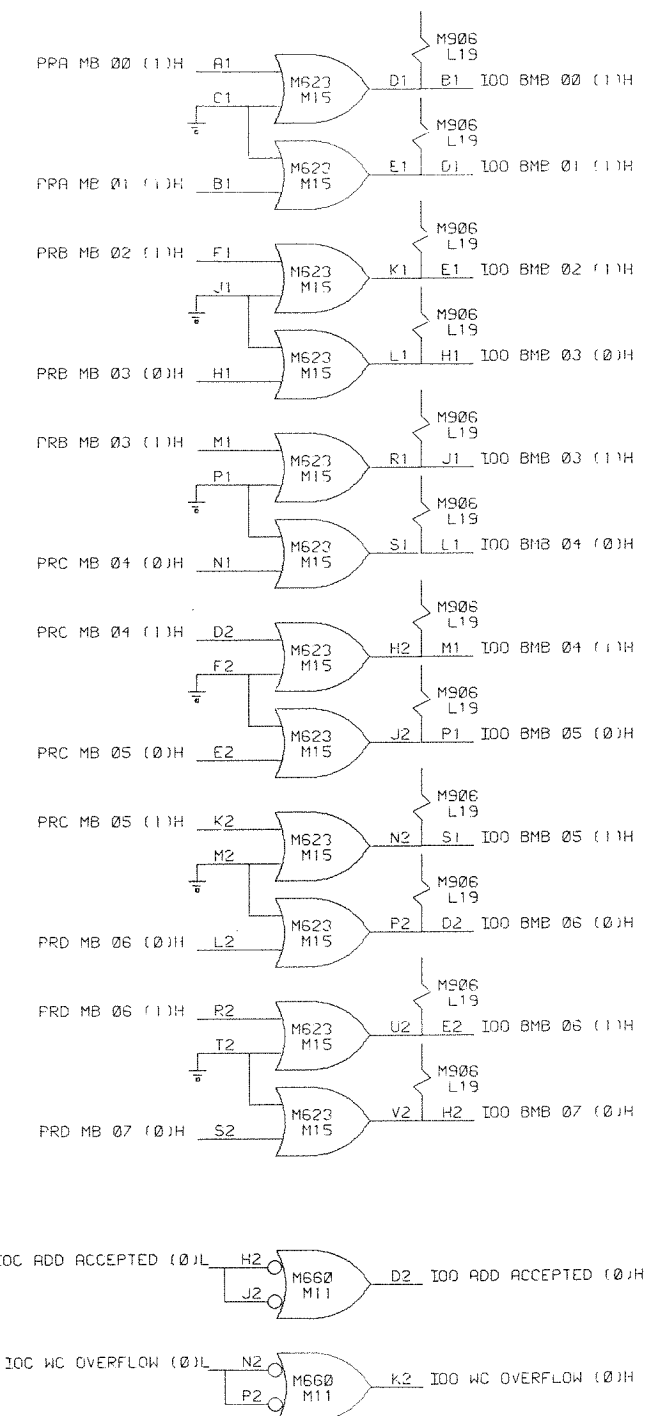
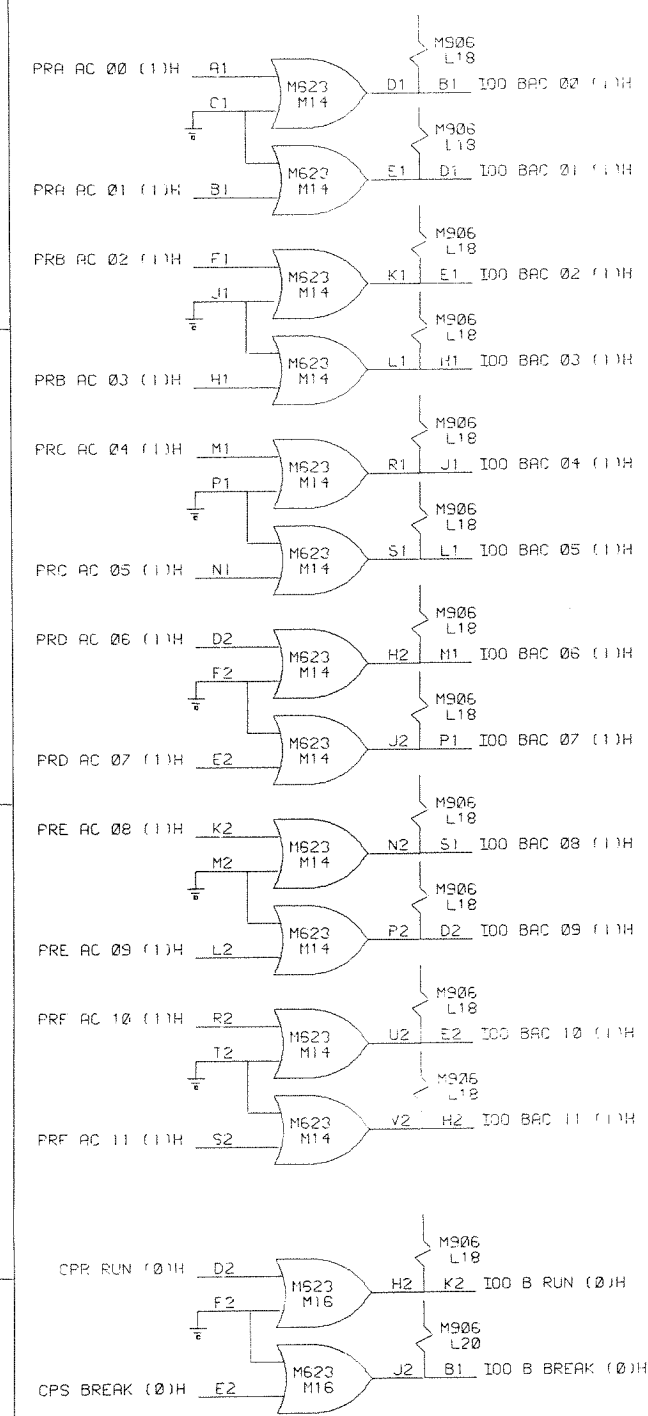
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REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	GH	EP12-00026	E
	ADS			S. GOLDSBY 9-1-70	
	J. SCANLAN 3/13/69			D. MACKLIN 9-2-70	
PD	EP12-00002	1B	JF	EP12-00030	F
	A. WASHINGTON 5/20/69			R. SOFKA 11-17-70	
	J. SCANLAN 5/22/69			D. MACKLIN 11-19-70	
NR	EP12-00013	1C		EP12-00039	H
	D. SOUTHER 10/1/69			George Wyatt 6-2-71	
	J. SCANLAN 10/6/69				
FV	EP12-00021	1D			
	D. SOUTHER 6/15/70				
	J. SCANLAN 6/17/70				

DRN. D. SHEPARD	DATE 2/20/69	 <b>digital EQUIPMENT CORPORATION</b> MATNARD, MASSACHUSETTS	
CHKD. J. BISONETE	DATE 2/20/69		
ENG. L. GALE	DATE 2/20/69	TITLE	
PROJ. ENG. L. GALE	DATE 2/20/69	IO CONTROL & TIMING	
PROD. D. CALL	DATE 2/20/69		
FIRST USED ON			
EP12			
SCALE	SIZE/CODE D BS	NUMBER EP12-0-IOC	REV. H
SHEET 1	OF 1	DIST.	

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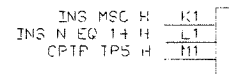
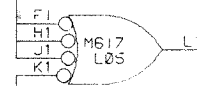
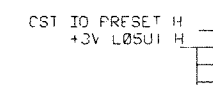
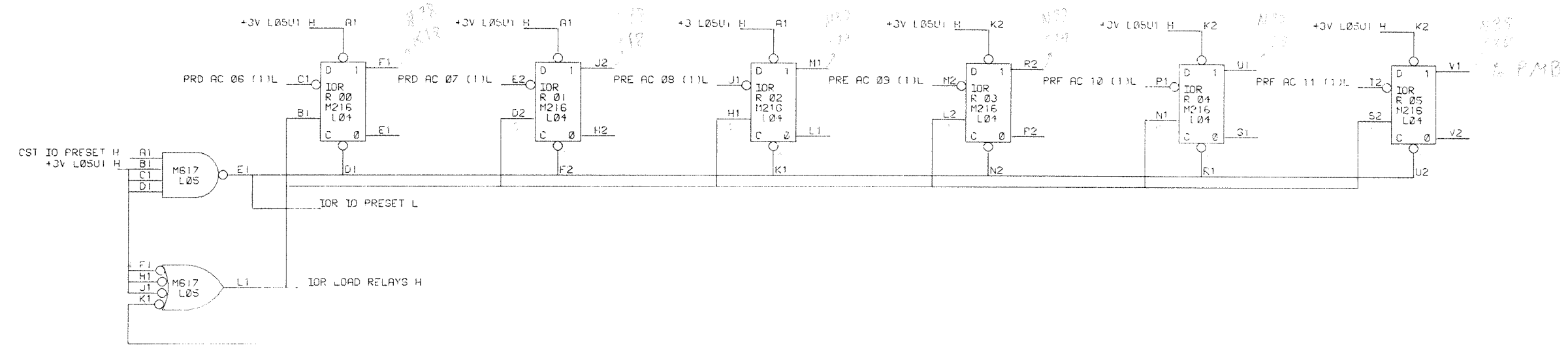


NOTE: THESE TWO INITIALIZE SIGNALS ARE LOGICALLY IDENTICAL BUT GO OUT ON SEPARATE WIRES.

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00002	A

DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON		TITLE IO OUTPUT BUFFERS
EP12		
SCALE		
SHEET 1 OF 1	DIST.	SIZE CODE D B S
		NUMBER EP12-0-100
		REV. A

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 igital Equipment Corporation and shall not be  
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 written permission.



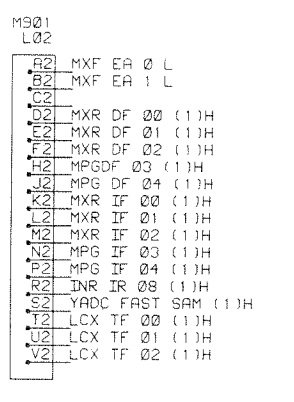
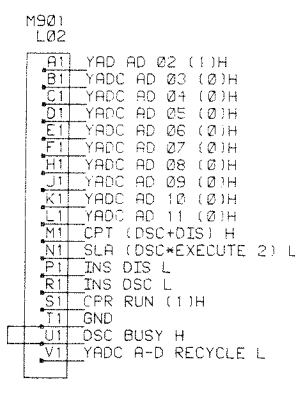
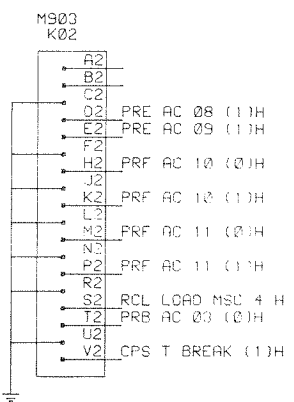
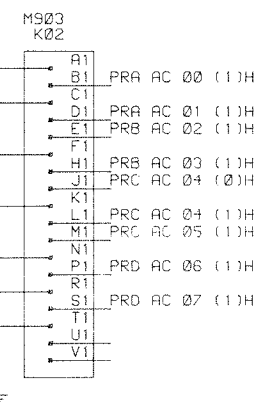
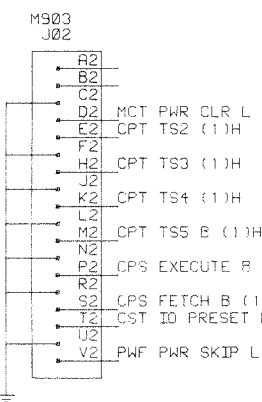
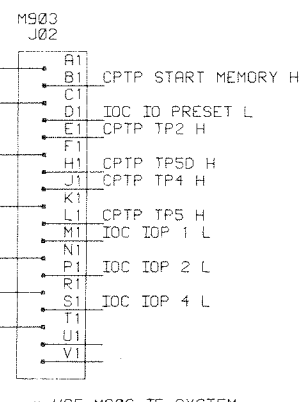
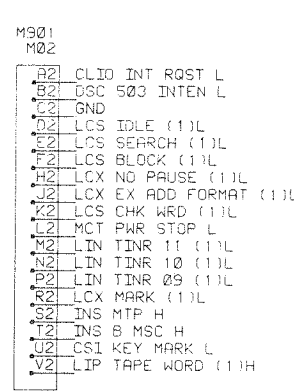
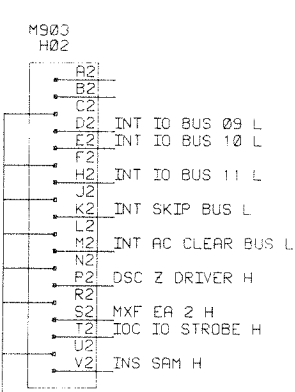
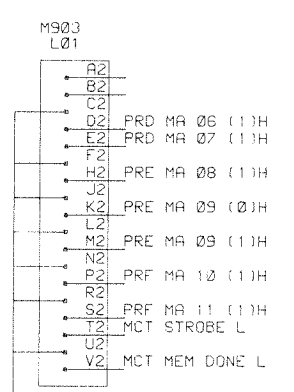
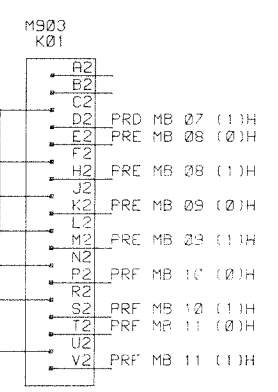
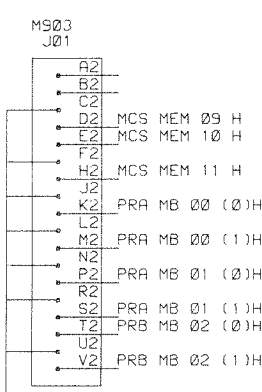
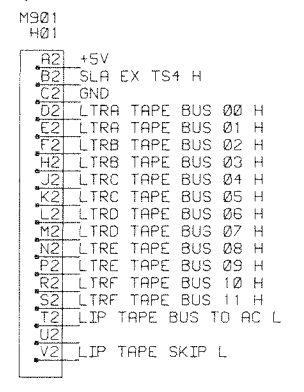
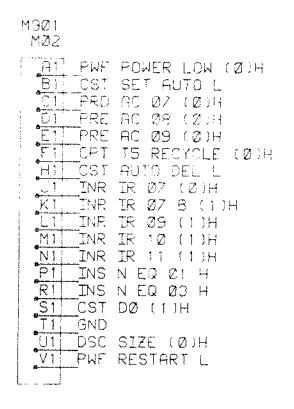
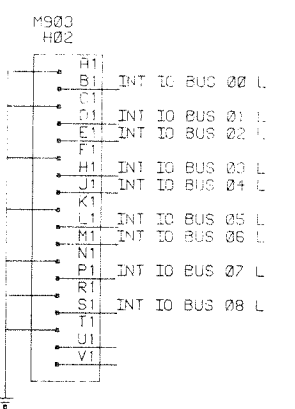
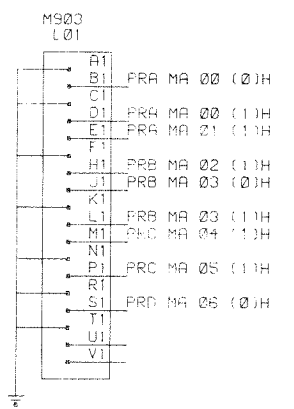
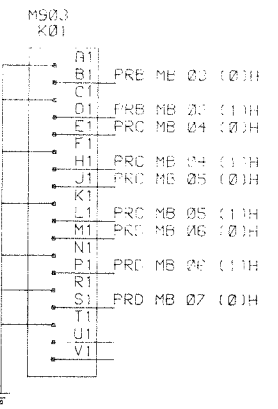
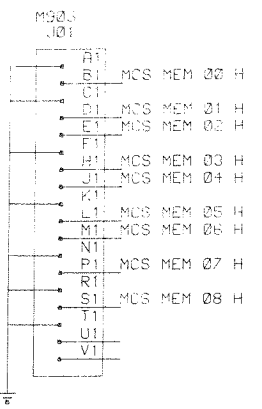
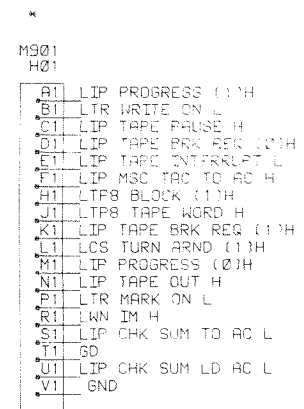
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N29
- B2
  - B3
  - C2
  - D2
  - E2
  - F2 IOR R 03 (0)H
  - H2
  - J2
  - K2 IOR R 04 (0)H
  - L2
  - M2
  - N2 IOR R 01 (0)H
  - P2 IOR R 05 (0)H
  - R2
  - S2
  - T2
  - U2
  - V2

- M900  
N28
- B1
  - B2
  - C1 IOR R 00 (0)H
  - D1
  - E1
  - F1
  - H1
  - J1 IOR R 02 (0)H
  - K1
  - L1 PRA AC 00 (0)H
  - M1
  - N1
  - P1
  - R1
  - S1
  - T1
  - U1
  - V1

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00001	A
	ADS	
	J. SCANLAN 6-2-63	
	EP12-00003	B

DRN. D. J. SHEPARD	DATE 2-20-63											
CHKD. L. BISONETE	DATE 2-20-63											
ENG. L. GALE	DATE 2-20-63	TITLE RELAY BUFFER										
PROJ. ENG. L. GALE	DATE 2-20-63											
PROD. D. C. BIL	DATE 2-20-63											
FIRST USED ON EP12												
SCALE	SIZE CODE D BS	NUMBER EP12-0-10R										
SHEET 1	OF 1	DIST. <table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>										

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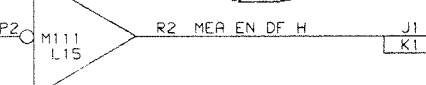
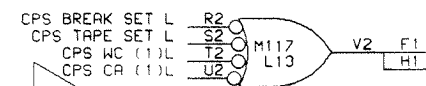
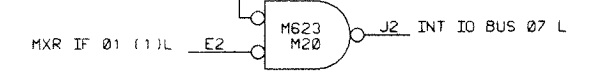
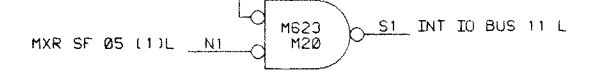
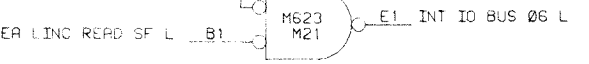
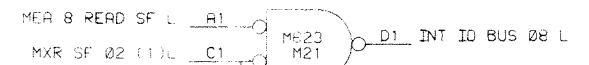
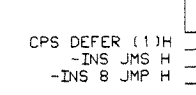
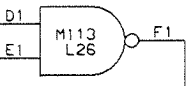
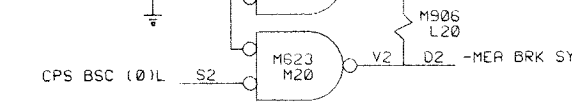
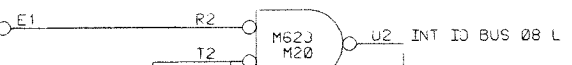
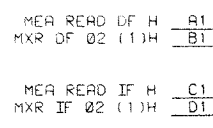
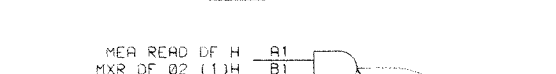
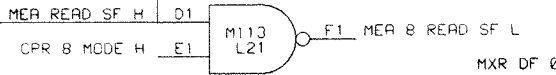
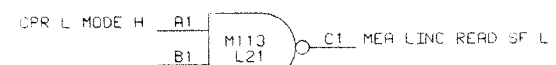
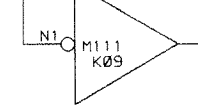
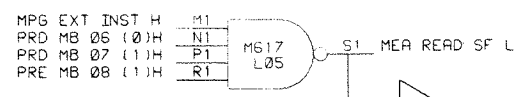
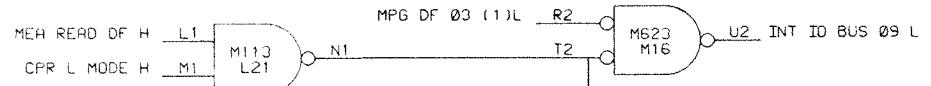
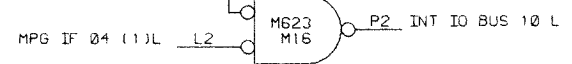
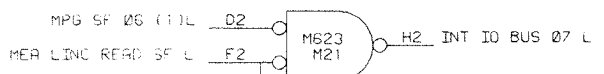
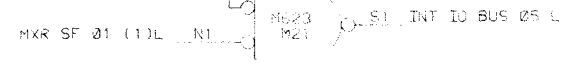
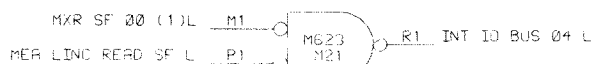
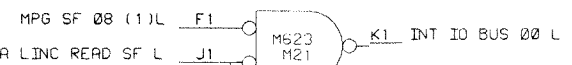
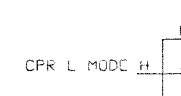
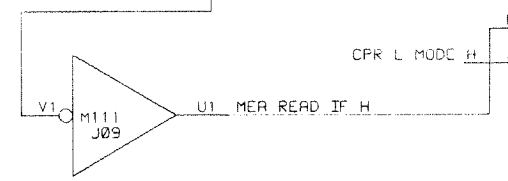
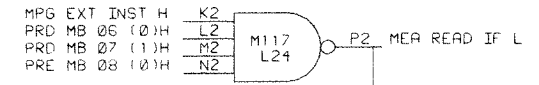
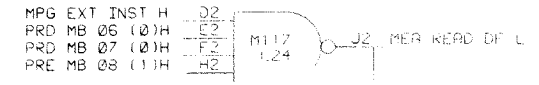
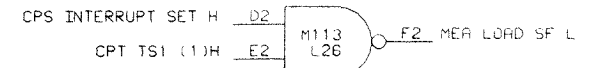
\* USE M906 IF SYSTEM DOES NOT HAVE TAPES.

\* ADD GND DISABLE WIRE FOR PDP-12C SYSTEMS ONLY WHICH DO NOT HAVE VC12 SCOPE CONTROL.

REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E	W	EP12-00006	K
	ADS			A WASHINGTON				
	J SCANLAN 3/13/69			J SCANLAN				
	EP12-00002	B	NR	EP12-00011	F			
	A WASHINGTON 5/20/69			BRUCE KORTEI,ING				
	J SCANLAN 5/22/69			J SCANLAN				
	EP12-00004	C		EP12-00016	H			
	A WASHINGTON 7/9/69			ADS				
	J SCANLAN 7/9/69			J SCANLAN				
	EP12-00006	D	GH	EP12-00033	J			
	A WASHINGTON			N. COLE 2/27/71				
	J SCANLAN			J SCANLAN 2/14/71				

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE INTER PROC CABLES
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON EP12	SIZE/CODE D BS	NUMBER EP12-0-IPC
SCALE	REV. K	
SHEET 1 OF 1	DIST.	

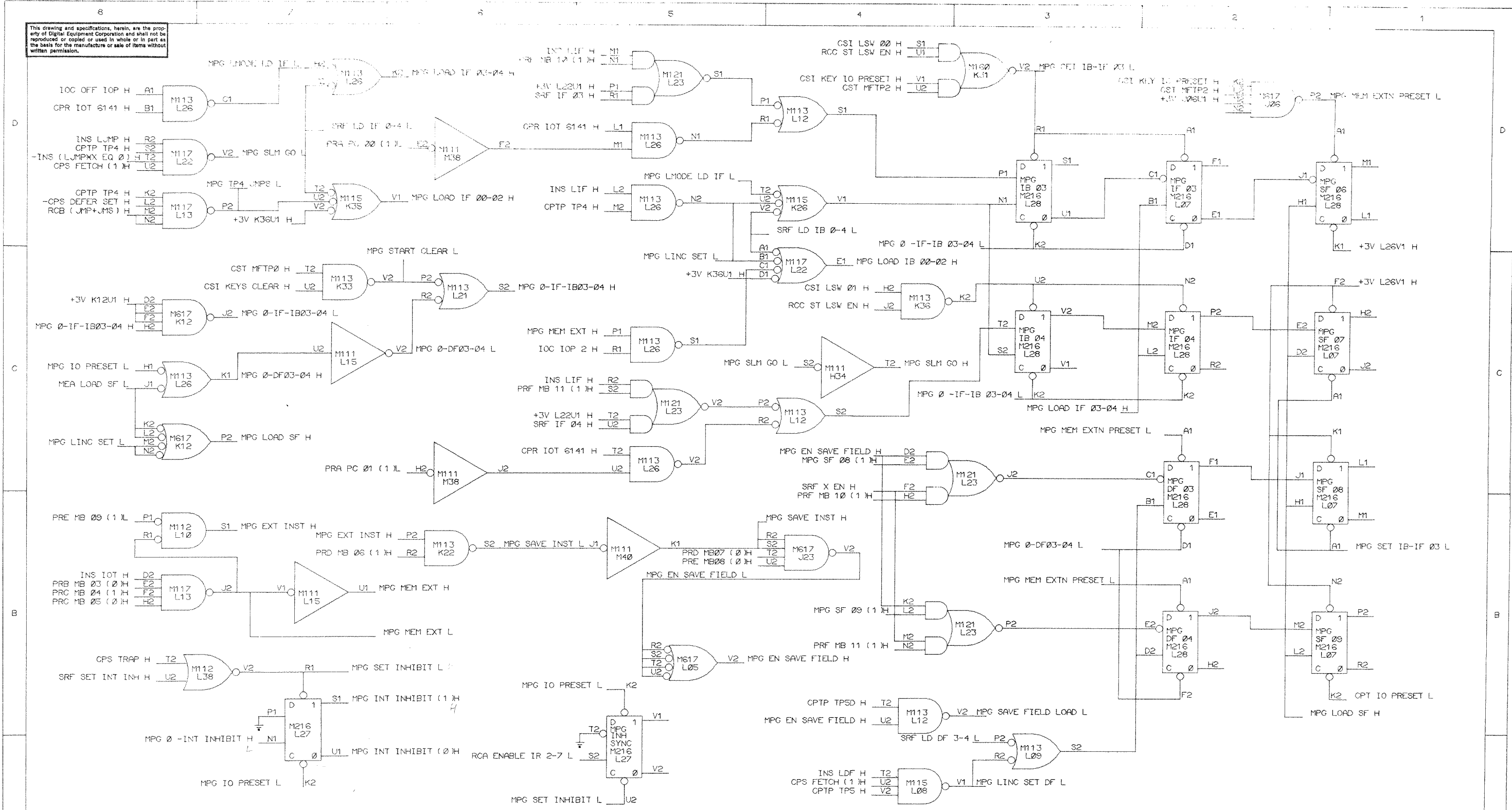




REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	FV	EP12-00021	E
	ADS			D. SOUTHER 6-16-70	
	J. SCANLAN 3/13/69			J. SCANLAN 6-17-70	
	EP12-00002	B	TC	EP12-00023	F
	A. WASHINGTON 5/20/69			D. SOUTHER 6-30-70	
	J. SCANLAN 5/22/69			D. MACKLIN 7-2-70	
NR	EP12-00004	C		EP12-00030	H
	A. WASHINGTON 7/9/69				
	L. GALE 7/15/69				
NR	EP12-00015	D			
	K. COTE 10-14-69				
	J. SCANLAN 10-17-69				

DRN D. SHEPARD	DATE 2/20/69		digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHKD J. BISONETE	DATE 2/20/69		TITLE	
ENG L. GALE	DATE 2/20/69	MEM EXTN AC INPUTS		
PROJ L. GALE	DATE 2/20/69			
PROD L. GALE	DATE 2/20/69			
FIRST USED ON EP12		SIZE D BS	NUMBER EP12-0-MEA	REV. H
SCALE SHEET 1 OF 1		DIST.		

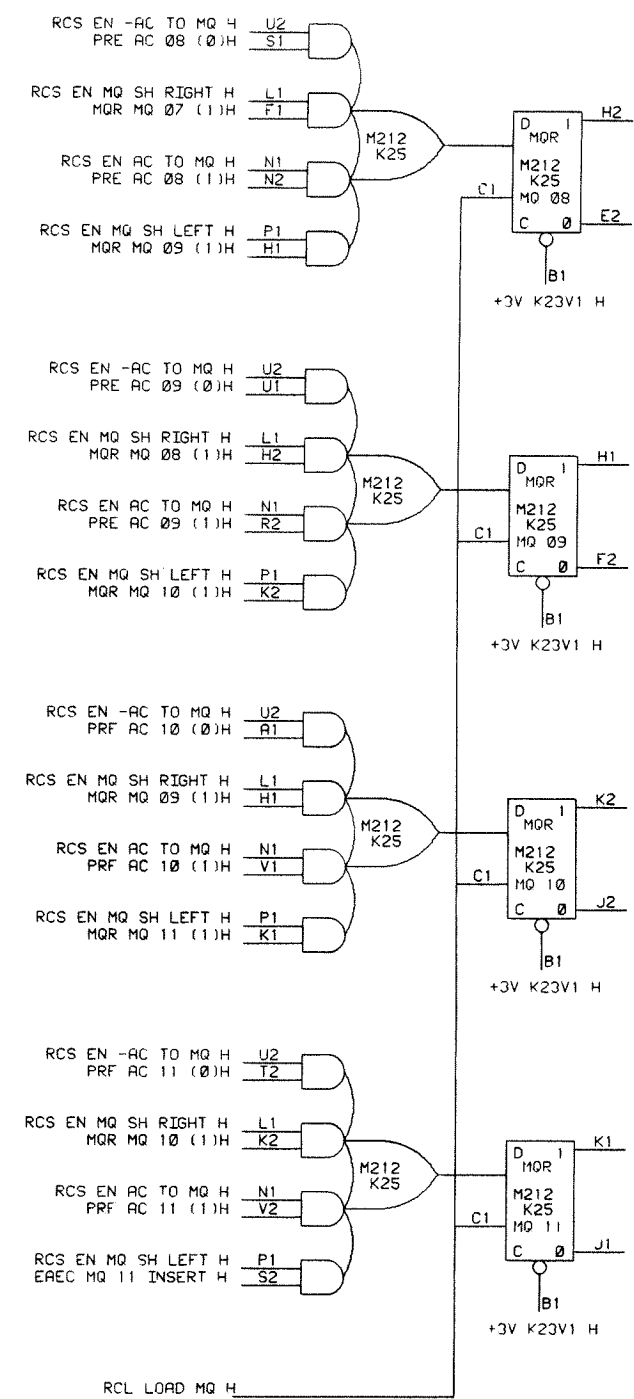
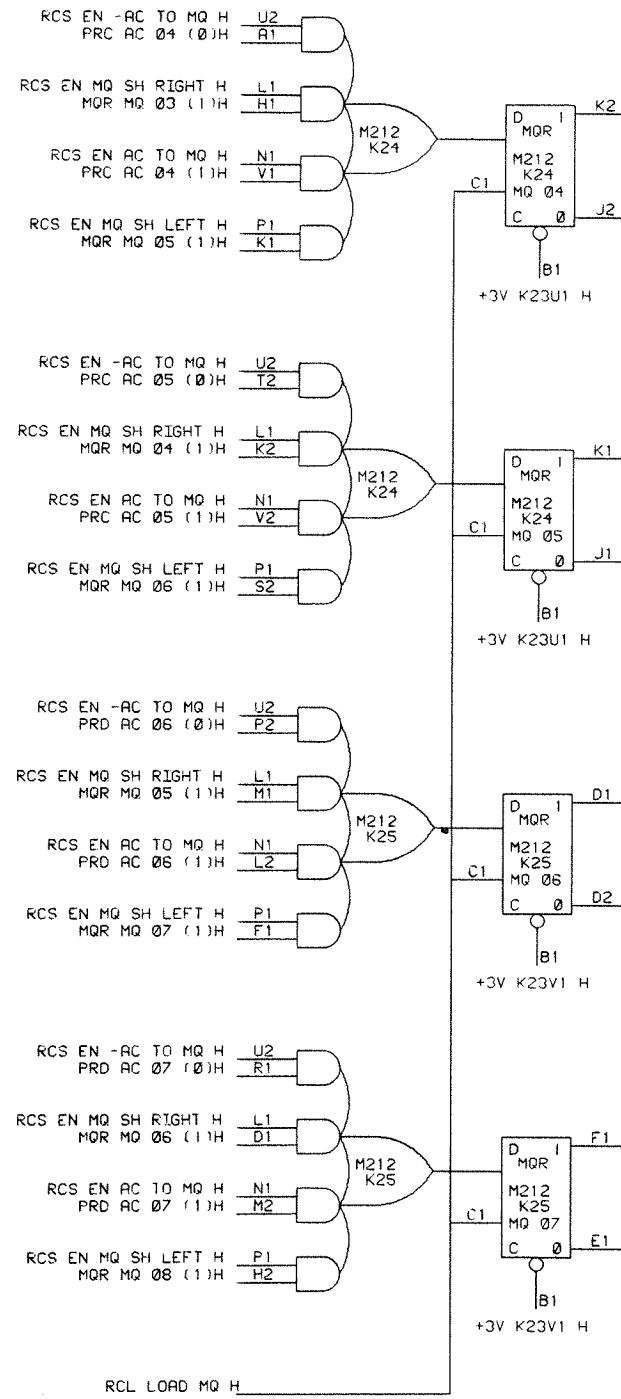
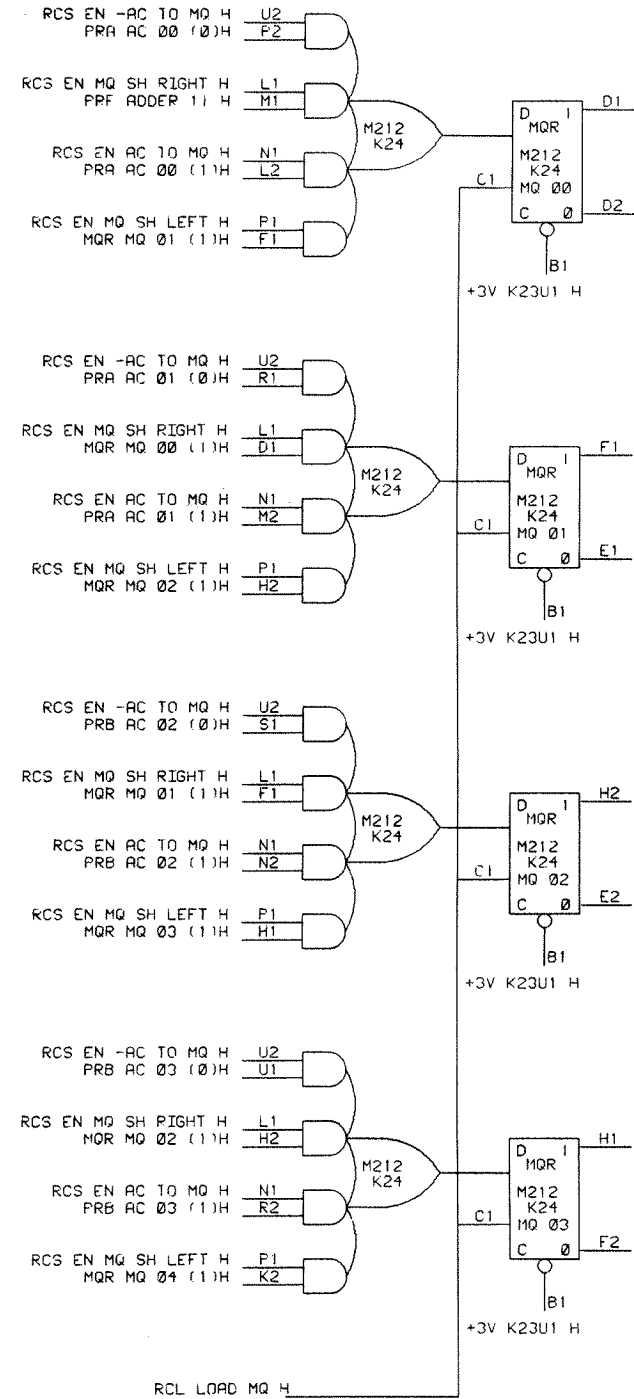
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REVISIONS		REVISIONS		REVISIONS	
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E
	ADS			A WASHINGTON 8/20/69	R
				L GALE 8/22/69	J
				K. COLE 10-14-69	S
PD	EP12-00002	B	NR	EP12-00015	IF
	A WASHINGTON 5/20/69			J. SCANLAN 5-20-71	L
	J. SCANLAN 5/22/69			J. SCANLAN 10-14-69	
	EP12-00003	C	NR	EP12-00018	IH
	A WASHINGTON 6/18/69			D. SOUTHER 12-2-69	
	L GALE 6/20/69			J. SCANLAN 12-4-69	
NR	EP12-00004	D	GH	EP12-00030	J
	A WASHINGTON 7/9/69			K WALSH 11/16/70	
				Q MACLIN 11/19/70	

DRN. D SHEPARD	DATE 2/20/69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD. J. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE
PROJ. ENG. L. GALE	DATE 2/20/69	MEM PAGE EXTN CONTROL
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON		
EP12		
SCALE	SIZE CODE	NUMBER
SHEET 1 OF 1	D BS	EP12-0-MPG
	DIST.	REV. L

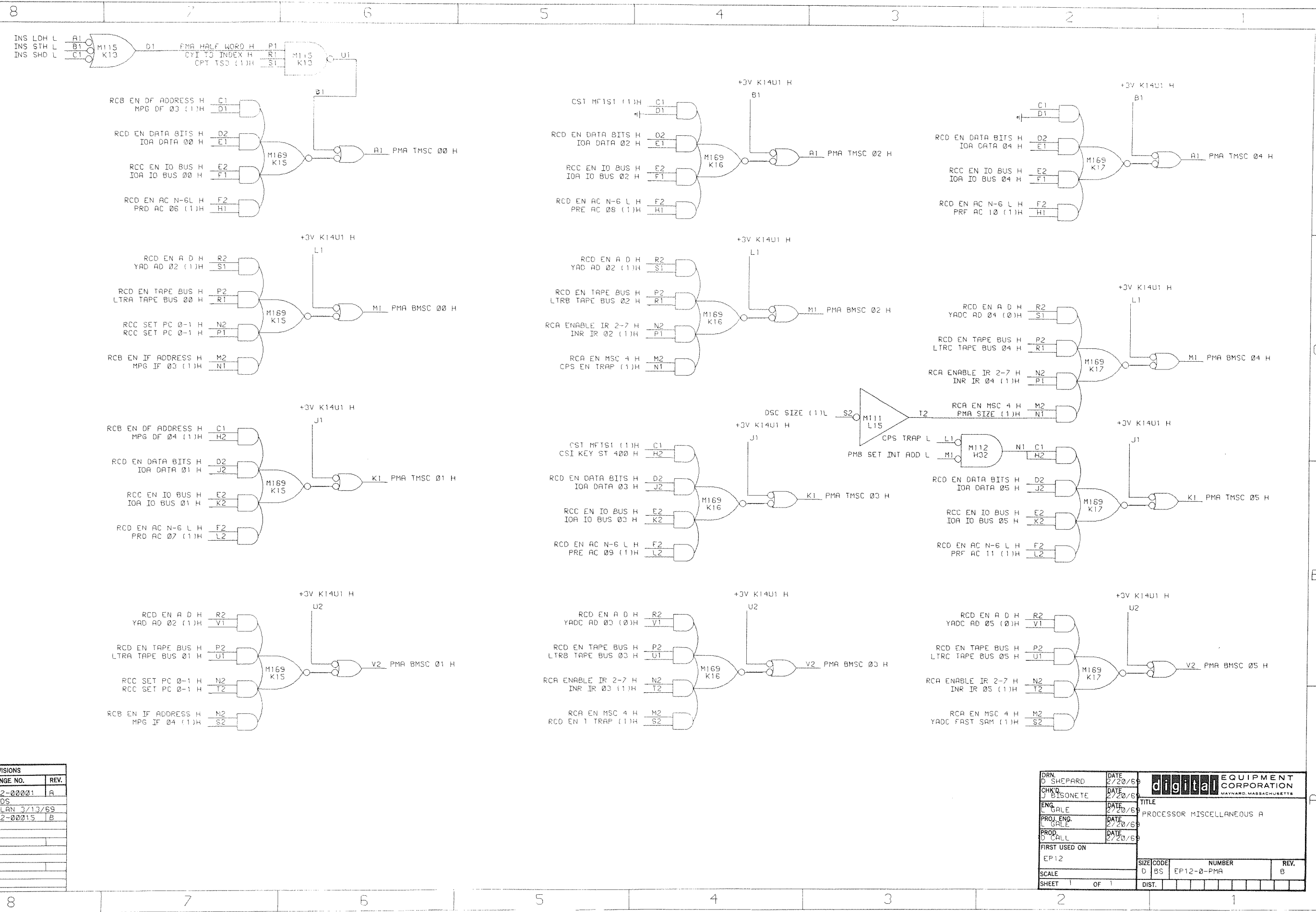
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REVISIONS		
CHK	CHANGE NO.	REV.
PD	EP12-00002	A
	A. WASHINGTON 5-20-69	
	J. SCANLAN 5-22-69	
	EP12-00030	B
	<i>Handwritten</i>	<i>Handwritten</i>

DRN. D. SHEPARD	DATE 2-20-69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. BISSONNETTE	DATE 2-20-69	
ENG. L. GALE	DATE 2-20-69	TITLE
PROJ. ENG. L. GALE	DATE 2-20-69	MUL QUOTIENT
PROD. D. CALL	DATE 2-20-69	
FIRST USED ON		
EP12	SIZE CODE D BS	NUMBER EP12-0-MQR
SCALE	DIST.	REV. B
SHEET 1 OF 1		

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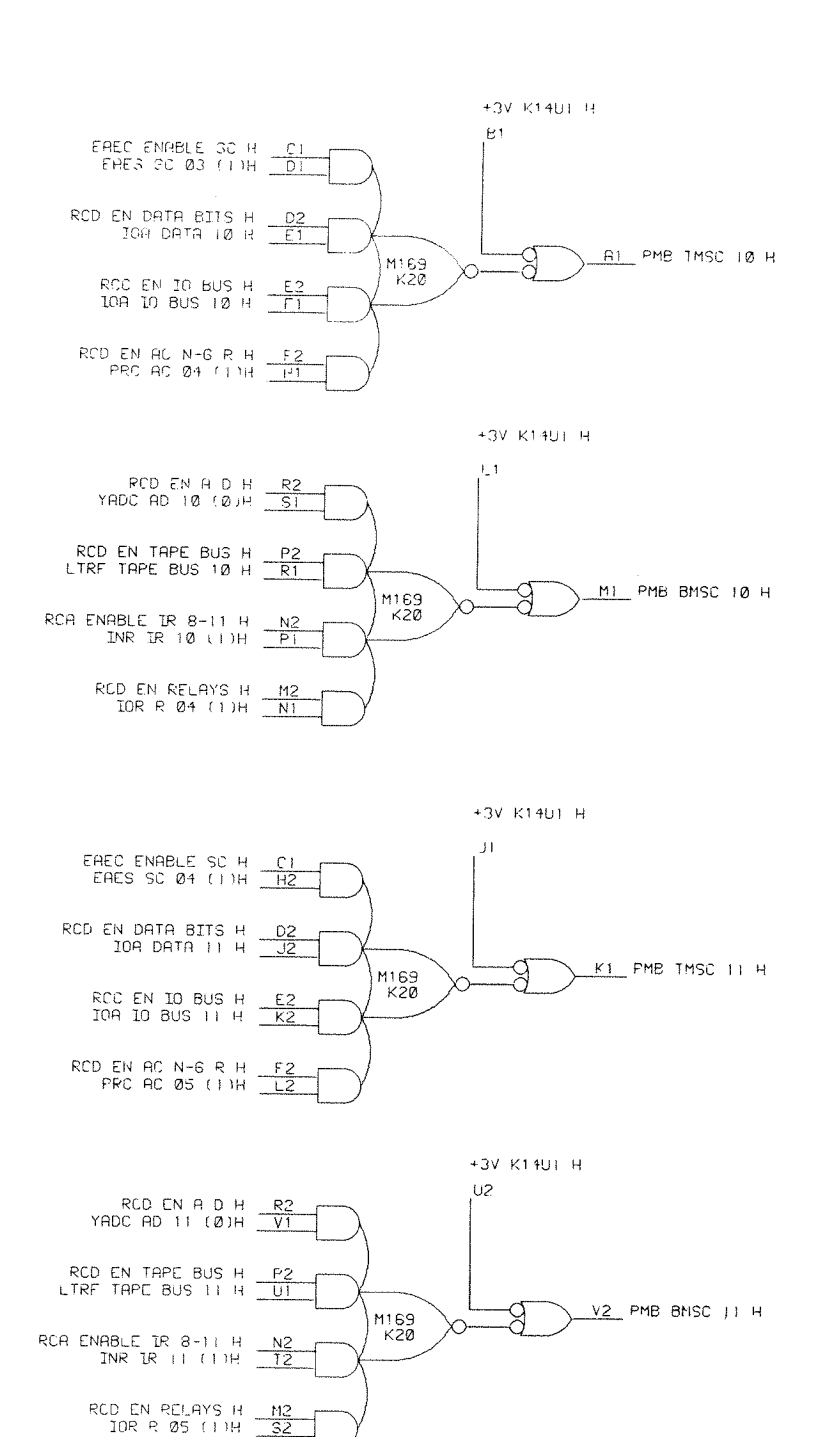
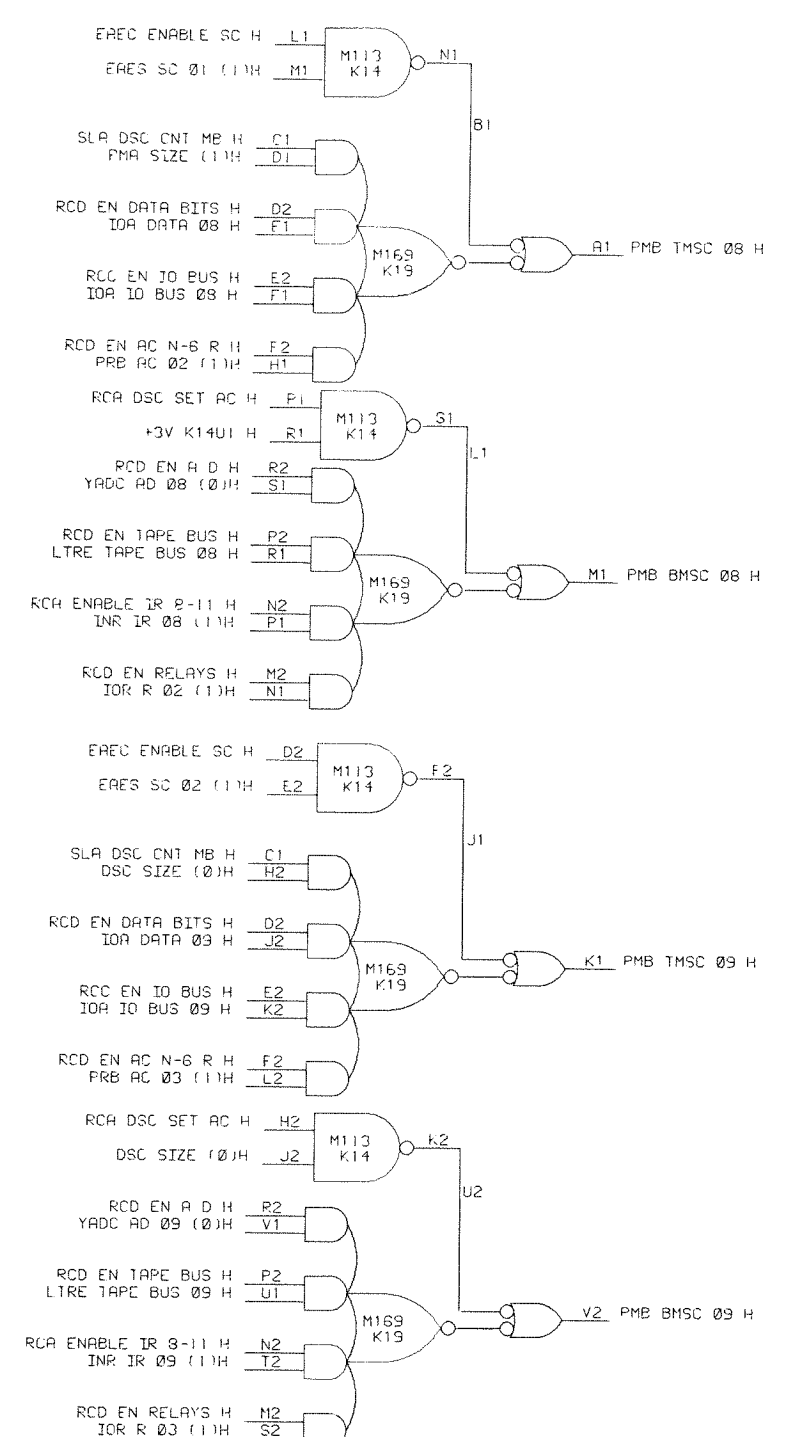
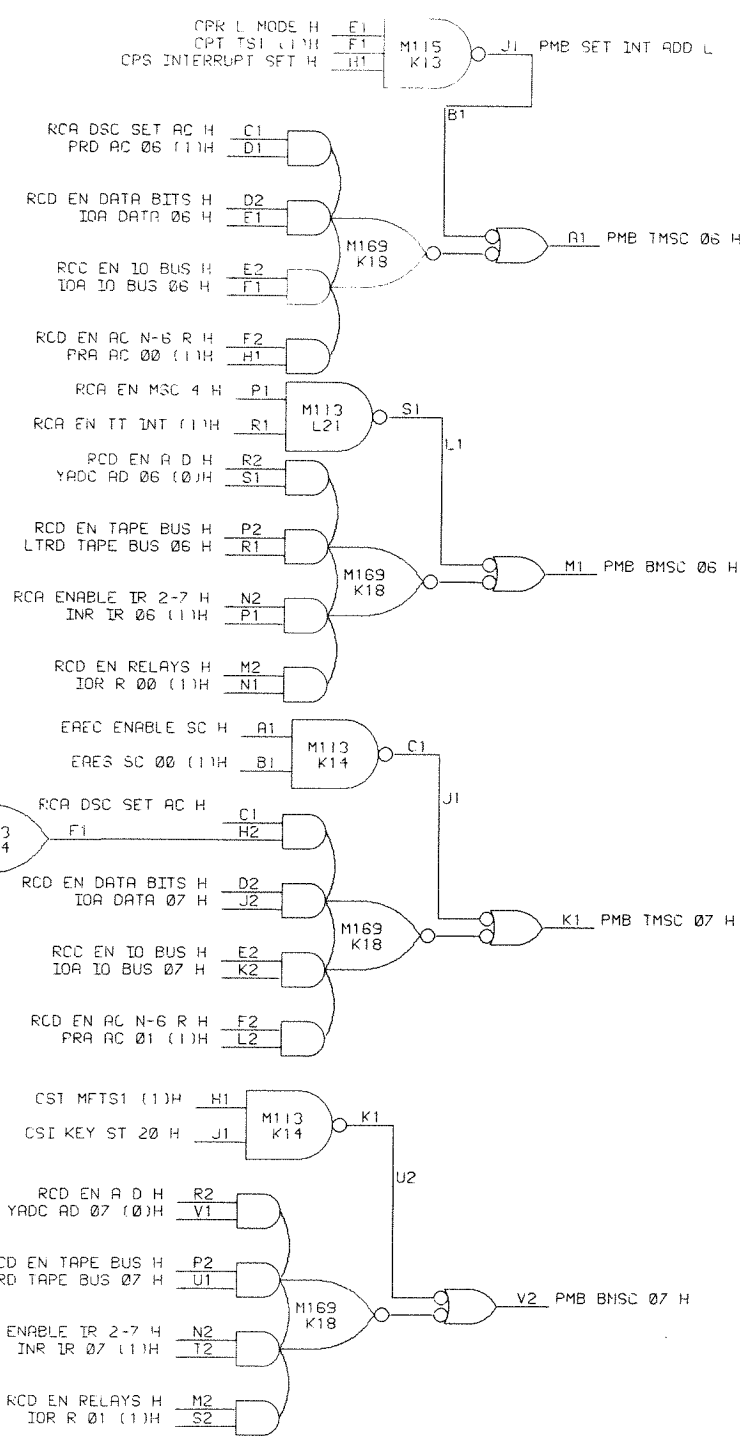


REVISIONS		
CHK	CHANGE NO.	REV.
J.B.	EP12-00001	A
	ADS	
J. SCANLAN	3/13/69	
	EP12-00015	B

DRN. D SHEPARD	DATE 2/20/69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD. J. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE
PROJ. ENG. L. GALE	DATE 2/20/69	PROCESSOR MISCELLANEOUS A
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON		
EP12		
SCALE	SIZE CODE D BS	NUMBER EP12-0-PMA
SHEET 1 OF 1	DIST.	REV. B

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8 7 6 5 4 3 2 1

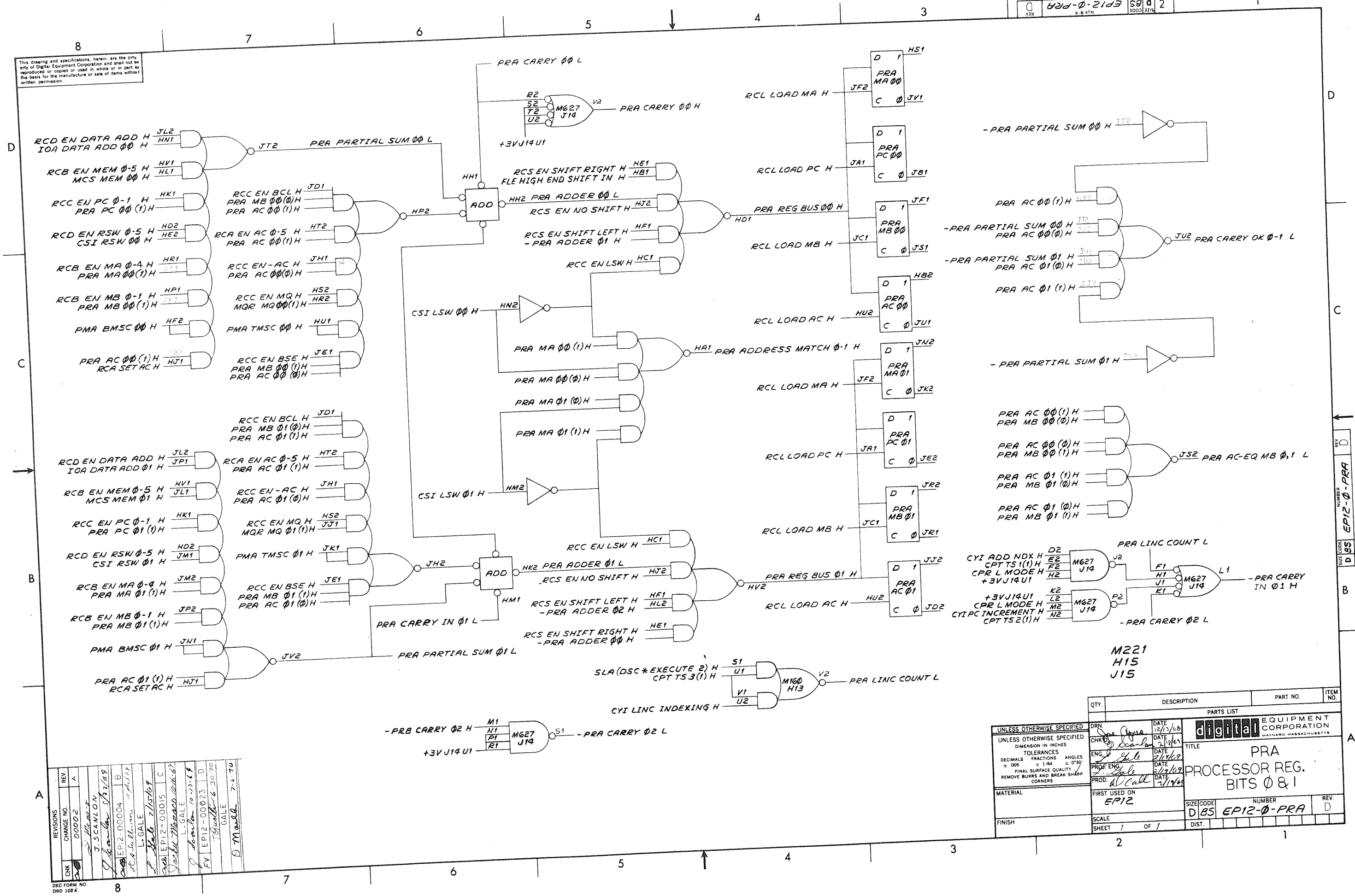


REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON		TITLE
EP12		PROCESSOR MISCELLANEOUS B
SCALE	SIZE CODE	NUMBER
SHEET 1 OF 1	D BS	EP12-0-PMB
DIST.		REV. A

8 7 6 5 4 3 2 1

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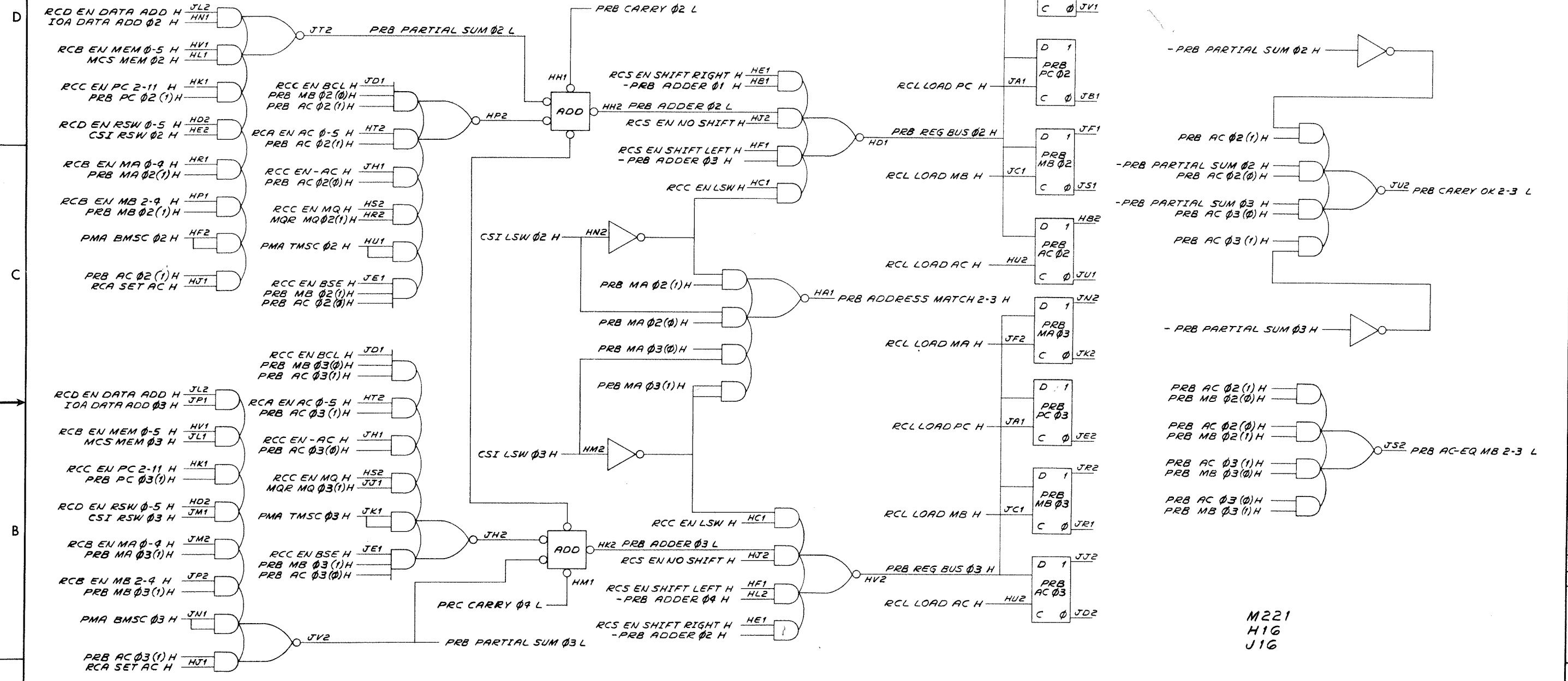
REV	DATE	BY	CHK
0002	12/17/69	J. SCANLON	J. SCANLON
0004	1/15/70	L. GALE	L. GALE
0005	1/15/70	L. GALE	L. GALE
0006	1/15/70	L. GALE	L. GALE
0007	1/15/70	L. GALE	L. GALE
0008	1/15/70	L. GALE	L. GALE
0009	1/15/70	L. GALE	L. GALE
0010	1/15/70	L. GALE	L. GALE
0011	1/15/70	L. GALE	L. GALE
0012	1/15/70	L. GALE	L. GALE
0013	1/15/70	L. GALE	L. GALE
0014	1/15/70	L. GALE	L. GALE
0015	1/15/70	L. GALE	L. GALE
0016	1/15/70	L. GALE	L. GALE
0017	1/15/70	L. GALE	L. GALE
0018	1/15/70	L. GALE	L. GALE
0019	1/15/70	L. GALE	L. GALE
0020	1/15/70	L. GALE	L. GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	= .005 = 1/64 = 0°30'		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	DRN: [Signature]	DATE: 12/17/69	
	CHK: [Signature]	DATE: 2/19/70	
	ENG: [Signature]	DATE: 2/19/70	
	PROZ ENG: [Signature]	DATE: 2/19/70	
	PROD: [Signature]	DATE: 2/19/70	
	FIRST USED ON	EPI2	
	SCALE	SHEET 1 OF 1	
	TITLE: PRA PROCESSOR REG. BITS 0 & 1		
	SIZE CODE	NUMBER	REV
	D BS	EPI2-0-PRA	D

SIZE CODE NUMBER  
 D BS EPI2-0-PRA  
 REV D



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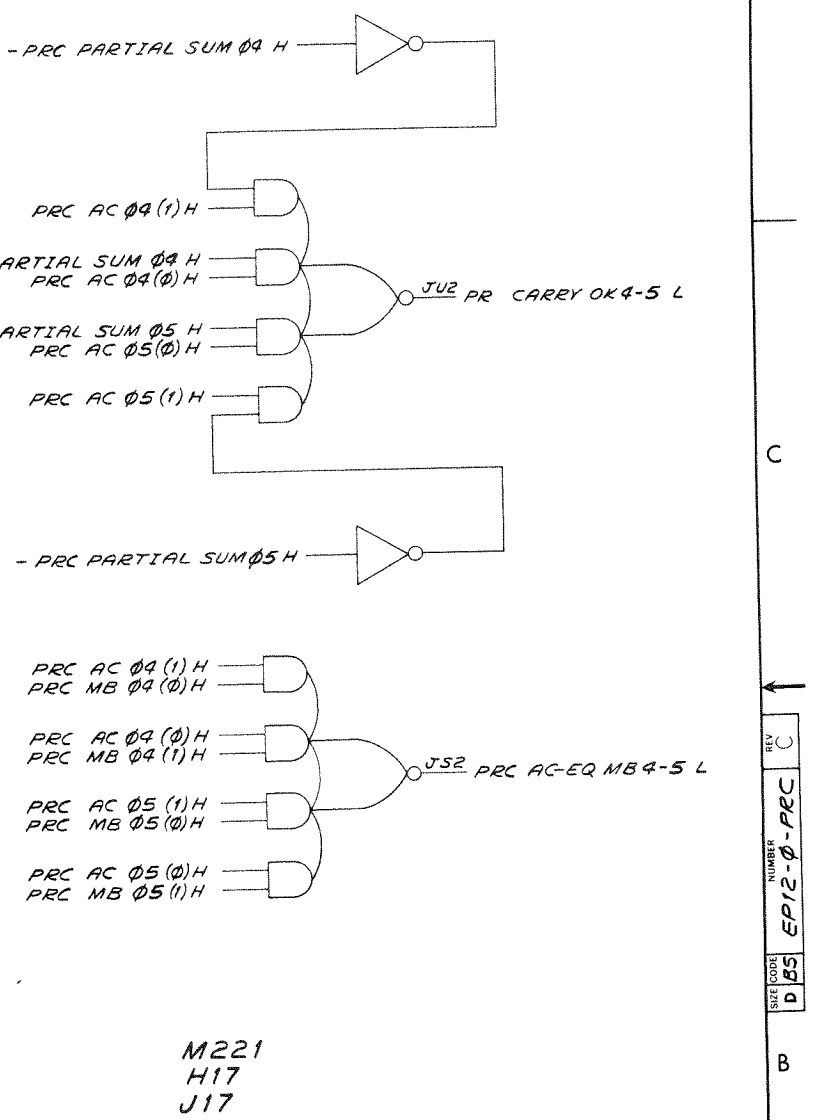
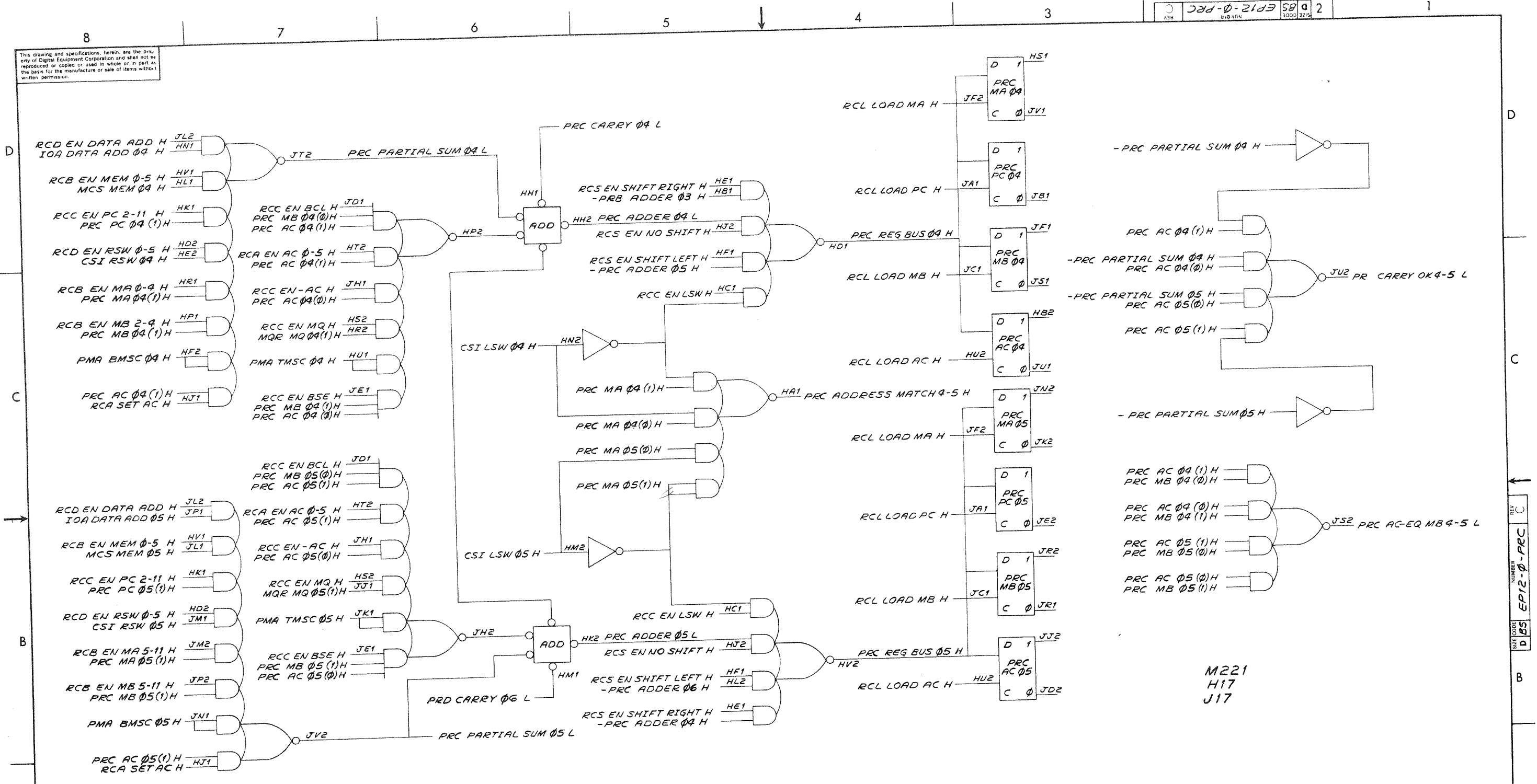


M221  
H16  
J16

REV.	DATE	BY	CHKD.
1	12/13/68	J. SCANLON	
2	1/21/69	J. SCANLON	
3	2/11/69	J. SCANLON	
4	2/11/69	J. SCANLON	
5	2/11/69	J. SCANLON	
6	2/11/69	J. SCANLON	
7	2/11/69	J. SCANLON	
8	2/11/69	J. SCANLON	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	= .005 = 1/64 = 0°30'		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FIRST USED ON		
	EP12		
	SCALE		
	SHEET 1 OF 1		
	TITLE		
	PRB PROCESSOR REG. BITS 2 & 3		
	SIZE CODE		
	D B S		
	NUMBER		
	E P I 2 - 0 - P R B		
	REV.		
	C		

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M221  
 H17  
 J17

CHK	REV	NO.	DATE	BY
1	A	00002		
	B	00015	12/1/65	J. SCANLON
	C	00023	10-17-69	L. GALE
	D	00023	6-30-70	T. HULL
				D. M. GALE

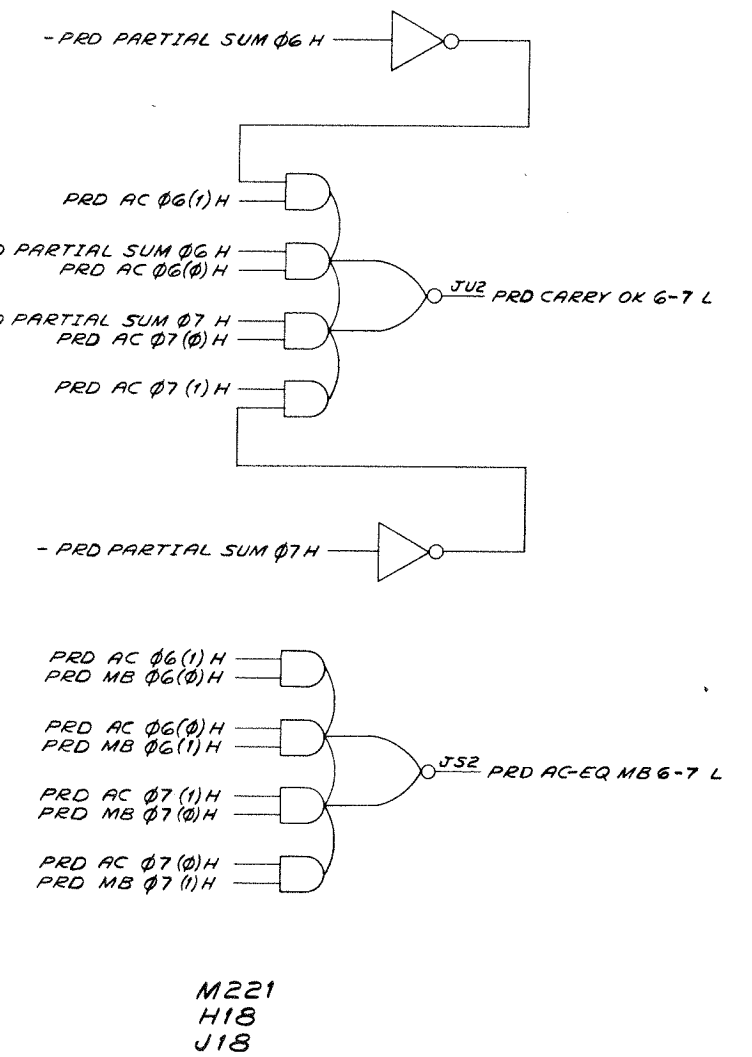
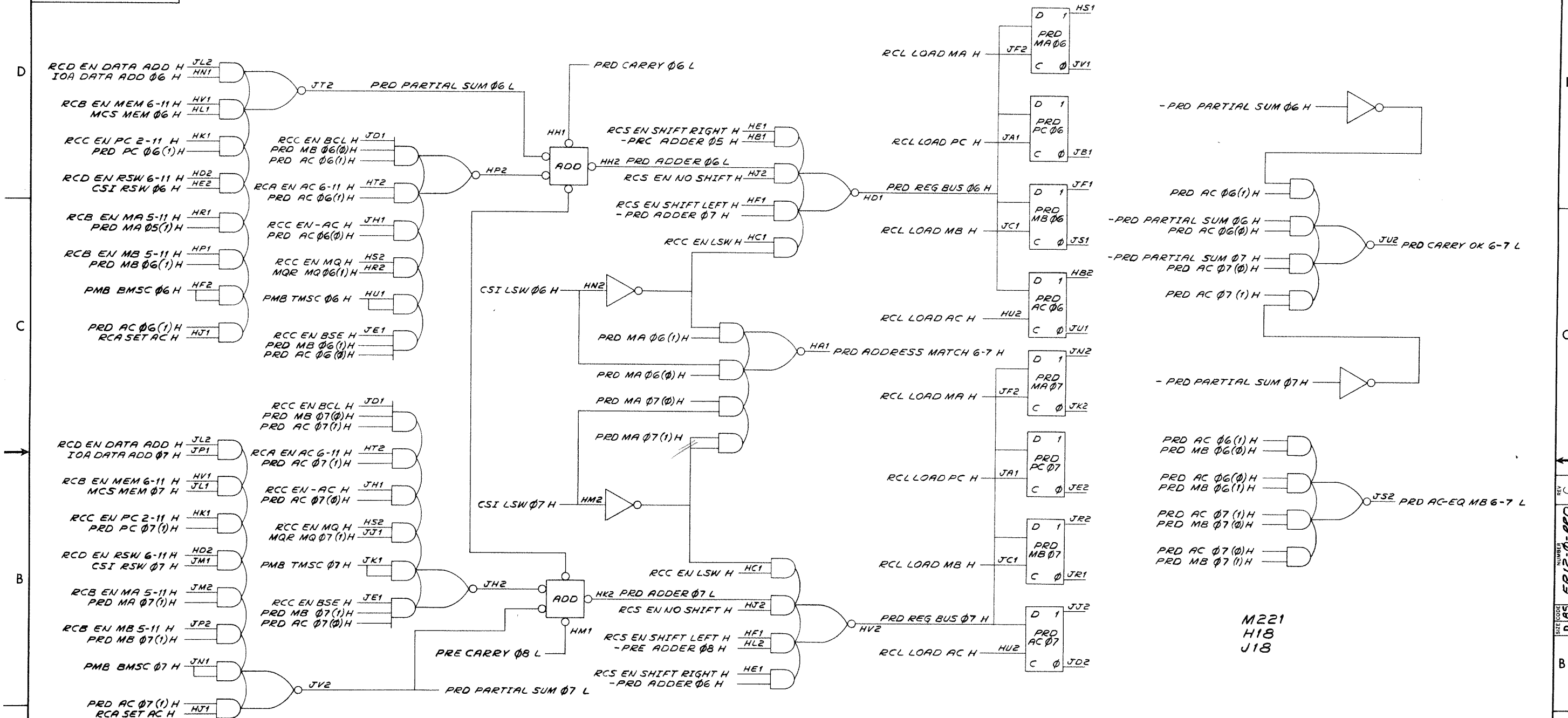
DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED	DRN DATE 12/13/68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	DATE 2/18/69	TITLE PRC PROCESSOR REG. BITS 4 & 5	
DIMENSION IN INCHES	DATE 2/18/69	SIZE CODE D BS NUMBER EP12-0-PRC REV C	
TOLERANCES	DATE 2/18/69	SCALE SHEET 1 OF 1	
DECIMALS = .005	DATE 2/18/69	DIST.	
FRACTIONS = 1/64	DATE 2/18/69		
ANGLES = 0°30'	DATE 2/18/69		
FINAL SURFACE QUALITY	DATE 2/18/69		
REMOVE BURRS AND BREAK SHARP CORNERS	DATE 2/18/69		

REV. C  
 NUMBER EP12-0-PRC  
 SHEET CODE D BS

A

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M221  
 H18  
 J18

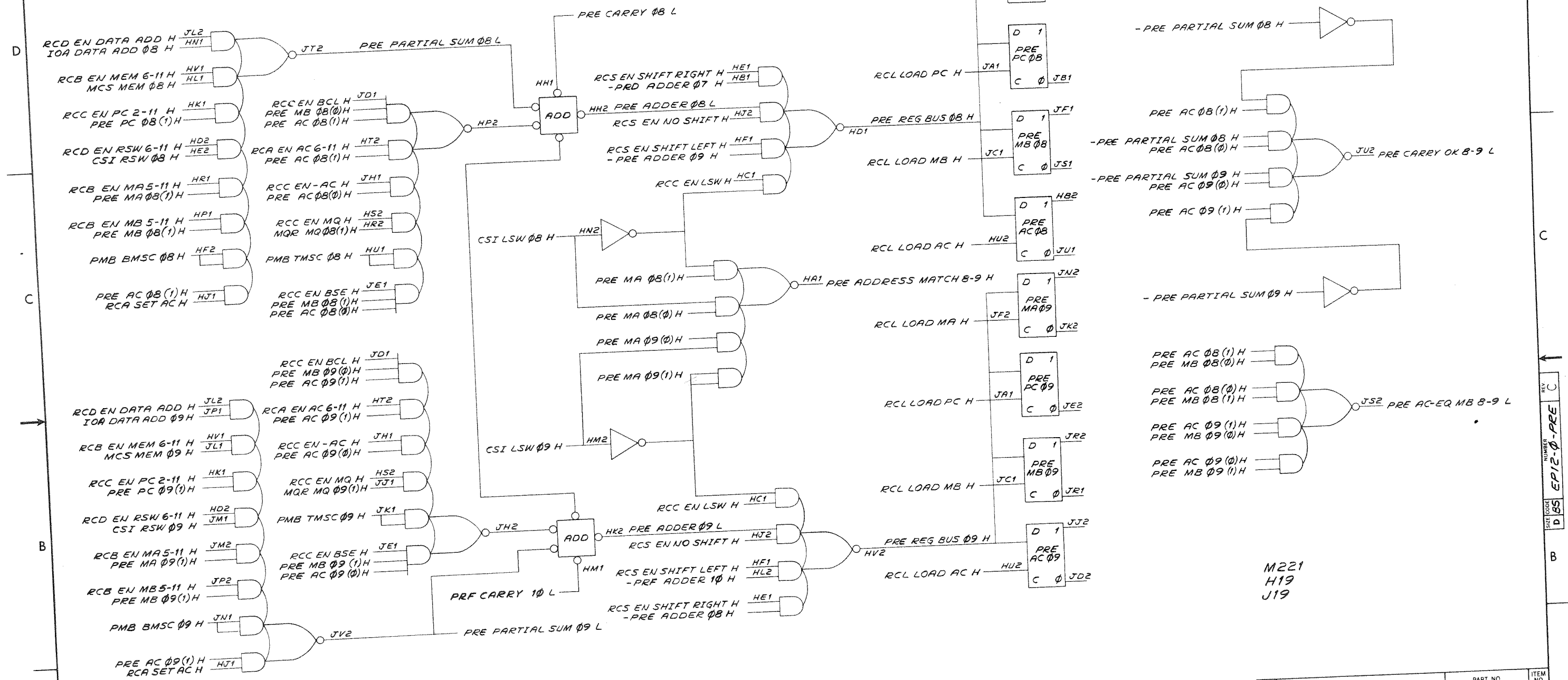
REV.	NO.	DATE	BY	CHKD.
A	00002		J. SCANLON	
B	00015	10-17-69	J. SCANLON	
C	00023	10-17-69	J. SCANLON	
D	00023	10-17-69	J. SCANLON	

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRN. DATE 12/13/68 DATE 2/19/69 DATE 2/19/69 DATE 2/19/69 DATE 2/19/69	
UNLESS OTHERWISE SPECIFIED		<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES = .005 ± 1/64 = 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS		TITLE <b>PRD</b> <b>PROCESSOR REG.</b> <b>BITS 6 &amp; 7</b>	
MATERIAL		FIRST USED ON EP12 -	
FINISH		SCALE	
SHEET 1 OF 1		DIST.	
SIZE CODE D/B5		NUMBER EP12-0-PRD	
REV. C			

REV. C  
 NUMBER D/B5  
 EP12-0-PRD

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M221  
H19  
J19

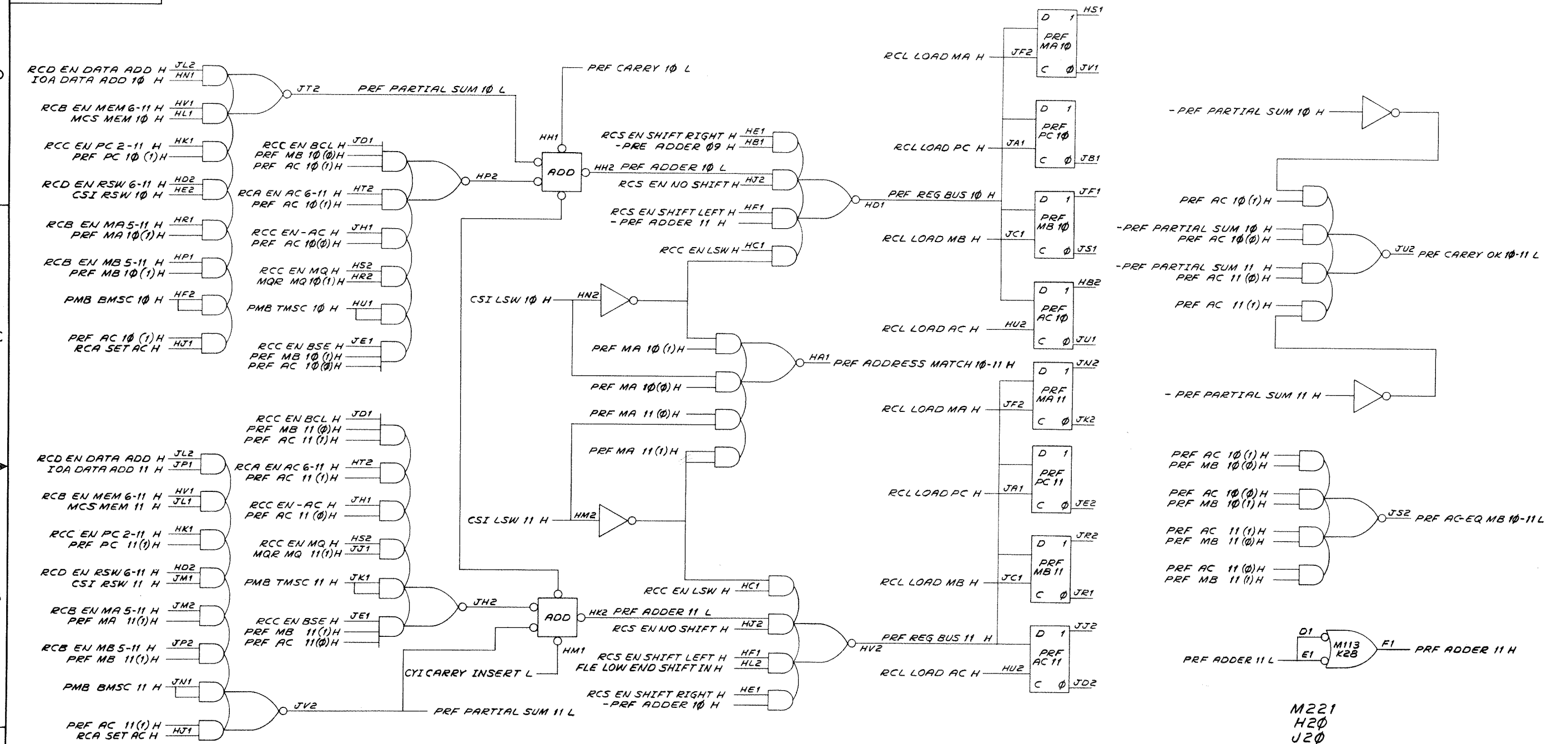
REV	NO.	DATE	BY	CHK
1	A			
2	B	12/13/67	J. SCANLON	
3	C	1/1/69	L. GALE	
4	D	1/1/69	J. SCANLON	
5	E	6-30-70	T. QUILLIN	
6	F	7-2-70	D.M. GALE	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
= .005 = 1/64 = 0°30'			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL		FIRST USED ON	
FINISH		SCALE	
		SHEET 1 OF 1	
D 85		NUMBER	
EP12-0-2-1-2-1		REV. C	

digital EQUIPMENT CORPORATION  
TITLE: PRE PROCESSOR REG. BITS 8 & 9

REV. C  
NUMBER  
D 85 EP12-0-2-1-2-1

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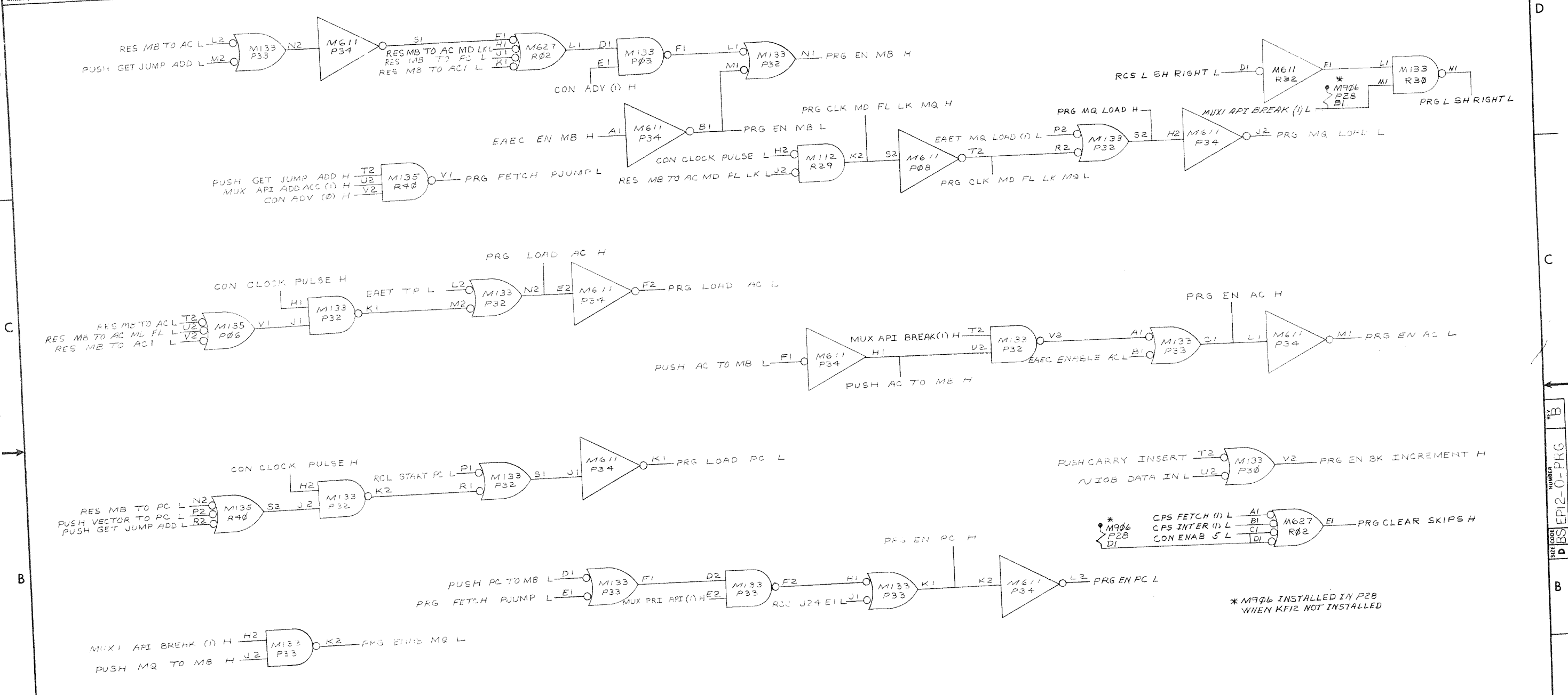


REV.	CHG.	NO.	BY	DATE
A	00002		J. SCANLON	10-19-69
B			L. GALE	10-19-69
C			T. GALE	10-19-69

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	± .005 ± 1/64 ± 0°30'		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FIRST USED ON		
	EPI2		
	FINISH		
	SCALE		
	SHEET 1 OF 1		
	DISTR.		
	TITLE		
	PRF PROCESSOR REG. BITS 10 & 11		
	NUMBER		
	D B S E P I 2 - 0 - P R F		
	REV.		
	C		

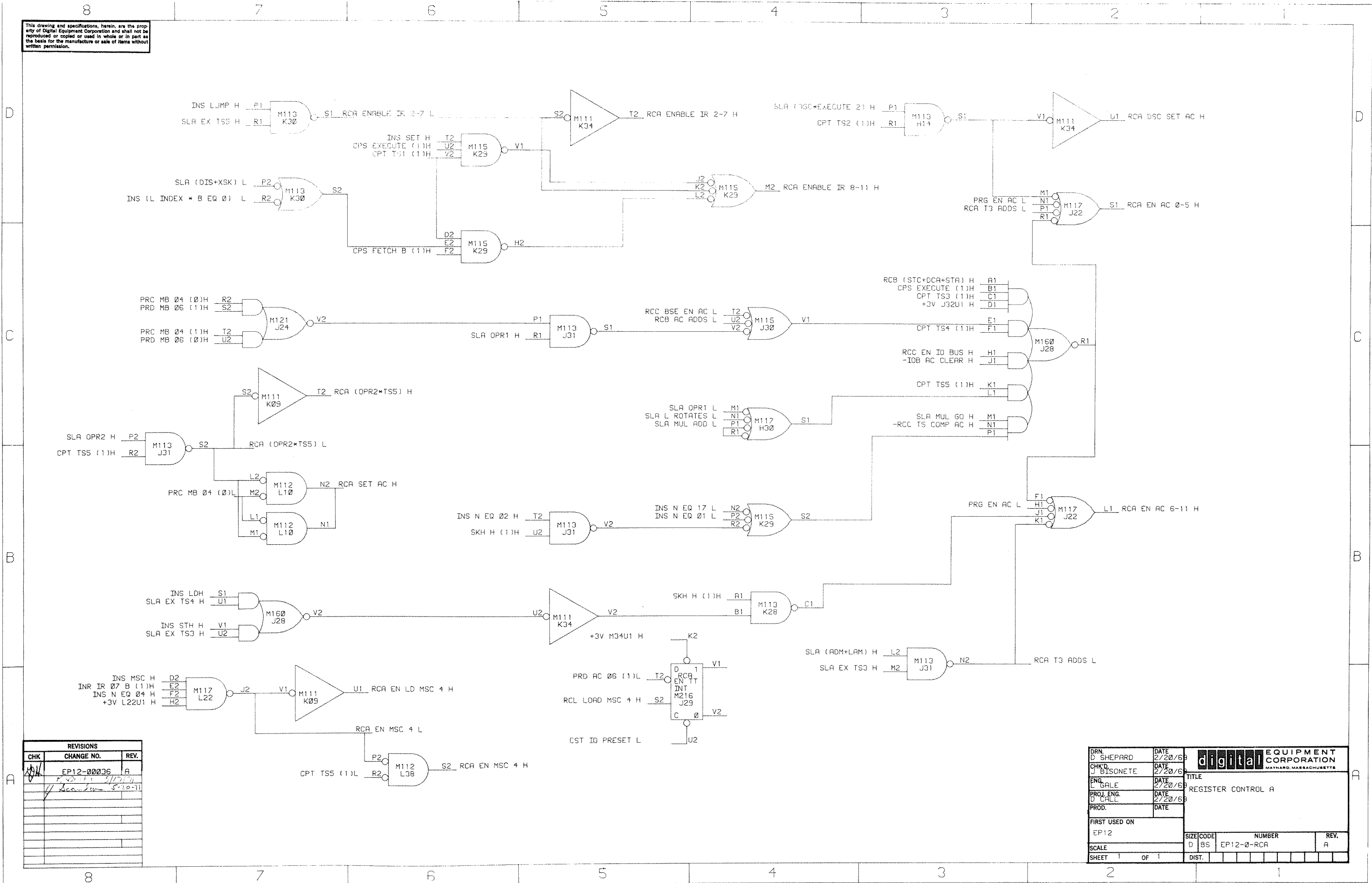
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REV	NO.	DATE	BY
A	1	3-11-72	MOORE
THIS DWG WAS ORIGINALLY D-B5-KF12-0-RPG			
E-11-EP12-0-0046 B			
IKNAIAN			
L-11-0046 B-11-72			

FIRST USED ON OPTICAL MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D.	DATE	TITLE	
DIMENSION IN INCHES			PROCESSOR REGISTER GATING	
TOLERANCES	ENG.	DATE	SIZE CODE	
DECIMALS FRACTIONS ANGLES			NUMBER	
= 005 = 1/64 = 0°30'			D-B5-EP12-0-PKG	
FINAL SURFACE QUALITY	PROD.	DATE	REV.	
REMOVE BURRS AND BREAK SHARP CORNERS			B	
MATERIAL	TEXT HIGHLIGHT			
FINISH	SCALE	SHEET 1 OF 1		

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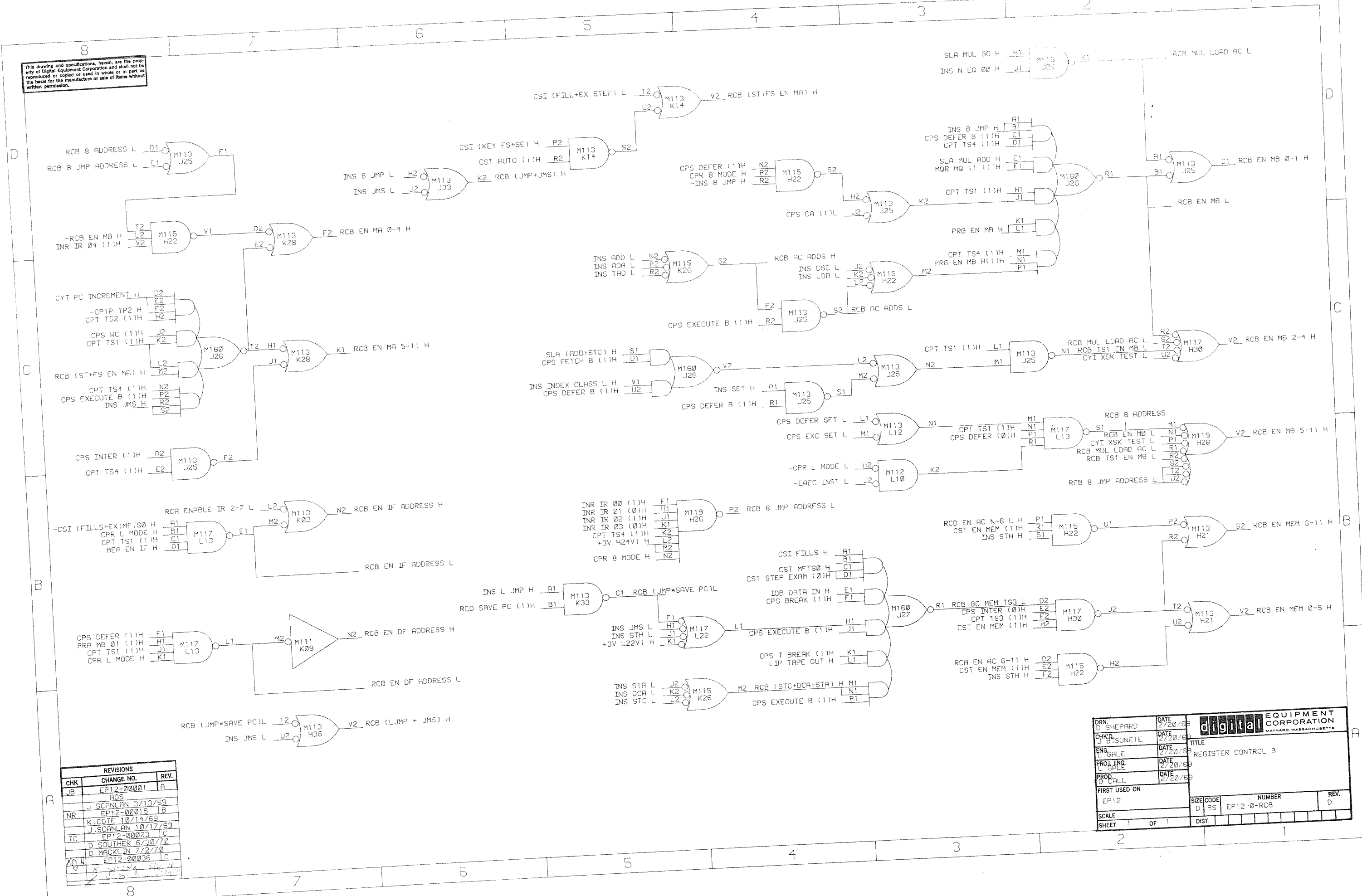


REVISIONS		
CHK	CHANGE NO.	REV.
W	EP12-00036	A

DRN: D SHEPARD	DATE: 2/20/69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD: J BISONETE	DATE: 2/20/69	
ENG: SALE	DATE: 2/20/69	TITLE: REGISTER CONTROL A
PROJ. ENG: D CALL	DATE: 2/20/69	
PROD.	DATE:	
FIRST USED ON		
EP12		
SCALE	SIZE CODE: D BS	NUMBER: EP12-0-RCA
SHEET 1 OF 1	DIST.	REV. A



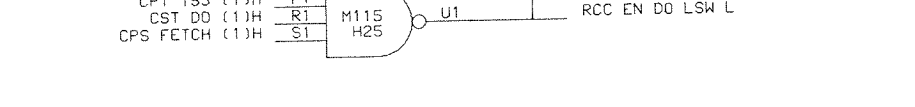
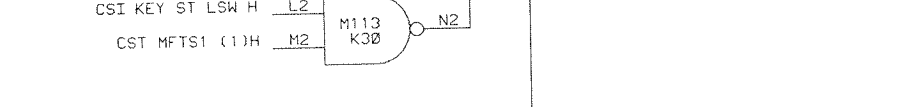
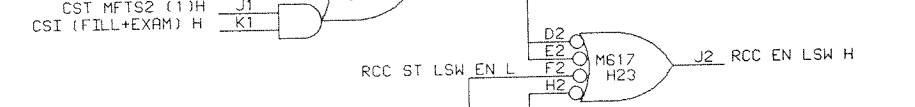
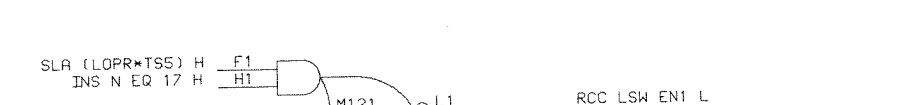
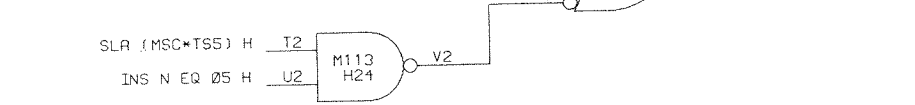
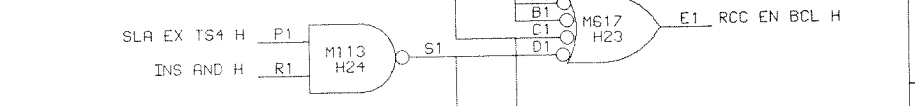
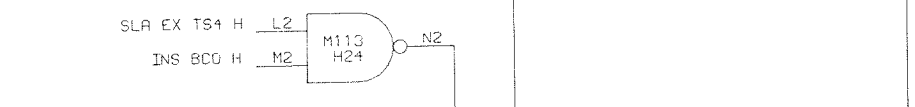
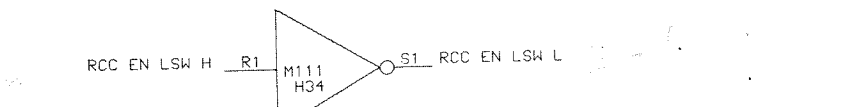
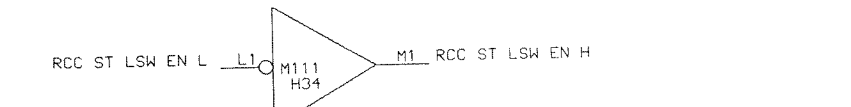
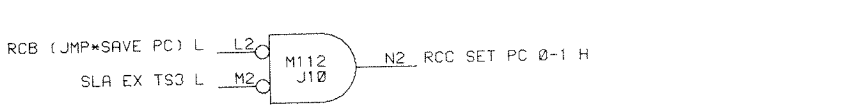
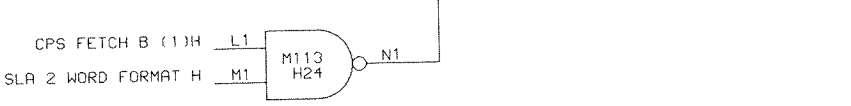
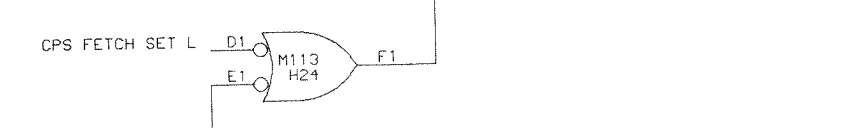
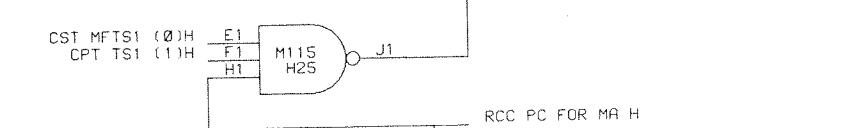
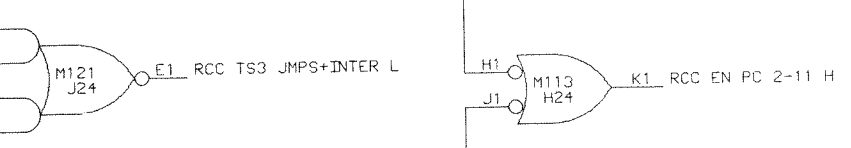
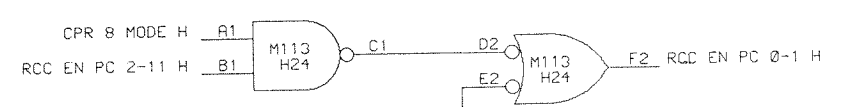
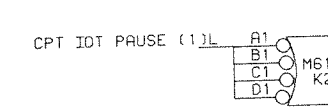
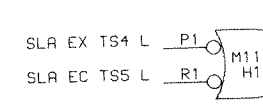
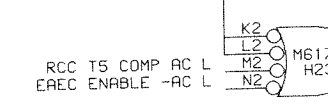
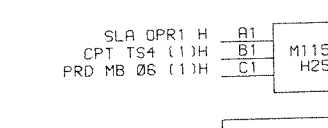
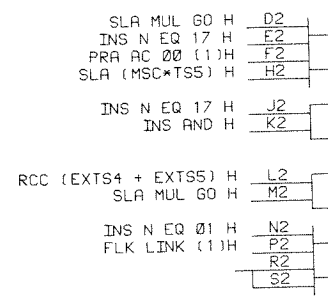
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REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
NR	J. SCANLAN 3/13/69 EP12-00015	B
	K. COTE 10/14/69	
	J. SCANLAN 10/17/69	
TC	EP12-00023	C
	D. SOUTHER 6/30/70	
	D. MACKLIN 7/2/70	
KLN	EP12-00036	D

DRN D. SHEPARD	DATE 2/20/69		TITLE	
CHKD J. BISONETE	DATE 2/20/69		REGISTER CONTROL B	
ENG. L. GALE	DATE 2/20/69	PROD. D. GALE	DATE 2/20/69	
FIRST USED ON EP12	SIZE CODE D 6S	NUMBER EP12-0-RCB	REV. D	
SCALE SHEET 1 OF 1	DIST.			

