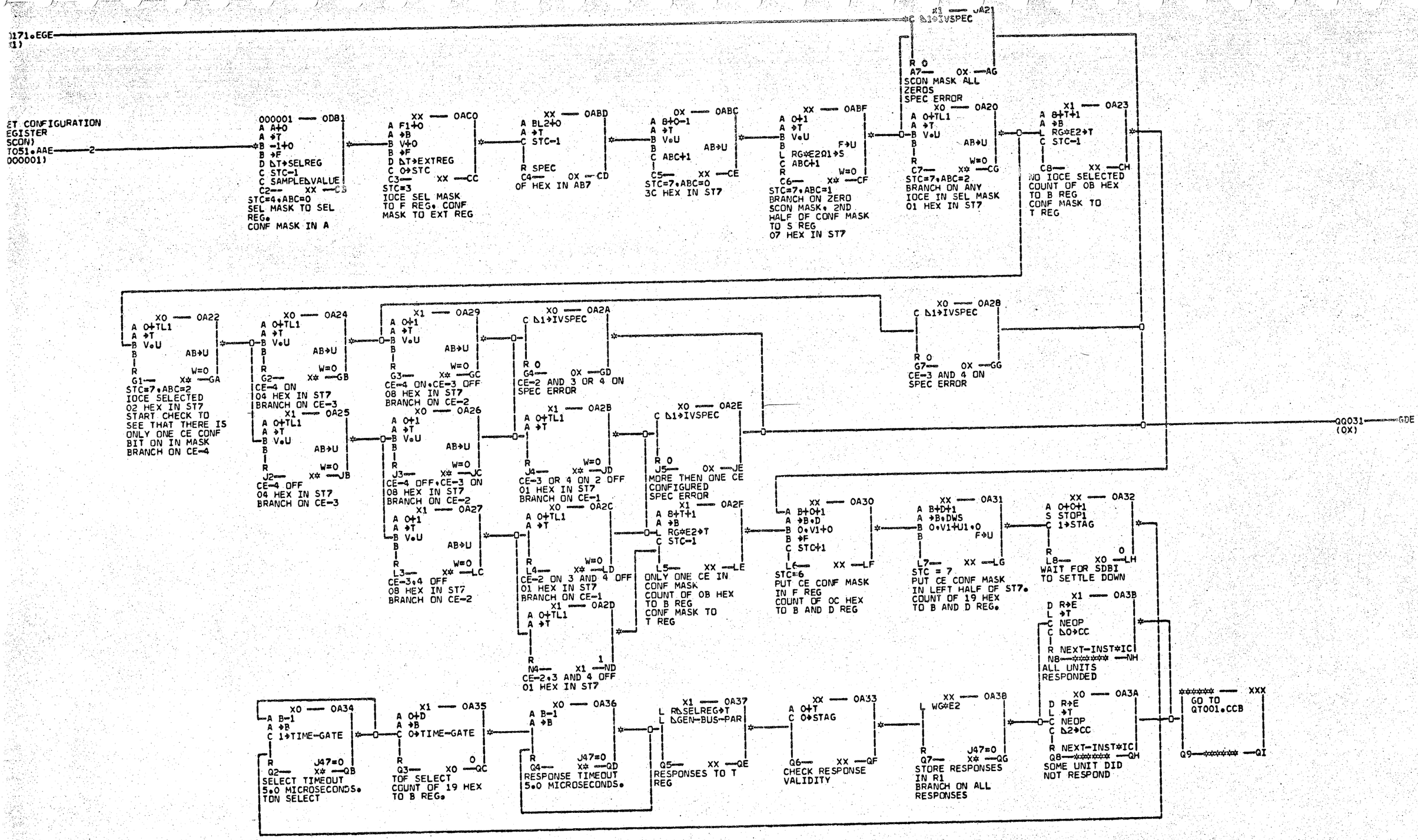
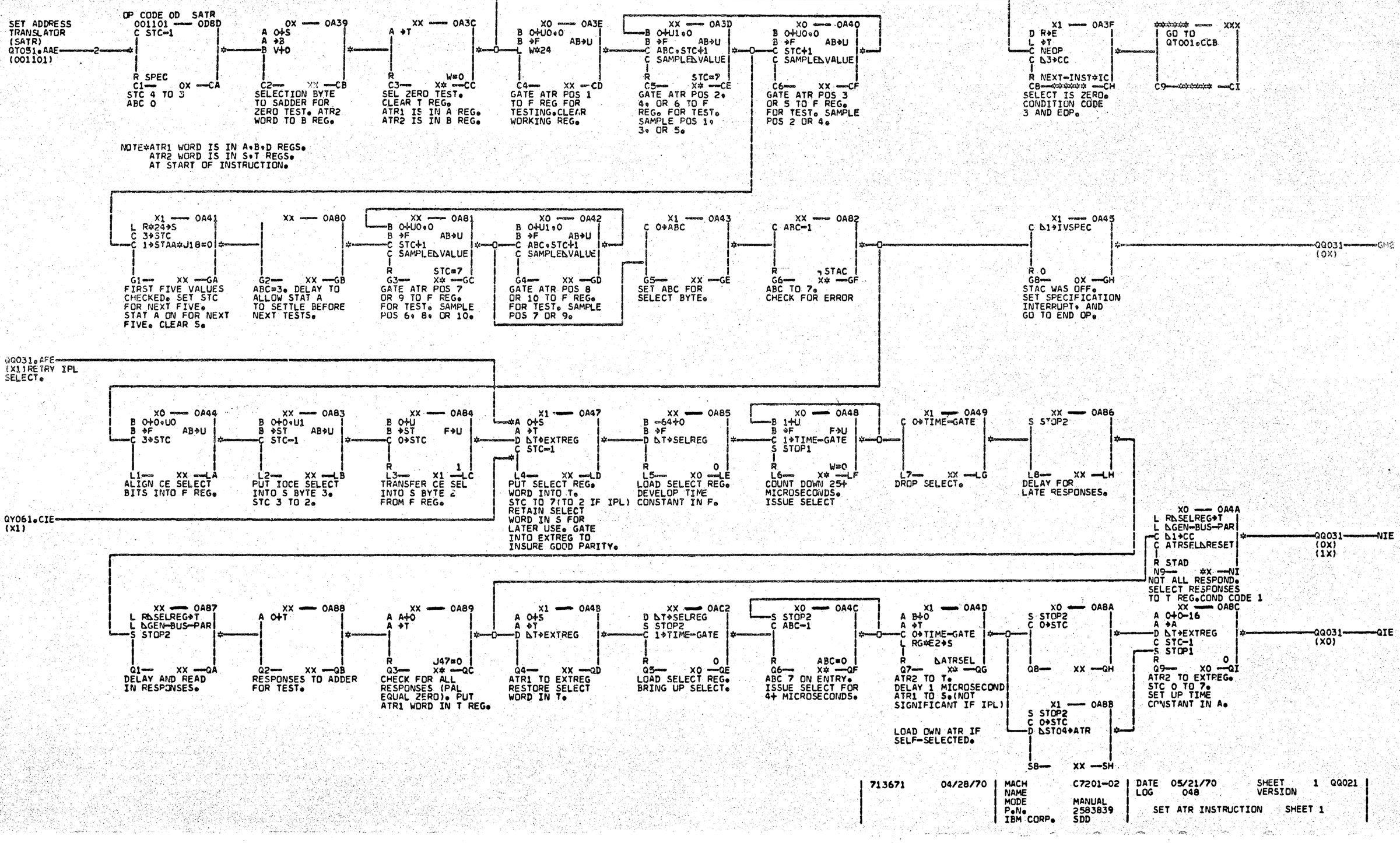
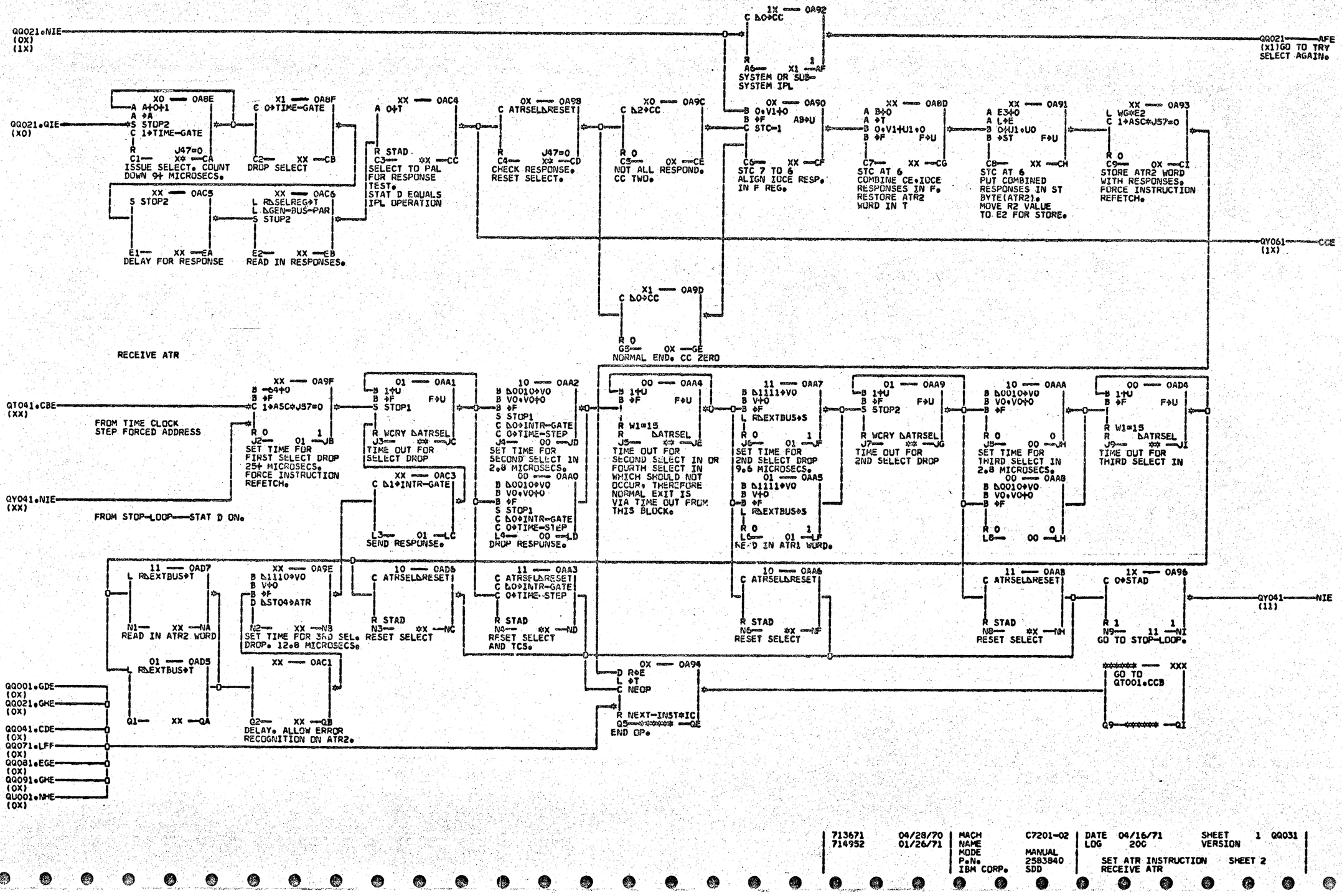
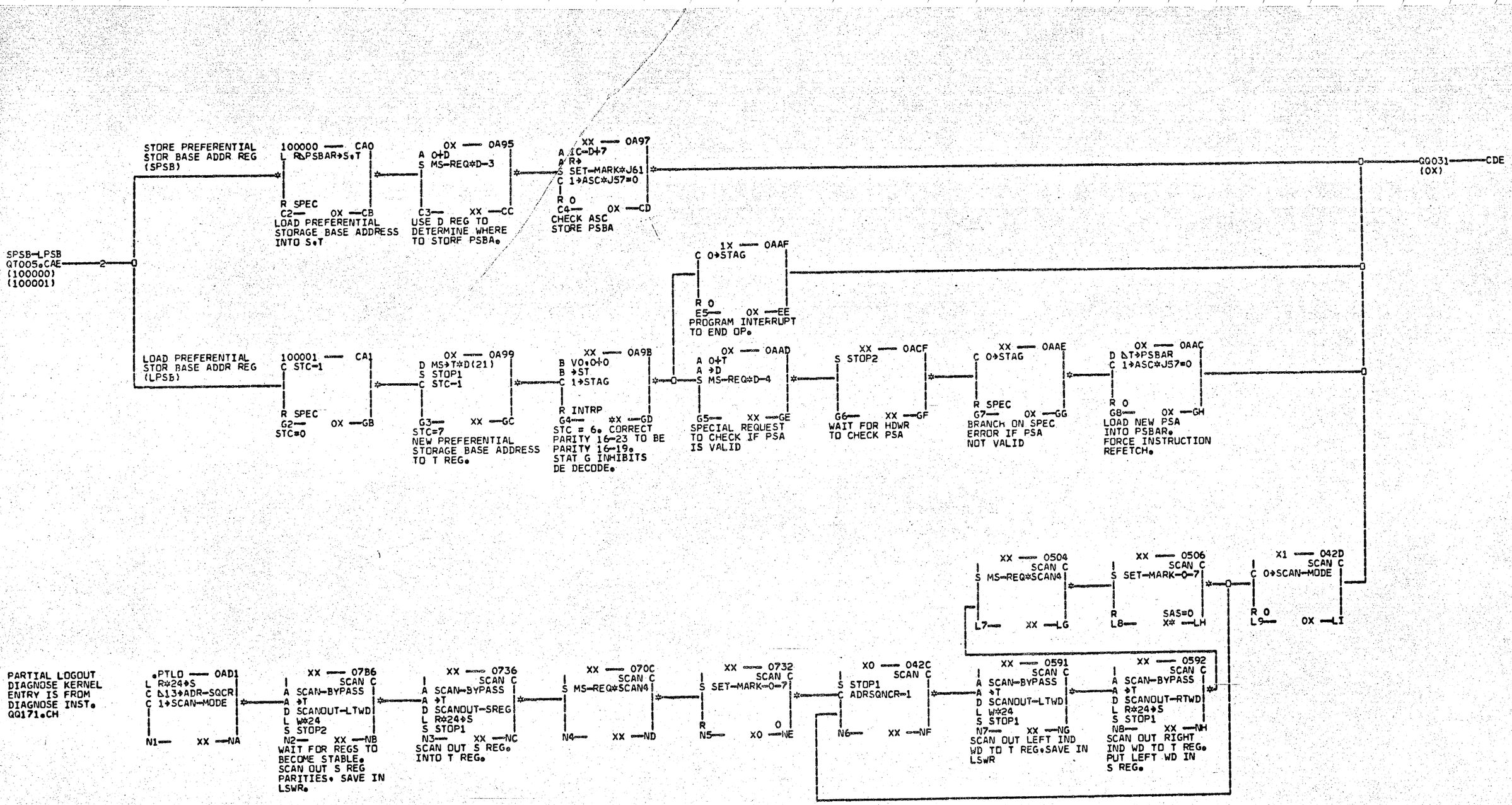


713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ001
		NAME		LOG 048	VERSION
		MODE	MANUAL	SET CONFIGURATION CONTROL REGISTER (SCON)	
		P•N•	2583838		
		IBM CORP•	SDD		


SET ADDRESS TRANSLATOR (SATR)
QT051•AAE (001101)
OP CODE OD SATR
001101 — OD8D
C STC=1
R SPEC
C1— OX —CA
STC 4 TO 3
ABC 0
OX — 0A39
A 0+S
A →B
B V+0
C2— XX —CB
SELECTION BYTE TO SADDER FOR ZERO TEST• ATR2 WORD TO B REG•
XX — 0A3C
A →T
R W=0
C3— X✲ —CC
SEL ZERO TEST• CLEAR T REG• ATR1 IS IN A REG• ATR2 IS IN B REG•
XO — 0A3E
B 0+U0•0
B →F AB→U
L W✲24
C4— XX —CD
GATE ATR POS 1 TO F REG FOR TESTING•CLEAR WORKING REG•
XX — 0A3D
B 0+U1•0
B →F AB→U
C ABC•STC+1
C SAMPLE△VALUE
R STC=7
C5— X✲ —CE
GATE ATR POS 2• 4• OR 6 TO F REG• FOR TEST• SAMPLE POS 1• 3• OR 5•
XO — 0A40
B 0+U0•0
B →F AB→U
C STC+1
C SAMPLE△VALUE
C6— XX —CF
GATE ATR POS 3 OR 5 TO F REG• FOR TEST• SAMPLE POS 2 OR 4•
X1 — 0A3F
D R→E
L →T
C NEOP
C △3→CC
R NEXT-INST✲IC
CB— ✲✲✲✲✲ —CH
SELECT IS ZERO• CONDITION CODE 3 AND EOP•
✲✲✲✲✲ — XXX
GO TO QT001•CCB
C9— ✲✲✲✲✲ —CI
NOTE✲ATR1 WORD IS IN A•B•D REGS• ATR2 WORD IS IN S•T REGS• AT START OF INSTRUCTION•
X1 — 0A41
L R✲24→S
C 3→STC
C 1→STAA✲J18=0
G1— XX —GA
FIRST FIVE VALUES CHECKED• SET STC FOR NEXT FIVE• STAT A ON FOR NEXT FIVE• CLEAR S•
XX — 0A80
G2— XX —GB
ABC=3• DELAY TO ALLOW STAT A TO SETTLE BEFORE NEXT TESTS•
XX — 0A81
B 0+U0•0
B →F AB→U
C STC+1
C SAMPLE△VALUE
R STC=7
G3— X✲ —GC
GATE ATR POS 7 OR 9 TO F REG• FOR TEST• SAMPLE POS 6• 8• OR 10•
XO — 0A42
B 0+U1•0
B →F AB→U
C ABC•STC+1
C SAMPLE△VALUE
G4— XX —GD
GATE ATR POS 8 OR 10 TO F REG• FOR TEST• SAMPLE POS 7 OR 9•
X1 — 0A43
C 0→ABC
G5— XX —GE
SET ABC FOR SELECT BYTE•
XX — 0A82
C ABC=1
R ¬STAC
G6— X✲ —GF
ABC TO 7• CHECK FOR ERROR
X1 — 0A45
C △1→IVSPEC
R 0
G8— OX —GH
STAC WAS OFF• SET SPECIFICATION INTERRUPT• AND GO TO END OP•
QQ031 (OX) —GM
QQ031•AFE (X1) RETRY IPL SELECT•
QY061•CIE (X1)
XO — 0A44
B 0+0•U0
B →F AB→U
C 3→STC
L1— XX —LA
ALIGN CE SELECT BITS INTO F REG•
XX — 0A83
B 0+0•U1
B →ST AB→U
C STC=1
L2— XX —LB
PUT IOCE SELECT INTO S BYTE 3• STC 3 TO 2•
XX — 0A84
B 0+U
B →ST F→U
C 0→STC
R 1
L3— X1 —LC
TRANSFER CE SEL INTO S BYTE 2 FROM F REG•
X1 — 0A47
A 0+S
A →T
D △T→EXTREG
C STC=1
L4— XX —LD
PUT SELECT REG• WORD INTO T• STC TO 7(TO 2 IF IPL) RETAIN SELECT WORD IN S FOR LATER USE• GATE INTO EXTREG TO INSURE GOOD PARITY•
XX — 0A85
B =64+0
B →F
D △T→SELREG
R 0
L5— XO —LE
LOAD SELECT REG• DEVELOP TIME CONSTANT IN F•
XO — 0A48
B 1+U
B →F F→U
C 1→TIME-GATE
S STOP1
R W=0
L6— X✲ —LF
COUNT DOWN 25+ MICROSECONDS• ISSUE SELECT
X1 — 0A49
C 0→TIME=GATE
L7— XX —LG
DROP SELECT•
XX — 0A86
S STOP2
L8— XX —LH
DELAY FOR LATE RESPONSES•
XO — 0A4A
L R△SELREG→T
L △GEN-BUS-PAR
C △1→CC
C ATRSEL△RESET
R STAD
N9— ✲X —NI
NOT ALL RESPOND• SELECT RESPONSES TO T REG•COND CODE 1
QQ031 (OX) (1X) —NIE
XX — 0A87
L R△SELREG→T
L △GEN-BUS-PAR
S STOP2
Q1— XX —QA
DELAY AND READ IN RESPONSES•
XX — 0A88
A 0+T
Q2— XX —QB
RESPONSES TO ADDER FOR TEST•
XX — 0A89
A A+0
A →T
R J47=0
Q3— X✲ —QC
CHECK FOR ALL RESPONSES (PAL EQUAL ZERO)• PUT ATR1 WORD IN T REG•
X1 — 0A4B
A 0+S
A →T
D △T→EXTREG
Q4— XX —QD
ATR1 TO EXTREG RESTORE SELECT WORD IN T•
XX — 0AC2
D △T→SELREG
S STOP2
C 1→TIME-GATE
R 0
Q5— XO —QE
LOAD SELECT REG• BRING UP SELECT•
XO — 0A4C
S STOP2
C ABC=1
R ABC=0
Q6— X✲ —QF
ABC 7 ON ENTRY• ISSUE SELECT FOR 4+ MICROSECONDS•
X1 — 0A4D
A B+0
A →T
C 0→TIME-GATE
L RG✲E2→S
R △ATRSEL
Q7— X✲ —QG
ATR2 TO T• DELAY 1 MICROSECOND ATR1 TO S•(NOT SIGNIFICANT IF IPL)
LOAD OWN ATR IF SELF-SELECTED•
XO — 0A8A
S STOP2
C 0→STC
Q8— XX —QH
X1 — 0A8B
S STOP2
C 0→STC
D △ST04→ATR
S8— XX —SH
XX — 0A8C
A 0+0-16
A →A
D △T→EXTREG
C STC-1
S STOP1
R 0
Q9— XO —QI
ATR2 TO EXTREG• STC 0 TO 7• SET UP TIME CONSTANT IN A•
QQ031 (OX) —QIE
Q0021
713671 04/28/70
MACH C7201-02
NAME
MODE MANUAL
P•N• 2583839
IBM CORP• SDD
DATE 05/21/70 SHEET 1 QQ021
LOG 048 VERSION
SET ATR INSTRUCTION SHEET 1



713671 714952	04/28/70 01/26/71	MACH NAME MODE P•N• IBM CORP•	C7201-02 MANUAL 2583840 SDD	DATE 04/16/71 LOG 20C	SHEET 1 QQ031 VERSION	SET ATR INSTRUCTION RECEIVE ATR	SHEET 2		



QQ041

713671	11/19/69	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ041
		NAME		LOG 048	VERSION
		MODE	MANUAL	LOAD•STORE PREF STOR BASE ADDR AND DIAGNOSE KERNEL AD1	
		P•N•	2583841		
		IBM CORP•	SDD		

MOVE WORD (MVW) QT031•EAE (011000)

MOVE WORD OP CODE D8
011000 — E98
A △2+△2
A →T
D D→STC
L R*24→S
C1— XX —CA
NEXT INSTR ADDR INTO S TO SAVE. 4 TO T (OVERLAP TEST CONSTANT)

XX — 0AB6
A O+S
A →△K
D IC→ABC
S MS=REQ*IC-4
C2— XX —CB
SAVE NEXT INSTR ADDR. IN K. REQUEST SOURCE OPERAND.

XX — 0AB7
A IC+O+8
A →IC
S STOP1
C ABC•STC=1
C3— XX —CC
WAIT ONE CYCLE UPDATE SOURCE ADDR TO NEXT DOUBLE WORD. ABC AND STC SET FOR WORD BOUNDARY TEST.

XX — 0AB9
A IC-D
A →B
C4— XX —CD
OVERLAP TEST. RESULT TO B.

XX — 0ABB
A B=T
D MS→ST
L W*24
C 1→STAA*J47=0
R J47=0
C5— X* —CE
SUBTRACT 4 FOR SINGLE OVERLAP TEST. STAT A ON FOR ONE WORD OVERLAP. FIRST OPND TO S•T. SAVE RIGHT SOURCE OPND IN WKG• REG•

X1 — 0A4F
G 1→STAA*J47=0
R ABC≠3
A6— X* —AF
STAT A ON FOR DOUBLE WORD OVERLAP.

XO — 0A4E
R ABC≠3
C6— X* —CF

X0 — 0A50
C 1→ASC*J57=0
R STC≠3
A7— X* —AG
SOURCE BNDRY. SINGLE WORD.

X1 — 0A51
C 1→ASC*J57=0
R STC≠3
C7— X* —CG
SOURCE BNDRY. NOT SINGLE. SET ASC TO REFETCH NEXT INSTRUCTION.

**** DESIGN NOTE:
**** RDS WORDS USED IN MOVE WORD
**** MICROPROGRAM MUST BE IN EITHER A OR B PLANE. THIS INDICATES IC IS IN K REG. TO RECOVERY PROGRAM.

X1 — 0A53
R ABC=7
G1— X* —GA
DEST BNDRY NOT SINGLE WORD. SOURCE NOT SINGLE.

X1 — 0A55
R STC=7
G2— X* —GB
SOURCE BNDRY. DOUBLE. DEST NOT SINGLE.

X1 — 0AB1
S MS=REQ*D-3
R E23=0
G3— *X —GC
SOURCE BOUNDARY DOUBLE•DESTINATION DOUBLE BOUNDARY.

X1 — 0AB3
R STC=7
G5— X* —GE
SOURCE SINGLE BNDRY. DEST NOT SINGLE.

X1 — 0AB5
L R*24→S
C E23=1
R E23=0 STAA
G6— *X —GF
SOURCE SINGLE BNDRY. DESTINATION DOUBLE BOUNDARY. RIGHT SOURCE OPND. TO S. REDUCE WORD COUNT.

STAT A ON IF HIGH SPEED WORD OVERLAP.

QQ091 — GFE (00•01•10•11)

QQ081 — GCE (0X•1X)

XO — 0A54
A O+△K
A →IC
C △1→IVSPEC
L2— OX —LB
SOURCE OFF BNDRY. SPECIFICATION ERROR

XO — 0AB0
A O+△K
A →IC
C △1→IVSPEC
L3— OX —LC
DEST OFF BNDRY. SPECIFICATION ERROR

XO — 0AB4
A O+△K
A →IC
C △1→IVSPEC
L6— OX —LF
DEST OFF BNDRY. SPECIFICATION ERROR

QQ031 — LFF (OX)END OP.

XO — 0A56
A O+△K
A →IC
C △1→IVSPEC
N2— OX —NB
SOURCE OFF BNDRY. SPECIFICATION ERROR

XO — 0AB2
A O+D
S MS=REQ*D-3
C 1→STAB*W=0
R E23=0
N5— *X —NE
SOURCE SINGLE BOUNDARY. DEST. SINGLE BOUNDARY. TURN ON STAT B TO INDICATE THIS BOUNDARY CONDITION.

OX — 0AB8
S SET-MARK*J61
R STAA
N6— X* —NF
STORE FROM T

QQ081 — NFE (XO•X1)

STAT A ON IF HIGH SPEED WORD OVERLAP.

XO — 0A52
A O+S
A →T
R ABC=7
Q1— X* —QA
DEST BNDRY SINGLE WORD. SOURCE NOT SINGLE. LEFT SOURCE WORD FROM S TO T.

QQ091 — QAE (X1)

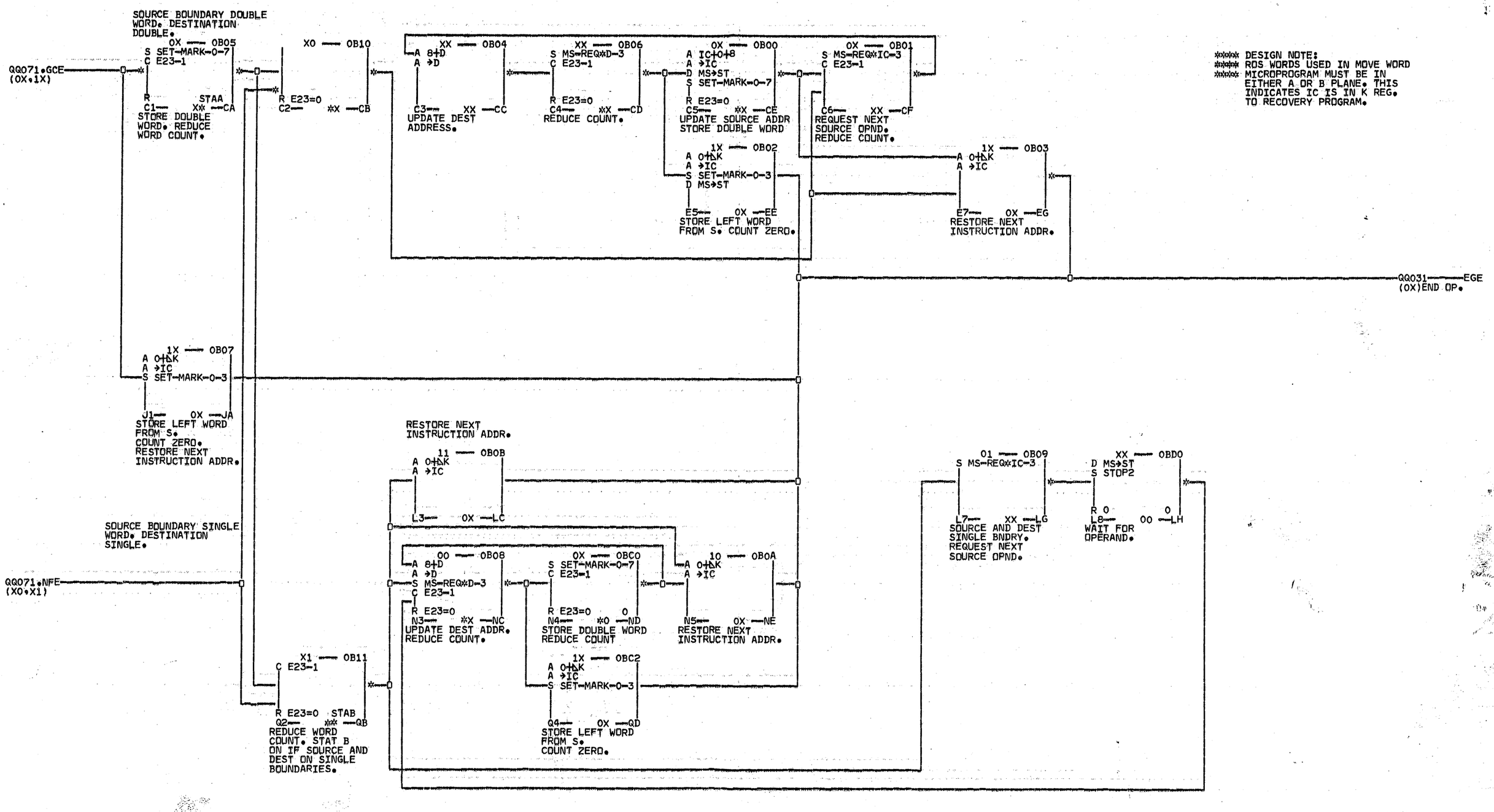
SOURCE BOUNDARY DOUBLE WORD. DESTINATION BOUNDARY SINGLE WORD.

COUNT ZERO. STORE FROM T. RESTORE NEXT INSTRUCTION ADDRESS.

