

FLOATING POINT  
SYSTEMS, INC.

**PROPRIETARY  
INFORMATION**

## ARRAY PROCESSOR SCHEMATICS

CUSTOMER NAME L. E. Med. System W/o # 764  
Schematics  
SERIAL #         
NAME OF HOST COMPUTER RDCP  
Book 1 of 2

NOTICE

The material in this manual is for information purposes only and is subject to change without notice.

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This document contains schematics, topologies, power supplies, wiring diagrams, etc.

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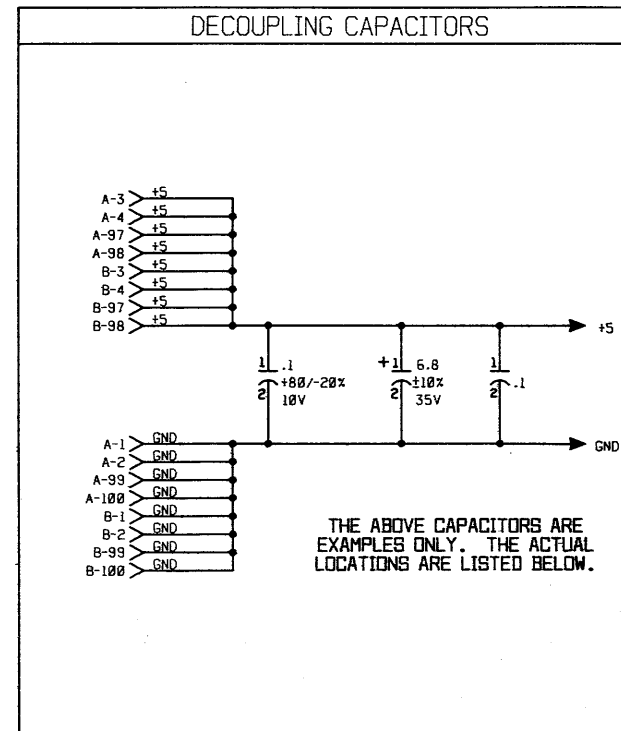
NOTE: UNLESS OTHERWISE SPECIFIED

- ALL RESISTOR VALUES ARE IN OHMS. DISCRETE RESISTORS ARE  $\pm 5\%$ , 1/4W. SIPS ARE  $\pm 2\%$ , .18W. DIPS ARE  $\pm 2\%$ , 1/4W.
- ALL CAPACITOR VALUES ARE IN MICROFARADS.  $+60\%$  -  $20\%$ , 58V.
- PULLUP RESISTORS ARE INDICATED BY THE SYMBOL AT APPROPRIATE LOCATIONS IN THE SCHEMATIC. THESE LOCATIONS ARE CALLED OUT ON SHEET ONE BY SHEET/ZONE.
- ALL POSSIBLE CAPACITOR LOCATIONS ARE LISTED. FOR ACTUAL CAPACITOR COUNT AND LOCATION INFORMATION, SEE THE ASSEMBLY DRAWING.
- NUMBERS IN PARENTHESES ON THE BLOCK DIAGRAM (SHEET 2) REFER TO SCHEMATIC SHEET NUMBERS.
- IC POWER PINS ARE:

IC TYPE	TOTAL PINS	+5V	GND
ALL	8	8	4
ALL	14	14	7
ALL	16	16	8
ALL	20	20	10
ALL	24	24	12
ALL	40	10	30

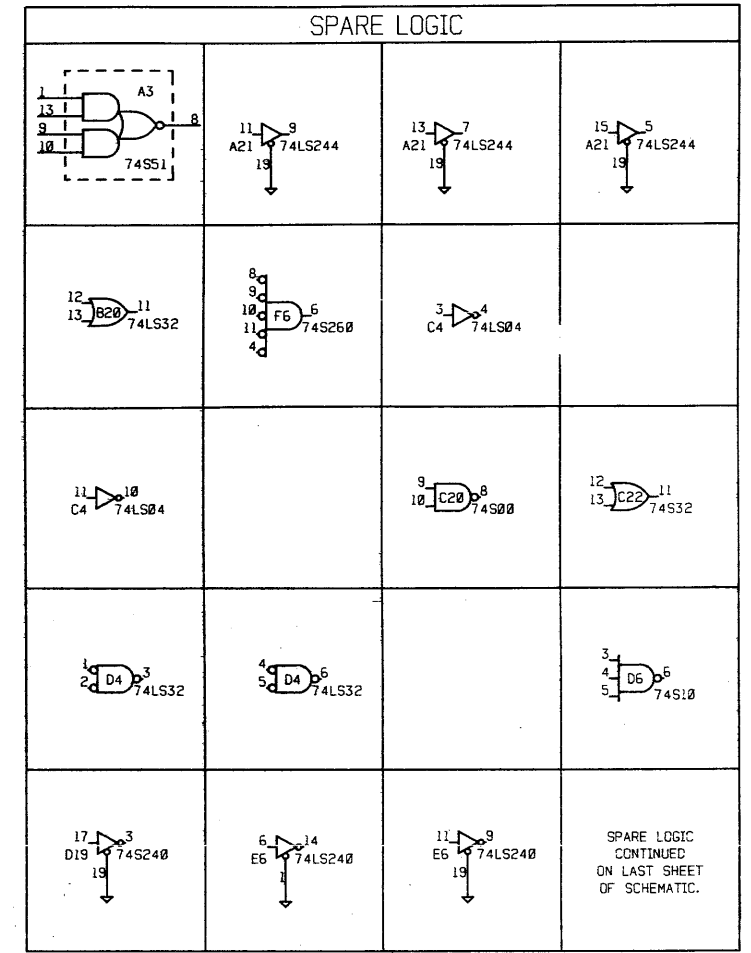
7 SCHEMATIC SHOWS ALL ETCH STRAPS. FOR ACTUAL STRAPPING, REFER TO ASSEMBLY DRAWING.

PULLUP RESISTORS					
PU1	PU2	PU3	PU4	PU5	PU6
3B3	7D7 17C3 15C2	8D7 15C4	9B8 18B6	9D5	10D7
PU7	PU8	PU9	PU10	PU11	PU12
14C5 14D6 14D7	11C4 10B2 15C1	12C4	12C2	13D7	13B3 13C3
PU13	PU14	PU15	PU16	PU17	PU18
16A7 17B5	16B6	17B5 17C7 17C8	17B4	18B1 18C4 18D5 18A2	18C5 18C8
PU19	PU20	PU21	PU22	PU23	
19C1	10A7 15B2 15C3	14B4 14B5 14B6 14B7	14B3 14C4 14D2	7B6	



### CAPACITOR LOCATIONS

VALUE	LOCATIONS
.1	A3C1, A4C1, A6C1, A20C1, A21C1, A22C1, B2C1, B3C1, B5C1, B8C1, B9C1, B11C1, B12C1, B13C1, B14C1, B16C1, B21C1, B22C1, C2C1, C5C1, C7C1, C9C1, C11C1, C12C1, C13C1, C14C1, C16C1, C18C1, C20C1, C22C1, D2C1, D4C1, D5C1, D8C1, D9C1, D11C1, D12C1, D13C1, D14C1, D16C1, D17C1, D20C1, D22C1, E4C1, E5C1, E7C1, E8C1, E9C1, E11C1, E12C1, E13C1, E14C1, E17C1, E18C1, E20C1, E21C1, F3C1, F4C1, F5C1, F7C1, F9C1, F11C1, F12C1, F14C1, F16C1, F17C1, F18C1, F20C1, F21C1, F22C1, G2C1, G3C1, G5C1, G7C1, G8C1, G9C1, G13C1, G14C1, G16C1, G18C1, G19C1, G21C1, G22C1, H2C1, H4C1, H5C1, H21C1, H22C1, J4C1, J6C1, J7C1, J8C1, J9C1, J11C1, J12C1, J13C2, J14C1, J15C2, J16C1, J17C1, J18C1, J20C1, J21C1, K3C1, K6C1, K7C1, K8C1, K9C1, K10C1, K11C1, K12C1, K13C1, K14C1, K16C1, K17C1, K18C1, K20C1, K21C1, K22C1, L2C1, L3C1, L5C1, L8C1, L8C2, L9C1, L9C2, L10C1, L10C2, L11C1, L11C2, L12C1, L12C2, L13C1, L13C2, L14C1, L15C1, L16C1, L17C1, L18C1, L20C1, L21C1, L22C1, M3C1, M7C1, M8C1, M9C1, M10C1, M10C2, M13C1, M14C1, M15C1, M15C2, M16C1, M17C1, M18C1, M19C1, M20C1, M21C1, M22C1, L7C1, M6C1, B17C1, K5C1
6.8	A5C1, A18C1, H19C1, M1C2, M11C1, M13C3, M22C2
.1 10V	M1C1, M11C2, M13C2, M22C3



### SPARE RESISTORS

DESCRIPTION	R#	PIN#
1K, 10 PIN SIP, PIN 1 TO +5V	C21R1 D3R1 E19R1 F13R1 G10R1 J13R1	9 6 10 10 2 7
1K, 16 PIN DIP	L3	3, 14 2, 15 8, 9
330/390, 6 PIN SIP, 5%, 1/8W (SEE SPARES)	B19R1	2, 5
390, 10 PIN SIP, PIN 1 TO +5V	G14R3	2
470, 10 PIN SIP, PIN 1 TO GND	G14R4	2

### REVISIONS

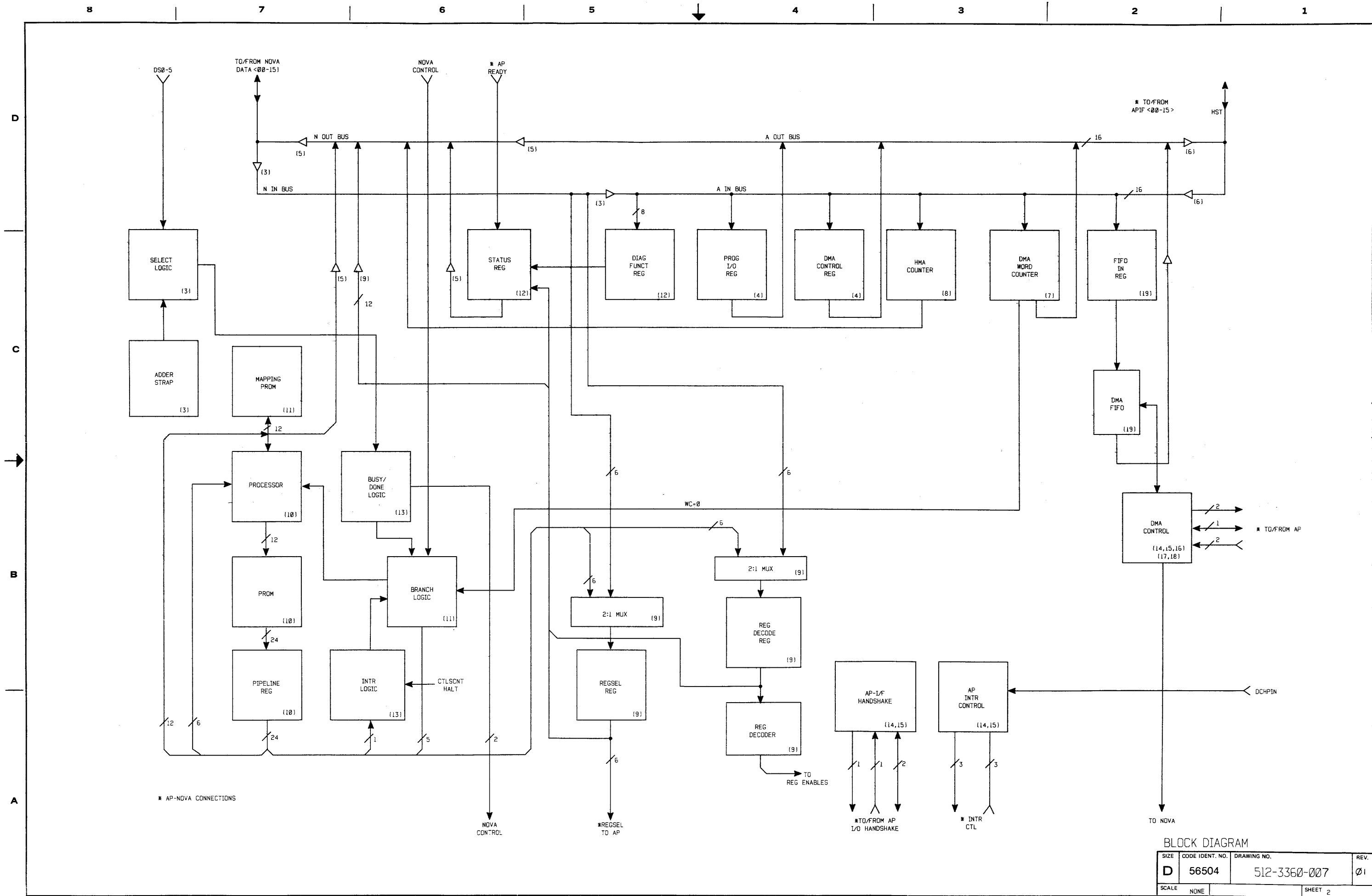
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
01	ECO 83380	ADD C20, SHT 13; LEVEL 2 RELEASE		C. WICKSON 8-4-83	JR 8-4-83

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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23480 Portland OR 97223
DRAWN BY: JEFF FARWELL	DATE: 7-26-83	
CHECK BY: S. RICHMOND	DATE: 8/1/83	DRAWING TITLE SCHEMATIC, ECB, 360, DB ADAPTER ECO#83435
MFG. ENG.	DATE:	
SIZE: D	CODE IDENT. NO.: 56504	DRAWING NO.: 512-3304-117
SCALE: NONE		REV. 01
		SHEET 1 OF 20

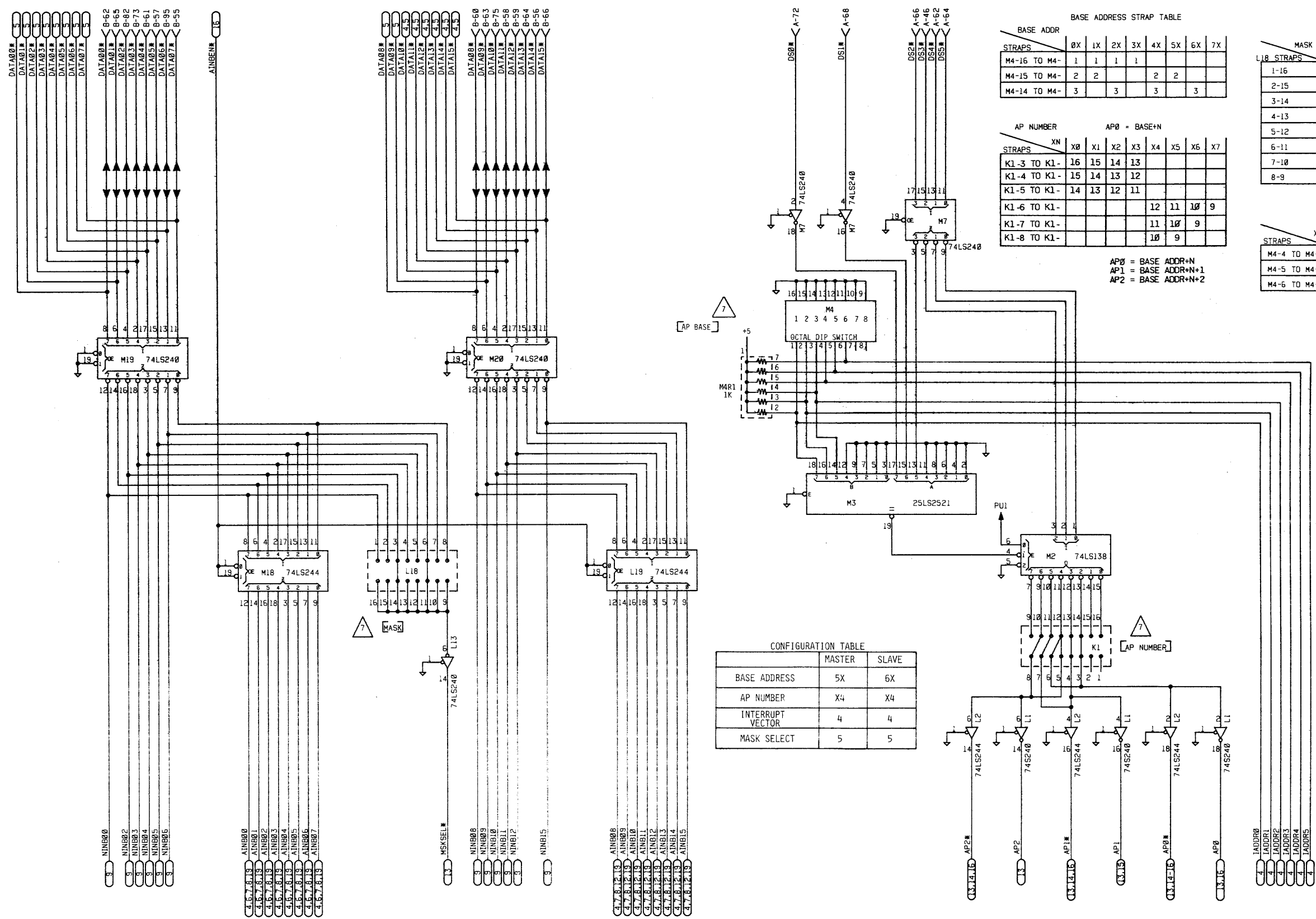
**IMPORTANT NOTE:** IGNORE DASHES IN PINOUTS (EXAMPLE: A-19). THEY ARE FOR PURPOSES OF CLARITY ONLY.



BLOCK DIAGRAM

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3360-007	01
SCALE	NONE	SHEET	2





BASE ADDRESS STRAP TABLE

BASE ADDR	0X	1X	2X	3X	4X	5X	6X	7X
M4-16 TO M4-	1	1	1	1				
M4-15 TO M4-	2	2			2	2		
M4-14 TO M4-	3		3		3		3	

AP NUMBER AP0 = BASE+N

STRAPS	XN	X0	X1	X2	X3	X4	X5	X6	X7
K1-3 TO K1-	16	15	14	13					
K1-4 TO K1-	15	14	13	12					
K1-5 TO K1-	14	13	12	11					
K1-6 TO K1-					12	11	10	9	
K1-7 TO K1-					11	10	9		
K1-8 TO K1-					10	9			

AP0 = BASE ADDR+N  
AP1 = BASE ADDR+N+1  
AP2 = BASE ADDR+N+2

MASK SELECT

MASK	0	1	2	3	4	5	6	7
1-16	ADD							
2-15		ADD						
3-14			ADD					
4-13				ADD				
5-12					ADD			
6-11						ADD		
7-10							ADD	
8-9								ADD

INTERRUPT VECTOR = BASE ADDR+X

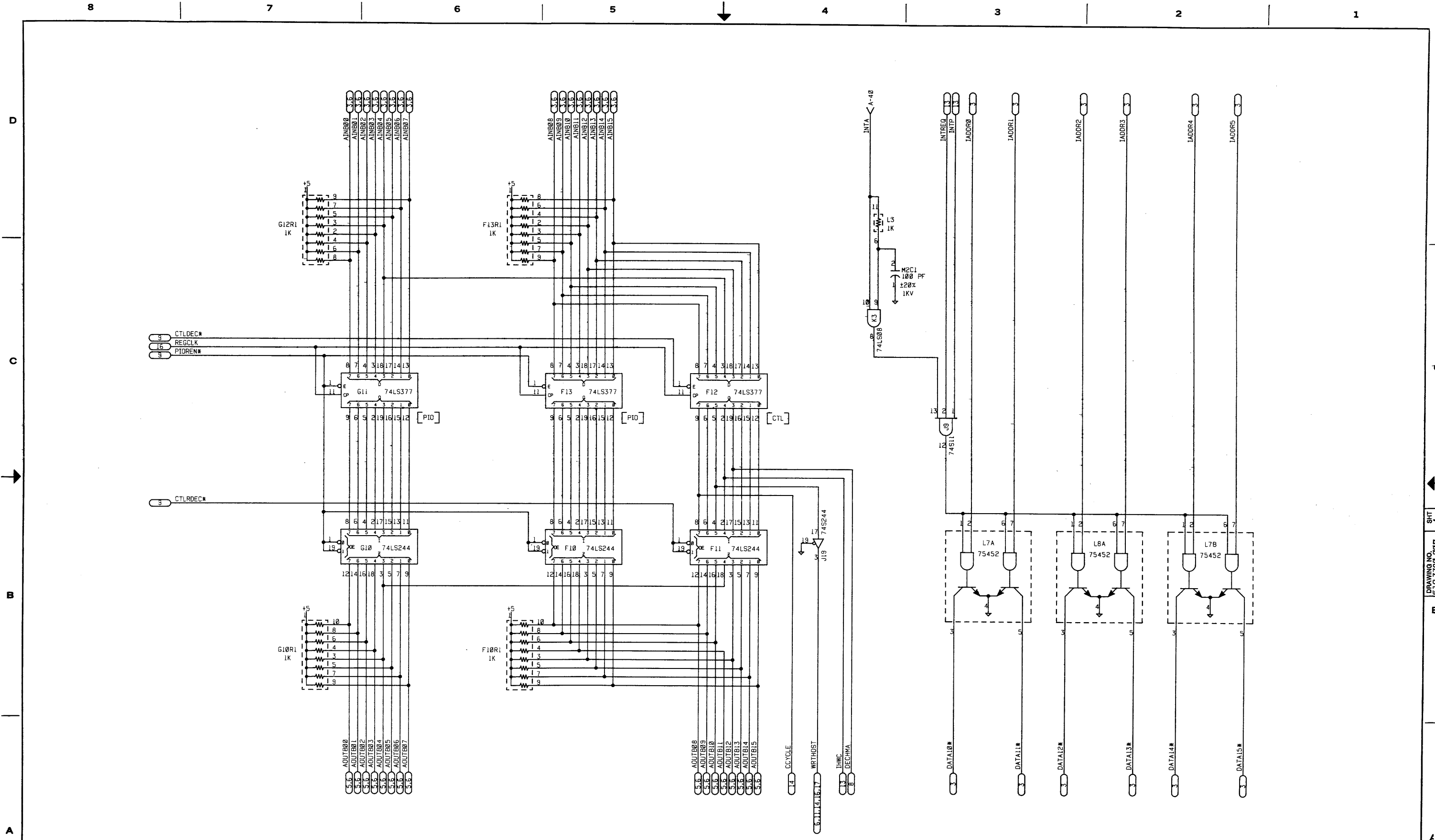
STRAPS	X	0	1	2	3	4	5	6	7
M4-4 TO M4-	13	13	13	13					
M4-5 TO M4-	12	12			12	12			
M4-6 TO M4-	11		11		11		11		

CONFIGURATION TABLE

	MASTER	SLAVE
BASE ADDRESS	5X	6X
AP NUMBER	X4	X4
INTERRUPT VECTOR	4	4
MASK SELECT	5	5

NIN BUS, NOVA ADDR  
SELECT AND DATA BUS

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3360-007	01
SCALE	NONE	SHEET	3



PIO AND CONTROL REGS

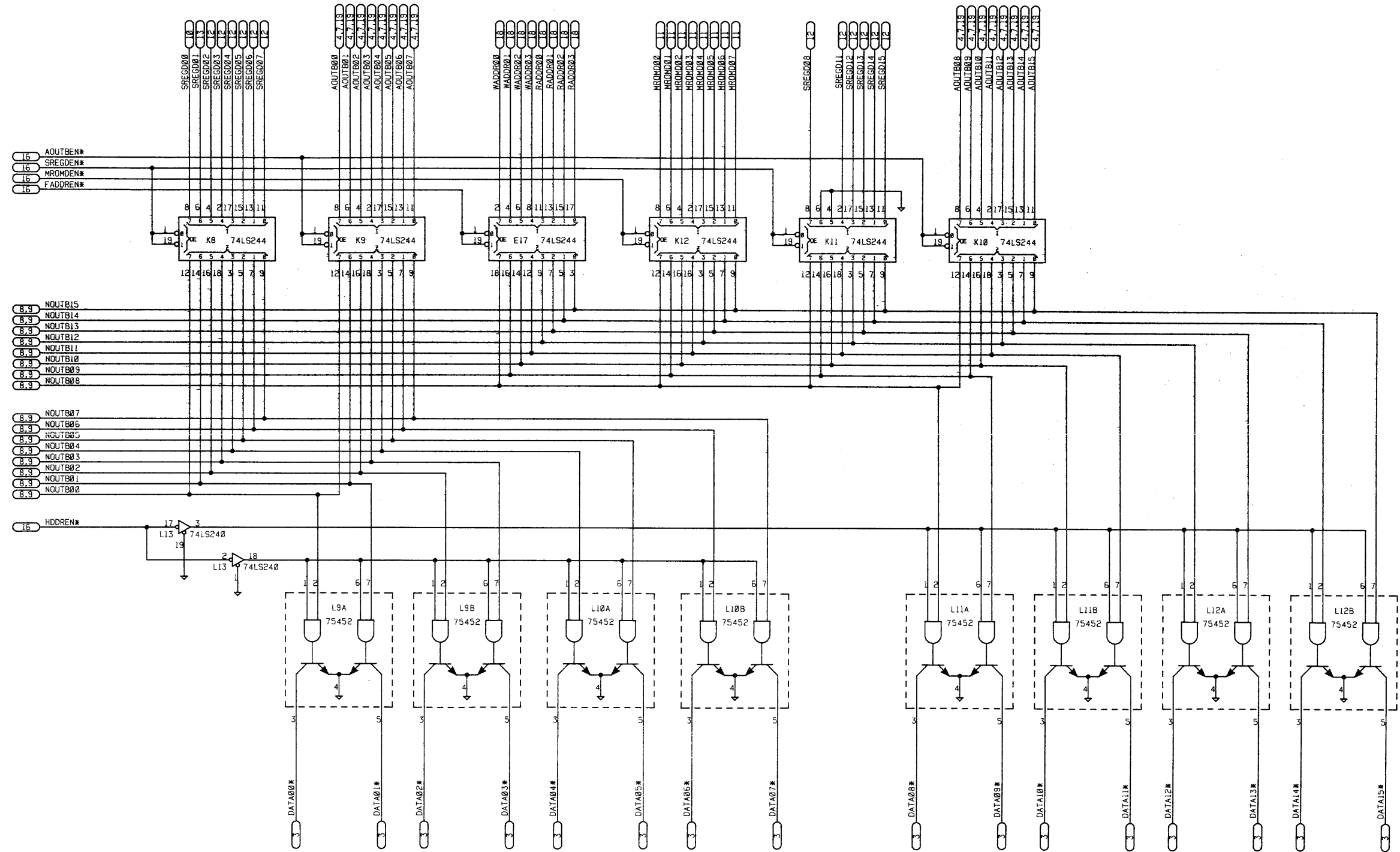
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SCALE	NONE	SHEET 4	

D

C

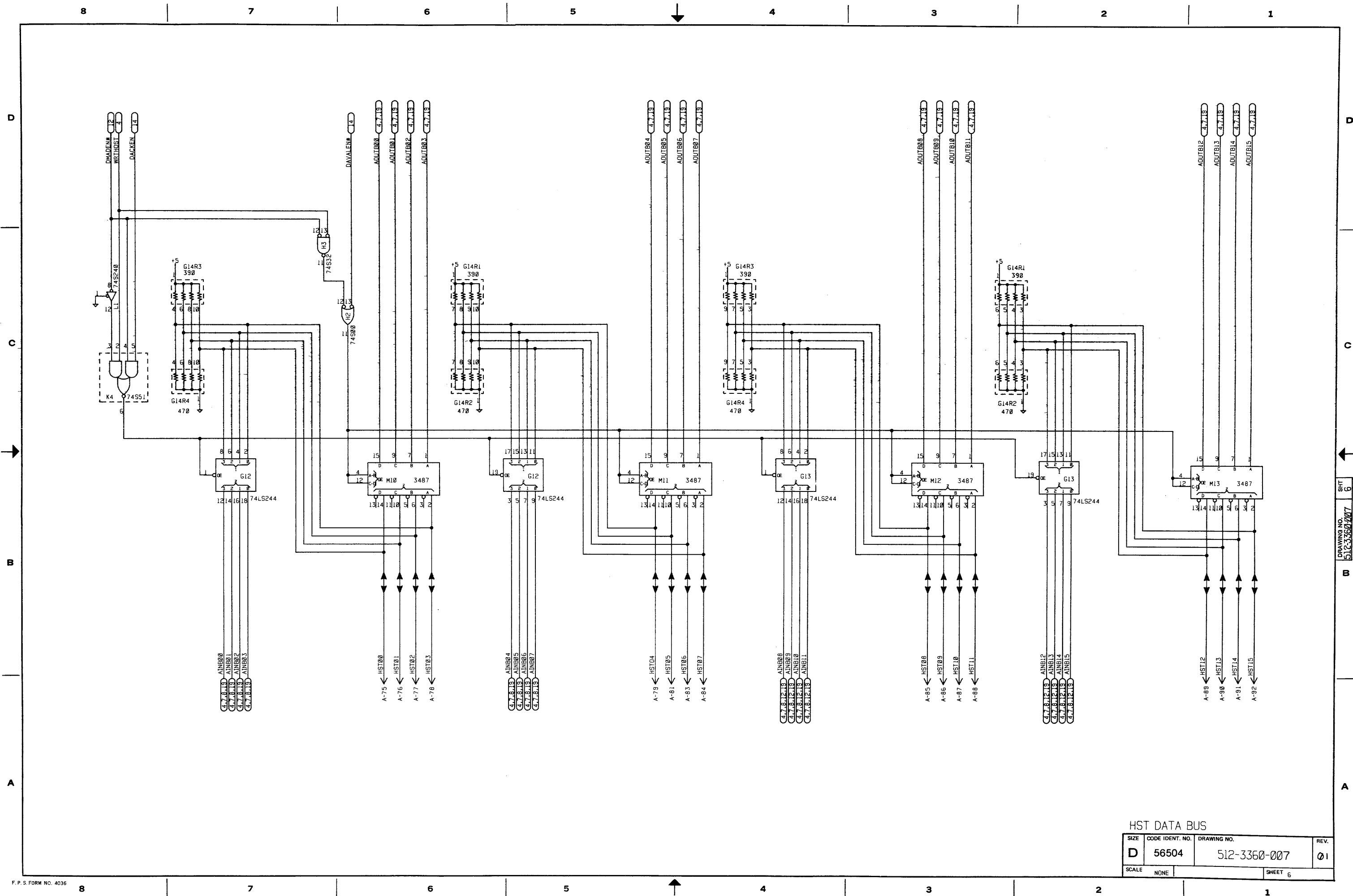
B

A

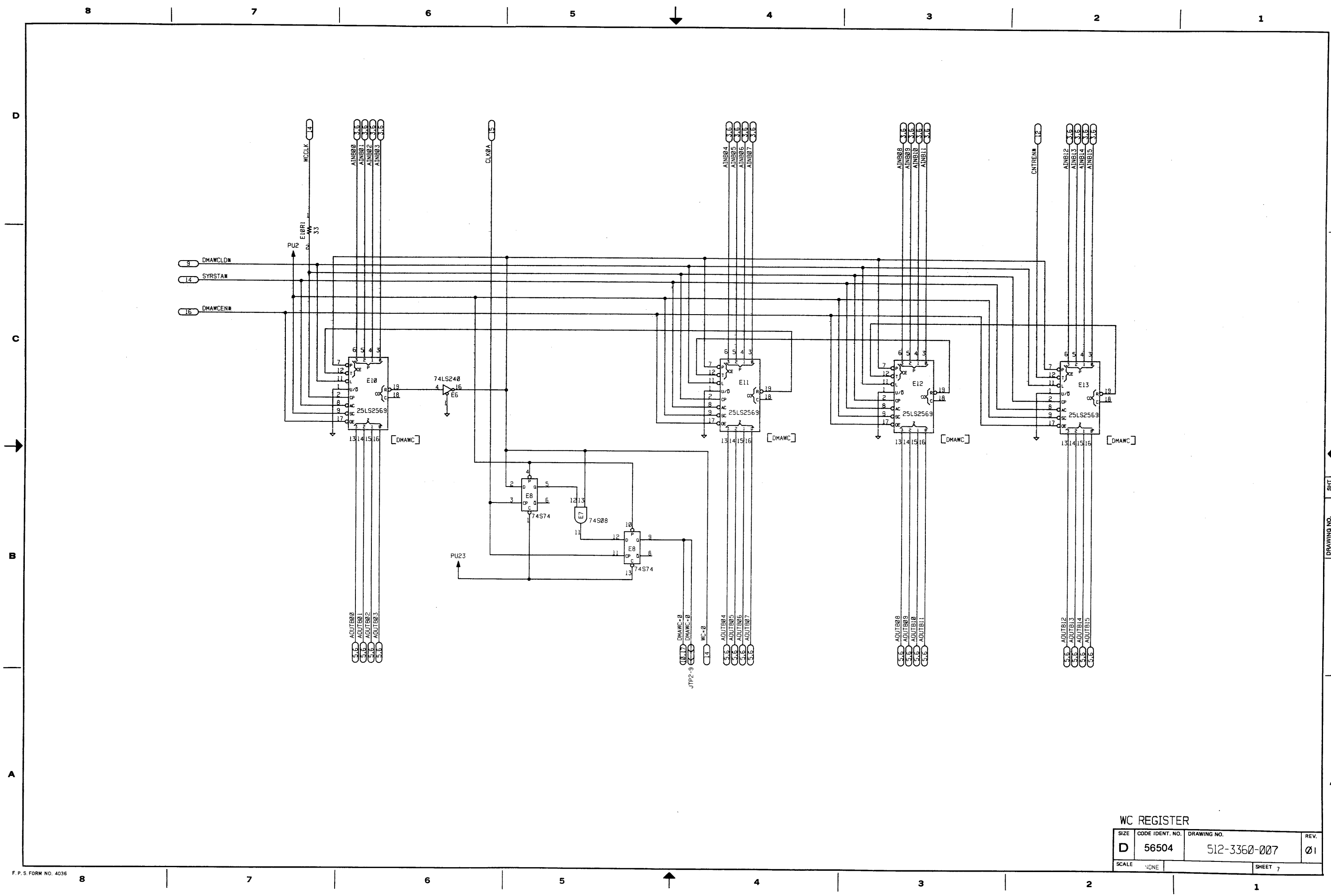


NOUT BUS AND NOVA DATA BUS

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SCALE	NONE	SHEET	5

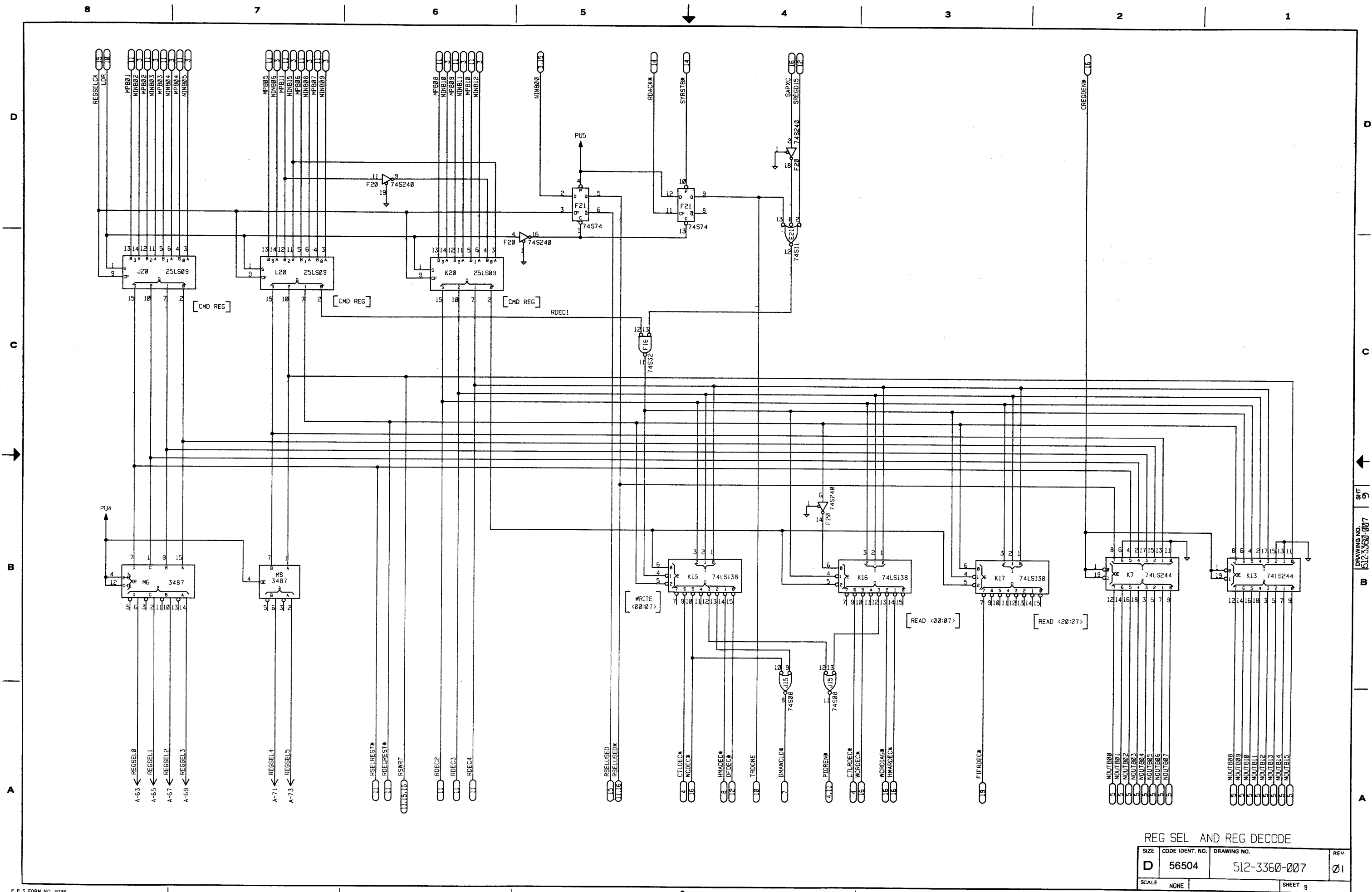


HST DATA BUS			
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SCALE	NONE	SHEET	6



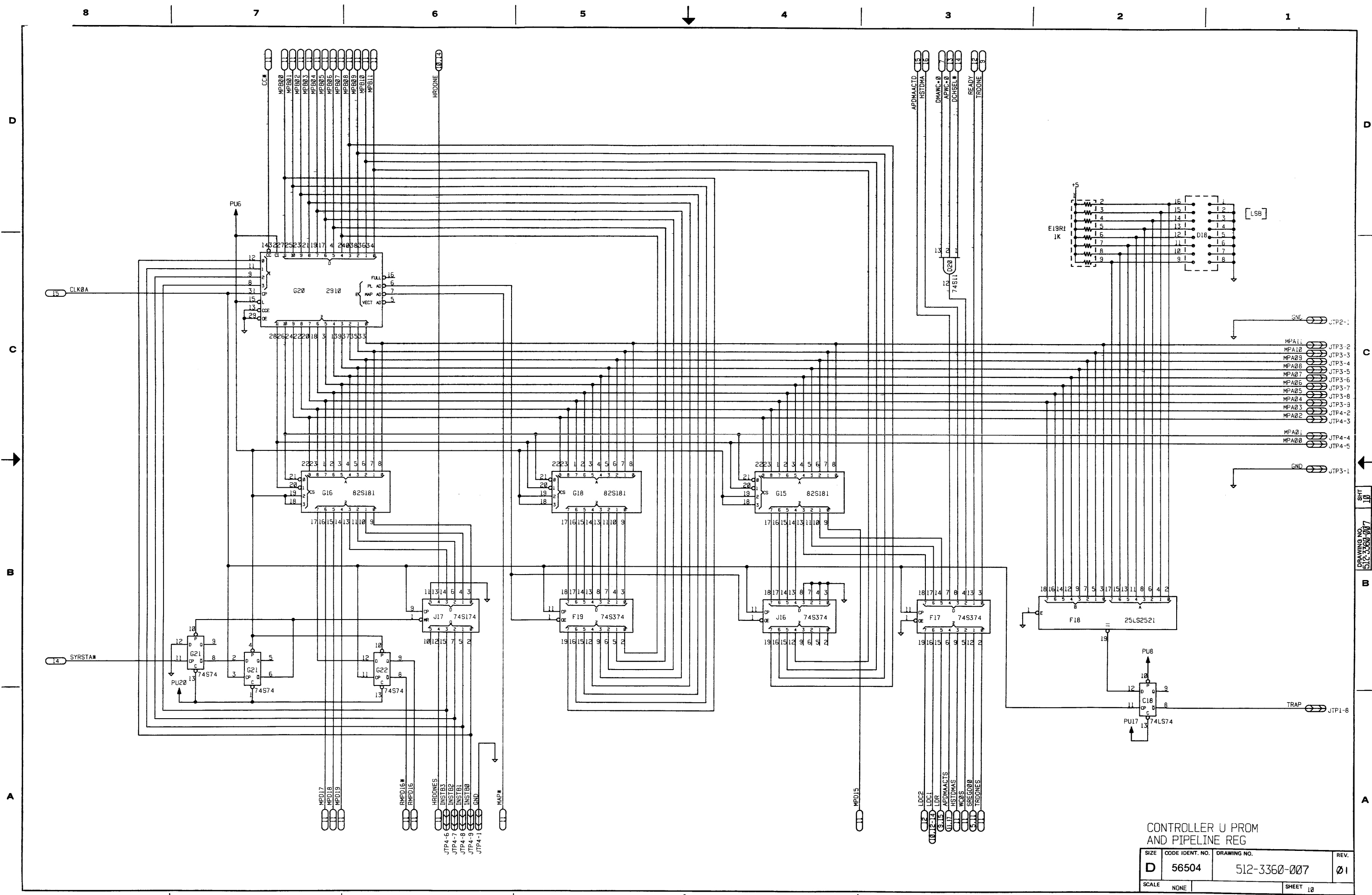
WC REGISTER			
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D	56504	512-3360-007	01
SCALE	NONE	SHEET 7	





REG SEL AND REG DECODE

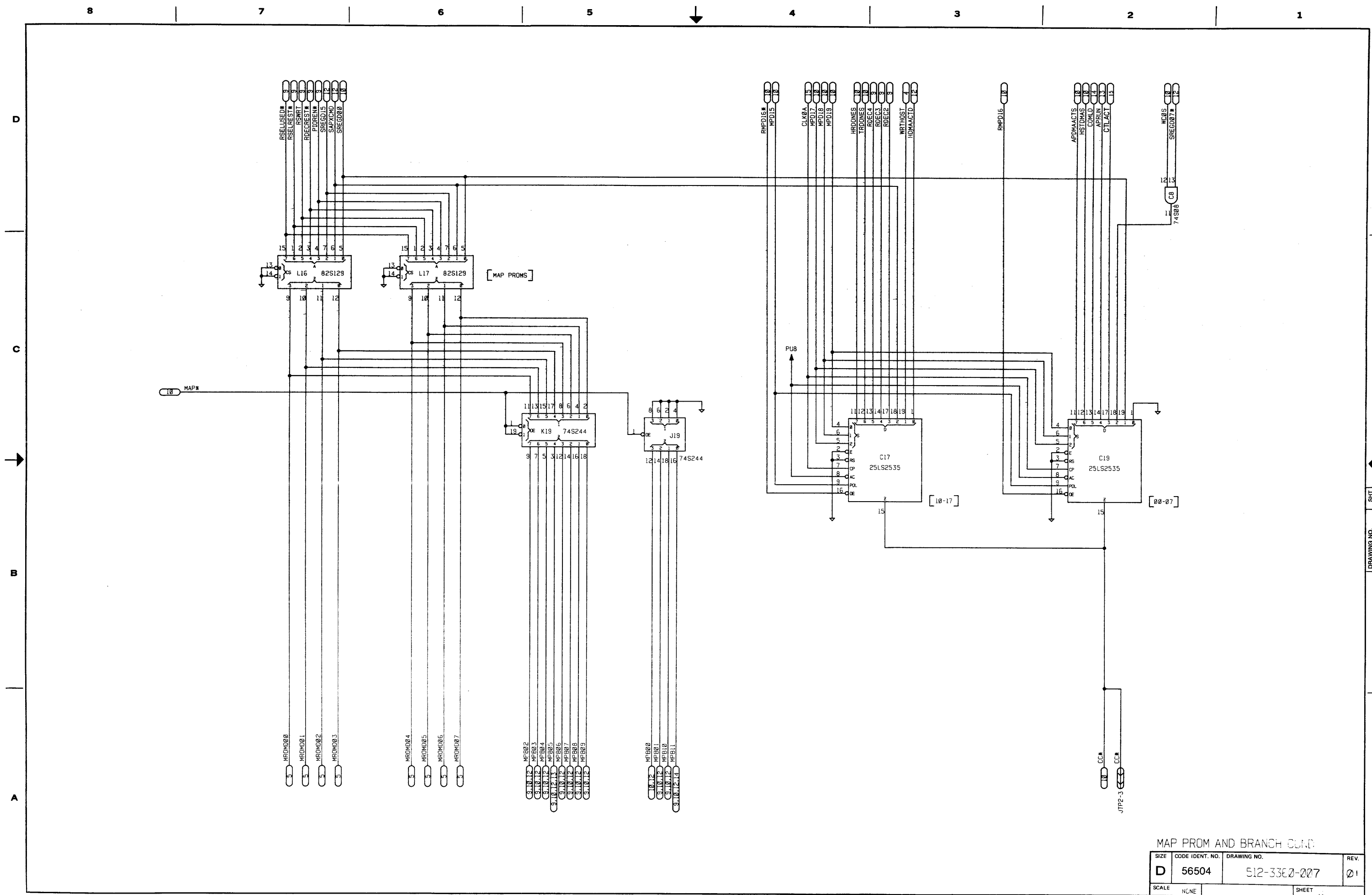
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D	56504	512-3360-007	01
SCALE	NONE	SHEET	9



CONTROLLER U PROM  
AND PIPELINE REG

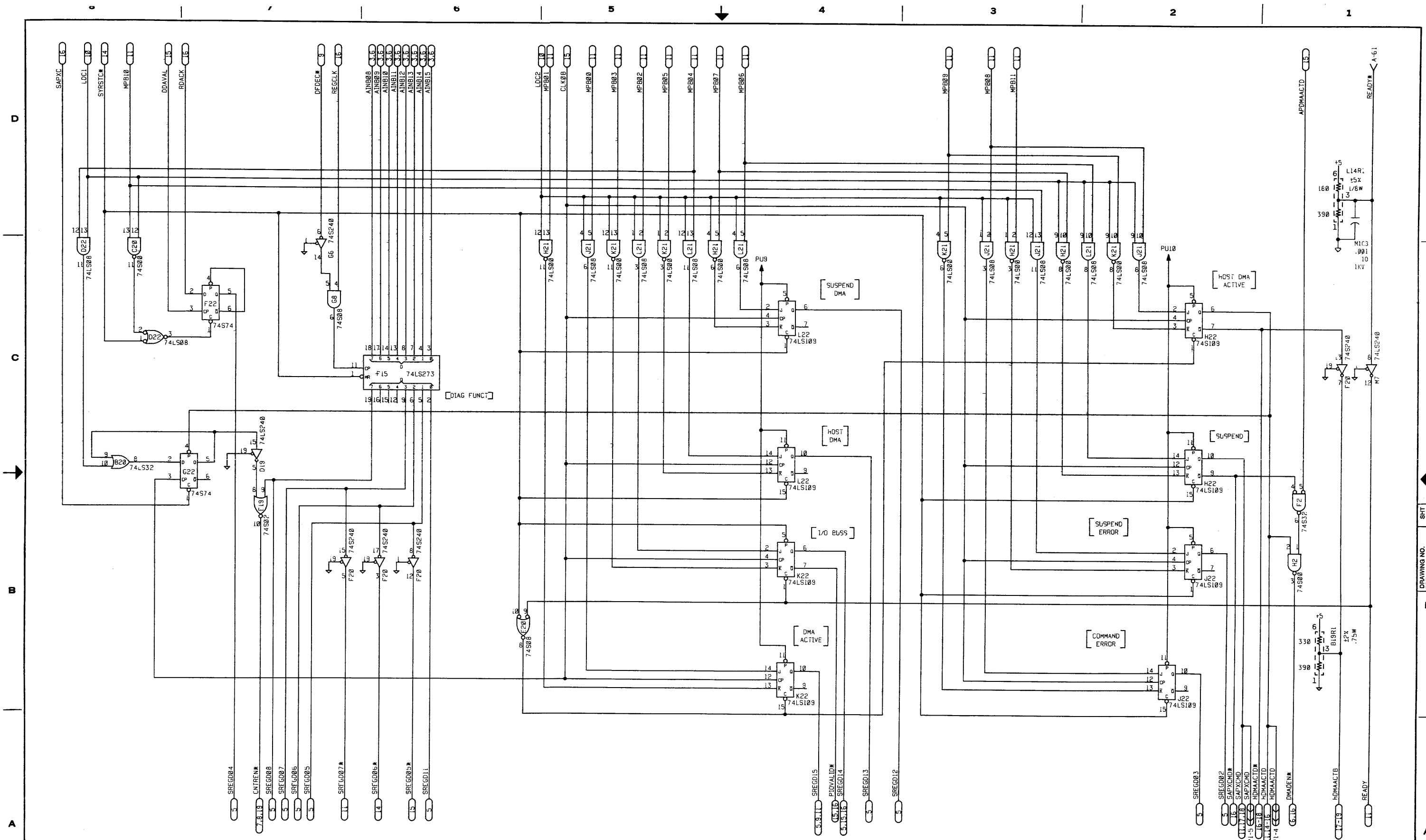
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D	56504	512-3360-007	01
SCALE	NONE	SHEET 10	





MAP PROM AND BRANCH COND.

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
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SCALE	NONE	SHEET	



DIAGNOSTIC FUNCTION AND STATUS REGISTERS

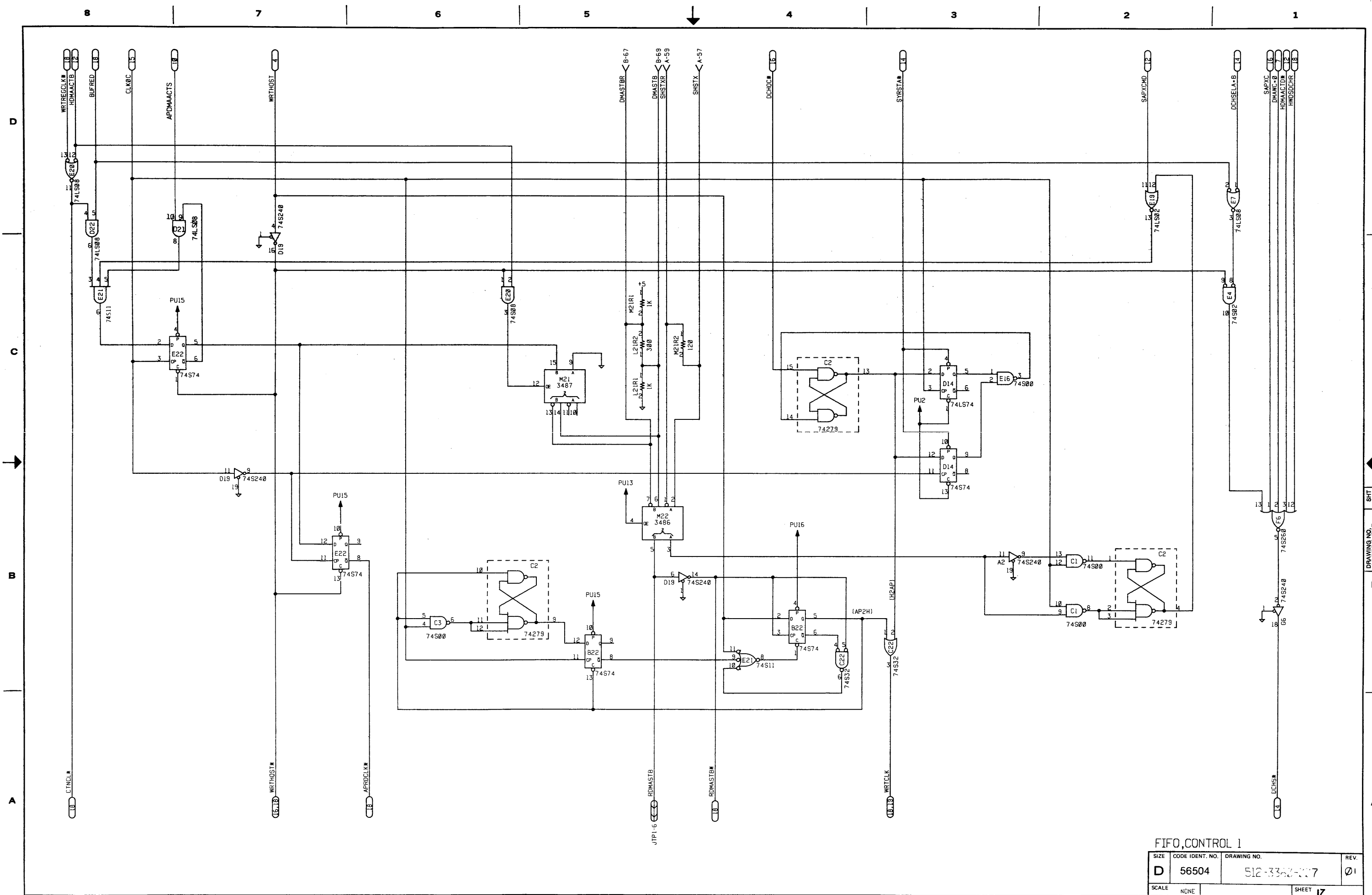
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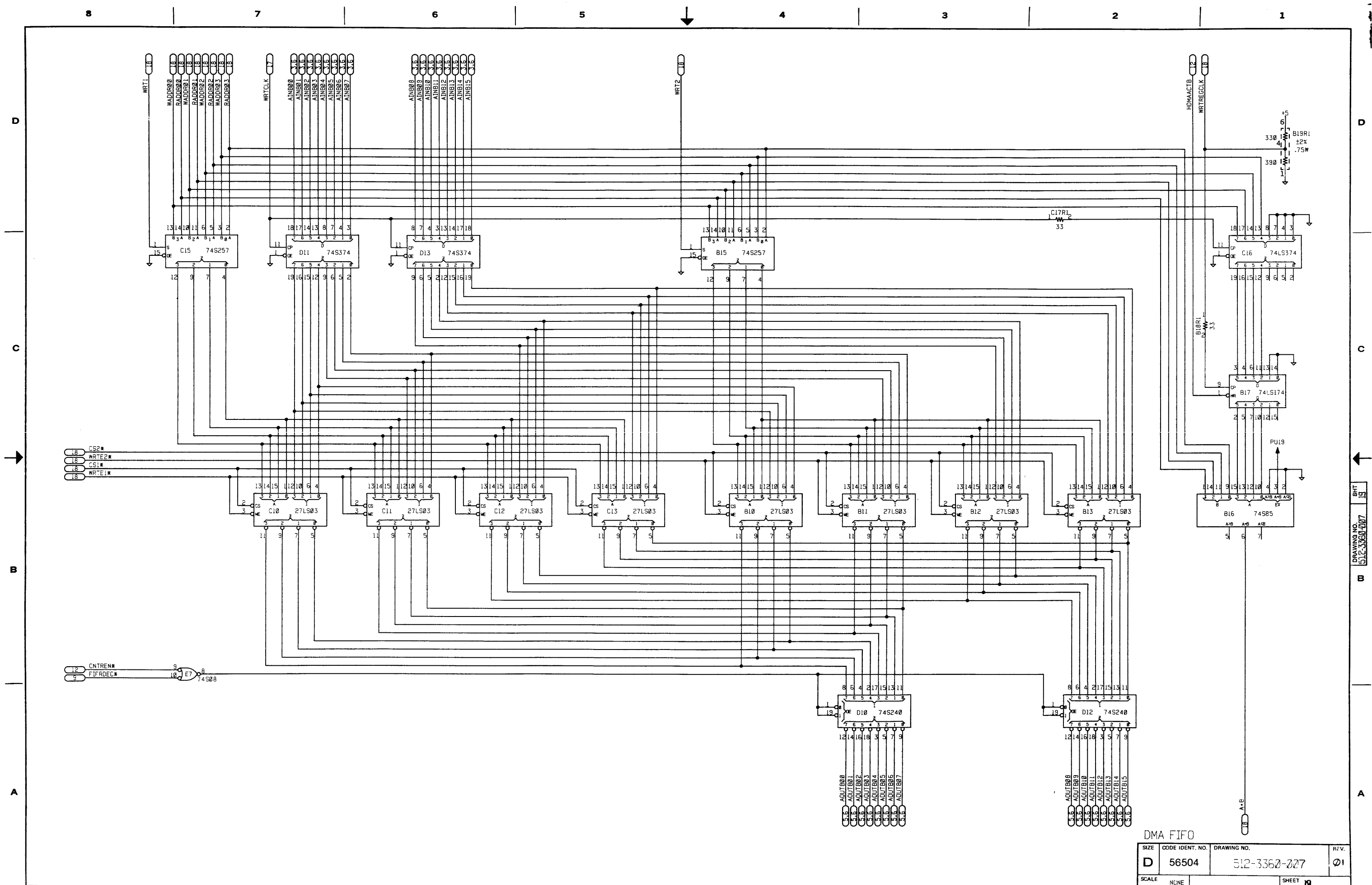




FIFO, CONTROL 1			
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D	56504	512-3362-1017	01
SCALE	NONE	SHEET	17







DMA FIFO

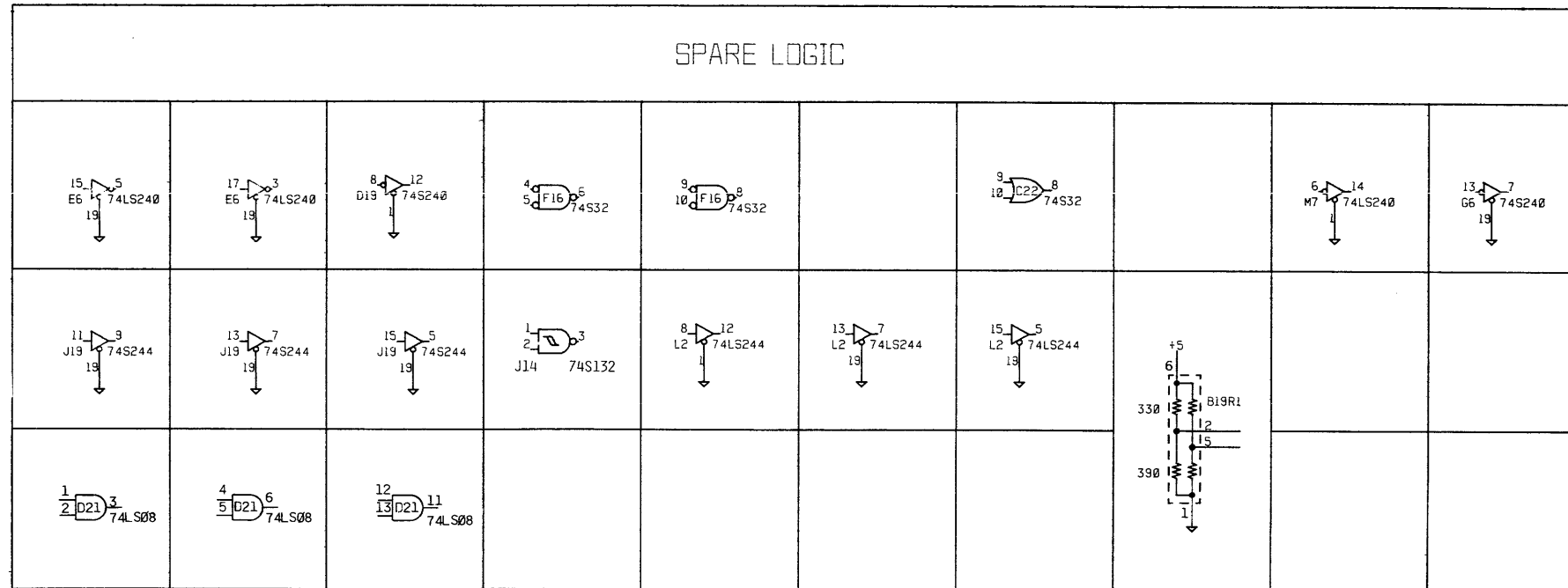
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D	56504	512-3360-227	01
SCALE	NONE	SHEET	19

JTP1	
PIN	SIGNAL
1	GND
2	EXTCKEN*
3	APDMACTD
4	HDMACTD
5	SAPXCHD
6	ROMASTB
7	US
8	TRAP
9	EXTCK
10	CLK00

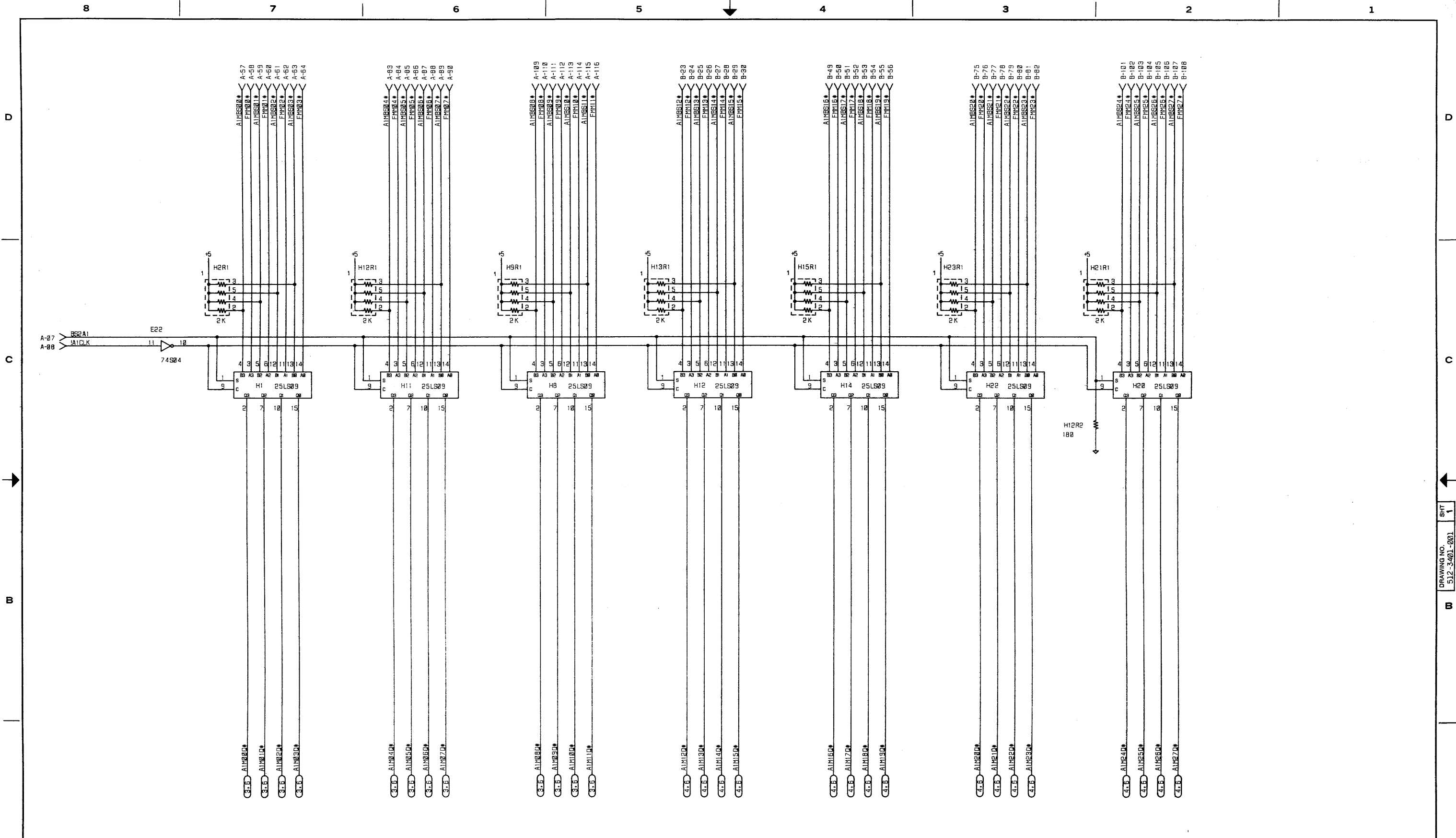
JTP2	
PIN	SIGNAL
1	GND
2	SYRST
3	CC*
4	CONTOUT
5	CTLACKB
6	DAVALB
7	RDACK
8	APWC=0
9	DMAWC=0
10	CLK00

JTP3	
PIN	SIGNAL
1	GND
2	MPA11
3	MPA10
4	MPA09
5	MPA08
6	MPA07
7	MPA06
8	MPA05
9	MPA04
10	CLK00

JTP4	
PIN	SIGNAL
1	GND
2	MPA03
3	MPA02
4	MPA01
5	MPA00
6	INSTB3
7	INSTB2
8	INSTB1
9	INSTB0
10	CLK00



SPARE LOGIC			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3360-207	01
SCALE: NONE		SHEET: 22	



REVISIONS				
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE
E	ECO 83156	CORR OUTPUT PINS 6, 7 & 9 ON A5, A9, A3 & B12, SHT 7		2/14/83

REVISIONS				
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE
A	ECO 80106	LEVEL 3 RELEASE		10/4/78
B	ECO 80392	LOGIC SYMBOL ERROR		11/1/78
C	ECO 81331	CORRECT DRAFTING ERROR		11/1/78
D	ECO 82409	CORRECT CONN E4,5,10,F8,9,10, H6,7 SHEET 3		11/2/82

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PROJ. ENG. <i>Steve Cook</i>	DATE 4-7-80
DRAWN BY <i>F.A.D.</i>	DATE 2/18/79
CHECK BY <i>Deborah Wilson</i>	DATE 4/1/80
MFG. ENG. <i>R.H. Colwell</i>	DATE 4-7-80

<b>FLOATING POINT SYSTEMS, INC.</b>		PO Box 23489 Portland OR 97223
DRAWING TITLE SCHEMATIC, ECB, 401-B FLOATING ADDER		
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. 512-3401-001
SCALE NONE	REV. E	
SHEET 1		OF 11

D

C

B

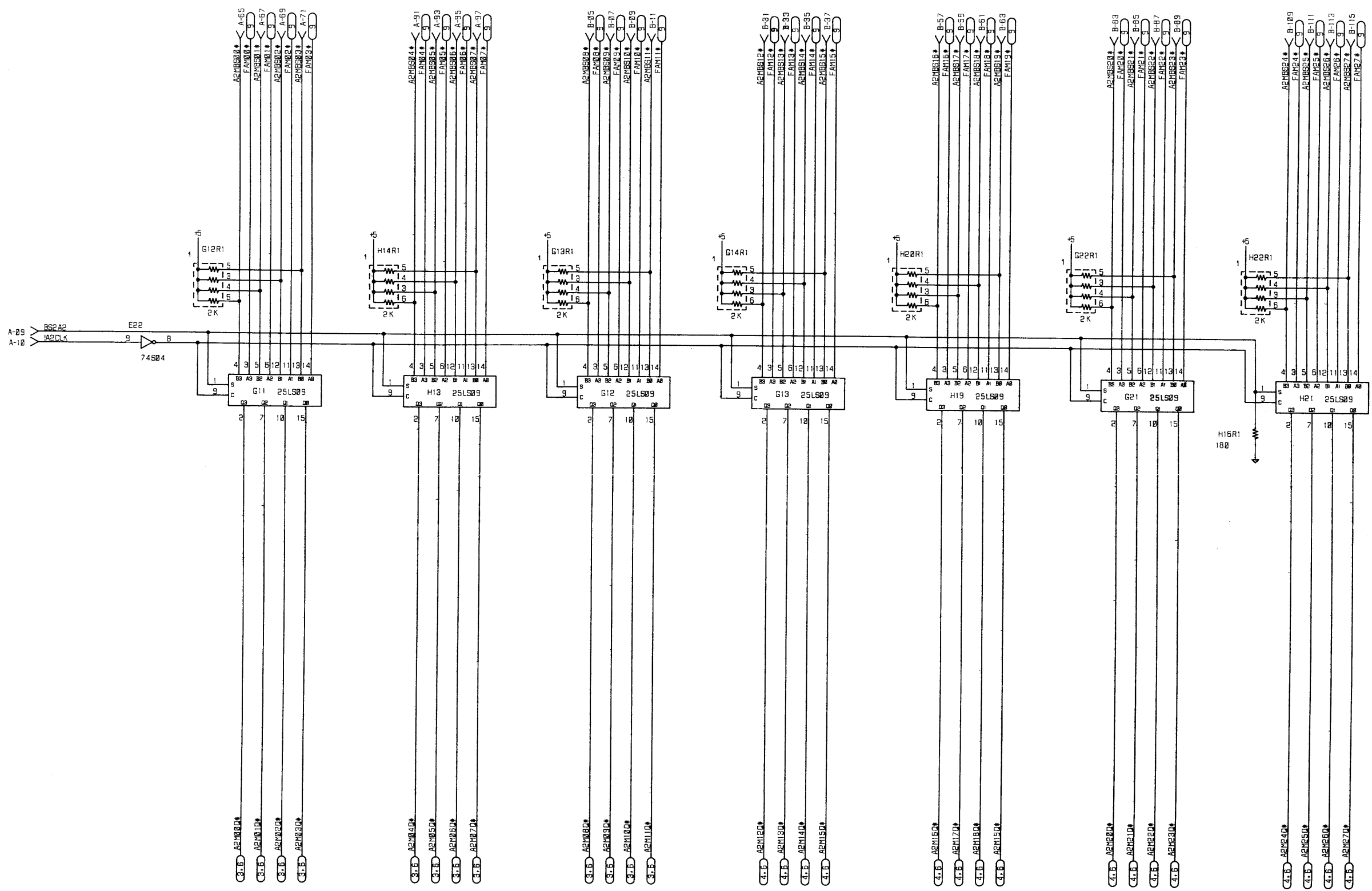
A

D

C

B

A



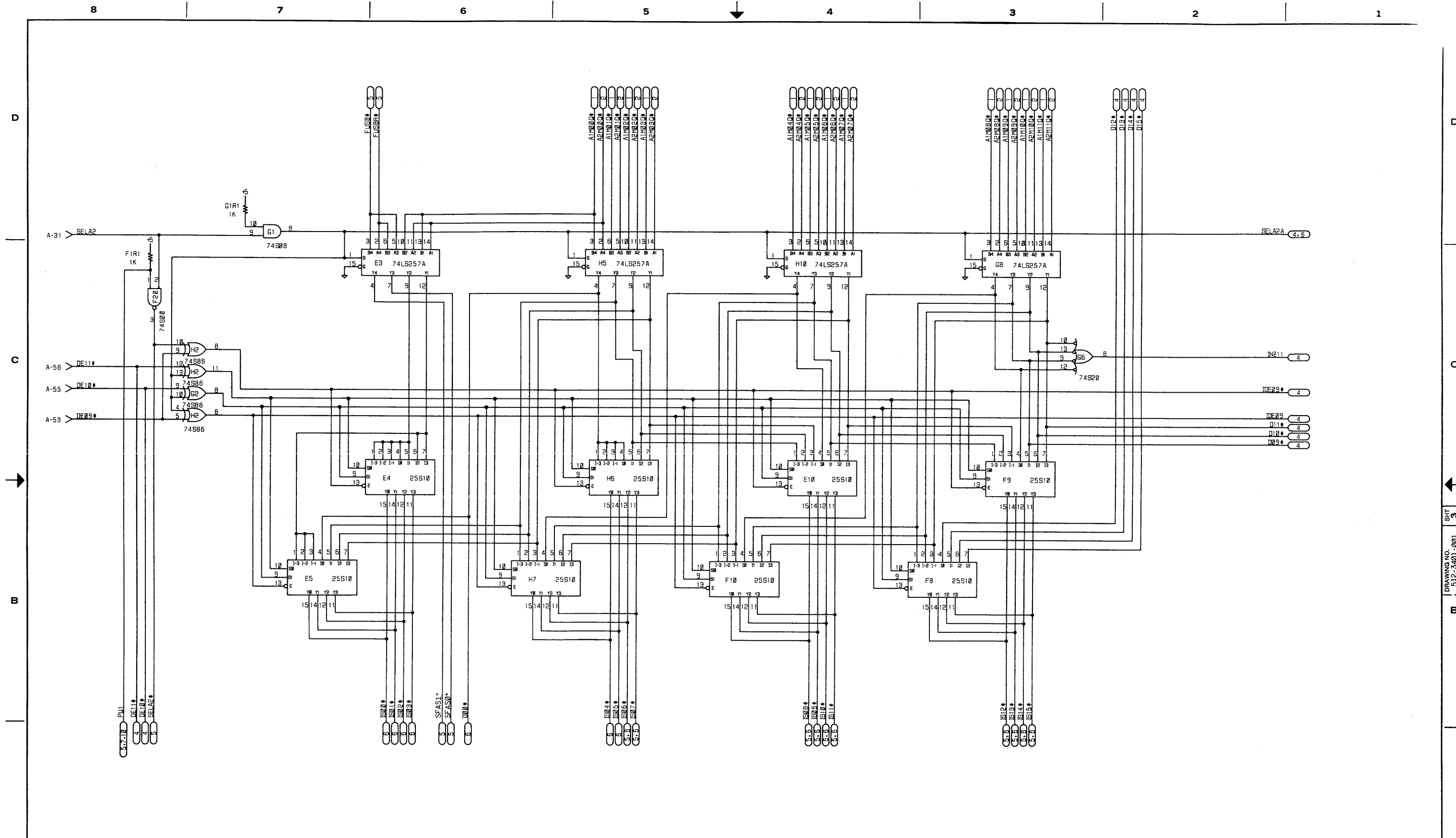
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C.R.O.	7/03/79
CHECK BY	DATE
MFG. ENG.	DATE

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SIZE	CODE IDENT. NO.	DRAWING NO.	REV.	
D	56504	512-3401-001	E	
SCALE	NONE	SHEET		2

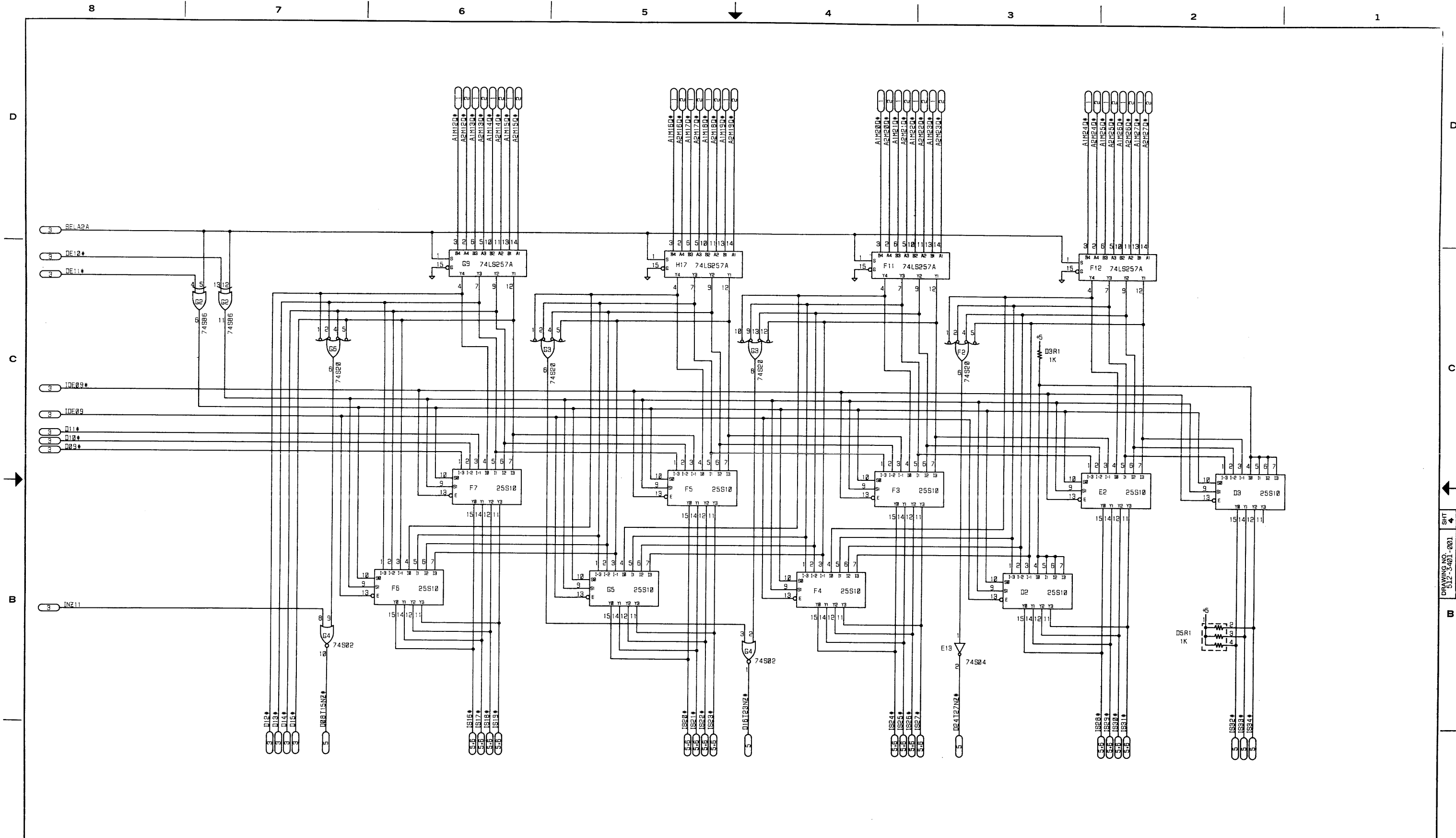


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CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		<b>SCHEMATIC, ECB, 401-B, FLOATING ADDER</b>
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	
SCALE <b>NONE</b>		DRAWING NO. <b>512-3401-001</b>
		REV. <b>E</b>
		SHEET <b>3</b>



REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

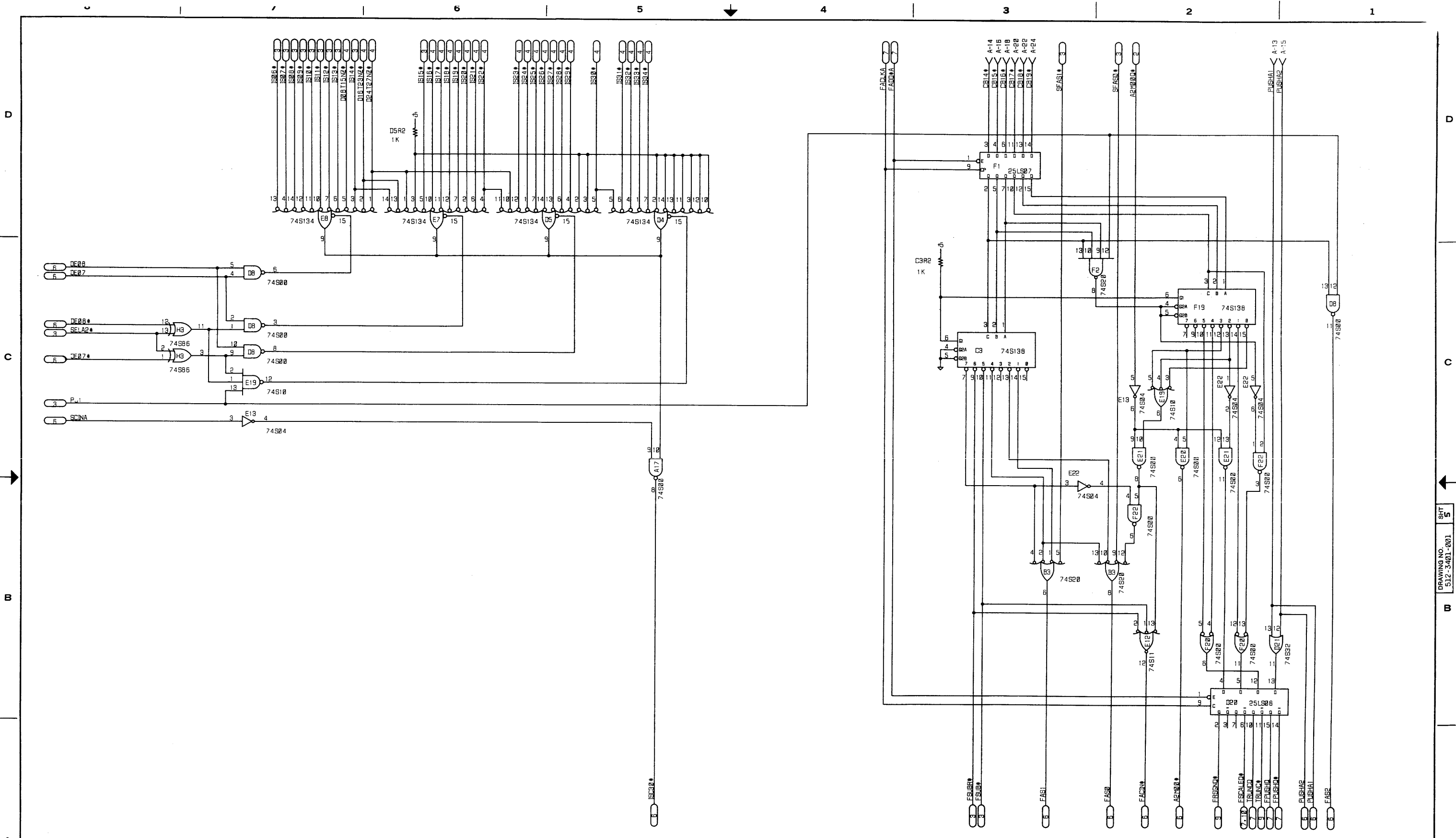
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PROJ. ENG.	DATE
DRAWN BY <b>C.R.O.</b>	DATE 7/29/79
CHECK BY	DATE
MFG. ENG.	DATE

<b>FLOATING POINT SYSTEMS, INC.</b>		PO Box 23489 Portland OR 97223	
DRAWING TITLE SCHEMATIC, ECB, 401-B, FLOATING ADDER			
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3401-001</b>	REV. <b>E</b>
SCALE NONE	SHEET 4		

DRAWING NO. 512-3401-001  
SHT 4

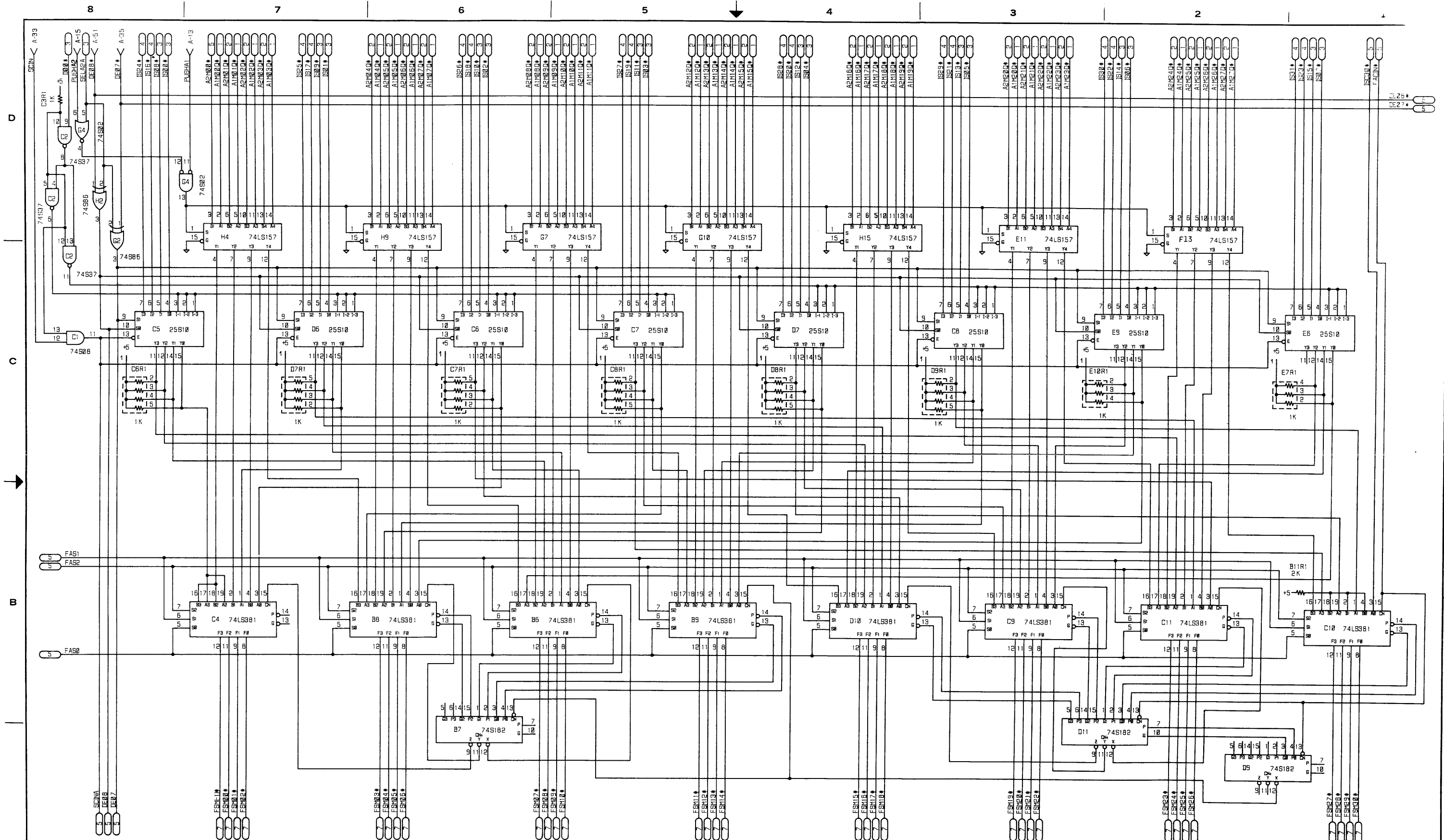


REVISIONS						
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK.	DATE
(This table is currently empty)						

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DRAWN BY <b>C.A.O.</b>	DATE <b>7/23/79</b>		
CHECK BY	DATE		
MFG. ENG.	DATE		
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3401-001</b>	REV. <b>E</b>
SCALE NONE		SHEET <b>5</b>	



REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
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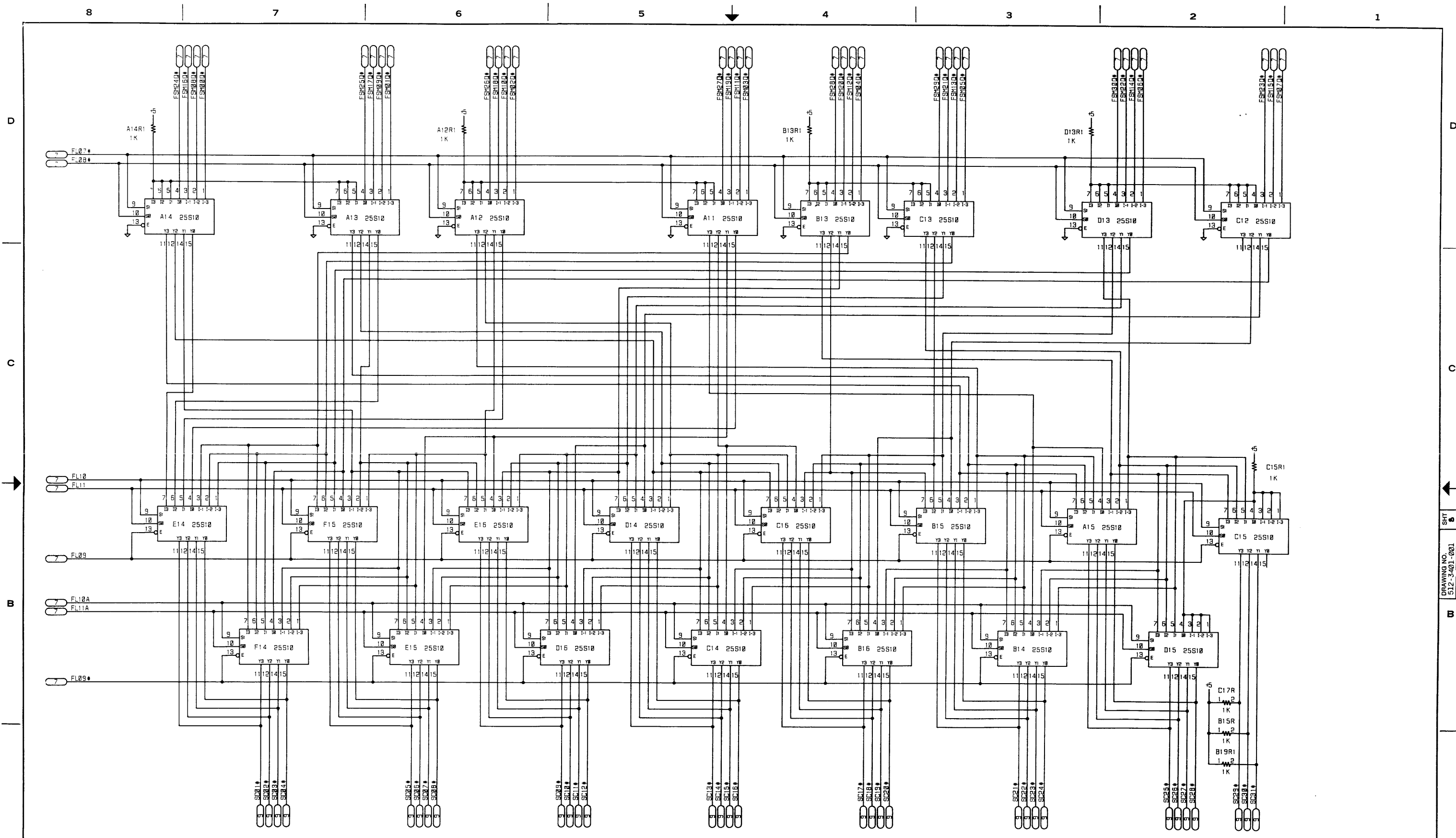
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DRAWN BY <b>C.R.O.</b>	DATE 7/23/79	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		SCHEMATIC, ECB, 401-B, FLOATING ADDER
SIZE	CODE IDENT. NO.	
D	56504	
DRAWING NO.		512-3401-001
SCALE NONE		
SHEET		6