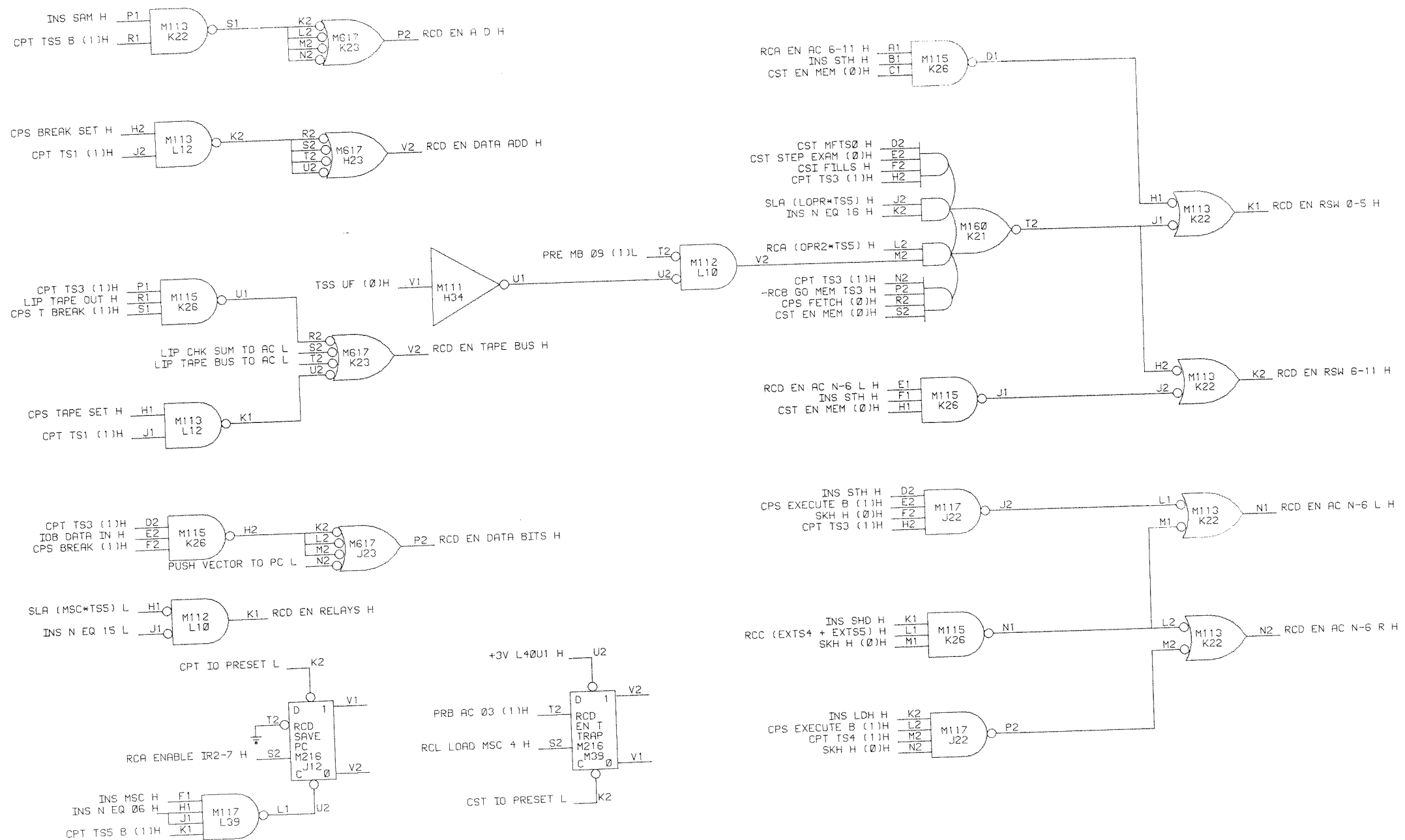
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REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-0000	A
ADS		
J SCANLON		
	EP12-00036	B

DRN D SHEPARD	DATE 2/20/69	 <b>digital EQUIPMENT CORPORATION</b> <small>MAYNARD, MASSACHUSETTS</small>
CHK'D J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	
PROJ ENG L GALE	DATE 2/20/69	
PROD D CALL	DATE 2/20/69	TITLE REGISTER CONTROL C
FIRST USED ON EP12	SIZE CODE D BS	NUMBER EP12-0-RCC
SCALE SHEET 1 OF 1	DIST.	REV. B

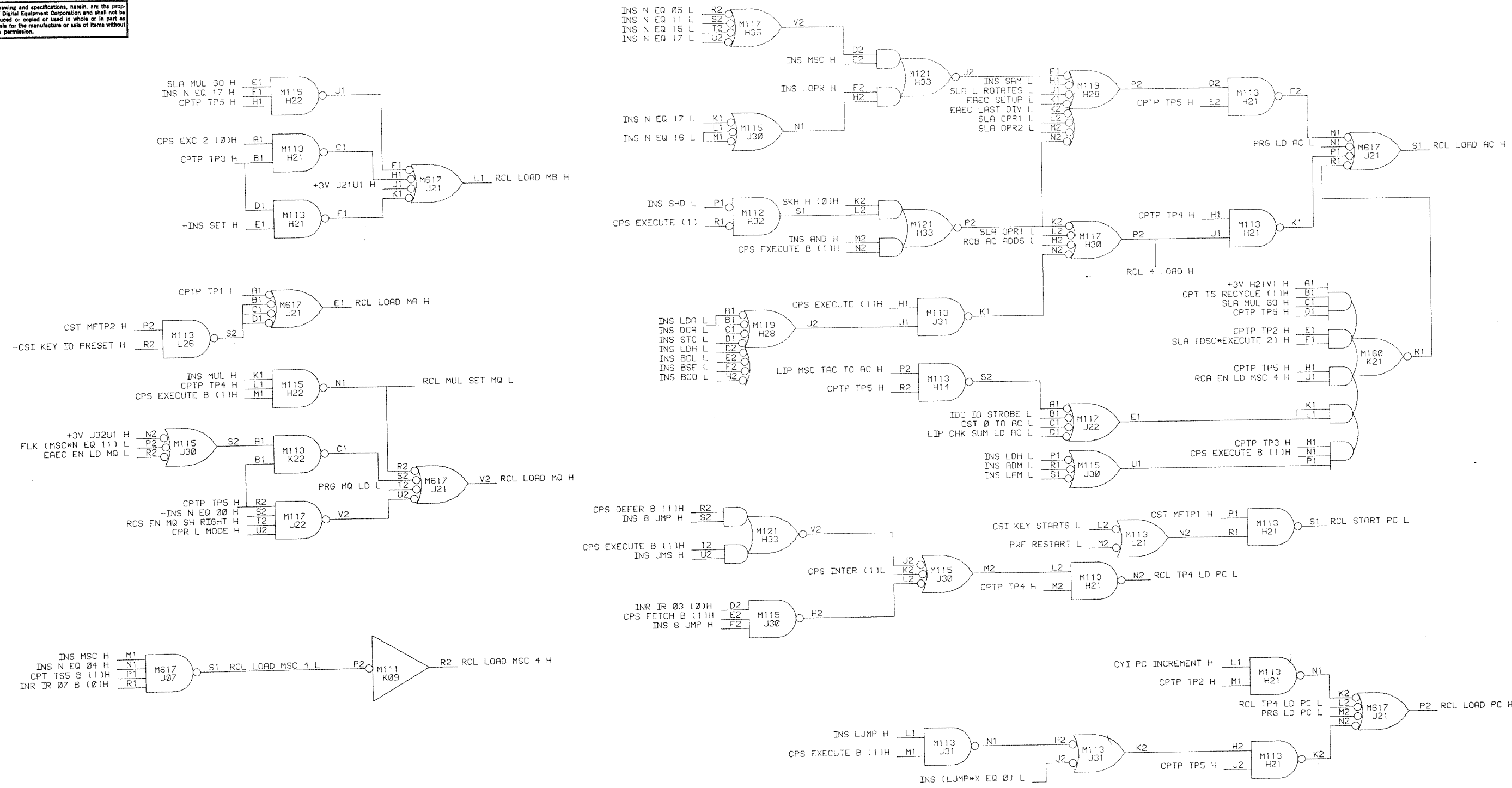
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REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
J.	SCANLAN 3/13/69	
PD	EP12-00002	B
	A WASHINGTON 6/20/69	
J.	SCANLAN 6/22/69	
	EP12-00003	C
	A WASHINGTON 6/19/69	
	L GALE 6/20/69	
	EP12-00036	D
	R. White 5/6/71	
	7. 5/6/71	

DRN. SHEPARD	DATE 2/20/69	 <b>digital EQUIPMENT CORPORATION</b> MAYNARD, MASSACHUSETTS	TITLE
CHKD. BISONETE	DATE 2/20/69		REGISTER CONTROL D
ENG. GALE	DATE 2/20/69		
PROJ. ENG. GALE	DATE 2/20/69		
PROD. CALL	DATE 2/20/69		
FIRST USED ON		SIZE CODE	NUMBER
EP12		D BS	EP12-0-RCD
SCALE		DIST.	
SHEET 1 OF 1			

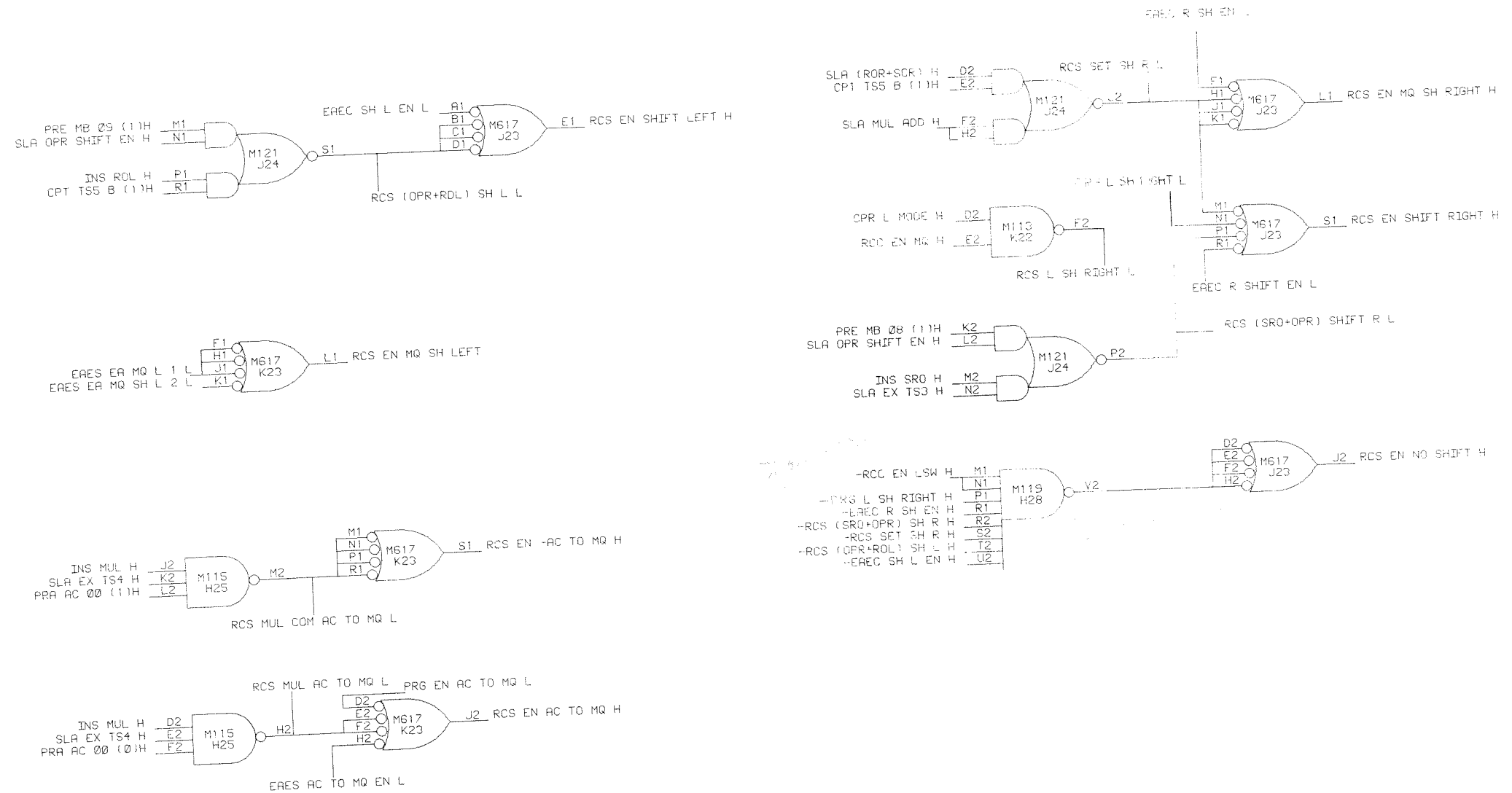
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REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00001	A	NR	EP12-00016	E
	ADS			K COTE 11-12-69	
J	SCANLAN 3/13/69		J	SCANLAN 11-14-69	
NR	EP12-00006	B	TC	EP12-00023	F
A	WASHINGTON 8/17/69		D	SOUTHER 6/23/70	
L	GALE 8/20/69		D	MACKLIN 7/2/70	
NR	EP12-00007	C		EP12-00036	H
A	WASHINGTON 8/6/69				
J	SCANLAN 8/6/69				
	EP12-00015	D			
K	COTE 10/14/69				
J	SCANLAN 10/17/69				

DRN D SHEPARD	DATE 2/20/69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE PROCESSOR REGISTER LOAD CONTROL
PROJ ENG L GALE	DATE 2/20/69	
PROD D CALL	DATE 2/20/69	
FIRST USED ON		
EP12	SIZE CODE 0 BS	NUMBER EP12-0-RCL
SCALE		REV. H
SHEET 1	OF 1	DIST.

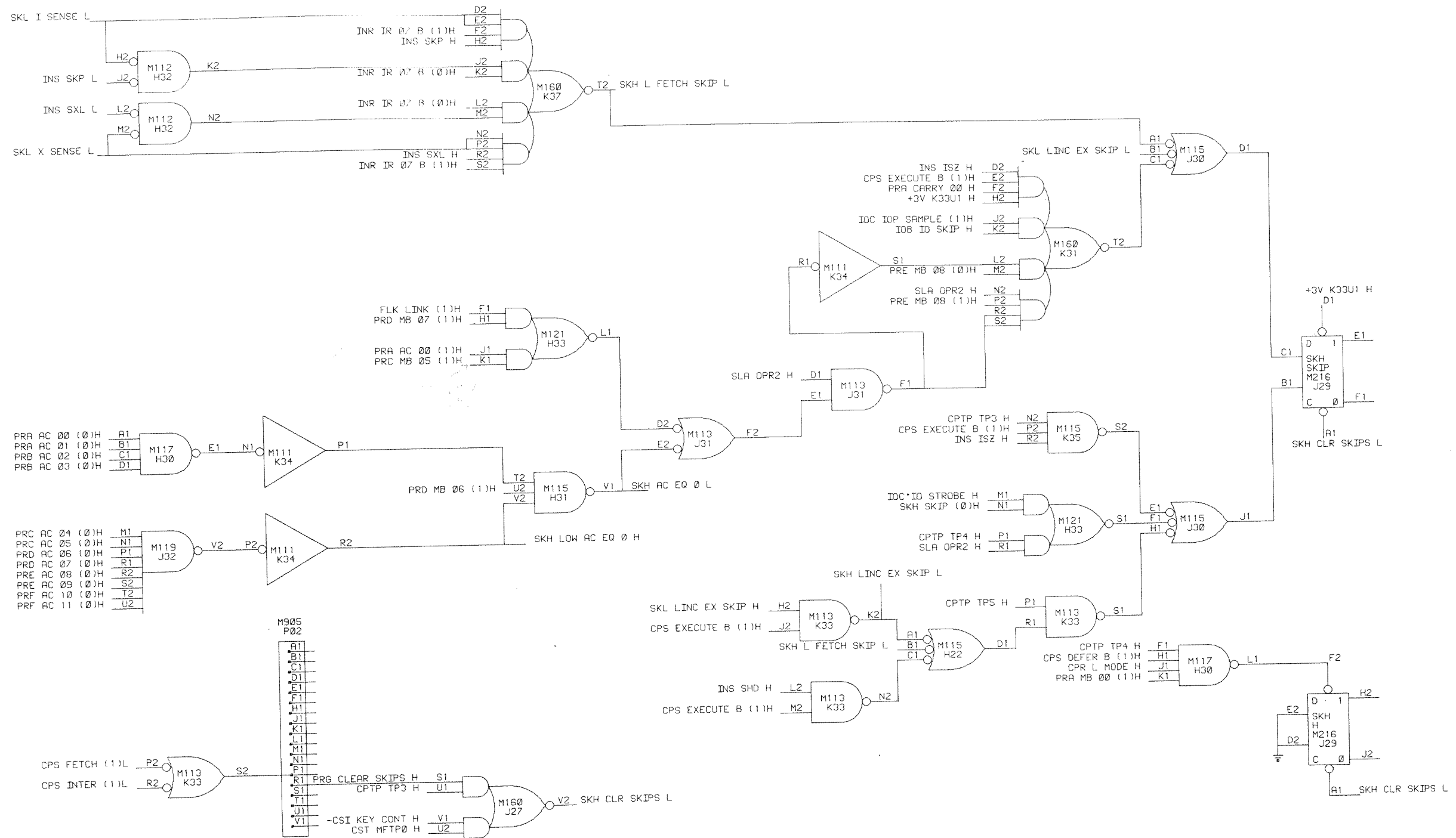
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REVISIONS		
CHK	CHANGE NO.	REV.
DWH	EP12-00036	A

DRN: D SHEPARD	DATE: 2/20/69	<b>digital EQUIPMENT CORPORATION</b>	
CHRD: J BISONETE	DATE: 2/20/69	MAYNARD, MASSACHUSETTS	
ENG: L GALE	DATE: 2/20/69	TITLE: REG SHIFT & MQ INPUTS	
PROJ. ENG: L GALE	DATE: 2/20/69		
PROD:	DATE:		
FIRST USED ON: EP12		SIZE CODE: D BS	NUMBER: EP12-0-RCS
SCALE:			REV: F
SHEET: 1	OF: 1	DIST:	

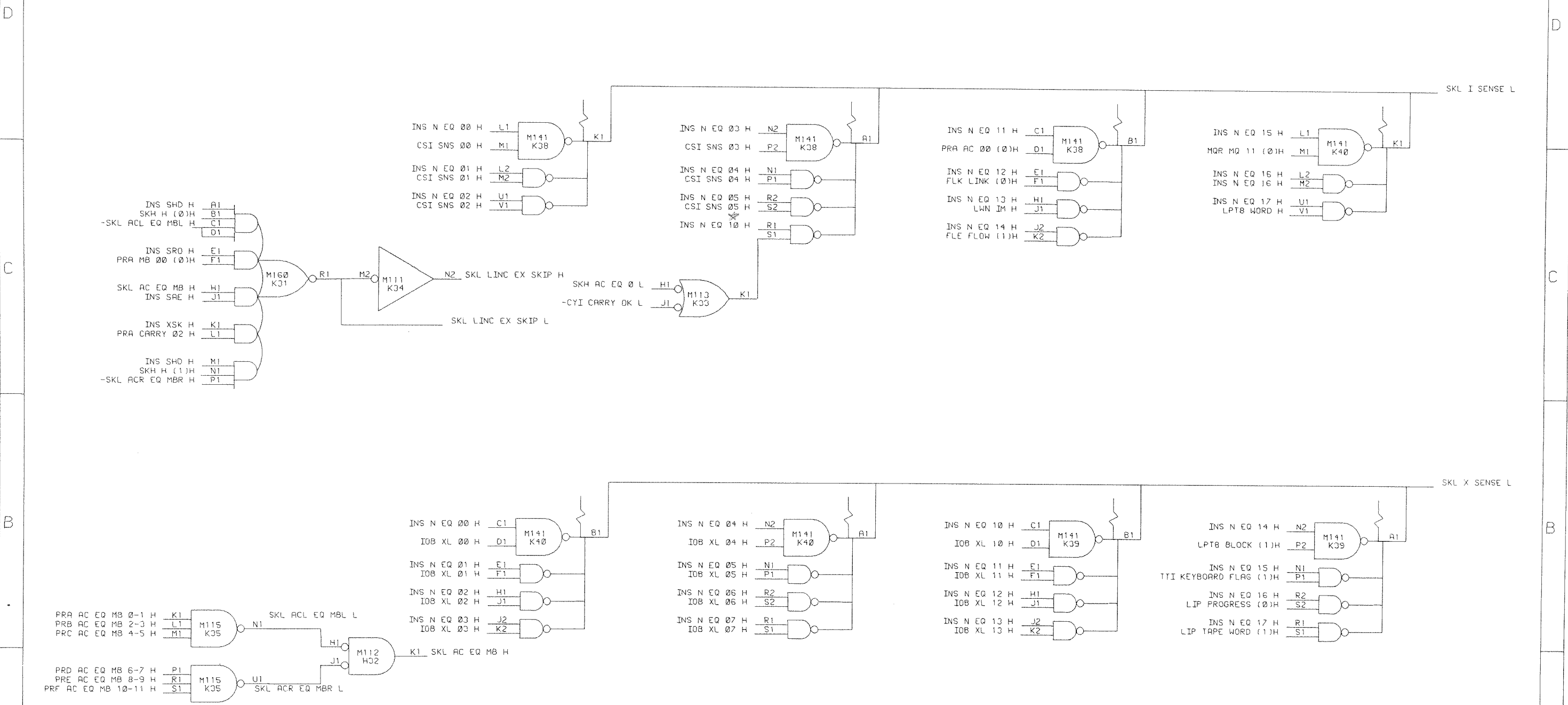
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REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
			TC	EP12-00023	C
	ADS		D	SOUTHER 6/30/70	
			D	MACKLIN 7/2/70	
	J. SCANLAN 3-13-69			EP12-00036	D
	EP12-00006	B			

DRN.	D. SHEPARD	DATE	2-20-69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	J. BISONETTE	DATE	2-20-69	
ENG.	L. GALE	DATE	2-20-69	TITLE
PROJ. ENG.	L. GALE	DATE	2-20-69	SKIP FF & H BIT
PROD.	D. CALL	DATE	2-20-69	
FIRST USED ON	EP12	SIZE CODE	D BS	NUMBER
SCALE	SHEET 1 OF 1	DIST.		REV. D

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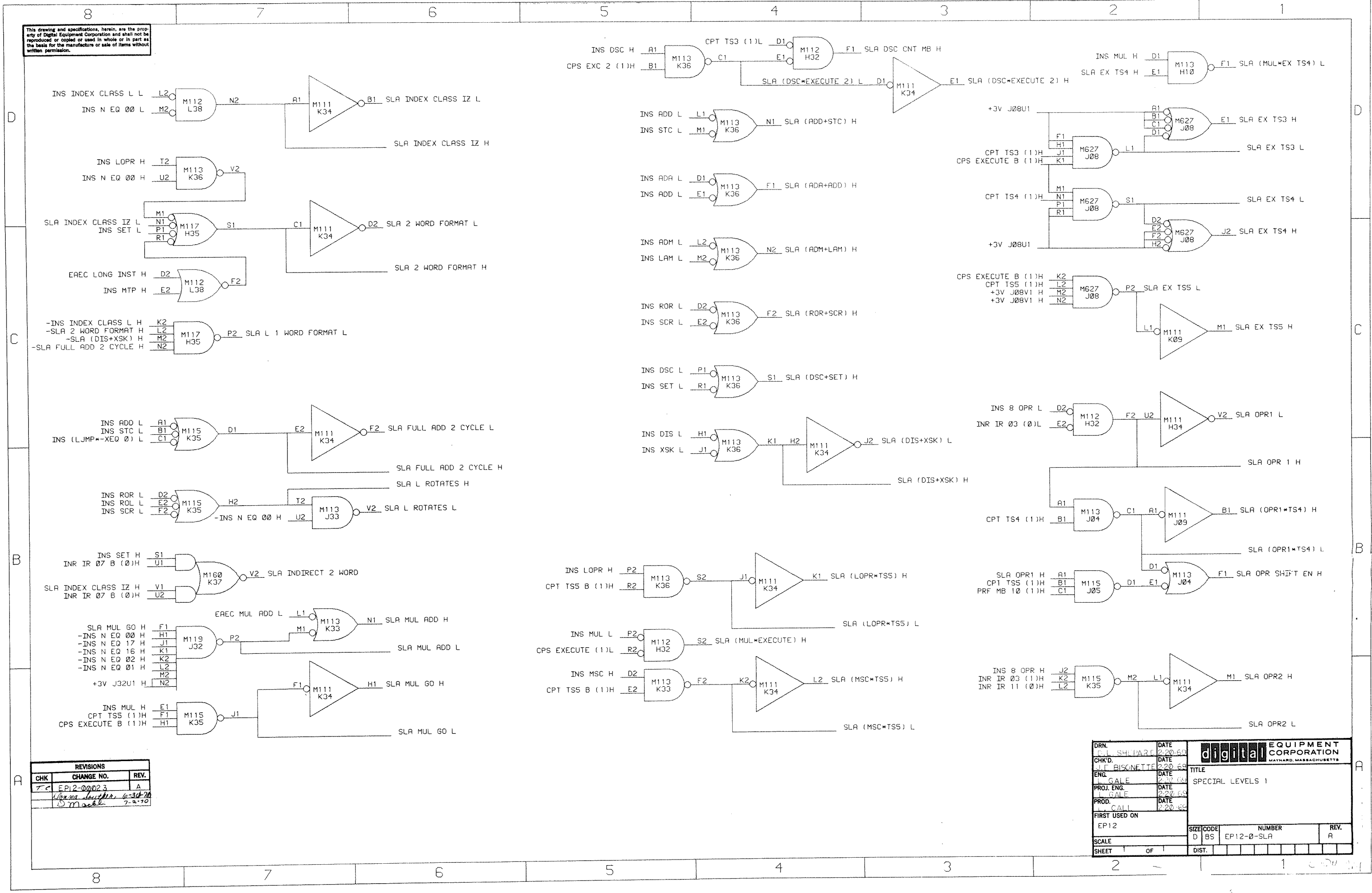
REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCARLAN 3/13/69	
	EP12-00003	B
	A WASHINGTON 6/17/69	
	L GALE 6/20/69	
	EP12-00016	C

\* for 06 & 07 see  
# 12-C-002

DRN. D SHEPARD	DATE 2/20/69	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE EP12 SKIPS
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		
SCALE D BS	SIZE CODE D BS	NUMBER EP12-0-SKL
SHEET 1 OF 1	DIST.	REV. C



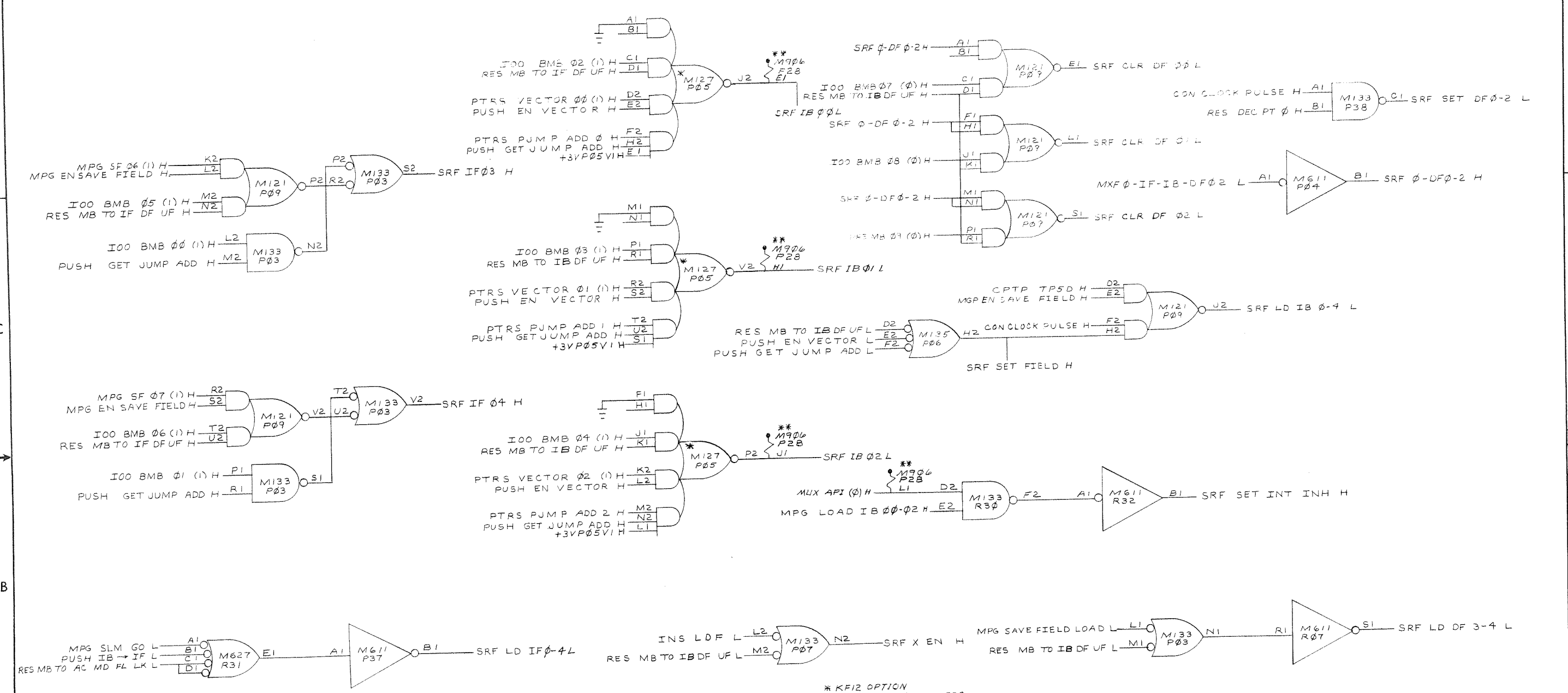
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REVISIONS		
CHK	CHANGE NO.	REV.
T.C.	EP12-00023	A
	Wanna Smith 6-30-70	
	D Macell 7-2-70	

DRN.	DATE	 <b>digital EQUIPMENT CORPORATION</b> <small>MAYNARD, MASSACHUSETTS</small>	TITLE
CHKD.	DATE		SPECIAL LEVELS 1
ENG.	DATE		
PROJ. ENG.	DATE		
PROD.	DATE		
FIRST USED ON			
EP12		SIZE CODE	NUMBER
SCALE		D 85	EP12-0-SLA
SHEET	OF	DIST.	REV.
			A

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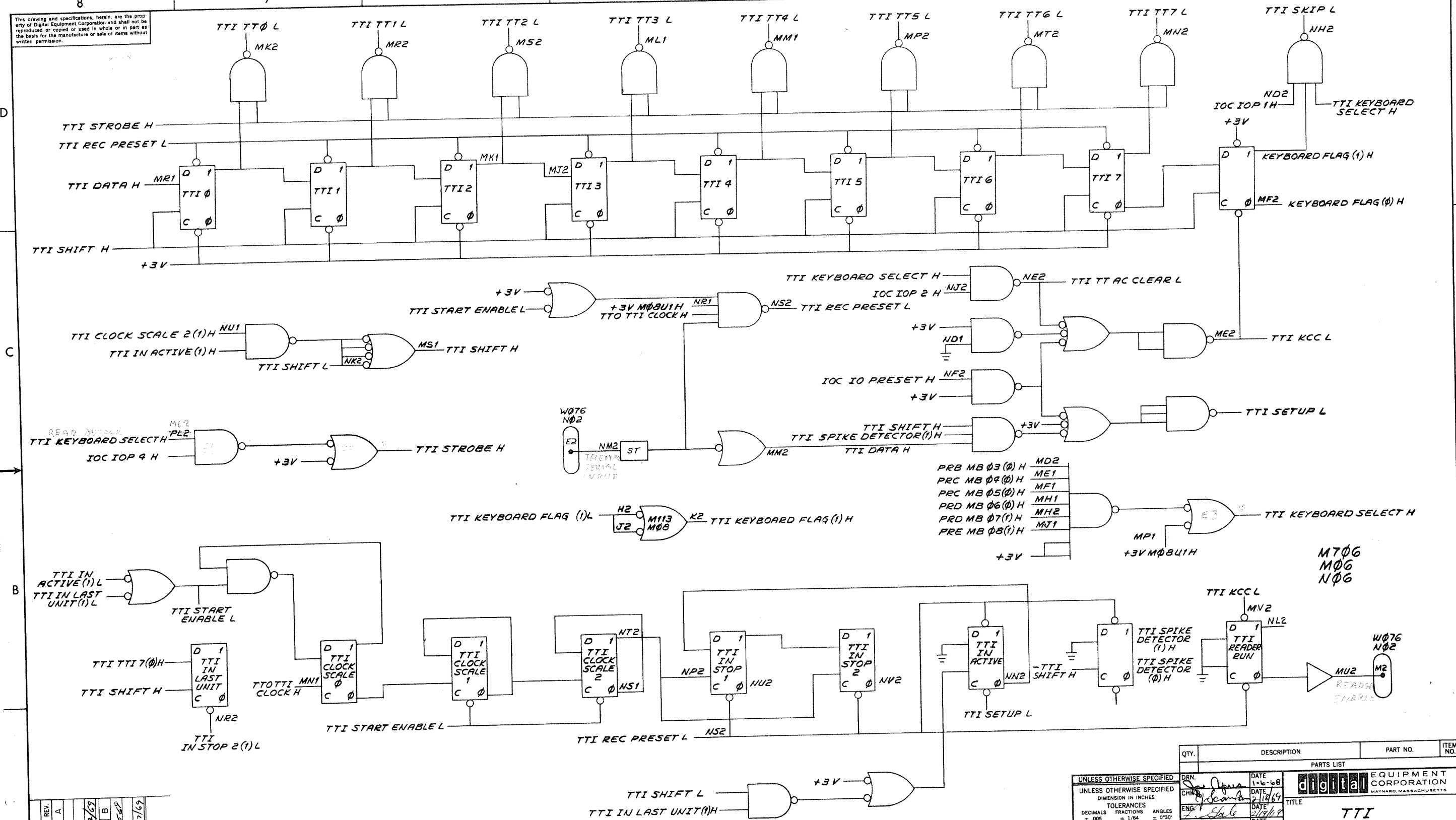


\* KF12 OPTION  
 \*\* M906 INSTALLED IN P28  
 WHEN KF12 NOT INSTALLED.

REV	DATE	BY	CHK
A	2-14-71	J. Moore	J. Moore
THIS DWG WAS ORIGINALLY D-B5-KF12-0-SRF			

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN J. Wilson	DATE 3-5-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	ENG	DATE	TITLE	
.XXX = .005	PROJ. ENG.	DATE	SET & RESTORE FIELDS	
.XX = .02	PROD.	DATE		
.X = .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
	A-ML-EPI2-0	D	BS-EPI2-0-SRF	A
FINISH	SCALE	SHEET	OF	DIST
		1	1	

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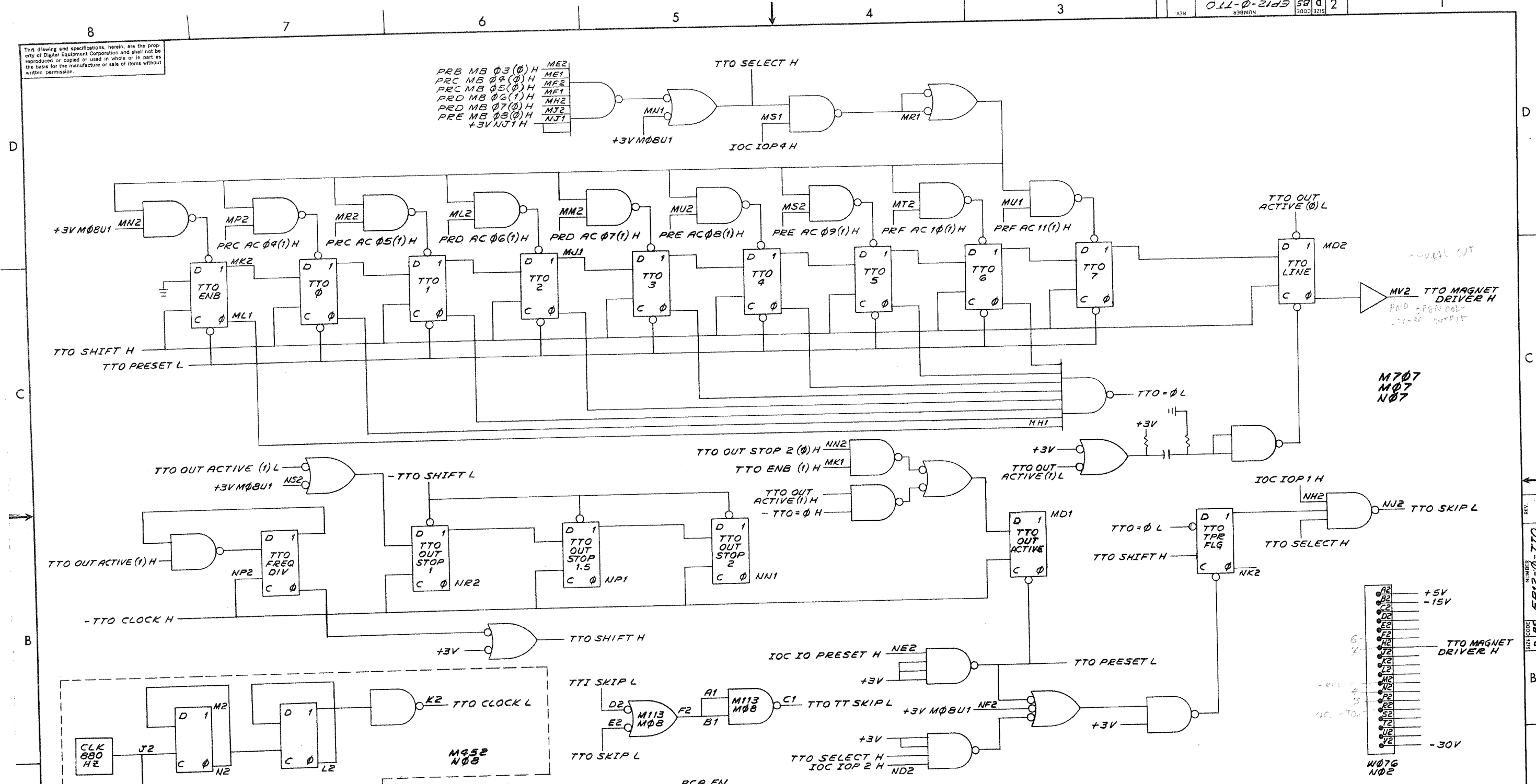
REV.	NO.	DATE	BY	CHK
A	0002		J. SCANLON	
B	0001	1/17/69	J. SCANLON	
C	0001	1/17/69	J. SCANLON	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	UNLESS OTHERWISE SPECIFIED	DRN.	DATE
	DIMENSION IN INCHES	CHK	DATE
	TOLERANCES	ENG.	DATE
	DECIMALS FRACTIONS ANGLES	PROG. ENG.	DATE
	= .005 = 1/64 = 0°30'	PROD.	DATE
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
MATERIAL	FIRST USED ON	TITLE	
FINISH	SCALE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
	SHEET OF	TTI TELETYPE RECEIVER	
		SIZE CODE	NUMBER
		D 55	EP12-0-TTI
		DIST.	REV.
			B

D  
C  
B  
A

REV. B  
 NUMBER  
 D 55 EP12-0-TTI  
 SIZE CODE

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REVISIONS	REV.
CHANGE NO.	
CHK	

DEC FORM NO. DRD 102A 8

UNLESS OTHERWISE SPECIFIED  
 DIMENSION IN INCHES  
 TOLERANCES  
 DECIMALS FRACTIONS ANGLES  
 ± .005 ± 1/64 ± 0°30'  
 FINAL SURFACE QUALITY  
 REMOVE BURRS AND BREAK SHARP CORNERS


QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
DRN	DATE 12-27-68	digital EQUIPMENT CORPORATION	
CHKD	DATE 2-18-69	MAYNARD, MASSACHUSETTS	
ENG	DATE 2/11/69	TITLE TTY TELETYPE TRANSMITTER	
PROJ. ENG.	DATE 2/11/69	SIZE CODE D B S	NUMBER EPI2-0-TTO
PROD.	DATE 2/11/69	DIST.	REV.
MATERIAL	FIRST USED ON EPI2	SHEET 2	OF 1


NUMBER EPI2-0-TTO  
 SIZE CODE D B S  
 REV.

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
GROUND	N01B1	N40C2	BLACK	
	N01C1	N02C2		
	N01V1	N40T1		
	N01U1	M40T1		
	N01T1	M40C2		
	N01S1	M02C2		WIRE IS
	N01R1	M02T1		#24 AWG
	N01N1	L40C2		
	N01M1	L01T1		
	N01L1	L01C2		
	N01K1	K40T1		
	N01J1	K40C2		
	N01H1	K01T1		
	N01F1	K01C2		
	N01E1	J40T1		
	N01D1	J40C2		
	N01P1	L40T1		
	M01U1	J01C2		
	M01T1	J18T1		
	M01S1	J18C2		
	M01R1	H40T1		
	M01P1	H40C2		
	M01N1	H01T1		
	M01V1	J01T1		
	M01M1	H01C2		
	M01L1	H18T1		

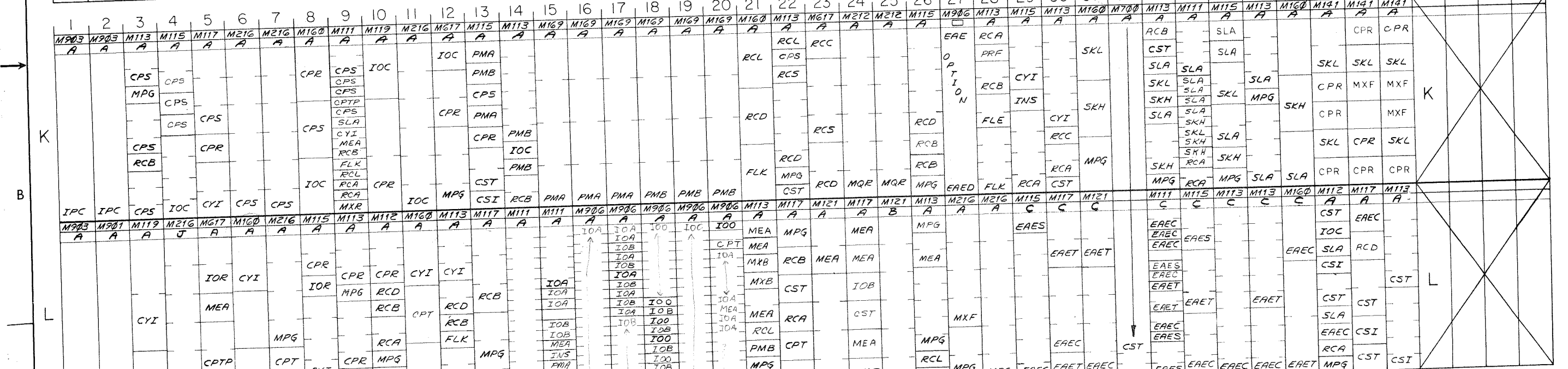
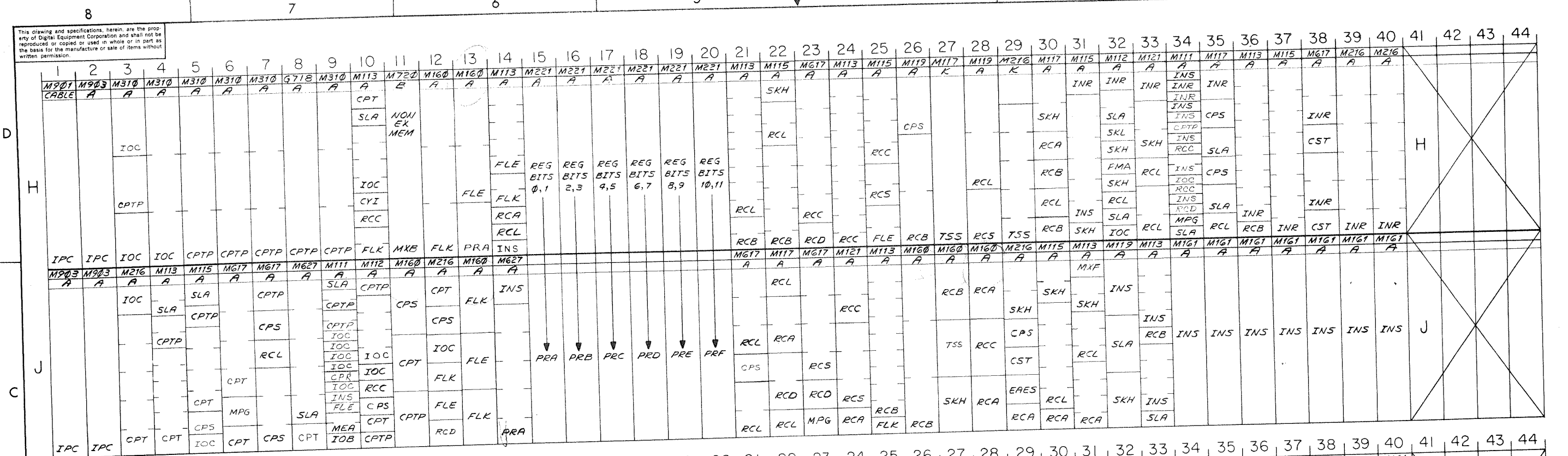
SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
GROUND	M01K1	H18C2	BLACK	
+10v	N01E2	N27A2	GREEN	
+5v	N01B2	N40A2	RED	
	M01V2	M40A2		
	M01U2	M04A2		WIRE IS
	M01T2	L40A2		#24 AWG
	M01S2	L03A2		
	M01R2	K40A2		
	M01P2	K03A2		
	M01N2	J40A2		
	M01M2	J18A2		
	M01L2	J03A2		
	M01K2	H40A2		
	M01J2	H18A2		
	M01H2	H03A2		
	M01F2	N28A2		
	M01E2	J09A2		
	M01D2	K18A2		
	M01C2	L18A2		
	M01B2	M18A2		
	M01A2	N12A2		
-15v	N01L2	N33B2	BLUE	
	N01K2	N02B2	BLUE	
	N01J2	N03B2	BLUE	

REVISIONS				DRN. <i>R. Kingsbury</i> DATE 3/11/69	
REV.	DATE	CHG. NO.	APP'D.	CHK'D. <i>R. Kingsbury</i> DATE 3/11/69	
A	11-21-69	EP12-00017	<i>J.S.</i>	ENG. <i>L. Gale</i> DATE 3/10/69	<b>TITLE</b> <b>GENERAL WIRING SHEET</b> <b>FOR</b> <b>D C POWER PROCESSOR LOGIC</b>
B	6-22-71	EP12-00041	<i>R.M.</i>	PROJ. ENG. <i>L. Gale</i> DATE 3/10/69	
				PROD. <i>D. Call</i> DATE 3/10/69	
FIRST USED ON				SIZE CODE NUMBER REV. A WL EP12-0-4 B	
SCALE				SHEET 1 OF 3	
DIST.				DIST.	

REVISIONS				DRN. <i>R. Kingsbury</i> DATE 3/11/69	
REV.	DATE	CHG. NO.	APP'D.	CHK'D. <i>R. Kingsbury</i> DATE 3/11/69	
				ENG. <i>L. Gale</i> DATE 3/10/69	<b>TITLE</b> <b>GENERAL WIRING SHEET</b> <b>FOR</b> <b>DC POWER PROCESSOR LOGIC</b>
				PROJ. ENG. <i>L. Gale</i> DATE 3/10/69	
				PROD. <i>D. Call</i> DATE 3/10/69	
FIRST USED ON				SIZE CODE NUMBER REV. A WL EP12-0-4 B	
SCALE				SHEET 2 OF 3	
DIST.				DIST.	



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REV	DESCRIPTION	DATE
1	RELEASED UNDER REV A 3/1/67	
2	00002	
3	J SCANLON	10-24-68
4	J SCANLON	10-24-68
5	EP12-00003 C	11-17-69
6	EP12-00007 D	11-24-69
7	EP12-00016 E	11-24-69
8	EP12-00027 F	11-24-69
9	EP12-00030 H	11-24-69
10	EP12-00043 J	11-24-69
11	EP12-00044 K	11-24-69
12	EP12-00045 L	11-24-69
13	EP12-00046 M	11-24-69
14	EP12-00047 N	11-24-69
15	EP12-00048 O	11-24-69

A=EP12  
 B=MC12  
 C=KE12  
 D=ASR33  
 E=DP12A  
 F=XY12  
 H=VC12  
 J=DR12  
 K=KT12

USE ONLY IF KE12 IS NOT INSTALLED

UNLESS OTHERWISE SPECIFIED

DRN	DATE
CHK	DATE
ENG	DATE
PROJ. ENG.	DATE
PROD.	DATE
MATERIAL	
NEXT HIGHER ASSY.	
SCALE	
SHEET	

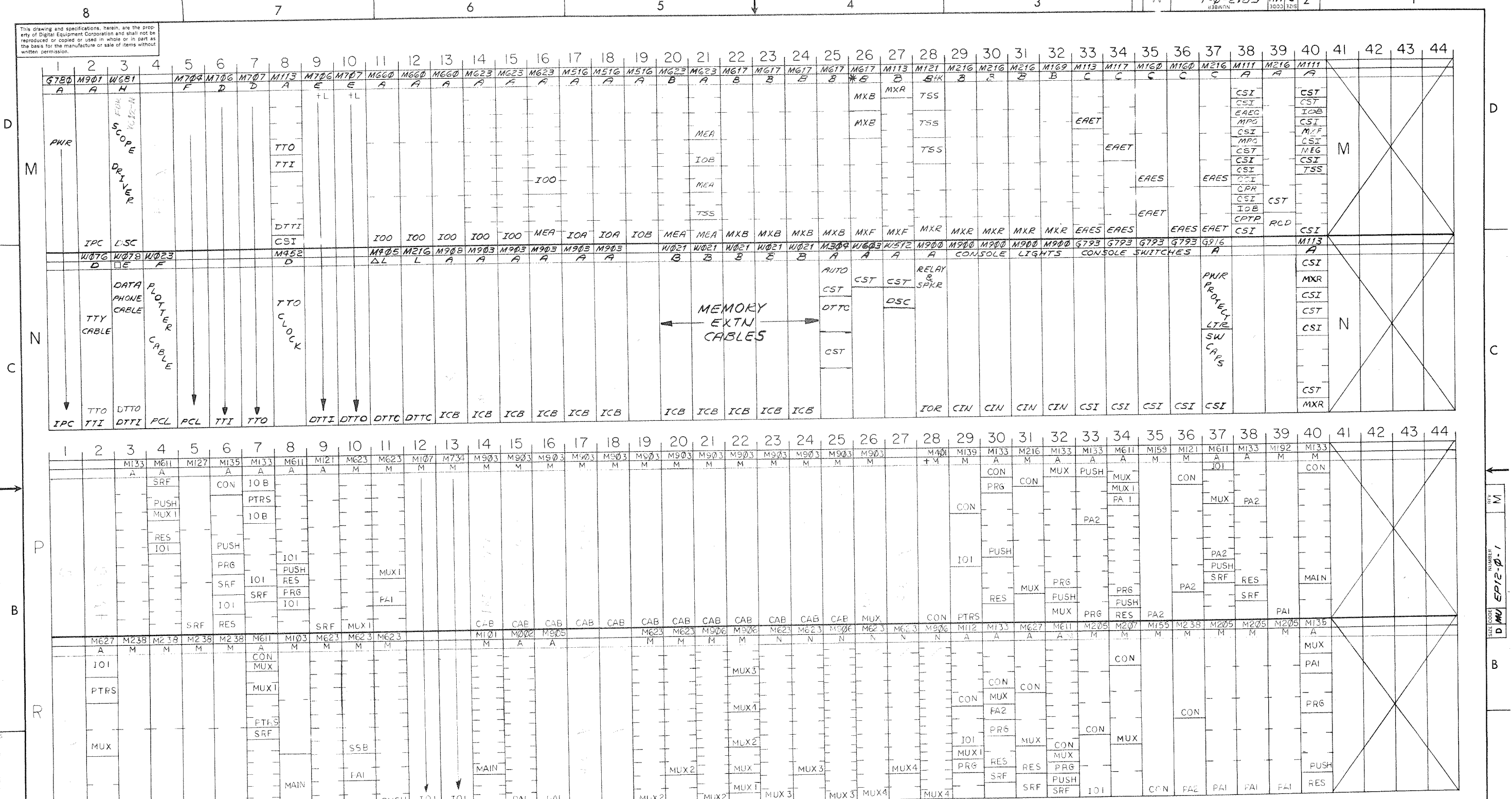
digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

MODULE UTILIZATION PROCESSOR

SIZE CODE D MU NUMBER EP12-0-1 REV M



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REV	CHANGE NO.	DATE
1		
2		

\* WHEN THE MC12 IS NOT INSTALLED USE A W023 WITH PINS J2, P2, V2, GROUNDING.

□ USE W076 FOR DP12A, M070 FOR DP12B. WHEN NEITHER CARD INSTALLED USE G700YA.

△ = USE A G718 FOR DP12A

+ INSERT M006 WHEN KF12 NOT INSTALLED.

- A = EP12 PROCESSOR
- B = MC12 WITH EYE
- C = KE12
- D = ASR33
- E = DP12A
- F = KY12
- H = VC12
- J = DP12
- K = KT12
- L = DP12B
- M = KF12
- N = DM12

UNLESS OTHERWISE SPECIFIED	DRN	DATE
UNLESS OTHERWISE SPECIFIED	DATE	DATE
TOLERANCES	DATE	DATE
DIMENSION IN INCHES	DATE	DATE
DECIMALS FRACTIONS ANGLES	DATE	DATE
= .005 = 1/64 = 0°30'	DATE	DATE
FINAL SURFACE QUALITY	DATE	DATE
REMOVE BURRS AND BREAK SHARP CORNERS	DATE	DATE
MATERIAL	FIRST USED ON	
FINISH		

digital EQUIPMENT CORPORATION

WAYNARD, MASSACHUSETTS

MODULE UTILIZATION PROCESSOR

SCALE: 2 OF 2

SHEET: 2 OF 2

SIZE CODE: D MU

NUMBER: EP12-0-1

REV: M

# DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST

MADE BY J. APREA	CHECKED J. SCANLON	SECTION	
DATE 10/29/68	DATE 2/18/69	ISSUED SECT.	
ENG L. GALE	PROD D. CALL		
DATE 2/19/69	DATE 2/10/69		

DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
G700YA	DATAPHONE DISABLE	
G718	TIMING JUMPER	
G780	CONTROL FOR 739 POWER SUPPLY	
M002	15 LOADS	
M101	BUS DATA INTERFACE	
M103	DEVICE SELECTOR	
M107	DEVICE SELECTOR	
M111	INVERTER	
M112	NOR GATE	
M113	NAND GATE	
M115	NAND GATE	
M117	NAND GATE	
M119	NAND GATE	
M121	AND/NOR GATE	
M127	2-2-2-3 AND/NOR GATE	
M133	10-2 INPUT NAND GATES	
M135	8-3 INPUT NAND GATES	
M139	3-8 INPUT NAND GATES	
M141	NAND/OR GATES	
M155	4 TO 16 LINE DECODER	
M159	ADDER	

TITLE MODULE COUNT

ASSY NO. D-MU-EP12-0-1  
SHEET 1 OF 3

SIZE CODE A PL  
NUMBER EP12-0-1  
REV. M  
ECO NO. EPI2-00016

# DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST

MADE BY J. APREA	CHECKED J. SCANLON	SECTION	
DATE 10/29/68	DATE 2/18/69	ISSUED SECT.	
ENG L. GALE	PROD D. CALL		
DATE 2/19/69	DATE 2/10/69		

DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
M160	AND/NOR GATE	
M161	BINARY TO OCTAL/DECIMAL DECODER	
M169	GATING MODULE	
M192	2-8 BIT PRIORITY ENCODERS	
M205	5 "D" FLIP-FLOPS	
M207	J-K FLIP-FLOPS	
M212	SHIFT REGISTER	
M216	FLIP FLOP	
M221	PROC. REGISTER	
M238	SYNCHRONOUS 4 BIT UP/DN COUNTER	
M304	PULSE AMPLIFIER	
M310	DELAY LINE	
M401	VARIABLE CLOCK	
M405	CRYSTAL CLOCK	
M452	VARIABLE CLOCK	
M516	POSITIVE BUS RECEIVER	
M611	HIGH SPEED POWER INVERTER	
M617	FOUR-INPUT POWER NAND GATE	
M623	BUS DRIVER	
M627	NAND POWER AMPLIFIER	
M660	POSITIVE LEVEL DRIVER	

TITLE MODULE COUNT

ASSY NO. D-MU-EP12-0-1  
SHEET 2 OF 3

SIZE CODE A PL  
NUMBER EP12-0-1  
REV. N  
ECO NO. EPI2-00016

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

MADE BY	J. APREA	CHECKED	J. SCANLON	SECTION
DATE	10/29/68	DATE	2/18/69	ISSUED SECT.
ENG	L. GALE	PROD	D. CALL	
DATE	2/19/69	DATE	2/10/69	

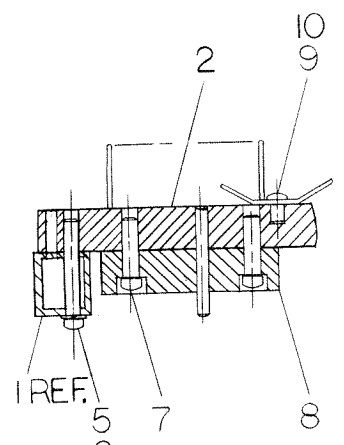
QUANTITY / VARIATION

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	EP12	MC12	KF12	DP12A	DP12B	XY12	VC12N	DR12	KT12	KF12	DM12
	M700	MANUAL FUNCTION TIMING	1					1					
	M704	PLOTTER CONTROL	1			1	1						
	M706	TELETYPE RECEIVER	1			1	1						
	M707	TELETYPE TRANSMITTER		1									
	M720	NON EXISTANT MEM.										1	
	M734	I/O BUS INPUT MULTIPLEXER										2	2
	M906	CABLE TERMINATOR	5										
	M908	RIBBON CONNECTOR	1										
	W023	I/O CABLE CONNECTOR	1										
	W078	TTY INTERFACE	1										
	W512	POSITIVE LEVEL CONVERTER	1										
	W603	POSITIVE LEVEL AMP	1						1				
	W681	SCOPE INTENSIFIER	1										
	G916	POWER PROTECT	1										
	M905	SELECTOR BOARD											
TITLE		ASSY NO.	SIZE	CODE	NUMBER					REV.	FCO NO.		
MODULE COUNT		D-MU-EP12-0-1	A	PL	EP12-0-1					M			
		SHEET 3 OF 3	DIST.										

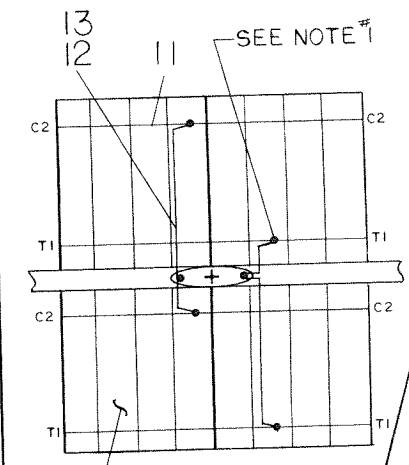
DEC FORM DEC 16-(325)-1031-N870  
DRA 110

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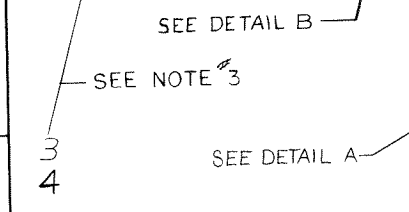
- NOTES:**
1. CONNECTIONS ON ITEMS #11 & #12 TO BE SOLDERED AND LOCATED AT MINIMUM PRACTICAL HEIGHT ABOVE BOARD.
  2. ALL CONN BLOCKS TO BE GROUNDED TO GND LUGS AS SHOWN.
  3. USE YELLOW WIRE (ITEM #3) FOR MACHINE WRAPPED & BLUE WIRE (ITEM #4) FOR HAND WRAPPED WIRE.
  4. PINS ON SIDE #1 OF MØ1 & NØ1 ARE GND.



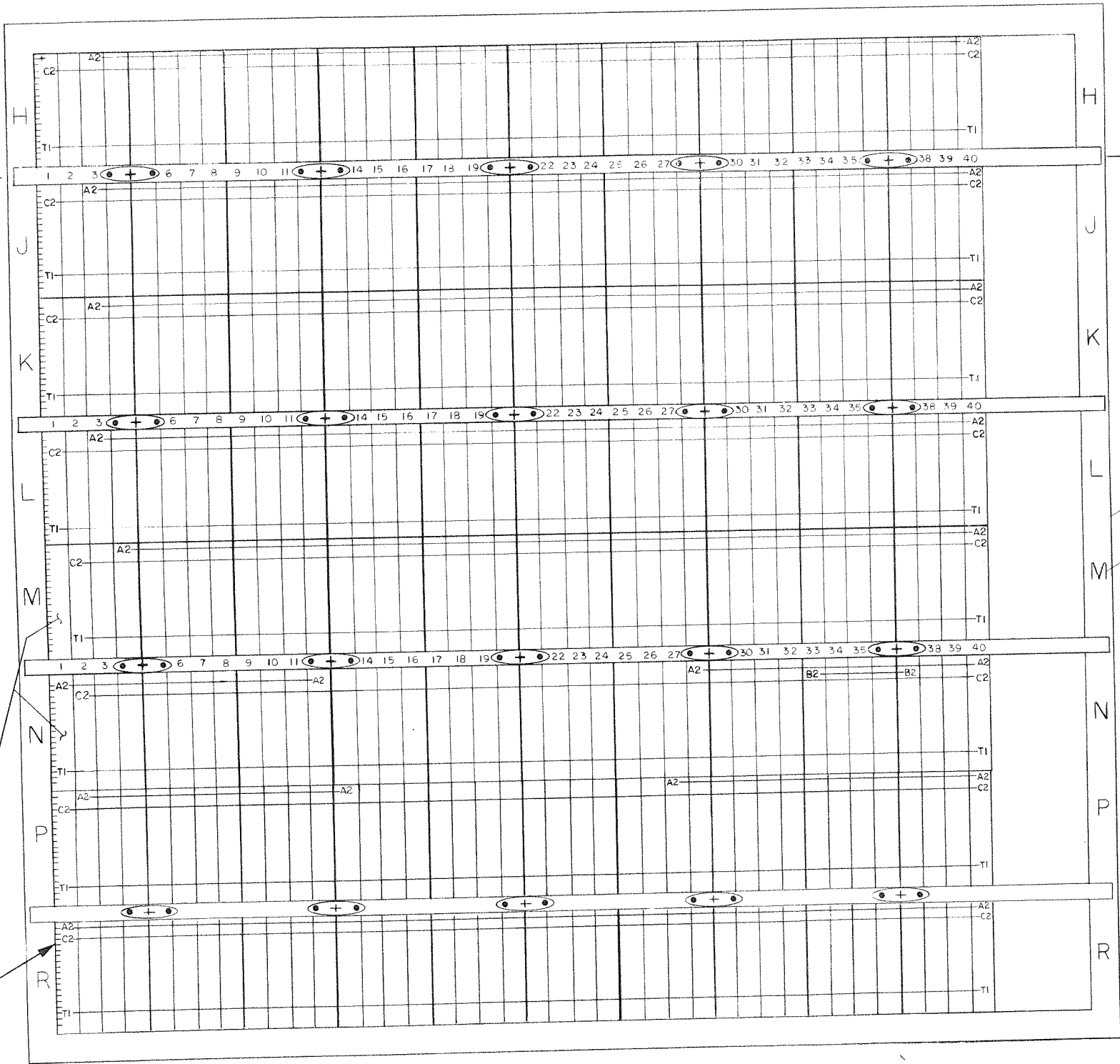
SECTION A-A  
SCALE 1/1



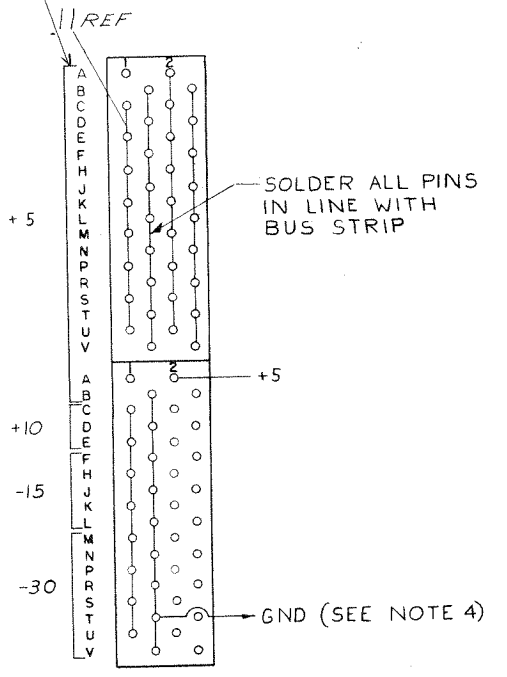
DETAIL A  
15 PLACES  
SEE NOTE #2



SEE DETAIL A



THESE VOLTAGES ARE FOUND ON TWO SIDE



MEN Ø1  
DETAIL B

REV	CHANGE NO.	DATE	BY	CHK'D	DATE
1	12-00004	2-13-69	Betty Duda		
2			S. ZNAMIEROWSKI		
3			S. ZNAMIEROWSKI		
4			J. CLAYTON		
5			J. CLAYTON		
6			J. CLAYTON		
7			J. CLAYTON		
8			J. CLAYTON		

FIRST USED ON OPTION/ MODEL:	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	PARTS LIST	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DIMENSIONS IN INCHES	ENG	DATE	TITLE LOGIC FRAME ASSY (EPI2)	
TOLERANCES	PROJ ENG	DATE	SIZE CODE NUMBER REV	
DECIMALS ± .005	PROD	DATE	DAD 7005976-0-0 M	
FRACTIONS ± 1/64			SCALE NONE SHEET 1 OF 1	
ANGLES ± 0°30'			DIST 5	
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS				
MATERIAL	NEXT HIGHER ASSY. A-ML-EPI2-0			
FINISH				

DAD 7005976-0-0 M

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

MADE BY G. GIANOULIS	CHECKED K. RUSS	SECTION 1
DATE 9/16/68	DATE 12/30/68	ISSUED SECT. 1
ENG <i>D. Paramore</i>	PROD <i>W. Call</i>	1
DATE 1/7/69	DATE 1/7/69	

QUANTITY / VARIATION

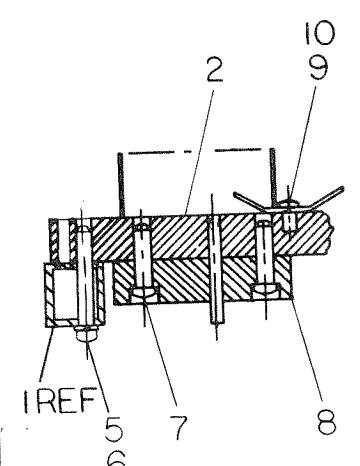
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	D-IA-7407207-0-0	LOGIC FRAME																					
2	D-IA-7406100-0-0	MTG BAR																					
3	9105740-5	#30 AWG SOLID TEF INS WIRE YELLOW	A/R																				
4	9105740-7	#30 AWG SOLID TEF INS WIRE BLUE	A/R																				
5	9008210	SCR PH HD PAN #8-32 x 1 SST W/NYLON PATCH	8																				
6	9006634	WASHER INT TOOTH #8	8																				
7	9006120	SCR PHL HD FIL POSI DRIVE #8-32 x 5/8 CPS	80																				
8	E-SC-1205348-0-0	288 PIN CONN BLOCK	40																				
9	9006121	SCR PHL HD FIL POSI DRIVE #8-32 x 3/8 CPS	20																				
10	9007597	TERMINAL #2116-08-00 SHAKIPROOF	20																				
11	1205541	STRIP, BUS	A/R																				
12	9107560-1	#22 AWG WIRE BUS	A/R																				
13	9107265	TUBING TEFLON #22 WHT	A/R																				
14	A-DC-7406370-0-0	LOGIC FRAME DECALS	A/R																				
REF	K-ML-EPI2-0-3	WIRE LIST																					
TITLE		LOGIC FRAME ASSY (EPI2)	ASSY NO. D-AD-7005976-0-0		SIZE CODE <b>A PL</b>		NUMBER 7005976-0-0				REV <b>M</b>		ECC NO. EPI2-00046										
SHEET		1	OF		1		DIST.		<b>6</b>														



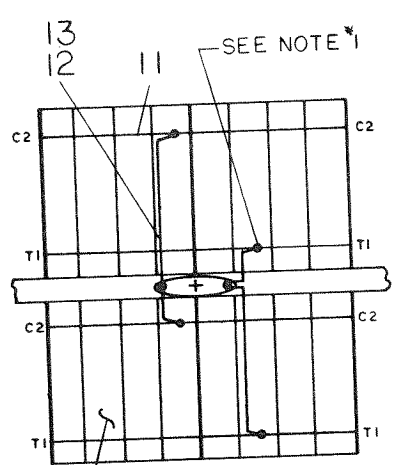


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- NOTES:
1. CONNECTIONS ON ITEMS #11 & #12 TO BE SOLDERED AND LOCATED AT MINIMUM PRACTICAL HEIGHT ABOVE BOARD.
  2. ALL CONN BLOCKS TO BE GROUNDED TO GND LUGS AS SHOWN.
  3. USE YELLOW WIRE (ITEM #3) FOR MACHINE WRAPPED & BLUE WIRE (ITEM #4) FOR HAND WRAPPED WIRE.
  4. SIDE #1 PINS OF E4Φ & F4Φ ARE GND.

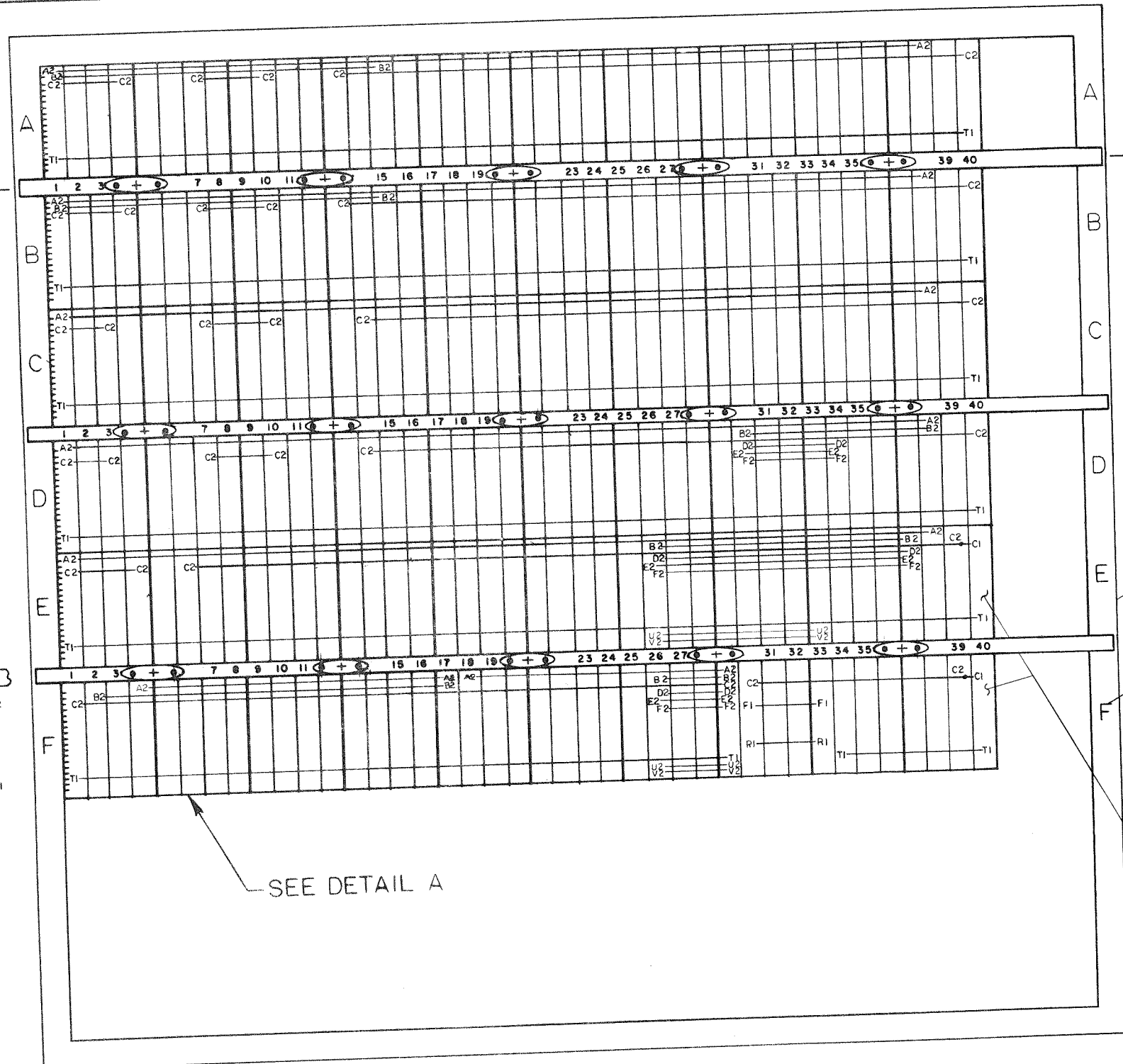


SECTION A-A  
SCALE 1/1



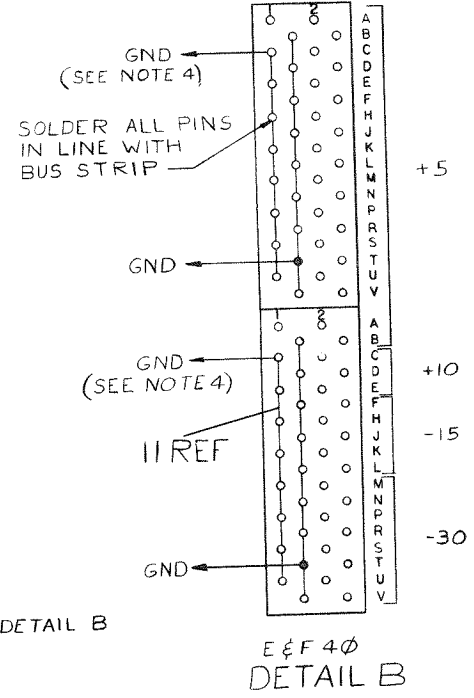
DETAIL A  
15 PLACES  
SEE NOTE #2

SEE NOTE #3



SEE DETAIL A

SEE DETAIL B



E & F 4Φ  
DETAIL B

REV.	CHG.	NO.	DATE	BY
A	12-00004		2-11-69	Betty Urdor
B	12-00006		2/12/69	S. ZNAMIEROWSKI
C	12-00009		3-7-69	CLAYTON
D	12-00010		3/11/69	ZNAMIEROWSKI
E	EM12-00001		3/14/69	GALE
F	EM12-00006		7-30-69	GALE
G	EM12-00008		8-15-69	GALE
H	EM12-00018		11-30-69	GALE
J	EM12-00018		11-30-69	GALE

FIRST USED ON OPTION MODEL:	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	PARTS LIST	
DIMENSION IN INCHES	CHK'D	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES	ENG.	DATE	TITLE	
DECIMALS = .005	PROJ. ENG.	DATE	LOGIC FRAME ASSY (EM12)	
FRACTIONS = 1/64	PROD.	DATE	SIZE CODE NUMBER	
ANGLES = 0°30'			D AD7005979-0-0	
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS			REV. J	
MATERIAL	NEXT HIGHER ASSY		SCALE NONE	
FINISH	A-ML-EM12-0		SHEET 1 OF 1	
			DIST.	

PART NO. AD7005979-0-0

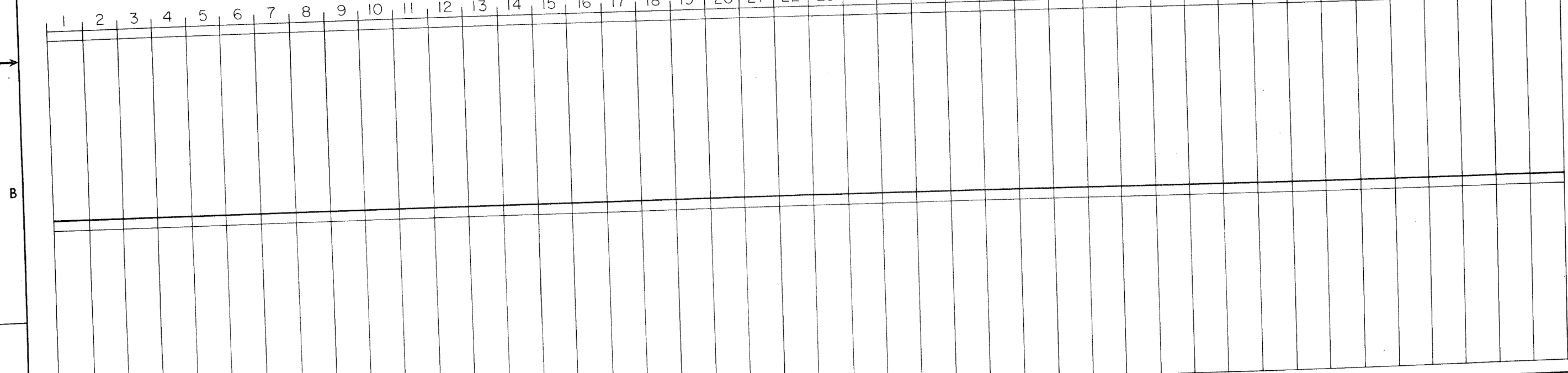
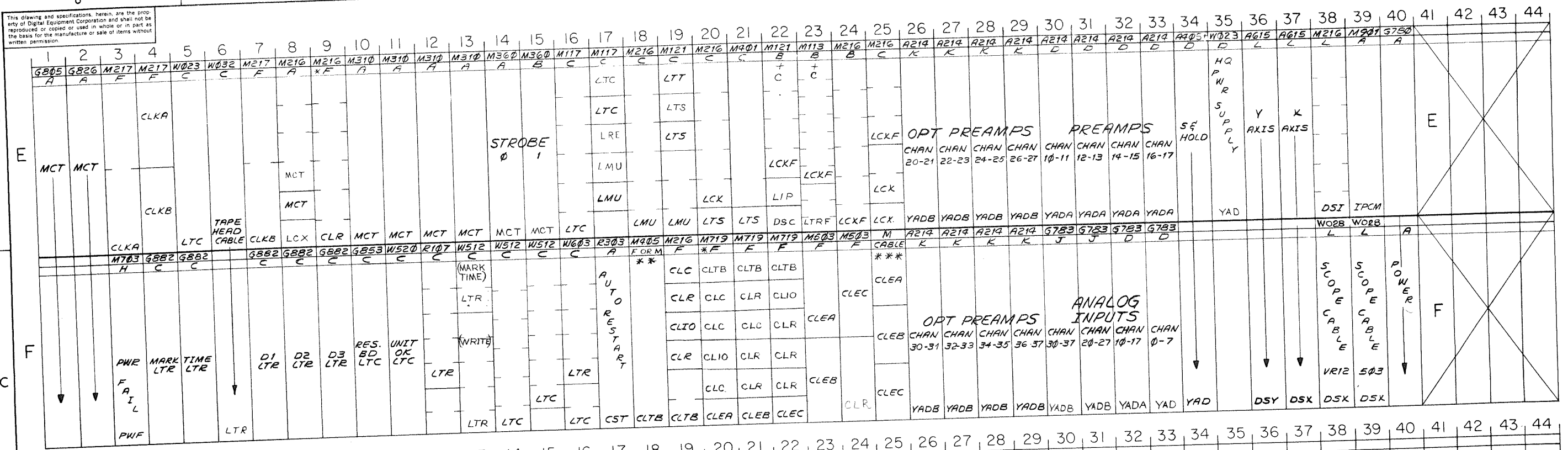


DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS <b>PARTS LIST</b>					QUANTITY / VARIATION														
MADE BY G. GIANOULIS		CHECKED K. RUSS		SECTION															
DATE 9/17/68		DATE 12/30/68		1															
ENG <i>[Signature]</i>		PROD <i>D. Call</i>		ISSUED SECT.															
DATE 1/7/69		DATE 1/7/69		1															
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION																	
1	D-1A-7407207-0-0	DOOR FRAME REWORK			1														
2	D-1A-7406100-0-0	MTG BAR			3														
3	9105740-5	#30 AWG SOLID TEF INS WIRE YELLOW			A/R														
4	9105740-7	#30 AWG SOLID TEF INS WIRE BLUE			A/R														
5	9006043-1	SCR PH HD PAN #8-32 x 1 SST			6														
6	9006634	WASHER INT TOOTH #8			6														
7	9006120	SCR PHL HD FIL POSI DRIVE #8-32 x 5/8 CPS			60														
8	E-SC-1205348-0-0	288 PIN CONN BLOCK			30														
9	9006121	SCR PHL HD FIL POSI DRIVE #8-32 x 3/8 CPS			15														
10	9007597	TERMINAL #2116-08-00 SHAKEPROOF			15														
11	1205541	STRIP, BUS			A/R														
12	9107560-1	#22 AWG WIRE BUS			A/R														
13	9107265	TUBING TEFLON #22 WHT			A/R														
14	A-DC-7406370-0-0	LOGIC FRAME DECALS			A/R														
REF	K-WL-EM12-0-4	WDRE LIST																	
TITLE		ASSY NO.		SIZE	CODE	NUMBER		REV.	ECO NO.										
LOGIC FRAME ASSY (EM12)		D-AD-7005979-0-0		A	PL	7005979-0-0		J	EM12-00018										
		SHEET 1 OF 1		DIST.	G														

DEC FORM NO.  
DRA 110



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CHK	REV	CHANGE NO.	DATE
DWB	A	0000.2	11-24-69
LGALE	B	0000.3	11-24-69
LGALE	C	0000.4	11-24-69
LGALE	D	0000.5	11-24-69
LGALE	E	0000.6	11-24-69
LGALE	F	0000.7	11-24-69
LGALE	G	0000.8	11-24-69
LGALE	H	0000.9	11-24-69
LGALE	I	0000.10	11-24-69
LGALE	J	0000.11	11-24-69
LGALE	K	0000.12	11-24-69
LGALE	L	0000.13	11-24-69
LGALE	M	0000.14	11-24-69
LGALE	N	0000.15	11-24-69
LGALE	O	0000.16	11-24-69
LGALE	P	0000.17	11-24-69
LGALE	Q	0000.18	11-24-69
LGALE	R	0000.19	11-24-69
LGALE	S	0000.20	11-24-69
LGALE	T	0000.21	11-24-69
LGALE	U	0000.22	11-24-69
LGALE	V	0000.23	11-24-69
LGALE	W	0000.24	11-24-69
LGALE	X	0000.25	11-24-69
LGALE	Y	0000.26	11-24-69
LGALE	Z	0000.27	11-24-69

\*\* USE M401 WITH KW12-B  
 USE M405 WITH KW12-A  
 OR KW12-C  
 + EM12 REV U OR LOWER  
 USES A404.

MEMORY  
 A=EM12  
 B=MC12  
 C=TC12  
 D=AD12  
 E=TC12B  
 F=KW12-A  
 H=KP12  
 J=AM12  
 K=AG12  
 L=VC12  
 M=KW12-B, KW12-C

\* USE W023 WITH PINS  
 C2-P2 JUMPED IN SLOT  
 E0 AND M908 WITH PINS C2-E1  
 JUMPERE IN SLOT F20 WHEN  
 KW12A IS NOT INSTALLED

\*\*\* USE M870 WITH KW12B  
 OR KW12C.

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN DATE 11-24-69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
TOLERANCES DECIMALS FRACTIONS ANGLES ± .005 ± .154 ± 0°30'	CHK DATE 2/27/69	TITLE MODULE UTILIZATION (MEMORY)
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	ENG DATE 2-28-69	SIZE CODE D MU EM12-0-2
MATERIAL	PROJ ENG DATE 2-28-69	NUMBER M
FINISH	PROD DATE 2-28-69	REV M
FIRST USED ON PDP-12	SCALE SHEET 1 OF 1	DIST.









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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
Ground	F40V1	F28T1	Black	
	F40U1	F28C2		
	F40T1	F01C2		
	F40S1	F34C2		
	F40R1	F01T1		
	F40P1	F39C2		
	F40N1	E01C2		
	F40M1	E06C2		Wire is #24
	F40LI	E01T1		A.W.G.
	F40KI	E39C2		
	F40JI	D01T1		
	F40WI	DO1C2		
	F40FI	DI0C2		
	F40EI	DI4C2		
	F40D1	D40T1		
	F40C1	D40C2		
	F40B1	C01T1		
	E40VI	C01C2		
	E40U1	C10C2		
	E40T1	C14C2		
	E40S1	C40T1		
	E40R1	C40C2		
	E40P1	B01T1		
	E40N1	B01C2		
	E40M1	B10C2		
	E40L1	B13C2		

REVISIONS				DRN. <i>J. Scanlon</i>	DATE 3/19/69	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>	<b>GENERAL WIRING SHEET</b> FOR DC Power Memory Logic
REV.	DATE	CHG. NO.	APP'D.	CHK'D. <i>J. Scanlon</i>	DATE 3/11/69		
A	4/69	00001		ENG. <i>L. Hale</i>	DATE 3/11/69		
B	11-20-69	EM12-00018		PROJ. ENG. <i>L. Hale</i>	DATE 3/11/69		
				PROD. <i>D. Call</i>	DATE 3/11/69		
				FIRST USED ON		SIZE CODE	NUMBER
						A WL	EM12-0-4
						SCALE	REV. B
				SHEET 1 OF 3		DIST.	

SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
Ground	E40K1	B40T1	Black	
	E40J1	B40C2		
	E40H1	A01T1		
	E40E1	A01C2		
	E40D1	A10C2		
	E40C1	A13C2		Wire is #24
	E40B1	A40T1		A. W. G.
	E40D1	A40C2		
	E40F1	B19C2		
	E40H1	A19C2		
	F40V1	E01P2		
	F40U1	F01L2		
+5V	F40A2	F02A2	RED	
	E40V2	E38A2		
	E40U2	E01A2		
	E40T2	D38A2		
	E40S2	D01A2		
	E40R2	C38A2		
	E40P2	C01A2		
	E40N2	B38A2		
	E40M2	B01A2		
	E40L2	A38A2		
	E40K2	A01A2		
	E40J2	B19A2		
	E40H2	A19A2		
	F40B2	F29A2		

REVISIONS				DRN. <i>J. Scanlon</i>	DATE 3/19/69	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>	<b>GENERAL WIRING SHEET</b> FOR DC POWER Memory Logic
REV.	DATE	CHG. NO.	APP'D.	CHK'D. <i>J. Scanlon</i>	DATE 3/11/69		
				ENG. <i>L. Hale</i>	DATE 3/11/69		
				PROJ. ENG. <i>L. Hale</i>	DATE 3/11/69		
				PROD. <i>D. Call</i>	DATE 3/11/69		
				FIRST USED ON		SIZE CODE	NUMBER
						A WL	EM12-0-4
						SCALE	REV. B
				SHEET 2 OF 3		DIST.	

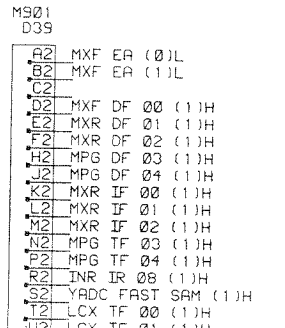
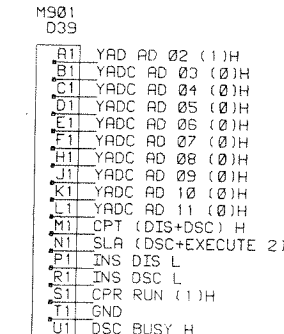
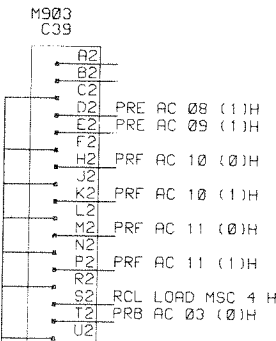
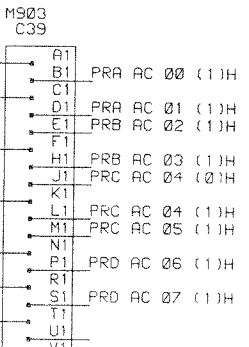
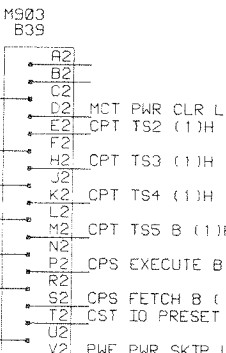
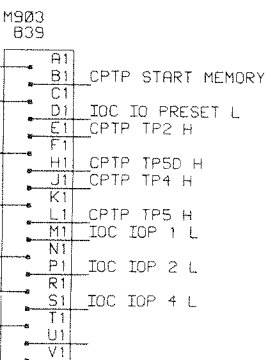
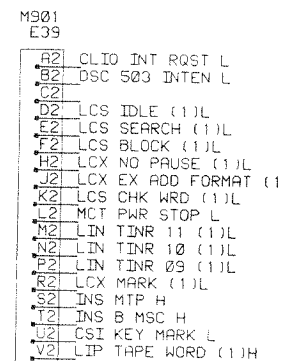
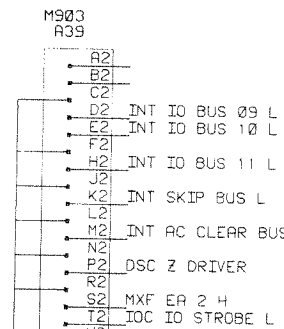
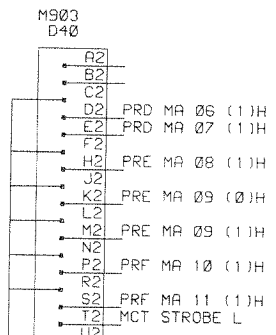
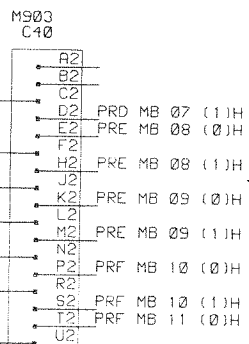
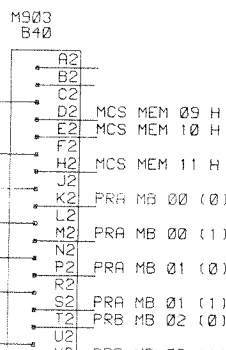
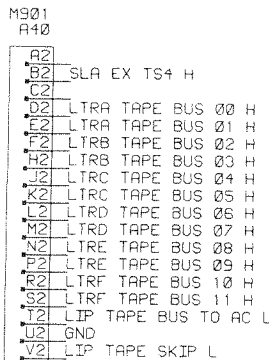
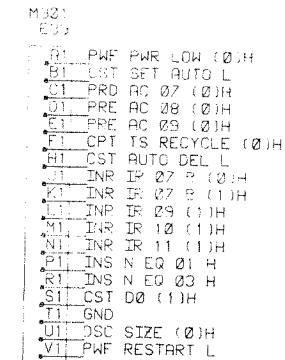
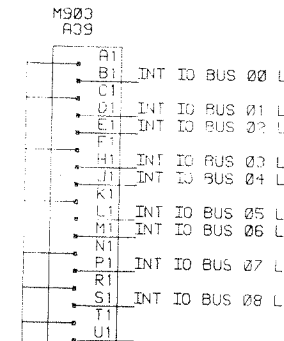
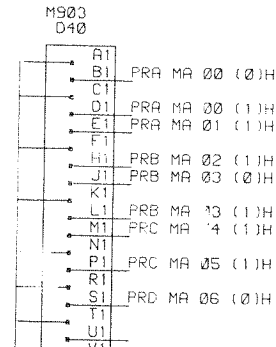
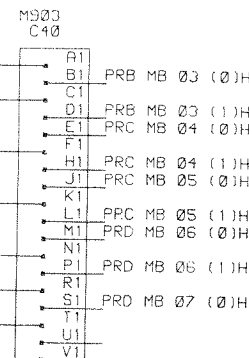
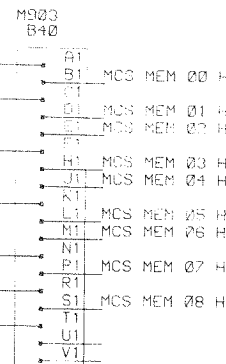
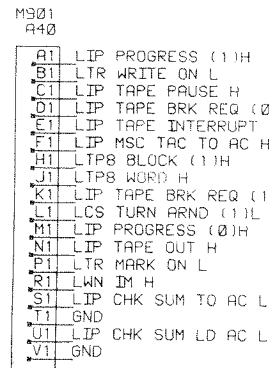
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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
+10V	F4ØD2	F17A2	Green	
-15V	F4ØL2	F29B2	Blue	
	F4ØK2	FØ2B2		
	F4ØJ2	E37B2		
	F4ØH2	D33B2		Wire is #24
	F4ØF2	AØ1B2		A. W. G.
	F4ØK2	EØ1B2		
-30V	F4ØN2	F4ØP2	Yellow	
	F4ØM2	F4ØN2		
	F4ØP2	EØ1E2		
	F4ØR2	F4ØS2		
	F4ØS2	EØ1F2		
	E4Ø42	E4ØV2		
	F4ØT2	F4Ø42		
	F4ØV2	EØ1H2		
+5V	E4ØF2	C19A2		
	E4ØE2	D19A2		
MCT X R/W SOURCE	CØ1K1	CØ7T2	GREEN	
MCT Y R/W SOURCE	CØ1S1	CØ2T2	GREEN	

REVISIONS				DRN. <i>J. Scanlon</i>	DATE 3/10/69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE <b>GENERAL WIRING SHEET</b> FOR DC POWER MEMORY Logic
REV.	DATE	CHG. NO.	APP'D.	CHK'D. <i>J. Scanlon</i>	DATE 3/11/69		
				ENG. <i>L. Gale</i>	DATE 3/11/69		
				PROD. ENG. <i>L. Gale</i>	DATE 3/11/69		
				PROD. <i>D. Call</i>	DATE 3/11/69		
				FIRST USED ON		SIZE CODE	NUMBER
				SCALE		A WL	EM12-0-4
				SHEET 3 OF 3		DIST.	REV. B



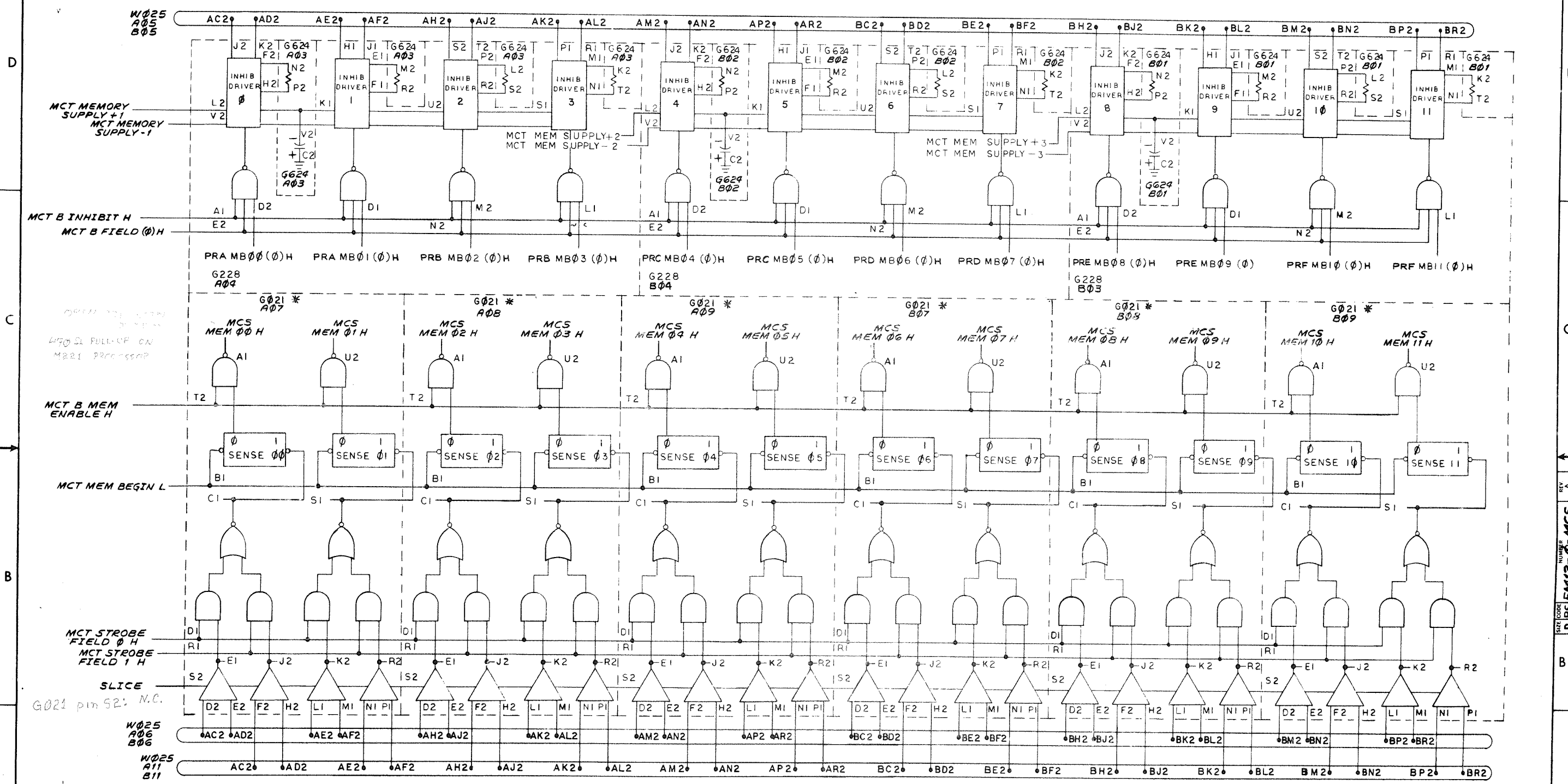
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REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00002	A	NR	EM12-00015	E
J	FASSHAUSER 4-15-69			ADS	
L	GALE 4-29-69		J	SCANLAN	
	EM12-00002	B	NR	EM12-00017	F
A	WASHINGTON 6-15-69		A	WASHINGTON 11-13-69	
L	GALE		J	SCANLAN 11-14-69	
	EM12-00004	C		EM12-00044	H
B	KORTLANG 9-12-69			ADS	
L	GALE 9-12-69		J	SCANLAN	
NR	EM12-00007	D		EM12-00047	J
B	KORTLANG 9-26-69				
L	GALE 9-26-69				

DRN. D.L. SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J.R. BISONETE	DATE 3-9-69	
ENG. L. GALE	DATE 3-9-69	TITLE INTER PROC CABLES
PROJ. ENG. L. GALE	DATE 3-9-69	
PROD. D. CALL	DATE 3-9-69	
FIRST USED ON EM12		
SCALE D BS	SIZE/CODE EM12-0-IPCM	NUMBER J
SHEET 1 OF 1	DIST.	REV. J

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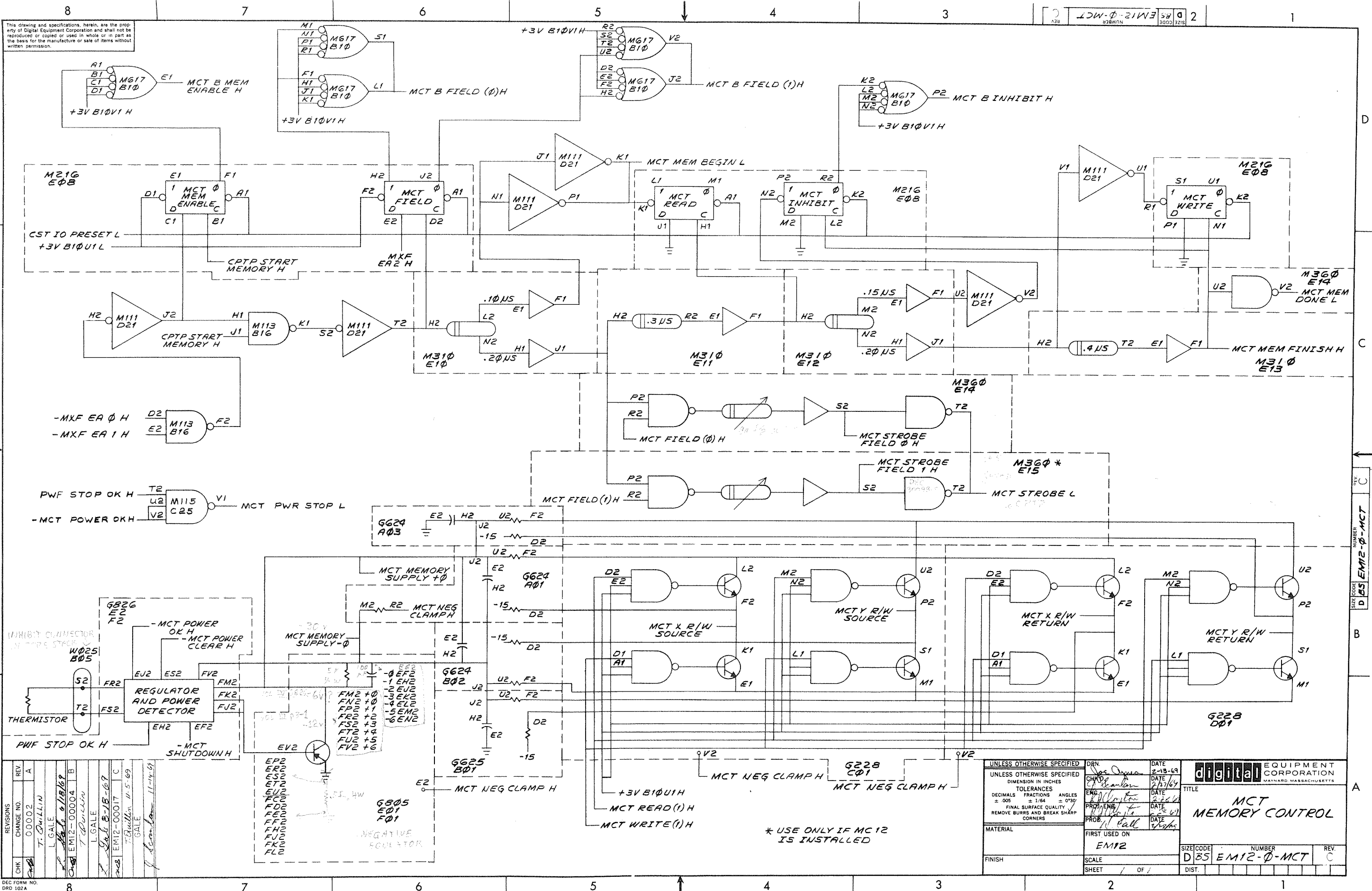


\* USE G020 ONLY IF MC12 IS NOT INSTALLED

REV	A
CHANGE NO	EM12-00003
CHK	WILLIAM G. 2/14/69
REV	1
DATE	2/14/69
BY	WILLIAM G.
CHK	WILLIAM G.
DATE	2/14/69
BY	WILLIAM G.

