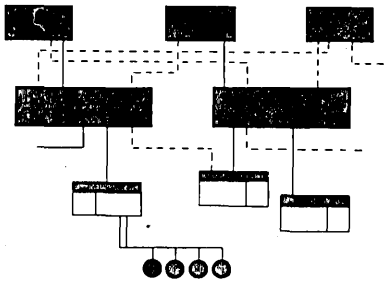
GENERAL ELECTRIC
COMPUTERS

GE-625/635 GEFRC Implementation

SYSTEM
SUPPORT
INFORMATION



ABSTRACT

This document describes the Generalized File and Record Control (GEFRC) subroutines available for use on any GE-625/635 configuration handling input and output media.

GENERAL ELECTRIC

CPB-1126

GE-625/635
GEFRC
IMPLEMENTATION

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GENERAL ELECTRIC
COMPUTER DEPARTMENT

PREFACE

The Generalized File and Record Control (GEFRC) system has been implemented as a set of over 40 subroutines. Approximately half of them represent the routines called directly by the user, and the other half are called internally and perform common and special functions required within the system.

This document describes all of the subroutines which comprise the GEFRC system. Arranged alphabetically by subroutine name, the following is given for each subroutine:

1. Subroutine name
2. Alternate names for the same subroutine
3. The form and content of the calling sequence
4. A brief description of the function performed
5. The names of other subroutines which call the routine being described
6. The names of other subroutines which are called by the routine being described
7. The size of the subroutine
8. A flow diagram indicating in general how the functions are performed, unless the description in item 4 is sufficient.

The following three abbreviations appear frequently within the flow charts:

CRX - The current record index. This represents the value found in bits 0-17 of word 0 of the file control block. This value gives the location of the first data word in the logical record last accessed in that file.

TEMP - The contents of bits 0-17 of word +3 of the file control block. For input files, this value is the location of the last word of the physical record being processed plus one. For output files, it gives the number of words within the current buffer which have not as yet been assigned.

BCW - The buffer control word. This is the first word of the current buffer and it is the extra word provided in addition to the specified block size. While transmission is taking place to

BCW - (Cont.) or from the buffer, the BCW contains the data control word (DCW) which controls the transmission. While the data is being processed in an input file, the BCW contains the location of the last word of the last accessed logical record plus one. While the buffer of an output file is being filled, the BCW contains the number of words which have already been assigned in that buffer.

The list below shows the order in which the GEFRC subroutines should be included in the system library for optimum loading.

.GSTIN	.GPNCH	.GRLSE
.GSTOT	.GEPRN	.GPUT, .GPTBK, .GCOPY
.GFRCE	.GPRNT	.GGET, .GGTBK
.GBSRC	.GIOPG	.GR250
.GFSRC	.GRDRC	.GOPEN
.GBSFM	.GALTR	.GCLSE
.GFSFM	.GCMDK	.GR200
.GRWND	.GRDCD	.GR225
.GWEF	.GWTRC	.GR275
.GWAIT	.GILLB	.GR375, .GR390
.GPTSZ	.GBCD	.GR960, .GR980
.GWRIT	.GBNRY	.GR990
.GREAD	.GEDIT	.GINHD, .GINTL, .GOUTH, .GOUTL, .GUSWH

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Name: .GALTR

Alternate Names: None

Calling Sequence: CALL .GALTR (fcb)

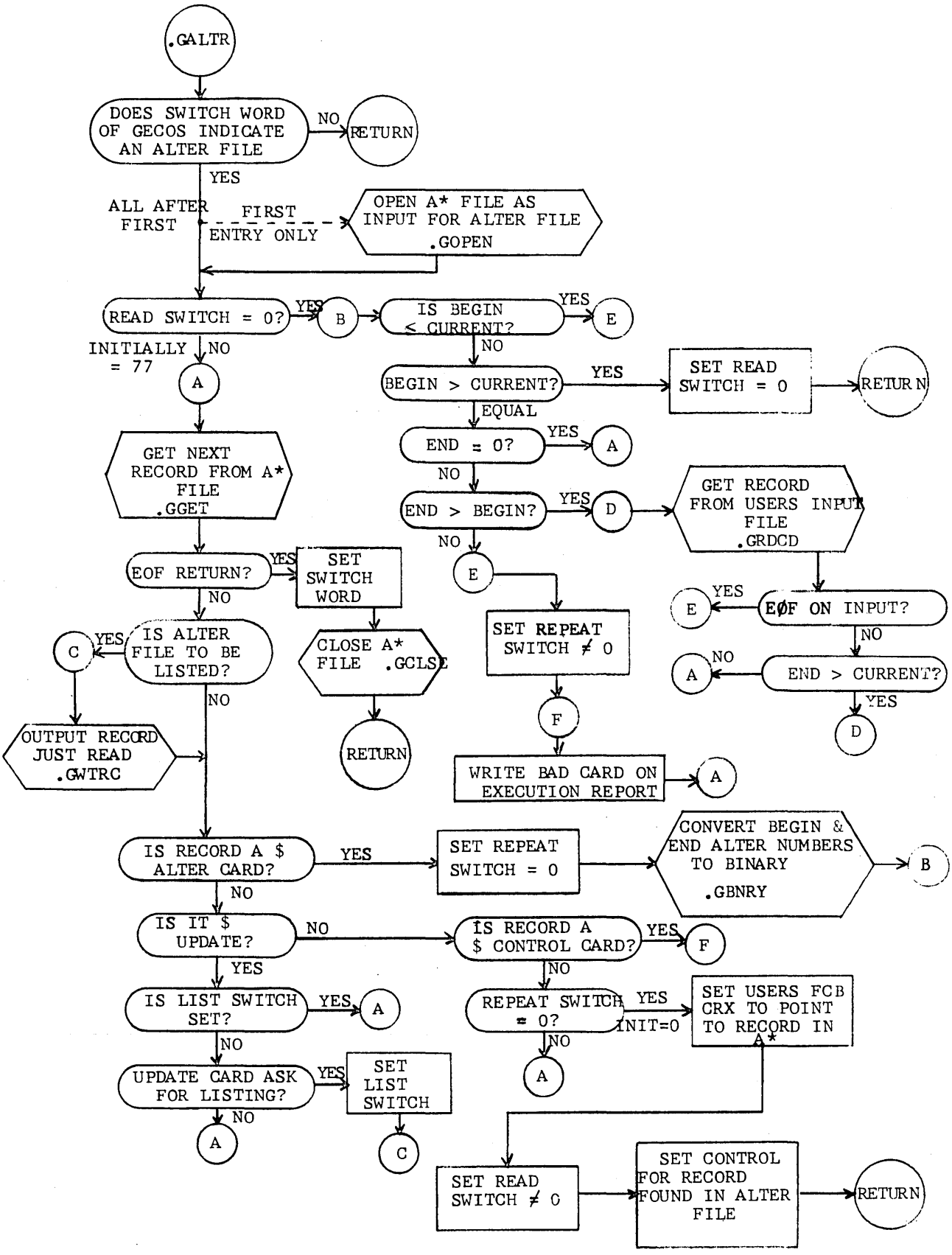
fcb = location of file control block

Function: To obtain the next logical record for the designated file from either the Alter file (A*) or from the users input file, if an Alter file exists.

Called By: .GRDRC

Calls For: .GOPEN, .GGET, .GWTRC, .GRDCD, .GBNRY, .GCLSE; references .GEDIT

Number of Words: 528 including A* file control block and buffer


.GALTR
DOES SWITCH WORD OF GECOS INDICATE AN ALTER FILE
NO
RETURN
YES
ALL AFTER FIRST
FIRST ENTRY ONLY
OPEN A* FILE AS INPUT FOR ALTER FILE .GOPEN
READ SWITCH = 0?
YES
B
IS BEGIN ≤ CURRENT?
YES
E
NO
INITIALLY = 77
NO
A
BEGIN > CURRENT?
YES
SET READ SWITCH = 0
RETURN
EQUAL
END = 0?
YES
A
NO
GET NEXT RECORD FROM A* FILE .GGET
END > BEGIN?
YES
D
GET RECORD FROM USERS INPUT FILE .GRDCD
NO
E
EOF RETURN?
YES
SET SWITCH WORD
NO
SET REPEAT SWITCH ≠ 0
E
YES
EØF ON INPUT?
NO
C
YES
IS ALTER FILE TO BE LISTED?
CLOSE A* FILE .GCLSE
A
NO
END > CURRENT?
NO
YES
D
NO
OUTPUT RECORD JUST READ .GWTRC
RETURN
F
WRITE BAD CARD ON EXECUTION REPORT
A
IS RECORD A $ ALTER CARD?
YES
SET REPEAT SWITCH = 0
CONVERT BEGIN & END ALTER NUMBERS TO BINARY .GBNRY
B
NO
IS IT $ UPDATE?
NO
IS RECORD A $ CONTROL CARD?
YES
F
YES
NO
IS LIST SWITCH SET?
YES
A
REPEAT SWITCH = 0?
YES
INIT=0
SET USERS FCB CRX TO POINT TO RECORD IN A*
NO
NO
A
UPDATE CARD ASK FOR LISTING?
YES
SET LIST SWITCH
NO
A
C
SET READ SWITCH ≠ 0
SET CONTROL FOR RECORD FOUND IN ALTER FILE
RETURN

Name: .GBCD

Alternate Names: None

Calling Sequence: CALL .GBCD
with binary number in the A register right justified. Return with the BCD equivalent right adjusted in the combined AQ registers.

Function: To convert a binary integer to its BCD equivalent. The value of the integer should not exceed ten decimal digits.

Called By: .GILLB, .GIOPG

Calls For: None

Number of Words: 26

Name: .GBNRY

Alternate Names: None

Calling Sequence: CALL .GBNRY
with BCD value right justified in the combined AQ registers. Return with the equivalent binary integer right justified in the Q register.

Function: To convert the BCD representation of an integer to its binary equivalent. The value of the integer should not exceed ten decimal digits.

Called By: .GILLB, .GALTR, .GIOPG

Calls For: None

Number of Words: 18

Name: .GBSFM

Alternate Names: BSTFM, .GABSF

Calling Sequence: CALL BSTFM (fcb, n)

fcb = location of file control block

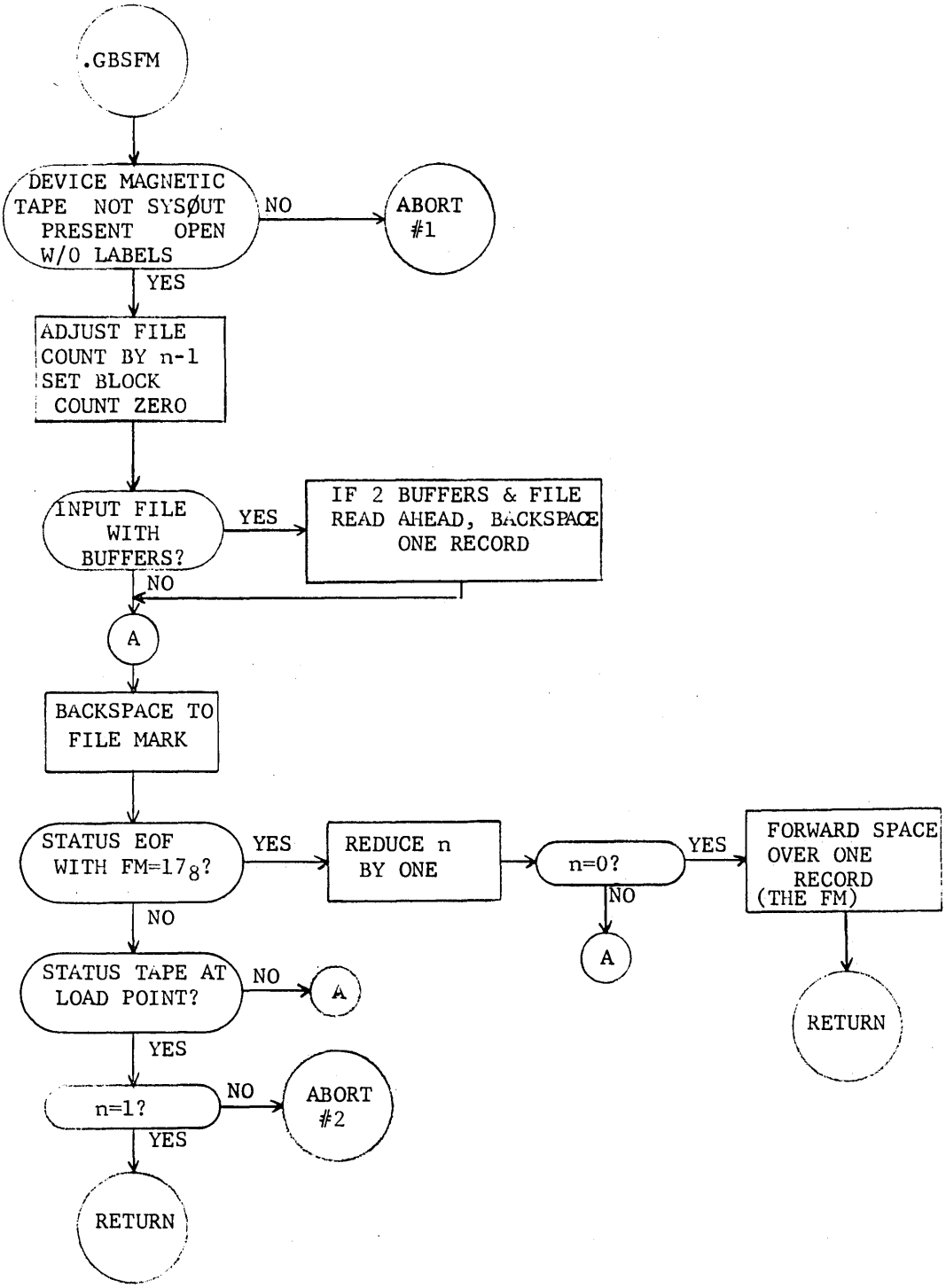
n = number of files

Function: To backspace an unlabeled magnetic tape file to a position immediately following the n^{th} preceding standard end-of-file ($FM=17_8$).

