

NOTES:
1. REPLACE ITEM 13 AND 14 WITH SMOOTH SIDE DOWN
(SEE SH 2 FOR NOTE 2)

ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	5-4-76	J. R. P.
B		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	5-4-76	J. R. P.
C		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	5-4-76	J. R. P.
D		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	7-25-76	J. R. P.
E		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	8-27-76	J. R. P.
F		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	1-28-77	J. R. P.
G		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	7-12-76	J. R. P.
H		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	7-12-76	J. R. P.
J		EN 40769 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	7-12-76	J. R. P.
K		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	9-30-76	J. R. P.
L		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	1-22-76	J. R. P.
M		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	1-13-77	J. R. P.
N		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	1-21-77	J. R. P.
P		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	3-11-77	J. R. P.
R		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	8-2-77	J. R. P.
T		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	8-12-77	J. R. P.
U		EN 41088 (1) R. J. J. (1) REVISED PER EXTENSIVE ENGR. CHANGE (2) ADDED SH 2 (3) UPDATED REV LEVEL BLOCK	6-27-78	J. R. P.

944930-5001	AUTO INSERTION TAPE
944930-0001	990/10 ARITHMETIC UNIT
PART NO	DESCRIPTION

REVISION LEVEL	TEST PROCEDURE (944933)	LOGIC DIAGRAM (944732-9901)	PWB (944931-0001)	RCSY (944930-0001)
	* * * * *	D E E E E E E E E F	E G G G H H H J J K K	T U V W X Y A A B C A D A E A F

PROCESSES:
1. SOLDER PER F-127, METHOD I AND/OR F-128
2. MARK PER F-100, METHOD II, CLASS 1, HEIGHT .09, COLOR BLACK
3. MARK PER F-100, METHOD III, CLASS 2, COLOR BLACK, TYPE 6

REV STATUS	REV AF	AF
BLOCK	SH 1 2	

UNLESS OTHERWISE SPECIFIED	UNLESS OTHERWISE SPECIFIED
REMOVE ALL BURRS AND SHARP EDGES	DIMENSIONS ARE IN INCHES
CONCENTRICITY MACHINED DIAMETERS 0.10 F/R	TOLERANCES ANGLES 25° 3 PLACE DECIMALS ± 0.02
DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING	
IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY	
INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-120	

QTY REQD	ITEM NO	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROCUREMENT SPECIFICATION

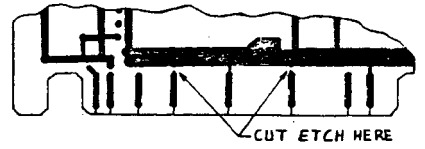
TEXAS INSTRUMENTS
Equipment Group Dallas, Texas

990/10 ARITHMETIC UNIT

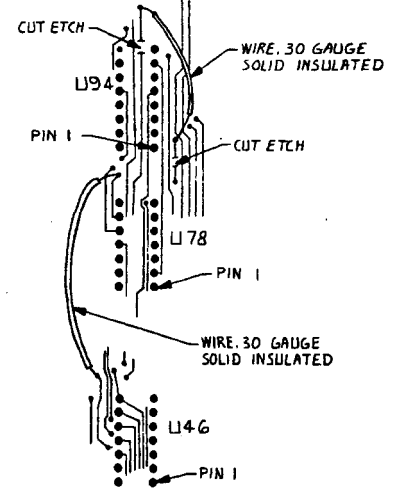
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SCALE SHEET

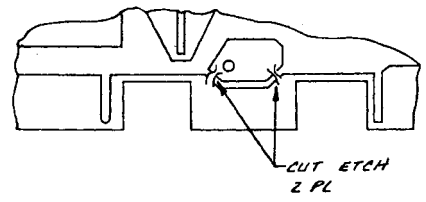
NOTES: CONT:
 2. REWORK FOR PWB REV B, C, D AND E. FOR REV E PWB DO PART 2(A) ONLY.
 (A) CUT ETCH AT P2-60 AND P2-14 AS SHOWN:



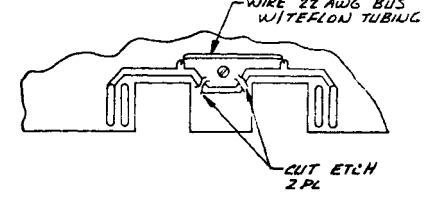
(B) CUT ETCH (2 PLACES) AND WIRE (2 PLACES) AS SHOWN:



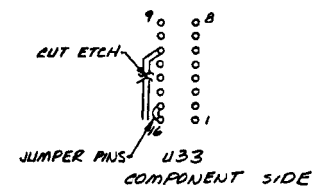
3. REWORK FOR PWB REV B, C AND D
 (A) CUT ETCH AS SHOWN ON COMPONENT SIDE OF PWB



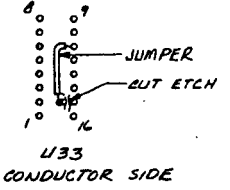
NOTES: CONT:
 (B) CUT ETCH AND WIRE AS SHOWN ON CONDUCTOR SIDE OF PWB USE #22 BUS WIRE + TEFLOX TUBING.



4. REWORK FOR PWB REV B, C AND D
 (A) CUT ETCH ON COMPONENT SIDE OF BOARD RUNNING TO U33-11
 (B) JUMPER PINS 15 AND 16 TOGETHER AT U33 ON COMPONENT SIDE. USE 30 GAUGE INSULATED WIRE

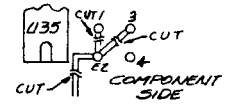


(C) CUT ETCH ON CONDUCTOR SIDE OF BOARD RUNNING TO U33-15
 (D) JUMPER U33-11 TO FEED-THRU NEAR U33-15 ON CONDUCTOR SIDE. USE 30 GA INSULATED WIRE

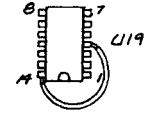


5. ITEM 91 IN -0001 LM CONSISTS OF COMPONENTS WHICH ARE AUTO INSERTED AND CONTAINED IN THE -5001 LM

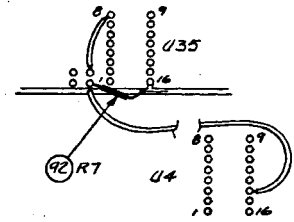
6. REWORK FOR PWB REV B, C, D AND E.
 A) CUT ALL ETCH RUNS TO PAD E2 AS SHOWN:



B) INSTALL ITEM 93 IN PADS E1 AND E2.
 C) ADD WIRE ON COMPONENT SIDE BETWEEN U19-4 AND U19-14 AS SHOWN:



D) ADD ITEM 92 BETWEEN PAD E2 AND VCC ETCH RUNNING TO U35-16 ON CONDUCTOR SIDE.
 E) ADD ECN WIRE BETWEEN PAD E1 AND U35-B ON CONDUCTOR SIDE.
 F) ADD ECN WIRE BETWEEN PAD E2 AND U4-14 ON CONDUCTOR SIDE.



G) PLACE ITEM 94 OVER ADDED PINS E1 AND E2 ON COMPONENT SIDE.

7. REWORK FOR PWB 944931 REV E
 A) REMOVE REF DESIG. U51 CLOSEST TO U53
 B) USING RUBBER STAMP OR RAPIDGRAPH REMARK AS U52.

8. REWORK FOR PWB REV G:
 A) ON CONDUCTOR SIDE, ADD ITEM 92(R7) BETWEEN U35-16 AND E-2 PAD

9. OVERSIZED PIN 996805-4 MAY BE USED FOR ITEM 93 WHEN THE PINS ARE NOT HELD IN PLACE AFTER STAKING

REVISIONS			
ZONE/LTR	DESCRIPTION	DATE	APPROVED
V	1.4.1980... ITEM 26 QUANTITY WAS 722-0001 LM, ADDED ITEM 60 (3) UPDATED REV. LEVEL BLOCK	6-22-79	J. K. P.
W	CN 441881 (C) P. 0.4 (1) UPDATED REV LEVEL BLOCK (2) ON LM P/N OF ITEM 93 WAS 972494-1	8-1-79	J. K. P.
Y	CN 442749 (C) B. 2.2 (1) ADDED NOTE 8 TO SH2 (2) UPDATED REV LVL BLOCK (3) ADDED R7 ITEM 92 AT ZN 36 PER REV H PWB 944931	1-15-79	J. K. P.
AA	CN 441354 (C) B. 2.2 (1) REVISED LNAS 944930-1 E-5001 PER EXTENSIVE ENGINEERING CHANGES (2) UPDATED REV LVL BLOCK	1-15-79	J. K. P.
AB	CN 442343 (B) B. 2.2 (1) ON -0001 LM P/N ITEM 67 WAS 946678-0014 (2) UPDATED REV LVL BLOCK	1-15-79	J. K. P.
AC	CN 451927 (D) P. 2. U14 (C) ON -0001 LM ITEM 15 P/N WAS 539544-10, ITEM 57 P/N WAS 972665-1, ITEM 69 P/N WAS 539544-2 (3) UPDATED REV LVL BLOCK	4-11-79	J. K. P.
AD	CN 441793 (C) B. 2.2 (1) ON -5001 LM ITEM 57 WAS 972665-1 (2) UPDATED REV LEVEL BLOCK	5-23-79	E. W. D.
AE	CN 450817 (C) B. 2.2 (1) ADDED NOTE 9 (2) UPDATED REV LEVEL BLOCK	6-11-79	E. W. D.
AF	CN 450506 (C) B. 2.2 (1) ADDED ITEM 95 TO -0001 LM (2) UPDATED REV LEVEL BLOCK	1-21-80	J. K. P.

TEXAS INSTRUMENTS INCORPORATED		DATE 11/28/79		LIST OF MATERIAL		PAGE 1 of		PART NUMBER LM 0944930-0001		REV AF	
PART ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ02	REF	EA		0544932-9901	LOGIC DIAGRAM-AU1, 990/10						
JJ03	REF	EA		0944933-9901	TEST PROCEDURE-AU1, 990/10						
JJ04	REF	EA		0944921-9901	SPECIFICATION, CPU, 990/10						
JJ05	JJ0J2.J00	EA		053384-J001	EJECTOR, NYLON, NON-LOCKING, PWB						
JJ07	00002.000	EA		0945239-0001	BRACKET-STIFFENER, PWB, 14IN						
JJ08	JJ0J2.J00	EA		0944954-0001	INSULATOR, PWB, 14IN						
JJ09	00006.000	EA		0972684-0002	SCREW, THD FRMG, HEX WSHR HD, 2-56X1/4 LG						
JJ10	JJ0J6.J00	EA		0418730-0101	WASHER, NYLON						
JJ13	JJ001.000	EA		0946758-0001	CABLE ASSY, AU, 34 CONDUCTOR						
JJ14	JJ001.000	EA		0946758-0002	CABLE ASSY, AU, 50 CONDUCTOR						
JJ15	JJ009.000	EA		2210188-0005	SOCKET, LOW PROFILE, DIP, 20 PINS	003612-D1L820P-108					
JJ15A					XU1 XU2 XU13 XU14 XU15 XU32						
JJ15B					XU45 XU79 XU80						
JJ18	JJ0J2.J00	EA		02190J2-7163	NETWORK, SN74LS163N						
JJ18A					U16 U31						
JJ19	00001.000	EA		09729J0-7400	NETWORK SN74LS00N	TI -SN74LS00N					
JJ19A					U111						
JJ22	JJ0J1.J00	EA		09729J0-7404	NETWORK SN74LS04N						
JJ22A					U112						
JJ43	00001.000	EA		0222222-7150	NETWORK SN74LS0N						
DRAFTSMAN		DATE		DESIGN ENGINEER		TITLE					
		11-23-79				990/10 ARITHMETIC UNIT					
APP'D. MFG.		DATE		APP'D. PROJECT ENGINEER		DATE		RELEASED		PROJECT NO.	
										7506	
										LM 0944930-0001	
										REV AF	

TEXAS INSTRUMENTS INCORPORATED		DATE 11/28/79		LIST OF MATERIAL		PAGE 2 of		PART NUMBER LM 0944930-0001		REV AF	
PART ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ43A					U21						
JJ52	00004.000	EA		0972900-7181	NETWORK SN74LS181N	TI -SN74LS181N					
JJ52A					U57 U73 U89 U106						
JJ58	00002.000	EA		0972637-0001	NETWORK, 74S299 SERIAL/PARALLEL CONVERTER						
JJ58A					U51 U100						
JJ59	00004.000	EA		0972654-0001	NETWORK, SN74LS670N						
JJ59A					U60 U76 U92 U109						
JJ60	00002.000	EA		0972037-1470	NETWORK, RES 47 OHM 24 16PIN BELEMENT						
JJ60A					U118 U119						
JJ66	00001.000	EA		0972763-0021	CAP., FIXED, AXIAL LEAD, .047 UF, +80V, -20V						
JJ66A					C75						
JJ67	00003.000	EA		0972924-0007	CAP FIX TANT SOLID 120 MFD 10 % 10 VOLT	WPL -M39003/1-2263					
JJ67A					C1 C2 C3						
JJ68	00001.000	EA		0226609-0001	DIODE, VISIBLE LIGHT EMITTING						
JJ68A					CR1						
JJ69	00016.000	EA		2210188-0003	SOCKET, LOW PROFILE, DIP, 16 CONT	003612-D1L816P-108					
JJ69A					XU11, XU12, XU16, XU30, XU31,						
JJ69B					XU46, XU48, XU60, XU64, XU65,						
JJ69C					XU67, XU76, XU81, XU92, XU101,						
JJ69D					XU109						
DRAFTSMAN		DATE		DESIGN ENGINEER		TITLE					
						990/10 ARITHMETIC UNIT					
APP'D. MFG.		DATE		APP'D. PROJECT ENGINEER		DATE		RELEASED		PROJECT NO.	
										LM 0944930-0001	
										REV AF	

TEXAS INSTRUMENTS INCORPORATED		DATE 11/28/79		LIST OF MATERIAL		PAGE 3 of		PART NUMBER LM 0944930-0001		REV AF	
PART ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ70	00001.000	EA		0946672-0001	PROGRAMMED ROM-STC#1 (U11)						
JJ70A					U11						
JJ71	00001.000	EA		0946672-0002	PROGRAMMED ROM-STC#2 (U12)						
JJ71A					U12						
JJ72	00001.000	EA		0946672-0003	PROGRAMMED ROM-SP#2 (U30)						
JJ72A					U30						
JJ73	00001.000	EA		0946672-0004	PROGRAMMED ROM-SP#1 (U46)						
JJ73A					U46						
JJ74	00001.000	EA		0946672-0005	PROGRAMMED ROM-OPCAL (U48)						
JJ74A					U48						
JJ75	00001.000	EA		0946672-0006	PROGRAMMED ROM-UCAL* (U64)						
JJ75A					U64						
JJ76	00001.000	EA		0946672-0007	PROGRAMMED ROM-BUSB (U67)						
JJ76A					U67						
JJ77	00001.000	EA		0946672-0008	PROGRAMMED ROM-IO (U81)						
JJ77A					U81						
JJ78	00001.000	EA		0946672-0009	PROGRAMMED ROM-BECONS (U101)						
JJ78A					U101						
JJ79	00001.000	EA		0945246-0015	ROM, FORMAT LDC U65(PC) C10(MM) (S2d7N)						
JJ79A					U65						
DRAFTSMAN		DATE		DESIGN ENGINEER		TITLE					
						990/10 ARITHMETIC UNIT					
APP'D. MFG.		DATE		APP'D. PROJECT ENGINEER		DATE		RELEASED		PROJECT NO.	
										LM 0944930-0001	
										REV AF	

TEXAS INSTRUMENTS INCORPORATED		DATE 11/28/79		LIST OF MATERIAL		PAGE 4 of		PART NUMBER LM 0944930-0001		REV AF	
PART ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ80	00001.000	EA		0946673-0018	PROGRAMMED ROM-CR#1 (U1)						
JJ80A					U1						
JJ81	00001.000	EA		0946673-0017	PROGRAMMED ROM-CR#3 (U2)						
JJ81A					U2						
JJ82	00001.000	EA		0946673-0003	PROGRAMMED ROM-CR#17 (U13)						
JJ82A					U13						
JJ83	00001.000	EA		0946673-0016	PROGRAMMED ROM-CR#9 (U14)						
JJ83A					U14						
JJ84	00001.000	EA		0946673-0012	PROGRAMMED ROM, CR25 (U15)						
JJ84A					U15						
JJ85	00001.000	EA		0946673-0019	PROGRAMMED ROM-CR#9 (U32)						
JJ85A					U32						
JJ86	00001.000	EA		0946673-0015	PROGRAMMED ROM-CR#1 (U45)						
JJ86A					U45						
JJ87	00001.000	EA		0946673-0020	PROGRAMMED ROM-SCAL (U79)						
JJ87A					U79						
JJ88	00001.000	EA		0946673-0009	PROGRAMMED ROM-UCAL (U80)						
JJ88A					U80						
JJ91	00001.000	EA		0944930-5001	AUTG INSERTED PARTS FOR 944930-0001						
JJ92	00001.000	EA		0972946-0065	RES FIX 10K OHM 54 .25 W CARBON FILM	R0H - F-25					
DRAFTSMAN		DATE		DESIGN ENGINEER		TITLE					
						990/10 ARITHMETIC UNIT					
APP'D. MFG.		DATE		APP'D. PROJECT ENGINEER		DATE		RELEASED		PROJECT NO.	
										LM 0944930-0001	
										REV AF	

TEXAS INSTRUMENTS INCORPORATED		DATE 11/28/79		LIST OF MATERIAL		PAGE 5 of		PART NUMBER LM 0944930-0001		REV AF	
PRINT ITEM NUMBER	QUANTITY FOR ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ42A					R7						
JJ43	00002.000	EA		0972456-0002	PIN, .025 SQUARE	BEI - 75481-002					
JJ43A					E1 E2						
JJ44	00001.000	EA		0972487-0001	JUMPER PLUG, CONNECTOR BLACK						
JJ44A					P7						
JJ45	REF	EA		0945072-9901	990/10 MICROCODE						
DRAFTSMAN		DATE	CDR. DRAFTSMAN	DATE	DESIGN ENGINEER	DATE	TITLE	990/10 ARITHMETIC UNIT			
APPD. MFG.		DATE	APPD. PROJECT ENGINEER	DATE	RELEASED	DATE	PROJECT NO.	LM 0944930-0001			

TEXAS INSTRUMENTS INCORPORATED		DATE 11/28/79		LIST OF MATERIAL		PAGE 1 of		PART NUMBER LM 0944930-5001		REV AF	
PRINT ITEM NUMBER	QUANTITY FOR ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ01	00001.000	EA		0944931-0001	PWB-AU1, 990/10						
JJ17	00002.000	EA		0219402-7404	NETWORK SN74LS04N						
JJ17A					U29, U44						
JJ19	00002.000	EA		0972900-7400	NETWORK SN74LS00N	TI -SN74LS00N					
JJ19A					U25, U78						
JJ20	00002.000	EA		0972900-7402	NETWORK SN74LS02N						
JJ20A					U20, U49						
JJ23	00001.000	EA		0972749-0001	NETWORK, SN74LS08N						
JJ23A					U27						
JJ24	00001.000	EA		0972900-7410	NETWORK SN74LS10N						
JJ24A					U18						
JJ26	00002.000	EA		0219402-7420	NETWORK SN74LS20N						
JJ26A					U8, U42						
JJ28	00002.000	EA		0972813-0001	NETWORK-SN74LS21N						
JJ28A					U34, U117						
JJ29	00001.000	EA		0972814-0001	NETWORK-SN74LS27N						
JJ29A					U43						
JJ30	00001.000	EA		0972900-7432	NETWORK SN74LS32N	TI -SN74LS32N					
JJ30A					U57						
JJ31	00001.000	EA		0972822-0001	NETWORK-SN74LS37N						
DRAFTSMAN		DATE	CDR. DRAFTSMAN	DATE	DESIGN ENGINEER	DATE	TITLE	AUTO INSERTED PARTS FOR 944930-0001			
APPD. MFG.		DATE	APPD. PROJECT ENGINEER	DATE	RELEASED	DATE	PROJECT NO.	LM 0944930-5001			

TEXAS INSTRUMENTS INCORPORATED		DATE 11/28/79		LIST OF MATERIAL		PAGE 2 of		PART NUMBER LM 0944930-5001		REV AF	
PRINT ITEM NUMBER	QUANTITY FOR ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ31A					U17						
JJ33	00005.000	EA		0972783-0001	NETWORK, SN74LS42N BCD/DEC						
JJ33A					U3, U41, U63, U95, U96						
JJ34	00001.000	EA		0972900-7451	NETWORK SN74LS51N	TI -SN74LS51N					
JJ34A					U26						
JJ35	00001.000	EA		0240000-7452	NETWORK-SN74H52N						
JJ35A					U24						
JJ36	00002.000	EA		0972900-7474	NETWORK SN74LS74N						
JJ36A					U19, U28						
JJ37	00004.000	EA		J596116-0001	IC, SN74LS75N, 4-BIT BISTABLE LATCH	U01295-SN74LS75N					
JJ37A					U59, U75, U91, U108						
JJ38	00001.000	EA		0972815-0001	NETWORK-SN74LS85N						
JJ38A					U114						
JJ39	00001.000	EA		0972751-0001	NETWORK, SN74LS86N						
JJ39A					U36						
JJ40	00003.000	EA		0972900-7109	NETWORK SN74LS109N	TI -SN74LS109N					
JJ40A					U33, U35, U54						
JJ41	00001.000	EA		0219402-7114	NETWORK SN74LS114N						
JJ41A					U62						
JJ42	00001.000	EA		J222222-7125	NETWORK SN74LS25N						
DRAFTSMAN		DATE	CDR. DRAFTSMAN	DATE	DESIGN ENGINEER	DATE	TITLE	AUTO INSERTED PARTS FOR 944930-0001			
APPD. MFG.		DATE	APPD. PROJECT ENGINEER	DATE	RELEASED	DATE	PROJECT NO.	LM 0944930-5001			

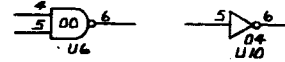
TEXAS INSTRUMENTS INCORPORATED		DATE 11/28/79		LIST OF MATERIAL		PAGE 3 of		PART NUMBER LM 0944930-5001		REV AF	
PRINT ITEM NUMBER	QUANTITY FOR ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ42A					U47						
JJ44	00002.000	EA		0801383-0001	NETWORK SN74LS151N						
JJ44A					U9, U10						
JJ45	00010.000	EA		0972900-7153	NETWORK SN74LS153N	TI -SN74LS153N					
JJ45A					U39, U40, U55, U56, U71, U72, U87						
JJ45B					U88, U104, U105						
JJ46	00002.000	EA		0972886-0001	NETWORK-QUAD MULTIPLEXER, SN74LS157N						
JJ46A					U38, U74						
JJ47	00005.000	EA		J222222-7163	NETWORK SN74163N						
JJ47A					U61, U77, U93, U110, U116						
JJ48	00002.000	EA		J222222-7173	NETWORK SN74173N						
JJ48A					U113, U115						
JJ49	00001.000	EA		0972900-7174	NETWORK SN74LS174N						
JJ49A					U23						
JJ50	00005.000	EA		0972900-7175	NETWORK SN74LS175N						
JJ50A					U22, U50, U66, U82, U98						
JJ51	00001.000	EA		0972811-0001	NETWORK-SN74LS280N						
JJ51A					U58						
JJ53	00001.000	EA		J222222-7182	NETWORK SN74182N						
JJ53A					U107						
DRAFTSMAN		DATE	CDR. DRAFTSMAN	DATE	DESIGN ENGINEER	DATE	TITLE	AUTO INSERTED PARTS FOR 944930-0001			
APPD. MFG.		DATE	APPD. PROJECT ENGINEER	DATE	RELEASED	DATE	PROJECT NO.	LM 0944930-5001			

PRINT ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF MEAS	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER
JJ34	00034.000	EA		J972900-7194	NETWORK SN74LS194N	TI -SN74LS194N
JJ34A					U54,U70,U86,U103	
JJ35	00004.000	EA		J972008-0001	NETWORK SN74LS251N	
JJ35A					U4,U5,U6,U7	
JJ36	00002.000	EA		J972900-7253	NETWORK SN74LS253N	TI -SN74LS253N
JJ36A					U83,U99	
JJ37	00007.000	EA		0490130-0001	IC,SN74LS257N,DATA SELECTORS/MULTIPLEXER	TI -SN74LS257N
JJ37A					U52,U53,U68,U69,U84,U85,	
JJ37B					U102	
JJ61	00001.000	EA		J972946-0047	RES FIX 180 OHM 5 4 .25 W CARBON FILM	ROH - R-25
JJ61A					R4	
JJ62	00001.000	EA		J972946-0051	RES FIX 270 OHM 5 4 .25 W CARBON FILM	ROH - R-25
JJ62A					R5	
JJ63	00001.000	EA		J972946-0055	RES FIX 390 OHM 5 4 .25 W CARBON FILM	ROH - R-25
JJ63A					R6	
JJ65	00002.000	EA		J972946-0065	RES FIX 1.0K OHM 54 .25 W CARBON FILM	ROH - R-25
JJ65A					R1,R2	
JJ66	00071.000	EA		J972763-0021	CAP.,FIXED,AXIAL LEAD,.047 UF,+80%,-20%	
JJ66A					L4 THRU C16,C18 THRU C25	
JJ66B					C27 THRU C36, C38 THRU C72	
DRAFTSMAN DATE CTD. DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTED PARTS FOR 944930-0001						
APP. ENG. DATE APP. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER LM 0944930-5001 REV AF						

PRINT ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF MEAS	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER
JJ66C					L74,C76 THRU L79	
JJ83	00001.000	EA		0222222-7153	NETWORK SN74153N	-SN74153N
JJ83A					U37	
JJ90	00001.000	EA		0222222-7157	NETWORK SN74157N	
JJ90A					U90	
DRAFTSMAN DATE CTD. DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTED PARTS FOR 944930-0001						
APP. ENG. DATE APP. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER LM 0944930-5001 REV AF						

AU1 Logic Diagram

- NOTES: UNLESS OTHERWISE SPECIFIED:
1. ALL DEVICE TYPES ARE PREFIXED WITH SN74
 2. GROUND IS APPLIED TO PIN 7 OF ALL 14-PIN IC'S AND PIN 8 OF ALL 16-PIN IC'S EXCEPT RESISTOR PACKAGES
 3. VCC IS APPLIED TO PIN 14 OF ALL 14-PIN IC'S AND PIN 16 OF ALL 16-PIN IC'S
 4. DEVICE TYPE, PIN NUMBERS, AND REFERENCE DESIGNATOR OF IC IS SHOWN AS FOLLOWS:



00 AND 04 = DEVICE TYPE
 9, 5, AND 6 = PIN NUMBERS
 U6 AND U10 = REFERENCE DESIGNATOR

5. ALL RESISTORS 1/4 WATT, 5%

REVISIONS			
REV	DATE	DESCRIPTION	APPROVED
A	1-10-74	CN408777(C) A. Chao	J. R. ...
B	2/11/74	CN422544(D) R. ...	J. R. ...
C	10-9-74	CN422544(D) R. ...	J. R. ...
D	12-7-74	CN420434(C) C. ...	J. R. ...
E	7-5-78	CN429589(D) 9-...	J. R. ...
F	9-6-79	CN450204(E) R. ...	J. R. ...
G	3-31-80	CN473240(E) R. GUIDRY	J. R. ...

