

GENERAL ELECTRIC

43B135921

CONT ON SHEET 2.1 SH NO. 2

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV. NO. \_\_\_\_\_  
CONT ON SHEET \_\_\_\_\_ SH NO. \_\_\_\_\_

TITLE  
INSTRUCTION TIMING AND  
BLOCK DESCRIPTION

FIRST MADE FOR **Datanet-30**

FOR MODELS 4WDCP930A1, 931A1

TABLE OF CONTENTS

DATANET-30 DATA COMMUNICATIONS PROCESSOR  
INSTRUCTION TIMING AND BLOCK DESCRIPTION

	<u>Page</u>
ABBREVIATED INSTRUCTION REPERTOIRE	2.1
INSTRUCTION REPERTOIRE	2.2
1.0 GENERAL	
Basic Timing	3
Start	4
Stop	4
Single Cycle Start	5
Prepare Cycle	6
Terminate and Prepare for Next Instruction	7
Addressing: Program Bank	8
Common Data Bank	8
Channel Table Addressing	9
Indirect Instruction Cycle	10
Memory Interrupt	11
Write Priority Select	11
Read Priority Select	12
Program Interrupt	13
2.0 HARDWARE LOAD	15
3.0 LOAD INSTRUCTIONS	28
4.0 STORE INSTRUCTIONS	38
5.0 ARITHMETIC INSTRUCTIONS	44
6.0 BRANCH INSTRUCTIONS	53
7.0 LOGICAL INSTRUCTIONS	56
8.0 REGISTER TRANSFERS	67
9.0 SPECIAL INSTRUCTIONS	74

REVISIONS	PRINTS TO

MADE BY <i>J.R. Harris, Oct 6, 1963</i>	APPROVALS <i>M.E. Harvey</i>	DIV OR DEPT <b>Computer</b>	43B135921
ISSUED <b>OCT 10 1963</b>	<i>Oct 7, 1963</i>	LOCATION <b>Phoenix</b>	CONT ON SHEET 2.1 SH NO. 2

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO. \_\_\_\_\_  
CONT ON SHEET \_\_\_\_\_ SH NO. \_\_\_\_\_

TITLE: INSTRUCTION TIMING AND BLOCK DESCRIPTION  
CONT ON SHEET 2.2 SH NO. 2.1  
FIRST MADE FOR: Datamet-30

DATANET-30 DATA COMMUNICATIONS PROCESSOR  
ABBREVIATED INSTRUCTION REPERTOIRE

FIRST OCTAL DIGIT	SECOND OCTAL DIGIT								THIRD OCTAL DIGIT	
	0	1	2	3	4	5	6	7		
0	HLT	AIC PTC	NIS	SCN	SLI	CL1	TRA	SLS	0-1	GENERAL
0	HLT	NCZ	NES	CSR	SR1	CK1	TRC	SRS	2-3	
0	HLT	XCZ	DIF		SL6	CL6	BCO		4-5	
0	HLT		DEF		SR6	CR6	BC1		6-7	
1	BRU	BRS	BZE	BNZ	BPL	BM1	BEV	BOD	0-7	NON-GENERAL
2	LDC	LDD	LDZ	LDQ		LDT	LDF		0-7	
3	STC	STD	STZ	C-M	ADO	SBO	STF	AMD	0-7	
4	LDA	CMA	AMA	NMA	RMA	XMA	AAZ		0-7	
5	TA	CAM	AAH	NAH	RAM	XAH	NAZ	XAZ	0-7	
6	LDB	CMR	AMB	NMB	RMB	XMB	ABZ		0-7	
7	STB	CBM	ABM	NBM	RBM	XBM	NBZ	XBZ	0-7	

REVISIONS	PRINTS TO

MADE BY: *J.R. Havill* *Oct 7, 1963*  
ISSUED: **OCT 10 1963**

APPROVALS: *M. J. Downey*  
*Oct 7, 1963*

Computer  
Phoenix

DIV OR DEPT: \_\_\_\_\_  
LOCATION: \_\_\_\_\_

43B135921  
CONT ON SHEET 2.2 SH NO 2.1



**INSTRUCTION REPERTOIRE (Continued)**

WORD TIMES	CODE OCTAL	OPERAND	FUNCTIONAL DESCRIPTION
<b>LOGICAL OPERATION INSTRUCTIONS</b>			
2	43	NMA M	M AND A TO A
2	53	NAM M	M AND A TO M
2	63	NMB M	M AND B TO B
2	73	NBM M	M AND B TO M
2	56	NAZ M	M AND A TO Z ONLY
2	76	NBZ M	M AND B TO Z ONLY
1	012-3	NCZ I	I AND C TO Z ONLY
1	020-1	NIS I	I AND INTERNAL STATUS LINES TO Z ONLY
1	022-3	NES I	I AND EXTERNAL STATUS LINES TO Z ONLY
2	44	RMA M	M OR A TO A
2	54	RAM M	M OR A TO M
2	64	RMB M	M OR B TO B
2	74	RBM M	M OR B TO M
2	45	SMA M	M XOR A TO A
2	55	XAM M	M XOR A TO M
2	65	XMB M	M XOR B TO B
2	75	XBM M	M XOR B TO M
2	57	XAZ M	M XOR A TO Z ONLY
2	77	XBZ M	M XOR B TO Z ONLY
1	014-5	XCZ I	I XOR C TO Z ONLY

**REGISTER TRANSFER INSTRUCTIONS FROM ABCORS - TO ABCT**

1	060-1	TRA FROM, TO	TRANSFER
1	062-3	TRC FROM, TO	TRANSFER COMPLEMENT
1	040-1	SL1 FROM, TO	SHIFT LEFT ONE
1	042-3	SR1 FROM, TO	SHIFT RIGHT ONE
1	044-5	SL6 FROM, TO	SHIFT LEFT SIX
1	046-7	SR6 FROM, TO	SHIFT RIGHT SIX
1	070-1	SLS FROM, TO	SHIFT LEFT SPECIAL
1	072-3	SRS FROM, TO	SHIFT RIGHT SPECIAL
1	050-1	CL1 FROM, TO	CIRCULATE LEFT ONE
1	052-3	CR1 FROM, TO	CIRCULATE RIGHT ONE
1	054-5	CL6 FROM, TO	CIRCULATE LEFT SIX
1	056-7	CR6 FROM, TO	CIRCULATE RIGHT SIX
1	064-5	BC0 FROM, TO	BIT CHANGE ZERO (8-LEVEL LINE TO 6-BIT)
1	066-7	BC1 FROM, TO	BIT CHANGE ONE (6-BIT TO 8-LEVEL LINE)

**SPECIAL INSTRUCTIONS**

1	00	HLT	CONDITIONAL HALT
1	024-5	DIF I	DRIVE INTERNAL FUNCTION LINES
1	026-7	DEF I	DRIVE EXTERNAL FUNCTION LINES
	030-1	SCN I	SCAN BIT OFFERS
	032-3	CSR I	CONTROLLER STATUS REQUEST

ON DRAWING  
CONT ON SHEET

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS
	✓	FRACTIONS
		DECIMALS
		ANGLES

REV NO  
CONT ON SHEET  
SH NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datamet-30  
438135921  
CONT ON SHEET 3  
SH NO 2.3

**GENERAL ELECTRIC**

REVISIONS	PRINTS TO

MADE BY: *W. G. Harty*  
ISSUED: *Oct 10 1963*  
OCT 10 1963  
APPROVALS: *W. G. Harty*  
Computer - Phoenix  
DIV OR DEPT: *438135921*  
LOCATION: *CONT ON SHEET 3*  
SH NO: *2.3*



CONT ON SHEET

DRAWING NO.

GENERAL ELECTRIC

430135921

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

REV NO.

TITLE

CONT ON SHEET 4 SH NO. 3

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

INSTRUCTION TIMING AND  
BLOCK DESCRIPTION

FRACTIONS

DECIMALS

ANGLES

FIRST MADE FOR Datamet-30

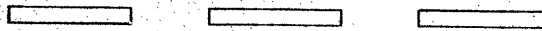
CONT ON SHEET

SH NO.

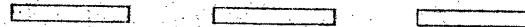
1.0 GENERAL

A B C D A B C D A B C D

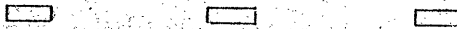
QTP0



QTP1

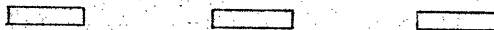


QTPA



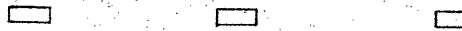
= QTP01 QTP10

QTPB



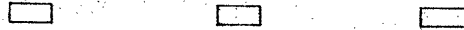
= QTP01 QTP11

QTPC



= QTP00 QTP11

QTPD



= QTP00 QTP10

BASIC TIMING

DATANET-30

REVISIONS

PRINTS TO

MADE BY  
*T.R. Hamill Oct 7, 1963*  
ISSUED  
OCT 10 1963

APPROVALS

*M.C. Hawley*  
Oct 7, 1963

Computer

Phoenix

DIV OR DEPT

LOCATION

430135921

CONT ON SHEET 4 SH NO. 3

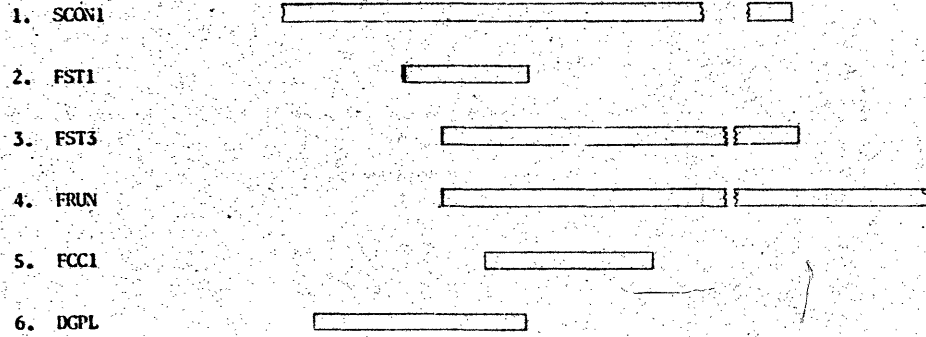
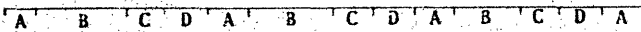
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:--

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
 FIRST MADE FOR Datatet-30

1.0 GENERAL (Continued)

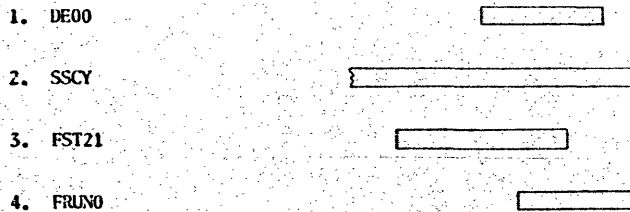
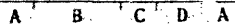
START (CONTINUOUS)



- SC0V1 "Continuous" Sw. on control panel energized.
- FST11 (C11-32) = FRUN0 · FST30 · QTPB0 · QTPC1 · SØPRO SC0V1
- FST10 (C13-32) = QTPB1 FCC11
- FST31 (G10-37) = QTPD1 (FST11 + FST21)
- FST30 (G10-31) = SRST1 (Release of Continuous Sw.)
- FRUN1 (G07-32) = QTPD1 · FST11
- FCC11 (C11-09) = QTPA1 FRUN1 FST11
- DGPL1 (F09-09) = FST11 DSPRO

START INSTRUCTION CYCLE

STOP (STOP-START SWITCH)



- DE001 = (Current Instr. must terminate)
- SSCY1 = Energizing step-stop switch
- FST21 (C11-10) = QTPB1 · FST30 · SSCY1 · SØPRO
- FRUN0 (C09-09) = (DE001 QTPB0) QTPD1 FST21

REVISIONS	PRINTS TO

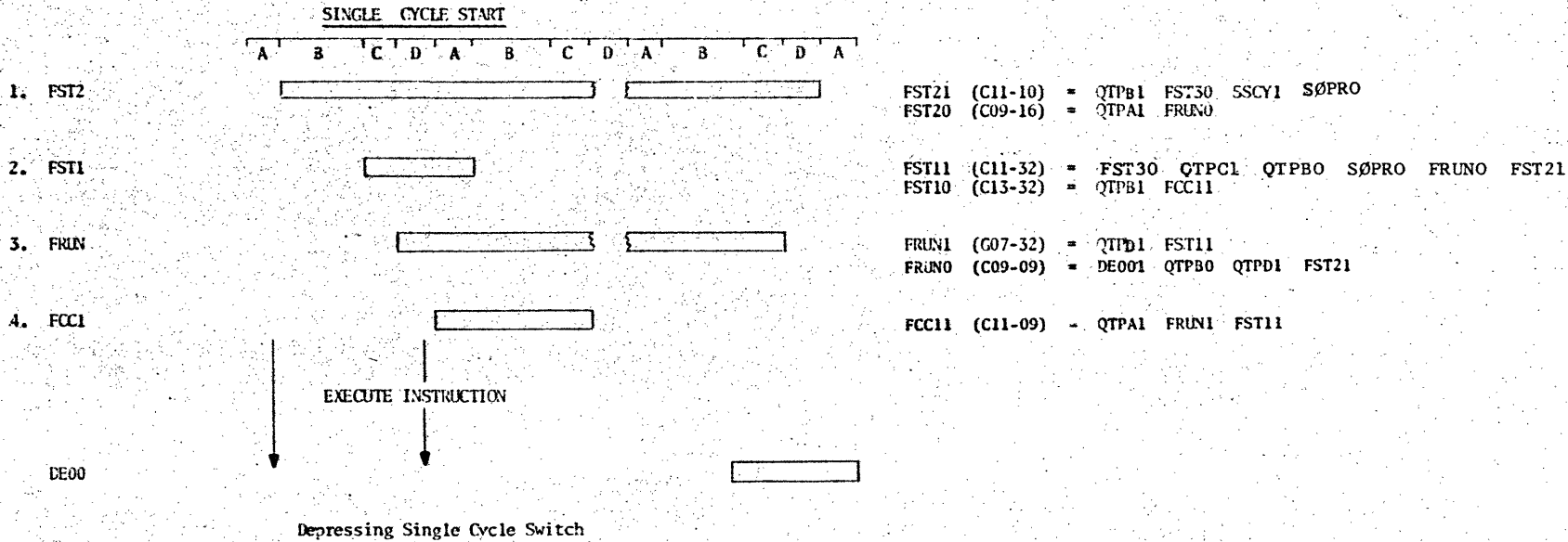
MADE BY <i>J.R. Hamill</i>	APPROVALS <i>W.C. Hamby</i>	Computer	DIV. OR DEPT.	43B135921
ISSUED OCT 10 1963	<i>Oct 7, 1963</i>	Phoenix	LOCATION	CONT. ON SHEET 5 SH. NO. 4

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO	TITLE	CONT ON SHEET	SH NO
	INSTRUCTION TIMING AND BLOCK DESCRIPTION	6	5
CONT ON SHEET	SH NO	FIRST MADE FOR <u>Datanet-30</u>	

1.0 GENERAL (Continued)



FST21 (C11-10) = QTPB1 FST30 SSCY1 SØPRO  
 FST20 (C09-16) = QTPA1 FRUNØ

FST11 (C11-32) = FST30 QTPC1 QTPBØ SØPRO FRUNØ FST21  
 FST10 (C13-32) = QTPB1 FCC11

FRUN1 (G07-32) = QTPB1 FST11  
 FRUNØ (C09-09) = DE001 QTPBØ QTPD1 FST21

FCC11 (C11-09) = QTPA1 FRUN1 FST11

Repeats Cycle

FST2 Prevents FST1 from setting more than once in single cycle. FST3 is used for this in Continuous mode.

REVISIONS	PRINTS TO

MADE BY <i>J.R. Howell Oct 7, 1963</i>	APPROVALS <i>M.G. Henry Oct 7, 1963</i>	DIV OR DEPT Computer	43B135921
ISSUED OCT 10 1963		LOCATION Phoenix	CONT ON SHEET 6 SH NO 5

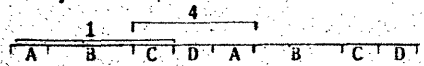
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV. NO.	TITLE	CONT. ON SHEET	SH. NO.
	INSTRUCTION TIMING AND BLOCK DESCRIPTION	7	6
CON. ON SHEET	SH. NO.	FIRST MADE FOR	
		Datanet-30	

1.0 GENERAL (Continued)

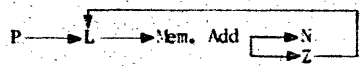
ALL INSTRUCTIONS, EXCEPT INDIRECT, PREPARE FOR THIS INSTRUCTION CYCLE



1. FRUN
2. DPGR
3. FCC1
4. DGPL
5. FL(01-14)1
6. DL(01-14)1
7. DMST
8. DCPR
9. DWM1
10. FN(12-18)1
11. FN(12-18)0
12. DGMZ
13. DZ(01-10)
14. FCC4
- \*15. DGZL
16. FL(01-07)0
17. FL(08-14)0
18. FL(01-10)1
19. DCQR
20. FQ011
21. FQ010
22. Decode "N" Reg and EXECUTE

- |            |     |                                |  |
|------------|-----|--------------------------------|--|
| FRUN1      | ( ) | QTPD1                          | FST11  |
| DPGR1      | ( ) | SPGR1                          | FPI30 FSG20 FHL10 FMI20                          |
| FCC11      | ( ) | QTPA1                          | FRUN1 DE001                                      |
| DGPL1      | ( ) | DSPRO                          | QTPBO FST20 FRUN1 DE001                          |
| FL(01-14)0 | ( ) | QTPOO                          | DGPL1  |
| FL(01-14)1 | ( ) | DGPL1                          | FP(01-14)1                                       |
| DL(01-14)1 | ( ) | (FL(01-14) FMI10) + JA(01-14)1 |  |
| DMST1      | ( ) | QTP01                          | (FRUN1 + FMI11)                                  |
| DCPR1      | ( ) | FPO10                          | SCPRI QTPB1 FPI20 DGPL0 FCC11 DPGR1              |
| DWM11      | ( ) | (QTP11 FCC11) + FCC41          |  |
| FN(12-18)1 | ( ) | QTPB1                          | FCC11 DPGR1 FM(12-18)1                           |
| FN(12-18)0 | ( ) | QTPB1                          | FCC11 DPGR1 FM(12-18)0                           |
| DGMZ1      | ( ) | DPGR1                          | (QTP11 FCC11 + FCC21 + FCC41 FMI20)              |
| DZ(01-10)  | ( ) | DGMZ1                          | FM(01-10)  |
| FCC41      | ( ) | QTPC1                          | FMI20 (DSIA0 FCC11 + FCC31)                      |
| DGZL1      | ( ) | QTPB0                          | FHL10 SPGR1 (FCC41) DE000 FSG20 + FCC21 + DSPRI) |
| FL(01-07)0 | ( ) | QTPOO                          | DGZL1  |
| FL(08-14)0 | ( ) | QTPOO                          | DGZL1  |
| FL(01-10)1 | ( ) | DGZL1                          | DZ(01-10)1                                       |
| DCQR1      | ( ) | DGQYO                          | QTPC1 SQPR1                                      |
| FQ011      | ( ) | FQ010                          | DCQR1  |
| FQ010      | ( ) | FQ011                          | DCQR1  |

Decode "N" Reg and EXECUTE



\*Not up in General Instructions

REVISIONS	PRINTS TO
SPGR1 FRUN1 FST10	

MADE BY <i>J.R. Harris</i>	APPROVALS <i>M.G. Harvey</i>	DIV OR DEPT Computer	43B135921
ISSUED OCT 10 1963	<i>Oct 7, 1963</i>	LOCATION Phoenix	CONT. ON SHEET 7 SH. NO. 6

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
	✓	FRACTIONS	DECIMALS	ANGLES
		+	+	+

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 8 SH NO. 7

CONT ON SHEET

SH NO

FIRST MADE FOR Datatnet-30

1.0 GENERAL (Continued)

ALL INSTRUCTIONS TERMINATE AND PREPARE FOR NEXT INSTRUCTION

A B C D A

- |           |                          |  |
|-----------|--------------------------|--|
| 1. DGPL   | <input type="checkbox"/> | DGPL1 ( ) = DSPRO FRUN1 DE001 QTPBO FST20  |
| 2. FEVNO  | <input type="checkbox"/> | FEVNO ( ) = QTPD1 DSBFI  |
| 3. FPLSO  | <input type="checkbox"/> | FPLSO ( ) = QTPD1 DSBFI  |
| 4. FZERO  | <input type="checkbox"/> | FZERO ( ) = QTPD1 DSBFI  |
| 5. DZNX   | <input type="checkbox"/> | *DZNX1 ( ) = DZ(01-07)1 + (DGENO + DMD10) (FN191 + FN170 + DMD00 DMD60) (DZ(08-18)1) |
| 6. DSBFI  | <input type="checkbox"/> | DSBFI ( ) = QTP10 DMJ10 FPI30 DDL10 DE001 QTPBO (DGENO + DMD00)                      |
| 7. FZER1  | <input type="checkbox"/> | FZER1 ( ) = QTPA1 DZNX1 (DSBFI + DDL11 FCC61 + DDL11 FCC81)                          |
| 8. FEVNI  | <input type="checkbox"/> | FEVNI ( ) = QTPA1 DZ010 (DSBFI + DDL11 FCC61)  |
| 9. FPLS1  | <input type="checkbox"/> | FPLS1 ( ) = QTPA1 DZ180 (DSBFI + DDL11 FCC81)  |
| 10. DE001 | <input type="checkbox"/> | DE001 ( ) = See equation on each instruction   |

\* Z(08-18) Not used in "C" instruction

NOTE: FZER1 means not zero.

Branch flip flops are not set during a branch instruction, or double length instruction.

REVISIONS	PRINTS TO

MADE BY <i>J.R. Harris</i> 10-7-1963	APPROVALS <i>M.G. Harvey</i> Oct 7 1963	Computer Phoenix	DIV OR DEPT	43B135921
ISSUED OCT 10 1963			LOCATION	CONT ON SHEET 8 SH NO. 7

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

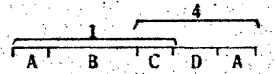
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO. \_\_\_\_\_  
TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datatnet-30  
CONT ON SHEET 9 SH NO. 8

1.0 GENERAL (Continued)

ADDRESSING (1)

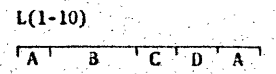
OPTION "0" M(1-10) → L(1-10)  
PROGRAM BANK P(11-14) → L(11-14)  
P has program bank address.  
M has address within bank.



- 1. DOP0
- 2. DGL1
- 3. DGL3
- 4. DRYR
- 5. DY(11-14)
- 6. DZ(01-10)
- 7. DZ(11-14)
- 8. FCC41
- 9. FL(01-07)0
- 10. DGZL1
- 11. FL(01-14)1

- DOP01 (C05-16) = DGENO DPGR1 FM110 FCC11 QTP11
- DGL11 (E19-15) = DOP01
- DGL31 (E19-19) = DOP01
- DRYR1 (C15-23) = DMRIO QTPB1 SINMO FCS10
- DY(11-14)1( \* ) = DØPOO FP(11-14)1
- DZ(01-10)1( \* ) = FM(01-10)1 DGMZ1
- DZ(11-14)1( \* ) = DGL11 FM(11-14)0 DY(11-14)1  
+ DGL31 FM(11-14)1 DY(11-14)1
- FCC41 (C11-15) = QTPC1 FMJ20 DSIAO FCC11
- FL(01-14)0( \* ) = DGZL1 QTP00
- DGZL1 (D18-15) = SPGR1 FHL10 QTPBO FCC41 FSGZO DEØØ0
- FL(01-14)1( \* ) = DZ(01-14)1 DGZL1

OPTION 2 COMMON DATA BANK  
N(1-10)



- 1. DZ(01-10)
- 2. FCC41
- 3. FL(01-7)1
- 4. DGZL1
- 5. FL(01-10)1

- DZ(01-10)1( \* ) = FM(01-10)1 DGMZ1
- FCC41 (C11-15) = QTPC1 FMJ20 DSIAO FCC11
- FL(01-14)0( \* ) = DGZL1 QTP00
- DGZL1 (D18-15) = SPGR1 FHL10 QTPBO FCC41 FSG20 DEØØ0
- FL(01-10)1( \* ) = DZ(01-14)1 DGZL1

REVISIONS	PRINTS TO

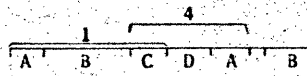
MADE BY <i>J.R. Howell Oct 7, 1963</i>	APPROVALS <i>W.G. Hanney Oct 7, 1963</i>	Computer Phoenix	DIV OR DEPT 439135921
ISSUED OCT 10 1963			LOCATION CONT ON SHEET 9 SH NO. 8

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:				REV NO
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		CONT ON SHEET
	✓	FRACTIONS	DECIMALS	
		+	+	

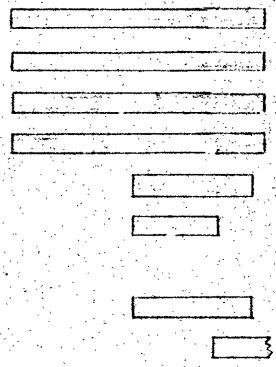
TITLE	INSTRUCTION TIMING AND BLOCK DESCRIPTION	CONT ON SHEET	10	SH NO.	9
FIRST MADE FOR	Datanet-30				

1.0 GENERAL (Continued)

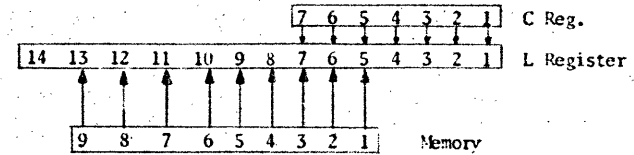
OPTION 3 - CHANNEL TABLE ADDRESSING



- 1. DOP3
- 2. DZ(01-4)
- 3. DZ(05-07)
- 4. DZ(08-13)
- 5. FCC41
- 6. FL(01-07)0
- 7.
- 8. DGZL1
- 9. FL(01-14)1



- DOP31 (C15-33) = DGENO DPGR1 FM101 FM111 FCC11 QTP11
- DZ(01-4)1 ( ) = DOP31 FC(01-4)1
- DZ(05-07)1( ) = DOP31 FC(05-07)1 + DOP31 FM(01-03)
- DZ(08-13)1( ) = DOP31 FM(04-09)1
- FCC41 (C11-15) = QTPC1 FMI20 DSIAO FCC11
- FL(01-14)0( ) = DGZL1 QTP00
- DGZL1 (D18-15) = SPGR1 FHL10 QTPBO FCC41 FSG20 DE000
- FL(01-14)1 = DZ(01-14)1 DGZL1



Memory contains base address of channel table.  
C Register contains address of channel.

REVISIONS	PRINTS TO

MADE BY <i>J.R. Harnish Oct 7, 1963</i>	APPROVALS <i>W.G. Hanney Oct 7, 1963</i>	Computer Phoenix	DIV OR DEPT	438135921
ISSUED OCT 10 1963			LOCATION	CONT ON SHEET 10 SH NO 9

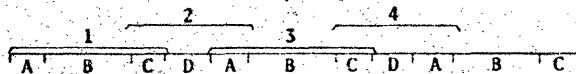
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV. NO. \_\_\_\_\_  
CONT. ON SHEET \_\_\_\_\_ SH. NO. \_\_\_\_\_

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datamet-30  
CONT. ON SHEET 11 SH. NO. 10

1.0 GENERAL (Continued)  
INDIRECT INSTRUCTION CYCLE



1. Prepare Instruction
  2. FN(12-18)1
  3. DZ(01-10)1
  4. FCC21
  5. DGZL1
  6. FL(08-14)1
  7. FL(01-14)1
  8. DL(01-14)1
  9. FCC31
  10. DNST1
  11. DRYR1
  12. See Below
  13. DGAD1
  14. DZ(01-18)1
  15. DGZL1
  16. FL(C1-14)1  
L now contains the new address
  - 12A. DGAY1 = Index by A
  - 12B. DGBY1 = Index by B
  - 12C. DGCY1 = Index by C
- M
- 18 17 16
- |   |   |
|---|---|
| X | X |
|---|---|
- 0 1 - Index by A  
 1 0 - Index by B  
 1 1 - Index by C

- Prepare
- FN(12-18) 1 ( ) = FM(12-18)1 QTPB1 FCC11 DPGR1
  - DZ(01-10)1 ( ) = FM(01-10)1 DGZ1
  - FCC21 (D13-41) = DSIA1 QTPC1 FMIZO
  - DGZL1 (D18-15) = QTPB0 SPGR1 FHL10 FCC21
  - FL(01-14)0 ( ) = QTP00 DGZL1
  - FL(01-14)1 ( ) = DZ(01-14)1 DGZL1
  - DL(01-14)1 ( ) = FL(01-14)1 FMI10
  - FCC31 (D13-10) = QTPA1 FCC21
  - 10. DNST1 (C02-27) = QTP01 FRUN1
  - 11. DRYR1 (C15-23) = QTPB1 DMR10 SINMO FCS10
  - 13. DGAD1 (D20-40) = FN121 DPCR1 FCC41 DGENO
  - 14. DZ(01-18)1 ( ) = AS(01-18)1
  - 15. DGZL1 (D18-15) = QTPB0 SPGR1 FHL10 FSG20 FCC41 DE000
  - 16. See Line 7
- Note: If indirect address word calls for indexing:
- A- DGAY1 (D-20-25) = FMI20A FCC31 FMI61 FMI170 (In this case the contents of A added to M and placed in L) (DSAROA + QTP11)
  - B- DGBY1 (F18-11) = FMI20A FCC31 FMI60 FMI171 (DSBROA + QTP11) (B + M → L)
  - C- DGCY1 (F18-23) = FMI20A FCC31 FMI61 FMI171 (DSCROA + QTP11) (C + M → L)

REVISIONS	PRINTS TO

MADE BY *J. R. Howell* APPROVALS *W. E. Harvey* Computer  
 ISSUED OCT 11 1963 *Oct 21 1963* Phoenix  
 DIV OR DEPT LOCATION CONT. ON SHEET 11 SH. NO. 10

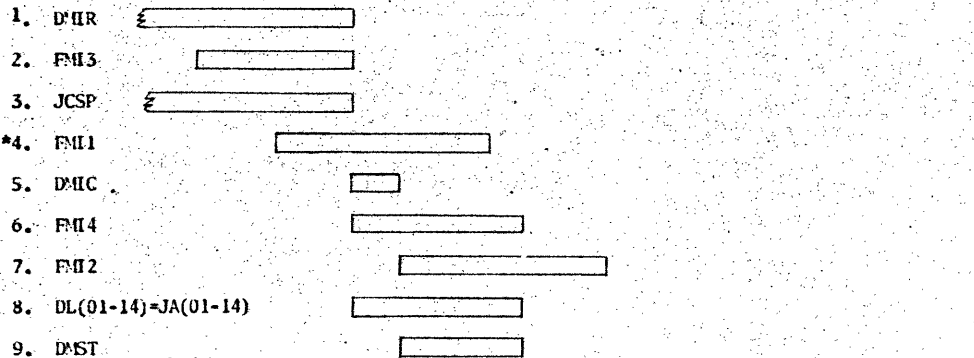
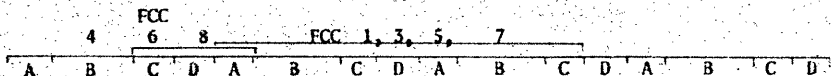


UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:			REV NO.	
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLE
	✓	±	±	±

TITLE	INSTRUCTION TIMING AND BLOCK DESCRIPTION	CONT ON SHEET	12	SH NO.	11
FIRST MADE FOR	Datatnet-30				

1.0 GENERAL (Continued)

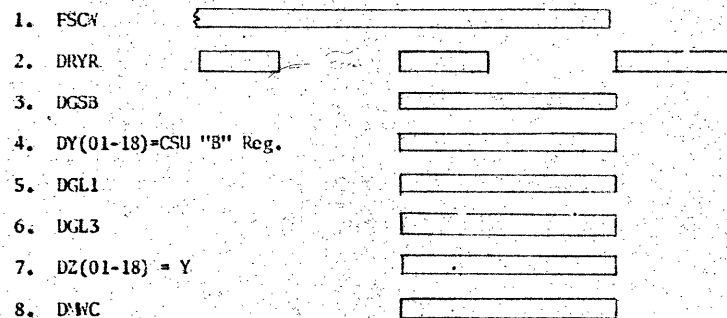
MEMORY INTERRUPT



- DMIR1 ( ) = CSU Memory Interrupt Request
- FMI31 ( ) = QTPB1 DMIR1
- FMI30 ( ) = QTPA1
- JCSP1 ( ) = CSU Connected
- FMI11 ( ) = QTPC1 FMI31 FHL10 JCSP1 (DADMO + DWM20)
- FMI10 ( ) = QTPG1 FMI21
- DMIC1 ( ) = QTPA1 FMI11
- FMI41 ( ) = QTPA1 FMI11
- FMI40 ( ) = QTPD1
- FMI21 ( ) = QTPB1 FMI41
- FMI20 ( ) = QTPB1 FMI40
- DL(01-14)1 ( ) = DA(01-14)1
- DMST1 ( ) = QTP01 (ERUN1 + FMI11)

CSU ADDRESS TO M

1 WRITE PRIORITY SELECT



1

- FCSW1 ( ) = FRXC1 JCSP1
- DRYR1 ( ) = QTPB1 DMIR1 SINMO (FCS10 + FMI21)
- DGSB1 ( ) = FCSW1 FMI21
- DY(01-18)1 ( ) = CSU FB(19-02)1 DGSB1
- DGL11 ( ) = FCSW1 FMI21
- DGL31 ( ) = FCSW1 FMI21
- DZ(01-18)1 ( ) = DGL11 FM(01-18)0 DY(01-18)1 + DGL31. FM(01-18)1
- DMWC1 ( ) = FCSW1 FMI21

CSU → Y

2 READ PRIORITY SELECT

\* Could be delayed until the next C time if (DWM21 DADM1) or (DWM11 DDL11) inhibits DMST, DCPR, prevents gating FL → DL.

2

PRINTS TO

MADE BY J.R. Harwell Oct 7, 1963	APPROVALS W.C. Harvey Oct 7, 1963	Computer Phoenix	DIV OR DEPT LOCATION	45B135921
ISSUED OCT 10 1963			CONT ON SHEET 12	SH NO 11

ON MS 133MS NO 1303  
ON DRAWING

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

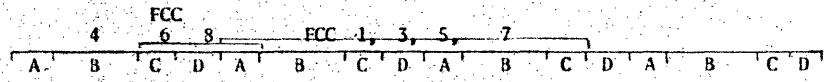
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO  
CONT ON SHEET SH NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datamet-30  
CONT ON SHEET 13 SH NO 12

1.0 GENERAL (Continued)

MEMORY INTERRUPT (Continued)



- |                  |     |            |  |         |
|------------------|-----|------------|--|---------|
| 1. DGL2          | [ ] | DGL21      | ( ) = FCSW0 FMI21  |         |
| 2. DGL3          | [ ] | DGL31      | ( ) = FCSW0 FMI21  | M → Z   |
| 3. DZ(01-18) = M | [ ] | DZ(01-18)1 | ( ) = DGL21 FM(01-18)1 DY(01-18)0 + DGL31 FM(01-18)1 DY(01-18) |         |
| 4. DGZD          | [ ] | DGZD1      | ( ) = QTPC1 FCSW0 FMI21  | Z → CSU |

3 RESUME PROGRAM

- |         |     |       |                                     |
|---------|-----|-------|-------------------------------------|
| 1. DPGR | [ ] | DPGR1 | ( ) = FPI30 FSG20 FMI20 SPGR1 FIL10 |
|---------|-----|-------|-------------------------------------|

To reset FCC1-3-5-7 = QTPD1 FMI20

To set FCC2-4-6-8 = QTPC1 FMI20

REVISIONS	PRINTS TO

MADE BY J.R. [Signature] Ret 7/1963  
ISSUED OCT 10 1963  
APPROVALS H.C. Hamer  
Computer Phoenix  
D/W OR DEPT  
LOCATION  
43B135921  
CONT ON SHEET 13 SH NO 12

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

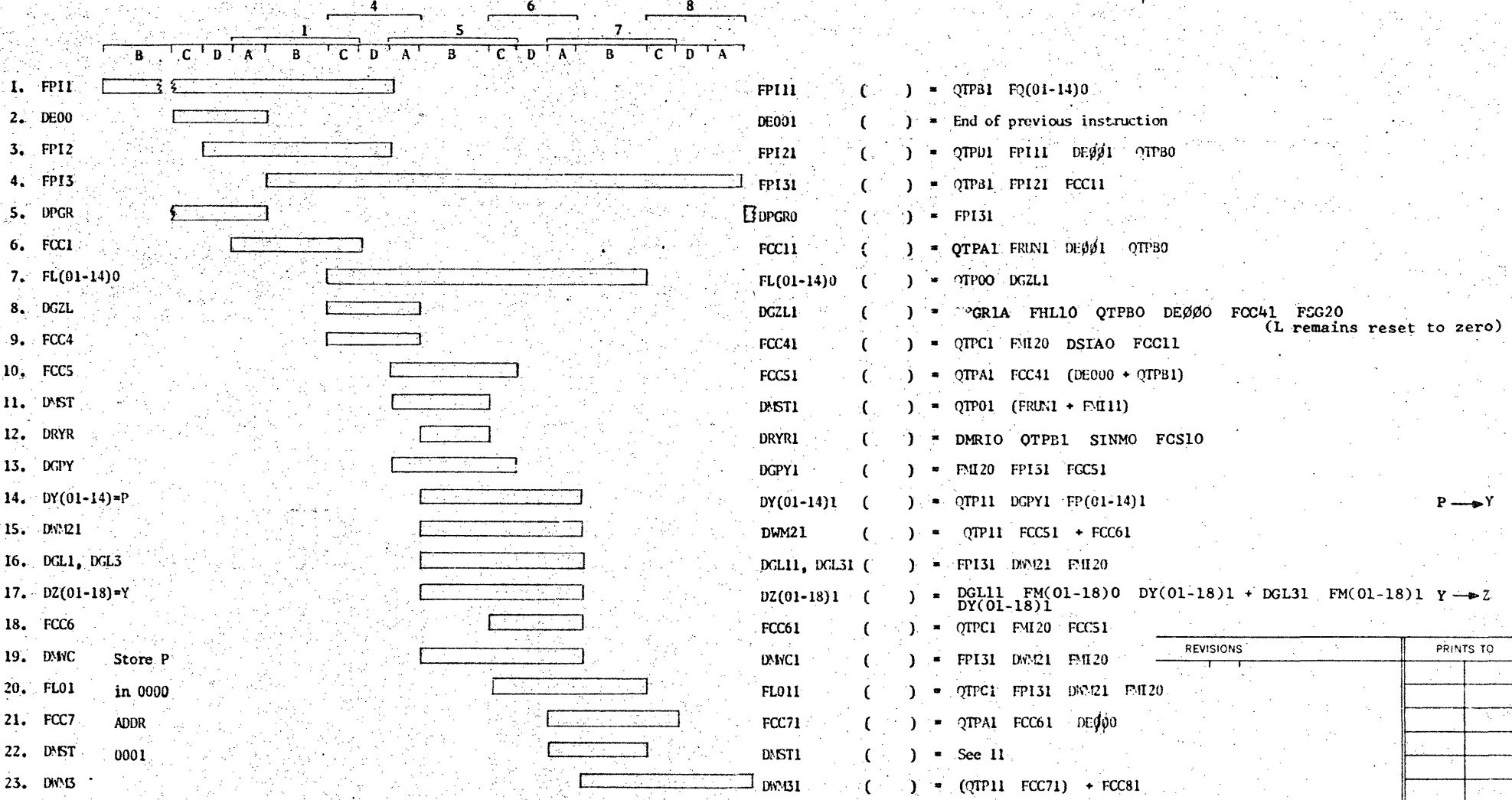
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	±	±	±

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 14 SH NO. 13

1.0 GENERAL (Continued)

PROGRAM INTERRUPT



REVISIONS	PRINTS TO

ON MS  
CONT ON SHEET

ON DRAWING

GENERAL ELECTRIC

43B135921

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

+

+

+

REV

NO

TITLE

INSTRUCTION TIMING AND  
BLOCK DESCRIPTION

CONT ON SHEET 15

SH NO. 14

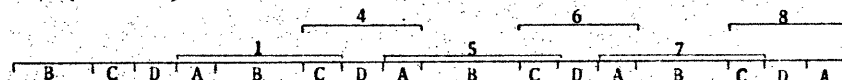
CONT ON SHEET

SH NO

FIRST MADE FOR Datanet-30

1.0 GENERAL (Continued)

PROGRAM INTERRUPT (Continued)



24. DGL2, DGL3	[ ]	DGL21, DGL31	( ) = FPI31 DVM31 FMI20	
25. DZ(01-18)=M	[ ]	DZ(01-18)1	( ) = DGL21 FM(01-18)1 DY(01-18)0 + DGL31 FM(01-18)1 DY(01-18) 1	M → Z
26. FCC8	[ ]	FCC81	( ) = FCC71 QTPC1 FMI20	
27. FP(01-14)0	[ ]	FP(01-14)0	( ) = DSPR1 QTP00 SPGR1	Z → P
28. DSPR	[ ]	DSPR1	( ) = FPI31 DVM31 FMI20	
29. FP(01-14)1	[ ]	FP(01-14)1	( ) = QTP10 DSPR1 DZ(01-14)1	
30. DGZL	[ ]	DGZL1	( ) = QTP80 SPGR1 DSPR1 FHL10	
31. FL(01-14)	[ ]	FL(01-14)1	( ) = DGZL1 DZ(01-14)1	P → L
32. DE00	[ ]	DE001	( ) = FCC81 FSG20	

REVISIONS

PRINTS TO

MADE BY

J.R. Howell 10.17.1963

APPROVALS

W.C. Murray

Computer

DIV OR DEPT

43B135921

ISSUED

OCT 1963

Rev 7/1963

Phoenix

LOCATION

CONT ON SHEET 15

SH NO 14

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:-

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS.	DECIMALS	ANGLES
	✓	+	+	+

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

FIRST MADE FOR Datnet-30

2.0 HARDWARE LOAD

SET FHL1

Q All 1's

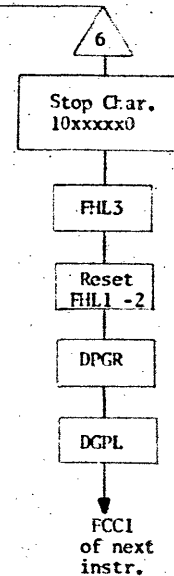
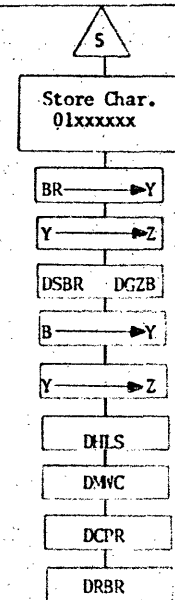
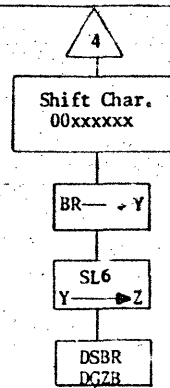
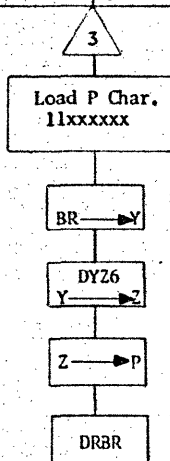
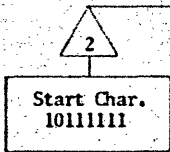
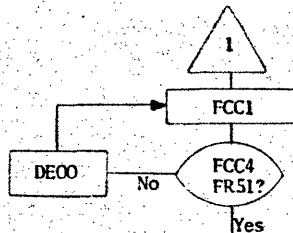
C = 0

DENA

FCCY FRS1?