1X — 0ABA
A O+△K
A →IC
S SET-MARK*J61
S6— OX —SF

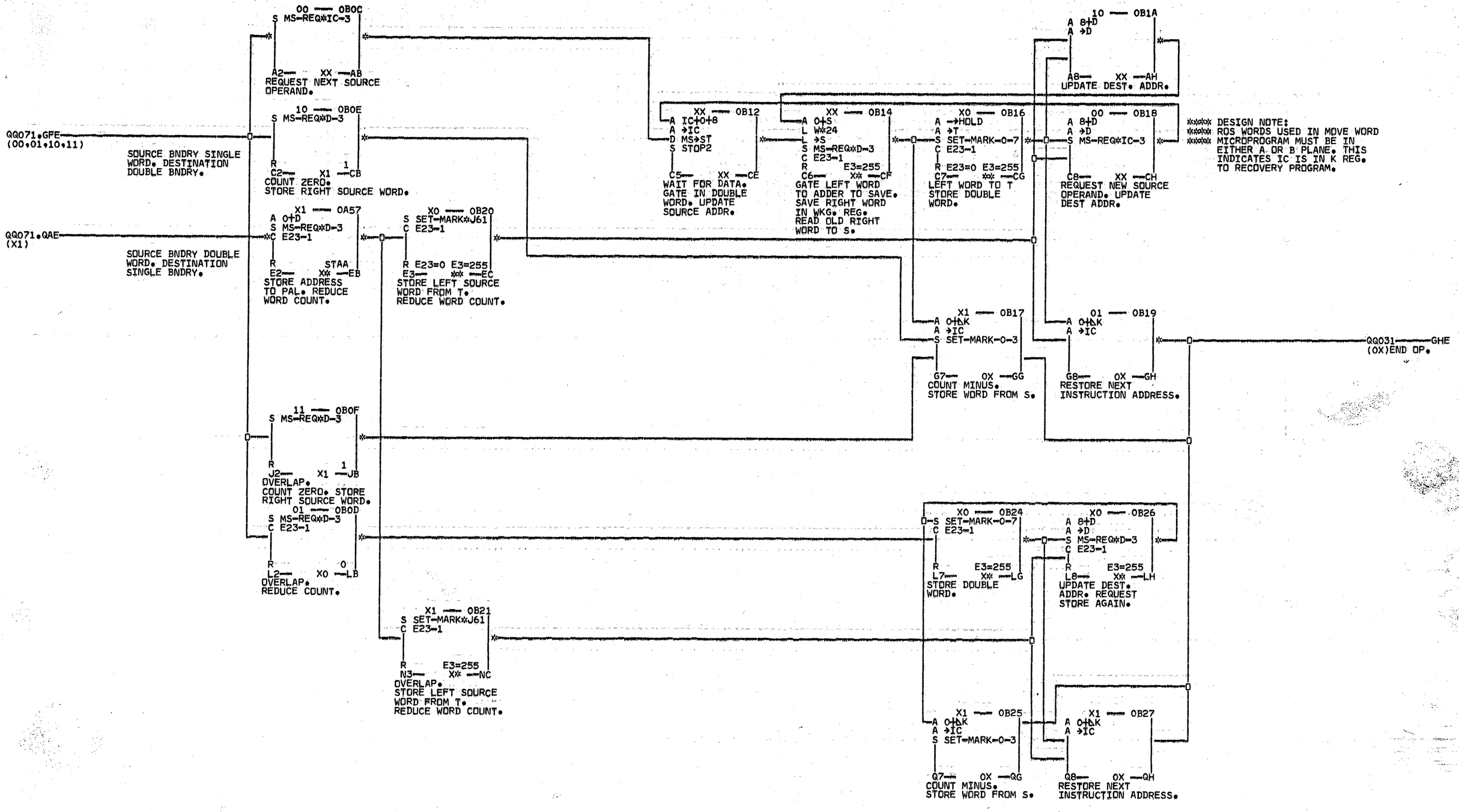
713671	04/28/70	MACH	C7201-02	DATE 05/22/72	SHEET 1 QQ071
714952	01/26/71	NAME		LOG 897	VERSION
717117	04/24/72	MODE	MANUAL	MOVE WORD INSTRUCTION SHEET 1	
		P•N•	2583842		
		IBM CORP.	SDD		

QQ071

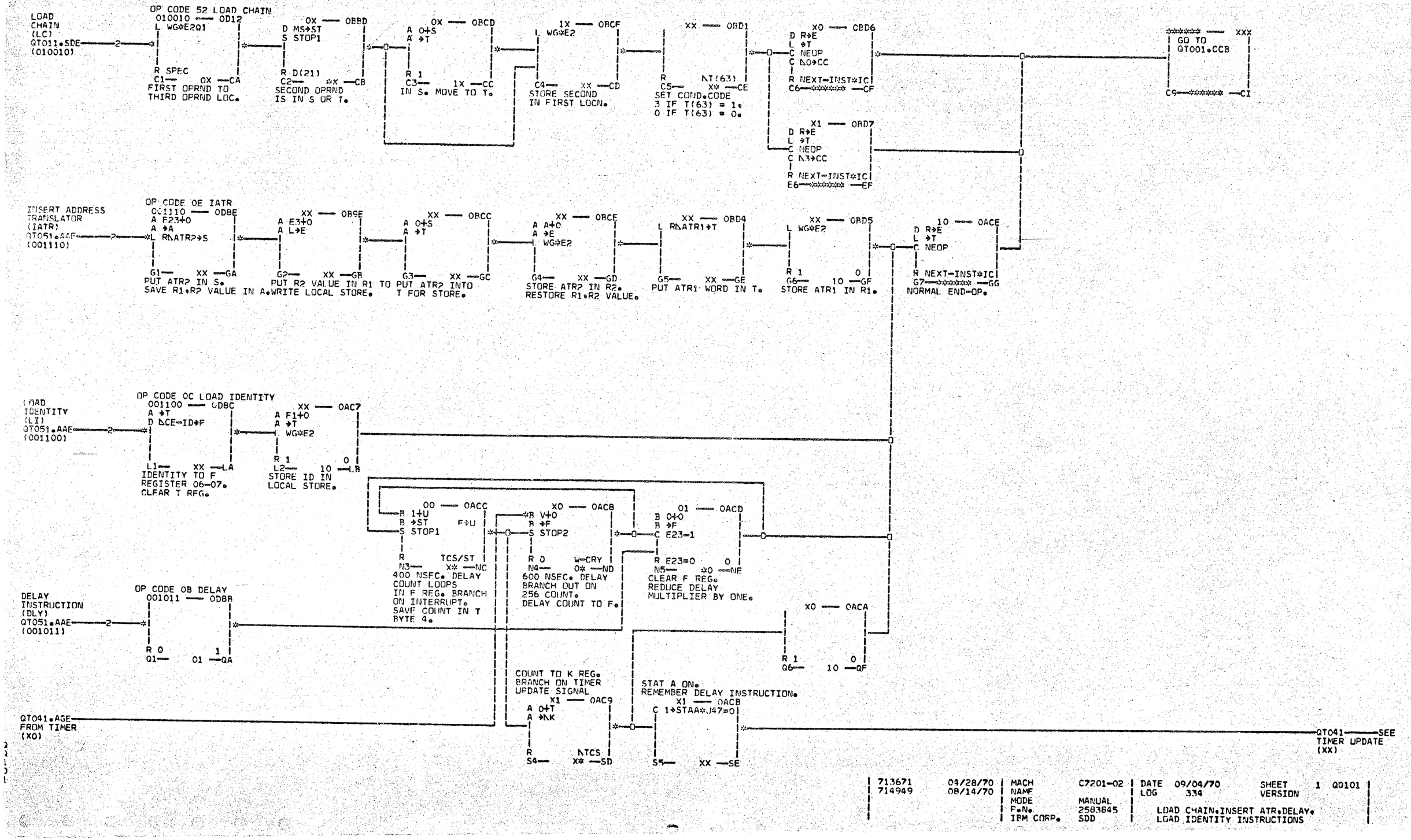


713671	04/28/70	MACH	C7201-02	DATE 05/22/72	SHEET 1
714949	08/14/70	NAME		LOG 897	VERSION
714952	01/26/71	MODE	MANUAL		
717117	04/24/72	P.N.	→ 2583843	MOVE WORD INSTRUCTION SHEET 2	
		IBM CORP.	SDD		

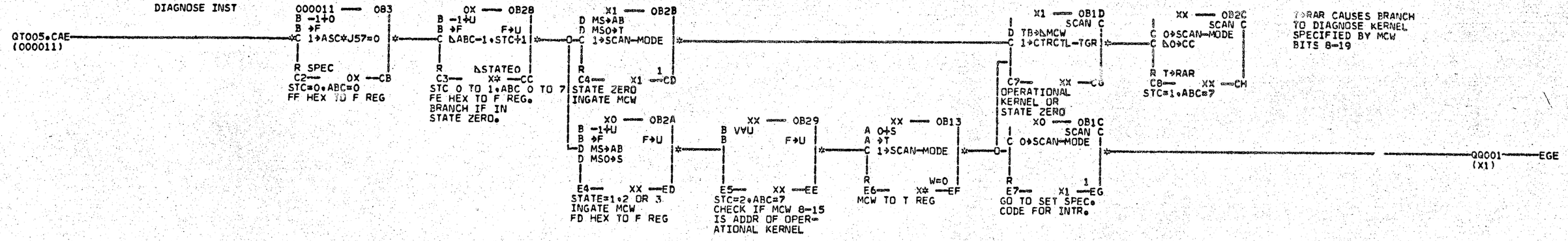
QQ081



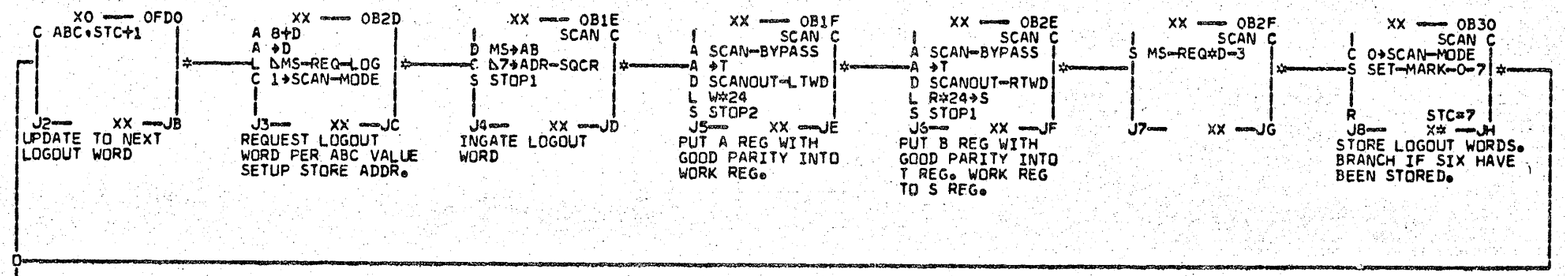
713671	04/28/70	MACH	C7201-02	DATE 05/22/72	SHEET I 00091
714952	01/26/71	NAME		LOG 897	VERSION
717117	04/24/72	MODE	MANUAL	MOVE WORD INSTRUCTION SHEET 3	
		P.N.	2583844		
		IBM CORP.	SDD		



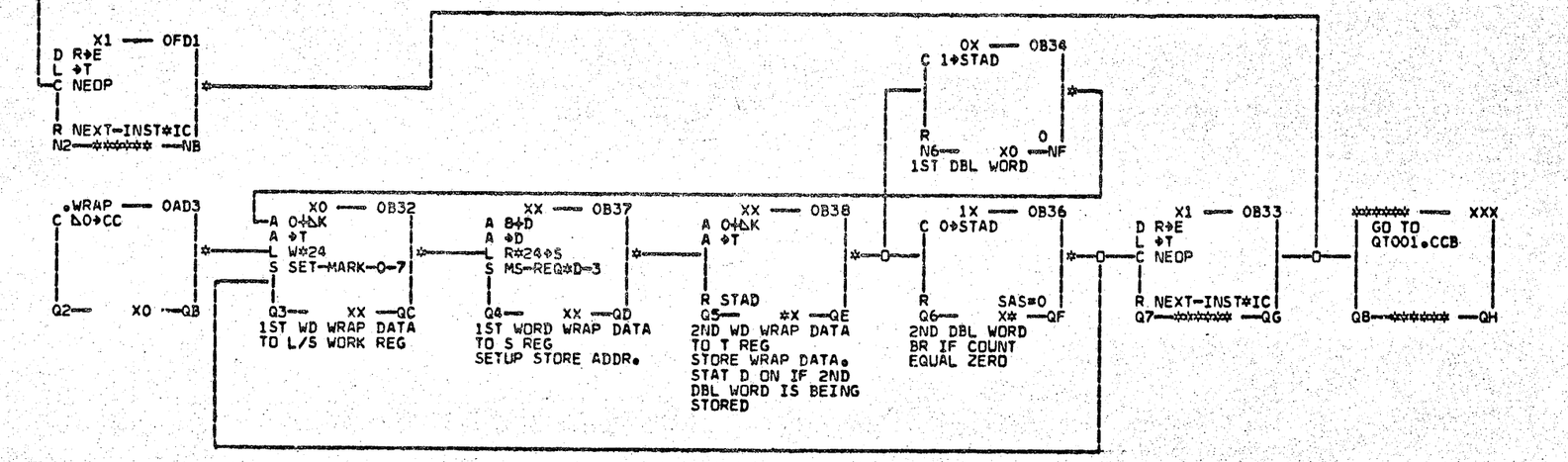
713671	04/28/70	MACH	C7201-02	DATE	09/04/70	SHEET	1 QQ101
714949	08/14/70	NAME		LOG	334	VERSION	
		MODE	MANUAL				
		P.N.	2583645		LOAD CHAIN•INSERT ATR•DELAY•		
		IBM CORP.	SDD		LOAD IDENTITY INSTRUCTIONS		



LOGOUT MAIN STORAGE
DIAGNOSE KERNEL
ENTRY IS FROM
DIAGNOSE INST
QQ171•CH



RESET CHECKS
DIAGNOSE KERNEL
ENTRY IS FROM
DIAGNOSE INST
QQ171•CH

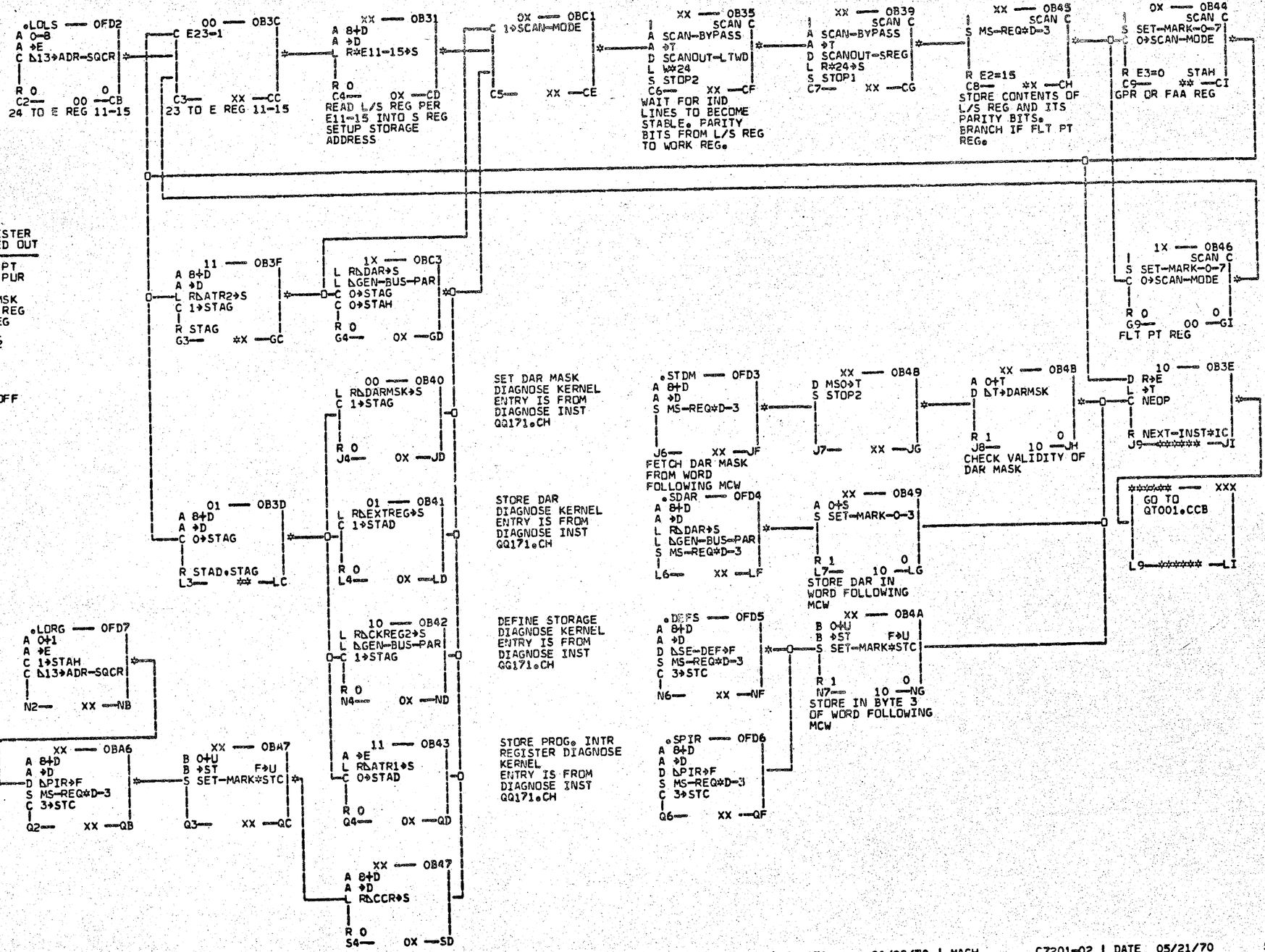


WRAP
DIAGNOSE KERNEL
ENTRY IS FROM
DIAGNOSE INST
QQ171•CH

QQ171

713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ171
		NAME		LOG 048	VERSION
		MODE	MANUAL	DIAGNOSE INSTRUCTION AND	
		P•N•	2583846	KERNELS FD0•FD1	
		IBM CORP•	SDD		

LOGOUT LOCAL
STORAGE REGISTERS
DIAGNOSE KERNEL
ENTRY IS FROM
DIAGNOSE INST
QQ171.CH



E REG 11-15	STAT H	STAT D	STAT G	REGISTER LOGGED OUT
16-23	OFF	OFF	OFF	FLT PT
00-15	OFF	OFF	OFF	GEN PUR
01	ON	OFF	OFF	CCR
01	ON	OFF	OFF	DARMSK
01	ON	OFF	ON	EXT REG
01	ON	ON	OFF	CKREG
01	ON	ON	ON	ATR1
00	ON	OFF	OFF	ATR2
00	ON	OFF	ON	DAR

E3 EQUAL ZERO AND STAT H OFF
MEANS LOGOUT COMPLETE

RADAR AND BEACON INITIALIZATION.BEACON HEADER ANALYSIS.

GPRS 12.13 UNLOADED INTO STORAGE WORK AREA STARTING AT SORT BIN BASE ADDRESS. GPRS WILL BE USED AS WORK REGISTERS AND WILL BE RESTORED AT END OF INSTRUCTION.

CONVERT AND SORT SYMBOLS (CSS)
QT051.AAE ——2——
(000010)
R1=2 FOR BEACON DATA. R1=0 FOR RADAR OR SS DATA.
QQ511.CIE (000010)
RE-ENTER CSS FROM INTERRUPT ROUTINE.

000010 — 0D82
A 0+T
A +D
B -64+0
B +F
R R&GP8+T
S MS=REQ*D=3
C2— XX —CB
FETCH PRIME DATA. SORT BIN BASE ADDRESS TO T. ABC=0.STC=4.

XX — 0C0C
A 0+D
A +D&K
L R&GP10+S
C D0+CC
C3— XX —CC
PRIME DATA ADDRESS TO K REG.WORD COUNT TO S.CC SET TO ZERO IN CASE NO OUTPUT DURING THIS EXECUTION.

XX — 0C0D
A 0+T
A +D
B VO.0*U
B F+U
L R&GP13+T
S MS=REQ*D=3
C 1+STAA*W*0
C4— XX —CD
SORT BIN BASE ADDRESS TO D.STORE GPRS 12.13. SET STAT A IF RIGHT WORD INDICATOR OFF.

XX — 0C0E
A 0+S
D MS+AB
L R&GP12+S
S SET-MARK=0=7
C 0+STC
D CON+E3
R E2=0/
C5— *X —CE
PRIME DATA TO AB. CHECK FOR WORD COUNT=0.0 TO E3. BRANCH IF RADAR DATA.

1X — 0C1A
A B+D
A +DWS
B &1000+VO
B VO.0+0.U0
B +F
S MS=REQ*D=4
C STC+1
R J57=0
A6— X* —AF
RADAR DATA.FETCH SECOND DOUBLE WORD OF SORT BIN BASE TO RESTORE OLD HEADER.OC TO F.STC.0 TO 1. BRANCH IF WORD COUNT=0. ——QQ211——AFF (X1)INPUT WORD COUNT=0.ABC=0. STC=1.F=1C.

0X — 0C18
A 0+&K
A +DWS
B &1000+VO
B VO.0+0.U0
B +F
C STC+1
R J57=0
C6— X* —CF
BEACON DATA.PRIME ADDRESS TO D.1C TO F.STO.STC.0 TO 1. BRANCH IF WORD COUNT=0.

X0 — 0C1C
B &1001+VO
B VO.VO+0
B +F1
L R&GP11+S
C SIGNS+STATS
C7— X0 —CG
NINE TO F1 FOR CONTROL BRANCH LATER.MASK CONSTANTS TO S.STAT C ON FOR ID IN PAGING ADDRESS EXCEPTION INTERRUPT ROUTINE.

Y0 — 0C0A
A 0+1
B +FO
D J7+ABC
R E2=0/ STAA
C9— *X —CI
ABC.0 TO 1.NEXT CYCLE.BRANCH IF RADAR DATA. BRANCH IF RW INDICATOR OFF(STAT A). ——QQ251——CIE (11)RADAR DATA RW IND OFF. ABC=0.1.STC=1. (10)RADAR DATA INSTRUCTION RE-ENTRY. PROCESS UDD WORD.F=0C. ABC=0.1.STC=1.

QQ251.CIE (X1)RADAR HEADER PROCESSED. ABC=0. STC=1.

00 — 0C10
A 8+D
A +D
B &1000+VO
B V.U
B AB+U
L R&GP11+S
C ABC+1
C 1+STAA*W*0
G1— XX —GA
BEACON DATA.IGNORE RW IND.COMPARE HEADER BIT.MASK CONSTANT TO S.PRIME ADDRESS +8.ABC.1 TO 2.STAT A ON FOR BEACON.

01 — 0C11
A 8+D
A +D
B &1000+VO
B V.U
B AB+U
L R&GP11+S
C ABC+1
G2— XX —GB
BEACON DATA.COMPARE HEADER BIT.PRIME ADDRESS+8 TO D. MASK CONSTANTS TO S. ABC.1 TO 2.

XX — 0C0F
A A+0
A +T
B V.U
L W*24
C &ABC=1.STC+1
L W*24
R W=0
G3— X* —GC
COMPARE ALTITUDE MASK.HEADER WORD TO T.ABC.2 TO 1. STC.1 TO 2.BRANCH IF NOT HEADER.

X0 — 0C1E
B VO.0.U
B +FO AB+U
C 0+STC
D CON+E3
R W=0
G4— X* —GD
BEACON HEADER VALID. COMPARE TYPE MASK AND SB BIT.MATCHING TYPE BITS AND SB BIT TO FO.

X1 — 0C07
A 0—1
B 0+0.U0
B F+U
S MS=REQ*D=3
D J7+STC
R W=0
G5— X* —GE
NO ALTITUDE MASK MATCH.FO TO W1. 7 TO STC.FETCH SECOND DOUBLE WORD OF DATA BLOCK.

X1 — 0C2D
A 8+D
A +T
C 0+STC
G6— XX —GF
SB BIT OFF.NO MASK BIT MATCH. DATA REJECTED.

X0 — 0C06
B V+0
B +F
R 0
J6— 0X —JF
ALT MASK BIT MATCH. BR CTRL BIT TO FO.

XX — 0C24
A 8+T
A +D
L R&GP10+5
S MS=REQ*D=3
C &512CRY+DLT
G7— XX —GG
FETCH NEXT HEADER. DATA COUNT TO T. CHECK PAGE OFLOW.

0X — 0C15
A 8+D
A +D
B &1000+VO
B VO.0.U
B +F F+U
S MS=REQ*D=3
J7— XX —JG
TYPE MASK BIT MATCH.FETCH 3RD DOUBLE WORD OF DATA BLOCK.

XX — 0C19
B &0100+VO
B VO.0—U.CRY
B F+U
S STOP1
J8— XX —JH
TURN ON STAT H IF BR CTRL BIT OFF.

XX — 0C1B
B —64+0
B +FO
D MS+AB
L RF*E3+T
C 3+STC
C E3+1
R 0
J9— X0 —JI
FIRST GEOG FILTER TO T.DATA WORD TO A. ——QQ221——JIE (X0)BEACON OR RADAR DATA.TO GEOGRAPHIC FILTER ABC=?.STC=3. F=CX.

QQ221.EFE (X1)DATA REJECTED BY GEOG OR STERILE AREA FILTER. ABC=?.STC=0.

XO — 0C2C
A 8+D
A +&K
B V+0
B +F
R W1=1
L1— *X —LA
ANY TYPE MASK BIT MATCH.OR SB BIT ON. OR BOTH.MOVE PVD ADDRESS TO F.PRIME ADDRESS+8 TO K REG.

TYPE MASK BIT MATCH.

1X — 0C17
A 8+D
A +DWS
B 0+U
B F+U
S MS=REQ*D=3
N2— XX —NB
SB BIT ON AND NO TYPE MASK BIT MATCH.PVD ADDRESS TO ST7.FETCH THIRD DOUBLE WORD OF DATA BLOCK.

XX — 0C16
A 0+TL1
A R+
B &1000+VO
B V.U
B F+U
D MS+ST
D J7+ABC
R &W(01-02)
N3— *X —NC
BITS 2.3.4 OF PVD ADDRESS TO ABC. BRANCH ON BITS 1.2 OF PVD ADDRESS. SECOND DOUBLE WORD OF DATA BLOCK TO ST. CHECK FOR BRIGHTNESS CONTROL BIT.

00 — 0C00
A B+0
A +A
C STC+1
R W=0
L4— X* —LD
PVD ADDRESS BITS 1-31 TO A REG.BR IF BR.CTRL BIT OFF.

01 — 0C01
A 0+S
A +B
C STC+1
R W=0
N4— X* —ND
PVD ADDRESS BITS 33-63 TO B REG.BR IF BR.CTRL BIT OFF.

10 — 0C02
A 0+T
A +A
C STC+1
R W=0
Q4— X* —QD
PVD ADDRESS BITS 65-95 TO A REG.CK FOR BR.CTRL BIT.

11 — 0C03
A +A.B
C STC+1
R 1
S4— X1 —SD
INVALID PVD ADDRESS. FORCE DECODE OF PVD ADDRESS BIT OFF. STC.7 TO 0.

XO — 0C04
A 8+D
A +D
B 0+&DECAB
B AB+U
D MS+AB
L R&GP10+S
S MS=REQ*D=3
C &512CRY+DLT
L5— XX —LE
SEE NOTE AT NE.

X1 — 0C05
A 8+D
A +D
B 0+&DECAB
B AB+U
D MS+AB
L R&GP10+S
S MS=REQ*D=3
C &512CRY+DLT
C 1+STAM
N5— XX —NE
SELECTED PVD ADDRESS BIT TO AB BUS BIT 6 PER F REG BITS 5.6.7.3RD DBLE WD OF DATA BLOCK TO AB.BLOCK COUNT TO S.FETCH NEXT HEADER.CHECK FOR PAGE OFLOW. STAT H OFF IF BR. CTRL BIT ON.

XX — 0C14
A 0+S
A +B
C STC+1
D CON+E3
R W=0
N6— X* —NF
INPUT DATA COUNT TO B.0 TO E3. STC.0 TO 1. BRANCH IF SELECTED PVD BIT OFF.

X1 — 0C09
A B+0—1
A +T
B —64+0
B +F
L W&GP10
R TCS/ST
Q7— X* —QG
(BEACON DATA BLOCK REJECTED)OR(RADAR HEADER PROCESSED). DATA COUNT—1 TO GPR10.

XO — 0C08
B —64+0
B +FO
L RF*E3+T
C E3+1
N8— XX —NH
SEL PVD BIT ON OR TYPE MASK MATCH. GEOG FILTER TO T.

X0 — 0C2A
B 0+0.U0
B +F F+U
D MS+AB
C 0+ABC
R J47=0
Q8— X* —QH
NO INTERRUPT PENDING. PRIME DATA TO AB. 0C TO F.BRANCH IF INPUT COUNT=0. ——QQ211——QHE (X1)LAST DATA BLOCK PROCESSED.

XX — 0C36
A 0+&K
A +D
C 3+STC
R 0
N9— X0 —NI
RESTORE PREVIOUS PRIME ADDRESS TO D REG.

QQ211——QGE (X1)INTERRUPT PENDING.

CSS LOCAL STORAGE ASSIGNMENTS

GPR 0.	BIN 0 DISP.BIN 1 DISP.
GPR 1.	BIN 2 DISP.BIN 3 DISP.
GPR 2.	BIN 4 DISP.BIN 5 DISP.
GPR 3.	BIN 6 DISP.BIN 7 DISP.
GPR 4.	BIN 8 DISP.BIN 9 DISP.
GPR 5.	BIN 10 DISP.BIN 11 DISP.
GPR 6.	BIN 12 DISP.BIN 13 DISP.
GPR 7.	BIN 14 DISP.BIN 15 DISP.
GPR 8.	(RADAR)RW.DS IND.SORT BIN BASE
GPR 8.	(BEACON)DS IND.SORT BIN BASE
GPR 9.	BIN OFLOW NO.PRIME ADDRESS.
GPR 10.	DATA COUNT.
GPR 11.	(RADAR) CONVERSION CONSTANT
GPR 12.	(BEACON)PVD INDEX.ALT MASK.TYPE MASK.CONVERSION CONSTANT
GPR 12.]	USED FOR WORK REGS.RESTORED
GPR 13.]	BEFORE END OP.
GPR 14.]	NOT USED BY
GPR 15.]	THIS INSTRUCTION.
FPR 0.	GEOGRAPHIC FILTER(Y0G.X0G)
FPR 1.	GEOGRAPHIC FILTER(Y1G.X1G)
FPR 2.	STERILE AREA 1 FILTER(Y0S1.X0S1)
FPR 3.	STERILE AREA 1 FILTER(Y1S1.X1S1)
FPR 4.	STERILE AREA 2 FILTER(Y0S2.X0S2)
FPR 5.	STERILE AREA 2 FILTER(Y1S2.X1S2)
FPR 6.	STERILE AREA 3 FILTER(Y0S3.X0S3)
FPR 7.	STERILE AREA 3 FILTER(Y1S3.X1S3)

PVD INDEX ANALYSIS.
BYTE
0 1 2 3 4 5 6 7
WORD.BIT

713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ201
		NAME		LOG 048	VERSION
		MODE	MANUAL	CSS INSTRUCTION INITIALIZATION AND BEACON HEADER PROCESSING.	
		P.N.	2583848		
		IBM CORP.	SDD		

QQ201•AFF
(X1)INPUT DATA COUNT=0•ABC=0• STC=1•CC=0• F=1C•

X1 — 0C1D
A 8+ΔK
A →B
B →F0
L RΔGP8→S•T
C 0→STC
A1— XX —AA
PREVIOUS DATA INDICATORS TO S•ADJUSTED PRIME ADDRESS TO B•0 TO STC•

QQ201•QHE
(X1)DATA REJECTED•DATA COUNT=0•ABC=0• STC=1•CC=0 OR 1•

X1 — 0C0B
A 8+D
A →B
L RΔGP8→S•T
C 0→STC
C1— XX —CA
PREVIOUS DATA INDICATOR TO S•ADJUSTED PRIME ADDRESS TO B• 0 TO STC•

QQ251•GHE
(X1)DATA COUNT =0•ABC=0• STC=0•CC=0 OR 1•

XX — 0C39
A 0+T
A →D
B 0•V1∀U
B F→U
C 1→STAB✲W=0
R 1
C2— 1X —CB
LAST DATA BLOCK PROCESSED•NO KNOWN INTERRUPT PENDING• SET STAT B IF OUTPUT DATA FROM PREVIOUS EXECUTION OF THIS INSTRUCTION•

1X — 0C3E
A 0+D
A →T
L WΔGP8
S MS=REQ✲D=3
C3— XX —CC
BLOCK COUNT=0 OR PROGRAMME INTERRUPT• FETCH DATA TO RESTORE GP12•13• RESET RW AND DS INDICATORS IN GPR8•

XX — 0C83
A B=8
A →T
L WΔGP9
C 0→STAG
R 0
C4— X0 —CD
ADJUSTED PRIME ADDRESS TO GPR9• STAT G OFF FOR NON-PROGRAMME INTERRUPT•

QQ221•LHE
(XX)DATA REJECTED•RADAR LEFT WORD• DATA COUNT=0• ABC=0•STC=0• CC=0 OR 1• F=0C•

X0 — 0C88
A 8+D
A →D
L R✲24→S
S MS=REQ✲D=3
C6— XX —CF
HEADER INFORMATION TO S•STORE DIAGNOSTIC WORD AND CURRENT HEADER IN SORT BIN BASE WORK AREA•

XX — 0C88
A 0+ΔK
A →T
D MS→AB
S SET=MARK=0=7
C7— XX —CG
DATA FOR GPR 12•13 TO AB•DIAGNOSTIC DATA TO T•

XX — 0C38
A A+0
A →T
L WΔGP12
R STAB
C8— X✲ —CH
RESTORE GP12• BRANCH IF OUTPUT DATA•

X1 — 0C8D
A B+0
A →T
L WΔGP13
C ΔI→CC
R STAG
C9— ✲X —CI
OUTPUT DATA• SET CONDITION CODE=1•RESTORE GP13•

BRANCH IF NON-PROGRAMME INTERRUPT•

QQ511 —CIE
(1X)NON-PROGRAMME INTERRUPT•

QQ201•QGE
(X1)INTERRUPT PENDING•DATA REJECTED•DATA COUNT MAY BE=0 ABC=?•STC=3• CC=0 OR 1•F=CO

X1 — 0C2B
A 8+D
A →B
B 0+0•UO
B →F F→U
L RΔGP8→S•T
C 0→STC
R J47=0
G1— X✲ —GA
SORT BIN BASE ADDRESS AND INDICATORS TO SAND T•F=0C• ADJUSTED PRIME ADDRESS TO B•BRANCH IF DATA COUNT=0•

X1 — 0C81
A 0+T
A →D
B 0•V1∀U
B F→U
C 1→STAB✲W=0
R 1
G2— 1X —GB
BLOCK COUNT=0•SET STAT B IF OUTPUT DATA FROM PREVIOUS EXECUTION OF THIS INSTRUCTION• SORT BIN BASE TO D•

X0 — 0C8C
A B+0
A →T
L WΔGP13
R STAG
G9— ✲X —GI
(NO OUTPUT DATA) OR (BIN PAGE OFLOW) OR (INVALID BEACON HEADER)• LEAVE CONDITION CODE AT 0•2•OR 3• RESTORE GPR 13•

QQ251•NIE
(X0)BIN PAGE OFLOW•CC=2• STAT B OFF• ABC=6•STC=4•

X0 — 0C80
A 0+T
A →D
B 0•V1∀U
B F→U
C 1→STAB✲W=0
R INTRP
L2— ✲X —LB
DATA COUNT≠0•SET STAT B IF OUTPUT DATA FROM PREVIOUS EXECUTION OF THIS INSTRUCTION•SORT BIN BASE ADDRESS TO D•BRANCH IF PROGRAMME INTERRUPT•

0X — 0C3C
A B=B
A →T
L WΔGP9
C 1→STAG
L3— XX —LC
DATA COUNT≠0•NON-PROGRAMME INTERRUPT PENDING•NOT BIN PAGE OFLOW•ADJUSTED PRIME ADDRESS TO GPR9•STAT G ON FOR PROGRAMME INTERRUPT•

XX — 0C8E
B -64+0
B →FO
L RΔGP8→T
S MS=REQ✲D=3
C 1→STC(00)
L4— XX —LD
FETCH DATA TO RESTORE GPR12•13•

XX — 0C85
B V0•0+0•U1
B →ST F→U
L R✲24→S
C 0→STC
R STAB
L5— X✲ —LE
HEADER DATA TO S• DS INDICATOR TO ST4• BRANCH IF DATA STORED•

X1 — 0C89
A 8+D
A →D
L WΔGP8
S MS=REQ✲D=3
L6— XX —LF
STAT B ON•SET DATA STORED BITS IN GPR8•

0X — 0C84
D R→E
L →T
C NEOP
R NEXT-INST✲IC
L8—✲✲✲✲✲✲ —LH

✲✲✲✲✲✲✲ —
GO TO QT001•CCB
L9—✲✲✲✲✲✲ —LI

CSS LOCAL STORAGE ASSIGNMENTS

GPR 0•	BIN 0 DISP•BIN 1 DISP•
GPR 1•	BIN 2 DISP•BIN 3 DISP•
GPR 2•	BIN 4 DISP•BIN 5 DISP•
GPR 3•	BIN 6 DISP•BIN 7 DISP•
GPR 4•	BIN 8 DISP•BIN 9 DISP•
GPR 5•	BIN 10 DISP•BIN 11 DISP•
GPR 6•	BIN 12 DISP•BIN 13 DISP•
GPR 7•	BIN 14 DISP•BIN 15 DISP•
GPR 8•	(RADAR)RW•DS IND•SORT BIN BASE
GPR 8•	(BEACON)DS IND•SORT BIN BASE
GPR 9•	BIN OFLOW NO•PRIME ADDRESS•
GPR 10•	DATA COUNT•
GPR 11•	(RADAR) CONVERSION CONSTANT
GPR 12•	(BEACON)PVD INDEX•ALT MASK•TYPE MASK•CONVERSION CONSTANT
GPR 12•, 13•, 14•, 15•	USED FOR WORK REGS•RESTORED BEFORE END OP• NOT USED BY THIS INSTRUCTION•
FPR 0•	GEOGRAPHIC FILTER(Y0G•X0G)
FPR 1•	GEOGRAPHIC FILTER(Y1G•X1G)
FPR 2•	STERILE AREA 1 FILTER(Y0S1•X0S1)
FPR 3•	STERILE AREA 1 FILTER(Y1S1•X1S1)
FPR 4•	STERILE AREA 2 FILTER(Y0S2•X0S2)
FPR 5•	STERILE AREA 2 FILTER(Y1S2•X1S2)
FPR 6•	STERILE AREA 3 FILTER(Y0S3•X0S3)
FPR 7•	STERILE AREA 3 FILTER(Y1S3•X1S3)

TERMINATION ROUTINES• SET OR RESET APPROPRIATE INDICATORS IN GPRS• SAVE SIGNIFICANT INFO IN SORT BIN BASE SAVE AREA•SET CONDITION CODE IF NECESSARY•

QQ201•GCE
(X1)BEACON DATA•INVALID HEADER FORMAT• ABC=1•STC=2•

X1 — 0C1F
A 0+D
A →B
L RΔGP8→T
C Δ3→CC
Q1— XX —QA
SORT BIN BASE ADDRESS TO T•ADJUSTED PRIME ADDRESS TO B•SET CONDITION CODE TO 3•

XX — 0C82
A 0+T
A →D
C 1→STAB✲J31=1
R 1
Q2— 1X —QB
SORT BIN BASE ADDRESS TO D•RESET STAT B• DS BITS IN GPR8 WILL BE RESET REGARDLESS OF WHETHER OR NOT DATA HAS BEEN STORED•

QQ291•QFE
(OX)FROM CVWL INSTRUCTION TERMINATION•

0X — 0D20
D R→E
L
C
R ,T✲IC
S6 ✲ —SH

713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ211
		NAME		LOG 048	VERSION
		MODE	MANUAL	CSS TERMINATION ROUTINES•	
		P•N•	2583849		
		IBM CORP•	SDD		

K REGISTER USED TO SAVE DATA
FOR DIAGNOSTIC PROGRAMME USE.