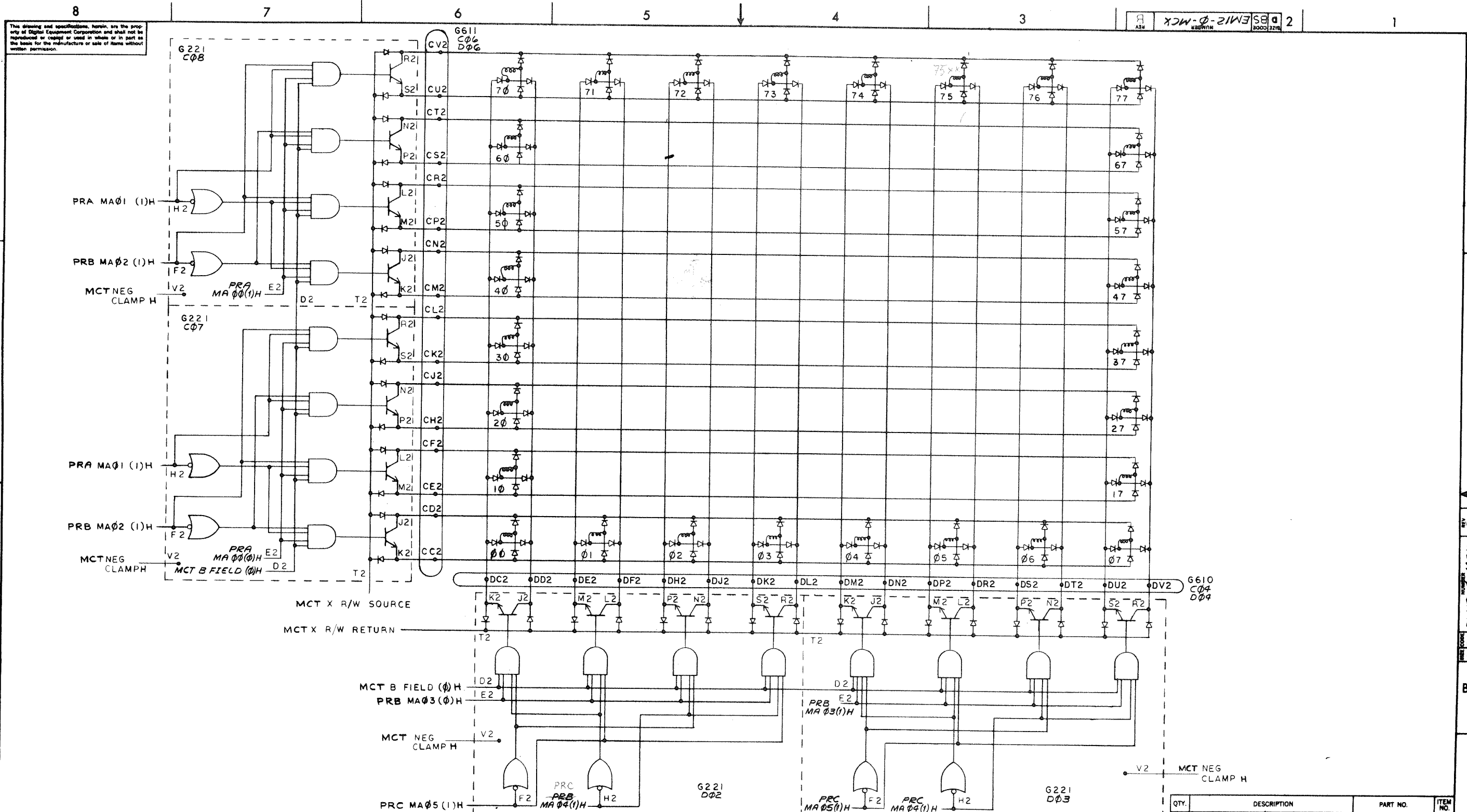
UNLESS OTHERWISE SPECIFIED	DRN	DATE	1-17-68
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	2/27/69
TOLERANCES	ENG	DATE	2-28-69
DECIMALS FRACTIONS ANGLES	PROJ. ENGR	DATE	2-28-69
= .005 ± 1/64 ± 0°30'	PROD	DATE	2/28/69
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL	FIRST USED ON		
FINISH	EM12		
SCALE			
SHEET	OF		
TITLE		digital EQUIPMENT CORPORATION	
MCS		MAINTARD MASSACHUSETTS	
SENSE AMPS & INHIBIT DRIVERS			
SIZE CODE	NUMBER	REV	
D BS	EM12-0-MCS	A	
DIST.			

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REV.	NO.	DATE	BY	CHKD.
A	0002	2-13-69	L. GALE	T. GULLIN
B	0004	2-13-69	L. GALE	T. GULLIN
C	0007	2-13-69	L. GALE	T. GULLIN
D	0011	2-13-69	L. GALE	T. GULLIN

UNLESS OTHERWISE SPECIFIED		DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED		CHKD.	DATE	
DIMENSION IN INCHES		ENG.	DATE	TITLE <b>MCT MEMORY CONTROL</b>
TOLERANCES		PROB.	DATE	
DECIMALS	FRACTIONS	ANGLES	DATE	
± .005	± 1/64	± 90°	DATE	
FINAL SURFACE QUALITY		PROB.	DATE	SIZE CODE DB5 EM12-0-MCT
REMOVE BURRS AND BREAK SHARP CORNERS		PROB.	DATE	
MATERIAL		FIRST USED ON		NUMBER REV. C
FINISH		EM12		
SCALE		SHEET / OF /		DIST.
SHEET / OF /		SHEET / OF /		



REV	CHANGE NO.	REV
1	EM12-00015	A
2	EM12-00030	B

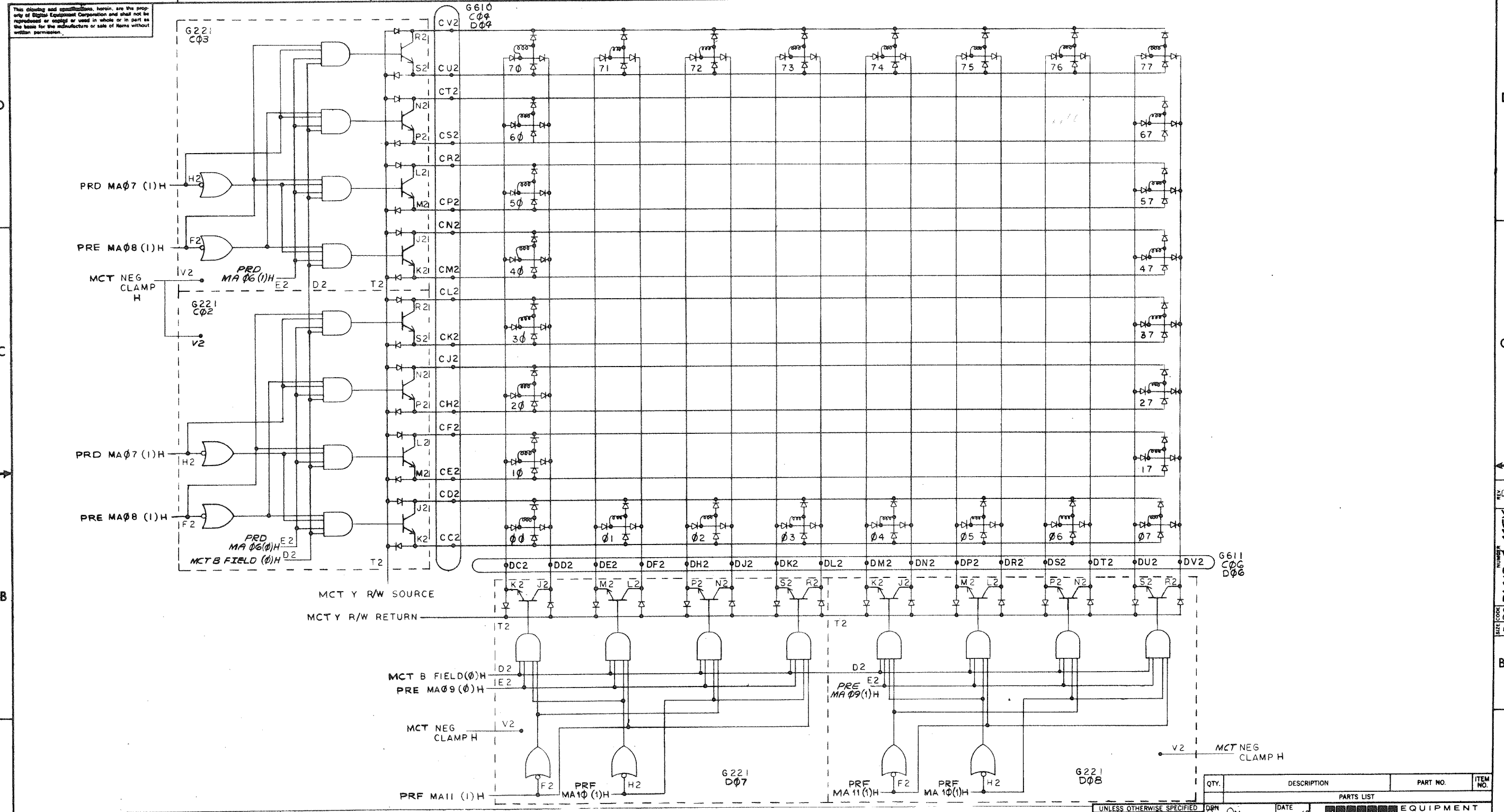
L. GALE  
 T. GALE  
 J. GALE  
 J. GALE  
 J. GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	± .005 ± 1/64 ± 0°30'		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	± .005 ± 1/64 ± 0°30'		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		

DRG	DATE	1-28-69
CHKD	DATE	2/5/69
ENG	DATE	2-28-69
PROJ. ENG.	DATE	2-28-69
PROG.	DATE	2/28/69

TITLE		digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
MCMX X AXIS SELECTION			
FIRST USED ON	EM12	SIZE CODE	D/BS
SCALE		NUMBER	EM12-0-MCX
SHEET	1	OF	1
DIST.		REV.	B

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REV.	CHANGE NO.	DATE
A	EM12-00015	1-20-69
B	EM12-00030	2-28-69

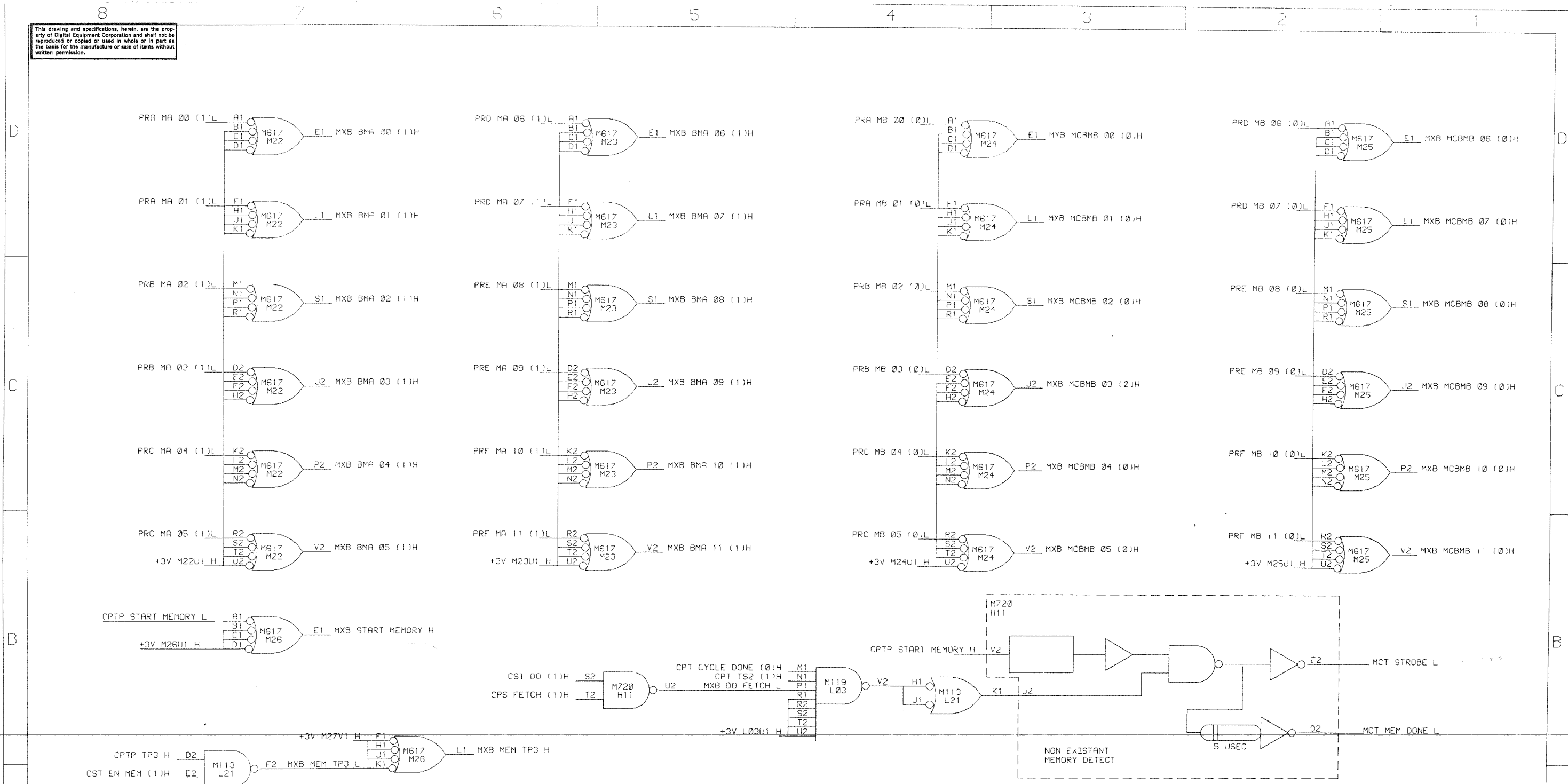
L. GALE  
 T. Quillen 3-2-70  
 GALE  
 3-4-70

UNLESS OTHERWISE SPECIFIED:  
 DIMENSION IN INCHES  
 DECIMALS FRACTIONS ANGLES  
 = .005 = 1/64 = 0°30'  
 FINAL SURFACE QUALITY  
 REMOVE BURRS AND BREAK SHARP CORNERS

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
TITLE			
MCY Y AXIS SELECTION			
FIRST USED ON			
EM12			
SCALE		SIZE CODE	NUMBER
SHEET OF		DBS	EM12-φ-MCY
		DIST.	REV. B



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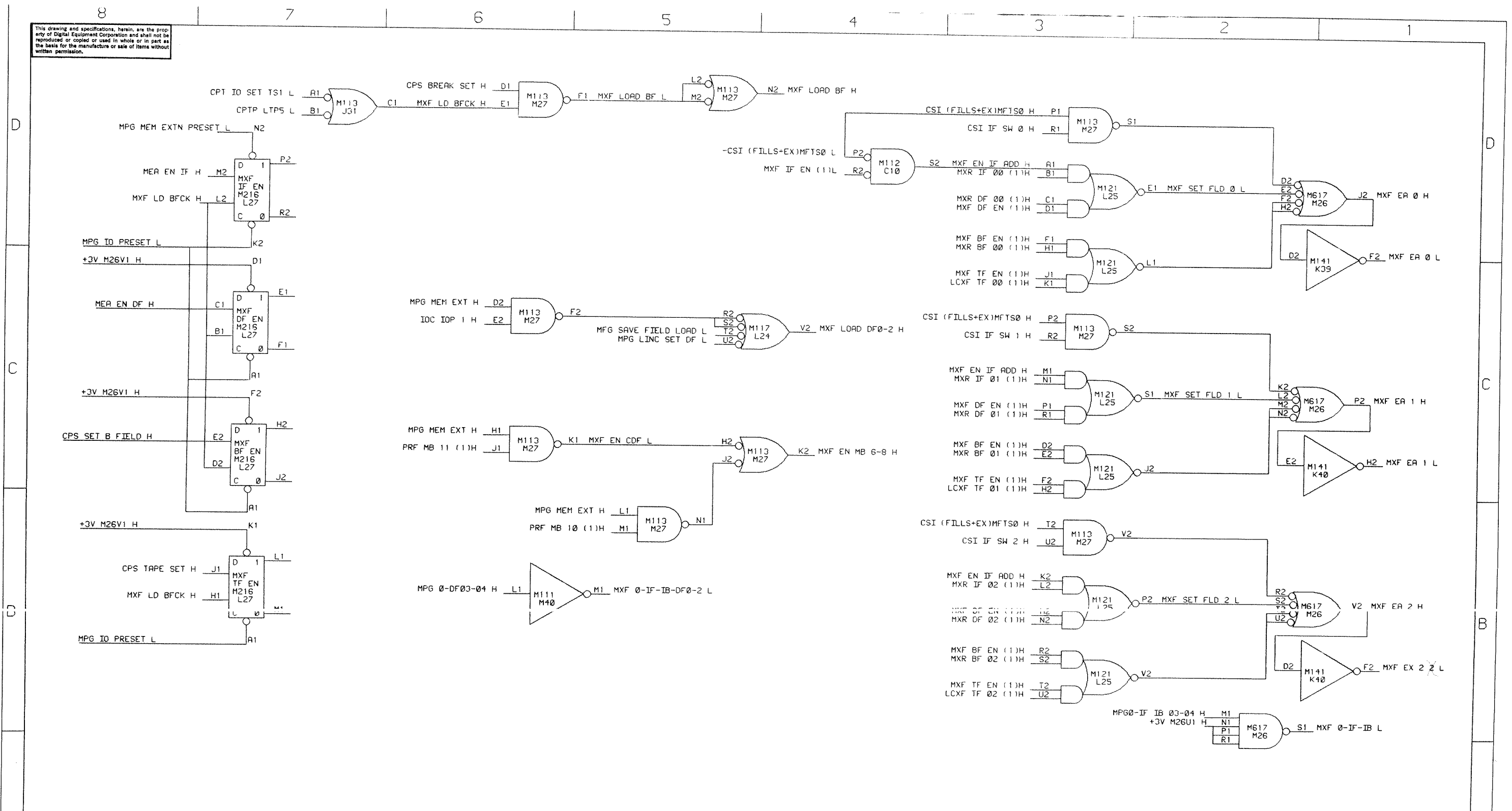


REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
PD	EP12-00002	B
	A WASHINGTON 5/20/69	
	J SCANLAN 5/22/69	
GH	EP12-00026	C
	S. GOLDSBY 9-1-70	
	D. MACKLIN 9-2-70	
	EP12-00030	D
	10/11/71	

DRN D SHEPARD	DATE 2/20/69	digital CORPORATION WAYNARD, MASSACHUSETTS
CHKD J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE MEM EX1N BUFFER
PROJ. ENG L GALE	DATE 2/20/69	
PROD D CALL	DATE 2/20/69	
FIRST USED ON MC12	SIZE CODE D BS	NUMBER MC12-0-MXB
SCALE		REV. D
SHEET 1 OF 1	DIST.	



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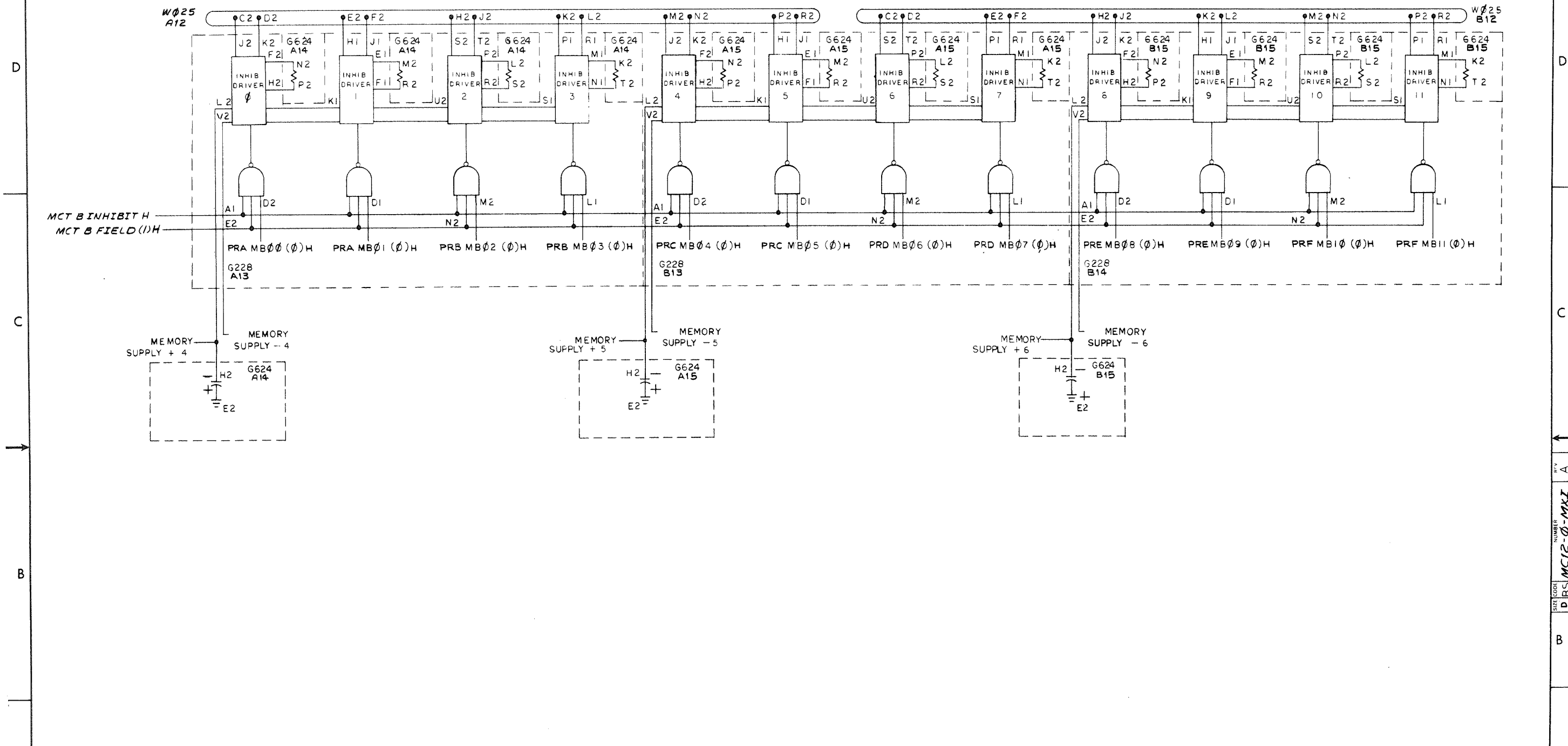


REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00001	A	NR	EP12-00007	E	GH	EP12-00026	K
	ADS			A. WASHINGTON 8/15/69			S. GOLDSBY 9-1-70	
	J. SCANLAN 3/13/69			L. GALE 8/20/69			D. MACKLIN 9-2-70	
	EP12-00003	B	NR	EP12-00009	F	J.W.	EP12-00030	L
	A. WASHINGTON 5/20/69			A. WASHINGTON 8/20/69				
	J. SCANLAN 5/22/69			J. SCANLAN 8/20/69				
	EP12-00004	C		EM12-00015	H			
	A. WASHINGTON 7/9/69			K. BOGGS 10/14/69				
	J. SCANLAN			J. SCANLAN 10/17/69				
	NR	EP12-00006	D	FV	EP12-00021	J		
	A. WASHINGTON 8/6/69			D. SOUTHER 6/17/70				
	J. SCANLAN 8/6/69			J. SCANLAN 6/17/70				

DRN.	D. SHEPARD	DATE	2/20/69	<b>digital</b> CORPORATION MAYNARD, MASSACHUSETTS
CHKD.	J. BISONETE	DATE	2/20/69	
ENG.	L. GALE	DATE	2/20/69	TITLE
PROJ. ENG.	L. GALE	DATE	2/20/69	MEM EXTN FIELD
PROD.	D. CALL	DATE	2/20/69	
FIRST USED ON				
MC12		SIZE CODE	D BS	NUMBER
SCALE				MC12-0-MXF
SHEET	1	OF	1	REV.
				L

1027 36

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REV.	CHANGE NO.	DATE	BY
1	EM12-0003	A	
2	T. D. W. 6-24-69		
3	J. GALE		
4	J. GALE	8/5/69	

DEC FORM NO. 500 102

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DATE 1-20-69	
DIMENSION IN INCHES		DATE 2/21/69	
TOLERANCES		DATE 2-28-69	
DECIMALS	FRACTIONS	ANGLES	DATE 2-28-69
= .005	= 1/64	= 0°30'	DATE 2/28/69
FINAL SURFACE QUALITY		DATE 2/28/69	
REMOVE BURRS AND BREAK SHARP CORNERS		DATE 2/28/69	
MATERIAL		FIRST USED ON	
FINISH		MC12	
SCALE		SIZE CODE	NUMBER
SHEET		D B S	MC12-0-MXI
OF		DIST.	REV A

SIZE CODE D B S  
 NUMBER MC12-0-MXI  
 REV A







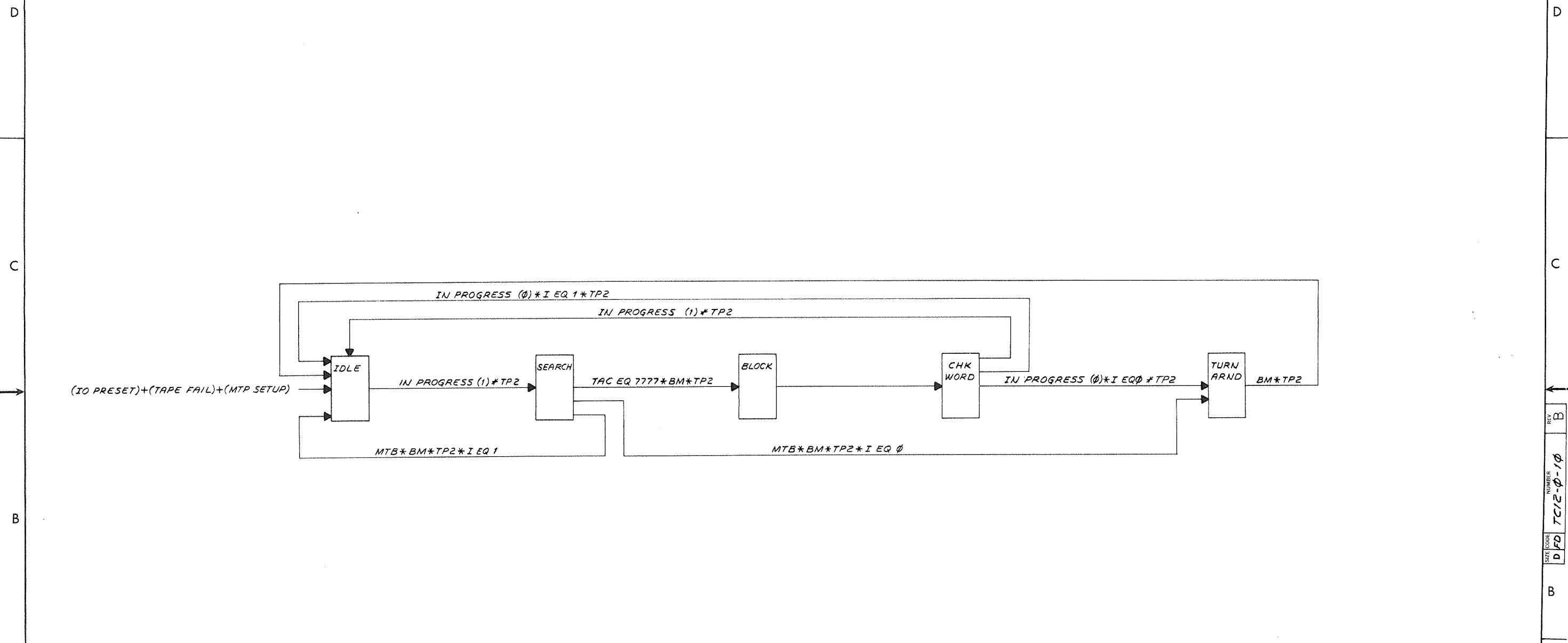






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REV. 2  
 SIZE CODE DFD  
 NUMBER TC12-φ-10



REV	CHANGE NO.	CHK	DATE
A	00002	mes	10/12/68
B	00015	L. GALE	10/12/68

DEC FORM NO. DRD 102A

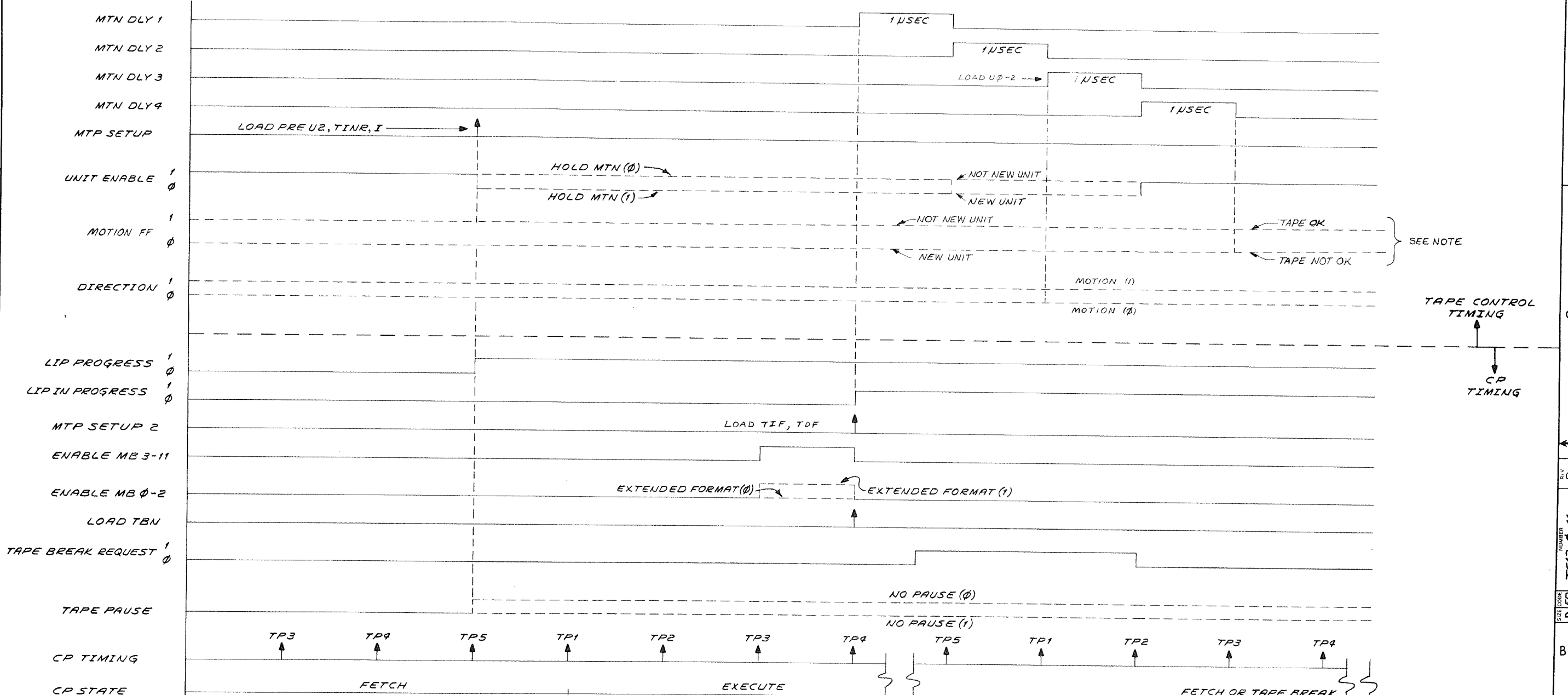
QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRN	DATE
UNLESS OTHERWISE SPECIFIED		CHKD	DATE
DIMENSION IN INCHES		ENG	DATE
TOLERANCES		PRD	DATE
DECIMALS ± .005	FRACTIONS ± 1/64	ANGLES ± 0°30'	DATE
FINAL SURFACE QUALITY		PROD	DATE
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL		FIRST USED ON	
FINISH		SCALE	
		SHEET 1 OF 1	
		SIZE CODE DFD	NUMBER TC12-φ-10
		DIST.	REV. B

**digital** EQUIPMENT CORPORATION  
 MAYNARD, MASSACHUSETTS

TITLE  
**TAPE PROCESSOR**  
**MJR. ST. FLOW**

REV. B  
 NUMBER TC12-φ-10  
 SIZE CODE DFD

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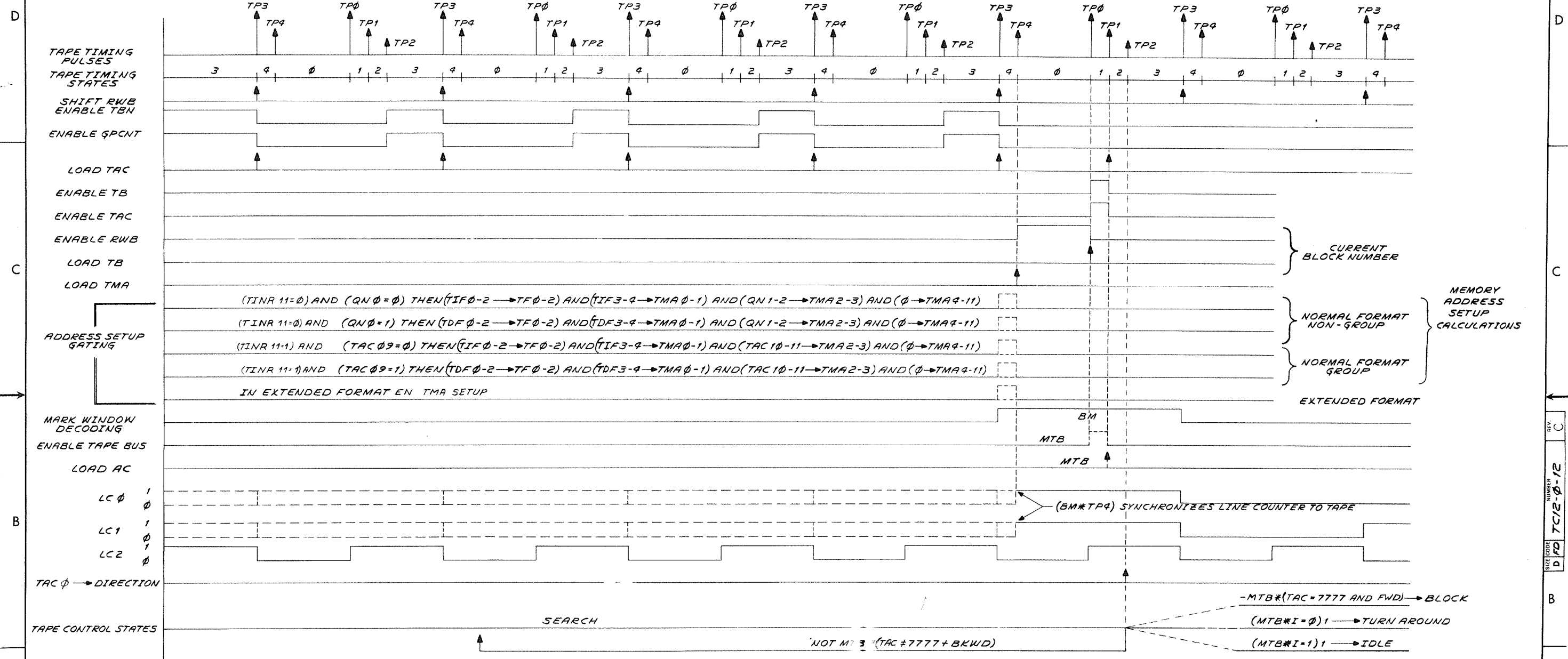
NOTE: TAPE FAIL SETS MOTION WHEN TAPE BECOMES OK.

PAUSE HERE FOR TAPE DATA REQUEST IF NO PAUSE (0)

REV.	CHANGE NO.	DATE	BY
A	00002	11/18/69	T. GALE
B	EM12-00003	11/24/69	T. GALE
C	EM12-00015	11/24/69	T. GALE
D	EM12-00017	11-5-69	T. GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
digital CORPORATION MAYNARD, MASSACHUSETTS			
UNLESS OTHERWISE SPECIFIED		DRN. 11-24-69	DATE 2/2/69
UNLESS OTHERWISE SPECIFIED		CHKD. T. GALE	DATE 2-18-69
DIMENSION IN INCHES		ENG. T. GALE	DATE 2-18-69
TOLERANCES		PROJ. ENG. T. GALE	DATE 2-18-69
DECIMALS FRACTIONS ANGLES		PROD. T. GALE	DATE 2-18-69
= .005 = 1/64 = 0°30'			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL	FIRST USED ON	SCALE	SIZE CODE
	TC12		D FD
FINISH		SHEET 1 OF 1	NUMBER
			TC12-0-11
			REV. D

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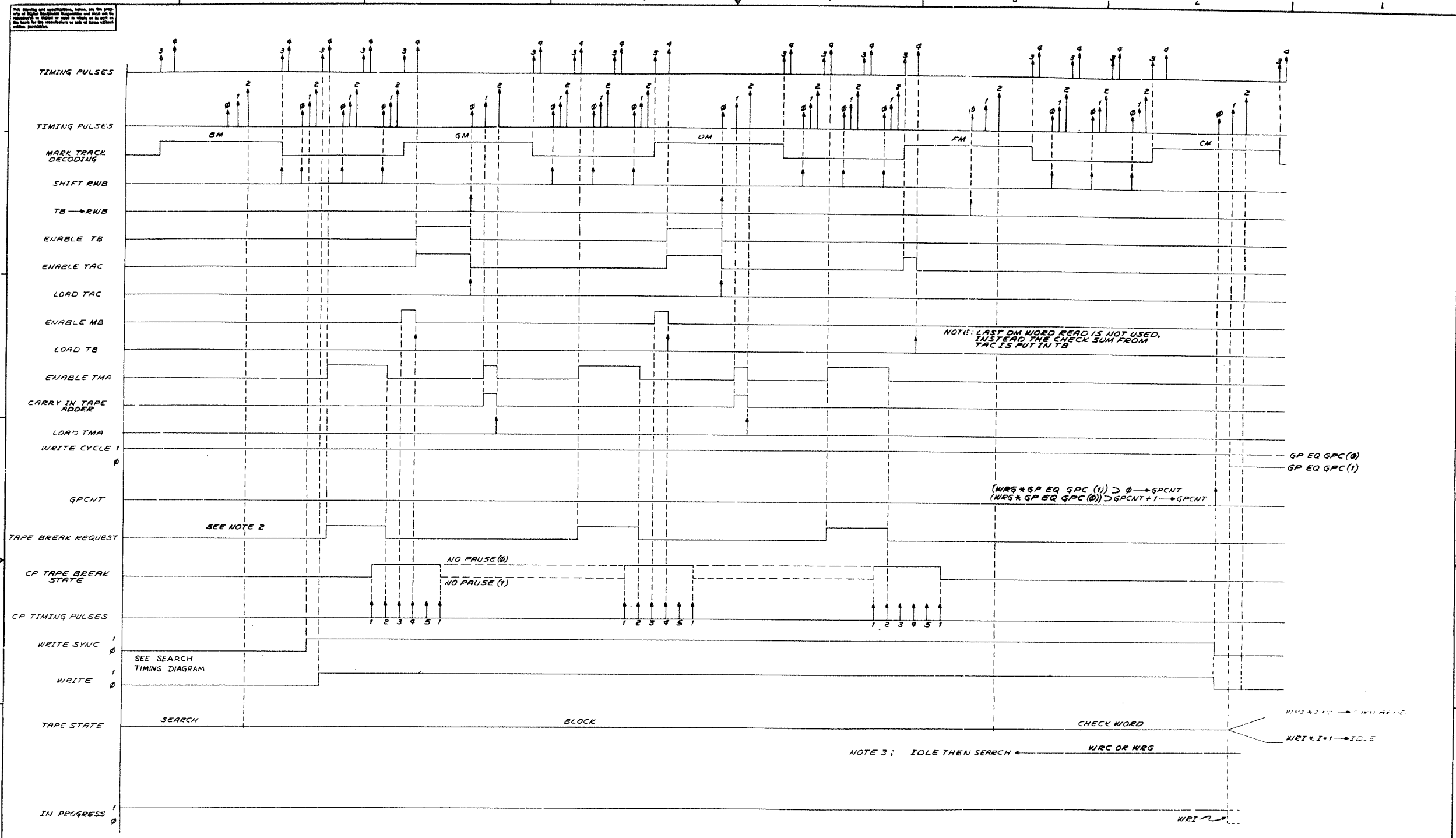


NOTE: TIMING NOT SHOWN TO SCALE. TP0 & TP3 ARE DERIVED FROM ZERO CROSSINGS OF TAPE TIMING TRACK. TP0 & TP3 ARE SEPARATED BY APPROXIMATELY 15 USEC. TTS1, TTS2, TTS4 ARE EACH 0.5 USEC.

REV.	CHG. NO.	BY	DATE
A	00002	T. GUILLEN	6/18/69
B	EM12-00003	T. GUILLEN	6/24/69
C	EM12-00015	L. GALE	8/1/69
D	EM12-00015	L. GALE	10/17/69

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRN. <i>[Signature]</i>	DATE 11-25-68
UNLESS OTHERWISE SPECIFIED		CHKD. <i>[Signature]</i>	DATE 2/17/69
DIMENSION IN INCHES		ENG. <i>[Signature]</i>	DATE 2-28-69
TOLERANCES		PROL. ENG. <i>[Signature]</i>	DATE 2-28-69
DECIMALS = .005		PRODD. <i>[Signature]</i>	DATE 4/28/69
FRACTIONS = 1/64		TITLE	
ANGLES = 0°30'		SEARCH TIMING	
FINAL SURFACE QUALITY		FIRST USED ON	
REMOVE BURRS AND BREAK SHARP CORNERS		TC12	
MATERIAL		SCALE	SIZE CODE
FINISH		SHEET / OF /	NUMBER
		DIST.	TC12-0-12
			REV. C





NOTE: LAST DM WORD READ IS NOT USED, INSTEAD THE CHECK SUM FROM TAC IS PUT IN TB

$(WRS * GP \text{ EQ } GPC(1)) > 0 \rightarrow GPCNT$   
 $(WRS * GP \text{ EQ } GPC(0)) > GPCNT + 1 \rightarrow GPCNT$

SEE NOTE 2

NO PAUSE (0)

NO PAUSE (1)

SEE SEARCH TIMING DIAGRAM

NOTE 3; I/OLE THEN SEARCH

WRC OR WRS

$WRI * 2 + 1 \rightarrow TURN \text{ RELOC}$

$WRI * I + 1 \rightarrow I/OLE$

- NOTES:
1. TIMING AND MARK TRACK DECODING NOT SHOWN TO SCALE.
  2. TIMING BETWEEN TAPE BREAK REQUEST AND CP TAPE BREAK STATE IS PROGRAM DEPENDENT.
  3. PERFORMS CHECK PHASE WHEN WRITE CYCLE GOES TO ZERO.

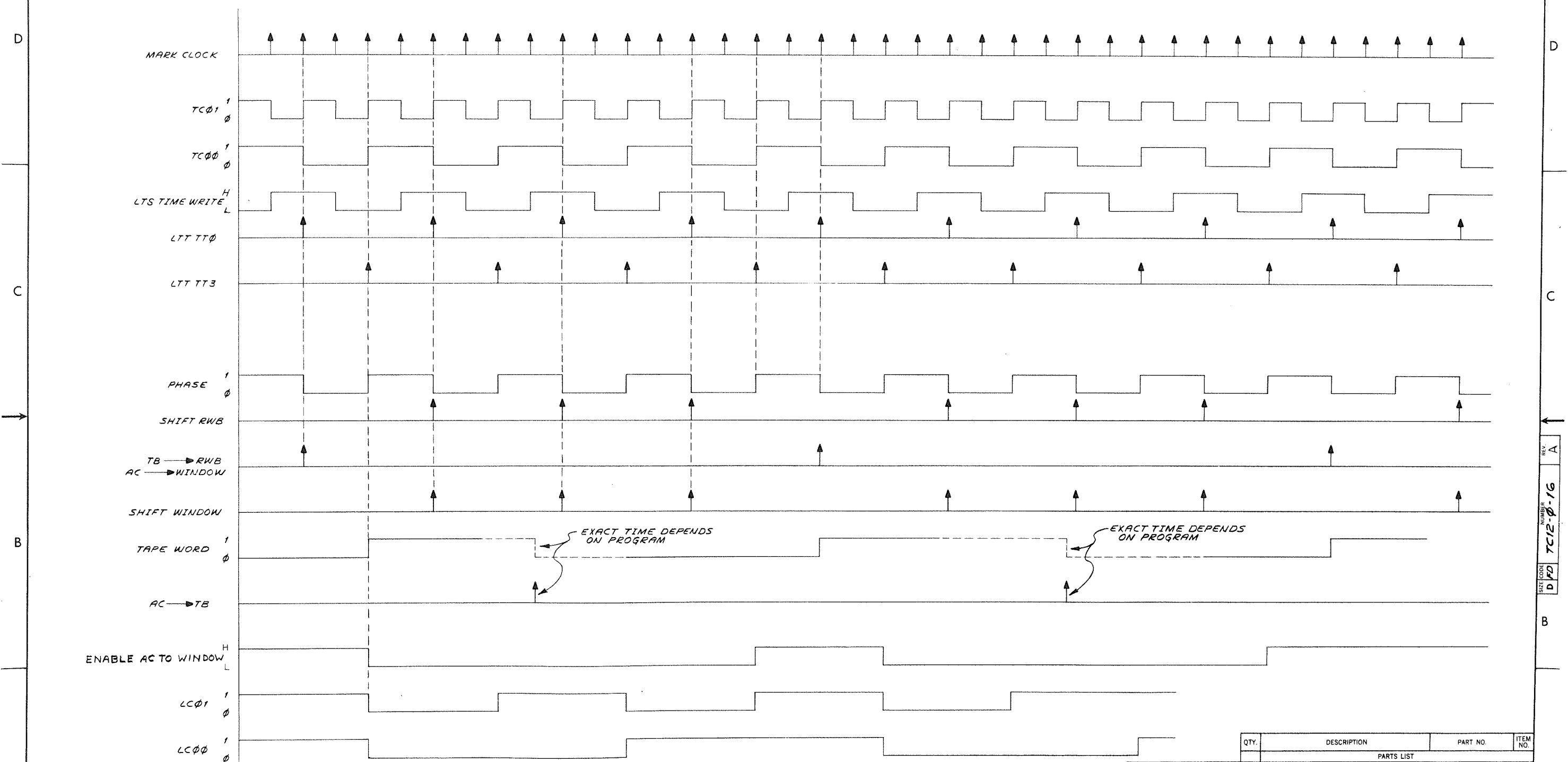
REV	DATE	BY	CHKD
1	11/16/69	L. GALE	
2	11/16/69	L. GALE	
3	11/16/69	L. GALE	
4	11/16/69	L. GALE	
5	11/16/69	L. GALE	
6	11/16/69	L. GALE	
7	11/16/69	L. GALE	
8	11/16/69	L. GALE	

UNLESS OTHERWISE SPECIFIED	DATE	11-16-69
UNLESS OTHERWISE SPECIFIED	TIME	10:00
DIMENSIONS IN INCHES	DATE	11/16/69
TOLERANCES	DATE	11/16/69
DECIMALS FRACTIONS ANGLES	DATE	11/16/69
0.000 0.001 0.010 0.030	DATE	11/16/69
FINAL SURFACE QUALITY	DATE	11/16/69
REMOVE BURRS AND BREAK SHARP CORNERS	DATE	11/16/69
MATERIAL	FIRST USED ON	PDP-12
FINISH	SCALE	EFDTC12-0-1A
SHEET	OF	

digital EQUIPMENT CORPORATION  
**BLOCK MODE WRITE**



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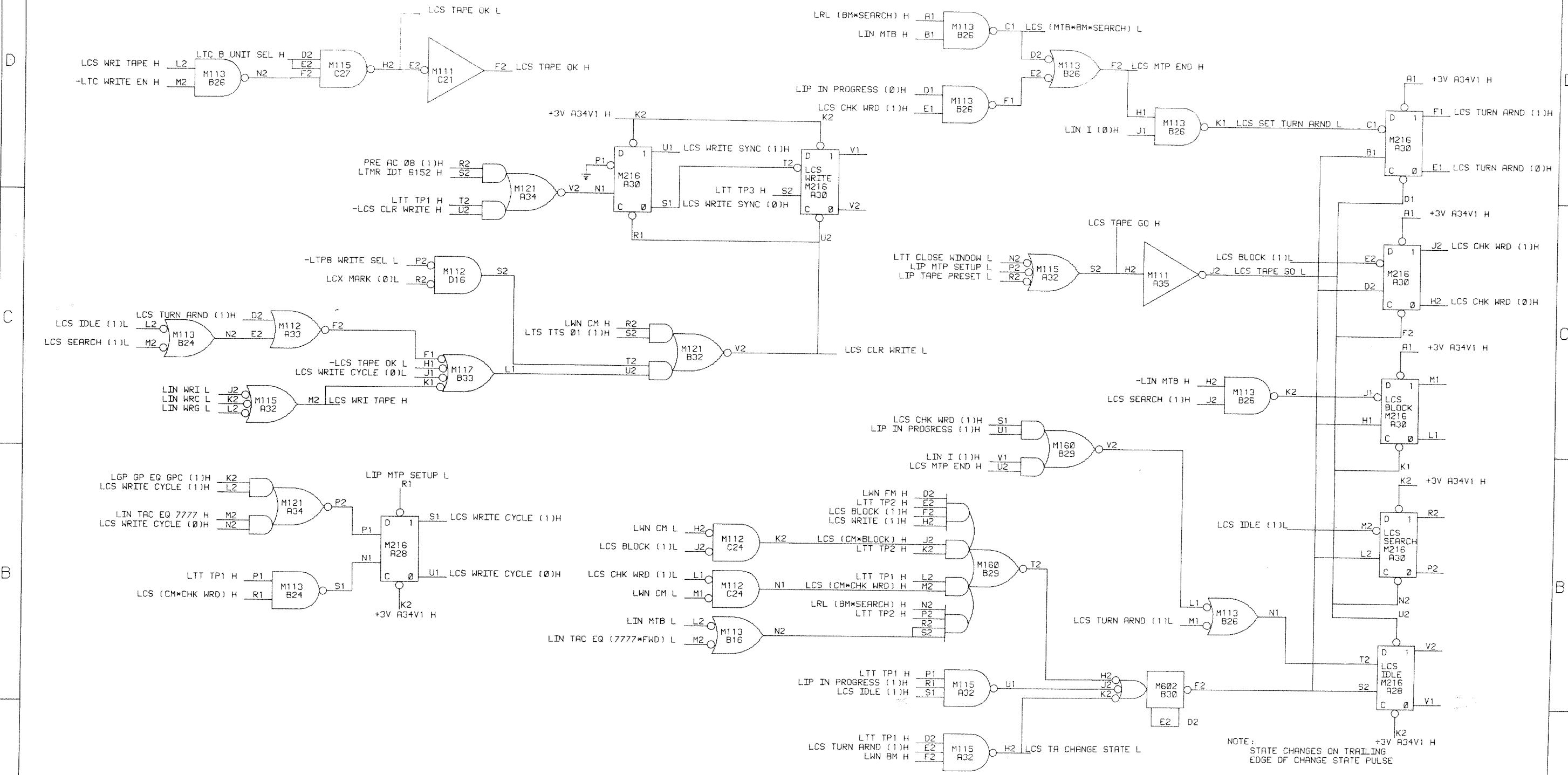


REV.	CHG. NO.	CHK.
A	EM12-00003	EM12-00003
		TC12-Φ-16
		LGAL
		J. J. GALE

UNLESS OTHERWISE SPECIFIED		DRN	DATE	PARTS LIST	
UNLESS OTHERWISE SPECIFIED		CHK'D	DATE	digital EQUIPMENT CORPORATION	
DIMENSION IN INCHES		ENG	DATE	MAYNARD, MASSACHUSETTS	
TOLERANCES		PROJ. ENG.	DATE	TITLE	
DECIMALS	FRACTIONS	PROD.	DATE	MARK TIMING	
± .005	± 1/64		DATE	REV. A	
ANGLES		FIRST USED ON		SIZE CODE NUMBER	
± 0°30'		TC12		DFD TC12-Φ-16	
FINAL SURFACE QUALITY		SCALE		DIST.	
REMOVE BURRS AND BREAK SHARP CORNERS		SHEET / OF /			
MATERIAL		FINISH			



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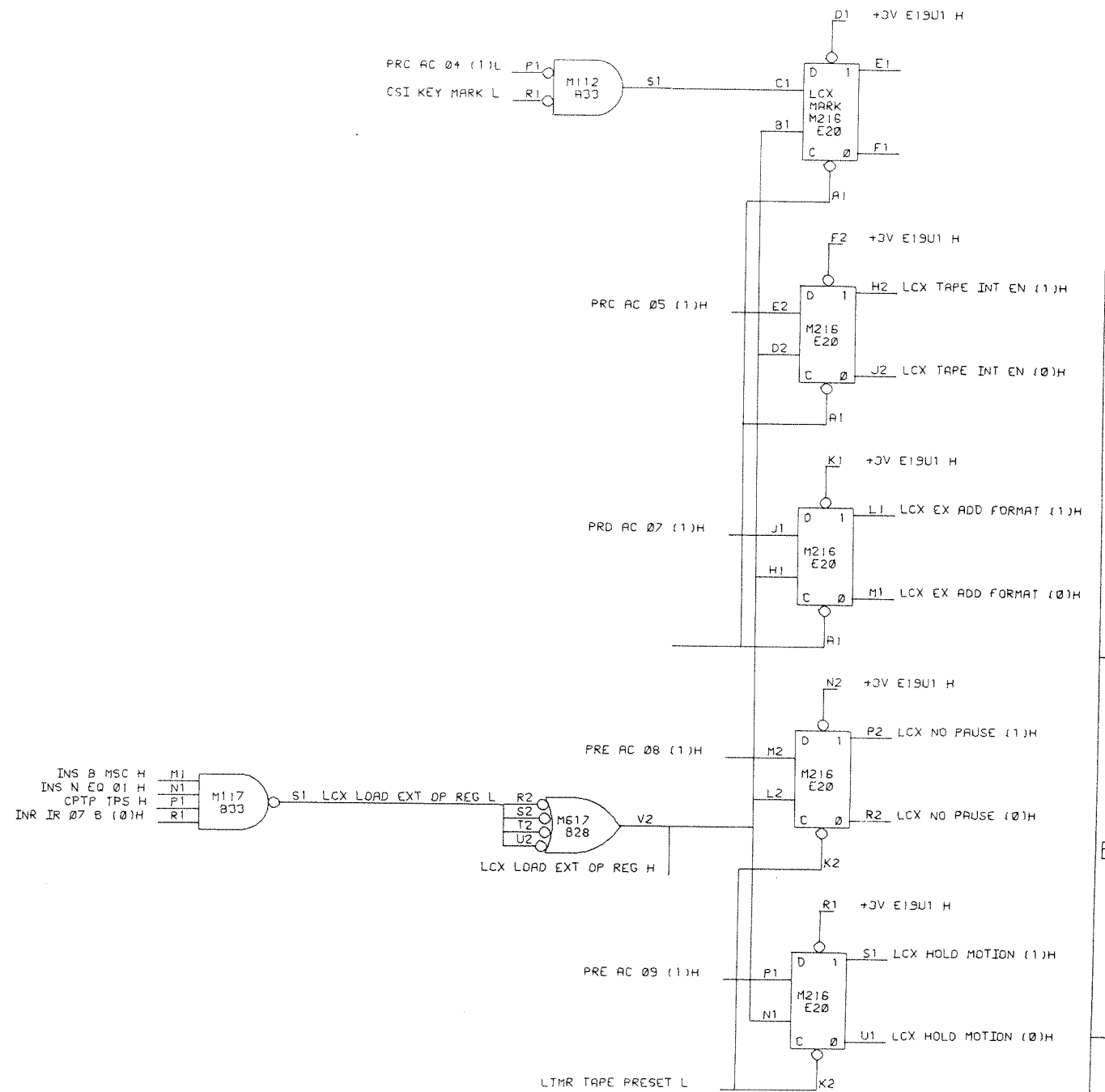
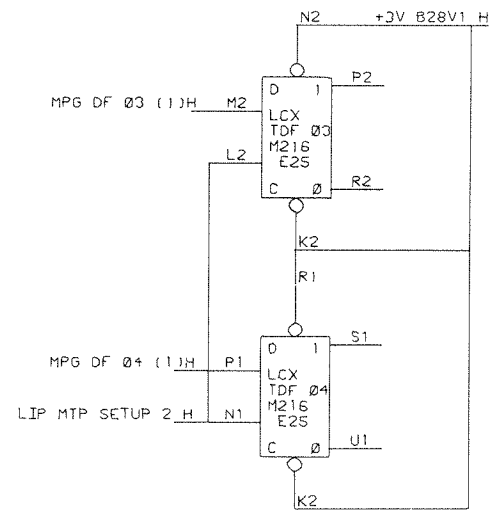
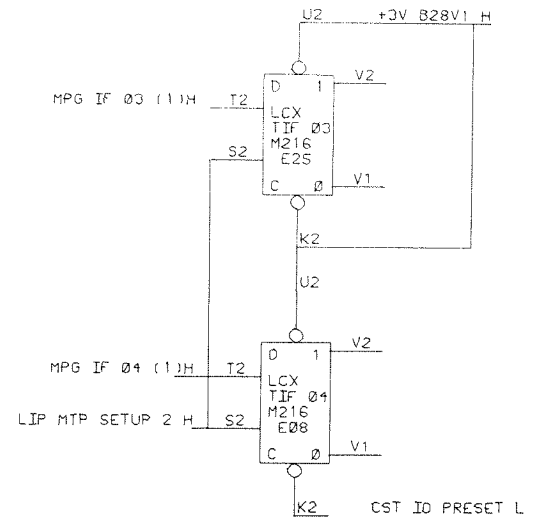
NOTE:  
STATE CHANGES ON TRAILING  
EDGE OF CHANGE STATE PULSE

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00003	A	NR	EM12-00017	E
L	GALE				
B	EM12-00007	B			
B	KORTLING 8-5-69				
L	GALE				
NR	EM12-00009	C			
B	KORTLING				
L	GALE 8-26-69				
NR	EM12-00015	D			
K	BCGGS 10-14-69				
J	SCANLAN 10-17-69				

DRN D SHEPARD	DATE 3-10-69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISCNETE	DATE 3-10-69	
ENG. L GALE	DATE 3-10-69	TITLE TAPE CONT STATES + INST
PROJ. ENG. L GALE	DATE 3-10-69	
PROD. D CALL	DATE 3-10-69	
FIRST USED ON TC12		
SCALE SHEET 1 OF 1	SIZE/CODE D BS	NUMBER TC12-0-LCS
		REV. E

LIP TAPE PRESET L

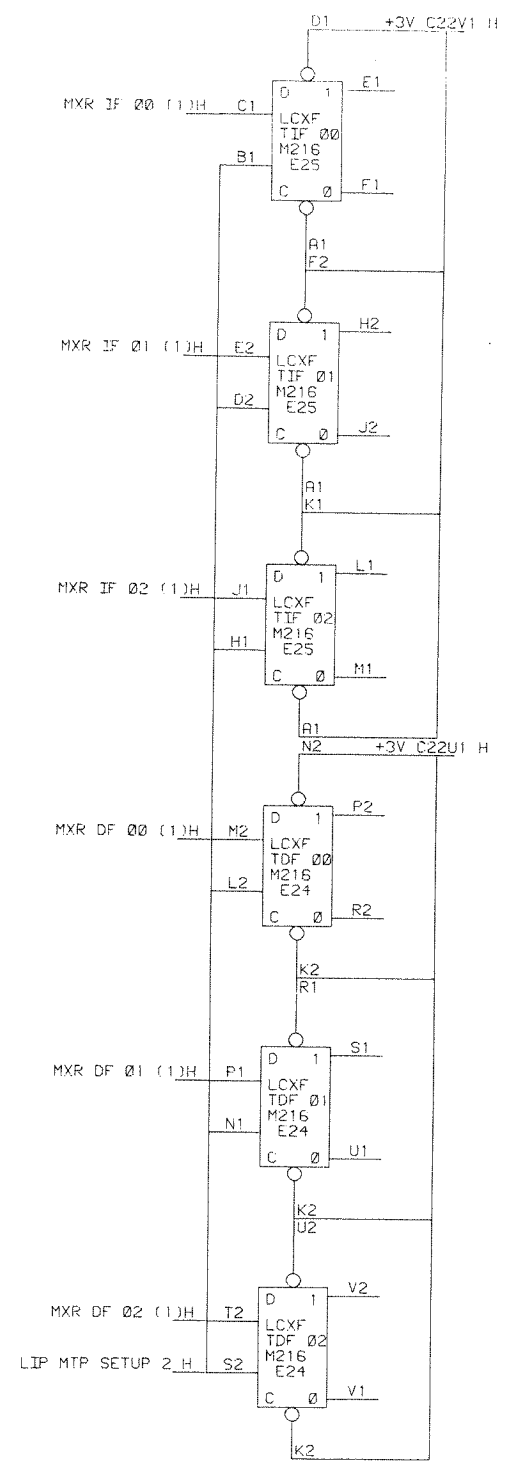
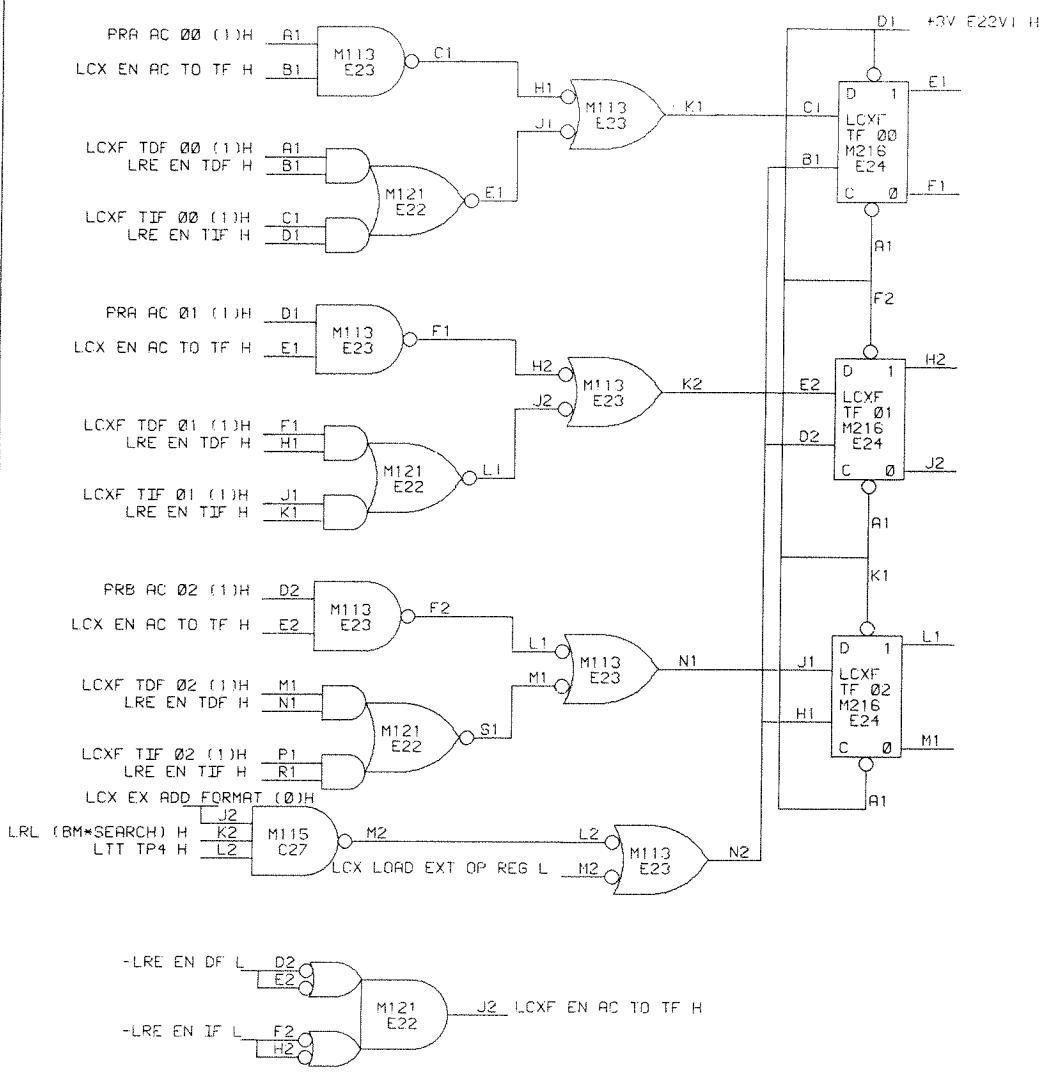
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REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
A.	WASHINGTON	
	L. GALE	
	EM12-00007	B
	BRUCE KORTELING	
	L. GALE	

DRN. D. L. SHEPARD	DATE 3-9-69	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J. R. BISONETE	DATE 3-9-69	
ENG. L. GALE	DATE 3-9-69	TITLE TAPE EXTENDED OPERATIONS
PROL. ENG. L. GALE	DATE 3-9-69	
PROD. D. GALL	DATE 3-9-69	
FIRST USED ON TC12		
SCALE D BS	SIZE CODE D BS	NUMBER TC12-0-LCX
SHEET 1 OF 1	DIST.	REV. B

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REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	

DRN. D. J. SHEPARD	DATE 3-9-69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. K. BISONETE	DATE 3-9-69	
ENG. L. GALE	DATE 3-9-69	TITLE TAPE EXTENDED FIELDS
PROJ. ENG. L. GALE	DATE 3-9-69	
PROD. D. CALI	DATE 3-9-69	
FIRST USED ON TC12		
SCALE SHEET 1 OF 1	SIZE/CODE D 8S	NUMBER TC12-0-LCXF
	DIST.	REV. A

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8 7 6 5 4 3 2 1

D

C

B

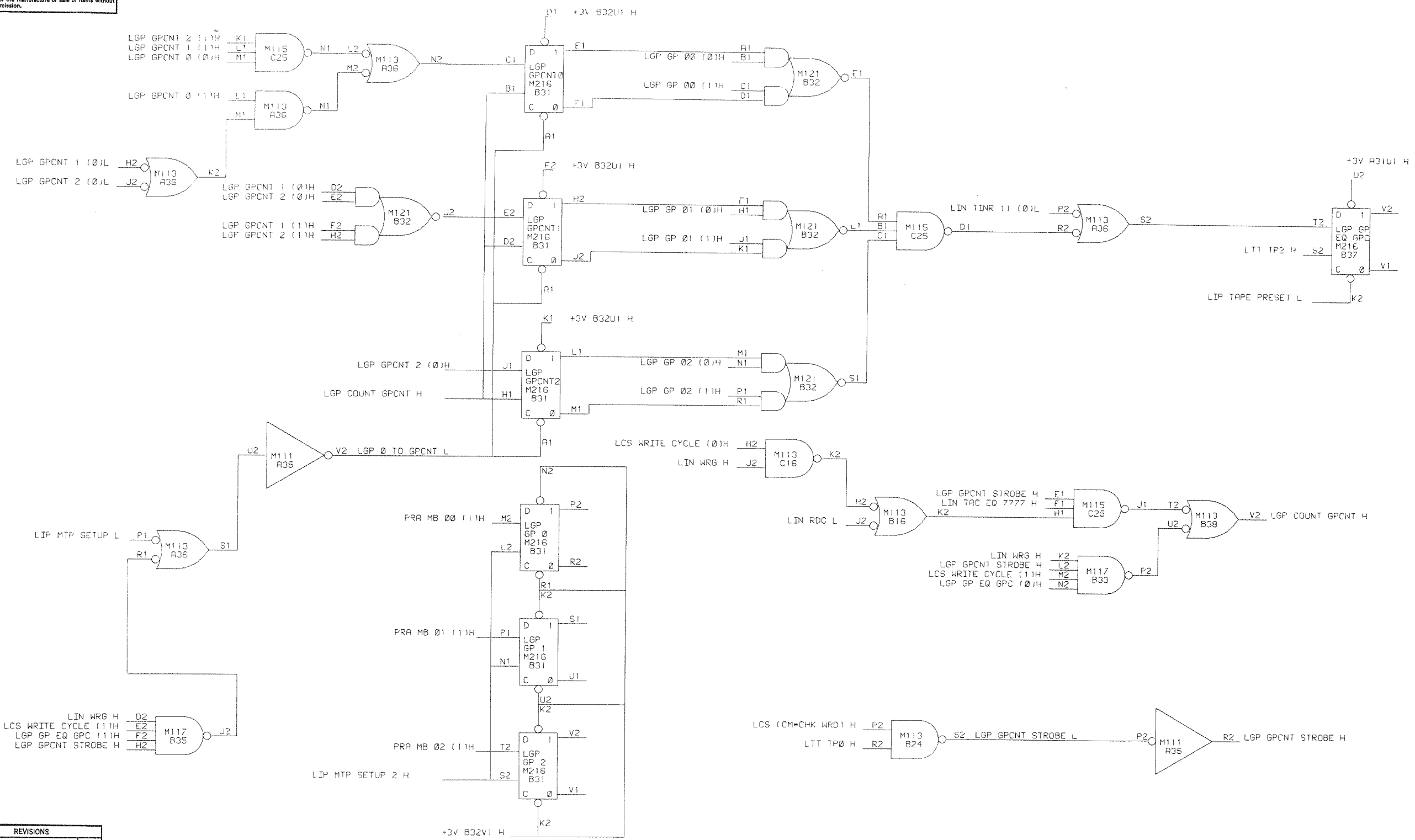
A

D

C

B

A

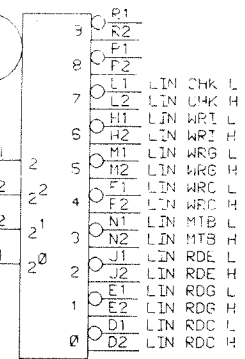
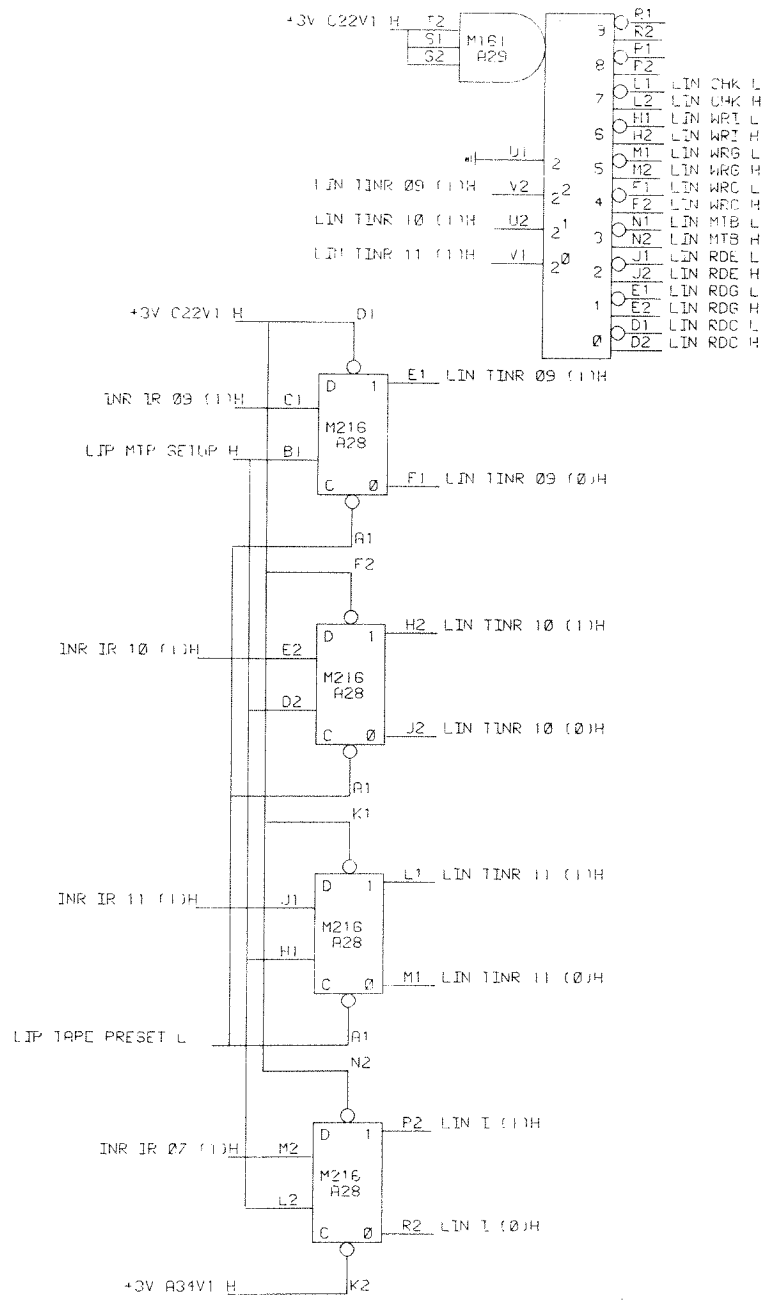
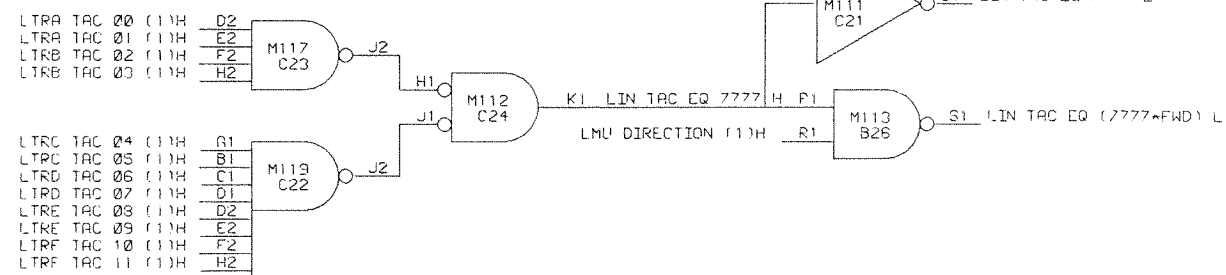


REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00215	A
K	BOGGS 10-14-69	
J	SCANLAN 10-17-69	
AC	EM12-00237	B
K	KRYSIK 7-25-70	
G	GALE 7-29-70	
✓	EM12-00241	C

DRN. D SHEPHARD	DATE 3-10-69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 3-10-69	
ENG. L GALE	DATE 3-10-69	TITLE TAPE GROUP COUNTER
PROJ. ENG. L GALE	DATE 3-10-69	
PROD. D CALL	DATE 3-10-69	
FIRST USED ON TC12		
SCALE	SIZE CODE D BS	NUMBER TC12-0-LGP
SHEET 1 OF 1	DIST.	REV. C

8 7 6 5 4 3 2 1

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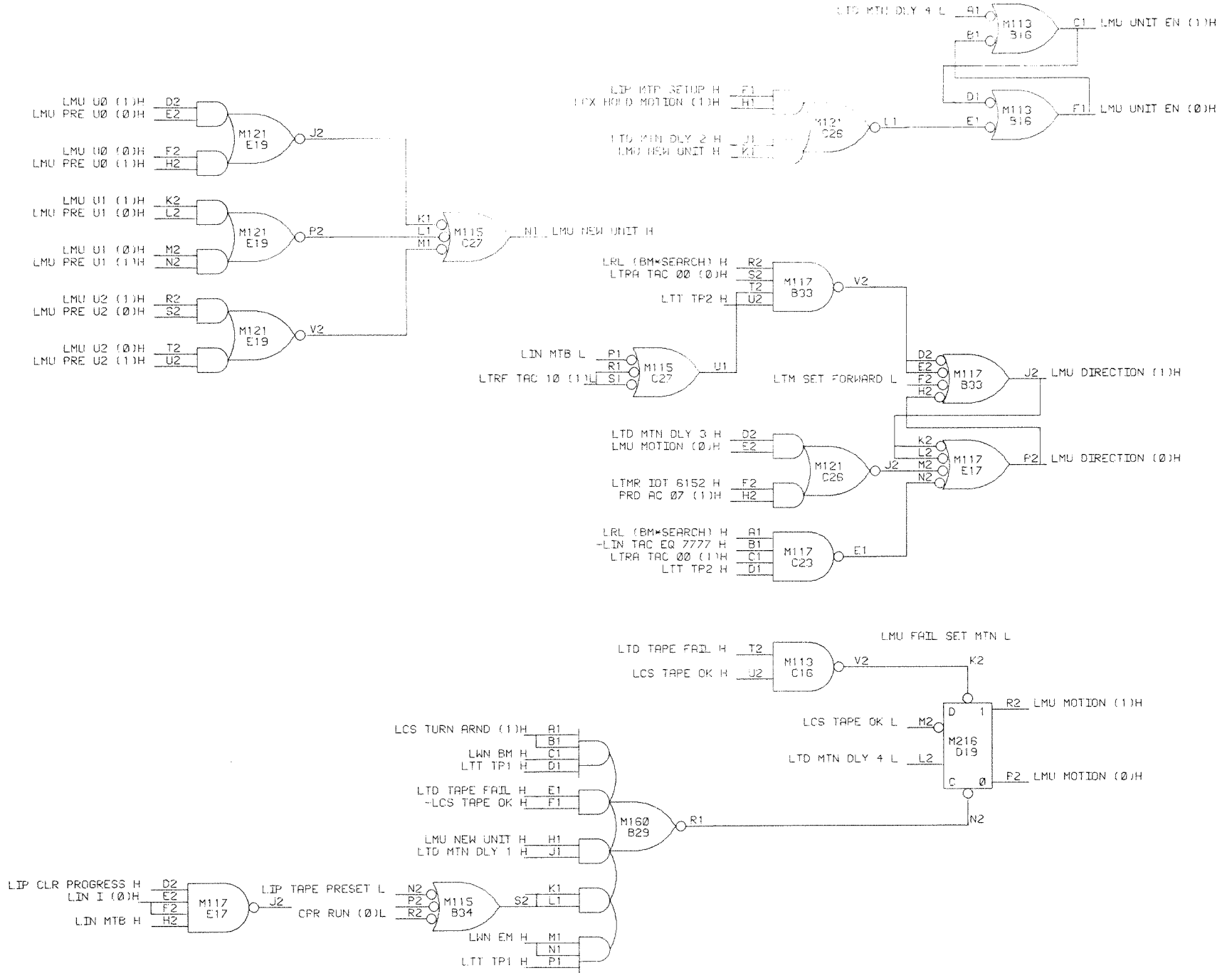
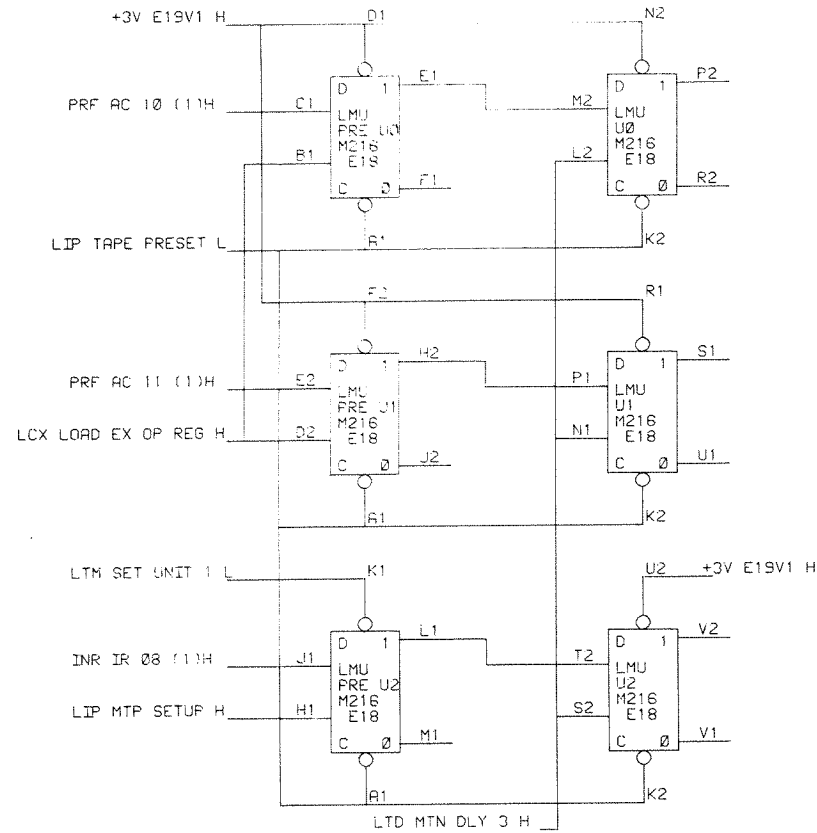


REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON		TITLE
TC12		TPPC INSTR
SCALE	SIZE CODE	NUMBER
SHEET 1 OF 1	D BS	TC12-0-LIN
DIST.		REV. 00



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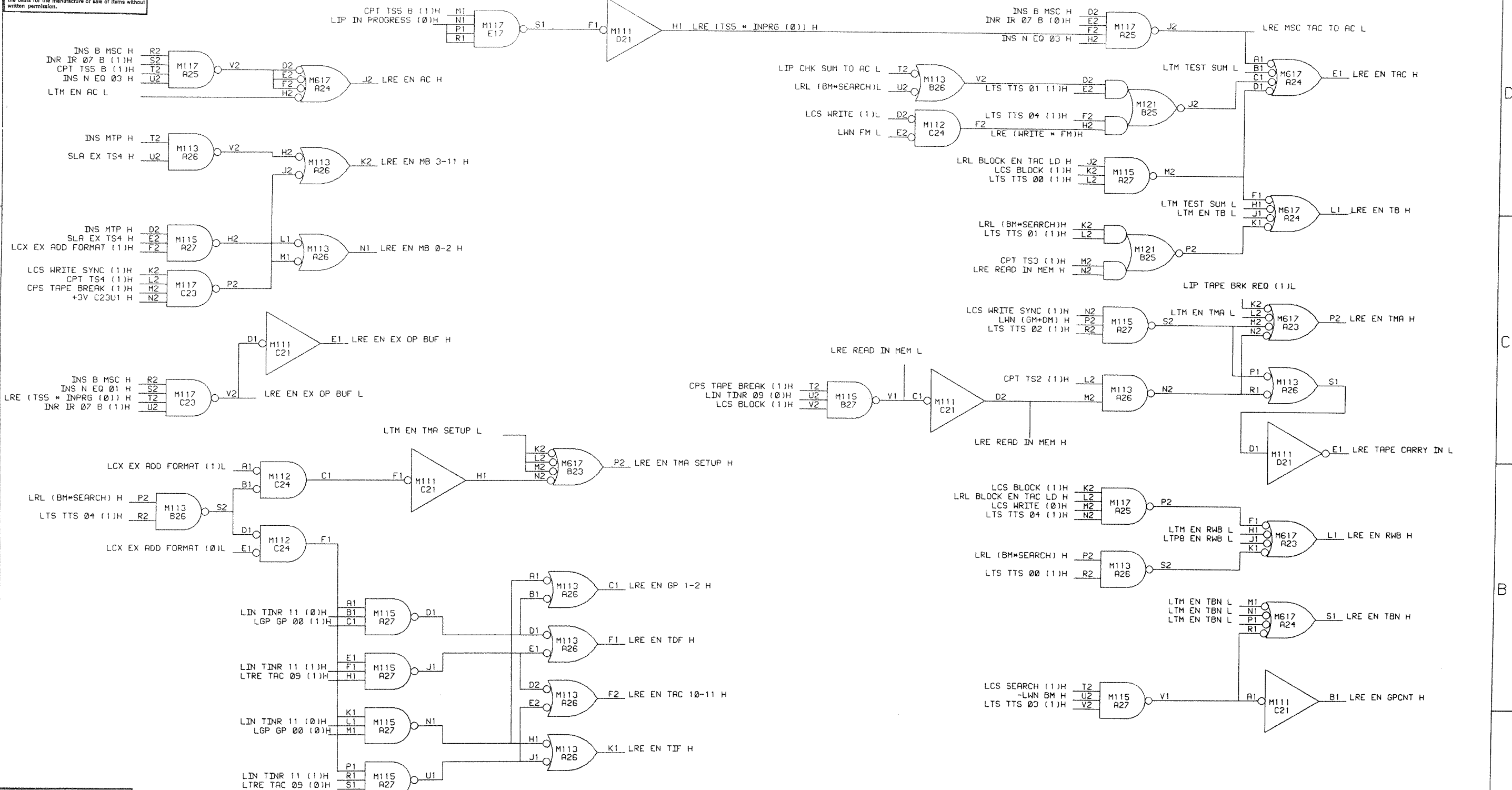


REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00003	A
	ADS	
	J SCANLAN 8/7/63	
	EM12-00017	B

DRN. D SHEPARD	DATE 3-10-63	<b>digital</b> CORPORATION MAYNARD, MASSACHUSETTS
CHKD. J BESONETE	DATE 3-10-63	
ENG. L GALE	DATE 3-10-63	TITLE TAPE UNIT AND MOTION
PROJ. ENG. L GALE	DATE 3-10-63	
PROD. D CHALL	DATE 3-10-63	
FIRST USED ON		
TC12	SIZE CODE D BS	NUMBER TC12-0-LMU
SCALE		REV. B
SHEET 1 OF 1	DIST.	



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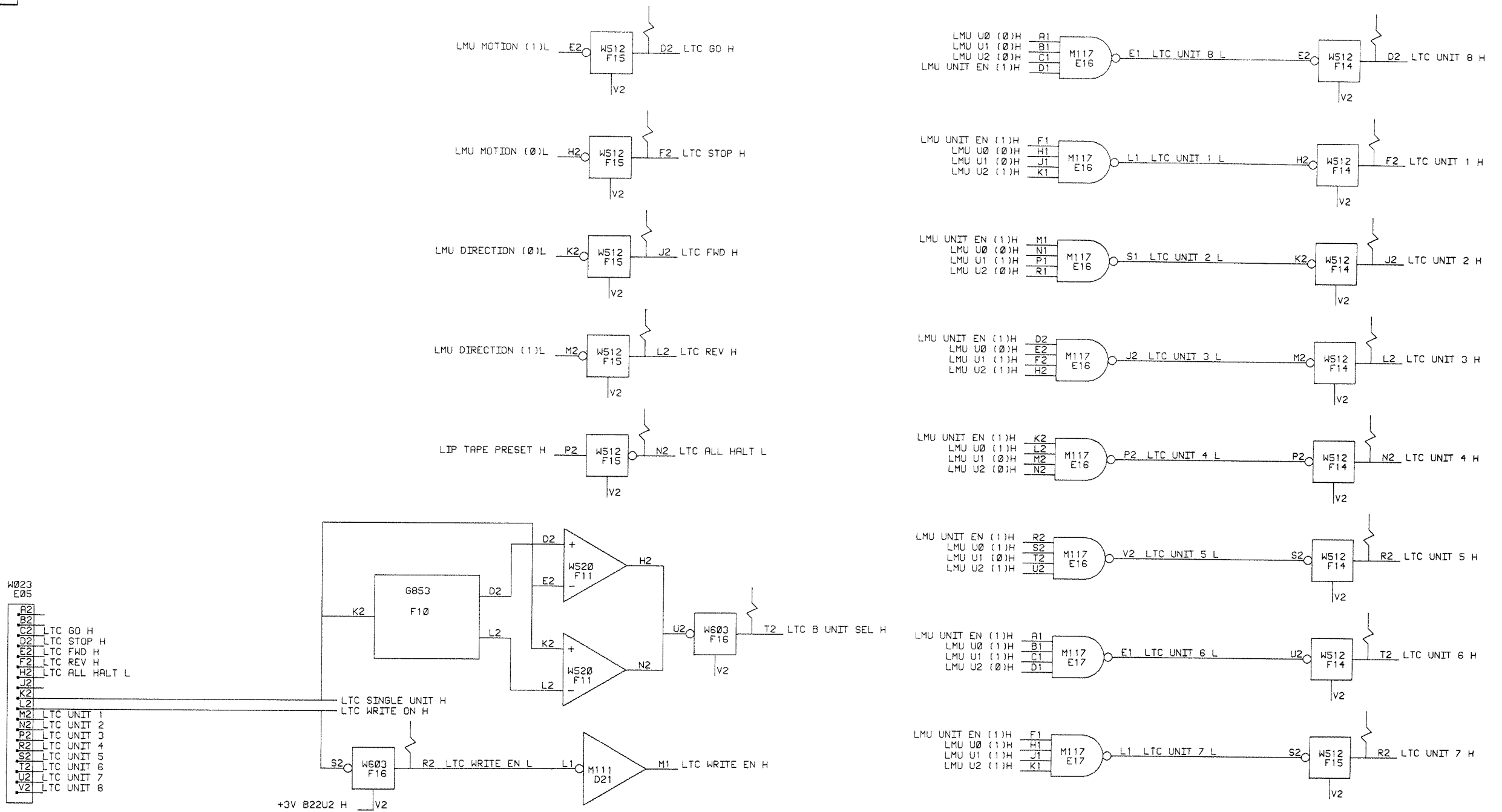


REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
ADS		
L GALE		
NR	EM12-00007	B
	B KOTELING 8-31-69	
	L GALE 8-26-69	
	EM12-00041	C

DRAWN D SHEPARD	DATE 3-9-69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISSONNETTE	DATE 3-9-69	
ENG. L GALE	DATE 3-9-69	TITLE TAPE REG ENABLE CTRL
PROJ. ENG. L GALE	DATE 3-9-69	
PROD. D CALL	DATE 3-9-69	
FIRST USED ON TC12		
SCALE SHEET 1 OF 1	SIZE/CODE D BS	NUMBER TC12-0-LRE
		REV. C



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- W023  
E05
- A2
  - B2
  - C2 LTC GO H
  - D2 LTC STOP H
  - E2 LTC FWD H
  - F2 LTC REV H
  - H2 LTC ALL HALT L
  - J2
  - K2
  - L2
  - M2 LTC UNIT 1
  - N2 LTC UNIT 2
  - P2 LTC UNIT 3
  - R2 LTC UNIT 4
  - S2 LTC UNIT 5
  - T2 LTC UNIT 6
  - U2 LTC UNIT 7
  - V2 LTC UNIT 8

+3V B22U2 H V2

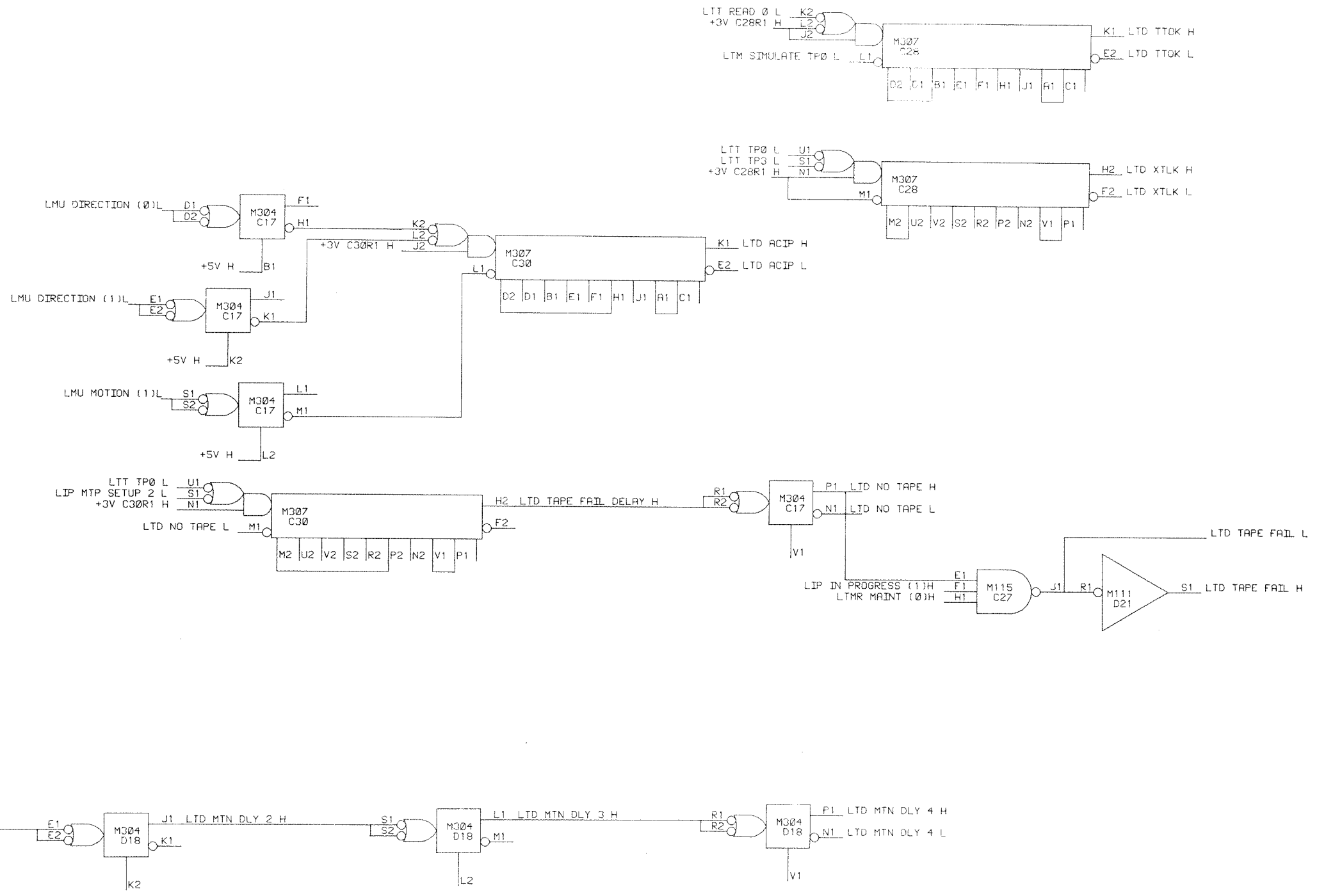
REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00004	B
B	VADITO	
L	GALE 8-18-69	
	EM12-00015	C

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
D. L. SHEPARD	8-9-69	
CHKD.	DATE	TITLE
J. K. BITSONETE	3-9-69	
ENG.	DATE	TRANSPORT CONTROL
L. GALE	3-8-69	
PROJ. ENG.	DATE	NUMBER
L. GALE	3-9-69	
PROD.	DATE	REV.
L. GALE	3-9-69	
FIRST USED ON		
TC12	SIZE CODE	NUMBER
SCALE	D BS	TC12-0-LTC
SHEET 1 OF 1	DIST.	