Yes

FRS1 = Char. has been received



REVISIONS	PRINTS TO

MADE BY F. B. Harrison OCT 7, 1963	ISSUED OCT 10 1963	APPROVALS H. B. Hanney Oct 7, 1963	DIV OR DEPT Computer Phoenix	LOCATION CONT ON SHEET 16 SH NO. 15	43B135921
--	-----------------------	--	------------------------------------	--	-----------

2.0 HARDWARE LOAD (Continued)

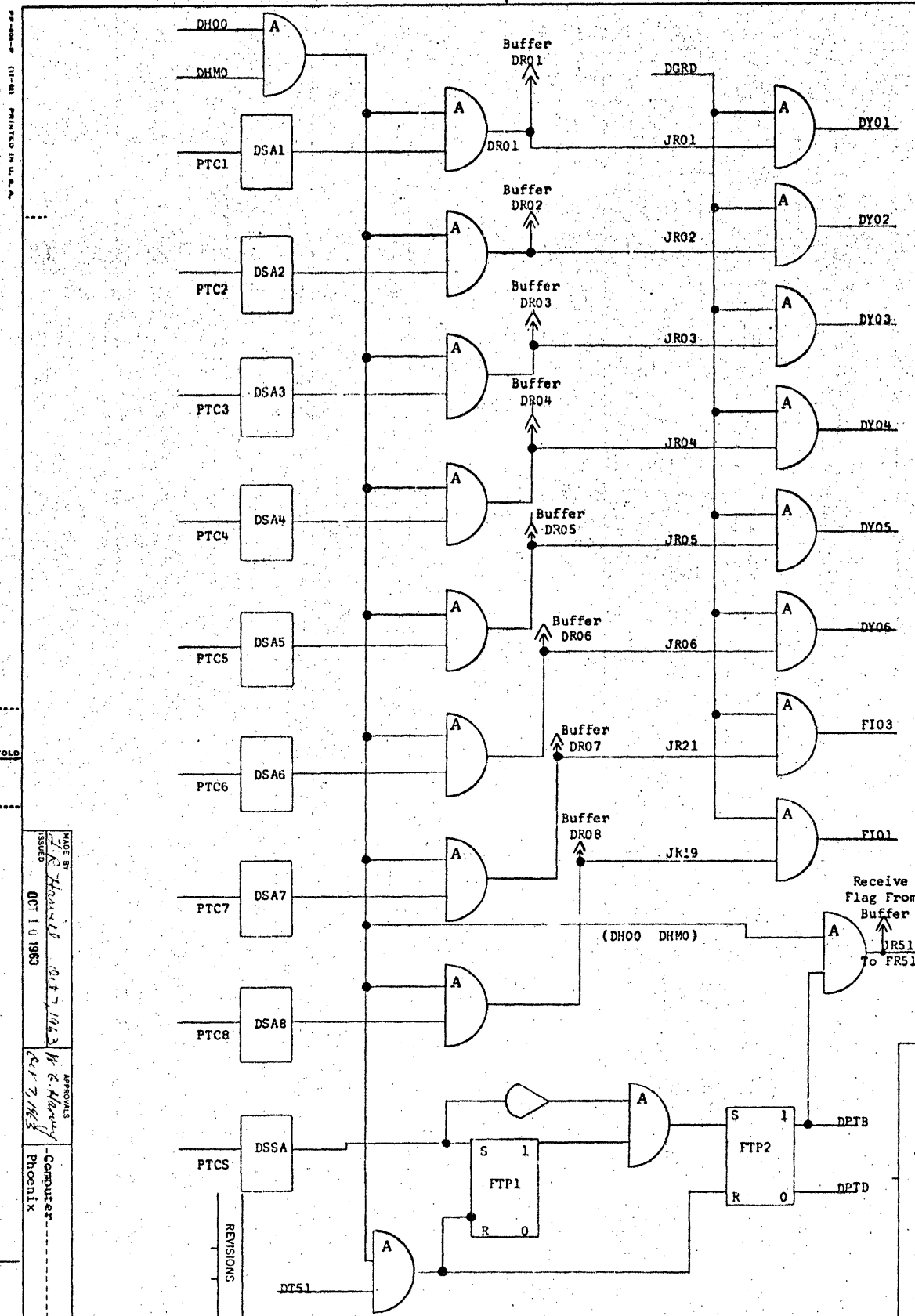
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS
		FRACTIONS
		DECIMALS
		ANGLES

REV NO. CONT. ON SHEET SH. NO. 11

TITLE  
INSTRUCTION TIMING AND  
BLOCK DESCRIPTION  
FIRST MADE FOR DATANET-30

GENERAL ELECTRIC



SIMPLIFIED SCHEMATIC  
DATANET-30 PAPER TAPE

MADE BY: *F.A. Hawkins* DATE: *8-7-1963*  
ISSUED: *OCT 10 1963*

APPROVALS: *W. G. Harvey* DATE: *8-7-1963*  
*Rev 7, 1963*

Computer: *Phoenix*

REV. NO. LOCATION CONT. ON SHEET SH. NO.

1		17	16
2			
3			
4			
5			
6			
7			
8			
9			
10			

PRINTS TO

PRINTED IN U.S.A.

FOLD

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

REV NO

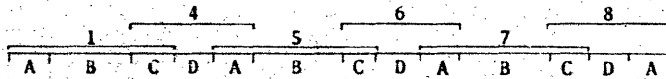
TITLE

INSTRUCTION TIMING AND  
BLOCK DESCRIPTION

CONT ON SHEET 18

SH NO. 17

2.0 HARDWARE LOAD (Continued)



- 1.1 FHL1 (SW)
- 1.2 FHL1 (LDQ)
- 1.3 FHL1 (Q-32)
- 1.4 FHL1 (DIF)
- 2. FQ(01-14) (All 1's)
- 3. FC(01-7)0
- 4. DH00
- 5. DH00
- 6. DENA
- 7. FCC4
- 8. FRS1
- 9. DGBY
- 10. DRYR
- 11. DY(01-18)
- 12. FCC5
- 13. FCC6
- 14. FCC7
- 15. FCC8
- 16. DTS1
- 17. FTP10
- 18. FTP20
- 19. DPTB
- 20. DRS1(JRS1)

- FHL11 ( ) = SPGR1-SMLD1-FCCL
- SPGR1-QTPD1-FCC41-SQPR1-FLDQ1-DMD31-DMJ21
- SPGR1-QTPB1-FQ(01-05)0-FQ(06-14)1
- SPGR1-DDIF1-FMD41
- FQ(01-14)1 ( ) = QTP00-FHL11-DE001
- FC(01-07)0 ( ) = FHL11
- DH001 ( ) = FC(03-06)0-DGLCO
- DH001 ( ) = FC(01-02)0
- DENA ( ) = Enable Paper Tape Logic
- FCC41 ( ) = FMI20 QTPC1 DSIA0 FCC11
- FRS11 ( ) = JRS11 QTPC1 FHL11
- DGBY1 ( ) = FHL11-(DSBRO + QTP11)
- DRYR1 ( ) = QTPB1-SINMO-DMRIO-FCS10
- DY(01-18)1 ( ) = QTP11 DGBY1 FB(01-18)1
- FCC51 ( ) = QTPA1 FCC41 (DE000 + QTPB1)
- FCC61 ( ) = FCC51 QTPC1 FMI20
- FCC71 ( ) = QTPA1 FCC61 (DE000 + QTPB1)
- FCC81 ( ) = FCC71 QTPC1 FMI20
- DTS11 ( ) = QTP10-FHL11-FCC81
- FTP10 ( ) = DH001 DH001 DT511
- FTP20 ( ) = DH001 DH001 DT511
- DPTB1 ( ) = FTP21 SLPT0
- DRS11 ( ) = FTP21 DH001 DFP01

REVISIONS	PRINTS TO

MADE BY  
ISSUED  
OCT 10 1963

APPROVALS  
11. G. Namery  
Oct 7, 1963

Computer  
Phoenix

DIV OR DEPT  
LOCATION  
43B135921  
CONT ON SHEET 18 SH NO 17

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

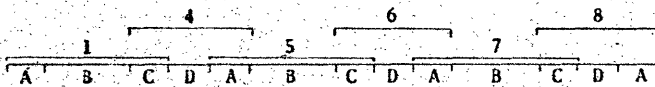
TOLERANCES ON MACHINED DIMENSIONS

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 19 SH NO 18

2.0 HARDWARE LOAD (Continued)



- 21. DPTD
- 22. DE00

1 Where no character is received

- 1. DE00
- 2. FCC1
- 3. FP510
- 4. FTP10
- 5. FTP20
- 6. FCC4

Go back to 1 until a character is received and JR51 is enabled.

- DPTD1 ( ) = FTP20 • SLPT0
- DE001 ( ) = FSG20 FCC81

1 If no character is read

- DE001 ( ) = FR510 FIL11
- FCC11 ( ) = QTPA1 FRUN1 DE001
- FR510 ( ) = QTPB1 PSN20
- FTP10 ( ) = )
- FTP20 ( ) = )
- FCC41 ( ) = FMI20 QTPC1 DSIA0 FCC11

) Remain reset until a sprocket is received

REVISIONS

PRINTS TO

MADE BY  
ISSUED  
OCT 1 1963

APPROVALS  
N. E. Hanney  
OCT 7, 1963

Computer  
Phoenix

DIV OR DEPT.  
LOCATION

43B135921

CONT ON SHEET 19 SH NO 18



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 20

SH NO. 19

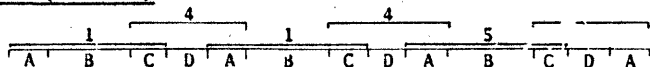
FRACTIONS DECIMALS ANGLES

CONT ON SHEET

SH NO

FIRST MADE FOR Datanet-30

2.0 HARDWARE LOAD (Continued)



1 Character is read

- 1. DE00
- 2. FCC11
- 3. FTP11
- 4. FTP21
- 5. FR511
- 6. DR511
- 7. DPTB
- 8. DPTD
- 9. FCC41
- 10. FCC51

1 If Character is present

- DE001 ( ) = FR510 FHL11
- FCC11 ( ) = QTPA1 FRUN1 DE001
- FTP11 ( ) = PTCS1
- FTP21 ( ) = FTP11 PTCS0
- FR511 ( ) = QTPC1 FHL11 JR511
- DR511 ( ) = FTP21 DH001 DR501
- DPTB1 ( ) = FTP21 SLPT0
- DPTD1 ( ) = FTP20 SLPT0
- FCC41 ( ) = QTPC1 FMI20 DSIA0 FCC11
- FCC51 ( ) = QTPA1 FCC41 DE000

2 Start Character

- 1. DR(01-06)
- 2. DR19:
- 3. DR210
- 4. FHL21
- 5. DGBY
- 6. DGRD
- 9. DRYR
- 10. DY(01-06)
- 11. DY(07-18)
- 12. FI011
- 13. FI030

2 Start Character

- DR(01-06)1 ( ) = DH001 DM01 PTC(1-6)1
- DR191 ( ) = DH001 DM01 PTC81
- DR210 ( ) = DH001 DM01 PTC70
- FHL21 ( ) = FCC51 JR(01-6)1 JR191 JR210 FHL11
- DGBY1 ( ) = FHL11-(DSBRO + QTP11)
- DGRD1 ( ) = FHL11 FCC51
- DRYR1 ( ) = QTPB1 DM10 SINNO PTC10
- DY(01-06)1 ( ) = DGRD1 JR(01-06)1
- DY(07-18)1 ( ) = QTP11 LGBY1 FB(07-18)1
- FI011 ( ) = DGRD1-JR191
- FI030 ( ) = DGRD1-JR210

REVISIONS

PRINTS TO

MADE BY  
ISSUED

2. K. Hanley  
OCT 1 1963

APPROVALS

W. E. Hanley  
Oct 7, 1963

Computer  
Phoenix

DIV OR DEPT

LOCATION

438135921

CONT ON SHEET 20

SH NO. 19

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

✓

±

±

±

REV NO

TITLE

INSTRUCTION TIMING AND BLOCK DESCRIPTION

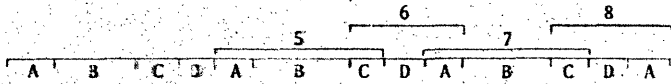
CONT ON SHEET

21

SH NO. 20

2.0 HARDWARE LOAD (Continued)

2 Start Character (Continued)



14. FCC61	[Bar]	FCC61	( ) = QTPC1 FMI20 FCC51
15. DSBR	[Bar]	DSBR1	( ) = FHL21 FCC61
16. FCC7	[Bar]	FCC71	( ) = QTPA1 FCC61 (DE000 + QTPB1)
17. FB(01-18)0	[Bar]	Fb(01-18)0	( ) = QTPD1 DSBR1 SS3R0
18. FCC8	[Bar]	FCC81	( ) = QTPC1 FCC71 FMI20
19. DT51	[Bar]	DT511	( ) = FHL11 FCC81 QTP10
20. FTP10	[Bar]	FTP10	( ) = DT511 DM001 DMF01
21. FTP20	[Bar]	FTP20	( ) = DT511 DM001 DMF01
22. DPTC	[Bar]	DPTD1	( ) = FTP20 SLPT0
23. DE00	[Bar]	DE001	( ) = FCC81 FSG20

REVISIONS	PRINTS TO

MADE BY <i>L.R. Hannon</i>	ISSUED OCT 1 1963	APPROVALS <i>W.G. Harvey</i>	Computer Phoenix	DIV OR DEPT Computer	438135921
				LOCAT-ON	CONT ON SHEET 21 SH NO 20



ON HS. CONT ON SHEET  
ON DIMENSIONS

GENERAL ELECTRIC

438135921

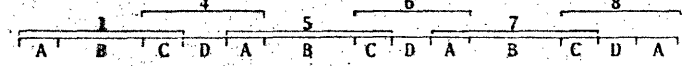
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING: --

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO. TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
CONT ON SHEET 23 SH NO. 22  
FIRST MADE FOR Datapoint-30

2.0 HARDWARE LOAD (Continued)

3 Load P Character (Continued)



- 21. DSPR [ ]
- 22. FP(01-14)=Z Reset [ ]  
FP(01-14)=Z Set [ ]
- 23. DGPI [ ]
- 24. DTS1 [ ]
- 25. FTP10 [ ]
- 26. FTP20 [ ]
- 27. DPTD [ ]
- 28. DE00 [ ]
- 29. FR511 [ ] [ ] [ ] [ ]

- DSPR1 ( ) = FHL21 FCC81 FI011 FI031
- FP(01-14)0 ( ) = QTP00 DSPR1 SPGR0
- FP(01-14) 0 ( ) = QTP00-DSPR1-SPGR1
- DGPL1 ( ) = Info gated at this time not used. Next P → L will place address in L.
- DTS11 ( ) = FHL11 FCC81 QTP10
- FTP10 ( ) = DTS11 DH001 DH01
- FTP20 ( ) = DTS11 DH001 DH01
- DPTD1 ( ) = FTP20 SLPT0
- DE001 ( ) = FCC81 FSG20
- FR511 ( ) = JR511 QTPC1 FHL11
- FR510 ( ) = QTPB1 (FCC51 + FSN20)

Go Back To ECC1 1

REVISIONS	PRINTS TO

MADE BY: R. H. ... ISSUED: OCT 10 1963  
APPROVALS: W. G. ...  
Phoenix Computer  
DIV OR DEPT: Computer  
LOCATION: CONT ON SHEET 23 SH NO 22  
438135921

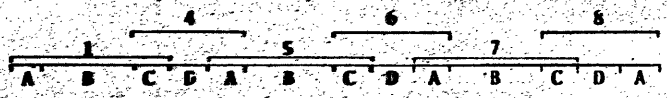
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO	TITLE	CONT ON SHEET	SH NO.
	INSTRUCTION TIMING AND BLOCK DESCRIPTION	24	23
CONT ON SHEET	SH NO.	FIRST MADE FOR	
		Datanet-30	

2.0 HARDWARE LOAD (Continued)

△ Shift Character



1. DR(01-6)
2. DR190
3. DR210
4. FHL162
5. DGBY
6. FCC5
7. DGRD
8. FIO10
9. FIO30
10. DY(01-6)  
BRYK
11. DY(07-18)
12. DZ(07-12)
13. DZ(13-18)
14. FCC6
15. DSBK
16. FB(01-18)
17. FCC7
18. DCPL

- DR(01-6) ( ) = DR001 DR01 FTC(1-6)1
- DR190 ( ) = DR001 DR01 PTC80
- DR210 ( ) = DR001 DR01 PTC70
- FHL1 and FHL2 Remain Set
- DGBY ( ) = FHL1(DSBRO + QTP11)
- FCC5 ( ) = QTPA1 FCC41 (DE000 + QTPB1)
- DGRD ( ) = FHL1 FCC51
- FIO10 ( ) = DGRD1 JR190
- FIO30 ( ) = DGRD1 JR210
- DY(01-6)1 ( ) = DGRD1 JR(01-06)1
- DRYR1 ( ) = QTPB1 SINMO DMRI0 FCC510
- DY(07-18)1 ( ) = DGBY1 FB(07-18)1 QTP11
- DZ(07-12)1 ( ) = DY(01-06)1 FHL21 FIO10 FIO30
- DZ(13-18) ( ) = DY(07-12)1 FHL21 FIO10 FIO30
- FCC61 ( ) = QTPC1 FM120 FCC51
- DSBR1 ( ) = FHL21 FCC61
- FB(01-18)0 ( ) = DSBK1 QTPD1 SSBRO
- FB(01-18)1 ( ) = QTP11 DSBK1 DZ(01-18)1
- FCC71 ( ) = QTPA1 FCC61 (DE000 + QTPB1)
- DCPL1 ( ) = FCC61 FHL21 DSPRO

REVISIONS	PRINTS TO

MADE BY <i>J.R. Howell</i>	APPROVALS <i>W.G. Harvey</i>	DIV OR DEPT Computer	438135921
ISSUED OCT 7 1963	<i>OCT 7, 1963</i>	LOCATION Phoenix	CONT ON SHEET 24 SH NO. 23

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 25 SH NO. 24

2.0 HARDWARE LOAD (Continued)

Shift Character



19. FCC8	<input type="checkbox"/>	FCC81	( ) = FCC71 QTPC1 FMI20
20. DT51	<input type="checkbox"/>	DT511	( ) = FHL11 FCC81 QTP10
21. FIP10	<input type="checkbox"/>	FIP10	( ) = DT511 DI1001 DFI01
22. FIP20	<input type="checkbox"/>	FIP20	( ) = DT511 DI1001 DFI01
23. DPTD	<input type="checkbox"/>	DPTD1	( ) = FIP20 SLPT0
24. DE00	<input type="checkbox"/>	DE001	( ) = FCC81 FSG20

Go Back to FCC1

REVISIONS	PRINTS TO

MADE BY <i>L.R. Harrell</i> ISSUED OCT 10 1963	APPROVALS <i>W.G. Haney</i> OCT 7, 1963	Computer Phoenix	DIV OR DEPT LOCATION	43B135921 CONT ON SHEET 25 SH NO. 24
---	---	---------------------	-------------------------	---

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

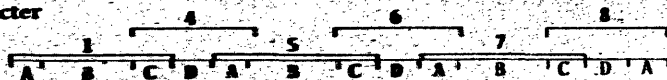
CONT ON SHEET

SH NO.

FIRST MADE FOR Datanet-30

2.0 HARDWARE LOAD (Continued)

5 Store Character



1. JR(01-6)	[Bar]
2. JR190	[Bar]
3. JR211	[Bar]
4. FHL16Z	[Bar]
5. DGBY	[Bar]
6. FCC5	[Bar]
7. DGRD	[Bar]
8. FI010	[Bar]
9. FI031	[Bar]
10. DY(01-6)	[Bar with diagonal hatching]
11. DY(07-18)	[Bar with diagonal hatching]
12. DGL11	[Bar]
13. DGL31	[Bar]
14. DZ(01-18)	[Bar]
15. FCC6	[Bar]
16. DSBRI	[Bar]
17. FB(01-18)	[Bar]
18. DGPL1	[Bar]
19. FCC7	[Bar]
20. DMNC1	[Bar]

DR(01-06)1	( )	=	DR001 DR001 PTC(1-6)1
DR190	( )	=	DR001 DR001 PTC80
DR211	( )	=	DR001 DR001 PTC71
FHL1 and FHL2 Remain On			
DGBY1	( )	=	FHL11(DSBRO + QTP11)
FCC51	( )	=	QTPA1 FCC41 (DE000 + QTPB1)
DGRD1	( )	=	FHL11 FCC51
FI010	( )	=	DGRD1 JR190
FI031	( )	=	DGRD1 JR211
DRYR1	( )	=	QTPB1-SINMO-DMRIO-FCS10
DY(01-06)1	( )	=	DGRD1 JR(01-06)1
DY(07-18)1	( )	=	DGBY1 FB(07-18) QTP11
DGL11	( )	=	FI031 FHL21
DGL31	( )	=	FI031 FHL21
DZ(01-18)1	( )	=	DGL11 FM(01-18)0 DY(01-18)1 + DGL31 FM(01-18)1 DY(01-18)1
FCC61	( )	=	QTPC1 FMI20 FCC51
DSBRI	( )	=	FHL21 FCC61
FB(01-18)0	( )	=	DSBRI QTPD1 SSBRO
FB(01-18)1	( )	=	QTP11 DSBRI DZ(01-18)1
DGPL1	( )	=	DSPRO FCC61 FHL21 REVISIONS
FCC71	( )	=	QTPA1 FCC61 (DE000 + QTPB1)
DMNC1	( )	=	DMN31 FI031 FI010 FHL21

PRINTS TO

MADE BY <i>J.R. Howell Oct 7, 1963</i>	APPROVALS <i>H.C. Nancy Oct 7, 1963</i>	Computer Phoenix	Div. OR DEPT. LOCATION	438135921
ISSUED OCT 10 1963				CONT ON SHEET 26 SH NO. 25







UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

REV NO

GENERAL ELECTRIC

43B135921

CONT ON SHEET 28 SH NO. 27

2.0 HARDWARE LOAD (Continued)

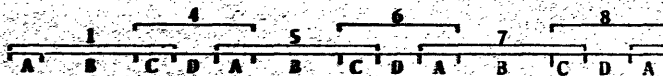
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	-

CONT ON SHEET SH NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

FIRST MADE FOR Datanet-30

△ Stop Character



1. DR (01-06)	=====
2. DR191	=====
3. DR210	=====
4. DGBY1	[ ]    [ ]    [ ]
5. FCC51	[ ]          [ ]
6. DGRD1	[ ]          [ ]
7. FHL31	[ ]          [ ]
8. FI011	[ ]          [ ]
9. FI030	[ ]          [ ]
10. DRYR	[ ]    [ ]    [ ]
11. DY(01-06)	[ ]          [ ]
12. DY(07-18)	[ ]          [ ]
13. FCC6	[ ]          [ ]
14. DSBRI	[ ]          [ ]
15. FB(01-18)0	[ ]          [ ]
16. FB(01-18)1	[ ]          [ ]
17. FCC71	[ ]          [ ]
18. DPCR1	[ ]          [ ]
19. DGPL1	[ ]          [ ]
20. FCC81	[ ]          [ ]
21. FHL10	[ ]          [ ]
22. FHL20	[ ]          [ ]
23. DE001	[ ]          [ ]

DR(01-06)1( )	=	DH001 DHM01 PTC(1-6)1
DR191 ( )	=	DM001 DM01 PTC81
DR210 ( )	=	DM001 DM01 PTC70
DGBY1 ( )	=	FHL11(DSBRO + QTP11)
FCC51 ( )	=	QTPA1 FCC41 (DE000 + QTPB1)
DGRD1 ( )	=	FCC51 FHL11
FHL31 ( )	=	FCC51 FHL21 JR210 JR191 JR010
FI011 ( )	=	DGRD1 JR191
FI030 ( )	=	DGRD1 JR210
DRYR1 ( )	=	QTPB1 DAR10 SINNO FCC10
DY(01-06)1 ( )	=	DGRD1 JR(01-06)1
DY(07-18)1 ( )	=	DGBY1 FB(07-18)1 QTP11
FCC61 ( )	=	QTPC1 FMI20 FCC51
DSBRI ( )	=	FHL21 FCC61
FB(01-18)0 ( )	=	QTPD1 DSBRI SSBRO
FB(01-18)1 ( )	=	DZ(01-18)1-DSBRI-QTP11 (Since A is zero, B will remain zero)
FCC71 ( )	=	QTPA1 FCC61 (DE000 + QTPB1)
DPCR1 ( )	=	FPI30 FSG20 FMI20 FHL10
DGPL1 ( )	=	SPCR1 FCC61 FHL21 DSPRO
FCC81 ( )	=	FCC71 QTPC1 FMI20
FHL10 ( )	=	QTPA1 FHL31 FCC81
FHL20 ( )	=	QTPA1 FHL31 FCC81
DE001 ( )	=	FCC81 FSG20

REVISIONS	PRINTS TO

MADE BY <i>J.R. Howell</i> ISSUED OCT 10 1963	APPROVALS <i>H.G. Manning</i> OCT 7 1963	Computer Phoenix	DIV OR DEPT LOCATION	43B135921 CONT ON SHEET 28 SH NO. 27
--	--	---------------------	-------------------------	---

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

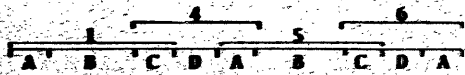
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	±	±	±

REV. NO.
CONT. ON SHEET
SH. NO.

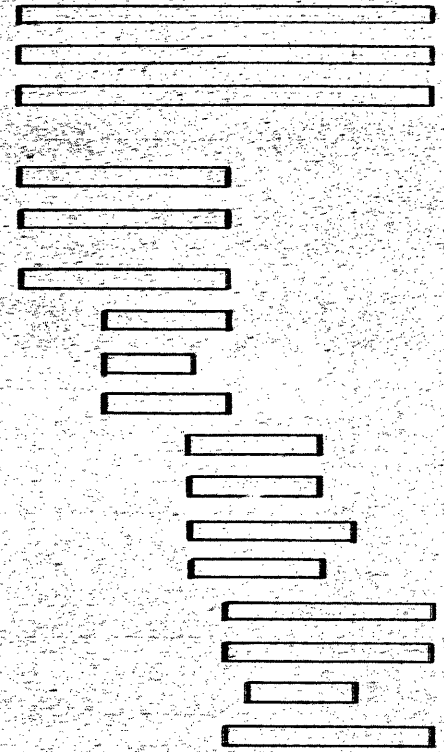
TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datatnet-30

3.0 LOAD INSTRUCTIONS

Load A(40) B(60) C(20)



1. Prepare
2. FM(12-18)
3. DE00
- Decode 4. DMJ
5. DM8
6. DM21
7. DZ(01-10)
8. FCC4
9. FL(01-14)1
10. DGZ1
11. FL(01-14)1
12. DL(01-14)1
- Address 13. FCC5
14. DM51
15. DM6
16. DM2
17. DM8
18. DCL2 and DCL3



Prepare

- FM(12-18) ( ) = FM(12-18) QTP81 FCC11 DPC81
- DM001 ( ) = DPC81 FN130 FN140 FN150
- DMJ21 ( ) = DPC81 FN160 FN171 FN180
- DMJ41 ( ) = DPC81 FN160 FN170 FN181
- DMJ61 ( ) = DPC81 FN160 FN171 FN181
- DM81 ( ) = (FCC11 QTP11) + FCC41
- DM21 ( ) = DPC81 (FM100 + FM110)[(FCC11-QTP11) + (FN120-FCC41)](DGEN0)
- DZ(01-10)1 ( ) = FM(01-10)1 DMZ1
- FCC41 ( ) = QTP81-FM120-FCC11-DSIA0
- FL(01-14)0 ( ) = QTP00 DGZ1
- DGZ1 ( ) = QTP80 FN110 SPGR1 FCC41 DE000 FSG20
- FL(01-14)1 ( ) = DZ(01-14)1 DGZ1
- DL(01-14)1 ( ) = FL(01-14)1 FM110
- FCC51 ( ) = QTP81 FCC41 DE000
- DM51 ( ) = QTP01 FM11
- DM6 ( ) = DPC81(QTP11-FCC51 + FCC61)
- DM2 ( ) = (QTP11 FCC51) + FCC61
- DM8 ( ) = DM810-QTP81-SIN80-FCC510
- DCL2 & DCL3 ( ) = DM61 DM401 FN160 FN181 REVISIONS
- DCL2 & DCL3 ( ) = DM61 DMJ21

PRINTS TO	

MADE BY <i>J.R. Howard</i> 807, 462	APPROVALS <i>M.E. Murray</i> Oct 7, 1963	Computer	DIV OR DEPT	43B135921
ISSUED OCT 1 1963		Phoenix	LOCATION	CONT. ON SHEET 29 SH. NO. 28



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

REV NO.

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 31 SH NO. 30

APPLIED PRACTICES

SURFACES

FRACTIONS

DECIMALS

ANGLES

CONT ON SHEET

SH NO.

FIRST MADE FOR Datatnet-30

3.0 LOAD INSTRUCTIONS (Continued)

Load Complement 41, 61



- 1 Prepare
- 2. FN(12-18)
- 3. DAD1
- Decode 4. DMJ4 or DMJ6
- 5. DGH
- 6. DGNZ
- 7. DZ(01-10)
- 8. FCC41
- 9. FL(01-14)0
- 10. DGZL
- Address 11. FL(01-14)1
- 12. DL(01-14)1
- 13. FCC51
- 14. DMST1
- 15. DEXC1
- 16. DMZ21
- 17. DRYR1
- 18. DGAY1
- 19. DGBY1

Prepare

- FN(12-18) ( ) = FN(12-18) QTPB1 FCC11 DPGRI
- DAD11 ( ) = DPGRI FN131 FN140 FN150
- DMJ41 ( ) = DPGRI FN160 FN170 FN181
- DMJ61 ( ) = DPGRI FN160 FN171 FN181
- DMJ11 ( ) = (FCC11 QTP11) + FCC41
- DGNZ1 ( ) = DPGRI-DGENO(FM100+FM110)[(FCC11-QTP11)+(FN120-FCC41)]
- DZ(01-10)1 ( ) = FN(01-10)1 DGNZ1
- FCC41 ( ) = QTPC1-FM120-FCC11-DSIAO
- FL(01-14)0 ( ) = QTP00 DGZL1
- DGZL1 ( ) = QTPB0 FMI10 SPGR1 FCC41 DE000 FSG20
- FL(01-14)1 ( ) = DZ(01-14)1 DGZL1
- DL(01-14)1 ( ) = FL(01-14)1 FMI10
- FCC51 ( ) = QTPA1 FCC41 DE000
- DMST1 ( ) = QTP01 FRUN1
- DEXC1 ( ) = DPGRI(QTP11-FCC51 + FCC61)
- DMZ21 ( ) = (QTP11 FCC51) + FCC61
- DRYR1 ( ) = DMRIO-QTPB1-SINMO-FCS10
- DGAY1 ( ) = FMI20(DSARO+QTP11)(FN181-FN170-FCC51-DPGRI)
- DGBY1 ( ) = (DSBRO+QTP11)(FN181-FN171-FCC51-DPGRI)
- DY(01-18)1 ( ) = FA(01-18)1 DGAY1 QTP11
- DY(01-18)1 ( ) = FB(01-18)1 DGBY1 QTP11

\* Even though A or B is transferred to Y DCL0 and DCL1 transfer A → Z.

PRINTS TO

MADE BY <i>F.R. Howell Oct 7, 1963</i>	APPROVALS <i>M.C. Skinnay Oct 7, 1963</i>	DIV OR DEPT Computer Phoenix	438135921
ISSUED OCT 10 1963		LOCATION CONT ON SHEET 31 SH NO. 30	

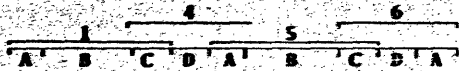


UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—				REV NO
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	±	±	±

TITLE	INSTRUCTION TIMING AND BLOCK DESCRIPTION
FIRST MADE FOR	Datanet-30

3.0 LOAD INSTRUCTIONS (Continued)

Load Complement 41, 61



20. DGL0

DGL01 ( ) = DEXC1 FN160 FN181 DMD11

21. DCL1

DCL11 ( ) = DEXC1 FN160 FN181 DMD11

22. DZ(01-18)1

DZ(01-18)1 ( ) = DGL01 FM(01-18)0 DY(01-18)0 + DGL11 FM(01-18)0 DY(01-18)1

23. FCC6

FCC61 ( ) = QIPC1 FMD20 FCC51

24. DS R

DSAR1 ( ) = DEXC1 DAJ41 DMD60

DSBR1 ( ) = DEXC1 DAJ61 DMD60

25. FA(01-18)0 or FB(01-18)0

FA(01-18)0 ( ) = QTPD1 DSAR1 SSAR0

FB(01-18)0 ( ) = QTPD1 DSBR1 SSBR0

26. FA(01-18)1 or FB(01-18)1

FA(01-18)1 ( ) = DZ(01-18) 1-DSAR1-QTP10

FB(01-18)1 ( ) = DZ(01-18) 1-DSBR1-QTP10

Terminate and prepare for next instruction

27. DEB0

DEB01 ( ) = DPCG1 DMD40 DMD00 FCC61 (FN181 + DMD10)

REVISIONS	PRINTS TO

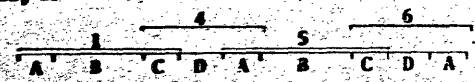
MADE BY <i>Z.R. Harris</i> 1227, 1963	APPROVALS <i>Oct 3, 1963</i> <i>Pho. H. Phing</i>	Computer Phoenix	DIV OR DEPT	438135921
ISSUED OCT 7 1963			LOCATION	CONT ON SHEET 32 SH NO 31

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING—

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO. \_\_\_\_\_  
TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datamet-30

3.0 LOAD INSTRUCTIONS (Continued)  
Load Q, Z, T Instructions 23, 22, 25



1. Prepare
2. FN(12-18)
- Decode 3. DMZ
4. DMZ, DMZ3, or 5
5. DMZ
6. DMZ
7. DZ(01-10)
8. FCC41
9. FL(01-14)0
10. DGZL1
- Z → L 11. FL(01-14)1
12. DL(01-14)1
13. FCC51
14. DMST
- Execute 15. DEX1
16. DMZ1
17. DGL2
18. DGL3
- 4 → Z 19. DZ(01-18)
20. FCC61

- Prepare
- FN(12-18) ( ) = FM(12-18) QTPB1 FCC11 DPGRI
  - DMZ1 ( ) = DPGRI FN160 FN171 FN180
  - DMZ21 ( ) = DPGRI FN130 FN141 FN150
  - DMZ31 ( ) = DPGRI FN131 FN141 FN150
  - DMZ51 ( ) = DPGRI FN130 FN140 FN151
  - DMZ11 ( ) = (FCC11 QTP11) + FCC41
  - DGMZ1 ( ) = DPGRI-DGENO(FM100+FM110)[(FCC11-QTP11)+(FN120-FCC41)]
  - DZ(01-10)1 ( ) = FM(01-10)1 DGMZ1
  - FCC41 ( ) = QTPC1-FM120-FCC11-DSIAO
  - FL(01-14)0 ( ) = QTP00 DGZL1
  - DGZL1 ( ) = QTPB0 FHL10 SPGR1 FCC41 DE000 FSG20
  - FL(01-14),1 ( ) = DZ(01-14)1 DGZL1
  - DL(01-14)1 ( ) = FL(01-14)1 FMI10
  - FCC51 ( ) = QTPA1 FCC41 DE000
  - DMST1 ( ) = QTP01 FRUN1
  - DEX1 ( ) = DPGRI(QTP11-FCC51) + FCC61
  - DMZ21 ( ) = (QTP11 FCC51) + FCC61
  - DGL21 ( ) = DEX1 DMZ21
  - DGL31 ( ) = DEX1 DMZ21
  - DZ(01-18)1 ( ) = DGL21 FM(01-18)1 DY(01-18)0 + DGL31 FM(01-18)1 DY(01-18)1
  - FCC61 ( ) = QTPC1 FMI20 FCC51

REVISIONS	PRINTS TO

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

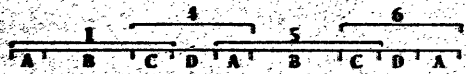
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV. NO.	DATE	BY

TITLE	INSTRUCTION TIMING AND BLOCK DESCRIPTION
FIRST MADE FOR	Datanet-30

3.0 LOAD INSTRUCTIONS (Continued)

Load Q, Z, T Instructions 23, 22, 25



Z → 21. FM(01-14)1  
DGTD1



or T 22. FM(01-14)0  
DT(01-21)1

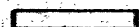


DT60



Terminate and prepare for next instruction.

23. DE00



For 22 instruction (Load Z) omit steps 21 and 22.

- FM(01-14)1 ( ) = QTP00 DE001 DMD31 DMJ21
- DGTD1 ( ) = QTP01 DMJ21 DMD51 DE001
- FM(01-14)0 ( ) = DZ(01-14)0 QTPA1 DMJ21 DMD31 DE001
- DT(01-18)1 ( ) = DGT01 DZ(01-18)1
- DT191 ( ) = DGT01 F1011
- DT201 ( ) = DGT01 F1021
- DT211 ( ) = DGT01 AP200
- DT601 ( ) = QTP01 DMJ21 DMD51 DE001 QTP00
- DE001 ( ) = FCC61 DMD10 DMD50 DPCR1 DMD10

REVISIONS	PRINTS TO

MADE BY T. R. [Signature] Oct 7, 1963 CHECKED OCT 10 1963	APPROVALS W. E. [Signature] Oct 7, 1963	COMPUTER Phoenix	DIV OR DEPT LOCATION	43B135921 CONT. ON SHEET 34 SH. NO. 33
--	---	---------------------	-------------------------	---

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

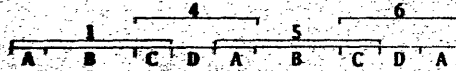
REV. NO.