QQ251.JFE
(XO)ABC=0.
STC=3.F=C0.

QQ201.JIE
(XO)BEACON
OR RADAR
DATA.ABC=?.
STC=3.F=CX.

QQ241.NEE
(01.10.11)
DATA FAILS
CORNER FILTER
ABC=7.STC=0.

QQ251.LDE
(01.10.11)
DATA WORD
PROCESSED.
ABC=6.STC=0.

XO — 0C34
A A→T
A →B
B -1+0.UO
B →F1 F→U
L RF*E3→T
C ΔLMT1
C 1→STAG
C E3+1
R 1 0
C2— 10 —CB
DATA COORDINATES MINUS FIRST GEOGRAPHIC BOUNDARY TO B.(CONVERTS DATA FROM SYSTEM TO PVD ORIGIN) SET LIMIT LATCH IF OUTSIDE.

10 — 0C22
A A→T
A →ΔK
B 1+U
B →F1 F→U
L RF*E3→T
C ΔLMT2
C E3+1
R W1=1
C3— *X —CC
DATA - SECOND GEOGRAPHIC BOUNDARY. SET LIMIT LATCH IF DATA OUTSIDE.DATA - SECOND OF FIRST PAIR OF STERILE FILTERS.RESET LIMIT LATCH IF DATA INSIDE.

1X — 0C27
A Q→D
A →ΔK
B Δ0100→V0
B V+0
B →F
L RΔGP11→S
C 0→ABC
R ΔLMT
C4— X* —CD
40 TO F REG. CONVERSION CONSTANT TO S.SAVE PRIME ADDRESS IN K REG. BRANCH IF DATA PASSES THIRD STERILE AREA FILTER.

XO — 0CA4
B -1+0
L RΔGP10→S
C 0→STC
C 1→STAA*W≠0
R E2=0/ STAA
C5— ** —CE
SET STAT A. BRANCH IF RADAR. BRANCH IF LEFT WORD REJECTED.

QQ231 —— CDE
(X1)TO MULTIPLY ROUTINE. DATA PASSES GEOGRAPHIC AND AND STERILE FILTERS.ABC=0. STC=3.F=40.

BEACON DATA EITHER REJECTED BY FILTERS OR PROCESSED.LEAVE STAT A ON.FETCH NEXT HEADER.(BEACON DATA ALWAYS LEFT WORD.)

01 — 0C31
A B+D
A →D
S MS—REQ*D—3
C Δ512CRY→DLT
E6— XX —EF
BEACON DATA REJECTED.FETCH NEXT HEADER.

10 — 0C32
A B+D
A →D
S MS—REQ*D—3
C Δ512CRY→DLT
G6— XX —GF
RADAR RIGHT WORD EITHER REJECTED BY FILTERS OR PROCESSED.FETCH NEXT DBLE WORD FROM PRIME.LEAVE STAT A ON FOR LEFT WORD.

QQ201 —— EFE
(XX)BEACON.OR RADAR RIGHT WORD DATA REJECTED.STAT A ON AS NEXT DATA WORD IS LEFT WORD.

OX — 0C25
A A—T
B 1+U
B →F1 F→U
L RF*E3→T
C E3+1 0→STAG
C ΔLMT1
R STAG ΔLMT
G2— ** —GB
DATA COORDINATES MINUS FIRST OF EACH PAIR OF STERILE AREA BOUNDARIES.DATA FAILS GEOGRAPHIC FILTER TEST IF LIMIT LATCH IS ON.DATA FAILS STERILE FILTER TEST IF LIMIT LATCH IS OFF.STAT G USED TO SEPARATE THESE TWO SETS OF CONDITIONS.

11 — 0C23
L RΔGP10→S
C 0→STC
C 1→STAA*J18=0
R E2=0/ STAA
G3— ** —GC
DATA FAILS GEOGRAPHIC FILTERS. DATA REJECTED.DATA COUNT TO S. BRANCH IF RADAR. BRANCH IF LEFT WORD REJECTED.

00 — 0C20
L RΔGP10→S
C 0→STC
C 1→STAA*J18=0
R E2=0/ STAA
L3— ** —LC
DATA FAILS ONE OF FIRST TWO STERILE AREA FILTERS.DATA REJECTED.DATA COUNT TO S. BRANCH IF RADAR. BRANCH IF LEFT WORD REJECTED.

11 — 0C33
A 0+S
A →B
L RΔGP12→S
C 1→STAA*J47=0
L5— XX —LE
RADAR LEFT WORD EITHER REJECTED BY FILTERS OR PROCESSED.TURN OFF STAT A FOR RIGHT WORD.WORD COUNT TO B. ODD DATA WORD TO S.

XX — 0C30
A B=1
A →T
D CON→E3
L WΔGP10
C 0→ABC
L6— XX —LF
WORD COUNT=1. 0 TO E3.

XX — 0C37
A 0+S
A →A
B -64+0
B →F0
L RF*E3→T
C E3+1 3→STC
R J47=0
L7— X* —LG
ODD DATA WORD TO A. 1100 TO F0 FOR FILTER LOOP COUNT. GEOG FILTER TO T. BRANCH IF INPUT COUNT=0.

X1 — 0C35
A B+D
A →B
B 0+0.UO
B →F
L RΔGP8→S.T
C 0→STC
L8— XX —LH
INPUT DATA COUNT=0. 0C TO F.0 TO STC. ADJUSTED PRIME ADDRESS TO B.

QQ211 —— LHE
(XX)DATA REJECTED.RADAR LEFT WORD. DATA COUNT=0. ABC=0.STC=0. CC=0 OR 1. F=0C.

GEOGRAPHIC AND STERILE AREA FILTERS.REJECT DATA POINTS THAT FALL OUTSIDE GEOGRAPHIC BOUNDARIES OR INSIDE ONE OF 3 STERILE AREAS FOR THIS PVD.

01 — 0C21
A A—T
A →ΔK
B 1+U
B →F1 F→U
L RF*E3→T
C ΔLMT2 0→STAD
C E3+1
R W1=1
Q3— *X —QC
DATA COORDINATES MINUS SECOND OF SECOND AND THIRD PAIRS OF STERILE FILTERS. RESULT TO K REG FOR DIAGNOSTIC PROGRAMME USE.SET LIMIT LATCH IF DATA PASSES.

CSS LOCAL STORAGE ASSIGNMENTS

GPR 0.	BIN 0 DISP.BIN 1 DISP.
GPR 1.	BIN 2 DISP.BIN 3 DISP.
GPR 2.	BIN 4 DISP.BIN 5 DISP.
GPR 3.	BIN 6 DISP.BIN 7 DISP.
GPR 4.	BIN 8 DISP.BIN 9 DISP.
GPR 5.	BIN 10 DISP.BIN 11 DISP.
GPR 6.	BIN 12 DISP.BIN 13 DISP.
GPR 7.	BIN 14 DISP.BIN 15 DISP.
GPR 8.	(RADAR)RW.DS IND.SORT BIN BASE
GPR 8.	(BEACON)DS IND.SORT BIN BASE
GPR 9.	BIN OFLOW ND.PRIME ADDRESS.
GPR 10.	DATA COUNT.
GPR 11.	(RADAR) CONVERSION CONSTANT
GPR 12.	(BEACON)PVD INDEX.ALT MASK.TYPE MASK.CONVERSION CONSTANT
GPR 12.]	USED FOR WORK REGS.RESTORED
GPR 13.]	BEFORE END OP.
GPR 14.]	NOT USED BY
GPR 15.]	THIS INSTRUCTION.
FPR 0.	GEOGRAPHIC FILTER(Y0G.X0G)
FPR 1.	GEOGRAPHIC FILTER(Y1G.X1G)
FPR 2.	STERILE AREA 1 FILTER(Y0S1.X0S1)
FPR 3.	STERILE AREA 1 FILTER(Y1S1.X1S1)
FPR 4.	STERILE AREA 2 FILTER(Y0S2.X0S2)
FPR 5.	STERILE AREA 2 FILTER(Y1S2.X1S2)
FPR 6.	STERILE AREA 3 FILTER(Y0S3.X0S3)
FPR 7.	STERILE AREA 3 FILTER(Y1S3.X1S3)

713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ221
		NAME		LOG 048	VERSION
		MODE	MANUAL	CSS GEOGRAPHIC AND STERILE AREA FILTERING.	
		P.N.	2583850		
		IBM CORP.	SDD		

FNNGD

CONVERT DATA POINT FROM SYSTEM SCALE TO PVD SCALE. RESULT WILL BE 10 BIT X COORDINATE AND 10 BIT Y COORDINATE. THIS ROUTINE ALSO USED BY CVWL INSTRUCTION.

CSS LOCAL STORAGE ASSIGNMENTS

GPR 0.	BIN 0 DISP. BIN 1 DISP.
GPR 1.	BIN 2 DISP. BIN 3 DISP.
GPR 2.	BIN 4 DISP. BIN 5 DISP.
GPR 3.	BIN 6 DISP. BIN 7 DISP.
GPR 4.	BIN 8 DISP. BIN 9 DISP.
GPR 5.	BIN 10 DISP. BIN 11 DISP.
GPR 6.	BIN 12 DISP. BIN 13 DISP.
GPR 7.	BIN 14 DISP. BIN 15 DISP.
GPR 8.	(RADAR) RW. DS IND. SORT BIN BASE
GPR 8.	(BEACON) DS IND. SORT BIN BASE
GPR 9.	BIN OFLOW NO. PRIME ADDRESS.
GPR 10.	DATA COUNT.
GPR 11.	(RADAR) CONVERSION CONSTANT
GPR 12.	(BEACON) PVD INDEX. ALT MASK. TYPE MASK. CONVERSION CONSTANT
GPR 12.	USED FOR WORK REGS. RESTORED
GPR 13.	BEFORE END OP.
GPR 14.	NOT USED BY
GPR 15.	THIS INSTRUCTION.
FPR 0.	GEOGRAPHIC FILTER (Y0G. X0G)
FPR 1.	GEOGRAPHIC FILTER (Y1G. X1G)
FPR 2.	STERILE AREA 1 FILTER (Y0S1. X0S1)
FPR 3.	STERILE AREA 1 FILTER (Y1S1. X1S1)
FPR 4.	STERILE AREA 2 FILTER (Y0S2. X0S2)
FPR 5.	STERILE AREA 2 FILTER (Y1S2. X1S2)
FPR 6.	STERILE AREA 3 FILTER (Y0S3. X0S3)
FPR 7.	STERILE AREA 3 FILTER (Y1S3. X1S3)

QQ261.GDE (XX) FROM WEATHER.

ENTRY TO MPY ROUTINE FROM WEATHER INST. CONVERSION CONSTANT IN S. STAT D ON FOR EXIT TO WEATHER INST AT END ON MPY ROUTINE. ABC=0. STC=3. F=40.

XX — OCAD
B V0.0.U
B F→U
D CON→E3
C ABC+1
L1— XX —LA
ABC.0 TO 1. CHECK CONVERSION CONSTANT FOR MID SCALE. 0 TO E3.

XX — OCAA
A →B8
B V+0
B →F
C ABC+1
C E3-1
R W=0
L2— X* —LB
CONVERSION CONSTANT TO F REG FOR CONTROL BRANCH LATER IN MPY ROUTINE. ABC.0 TO 1. BRANCH IF LARGE OR MID-SCALE MPY.

X1 — OCA7
A BL2+0
A →T
C 3→STC
C SEL-MPL*E3
C E3-1
L3— XX —LC
LARGE OR SMALL SCALE CONVERSION CONSTANT. MPY COORDINATES BY 4 TO T.3 TO STC.

XX — OCAB
A R*AB38
B -64.U
B F→U
C STC+1
C SEL-MPL*E3
C E3-1
L4— XX —LD
MPY FIRST TWO BITS. CHECK FOR SMALL OR MEDIUM CONVERSION CONSTANT. STC.3 TO 4.

XX — OCAC
A BL2+0
A R*AB38
B ΔOO11→V0
B V0.V0+0
B →F1
C STC+1
C SEL-MPL*E3
R W=0
L5— X* —LE
MPY SECOND TWO BITS. STC.4 TO 5. BRANCH IF LARGE SCALE.

X0 — OCAB
A BL2+0
A →B.T
B →F0
C STC+1
L6— XX —LF
SMALL OR MEDIUM SCALE. MPY LAST TWO BITS. STC.5 TO 6.

XX — OCAE
A 0+ΔT45R
A →A.B
B V.U
B →ST.F F→U
C 0→STC
R STAD
N7— X* —NG
MOVE CONVERTED Y COORDINATES TO A AND B. REMOVE EXTRANIOUS BITS FROM CONVERTED X COORDINATE IN T. CHECK FOR TWO HI-ORDER X BITS=00. BRANCH IF WEATHER INST.

X1 — OCA9
A BL2+0
A R→B.T
B →F0
C STC+1
Q6— XX —QF
LARGE SCALE. MPY LAST TWO BITS. DIVIDE BY 16 TO B AND T.

QQ221.CDE (X1) DATA PASSES GEOG AND STERILE FILTERS. ABC=0. STC=3. F=40. CONVERSION CONSTANT IN S. STAT D OFF.

X1 — OCA5
A 0+D
A →T
B V0.0.U
B F→U
D CON→E3
L W=GP9
C ABC+1
Q1— XX —QA
SAVE UPDATED PRIME ADDRESS. ABC.0 TO 1. CHECK CONVERSION CONSTANT FOR MID SCALE. 0 TO E3.

X0 — OCA6
A B+0
A →T
C 3→STC
C SEL-MPL*E3
C E3-1
Q3— XX —QC
MID-SCALE CONVERSION CONSTANT. NO SHIFT COORDINATES TO T.3 TO STC.

OX — OCBC
A 0+ΔT67
A →A.T
B ΔOO11→V0
B V0.V0+U
B F→U
L W=GP13
C ABC+1
R W=0
J9— X* —JI
REMOVE Y COORDINATE FROM T4.5. CHECK FOR HI-ORDER X=11. ABC.2 TO 3. BRANCH IF HI-ORDER X=00.

QQ241 — JIE
(X0.X1) SCALED DATA TO CORNER FILTERING AND OUTPUT FORMAT. ABC=3. STC=0. F=03. Y COORD IN B REG. RIGHT JUSTIFIED. X COORD IN A. T. GPR13. RIGHT JUSTIFIED.

1X — OCBE
A 0+ΔT67
A →T
B ΔOO11→V0
B V0.V0+0
B →F1
C 0→ABC
N9— XX —NI
REMOVE Y COORDINATE FROM T4.5.03 TO F.

QQ281 — NIE
(XX) SCALED DATA. RETURN TO WEATHER INST. ABC=0. STC=0. F=03. Y COORD IN A. B. RIGHT JUSTIFIED. X COORD IN T. RIGHT JUSTIFIED.

713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ231
		NAME		LOG 048	VERSION
		MODE	MANUAL	CSS AND CVWL MULTIPLY ROUTINE FOR DATA CONVERSION.	
		P.N.	2583851		
		IBM CORP.	SDD		

QQ231•JIE
(X0•X1)SCALED
DATA•ABC=3•
STC=0•F=03•
Y COORD IN B•
X COORD IN A•
T•GPR13•

REJECT DATA POINTS THAT FALL IN PVD CORNERS•FORMAT HEADER INFO AND SCALED Y,X COORDINATES INTO OUTPUT FORMAT•DETERMINE BIN NUMBER INTO WHICH OUTPUT DATA WORD WILL BE SORTED (BIN NUMBER=2 HI-ORDER BITS OF Y AND X((YYXX)))• ADD BIN ADDRESS DISPLACEMENT PER BIN NUMBER•TO SORT BIN BASE TO DETERMINE NEXT VACENT LOCATION IN OUTPUT BIN•

X0 — 0CB0
A B+0
A →T
D CON→E3
L R&GP13→S
C 0→STAG
R W1=(01-15)
A2— ✲✲ —AB
2 HI ORDER X BITS≠00•
Y COORD TO T•X COORD
TO S•BRANCH IF HI
ORDER X=01 OR 10•

X1 — 0CB1
A B+0
A →T
D CON→E3
L R&GP13→S
C 1→STAG
R 1 0
E2— 10 —EB
2 HI-ORDER X BITS=00•
TURN ON STAT G•
Y COORD TO T•X COORD
TO S•

00 — 0C90
A 0+TL1
A L→A•DTS
B &1111→V0
B V0•V0+U
B AB→U
C &ABC-1•STC+1
C 1→STAG
A4— XX —AD
2 HI-ORDER X=11•
Y COORD LEFT 5 TO A•T•
8 LOW-ORDER X COMP TO
SO•ABC•3 TO 2•
STC•0 TO 1•

2 HI-ORDER
X≠01 OR 10•

10 — 0C92
A 0+TL1
A L→A•DTS
B 0+U
B AB→U
C &ABC-1•STC+1
E4— XX —ED
Y COORD LEFT 5 TO A•T•
8 LOW ORDER X TO SO•
ABC•3 TO 2•STC•0 TO 1•

XX — 0CB9
A 0+&K
A →DWS
B &0110→V0
B V•U
B →F AB→U
C 0→ABC
R STAG
E5— ✲X —EE
2 HI-ORDER Y BITS
TO S1 AND F•BITS
1•2•ABC•2 TO 0•
RESTORE D REG FROM
K REG•CHECK FOR
2 HI-ORDER Y=00•
BRANCH IF 2
HI-ORDER X=00
OR 11(STAT G ON)

X0 — 0CA2
A 0→T
A →B
B &1000→V0
B V•U
B →F0 AB→U
L R&GP13→T
C ABC•STC+1
A6— XX —AF
BRIGHTNESS CONTROL
BIT ON•HEADER
INFO TO B•
ABC•6 TO 7•
STC•3 TO 4•

X1 — 0CA3
A 0→T
A →B
B &1100→V0
B V•U
B →F0 AB→U
L R&GP13→T
C ABC•STC+1
E6— XX —EF
BRIGHTNESS CONTROL
BIT OFF•
HEADER INFO TO B•
ABC•6 TO 7•
STC•3 TO 4•

XX — 0CB2
A F1+0
A &R1→B8•E
B 0+U1•U0
B →F F→U
C7— XX —CG
BIN NUMBER
RIGHT 1 TO E3
FOR ADDRESS OF
GPR CONTAINING
BIN DISPLACEMENT•
B8=0 FOR EVEN
NUMBERED BINS•
BL AND BR BITS
TO F1•BIN NUMBER
TO F0•

XX — 0CB3
A E23+&K
A →E
B 0+U
B →S7 AB→U
L R&GP8→S
C STC+1
C8— XX —CH
S BIT AND SYMBOL
TO OUTPUT WORD•
RESTORE E2 FROM
K REG•STC•4 TO 5•
SORT BASE TO S•

XX — 0CB4
A B8+0
B 0•V1+U1•0
B →ST F→U
L W&GP13
C &1→CC
G7— XX —GG
CHECK FOR ODD BIN NO•
BR AND BL BITS TO
OUTPUT WORD•OUTPUT
WORD TO GP13•
SET CC TO 1•

XX — 0CB5
A 0+S
A →A
B &0100→V0
B V0•V0+0
B →F1
L R✲E3→T
C STC+1
R J57=0
G8— X✲ —GH
SORT BASE TO A•
4 TO F1•SORT BIN
DISPLACEMENT TO T•
BRANCH IF BIN NUM-
BER EVEN•

CSS LOCAL STORAGE ASSIGNMENTS

GPR 0• BIN 0 DISP•BIN 1 DISP•
GPR 1• BIN 2 DISP•BIN 3 DISP•
GPR 2• BIN 4 DISP•BIN 5 DISP•
GPR 3• BIN 6 DISP•BIN 7 DISP•
GPR 4• BIN 8 DISP•BIN 9 DISP•
GPR 5• BIN 10 DISP•BIN 11 DISP•
GPR 6• BIN 12 DISP•BIN 13 DISP•
GPR 7• BIN 14 DISP•BIN 15 DISP•
GPR 8•(RADAR)RW•DS IND•SORT BIN BASE
GPR 8•(BEACON)DS IND•SORT BIN BASE
GPR 9• BIN OFLOW NO•PRIME ADDRESS•
GPR 10• DATA COUNT•
GPR 11•(RADAR) CONVERSION CONSTANT
GPR 12•(BEACON)PVD INDEX•ALT MASK•TYPE MASK•CONVERSION CONSTANT
GPR 12•) USED FOR WORK REGS•RESTORED
GPR 13•) BEFORE END OP•
GPR 14•) NOT USED BY
GPR 15•) THIS INSTRUCTION•
FPR 0• GEOGRAPHIC FILTER(Y0G•X0G)
FPR 1• GEOGRAPHIC FILTER(Y1G•X1G)
FPR 2• STERILE AREA 1 FILTER(Y0S1•X0S1)
FPR 3• STERILE AREA 1 FILTER(Y1S1•X1S1)
FPR 4• STERILE AREA 2 FILTER(Y0S2•X0S2)
FPR 5• STERILE AREA 2 FILTER(Y1S2•X1S2)
FPR 6• STERILE AREA 3 FILTER(Y0S3•X0S3)
FPR 7• STERILE AREA 3 FILTER(Y1S3•X1S3)

1X — 0C3F
A 0+TL1
A L→A
B &0110→V0
B V+U
B F→U
C ABC•STC-1
R W=0
J2— X✲ —JB
Y COORD LFT 10 TO A•
CHECK FOR 2 HI ORDER
Y=11•ABC•0 TO 7•STC•
1 TO 0•BRNCH IF 2 HI
ORDER Y=00•

X0 — 0C96
A A+S
A →T
B V-&U
B AB→U
L W&GP13
C &ABC-1•STC+1
R W=0
J3— X✲ —JC
2 HI ORDER Y≠00•
FORMAT Y AND X CO-
ORDINATES TO T•GP13•
8 LOW ORDER X BITS-
8 LOW ORDER Y BITS•
ABC•7 TO 6•STC•0 TO
1•BRANCH IF 2 HI
ORDER Y BITS=11•

X0 — 0C98
A E23+0
A →&K
B V+U
B →F0 F→U
L R✲24→T
C STC+1
J4— 10 —JD
2 HI-ORDER Y=01
OR 10•2 HI-ORDER
Y BITS TO F•BITS
0,1•STC•1 TO 2•
SAVE E2 IN K REG•
HEADER INFO TO T•

10 — 0C9E
A 0→T
A R→B
B 0•V1+0•U0
B →F1 F→U
C STC+1
R STAH
J5— X✲ —JE
DATA ACCEPTED•PASSES
ALL FILTERS AND
TESTS•2 HI-ORDER
Y BITS TO F•BITS
4•5• 2 HI-ORDER
X BITS TO F•BITS 6•7•
F=YYOOYYXX•STC•2 TO 3•
HEADER INFO RIGHT 4
TO B•BRANCH IF
BRIGHTNESS CONTROL
BIT OFF•

0X — 0C3D
A 0+TL1
A L→A
B -64+0
C ABC•STC=1
R 0
N2— X0 —NB
Y COORD LEFT 10 TO A•
ABC•0 TO 7•STC•1
TO 0•PREVENT BRANCH
NEXT CYCLE•

X1 — 0C97
A A+S
A →T
B V+U
B AB→U
L W&GP13
C &ABC-1•STC+1
Q3— X1 —QC
2 HI ORDER Y=00•
FORMAT Y AND X
COORDINATES TO T•
GPR13•8 LOW ORDER
X BITS+8 LOW ORDER
Y BITS•ABC•7 TO 6•
STC•0 TO 1•

X1 — 0C99
A E23+0
A →&K
B V+U
B →F0 F→U
L R✲24→T
C STC+1
R WCRY W=0
N4— ✲✲ —ND
2 HI ORDER Y=11•
2 HI ORDER Y BITS
TO F•BITS 0•1•
STC•1 TO 2•BRANCH
(10) IF DATA NOT
IN CORNER•

00 — 0C9C
A 0-1
A →B
B -1+0
L R&GP10→S
C 0→STC
C 1→STAA✲W≠0
R E2=0/ STAA
N5— ✲✲ —NE
DATA FAILS CORNER•
DATA COUNT TO S•

11 — 0C9F
A 0-1
A →B
B -1+0
L R&GP10→S
C 0→STC
C 1→STAA✲W≠0
R E2=0/ STAA
Q5— ✲✲ —QE
DATA FAILS CORNER
FILTER•DATA COUNT
TO S•

01 — 0C9D
A 0-1
A →B
B -1+0
L R&GP10→S
C 0→STC
C 1→STAA✲W≠0
R E2=0/ STAA
N6— ✲✲ —NF
DATA FAILS CORNER
FILTER•DATA COUNT
TO S•

XX — 0CB7
A A+&T67
A →DWS
B 0+U
B AB→U
C ABC•STC-1
L9— XX —LI
BIN DISP+BASE TO D•UP-
DATE BIN DISP•ABC•
7 TO 6•STC•7 TO 6•

XX — 0CB8
A A+&T45R
A →DWS
B 0+U
B AB→U
C ABC•STC-1
N9— XX —NI
BIN DISP+BASE TO D
UPDATE BIN DISP•
ABC•7 TO 6•
STC•5 TO 4•

X0 — 0C44
A F1+&T67
A →B
L R&GP9→S
C STC+1
L8— XX —LH
BIN NUMBER ODD•BIN
DISPLACEMENT+4•
STC•6 TO 7•

X1 — 0C45
A F1+&T45R
A →B
L R&GP9→S
C STC-1
N8— XX —NH
BIN NUMBER EVEN•
BIN DISPLACEMENT+4•
STC•6 TO 5•PRIME
ADDRESS TO S•

QQ251——LIE
(XX)SORT BIN
BASE IN A•ABC
=6•STC=4 OR 6•

QQ221——NEE
(01•10•11)
DATA FAILS
CORNER FILTER•
ABC=?•STC=0•

713671	04/28/70	MACH NAME	C7201-02	DATE 05/21/70	SHEET 1 QQ241
		MODE	MANUAL	LOG 048	VERSION
		P•N•	2583852	CSS CORNER FILTER•DATA FORMAT AND BIN SORT ROUTINES•	
		IBM CORP•	SDD		

PROCESS RADAR HEADER INFORMATION. SAVE RIGHT WORD IF RADAR DATA.

QQ201.CIE (11)RADAR DATA RW IND OFF. ABC=0.1.STC=1. (10)RADAR DATA INSTRCTN RE-ENTRY. PROCESS ODD WORD. F=0C. ABC=0.1.STC=1.

11 — 0C13
A B+0
A +T
B Δ1000→V0
B V0.0.U
B +F0 AB+U
L WΔGP12
C 0+STC
R F1≠9
C1— *X —CA
RADAR DATA. CHECK FOR HEADER. RIGHT WORD TO GPR12. OLD HEADER TO S. BRANCH IF INSTRUCTION ENTRY.

0X — 0C4C
B Δ100C→V0
B V0.0.U
B F+U
D MS0→T
L W*24
R 1
A2— 1X —AB
INSTRUCTION ENTRY. OLD HEADER TO GPR24. CHECK FOR NEW HEADER.

1X — 0C4E
A A+0
A +T
D CON→E3
L RΔGP11→S
C ABC=1
R F1≠9 W=0
C3— ** —CC
LEFT WORD TO T. ABC.1 TO 0. DATA COUNT TO S. BRANCH IF (NOT INSTRCT ENTRY). OR (DATA WORD)

00 — 0C40
A 0+ΔK
A +D
R 1 0
A4— 10 —AD
INSTR ENTRY. HEADER WORD. RESTORE PRIME ADDRESS IN D REG.

10 — 0C42
A B+0
A +A
B V+0
B +F
L RΔGP10→S
C STC=1
C5— XX —CE
NOT INST ENTRY. HEADER WORD. COMPILE HEADER INFO FOR OUTPUT USE. DATA COUNT TO S. STC.0 TO 7.

XX — 0C4A
A 0+S
A +B
B 0+U
B +ST AB+U
C 0→STC
C6— XX —CF
HEADER DATA TO T REG. WORD COUNT TO B.

XX — 0C4B
A B+D
A +D
B Δ0100→V0
B V0.0—U.CRY
B F+U
L W*24
S MS—REQ*D—3
C Δ512CRY→DLT
R J47=1
C7— X* —CG
PRIME ADDRESS+8 TO D. HEADER INFO TO GPR24. SET STAT H IF BR CTRL BIT OFF. FETCH NEXT PRIME DATA. BRANCH IF COUNT=1. COUNT CANNOT=0 AT THIS POINT.

X0 — 0C46
A B=1
A +B
C STC+1
R 1
C8— X1 —CH
DATA COUNT GREATER THAN 1. WORD COUNT—1. STC.0 TO 1.

QQ201 — CHE
(X1)RADAR HEADER PROCESSED.

01 — 0C41
A 0+ΔK
A +D
B V+0
B +F
E4— XX —ED
INSTR ENTRY. DATA WORD. BR. CTRL. BIT TO F. RESTORE PRIME ADDRESS IN D REG.

XX — 0C56
B Δ0100→V0
B V0.0—U.CRY
B F+U
R 1 1
G5— 11 —GE
SET STAT H IF BR CTRL BIT OFF.

X1 — 0C47
A +T
B Δ1100→V0
B V0.V0+0
B +F1
L WΔGP10
R 1
G8— X1 —GH
DATA COUNT=1. 1100 TO F1. ZERO TO DATA COUNT IN GPR10.

QQ211 — XE
(X1)WORD COUNT=0. ABC=0. STC=0. CC=0 OR 1.

10 — 0C12
A R+0
A +A
D MS0→T
L W*24
S STOP1
C STC=1
G1— XX —GA
RADAR INSTRUCTION RE-ENTRY. DATA WORD TO A. HEADER TO T AND GPR24. STAT A OFF FOR RADAR RIGHT WORD. STC.1 TO 0.

XX — 0C4D
A 0+ΔK
A +D
B V+0
B +F
L RΔGP8→T
C 1→STC(00)
G2— XX —GB
RW INDICATOR TO T. PRIME ADDRESS TO D. BR. CTRL. BIT TO F. STC.0 TO 4.