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DELAY SETTINGS			
DELAY	TUSE	TOLL	SWITCH SET *
TTOK	48 USEC	+ 4	5
ACIP	180 MSEC	+ 20	1
XTLX	7 USEC	+ 1	5
TAPE FAIL	300 MSEC	+ 50	1
MARK CLOCK	7.5 USEC	+ 0.3	5

\* ON M307 REV.B AND GREATER-SEE B-CS-M307-0-1 FOR DETAILS.



REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-0001	A	NR	EM12-0017	E
J	FASSHAUER 4/15/69		A	WASHINGTON 11-3-69	
L	GALE 4/29/69		J	SCANLAN 11-14-69	
	EM12-0002	B		EM12-0037	F
A	WASHINGTON		K	KRYSIAK	
J	SCANLAN		J	SCANLAN	
	EM12-0003	C	HC	EM12-0038	H
A	WASHINGTON				
J	SCANLAN		D	MANSON 3-17-70	
	EM12-0011	D			
A	WASHINGTON				
J	SCANLAN				

DRN. D SHEPARD	DATE 3-9-69	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 3-9-69	
ENG. L GALE	DATE 3-9-69	
PROJ. ENG. L GALE	DATE 3-9-69	
PROD. D CALL	DATE 3-9-69	
FIRST USED ON TC12		
SCALE SHEET 1 OF 1	SIZE CODE D BS	NUMBER TC12-0-LTD
	DIST.	REV. H



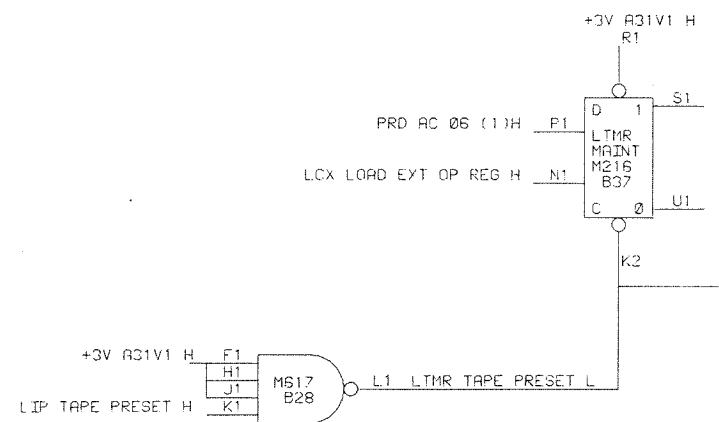
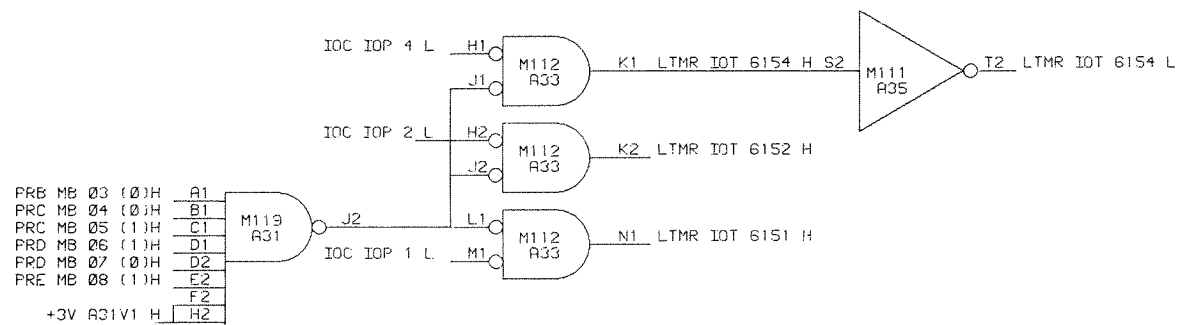
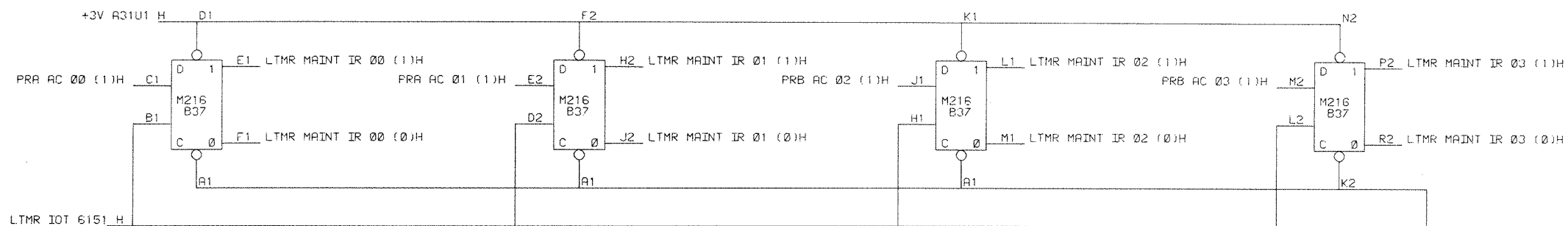
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MSC 3 TAC TO AC  
MSC 1 3 AC TO TMA SETUP

IOT 6151	
AC BIT	FUNCTION
0	TO MAINT INST REG
1	TO MAINT INST REG
2	TO MAINT INST REG
3	TO MAINT INST REG
4	CLEAR TAPE DONE
5	SKIP ON TAPE DONE
6	GENERATE TT0
7	GENERATE TT3
8	SIMULATE MARK INPUT
9	SIMULATE DATA 1 INPUT
10	SIMULATE DATA 2 INPUT
11	SIMULATE DATA 3 INPUT

IOT 6152	
AC BIT	FUNCTION
0	TAPE PRESET
1	SHIFT RWB
2	TB TO RWB
3	TB + TAC TO TAC
4	0 TO TAPE WORD FF
5	SET 8 TAPE
6	SET UNIT 1
7	SET BKWRD
8	SET WRITE SYNC
9	SET 8 TAPE MOTN
10	SET 8 WRITE
11	

IOT 6154		
CONTENTS MAINT INST REG		ACTION
000	0	AC TO TB
000	1	AC TO TBN
001	0	AC TO TAC
001	1	AC TO TMA
010	0	TMA SETUP TO AC
010	1	TBN TO AC
011	0	TB TO AC
011	1	RWB TO AC
100	0	MARK WINDOW TO AC
100	1	STATS TO AC
101	0	UNITS + MTN TO AC
101	1	TINST TO AC
110	0	MISC STATUS 1 TO AC
110	1	MISC STATUS 2 TO AC
111	0	TMA TO AC
111	1	NOT USED

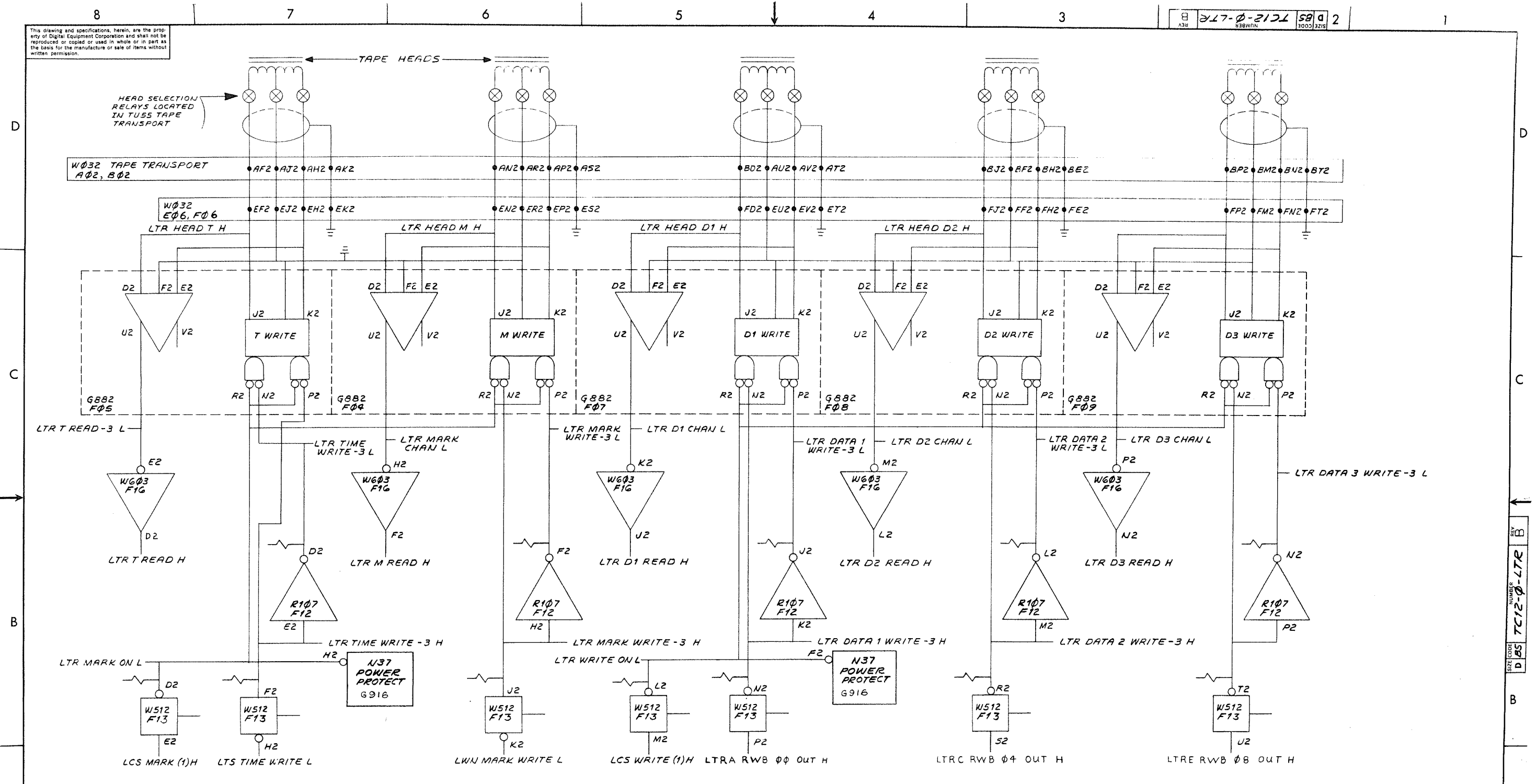


REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00017	A

DRN D SHEPARD	DATE 3-10-63	 digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 3-10-63	
ENG L GALE	DATE 3-10-63	
PROJ. ENG. L GALE	DATE 3-10-63	
PROD. D CALL	DATE 3-10-63	
FIRST USED ON TC12		
SCALE SHEET 1 OF 1	SIZE/CODE D BS	NUMBER TC12-0-LTHR
	DIST.	REV. A

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8 217-0-2121 2 1



REV.	CHG. NO.	DATE	BY
A	00002		T. QUILLIN
B	00003	6/18/69	L. GALE
C	00004		L. GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED: DRN DATE 21 AUG 68			
UNLESS OTHERWISE SPECIFIED: CHECKED DATE 9/23/69			
UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES			
TOLERANCES: DECIMALS FRACTIONS ANGLES			
= .005 ± .154 = 0°30'			
FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL: PROJECT ENG. DATE 2-20-67			
FINISH: PROJ. DATE 2-20-67			
FIRST USED ON: TC12			
SCALE: DIST.			
SHEET / OF /			

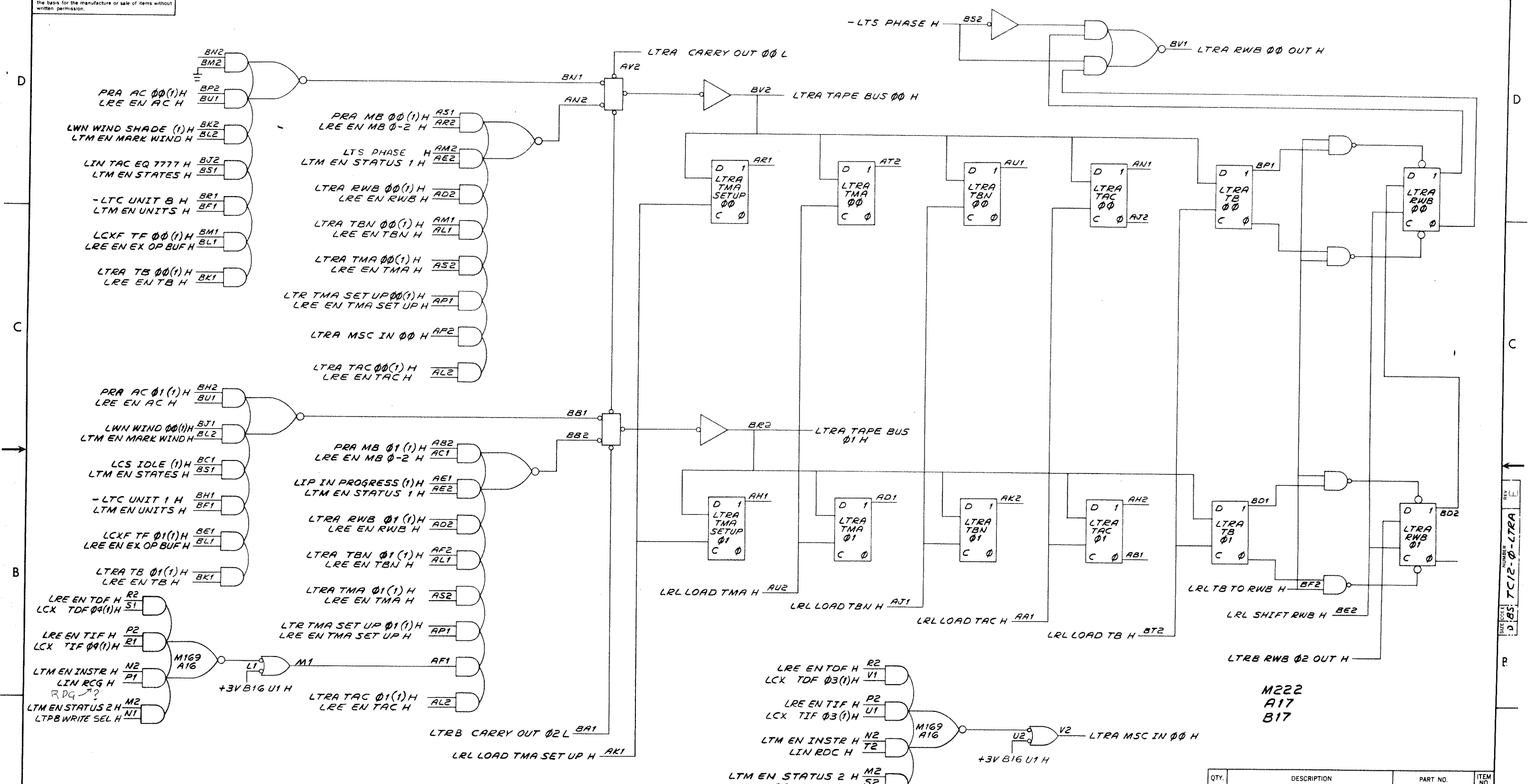
digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE: LTR TAPE READER-WRITERS

SIZE CODE: DBS NUMBER: TC12-0-LTR REV. B



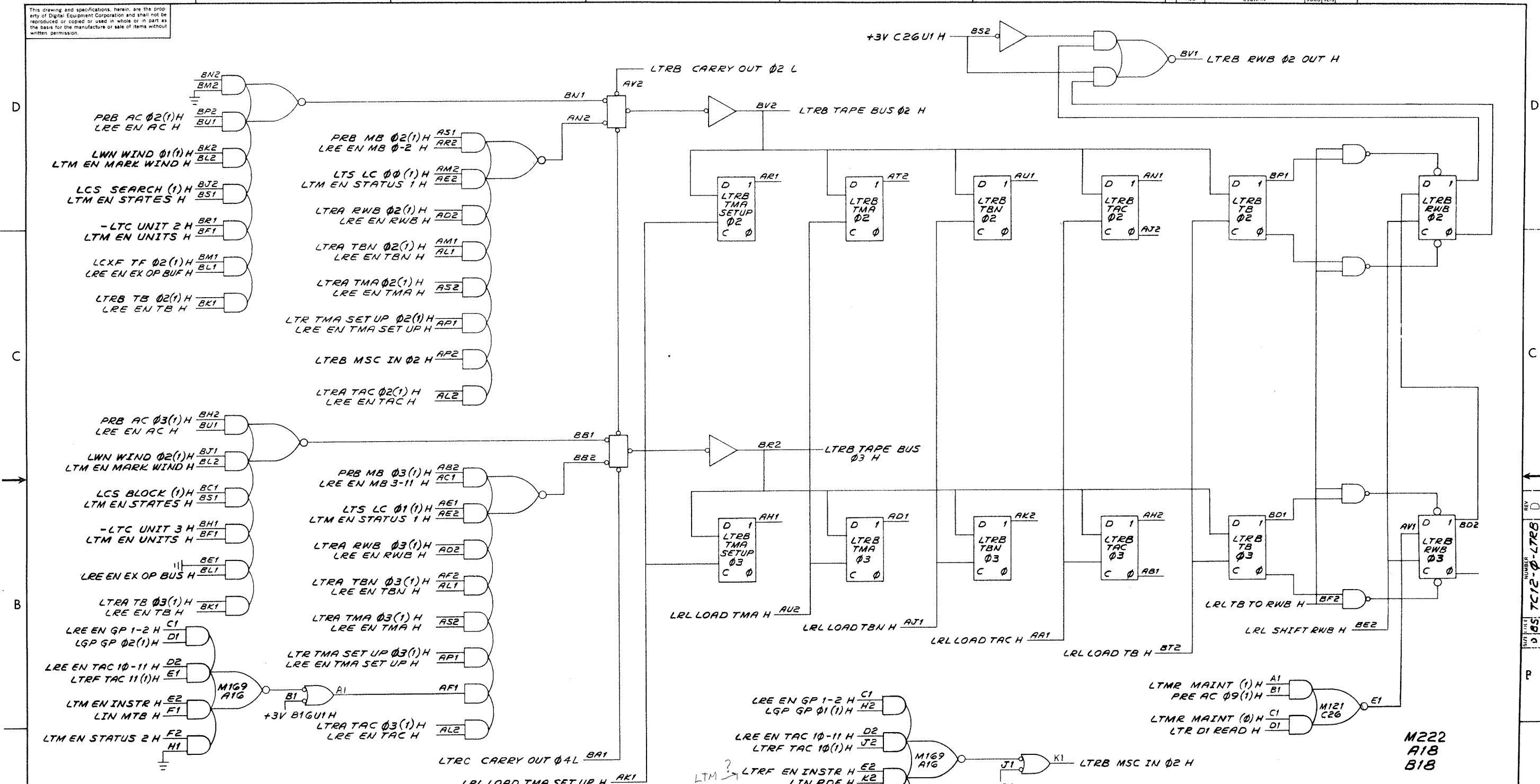
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UNLESS OTHERWISE SPECIFIED		DRN: <i>John...</i>	DATE: 12-8-68
UNLESS OTHERWISE SPECIFIED		CHK: <i>J. Scanlon</i>	DATE: 2/27/69
DIMENSION IN INCHES		ENG: <i>J. Clayton</i>	DATE: 2-28-69
DECIMALS FRACTIONS ANGLES		PRD: <i>J. Clayton</i>	DATE: 2-28-69
= .005 = 1/64 = 0°30'		PROD: <i>Ball</i>	DATE: 2/28/69
FINAL SURFACE QUALITY		FIRST USED ON	
REMOVE BURRS AND BREAK SHARP CORNERS		TC12	
MATERIAL	SCALE	TITLE	
	1 OF 1	LTRA BITS 0 & 1	
FINISH	SHEET	SIZE CODE	NUMBER
		DBS	TC12-0-LTRA
		DIST.	REV
			E

NUMBER  
 DBS TC12-0-LTRA

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REV	NO	DATE	BY	CHKD
A	00002	1/18/69	T. GALE	
B	00003	6/24/69	L. GALE	
C	00009	8/18/69	L. GALE	
D	00015	10/17/69	L. GALE	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	= .005 ± 1/64 = 0°30'		
	FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	DRN	DATE	12-8-68
	CHKD	DATE	2/2/69
	ENGR	DATE	2-5-69
	PRG. ENGR	DATE	2-12-69
	PROB.	DATE	7/24/69
	FIRST USED ON	TC12	
	SCALE	SHEET 1 OF 1	
	SIZE CODE		D B5
	NUMBER		TC12-0-LTRB
	REV		D

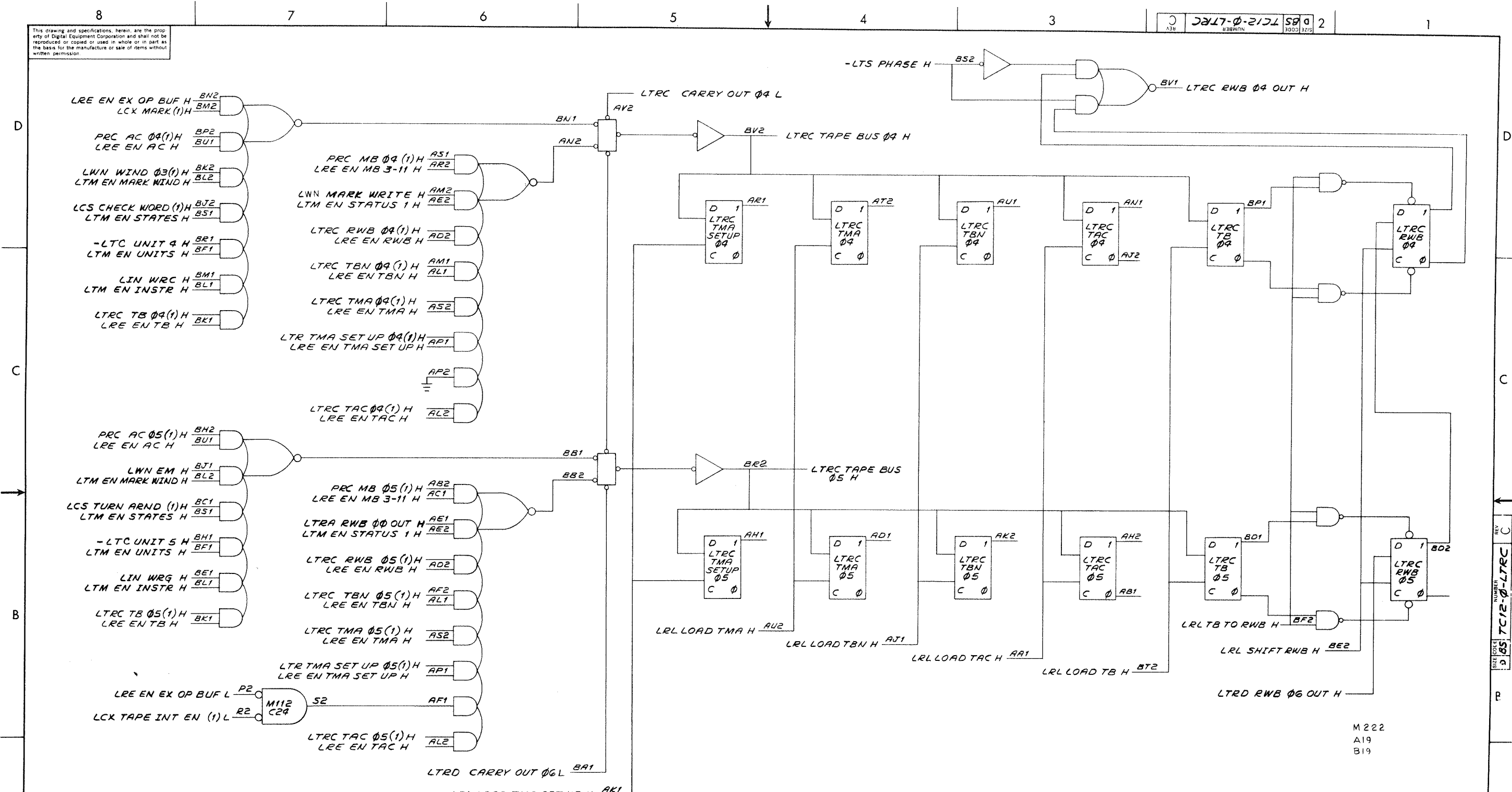
**digital** EQUIPMENT CORPORATION  
MAYNARD MASSACHUSETTS

TITLE  
**LTRB BITS 2 & 3**

M222  
A1B  
B1B

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TC12-0-LTRC 2



M 222  
A19  
B19

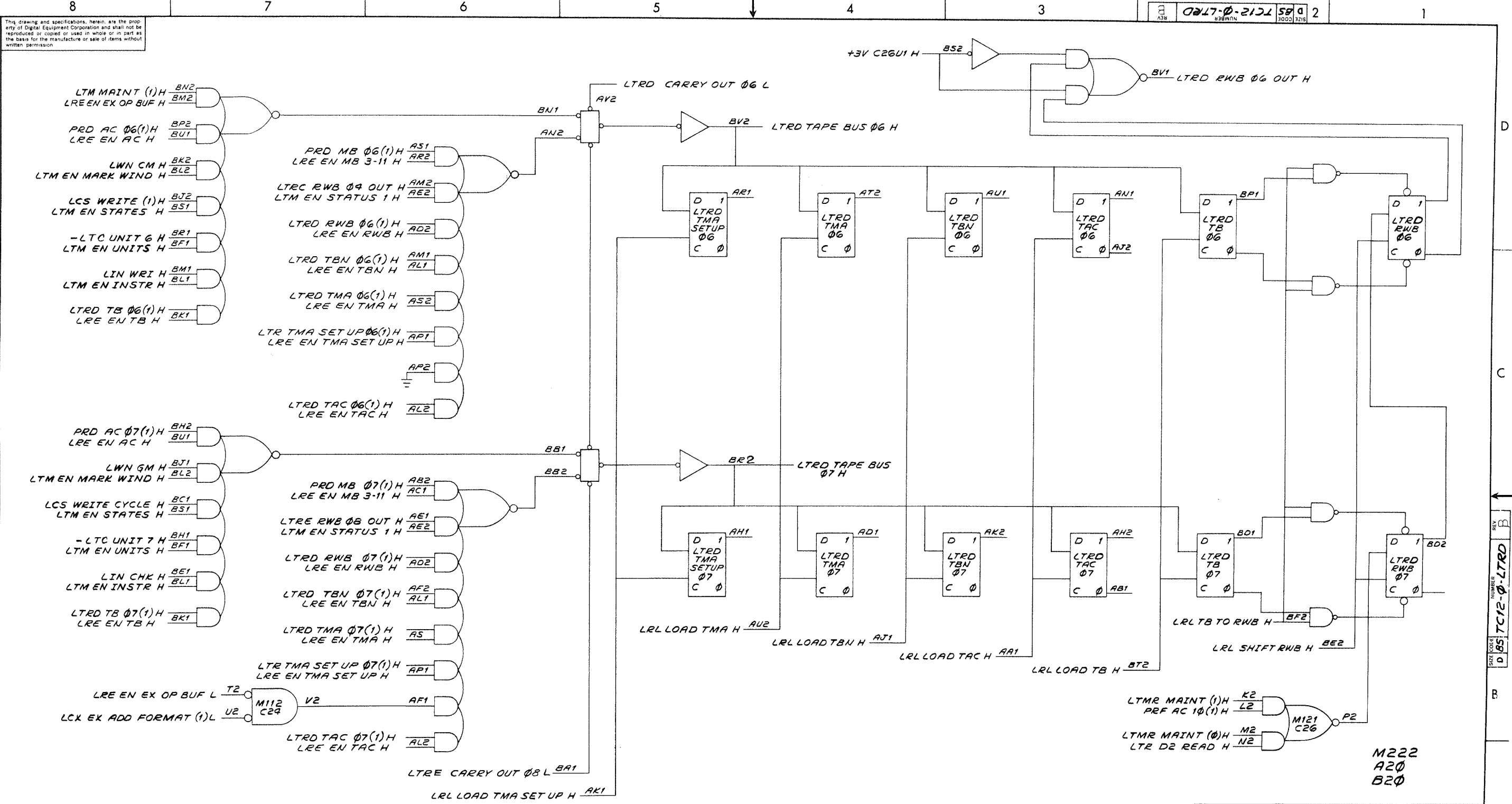
REV	NO	DATE	BY	CHK
A	00002		T. GALLIN	
B	00003	2-27-70	L. GALE	
C	00003	7-16-70	L. GALE	
D	00037	7-23-70	L. GALE	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	DECIMALS	FRACTIONS	ANGLES
	± .005	± 1/64	± 0°30'
	FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	DRN	DATE	12-8-68
	CHK	DATE	2/2/69
	ENG	DATE	2-28-69
	PROJ ENGR	DATE	2-28-69
	PROD	DATE	2-28-69
	FIRST USED ON		
	TC12		
	SCALE	SHEET 1 OF 1	
	DIST.	NUMBER	REV
		DBS	TC12-0-LTRC C

digital EQUIPMENT CORPORATION  
MAYNARD MASSACHUSETTS

TITLE  
LTRC  
BITS 4 & 5

SIZE FOR TC12-0-LTRC  
REV C



REV	CHANGE NO.	DATE
1	0002	7-20-68
2	0003	1-10-69
3	0004	2-28-69

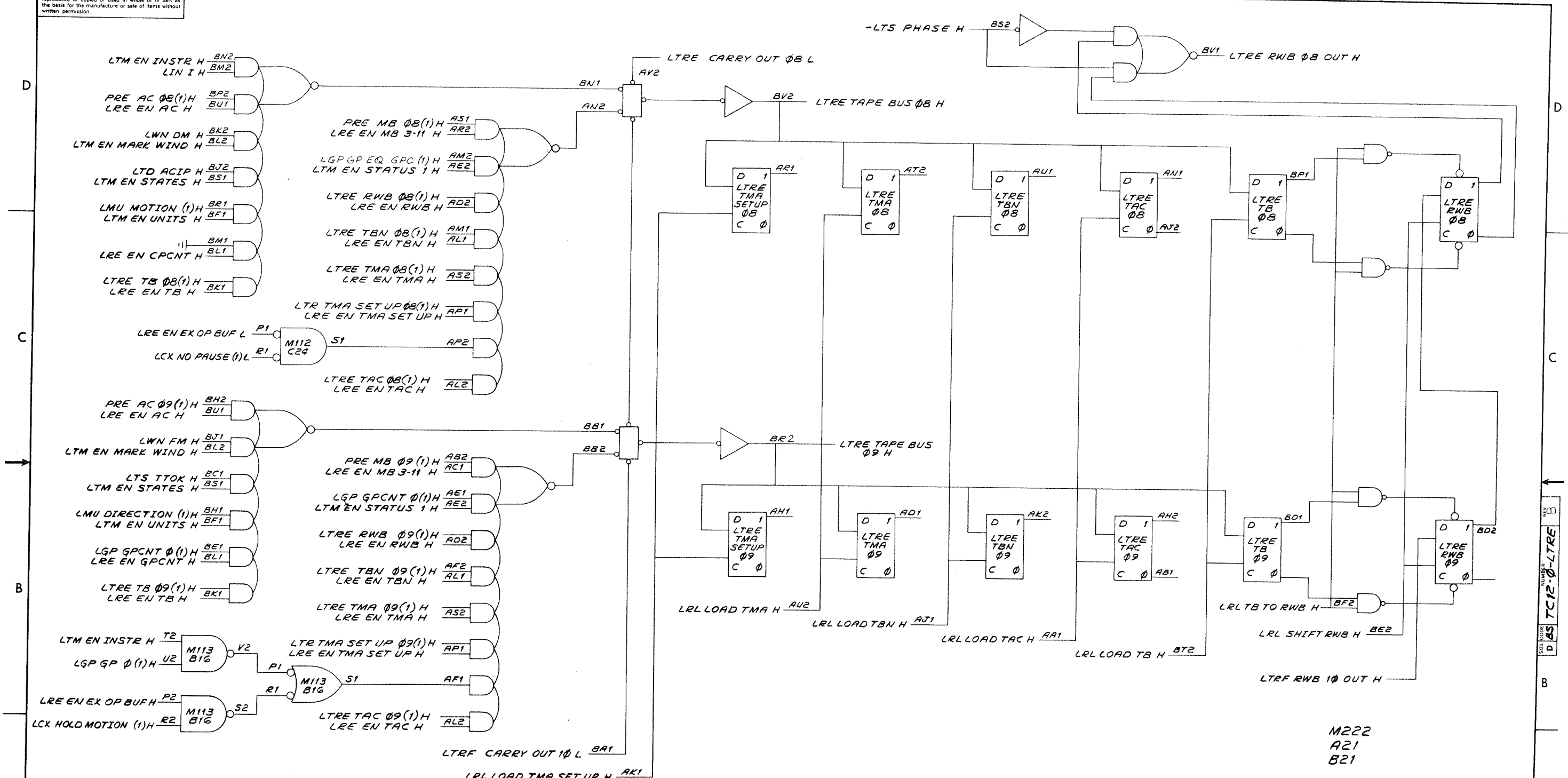
DESIGNER: T. GUILLEN  
 CHECKED: I. GALE  
 DRAWN: FV  
 DATE: 1-10-69  
 TITLE: LTRD BITS 6 & 7

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES: DECIMALS = 0.005, FRACTIONS = 1/64, ANGLES = 0°30'		
	FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL: TC12		
	FIRST USED ON: TC12		
	SCALE: SHEET 1 OF 1		
	TITLE: LTRD BITS 6 & 7		
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES: DECIMALS = 0.005, FRACTIONS = 1/64, ANGLES = 0°30'		
	FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL: TC12		
	FIRST USED ON: TC12		
	SCALE: SHEET 1 OF 1		
	TITLE: LTRD BITS 6 & 7		
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES: DECIMALS = 0.005, FRACTIONS = 1/64, ANGLES = 0°30'		
	FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL: TC12		
	FIRST USED ON: TC12		
	SCALE: SHEET 1 OF 1		
	TITLE: LTRD BITS 6 & 7		

REV B  
 NUMBER  
 D BS TC12-0-LTRD

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8 7 6 5 4 3 2 1  
 DBS TC12-0-LTR E  
 3000 2215



M222  
 A21  
 B21

REV	DATE	BY	CHK
A	11-11-69	L. GALE	T. QUILLIN
B	11-5-69	L. GALE	T. QUILLIN

DEC FORM NO. DRD 102A

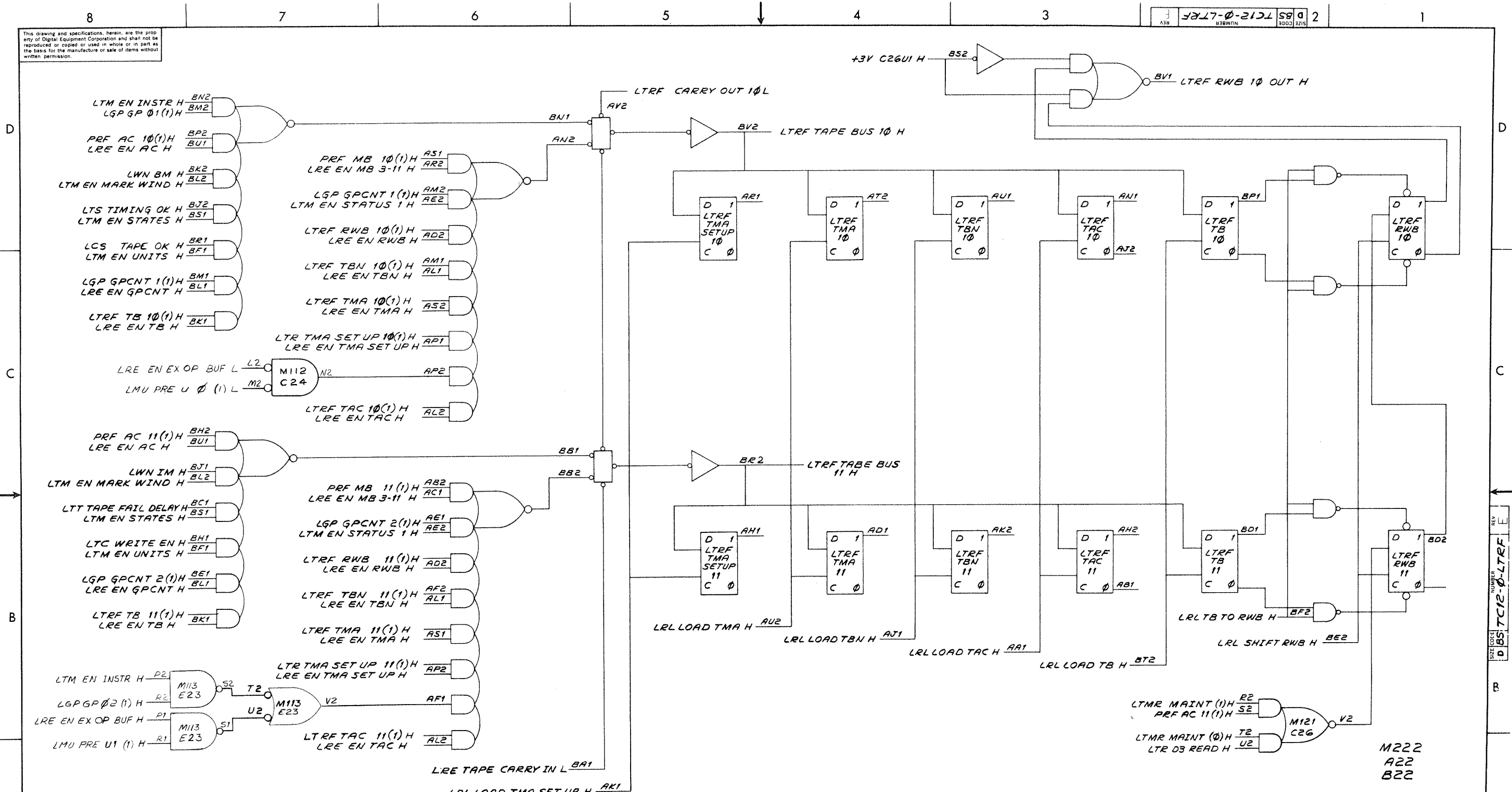
QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	± .005 ± 1/64 ± 0'30"		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	SCALE		
	SHEET / OF /		
	DIST.		

digital EQUIPMENT CORPORATION  
 MAYNARD, MASSACHUSETTS

LTR E  
 BITS 8 & 9

SIZE CODE DBS  
 NUMBER TC12-0-LTR E  
 REV. B

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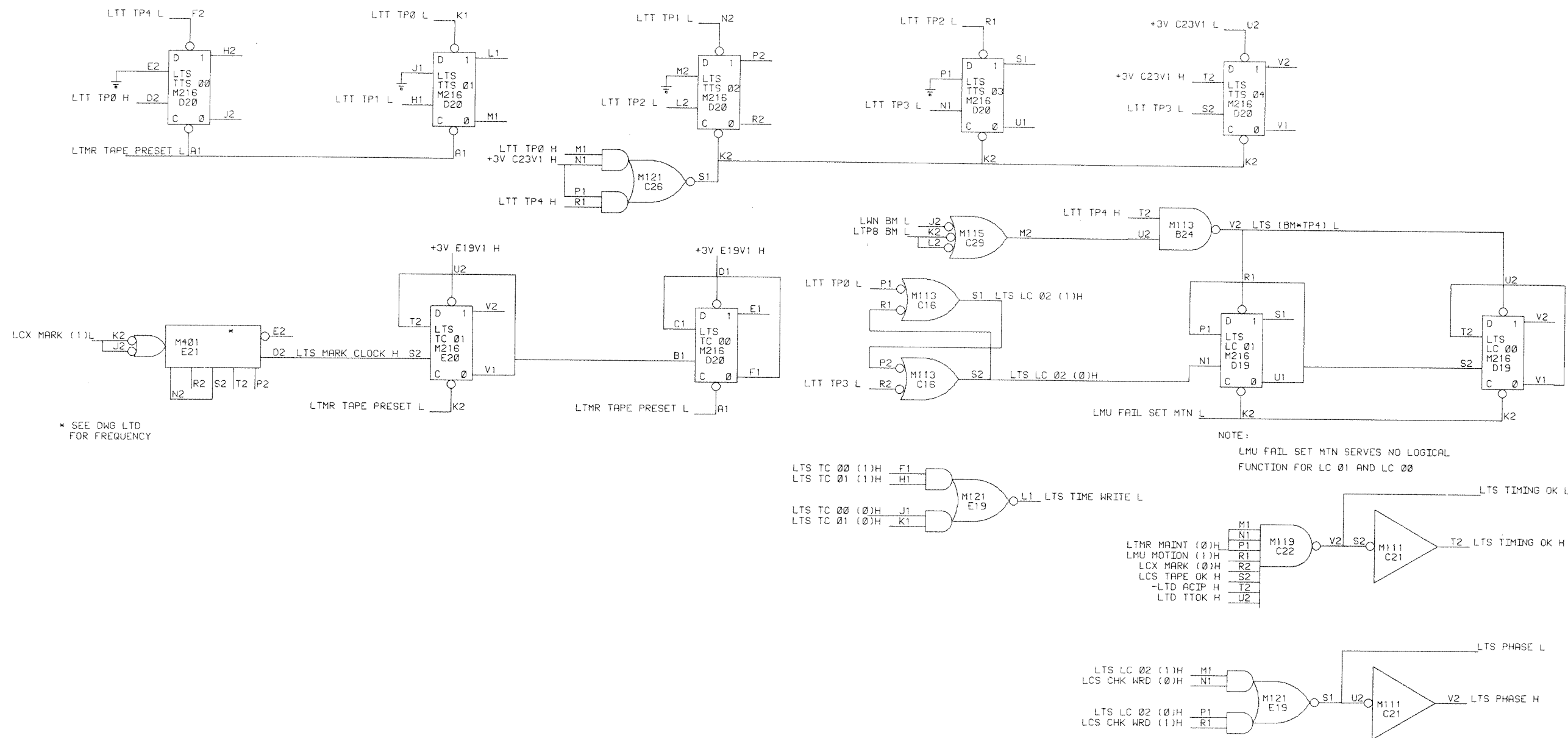


REV	DATE	BY	CHKD	DESCRIPTION
A	12-8-68	L. GALE		INITIAL DESIGN
B	2-27-69	L. GALE		REVISED FOR TOLERANCES
C	2-28-69	L. GALE		REVISED FOR MATERIAL
D	2-28-69	L. GALE		REVISED FOR FINISH
E	2-28-69	L. GALE		REVISED FOR SHEET

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	± .005 ± 1/64 ± 0°30'		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	SCALE		
	SHEET / OF /		
	DISTR.		

DRN	DATE	12-8-68
CHKD	DATE	2-27-69
ENGR	DATE	2-28-69
PROV	DATE	2-28-69
PRD	DATE	2-28-69
TITLE		
LTRF BITS 0 & 11		
FIRST USED ON		
TC12		
SIZE CODE	NUMBER	REV
D BS	TC12-0-LTRF	E

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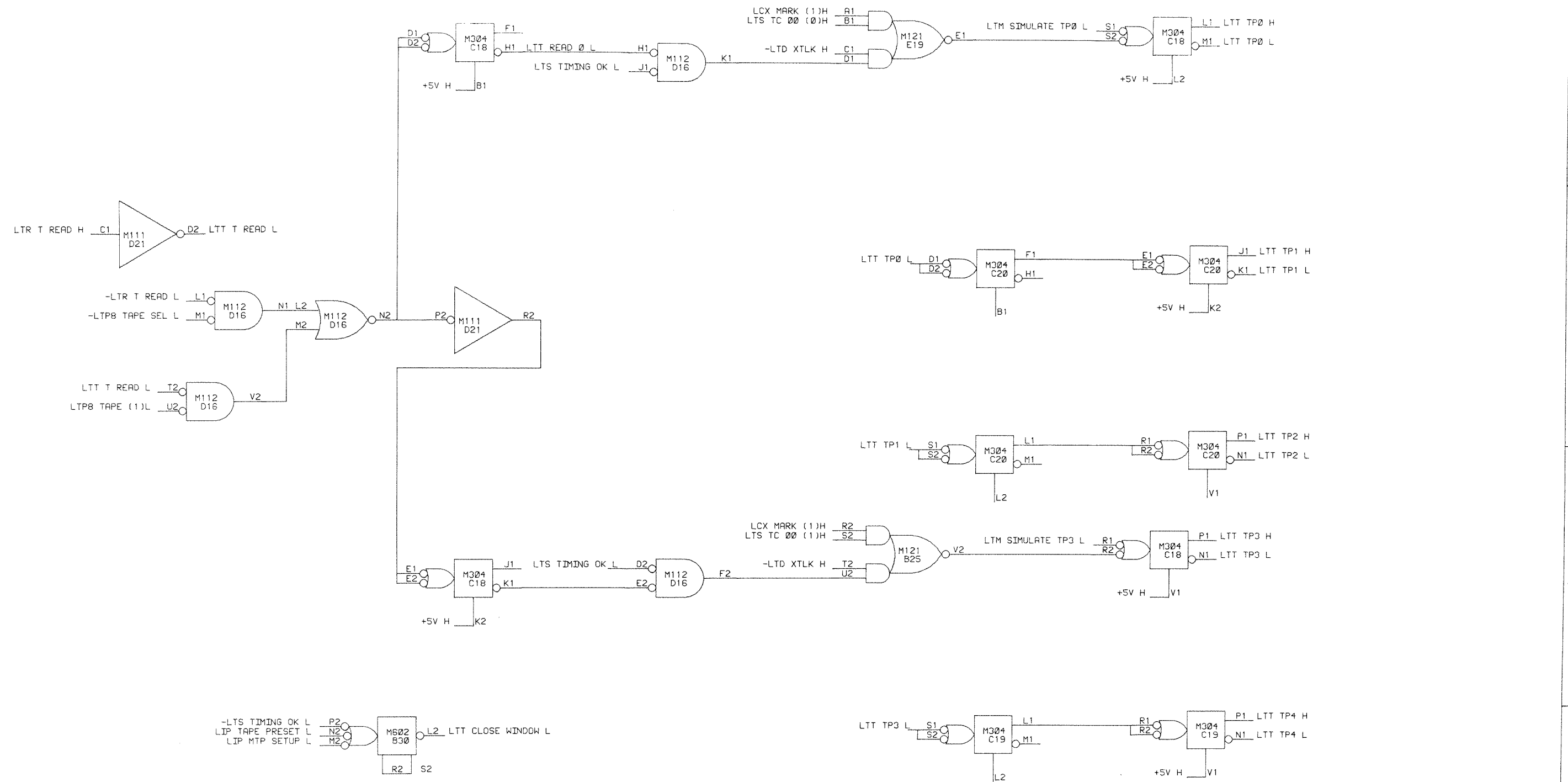


REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
J	SCANLAN 6-18-69	
A	WASHINGTON 6-5-69	
NR	EM12-00003	B
A	WASHINGTON 7-69	
J	SCANLAN 7-8-69	
NR	EM12-00015	C
K	BOGGS	
J	SCANLAN	
NR	EM12-00022	D
	<i>Handwritten notes</i>	

DRN.	D. J. SHEPARD	DATE	7-9-69		TITLE	
CHKD.	J. K. BISONETE	DATE	7-9-69		TAPE STATES	
ENG.	L. GALE	DATE	7-9-69			
PROJ. ENG.	L. GALE	DATE	7-9-69			
PROD.	D. CALL	DATE	7-9-69			
FIRST USED ON	TC12			SIZE	CODE	NUMBER
SCALE	D	BS	TC12-0-LTS			REV.
SHEET	1	OF	1	DIST.		D



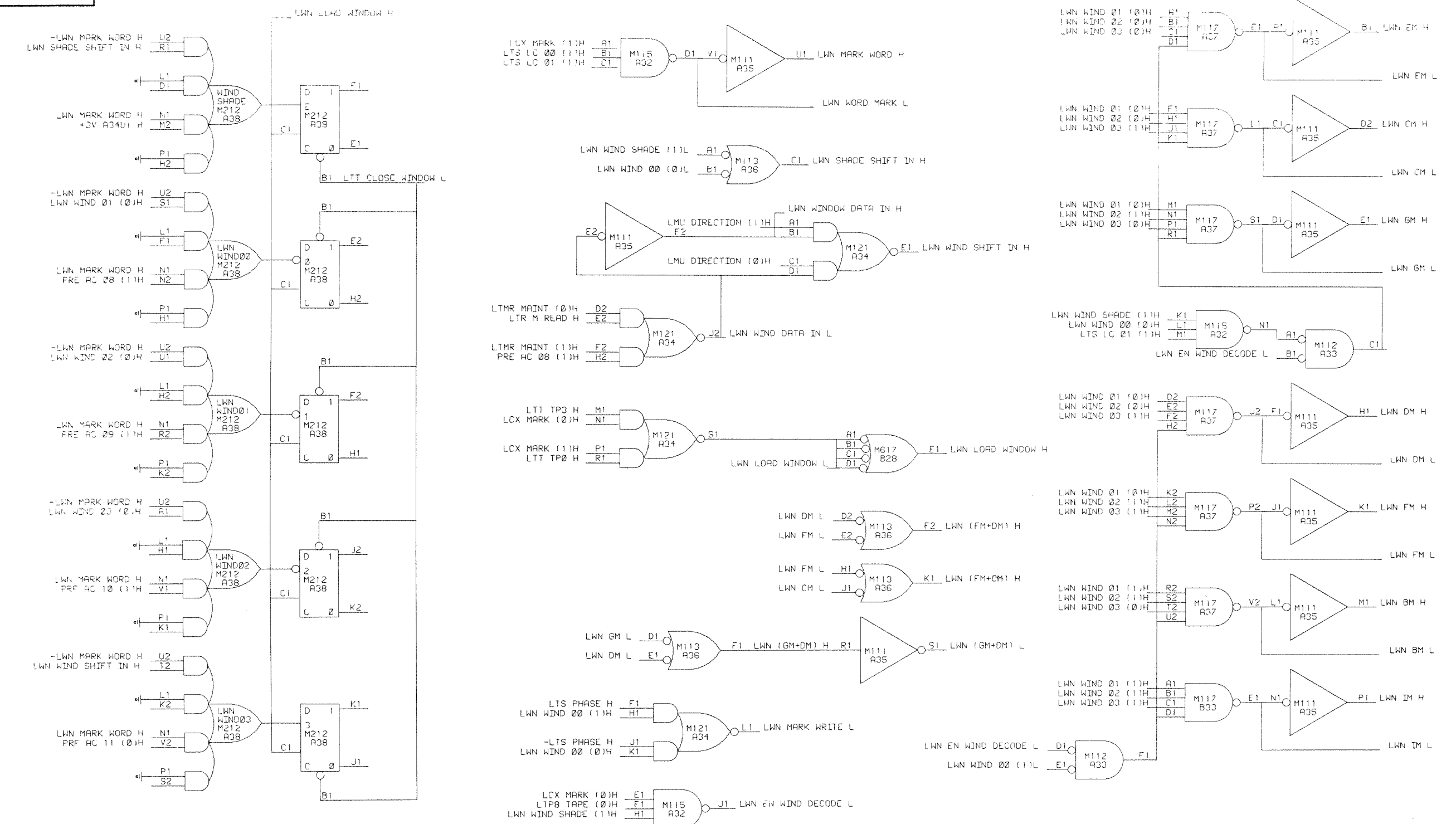
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REVISIONS		
CHK	CHANGE NO.	REV.
PD	EM12-00001	A
J FASSHAUER	4-15-69	
L GALE	4-24-69	
NR	EM12-00005	B
A WASHINGTON	7-18-69	
L GALE	7-18-69	
	EM12-00015	C

DRN. D. L. SHEPARD	DATE 8-9-69	<b>digital</b> CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J. K. BISONETE	DATE 8-9-69	
ENG. L. GALE	DATE 7-9-69	TITLE TAPE TIME PULSES
PROJ. ENG. L. GALE	DATE 8-9-69	
PROD. D. CALL	DATE 8-9-69	
FIRST USED ON TC12		
SCALE D BS	SIZE CODE D BS	NUMBER TC12-0-LTT
SHEET 1 OF 1	DIST.	REV. C

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REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00005	A
	J. FASSHAUER 4-15-69	
	L. GALE 4-29-69	
	EM12-00015	B
	KEN BOGGS 10-14-69	
	J. SCANLAN 10-17-69	
NR	EM12-00032	C
	A. WASHINGTON 3-13-70	
	J. SCANLAN 3-16-70	
	EM12-00041	D
	M. GALE 11/30/70	

DRN. D. SHEPARD	DATE 3-5-69		TITLE TAPE MARK WINDOW
CHKD. P. PERSONE	DATE 3-5-69		
ENG. L. GALE	DATE 3-5-69		
PROJ. ENG. L. GALE	DATE 3-9-69		
PROD. D. CALL	DATE 3-5-69		
FIRST USED ON TC12			
SCALE	SIZE CODE D BS	NUMBER TC12-0-LWN	REV. D
SHEET	OF	DIST.	





**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**PARTS LIST**

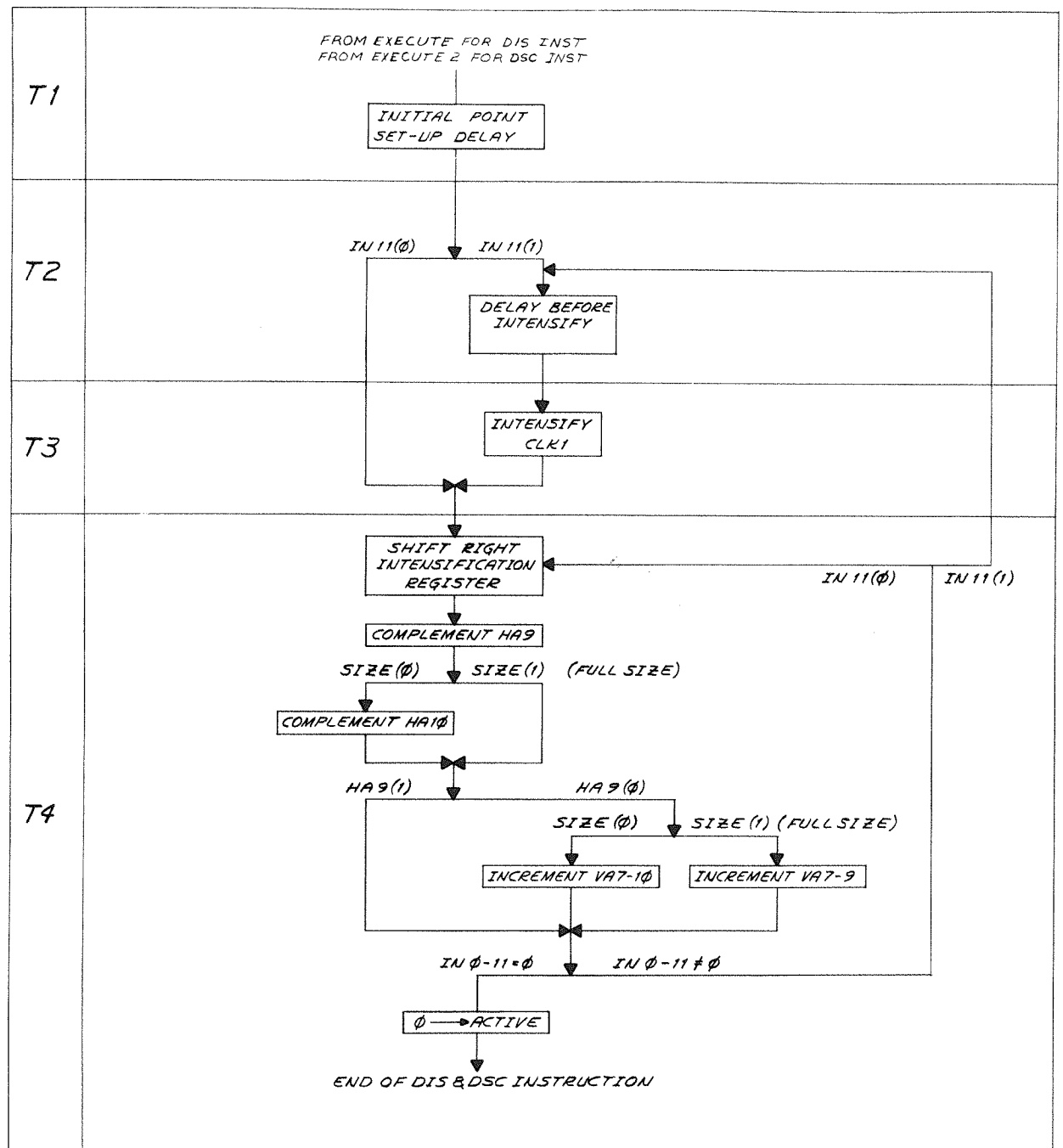
MADE BY	CHECKED <i>[Signature]</i>	SECTION
DATE <i>D. Macklin</i> 1-8-72	DATE <i>1-31-72</i>	1
ENG <i>D. Macklin</i>	PROD <i>D. Macklin</i>	ISSUED SECT.
DATE <i>2-2-72</i>	DATE <i>2-4-72</i>	1

QUANTITY / VARIATION

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	VC12-0	VC12-C	VC12-N	VC12-S												
				A615	D-A	2												
	M101	Bus Data Interface	1															
	M115	Nand Gate	1															
	M117	Nand Gate	1															
	M216	Six Flop Flops	2															
	M711	Display Control	1															
	M7601	611/color Control		1		1												
	W681	Scope Intensifier			1													
	D-IA-7000238-0-0	Internal Scope Cable	*															
	D-IA-7006975-0-0	Cable Assy (VC12N)			1													
	D-AD-7005963-0-0	Relay Panel Assy.	**															
	12-03185-2	Precision Power Supply ± 15V	Δ															
	C-AD-7006045-0-0	Power Supply BRKT Assy.	Δ															
		* Quantity of "One" when adding this option (VC12) to a PDP-12-C System.			Δ													
		** Quantity of "One" when adding this option (VC12) to a PDP-12-C System with no added AD12 or DR12 option.																

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP-12 Display Controls		A	PL	VC12-0-0	A	VC12S-00001
SHEET	OF	DIST.				

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TIMING TABLE ( $\mu$ SECS)		
STD SYS		COMMENTS
T1	25.0	CAN BE CHANGED BY REPLACING 30K $\Omega$ RESISTOR ADJACENT TO POLARITY SWITCH ON M711 15K $\Omega$ = 10 $\mu$ SECS 7K $\Omega$ = 5 $\mu$ SECS
T2	1.5 OR 7.0	PULSE REPETITION RATE SWITCH SETS DESIRED TIME
T3	.5 OR 10.0	INTENSIFICATION PULSE WIDTH IS DETERMINED BY WIDTH SWITCH SETTING ON M711
T4	.8	NON-ADJUSTABLE FIXED TIME

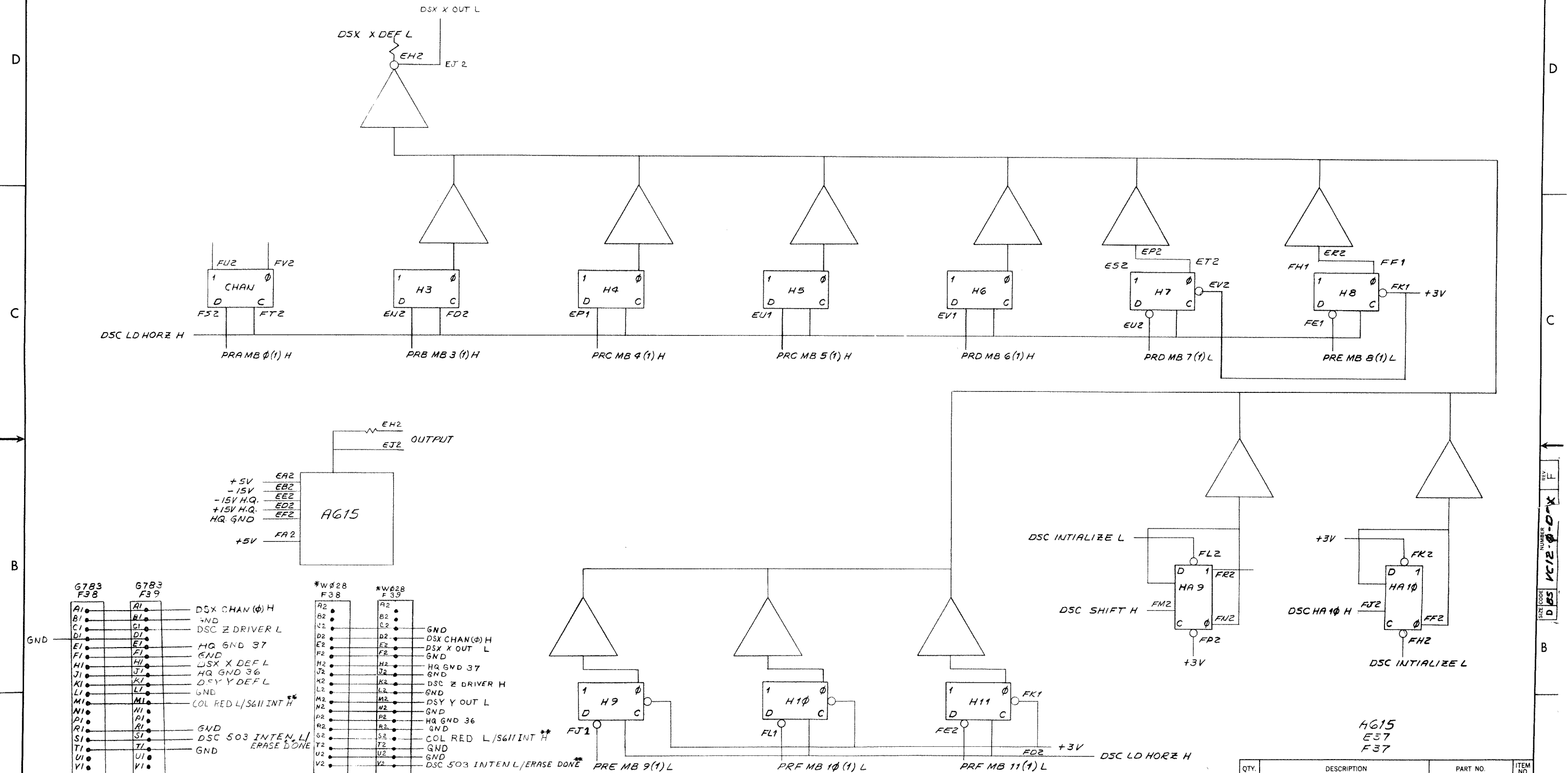
REV.	CHANGE NO.	DATE	BY	CHKD.
A	00002	6/18/69	L. GALE	T. Quill
B	EM12-00008	8-15-69	L. GALE	L. GALE
C	EM12-00033	8-15-69	L. GALE	L. GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
DRN: <i>For Agree</i> DATE: 2/27/69			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
= .005 = 1/64 = 90°			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FIRST USED ON			
VC12			
FINISH			
SCALE			
SHEET / OF /			
TITLE			
LINC-8 SCOPE			
DISPLAY			
DIS & DSC			
digital EQUIPMENT CORPORATION			
MAYNARD, MASSACHUSETTS			
SIZE CODE			
D FD			
NUMBER			
VC12-0-9			
REV.			
C			





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REV.	NO.	DATE	BY	CHKD.
A	00002	2-16-69	T. GULLIN	L. GALE
B	00008	2-17-69	L. GALE	L. GALE
C	00039	2-18-69	L. GALE	L. GALE
D	00096	2-25-70	L. GALE	L. GALE
E	00054	8-12-71	R. MOORE	R. MOORE
F	00001	11-8-71	R. MOORE	R. MOORE
F	STRAIGHT	2-24-72	F. STRAIGHT	F. STRAIGHT

NOTE: HQ POWER FOR THIS MODULE AND E.F.36 IS DERIVED FROM HQ POWER SUPPLY SHOWN ON AD12-D-YAD  
 \*AG783 CABLE ASSY. MAY ALSO BE USED.  
 \*\* USED WITH VC12-S OPTION

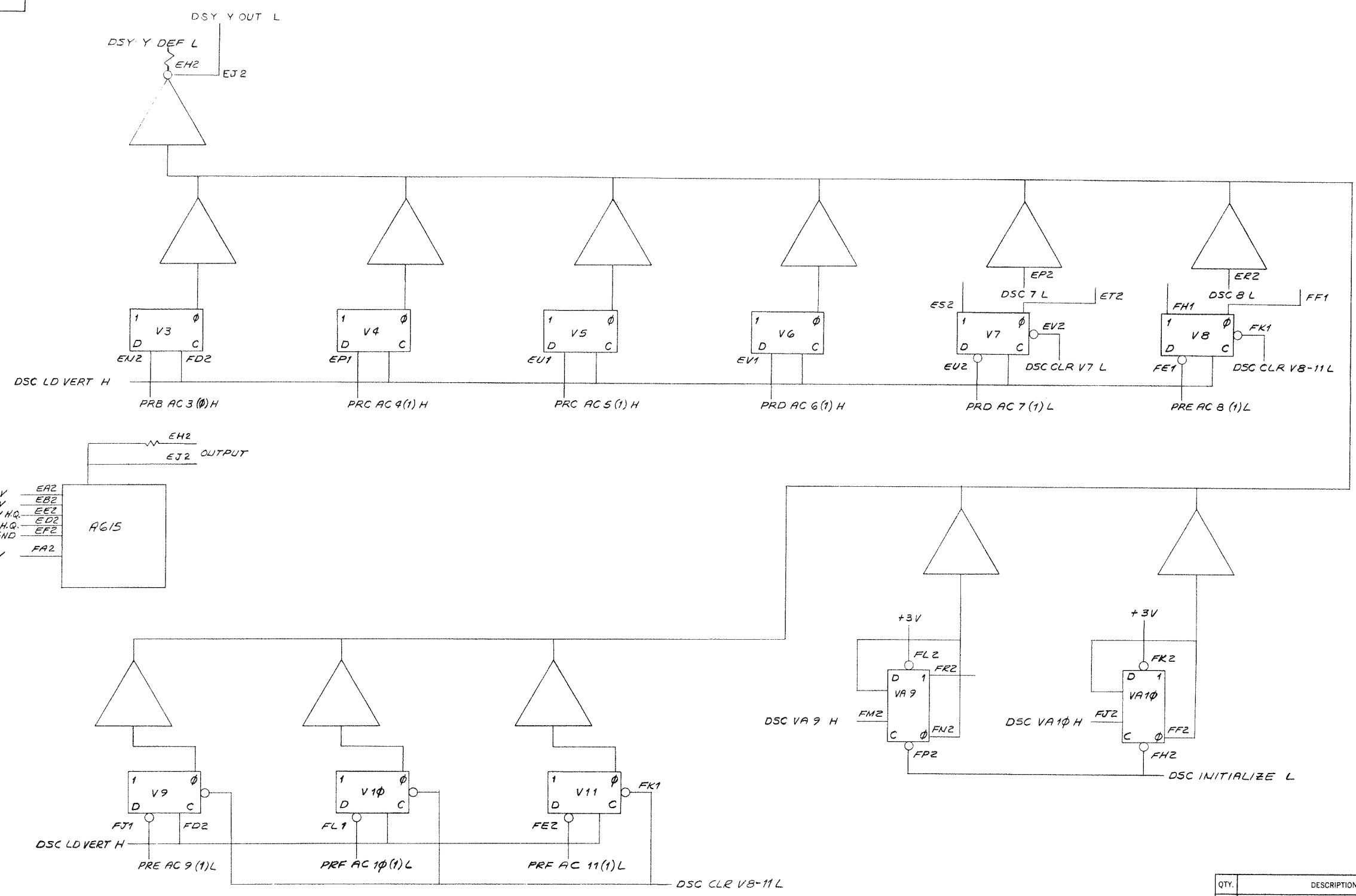
QTY.	DESCRIPTION	PART NO.	ITEM NO.
	AG15	E37	F37
	HA9		
	HA10		

UNLESS OTHERWISE SPECIFIED	DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED	CHKD.	DATE	
TOLERANCES	ENG.	DATE	TITLE DSX HORIZONTAL D-A
DECIMALS FRACTIONS ANGLES	PROJ. ENG.	DATE	
= .005 ± .104 ± 0°30'	PROD.	DATE	SIZE/CODE NUMBER REV. D85 VC12-0-DSX F
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	FIRST USED ON		
MATERIAL	VC12		SCALE
FINISH			SHEET / OF /

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150-0-2101 58 d 2



+5V EA2  
-15V EB2  
+15V H.Q. EC2  
H.Q. GND ED2  
+5V EF2  
FA2

AG15  
E36  
F36

REV.	CHANGE NO.	DATE	BY
A	0000	7/20/68	L. GALE
B	EM1200039	8/18/69	L. GALE
		8-20-70	L. GALE
		8-25-70	J. M. GALE

UNLESS OTHERWISE SPECIFIED		PARTS LIST	
DRN.	DATE	QTY.	DESCRIPTION
CHKD.	DATE		
ENG.	DATE		
PROJ. ENG.	DATE		
PROD.	DATE		
FIRST USED ON		PART NO.	ITEM NO.
VC12			
SCALE		PARTS LIST	
SHEET OF		digital CORPORATION MAYNARD, MASSACHUSETTS	
		TITLE	
		DSY VERTICAL D-A	
		SIZE CODE	NUMBER
		D B S	VC12-0-DSY
		REV.	B

REV. B  
NUMBER  
D B S VC12-0-DSY

8

7

6

5

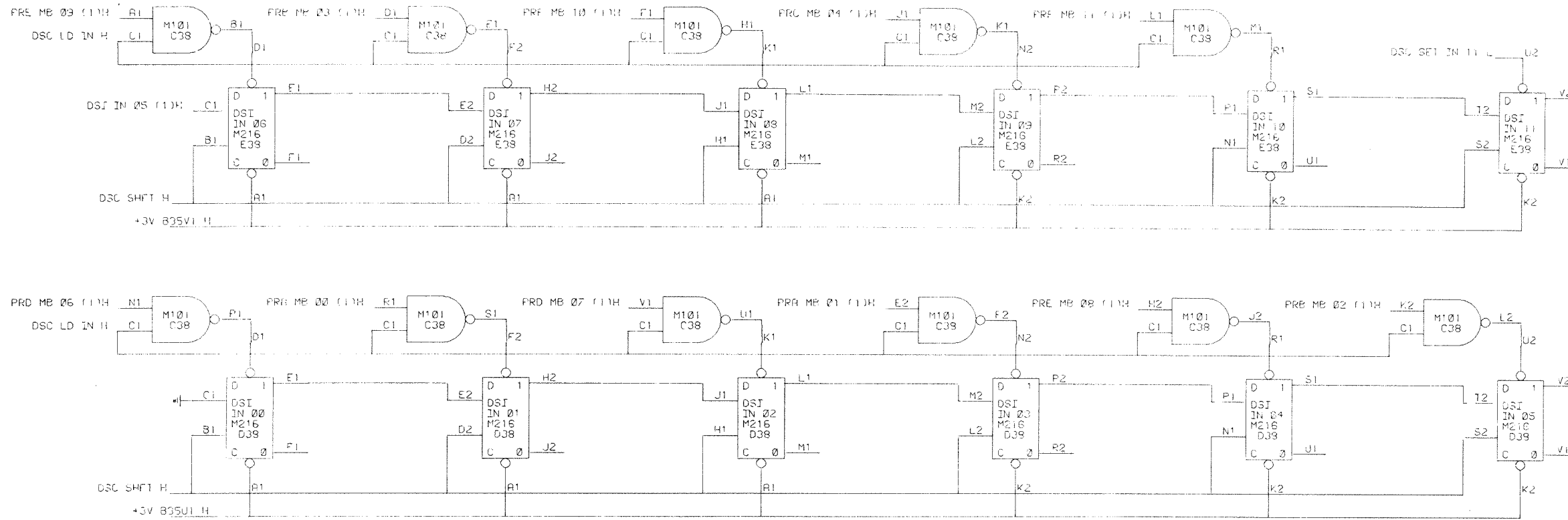
4

3


2

1

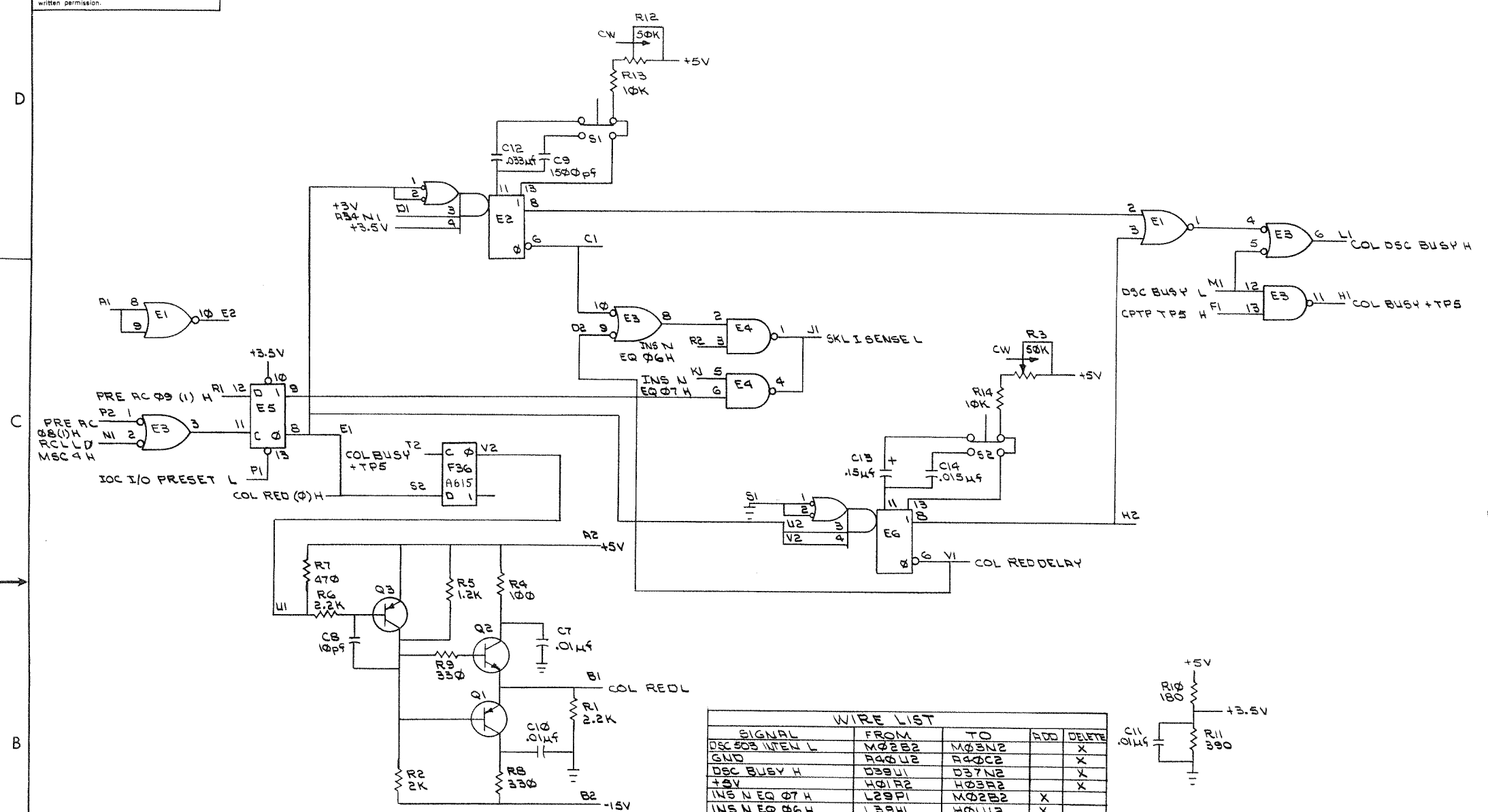
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REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON	DATE	
VC12		TITLE DISPLAY INT REG
SCALE		SIZE CODE D BS
SHEET 1 OF 1		NUMBER VC12-0-DS1
		REV. 00
		DIST.

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NOTE:  
HAND WIRING LIST BELOW REQUIRED  
BEFORE INSTALLING INTO THE PDP-12

WIRE LIST				
SIGNAL	FROM	TO	ADD	DELETE
DSC BUS I SENSE L	M02B2	M03N2		X
GND	A40U2	A40C2		X
DSC BUSY H	D39U1	D37N2		X
+5V	H01R2	H03F2		X
INS N EQ 07 H	L29P1	M02B2	X	
INS N EQ 06 H	L39H1	H01U2	X	
INS N EQ 06 H	D36R2	A40U2	X	
SKL I SENSE L	K40K1	H01R2	X	
DSC BUSY H	D39U1	D36L1	X	

D36  
M7601

REV	NO	DATE	BY
A	1	11-3-71	F. STRAIGHT

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VC12-C				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED, DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XXX = .005	±0° 30'	<b>COLOR SCOPE CONTROL</b>		
.XX = .02				
.X = .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	SCALE NONE	D CS	VC12-C-COL	A
SHEET OF		DIST.		

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<b>DIGITAL EQUIPMENT CORPORATION</b>						
MAYNARD, MASSACHUSETTS						
<b>ENGINEERING SPECIFICATION</b>					DATE 9/24/69	
TITLE VC12 SPECIFICATIONS						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
<u>GENERAL</u>						
The VC12 Scope Control consists of electronic circuitry designed to convert digital voltage levels into analog voltages for application to the input amplifier circuitry of suitable CRT display scopes. Timing and logical circuitry designed to permit the display of information derived from the PDP-12 central processor and memory asynchronously in either of two modes, Point Plotting or Character Display, is provided.						
<u>INSTRUCTIONS</u>						
DIS mnemonic 140+20I+ $\alpha$						
DSC mnemonic 1740+20I+ $\beta$						
<u>DIGITAL TO ANALOG CONVERTER</u>						
<u>VOLTAGE RANGE</u>						
Condition: digital input = $000_8 \ 0 \text{ v} \pm .3 \text{ v}$						
digital input = $777_8 \ -5.85 \text{ v} \pm .3 \text{ v}$						
<u>DEFINITION</u>						
The output voltage range is divided into 512 equal parts $\pm 1/2$ part.						
<u>TEMPERATURE STABILITY</u>						
.02% / $^{\circ}\text{C}$						
ENG <i>R. Douglas</i>	APPD <i>L. Gale</i>	SIZE <b>A</b>	CODE SP	NUMBER VC12-0-5	REV	

<b>ENGINEERING SPECIFICATION</b>			CONTINUATION SHEET														
TITLE VC12 SPECIFICATIONS																	
<p><u>TOTAL TRANSITION TIME</u></p> <p style="padding-left: 40px;">.3% of maximum voltage transition    5 <math>\mu\text{sec}</math> + 25 nsec/ft. of output cable length</p> <p><u>DC OUTPUT IMPEDANCE</u></p> <p style="padding-left: 40px;">100 <math>\Omega</math> min. -- 200 <math>\Omega</math> max.</p> <p><u>WORST CASE LOAD CONDITIONS</u></p> <p style="padding-left: 40px;">1 K<math>\Omega</math> min in parallel with 5000 pf max.</p> <p><u>MAXIMUM CABLE LENGTH</u></p> <p style="padding-left: 40px;">200 ft.</p> <p><u>DIGITAL CIRCUITRY</u></p> <p style="padding-left: 40px;">Input Conditions: 2 TTL unit load at the data input from processor registers.</p> <p style="padding-left: 40px;">Other digital signals are generated on the M711 logical control circuit.</p> <p><u>DISPLAY CHARACTER</u></p> <p>Two additional register elements, drivers, and weighted resistors are provided to add the weighted values of 2 increments and 4 increments under control of the M711.</p> <p><u>LOGICAL CONTROL CIRCUITRY</u></p> <p style="padding-left: 40px;"> </p> <p><u>INPUT LOADS</u></p> <table style="width: 100%; border: none;"> <tr> <td style="padding-left: 20px;">TS5</td> <td style="text-align: right;">3 TTL unit loads</td> </tr> <tr> <td style="padding-left: 20px;">EXECUTE B(1)</td> <td style="text-align: right;">1 TTL unit load</td> </tr> <tr> <td style="padding-left: 20px;">DIS</td> <td style="text-align: right;">1 TTL unit load</td> </tr> <tr> <td style="padding-left: 20px;">DSC</td> <td style="text-align: right;">1 TTL unit load</td> </tr> <tr> <td style="padding-left: 20px;">DIS + DSC</td> <td style="text-align: right;">1 TTL unit load</td> </tr> <tr> <td style="padding-left: 20px;">PIE DSC • EXECUTE 2</td> <td style="text-align: right;">2 TTL unit loads</td> </tr> <tr> <td style="padding-left: 20px;">PRFAC(4)1</td> <td style="text-align: right;">1 TTL unit load</td> </tr> </table>				TS5	3 TTL unit loads	EXECUTE B(1)	1 TTL unit load	DIS	1 TTL unit load	DSC	1 TTL unit load	DIS + DSC	1 TTL unit load	PIE DSC • EXECUTE 2	2 TTL unit loads	PRFAC(4)1	1 TTL unit load
TS5	3 TTL unit loads																
EXECUTE B(1)	1 TTL unit load																
DIS	1 TTL unit load																
DSC	1 TTL unit load																
DIS + DSC	1 TTL unit load																
PIE DSC • EXECUTE 2	2 TTL unit loads																
PRFAC(4)1	1 TTL unit load																
	SIZE <b>A</b>	CODE SP	NUMBER VC12-0-5														
			REV														



TITLE VC12 SPECIFICATIONS

OUTPUT DRIVE CAPABILITIES

BUSY H	10 TTL unit loads
BUSY L	8 TTL unit loads
Intensify H	10 unit loads if pol switch -
Intensify L	10 unit loads if pol switch +
Intensify A*	20 ma to +3 v
	8 ma to 0 v

- \* Intensify A is a push pull driver exhibiting 100 (nominal) drive impedance to ground or plus five volts. The polarity switch allows change of pulse polarity by connecting the input to the driver to either Intensify H or Intensify L outputs. The output has an integrator circuit built in to limit rise and fall time effects on the analog output.

INTENSIFICATION PATTERN REGISTERBUFFER SIZE AND TYPE

12 bit shift register

NATURE OF LOAD SOURCE

1's transfer from memory buffer

INSTRUCTION EXECUTION TIME

DIS:  $< 27 + a \mu\text{sec}$  where  $a = .5 \mu\text{sec}$  if width switch is MIN position or  
 $a = 10 \mu\text{sec}$  if width switch is MAX position.

DSC:  $< 27.5 + 1.5a + 2.5b + .5b$

where a = number of non intensified points \*\*

b = number of intensified points \*\*

- \*\* The PRR switch sets the time between intensification pulses during the execution of the DSC instruction.

Thus, the third term of the DSC time formula should read as written if the PRR switch is in FAST position or +7.6b for the PRR switch in SLOW position.

SIZE A	CODE SP	NUMBER VC12-0-5	REV
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TITLE VC12 SPECIFICATIONS

\*\*\* The WIDTH switch sets the width of the intensification pulse.

Thus, the fourth term of the DSC should read as written if the WIDTH switch is MIN or + 10b if the WIDTH switch is set to MAX position.

TIMING MODE

Asynchronous

NOTE: Execution times indicate the actual duration of execution of the display instructions; because of the asynchronous nature of the VC12 control the processor is free to execute other nondisplay instructions after  $3.2 \mu\text{sec}$  for DIS instructions or  $4.8 \mu\text{sec}$  for DSC instructions.

The PDP-12 processor will pause if instructed to execute a display instruction before completion of a previous display instruction unless forced to abort completion of the first display instruction in favor of execution of the second instruction by the assertion of a tape interrupt.

LOGICAL FUNCTION of VC12 shall be as illustrated on prints

FD-PDP12-0-17  
 FD-PDP12-0-18  
 FD-PDP12-0-20  
 FD-VC12-0-4

CHARACTER DISPLAYCHARACTER SIZE

Defined by a flip flop storage element in conjunction with circuitry in the logical control and Digital to Analog Converter modules.

The flip flop storage element is jam loaded from the contents of AC bit 4 by pulses produced during the execution of ESF instruction (Code 0004).  $C(AC_4) = 1$  indicates half size.

SIZE A	CODE SP	NUMBER VC12-0-5	REV
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TITLE VC12 SPECIFICATIONS

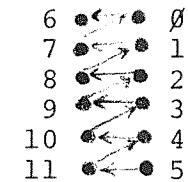
POINT INCREMENT SIZE

Half size: 24 mv. ±3 mv.\*

Full size: 48 mv. ±5 mv.\*

\* On a VR12 adjusted to display a 6.75 inch by 9 inch image, half size character point increments shall be .026 inches on the vertical axis and .035 inches on the horizontal axis; and full size character point increments shall be .052 inches on the vertical axis and .070 inches on the horizontal axis.

THE ANALOG CIRCUITRY, CONTROL AND PATTERN INTENSIFICATION REGISTERS shall be constructed that the beam will be directed on the CRT to two parallel 6 point lines, the points of which are to be intensified by a 1 in the appropriate memory bit as indicated in the diagram below.



DISPLAY CHANNEL

A flip flop storage element shall be provided to apply to an appropriate output pin a digital voltage capable of driving up to 10 TTL gate input loads.

Load Source (channel flip flop) bit 0 of the alpha register referenced if a DIS instruction, or memory loc 0001 if a DSC instruction.

"AND" logic gates must be provided at the CRT display logically select the intensification pulses defined to coincide with the analog points to be displayed on either channel as defined by the logic level.

SIZE	CODE	NUMBER	REV
A	SP	VC12-0-5	







**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE

VC12-C INSTRUCTION SUMMARY (LINC MODE)

MNEUMONIC	CODE	DESCRIPTION
ESF	0004	If the accumulator =14 the ESF instruction will set the VR20 to red mode. If the AC=10 the green mode will be set. I/O preset sets the green mode.
RSKP	447 + 20I	Skip on red mode if I=0 Skip on green mode if I=1
DSKP	446 + 20I	Skip on color not ready if I=0 Skip on color ready if I=1 Used after the ESF instruction to indicate the VR20 has switched colors

VC12 INSTRUCTIONS (REFERENCE)

MNEUMONIC	CODE	DESCRIPTION
DIS	140 + 20I + α	Display a dot. If I=0 the contents of the α register is the horizontal coordinate. If I=1 the contents of α incremented by one is the horizontal coordinate. If bit 0 of the contents of α = 0 channel 1 is set. If bit 0=1 channel 2 is set. In all cases the AC holds the vertical coordinate
DSC	1740 + 20I + β	Display character instruction displays at 2 x 6 dot matrix. The address of the pattern word is either taken from the contents of β, (I=0) or contents of β + 1, (I=1)

SIZE A	CODE SP	NUMBER VC12-C-1	REV
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**ENGINEERING SPECIFICATION**

CONTINUATION SHEET

TITLE

NOTE:

Previous to this option linc codes 0466 and 0467 were implied unconditional skips. Any programs that use these codes and are to be customer modified to utilize the color scope will require redefining these codes.

Programs written on the dial assembler are unaffected because dial defines the skip as 0456.

PROGRAM EXAMPLE

This routine illustrates a method of displaying two dots at center screen on the VR20. One dot will be in green on channel 1, the other in red on channel 2.

MNEUMONIC	ADDRESS/CONTENTS	COMMENT
*20		
Start, LDA	4020/1000	/Store Address,
XADD1	4021/0045	/of X Coordinate,
STC ALPHA	4022/4002	/into the α register
LDA I	4023/1020	/Put green mode,
10	4024/0010	/No. into AC.
ESF	4025/0004	/set green mode.
DSKP I	4026/0466	/done switching green?
JMP.-1	4027/6026	/no wait.
CLR	4030/0011	/set vertical coord.=0
DIS ALPHA	4031/0142	/display a green dot.
LDA	4032/1000	/Store address of,
XADD2	4033/0046	/X coord. plus channel,
STC	4034/4002	/2 Into the α register.
LDA I	4035/1020	/put red mode no.,
14	4036/0014	/into the AC.
ESF	4037/0004	/set red mode.
DSKP I	4040/0466	/Done switching to red?
JMP.-1	4041/6040	/No wait.
CLR	4042/0011	/set vertical coord=0.
DIS ALPHA	4043/0142	/Display A red dot.
JMP START	4044/6020	/Do it all again.
XADD1, 1400	4045/1400	/X coord. Chan 1
XADD2, 5400	4046/5400	/X coord. Chan 2
ALPHA =2		/defined for assembler
DSKP =446		/

SIZE A	CODE SP	NUMBER VC12-C-1	REV
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**TITLE**

GENERAL SPECIFICATIONS

NOMINAL COLOR SWITCHING DELAYS:

Red to Green 1.6 MS  
Green to Red .3 MS

DETAILED DESCRIPTION

The M7601 module is utilized only when changing or testing color status on the VR20.

Initially "IOC I/O preset L" sets the pre-color flip-flop to the green mode. The first instruction following sets the scope to green via signal "CoL Busy + TP5". The color flip-flop is part of the A615 D/A module located in slot F36. When a program color change is initiated "RCL LD MSC 4 H" toggles the pre-color flip-flop. The one shot applicable to the color change is triggered and at TP5 time (if no display in progress) the color flip-flop is set to the desired mode. The VR20 scope starts changing color. During this period no display is allowed because "CoL DSC Busy H" is asserted for the length of the delay. Any attempt at displaying will hang the processor in internal pause.

The active one-shot enables the other input to the "INS N EQ 6 H" gate and the instruction 0446 will cause a skip. At any time, the "INS or EQ 07 H" gate reflects the color the scope is in, and can be sampled by the 0447 instruction.

INSTALLATION AND ACCEPTANCE

1. Insure ECO's EM12-0039, EM12-00051 and 12-00096 are installed.
2. Install red wires as per the hand wiring list on print D-CS-VC12-C-CoL.
3. Install the M7601 module into slot D36.
4. Adjust the delays at pin D36B1 for 1.6 MS (red to green) and .3MS (green to red). Use main DEC 12-D6BC or the sample program attached.
5. The VC12-C will be considered acceptable upon successful completion of mainDEC 12-D6BC.

SIZE <b>A</b>	CODE SP	NUMBER VC12-C-1	REV
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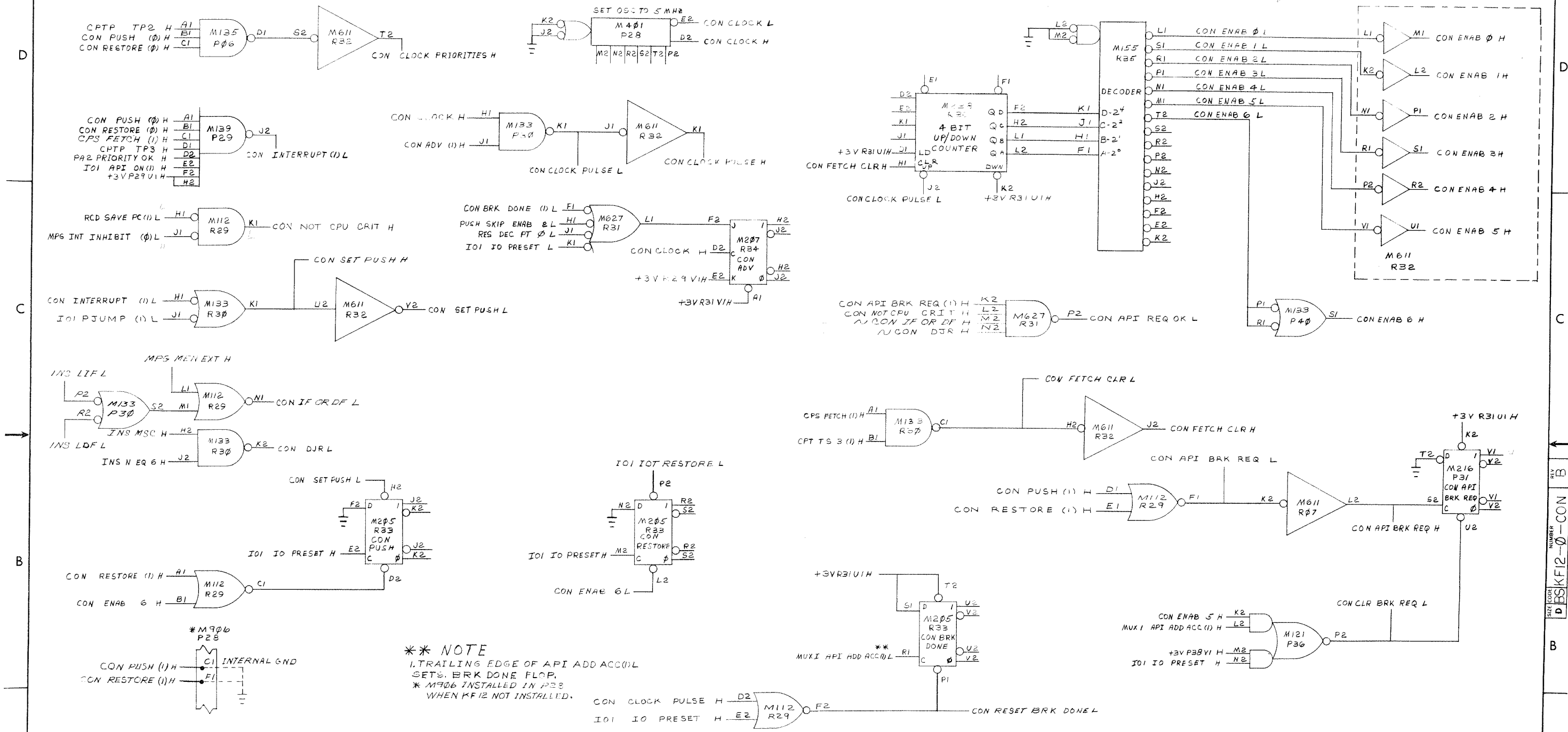
# MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. (PL)
D-BS-KF12-0-CON	B	1	CONTROL GATING
D-BS-KF12-0-I01	B	1	IOT GENERATOR
D-BS-KF12-0-MAIN		1	MAINTENANCE
D-BS-KF12-0-MUX	D	1	MULTIPLEXER CONTROL
D-BS-KF12-0-MUX1		1	MUX API
D-BS-KF12-0-MUX2		1	MUX DEVICE 1
D-BS-KF12-0-PA1	A	1	PRIORITY LEVELS IN
D-BS-KF12-0-PA2		1	PRIORITY DECODING
D-BS-KF12-0-PTRS		1	STACK & VECTOR POINTERS
D-BS-KF12-0-PUSH		1	PUSH GATING
D-BS-KF12-0-RES	B	1	RESTORE GATING
D-BS-KF12-0-SSB		1	SAVE STATUS BITS
D-IC-KF12-0-CAB		1	BREAK DEVICE CABLE
D-FD-KF12-0-MRG	A	1	MAJOR REGISTER GATING
D-FD-KF12-0-FD	A	1	FLOW DIAGRAM
D-FD-KF12-0-FDBF		1	BLOCK FLOW
D-FD-KF12-0-FDVG		1	VECTOR GATING
A-SP-KF12-0-1	REF		ENGINEERING SPECIFICATIONS

REVISIONS				DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>			
REV.	DATE	CHG. NO.	APP'D.	E. WILSON	3/17/71				
A	06/71	EP12-40	D.M.	<i>[Signature]</i>	5/21/71	<b>TITLE</b>  AUTOMATIC PRIORITY INTERRUPT			
B	8/71	EP12-42	R.M.	<i>[Signature]</i>	5/21/71				
C	10/71	EP12-43	R.M.	<i>[Signature]</i>	5/21/71				
D	1/72	EP12-44	R.M.	<i>[Signature]</i>	5/21/71				
E	7/72	EP12-46	R.I.	<i>[Signature]</i>	5/21/71				
FIRST USED ON				PDP12		SIZE	CODE	NUMBER	REV.
SCALE						A	ML	KF12-0	E
SHEET				1	OF	1	DIST.		