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT. ON SHEET 35 SH. NO. 34

3.0 LOAD INSTRUCTIONS (Continued)

Load Special Flip-Flop (26)



	1. Prepare Instruction	
	2. FN(12-18)	
Decode	3. DNZ	
	4. DND	
	5. DNI	
	6. DNZ	
	7. DZ(01-10)	
	8. FCC4	
	9. FL(01-14)0	
	10. DGL	
	11. FL(01-14)1	
Address	12. DL(01-14)1	
Memory	13. FCC51	
	14. DNST	
	15. DEX	
	16. DNI	
	17. DGL2	
	18. DGL3	
	19. DZ(01-18)	

Prepare	( )	
FN(12-18)	( )	= FN(12-18) QTPB1 FCC11 DPGRI
DNZ1	( )	= DPGRI FN160 FN171 FN180
DND1	( )	= DPGRI FN130 FN141 FN151
DNI1	( )	= (FCC11 QTP11) + FCC41
DNZ1	( )	= DPGRI · DGENO(FM100 + FM110)[(FCC11 · QTP11) + (FN120 · FCC41)]
DZ(01-10)	( )	= FM(01-10) DGNZ1
FCC41	( )	= QTPC1 · FMI20 · FCC11 · DSIAO
FL(01-14)0	( )	= QTP00 DGL1
DGL1	( )	= QTPB0 FHL10 SPGR1 FCC41 DE000 FSG20
FL(01-14)1	( )	= DZ(01-14)1 DGL1
DL(01-14)1	( )	= FL(01-14)1 FMI10
FCC51	( )	= QTPA1 FCC41 DE000
DNST1	( )	= QTP01 FRUN1
DEX1	( )	= DPGRI(QTP11 · FCC51 + FCC61)
DNI21	( )	= (QTP11 · FCC51) + FCC61
DGL21	( )	= DEX1 DNZ1
DGL31	( )	= DEX1 DNZ1
DZ(01-18)1	( )	= DGL21 · FM(01-18)1 DY(01-18)0 + DGL31 · FM(01-18)1 DY(01-18)1

PRINTS TO	

MADE BY J.R. HANCOCK ISSUED OCT 10 1962	APPROVALS W.G. HANCOCK OCT 7, 1963	Computer Phoenix	DIV OR DEPT LOCATION	438135921 CONT. ON SHEET 35 SH. NO. 34
--	--	---------------------	-------------------------	---





UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

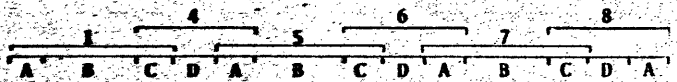
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
	✓	FRACTIONS	DECIMALS	ANGLES
		+	+	+

REV NO.	TITLE
	INSTRUCTION TIMING AND BLOCK DESCRIPTION
CONT ON SHEET	SH NO.
	11

FIRST MADE FOR Datanet-30

3.0 LOAD INSTRUCTIONS (Continued)

Load Double M → A M/1 → B



1. Prepare
2. FN(12-18)
3. DMD1
- Decode 4. DMJ2
5. DDL1
6. DDM1
7. DGM2
- M → 8. DZ(01-10)
9. FCC4
10. FL(01-14)0
11. DGZL
- Z → 12. FL(01-14)1
13. DL(02-14)1
- Address 14. DL011
15. FCC5
16. DMT1
17. DEXC
18. DGL2
19. DGL3
20. DDM21

- Prepare
- FN(12-18) ( ) = FN(12-18) QTPB1 FCC11 DPGRI
  - DMD11 ( ) = DPGRI FN131 FN140 FN150
  - DMJ21 ( ) = DPGRI FN160 FN171 FN180
  - DDL11 ( ) = DMJ21 DMD11
  - DDM11 ( ) = (FCC11 QTP11) + FCC41
  - DGM21 ( ) = DPGRI-DGENO-(FM100 + FM110)
  - DZ(01-10)1 ( ) = FM(01-10)1 DGM21 [(FCC11-QTP11) + (FN120-FCC41)]
  - FCC41 ( ) = QTPC1-FM120-FCC11-DSIA0
  - FL(01-14)0 ( ) = QTP00 DGZL1
  - DGZL1 ( ) = QTP30 FIL10 SPGR1 FCC41 DE000 FSG20
  - FL(01-14)1 ( ) = DZ(01-14)1 DGZL1
  - DL(02-14)1 ( ) = FL(02-14)1 FM110
  - DL011 ( ) = FCC41-DDL11-FM110
  - FCC51 ( ) = QTPA1 FCC41 DE000
  - DMT1 ( ) = QTP01 FRUN1
  - DEXC1 ( ) = DPGRI(QTP11-FCC51 + FCC61 + FCC71 + FCC81)
  - DGL21 ( ) = DEXC1 DMJ21
  - DGL31 ( ) = DEXC1 DMJ21
  - DDM21 ( ) = (QTP11 FCC51) + FCC61

\* Transfer both words from M → Z.

REVISIONS	PRINTS TO

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING—

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES

REV NO.

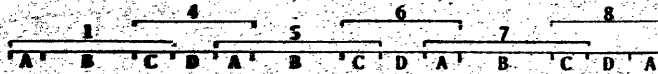
TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET SH NO.

FIRST MADE FOR Datanet-30

3.0 LOAD INSTRUCTIONS (Continued)

Load Double M → A N-1 → 5



- 21. DZ(01-18)
- 22. FCC6
- 23. DSR
- 24. FB(01-18)0
- 25. FB(01-18)1
- 26. DZNI
- 27. FZRO, FPLSO, FEVNO
- 28. FZRI (Conditional)
- 29. FEVNI
- Address M 30. FCC7
- FL(01-14) - FL(01-14) (See Line 17)
- 31. DMST
- 32. DMNS
- 33. DZ(01-18)
- 34. FCC8
- 35. DSR
- 36. FA(01-14)0
- Z → A 37. FA(01-14)1
- 38. FZRI (Conditional)
- 39. FPLSI
- Terminate and prepare for next instruction.
- 40. DE00

- DZ(01-18)1 ( ) = DGL21 FM(01-18)1 DY(01-18)0 + DGL31 FM(01-18)1
- FCC61 ( ) = QTPC1 FM20 FCC51 DY(01-18)1
- DSBR1 ( ) = FCC61 DMU21 DM11
- FB(01-18)0 ( ) = QTPD1 DSR1 SSBRO
- FB(01-18)1 ( ) = DZ(01-18)1 QTP10 DSR1
- DZNI ( ) = DZ(01-18)1
- FZRO, FPLSO, FEVNO ( ) = DDLI1 FCC61 QTPD1
- FZRI ( ) = QTP11 DZNI FCC61 DDLI1
- FEVNI ( ) = QTPA1 DDLI1 FCC61 DZ010
- FCC71 ( ) = QTPA1 FCC61 DE000
- DMST ( ) = See 16.
- DMNS ( ) = (QTP11 FCC71) + FCC81
- DZ(01-18)1 ( ) = See 21
- FCC81 ( ) = QTPC1 FM20 FCC71
- DSAR1 ( ) = DMU21 DM11 FCC81
- FA(01-14)0 ( ) = QTPD1 DSAR1 SSBRO
- FA(01-14)1 ( ) = QTP10 DSAR1 DZ(01-18)1
- FZRI ( ) = QTPA1 DZNI DDLI1 FCC81
- FPLSI ( ) = QTPA1 DZ180 DDLI1 FCC81
- DE001 ( ) = FCC81 FSG20

REVISIONS

PRINTS TO

MADE BY <i>J.R. Hancock Oct 7, 1963</i>	APPROVALS <i>W.S. Hanney Oct 7, 1963</i>	Computer	DIV OR DEPT	43B135921
ISSUED OCT 16 1963		Phoenix	LOCATION	CONT ON SHEET 38 SH NO. 37

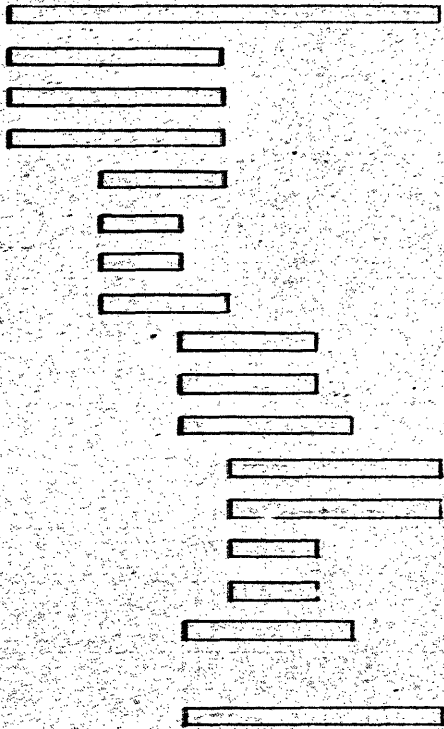
4.0 STORE INSTRUCTIONS

Store Instruction 30, 50, 70

Prepare Instruction



1. FN(12-18)
2. DNM
3. DGMZ
4. DZ(01-10)
5. FCC4
6. FL(01-7)0
7. FL(08-14)0
8. DGZL
9. FL(01-14)1
10. DL(01-14)1
11. FCC5
12. DEXC
13. DGMZ
14. DMST
15. DRYR
16. DC Y
17. DY(01-18) 1



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO.	TITLE	CONT ON SHEET	SH NO.
	INSTRUCTION TIMING AND BLOCK DESCRIPTION	39	38
	FIRST MADE FOR Datanet-30		

- FN(12-18) = FN(12-18) QTPB1 FCC11 DPGR1
  - (E11-38) = (FCC11 QTP11) + FCC41
  - ( ) = [(FCC11 QTP11 + FCC41 FN120)] DCENO DPGR1 (FM100 + FM110)
  - DZ(01-10)1 = FM(01-10)1 DGMZ1
  - FCC41 (C11-15) = QTPC1 FMI20 FCC11 DSIA0
  - FL(01-07)0 = QTP00 DGZL1
  - FL(08-14)0 = QTP00 DGZL1
  - DGZL1 ( ) = SPGR1 QTP80 FHL10 (FCC41 DE000 FSG20)
  - FL(01-14)1 = DZ(01-14)1 DGZL1
  - DL(01-14)1 = FL(01-14)1 FMI10
  - FCC51 ( ) = QTPA1 FCC41 DE000
  - DEXC1 ( ) = DPGR1(QTP11-FCC51 + FCC61)
  - DMZ1 ( ) = (QTP11 FCC51) + FCC61
  - DMST1 ( ) = QTP01 FRIN1
  - DRYR1 ( ) = DMRIO-QTPB1-SINMO-FCS10
  - DCAY1 ( ) = DSARO-FMI20-FN181-FN170-FCC51-DPGR1
  - DCBY1 ( ) = DSBRO-FN181-FN171-FCC51-DPGR1
  - DCY1 ( ) = DSCRO-DMJ31-DMD01-FCC51
- (In a 32 Instruction, nothing is gated into Y)

DY(01-18)1	= QTP11 DCAY1 FA(01-18)1 REVISIONS	PRINTS TO
DY(01-18)1	= QTP11 DCBY1 FB(01-18)1	
DY(01-07)1	= QTP11 DCY1 FC(01-7)1	

MADE BY T.A. HANCOCK Oct 7, 1963	ISSUED OCT 10 1963	APPROVALS W.C. HANCOCK Oct 7, 1963	DIV OR DEPT Computer Phoenix	LOCATION CONT ON SHEET 39	SH NO. 38
-------------------------------------	-----------------------	--	------------------------------------	------------------------------	-----------



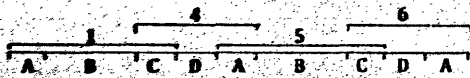
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO.	TITLE	CONT ON SHEET	SH NO.
	INSTRUCTION TIMING AND BLOCK DESCRIPTION	40	39
	FIRST MADE FOR	Datatet-30	

4.0 STORE INSTRUCTIONS (Continued)

Store Instruction 30, 50, 70



- 13. DCL1
  - 19. DCL3
  - 20. DZ(01-18)1
  - 21. DPMC
  - 22. DE00
- End Instruction

- DCL11 ( ) = DEXC1 DAD01 FN161 (FN171 + FN181)
- DCL31 ( ) = DEXC1 DAD01 FN161 (FN171 + FN181)  
(A 32 Instruction gates nothing into Z)
- DZ(01-18)1 = DGL11 FM(01-18)0 DY(01-18)1 +  
DGL31 FM(01-18)1 DY(01-18)1
- DPMCL ( ) = DPGR1 FN161 DAD21 DAD00 DAD10 (FN140 + FN150 + FN180)
- DE001 ( ) = DAD00 FCC61 DPGR1 DAD10 (FN181 + DAD10)

For a 51 or a 71

- 18. DGL01 ( ) = FN161 FN181 DAD11 DEXC1
- 19. DGL21 ( ) = FN161 FN181 DAD11 DEXC1

For a 33

- 18. DGL01 ( ) = DEXC1 DAD31 DAD31
- 19. DGL11 ( ) = DEXC1 DAD31 DAD31

For a 32

No transfer Y → Z or M → Z.

REVISIONS	PRINTS TO

MADE BY <i>J.R. Howell</i>	APPROVALS <i>W. G. Harvey</i>	DIV OR DEPT. Computer	43B135921
ISSUED OCT 1-0 1963	<i>Oct 7, 1963</i>	LOCATION Phoenix	CONT ON SHEET 40 SH NO 39

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

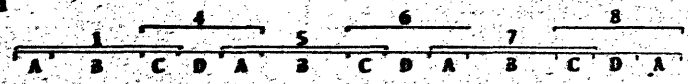
REV NO. \_\_\_\_\_  
CONT ON SHEET \_\_\_\_\_ SH NO. \_\_\_\_\_

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datanet-30

CONT ON SHEET 41 SH NO. 40

4.0 STORE INSTRUCTIONS (Continued)

Store Double 31



1. Prepare
2. FN(12-18)
3. DMU31
4. DM11
5. DDL1
6. DDC1
7. DDCZ1
8. DZ(01-10)
9. FCC41
10. FL(01-14)0
11. FL(01-14)1
12. DL(02-14)
13. DL01
14. FCC5
15. DNST
16. DEX1
17. DDC2
18. DDCY
19. DDCY
20. DY(01-18)
21. DCL1

- FN(12-18) ( ) = FN(12-18) QTPB1 FCC11 DPGR1
- DMU31 ( ) = DPGR1 FN161 FN171 FN180
- DM11 ( ) = DPGR1 FN131 FN140 FN150
- DDL1 ( ) = DMU31 DM11
- DDC1 ( ) = (FCC11 QTP11) + FCC41
- DDCZ1 ( ) = DPGR1-DGENO(FM100 + FM110) (FCC11-QTP11 + FN120-FCC41)
- DZ(01-10) ( ) = FN(01-10) DDCZ1
- FCC41 ( ) = QTPC1-FM120-FCC11-DSIA0
- FL(01-14)0 ( ) = QTP00 DDCZ1
- FL(01-14)1 ( ) = DZ(01-14)1 DDCZ1
- DL(02-14)1 ( ) = FL(02-14)1 FM110
- DL01 ( ) = FCC41-DL11-FM110
- FCC5 ( ) = QTPA1 FCC41 DE000
- DNST ( ) = QTP01 FM11
- DEX1 ( ) = DPGR1 (QTP11-FCC51 + FCC61 + FCC71 + FCC81)
- DDC2 ( ) = (QTP11 FCC51) + FCC61
- DDCY ( ) = DMR10-QTPB1-SINMO-FC510
- DDCY1 ( ) = DSBRO-DL11-FCC51
- DY(01-18)1 ( ) = QTP11 DDCY1 FB(01-18)1
- DCL1 ( ) = DMU31 DM11 DEX1

REVISIONS	PRINTS TO

MADE BY J.R. Harwood Feb 7, 1963 APPROVALS W.E. Harvey  
 ISSUED DEC 1 0 1962 Feb 7, 1963  
 Computer Phoenix DIV OR DEPT Phoenix LOCATION Phoenix  
 438135921 CONT ON SHEET 41 SH NO. 40

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

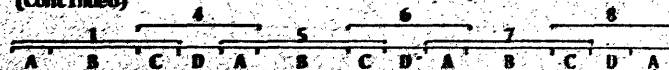
APPLIED PRACTICES	SURFACES ✓	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

FIRST MADE FOR Datanet-30

4.0 STORE INSTRUCTIONS (Continued)

Store Double 31 (Continued)



- 22. DGL3
- 23. FCC6
- 24. DZ(01-18)
- 25. DMC
- 26. FCC7
- 27. DL01-14
- 28. DMC5
- 29. DGV
- 30. DY(01-18)1
- 31. DZ(01-18)1
- 32. DMC
- 33. FCC81
- 34. DE00

- PGL31 ( ) = DMJ31 DAD11 DEXC1
- FCC61 ( ) = FCC51 QTPC1 FMI20
- DZ(01-18)1 ( ) = DGL11-FM(01-18)0 DY(01-18)1 +  
DGL31-FM(01-18)1 DY(01-18)1
- DMC1 ( ) = DPCR1 FMI61 FMI50 DM21 DA'DO DADMD
- FCC71 ( ) = QTPA1 FCC61 DE000
- DL(01-14)1 ( ) = FL(01-14)1 FMI10
- DMC51 ( ) = (QTP11 FCC71) + FCC81
- DGAV1 ( ) = SARO-FMI20-DGL11-FCC71
- DY(01-18)1 ( ) = QTP11 DGAV1 FA(01-14)1
- DZ(01-18)1 ( ) = DGL11-FM(01-18)0 DY(01-18)1 +  
DGL31-FM(01-18)1 DY(01-18)1
- DMC1 ( ) = DMC51 FMI20 DMJ31 DAD11
- FCC81 ( ) = FCC71 QTPC1 FMI20
- DE001 ( ) = FSG20 FCC81

End Instruction

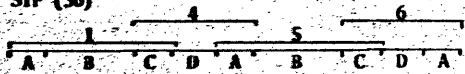
REVISIONS	PRINTS TO

MADE BY <i>J.R. Nunn</i> OCT 16 1963	APPROVALS <i>M.G. King</i> OCT 7 1963	Computer Phoenix	DIV OR DEPT LOCATION	438135921 CONT ON SHEET 42 SH NO 41
--	---	---------------------	----------------------------	--

4.0 STORE INSTRUCTIONS (Continued)

Store Special Flip-Flops

STF (36)



- 1. FN(12-18)
- 2. DMJ3
- 3. DND6
- 4. DNM11
- 5. DGMZ
- 6. DZ(01-10)
- 7. FCC41
- 8. FL(01-14)0
- 9. FL(01-14)1
- 10. DL(01-14)1
- 11. FCC51
- 12. DMST
- 13. DEXC
- 14. DNMZ
- 15. DRYR
- 16. DY01
- 17. DY02
- 18. DY08
- 19. DY09
- 20. DY10

- FN(12-18) (\*) = FM(12-18) QTPB1 FCC11 DPGR1
- DMJ31 ( ) = DPGR1 FN161 FN171 FN180
- DND61 ( ) = DPGR1 FN130 FN141 FN151
- DNM11 ( ) = (FCC11 QTP11) + FCC41
- DGMZ1 ( ) = DPGR1-DGENO(FM100 + FM110) (FCC11-QTP11 + FN120-FCC41)
- DZ(01-10) ( ) = FN(01-10) DGMZ1
- FCC41 ( ) = QTPC1-FM120-FCC11-DS1A0
- FL(01-14)0 ( ) = QTP00 DGMZ1
- FL(01-14)1 ( ) = DZ(01-14)1 DGMZ1
- DL(01-14)1 ( ) = FL(01-14)1 FM110
- FCC51 ( ) = QTPA1 FCC41 DE000
- DMST1 ( ) = QTP01 FRUN1
- DEXC1 ( ) = DPGR1 [(QTP11 FCC51) + FCC61]
- DNMZ1 ( ) = (QTP11 FCC51) + FCC61
- DRYR1 ( ) = DMR10-QTPB1-SINMO-FCC510
- DY011 ( ) = FEVNO QTP11 DND61 DMJ31 FCC51
- DY021 ( ) = FEZER1 QTP11 DND61 DMJ31 FCC51
- DY081 ( ) = FI011 QTP11 DND61 DMJ31 FCC51
- DY091 ( ) = FI021 QTP11 DND61 DMJ31 FCC51
- DY101 ( ) = FI031 QTP11 DND61 DMJ31 FCC51

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:			REV NO
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS	
	✓	FRACTIONS DECIMALS ANGLES	
		+ - +	

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datatnet-30

REVISIONS	PRINTS TO

MADE BY <i>J.R. Hazzell</i>	ISSUED OCT 10 1963	APPROVALS <i>D.S. Harty</i>	Computer Phoenix	DIV. OR DEPT. LOCATION	43B135921 CONT ON SHEET 43 SH NO. 42
--------------------------------	-----------------------	--------------------------------	---------------------	---------------------------	---



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLE
	✓	+	+	+

REV NO. \_\_\_\_\_  
TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datamet-30  
CONT ON SHEET \_\_\_\_\_ SH NO. \_\_\_\_\_

4.0 STORE INSTRUCTIONS (Continued)

Store Special Flip-Flops STF (36) (Continued)



21. DY18	<input type="checkbox"/>	DY181	( ) = FPL50 QIP11 DMD61 DMJ31 FCC51
22. DCL1	<input type="checkbox"/>	DCL11	( ) = DEXC1 DMJ31 DMD61
23. DGL3	<input type="checkbox"/>	DGL31	( ) = DEXC1 DMJ31 DMD61
24. DZ(01-18)	<input type="checkbox"/>	DZ(01-18)1	( ) = DGL11-FM(01-18)0-DY(01-18)1 + DGL31-FM(01-18)1-DY(01-18)1
25. FCC6	<input type="checkbox"/>	FCC61	( ) = QIPC1 FMI20 FCC51
26. DM4C	<input type="checkbox"/>	DM4C1	( ) = DPGR1 DMS21 DAVD0 DADM0 FMI61 FMI80
27. DE00	<input type="checkbox"/>	DE001	( ) = DPGR1 DADM0 DAVD0 FCC61 DM10

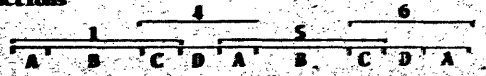
REVISIONS	PRINTS TO

MADE BY <i>J.R. Hamill</i>	APPROVALS <i>J.C. Henry</i>	Computer Phoenix	DIV OR DEPT	438135921
ISSUED OCT 10 1963	<i>Oct 7 1963</i>		LOCATION	CONT ON SHEET 44 SH NO. 43

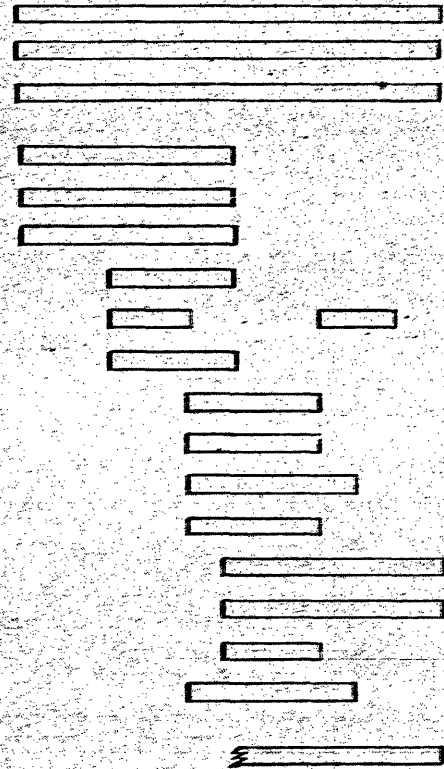
5.0 ARITHMETIC INSTRUCTIONS

- 42. M+A → A
- 46. A+M → Z
- 62. M+B → B
- 66. B+M → Z

Add Instructions



- 1. Prepare
- 2. FM(12-18)
- 3. DPM4 or 6
- Decode 4. DPM2 or 6
- 5. DPM
- 6. DGM
- M → Z 7. DZ(01-10)
- 8. FCC4
- 9. FL(01-14)0
- 10. DGZL
- Z → 11. FL(01-14)1
- Addr 12. DL(01-14)1
- 13. FCS
- 14. DM T
- 15. DEX
- 16. DGM21
- 17. DMY
- A or 3 → 18. DGM or DGM
- 19. DY(01-18)



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	±	±	±

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datnet-30

CONT ON SHEET 45 SH NO. 44

Prepare

- FM(12-18) ( ) = FM(12-18) QTPB1 FCC11 DPGRI
- DPM41 ( ) = DPGRI FN181 FN170 FN160
- DPM61 ( ) = DPGRI FN181 FN171 FN160
- DPM21 ( ) = DPGRI FN130 FN141 FN150
- DPM61 ( ) = DPGRI FN130 FN141 FN151
- DGM1 ( ) = (FCC11 QPT11) + FCC41
- DGM21 ( ) = DPGRI-DGENO(FM100 + FM110)(FCC11-QTP11 + FN120-FCC41)
- DZ(01-10)1 ( ) = FM(01-10)1 DGM21
- FCC41 ( ) = QTPC1-FM120-FCC11-DSIAO
- FL(01-14)0 ( ) = QIP00 DGZL1
- DGZL1 ( ) = QIPB0 FM110 SPGR1 FCC41 DE000 FSG20
- FL(01-14)1 ( ) = DZ(01-14)1 DGZL1
- DL(01-14)1 ( ) = FL(01-14)1 FM110
- FCS1 ( ) = QIPAI FCC41 DE000
- DM T ( ) = QIP01 FM11
- DEX1 ( ) = DPGRI(QTP11-FCC51 + FCC61)
- DGM21 ( ) = (QIP11 FCC51) + FCC61
- DMY1 ( ) = DM10-QTPB1-SINMO-FCS10
- DGM ( ) = DSABO-FM120-FN181-FN170-FCC51-DPGRI
- DGM21 ( ) = DSBRO-FN181-FN171-FCC51-DPGRI
- DY(01-18)1 ( ) = FA(01-18)1 QIP11 DGBY1
- DY(01-18)1 ( ) = FB(01-18)1 QIP11 DGBY1

REVISIONS

PRINTS TO

MADE BY <i>J.R. Marshall</i>	APPROVALS <i>W.G. King</i>	DIV OR DEPT Computer	438135921
DATED OCT 10 1963	DATE Oct 3, 1963	LOCATION Phoenix	CONT ON SHEET 45 SH NO. 44

5.0 ARITHMETIC INSTRUCTIONS (Cont.)

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:				REV NO.
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		CONT ON SHEET SH NO.
	✓	FRACTIONS	DECIMALS	
		+	-	
		ANGLES		
		+	-	

TITLE
INSTRUCTION TIMING AND BLOCK DESCRIPTION
FIRST MADE FOR Datanet-30



- Adder → Z
- 20. DGAD
  - 21. DZ(01-18)
  - 22. DSAR, or DSBR
  - 23. FA or FB(01-18)0
  - Z → A 24. FA(01-18)1 or FB(01-18)1   
or B
  - 25. DE00
  - 26. Set Branch FF's and Prepare for next instruction.

- DGAD1 ( ) = DEKCI(FN181·DMD21 + FN181·FN160·DMD61)
- DZ(01-18)1 ( ) = AS(01-18)1
- DSAR1 ( ) = DEKCI DMJ41 D·D60
- DSBR1 ( ) = DEKCI DMJ61 DMJ60
- FA(01-18)0 ( ) = QTP01 SSAR0 DSAR1
- FB(01-18)0 ( ) = QTP01 SSBR0 DSBR1
- FA(01-18)1 ( ) = DSAR1·DZ(01-18)1·QTP10
- FB(01-18)1 ( ) = DSBR1·DZ(01-18)1·QTP10
- DE001 ( ) = FCC61·DAMDO·DADMD·DFGR1·FN181

If 46 or 66 instruction, delete steps 22, 23, and 24.

REVISIONS	PRINTS TO

MADE BY <i>J.R. Howell</i> 5-7-46	APPROVALS <i>H.E. Namy</i> Oct 7, 1953	Computer Phoenix	DIV. OR DEPT.	43B135921
ISSUED OCT 10 1953			LOCATION	CONT ON SHEET 46 SH NO. 45

5.0 ARITHMETIC INSTRUCTIONS (Continued)

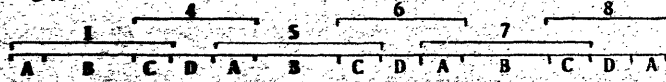
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	±	±	±

REV NO. \_\_\_\_\_  
CONT ON SHEET \_\_\_\_\_ SH NO. \_\_\_\_\_

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datnet-30

52, 72 Add A or B + M → M



1. Prepare
2. FN(12-18) \_\_\_\_\_
3. DEZ \_\_\_\_\_
- Decode 4. DDM \_\_\_\_\_
5. DCH \_\_\_\_\_
6. DGNZ \_\_\_\_\_
- Z 7. DZ(01-10) \_\_\_\_\_
8. FCC4 \_\_\_\_\_
9. FL(01-14)0 \_\_\_\_\_
10. DGZL \_\_\_\_\_
11. FL(01-14)1 \_\_\_\_\_
12. DL(01-14)1 \_\_\_\_\_
13. FCC5 \_\_\_\_\_
14. DPT \_\_\_\_\_
15. DEX \_\_\_\_\_
16. DEXZ \_\_\_\_\_
- A or S 17. DRYR \_\_\_\_\_
- Y 18. DCY \_\_\_\_\_
19. DY(01-18) \_\_\_\_\_

- Prepare
- FN(12-18) ( ) = FN(12-18) QTPB1 FCC11 DPGRI
  - DN21 ( ) = DPGRI FN130 FN141 DN150
  - DADM1 ( ) = FN161 FN181 DN21
  - DNM11 ( ) = (FCC11 QTP11) + FCC41
  - DGNZ1 ( ) = DPGRI • DGENO(FM100 + FM110)(FCC11 • QTP11 + FN120 • FCC41)
  - DZ(01-10)1 ( ) = FM(01-10)1 DGNZ1
  - FCC41 ( ) = QTPC1 • FM120 • FCC11 • DSIA0
  - FL(01-14)0 ( ) = QTP00 DGZL1
  - DGZL1 ( ) = QTPB0 FHL10 SPGR1 FCC41 DE000 FSG20
  - FL(01-14)1 ( ) = DZ(01-14)1 DGZL1
  - DL(01-14)1 ( ) = FL(01-14)1 FM10
  - FCC51 ( ) = QTPA1 FCC41 DE000
  - DPT1 ( ) = QTP01 FRUN1
  - DEX1 ( ) = DPGRI(QTP11 • FCC51 + FCC61 + FCC71 + FCC81)
  - DEXZ1 ( ) = (QTP11 FCC51) + FCC61
  - DRYR1 ( ) = DMRI0 • QTPB1 • SINM0 • FCS10
  - DGAY1 ( ) = DSARO • FM120 • FN181 • FN170 • FCC51 • DPGRI
  - DGBY1 ( ) = DSBRO • FN181 • FN171 • FCC51 • DPGRI
  - DY(01-18)1 ( ) = FA(01-18) QTP11 DGAY1 REVISIONS
  - DY(01-18)1 ( ) = FB(01-18) QTP11 DGBY1

PRINTS TO	

MADE BY <i>J. R. Howell</i> OCT 7, 1963	ISSUED OCT 10 1963	APPROVALS <i>W. G. Kinney</i> OCT 7, 1963	DIV OR DEPT Computer	LOCATION Phoenix	43B135921	CONT ON SHEET 47	SH NO. 46
--	-----------------------	---	-------------------------	---------------------	-----------	------------------	-----------



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES

✓

+

+

+

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

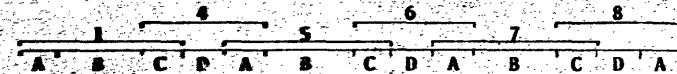
CONT ON SHEET

SH NO

FIRST MADE FOR Datamet-30

5.0 ARITHMETIC INSTRUCTIONS (Continued)

52, 72 Add A or B + M → M



Y + M	20. DGAD		DGAD1	( ) = DEXC1 F#181 D#D21
Adder	21. DMRI		DMRI1	( ) = FCC71 DACM1
→ Z	22. DZ(01-18)		DZ(01-18)1	( ) = AS(01-18)1
	23. FCC7		FCC71	( ) = QTPA1 FCE61 DE000
	24. DMST		DMST1	( ) = See 14
	25. DMMS		DMMS1	( ) = QTP11 FCC71 + FCC81
Z → M	26. DMWC		DMWC1	( ) = DMMS1 F#120 DADM1
	27. DE00		DE001	( ) = FCC81 FSG20

REVISIONS	PRINTS TO

MADE BY <i>E. R. Howell Oct 7, 1963</i>	APPROVALS <i>W. S. Henry Oct 7, 1963</i>	DIV OR DEPT. Computer Phoenix	438135921
ISSUED OCT 14 1963		LOCATION CONT ON SHEET 48	SH NO 47

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:-

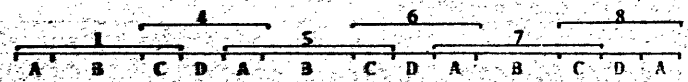
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO.	
CONT ON SHEET	SH NO.

TITLE INSTRUCTION TIMING AND BLOCK DIAGRAM  
FIRST MADE FOR Datatnet-30

5.0 ARITHMETIC INSTRUCTIONS (Continued)

- 34 Add One to '1'
- 35 Subtract One from '1'



- 1. Prepare
- 2. FN(12-18)
- 3. DN31
- 4. DFD41 or DFD51
- 5. DAD41
- 6. DFN11
- 7. DGN21
- 8. DZ(01-10)1
- 9. FCC41
- 10. FL(01-14)1
- 11. DGZL1
- 12. FL(01-14)1
- 13. FL(01-14)1
- 14. DNST1
- 15. FCC51
- 16. DEXC1
- 17. DFN21
- 18. DRY21
- 19. DTD1 or DT(01-15)1

- Prepare ( )
- FN(12-18) ( ) = FN(12-18) QTPB1 FCC11 DPGR1
- DN31 ( ) = DPGR1 FN161 FN171 FN180
- DFD41 ( ) = DPGR1 FN130 FN140 FN151
- DAD41 ( ) = DN31 FN140 FN151
- DFN11 ( ) = (FCC11 QTP11) + FCC41
- DGN21 ( ) = DPGR1 DGENO(FM100 + FM110)(FCC11 QTP11 + FN120 FCC41)
- DZ(01-10)1 ( ) = FN(01-10)1 DGZ1
- FCC41 ( ) = QTPC1 FM120 FCC11 DSIA0
- FL(01-10)0 ( ) = QTP00 DGZL1
- DGZL1 ( ) = QTP30 FM110 SPGR1 FCC41 DE000 FSC20
- FL(01-14)1 ( ) = DZ(01-14)1 DGZL1
- DL(01-14)1 ( ) = FL(01-14)1 FM110
- DNST1 ( ) = QTP01 FRUN1
- FCC51 ( ) = QTPA1 FCC41 DE000
- DEXC1 ( ) = DPGR1(QTP11 FCC51 + FCC61 + FCC71 + FCC81)
- DFN21 ( ) = (QTP11 FCC51) + FCC61
- DRY21 ( ) = DMR10 QTPB1 SINMO FCS10
- DY011 ( ) = FCC51 DN31 FN140 FN151 QTP11

REVISIONS	PRINTS TO

MADE BY <i>I.R. Howell</i> 0217, 1963 ISSUED OCT 10 1963	APPROVALS <i>M.C. Harvey</i> OCT 7, 1963	Computer Phoenix	DIV OR DEPT LOCATION	438135921 CONT ON SHEET 49 SH NO. 48
---	--	---------------------	-------------------------	---

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

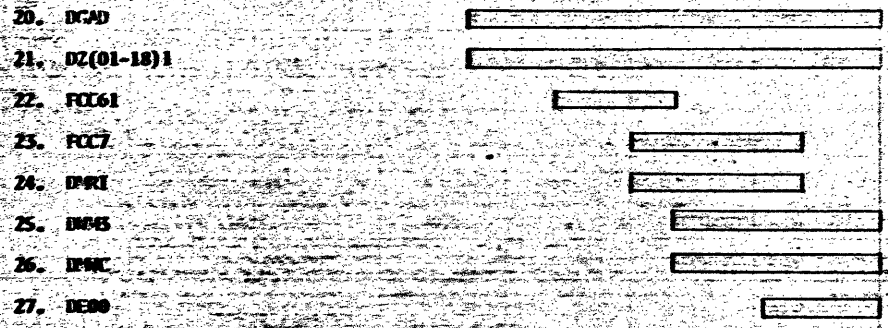
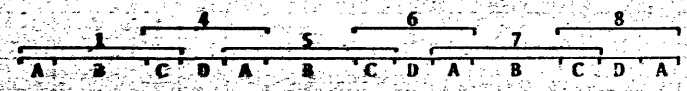
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	±	±	±

REV. NO.	
CONT. ON SHEET	SH. NO.

TITLE  
INSTRUCTION TIMING AND  
BLOCK DESCRIPTION  
FIRST MADE FOR Datamc-30

5.0 ARITHMETIC INSTRUCTIONS (Continued)

- 34 Add One to M
- 35 Subtract One from M



- DGAD1 ( ) = DEXC1 DADM1
- DZ(01-18)1 ( ) = AS(01-18)1
- FCC61 ( ) = QTPC1 FMI20 FCC51
- FCC71 ( ) = QTPA1 FCC61 DE000
- DPC11 ( ) = DADM1 FCC71
- DPC51 ( ) = (QTP11 FCC71) + FCC81
- DPC81 ( ) = DPC31 FMI20 DADM1
- DE001 ( ) = FCC81 FSG20

- 35
- 4. DMD51 ( ) = DPC11 FMI31 FMI40 FMI51
- 19. DYO11 ( ) = FCC51 DMI31 FMI40 FMI51 QTP11
- DY(02-18)1 ( ) = FCC51 DMI31 DMD51

This complements Y and gives an adder output to Z equal to M-1.

REVISIONS	PRINTS TO

APPROVALS MADE BY: <i>J.R. Hannon</i> Oct 7, 1963 CHECKED: <i>M.C. Hannon</i> Oct 7, 1963 DATE: OCT 10 1963	DIV. OR DEPT. Computer LOCATION: CON. ON SHEET 50 PHOENIX	438135921 SH. NO. 49
--	--	-------------------------

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

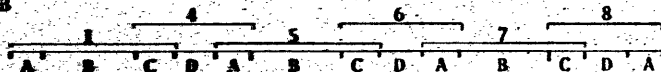
CONT ON SHEET 51 SH NO. 50

5.0 ARITHMETIC INSTRUCTIONS (Continued)

CONT ON SHEET SH NO.

FIRST MADE FOR Datamet-30

37 Add M and M+1 to A and B



1. Prepare	
2. FM(12-18)	[ ]
3. DMJ3	[ ]
4. DMJ7	[ ]
5. DMJ0	[ ]
6. DDL1	[ ]
7. DMJ1	[ ]
8. DGMZ	[ ]
9. DZ(01-10)	[ ]
10. FCC4	[ ]
11. FL(01-14)0	[ ]
12. DGZL	[ ]
13. FL(01-14)1	[ ]
14. DL(02-14)1	[ ]
15. DL011	[ ]
16. FCC51	[ ]
17. DMST	[ ]
18. DEXC1	[ ]
19. DMZ1	[ ]
20. DRYK1	[ ]
21. DGBY1	[ ]
22. DV(01-18)	[ ]
23. DGM0	[ ]

Prepare	
FM(12-18)	( ) = FM(12-18) QTPB1 FCC11 DPGRI
DMJ3	( ) = DPGRI FM161 FN171 FN180
DMJ7	( ) = DPGRI FN131 FN141 FN151
DAMJ1	( ) = DMJ31 DMJ71
DDL1	( ) = DMJ1
DMJ1	( ) = (FCC11 QTP11) + FCC41
DGMZ1	( ) = DPGRI • DGENO(FM100 + FM110)(FCC11 • QTP11 + FN120 • FCC41)
DZ(01-10)1	( ) = FM(01-10)1 DGMZ1
FCC41	( ) = QTPC1 • FM120 • FCC11 • DSIAO
FL(01-14)0	( ) = QTP00 DGZL1
DGZL1	( ) = QTPB0 FM110 SPGR1 FCC41 DE000 FSG20
FL(01-14)1	( ) = DZ(01-14)1 DGZL1
DL(02-14)1	( ) = FL(02-14)1 FM110
DL011	( ) = DDL11 FCC41
FCC51	( ) = QTPA1 FCC41 DE000
DMST1	( ) = QTP01 FRUN1
DEXC1	( ) = DPGRI(QTP11 FCC51 + FCC61 + FCC71 + FCC81)
DMZ1	( ) = (QTP11 FCC51) + FCC61
DRYK1	( ) = DMRI0 • QTPB1 • SINMO • FCCS10
DGBY1	( ) = DDL11 • FCC51 • DSBRO
DV(01-18)1	( ) = FB(01-18)1 QTP11 DGBY1
DGM0	( ) = DEXC1 DAMJ1

REVISIONS

PRINTS TO

MADE BY *R. Howell* 10/7/63  
ISSUED OCT 10 1963

APPROVALS  
*W.G. Haney*  
Oct 7, 1963

Computer  
Phoenix

DIV OR DEPT  
LOCATION

43B135921

CONT ON SHEET 51 SH NO. 50



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

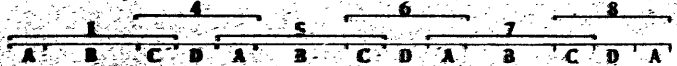
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACT-QMS	DECIMALS	ANGLES
	✓	±	±	±

REV NO.	
CONT ON SHEET	SH NO.