SPARES

TYPE	LOCATION	PINS
LS00	U25	8, 9, 10
LS02	U49	4, 5, 6
SD4	U44	5, 6, 10, 11
LS08	U27	8, 9, 10
LS27	U43	1, 2, 12, 13
LS51	U26	1, 2, 3, 10, 11, 12, 13
SL14	U62	8, 9, 10, 11, 12
LS5	U47	8, 9, 10, 11, 12, 13
LS7	U23	16, 17

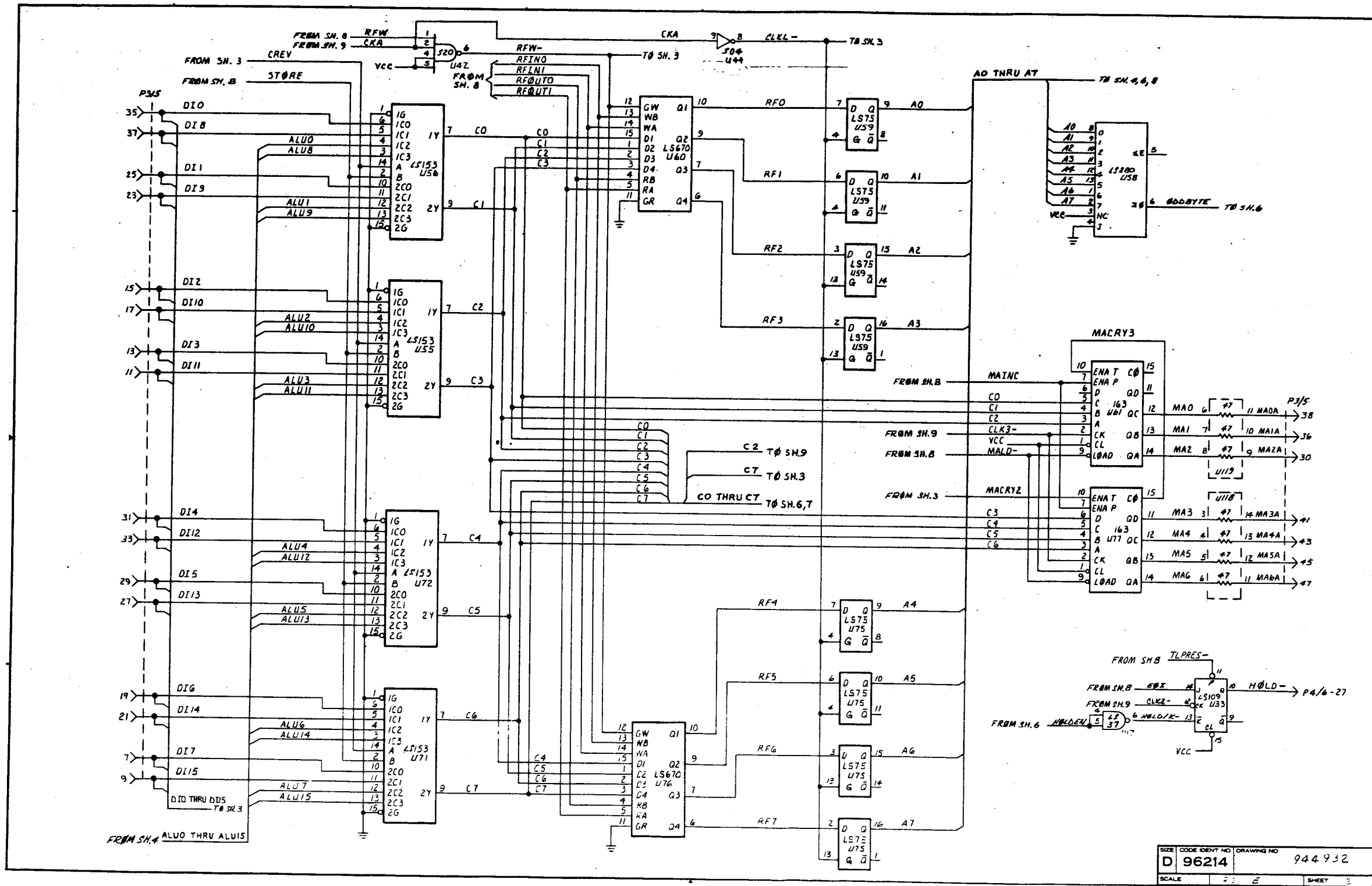
INDEX OF SIGNALS IN LOGIC DIAGRAM 944932									
SIGNAL	SH	SIGNAL	SH	SIGNAL	SH	SIGNAL	SH	SIGNAL	SH
ABALO-THRU ABAL6-	4	DEQ 2	7	LD MAP-	8	RAO THRU RA7	8	XBP00NE	8
AEQB	4	DIO THRU DI15	2	LD MAPID-	7	RESET-	8	XBP00THER	8
AEQBLS	4	DST 0 THRU DST 8	6	LDSFSET-	8	RFO THRU RF7	2	XO THRU X2	4
AEQBMS	4	ENA- THRU ENF-	5	LDSFO	8	RFB THRU RF15	3	XOA, XIA	4
AGT	6	ENCREU	8	LEVO THRU LEV3	5	RFNO, RFNI	8	XOPLLG	4
ALCAMP	4	ENINC	8	LOAD	9	RFOUTO, RFOUT1	8	YO, Y1	6
ALUO THRU ALU15	4	ENJMP	8	LOAD 0/6	9	RFW	8	YOA, YIA	4
ALUCO THRU ALUC4	8	ENMPYTS	8	LOAD 7/8	6	SAVMAIS-	8	120HZMSK	8
ALUCIA THRU ALUC4A	4	ENTRAPOUT-	5	LOADFFCLR-	8	SCALEN-	7		
ALUSPLIT	4	ENXOP-	8	LOADFFO	9	SCCLR-	8		
ALUSPLIT-	6	ENXOPSTB-	8	LSBMSK	3	SCEQ7	9		
ARITH	6	EPI	8	LSOV	2	SCEQF	9		
ARITH/ADD	6	FAULT-	8	MAO THRU MAG	2	SCINC	8		
AO THRU A7	2	FMTIBYTE	7	MA7 THRU MA14	3	SCLO	8		
AS THRU AIS	3	FORCEOUT-	8	MAIS CLK-	3	SC1, SC2, SC3	9		
BO THRU B15	5	FORCEREV-	6	MAIS SAV	3	SDCRYO	8		
BUS B0 THRU BUS B9	8	HALT	9	MACRY 1	3	SDCI	8		
BUS B9A	5	HOLD-	2	MACRY 2	3	SDCRU 1	8		
BYTE	7	HOLDEN	2	MACRY 3	3	SD1 THRU SD15	4		
CARRY IN	4	IDEN	8	MAINL	3	SDRTIN	4		
CARRY IN- CREV	8	IDEN-	7	MALD-	8	SEQZ	7		
CRUBITINA	3	IDLE-	8	MAP003, 004, 0010, 0013	9	SPECIALO THRU SPECIAL4	8		
CKA	9	IFLAG-	9	MAP1097, 1099	9	SPLITA	4		
CLKL-	2	ILDFSET-	8	MAP 2-	9	STC0 THRU STC4	8		
CLKI-THRU CLK3-	9	INTCRU-	8	MAP2CLR-	8	STPRE	8		
COMP	4	INTPRES	7	MASKLD-	6	STRECCLL	8		
COUT	4	IRLD	8	MCVW	7	STO THRU ST8	6		
COUTDLY	4	IRLSLD-	8	MPYTS	8	ST7/8 CLR	6		
CRU878	4	IRO THRU IR15	7	MQCO	8	ST12 THRU ST15	9		
CYREQ	8	IRO/1	7	MQCI	8	TEST	8		
CO THRU C7	2	IR 0/78	7	MQ0, MQ7, MQ8	5	SHLSH	8		
CB THRU C15	3	IR 0A	7	ODDBYTE	2	TEST 0	8		
CGA	6	IR CLK-	7	OPCALEN-	7	TEST 1 THRU TEST4	8		
DCALEN	7	IRLSCLK-	7	PINT-	9	TLPRES-	8		
DECO-DEC 3	8	IRYO THRU IRX3	7	PRIORITY	9	TSLQZ	7		
DEQ 8	7	JUMP-	6	PR/INT B0	9	TSTENG-THRU TSTEN3-	9		
		JUMPO THRU JUMP7	7	PRIVOPSET-	8	WRAP 2	8		
		LDFSET-	8	PWRLQAD	8	XBPABORT	8		
		LDFFO	8	RACN	8				
		LDFFO	9	RALQAD-	8				

REV	STATUS	REV	6	E	E	G	A	E	A	E	G	E
OF SHEETS	SHEET	1	2	3	4	5	6	7	8	9	10	

QTY	REQD	ITEM NO	CODE	IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROCUREMENT SPECIFICATION
UNLESS OTHERWISE SPECIFIED							
REMOVE ALL BURRS AND SHARP EDGES							
CONCENTRICITY MACHINED DIAMETERS .010 PIR							
DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING							
IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY							
INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100							
HOLE TOLERANCE							
.013	THRU	.001	.005	THRU	.001	.001	
.125	THRU	.001	.001	THRU	.001	.001	
.501	THRU	.001	.001	THRU	.001	.001	
.750	THRU	.001	.001	THRU	.001	.001	
APPLICATION							
UNLESS OTHERWISE SPECIFIED							
DIMENSIONS ARE IN INCHES							
TOLERANCES							
ANGLES 21°							
3 PLACE DECIMALS ±.010							
2 PLACE DECIMALS ±.02							
MATERIAL							
PARTS LIST							
DATE: 10/27/75							
CHK: S. LEE 5/17/76							
ENGR: S. LEE 5/17/76							
QA: S. LEE 5/17/76							
APPRO: S. LEE 5/17/76							
CONTR NO: S. LEE 5/17/76							
DESIGN ACTIVITY RELEASE: S. LEE 5/17/76							
SIZE: CODE IDENT NO: DRAWING NO: D 96214 944932							
SCALE: 1:1 SHEET 1 OF 10							

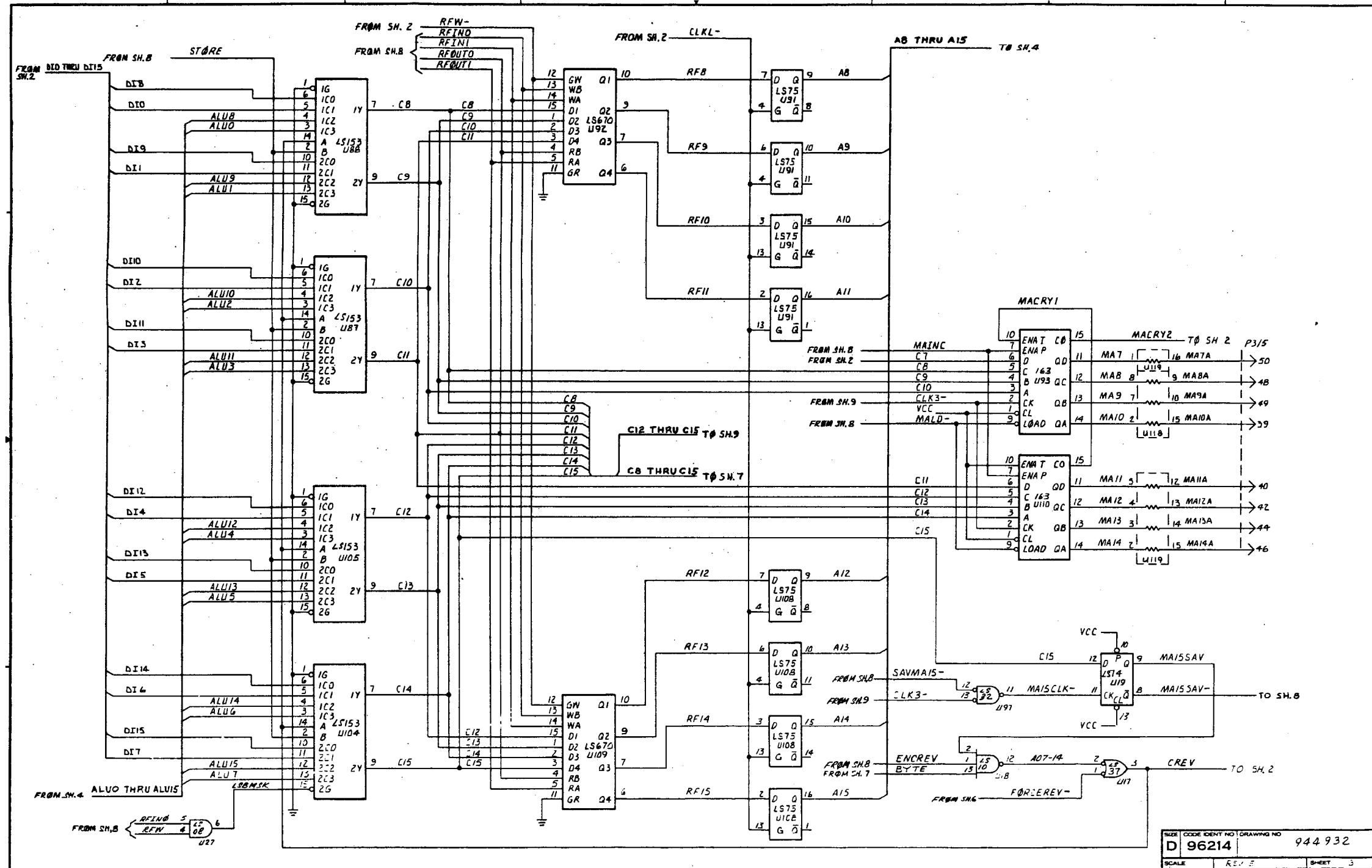
TEXAS INSTRUMENTS
 INCORPORATED
 Equipment Group Dallas, Texas