Called By: User

Calls For: .GR960

Number of Words: 80


.GBSFM
DEVICE MAGNETIC TAPE NOT SYSØUT PRESENT OPEN W/O LABELS
NO
ABORT #1
YES
ADJUST FILE COUNT BY n-1 SET BLOCK COUNT ZERO
INPUT FILE WITH BUFFERS?
YES
IF 2 BUFFERS & FILE READ AHEAD, BACKSPACE ONE RECORD
NO
A
BACKSPACE TO FILE MARK
STATUS EOF WITH FM=17$_8$?
YES
REDUCE n BY ONE
n=0?
YES
FORWARD SPACE OVER ONE RECORD (THE FM)
NO
A
RETURN
NO
STATUS TAPE AT LOAD POINT?
NO
A
YES
n=1?
NO
ABORT #2
YES
RETURN

Name: .GBSRC

Alternate Names: BSREC, .GABSR

Calling Sequence: CALL BSREC (fcb, n, eof)

fcb = location of file control block

n = number of records

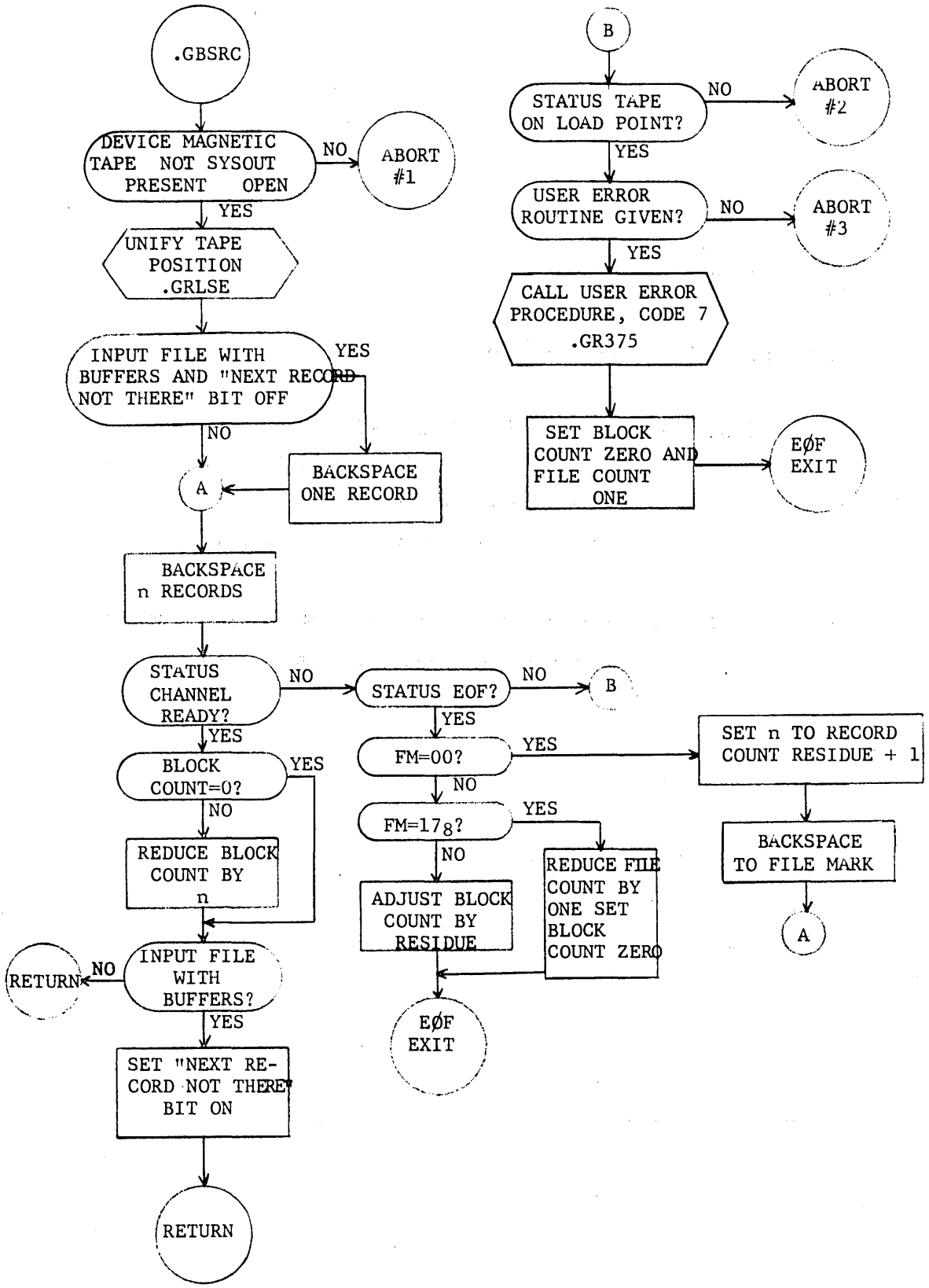
eof = location of end-of-file routine

Function: To space over the n last accessed physical records on the designated magnetic tape file in a backward direction.

Called By: User

Calls For: .GRLSE, .GR375, .GR960

Number of Words: 126


.GBSRC
DEVICE MAGNETIC TAPE NOT SYSOUT PRESENT OPEN
NO
ABORT #1
YES
UNIFY TAPE POSITION .GRLSE
INPUT FILE WITH BUFFERS AND "NEXT RECORD NOT THERE" BIT OFF
YES
NO
BACKSPACE ONE RECORD
A
BACKSPACE n RECORDS
STATUS CHANNEL READY?
NO
YES
BLOCK COUNT=0?
YES
NO
REDUCE BLOCK COUNT BY n
INPUT FILE WITH BUFFERS?
NO
RETURN
YES
SET "NEXT RECORD NOT THERE" BIT ON
RETURN
STATUS EOF?
NO
B
YES
FM=00?
YES
SET n TO RECORD COUNT RESIDUE + 1
NO
FM=17₈?
YES
NO
ADJUST BLOCK COUNT BY RESIDUE
REDUCE FILE COUNT BY ONE SET BLOCK COUNT ZERO
BACKSPACE TO FILE MARK
A
EØF EXIT
B
STATUS TAPE ON LOAD POINT?
NO
ABORT #2
YES
USER ERROR ROUTINE GIVEN?
NO
ABORT #3
YES
CALL USER ERROR PROCEDURE, CODE 7 .GR375
SET BLOCK COUNT ZERO AND FILE COUNT ONE
EØF EXIT

Name: .GCLSE

Alternate Names: CLOSE, .GACLS

Calling Sequence: CALL CLOSE (list, n)

list = location of first of n consecutive file designator words for the files to be closed.

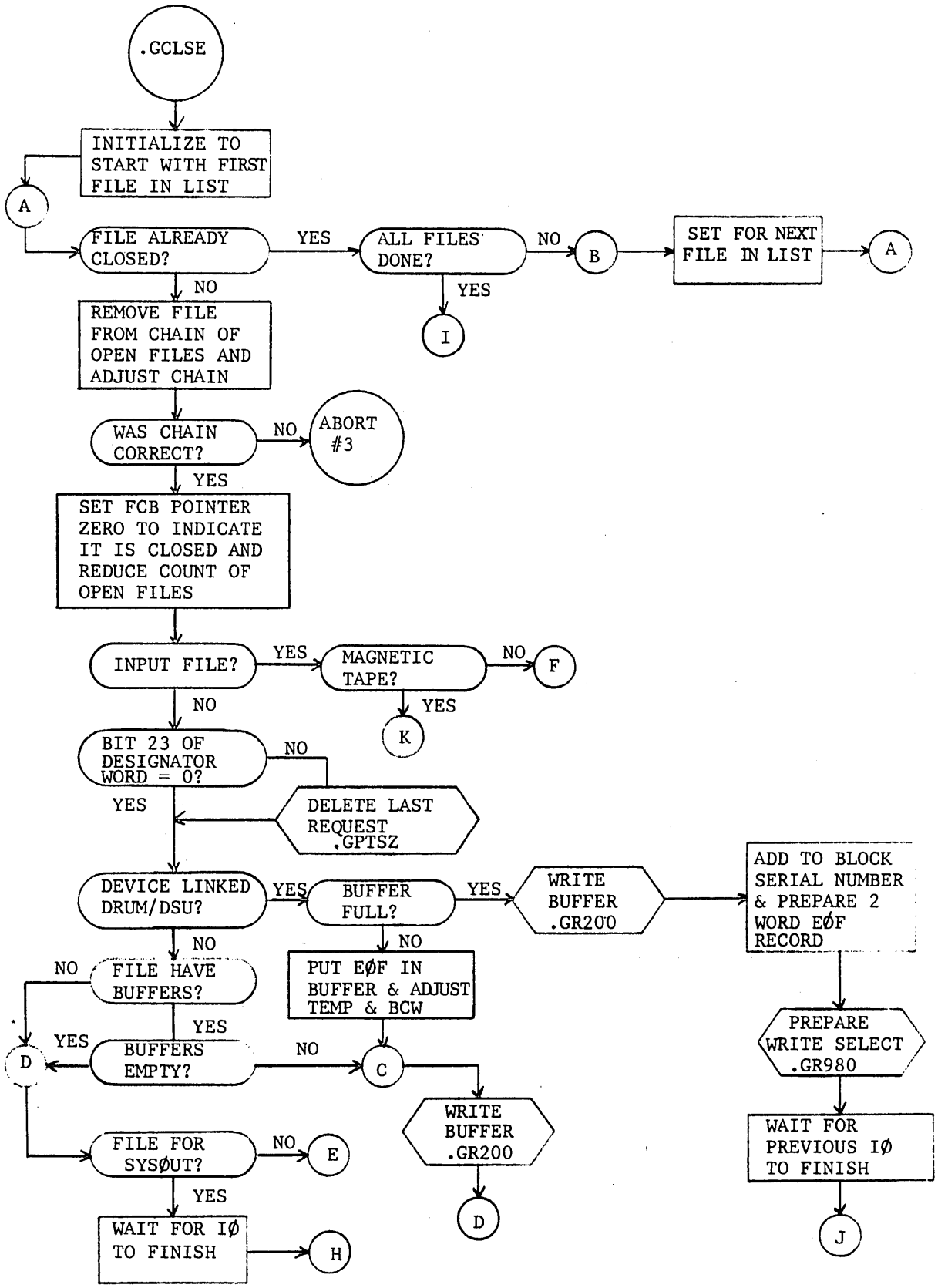
n = number of files to be closed.

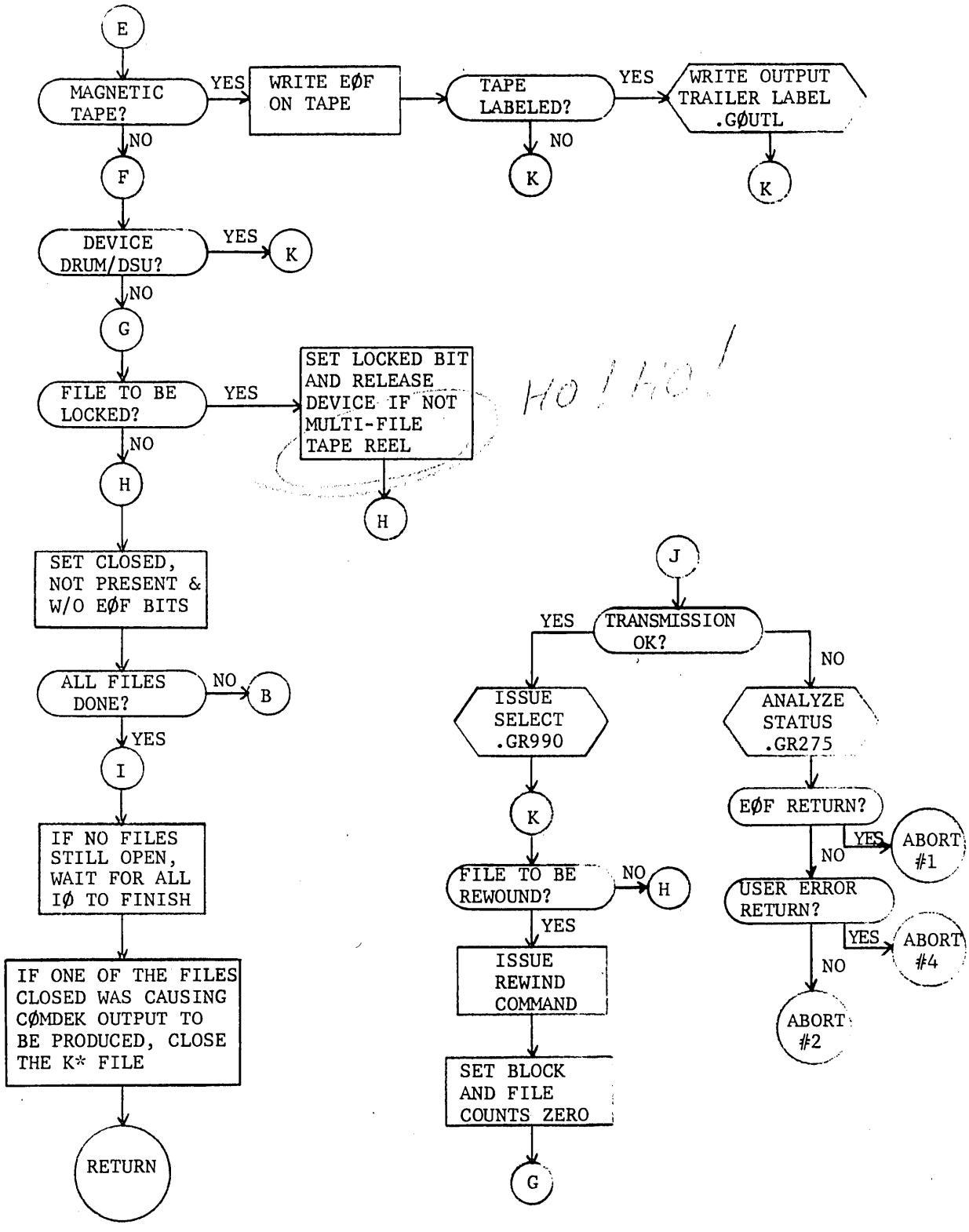
Function: To disconnect (close) files when no further activities are to be performed on them.

Called By: User, .GCMDK, .GALTR

Calls For: .GR200, .GR275, .GR960, .GR980, .GR990, .GOUTL; .GPTSZ if so initialized.