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datatnet-30

5.0 ARITHMETIC INSTRUCTIONS (Continued)

37 Add M and M+1 to A and B



24. DZ(01-18)	[Bar]	DZ(01-18)1	( ) = AS(01-18)1
25. FCC6	[Bar]	FCC61	( ) = QIP1 FMI20 FCC51
26. DSR	[Bar]	DSR1	( ) = FCC61 DAV1
27. FB(01-18)0	[Bar]	FB(01-18)0	( ) = QIP1 DSR1 SS30
28. FB(01-18)1	[Bar]	FB(01-18)1	( ) = DZ(01-18)1-QIP10-DSR1
29. DZN1	[Bar]	DZN1	( ) = DZ(01-18)1
30. FZER0, FPLS0, FEVS0	[Bar]	FZER0, FPLS0, FEVS0	( ) = DDL1 FCC61 QIP1
31. FZER1	[Bar]	FZER1	( ) = QIP1 DZN1 FCC61 DDL1
32. FEVS1	[Bar]	FEVS1	( ) = QIP1 DDL1 FCC61 DZ010
33. FCC7	[Bar]	FCC71	( ) = QIP1 FCC61 DE00
34. DAST	[Bar]	DAST1	( ) = See 17
35. DAV1	[Bar]	DAV1	( ) = (QIP1 FCC71) + FCC81
36. DRY1	[Bar]	DRY1	( ) = SEE Line 20
37. DCW1	[Bar]	DCW1	( ) = FMI20-DSAR0-DDL1-FCC71
38. DW(01-18)	[Bar]	DW(01-18)1	( ) = QIP1 DAV1 FA(01-18)1
39. DZ(01-18)	[Bar]	DZ(01-18)1	( ) = AS(01-18)1
40. FCC8	[Bar]	FCC81	( ) = QIP1 FMI20 FCC71
41. DSR	[Bar]	DSR1	( ) = FCC81 DAV1
42. FA(01-18)0	[Bar]	FA(01-18)0	( ) = QIP1 DSR1 SSAR0
43. FA(01-18)1	[Bar]	FA(01-18)1	( ) = QIP10-DSAR1-DZ(01-18)1
44. DZN1	[Bar]	DZN1	( ) = See Line 29
45. FZER1	[Bar]	FZER1	( ) = QIP1 DZN1 DDL1 FCC81
46. FPLS	[Bar]	FPLS1	( ) = QIP1 DZ180 DDL1 FCC81
47. DE00	[Bar]	DE00	( ) = FCC81 ESC20

REVISIONS	PRINTS TO

MADE BY: *SR Hamel* DATE: *027, 1963* APPROVALS: *W.S. Hamel* DIVISION: *Computer* DEPT: *Phoenix*  
 ISSUED: *OCT 10 1963* LOCATION: *CON. ON SHEET 52* SH NO. *51*

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS	DECIMALS	ANGLES
+	+	+

REV NO.

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

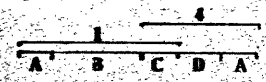
CONT ON SHEET

SH NO.

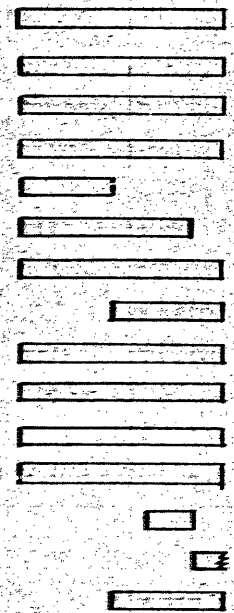
FIRST MADE FOR Datanet-30

5.0 ARITHMETIC INSTRUCTIONS (Continued)

010 Add Instruction to C  
011 Place Instruction in C



1. Prepare
2. FN(12-18)
3. DMD1
4. DGEN
5. DGN0
6. DRYR
7. DGCY
8. DY(01-07)
9. FCC41
10. DEXC1
11. DGAD
12. DZ(01-18)
13. DSCR
14. FC(01-07)0
15. FC(01-07)1
16. DE00



Prepare

- FN(12-18) ( ) = FN(12-18) QTPB1 FCC11 DPGR1
- DMD11 ( ) = DPGR1 FN131 FN140 FN150
- DGEN1 ( ) = DPGR1 DGM11 FN160 FN180 FN170
- DGN01 ( ) = DGEN1 FM110 FN120
- DRYR1 ( ) = DMR10 QTPB1 SINMO FGS10
- DGCY1 ( ) = DGEN1 DMD11 FM100 DSCRO
- DY(01-07) ( ) = DGCY1 QTP11 FC(01-07)1 (In an 011 instruction Y is left all zeros)
- FCC41 ( ) = QTPC1 FM120 FCC11 DSIA0
- DEXC1 ( ) = DPGR1 DGEN1
- DGAD1 ( ) = DGN01 DMD11 DEXC1
- DZ(01-18)1 ( ) = AS(01-18)1
- DSCR1 ( ) = DGN01 DMD11
- FC(01-07)0 ( ) = QTPD1 DSCR1 SSCRO
- FC(01-07)1 ( ) = DZ(01-07)1 DSCR1 QTP10
- DE001 ( ) = FCC41 DGEN1 DMD30

REVISIONS	PRINTS TO

MADE BY <i>J.R. Howell</i> ISSUED OCT 10 1963	APPROVALS <i>K.C. Harvey</i> OCT 7, 1963	Computer Phoenix	DIV OR DEPT LOCATION	430135921 CONT ON SHEET 53 SH NO 52
--	--	---------------------	-------------------------	--

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:--

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO.

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET

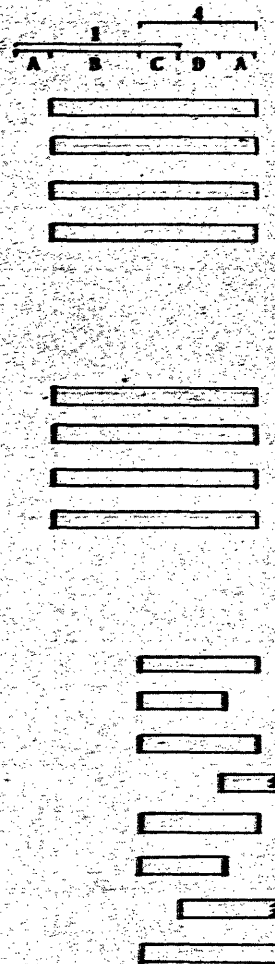
SH NO.

FIRST MADE FOR Datanet-30

6.0 BRANCH INSTRUCTIONS (Continued)

10, 12, 13, 14, 15, 16, 17 (Except 255)

1. Prepare
2. FM(12-18)
3. DMJ1
4. DMD1
5. DDM1
6. DGMZ
7. FZ(01-10)
8. DSAT
9. FCC4
10. FL(01-14)1
11. DGZL
12. FL(01-14)1
13. DSPR
14. FP(01-14)0
15. FP(01-14)1
16. DE00



Prepare Instruction

- FM(12-18) (\*) = FM(12-18) QTPB1 FCC11 DPGRI
- DMJ11 ( ) = DPGRI FN161 FN170 FN180
- DMD01 ( ) = DPGRI FN130 FN140 FN150
- DMD21 ( ) = DPGRI FN130 FN141 FN150
- DMD31 ( ) = DPGRI FN131 FN141 FN150
- DMD41 ( ) = DPGRI FN130 FN140 FN151
- DMD51 ( ) = DPGRI FN131 FN140 FN151
- DMD61 ( ) = DPGRI FN130 FN141 FN151
- DMD71 ( ) = DPGRI FN131 FN141 FN151
- DDM11 ( ) = (QTP11 FCC11) + FCC41
- DGMZ1 ( ) = DPGRI DGENO(FM100 + FM110)(FCC11 QTP11 + FN120 FCC41)
- FZ(01-10)1 ( ) = FM(01-10)1 DGMZ1
- DSAT1 (10) ( ) = DMD01
- DSAT1 (12) ( ) = FZERO DMD21
- DSAT1 (13) ( ) = FZERI DMD31
- DSAT1 (14) ( ) = FPLS1 DMD41
- DSAT1 (15) ( ) = F PLS0 DMD51
- DSAT1 (16) ( ) = FEVNI DMD61
- DSAT1 (17) ( ) = FEVNO DMD71
- FCC41 ( ) = QTPC1 FMI20 FCC11 DSIAO
- FL(01-14)0 ( ) = QTP00 DGZL1
- DGZL1 ( ) = FCC41 DE000 FSG20 FIL10 SPGR1 QTPB0
- FL(01-14)1 ( ) = DZ(01-14)1 DGZL1
- DSPR1 ( ) = DMJ11 FIL30 DE001 DSAT1
- FP(01-14)0 ( ) = QTP00 DSPR1 SPGR1
- FP(01-14)1 ( ) = QTP10 DSPR1 DZ(01-14)1
- DE001 ( ) = DMJ11 DMD10 FCC41

REVISIONS	PRINTS TO

MADE BY <i>J.R. Havel</i> (017, 1963)	APPROVALS <i>H.C. Harvey</i> OCT 7 1963	Computer Phoenix	DIV OR DEPT Phoenix	438135921
ISSUED OCT 10 1963			LOCATION	CONT ON SHEET 54 SH NO. 53

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	-

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

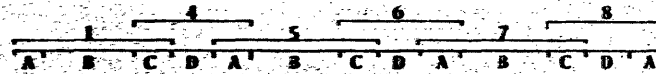
CONT ON SHEET

SH NO

FIRST MADE FOR Datnet-30

6.0 BRANCH INSTRUCTIONS (Continued)

Branch Subroutine BRS (11)  
(See Note)



1. Prepare
2. FN(12-18)
3. DNUI
4. DNDI
5. DDCI
6. DSDI
7. DGNZ
8. DZ(01-10)
9. FCC41
10. FL(01-14)0
11. DGZL
12. FL(01-14)1
13. FCC51
14. DNST
15. DEXC
16. DRYR
17. DGPY
18. DY(01-14)
19. DDC21
20. DGL1

Prepare

- FN(12-18)1 (\*) = FN(12-18) QTPB1 FLC11 DPCR1
- DNUI1 ( ) = DPCR1 FN161 FN170 FN180
- DNDI1 ( ) = DPCR1 FN131 FN140 FN150
- DDCI1 ( ) = (QTPH FCC11) + FCC41
- DSDI1 ( ) = DNDI1
- DGNZ1 ( ) = DPCR1 DGENO(FM100 + FM110)(FCC11 QTP11 + FN120 FCC41)
- DZ(01-10)1 ( ) = FN(01-10)1 DSNZ1
- FCC41 ( ) = QTPC1 FM120 FCC11 DSIA0
- FL(01-14)0 ( ) = QTP00 DGZL1
- DGZL1 ( ) = FCC41 DE000 FSG20 FHL10 SPOR1 QTPB0
- FL(01-14)1 ( ) = DZ(01-14)1 DGZL1
- FCC51 ( ) = QTPA1 FCC41 DE000
- DNST1 ( ) = QTP01 FRIN1
- DEXC1 ( ) = DPCR1(QTP11 FCC51 + FCC61 + FCC71 + FCC81)
- DRYR1 ( ) = DMRIO QTPB1 SINMO FCS10
- DGPY1 ( ) = FM120 DEXC1 DNUI1 DNDI1 FCC51
- DY(01-14)1 ( ) = QTP11 DGPY1 DY(01-14)1
- DDC21 ( ) = (QTP11 FCC51) + FCC61
- DGL11 ( ) = DSNZ1 DNUI1

Note: The contents of the memory address specified in this instruction must be even. For instance, if the instruction is 110xxx the word (address) contained in memory location xxx must be even.

REVISIONS

PRINTS TO

MADE BY: *Ed Howard* 5173, 1963  
ISSUED: OCT 2 1963

APPROVALS: *W. E. Murray*  
6103, 1963

Computer  
Phoenix

DIV OR DEPT  
LOCATION

438135921

COPY ON SHEET 55 SH NO 54

ONE SH CONT ON SHEET  
DRAWING NO.

GENERAL ELECTRIC

43B135921

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

✓

+

+

+

REV NO

TITLE

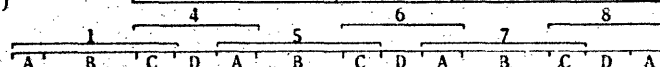
INSTRUCTION TIMING AND  
BLOCK DESCRIPTION

CONT ON SHEET 56

SH NO. 55

6.0 BRANCH INSTRUCTIONS (Continued)

Branch Subroutine BRS (11)



21. DGL3	[Bar]	DGL31	( )	=	DWM21 DMJ11
22. DZ(01-18)	[Bar]	DZ(01-18)1	( )	=	DGL11 FM(01-18)0 DY(01-18)1 + DGL31 FM(01-18)1 DY(01-18)1
23. DMC	[Bar]	DMC1	( )	=	DPGR1 DWM21 DAVD0 DADND FN161 FN180
24. FCC61	[Bar]	FCC61	( )	=	QTPC1 FMI20 FCC51
25. FL01	[Bar]	FL011	( )	=	QTPC1 DMJ11 DWM21
26. DMST	[Bar]	DMST1	( )	=	SEE14
27. FCC71	[Bar]	FCC71	( )	=	QTPA1 FCC61 DE000 (See timing)
28. DMB	[Bar]	DMB1	( )	=	(QTP11 FCC71) + FCC81
29. DGL21	[Bar]	DGL21	( )	=	DMJ11 DMB1
30. DGL31	[Bar]	DGL31	( )	=	DMJ11 DMB1
31. DZ(01-18)	[Bar]	DZ(01-18)1	( )	=	DGL21 FM(01-18)1 DY(01-18)0 + DGL31 FM(01-18)1 DY(01-18)1
32. FCC81	[Bar]	FCC81	( )	=	QTPC1 FMI20 FCC71
33. DSPR	[Bar]	DSPR1	( )	=	FHL30 DE001 DSAT1 DMJ11
34. FP(01-14)0	[Bar]	FP(01-14)0	( )	=	QTP00 SPGR1 DSPR1
35. FP(01-14)1	[Bar]	FP(01-14)1	( )	=	QTP10 DSPR1 DZ(01-14)1
36. DE001	[Bar]	DE001	( )	=	FCC81 FSG20

REVISIONS

PRINTS TO

MADE BY  
*J.R. Howell Oct 7, 1963*  
ISSUED  
OCT 10 1963

APPROVALS

*W.C. Harvey Oct 7, 1963*

Computer

Phoenix

DIV OR DEPT

43B135921

LOCATION CONT ON SHEET 56

SH NO. 55

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 57 SH NO. 56

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS:

FRACTIONS

DECIMALS

ANGLES

CONT ON SHEET

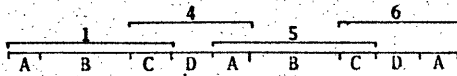
SH NO

FIRST MADE FOR Datanet-30

7.0 LOGICAL INSTRUCTIONS

63, 64, 65, 76, 77

63 M and B → B



1. Prepare Instruction

2. FN(12-18)

3. DMU6

4. DND3, 4, 5, 6, 7

5. DNM1

6. DGMZ

7. DZ(01-10)

8. FCC4

9. FL(01-14)0

10. DGZL

11. FL(01-14)1

12. DL(01-14)1

13. FCC5

14. DNST

15. DEXC

16. DNM2

17. DRYR

18. DGBY

19. DY(01-18)

Prepare

FN(12-18) ( ) = FN(12-18) FCC11 DPGRI

DMU6 ( ) = DPGRI FN160 FN171 FN181

DND3 ( ) = DPGRI FN131 FN141 FN150

DND4 ( ) = DPGRI FN130 FN140 FN151

DND5 ( ) = DPGRI FN151 FN140 FN151

DND6 ( ) = DPGRI FN130 FN141 FN151

DND7 ( ) = DPGRI FN131 FN141 FN151

DNM1 ( ) = (FCC11 QTP11) + FCC41

DGMZ ( ) = [(FCC11 QTP11) + (FCC41 FN120)] (DCENO + DND3) DPGRI (FN100 + FN110)

DZ(01-10) ( ) = FN(01-10)1 DGMZ1

FCC4 ( ) = QTPC1 FN120 FCC11 DSIA0

FL(01-14)0 ( ) = QTP00 DGZL1

DGZL ( ) = QTP30 FN110 SPGR1 FCC41 DE000 FSC20

FL(01-14)1 ( ) = DZ(01-14)1 DGZL1

DL(01-14)1 ( ) = FL(01-14)1 FN110

FCC5 ( ) = QTPA1 FCC41 DE000

DNST ( ) = QTP01 FRUN1

DEXC ( ) = DPGRI(QTP11 FCC11 + FCC61)

DNM2 ( ) = (QTP11 FCC5) + FCC61

DRYR ( ) = DMRIO QTPB1 SINMO FCS10

DGBY ( ) = DPGRI FCC51 FN171 FN181(DSBRO + QTP11)

DY(01-18) ( ) = FB(01-18)1 QTP11 DGBY1

REVISIONS

PRINTS TO

MADE BY *J.P. Howell* 9/17/63  
ISSUED OCT 10 1963

APPROVALS *J.P. Howell*  
Computer  
Phoenix

DIV OR DEPT  
LOCATION

438135921  
CONT ON SHEET 57 SH NO 56

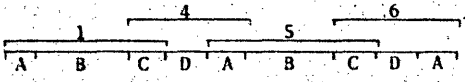


UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:			REV NO.
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS	
	✓	FRACTIONS    DECIMALS    ANGLES	
		+                +                +	
		-                -                -	

TITLE	INSTRUCTION TIMING AND BLOCK DESCRIPTION	CONT ON SHEET	58	SH NO.	57
FIRST MADE FOR	Datnet-30				

7.0 LOGICAL INSTRUCTIONS (Continued)

63, 64, 65, 76, 77



B and M → Z	20.	63, 76	64	65, 77	
			DGL1	DGL1	[Bar]
			DGL2	DGL2	
			DGL3	DGL3	
21.	DZ(01-18)				[Bar]
22.	DSBR				[Bar]
23.	FB(01-18)0				[Bar]
24.	FB(01-18) = 1 Set Special Flip Flops, etc.				[Bar]
Terminate and Prepare for Next Instruction					
25.	DE00				[Bar]

DGL11 (64)	( )	=	DEXC1	FN181	DMD41
DGL11 (65)	( )	=	DEXC1	FN181	DMD51
DGL11 (77)	( )	=	DEXC1	FN181	DMD71 FN161
DGL21 (64)	( )	=	DEXC1	FN181	DMD41
DGL21 (65)	( )	=	DEXC1	FN181	DMD51
DGL21 (77)	( )	=	DEXC1	FN181	DMD71 FN161
DGL31 (65)	( )	=	DEXC1	FN181	DMD51
DGL31 (77)	( )	=	DEXC1	FN181	DMD71 FN161
65, 77 DZ(01-18)1 (64)	( )	=	(FM(01-18)0 DY(01-18)1 DGL11) + (DGL21 FM(01-18)1 DY(01-18)0)		
		=	(FM(01-18)0 DY(01-18)1 DGL11) + (DGL21 FM(01-18)1 DY(01-18)0)		
		=	+ (DGL31 FM(01-18)1 DY(01-18)1)		
63, 76		=	DGL31 FM(01-18)1 DY(01-18)1		
DSBR1	( )	=	DEXC1	DMD61	DMD60
FB(01-18)0	( )	=	QTPD1	DSBR1	SSBR0
FB(01-18)1	( )	=	QTP10	DSBR1	DZ(01-18)1
DE001	( )	=	DPGR1	DMD0	FCC61 DMD0 (FN181 + DMD10)

76, 77 Delete 22, 23, 24 above. M and B → Z Special FF's.

22. DGL31 = FN181 FN161 DMD61 DEXC1

REVISIONS	PRINTS TO

MADE BY	J.S. Hamilton	OCT 7, 1963	APPROVALS	W.C. Manning	Computer	DIV OR DEPT	Phoenix	438135921
ISSUED	OCT 10 1963					LOCATION	CONT ON SHEET	58
							SH NO.	57

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

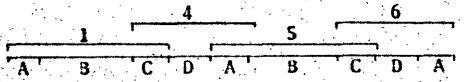
REV NO	CONT ON SHEET	SH NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datnet-30

7.0 LOGICAL INSTRUCTIONS (Continued)

73, 74, 75 Instructions

73 M and B → M



73 M and B → M  
74 M or B → M  
75 M Xor B → M

1. Prepare Instruction

2. FN(12-18)

3. DMD3, DMD4, DMD5

4. DWM1

5. DGMZ

6. DZ(01-10)

7. FCC4

8. FL(01-14)0

9. DGZL

10. FL(01-14)

11. DL(01-14)1

12. FCC5

13. DMST

14. DEXC

15. DWM2

16. DRYR

B → Y 17. DGBY

18. DY(01-18)1

Prepare

FN(12-18)

DMD31

DMD41

DMD51

DWM11

DGMZ1

DZ(01-10)1

FCC41

FL(01-14)0

DGZL1

FL(01-14)1

DL(01-14)1

FCC51

DMST1

DEXC1

DWM21

DRYR1

DGBY1

DY(01-18)1

- ( ) = FN(12-18) QTPB1 FCC11 DPGRI
- ( ) = DPGRI FN150 FN131 FN141
- ( ) = DPGRI FN151 FN130 FN140
- ( ) = DPGRI FN151 FN140 FN131
- ( ) = (FCC11 QTP11) + FCC41
- ( ) = [FCC11 QTP11 + FCC41 FN120] DGENO DPGRI (FM100 + FM110)
- ( ) = FN(01-10)1 DGMZ1
- ( ) = QTPC1 FN120 FCC11 DSIA0
- ( ) = QTP00 DGZL1
- ( ) = QTPB0 FN110 SPGR1 FCC41 DE000 FSG20
- ( ) = DZ(01-14)1 DGZL1
- ( ) = FL(01-14)1 FMI10
- ( ) = QTPA1 FCC41 DE000
- ( ) = QTP01 FRUN1
- ( ) = DPGRI(QTP11 FCC51 + FCC61)
- ( ) = (QTP11 FCC51) + FCC61
- ( ) = QTPB1 DMRI0 FCS10 SIN0
- ( ) = (QTP10 + DSBRO) DPGRI FCC51 FN171 FN181
- ( ) = QTP11 DGBY1 FB(01-18)1

REV NO	PRINTS TO

MADE BY <i>J.R. Kimmel Oct 7, 1963</i>	APPROVALS <i>M.G. Conway Oct 7, 1963</i>	Computer Phoenix	DIV OR DEPT LOCATION	43B135921
ISSUED OCT 10 1963				CONT ON SHEET 59 SH NO 58



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING--

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

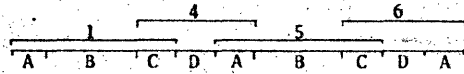
REV NO.	
CONT ON SHEET	SH NO.

TITLE	INSTRUCTION TIMING AND BLOCK DESCRIPTION
FIRST MADE FOR	Datanet-30

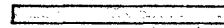
7.0 LOGICAL INSTRUCTIONS (Continued)

73, 74, 75 Instructions

73 M and B → M

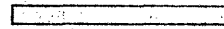


B and M → Z 19. 73 74 75  
DGL1 DGL1



DGL11 ( ) = DEXC1 FN181 DMD41  
DGL11 ( ) = DEXC1 FN181 DMD51

20. DGL2 DGL2



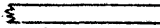
DGL21 ( ) = DEXC1 FN181 DMD41  
DGL21 ( ) = DEXC1 FN181 DMD51

21. DGL3 DGL3



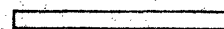
DGL31 ( ) = DEXC1 FN181 DMD31  
DGL31 ( ) = DEXC1 FN181 DMD41

22. DZ(01-18)



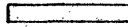
DZ(01-18)1 ( ) = FM(01-18)1 DY(01-18)1 DGL31  
DZ(01-18)1 ( ) = (FM(01-18)0 DY(01-18)1 DGL11) + (DGL21 FM(01-18)1 DY(01-18)0) + DGL31 FM(01-18)1 DY(01-18)1  
DZ(01-18)1 ( ) = (FM(01-18)0 DY(01-18)1 DGL11) + (DGL21 FM(01-18)1 DY(01-18)0)

Z → M 23. DAWC  
Set Special FF's, etc.



DAWC1 ( ) = FN180 FN161 DPGR1 DWM21 DAMDO DADMO

24. DE00



DE001 ( ) = DPGR1 DADMO DAMDO FCC61 FN181

REVISIONS	PRINTS TO

MADE BY <i>J.R. Harold</i> 10/17/46	APPROVALS <i>M.C. Harvey</i> Oct 7, 46	Computer Phoenix	DIV OR DEPT LOCATION	43B135921
ISSUED OCT 16 1963			CONT ON SHEET 50	SH NO. 59

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

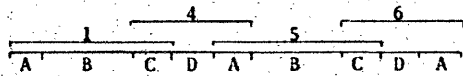
REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

FIRST MADE FOR Datanet-30

7.0 LOGICAL INSTRUCTIONS (Continued)

43, 44, 45, 56, 57



- 43. M and A → A
- 44. M or A → A
- 45. M Xor A → A
- 57. M Xor A → Z

Logical And/or/Xor

Prepare

- FN(12-18) ( ) = FN(12-18) QTPB1 FCC11 DPGRI
- DMJ41 ( ) = DPGRI FN160 FN170 FN181
- DMJ31 ( ) = DPGRI FN131 FN141 FN150
- DMJ41 ( ) = DPGRI FN151 FN140 FN150
- DMJ51 ( ) = DPGRI FN151 FN140 FN151
- DMJ71 ( ) = DPGRI FN131 FN141 FN151
- DMJ61 ( ) = DPGRI FN130 FN141 FN151
- DWM11 ( ) = (QTP11 FCC11) + FCC41
- DGNZ1 ( ) = [QTP11 FCC11 + FN120 FCC41] DPGRI DGENO(FM100 + FM110)
- DZ(01-10)1 ( ) = FN(01-10)1 DGNZ1
- FCC41 ( ) = QTPC1 FN120 DSIA0 FCC11
- FL(01-10)0 ( ) = QTP00 DGZL1
- DGZL1 ( ) = QTP00 SPGR1 FSG20 FCC41 (QTPB1 + DE000) FN110
- FL(01-14)1 ( ) = DZ(01-14)1 DGZL1
- DL(01-14)1 ( ) = FL(01-14)1 FN110
- FCC51 ( ) = QTPA1 FCC41 DE000
- DMST1 ( ) = QTP01 FRUN1
- DEXC1 ( ) = DPGRI(QTP11 FCC51 + FCC61)
- DWM21 ( ) = (QTP11 FCC51) + FCC61
- DRYR1 ( ) = QTPB1 DM10 SIN0 FCS10
- DGAY1 ( ) = DM120A(DSARO + QTP11) DPGRI FCC51 FN170 FN181
- DY(01-10)1 ( ) = FA(01-18)1 QTP11 DGAY1

1. Prepare Instruction

2. FN(12-18)

3. DMJ4

Decode 4. DMJ3, 4, 5, 6, 7

5. DWM1

6. DGNZ

M → Z 7. DZ(01-10)

8. FCC4

9. FL(01-10)0

10. DGZL

Z → L 11. FL(01-14)

12. DL(01-14)

13. FCC5

14. DMST

15. DEXC

16. DWM2

17. DRYR

18. DGAY

19. DY(01-18)

REVISIONS

PRINTS TO

MADE BY

FRH

APPROVALS

W. B. Harvey

Computer

Phoenix

DIV OR DEPT

438135921

ISSUED OCT 10 1963

LOCATION

CONT ON SHEET 61

SH NO 60

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

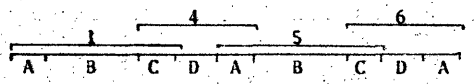
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO
CONT ON SHEET
SH NO

TITLE	INSTRUCTION TIMING AND BLOCK DESCRIPTION
FIRST MADE FOR	Datanet-30

7.0 LOGICAL INSTRUCTIONS (Continued)

Logical "And" Instructions  
43, 44, 45, 56, 57  
M and A      A



	43, 56	44	45, 57				
M → Z20.	DGL1	DGL1		[Bar]	(44)DGL11	( )	= DEXC1 FN181 DND41 DEXC1 FN181 DND51 DEXC1 FN181 DND71 FN161
21.	DGL2	DGL2		[Bar]	(44)DGL21	( )	= DEXC1 FN181 DND41 DEXC1 FN181 DND51 DEXC1 FN181 DND71 FN161
Z → A22.	DGL3	DGL3		[Bar]	(43)DGL31	( )	= DEXC1 FN181 DND31 DEXC1 FN181 DND41
23.	DZ(01-18)			[Bar]	DZ(01-18)1	( )	= DY(01-18)1 FM(01-18)1 DGL31 = (DGL11 FM(01-18)0 DY(01-18)1) + (DGL21 FM(01-18)1 DY(01-18)0) + = (DGL31 DY(01-18)1 FM(01-18)1) (45, 57) = (DGL11 FM(01-18)0 DY(01-18)1) + (DGL21 FM(01-18)1 DY(01-18)0)
24.	DSAR			[Bar]	DSAR1	( )	= DEXC1 DND41 DND60
25.	FA(01-18)0			[Bar]	FA(01-18)0	( )	= QTPD1 DSAR1 SSAR0
26.	FA(01-18)1			[Bar]	FA(01-18)1	( )	= DZ(01-18)1 DSAR1 QTP10
27.	DE00			[Bar]	DE001	( )	= FCC61 DAMDO FN181 DADMO DPGRI

M and A → Z (Special FF's)

56, 57 Delete Steps 24, 25, 26

REVISIONS	PRINTS TO

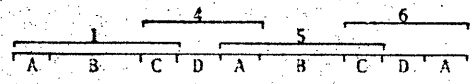
MADE BY <i>H. Howell</i> OCT 7, 1963	APPROVALS <i>W. G. Henry</i> OCT 7, 1963	DIV OR DEPT Computer Phoenix	LOCATION CONT ON SHEET 62 SH NO. 61
---	--	------------------------------------	--

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:			REV NO.
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS	CONT ON SHEET
	✓	FRACTIONS + - ANGLES	SH NO.

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datamet-30

7.0 LOGICAL INSTRUCTIONS (Continued)

53, 54, 55



53. M and A → M  
54. M or A → M  
55. M Xor A → M

1. Prepare Inst.	[Bar]
2. FN(12-18)	[Bar]
3. DMD3, 4, 5	[Bar]
Decode	
4. DFM	[Bar]
5. DFMZ	[Bar]
M → Z 6. DZ(01-10)	[Bar]
7. FCC4	[Bar]
8. FL(01-14)0	[Bar]
9. DGZL	[Bar]
Z → L 10. FL(01-14)1	[Bar]
Address 11. DL(01-14)1	[Bar]
Memory for Operand 12. FCC5	[Bar]
13. DFMST	[Bar]
14. DEXC	[Bar]
15. DFMZ	[Bar]
16. DRYR	[Bar]
17. DGAY	[Bar]

Prepare	
FN(12-18)1 ( )	= FN(12-18)1 QTP31 FCC11 DPGR1
DMD31 ( )	= DPGR1 FN131 FN141 FN150
DMD41 ( )	= FN130 DPGR1 FN151 FN140
DMD51 ( )	= DPGR1 FN131 FN151 FN140
DFM1 ( )	= (QTP11 FCC11) + FCC41
DFMZ1 ( )	= [QTP11 FCC11 + FN120 FCC41] DPGNO (FM100 + FM110)
DZ(01-10)1 ( )	= FM(01-10)1 DGMZ1
FCC41 ( )	= QTPC1 FM20 DSIA0 FCC11
FL(01-14)0 ( )	= QTP00 DGZL1
DGZL1 ( )	= QTP30 SPGR1 FSC20 FCC41 (QTP31 + DE000) FM110
FL(01-14)1 ( )	= DZ(01-14)1 DGZL1
DL(01-14)1 ( )	= FL(01-14)1 FM110
FCC51 ( )	= QTPA1 FCC41 DE000
DMST1 ( )	= QTP01 FFMV1
DEXC1 ( )	= DPGR1 (QTP11 FCC51 + FCC61)
DFMZ1 ( )	= (QTP11 FCC51) + FCC61
DRYR1 ( )	= QTP31 DMR10 SFR0 FCS10
DGAY1 ( )	= FM20 (DSAR0 + QTP11) FN181 FN170 FCC51 DPGR1

REVISIONS	PRINTS TO

MADE BY <i>Z. Howell Oct 7, 1963</i>	APPROVALS <i>M. C. Henry Oct 3, 1963</i>	Computer Phoenix	DIV OR DEPT	438135921
ISSUED OCT 10 1963			LOCATION	CONT ON SHEET 63 SH NO 62

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

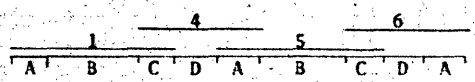
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

FIRST MADE FOR Datatnet-30

7.0 LOGICAL INSTRUCTIONS (Continued)

53, 54, 55



18. DY(01-18)

DY(01-18)1 ( ) = FA(01-18)1 QTP11 DGAY1

53 54 55

19. DGL1 DGL1

DGL11 ( ) = DEXC1 FN181 D'D41  
DGL11 ( ) = DEXC1 FN181 D'D51

20. DGL2 DGL2

DGL21 ( ) = DEXC1 FN181 D'D41  
DGL21 ( ) = DEXC1 FN181 D'D51

21. DGL3 DGL3

DGL31 ( ) = DEXC1 FN181 D'D31  
DGL31 ( ) = DEXC1 FN181 D'D41

Y → Z 22. DZ(01-18)

DZ(01-18)1 ( ) = DY(01-18)1 FM(01-18)1 DGL31  
= (DGL11 FM(01-18)0 DY(01-18)1) + (DGL21 FM(01-18)1 DY(01-18)0)  
+ (DGL31 DY(01-18)1 FM(01-18)1)  
= (DGL11 FM(01-18)0 DY(01-18)1) + (DGL21 FM(01-18)1 DY(01-18)0)

23. D'WC  
Set Special FF's, etc.

D'WC1 ( ) = FN161 DPGR1 DWM21 DAMDO DAMDO (FN140 + FN150)

24. DE00

DE001 ( ) = DA'D0 FCC61 FN181 DADMO DPGR1

REVISIONS	PRINTS TO

MADE BY <i>J.R. H...</i>	APPROVALS <i>P.E. Hanney</i>	Computer	DIV OR DEPT	438135921
ISSUED OCT 10 1963	<i>Oct 7, 1963</i>	Phoenix	LOCATION	CONT ON SHEET 64 SH NO 63

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

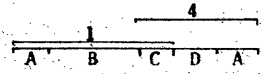
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO	
CONT ON SHEET	SH NO

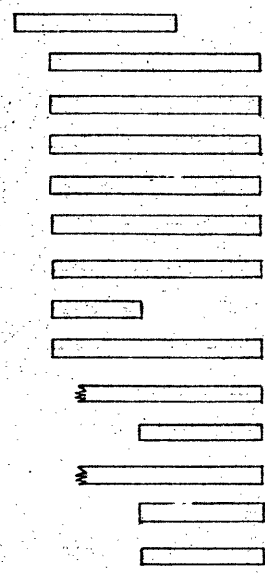
TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datanet-30

7.0 LOGICAL INSTRUCTIONS (Continued)

012-3 Instruction and C → Z



1. Prepare Instruction
2. FN(12-18)
3. DGEN1
- Decode 4. DMD1
5. DGN2
6. DMM1
7. DGL3
8. DRYR
9. DGCY
10. DY(01-07) = C
11. FCC4
12. DZ(01-18) = C+M  
Set Special FF's, etc.
13. DE00



- Prepare
- FN(12-18) ( ) = FN(12-18) FCC11 DPGRI QTPB1
  - DGEN1 ( ) = DMM1 DPGRI FN160 FN170 FN180
  - DMD11 ( ) = DPGRI FN131 FN140 FN150
  - DGN21 ( ) = DGEN1 FM111 FM120
  - DMM11 ( ) = (QTP11 FCC11) + FCC41
  - DGL31 ( ) = DGN21 DMD11
  - DRYR1 ( ) = QTPB1 DARI9 SINNO FCS10
  - DGCY1 ( ) = DGEN1 DMD11 DGN00
  - DY(01-07)1 ( ) = FC(01-07)1 QTP11 DGCY1
  - DZ(01-18)1 ( ) = FN(01-18)1 DY(01-18)1 DGL31
  - FCC41 ( ) = QTPC1 FMI20 DSIAO FCC11
  - DE001 ( ) = DGEN1 DMD30 FCC41

014-5 Instruction Xor C → Z

5. DGN41 = FM110 FM121 DGEN1
8. DXR31 = DGN41 DMD11
9. DGL11 = DGN41 DMD11
10. DGL21 = DGN41 DMD11

REVISIONS	PRINTS TO

MADE BY <i>R. H. ...</i>	APPROVALS <i>W. G. ...</i>	DIV OR DEPT Computer	438135921
ISSUED OCT 10 1963	<i>Oct 7, 1963</i>	LOCATION Phoenix	CONT ON SHEET 65 SH NO 64

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS  
FRACTIONS DECIMALS ANGLES

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET

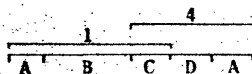
SH NO.

FIRST MADE FOR Datnet-30

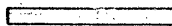
7.0 LOGICAL INSTRUCTIONS (Continued)

022-3 External Status Lines and

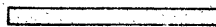
I → Z



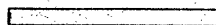
1. Prepare Instruction



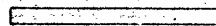
2. FN(12-18)



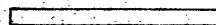
3. DGEN



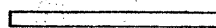
4. DMD2



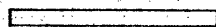
5. DGN2



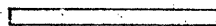
6. DEXC



7. DWM1



8. DGL3



9. DGRC



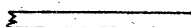
10. DRYR



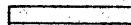
11. DY(01-10) = JR(51-60)



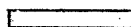
12. DZ(01-18)



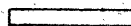
13. FCC4



Set Special FF's, etc.



14. DE00



Prepare

FN(12-18) ( ) = FN(12-18) FCC11 DPGRI QTPB1

DGEN1 ( ) = DWM1 DPGRI FN160 FN170 FN180

DMD21 ( ) = DPGRI FN130 FN141 FN150

DGN21 ( ) = DGEN1 FMI11 FMI20

DEXC1 ( ) = DGEN1 DPGRI

DWM11 ( ) = (FCC11 QTP11) + FCC41

DGL31 ( ) = DGEN1 DMD21

DGRC1 ( ) = DMD21 DGN21

DRYR1 ( ) = QTPB1 DARIO FCS10 SINNO

DY(01-10)1 ( ) = JR(51-60)1 DGRC1

DZ(01-18)1 ( ) = DGL31 DY(01-10)1 FN(01-18)1

FCC41 ( ) = QTPC1 FMI20 DSIA0 FCC11

DE001 ( ) = DGEN1 DMD31 FCC41

REVISIONS

PRINTS TO

MADE BY *J.R. Howell* 02/7, 1963  
ISSUED 02/7, 1963

APPROVALS  
*M.S. Hansen*  
02/7, 1963

Computer  
Phoenix

DIV OR DEPT  
LOCATION

438135921

CONT ON SHEET 66 SH NO 65



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:--

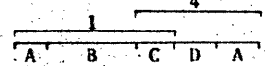
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO
CONT ON SHEET
SH NO.