XX — 0C4F
B 0.V1+0
B +ST
L WΔGP8
G3— XX —GC
RESET RW INDICATOR IN GPR8. STC.4 TO 3.

XX — 0C53
A B+S
A +T
B 0+U1.U0
B +F F+U
L WΔGP10
C STC+1
R STAA
Q6— X* —QF
COUNT—1 TO GPR10. MOVE BIN NUMBER TO F1. STC.3 TO 4. BRANCH IF RADAR AND NEXT DATA WORD IS RIGHT WORD.

11 — 0C43
B —64+0
B +FO
L RF*E3→T
C 3→STC
C E3+1
R 0
J6— X0 —JF
NOT INST ENTRY. DATA WORD. STC.0 TO 3. FIRST GEOG FILTER TO T.

QQ221 — JFE
(X0)TO GEOG FILTER. ABC=?. STC=3. F=C0.

QQ241.LIE (XX)SORT BIN BASE IN A. ABC=6. STC=4 OR 6.

XX — 0C50
A F1+D
B 0+U
B +ST AB+U
L W*E11—15
S SET—MARK*J61
C 3→STC
L2— XX —LB
OUTPUT ADDRESS+4 TO CHECK FOR PAGE OFLOW. STORE UPDATED BIN DISPLACEMENT IN APPROPRIATE GPR. STORE OUTPUT WORD.

XX — 0C51
A 0+S
A +ΔK
L RΔGP13→S.T
S MS—REQ*D—3
C 1→STAB*W=0
R Δ512CRY
L3— X* —LC
PRIME ADDRESS TO K REG. OUTPUT WORD TO S. T. BRANCH IF BIN PAGE OFLOW. TURN ON STAT B FOR OUTPUT DATA INDICATOR.

X0 — 0C3A
A 0+ΔK
A +D
B —1+0
L RΔGP10→S
S STOP1
C 0→STC
C 1→STAA*W≠0
R E2=0/ STAA
L4— ** —LD
PRIME ADDRESS TO D. DATA COUNT TO S. TURN ON STAT A. BRANCH IF RADAR. BRANCH IF LEFT WORD PROCESSED.

QQ221 — LDE
(01.10.11) DATA WORD PROCESSED. ABC=6. STC=0.

STORE FORMATTED DATA WORD IN SORT BIN. CHECK FOR BIN PAGE OFLOW AND PREPARE TO TERMINATE INSTRUCTION IF THIS HAS OCCURRED. OTHERWISE CONTINUE BY PROCESSING NEXT PRIME DATA WORD.

X1 — 0C3B
A B+ΔK
A +D
L RΔGP10→S
S STOP1
C Δ512CRY→DLT
R E2=0/
Q4— X* —QD
BIN PAGE OFLOW. UPDATE PRIME DATA ADDRESS. DATA COUNT TO S. BRANCH IF RADAR.

RADAR DATA. FETCH NEXT PRIME TO ALLOW PAGING. —1→B.
1X — 0C93
A 0=1
A +B
S MS—REQ*D—3
C 0→STAD
N5— XX —NE

0X — 0C91
A 0—1
A +B
S MS—REQ*D—3
C 0→STAD
C 1→STAA*J18=0
Q5— XX —QE
BEACON DATA. RESET STAT A. FETCH NEXT PRIME TO ALLOW PAGING. —1 TO B.

NEXT DATA WORD IS RADAR RIGHT WORD. ADJUSTED PRIME ADDRESS TO T. SORT BIN BASE TO S.
X1 — 0C55
A 0+ΔK
A +T
B —64+0
B +FO
L RΔGP8→S
C Δ2→CC
N7— XX —NG

X0 — 0C54
A 0+D
A +T
B —64+0
B +FO
L RΔGP8→S
C Δ2→CC
Q7— XX —QG
BEACON DATA OR NEXT RADAR WORD IS LEFT WORD. SORT BIN BASE TO S ADJUSTED PRIME ADDRESS TO T.

XX — 0C52
A 0+S
A +DWS
B 0+0.U1
B F+U
L WΔGP9
S MS—REQ*D—3
C 1→STAB*J31=1
R STAA
Q8— X* —QH
SORT BIN BASE TO D AND FETCH. BIN NUMBER TO GPR9. RESET STAT B. BRANCH TO SET RW INDICATOR.

X0 — 0C48
A 0+D
A +JWT
B 0+0.U0
B F+U
L WΔGPB
C 0→STAG
R 0
N9— X0 —NI
SET DS INDICATOR IN GPR8.

X1 — 0C49
A 0+D
A +JWT
B Δ1100→V0
B V0.V0+0
L WΔGPB
C 0→STAG
R 0
Q9— X0 —QI
SET DS AND RW INDICATORS IN GPR8.

QQ211 — NIE
(X0)BIN PAGE OFLOW. CC=2. STAT B OFF. ABC=6. STC=4.

713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ251
		NAME		LOG 048	VERSION
		MODE	MANUAL	CSS HEADER ANALYSIS AND BIN PAGE OFLOW ROUTINES.	
		P.N.	2583853		
		IBM CORP.	SDD		

QQ251

ENTRY FROM QQ281•QGE INDICATES A WEATHER LINE HAS JUST BEEN PROC AND STORED INTO REFRESH MEM•

QQ281•QGE
(XO)

BLOCK AH IS A COMMON TERMINATION BLK USED FOR STERILE AREA 1 FAIL AND NORMAL TERMINATION•

XO — OD26
A IC+0
A +D
S MS-REQ*D-3
L R*28+S
C 0+STC
AB— XX —AH
STER AREA 1 FAIL OR NORM TERM•

XX — OD28
A 0+S
A +IC
B Δ1000+V0
B V+0
B +F
L RΔGP10+S
C 0+STAG
AD— XX —AI SET UP FOR NEXT WD

QQ291 —AIE
(XX)
TO INITIALIZE

LINE IS REJECTED

QQ271•GHE
(XX)

QQ291•CGE
(XX)
FROM INITIAL-IZATION AND HEADER PROC ROUTINE•

XX — OD0E
A 0+D
A +IC
L RΔFP0+T
C2— XX —CB
SET UP FOR GEOGRAPHIC FILTER

XX — OD21
A A-T
A +B
C ΔLMT1
L RΔFP1+T
C3— XX —CC
GEOG FILT 1 Y1•X1 PVD COORD TO B REG

XX — OD14
A A-T
C ΔLMT2
L RΔFP2+T
C4— XX —CD
GEOG FILT 1 Y2•X2 STERILE AREA 1 Y1• X1 TO T REG•

XX — OD23
A A-T
C ΔLMT1
L RΔFP3+T
C 0+STC
R ΔLMT
C5— X* —CE
STERILE AREA 1 FILT Y1•X1•BRANCH IF DATA FAILED GEOG FILT•CLEAR STC•

XO — OD24
A A-T
C ΔLMT2
L RΔFP4+T
C 0+ABC
C6— XX —CF
STERILE AREA 1 FILT Y2•X2•CLEAR ABC•

XX — OD2D
A A-T
C ΔLMT1
L RΔFP5+T
C 1+STC(00)
R ΔLMT
C7— X* —CG
STERILE AREA 2 FILT Y1•X1•BRANCH IF DATA PASSED STER AREA 1 FILT• 4 TO STC•

X1 — OD27
A A-T
C ΔLMT2
L RΔFP6+T
C STC-1
C8— XX —CH
STERILE AREA 2 FILT Y2•X2•STC STEPPED TO 3•

CVWL GPR ASSIGNMENTS

GPR0	WORKING REGISTER•
GPR1	WORKING REGISTER•
GPR2	WORKING REGISTER•
GPR3	WORKING REGISTER•
GPR4	WORKING REGISTER•
GPR5	NEXT ADDRESS IN REFRESH•
GPR6	0•9D BORDER REGION-Y1•X1•
GPR7	0•9D BORDER REGION-Y2•X2•
GPR8	WORKING REGISTER•
GPR9	NEXT DBL WD ADDRESS IN PRIME•
GPR10	DOUBLE WORD COUNT•
GPR11	CONVERSION CONSTANT•
FPR0	GEOGRAPHIC AREA-Y1•X1•
FPR1	GEOGRAPHIC AREA-Y2•X2•
FPR2	STERILE AREA NO• 1-Y1•X1•
FPR3	STERILE AREA NO• 1-Y2•X2•
FPR4	STERILE AREA NO• 2-Y1•X1•
FPR5	STERILE AREA NO• 2-Y2•X2•
FPR6	STERILE AREA NO• 3-Y1•X1•
FPR7	STERILE AREA NO• 3-Y2•X2•

XO — OD2A
A IC+0
A +D
S MS-REQ*D-3
L R*24+S
C 0+STC
E2— XX —EB
STERILE AREA FAILED

XX — OD29
A A-T
C ΔLMT1
L RΔFP7+T
R ΔLMT
G1— X* —GA
STER AREA 3•BR IF DATA PASSED STER AREA 2 FILT•

X1 — OD2B
A A-T
C ΔLMT2
R STAG
G2— *X —GB
STERILE AREA 3 FILT Y2•X2•BRANCH ON STAT G IF 1ST SET OF COORD(WD1) FAILED GEOG FILT•

OX — OD95
A B+0
A +T
L WΔGP1
R STAD ΔLMT
G3— X* —GC
CONVERTED PVD COORD TO GPR 1• BRANCH IF DATA PASSED STER AREA 3 FILT•BRANCH ON STAT D IF 1ST SET OF COORD(WD1)HAS JUST BEEN PROC•

01 — OD31
A 0+S
A +B
B Δ0100+V0
B V+0
B +F
L RΔGP11+S
C 1+STAD
G4— XX —GD

10 — OD32
A IC+0
A +D
S MS-REQ*D-3
L R*24+S
C 0+STC
J4— XX —JD
STERILE AREA FAILED REJECT LINE

11 — OD33
A A+0
A +T
L RΔGP1+S
C 0+STAD
L4— XX —LD
WD1 PASSED GEOG AND STERILE TESTS

00 — OD30
A IC+0
A +D
S MS-REQ*D-3
L R*24+S
C 0+STC
N4— XX —ND
STERILE AREA FAILED REJECT LINE

XX — OD34
A 0+ΔK
A +A
L WΔGP0
G5— XX —GE
WD 2 TO A REG• SYS COORD OF WD 1 TO GPR 0•

XX — OD3F
A B+0
A +T
L WΔGP1
G6— XX —GF
PVD COORD OF WD 1 TO GPR 1•

X1 — OD25
A 0+Δ2
A +T
L WΔGP4
C 0+STAD
R STAD
J6— *X —JF
PUT A CONSTANT 2 INTO GPR 4 IF PT FAILED GEOG FILT• THIS CONSTANT WILL BE USED ON PG QQ281 TO DETERMINE THE VALUES OF THE CO• C1 BITS OF THE OUTPUT FORMAT WD• BRANCH IF 1ST WD HAS JUST BEEN PROC

OX — OD94
B Δ1010+V0
B V0•V0+0
B +F
L RΔGP0+T
R STAG
J7— *X —JG
CHECK IF WD1 FAILED GEOG WD2 FAILED GEOG

1X — OD96
A A+0
A +T
C 1+STAG
L7— XX —LG
WD1 FAILED GEOG

OX — OD35
A A+T
A ΔR1+B
B 0+0•U
B +F F+U
L RΔFP0+T
C 0+STC
G8— XX —GH
WD1 PASSED GEOG WD2 FAILED GEOG WD2 CONVERTED

1X — OD37
A IC+0
A +D
S MS-REQ*D-3
L R*24+S
C 0+STC
J8— XX —JH
WD1 AND WD2 FAILED GEOG REJECT LINE

QQ271 —GHE
(XX)
TO TRUNCATION ROUTINE

EXIT HERE TO THE TRUNCATION ROUTINE WHEN THE 1ST SET OF COORDINATES OF A WEATHER LINE PASS THE GEOG FILTER AND STERILE AREA FILTER•THE 2ND SET OF COORD FAIL THE GEOG FILTER AND NO STERILE AREA FILTERING PERFORMED•THE FIRST POINT INSIDE THE GEOG BOUND BECOMES THE MAJOR POSITION PT AND ITS SYSTEM COORD ARE IN THE T REG AND GPR 0•MAJ POS PVD COORD ARE IN GPR 1•THE PT OUTSIDE THE GEOG BOUND IS THE SECONDARY POS AND ITS SYSTEM COORD ARE IN THE A REG•

IF ONE OR BOTH POINTS OF THE WEATHER LINE FALL INSIDE THE GEOG BOUND OF THE PVD•THE LINE WILL BE ACCEPTED•IF ONE OR BOTH PTS FALL INSIDE ANY STER AREA•THE LINE WILL BE REJECTED•IF BOTH PTS FALL OUTSIDE THE GEOG BOUND OF THE PVD•THE LINE WILL BE REJECTED IF ONLY ONE PT FALLS OUTSIDE THE GEOG BOUND OF THE PVD•THEN THAT LINE WILL REQUIRE TRUNCATION•

QQ271•CIE
(01)
QQ281•CDE
(01)

IN BOX NB THE SYST COORD OF WD 2 ARE PUT INTO T REG•SYS COORD OF WD 1 TO S REG•

1X — OD97
A B+0
A +T
L WΔGP1
R ΔLMT
N1— X* —NA
WD1 FAILED AND WD 2 PASSED GEOG FILT•PVD COORD OF WD 2 TO GPR 1• BRANCH IF WD 2 PASSED STER AREA 3 FILT•

X1 — OD3B
A A+0
A +T
L RΔGP0+S
N2— XX —NB
WD1 FAILED GEOG WD2 PASSED GEOG PASSED STERILE

XO — OD3A
A IC+0
A +D
S MS-REQ*D-3
L W&GP1
C 0+STC
Q2— XX —QB
WD1 FAILED GEOG WD2 FAILED STERILE AREA

XX — OD3D
B Δ1010+V0
V0•V0+0
B +F
L WΔGP0
C 0+STAG
Q4— XX —QD
CONSTANT A0 TO F REG•THIS CONS WILL BE USED IN TRUNC ROUT TO COUNT NO OF TRUNC ON A LINE•SYST COORD OF WD 2 TO GPR 0 RESET STAT G•

XX — OD3E
A 0+S
A +A
B 0+0•U
B +F F+U
L RΔGP1+S
Q6— XO —QF
MAJOR POS(WD2) PVD COORD TO S REG•SECONDARY POS SYST COORD TO A REG•MAJOR POS SYS COORD ARE IN T REG•SHIFT CONST A0 R4 TO F REG•

QQ231 —GDE
(XX)
TO MULT ROUT

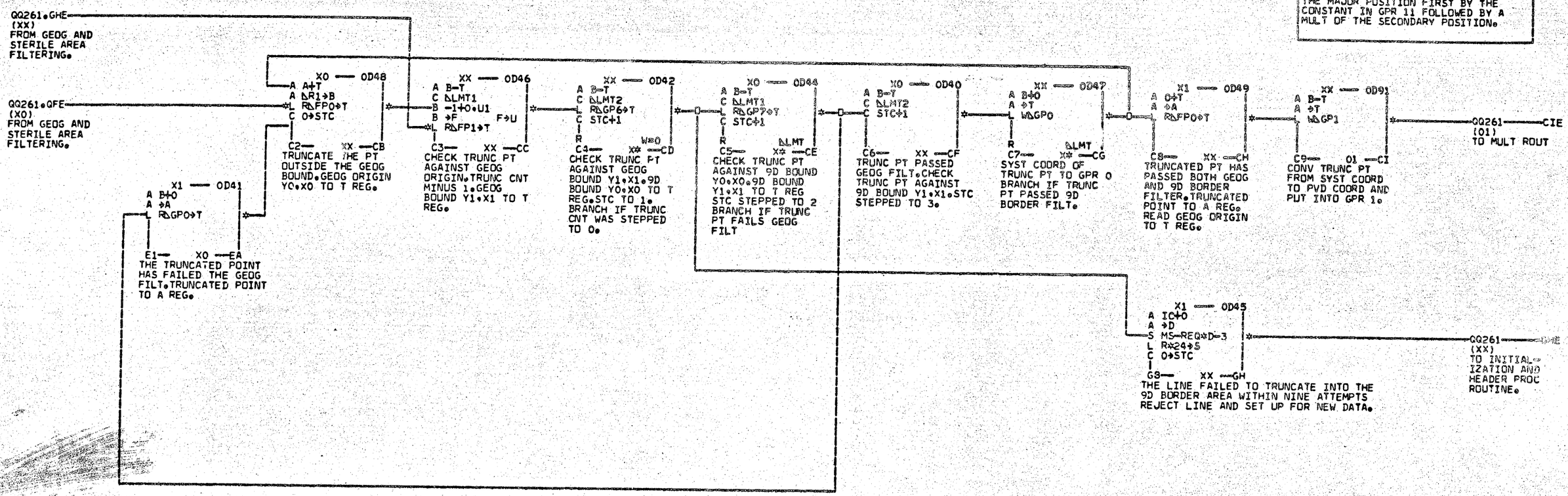
EXIT HERE TO MULT ROUT IF BOTH PTS HAVE PASSED THE GEOG AND STERILE AREA FILTERS•THE PVD COORD OF THE PRIMARY PT ARE IN THE B REG AND THE MULT CONSTANT IN THE S REG•PVD COORD OF THE SECONDARY PT IS IN GPR 1•

QQ271 —QFE
(XO)
TO TRUNCATION ROUTINE

THE CONDITIONS FOR EXITING HERE TO THE TRUNCATION ROUT ARE THE SAME AS THOSE SPECIFIED ABOVE•THE EXCEPTION IS THE 2ND SET OF COORD PROC NOW BECOME THE MAJ POS AND 1ST SET OF COORD(FAIL GEOG FILT) BECOME THE SECONDARY PT•

713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ261
		NAME		LOG 048	VERSION
		MODE	MANUAL	WEATHER-GEOGRAPHIC AND STERILE AREA FILTERING	
		P•N•	2583854		
		IBM CORP•			

16200
1



TRUNCATION IS THE ADDITION OF A POINT OUTSIDE THE GEOGRAPHIC BOUNDARY WITH A POINT INSIDE THE GEOGRAPHIC BOUNDARY AND HALVING THE RESULT BOTH THE Y AND X COMPONENTS OF EACH POINT WILL BE TRUNCATED IN THE SAME OPERATION AND THE RESULTS OF WHICH WILL BE PLACED INTO THE B REG•

THE PURPOSE OF TRUNCATION IS TO RETURN A PT WHICH LIES OUTSIDE THE GEO BOUN OF A PVL TO SOME PT WITHIN THE GEOG BOUND AND THE •9D BORDER OF THE PVD•THE ABOVE HALVING FUNCTION IS APPLIED•A MAXIMUM OF NINE ATTEMPTS ARE MADE TO RETURN THE POINT TO THE PVD AREA•IF TRUNCATION IS NOT SUCCESSFUL AFTER THESE ATTEMPTS THEN THE LINE WILL BE REJECTED•

CVWL GPR ASSIGNMENTS•

GPR0	WORKING REGISTER•
GPR1	WORKING REGISTER•
GPR2	WORKING REGISTER•
GPR3	WORKING REGISTER•
GPR4	WORKING REGISTER•
GPR5	NEXT ADDRESS IN REFRESH•
GPR6	O•9D BORDER REGION=Y1•X1•
GPR7	O•9D BORDER REGION=Y2•X2•
GPR8	WORKING REGISTER•
GPR9	NEXT DBL WD ADDRESS IN PRIME•
GPR10	DOUBLE WORD COUNT•
GPR11	CONVERSION CONSTANT•
FPR0	GEOGRAPHIC AREA=Y1•X1•
FPR1	GEOGRAPHIC AREA=Y2•X2•
FPR2	STERILE AREA NO• 1=Y1•X1•
FPR3	STERILE AREA NO• 1=Y2•X2•
FPR4	STERILE AREA NO• 2=Y1•X1•
FPR5	STERILE AREA NO• 2=Y2•X2•
FPR6	STERILE AREA NO• 3=Y1•X1•
FPR7	STERILE AREA NO• 3=Y2•X2•

QQ271

713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ271
		NAME		LOG 048	VERSION
		MODE	MANUAL		
		P•N•	2583855	WEATHER-TRUNCATION	
		IBM CORP•			

EXIT HERE TO MULTIPLY THE SECONDARY POSITION BY THE CONSTANT CONTAINED IN THE S REG.

QQ231.NIE
(XX)FROM MULTIPLY ROUTINE.
ABC=0
STC=0.F=03
Y COOR IN A.
B.X COOR IN T

XX — 0D4B
A →D
L R&GP1→S
C 1→STAH
R STAH
C2— X* —CB
CLEAR D REG.BRANCH IF STAT H ON.IF BRANCH IS MADE THEN BOTH POINTS HAVE BEEN MULT.

XO — 0D4C
L W&GP1
C 1→STC(00)
C3— XX —CC
MAJOR POS X TO GPR 1.

XX — 0D4E
A A+0
A →T
L W&GP2
C STC=1
C4— 01 —CD
MAJOR POS Y TO GPR 2.

X1 — 0D4D
A 0+T
A →B
L R&GP1→T
C STC=1
E3— XX —EC
MAJOR POS X TO T REG.SECONDARY POS X TO B REG. SECONDARY POS Y IS IN A REG.

XX — 0D50
A B=DT
A →B
L R&GP2→T
C ABC+1
E4— XX —ED
MAJOR POSITION Y TO T REG.ABC TO 1 DELTA X TO B REG.

XX — 0D51
A A=DT
A →A
L R&GP4→S
C ABC+1
R JCRY4
E5— X* —EE
DELTA Y TO A REG. ABC TO 2.TRUNC BIT TO S REG.

X1 — 0D53
A 0+S
B →F
L R&GPB→T
R JCRY4
E6— X* —EF
DELTA X PLUS DELTA Y TO A REG.

XO — 0D52
A 0+S
B D0100→V0
B V+0
B →F
L R&GP8→T
R JCRY4
G6— X* —GF
DELTA X NEG.SIGN OF DELTA X TO F REG.

X1 — 0D57
A D2+D2
B 0+U
B →ST F→U
C J7→STC
R J47=0
C8— X* —CH
DELTA Y IS PLUS. BRANCH IF LINE WAS TRUNCATED. SIGN OF DELTAS TO BYTE 7 OF 1ST FORMAT WD.4 TO STC.

X1 — 0D2F
B D1100→V0
B V+0
B →F
C STC+1
C9— XX —CI
THIS LINE WAS NOT TRUNCATED.CO AND C1 BITS TO F REG. FIVE TO STC.

QQ261 — CDE (01) TO MULT ROUT

XO — 0D56
A D2+D2
B D1000→V0
B V+U
B →ST F→U
C J7→STC
R J47=0
G8— X* —GH
DELTA Y NEG.BRANCH IF LINE WAS TRUNCATED.SIGN OF DELTAS TO BYTE 7 OF 1ST FORMAT WORD. 4 TO STC.

XO — 0D2E
B D1000→V0
B V+0
B →F
C STC+1
G9— XX —GI
THIS LINE WAS TRUNCATED. BIT C1 TO F REG. 5 TO STC.

XX — 0D80
A 0-1
B V+0
C J7→STC
J2— XX —JB
HEADER SYMBOL TO SAL.7 TO STC

XX — 0D13
A →E
L R&GP2→S
C STC=1
R W=0
J3— X* —JC
MAJOR POS Y TO S REG.BRANCH IF HEADER SYM EQ 0.

XO — 0DB4
A D2+D2
B 0+U
B →ST F→U
C J7→STC
J4— XX —JD
C1 AND CO BITS TO 1ST FORMAT WD.

A SUBTRACTION OF THE MAJOR POSITIONS FROM THE SECONDARY POSITIONS RESULT IN THE DELTA Y AND X COMPONENTS OF THE WEATHER LINE. THE FORMATING OF THE WEATHER LINE WILL BE DONE IN 3 OPERATIONS. THE BR.B.D.DL.SYM.SY.SX. CO. AND C1 ON THE 1ST OPERATION. THE DELTA Y AND X ON THE 2ND FMT OPER. THE MAJOR POSITION Y AND X WILL BE FMT ON THE 3RD AND FINAL OPERATION.

X1 — 0D85
A D2+D2
B →ST
C J7→STC
L5— XX —LE
HEADER SYM EQ 0. CLEAR CO.C1 BITS FROM 1ST FORMAT WD.4 TO STC.

XX — 0D87
A B+0
A →T
D DT→M
L6— XX —LF
DELTA X TO T REG. WORD 0 TO M REG.

XX — 0D88
A 0+S
A →B
B 0+U
B →ST AB→U
L R&GP1→S
C ABC.STC+1
L7— XX —LG
FIRST BYTE OF DELTA Y TO BYTE 4 OF T REG.MAJOR POSITION Y TO B REG.MAJOR POS X TO S REG.STC TO 5 AND ABC TO 3.

XX — 0D89
A B+0
A →A
B 0+U
B →ST AB→U
D DFMTW*E14-15
L8— XX —LH
SECOND BYTE OF DELTA Y TO BYTE 5 OF T REG.FORMAT WORD 0.MAJOR POS Y TO A REG.

CVWL GPR ASSIGNMENTS

GPR0	WORKING REGISTER.
GPR1	WORKING REGISTER.
GPR2	WORKING REGISTER.
GPR3	WORKING REGISTER.
GPR4	WORKING REGISTER.
GPR5	NEXT ADDRESS IN REFRESH.
GPR6	0.9D BORDER REGION-Y1.X1.
GPR7	0.9D BORDER REGION-Y2.X2.
GPR8	WORKING REGISTER.
GPR9	NEXT DBL WD ADDRESS IN PRIME.
GPR10	DOUBLE WORD COUNT.
GPR11	CONVERSION CONSTANT.
FPR0	GEOGRAPHIC AREA-Y1.X1.
FPR1	GEOGRAPHIC AREA-Y2.X2.
FPR2	STERILE AREA NO. 1-Y1.X1.
FPR3	STERILE AREA NO. 1-Y2.X2.
FPR4	STERILE AREA NO. 2-Y1.X1.
FPR5	STERILE AREA NO. 2-Y2.X2.
FPR6	STERILE AREA NO. 3-Y1.X1.
FPR7	STERILE AREA NO. 3-Y2.X2.

QQ281

XX — 0D8A
A 0+S
A →T
D DT→M
L R&GP5→S
C ABC.STC-1
C E3+1
Q2— XX —QB
MAJOR POS X TO T REG.WD 2 TO M REG REFRESH MEM ADDR TO S REG.ABC TO 2 STC TO 4.

XX — 0D0D
A 0+S
A →DWS
B 0+U
C E3+1
C ABC.STC+1
Q4— XX —QD
1ST BYTE OF MAJOR POS Y TO BYTE 4 OF T REG.REFRESH MEM ADDR TO D REG ABC TO 3 AND STC TO 5.E REG 12-15 EQ 2.

XX — 0D1F
B 0+U
B →ST AB→U
D DFMTW*E14-15
S SET-MARK-0-7
Q5— XX —QE
2ND BYTE OF MAJOR POS Y TO BYTE 5 OF T REG.FORMAT WORD 2.SET MARKS

XX — 0D2C
A B+D
A →B
S DRQ-XY-STO*D
C E3-1
C 0→STAH
Q6— XX —QF
REF MEM ADDR PLUS 8 TO B REG.MAKE STORE REQ TO REF MEM.E REG 12-15 TO 1.

XX — 0D3C
A B+0
A →T
D DFMTW*E14-15
L W&GP5
D DT→M
Q7— XO —QG
WD1 TO M REG AND FORMAT WD 1.

QQ261 — QGE (XO) TO INITIALIZATION AND HEADER PROC ROUTINE.

EXIT HERE TO CHECK IF THERE IS AN INTERRUPT PENDING OR THE DBL WORD CO.NT EQUALS ZERO.IF NEITHER CASE IS PENDING THEN PROCESS NEXT HEADER OR WEATHER LINE COORDINATES.

713671	04/28/70	MACH	C7201-02	DATE	05/21/70	SHEET	1 QQ281
		NAME		LOG	048	VERSION	
		MODE	MANUAL	WEATHER-DELTA			
		P.N.	2583856				
		IBM CORP.					

CONVERT WEATHER LINES (CVWL)
QT051•AAE ——2——
(000011)
QQ511•AIE ——
(000011)
RE-ENTER CVWL FROM INTERRUPT ROUTINE.

000011 — OD03
A O+T
A +D
B Δ1000+VO
B V+0
B +F
S MS-REQ*D-3
C1— XX —CA
ADDR OF NEXT DATA WD IN PRIME TO D REG AND MAKE FETCH REQ.CONSTANT 8 TO BITS 0-3 OF F REG

XX — OD00
A IC+0
A +T
L W*24
S STOP1
C 0+STC
C2— XO —CB
INSTR ADDR TO WORKING REG.

XX — OD07
A 0+S
A +IC
B 0+U0.0
B +ST F+U
L W&GP4
C 0+STAG
C3— XX —CC
WORD COUNT TO IC CONSTANT 80 TO BYTE 0 OF S REG

XX — OD9B
A 0+D
A +T
B V+U
L W&GP3
C 1+STC(00)
R J47=0
C4— X* —CD
PRESENT PRIME ADDR TO GPR 3. 4 TO STC.CHECK IF DATA WD IS A HDR.

XO — OD06
A B+D
A +D
C Δ512CRY+DLT
R W-CRY
C5— X* —CE
UPDATE PRIME ADDR BY 8.BRANCH IF DATA WD IS A HDR.

X1 — OD05
L R*24+S
G5— 01 —GE
WD CNT EQ 0.TERMINATE.

XO — OD06
A B+D
A +Δ1
C 1+STAD
C6— XX —CF
DATA WORD WAS NOT A HEADER PUT 2ND POINT IN K REG.

X1 — OD07
A IC-1
A +IC.T
L W&GP10
C ABC+1
E6— XX —EF
WD COUNT MINUS 1 TO IC.ABC TO 1.

XX — OD54
A Δ2+Δ2
B 0+U
B +ST AB+U
C J7+ABC
S MS-REQ*D-3
R J47=0
G6— X* —GF
MOVE D.DL.B.BL BITS TO BYTE 4 OF T REG.ABC TO 4.

X1 — OD08
L R*24+S
C STC+1
A7— XX —AG
NO DATA WDS AFTER HDR.STC TO 3.

XX — OD01
B 0+U
B +ST AB+U
L W&GP8
A8— X1 —AH

SYMBOL DATA TO BYTE 5 OF T REG TO GPR 8.

XX — OD08
A IC-1
A +T
L W&GP10
C7— XX —CG
DBL WORD COUNT MINUS 1 TO GPR 10

QQ261— —CGE
(XX)
TO GEOGRAPHIC AND STERILE AREA FILTER.

XO — OD0A
A +E
L R*24+S
C STC+1
R TCS/ST
E8— X* —EH
CLEAR E REG.STC TO 5.BRANCH IF INTERRUPT IS PENDING.

XO — OD16
B 0+U
B +ST AB+U
L W&GP8
D E3+ABC.STC
E9— XO —EI
SYMBOL TO BYTE 5 OF T REG.ZERO TO ABC AND STC.SAVE D.DL.E.BL.AND SYMBOL IN GPR 8.

THE SYMBOL.D.DL.B.AND BL.INFO IS TAKEN FROM THE HEADER DBL WD AND PUT INTO GPR8.IF THE DBL WD BEING PROCESSED IS NOT A HEADER WD THEN IT IS ASSUMED THAT WHATEVER IS CONTAINED IN GPR8 IS THE HEADER INFO ASSOCIATED WITH THAT DATA.WHEN THE PROCESSING OF ONE WEATHER LINE IS COMPLETED.PROVISIONS ARE MADE TO HONOR ANY INTERRUPT THAT MAY BE PENDING

CVWL GPR ASSIGNMENTS

GPR0	WORKING REGISTER.
GPR1	WORKING REGISTER.
GPR2	WORKING REGISTER.
GPR3	WORKING REGISTER.
GPR4	WORKING REGISTER.
GPR5	NEXT ADDRESS IN REFRESH.
GPR6	O.9D BORDER REGION-Y1.X1.
GPR7	O.9D BORDER REGION-Y2.X2.
GPR8	WORKING REGISTER.
GPR9	NEXT DBL WD ADDRESS IN PRIME.
GPR10	DOUBLE WORD COUNT.
GPR11	CONVERSION CONSTANT.
FPR0	GEOGRAPHIC AREA-Y1.X1.
FPR1	GEOGRAPHIC AREA-Y2.X2.
FPR2	STERILE AREA NO. 1-Y1.X1.
FPR3	STERILE AREA NO. 1-Y2.X2.
FPR4	STERILE AREA NO. 2-Y1.X1.
FPR5	STERILE AREA NO. 2-Y2.X2.
FPR6	STERILE AREA NO. 3-Y1.X1.
FPR7	STERILE AREA NO. 3-Y2.X2.

SYMBOL TO BYTE 5 TO GPR 8.BRANCH IF PROG INTRP.

X1 — OD17
B 0+U
B +ST AB+U
L W&GP8
C 0+STAG
R INTRP 0
L2— *0 —LB

00 — OD18
L R*24+S
C 1+STAG
J4— 01 —JD
NON PROGRAM INTERRUPT.

01 — OD19
A 0+S
A +IC
L4— 0X —LD
WORD COUNT EQUAL 0 END OP

10 — OD1A
A 0+S
A +IC
N4— 0X —ND
PROGRAM INTERRUPT END OP

11 — OD1B
A 0+S
A +IC
Q4— 0X —QD
WORD COUNT EQUAL 0 END OP

XX — OD1E
A 0+S
L W&GP4
C 0+ABC
R TCS/ST
N1— X* —NA
BRANCH IF INTRP IS PENDING.

QQ261•AIE —
(XX)

XO — OD1C
A +T
D MS+AB
L R&GP10+S
C 0+STC
N2— XX —NB
NO INTERRUPT PENDING

X1 — OD1D
L R*24+S
C 0+STAG
R INTRP J47=0
Q2— X* —QB
CHECK IF WORD COUNT EQUALS ZERO.