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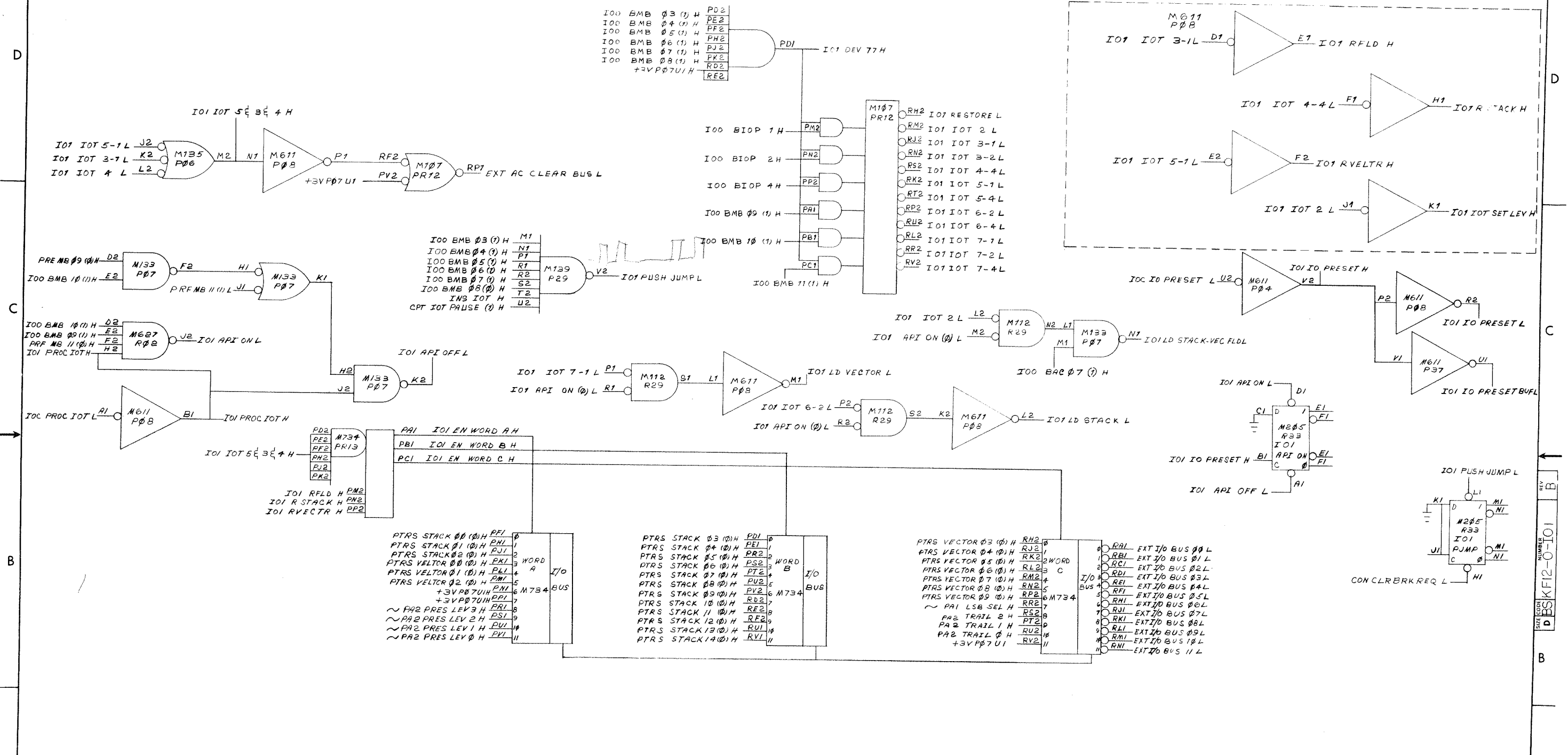
REV. B  
 NUMBER  
 DBSKF12-0-CON



REV	NO	DATE	BY	CHKD
A	1	5-14-72	MOORE	
B	2		IKNAIAN	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. CHK'D.	DATE DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	ENG.	DATE		
ANGLES ±0° 30'	PROJ. ENG.	DATE	TITLE <b>CONTROL GATING</b>	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE		
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH			A-ML-KF12-0	DBSKF12-0-CON
	SCALE		DIST	REV. B
	SHEET	OF		

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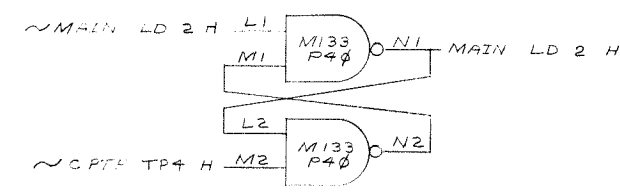
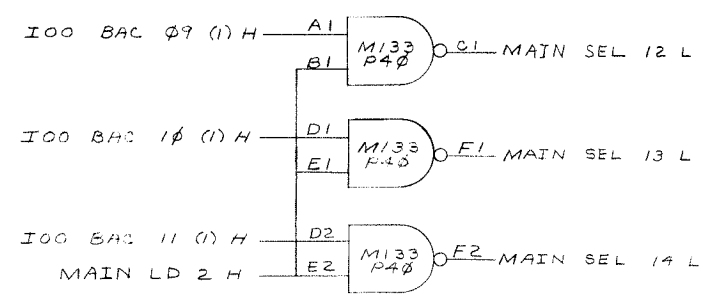
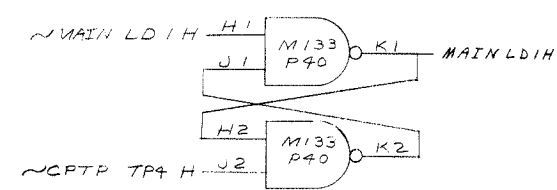
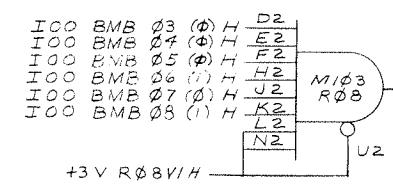
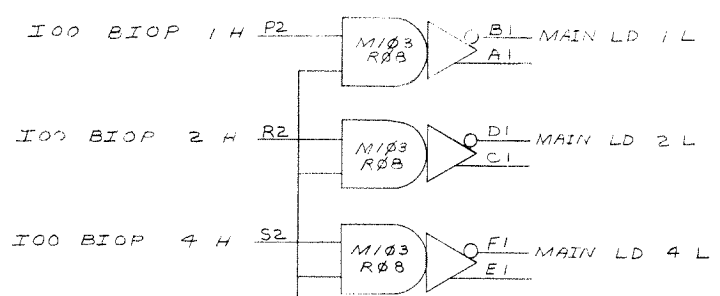
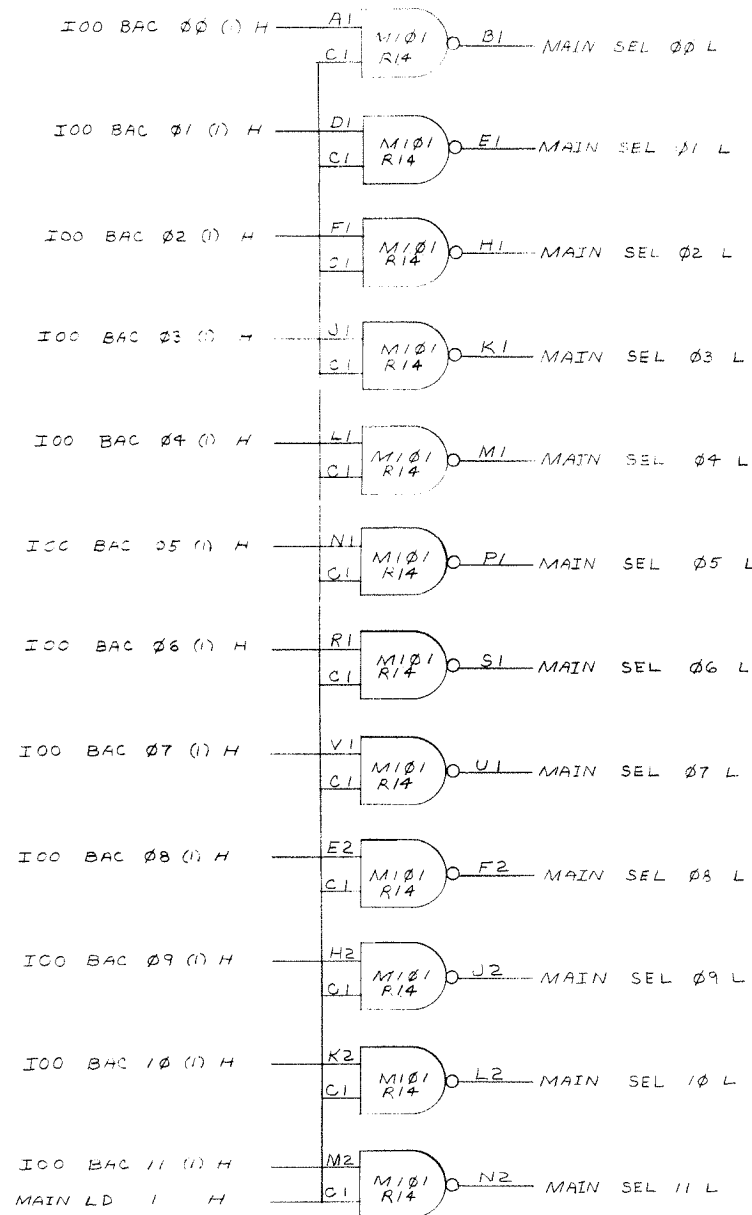
REV	CHANGE NO	BY	DATE
A	00044	MOORE	1-14-73
		IKNAIAN	1-14-73
			1-14-73

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDPI2				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRN. DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	ANGLES	CHK'D. DATE	TITLE	
.XXX ± .005	± 0° 30'	ENG. DATE	IOT GENERATOR	
.XX ± .02		PROJ. ENG. DATE		
X ± .1		PROD. DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	SCALE	SIZE CODE	NUMBER
		A-ML-KF12-0	DBSKF12-0-IO1	B
FINISH	SCALE	SHEET	OF	DIST.

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D  
 C  
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 B  
 A



REV	
CHANGE NO	
REVISIONS	
CHK	

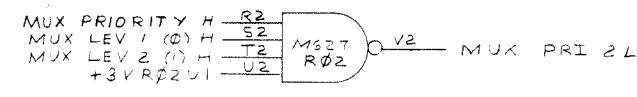
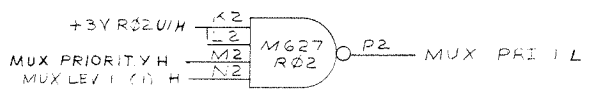
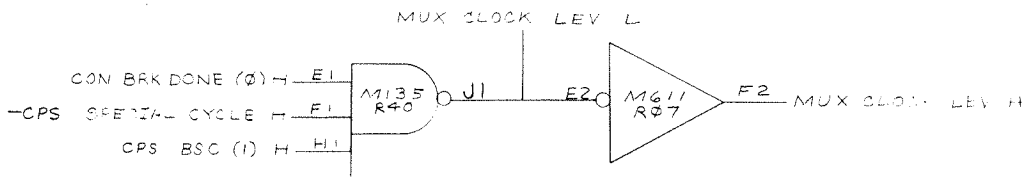
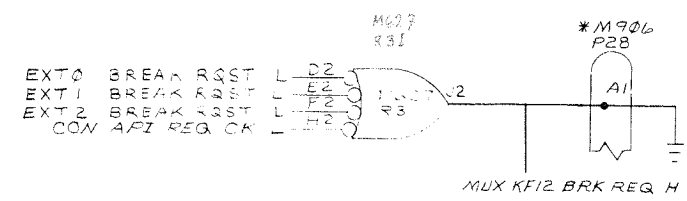
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDF 12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. DATE 2-23-71	digital EQUIPMENT CORPORATION		
DECIMALS .XXX - .005	CHK'D. DATE 2-24-71	TITLE		
ANGLES ±0° 30'	ENG. DATE 2-24-71	MAINTENANCE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. DATE 2-24-71			
MATERIAL	PROD. DATE 2-24-71			
FINISH	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
	A-M1-KF12-C	D	BS/KF12-C-MAIN	
	SCALE	DIST.		
	SHEET 1 OF 1			



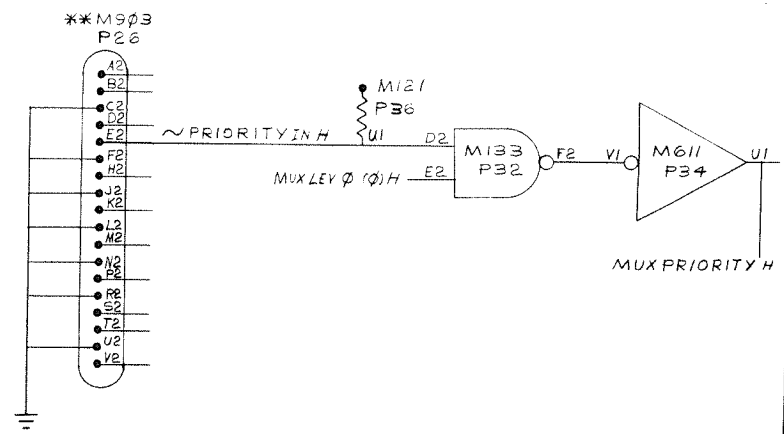
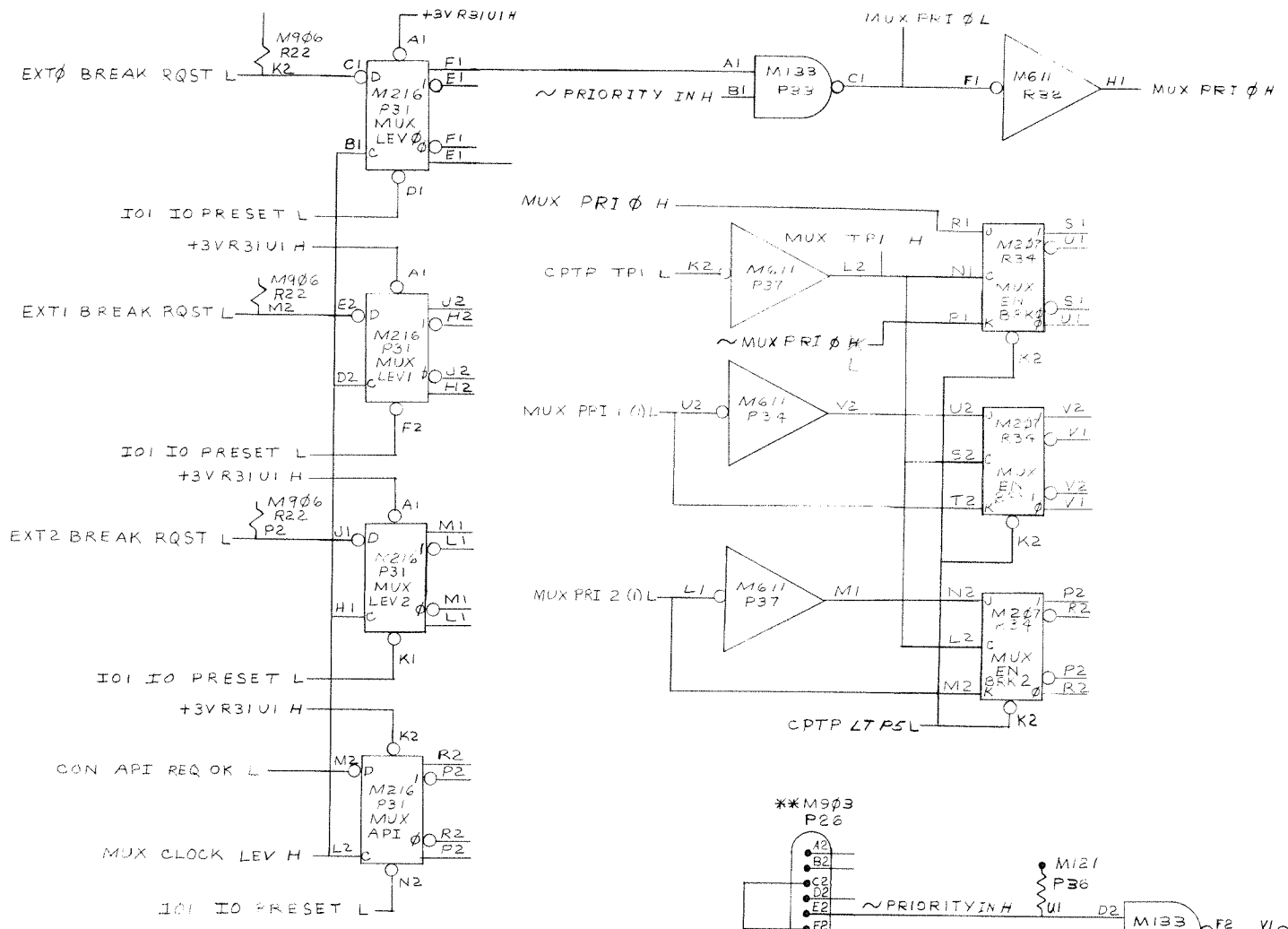
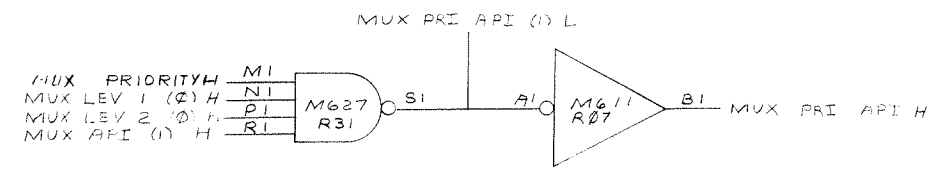
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171-7-74 58 a 2

D  
C  
B  
A



NOTE:  
1. \*M906 INSTALLED IN P28 WHEN KF12 NOT INSTALLED.  
2. \*\* CABLE FROM DM 04.



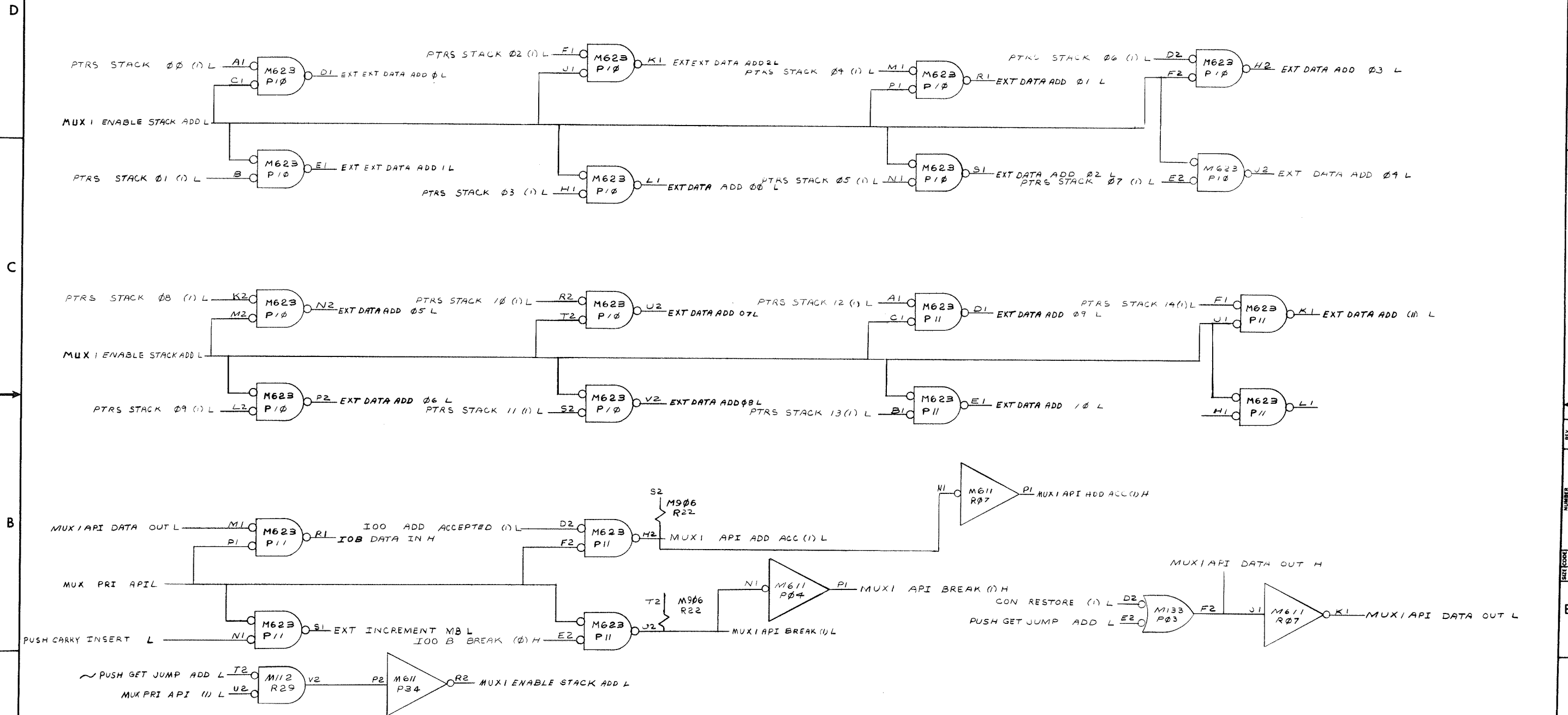
REV	CHANGE NO	DATE	BY	CHK
A	00040	3-5-71	WILSON	WILSON
B	00042	7-9-71	MOORE	MOORE
C	00044	1-12-71	IKNAIAN	IKNAIAN
D	00046	2-14-72	IKNAIAN	IKNAIAN

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDF 12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN WILSON	DATE 3-5-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D WILSON	DATE 7-9-71	TITLE MULTIPLEXER CONTROL	
ANGLES	ENG. WILSON	DATE 7-9-71	MATERIAL	
XXX = .005	PROJ. ENG. WILSON	DATE 7-9-71	NEXT HIGHER ASSY.	
XX = .02	PROD. WILSON	DATE 7-9-71	SCALE	
X = .1			FINISH	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			SHEET OF	
			DIST.	
			SIZE CODE	
			NUMBER	
			REV	
			D	

DEC FORM NO. DRD 102-B

D  
C  
B  
A

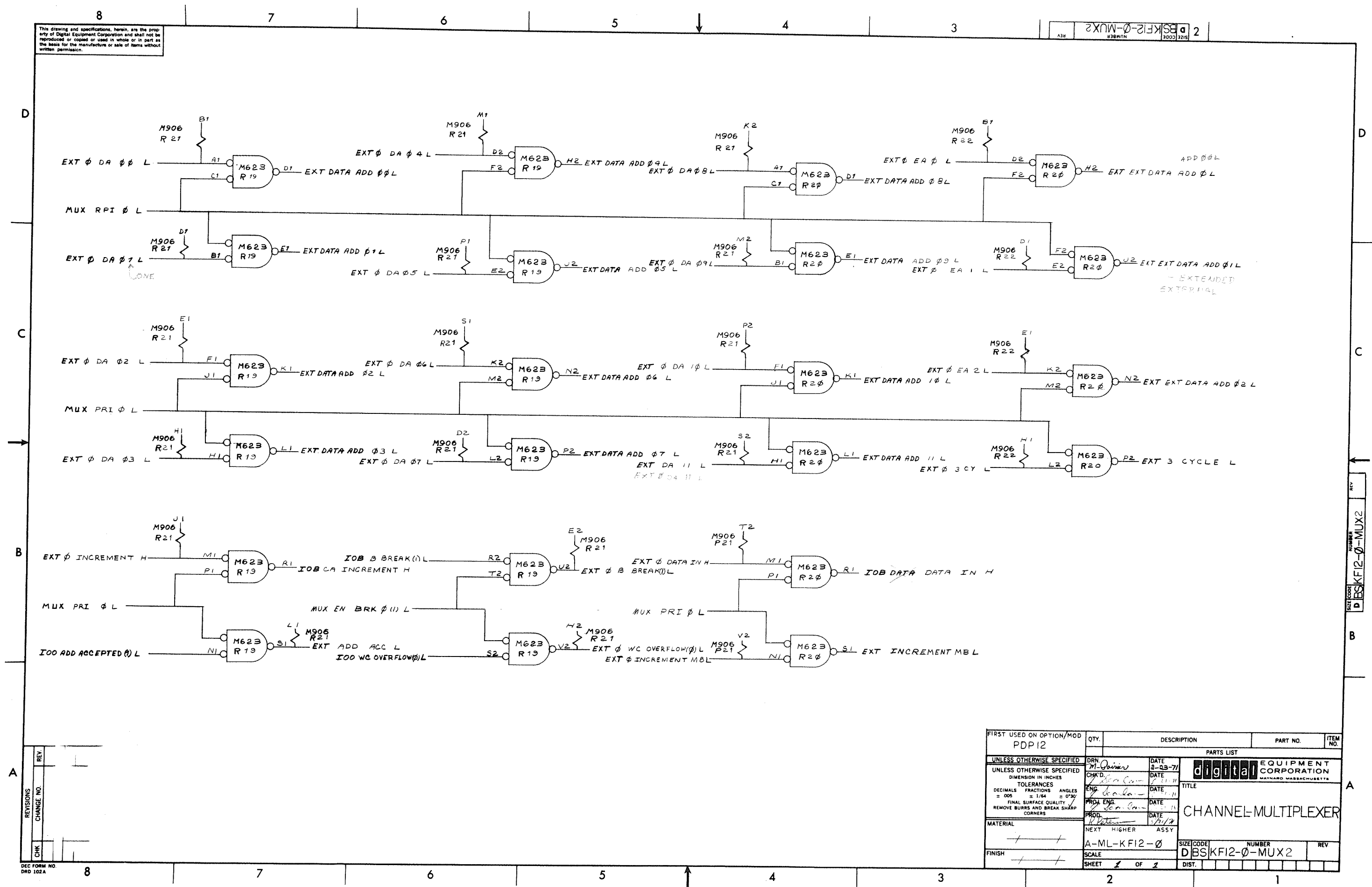
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REV.	
CHG.	
NO.	
REVISIONS	

FIRST USED ON OPTION/MOD PDP12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	TITLE	
DIMENSION IN INCHES	ENG.	DATE	CHANNEL-MULTIPLEXER	
TOLERANCES	PROJ. ENG.	DATE	MUX-API	
DECIMALS FRACTIONS ANGLES	PROJ. ENG.	DATE		
± .005 ± 1/64 ± 0°30'	PROJ. ENG.	DATE		
FINAL SURFACE QUALITY	PROJ. ENG.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS	PROJ. ENG.	DATE		
MATERIAL	NEAT - HIGHER	ASSY		
FINISH	A-ML-KF12-0	SCALE	SIZE CODE	NUMBER
	SHEET 2 OF 2	DIST.	DBSKF12-0-MUX 1	REV

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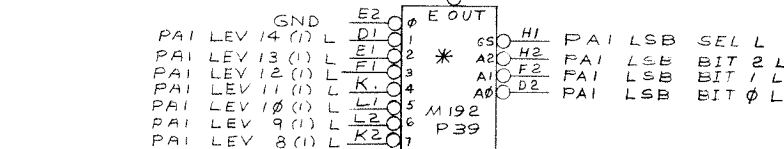
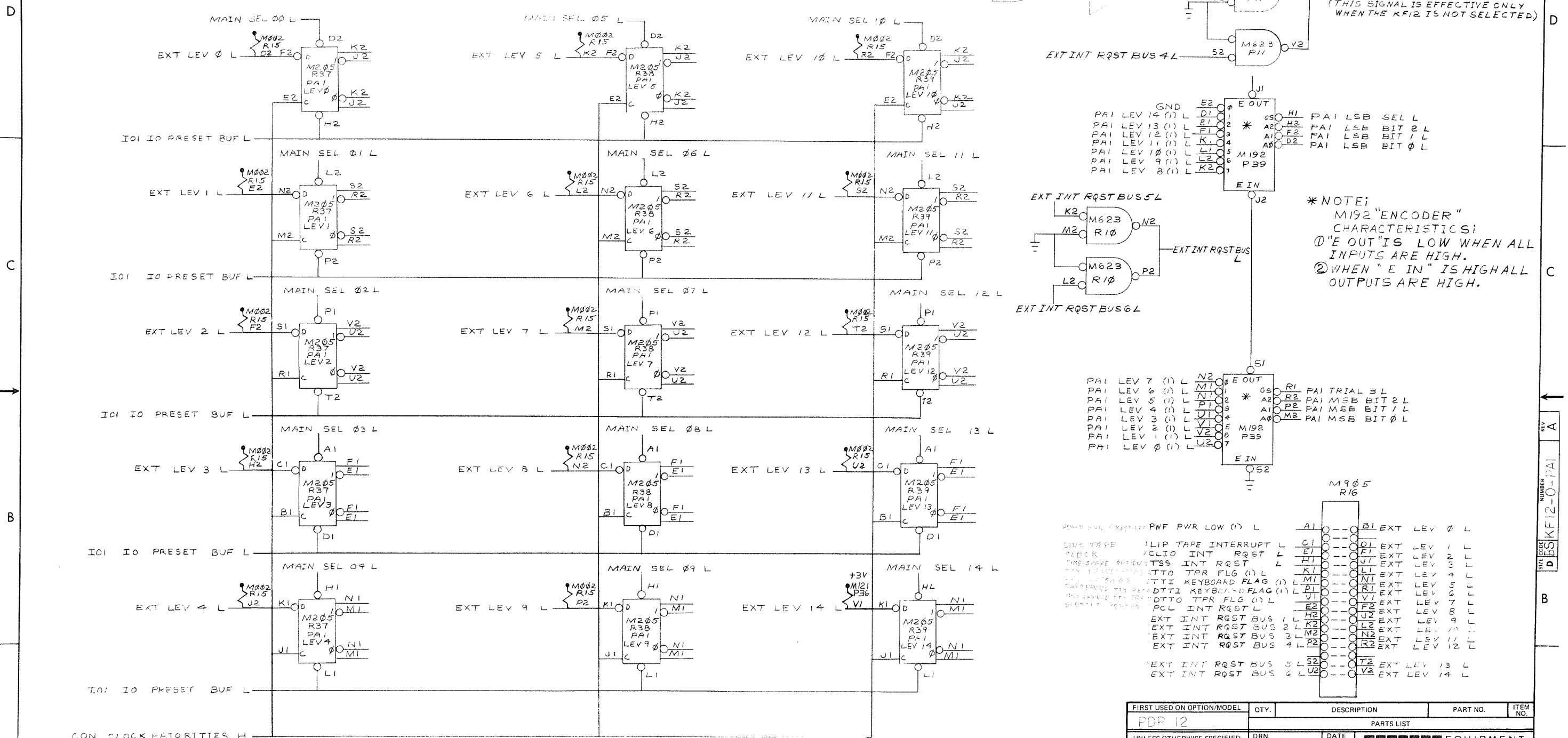
FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED				
DRN.	M. Gainer	DATE	8-23-71	
CHK'D.		DATE		
ENG.		DATE		
PRD. ENG.		DATE		
PROD.		DATE		
MATERIAL				
NEXT HIGHER ASSY				
FINISH				
SCALE				
SHEET 1 OF 1				
A-ML-KF12-0		SIZE CODE	NUMBER	REV
D BSKF12-0-MUX2		DIST.		

REV.	CHANGE NO.	DESCRIPTION
1		

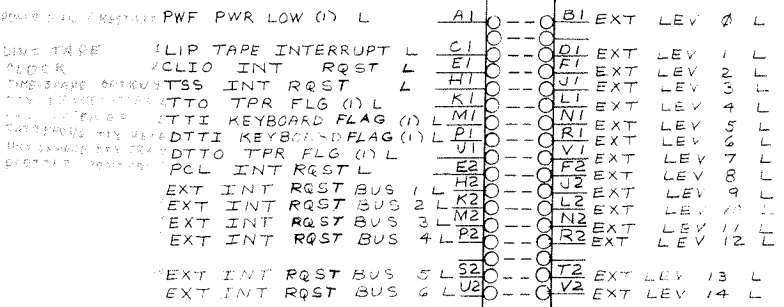
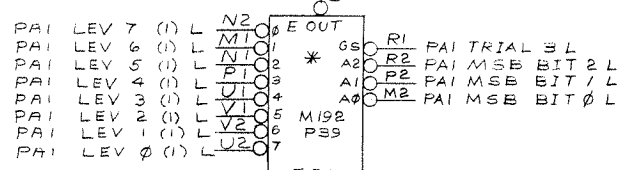
DEC FORM NO. DRD 102A

SIZE CODE NUMBER  
 D BSKF12-0-MUX2

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\*NOTE: "ENCODER" CHARACTERISTICS:  
 ① "E OUT" IS LOW WHEN ALL INPUTS ARE HIGH.  
 ② WHEN "E IN" IS HIGH ALL OUTPUTS ARE HIGH.



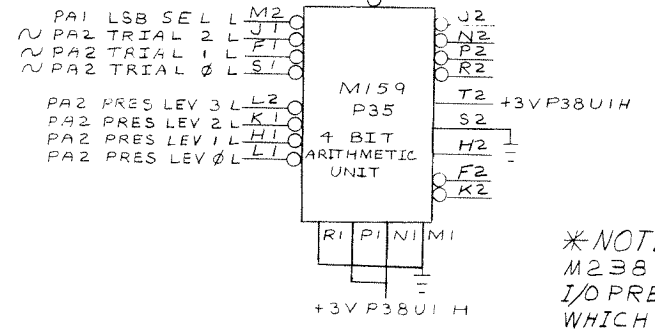
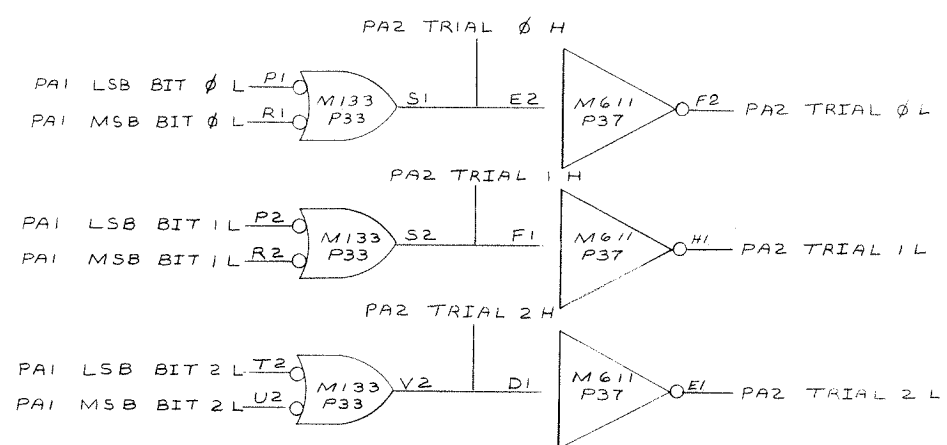
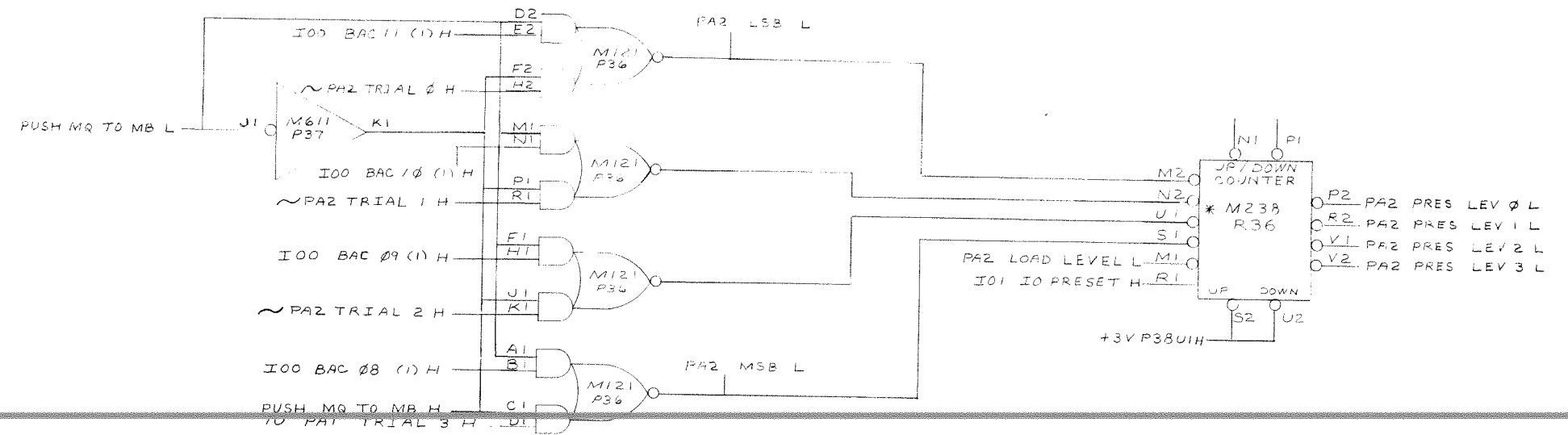
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. <i>E. Wilson</i>	DATE 2-25-71	 TITLE: PRIORITY LEVELS IN	
DECIMALS ANGLES	CHK'D.	DATE 3-1-71		
.XXX = .005 .XX = .02 .X = .1	ENG. <i>[Signature]</i>	DATE 3-1-71		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. <i>[Signature]</i>	DATE 3-1-71		
MATERIAL	PROD. <i>[Signature]</i>	DATE 3-2-71	NEXT HIGHER ASSY. A-ML-KF12-0	
FINISH	SCALE SHEET / OF /	DIST.	SIZE/CODE DBS	NUMBER KF12-0-PAI
			REV. A	

REV. A  
 DATE 10-20-70  
 BY [Signature]  
 CHECKED BY [Signature]  
 MACKLIN  
 DATE 6-28-71  
 BY [Signature]

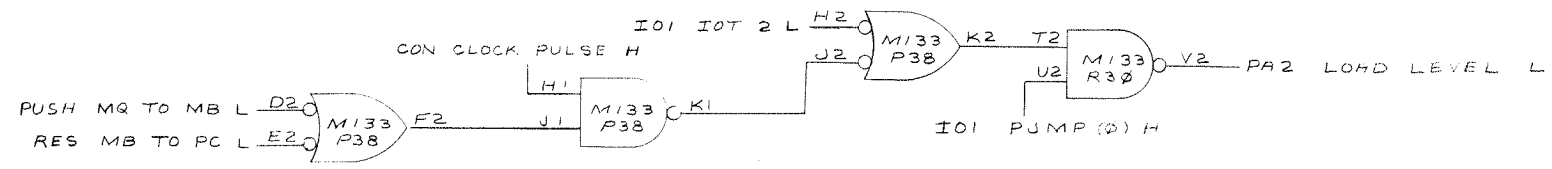
REV. A  
 NUMBER DBS  
 CODE KF12-0-PAI

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2  
 BS KFI2-0-PA2  
 3715



\*NOTE:  
 M238 CHARACTERISTICS.  
 I/O PRESET SETS ALL OUTPUTS LOW  
 WHICH IS LEVEL "17" OR  
 MACHINE LEVEL.



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN E. Nilson	DATE 3-9-71	 digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D	DATE		
ANGLES	ENG.	DATE		
XXX = .005 XX = .02 X = .1	PROJ. ENG.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE	TITLE PRIORITY DECODING	
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	A-ML-KFI2-0		DBS	KFI2-0-PA2
SHEET / OF /			DIST.	REV.

REV.	DESCRIPTION

100-112-B

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D

D

C

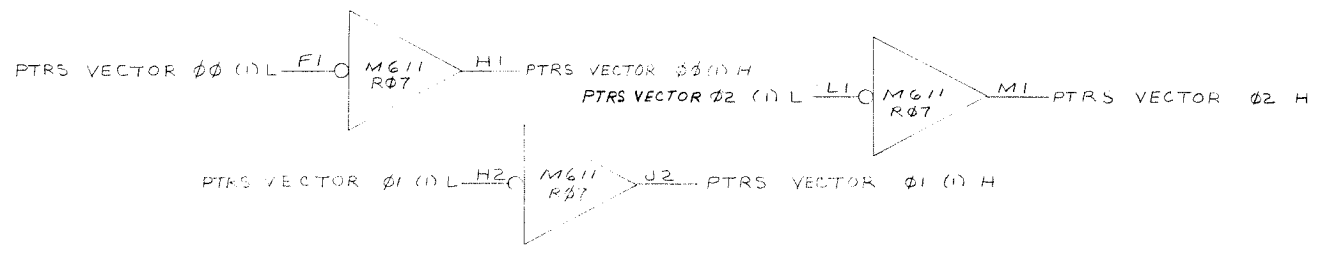
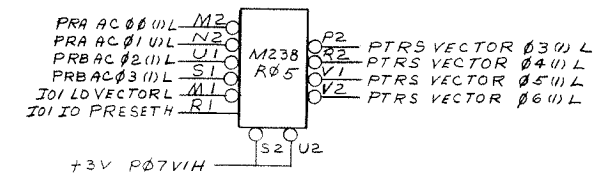
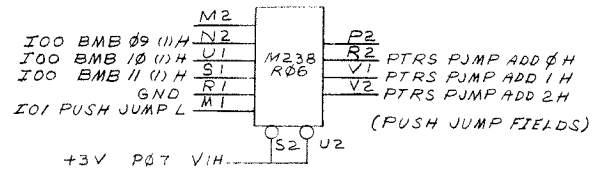
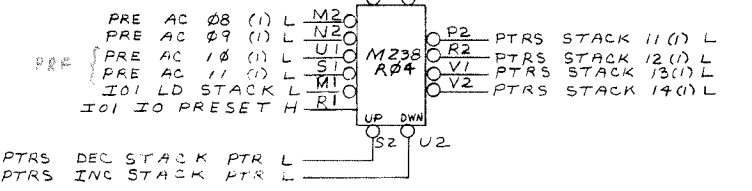
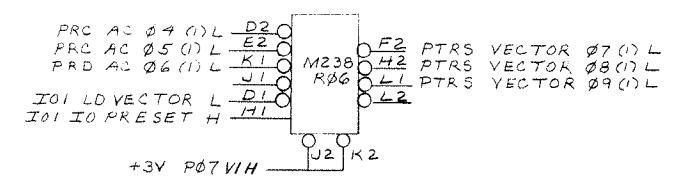
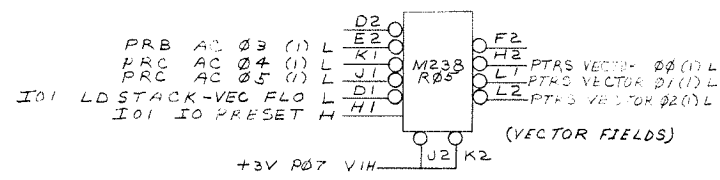
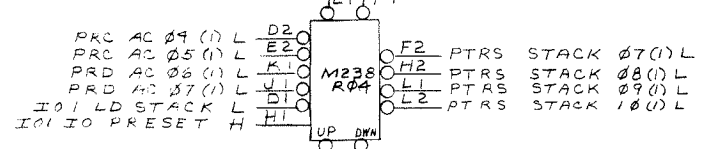
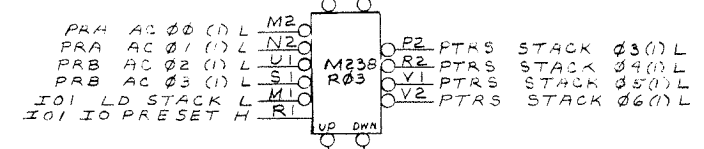
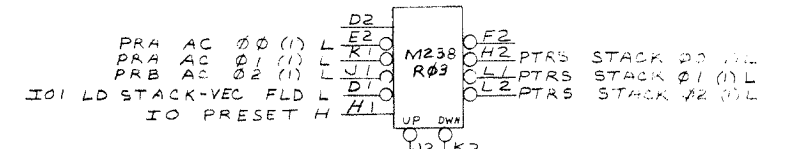
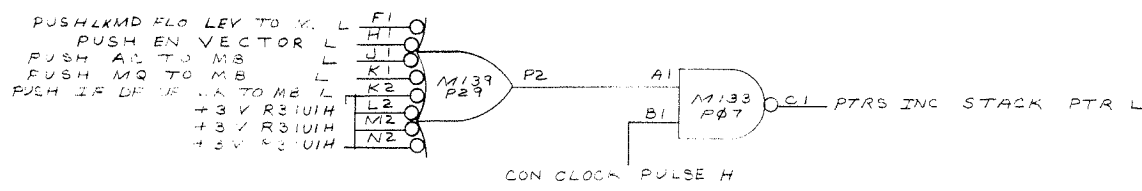
C

B

B

A

A



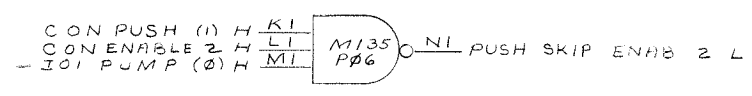
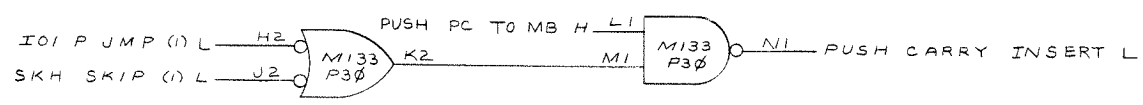
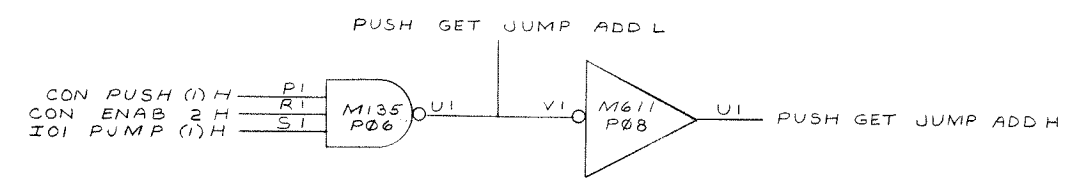
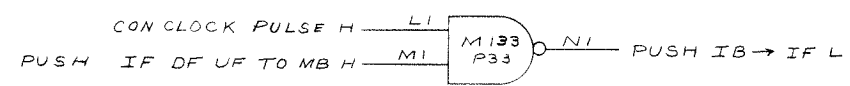
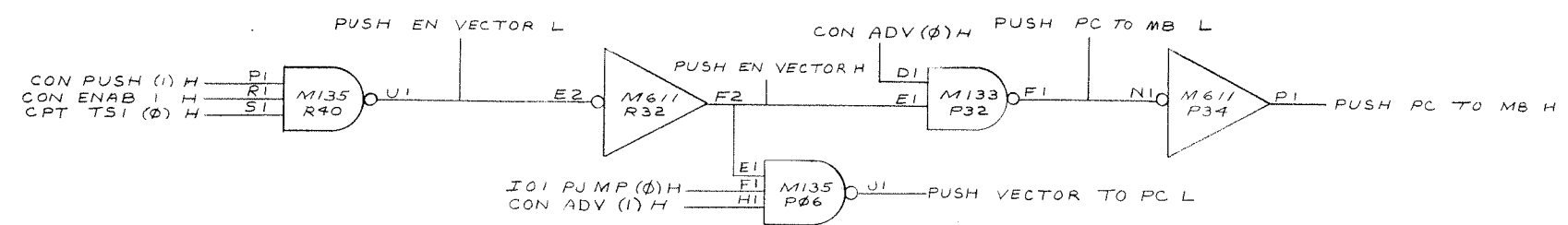
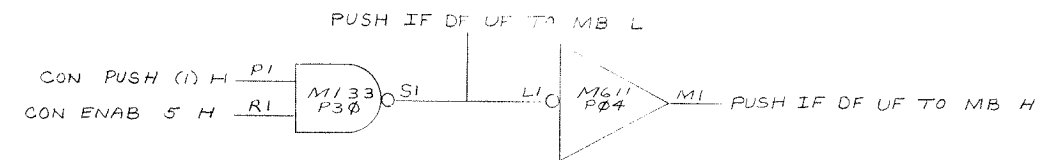
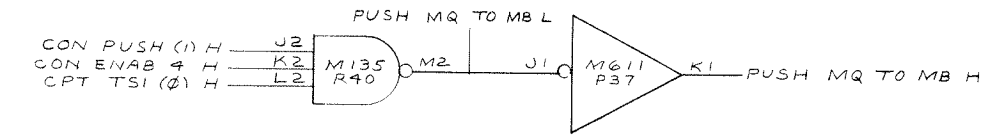
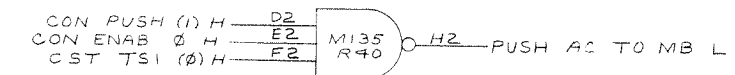
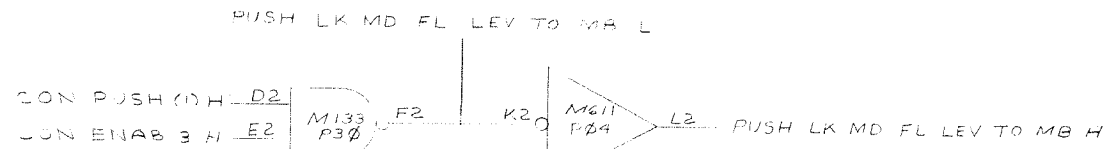
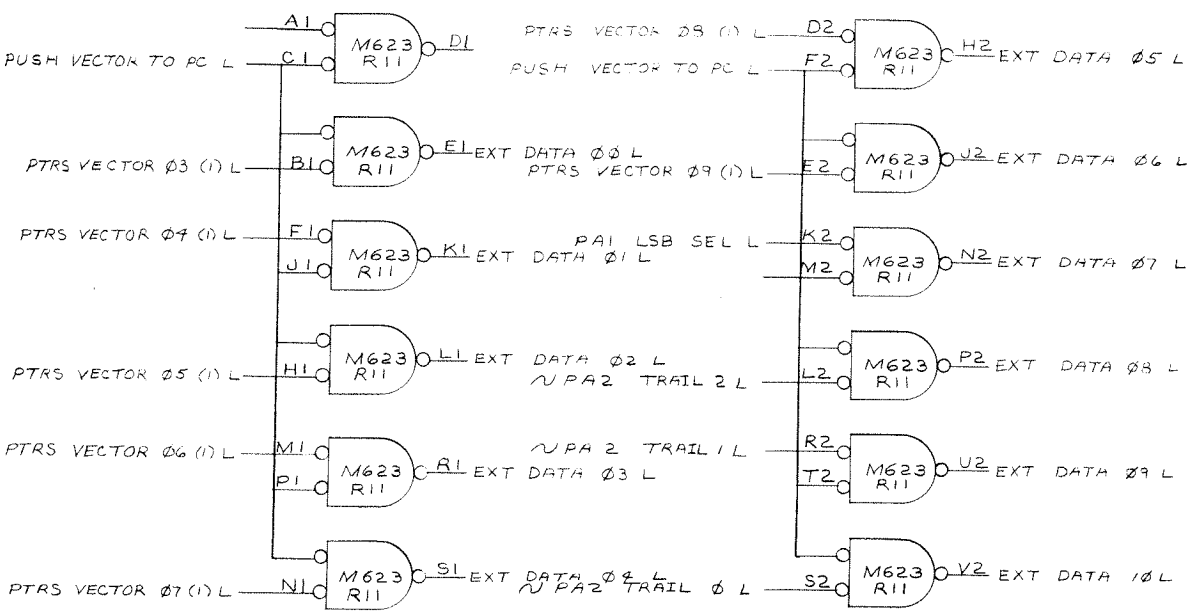
REV	CHANGE NO.

FIRST USED ON OPTION/MODEL PDP 12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN Wilson	DATE 2-24-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS	CHK'D Wilson	DATE 11-71	TITLE STACK & VECTOR POINTERS	
ANGLES	ENG. Wilson	DATE	SIZE CODE A-ML-KF12-0	
.XXX = .005	PROJ. ENG. Wilson	DATE	NUMBER D BSKF12-C-PTRS	
.XX = .02	PROD. Wilson	DATE 12/21	REV.	
.X = .1	REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASSY.			
FINISH	SCALE			
SHEET 1 OF 1		DIST.		

REV. NO. NUMBER D BSKF12-C-PTRS

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D  
C  
B  
A



REV  
NUMBER  
BS KFI2-0-PUSH  
D

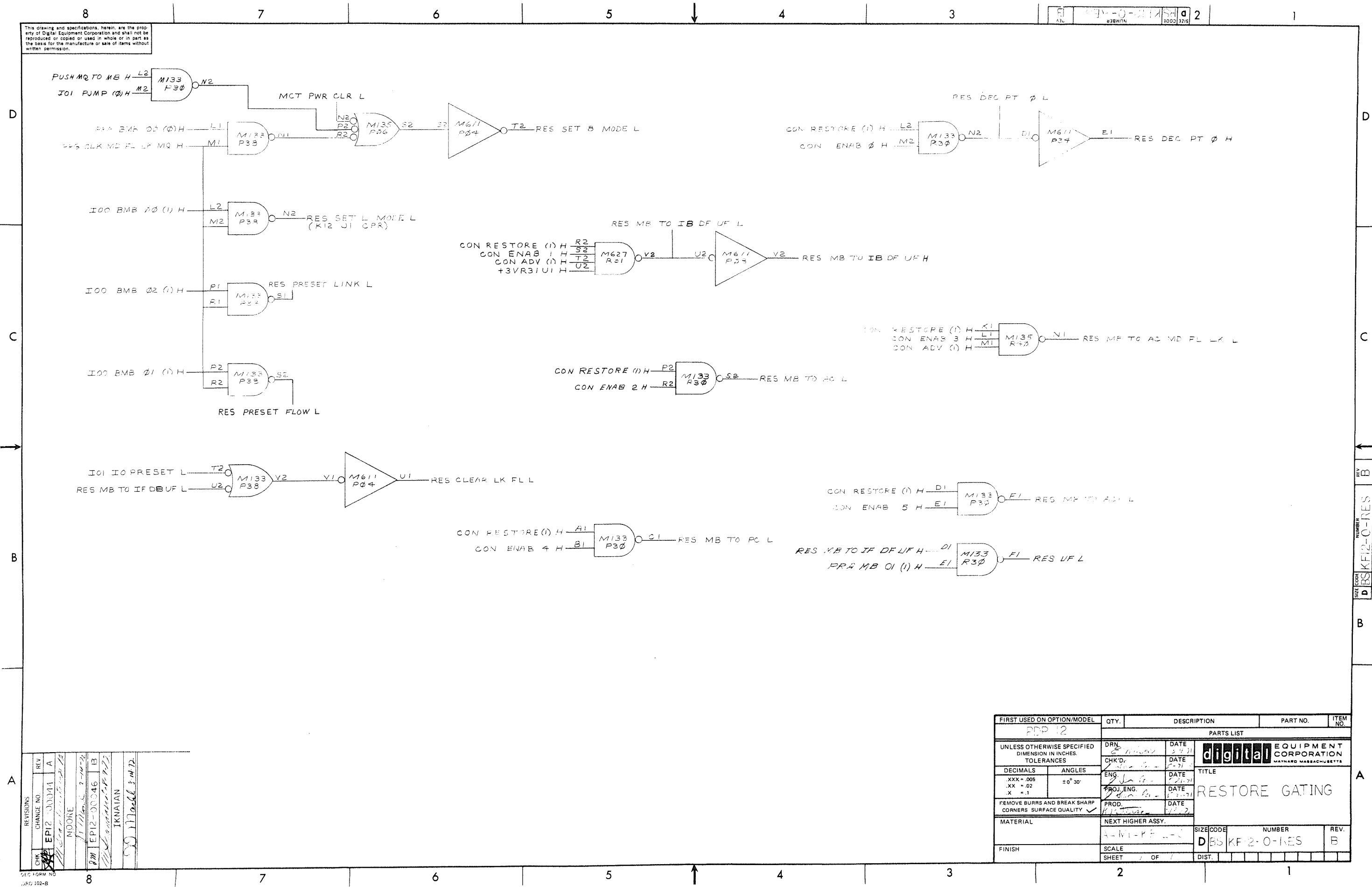
REV	
CHANGES	
DATE	

FIRST USED ON OPTION MODEL PDF 12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	TITLE	
DIMENSION IN INCHES	ENG	DATE	PUSH GATING	
TOLERANCES	PROJ. ENG.	DATE	MATERIAL	
DECIMALS FRACTIONS ANGLES	PROD.	DATE	NEXT HIGHER ASSY	
± .005 ± .001 ± .030	MATERIAL		A-N1-KFI2-0	
FINAL SURFACE QUALITY	FINISH		SCALE	SIZE CODE NUMBER REV
REMOVE BURRS AND BREAK SHARP CORNERS	FINISH		SCALE	D BS KFI2-0-PUSH
	SHEET	OF	DIST.	

A

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REV. 2  
 3000 3215

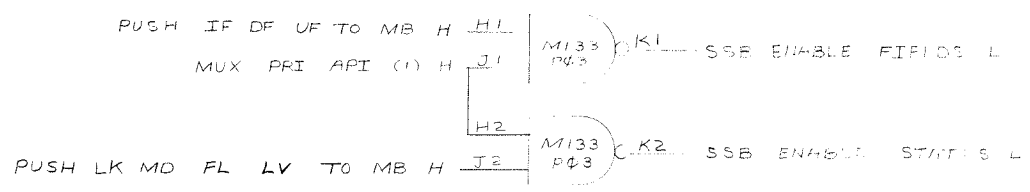
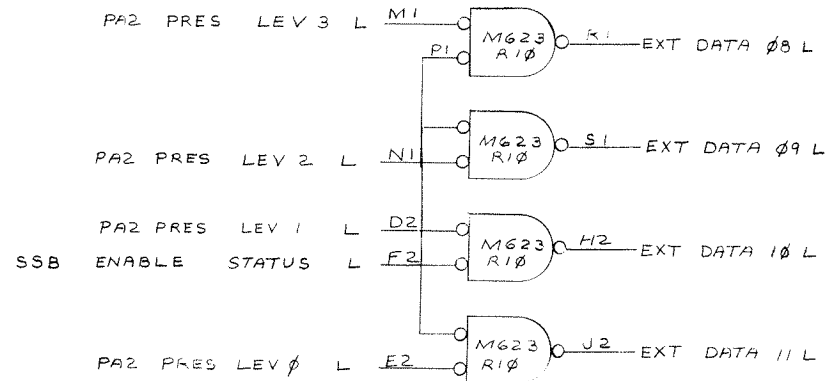
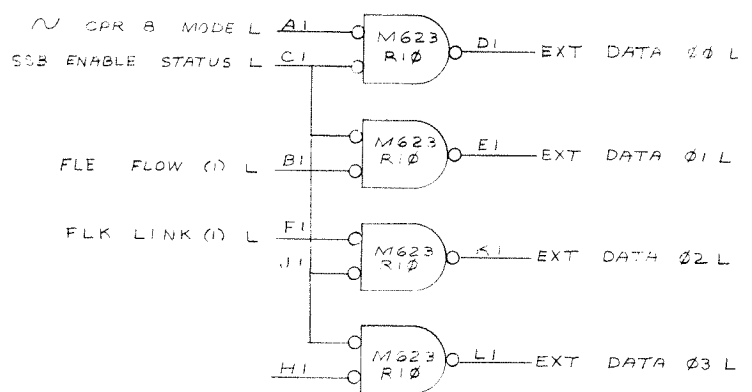
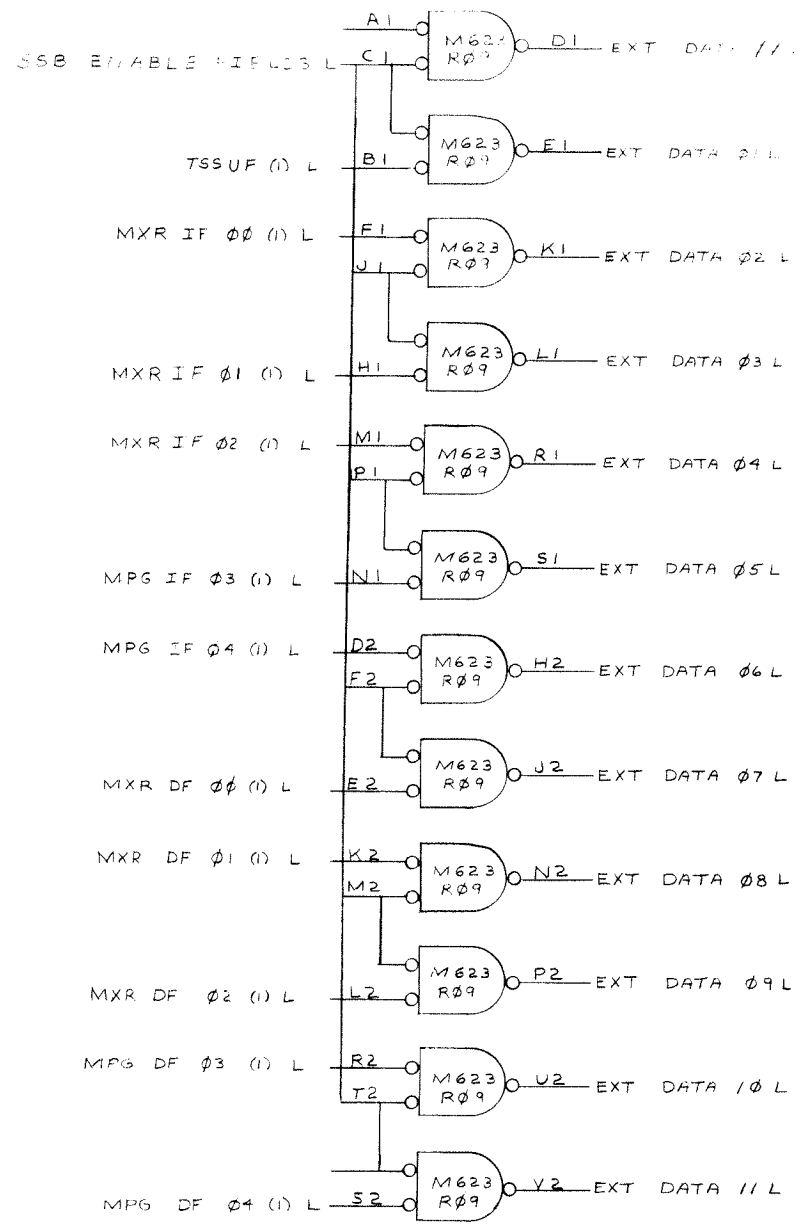


REV	CHANGE NO.	DATE	BY	CHK
A	0001	11/11/71	MOORE	
B	0002	11/11/71	MOORE	
C	0003	11/11/71	MOORE	
D	0004	11/11/71	MOORE	
E	0005	11/11/71	MOORE	
F	0006	11/11/71	MOORE	
G	0007	11/11/71	MOORE	
H	0008	11/11/71	MOORE	
I	0009	11/11/71	MOORE	
J	0010	11/11/71	MOORE	
K	0011	11/11/71	MOORE	
L	0012	11/11/71	MOORE	
M	0013	11/11/71	MOORE	
N	0014	11/11/71	MOORE	
O	0015	11/11/71	MOORE	
P	0016	11/11/71	MOORE	
Q	0017	11/11/71	MOORE	
R	0018	11/11/71	MOORE	
S	0019	11/11/71	MOORE	
T	0020	11/11/71	MOORE	
U	0021	11/11/71	MOORE	
V	0022	11/11/71	MOORE	
W	0023	11/11/71	MOORE	
X	0024	11/11/71	MOORE	
Y	0025	11/11/71	MOORE	
Z	0026	11/11/71	MOORE	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DRN. 6/11/71	DATE 6-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
TOLERANCES	CHK'D. 6/11/71	DATE 6-71	TITLE RESTORE GATING	
DECIMALS .XXX = .005	ENG. 6/11/71	DATE 6-71		
ANGLES ±0° 30'	PROJ. ENG. 6/11/71	DATE 6-71		
.XX = .02	PROD. 6/11/71	DATE 6-71		
.X = .1				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓				
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
	A-MI-PP-1-1	D	BS KF 2-O-RES	B
FINISH	SCALE	SHEET	OF	DIST.
		1	OF 1	



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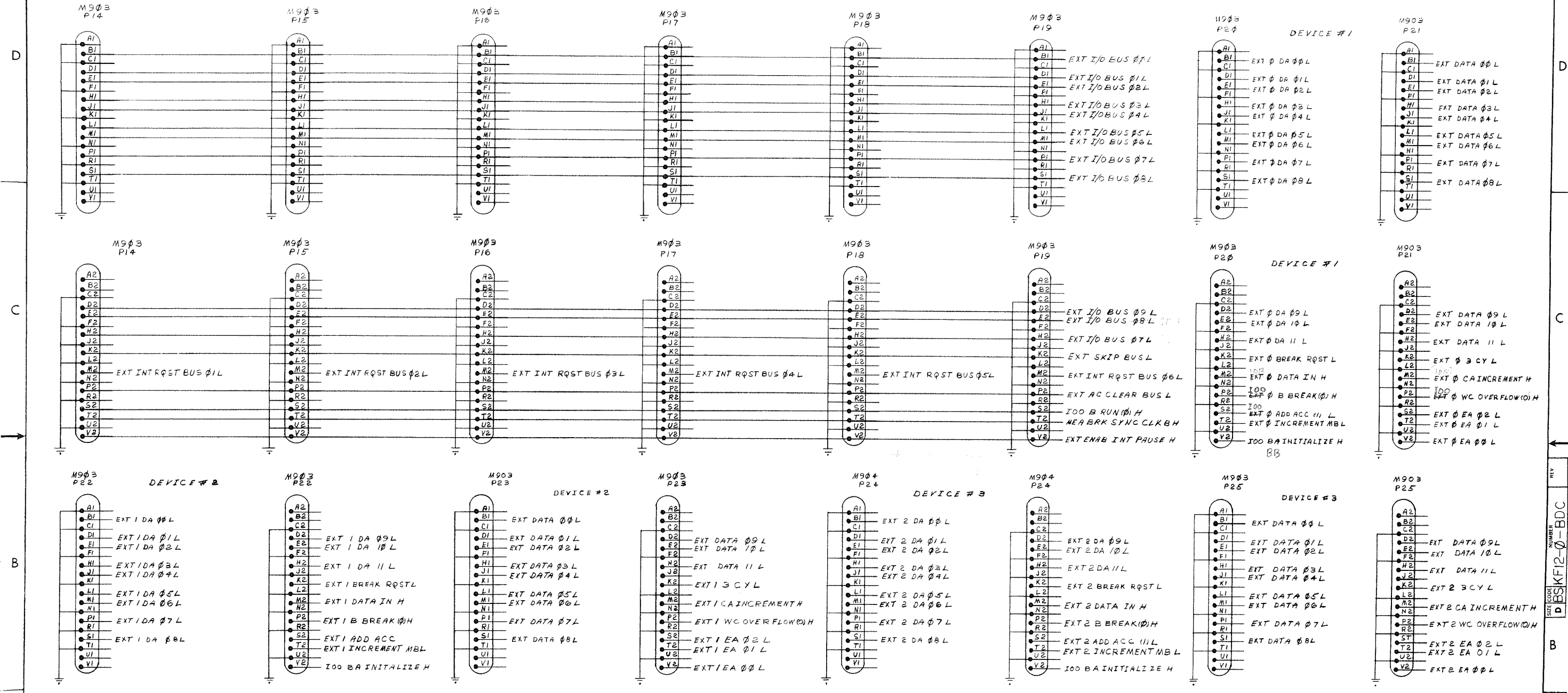
REV	
CHG	
NO	

FIRST USED ON OPTION MODEL PDP 12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	TITLE	
DIMENSION IN INCHES	ENG.	DATE	SAVE STATUS BITS	
TOLERANCES	PROD. ENG.	DATE	SIZE CODE NUMBER REV.	
DECIMALS FRACTIONS ANGLES	PROD.	DATE	SCALE OF	
± .005 ± 1/64 ± 0°30'	NEXT HIGHER ASSY		DIST.	
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS			D BSKF12-0-SSB	
MATERIAL				
FINISH				

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P14 - P19

BSK F12-0-KF12-a 2

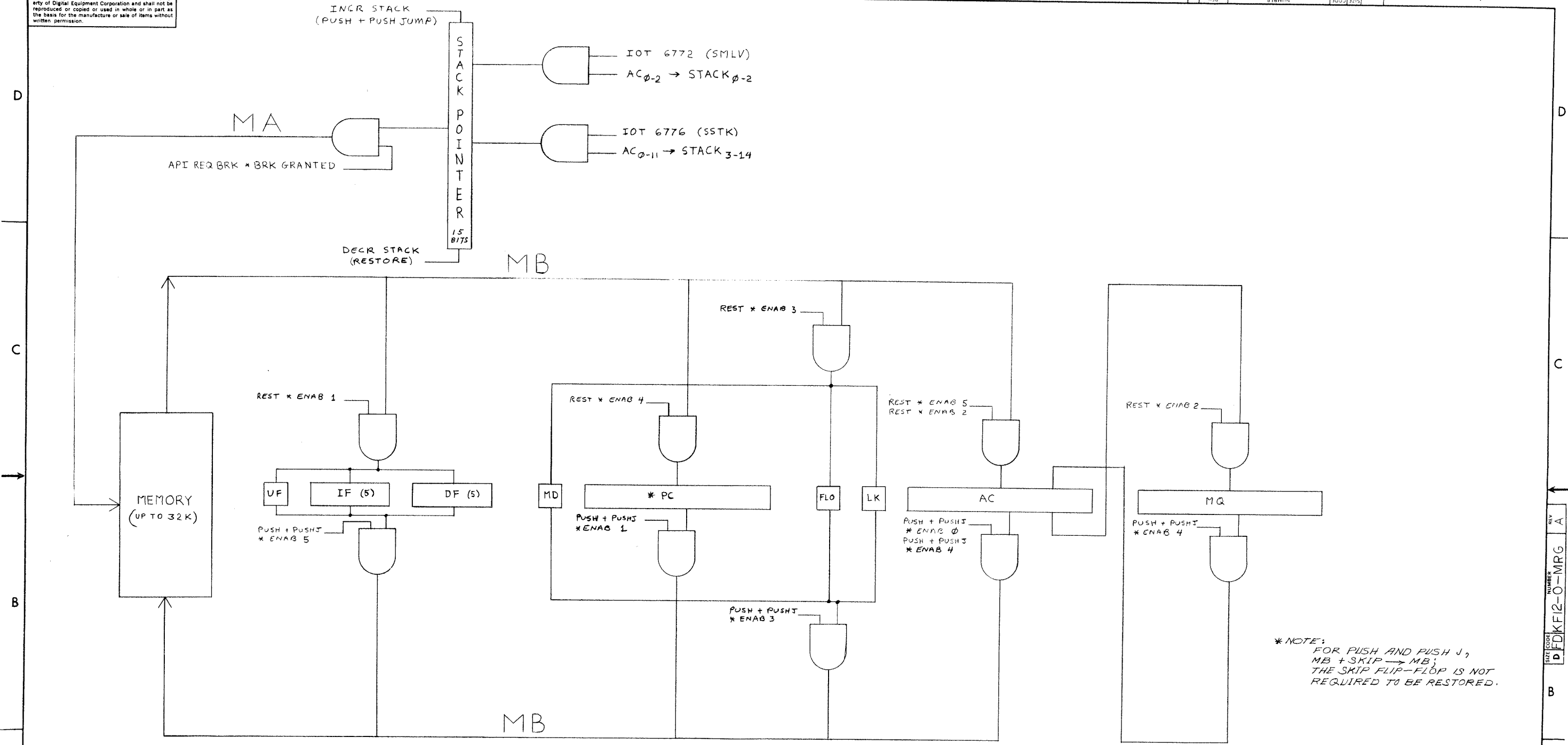


220-925

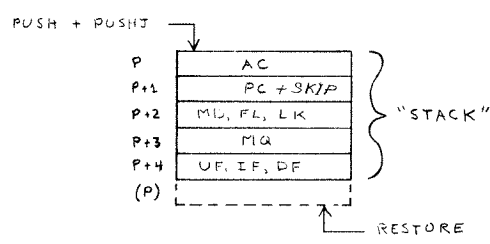
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. 3-9-71	DATE	 <b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small>
DECIMALS	ANGLES	CHK'D.	DATE	
.XXX = .005	±0° 30'	ENG.	DATE	
.XX = .02		PROJ. ENG.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE	<b>BREAK DEVICE CABLES</b>
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	
FINISH	A-ML-KF12-0		NUMBER	
		SHEET 1 OF 1	DIST.	REV.

REV. NUMBER D BSK F12-0-BDC

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\* NOTE: FOR PUSH AND PUSH J, MB + SKIP → MB; THE SKIP FLIP-FLOP IS NOT REQUIRED TO BE RESTORED.



REVISIONS	CHANGE NO.	REV.
CHK	77	A
IKNAIAN		
DD Model 8#72		

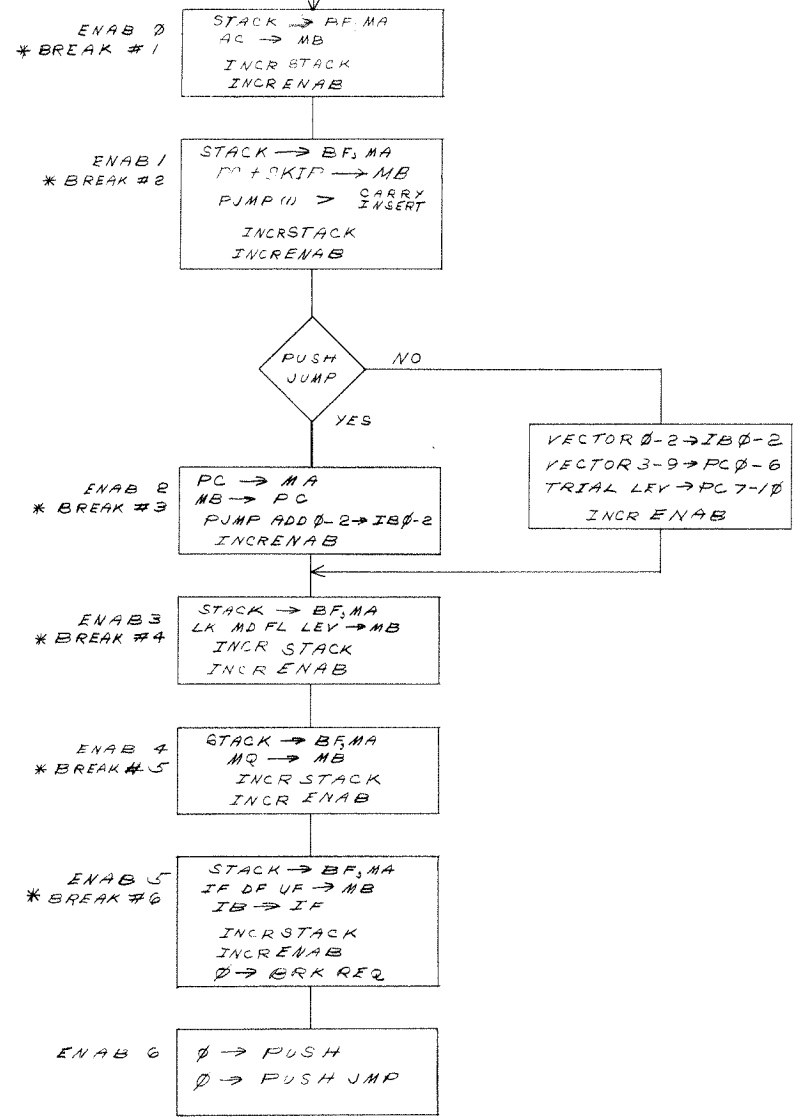
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN LONG	DATE 5/10/72	digital EQUIPMENT CORPORATION WATYARD, MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHK'D	DATE 5/10/72	TITLE MAJOR REGISTER-GATING	
ANGLES ±0° 30'	ENG. canlan	DATE 5/10/72	REV. A	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. canlan	DATE 5/10/72	NUMBER DFDKF12-C-MRG	
MATERIAL	PROD. RFE	DATE 5/10/72	REV. A	
FINISH	NEXT HIGHER ASSY.		SCALE	
	A-ML-KF12-0		SHEET 1 OF 1	
			DIST.	

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SIZE CODE  
 878000  
 1001215  
 2

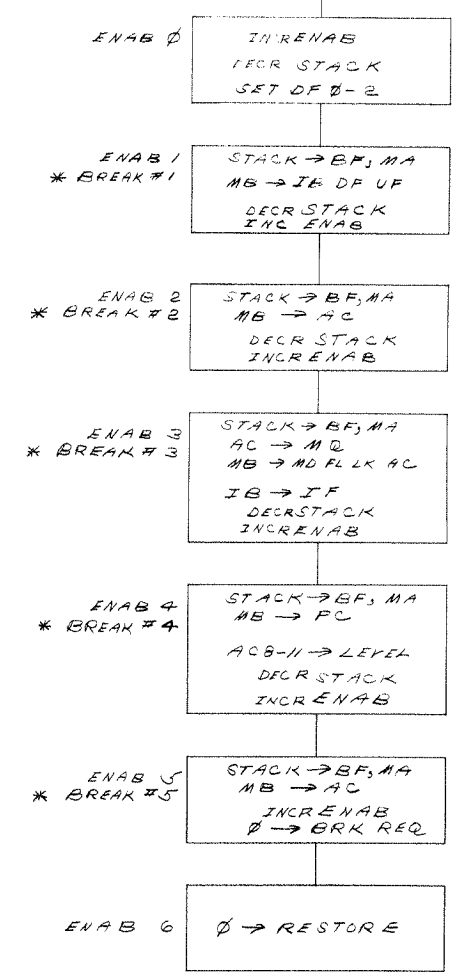
### PUSH

INTERRUPT REQ \* PRIORITY OK  
 OR  
 PUSH JUMP >  
 SET PUSH AND BRK REQ



### RESTORE

JOT RESTORE >  
 SET RESTORE  
 SET BRK REQ

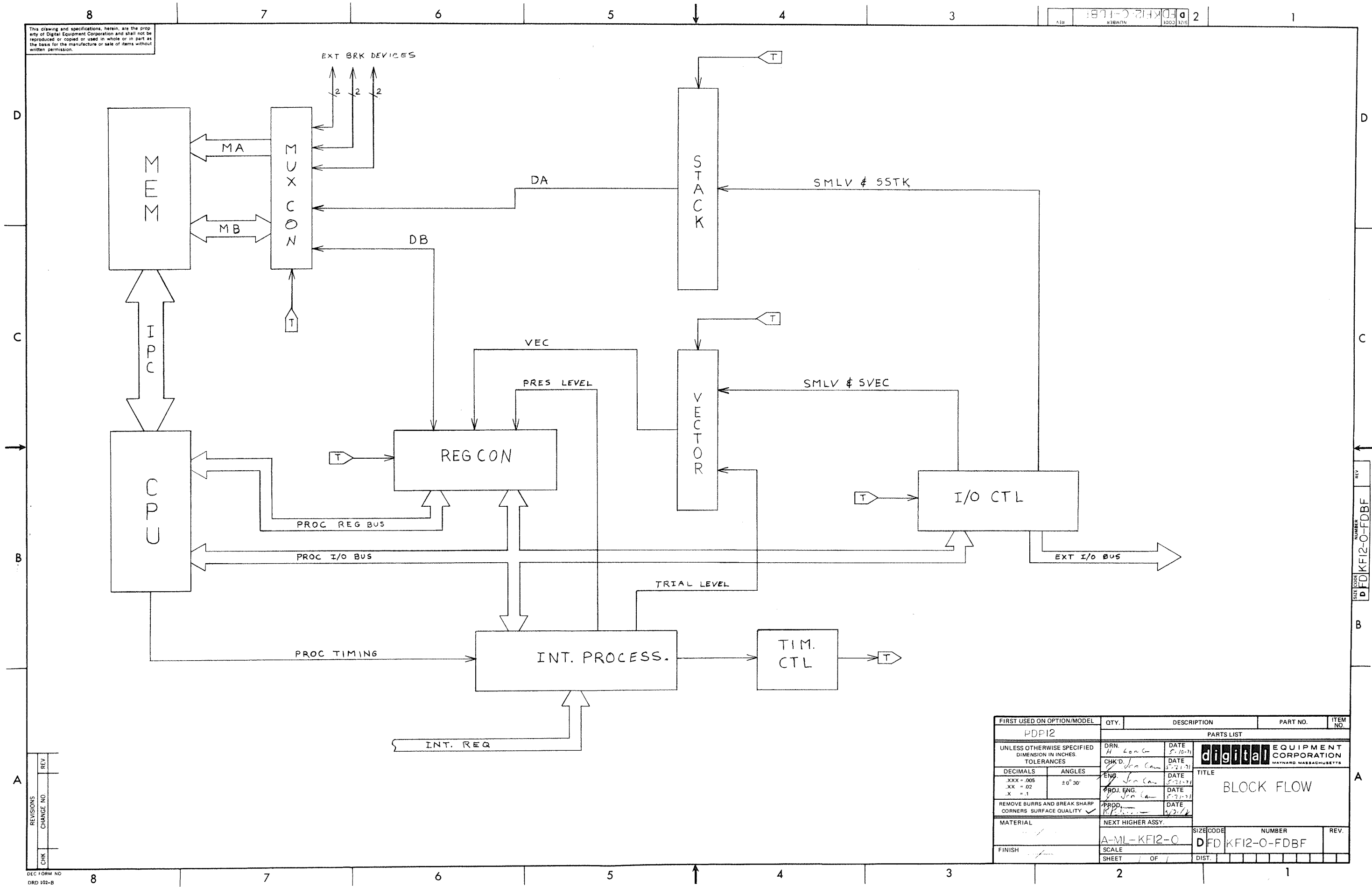


\* NOTE  
 1. THE KFI2 HAS LOWEST PRIORITY  
 ON THE BUS. BREAK REQUESTS  
 FROM OTHER DEVICES WILL BE  
 ACKNOWLEDGED DURING A PUSH  
 OR RESTORE.

REVISIONS	CHK	CHANGE NO	REV
	P	EP12-00046	A
		IKNAIAN	8-14-72

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN 7-2-72	DATE 3-22-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS	CHK'D 7-2-72	DATE 3-22-72	TITLE FLOW-DIAGRAM	
ANGLES	ENG. 7-2-72	DATE 3-22-72		
.XXX = .005 .XX = .02 .X = .1	PROJ. ENG. 7-2-72	DATE 3-22-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROB. 7-2-72	DATE 3-22-72		
MATERIAL	NEXT HIGHER ASSY.		SIZE CODE	NUMBER
FINISH	A-ML-KF12-0		DFD	KF12-0-FD
	SCALE	NONE		REV. A
	SHEET	1 OF 1	DIST	

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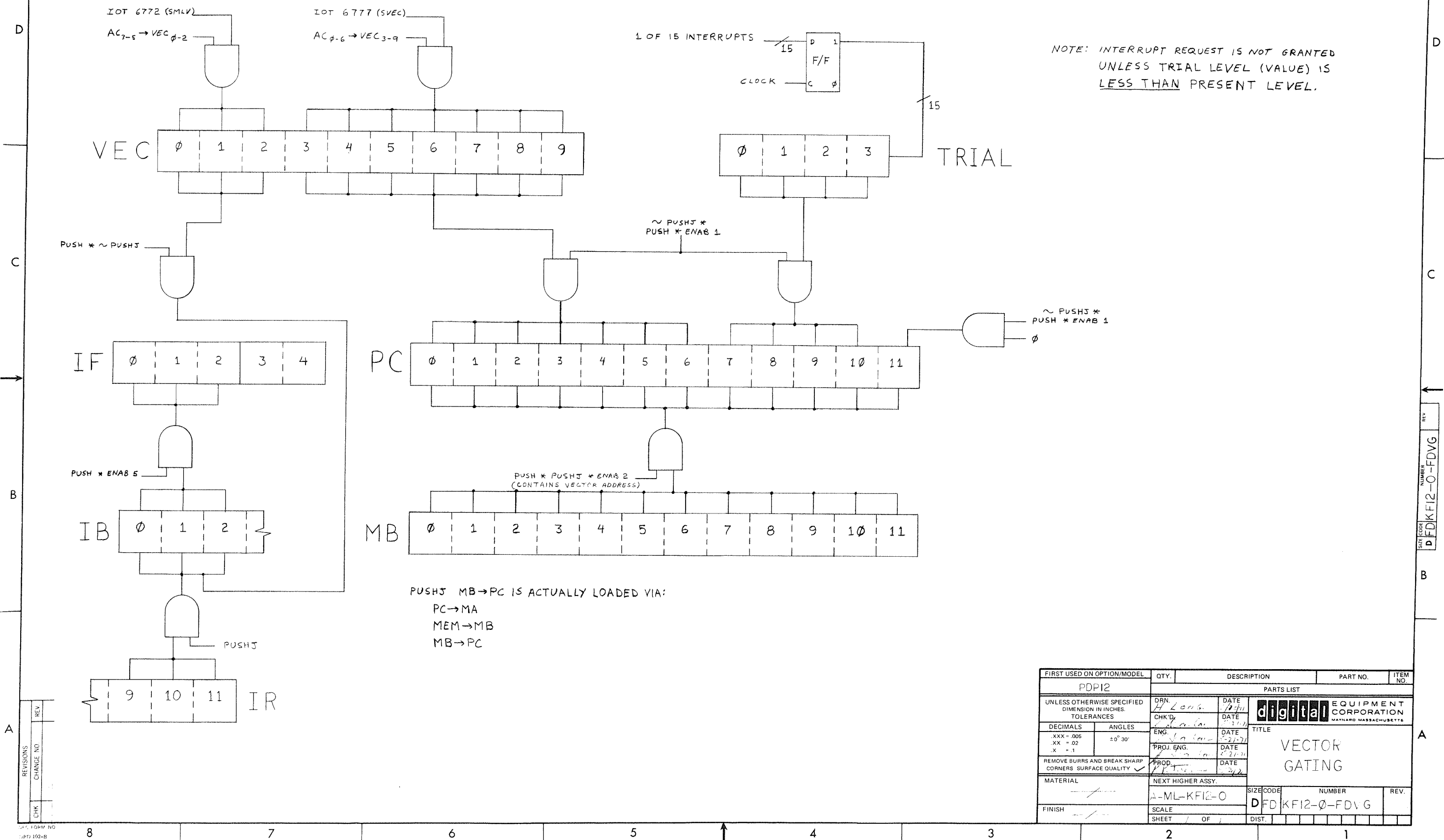
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN H Lon Gm	DATE 5-10-71	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
DECIMALS .XXX = .005	CHK'D Jon Gm	DATE 5-21-71		
ANGLES ±0° 30'	ENG Jon Gm	DATE 5-21-71		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROJ. ENG. Jon Gm	DATE 5-21-71		
MATERIAL	PROD. K. P. ...	DATE 5-21-71	TITLE BLOCK FLOW	
FINISH	NEXT HIGHER ASSY.		SIZE CODE A-ML-KF12-0	NUMBER D FD KF12-0-FDBF
	SCALE			REV.
	SHEET 1 OF 1		DIST.	

REV.	CHANGE NO.	CHK.

REV. NUMBER  
 D FD KF12-0-FDBF

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FDKF12-0-FDVG 2



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		DRN. H Long.	DATE 7/7/71	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
DECIMALS .XXX = .006	ANGLES ±0° 30'	CHK'D.	DATE 7/7/71	
		ENG.	DATE 7/7/71	
		PROJ. ENG.	DATE 7/7/71	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PROD.	DATE 7/7/71	TITLE VECTOR GATING
MATERIAL		NEXT HIGHER ASSY.		SIZE CODE A-ML-KF12-0
FINISH		SCALE		NUMBER DFDKF12-0-FDVG
		SHEET	OF	REV.

REV.	CHANGE NO.	REVISIONS

SIZE CODE NUMBER DFDKF12-0-FDVG

# MASTER DRAWING LIST

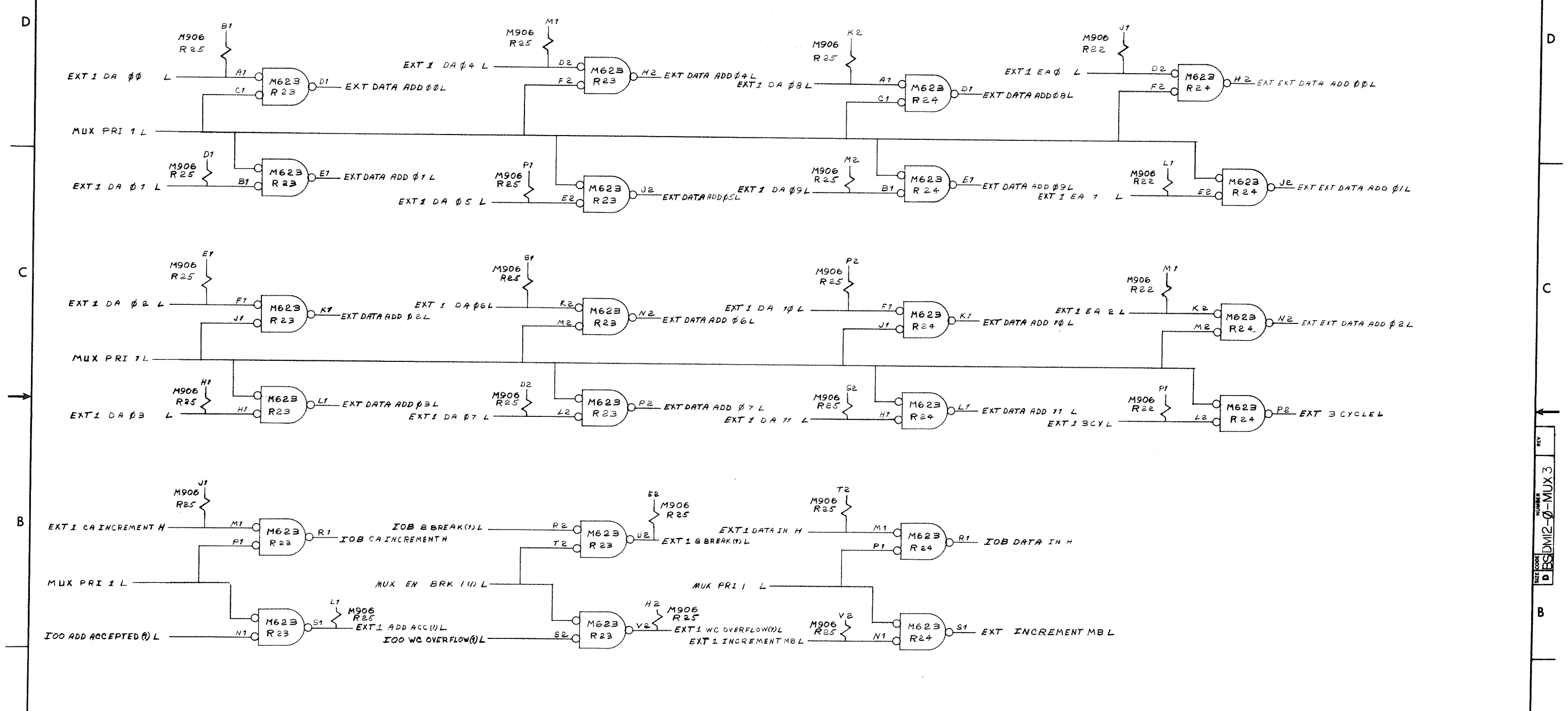
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DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
<del>A-PL-DM12-0-0</del>		<del>1</del>	<del>3 CHANNEL DATA BREAK MUX</del>
D-BS-DM12-0-MUX3		1	MUX DEVICE 2
D-BS-DM12-0-MUX4		1	MUX DEVICE 3
A-SP-DM12-0-1	REF		ENGINEERING SPECIFICATIONS
A-ML-EP12-0	REF	2	PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. (PL)

REVISIONS				DRN.	DATE <u>8-28-71</u>	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>
REV.	DATE	CHG. NO.	APP'D.	CHK'D/	DATE	
A	10/71	EP12-43	R. M.	ENG.	DATE	
B	1/71	EP12-44	R.M.	PROJ. ENG.	DATE	
				PROD.	DATE <u>2/21/71</u>	TITLE
				FIRST USED ON		3 CHANNEL DATA BREAK MUX
				KF12	SIZE CODE	NUMBER
				SCALE	A ML	DM12-0
				SHEET 1 OF 1	DIST.	REV. B

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REV. 2  
 NUMBER 3  
 SIZE CODE D  
 BS DM12-0-MUX 3



REV	
CHG	
NO	
NO	

FIRST USED ON OPTION/MOD PDP12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION WATYARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	TITLE	
DIMENSION IN INCHES			MUX DEVICE 2	
TOLERANCES	PROJ. ENG.	DATE		
DECIMALS FRACTIONS ANGLES	PROD.	DATE		
= .005 ± 1/64 = 0°30'				
FINAL SURFACE QUALITY				
REMOVE BURRS AND BREAK SHARP CORNERS				
MATERIAL	NEXT HIGHER ASSY			
FINISH	A-ML-KF12-0	SCALE	SIZE CODE	NUMBER
			DBS	DM12-0-MUX 3
	SHEET 1 OF 2	DIST.		REV.

DEC FORM NO. 8  
 DRD 102A



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SIZE CODE 2  
 NUMBER DBSDMI2-0-MUX4



REV	
CHK	
SEC FORM NO.	102A

FIRST USED ON OPTION/MOD PDP12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED				
DRAWN <i>M. Quinn</i>	DATE 3-23-71	PARTS LIST		
CHK'D <i>J. Scalan</i>	DATE 5-21-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
ENG <i>J. Scalan</i>	DATE 5-21-71	TITLE		
PROJ. ENG. <i>J. Scalan</i>	DATE 5-21-71	MUX DEVICE 3		
PROD. <i>K. Quinn</i>	DATE 2/2/72	MATERIAL		
NEXT HIGHFR ASSY		FINISH		
SCALE		SIZE CODE NUMBER		
SHEET 1 OF 1		DBSDMI2-0-MUX4		
		DIST.		

SIZE CODE 2  
 NUMBER DBSDMI2-0-MUX4



# MASTER DRAWING LIST

MAINTENANCE MANUALS		UNIT VARIATIONS											
NO.	TITLE												
KE12-0	ARITHMETIC OPERATION	X											

USED ON OPTIONS												

REV.	DATE	CHG. NO.	APPD.
A	3-18-69	EP12-01	J.S.
B	6-5-69	EP12-04	I.G.
C	10-70	EP12-30	I.G.
D	7/71	MISC-86	A.V.
E	1/72	EP12-44	R.M.

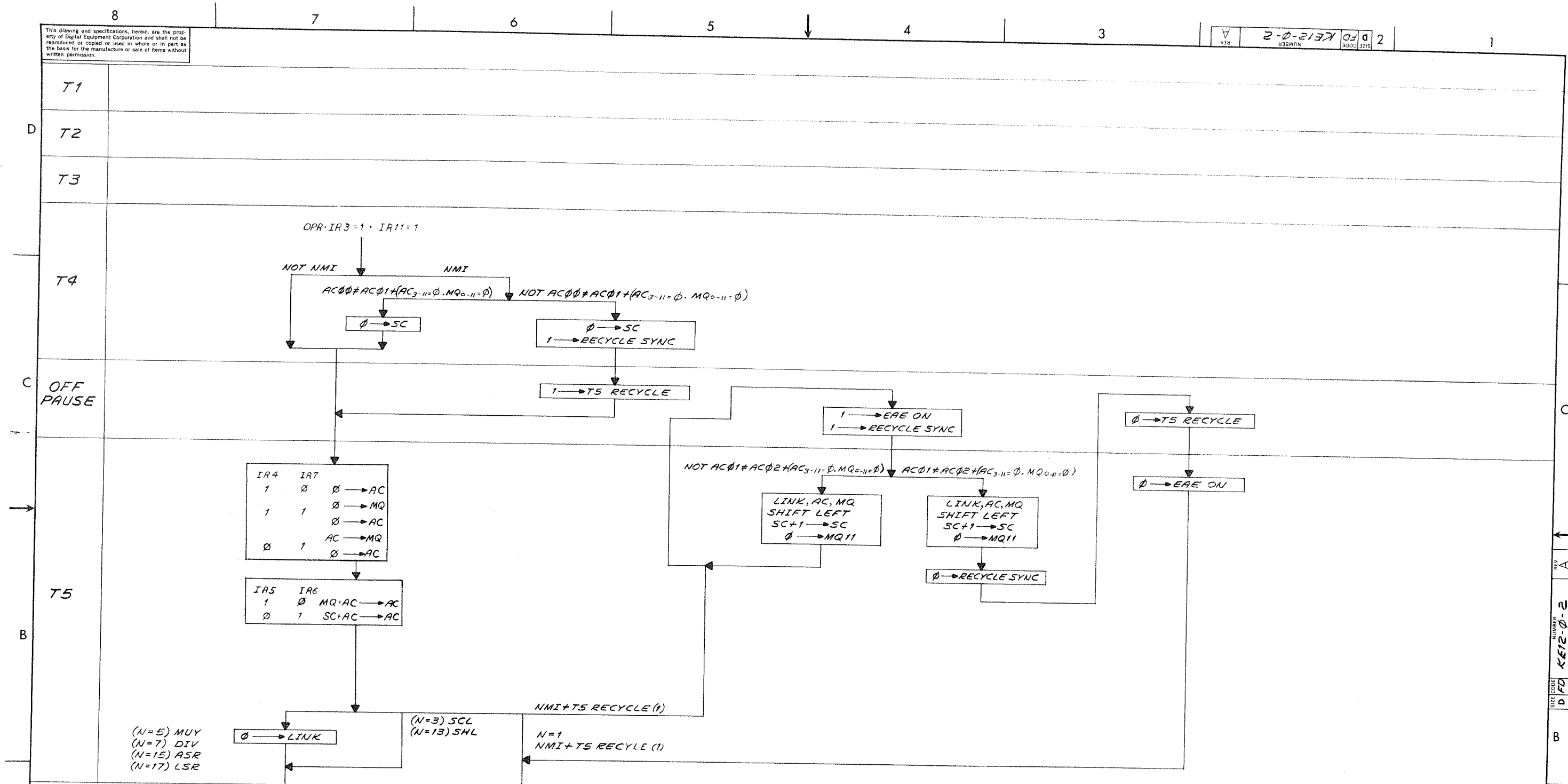
DRN.	DATE	J. APREA	DATE	3-7-69
CHK'D	DATE	R. HUTNAK	DATE	3-7-69
ENG.	DATE	L. GALE	DATE	3-10-69
PROJ. ENG.	DATE	L. GALE	DATE	3-10-69
PROD.	DATE	D. CALL	DATE	3-10-69
FIRST USED ON				
PDP-12				
SCALE				REV.
SHEET	1	OF	2	E

SIZE	CODE	NUMBER
A	ML	KE12-0

**digital** EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS  
 ARITHMETIC OPERATION

PRINT SET	DWG. NO.	REV. NO. OF LET. SHEETS	TITLE	OPTION NO.
X	D-FD-KE12-0-2	A	EAE FETCH	
X	D-FD-KE12-0-3	I	EAE EXECUTE PART 1	
X	D-FD-KE12-0-4	I	EAE EXECUTE PART 2	
X	D-BS-KE12-0-EAEC	B	EAE CONTROL	
X	D-BS-KE12-0-EAED	A	EAE DISABLE	
X	D-BS-KE12-0-EAES	I	EAE STEP COUNTER TMD CONTROL	
X	D-BS-KE12-0-EAET	I	EAE TIMING	
	A-ML-EP12-0	REF	PROCESSOR	
	D-MU-EP12-0-1	REF	MODULE UTILIZATION PROC.	
	A-PL-EP12-0-1	REF	MODULE UTILIZATION PROC. (PL)	
<b>TITLE</b> ARITHMETIC OPERATION				REV
				E

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(N=5) MUY  
 (N=7) DIV  
 (N=15) ASR  
 (N=17) LSR

(N=3) SCL  
 (N=13) SHL

NMI+TS RECYCLE (1)  
 N=1  
 NMI+TS RECYCLE (1)

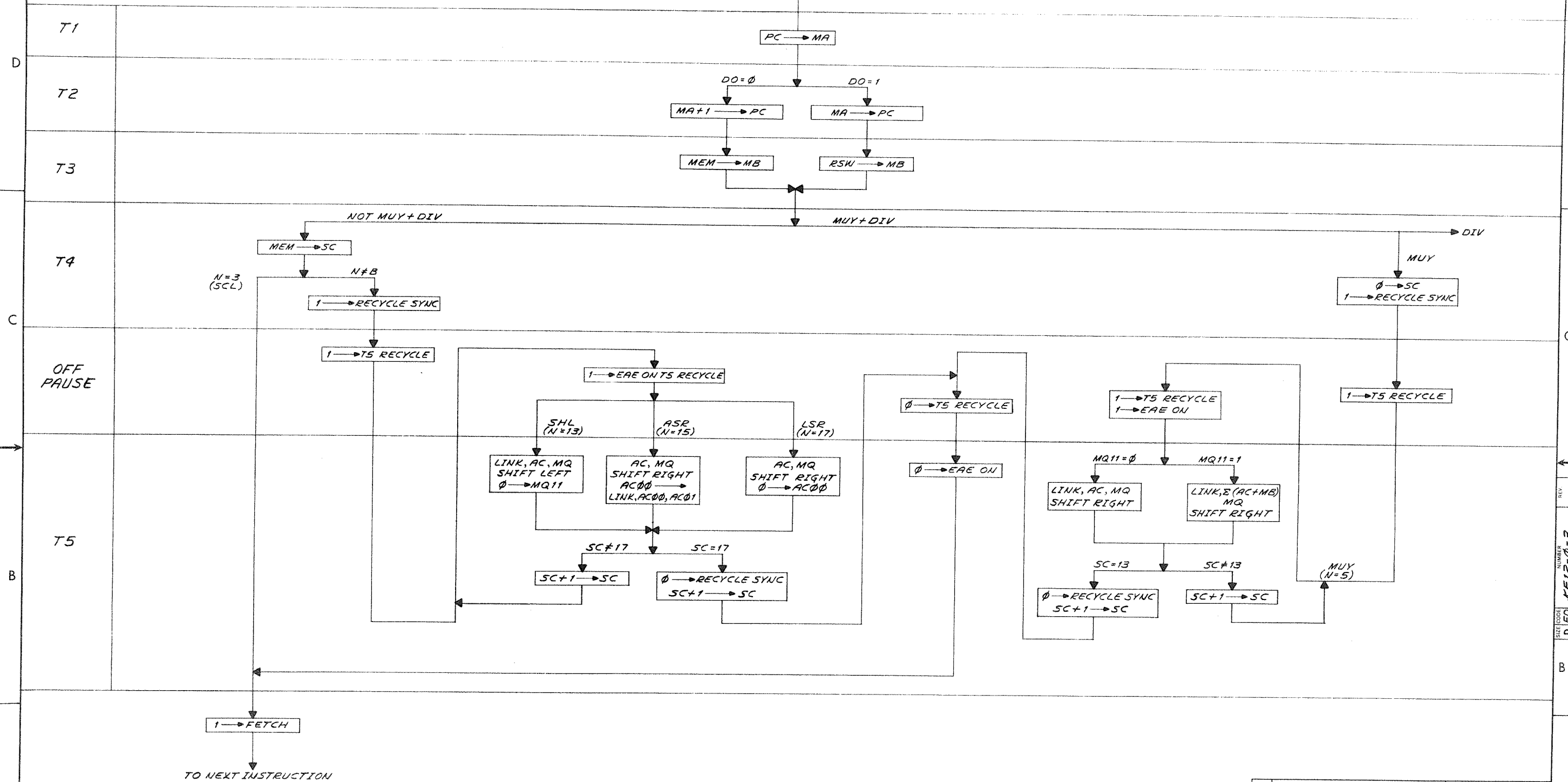
REV	CHANGE NO.	DATE
A	00030	11/17/69

REVISIONS  
 CHK FV  
 D. MACKLIN  
 11/17/69

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		digital EQUIPMENT CORPORATION	
UNLESS OTHERWISE SPECIFIED		MAYNARD, MASSACHUSETTS	
DIMENSION IN INCHES		TITLE	
TOLERANCES		EAE FETCH	
DECIMALS	FRACTIONS	ANGLES	
± .005	± 1/64	± 0°30'	
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL		FIRST USED ON	
		KE12	
FINISH		SCALE	
		SHEET / OF /	
		DIST.	
		SIZE CODE NUMBER REV.	
		DFD KE12-0-2 A	

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EAE EXECUTE (PART 1)



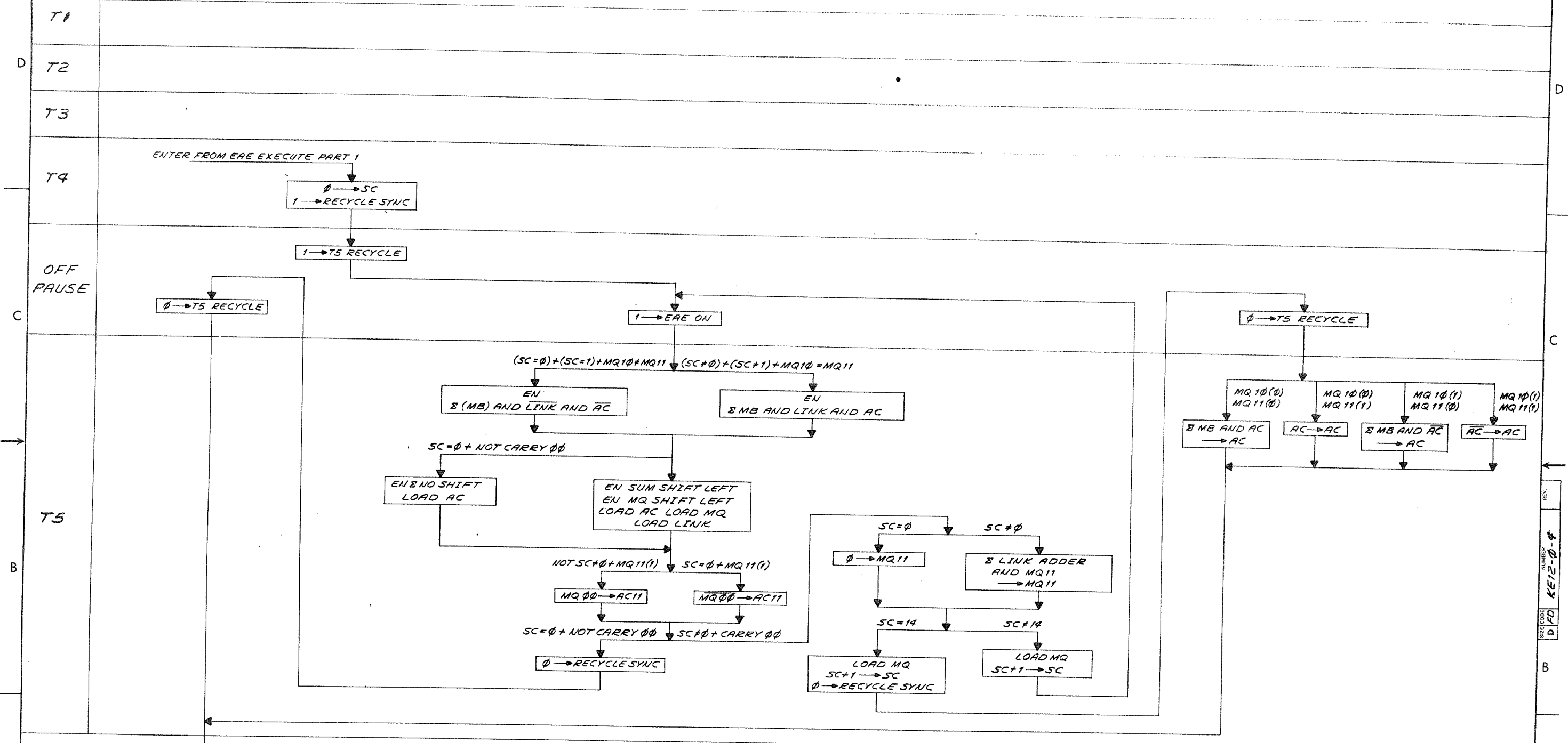
REV.	NO.
CHG.	NO.
CHK.	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRN. DATE 11-20-68	
DIMENSION IN INCHES		CHK. DATE 2/18/69	
TOLERANCES		ENG. DATE 2/19/69	
DECIMALS FRACTIONS ANGLES		PRO. ENG. DATE 2/26/69	
= .005 ± 1/64 = 0°30'		PROD. DATE 2/27/69	
FINAL SURFACE QUALITY		FIRST USED ON	
REMOVE BURRS AND BREAK SHARP CORNERS		KE12	
MATERIAL		SCALE	
FINISH		SHEET OF	
		SIZE CODE D/FD KE12-0-3	
		NUMBER KE12-0-3	
		REV.	