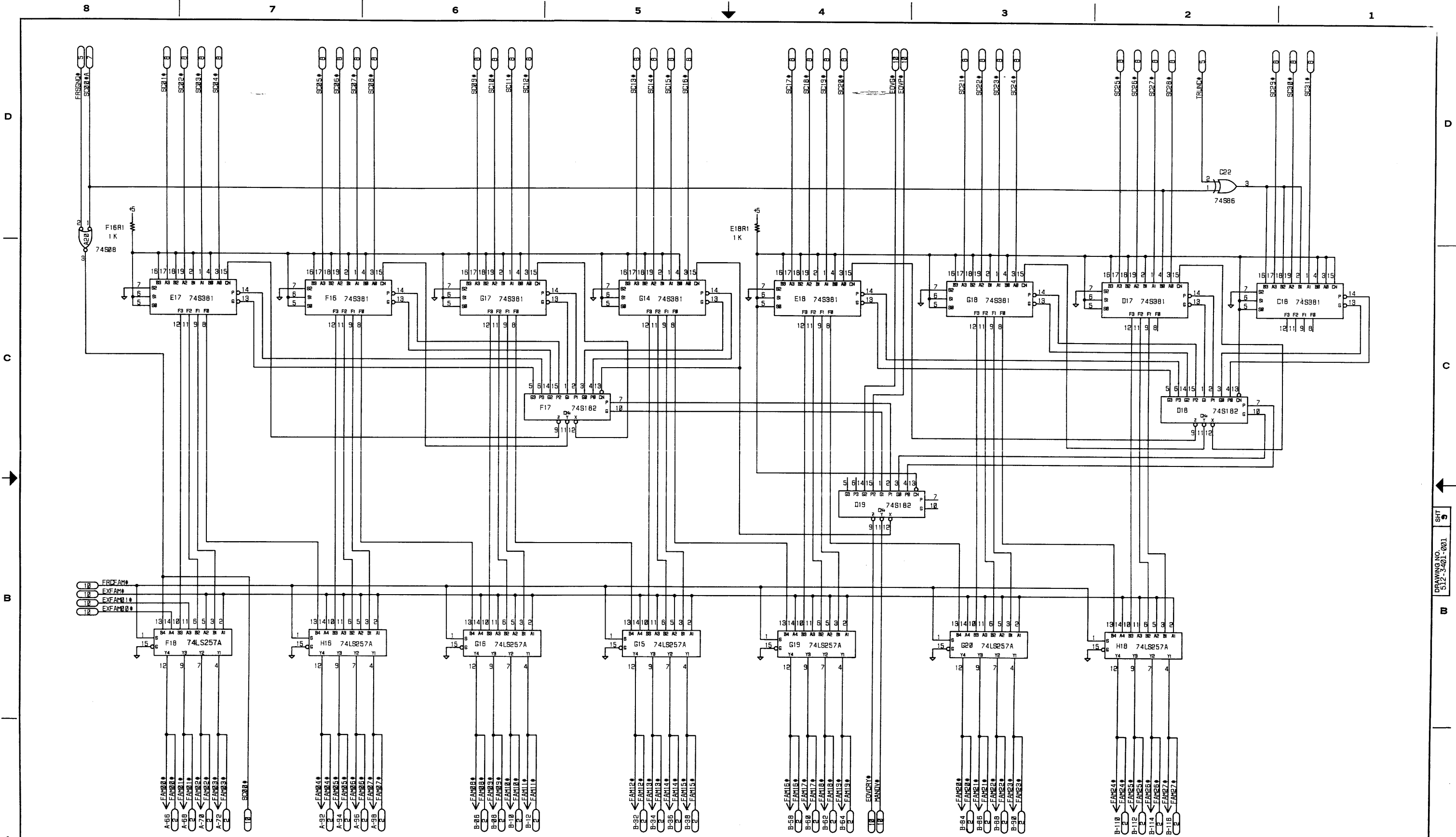
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PROJ. ENG.	DATE
DRAWN BY <b>C.A.O.</b>	DATE 7/23/79
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MFG. ENG.	DATE

<b>FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23489 Portland OR 97223	
DRAWING TITLE	
SCHEMATIC, ECB, 401-B, FLOATING ADDER	
SIZE <b>D</b>	CODE IDENT. NO. 56504
DRAWING NO. 512-3401-001	REV. E
SCALE NONE	SHEET 8



REVISIONS				
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE

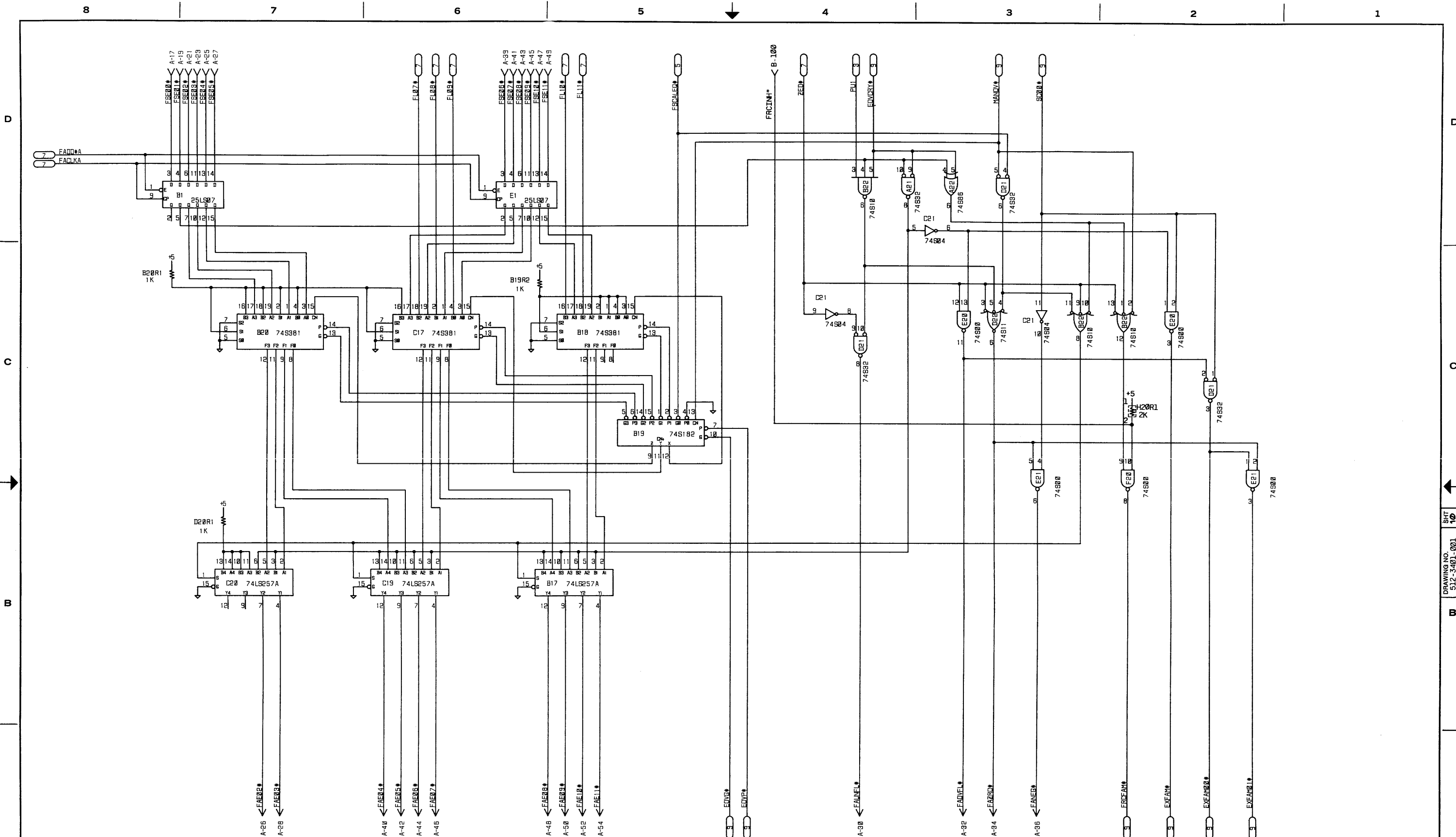
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DRAWN BY	DATE		
CHECK BY	DATE		
MFG. ENG.	DATE		
DRAWING TITLE		SCHEMATIC, ECB, 401-B, FLOATING ADDER	
SIZE	CODE IDENT. NO.		
D	56504	DRAWING NO.	REV.
SCALE NONE	512-3401-001	9	E

DRAWING NO. 512-3401-001

SHEET 9

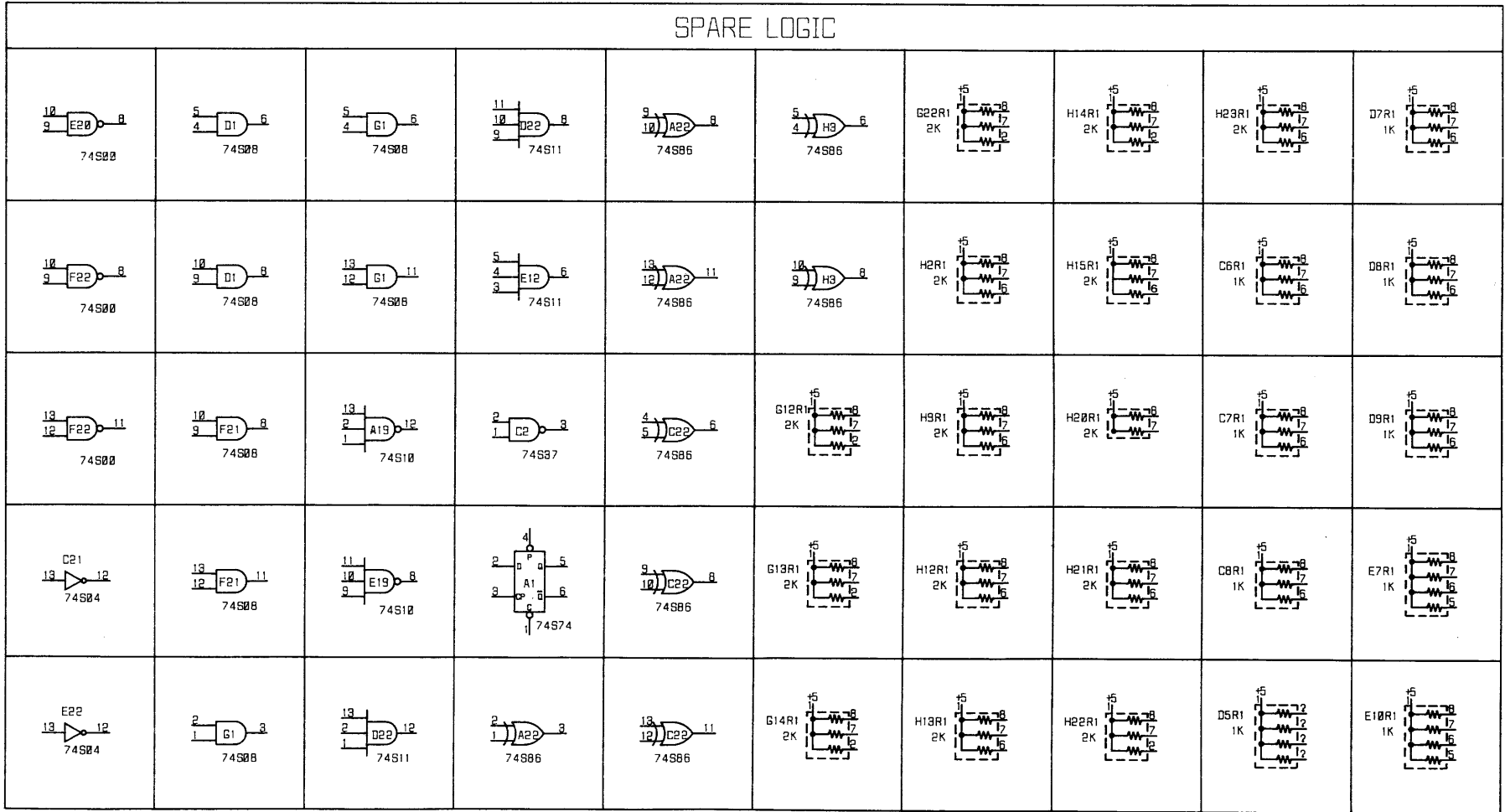
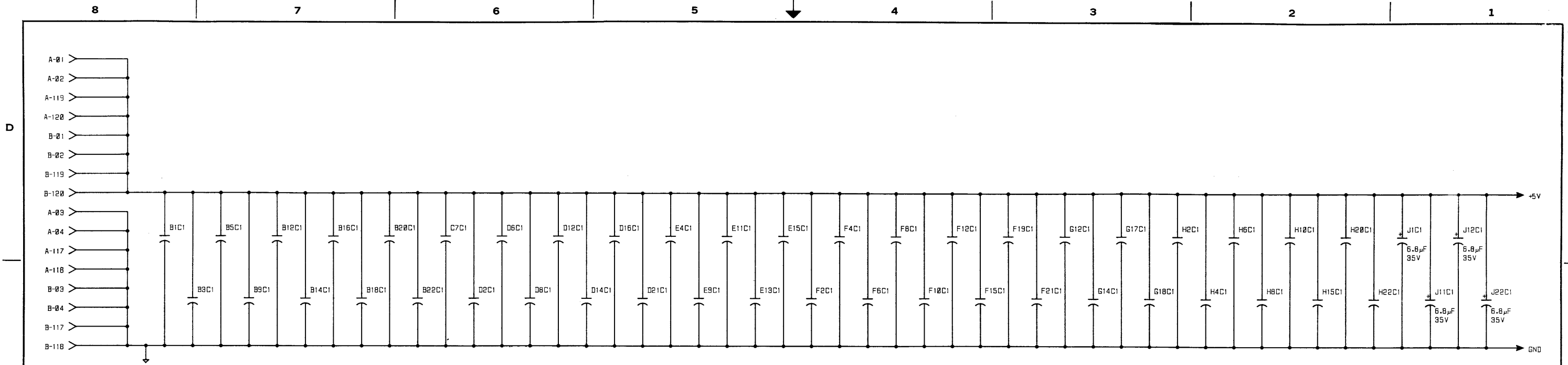


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REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

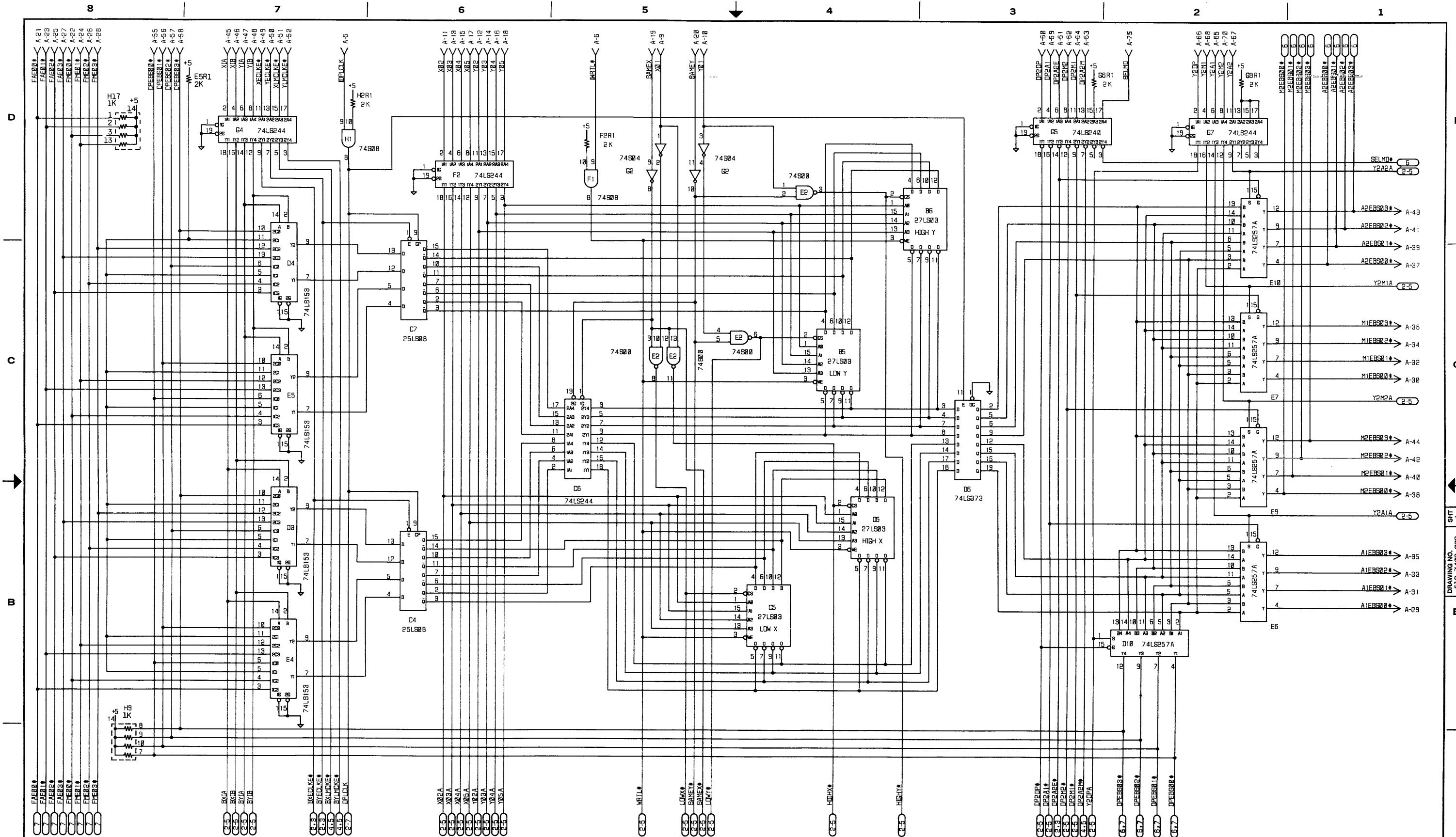
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DRAWN BY: <b>C.F.O.</b>	DATE: <b>7/23/73</b>	
CHECK BY:	DATE:	
MFG. ENG.	DATE:	DRAWING TITLE: <b>SCHEMATIC, ECB, 401-B, FLOATING ADDER</b>
SIZE: <b>D</b>	CODE IDENT. NO.: <b>56504</b>	DRAWING NO.: <b>512-3401-001</b>
SCALE: <b>NONE</b>	SHEET <b>18</b>	



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REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE			CHK. / DATE	DRAWING TITLE	SIZE	CODE IDENT. NO.
						<b>SCHEMATIC, ECB, 401-B, FLOATING ADDER</b>	<b>D</b>	<b>56504</b>	<b>512-3401-001</b>	<b>E</b>
							SCALE NONE			SHEET 11

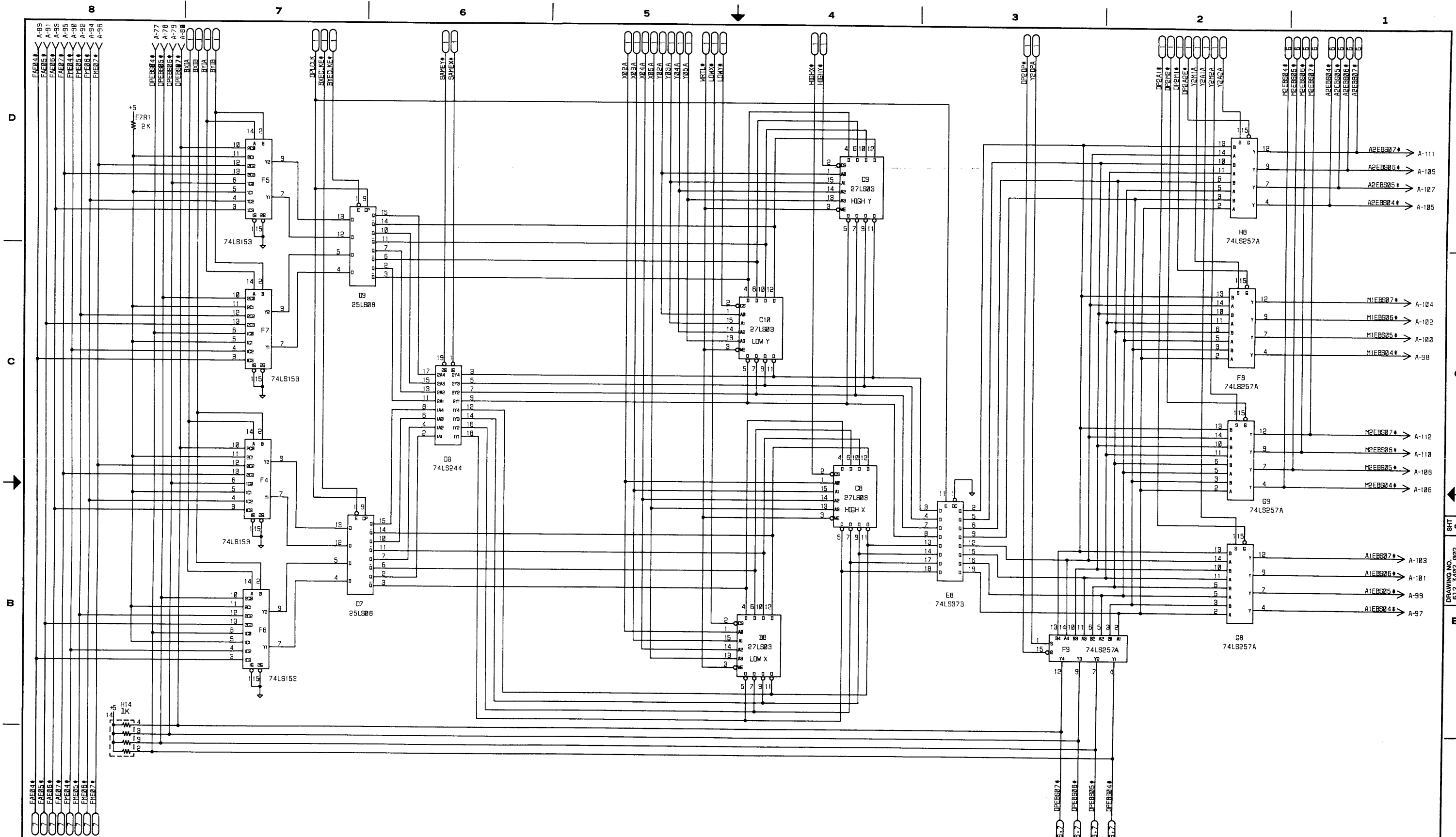


REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
01	EN #41	INITIAL LEVEL 2 RELEASE			
A	ECO 80063	LEVEL 3 RELEASE			
B	ECO 80259	ADD RESISTOR PULLUPS			
C	ECO 80505	CORRECT DRAFTING ERROR			
D	ECO 83157	UPDATE SCHEMATIC			

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PROJ. ENG. MICHAEL STANBRO	DATE 8-1-79	<b>FLOATING POINT SYSTEMS, INC.</b> PO Box 23488 Portland OR 97223
DRAWN BY <b>C.R.O.</b>	DATE 7-7-79	
CHECK BY RAY WILLIAMS	DATE 7-31-79	DRAWING TITLE <b>SCHEMATIC ECB</b> <b>DATA PAD LEFT (EXPONENT BITS 0-3)</b>
MEG. ENG. Michael Art Baker	DATE 8-15-79	
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3402-002</b>
SCALE NONE	SHEET 1 OF 8	

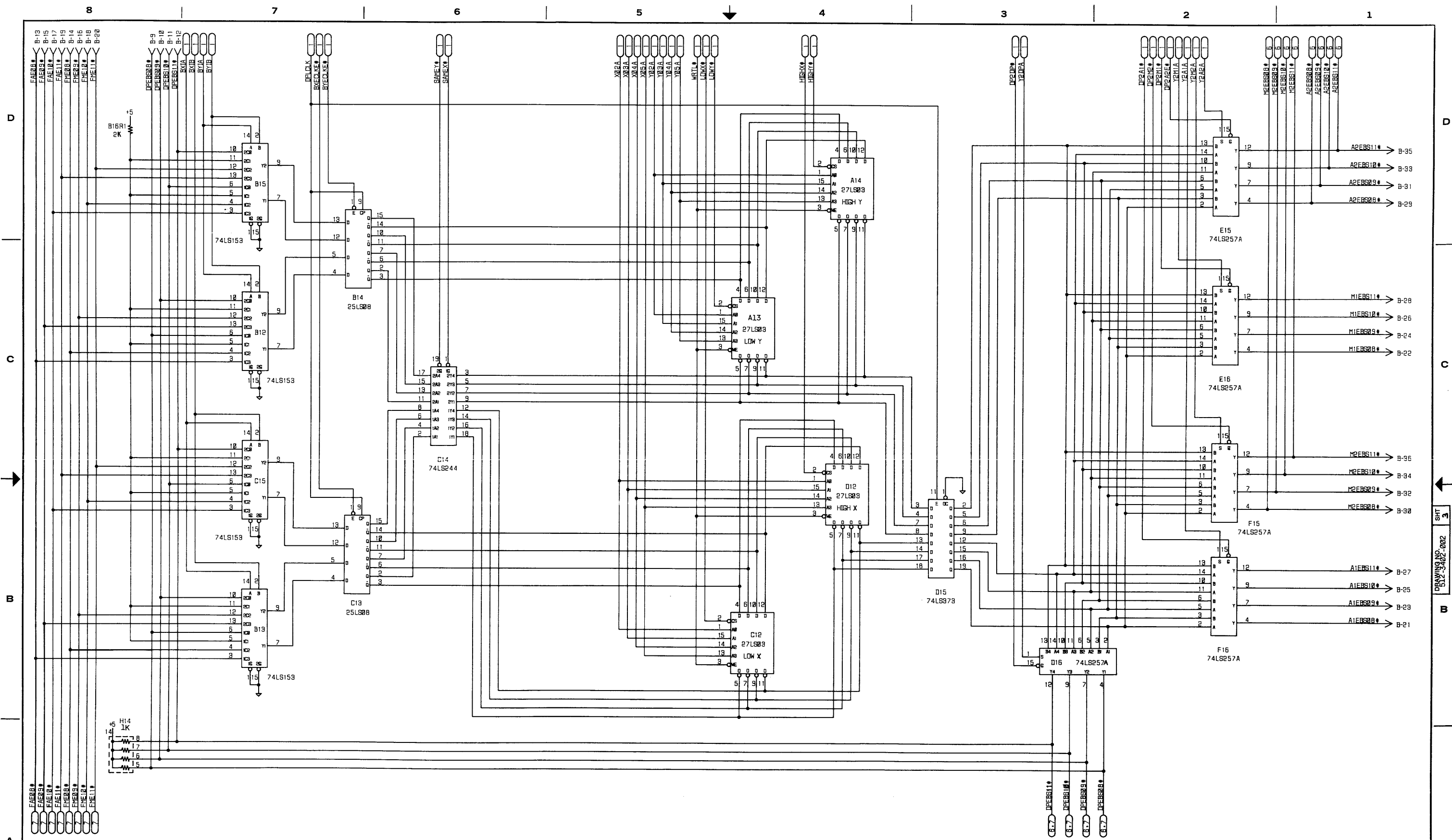


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DRAWN BY <b>C.R.O.</b>	DATE 7-7-79	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		SCHEMATIC, ECB 402-B DATA PAD LEFT (EXPONENT BITS 4-7)
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	
DRAWING NO. <b>512-3402-002</b>		
SCALE NONE		SHEET <b>2</b>



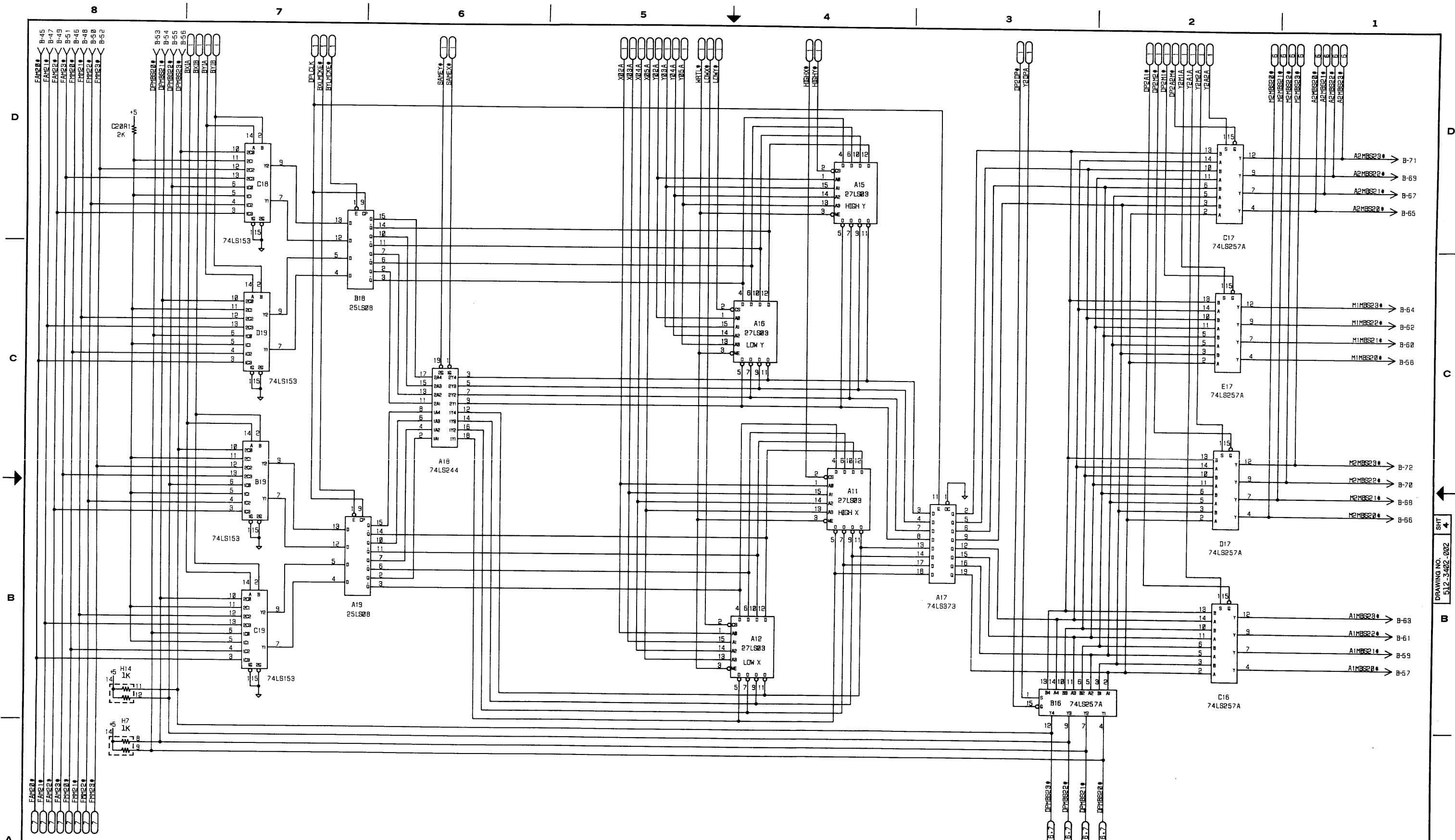
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DRAWN BY <b>C.A.D.</b>	DATE 7-7-79		
CHECK BY	DATE		
MFG. ENG.	DATE		
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3402-002</b>	REV. <b>D</b>
SCALE NONE	SHEET <b>3</b>		



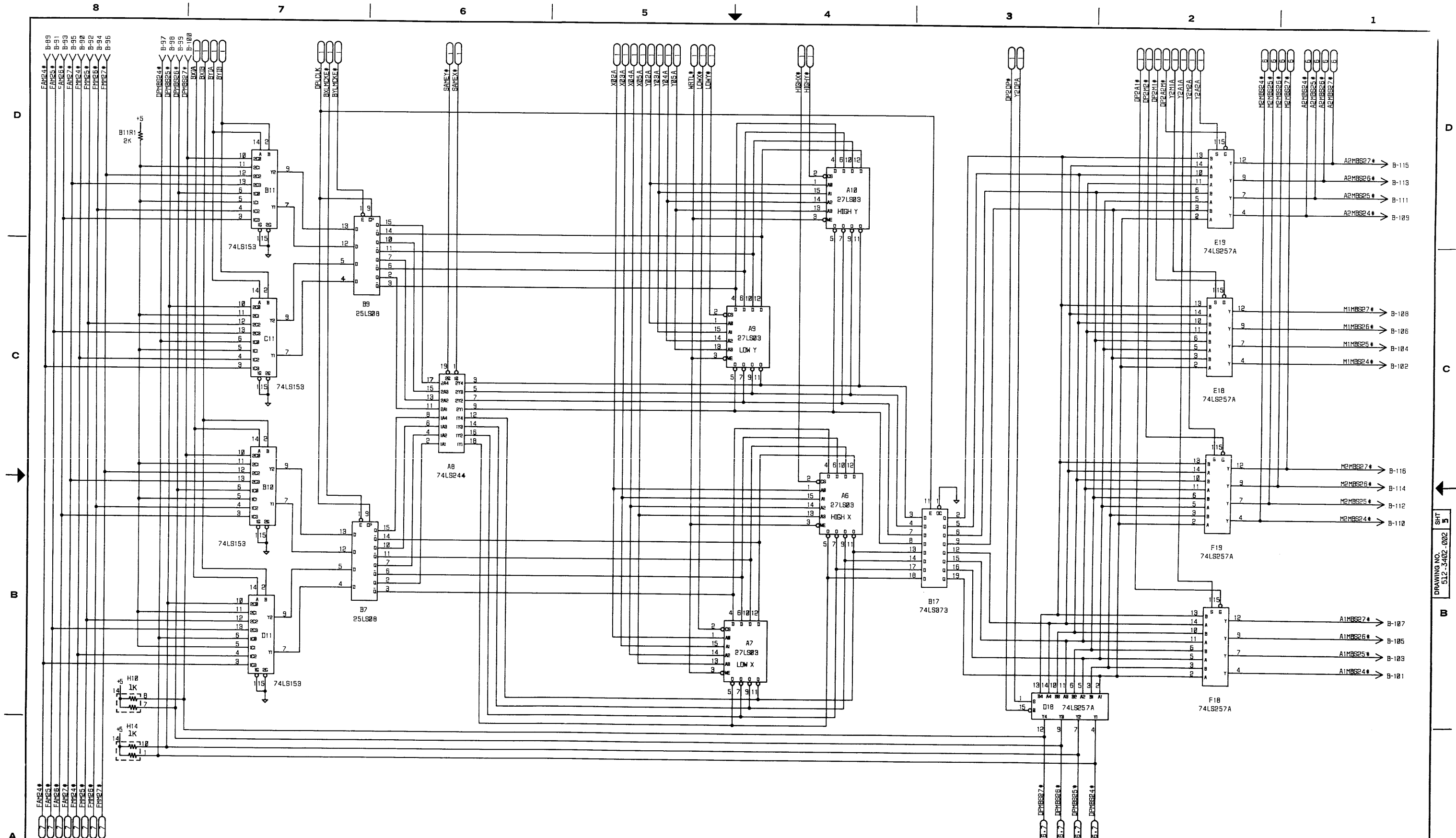


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DRAWN BY: <b>C.A.D.</b>	DATE: 7-7-79	
CHECK BY:	DATE:	
MFG. ENG.	DATE:	
DRAWING TITLE		DRAWING NO. 56504 SCALE NONE
402-B DATA PAD LEFT (MANTISSA BITS 20-23)		
SIZE: <b>D</b>	CODE IDENT. NO. 512-3402-002	
DRAWING NO. 512-3402-002		REV. <b>D</b>
SHEET 4		

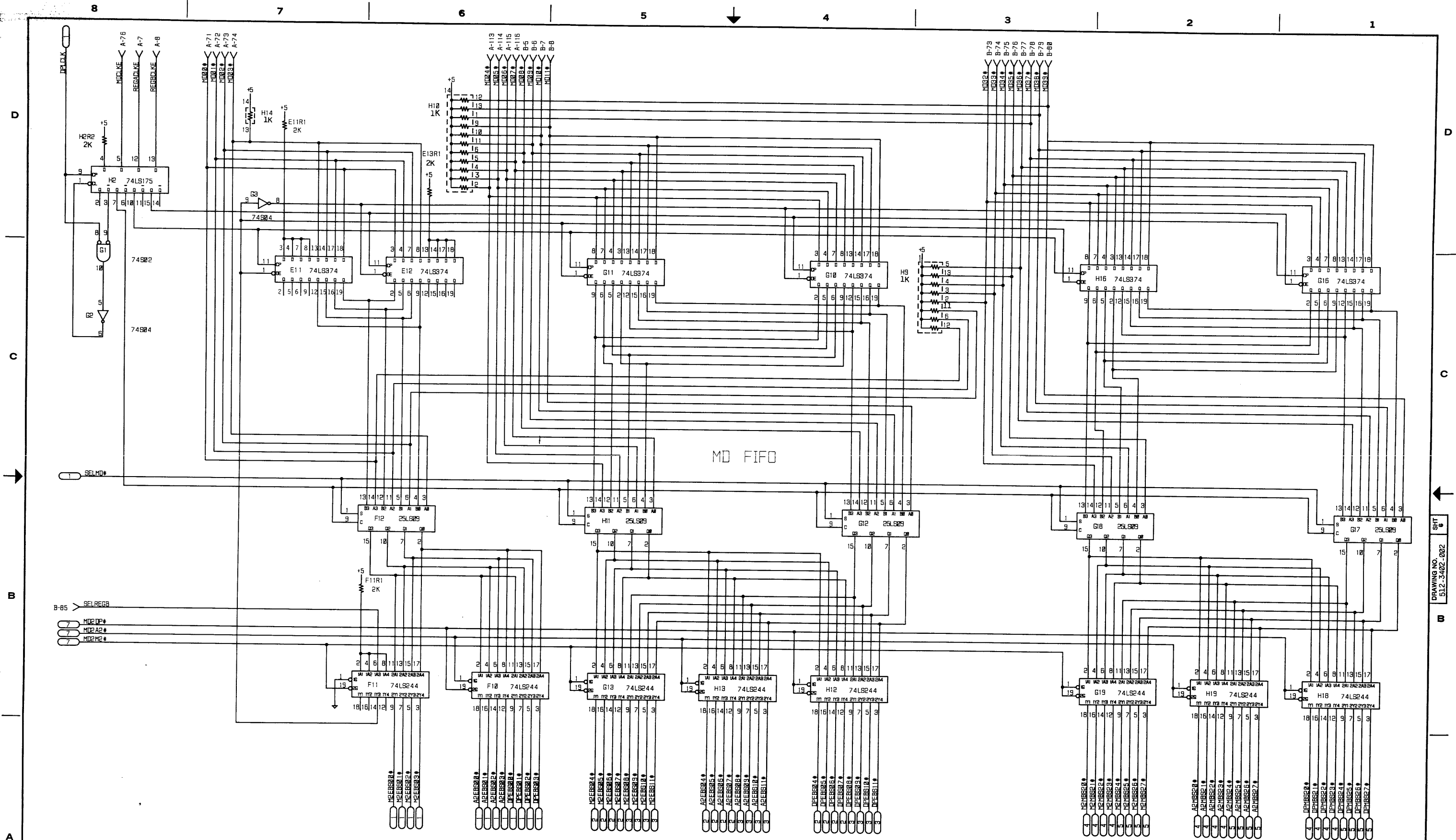


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REV.	AUTH.	DESCRIPTION	ZONE	APPD / DATE	CHK. / DATE

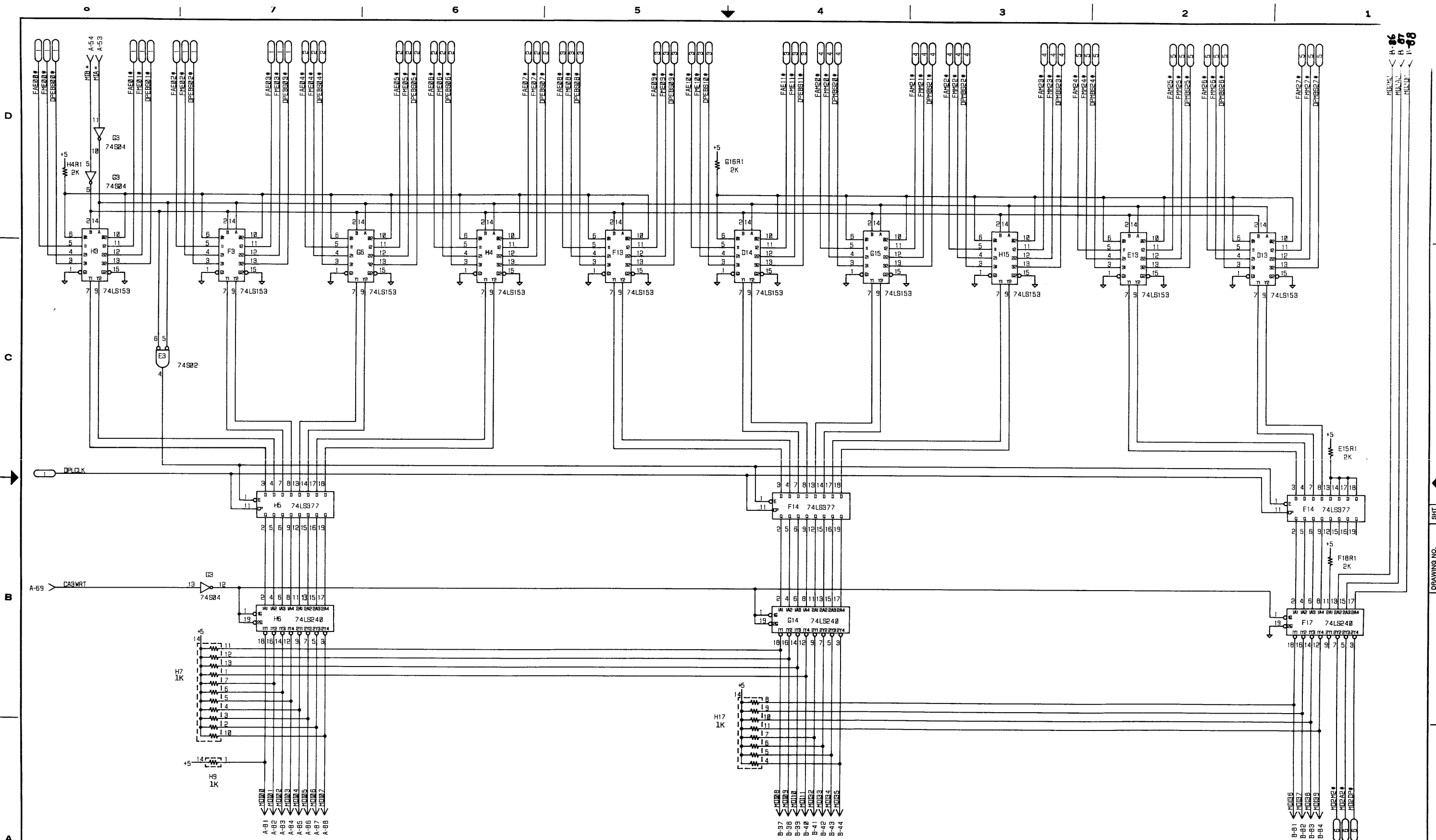
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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23489 Portland OR 97223
DRAWN BY: <b>C.A.O.</b>	DATE: 7-7-79	
CHECK BY:	DATE:	
MFG. ENG.	DATE:	
DRAWING TITLE		SCHEMATIC ECB 402-B DATA PAD LEFT (MANTISSA BITS 24-27)
SIZE: <b>D</b>	CODE IDENT. NO. <b>56504</b>	
DRAWING NO. <b>512-3402-002</b>		
SCALE: NONE		SHEET <b>5</b>



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REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE			CHK. / DATE	C.R.O.	
									SIZE <b>D</b> CODE IDENT. NO. <b>56504</b> DRAWING NO. <b>512-3402-002</b> REV. <b>D</b> SCALE NONE SHEET <b>6</b>

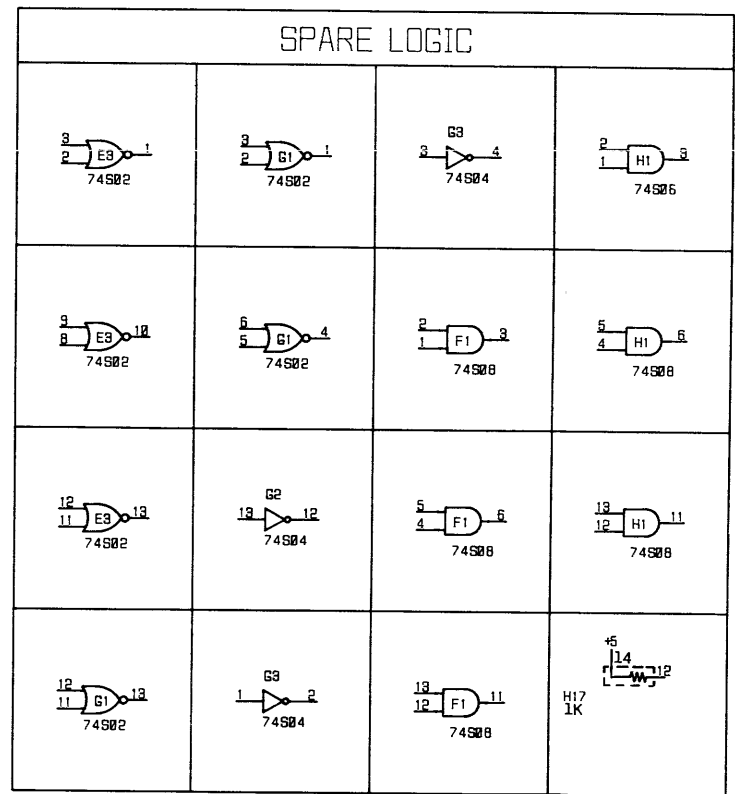
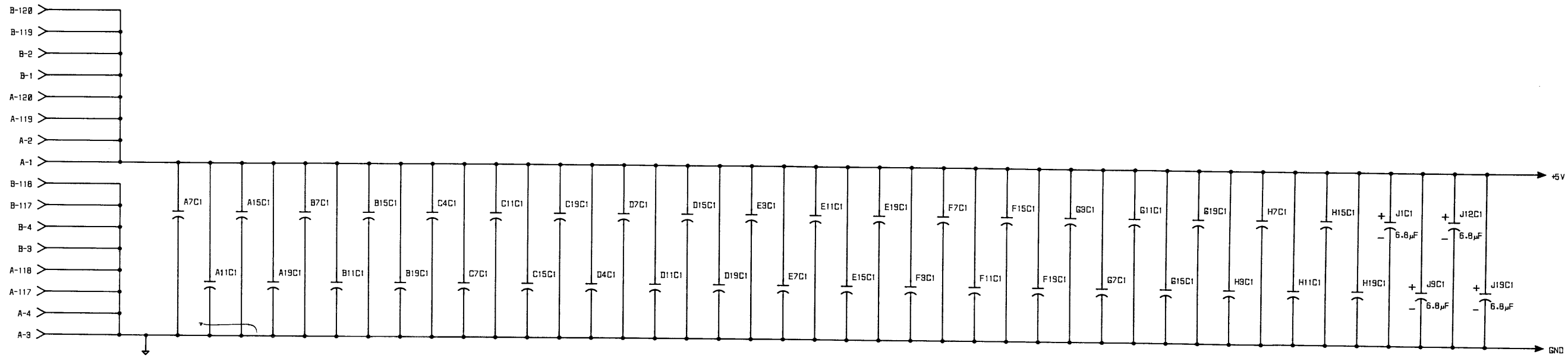


REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23489 Portland OR 97223
DRAWN BY <b>E.A.O.</b>	DATE 7-7-79	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE <b>SCHEMATIC ECB</b>		MOI REG (MOI02 - MOI11) (MOI32 - MOI39)
DATA PAD LEFT		DRAWING NO. 512-3402-002
SIZE <b>D</b>	CODE IDENT. NO. 56504	REV. D
SCALE NONE	SHEET 7	



**NOTES**

1. UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE 0.1µF 50 VOLTS.

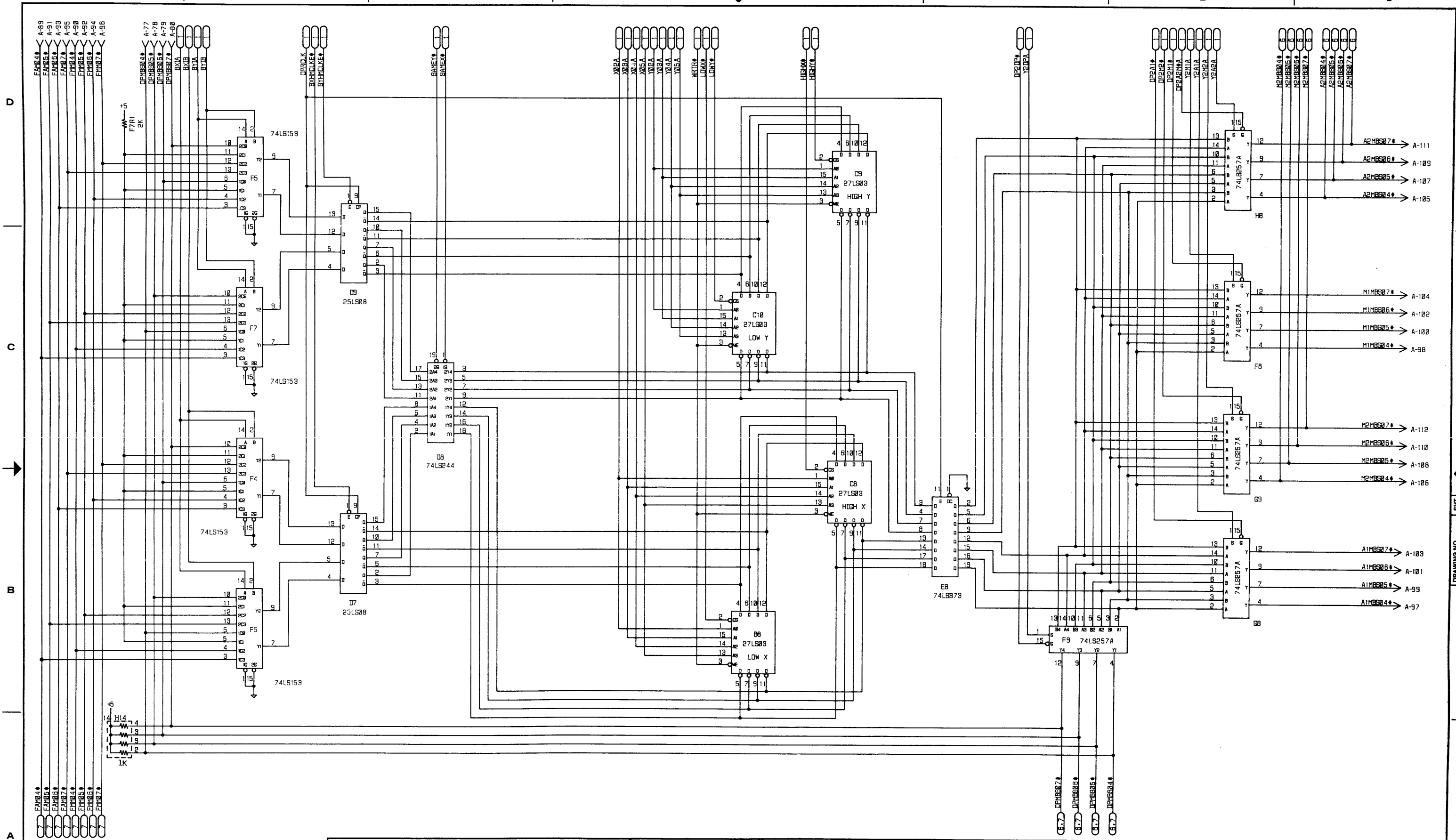
REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

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DRAWN BY <b>C.A.D.</b>	DATE <b>7/2/79</b>	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		REV. <b>D</b>
<b>SCHEMATIC, ECB</b> <b>402 - B</b> <b>DATA PAD LEFT</b>		
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3402-002</b>
SCALE NONE	SHEET <b>B</b>	





REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

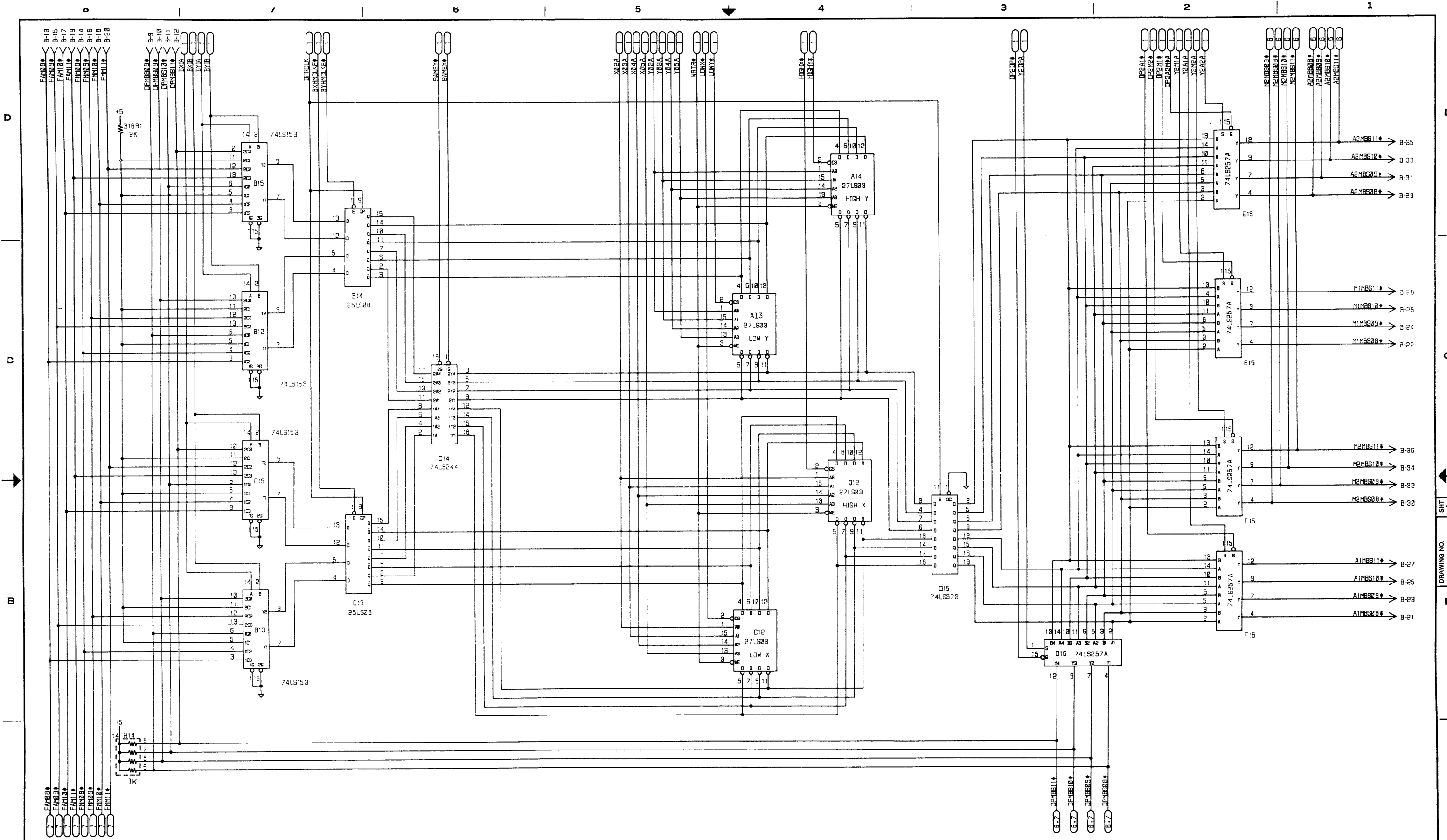
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PROJ. ENG.	DATE
DRAWN BY <b>C.A.O.</b>	DATE 7/2/79
CHECK BY	DATE
MFG. ENG.	DATE

<b>FLOATING POINT SYSTEMS, INC.</b>		PDR 2348 Portland OR 97223
<b>DRAWING TITLE</b> SCHEMATIC ECB 402-B DATA PAD RIGHT (MANTISSA BITS 4-7)		
SIZE <b>D</b> CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3402-003</b>	REV. <b>C</b>
SCALE NONE	SHEET 2 OF 8	





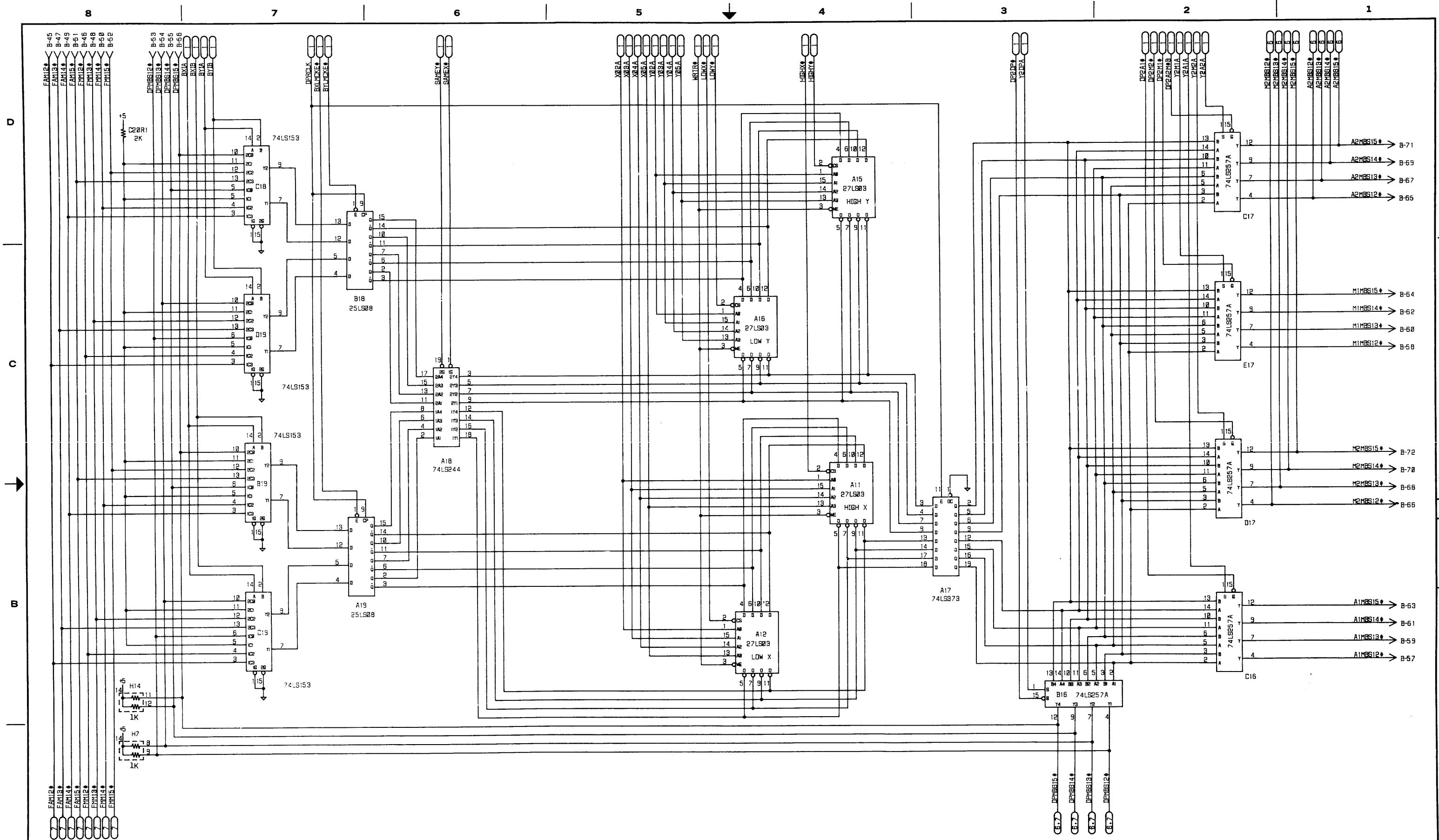
REVISIONS						
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE	
/						

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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23489 Portland OR 97223
DRAWN BY <b>C.R.O.</b>	DATE <b>7/2/79</b>	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		REV. C
<b>SCHEMATIC ECB</b> <b>402-B</b> <b>DATA PAD RIGHT (MANTISSA BITS B-11)</b>		
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3402-003</b>
SCALE NONE	SHEET <b>3</b> OF <b>8</b>	





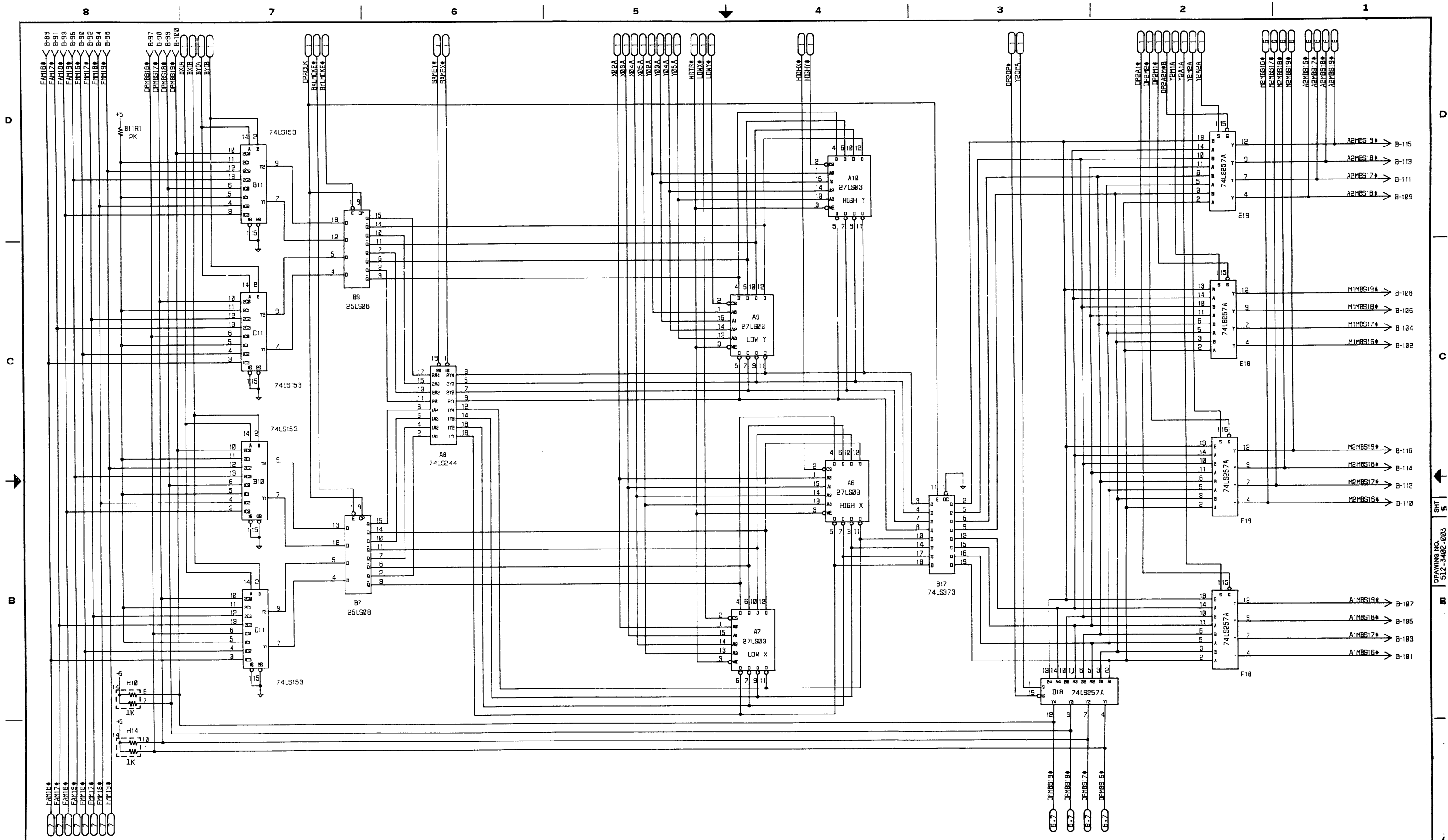
REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

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PROJ. ENG.	DATE
DRAWN BY <b>C.A.D.</b>	DATE 7/2/79
CHECK BY	DATE
MFG. ENG.	DATE

<b>FPS</b> FLOATING POINT SYSTEMS, INC. POB No. 23400 Portland OR 97223	
DRAWING TITLE SCHEMATIC: ECB 402- B DATA PAD RIGHT (MANTISSA BITS 12-15)	
SIZE D	CODE IDENT. NO. 56504
DRAWING NO. 512-3402-003	REV. C
SCALE NONE	SHEET 4 OF 8

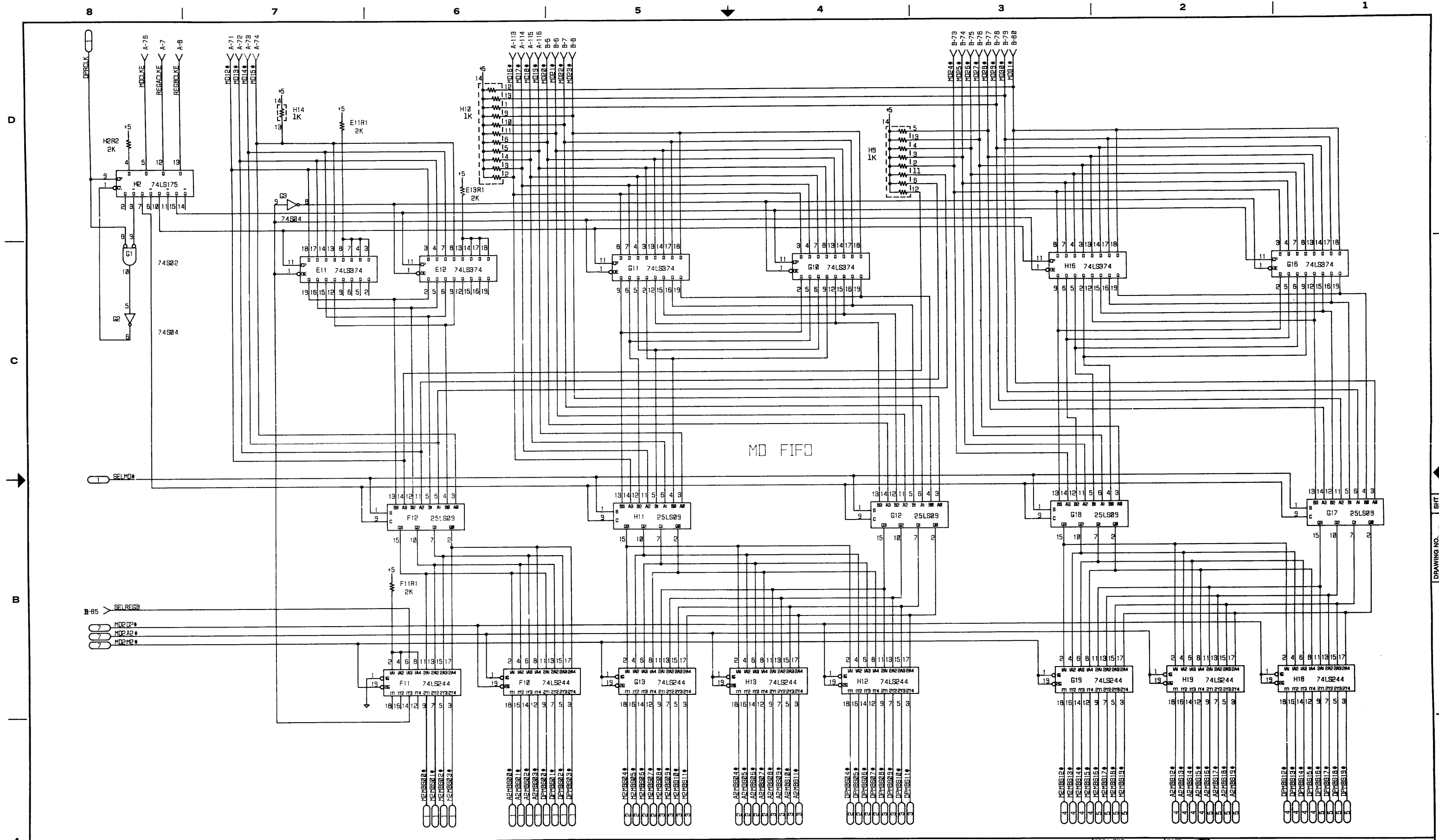


REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> PO Box 23488 Portland OR 97223	<b>DRAWING TITLE</b> SCHEMATIC, ECB 402-B DATA PAD RIGHT (MANTISSA BITS 16-19)
DRAWN BY <b>C.A.O.</b>	DATE 7/2/79		
CHECK BY	DATE		
MFG. ENG.	DATE		
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3402-003</b>	REV. <b>C</b>
SCALE NONE	SHEET 5 OF 8		



REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
/					

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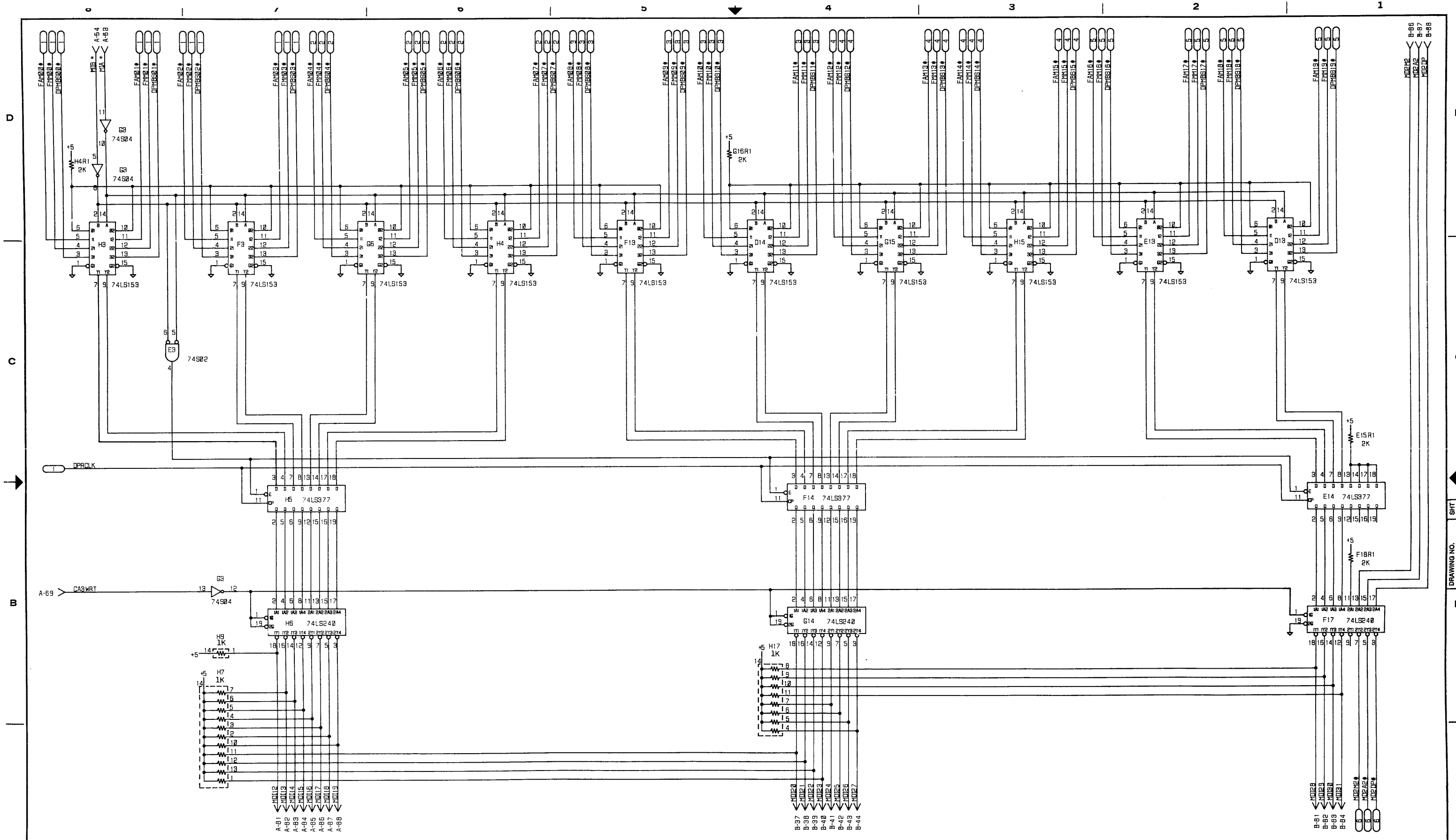
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DRAWN BY <b>C.A.O.</b>	DATE 7/2/79
CHECK BY	DATE
MFG. ENG.	DATE

**FLOATING POINT SYSTEMS, INC.** POBor 23488 Portland OR 97223

DRAWING TITLE  
 SCHEMATIC ECB  
 402-B  
 DATA PAD RIGHT MD REG (MD 12# - MD 31#)

SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3402-003</b>	REV. <b>C</b>
SCALE NONE			SHEET 6 OF 8



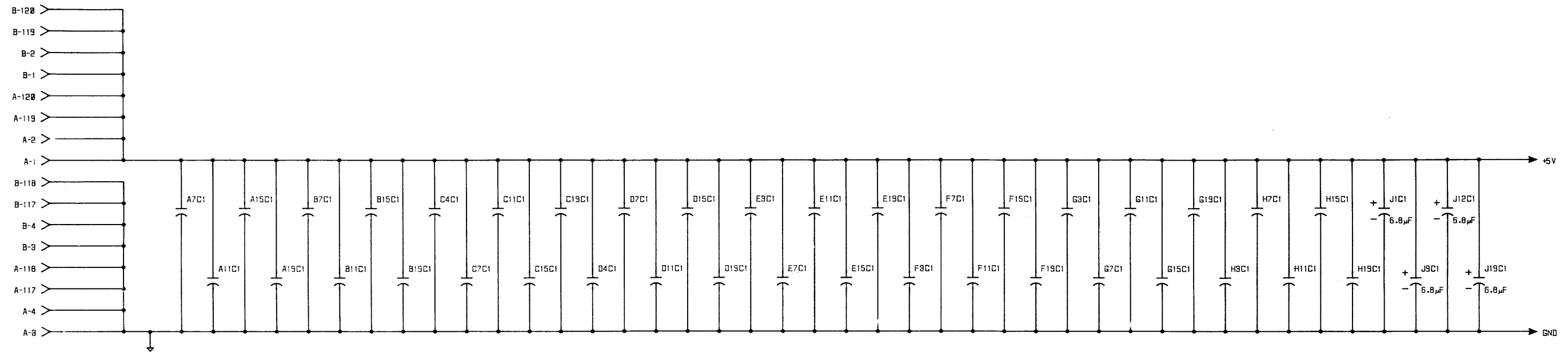
REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23488 Portland OR 97223
DRAWN BY: <b>C.A.O.</b>	DATE: 7/2/79	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		SCHEMATIC ECB 402-B DATA PAD RIGHT MDI REG (MOI12-MOI11)
SIZE	CODE IDENT. NO.	
<b>D</b>	<b>56504</b>	
DRAWING NO.		512-3402-003
SCALE NONE		
SHEET 7 OF 8		REV. C

D



C

B

NOTES

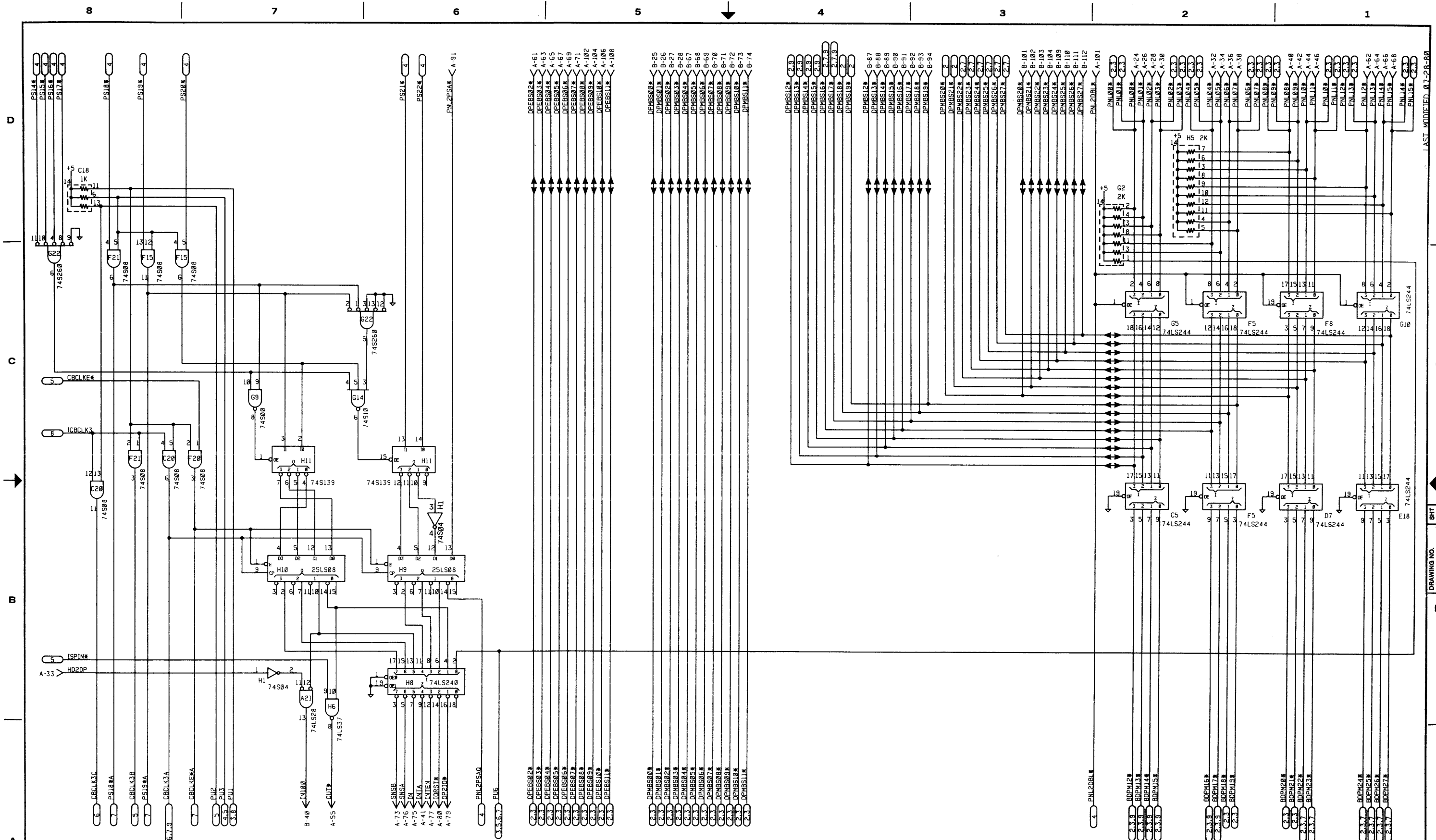
1. UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE 0.1µF, 50 VOLTS.

SPARE LOGIC			

A

REVISIONS						PROPRIETARY INFORMATION	LIMITED RIGHTS LEGEND	PROJ. ENG.	DATE	DRAWING TITLE	DRAWING NO.	REV.
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE			DRAWN BY	DATE			
/						<p><b>PROPRIETARY INFORMATION</b></p> <p>This document contains proprietary information and is supplied for identification, maintenance, engineering evaluation or inspection purposes only and shall not be duplicated or disclosed without written permission of</p> <p><b>FLOATING POINT SYSTEMS, INC.</b></p> <p>By accepting this document the recipient agrees to make every effort to prevent unauthorized use of this information.</p>	<p><b>LIMITED RIGHTS LEGEND</b></p> <p>Contractor: <b>FLOATING POINT SYSTEMS, INC.</b> Contract No. _____</p> <p>Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above Contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or, in the case of computer software documentation, for preparing the same or similar computer software, or (c) used by a party other than the Government, except for (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use, release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government or for emergency repair or overhaul work by or for such government under the conditions (i) above. This legend, together with the indications of the portions of this data which are subject to such limitations shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.</p>	DRAWN BY: <b>C.A.O.</b> DATE: 7/2/79	DATE: 7/2/79	SCHEMATIC, ECB 402-B DATA PAD RIGHT	DRAWING NO. 512-3402-003	REV. C
								SIZE: <b>D</b> CODE IDENT. NO.: 56504	SCALE: NONE	SHEET <b>B</b> OF <b>B</b>		

DRAWING NO. | SHEET



NOTES:  
 ⚠ UNLESS OTHERWISE SPECIFIED, ALL CAPACITORS ARE 0.1MF 50 VOLTS.

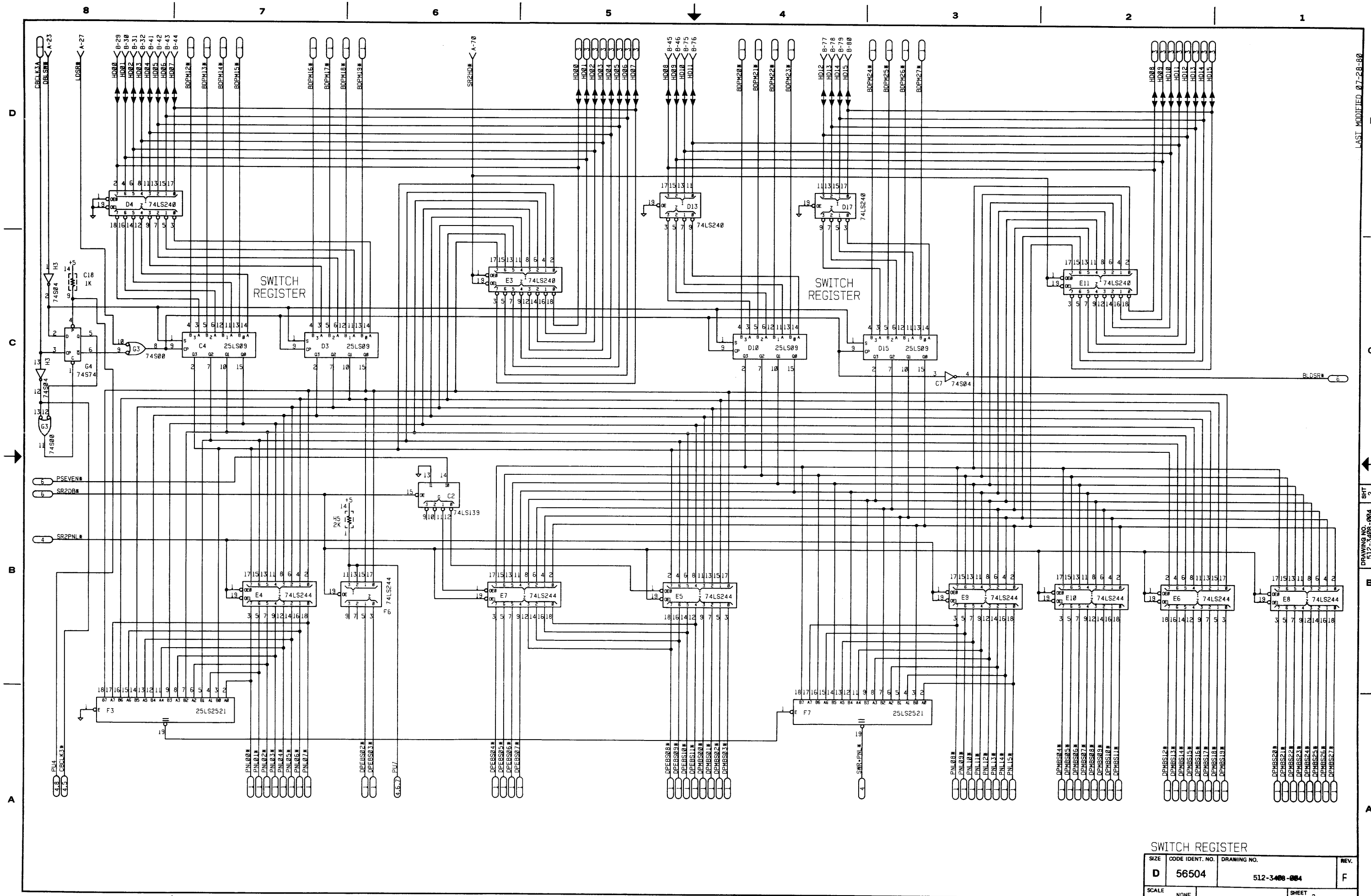
**IMPORTANT NOTE:** IGNORE DASHES IN PINOUTS (EXAMPLE:A-19), THEY ARE FOR PURPOSES OF CLARITY ONLY.