ENTRANCE INTO THIS PAGE FROM QQ261 INDICATES THAT A SET OF WEATHER COORDINATES HAVE BEEN PROCESSED.

1X — OD22
A 0+1
A +Δ1
C 0+STAG
R 0
N7— 0X —NG
1 TO K REG(TO BE USED FOR RETURN TO CVWL FROM TCS ROUT.THIS IS NOT A PROG INTERRUPT.

QQ511— —NGE
(0X)NON-PROGRAMME INTERRUPT.

0X — OD11
A 0+D
A +T
L W&GP9
R STAG
Q6— X* —QF
BRANCH ON NON PROG INTERRUPT.

QQ211— —QFE
(0X)
TO END OP

QQ291

713671	04/28/70	MACH	C7201-02	DATE	05/21/70	SHEET	1 QQ291
		NAME		LOG	048	VERSION	
		MODE	MANUAL				
		P.No.	2583857				
		IBM CORP.	SDD				

WEATHER—INITIALIZATION AND HEADER PROCESSING

QQ511•EIE
(001111)
RE-ENTRY FROM
INTERRUPT
ROUTINE.

REPACK
SYMBOLS
(RPSB)
QT051•AAE —2→
(001111)

OP CODE (OF)
001111 — 0D8F
*A IC+0
A →T
L R&GP7→S
C 0→STC

C1 — XX — CA
360 IC TO T.
NEXT WCT ADDR.
TO S REG.

XX — 0F81
A 0+S
A →A
L R&GP8→S

C3 — XX — CC
WCT ADDRESS
TO A REG. IRXT
AND TWICE BIN NO.
TO S REG.

XX — 0F82
A A+S
A →IC
B V+0
B →F
L W*24

C4 — XX — CD
WCTA + (2 X BIN NO.)
TO IC•STATUS•IRXT
CODE TO F•STC=0•
SAVE 360 IC IN
WORKING REGISTER.

XX — 0F83
A F1+0
B 0+U1•U0
B →F F→U
L R&GP11→T
S MS=REQ*IC=3
C 1→STC(00)

C5 — XX — CE
IRXT CODE TEST
IN PADDER. REQUEST
BIN DISP. ADDRESS
FROM WCT. DP BITS
TO T REG. STC TO 4.
REVERSE IRXT AND
STATUS IN F.

XX — 0F84
A →B8•&K
L R&GP7→S

R J47=0
C6 — X* — CF
CLEAR K FOR SYMBOL
COUNT. CLEAR B64=67
OF ANY RESIDUE.
STC = 4. NEXT WCT
ADDRESS TO S REG.

QQ501 — CFE
(X0)
INTERRUPT ENTRIES →

X1 — 0F87
B 0+0
B →ST
L W&GP11
C STC+1

R T(32)
C7 — X* — CG
TEST DP BITS IN T.
RESET DP BITS AND
STORE IN GPR11.
STC 4 TO 5.

QQ521 — CGE
(X1)
NDT PAGE OVERFLOW ENTRY →

X0 — 0F88
A A+&32
A →T•D
D MS→AB
L W&GP7
C STC+1

C8 — XX — CH
FIRST WCT ORDER
ADDR. TO T AND D.
REGS. AND GPR7.
STC 5 TO 6.
BIN DISP. ADDR.
TO AB REGS.

XX — 0F8B
A →T
D IC→ABC
L R&GP2→S

G4 — XX — GD
SET AB BYTE POINTER
TO DISPLACEMENT ADDR.
START. STC = 6.
CLEAR T REG.
ODTA TO S REG.

XX — 0F8C
A 0+S
A →IC
B 0+U
B →ST AB→U
S MS=REQ*IC=4
C ABC•STC+1

G5 — XX — GE
GATE FIRST BYTE
OF DISP. ADDR. TO
T REG. BYTE 6.
DEVELOP BIN DISP.
ADDRESS IN T REG.
ODTA TO IC.
REQUEST ODT WORDS.

XX — 0F8D
A 0+D
B 0+U
B →ST AB→U
D J7→ABC
L W&GP9

G6 — XX — GF
WCT ORDER BYTE
ADDRESS TO ABC.
GATE SECOND BYTE
OF DISP. ADDR. TO
T REG. BYTE 7.
BIN DISP. ADDRESS
TO GPR 9.

XX — 0F8E
A 0+T
A →B
L R&GP10→T
C 0→STC

G7 — XX — GG
BIN DISP. ADDRESS
TO B REG. SORT BIN
BASE ADDR. TO T.

XX — 0F8A
A B+T
A →T
B →F
L W&GP6
S MS=REQ*D=3
C STC=1

G8 — XX — GH
COMPUTE SORT BIN
ADDRESS. STORE IN
GPR6. REQUEST WCT
WORDS. ZERO TO F.
STC 0 TO 7.

XX — 0F8F
B &0111→V0
B V0•V0+0
B →F1
D MS→Q
D &MS→LM
L R&GP4→T

G9 — XX — GI
GATE ODT WORDS TO
LM AND Q REGS.
ORMA TO T REG.
0111 TO F1.

QQ421•LGE
(0X•1X)FROM
PRIOR DELETE
TYPE ORDER.
STAT D ON IF
FROM DELETE OR
DELETEN1.

QQ521•NIE
(X1)NEXT
C/T ENTRY.

1X — 0F9A
A 0+D
A →T
B 1+0
L W&GP7

R 0
L4 — XO — LD
FROM DELETE N1
OR DELETE.

XO — 0F94
B →F
L R*24→S
C 1→STAG
C &1→IVSPEC

L6 — XX — LF
ORMA NOT ON DOUBLE
WORD BOUNDARY.

QQ511 — LFE
(XX)SPEC CHECK
TERMINATION.

XX — 0F93
B V•U
B F→U
D &LM→N•Q→R*IC
C STC+1

N1 — XX — NA
FIRST ODT DESC TO N•R
REGS•CHECK ORMA.

XX — 0FC4
A →T
D MS→AB
D R→E
L W&FP2

R W=0
N2 — X* — NB
WCT WORDS TO AB.
FIRST ODT DESC.
TO E REG. CLEAR
FPR2 FOR INSERT.
BRANCH IF ORMA
ON DOUBLE WORD
BOUNDARY.

X1 — 0F95
*A &2+&2
A →T
B &0010→V0
B V*U
B AB→U
L W&FP4
R 0

N3 — OX — NC
CONSTANT 4 TO
FPR4 FOR INSERT
SYMBOLS.
WCT ORDER TO
SADDER FOR TEST
DELETE N2
(00100000)?

OX — 0F98
A 0+D
A →T
B &0001→V0
B V*U
B AB→U
L W&GP7
R W=0

N4 — X* — ND
WCT ORDER TO
SADDER FOR TEST
DELETEN1
(00010000)?
STORE CURRENT
WCTA IN GPR7.

XO — 0F9C
A B+0
A →T
B &0011→V0
B V*U
B AB→U
L W&FP1
C ABC+1
R W=0

N5 — X* — NE
WCT ORDER TO
SADDER FOR TEST
DELETE(00110000)?
ORDER NOT DELETEN2.
SAVE B REG. ORDERS
IN FPR1 TEMPORARILY.
ABC TO BATCH NO.

XO — 0F9E
A →B8
B &NO→V
B V*U AB→U

R W=0
N6 — X* — NF
ORDER NOT DELETEN1.
TEST BATCH NUMBERS
FOR MATCH.
CLEAR B64=67 OF
ANY RESIDUE.

XO — 0F50
A 0+&K
A →B
L R&GP4→T
C ABC=1

N7 — XX — NG
NOT DELETE ORDER.
READOUT ORMA FOR
DELETE SYMBOL
UPDATE.
SYMBOL COUNT TO B.
FOR MULTIPLY.
ABC BACK TO ORDER
BYTE.

XX — 0F85
A BL2+T
A →T
D J7→STC
L R&FP1→S

N8 — XX — NH
UPDATE ORMA TO
BYPASS DELETED
SYMBOLS. (S/C X 4)
+ ORMA. STC TO
4 IF COUNT ODD.
0 IF EVEN. B REG.
ORDERS TO S REG.

XX — 0F97
A 0+S
A →B
L R&GP3→S
C 1→STAG

N9 — XX — NI
RESTORE ORDERS IN B REG.
NDT ADDRESS TO S.
STAT G ON TO INDICATE
TO MOVE ROUTINES THAT
ENTRY IS FROM DELETE
ROUTINE.

QQ411 — NIE
(XX)

QQ421 — NFE
(X1)
DELETE

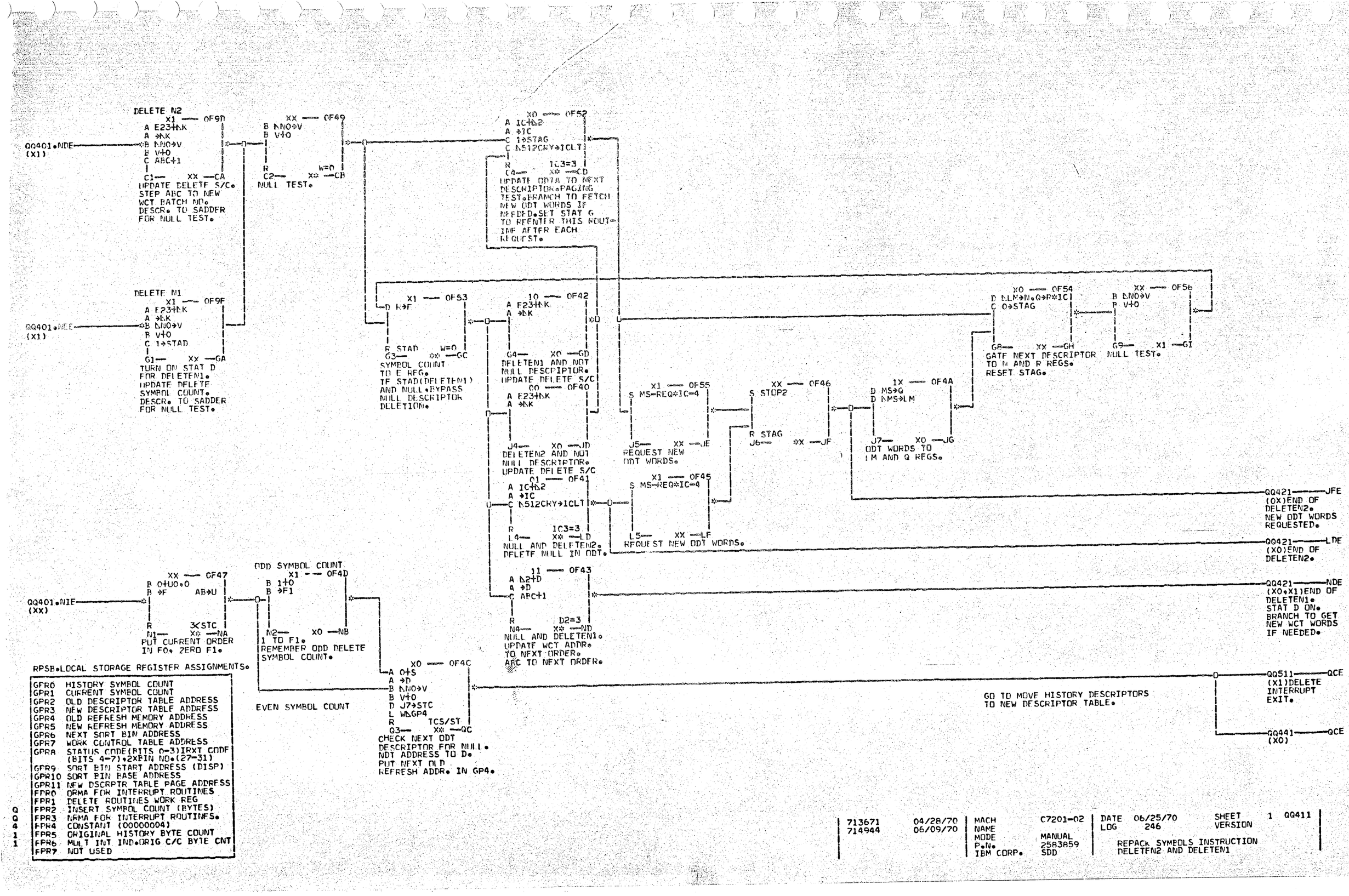
QQ411 — NEE
(X1)
DELETEN1

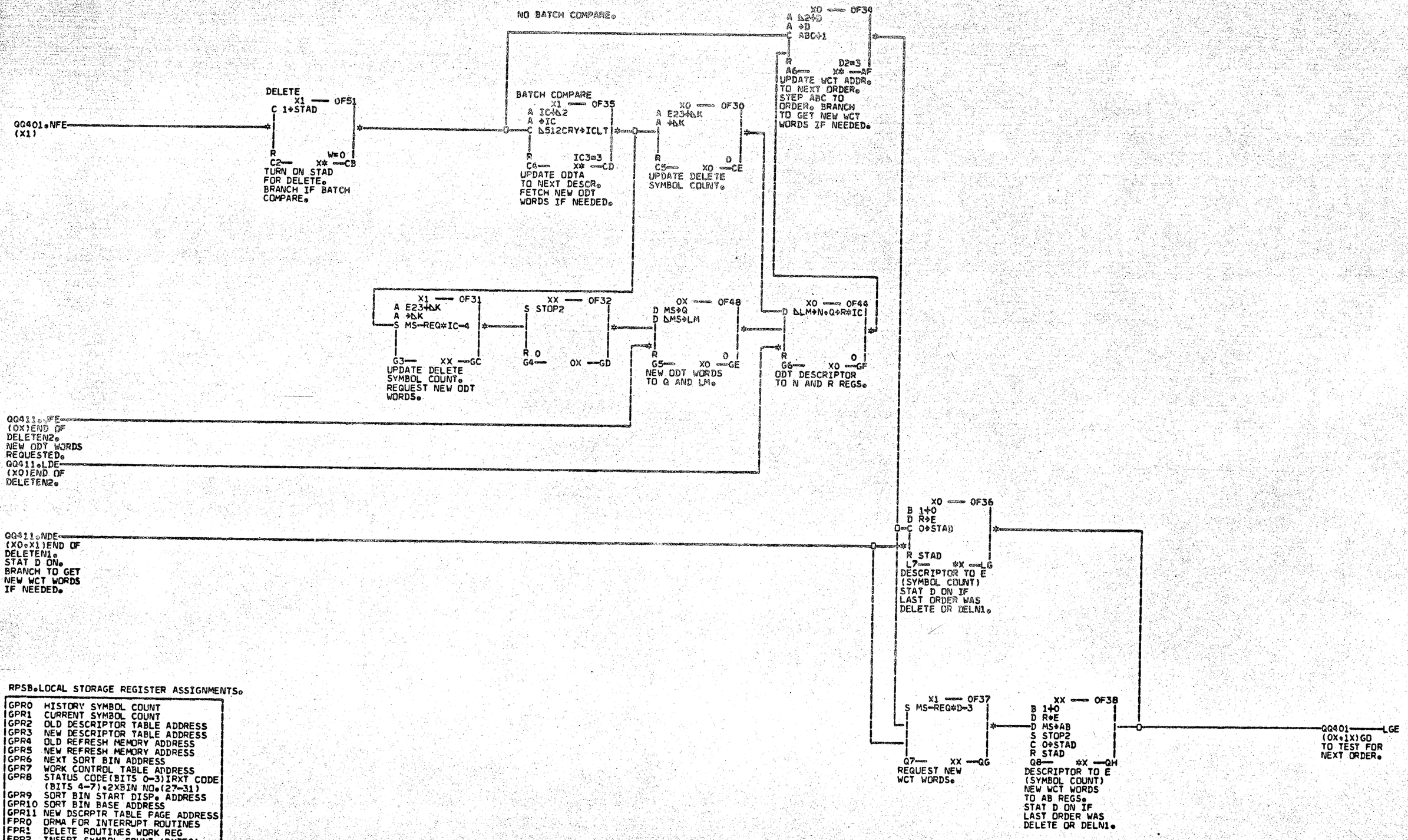
QQ411 — NDE
(X1)
DELETEN2

RPSB•LOCAL STORAGE REGISTER ASSIGNMENTS.

GPR0	HISTORY SYMBOL COUNT
GPR1	CURRENT SYMBOL COUNT
GPR2	OLD DESCRIPTOR TABLE ADDRESS
GPR3	NEW DESCRIPTOR TABLE ADDRESS
GPR4	OLD REFRESH MEMORY ADDRESS
GPR5	NEW REFRESH MEMORY ADDRESS
GPR6	NEXT SORT BIN ADDRESS
GPR7	WORK CONTROL TABLE ADDRESS
GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7)•2XBIN NO.(27-31)
GPR9	SORT BIN START DISP. ADDRESS
GPR10	SORT BIN BASE ADDRESS
GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
FPR0	ORMA FOR INTERRUPT ROUTINES
FPR1	DELETE ROUTINES WORK REG
FPR2	INSERT SYMBOL COUNT (BYTES)
FPR3	NRMA FOR INTERRUPT ROUTINES.
FPR4	CONSTANT (00000004)
FPR5	ORIGINAL HISTORY BYTE COUNT
FPR6	MULT INT IND•ORIG C/C BYTE CNT
FPR7	NOT USED

713671	04/28/70	MACH	2701-02	DATE 03/03/72	SHEET 1 QQ401
714952	01/05/71	NAME		LOG 876	VERSION
717525	02/24/72	MODE	MANUAL	REPACK SYMBOLS INSTRUCTION	
		P.N.	2583858	INITIALIZATION	
		IBM CORP.	SDD		

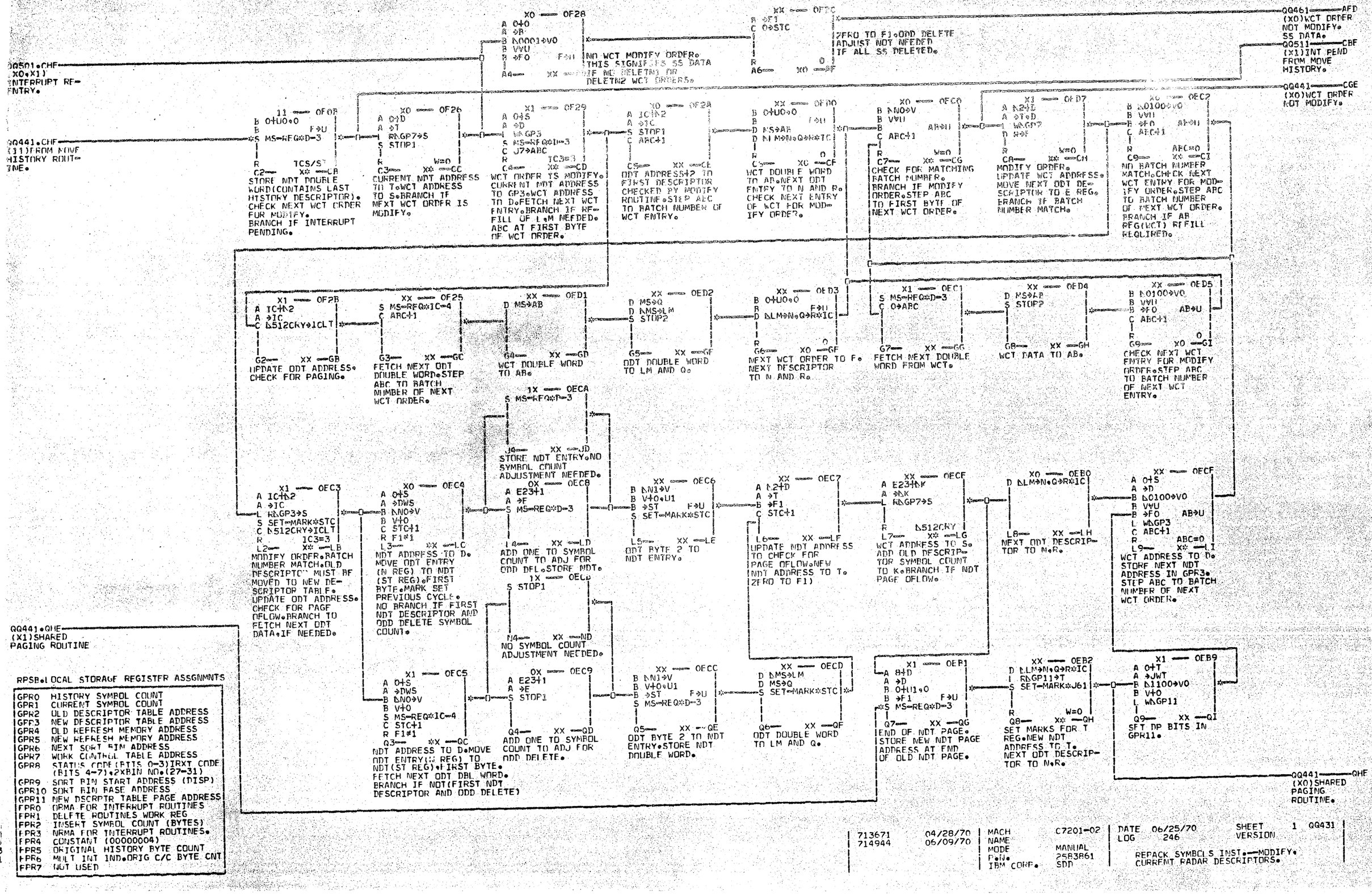

DELETE N2
X1 — 0F9D
A E23+NK
A →NK
B NNO→V
B V+0
C ABC+1
C1— XX —CA
UPDATE DELETE S/C. STEP ABC TO NEW WCT BATCH NO. DESCR. TO SADDER FOR NULL TEST.
QQ401.NDE (X1)
XX — 0F49
B NNO→V
B V+0
R W=0
C2— X* —CB
NULL TEST.
XO — 0F52
A IC+2
A →IC
C 1→STAG
C N512CKY→ICLT
R IC3=3
C4— XX —CD
UPDATE ODTA TO NEXT DESCRIPTOR. PAGING TEST. BRANCH TO FETCH NEW ODT WORDS IF NEEDED. SET STAT G TO REENTER THIS ROUTINE AFTER EACH REQUEST.
DELETE N1
X1 — 0F9F
A E23+NK
A →NK
B NNO→V
B V+0
C 1→STAD
G1— XX —GA
TURN ON STAT D FOR DELETEN1. UPDATE DELETE SYMBOL COUNT. DESCR. TO SADDER FOR NULL TEST.
QQ401.NLE (X1)
X1 — 0F53
D K→F
R STAD W=0
G3— X* —GC
SYMBOL COUNT TO E REG. IF STAD(DELETEN1) AND NULL BYPASS NULL DESCRIPTOR DELETION.
10 — 0F42
A E23+NK
A →NK
G4— XO —GD
DELETEN1 AND NOT NULL DESCRIPTOR. UPDATE DELETE S/C
C0 — 0F40
A E23+NK
A →NK
J4— XO —JD
DELETEN2 AND NOT NULL DESCRIPTOR. UPDATE DELETE S/C
C1 — 0F41
A IC+2
A →IC
C N512CKY→ICLT
R IC3=3
L4— X* —LD
NULL AND DELETEN2. DELETE NULL IN ODT.
11 — 0F43
A N2+D
A →D
C ABC+1
R D2=3
N4— X* —ND
NULL AND DELETEN1. UPDATE WCT ADDR. TO NEXT ORDER. ABC TO NEXT ORDER.
X1 — 0F55
S MS=REQ*IC=4
J5— XX —JE
REQUEST NEW ODT WORDS.
X1 — 0F45
S MS=REQ*IC=4
L5— XX —LF
REQUEST NEW ODT WORDS.
XX — 0F46
S STOP2
R STAG
J6— *X —JF
1X — 0F4A
D MS→Q
D NMS→LM
J7— XO —JG
ODT WORDS TO 1M AND Q REGS.
XO — 0F54
D LLM→N.Q→R*IC
C 0→STAG
G8— XX —GH
GATE NEXT DESCRIPTOR TO N AND R REGS. RESET STAG.
XX — 0F56
B NNO→V
R V+0
G9— X1 —GI
NULL TEST.
QQ421 —JFE
(OX)END OF DELETEN2. NEW ODT WORDS REQUESTED.
QQ421 —LDE
(XO)END OF DELETEN2.
QQ421 —NDE
(XO*X1)END OF DELETEN1. STAT D ON. BRANCH TO GET NEW WCT WORDS IF NEEDED.
QQ511 —QCE
(X1)DELETE INTERRUPT EXIT.
QQ441 —QCE
(XO)
GO TO MOVE HISTORY DESCRIPTORS TO NEW DESCRIPTOR TABLE.
XX — 0F47
B O+UO.O
B →F AB→U
R 3<STC
N1— X* —NA
PUT CURRENT ORDER IN FO. ZERO F1.
QQ401.NIE (XX)
ODD SYMBOL COUNT
X1 — 0F4D
B 1+0
B →F1
N2— XO —NB
1 TO F1. REMEMBER ODD DELETE SYMBOL COUNT.
EVEN SYMBOL COUNT
XO — 0F4C
A O+S
A →D
B NNO→V
B V+0
D J7→STC
L WAGP4
R TCS/ST
Q3— X* —QC
CHECK NEXT ODT DESCRIPTOR FOR NULL. NDT ADDRESS TO D. PUT NEXT OLD REFRESH ADDR. IN GP4.
RPSB.LOCAL STORAGE REGISTER ASSIGNMENTS.
GPR0 HISTORY SYMBOL COUNT
GPR1 CURRENT SYMBOL COUNT
GPR2 OLD DESCRIPTOR TABLE ADDRESS
GPR3 NEW DESCRIPTOR TABLE ADDRESS
GPR4 OLD REFRESH MEMORY ADDRESS
GPR5 NEW REFRESH MEMORY ADDRESS
GPR6 NEXT SORT BIN ADDRESS
GPR7 WORK CONTROL TABLE ADDRESS
GPR8 STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7)+2xBIN NO.(27-31)
GPR9 SORT BIN START ADDRESS (DISP)
GPR10 SORT BIN BASE ADDRESS
GPR11 NEW DSCRPTR TABLE PAGE ADDRESS
Q FPR0 ORMA FOR INTERRUPT ROUTINES
FPR1 DELETE ROUTINES WORK REG
Q FPR2 INSERT SYMBOL COUNT (BYTES)
Q FPR3 NRMA FOR INTERRUPT ROUTINES.
4 FPR4 CONSTANT (00000004)
1 FPR5 ORIGINAL HISTORY BYTE COUNT
1 FPR6 MULT INT IND.ORIG C/C BYTE CNT
FPR7 NOT USED
713671 04/28/70
714944 06/09/70
MACH C7201-02
NAME
MODE MANUAL
P.N. 2583859
IBM CORP. SDD
DATE 06/25/70
LOG 246
SHEET 1 QQ411
VERSION
REPACK SYMBOLS INSTRUCTION
DELETEN2 AND DELETEN1



RPSB.LOCAL STORAGE REGISTER ASSIGNMENTS.

	GPR0	HISTORY SYMBOL COUNT
	GPR1	CURRENT SYMBOL COUNT
	GPR2	OLD DESCRIPTOR TABLE ADDRESS
	GPR3	NEW DESCRIPTOR TABLE ADDRESS
	GPR4	OLD REFRESH MEMORY ADDRESS
	GPR5	NEW REFRESH MEMORY ADDRESS
	GPR6	NEXT SORT BIN ADDRESS
	GPR7	WORK CONTROL TABLE ADDRESS
	GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7).2XBIN NO.(27-31)
	GPR9	SORT BIN START DISP. ADDRESS
	GPR10	SORT BIN BASE ADDRESS
	GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
	FPR0	ORMA FOR INTERRUPT ROUTINES
	FPR1	DELETE ROUTINES WORK REG
Q	FPR2	INSERT SYMBOL COUNT (BYTES)
Q	FPR3	NRMA FOR INTERRUPT ROUTINES.
4	FPR4	CONSTANT (00000004)
2	FPR5	ORIGINAL HISTORY BYTE COUNT
1	FPR6	MULT INT IND.ORIG C/C BYTE CNT
	FPR7	NOT USED

713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ421
		NAME		LOG 048	VERSION
		MODE	MANUAL	REPACK SYMBOLS INSTRUCTION	
		P.N.	2583860		


QQ501•CHF
(X0•X1)
INTERRUPT RE=
ENTRY•
QQ441•CHF
(11)FROM MOVE
HISTORY ROUT=
INE•
11 — OF0B
B 0+U0•0
B F•U
S MS=REQ*D=3
R TCS/ST
C2— X* —CA
STORE NDT DOUBLE
WORD(CONTAINS LAST
HISTORY DESCRIPTOR)•
CHECK NEXT WCT ORDER
FOR MODIFY•
BRANCH IF INTERRUPT
PENDING•
X0 — OF26
A 0+D
A +T
R REGP7•S
S STOP1
R W=0
C3— X* —CC
CURRENT NDT ADDRESS
TO T•WCT ADDRESS
TO S•BRANCH IF
NEXT WCT ORDER IS
MODIFY•
X1 — OF29
A 0+S
A +D
R WAGP3
S MS=REQ*D=3
C J7+ABC
R IC3=3
C4— X* —CD
WCT ORDER IS MODIFY•
CURRENT NDT ADDRESS
TO GP3•WCT ADDRESS
TO D•FETCH NEXT WCT
ENTRY•BRANCH IF RE=
FILL OF L•M NEEDED•
ABC AT FIRST BYTE
OF WCT ORDER•
X0 — OF2A
A IC+2
A +IC
S STOP1
C ABC+1
C5— X* —CE
NDT ADDRESS+2 TO
FIRST DESCRIPTOR
CHECKED BY MODIFY
ROUTINE•STEP ABC
TO BATCH NUMBER OF
WCT ENTRY•
XX — OF00
B 0+U0•0
B F•U
D MS+AB
D N M•N•Q•N*IC
R 0
C5— X0 —CF
WCT DOUBLE WORD
TO AB•NEXT NDT
ENTRY TO N AND R•
CHECK NEXT ENTRY
OF WCT FOR MOD=
IFY ORDER•
X0 — OFC0
B ANO+V
B VWU
B AB+U
C ABC+1
R W=0
C7— X* —CG
CHECK FOR MATCHING
BATCH NUMBER•
BRANCH IF MODIFY
ORDER•STEP ABC
TO FIRST BYTE OF
NEXT WCT ORDER•
X1 — OFD7
A A2+D
A +T•D
L WAGP2
D +F
R W=0
C8— X* —CH
MODIFY ORDER•
UPDATE WCT ADDRESS•
MOVE NEXT NDT DE=
SCRIPTOR TO E REG•
BRANCH IF BATCH
NUMBER MATCH•
X0 — OFC2
B A0100+V0
B VWU
B +F0 AB+U
C ABC+1
R ABC=0
C9— X* —CI
NO BATCH NUMBER
MATCH•CHECK NEXT
WCT ENTRY FOR MOD=
IFY ORDER•STEP ABC
TO BATCH NUMBER
OF NEXT WCT ORDER•
BRANCH IF AB
REG(WCT) REFILL
REQUIRED•
XX — OF7C
R +F1
C 0+STC
R 0
A6— X0 —AF
ZERO TO F1•ODD DELETE
ADJUST NOT NEEDED
IF ALL SS DELETED•
XO — OF2B
A 0+0
A +B
B A0001+V0
B VWU
B +F0 F+U
A4— XX —AE
NO WCT MODIFY ORDER•
THIS SIGNIFIES SS DATA
OR NO DELETING OR
DELETING WCT ORDERS•
QQ461— AFD
(XO)WCT ORDER
NOT MODIFY•
SS DATA•
QQ511— CBF
(X1)INT PEND
FROM MOVE
HISTORY•
QQ441— CGE
(XO)WCT ORDER
NOT MODIFY•
X1 — OF2B
A IC+A2
A +IC
C A512CRY+1CLT
G2— XX —GB
UPDATE ODT ADDRESS•
CHECK FOR PAGING•
XX — OF25
S MS=REQ*IC=4
C ARC+1
G3— XX —GC
FETCH NEXT ODT
DOUBLE WORD•STEP
ABC TO BATCH
NUMBER OF NEXT
WCT ORDER•
XX — OFD1
D MS+AB
G4— XX —GD
WCT DOUBLE WORD
TO AB•
XX — OED2
D MS+Q
D AMS+LM
S STOP2
G5— XX —GF
ODT DOUBLE WORD
TO LM AND Q•
XX — OED3
B 0+U0•0
R F+U
D ALM•N•Q+R*IC
R 0
G6— XO —GF
NEXT WCT ORDER TO F•
NEXT DESCRIPTOR
TO N AND R•
X1 — OEC1
S MS=REQ*D=3
C 0+ABC
G7— XX —GG
FETCH NEXT DOUBLE
WORD FROM WCT•
XX — OED4
D MS+AB
S STOP2
G8— XX —GH
WCT DATA TO AB•
XX — OED5
B A0100+V0
B VWU
B +F0 AB+U
C ABC+1
R 0
G9— XO —GI
CHECK NEXT WCT
ENTRY FOR MODIFY
ORDER•STEP ABC
TO BATCH NUMBER
OF NEXT WCT
ENTRY•
1X — OECA
S MS=REQ*D=3
J4— XX —JD
STORE NDT ENTRY•NO
SYMBOL COUNT
ADJUSTMENT NEEDED•
0X — OEC8
A E23+1
A +E
S MS=REQ*D=3
I4— XX —LD
ADD ONE TO SYMBOL
COUNT TO ADJ FOR
ODD DEL•STORE NDT•
1X — OECB
S STOP1
N4— XX —ND
NO SYMBOL COUNT
ADJUSTMENT NEEDED•
XX — OEC6
B AN1+V
B V+0•U1
B +ST F+U
S SET=MARK*STC
L5— XX —LE
ODT BYTE 2 TO
NDT ENTRY•
XX — OEC7
A N2+D
A +T
B +F1 F+U
C STC+1
L6— XX —LF
UPDATE NDT ADDRESS
TO CHECK FOR
PAGE OFLOW•NEW
NDT ADDRESS TO T•
ZERO TO F1)
XX — OECF
A E23+AK
A +AK
L RAGP7+S
R A512CRY
L7— X* —LG
WCT ADDRESS TO S•
ADD OLD DESCRIP=
TOR SYMBOL COUNT
TO K•BRANCH IF NDT
PAGE OFLOW•
XO — OEB0
D ALM+N•Q+R*IC
L8— XX —LH
NEXT ODT DESCRIP=
TOR TO N•R•
XX — OECF
A 0+S
A +D
B A0100+V0
B VWU
B +F0 AB+U
L WAGP3
C ABC+1
R ABC=0
L9— X* —LI
WCT ADDRESS TO D•
STORE NEXT NDT
ADDRESS IN GPR3•
STEP ABC TO BATCH
NUMBER OF NEXT
WCT ORDER•
X1 — OEC3
A IC+A2
A +IC
L RAGP3+S
S SET=MARK*STC
C A512CRY+ICLT
R IC3=3
L2— X* —LB
MODIFY ORDER•BATCH
NUMBER MATCH•OLD
DESCRIPTOR MUST BE
MOVED TO NEW DE=
SCRIPTOR TABLE•
UPDATE ODT ADDRESS•
CHECK FOR PAGE
OFLOW•BRANCH TO
FETCH NEXT ODT
DATA•IF NEEDED•
X0 — OEC4
A 0+S
A +DWS
B ANO+V
B V+0
C STC+1
R F1*1
L3— X* —LC
NDT ADDRESS TO D•
MOVE ODT ENTRY
(N REG) TO NDT
(ST REG)•FIRST
BYTE•MARK SET
PREVIOUS CYCLE•
NO BRANCH IF FIRST
NDT DESCRIPTOR AND
ODD DELETE SYMBOL
COUNT•
X1 — OEC5
A 0+S
A +DWS
B ANO+V
B V+0
S MS=REQ*IC=4
C STC+1
R F1*1
Q3— X* —QC
NDT ADDRESS TO D•MOVE
ODT ENTRY(N REG) TO
NDT(ST REG)•FIRST BYTE•
FETCH NEXT ODT DBL WORD•
BRANCH IF NOT(FIRST NDT
DESCRIPTOR AND ODD DELETE)
0X — OEC9
A E23+1
A +E
S STOP1
Q4— XX —QD
ADD ONE TO SYMBOL
COUNT TO ADJ FOR
ODD DELETE•
XX — OECC
B AN1+V
B V+0•U1
B +ST F+U
S MS=REQ*D=3
Q5— XX —QE
ODT BYTE 2 TO NDT
ENTRY•STORE NDT
DOUBLE WORD•
XX — OECD
D AMS+LM
D MS+Q
S SET=MARK*STC
Q6— XX —QF
ODT DOUBLE WORD
TO LM AND Q•
X1 — OEB1
A 8+D
A +D
B 0+U1•0
B +F1 F+U
S MS=REQ*D=3
Q7— XX —QG
END OF NDT PAGE•
STORE NEW NDT PAGE
ADDRESS AT END
OF OLD NDT PAGE•
XX — OEB2
D ALM+N•Q+R*IC
I RAGP11+T
S SET=MARK*J61
R W=0
Q8— X* —QH
SET MARKS FOR T
REG•NEW NDT
ADDRESS TO T•
NEXT ODT DESCRIP=
TOR TO N•R•
X1 — OEB9
A 0+T
A +JWT
B A1100+V0
B V+0
L WAGP11
Q9— XX —QI
SET DP BITS IN
GPR11•
QQ441— QHF
(XO)SHARED
PAGING
ROUTINE•
QQ441•QHE
(X1)SHARED
PAGING ROUTINE
RPSB•LOCAL STORAGE REGISTER ASSGNMNTS
GPR0 HISTORY SYMBOL COUNT
GPR1 CURRENT SYMBOL COUNT
GPR2 OLD DESCRIPTOR TABLE ADDRESS
GPR3 NEW DESCRIPTOR TABLE ADDRESS
GPR4 OLD REFRESH MEMORY ADDRESS
GPR5 NEW REFRESH MEMORY ADDRESS
GPR6 NEXT SORT BIN ADDRESS
GPR7 WORK CONTROL TABLE ADDRESS
GPR8 STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7)•2XBIN NO•(27-31)
GPR9 SORT BIN START ADDRESS (DISP)
GPR10 SORT BIN BASE ADDRESS
GPR11 NEW DSCRPTR TABLE PAGE ADDRESS
FPR0 ORMA FOR INTERRUPT ROUTINES
FPR1 DELETE ROUTINES WORK REG
FPR2 INSERT SYMBOL COUNT (BYTES)
FPR3 NRMA FOR INTERRUPT ROUTINES•
FPR4 CONSTANT (00000004)
FPR5 ORIGINAL HISTORY BYTE COUNT
FPR6 MULT INT IND•ORIG C/C BYTE CNT
FPR7 NOT USED
713671 04/28/70
714944 06/09/70
MACH C7201-02
NAME
MODE MANUAL
P•N• 2583861
IBM CORP• SDD
DATE 06/25/70 SHEET 1 QQ431
LOG 246 VERSION
REPACK SYMBOLS INST•—MODIFY•
CURRENT RADAR DESCRIPTORS•