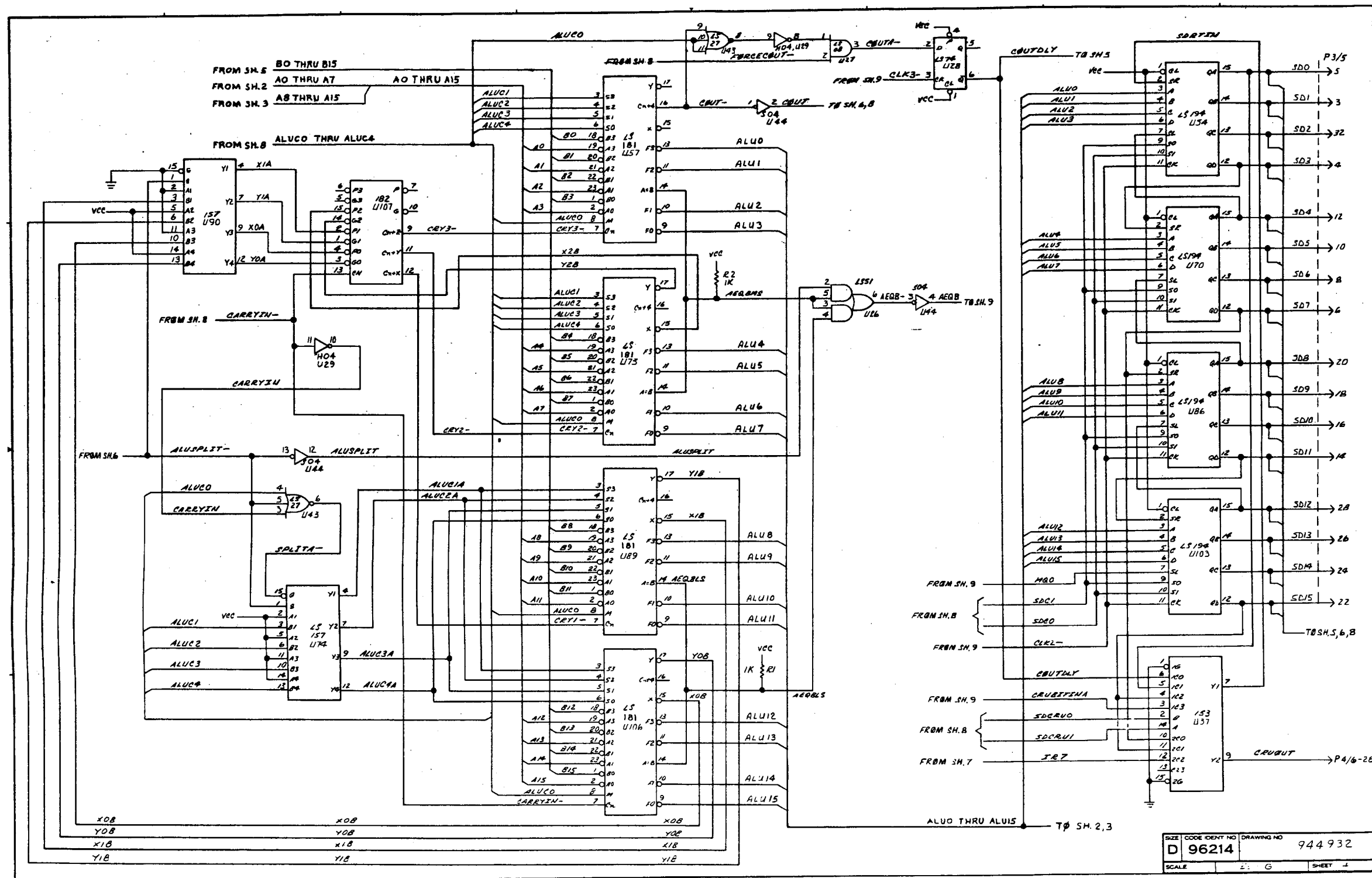
LOGIC DIAGRAM -
 AU #1, 990/10



SIZE	CODE IDENT NO	DRAWING NO
D	96214	944932
SCALE		SHEET

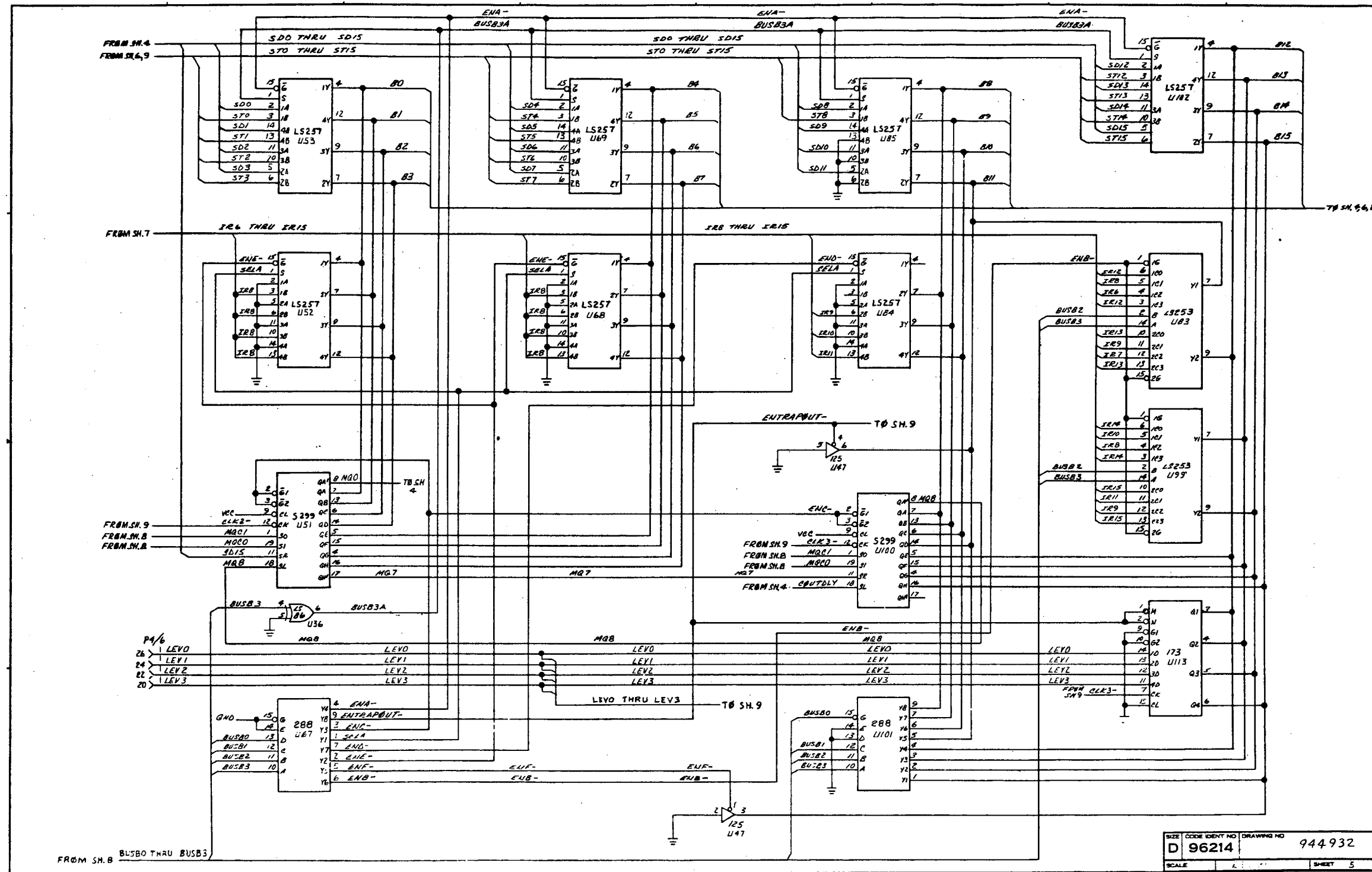
AU1 Logic Diagram

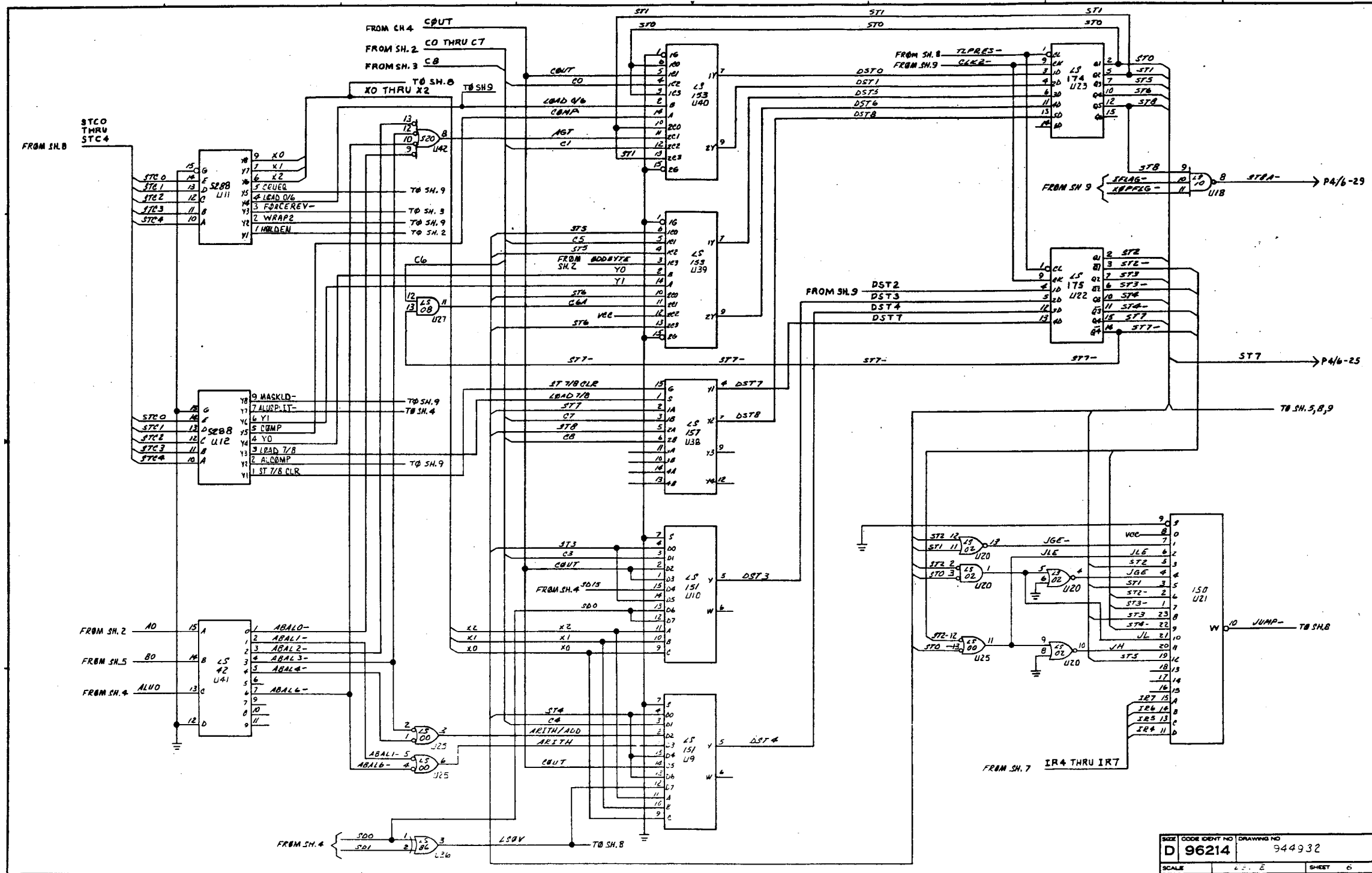




SIZE	CODE	IDENT NO	DRAWING NO
D	96214		944932
SCALE	1:1	G	SHEET 4

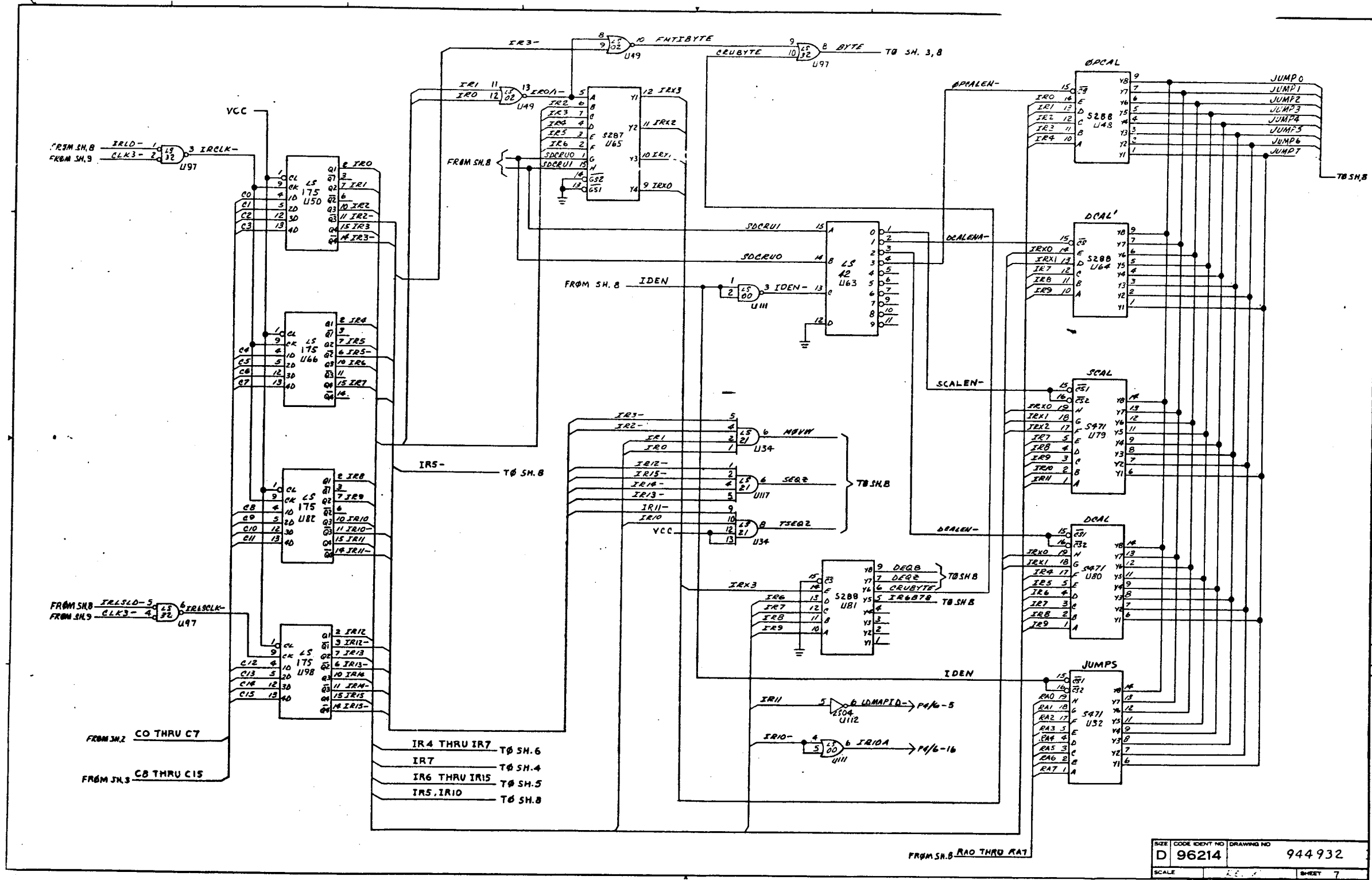
AU1 Logic Diagram



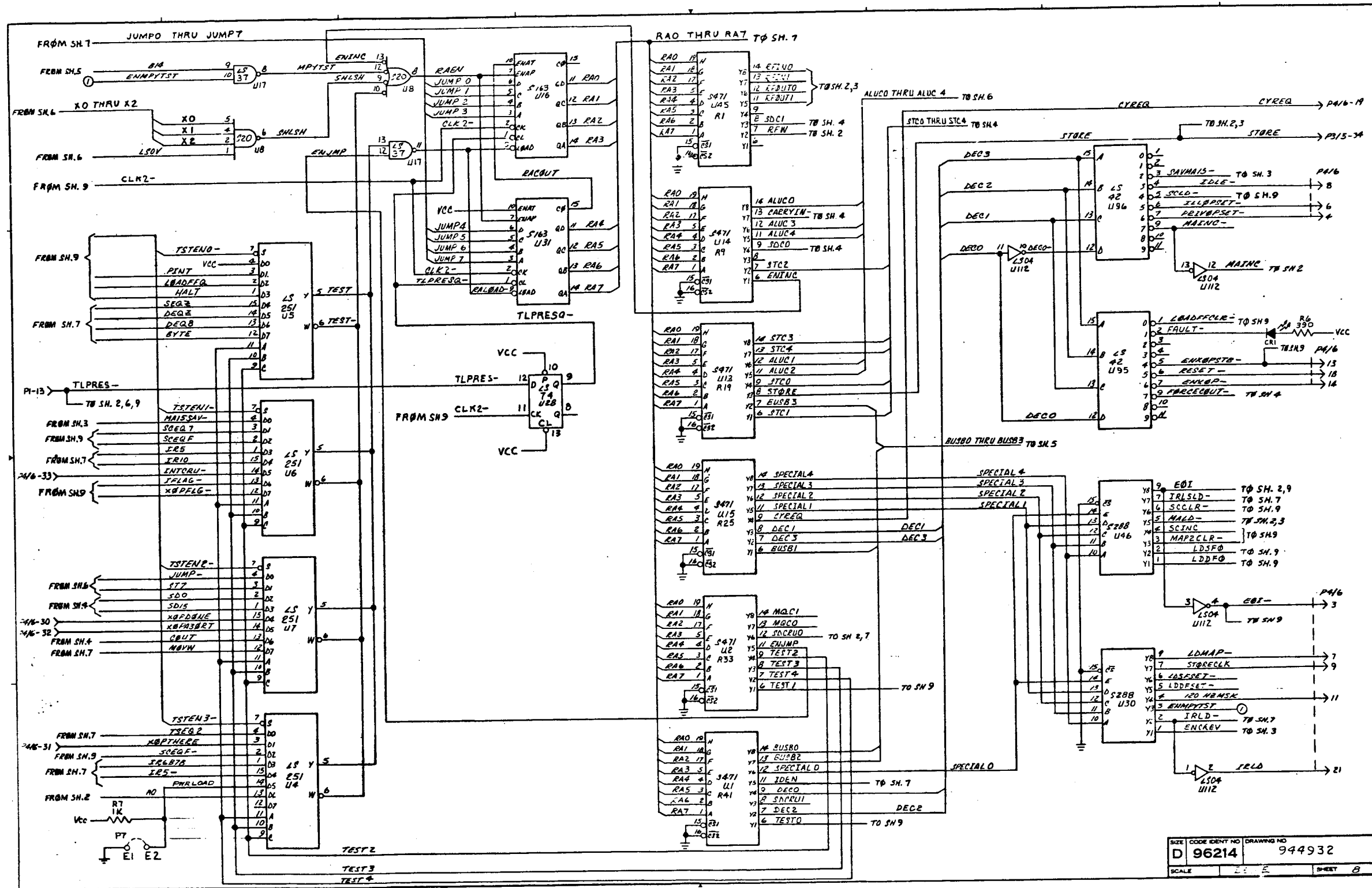


SIZE	CODE IDENT NO	DRAWING NO
D	96214	944932
SCALE	1:1	SHEET 6

AU1 Logic Diagram



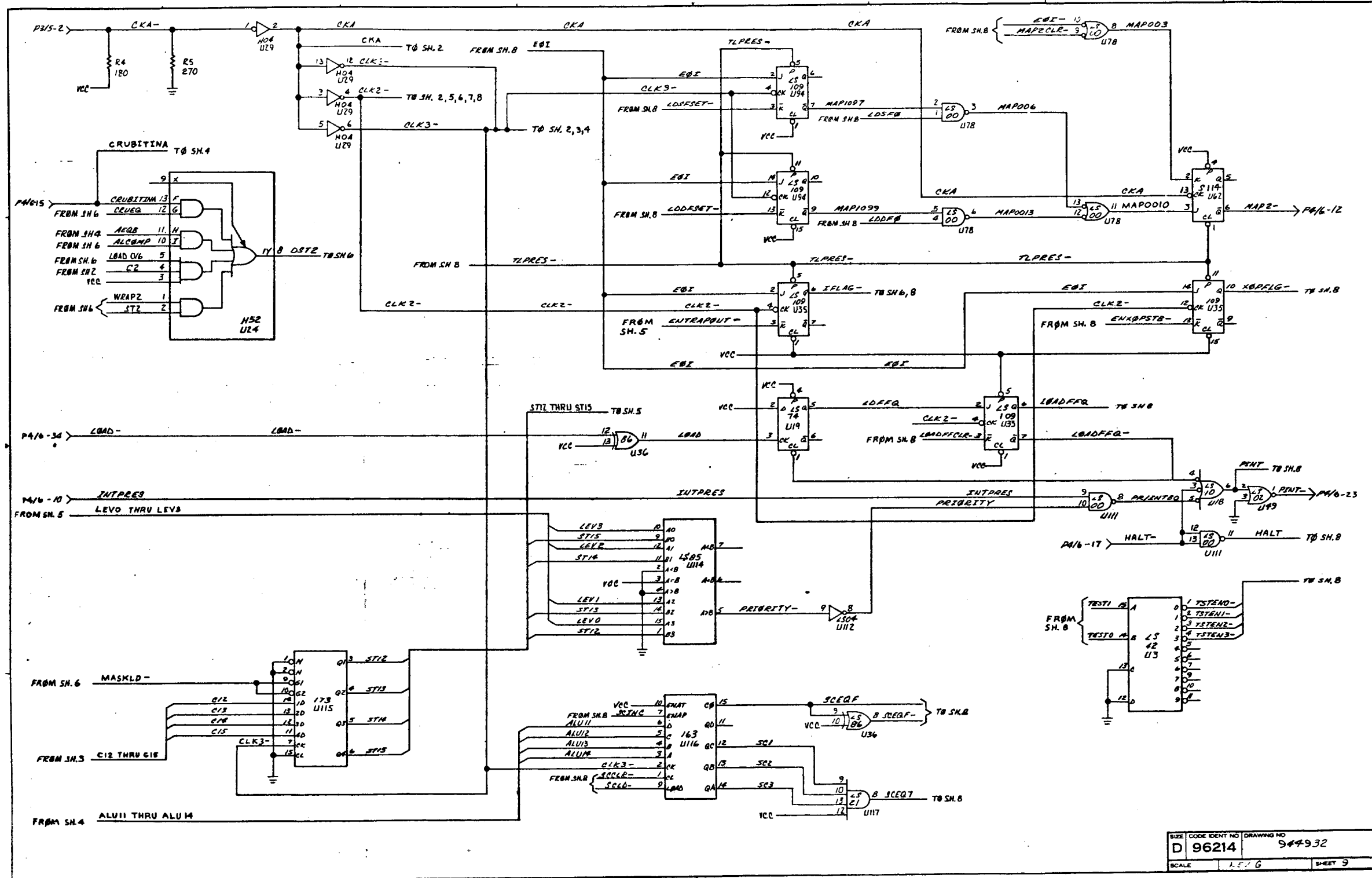
SIZE	CODE IDENT NO	DRAWING NO
D	96214	944932
SCALE		SHEET 7



SIZE	CODE IDENT NO	DRAWING NO
D	96214	944932
SCALE	1:1	SHEET 8

AU1 Logic Diagram

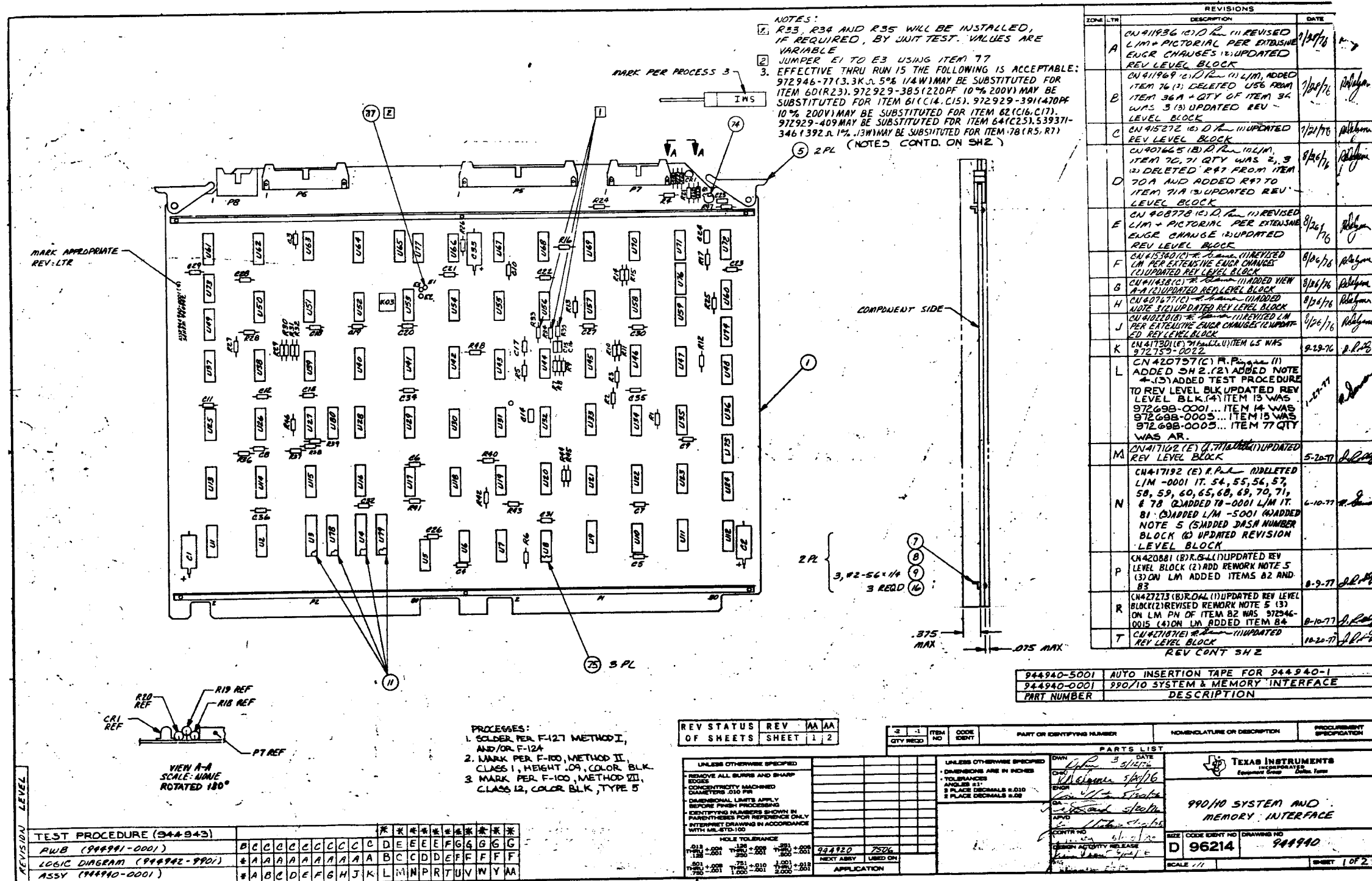
AU1 Logic Diagram



SIZE	CODE IDENT NO	DRAWING NO
D	96214	944932
SCALE	1:1	SHEET 3

REF.	TYPE	PAGE(S)	REF.	TYPE	PAGE(S)
U1	S471	8	U64	S288	7
U2	S471	8	U65	S287	7
U3	LS42	9	U66	LS175	7
U4	LS251	8	U67	S288	5
U5	LS251	8	U68	LS257	5
U6	LS251	8	U69	LS257	5
U7	LS251	8	U70	LS194	4
U8	S20	8	U71	LS153	2
U9	LS151	6	U72	LS153	2
U10	LS151	6	U73	LS181	4
U11	S288	6	U74	LS157	4
U12	S288	6	U75	LS75	2
U13	S471	8	U76	LS670	2
U14	S471	8	U77	163	2
U15	S471	8	U78	LS00	9
U16	S163	8	U79	S471	7
U17	LS37	2,3,8	U80	S471	7
U18	LS10	3,6,9	U81	S288	7
U19	LS74	3,9	U82	LS175	7
U20	LS02	6	U83	LS253	5
U21	150	6	U84	LS257	5
U22	LS174	6	U85	LS257	5
U23	LS174	6	U86	LS194	4
U24	H52	9	U87	LS153	3
U25	LS00	6	U88	LS153	3
U26	LS51	4	U89	LS181	4
U27	LS08	3,4,6	U90	LS157	4
U28	LS74	4,8	U91	LS75	3
U29	H04	4,9	U92	LS670	3
U30	S288	8	U93	163	3
U31	S163	8	U94	LS109	9
U32	S471	7	U95	LS42	8
U33	LS109	2,9	U96	LS42	8
U34	LS21	7	U97	LS32	3,7
U35	LS109	9	U98	LS175	7
U36	LS86	5,6,9	U99	LS253	5
U37	153	4	U100	S299	5
U38	LS157	6	U101	S288	5
U39	LS153	6	U102	LS257	5
U40	LS153	6	U103	LS194	4
U41	LS42	6	U104	LS153	3
U42	S20	2,6	U105	LS153	3
U43	LS27	4	U106	LS181	4
U44	S04	2,4	U107	J02	4
U45	S471	8	U108	LS75	3
U46	S288	8	U109	LS670	3
U47	125	5	U110	163	3
U48	S288	7	U111	LS00	7,9
U49	LS02	7,9	U112	LS04	7,8,9
U50	LS175	7	U113	173	5
U51	S299	5	U114	LS85	9
U52	LS257	5	U115	173	9
U53	LS257	5	U116	163	9
U54	LS194	4	U117	LS21	7,9
U55	LS153	2	U118	47a	2,3
U56	LS153	2	U119	47a	2,3
U57	LS181	4	R1	1K _a	4
U58	LS280	2	R2	1K _a	4
U59	LS75	2	R4	180 _a	9
U60	LS670	2	R5	270 _a	9
U61	163	2	R6	390	8
U62	S114	9	CR1	LED	8
U63	LS42	7	R7	1K _a	8

SIZE	CODE IDENT NO	DRAWING NO
D	96214	944932
SCALE	REF	SHEET 10



NOTES:
 1. R33, R34 AND R35 WILL BE INSTALLED, IF REQUIRED, BY UNIT TEST. VALUES ARE VARIABLE
 2. JUMPER E1 TO E3 USING ITEM 77
 3. EFFECTIVE THRU RUN 15 THE FOLLOWING IS ACCEPTABLE:
 972946-77(3.3K ± 5% 1/4W) MAY BE SUBSTITUTED FOR ITEM 60(R23). 972929-385(220PF 10% 200V) MAY BE SUBSTITUTED FOR ITEM 61(C14, C15). 972929-391(470PF 10% 200V) MAY BE SUBSTITUTED FOR ITEM 62(C16, C17). 972929-409 MAY BE SUBSTITUTED FOR ITEM 64(C25). 539371-346(392 Ω 1% 1/3W) MAY BE SUBSTITUTED FOR ITEM 78(R5, R7)
 5 2 PL (NOTED CONTD. ON SH2)

REVISIONS		
ZONE	TR	DATE
A	1	1/24/76
B	1	1/24/76
C	1	1/24/76
D	1	8/26/76
E	1	8/26/76
F	1	8/26/76
G	1	8/26/76
H	1	8/26/76
J	1	8/26/76
K	1	9-29-76
L	1	1-27-77
M	1	5-20-77
N	1	6-10-77
P	1	8-9-77
R	1	8-10-77
T	1	10-20-77

944940-5001	AUTO INSERTION TAPE FOR 944940-1
944940-0001	990/10 SYSTEM & MEMORY INTERFACE
PART NUMBER	DESCRIPTION

REV STATUS	REV	AA	AA
OF SHEETS	SHEET	1	2

QTY	ITEM NO	CODE	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROUREMENT SPECIFICATION
-----	---------	------	----------------------------	-----------------------------	--------------------------

UNLESS OTHERWISE SPECIFIED

REMOVE ALL BURRS AND SHARP EDGES
 CONCENTRICITY MACHINED DIAMETERS .010 PPT
 DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING
 IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY
 INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100

HOLE TOLERANCE

Ø18 +.004	Ø18 +.001	Ø18 +.001	Ø18 +.001
Ø18 -.001	Ø18 -.001	Ø18 -.001	Ø18 -.001
Ø18 ±.001	Ø18 ±.001	Ø18 ±.001	Ø18 ±.001
Ø18 ±.001	Ø18 ±.001	Ø18 ±.001	Ø18 ±.001

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 ANGLES ±1°
 3 PLACE DECIMALS ±.010
 2 PLACE DECIMALS ±.005

DATE: 3/15/76
 DRAWN: [Signature]
 CHECKED: [Signature]
 APPROVED: [Signature]

TEXAS INSTRUMENTS
 Equipment Group Dallas, Texas

990/10 SYSTEM AND MEMORY INTERFACE

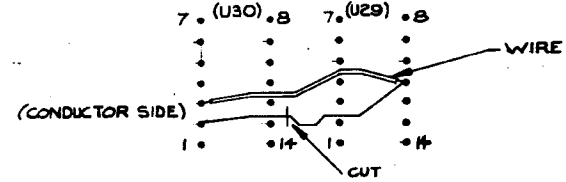
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D 96214 944940

SCALE: 1/1 SHEET 1 OF 2

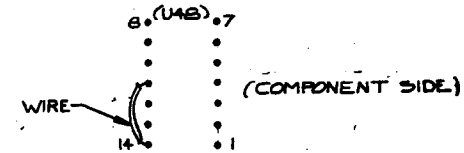
NOTES: CONT

4. REWORK PROCEDURE FOR PWB 944941 REV(C)

A. CUT ETCH BETWEEN U29-11 & U30-2. ADD WIRE CONDUCTOR SIDE (30 GA) INSULATED BETWEEN U29-11 & U30-3



B. ADD WIRE ON FRONT OF BOARD (COMPONENT SIDE) FROM U4B-11 TO U4B-14

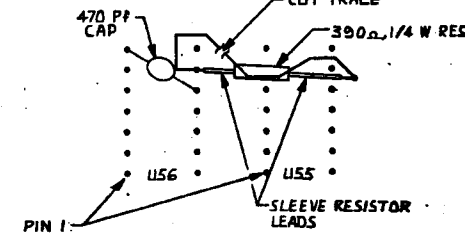


5. REWORK FOR PWB 944941 REV B THRU F.

A. ON CIRCUIT SIDE OF BOARD CUT TRACE CONNECTING U56 PIN 9 TO FEED THRU ADJACENT TO U55 PIN 9 AND 10.

B. INSTALL R49 (390Ω 1/4 W, 5%) ON CIRCUIT SIDE BETWEEN U56 PIN 9 AND ABOVE FEED THRU ADJACENT TO U55 PINS 9 AND 10. SLEEVE EXPOSED RESISTOR LEADS USING ITEM 84.

C. INSTALL C37 (470 pf) ON CIRCUIT SIDE BETWEEN U56 PIN 7 AND U56 PIN 10.



6. REWORK FOR 944941 REV B THRU F PWB:

A. CUT I.C. PINS OF U66-4, 5, 6 AND 9. ISOLATE CUT PINS FROM ETCH.

B. ADD THE FOLLOWING WIRES (ITEM 77) TO ASSEMBLY:

- U59-8 TO U66-10 (I.C. PIN)
- U59-9 TO U57-3
- U59-10 TO U21-8
- U68-9 TO U66-9 (I.C. PIN)

REVISIONS				
REV	DATE	DESCRIPTION	DATE	APPROVED
U	4-27-78	CN441077 (B) REV (C) (1) REV LEVEL OF PWB WAS E (2) UPDATED REV LEVEL BLK SH 2 (3) ADDED NOTE 6 (4) NOTE 5 READ -944941 REV B, C, D AND E		<i>[Signature]</i>
V	1-24-79	CN 430758 (C) & B & D (1) REVERSED LMA PER EXTENSIVE ENGR. CHANGES (2) UPDATED REV LVL BLK		<i>[Signature]</i>
W	3-6-79	CN450507 (E) REV (F) (1) EN C-5 DELETE C34 (2) ENBS REF BALLOON WAS 616 (3) UPDATED REV LEVEL BLOCK		<i>[Signature]</i>
Y	sec. 79	CN450533 (D) REV (E) (1) ADDED R33, R34, & R35 BETWEEN U44 & U56, ZONE C-5 (2) UPDATED REV LEVEL BLOCK		<i>[Signature]</i>
AA	2-11-80	CN456124 (C) REV (D) (1) ON -0001 LM, ADDED ITEMS 18, 21, 34, 36, 49 & 50 (2) UPDATED REV LEVEL BLOCK		<i>[Signature]</i>

ITER	CODE IDENT NO	DRAWING NO
D	96214	944940
SCALE NONE	REV AA	SHEET 2

TEXAS INSTRUMENTS INCORPORATED		DATE 02/05/80		LIST OF MATERIAL		PAGE 1 of		PART NUMBER LM 0944940-0001		REV AA		
QTY	UNIT	DESCRIPTION	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER							
0002	REF	EA	0944942-9901	LOGIC DIAGRAM-AU2, W/O MAPPING								
0003	REF	EA	0944943-9901	TEST PROCEDURE-AU2, W/O MAPPING								
0004	REF	EA	0944921-9901	SPECIFICATION, CPU, 990/10								
0005	00002.000	EA	0533844-0001	EJECTOR, NYLON, NON-LOCKING, PWB								
0007	00002.000	EA	0945239-0001	BRACKET-STIFFENER, PWB, 14IN								
0008	00002.000	EA	0944954-0001	INSULATOR, PWB, 14IN								
0009	00006.000	EA	0972684-0002	SCREW, THD FRNG, HEX WSHR HD, 2-56X1/4 LG								
0010	00001.000	EA	2210188-0001	SOCKET, LOW PROFILE, DIP, 3 CONT, 8 PINS	003612-DIL88P-108							
0010A				K03								
0011	00004.000	EA	2210188-0005	SOCKET, LOW PROFILE, DIP, 20 PINS	003612-DILB20P-108							
0011A				XU3 XU4 XU78 XU79								
0012	00001.000	EA	0972706-0001	CONNECTOR, PWB, 10P, RT. A, SDRTL, HDR, FLTCBL	015912-609-1002H							
0012A				P8								
0013	00001.000	EA	0972137-0001	CONNECTOR, PC-HEADER 20 CONTACT	BEI - 65483-001							
0013A				P7								
0014	00001.000	EA	0972137-0003	CONNECTOR ONE AMP 500VDC 34 CONTACT	076381-3431-1002							
0014A				P6								
0015	00001.000	EA	0972137-0005	CONNECTOR, PC 50 PIN	BEI - 65483-005							
0015A				P5								
0016	00006.000	EA	0418730-0101	WASHER, NYLON								
DRAFTSMAN		DATE	CED DRAFTSMAN	DATE	DESIGN ENGINEER	DATE	TITLE					
APPROV		DATE	APPROV PROJECT ENGINEER	DATE	RELEASED	DATE	PROJECT NO.					
							7506					
								990/10 SYSTEM & MEMORY INTERFACE				
								PART NUMBER LM 0944940-0001				
								REV AA				

TEXAS INSTRUMENTS INCORPORATED		DATE 02/05/80		LIST OF MATERIAL		PAGE 2 of		PART NUMBER LM 0944940-0001		REV AA		
QTY	UNIT	DESCRIPTION	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER							
0018	00001.000	EA	0972900-7400	NETWORK SN74LS00N	TI -SN74LS00N							
0018A				U19								
0021	00001.000	EA	0972900-7404	NETWORK SN74LS04N								
0021A				U73								
0028	00001.000	EA	0972784-0001	NETWORK SN74LS13N								
0028A				U71								
0034	00001.000	EA	0972900-7430	NETWORK SN74LS30N	TI -SN74LS30N							
0034A				U17								
0036	00001.000	EA	0972782-0001	NETWORK SN74LS132N	TI -SN74LS132N							
0036A				U8								
0049	00001.000	EA	0972787-0003	NETWORK SN74LS367N								
0049A				U5								
0050	00001.000	EA	0972787-0004	NETWORK SN74LS368N								
0050A				U25								
0061	00001.000	EA	0539679-0004	CAPACITOR, 220 PF 28 100V FX CER DIE	095275-VK20BA221G							
0061A				C15								
0062	00002.000	EA	0539679-0008	CAPACITOR, 470 PF 28 100V FX CER DIE	095275-VK20BA471G							
0062A				C16 C17								
0063	00001.000	EA	0539679-0003	CAPACITOR, 680 PF 28 100V FX CER DIE	095275-VK20BA681G							
0063A				C26								
DRAFTSMAN		DATE	CED DRAFTSMAN	DATE	DESIGN ENGINEER	DATE	TITLE					
APPROV		DATE	APPROV PROJECT ENGINEER	DATE	RELEASED	DATE	PROJECT NO.					
								990/10 SYSTEM & MEMORY INTERFACE				
								PART NUMBER LM 0944940-0001				
								REV AA				

TEXAS INSTRUMENTS INCORPORATED		DATE 02/05/80		LIST OF MATERIAL		PAGE 3 of		PART NUMBER LM 0944940-0001		REV AA		
QTY	UNIT	DESCRIPTION	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER							
0064	00001.000	EA	0972929-0409	CAP FIX CERAMIC 4700 PF 10 X 100 V	QPL -H39014/01-1409							
0064A				C25								
0066	00002.000	EA	0972924-0016	CAP FIX TANT SOLID 100 MFD 10 X 20 VOLT	QPL -H39003/1-2301							
0066A				C1 C2								
0067	00001.000	EA	0972948-0002	TRANSISTOR, 2N2222A NPN GEN PURP SW TO-18	TI - 2N2222A							
0067A				Q1								
0072	00001.000	EA	0972924-0006	CAP FIX TANT SOLID 39 MFD 10 X 10 VOLT	QPL -H39003/1-2259							
0072A				C33								
0073	00001.000	EA	0226609-0001	DIODE, VISIBLE LIGHT EMITTING								
0073A				CR1								
0074	00001.000	EA	0972507-0001	INSULATOR DISC: TO-18	THR --7717-220							
0075	00003.000	EA	2210188-0002	SOCKET, LOW PROFILE, DIP, 14 PINS	003612-DIL814P-108							
0075A				XU8 XU56 XU71								
0076	00001.000	EA	0222222-7132	NETWORK SN74LS32N								
0076A				U56								
0077	00000.050	FT	0411408-0030	WIRE BARE TINNED COPPER 30 AWG ROUND BUS 1MP	- 30-630							
0080	00001.000	EA	0539679-0006	CAPACITOR, 330 PF 28 100V FX CER DIE	095275-VK20BA331G							
0080A				C14								
0081	00001.000	EA	0944940-5001	AUTO INSERTION TAPE FOR 944940-1								
0082	00001.000	EA	0972944-0055	RES FIX 390 OHM 1/2 W CARBON FILM	RQH - R-25							
DRAFTSMAN		DATE	CED DRAFTSMAN	DATE	DESIGN ENGINEER	DATE	TITLE					
APPROV		DATE	APPROV PROJECT ENGINEER	DATE	RELEASED	DATE	PROJECT NO.					
								990/10 SYSTEM & MEMORY INTERFACE				
								PART NUMBER LM 0944940-0001				
								REV AA				

TEXAS INSTRUMENTS INCORPORATED		DATE 02/05/80		LIST OF MATERIAL		PAGE 4 of		PART NUMBER LM 0944940-0001		REV AA		
QTY	UNIT	DESCRIPTION	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER							
0082A				R49								
0083	00001.000	EA	0972757-0009	CAP FIX CER 470PF 10X 50V								
0083A				C37								
0084	00000.100	FT	0410499-0006	INSULATION SLEEVING, TEFLON #22 NATURAL	QPL -81349							
DRAFTSMAN		DATE	CED DRAFTSMAN	DATE	DESIGN ENGINEER	DATE	TITLE					
APPROV		DATE	APPROV PROJECT ENGINEER	DATE	RELEASED	DATE	PROJECT NO.					
								990/10 SYSTEM & MEMORY INTERFACE				
								PART NUMBER LM 0944940-0001				
								REV AA				

TEXAS INSTRUMENTS INCORPORATED		DATE 02/05/80		LIST OF MATERIAL		PAGE 1 of		PART NUMBER LM 0944940-5001		REV AA	
PRINT ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
0001	00001.000	EA		0944941-0001	PWB-AU2, W/O MAPPING						
0017	00002.000	EA		0219402-7404	NETWORK SN74S04N						
0017A					U67,U69						
0018	00001.000	EA		0972900-7400	NETWORK SN74LS00N	TI	-SN74LS00N				
0018A					U52						
0019	00002.000	EA		0219402-7400	NETWORK SN74S00N						
0019A					U47,U74						
0020	00002.000	EA		0240000-7404	NETWORK SN74H04N						
0020A					U10,U22						
0021	00002.000	EA		0972900-7404	NETWORK SN74LS04N						
0021A					U21,U34						
0022	00002.000	EA		0222222-7407	NETWORK-SN7407N	TI-	-SN7407N				
0022A					U44,U72						
0023	00001.000	EA		0972749-0001	NETWORK, SN74LS08N						
0023A					U39						
0024	00001.000	EA		0222222-7408	NETWORK-SN7408N						
0024A					U36						
0025	00002.000	EA		0996150-0001	OBSOLETE P/N REPLC BY 219402-7408	TI	-SN74S08N				
0025A					U57,U59						
0026	00004.000	EA		0219402-7410	NETWORK SN74LS10N						
DRAFTSMAN DATE CED DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944940-1											
APPRO. MFG. DATE APPRO. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER REV LM 0944940-5001 AA											

TEXAS INSTRUMENTS INCORPORATED		DATE 02/05/80		LIST OF MATERIAL		PAGE 2 of		PART NUMBER LM 0944940-5001		REV AA	
PRINT ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
0026A					U12,U30,U58,U68						
0027	00001.000	EA		0240000-7411	NETWORK-SN74H11N						
0027A					U43						
0029	00001.000	EA		0972900-7410	NETWORK SN74LS10N						
0029A					U29						
0030	00002.000	EA		0219402-7420	NETWORK SN74S20N						
0030A					U45,U48						
0031	00001.000	EA		0972900-7428	NETWORK SN74LS20N						
0031A					U31						
0032	00001.000	EA		0219402-7474	NETWORK SN74S74N						
0032A					U70						
0033	00001.000	EA		0972814-0001	NETWORK-SN74LS27N						
0033A					U18						
0034	00001.000	EA		0972900-7430	NETWORK SN74LS30N	TI	-SN74LS30N				
0034A					U63						
0036	00001.000	EA		0972782-0001	NETWORK SN74LS132N	TI	-SN74LS132N				
0036A					U66						
0037	00002.000	EA		0222222-7437	NETWORK SN7437N						
0037A					U32,U75						
0038	00002.000	EA		0972783-0001	NETWORK-SN74LS42N BCD/DEC						
DRAFTSMAN DATE CED DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944940-1											
APPRO. MFG. DATE APPRO. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER REV LM 0944940-5001 AA											