Number of Words: 238


.GCLSE
INITIALIZE TO START WITH FIRST FILE IN LIST
A
FILE ALREADY CLOSED?
YES
ALL FILES DONE?
NO
B
SET FOR NEXT FILE IN LIST
A
YES
I
NO
REMOVE FILE FROM CHAIN OF OPEN FILES AND ADJUST CHAIN
WAS CHAIN CORRECT?
NO
ABORT #3
YES
SET FCB POINTER ZERO TO INDICATE IT IS CLOSED AND REDUCE COUNT OF OPEN FILES
INPUT FILE?
YES
MAGNETIC TAPE?
NO
F
YES
K
NO
BIT 23 OF DESIGNATOR WORD = 0?
NO
YES
DELETE LAST REQUEST .GPTSZ
DEVICE LINKED DRUM/DSU?
YES
BUFFER FULL?
YES
WRITE BUFFER .GR200
ADD TO BLOCK SERIAL NUMBER & PREPARE 2 WORD EØF RECORD
NO
NO
PUT EØF IN BUFFER & ADJUST TEMP & BCW
NO
FILE HAVE BUFFERS?
NO
YES
YES
D
BUFFERS EMPTY?
NO
C
PREPARE WRITE SELECT .GR980
WRITE BUFFER .GR200
FILE FOR SYSØUT?
NO
E
YES
WAIT FOR PREVIOUS IØ TO FINISH
D
WAIT FOR IØ TO FINISH
H
J


E
MAGNETIC TAPE?
YES
WRITE EØF ON TAPE
TAPE LABELED?
YES
WRITE OUTPUT TRAILER LABEL .GØUTL
NO
K
K
NO
F
DEVICE DRUM/DSU?
YES
K
NO
G
FILE TO BE LOCKED?
YES
SET LOCKED BIT AND RELEASE DEVICE IF NOT MULTI-FILE TAPE REEL
H
NO
H
SET CLOSED, NOT PRESENT & W/O EØF BITS
ALL FILES DONE?
NO
B
YES
I
IF NO FILES STILL OPEN, WAIT FOR ALL IØ TO FINISH
IF ONE OF THE FILES CLOSED WAS CAUSING CØMDEK OUTPUT TO BE PRODUCED, CLOSE THE K* FILE
RETURN
J
TRANSMISSION OK?
YES
NO
ISSUE SELECT .GR990
ANALYZE STATUS .GR275
K
EØF RETURN?
YES
ABORT #1
NO
FILE TO BE REWOUND?
NO
H
USER ERROR RETURN?
YES
ABORT #4
YES
NO
ISSUE REWIND COMMAND
ABORT #2
SET BLOCK AND FILE COUNTS ZERO
G

Name: .GCMDK

Alternate Names: None

Calling Sequence: CALL .GCMDK (fcb)

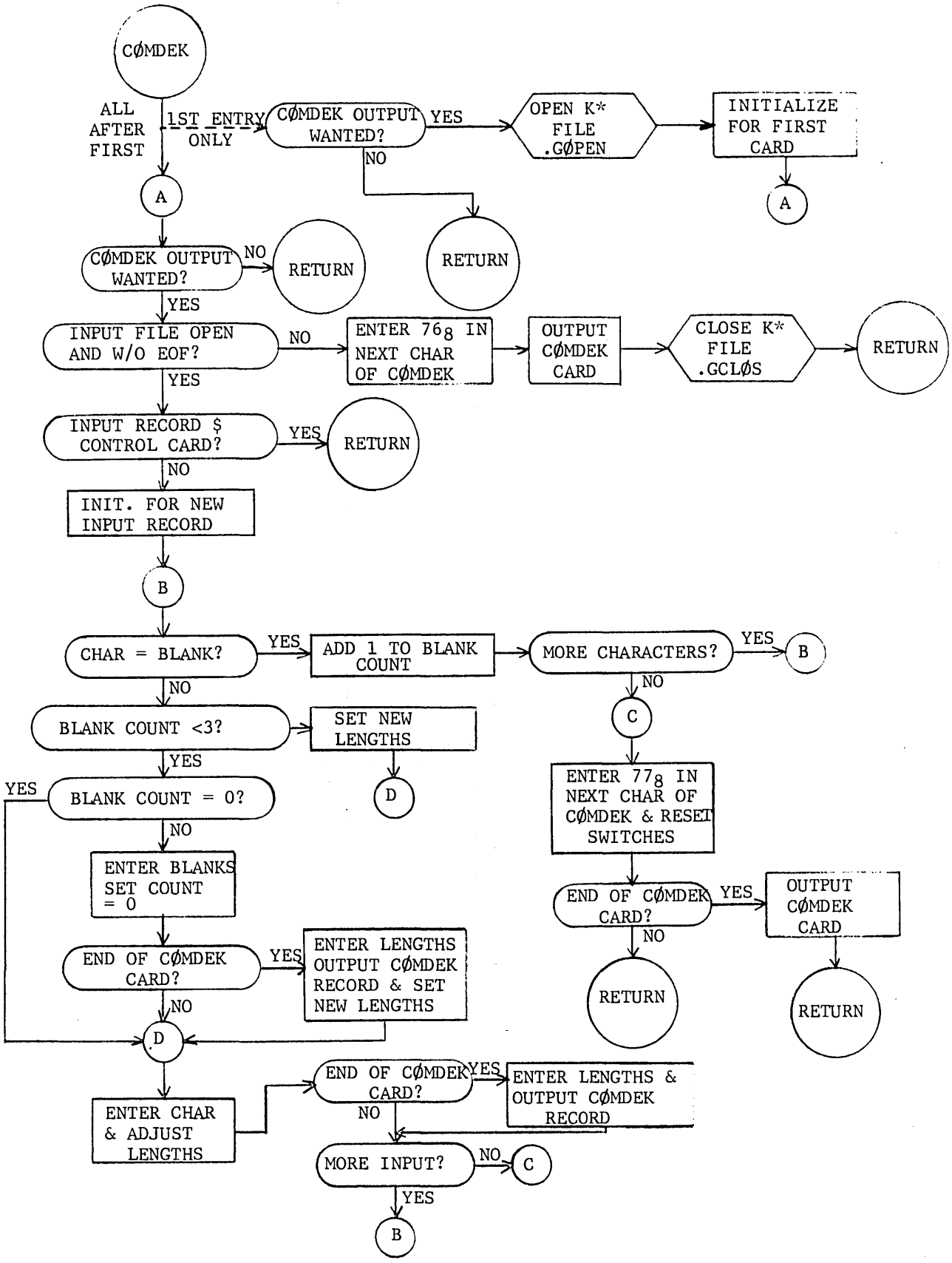
fcb = Location of file control block

Function: To compress the current logical record of the designated file into the COMDEK format if so indicated in the appropriate position of the GECOS switch word. The compressed record is inserted in the K* file which is also opened and closed by this routine.

Called By: .GRDRC

Calls For: .GOPEN, .GCLSE, .GILLB, .GWTRC; references .GEDIT

Number of Words: 618 including K* file control block and buffer


CØMDEK
ALL AFTER FIRST
1ST ENTRY ONLY
CØMDEK OUTPUT WANTED?
YES
NO
OPEN K* FILE .GØPEN
INITIALIZE FOR FIRST CARD
A
A
CØMDEK OUTPUT WANTED?
NO
RETURN
RETURN
YES
INPUT FILE OPEN AND W/O EOF?
NO
ENTER 76₈ IN NEXT CHAR OF CØMDEK
OUTPUT CØMDEK CARD
CLOSE K* FILE .GCLØS
RETURN
YES
INPUT RECORD $ CONTROL CARD?
YES
RETURN
NO
INIT. FOR NEW INPUT RECORD
B
CHAR = BLANK?
YES
ADD 1 TO BLANK COUNT
MORE CHARACTERS?
YES
B
NO
C
BLANK COUNT <3?
SET NEW LENGTHS
YES
D
YES
BLANK COUNT = 0?
NO
ENTER BLANKS SET COUNT = 0
ENTER 77₈ IN NEXT CHAR OF CØMDEK & RESET SWITCHES
END OF CØMDEK CARD?
YES
OUTPUT CØMDEK CARD
NO
RETURN
RETURN
END OF CØMDEK CARD?
YES
ENTER LENGTHS OUTPUT CØMDEK RECORD & SET NEW LENGTHS
NO
D
ENTER CHAR & ADJUST LENGTHS
END OF CØMDEK CARD?
YES
ENTER LENGTHS & OUTPUT CØMDEK RECORD
NO
MORE INPUT?
NO
C
YES
B

Name: .GCOPY

Alternate Names: COPY, .GACOP

Calling Sequence: CALL COPY (fcb~out, fcb~in)

fcb~out = location of file control block of the output file

fcb~in = location of file control block of the input file

Function: To move the last accessed logical input record from the designated input file to the next available position in the designated output file.

Called By: User

Calls For: .GCOPY is a separate entry to .GPUT

Name: .GEDIT

Alternate Names: IOEDIT, .GAEDI

Calling Sequence: CALL IOEDIT (list, n)

list = location of first entry in a list of control parameters.

n = number of entries in the list.

A list entry has the form ZERO control, code where control is the location of a parameter and code indicates the type of parameter.

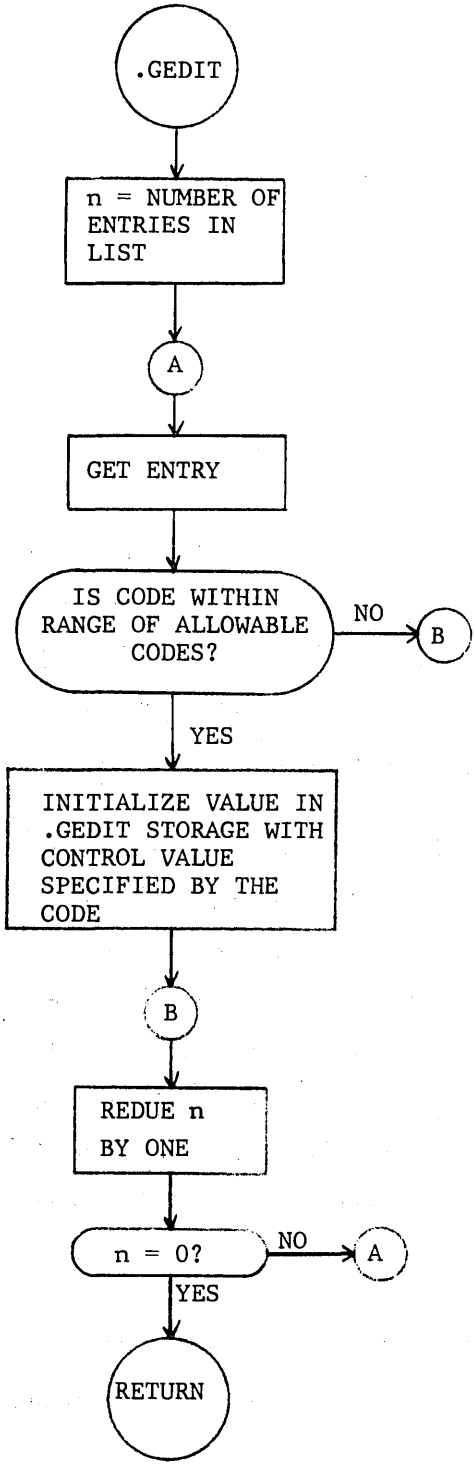
Function: To initialize the edit functions such as PRINT and PUNCH with parameters which do not usually vary with each call for these routines. These parameters are (in order of their code numbers): 1) first heading line for PRINT, 2) second heading line for PRINT, 3) label for PUNCH, 4) label for COMDEK output, 5) first page number for PRINT, 6) location of P* file control block for reporting errors, and 7) report code for PRINT.

Called By: User

Referenced by: .GALTR, .GCMDK, .GILLB, .GIOPG, .GPNCH, .GPRNT

Calls For: None

Number of Words: 60


.GEDIT
n = NUMBER OF ENTRIES IN LIST
A
GET ENTRY
IS CODE WITHIN RANGE OF ALLOWABLE CODES?
NO
B
YES
INITIALIZE VALUE IN .GEDIT STORAGE WITH CONTROL VALUE SPECIFIED BY THE CODE
B
REDUE n BY ONE
n = 0?
NO
A
YES
RETURN

Name: .GEPRN

Alternate Names: EPRINT

Calling Sequence: CALL EPRINT (fcb, image, slew, n)

fcb = location of file control block

image = location of first word of line image

slew = location of word containing slewing information in bits 30-35

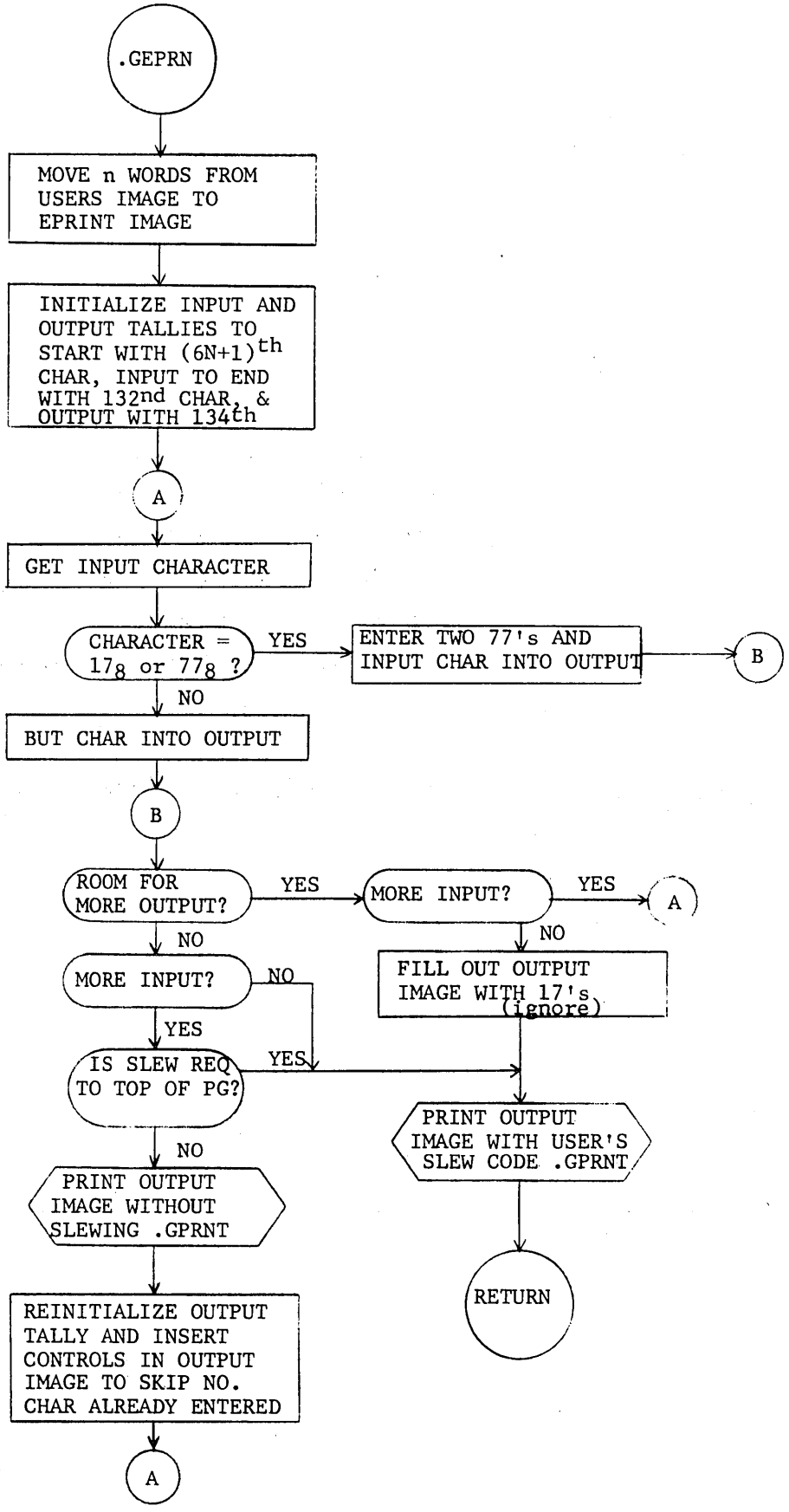
n = number of initial words in image which do not require editing.

Function: To edit a print line image prior to writing via the PRINT routine.