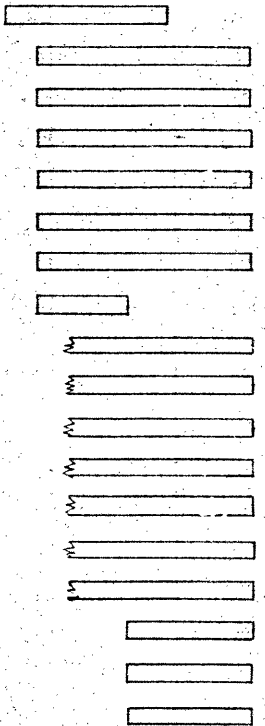
TITLE
INSTRUCTION TIMING AND BLOCK DESCRIPTION
FIRST MADE FOR Datanet-30
CONT ON SHEET 67
SH NO. 66

7.0 LOGICAL INSTRUCTIONS (Continued)

020-1 Internal Status Lines and



1. Prepare Instruction
2. FN(12-18)
3. DGEN1
4. DMD21
- Decode 5. DGN01
6. DMM1
7. DGL3
8. DRYR
9. DY01 (AP06)
10. DY02 (AP20)
- ISL → Y11. 11. DY03 (AP19)
12. DY04 (SOPR1)
13. DY07 (JCSC8)
- M and 14. DY(08-10) (FI(01-03))
- ISL → Z15. 15. DZ(01-18)
16. FCC4
- Set Special FF's, etc.
17. DE00



Prepare

- FN(12-18) ( ) = FN(12-18) FCC11 DPGR1 QTPB1
- DGEN1 ( ) = DMM1 DPGR1 FN160 FN170 FN180
- DMD21 ( ) = DPGR1 FN130 FN141 FN150
- DGN01 ( ) = DGEN1 FM120 FM110
- DMM1 ( ) = (FCC11 QTP11) + FCC41
- DGL31 ( ) = DGEN1 DMD21
- DRYR1 ( ) = QTPB1 DM10 FCS10 SINMO
- DY011 ( ) = AP061 DMD21 DGN01
- DY021 ( ) = AP201 DMD21 DGN01
- DY031 ( ) = AP190 DMD21 DGN01
- DY041 ( ) = SOPR1 DMD21 DGN01
- DY071 ( ) = FCSC0 DMD21 DGN01
- DY(08-10)1 ( ) = FI(01-03)1 DMD21 DGN01
- DZ(01-18)1 ( ) = DGL31 DY(01-18)1 FI(01-18)1
- FCC41 ( ) = QTPC1 FM120 DSIA0 FCC11
- DE001 ( ) = DGEN1 DMD30 FCC41

- AP061 = Character parity is "1"
- AP201 = Word Parity is "1"
- AP190 = AP6 and AP18 are identical
- SOPR1 = Oper. sw. in Maintenance position
- JCSC1 = Controller Selector Ready
- FI011 = Control FF 1 = 1
- FI021 = Control FF 2 = 1
- FI031 = Parity Bit F F = 1

REVISIONS	PRINTS TO

MADE BY <i>J. H. ...</i>	APPROVALS <i>W. E. Harry</i>	DIV OR DEPT Computer	438135921
ISSUED OCT 10 1963	<i>Oct 7, 1963</i>	Phoenix	CONT ON SHEET 67 SH NO. 66

8.0 REGISTER TRANSFERS

060-1

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

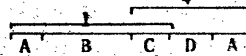
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO	
CONT ON SHEET	SH NO

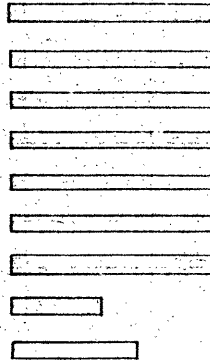
TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 68 SH NO. 67

FIRST MADE FOR Datanet-30



1. Prepare
2. FN(12-18)
3. DGEN
4. DGEN
5. DAD6
6. DEXC
7. DRTT
8. DWM
9. DRYR
10. See Note Reg → Y
11. DY(01-18)
12. DGL1
13. DGL3



Prepare

- FN(12-18) = FN(12-18) QTPB1 FCC11 DPCR1
- DGEN1 (007-09) = DWM11 FN(16-18)0 DPCR1
- DGN01 (004-09) = FN110 FN120 DGEN1
- DAD61 (F10-38) = FN130 DPCR1 FN151 FN141
- DEXC1 (C08-09) = DPCR1 DGEN1
- DRT11 (G11-25) = DWM11 FN151 DGEN1
- DWM11 (F11-38) = (FCC11 QTP11) + FCC41
- DRYR1 (C15-23) = QTPB1 DARI0 SINMO FCS10
- DGAY1 (D20-25) = FN120 QTP11 DRT11 FMO1
- DGBY1 (F18-11) = QTP11 DRT11 FMO91
- DGCY1 (F18-23) = QTP11 DRT11 FMO81
- DGY1 (G14-21) = FMO71 DRT11
- DGRD1 (C10-15) = QTPC1 DRT11 FMO61
- DCSY1 (C15-15) = DRT11 FMO51
- DY(01-18)1 = + FA(01-18)1 QTP11 DGAY1  
+ FB(01-18)1 QTP11 DGBY1  
+ FC(01-07)1 QTP11 DGCY1  
+ FD(01-14)1 DGY1
- DY(01-18)1 = JR(01-18)1 DGRD1
- FI(01-03)1 = JR(19-21)1 DGRD1
- DZ(01-18)1 = DY(01-18)1 FM(01-18)1  
(DGL31 + DGL11)
- DGL11 (E19-15) = DGN01 DAD60
- DGL31 (E19-19) = DGN01 DAD60

Register	FROM					TO				
	A	B	C	Q	R	S	A	B	C	T
Memory	10	9	8	7	6	5	4	3	2	1

REVISIONS		PRINTS TO	

MADE BY <i>J. H. ...</i>	APPROVALS <i>W. C. ...</i>	Computer	DIV OR DEPT	438135921
ISSUED OCT 10 1963		Phoenix	LOCATION	CONT ON SHEET 68 SH NO. 67

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:--

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

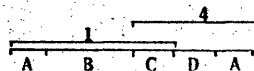
FIRST MADE FOR Datatnet-30

CONT ON SHEET

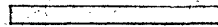
SH NO

8.0 REGISTER TRANSFERS (Continued)

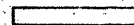
060-1



14. SET REGISTERS



15. FCC4



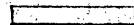
16. DZ(01-18) = Y(01-18)



17. Z → Register



18. DE00



- DGTD1 = DE001 QTPBO DRT11 FM011
- DSAR1 (E04-10) = DRT11 FM041
- DSBR1 (C07-15) = DRT11 FM031
- DSCR1 (F04-09) = DRT11 FM021
- FCC41 (C11-15) = QTPC1 FM20 FCC11 DSIA0
- DZ(01-18)1 (\*) = DY(01-18)1 DGL11 DGL31
- FA(01-18)1 (\*) = DZ(01-18)1 DSAR1 QTP10
- FB(01-18)1 (\*) = DZ(01-18)1 DSBR1 QTP10
- FC(01-07)1 (\*) = DZ(01-07)1 DSCR1 QTP10
- DT(01-18)1 (\*) = DZ(01-18)1 DT01
- DT(19-20)1 (\*) = FI(01-02)1 DT01
- DT211 ( ) = AP200 DGTD1
- DT511 ( ) = DRT11 FM061 QTP10
- DT521 ( ) = DRT11 FM011 QTP00
- DE001 (C06-38) = FCC41 DCEN1 DM050

Transfer Complement 062-063  
Substitute

- 4. DGN21 ( ) = FML20 FML20 DCEN1
- 12. DGL01 ( ) = DM061 DGN21
- 13. DGL21 ( ) = DM061 DGN21

REVISIONS	PRINTS TO

MADE BY <i>J.R. Howell Oct 7, 1963</i>	APPROVALS <i>H. C. ... Oct 7, 1963</i>	DIV OR DEPT Computer	438135921
ISSUED OCT 10 1963		LOCATION Phoenix	CONT ON SHEET 69 SH NO. 68

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

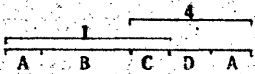
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO	CONT ON SHEET	SH NO
	70	69

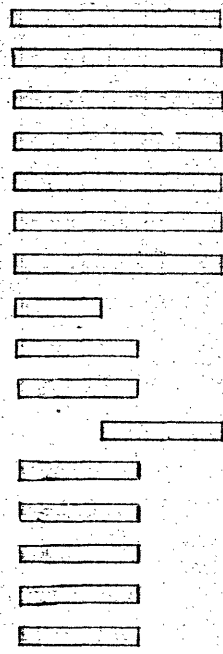
TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
FIRST MADE FOR Datamet-30

8.0 REGISTER TRANSFERS (Continued)

Bit Change 1



1. Prepare
2. FN(12-18)1
3. DGEN
4. DGN6
5. DMD6
6. DRT1
7. DNM1
8. DEXC
9. DRYR
10. DGBY
11. DY(01-18)
12. FCC4
13. DZ(02-05)
14. DZ06
15. DZ(07-08)
16. DZ09
17. DZ(10-12)



Prepare

- FN(12-18) = FN(12-18) QTPB1 FCC11 DPGRI
- DGEN1 (D07-09) = DNM11 FN160 FN170 FN180 DPGRI
- DGN61 (D04-31) = FM121 FM111 DGEN1
- DMD61 (F10-38) = FN130 FN141 FN151 DPGRI
- DRT11 (G11-25) = DNM11 FN151 DGEN1
- DNM11 (E11-38) = (QTP11 FCC11) + FCC41
- DEXC1 (C07-09) = DPGRI DGEN1
- DRYR1 (C15-23) = QTPB1 DMR10 FCS10 SINMO
- DGBY1 (F18-11) = DRT11 FM091 (DSBRO + QTP11)
- DY(01-18)1 = QTP11 DGBY1 FB(01-18)1
- FCC41 (C11-15) = QTPC1 FM120 FCC11 DSIA0
- DBC11 = DGN61 DMD61
- DZ(02-05)1 = DY(01-04) DCB11
- DZ061 = FPER1 DBC11
- DZ(07-08)1 = DY(05-06)1 DBC11
- DZ091 = FI011 DBC11
- DZ(10-12)1 = DBC11

REVISIONS	PRINTS TO

MADE BY <i>R. Hamilton Oct 7, 1963</i>	ISSUED OCT 10 1963	APPROVALS <i>R. G. Henny</i> OCT 7 1963	Computer Phoenix	DIV OR DEPT	438135921
LOCATION			CONT ON SHEET 70	SH NO 69	

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

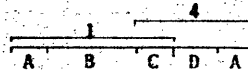
CONT ON SHEET SH NO.

FIRST MADE FOR Datanet-30

8.0 REGISTER TRANSFERS (Continued)

Bit Change 1 (Continued)

- 18. DSBF
- 19. FB(01-18)1
- 20. DE00
- 21. End Instruction



- DSBR1 (C07-15) = DRT11 FM31
- FB(01-18)1 (\*) = QTP10 DSBRI DZ(01-18)1
- DE001 (C06-38) = FCC41 DGEN1 DMD30

Bit Change 0

Bit Change 0

- 4. DCN4
- 13. DZ(01-04)
- 14. DZ(05-06)
- 15. FI031
- 16. FI011
- 17. Delete

- DGN41 (D04-21) = DGEN1 FM110 FM121
- DZ(01-14)1 (\*) = DY(02-05)1 DBCOL
- DZ(05-06)1 (\*) = DY(07-08)1 DBCOL
- FI031 (D09-21) = QTPA1 DY061 DBCOL
- FI011 (D09-09) = QTPA1 DY091 DBCOL
- Delete

REVISIONS	PRINTS TO

MADE BY <i>J.R. Maxwell</i> OCT 7 1963	APPROVALS <i>W.C. Harvey</i> SEP 7 1963	Computer Phoenix	DIV OR DEPT LOCATION	438135921 CONT ON SHEET 71	SH NO 70
---	---	---------------------	-------------------------	-------------------------------	----------

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	±	±	±

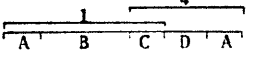
TITLE INSTRUCTION, TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 72 SH NO. 71

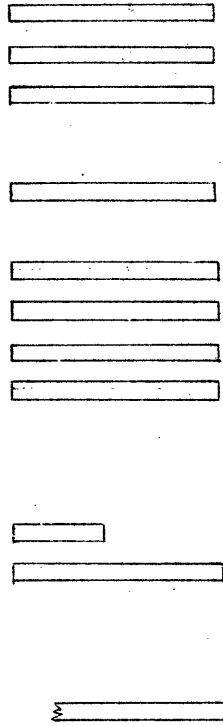
8.0 REGISTER TRANSFERS (Continued)

Shift Instructions

040-1, 042-3, 044-5, 046-7, 070-1, 072-3, 050-1, 052.3, 054-5, 056-7



- 1. FN(12-18)
- 2. DGEN
- 3. DGN See Table
- 4. DMD See Table
- 5. DRTI
- 6. DMTL
- 7. DEXC
- 8. See Table
- 9. DRYR
- 10. See Table
- 11. DY(01-18)1 Table



- FN(12-18) = FN(12-18) QTPB1 FCC11 DPGRI
- DGEN1 (D07-09) = DWM11 FN160 FN170 FN180 DPGRI
- DGN01 (D04-09) = DGEN1 FM110 FM120 [SL1, CL1, SLS]
- DGN21 (D04-15) = DGEN1 FM111 FM120 [SR1, CR1, SRS]
- DGN41 (D04-21) = DGEN1 FM110 FM121 [SL6, CL6]
- DGN61 (D04-31) = DGEN1 FM111 FM121 [SR6, CR6]
- DMD41 (F10-37) = DPGRI FN130 FN140 FN151 [SL1-6, SR1-6]
- DMD51 (F10-41) = DPGRI FN131 FN140 FN151 [CL1-6, CR1-6]
- DMD71 (F10-52) = DPGRI FN131 FN141 FN151 [SLS, SRS]
- DRTI1 (G11-25) = DWM11 FN151 DGEN1
- DWM11 (E11-38) = (QTP11 FCC11) + FCC41
- DEXC1 (C08-09) = DPGRI DGEN1
- DSL11 ( ) = DMD60 FN151 DGN01
- DSL61 ( ) = DGN41 FN140 FN151
- DSR11 ( ) = DMD60 FN151 DGN21
- DSR61 ( ) = DGN61 FN140 FN151
- DCR11 ( ) = DGN21 DMD51
- DCR61 ( ) = DGN61 DMD51
- DRYR1 (C15-23) = QTPB1 SINNO DMR10 FCS10
- DGAY1 (D20-25) = FM120 QTP11 DRTI1 FM101
- DGBY1 (F18-11) = QTP11 DRTI1 FM091
- DGCY1 (F18-23) = QTP11 DRTI1 FM081
- DGY1 (G14-21) = DRTI1 FM071
- DGRD1 (C10-15) = QTPC1 DRTI1 FM061
- DGSY1 (C15-15) = DRTI1 FM051

- DY(01-18)1 = FA(01-18)1 QTP11 DGAY1
- " = FB(01-18)1 QTP11 DGBY1 REVISIONS
- " = FC(01-07)1 QTP11 DGCY1
- " = FD(01-14)1 DGY1
- " = JR(01-18)1 DGRD1
- FI(01-03)1 = JR(19-21)1 DGRD1
- DY(01-18)1 = SS(01-18)1 DGSY1

PRINTS TO

MADE BY S.H. H... ..	APPROVALS M.S. H... ..	Computer	DIV OR DEPT	43B135921
ISSUED OCT 10 1963	REVISED Oct 7, 1963	Phoenix	LOCATION	CONT ON SHEET 72 SH NO. 71

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

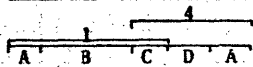
REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 73 SH NO. 72

8.0 REGISTER TRANSFERS (Continued)

Shift Instructions (Cont.)



12. FCC41

13. DZ(01-18) Table

FCC41 (C11-15) = TPC1 PM120 FCC11 DS1A0

SL1	SL6	SR1	SR6	Left Special	Right Special	CL1	CL6	CR1	CR6
DZ01		DY02	DY07	FB18	DY02	DY18	DY13	DY02	DY07
2	DY01	3	8	DY01	3	DY01	14	3	8
3	2	4	9	02	4	2	15	4	9
4	3	5	10	03	5	3	16	5	10
5	4	6	11	04	6	4	17	6	11
6	5	7	12	5	7	5	18	7	12
7	6	DY01	8	6	8	6	1	8	13
8	7	2	9	7	9	7	2	9	14
9	8	3	10	8	10	8	3	10	15
10	9	4	11	9	11	9	4	11	16
11	10	5	12	10	12	10	5	12	17
12	11	6	13	11	13	11	6	13	18
13	12	7	14	12	14	12	7	14	DY01
14	13	8	15	13	15	13	8	15	2
15	14	9	16	14	16	14	9	16	3
16	15	10	17	15	17	15	10	17	4
17	16	11	18	16	18	16	11	18	5
18	17	12		17	FA01	17	12	DY01	6
DSL1	DSL6	DSR1	DSR6	DSL5 DSL1	DSRS DSR1	DCL1 DSL1	DCL6 DSL6	DCR1 DSR1	DCR6 DSR6
DZ(02-18)1 = DY(01-17)1 DSL11	DZ(07-18)1 = DY(01-12)1 DSL61	DZ(01-17)1 = DY(02-18)1 DSR11	DZ(01-12)1 = DY(07-18)1 DSR6	DZ011 = FB181 PMD71 DSN01 DRT11 PMD60 DZ(02-18)1 = DY(01-17)1 DSL11	DZ181 = FA011 PMD71 DSN21 DRT11 PMD60 DZ(01-17)1 = DY(02-18)1 DSR11	DZ011 = DY181 DTL11 DZ(02-18)1 = DY(01-17)1 DSL11	DZ(01-06)1 = DY(14-18)1 DZ(07-18)1 = DY(01-12)1	DZ181 = DY011 DCR11 DZ(01-17)1 = DY(02-18)1	DZ(01-12)1 = DY(07-18)1 DZ(13-18)1 = DY(01-06)1

REVISIONS

PRINTS TO

MADE BY <i>R. Howell</i> OCT 7, 1963	ISSUED OCT 16 1963	APPROVALS <i>M. G. Harvey</i> OCT 7, 1963	Computer Phoenix	DIV OR DEPT	LOCATION	436135921	CONT ON SHEET 73 SH NO. 72
---	-----------------------	---	---------------------	-------------	----------	-----------	----------------------------



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO

TITLE

INSTRUCTION TIMING AND  
BLOCK DESCRIPTION

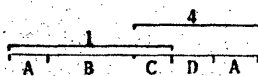
CONT ON SHEET

SH NO.

FIRST MADE FOR **Datanet-30**

8.0 REGISTER TRANSFERS (Continued)

Shift Instructions (Cont.)



14. DS\_R (See Table)

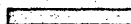


15. DGTD

16. Z → Register (See Table)



17. DE00



18. Prepare for next instruction

- DSARI (E04-10) = DRT11 F1041
- DSBRI (C07-15) = DRT11 F1031
- DSCR1 (F04-09) = DRT11 F1021
- DGTD1 = DE001 QTPB0 DRT11 FM011
- FA(01-18)1 = DZ(01-18)1 QTP10 DSARI
- FB(01-18)1 = DZ(01-18)1 QTP10 DSBRI
- FC(01-07)1 = DZ(01-07)1 QTP10 DSCR1
- DT(01-18)1 = DZ(01-18)1 DGTDI
- DT(19-20)1 = FI(01-02)1 DGTDI
- DT211 = AP200 DGTDI
- DE001 (C06-38) = FCC41 DGEN1 D1030

M

- 1 Z → Transmit Data Lines
- 2 Z → C
- 3 Z → B
- 4 Z → A
- 5 Switches → Y
- 6 Receive Lines → Y
- 7 Q → Y
- 8 C → Y
- 9 B → Y
- 10 A → Y

REVISIONS

PRINTS TO

MADE BY *J.R. Howell* Oct 7, 1963  
ISSUED OCT 10 1963

APPROVALS *W.G. HANNEY*  
Oct 7, 1963

Computer  
Phoenix

DIV OR DEPT  
LOCATION

43B135921

CONT ON SHEET 74 SH NO. 73

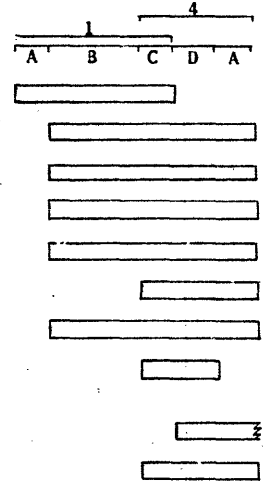
CONT ON SHEET 75  
DRAWING NO.

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:				REV NO.
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		CONT ON SHEET
		FRACTIONS	DECIMALS	
	✓	+	+	+

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
CONT ON SHEET 75 SH NO. 74  
FIRST MADE FOR

9.0 SPECIAL INSTRUCTIONS

- 00 Halt
1. Prepare Instruction
  2. FN(12-18)0
  3. DGEN
  4. DMD0
  5. DWM1
  6. FCC4
  7. DEXC
  8. FST21
  9. FRUN0
  10. DE00



See Page

- FN(12-18)0 = FM(12-18)0 QTPB1 FCC11 DPGR1
- DGEN1 (D07-09) = DWM11 FN160 FN170 FN180 DPGR1
- DMD01 (F10-09) = DPGR1 FN130 FN140 FN150
- DWM11 (E11-38) = (QTP11 FCC11) + FCC4
- FCC41 (C11-15) = QTPC1 FM120 DSIAO FCC11
- DEXC1 (C08-09) = DGEN1 DPGR1
- FST21 (C11-10) = QTPOO DGEN1 DMD01 SHLT1 SOPRO
- FST20 (C09-16) = QTPA1 FRUN0
- FRUN0 (C09-09) = DE001 QTPB0 QTPD1 FST21
- DE001 (C06-38) = FCC41 DMD30 DGEN1

Halt Instruction inhibits setting of Branch FF's

REVISIONS	PRINTS TO

MADE BY <i>L. H. ...</i>	ISSUED OCT 11 1963	APPROVALS <i>M. C. ...</i>	Computer Phoenix	DIV OR DEPT	43B135921
LOCATION			CONT ON SHEET 75	SH NO. 74	

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

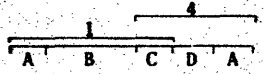
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION  
 FIRST MADE FOR Datamet-30

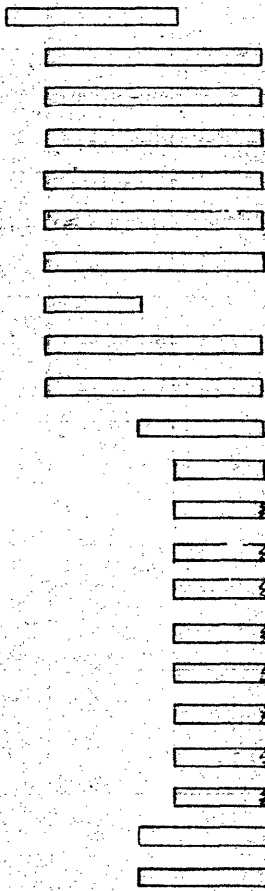
REV NO  
 CONT ON SHEET SH NO.

9.0 SPECIAL INSTRUCTIONS (Continued)

024-5 Drive Internal Function Lines



- 1. Prepare Instruction
- 2. FN(12-18)
- Decode 3. DGEN
- 4. DMD2
- 5. DGN4
- 6. DEXC
- 7. DNM1
- Reset Y 8. DRYR
- 9. DGL2
- M → Z 10. DGL3
- 11. FCC4
- Drive 12. DD1F  
Function  
Lines 13. FI(01-03)0
- 14. FBUZO
- 15. FBUZ1
- 16. FHL11
- 17. DCSC1
- 18. FI011
- 19. FI021
- 20. FI031
- Set Special FF's, etc.
- 21. DE00



- Prepare
- FN(12-18) ( ) = FN(12-18) FCC11 DPGR1 QTPB1
- DGEN1 ( ) = DWM11 DPGR1 FN160 FN170 FN180
- DMD21 ( ) = DPGR1 FN130 FN141 FN150
- DGN41 ( ) = FMT21 FMT10 DGEN1
- DEXC1 ( ) = DPGR1 DGEN1
- DNM11 ( ) = (QTP11 FCC11) + FCC41
- DRYR1 ( ) = QTPB1 DMR10 SIND FMI21
- DGL21 ( ) = DGEN1 DMD21 FMT21
- DGL31 ( ) = DGEN1 DMD21
- FCC41 ( ) = QTPC1 FMI20 DSIA0 FCC11
- DD1F1 ( ) = QTP10 DE001 DGN41 DMD21
- FI(01-03)0 ( ) = QTPD1 DD1F1 DZ011
- FBUZO ( ) = DD1F1 FN021
- FBUZ1 ( ) = DD1F1 FN031
- FHL11 ( ) = DD1F1 FN041
- DCSC1 ( ) = DD1F1 FN071
- FI011 ( ) = DD1F1 DZ081
- FI021 ( ) = DD1F1 DZ091
- FI031 ( ) = DD1F1 DZ101
- DE001 ( ) = FCC41 DGEN1 DMD30

REVISIONS	PRINTS TO

MADE BY <i>J.C. Howell</i> Oct 7, 1963	APPROVALS <i>W.E. Harvey</i> Oct 7, 1963	Computer Phoenix	DIV OR DEPT Phoenix	43B135921
ISSUED OCT 10 1963			LOCATION	CONT ON SHEET 76 SH NO. 75

9.0 SPECIAL INSTRUCTIONS (Continued)

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

REV NO

TITLE

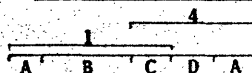
INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET

SH NO.

FIRST MADE FOR Datamet-30

026-7 Drive External Status Lines



1. Prepare Instruction

2. FN(12-18)1

3. DGEN1

4. DMD21

5. DGN61

6. DEXC1

7. DWM11

8. DRYR

9. DGL21

10. DGL31

11. FCC41

12. DZ(01-10)

13. DT(51-60)1 = DZ(01-10)1

14. DE00

Prepare

FN(12-18) ( ) = FM(12-18) FCC11 DPGR1 QTPB1

DGEN1 ( ) = FN160 DWM11 FN180 FN170 DPGR1

DMD21 ( ) = DPGR1 FN130 FN141 FN150

DGN61 ( ) = DGEN1 FM111 FN121

DEXC1 ( ) = DPGR1 DGEN1

DWM11 ( ) = (QTP11 FCC11) + FCC41

DRYR ( ) = QTPB1 DMR10 SINMO FCS10

DGL21 ( ) = DGEN1 DMD21 FM121

DGL31 ( ) = DGEN1 DMD21

FCC41 ( ) = QTPC1 FM120 DSIA0 FCC11

DZ(01-18)1 ( ) = FM(01-18)1 DZ(01-18)1 (DGL21 + DGL31)

DT(51-60)1 ( ) = DZ(01-10)1 QTPB0 DMD21 DGN61 DE001

DE001 ( ) = FCC41 DGEN1 DMD30

REVISIONS

PRINTS TO

MADE BY  
Z.R. Howell Oct 7, 1963  
ISSUED  
OCT 10 1963

APPROVALS

M.G. Hammy  
Oct 7, 1963

Computer  
Phoenix

DIV OR DEPT

LOCATION

43B135921

CONT ON SHEET 77

SH NO 76

9.0 SPECIAL INSTRUCTIONS: (Continued)

SCAN 030 (SCN)  
Assume SCN INST 0300011 is in Mem. Loc = 0075

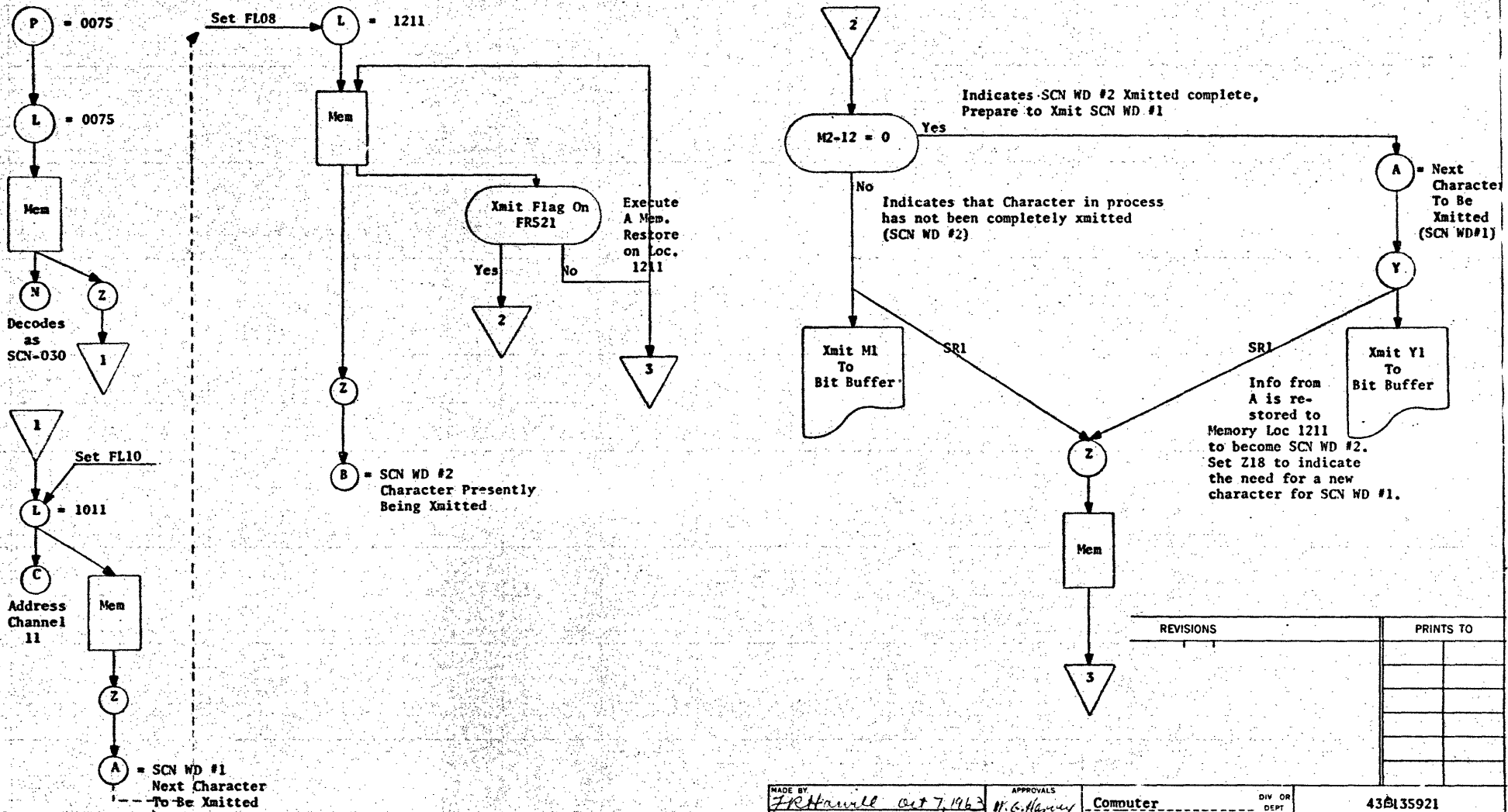
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV. NO.  
CONT. ON SHEET SH. NO.

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

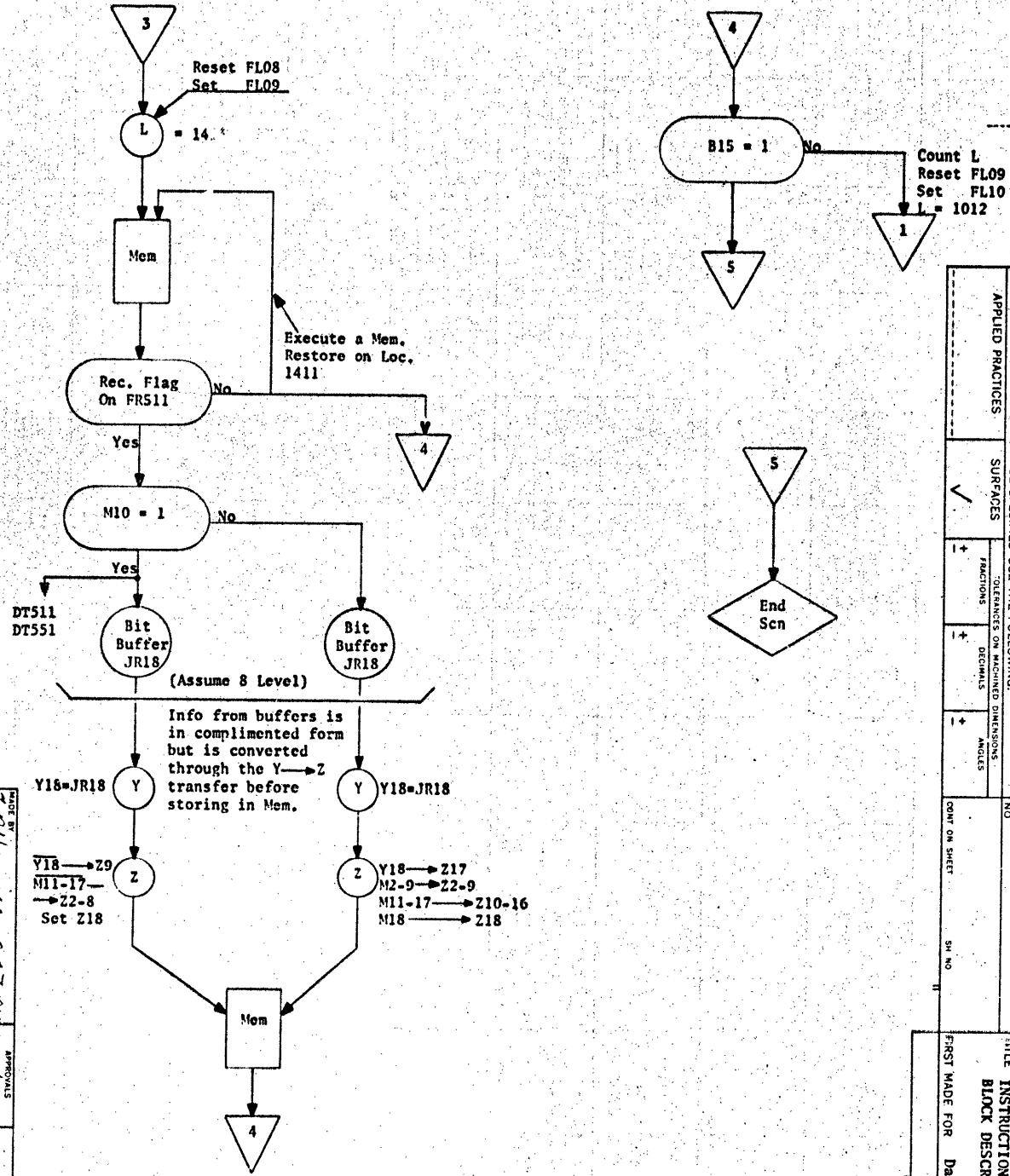
FIRST MADE FOR Datanet-30



REVISIONS	PRINTS TO

MADE BY: *F.R. Hannell Oct 7, 1963* APPROVALS: *W. G. Hanney Oct 7, 1963*  
 ISSUED: OCT 10 1963  
 DIV OR DEPT: Computer LOCATION: Phoenix  
 43B135921 CONT ON SHEET 78 SH NO. 77

9.0 SPECIAL INSTRUCTIONS (Continued)



MADE BY: *F. H. H. H. H.*  
 DESIGNED: *Oct 10 1963*  
 APPROVED: *N. G. H. H. H.*  
 DATE: *Oct 7 1963*  
 COMPUTER: *Phoenix*  
 DIV. OR DEPT.: *435135921*  
 LOCATION CONT. ON SHEET: *79*  
 SHEET NO.: *78*

REVISIONS	PRINTS TO

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS:	REV
✓	+	FRACTIONS	NO.
	+	DECIMALS	
	+	ANGLES	

TITLE: **GENERAL ELECTRIC**  
**INSTRUCTION TIMING AND BLOCK DESCRIPTION**  
 FIRST MADE FOR: **Datanet-30**  
 SHEET NO.: **79**  
 SHEET NO. OF SHEET: **78**

FORM 3-63 PRINTED IN U.S.A.

NO. DRAWING: **435135921**  
CONT. ON SHEET: **79**



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

REV NO

TITLE

CONT ON SHEET 80 SH NO. 79

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

INSTRUCTION TIMING AND BLOCK DESCRIPTION

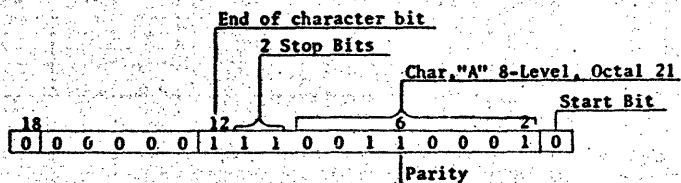
9.0 SPECIAL INSTRUCTIONS (Continued)

CONT ON SHEET

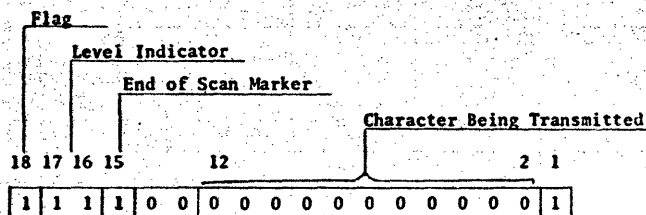
SH NO.

FIRST MADE FOR Datatnet-30

SCAN WORD 1: Next character to be xmitted  
(Assume 8-level "A" = 0 0 1 1 0 0 0 1)



SCAN WORD 2: Character being transmitted



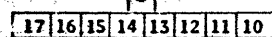
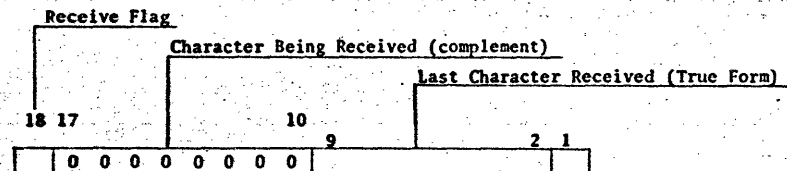
When M2-12 = 0 the end of character bit is in M1 and transmission of the character is complete. M18 is turned on to signify transmission is complete. If M18 is on, the program must supply a new character for Scan Word #1.

If M15 is on, this signifies last channel to be scanned.

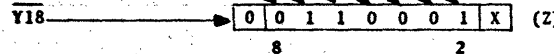
Level Indicator: When Scan Word 2 has been transferred to the B register the state of B16 and B17 determine the receive code level:

M17	M16	
0	0	= 5 Level
0	1	= 6 Level
1	0	= 7 Level
1	1	= 8 Level

SCAN WORD 3: Receive Characters



1 0 0 0 0 0 0 0 Start Bit is received  
 0 1 0 0 0 0 0 0  
 1 0 1 0 0 0 0 0  
 1 1 0 1 0 0 0 0 Char. "A" is being received and shifted down  
 1 1 1 0 1 0 0 0  
 0 1 1 1 0 1 0 0  
 0 0 1 1 1 0 1 0  
 1 0 0 1 1 1 0 1 M10 on indicates last bit is being received. As next bit is received, a complementary shift is made.



When the shift is executed, Z18 is turned on to indicate that the program has to store this character in another memory location before receipt of another character.