TEXAS INSTRUMENTS INCORPORATED		DATE 02/05/80		LIST OF MATERIAL		PAGE 3 of		PART NUMBER LM 0944940-5001		REV AA	
PRINT ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
0038A					U33,U65						
0039	00003.000	EA		0222222-7442	NETWORK-SN7442N						
0039A					U9,U11,U15						
0040	00003.000	EA		0972900-7474	NETWORK SN74LS74N						
0040A					U23,U24,U54						
0041	00001.000	EA		0222222-7474	NETWORK SN7474N		-SN7474N				
0041A					U35						
0042	00002.000	EA		0972900-7109	NETWORK SN74LS109N	TI	-SN74LS109N				
0042A					U61,U62						
0043	00001.000	EA		0222222-7125	NETWORK SN74125N						
0043A					U60						
0044	00001.000	EA		0972900-7139	NETWORK SN74LS139N	TI	-SN74LS139N				
0044A					U20						
0045	00002.000	EA		0222222-7148	NETWORK SN74148N						
0045A					U38,U40						
0046	00001.000	EA		0801383-0001	NETWORK SN74LS151N						
0046A					U64						
0047	00003.000	EA		0972900-7174	NETWORK SN74LS174N						
0047A					U37,U41,U42						
0048	00002.000	EA		0972900-7175	NETWORK SN74LS175N						
DRAFTSMAN DATE CED DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944940-1											
APPRO. MFG. DATE APPRO. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER REV LM 0944940-5001 AA											

TEXAS INSTRUMENTS INCORPORATED		DATE 02/05/80		LIST OF MATERIAL		PAGE 4 of		PART NUMBER LM 0944940-5001		REV AA	
PRINT ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
0048A					U50,U51						
0049	00003.000	EA		0972787-0003	NETWORK SN74LS367N						
0049A					U1,U2,U16						
0050	00008.000	EA		0972787-0004	NETWORK SN74LS368N						
0050A					U6,U7,U13,U14,U26,U27,U28						
0050B					U80						
0051	00001.000	EA		0972556-0002	NETWORK SN74368N						
0051A					U76						
0052	00001.000	EA		0974674-0001	NETWORK SN75138N						
0052A					U46						
0053	00002.000	EA		0800118-0008	RESISTOR 1.0KOHMS DIL PULL UP 16 PINS	BEC	-8981R1.0K				
0053A					U49,U53						
0054	00008.000	EA		0972946-0033	RES FIX 47.0 OHM 5 W .25 W CARBON FILM	ROM	- R-25				
0054A					R2 R3 R11 R14 R15 R18 R24						
0054B					R48						
0055	00003.000	EA		0972946-0047	RES FIX 180 OHM 5 W .25 W CARBON FILM	ROM	- R-25				
0055A					R1 R10 R19						
0056	00002.000	EA		0972946-0049	RES FIX 220 OHM 5 W .25 W CARBON FILM	ROM	- R-25				
0056A					R21 R22						
0057	00003.000	EA		0539370-0338	RES FIX FILM 332 OHM 1/2 W .25 WATT	COM	-NA55D-100PPN/C				
DRAFTSMAN DATE CED DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944940-1											
APPRO. MFG. DATE APPRO. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER REV LM 0944940-5001 AA											

TEXAS INSTRUMENTS INCORPORATED		DATE 02/05/80		LIST OF MATERIAL		PAGE 5 of		PART NUMBER LM 0944940-5001		REV AA	
PRINT ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
0057A					R6 R8 R17						
0058	00002.000	EA		0972946-0055	RES FIX 390 OHM 5 1/2 .25 W CARBON FILM	ROH - R-25					
0058A					R12 R20						
0059	00002.000	EA		0972946-0065	RES FIX 1.0K OHM 5 1/2 .25 W CARBON FILM	ROH - R-25					
0059A					R9 R13						
0060	00001.000	EA		0539370-0437	RES FIX FILM 3.48K OHM 1 1/2 .25 WATT	COR -NA55D-100PPH/C					
0040A					R23						
0065	00027.000	EA		0972763-0022	CAP FIXED .056 UF 50 VOLTS	UC -C53C563Z					
0065A					C3 THRU C13 C18 THRU C23						
0065B					C26 THRU C32 C34 C35 C36						
0068	00016.000	EA		0972946-0051	RES FIX 270 OHM 5 1/2 .25 W CARBON FILM	ROH - R-25					
0068A					R27 THRU R32 R36 THRU R39						
0068B					R41 THRU R46						
0069	00001.000	EA		0972946-0045	RES FIX 150 OHM 5 1/2 .25 W CARBON FILM	ROH - R-25					
0069A					R26						
0070	00001.000	EA		0972946-0057	RES FIX 470 OHM 5 1/2 .25 W CARBON FILM	ROH - R-25					
0070A					R25						
0071	00004.000	EA		0972946-0081	RES FIX 4.7K OHM 5 1/2 .25 W CARBON FILM	ROH - R-25					
0071A					R4 R16 R40 R47						
0072	00002.000	EA		0539370-0344	RES FIX FILM 392 OHM 1 1/2 .25 WATT	COR - NA55					
DRAFTSMAN DATE CED DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944940-1											
APPD. MGR. DATE APPD. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER REV LM 0944940-5001 AA											

TEXAS INSTRUMENTS INCORPORATED		DATE 02/05/80		LIST OF MATERIAL		PAGE 6 of		PART NUMBER LM 0944940-5001		REV AA	
PRINT ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
0078A					R5 R7						
0079	00001.000	EA		0240000-7400	NETWORK-SN74H00H						
0079A					U55						
DRAFTSMAN DATE CED DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944940-1											
APPD. MGR. DATE APPD. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER REV LM 0944940-5001 AA											

- NOTES: UNLESS OTHERWISE SPECIFIED,
 1. ALL DEVICE TYPES ARE PREFIXED WITH SMT4
 2. GROUND IS APPLIED TO PIN 7 OF ALL 14-PIN IC'S AND PIN 8 OF ALL 16-PIN IC'S.
 3. VCC IS APPLIED TO PIN 14 OF ALL 14-PIN IC'S AND PIN 16 OF ALL 16-PIN IC'S.
 4. DEVICE TYPE, PIN NUMBERS, AND REFERENCE DESIGNATOR OF IC IS SHOWN AS FOLLOWS



- 00 AND 04 = DEVICE TYPE
 4, 5 AND 6 = PIN NUMBERS
 U6 AND U10 = REFERENCE DESIGNATOR
 5. ALL RESISTOR VALUES ARE IN OHMS
 6. ALL CAPACITOR VALUES ARE IN PICOFARADS
 7. R33, R34, AND R35 ARE TRIMMER RESISTORS AND MAY OR MAY NOT BE INSTALLED

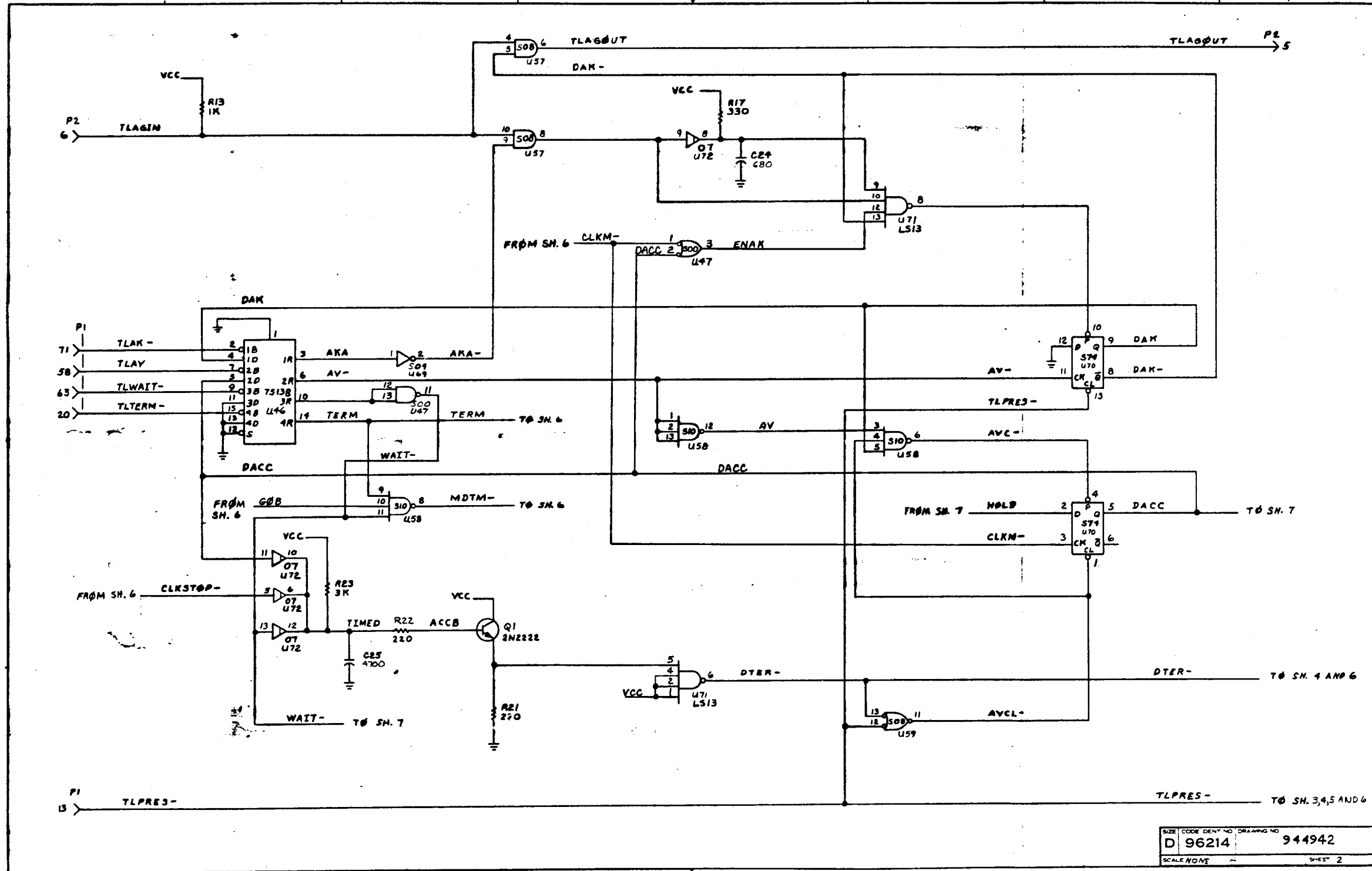
ZONE	LTN	DESCRIPTION	DATE	APPROVED
A		CN411950 (E) J. Walker	8/23/76	J. Walker
B		CN420740 (D) S. Campbell	12/1/77	S. Campbell
C		CN417163 (E) L. T. T. T.	5-22-77	L. T. T. T.
D		CN420882 (G) J. Walker	7/1/77	J. Walker
E		CN421061 (D) J. Walker	10-12-77	J. Walker
F		CN441075 (C) R. D. D.	5-1-78	R. D. D.

SPARES

TYPE	LOCATION	PINS
S00	U74	4, 5, 6
LS04	U73	3, 4
S01	U22	4, 5
S04	U69	3, 4
S07	U44	10, 11, 12, 13
O7	U72	3, 4
O8	U36	8, 9, 10
S08	U59	4, 5, 6, 7, 8, 9, 10
LS74	U24	8, 9, 10, 11, 12, 13
125	U60	4, 5, 6, 8, 9, 10, 11, 12, 13
S102	U8	4, 5, 6
LS174	U42	4, 5, 6, 7, 10, 11, 12, 13
LS367	U16	11, 12, 13, 14, 15
LS368	U80	11, 12, 13, 14, 15
LS367	U5	11, 12, 13, 14, 15
LS368	U6	9, 10, 11, 12
LS368	U7	4, 5, 6, 7
368	U76	6, 7, 9, 10, 11, 12
LS132	U66	4, 5, 6

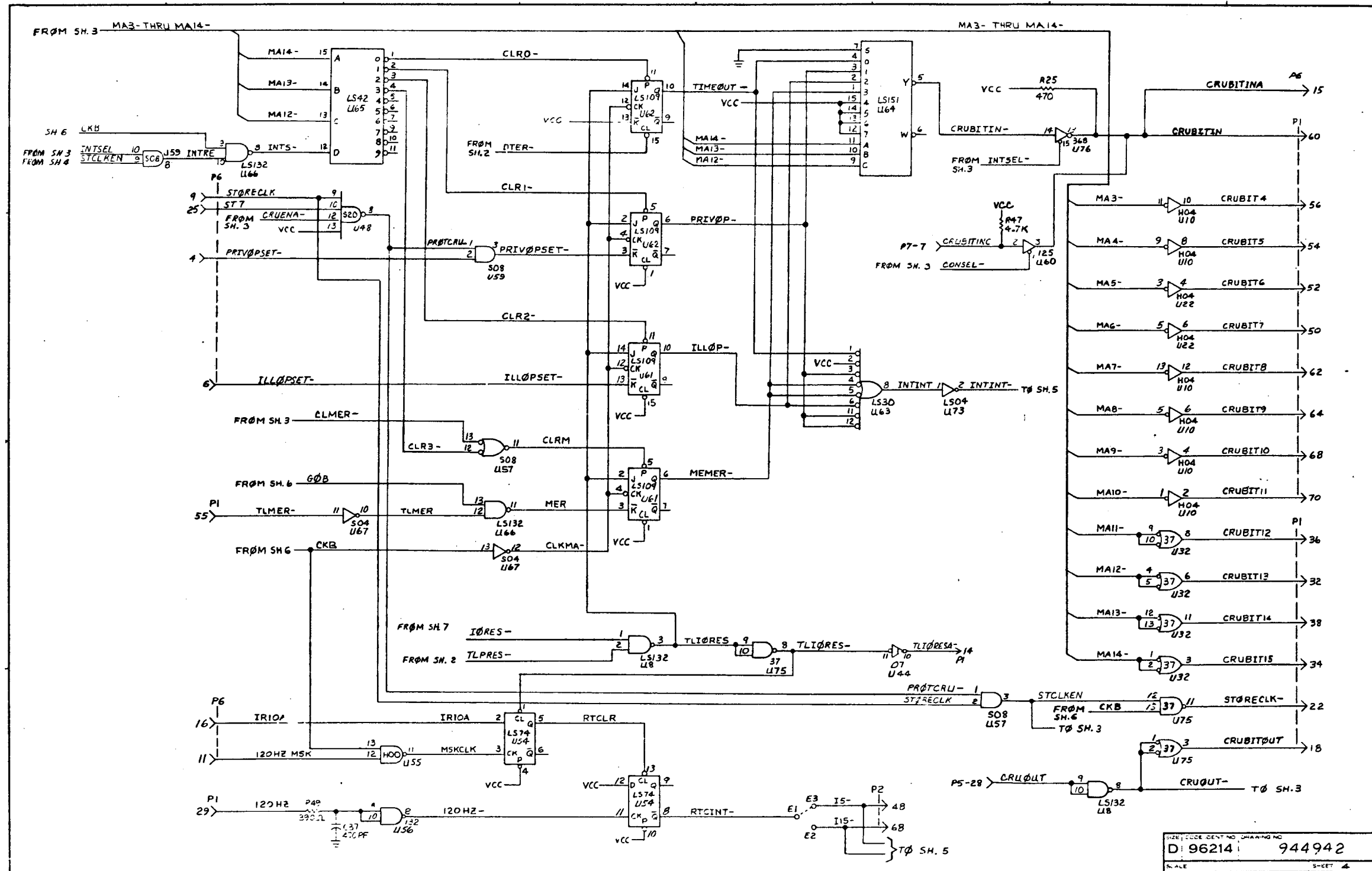
REV STATUS	SW	1	2	3	4	5	6	7	8	9	10	REV	QTY REQD	ITEM NO	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROCUREMENT SPECIFICATION
OF SHEETS	REV	F	A	A	F	E	E	B	A	A	F							
UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS AND SHARP EDGES CONCENTRICITY MACHINED DIAMETERS 0.10 PIR DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100												UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ANGLES ±1° 3 PLACE DECIMALS ± 0.02 2 PLACE DECIMALS ± 0.2						
HOLE TOLERANCE .013 - .004 THRU .005 .013 - .001 THRU .001 .013 - .001 THRU .001 .013 - .001 THRU .001												PARTS LIST DATE: 10-23-75 CHK: C. KEILOR 5-25-76 ENGR: J. Walker 5-27-76 APP'D: J. Walker 5/27/76 DESIGN ACTIVITY RELEASE: 5/27/76 SCALE: N/A						
APPLICATION: 944940 7506 NEXT ASSY: USED ON												TEXAS INSTRUMENTS EQUIPMENT GROUP DALLAS, TEXAS LOGIC DIAGRAM - SMI, 990/10 SIZE: CODE IDENT NO: DRAWING NO D 96214 944942 SHEET 1 OF 10						