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
E	ECO 82281	CHG J2C1, J11C1, J14C1, J24C1 FROM 6.8 35V TO 68 10V, SHT 10		XN/5/24/82	J. Berman 5/20/82
F	ECO 83157	CORRECT E20, SHT 5, ZONE B2		01/8/4/83	8/3/83

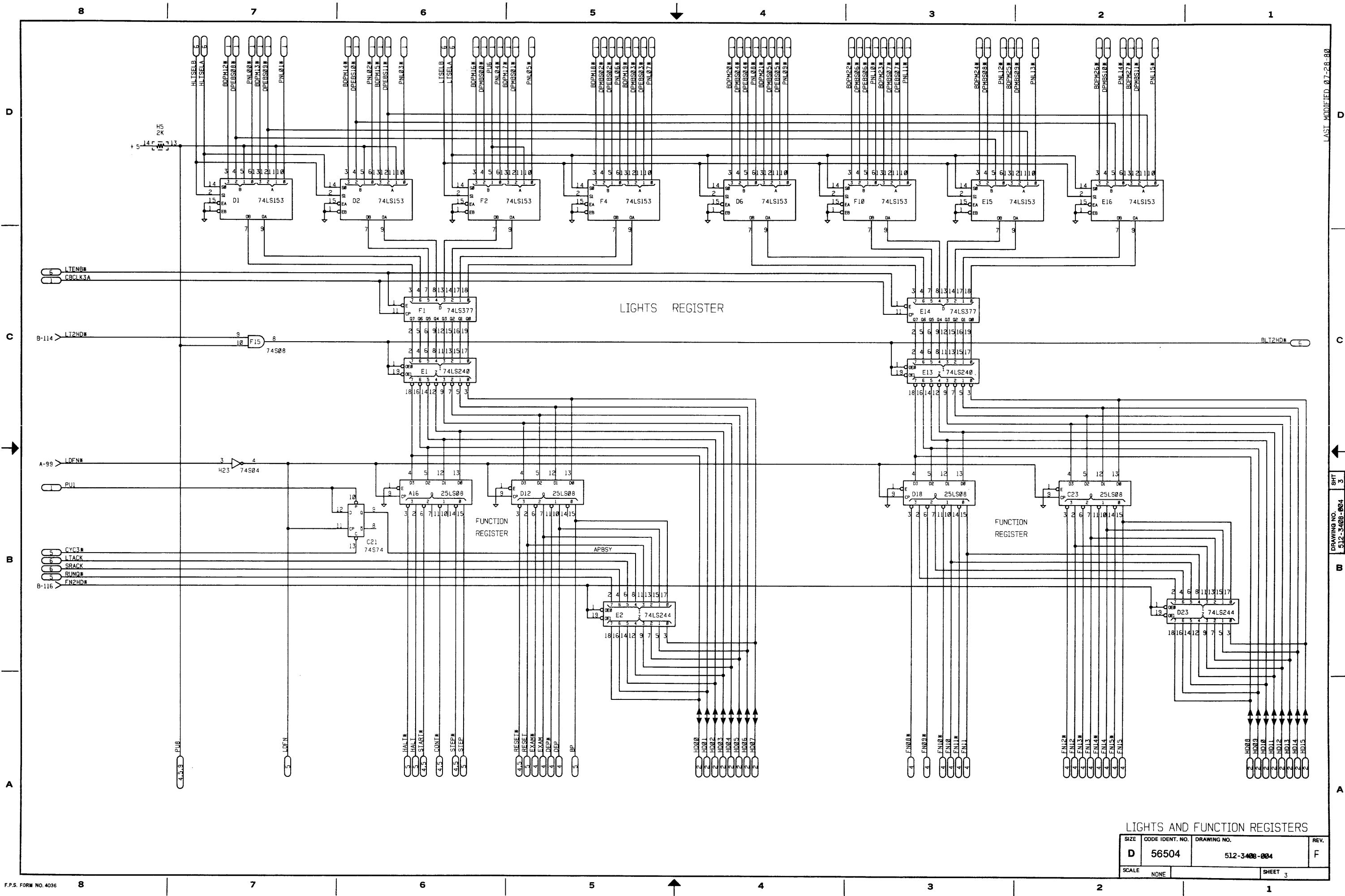
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PROJ. ENG. <i>Gene Cook</i>	DATE 8/8/80	<b>FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23488 Portland OR 97223
DRAWN BY <b>C.A.D.</b>	DATE 7/29/80	
CHECK BY <i>Abraham</i>	DATE 8/13/80	DRAWING TITLE <b>SCHEMATIC, ECB 408-A I/O GROUP DECODE ADD DATA BUSES</b>
MFG. ENG. <i>Koger Caldwell</i>	DATE 9-9-80	
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3408-004</b>
SCALE NONE		SHEET <b>1</b> OF <b>18</b>



SWITCH REGISTER			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3408-004	F
SCALE	NONE	SHEET	2



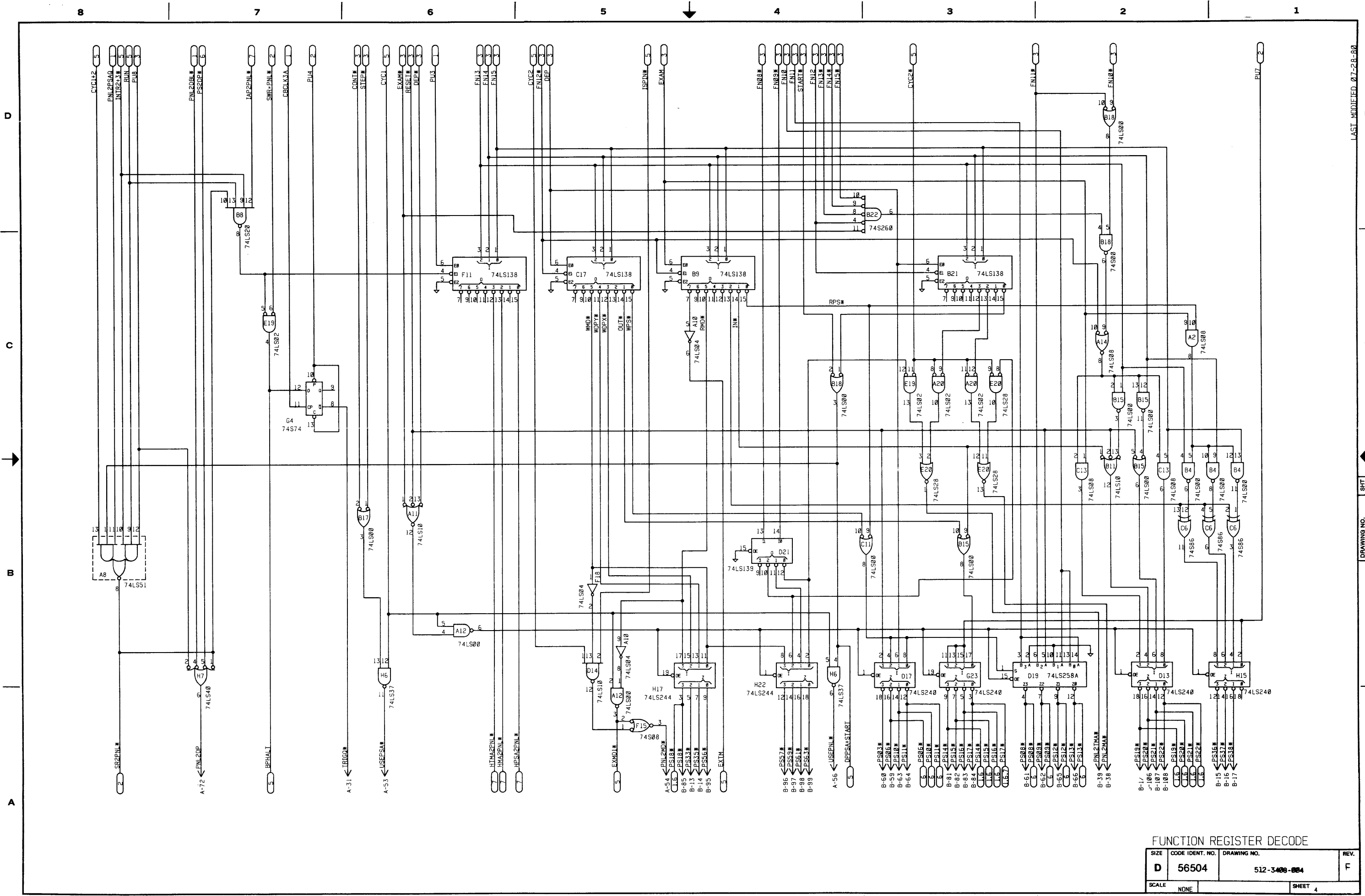
LAST MODIFIED 07-28-80

DRAWING NO. 512-3408-004 SHEET 3

LIGHTS AND FUNCTION REGISTERS

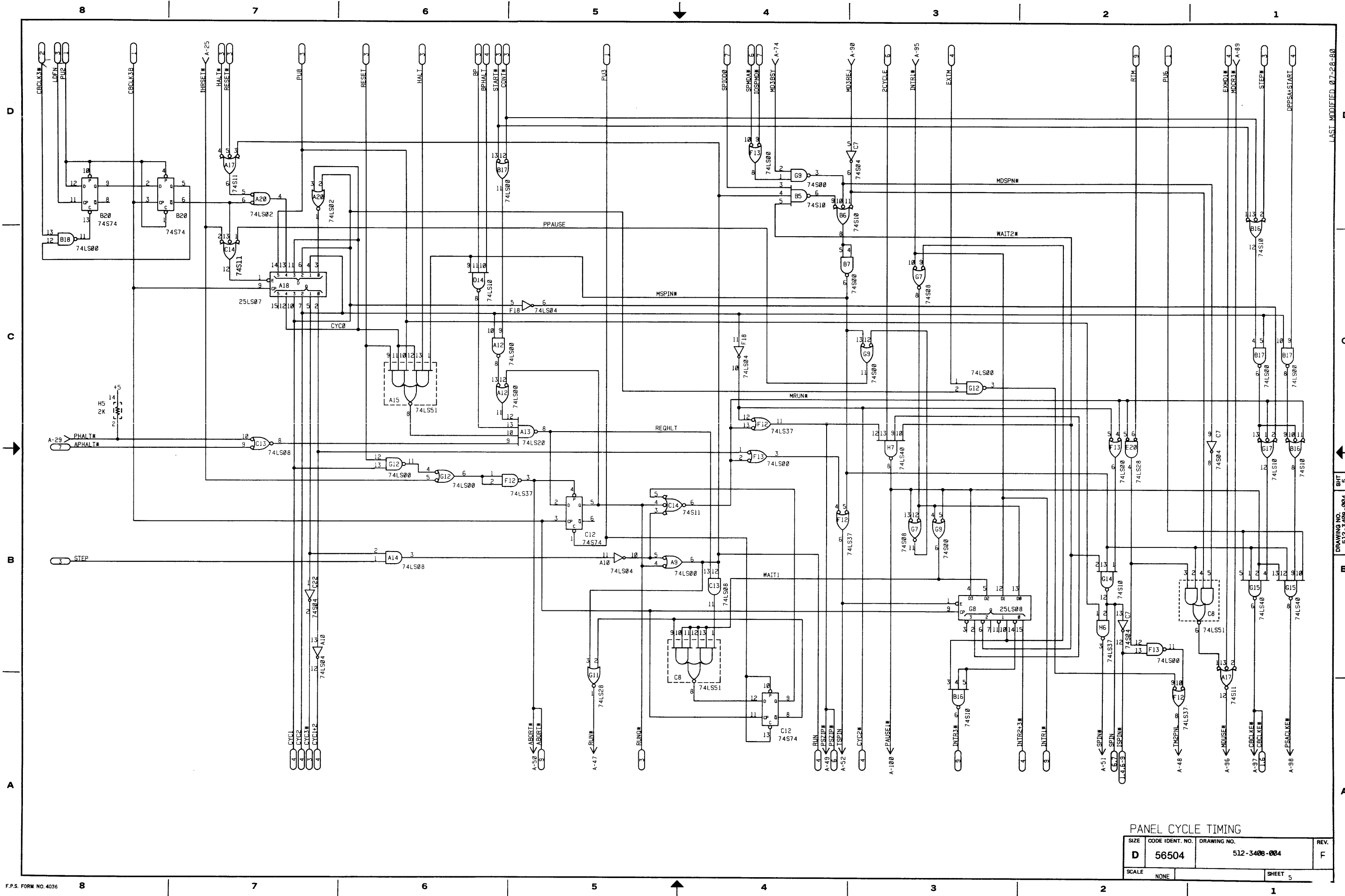
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3408-004	F
SCALE	NONE	SHEET	3



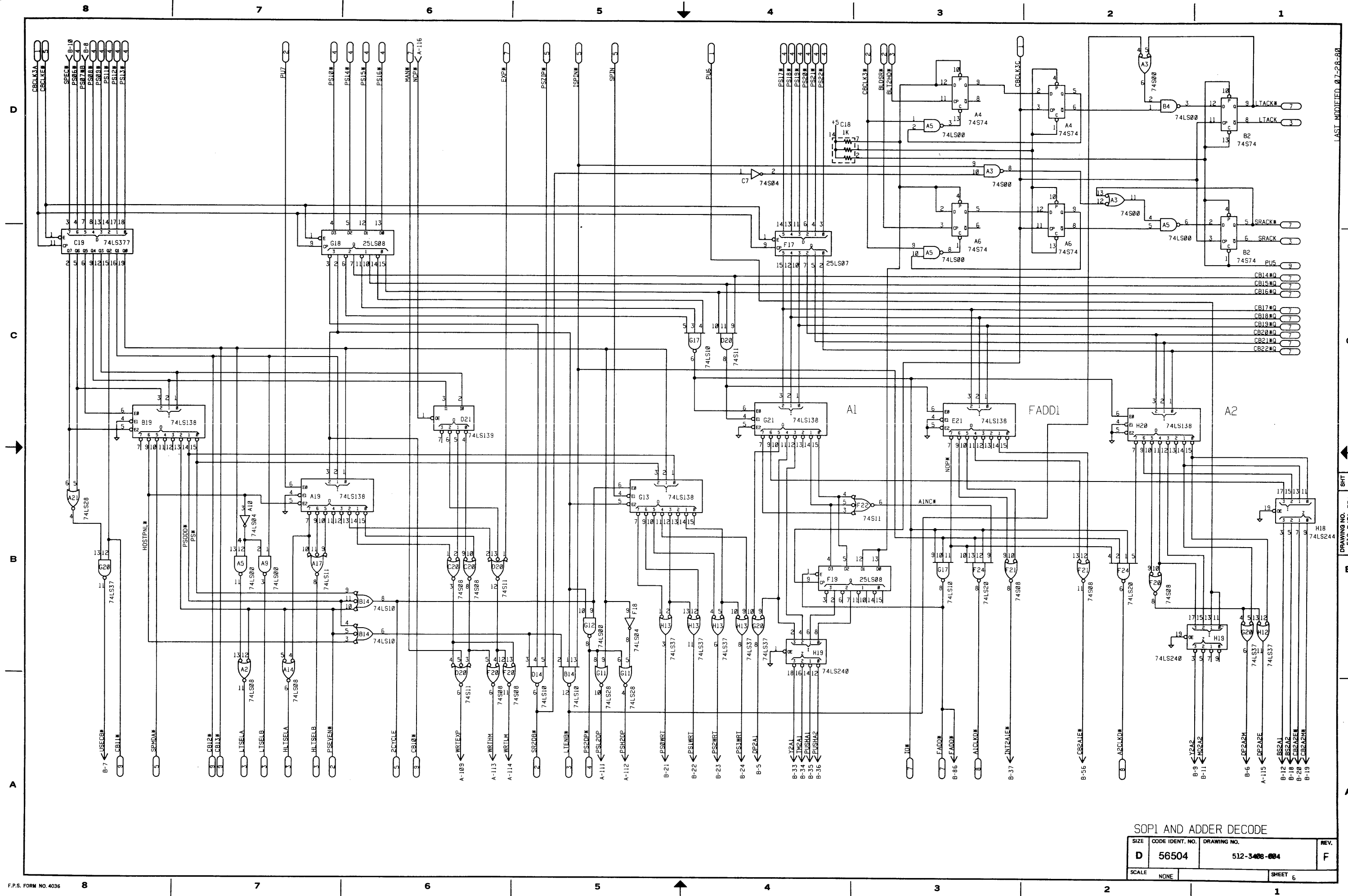


FUNCTION REGISTER DECODE

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3408-004	F
SCALE	NONE	SHEET	4



PANEL CYCLE TIMING			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3408-004	F
SCALE	NONE	SHEET	5

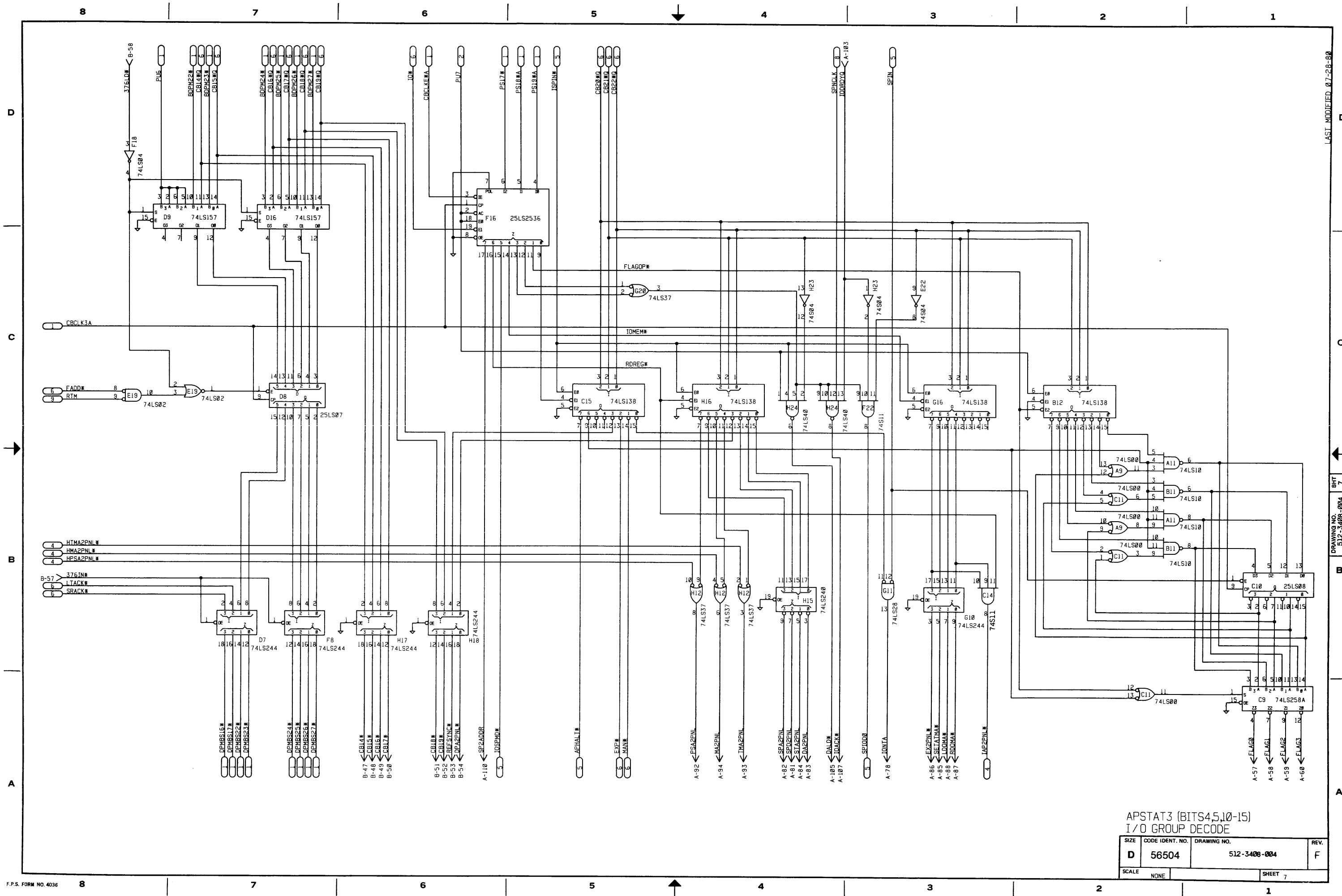


SOP1 AND ADDER DECODE

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3408-004	F
SCALE	NONE	SHEET	6

LAST MODIFIED 07-28-80

DRAWING NO. 512-3408-004

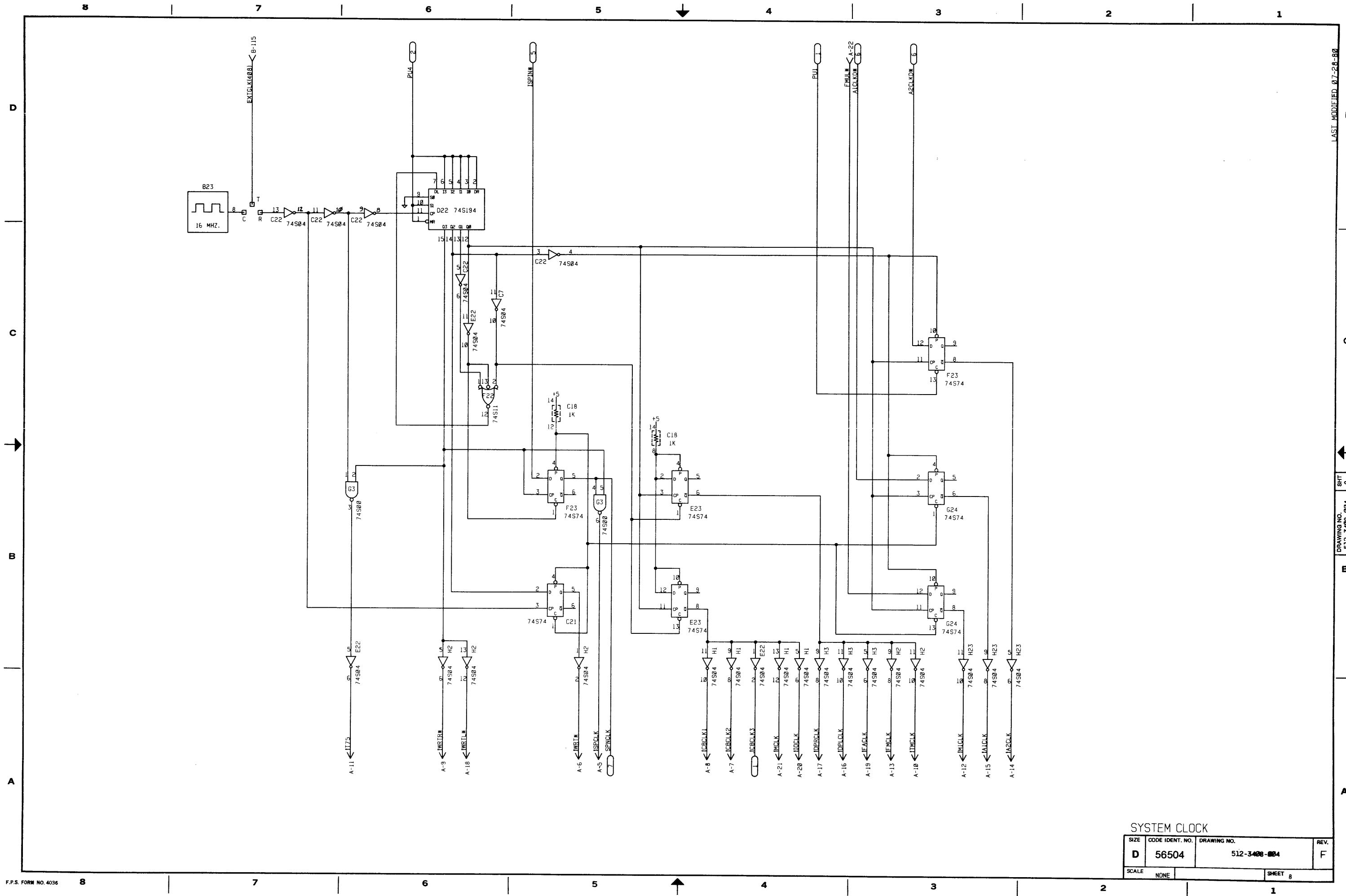


APSTAT3 (BITS4,5,10-15)  
I/O GROUP DECODE

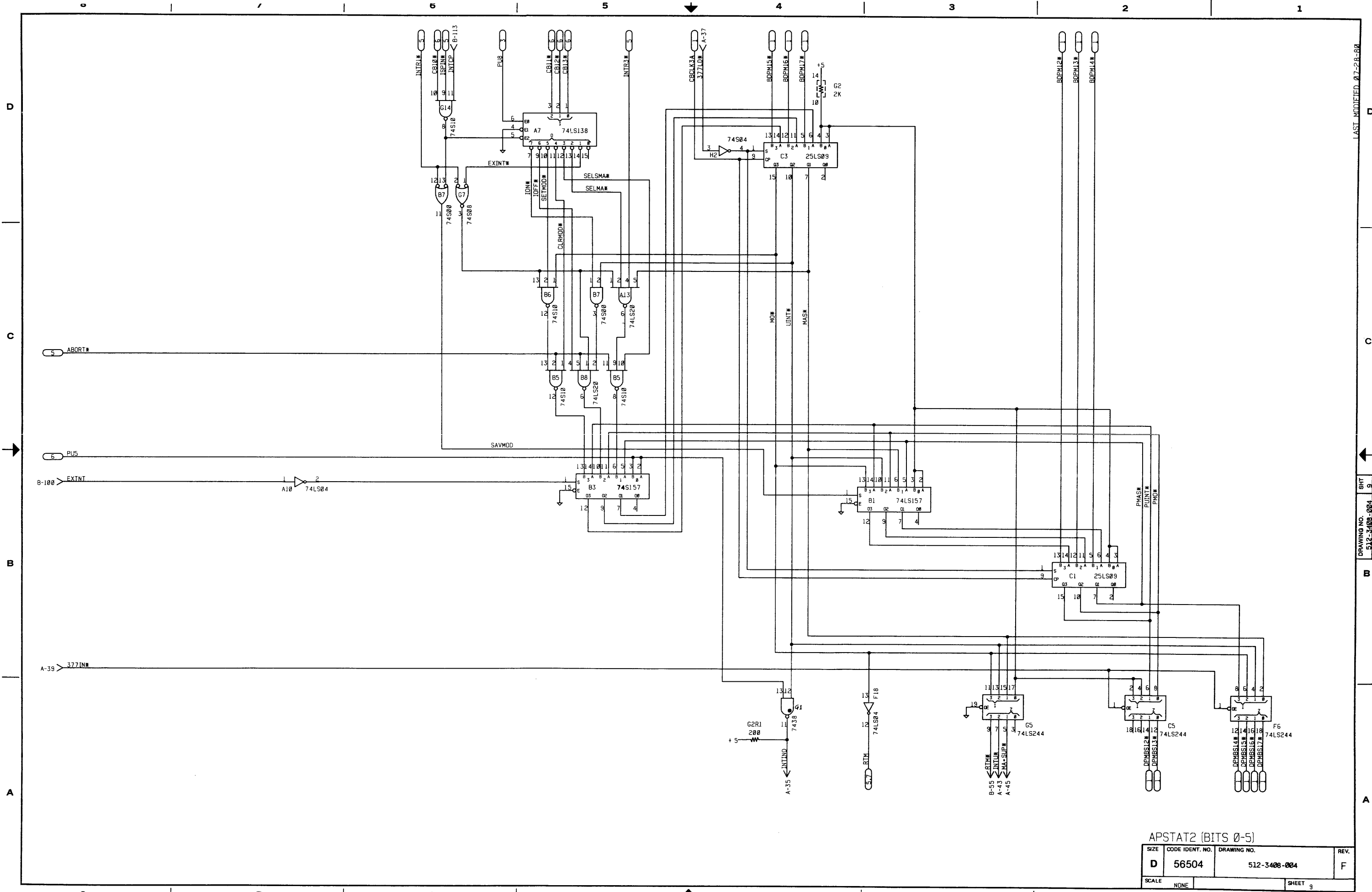
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3408-004	F
SCALE	NONE	SHEET	7

LAST MODIFIED 07-28-80

DRAWING NO. 512-3408-004 SHEET 7



SYSTEM CLOCK			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3408-004	F
SCALE	NONE	SHEET 8	



APSTAT2 (BITS 0-5)

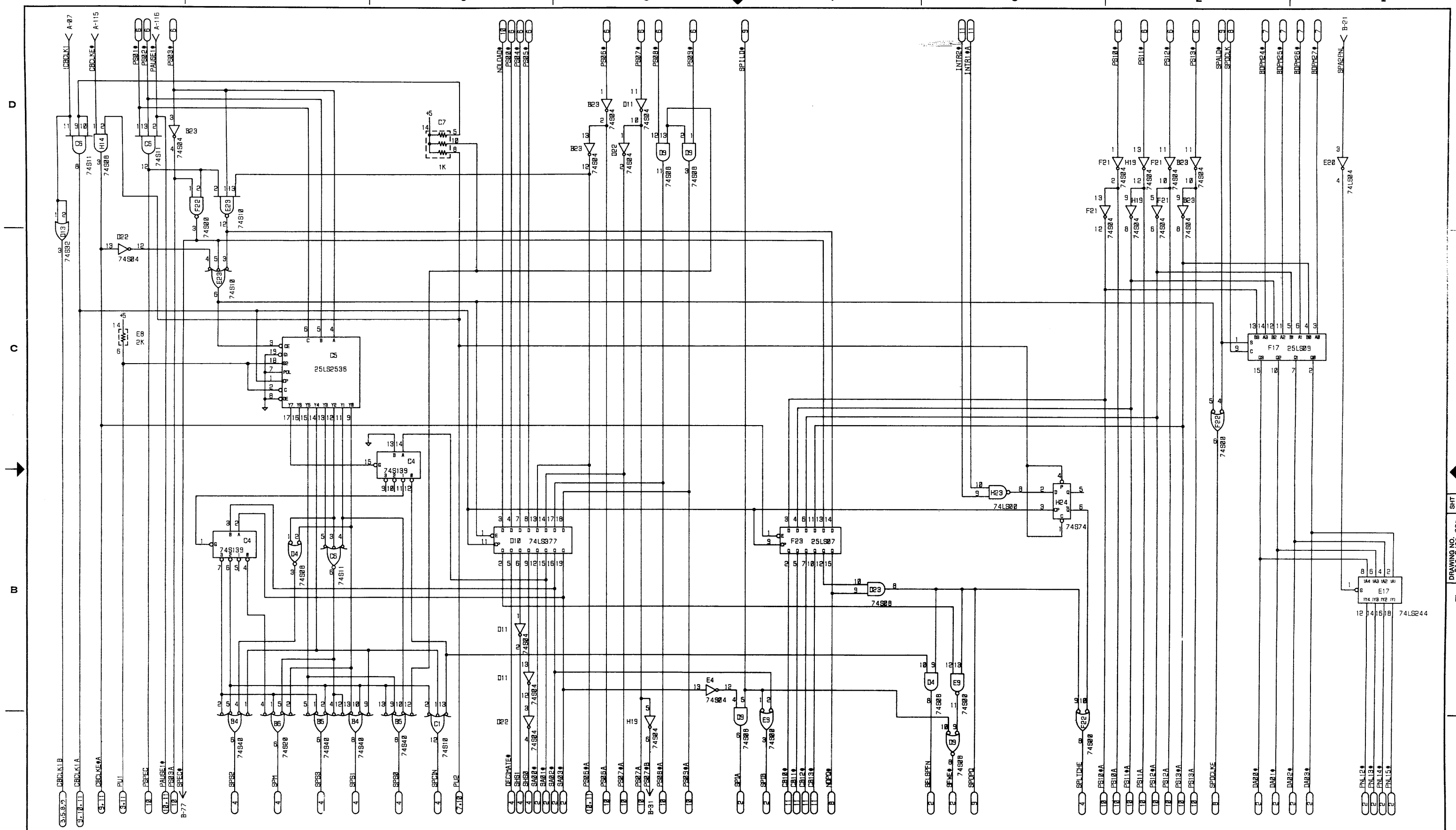
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3408-004	F
SCALE NONE		SHEET 9	

LAST MODIFIED 07-28-80

DRAWING NO. 512-3408-004

SHEET 9





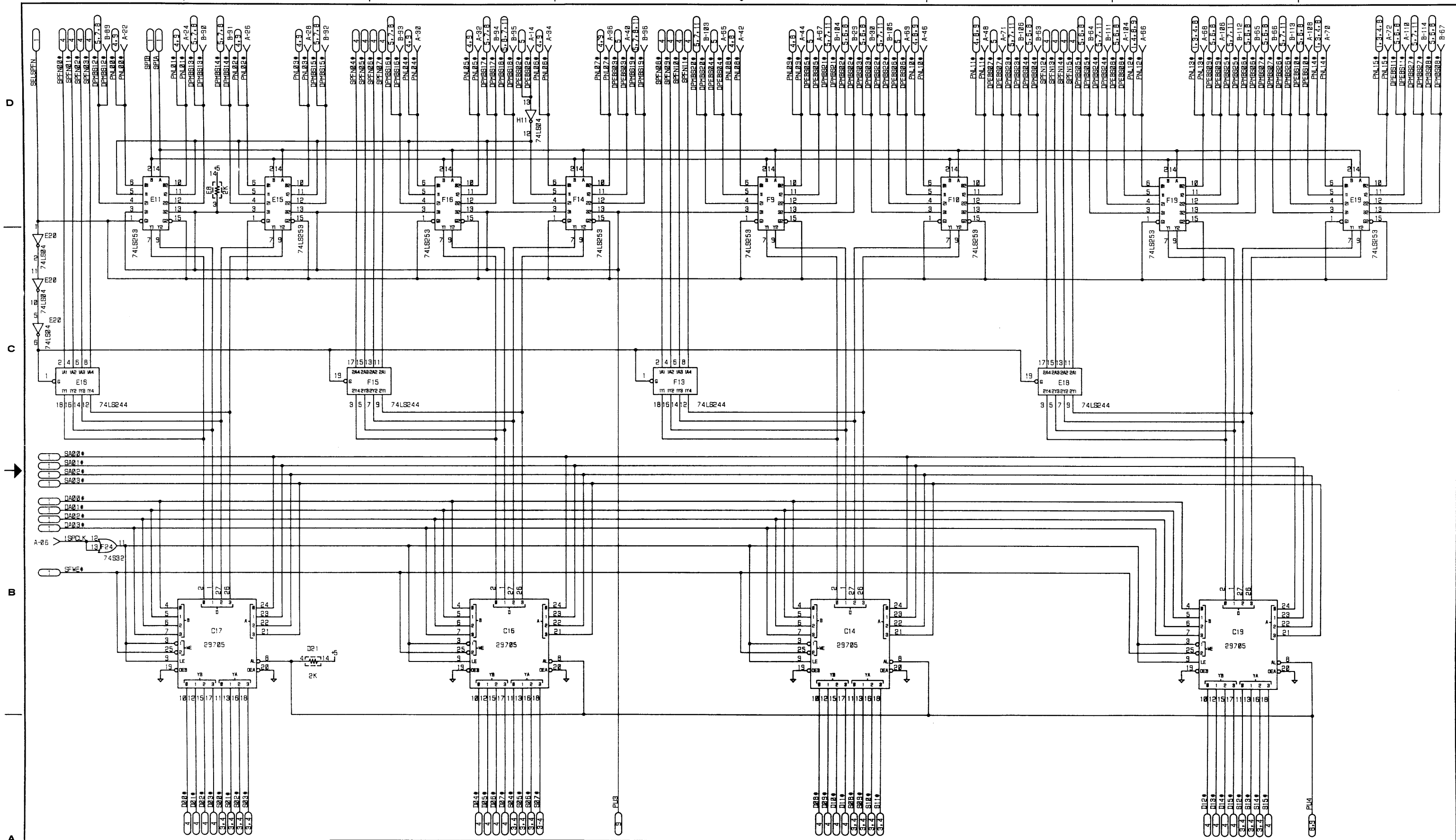
REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
A	ECO 80177	LEVEL 3 RELEASE		5/14/80	MB/5/18/80
B	ECO 80495	CHANGE RESISTOR DESIGNATOR		2/6/81	MB/2/22/81
C	ECO 81576	CORRECT ERROR ON GATE OUTPUT		1/4/82	MB/1/22/82
D	ECO 82432	CORR SIG SELSPFN SHT 1,2	B3,D3	1/12/82	MB/1/12/82

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PROJ. ENG. <i>Daniel Cook</i>	DATE 5/14/80	<b>FLOATING POINT SYSTEMS, INC.</b> <small>PO Box 23488 Portland OR 97223</small>
DRAWN BY <b>C.A.D.</b>	DATE 7-7-79	
CHECK BY <i>Robert G. ...</i>	DATE 3-6-80	DRAWING TITLE SCHEMATIC, FCB
MEG. ENG. <i>Roger Caldwell</i>	DATE 5-15-80	DATE 422-B
		PROCESSOR 1
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. 512-3422-002
SCALE NONE		SHEET 1 OF 11



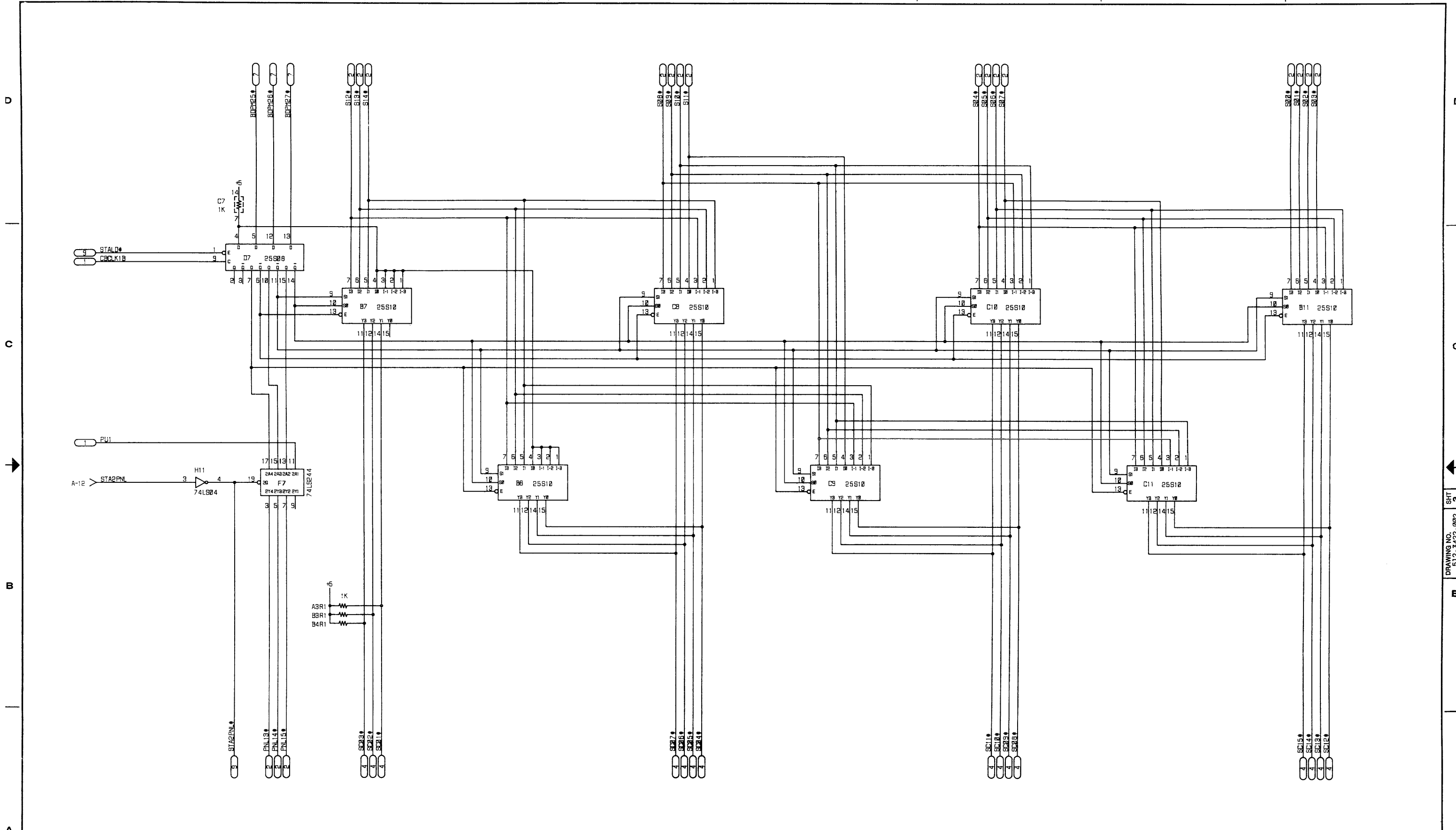


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DRAWN BY <b>C.A.D.</b>	DATE 7-7-79	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		SCHEMATIC ECB 422-B PROCESSOR 1
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	
SCALE NONE	DRAWING NO. <b>512-3422-002</b>	
SHEET <b>2</b> OF <b>12</b>		REV. <b>D</b>

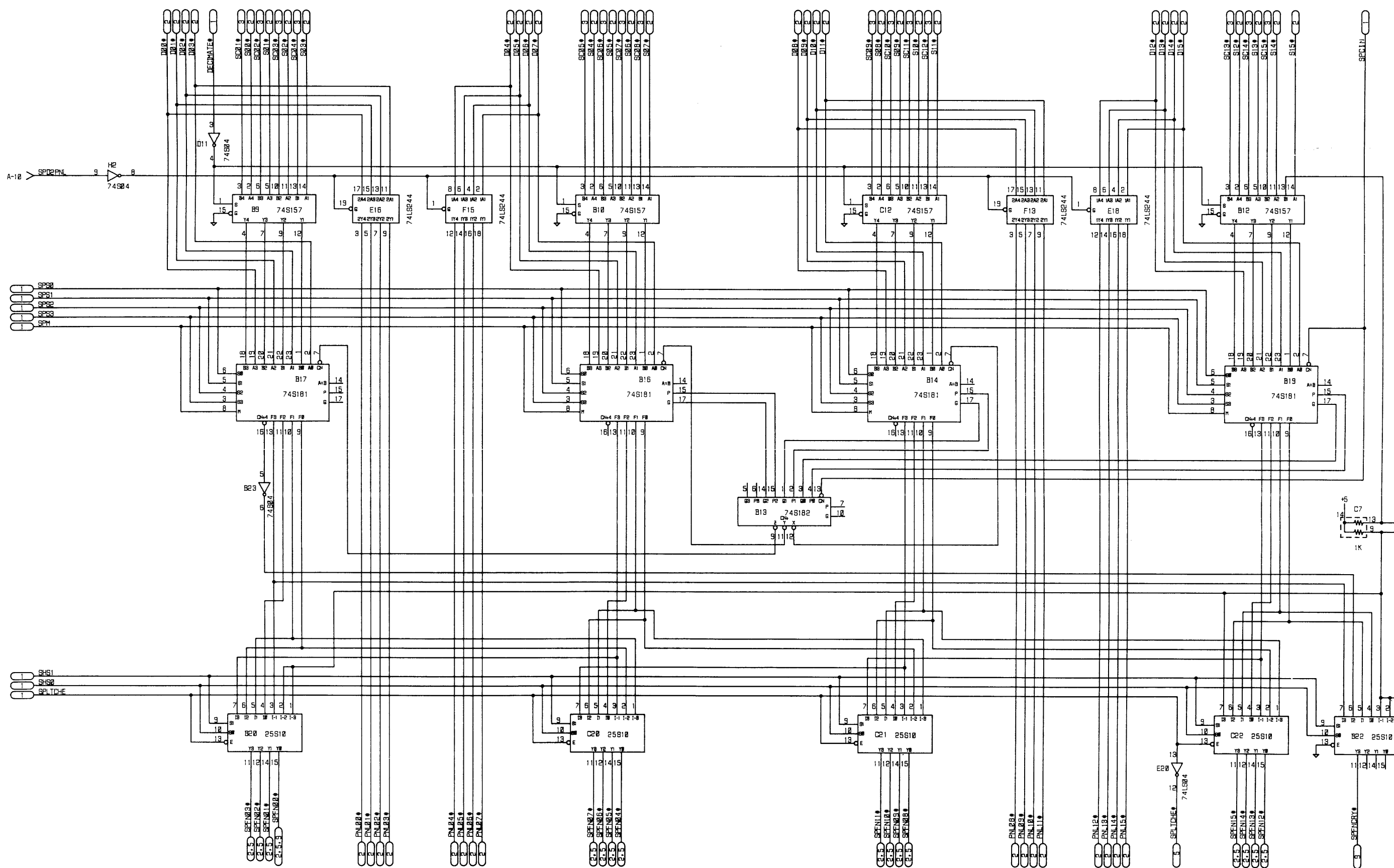


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DRAWN BY <b>C.A.O.</b>	DATE 7-7-75		
CHECK BY	DATE		
MFG. ENG.	DATE		
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3422-002</b>	REV. <b>D</b>
SCALE NONE		SHEET <b>9</b> OF <b>12</b>	



REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

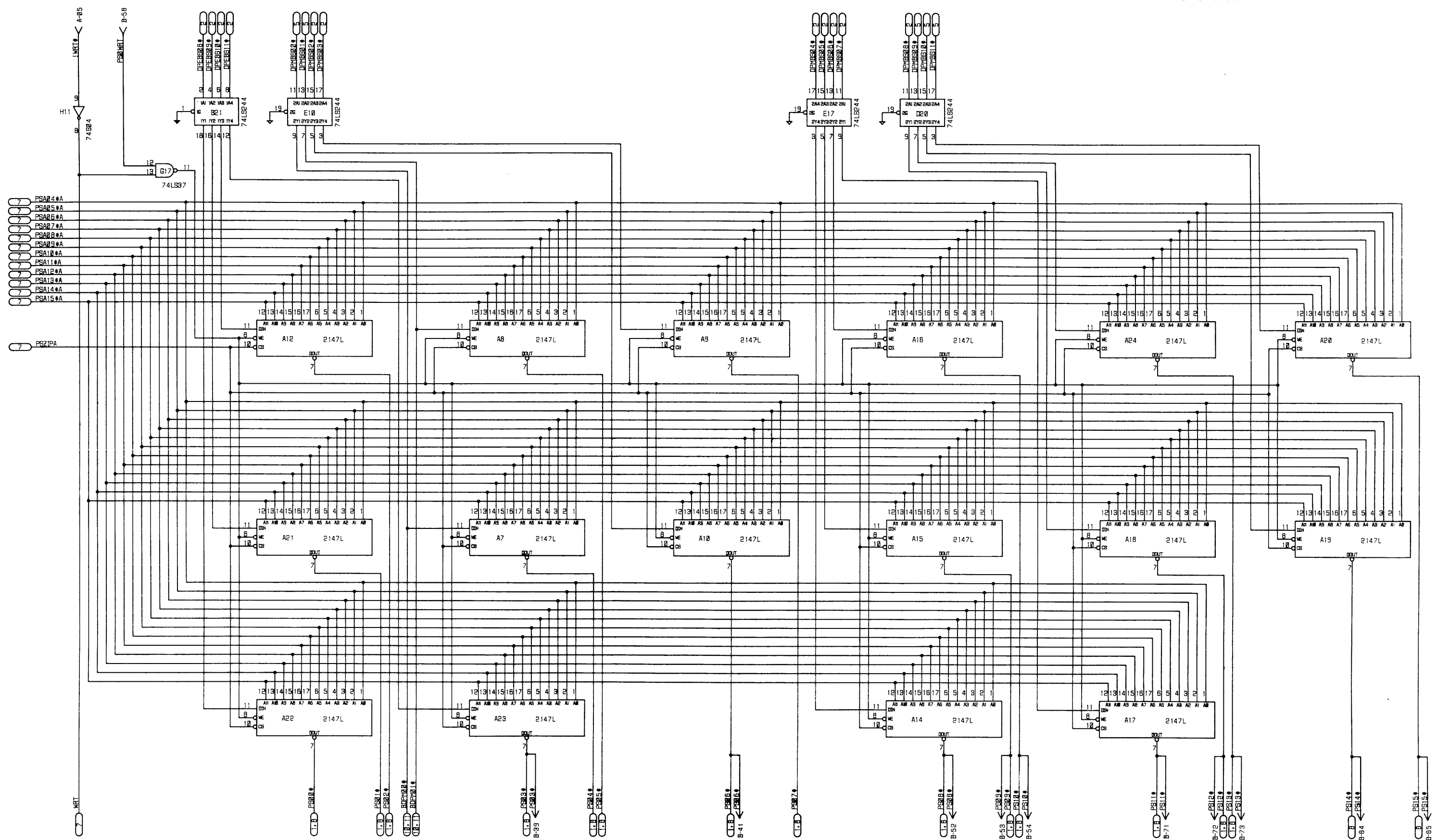
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DRAWN BY <b>C.A.D.</b>	DATE 7-7-79	
CHECK BY	DATE	
MFG. ENG.	DATE	DRAWING TITLE <b>SCHEMATIC ECB 422-B, PROCESSOR 1</b>
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3422-002</b>
SCALE NONE		SHEET <b>4</b> OF <b>12</b>

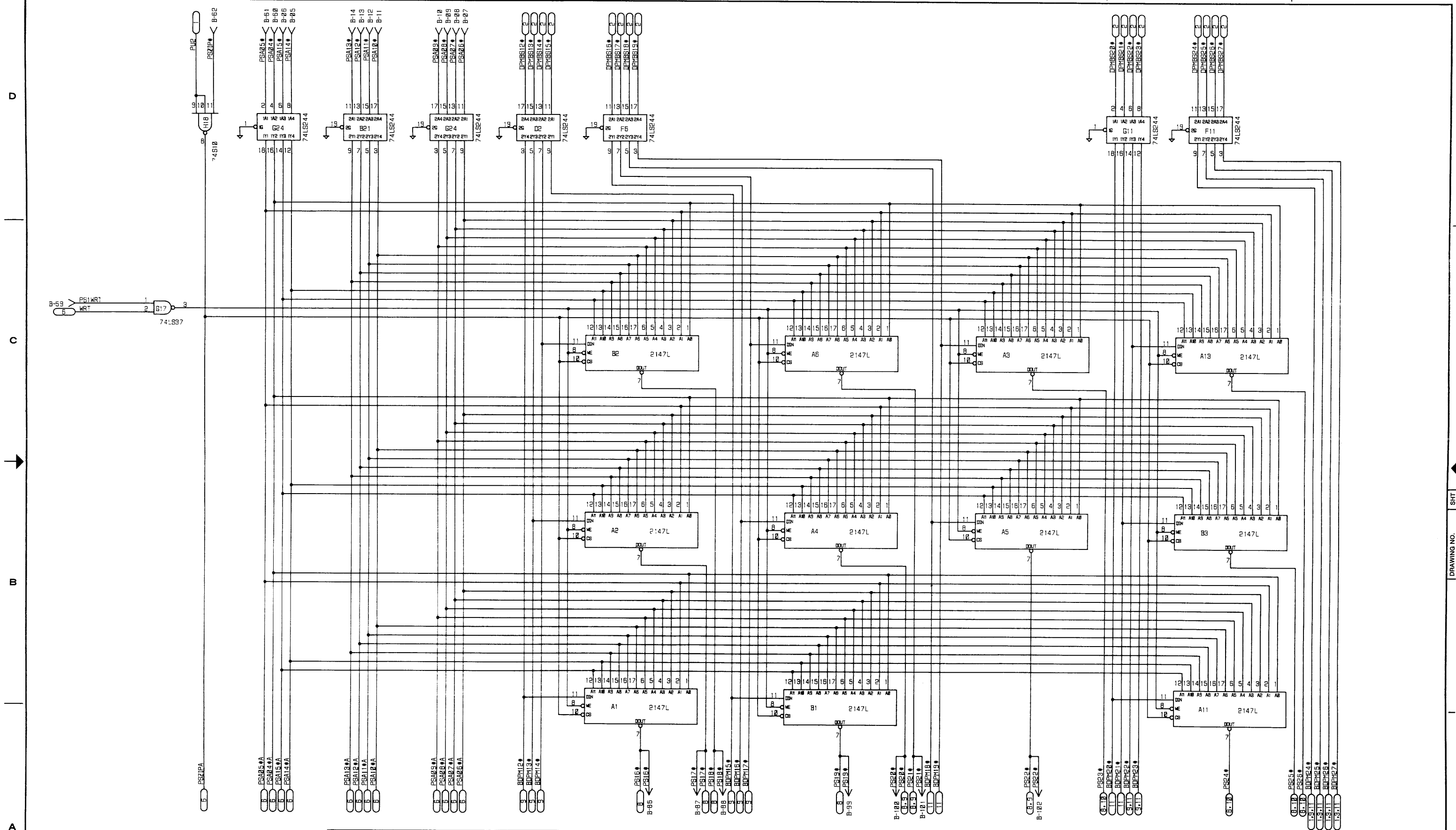


D  
C  
B  
A



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REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE			CHK. / DATE	DRAWN BY	
							<b>C.A.D.</b>	7-7-79	SIZE <b>D</b> CODE IDENT. NO. <b>56504</b> DRAWING NO. <b>512-3422-002</b> REV. <b>D</b> SCALE NONE SHEET <b>6</b> OF <b>12</b>

DRAWING NO. 5111



REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

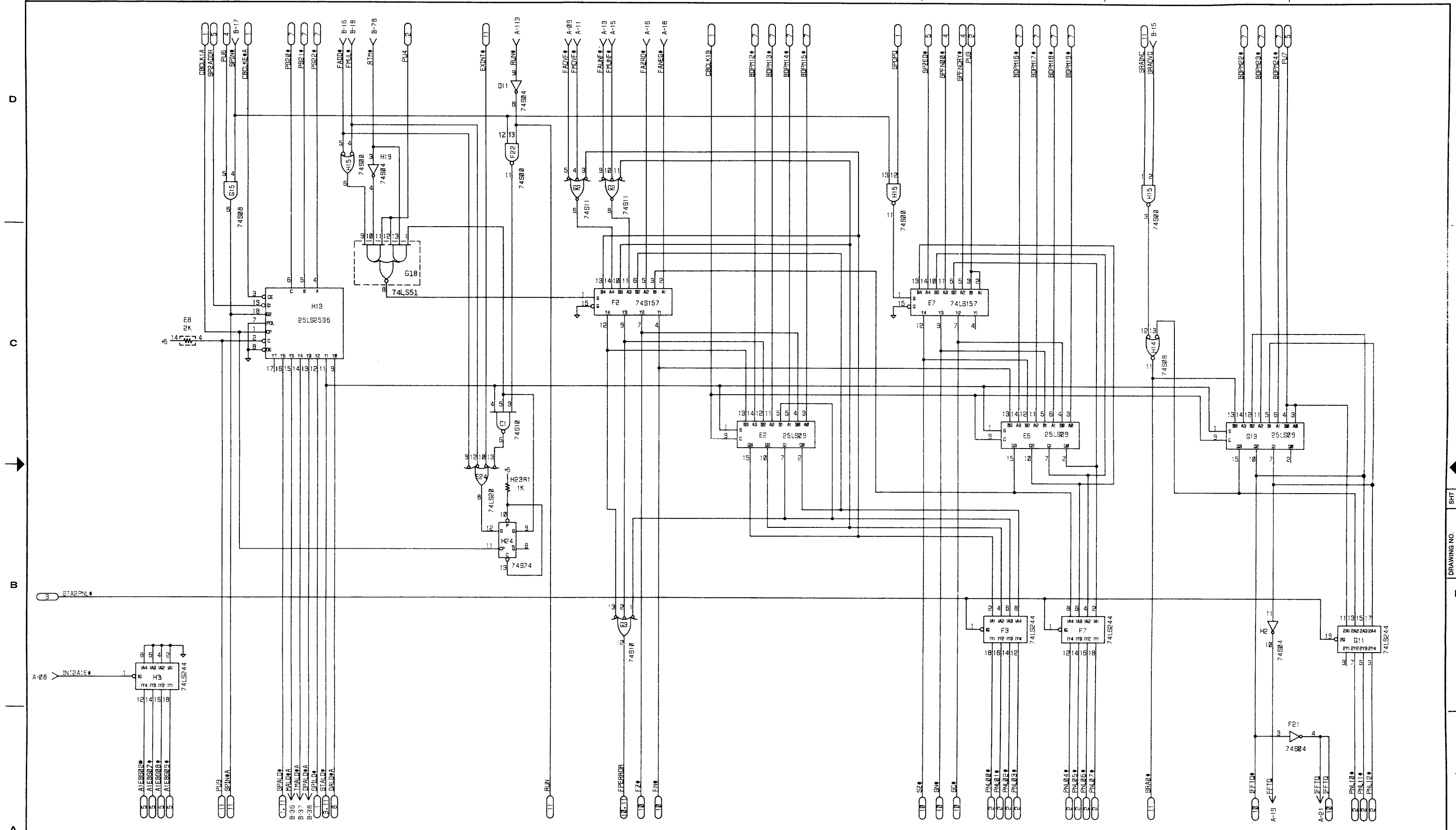
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DRAWN BY <b>C.R.O.</b>	DATE 7-7-79	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		SCHEMATIC ECB 422-B, PROCESSOR 1
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	
DRAWING NO. 512-3422-002		REV. <b>D</b>
SHEET 7 OF 12		







REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

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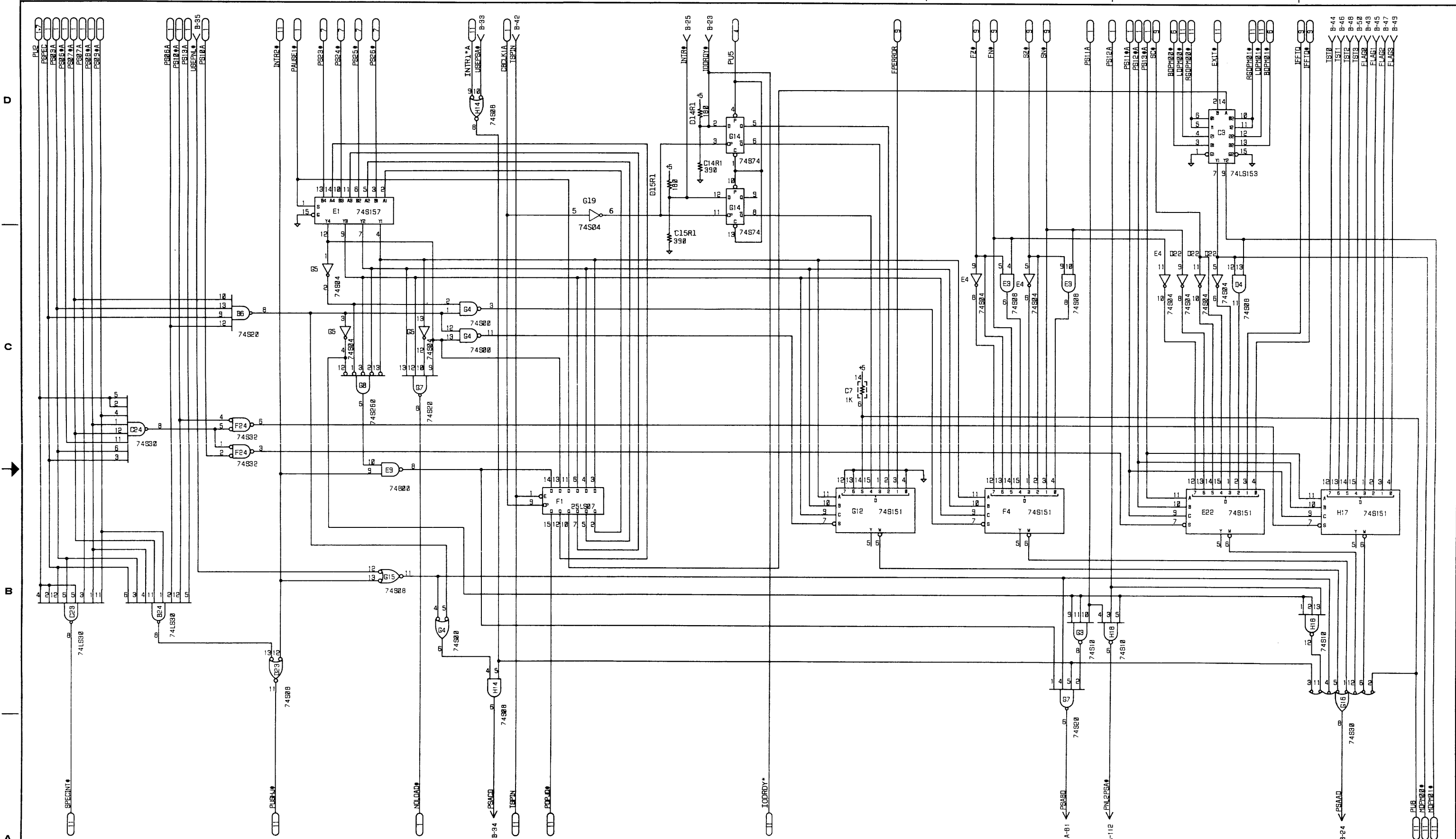
PROJ. ENG.	DATE
DRAWN BY <b>C.R.O.</b>	DATE 7-7-79
CHECK BY	DATE
MFG. ENG.	DATE

**FLOATING POINT SYSTEMS, INC.** POB 23489 Portland OR 97223

DRAWING TITLE  
**SCHEMATIC ECB 422-B, PROCESSOR 1**

SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3422-002</b>	REV <b>D</b>
SCALE NONE			SHEET 9 OF 12





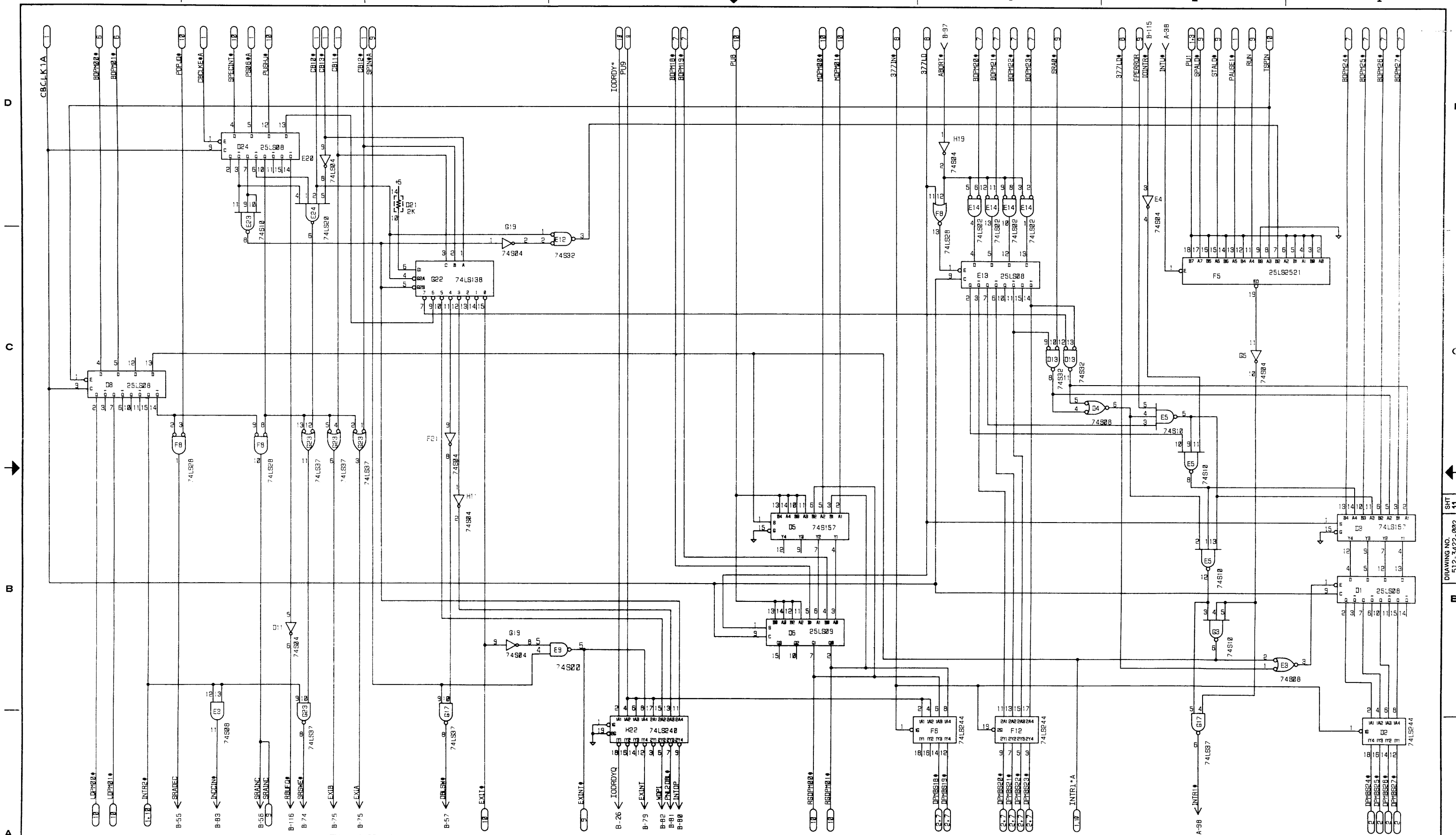
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DRAWN BY <b>C.R.O.</b>	DATE 7-7-79
CHECK BY	DATE
MFG. ENG.	DATE

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DRAWING TITLE SCHEMATIC: ECB 422-B, PROCESSOR 1			
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. 512-3422-002	REV. D
SCALE NONE	SHEET 10 OF 12		

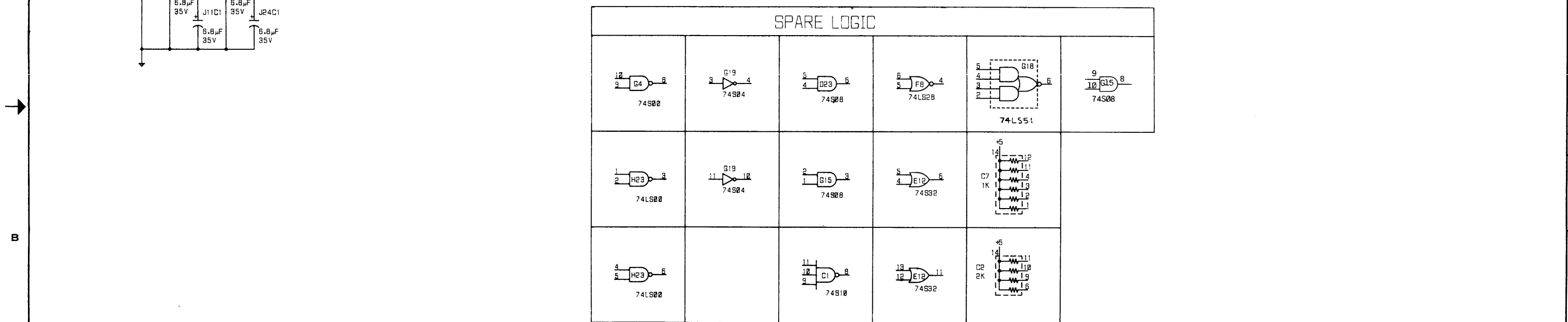
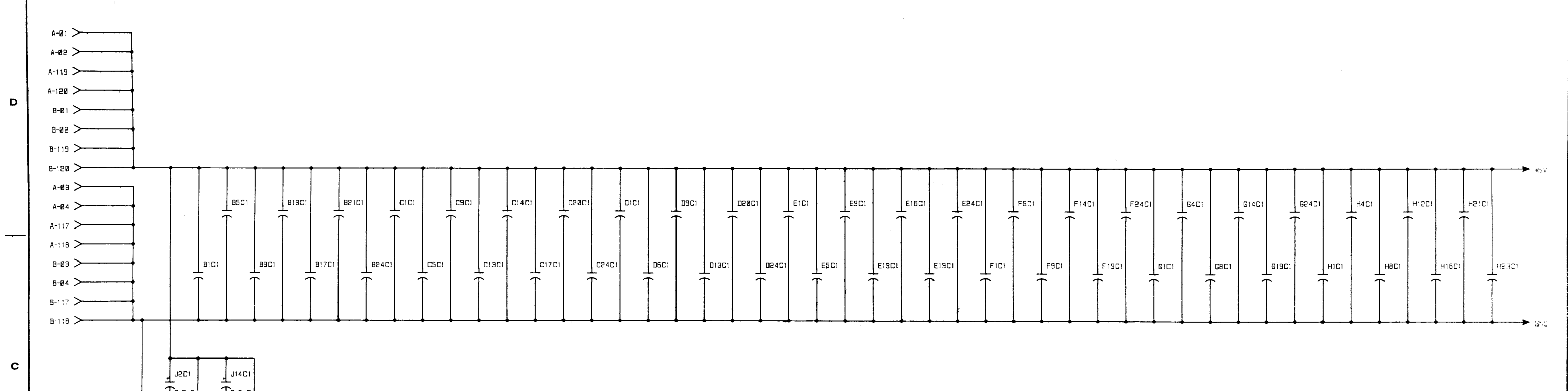


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REV	AUTH.	DESCRIPTION	ZONE	APVD / DATE

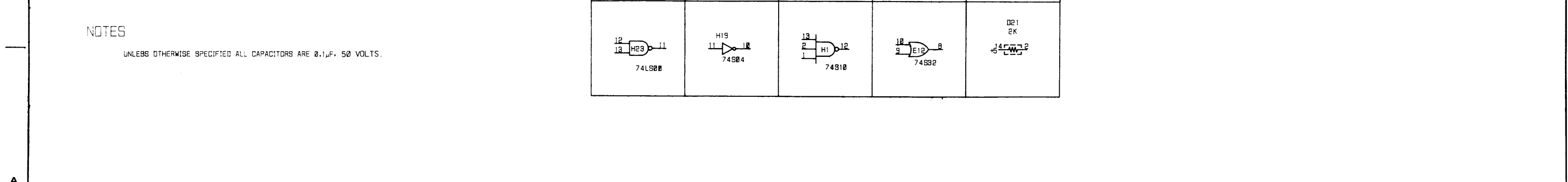
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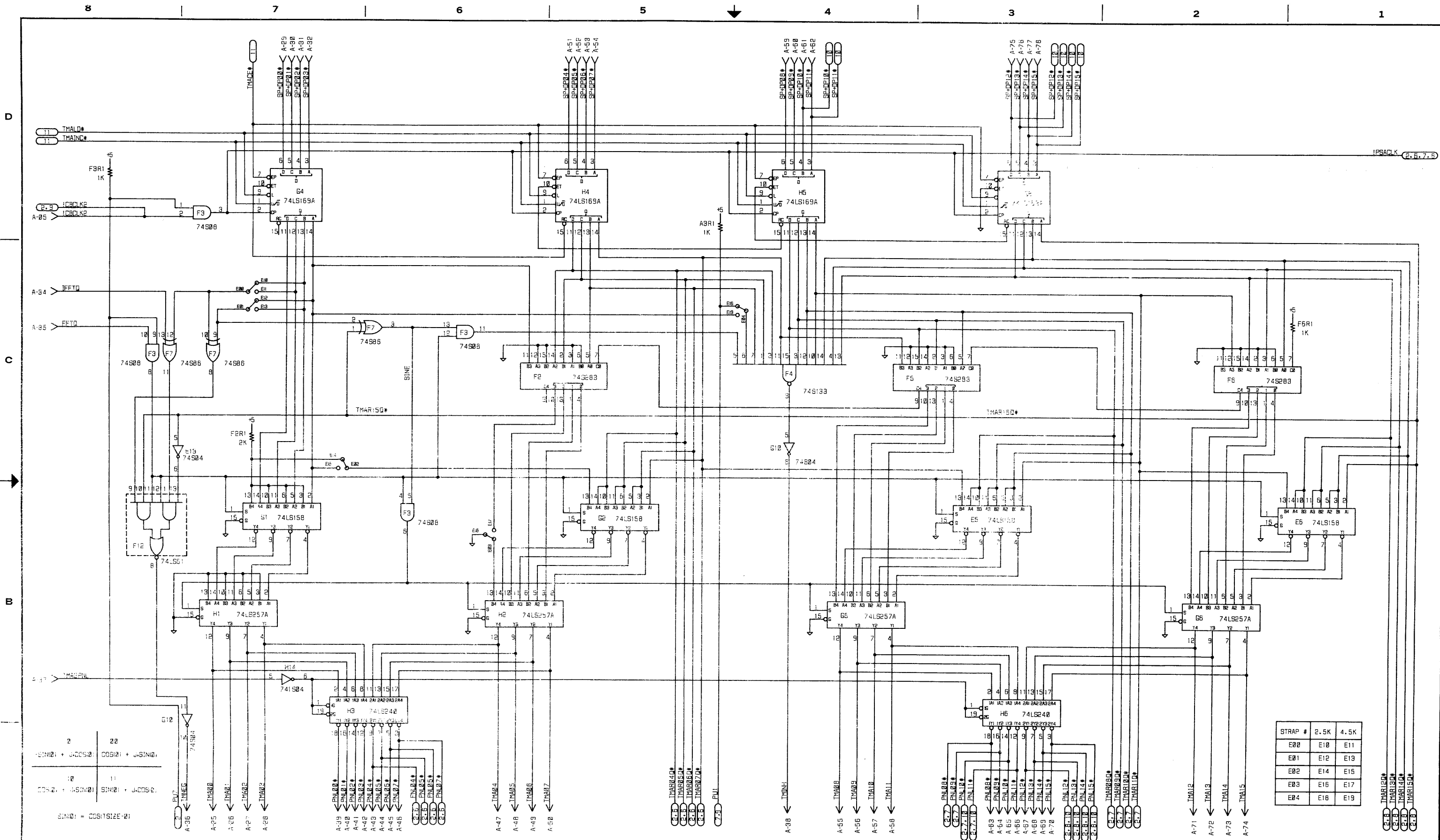
PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> PO Box 23489 Portland OR 97223
DRAWN BY <b>C.A.O.</b>	DATE 7-7-79	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		SCHEMATIC, ECB 422-B, PROCESSOR 1
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	
DRAWING NO. <b>512-3422-002</b>		REV. <b>D</b>
SCALE NONE		SHEET <b>11</b> OF <b>12</b>



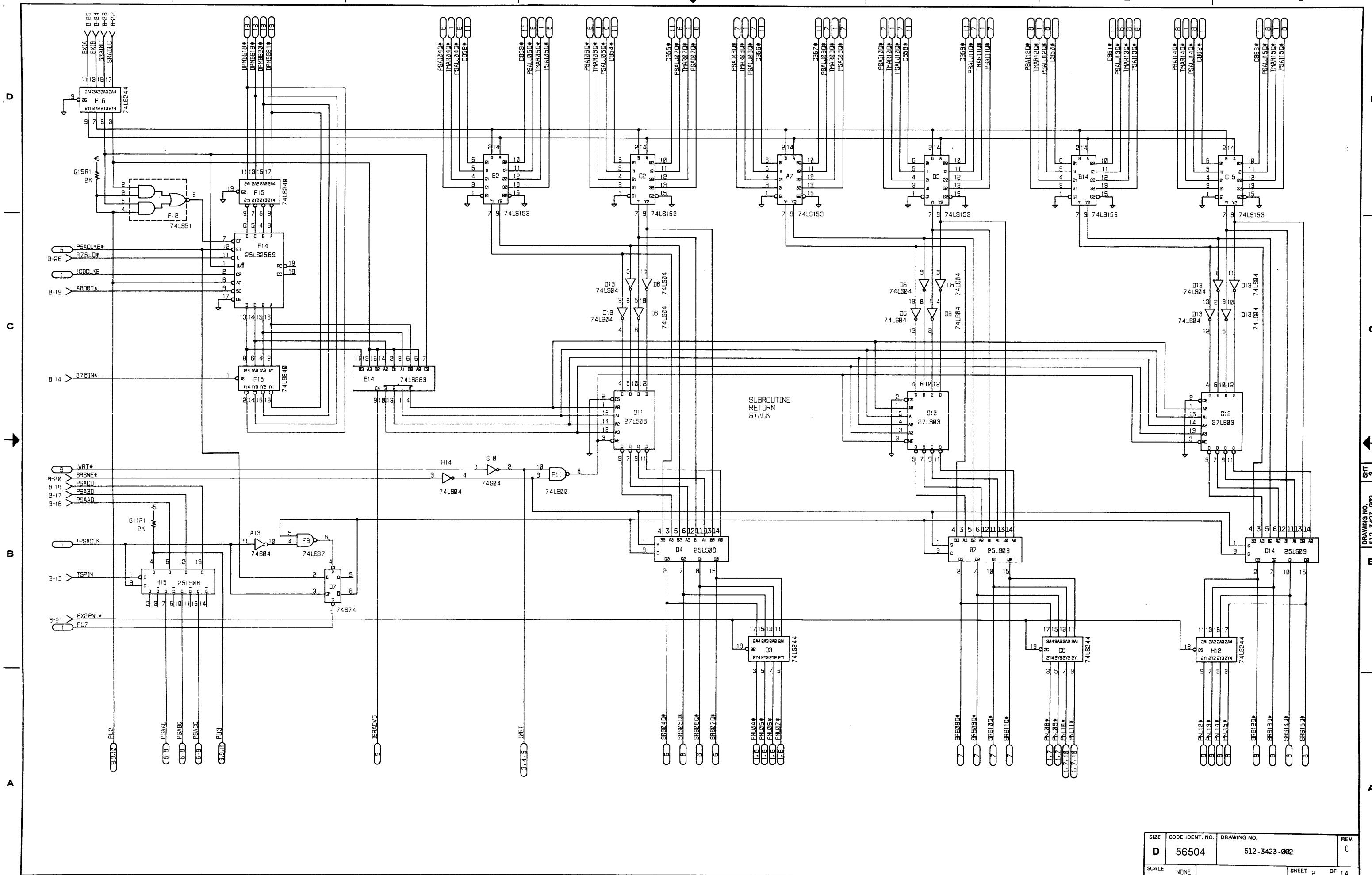
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REV.	AUTH.	DESCRIPTION	ZONE					APVD / DATE	CHK. / DATE	
						CHECK BY	DATE	SCHEMATIC: ECB 422-B, PROCESSOR 1		
						MFG. ENG.	DATE	SIZE <b>D</b>		
								CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3422-002</b>	REV. <b>D</b>
								SCALE NONE	SHEET 12 OF 12	



2      20  
 COSIN2 + JCOS2    COSIN1 + JSIN1  
 10      11  
 COS2 + JSIN2    SIN2 + JCOS2  
 SIN0 = COS1SIZE-01  
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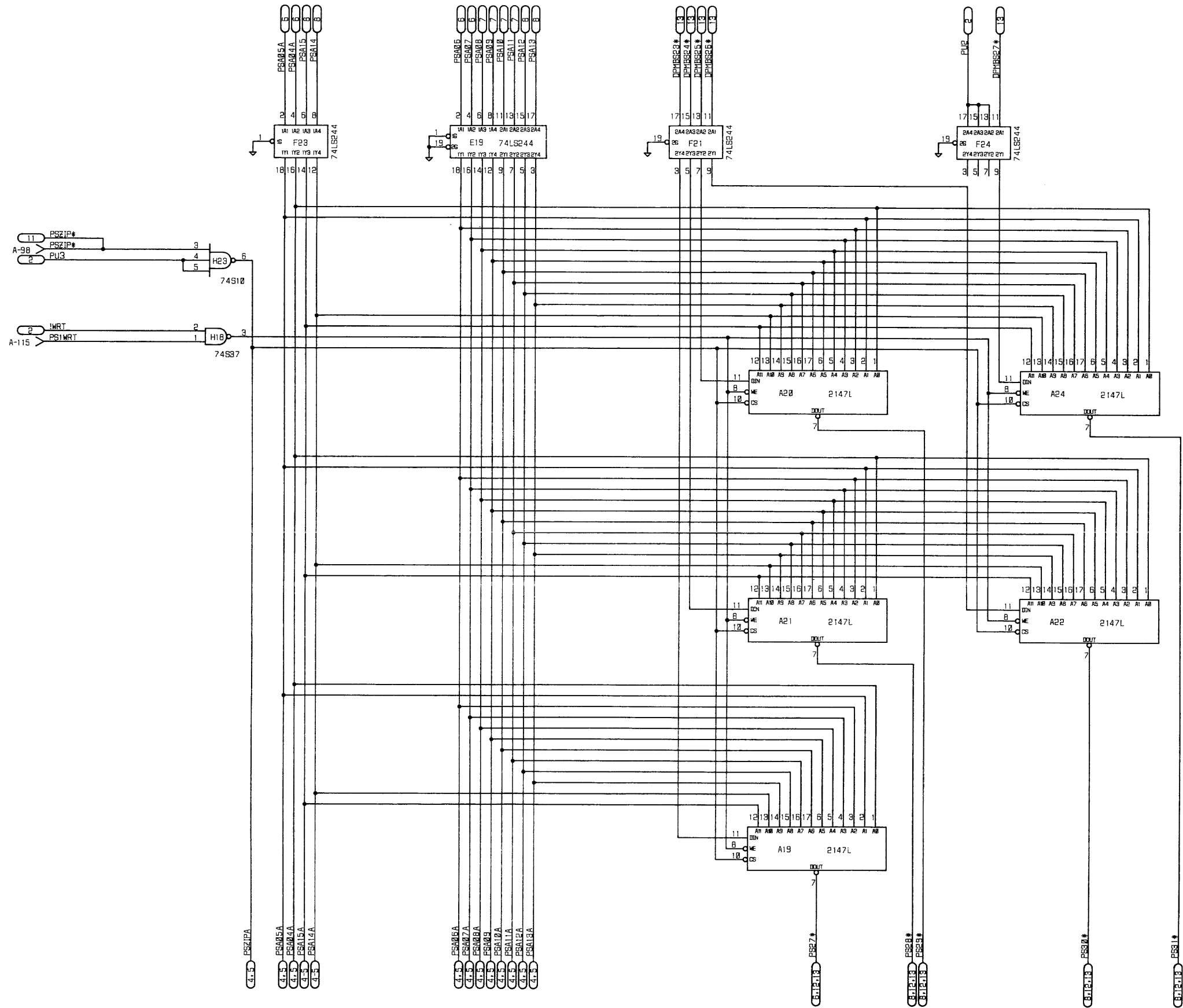
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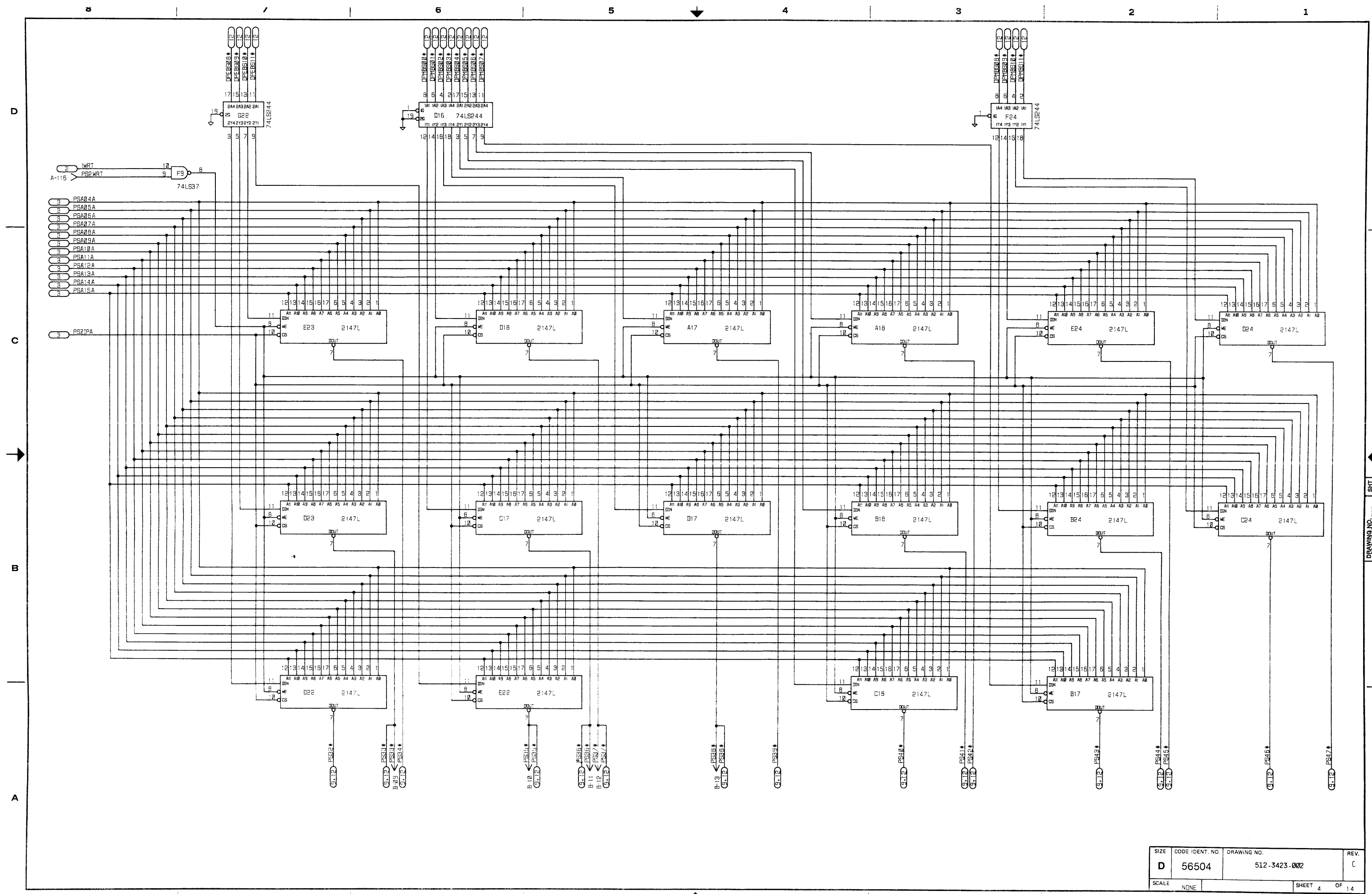
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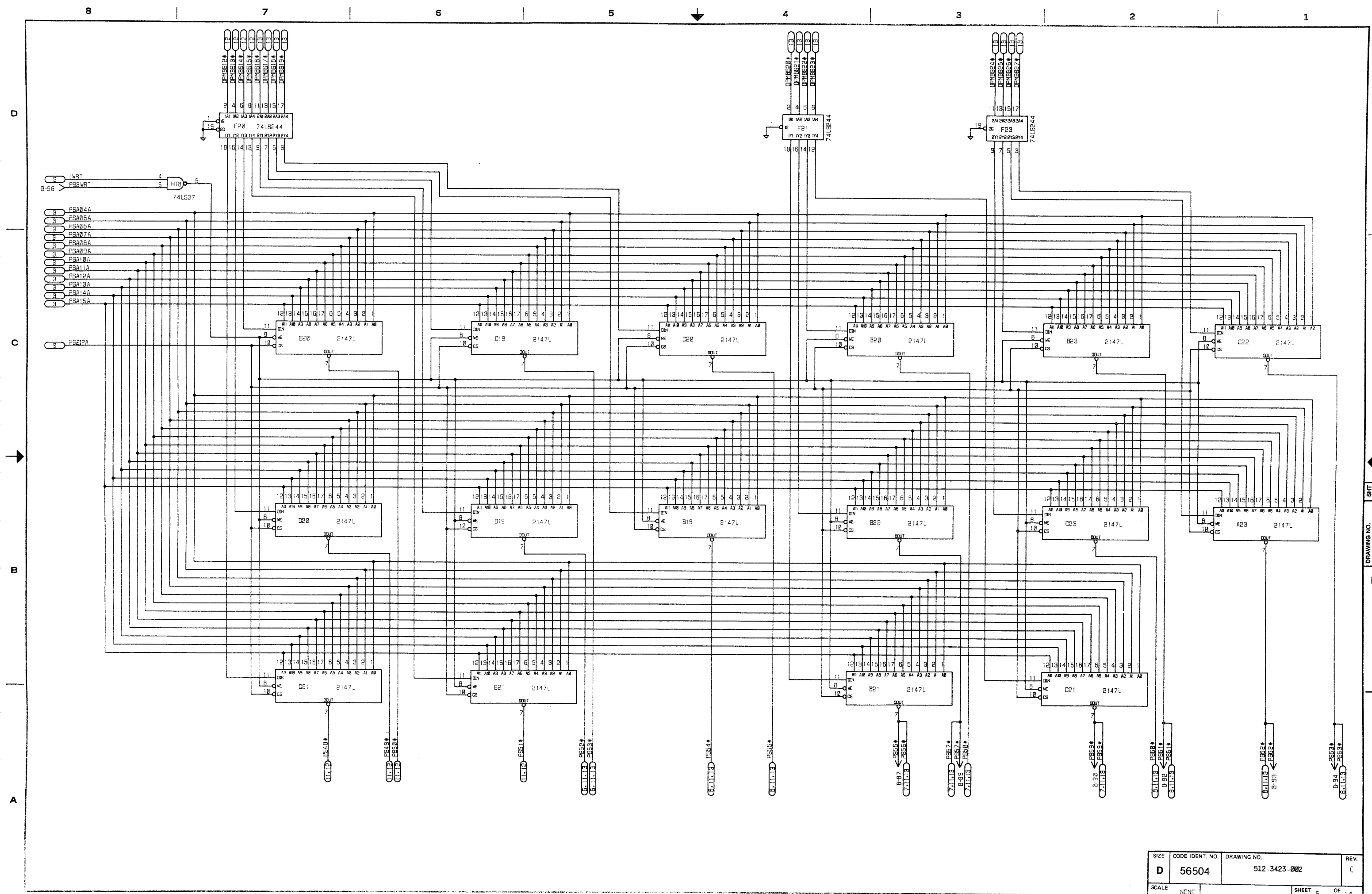
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DRAWING NO. 512-3423-002 SHEET 3 OF 14



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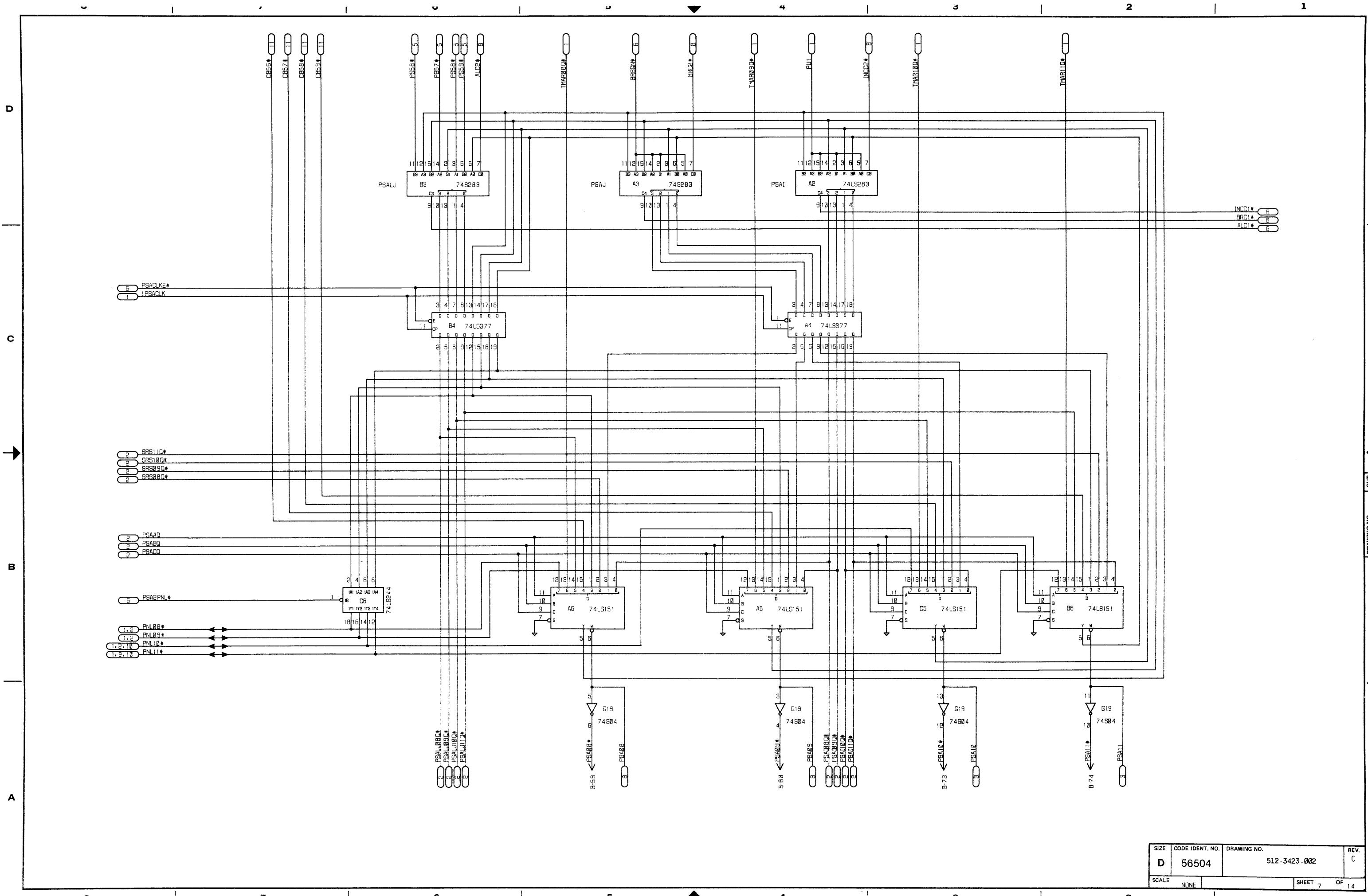