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EAE EXECUTE PART 2 (DIVIDE)

REV. 2  
 NUMBER KE12-0-4  
 SIZE CODE DFD

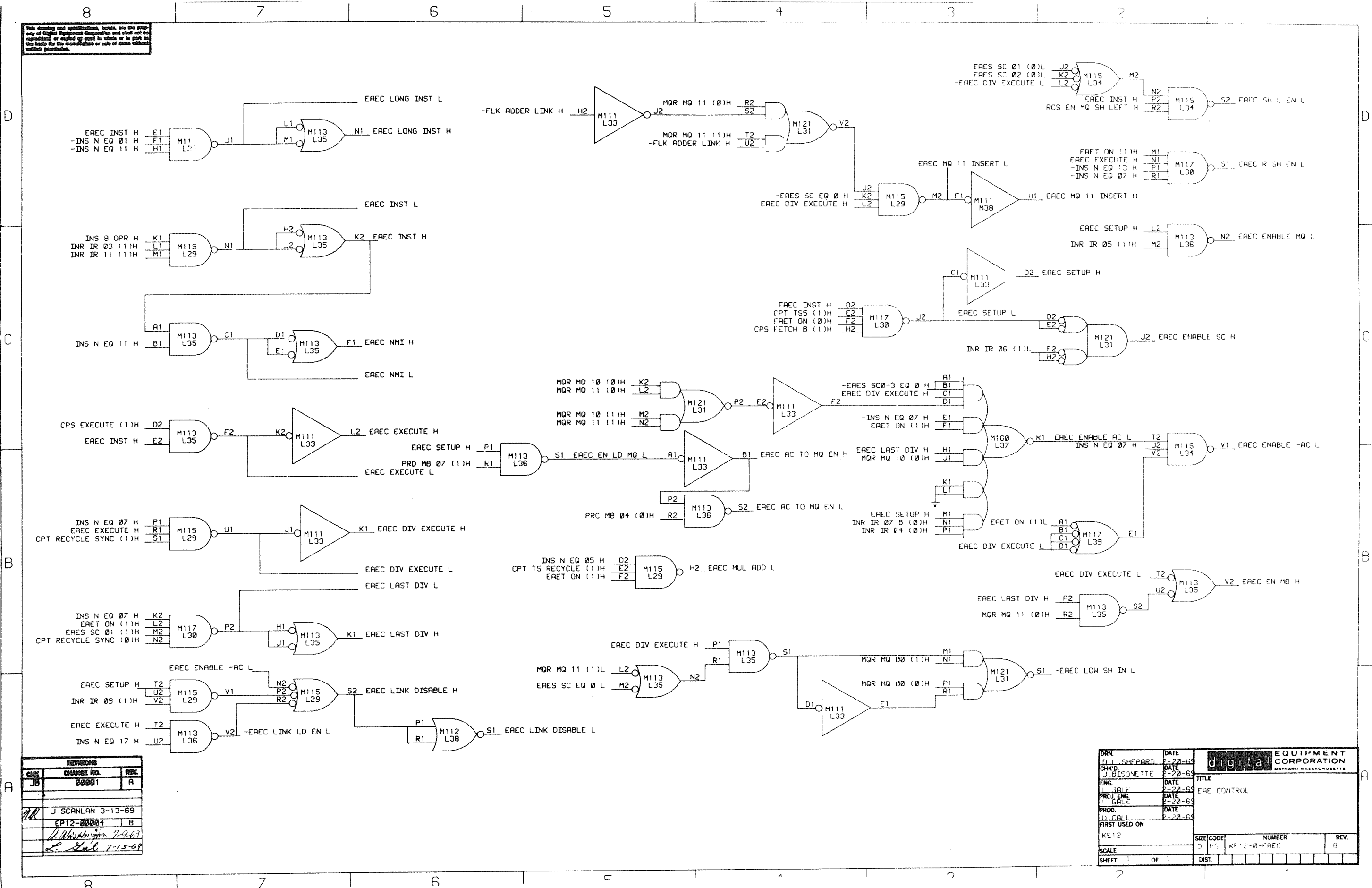


REV.	
CHANGE NO.	
CHK.	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
= .005 = 1/64 = 0°30'			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FINISH			
UNLESS OTHERWISE SPECIFIED			
DRN.	DATE	PARTS LIST	
CHD	DATE	digital EQUIPMENT CORPORATION	
ENG	DATE	MAYNARD, MASSACHUSETTS	
PROJ. ENG.	DATE	TITLE	
PROD.	DATE	EAE EXECUTE PART 2	
FIRST USED ON			
KE12			
SCALE			
SHEET OF			
SIZE CODE		NUMBER	
DFD		KE12-0-4	
DIST.		REV.	

REV. 2  
 NUMBER KE12-0-4  
 SIZE CODE DFD

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REVISIONS		
CHG	CHANGE NO.	REASON
JB	00001	A
JR		
JR		
JR		
JR		
JR		
JR		
JR		
JR		
JR		
JR		

DRN D. L. SHEPARD	DATE 2-20-69	<b>digital EQUIPMENT CORPORATION</b> MAYNARD, MASSACHUSETTS
CHK'D J. BISONNETTE	DATE 2-20-69	
ENG J. GALE	DATE 2-20-69	
PROJ. ENG. J. GALE	DATE 2-20-69	
PROD. D. CALL	DATE 2-20-69	
FIRST USED ON KE12	DATE 2-20-69	
SCALE	SIZE CODE	
SHEET	DIST.	
OF		

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- M906 K27  
B1 EREC EN LD MD L \*M90E K27
- M906 K27  
J1 EREC ENABLE -AC L
- M906 K27  
E1 EREC AC TD MD EN L
- M906 K27  
H1 EREC ENABLE HC L
- M906 K27  
J1 EREC ENABLE MD L
- M906 K27  
L1 EREC LAST DIV L
- M906 K27  
VZ ERET MD LOAD (0)H EREC LINE DISABLE H
- M906 K27  
P1 EREC LINK LD EN EREC LONG INST H
- M906 K27  
S1 EREC MUL ADD L EREC EN MB H
- M906 K27  
D2 EREC R SH EN L EREC ENABLE SC H
- M906 K27  
E2 EREC SETUP L EREC INST H
- M906 K27  
H2 EREC SH L EN L EREC MD 11 INSERT H
- M906 K27  
K2 ERET ON (0)H RCS EN MD SH LEFT H
- M906 K27  
M2 ERET RECYCLE L ERET ON (1)H
- M906 K27  
P2 FILE K2BK2

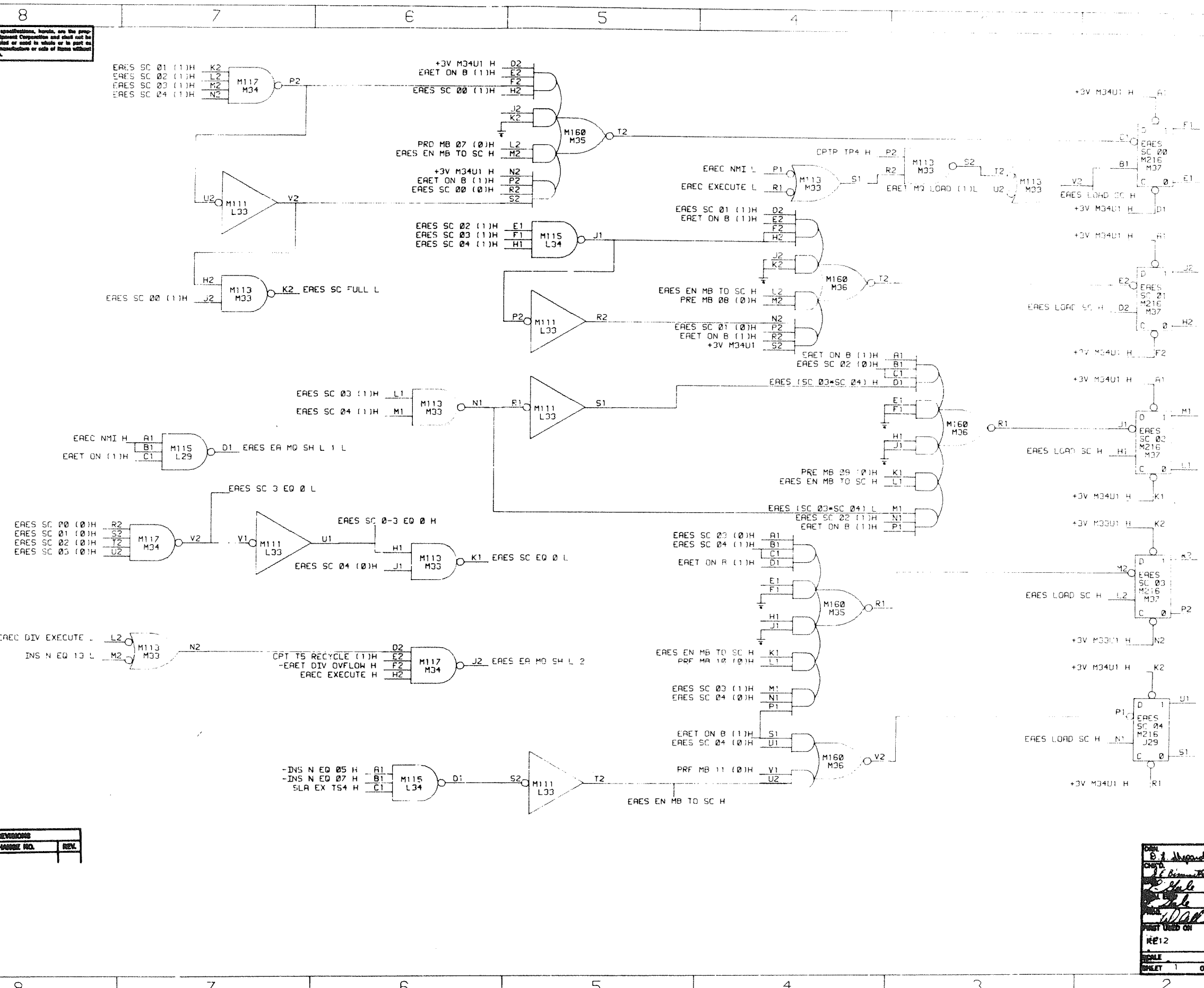
\* INSERTED ONLY WHEN SYSTEM DOES NOT HAVE KE12.

REVISIONS		
REV	CHANGE NO.	RES.
36	0001	A
	Ads	
H. Deanlan 3/12/69		

DATE 3/12/69	DATE 3/12/69	digital EQUIPMENT CORPORATION MILFORD, MASSACHUSETTS 0
CHKD. J. Williams	DATE 3/12/69	
DES. J. Smith	DATE 3/12/69	TITLE ERE DISABLE
APP. J. Smith	DATE 3/12/69	
PROB. J. Smith	DATE 3/12/69	
FIRST USED ON KE12		
SCALE D 8C	SIZE CODE D 8C	NUMBER KE12-0-ERED
SHEET 1	OF 1	REV. A



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NOTE:  
 N=01 NOP  
 N=03 SCL  
 N=05 MUY  
 N=07 DVI  
 N=11 NMI  
 N=13 SHL  
 N=15 ASR  
 N=17 LSR

REVISIONS		
CHK	CHANGE NO.	REV.

DESIGNED <i>B. J. Morgan</i> DATE 10/11/69	DRAWN <i>J. J. Bennett</i> DATE 10/11/69	CHECKED <i>[Signature]</i> DATE 10/11/69	TESTED <i>[Signature]</i> DATE 10/11/69	DATE USED ON RE12	TITLE ERES STEP COUNTER & MD CONTROL	EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS 01901
D 85	NUMBER KE12-0-ERES	REV. 00	SHEET 1 OF 1	DIST.	1	1



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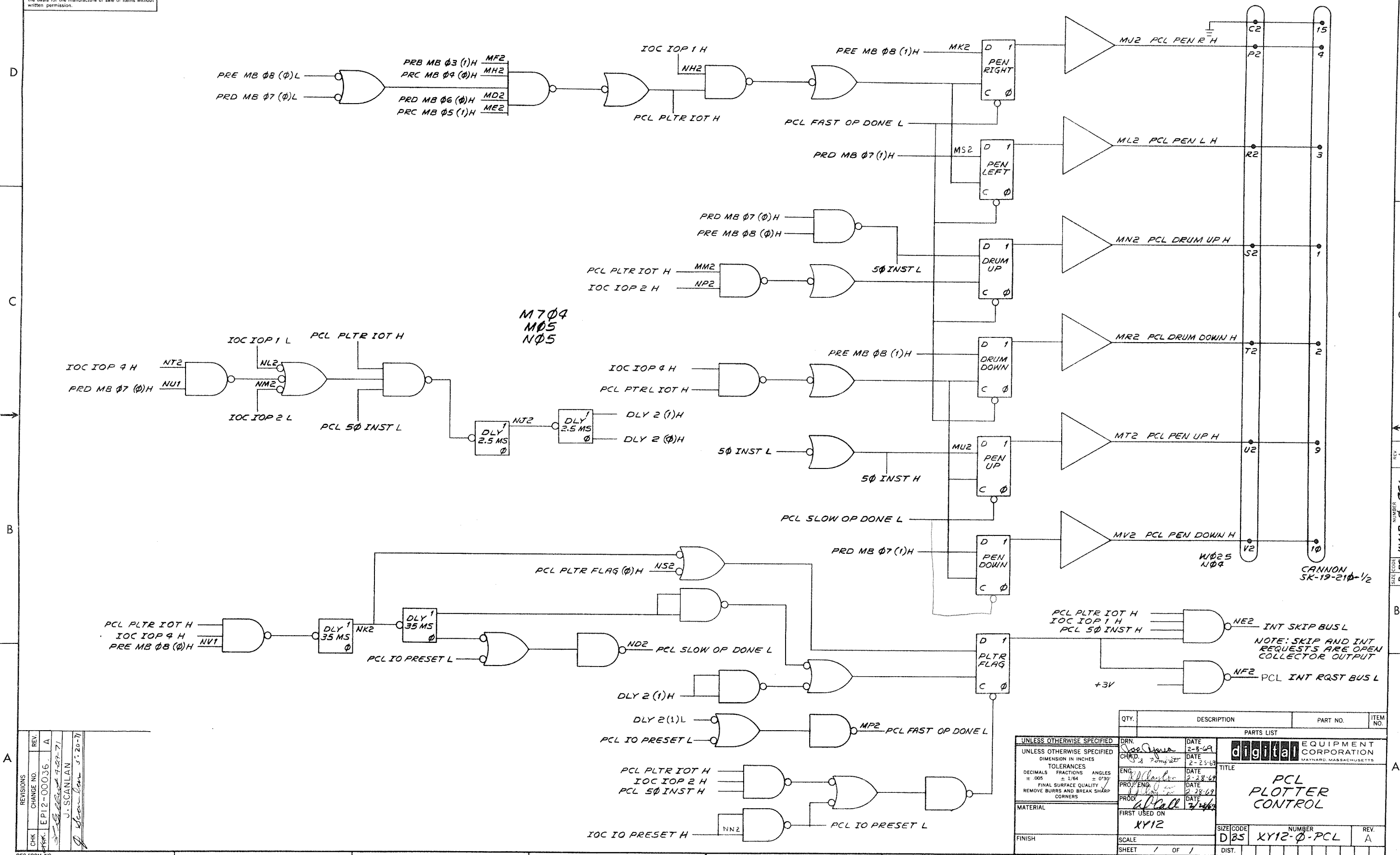
# MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PROCESSOR
<del>A-ML-PDP12-0</del>		<del>2</del>	<del>PDP12 SYSTEM</del>
<del>K-WL-EP12-0-3</del>	<del>REF</del>		<del>WIRE LIST</del>
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC
<del>D-MU-EP12-0-2</del>	<del>REF</del>		<del>MODULE UTILIZATION PROC</del>
D-BS-XY12-0-PCL	A	1	PCL PLOTTER CONTROL
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC PL
<del>A-PL-EP12-0-2</del>	<del>REF</del>		<del>MODULE UTILIZATION PROC PL</del>
C-IA-7005543-0-0	#	1	PLOTTER CONTROL CABLE W023

REVISIONS				DRN.		DATE		<b>DIGITAL</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>			
REV.	DATE	CHG. NO.	APP'D.	J. APREA	3/7/69	CHK'D.	DATE				
A	12/69	00001	L.G.	R. HUTNAK	3/7/69	ENG.	DATE	TITLE PLOTTER CONTROL			
B	6/70	EP12-23	L.G.	<i>L. Gale</i>	3/10/69	PROJ. ENG.	DATE				
C	3/71	EP12-36	J.S.	<i>L. Gale</i>	3/10/69	PROD.	DATE				
D	1/72	EP12-44	R.M.	<i>W. Call</i>	3/10/69	FIRST USED ON	DATE				
				PDP-12		SIZE	CODE	NUMBER		REV.	
				SCALE		A	ML	XY12-0		D	
				SHEET 1 OF 1		DIST.					

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REV. 2  
D 15 XY12-φ-PCL



REV.	CHANGE NO.	DATE
A	00036	2-25-69
B	00037	2-25-69
C	00038	2-25-69
D	00039	2-25-69

REVISIONS  
CHK: EPI2-00036  
J. SCANLAN  
J. Scanlan 5-20-71

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS	FRACTIONS	ANGLES	
= .005	= 1/64	= 0°30'	
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FINISH			
FIRST USED ON			
XY12			
SCALE			
SHEET / OF /			
DIST.			

digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE  
**PCL PLOTTER CONTROL**

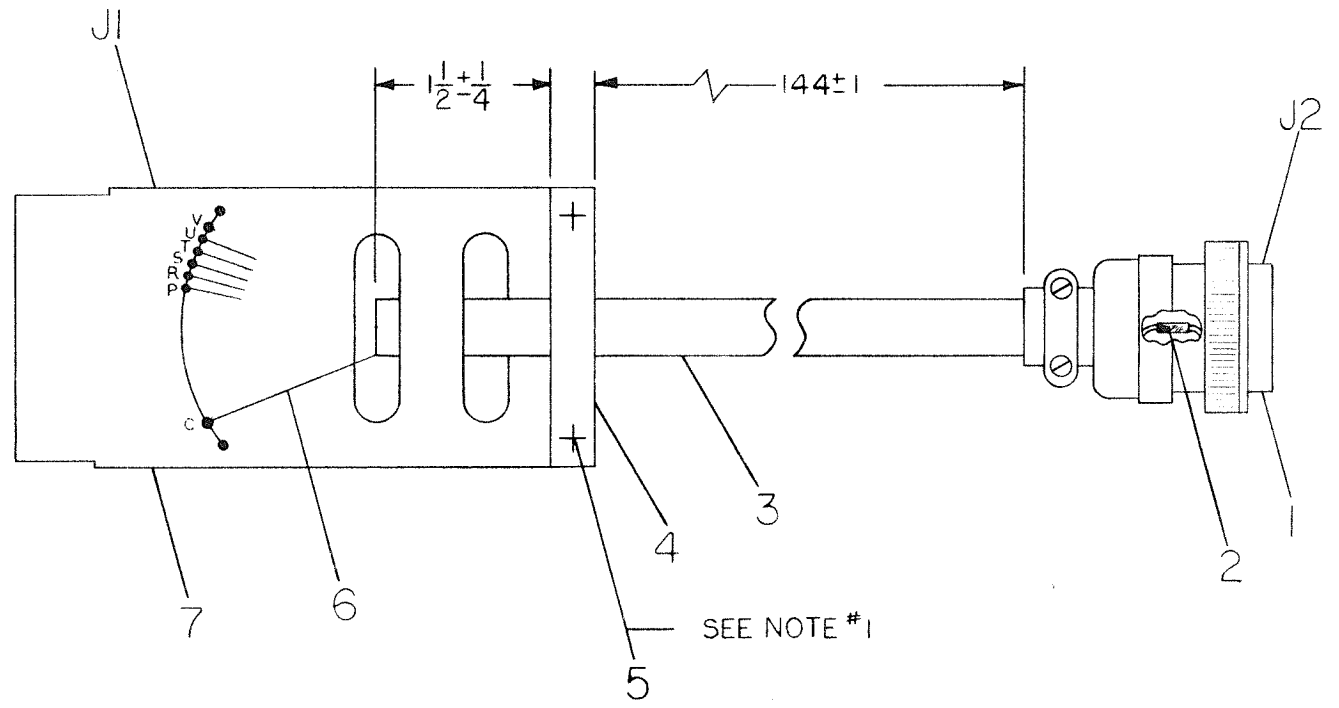
SIZE CODE: D 15  
NUMBER: XY12-φ-PCL  
REV. A

REV. A  
NUMBER  
D 15 XY12-φ-PCL

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WIRE TABLE	
CONNECTION	
FROM	TO
J1 - C	J2 - 15
↑ P	↑ 4
↑ R	↑ 3
↑ S	↑ 1
↑ T	↑ 2
↓ U	↓ 9
J1 - V	J2 - 10

NOTES:  
 1. ASSEMBLE CABLE CLAMP #4 WITH EYELETS #5 AFTER WIRE #6 IS SOLDERED TO BOARD.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
	WØ23 CABLE CONNECTOR	5002726	7
A/R	#18 AWG STRD TEF WHT		6
	EYELET #A-94 E.B. STIMPSON		5
	CLABLE CLAMP	5302016	4
A/R	BLK VINYL TUBING #2-17/64 ID		3
	TUBING HY-SHRINK #18 X 1/4 LONG RED		2
	CANNON SK-19-210-1/2		1

REVISIONS	CHANGE NO.	REV.
CHK	ECO # 3101	A
CHANGED DIM FROM 120# TO 144 #1		
L. GALE 10/16/67		
WØ23-00003 B		
L. GALE		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'	DRN. P. S. / DATE 6-30-67 CHK'D. / DATE 7-21-67 ENG. D. D. / DATE 7-22-67 PROJ. ENG. / DATE 7-22-67 RDG. / DATE 7-22-67	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
MATERIAL //	FIRST USED ON C-UA-350-C-0	TITLE PLOTTER CONTROL CABLE WØ23
FINISH //	SCALE 1/1	SIZE CODE C1A NUMBER 7005543-0-0 REV. B
	SHEET 1 OF 1	DIST. 6

REV. B  
 NUMBER 7005543-0-0  
 SIZE CODE C1A



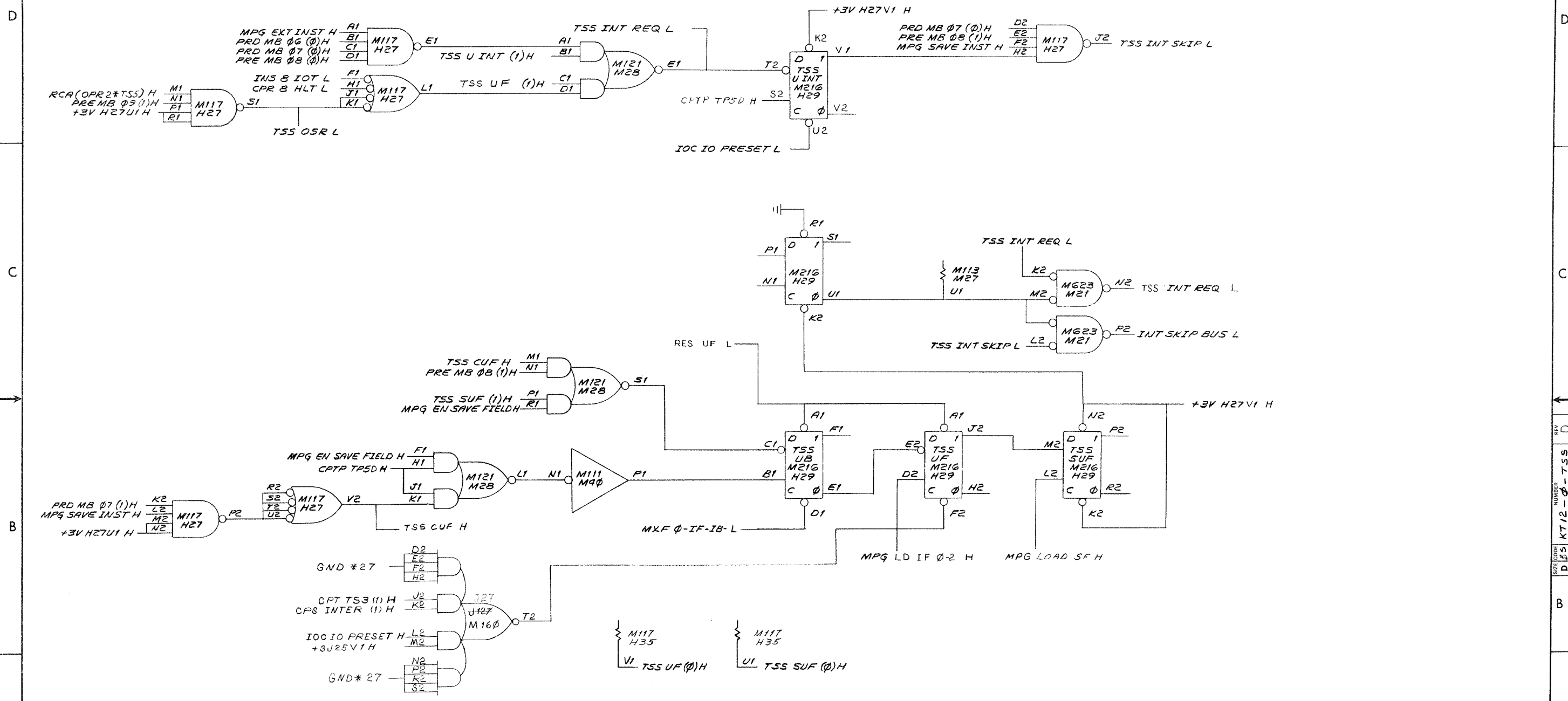
# MASTER DRAWING LIST

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DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC
D-BS-KT12-0-TSS	D	1	PDP-12 TIME SHARING OPTION
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC PL
A-SL-KT12-0-2		1	SOFTWARE LIST
A-SP-KT12-0-1		2	ACCEPTANCE PROCEDURE

<b>REVISIONS</b>				DRN. J. SCANLAN	DATE 3/7/69	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE  PDP-12 TIME SHARING OPTION								
REV.	DATE	CHG. NO.	APP'D.	CHK'D. R. Hutnag	DATE 3/7/69										
A	4/18/69	EP12-02	J.S.	ENG. L. Gale	DATE 3/10/69										
B	7/70	EP12-26	L.G.	PROJ. ENG. L. Gale	DATE 3/10/69										
C	10/70	EP12-30	L.G.	PROD. W. Call	DATE 3/10/69										
D	3/71	EP12-36	J.S.												
E	1/72	EP12-44	R.M.												
F	7/72	EP12-46	R.I.												
				FIRST USED ON		SIZE	CODE	NUMBER	REV.						
				SCALE		A	ML	KT12-0	F						
				SHEET	1	OF	1	DIST.							

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REV.	REV.	DATE	BY	CHKD.
A	00002	3/1/69	J. SCANLON	J. SCANLON
B	00026	3/1/69	D. MACKLIN	J. SCANLON
C	00030	3/1/69	D. MACKLIN	J. SCANLON
D	00036	3/1/69	D. MACKLIN	J. SCANLON

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
± .005 ± 1/64 ± 0°30'			
FINAL SURFACE QUALITY 1			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FIRST USED ON			
KT12			
SCALE			
SHEET 1 OF 1			
SIZE CODE		NUMBER	
D B5		KT12-0-TSS	
REV. D		REV. D	

REV. D  
KT12-0-TSS



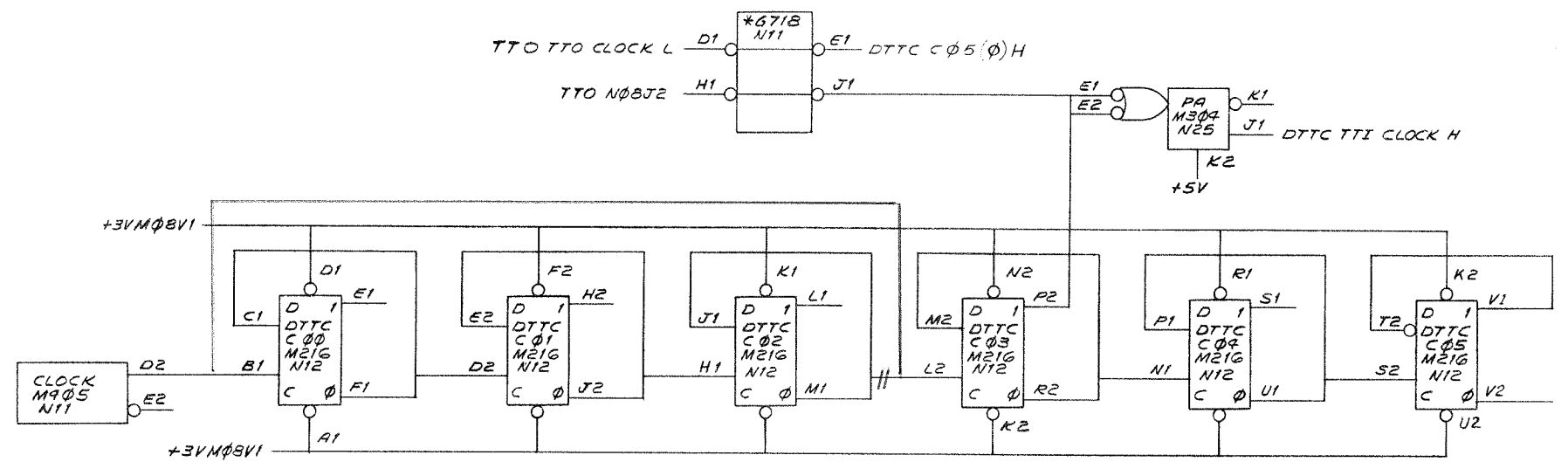
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## MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
<del>A-ML-EP12-0</del>	<del>REF</del>	<del>2</del>	<del>PDP 12 SYSTEM</del>
A-ML-EP12-0	REF	2	PROCESSOR
<del>K-WL-EP12-0-3</del>	<del>REF</del>		<del>WIRE LIST</del>
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
<del>D-MU-EP12-0-2</del>	<del>REF</del>		<del>MODULE UTILIZATION PROC.</del>
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. PL
<del>A-PL-EP12-0-2</del>	<del>REF</del>		<del>MODULE UTILIZATION PROC. PL</del>
D-BS-DP12-0-DTTC	B	1	DTTC DATAPHONE CLOCK
D-BS-DP12-0-DTTI	B	1	DTTI TELETYPE RECEIVER
D-BS-DP12-0-DTTO	C	1	DTTO TELETYPE TRANSMITTER
A-SP-DP12-0-1		7	ENGINEERING SPECIFICATION

REVISIONS				DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>
REV.	DATE	CHG. NO.	APP'D.	CHK'D.	DATE	
A	2/70	EP12-20	L.G.	J. APREA	3/7/69	TITLE  TTY/DATAPHONE
B	5/70	EP12-22	D.C.	K. RUSS	7/25/69	
C	9/70	EP12-29	L.G.	<i>L. G. Russo</i>	8/11/69	
D	1/72	EP12-44	R.M.	<i>R. M. Call</i>	8/18/69	
				PROJ. ENG.	DATE	SIZE CODE      NUMBER      REV.
				PROD.	DATE	
FIRST USED ON				PDP12		
SCALE				<i>H</i>		
SHEET				1 OF 1		A ML      DP12-A      D

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**DP12-A**  
 WHEN THE DP12 IS USED TO DRIVE A TELETYPE AT 110 BAUD, THE M905 (N11) AND M216 (N12) ARE NOT USED. G718 MODULE IS PLACED IN SLOT N11 THEREBY CONNECTING THE PDP-12 TELETYPE TO THE DP12 INPUT AND OUTPUT MODULES.

**DP12-B**  
 WHEN THE DP12 IS USED AT OTHER BAUD RATES (UP TO 10,000 BAUD) THE CRYSTAL CLOCK (M905, N11) IS SELECTED TO BE 128 TIMES THE BAUD RATE. FOR BAUD RATES BETWEEN 10,000 TO 100,000 THE WIRE FROM N12L2 TO N12M1 IS REMOVED AND A WIRE IS ADDED FROM N12L2 TO N11O2. THE CRYSTAL RATE IS THEN SELECTED TO BE 16 TIMES THE BAUD RATE. USE CABLE BCDIA-25 FOR INTER-CONNECTION TO DATAPHONE.

The function of G718 is given by these two jumpers:  
 N11 D1 - N11 E1  
 N11 H1 - N11 J1

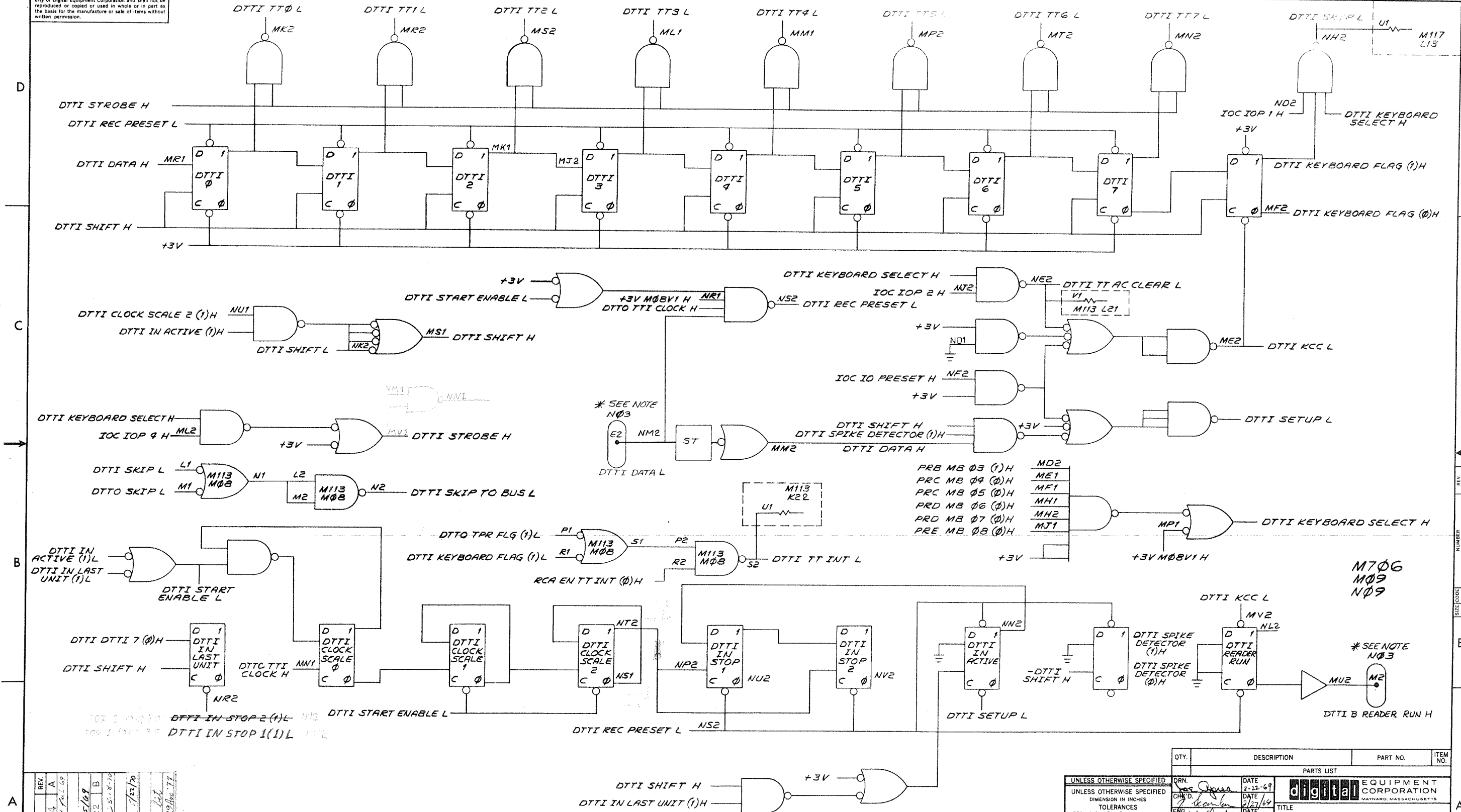
CHANGE INCORPORATED

REV.	CHANGE NO.	DATE
A	EP12-00003	5-29-69
B	EP12-00020	6-12-69
C	EP12-00020	8-19-74
D	EP12-00020	2-18-74
E	EP12-00020	2-18-74

UNLESS OTHERWISE SPECIFIED	DRN	DATE	2-23-69
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	2/27/69
DIMENSION IN INCHES	ENG.	DATE	2-28-69
TOLERANCES	PROJ. ENG.	DATE	2-22-69
DECIMALS FRACTIONS ANGLES	PROD.	DATE	2-28-69
± .005 ± 1/64 ± 0°30'	FIRST USED ON		
FINAL SURFACE QUALITY	DP12		
REMOVE BURRS AND BREAK SHARP CORNERS	SCALE	NONE	
	SHEET	OF	
	DIST.		

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		
	TITLE DTTC DATAPHONE CLOCK		
	SIZE CODE	NUMBER	REV.
	DBS	DP12-φ-DTTC	B

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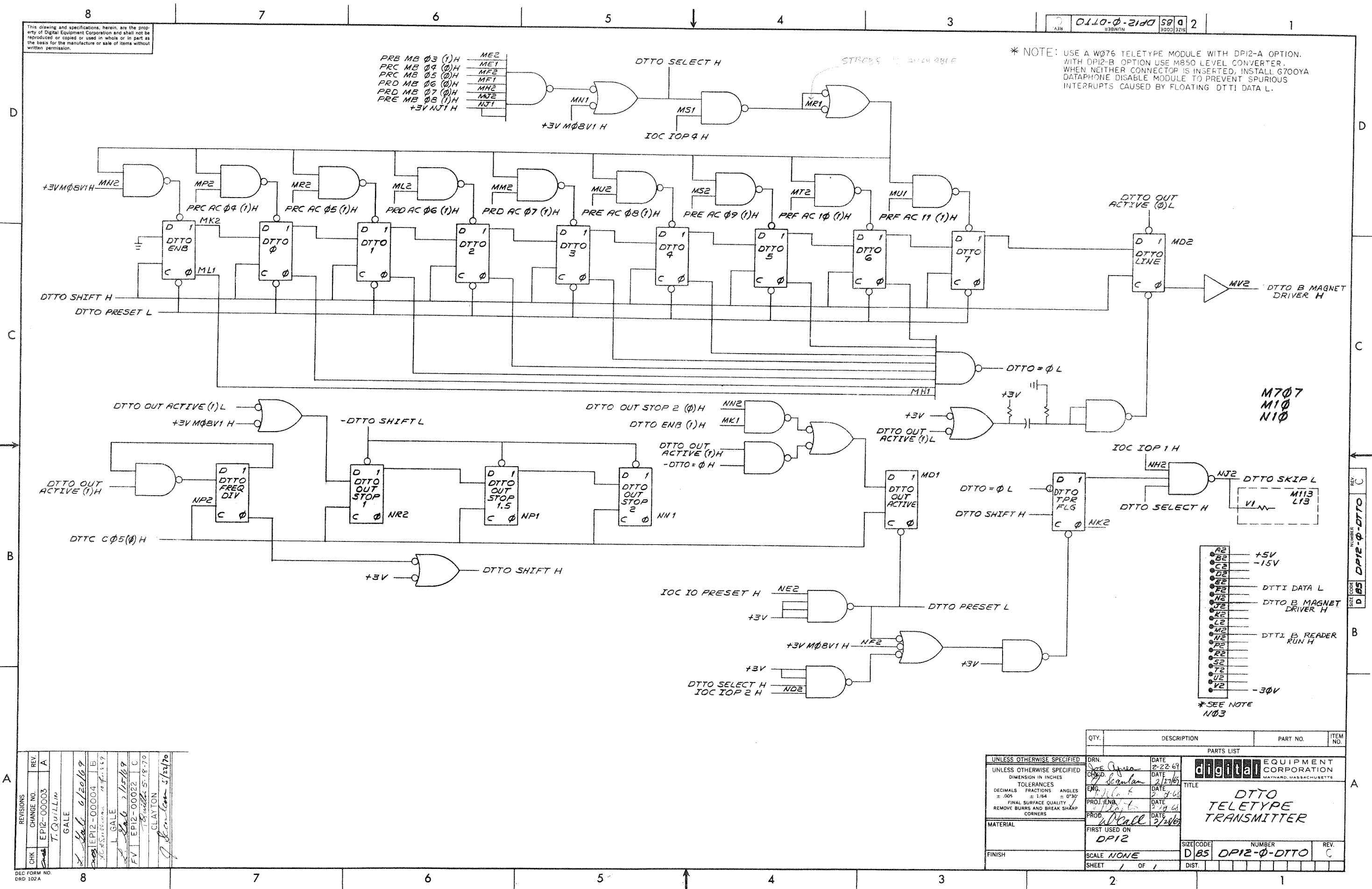
REV.	DATE	BY	CHK
A	2/15/69	L. GALE	
B	2/27/69	F. V. [unclear]	
C	2/28/69	[unclear]	
D	2/28/69	[unclear]	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	± .005 ± 1/64 ± 0°30'		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	DRN. DATE 2-12-69		
	DATE 2/27/69		
	DATE 2-28-69		
	DATE 2-28-69		
	DATE 2/28/69		
	FIRST USED ON		
	DPI2		
	SCALE		
	SHEET 1 OF 1		
	TITLE		
	DTTI TELETYPE RECEIVER		
	SIZE CODE NUMBER REV.		
	D BS DPI2-φ-DT1 B		

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REV. 2  
 SIZE CODE D 85  
 NUMBER DP12-φ-DTTO

\* NOTE: USE A W076 TELETYPE MODULE WITH DP12-A OPTION. WITH DP12-B OPTION USE M850 LEVEL CONVERTER. WHEN NEITHER CONNECTOR IS INSERTED, INSTALL 6700YA DATAPHONE DISABLE MODULE TO PREVENT SPURIOUS INTERRUPTS CAUSED BY FLOATING DTTO DATA L.



A2	+5V
B2	-15V
C2	
D2	
E2	
F2	
G2	
H2	DTTO DATA L
J2	DTTO B MAGNET DRIVER H
K2	
L2	
M2	
N2	DTTO B READER RUN H
P2	
R2	
S2	
T2	
U2	
V2	-30V

\*SEE NOTE 1103

REV.	CHANGE NO.	BY
A	EP12-00003	T. Quillim
B	EP12-00004	L. GALE
C	EP12-00022	F. V. ...
D	EP12-00022	CLAYTON

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
±.005 ± 1/64 ± 0°30'			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FINISH			
SCALE NONE			
SHEET 1 OF 1			
DISTRIBUTION			
DRN. DATE 2-22-69			
CHG. BY 2/27/69			
ENG. DATE 2-27-69			
PROJ. ENGR. DATE 2-27-69			
PROD. DATE 2/27/69			
FIRST USED ON DP12			
TITLE DTTO TELETYPE TRANSMITTER			
DIGITAL EQUIPMENT CORPORATION			
MAYNARD, MASSACHUSETTS			
SIZE CODE D 85			
NUMBER DP12-φ-DTTO			
REV. C			

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## MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
<del>A-ML-PDP12-0</del>	<del>REF</del>	<del>2</del>	<del>PDP-12 SYSTEM</del>
A-ML-EP12-0	REF	2	PROCESSOR
<del>K-WL-EP12-0-3</del>	<del>REF</del>		<del>WIRE LIST</del>
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
<del>D-MU-EP12-0-2</del>	<del>REF</del>		<del>MODULE UTILIZATION PROC.</del>
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. PL
<del>A-PL-EP12-0-2</del>	<del>REF</del>		<del>MODULE UTILIZATION PROC. PL</del>
D-BS-DP12-0-DTTC	B	1	DTTC DATAPHONE CLOCK
D-BS-DP12-0-DTTI	B	1	DTTI TELETYPE RECEIVER
D-BS-DP12-0-DTTO	C	1	DTTO TELETYPE TRANSMITTER
D-IA-BC01A-0-0	#	1	LEVEL CONVERTER (BI POLAR) CABLE
A-SP-DP12-0-1		7	ENGINEERING SPECIFICATION

REVISIONS				DRN.	DATE	digital EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>				
REV.	DATE	CHG. NO.	APP'D.	CHK'D.	DATE	TITLE  TTY/DATAPHONE (EIA LEVEL)				
A	2/70	EP12-20	L.G.	J. APREA	3/7/69					
B	5/70	EP12-22	D.C.	K. RUSS	7/25/69					
C	8/70	EP12-29	L.G.	<i>L. Sale</i>	8/11/69					
D	1/72	EP12-44	R.M.	<i>L. Sale</i>	8/11/69					
				<i>R. Call</i>	8/18/69					
				PROJ. ENG.	DATE					
				PROD.	DATE					
FIRST USED ON										
PDP12				SIZE	CODE	NUMBER				REV.
SCALE #				A	ML	DP12-B				0
SHEET 1 OF 1				DIST.						

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LEGEND		
NUMBER	DIM 'A'	TOLERANCE
BCOIA-5	5 FT	± 2 IN
BCOIA-10	10 FT	± 3 IN
BCOIA-15	15 FT	± 4 IN
BCOIA-20	20 FT	± 5 IN
BCOIA-25	25 FT	± 6 IN
BCOIA-30	30 FT	± 7 IN
BCOIA-35	35 FT	± 8 IN
BCOIA-40	40 FT	± 10 IN
BCOIA-45	45 FT	± 11 IN
BCOIA-50	50 FT	± 12 IN

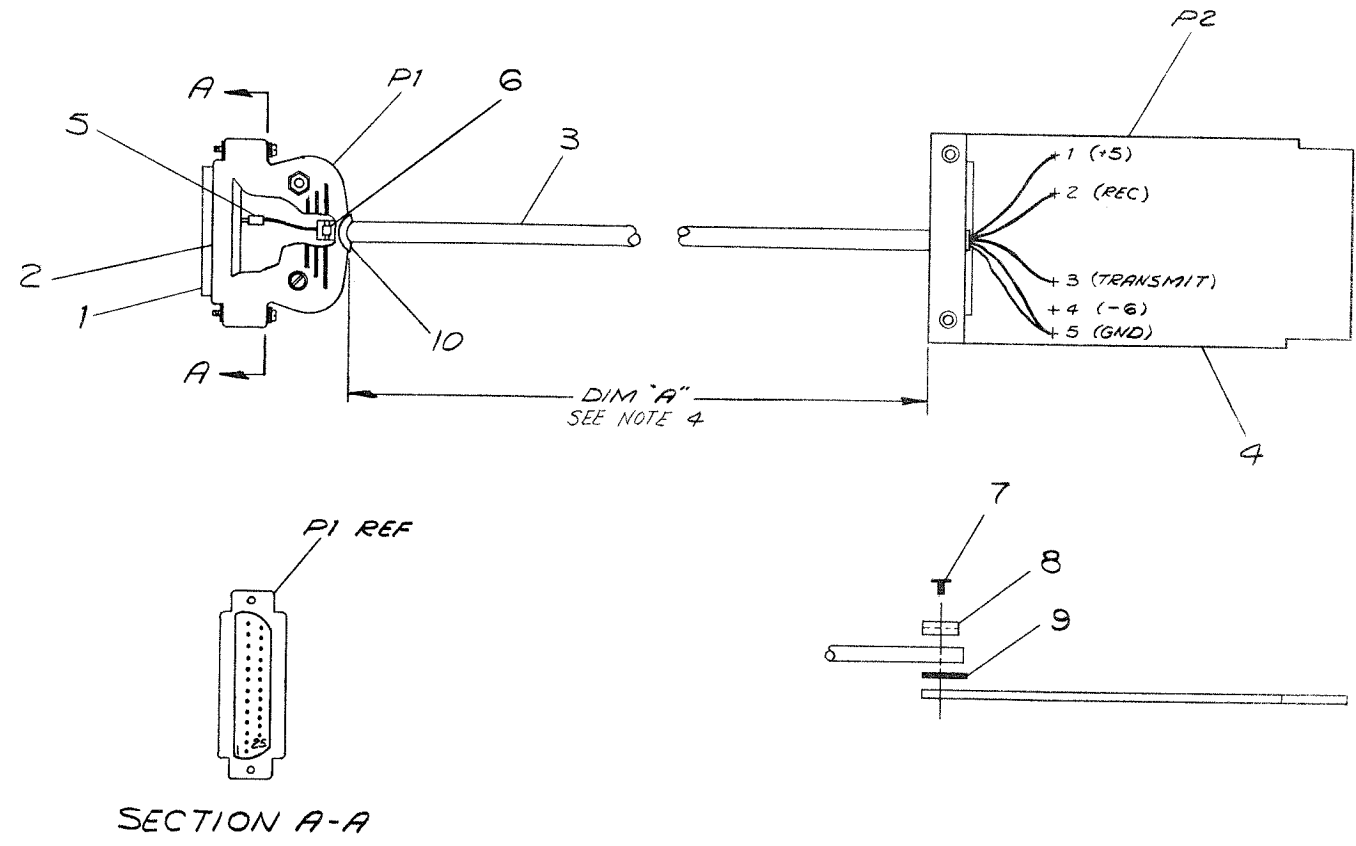
WIRE TABLE						
ITEM NO	DESCRIPTION	COLOR	FROM		TO	
			CONNECTION	WITH	CONNECTION	WITH
3	#22	BLK	P1-1	S-SOLDER	P2-5	SOLDER
3	#22	RED	P1-2	S-SOLDER	P2-3	SOLDER
3	#22	GRN	P1-3	S-SOLDER	P2-2	SOLDER
3	#22	ORN	P1-7	S-SOLDER	P2-5	SOLDER
3	#22	WHT	P1-20	S-SOLDER	P2-1	SOLDER

**NOTES:**

- EACH SOLDERED CONNECTION ON P1 SHALL BE INSULATED WITH A 1/4 INCH PIECE OF HY-SHRINK TUBING (\*5)
- APPLY TAPE (\*9) BETWEEN CABLE (\*3) AND BOARD (\*4) THEN SOLDER. ASSEMBLE CLAMP (\*8) & EYELETS (\*7) TO BOARD AFTER SOLDERING.
- ~~VARIATIONS AND LENGTHS SHOWN IN LEGEND ARE STANDARD OTHER THAN STANDARD. VARIATIONS WILL BE SPECIFIED BY ALPHANUMERIC DESIGNATION. FOR LENGTHS OTHER THAN FOOT INCREMENTS FROM ONE (1) FOOT THRU NINE (9) FEET, ELEVEN (11) INCHES.~~
  - ~~A=1" G=7"~~
  - ~~B=2" H=8"~~
  - ~~C=3" J=9"~~
  - ~~D=4" K=10"~~
  - ~~E=5" L=11"~~
  - ~~F=6"~~

~~EXAMPLE: BCO2X-30 = 3'0"~~  
~~LENGTHS WILL BE IN FOOT~~  
~~INCREMENTS FROM TEN (10) FEET ON.~~  
~~AND WILL BE SPECIFIED BY THE~~  
~~CORRESPONDING NUMERICAL~~  
~~DESIGNATION.~~  
~~EXAMPLE: BCO2X-11 = 11 FEET~~  
~~THE TOLERANCE ON DIMENSION "A"~~  
~~WILL BE ± 2% OF THE FOOT~~  
~~INCREMENT.~~

- CABLE TO BE CUT TO DIM 'A' + 8 INCHES



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	GROMMET # 809 A.I.R.	9007668	10
	A/R TAPE #4032 1/2 X 1 3/4 (3M CO)	9007834-0-0	9
1	CABLE CLAMP	1202704	8
2	EYELET #GS-9-7 STIMPSON	9006732	7
1	TIE WRAP PANDUIT #SST-1B	9007031	6
4	HEAT SHRINK TUBING 1/8 DIA	9107255	5
1	M850 CABLE CONN	M850	4
A/R	CABLE, BELDEN 5 COND	9107680	3
1	PLUS CINCH HOOD #DBS1226-1	1205885	2
1	PLUG CINCH DB-25P	1205886	1

REV.	CHANGE NO.	REV.
A	BCOIA-00001	A
B	BCOIA-00003	B

CHK: LKLOTZ  
 ENG: L. KLOTZ  
 DATE: 1-26-70

FIRST USED ON OPTION/ MODEL: BCOIA

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES

TOLERANCES: DECIMALS = .005, FRACTIONS = 1/64, ANGLES = ± 0°30'

FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: \_\_\_\_\_

FINISH: \_\_\_\_\_

DRN: [Signature] DATE: 7-5-69

CHK'D: [Signature] DATE: 7/12/69

PROJ. ENG: [Signature] DATE: 7/12/69

PROD: [Signature] DATE: 7/12/69

NEXT HIGHER ASSY: \_\_\_\_\_

SCALE: 1 OF 1

SHEET: 1 OF 1

PARTS LIST

digital EQUIPMENT CORPORATION  
 NATHAN, MASSACHUSETTS

TITLE: LEVEL CONVERTER (BI POLAR)

SIZE CODE: DIA BCOIA-0-0

NUMBER: \_\_\_\_\_

REV: B

DIST: (6)

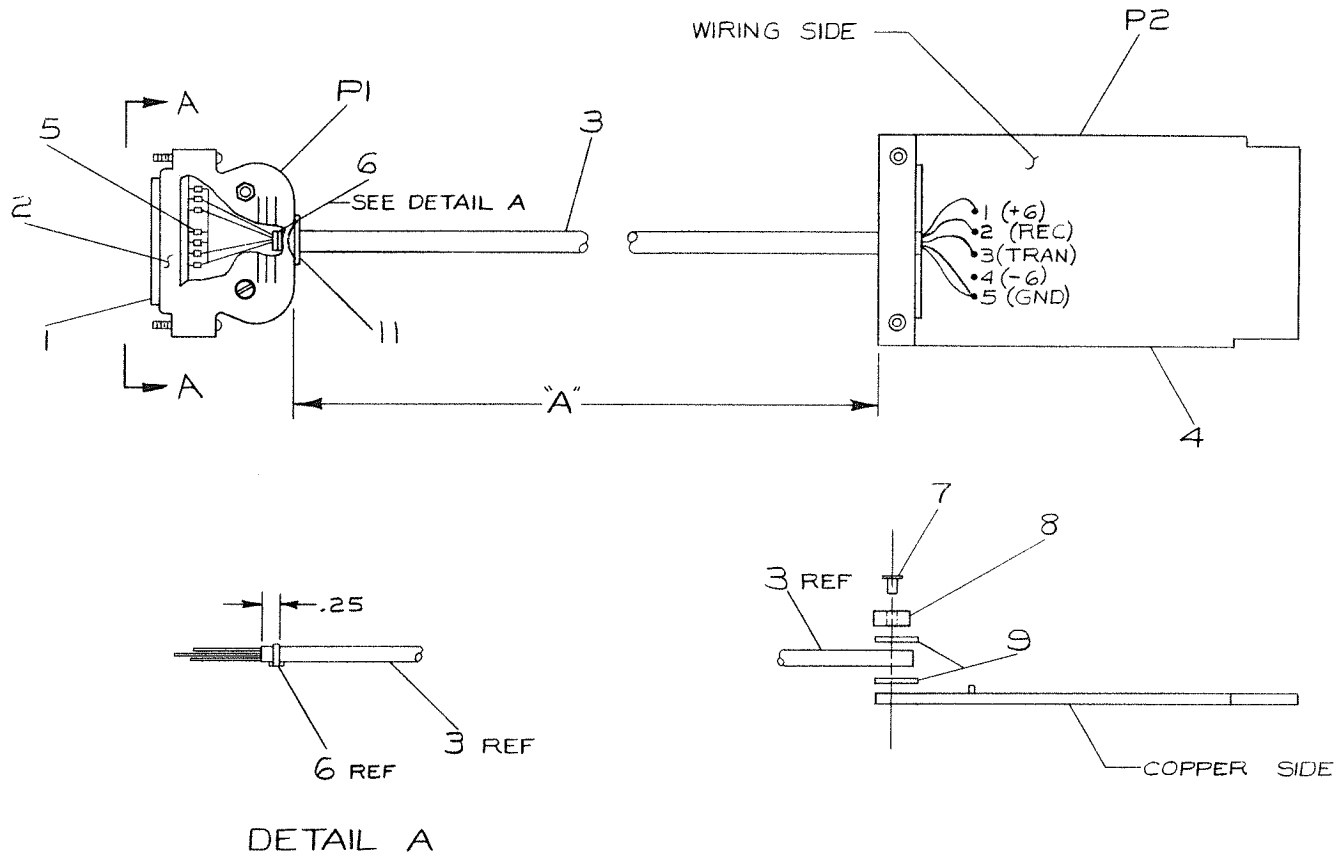
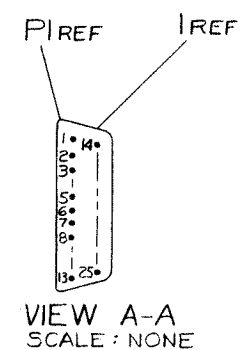
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LEGEND	
NUMBER	"A" DIM
BCØIU-10	10' ± 2"
BCØIU-25	25' ± 5"

WIRE TABLE				
ITEM NO.	DESCRIPTION	FROM CONNECTION	TO CONNECTION	REMARKS
3	BLK	P1-7	P2-5	
3	GRN	P1-2	P2-2	
3	RED	P1-3	P2-3	
3	BRN	P1-1	P2-5	
10 22		P1-5	P1-6	JUMPER
10 22		P1-6	P1-8	JUMPER
3	WHT	P1-5	P2-1	

NOTES:

- ALL WIRE ENDS MUST BE FLARE TO BE INSULATED WITH A .25 INCH PIECE OF TUBE (ITEM #5).
- APPLY TAPE (ITEM #9) BETWEEN CABLE (ITEM #3) AND BOARD (ITEM #4), ALSO BETWEEN CLAMP (ITEM #8) AND CABLE.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	GROMMET	9007668	11
4/R	22 AWG BUS WIRE	9107560-01	10
4/R	TAPE #4032, .03 THK x .50W	9007834	9
1	CABLE CLAMP	1202704	8
2	EYELET #GS-4-7, STIMPSON	9006732	7
1	TIE WRAP, PANDUIT #SST-1B	9007031	6
4/R	HIGH SHRINK TUBING, WHT, .12 IN	9107255	5
1	EIA LEVEL CONVERTER	M850	4
4/R	CABLE, BELDON, 5 COND	9107630	3
1	CANNON PLUG HOOD #DB51226-1	1205895	2
1	CANNON CONNECTOR #DB51226-1	1204975	1

FIRST USED ON OPTION / MODEL  
LT37

DO NOT SCALE DRAWING  
UNLESS OTHERWISE SPECIFIED  
DIMENSION IN INCHES  
TOLERANCES  
DIMENSIONAL FINISHES  
FINAL SURFACE QUALITY  
REMOVE BURRS AND BREAK SHARP CORNERS  
MATERIAL  
FINISH

JRN. W.F.M. G. DATE 5/6/70  
CHK'D. DATE 5/28/70  
ENG. DATE 5/15/70  
PROJ. ENG. DATE 5/12/70  
PROD. DATE 12/2/70  
NEXT HIGHER ASSY  
D-UA-LT37-Ø-Ø  
SCALE NONE  
SHEET 1 OF 2

digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE  
LEVEL CONVERTER (BI POLAR)

SIZE CODE DIST. NUMBER REV.  
D I A B C Ø I U - Ø - Ø

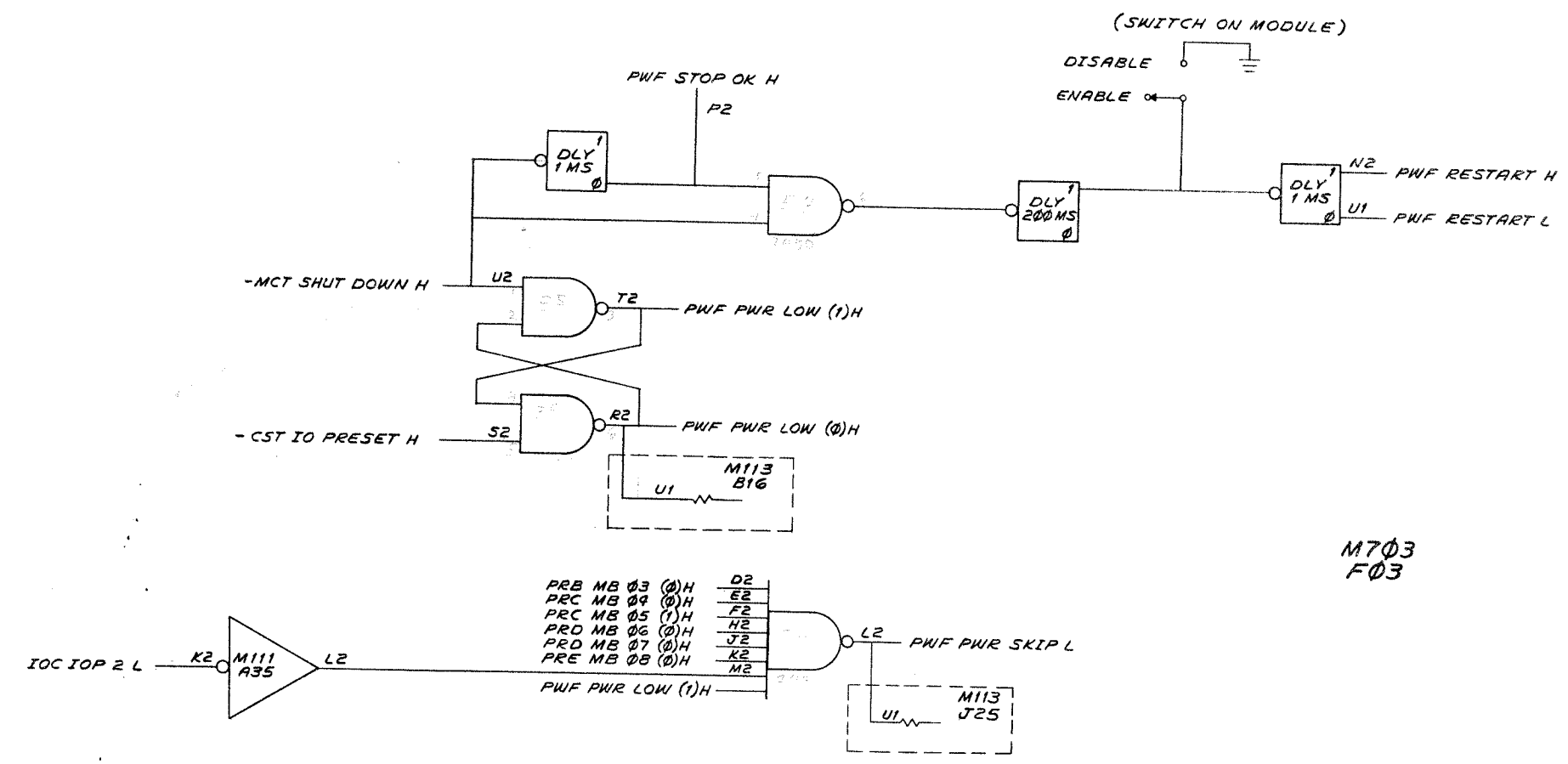
REV.	CHANGE NO.







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REV.	
CHANGE NO.	
CHK	

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED	DRN	DATE	2-11-69
UNLESS OTHERWISE SPECIFIED	CHKD	DATE	2/27/69
DIMENSION IN INCHES	ENG	DATE	2/28/69
TOLERANCES	PROJ. ENG.	DATE	2-28-69
DECIMALS FRACTIONS ANGLES	PROD.	DATE	2/24/69
= .005 ± 1/64 = 0°30'			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL	FIRST USED ON		
FINISH	KPI2		
	SCALE	SIZE CODE	NUMBER
	SHEET / OF /	D BS	KPI2-0-PWF
		DIST.	REV.

REV. 2  
 SIZE CODE D BS  
 NUMBER KPI2-0-PWF

A

# MASTER DRAWING LIST

MAINTENANCE MANUALS		UNIT VARIATIONS																
NO.	TITLE																	
	KW12-Ø CLOCK OPTION	X	X	X														

USED ON OPTIONS

PDP 12										
--------	--	--	--	--	--	--	--	--	--	--

APP'D.	CHG. NO.	DATE	8/71	MISC-86				FIRST USED ON	PDP12	SCALE	#	SHEET	1	OF	2	DIST.	REV.	B
			ORIG	6/72														

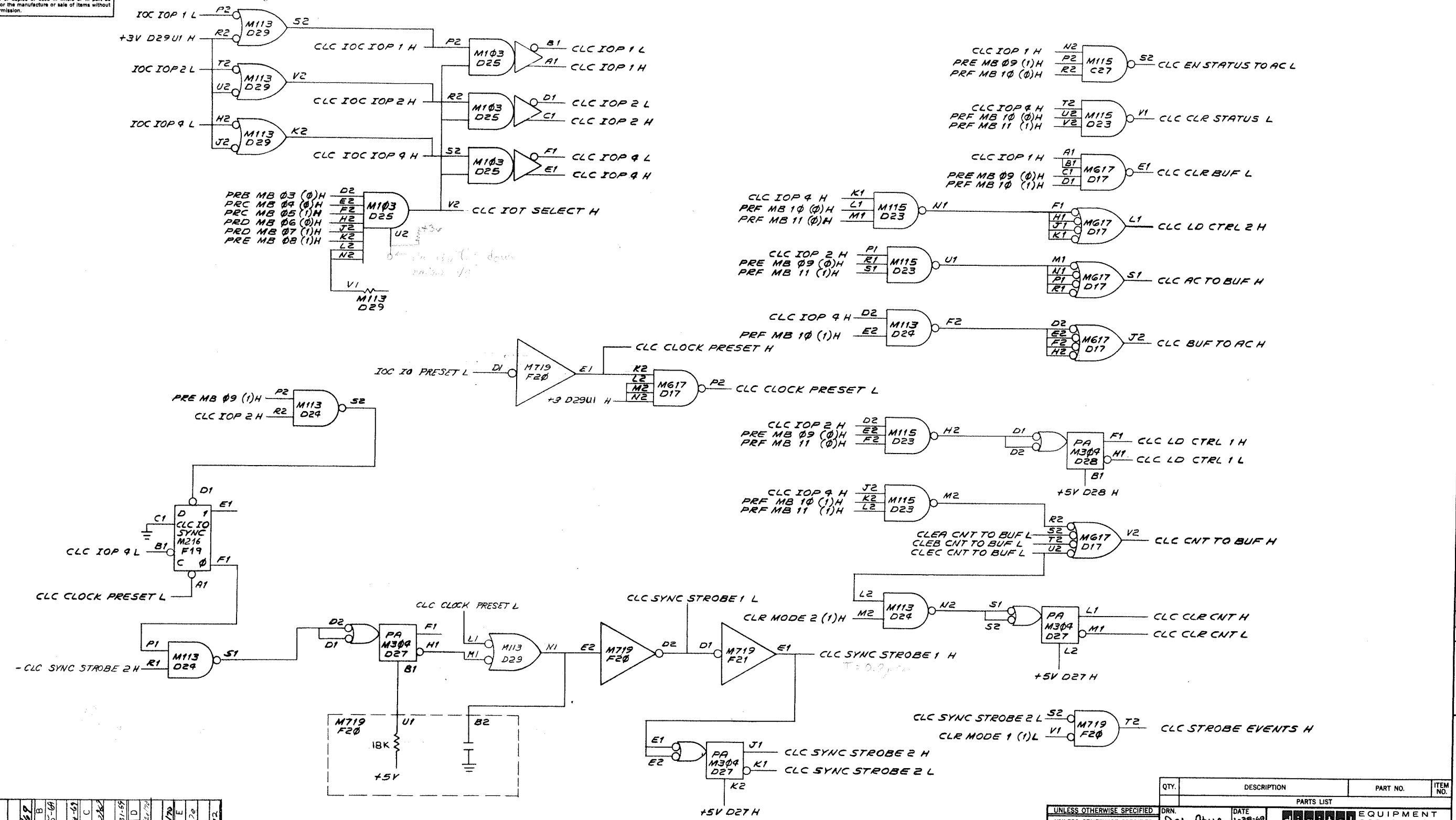
**digital** EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE  
CLOCK

PRINT SET		DWG. NO.	REV. NO. OF SHEETS	REV. LET.	TITLE	OPTION NO.
X		D-BS-KW12-Ø-CLC	E 1		CLC CLOCK IO CONTROL	
X		D-BS-KW12-Ø-CLEA	E 1		CLEA INPUT CHANNEL 1	
X		D-BS-KW12-Ø-CLEB	D 1		CLEB INPUT CHANNEL 2	
X		D-BS-KW12-Ø-CLEC	D 1		CLEC INPUT CHANNEL 3	
X		D-BS-KW12-Ø-CLIO	B 1		CLIO CLOCK TO INPUT	
X		D-BS-KW12-Ø-CLKA	1		CLKA CLOCK AND BUFFER 00-05	
X		D-BS-KW12-Ø-CLKB	1		CLKB CLOCK AND BUFFER 06-11	
X		D-BS-KW12-Ø-CLR	E 1		CLR CLOCK RATE	
X		D-BS-KW12-Ø-CLTB	A 1		CLTB CLOCK TIME BASE	
X		D-CS-7006335-0-1	C 1		CLOCK CONTROL CIRCUIT SCHEMATIC	
X		D-AD-7006335-0-0	E 2		CLOCK CONTROL PANEL ASSEMBLY	
X		A-PL-7006335-0-0	E 2		CLOCK CONTROL PANEL ASSEMBLY (PL)	
X		A-PL-KW12-Ø-Ø	A 1		KW12 CLOCK CONTROL	
X		A-SP-KW12-Ø-1	A 8		KW12 REAL TIME CLOCK	
X		D-BS-KW12-Ø-CLUB	B 1		SIMPLE CLOCK	
X		A-SP-KW12-B-1	1		ENGINEERING SPECIFICATION	
-		K-WL-EM12-0-3	REF		WIRELIST	
TITLE					CLOCK	

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS						PARTS LIST			QTY/VAR																
MADE BY		CHECKED		SECTION		KW12-A	KW12-B	KW12-C																	
DATE		DATE		ISSUED SECT.												UNIT COST	UNIT QUANTITY	QUANTITY ISSUED							
ENG		PROD																							
DATE		DATE																							
ITEM NO.	CL	DWG NO./PART NO. BASIC VAR.	DESCRIPTION																						
		M503	Schmidt Trigger & PA			3																			
		M719	Super Clock Synchronizer			3																			
		M405	Crystal Clock			1		1																	
		M216	Six Flip Flop			2																			
		M217	Clock Counter Buffer			3																			
		M623	Bus Driver			1																			
		M103	Device Selector			1	1	1																	
		M304	Pulse Amplifier			2																			
		M117	NAND Gate			1																			
		M115	NAND Gate			1																			
		M113	NAND Gate			2	1	1																	
		M617	Four Input Power NAND Gate			1																			
		D-AD-7006335-0-0	Clock Control Panel			1																			
		1203185-2	Power Supply (for PDP-12C only)			1																			
		C-AD-7006045-0-0	Power Supply Bracket Assembly (12C only)			1																			
		M870	Simple Clock				1	1																	
		M401	Variable Clock				1																		
TITLE															ASSY NO.			SIZE CODE		NUMBER			REV.	ECO NO.	
(KW12) Clock Control															/ /			A PL		KW12-0-0			A	EM12-00041	
SHEET															OF	DIST.									

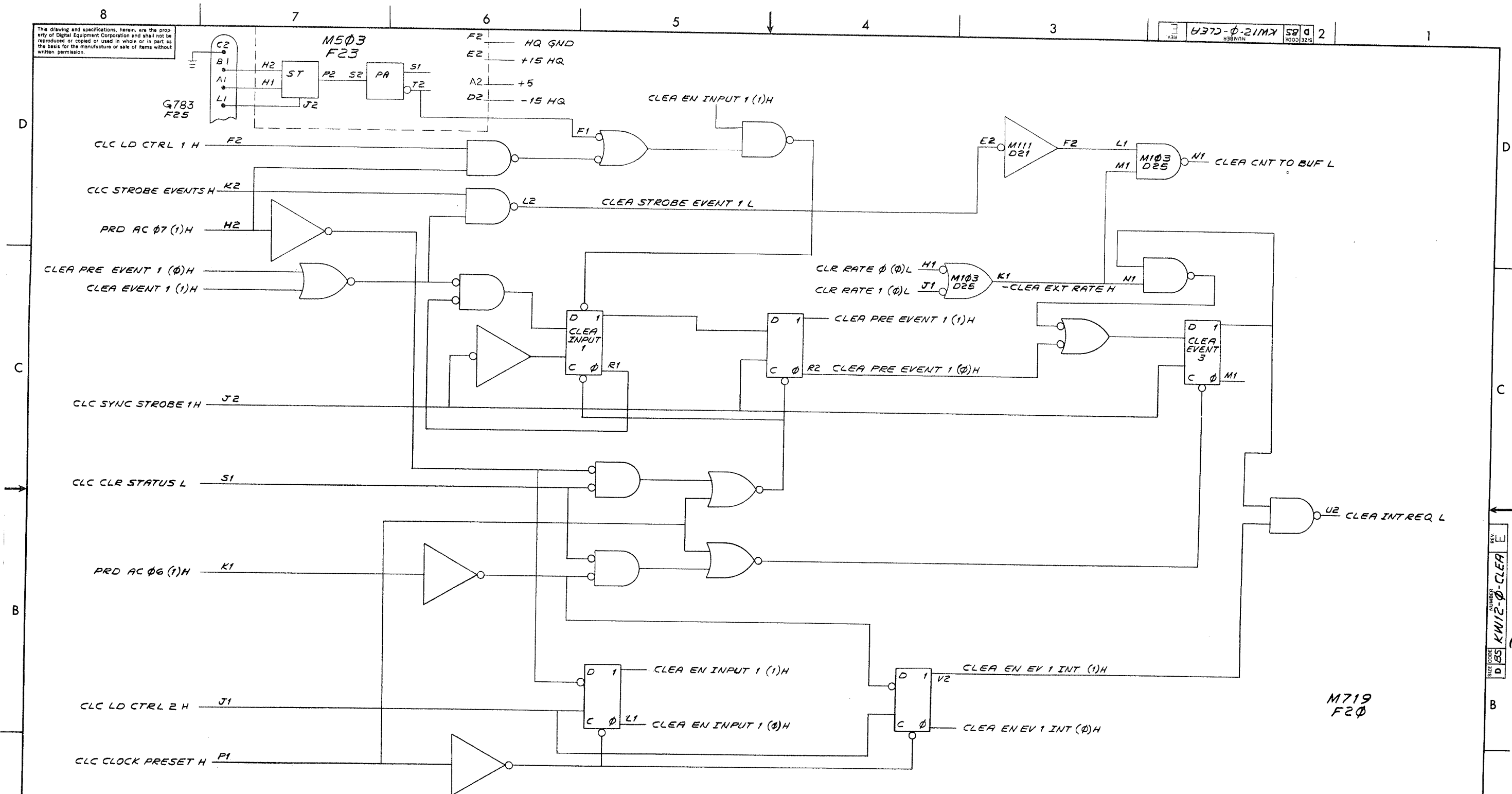
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REV.	CHANGE NO.	BY	DATE
A	0001	S. Thomas	1-28-69
B	0002	L. GALE	2-20-69
C	0003	L. GALE	2-20-69
D	0004	L. GALE	2-20-69
E	0005	L. GALE	2-20-69

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		DRN. DATE 1-28-69	
DIMENSION IN INCHES		DATE 2-20-69	
TOLERANCES		TITLE	
DECIMALS	FRACTIONS	ANGLES	DATE 2-20-69
± .005	± 1/64	± 0°30'	DATE 2-20-69
FINAL SURFACE QUALITY		DATE 2-20-69	
REMOVE BURRS AND BREAK SHARP CORNERS		DATE 2-20-69	
MATERIAL		FIRST USED ON	
FINISH		KWI2	
SCALE		SIZE CODE	NUMBER
SHEET 1 OF 1		D B5	KWI2-0-CLC
		DIST.	REV. E

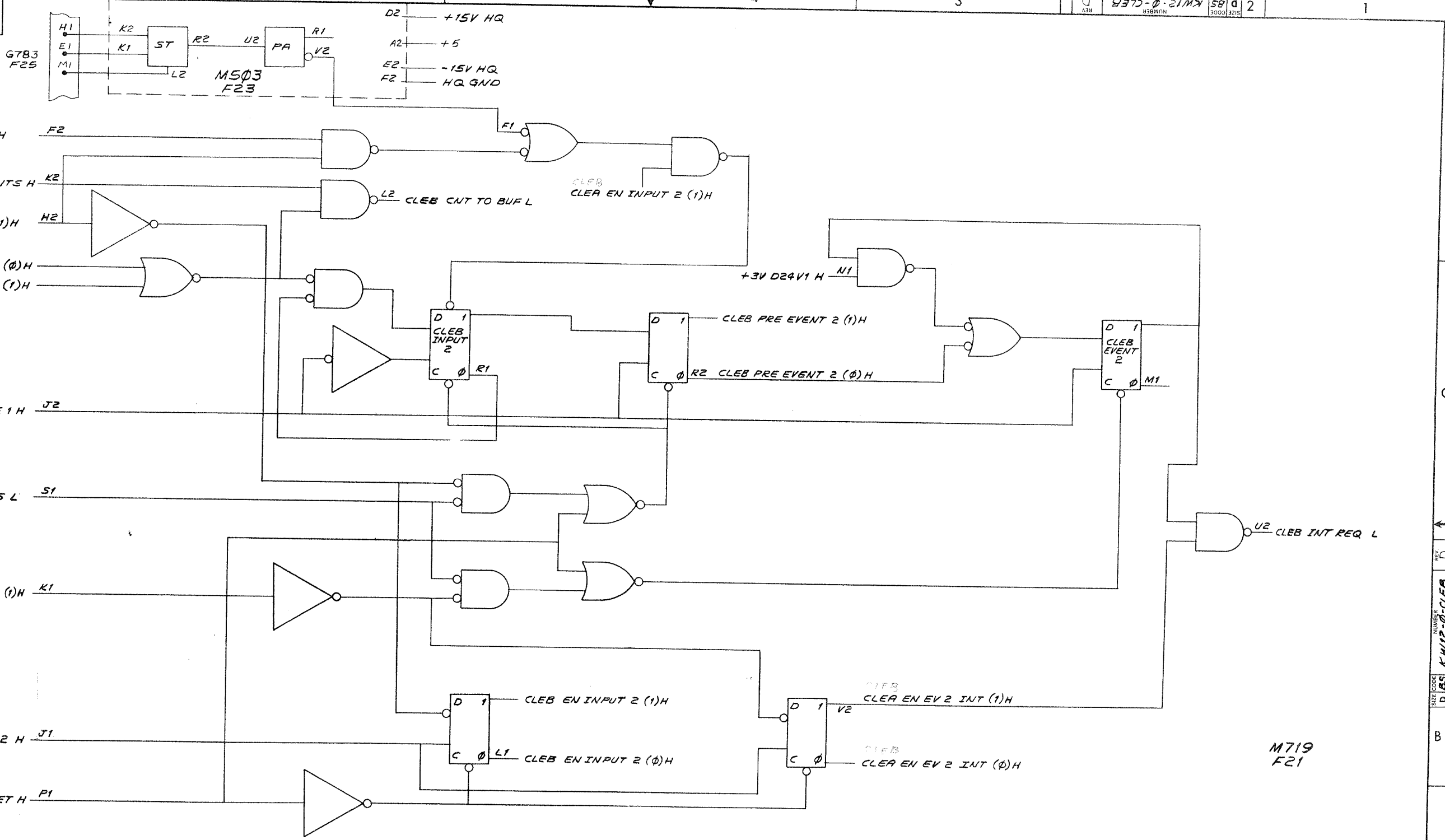
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REV.	CHG. NO.	CHK.	DATE	BY
A	00001	W. Moore	1/17/69	L. GALE
B	00002	T. Goullin	2/28/69	L. GALE
C	EM12-00015	L. GALE	1/17/69	L. GALE
D	EM12-00030	J. Williams	3-27-70	GALE
E	EM12-00055	J. Williams	5-4-70	GALE
	1-3-72	R. Moore		
	1-24-72	W. Moore		

UNLESS OTHERWISE SPECIFIED		PARTS LIST	
DRN.	DATE	QTY.	DESCRIPTION
CHG. 2-1-69	DATE 2-1-69		
ENG. 2-23-69	DATE 2-23-69		
PROD. ENG. 2-28-69	DATE 2-28-69		
PROD. 2-28-69	DATE 2-28-69		
MATERIAL		FIRST USED ON	
FINISH		SCALE	
		SHEET / OF /	
UNLESS OTHERWISE SPECIFIED		PARTS LIST	
DIMENSION IN INCHES		TITLE	
TOLERANCES		CLEA INPUT CHAN 1	
DECIMALS ± .005	FRACTIONS ± 1/64	digital EQUIPMENT CORPORATION	
ANGLES ± 0°30'		MAYNARD, MASSACHUSETTS	
FINAL SURFACE QUALITY		SIZE CODE NUMBER	
REMOVE BURRS AND BREAK SHARP CORNERS		D BS KW12-0-CLEA	
		REV. E	

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REV	CHG	NO	DATE	BY	CHKD
A	0001			L. GALE	
B	0002			L. GALE	
C	0005		10/17/69	L. GALE	
D	0055		1-3-72	R. MOORE	

UNLESS OTHERWISE SPECIFIED		PARTS LIST	
DRN	DATE	DRN	DATE
CHKD	DATE	CHKD	DATE
ENG	DATE	ENG	DATE
PRD	DATE	PRD	DATE
MATERIAL		FIRST USED ON	
FINISH		SCALE	
SHEET		SHEET	
TITLE		NUMBER	
REV		REV	

digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

CLEB INPUT CHAN 2

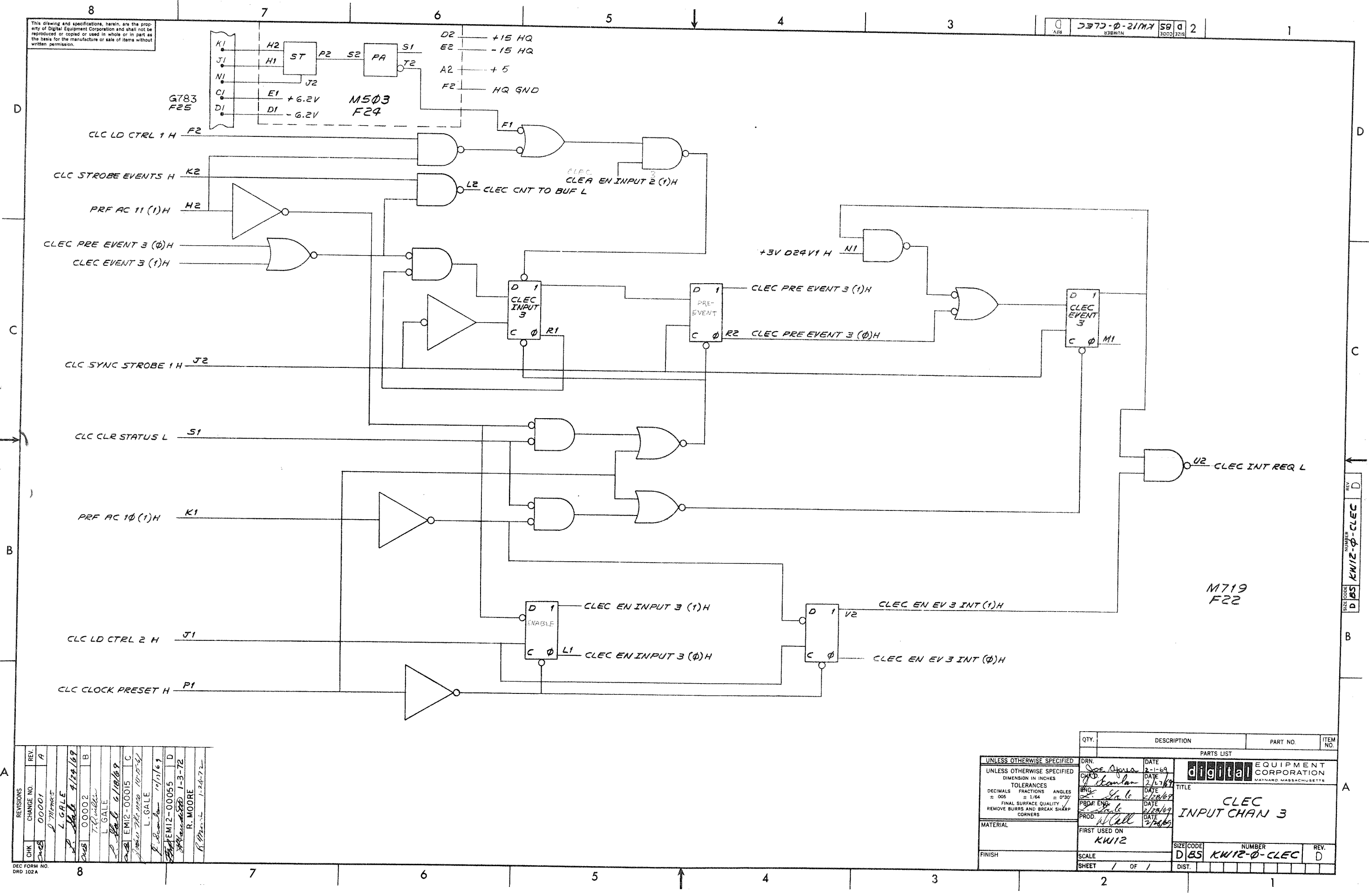
KW12

D BS KW12-0-CLEB D

1 OF 1

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REV. 2  
 SIZE CODE D B5  
 NUMBER KW12-φ-CLEC



REV.	CHANGE NO.	DESCRIPTION
A	0001	Initial
B	0002	L. GALE 1/22/69
C	0003	L. GALE 6/18/69
D	0005	L. GALE 10/11/69
E	0005	R. MOORE 1-3-72
F	0005	R. MOORE 1-24-72

QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
± .005 ± 1/64 ± 0°30'			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL		FIRST USED ON	
		KW12	
FINISH		SCALE	
		SHEET / OF /	
DRN. <i>Doc. Op. a</i>		DATE 2-1-69	
CHKD. <i>J. Stamban</i>		DATE 2/17/69	
ENG. <i>L. GALE</i>		DATE 2/23/69	
PROB. ENG. <i>L. GALE</i>		DATE 2/23/69	
PROD. <i>Wall</i>		DATE 2/26/69	
PARTS LIST		TITLE	
digital EQUIPMENT CORPORATION		CLEC INPUT CHAN 3	
MAYNARD MASSACHUSETTS			
SIZE CODE D B5		NUMBER KW12-φ-CLEC	
REV. D		DIST.	

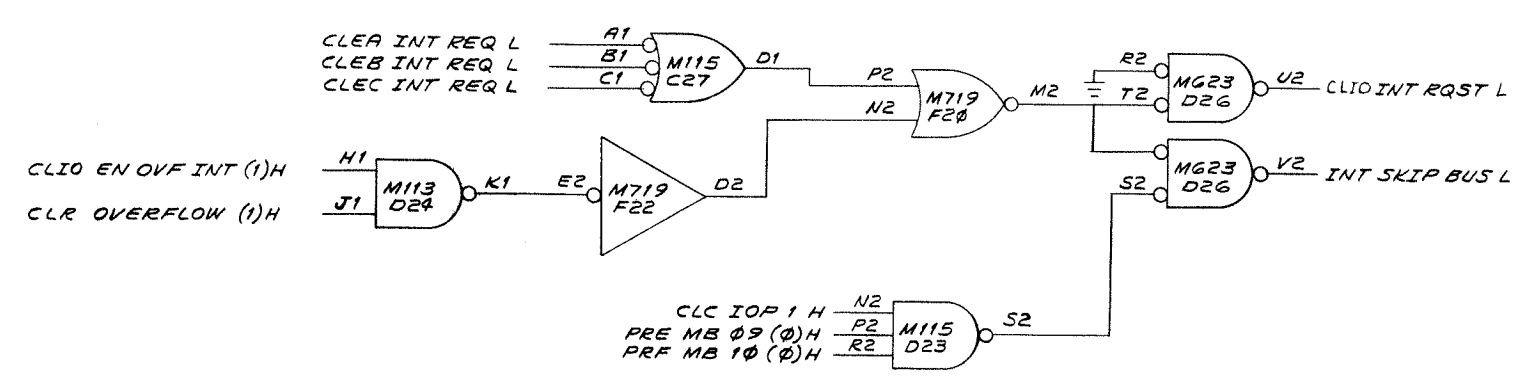
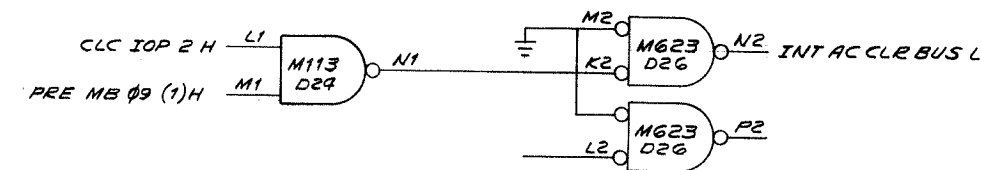
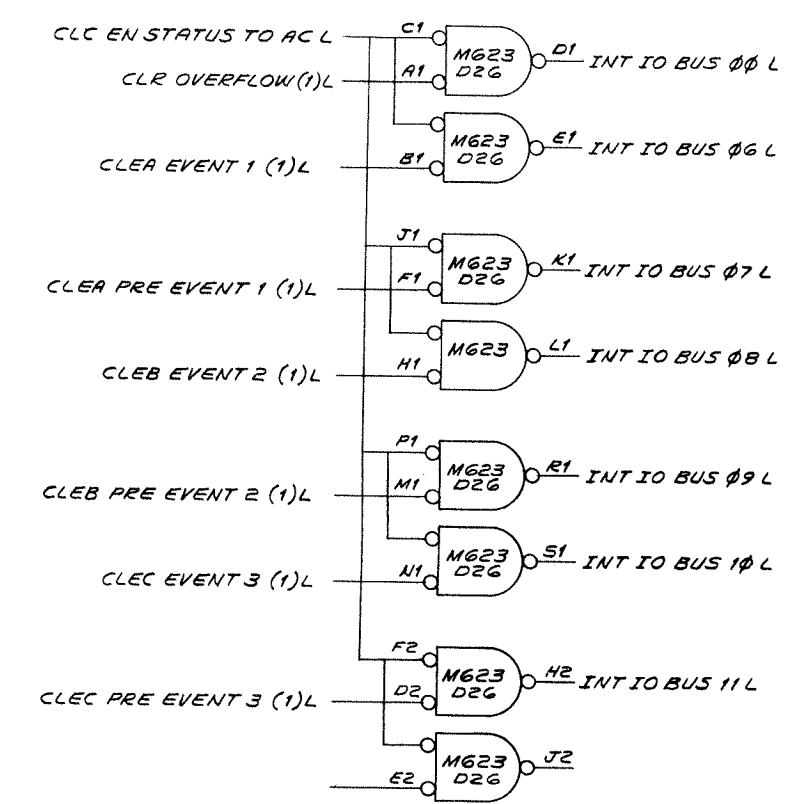
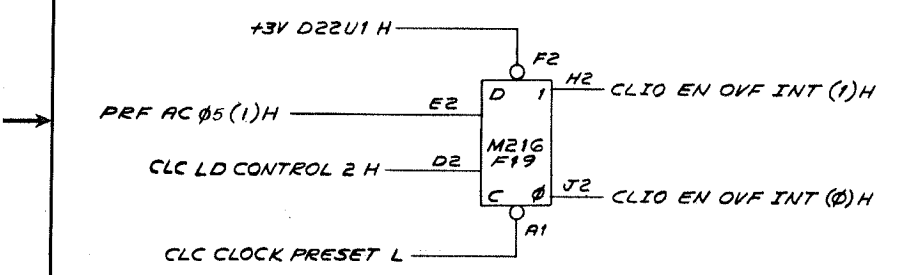
REV. D  
 NUMBER KW12-φ-CLEC  
 SIZE CODE D B5



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D  
 C  
 B  
 A

D  
 C  
 B  
 A

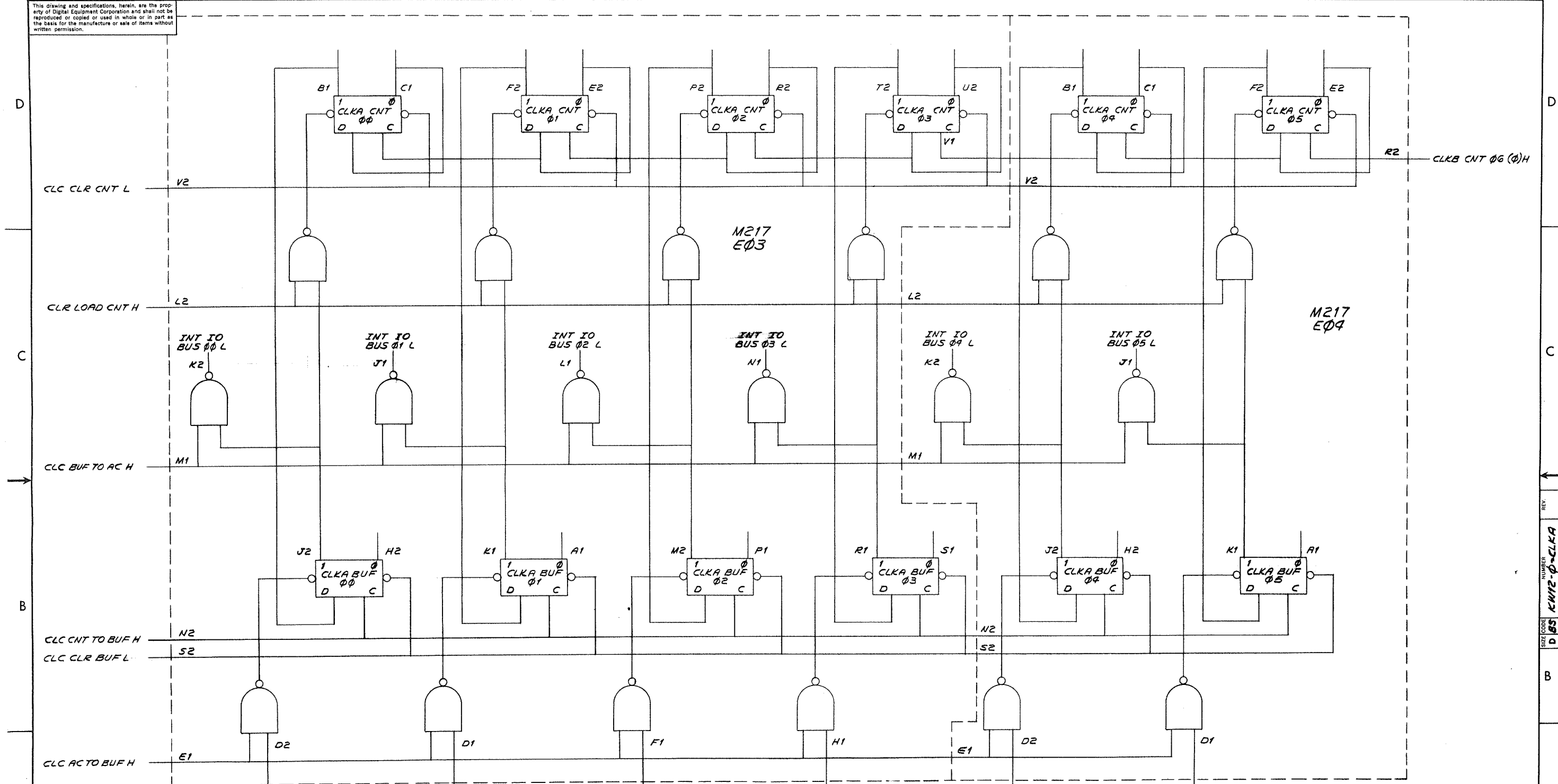


REV.	CHG. NO.	BY	DATE
A	00002	T. O'NEILL	1-29-69
B		L. GALE	2/27/69
C			2/28/69
D			2/28/69

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS	FRACTIONS	ANGLES
	± .005	± 1/64	± 0°30'
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	UNLESS OTHERWISE SPECIFIED		
	DRN	DATE	1-29-69
	CHKD	DATE	2/27/69
	ENG.	DATE	2/28/69
	PROJ. ENG.	DATE	2/28/69
	PROD.	DATE	2/28/69
	FIRST USED ON		
	KW12		
	SCALE	NUMBER	REV.
	SHEET	D 125	B
	OF	1	
	DIST.		