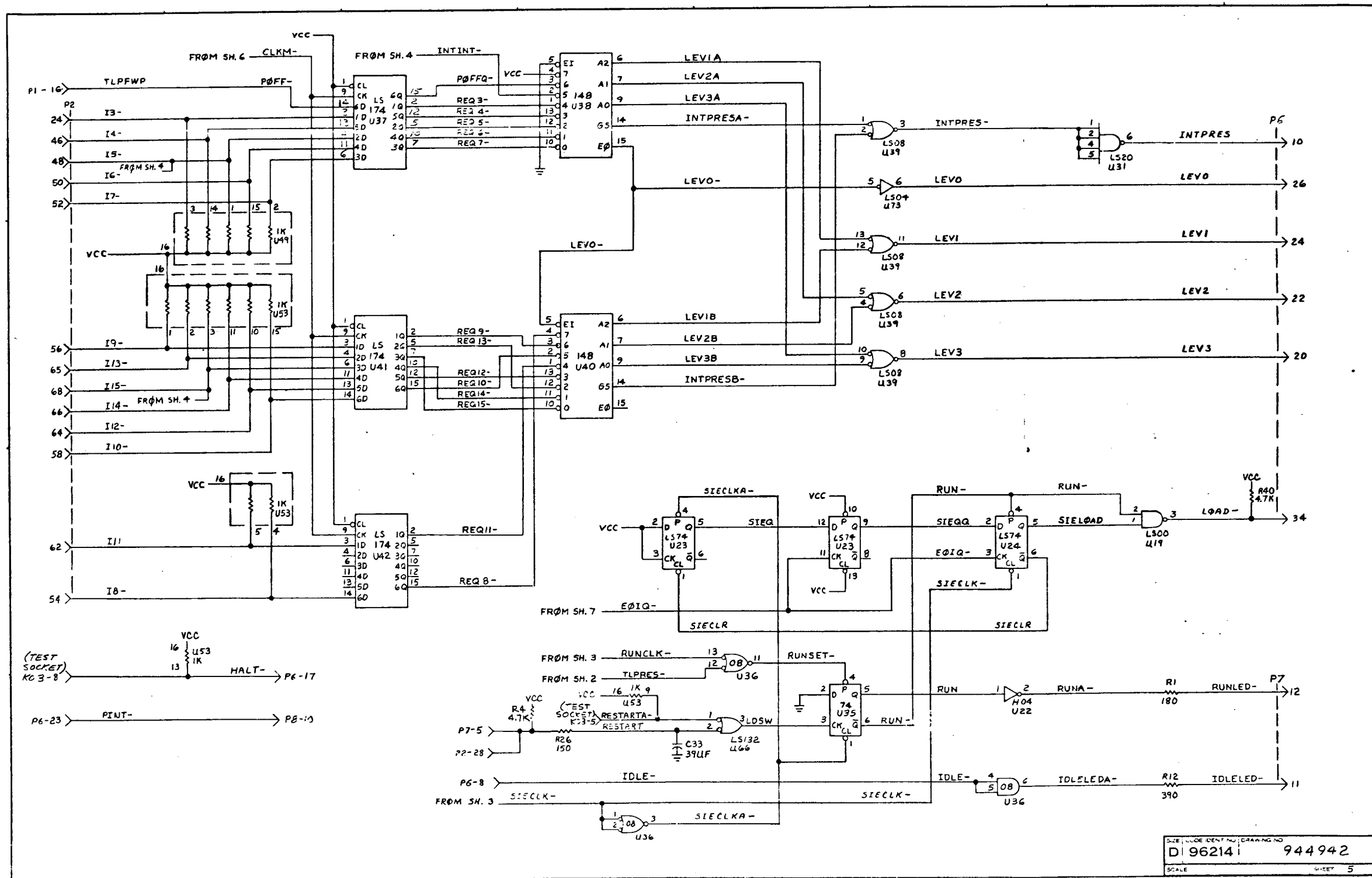
SMI Logic Diagram



SIZE	CODE	DEPT	NO.	DRAWING	NO.
D	96214			944942	
SCALE	NONE				SHEET 2

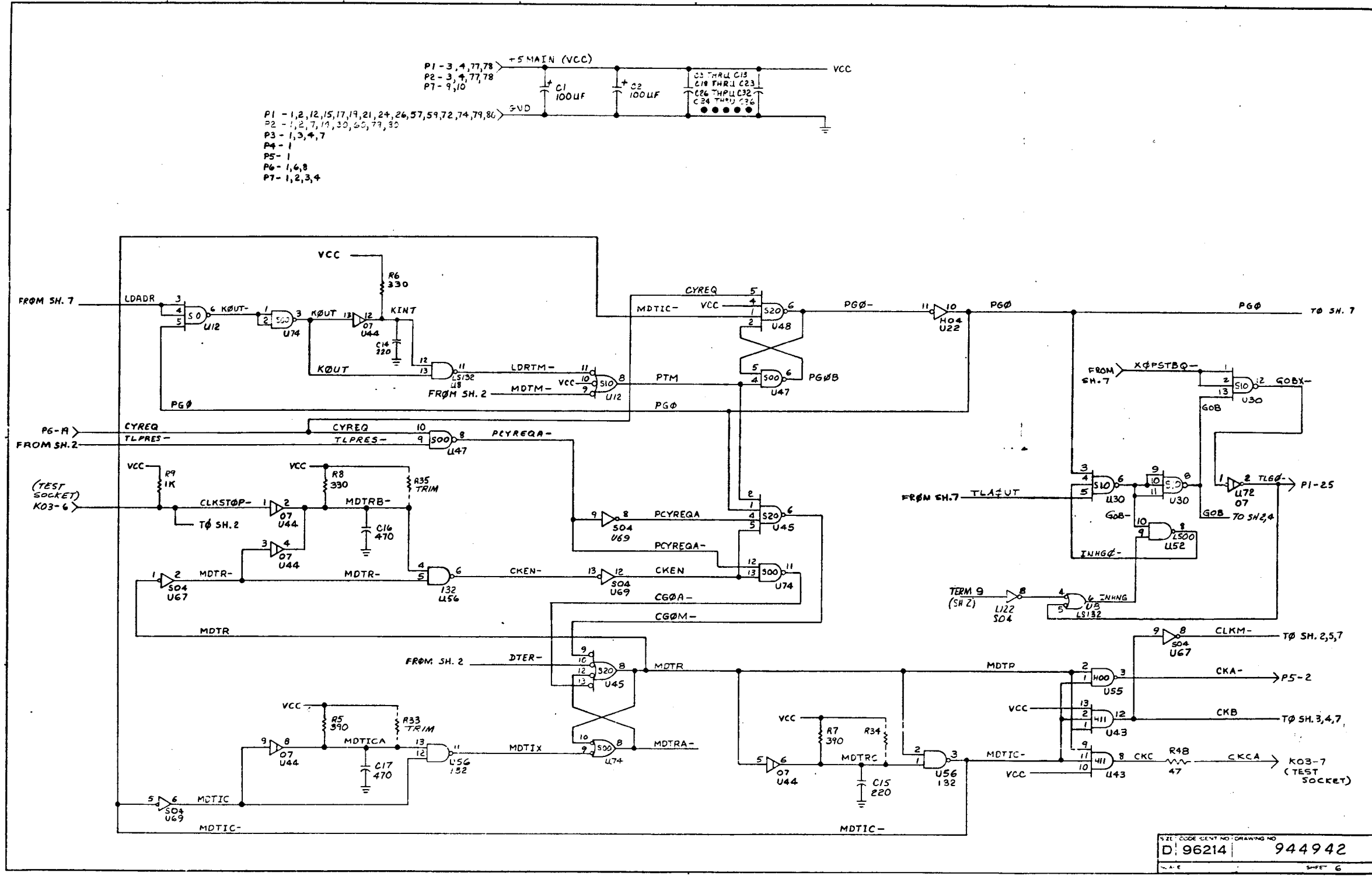
SMI Logic Diagram

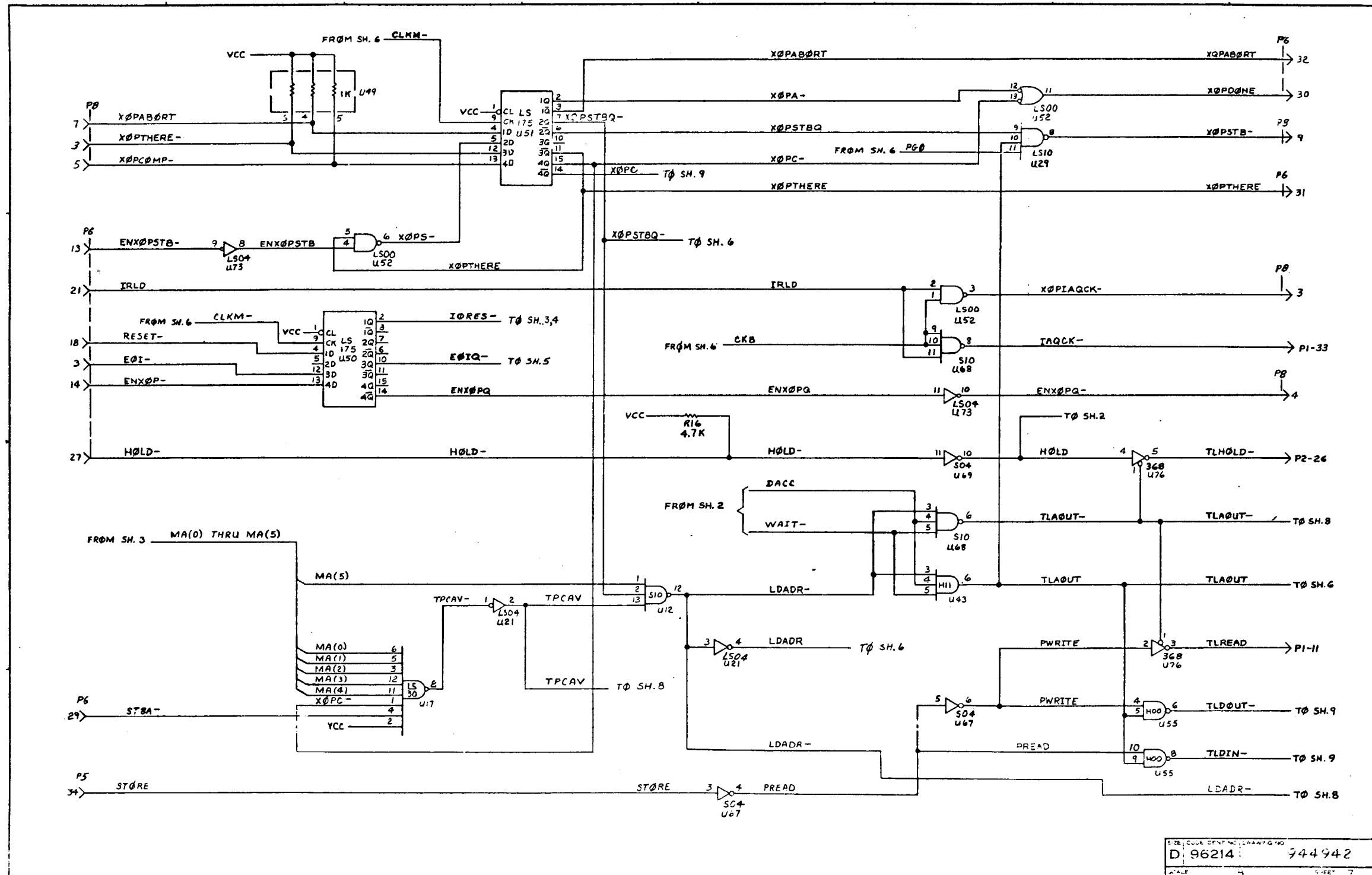


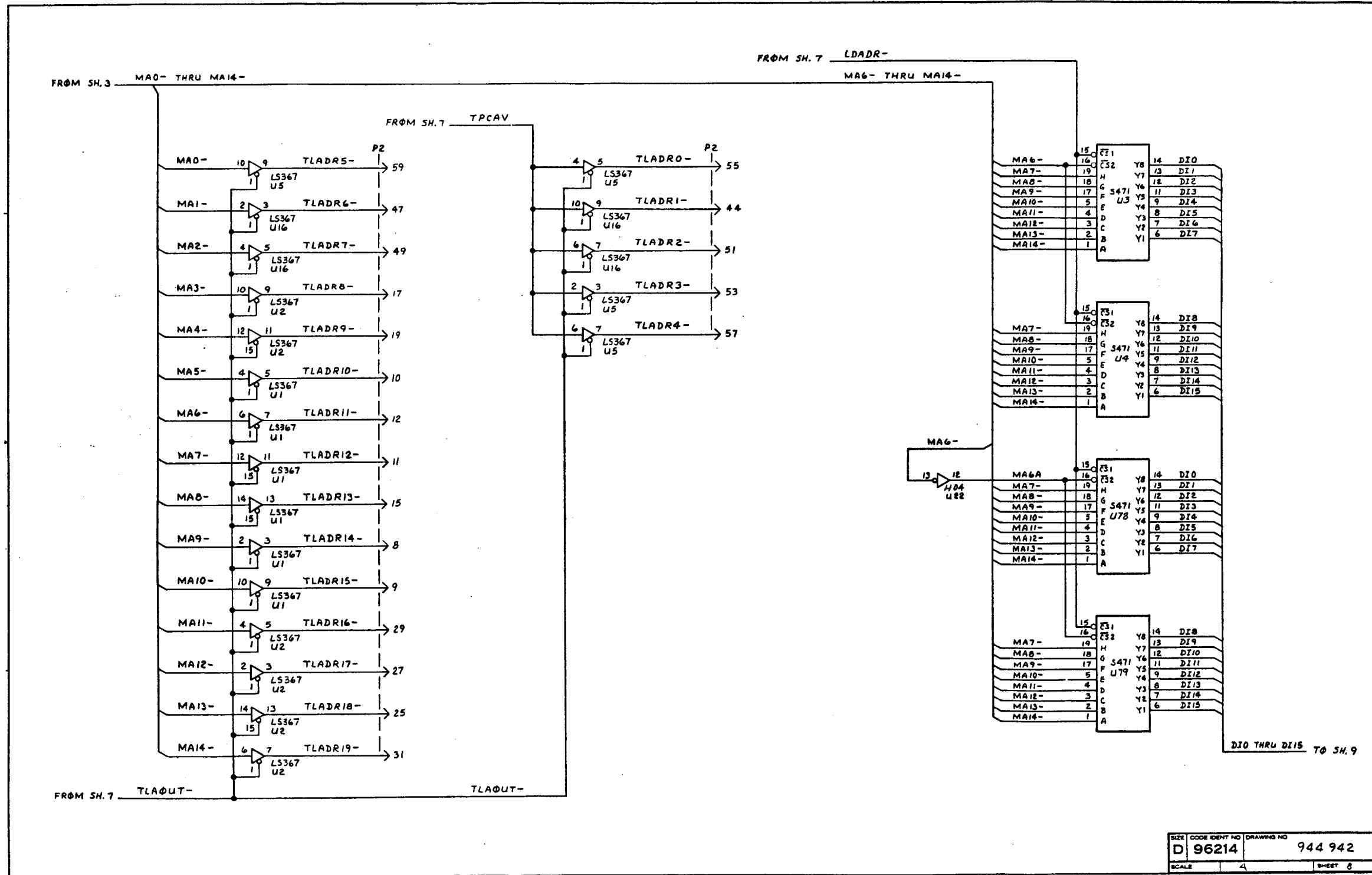


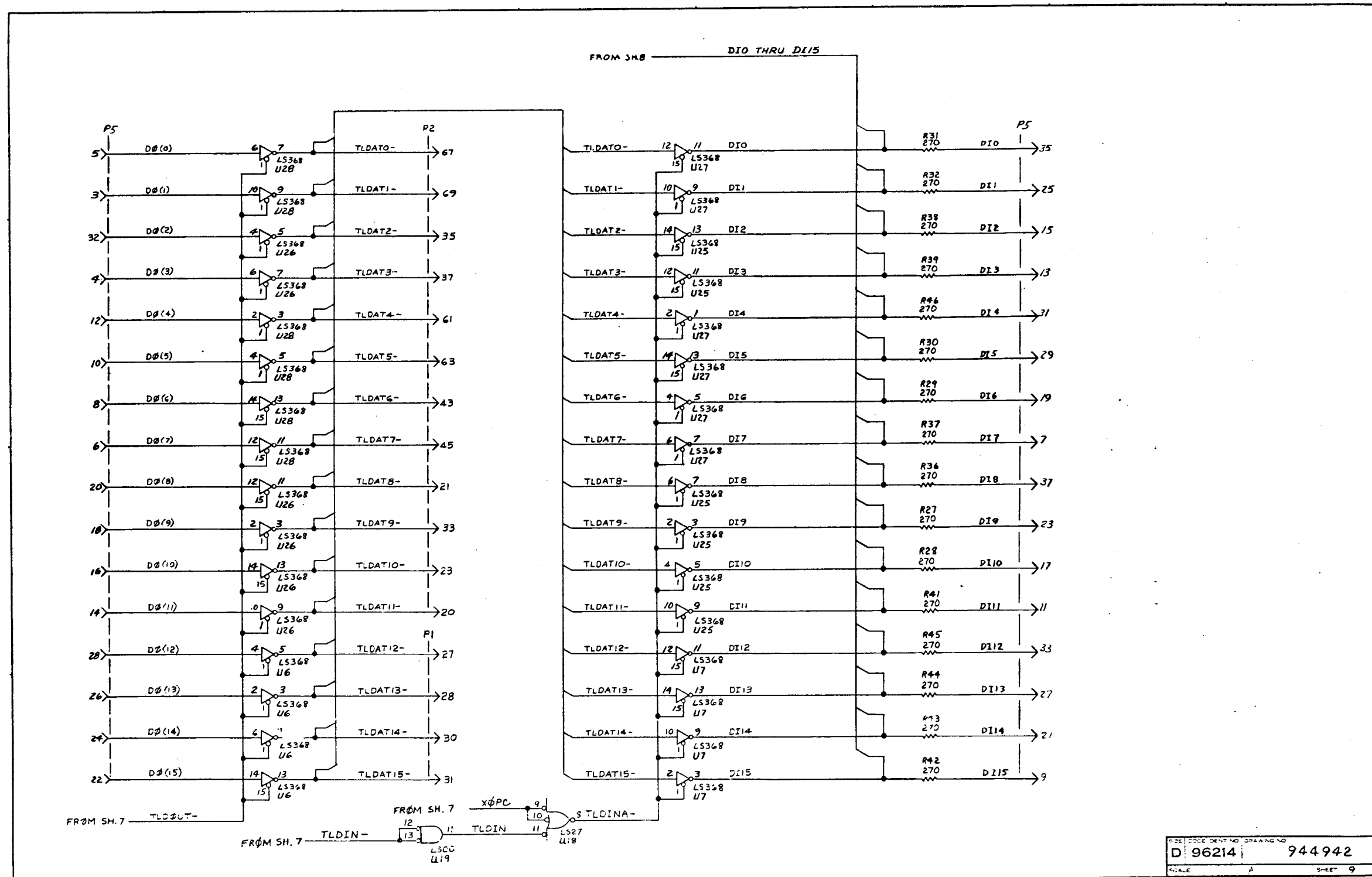
SIZE | LOE IDENT NO | DRAWING NO
 DI 96214 | 944942
 SCALE | SHEET 5

SMI Logic Diagram







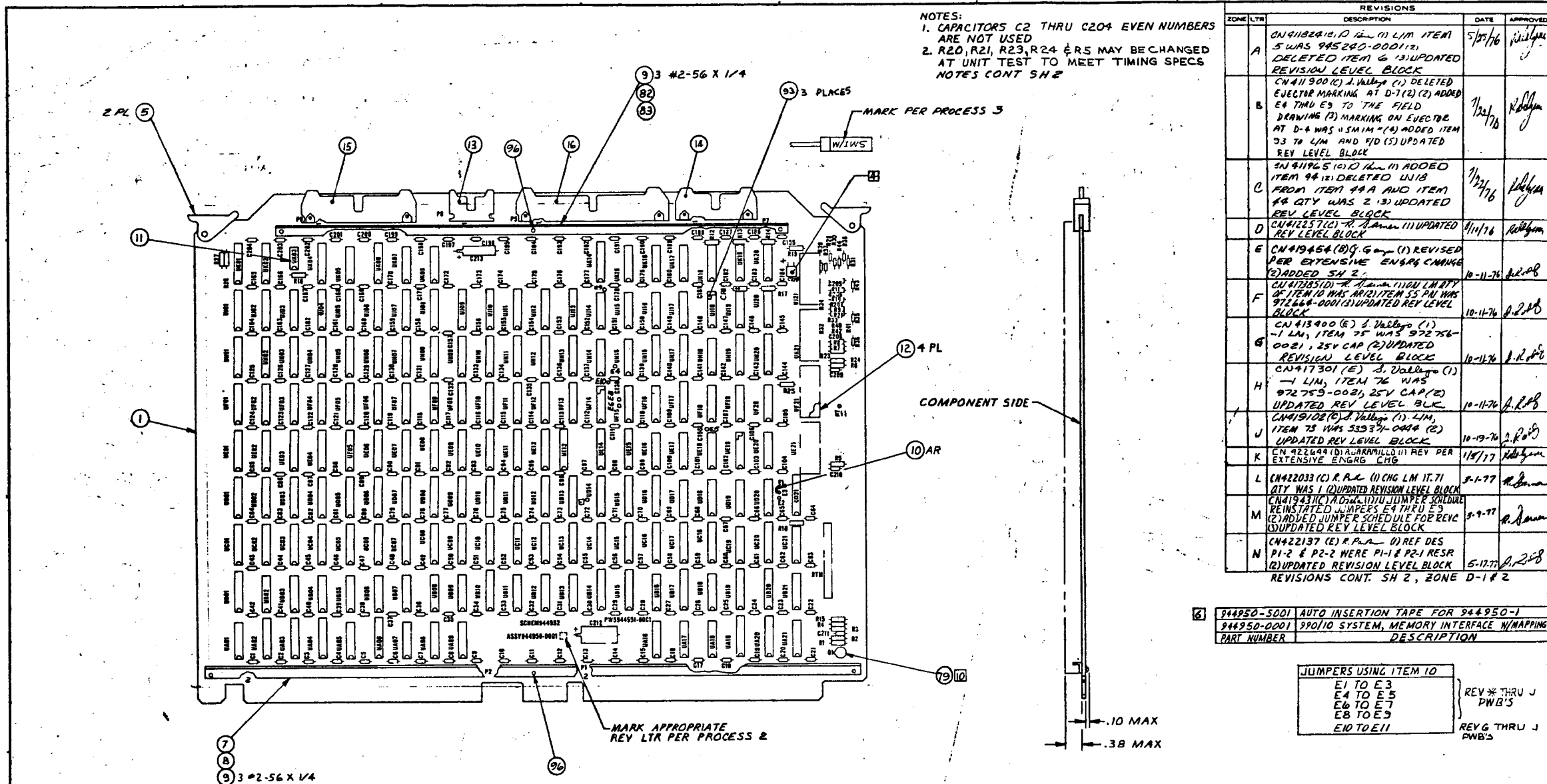


U NO.	TYPE	PAGE(S)	LOCATIONS
1	L5367	8	C7, B7
2	L5367	8	C7, A7
3	S471	8	C2
4	S471	8	C2
5	L5367	8	D7, D5, C5
6	L5368	9	A7
7	L5368	9	A5
8	L5132	1,6 (ATS SOCKET)	B5, A2-C6, B2
9	42	3	B2
10	H04	4	C2, B2
11	42	3	B2
12	\$10	6,7	C7, C5-B5
13	L5368	3	D6, C6
14	L5368	3	C6, A6
15	42	3	A2
16	L5367	8	C7, C5
17	L520	7	A6
18	L527	3,9	A4, A6
19	L500	3,5,9	A4, A6, B2
20	L5139	3	B4
21	L504	3,7	C3, B3, C2-B4, B4
22	H04	1,5,6,8	C2-A3-C3, B3-B3
23	L574	5	B4
24	L574	5	B3
25	L5368	9	B5, C5
26	L5368	9	B7, C7
27	L5368	9	B5, C5, D5
28	L5368	9	B7, C7, D7
29	L510	3,7	D4-D3
30	\$10	6	B2
31	L520	3,5	C4-D2
32	37	4	B2
33	L542	3	C4
34	L504	3	C2, D2
35	74	3,5	C2-A4
36	08	3,5	C2-A5, A4, A3
37	L5174	5	D6
38	148	5	D5
39	L508	5	D3, C3
40	148	5	C5
41	L5174	5	C6
42	L5174	5	B6
43	H11	6,7	A2-B3
44	07	6,4	C6, B7, A7, A4-B3
45	\$20	6	A5, B4
46	75138	2	C7
47	\$00	2,6	C6, C5-C6, C4
48	\$20	1,6	C7-C4
49	1KRES	5,7	C7-D7
50	L5175	7	C6
51	L5175	7	D6
52	L500	4,7,7	B2-C6, D3, C3
53	1KRES	5	C7, B7
54	L574	4	A6, A5
55	H00	1,6,7	A6-A2, A2
56	132	1,6 (ATS SOCKET)	A6-B6, A6, A3
57	\$08	2,4	D5, B4, A3
58	\$10	2	B6, B5, B3
59	\$08	2,4	A3, C6-D8
60	125	4	C3

U NO.	TYPE	PAGE(S)	LOCATIONS
61	L5109	4	C5, B5
62	L5109	4	C5, D5
63	L530	4	C4
64	L5151	4	D3
65	L542	4	D6
66	L5132	1,5	D8, D7, B6-A4
67	S04	1,6,7	B7-B7, A2, A4, A3
68	S10	7	C3, B3
69	S04	2,6,7	C6-A8, A5-B3
70	S74	2	B2, C2
71	L513	2 (ATS SOCKET)	A5, C3
72	07	2,6	B7, D5-B2
73	L504	1,5,7	C3-D3-C7, C3
74	S00	6	C7, A5, B4
75	37	3,4	C2-A2, A4
76	368	1,7	D2-B2
78	S471	8	B2
79	S471	8	A2
80	L5368	3	C6, D6

REF	VALUE	USE	PAGE
R1	180	RUNLED-	5
R2	47	CONSBIT15	3
R3	47	CONSBIT13	3
R4	4.7K	RESTART-	5
R5	390	MDTIX-	6
R6	330	LDRTM-	1
R7	390	MDTIC-	1
R8	330	MDTR-	1
R9	1K	CLKSTOP-	6
R10	180	PWRLED-	3
R11	47	CONSBIT11	3
R12	390	ILORLED-	5
R13	1K	TLAGIN	2
R14	47	CONSBIT07	3
R15	47	CONSBIT12	3
R16	4.7K	HOLD-	7
R17	330	TLAGIN	2
R18	47	CONSOLE-	3
R19	180	FAULT (CONSOLE)	3
R20	390	FAULT	3
R21	220	TIMEOUT	2
R22	220	TIMEOUT	2
R23	5K	TIMEOUT	2
R24	47	CONSEL-	3
R25	470	CRUBITIN-	4
R26	150	RESTART-	5
R27	270	D19	9
R28	↑	D110	↑
R29	↑	D16	↑
R30	↑	D15	↑
R31	↓	D10	↓
R32	270	D11	9
R33	TRIM	MDTIX-	6
R34	TRIM	MDTIC-	6
R35	TRIM	CKEN-	6
R36	270	D18	9
R37	↑	D17	↑
R38	↑	D12	↑
R39	270	D13	9
R40	4.7K	LOAD-	5
R41	270	D11	9
R42	↑	D15	↑
R43	↑	D14	↑
R44	↓	D13	↓
R45	↓	D12	↓
R46	270	D14	9
R47	4.7K	CONSOLE	4
R48	47	EXTERNAL CLACK	6
Q1	2N2222	TIMEOUT	2
LED	-	FAULT	3

CAPACITOR	PAGE
C1 100 μF	6
C2 100 μF	6
C3 56 DECOUPLER	6
C4	6
C5	6
C6	6
C7	6
C8	6
C9	6
C10	6
C11	6
C12	6
C13 56 DECOUPLER	6
C14 220 LDRTM-	6
C15 220 MDTIC-	6
C16 470 MDTRA-	6
C17 470 MDTIX-	6
C18 56 DECOUPLER	6
C19	6
C20	6
C21	6
C22	6
C23 56 DECOUPLER	6
C24 680 TLAGIN	6
C25 4700 TIMEOUT	6
C26 56 DECOUPLER	6
C27	6
C28	6
C29	6
C30	6
C31	6
C32 56 DECOUPLER	6
C33 33 μF RESTART	6
C34 56 DECOUPLER	6
C35 56 DECOUPLER	6



NOTES:
 1. CAPACITORS C2 THRU C204 EVEN NUMBERS ARE NOT USED
 2. R20, R21, R23, R24 & R5 MAY BE CHANGED AT UNIT TEST TO MEET TIMING SPECS
 NOTES CONT SH 2

ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		CN4182A(1) D (1) L/M ITEM 5 WAS 945200-000(1) DELETED ITEM 6 (3) UPDATED REVISION LEVEL BLOCK	5/27/76	Ridgman
B		CN411900(C) J. Valby (1) DELETED EJECTOR MARKING AT D-1(2) (2) ADDED E4 THRU E3 TO THE FIELD DRAWING (3) MARKING ON EJECTOR AT D-4 WAS "SMIM" (4) ADDED ITEM 53 TO L/M AND FID (5) UPDATED REV LEVEL BLOCK	7/27/76	Ridgman
C		CN411965(1) D (1) L/M ADDED ITEM 94 (2) DELETED UNIB FROM ITEM 49 A AND ITEM 49 QTY WAS 2 (3) UPDATED REV LEVEL BLOCK	7/27/76	Ridgman
D		CN412257(C) R. Valby (1) UPDATED REV LEVEL BLOCK	11/17/76	Ridgman
E		CN419454(B) G. G. (1) REVISED PER EXTENSIVE ENGRG CHANGE (2) ADDED SH 2	10-11-76	A.R.P.
F		CN417851(D) R. Valby (1) UNIB ITEM 10 WAS ADDED ITEM 35 PM WAS 971644-000(1) UPDATED REV LEVEL BLOCK	10-11-76	A.R.P.
G		CN413400(E) J. Valby (1) -1 L/M, ITEM 75 WAS 972756-000(1) 25V CAP (2) UPDATED REVISION LEVEL BLOCK	10-11-76	A.R.P.
H		CN417301(E) J. Valby (1) -1 L/M, ITEM 76 WAS 972759-000(1) 25V CAP (2) UPDATED REV LEVEL BLK	10-11-76	A.R.P.
J		CN419108(C) J. Valby (1) L/M, ITEM 75 WAS 333374-000(1) (2) UPDATED REV LEVEL BLOCK	10-19-76	A.R.P.
K		CN422644(D) A. R. P. (1) REV PER EXTENSIVE ENGRG CHG	1/8/77	Ridgman
L		CN422033(C) A. R. P. (1) CHG L/M IT. 71 QTY WAS 1 (2) UPDATED REVISION LEVEL BLOCK	5-1-77	Ridgman
M		CN419437(C) A. R. P. (1) JUMPER SOLDER REINSTATED JUMPEES E4 THRU E3 (2) ADDED JUMPER SCHEDULE FOR REVC (3) UPDATED REV LEVEL BLOCK	5-2-77	Ridgman
N		CN422137(E) A. R. P. (1) REF DES P1-2 & P2-2 WERE P1-1 & P2-1 RESR (2) UPDATED REVISION LEVEL BLOCK	5-17-77	A.R.P.

REV	DESCRIPTION
6	944950-5001 AUTO INSERTION TAPE FOR 944950-1
	944950-0001 990/10 SYSTEM, MEMORY INTERFACE MAPPING
	PART NUMBER DESCRIPTION

JUMPERS USING ITEM 10
 E1 TO E3
 E4 TO E5
 E6 TO E7
 E8 TO E9
 E10 TO E11

REV * THRU J
 PWB'S
 REV G THRU J
 PWB'S

REVISION LEVEL	TEST PROCEDURE (944953-9901)	A	A	A	B
	LOGIC DIAGRAM (944952-9901)	N	N	P	P
	PWB (944951-0001)	J	J	J	K
	ASSY (944950-0001)	A	B	A	C
	TEST PROCEDURE (944953-9901)	*	*	*	*
	LOGIC DIAGRAM (944952-9901)	D	E	F	G
	PWB (944951-0001)	D	D	D	D
	ASSY (944950-0001)	W	Y	A	B
	TEST PROCEDURE (944953-9901)	*	*	*	*
	LOGIC DIAGRAM (944952-9901)	*	*	A	A
	PWB (944951-0001)	*	A	A	A
	ASSY (944950-0001)	*	A	B	C

PROCESSES:
 1. SOLDER PER F-127, METHOD I AND/OR F-124
 2. MARK PER F-100, METHOD II, CLASS 1, HEIGHT .09, COLOR BLACK
 3. MARK PER F-100, METHOD VII, CLASS 12, COLOR BLACK, TYPE 6

REV STATUS	REV	QC	PC
OF SHEETS	SHEET	1	2 3

UNLESS OTHERWISE SPECIFIED	UNLESS OTHERWISE SPECIFIED
REMOVE ALL BURRS AND SHARP EDGES	DIMENSIONS ARE IN INCHES
CONCENTRICITY MACHINED DIAMETERS .010 P/R	TOLERANCES ANGLES 2:1
DIMENSIONAL UNITS APPLY BEFORE FINISH PROCESSING	3 PLACE DECIMALS ± 0.10
IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY	2 PLACE DECIMALS ± 0.02
INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100	
HOLE TOLERANCE	
.013 - .004	128 - .001
.125 - .001	250 - .001
.301 - .008	THRU .001
.750 - .001	1.000 - .001
	2.000 - .001

DATE	BY	DESCRIPTION
8-23-76	J. Valby	DESIGN
4/28/76	J. Valby	ENGR
1-27-76	J. Valby	ENGR
1/27/76	J. Valby	ENGR
4/21/76	J. Valby	ENGR
7/29/76	J. Valby	ENGR

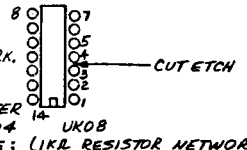
PARTS LIST	DESCRIPTION	QTY	REV
344320	7506		
	NEXT ASSY USED ON		
	APPLICATION		

TEXAS INSTRUMENTS	990/10 SYSTEM AND MEMORY INTERFACE WITH MAPPING
INCORPORATED	
EQUIPMENT GROUP	
DALLAS, TEXAS	
SIZE	CODE IDENT NO (DRAWING NO)
D	96214
	944950
SCALE 1/1	SHEET 1 OF 3

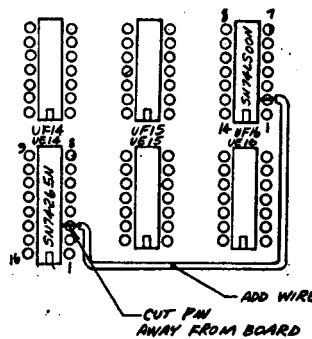
NOTES: CONTINUED

3. REWORK PROCEDURE FOR PWB 944951-0001 REV A & B

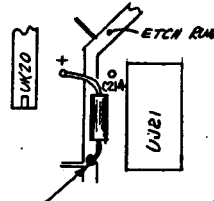
(a) CUT ETCH ON TOP OF BOARD BETWEEN PINS 3 AND 4 OF UKOB RESISTOR NETWORK. TO MAKE SURE ETCH IS COMPLETELY CUT, CHECK WITH OHM-METER BETWEEN PINS 3 AND 4. AFTER CUT IS MADE, (1KΩ RESISTOR NETWORK) METER SHOULD READ 2000 OHMS WITH RESISTOR NETWORK IN PLACE OR ∞ WITH RESISTOR NETWORK REMOVED



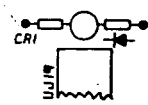
(b) CUT PIN UE14-3 AWAY FROM BOARD. ADD INSULATED WIRE BETWEEN THE CUT PIN OF UE14 PACKAGE TO PIN U116-2



(c) IT IS ACCEPTABLE TO USE PN 972924-0006 (39μF, 10V SOLID TANT. AXIAL LEAD) FOR C214 (ITEM 77). IF THIS PART IS USED, IT SHOULD BE MOUNTED AS SHOWN. THE POSITIVE LEAD OF CAP SHOULD BE SOLDERED INTO THE ORIGINAL HOLE MARKED WITH '+'. THE NEGATIVE LEAD, INSTEAD OF SOLDERING IN THE OTHER C214 HOLE, SHOULD BE SOLDERED TO ETCH RUN AS SHOWN.



5. FOR PWB 944950-0001 REV A, B INSTALLATION NOTE FOR CRI: INSULATE LEADS OF CRI AS REQUIRED WITH TEFLON SLEEVING, 22 AWG, PART NUMBER 910999-6 AS SHOWN:



(d) ITEM 97 IN -0001 LM CONSISTS OF COMPONENTS WHICH ARE AUTO INSERTED AND CONTAINED IN THE -5001 LM

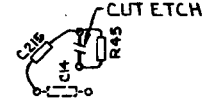
NOTES: CONTINUED

7. REWORK ASSEMBLY USING REV F AND EARLIER PWB AS FOLLOWS:

A. ON LEAD SIDE OF BOARD CUT ETCH NEAR FOLLOWING IC PINS:

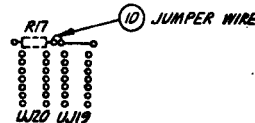
F20-3
B. USING ITEM 9B ADD FOLLOWING TWISTED PAIR:
(BLUE) A05-8 F20-3 (BLUE)
(WHITE) A05-7 F20-7 (WHITE)

B. REWORK FOR PWB A, B, C, D
A. CUT ETCH AS SHOWN BELOW
B. INSTALL R45 BETWEEN FEED THRU WHERE ETCH WAS CUT
C. INSTALL C215 FROM THE TOP OF R45 TO THE LEFT OF C14



9. FOR PWB 944951-0001 REV C ONLY

A. CUT PIN UE14-3 CLOSE TO PWB
B. ADD WIRE FROM UE14-3 PACKAGE TO U116-2
C. SECURE WIRE TO PWB WITH HOT MELT
D. ON ETCH SIDE OF BOARD ADD WIRE TO JUMPER R17 LEAD TO ADJACENT PAD AS SHOWN BELOW

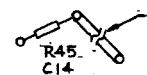


(e) ITEM 79 SHOULD BE MACHINE PREPPED PRIOR TO INSERTION

11. FOR PWB 944951-0001 REV F ONLY

A. CUT IC PINS UJ19-9, UE16-2, UB16-2, UB16-1 AND UB21-12
B. ADD WIRES:
FROM TO
UJ19-9 PKG UE16-2 PKG
UE16-2 PKG UB16-2 PKG
UB16-2 PKG UB16-1 PKG
UB16-1 PKG UB21-12 PKG
C. CUT IC PINS UJ14-12, UH14-12 AND UEM-1
D. ADD WIRES:
FROM TO
UJ14-12 PKG UH14-12 PKG
UH14-12 PKG UEM-1 PKG

12. ON PWB 944951 REV F BUILT BY TI ONLY, CUT ETCH AND INSTALL R45 AS SHOWN ON COMPONENT SIDE OF BOARD



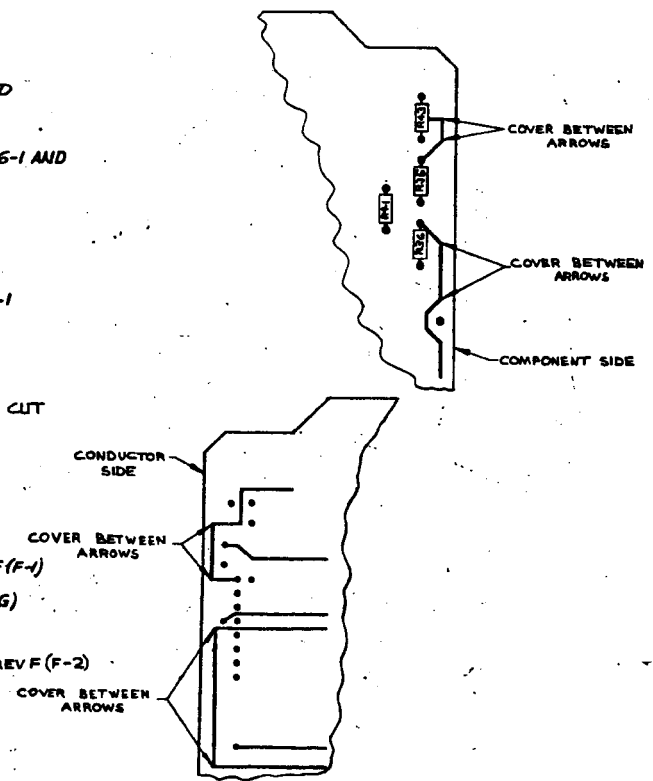
13. REWORK PROCEDURE FOR PWB 944951 REV F (F-1)