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DRAWING NO. SHT







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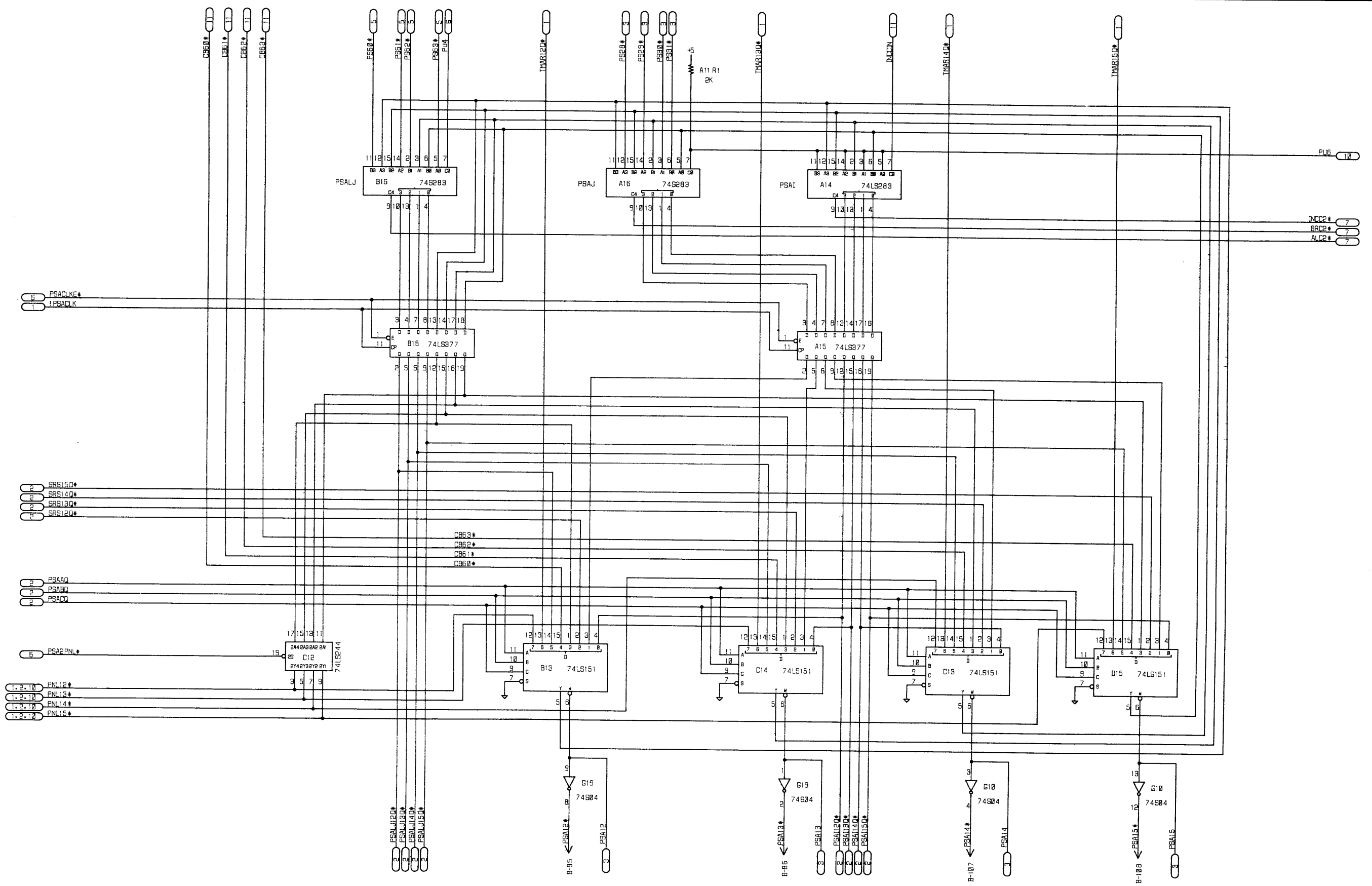
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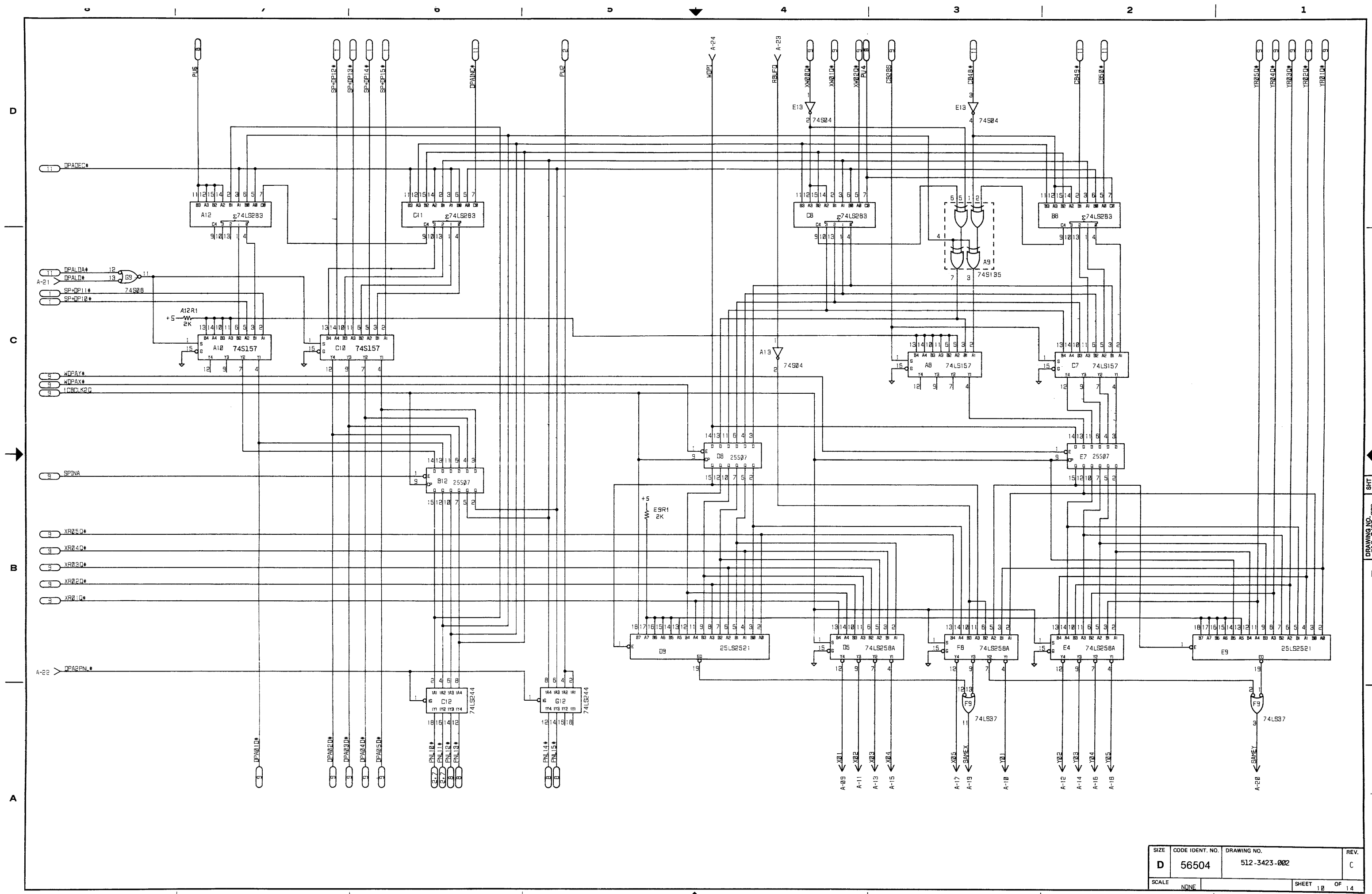
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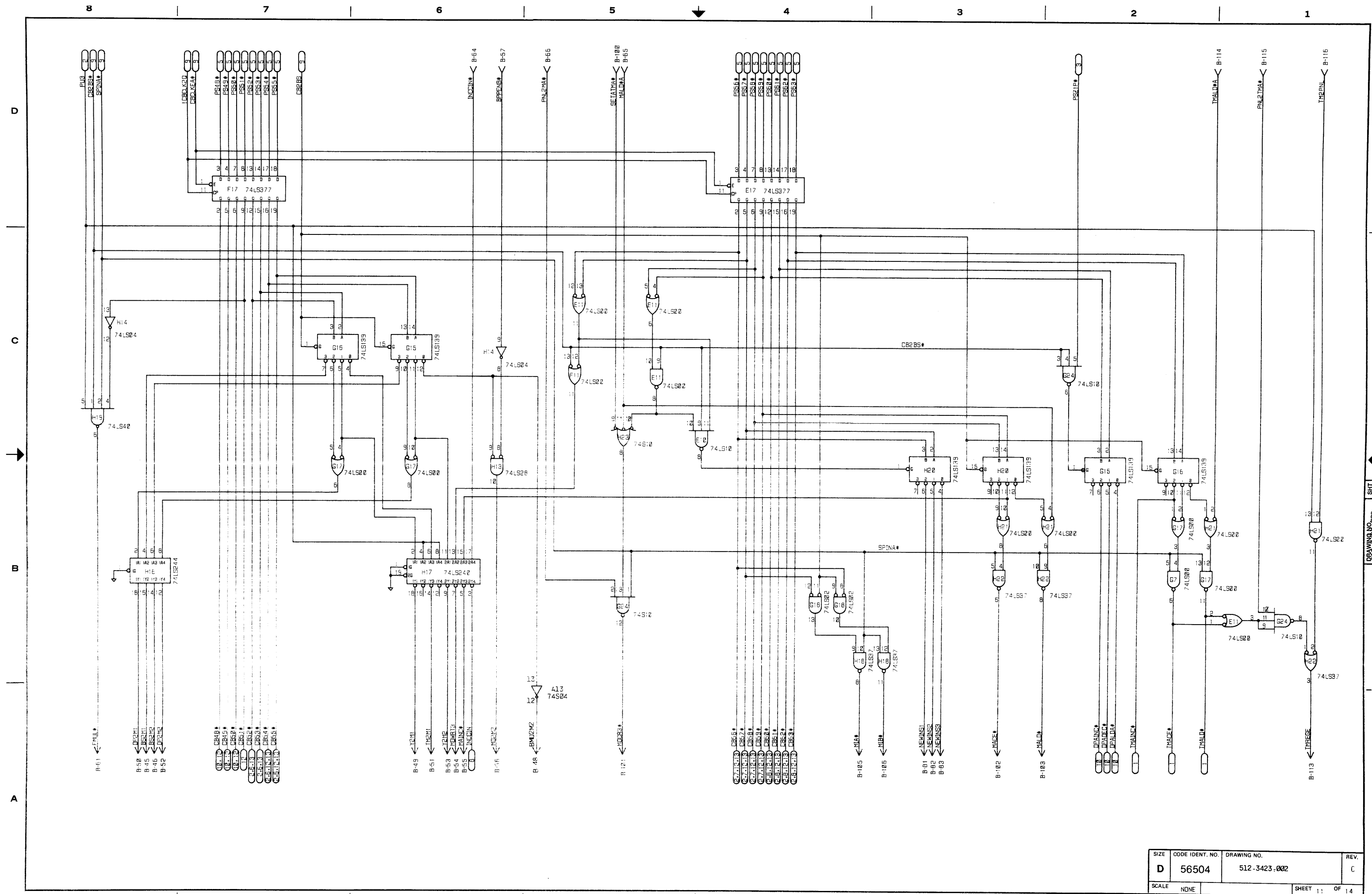
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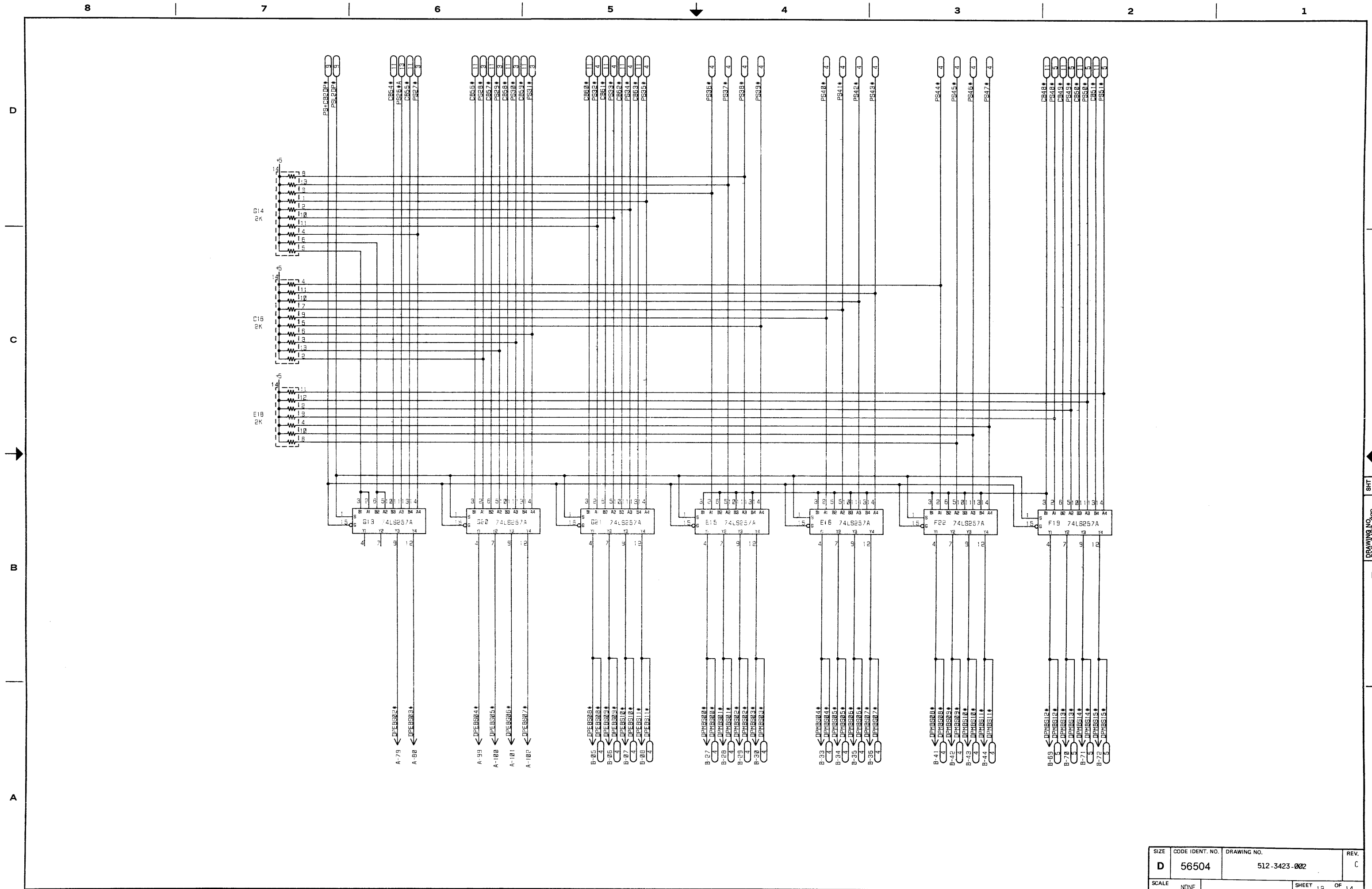




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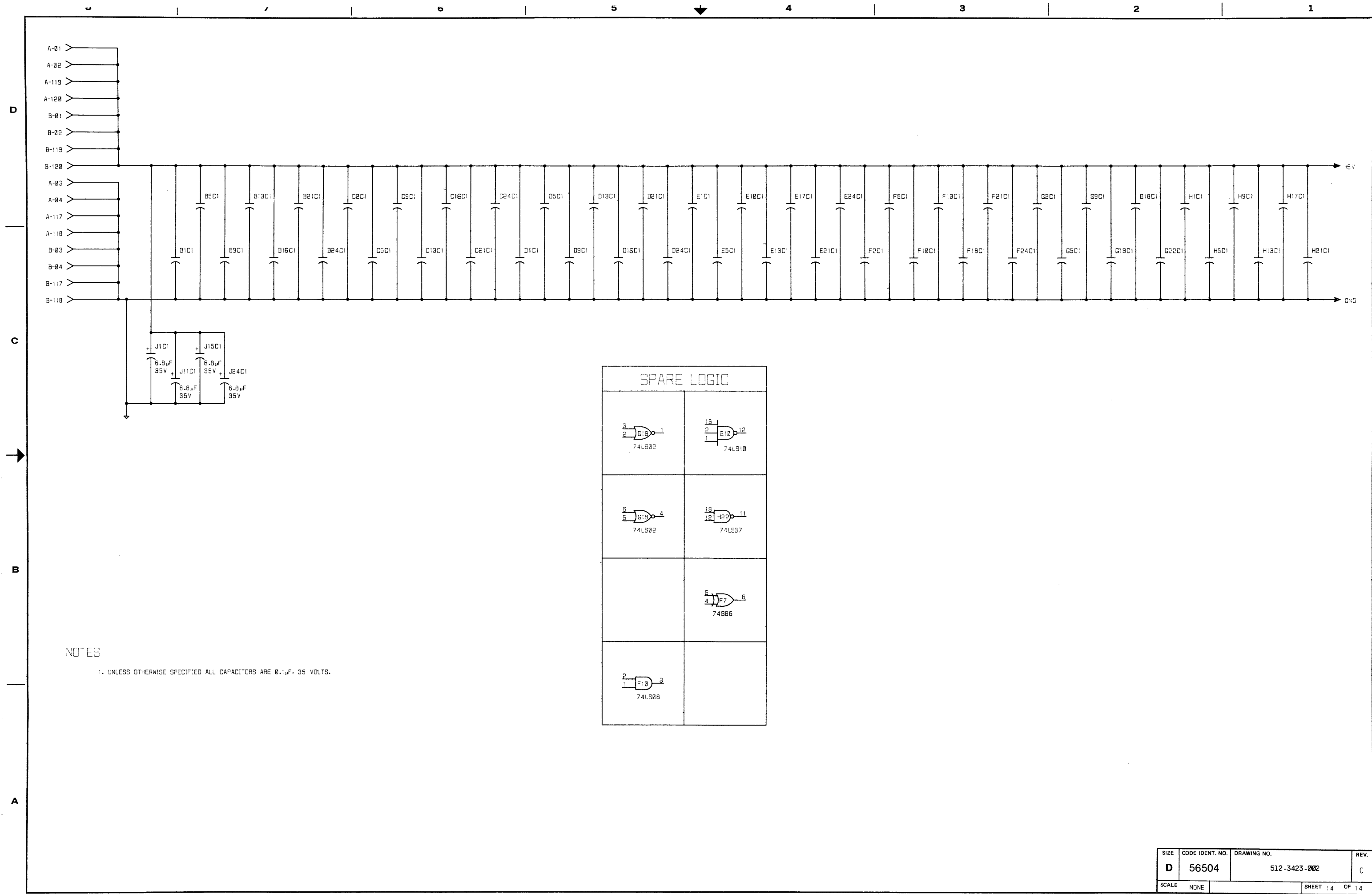


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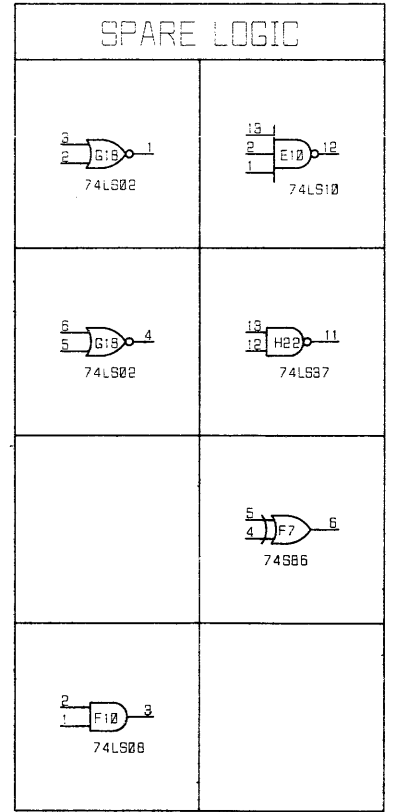




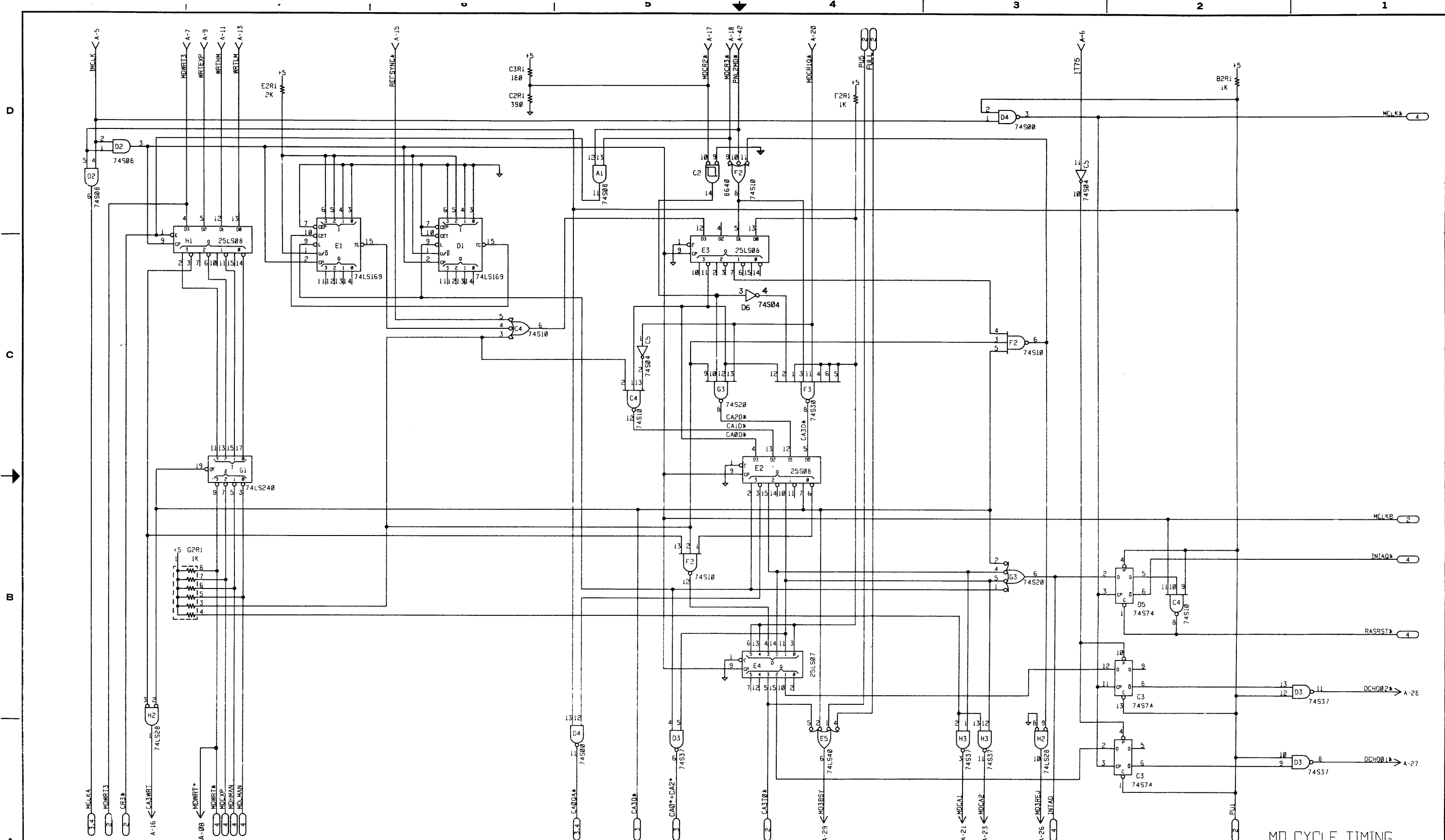


NOTES

1. UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE 0.1μF, 35 VOLTS.



SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3423-002	C
SCALE	NONE		SHEET 14 OF 14



MD CYCLE TIMING

NOTES:  
 1. UNLESS OTHERWISE SPECIFIED, ALL CAPACITORS ARE 0.1M<sup>F</sup> 50 VOLTS.

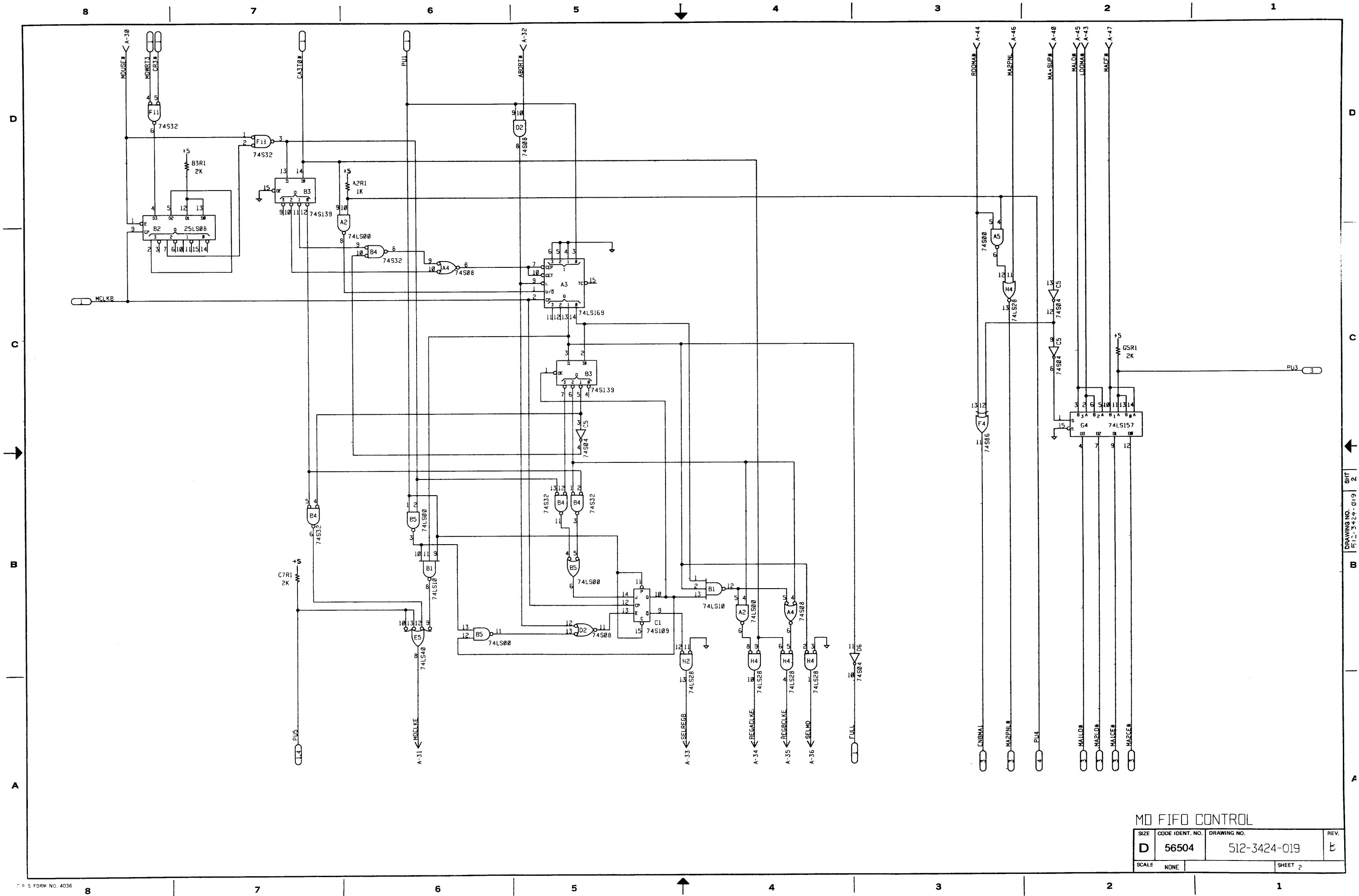
**IMPORTANT NOTE** - IGNORE DASHES IN PINOUTS (EXAMPLE:A-19), THEY ARE FOR PURPOSES OF CLARITY ONLY.

REVISIONS						
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE	
B	ECO 83196	TITLE DESCRIPTION CHANGE		3/15/83	3/15/83	

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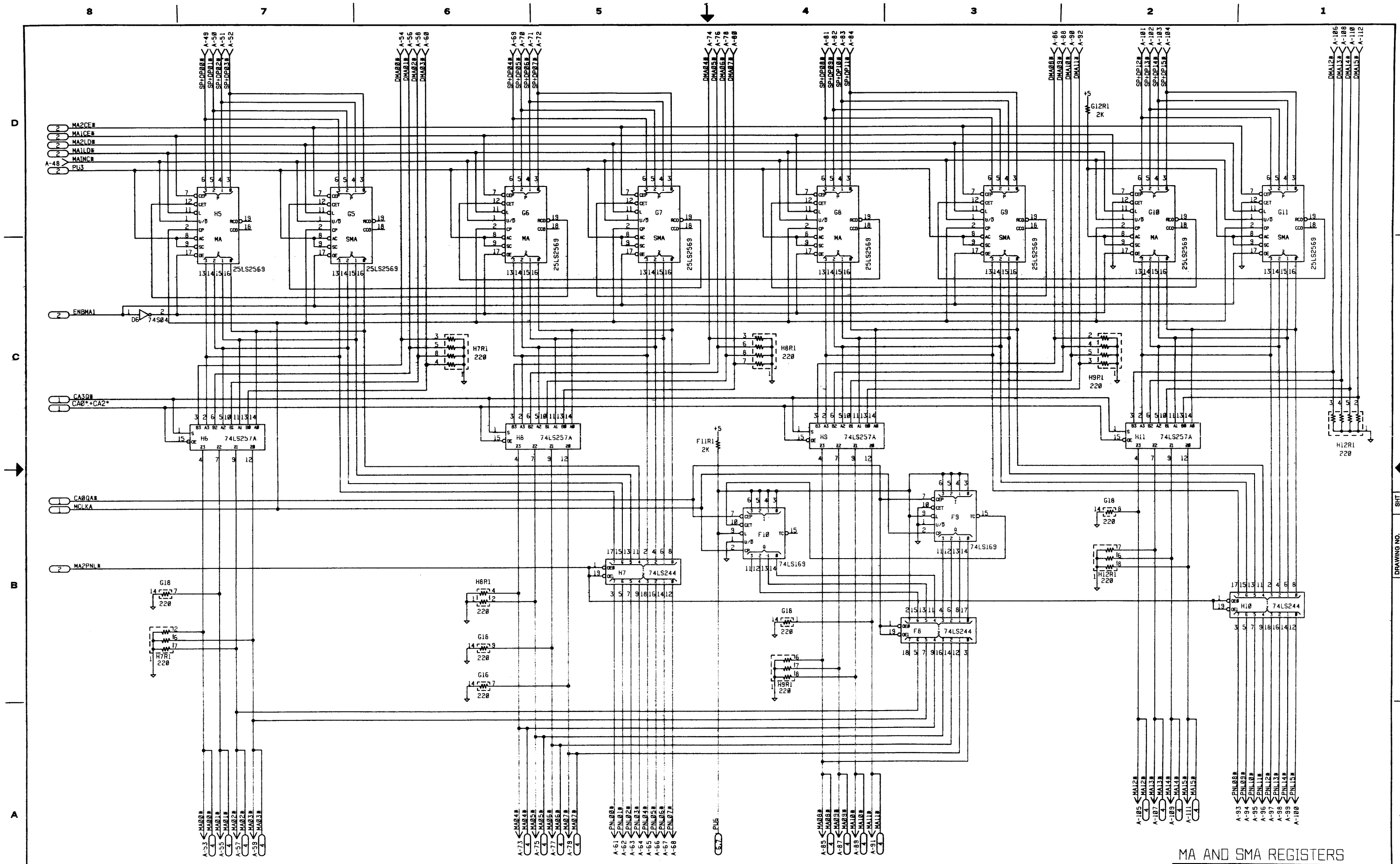
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PROJ. ENG. <i>Ed</i>	DATE 3/15/83	<b>FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23489 Portland OR 97223
DRAWN BY <i>M. KINMEL</i>	DATE 8-10-81	
CHECK BY <i>[Signature]</i>	DATE 3-15-83	
MFG. ENG. <i>[Signature]</i>	DATE 3/15/83	
DRAWING TITLE SCHEMATIC, ECB 424-E, MAIN DATA, +5V ONLY		REV. B
SIZE D	CODE IDENT. NO. 56504	DRAWING NO. 512-3424-019
SCALE NONE	SHEET 1 OF 11	



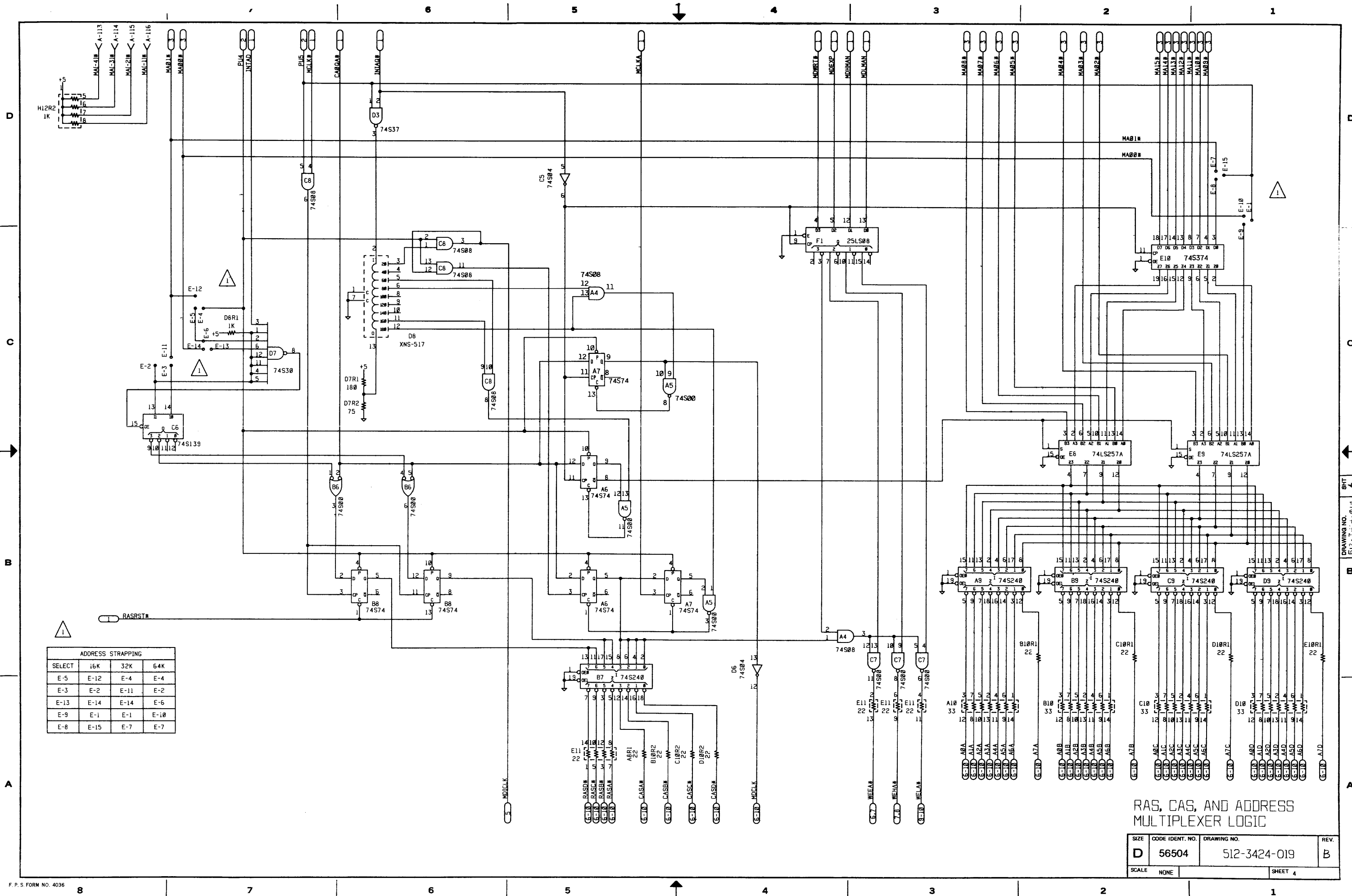
MD FIFO CONTROL

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3424-019	1
SCALE NONE			SHEET 2



MA AND SMA REGISTERS

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3424-019	B
SCALE	NONE	SHEET	3

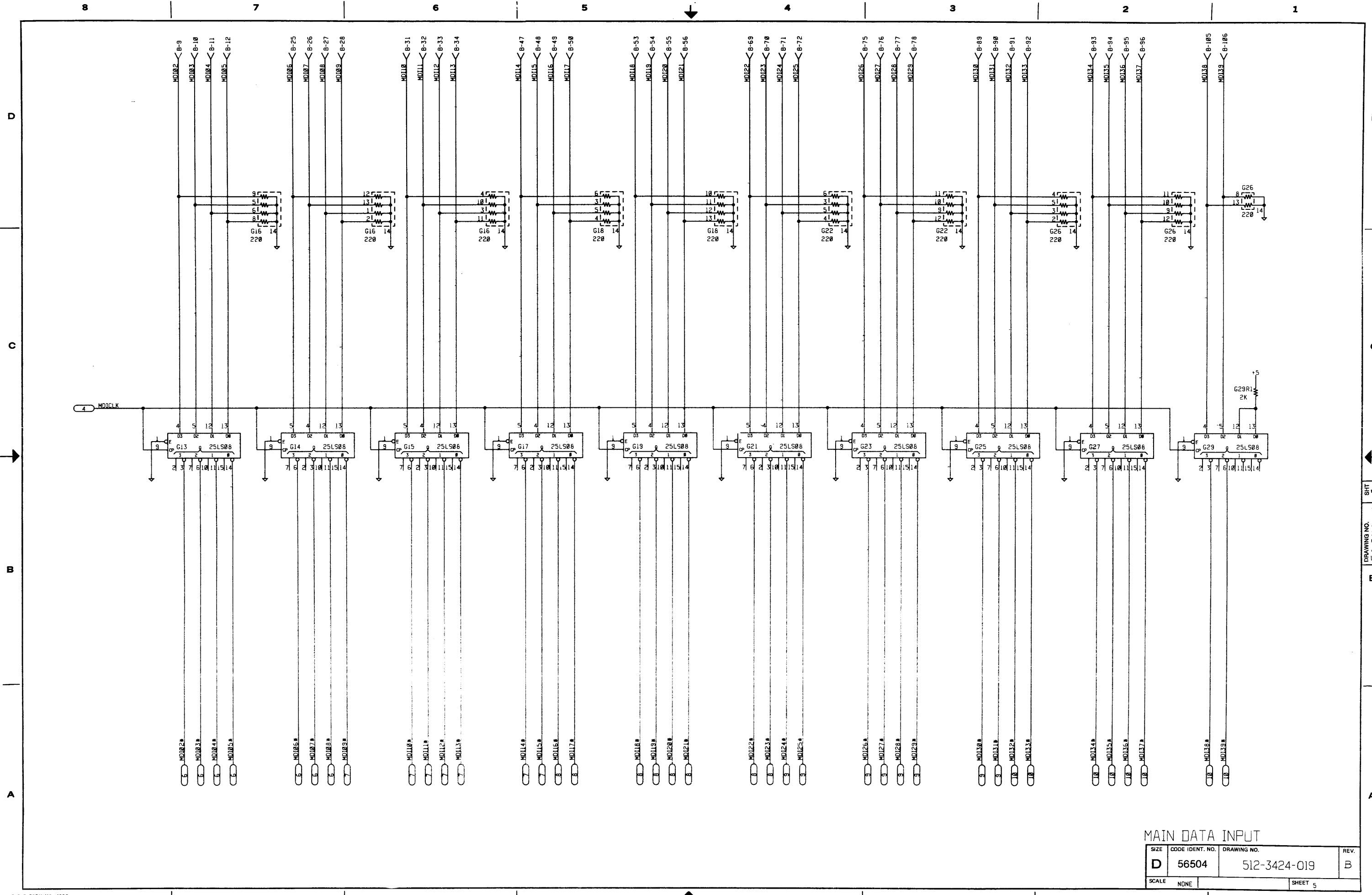


ADDRESS STRAPPING

SELECT	16K	32K	64K
E-5	E-12	E-4	E-4
E-3	E-2	E-11	E-2
E-13	E-14	E-14	E-6
E-9	E-1	E-1	E-10
E-8	E-15	E-7	E-7

RAS, CAS, AND ADDRESS  
MULTIPLEXER LOGIC

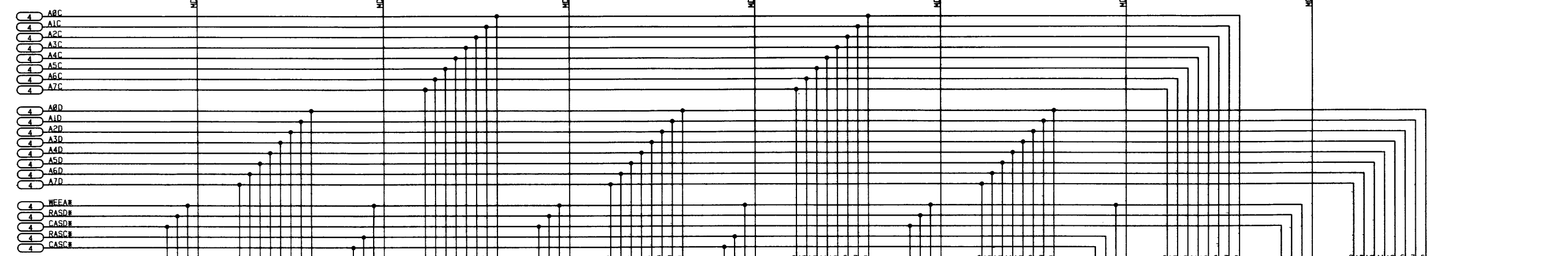
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3424-019	B
SCALE	NONE	SHEET 4	



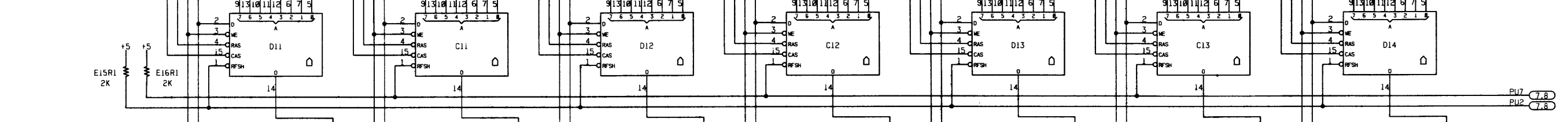
MAIN DATA INPUT

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3424-019	B
SCALE NONE		SHEET 5	

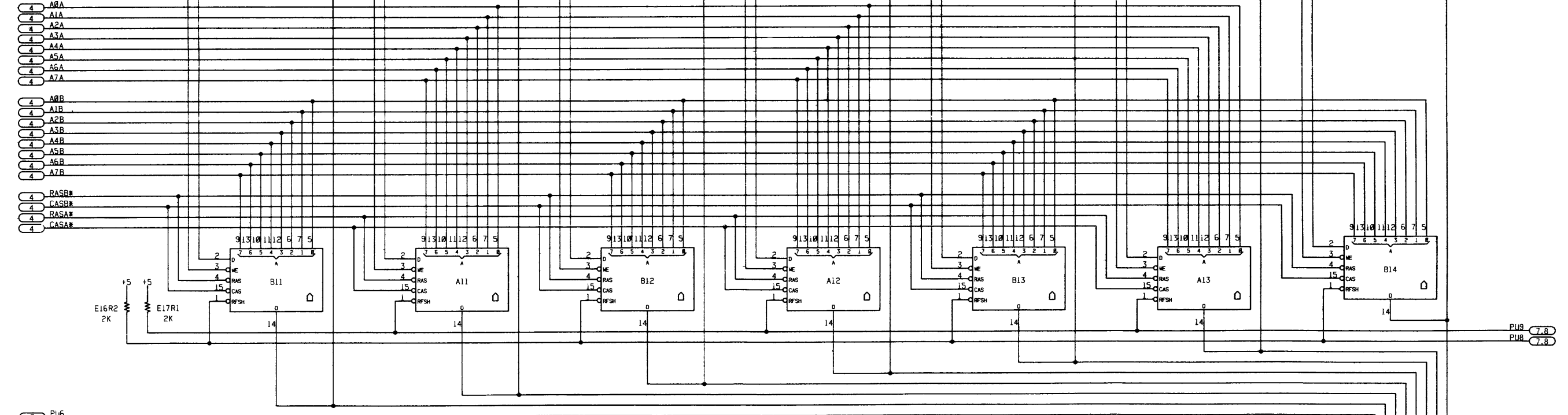
D



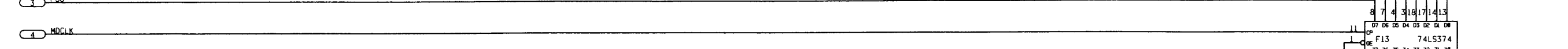
C



B

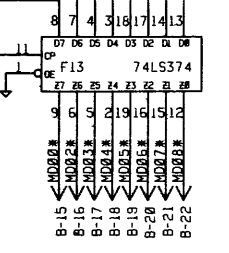
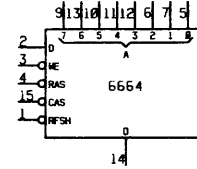
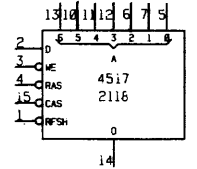
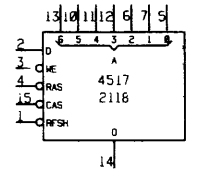


A



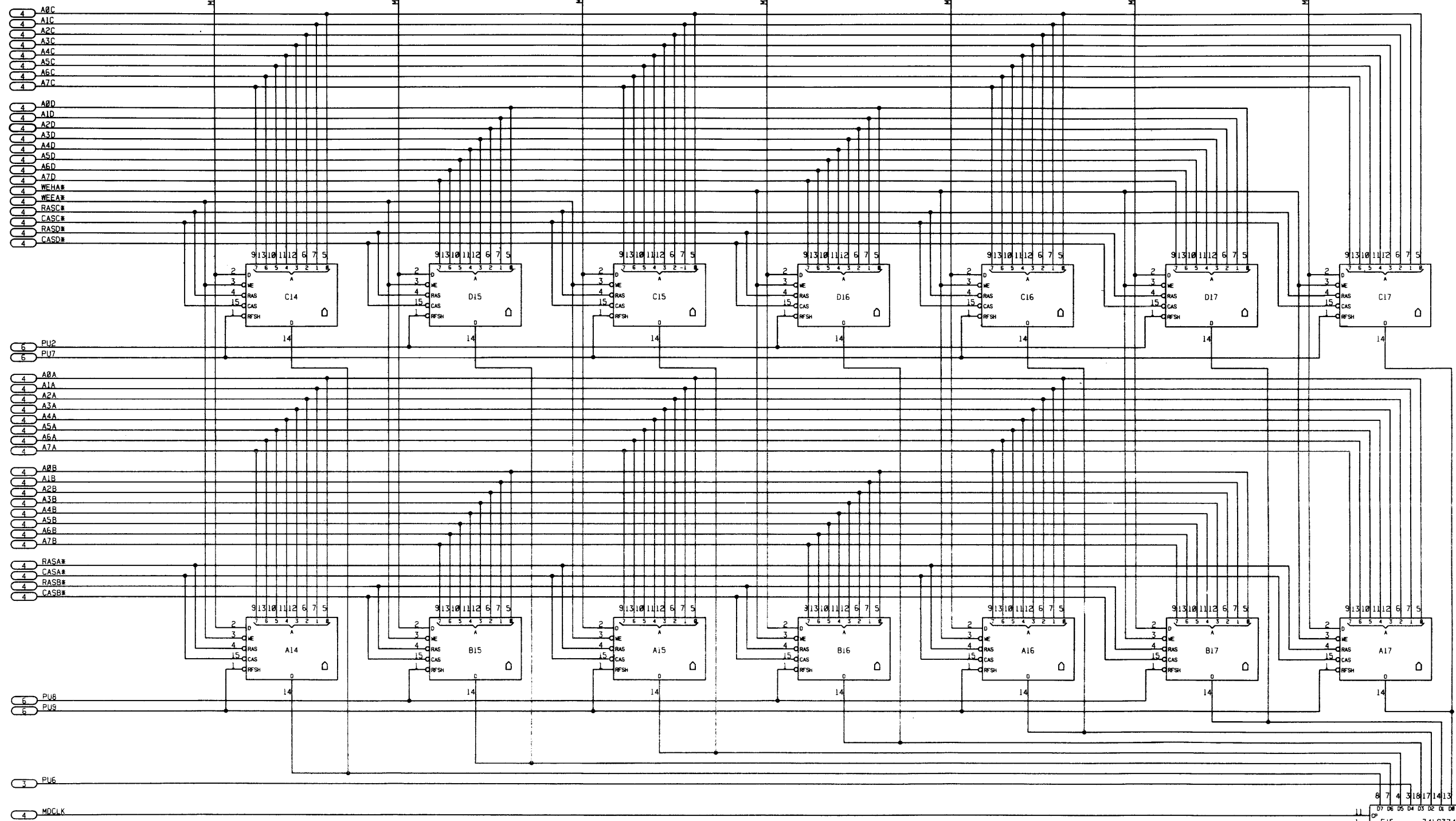
NOTE

1. FOR 16K MD VERSION, ROWS A AND B ARE STUFFED WITH 4517/2118.
2. FOR 32K MD VERSION, ROWS A,B,C, AND D ARE STUFFED WITH 4517/2118.
3. FOR 64K MD VERSION, ROWS A AND B ARE STUFFED WITH 6664.



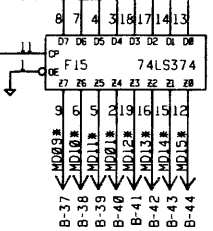
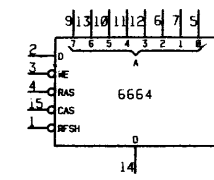
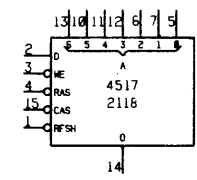
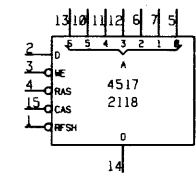
EXPONENT BITS 2-8

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3424-019	B
SCALE NONE		SHEET 6	



NOTE

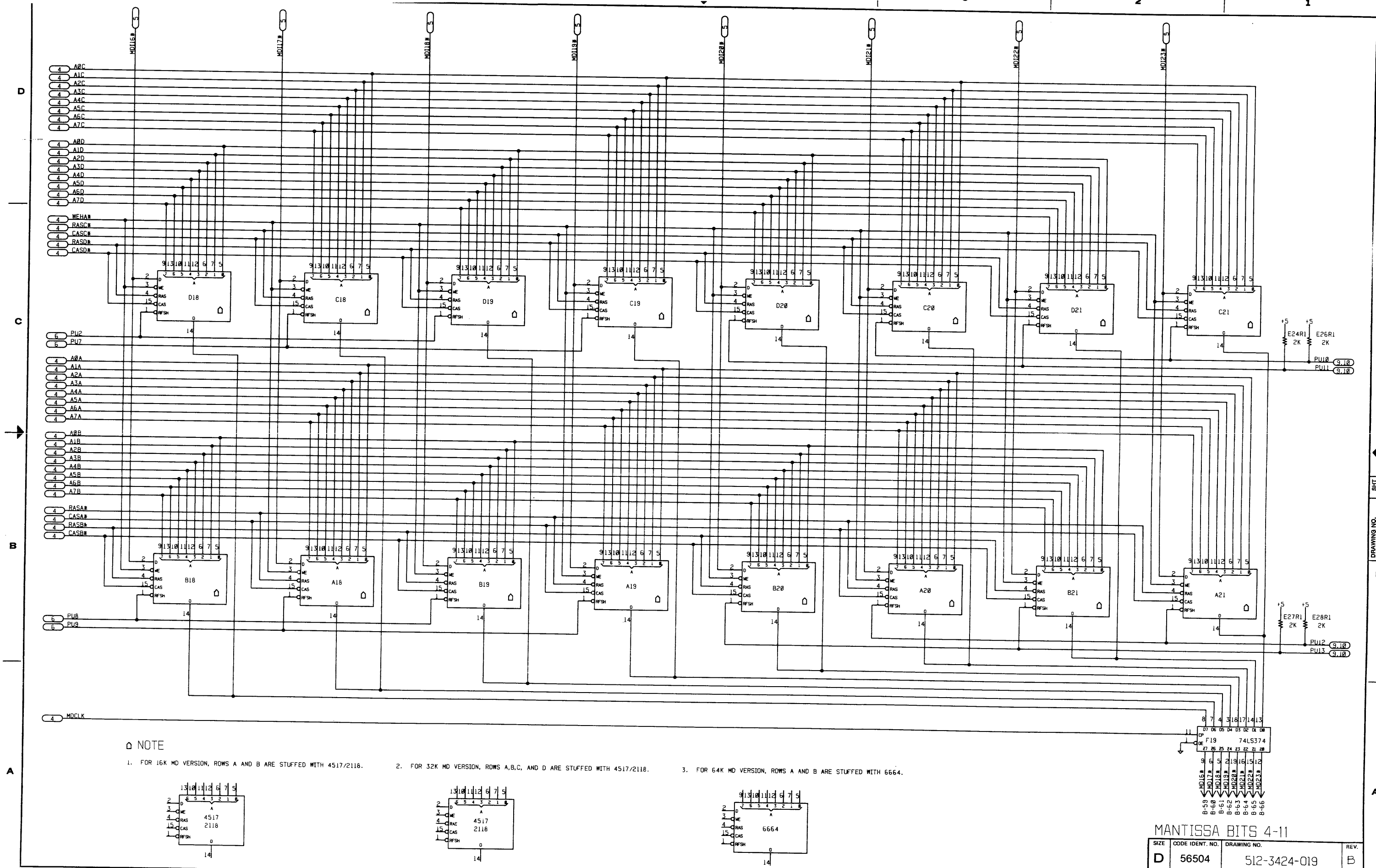
- FOR 16K MD VERSION, ROWS A AND B ARE STUFFED WITH 4517/2118.
- FOR 32K MD VERSION, ROWS A,B,C, AND D ARE STUFFED WITH 4517/2118.
- FOR 64K MD VERSION, ROWS A AND B ARE STUFFED WITH 6664.



EXPONENT BITS 9-11  
MANTISSA BITS 0-3

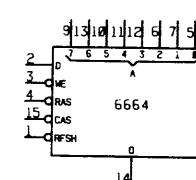
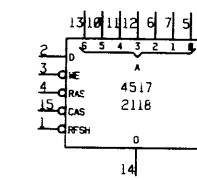
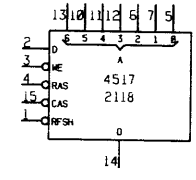
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3424-019	B
SCALE	NONE	SHEET 7	





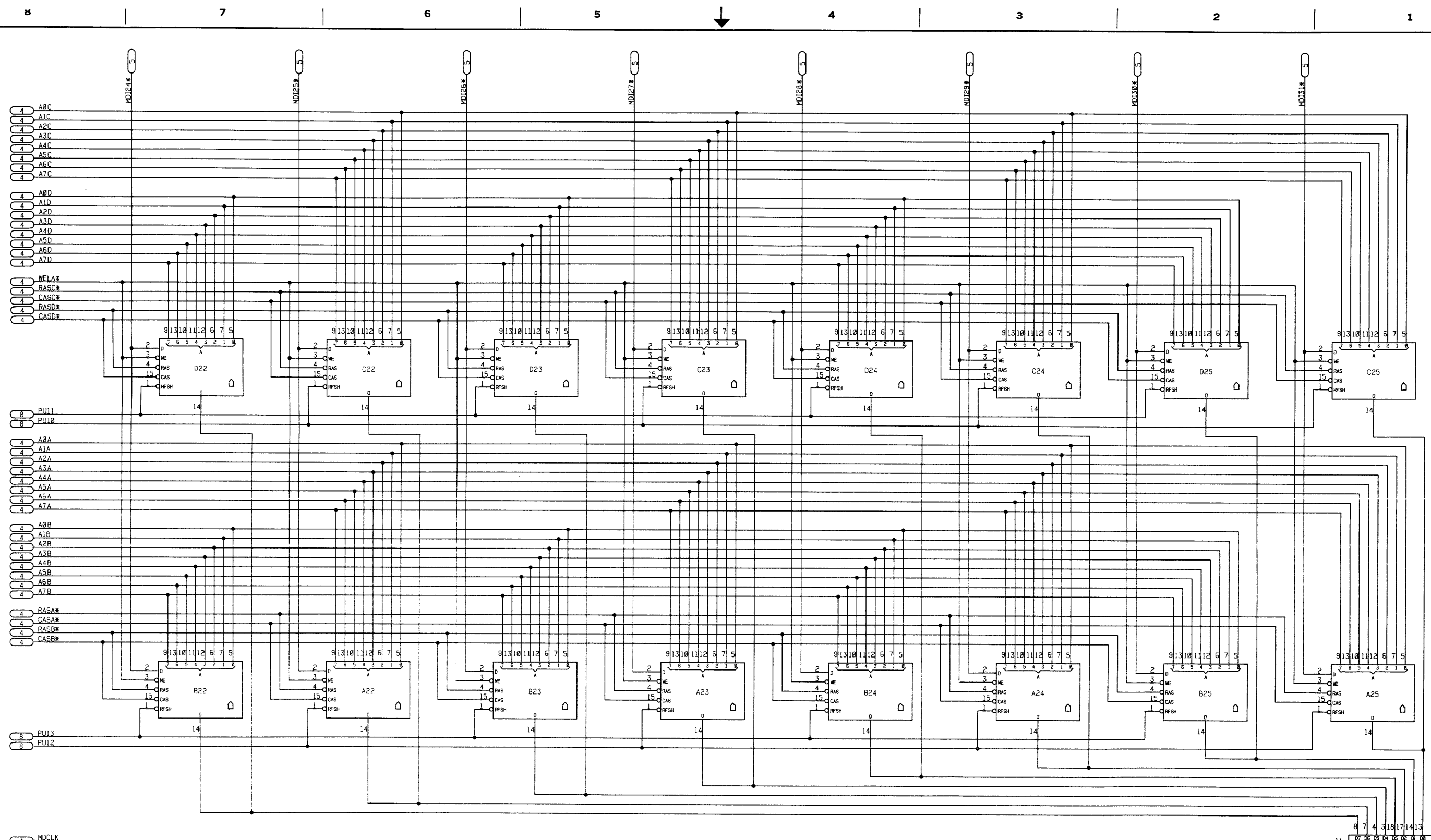
NOTE

- 1. FOR 16K MD VERSION, ROWS A AND B ARE STUFFED WITH 4517/2116.
- 2. FOR 32K MD VERSION, ROWS A,B,C, AND D ARE STUFFED WITH 4517/2116.
- 3. FOR 64K MD VERSION, ROWS A AND B ARE STUFFED WITH 6664.



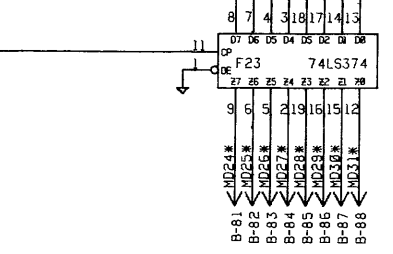
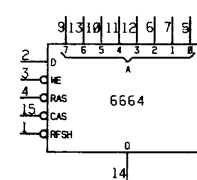
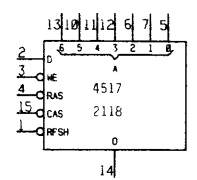
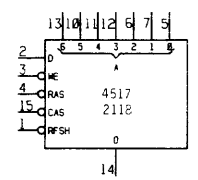
MANTISSA BITS 4-11

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3424-019	B
SCALE	NONE	SHEET	8



NOTE

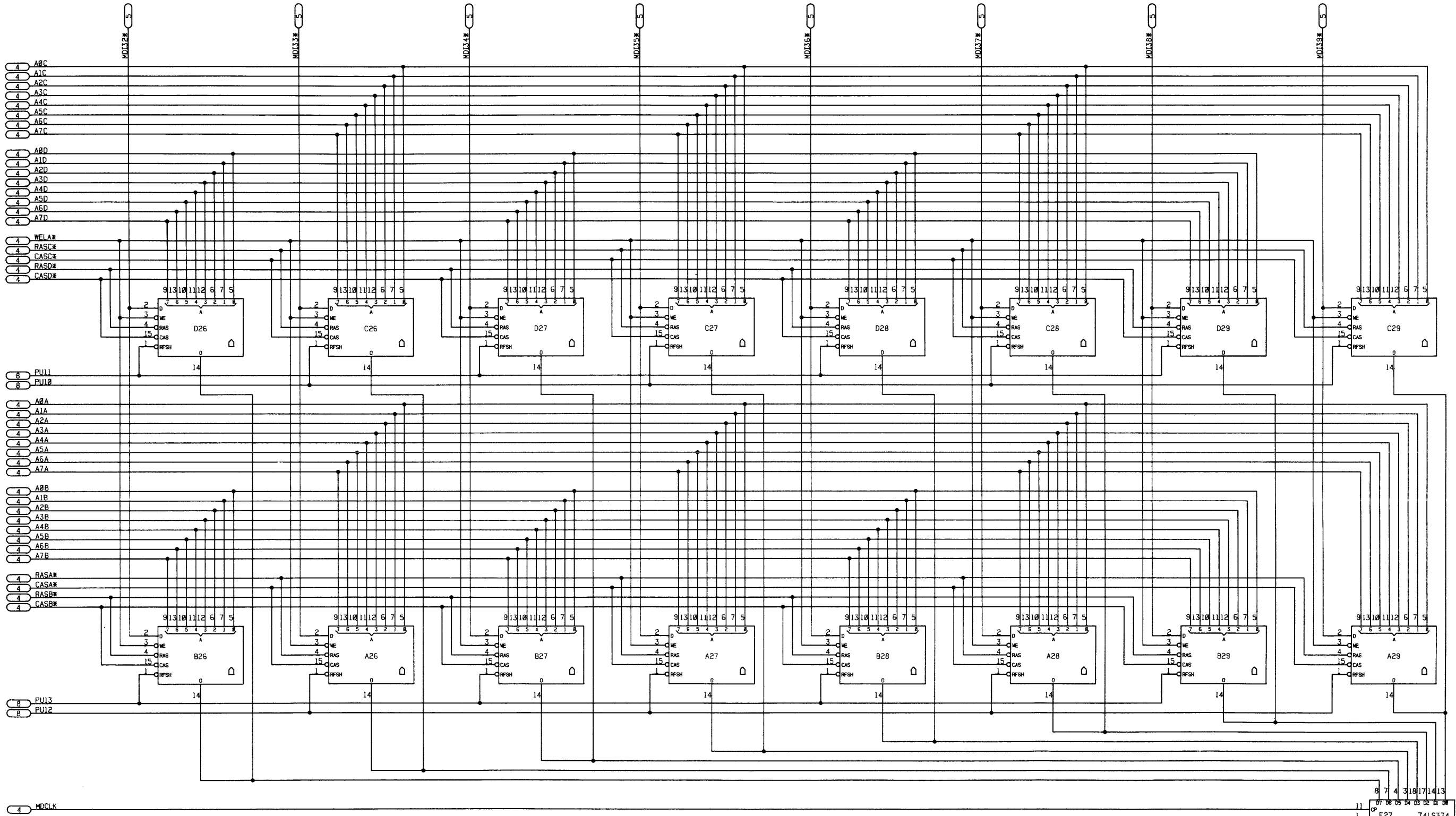
1. FOR 16K MD VERSION, ROWS A AND B ARE STUFFED WITH 4517/2118.
2. FOR 32K MD VERSION, ROWS A,B,C, AND D ARE STUFFED WITH 4517/2118.
3. FOR 64K MD VERSION, ROWS A AND B ARE STUFFED WITH 6664.



MANTISSA BITS 12-19

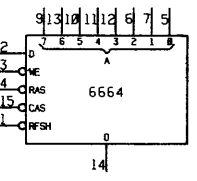
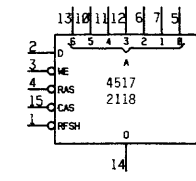
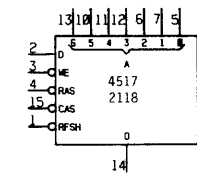
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3424-019	B
SCALE	NONE	SHEET	g

8 7 6 5 4 3 2 1



NOTE

- FOR 16K MD VERSION, ROWS A AND B ARE STUFFED WITH 4517/2118.
- FOR 32K MD VERSION, ROWS A,B,C, AND D ARE STUFFED WITH 4517/2118.
- FOR 64K MD VERSION, ROWS A AND B ARE STUFFED WITH 6664.



MANTISSA BITS 20-27

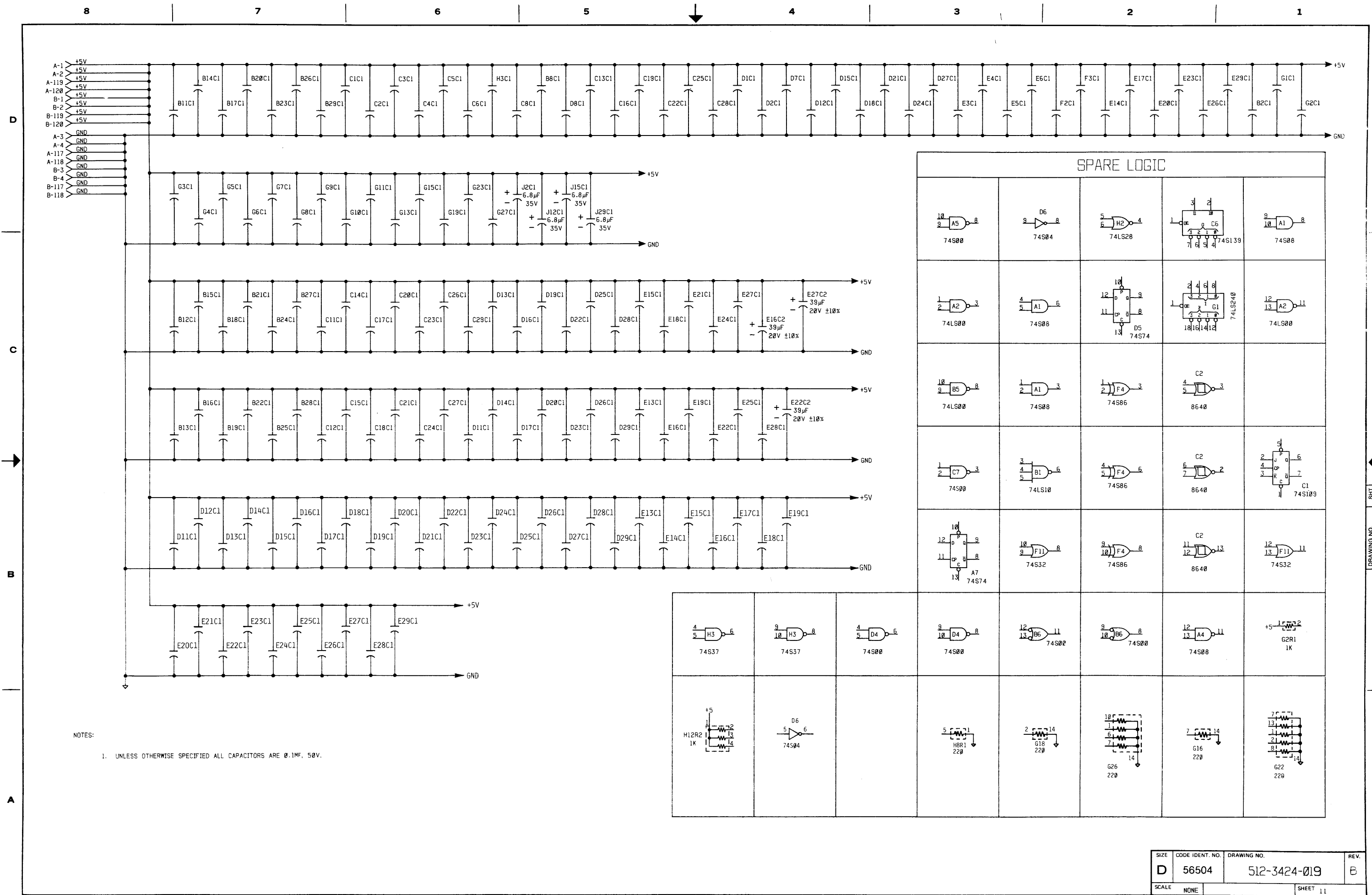
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3424-019	B
SCALE	NONE	SHEET 10	

LAST MODIFIED 06-24-80

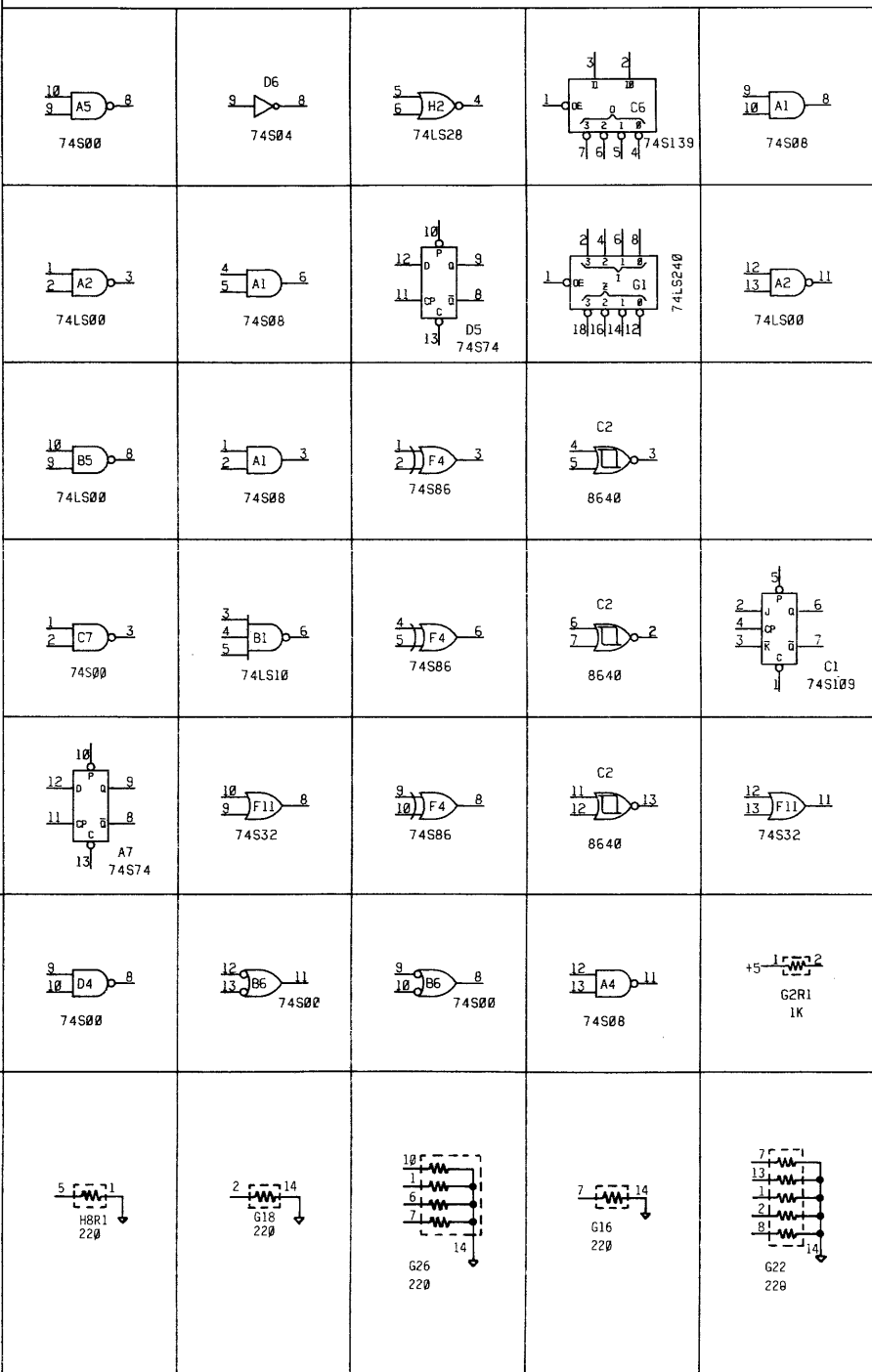
DRAWING NO. 512-3424-019

SHT 10

8 7 6 5 4 3 2 1

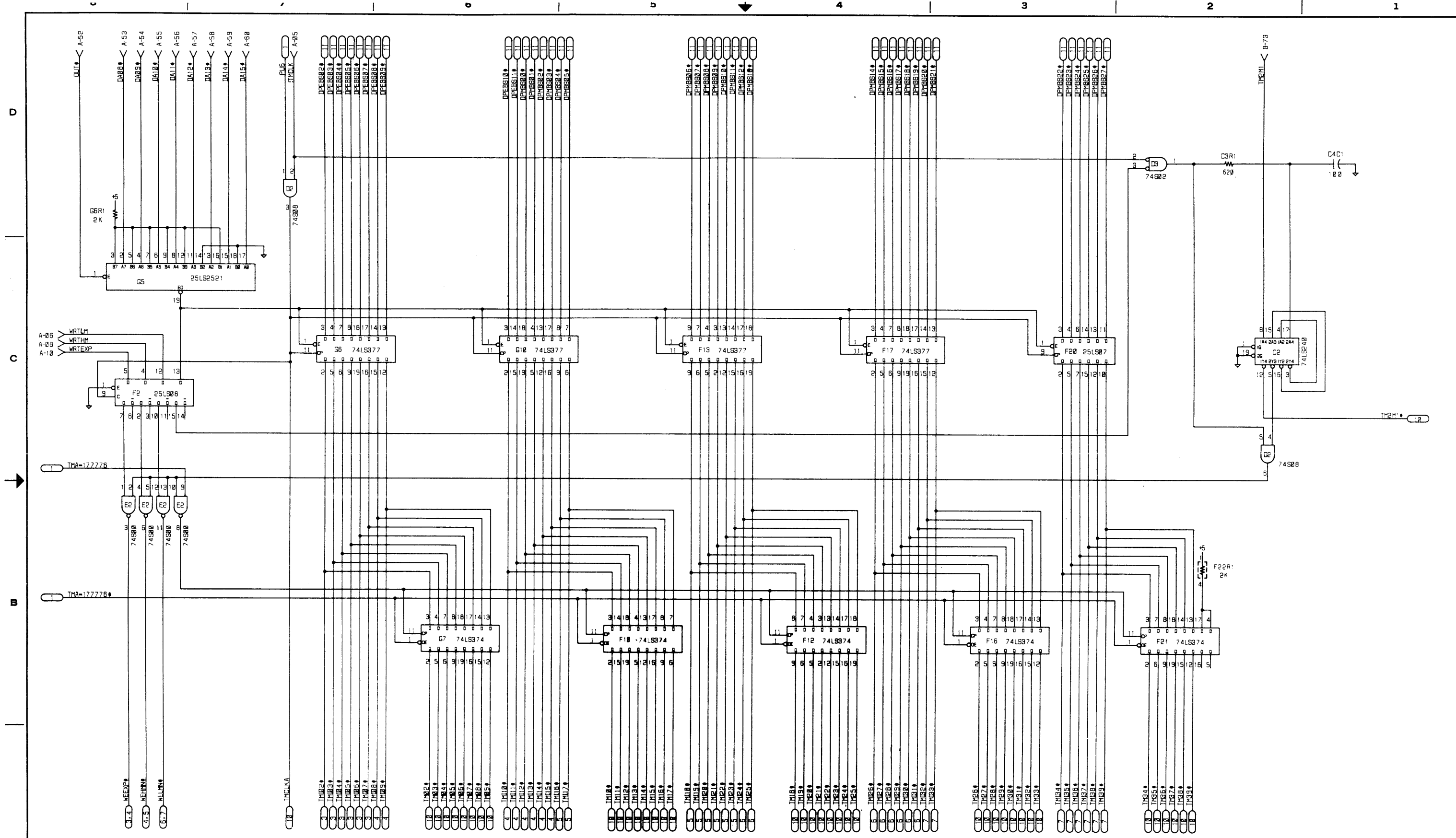


SPARE LOGIC



NOTES:  
1. UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE 0.1MF, 50V.





REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

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DRAWN BY <b>C.R.D.</b>	DATE 7-9-79
CHECK BY	DATE
MFG. ENG.	DATE

**FPS FLOATING POINT SYSTEMS, INC.** PO Box 23489 Portland OR 97223

DRAWING TITLE  
**SCHEMATIC, ECB 425-A**

SIZE **D** CODE IDENT. NO. **56504** DRAWING NO. **512-3425-005** REV. **B**

SCALE NONE SHEET 2 OF 12

D

C

B

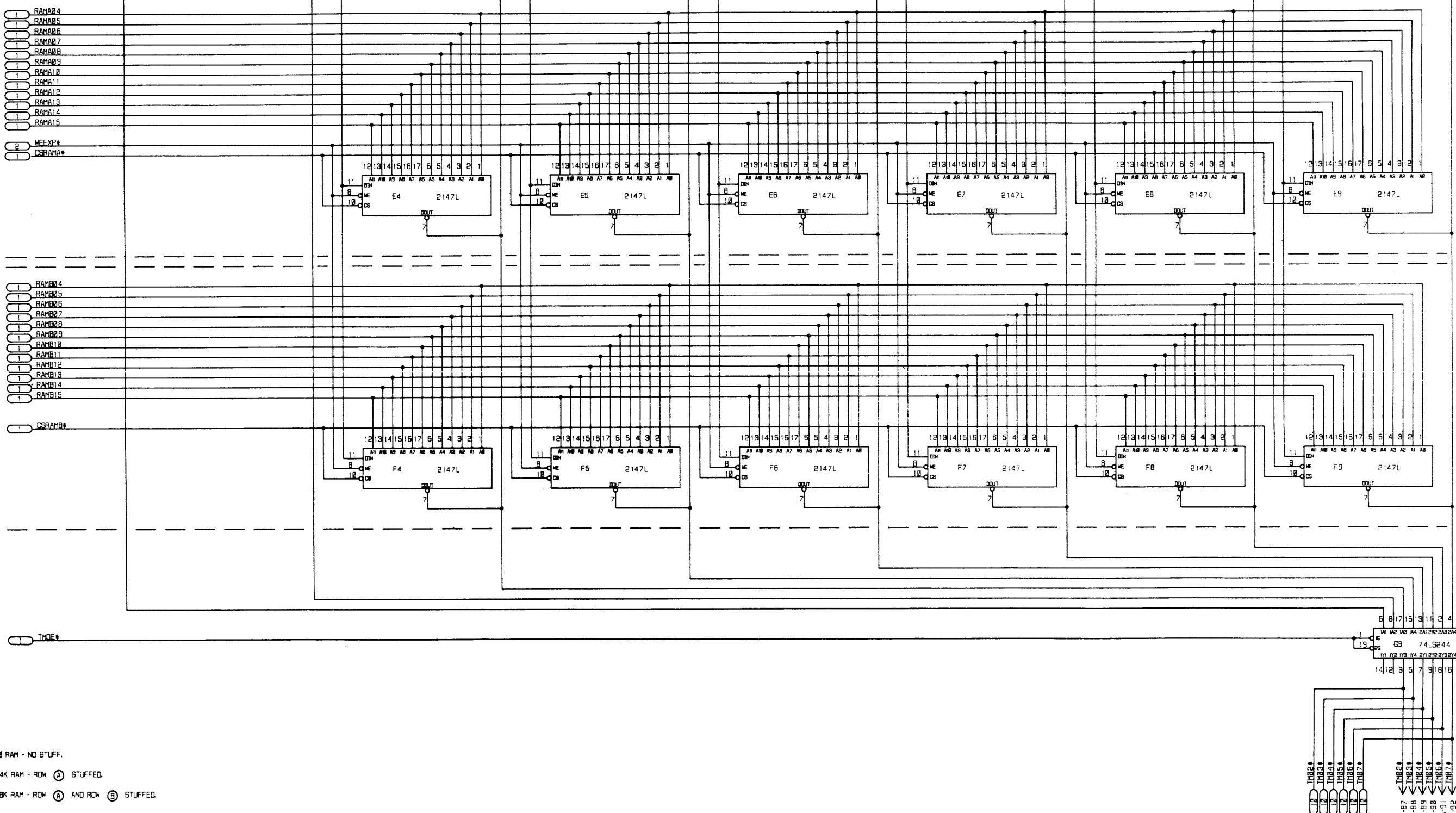
A

C

C

B

A



(A)

(B)

NOTE

- 1. 0 RAM - NO STUFF.
- 2. 4K RAM - ROW (A) STUFFED.
- 3. 8K RAM - ROW (A) AND ROW (B) STUFFED.

REVISIONS					
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PROJ. ENG.	DATE
DRAWN BY <b>C.R.D.</b>	DATE 7-9-79
CHECK BY	DATE
MFG. ENG.	DATE

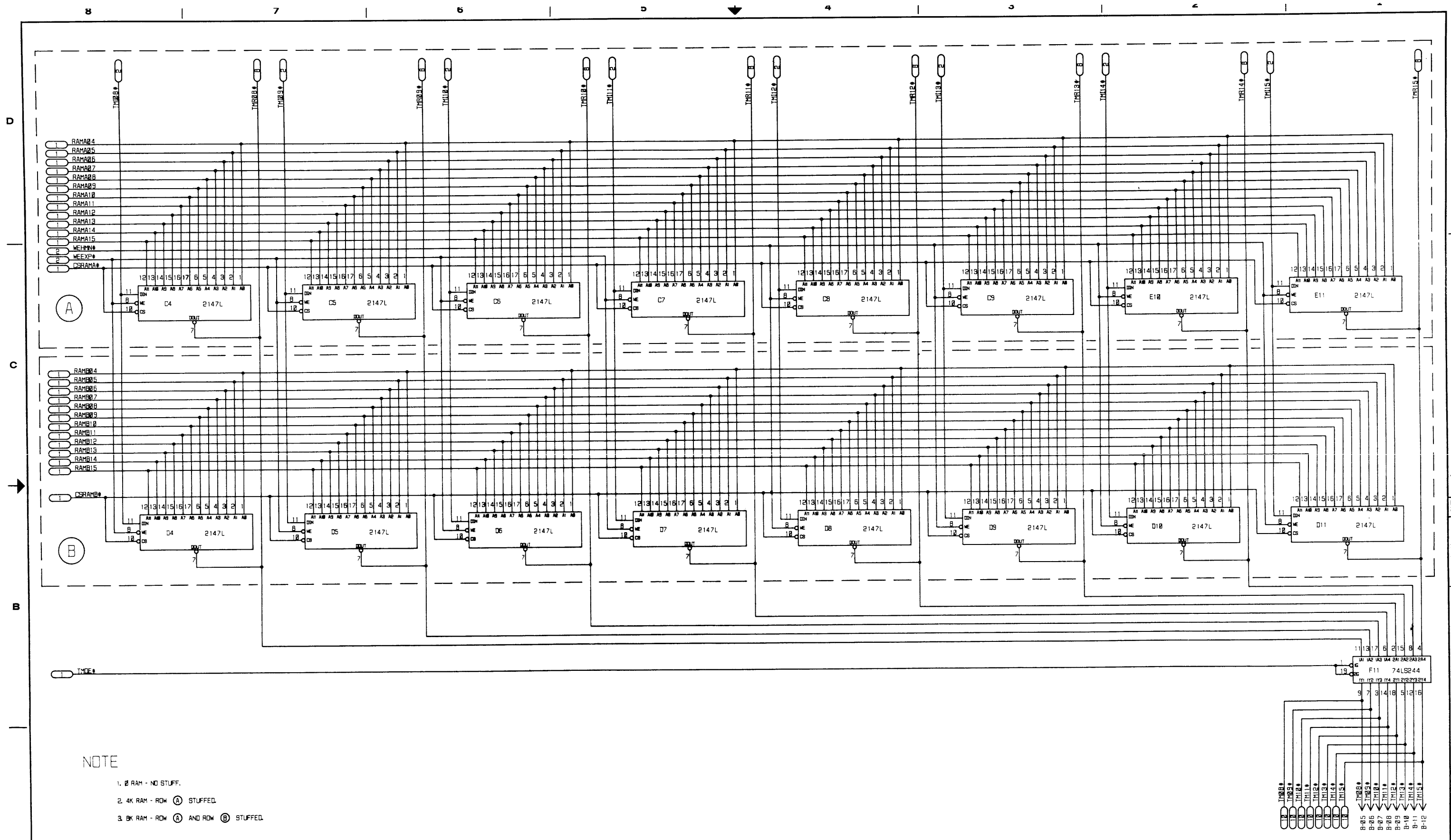
**FLOATING POINT SYSTEMS, INC.** P.O. Box 23488 Portland OR 97223

DRAWING TITLE  
**SCHEMATIC; ECB 425-A**  
 TM

SIZE **D** CODE IDENT. NO. **56504** DRAWING NO. **512-3425-005** REV. **B**

SCALE NONE SHEET **3** OF **12**





- NOTE
- RAM - NO STUFF.
  - 4K RAM - ROW (A) STUFFED.
  - 8K RAM - ROW (A) AND ROW (B) STUFFED.

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
(This table is currently empty)					

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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23489 Portland, OR 97223
DRAWN BY <b>C.R.O.</b>	DATE 7-9-79	
CHECK BY	DATE	
MFG. ENG.	DATE	DRAWING TITLE <b>SCHEMATIC, ECB</b> <b>425-A</b> <b>TM</b>
SIZE <b>D</b> CODE IDENT. NO. <b>56504</b>		DRAWING NO. <b>512-3425-005</b>
SCALE NONE		REV. <b>B</b>
		SHEET <b>4</b> OF <b>12</b>





**NOTE**

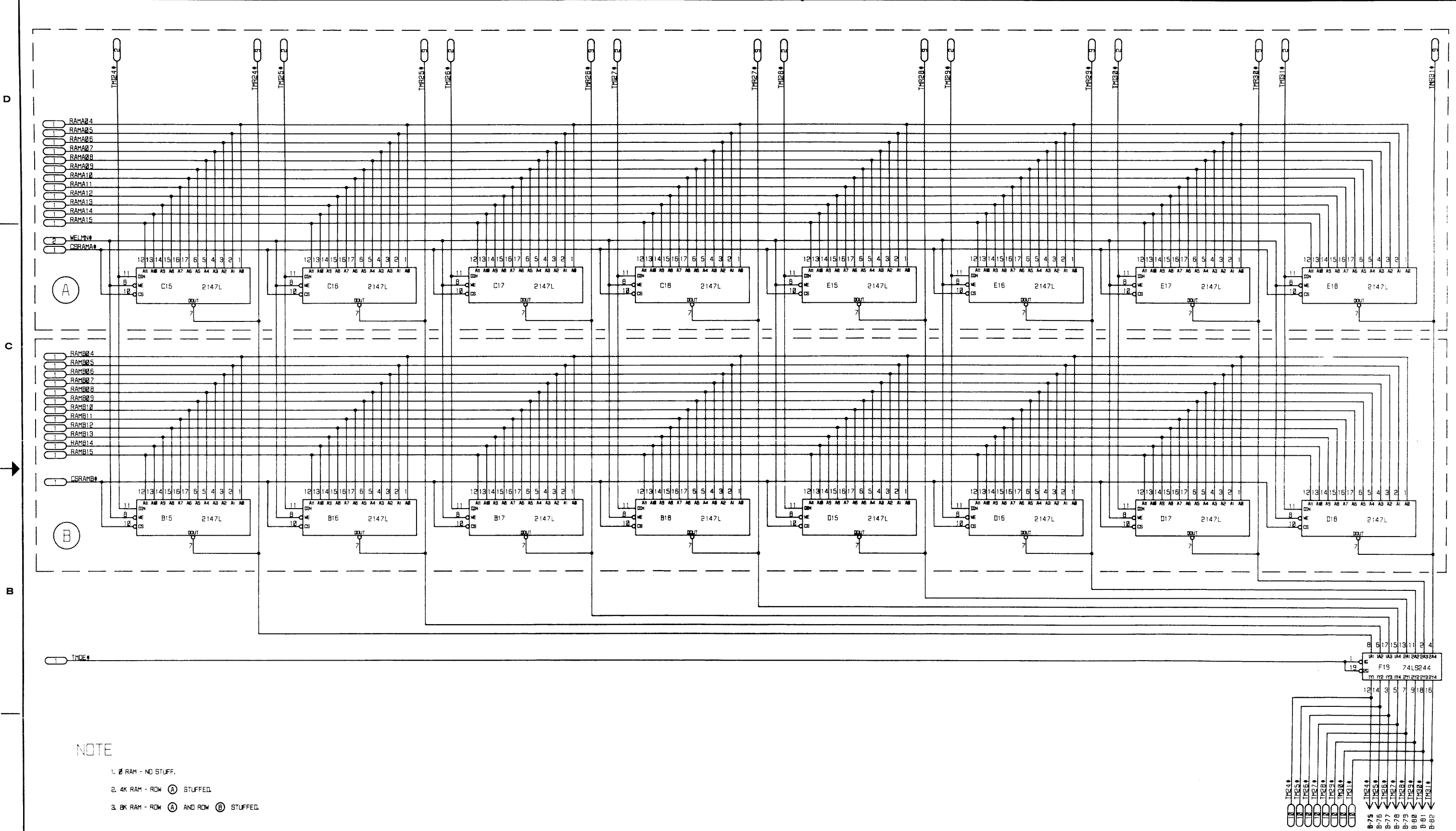
- 1. RAM - NO STUFF.
- 2. 4K RAM - ROW (A) STUFFED.
- 3. 8K RAM - ROW (A) AND ROW (B) STUFFED.

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> PO Box 23489 Portland OR 97223
DRAWN BY <b>C.A.D.</b>	DATE 7-9-79	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		SCHEMATIC, ECB 425-A TM
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	
DRAWING NO. <b>512-3425-005</b>		REV. <b>B</b>
SCALE NONE		SHEET <b>5</b> OF <b>12</b>



NOTE

- 1. 4K RAM - NO STUFF.
- 2. 4K RAM - ROW (A) STUFFED.
- 3. 8K RAM - ROW (A) AND ROW (B) STUFFED.