MOVE HISTORY SYMBOL COUNT TO B.
CHECK NEXT WCT ORDER FOR INSERT
OR EOCT.NDT ADDRESS IN T.
F0=0000 IF INSERT.F0=0011 IF EOCT.

QQ501.EIE
(X0)INTERRUPT
RE-ENTRY TO
MOVE CURRENT
DESCRIPTORS
ROUTINE.

QQ431.CGE
(X0)FROM
MODIFY DE-
SCRIPTORS
ROUTINE.

QQ431.QHE
(X0)SHARED
PAGING ROUTINE

F1=1 IF DELETE SYMBOL
COUNT IS ODD.0 IF EVEN.
F1 WILL BE SET TO ZERO
WHEN THE FIRST DE-
SCRIPTOR IS MOVED FROM
ODT TO NDT.THE SYMBOL
COUNT OF THIS DESCRIPTOR
WILL BE INCREASED BY
ONE AND THE ASSOCIATED
HISTORY OR CURRENT SYMBOL
COUNT WILL BE INCREASED
BY ONE.THE MOVE SYMBOLS
ROUTINES WILL INSERT A
CORRESPONDING NULL
SYMBOL IN NRM.

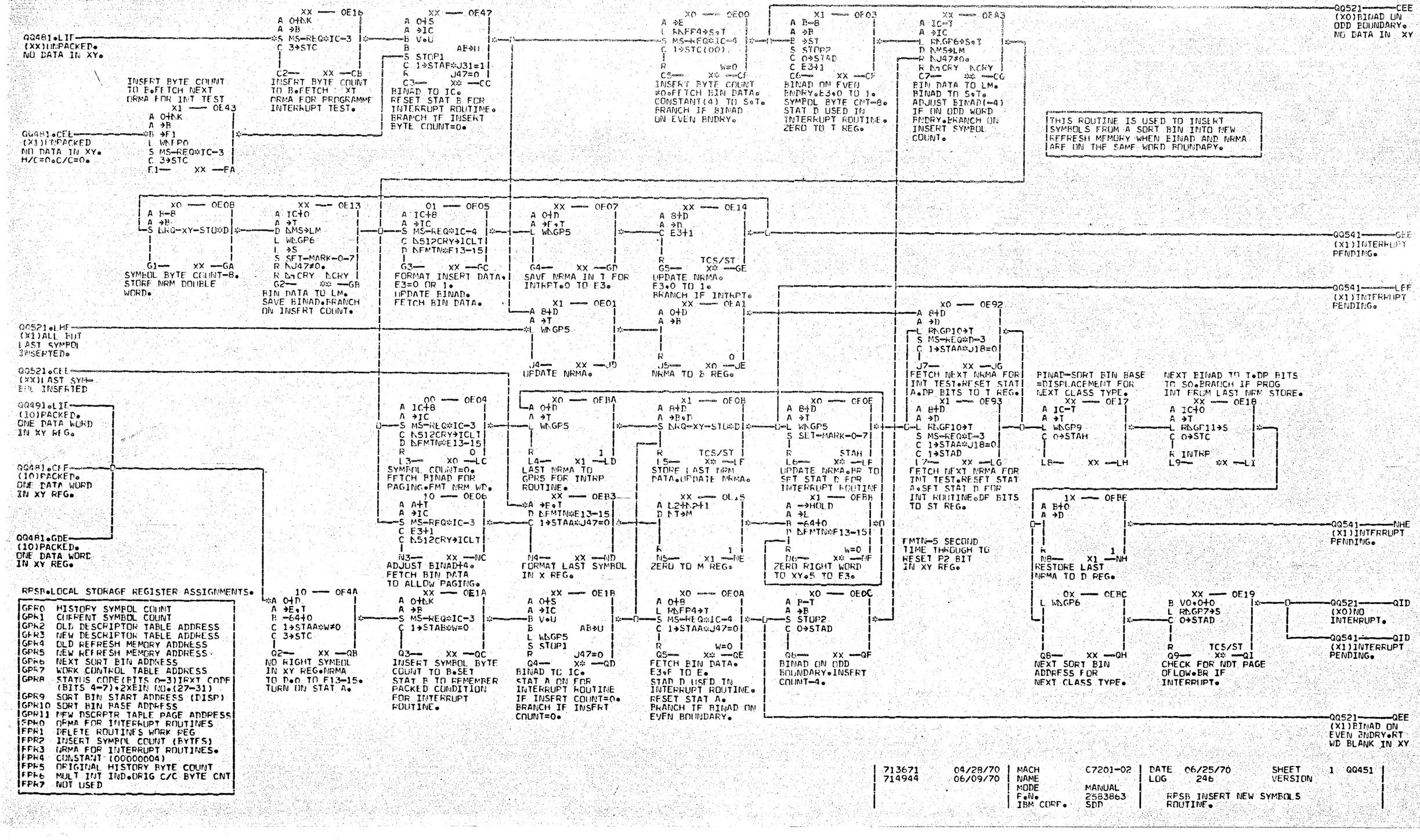
QQ411.QCE
(X0)FROM
DELETE ROUTINE
STAT G ON FOR
MOVE HISTORY
DESCRIPTORS.
F1=1 IF DELETE
SYMBOL COUNT
ODD.

QQ501.AIE
(X0)IRXT 0001.
ENTER MOVE
HISTORY
ROUTINE.

RPSB.LOCAL STORAGE REGISTER ASSIGNMENTS.

GPR0	HISTORY SYMBOL COUNT
GPR1	CURRENT SYMBOL COUNT
GPR2	OLD DESCRIPTOR TABLE ADDRESS
GPR3	NEW DESCRIPTOR TABLE ADDRESS
GPR4	OLD REFRESH MEMORY ADDRESS
GPR5	NEW REFRESH MEMORY ADDRESS
GPR6	NEXT SORT BIN ADDRESS
GPR7	WORK CONTROL TABLE ADDRESS
GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7).2XBIN NO.(27-31)
GPR9	SORT BIN START ADDRESS (DISP)
GPR10	SORT BIN BASE ADDRESS
GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
FPR0	ORMA FOR INTERRUPT ROUTINES
FPR1	DELETE ROUTINES WORK REG
FPR2	INSERT SYMBOL COUNT (BYTES)
FPR3	NRMA FOR INTERRUPT ROUTINES.
FPR4	CONSTANT (00000004)
FPR5	ORIGINAL HISTORY BYTE COUNT
FPR6	MULT INT IND.ORIG C/C BYTE CNT
FPR7	NOT USED

713671	04/28/70	MACH	7201-02	DATE 03/03/72	SHEET 1 QQ441
714944	06/09/72	NAME		LOG 876	VERSION
717525	01/10/72	MODE	ANUAL	RPSB INST. MOVE HISTORY OR CURRENT DESCRIPTORS.	
		P.N.	583862		
		IBM CORP.	DD		


QQ481•LIF
(XX)UNPACKED•
NO DATA IN XY•
XX — 0E16
A 0+NK
A →B
S MS=REQ*IC=3
C 3→STC
C2— XX —CB
INSERT BYTE COUNT TO B•FETCH NEXT ORMA FOR INT TEST
XX — 0E47
A 0+S
A →IC
B V•U
B AB→U
S STOP1
C 1→STAB*U31=1
R U47=0
C3— X* —CC
BINAD TO IC•
RESET STAT B FOR INTERRUPT ROUTINE•
BRANCH IF INSERT BYTE COUNT=0•
XO — 0E00
A →E
L RNFF4→S•T
S MS=REQ*IC=4
C 1→STC(00)
R W=0
C5— XX —CF
INSERT BYTE COUNT *0•FETCH BIN DATA•
CONSTANT(4) TO S•T•
BRANCH IF BINAD ON EVEN BNDRY•
X1 — 0E03
A B=B
A →B
B →ST
S STOP2
C 0→STAD
C E3+1
C6— XX —CF
BINAD ON EVEN BNDRY•E3•0 TO 1•
SYMBOL BYTE CNT=8•
STAT D USED IN INTERRUPT ROUTINE•
ZERO TO T REG•
XX — 0EA3
A IC=T
A →IC
L RNGP6→S•T
D NMS→LM
R NU47≠0•
R RNCRY NCRY
C7— X* —CG
BIN DATA TO LM•
BINAD TO S•T•
ADJUST BINAD(-4) IF ON ODD WORD BNDRY•BRANCH ON INSERT SYMBOL COUNT•
QQ521——CEE
(XO)BINAD ON ODD BOUNDARY•
NO DATA IN XY
THIS ROUTINE IS USED TO INSERT SYMBOLS FROM A SORT BIN INTO NEW REFRESH MEMORY WHEN BINAD AND NRMA ARE ON THE SAME WORD BOUNDARY•
INSERT BYTE COUNT TO B•FETCH NEXT ORMA FOR INT TEST
X1 — 0E43
A 0+NK
A →B
B →F1
L WNFPO
S MS=REQ*IC=3
C 3→STC
E1— XX —EA
QQ481•CEE
(X1)UNPACKED
NO DATA IN XY•
H/C=0•C/C=0•
XO — 0E08
A B=B
A →B
S RNQ=XY=STO*D
G1— XX —GA
SYMBOL BYTE COUNT=8•
STORE NRM DOUBLE WORD•
XX — 0E13
A IC+0
A →T
D NMS→LM
L WNGP6
L →S
S SFT=MARK=0=7
R NU47≠0•
R RNCRY NCRY
G2— X* —GB
BIN DATA TO LM•
SAVE BINAD•BRANCH ON INSERT COUNT•
01 — 0F05
A IC+8
A →IC
S MS=REQ*IC=4
C RS12CRY→ICLT
D NFMTN*F13=15
G3— XX —GC
FORMAT INSERT DATA•
E3=0 OR 1•
UPDATE BINAD•
FETCH BIN DATA•
XX — 0E07
A 0+D
A →F•T
L WNGP5
G4— XX —GD
SAVE NRMA IN T FOR INTRPT•0 TO E3•
XX — 0E14
A 8+D
A →D
C E3+1
R TCS/ST
G5— X* —GE
UPDATE NRMA•
E3•0 TO 1•
BRANCH IF INTRPT•
QQ541——CEE
(X1)INTERRUPT PENDING•
QQ541——LEE
(X1)INTERRUPT PENDING•
X1 — 0E01
A 8+D
A →T
L WNGP5
J4— XX —JD
UPDATE NRMA•
XX — 0EA1
A 0+D
A →B
R 0
J5— XO —JE
NRMA TO B REG•
QQ521•LHF
(X1)ALL BUT LAST SYMBOL INSERTED•
QQ521•CEE
(XX)LAST SYM= BOL INSERTED
QQ481•LIF
(10)PACKED•
ONE DATA WORD IN XY REG•
QQ481•CFF
(10)PACKED•
ONE DATA WORD IN XY REG•
QQ481•GDE
(10)PACKED•
ONE DATA WORD IN XY REG•
00 — 0E04
A IC+8
A →IC
S MS=REQ*IC=3
C RS12CRY→ICLT
D NFMTN*E13=15
R 0
L3— XO —LC
SYMBOL COUNT=0•
FETCH BINAD FOR PAGING•FMT NRM WD•
10 — 0E06
A A+T
A →IC
S MS=REQ*IC=3
C E3+1
C RS12CRY→ICLT
N3— XX —NC
ADJUST BINAD+4•
FETCH BIN DATA TO ALLOW PAGING•
XO — 0FBA
A 0+D
A →T
L WNGP5
R 1
L4— X1 —LD
LAST NRMA TO GP5 FOR INTRP ROUTINE•
XX — 0EB3
A →E•T
D NFMTN*E13=15
C 1→STAA*J47=0
N4— XX —ND
FORMAT LAST SYMBOL IN X REG•
X1 — 0F0B
A B+D
A →B•D
S RNQ=XY=STO*D
R TCS/ST
L5— X* —LF
STORE LAST NRM DATA•UPDATE NRMA•
XX — 0L45
A L2+M+1
D NT→M
R 1
N5— X1 —NE
ZERO TO M REG•
XO — 0F0E
A 8+D
A →T
L WNGP5
S SET=MARK=0=7
R STAH
L6— X* —LF
UPDATE NRMA•BR TO SET STAT D FOR INTERRUPT ROUTINE
X1 — 0FBB
A →HOLD
A →E
B -64+0
D NFMTN*F13=15
R W=0
N6— X* —NF
ZERO RIGHT WORD TO XY•5 TO E3•
XO — 0E92
A 8+D
A →D
L RNGP10→T
S MS=REQ*D=3
C 1→STAA*U18=0
J7— XX —JG
FETCH NEXT NRMA FOR INT TEST•RESET STAT A•DP BITS TO T REG•
X1 — 0E93
A 8+D
A →D
L RNGP10→T
S MS=REQ*D=3
C 1→STAA*U18=0
C 1→STAD
L7— XX —LG
FETCH NEXT NRMA FOR INT TEST•RESET STAT A•SET STAT D FOR INT ROUTINE•DP BITS TO ST REG•
FMTN=5 SECOND TIME THROUGH TO RESET P2 BIT IN XY REG•
BINAD=SORT BIN BASE =DISPLACEMENT FOR NEXT CLASS TYPE•
XX — 0F17
A IC=T
A →T
L WNGP9
C 0→STAH
L8— XX —LH
NEXT BINAD TO T•DP BITS TO SO•BRANCH IF PROG INT FROM LAST NRM STORE•
XX — 0E18
A IC+0
A →T
L RNGP11→S
C 0→STC
R INTRP
L9— X* —LI
1X — 0FBE
A B+0
A →D
R 1
N8— X1 —NH
RESTORE LAST NRMA TO D REG•
QQ541——NHE
(X1)INTERRUPT PENDING•
10 — 0F4A
A 0+D
A →E•T
B -64+0
C 1→STAA*W≠0
C 3→STC
Q2— XX —QB
NO RIGHT SYMBOL IN XY REG•NRMA TO D•0 TO E13–15• TURN ON STAT A•
XX — 0E1A
A 0+NK
A →B
S MS=REQ*IC=3
C 1→STAB*W=0
Q3— XX —QC
INSERT SYMBOL BYTE COUNT TO B•SET STAT B TO REMEMBER PACKED CONDITION FOR INTERRUPT ROUTINE•
XX — 0E1B
A 0+S
A →IC
B V•U
B AB→U
L WNGP5
S STOP1
R U47=0
Q4— X* —QD
BINAD TO IC•
STAT A ON FOR INTERRUPT ROUTINE
IF INSERT COUNT=0• BRANCH IF INSERT COUNT=0•
XO — 0E0A
A 0+8
L RNFP4→T
S MS=REQ*IC=4
C 1→STAA*U47=0
R W=0
Q5— X* —QE
FETCH BIN DATA• E3•F TO E•
STAD D USED IN INTERRUPT ROUTINE• RESET STAT A•
BRANCH IF BINAD ON EVEN BOUNDARY•
XO — 0E0C
A P=T
A →B
S STOP2
C 0→STAD
Q6— XX —QF
BINAD ON ODD BOUNDARY•INSERT COUNT=4•
0X — 0EBC
L WNGP6
Q8— XX —QH
NEXT SORT BIN ADDRESS FOR NEXT CLASS TYPE•
XX — 0E19
B V0•0+0
L RNGP7→S
C 0→STAD
R TCS/ST
Q9— X* —QI
CHECK FOR NDT PAGE OFLOW•BR IF INTERRUPT•
QQ521——QID
(XO)NO INTERRUPT•
QQ541——QID
(X1)INTERRUPT PENDING•
QQ521——QEE
(X1)BINAD ON EVEN BNDRY•RT WD BLANK IN XY
RPSR•LOCAL STORAGE REGISTER ASSIGNMENTS•
GPR0 HISTORY SYMBOL COUNT
GPR1 CURRENT SYMBOL COUNT
GPR2 OLD DESCRIPTOR TABLE ADDRESS
GPR3 NEW DESCRIPTOR TABLE ADDRESS
GPR4 OLD REFRESH MEMORY ADDRESS
GPR5 NEW REFRESH MEMORY ADDRESS
GPR6 NEXT SORT BIN ADDRESS
GPR7 WORK CONTROL TABLE ADDRESS
GPR8 STATUS CODE(BITS 0–3)IRXT CODE (BITS 4–7)•2XBIN NO•(27–31)
GPR9 SORT BIN START ADDRESS (DISP)
GPR10 SORT BIN BASE ADDRESS
GPR11 NEW DSCRPTR TABLE PAGE ADDRESS
FPR0 ORMA FOR INTERRUPT ROUTINES
FPR1 DELETE ROUTINES WORK REG
FPR2 INSERT SYMBOL COUNT (BYTES)
FPR3 NRMA FOR INTERRUPT ROUTINES•
FPR4 CONSTANT (00000004)
FPR5 ORIGINAL HISTORY BYTE COUNT
FPR6 MULT INT IND•ORIG C/C BYTE CNT
FPR7 NOT USED
713671 04/28/70
714944 06/09/70
MACH C7201-02
NAME
MODE MANUAL
F•N• 2583863
IBM CORP• SDD
DATE 06/25/70
LOG 246
SHEET 1 QQ451
VERSION
RPSR INSERT NEW SYMBOLS ROUTINE•

COMING INTO PAGE FROM PAGE QQ441•CHE THE FOLLOWING CONDITIONS EXIST:
(1)D REG=NEW DESCRIP TABLE ADDR•
(2)IC=OLD DESCRIP TABLE ADDR•
(3)FO=ZERO IF NEXT WCT ORDER IS AN INSERT AND FO=THREE IF NEXT ORDER IS AN END OF CLASS TYPE•ANY OTHER VALUE IN FO INDICATES AN INVALID SEQUENCE•
(4)K REG=CURRENT SYMBOL COUNT•

QQ501•GIF
(XX)INTERRUPT
RE-ENTRY TO
INSERT ROUTINE

QQ431•AFD
(X0)SINGLE
SYMBOL DATA•

QQ441•CHF
(01)FROM MOVE
CURRENT
DESCRIPTORS
ROUTINE•
HISTORY COUNT
IN B REG•
CURRENT COUNT
IN K REG•

01 — 0F09
B 0+U0•0
B →F F→U
S MS=REQ*D=3
C 0→STC
R TCS/ST
E2— X* —FB
STORE LAST OLD DES INTO NEW DESC TABLE (NDT) IF NECESSARY•
CLEAR F REG 4-7

X0 — 0F3A
A BL2+0
A →T
B D0011→V0
B V+U
B F→U
L WAGP0
S STOP1
C 0→ABC
F3— XX —FC
MULT HIST CNT BY 4 TO GPR 0•CHECK IF ORD IS AN EOCT

XX — 0F39
A 0+K
A →B
B 0+U
B F→U
L RAGP7→S
C 1→STC(00)
R W=0
E4— X* —ED
CUR CNT TO B REG•
BRANCH IF ORD IS AN EOCT•4 TO STC•
WCTA TO S REG•

X1 — 0F3D
A BL2+0
A →T
L WAGP1
C5— XX —CE
THIS WCT ORDER IS AN EOCT•SYM CNT TO GPR 1•

X0 — 0F3C
A 1C+0
A →T
C ABC•STC+1
R W=0
F5— X* —EE
THIS IS NOT AN EOCT ORD•BRANCH IF INS ORD•ODTA TO T REG•STC TO 5•
ABC TO 1•

XX — 0F8D
A →K
L WAFP6
A7— XX —AG
ZERO TO K REG•
SAVE CURRENT COUNT•

X0 — 0F3E
B →F
C K3→CC
C 1→STAG
C6— XX —CF
ILLEGAL SEQUENCE

IN THIS ILLEGAL SEQ THE ODTA CONTAINED IN GPR 2 IS POINTING AT THE 1ST DESC OF THE CURRENT CLASS TYPE•THE NDTA IN GPR 3 IS ALSO POINTING AT THE 1ST DESC OF THE CURRENT CLASS TYPE•

X1 — 0F3F
A 0+S
A →1C
L WAGP8→S
C ABC•STC+1
F6— XX —FF
VALID SEQUENCE OF ORDS TO THIS POINT
WCT ORD IS A INS•
BIN NO TO S REG•
STC TO 6•ABC TO 2

XX — 0F2D
A →K
L WAGP2
F7— XX —EG
CLEAR THE K REG•
ODT ADDR TO GPR 2

XX — 0F2E
A BL2+0
A →T
L WAGP1
S MS=RFQ*IC-4
F8— XX —FH
MULT CURR CNT BY 4 AND PUT INTO GPR 1•MAKE MEM REQ TO FETCH WCT ORDER

XX — 0F2F
A 0+D
A →B
L WAFP6
F9— XX —FI
NDT ADDR TO B REG•
SAVE CURRENT COUNT•

QQ511 — AGE
(XX)
TO END OF CLASS TYPE ROUTINE•

QQ511 — CFE
(XX)
ILLEGAL SEQUENCE TERMINATE

QQ511 — BF
(X1)
END OF MOVE CURRENT DESC INTERRUPT IS PENDING

QQ471•CHF
(XX)
FROM LAST PDT INS•MORE INS ORDERS TO BE EXEC IN THIS CLASS TYPE•

XX — 0DA1
A 0+N2
R V+0
B →F
C J7→STC
J3— XX —JC
TWO TO STC•

XX — 0F4E
A N2+S
A →T
L1— XX —LA
ADD 2 TO BIN NO•
AND PUT INTO T REG•

XX — 0F4F
A IC+T
A →D
L RAGP9→T
S MS=REQ*D=3
L2— XX —LB
WCT ADDRESS PLUS BIN NO• TO D REG AND MAKE REQUEST•
SORT BIN START ADDR• TO T REG•

XX — 0D9B
A 0+N2
B V+0
B →F
D ALM→N•Q→R*IC
D AMS→LM
C J7→STC
L3— XX —LC
2 TO STC•BYTE SIX OF SORT START ADDR TO F REG•WCT ORD TO LM REG•

XX — 0D9A
A 0→T
A →A
D MS→T*D(21)
S STOP1
R D22=1
L4— X* —LD
IN THE PREVIOUS CYCLE BYTE 6 OF THE SORT BIN START ADDR WAS PUT INTO F REG•
IN THIS CYCLE THE TWOS COMPL OF THE SORT BIN START ADDR TO A REG•
NEW BIN ADDR OR STOP ADDR TO T REG PER D 21•

X1 — 0D9D
A 0+NT67
A →DTS
B 0→NU
B F→U
L WAGP9
C ABC•STC+1
L6— XX —LE
NEW SORT BIN ADDR IS IN BYTES 6 AND 7 OF T REG•CLEAR BYTES 4 AND 5 AND WRITE INTO GPR9 TO UPDATE SORT BIN START ADDR•TWOS COMPL•OF BYTE SIX OF THE SORT BIN ADDR• TO BYTE 2 OF S REG•STC STEPPED TO THREE•

XX — 0D9E
A R+0
A →DWS
B -1+U
B AB→U
C 0→STC
L7— XX —LG
NDTA TO D REG•TWOS COMPL VALUE OF SORT BIN START ADDR PLUS MINUS 1 TO BYTE 3 OF S REG•THE PURPOSE OF ADDING A MINUS 1 TO THIS VALUE IS TO ALLOW THE PROCESSING OF ALL ZERO DATA IN THE LAST 8 BITS OF THE START DISPL ADDR•CLEAR STC•

XX — 0D9F
A A+T
A →B
B -1+0
B →ST
C STC+1
L8— XX —LH
EFFECTIVELY THIS IS A SUBTRACTION BETWEEN THE START AND STOP ADDR •THE REMAINDER IS PUT INTO B REG•FF TO BYTE 0 OF S REG
STC STEPPED TO 1•

XX — 0DA0
A IC+N32
A →IC
B -1+0
B →ST
R NJ47≠0•
R N7CRY NCRY
L9— X* —LI
WCT ADDR PLUS 32 TO IC•FF TO BYTE 1 OF S REG•BRANCH TO ONE OF 3 DESCR ROUT—
(1)NO SYMBOL CNT FOR INS ORD•
(2)SYMBOL CNT FOR INS ORD•INSERT SYMBOLS IN SAME PAGE•
(3)SYMBOL CNT FOR INS ORD•INSERT SYMBOLS NOT IN SAME PAGE•

X0 — 0D9C
A 0+NT45R
A →DTS
B 0→NU
B F→U
L WAGP9
C ABC•STC+1
Q6— XX —QF
NEW SORT BIN ADDR IS IN BYTES 4 AND 5 OF T REG•PUT 4 AND 5 INTO BYTES 6 AND 7•CLEAR BYTES 4 AND 5 AND PUT T REG INTO GPR9•PUT THE TWOS COMPL OF BYTE 6 OF SORT BIN START ADDR INTO BYTE 2 OF THE S REG•STEP ABC AND STC TO 3•

QQ471 — LIE
(00•01•10)
BUILD NEW DESCRIPTOR

RPSB•LOCAL STORAGE REGISTER ASSIGNMENTS•

GPR0	HISTORY SYMBOL COUNT
GPR1	CURRENT SYMBOL COUNT
GPR2	OLD DESCRIPTOR TABLE ADDRESS
GPR3	NEW DESCRIPTOR TABLE ADDRESS
GPR4	OLD REFRESH MEMORY ADDRESS
GPR5	NEW REFRESH MEMORY ADDRESS
GPR6	NEXT SORT BIN ADDRESS
GPR7	WORK CONTROL TABLE ADDRESS
GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7),2XBIN NO•(27-31)
GPR9	SORT BIN START ADDRESS (DISP)
GPR10	SORT BIN BASE ADDRESS
GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
FPR0	ORMA FOR INTERRUPT ROUTINES
FPR1	DELETE ROUTINES WORK REG
FPR2	INSERT SYMBOL COUNT (BYTES)
FPR3	NORMA FOR INTERRUPT ROUTINES•
FPR4	CONSTANT (00000004)
FPR5	ORIGINAL HISTORY BYTE COUNT
FPR6	MULT INT IND•ORIG C/C BYTE CNT
FPR7	NOT USED

THE PURPOSE OF THE INSERT NEW DESCRIPTOR ROUTINE WILL BE TO COMPUTE THE NUMBER OF NEW SYMBOLS THAT ARE TO BE INSERTED INTO THE NEW REFRESH AREA OF MEMORY AND CONSTRUCT A DESCRIPTOR CONTAINING A BATCH NO AND A SYMBOL COUNT AND ADD IT TO THE NDT THE NEXT ORDER IN THE WCT TO BE ACCESSED WILL BE TAKEN FROM THE 18TH HALF WD POSITION FROM THE GIVEN INS ORDER•EVERY INSERT ORDER WILL LIE ON A HALF WD BOUND AND IS IMMEDIATELY FOLLOWED BY ITS OWN TABLE OF 16 BIN DISPLACEMENT VALUES

713671	04/28/70	MACH	C7201-02	DATE 06/25/70	SHEET 1 QQ461
714944	06/09/70	NAME		LOG 246	VERSION
		MODE	MANUAL	REPACK SYMBOLS-INSERT	
		P•N•	2583864		
		IBM CORP•			

REFER TO PAGE QQ461 FOR THE PURPOSE AND DESCRIPTION OF THE INSERT ROUTINE.

XO — ODP5
D ΔMS→LM
D ΔLM→N.Q→R⁄IC
A3— XX —AC
WCT TO LM.

00 — ODA4
A IC+Δ2
A →IC
L RΔGP9→T
S MS=REQ*IC=4
C1— XX —CA
WCTA +2.OBINA TO T REG.REQ NEXT WCT ORDER.

XX — ODA2
A IC+Δ2
A →IC
B ΔO110→VO
B V+O
B →F
S STOP2
C2— XO —CB
WCTA +2.CONST 6 TO FO TO BE USED TO SEE IF NEXT ORD IS EOCT.

XX — ODA7
A O+ΔK
A →T
B ΔNO→V
B VVU
B F→U
L WΔFP2
D D→STC
C3— XX —CC
FIRST BYTE OF WCT ORDER EXCL OR WITH CONSTANT IN F REG.

XX — OD93
B ΔO101→VO
B V+O
B →F
L RΔGP8→S
C O→ABC
R W=O
C4— X* —CD
BRANCH IF WCT ORD IS AN EOCT.INS ORD CONSTANT TO F REG.BIN NUMBER TO S REG.

XO — ODA8
A O→D
A →B
B ΔNO→V
B VVU
B F→U
C ABC+1
C5— XX —CE
WCT ORD IS NOT AN EOCT.CHECK IF ORD IS AN INS.

XX — ODAA
A Δ2→S
A →T
B ΔO100→VO
B V+O
B →F
C ABC+1
R W=O
C6— X* —CF
BIN NO PLUS TWO. CONSTANT 4 TO F REG TO BE USED TO CHECK IF MOD ORD BRANCH IF ORD IS AN INS.