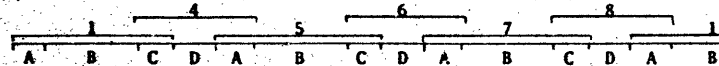
REVISIONS	PRINTS TO

MADE BY <i>Z.R. Howell</i> ISSUED OCT 10 1963	APPROVALS <i>M.G. Kennedy</i> REV 7, 1963	Computer Phoenix	DIV OR DEPT LOCATION	43B135921 CONT ON SHEET 80 SH NO. 79
--	---	---------------------	-------------------------	---

9.0 SPECIAL INSTRUCTIONS (Continued)

SCAN INSTRUCTION

1. Prepare
2. FN(12-18)
3. DGEN
4. DMD3
5. DGN0
6. DMST
7. DPGR
8. DZ(01-10)
9. FCC4
10. FSG1
11. FSN1
12. FL(08-14)0
13. FL(01-07)0
14. DGZL
15. FL(01-10)1
16. FL101
17. FCC5
18. DMST



UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO	TITLE	CONT ON SHEET	SH NO
	INSTRUCTION TIMING AND BLOCK DESCRIPTION	81	80
	FIRST MADE FOR	Datnet-30	

Prepare Instruction

- FN(12-18) 1/0 ( ) = FM(12-18)1/0 FCC11 QTPB1 DPGR1
- DGEN1 ( ) = FN160 FN170 FN180 DPGR1 DWM11
- DMD31 ( ) = FN131 FN141 FN150 DPGR1
- DGN01 ( ) = DGEN1 FM110 FM120
- DMST1 ( ) = QTP01 (FRUN1 + FM111)
- DPGR1 ( ) = FM120 FHL10 FSG20 FP130 SPGR1
- DZ(01-10)1 ( ) = DGM21 FM(1-10)1
- FCC41 ( ) = FCC11 QTPC1 FM120 DSIAO indirect address)
- FSG11 ( ) = QTPC1 DGEN1 DMD31
- FSN11 ( ) = QTPC1 DMD31 DGN01
- FL(08-14)0 ( ) = QTP00 (FSN21 FM120 + SMRS1 + DGZL1 + DGPL1)
- FL(01-07)0 ( ) = QTP00 (DGZL1 + DGPL1)
- DGZL1 ( ) = (FSG20 DE000 FCC41) FHL10 QTPB0 SPGR1
- FL(01-10)1 ( ) = DZ(01-10)1 DGZL1
- FL101 ( ) = [DE000 (FSN11 + FSN21)] + (DZ101 DGZL1)
- FCC51 ( ) = QTPA1 FCC41 DE000
- DMST1 ( ) = See Start 6



REVISIONS	PRINTS TO

MADE BY <i>J.R. Hassell</i> ISSUED OCT 1 1963	APPROVALS <i>M.S. Haines</i> <i>Oct 7 1963</i>	Computer Phoenix	DIV OR DEPT LOCATION	438135921 CONT ON SHEET 81 SH NO 80
--	--	---------------------	-------------------------	--

ON WS 3345 NO INGO

ON DIMENSIONS

GENERAL ELECTRIC

43B135921

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

REV NO

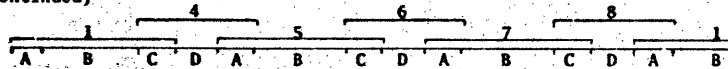
TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 82

SH NO. 81

9.0 SPECIAL INSTRUCTIONS (Continued)

SCAN INSTRUCTIONS (Continued)



19. rSG2	[Bar]	FSG21	( ) = QTPB1 FSG11
20. FR510	[Bar]	FR510	( ) = QTPB1(FSN21 + FCC51)
21. FR520	[Bar]	FR520	( ) = QTPB1(FSN21 + FCC51)
22. FSN2	[Bar]	FSN21	( ) = QTPB1 FSN11
23. DGLC	[Bar]	DGLC1	( ) = FSN21 FCC51 QTP11
24. DGL2	[Bar]	DGL21	( ) = FSN21 DWM21 FMI20
25. DGL3	[Bar]	DGL31	( ) = FSN21 DWM21 FMI20
26. Z(01-18)	[Bar]	DZ(01-18)1	( ) = DY(01-18)1 DGL21 DGL31
27. FCC6	[Bar]	FCC61	( ) = FCC51 QTPC1 FMI20
28. FA(01-18)0	[Bar]	FA(01-18)0	( ) = QTPD1 DSAR1 SSAR0
29. DSAR	[Bar]	DSAR1	( ) = FCC61 FSN21
30. FA(01-18)1 SCN Wd 1 in A	[Bar]	FA(01-18)1	( ) = DZ(01-18)1 QTP10 DSAR1
31. FL(08-14)0	[Bar]	FL(08-14)0	( ) = See Start 12
32. FL(08-10)1 Address 12xx	[Bar]	FL081	( ) = FSN21 FCC61
33. FCC7	[Bar]	FCC71	( ) = DE0C0 QTPA1 FCC61
34. DMST	[Bar]	DMST	( ) = See Start 6
*35. DZ(01-11) = M(02-12)	[Bar]	DZ(01-11)1	( ) = DWM31 FMI20 FSN21 FM(02-12)1
*36. DZ(15-18) = M(15-18)	[Bar]	DZ(15-18)1	( ) = FM(15-18)1 FMI20 FSN21

\* This transfer always occurs.  
The transfer (item 10, page 82)  
of Y → Z only occurs if M(2-12) = 0.  
(See flow chart, page 77)

REVISIONS

PRINTS TO

MADE BY  
*J. H. Arnold* Oct 7, 1963  
ISSUED  
OCT 10 1963

APPROVALS  
*M. E. Abney*  
Oct 7, 1963

Computer  
Phoenix

DIV OR DEPT  
LOCATION

43B135921

CONT ON SHEET 82

SH NO 81

ON HC 1335 NO LING

ON DRAWING

GENERAL ELECTRIC

43B135921

CONT ON SHEET 83 SH NO. 82

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES

SURFACES

TOLERANCES ON MACHINED DIMENSIONS

FRACTIONS

DECIMALS

ANGLES

✓

+

+

+

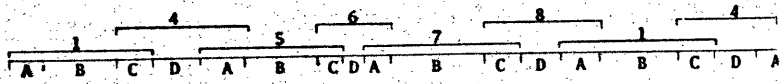
REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

FIRST MADE FOR Datanet-30

9.0 SPECIAL INSTRUCTIONS (Continued)

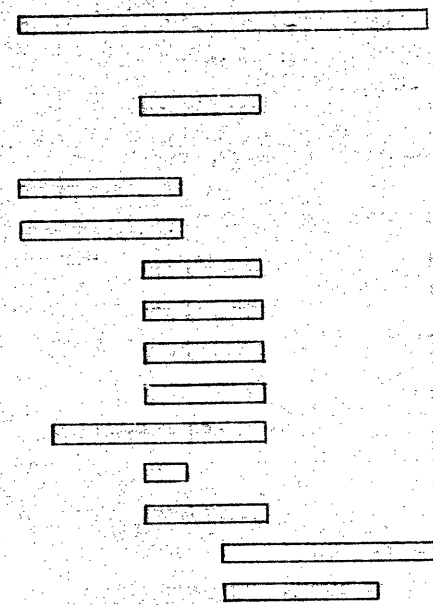
SCAN INSTRUCTIONS (Continued)



If FR52 is reset, do a memory restore and go to  $\triangle 3$ .

$\triangle 2$

1. FR521  
Is M2-12 = 0 - If yes, skip to 3.
2. DT01 = JM01  
Skip to 7
3. DGAY
4. DY01-18 = A
5. DT01 = DY01
6. DZ18 = DSY1
7. DZ(01-17) = Y(2-18)
8. FCC8
9. DMC
10. FB(01-18)0
11. DSBR
12. FB(01-18) = Z(01-18) (Scan Wd 2  $\rightarrow$  B)
13. FCC1



- FR521 ( ) = FR521 DSY10 FM011 FCC81
- DT011 (J23-11) = (JM(02-12)Not Z) JM011 FR521 FCC81
- DGAY1 (D20-25) = FMI20(DSARO + QTP11) FSN21 FCC71
- DY(01-18)1 (\*) = QTP11 DGAY1 F(01-18)1
- DT011 (J23-11) = FR521 DY011 DSY11 FCC81
- DZ181 (C28-25) = DSY11 2)0 FSN21 FMI20 DWM31
- DZ(01-17)1 (\*) = DWM31 FMI20 FSN21 FM(01-17)1
- FCC81 (C13-41) = FMI20 QTPC1 FCC71
- DMC1 (J04-41) = FR511 FSN21 FMI20
- FB(01-18)0 (\*) = DSBR1 QTPD1 SSBRO
- DSBR1 (C07-15) = FSN21 FCC81
- FB(01-18)1 (\*) = DZ(01-18)1 QTP10 DSBR1
- FCC11 (C11-09) = (FCC81 FSG21 FSG30) QTPA1 FRUN1

REVISIONS	PRINTS TO

MADE BY <i>JR Hamill Oct 7, 1963</i>	APPROVALS <i>W. L. Hickey</i>	Computer	DIV OR DEPT	43B135921
ISSUED OCT 10 1963	<i>Oct 7, 1963</i>	Phoenix	LOCATION	CONT ON SHEET 83 SH NO. 82

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO

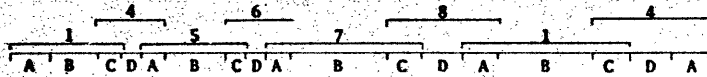
TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET SH NO.

FIRST MADE FOR Datanet-30

9.0 SPECIAL INSTRUCTIONS (Continued)

Scan Instructions (Continued)



1. FL(08-14)0 (Reset high order L)



FL(08-14)0 (\*) = See Start 12

2. FL(09-10)1



FL091 (\*) = FSN21 FCC81 (For FL10, see start 16)

If FR51 is reset, do a memory restore and go to

3. FR511



FR511 (F01-21) = QTPA1 FCC81 FSN21 JR511

4. DY18 = JR18



DY181 (D21-25) = JR180 QTP11 FR511 FSN21 FMI21

If M10 = 1 go to 10

5. DZ(02-09)1 = M02-09



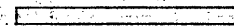
DZ(02-9)1 (\*) = FM(02-04)1 FM100 FSN21 FMI20 DWM11

6. DZ(10-16)1 = M11-17



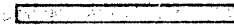
DZ(10-16)1 (\*) = FM(10-16)1 DWM11 FMI20 FSN21

7. DLE(5-8)1 (Level Determined by B(16-17)).



DZ171 (\*) = DLE81 DWM11 FMI20 FSN21 FM100

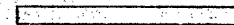
8. DZ181 = M181



DZ181 (\*) = FMI81 DWM11 FMI20 FSN21 FM100

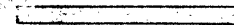
Go to MWC (13)

9. DZ(02-08)1 = M(11-17)0



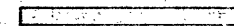
DZ(02-08)1 (\*) = DWM11 FMI20 FSN21 FMI01 FM(11-17)0

10. DZ(09)1 = DY180



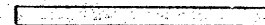
DZ091 (\*) = DY180 FMI01 FSN21 FMI20 DWM11

11. DZ181 = DSM3 (Flag)



DZ181 (\*) = DWM11 FMI20 FSN21 FMI01

12. DMC1



DMC1 (F02-38) = FR511 FSN21 FM120

13. DT511



DT511 (J25-11) = QTP10 FR511 FSN21 FCC41

14. DT551



DT551 (J25-25) = DT511 DWM11 FMI20 FSN21 FMI01

REVISIONS

PRINTS TO

MADE BY <i>Z.R. Hassell Oct 7, 1963</i>	APPROVALS <i>W.G. Harris</i>	Computer	DIV OR DEPT	43B135921
ISSUED OCT 10 1963	<i>Oct 7, 1963</i>	Phoenix	LOCATION	CONT ON SHEET 84 SH NO 83

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

REV NO

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

CONT ON SHEET 85 SH NO. 84

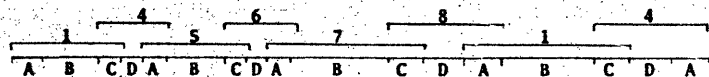
CONT ON SHEET

SH NO

FIRST MADE FOR Datatnet-30

9.0 SPECIAL INSTRUCTIONS (Continued)

Scan Instructions (Continued)

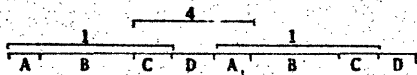


4. If B15 is on, go to 5.

- 1. FL(01) [ ]
- 2. FL(08-14)0 [ ]
- 3. FL101 [ ]

- FL011 (\*) = FL010 QTPB1 FMI40 FCC11 FSN21.
- FL(08-14)0 (\*) = QTP00 FSN21 FMI20
- FL101 (\*) = DE000 (FSN21 + FSN11)

GO BACK TO 1



- 5. END SCAN
- 1. FSG31 [ ]
- 2. FSG21 [ ]
- 3. FSN21 [ ]
- 4. FR510 [ ]
- 5. DE00 [ ]

- FSG31 (C08-31) = QTPB0 FB151 DWM11 FSN21 FMI20
- FSG20 (C16-10) = QTPB1 FSG31
- FSN20 (C04-38) = QTPB1 FSG31
- FR510 (F01-15) = QTPB1 FSN20
- DE001 (J04-10) = QTPB0 DWM11 FB151 FSN21 FMI20

Prepare for next instruction.

REVISIONS	PRINTS TO

MADE BY <i>J.P. Howell</i> ISSUED OCT 10 1963	APPROVALS <i>V.P. Hummer</i> 6-27-1963	DIV OR DEPT Computer Phoenix	LOCATION CONT ON SHEET 85 SH NO. 84
--	--	------------------------------------	--



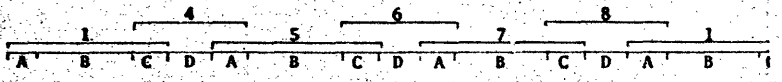
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	

REV NO	TITLE	CONT ON SHEET	SH NO
	INSTRUCTION TIMING AND BLOCK DESCRIPTION	86	85
	FIRST MADE FOR	Datnet-30	

9.0 SPECIAL INSTRUCTIONS (Continued)

032-3 CSR



1. Prepare
2. FN(12-18) [Bar]
3. DGEN [Bar]
4. DMD31 [Bar]
5. DGN21 [Bar]
6. DNM11 [Bar]
7. DEXC1 [Bar]
8. DGMZ1 [Bar]
9. DZ(01-10) [Bar]
10. FSG1 [Bar]
11. FCC4 [Bar]
12. DBSC [Bar]
13. FCC5 [Bar]
14. FSG21 [Bar]
15. DPGRO [Bar]
16. DRYR [Bar]
17. FCC1 [Bar]
18. FCC4 [Bar]

At this point the processor must wait until the FBOL (Branch on Line) signal is received from the controller selector. (Assume that FBOL is received sometime during the next FCC4). The cycle counter counts from FCC8 to FCC1.

- Prepare
- FN(12-18) ( ) = FM(12-18) QTPB1 FCC11 DPGRI
  - DGEN1 ( ) = FN160 DNM11 FN180 FN170 DPGRI
  - DMD31 ( ) = DPGRI FN131 FN141 FN150
  - DGN21 ( ) = DGEN1 FM111 FM120
  - DNM11 ( ) = (QTP11 FCC11) + FCC41
  - DEXC1 ( ) = DPGRI(DGEN1 + QTP11 FCC51 + FCC61 + FCC71 + FCC81)
  - DGMZ1 ( ) = [(FCC11 QTP11) + (FCC41 FN120)] FM100 DPGRI DMD31
  - DZ(01-10)1 ( ) = DGMZ1 FM(01-10)1
  - FSG1 ( ) = QTPC1 DGEN1 DMD31
  - FCC41 ( ) = QTPC1 FM120 DSIA0 FCC11
  - DBSC1 ( ) = QTPDL FSG11 DGN21
  - FCC51 ( ) = QTPA1 FCC41 (DE000 + QTPB1)
  - FSG21 ( ) = QTPB1 FSG11
  - DPGRO ( ) = FSG21 FPL30 FM120 SPGRI FHL10
  - 6. DRYR1 ( ) = QTPB1 DMR10 SINMO FCS10
  - 7. FCC11 ( ) = QTPA1 FRUN1 FSG21 FSG30 FCC81
  - 8. FCC4 ( ) = SEE 11

REVISIONS	PRINTS TO

MADE BY 10/17/63 J.P. Hancock	APPROVALS W.E. Manning 10/17/63	DIV OR DEPT Computer	438135921
ISSUED OCT 10 1963	Phoenix	LOCATION	CONT ON SHEET 86 SH NO 85

9.0 SPECIAL INSTRUCTIONS (Continued)

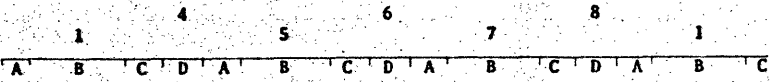
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS		
		FRACTIONS	DECIMALS	ANGLES
	✓	+	+	+

TITLE INSTRUCTION TIMING AND BLOCK DESCRIPTION

FIRST MADE FOR Datnet-30

032-3 CSR



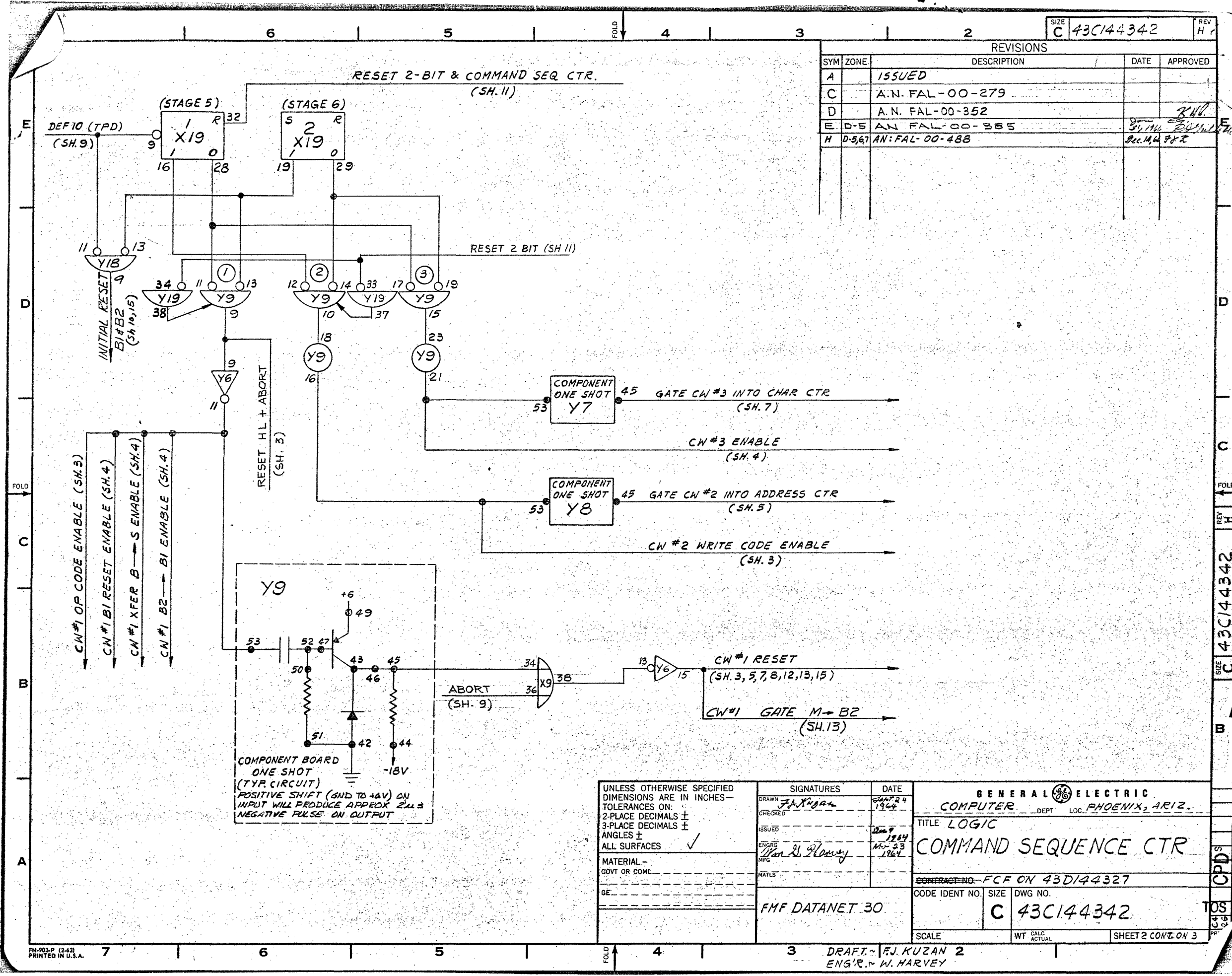
- |                |  |            |  |
|----------------|--|------------|--|
| 19. FBOL       |  | FBOL1      | ( ) = Branch on Line from CSU                                      |
| 20. FCS1       |  | FCS11      | ( ) = QTPB1 FSG30 FBOL1 JCSP1                                      |
| 21. DGSB1      |  | DGSB1      | ( ) = FCS11 F90L1  |
| 22. DY(01-18)1 |  | DY(01-18)1 | ( ) = (CSU B Reg (19-02)1) DGSB1                                   |
| 23. DGL1       |  | DGL11      | ( ) = FCS11 FMI20  |
| 24. DGL3       |  | DGL31      | ( ) = FCS11 FMI20  |
| 25. FCC5       |  | FCC51      | ( ) = SEE 13   |
| 26. DZ(01-18)1 |  | DZ(01-18)1 | ( ) = +DGL11 FM(01-18)0 DY(01-18)1<br>+DGL31 FM(01-18)1 DY(01-18)1 |
| 27. DSBR       |  | DSBR1      | ( ) = FCS11 FMI20  |
| 28. FCC61      |  | FCC61      | ( ) = QTPC1 FMI20 FCC51  |
| 29. FSG31      |  | FSG31      | ( ) = QTPB0 FCS11 FMI20  |
| 30. FB(01-18)0 |  | FB(01-18)0 | ( ) = QTPD1 DSBR1 SSBRO  |
| 31. FB(01-18)1 |  | FB(01-18)1 | ( ) = DZ011 DSBR1 QTP10  |
| 32. FSG20      |  | FSG20      | ( ) = QTPB1 FSG31  |
| 33. DPGR1      |  | DPGR1      | ( ) = FP130 FSG20 FMI20 SPGR1 FHL10                                |
| 34. DE00       |  | DE001      | ( ) = QTPB0 FCS11 FMI20  |

The time FBOL is received determines which CDA time DE00 will occur. FBOL might arrive at such a time that DE00 could come in either FCC4, FCC6, or FCC8.

REVISIONS	PRINTS TO

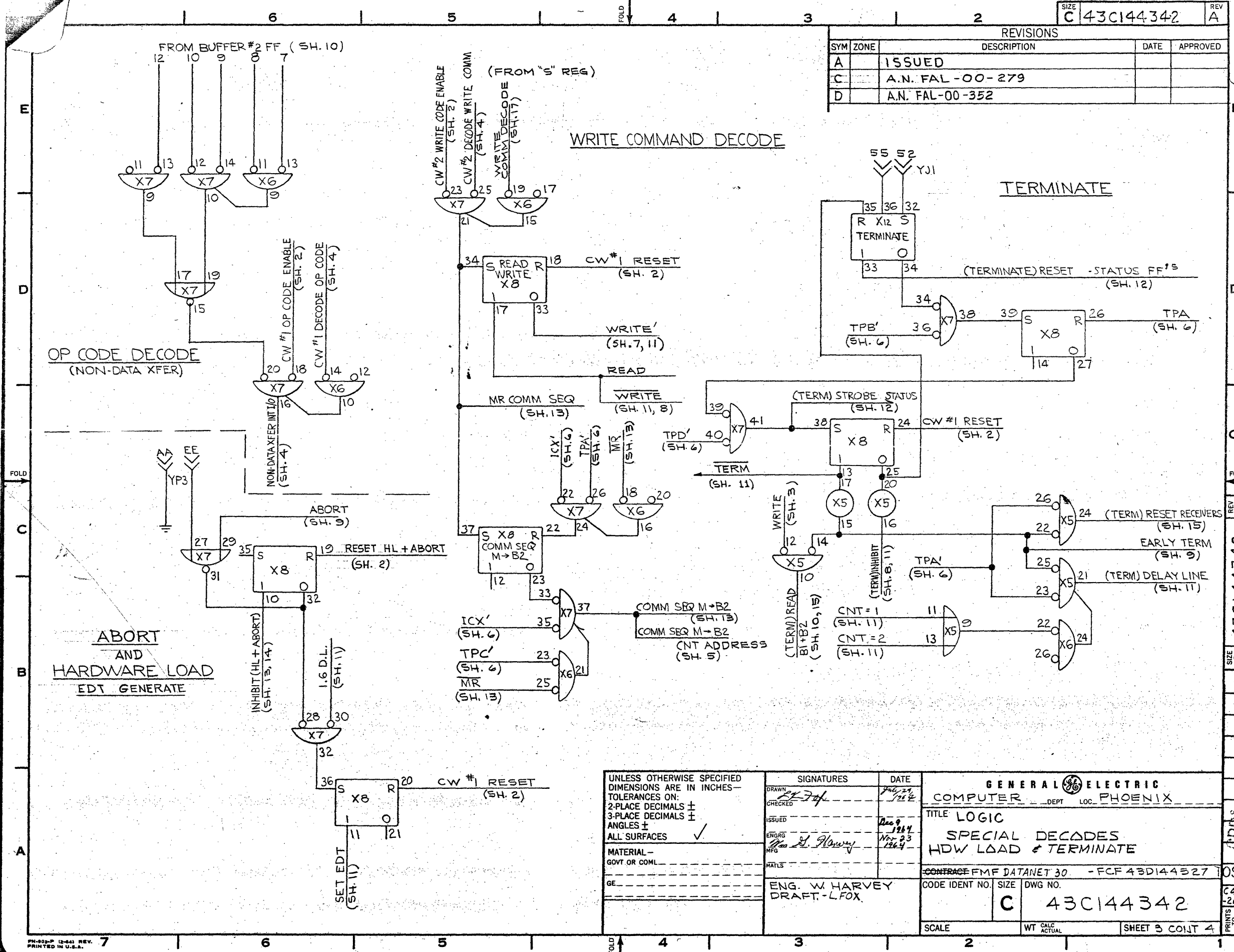
MADE BY <i>J.R. Hamill</i> ISSUED OCT 10 1963	APPROVALS <i>W.S. Hammy</i> OCT 7, 1963	DIV OR DEPT Computer Phoenix	LOCATION CONT. ON SHEET F	43B135921 SH NO. 86
--	---	------------------------------------	------------------------------	------------------------

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		
C		A.N. FAL-00-279		
D		A.N. FAL-00-352		
E	D-5	AN FAL-00-385	5/11/64	<i>[Signature]</i>
H	D-5,6,7	AN: FAL-00-488	Dec. 14, 1964	<i>[Signature]</i>



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES— TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓		SIGNATURES DRAWN: <i>[Signature]</i> CHECKED: <i>[Signature]</i> ISSUED: <i>[Signature]</i> ENGRG: <i>[Signature]</i> MFG: <i>[Signature]</i>		DATE JAN 24 1964 JUN 9 1964 MAY 23 1964	GENERAL ELECTRIC COMPUTER DEPT. LOC. PHOENIX, ARIZ.	
MATERIAL— GOVT OR COML		MATERIALS		TITLE LOGIC		
GE		CONTRACT NO. FCF ON 43D144327		CODE IDENT NO. SIZE DWG NO.		
FMF DATANET 30		SCALE		C 43C144342		
DRAFT. FJ. KUZAN 2		WT. CALC. ACTUAL		SHEET 2 CONT. ON 3		

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		
C		A.N. FAL-00-279		
D		A.N. FAL-00-352		



UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES—  
TOLERANCES ON:  
2-PLACE DECIMALS ±  
3-PLACE DECIMALS ±  
ANGLES ±  
ALL SURFACES ✓  
MATERIAL—  
GOVT OR COML  
GE

SIGNATURES	DATE
DRAWN <i>[Signature]</i>	Dec 24 1964
CHECKED <i>[Signature]</i>	
ISSUED	
ENGRG <i>[Signature]</i>	Dec 9 1964
APPROV <i>[Signature]</i>	Nov 23 1964
MATLS	
ENG. W. HARVEY DRAFT.-L.FOX	

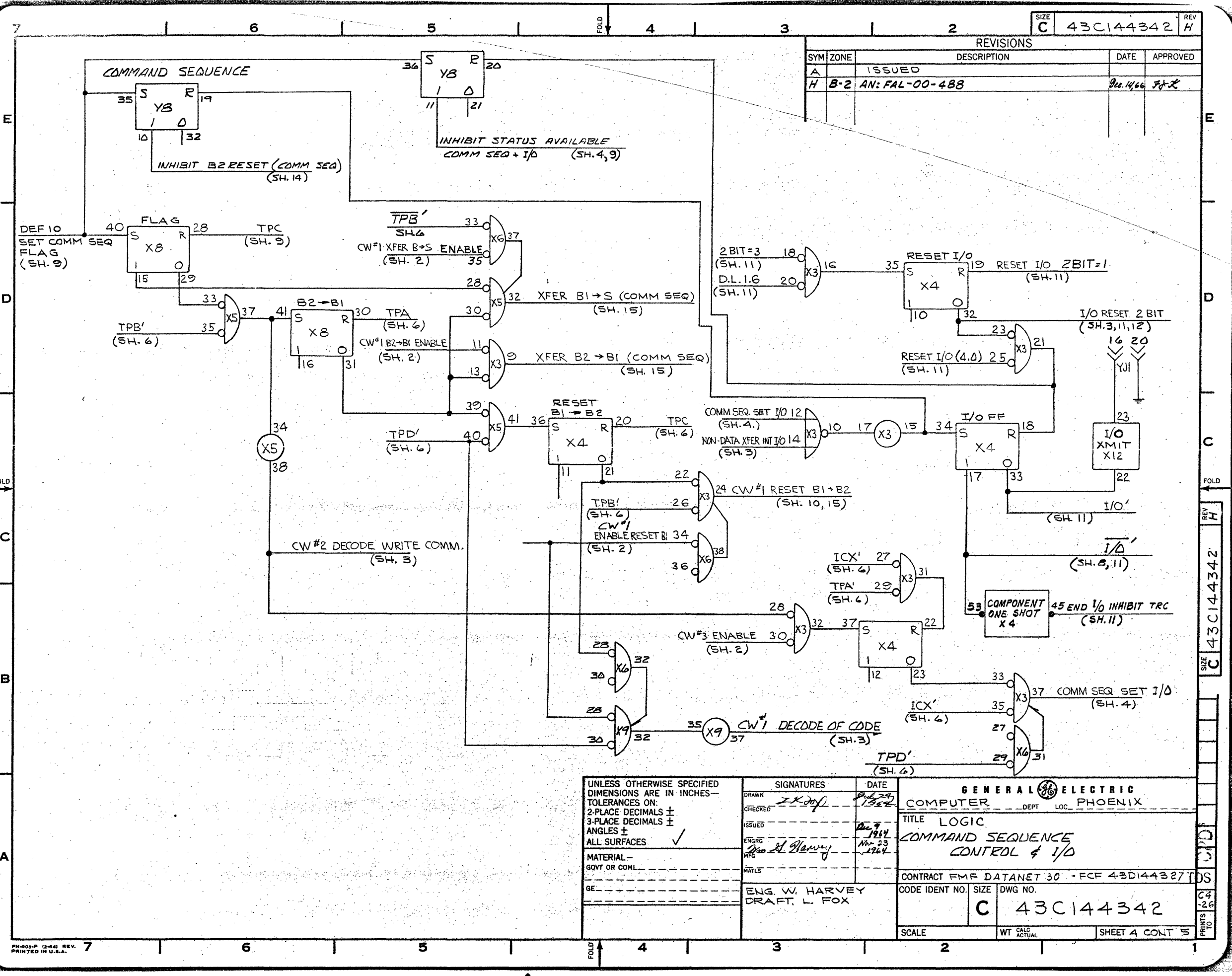
GENERAL ELECTRIC  
COMPUTER DEPT LOC. PHOENIX

TITLE LOGIC  
SPECIAL DECODES  
HDW LOAD & TERMINATE

CONTRACT FMF DATANET 30 - FCF 43D144327

CODE IDENT NO.	SIZE	DWG NO.
	C	43C144342

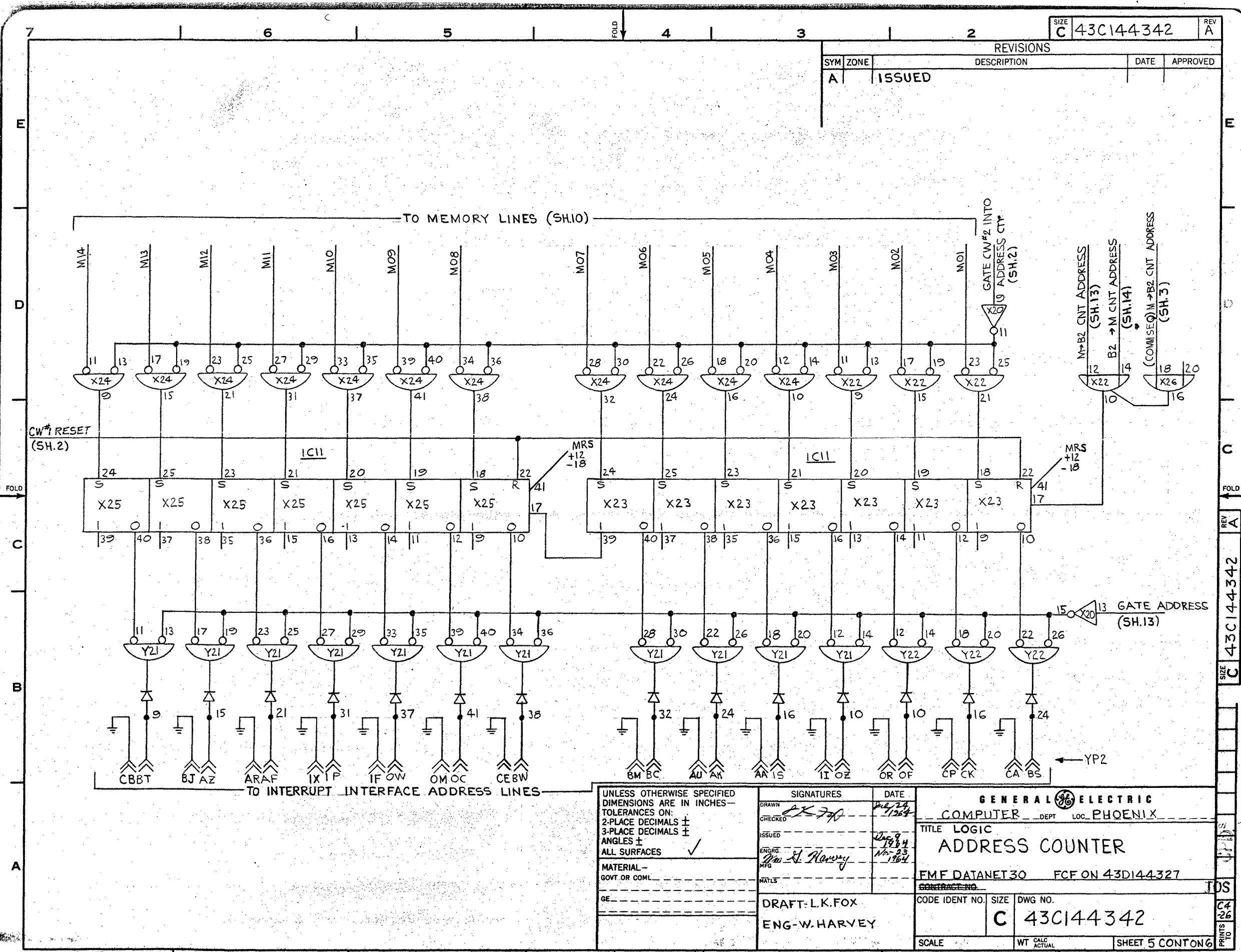
SCALE \_\_\_\_\_ WT CALC ACTUAL \_\_\_\_\_ SHEET 3 CONT 4



REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		
H	B-2	AN: FAL-00-488	Dec. 14, 66	JFK

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES— TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓	SIGNATURES		DATE	<b>GENERAL ELECTRIC</b> COMPUTER DEPT. LOC. PHOENIX TITLE LOGIC <b>COMMAND SEQUENCE CONTROL &amp; I/O</b> CONTRACT FME DATANET 30 - FCF 43D144327 DS
	DRAWN <i>ZK</i>		Dec 29 1966	
	CHECKED			
	ISSUED		Dec 9 1964	
MATERIAL -	ENG. W. HARVEY		Nov 23 1964	CODE IDENT NO. SIZE DWG NO. C 43C144342
GOVT OR COML	DRAFT. L. FOX			
GE	SCALE		WT. CALC. ACTUAL	SHEET 4 CONT 5

SIZE C 43C144342 REV H  
 SIZE C 43C144342 REV H  
 SIZE C 43C144342 REV H  
 PRINTS TO



SIZE C 43C144342		REV A		
REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		

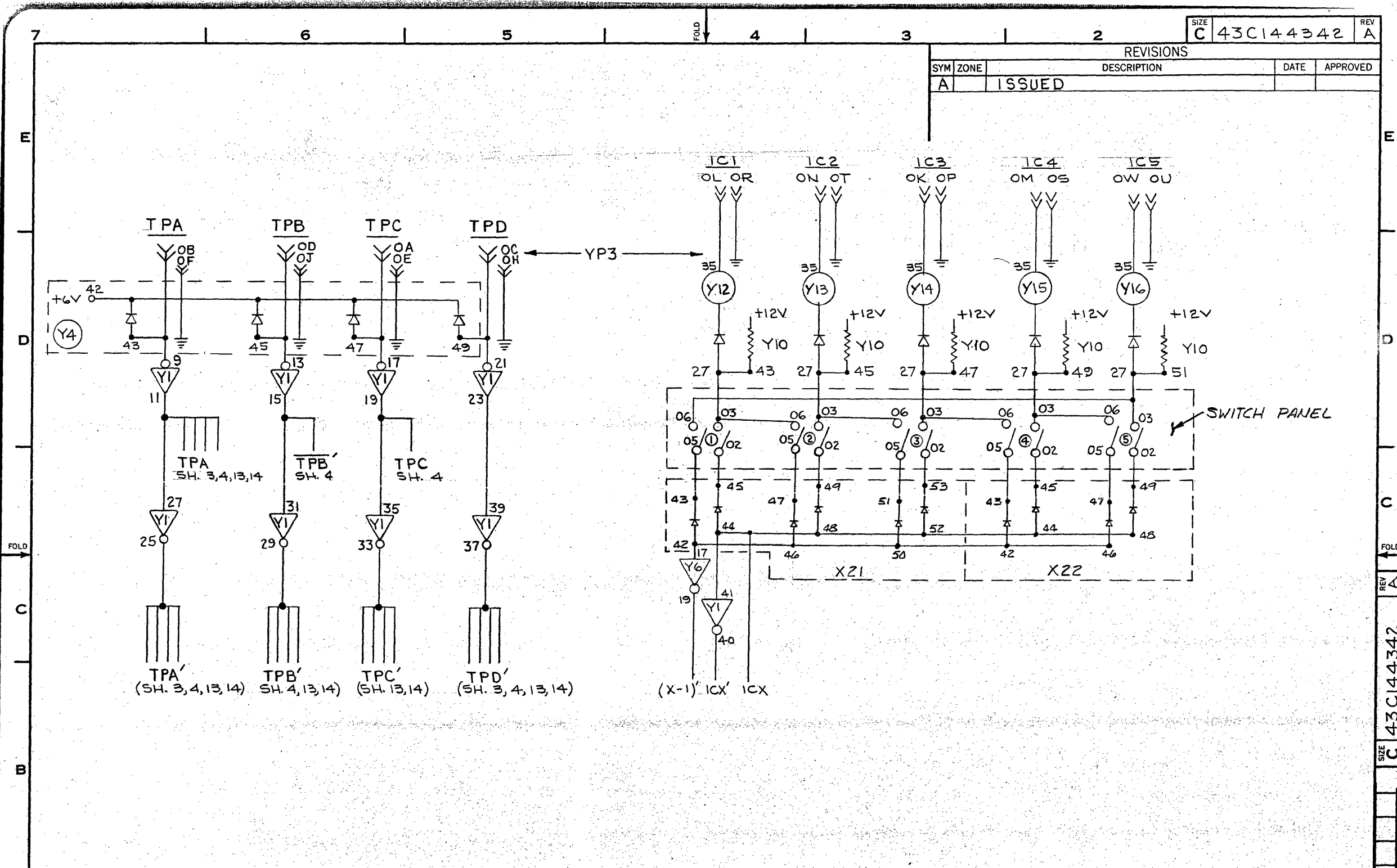
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES— TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓ MATERIAL— GOVT. OR COML. GE

SIGNATURES  
 DRAWN: [Signature]  
 CHECKED: [Signature]  
 ISSUED: [Signature]  
 ENGRG: [Signature]  
 MFG: [Signature]  
 MATLS: [Signature]  
 DRAFT-L.K.FOX  
 ENG-W.HARVEY

GENERAL ELECTRIC  
 COMPUTER DEPT. LOC. PHOENIX  
 TITLE LOGIC ADDRESS COUNTER  
 FMF DATANET 30 FCF ON 43D144327  
 CONTRACT NO. [Blank]  
 CODE IDENT NO. [Blank] SIZE C 43C144342 DWG NO. [Blank]  
 SCALE [Blank] WT. CALC. ACTUAL [Blank] SHEET 5 CONTONG