REVISIONS					
REV	AUTH	DESCRIPTION	ZONE	APVD / DATE	CHK / DATE
(This table is currently empty)					

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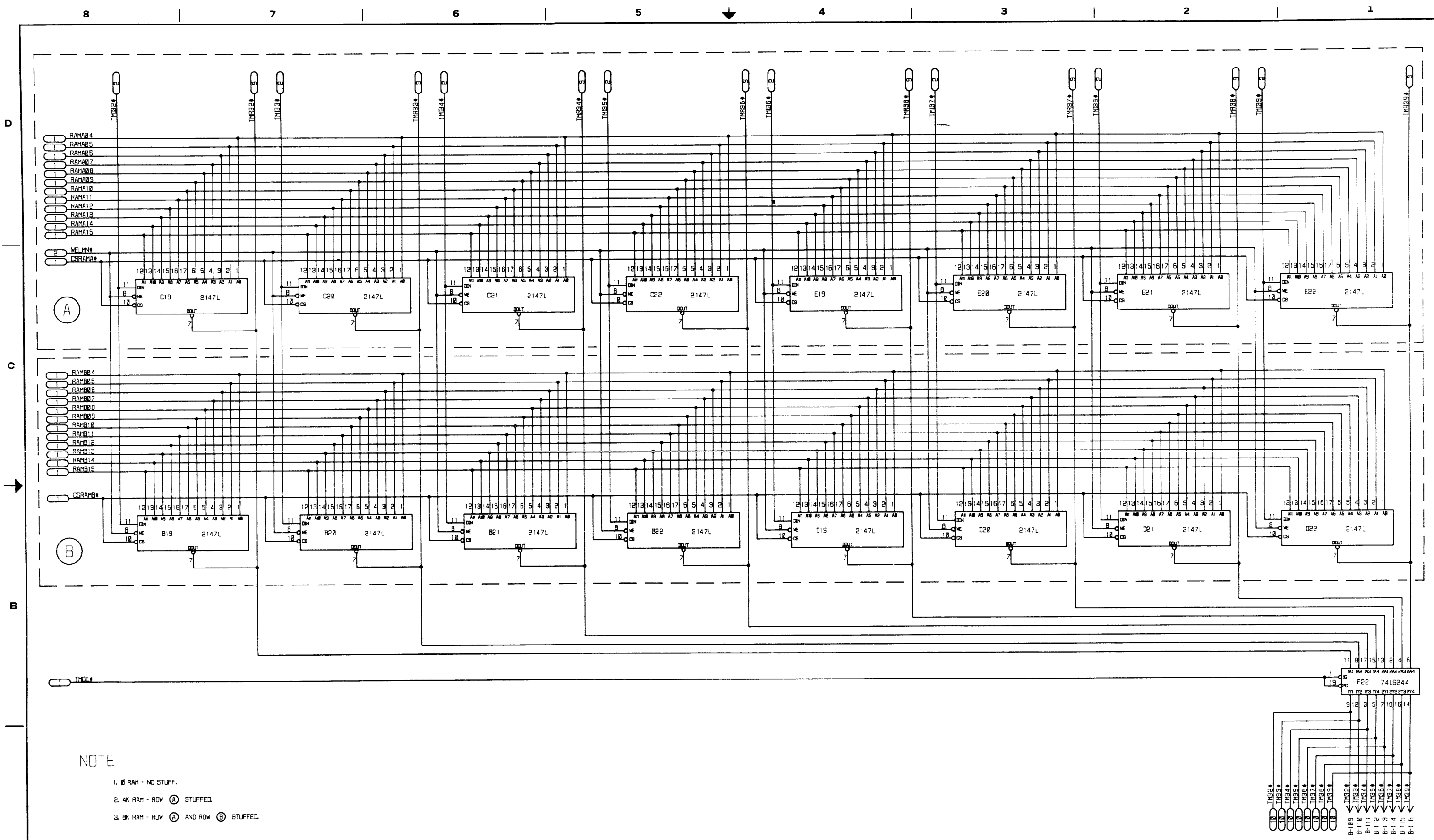
PROJ. ENG.	DATE
DRAWN BY: C.A.O.	DATE: 7-9-79
CHECK BY:	DATE:
MFG. ENG.	DATE:

**FLOATING POINT SYSTEMS, INC.** POBox 23489 Portland OR 97223

DRAWING TITLE: SCHEMATIC, ECB 425-A TM

SIZE: D CODE IDENT. NO.: 56504 DRAWING NO.: 512-3425-00 5 REV. B

SCALE: NONE SHEET 6 OF 12



**NOTE**

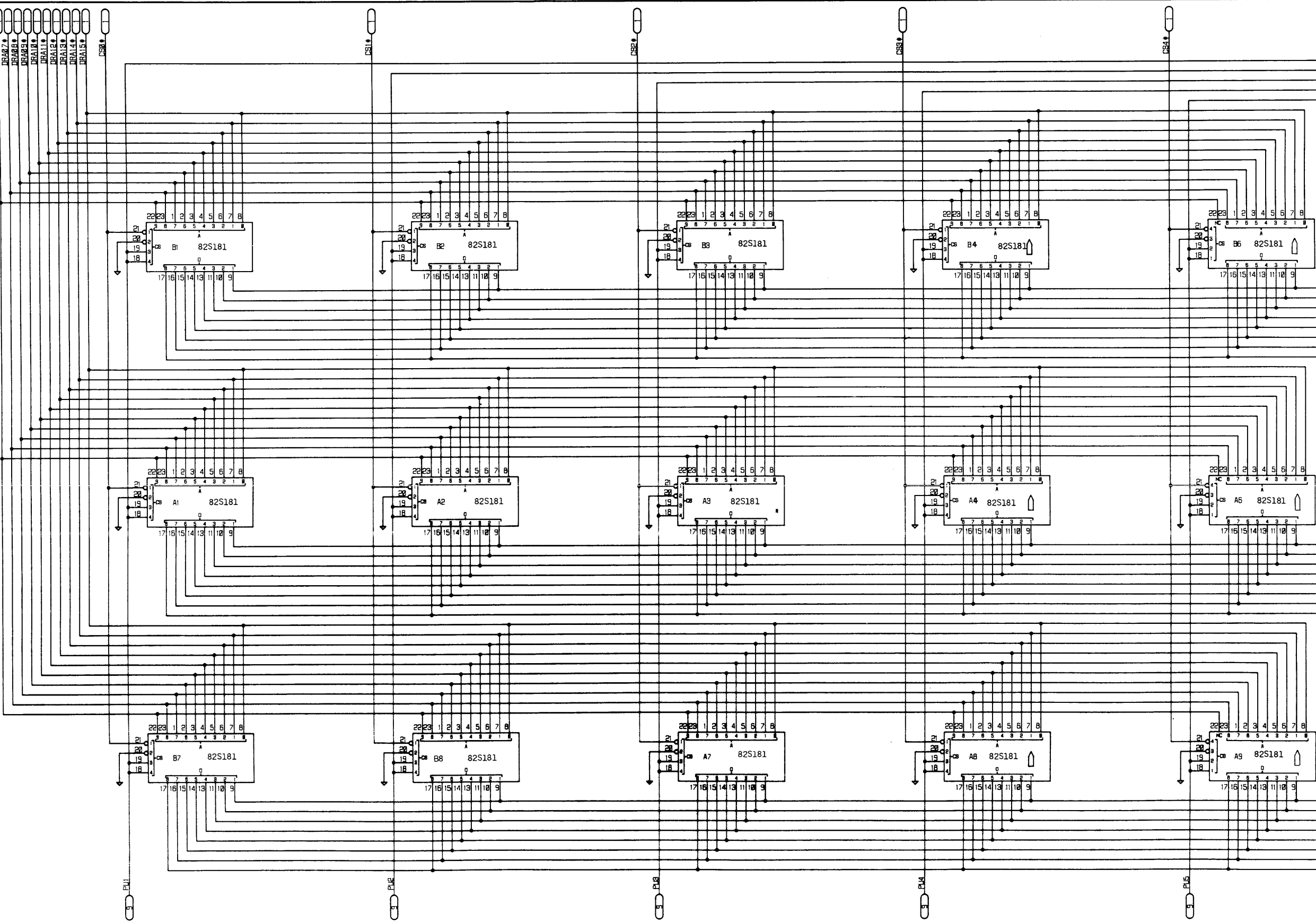
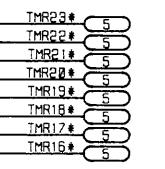
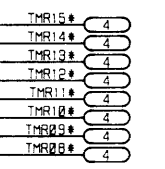
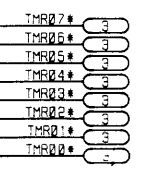
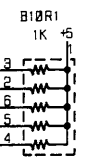
1. Ø RAM - NO STUFF.
2. 4K RAM - RDW (A) STUFFED.
3. 8K RAM - RDW (A) AND RDW (B) STUFFED.

REVISIONS						
REV.	AUTH.	DESCRIPTION	ZONE	APVD	DATE	CHK. DATE

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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> PCBos 23489 Portland OR 97223
DRAWN BY <b>C.A.D.</b>	DATE 7-9-79	
CHECK BY	DATE	
MFG. ENG.	DATE	DRAWING TITLE <b>SCHEMATIC, ECB</b> 425-A TM
SIZE <b>D</b> CODE IDENT. NO. <b>56504</b> DRAWING NO. <b>512-3425-005</b>		REV. <b>B</b>
SCALE NONE		SHEET 7 OF 12



NOTE  
 1. FOR 2.5K TM ROM OPTION. THESE ARE NO STUFF.

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK / DATE

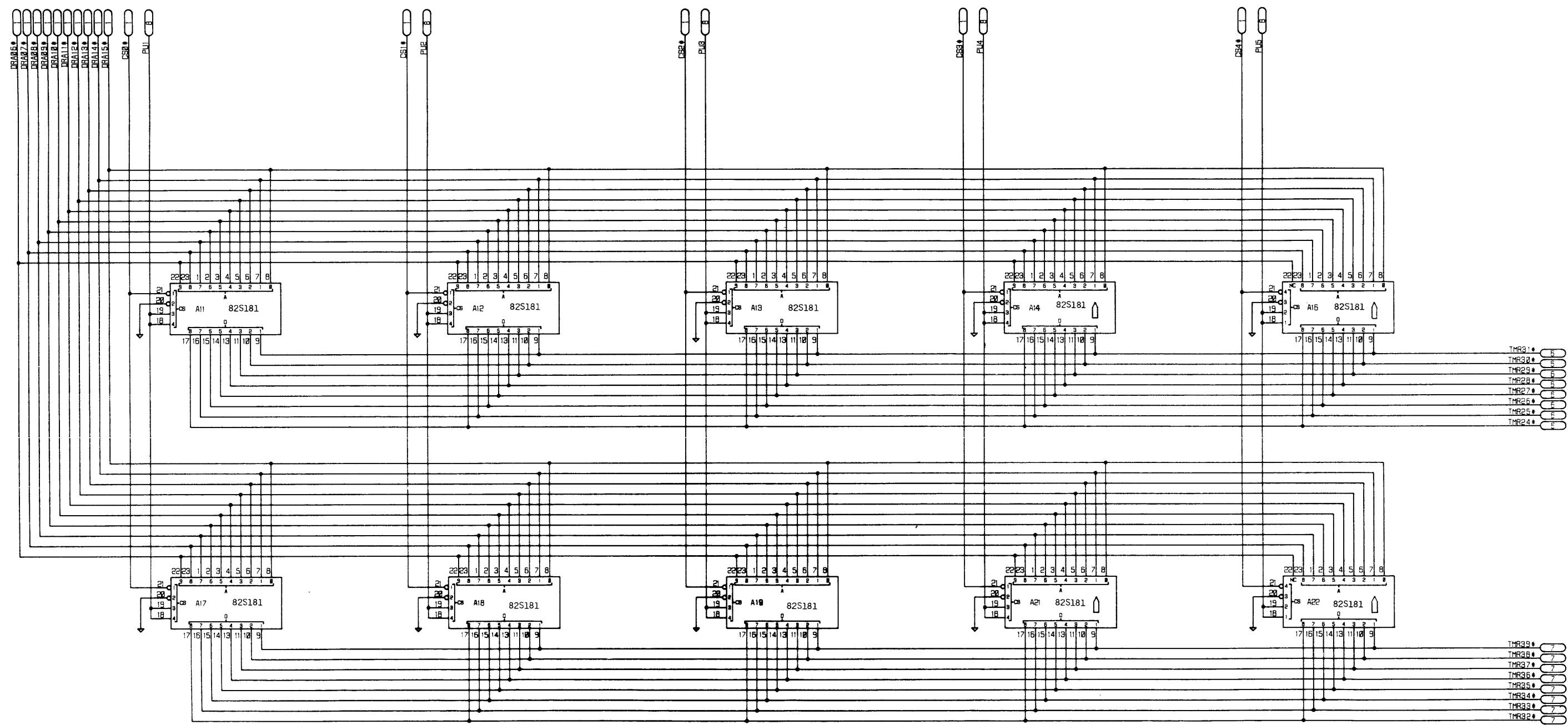
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PROJ. ENG.	DATE
DRAWN BY <b>C.A.O.</b>	DATE 7-9-79
CHECK BY	DATE
MFG. ENG.	DATE

<b>FLOATING POINT SYSTEMS, INC.</b>		P.O. Box 23489 Portland OR 97223	
DRAWING TITLE SCHEMATIC, ECB 425-A TM		REV. B	
SIZE D	CODE IDENT. NO. 56504	DRAWING NO. 512-3425-005	REV. B
SCALE NONE		SHEET 8 OF 12	

D  
C  
B  
A



NOTE  
1. FOR 2.5K TM ROM OPTION. THESE ARE NO STUFF.

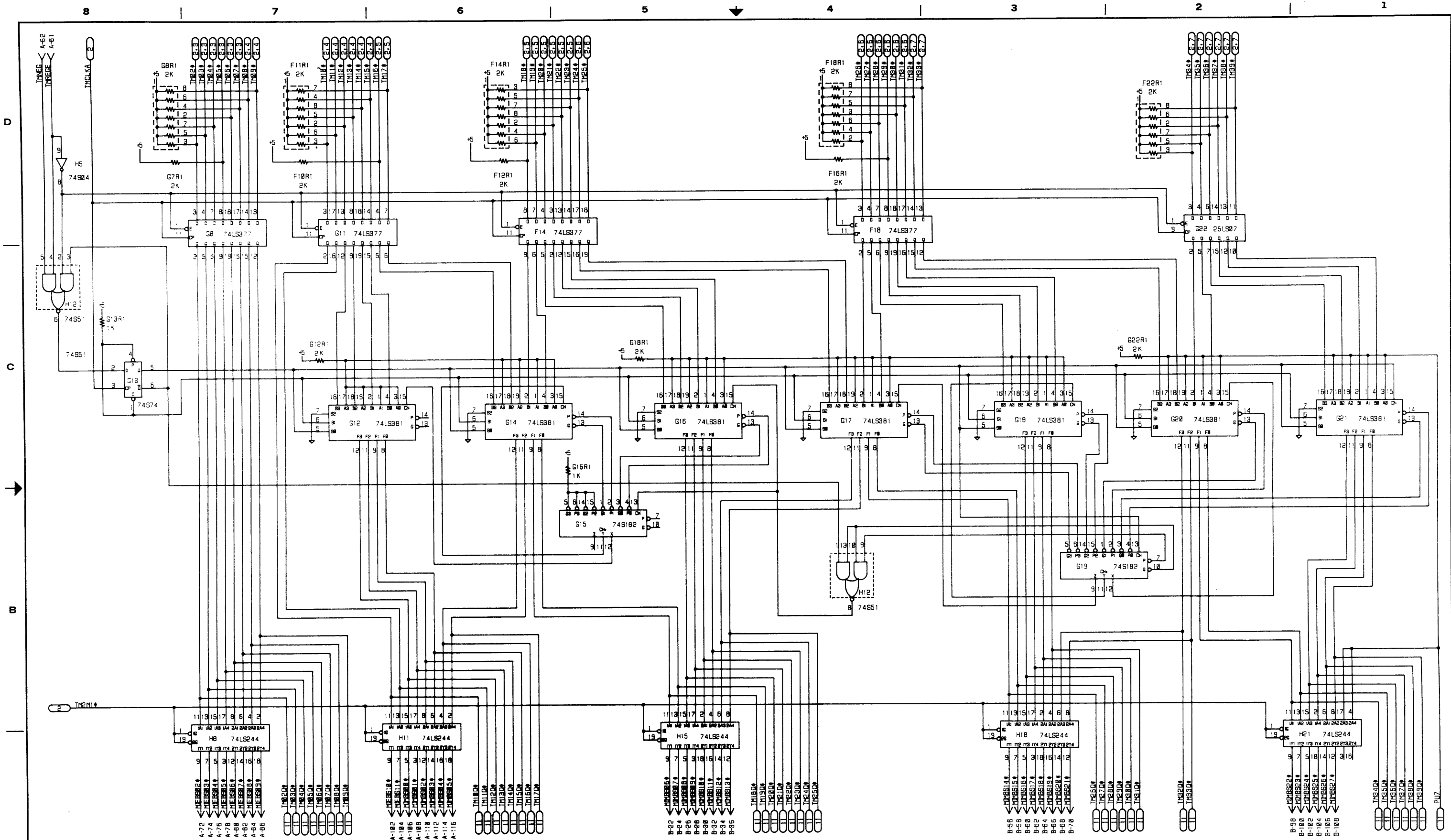
REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
(Table is mostly empty with a large 'X' mark)					

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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23489 Portland OR 97223
DRAWN BY <b>C.A.O.</b>	DATE 7-9-78	
CHECK BY	DATE	
MFG. ENG.	DATE	
DRAWING TITLE		REV. B
SCHEMATIC, ECB 425-A TM		
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3425-005</b>
SCALE NONE	SHEET 9 OF 12	

DRAWING NO. 512-3425-005 SHEET 9 OF 12



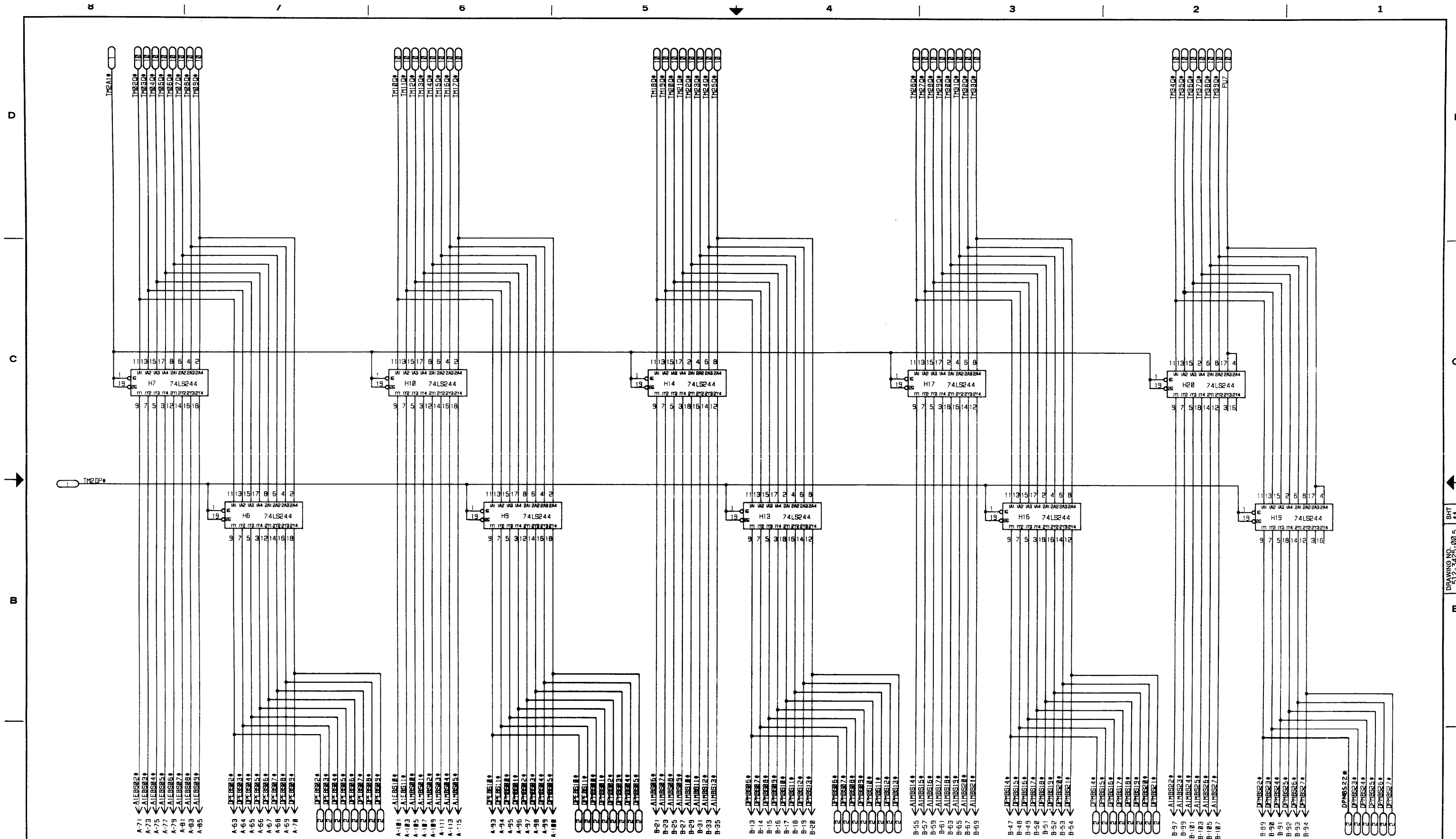
TM NEG	381	S2	S1	S0
H	MINUS B	L	H	L
L	PLUS B	L	H	H
A=ZERO				

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

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CHECK BY <b>C.A.O.</b>	DATE 7-9-79	
MFG. ENG.	DATE	DRAWING TITLE SCHEMATIC, ECB 425-A TM
SIZE <b>D</b> CODE IDENT. NO. <b>56504</b> DRAWING NO. <b>512-3425-00 5</b>		REV <b>B</b>
SCALE NONE		SHEET <b>10</b> OF <b>12</b>



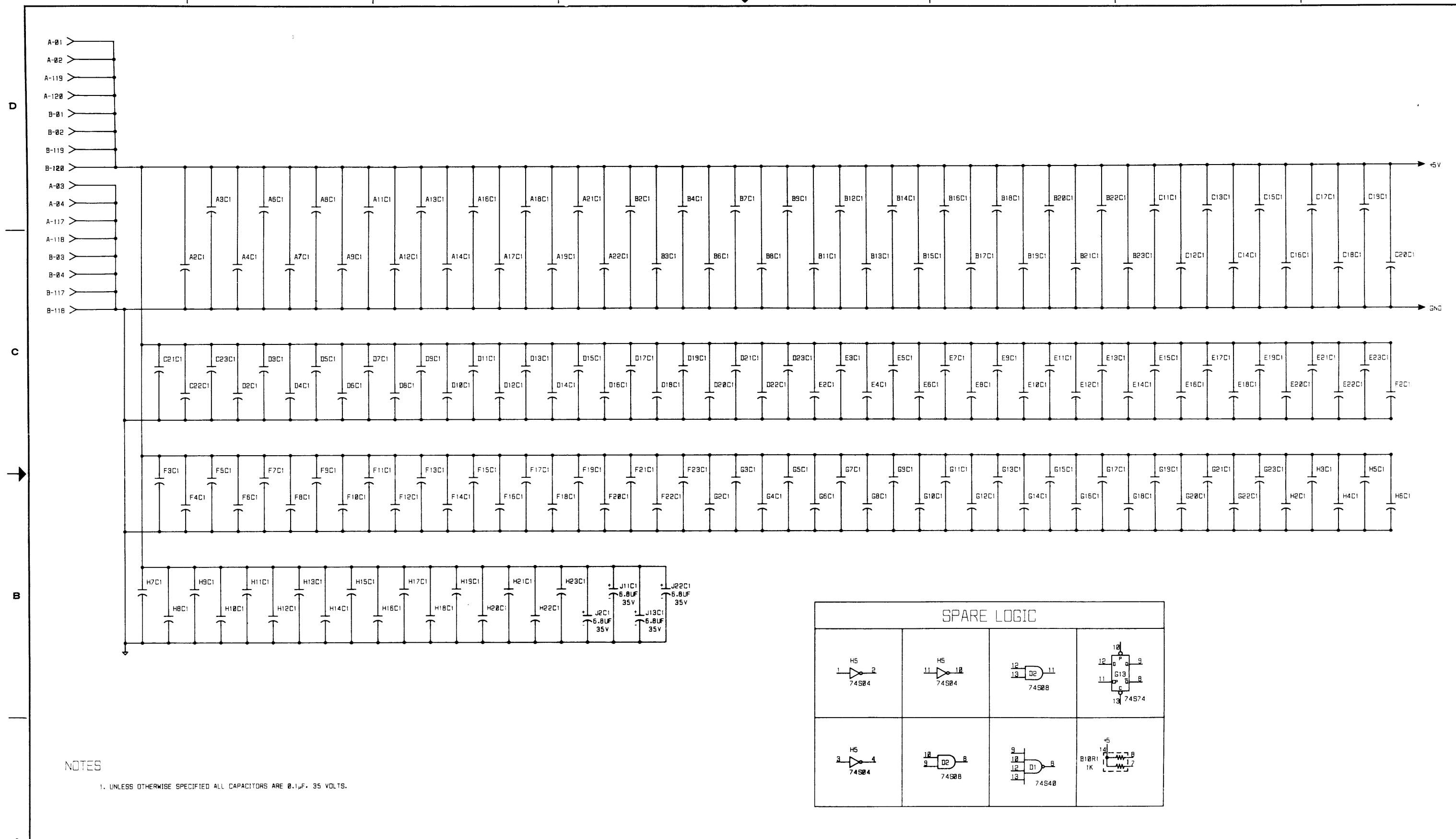
REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE

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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b> PO Box 23489 Portland OR 97223	<b>DRAWING TITLE</b> SCHEMATIC, ECB 425-A TM
DRAWN BY <b>C.A.D.</b>	DATE 7-9-79		
CHECK BY	DATE		
MFG. ENG.	DATE		
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3425-005</b>	REV. <b>B</b>
SCALE NONE			SHEET <b>11</b> OF <b>12</b>





**NOTES**

1. UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE 0.1μF, 35 VOLTS.

REVISIONS						
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE	

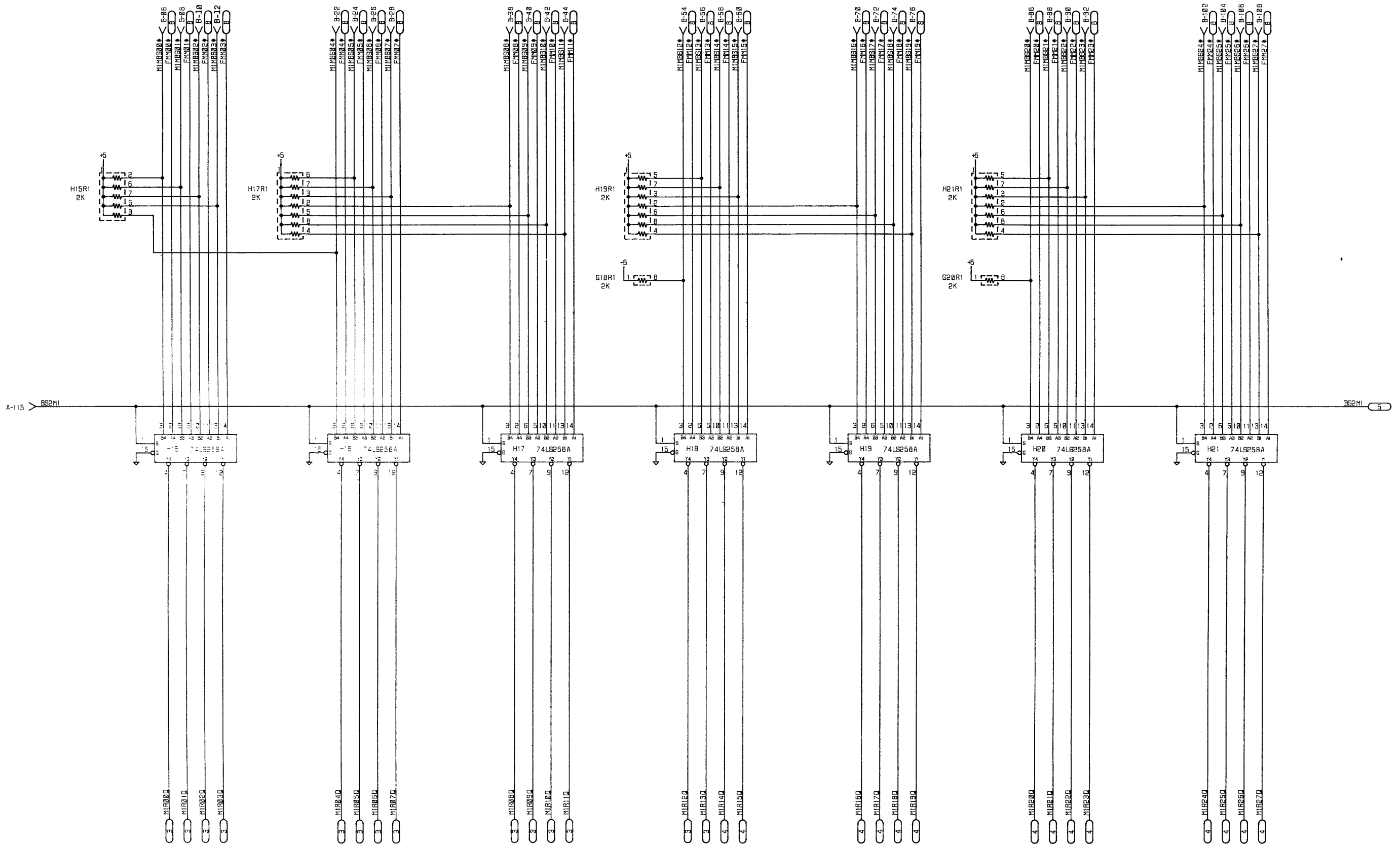
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PROJ. ENG.	DATE	<b>FPS FLOATING POINT SYSTEMS, INC.</b> P.O. Box 23488 Portland OR 97223
DRAWN BY: <b>C.A.O.</b>	DATE: 7-9-79	
CHECK BY:	DATE:	
MFG. ENG.	DATE:	
DRAWING TITLE: <b>SCHEMATIC, ECB 425-A</b>		REV. <b>B</b>
SIZE: <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3425-005</b>
SCALE: NONE	SHEET <b>12</b> OF <b>12</b>	



D  
C  
B  
A

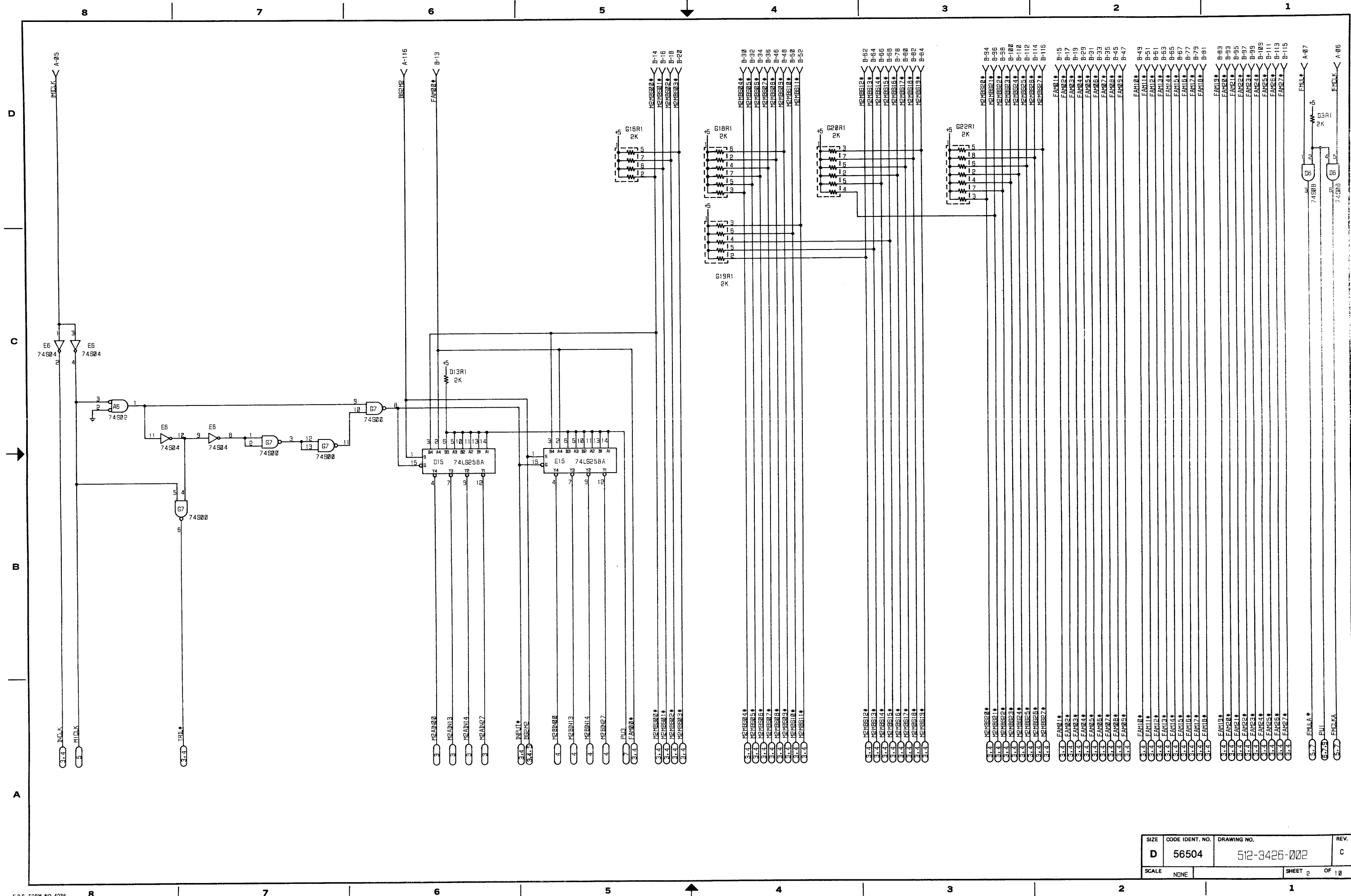


REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
01	EN #039	INITIAL LEVEL 2 RELEASE			
A	ECO 80116	LEVEL 3 RELEASE		AE 4-2-80	Del 4/1/80
B	ECO 80181	CORRECT PUSH A1 & A2		AE 8-2-80	Del 8/4/80
C	ECO 80260	CORRECT PUSH/SCALE		AE 7-15-80	Del 7/15/80

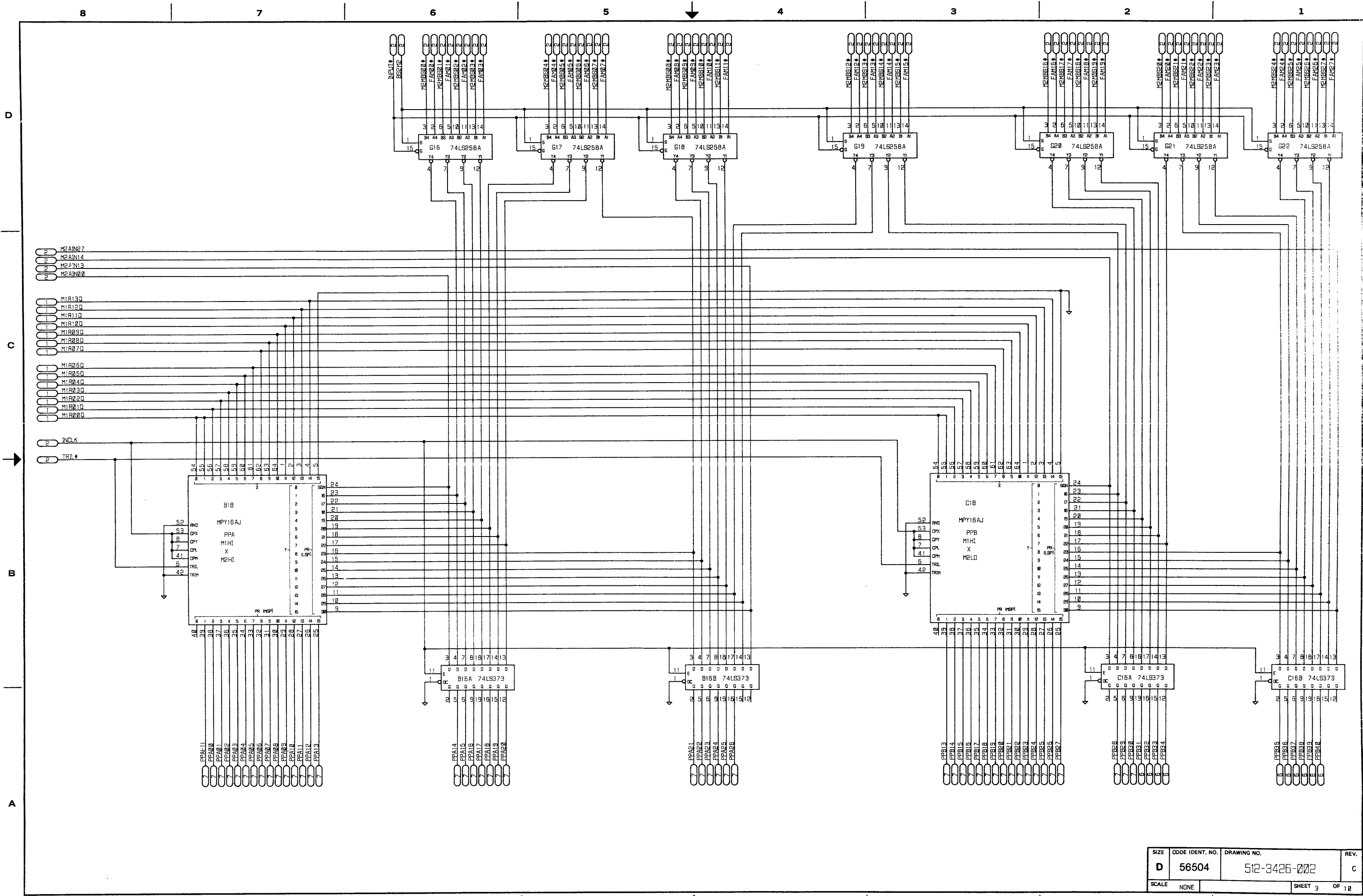
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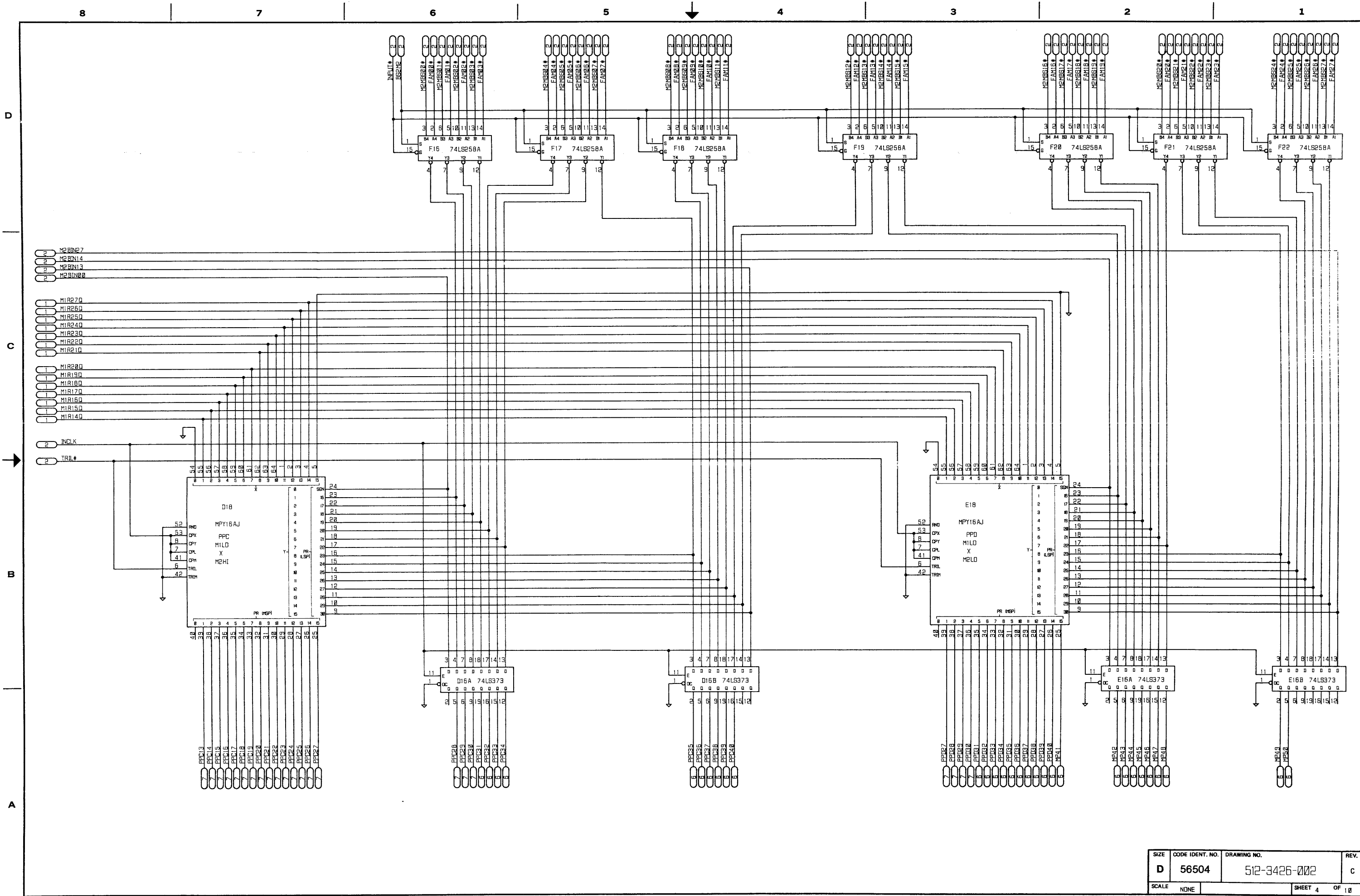
PROJ. ENG. <i>Michael Stanko</i>	DATE 10/2/79	<b>FLOATING POINT SYSTEMS, INC.</b> <small>PO Box 22489 Portland OR 97223</small>
DRAWN BY <b>C.A.O.</b>	DATE 7-11-79	
CHECK BY <b>CHINH NGUYEN</b>	DATE 10-2-79	DRAWING TITLE SCHEMATIC: ECB 426-B FLOATING MULTIPLIER
MFG. ENG. <i>R.H. Caldwell</i>	DATE 8-7-80	SIZE <b>D</b>
CODE IDENT. NO. <b>56504</b>		DRAWING NO. <b>512-3426-002</b>
SCALE NONE		REV. <b>C</b>
SHEET 1 OF 18		



SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3426-002	C
SCALE	NONE	SHEET 2	OF 18

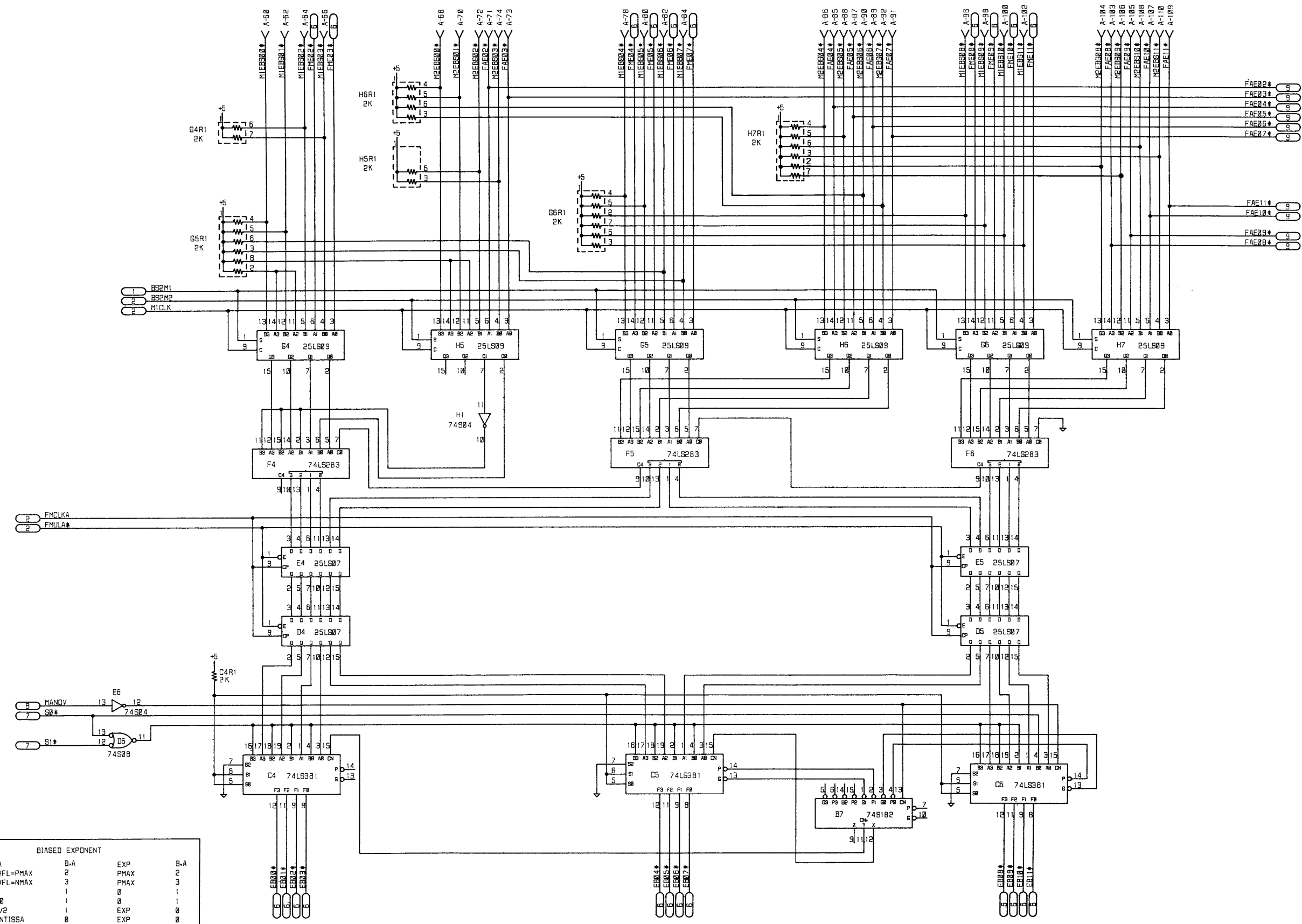


SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3426-002	C
SCALE	NONE	SHEET 3	OF 10



SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3426-002	C
SCALE	NONE	SHEET 4	OF 18

D  
C  
B  
A



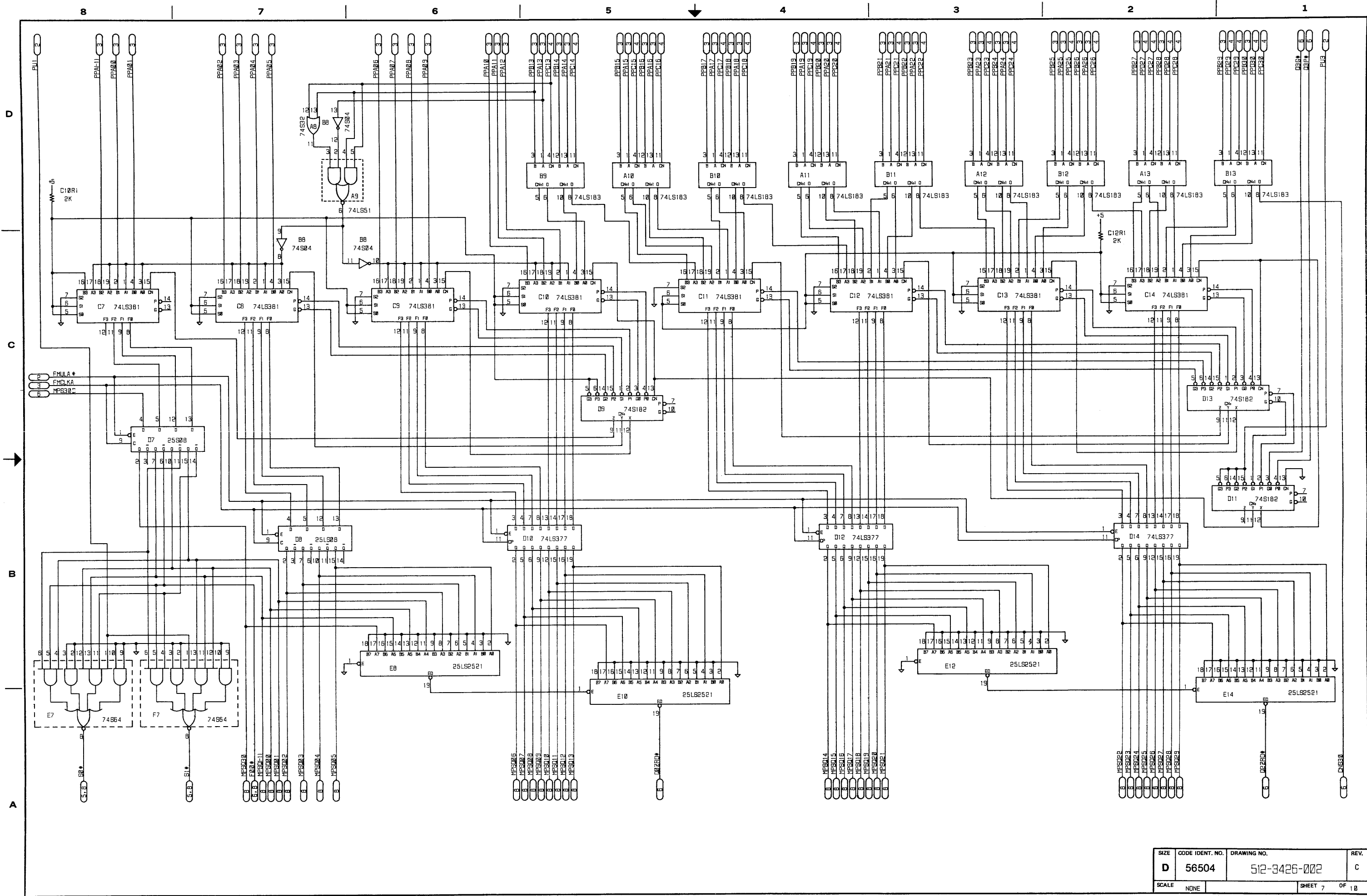
BIASED EXPONENT			
MANTISSA	B-A	EXP	B-A
ZERO.POVFL=PMAX	2	PMAX	3
ZERO.NOVFL=NMAX	3	PMAX	3
UNFL=0	1	0	1
MPSZ0=0	1	0	1
MANDV=1/2	1	EXP	0
NONE=MANTISSA	0	EXP	0

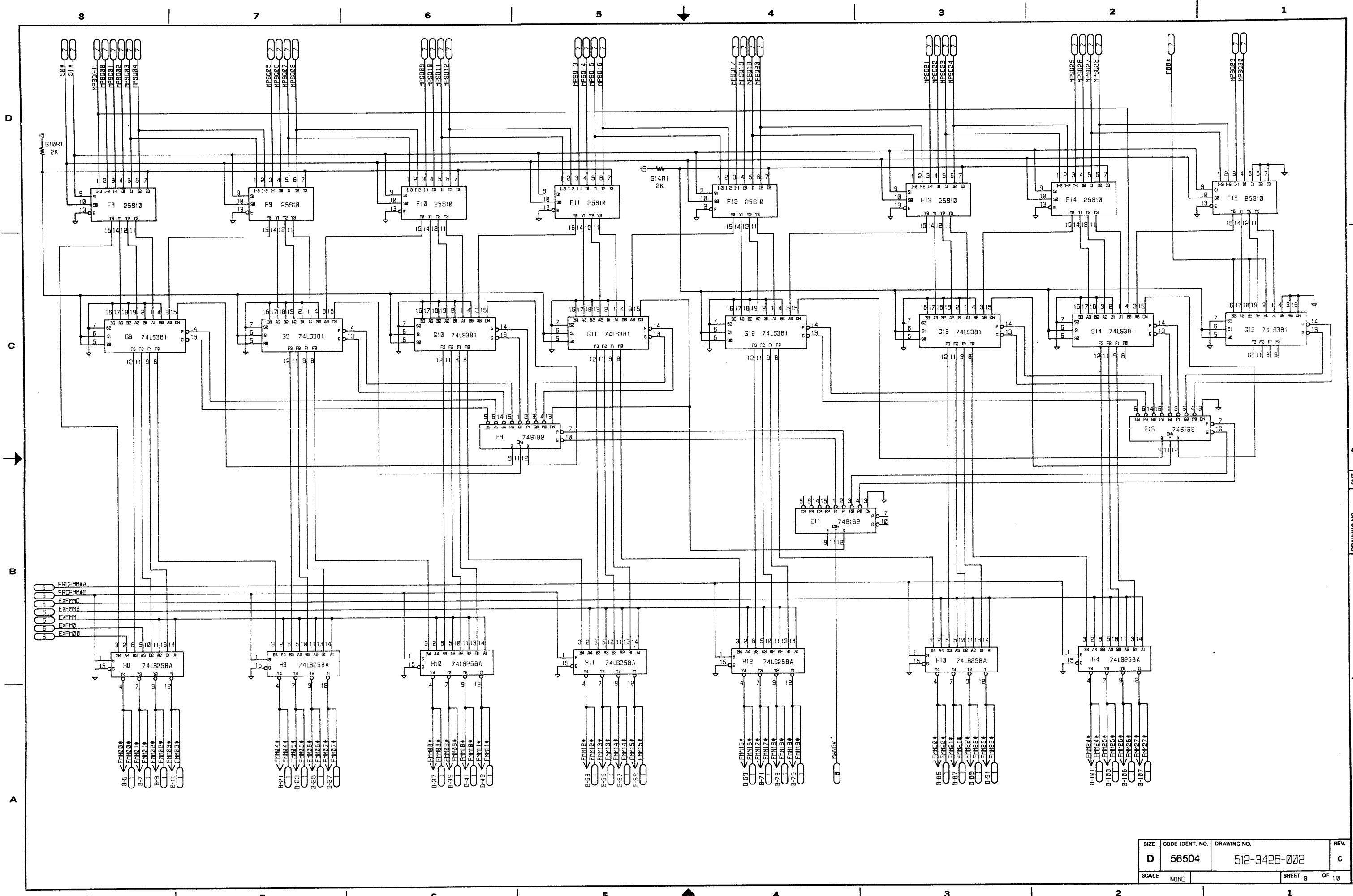
MANDV=1		MANDV=0	
NOT POSSIBLE S1=S0=0	EXP ADD 0 IF S1=S0=0	ADD 0 IF S0=1	ADD 777 IF S0=1
ADD 0 IF S0=1	ADD 777 IF S1=1	ADD 776 IF S1=1	

DRAWING NO. 512-3426-002 SHEET 5





SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3426-002	C
SCALE	NONE	SHEET 7	OF 10



SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3426-002	C
SCALE	NONE	SHEET 8	OF 10



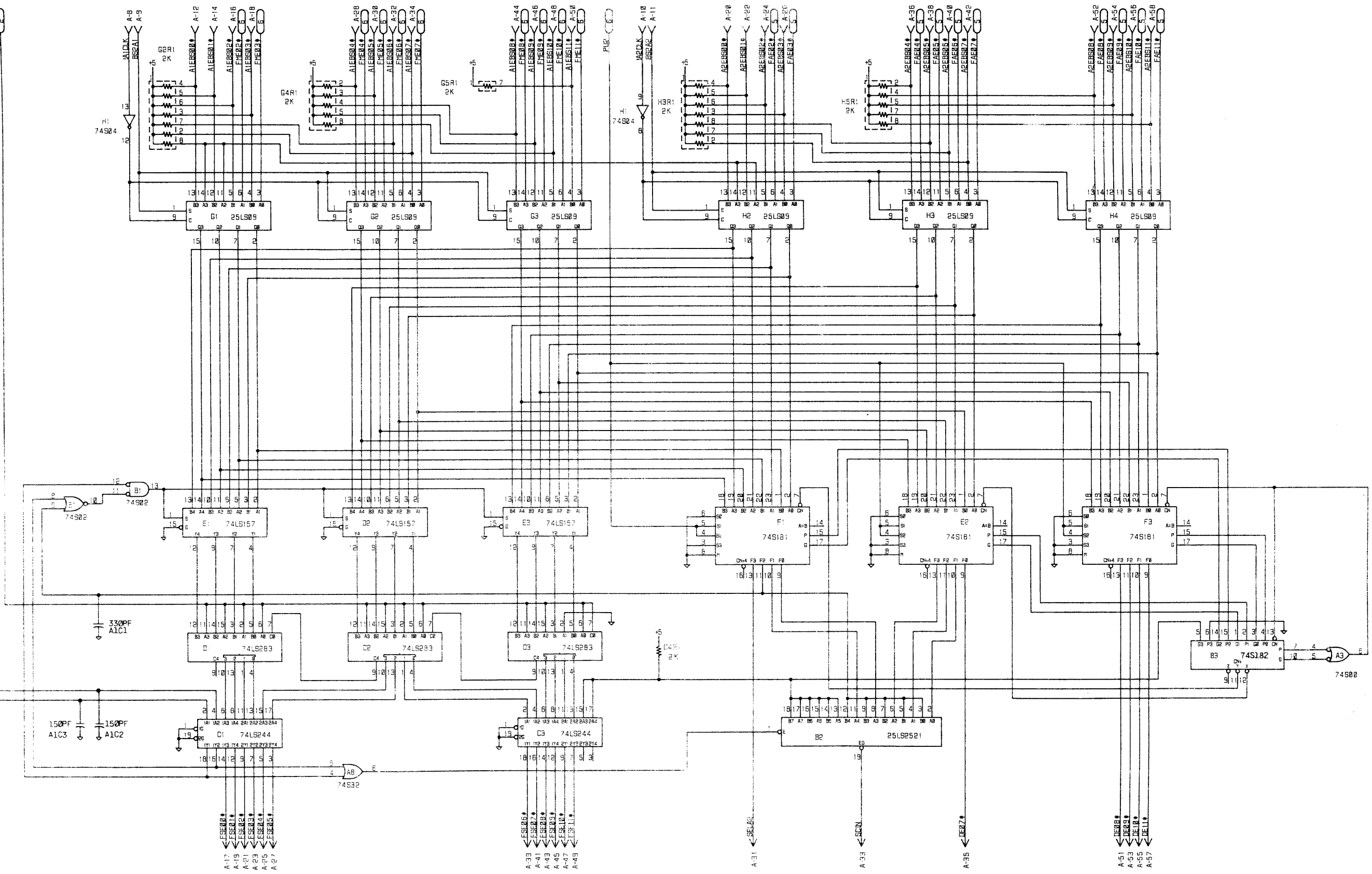
D

C

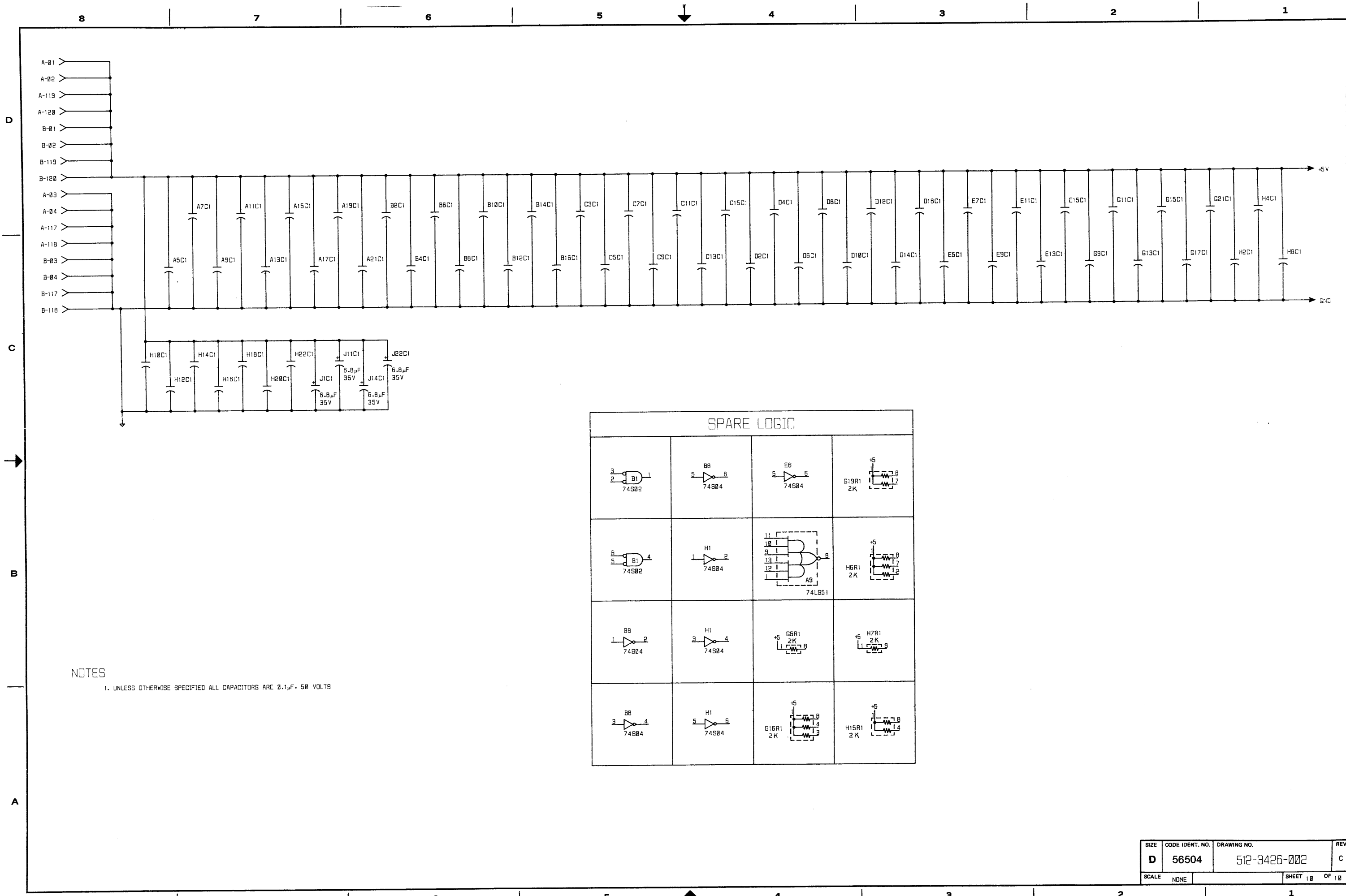
B

A

PUL

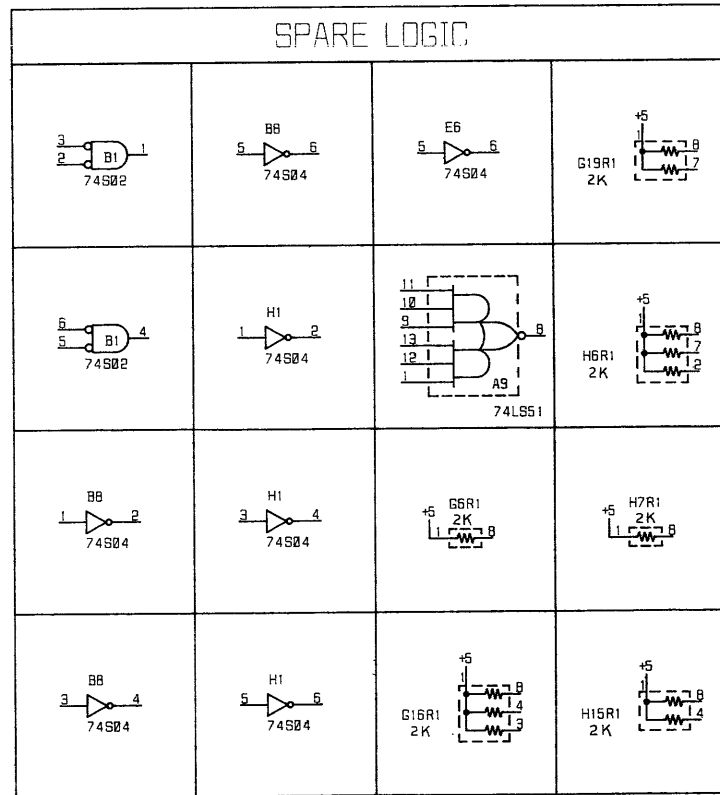


SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3426-002	C
SCALE	NONE	SHEET 9	OF 10



NOTES

1. UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE 0.1μF, 50 VOLTS



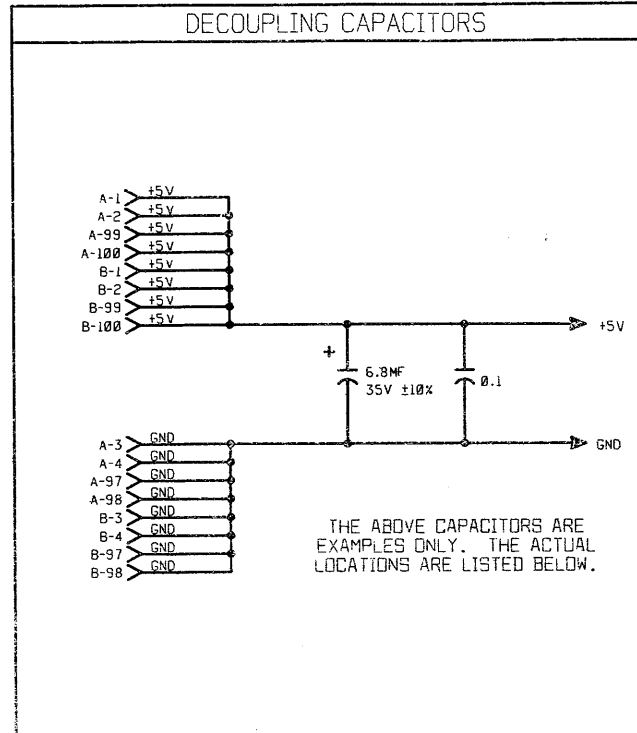
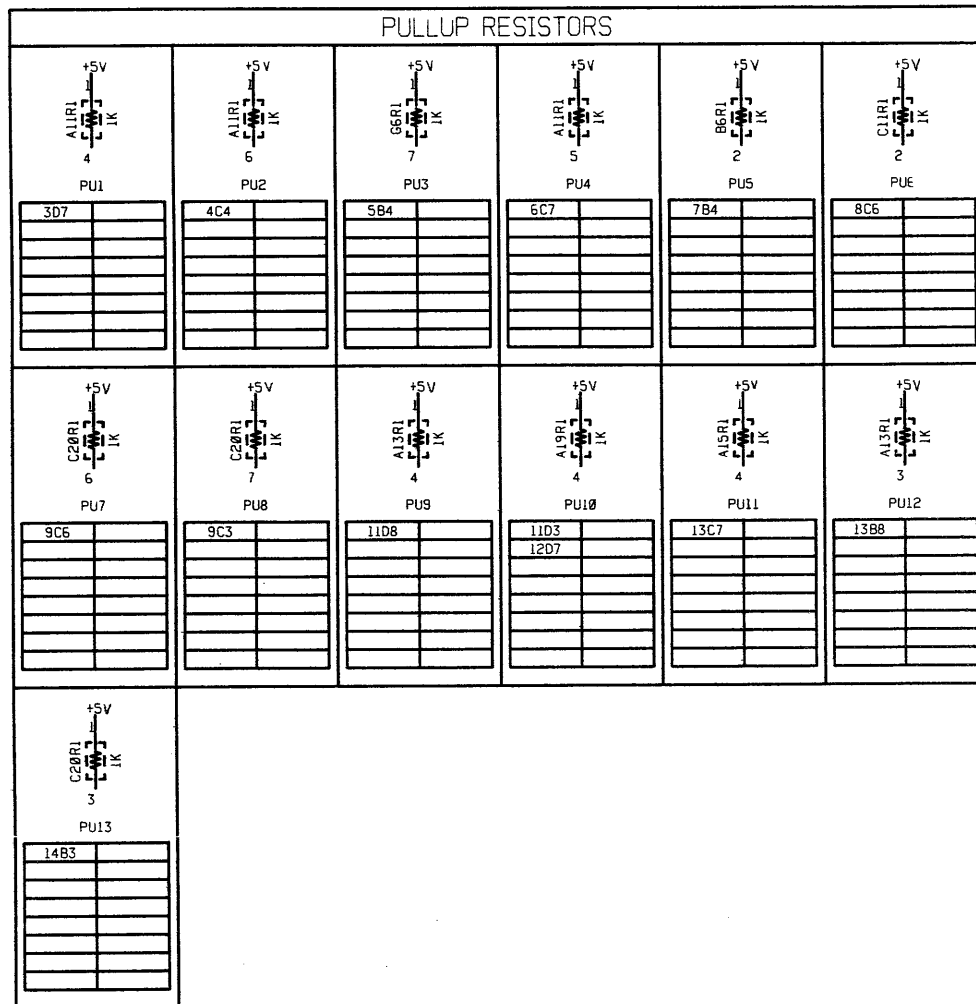
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3426-002	C
SCALE	NONE	SHEET 1 OF 10	

NOTE: UNLESS OTHERWISE SPECIFIED

1. ALL RESISTOR VALUES ARE IN OHMS.
2. ALL CAPACITOR VALUES ARE IN MICROFARADS, 50V ±20%.
3. PULLUP RESISTORS ARE INDICATED BY THE SYMBOL AT APPROPRIATE POINTS IN THE SCHEMATIC. DESTINATIONS ARE CALLED OUT ON SHEET ONE BY SHEET.
4. ALL POSSIBLE CAPACITOR LOCATIONS ARE LISTED. FOR ACTUAL CAPACITOR COUNT AND LOCATION INFORMATION, SEE THE ASSEMBLY DRAWING.

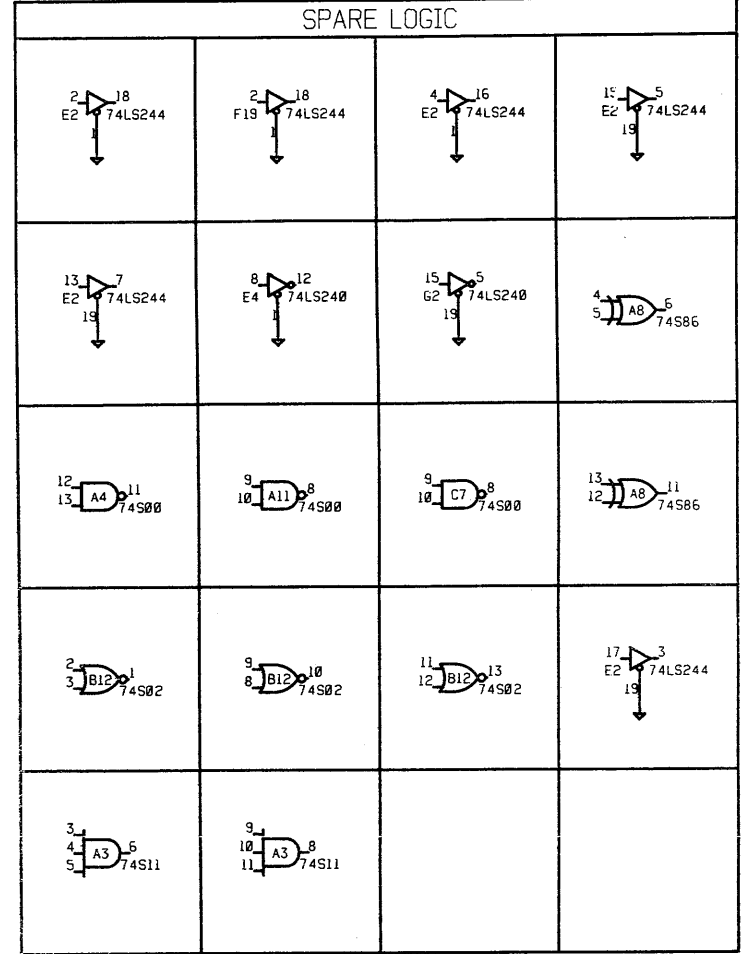
IC POWER PINS ARE:

IC TYPE	TOTAL PINS	+5V	GND
ALL	14	14	7
ALL	16	16	8
ALL	20	20	10
ALL	24	24	12



### CAPACITOR LOCATIONS

VALUE	LOCATIONS
0.1	A2C1, A3C1, A4C1, A7C1, A8C1, A10C1, A12C1, A13C1, A15C1, A17C1, A19C1, A21C1, B1C1, B2C1, B3C1, B5C1, B7C1, B9C1, B11C1, B12C1, B14C1, B16C1, B18C1, B20C1, B22C1, C1C1, C2C1, C4C1, C5C1, C6C1, C8C1, C9C1, C10C1, C11C1, C12C1, C13C1, C15C1, C17C1, C19C1, C21C1, C22C1, D2C1, D4C1, D5C1, D7C1, D8C1, D9C1, D10C1, D11C1, D12C1, D13C1, D14C1, D16C1, D18C1, D19C1, D21C1, D22C1, E2C1, E3C1, E5C1, E7C1, E8C1, E9C1, E10C1, E11C1, E13C1, E14C1, E15C1, E17C1, E18C1, E20C1, E21C1, E22C1, F2C1, F5C1, F6C1, F10C1, F11C1, F13C1, F15C1, F17C1, F19C1, F20C1, F22C1, G3C1, G5C1, G7C1, G8C1, G10C1, G11C1, G13C1, G14C1, G16C1, G18C1, G19C1, G21C1, G22C1, H1C1, H12C1, H12C2, H2C1.
6.8	A1C1, A22C1, H2C1, H11C1, H13C1, H22C2



### SPARE RESISTORS

DESCRIPTION	R#	PIN#
1K	A11R1	7, 8
	A13R1	2
	A15R1	2, 3
	A17R1	2, 3, 4
	A19R1	2, 3
	C20R1	8
	F7R1	7
	F9R1	10
	G9R1	8

REVISIONS				
REV.	AUTH.	DESCRIPTION	ZONE	CHK./DATE
01	ECO 82605	LEVEL 2 RELEASE		
A	ECO 83013	LEVEL 3 RELEASE		

REVISIONS				
REV.	AUTH.	DESCRIPTION	ZONE	CHK./DATE
01	ECO 82605	LEVEL 2 RELEASE		
A	ECO 83013	LEVEL 3 RELEASE		

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PROJ. ENG. <i>John Cook</i>	DATE 2/24/83	<b>FLOATING POINT SYSTEMS, INC.</b> <small>PO Box 23488 Portland OR 97223</small>
DRAWN BY <i>John Cook</i>	DATE 3-16-83	
CHECK BY <i>John Cook</i>	DATE 8/1/82	DRAWING TITLE SCHEMATIC, ECB 446
MFG. ENG. <i>F. Mayeux</i>	DATE 2/24/83	FORMATTER, CI, RDPC
SIZE <b>D</b>		CODE IDENT. NO. <b>56504</b>
DRAWING NO. 512-3446-005		REV. <b>A</b>
SCALE NONE		SHEET 1 OF 14

CONV	0	1	2	3	4	5	6	7
ESCN1	L	L	L	H	H	L	L	L
ESCN2	L	L	H	L	L	L	L	L
ESLOE#	L	H	H	H	L	L	H	L
ESLIE#	H	H	L	L	H	H	H	H

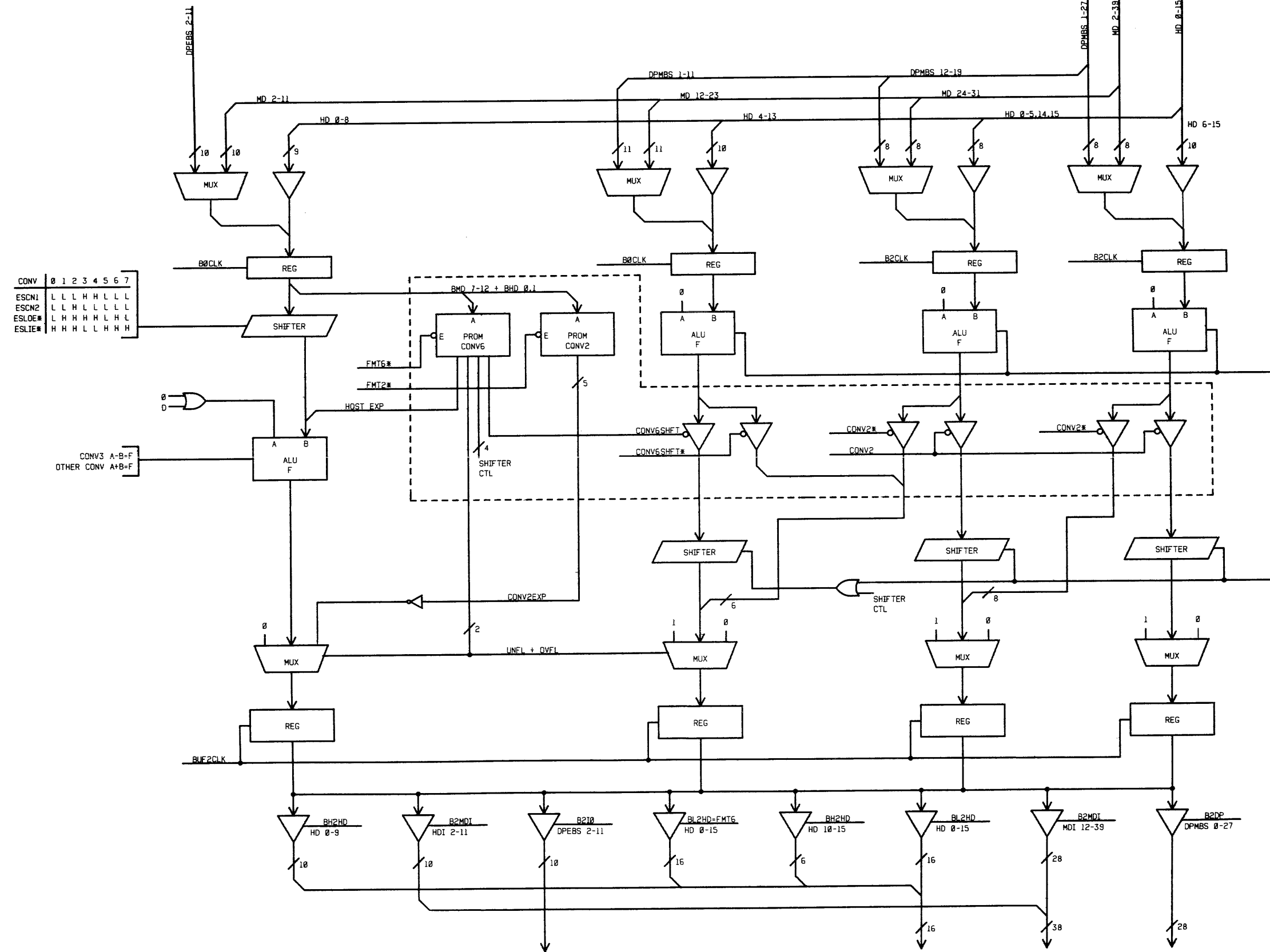
CONV3 A-B=F  
OTHER CONV A+B=F

CONV 3 OR 7,  
IF SIGN NEGATIVE  
ALU FUNCTION A-B-CARRY=F  
ALL OTHER FMTS F=B

CONV	0	1	2	3	4	5	6	7
SHIE#	H	H	H	D	L	L	D	D
SLOE#	L	L	H	D	H	H	D	D
SCN1	L	L	L	D	H	H	D	D
SCN2	L	L	L	D	H	H	D	D

CONV#	0	1	2	3	4	5	6	7
0	32 BIT TRANS	2AP						
1	16 BIT INT	2AP						
2	16 BIT FPN	2AP						
3	IBM FPN	2AP						
4	32 BIT TRANS	2HOST						
5	16 BIT INT	2HOST						
6	16 BIT FPN	2HOST						
7	IBM FPN	2HOST						

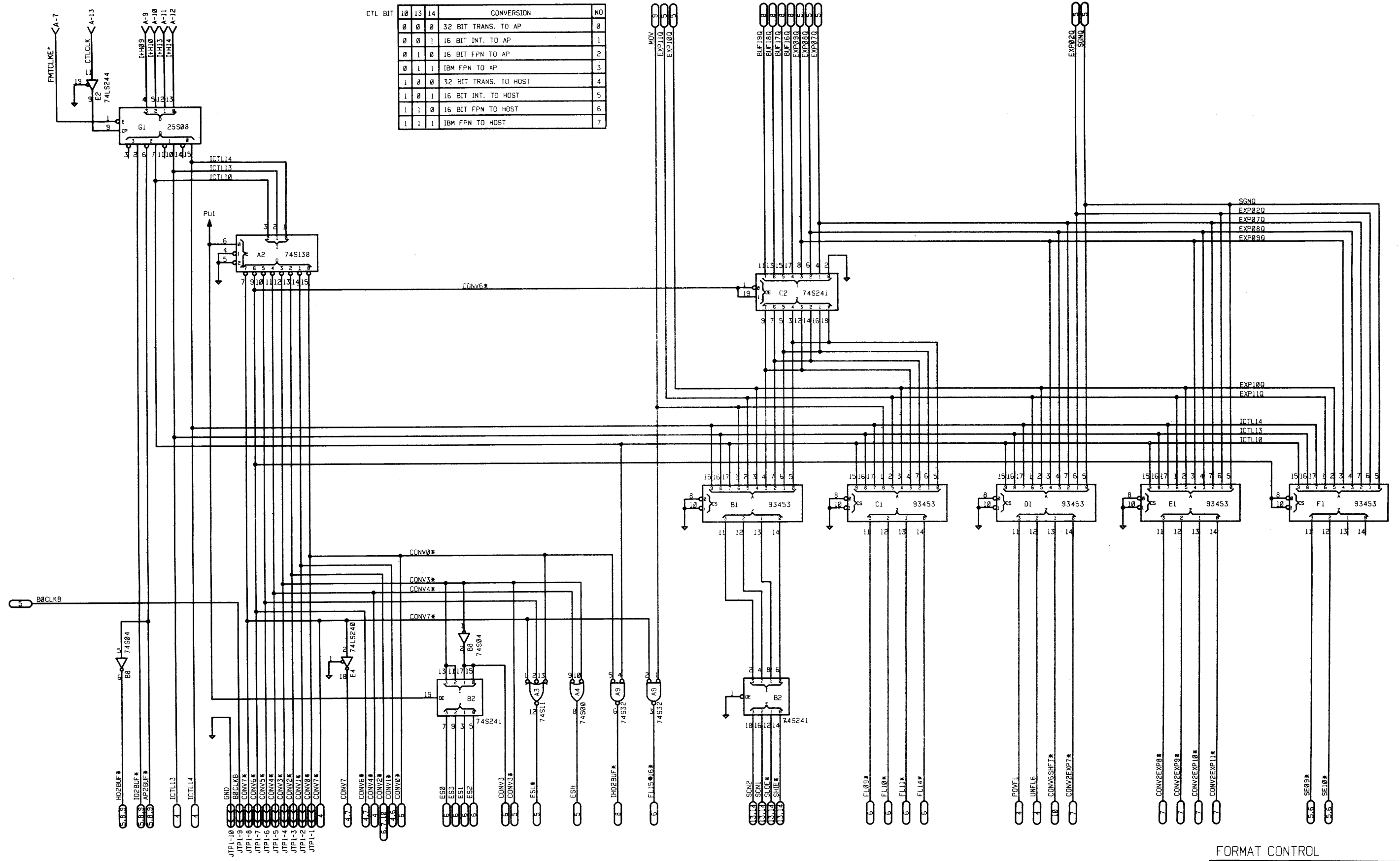
NOTE D-DATA DEPENDENT



BLOCK DIAGRAM

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3446-005	A
SCALE	NONE	SHEET 2	

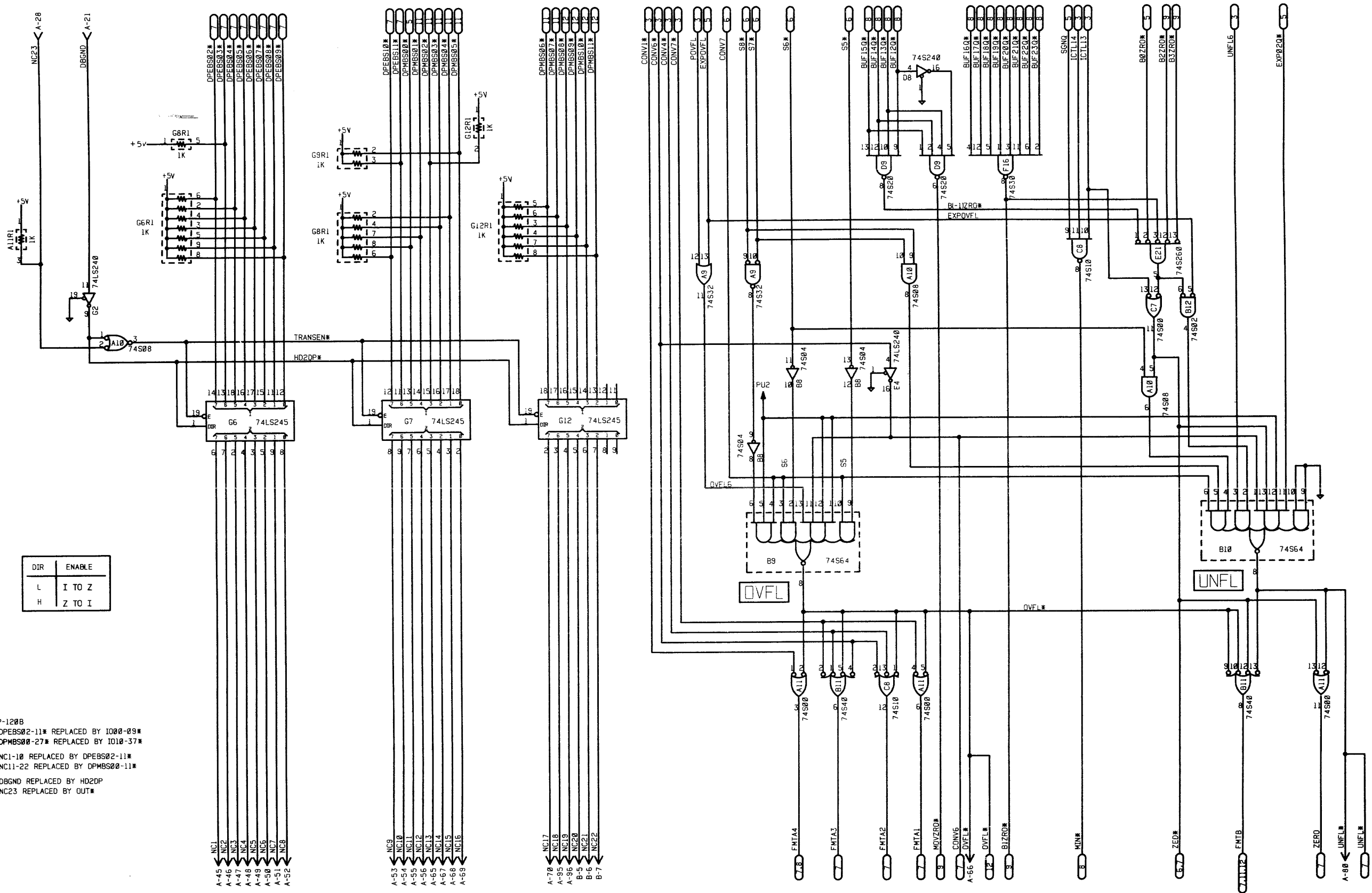
CTL BIT	10	13	14	CONVERSION	NO
	0	0	0	32 BIT TRANS. TO AP	0
	0	0	1	16 BIT INT. TO AP	1
	0	1	0	16 BIT FPN TO AP	2
	0	1	1	IBM FPN TO AP	3
	1	0	0	32 BIT TRANS. TO HOST	4
	1	0	1	16 BIT INT. TO HOST	5
	1	1	0	16 BIT FPN TO HOST	6
	1	1	1	IBM FPN TO HOST	7



FORMAT CONTROL			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3446-205	A
SCALE	NONE	SHEET	3