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8775-0-21177 5B 2  
 3000 3218



REVISIONS	REV.
CHANGE NO.	
CHK	

FORM NO. 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
UNLESS OTHERWISE SPECIFIED		DRN.	DATE
UNLESS OTHERWISE SPECIFIED		CHKD.	DATE
DIMENSION IN INCHES		ENG.	DATE
TOLERANCES		PRD. ENR.	DATE
DECIMALS	FRACTIONS	ANGLES	DATE
= .005	= 1/64	= 0°30'	
FINAL SURFACE QUALITY		PROD.	DATE
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL		FIRST USED ON	
FINISH		SCALE	
		SHEET / OF /	
		DIST.	

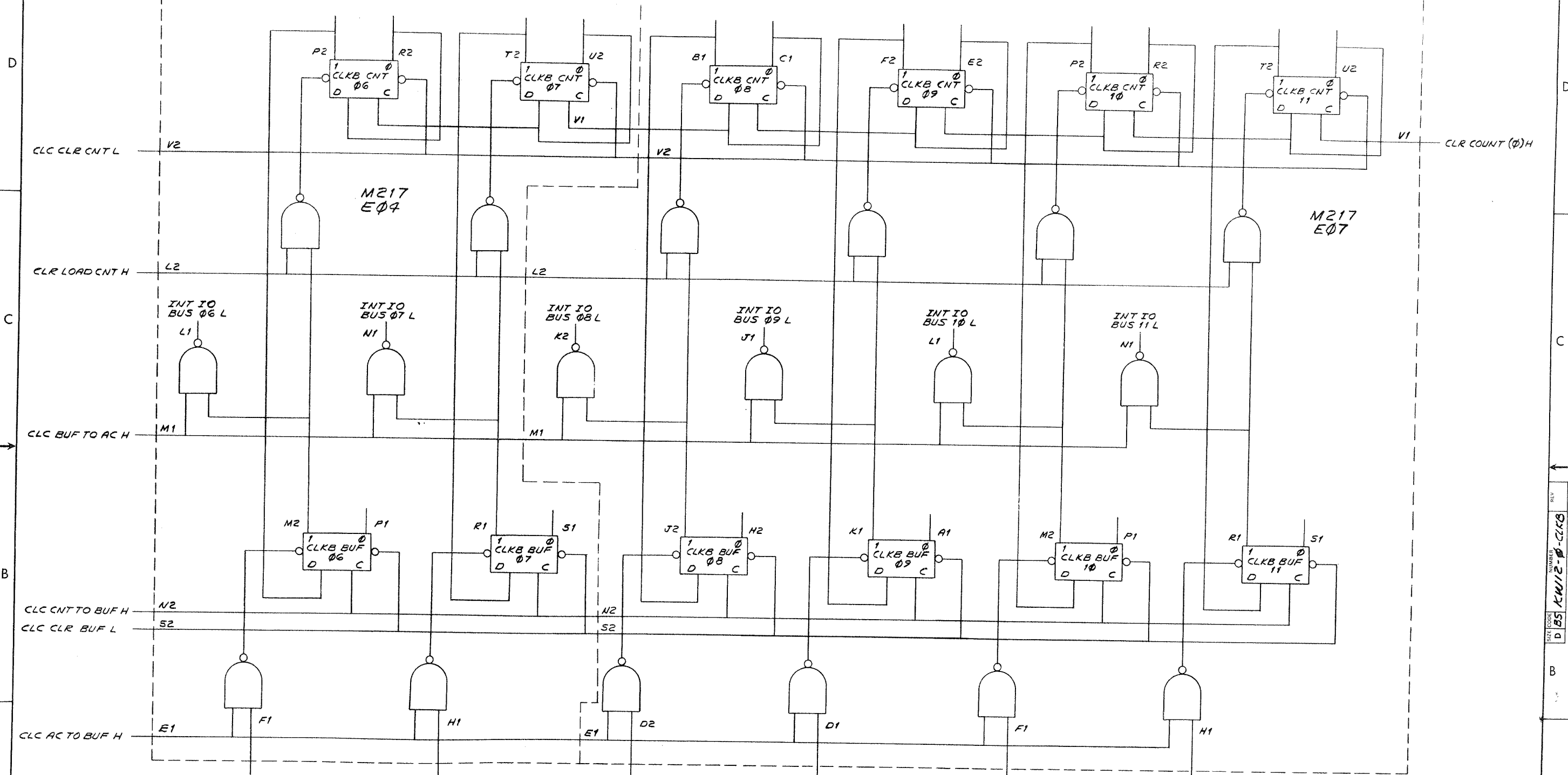
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TITLE <b>CLKA CLOCK &amp; BUFFER 00-05</b>	
SIZE CODE D B5	NUMBER KW12-0-CLKA
REV.	

REV. NUMBER  
 D B5 KW12-0-CLKA

A

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8-170-0-21/MX 58 2



REV.	CHANGE NO.

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

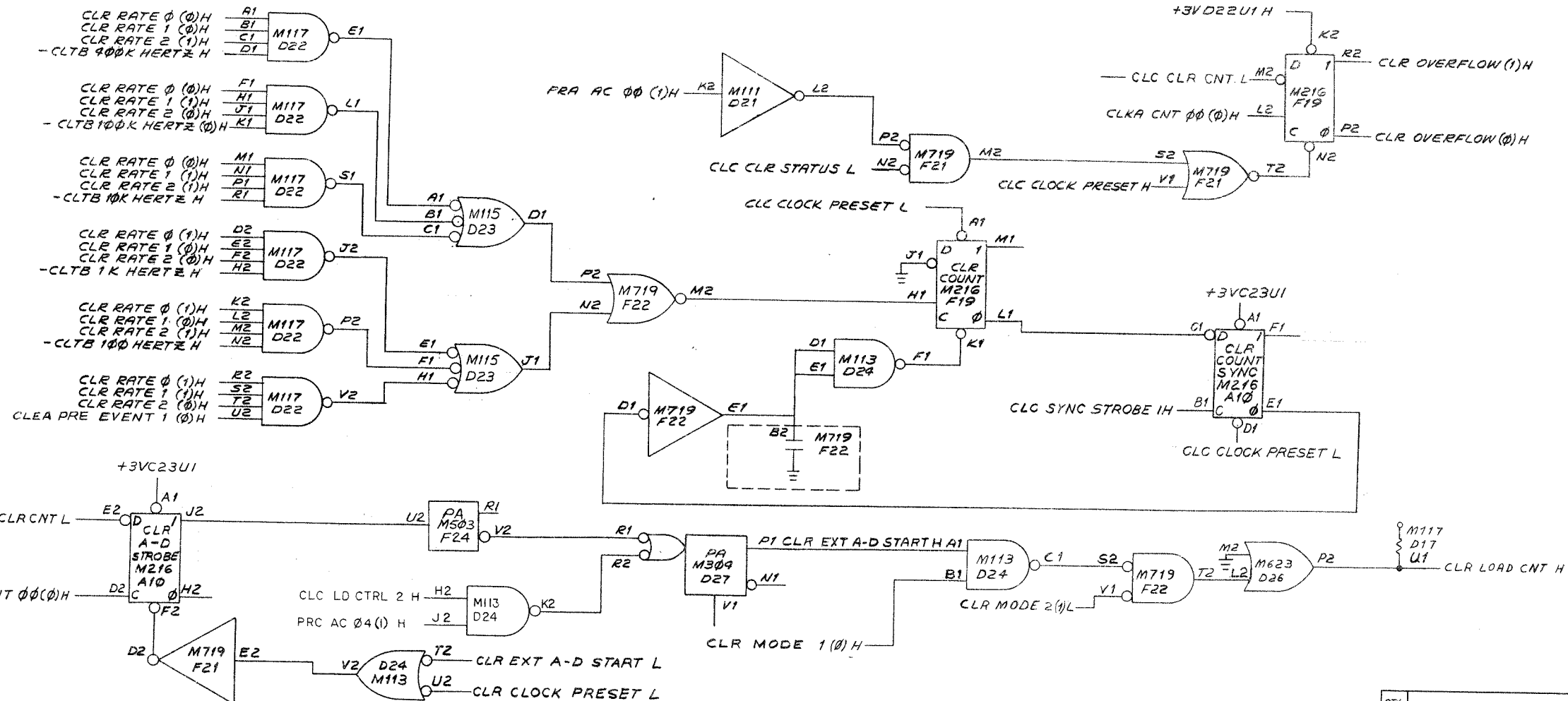
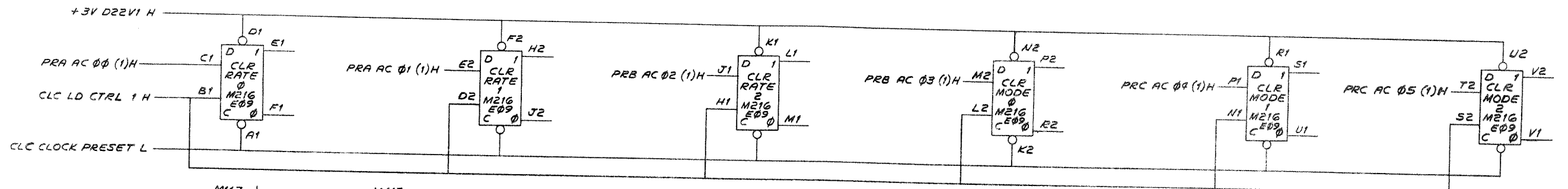
UNLESS OTHERWISE SPECIFIED		DRN	DATE
UNLESS OTHERWISE SPECIFIED		CHK'D	DATE
DIMENSION IN INCHES		ENG	DATE
TOLERANCES		PRGR ENGR	DATE
DECIMALS	FRACTIONS	ANGLES	DATE
± .005	± 1/64	± 0°30'	DATE
FINAL SURFACE QUALITY		PROD.	DATE
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL	FIRST USED ON		
	KW12		
FINISH	SCALE	SIZE CODE	NUMBER
		D BS	KW12-0-CLKB
SHEET	OF	DIST.	REV.
1	1		

**digital** EQUIPMENT CORPORATION  
WATYARD, MASSACHUSETTS

TITLE  
**CLKB CLOCK & BUFFER**  
06-11

REV. NO. 1  
SIZE CODE D 155  
NUMBER 8-170-0-21-CLKB

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REV.	CHG. NO.	DATE	BY
A	00001	1-24-69	L. GALE
B	EM12-00003	4/24/69	L. GALE
C	EM12-00009	8/8/69	L. GALE
D	EM12-00034	8/26/69	L. GALE
E	EM12-00055	3/10/70	L. GALE
F	EM12-00055	1-3-72	R. MOORE

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS	FRACTIONS	ANGLES	
± .005	± 1/64	± 0°30'	
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL	FIRST USED ON	SCALE	DATE
	KW12		
FINISH	SCALE	SHEET	OF
		1	1

digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

CLR  
CLOCK RATE

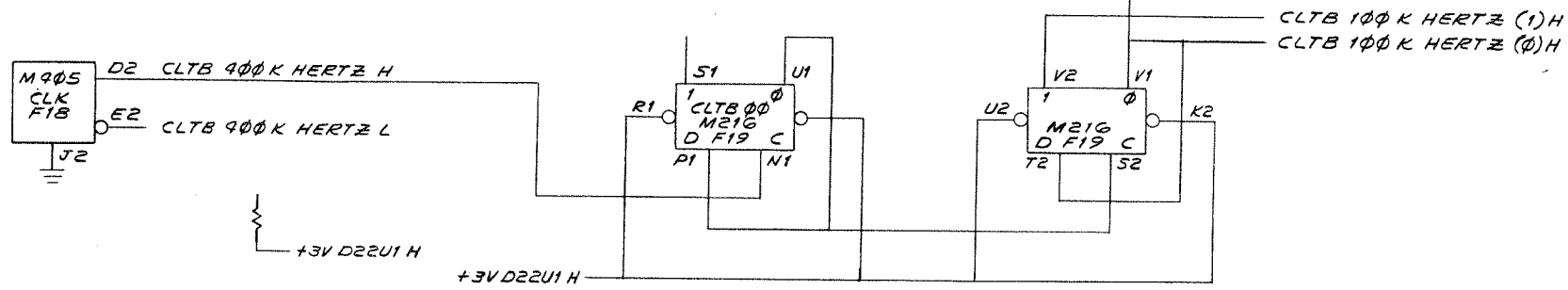
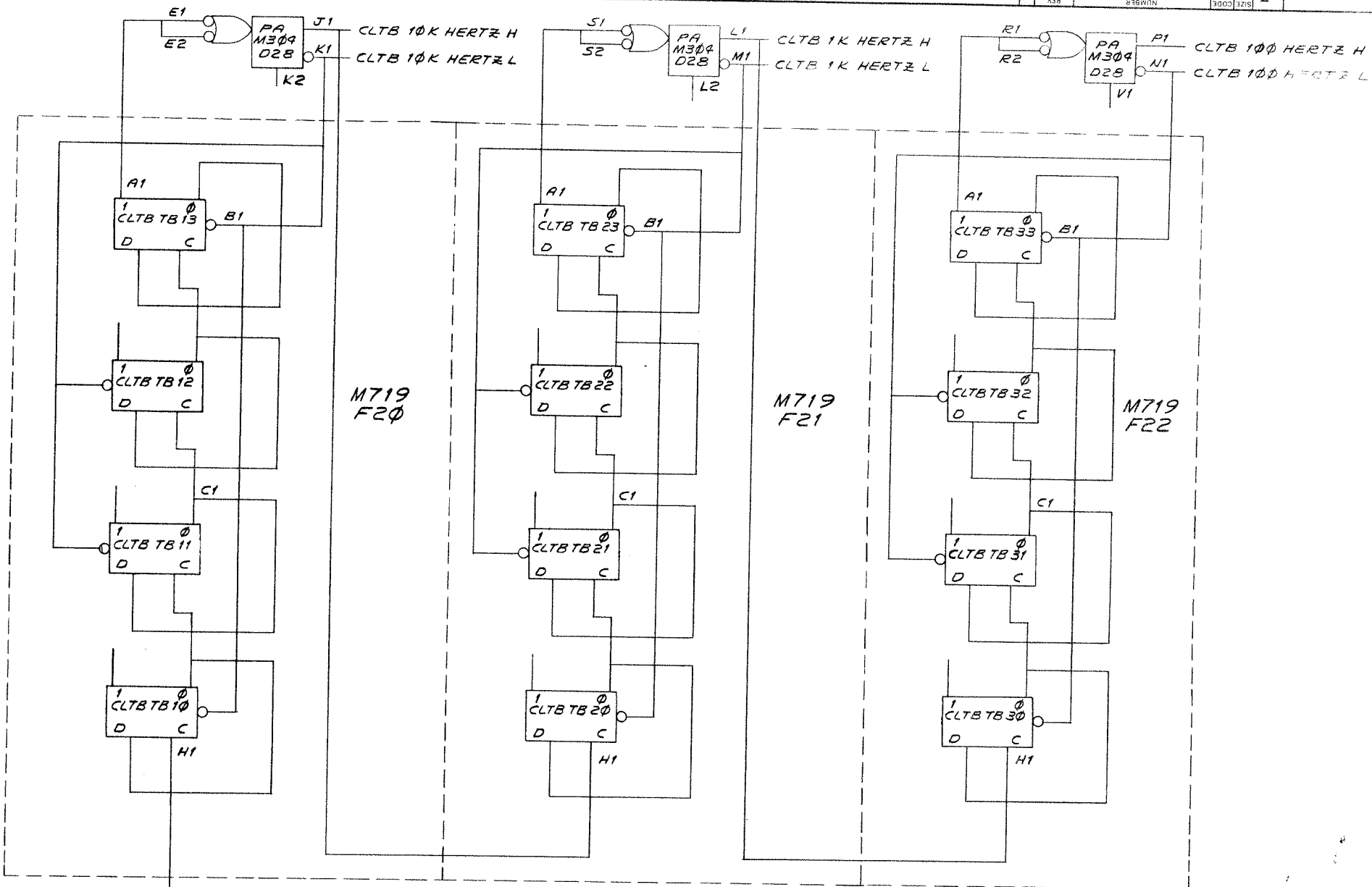
SIZE CODE  
D BS  
NUMBER  
KW12-0-CLR  
REV.  
E

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8 7 6 5 4 3 2 1  
 A3B 8L72-0-21M.Y S8 D 2

D  
C  
B  
A

D  
C  
B  
A



NOTE: DECADE COUNT SEQUENCE

- 0110
- 0111
- 1000
- 1001
- 1010
- 1011
- 1100
- 1101
- 1110
- 1111
- 0000

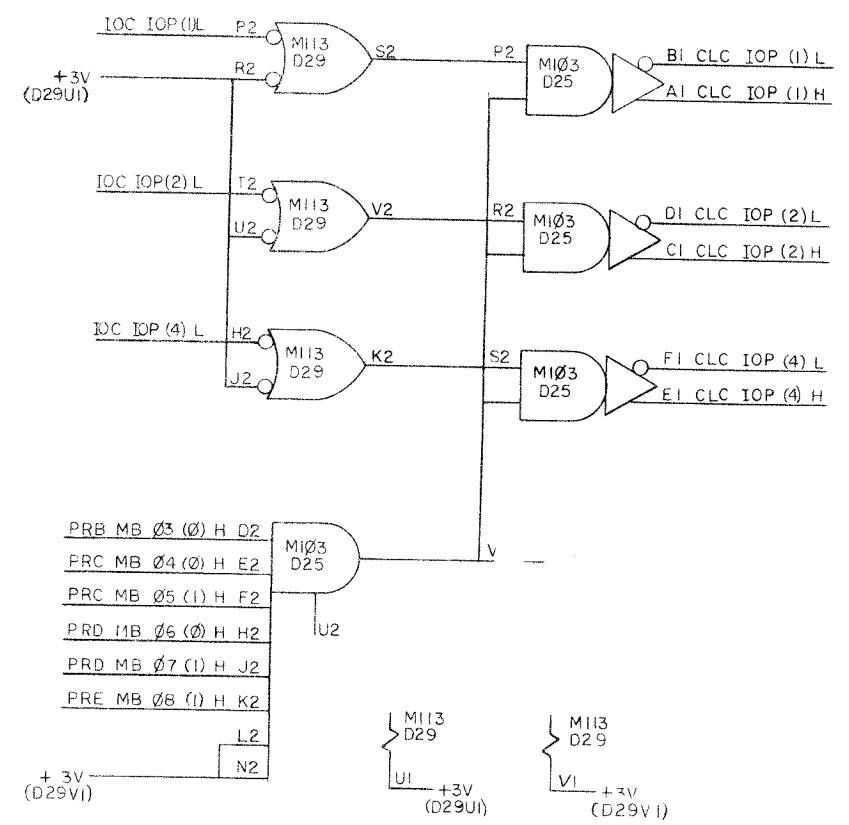
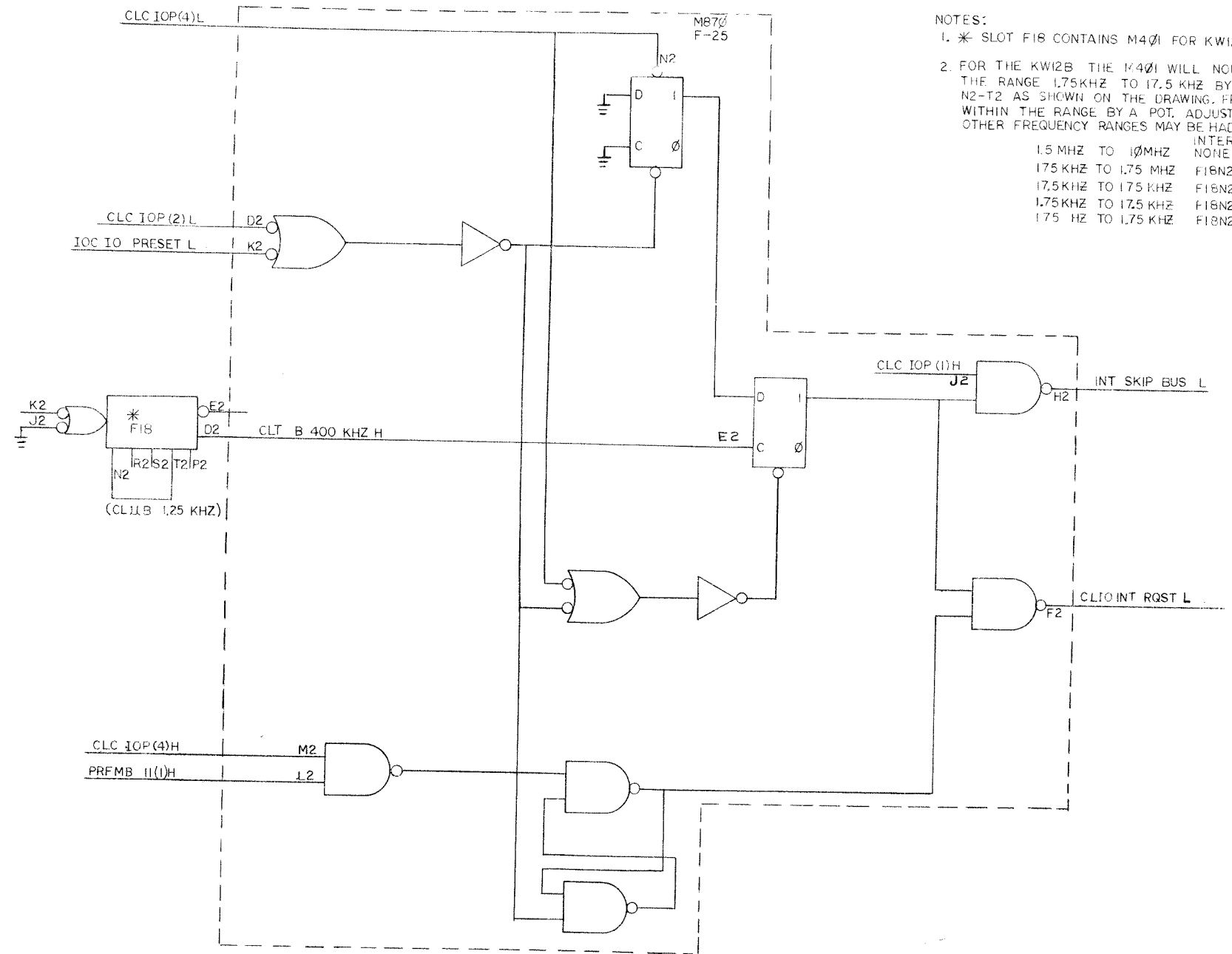
REV.	CHANGE NO.	DATE
A	EM12-00011	1-20-69
L. GALE 9-11-69		

UNLESS OTHERWISE SPECIFIED	DRN	DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED	CHKD	DATE	
DIMENSION IN INCHES	ENG	DATE	TITLE <b>CLTB</b> <b>CLOCK TIME BASE</b>
TOLERANCES	PRD	DATE	
DECIMALS FRACTIONS ANGLES	PROJ	DATE	
± .005 ± 1/64 ± 0°30'	PROD	DATE	
MATERIAL	FIRST USED ON	DATE	SCALE SHEET / OF /
FINISH	NUMBER	REV.	DIST.

SIZE CODE NUMBER  
 D B51 KW12-0-CLTB

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NOTES:  
 1. \* SLOT F18 CONTAINS M401 FOR KW12B AND M405 KW12C.  
 2. FOR THE KW12B THE M401 WILL NOMINALLY BE SET TO THE RANGE 1.75 KHZ TO 17.5 KHZ BY CONNECTING PINS N2-T2 AS SHOWN ON THE DRAWING. FREQUENCY IS VARIABLE WITHIN THE RANGE BY A POT. ADJUSTMENT ON M401. OTHER FREQUENCY RANGES MAY BE HAD BY THE FOLLOWING:  
 INTERCONNECTIONS REQUIRED  
 1.5 MHZ TO 10MHZ NONE (NOT RECOMMENDED)  
 17.5 KHZ TO 175 MHZ F18N2--F18R2  
 175 KHZ TO 1.75 KHZ F18N2--F18S2  
 1.75 KHZ TO 17.5 KHZ F18N2--F18T2  
 175 HZ TO 1.75 KHZ F18N2--F18P2

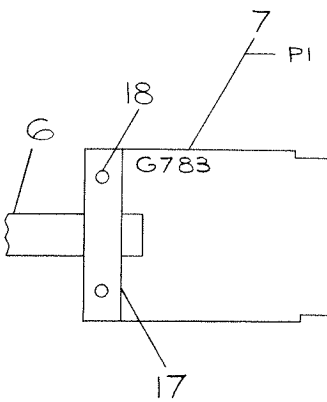
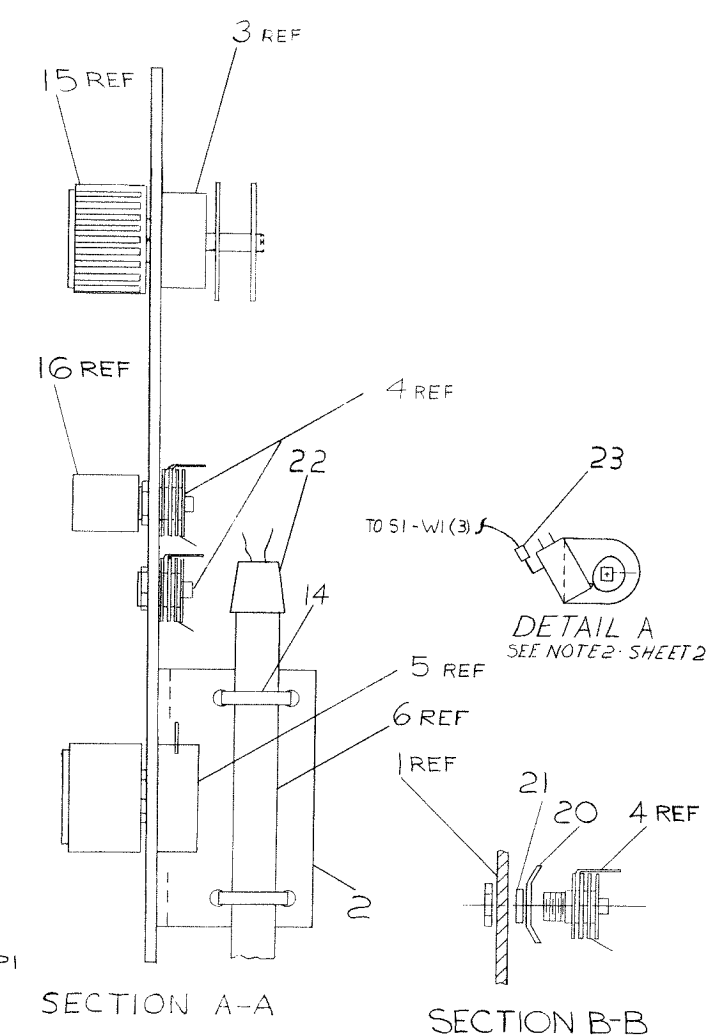
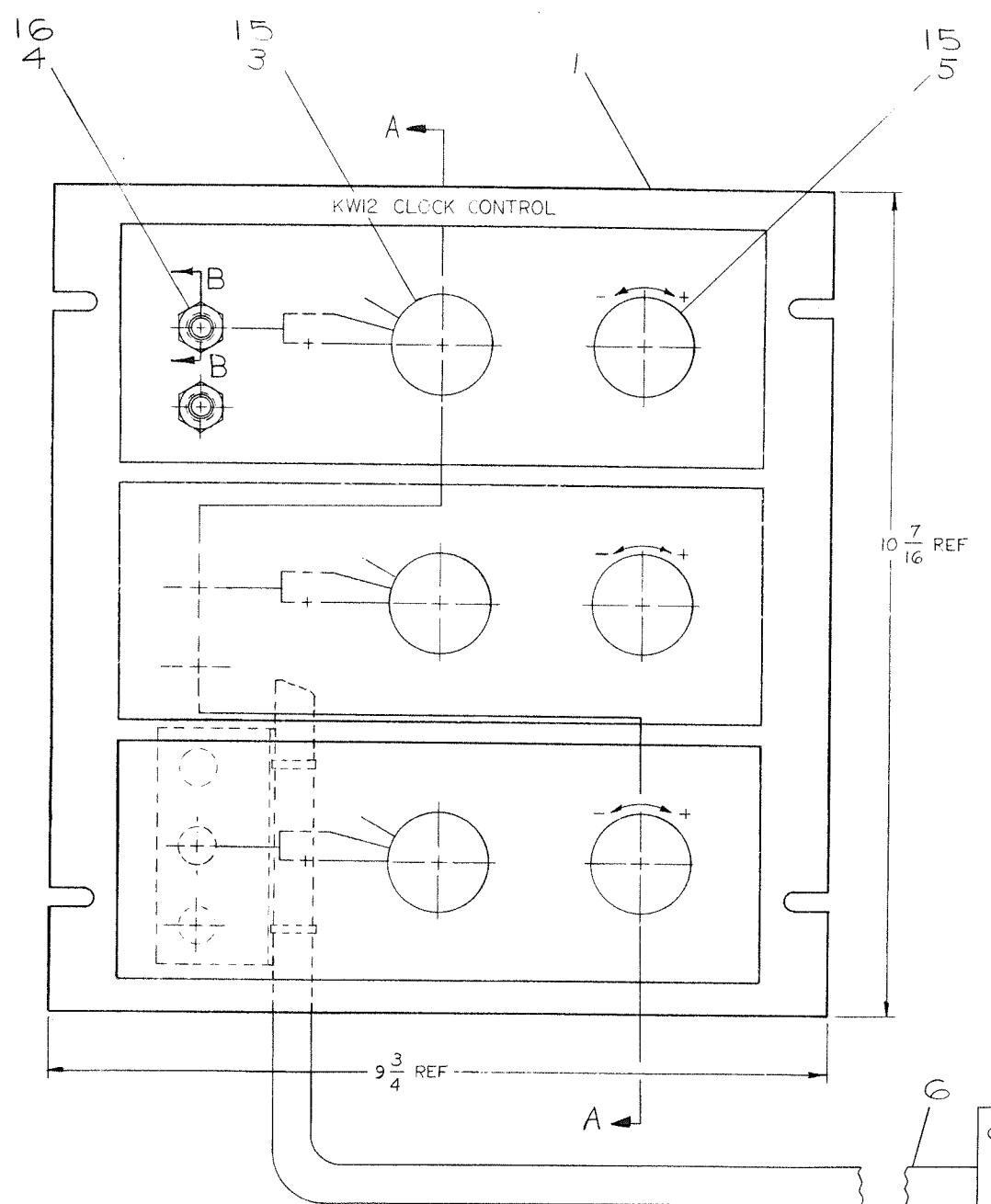


REV	CHANGE NO.	DESCRIPTION
A	00 041	EM12
B	00 047	EM12
C	00 047	EM12
D	00 047	EM12
E	00 047	EM12
F	00 047	EM12
G	00 047	EM12
H	00 047	EM12
I	00 047	EM12
J	00 047	EM12
K	00 047	EM12
L	00 047	EM12
M	00 047	EM12
N	00 047	EM12
O	00 047	EM12
P	00 047	EM12
Q	00 047	EM12
R	00 047	EM12
S	00 047	EM12
T	00 047	EM12
U	00 047	EM12
V	00 047	EM12
W	00 047	EM12
X	00 047	EM12
Y	00 047	EM12
Z	00 047	EM12

REV	DESCRIPTION	PART NO.	ITEM NO.
B	DESCRIPTION		
PARTS LIST			
QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	KW12		
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS	FRACTIONS	ANGLES	
± .005	± 1/64	± 0°30'	
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
NEXT HIGHER ASSY			
FINISH			
SCALE			
SHEET OF			
TITLE		REV.	
SIMPLE CLOCK		B	
SIZE CODE		NUMBER	
DBS KW12-0-CLUB		REV. B	

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NOTES  
 1. TWIST DRAIN WIRES OF PAIR #2, 5, AND 6 TOGETHER AND SOLDER TO GND LUG.



REV	DATE	BY	CHK'D	DESCRIPTION
A	9-17-67	L. GALE		Initial Design
B	9-22-67	L. GALE		Final Design
C	10-10-67	GALE		Final Design
D	10-14-67	GALE		Final Design
E	12-17-67	GALE		Final Design
F	12-18-67	TEACHER		Final Design
G	3-28-71	TEACHER		Final Design
H	7-11-71	R. IK NANIAN		Final Design
I	7-23-71	Ronald Johnson		Final Design

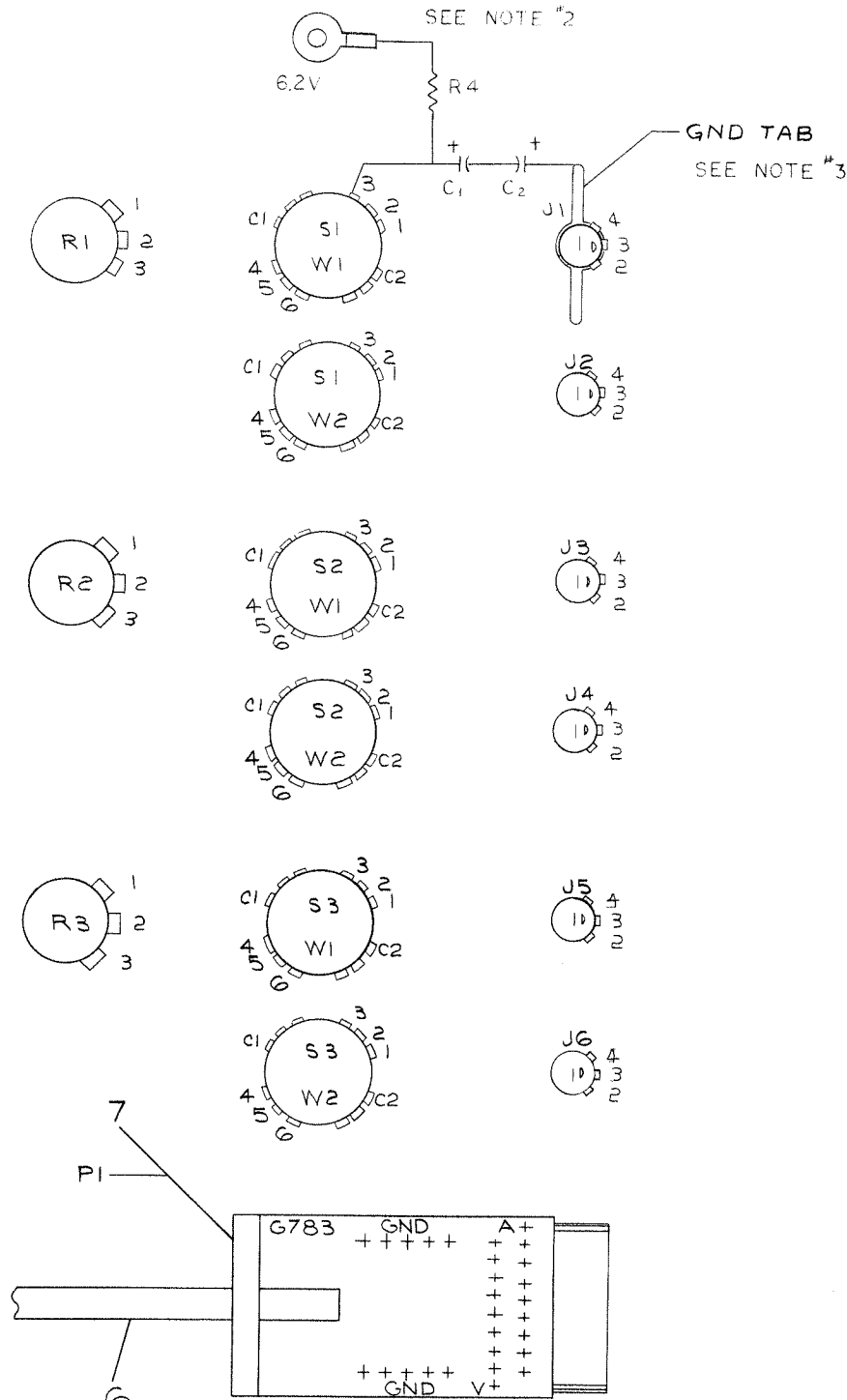
REV	DATE	BY	CHK'D	DESCRIPTION
A	8/1/69	Sal		Final Design
B	8/11/69	Sal		Final Design
C	8/11/69	Sal		Final Design

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	QUADROS	DATE 15 JUL 68	
	DRN	DATE 8/1/69	
	CHK'D	DATE 8/1/69	
	ENG	DATE 8/1/69	
	PROJ. ENG	DATE 8/1/69	
	PROD.	DATE 8/1/69	
	NEXT HIGHER ASSY		
	A-ML-KW12-0		
	SCALE NONE	SIZE CODE D	NUMBER 7006335-0-0
	SHEET 1 OF 2	DIST. E	REV E

NUMBER 7006335-0-0  
 REV E

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WIRING DIAGRAM  
VIEW FROM REAR OF PANEL

WIRE TABLE						
ITEM NO	DESCRIPTION	AWG	COLOR	CONNECTIONS		REMARKS
				FROM	TO	
6	22	22	BLK	PI-A1	S1-W1(C1)	RED SHIELD PAIR#1
			RED	PI-B1	S1-W1(C2)	
			BLK	PI-C1	S1-W2(1)	GRN SHIELD PAIR#2
			WHT	PI-D1	S1-W2(2)	
			BLK	PI-E1	S2-W1(C1)	BLU SHIELD PAIR#3
			GRN	PI-H1	S2-W1(C2)	
			BLK	PI-J1	S3-W1(C1)	BLU SHIELD PAIR#4
			BLU	PI-K1	S3-W1(C2)	
			BLK	PI-L1	R1-2	BLU SHIELD PAIR#5
			YEL	PI-M1	R2-2	
			BLK	PI-N1	R3-2	BLU SHIELD PAIR#6
			BRN	PI-P1	GND TAB	
6			DRN	PI-GND	GND TAB	SYS GND
8			BLK	S1-W1(1)	S1-W1(5)	-CLK1
				S1-W1(5)	J1-2	-CLK1
				J1-2	J1-4	-CLK1
				J1-4	J2-2	-CLK1
				S2-W1(1)	S2-W1(5)	-CLK2
				S2-W1(5)	J3-2	-CLK2
				J3-2	J3-4	-CLK2
				J3-4	J4-2	-CLK2
				S3-W1(1)	S3-W1(5)	-CLK3
				S3-W1(5)	J5-2	-CLK3
				J5-2	J5-4	-CLK3
				J5-4	J6-2	-CLK3
				S1-W2(1)	S1-W2(5)	+6.2V
				S1-W2(5)	S2-W2(1)	+6.2V
				S2-W2(1)	S2-W2(5)	+6.2V
				S2-W2(5)	S3-W2(1)	+6.2V
				S3-W2(1)	S3-W2(5)	+6.2V
				S1-W2(C1)	R1-1	+6.2V
				S1-W2(C2)	R1-3	VCLK1
				S3-W2(C1)	R3-1	+6.2V
			BLK	S3-W2(C2)	R3-3	VCLK3
			RED	S1-W1(2)	S1-W1(4)	+CLK1
				S1-W1(2)	J1-3	+CLK1
				J1-3	J2-3	+CLK1
				R4-C1	S1-W1(3)	NOTE 2
				S1-W1(3)	S2-W1(3)	
			RED	S2-W1(3)	S3-W1(3)	
10			BRN	S1-W1(6)	J1-1	CLK1 HQ GND
				J1-1	J2-1	CLK1 HQ GND
				S2-W1(6)	J3-1	CLK2 HQ GND
				J3-1	J4-1	CLK2 HQ GND
				S3-W1(6)	J5-1	CLK3 HQ GND
				J5-1	J6-1	CLK3 HQ GND
				S1-W2(3)	S1-W2(6)	SYS GND
				S1-W2(6)	S2-W2(3)	
				S2-W2(3)	S2-W2(6)	
				S2-W2(6)	S3-W2(3)	
				S3-W2(3)	S3-W2(6)	
10			BRN	S3-W2(6)	GND TAB	SYS GND
11			WHT	S1-W2(2)	S2-W2(2)	-6.2V
12			GRN	S2-W1(2)	S2-W1(4)	+CLK2
12			GRN	S2-W1(2)	J3-3	+CLK2
12			GRN	J3-3	J4-3	+CLK2
13			BLU	S3-W1(2)	S3-W1(4)	+CLK3
13			BLU	S3-W1(2)	J5-3	+CLK3
13			BLU	J5-3	J6-3	+CLK3
19			YEL	R2-1	S2-W2(C1)	+6.2V
19	22		YEL	R2-3	S2-W2(C2)	VCLK2

- NOTES:
- C1 IS WIPER CONTACT FOR SWITCH POSITIONS 1,2,3.  
C2 IS WIPER CONTACT FOR SWITCH POSITIONS 4,5,6.
  - 26" LONG RED WIRE FROM POWER SWITCH TO R4 SHOULD BE TIE-WRAPPED TO BELDEN CABLE (ITEM #6) WITH SMALL TIE WRAPS (ITEM #20) AND SHOULD BE CONNECTED TO POWER SWITCH AS SHOWN IN DETAIL "A".
  - 65 INCHES LONG #18 AWG. WHT. FROM GND. TAP SHOULD BE CONNECTED TO PIN 12 OF P7 ON 724 POWER SUPPLY. TERMINATE WIRE WITH AMP PIN #1209378-01.

WIRE TABLE						
ITEM NO	DESCRIPTION	AWG	COLOR	CONNECTIONS		REMARKS
				FROM	TO	
20	22	22	WHT	S3-W2(2)	S3-W2(4)	-6.2V
20	22	22	WHT	S3-W2(4)	S2-W2(4)	-6.2V
20	22	22	WHT	S2-W2(4)	S1-W2(4)	-6.2V
30				C2+	GND TAP	GND
30				C1-	C2-	

REVISIONS	REV
CHANGE NO.	
CHK	

DEC FORM NO. DRD 100

FIRST USED ON OPTION/ MODEL

DO NOT SCALE DRAWING  
UNLESS OTHERWISE SPECIFIED  
DIMENSION IN INCHES  
TOLERANCES  
DECIMALS FRACTIONS ANGLES  
= .005 = 1/64 = 0°30'  
FINAL SURFACE QUALITY  
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
DRN. <i>F. Maguire</i> DATE 7-25-69		digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. <i>A. Huss</i> DATE 8-5-69	TITLE KW12 CLOCK CONTROL PANEL		
ENG. <i>Gale</i> DATE 8/11/69	NEXT HIGHER ASSY		
PROD. ENG. <i>L. Stale</i> DATE 8/11/69	SCALE NONE		
PROD. <i>W. O'cale</i> DATE 8/11/69	SHEET 2 OF 2		
SIZE CODE DAD	NUMBER 7006335-0-0	REV. E	

REV. E  
NUMBER DAD7006335-0-0



## DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

### PARTS LIST

MADE BY FRANK E. SOUSA  
 DATE 7/15/69  
 ENG *L. Gale* 8/14/69  
 DATE  
 CHECKED K. RUSS  
 DATE 7/16/69  
 PROD *D. Call*  
 DATE 8/18/69  
 SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-7407414-0-0	PANEL	1
2	B-MD-7406901-0-0	CABLE BRKT	1
3	B-MD-7407540-0-0	SWITCH ROTARY	3
4	1203562	JAX #13-B 3 COND SWITCH CRAFT	6
5	1309402-07	POT 5K 2W 20% A & B	3
6	9107582	CABLE #8778 BELDEN	8FT.
7	G783	CONN, CABLE G783	1
8	9107350-00	WIRE #22 AWG BLK STRD TEF INS	A/R
9	9107350-22	WIRE #22 AWG RED STRD TEF INS	A/R
10	9107350-11	WIRE #22 AWG BRN STRD TEF INS	A/R
11	9107350-99	WIRE #22 AWG WHT STRD TEF INS	A/R
12	9107350-55	WIRE #22 AWG GRN STRD TEF INS	A/R
13	9107350-66	WIRE #22 AWG BLU STRD TEF INS	A/R
14	9007032	TIE WRAP #SST-2-B PANDUIT	2
15	1209244	KNOB BUCKEYE SS-125L-2	6
16	1209430	PHONE PLUG #90 SWITCHCRAFT	6
17	1202790	CABLE CLAMP	1
18	9006741	EYELET A94 STIMPSON	2
19	9107350-44	WIRE #22 AWG YEL STRD TEF INS	A/R
20	9007612	SOLDER LUG	1
21	9008979	WASHER INT TOOTH 3/8	1
22	9107252	TUBING SHRINKABLE 3/8 DIA. WHT	A/R

TITLE

(KW12) CLOCK CONTROL PNL

ASSY NO.

D-AD-7006335-0-0

SIZE CODE  
**A PL**

NUMBER  
7006335-0-0

REV  
**E**

ECO NO.  
FM12-00050

## DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

### PARTS LIST

MADE BY FRANK E. SOUSA  
 DATE 7-15-69  
 ENG L. GALE  
 DATE 8-11-69  
 CHECKED K. RUSS  
 DATE 7-16-69  
 PROD D. CALL  
 DATE 8-18-69  
 SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
23	9007929	CONN, SOLDERLESS #50321 ARKLESS	1
24	9107256-10	#22 TUBING, CLR	A/R
25	9107256-05	#22 TUBING, PLU	A/R
26	9107256-01	#22 TUBING, BRN	A/R
27	9107256-02	#22 TUBING, RED	A/R
28	90007031	TIE WRAP PANDUIT #SST-1B	8
29	1300365	RESISTOR 1K, 1/4W, 5%	1
30	1002627	CAPACITOR 2.2 MFD 20V 10%	2
31	9107360-99	WIRE #18 AWG WHT.	65"
32	1209378-01	PIN #606204 AMP	1
33	9107714-01	TUBING, POLYOLEFIN HEAT SHRINK - BLK	A/R
34	9107278-11	TUBING, #18 AWG TEFLON WIRE - NATURAL	A/R

TITLE

(KW12) CLOCK CONTROL PNL

ASSY NO.  
D-AD-7006335-0-0

SIZE CODE  
**A PL**

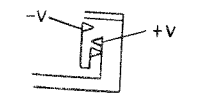
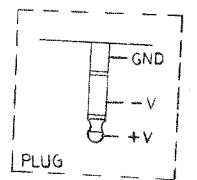
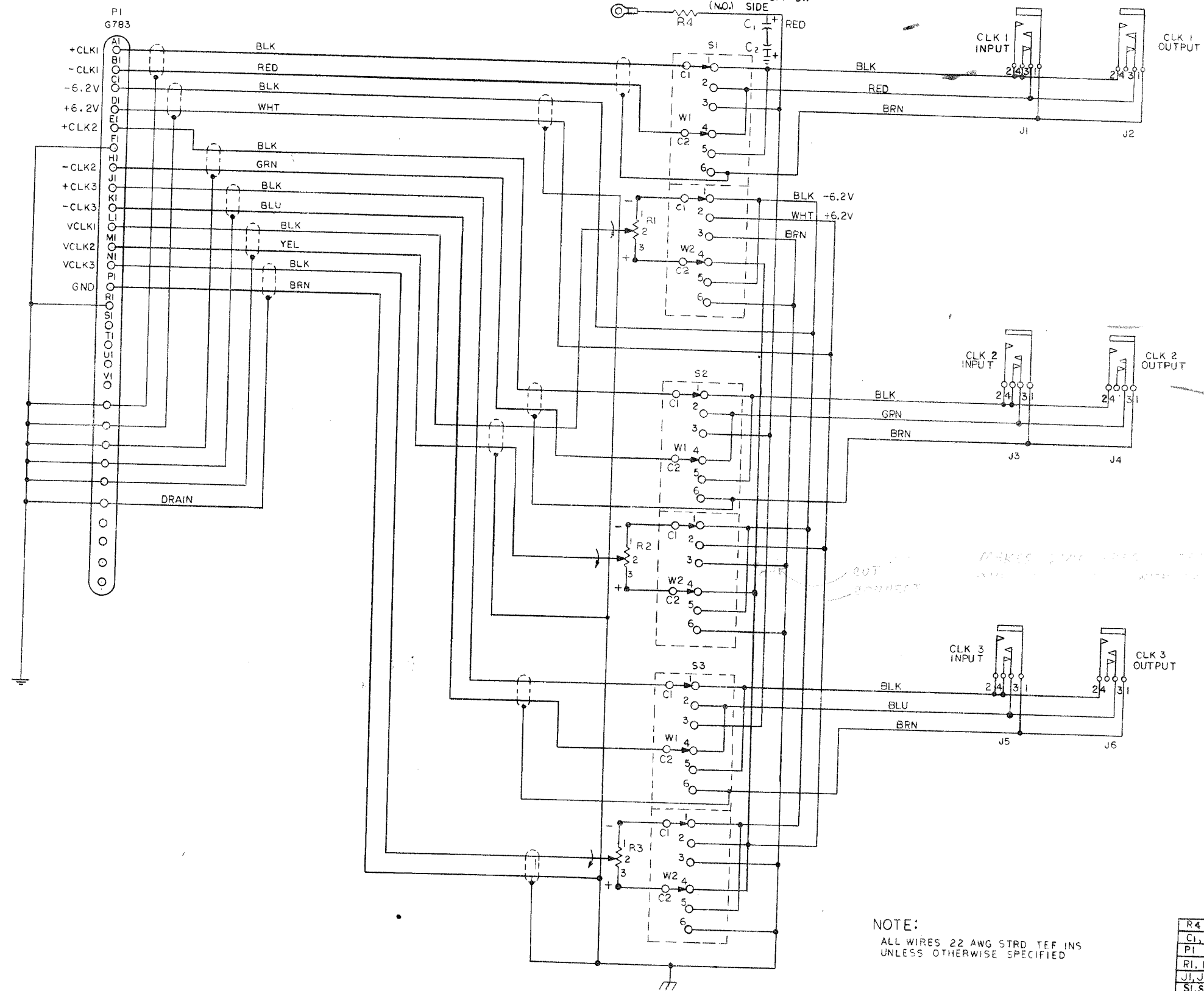
NUMBER  
7006335-0-0

REV  
**E**

ECO NO.

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1-0-5539007



WHEN C1 IS IN THE 2ND POSITION AND C2 IS IN THE 5TH POSITION THE SIGNAL IS IN THE POSITIVE RAMP FIRING POSITION

*Handwritten note:* CUT HERE TO REMOVE THE CIRCUIT FROM THE BOARD

NOTE:  
ALL WIRES 22 AWG STRD TEF INS  
UNLESS OTHERWISE SPECIFIED

R4	1K 1/4W 5%	1300365
C1, C2	2.2µF 20V 10%	1002627
P1	CABLE CONN	G783
R1, R2, R3	POT 5K 2W 20%	1309402-07
J1, J2, J3, J4, J5, J6	JA X #13B 3COND. SWITCHCRAFT	1203562
S1, S2, S3	SWITCH REWORK	BMD74075400
REF. DESIGNATION	DESCRIPTION	PART NO.

FORM NO. 101

REVISIONS	DATE	BY
1	5/6/69	...

DRN	DATE
...	5/6/69

TRANSISTOR & DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA

PARTS LIST		TITLE	
digital		CLOCK CONT. KW12	
EQUIPMENT CORPORATION	SIZE CODE	NUMBER	REV.
MAYNARD, MASSACHUSETTS	D CS	7006335-0-1	C
PRINTED CIRCUIT REV.			

SIZE CODE D CS 7006335-0-1

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**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**ENGINEERING SPECIFICATION**

DATE 8-26-69

TITLE KW-12 Real Time Clock

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	EM12-00055	R. MOORE	12/71	<i>R. Moore</i>	1-24-72

Scope: The following information details the function and operation of the KW-12 - Real Time Clock Option for the PDP-12.

ENG <i>A. Teicher</i>	APPD <i>L. Gale</i>	SIZE <b>A</b>	CODE SP	NUMBER KW12-0-1	REV <b>A</b>
--------------------------	------------------------	------------------	------------	--------------------	-----------------

DEC FORM NO. DRA 107

**ENGINEERING SPECIFICATION**

**digital**

CONTINUATION SHEET

TITLE ~~KW-12~~ Real Time Clock

Functional Description

The KW-12 is a PDP-12 Option that may be used to measure intervals or count events with a great deal of flexibility. In addition, to a 12-bit counter the KW-12 has a crystal controlled programmable time base and three external input channels.

Logically the KW-12 contains the following sections.

a.) Clock Control Register

The Clock Control Register is set by an IOT instruction and controls the rate of the time base and the mode of counting.

b.) Clock Enable Register

The clock enable register is set by an IOT instruction and selectively enables each of the three input channels and the clock interrupt line. A special function of the Clock Enable Register is to permit presetting of the Clock Counter.

c.) Clock Buffer Preset Register

The Clock Buffer Preset Register stores data being transferred from the A/C to the Clock Counter or from the Clock Counter to the A/C.

d.) Clock Counter

The Clock Counter is a 12-bit Binary Counter with an over-flow indicator. The contents of the Clock Counter may be transferred to the Buffer Preset Register or the Clock Counter may be preset by the Buffer Preset Register.

e.) Programmable Time Base

The Programmable Time Base provides pulses to the Clock Counter according to the rate set in the Clock Counter Register.

SIZE <b>A</b>	CODE SP	NUMBER KW12 - 0 - 1	REV <b>A</b>
------------------	------------	------------------------	-----------------

DEC FORM NO. DRA 108

TITLE KW-12 Real Time Clock

f.) External Input Channels

Three External Input Channels are provided to record external events. Each channel contains an adjustable threshold Schmitt Trigger and gating set by the Clock Enable Register. All three channels may actuate the Clock Interrupt or cause the contents of the Clock Counter to be transferred to the Clock Buffer Preset Register. In addition, channel 1 and 3 have special capabilities as noted below:

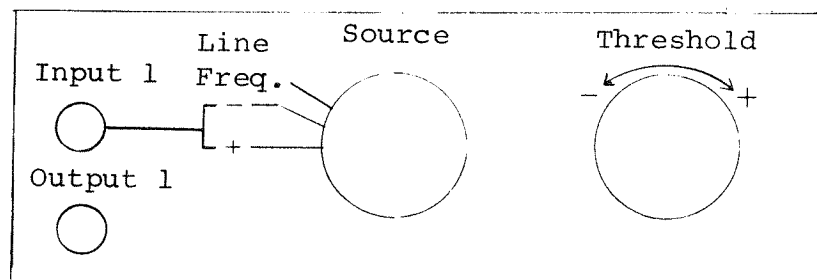
1) Channel 1

An event at channel 1 may be used as an input to the Clock Counter.

2) Channel 3

An event at channel 3 may be used to reset the Clock Counter.

Nominal Input Voltage Range	+ 5 Volts
Input Type	differential
Input Resistance	10,000 ohms
Input Threshold	variable between -5 and +5
Slope	Selector switch or 60 Hz line frequency
Minimum duration input pulse	2 $\mu$ sec
Maximum Permissible Input Voltage	$\pm$ 50 volts



Typical Channel

SIZE	CODE	NUMBER	REV
A	SP	KW12 - 0 - 1	A

TITLE KW-12 Real Time Clock

Clock Control Panel

Location - behind door on left side of the front of the PDP-12.

Input Jack Type - 3 conductor phone plug

Output

This receptacle permits the input signal to be connected to another external device or to the analog input jacks of the A-D Converter.

Operation

The KW-12 is connected to the PDP-12 as a standard I/O device with device select code 13. Each data transfer from or to the clock requires 4.25 usec. All instructions for the KW-12 have the following form:

Mnemonic\* (613X)<sub>8</sub> where X is (1-7)<sub>8</sub> the instructions are as follows:

Octal Code

CLSK	6131	Skip on Clock Interrupt Interrupt Conditions a) Enable Event 1 Interrupt (1) and Event 1 (1) b) Enable Event 2 Interrupt (1) and Event 2 (1) c) Enable Event 3 Interrupt (1) and Event 3 (1) d) Enable Overflow Interrupt (1) and Overflow (1)
CLR	6132	C(AC) → C (Clock Control Register) The AC is unchanged

\*Mnemonic defined in DIAL PMode only. In LMode user must define symbol himself.

SIZE	CODE	NUMBER	REV
A	SP	KW12 - 0 - 1	A

TITLE KW-12 Real Time Clock

Clock Control Register

Count Rate Reg.			Mode Reg.			Not Used		Not Used		Not Used	
00	01	02	03	04	05	06	07	08	09	10	11

C0	C1	C2	M0	M1	M2	Sim. Ch. 1 Event	Sim. Ch. 2 Event	Sim. Ch. 3 Event
----	----	----	----	----	----	------------------	------------------	------------------

Count	Rate	Reg.	Counting Rate
C0	C1	C2	
0	0	0	Stop Counter
0	0	1	400 KHZ
0	1	0	100 KHZ
0	1	1	10 KHZ
1	0	0	1 KHZ
1	1	0	Rate of input Channel 1
1	1	1	Stop Counter (Providing Channel 1 enabled - otherwise rate = 0)

Mode	Control	Reg.	
M0	M1	M2	
0	0	0	Counter runs as selected rate and overflows every 4096 counts. Overflow remains set until cleared with 6135 instructions.
0	0	1	*Counter runs at selected rate. Overflow causes C (Buffer Preset Reg.) to be transferred to the Clock Counter which continues to run. Overflow remains set until cleared with 6135 instructions.

\*Whenever mode control register M2 goes from 0 to 1 the Clock Counter is cleared.

SIZE	CODE	NUMBER	REV
A	SP	KW12 - 0 - 1	A

TITLE KW-12 Real Time Clock

Mode Control Reg.

0 1 0 Counter runs at selected rate. When the following occurs, the Clock Counter is transferred to the Buffer Preset Register and the Counter continues.

Enable Event X (1) and Event X (1) X= 1,2,3

0 1 1 Counter runs at selected rate. When the following occurs C (Clock Counter) is transferred to the Buffer Preset Register and the Clock Counter continues to run either from the present count or zero as shown.

Enable Event X (1) and Event X (1) X= 1,2 Clock Counter continues from present count.

Enable Event 3 (1) and Event 3 (1) also causes the Clock Control Counter to be cleared

- 100 ) When M0 is a (1) the occurrence of overflow is used
- 101 ) to trigger the A/D Converter if A-D Control also has
- 110 ) FAST-SAMPLE flip-flop set. The remaining two mode
- 111 ) control bits are decoded exactly as above. \*

CLAB 6133 C (AC) → C (Buffer Preset Register) The AC is unchanged

CLEN 6134 C (AC) → C (Clock Enable Register)

Enable Register Bit

00 - 03 Not used  
04 C (Buffer Preset Register) <sup>Ored</sup> → C (Clock Counter)

\*This bars A-D conversion starts by the SAM instruction. A--D conversion starts with Clock Overflow only; loaded into AC by SAM instruction only.

SIZE	CODE	NUMBER	REV
A	SP	KW12-0-1	A

TITLE KW-12 Real Time Clock

04 cont'd. If mode control register M2 (1).

05 Enable Interrupt when Overflow (1)

06 Enable Interrupt on Event (1)

07 Enable Input Channel (1)

08 Enable Interrupt on Event 2 (1)

09 Enable Input Channel 2

10 Enable Interrupt on Event 3 (1)

11 Enable Input Channel 3

CLSA 6135 Clock status is inclusive Ored into the AC.  
The clock status bits are then cleared.

AC Bit

00 Overflow (1)

01 - 05 Not used

06 Event 1 (1)

07 Pre-Event (1)

08 Event 2 (1)

09 Pre-Event 2 (1)

10 Event 3 (1)

11 Pre-Event 3 (1)

If both Event X (1) and Pre-Event X (1) then  
2 or more events have occurred on Channel X  
since the previous 6135 instruction.

~~\*Overflow flip flop should be cleared with the 6135 IOT prior  
to use his instruction.~~

SIZE	CODE	NUMBER	REV
A	SP	KW12 - 0 - 1	A

SHEET 7 OF 8

TITLE KW-12 Real Time Clock

CLBA 6136 C (Buffer Preset Register) → C (AC)

CLCA 6137 C (Clock Counter) → C (Buffer Preset Register) → C (AC)

The following PDP-12 Drawings apply to the KW-12:

A-ML-PDP-12-0	PDP12 System
K-WL-EM12-0-3	Wire List
D-MU-EM12-0-1	Module Utilization Mem
D-MU-EM12-0-2	Module Utilization Mem
D-BS-KW12-0-CLC	CLC Clock IO Control
D-BS-KW12-0-CLEA	CLEA Input Channel 1
D-BS-KW12-0-CLEB	CLEB Input Channel 2
D-BS-KW12-0-CLEC	CLEC Input Channel 3
D-BS-KW12-0-CLIO	CLIO Clock to Input
D-BS-KW12-0-CLKA	CLKA Clock & Buffer 00-05
D-BS-KW12-0-CLKB	CLKB Clock & Buffer 06-11
D-BS-KW12-0-CLR	CLR Clock Rate
D-BS-KW12-0-CLTB	CLTB Clock Time Base
A-PL-EM12-0-1	Module Utilization MEM PL
A-PL-EM12-0-2	Module Utilization Mem PL
A-AD-7006335-0-0	Clock Control Panel Assembly
A-PL-7006335-0-0	Clock Control Panel Assembly (Parts List)
D-CS-7006335-0-1	Clock Control Circuit Schematic
A-PL-EM12-0-1	Module Utilization
A-PL-EM12-0-2	Module Utilization

SIZE	CODE	NUMBER	REV
A	SP	KW12 - 0 - 1	A

SHEET 8 OF 8

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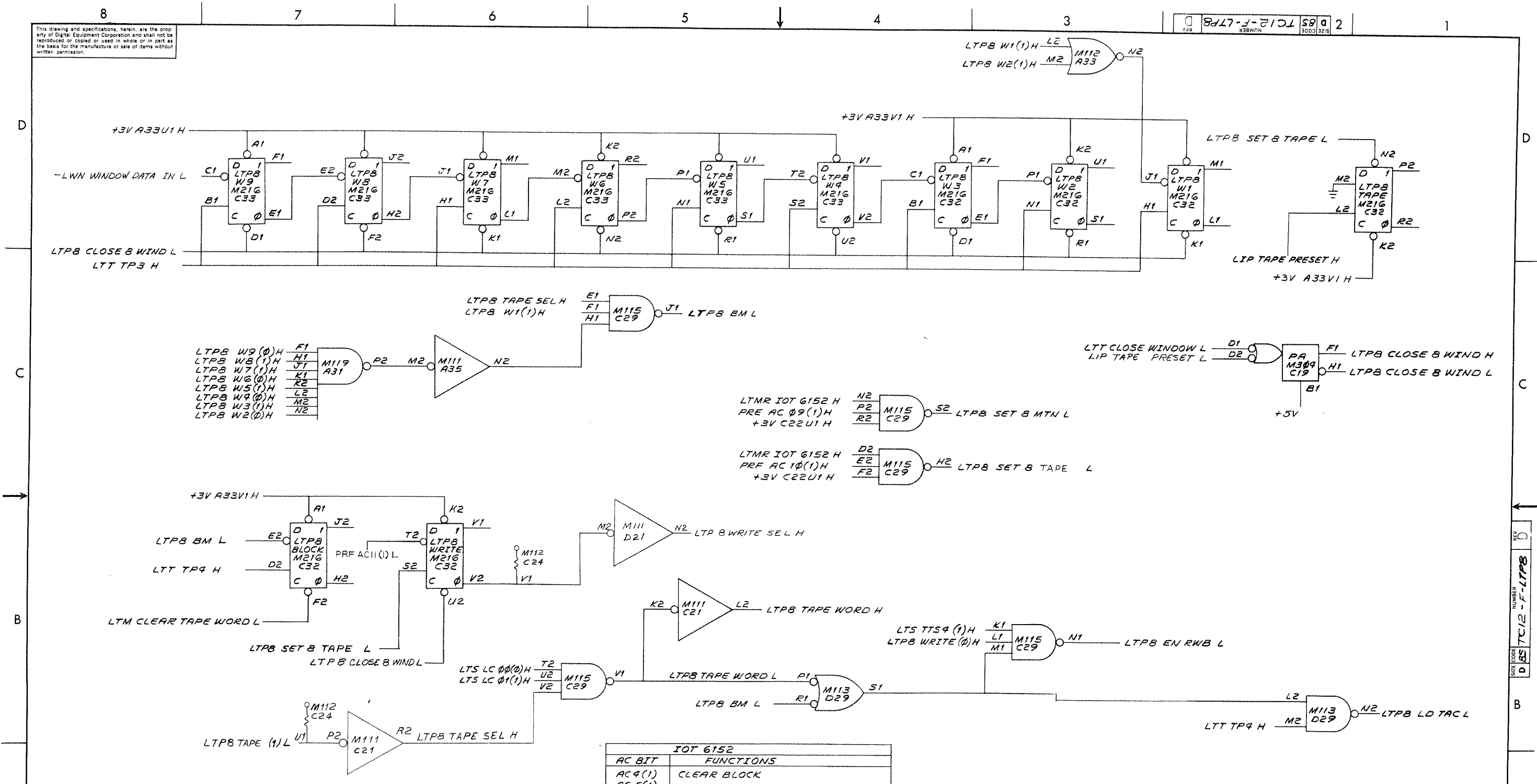
# MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-SP-TC12-F-1		3	ENGINEERING SPECS.
D-FD-TC12-F-2			TIMING DIAGRAM
A-SP-TC12-F-3		2	ACCEPTANCE & CHECKOUT PROCEDURE
D-BS-TC12-F-LTP8	D	1	LTP8 TAPE CONTROL
K-WL-EM12-0-3	REF		WIRE LIST
D-MU-EM-0-1	REF		MODULE UTILIZATION MEM
D-MU-EM-0-2	REF		MODULE UTILIZATION MEM
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL

REVISIONS				DRN. J. APREA	DATE 3/14/69	
REV.	DATE	CHG. NO.	APP'D.	CHK'D. <i>[Signature]</i>	DATE 3/18/69	
A	3/69	EM12-01	L.G.	ENG. <i>[Signature]</i>	DATE 3/10/69	TITLE  8 TAPE CONTROL
B	6/69	EM12-04	L.G.	PROJ. ENG. <i>[Signature]</i>	DATE 3/10/69	
C	8/69	EM12-10	L.G.	PROD. <i>[Signature]</i>	DATE 3/10/69	SIZE A ML
D	3/70	EM12-32	L.G.	FIRST USED ON		NUMBER
E	4/70	EM12-36	L.G.	PDP-12		REV. E
				SCALE	TC12-F	
				SHEET	OF	DIST.

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2 85 TC12-F-LTP8



IOT 6152	
AC BIT	FUNCTIONS
AC 4(1)	CLEAR BLOCK
AC 5(1)	SET BACKWARD
AC 6(1)	SELECT UNIT 1
AC 7(1)	SET FORWARD
AC 9(1)	SET B MOTION & FORWARD IF MOTION = $\emptyset$
AC 10(1)	SEL B TAPE AND AC 11 → WRITE

SKL 14 = SKIP ON B BLOCK  
 SKL 17 = SKIP ON B WORD  
 TAPE PRESET =  $\emptyset$  → WRITE  
 $\emptyset$  → MOTION  
 $\emptyset$  → DESELECT B TAPE

REV.	CHG. NO.	DATE	BY	APP.
1	EM12-00001	A		
2	EM12-00004	B	LGALE	
3	EM12-00010	C	LGALE	
4	EM12-00032	D	LGALE	

REV. 1: LGALE 8-18-69  
 REV. 2: LGALE 8-18-69  
 REV. 3: LGALE 8-23-69  
 REV. 4: LGALE 8-23-69

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
UNLESS OTHERWISE SPECIFIED	DRN. DATE 1-23-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	DATE 2/17/69	TITLE LTP8 B TAPE CONTROL	
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
± .005 ± 1/64 ± 0°30'			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FINISH			
SCALE			
SHEET / OF /	SIZE CODE D85	NUMBER TC12-F-LTP8	REV. D



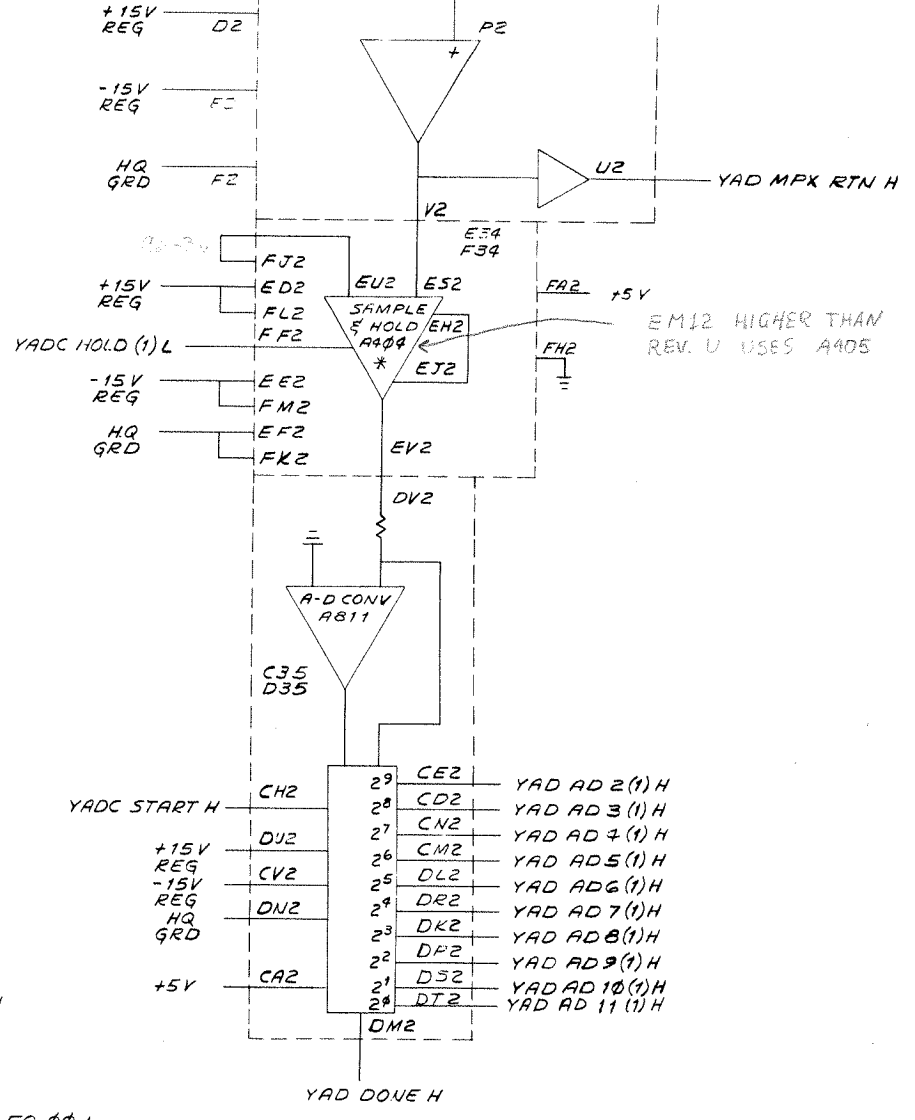
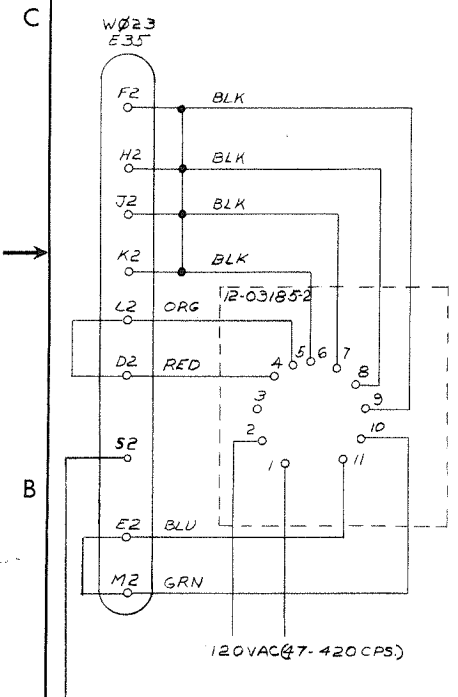
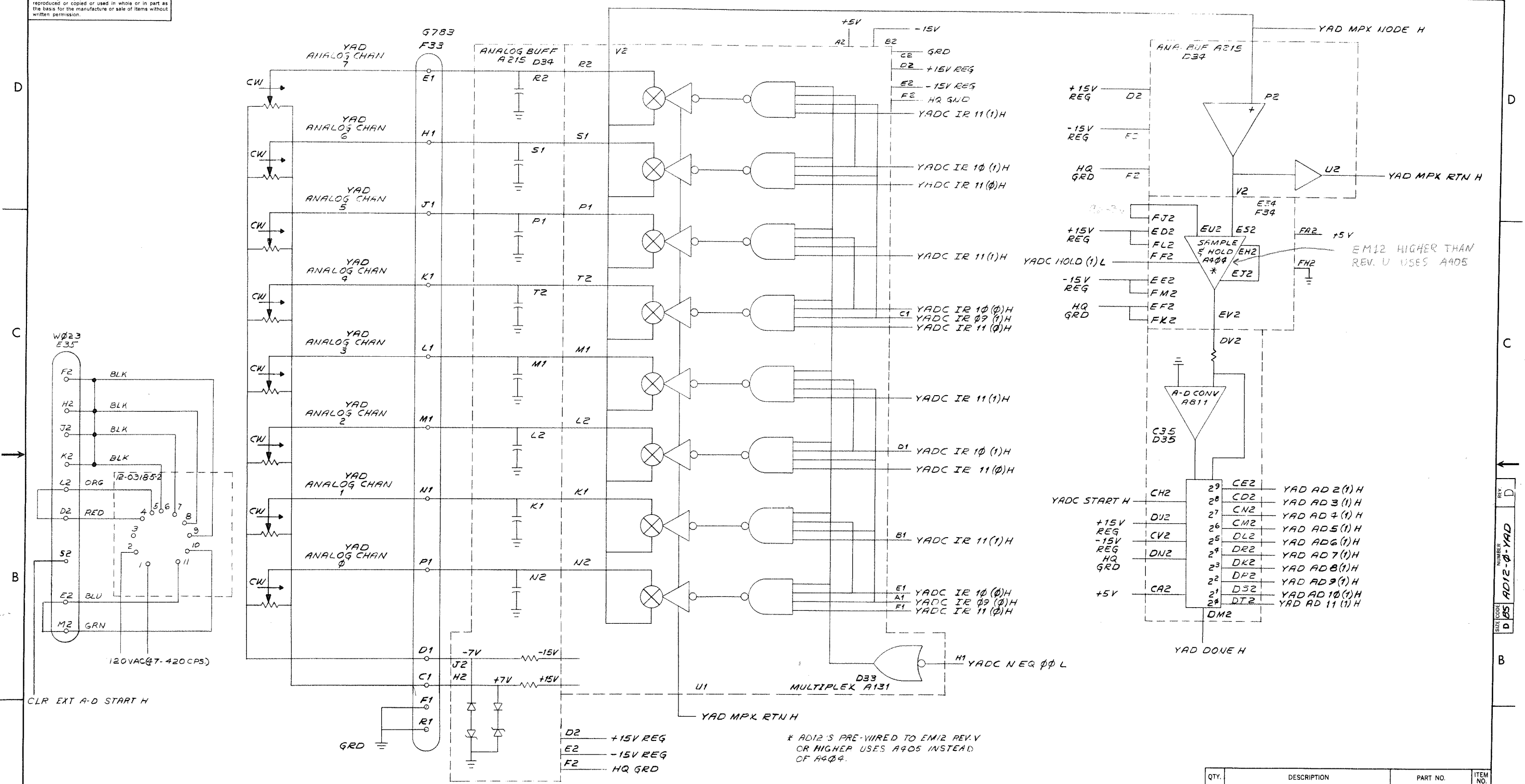
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# MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0		1	PDP12 SYSTEM
K-WL-EM12-0-3	REF		WIRE LIST
D-MU-EM12-0-1	REF		MODULE UTILIZATION MEM
D-MU-EM12-0-2	REF		MODULE UTILIZATION MEM
D-BS-AD12-0-YAD	D	1	A-D CONVERTER
D-BS-AD12-0-YADA	A	1	YADA CHAN 10-17
D-BS-AD12-0-YADB	A	1	YADB CHAN 20-37
D-BS-AD12-0-YADC	E	1	YADC A-D CONTROL
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL
A-SP-AD12-0-1	E	8	PDP-12 ANALOG TO DIGITAL CONVERTER

REVISIONS				DRN.	DATE	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>	TITLE  ANALOG TO DIGITAL CONVERTER
REV.	DATE	CHG. NO.	APP'D.	J. APREA	<i>3/7/69</i>		
A	3/69	EM12-01	L.G.	CHK'D.	DATE		
B	4/69	EM12-02	L.G.	R. HUTANK	<i>3/7/69</i>		
C	7/69	EM12-08	L.G.	ENG.	<i>3/10/69</i>		
D	8/69	EM12-09	L.G.	PROJ. ENG.	<i>3/10/69</i>		
E	1/70	12-55	L.G.	PROD.	<i>3/10/69</i>		
F	4/70	12-68	L.G.	FIRST USED ON			
H	6/70	12-76	L.G.	PDP-12			
J	10/70	EM12-41	L.G.	SCALE			
K	11/70	EP12-30	L.G.	SHEET <b>1</b> OF <b>1</b>			
L	0671	00001	R.S.				
M	10/71	EM12-53	RM				

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REV.	CHG. NO.	DATE	BY
A	0001	1-4-68	L. GALE
B	0002	2-27-68	L. GALE
C	0003	2-28-68	L. GALE
D	0004	7-2-70	L. GALE
E	0005	10-28-71	L. GALE
F	0006	5-15-67	L. GALE
G	0007	7-1-70	L. GALE
H	0008	7-2-70	L. GALE
I	0009	10-28-71	L. GALE
J	0010	10-28-71	L. GALE
K	0011	10-28-71	L. GALE
L	0012	10-28-71	L. GALE
M	0013	10-28-71	L. GALE
N	0014	10-28-71	L. GALE
O	0015	10-28-71	L. GALE
P	0016	10-28-71	L. GALE
Q	0017	10-28-71	L. GALE
R	0018	10-28-71	L. GALE
S	0019	10-28-71	L. GALE
T	0020	10-28-71	L. GALE
U	0021	10-28-71	L. GALE
V	0022	10-28-71	L. GALE
W	0023	10-28-71	L. GALE
X	0024	10-28-71	L. GALE
Y	0025	10-28-71	L. GALE
Z	0026	10-28-71	L. GALE

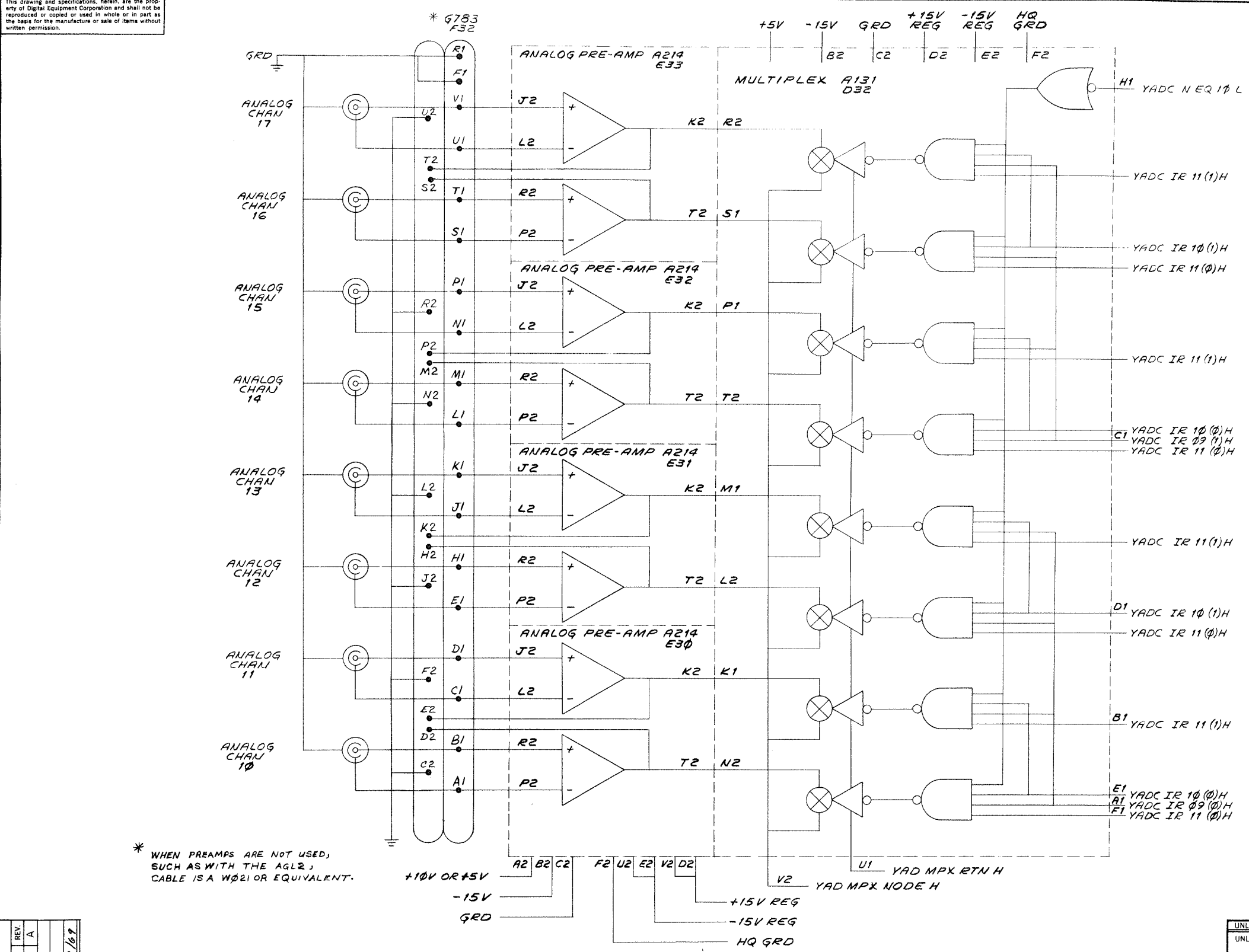
QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED:		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	= .005 = 1/64 = 0°30'		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	SCALE		
	SHEET / OF /		
	UNLESS OTHERWISE SPECIFIED: DRN. DATE 1-4-68		
	UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	= .005 = 1/64 = 0°30'		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	SCALE		
	SHEET / OF /		
	FIRST USED ON		
	AD12		
	SIZE CODE		
	D BS		
	NUMBER		
	AD12-0-YAD		
	REV.		
	D		

REV. D  
NUMBER  
AD12-0-YAD  
SIZE CODE

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4041-0-2104 59 d 2

D  
C  
B  
A



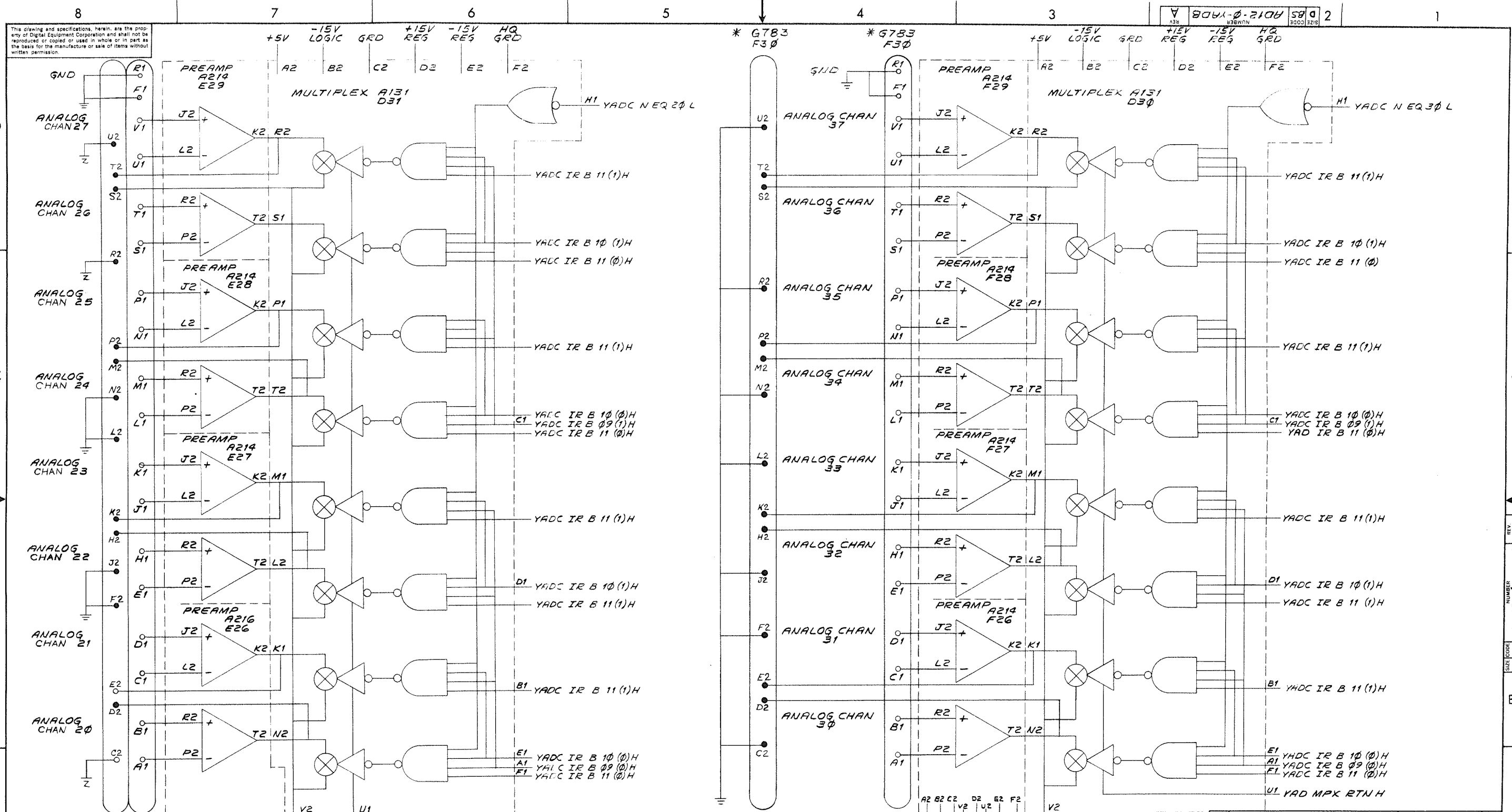
\* WHEN PREAMPS ARE NOT USED, SUCH AS WITH THE AGL2, CABLE IS A W0210R EQUIVALENT.

REV.	A
CHANGE NO.	0002
CHK	T. QUILLIN
	L. GALE
	6/18/69

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			
UNLESS OTHERWISE SPECIFIED		digital EQUIPMENT CORPORATION	
UNLESS OTHERWISE SPECIFIED		MAYNARD, MASSACHUSETTS	
DIMENSION IN INCHES		TITLE	
TOLERANCES		YAD A CHAN 10-17	
DECIMALS	FRACTIONS	ANGLES	
± .005	± 1/64	± 0°30'	
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL	FIRST USED ON	SIZE CODE	NUMBER
	AD12	D BS	AD12-0-YADA
FINISH	SCALE	DIST.	REV.
			A

REV. A  
AD12-0-YADA



REV	NO	DATE	BY
1	A	1-4-68	J. Scamman
2	A	2-17-69	J. Scamman
3	A	2-28-69	J. Scamman
4	A	2-28-69	J. Scamman

\* WHEN PREAMPS ARE NOT USE -  
SUCH AS WITH THE AGL2 -  
CABLE IS A WØ21 OR EQUIVALENT.

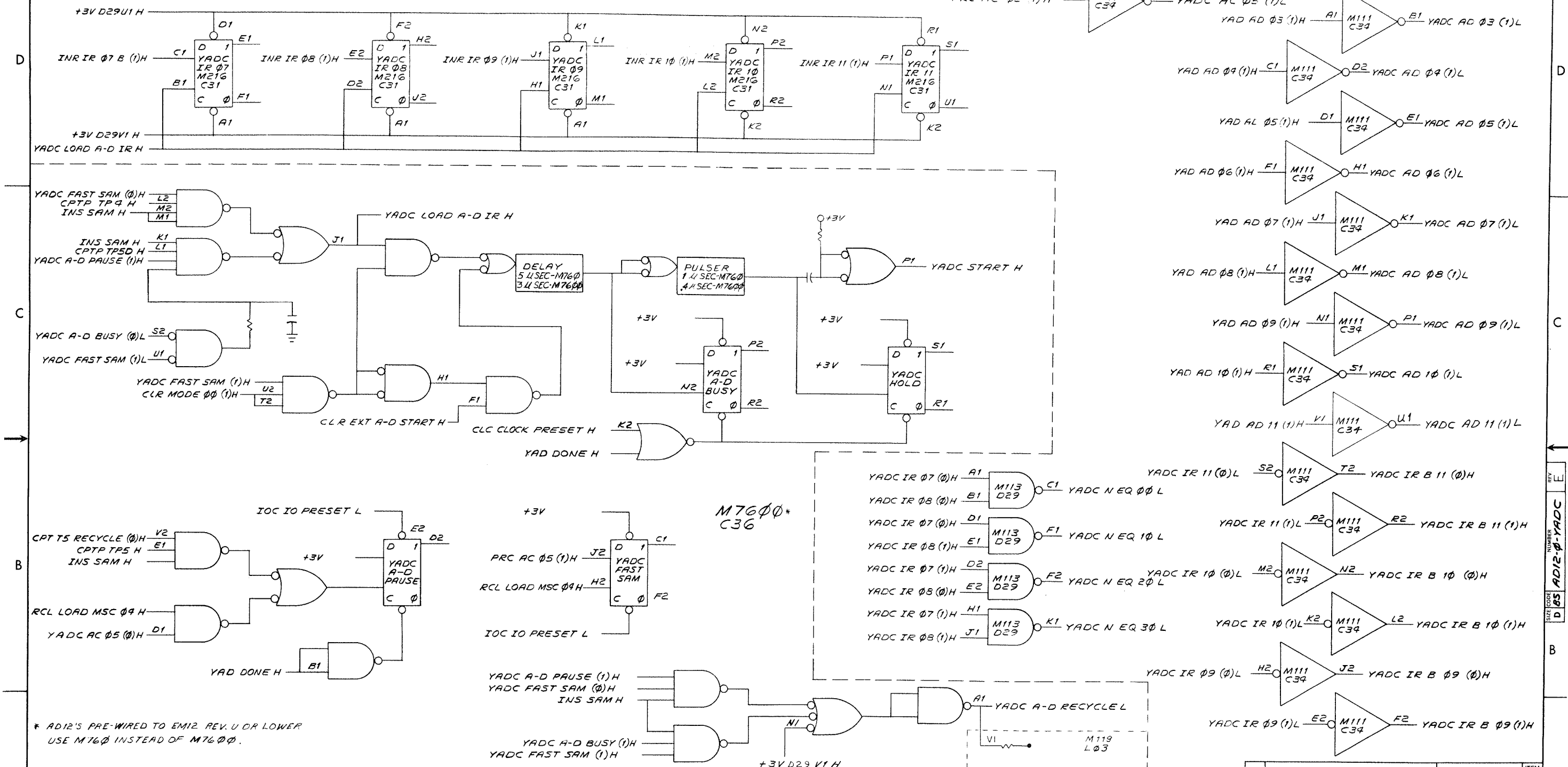
+1ØV OR +5V  
-15V  
GRD  
HQ GRD  
-15V REG  
+15V REG

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS	FRACTIONS	ANGLES
	± .005	± 1/64	± 0°30'
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	FIRST USED ON		
	AD12		
	SCALE	NUMBER	REV.
	SHEET 7 OF 1	DIST. D BS	AD12-φ-YADB A

digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE  
YAD B  
CHAN 2Ø-37

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REV	NO.	DATE	BY	CHKD.
A	00001			
B	00009			
C	00041			
D	00030	10/30/70		
E	00053	11/11/71		

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
	UNLESS OTHERWISE SPECIFIED		
	DIMENSION IN INCHES		
	TOLERANCES		
	DECIMALS FRACTIONS ANGLES		
	± .005 ± 1/64 ± 0°30'		
	FINAL SURFACE QUALITY		
	REMOVE BURRS AND BREAK SHARP CORNERS		
	MATERIAL		
	FINISH		
	SCALE		
	SHEET 1 OF 1		
	DIST.		

digital EQUIPMENT CORPORATION  
MAYNARD, MASSACHUSETTS

TITLE  
**YADC A-D CONTROL**

SIZE CODE  
D BS

NUMBER  
AD12-0-YADC

REV  
E

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**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**ENGINEERING SPECIFICATION**

DATE

TITLE PDP-12 ANALOG TO DIGITAL CONVERTER

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
	1) AD12, AM12, AG12 Specifications					
	2) AD12, AM12, AG12 Parts Allocation					
	3) Adjustment Procedure					
A	DWG. NO. WAS A-SP-PDPI2-1-6	12-00055	T.J.DUGGAN	2-3-70	<i>T. Duggan</i>	2/4/70
B		12-00068	L. GALE	4-15-70	<i>L. Gale</i>	4/21/70
C		12-00076	BUDIANSKY	6-4-70	<i>D. Budiansky</i>	7/2/70
D	CHANGE PER ECO	AD12-00001	SCHWEGLER	5-6-71	<i>R. Schwegler</i>	6/28/71
E	CHANGE PER ECO	EM12-00053	LINDERHEIMER	10-18-71		

ENG <i>L. Gale</i> 6/3/69	APPD <i>L. Gale</i> 6/3/69	SIZE <b>A</b>	CODE SP	NUMBER AD12-0-1	REV <b>E</b>
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**ENGINEERING SPECIFICATION**



CONTINUATION SHEET

TITLE

1) AD12, AM12, AG12 Specifications

Analog Input

Input Voltage Range: AD-12, AG12  $\pm 1$  volt  
AM-12  $\pm 5$  volts

Input Resistance AD-12, AG12  $\pm 2\%$   
(normal noninverting connection): 70 k  $\Omega$ , 300 pf in parallel  
(inverting input connection): 35 k, 300 pf in parallel  
AM-12  $\geq 10$  meg. ohms, 300 pf to selected multiplex

Common-Mode Rejection: AD12, AG12 25 db worse case  
(source IMP  $< 250$ ) 35 db typical  
AM-12 No. com. mode rej.

Common-Mode Voltage Range: AD12, AG12  $\pm 3.5$  volts from system fault line ground

Input Protection: AD-12, AG12  $\pm 67$  volts from fault line indefinitely  
120-volts rms for 5 sec.  
AM-12  $\pm 8$  volts indef.

Overvoltage Recovery Time: AD12, AG12 8  $\mu$ sec

Frequency Response: AD12, AG12, AM12 0- to 30-kHz flat  
60-kHz 3-db down

Parameter Pots: AD12 8 10-turn parameter potentiometers are provided.  $1\frac{1}{2}$  to 2 turns at each extreme are beyond the A to D range.

Long Term Stability (1 hour) Better than 1% for  $\pm 30C$ .

Multiplexer Performance

Number and Type: 16 FET multiplex switches expandable to 32 (AM-12)

SIZE <b>A</b>	CODE SP	NUMBER AD12-0-1	REV <b>E</b>
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## TITLE

1) AD12, AM12, AG12 Specifications cont'd.

A/D Performance (See Note 1)

Resolution: 10 bits  $\pm \frac{1}{2}$  LSB  $\pm .1\%/^{\circ}\text{C}$   
for Inputs to ch. 10  $\rightarrow$  37

Conversion Rate: 50 kHz

Sample Acquisition Time: 5  $\mu\text{sec}$  ( $\pm 1 \mu\text{sec}$ )

Aperture Time: 200 nsec

Mechanical

Precision-stabilized power supplies, input amplifiers, sample-and-hold multiplexers and analog-to-digital converter modules are located with the memory in the PDP-12 main frame. Connection is made to the data terminal section to the left of the console.

Analog parameters may be set in by precision 10 turn potentiometers.

Analog input jacks are provided to accept standard three-contact phone plugs.

Inverting inputs must have dc resistance less than 250  $\Omega$  in all input conditions.

No temp or long term stability is implied for parameter pots.

AM12 inputs have a small current leakage, similar to a capacitive charge, as the channel first becomes selected under some conditions. This leakage is less than 3 ma for a period not to exceed 1  $\mu\text{sec}$ .

Note 1 - Newer AD12's use A405 sample and hold and a M7600 A-D Control Module. This newer version has a faster sample rate. See sheet 8 of this specification.

SIZE A	CODE SP	NUMBER AD12-0-1	REV E
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## ENGINEERING SPECIFICATION

## TITLE PARTS ALLOCATION OF AD12, AM12, AG12

Qty.	Part #	Use in AD12	Location	Print Ref.
4	A214	8 Analog Preamplifiers	E30 to E33	AD12- $\emptyset$ -YADA
2	A131	16 Multiplex FET Switches	D32, D33	{ AD12- $\emptyset$ -YAD AD12- $\emptyset$ -YADA
1	A215	Pot. Filter Cap., Zen-er Ref. & Bootstrap Amp.	D34	AD-12- $\emptyset$ -YAD
1	* A405	Sample and Hold	E34, F34	AD-12- $\emptyset$ -YAD
1	A811	A/D Converter Mod.	C35, D35	AD-12- $\emptyset$ -YAD
1	* M7600	A/D Control Logic	C36	AD-12- $\emptyset$ -YADC
1	12-3185-2	Regulated Power Supply $\pm 15\text{V}$	Lower Right of Memory Panel	UA-PDP-12- $\emptyset$ - $\emptyset$
1	700-6045	Bracket		700-6045
1	700-7964	Analog Panel	To Left of PDP-12 Console	{ CS-700-7964 AD-700-5964
		Connects to ADC with Cable		
		Terminated in G783 con.	F33	AD-12- $\emptyset$ -YAD
1	700-5963	Relay Input	Below Power Panel--8 Phone Plug Recept.	{ CS-700-5963 AD-700-5963
		Cable Terminated in G783	F32	AD-12- $\emptyset$ -YADA

\* AD12's pre-wired to EM12 Rev U or lower use A404 and M760.

SIZE A	CODE SP	NUMBER AD12-0-1	REV E
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ENGINEERING SPECIFICATION



CONTINUATION SHEET

TITLE PARTS ALLOCATION OF AD12, AM12, AG12 - cont.

Qty.	Part #	Use in AM12	Location	Print Ref.
2	A131	16 Multiplex FET Switches	D30, D31	AD-12-Ø-YADB
		Input Connector	F30, F31	AD-12-Ø-YADB

Qty.	Part #	Use in AG12	Location	Print Ref.
8	A214	Analog Preamplifiers	E26-E29	AD12-Ø-YADB
		Input, Relay Panel	F30-F31	AD-700-6046 AD12-Ø-YADB

SIZE A	CODE SP	NUMBER AD12-0-1	REV E
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ENGINEERING SPECIFICATION



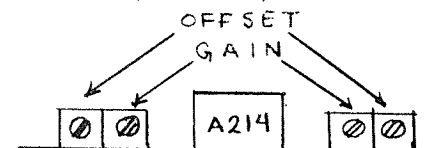
CONTINUATION SHEET

TITLE

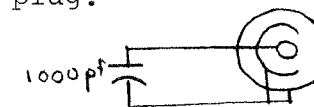
- 1) Set Ch. Ø pot about 5 turns from either end.
- 2) Connect pin D34N2 to D34F2.
- 3) Run AD TST Program with all sense switches → Ø.
- \*\* 4) Adjust A404 Sample and Hold offset until Ch. Ø reaches the threshold point of +Ø and -Ø volts.