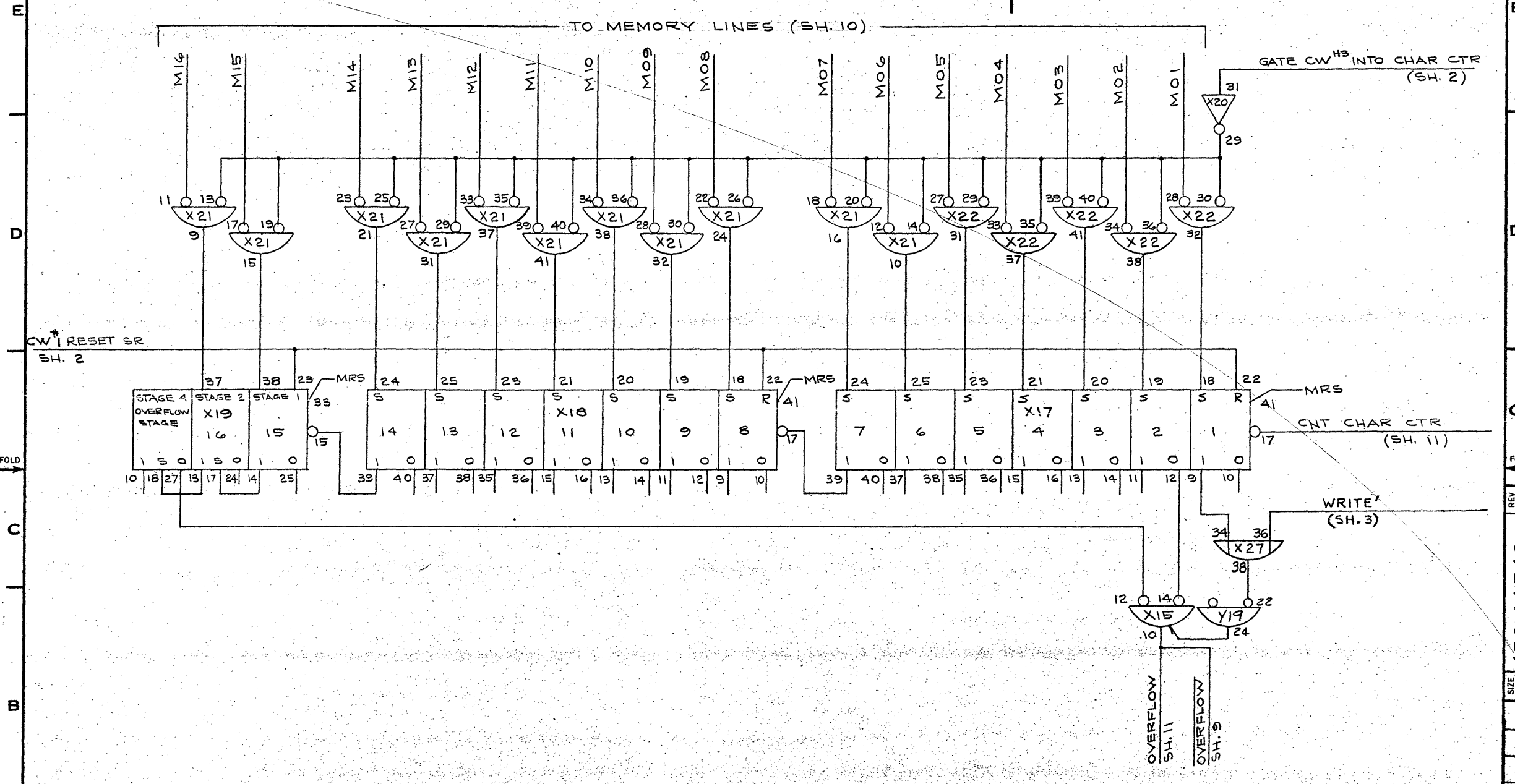
REVISIONS			
SYM	ZONE	DESCRIPTION	DATE
A		ISSUED	



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES— TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓ MATERIAL— GOVT OR COML— GE—	DRAWN <i>N.C. Oetting</i>	DATE July 8 1964	<b>GENERAL ELECTRIC</b> COMPUTER DEPT LOC PHOENIX TITLE LOGIC <b>INTERRUPT INTERFACE</b> SELECT SWITCHES & TIMING PULSES FMF ON DATANET-30 FCF ON 43D144327 CONTRACT CODE IDENT NO. SIZE DWG NO. C 43C144342 SCALE WT CALC ACTUAL SHEET 6 CONT 7
	CHECKED <i>N.C. Oetting</i>	ISSUED Dec 9 1964	
	ENGRG <i>W. Harvey</i>	No. 33 1964	
	DRAFT-N.C.OETTING ENG-W. HARVEY		

SIZE C 43C144342  
 REV A  
 PRINTS TO

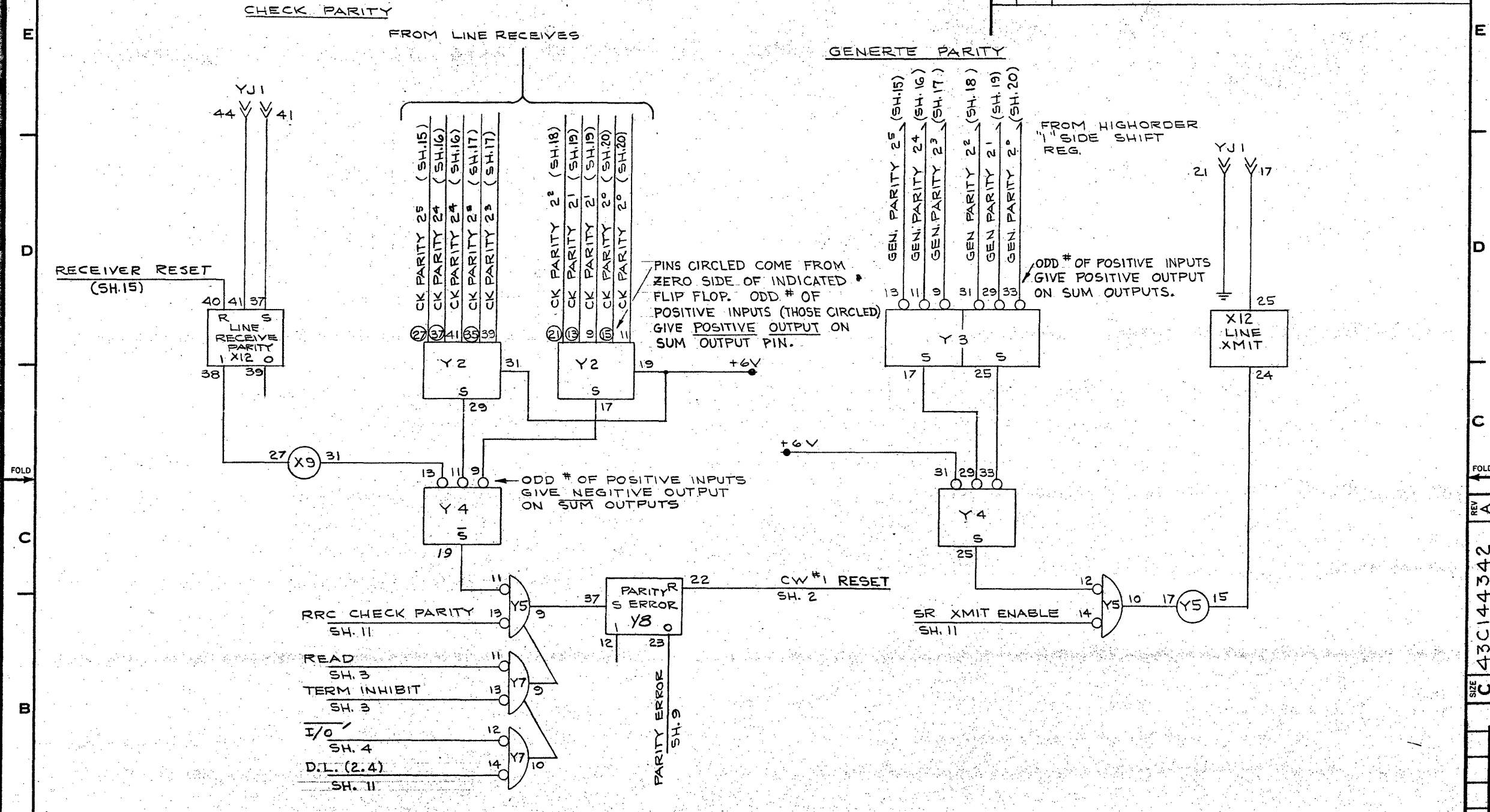
REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		
B		A.N. FAL-00-224		



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES— TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓	SIGNATURES DRAWN <i>E. Langley</i> CHECKED ISSUED <i>Dec 9 1964</i> ENGRG <i>W. Harvey</i> MFG <i>Nov 23 1964</i>	DATE 23 July 1964	GENERAL ELECTRIC COMPUTER DEPT LOC. PHOENIX	
	MATERIAL— GOVT OR COML		TITLE CHARACTER COUNTER	
	ENG. W. HARVEY DRAFT. E. GAZZOLA		CONTRACT—FMF DATANET 30. FCF 43D144327	CODE IDENT NO. SIZE DWG NO. C 43C144342
	GE		SCALE	WT CALC ACTUAL SHEET 7 CONT 8

REV A  
 SIZE C 43C144342  
 CPD  
 TOS  
 4-26  
 PRINTS TO

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		
C		A.N. FAL-00-279		



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES— TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓ MATERIAL— GOVT OR COML— GE—	SIGNATURES		DATE	<b>GENERAL ELECTRIC</b> COMPUTER DEPT. LOC. PHOENIX TITLE LOGIC <b>PARITY CHECK &amp; PARITY GENERATE</b> CONTRACT FMF DATANET 30, FCF ON 43C144327 CODE IDENT NO. SIZE DWG NO. <b>C 43C144342</b> SCALE WT. CALC. ACTUAL SHEET 8 CONT 9
	DRAWN <i>E. Gazzola</i>		July 1964	
	CHECKED <i>[Signature]</i>			
	ISSUED <i>[Signature]</i>		Aug 24 1964	
MATERIALS		ENGRG <i>W. A. Harvey</i> MFG <i>Nov 23 1964</i>		

SIZE C 43C144342 REV A  
 CPD  
 OS  
 C4  
 26  
 PRINTS TO

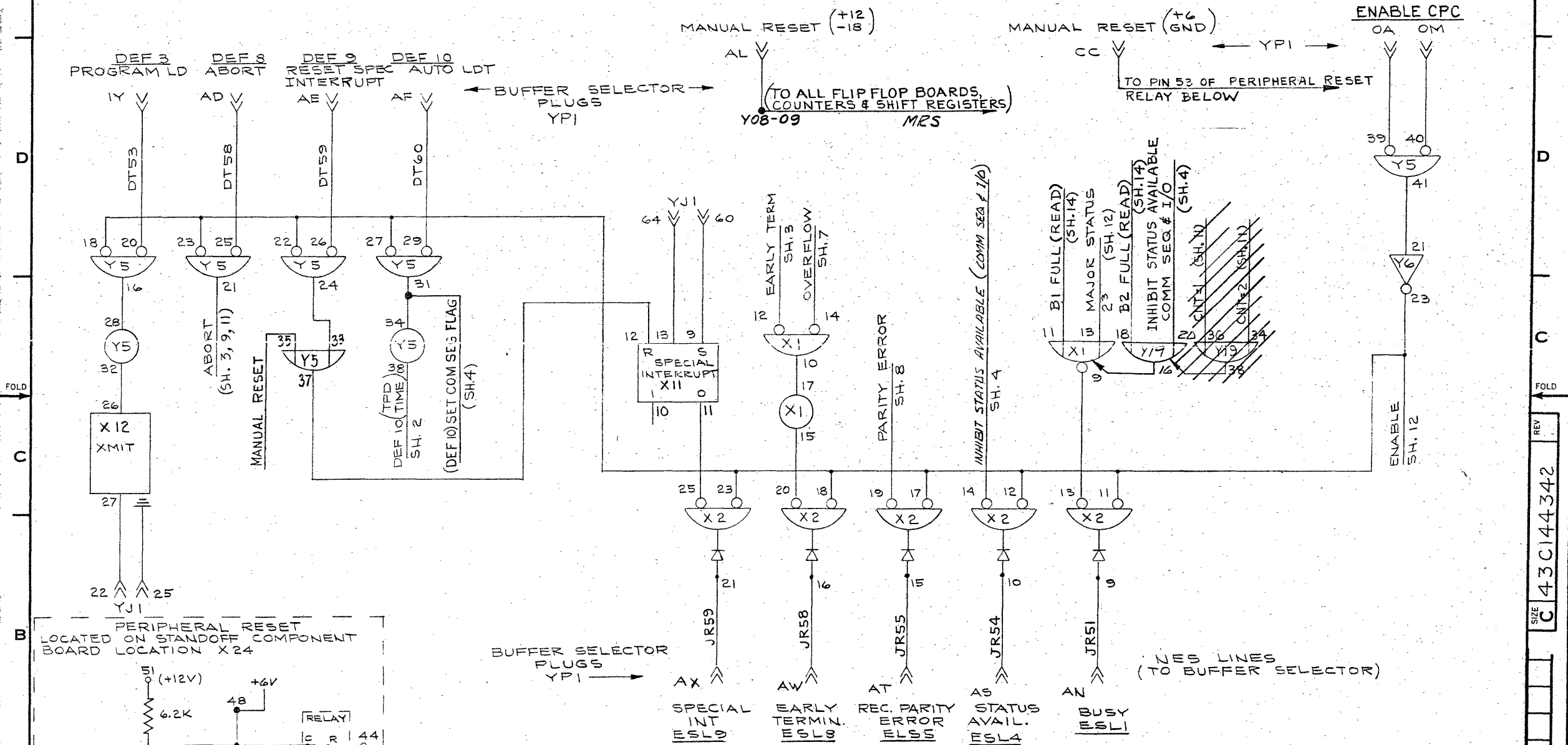
REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		
C		A.N. FAL-00-279		
D		A.N. FAL-00-352		
DI	C2	RECORD CHANGE AR 43872		
H	5-2	AN: FAL-00-488	Dec. 14, 66	W.K.
J	C6	FAL-00-543 ADDED MANUAL RESET	1 SEP 1967	66E

DEF LINES  
(FROM BUFFER SELECTOR)

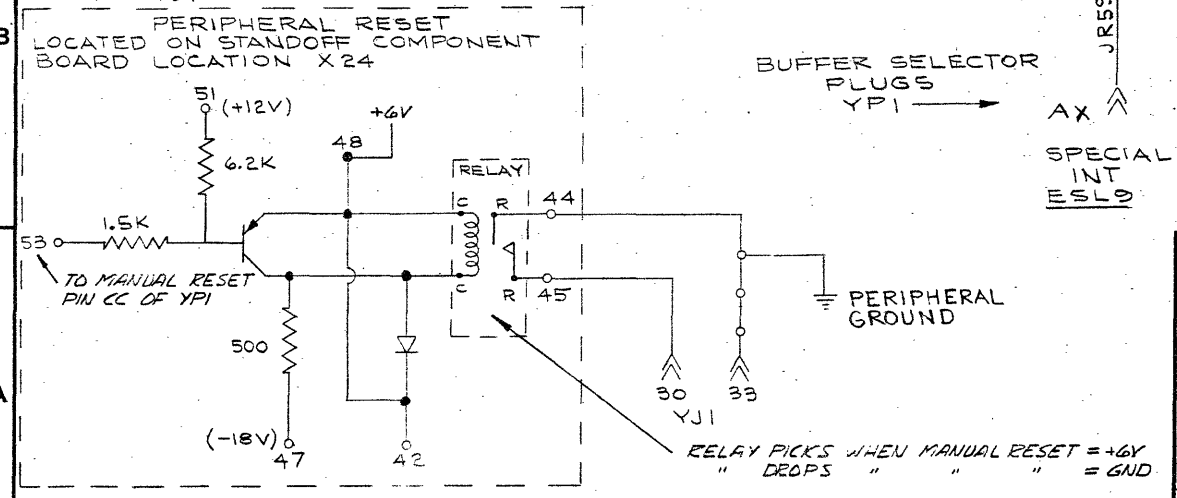
DEF 3 PROGRAM LD  
DEF 8 ABORT  
DEF 9 RESET SPEC INTERRUPT  
DEF 10 AUTO LDT

MANUAL RESET (+12)  
AL  
Y08-09  
MCS  
(TO ALL FLIP FLOP BOARDS,  
COUNTERS & SHIFT REGISTERS)

MANUAL RESET (+6)  
CC  
YPI  
ENABLE CPC  
OA OM  
TO PIN 53 OF PERIPHERAL RESET  
RELAY BELOW



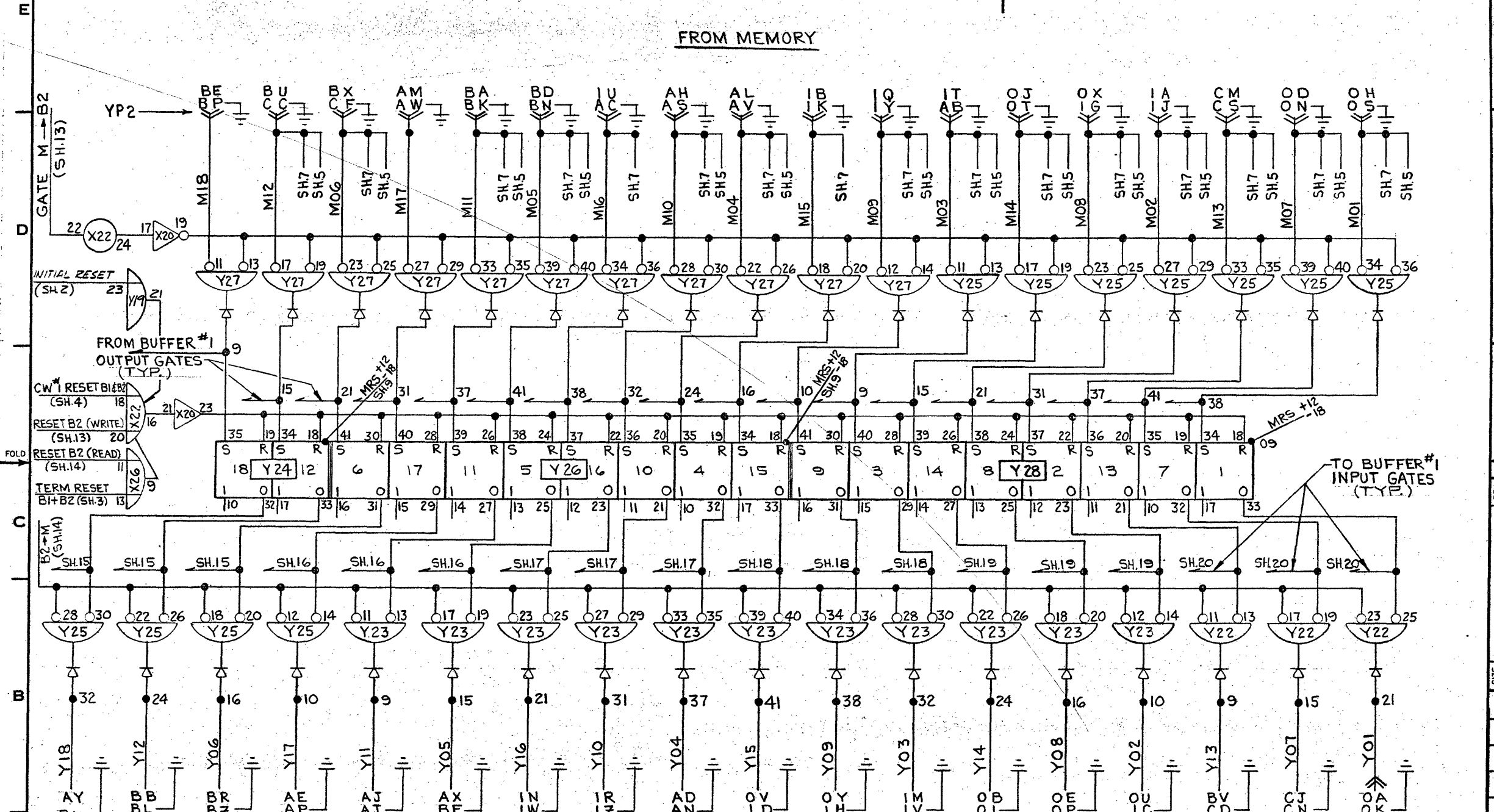
PERIPHERAL RESET  
LOCATED ON STANDOFF COMPONENT  
BOARD LOCATION X24



SIGNATURES		DATE	GENERAL ELECTRIC	
DRAWN: <i>E. Gazzola</i>		15 July 1964	COMPUTER DEPT. LOC. PHOENIX	
CHECKED: <i>[Signature]</i>			TITLE LOGIC	
ISSUED: <i>[Signature]</i>			BUFFER SELECTOR INTERFACE LINES	
ENGRG: <i>[Signature]</i>			& PERIPHERAL RESET	
MFG: <i>[Signature]</i>			CONTRACT FMF DATANET 30 FCF ON 43C144327	
MATS: <i>[Signature]</i>			CODE IDENT NO. SIZE DWG NO.	
GE:			C 43C144342	
SCALE		WT. CALC. ACTUAL	SHEET 9 CONT. 10	

REV C 43C144342

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		



TO MEMORY DATA LINES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES - TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓

MATERIAL - GOVT OR COM. \_\_\_\_\_

GE \_\_\_\_\_

SIGNATURES		DATE
<i>W.C. Oetting</i>		JULY 24, 1964
ISSUED		
<i>W.C. Oetting</i>		12-27-64
ENGRG		
<i>W.C. Oetting</i>		11-23-64
MATERIALS		

GENERAL ELECTRIC  
 COMPUTER DEPT LOC. PHOENIX

TITLE LOGIC BUFFER #2

FMF DATANET-30 FCF ON 43D144327

CONTRACT NO. \_\_\_\_\_

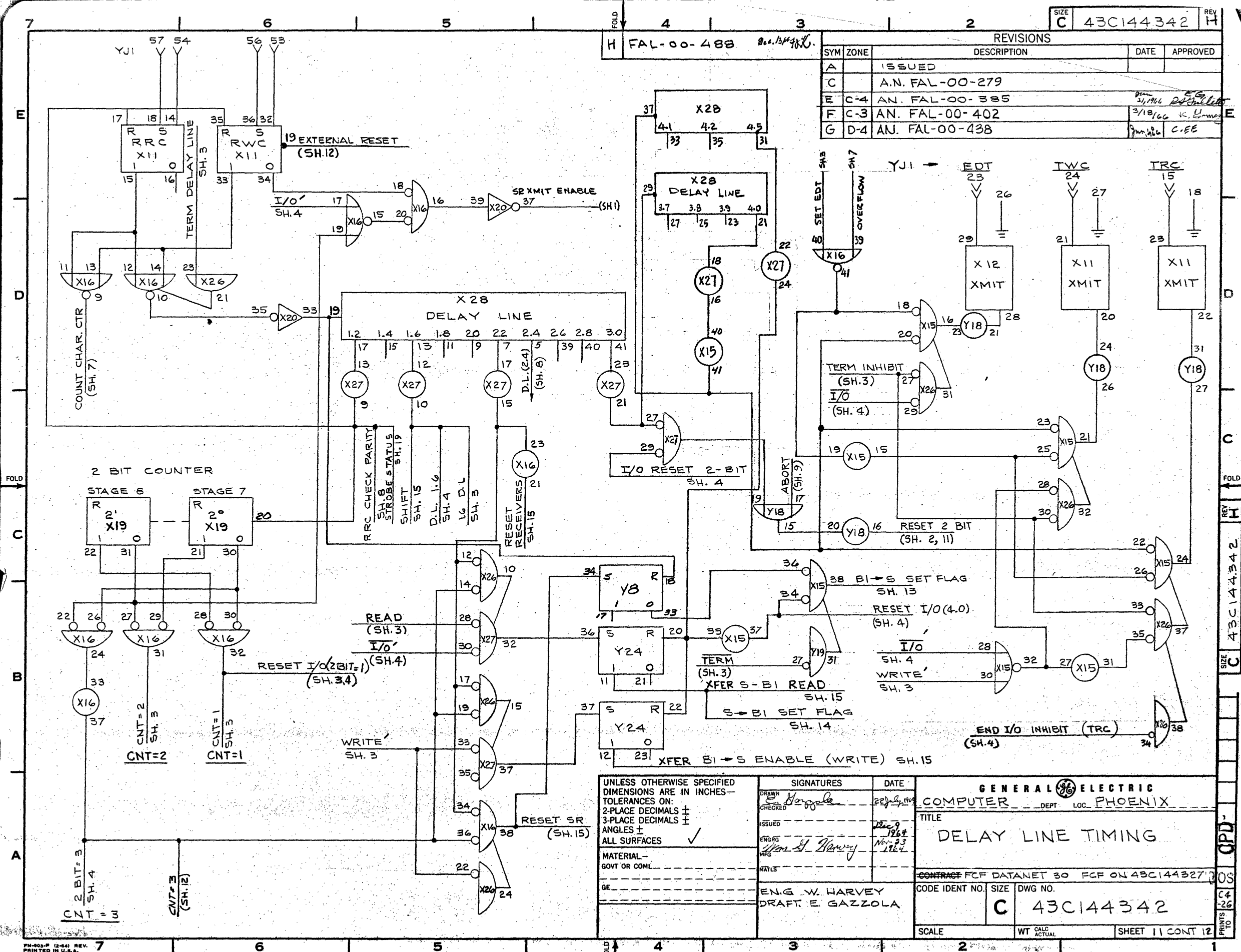
DRAFT-N.C.OETTING  
 ENG.-W. HARVEY

CODE IDENT NO. \_\_\_\_\_ SIZE DWG NO. C 43C144342

SCALE \_\_\_\_\_ WT CALC ACTUAL SHEET 10 CONT 11



REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		
C		A.N. FAL-00-279		
E	C-4	AN. FAL-00-385	3/18/66	<i>[Signature]</i>
F	C-3	AN. FAL-00-402	3/18/66	<i>[Signature]</i>
G	D-4	AN. FAL-00-438	3/18/66	<i>[Signature]</i>



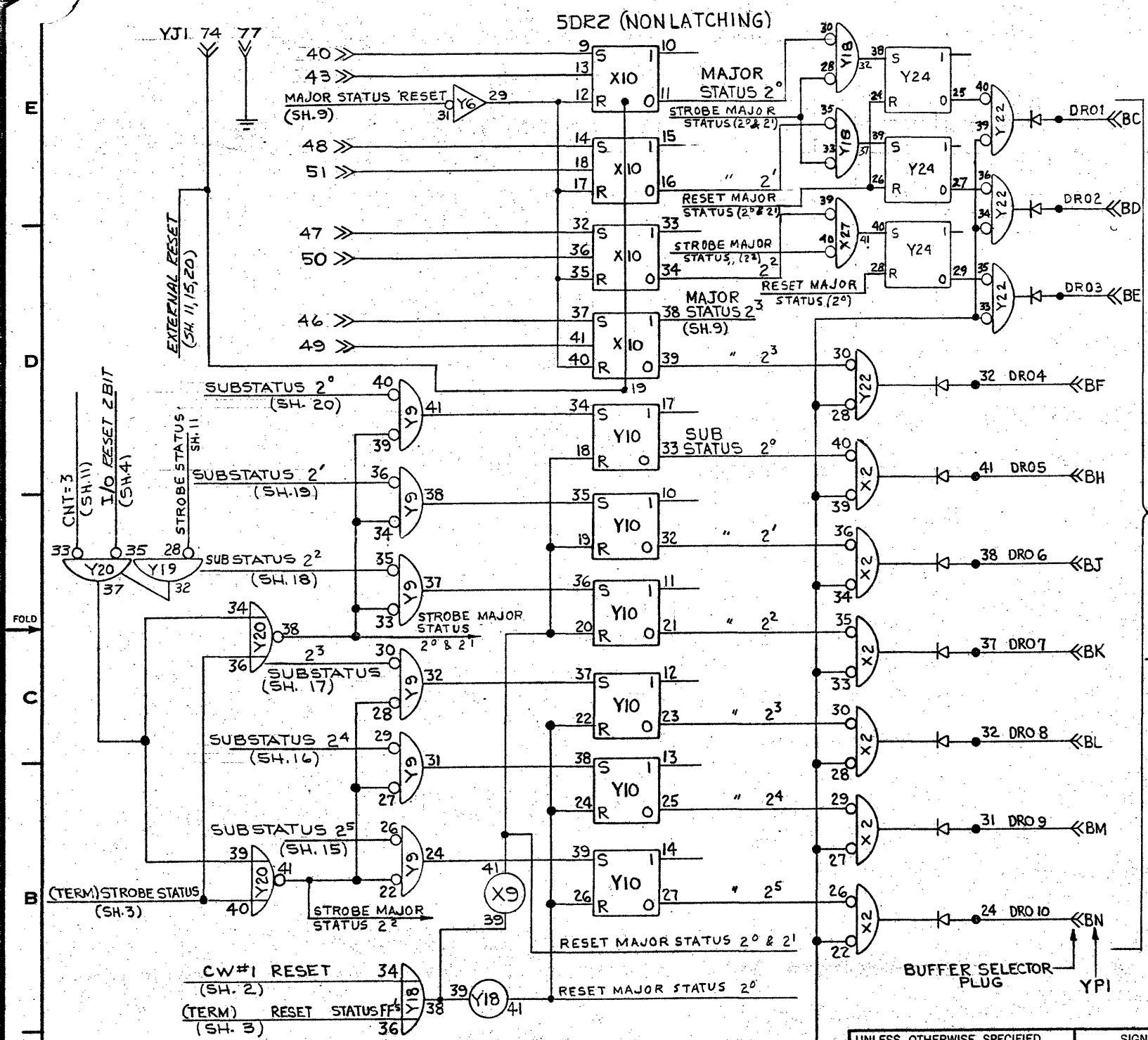
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES— TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓ MATERIAL— GOVT OR COML

SIGNATURES		DATE
DRAWN	<i>[Signature]</i>	22/2/66
CHECKED		
ISSUED		
ENGRG	<i>[Signature]</i>	12/64
MFG		17/64
MATERIALS		
ENG. W. HARVEY		
DRAFT. E. GAZZOLA		

GENERAL ELECTRIC		
COMPUTER	DEPT	LOC. PHOENIX
TITLE		
DELAY LINE TIMING		
CONTRACT FCF DATANET 30 FCF ON 43C144327		
CODE IDENT NO.	SIZE	DWG NO.
	C	43C144342
SCALE	WT CALC ACTUAL	SHEET 11 CONT 12

REV H 43C144342

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		
C		FAL-00-279		



TO RECEIVE DATA LINES  
BUFFER SELECTOR

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES--  
TOLERANCES ON:  
2-PLACE DECIMALS ±  
3-PLACE DECIMALS ±  
ANGLES ±  
ALL SURFACES ✓

MATERIAL -  
GOVT OR COML

GE

SIGNATURES	DATE
<i>W.C. Oetting</i>	JULY 21, 1964
<i>W. Harvey</i>	DEC 4, 1964

GENERAL ELECTRIC  
COMPUTER DEPT Loc. PHOENIX

TITLE LOGIC  
MAJOR & SUB-STATUS LINES

FMF DATANET-30 F.C.F. ON 43D 144327

CONTRACT NO.

DRAFT-N.C. OETTING  
ENG-W. HARVEY

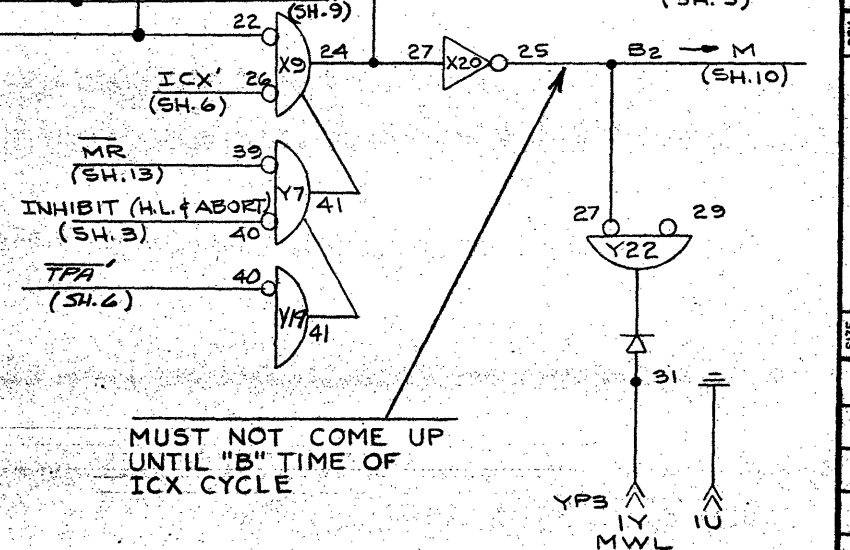
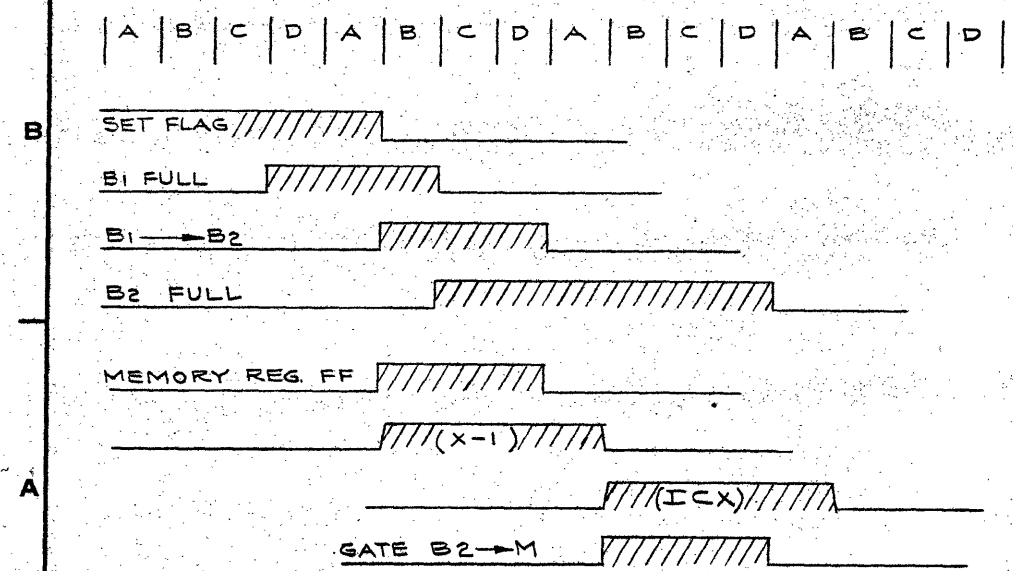
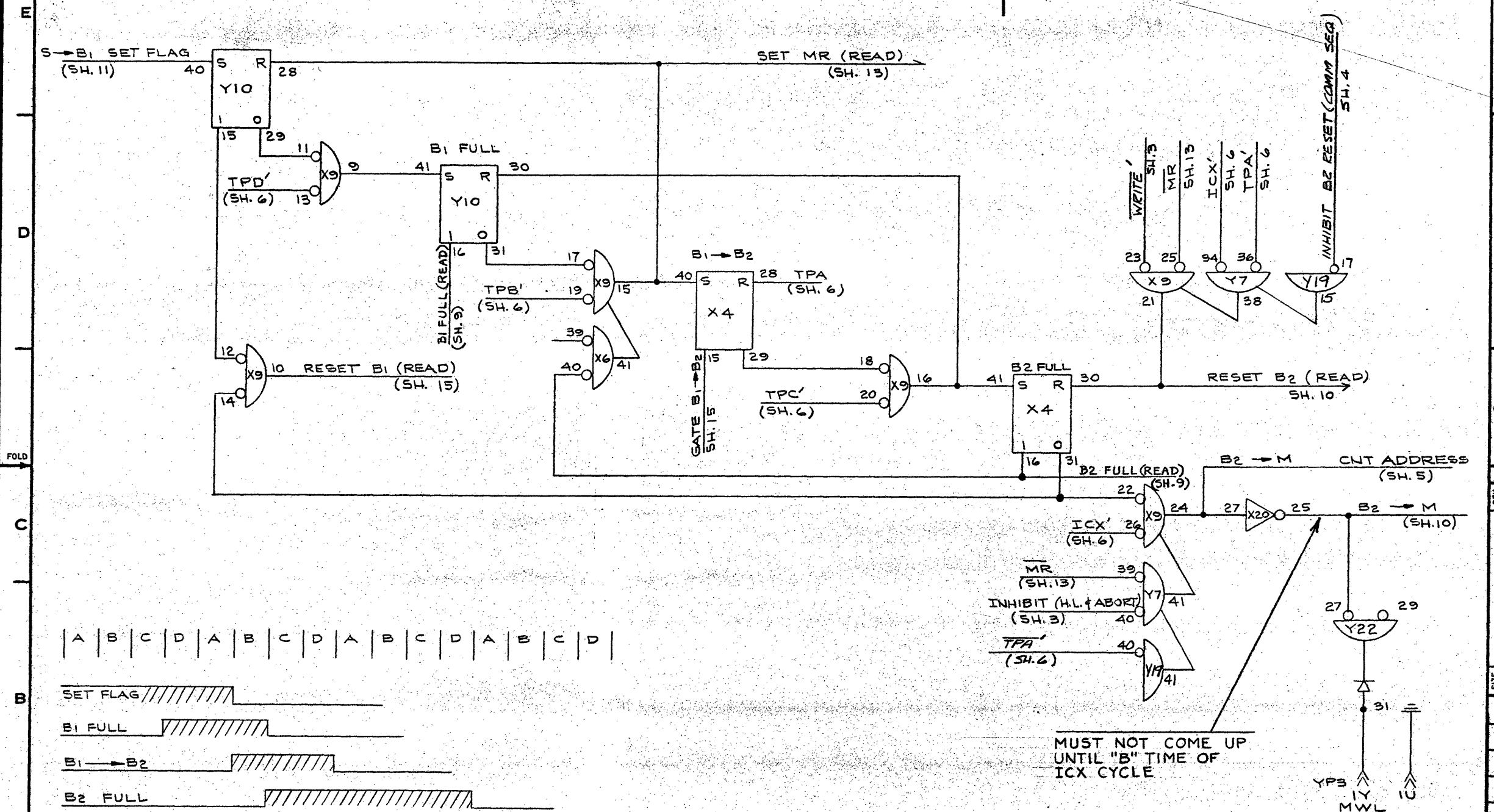
CODE IDENT NO. SIZE DWG NO.  
C 43C144342