DIR	ENABLE
L	I TO Z
H	Z TO I

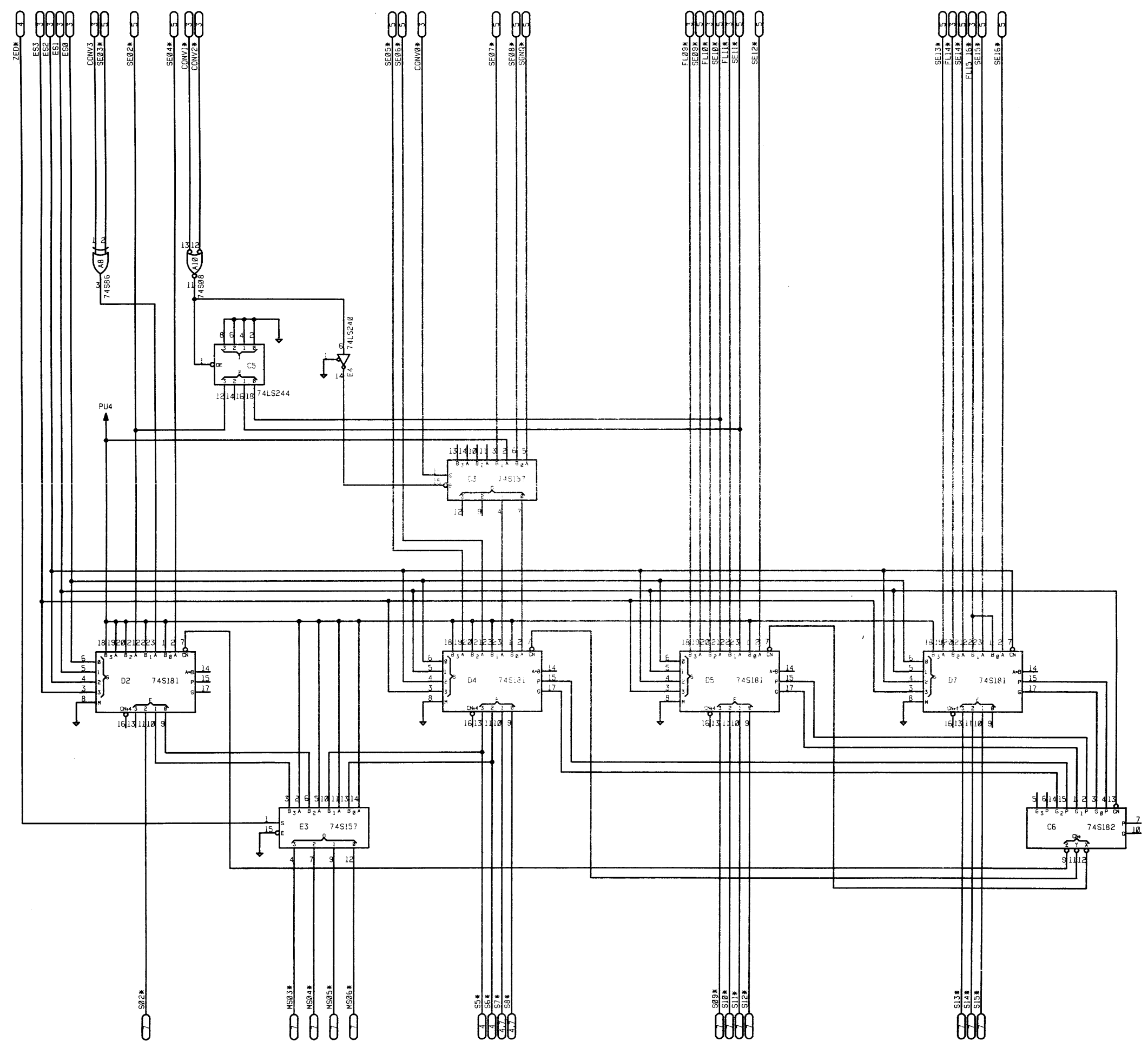
NOTE:  
FOR AP-120B  
 DPES02-11\* REPLACED BY I000-09\*  
 DPMS00-27\* REPLACED BY I010-37\*  
 NC1-10 REPLACED BY DPES02-11\*  
 NC11-22 REPLACED BY DPMS00-11\*  
 DBGND REPLACED BY HD2DP  
 NC23 REPLACED BY OUT\*



IO/DP TRANSCEIVER

SIZE <b>D</b>	CODE IDENT. NO. 56504	DRAWING NO. 512-3446-005	REV. A
SCALE NONE			SHEET 4

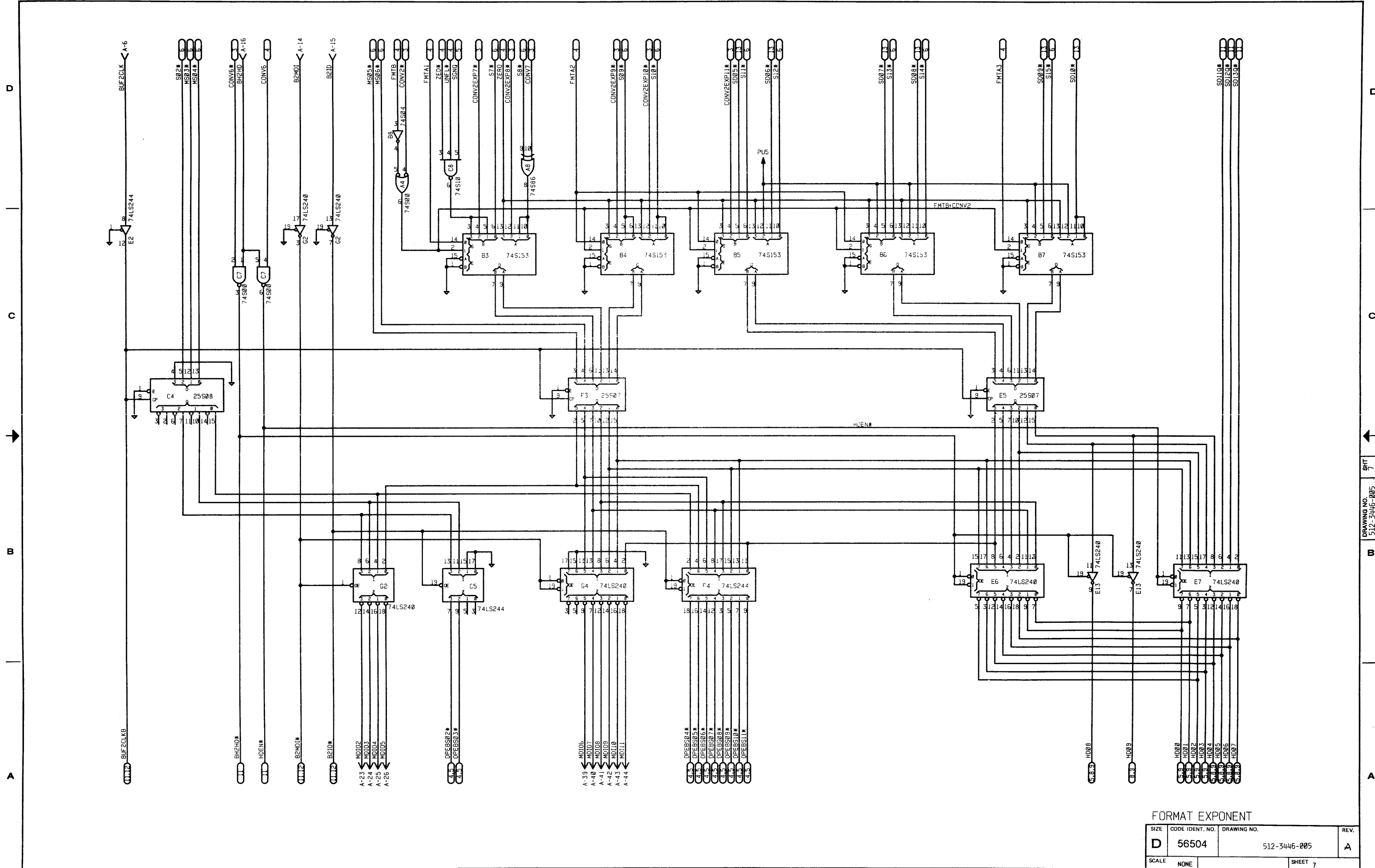




FORMAT EXPONENT

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3446-005	A
SCALE	NONE	SHEET 6	

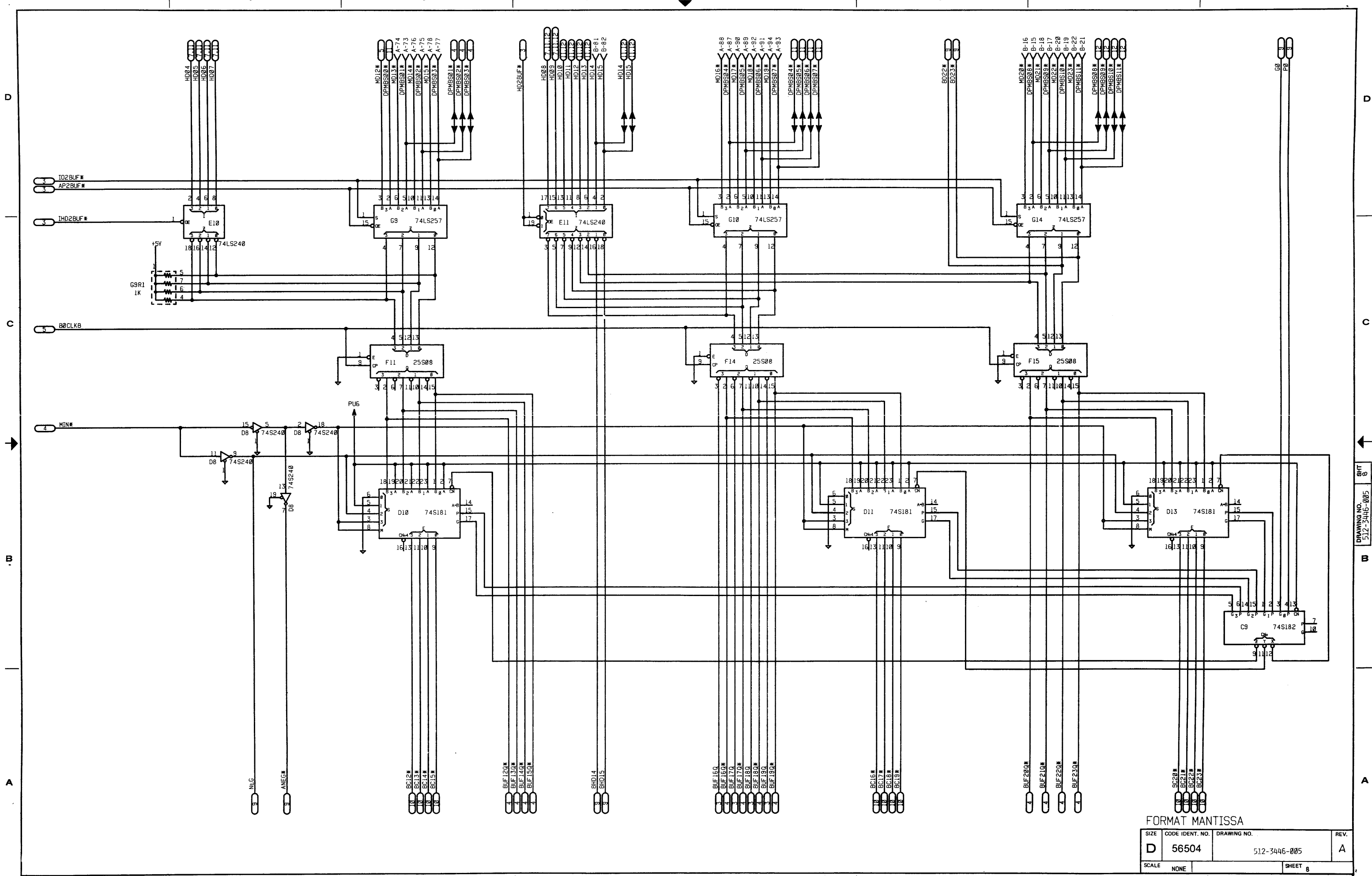




FORMAT EXPONENT

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3446-005	A
SCALE	NONE	SHEET	7

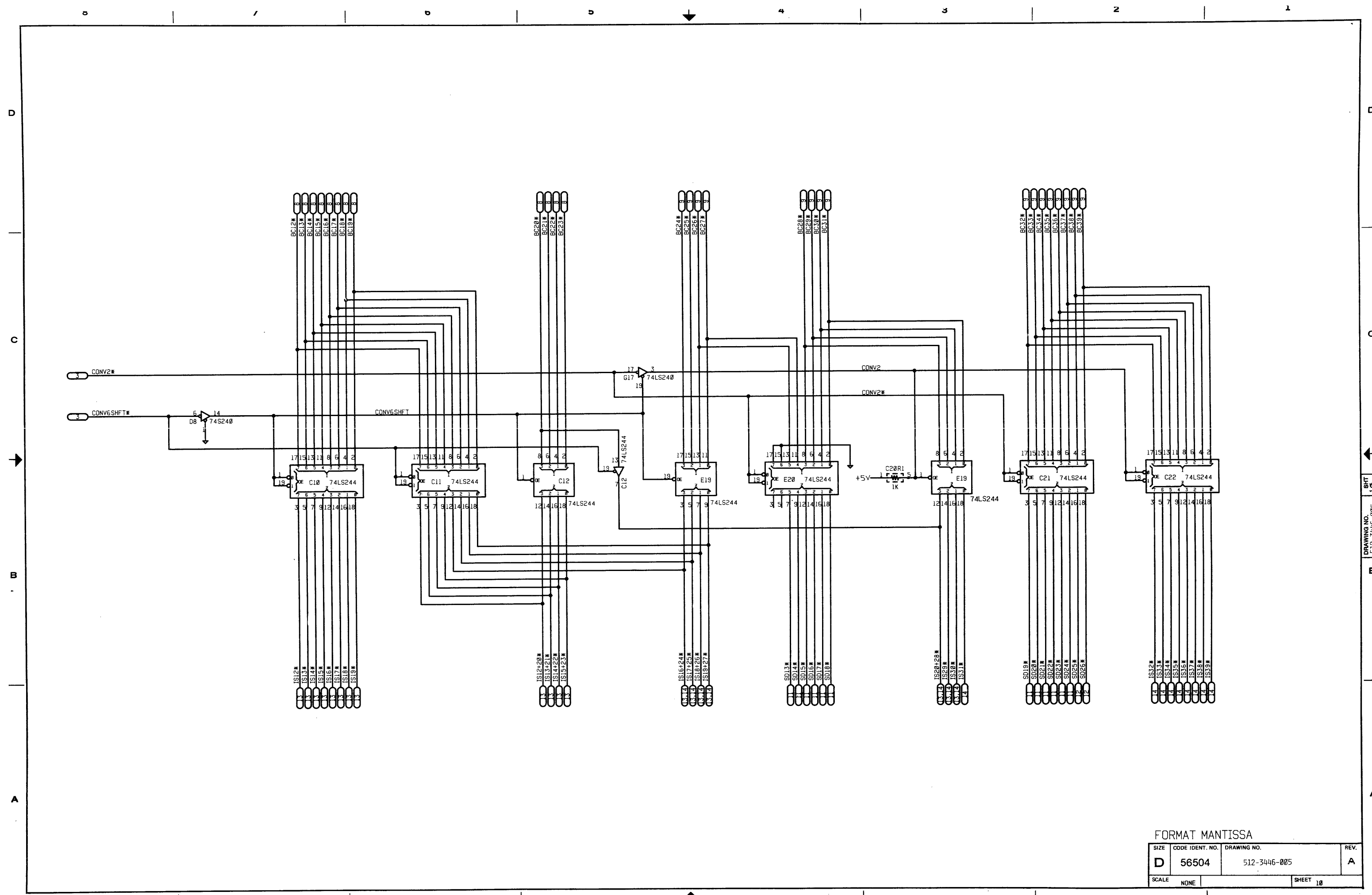
DRAWING NO. 512-3446-005 SHEET 7



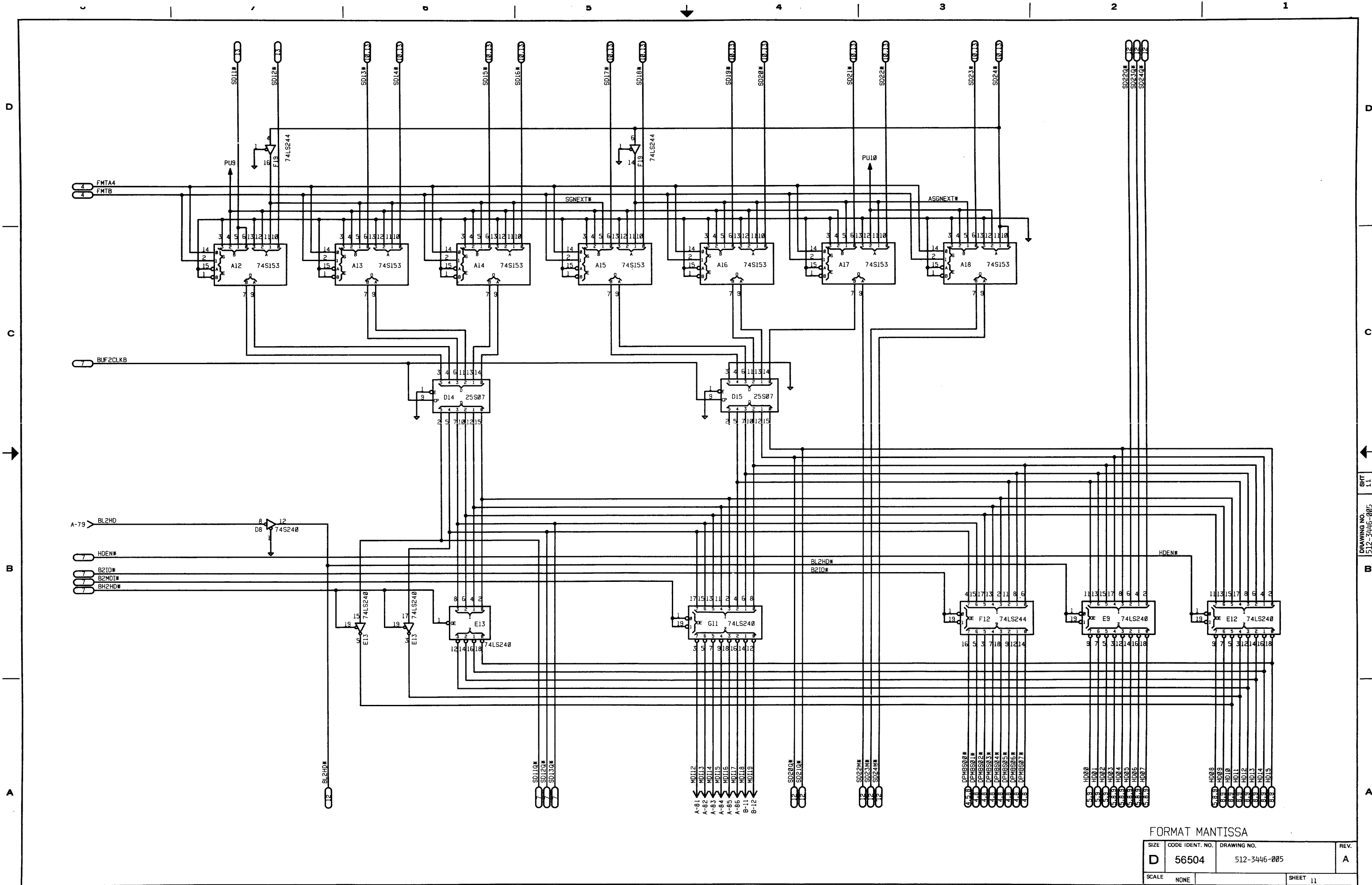
FORMAT MANTISSA

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3446-005	A
SCALE	NONE	SHEET	8



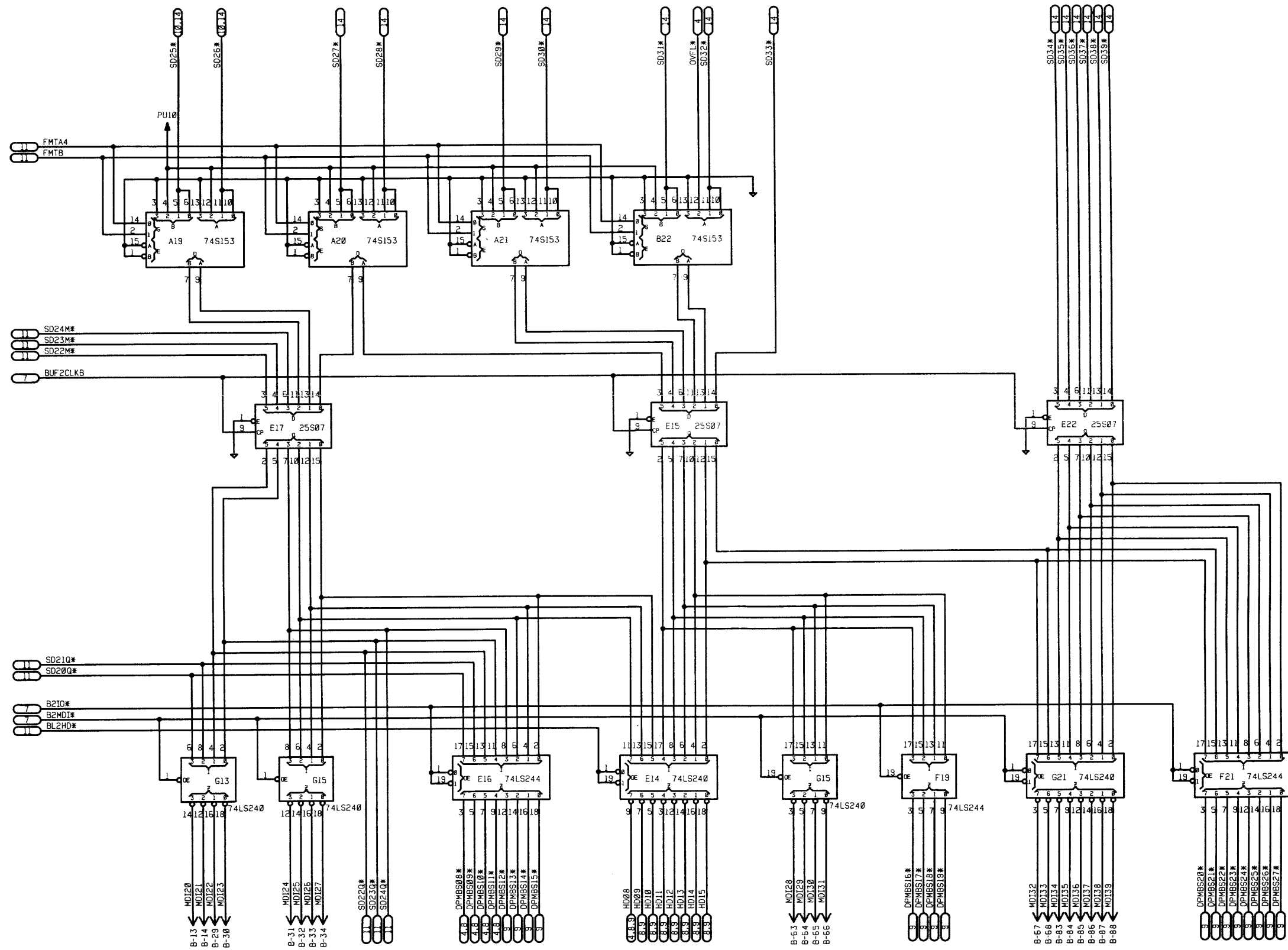


FORMAT MANTISSA			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3446-005	A
SCALE	NONE	SHEET	10



FORMAT MANTISSA

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3446-005	A
SCALE	NONE	SHEET	11



FORMAT MANTISSA

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3446-005	A
SCALE	NONE	SHEET	12

DRAWING NO. 512-3446-005

REV. 1.2

D

C

B

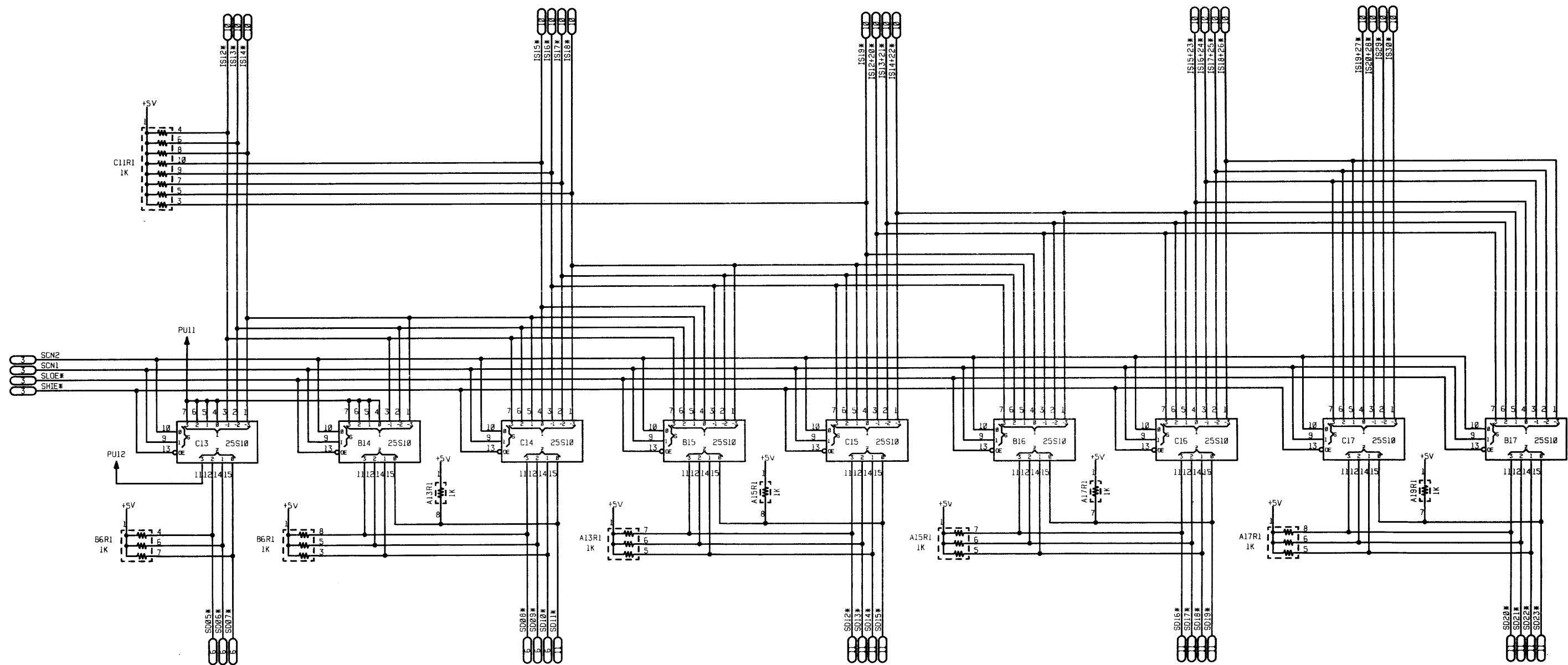
A

D

C

B

A

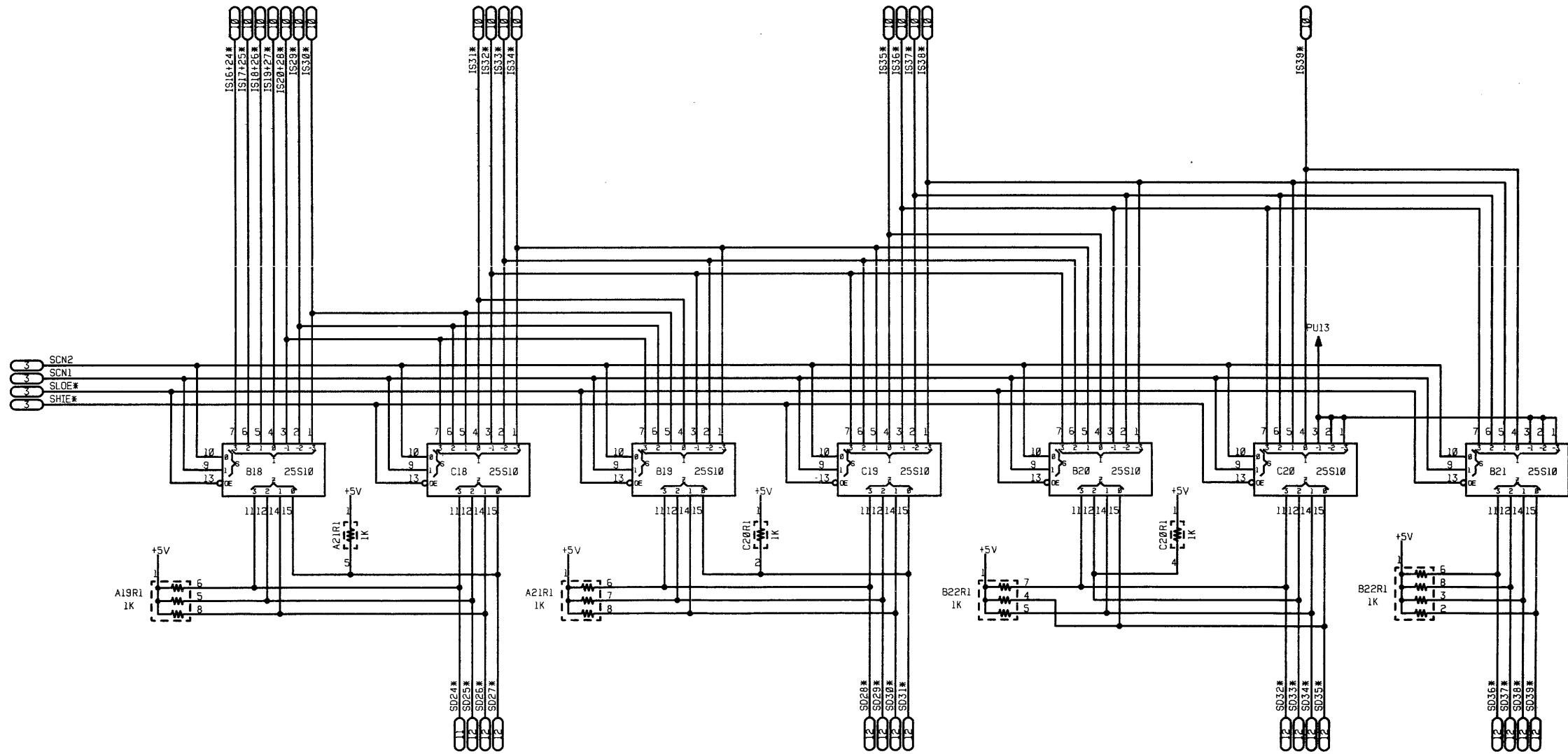


DRAWING NO. 512-3446-005  
 BHT 15

FORMAT MANTISSA

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3446-005	A

SCALE NONE SHEET 13

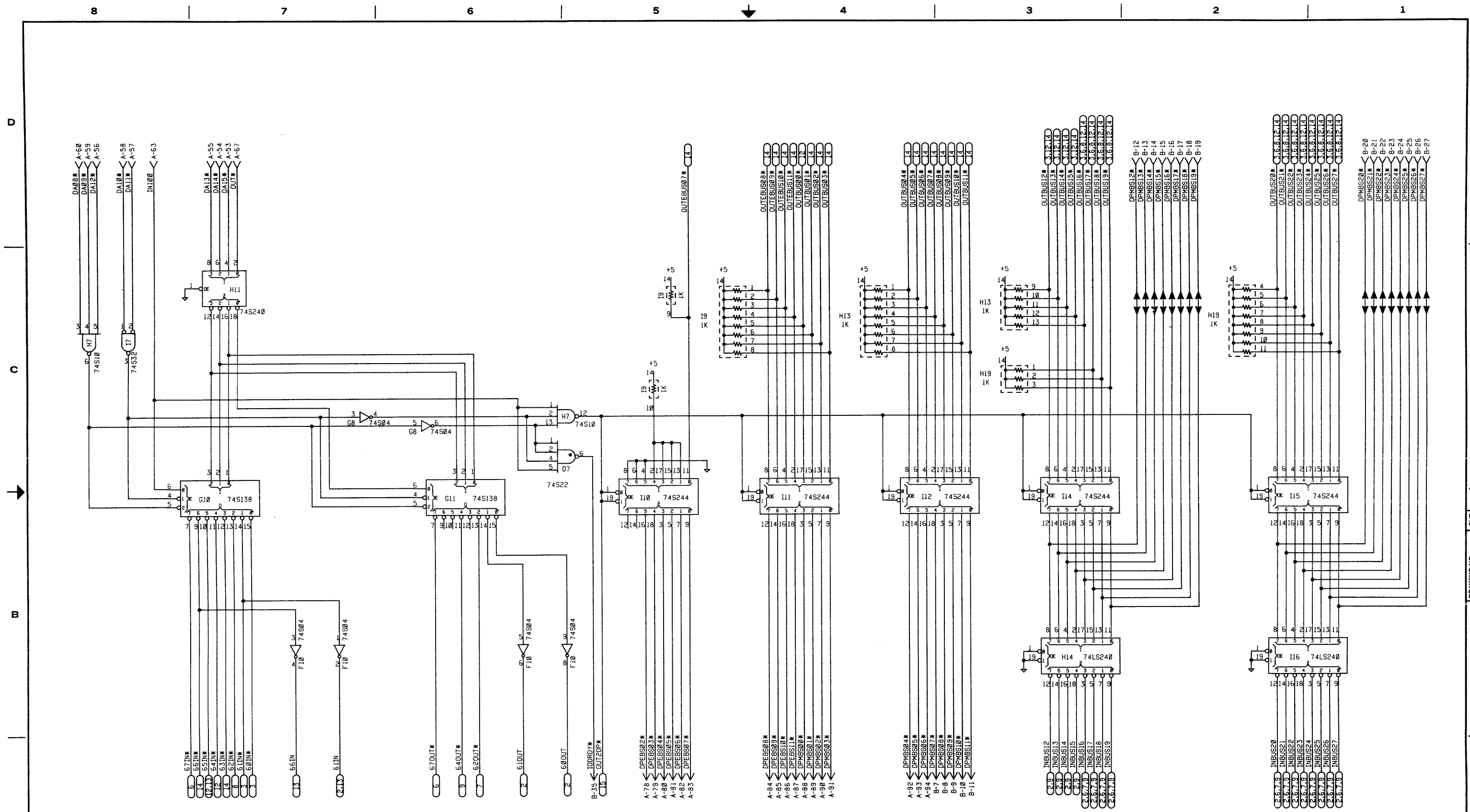


DRAWING NO. 512-3446-005  
 8HT 14

FORMAT MANTISSA

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3446-005	A
SCALE	NONE	SHEET	14





NOTE: UNLESS OTHERWISE SPECIFIED:  
 1. ALL RESISTOR VALUES ARE IN OHMS.  
 2. ALL CAPACITOR VALUES ARE IN MICROFARADS.

I/O RECEIVERS AND DRIVERS  
 DEVICE ADDRESS DECODERS

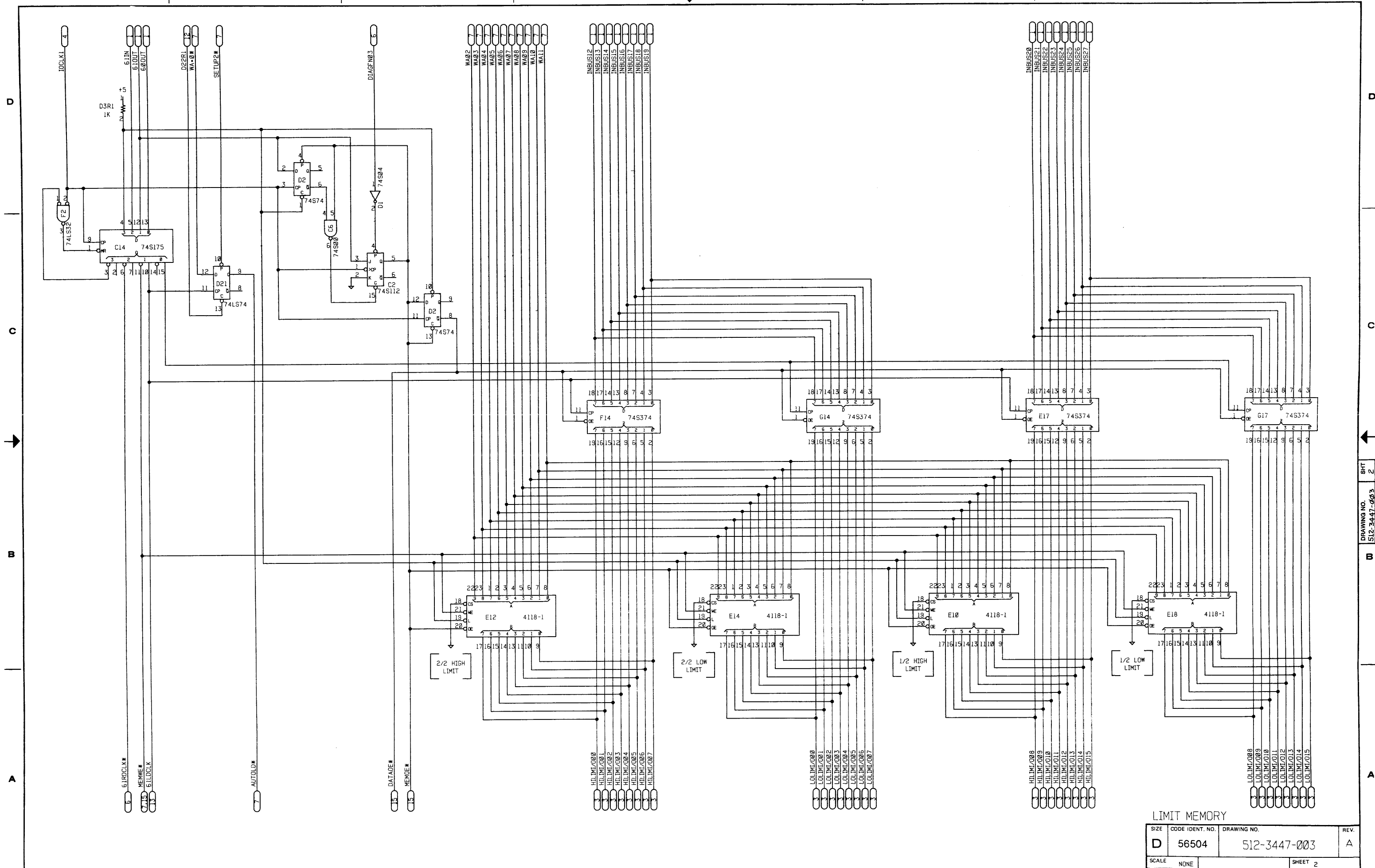
**IMPORTANT NOTE:** IGNORE DASHES IN PINOUTS (EXAMPLE: A-19). THEY ARE FOR PURPOSES OF CLARITY ONLY.

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
01	EN # 249	LEVEL 1 RELEASE 106510		<i>JE</i> 10/18/82	<i>KO</i> 11/18/82
02	ECO 82718	LVL 2 REL: ADD GATES C5,6 SHT 11 DELETE SPARE LOGIC C5,6 SHT 17	C8	<i>CAELA JACKSON</i> 10-12-82	<i>Michael</i>
A	ECO 83013	LEVEL 3 RELEASE		<i>CAELA JACKSON</i> 2-24-83	<i>Michael</i> 2/23/83

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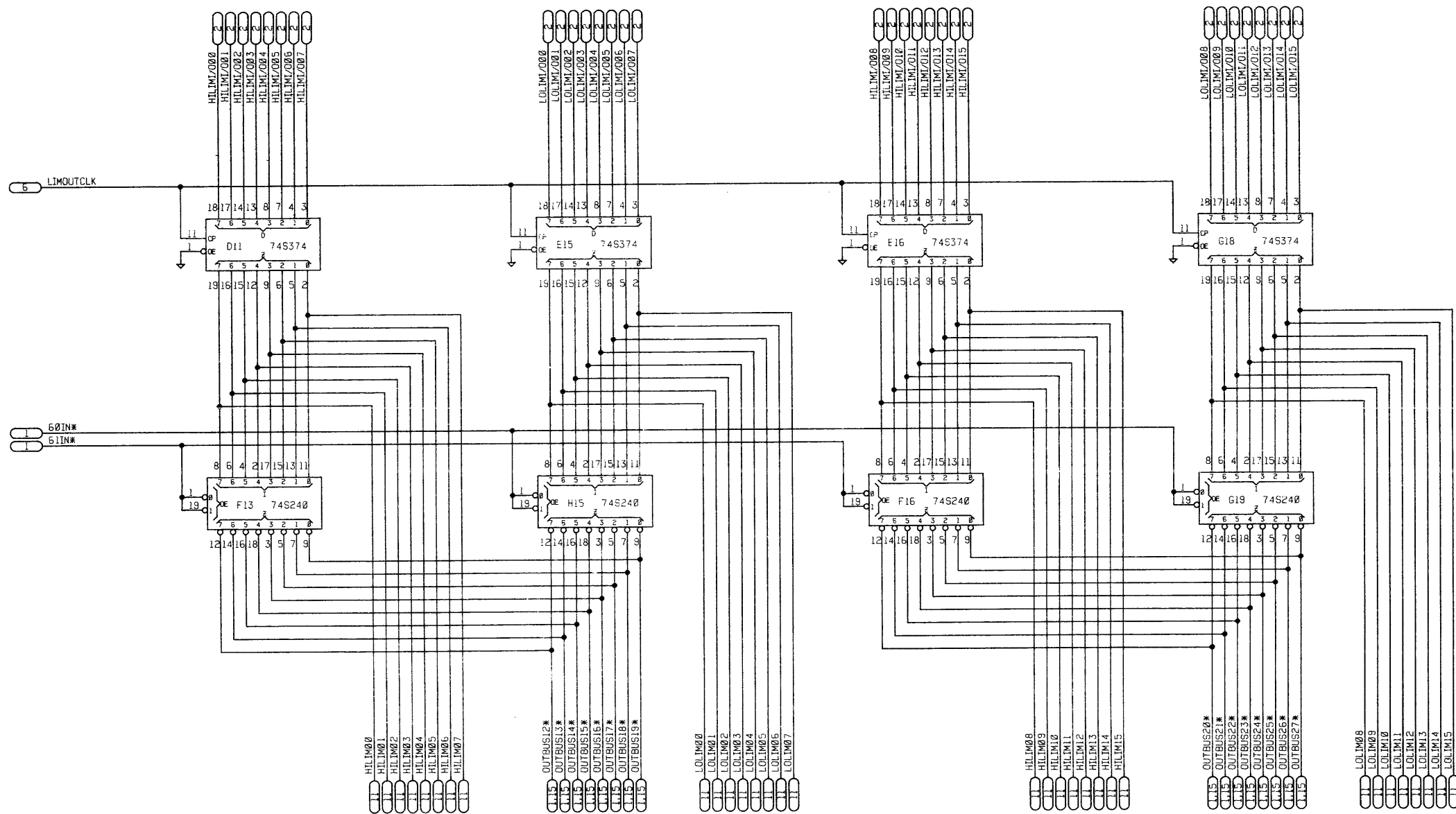
PROJ. ENG. <i>Paul Cook</i>	DATE 2/24/83	<b>FLOATING POINT SYSTEMS, INC.</b> PO Box 23488 Portland OR 97223
DRAWN BY <i>C.A.O.</i>	DATE 6-23-82	
CHECK BY <i>W. Goecker</i>	DATE 6-24-82	DRAWING TITLE SCHEMATIC, ECB, 447 CIO, RDPC
MFG. ENG. <i>W. Mayrus</i>	DATE 2/24/83	SIZE <b>D</b>
		CODE IDENT. NO. <b>56504</b>
		DRAWING NO. <b>512-3447-003</b>
		SCALE NONE
		SHEET 1 OF 17



LIMIT MEMORY

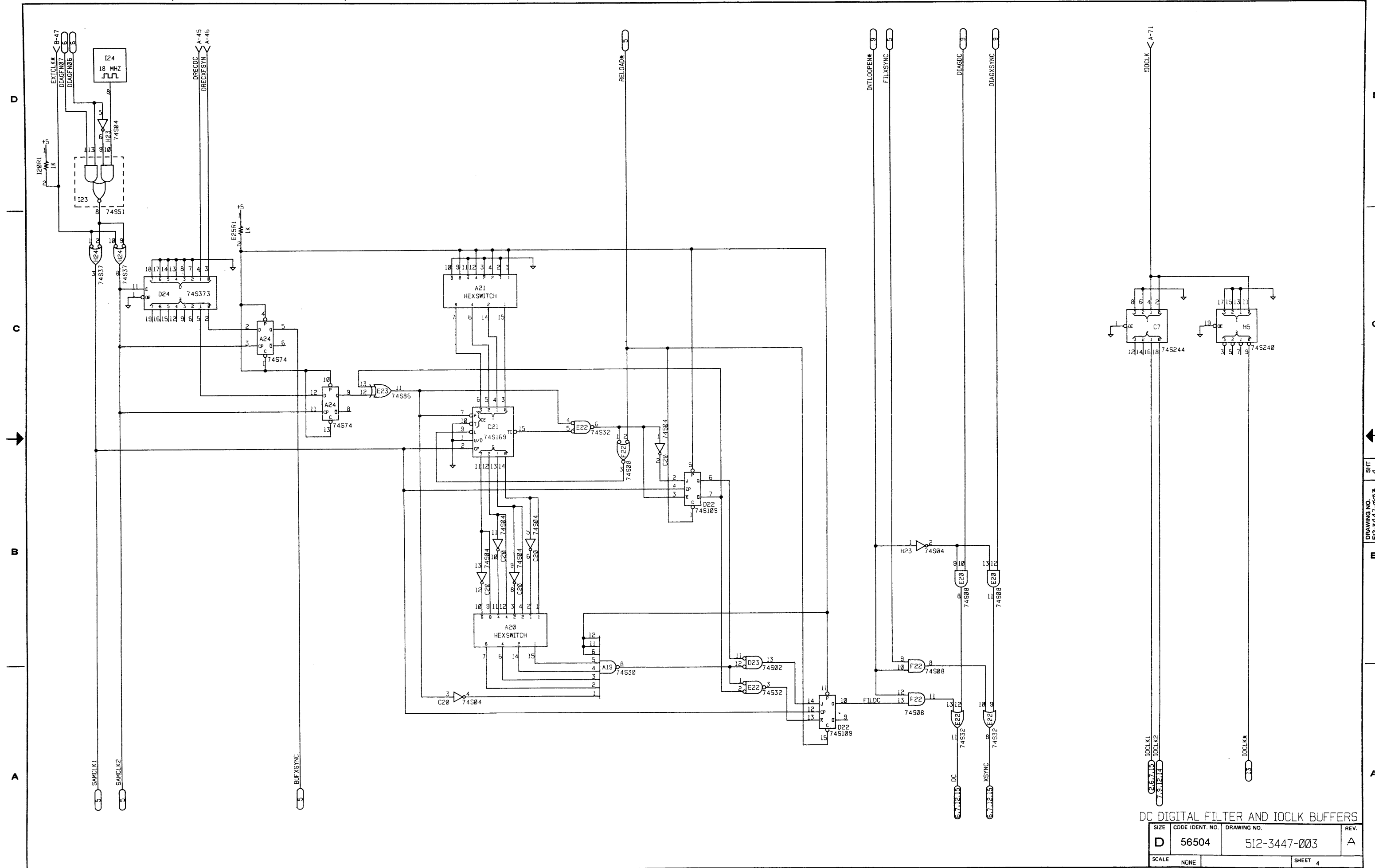
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	2

DRAWING NO. 512-3447-003 SHT 2



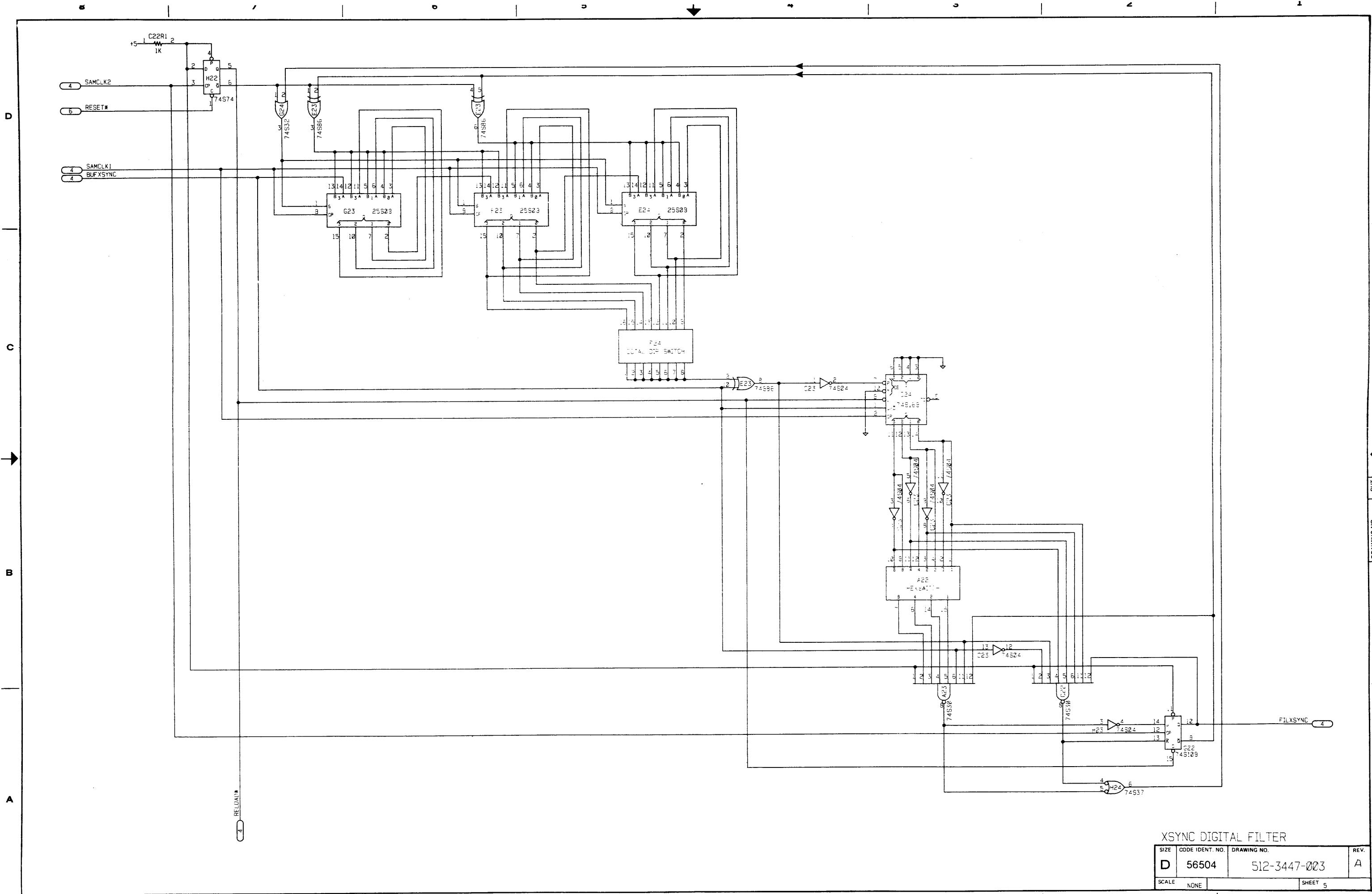
LIMIT MEMORY OUTPUT REG,  
DIAGNOSTIC OUTBUS DRIVERS

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	3



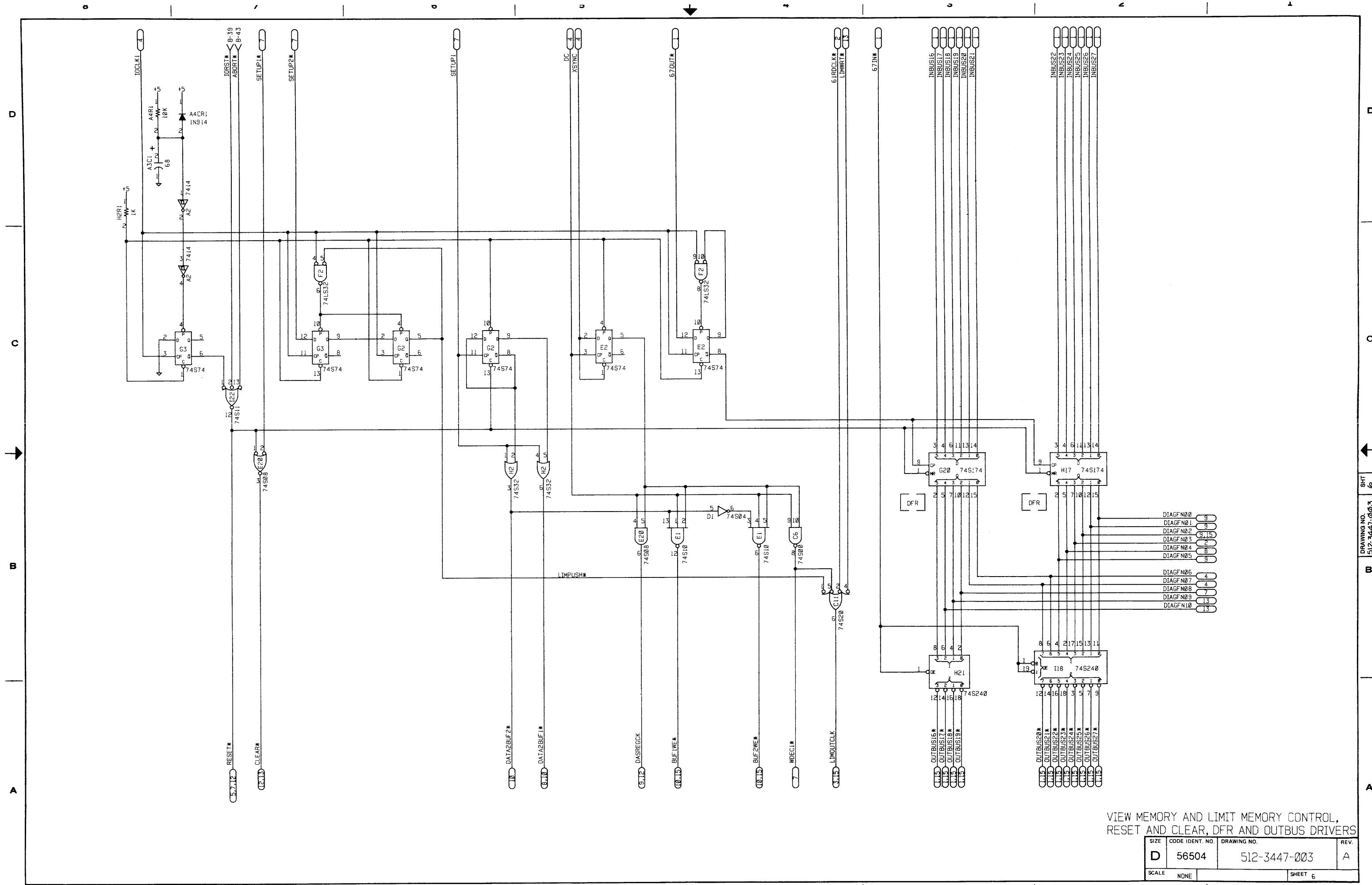
DC DIGITAL FILTER AND IOCLK BUFFERS

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET 4	



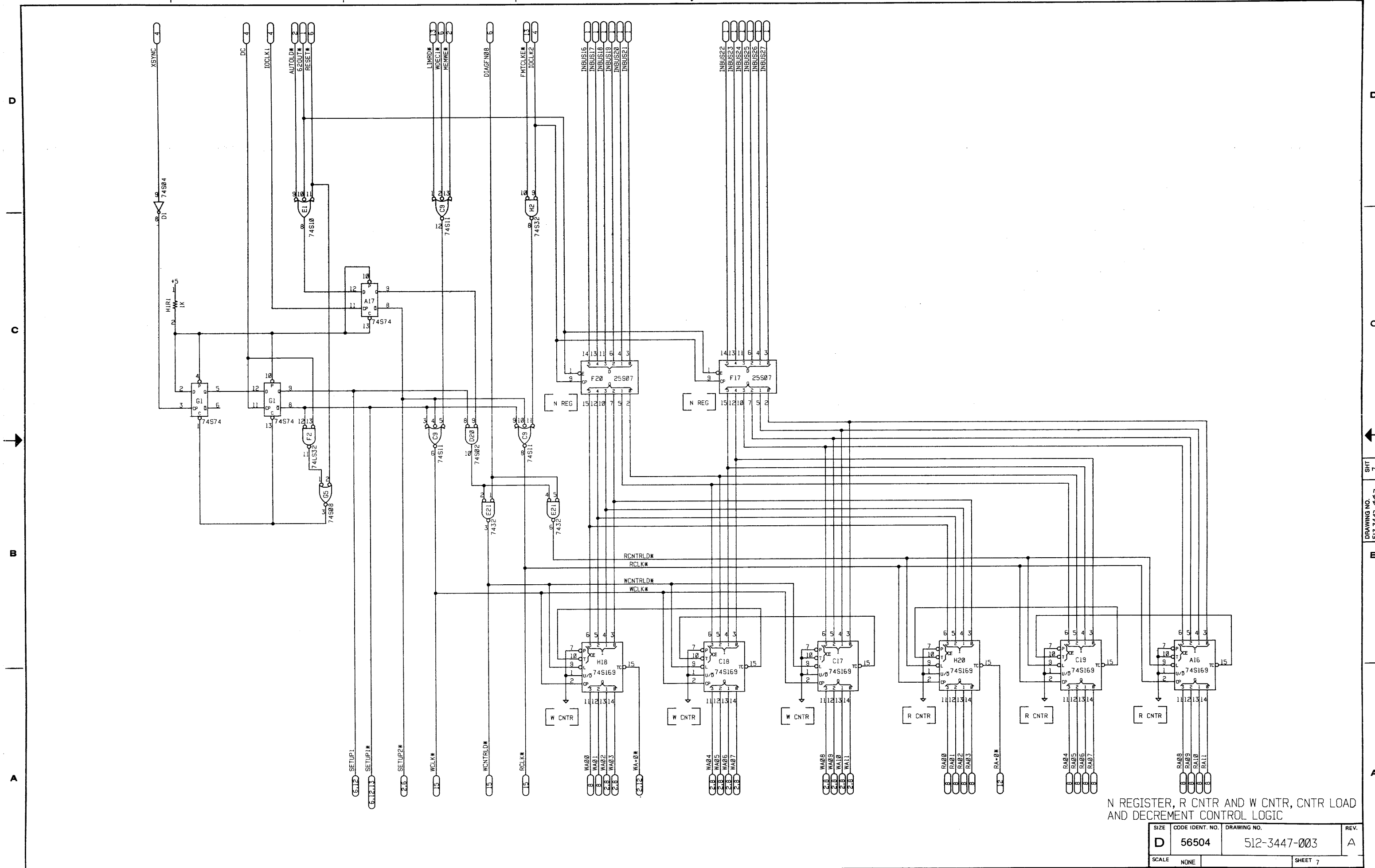
XSYNC DIGITAL FILTER

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	5



VIEW MEMORY AND LIMIT MEMORY CONTROL,  
RESET AND CLEAR, DFR AND OUTBUS DRIVERS

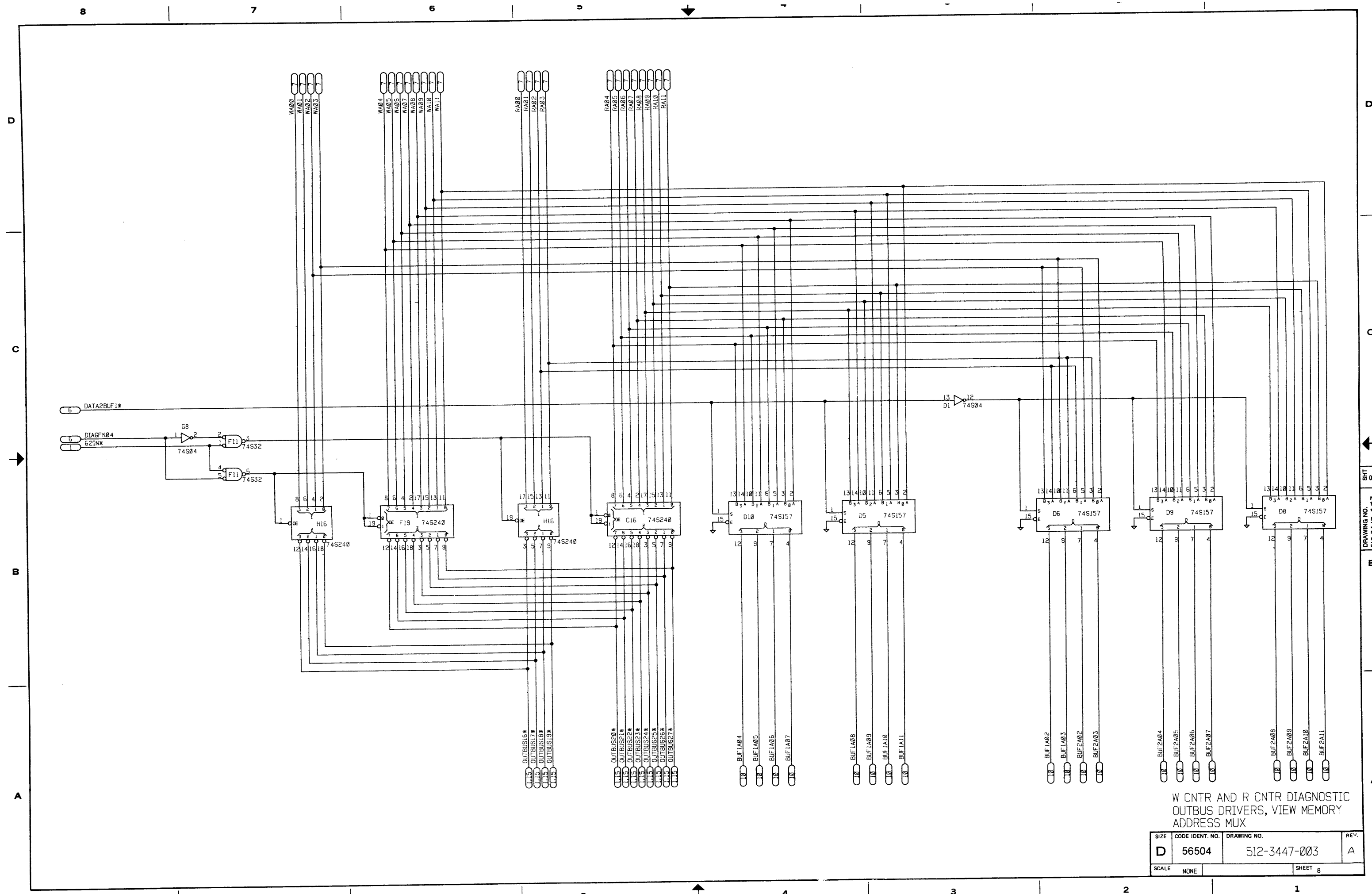
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	6



N REGISTER, R CNTR AND W CNTR, CNTR LOAD AND DECREMENT CONTROL LOGIC

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	7

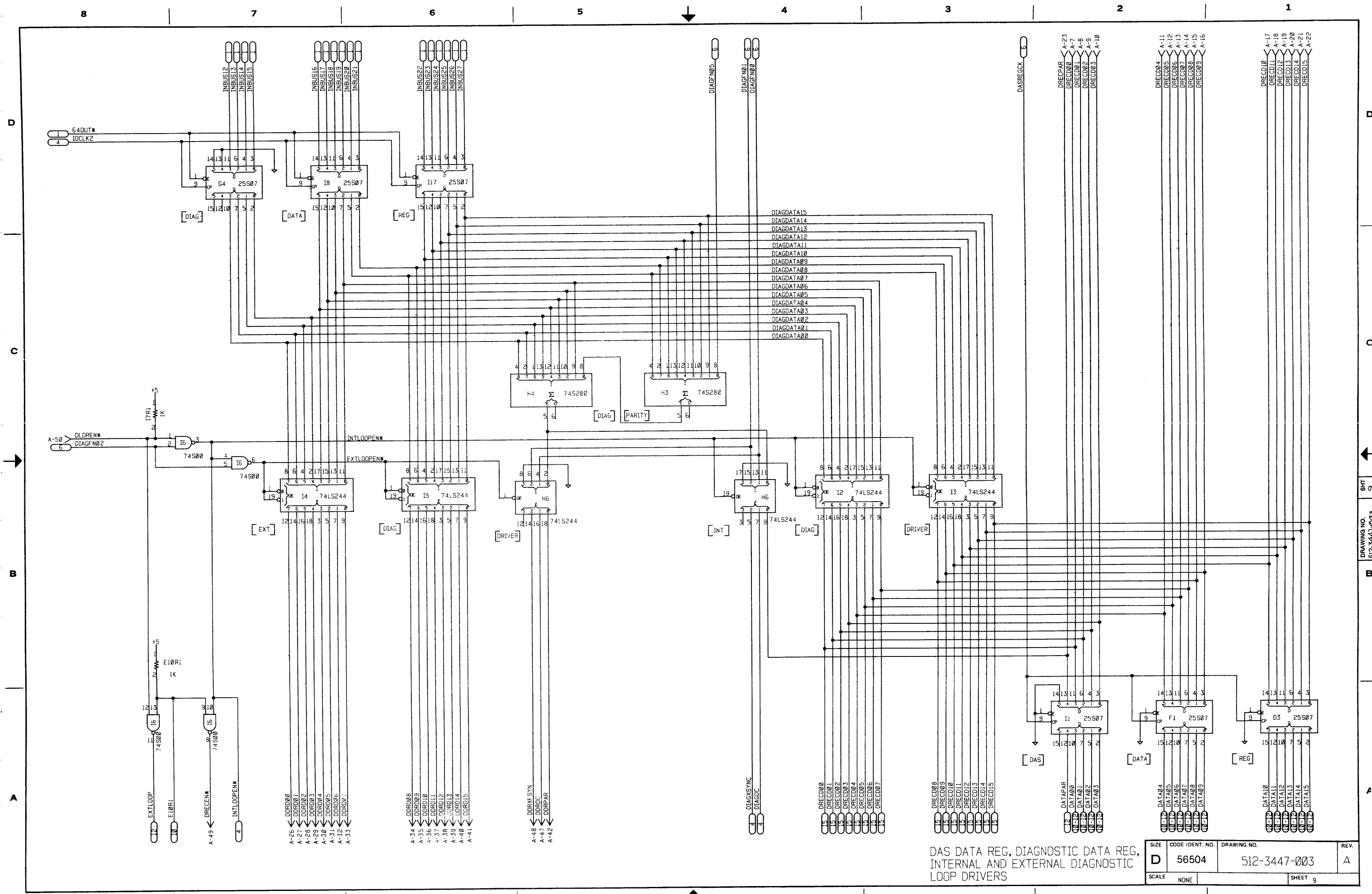
DRAWING NO. 512-3447-003 SHEET 7



W CNTR AND R CNTR DIAGNOSTIC  
 OUTBUS DRIVERS, VIEW MEMORY  
 ADDRESS MUX

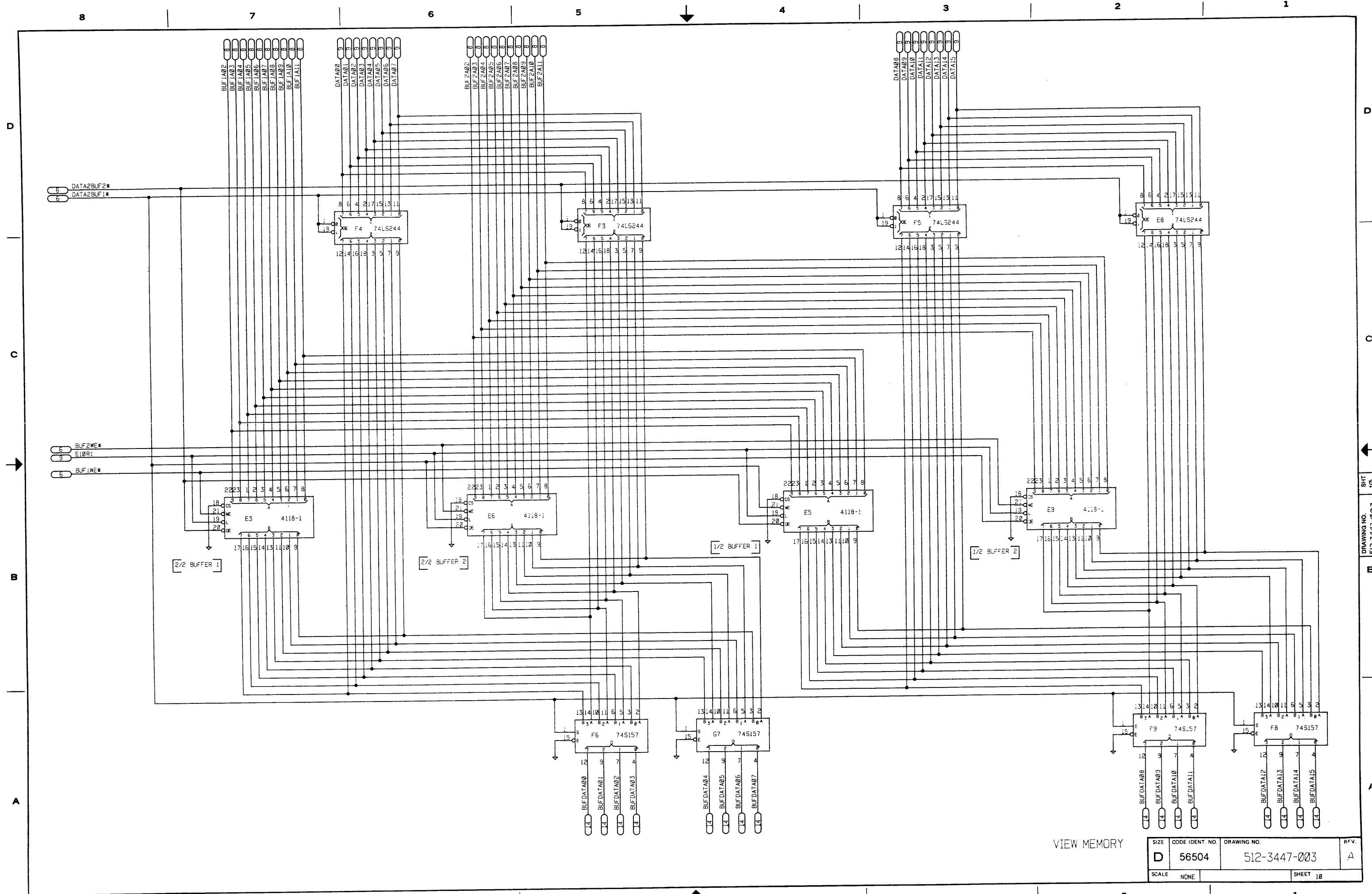
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE		SHEET 8





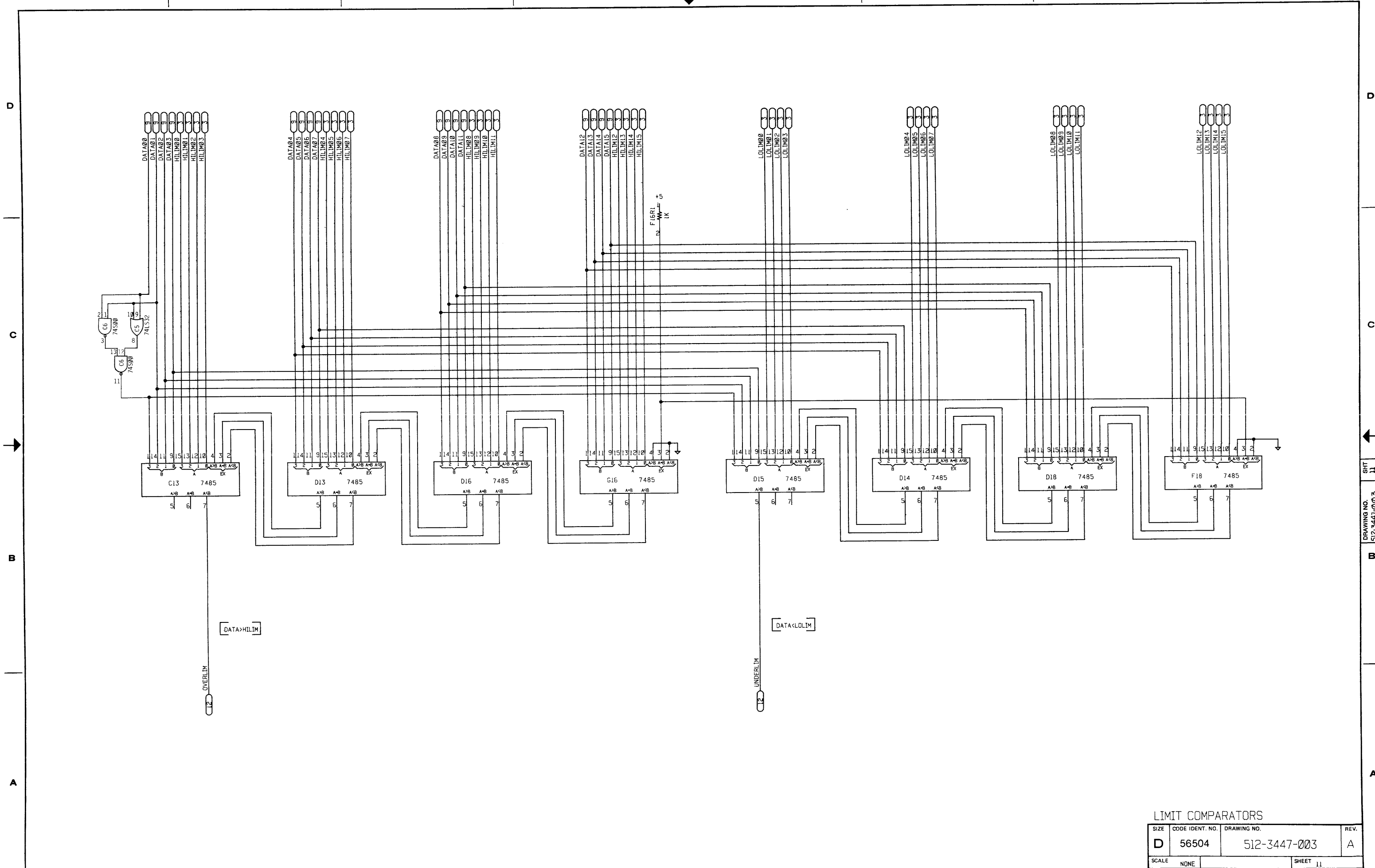
DAS DATA REG, DIAGNOSTIC DATA REG,  
INTERNAL AND EXTERNAL DIAGNOSTIC  
LOOP DRIVERS

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	g



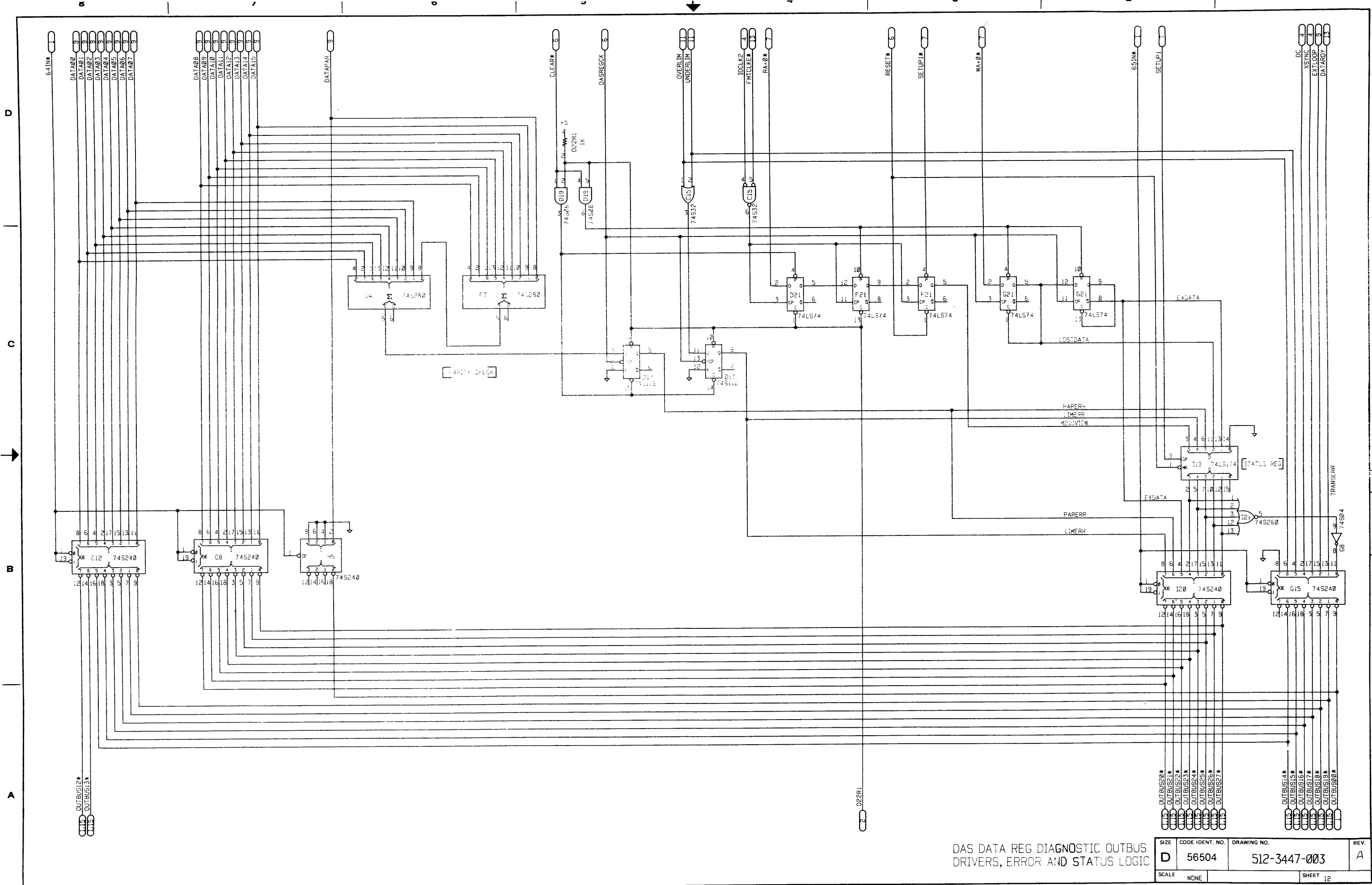
VIEW MEMORY

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	10



LIMIT COMPARATORS

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	11

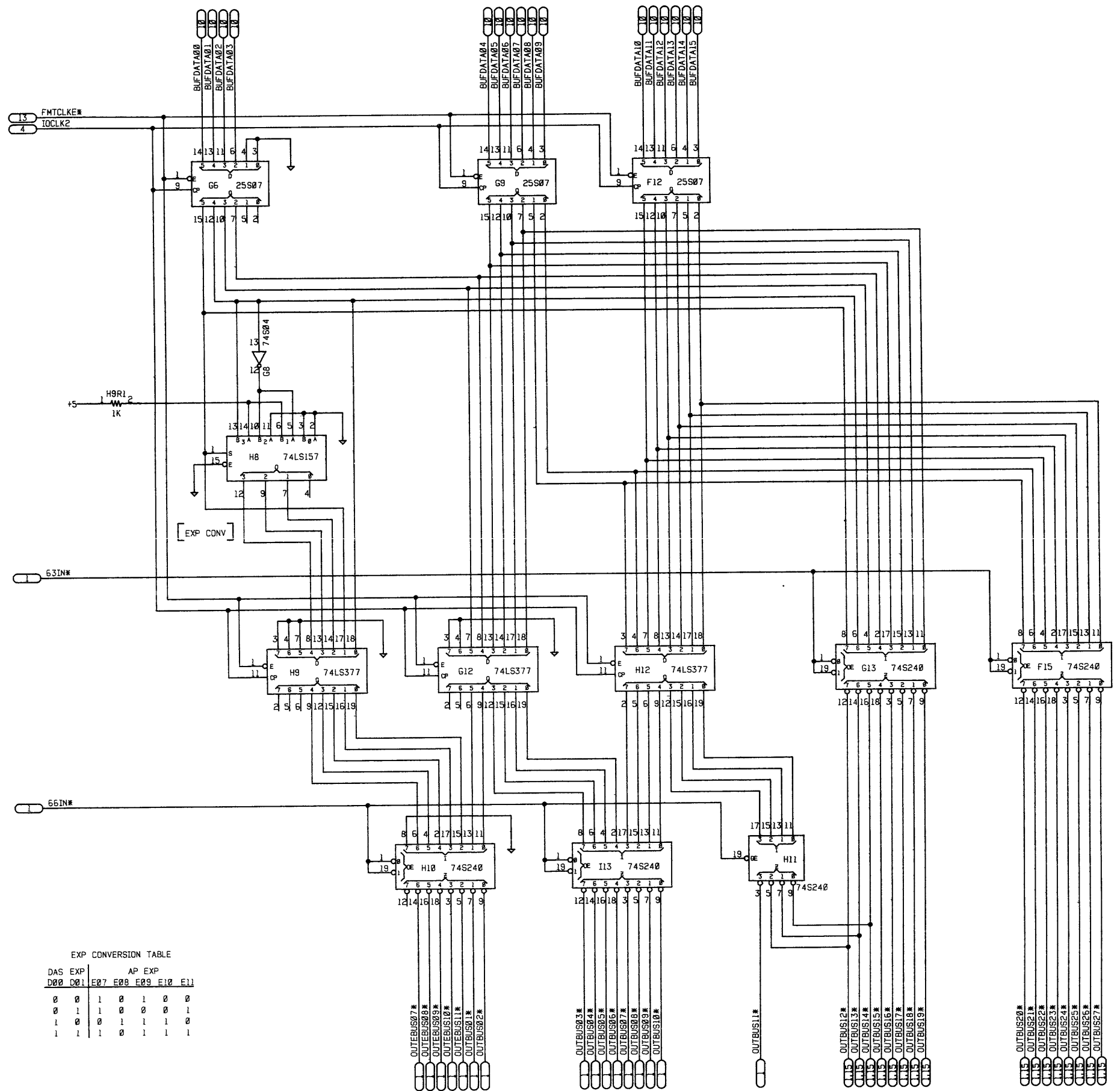


DAS DATA REG DIAGNOSTIC OUTBUS DRIVERS, ERROR AND STATUS LOGIC

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	12



D  
C  
B  
A

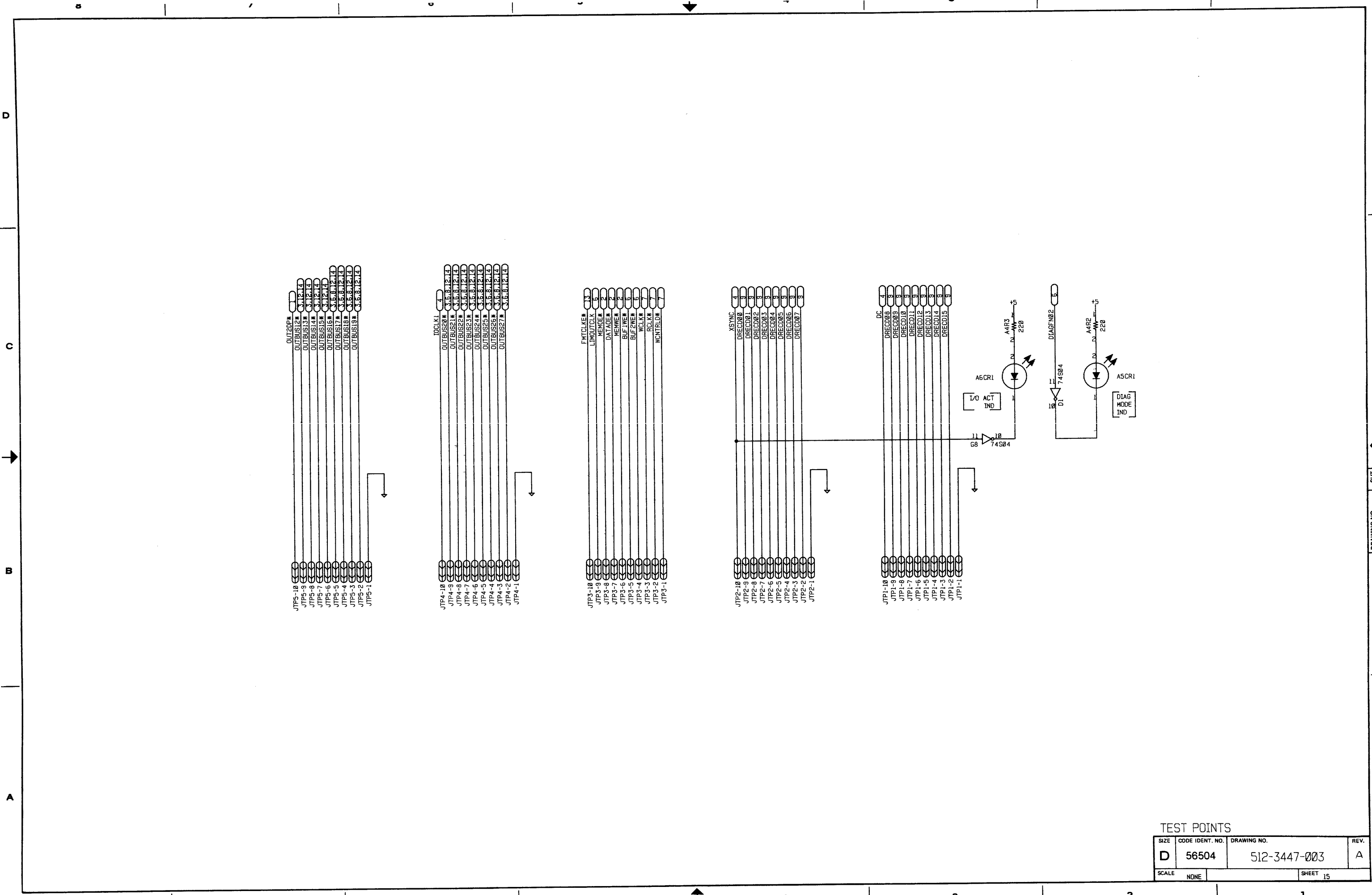


EXP CONVERSION TABLE

DAS EXP	AP EXP
D00 D01	E07 E08 E09 E10 E11
0 0	1 0 1 0 0
0 1	0 0 0 0 1
1 0	0 1 1 1 0
1 1	1 0 1 1 1

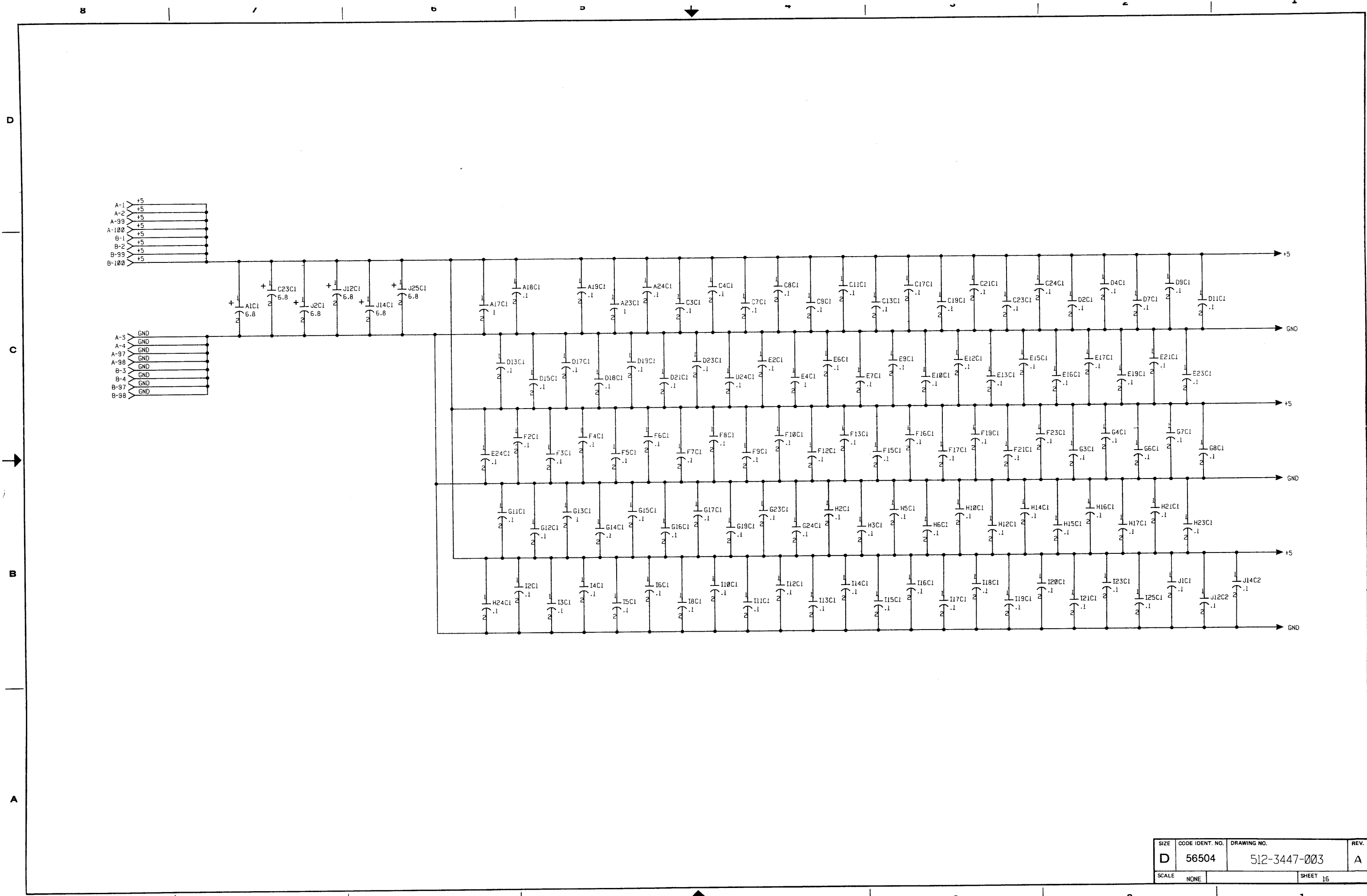
FORMATTER AND VIEW MEMORY  
DIAGNOSTIC OUTBUS DRIVERS

SIZE <b>D</b>	CODE IDENT. NO. 56504	DRAWING NO. 512-3447-003	REV. A
SCALE NONE	SHEET 14		



TEST POINTS

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	15

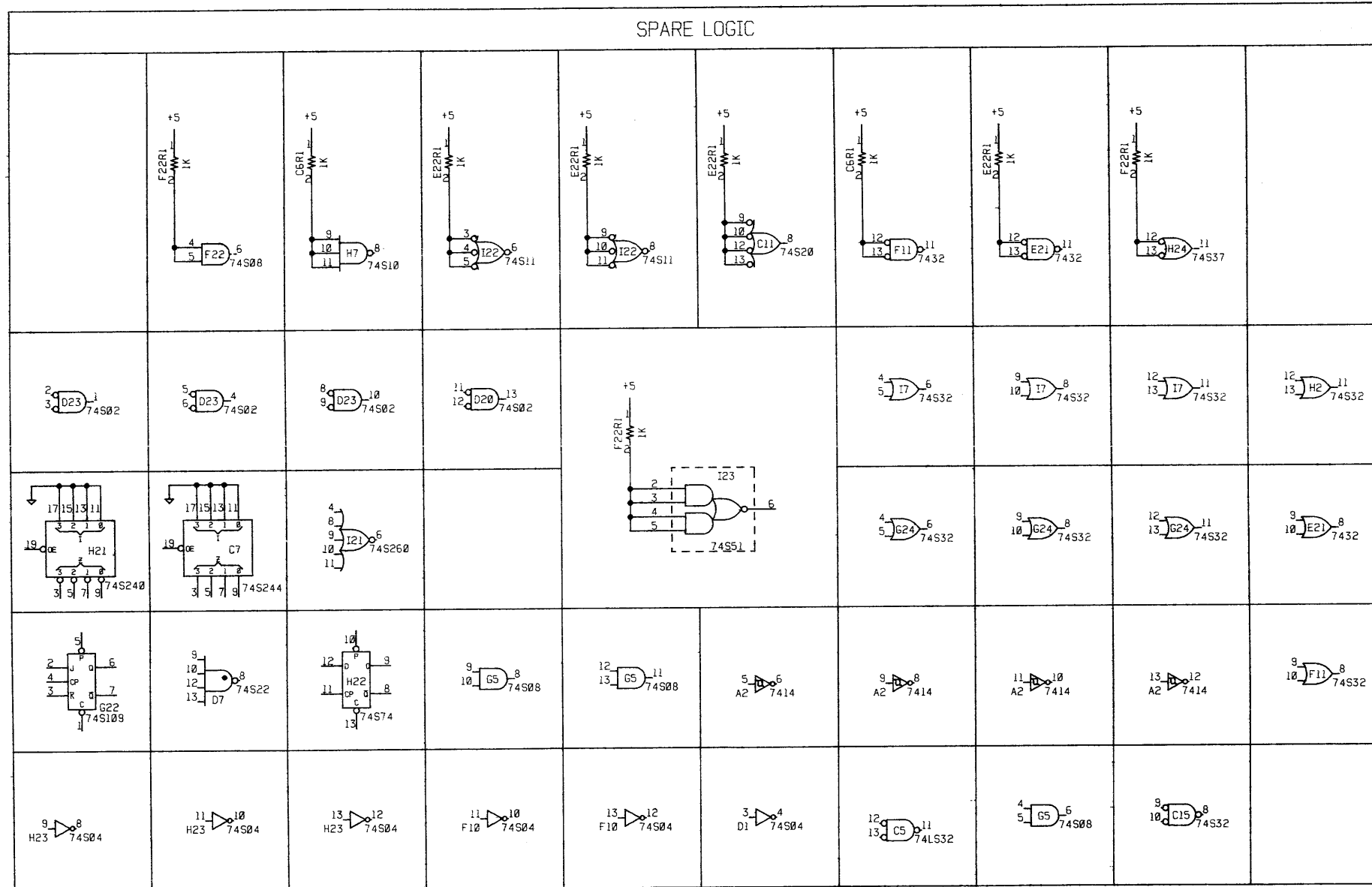


SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	16

DRAWING NO. 512-3447-003



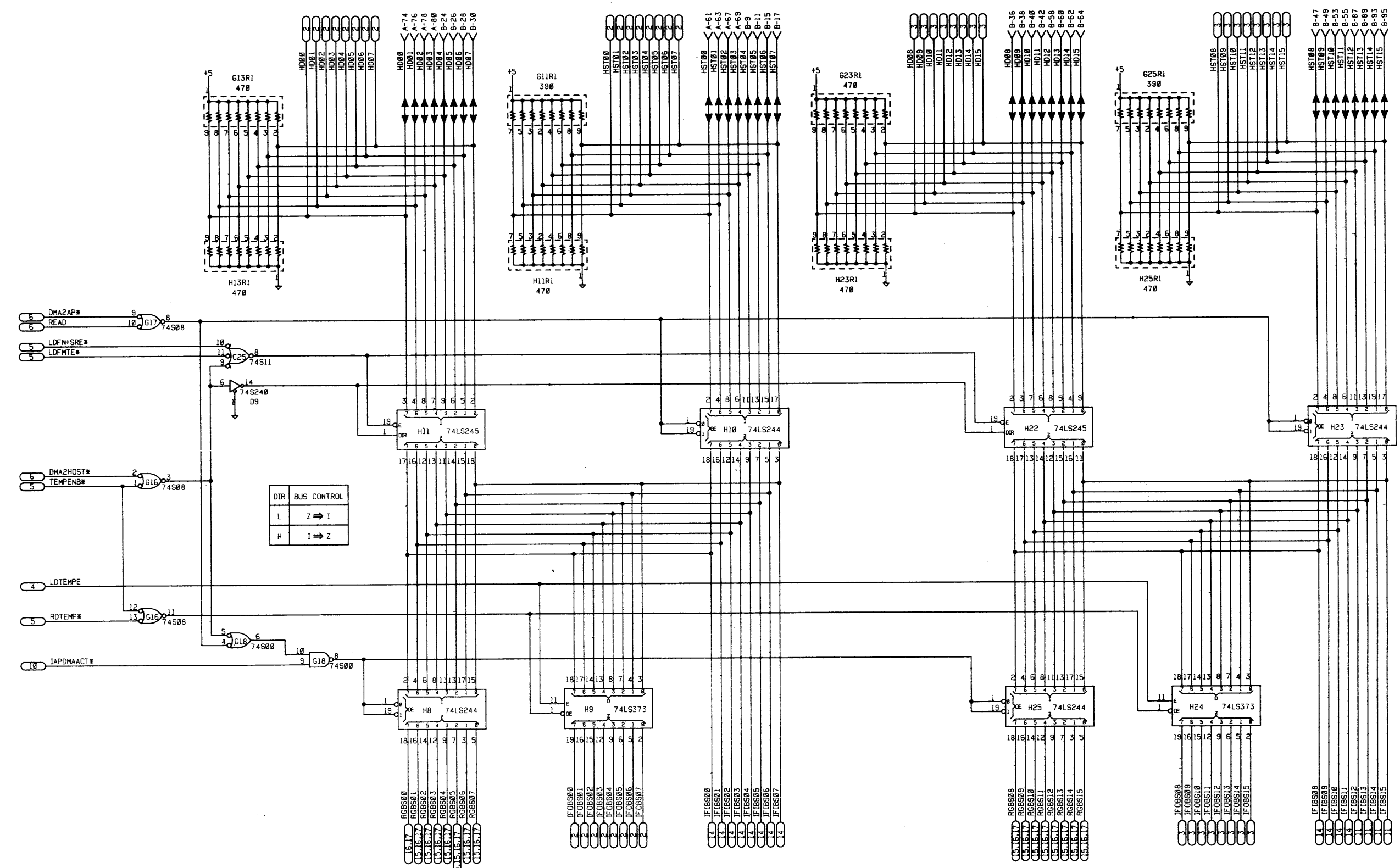
SPARE LOGIC



SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3447-003	A
SCALE	NONE	SHEET	17

D  
C  
B  
A

D  
C  
B  
A



HSTXX, HDXX, TEMP REG

NOTE: UNLESS OTHERWISE SPECIFIED  
 1. ALL RESISTOR VALUES ARE IN OHMS. DISCRETES ARE ±5%, 1/4W. SIPS ARE ±2%, .18W.  
 2. ALL CAPACITOR VALUES ARE IN MICROFARADS, ±20%, 50V.