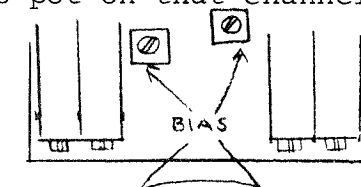
- 5) Remove D34N2 to D34F2 connection.
- 6) Turn parameter potentiometer slowly 10 turns over the full range. Assure that each count is displayed on Ch. Ø display. Repeat this test on each of the remaining parameter pots. (1-½ to 2 turns at each end of the pot do not offset the number displayed.)
- 7) Insert EDC Prec. Voltage source in channel to be tested; set to Ø volts, then adjust offset pots on respective A214 to the switching point of +Ø and -Ø volts.



Note: If the boards have been tested in the module test facility, bias has been preset. If the bias has not been preset, place A214 on module extender and insert a phone plug with the following circuit in place of the EDC plug.



Adjust the bias pot on that channel to assure ±Ø volts display.



\*\* See Sheet 8 of this specification for A405 layout.

SIZE A	CODE SP	NUMBER AD12-0-1	REV E
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TITLE

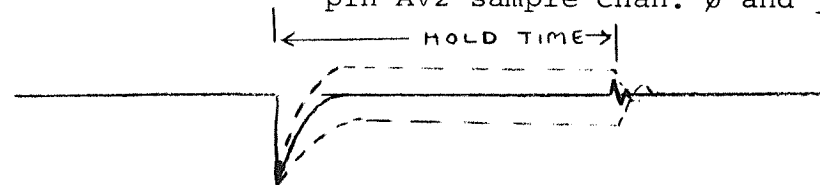
Replace EDC and assure  $\pm 0$  volts.  
Readjust offset if necessary.

- 8) Set EDC to +.985; adjust gain to indicate +776 readout on channel under test.
- 9) Increase EDC voltage to +.995; assure +777.
- 10) Set EDC at -.985; assure -776 reading. If necessary, slightly re-adjust the offset pot on the A214 in question, but insure that a reading of +0 or -0 (or the  $\pm 0$  threshold) is still present when EDC is set to 0 volts. See step 7.
- 11) Record voltage of switching indecision point for the numbers -770 to -777 and +000 to +007; assure non is less 1 **mv** nor greater than 3 **mv**.
- 12) Repeat steps 7 through 12 for successive analog channels.
- \* 13) A note about the other pots on the A404: Only the offset pot should be adjusted in the normal set-up procedure of the PDP-12 analog-to-digital converter.
- \* Use step 13 on Sheet 8 of this specification when A405 is installed. If inadvertently other pots are adjusted, the following information may be helpful:

Pot A (marked on board) is the amplifier balance

Pot B is gain. This adjustment is very fine; being only  $\pm .2\%$  misadjustment would not be disastrous.

Pot C is pedestal; to adjust this look at pin AV2 sample chan. 0 and jump back.



Adjust this voltage to hold exactly equal to sample voltage.

Pot D No normal machine mode facilitates readjustment.

The analog preamplifiers are designed with bias circuitry to simplify change of input characteristics from DC to AC sources for signals applied to the noninverting input. The inverting input must at all times be driven from a low DC impedance.

SIZE <b>A</b>	CODE SP	NUMBER AD12-0-1	REV <b>E</b>
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TITLE

NEWER AD12's

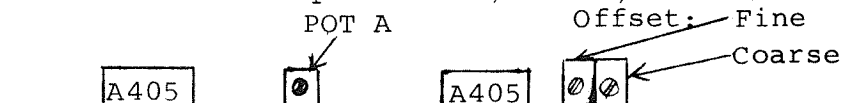
When A405 and M7600 are installed, the following performance specifications hold:

A/D Performance

- Resolution: 10 bits  $\pm \frac{1}{2}$  LSB  $\pm .1\%/^{\circ}\text{C}$  for Inputs to ch. 10  $\rightarrow$  37
- Conversion Rate: 69 KHz
- Sample Acquisition Time: 3 usec ( $\pm 1$  usec)
- Aperture Time: 100 nsec

Steps 4 and 13 are modified as follows:

- 4) Adjust A405 Sample and Hold offset until Ch. 0 reaches the threshold point of +0 and -0 volts.



- 13) A note about the other pot on the A405: Only the offset pots should be adjusted in the normal set-up procedure of the PDP-12 analog-to-digital converter.

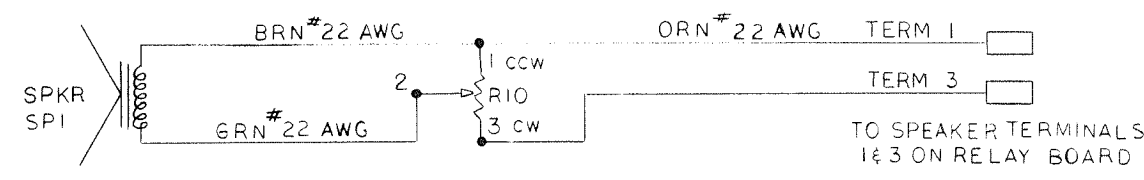
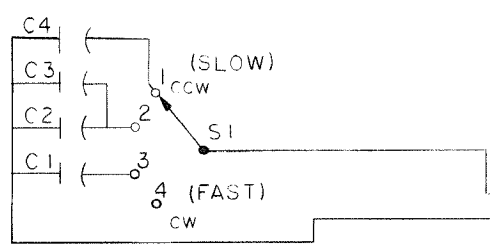
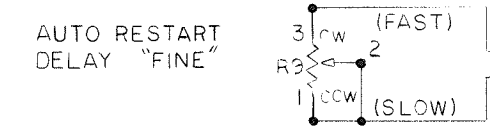
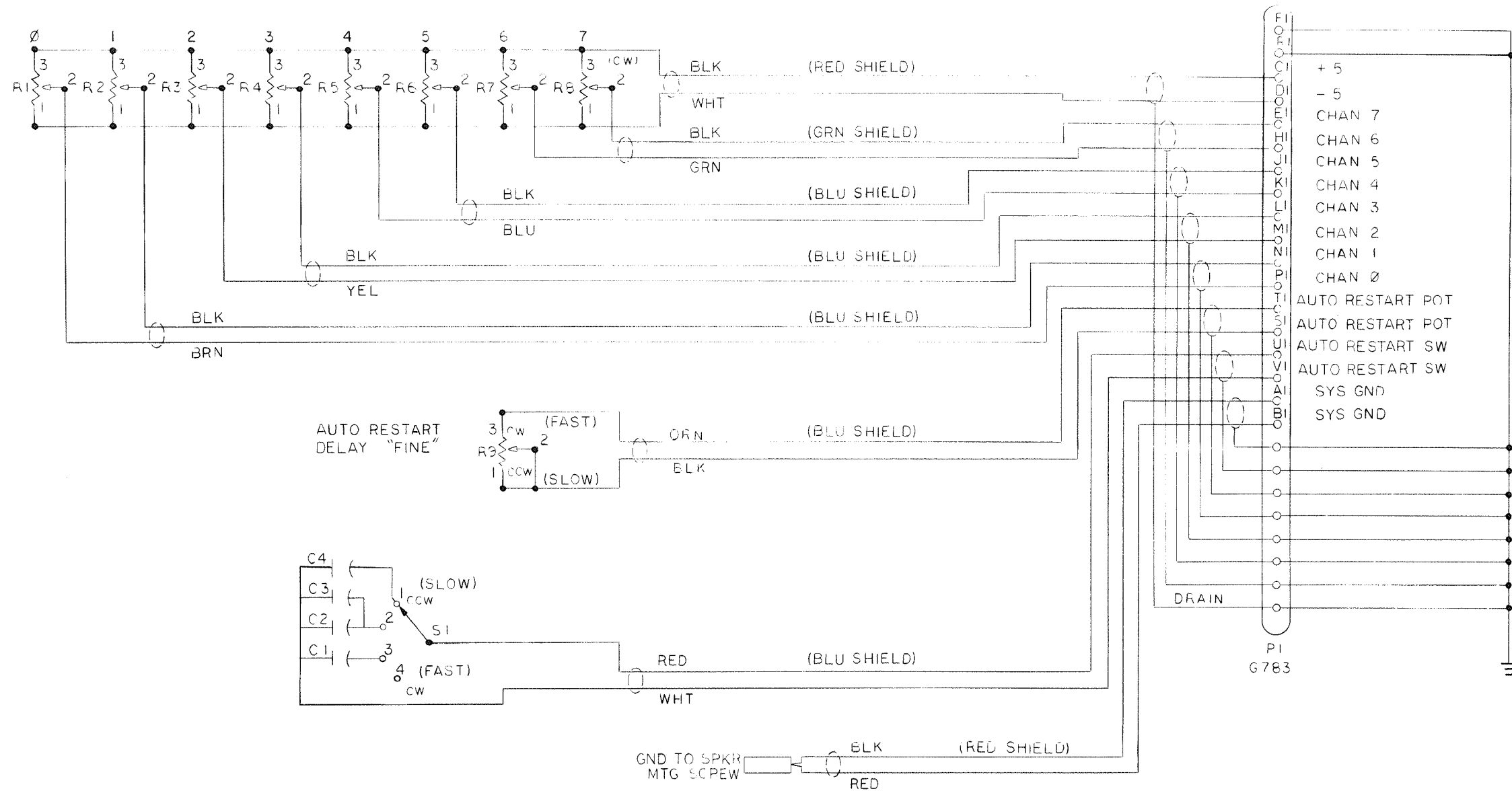
Pot A (marked on board) is the amplifier balance

The analog preamplifiers are designed with bias circuitry to simplify change of input characteristics from DC to AC sources for signals applied to the noninverting input. The inverting input must at all times be driven from a low DC impedance.

SIZE <b>A</b>	CODE SP	NUMBER AD12-0-1	REV <b>E</b>
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ANALOG CHANNELS 0 THRU 7



NOTE: WIRE IS BELDEN CABLE #8774 EXCEPT AS NOTED

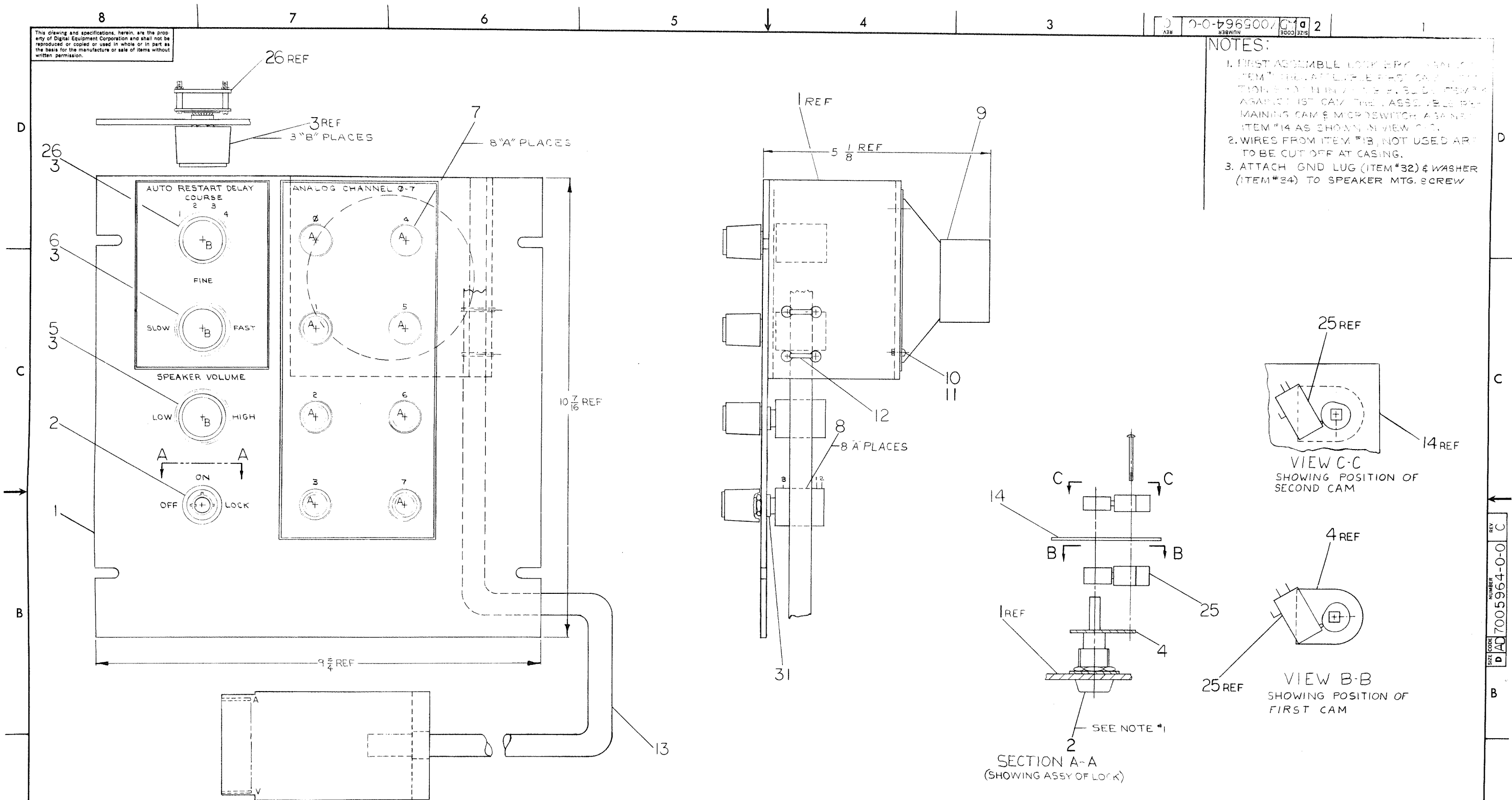
REF DESIG	DESCRIPTION	PART NO
C4	CAPICITOR 10 MFD 20V	1004813
SPI	SPEAKER 4 BMS-45 45Ω 3W	1204880
PI	CABLE CONN	G783
C1	CAPACITOR .033MFD 100V	1000050
C2	CAPACITOR .15MFD 35V	1002180
C3	CAPACITOR .47μF 35V	1005965
S1	SWITCH PA-020 CENTRAL AB	1209304
R10	POT 2.5K OHM JAIN 056S252UA	1309402-06
R9	POT 25K JAIN 056S253 UA	1309402-09
R1 THRU R8	POT 5K OHM 10 TURN DUNCAN	1309532-6

REVISIONS CHK ENG NO. REV 1-3-5-4 A	DRW DATE 7/10/68	TRANSISTOR & DIODE CONVERSION CHART DEC EIA DEC EIA		digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE ANALOG PANEL PDP-12		SIZE CODE NUMBER REV C CS 7005964-0-1 A
	CHKD DATE 8/1/68	ENG DATE 8/1/68	PROD DATE 8/1/68		PRINTED CIRCUIT REV.		

REV. A  
NUMBER 7005964-0-1  
SIZE CODE C CS

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- NOTES:
1. FIRST ASSEMBLY LOCK BY PLACING ITEM #14 ON ATTACHE PHOTO CAMERA SECTION 5.1 IN VIEW B. SLIDING ITEM #14 AGAINST 1ST CAM. THE ASSEMBLY REMAINING CAM & MICROSWITCH ASSEMBLY ITEM #14 AS SHOWN IN VIEW C-C.
  2. WIRES FROM ITEM #13, NOT USED ARE TO BE CUT OFF AT CASING.
  3. ATTACH GND LUG (ITEM #32) & WASHER (ITEM #34) TO SPEAKER MOUNTING SCREW

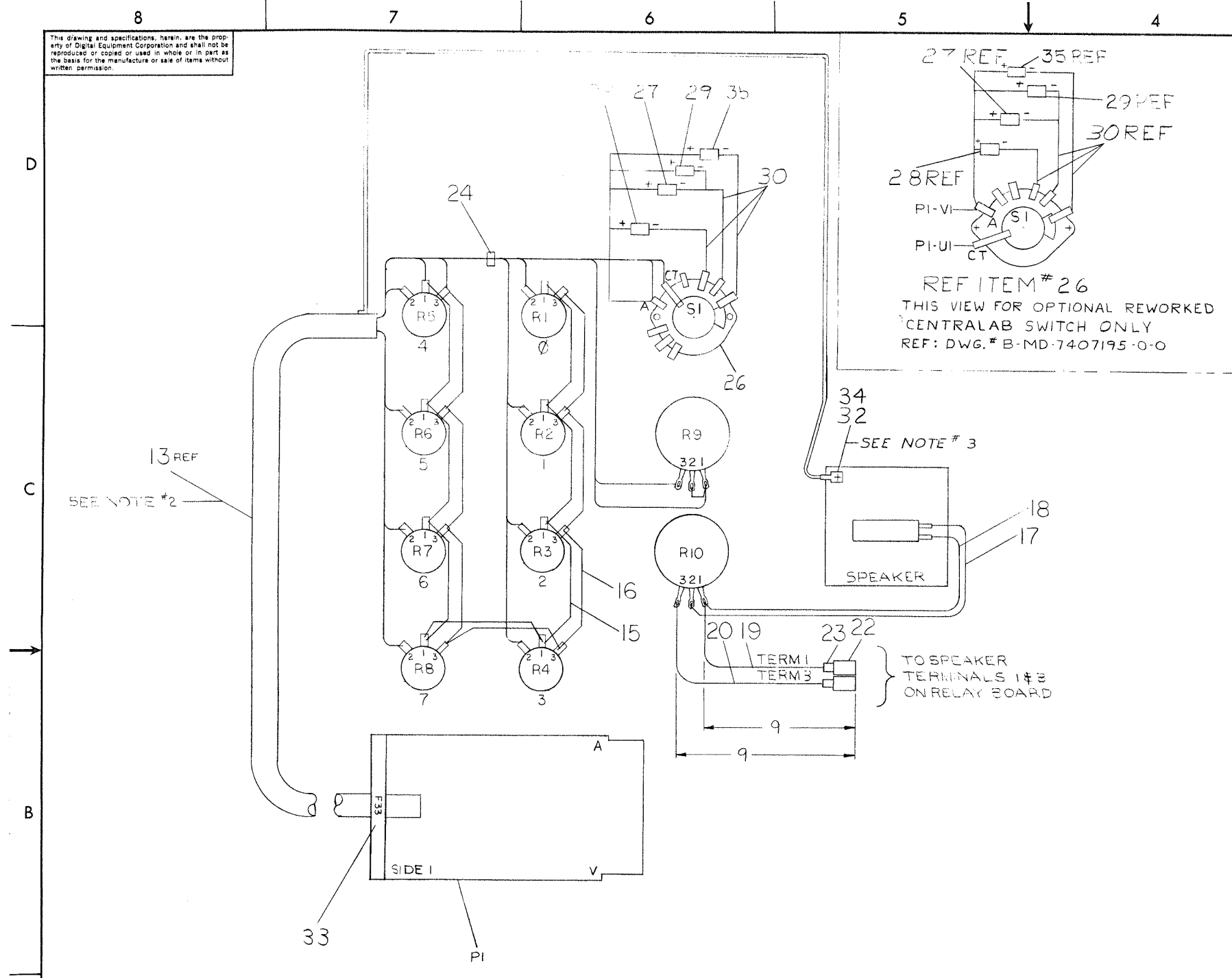


REV	CHG	NO	DATE	BY
A	12-00011			L. GALE
B	12-00054	5/12/69		L. GALE
C	12-00067	2/16/70		L. GALE
	12-00077	4-2-70		L. GALE
	12-00084	4-7-70		L. GALE

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	TITLE	
DIMENSION IN INCHES	R. Russ	2/28/69	ANALOG PANEL ASSY	
TOLERANCES	ENG	DATE	NEXT HIGHER ASSY	
DECIMALS FRACTIONS ANGLES	L. Gale	3-5-69	C-UA-PDP12-0-0	
± .005 ± 1/64 ± 0'30"	PROJ. ENG	DATE	SCALE NONE	
FINAL SURFACE QUALITY	W. Call	3-5-69	SHEET 1 OF 2	
REMOVE BURRS AND BREAK SHARP CORNERS	PROD.	DATE	SIZE CODE NUMBER REV.	
			DAD 7005964-0-0 C	
MATERIAL			DIST. C	
FINISH				

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0-0-195900/001 d 2



ITEM NO	AWG	COLOR	FROM	TO	REMARKS	SIGNAL
13	22	BLU	PI-PI	R1-2	BLU SHIELD	CHAN 0
		BLK	PI-NI	R2-2	PAIR # 6	CHAN 1
		YEL	PI-MI	R3-2	BLU SHIELD	CHAN 2
		BLK	PI-LI	R4-2	PAIR # 5	CHAN 3
		BLU	PI-KI	R5-2	BLU SHIELD	CHAN 4
		BLK	PI-JI	R6-2	PAIR # 4	CHAN 5
		GRN	PI-HI	R7-2	GRN SHIELD	CHAN 6
		BLK	PI-EI	R8-2	PAIR # 3	CHAN 7
		WHT	PI-DI	R5-1	FED SHIELD	-5
		BLK	PI-CI	R5-3	PAIR # 2	+5
		ORN	PI-TI	R9-3	BLU SHIELD	AUTO RESTART POT
		BLK	PI-SI	R9-1	PAIR # 7	AUTO RESTART POT
		RED	PI-UI	S1-CT	BLU SHIELD	AUTO RESTART SW
13		WHT	PI-VI	S1-A	PAIR # 8	AUTO RESTART SW
15		WHT	R1-1	R2-1		-5
			R2-1	R3-1		-5
			R3-1	R4-1		-5
			R4-1	R8-1		-5
			R8-1	R7-1		-5
			R7-1	R6-1		-5
15		WHT	R6-1	R5-1		-5
16		BLK	R1-3	R2-3		+5
			R2-3	R3-3		+5
			R3-3	R4-3		+5
			R4-3	R8-3		+5
			R8-3	R7-3		+5
			R7-3	R6-3		+5
			R6-3	R5-3		+5
16		BLK	R9-2	R9-1		AUTO RESTART POT
17		GRN	SPKR	R10-2		SPKR OUTPUT
18		BRN	SPKR	R10-1		SPKR OUTPUT
19		ORN	R10-1	TERM1		SPKR AMP OUTPUT TERM 1
20	22	VIO	R10-3	TERM3		SPKR AMP OUTPUT TERM 3
13	22	BLK	PI-AI	SPKRGND	RED SHIELD	SYS GND
13	22	RED	PI-BI	SPKRGND	PAIR #1	SYS GND

REVISIONS	REV.
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN. <i>Stan Pittman</i>	DATE 10/15/68	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D. <i>A. Russo</i>	DATE 2/25/69		
TOLERANCES	ENG. <i>W. Call</i>	DATE 5-2-69		
DECIMALS FRACTIONS ANGLES	PROJ. ENG. <i>W. Call</i>	DATE 5-3-69		
REMOVE BURRS AND BREAK SHARP CORNERS	PROD. <i>W. Call</i>	DATE 3/15/69	<b>ANALOG PANEL ASSY</b>	
MATERIAL	NEXT NUMBER ASSY			
FINISH	SCALE NONE			
SHEET 2 OF 2		SIZE CODE D AD 7005964-0-0		REV. C

NUMBER AD7005964-0-0 REV. C

## DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST

MADE BY S. POITRAS  
 DATE 10/9/68  
 ENG *L. Galo* 3-3-69  
 DATE 11/21/68  
 PROD *WCall*  
 DATE 3/3/69

CHECKED K. RUSS  
 SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-7406845-0-0	ANALOG PANEL.	1
2	1209236-00	SWITCH EXA-112-2 CHICAGO LOCK CO. (BARREL)	1
3	1209244	KNOB, BUCKEYE SS-125L-2	3
4	1209236-01	BRACKET CHICAGO LOCK	1
5	1309402-06	POT 2.5K OHM #JAIN056S252UA A-B	1
6	1309402-09	POT 25K OHM #JAIN056S253UA A-B	1
7	1209245	KNOB, BUCKEYE SSN 70-2	8
8	1309532-6	POT. 5K OHM 10 TURN DUNCAN	8
9	1204880	SPEAKER 4 BMS-45, 45 OHM 3W OXFORD	1
10	9006022-1	SCR PHL PAN HD #6-32 x 3/8 LG	4
11	9006560	KEPS NUT #6-32	4
12	9007032	TIEWRAP #SST-2-B PANDUIT	2
13	C-IA-7006028-1-0	CABLE ASSEMBLY (G783)	1
14	B-MD-7407049-0-0	INSULATOR, SWITCH	1
15	9107350-10	WIRE #22 AWG STRD TEF INS (WHT)	A/R
16	9107350-1	WIRE #22 AWG STRD TEF INS (BLK)	A/R
17	9107350-6	WIRE #22 AWG STRD TEF INS (GRN)	A/R
18	9107350-2	WIRE #22 AWG STRD TEF INS (BRN)	A/R
19	9107350-4	WIRE #22 AWG STRD TEF INS (ORN)	A/R
20	9107350-8	WIRE #22 AWG STRD TEF INS (VIO)	A/R
21	<del>9107252</del>	<del>TUBING SHRINKABLE WHT 3/8</del>	<del>A/R</del>
22	9006997	FASTON TAB #42025-1	2
TITLE ANALOG PANEL ASSY			
ASSY NO. D-AD-7005964-0-0		SIZE CODE A PL	NUMBER 7005964-0-0
SHEET 1 OF 2		DIST. 6	REV. ECO NO. C 00067

## DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST

MADE BY S. POITRAS  
 DATE 10/9/68  
 ENG *L. Galo* 3-3-69  
 DATE 11/21/68  
 PROD *WCall*  
 DATE 3/3/69

CHECKED K. RUSS  
 SECTION 1  
 ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
23	<del>9107255</del>	<del>TUBING SHRINKABLE 1/8 O.D.</del>	A/R
24	9007031	TY. WRAP #SST-1-B PANDUIT	A/R
25	1209355	MICRO SW #6831 "MICRO"	2
26	B-MD-7407195-0-0	SWITCH CENTRALAB (REWORK)	1
26	1209394	SWITCH CENTRALAB PA-020	1
27	1005965	CAPACITOR .47 uf 35V 10%	1
28	1000050	CAPACITOR .033 MFD 100V 10%	1
29	1002180	CAPACITOR .15 MFD 35V 10%	1
30	9107256-02	TUBING #22 AWG TEF (BRN)	A/R
31	9006680	WASHER .401 ID X .812 OD	8
32	9007634	SOLDERLESS CONN #36242	1
33	A-DC-7407193-0-0	LOGIC DECAL	A/R
34	9007649	WASHER EXT TOOTH #6	1
35	1004813	CAPICITOR 10 MFD 20 V 10%	1
OPTIONAL SWITCH SEE ASSY DWG.			
TITLE ANALOG PANEL ASSY			
ASSY NO. D-AD-7005964-0-0		SIZE CODE A PL	NUMBER 7005964-0-0
SHEET 2 OF 2		DIST. 6	REV. ECO NO. C



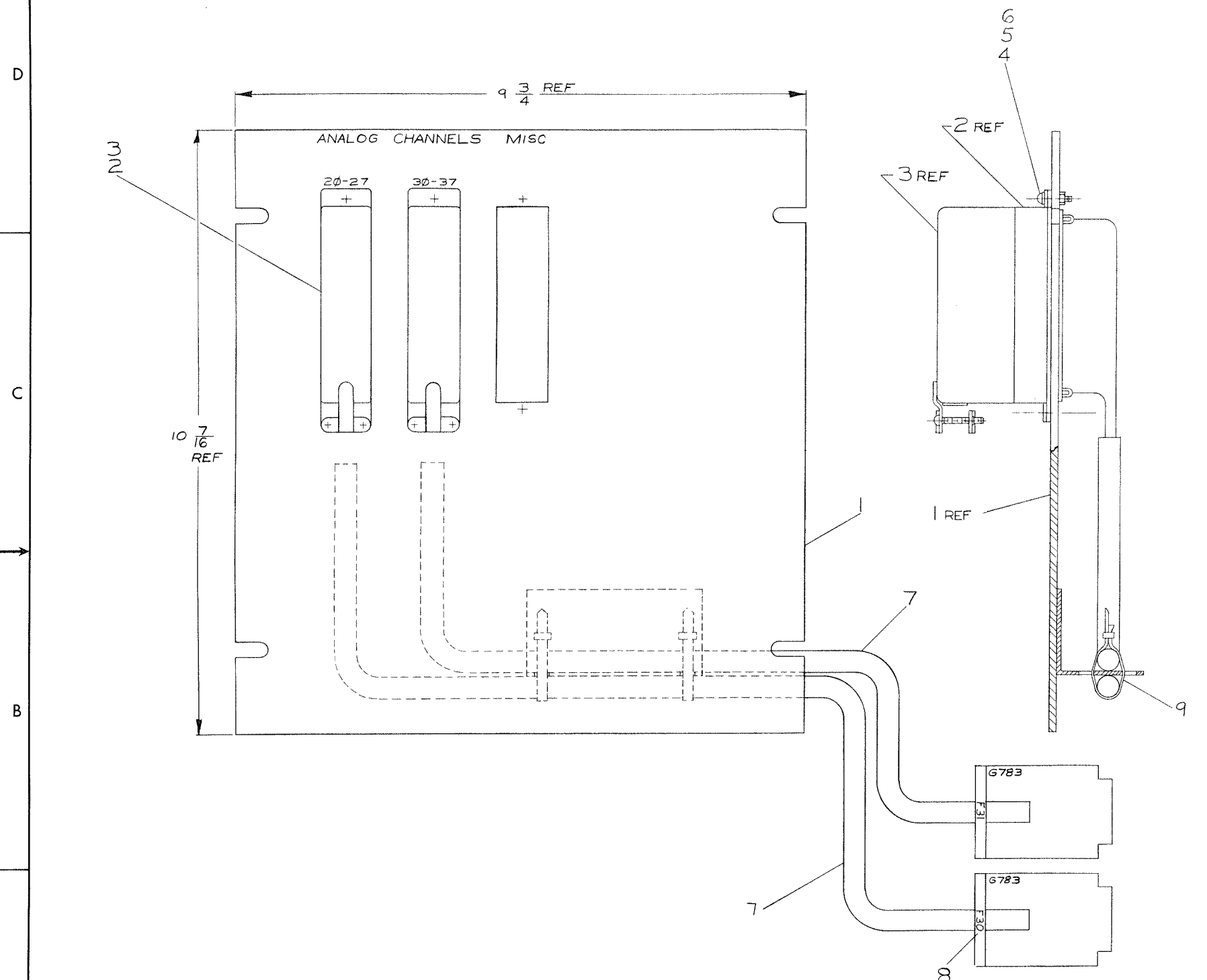
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# MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-AD12-0	REF	1	ANALOG TO DIGITAL CONVERTER
D-BS-AD12-0-YAD	REF	1	A-D CONVERTER
D-BS-AD12-0-YADA	REF	1	YADA CHAN 10-17
D-BS-AD12-0-YADB	REF	1	YADB CHAN 20-37
D-BS-AD12-0-YADC	REF	1	YADC A-D CONTROL
D-MU-EM12-0-1	REF	1	MODULE UTILIZATION MEMORY
D-MU-EM12-0-2	REF	1	MODULE UTILIZATION MEMORY
A-PL-EM12-0-1	REF	1	MODULE COUNT
A-PL-EM12-0-2	REF	1	MODULE COUNT
D-AD-7006046-0-0	A	2	ANALOG EXTENSION PANEL
A-PL-7006046-0-0	A	1	ANALOG EXTENSION PANEL (PL)

<b>REVISIONS</b>				DRN. K. RUSS	DATE 8/1/69	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>	TITLE  A-D ADDITIONAL PREAMPS
REV.	DATE	CHG. NO.	APP'D.	CHK'D. K. RUSS	DATE 8/1/69		
A	7/70	EM12-37	L.G.	ENG. <i>L. Hale</i>	DATE 8/11/69		
				PROJ. ENG. <i>L. Hale</i>	DATE 8/11/69		
				PROD. <i>L. Call</i>	DATE 8/18/69		
				FIRST USED ON PDP12	SIZE	CODE A ML	NUMBER AG12-0
				SCALE #			REV. A
				SHEET 1 OF 1	DIST.		

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REV.	CHANGE NO.	CHK	DATE
A	0001	T. Sullivan	8-1-69
		GALE	8-15-69

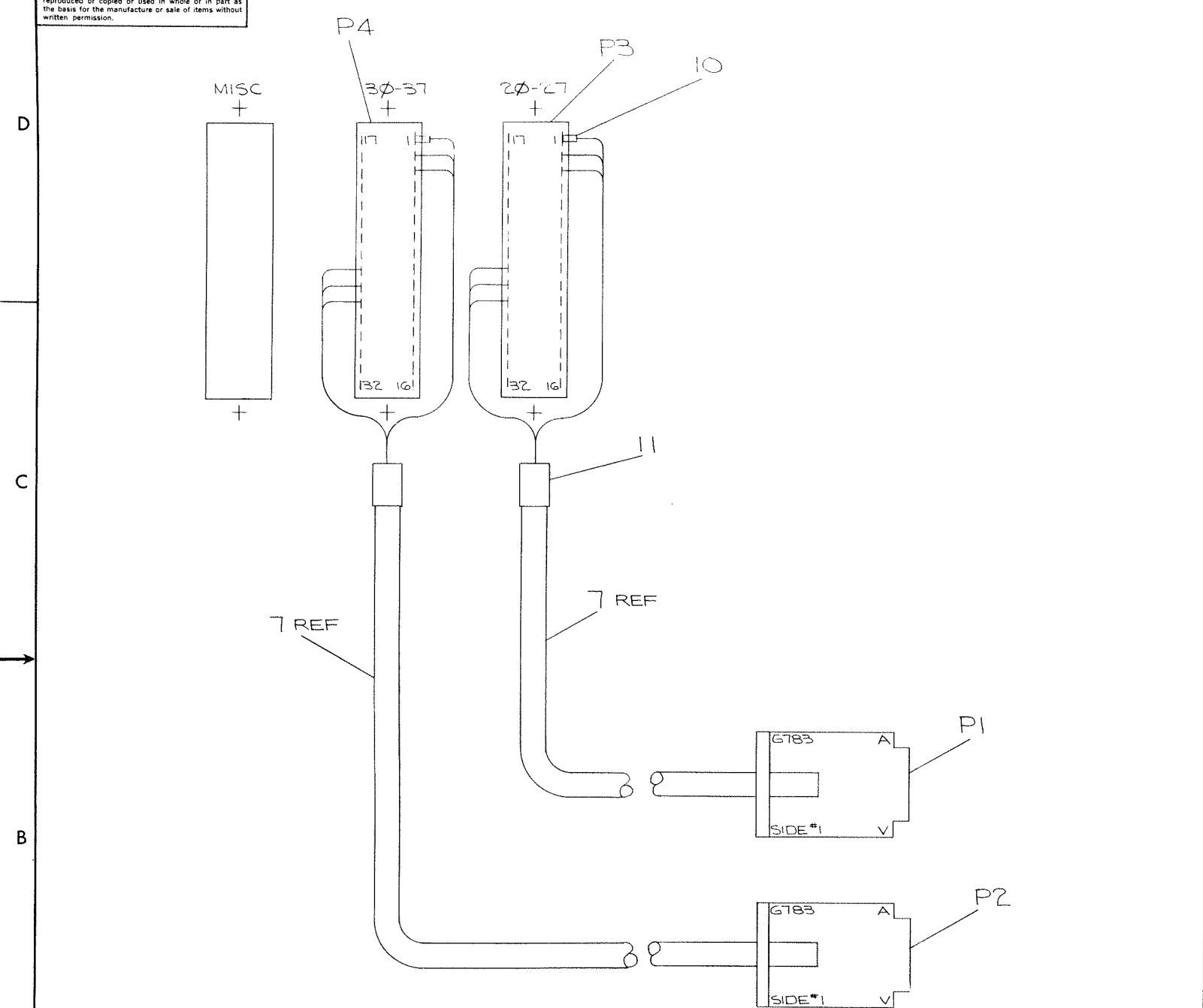
FIRST USED ON OPTION/MODEL PDP 12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	<b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE <b>ANALOG EXT PANEL ASSY (AG12)</b>	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE		
TOLERANCES	ENG.	DATE		
DECIMALS FRACTIONS ANGLES	PROF. ENG.	DATE		
± .005 ± 1/64 ± 0°30'	PROD.	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS				
MATERIAL	NEXT HIGHER ASSY		SIZE CODE	NUMBER
FINISH	SCALE		D AD 7006046-0-0	REV. A
	SHEET 1 OF 2		DIST.	

SIZE CODE NUMBER  
 D AD 7006046-0-0  
 REV. A



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8 7 6 5 4 3 2 1



WIRING DIAGRAM  
VIEW TAKEN FROM  
REAR OF PANEL

ITEM NO.	AWG	COLOR	CONNECTIONS		REMARKS	SIGNAL
			FROM	TO		
7	22	BLK	P1-A1	P3-1	RED SHIELD PAIR #1	-CHAN 20
		RED	P1-B1	-2		+CHAN 20
		DRAIN	GND	-3		SYS GND
		BLK	P1-C1	-4		-CHAN 21
		WHT	P1-D1	-5		+CHAN 21
		DRAIN	GND	-6		SYS GND
		BLK	P1-E1	-7		-CHAN 22
		GRN	P1-H1	-8		+CHAN 22
7	22	DRAIN	GND	-9	GRN SHIELD PAIR #3	SYS GND
		BLK	P1-J1	-10		-CHAN 23
		BLU	P1-K1	-11		+CHAN 23
		DRAIN	GND	-12		SYS GND
		BLK	P1-L1	-13		-CHAN 24
		YEL	P1-M1	-14		+CHAN 24
		DRAIN	GND	-15		SYS GND
		BLK	P1-N1	-16		-CHAN 25
7	22	BRN	P1-P1	-32	BLU SHIELD PAIR #6	+CHAN 25
		DRAIN	GND	-31		SYS GND
		BLK	P1-S1	-30		-CHAN 26
		ORN	P1-T1	-29		+CHAN 26
		DRAIN	GND	-28		SYS GND
		RED	P1-U1	-27		-CHAN 27
		WHT	P1-V1	-26		+CHAN 27
		DRAIN	GND	-25		SYS GND
7	22	BLK	P2-A1	P4-1	RED SHIELD PAIR #1	-CHAN 30
		RED	P2-B1	-2		+CHAN 30
		DRAIN	GND	-3		SYS GND
		BLK	P2-C1	-4		-CHAN 31
		WHT	P2-D1	-5		+CHAN 31
		DRAIN	GND	-6		SYS GND
		BLK	P2-E1	-7		-CHAN 32
		GRN	P2-H1	-8		+CHAN 32
7	22	DRAIN	GND	-9	GRN SHIELD PAIR #3	SYS GND
		BLK	P2-J1	-10		-CHAN 33
		BLU	P2-K1	-11		+CHAN 33
		DRAIN	GND	-12		SYS GND
		BLK	P2-L1	-13		-CHAN 34
		YEL	P2-M1	-14		+CHAN 34
		DRAIN	GND	-15		SYS GND
		BLK	P2-N1	-16		-CHAN 35
7	22	BRN	P2-P1	-32	BLU SHIELD PAIR #6	+CHAN 35
		DRAIN	GND	-31		SYS GND
		BLK	P2-S1	-30		-CHAN 36
		ORN	P2-T1	-29		+CHAN 36
		DRAIN	GND	-28		SYS GND
		RED	P2-U1	-27		-CHAN 37
		WHT	P2-V1	-26		+CHAN 37
		DRAIN	GND	-25		SYS GND

REVISIONS CHANGE NO. REV. CHK	FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST				
	UNLESS OTHERWISE SPECIFIED	DRN. <i>R. Co. K</i>	DATE <i>2/28/69</i>		
	UNLESS OTHERWISE SPECIFIED	CHK'D <i>R. Co. K</i>	DATE <i>2/28/69</i>	TITLE <b>ANALOG EXT PANEL ASSY (AG12)</b>	
DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES = .005 = 1/64 = 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	ENG. <i>Sh. C.</i> DATE <i>2/2/69</i> PROD. <i>W. Co. K</i> DATE <i>3/5/69</i>	SCALE <i>H</i> SHEET <i>2</i> OF <i>2</i>	SIZE CODE <b>DAD7006046-0-0</b>	NUMBER <b>0-0</b>	REV. <b>A</b>

8 7 6 5 4 3 2 1

REV. A  
 NUMBER  
 DAD7006046-0-0

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS

**PARTS LIST**

MADE BY W.F. McCARTHY	CHECKED K. RUSS	SECTION
DATE 12/2/68	DATE 12/11/68	1
ENG	PROD <i>W. Hall</i>	ISSUED SECT.
DATE <i>L. Gale 3-3-69</i>	DATE <i>3/3/69</i>	1

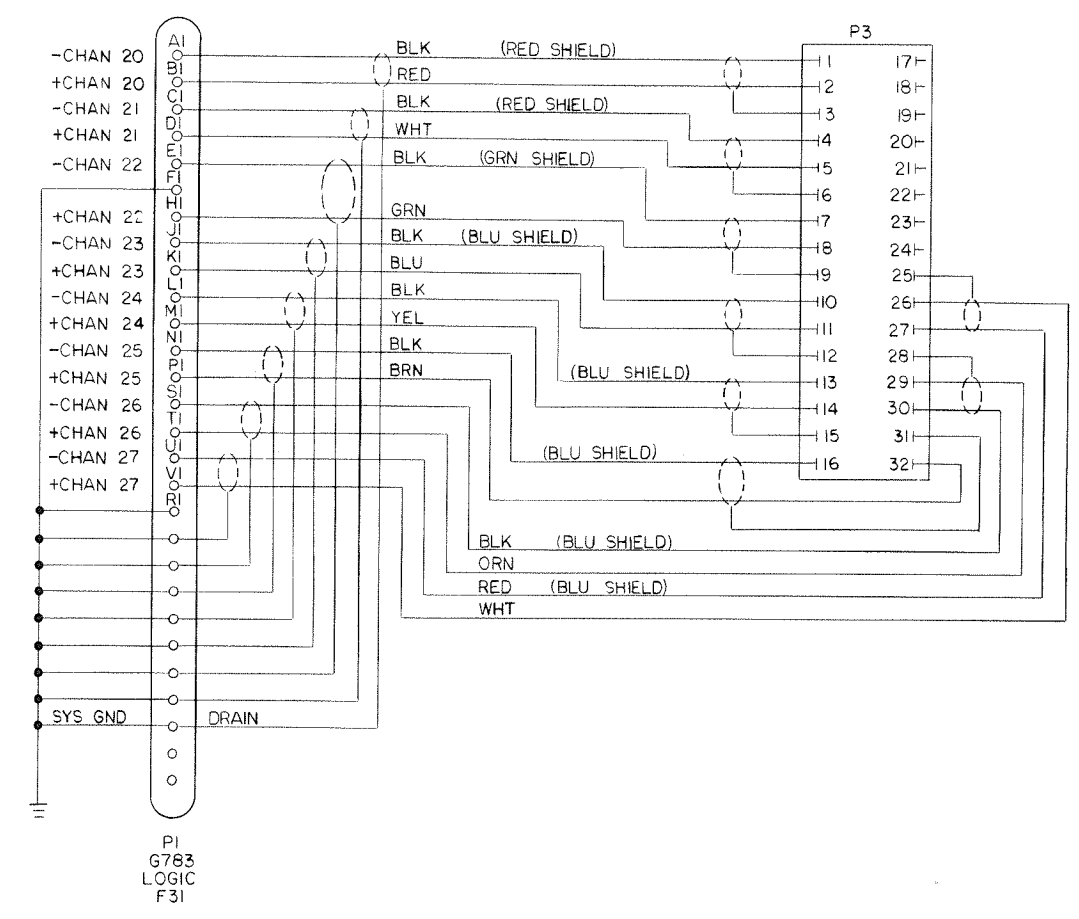
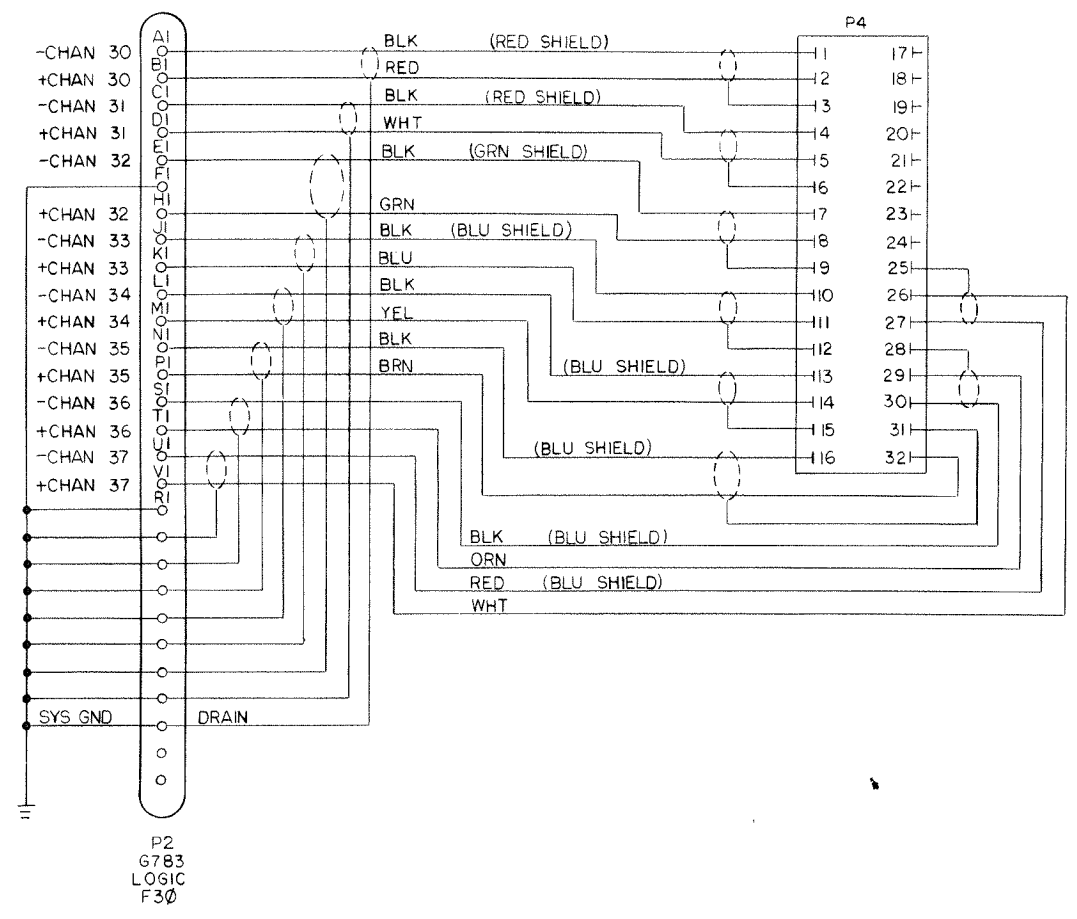
QUANTITY/VARIATION


ITEM NO.	DWG NO. / PART NO.	DESCRIPTION
1	D-IA-7406819-0-0	ANALOG EXT PANEL
2	1203578	CONN BLUE RIBBON #26-4401-32P AMP
3	1203584	CONN BLUE RIBBON #26-4501-32S AMP
4	9006010-1	SCR PHL HD PAN #4-40 x 5/16 LG
5	9006557	NUT KEPS #4-40
6	9006632	WASH INT TOOTH #4
7	C-IA-7006028-2-0	CABLE ASSY (G783)
8	A-DC-7407193-0-0	LOGIC DECALS
9	9007032	TIE WRAP #SST-2-B PANDUIT
10	9107255	TUBING SHRINKABLE WHT 1/8 DIA
11	9107252	TUBING SHRINKABLE WHT 3/8 DIA

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ANALOG EXT PANEL ASSY (A612)	D-AD-7006046-0-0	A	PL	7006046-0-0	A	AM12-00001
	SHEET 1 OF 1	DIST.				

DEC FORM NO. DRA 110

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NOTE: WIRE IS BELDEN CABLE #8774

P3, P4	CONN #26-4401-32P-AMP	120357e
P1, P2	G783 CABLE CONN.	G783
REF DESIGNATION	DESCRIPTION	PART NO.

REVISIONS CHK CHG NO. REV. DATE 1/1/69	DESIGNED: R.T.H. DATE: 8/14/69 CHECKED: A.W. Puro DATE: 8/19/69 ENG: S. Sale DATE: 8/18/69 PROP: D. Call DATE: 8/18/69	TRANSISTOR & DIODE CONVERSION CHART DEC EIA DEC EIA	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE: ANALOG EXT PANEL PDP 12 SIZE CODE NUMBER D CS 7006046-0-1 PRINTED CIRCUIT REV.
--	---	--	--	--







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# MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PDP 12 PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
<del>D-MU-EP12-0-2</del>	<del>REF</del>	<del>2</del>	<del>MODULE UTILIZATION PROC.</del>
A-PL-EP12-0-1	REF	3	MODULE COUNT
<del>A-PL-EP12-0-2</del>	<del>REF</del>	<del>1</del>	<del>MODULE COUNT</del>
D-BS-EP12-0-IOR	REF	1	RELAY BUFFER
D-AD-7005963-0-0	D	1	RELAY PANEL ASSY
A-PL-7005963-0-0	D	1	RELAY PANEL ASSY (PL)
D-CS-7005963-0-1	B	1	RELAY PANEL CIRCUIT SCHEMATIC

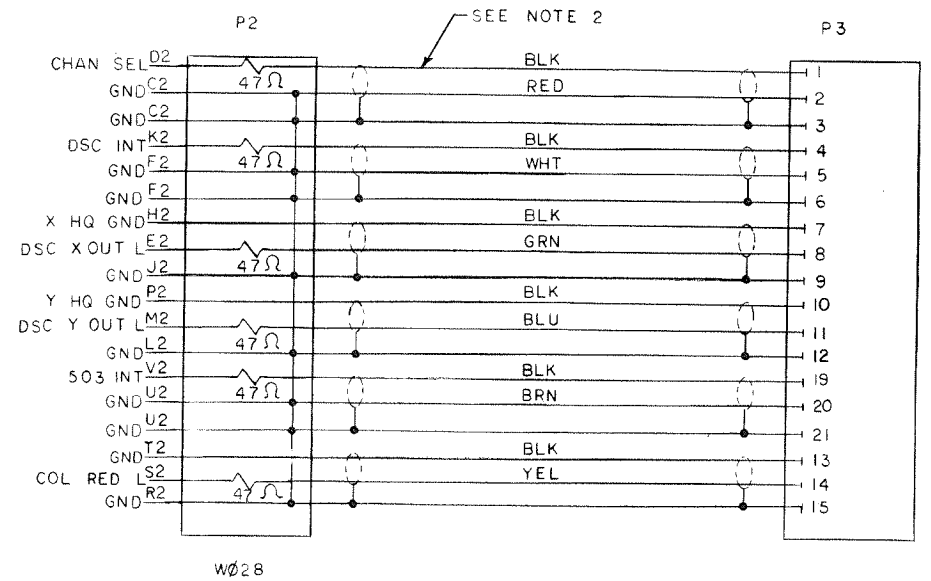
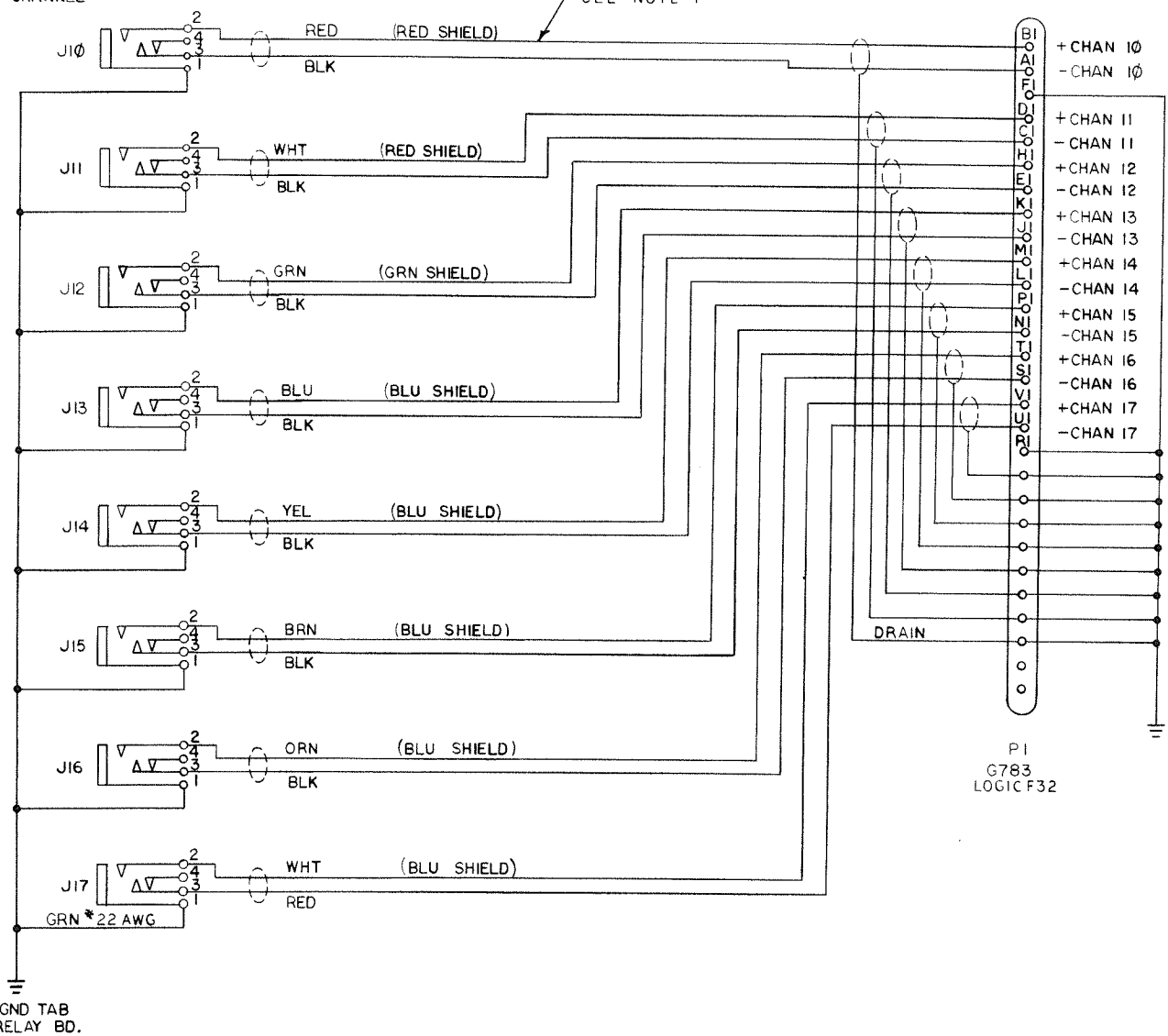
REVISIONS				DRN.	DATE	<div style="display: flex; align-items: center;"> <div> <b>digital</b> EQUIPMENT CORPORATION  <small>MAYNARD, MASSACHUSETTS</small> </div> </div>					
REV.	DATE	CHG. NO.	APP'D.	CHK'D.	DATE				TITLE  RELAY BUFFER		
A	7/71	12-96	F.V.	K. RUSS	8/4/69	RELAY BUFFER					
B	1/72	EP12-44	R.M.	K. RUSS	8/4/69						
				ENG.	DATE				RELAY BUFFER		
				PROJ. ENG.	DATE						
				PROD.	DATE	RELAY BUFFER					
FIRST USED ON				PDP 12		SIZE	CODE	NUMBER	REV.		
SCALE				-H		A	ML	DR12-0	B		
SHEET				1	OF	1	DIST.				



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NOTES:  
 1. WIRE IS BELDEN CABLE "8774  
 2. WIRE IS BELDEN CABLE "8778

ANALOG CHANNEL



REF. DESIGNATION	DESCRIPTION	PART NO.
P2	W028 CABLE ASSY.	7007005-7E-0
P3	CONN BLU RIBBON #26-4401-24P	1209265
P1	G783 CABLE CONN.	G783
J10 THRU J17	JAX #13-B 3 COND SWITCHCRAFT	1203562

PARTS LIST

REV	DESCRIPTION	DATE	BY
1	REVISED	8-13-69	F. Long
2	REVISED	8-19-69	J. Adams
3	REVISED	8-19-69	J. Adams
4	REVISED	8-19-69	J. Adams

TRANSISTOR & DIODE CONVERSION CHART
DEC EIA DEC EIA

**digital** TITLE RELAY PANEL  
 EQUIPMENT PDP 12  
 CORPORATION NUMBER 7005963-0-1  
 MAYNARD, MASSACHUSETTS PRINTED CIRCUIT REV.

REVISIONS	CHK	CHK NO	REV	DATE
1	FV	1000002	A	8-13-69
2	FV	1000002	B	8-19-69

SIZE CODE NUMBER 7005963-0-1 REV B

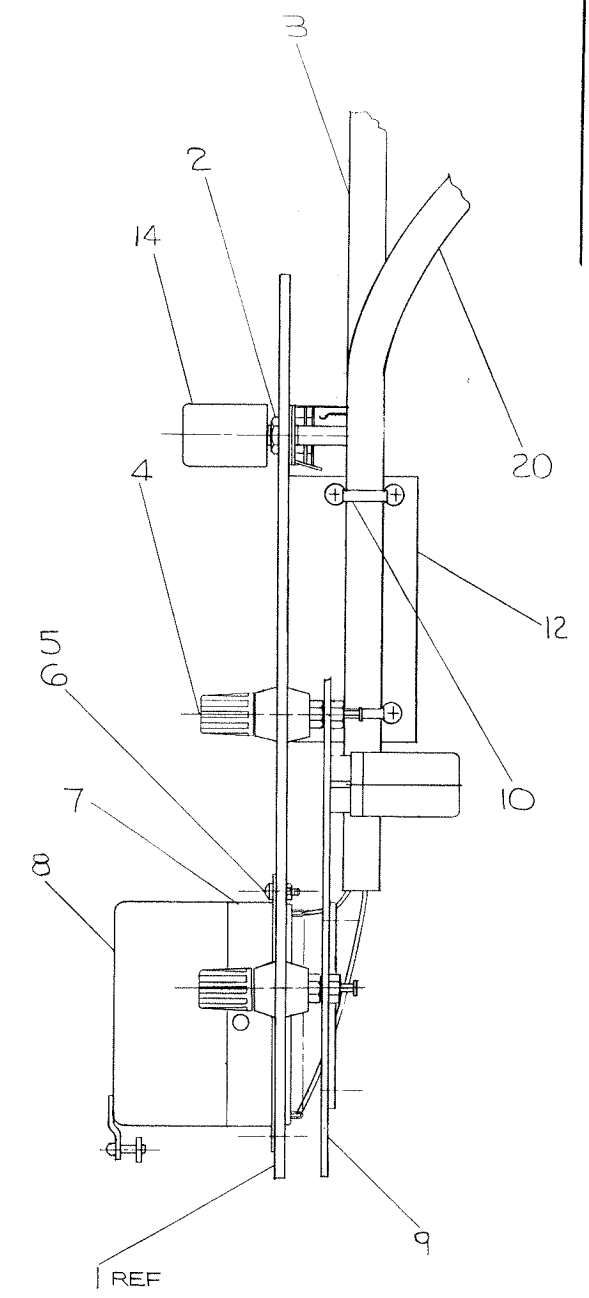
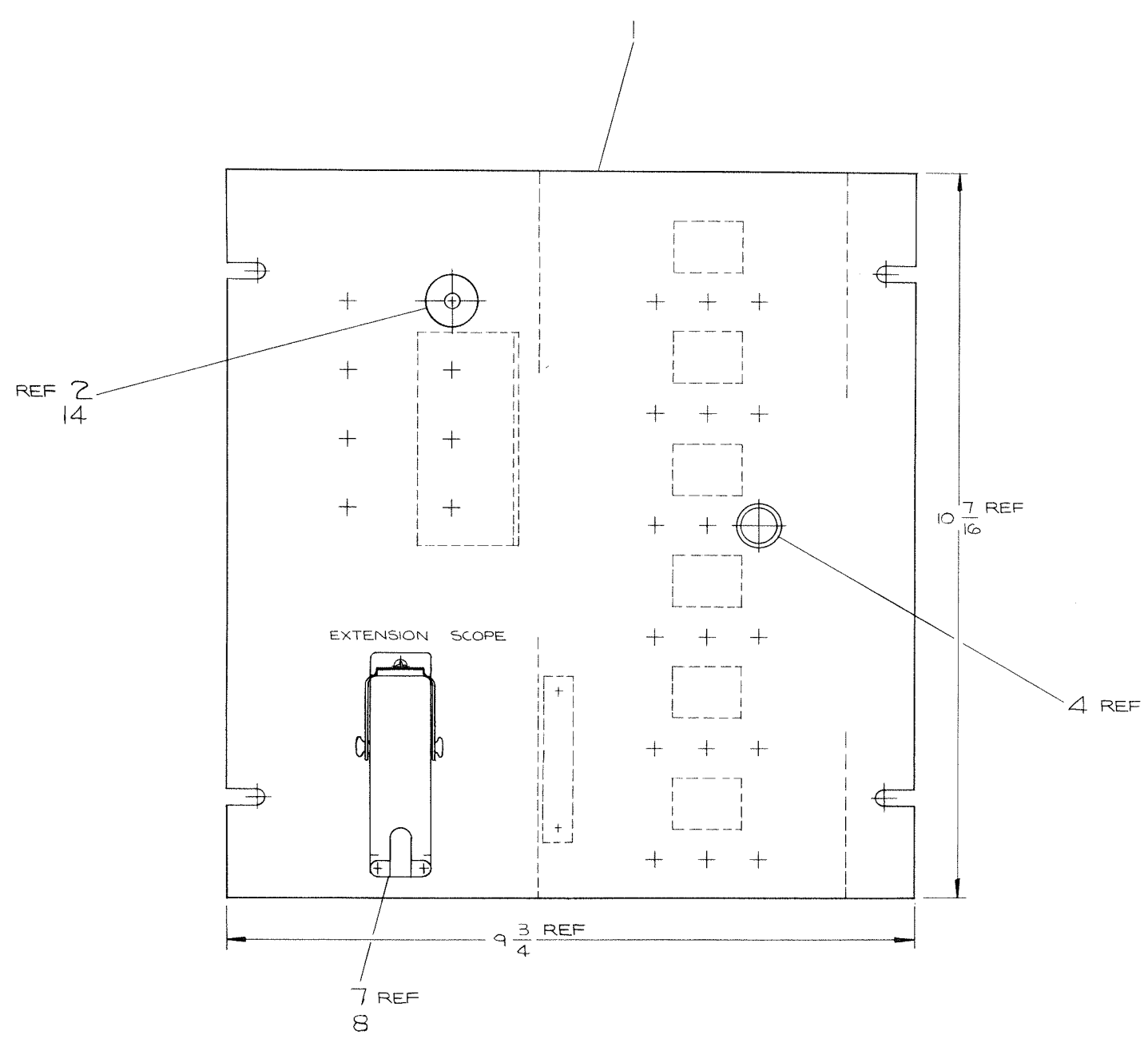


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NOTES:  
 1. ALL WIRES FROM ITEM #3 NOT USED ARE TO BE CUT OFF AT CASING.

D  
C  
B  
A

D  
C  
B  
A



REV.	CHANGE NO.	DATE	BY	CHK
A	DR12-00001	7-23-69	GALE	
B	12-00026	8/26/69	L. GALE	
C	12-00082	8-27-71	FV	
D	12-00096	8-27-71	G. BUDIANSKY	
			R. MOORE	
			O. C. H.	

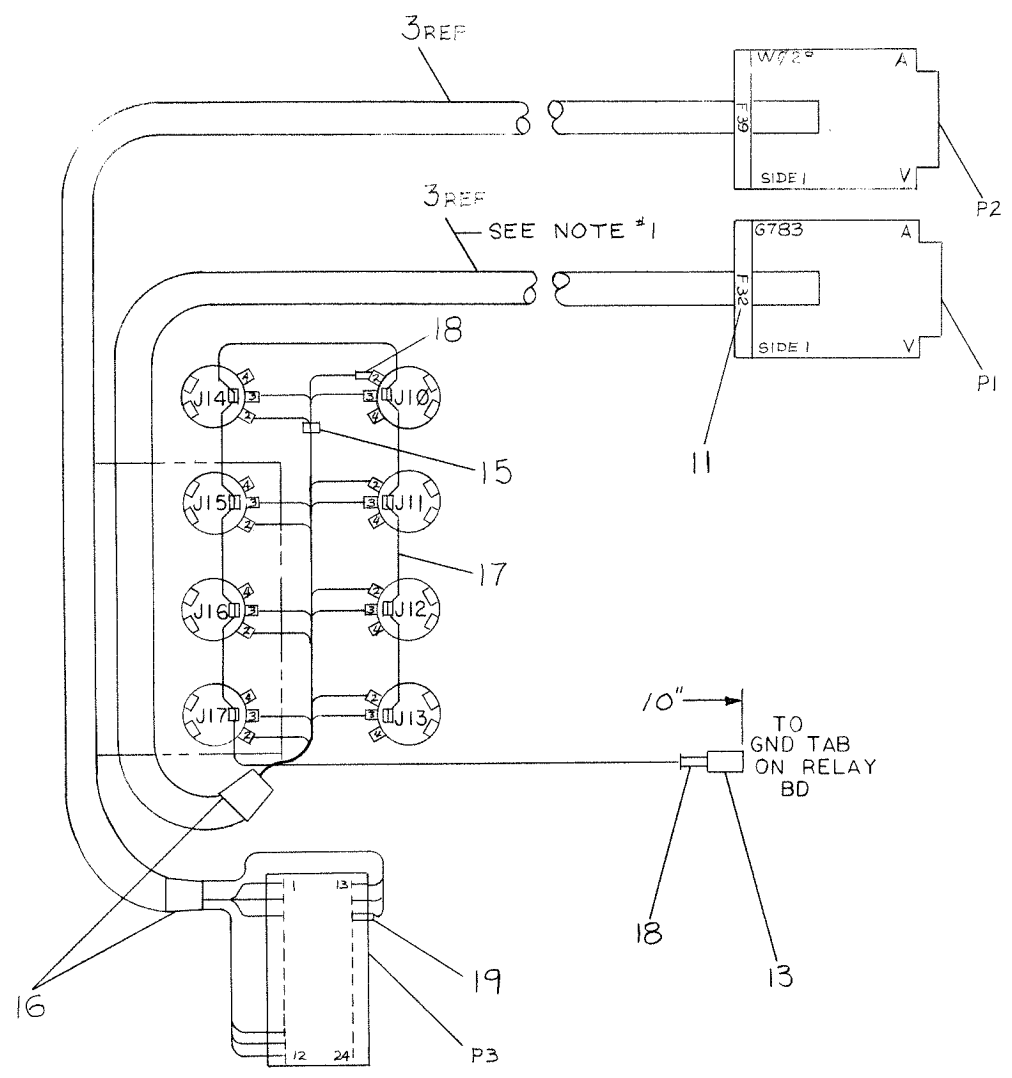
FIRST USED ON OPTION/ MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	<b>digital</b> CORPORATION <small>WATYARD, MASSACHUSETTS</small>	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE		
UNLESS OTHERWISE SPECIFIED	ENG	DATE		
UNLESS OTHERWISE SPECIFIED	PROD.	DATE		
DIMENSION IN INCHES		TOLERANCES		RELAY PANEL ASSY (DR12)
DECIMALS	FRACTIONS	ANGLES		
± .005	± 1/64	± 0°30'		
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS				
MATERIAL	NEXT HIGHER ASSY		SIZE CODE	NUMBER
FINISH	SCALE		DAD	7005963-0-0
	SHEET	OF	DIST.	REV.
	1	2	C	D

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REV CODE NUMBER  
DAD 7005963-0-0

WIRE TABLE						
ITEM NO	AWG	DESCRIPTION	CONNECTIONS FROM	TO	REMARKS	SIGNAL
3	22	BLK	P1-A1	J10-2	RED SHIELD	-CHAN 12
		RED	P1-B1	J10-3	PAIR #1	+CHAN 12
		DRAIN	GND	OPEN		
		BLK	P1-C1	J11-2	RED SHIELD	-CHAN 11
		WHT	P1-D1	J11-3	PAIR #2	+CHAN 11
		DRAIN	GND	OPEN		
		BLK	P1-E1	J12-2	GRN SHIELD	-CHAN 12
		GRN	P1-H1	J12-3	PAIR #3	+CHAN 12
		DRAIN	GND	OPEN		
		BLK	P1-J1	J13-2	BLU SHIELD	-CHAN 13
		WHT	P1-K1	J13-3	PAIR #4	+CHAN 13
		DRAIN	GND	OPEN		
		BLK	P1-L1	J14-2	BLU SHIELD	-CHAN 14
		YEL	P1-M1	J14-3	PAIR #5	+CHAN 14
		DRAIN	GND	OPEN		
		BLK	P1-N1	J15-2	BLU SHIELD	-CHAN 15
		BRN	P1-P1	J15-3	PAIR #6	+CHAN 15
		DRAIN	GND	OPEN		
		BLK	P1-S1	J16-2	BLU SHIELD	-CHAN 16
		ORN	P1-T1	J16-3	PAIR #7	+CHAN 16
		DRAIN	GND	OPEN		
		RED	P1-U1	J17-2	BLU SHIELD	-CHAN 17
		WHT	P1-V1	J17-3	PAIR #8	+CHAN 17
3	22	DRAIN	GND	OPEN		
17	22	GRN	J17-1	J16-1		SYS GND
			J16-1	J15-1		
			J15-1	J14-1		
			J14-1	J10-1		
			J10-1	J11-1		
			J11-1	J12-1		
			J12-1	J13-1		
17	22	GRN	J17-1	GND TAB		SYS GND
3	22	BLK	P2-D2*	P3-1	PAIR #1	CHAN SEL
		RED	GND	P3-2		GND
		DRAIN	GND	P3-3		SHIELD
		BLK	P2-K2*	P3-4		DSC INT
		WHT	GND	P3-5	PAIR #2	GND
		DRAIN	GND	P3-6		SHIELD
		BLK	P2-H2	P3-7		X HQ GND
		GRN	P2-E2*	P3-8	PAIR #3	DSC X OUT L
		DRAIN	GND	P3-9		SHIELD
		BLK	P2-P2	P3-10	PAIR #4	Y HQ GND
		BLU	P2-M2*	P3-11		DSC Y OUTL
		DRAIN	GND	P3-12		SHIELD
		BLK	P2-T2	P3-13	PAIR #5	GND
		YEL	F2-S2	P3-14		COL RED L
		DRAIN	GND	P3-15		SHIELD
				P3-16		
				P3-17	NOT USED	
				P3-18		
		BLK	P2-V2*	P3-19	PAIR #6	503 INT
		BRN	GND	P3-20		GND
		DRAIN	GND	P3-21		SHIELD
				P3-22		
				P3-23	NOT USED	
3	22			P3-24		

\* THROUGH 47Ω RESISTOR



WIRING DIAGRAM  
VIEW LOOKING AT REAR  
OF PANEL

REVISIONS	REV
CHANGE NO.	
CHK	

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE	TITLE	
TOLERANCES	ENG	DATE	RELAY PANEL ASS'Y (DR12)	
DECIMALS FRACTIONS ANGLES	PROD. ENG.	DATE	SIZE CODE NUMBER REV	
± .005 ± 1/64 ± 0°30'	PROD.	DATE	DAD 7005963-0-0 D	
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS			SCALE NONE SHEET 2 OF 2	
MATERIAL		NEXT HIGHER ASSY	DIST.	
FINISH				

REV D  
NUMBER  
DAD 7005963-0-0

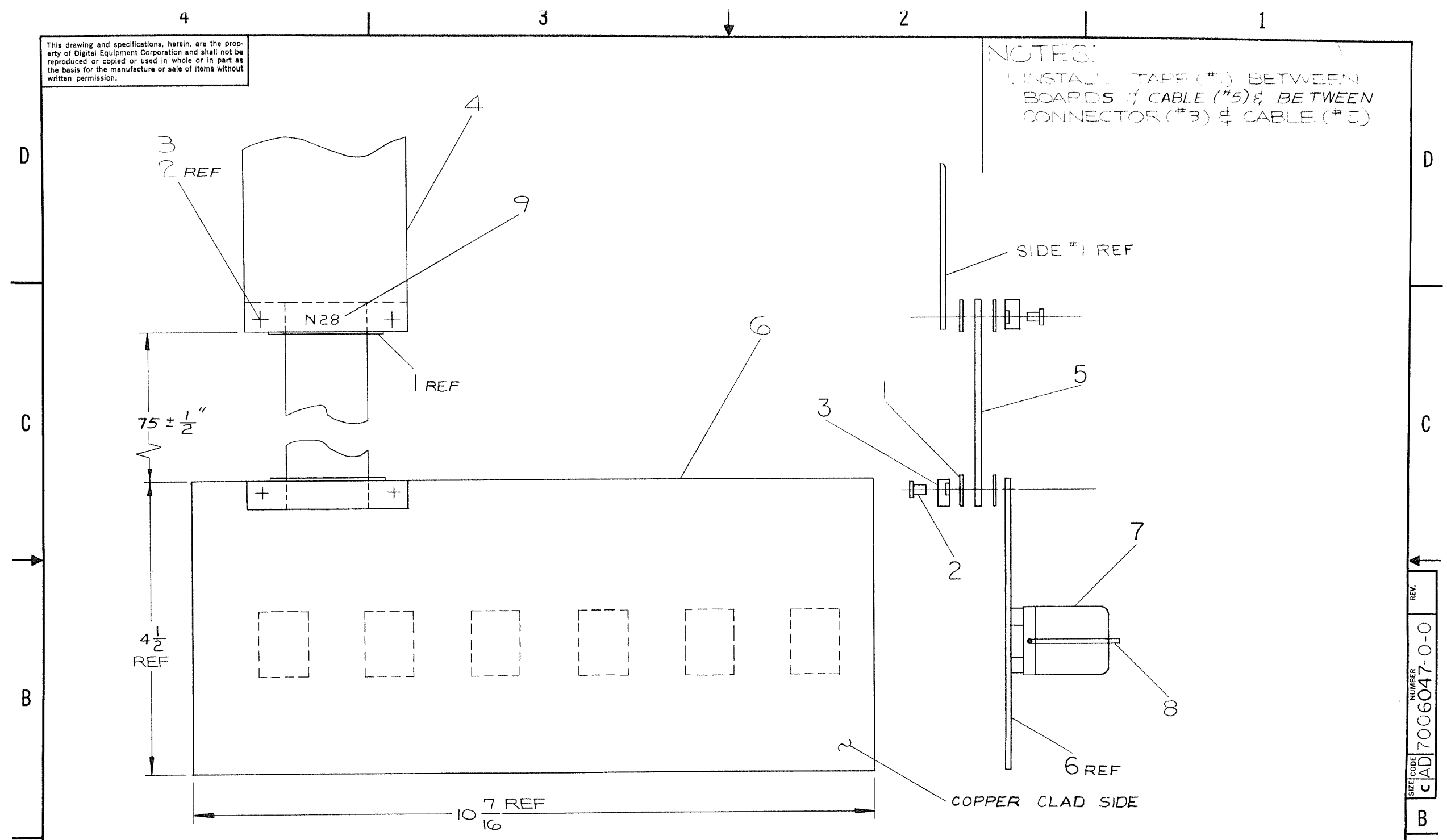
DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS <b>PARTS LIST</b>					QUANTITY / VARIATION															
MADE BY R. COOK		CHECKED K. RUSS		SECTION																
DATE 10/8/68		DATE 11/11/68		1																
ENG L. Gale 3/3/69		PROD <i>W. Gale</i>		ISSUED SECT.																
DATE 3/3/69		DATE 3/3/69		1																
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION																		
1	D-IA-7406846-0-0	PANEL RELAY				1														
2	1203562	JAX #13-B 3 COND SWITCH CRAFT				8														
3	C-IA-7006028-1-0	CABLE ASSY G783				1														
4	1209352-02	BINDER POST #DF31 WTC SUPERIOR ELEC.				18														
5	9006010-1	SCR PHL HD PAN #4-40 x 5/16 LG				2														
6	9006557	NUT KEPS #4-40				2														
7	1209265	CONN BLU RIBBON #26-4401-24P AMP				1														
8	1209277	CONN BLU RIBBON #26-4501-24S AMP				1														
9	C-AD-7006047-0-0	RELAY BD. ASSY				1														
10	9007032	TIE WRAP #SST-2-B PANDUIT				2														
11	A-DC-7407193-0-0	LOGIC DECALS				A/R														
12	B-MD-7406901-0-0	CABLE BRACKET				1														
13	9006997	FASTON TAB #42025-1				1														
14	1209430	PHONE PLUG #90 SWITCH CRAFT				8														
15	9007031	TIE WRAP #SST-1-B PANDUIT				A/R														
16	9107252	TUBING SHRINKABLE WHT 3/8 DIA				A/R														
17	9107350-6	WIRE #22 AWG STRD TEF/INS (GRN)				A/R														
18	9107305	TUBING SHRINKABLE RED 3/16 DIA				A/R														
19	9107255	TUBING SHRINKABLE WHT 1/8 DIA				A/R														
20	C-IA-7007005-7E-0	CABLE ASSY WC28				1														
TITLE		ASSY NO.		SIZE	CODE	NUMBER				REV.	ECO NO.									
RELAY PANEL ASSY (DR12)		D-AD-7005963-0-0		A	PL	7005963-0-0				D	12-00096									
		SHEET 1 OF 1		DIST. 6																

DEC FORM NO.  
DRA 110

X

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NOTES:  
 1. INSTALL TAPE (#1) BETWEEN BOARDS & CABLE (#5) & BETWEEN CONNECTOR (#3) & CABLE (#2)



REVISIONS	REV.
	CHANGE NO.
CHK	

FIRST USED ON OPTION/MODEL PDP 12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN. <i>B. Cook</i>	DATE <i>10/19/68</i>	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D. <i>R. Davis</i>	DATE <i>1-9-69</i>	TITLE	
DIMENSION IN INCHES			RELAY BOARD ASSY	
TOLERANCES			DATE <i>3-3-69</i>	
DECIMALS ± .005	FRACTIONS ± 1/64	ANGLES ± 0°30'	DATE <i>3-3-69</i>	
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS			DATE <i>3/3/69</i>	
MATERIAL	NEXT HIGHER ASSY			
FINISH	D-AD-7005963-0-0			
SCALE		SIZE CODE NUMBER		
SHEET 1 OF 1		CAD 7006047-0-0		
DIST. C				

REV.
NUMBER
SIZE CODE
CAD 7006047-0-0
B

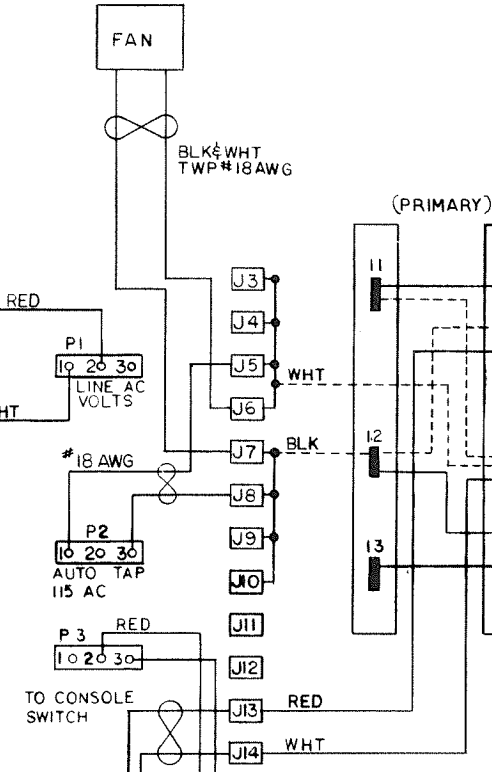
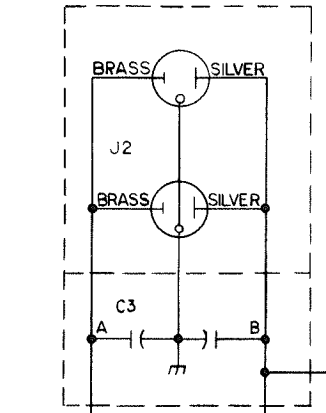
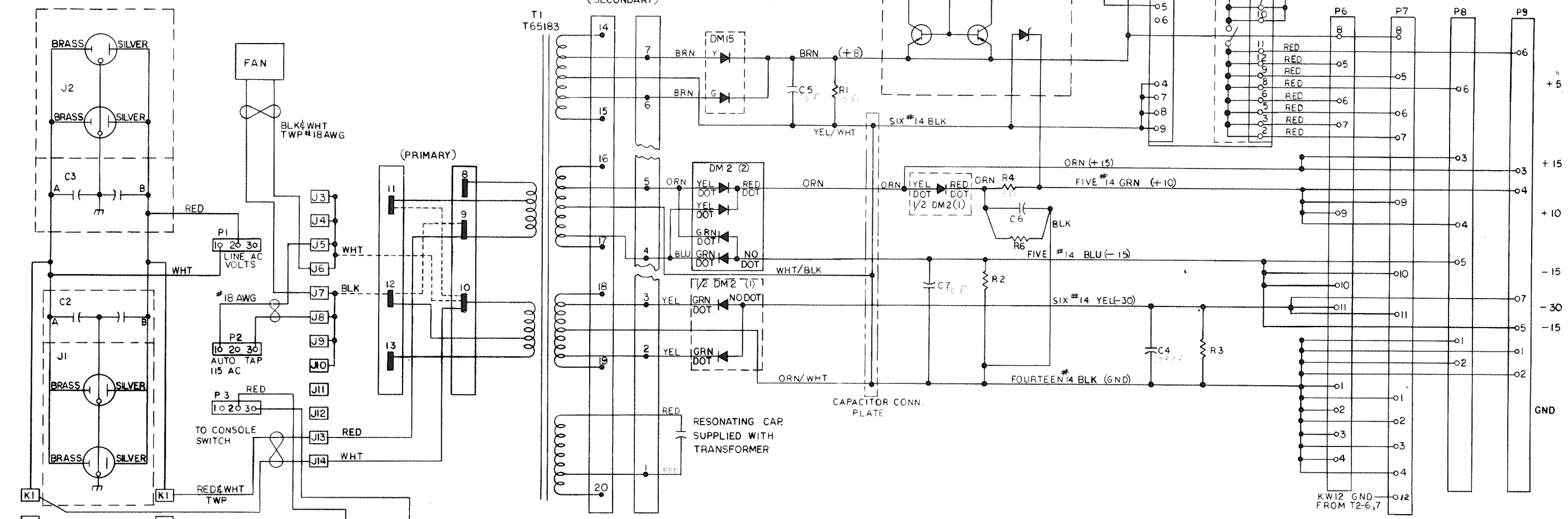
DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS <b>PARTS LIST</b>			QUANTITY / VARIATION															
MADE BY R. COOK		CHECKED K. RUSS		SECTION														
DATE 10/9/68		DATE 1/8/69		1														
ENG		PROD <i>W. Call</i>		ISSUED SECT.														
DATE <i>L. Seb 3-3-69</i>		DATE <i>3/3/69</i>		1														
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION																
1	9007834	TAPE #4032 1/2 WIDEX 1-3/16 LG 3M CO		A/R														
2	9006732	EYELET #GS-4-7 STIMPSON		4														
3	1202704	CABLE CLAMP		2														
4	M900	CABLE CONN M900		1														
5	<b>9105692 -1</b>	FLEX PRINT CABLE 19 COND		A/R														
6	C-IA-5408124-0-0	ETCH BOARD ASSY		1														
7	<b>1209349</b>	RELAY #1368 PARELCO		6														
8	<b>1209423</b>	RELAY CLIP PARELCO		6														
9	A-DC-7407193-0-0	LOGIC DECALS		A/R														
TITLE RELAY BOARD ASSY				ASSY NO. C-AD-7006047-0-0		SIZE CODE <b>A PL</b>		NUMBER 7006047-0-0				REV.		ECO NO.				
				SHEET 1 OF 1		DIST. <b>G</b>												

DEC FORM NO.  
DRA 110

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INPUT VOLTAGE	JUMPERS	LINE CONNECTIONS
100V 50~	12-9 ; 10-11	9-10
115V 50~	9-13 ; 8-10	9-10
200V 50~	11-12	9-10
215V 50~	8-12	9-10
230V 50~	8-13	9-10
120V 60~	9-12 ; 10-11	9-10
240V 60~	11-12	9-10
115V AUTO TAP	50~ USAGE	10-13
120V AUTO TAP	60~ USAGE	10-12

* SECONDARY CONNECTIONS		
WIRE COLOR	60 HZ	50 HZ
BRN	7,6	14,15
ORN	5	16
BLU	4	17
YEL	3,2	18,19
RED	1	20

- NOTES:
- FOR 240V OPERATION REMOVE JUMPER 1-2, 3-4 & ADD JUMPER 2-3
  - JUMPERS FOR 120V 60HZ OPERATION SHOWN WITH DOTTED LINES
  - UNLESS OTHERWISE SPECIFIED ALL WIRE TO BE 14 AWG STRD

REF DESIGNATION	DESCRIPTION	PART NO.
T2	TRANSFORMER F-106Z	1609426
K1	RELAY	1210241
R6	RESISTOR 220 1W 10%	1300277
CB2	CKT BKR 25A 50V SINGLE POLE	1205893-2
G824	REGULATOR CONTROL	6824
P5, P6, P7	MATE-N-LOK 12-WAY	1209350-12
P4, P8, P9	MATE-N-LOK 9-WAY	1209350-09
P1, P2, P3	MATE-N-LOK 3-WAY	1209350-03
HEAT SINK	HEAT SINK	5408298-0-0
DM 2(1), DM 2 (2)	DIODE DM 2	1105397
DM15	DIODE DM 15	1105799
R4, R5	RES 3 25W 5% WW	1309385
R3	RES. 100 25W 5% WW	1302888
R2	RES. 15 25W 5% WW	1300181
R1	RES. 10 25W 5% WW	1305887
C6	CAP 9300 MFD 15 VDC	1000095
C5, C7	CAP 160000 MFD 20V	1004874
C4	CAP 57,000 MFD 50V	1004875
C1, C2, C3	CAP 1MFD 1000 VDC	1002153
J11, J12	JUNC BUSH DC-202 YEL	9007235
J13	JUNC BUSH DC-202 RED	9007231
J7, J8, J9, J10	JUNC BUSH DC-202 BLK	9007237
J3, J4, J5, J6, J14	JUNC BUSH DC-202 WHT	9007235
J1 - J2	RECEPTACLE 1010	1205351
CBI	CKT BKR 20AMP 250V 60~	1201218
FAN	FAN, BOXER 50/ 60 ~	12 09942-1
T1	TRANSFORMER T65183	1605651

PARTS LIST	
TITLE	NUMBER
DIGITAL POWER SUPPLY 724	724-0-1
EQUIPMENT CORPORATION	REV. H
MAYNARD, MASSACHUSETTS	PRINTED CIRCUIT REV.

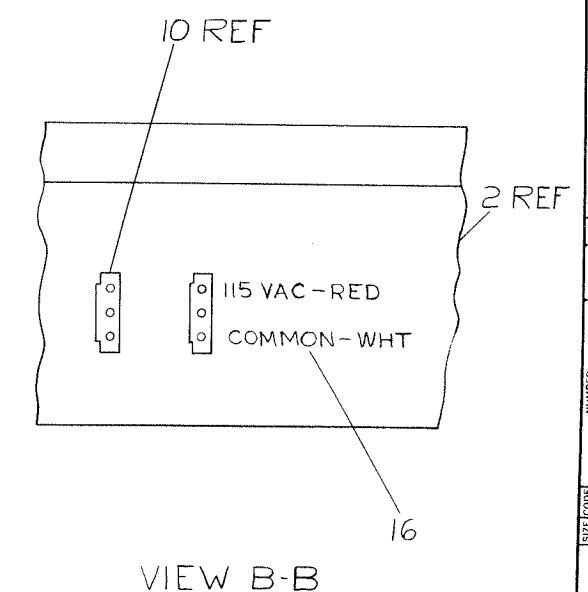
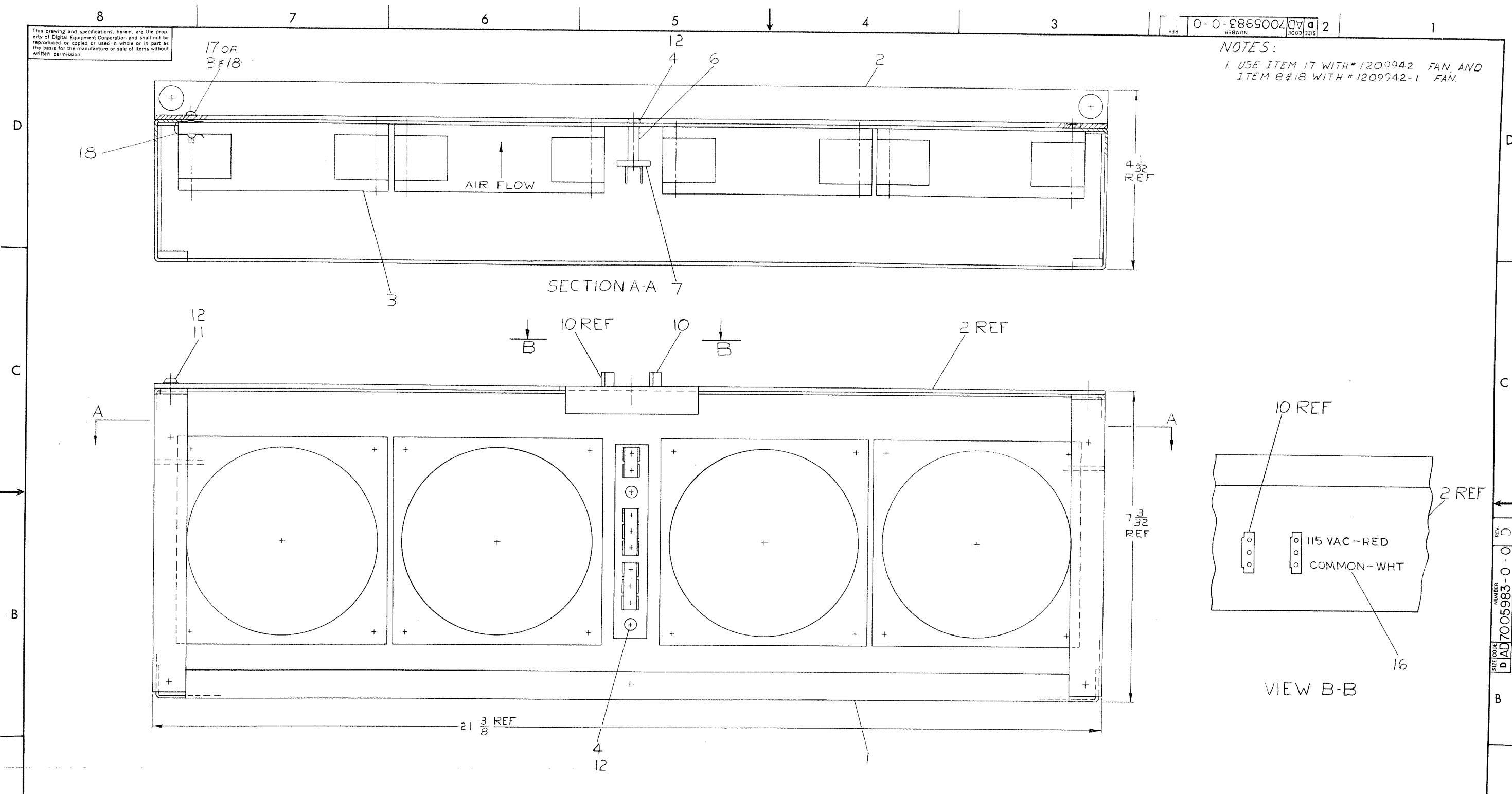
TRANSISTOR & DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA

REVISIONS	DATE	BY	CHK'D
1	2-18-67		
2	3-6-67		
3	4-15-67		
4	4-15-67		
5	4-15-67		

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REV 0-0-0865002 2

NOTES:  
 1. USE ITEM 17 WITH # 1209942 FAN, AND  
 ITEM 8#18 WITH # 1209942-1 FAN.



REV.	CHANGE NO.	BY	DATE
A	12-00014	S. ZNAMIEROWSKI	12-10-69
B	12-00028	D. NEVALA	12-10-69
C	12-00041	L. GALE	12-10-69

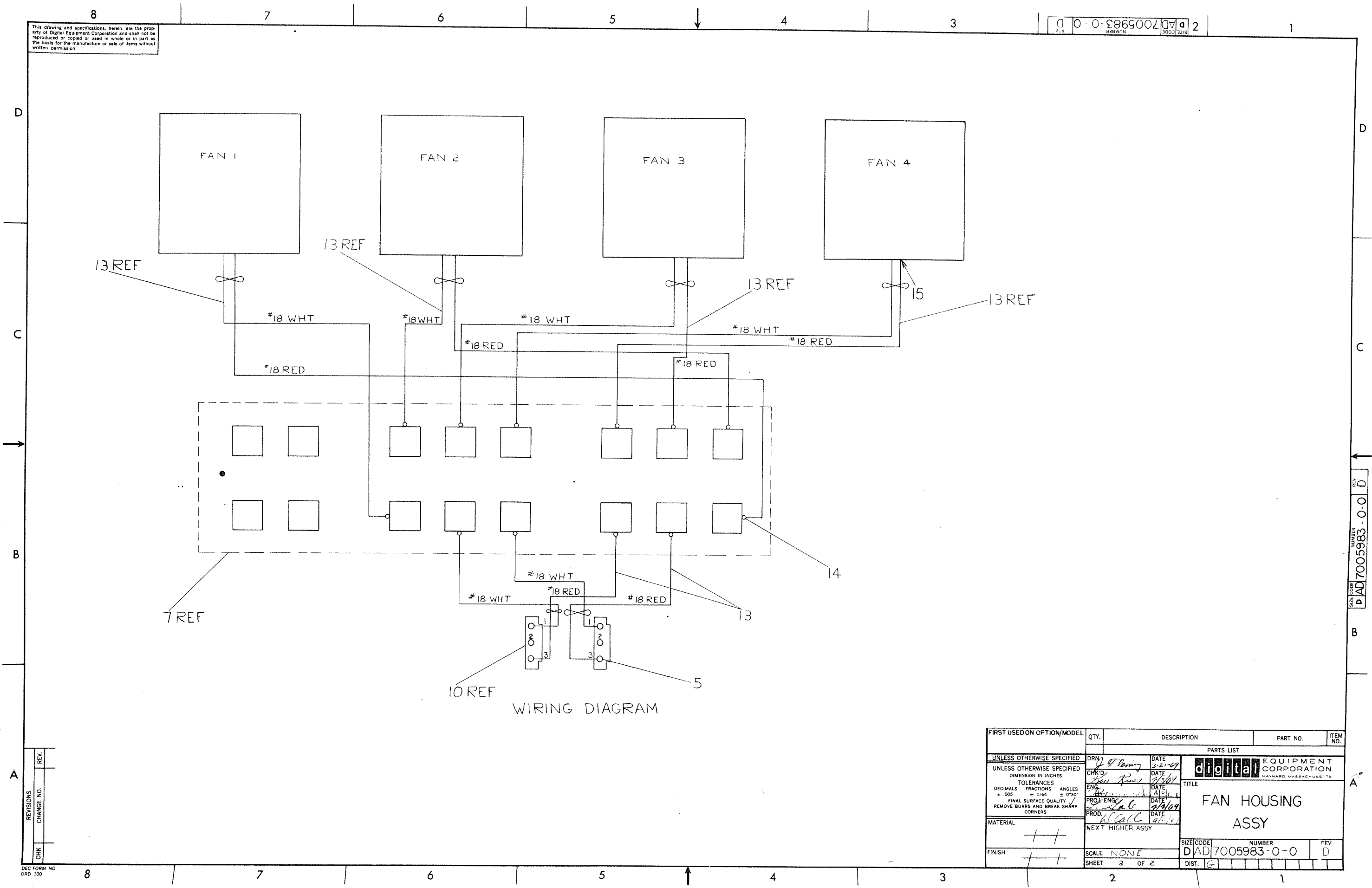
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP-12				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED		DRN. Fleming	DATE 3-21-69	<b>digital</b> EQUIPMENT CORPORATION WATNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED		CHK'D. [Signature]	DATE 7/28/69	
TOLERANCES		ENG. [Signature]	DATE 9/11/69	
DECIMALS FRACTIONS ANGLES		PROD. [Signature]	DATE 9/11/69	
DECIMALS = .005 FRACTIONS = 1/64 ANGLES = 0°30'		TITLE		<b>FAN HOUSING ASSY</b>
FINAL SURFACE QUALITY: REMOVE BURRS AND BREAK SHARP CORNERS		D-VA-PDP12-0-0		
MATERIAL		NEXT HIGHER ASSY		SIZE CODE
FINISH		SCALE 1/1		NUMBER
		SHEET 1 OF 2		REV.
				DIST.

REV 0-0-0865002 2



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0-0-0-869002 2



WIRING DIAGRAM

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN: <i>J. J. Perry</i>	DATE: 3-21-69	<b>digital</b> EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>	
UNLESS OTHERWISE SPECIFIED	CHK'D: <i>Ray Jones</i>	DATE: 4-1-69		
TOLERANCES	ENG: <i>La G</i>	DATE: 2-19-69		
DECIMALS FRACTIONS ANGLES ± .005 ± 1/64 ± 0°30'	PROJ. ENG: <i>La G</i>	DATE: 2-19-69		
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	PROD. DATE: <i>Call</i>	DATE: 2-19-69	TITLE <b>FAN HOUSING ASSY</b>	
MATERIAL	NEXT HIGHER ASSY			
FINISH	SCALE: NONE	SIZE/CODE: DAD7005983-0-0		REV: D
SHEET 2 OF 2		DIST.:		

REV.	
CHANGE NO.	
CHK	

DEC FORM NO. DRD 100

NUMBER  
 DAD7005983-0-0  
 REV  
 D

**DIGITAL EQUIPMENT CORPORATION**  
MAYNARD, MASSACHUSETTS  
**PARTS LIST**

QUANTITY / VARIATION

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION													
MADE BY	J. FLEMING	CHECKED	K. RUSS	SECTION											
DATE	3/21/69	DATE	4/2/69											1	
ENG	<i>S. Angimemurhi</i>	PROD	<i>W. Call</i>	ISSUED SECT.										1	
DATE	<i>4/2/69</i>	DATE	<i>4/11/69</i>											1	
1	E-IA-7407254-0-0	CHASSIS, FAN HOUSING													
2	D-MD-7406948-0-0	COVER, FAN HOUSING													
3	1209942 or 1209942-1	FA													
4	9006022-1	SCR PHL HD PAN #6-32 X 3/8 SST													
5	1209379-01	PIN #60619-4 AMP													
6	9006859	SPACER 1/4 AF X 3/4 X #6-32													
7	C-IA-7405083-0-0	TERMINAL STRIP													
8	9006024-1	SCR PHL HD PAN #6-32 X 1/2 SST													
9	<del>9006560</del>	<del>NUT KEYS #6-32</del>													
10	1209350-03	HOUSING SOCKET MATE-N-LOK													
11	9006021-1	SCR PHL HD PAN #6-32 X 5/16													
12	9006633	WASH INT TOOTH #6													
13	9107430-29	WIRE #18 AWG STRD TWP (RED & WHT)		A/R											
14	9006997	CONN SLDS #42025-1 AMP													
15	9107305	TUBING SHRINKABLE #14 X 9/16 LG RED													
16	A-DC-7406899-0-0	FAN DECALS		A/R											
17	9006121	SCR, SELFTAPPING 8-32 x 3/8 LG													
18	9008202	FAN CLIP													
19	9007031	TIE WRAP SST-IB PANDUIT													
TITLE				ASSY NO.	SIZE	CODE	NUMBER					REV.	ECO NO.		
FAN HOUSING ASSY				D-AD-7005983-0-0	A	PL	7005983-0-0					D	12-00074		
SHEET 1 OF 1				DIST.											

X