SCALE WT. CALC. ACTUAL SHEET 12 CONT 13



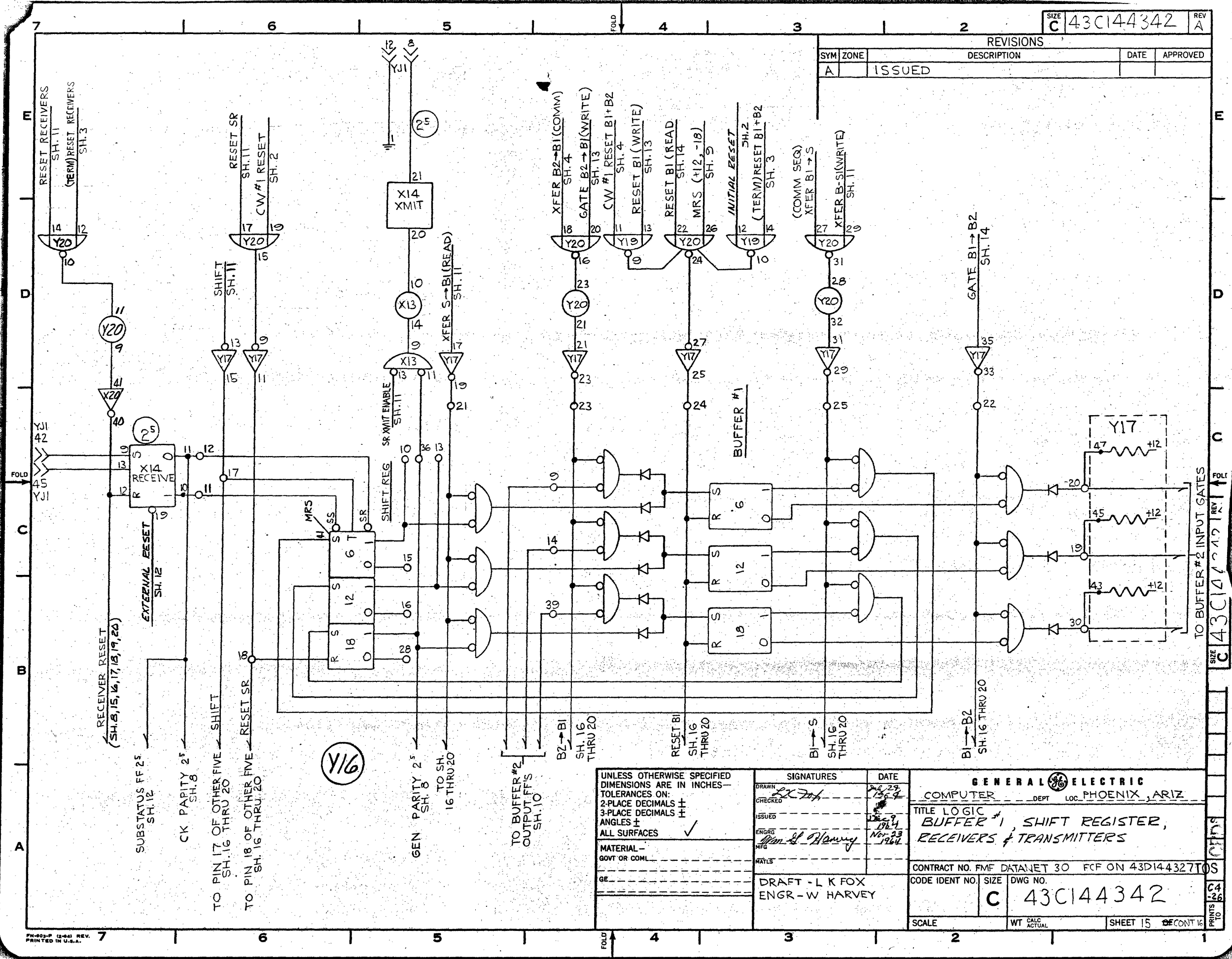


REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		
B		A.N. FAL-00-224		



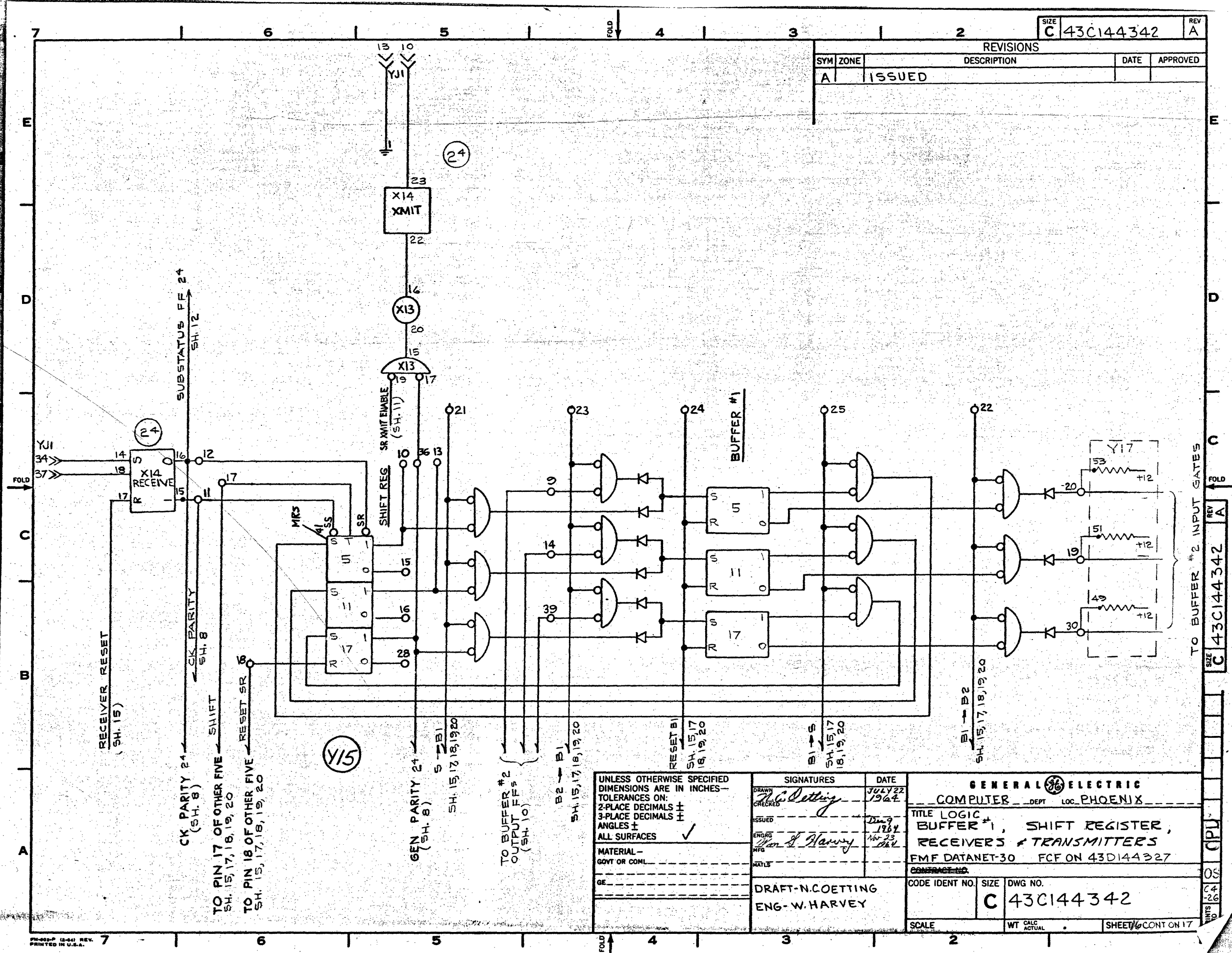
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES— TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓	SIGNATURES		DATE	<b>GENERAL ELECTRIC</b> COMPUTER DEPT. LOC. PHOENIX TITLE <b>READ BUFFER CONTROL</b> CONTRACT FMF DATANET 30, FCF ON 43D144327 TDS CODE IDENT NO. SIZE DWG NO. <b>C 43C144342</b> SCALE WT. CALC. ACTUAL SHEET 14 CONT. 15
	DRAWN	16 July 1964		
	CHECKED	1264		
	ISSUED	11-25-64		
MATERIAL— GOVT OR COML	ENG'D		1964	
GE	MFG			
	MATLS			

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES - TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓		SIGNATURES		DATE	GENERAL ELECTRIC COMPUTER DEPT. LOC. PHOENIX, ARIZ.	
MATERIAL - GOVT OR COML		DRAWN: [Signature]		2/29/64	TITLE LOGIC BUFFER #1, SHIFT REGISTER, RECEIVERS & TRANSMITTERS	
GE		CHECKED: [Signature]		3/1/64	CONTRACT NO. FMF DATAJET 30 FCF ON 43D144327TOS	
		ISSUED: [Signature]		10/23/64	CODE IDENT NO. SIZE DWG NO. C 43C144342	
		ENGRG: [Signature]			SCALE	
		MFG:			WT. CALC. ACTUAL	
		MAYLS:			SHEET 15 OF CONT 16	
		DRAFT - L K FOX ENGR - W HARVEY			PRINTS TO C4326	

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		



RECEIVER RESET (SH. 15)

CK PARITY 24 (SH. 8)

TO PIN 17 OF OTHER FIVE (SH. 15, 17, 18, 19, 20)

TO PIN 18 OF OTHER FIVE (SH. 15, 17, 18, 19, 20)

GEN PARITY 24 (SH. 8)

TO BUFFER #2 OUTPUT FFs (SH. 10)

B2 - B1 (SH. 15, 17, 18, 19, 20)

RESET B1 (SH. 15, 17, 18, 19, 20)

B1 - S (SH. 15, 17, 18, 19, 20)

B1 - B2 (SH. 15, 17, 18, 19, 20)

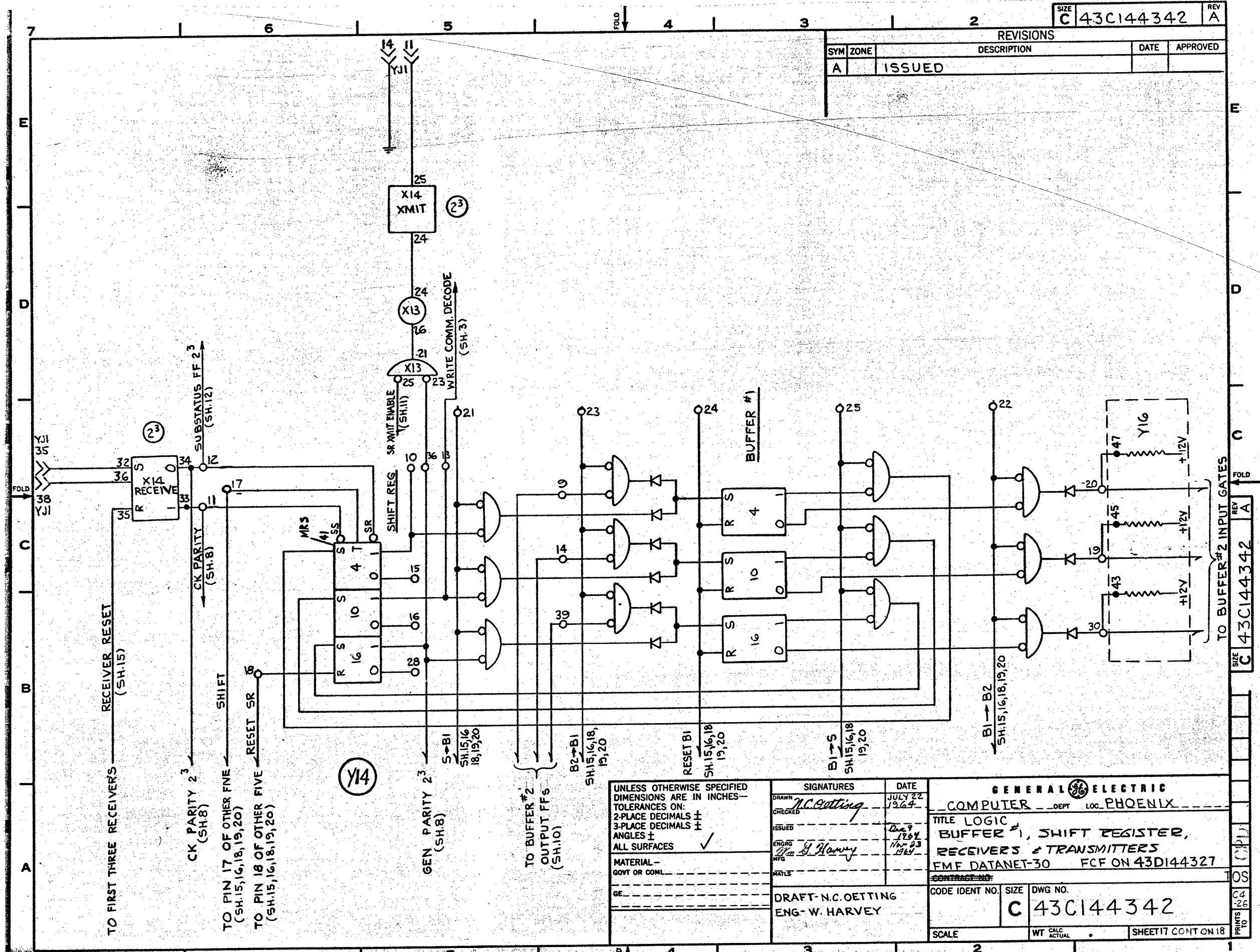
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES - TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓ MATERIAL - GOVT OR COM. GE

SIGNATURES DATE  
 DRAWN: W. Coetting JULY 22 1964  
 CHECKED: W. Coetting  
 ISSUED: [Signature] JUN 9 1964  
 ENGRG: W. Coetting JUN 23 1964  
 MFG: [Signature]  
 DRAFT-N. COETTING  
 ENG-W. HARVEY

GENERAL ELECTRIC COMPUTER DEPT. LOC. PHOENIX  
 TITLE LOGIC BUFFER #1, SHIFT REGISTER, RECEIVERS & TRANSMITTERS  
 FMF DATANET-30 FCF ON 43D144327  
 CONTRACT NO.  
 CODE IDENT NO. SIZE DWG NO. C 43C144342  
 SCALE WT. CALC. ACTUAL SHEET 6 CONT ON 17

TO BUFFER #2 INPUT GATES (SH. 15, 17, 18, 19, 20)

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		



UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES—  
TOLERANCES ON:  
2-PLACE DECIMALS ±  
3-PLACE DECIMALS ±  
ANGLES ±  
ALL SURFACES ✓  
MATERIAL—  
GOVT OR COML  
GE

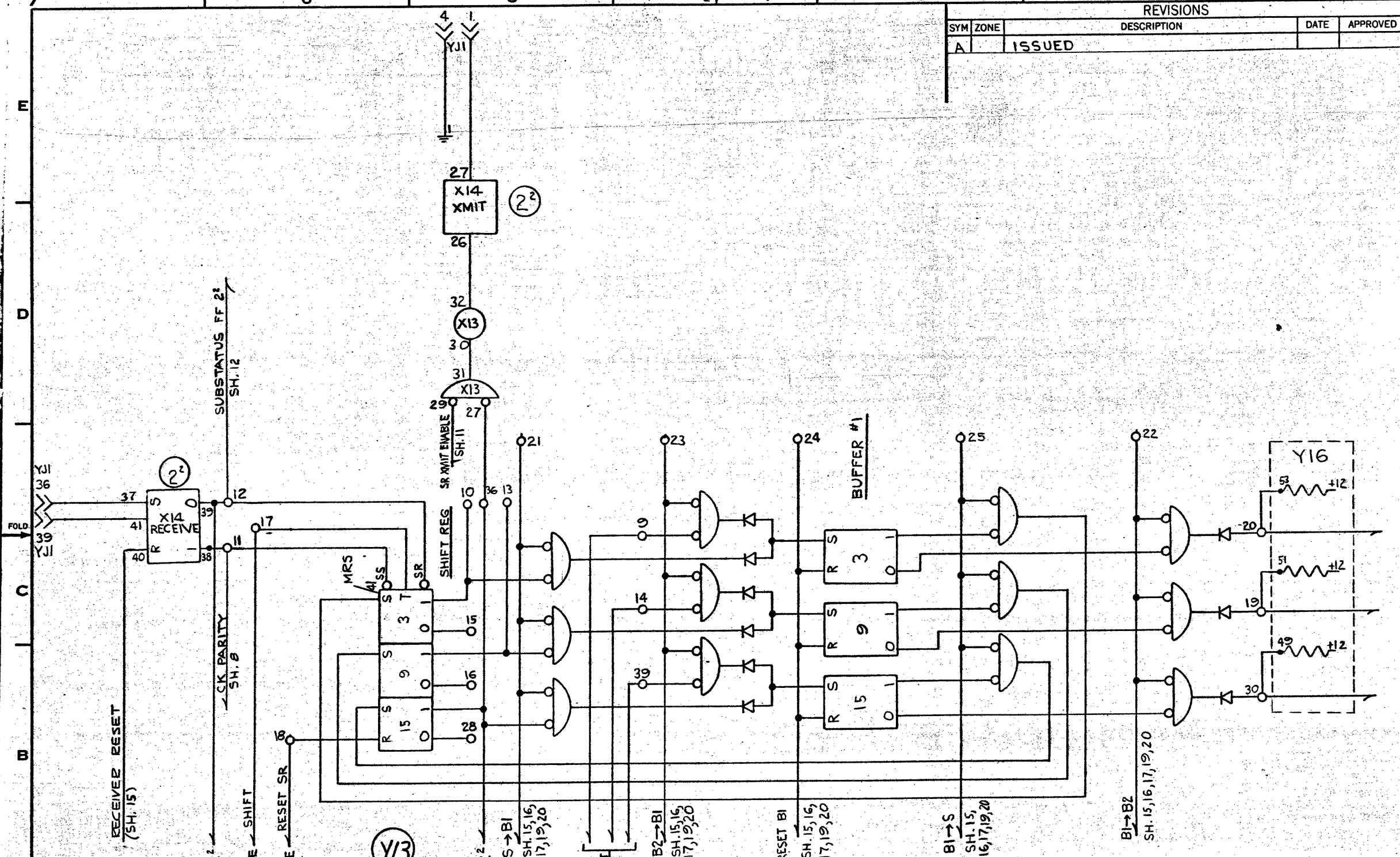
SIGNATURES		DATE
DRAWN	<i>N.C. Oetting</i>	JULY 22 1964
CHECKED		
ISSUED		
ENGRG	<i>W. Harvey</i>	Dec 9 1964
MFG		

GENERAL ELECTRIC		
COMPUTER DEPT LOC PHOENIX		
TITLE LOGIC		
BUFFER #1, SHIFT REGISTER,		
RECEIVERS & TRANSMITTERS		
FME DATANET-30 FCF ON 43D144327		
CONTRACT NO:		
CODE IDENT NO.	SIZE	DWG NO.
	C	43C144342
SCALE	WT CALC ACTUAL	SHEET 17 CONT ON 18

TO BUFFER #2 INPUT GATES  
SIZE C 43C144342 REV A



REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES - TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓

MATERIAL - GOVT OR COML

GE

SIGNATURES: *W.C. Oetting* (DRAWN), *W. Harvey* (ENG'G), *W. Harvey* (MFG)

DATE: JULY 22 1964

ISSUED: *July 23 1964*

TITLE: LOGIC BUFFER #1, SHIFT REGISTER, RECEIVERS & TRANSMITTERS

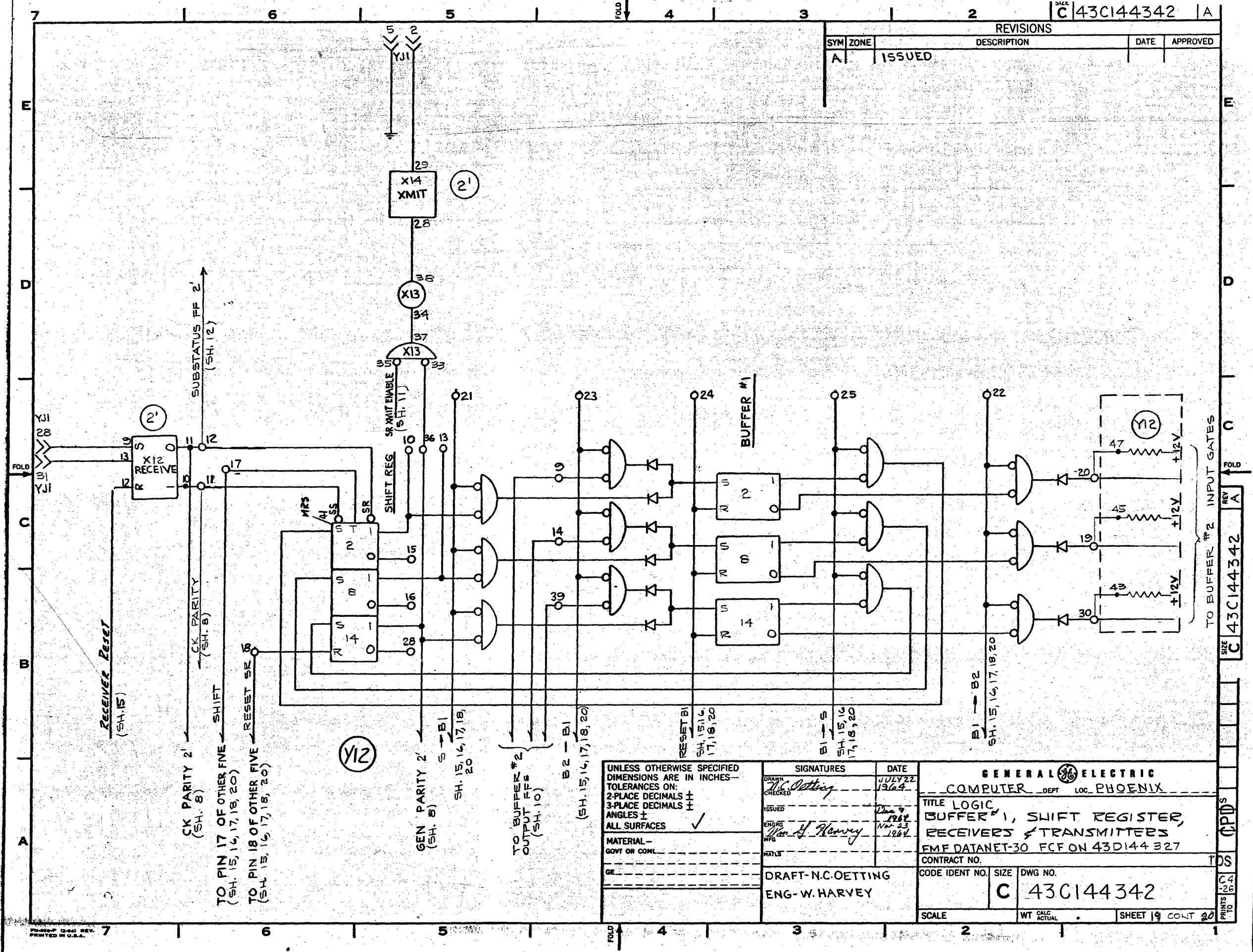
CONTRACT NO. FMF DATANET-30 FCF ON 43D144327

CODE IDENT NO. C 43C144342

SCALE: WT CALC ACTUAL

SHEET 8 CONT ON 9

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		



Receiver Reset (SH. 15)

CK PARITY 2' (SH. 8)

TO PIN 17 OF OTHER FIVE SHIFT (SH. 15, 16, 17, 18, 20)

TO PIN 18 OF OTHER FIVE RESET SR (SH. 15, 16, 17, 18, 20)

GEN PARITY 2' (SH. 8)

TO BUFFER #2 OUTPUT FFs (SH. 10)

B2 - B1 (SH. 15, 16, 17, 18, 20)

RESET B1 (SH. 15, 16, 17, 18, 20)

B1 - B2 (SH. 15, 16, 17, 18, 20)

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES - TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓ MATERIAL - GOVT OR COM. GE

SIGNATURES DATE  
 DRAWN N.C. Oetting JULY 22 1964  
 CHECKED  
 ISSUED  
 ENGR W. J. Harvey Nov 23 1964  
 DRAFT - N.C. OETTING  
 ENG - W. HARVEY

GENERAL ELECTRIC COMPUTER DEPT LOC. PHOENIX  
 TITLE LOGIC BUFFER #1, SHIFT REGISTER, RECEIVERS & TRANSMITTERS  
 FME DATANET-30 FCF ON 43D144 327  
 CONTRACT NO.  
 CODE IDENT NO. SIZE DWG NO.  
 C 43C144342  
 SCALE WT CALC ACTUAL SHEET 19 CONT 20

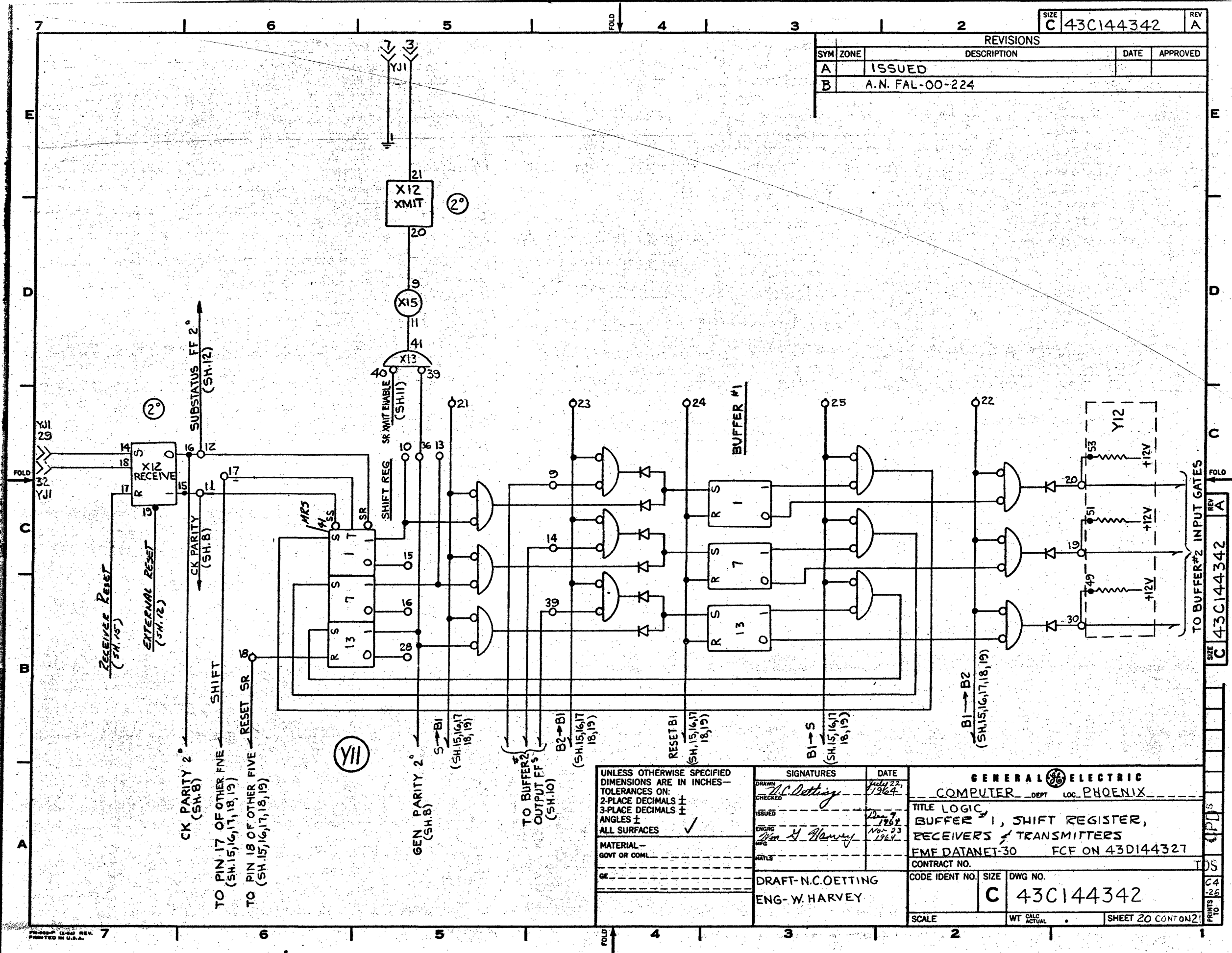
TO BUFFER #2 INPUT GATES

SIZE C 43C144342

REV A



REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		
B		A.N. FAL-00-224		

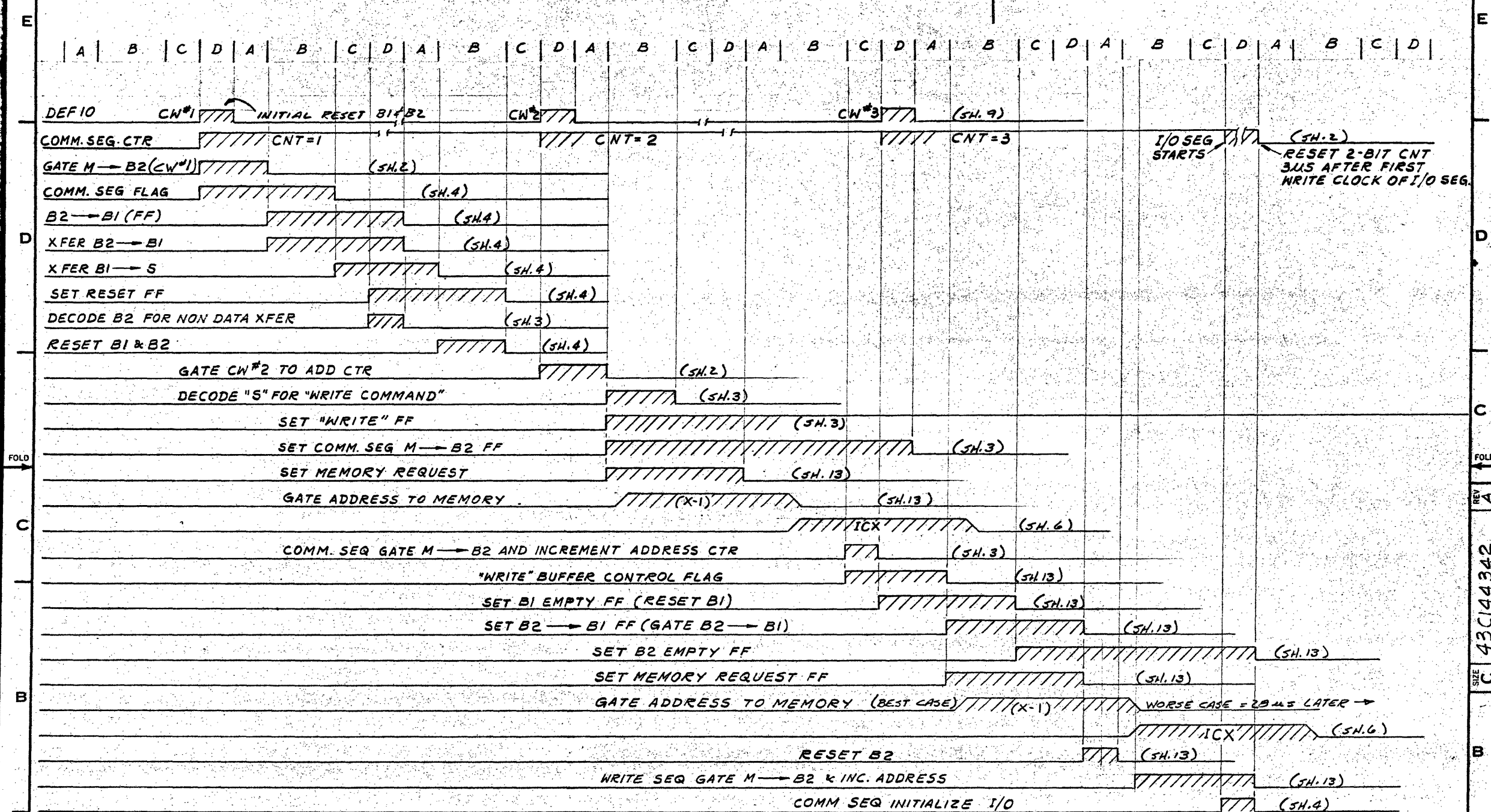


UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES—  
 TOLERANCES ON:  
 2-PLACE DECIMALS ±  
 3-PLACE DECIMALS ±  
 ANGLES ±  
 ALL SURFACES ✓  
 MATERIAL—  
 GOVT OR COML  
 GE

SIGNATURES  
 DRAWN *N.C. Oetting*  
 CHECKED  
 ISSUED  
 ENGRG *W. Harvey*  
 DATE  
 July 22, 1964  
 Draft  
 No. 23  
 1964

GENERAL ELECTRIC  
 COMPUTER DEPT LOC. PHOENIX  
 TITLE LOGIC  
 BUFFER #1, SHIFT REGISTER,  
 RECEIVERS & TRANSMITTERS  
 FME DATANET-30 FCF ON 43D144327  
 CONTRACT NO.  
 CODE IDENT NO. SIZE DWG NO.  
 C 43C144342  
 SCALE WT CALC ACTUAL SHEET 20 CONTON 21

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ISSUED		



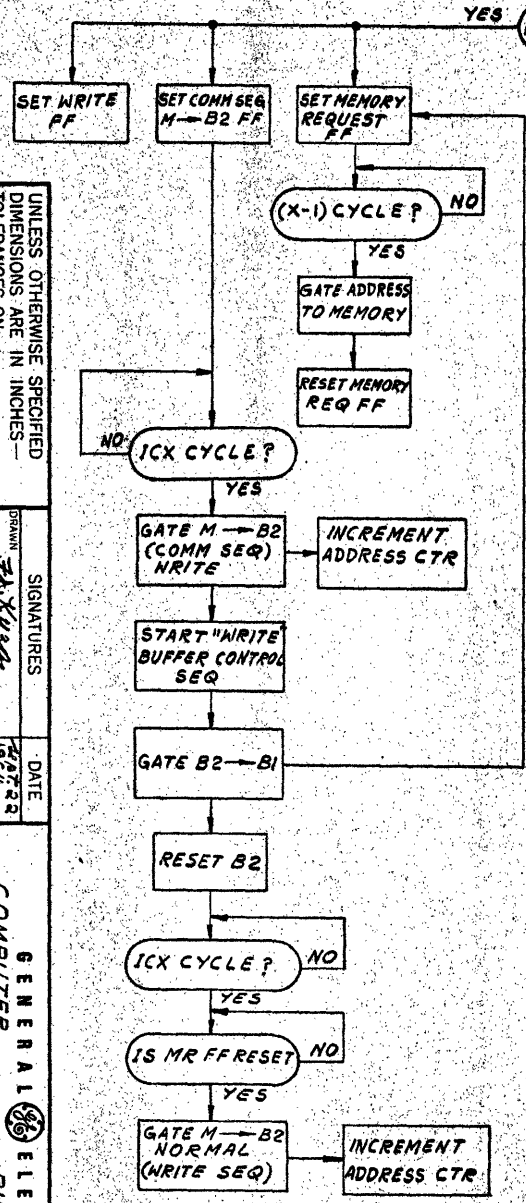
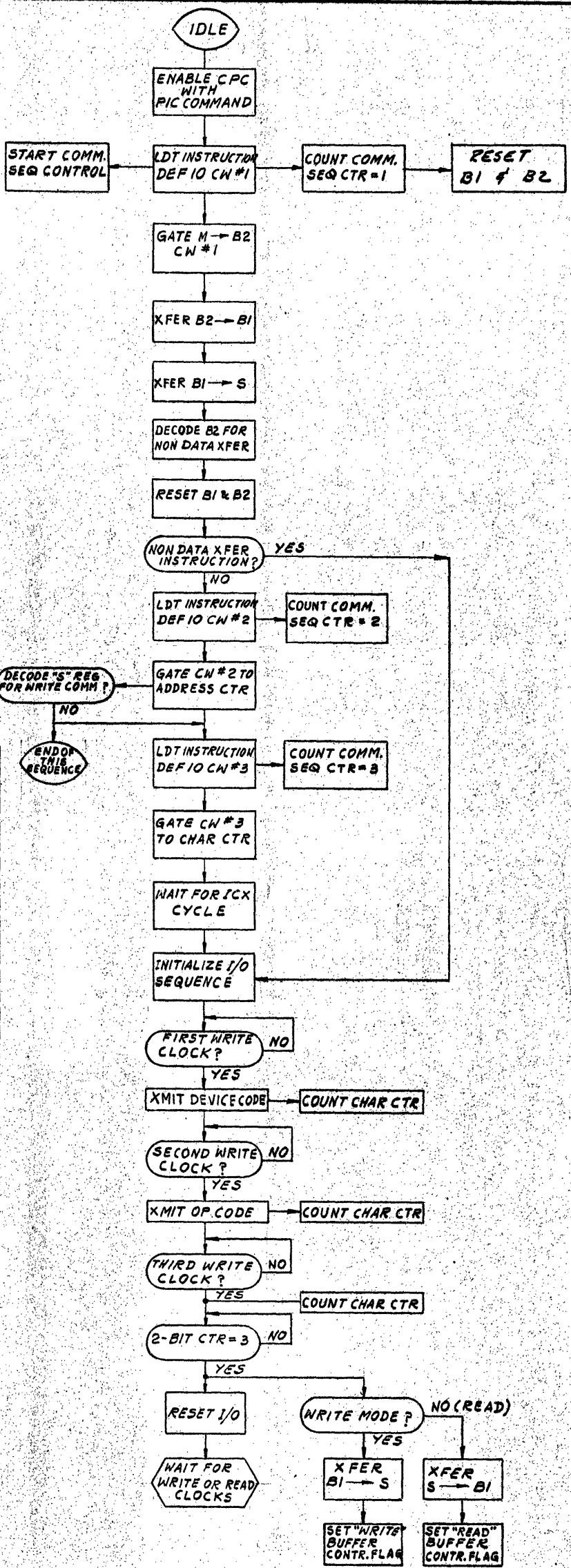
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES— TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓ MATERIAL— GOVT OR COM.	SIGNATURES	DATE	<b>GENERAL ELECTRIC</b> COMPUTER DEPT. LOC. PHOENIX, ARIZONA TITLE LOGIC TIMING CHART, COMMAND SEQUENCE, & I/O CONTRACT NO. FCF ON 43D144327 CODE IDENT NO. SIZE DWG NO. C 43C144342 SCALE WT. CALC. ACTUAL SHEET 21 CONT. ON 22
	DRAWN <i>F. Kuzan</i>	Sept 21 1964	
	CHECKED		
	ISSUED		
	ENGRG <i>W. Harvey</i>	Sept 21 1964	
	MATLS		

PH-2002 (2-6-62)  
PRINTED IN U.S.A.

FOLD

FOLD

FOLD



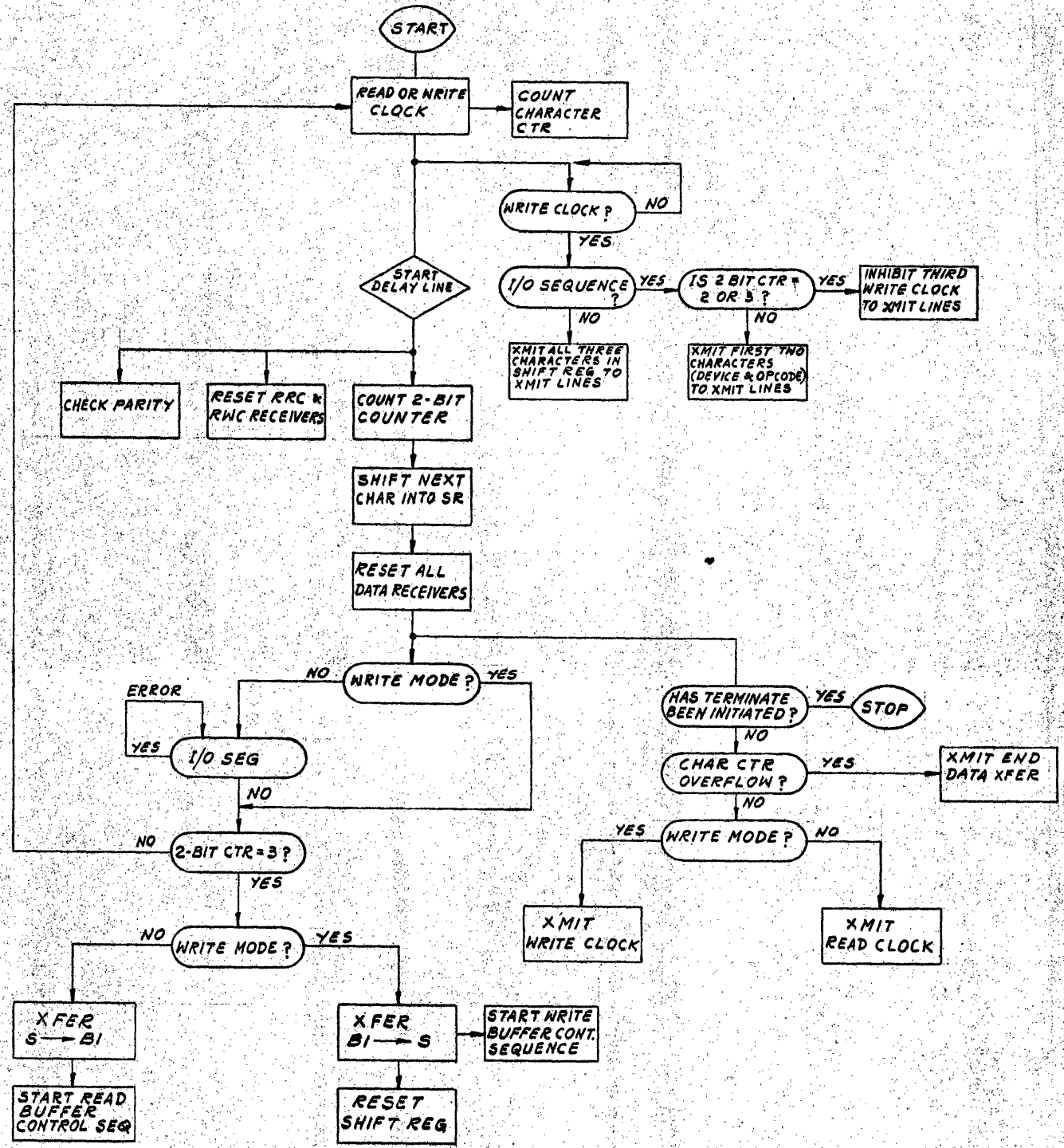
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES - TOLERANCES ON: 2-PLACE DECIMALS ± 3-PLACE DECIMALS ± ANGLES ± ALL SURFACES ✓ MATERIAL - GOVT OR COML

DESIGNED BY <i>W. K. Kuzan</i>	CHECKED BY <i>W. K. Kuzan</i>	ISSUED BY <i>W. K. Kuzan</i>	DATE 1/27/64
DRAWN BY <i>W. K. Kuzan</i>		DATE 1/27/64	
ENGINEER <i>W. K. Kuzan</i>			
MATERIAL <i>Aluminum</i>			
GOVT OR COML			
FME DATANET 30			
SCALE			
CODE IDENT NO.	SIZE	DWG NO.	REV
C	C	43C144342	A
SHEET 22 CONT ON 23			

GENERAL ELECTRIC  
COMPUTER DEPT. LOC. PHOENIX, ARIZ.  
TITLE LOGIC BLOCK DIAGRAM  
COMMAND SEQUENCE & I/O

43C144342  
REV A

SYMBOL ZONE	4	ISSUED	DATE	APPROVED
REVISIONS	2	DESCRIPTION		
SIZE	C	43C144342		
REV	4			



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES -  
 2-PLACE DECIMALS ±  
 3-PLACE DECIMALS ±  
 ALL SURFACES ✓

MATERIAL -  
 GOVT OR COM.

ENGINEER  
 W. HARVEY

SIGNATURES	DATE
<i>W. Harvey</i>	10/23/54
<i>W. Harvey</i>	10/23/54

FME DATANET 30

GENERAL ELECTRIC  
 COMPUTER DEPT. PHOENIX, ARIZ.  
 TITLE: LOGIC BLOCK DIAGRAM  
 DELAY LINE SEQUENCE  
 CODE IDENT NO. C 43C144342  
 SIZE DWG NO. FCF ON 43D/44327

SCALE: 1:1  
 WT. CAL. ACTUAL: 10S  
 SHEET 23 CONT. ON F

REV	DATE	APPROVED	DESCRIPTION	ISSUED	ZONE	SIZE
4				ISSUED		C 43C144342