X1 — ODAF
A Δ2+Δ2+1
D J7→STC
C7— XX —CG
ORD IS AN INS.5 TO STC.

XO — ODAE
A →A
B ΔNO→V
B VVU
B F→U
E7— XX —EG
NOT(INS OR EOCT ORD)

XX — ODAC
A IC+T
A →D
S MS=REQ*D=3
C STC+1
L RΔGP9→T
C8— XX —CH
REQ WCT DISP ADDR PER D.START ADDR TO T REG.STC TO 6

XX — ODAB
A Δ2+D
A →B
B →ST
R W=O
E8— X* —EH
BRANCH IF MOD ORD BYTE 1 OF NULL→ST

XO — ODB2
A IC+O
A →T
B →F
L WΔGP7
C Δ3→CC
C 1→STAG
E9— XX —EI
THIS IS AN INVALID SEQUENCE OF ORD. PREPARE TO TERM. WCTA TO GPR7.CLEAR THE F REG AND SET STAT G.SET A COND CODE OF 3 AND GO TO TERMINATE INST

QQ531 —CDE
(X1)
TO END OF CLASS TYPE ROUTINE

QQ461 —CHE
(XX)
PROCESS NEXT INSERT ORDER

QQ511 —EIE
(XX)
INVALID SEQUENCE TERMINATE

QQ461.LIE—
(00.01.10)
CONTINUE PROC INSERT ORDER.

01 — ODA5
A B+ΔK
A →ΔK
D D→STC
G1— XX —GA
THE NEW BIN ADDR. IS GREATER THAN THE OLD BIN ADDR. INS DATA IN SAME PG.ACCUMULATE SYM CNT IN K REG.BITS 21-23 OF NDT ADDR TO STC.

XX — ODAD
A RL2→O
A R→B
B ΔN1→V
B V+O
B →ST
C O→ABC
G2— X1 —GB
DIVIDE SYMBOL COUNT SECOND BYTE OF WCT (BATCH NUMBER) TO MAKE UP FIRST BYTE OF NDT. SET ABC TO 0

X1 — ODB3
S SET=MARK*STC
C ΔABC=1.STC+1
G3— XX —GC
STEP ABC TO 7 IF NOT DUMMY MODIFY ORDER.

XX — ODB1
B O+U
B →ST AB→U
S MS=REQ*D=3
G4— XX —GD
SYMBOL COUNT TO 2ND BYTE OF NEW DESCRIPTOR AND STORE INTO NDT.

XX — OD38
A IC+Δ2
A →IC
S SET=MARK*STC
C STC+1
G5— XX —GE
SET MARKS PER STC. WCT ADDR PLUS TWO TO IC.

XX — ODB5
A Δ2→D
A →D
S MS=REQ*IC=4
C O→STAD
G6— XX —GF
NDT ADDR PLUS 2 FETCH WCT

XX — ODB6
A IC+Δ2
A →IC
B ΔO110→VO
B V+O
B →F
S STOP2
R Δ512CRY
G7— X* —GG
WCT + 2.CONS 6 TO FO TO BE USED TO SEE IF NEXT ORD IS EOCT.

XX — OD43
B =1+O
B →ST
C 1→STC(00)
L1— XX —LA
SET STC TO 6.

BOX LA COMPLETES THE DEVELOPEMENT OF A NEG LOW ORDER 8 BITS OF THE START ADDR IN THE S REG.FF IS CONTAINED IN BYTES 0-2 AND THE 2S COMPL OF LOW ORDER BYTE IN BYTE 3.

X1 — ODB9
A O=1
D ΔMS→LM
D ΔLM→N.Q→R*IC
L RΔGP11→T
S MS=REQ*D=3
C O→STC
L3— XX —LC
NEW NDT ADDRESS TO T.WCT TO LM.STORE NEW NDT ADDRESS AT END OF OLD NDT PAGE.

XX — ODB7
S SET=MARK*J61
C 1→STC(00)
L5— XX —LE
4 TO STC.SET MARK 4-7.

XX — ODBB
A O+T
A →DWS
B Δ1100→VO
B VO.O+O
L WΔGP11
L8— XX —LH
PAGING BITS TO GPR11.

10 — ODA6
A O+S
A →A
B 1+O
B →F
C ΔABC=1.STC+1
N1— XX —NA
THE NEW BIN ADDR IS LESS THAN THE OLD BIN ADDR.THE NEW DATA TO BE INSERTED IS CONTAINED IN TWO SEPARATE PGS.PUT THE TWOS COMPL OF THE TWO LEAST SIGNIFICANT BYTES OF THE OBA INTO BYTE 2 AND 3 OF A REG PUT CONST 1 INTO F1.STEP ABC.STC TO 2.

XX — ODBC
B VVU
B →ST AB→U
N2— XX —NB
BYTE SIX OF T REG IS EXCL ORD WITH BYTE 2 OF A REG AND RESULTS PUT INTO BYTE SIX OF T REG.

XX — ODBD
B V.U
B →ST.F F→U
N3— XX —NC
BYTE 6 OF T REG IS ANDED WITH THE CONSTANT 1 IN THE F REG AND RESULTS PUT IN BYTE 6 OF T REG AND F REG

XX — ODBE
B O=ΔU
B →F F→U
N4— XX —ND
2S COMPL OF F REG TO SAL TO F REG. CHECK IF CRY.

XX — ODBF
B 1=ΔU
B →F F→U
R W=CRY
N5— X* —NE
+ 1 MINUS THE 2S COMPL OF F REG TO F REG.

X1 — ODC3
A O+S
A →A
B 1+U
B →ST F→U
N6— X1 —NF
ADD 1 TO CONTENTS OF F REG AND PUT INTO BYTE 6 OF T REG.STOP ADDR TO A REG.

RPSB.LOCAL STORAGE REGISTER ASSIGNMENTS.

GPR0	HISTORY SYMBOL COUNT
GPR1	CURRENT SYMBOL COUNT
GPR2	OLD DESCRIPTOR TABLE ADDRESS
GPR3	NEW DESCRIPTOR TABLE ADDRESS
GPR4	OLD REFRESH MEMORY ADDRESS
GPR5	NEW REFRESH MEMORY ADDRESS
GPR6	NEXT SORT BIN ADDRESS
GPR7	WORK CONTROL TABLE ADDRESS
GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7).2XBIN NO.(27-31)
GPR9	SORT BIN START ADDRESS (DISP)
GPR10	SORT BIN BASE ADDRESS
GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
FPR0	ORMA FOR INTERRUPT ROUTINES
FPR1	DELETE ROUTINES WORK REG
FPR2	INSERT SYMBOL COUNT (BYTES)
FPR3	NRMA FOR INTERRUPT ROUTINES.
FPR4	CONSTANT (00000004)
FPR5	ORIGINAL HISTORY BYTE COUNT
FPR6	MULT INT IND.ORIG C/C BYTE CNT
FPR7	NOT USED

X1 — ODC7
A A+T
A →B
N7— XX —NG
SYMBOL COUNT TO B REG.

XX — ODC1
A B+1
A →B
N8— XX —NH
ADD ONE TO SYMBOL COUNT.

XX — ODOF
A B-B
A →B
R O 1
N9— O1 —NI
SUBTRACT 8 FROM SYMBOL COUNT.

XO — ODC2
B V.U
Q7— XX —QG

XX — ODC4
A O+S
A →A
B 1+U
B →ST F→U
R W=O
Q8— X* —QH

XO — ODC6
B 1+O
B →ST
Q9— X1 —QI

THE PURPOSE OF BOXES NE.NF.QG.ANDQI IS TO ESTABLISH A CONSTANT OF EITHER 256.512.OR768 TO BE ADDED TO THE DIFFERENCE BETWEEN THE LOW ORDER 8 BITS OF THE START AND STOP DISPLACEMENT ADDR.THE BLOCKS PREVIOUS TO BOX NA DETERMINED WHICH HALF OF THE PAGE THAT BOTH THE START AND STOP ADDR ARE POINTED.

QQ471

713671	04/28/70	MACH	C7201-02	DATE 05/21/70	SHEET 1 QQ471
		NAME		LOG 048	VERSION
		MODE	MANUAL	REPACK SYMBOLS INSERT	
		P.N.	2583865		
		IBM CORP.			

ENTRY INTO THIS PAGE FROM QQ531.NHE INDICATES THE NEW DESC TABLE FOR ONE CLASS TYPE HAS BEEN BUILT.
(1)B REG=HISTORY COUNT - 8.
(2)IC=OLD REFRESH MEM ADDR + 8.
(3)D REG=NEW REFRESH MEM ADDR - 8.
(4)LM REG=1ST WD OF ORM TO BE MOVED

QQ531.NHE
(00,10)
FROM END OF CLASS TYPE RQUT.LAST DESC OF NEW DESCRIP TABLE

QQ491.EHE
(00)
FROM ORM TO NRM MOVE.LAST SYM TO BE MOVED.

ENTRY INTO THIS PAGE FROM QQ491 INDICATES ALL BUT TWO SYM HAVE BEEN MOVED FROM ORM TO NRM.

QQ491.GHE
(X1)FROM ORM TO NRM MOVE. LAST SYM TO BE MOVED.

10 — 0DD6
A 8+T
C E3-1
C 1→STAD
C2— XX —CB
HIST CNT EQ TO 0 OR 4.B.T REG CONTAINS EITHER NEG 4 OR NEG 8.0 OR 1 HIST SYM TO BE MOVED FROM ORM TO NRM.PLUS 8 TO THE NEG VALUE IN T REG TO PAL.E REG STEPPED TO EITHER 1 OR 5.

XX — 0E81
A B+S
A →B.T
L R▷GP6→S
C 0→STC
R J47=0
C3— X✲ —CC
BRANCH IF HIST CNT EQ 0.CUR CNT PLUS NEG 4 OR 8 TO B.T REGS.CLEAR STC.

X1 — 0E41
A B+8
C E3-1
L R▷GP4→T
R ▷J47≠0.
R ▷CRY ▷CRV
C4— ✲✲ —CD
HIST CNT EQ 0.ADD 8 TO CUR CNT TO PAL.E REG STEPPED TO EITHER 0 OR 4 ORMA TO T REG. BRANCH ON CUR CNT RESULTS OF 0.+0.-0.

10 — 0E46
A F1+T
A →T
L W▷GP4
C 0→STAD
R J47=0
C5— X✲ —CE
RESULTS OF HIST CNT -8 PLUS CUR CNT ARE NEG.ADD A CONSTANT 0 OR 4 TO ORMA AND PUT INTO GPR 4.BRANCH IF THERE ARE NO SYM TO BE MOVED.

X0 — 0E42
A IC+0
A →T
L W▷GP4
D ▷FMTO✲E13-15
C6— 10 —CF
ONE CUR SYM TO BE MOVED.ORMA TO GP4.

QQ491 —CDE
(01)
MOVE SYMBOLS-TO OLD REFRESH NEW REFRESH

QQ451 —CEE
(X1)UNPACKED GO TO INSERT NEW SYMBOLS ROUTINE.

QQ451 —CFE
(10)
PACK.GO TO INSERT NEW SYMBOLS.

X0 — 0E40
A IC+0
A →T
L W▷GP4
D ▷FMTO✲E13-15
C 0→STAD
R ▷J47≠0.
R ▷CRY ▷CRV
G4— ✲✲ —GD
HIST CNT EQ 4. THERE IS ONE HIST SYM TO BE MOVED FROM ORM→NRM AND THERE MAY BE CUR SYM TO BE MOVED. ORMA TO GPR 4.BR IF 0.+0.-0.

00 — 0E3C
A IC+0
A →T
D ▷FMTO✲E13-15
L W▷GP4
L →S
J5— 00 —JE
ONE MORE DBL WD TO FORMAT FROM ORM TO NRM.PUT ORMA INTO GPR 4.

QQ451 —GDE
(10)PACK. GO TO INSERT NEW SYMBOLS.

QQ491 —GDE
(01)
MOVE SYMBOLS-OLD REFRESH TO NEW REFRESH.

00 — 0E44
A IC+0
A →T
D ▷FMTO✲E13-15
L W▷GP4
L →S
L7— 00 —LG
ONE MORE DBL WD TO FORMAT FROM ORM TO NRM.PUT ORMA INTO GPR 4.

00 — 0E48
A 8+D
A →E.D
C 0→STAD
S ▷RQ=XY=STO✲D
R TCS/ST
L8— X✲ —LH
+8 TO NRMA TO E AND D REGS.STORE LAST DBL WD INTO NRM.BRANCH IF INTERRUPT IS PENDING.

XO — 0E4C
S SET-MARK-0-7
L R▷GP6→S
L9— XX —LI
SET MARKS FOR MEMORY REQUEST IN PREVIOUS CYCLE IF NO INTERRUPT PENDING.

QQ541 —LHE
(X1)
INTERRUPT IS PENDING.

QQ451 —LIE
(XX)UNPACKED. GO TO INSERT NEW SYMBOLS ROUTINE.

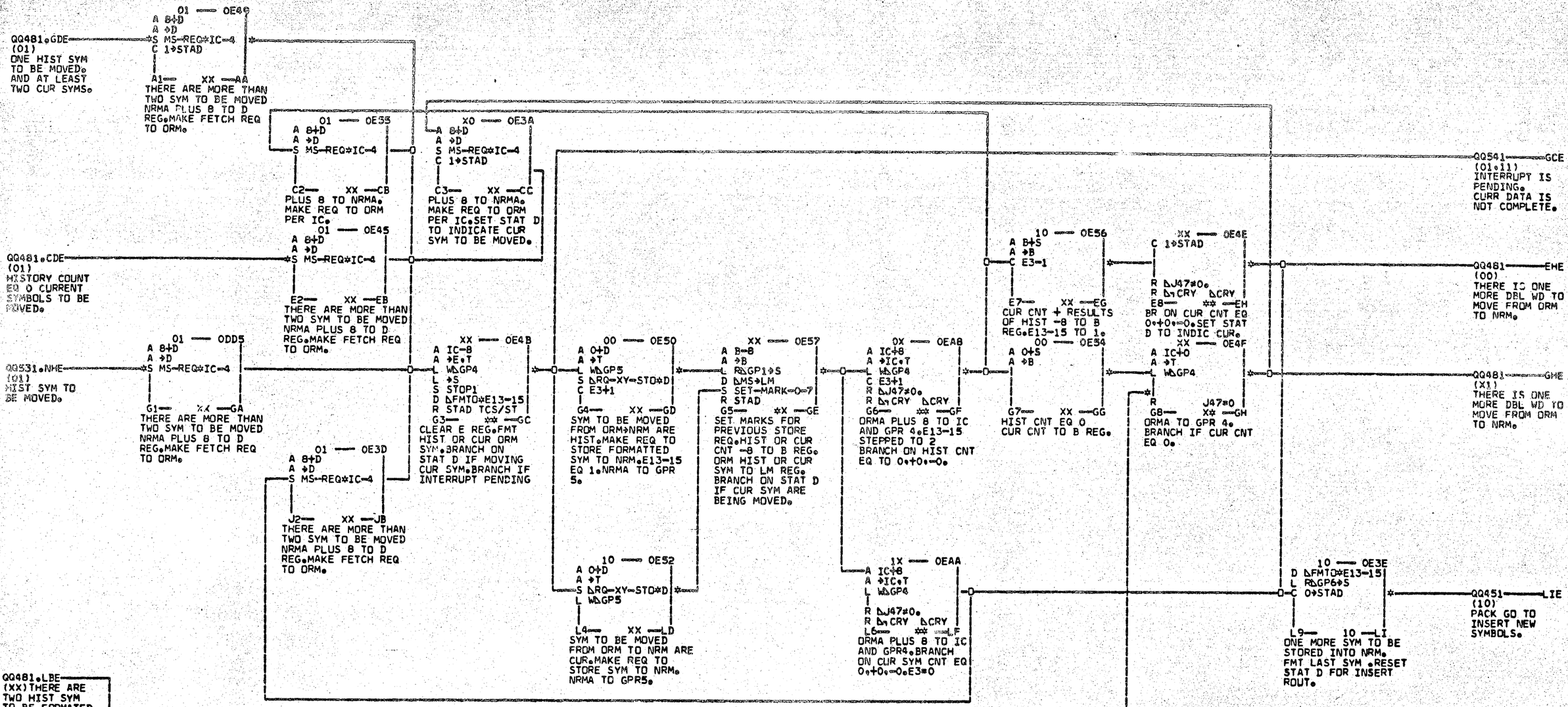
QQ491 —LBE
(XX)
MOVE SYMBOLS-OLD REFRESH TO NEW REFRESH.

UP TO THIS POINT ONLY DESCRIPTORS HAVE BEEN MOVED.IT IS NECESSARY NOW TO MOVE THE SYMBOL DATA FROM OLD REFRESH TO NEW REFRESH.THE FIRST FUNCTION PERFORMED ON THIS PAGE WILL BE TO DETERMINE WHETHER THERE ARE ANY SYMBOLS TO BE MOVED. IF NOT THEN BRANCH TO INSERT NEW SYMBOLS ROUTINE.IF THERE ARE SYMBOLS TO BE MOVED THEN GO TO PAGE QQ491 WHERE THE ACTUAL MOVE OF HISTORY AND CURRENT SYMBOLS FROM OLD REFRESH TO NEW REFRESH TAKES PLACE.

RPSB.LOCAL STORAGE REGISTER ASSIGNMENTS.

	GPR0	HISTORY SYMBOL COUNT
	GPR1	CURRENT SYMBOL COUNT
	GPR2	OLD DESCRIPTOR TABLE ADDRESS
	GPR3	NEW DESCRIPTOR TABLE ADDRESS
	GPR4	OLD REFRESH MEMORY ADDRESS
	GPR5	NEW REFRESH MEMORY ADDRESS
	GPR6	NEXT SORT BIN ADDRESS
	GPR7	WORK CONTROL TABLE ADDRESS
	GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7).2XBIN NO.(27-31)
	GPR9	SORT BIN START ADDRESS (DISP)
	GPR10	SORT BIN BASE ADDRESS
	GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
	FPR0	ORMA FOR INTERRUPT ROUTINES
	FPR1	DELETE ROUTINES WORK REG
Q	FPR2	INSERT SYMBOL COUNT (BYTES)
Q	FPR3	NRMA FOR INTERRUPT ROUTINES.
4	FPR4	CONSTANT (00000004)
8	FPR5	ORIGINAL HISTORY BYTE COUNT
1	FPR6	MULT INT IND.ORIG C/C BYTE CNT
	FPR7	NOT USED

713671	04/28/70	MACH	C7201-02	DATE	05/21/70	SHEET	1 QQ481
		NAME		LOG	048	VERSION	
		MODE	MANUAL	REPACK SYMBOLS-INITIALIZE OLD REFR TO NEW REFR MOVE			
		P.N.	2583866				
		IBM CORP.	SDD				



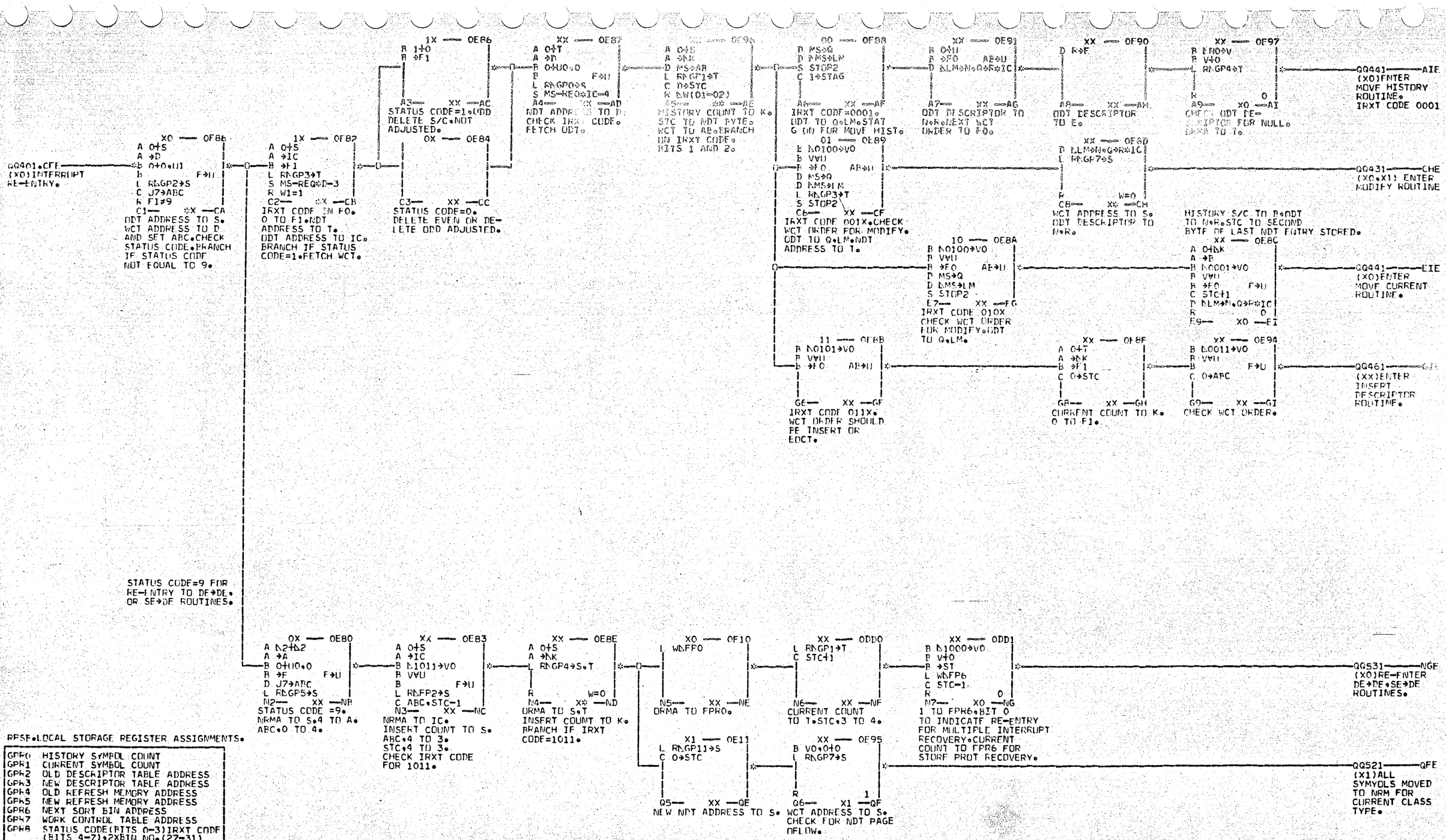
RPSB•LOCAL STORAGE REGISTER ASSIGNMENTS•

	GPR0	HISTORY SYMBOL COUNT
	GPR1	CURRENT SYMBOL COUNT
	GPR2	OLD DESCRIPTOR TABLE ADDRESS
	GPR3	NEW DESCRIPTOR TABLE ADDRESS
	GPR4	OLD REFRESH MEMORY ADDRESS
	GPR5	NEW REFRESH MEMORY ADDRESS
	GPR6	NEXT SORT BIN ADDRESS
	GPR7	WORK CONTROL TABLE ADDRESS
	GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7)•2XBIN NO•(27-31)
	GPR9	SORT BIN START ADDRESS (DISP)
	GPR10	SORT BIN BASE ADDRESS
	GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
	FPR0	ORMA FOR INTERRUPT ROUTINES
	FPR1	DELETE ROUTINES WORK REG
Q	FPR2	INSERT SYMBOL COUNT (BYTES)
Q	FPR3	NRMA FOR INTERRUPT ROUTINES•
4	FPR4	CONSTANT (00000004)
9	FPR5	ORIGINAL HISTORY BYTE COUNT
1	FPR6	MULT INT IND•ORIG C/C BYTE CNT
	FPR7	NOT USED

DURING THIS ROUTINE THE DESIGNATED NUMBER OF SYMBOLS AS PER HISTORY COUNT (2 PER DOUBLE WORD) ARE MOVED FROM OLD REFRESH TO NEW REFRESH•AS EACH SYMBOLS IS MOVED•THE BRIGHTNESS BIT FOR EACH SYMBOL IS RESET•AFTER COMPLETION OF THIS MOVE•THE ROUT WILL CONTINUE ON TO PROCESS CURRENT SYMBOLS•IF THE DELETE OPERATION HAS LEFT THE FIRST HISTORY SYMBOL TO BE MOVED ON AN ODD BOUNDARY•THE ROUT WILL TRANSFER THE FIRST SYMBOL AND ASSOCIATED CONTROL BITS FROM WD 2 TO WD 1•THE P2 BIT WILL BE RESET TO PREVENT THE DISPLAY OF WD 2•ALL THE REMAING SYM WILL BE TRANSFERED AS GIVEN EXCEPT THE BRIGHTNESS BITS WILL BE RESET•THE MOVING OF CURR SYM WILL NOT REQUIRE THE RESET OF THE BRIGHTNESS BITS•

713671	04/28/70	MACH	C7201-02	DATE	05/21/70	SHEET	1 QQ491
		NAME		LOG	048	VERSION	
		MODE	MANUAL				
		P•N•	2583867				

REPACK SYMBOLS—MOVE OLD



RPSF•LOCAL STORAGE REGISTER ASSIGNMENTS•

	GPR0	HISTORY SYMBOL COUNT
	GPR1	CURRENT SYMBOL COUNT
	GPR2	OLD DESCRIPTOR TABLE ADDRESS
	GPR3	NEW DESCRIPTOR TABLE ADDRESS
	GPR4	OLD REFRESH MEMORY ADDRESS
	GPR5	NEW REFRESH MEMORY ADDRESS
	GPR6	NEXT SORT BIN ADDRESS
	GPR7	WORK CONTROL TABLE ADDRESS
	GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7)•2XBIN NO•(27-31)
	GPR9	SORT BIN START ADDRESS (DISP)
	GPR10	SORT BIN BASE ADDRESS
	GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
	FPR0	ORMA FOR INTERRUPT ROUTINES
	FPR1	DELETE ROUTINES WORK REG
Q	FPR2	INSERT SYMBOL COUNT (BYTES)
Q	FPR3	NRMA FOR INTERRUPT ROUTINES•
5	FPR4	CONSTANT (00000004)
0	FPR5	ORIGINAL HISTORY BYTE COUNT
1	FPR6	MULT INT IND•ORIG C/C BYTE CNT
	FPR7	NOT USED

713671	04/28/70	MACH	C7201-02	DATE	06/25/70	SHEET	1 QQ501
714944	06/09/70	NAME		LOG	246	VERSION	
		MODE	MANUAL	RPSB INSTRUCTION•INTERRUPT ENTRY ROUTINES•			
		P•N•	2583868				
		IBM CORP•	SDD				

QQ211•CIE
(1X)CSS NON-PROGRAMME INTERRUPT•

1X — 0C86
A 0+8
A +ΔK
C 0+STAD
C 0+STAM
R ΔTCS
A2— X✲ —AB
B TO K REG FOR INSTR RE-ENTRY• BRANCH IF TIME CLOCK STEP•

X1 — 0CC1
A Δ2+Δ2+1
A L+D
S MS=REQ✲D=3
C INH=MS=PROT
C 0+TIME=STEP
A3— XX —AC
ADDRESS (50) TO D• FETCH TIME CLOCK VALUE•

XX — 0CC2
B +F
D MS+AB
S STOP2
C 1+STAB✲J31=1
A4— XX —AD
TIME CLOCK VALUE TO B• RESET STAT B•

X1 — 0CC7
A A+0+TIME
A +T
L W=24
S MS=REQ✲D=3
C INH=MS=PROT
C 0+STAG
A5— XX —AE
UPDATE TIME CLOCK VALUE•

XX — 0CC6
A 0=1
A +B
L R✲24+S
S SET=MARK=0=3
C 0+ABC
R ,F0•
A6— W —AF
NEW TIME CLOCK VALUE TO S AND STORE AT ADDRESS Δ50)• BRANCH IF NOT TIME CLOCK OFLOW•

X1 — 0CC7
A B+ΔK
C 0+STC
R TCS/ST
A7— X✲ —AG
X+1 TO TEST FOR INSTRUCTION RE-ENTRY•
XO — 0CC6
C 1+TCL-TGR
R 0
C7— XO —CL
TCL FOR TIMER OFLOW•

XO — 0CCB
C 1+STC(00)
R ΔJ47✲0•
R Δ=CRY ΔCRY
A8— ✲ —AH
BRANCH FOR INSTRUSTION RE-ENTRY•
X=0 IF RPSB•
X=1 IF CVWL•
X=8 IF CSS•

00 — 0CCC
A 0+8
L RΔGP9+T
C 1+STAA✲J18=0
R 1 1
A9—000011 —AI
RE-ENTER CVWL•
PRIME ADDRESS TO T•
RESET STAT A•
01 — 0CCD
A 0+8
L RΔGP9+T
C 1+STAA✲J18=0
R 1 0
C9—000010 —CI
RE-ENTER CSS•
PRIME ADDRESS TO T•
RESET STAT A•
10 — 0CCE
A 0+8
C 1+STAA✲J18=0
R 1 1
E9—001111 —EI
RE-ENTER RPSB•
RESET STAT A •

QQ291•NGE
(0X)CVWL NON-PROG INTRPT

QQ541•NIE
(XX)DE+DE
SE+DE INTRPTS

QQ461•CFE
(XX)INVALID WCT SEQUENCE•

QQ471•EIE
(XX)INVALID WCT SEQUENCE•

QQ531•NCE
(X1)INTERRUPT PENDING AT END OF INSERT DESCRIPTORS ROUTINE• IRXT CODE 0001

X1 — 0DD3
B Δ0001+V0
B V0•0+0
B +F0
C 0+STC
E1— XX —EA
IRXT CODE 0001 TO F0•STATUS CODE 1001 IN F1•INSERT COUNT IN FPR2•

0X — 0CBD
C 0+STAD
C 0+STAM
R ΔTCS
E2— X✲ —EB
BRANCH IF TIME CLOCK STEP•

X1 — 0CC9
A 0+Δ2
A +T
E5— XX —EE
NON-PROG INT•
+2 TO T REG•

XO — 0CC0
A 0+Δ2
A +T
G5— XX —GE
NON-PROGRAMME INTERRUPT•+2 TO T•

XX — 0C2E
A IC-T
A +IC
R IC3=3
G6— X✲ —GF
360IC-2•

XO — 0CCA
A IC-8
A +IC•D
S MS-REQ✲IC-3
C 0+STAG
G7— XX —GG
ADJ 360IC TO SAME INSTR• AND REFETCH•

XX — 0C57
A IC+8
A +IC
S STOP1
C 1+STAA✲J18=0
R 0 0
G9— 00 —GI
INSTRUCTION TERMINATION•
RESET STAT A•

QE041 —CIE
(00)

QQ431•CPE
(X1)INTERRUPT PENDING AT END OF MOVE HISTORY DESCRIPTORS ROUTINE• IRXT CODE 0010

X1 — 0F27
A 0+ΔK
A +T
B Δ0010+V0
B V+0
B +F0
L WΔGP0
S STOP1
C 0+STC
G2— XX —GB
IRXT CODE 0010 TO F0• SAVE HISTORY SYMBOL COUNT•

1X — 0CBF
R IC3=3
J6— X✲ —JF
PROG INT OR NO INT TERMINATION•

X1 — 0CCB
A IC-16
A +IC•D
S MS-REQ✲IC-3
C 0+STAG
J7— XX —JG
ADJ 360IC TO SAME INSTR• AND REFETCH•

QQ411•QCE
(X1)INTERRUPT PENDING AT END OF DELETE DESCRIPTORS ROUTINE• IRXT CODE 0001

X1 — 0F05
A IC+0
A +T
B Δ0001+V0
B V+0
B +F0
L WΔGP2
C 0+STC
J1— XX —JA
IRXT CODE 0001 TO F0• SAVE ODT ADDRESS•

QQ441•CDE
(X1)INTRPT AT END OF MODIFY DESCRIPTORS•

X1 — 0F1D
B Δ0100+V0
B V+0
B +F0
S MS-REQ✲D=3
C 0+STC
L2— XX —LB
IRXT CODE 0100 TO F0• STORE NULL DESCRIPTOR AT END OF NDT HISTORY DESCRIPTORS•

XX — 0EA9
A 0+ΔK
A +T
L WΔGP0
S STOP1
L3— XX —LC
SAVE HISTORY SYMBOL COUNT•

XX — 0E3F
A IC+0
A +T
L WΔGP2
L4— XX —LD
SAVE ODT ADDRESS•

XX — 0EAB
A 0+D
A +T
L WΔGP3
C 0+STAG
L5— XX —LE
SAVE NDT ADDRESS•

XX — 0EAC
A 0+0
A +ΔK
L R✲24+S
C 0+STC
L6— XX —LF
360IC TO S•
0 TO K FOR RETURN TO RPSB INSTRUCTION IF TIME CLOCK STEP•

XX — 0EA4
A 0+S
A +IC
L RΔGP8+T
C 1+STC(00)
C 0+STAM
R STAG
L7— X✲ —LG
360IC TO IC•
STC•0 TO 4•
BRANCH IF (DE ROUTINES PROGRAMME INTERRUPT TERMINATION) OR (NO INTERRUPT TERMINATION)

0X — 0CD1
B 0+U1•U0
B +ST F+U
L WΔGP8
R INTRP
L8— X✲ —LH
STATUS AND IRXT CODE TO GPR8• BRANCH IF PROGRAMME INTERRUPT FROM DESCRIPTOR ROUTINES•

STATUS CODE=0000 IF EVEN DELETE OR ODD DELETE ADJUSTED•=0001 IF ODD DELETE NOT ADJUSTED• =1001 IF EXIT FROM DE+DE OR SE+DE ROUTINES•