Called By: User

Calls For: .GPRNT

Number of Words: 160


.GEPRN
MOVE n WORDS FROM USERS IMAGE TO EPRINT IMAGE
INITIALIZE INPUT AND OUTPUT TALLIES TO START WITH (6N+1)th CHAR, INPUT TO END WITH 132nd CHAR, & OUTPUT WITH 134th
A
GET INPUT CHARACTER
CHARACTER = 17₈ or 77₈ ?
YES
ENTER TWO 77's AND INPUT CHAR INTO OUTPUT
B
NO
BUT CHAR INTO OUTPUT
B
ROOM FOR MORE OUTPUT?
YES
MORE INPUT?
YES
A
NO
NO
MORE INPUT?
NO
FILL OUT OUTPUT IMAGE WITH 17's (ignore)
YES
IS SLEW REQ TO TOP OF PG?
YES
PRINT OUTPUT IMAGE WITH USER'S SLEW CODE .GPRNT
NO
PRINT OUTPUT IMAGE WITHOUT SLEWING .GPRNT
RETURN
REINITIALIZE OUTPUT TALLY AND INSERT CONTROLS IN OUTPUT IMAGE TO SKIP NO. CHAR ALREADY ENTERED
A

Name: .GFRCE

Alternate Names: FORCE, .GAFRC

Calling Sequence: CALL FORCE (fcb)

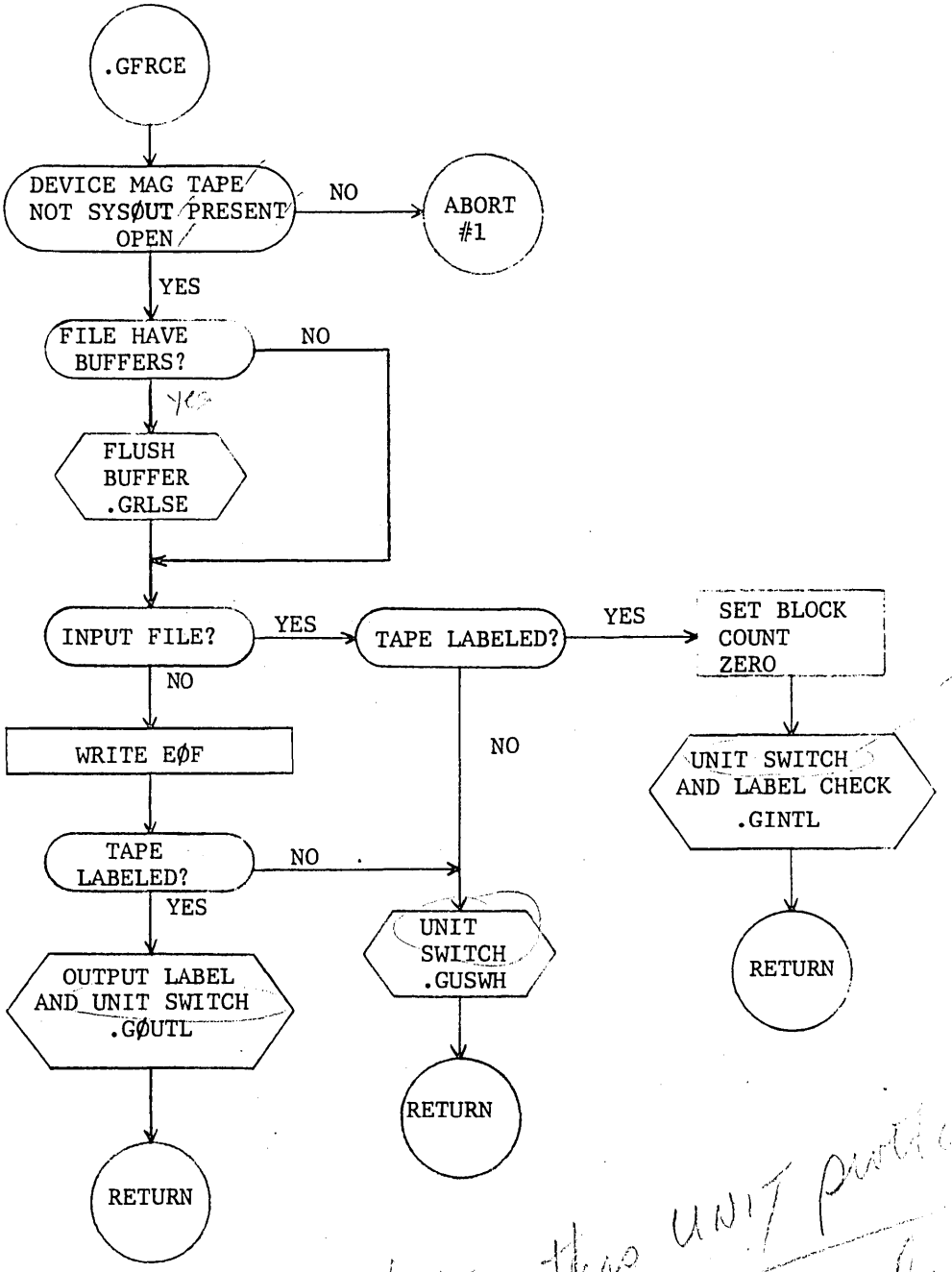
fcb = location of file control block

Function: To force an end-of-reel condition on a magnetic tape file.

Called By: User

Calls For: .GINTL, .GOUTL, .GRLSE, .GUSWH, .GR960

Number of Words: 56


.GFRCE
DEVICE MAG TAPE NOT SYSØUT PRESENT OPEN
NO
ABORT #1
YES
FILE HAVE BUFFERS?
NO
YES
FLUSH BUFFER .GRLSE
INPUT FILE?
YES
TAPE LABELED?
YES
SET BLOCK COUNT ZERO
NO
WRITE EØF
NO
UNIT SWITCH AND LABEL CHECK .GINTL
TAPE LABELED?
NO
YES
UNIT SWITCH .GUSWH
RETURN
OUTPUT LABEL AND UNIT SWITCH .GØUTL
RETURN
RETURN

Name: .GFSFM

Alternate Names: FSTFM, .GAFSF

Calling Sequence: CALL FSTFM (fcb, n)

fcb = location of file control block

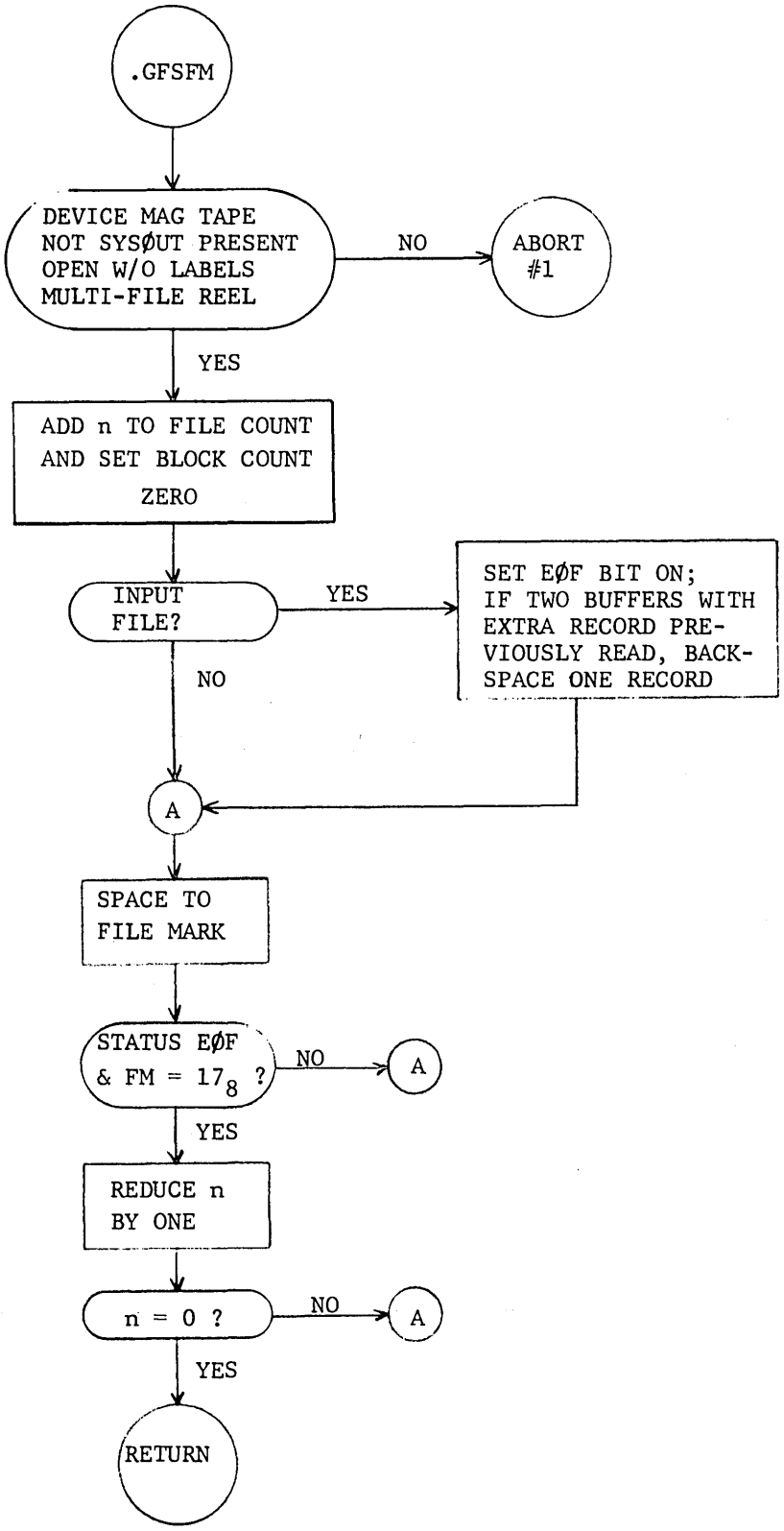
n = number of files

Function: To forward space an unlabeled multi-file magnetic tape file to a position immediately following the n^{th} succeeding standard end-of-file ($FM=17_8$).

Called By: User

Calls For: .GR960

Number of Words: 60


.GFSFM
DEVICE MAG TAPE
NOT SYSØUT PRESENT
OPEN W/O LABELS
MULTI-FILE REEL
NO
ABORT
#1
YES
ADD n TO FILE COUNT
AND SET BLOCK COUNT
ZERO
INPUT
FILE?
YES
SET EØF BIT ON;
IF TWO BUFFERS WITH
EXTRA RECORD PRE-
VIOUSLY READ, BACK-
SPACE ONE RECORD
NO
A
SPACE TO
FILE MARK
STATUS EØF
& FM = 17₈ ?
NO
A
YES
REDUCE n
BY ONE
n = 0 ?
NO
A
YES
RETURN

Name: .GFSRC

Alternate Names: FSREC, .GAFSR

Calling Sequence: CALL FSREC (fcb, n, eof)

fcb = location of file control block

n = number of records

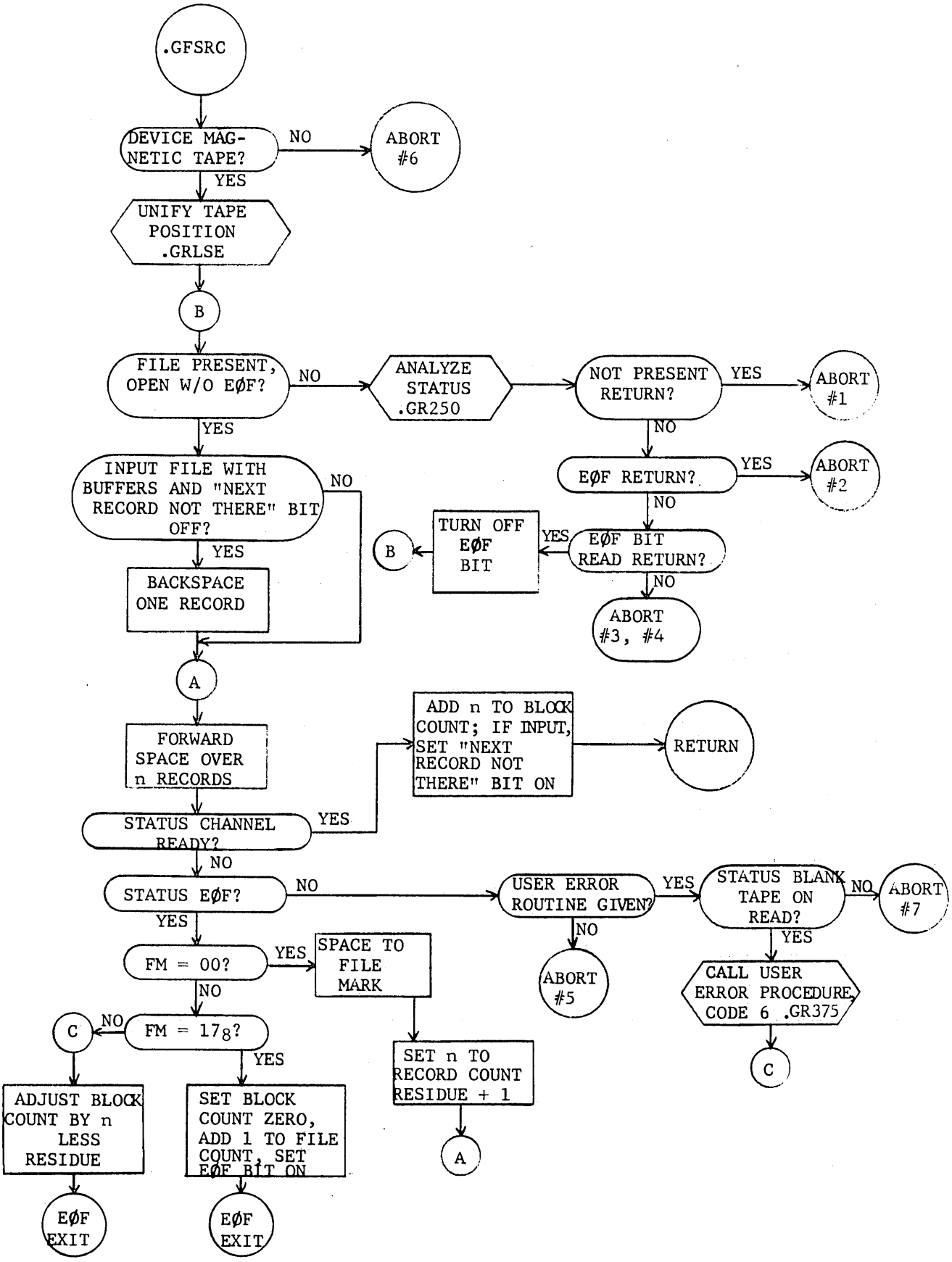
eof = location of end-of-file routine

Function: To space over the next n physical records on the designated magnetic tape file in a forward direction.