A. CUT IC PIN UH15-14
B. CONNECT WIRE (ITEM 10) FROM UH15-14 (PKG) TO UH16-16
C. DO REWORK NOTE 7

14. REWORK FOR ASSYS USING PWB 944951 REV F (F-2)

A. DO REWORK NOTE 7 ONLY

REVISIONS				REVISIONS					
ZONE	LTR	DESCRIPTION	DATE	APPROVED	ZONE	LTR	DESCRIPTION	DATE	APPROVED
AR		CN448466 (C) 1) NOTE 2 WAS R20... ARE SELECTED AT UNIT TEST (2) ON -5001 LM ITEM 86 R5 WAS REMOVED & ADDED TO ITEM 85 (3) UPDATED REV LEVEL BLOCK	5-8-79	E. Wing	P		CN420470 (E) P. 2.1 - 1) REVISED PER EXTENSIVE ENGINEERING CHANGE (2) UPDATED REVISION LEVEL BLOCK	5-13-77	A. R. P.
AT		CN448729 (D) 1) ADDED REWORK NOTE 14 TO ZN A-5, G (2) UPDATED REV LEVEL BLOCK	5-8-79	E. Wing	R		CN427283 (E) 1) ADDED NOTE 7 (2) ADDED ITEM 98 TO -0001 LM (3) UPDATED REV LEVEL BLOCK	7-14-77	E. Wing
AU		CN448293 (B) 1) ADDED REWORK NOTE 15 TO ZN C-3, 4 (2) UPDATED REV LEVEL BLOCK	9-15-79	E. Wing	T		CN420893 (B) 1) ADDED NOTE 8 (2) LM ADDED ITEM 5 99 & 100 (3) UPDATED REV LEVEL BLOCK	6-15-77	A. R. P.
AV		CN443363 (B) 1) ON -0001 LM ADDED ITEM 101 (2) ADDED REWORK NOTE 16 UPPER RIGHT CORNER (3) UPDATED REV LEVEL BLK	10-2-79	E. Wing	U		CN427205 (C) 1) NOTE 3 WAS FOR REV A ONLY (2) NOTE 5 WAS REWORK PROCEDURE FOR REV A PWB (3) ADDED NOTE 9 (4) UPDATED REV LEVEL BLOCK	8-15-77	A. R. P.
AW		CN448250 (C) 1) NOTE 195 ON -5001 LM, PIN WAS 222202-7148 (2) UPDATED REV LEVEL BLOCK	10-2-79	E. Wing	V		CN421907 (C) 1) ZN B-1 NOTE REV... PWB'S WAS REV #, A AND B PWB'S (2) DELETED JUMPER SCHEDULE FOR REV # PWB (3) ADDED REV LEVEL BLOCK	5-15-77	A. R. P.
AY		CN450586 (D) 1) REVISED PER EXTENSIVE ENGR CHANGES	11-13-79	E. Wing	W		CN426869 (E) 1) -5001 LM, DELETED ITEM 84 F84 A (2) -0001 LM ITEM 84 QTY WAS 13 (3) UPDATED REV LEVEL BLOCK	8-25-77	A. R. P.
BA		CN450534 (C) 1) ZN B-1 SIDE NOTE FOR JUMPER E10 TO E11 WAS REV G PWB'S ONLY (2) NOTE FOR FIRST FOUR JUMPERS WAS REV # THRU G PWB'S (3) UPDATED REV LEVEL BLOCK	11-13-77	E. Wing	Y		CN425271 (E) 1) REVISED AND UPDATED REV LEVEL BLOCK (2) -0001 LM: ITEM 100, C215 HAS CN41314 NOTE B1, C215 HAS CN41314 NOTE B2	10-12-77	A. R. P.
BB		CN456193 (B) 1) DELETED ITEM 27 ON -5001 LM (2) ITEM 25 ON -5001 LM QTY WAS 2 AND ADDED UH15 TO REF DES (3) UPDATED REV LEVEL BLOCK	1-8-80	A. R. P.					
		15. REWORK FOR PWB (944951) REV # THRU H. A. CUT PIN 2 OF UB05 B. WIRE PIN 2 OF UB05 TO PIN 3 OF UB08. C. WIRE PINS 1&2 OF UB08 TO PIN B OF UA08.							
		16. REWORK FOR PWB (944951) REV # THRU H USING ITEM 101, COVER THE ETCH RUNS INDICATED BETWEEN ARROWS. KEEP EPOXY OFF COMPONENTS. ITEM 101 MAY BE SUBSTITUTED BY 996639-0001.							
AC		CN430023 (B) 1) 11SH1-ADDED B16L02L 96 IN 2 PL DELETED BALLOON 96 FROM BALLOON 95 STACK-UP (2) -0001 LM ITEM 94 QTY WAS 13 (3) REVISED & UPDATED REV LEVEL BLOCK	12-2-77	A. R. P.	AA		CN427189 (D) 1) ADDED NOTE 20 (2) UPDATED REV LEVEL BLOCK	10-12-77	A. R. P.
AD		CN442605 (C) 1) A. B. C. (4) ON LM -1 DELETED ITEM 95 (2) SH. 1 ZN A-4 DELETED BALLOON 95 FROM 79 AND ADDED FLAG 10 (3) ADDED NOTE 10 (4) UPDATED REV LEVEL BLOCK	8-7-78	A. R. P.	AB				
AE		CN446656 (C) 1) B. B. (2) ON SHEET 2 NOTE 5 WAS INSTALLATION NOTE FOR CRI (2) UPDATED REV LEVEL BLOCK	10-5-78	A. R. P.	AC				
AF		CN442967 (C) 1) ADDED NOTE 11 & UPDATED REV LEVEL BLOCK	10-12-78	A. R. P.	AD				
AG		CN441350 (C) 1) REVISED LM PER EXTENSIVE ENGR CHANGES (2) UPDATED REV LVL BLK.	1-18-79	E. Wing	AE				
AH		CN448504 (C) 1) B. B. (1) ON SH 2 ADDED REWORK NOTE 12 (2) UPDATED REV LVL BLK.	1-19-79	E. Wing	AF				
AJ		CN441727 (C) 1) B. B. (1) ON -0001 LM DELETED ITEMS B08B AND ADDED SAME TO -5001 LM (2) UPDATED REVISION LVL BLK.	1-19-79	E. Wing	AG				
AK		CN442759 (C) 1) B. B. (1) ON NOTE 7 FIRST LINE WAS "...REV D..." (2) ON SH 1 ZN A-1 NOTE FOR JUMPER SCHEDULE WAS "... REV D..." (3) UPDATED REV LVL BLOCK (4) ADDED E10 TO E11 ON JUMPER SCHEDULE	1-19-79	E. Wing	AH				
AL		CN451919 (D) 1) ADDED REV LEVEL BLOCK (2) ON LM, -0001 ITEM 11 WAS 539544-6, ITEM 12 WAS 539544-10, ITEM 13 WAS 539544-1 (3) ON LM, -5001, ITEM 30 WAS 996150-1	5-3-79	A. R. P.	AJ				
AM		CN448317 (D) 1) ZN A-6.5 ADDED NOTE 13 (2) UPDATED REV LEVEL BLOCK	5-3-79	A. R. P.	AK				
AN		CN451937 (D) 1) B. B. (1) UPDATED REV LEVEL BLOCK (2) ON -1 LM ITEM B WAS 966488-1	5-3-79	A. R. P.	AL				
AP		CN441751 (C) 1) B. B. (1) -5001 LM DELETED USED ITEM 41 ADDED UP 20 ITEM 41 (2) C. B. (2) UPDATED REV LEVEL BLOCK	5-8-79	A. R. P.	AM				



REV CONT 2 C-4	SIZE	CODE IDENT NO	DRAWING NO
	D	96214	944950
SCALE	LEV	FF	SHEET 2

TEXAS INSTRUMENTS INCORPORATED		DATE 12/11/79		LIST OF MATERIAL		PAGE 1 of		PART NUMBER LM0944950-0001		REV 88C	
QTY	UNIT	DESCRIPTION	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER						
JJ02	REF	EA	0944952-9901	LOGIC DIAGRAM-AJ2, W/ MAPPING							
JJ03	REF	EA	0944953-9901	TEST PROCEDURE-AU2, W/ MAPPING							
JJ04	REF	EA	0944921-9901	SPECIFICATION, CPU, 990/13							
JJ05	00002.000	EA	053384-0001	EJECTOR, NYLON, N3N-LOCKING, PMB							
JJ07	00001.000	EA	0945239-0001	BRACKET-STIFFENER, PMB, 14IN							
JJ08	00001.000	EA	0944954-0001	INSULATOR, PMB, 14IN							
JJ09	00006.000	EA	0972684-0002	SCREW, THD FRMG, HEX WSHR HD, 2-56X1/4 LG							
JJ10	00000.090	FT	0457313-3006	WIRE 24 AMG SOLID, TEFLON, WHITE	QPL - MIL-W-16873/4						
JJ11	00001.000	EA	2210188-0001	SOCKET, LOW PROFILE, DIP, 3 CONT, 8 PINS	003612-D1LB8P-108						
JJ11A				KUK03							
JJ12	00004.000	EA	2210188-0005	SOCKET, LOW PROFILE, DIP, 20 PINS	003612-D1LB20P-108						
JJ12A				XUE21 XUF21 XUH21 XUJ21							
JJ13	00001.000	EA	0972706-0001	CONNECTOR, PMB, 10P, RT. A, SDRTL, HDR, FLTCBL	015912-609-1002M						
JJ13A				P8							
JJ14	00001.000	EA	0972137-0001	CONNECTOR, PC-HEADER 20 CONTACT	BEI - 65483-001						
JJ14A				P7							
JJ15	00001.000	EA	0972137-0003	CONNECTOR ONE AMP 500VDC 34 CONTACT	076381-3431-1002						
JJ15A				P6							
JJ16	00001.000	EA	0972137-0305	CONNECTOR, PC 50 PIN	BEI - 65483-005						
JJ16A				P5							
DRAFTSMAN: <i>L.R.</i> DATE: 12-13-79 TITLE: 990/10 SYSTEM, MEMORY INTERFACE W/MAPPING PROJECT NO: 7506 PART NUMBER: LM0944950-0001 REV: 88C											

TEXAS INSTRUMENTS INCORPORATED		DATE 12/11/79		LIST OF MATERIAL		PAGE 2 of		PART NUMBER LM0944950-0001		REV 88C	
QTY	UNIT	DESCRIPTION	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER						
JJ17	00001.000	EA	0226609-0001	DIODE, VISIBLE LIGHT EMITTING							
JJ17A				CR1							
JJ29	00001.000	EA	0972784-0001	NETWORK SN74LS13N							
JJ29A				UE19							
JJ40	00001.000	EA	0972900-7474	NETWORK SN74LS74N							
JJ40A				UF20							
JJ44	00001.000	EA	0972782-0001	NETWORK SN74LS132N					TI	-SN74LS132N	
JJ44A				UF14							
JJ52	00001.000	EA	0972900-7197	NETWORK SN74LS197N					TI	-SN74LS197N	
JJ52A				UA01							
JJ69	00001.000	EA	0972946-0065	RES FIX 1.0K OHM 5% .25 W CARBON FILM	RDH - R-25						
JJ69A				R27							
JJ71	00001.000	EA	0972946-0081	RES FIX 4.7K OHM 5% .25 W CARBON FILM	RDH - R-25						
JJ71A				R28							
JJ72	00001.000	EA	0539679-0006	CAPACITOR, 330 PF 2% 100V FX CER DIE	095275-VK20BA331G						
JJ72A				C208							
JJ77	00001.000	EA	0972711-0012	CAP FIXED 33UF 10MVDC 10% ELCTLT AL	NAC - 10U-33						
JJ77A				C214							
JJ78	00002.000	EA	0972924-0012	CAP FIX TANT SOLID 150 MFD 10% 15 VOLT	QPL -M39003/1-2277						
JJ78A				C212 C213							
DRAFTSMAN: <i>L.R.</i> DATE: 12-13-79 TITLE: 990/10 SYSTEM, MEMORY INTERFACE W/MAPPING PROJECT NO: 7506 PART NUMBER: LM0944950-0001 REV: 88C											

TEXAS INSTRUMENTS INCORPORATED		DATE 12/11/79		LIST OF MATERIAL		PAGE 3 of		PART NUMBER LM0944950-0001		REV 88C	
QTY	UNIT	DESCRIPTION	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER						
JJ79	00001.000	EA	0972948-0002	TRANSISTOR, 2N2222A NPN GEN PURP SW TO-18	TI - 2N2222A						
JJ79A				Q1							
JJ82	00001.000	EA	0946737-0001	INSULATOR PMB SPECIAL SMI/M							
JJ83	00001.000	EA	0946733-0001	STIFFENER, PMB, SPECIAL SMI/M							
JJ84	00016.000	EA	0972975-0035	RES FIX COMP 270 OHMS 5% 1/8 WATT	QPL - RC05G271J5						
JJ84A				R29 THRU R44							
JJ87	00001.000	EA	0539679-0004	CAPACITOR, 220 PF 2% 100V FX CER DIE	095275-VK20BA221G						
JJ89A				C205							
JJ91	00002.000	EA	0539679-0008	CAPACITOR, 470 PF 2% 100V FX CER DIE	095275-VK20BA471G						
JJ91A				C206 C207							
JJ92	00002.000	EA	0539679-0003	CAPACITOR, 680 PF 2% 100V FX CER DIE	095275-VK20BA681G						
JJ92A				C209 C210							
JJ93	00003.000	EA	2210188-0002	SOCKET, LOW PROFILE, DIP, 14 PINS	003612-D1LB14P-108						
JJ93A				XUF14, XUE19, XUJ18							
JJ94	00001.000	EA	322222-7132	NETWORK SN74132N							
JJ94A				UJ18							
JJ96	00002.000	EA	3236369-0001	WASHER #2 NYLON FLAT BLK .090IDX.020 THK	NPG -101-BLK						
JJ97	00001.000	EA	0944950-5001	AUTO INSERTION TAPE FOR 944950-1							
JJ98	00001.000	FT	0966760-2896	WIRE, TWISTED PAIR #28 WHT/BLU IPVC	UL - 1472 7STR UL						
JJ99	00001.000	EA	0972946-0055	RES FIX 390 OHM 5% .25 W CARBON FILM	RDH - R-25						
DRAFTSMAN: <i>L.R.</i> DATE: 12-13-79 TITLE: 990/10 SYSTEM, MEMORY INTERFACE W/MAPPING PROJECT NO: 7506 PART NUMBER: LM0944950-0001 REV: 88C											

TEXAS INSTRUMENTS INCORPORATED		DATE 12/11/79		LIST OF MATERIAL		PAGE 4 of		PART NUMBER LM0944950-0001		REV 88C	
QTY	UNIT	DESCRIPTION	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER						
JJ99A				R45							
J100	00001.000	EA	0972757-0009	CAP FIX CER 470PF 10% 50V							
J100A				C215							
J101	AR	EA	0417630-0001	ADHESIVE, EPOXY 0151					HYS	-EPOXI-PATCH KIT	
DRAFTSMAN: <i>L.R.</i> DATE: 12-13-79 TITLE: 990/10 SYSTEM, MEMORY INTERFACE W/MAPPING PROJECT NO: 7506 PART NUMBER: LM0944950-0001 REV: 88C											

TEXAS INSTRUMENTS INCORPORATED		DATE 12/11/79		LIST OF MATERIAL		PAGE 1 of		PART NUMBER LM0944950-5001		REV BBC	
ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ1	00001.000	EA		0944951-0001	PWB-AU2, W/ MAPPING						
JJ18	00003.000	EA		0972900-7400	NETWORK SN74LS00N	TI -SN74LS00N					
JJ18A					UB08 UK05 UF16						
JJ19	00005.000	EA		0219402-7400	NETWORK SN74S00N						
JJ19A					UA05 UA17 UB04 UF15 JJ16						
JJ20	00002.000	EA		0240000-7404	NETWORK SN74H04N						
JJ20A					UA21 UC21						
JJ21	00006.000	EA		0972900-7404	NETWORK SN74LS04N						
JJ21A					UA09 UB07 UB12 UD18 UK07						
JJ21B					UK20						
JJ22	00003.000	EA		0219402-7404	NETWORK SN74S04N						
JJ22A					UE16 UJ15 UJ19						
JJ23	00002.000	EA		0222222-7407	NETWORK-SN7407N	TI- -SN7407N					
JJ23A					UF19 UJ20						
JJ24	00002.000	EA		0972749-0001	NETWORK, SN74LS08N						
JJ24A					UC19 UD19						
JJ25	00001.000	EA		0972900-7410	NETWORK SN74LS10N						
JJ25A					UA07						
JJ26	00001.000	EA		0219402-7410	NETWORK SN74S10N						
JJ26A					UJ14						
DRAFTSMAN DATE CED. DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944950-1											
APP. MFG. DATE APP. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER REV LM0944950-5001 BBC											

TEXAS INSTRUMENTS INCORPORATED		DATE 12/11/79		LIST OF MATERIAL		PAGE 2 of		PART NUMBER LM0944950-5001		REV BBC	
ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ28	00003.000	EA		0972788-0001	NETWORK, SN74LS11, POSITIVE AND GATE						
JJ28A					UB06 UH15 UK15						
JJ30	00001.000	EA		0219402-7408	NETWORK SN74S08N	TI- -SN74S08N					
JJ30A					UF18						
JJ31	00002.000	EA		0972900-7420	NETWORK SN74LS20N						
JJ31A					UB02 UD17						
JJ32	00004.000	EA		0219402-7420	NETWORK SN74S20N						
JJ32A					UA18 UB11 UH14 UJ17						
JJ33	00001.000	EA		0972814-0001	NETWORK-SN74LS27N						
JJ33A					UE17						
JJ34	00002.000	EA		0972900-7430	NETWORK SN74LS30N	TI -SN74LS30N					
JJ34A					UB03 UH18						
JJ35	00003.000	EA		0222222-7437	NETWORK SN7437N						
JJ35A					UAL6 UB16 UE20						
JJ36	00002.000	EA		0972783-0001	NETWORK, SN74LS42N BCD/DEC						
JJ36A					UF17 UH16						
JJ37	00003.000	EA		0222222-7442	NETWORK-SN7442N						
JJ37A					UA19 UA20 UA03						
JJ38	00001.000	EA		0972900-7451	NETWORK SN74LS51N	TI -SN74LS51N					
JJ38A					UB05						
DRAFTSMAN DATE CED. DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944950-1											
APP. MFG. DATE APP. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER REV LM0944950-5001 BBC											

TEXAS INSTRUMENTS INCORPORATED		DATE 12/11/79		LIST OF MATERIAL		PAGE 4 of		PART NUMBER LM0944950-5001		REV BBC	
ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ48D					UH09 UH17						
JJ49	00005.000	EA		0972669-0001	NETWORK, SN74LS163N						
JJ49A					UE06 UE09 UH07 UJ06 UJ08						
JJ50	00003.000	EA		0972900-7174	NETWORK SN74LS174N						
JJ50A					UB17 UB19 UB20						
JJ51	00002.000	EA		0972900-7175	NETWORK SN74LS175N						
JJ51A					UK06 UK14						
JJ53	00002.000	EA		0972668-0001	NETWORK SN74LS251N						
JJ53A					UC07 UF07						
JJ54	00008.000	EA		0972900-7253	NETWORK SN74LS253N	TI -SN74LS253N					
JJ54A					UD04 UD10 UE04 UE10 UH04						
JJ54B					UH10 UJ04 UJ10						
JJ55	00001.000	EA		0972120-0001	NETWORK, SN74259 8-BIT ADDRESSABLE LATCH	001295-74259					
JJ55A					UB10						
JJ56	00001.000	EA		0972159-7265	NETWORK, SN74265N						
JJ56A					UE14						
JJ57	00021.000	EA		0972652-0001	NETWORK SN74LS283N						
JJ57A					UC03 UC04 UC10 UC11 UE01						
JJ57B					UE02 UE03 UE08 UE11 UE12						
JJ57C					UE13 UF03 UF04 UF10 UF11						
DRAFTSMAN DATE CED. DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944950-1											
APP. MFG. DATE APP. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER REV LM0944950-5001 BBC											

TEXAS INSTRUMENTS INCORPORATED		DATE 12/11/79		LIST OF MATERIAL		PAGE 3 of		PART NUMBER LM0944950-5001		REV BBC	
ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF ISSUE	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER					
JJ59	00001.000	EA		0972900-7454	NETWORK SN74LS54N	TI -SN74LS54N					
JJ59A					UB09						
JJ60	00003.000	EA		0972900-7474	NETWORK SN74LS74N						
JJ60A					UD20 UK17 UK18						
JJ61	00002.000	EA		0222222-7474	NETWORK SN7474N	-SN7474N					
JJ61A					UA08 UB21						
JJ62	00001.000	EA		0972751-0001	NETWORK, SN74LS86N						
JJ62A					UB13						
JJ63	00003.000	EA		0972900-7109	NETWORK SN74LS109N	TI -SN74LS109N					
JJ63A					UA06 UH19 UH20						
JJ65	00001.000	EA		0972900-7138	NETWORK SN74LS138N	TI -SN74LS138N					
JJ65A					UB01						
JJ66	00001.000	EA		0972900-7139	NETWORK SN74LS139N	TI -SN74LS139N					
JJ66A					UC17						
JJ67	00003.000	EA		0222222-7148	NETWORK SN74148N						
JJ67A					UC18 UC20 UD07						
JJ68	00017.000	EA		0801383-0001	NETWORK SN74LS151N						
JJ68A					UC05 UC06 UC08 UC09 UD05						
JJ68B					UD06 UD08 UD09 UF05 UF06						
JJ68C					UF08 UF09 UH05 UH06 UH08						
DRAFTSMAN DATE CED. DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944950-1											
APP. MFG. DATE APP. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. PART NUMBER REV LM0944950-5001 BBC											

TEXAS INSTRUMENTS INCORPORATED DATE 12/11/79 LIST of MATERIAL PAGE 5 of LM0944950-5001 BBC

ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF MEAS.	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER
JJ57D					UJ01 UJ02 UJ03 UJ11 UJ12	
JJ57E					UJ13	
JJ58	00004.000	EA		0972787-0003	NETWORK SN74LS367N	
JJ58A					UE05 UJ05 UJ07 UJ09	
JJ59	00013.000	EA		0972787-0004	NETWORK SN74LS368N	
JJ59A					UA02 UA04 UB14 UB15 UC14	
JJ59B					UC15 UC16 UD14 UD15 UD16	
JJ59C					UE15 UK01 UK04	
JJ5D	00021.000	EA		0972654-0001	NETWORK, SN74LS670N	
JJ5UA					UC01 UC02 UC12 UC13 UD01	
JJ60B					UD02 UD03 UD11 UD12 UD13	
JJ60C					UE07 UF01 UF02 UF12 UF13	
JJ60D					UH01 UH02 UH03 UH11 UH12	
JJ60E					UH13	
JJ61	00001.000	EA		0802023-0001	NETWORK SN75138N	
JJ61A					UD21	
JJ62	00002.000	EA		0972141-0041	NETWORK, RES. 1.0 K OHM 2 % 14 PIN DIP	BEC - 899-1-R10K
JJ62A					UB18 UK08	
JJ63	00001.000	EA		0972007-1470	NETWORK, RES., 14 PIN, 47 OHM, 2%, 7 ELEMENT	
JJ63A					UK19	
DRAFTSMAN DATE CED DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944950-1						
APPRO. MFG DATE APPR. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. LM0944950-5001 BBC						

TEXAS INSTRUMENTS INCORPORATED DATE 12/11/79 LIST of MATERIAL PAGE 6 of LM0944950-5001 BBC

ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF MEAS.	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER
JJ64	00001.000	EA		0972946-0033	RES FIX 47.0 OHM 5 % .25 W CARBON FILM	ROH - R-25
JJ64A					R12	
JJ65	00001.000	EA		0972946-0045	RES FIX 150 OHM 5 % .25 W CARBON FILM	KOH - R-25
JJ65A					R25	
JJ66	00002.000	EA		0972946-0049	RES FIX 220 OHM 5 % .25 W CARBON FILM	ROH - R-25
JJ66A					R1 R2	
JJ67	00001.000	EA		0240000-7400	NETWORK-SN74H00N	
JJ67A					UK16	
JJ68	00003.000	EA		0972946-0055	RES FIX 390 OHM 5 % .25 W CARBON FILM	ROH - R-25
JJ68A					R13 R15 R17	
JJ69	00002.000	EA		0972946-0065	RES FIX 1.0K OHM 5% .25 W CARBON FILM	ROH - R-25
JJ69A					R4 R7	
JJ70	00001.000	EA		0539370-0436	RES FIX FILM 3.40K OHM 1% .25 WATT	CDR - NA55
JJ70A					R3	
JJ71	00002.000	EA		0972946-0081	RES FIX 4.7K OHM 5 % .25 W CARBON FILM	ROH - R-25
JJ71A					R16 R19	
JJ73	00002.000	EA		0539370-0349	RES FIX FILM 422 OHM 1% .25 WATT	CDR - NA55
JJ73A					R9 R11	
JJ75	00001.000	EA		0972757-0021	CAP, FIX, CERAMIC, 4700PF, 50V 10%	
JJ75A					C211	
DRAFTSMAN DATE CED DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944950-1						
APPRO. MFG DATE APPR. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. LM0944950-5001 BBC						

TEXAS INSTRUMENTS INCORPORATED DATE 12/11/79 LIST of MATERIAL PAGE 7 of LM0944950-5001 BBC

ITEM NUMBER	QUANTITY PER ASSEMBLY	UNIT OF MEAS.	DWG. SIZE	PART NUMBER	DESCRIPTION	VENDOR PART NUMBER
JJ76	00102.000	EA		0972763-0021	CAP., FIXED, AXIAL LEAD, .047 UF, 680%, -20%	
JJ76A					C1 THRU C203 ODD NO. ONLY	
JJ80	00001.000	EA		2219402-7474	NETWORK SN74S74N	
JJ80A					UE18	
JJ81	00001.000	EA		0972556-0002	NETWORK SN74368N	
JJ81A					UK02	
JJ85	00002.000	EA		0539374-0342	RES FIX FILM 357 OHM 1% .25 WATT	CDR - NC5
JJ85A					R5 R6	
JJ86	00001.000	EA		0539370-0339	RES FIX FILM 332 OHM 1% .25 WATT	CDR - NA55-100PPH/C
JJ86A					R8	
JJ87	00001.000	EA		0539370-0340	RES FIX FILM 340 OHM 1% .25 WATT	CDR - NA55
JJ87A					R10	
JJ88	00002.000	EA		0972946-0047	RES FIX 180 OHM 5 % .25 W CARBON FILM	ROH - R-25
JJ88A					R14 R18	
DRAFTSMAN DATE CED DRAFTSMAN DATE DESIGN ENGINEER DATE TITLE AUTO INSERTION TAPE FOR 944950-1						
APPRO. MFG DATE APPR. PROJECT ENGINEER DATE RELEASED DATE PROJECT NO. LM0944950-5001 BBC						

- NOTES: UNLESS OTHERWISE SPECIFIED;
1. ALL DEVICE TYPES ARE PREFIXED WITH SMT#
 2. GROUND IS APPLIED TO PIN 7 OF ALL 14-PIN IC'S AND PIN 8 OF ALL 16-PIN IC'S EXC RES PKGS
 3. VCC IS APPLIED TO PIN 14 OF ALL 14-PIN IC'S AND PIN 16 OF ALL 16-PIN IC'S
 4. DEVICE TYPE, PIN NUMBERS, AND LOCATION OF IC IS SHOWN AS FOLLOWS:



100 AND 04 = DEVICE TYPE
 5 AND 6 = PIN NUMBERS
 B06 AND C10 = LOCATION: FIRST LETTER DENOTES ROW, SECOND AND THIRD DIGITS DENOTES COLUMN - IC IS LOCATED AT THE INTERSECTION OF ROW AND COLUMN.