QQ401•LFE
(XX)SPEC CHECK
QQ521•QGE
(XX) EOCT
QQ531•LHE
(XX)SPEC CHECK

QQ461•EBE
(X1)INTERRUPT PENDING AT END OF MOVE CURRENT DESCRIPTORS ROUTINE• IRXT CODE 0110

X1 — 0F3B
A 0+ΔK
A +T
B Δ0110+V0
B V+0
B +F0
L WΔGP1
S STOP1
C 0+STC
Q2— XX —QB
IRXT CODE 0110 TO F0• SAVE CURRENT SYMBOL COUNT•

XX — 0EA6
A BL2+0
A +T
L WΔGP0
Q3— XX —QC
ADJUST HISTORY SYMBOL COUNT TO BYTE COUNT AND SAVE IN GPR0•

1X — 0CD3
B 0+U1•U0
B +ST F+U
L WΔGP8
C 0+STAG
R 1
Q8— 1X —QH
(PROGRAMME INTERRUPT TERMINATION) OR (NO INTERRUPT TERMINATION)

QQ291 —AIE
(000011)
RE-ENTER CVWL

QQ201 —CIE
(000010)
RE-ENTER CSS

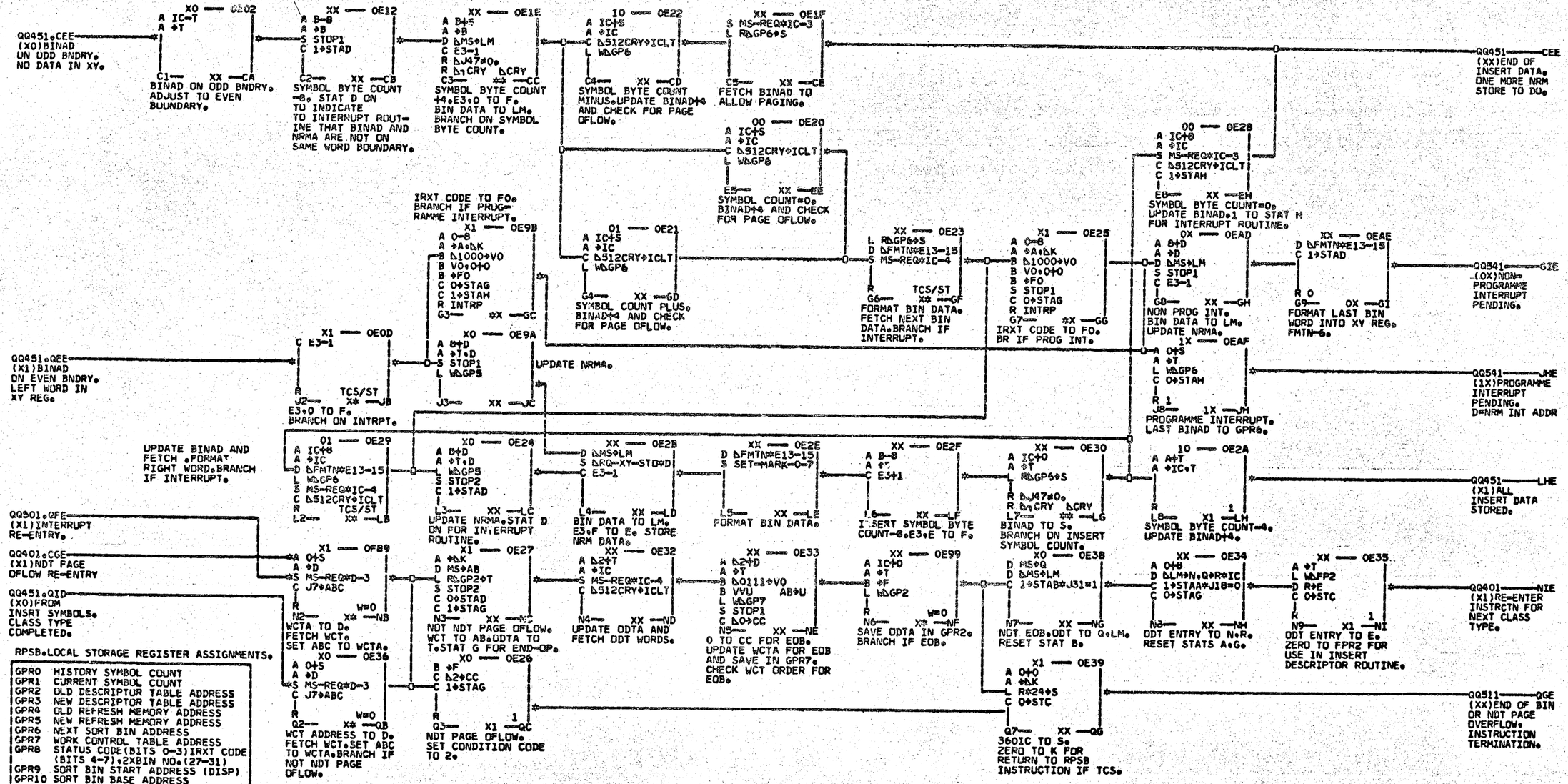
QQ401 —EIE
(001111)
RE-ENTER RPSB

RPSB•LOCAL STORAGE REGISTER ASSIGNMENTS•

GPR0	HISTORY SYMBOL COUNT
GPR1	CURRENT SYMBOL COUNT
GPR2	OLD DESCRIPTOR TABLE ADDRESS
GPR3	NEW DESCRIPTOR TABLE ADDRESS
GPR4	OLD REFRESH MEMORY ADDRESS
GPR5	NEW REFRESH MEMORY ADDRESS
GPR6	NEXT SORT BIN ADDRESS
GPR7	WORK CONTROL TABLE ADDRESS
GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7)•2XBIN NO•(27-31)
GPR9	SORT BIN START ADDRESS (DISP)
GPR10	SORT BIN BASE ADDRESS
GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
FPR0	ORMA FOR INTERRUPT ROUTINES
FPR1	DELETE ROUTINES WORK REG
FPR2	INSERT SYMBOL COUNT (BYTES)
FPR3	NRMA FOR INTERRUPT ROUTINES•
FPR4	CONSTANT (00000004)
FPR5	ORIGINAL HISTORY BYTE COUNT
FPR6	MULT INT IND•ORIG C/C BYTE CNT
FPR7	NOT USED

QQ511

713671	04/28/70	MACH	C7201-02	DATE	05/21/70	SHEET	1
		NAME		LOG	048	VERSION	
		MODE	MANUAL	RPSB INST•INTERRUPT TERMINATION FOR DESCRIPTOR ROUTINES•			
		P•N•	2583869				
		IBM CORP•	SDD				



RPSB.LOCAL STORAGE REGISTER ASSIGNMENTS.

	GPR0	HISTORY SYMBOL COUNT
	GPR1	CURRENT SYMBOL COUNT
	GPR2	OLD DESCRIPTOR TABLE ADDRESS
	GPR3	NEW DESCRIPTOR TABLE ADDRESS
	GPR4	OLD REFRESH MEMORY ADDRESS
	GPR5	NEW REFRESH MEMORY ADDRESS
	GPR6	NEXT SORT BIN ADDRESS
	GPR7	WORK CONTROL TABLE ADDRESS
	GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7).2XBIN NO.(27-31)
	GPR9	SORT BIN START ADDRESS (DISP)
	GPR10	SORT BIN BASE ADDRESS
	GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
	FPR0	ORMA FOR INTERRUPT ROUTINES
	FPR1	DELETE ROUTINES WORK REG
Q	FPR2	INSERT SYMBOL COUNT (BYTES)
Q	FPR3	NRMA FOR INTERRUPT ROUTINES.
5	FPR4	CONSTANT (00000004)
2	FPR5	ORIGINAL HISTORY BYTE COUNT
1	FPR6	MULT INT IND.ORIG C/C BYTE CNT
	FPR7	NOT USED

713671	04/28/70	MACH	C7201-02	DATE	04/16/71	SHEET	1 QQ521
714952	01/05/71	NAME		LOG	200	VERSION	
		MODE	MANUAL	RPSB.INSERT SYMBOLS ROUTINE.			
		P.No.	2583870	EOB AND NDT PAGE OFLOW TERM.			
		IBM CORP.	SDD				

ENTRY INTO THIS PAGE FROM QQ471•CDE INDICATES THE PREVIOUS WCT ORDER EXECUTED WAS AN INSERT•
(1)IC=WORK CONT TABLE ADDR•
(2)D REG=NEW DESC TABLE ADDR•
(3)K REG=INSERT COUNT•

THE PURPOSE OF THIS EOCT ROUTINE IS TO STORE TWO ZERO BYTES BEHIND THE LAST DESCRIPTOR OF THE NEW DESCRIPTOR TABLE•IN ADDITION THE INITIALIZATION OF THE MOVE FROM OLD REFRESH MEMORY TO NEW REFRESH MEMORY WILL BE PERFORMED ON THIS PAGE•

QQ471•CDE
(X1)
INSERT WCT ORDER HAS BEEN EXECUTED•

X1 — ODA9
A IC+Δ2
A →T
L WΔGP7
S SET-MARK✲STC
C3— XX —CC
ADDR OF NEXT WCT ORDER TO GPR 7•

QQ461•AGE
(XX)
NO INSERT WCT ORDER HAS BEEN EXECUTED•

XX — ODCB
A IC+0
A →T
L WΔGP2
C D→STC
E2— XX —EB
SAVE ODT ADDRESS• SET STC TO NDT BYTE•

XX — ODC9
A Δ2+S
A →IC•T
L WΔGP7
S SET-MARK✲STC
C 0→ABC
E3— XX —EC
ADD 2 TO WCT ADDR AND PLT INTO GPR 7• CLEAR ABC•SET MARK FOR 1ST BYTE OF EOCT SEPARATOR•

XX — ODCA
A 0+1
A →B
B →ST
S MS-REQ✲D-3
C STC+1
E4— XX —ED
PUT THE 1ST BYTE OF THE NULL EOCT SEPARATOR INTO ST REG•MAKE REQ TO STORE EOCT SEPARATOR INTO NDT•PUT A 1 INTO BIT 63 OF B REG•

XX — ODCB
A BL2+0
A →A
B →ST
S SET-MARK✲STC
C 0→STC
E5— XX —EE
PUT THE 2ND BYTE OF THE NULL EOCT SEPARATOR INTO ST REG•SET MARK FOR THAT BYTE•CLEAR STC•SHIFT CONSTANT IN B REG TO BIT 29 OF A REG•

XX — ODCC
A Δ2+D
A →T•D
L WΔGP3
C ABC•STC+1
E7— XX —EG
ADD 2 TO THE NEXT NDTA AND PUT INTO T•D REGS AND GPR 3•STEP ABC•STC TO 1•

XX — ODCD
L RΔGP5→S
C ABC•STC+1
R ΔS12CRY
E8— X✲ —EH
NEW REFRESH MEM ADDR TO S REG•ABC STC STEPPED TO 2 BRANCH IF NDTA PAGED•

X1 — ODCF
A 0-1
L RΔGP11→T
S MS-REQ✲D-3
C 0→STC
J1— XX —JA
NEW NDTA TO T REG STORE NDTA INTO END OF OLD NDT PAGE•

XX — ODA3
S SET-MARK✲J61
C 1→STC(00)
L WΔGP3
J2— XX —JB
4 TO STC•SET MARK 4-7•PUT NEW NDTA INTO GPR 3•

XX — ODB0
A 0+T
A →DWS
B Δ1100→VO
B VO•0+0
L WΔGP11
C STC-1
J3— XX —JC
PAGING BITS TO GPR 11•STC TO 3

XX — ODB4
A 0+S
A →IC
B Δ1001→VO
B VO•VO+0
B →F1
L RΔGP4→S
C ABC+1
R TCS/ST
J4— X✲ —JD
NRMA TO IC•ORMA TO S REG•ABC TO 3 BRANCH IF INTERRUPT IS PENDING•1001 TO F1 FOR USE IN INTERRUPT ROUTINE

NRMA TO FPR3 FOR USE IN INTERRUPT ROUTINE•

XX — ODC0
A Δ2+Δ2
A →A
B 0•V1•U
L WΔFP3
C 3→STC
C E3+1
L7— XX —LG

X0 — OD02
L R✲24→S
C 1→STAG
C Δ1→IVSPEC
L8— XX —LH

QQ511 —LHE
(XX)
SPECIFICATION ERROR•NRMA NOT ON DBL WD BOUND•END OP•

QQ501•NGE
(X0)INTERRUPT RE-ENTRY TO DE→DE•SE→DE ROUTINES•

X0 — ODCE
A 0+S
A →IC
B Δ1001→VO
B VO•VO+0
B →F1
L RΔGP4→S
C ABC•STC+1
R TCS/ST
N3— X✲ —NC
NEW REFRESH MEMORY ADDRESS TO IC•OLD REFRESH MEMORY ADDRESS TO S• 1001 TO F1 FOR USE IN INTERRUPT ROUTINE•BRANCH IF INTERRUPT•

X0 — ODD2
A IC-8
A →A•D
B V•U
B →F
L RΔGP0→T
C 0→STAD
N4— XX —ND
NRMA MINUS 8 TO D REG•HIST CNT TO T REG AND BIT 29 OF ORMA WITH THE CONSTANT 00000100 IN BYTE 7 OF THE B REG•PUT RESULTS INTO F REG•

XX — OD86
A 0+S
A →IC•E
B V✲U
B →ST F→U
L WΔFP5
S MS-REQ✲IC-4
C 0→STC
N5— XX —NE
ORMA TO IC AND E REG AND MAKE MEM REQ TO ORM•RESET BIT 29 OF ORMA IN S REG IF SET•THIS PUTS THE ORMA ON AN EVEN WORD BOUNDARY•SAVE HIST COUNT•

XX — ODC5
A 0+T
A →B
B Δ0111→VO
B VO•VO+0
B →ST
L RΔGP5→T
N6— XX —NF
HIST CNT TO B REG• NRMA TO T REG• E 13-15 STEPPED TO 5 IF ORMA WAS ON AN ODD WD BNDRY OR E 13-15 STEPPED TO 1 IF ORMA WAS ON AN EVEN WD BOUNDARY•

XX — ODBA
A B-8
A →B•T
C E3+1
R W=0
N7— X✲ —NG
HIST CNT MINUS 8 TO B AND T REG• E 13-15 STEPPED TO 6 IF ORMA WAS ON ODD BOUND• E 13-15 STEPPED TO 2 IF ORMA ON AN EVEN WORD BOUND

X1 — OD03
A 8+S
A →IC•R
D ΔMS→LM
L RΔGP1→S
R Δ J47≠0•
R Δ↑CRY ΔCRY
N8— ✲✲ —NH
ADJUSTED ORMA PLUS 8 TO IC•ORM TO LM REG•CUR CNT TO S REG•BRANCH ON HIST CNT MINUS 8 EQ 0• +0•-0•

QQ481 —NHE
(00•10)
QQ491 —NHE
(01)

EXIT TO QQ481 WHEN THERE ARE 0•1•OR 2 HIST SYM TO BE MOVED•EXIT TO QQ491 WHEN THERE ARE MORE THAN 2 HIST SYM TO BE MOVED•

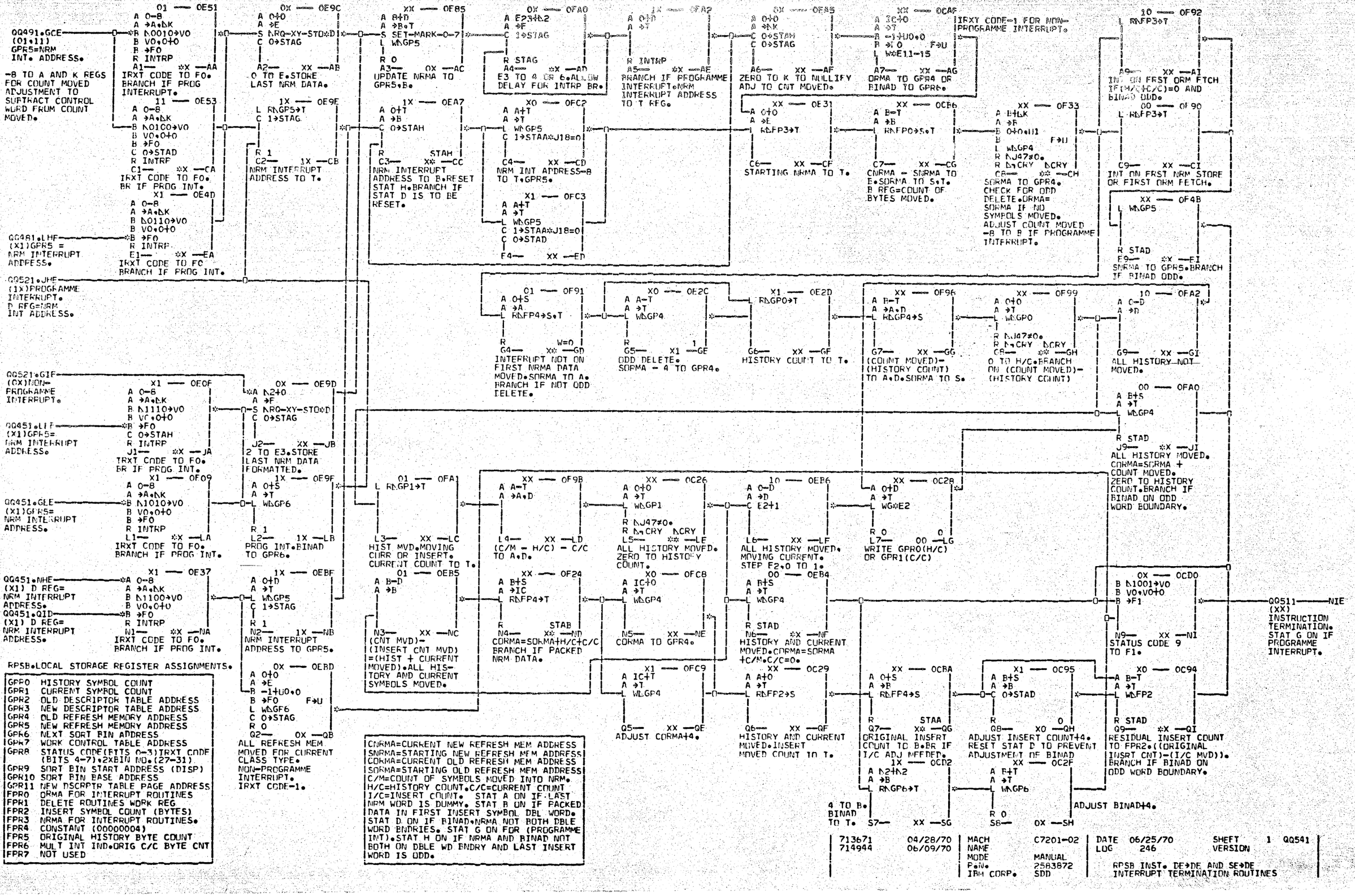
QQ511 —NCE
(X1)
END OF INSERT NEW DESCR ROUT INTERRUPT IS PENDING•

RPSB•LOCAL STORAGE REGISTER ASSIGNMENTS•

GPR0	HISTORY SYMBOL COUNT
GPR1	CURRENT SYMBOL COUNT
GPR2	OLD DESCRIPTOR TABLE ADDRESS
GPR3	NEW DESCRIPTOR TABLE ADDRESS
GPR4	OLD REFRESH MEMORY ADDRESS
GPR5	NEW REFRESH MEMORY ADDRESS
GPR6	NEXT SORT BIN ADDRESS
GPR7	WORK CONTROL TABLE ADDRESS
GPR8	STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7)•2XBIN NO•(27-31)
GPR9	SORT BIN START ADDRESS (DISP)
GPR10	SORT BIN BASE ADDRESS
GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
FPR0	ORMA FOR INTERRUPT ROUTINES
FPR1	DELETE ROUTINES WORK REG
FPR2	INSERT SYMBOL COUNT (BYTES)
FPR3	NRMA FOR INTERRUPT ROUTINES•
FPR4	CONSTANT (00000004)
FPR5	ORIGINAL HISTORY BYTE COUNT
FPR6	MULT INT IND•ORIG C/C BYTE CNT
FPR7	NOT USED

Q Q 5 3 1

713671	04/28/70	MACH	C7201-02	DATE	05/21/70	SHEET	1 QQ531
		NAME		LOG	048	VERSION	
		MODE	MANUAL	REPACK SYMBOLS-END OF CLASS TYPE•			
		P•N•	2583871				
		IBM CORP•	SDD				


QQ491•GCE (01•11) GPR5=NRM INT• ADDRESS•
-8 TO A AND K REGS FOR COUNT MOVED ADJUSTMENT TO SUBTRACT CONTROL WORD FROM COUNT MOVED•
01 — 0E51
A 0=8
A →A•ΔK
B ΔQ010→VQ
B VQ•0+0
B →FQ
R INTRP
A1— ※X —AA
IRXT CODE TO FQ• BRANCH IF PROG INTERRUPT•
11 — 0E53
A 0=8
A →A•ΔK
B ΔQ100→VQ
B VQ•0+0
B →FQ
C 0→STAD
R INTRP
C1— ※X —CA
IRXT CODE TO FQ• BR IF PROG INT•
X1 — 0E4D
A 0=8
A →A•ΔK
B ΔQ110→VQ
B VQ•0+0
B →FQ
R INTRP
E1— ※X —EA
IRXT CODE TO FQ BRANCH IF PROG INT•
QQ481•LHF (X1)GPR5 = NRM INTERRUPT ADDRESS•
QQ521•JHE (1X)PROGRAMME INTERRUPT• D REG=NRM INT ADDRESS•
0X — 0E9C
A 0+0
A →E
S ΔRQ-XY-STQ※D
C 0→STAG
A2— XX —AB
0 TO E•STORE LAST NRM DATA•
1X — 0E9E
L RΔGP5→T
C 1→STAG
R 1
C2— 1X —CB
NRM INTERRUPT ADDRESS TO T•
XX — 0F85
A B+0
A →B•T
S SET-MARK-0-7
L WΔGP5
R 0
A3— 0X —AC
UPDATE NRMA TO GPR5•B•
1X — 0EA7
A 0+T
A →B
C 0→STAH
R STAH
C3— X※ —CC
NRM INTERRUPT ADDRESS TO B•RESET STAT H•BRANCH IF STAT D IS TO BE RESET•
0X — 0FA0
A E2+ΔE2
A →F
C 1→STAG
R STAG
A4— ※X —AD
E3 TO 4 OR 6•ALLOW DELAY FOR INTRP BR•
XO — 0FC2
A A+T
A →T
L WΔGP5
C 1→STAA※J18=0
C4— XX —CD
NRM INT ADDRESS-8 TO T•GPR5•
X1 — 0FC3
A A+T
A →T
L WΔGP5
C 1→STAA※J18=0
C 0→STAD
F4— XX —ED
1X — 0FA2
A 0+0
A →T
R INTRP
A5— ※X —AE
BRANCH IF PROGRAMME INTERRUPT•NRM INTERRUPT ADDRESS TO T REG•
0X — 0FA5
A 0+0
A →ΔK
C 0→STAM
C 0→STAG
A6— XX —AF
ZERO TO K TO NULLIFY ADJ TO CNT MOVED•
XX — 0E31
A 0+0
A →E
RΔFP3→T
C6— XX —CF
STARTING NRMA TO T•
XX — 0CAF
A 1C+0
A →T
B -1+U0•0
R →F 0 F→U
L WX•E11-15
A7— XX —AG
ORMA TO GPR4 OR BINAD TO GPR6•
XX — 0CB6
A B=T
A →B
RΔFPO→S•T
C7— XX —CG
CNRMA - SNRMA TO B•SORMA TO S•T• B REG=COUNT OF BYTES MOVED•
XX — 0F33
A B+ΔK
A →B
B 0+0•U1
B F→U
L WΔGP4
R ΔJ47≠0•
R ΔΔCRY ΔCRY
C8— ※※ —CH
SORMA TO GPR4• CHECK FOR ODD DELETE•ORMA= SORMA IF NO SYMBOLS MOVED• ADJUST COUNT MOVED -8 TO B IF PROGRAMME INTERRUPT•
IRXT CODE=1 FOR NON-PROGRAMME INTERRUPT•
10 — 0F92
L RΔFP3→T
A9— XX —AI
INT ON FRST ORM FETCH IF(M/C+C/C)=0 AND BINAD ODD•
00 — 0F90
L RΔFP3→T
C9— XX —CI
INT ON FRST NRM STORE OR FIRST ORM FETCH•
XX — 0F4B
L WΔGP5
R STAD
F9— ※X —FI
SNRMA TO GPR5•BRANCH IF BINAD ODD•
QQ521•GIF (0X)NON-PROGRAMME INTERRUPT•
X1 — 0E0F
A 0=8
A →A•ΔK
B ΔJ110→VQ
B VC•0+0
B →FQ
C 0→STAH
R INTRP
J1— ※X —JA
IRXT CODE TO FQ• BR IF PROG INT•
QQ451•LIF (X1)GPR5= NRM INTERRUPT ADDRESS•
X1 — 0F09
A 0=8
A →A•ΔK
B ΔJ010→VQ
B VQ•0+0
B →FQ
R INTRP
L1— ※X —LA
IRXT CODE TO FQ• BRANCH IF PROG INT•
QQ451•GLE (X1)GPR5= NRM INTERRUPT ADDRESS•
0X — 0E9D
A ΔZ+0
A →F
S ΔRQ-XY-STQ※D
C 0→STAG
J2— XX —JB
2 TO E3•STORE LAST NRM DATA FORMATTED•
1X — 0E9F
A 0+S
A →T
L WΔGP6
R 1
L2— 1X —LB
PROG INT•BINAD TO GPR6•
01 — 0FA1
L RΔGP1→T
L3— XX —LC
HIST MVD•MOVING CURR OR INSERT• CURRENT COUNT TO T•
XX — 0F9B
A A=T
A →A•D
L4— XX —LD
(C/M - H/C) - C/C TO A•D•
XX — 0C26
A 0+0
A →T
L WΔGP1
R ΔJ47≠0•
R ΔΔCRY ΔCRY
L5— ※※ —LE
ALL HISTORY MOVED• ZERO TO HISTORY COUNT•
10 — 0EB6
A 0-D
A →D
C E2+1
L6— XX —LF
ALL HISTORY MOVED• MOVING CURRENT• STEP F2•0 TO 1•
XX — 0C2B
A 0+D
A →T
L WG※E2
R 0 0
L7— 00 —LG
WRITE GPRO(H/C) OR GPR1(C/C)
0X — 0CD0
B ΔJ001→VQ
B VQ•VQ+0+0
B →F1
N9— XX —NI
STATUS CODE 9 TO F1•
QQ511— NIE (XX) INSTRUCTION TERMINATION• STAT G ON IF PROGRAMME INTERRUPT•
01 — 0E01
A 0=8
A →A•ΔK
B ΔQ001→VQ
B VQ•0+0
B →FQ
R INTRP
A1— ※X —AA
IRXT CODE TO FQ• BRANCH IF PROG INTERRUPT•
QQ481•LHF (X1)GPR5 = NRM INTERRUPT ADDRESS•
01 — 0F91
A 0+S
A →A
L RΔFP4→S•T
R W=0
G4— XX —GD
INTERRUPT NOT ON FIRST NRMA DATA MOVED•SORMA TO A• BRANCH IF NOT ODD DELETE•
XO — 0E2C
A A-T
A →T
L WΔGP4
R 1
G5— X1 —GE
ODD DELETE• SORMA - 4 TO GPR4•
X1 — 0E2D
L RΔGPO→T
G6— XX —GF
HISTORY COUNT TO T•
XX — 0F96
A B=T
A →A•D
L RΔGP4→S
G7— XX —GG
(COUNT MOVED)- (HISTORY COUNT) TO A•D•SORMA TO S•
XX — 0F99
A 0+0
A →T
L WΔGPO
R ΔJ47≠0•
R ΔΔCRY ΔCRY
G8— ※※ —GH
0 TO H/C•BRANCH ON (COUNT MOVED)- (HISTORY COUNT)
10 — 0FA2
A C-D
A →D
G9— XX —GI
ALL HISTORY NOT MOVED•
00 — 0FA0
A B+S
A →T
L WΔGP4
R STAD
J9— ※X —JI
ALL HISTORY MOVED• CORMA=SORMA + COUNT MOVED• ZERO TO HISTORY COUNT•BRANCH IF BINAD ON ODD WORD BOUNDARY•
ADJUST BINAD+4•
XX — 0F4B
L WΔGP5
R STAD
F9— ※X —FI
SNRMA TO GPR5•BRANCH IF BINAD ODD•
QQ451•LIF (X1)GPR5= NRM INTERRUPT ADDRESS•
QQ451•GLE (X1)GPR5= NRM INTERRUPT ADDRESS•
QQ451•NHE (X1) D REG= NRM INTERRUPT ADDRESS•
QQ451•QID (X1) D REG= NRM INTERRUPT ADDRESS•
X1 — 0E37
A 0=8
A →A•ΔK
B ΔJ100→VQ
B VQ•0+0
B →FQ
R INTRP
W1— ※X —NA
IRXT CODE TO FQ• BRANCH IF PROG INT•
1X — 0EBF
A 0+D
A →T
L WΔGP5
C 1→STAG
R 1
N2— 1X —NB
NRM INTERRUPT ADDRESS TO GPR5•
0X — 0EBD
A 0+0
A →E
B -1+U0•0
B →FQ F→U
L WΔGP6
C 0→STAG
R 0
Q2— 0X —QB
ALL REFRESH MEM MOVED FOR CURRENT CLASS TYPE• NON-PROGRAMME INTERRUPT• IRXT CODE-1•
XX — 0F9B
A A=T
A →A•D
L4— XX —LD
(C/M - H/C) - C/C TO A•D•
XX — 0F24
A B+S
A →IC
L RΔFP4→T
R STAB
N4— X※ —ND
CORMA=SORMA+H/C+C/C BRANCH IF PACKED NRM DATA•
XO — 0FC8
A IC+0
A →T
L WΔGP4
N5— XX —NE
CORMA TO GPR4•
00 — 0EB4
A B+S
A →T
L WΔGP4
R STAD
N6— ※X —NF
HISTORY AND CURRENT MOVED• CORMA=SORMA +C/M•C/C=0•
N3— XX —NC
(CNT MVD)- ((INSERT CNT MVD) =(HIST + CURRENT MOVED)•ALL HISTORY AND CURRENT SYMBOLS MOVED•
X1 — 0FC9
A IC+T
A →T
L WΔGP4
Q5— XX —QE
ADJUST CORMA+4•
XX — 0C29
A A+0
A →T
L RΔFP2→S
Q6— XX —QF
HISTORY AND CURRENT MOVED•INSERT MOVED COUNT TO T•
XX — 0CBA
A 0+S
A →B
L RΔFP4→S
R STAA
Q7— X※ —QG
ORIGINAL INSERT COUNT TO B•BR IF I/C ADJ NEEDED•
1X — 0CD2
A ΔJ+ΔJ2
A →B
L RΔGP6→T
4 TO B• BINAD TO T•
S7— XX —SG
X1 — 0C95
A B+S
A →B
C 0→STAD
R 0
Q8— XO —QH
ADJUST INSERT COUNT+4• RESET STAT D TO PREVENT ADJUSTMENT OF BINAD
XX — 0C2F
A B+T
A →T
L WΔGP6
R 0
S8— 0X —SH
ADJUST BINAD+4•
X0 — 0C94
A B=T
A →T
L WΔFP2
R STAD
Q9— ※X —QI
RESIDUAL INSERT COUNT TO FPR2•((ORIGINAL INSRT CNT)-(I/C MVD))• BRANCH IF BINAD ON ODD WORD BOUNDARY•
RPSB•LOCAL STORAGE REGISTER ASSIGNMENTS•
GPR0 HISTORY SYMBOL COUNT
GPR1 CURRENT SYMBOL COUNT
GPR2 OLD DESCRIPTOR TABLE ADDRESS
GPR3 NEW DESCRIPTOR TABLE ADDRESS
GPR4 OLD REFRESH MEMORY ADDRESS
GPR5 NEW REFRESH MEMORY ADDRESS
GPR6 NEXT SORT BIN ADDRESS
GPR7 WORK CONTROL TABLE ADDRESS
GPR8 STATUS CODE(BITS 0-3)IRXT CODE (BITS 4-7)•2XBIN NO•(27-31)
GPR9 SORT BIN START ADDRESS (DISP)
GPR10 SORT BIN BASE ADDRESS
GPR11 NEW DSCRPTR TABLE PAGE ADDRESS
FPR0 ORMA FOR INTERRUPT ROUTINES
FPR1 DELETE ROUTINES WORK REG
FPR2 INSERT SYMBOL COUNT (BYTES)
FPR3 NRMA FOR INTERRUPT ROUTINES•
FPR4 CONSTANT (00000004)
FPR5 ORIGINAL HISTORY BYTE COUNT
FPR6 MULT INT IND•ORIG C/C BYTE CNT
FPR7 NOT USED
CNRMA=CURRENT NEW REFRESH MEM ADDRESS
SNRMA=STARTING NEW REFRESH MEM ADDRESS
CORMA=CURRENT OLD REFRESH MEM ADDRESS
SORMA=STARTING OLD REFRESH MEM ADDRESS
C/M=COUNT OF SYMBOLS MOVED INTO NRM•
H/C=HISTORY COUNT•C/C=CURRENT COUNT
I/C=INSERT COUNT• STAT A ON IF LAST NRM WORD IS DUMMY• STAT B ON IF PACKED DATA IN FIRST INSERT SYMBOL DBL WORD• STAT D ON IF BINAD•NRMA NOT BOTH DBLE WORD BNDRIES• STAT G ON FOR (PROGRAMME INT)•STAT H ON IF NRMA AND BINAD NOT BOTH ON DBLE WD BNDRY AND LAST INSERT WORD IS ODD•
713671 04/28/70
714944 06/09/70
MACH C7201-02
NAME
MODE MANUAL
P•N• 2583872
IBM CORP• SDD
DATE 06/25/70 SHEET 1 QQ541
LOG 246 VERSION
RPSB INST• DE→DE AND SE→DE INTERRUPT TERMINATION ROUTINES