Called By: User

Calls For: .GRLSE, .GR250, .GR275, .GR375, .GR960

Number of Words: 150


.GFSRC
DEVICE MAG-NETIC TAPE?
NO
ABORT #6
YES
UNIFY TAPE POSITION .GRLSE
B
FILE PRESENT, OPEN W/O EØF?
NO
ANALYZE STATUS .GR250
NOT PRESENT RETURN?
YES
ABORT #1
NO
EØF RETURN?
YES
ABORT #2
NO
INPUT FILE WITH BUFFERS AND "NEXT RECORD NOT THERE" BIT OFF?
NO
YES
BACKSPACE ONE RECORD
TURN OFF EØF BIT
YES
B
EØF BIT READ RETURN?
NO
ABORT #3, #4
A
FORWARD SPACE OVER n RECORDS
ADD n TO BLOCK COUNT; IF INPUT, SET "NEXT RECORD NOT THERE" BIT ON
RETURN
STATUS CHANNEL READY?
YES
NO
STATUS EØF?
NO
USER ERROR ROUTINE GIVEN?
YES
STATUS BLANK TAPE ON READ?
NO
ABORT #7
YES
NO
ABORT #5
YES
CALL USER ERROR PROCEDURE, CODE 6 .GR375
C
YES
FM = 00?
YES
SPACE TO FILE MARK
NO
C
NO
FM = 17₈?
YES
SET n TO RECORD COUNT RESIDUE + 1
A
ADJUST BLOCK COUNT BY n LESS RESIDUE
SET BLOCK COUNT ZERO, ADD 1 TO FILE COUNT, SET EØF BIT ON
EØF EXIT
EØF EXIT

Name: .GGET

Alternate Names: GET, .GAGET

Calling Sequence: CALL GET (fcb, eof, stor)

fcb = location of file control block

eof = location of end-of-file routine

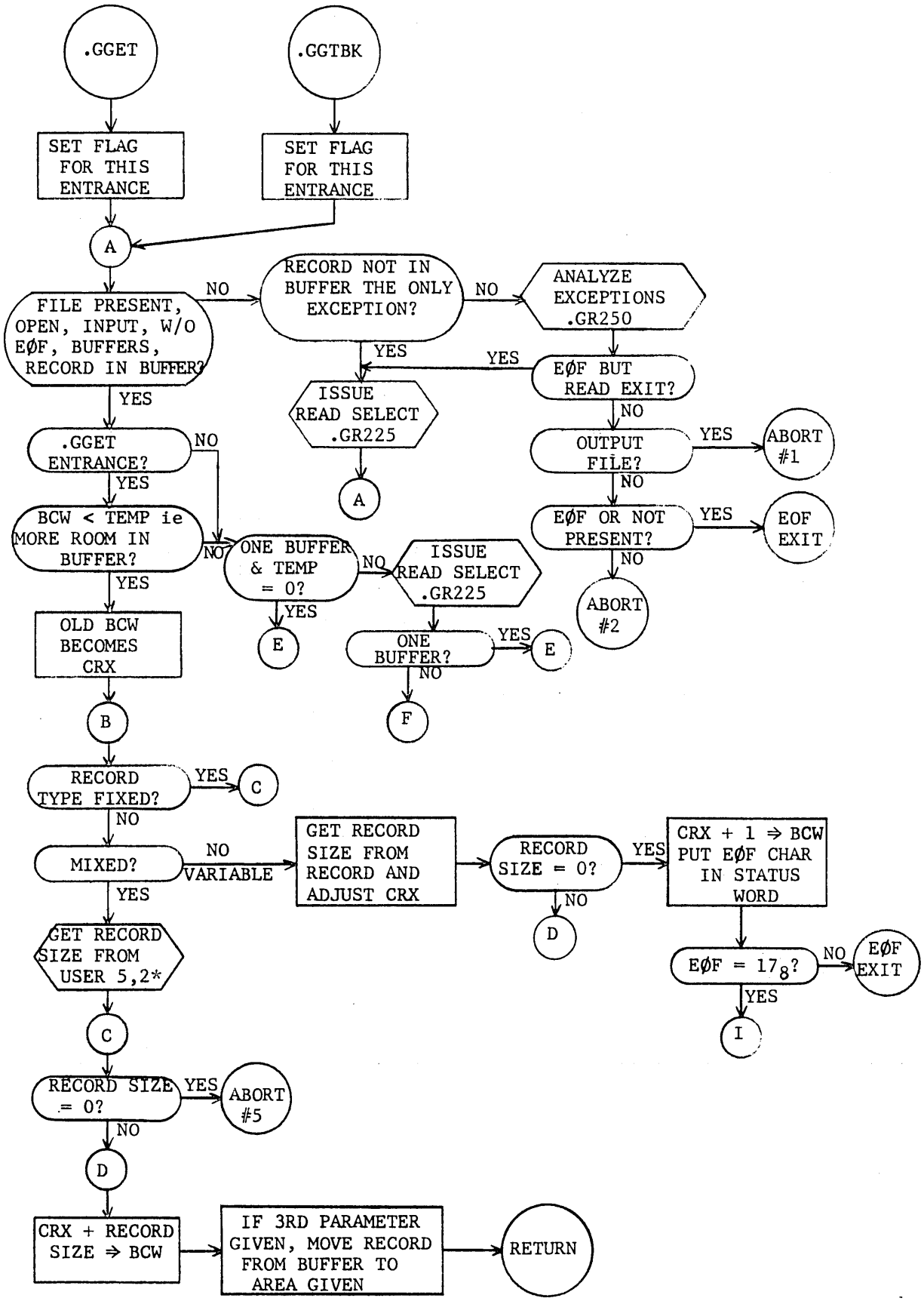
stor = location of first word of area to which the record is to be moved

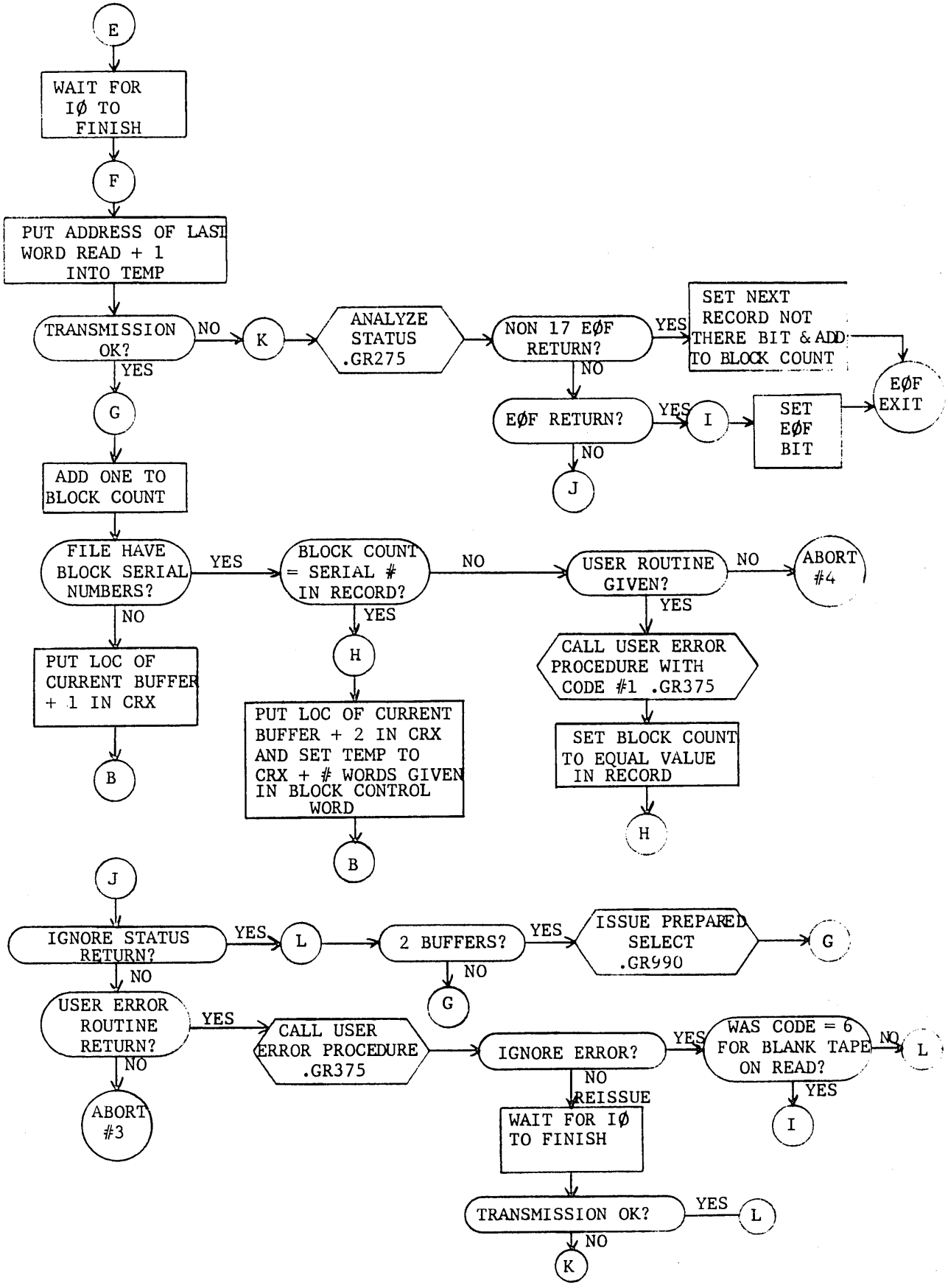
Function: To obtain the next logical input record from the designated input file and, if desired, move that logical record to a working area.

Called By: User, .GALTR, .GRDCD

Calls For: .GR225, .GR250, .GR275, .GR375, .GR960, .GR990

Number of Words: 218


.GGET
.GGTBK
SET FLAG FOR THIS ENTRANCE
SET FLAG FOR THIS ENTRANCE
A
FILE PRESENT, OPEN, INPUT, W/O EØF, BUFFERS, RECORD IN BUFFER?
NO
RECORD NOT IN BUFFER THE ONLY EXCEPTION?
NO
ANALYZE EXCEPTIONS .GR250
YES
YES
EØF BUT READ EXIT?
ISSUE READ SELECT .GR225
A
NO
OUTPUT FILE?
YES
ABORT #1
NO
EØF OR NOT PRESENT?
YES
EOF EXIT
NO
ABORT #2
YES
.GGET ENTRANCE?
NO
YES
BCW < TEMP ie MORE ROOM IN BUFFER?
NO
ONE BUFFER & TEMP = 0?
NO
ISSUE READ SELECT .GR225
YES
E
ONE BUFFER?
YES
E
NO
F
YES
OLD BCW BECOMES CRX
B
RECORD TYPE FIXED?
YES
C
NO
MIXED?
NO VARIABLE
GET RECORD SIZE FROM RECORD AND ADJUST CRX
RECORD SIZE = 0?
YES
CRX + 1 ⇒ BCW PUT EØF CHAR IN STATUS WORD
YES
NO
D
GET RECORD SIZE FROM USER 5,2*
EØF = 17₈?
NO
EØF EXIT
YES
I
C
RECORD SIZE = 0?
YES
ABORT #5
NO
D
CRX + RECORD SIZE ⇒ BCW
IF 3RD PARAMETER GIVEN, MOVE RECORD FROM BUFFER TO AREA GIVEN
RETURN


E
WAIT FOR IØ TO FINISH
F
PUT ADDRESS OF LAST WORD READ + 1 INTO TEMP
TRANSMISSION OK?
NO
K
ANALYZE STATUS .GR275
NON 17 EØF RETURN?
YES
SET NEXT RECORD NOT THERE BIT & ADD TO BLOCK COUNT
EØF EXIT
NO
EØF RETURN?
YES
I
SET EØF BIT
NO
J
YES
G
ADD ONE TO BLOCK COUNT
FILE HAVE BLOCK SERIAL NUMBERS?
YES
BLOCK COUNT = SERIAL # IN RECORD?
NO
USER ROUTINE GIVEN?
NO
ABORT #4
YES
NO
YES
PUT LOC OF CURRENT BUFFER + 1 IN CRX
H
CALL USER ERROR PROCEDURE WITH CODE #1 .GR375
PUT LOC OF CURRENT BUFFER + 2 IN CRX AND SET TEMP TO CRX + # WORDS GIVEN IN BLOCK CONTROL WORD
SET BLOCK COUNT TO EQUAL VALUE IN RECORD
B
B
H
J
IGNORE STATUS RETURN?
YES
L
2 BUFFERS?
YES
ISSUE PREPARED SELECT .GR990
G
NO
NO
G
USER ERROR ROUTINE RETURN?
YES
CALL USER ERROR PROCEDURE .GR375
IGNORE ERROR?
YES
WAS CODE = 6 FOR BLANK TAPE ON READ?
NO
L
NO
REISSUE
YES
ABORT #3
WAIT FOR IØ TO FINISH
I
TRANSMISSION OK?
YES
L
NO
K

Name: .GGTBK

Alternate Names: GETBK, .GAGTB

Calling Sequence: CALL GETBK (fcb, eof, stor)

fcb = location of file control block

eof = location of end-of-file routine

stor = location of first word of area to which the record is to be moved.

Function: To obtain the first logical record in the next physical record from the designated input file and, if desired, move that logical record to a working area.