**IMPORTANT NOTE.** IGNORE DASHES IN PINOUTS (EXAMPLE:A-19). THEY ARE FOR PURPOSES OF CLARITY ONLY.

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
01	ECJ 83220	LEVEL 2 RELEASE		APP 5/13/83	5/16/83

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PROJ. ENG.	DATE	<b>FLOATING POINT SYSTEMS, INC.</b>	FORM 2348B Performed OR 8723
DRAWN BY: PARSONS CAD	DATE: 4-27-83		DRAWING TITLE SCHEMATIC, ECB, 44B, ARITHMETIC PROCESSOR INTERFACE, RDGP
CHECK BY: [Signature]	DATE: 5-18-83	SIZE: 56504 CODE IDENT. NO.	DRAWING NO. 512-3448-010 REV. 01
MFG. ENG.	DATE	SCALE NONE	SHEET 1 OF 20

DRAWING NO. 512-3448-010  
 SHEET 1

D

C

B

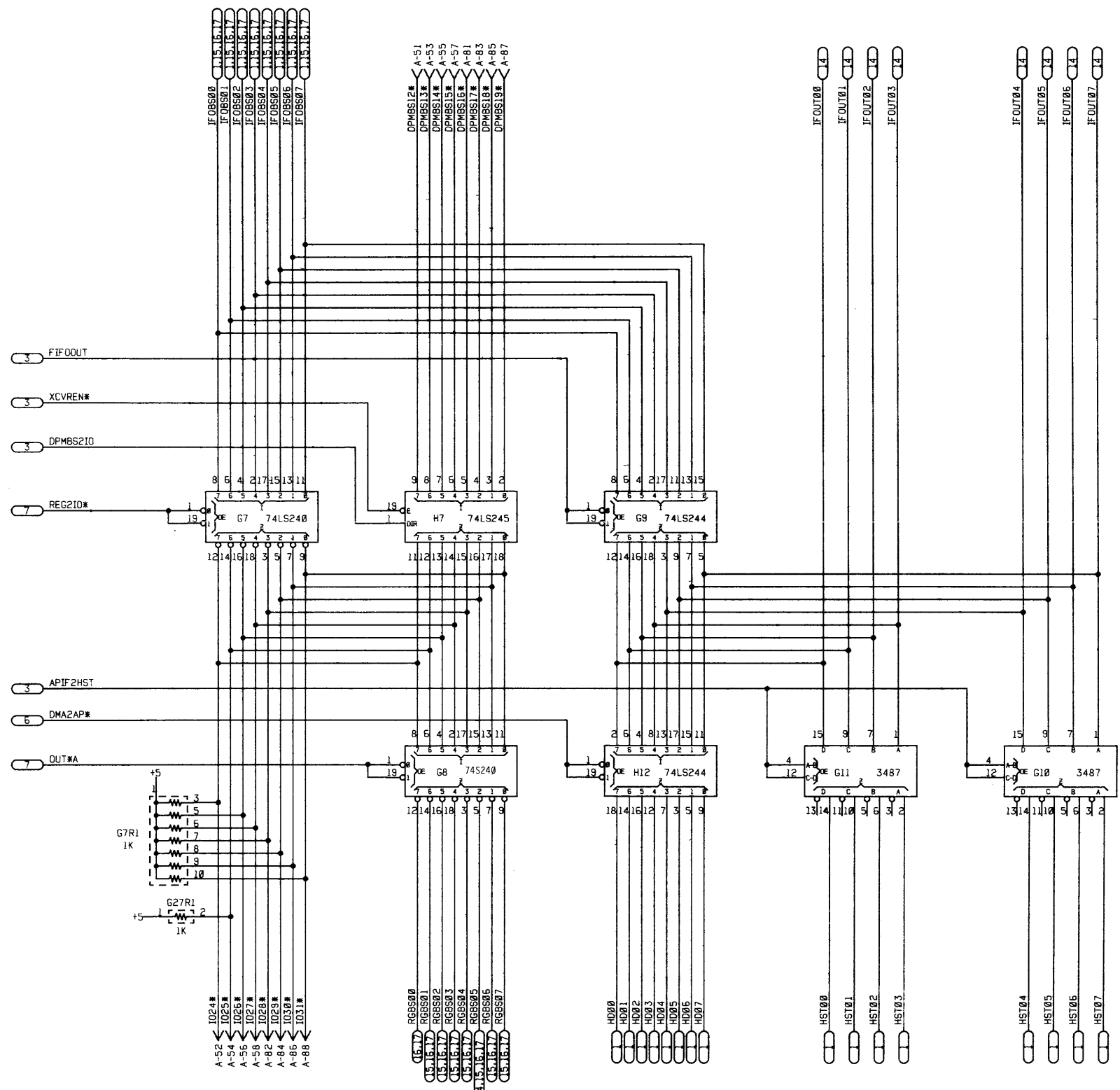
A

D

C

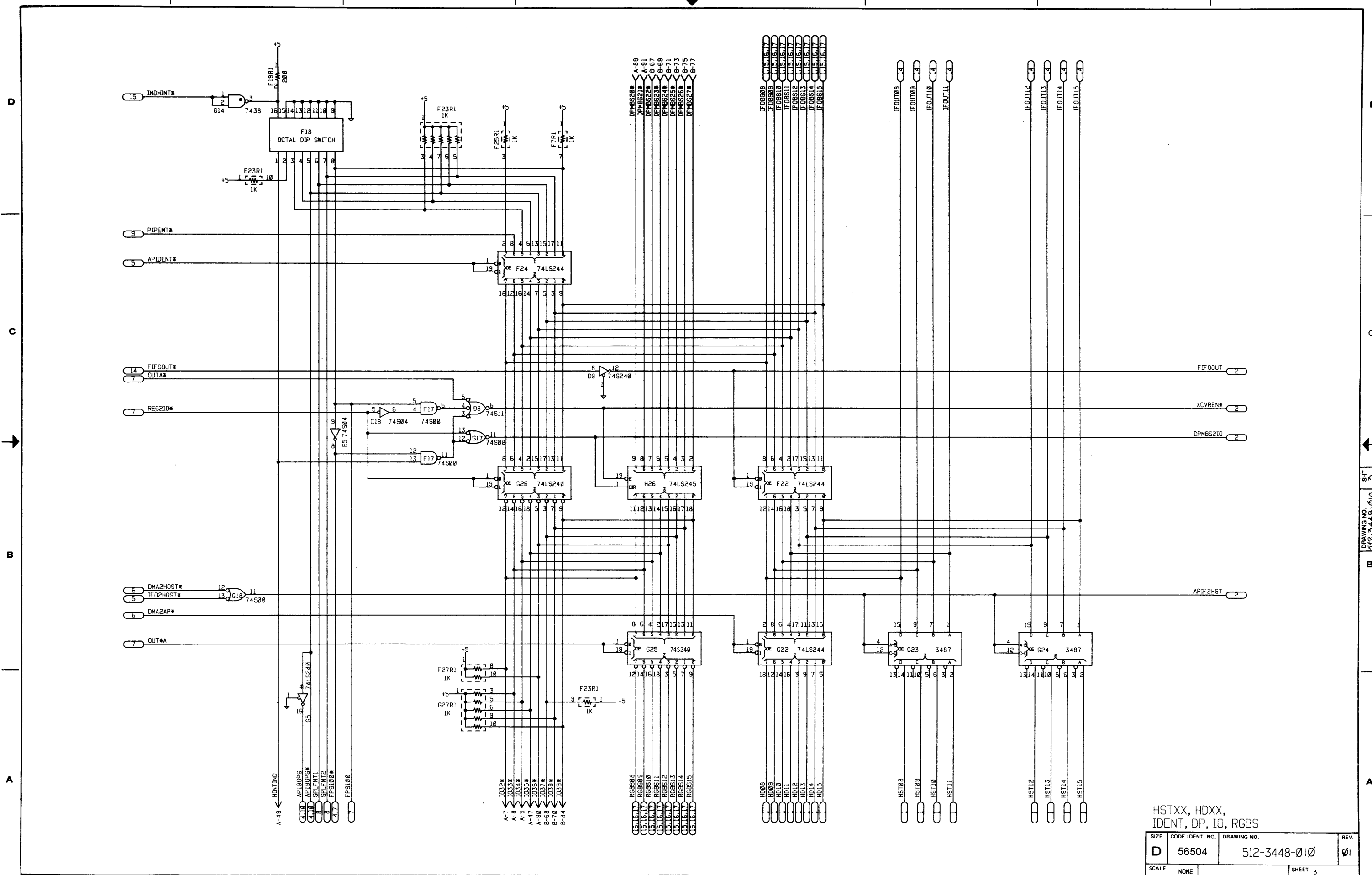
B

A



DRAWING NO. 512-3448-010  
 SHEET 2

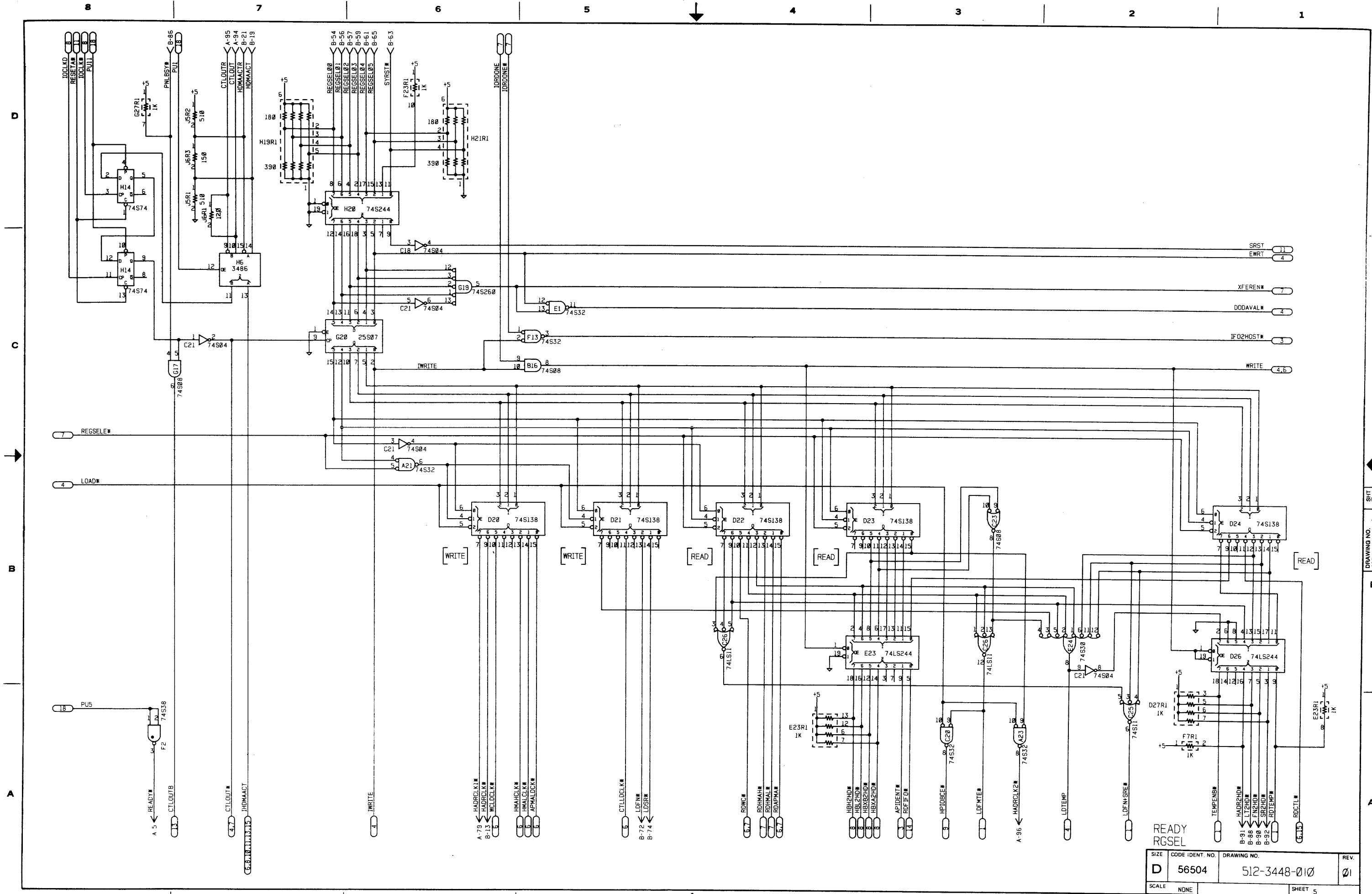
HSTXX, HDXX DP, IO, RGBS			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE	SHEET 2	



HSTXX, HDXX,  
IDENT, DP, IO, RGBS

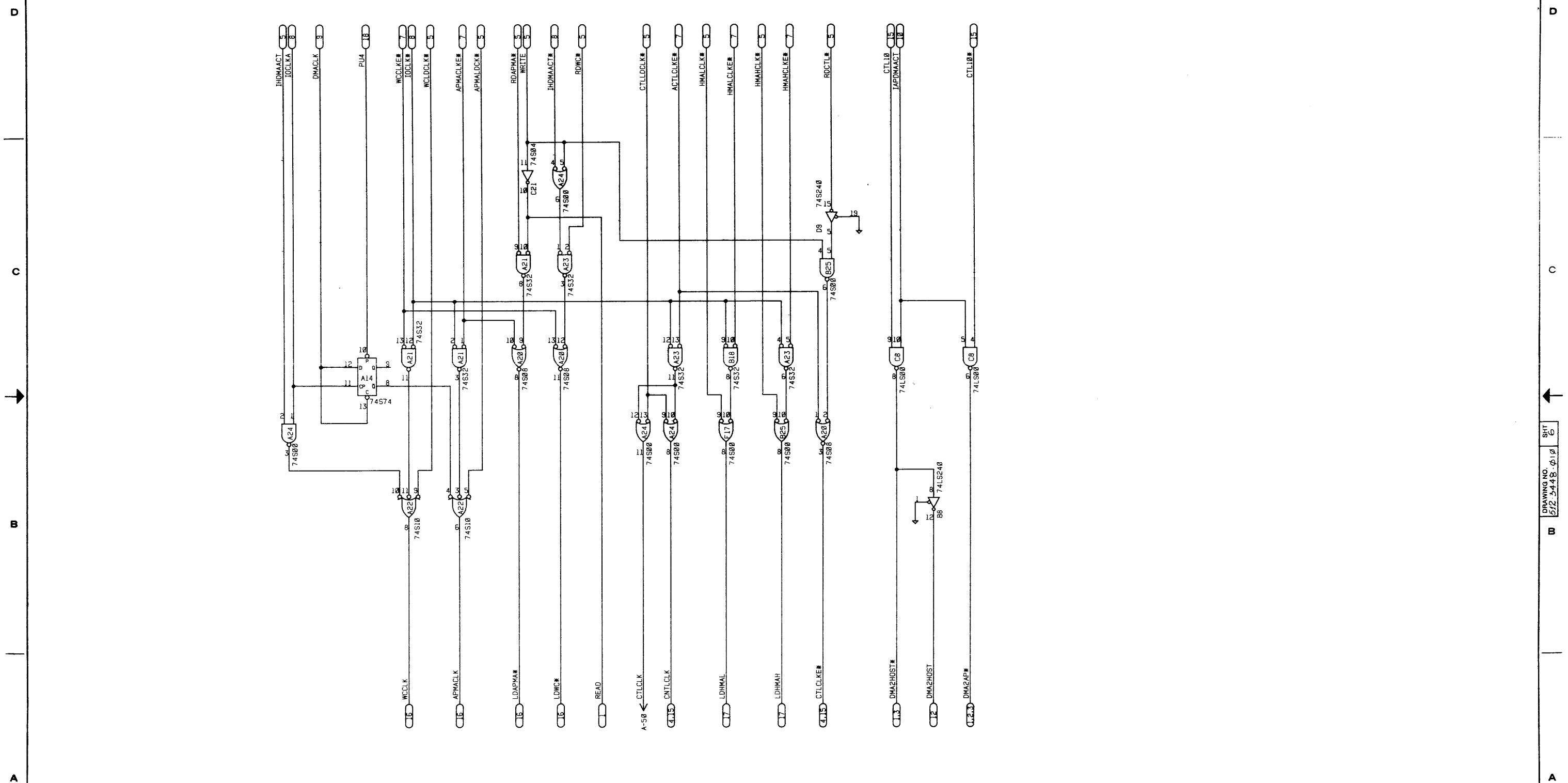
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE	SHEET	3





SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE	SHEET	5

SHEET 5  
 DRAWING NO. 512-3448-010



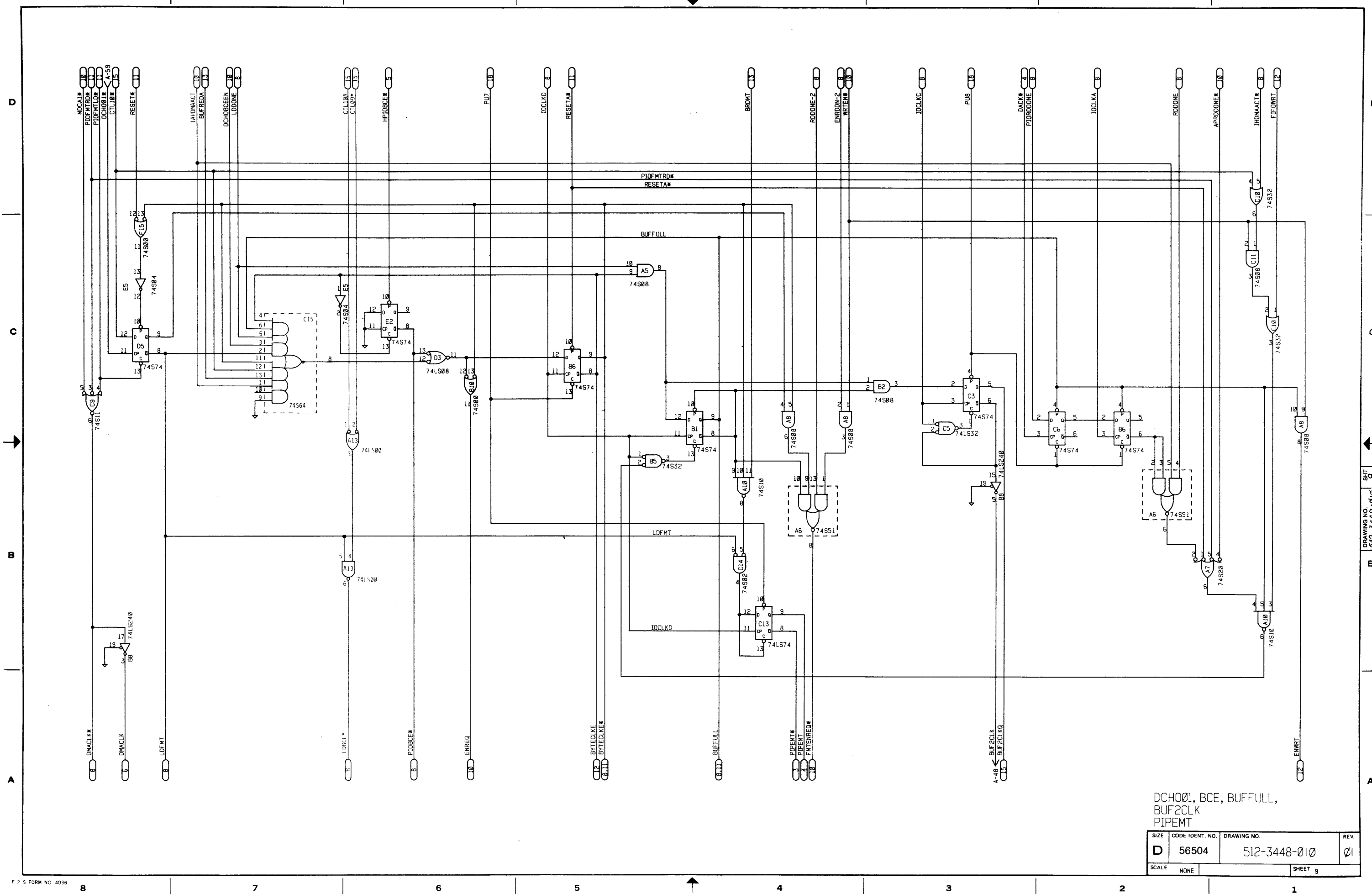
REGISTER CLOCKS  
HST CONTROL

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	0
SCALE	NONE		SHEET 6



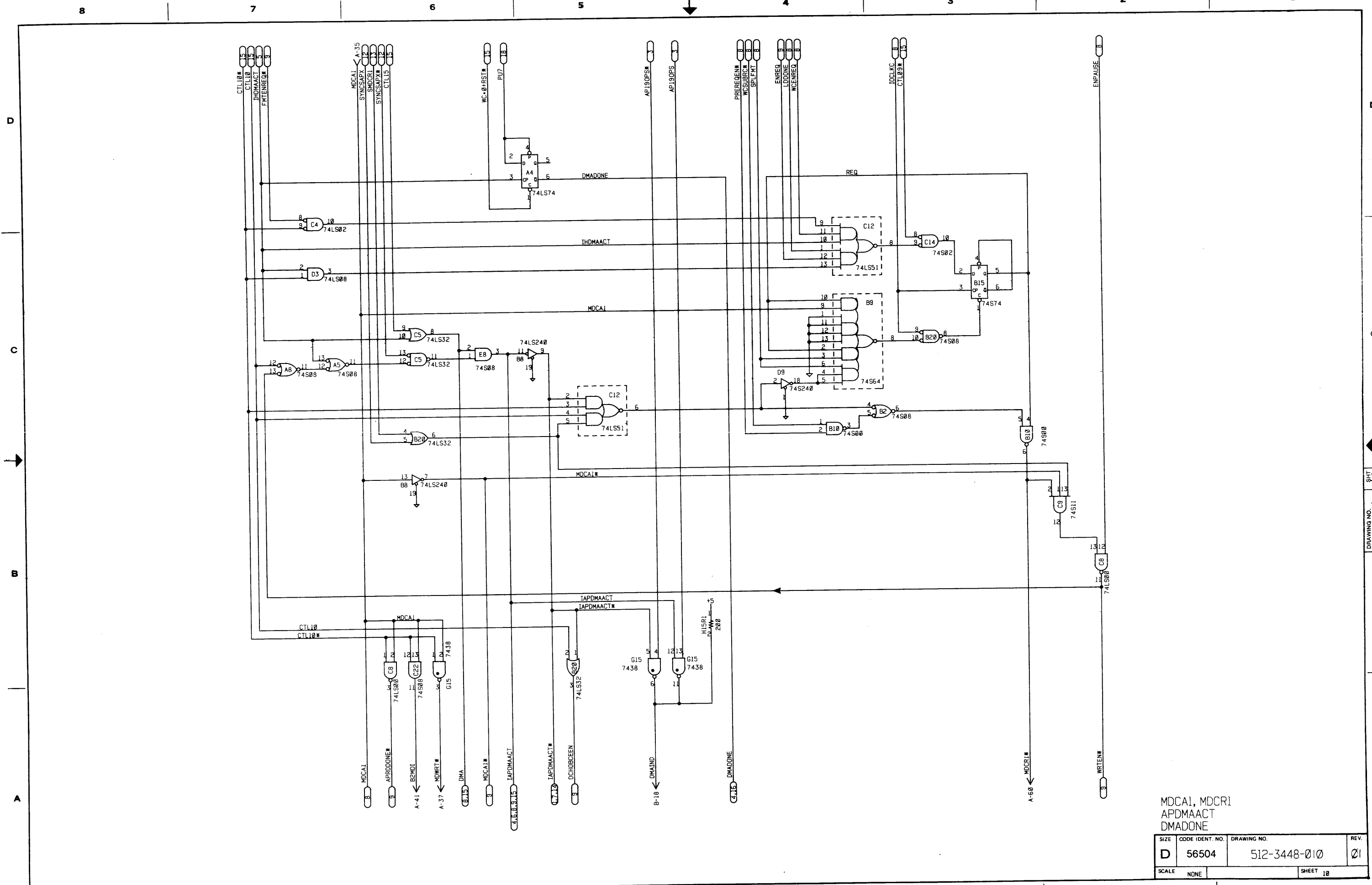






DCH001, BCE, BUFFULL,  
 BUF2CLK  
 PIPEM

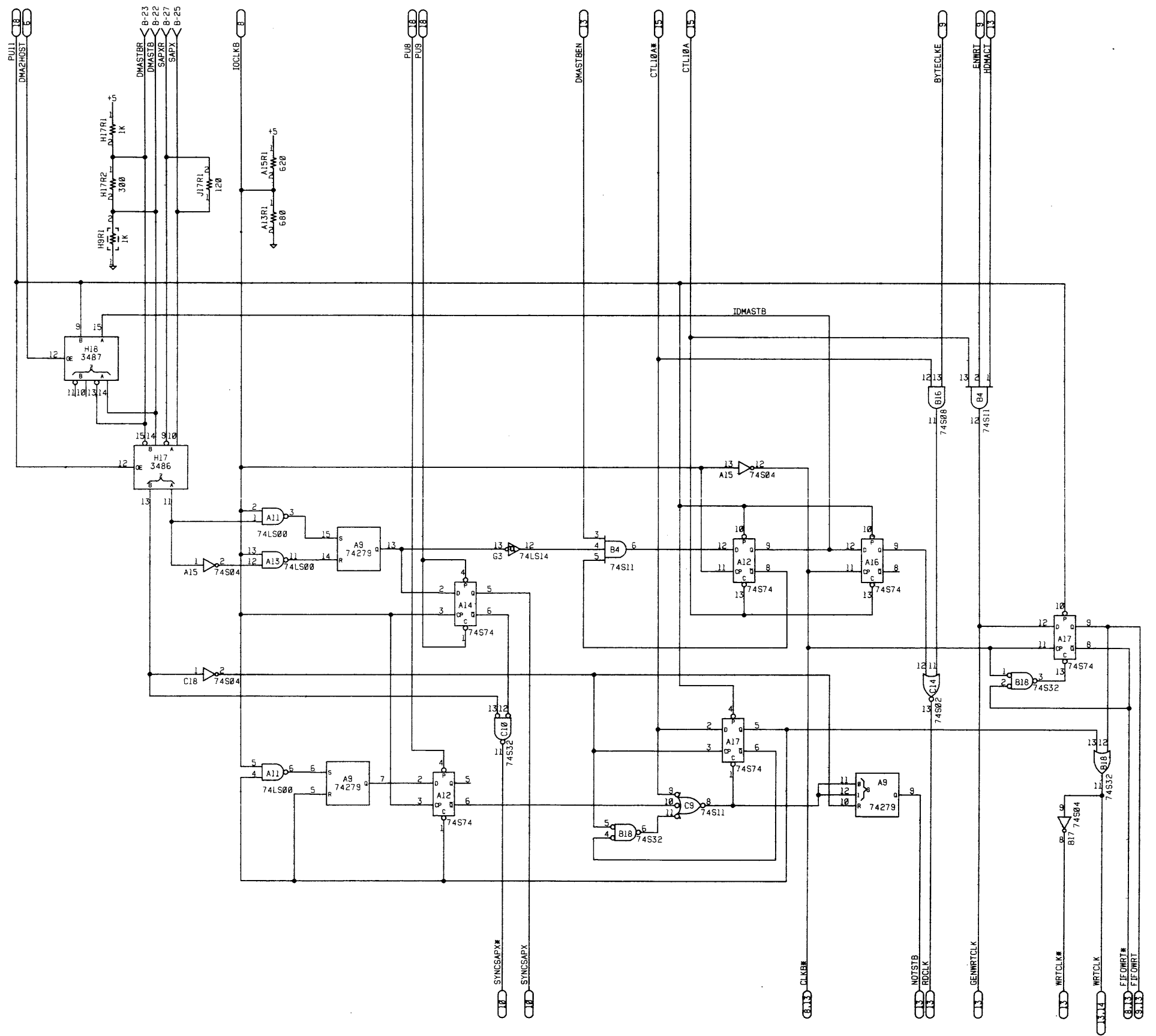
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE	SHEET	9



MDCAL, MDCRI  
APDMACT  
DMADONE

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE	SHEET 10	



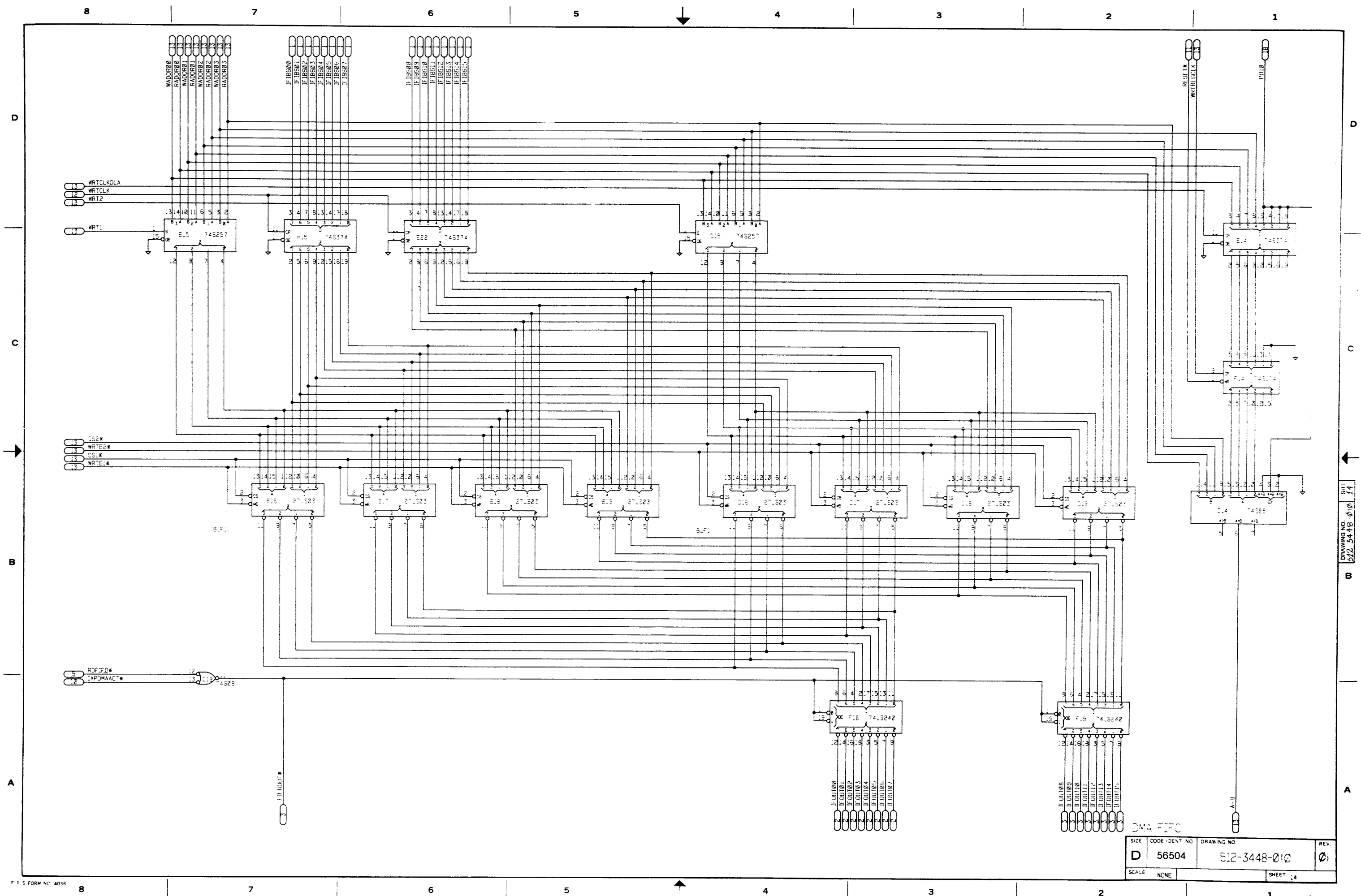


FIFO CONTROL, WRTCLK, DMASB, SAPX

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE		SHEET 12

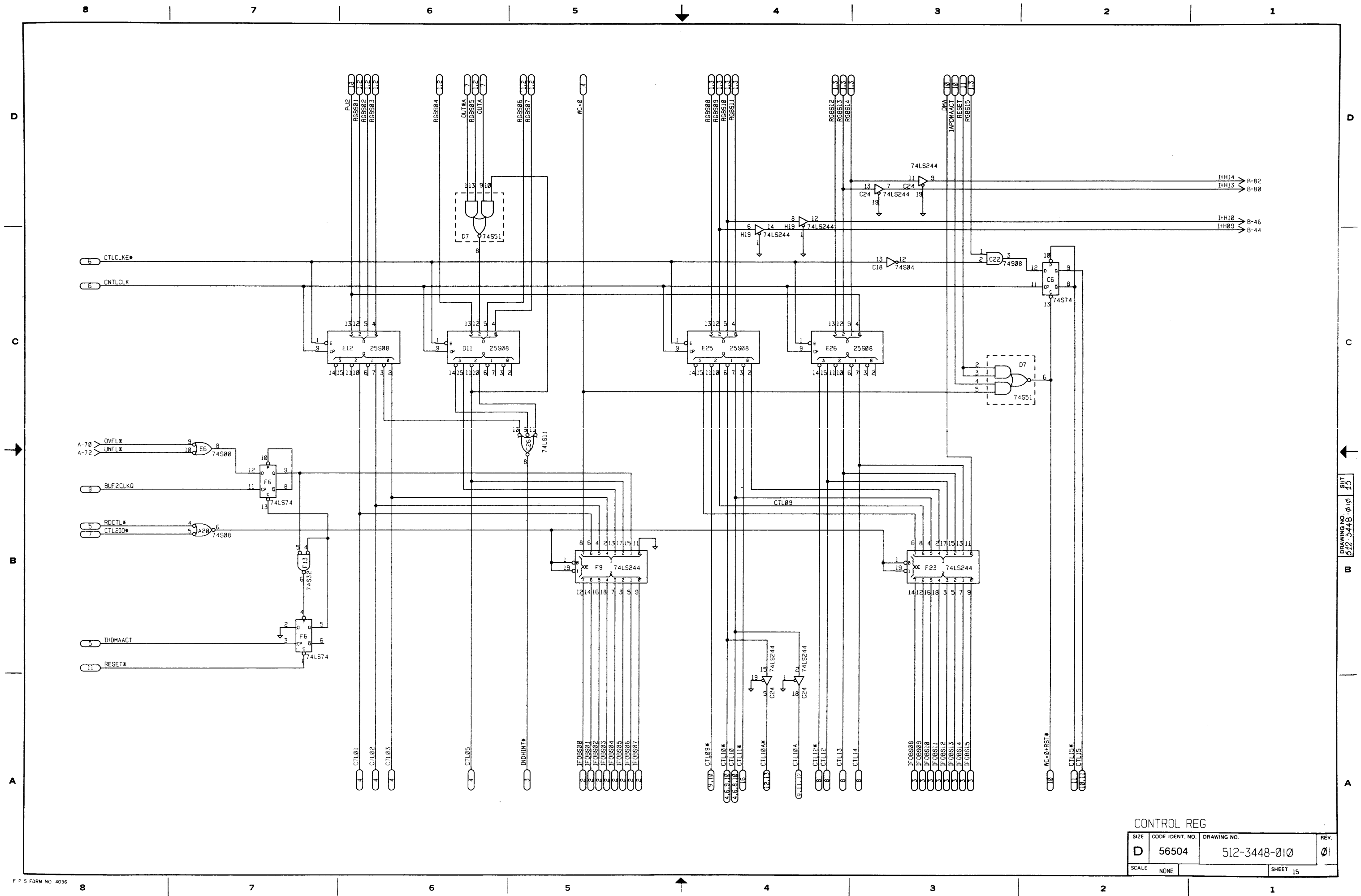
DRAWING NO. 512-3448-010 12





SHEET 14  
 DRAWING NO. 512-3448-010

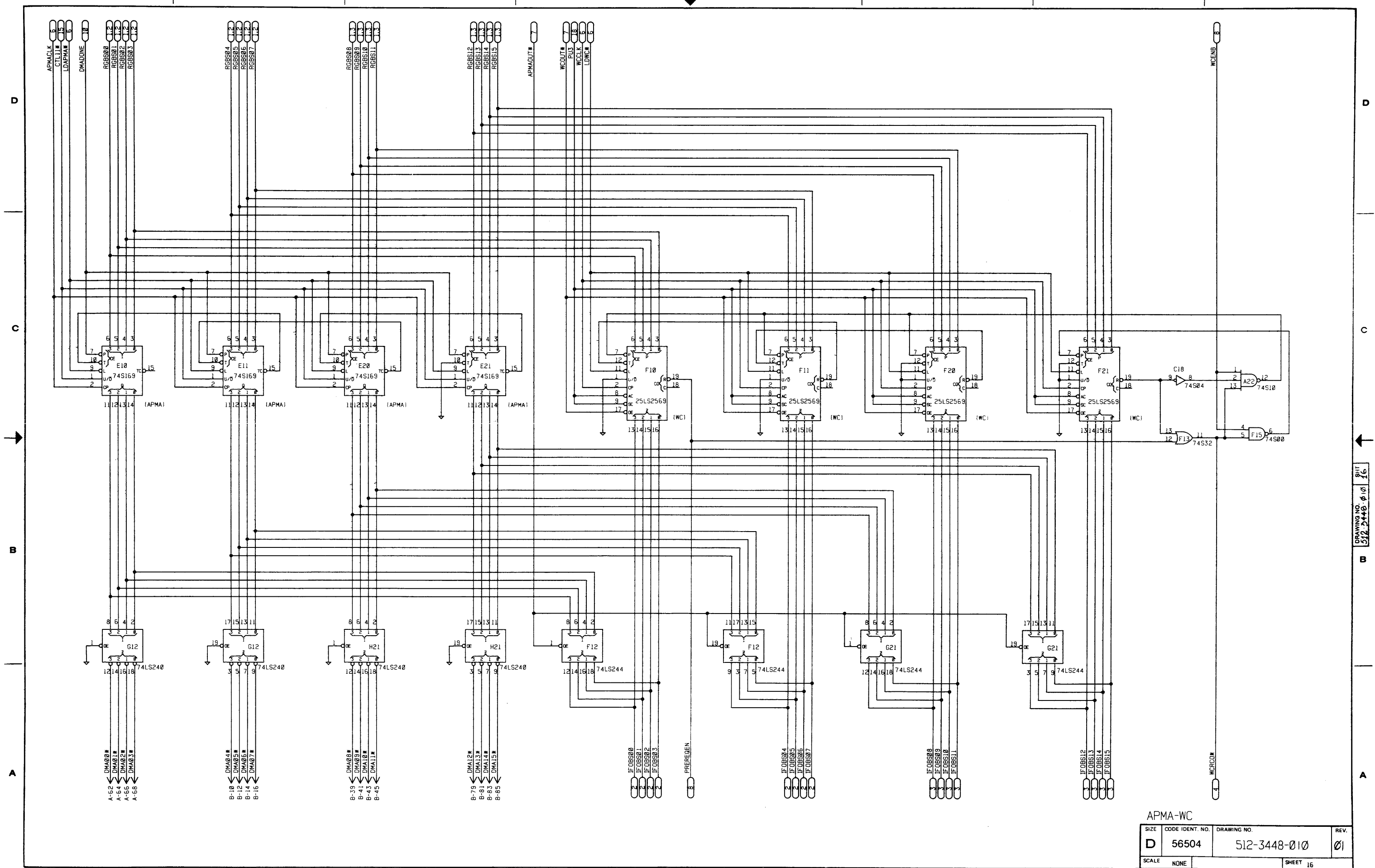
DMA FIFO		SIZE	CODE IDENT NO	DRAWING NO.	REV.
		D	56504	512-3448-010	01
SCALE		NONE		SHEET 14	



CONTROL REG			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE	SHEET	15

DRAWING NO. 512-3448-SHT 15





APMA-WC			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE	SHEET 16	

DRAWING NO. 512-3448-010 16

8

7

6

5

4

3

2

1

D

C

B

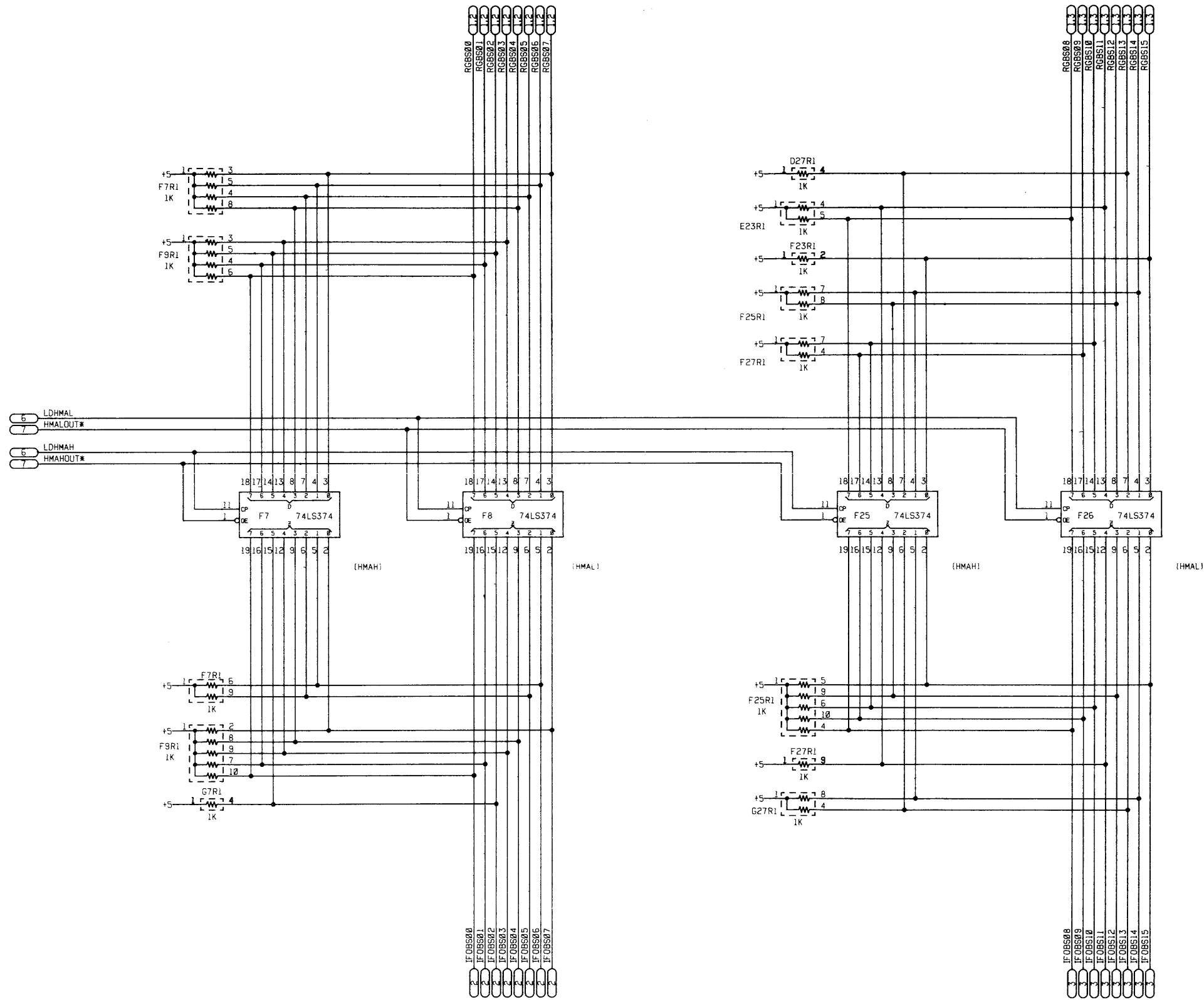
A

D

C

B

A



DRAWING NO. 512-3448-010 SHEET 17

HMA REG			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE	SHEET	17

8

7

6

5

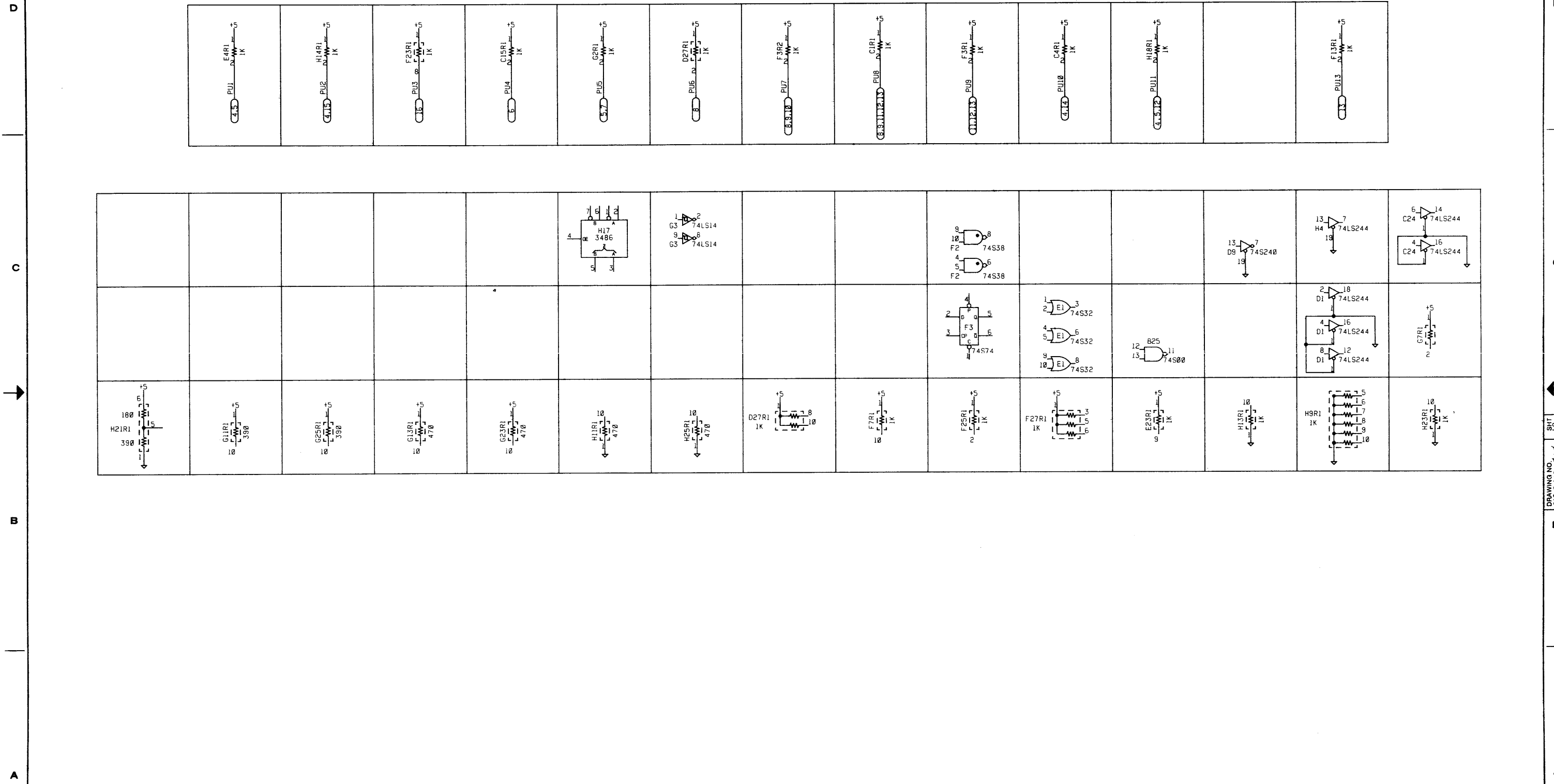
4

3

2

1

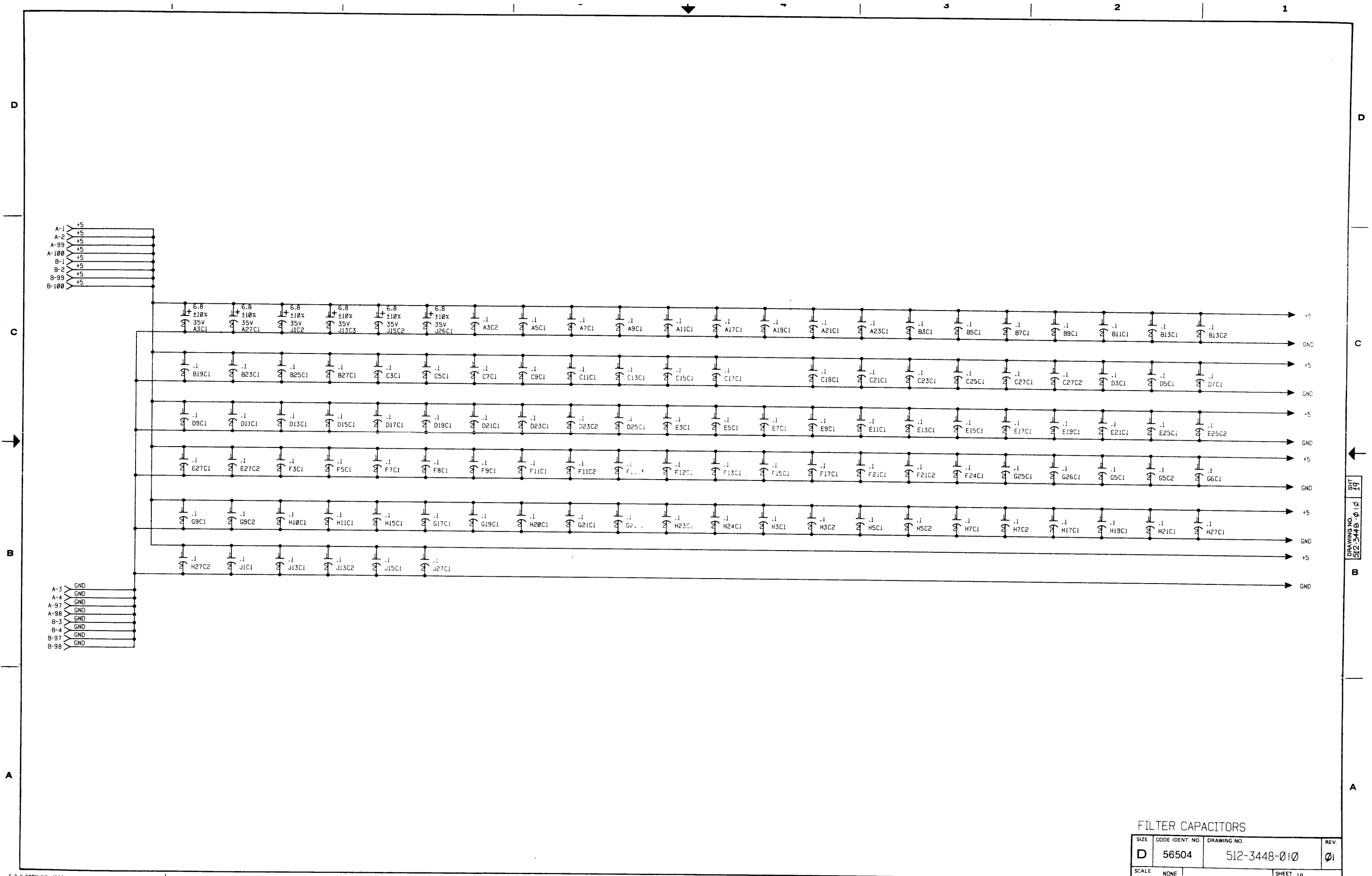
8 7 6 5 4 3 2 1



SPARES AND PULLUPS			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE	SHEET	18

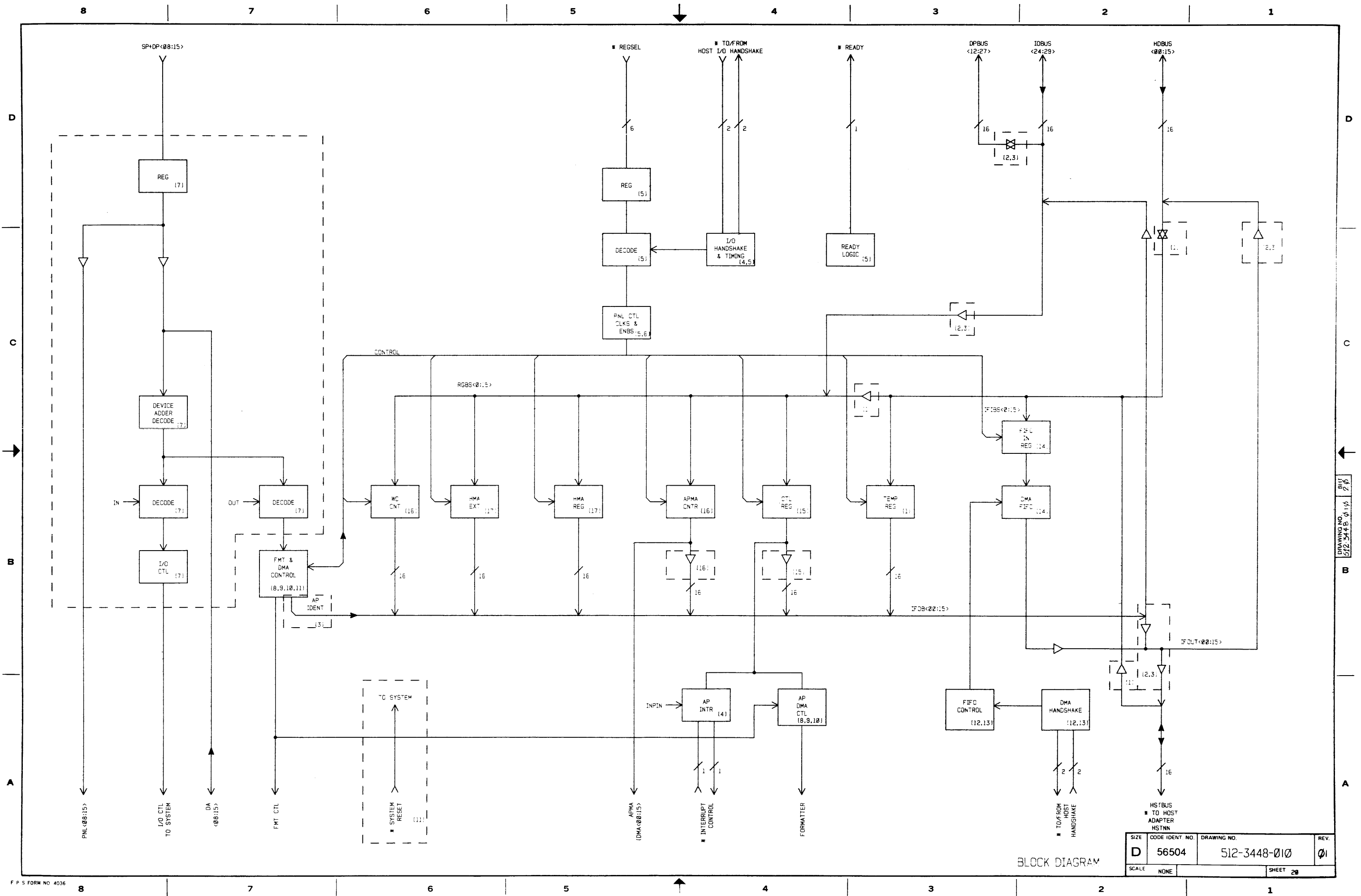
DRAWING NO. 512-3448-010 SH1 18

F.P.S. FORM NO. 4036 8 7 6 5 4 3 2 1



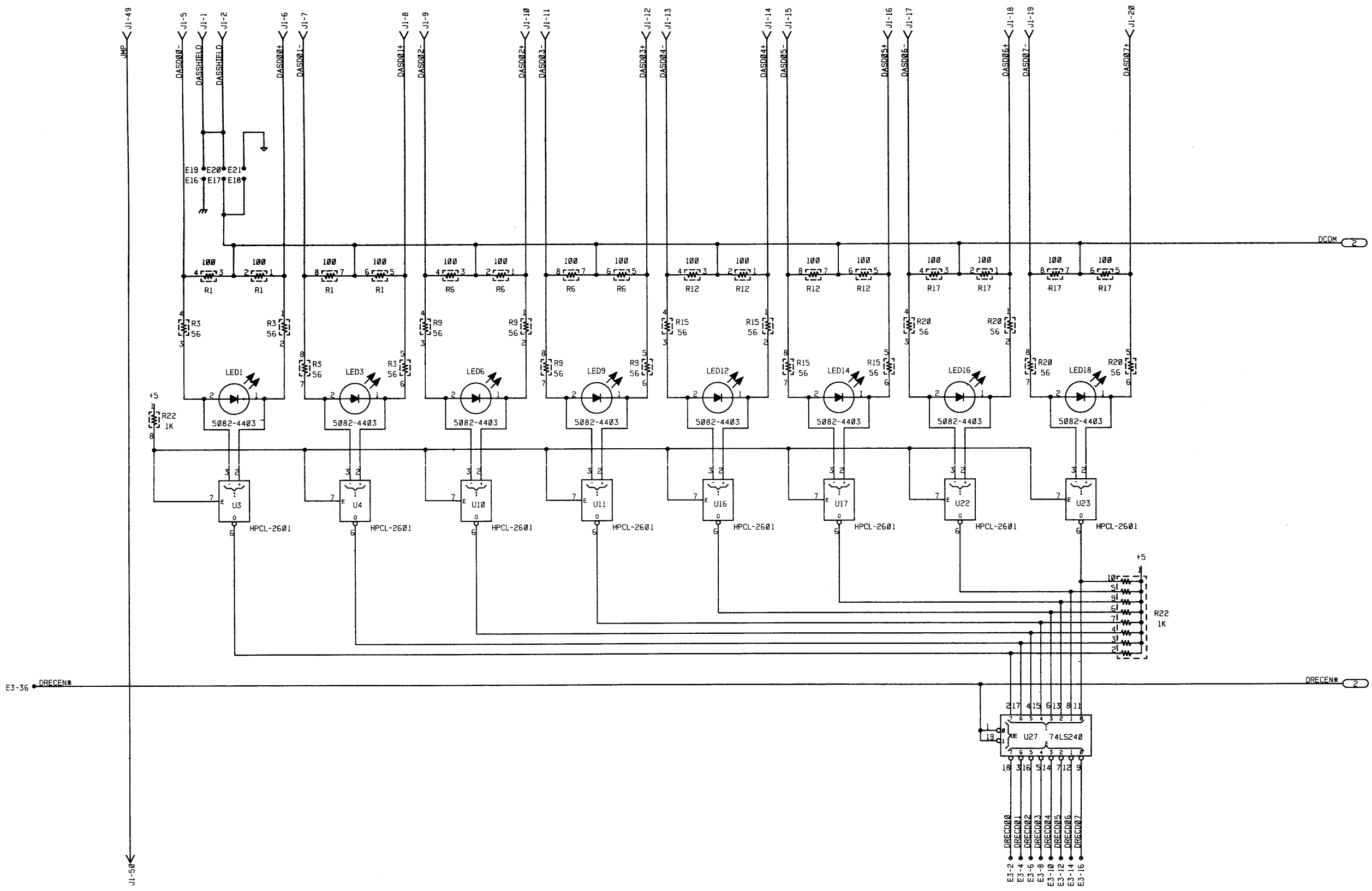
FILTER CAPACITORS

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3448-010	01
SCALE	NONE	SHEET 19	



BLOCK DIAGRAM

SIZE <b>D</b>	CODE IDENT NO. 56504	DRAWING NO. 512-3448-010	REV. 01
SCALE NONE	SHEET 20		



E3-36 DRECEN\*

DRECEN\* 2

REVISIONS					
REV.	AUTH.	DESCRIPTION	ZONE	APVD / DATE	CHK. / DATE
03	EN #069	LEVEL 1 RELEASE NEW COMPLETED 475 OII SCHEM 106510		6/24/81	
04	EN #136	CHANGE NUMBER ON DUPLICATE WIRING POINTS TO E23 & E24		7/29/81	E.A.
05	ECC 82056	LEVEL 2 RELEASE		2/27/82	
A	ECO 82806	LEVEL 3 RELEASE		11-22-82	
B	ECO 83033	CHANGE STATUS CODE		3-8-83	

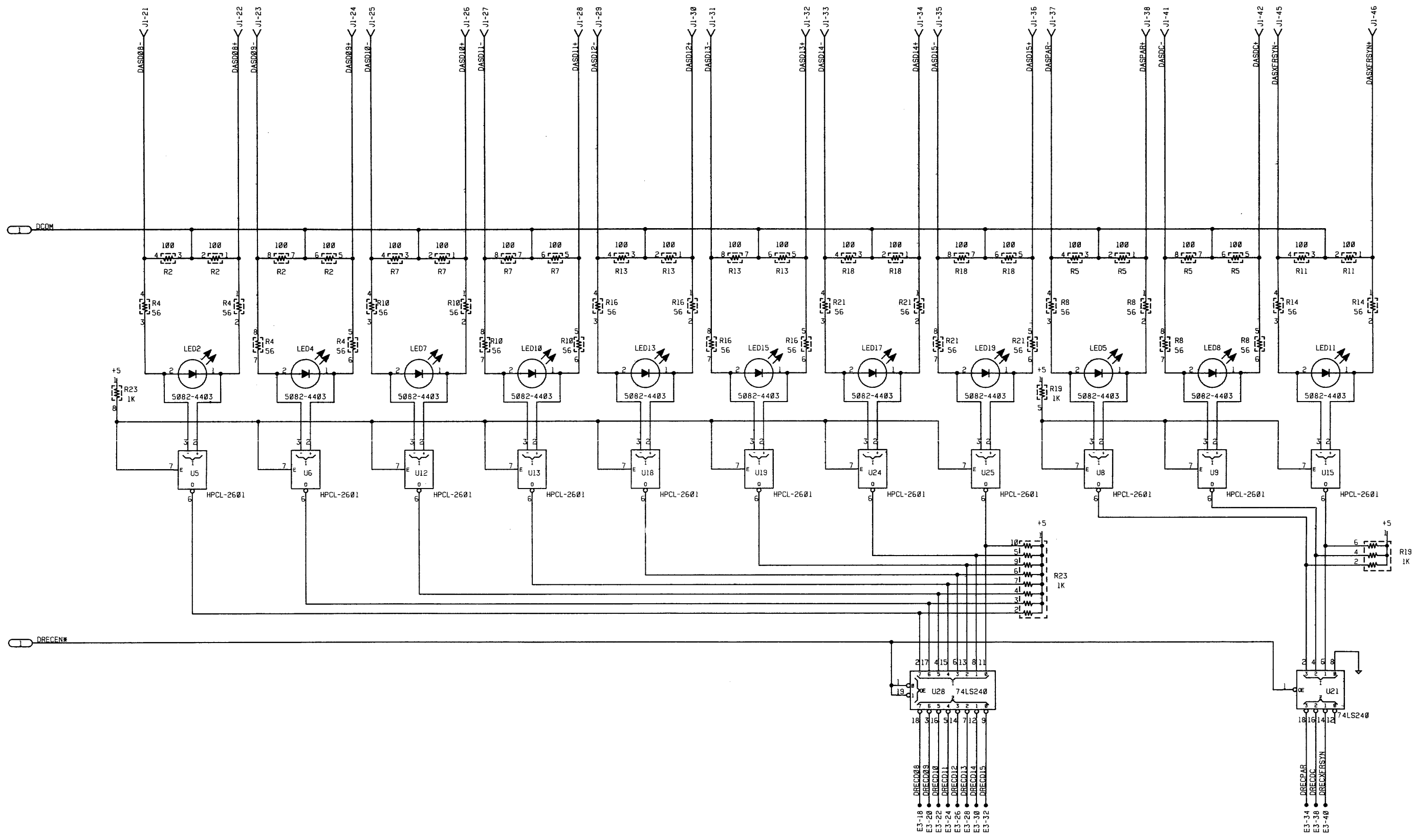
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PROJ. ENG. <i>Base Cook</i>	DATE 1/29/82
DRAWN BY <i>C.A.D.</i>	DATE 5/11/81
CHECK BY <i>Steve Schmidt</i>	DATE 5/14/81
MFG. ENG. <i>S. Mayson</i>	DATE 1/29/82

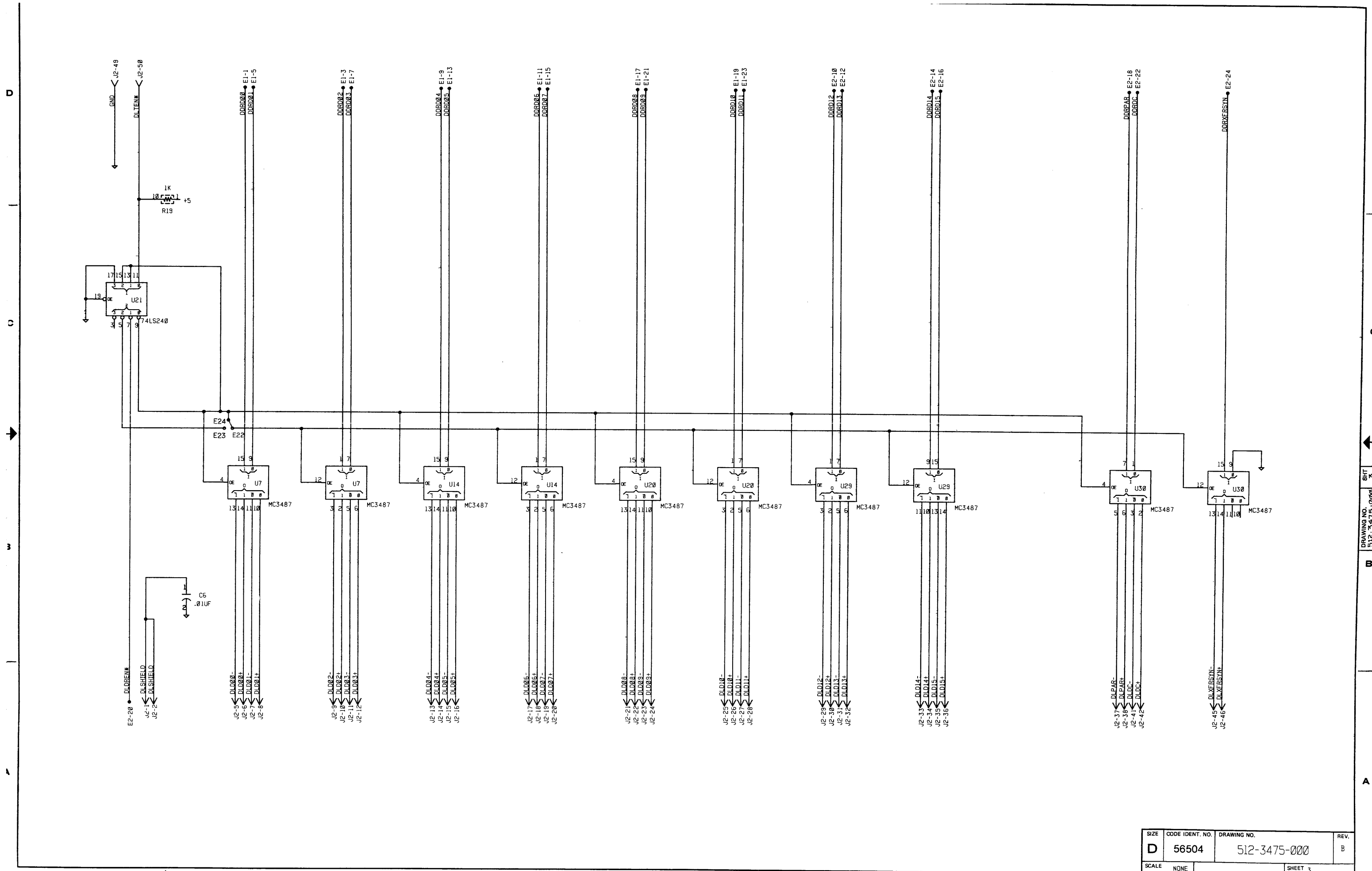
<b>FLOATING POINT SYSTEMS, INC.</b>		PO Box 23488 Portland OR 97223
DRAWING TITLE SCHEMATIC, ECB, 475- OPTICAL ISOLATOR INTERCONNECT, OII FPS-100		
SIZE <b>D</b>	CODE IDENT. NO. <b>56504</b>	DRAWING NO. <b>512-3475-000</b>
SCALE NONE	SHEET 1 OF 4	

DRAWING NO. 512-3475-000 SHEET 1



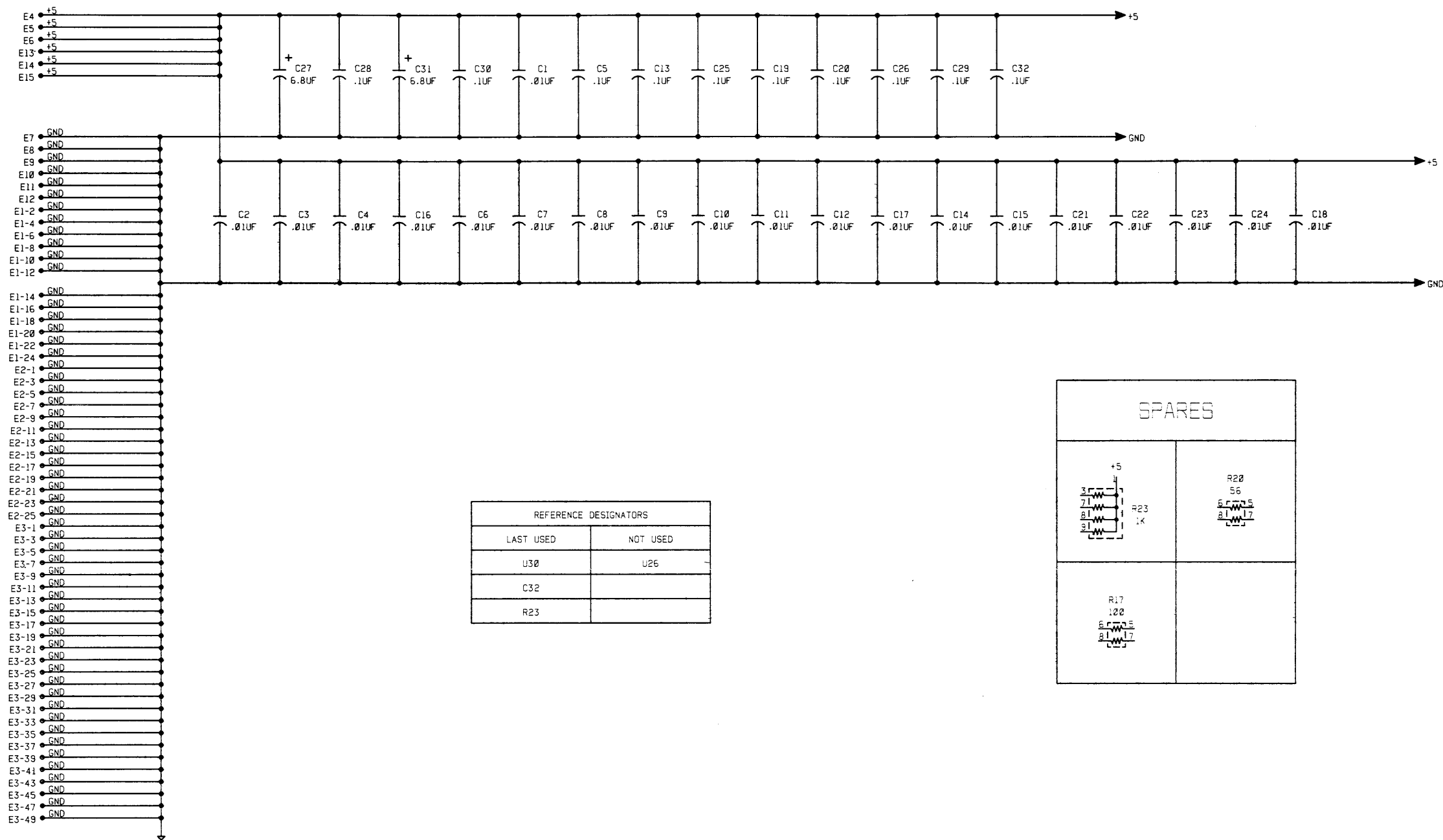
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3475-000	B
SCALE	NONE	SHEET	2

DRAWING NO. 512-3475-000 SHEET 2

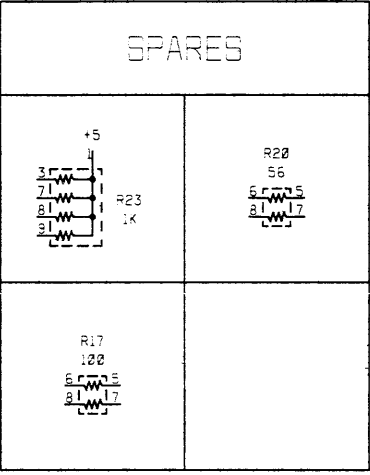


SIZE <b>D</b>	CODE IDENT. NO. 56504	DRAWING NO. 512-3475-000	REV. B
SCALE NONE	SHEET 3		





REFERENCE DESIGNATORS	
LAST USED	NOT USED
U30	U26
C32	
R23	



SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3475-302	3
SCALE	NONE	SHEET	4

DRAWING NO. 512-3475-000

SHEET 4

NOTE: UNLESS OTHERWISE SPECIFIED

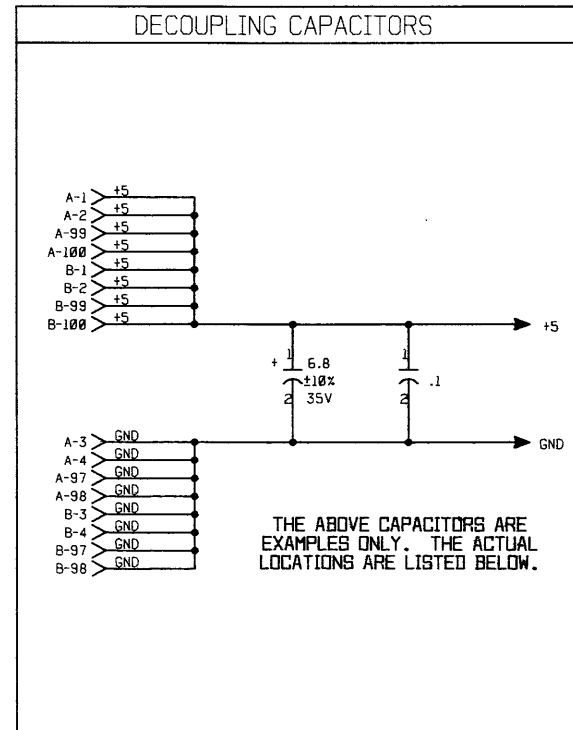
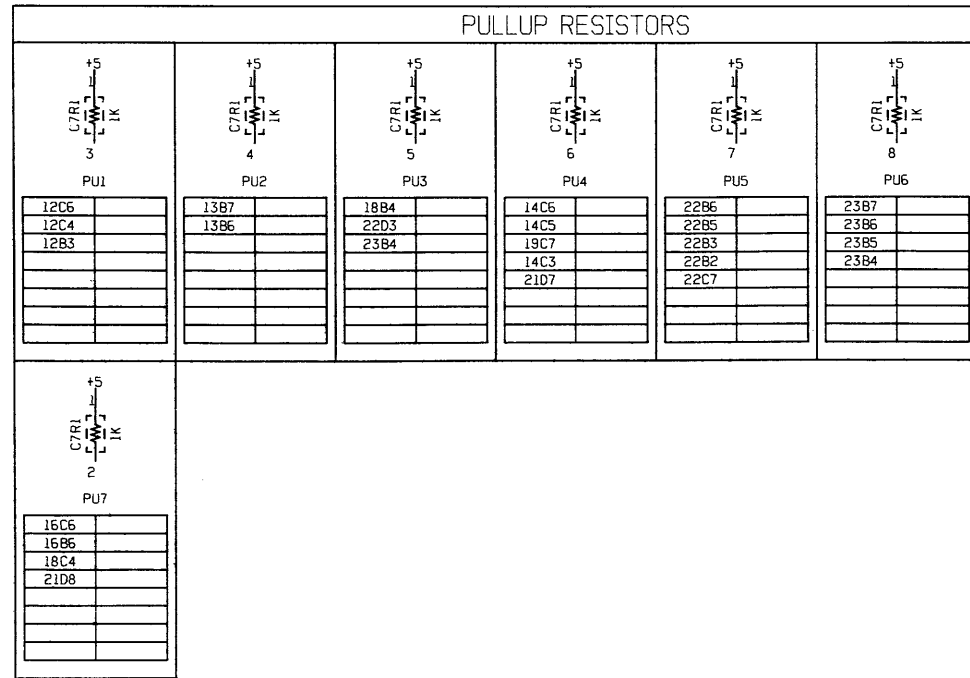
- ALL RESISTOR VALUES ARE IN OHMS. DISCRETES ARE  $\pm 5\%$ , 1/4W. SIPS ARE  $\pm 2\%$ , .18W.
- ALL CAPACITOR VALUES ARE IN MICROFARADS.  $\pm 80\%$  -20%, 50V
- PULLUP RESISTORS ARE INDICATED BY THE SYMBOL AT APPROPRIATE LOCATIONS IN THE SCHEMATIC. THESE LOCATIONS ARE CALLED OUT ON SHEET ONE BY SHEET/ZONE.
- ALL POSSIBLE CAPACITOR LOCATIONS ARE LISTED. FOR ACTUAL CAPACITOR QUANTITY, VALUE, AND LOCATION INFORMATION, SEE THE ASSEMBLY DRAWING.
- NUMBERS IN PARENTHESES ON THE BLOCK DIAGRAM (SHEETS 2,3) REFER TO SCHEMATIC SHEET NUMBERS.
- IC POWER PINS ARE:

IC TYPE	TOTAL PINS	+5V	GND
ALL	14	14	7
ALL	16	16	8
ALL	20	20	10

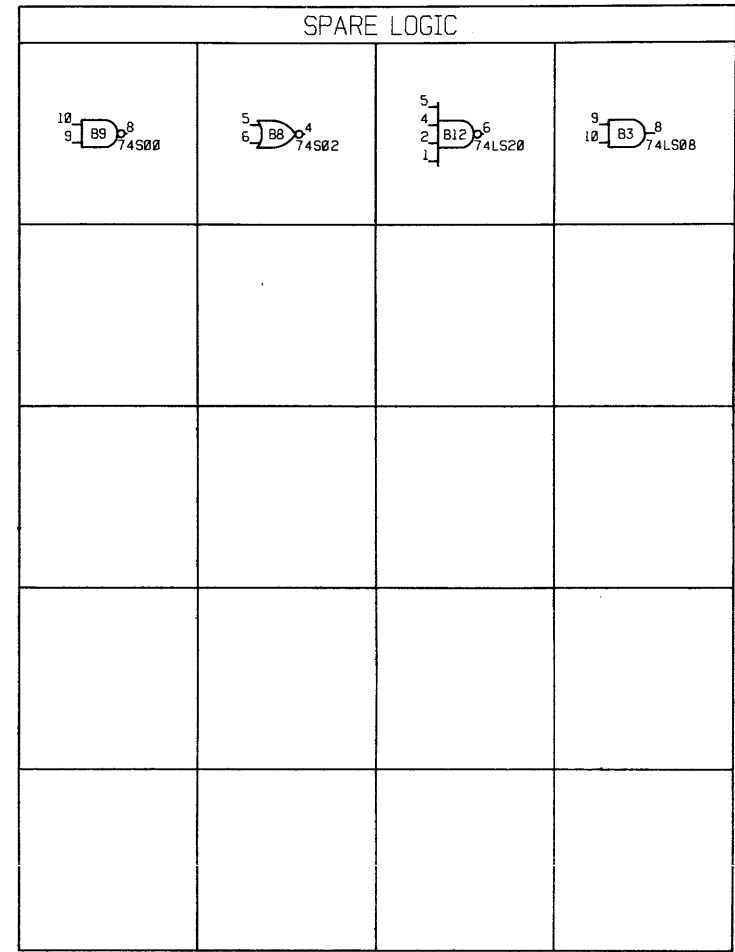
EXCEPT FOR :

2148HL-3	18	18	9
----------	----	----	---

FOR RDCP-120 USE FPS P/N 210-7424-010.  
FOR RDCP-100 USE FPS P/N 215-7424-000



- ### DECOUPLING CAPACITOR LOCATIONS
- A3C1, A5C1, A6C1, A7C1, A8C1, A9C1, A10C1, A11C1, A11C2, A13C1, A13C2, A15C1, A15C2, A17C1, A19C1, A19C2, A20C1, A21C1, A22C1, A23C1, A24C1, A25C1, A27C1, B3C1, B3C2, B5C1, B6C1, B7C1, B8C1, B9C1, B10C1, B11C1, B13C1, B13C2, B15C1, B15C2, B17C1, B19C1, B19C2, B20C1, B21C1, B22C1, B23C1, B24C1, B25C1, C1C1, C3C1, C3C2, C4C1, C6C1, C8C1, C9C1, C10C1, C11C1, C11C2, C13C1, C13C2, C15C1, C15C2, C17C1, C17C2, C19C1, C19C2, C20C1, C21C1, C22C1, C23C1, C24C1, C25C1, D1C1, D3C1, D3C2, D5C1, D6C1, D7C1, D7C2, D9C1, D10C1, D11C1, D13C1, D15C1, D17C1, D19C1, D19C2, D19C3, D21C1, D22C1, D23C1, D24C1, D25C1, D27C1, D27C2, E1C1, E3C1, E3C2, E5C1, E5C2, E6C1, E7C1, E8C1, E9C1, E10C1, E11C1, E11C2, E13C1, E15C1, E15C2, E19C1, E19C2, E20C1, E21C1, E22C1, E23C1, E24C1, E25C1, E27C1, E27C2, F1C1, F3C1, F3C2, F5C1, F6C1, F7C1, F8C1, F9C1, F10C1, F11C1, F11C2, F13C1, F15C1, F17C1, F17C2, F19C1, F21C1, F21C2, F22C1, F23C1, F24C1, F25C1, F27C1, G1C1, G3C1, G3C2, G6C1, G7C1, G8C1, G9C1, G10C1, G11C1, G11C2, G13C1, G15C1, G15C2, G17C1, G19C1, G19C2, G20C1, G21C1, G22C1, G23C1, G24C1, G25C1, G27C1, G27C2, H1C1, H3C1, H3C2, H4C1, H6C1, H7C1, H7C2, H10C1, H11C1, H11C2, H13C1, H15C1, H17C1, H19C1, H19C2, H20C1, H21C1, H22C1, H23C1, H24C1, H25C1, H27C1, H27C2, J1C1, J4C1, J13C1, J15C1, J27C1