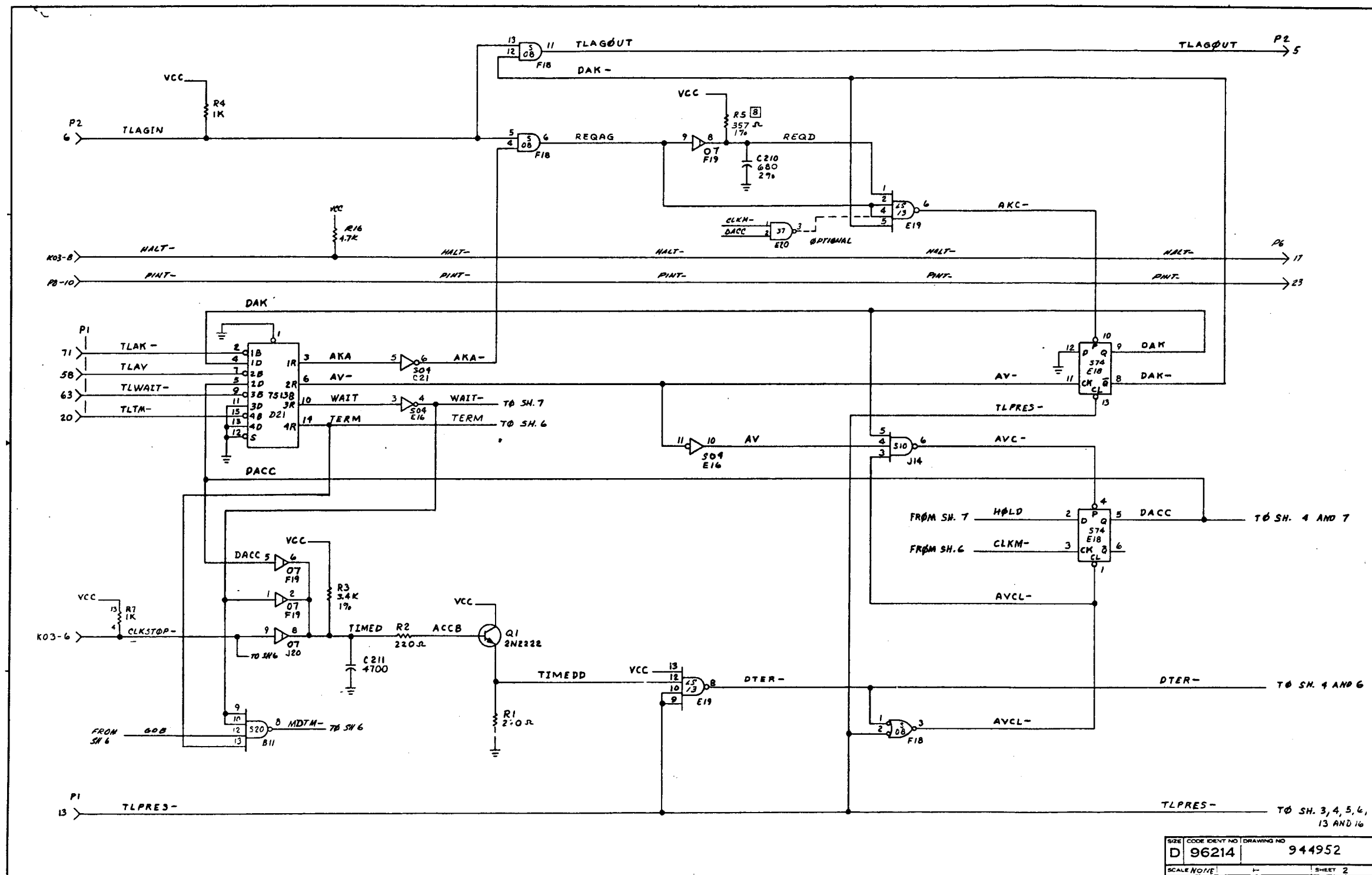
5. ALL RESISTOR VALUES ARE IN OHMS
6. ALL CAPACITOR VALUES ARE IN PICOFARADS
7. R20, R21, R23 AND R24 ARE TRIMMER RESISTORS AND MAY OR MAY NOT BE INSTALLED
8. R5 MAY BE CHANGED AT UNIT TEST TO MEET TIMING SPECS

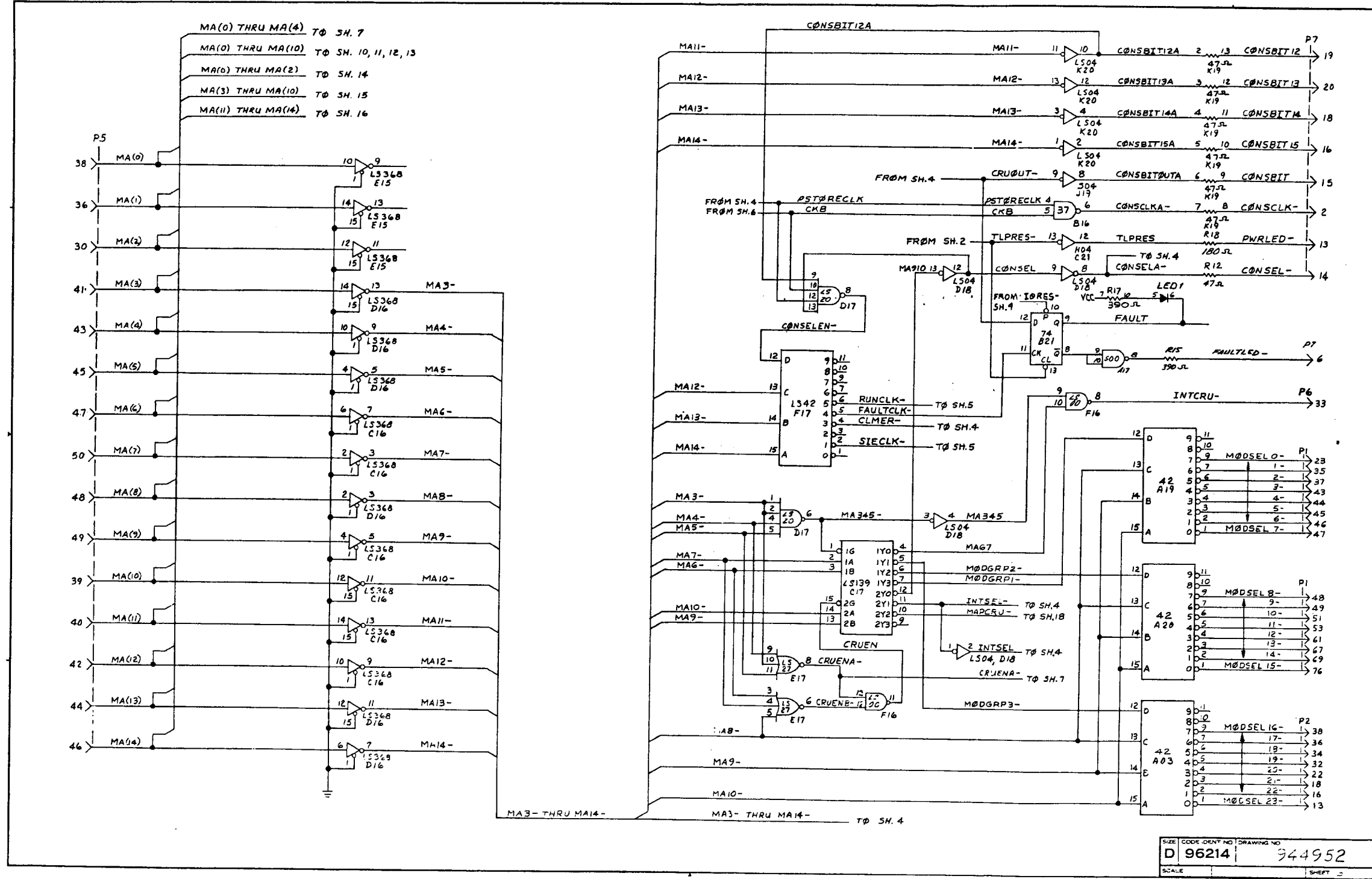
REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
A		CN415359 (D) P. Parker (REVISED PER EXTENSIVE ENGINEERING CHANGES (SHADED REV STATUS BLK)	11/11/76
B		CN419446 (E) A. C. S. S. S.	4-11-78
C		CN422136 (E) J. W. K. K.	5-20-77
D		CN420554 (C) D. B. HALL	6-11-77
E		CN425126 (C) H. D. K. K.	10-17-77
F		CN427188 (D) R. Parker	10-17-77
G		CN446656 (C) B. B. K.	9-22-78
H		CN448469 (E) H. W. S. K.	5-2-79
J		CN451995 (E) H. W. S. K.	5-2-79
K		CN449711 (D) H. W. S. K.	5-25-79
L		CN450286 (C) R. Parker	8-1-79
M		CN433366 (C) D. B. K.	8-9-79
N		CN450587 (D) H. W. S. K.	10-30-79
P		CN456200 (C) C. R. K.	1-9-80

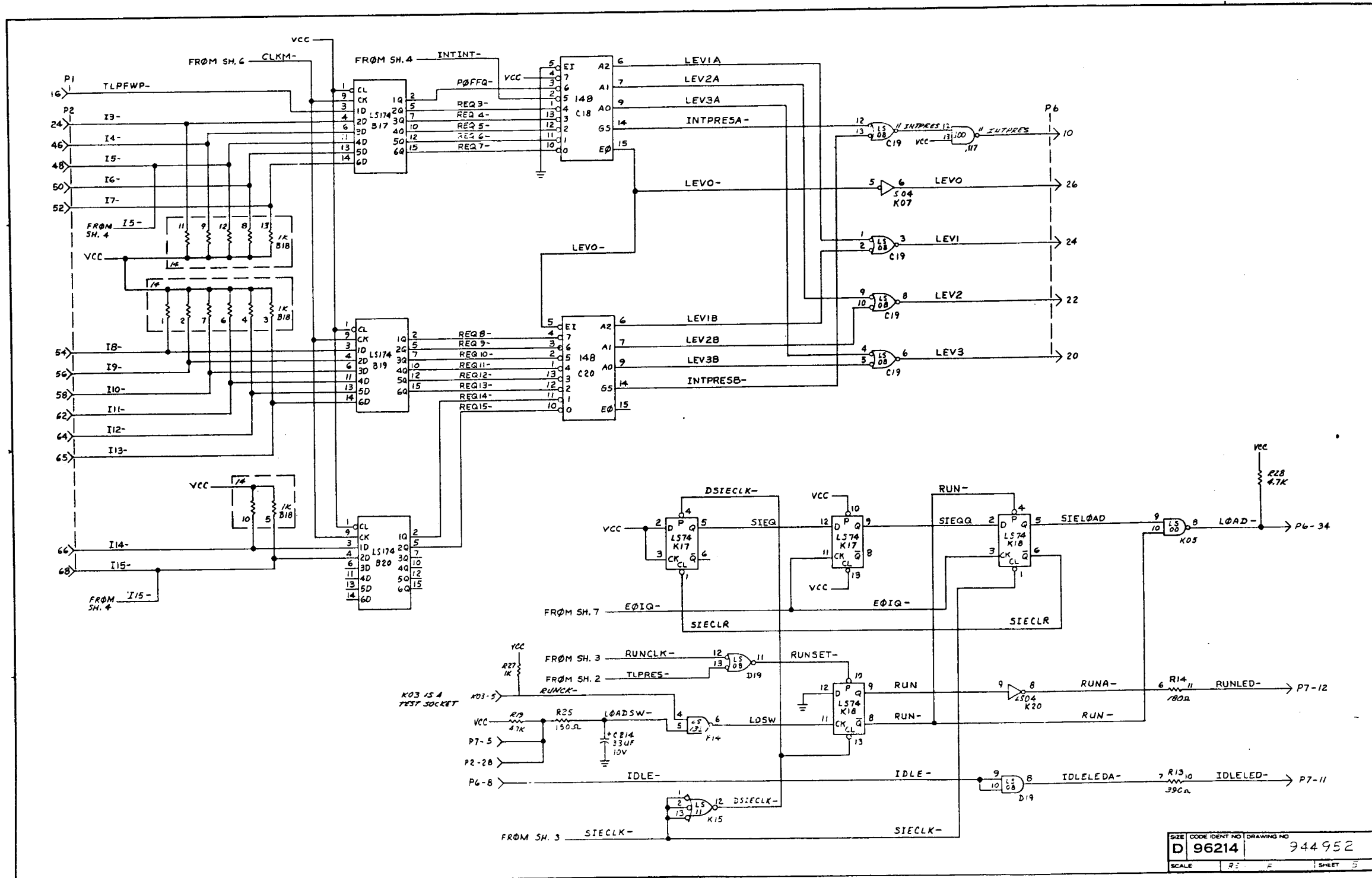
TYPE	LOCATION	PIN#
J00	F15	4, 5, 6, 11, 12, 13
LS00	J16	8, 9, 10
	B08	8, 9, 10
	K07	10, 11, 13
	B07	5, 6
S04	B12	1, 2, 3, 4, 5, 6
	K20	5, 6
	J15	5, 6
	J19	10, 11
S08	F18	8, 9, 10
	K15	3, 4, 5, 6
LS27	E17	1, 2, 12, 13
37	E20	1, 2, 3
LS86	B13	1, 2, 3, 4, 5, 6, 11, 12, 13
LS175	B20	6, 7, 10, 11, 12, 13, 14, 15
LS348	E15	1, 2, 3, 4, 7

REV STATUS	REV	R	H	K	F	P	K	-	-	-	M	M	M	-	P	E	
OF SHEETS	5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	20

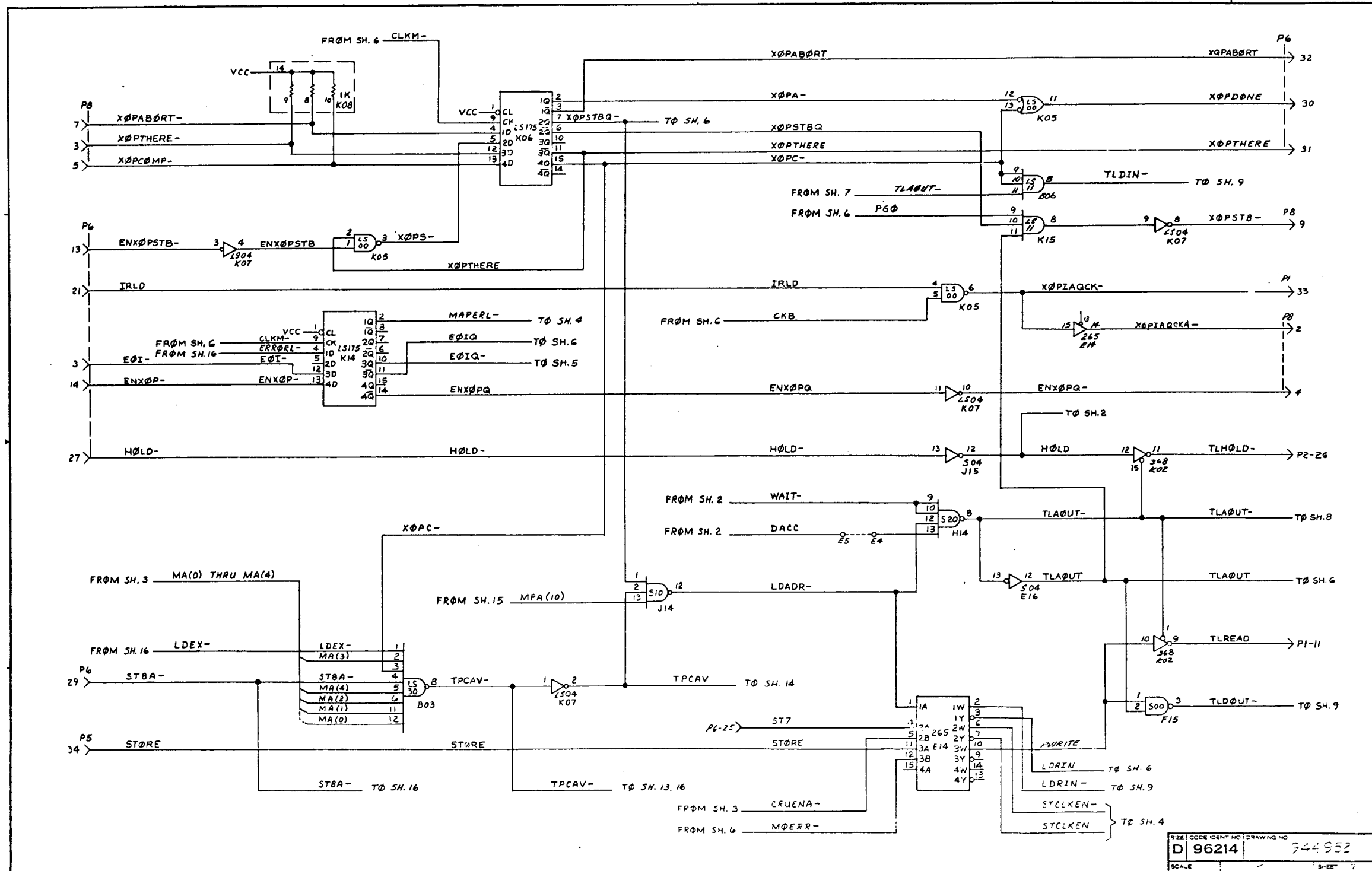
QTY	REGR	FRM NO	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROUREMENT SPECIFICATION																																																																										
PARTS LIST																																																																																
UNLESS OTHERWISE SPECIFIED				UNLESS OTHERWISE SPECIFIED																																																																												
<ul style="list-style-type: none"> REMOVE ALL BURRS AND SHARP EDGES CONCENTRICITY MACHINED DIAMETERS .010 Pk DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100 				<ul style="list-style-type: none"> DIMENSIONS ARE IN INCHES TOLERANCES ANGLES ±1° 3 PLACE DECIMALS ±.010 2 PLACE DECIMALS ±.05 																																																																												
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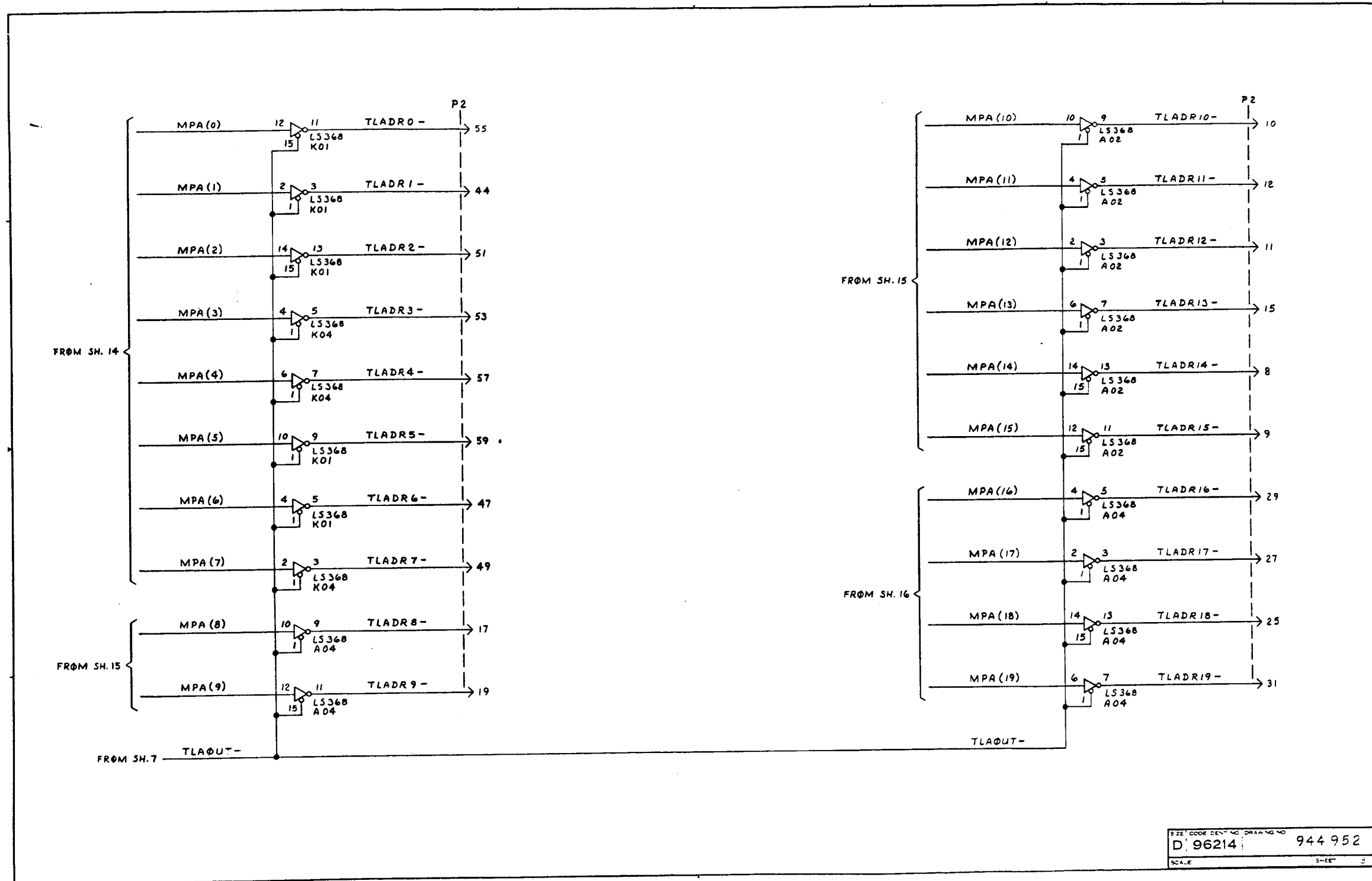


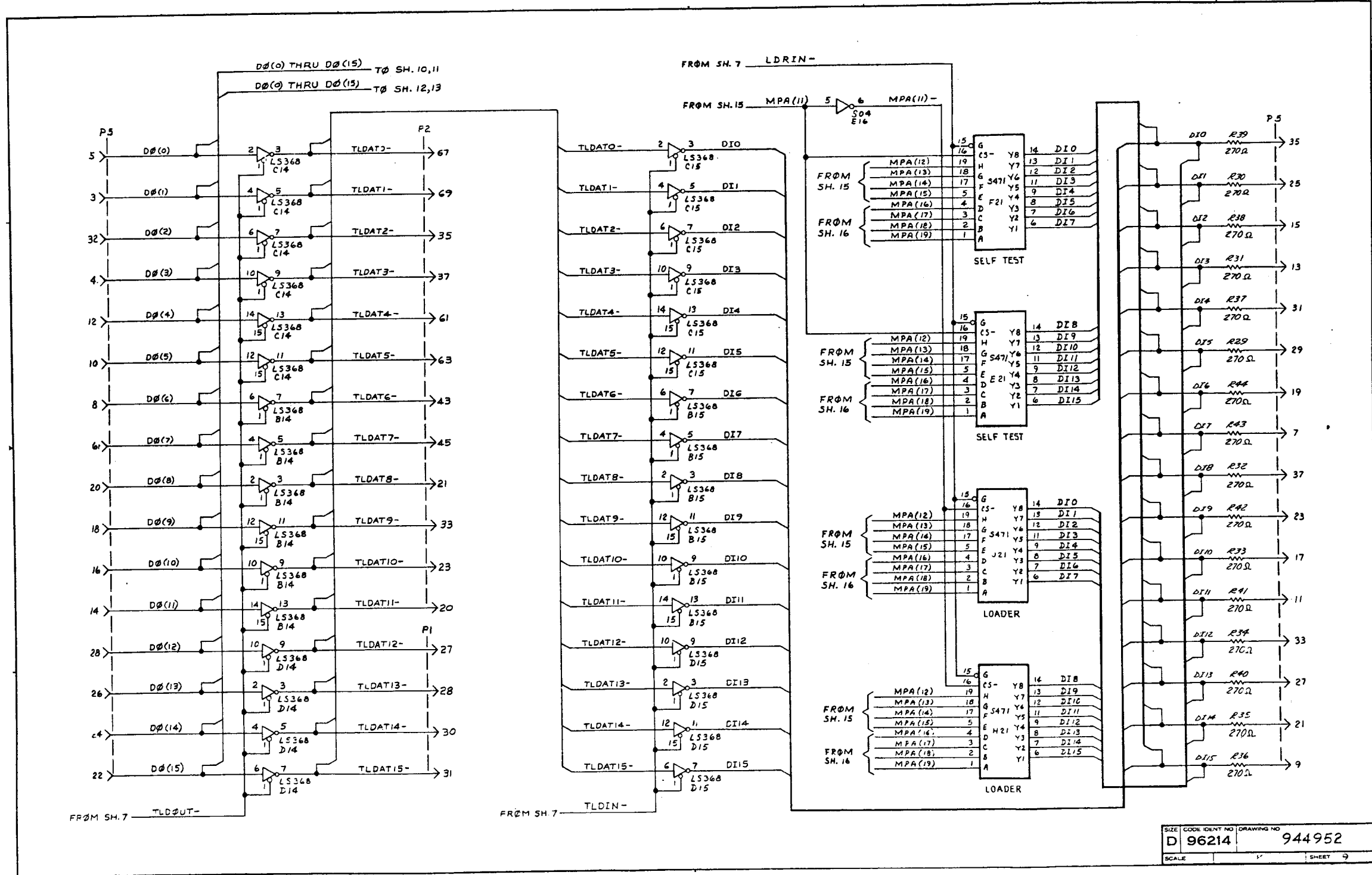


SIZE	CODE IDENT NO	DRAWING NO
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SCALE	R	SHEET 5