Called By: User

Calls For: .GGTBK is a separate entry to .GGET

Name: .GILLB

Alternate Names: None

Calling Sequence: CALL .GILLB (kind, request, label)

kind = location of word indicating type of card to be labeled--zero, column binary; non-zero, Hollerith

request = 0 if request is from .GCMDK routine, 1 if request from .GPNCH routine

label = location of the first word of the label area

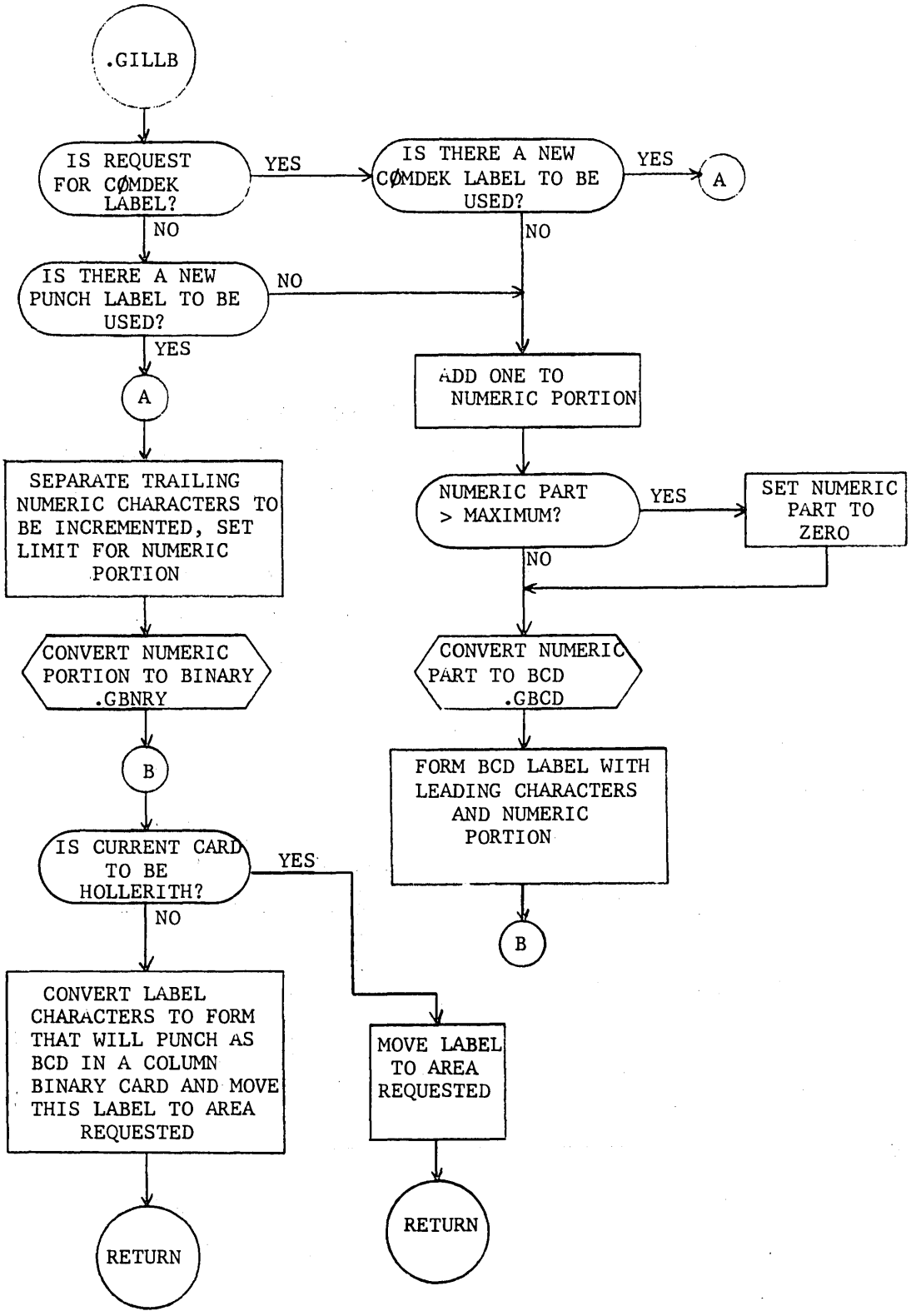
Function:

To produce a sequenced label for punched card output such that it will appear to be a Hollerith label in columns 73-80 regardless of the type of card produced.

Called By: .GCMDK, .GPNCH

Calls For: .GBCD, .GBNRY; references .GEDIT

Number of Words: 208


.GILLB
IS REQUEST FOR CØMDEK LABEL?
YES
IS THERE A NEW CØMDEK LABEL TO BE USED?
YES
A
NO
NO
IS THERE A NEW PUNCH LABEL TO BE USED?
NO
YES
A
ADD ONE TO NUMERIC PORTION
SEPARATE TRAILING NUMERIC CHARACTERS TO BE INCREMENTED, SET LIMIT FOR NUMERIC PORTION
NUMERIC PART > MAXIMUM?
YES
SET NUMERIC PART TO ZERO
NO
CONVERT NUMERIC PORTION TO BINARY .GBNRY
CONVERT NUMERIC PART TO BCD .GBCD
B
FORM BCD LABEL WITH LEADING CHARACTERS AND NUMERIC PORTION
B
IS CURRENT CARD TO BE HOLLERITH?
YES
NO
CONVERT LABEL CHARACTERS TO FORM THAT WILL PUNCH AS BCD IN A COLUMN BINARY CARD AND MOVE THIS LABEL TO AREA REQUESTED
MOVE LABEL TO AREA REQUESTED
RETURN
RETURN

Name: .GINHD

Alternate Names: None

Calling Sequence: CALL .GINHD
XR2 contains the location of the file control block

Function: To check the header label on a labeled input tape file.

Called By: .GOPEN

Note: See "Label Checking and Unit Switching"

Name: .GINTL

Alternate Names: None

Calling Sequence: CALL .GINTL

XR2 contains the location of the file control block

Function: To read and check the trailer label on a labeled input tape file.

Called By: .GFRCE, .GR275

Note: See "Label Checking and Unit Switching"

Name: .GIOPG

Alternate Names: None

Calling Sequence: CALL .GIOPG (word)

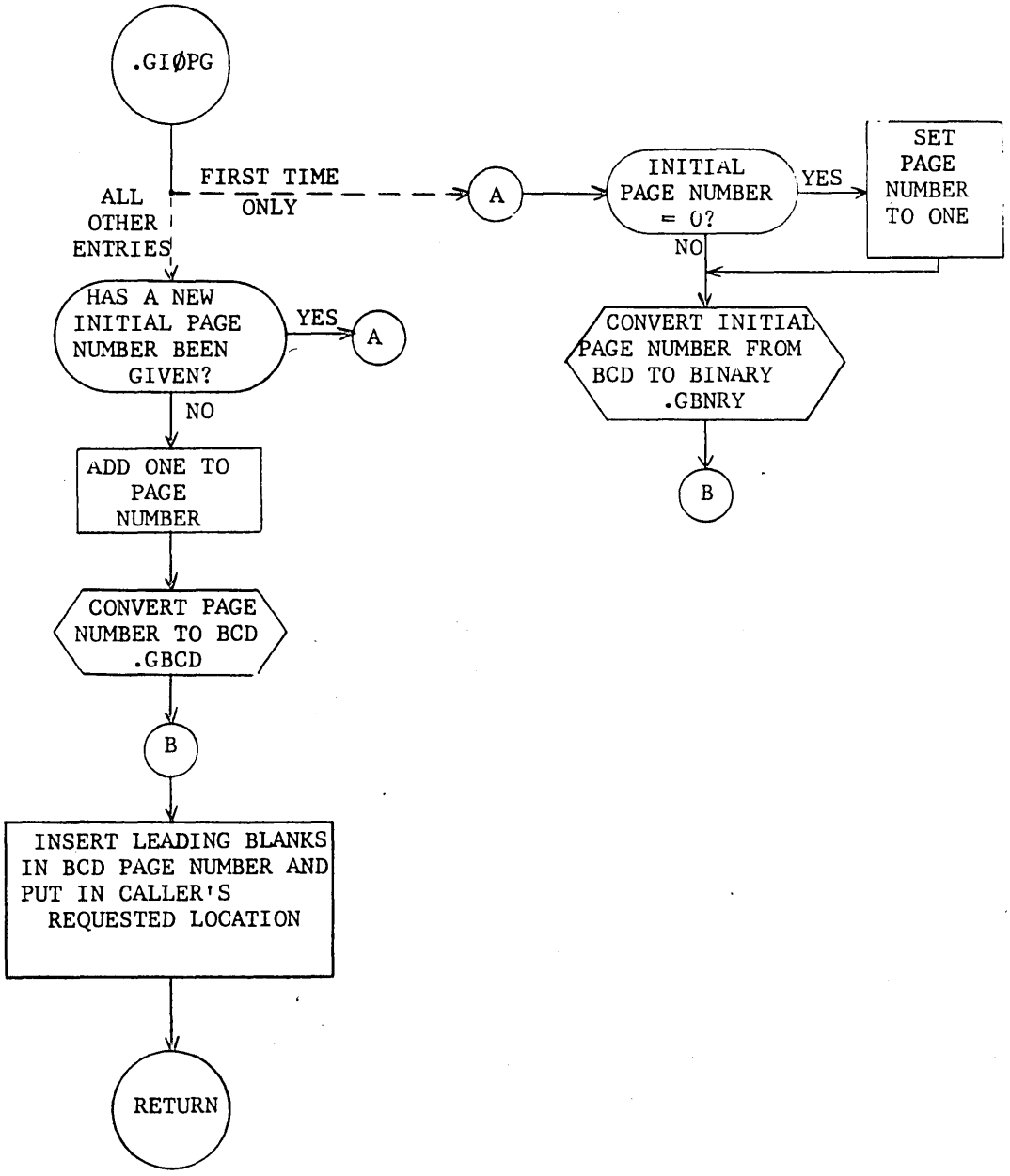
word = location of word in which the new page number is to be placed

Function: To increment the page number used by the PRINT routine and to supply the updated page number in BCD form.

Called By: .GPRNT

Calls For: .GBCD, .GBNRY; references .GEDIT

Number of Words: 52


.GIØPG
FIRST TIME ONLY
ALL OTHER ENTRIES
A
INITIAL PAGE NUMBER = 0?
YES
SET PAGE NUMBER TO ONE
NO
CONVERT INITIAL PAGE NUMBER FROM BCD TO BINARY .GBNRY
B
HAS A NEW INITIAL PAGE NUMBER BEEN GIVEN?
YES
A
NO
ADD ONE TO PAGE NUMBER
CONVERT PAGE NUMBER TO BCD .GBCD
B
INSERT LEADING BLANKS IN BCD PAGE NUMBER AND PUT IN CALLER'S REQUESTED LOCATION
RETURN

Name: .GOPEN

Alternate Names: OPEN

Calling Sequence: CALL OPEN (list, n)

list = location of first of n consecutive file designator words for the files to be opened.

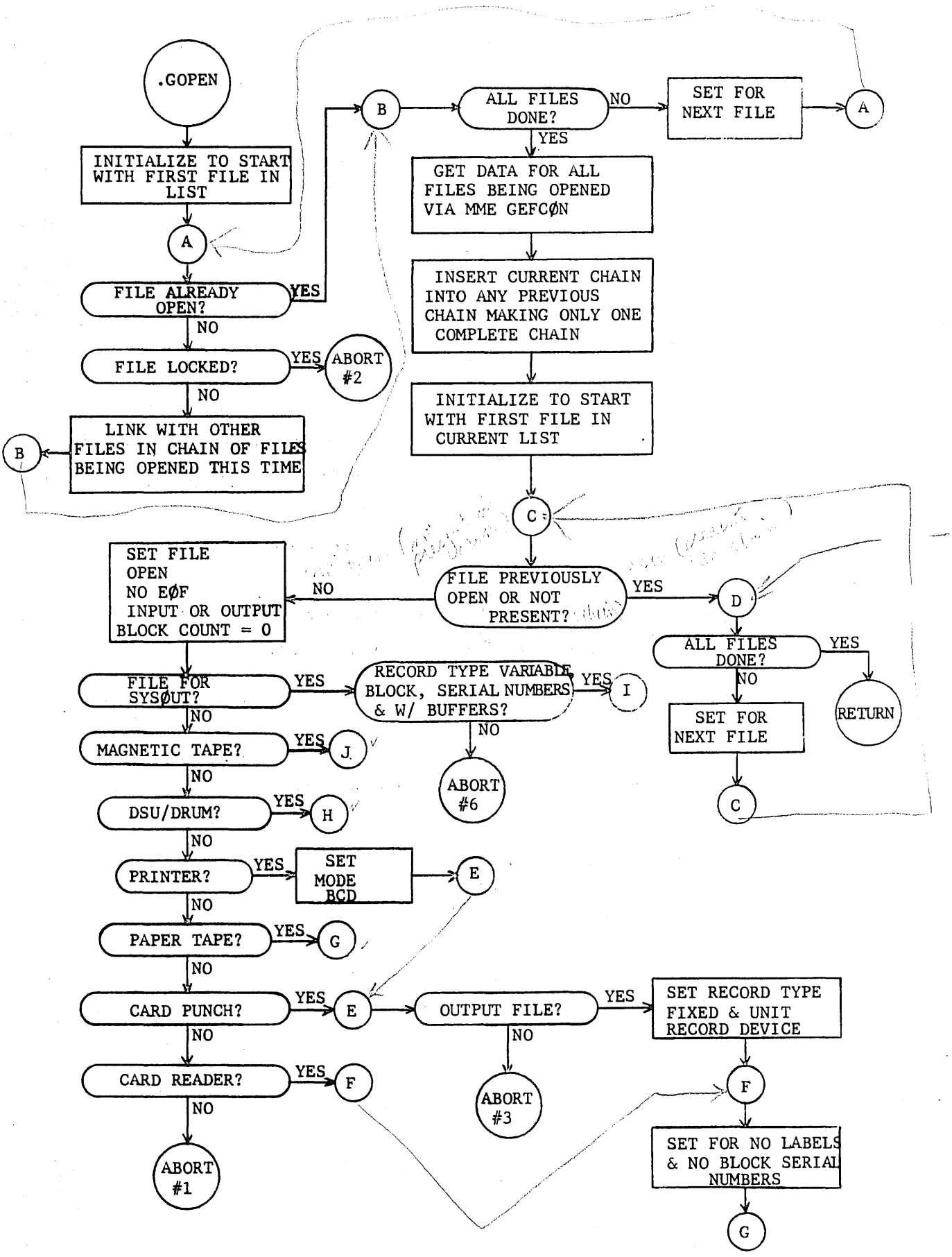
n = number of files to be opened.

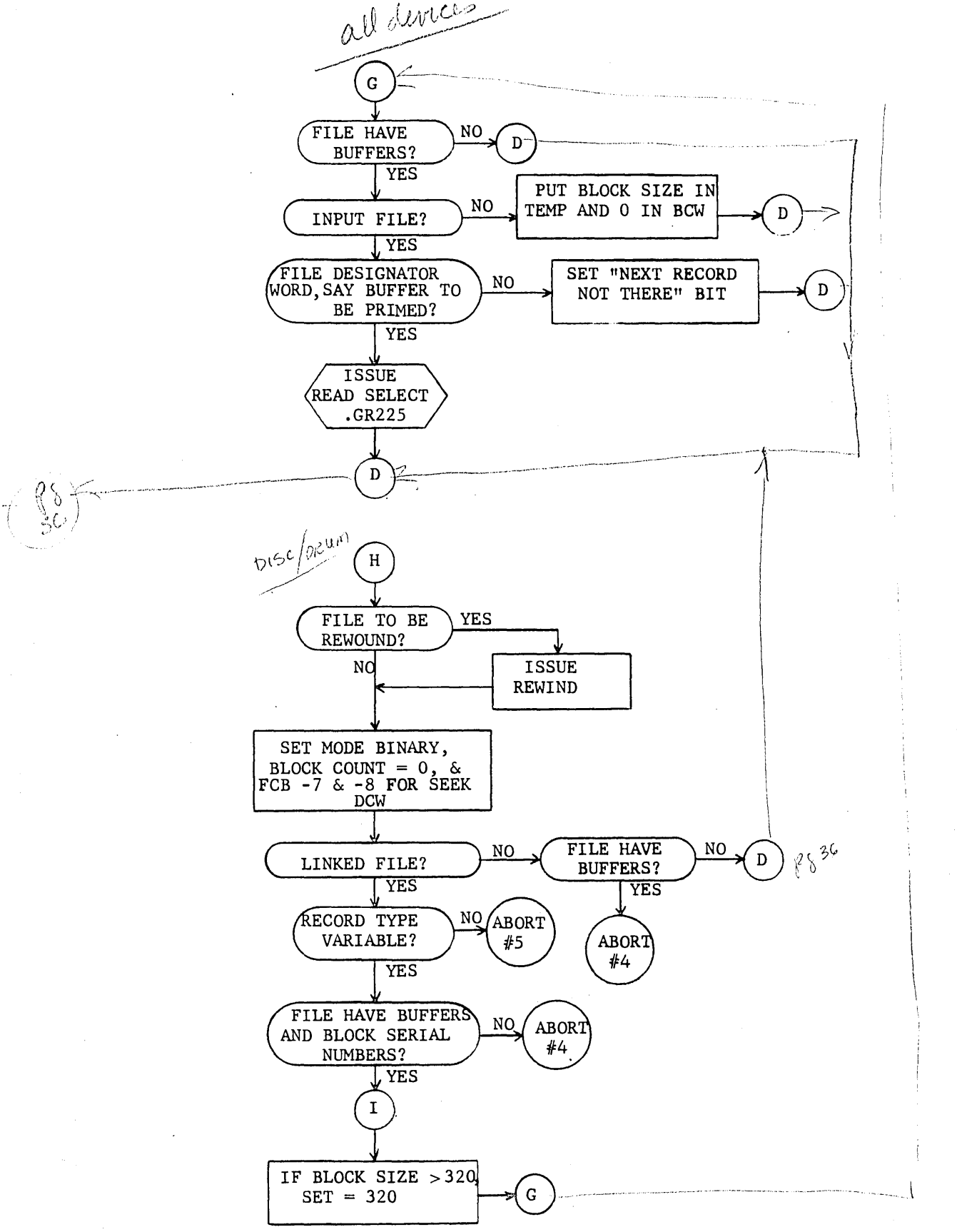
Function: To initialize (open) files such that they may be properly accessed by other GEFRC functions.