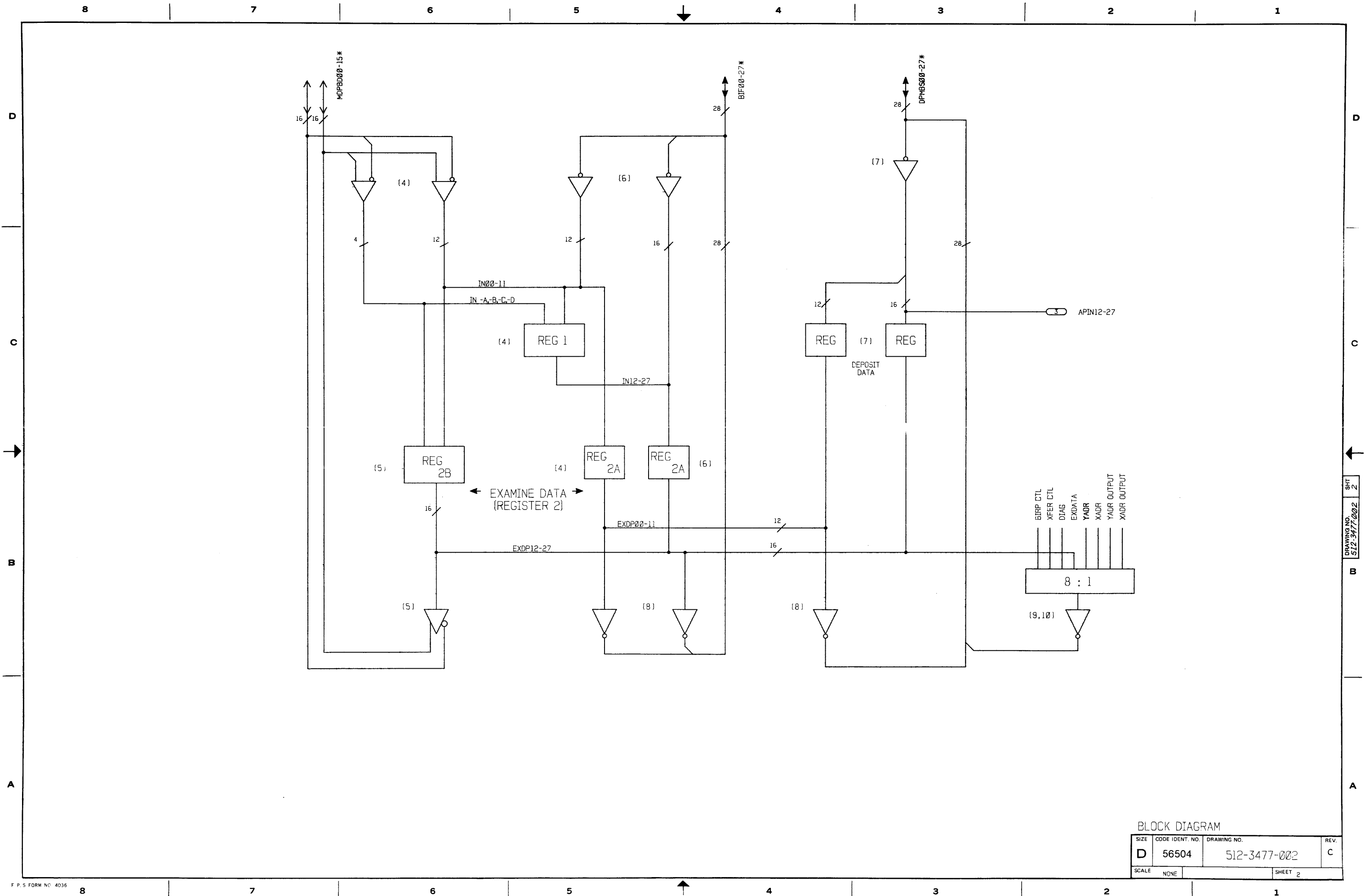


### SPARE RESISTORS

DESCRIPTION	R#	PIN#
330/390, 6 PIN SIP	C5R1	2
1K, 10 PIN SIP	H1R1	10
	H5R1	10
	C7R1	9, 10

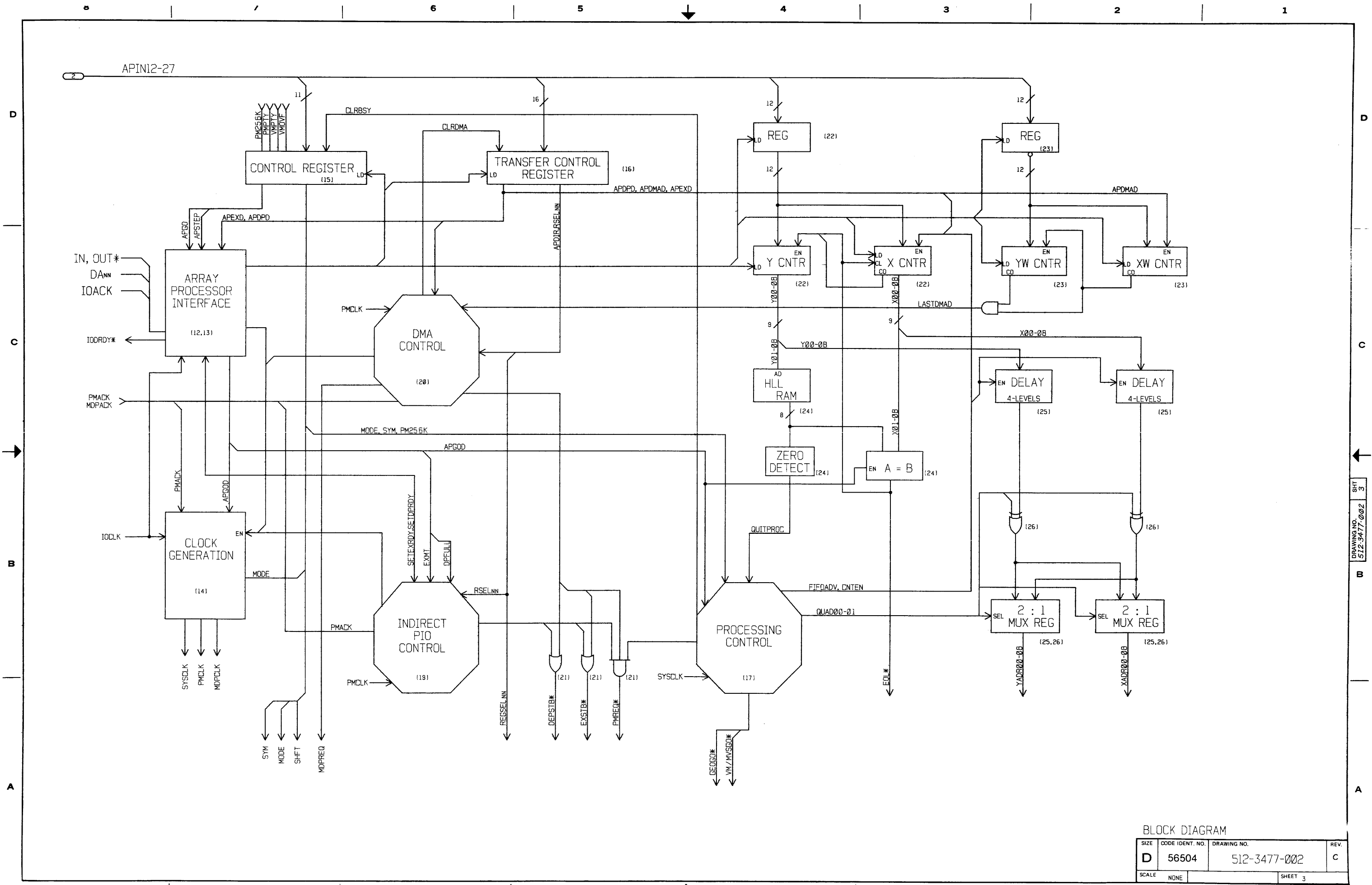
REVISIONS					REVISIONS					PROPRIETARY INFORMATION		LIMITED RIGHTS LEGEND		DRAWING INFORMATION		
REV.	AUTH.	DESCRIPTION	ZONE	APVD/DATE	CHK./DATE	REV.	AUTH.	DESCRIPTION	ZONE	APVD/DATE	CHK./DATE	PROJ. ENG.	DATE	DRAWN BY	DATE	DRAWING TITLE
C	ECO 83203	CORR SIGNAL NAMES, SHT. 14	A4	2/15/82	JK 7-15-82	01	EN 241	LEVEL 1 RELEASE	106510	00 6/25/82	JK 6-25-82	KEVIN J. COOK	4/19/82	C.A.O.	6-10-82	SCHEMATIC, ECB, 477
						02	ECO 82581	LEVEL 2 RELEASE; BOAT SIGNAL APDMAD* TO SHT 15, SHT 17	D7	8/9/82	JK 8-9-82				6-15-82	BIRP I/F
						A	ECO 82790	LEVEL 3 RELEASE		08/25/82	JK 8-25-82				11/1/82	
						B	ECO 83014	CHNG IC AT A5 TO 74S174, SHT. 20		2-4-85	JK 2-4-85					

**IMPORTANT NOTE:** IGNORE DASHES IN PINOUTS (EXAMPLE: A-191). THEY ARE FOR PURPOSES OF CLARITY ONLY.



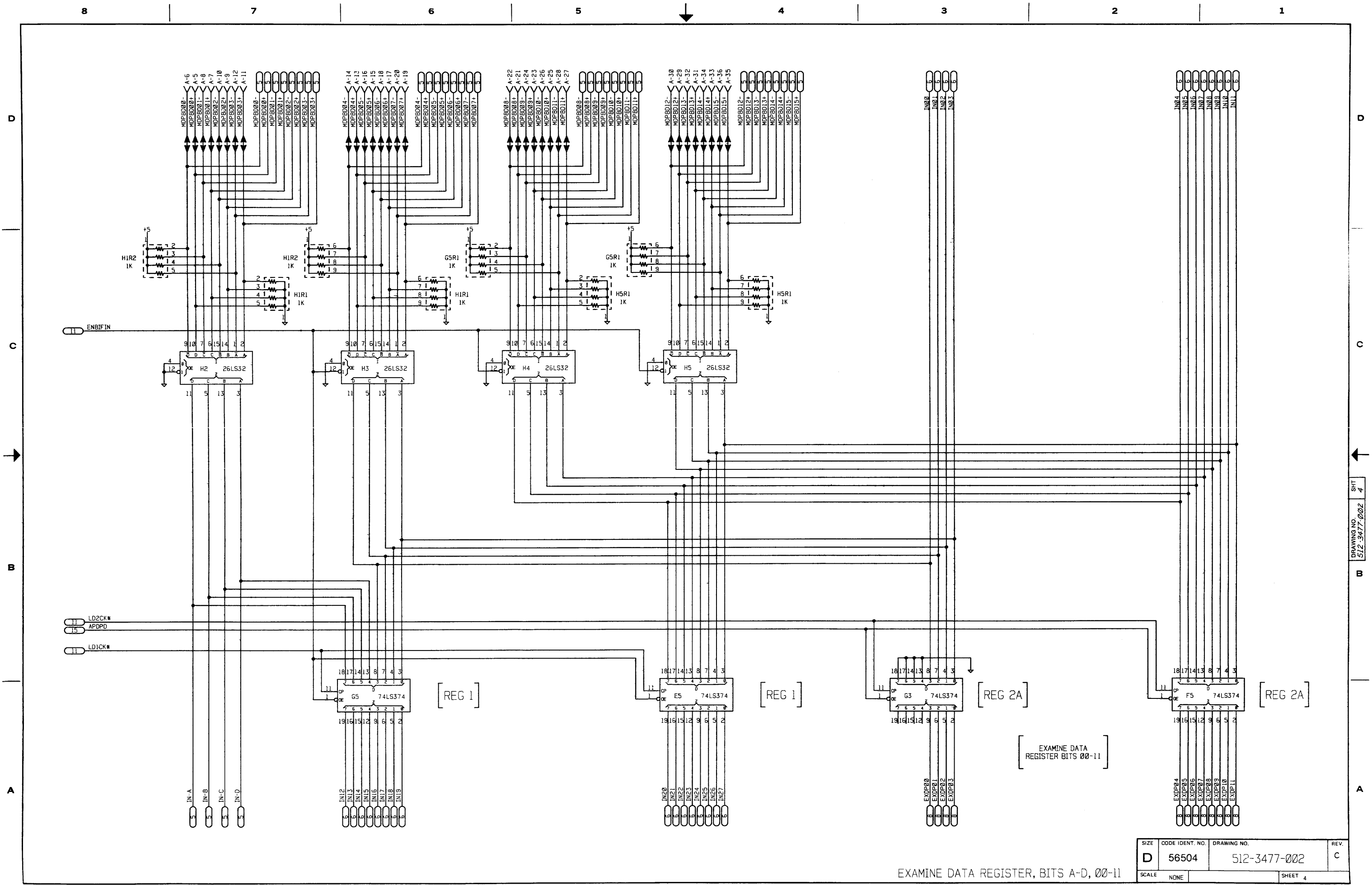
BLOCK DIAGRAM

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET	2



BLOCK DIAGRAM

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET	3



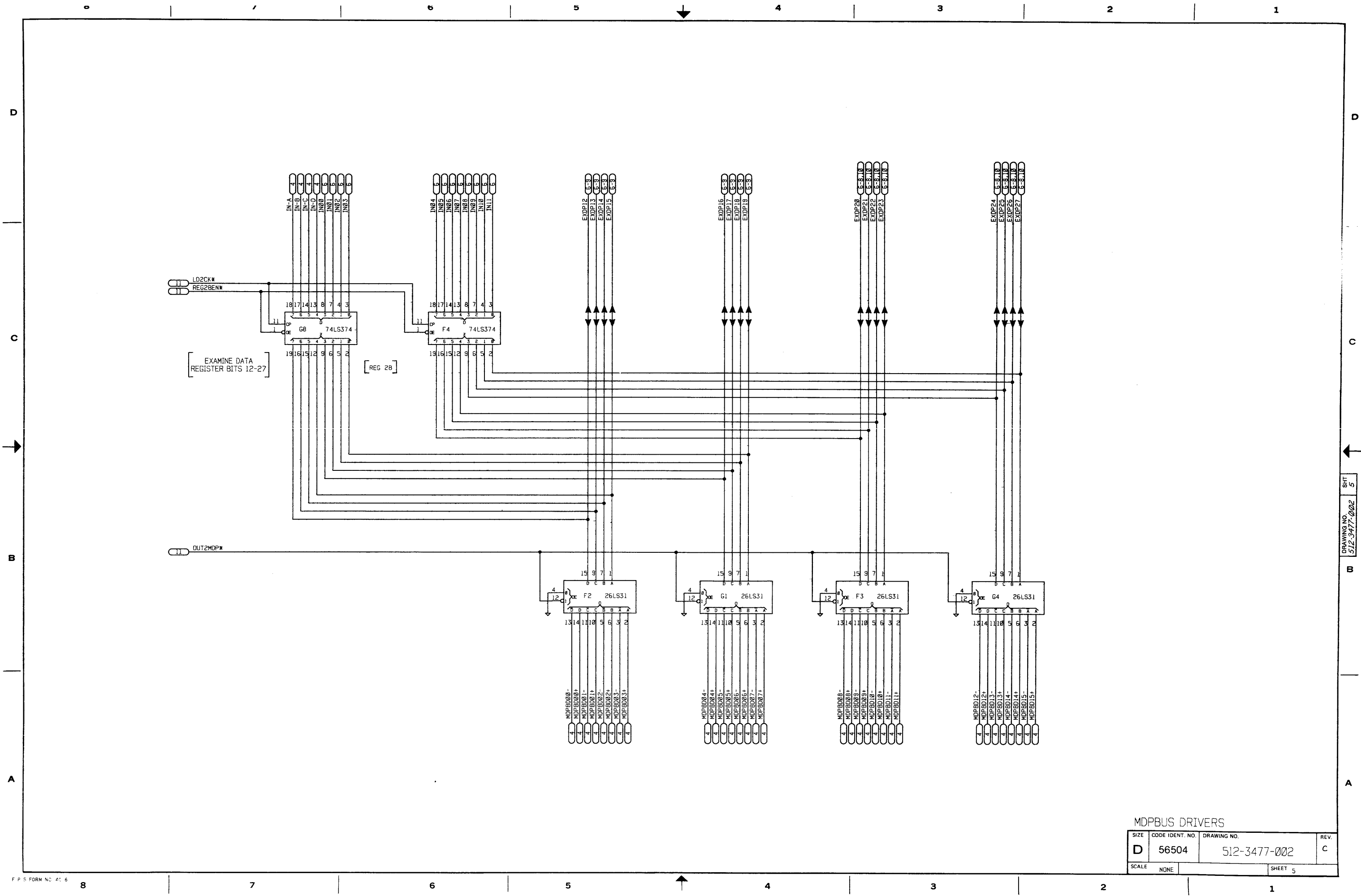
D  
C  
B  
A

D  
C  
B  
A

SHT 4  
DRAWING NO. 512-3477-002

EXAMINE DATA REGISTER, BITS A-D, 00-11

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET	4



MDPBUS DRIVERS			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET	5

DRAWING NO. 512-3477-002  
SHT 5

D

C

B

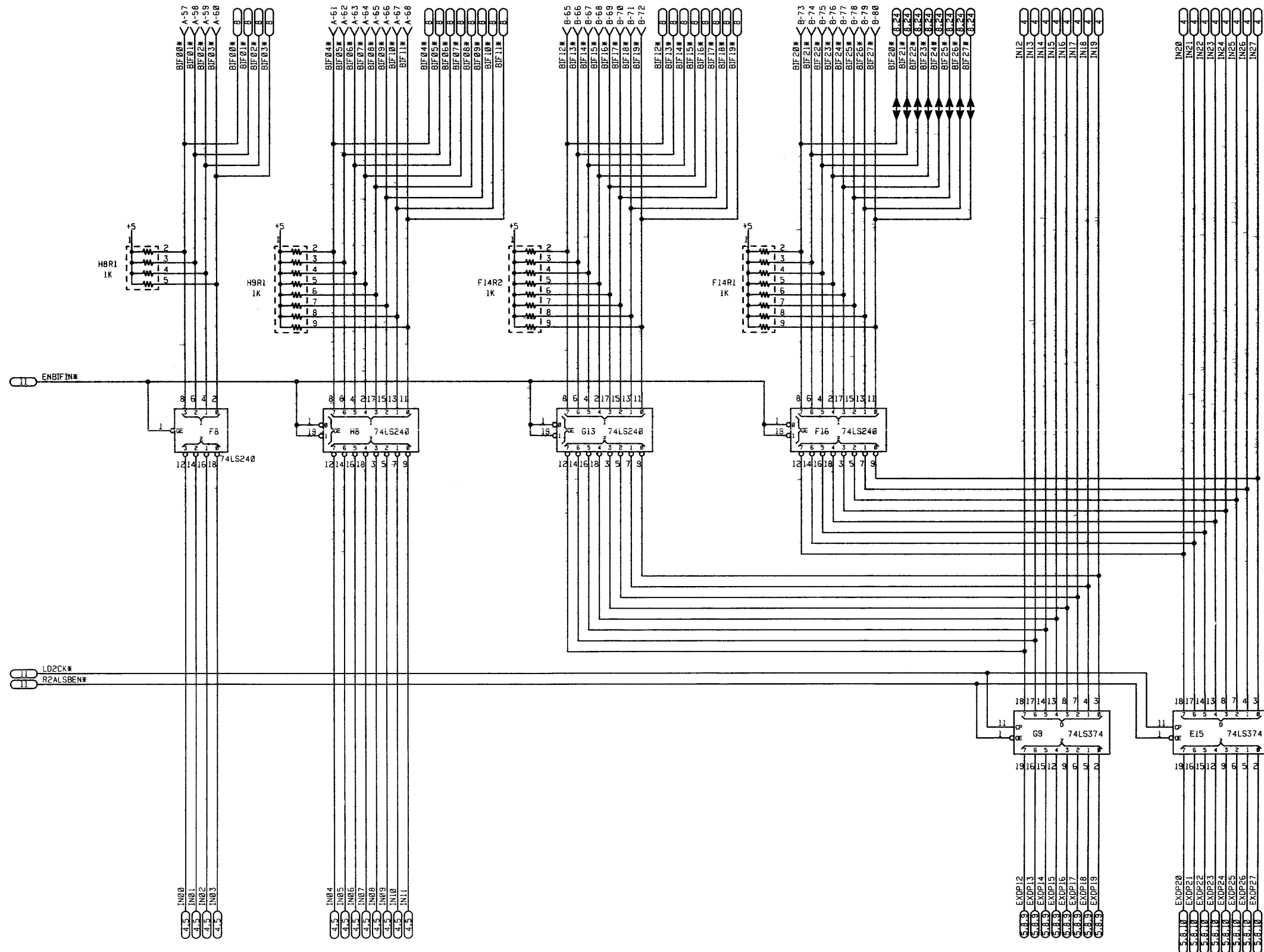
A

D

C

B

A

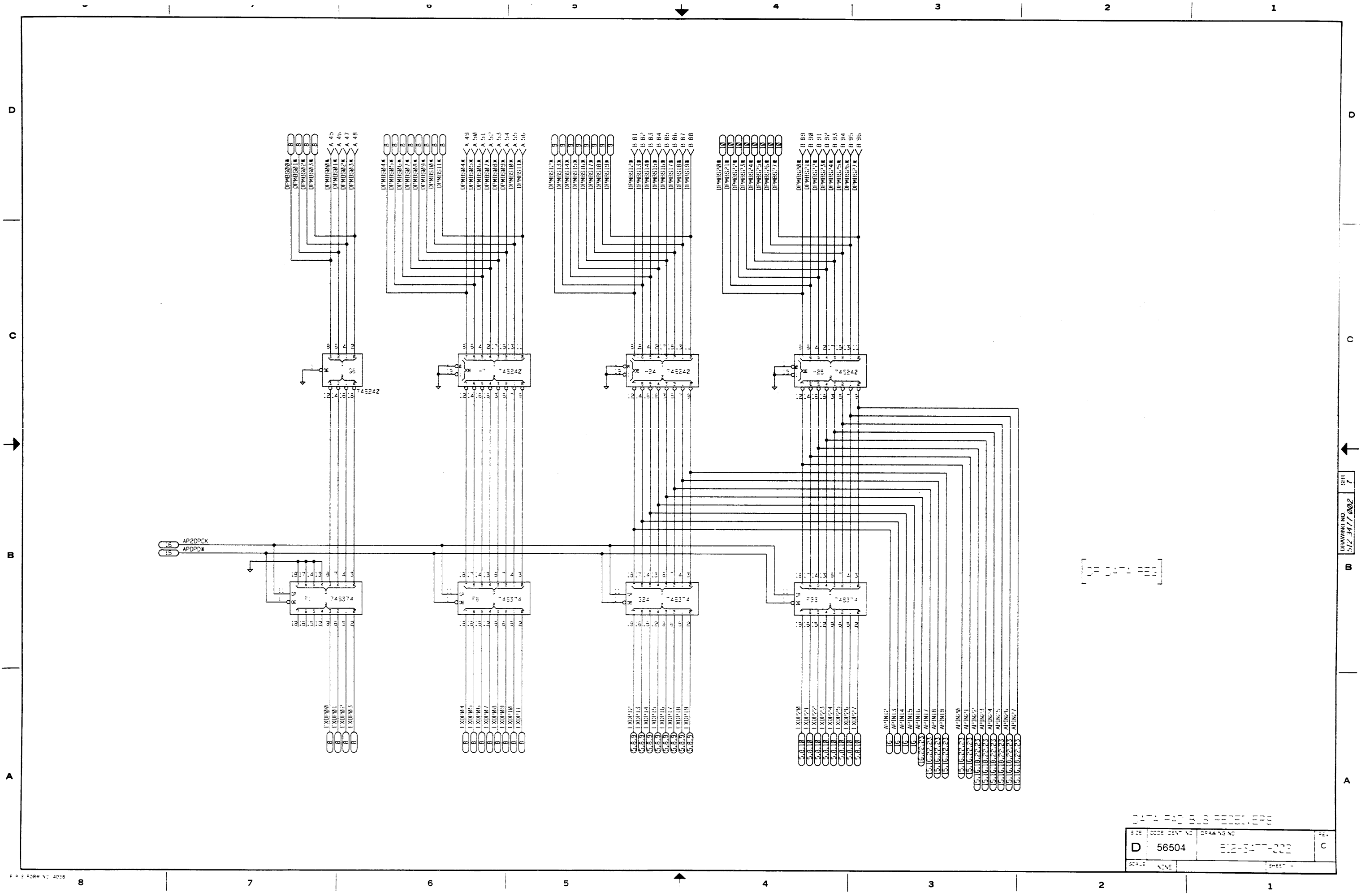


[REG 2A]

[EXAMINE DATA REG  
BITS 12-27]

BIF BUS RECEIVERS

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET	6



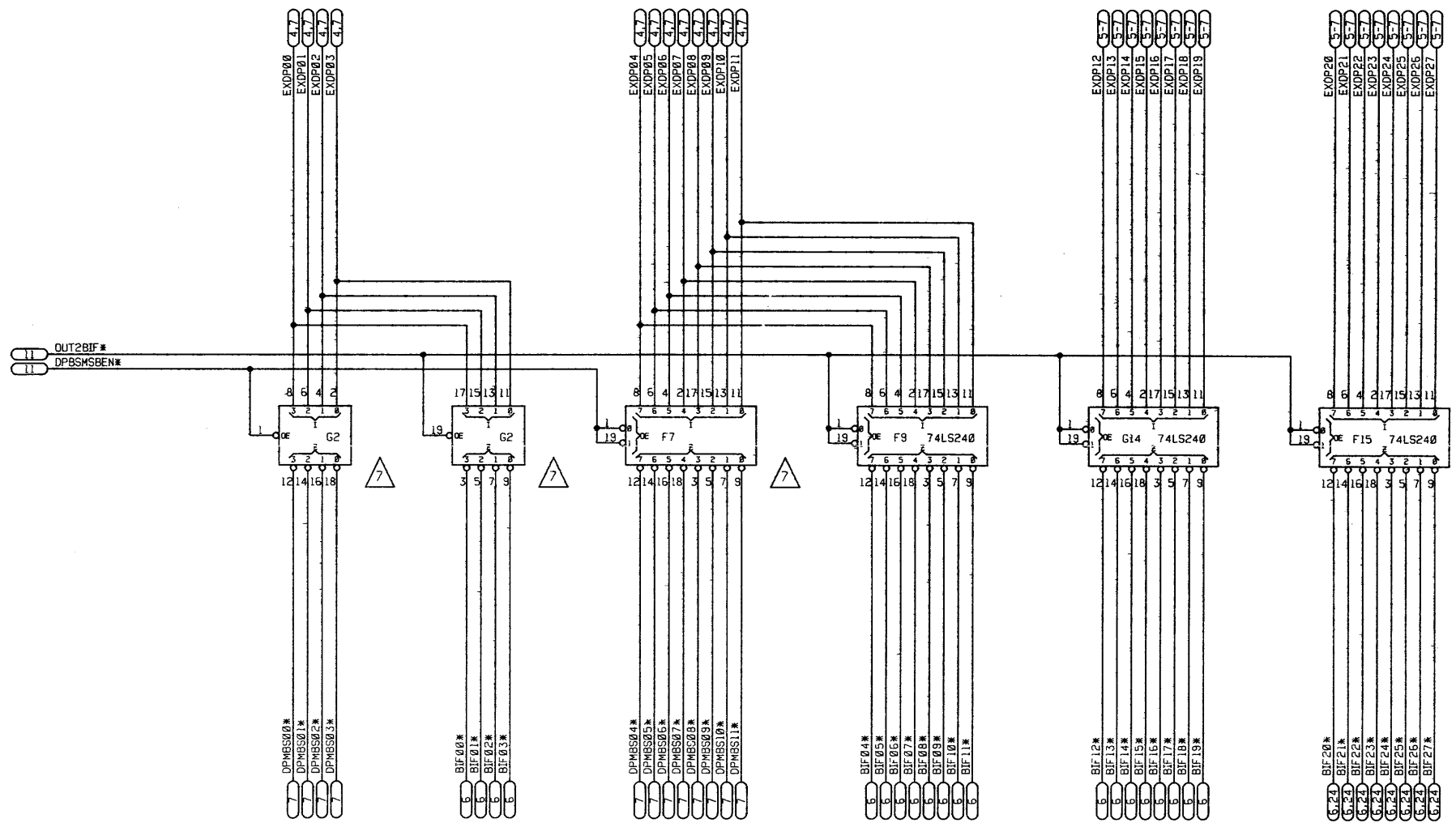
000000

DATA PORT BUS RECEIVERS

SIZE	CODE	DEV'T NO	DRAWING NO	REV.
D		56504	512-3477-002	C
SCALE	NONE		SHEET	

DRAWING NO 512-3477-002 SHEET 7





BIF BUS DRIVERS/DATA PAD  
 BUS 00-11 DRIVERS

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE		SHEET 8

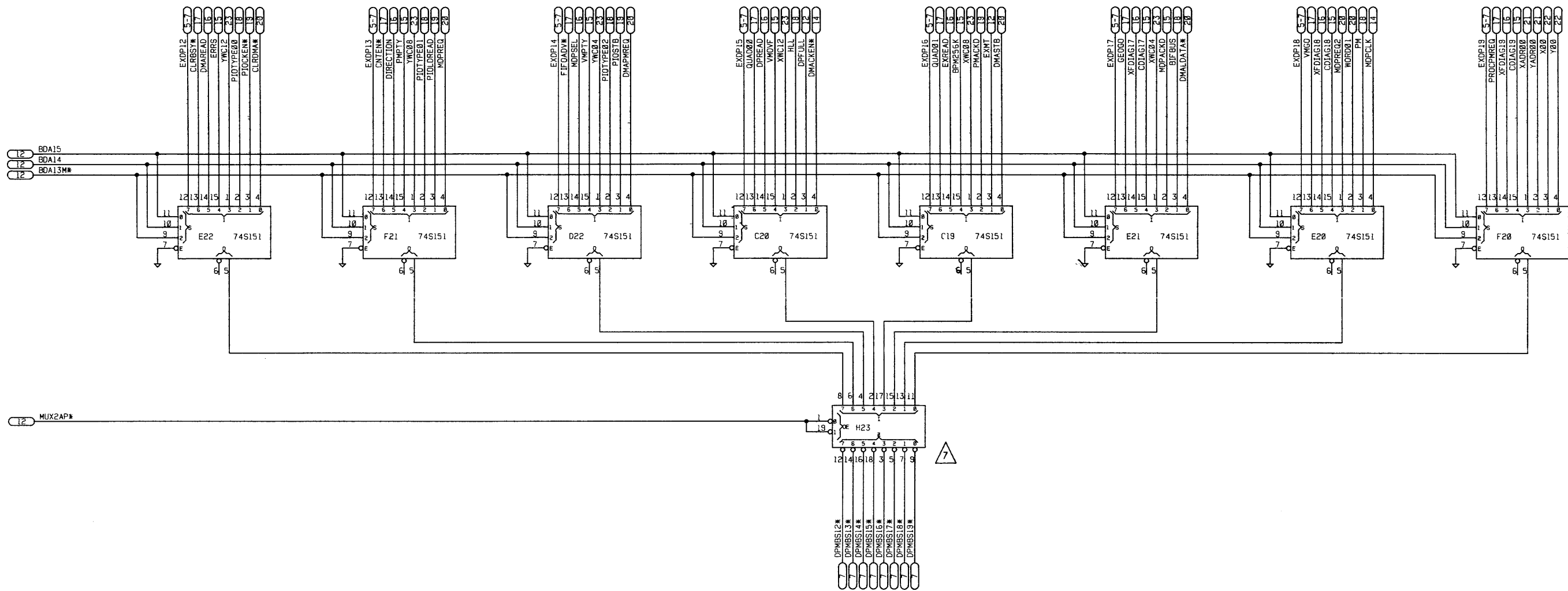
DRAWING NO.  
512-3477-002

SHT  
8

8 7 6 5 4 3 2 1

D

D



C

C

B

B

B

B

A

A

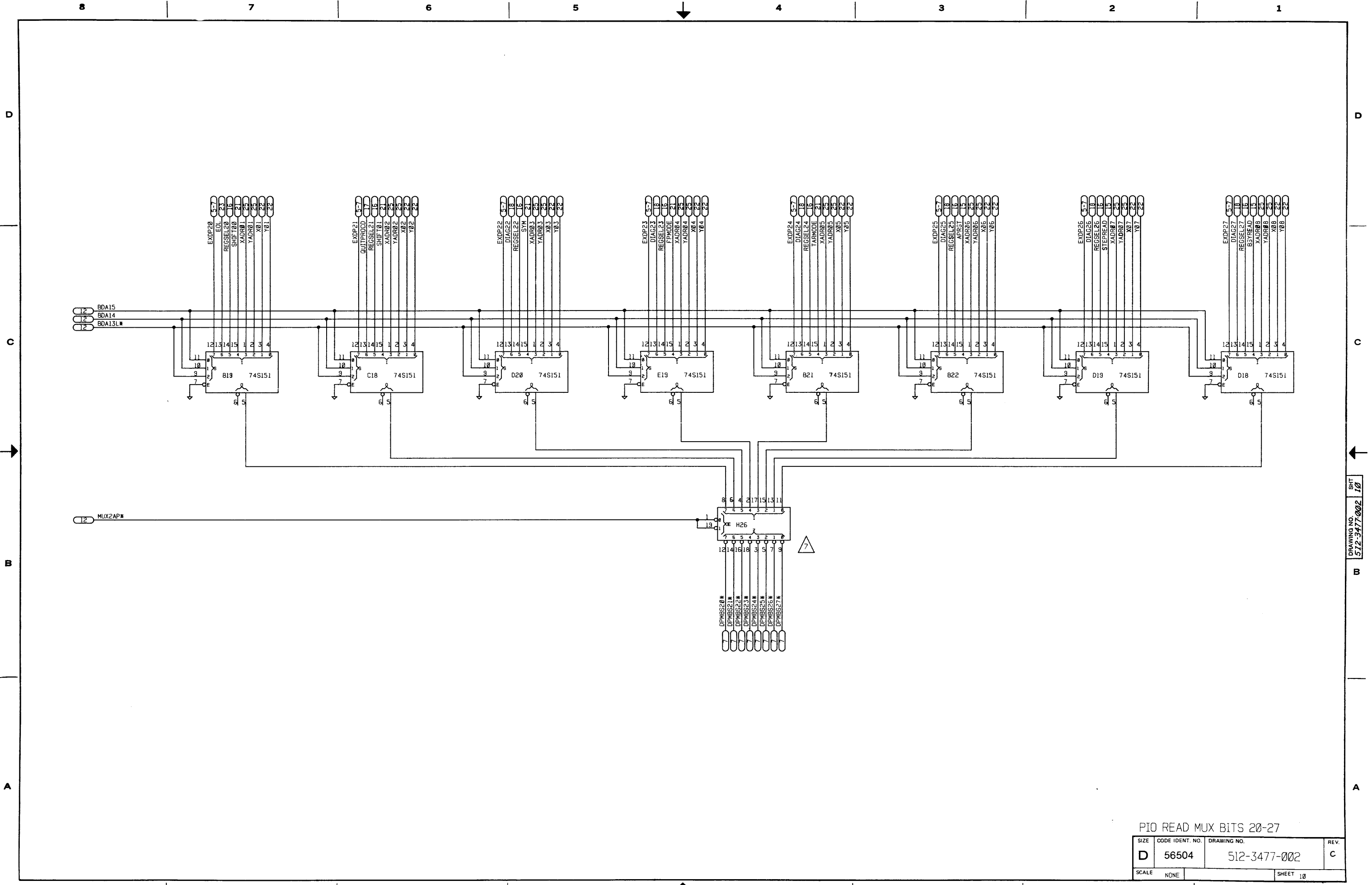
DATA READ	DEVICE ADDRESS	BDA13*	BDA14	BDA15
Y ADDRESS	104	0	0	0
X ADDRESS	105	0	0	1
Y ADDRESS OUTPUT	106	0	1	0
X ADDRESS OUTPUT	107	0	1	1
BITP CTL REG	100	1	0	0
XFER CTL REG	101	1	0	1
DIAGNOSTIC REG	102	1	1	0
EXAMINE DATA REG	103	1	1	1

PIO READ MUX BITS 12-19

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET	9

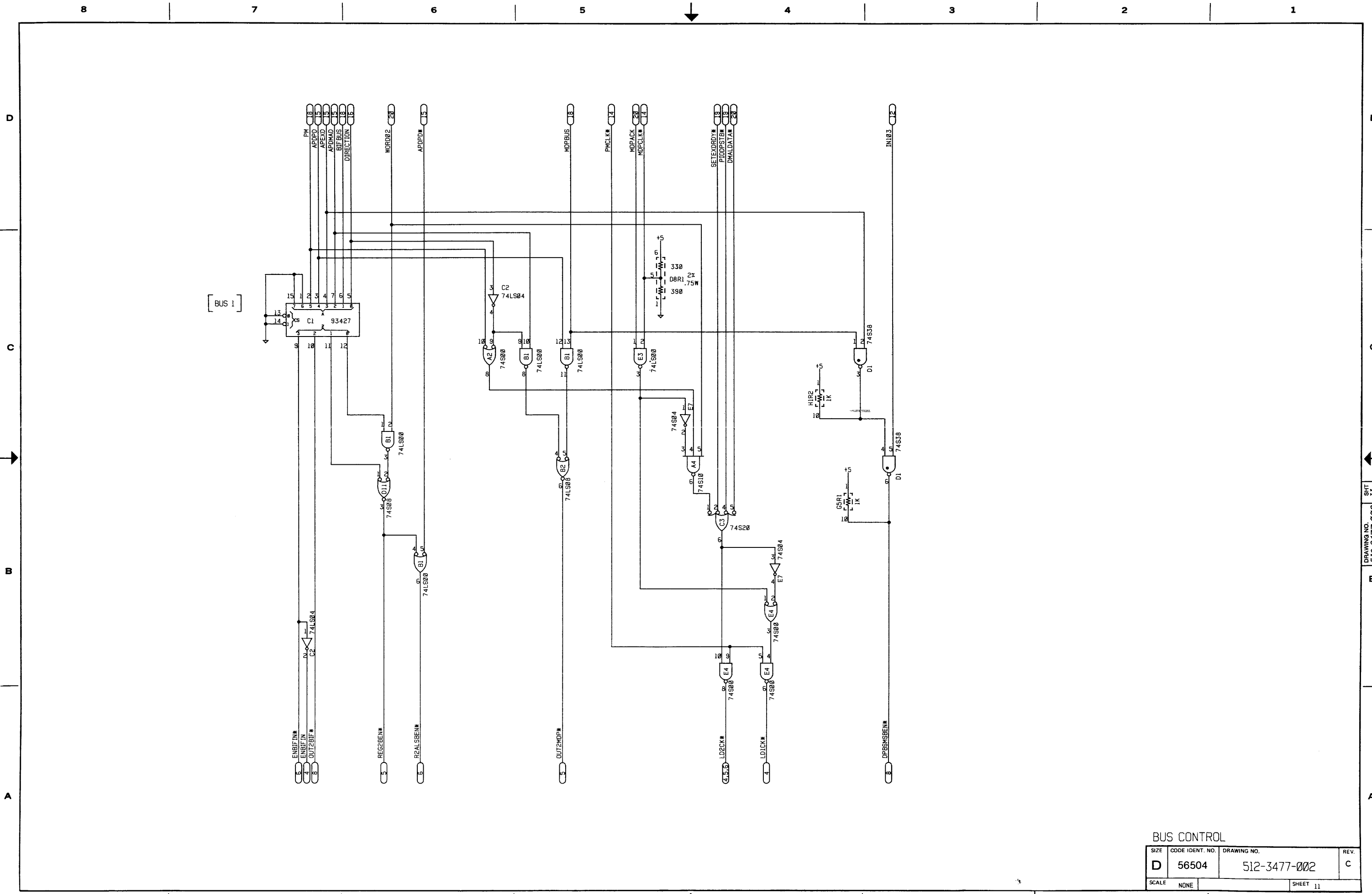
DRAWING NO. 512-3477-002 SHEET 9

8 7 6 5 4 3 2 1



PIO READ MUX BITS 20-27

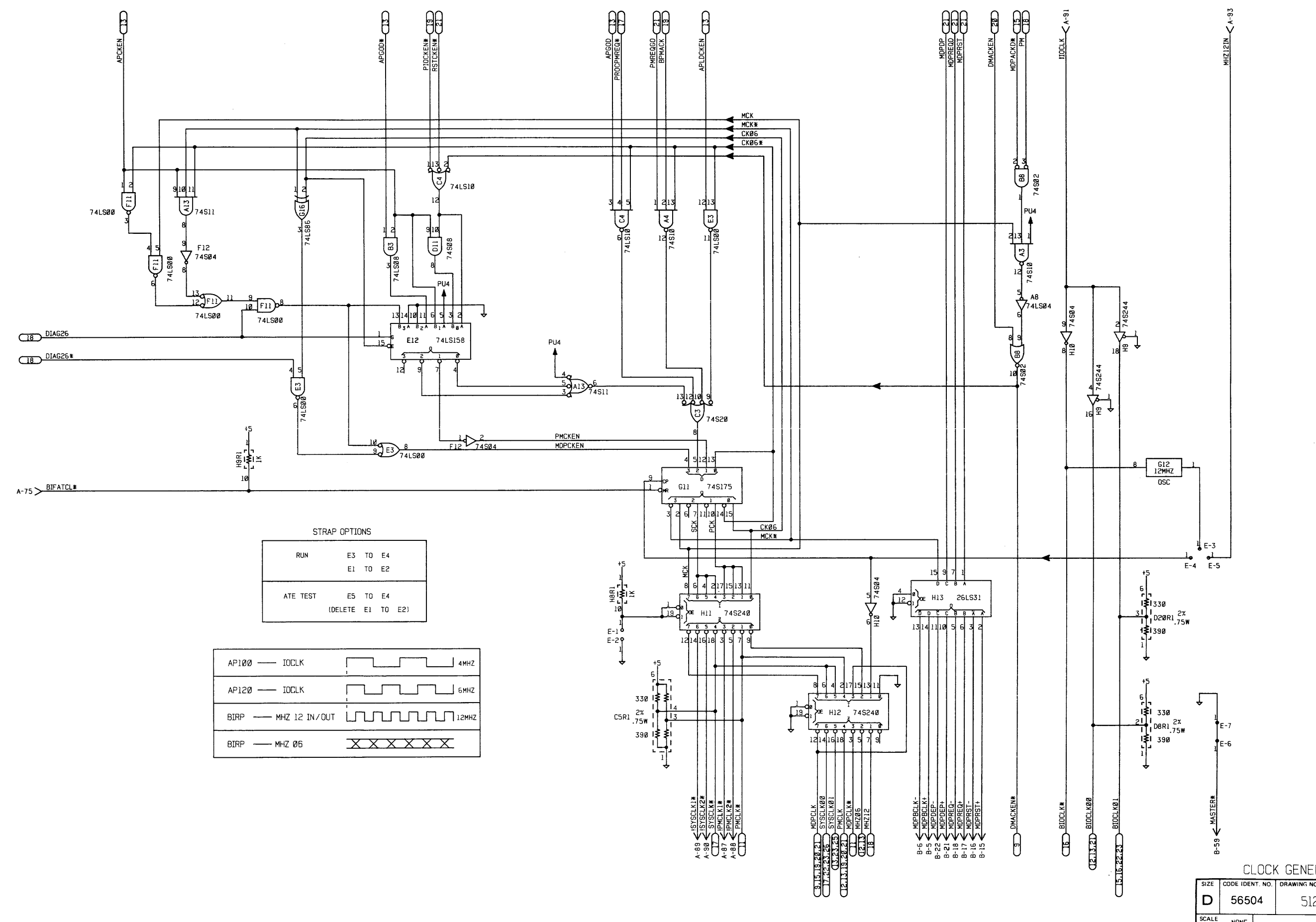
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET	10



BUS CONTROL			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET 11	

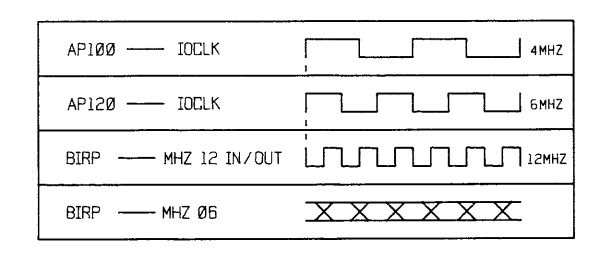






STRAP OPTIONS

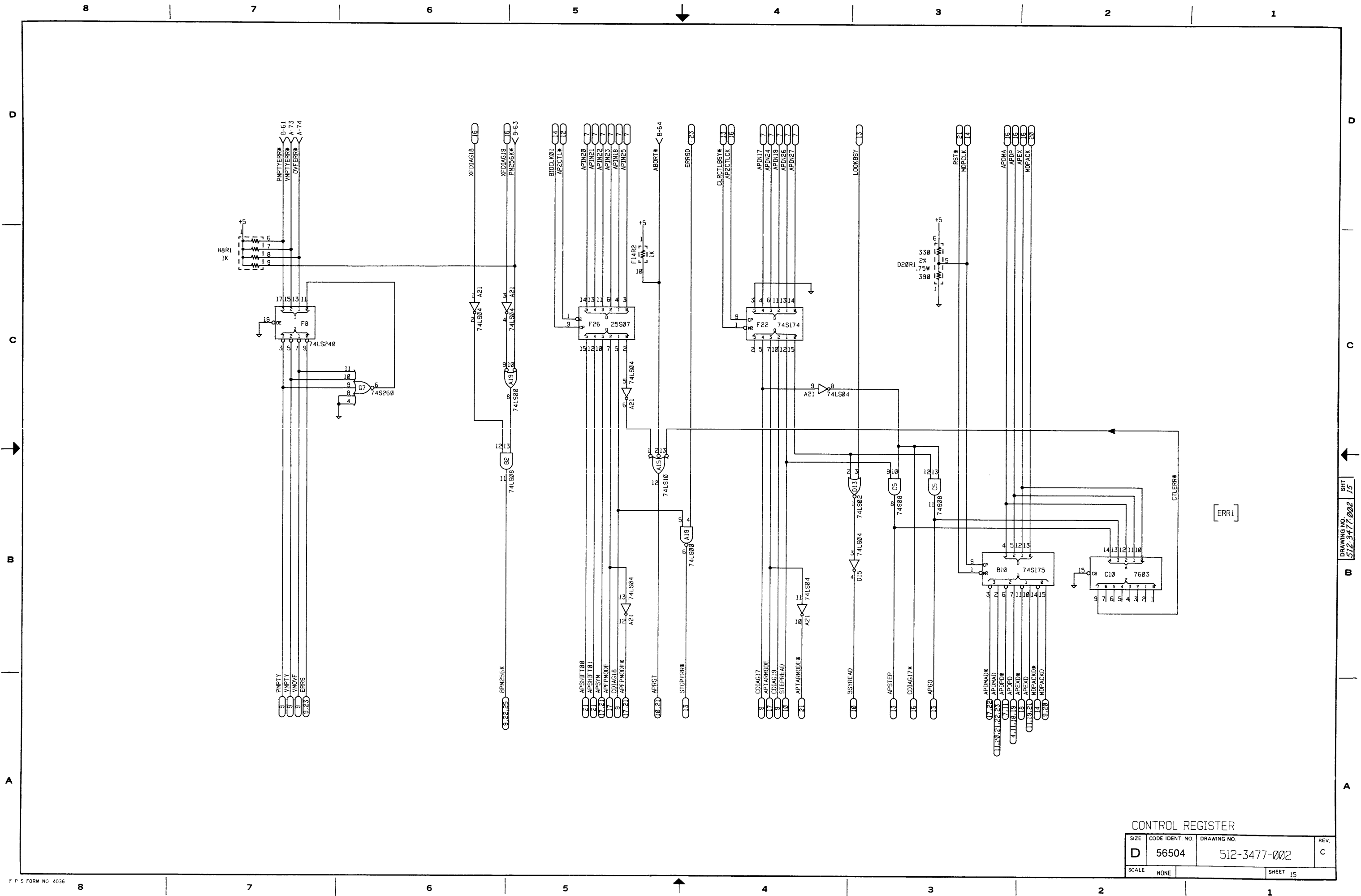
RUN	E3 TO E4 E1 TO E2
ATE TEST	E5 TO E4 (DELETE E1 TO E2)



CLOCK GENERATION

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET	14

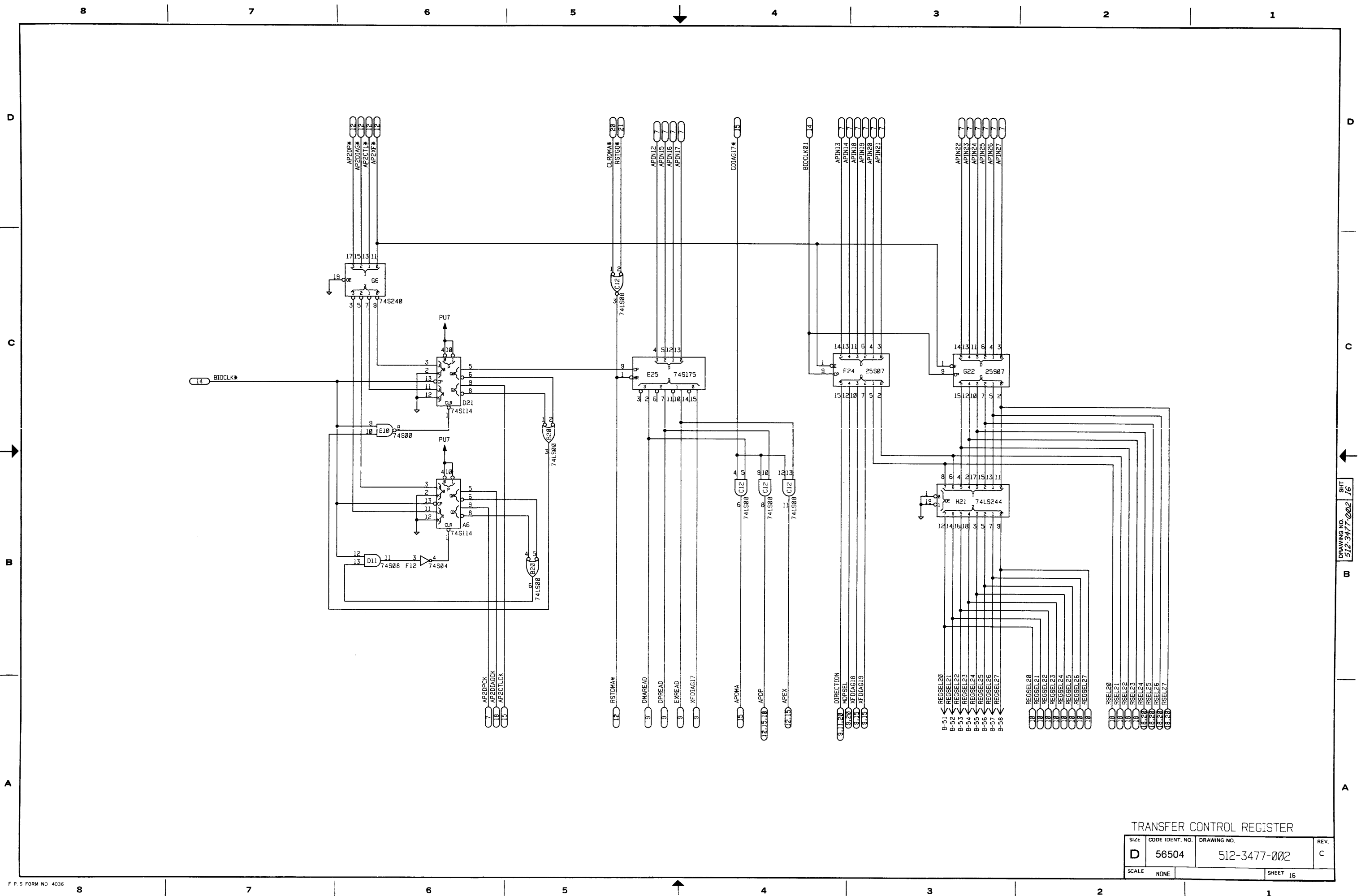
DRAWING NO. 512-3477-002 14



CONTROL REGISTER

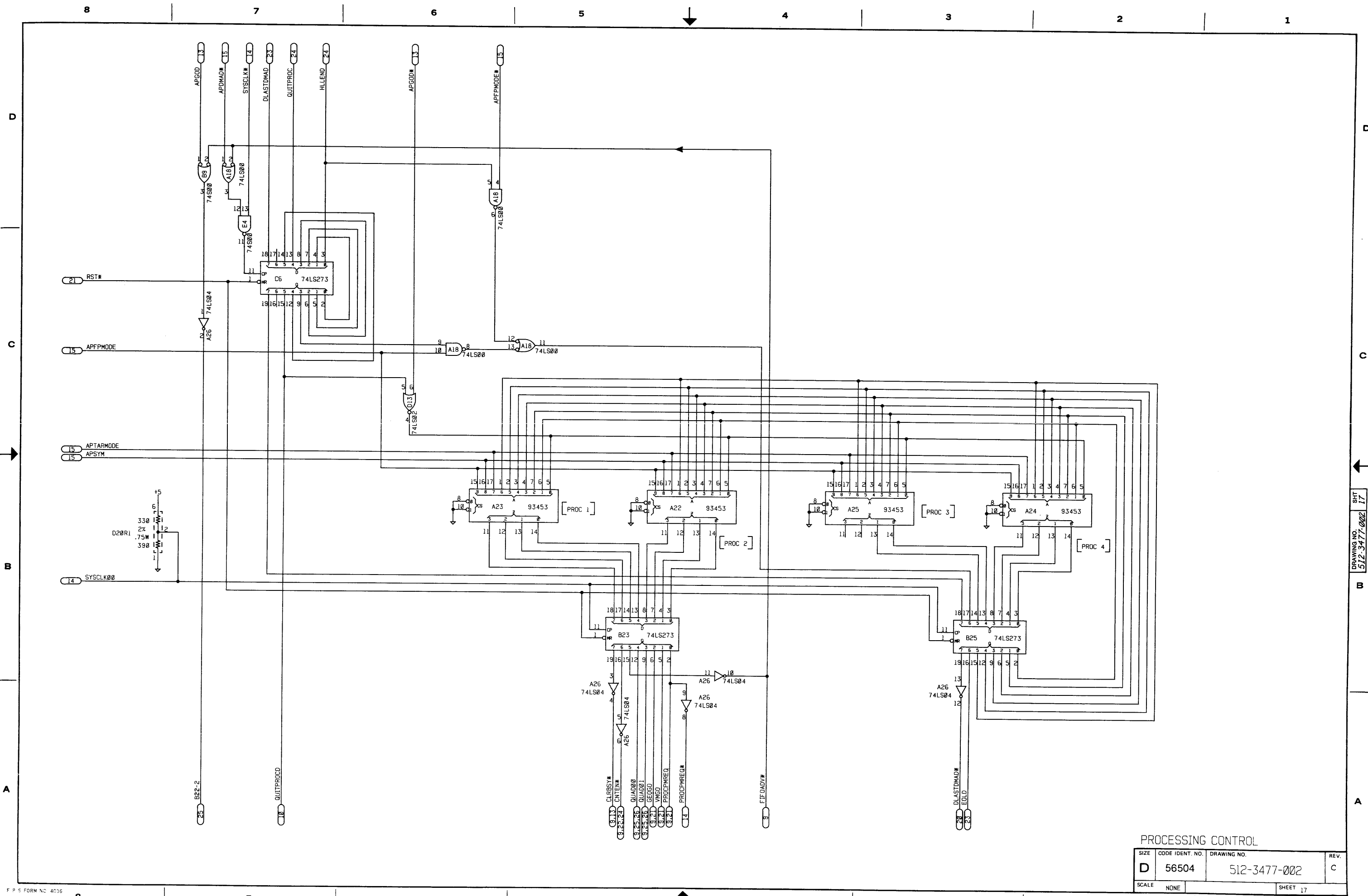
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET	15





TRANSFER CONTROL REGISTER

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET 16	

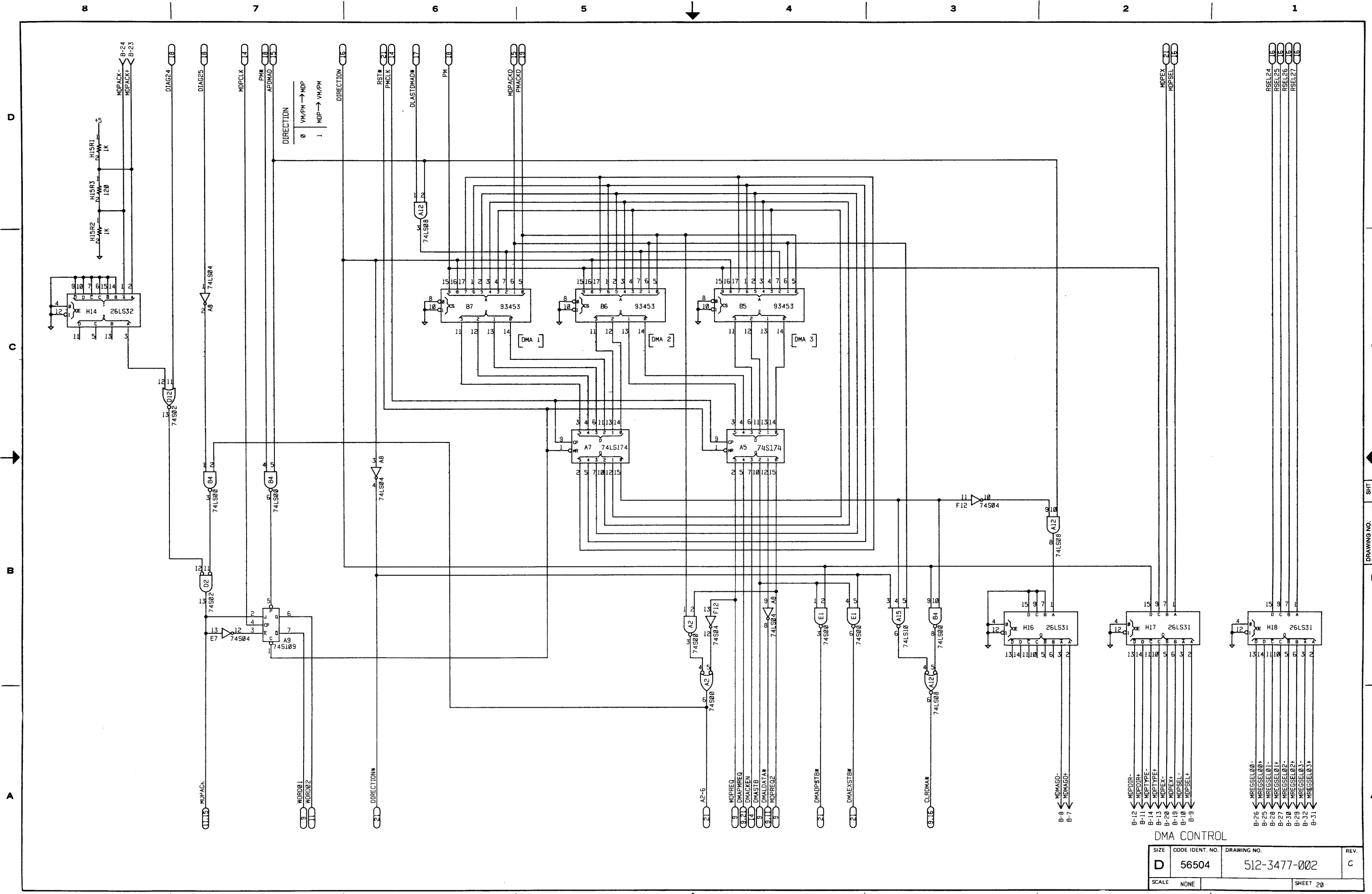


PROCESSING CONTROL

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET	17

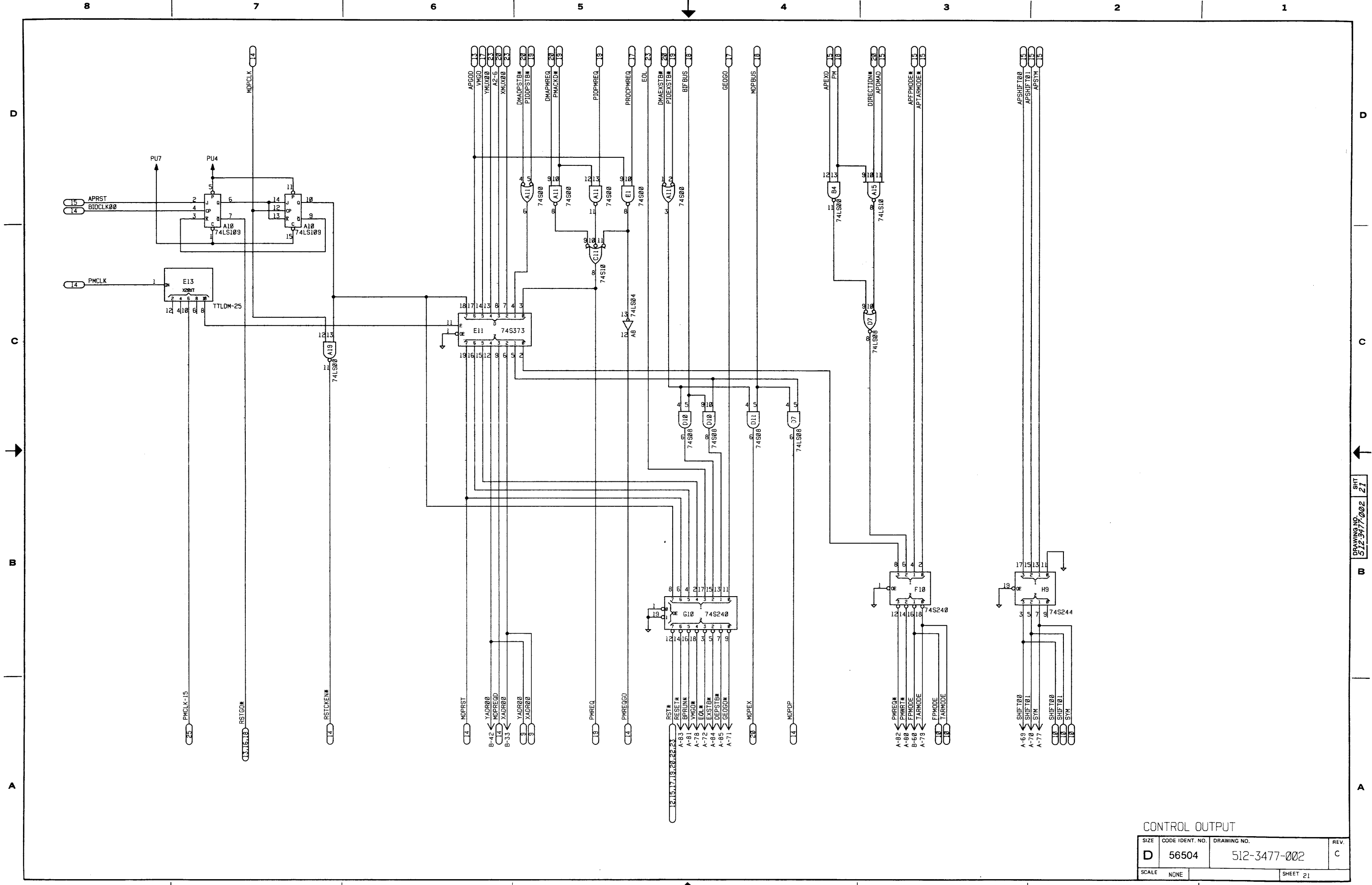






DMA CONTROL

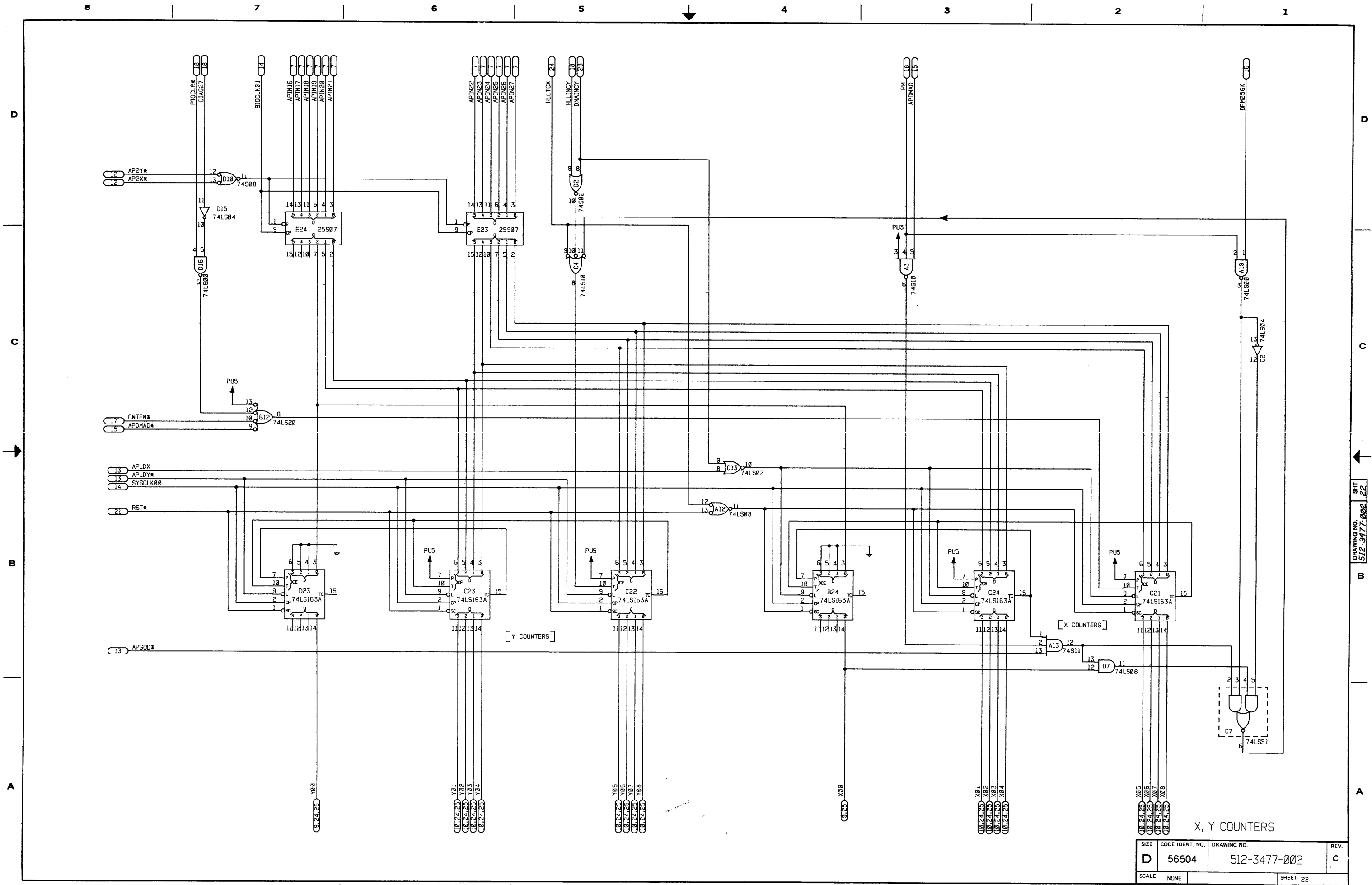
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET 20	



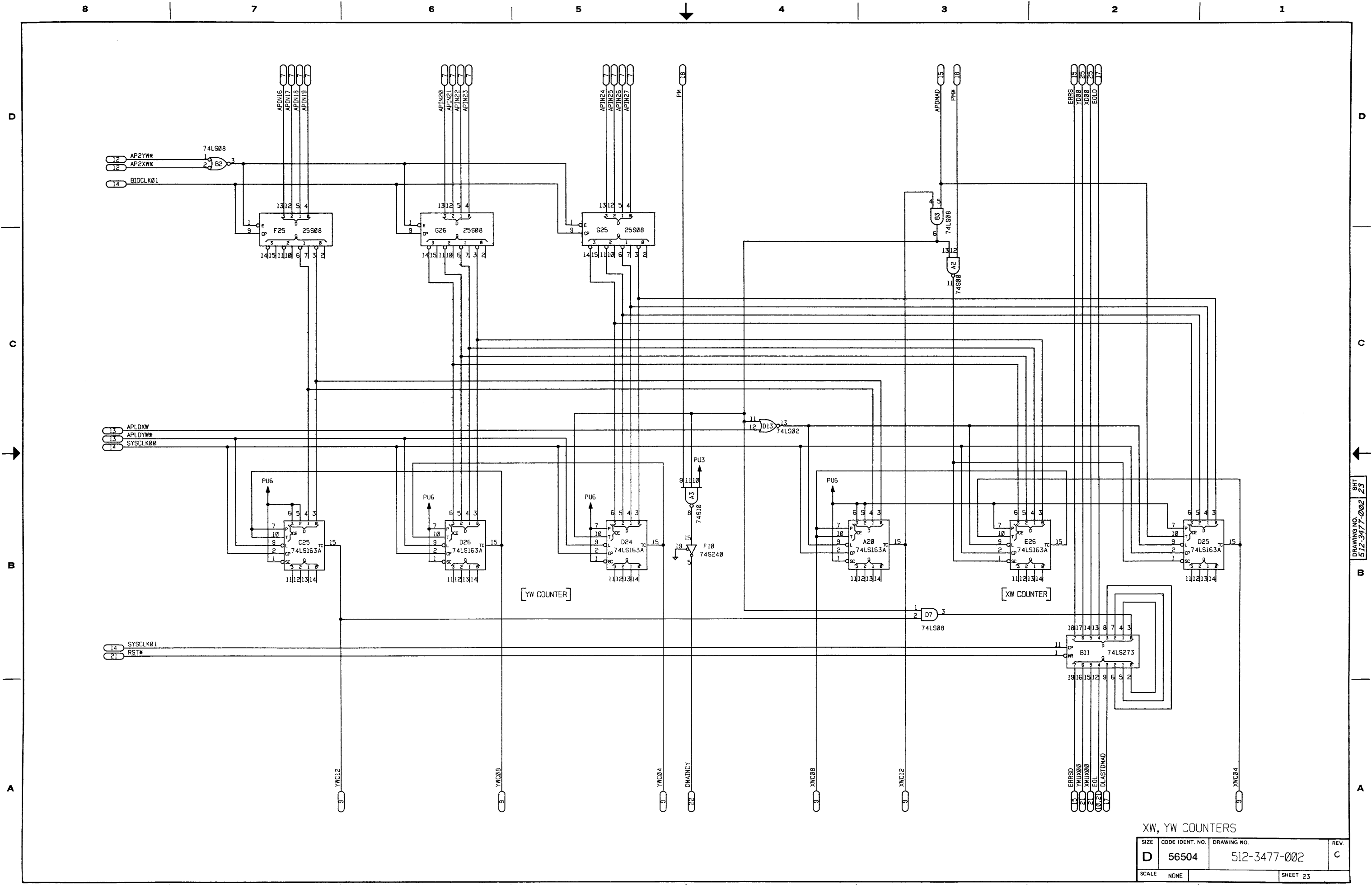
CONTROL OUTPUT

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET 21	

DRAWING NO. 512-3477-002 SHEET 21



SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET 22	

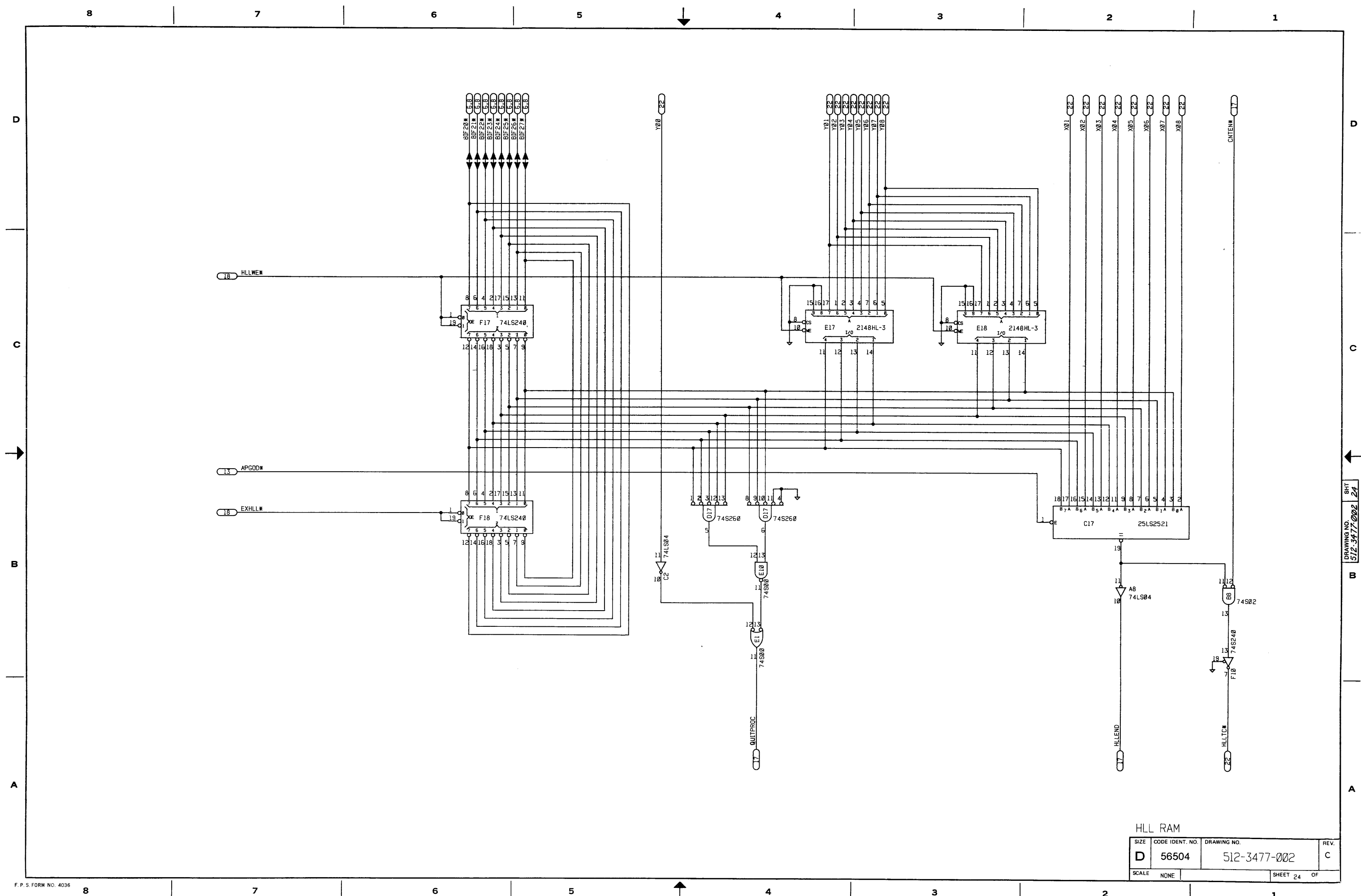


**XW, YW COUNTERS**

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE		SHEET 23

DRAWING NO. 512-3477-002 SHEET 23





HLL RAM			
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET 24	OF

8 7 6 5 4 3 2 1

D

C

B

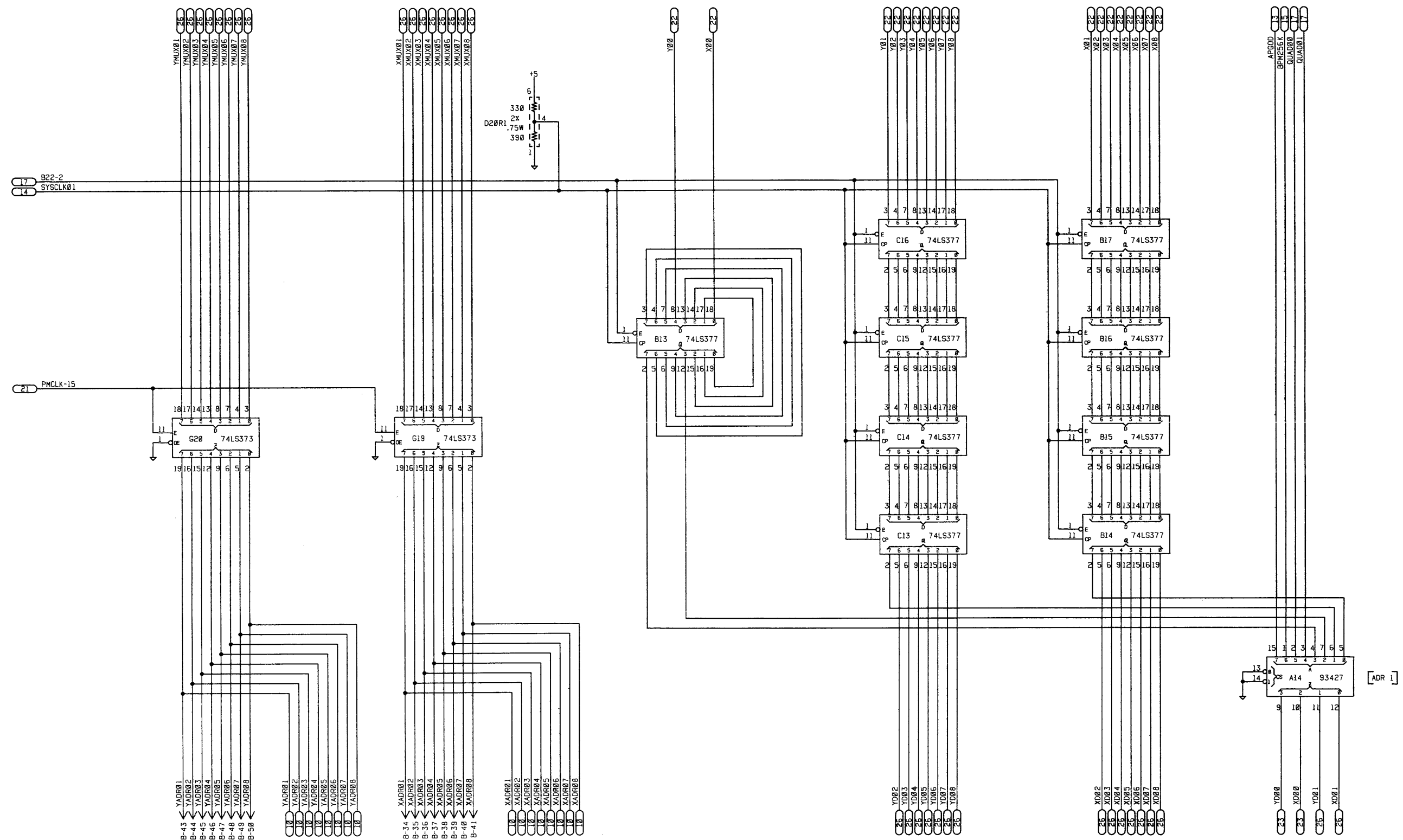
A

D

C

B

A

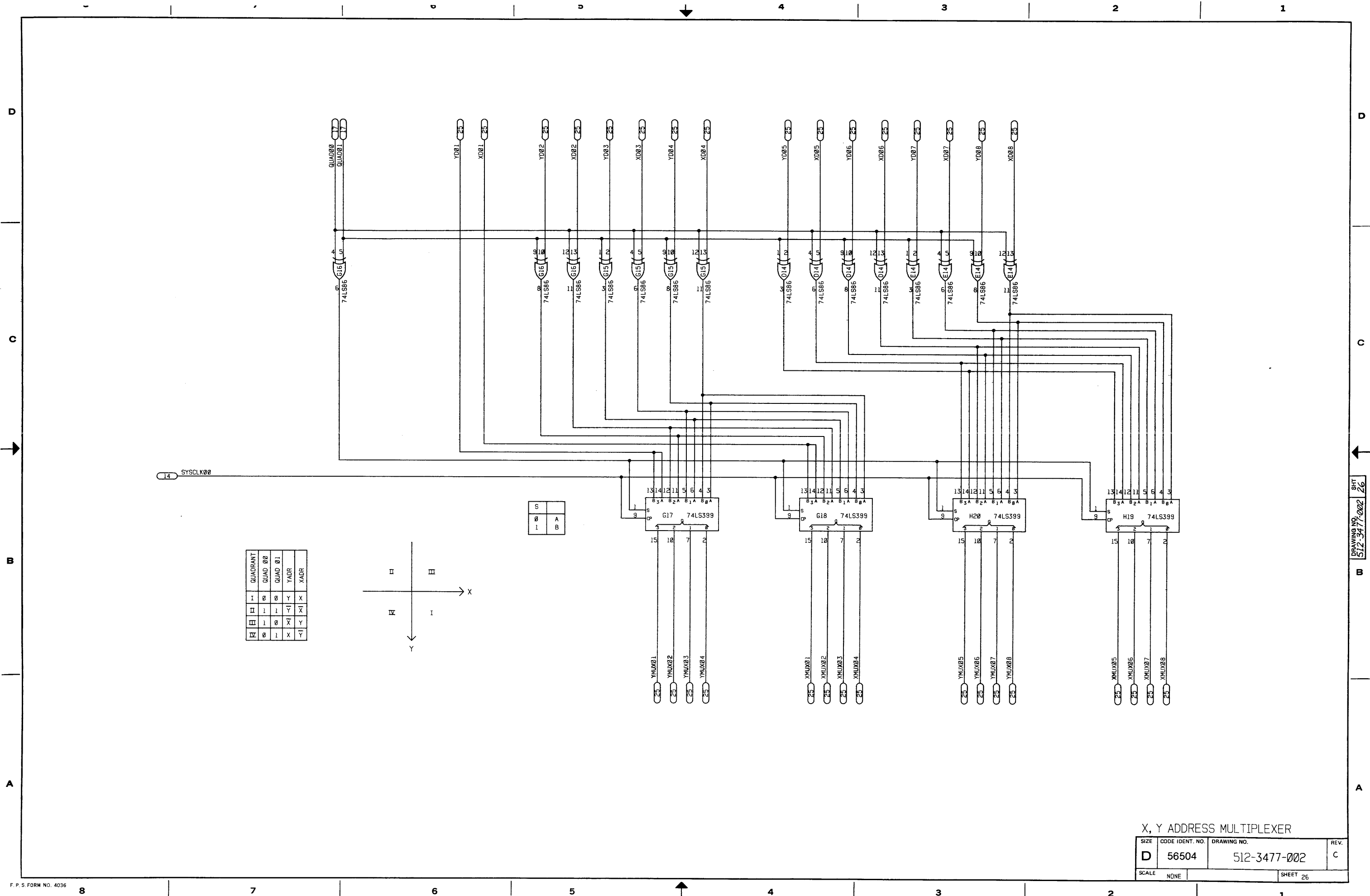


ADDRESS DELAY / OUTPUT

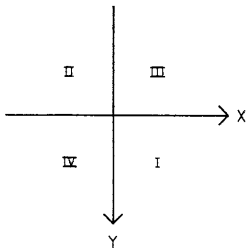
SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET 25	

DRAWING NO. 512-3477-002  
SHEET 25

8 7 6 5 4 3 2 1



QUADRANT	QUAD 00	QUAD 01	YADR	XADR
I	0	0	Y	X
II	1	1	Y	X
III	1	0	X	Y
IV	0	1	X	Y



S	A	B
0	A	B
1	B	A

X, Y ADDRESS MULTIPLEXER

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
D	56504	512-3477-002	C
SCALE	NONE	SHEET 26	

D

C

B

A

CONNECTOR	SIGNAL NAME	SHEET #
A-1	+5	1
A-2	+5	1
A-3	GND	1
A-4	GND	1
A-5	MDPB000+	4
A-6	MDPB000-	4
A-7	MDPB001+	4
A-8	MDPB001-	4
A-9	MDPB002+	4
A-10	MDPB002-	4
A-11	MDPB003+	4
A-12	MDPB003-	4
A-13	MDPB004+	4
A-14	MDPB004-	4
A-15	MDPB005+	4
A-16	MDPB005-	4
A-17	MDPB006+	4
A-18	MDPB006-	4
A-19	MDPB007+	4
A-20	MDPB007-	4
A-21	MDPB008+	4
A-22	MDPB008-	4
A-23	MDPB009+	4
A-24	MDPB009-	4
A-25	MDPB010+	4
A-26	MDPB010-	4
A-27	MDPB011+	4
A-28	MDPB011-	4
A-29	MDPB012+	4
A-30	MDPB012-	4
A-31	MDPB013+	4
A-32	MDPB013-	4
A-33	MDPB014+	4
A-34	MDPB014-	4
A-35	MDPB015+	4
A-36	MDPB015-	4
A-37	DA08*	12
A-38	DA09*	12
A-39	DA10*	12
A-40	DA11*	12
A-41	DA12*	12
A-42	DA13*	12
A-43	DA14*	12
A-44	DA15*	12
A-45	DPMBS00*	7
A-46	DPMBS01*	7
A-47	DPMBS02*	7
A-48	DPMBS03*	7
A-49	DPMBS04*	7
A-50	DPMBS05*	7
A-51	DPMBS06*	7
A-52	DPMBS07*	7
A-53	DPMBS08*	7
A-54	DPMBS09*	7
A-55	DPMBS10*	7
A-56	DPMBS11*	7
A-57	BIF00*	6
A-58	BIF01*	6
A-59	BIF02*	6
A-60	BIF03*	6
A-61	BIF04*	6
A-62	BIF05*	6
A-63	BIF06*	6
A-64	BIF07*	6
A-65	BIF08*	6
A-66	BIF09*	6
A-67	BIF10*	6
A-68	BIF11*	6
A-69	SHIFT00	21
A-70	SHIFT01	21
A-71	GEDG0*	21
A-72	EOL*	21
A-73	VMPTYERR*	15
A-74	OVFERR*	15

CONNECTOR	SIGNAL NAME	SHEET #
A-75	BIFATCL*	14
A-76	IOACK*	12
A-77	SYM	21
A-78	VMG0*	21
A-79	TARMODE	21
A-80	PMWRT*	21
A-81	BPRUN*	21
A-82	PMREQ*	21
A-83	RESET*	21
A-84	EXSTB*	21
A-85	DEPSTB*	21
A-87	PMCLK1*	14
A-88	PMCLK2*	14
A-89	SYSCLK1*	14
A-90	SYSCLK2*	14
A-91	IIOCLK	14
A-93	MHZ12IN	14
A-94	IDDRDY*	12
A-95	OUT*	12
A-96	IN	12
A-97	GND	1
A-98	GND	1
A-99	+5	1
A-100	+5	1
B-1	+5	1
B-2	+5	1
B-3	GND	1
B-4	GND	1
B-5	MDPBCLK+	14
B-6	MDPBCLK-	14
B-7	MDMAG0+	20
B-8	MDMAG0-	20
B-9	MDPSEL+	20
B-10	MDPSEL-	20
B-11	MDPDIR+	20
B-12	MDPDIR-	20
B-13	MDPTYPE+	20
B-14	MDPTYPE-	20
B-15	MDPRST+	14
B-16	MDPRST-	14
B-17	MDPREQ+	14
B-18	MDPREQ-	14
B-19	MDPEX+	20
B-20	MDPEX-	20
B-21	MDPDEP+	14
B-22	MDPDEP-	14
B-23	MDPACK+	20
B-24	MDPACK-	20
B-25	MREGSEL00+	20
B-26	MREGSEL00-	20
B-27	MREGSEL01+	20
B-28	MREGSEL01-	20
B-29	MREGSEL02+	20
B-30	MREGSEL02-	20
B-31	MREGSEL03+	20
B-32	MREGSEL03-	20
B-33	XADR00	21
B-34	XADR01	25
B-35	XADR02	25
B-36	XADR03	25
B-37	XADR04	25
B-38	XADR05	25
B-39	XADR06	25
B-40	XADR07	25
B-41	XADR08	25
B-42	YADR00	21
B-43	YADR01	25
B-44	YADR02	25
B-45	YADR03	25
B-46	YADR04	25
B-47	YADR05	25
B-48	YADR06	25
B-49	YADR07	25
B-50	YADR08	25

CONNECTOR	SIGNAL NAME	SHEET #
B-51	REGSEL20	16
B-52	REGSEL21	16
B-53	REGSEL22	16
B-54	REGSEL23	16
B-55	REGSEL24	16
B-56	REGSEL25	16
B-57	REGSEL26	16
B-58	REGSEL27	16
B-59	MASTER*	14
B-60	FPMODE	21
B-61	PMPTYERR*	15
B-62	PMACK	19
B-63	PM256K*	15
B-64	ABORT*	15
B-65	BIF12*	6
B-66	BIF13*	6
B-67	BIF14*	6
B-68	BIF15*	6
B-69	BIF16*	6
B-70	BIF17*	6
B-71	BIF18*	6
B-72	BIF19*	6
B-73	BIF20*	6
B-74	BIF21*	6
B-75	BIF22*	6
B-76	BIF23*	6
B-77	BIF24*	6
B-78	BIF25*	6
B-79	BIF26*	6
B-80	BIF27*	6
B-81	DPMBS12*	7
B-82	DPMBS13*	7
B-83	DPMBS14*	7
B-84	DPMBS15*	7
B-85	DPMBS16*	7
B-86	DPMBS17*	7
B-87	DPMBS18*	7
B-88	DPMBS19*	7
B-89	DPMBS20*	7
B-90	DPMBS21*	7
B-91	DPMBS22*	7
B-92	DPMBS23*	7
B-93	DPMBS24*	7
B-94	DPMBS25*	7
B-95	DPMBS26*	7
B-96	DPMBS27*	7
B-97	GND	1
B-98	GND	1
B-99	+5	1
B-100	+5	1

DRAWING NO. 512-3477-002 27

SIZE	CODE IDENT. NO.	DRAWING NO.	REV.
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