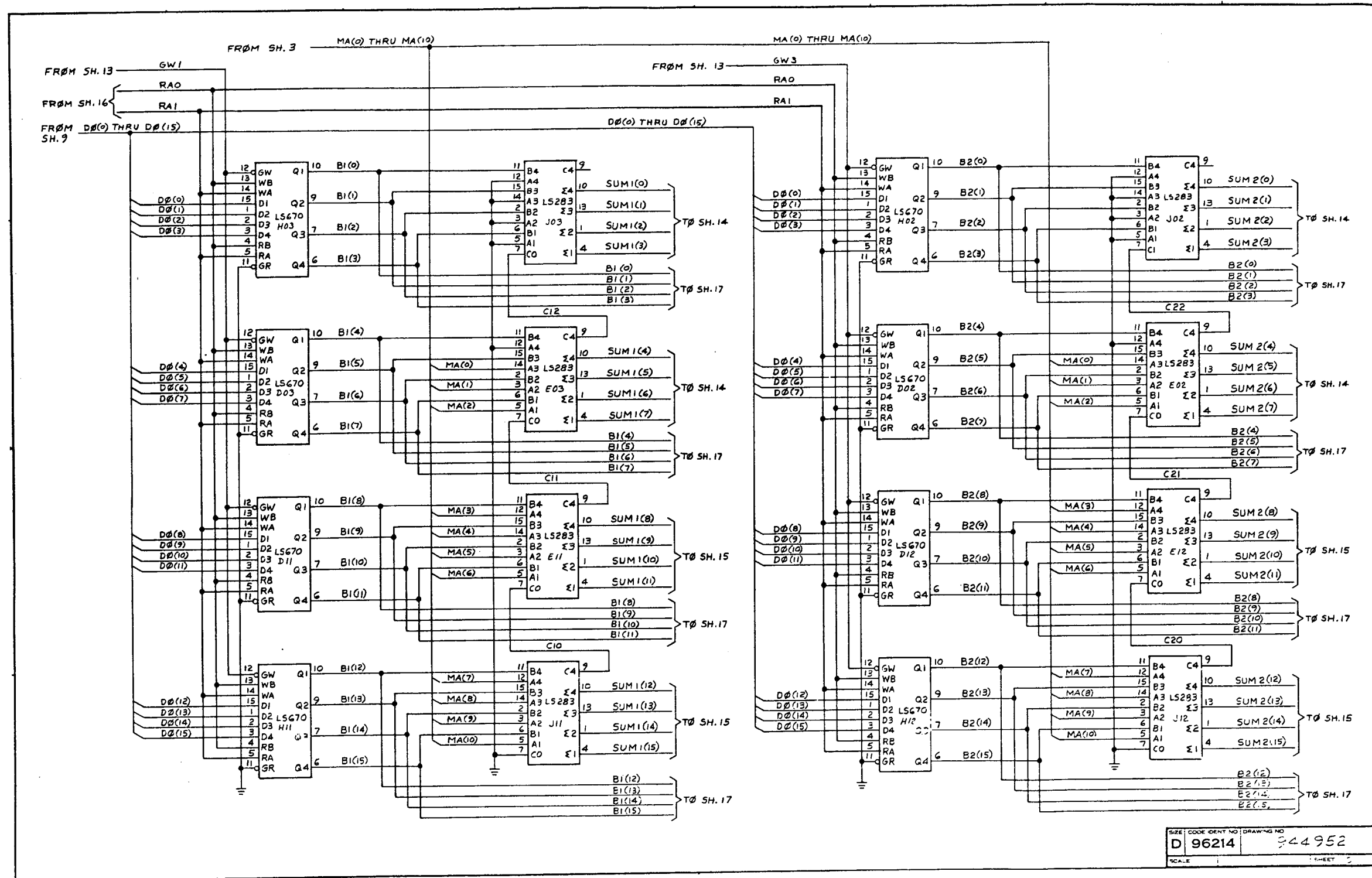


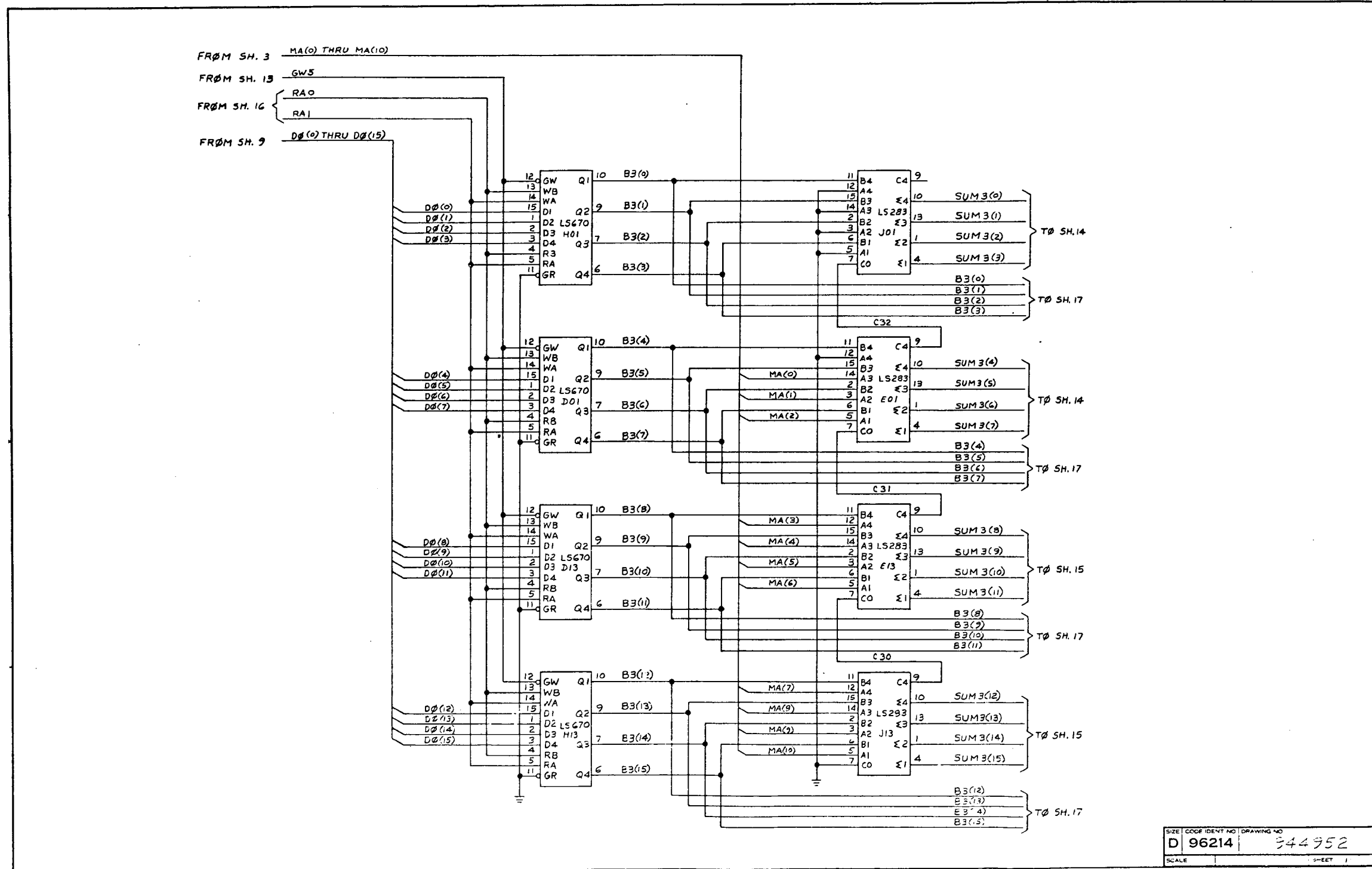
D 96214 344952
 SCALE SHEET 7

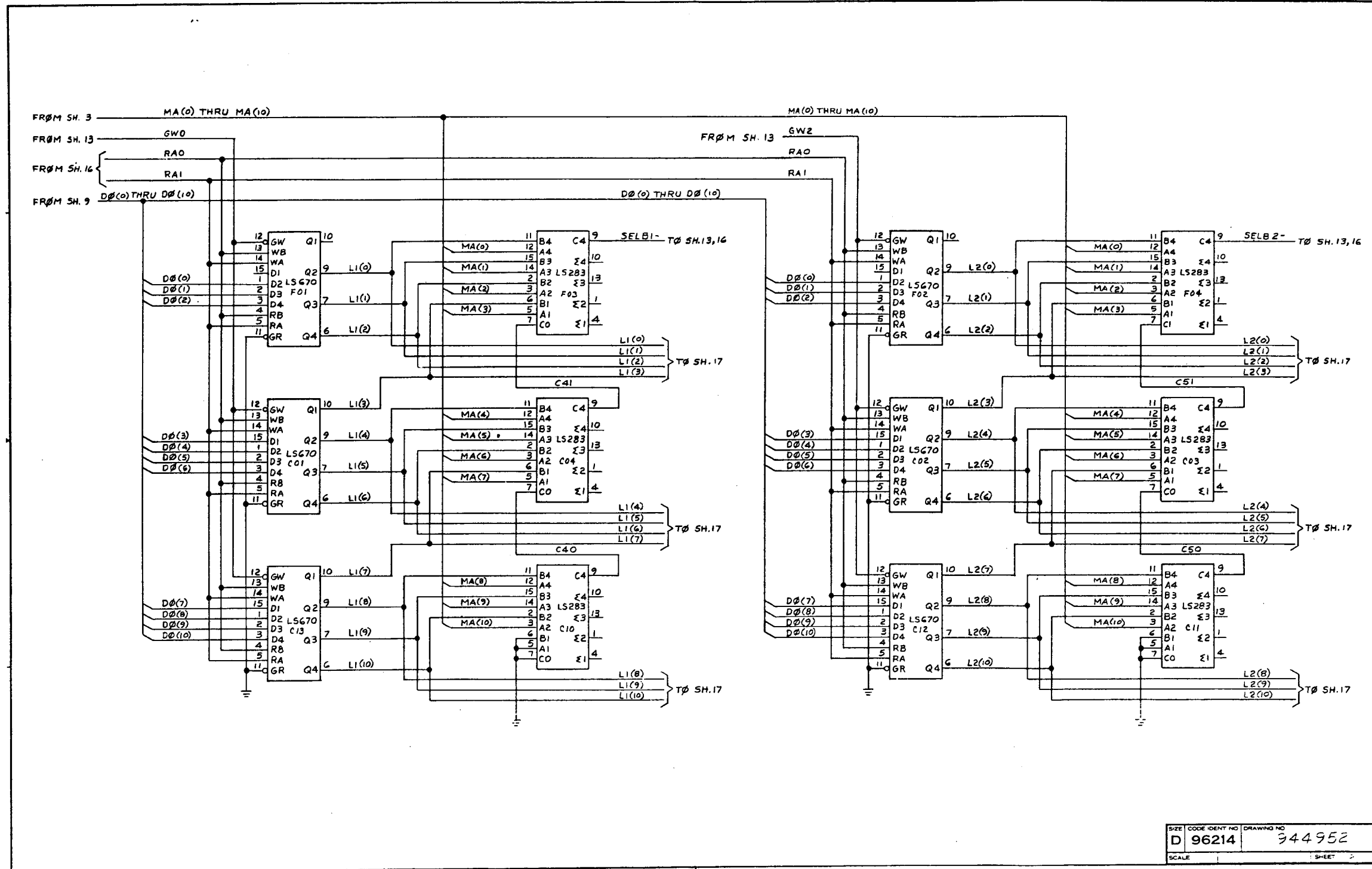


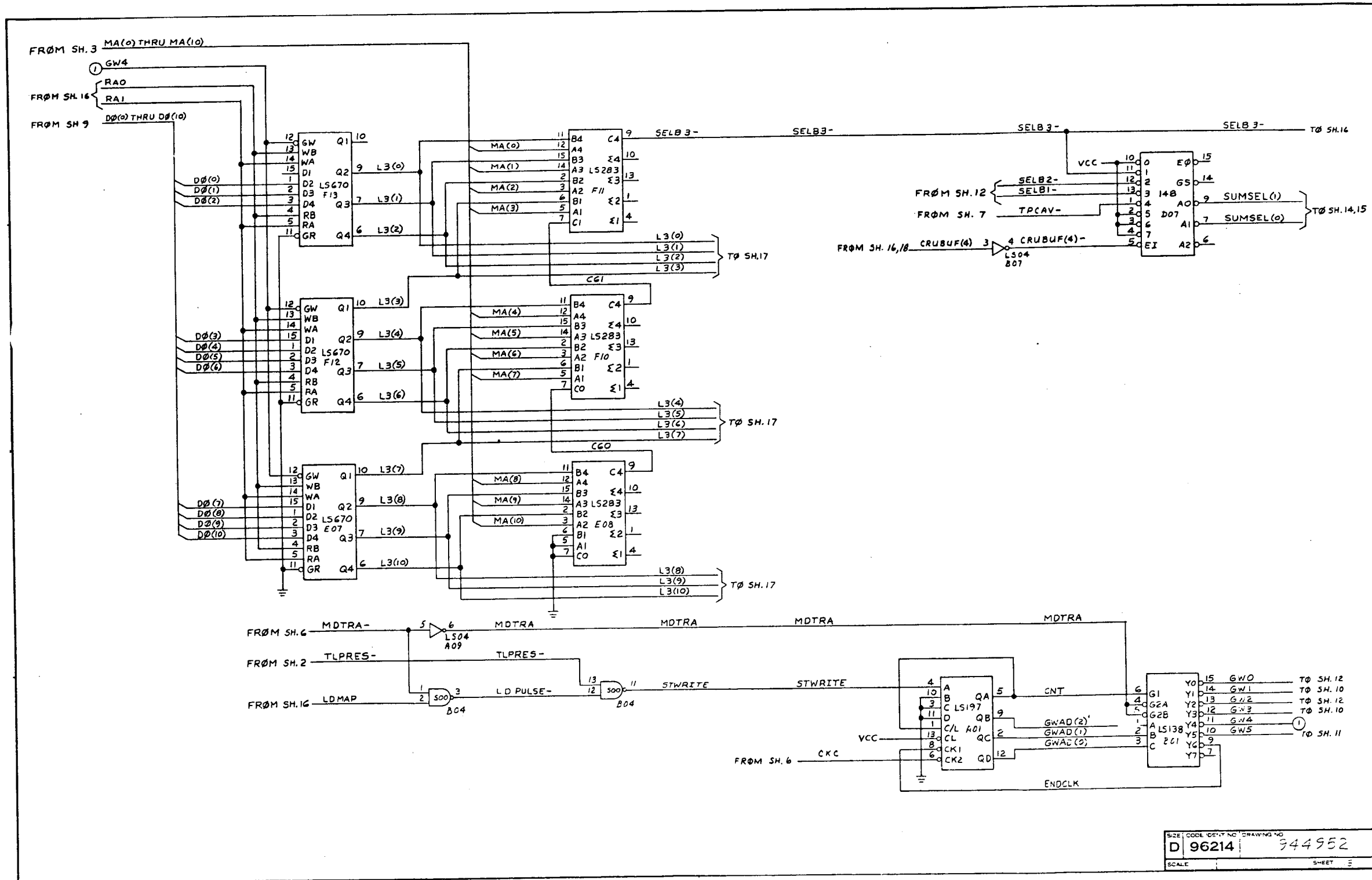


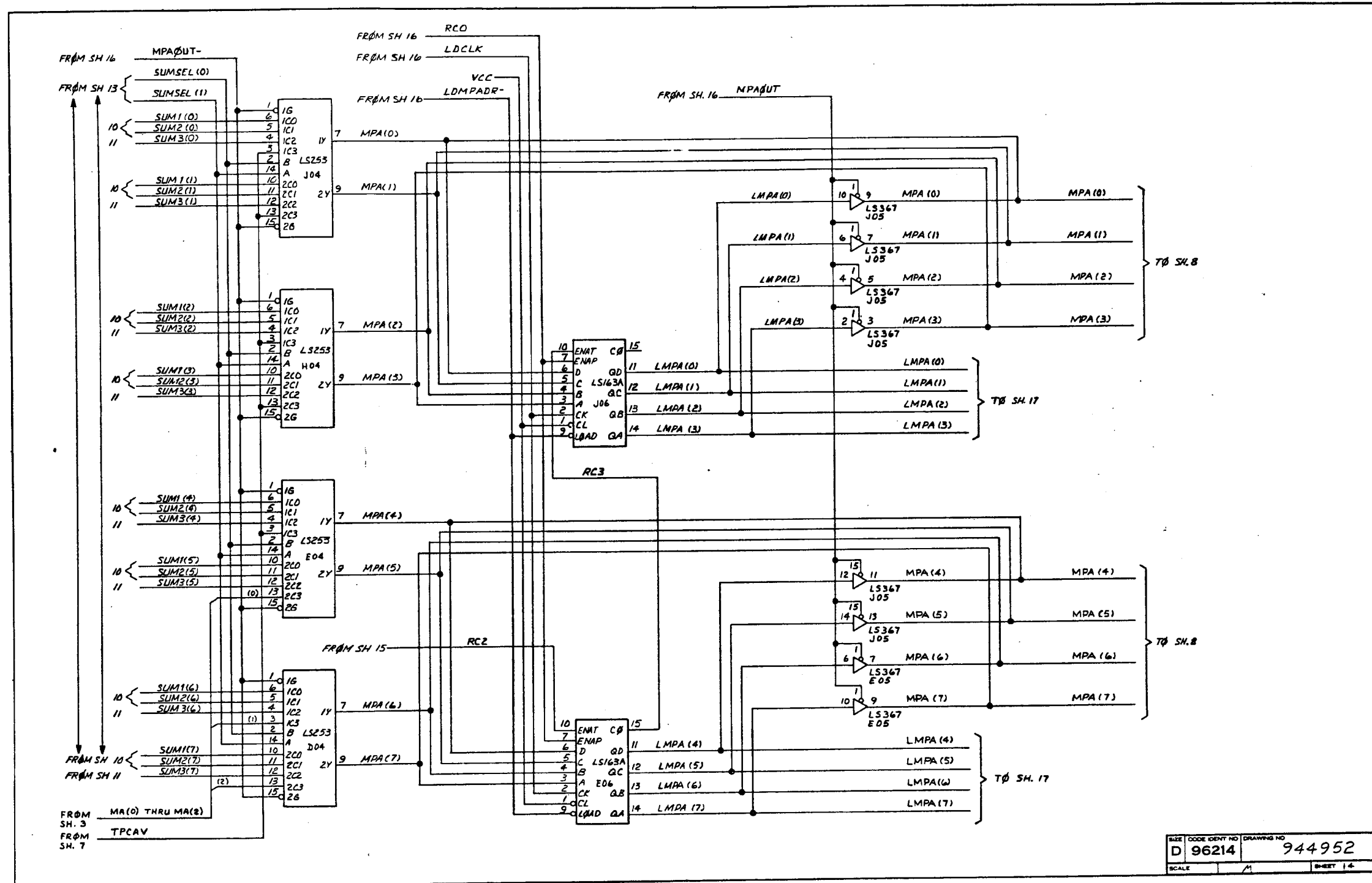
SIZE	CODE IDENT NO	DRAWING NO
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SCALE	1"	SHEET 9

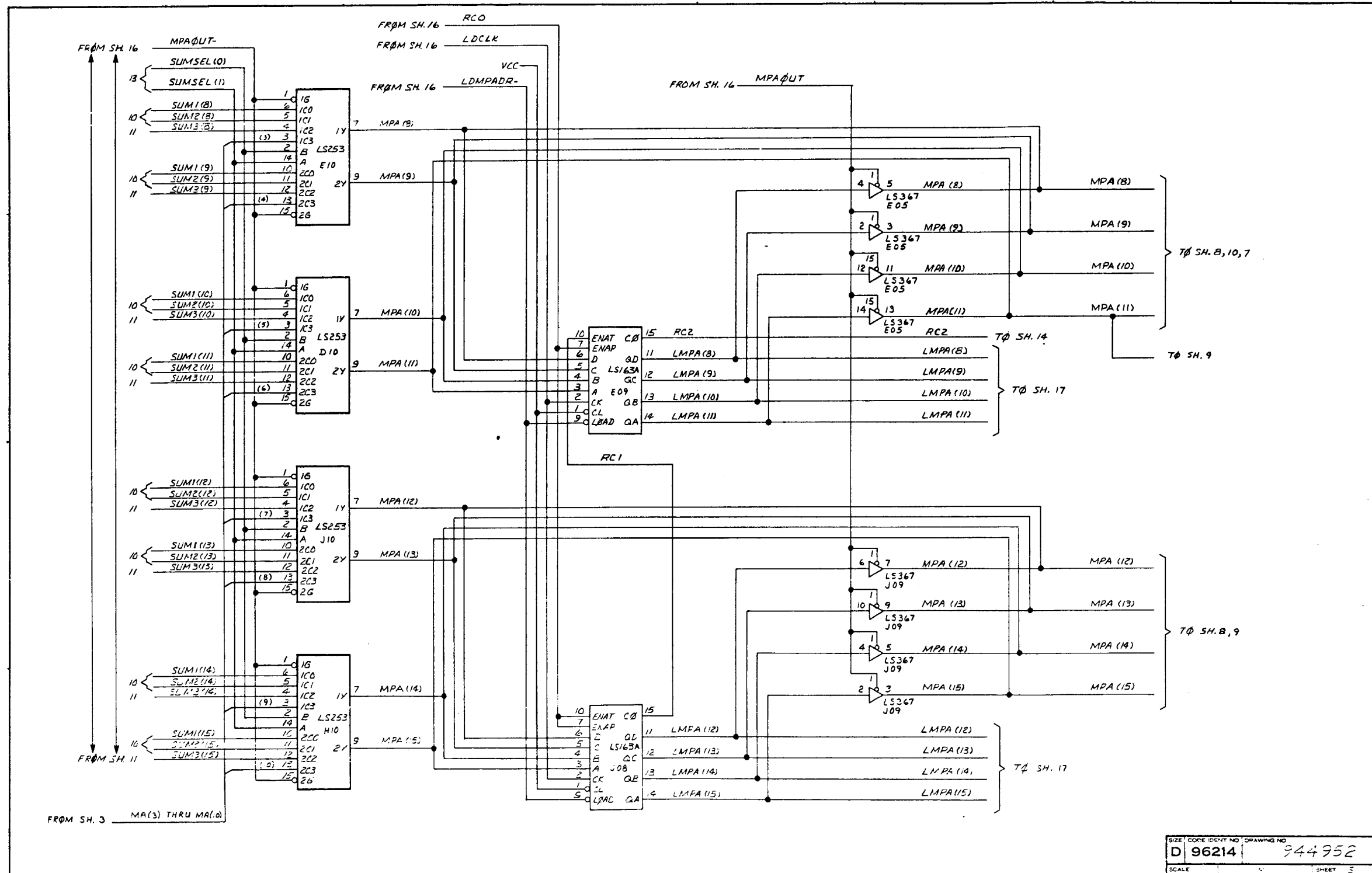


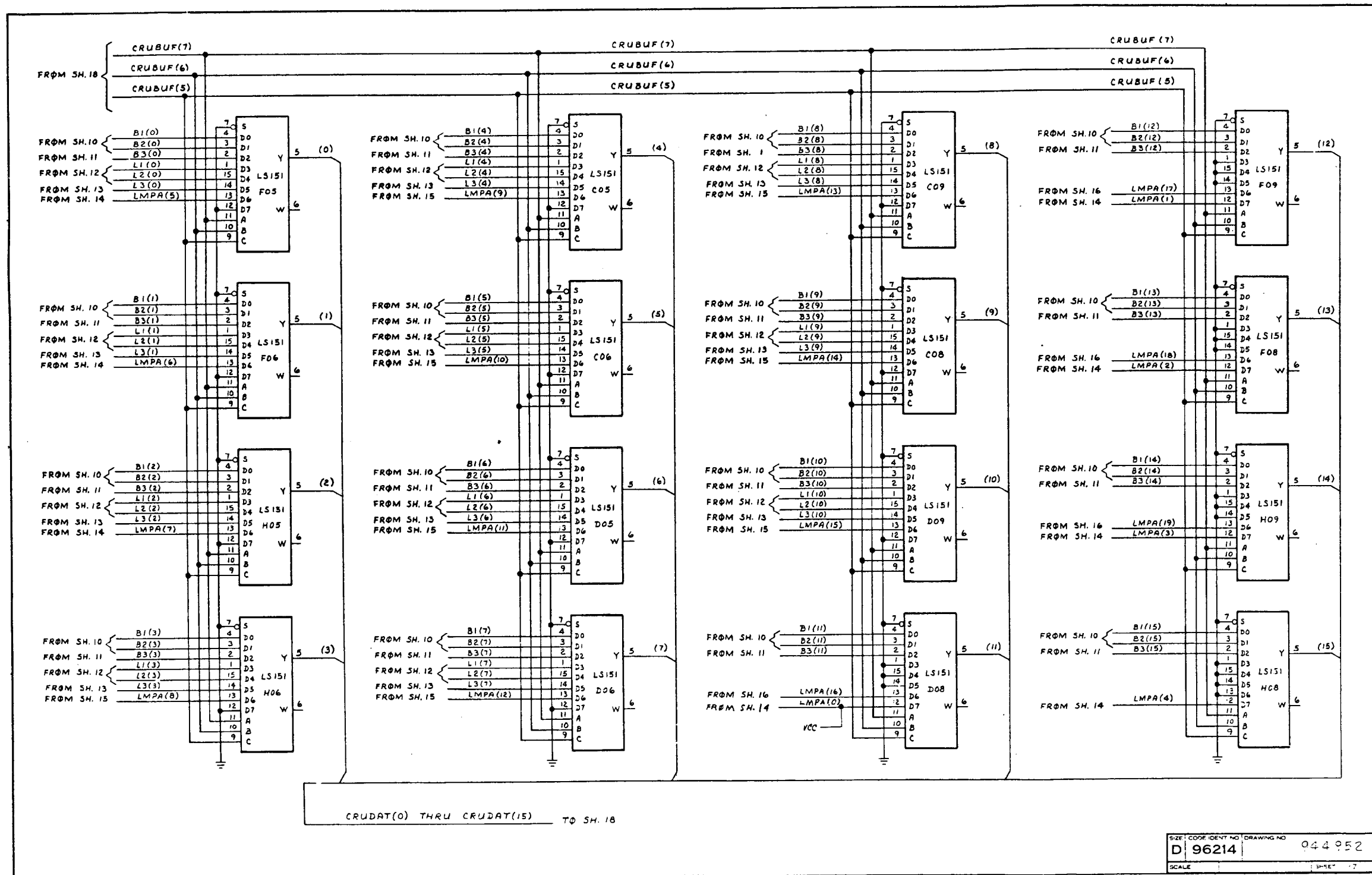


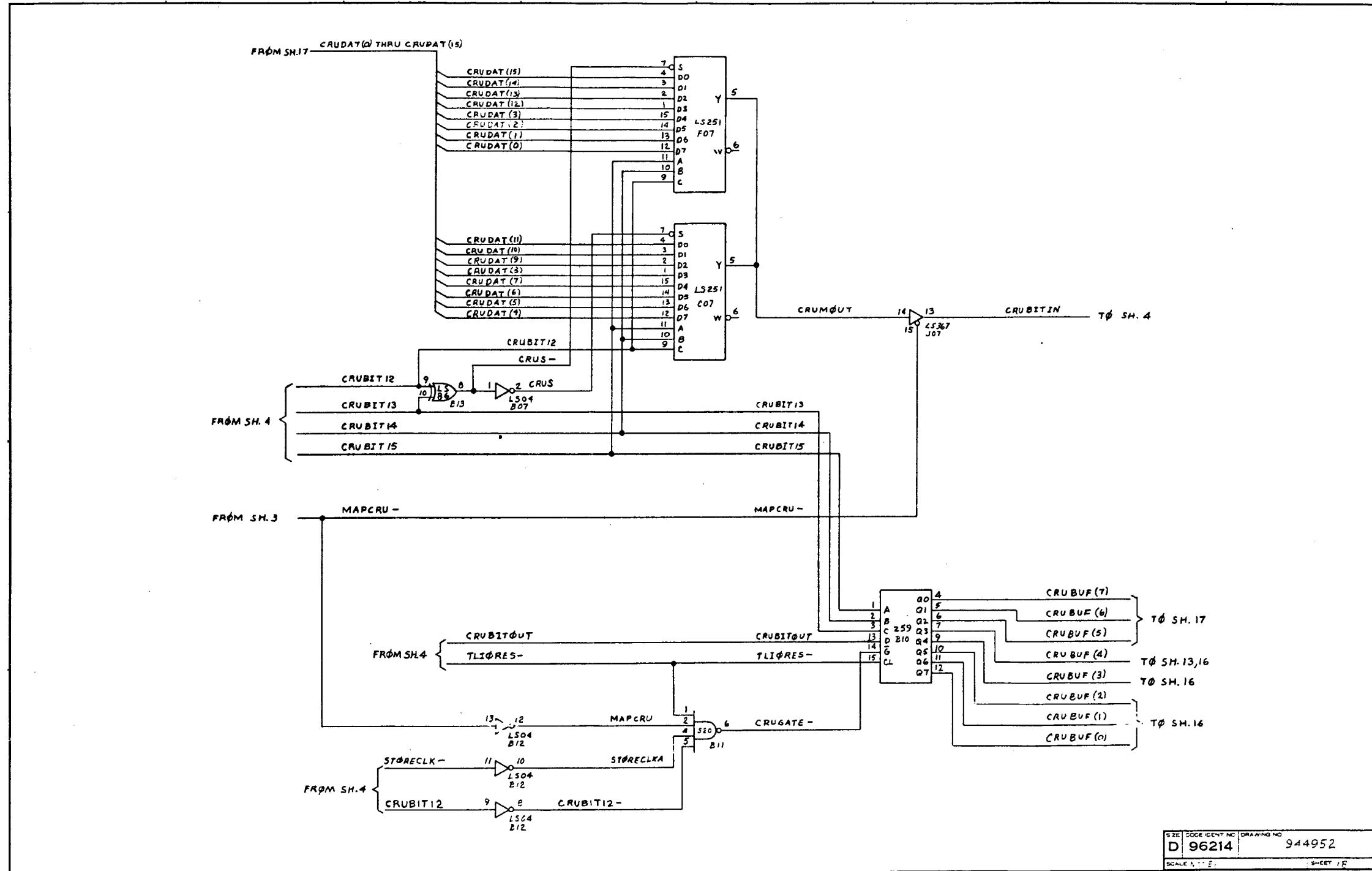












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A01	LS197	-13
A02	LS368	-8
A03	42	-3
A04	LS368	-8
A05	S00	-16
A06	LS109	-16
A07	LS10	-16
A08	74	-16
A09	LS04	-13, 16
A16	37	-4
A17	S00	-5, 6
A18	S20	-4, 6
A19	H04	-3
A20	42	-3
A21	H04	-4
B01	LS138	-13
B02	LS20	-16
B03	LS30	-7
B04	S00	-3, 4, 5
B05	51	-16
B06	LS11	-16
B07	LS04	-13, 16, 18
B08	LS00	-16
B09	LS54	-16
B11	S20	-2, 18
B12	LS04	-18
B13	LS86	-18
B14	LS368	-9
B15	LS368	-9
B16	37	-3, 4
B17	LS174	-5
B18	1K	-5
B19	LS174	-5
B20	LS174	-5
B21	74	-3, 6
C01	LS670	-12
C02	LS670	-12
C03	LS283	-12
C04	LS283	-12
C05	LS151	-17
C06	LS151	-17
C07	LS251	-18
C08	LS151	-17
C09	LS151	-17
C10	LS283	-12
C11	LS283	-12
C12	LS670	-12
C13	LS670	-12
C14	LS368	-9
C15	LS368	-9
C16	LS368	-3
C17	LS139	-3
C18	148	-5
C19	LS08	-5
C20	148	-5
C21	H04	-2, 3, 4

LOC.	TYPE	PAGE(S)
D01	LS670	-11
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D03	LS670	-10
D04	LS253	-14
D05	LS151	-17
D06	LS151	-17
D07	148	-13
D08	LS151	-17
D09	LS151	-17
D10	LS253	-15
D11	LS670	-10
D12	LS670	-10
D13	LS670	-11
D14	LS368	-4, 9
D15	LS368	-9
D16	LS368	-3
D17	LS20	-3
D18	LS04	-3, 4, 5
D19	LS08	-4, 5
D20	LS74	-4
D21	LS138	-2
E01	LS283	-11
E02	LS283	-10
E03	LS283	-10
E04	LS253	-14
E05	LS367	-14, 15
E06	LS163A	-14
E07	LS670	-13
E08	LS283	-13
E09	LS163A	-15
E10	LS253	-15
E11	LS283	-10
E12	LS283	-10
E13	LS283	-11
E14	265	-7
E15	LS368	-3, 4
E16	S04	-2, 4, 7, 9, 6
E17	LS27	-3
E18	S74	-2
E19	LS13	-2
E20	37	-4
E21	S471	-9
F01	LS670	-12
F02	LS670	-12
F03	LS283	-12
F04	LS283	-12
F05	LS151	-17
F06	LS151	-17
F07	LS251	-18
F08	LS151	-17
F09	LS151	-17
F10	LS283	-13
F11	LS283	-13
F12	LS670	-13
F13	LS670	-13
F14	LS132	-4, 5, 6

LOC.	TYPE	PAGE(S)
F15	S00	-7, 16
F16	LS00	-3, 4, 6
F17	LS42	-3
F18	S08	-2
F19	07	-2, 6, 4
F20	LS74	-4, 6
F21	S471	-9
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H03	LS670	-10
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H06	LS151	-17
H07	LS163A	-16
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H09	LS151	-17
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H11	LS670	-10
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H13	LS670	-11
H14	S20	-6, 7
H15	LS11	-6
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H18	LS30	-4
H19	LS109	-4
H20	LS109	-4
H21	S471	-9
J01	LS283	-11
J02	LS283	-10
J03	LS283	-10
J04	LS253	-14
J05	LS367	-14
J06	LS163A	-14
J07	LS367	-16, 18
J08	LS163A	-15
J09	LS367	-4, 15
J10	LS253	-15
J11	LS283	-10
J12	LS283	-10
J13	LS283	-11
J14	S10	-2, 6, 7
J15	S04	-6, 7
J16	S00	-4, 6
J17	S20	-6
J18	LS132	-6
J19	S04	-3, 6
J20	07	-2, 6
J21	S471	-9
K01	LS368	-8
K02	368	-7
K03	SOCKET	-TEST SOCKET
K04	LS368	-7, 8
K05	LS00	-5, 7
K06	LS175	-7
K07	LS04	-5, 7

LOC.	TYPE	PAGE(S)
K08	1K	-4, 7
K14	LS175	-7
K15	LS11	-5, 7
K16	S00	-4, 6
K17	LS74	-5
K18	LS74	-5
K19	47a	-3
K20	LS04	-3, 5

SIZE	CODE IDENT NO	DRAWING NO
D	96214	944952
SCALE	F	SHEET

SMI (with mapping) Logic Diagram

REF DES	VALUE	PAGE(S)		REF DES	VALUE	PAGE
R1	220 Ω	2				
R2	220 Ω	2				
R3	3.3K	2				
R4	1K	2				
R5	300 Ω	2				
R6	300 Ω	6		C205	220	6
R7	1K	2		C206	470	6
R8	330 Ω	6		C207	470	6
R9	390 Ω	6		C208	220	6
R10	330 Ω	6		C209	470	6
R11	330 Ω	6		C210	470	2
R12	47 Ω	3		C211	.0047	2
R13	390 Ω	5		C212	LARGE DECOUPLING	
R14	180 Ω	5		C213	LARGE DECOUPLING	
R15	390 Ω	3		C214	39 μ	5
R16	4.7K	2		C215	470PF	4
R17	390 Ω	3		LED		6
R18	180 Ω	3		R45	390 Ω	4
R19	4.7K	5				
R20		6	TRIM FOR R11			
R21		6	TRIM FOR R9			
R22			DELETED			
R23		6	TRIM FOR R10			
R24		6	TRIM FOR 6			
R25	150 Ω	5				
R27	1K	5				
R28	4.7K	5				
R29	270 Ω	9				
R30	270 Ω	9				
R31	270 Ω	9				
R32	270 Ω	9				
R33	270 Ω	9				
R34	270 Ω	9				
R35	270 Ω	9				
R36	270 Ω	9				
R37	270 Ω	9				
R38	270 Ω	9				
R39	270 Ω	9				
R40	270 Ω	9				
R41	270 Ω	9				
R42	270 Ω	9				
R43	270 Ω	9				
R44	270 Ω	9				
QK19	47 Ω	3,6				
QK08	1k	4,7				
Q1	2N2222	2				
Q218	1K	5				