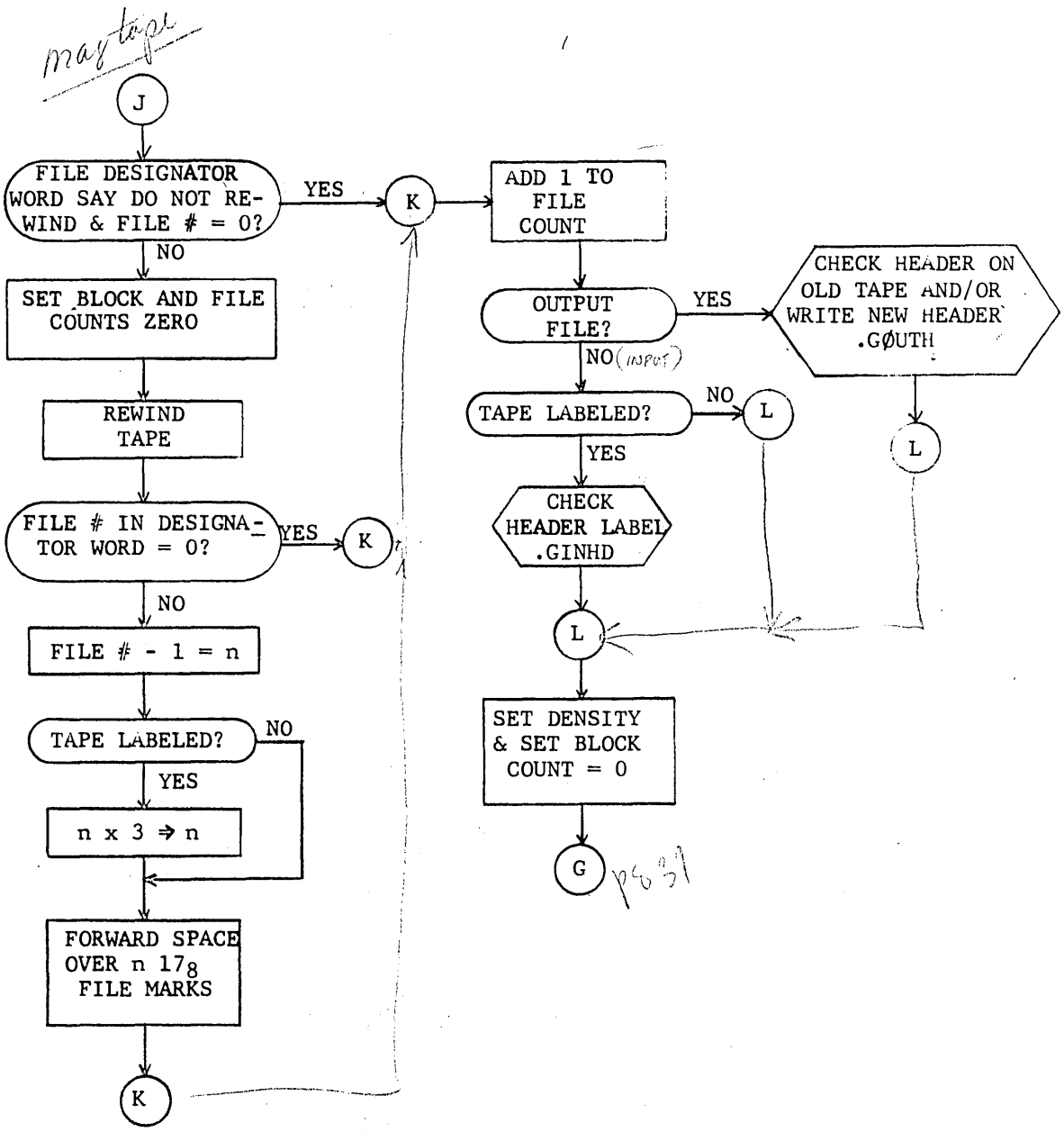
Called By: User, .GCMDK, .GALTR

Calls For: .GR225, .GR960, .GINHD, .GOUTH

Number of Words: 306


.GOPEN
INITIALIZE TO START WITH FIRST FILE IN LIST
A
FILE ALREADY OPEN?
YES
NO
FILE LOCKED?
YES
ABORT #2
NO
LINK WITH OTHER FILES IN CHAIN OF FILES BEING OPENED THIS TIME
B
B
ALL FILES DONE?
NO
SET FOR NEXT FILE
A
YES
GET DATA FOR ALL FILES BEING OPENED VIA MME GEFCØN
INSERT CURRENT CHAIN INTO ANY PREVIOUS CHAIN MAKING ONLY ONE COMPLETE CHAIN
INITIALIZE TO START WITH FIRST FILE IN CURRENT LIST
C
FILE PREVIOUSLY OPEN OR NOT PRESENT?
NO
YES
SET FILE OPEN NO EØF INPUT OR OUTPUT BLOCK COUNT = 0
D
ALL FILES DONE?
YES
NO
SET FOR NEXT FILE
RETURN
C
FILE FOR SYSØUT?
YES
RECORD TYPE VARIABLE, BLOCK, SERIAL NUMBERS & W/ BUFFERS?
YES
I
NO
ABORT #6
NO
MAGNETIC TAPE?
YES
J
NO
DSU/DRUM?
YES
H
NO
PRINTER?
YES
SET MODE BCD
E
NO
PAPER TAPE?
YES
G
NO
CARD PUNCH?
YES
E
NO
CARD READER?
YES
F
NO
ABORT #1
OUTPUT FILE?
YES
NO
ABORT #3
SET RECORD TYPE FIXED & UNIT RECORD DEVICE
F
SET FOR NO LABELS & NO BLOCK SERIAL NUMBERS
G


all devices
G
FILE HAVE BUFFERS?
NO
D
YES
INPUT FILE?
NO
PUT BLOCK SIZE IN TEMP AND 0 IN BCW
D
YES
FILE DESIGNATOR WORD, SAY BUFFER TO BE PRIMED?
NO
SET "NEXT RECORD NOT THERE" BIT
D
YES
ISSUE READ SELECT .GR225
D
DISC/DRUM
H
FILE TO BE REWOUND?
YES
NO
ISSUE REWIND
SET MODE BINARY, BLOCK COUNT = 0, & FCB -7 & -8 FOR SEEK DCW
LINKED FILE?
NO
FILE HAVE BUFFERS?
NO
D
YES
YES
RECORD TYPE VARIABLE?
NO
ABORT #5
ABORT #4
YES
FILE HAVE BUFFERS AND BLOCK SERIAL NUMBERS?
NO
ABORT #4
YES
I
IF BLOCK SIZE > 320, SET = 320
G


mag tape
J
FILE DESIGNATOR WORD SAY DO NOT REWIND & FILE # = 0?
YES
K
NO
SET BLOCK AND FILE COUNTS ZERO
REWIND TAPE
FILE # IN DESIGNATOR WORD = 0?
YES
K
NO
FILE # - 1 = n
TAPE LABELED?
NO
YES
n x 3 ⇒ n
FORWARD SPACE OVER n 17₈ FILE MARKS
K
ADD 1 TO FILE COUNT
OUTPUT FILE?
YES
CHECK HEADER ON OLD TAPE AND/OR WRITE NEW HEADER .GØUTH
L
NO (INPUT)
TAPE LABELED?
NO
L
YES
CHECK HEADER LABEL .GINHD
L
SET DENSITY & SET BLOCK COUNT = 0
G
p 37

Name: .GOUTH

Alternate Names: CALL .GOUTH

XR2 contains the location of the file control block.

Function: To read the existing header label on a tape to be used as an output file, check for expired retention period, and write a new header label if so indicated.

Called By: .GOPEN

Note: See "Label Checking and Unit Switching"

Name: .GOUTL

Alternate Names: None

Calling Sequence: CALL .GOUTL
XR2 contains the location of the file control block.

Function: To write a trailer label on a labeled output tape file.

Called By: .GCLSE, .GFRCE, .GR275

Note: See "Label Checking and Unit Switching"

Name: .GPNCH

Alternate Names: PUNCH, .GAPNC

Calling Sequence: CALL PUNCH (fcb, image, kind)

fcb = location of file control block

image = location of first word of card image

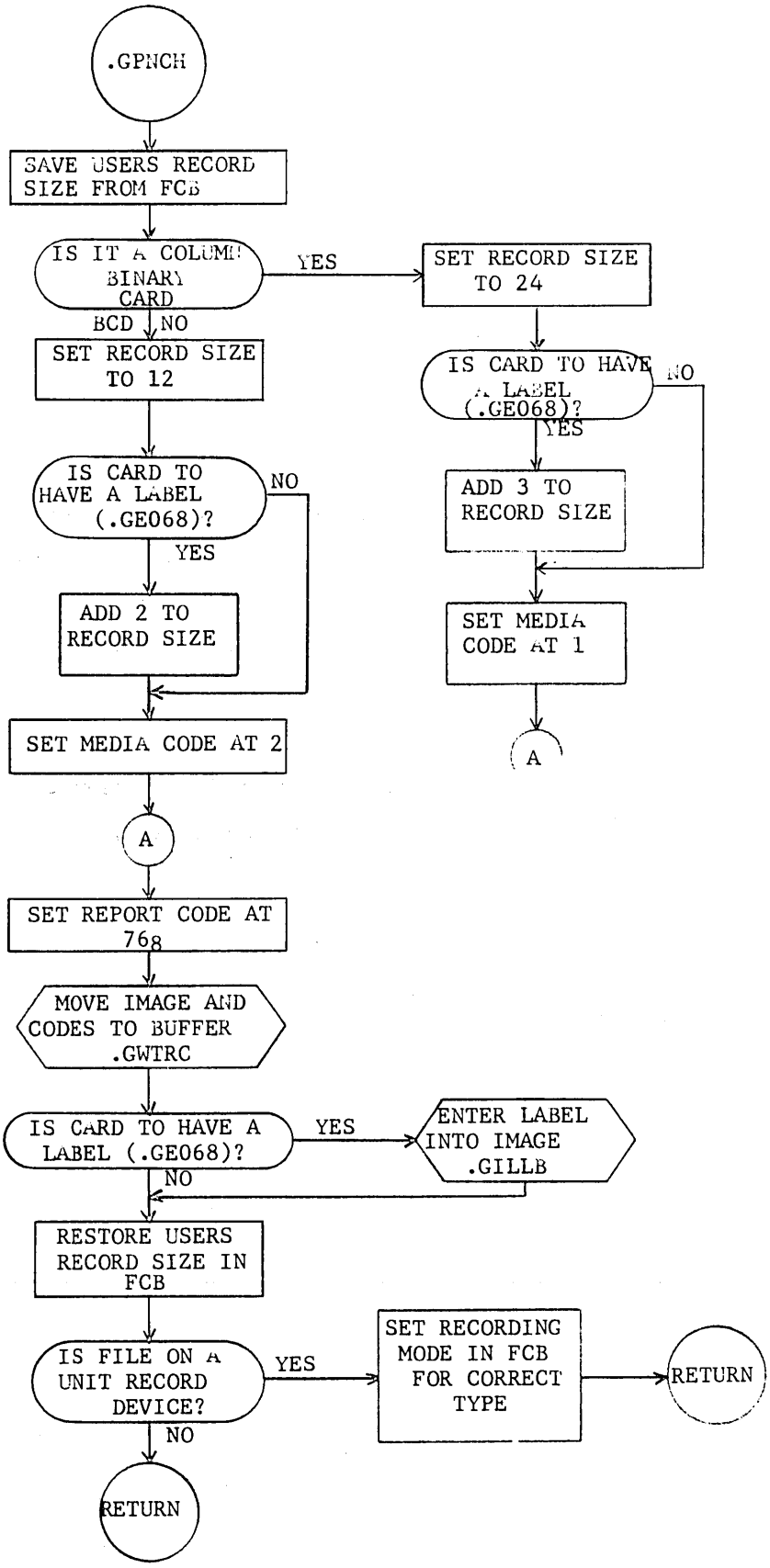
kind = location of word containing key to type of card--zero, column binary; non-zero, Hollerith

Function: To insert a punched card image in the next available position in the designated output file.

Called By: User

Calls For: .GWTRC, .GILLB: references .GEDIT

Number of Words: 72


.GPNCH
SAVE USERS RECORD SIZE FROM FCB
IS IT A COLUMN BINARY CARD
YES
SET RECORD SIZE TO 24
BCD
NO
SET RECORD SIZE TO 12
IS CARD TO HAVE A LABEL (.GE068)?
NO
YES
ADD 3 TO RECORD SIZE
IS CARD TO HAVE A LABEL (.GE068)?
NO
YES
ADD 2 TO RECORD SIZE
SET MEDIA CODE AT 1
A
SET MEDIA CODE AT 2
A
SET REPORT CODE AT 768
MOVE IMAGE AND CODES TO BUFFER .GWTRC
IS CARD TO HAVE A LABEL (.GE068)?
YES
ENTER LABEL INTO IMAGE .GILLB
NO
RESTORE USERS RECORD SIZE IN FCB
IS FILE ON A UNIT RECORD DEVICE?
YES
SET RECORDING MODE IN FCB FOR CORRECT TYPE
RETURN
NO
RETURN

Name: .GPRNT

Alternate Names: PRINT, .GAPRN

Calling Sequence: CALL PRINT (fcb, image, slew)

fcb = location of file control block

image = location of first word of line image

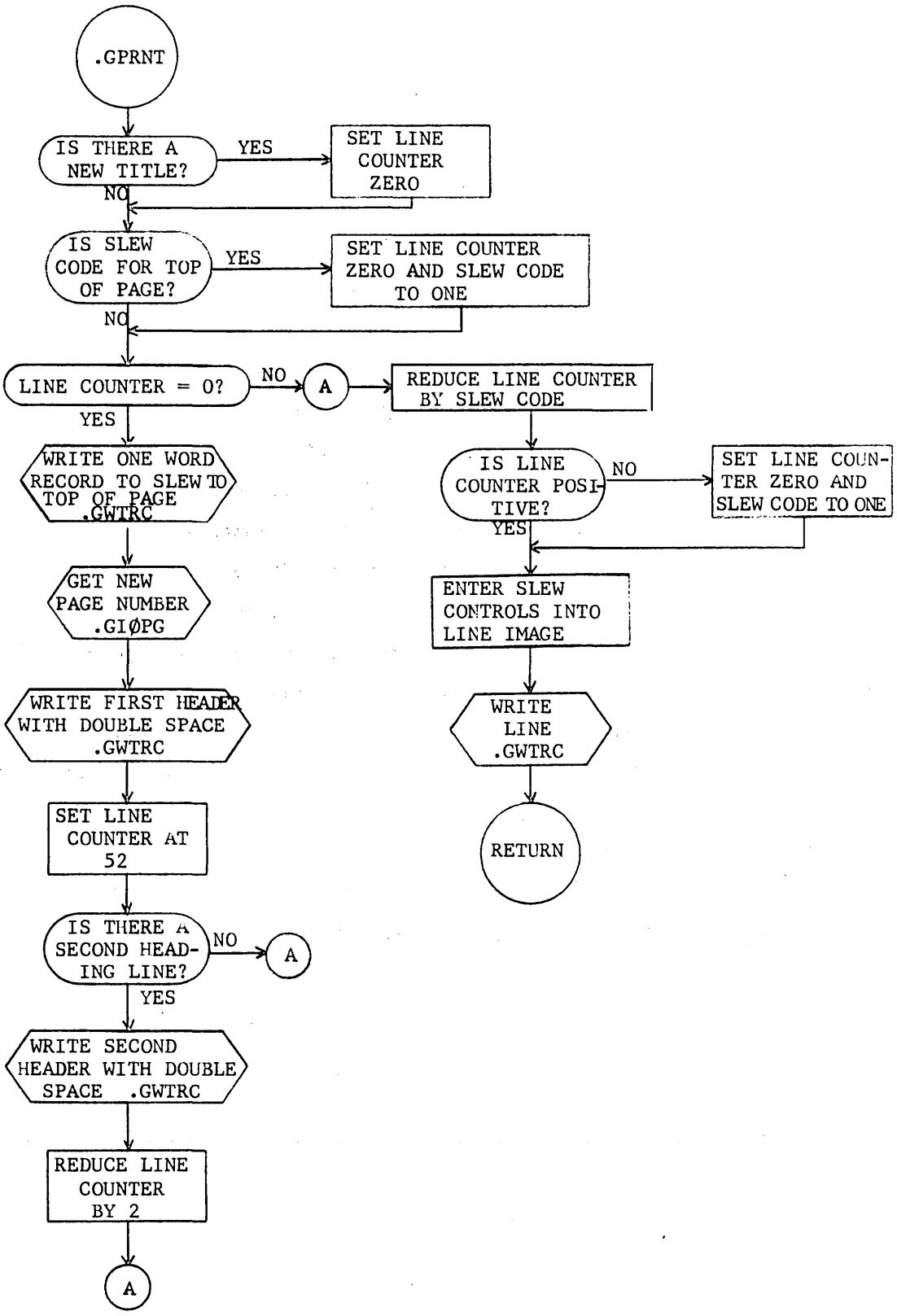
slew = location of word containing slewing information in bits 30-35

Function: To insert a line into the one current printed report whose pages are automatically 1) titled and subtitled, 2) numbered, and 3) controlled by an internal line counter.

Called By: User, .GEPRN

Called For: .GWTRC, .GIOPG; references .GEDIT

Number of Words: 176


.GPRNT
IS THERE A NEW TITLE?
YES
SET LINE COUNTER ZERO
NO
IS SLEW CODE FOR TOP OF PAGE?
YES
SET LINE COUNTER ZERO AND SLEW CODE TO ONE
NO
LINE COUNTER = 0?
NO
A
REDUCE LINE COUNTER BY SLEW CODE
YES
WRITE ONE WORD RECORD TO SLEW TO TOP OF PAGE .GWTRC
GET NEW PAGE NUMBER .GIØPG
WRITE FIRST HEADER WITH DOUBLE SPACE .GWTRC
SET LINE COUNTER AT 52
IS THERE A SECOND HEADING LINE?
NO
A
YES
WRITE SECOND HEADER WITH DOUBLE SPACE .GWTRC
REDUCE LINE COUNTER BY 2
A
IS LINE COUNTER POSITIVE?
NO
SET LINE COUNTER ZERO AND SLEW CODE TO ONE
YES
ENTER SLEW CONTROLS INTO LINE IMAGE
WRITE LINE .GWTRC
RETURN

Name: .GPTBK

Alternate Names: PUTBK, .GAPTB

Calling Sequence: CALL PUTBK (fcb, stor)

fcb = symbolic location of file control block

stor = location of first data word of record to be moved into allocated space

Function: To allocate space at the beginning of a buffer of the designated output file for inserting the next logical record of that file and, if desired, move that logical record to the allocated area.

Called By: User

Calls For: .GPTBK is a separate entry to .GPUT

Name: .GPTSZ

Alternate Names: PUTSZ, .GAPTS

Calling Sequence: CALL PUTSZ (fcb, size)

fcb = location of file control block

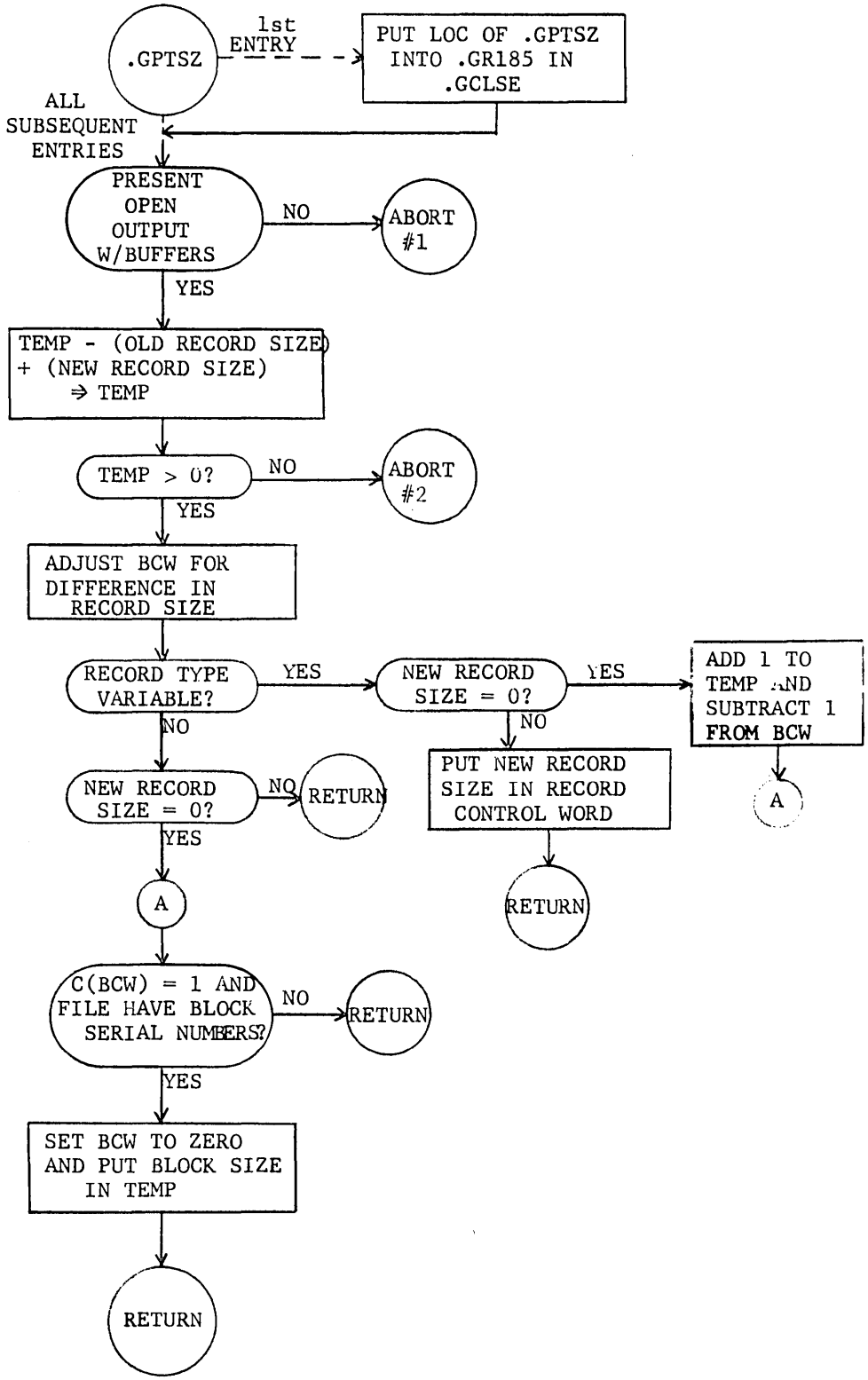
size = location of word containing new record size in bits 0-17

Function: To update the file control block of the designated output file to reflect the true size of the last logical record placed in that file.

Called By: User; .GCLSE if so initialized

Calls For: .GR960, initializes .GR185 in .GCLSE

Number of Words: 62


.GPTSZ
1st ENTRY
PUT LOC OF .GPTSZ INTO .GR185 IN .GCLSE
ALL SUBSEQUENT ENTRIES
PRESENT OPEN OUTPUT W/BUFFERS
NO
ABORT #1
YES
TEMP - (OLD RECORD SIZE) + (NEW RECORD SIZE) ⇒ TEMP
TEMP > 0?
NO
ABORT #2
YES
ADJUST BCW FOR DIFFERENCE IN RECORD SIZE
RECORD TYPE VARIABLE?
YES
NEW RECORD SIZE = 0?
YES
ADD 1 TO TEMP AND SUBTRACT 1 FROM BCW
A
NO
PUT NEW RECORD SIZE IN RECORD CONTROL WORD
RETURN
NO
NEW RECORD SIZE = 0?
NO
RETURN
YES
A
C(BCW) = 1 AND FILE HAVE BLOCK SERIAL NUMBERS?
NO
RETURN
YES
SET BCW TO ZERO AND PUT BLOCK SIZE IN TEMP
RETURN

Name: .GPUT

Alternate Names: PUT, .GAPUT

Calling Sequence: CALL PUT (fcb, stor)

fcb = location of file control block

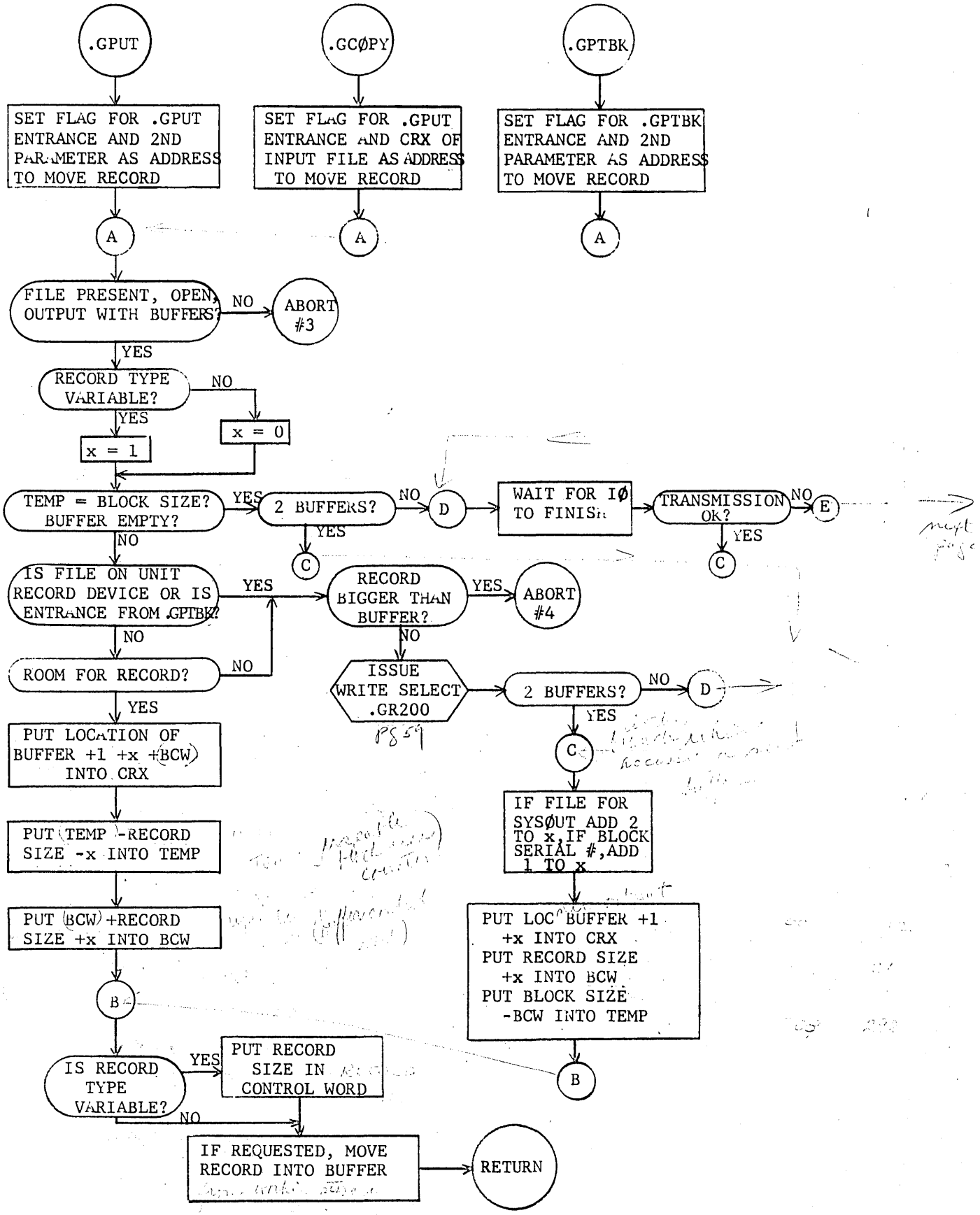
stor = location of first data word of record to be moved into allocated space

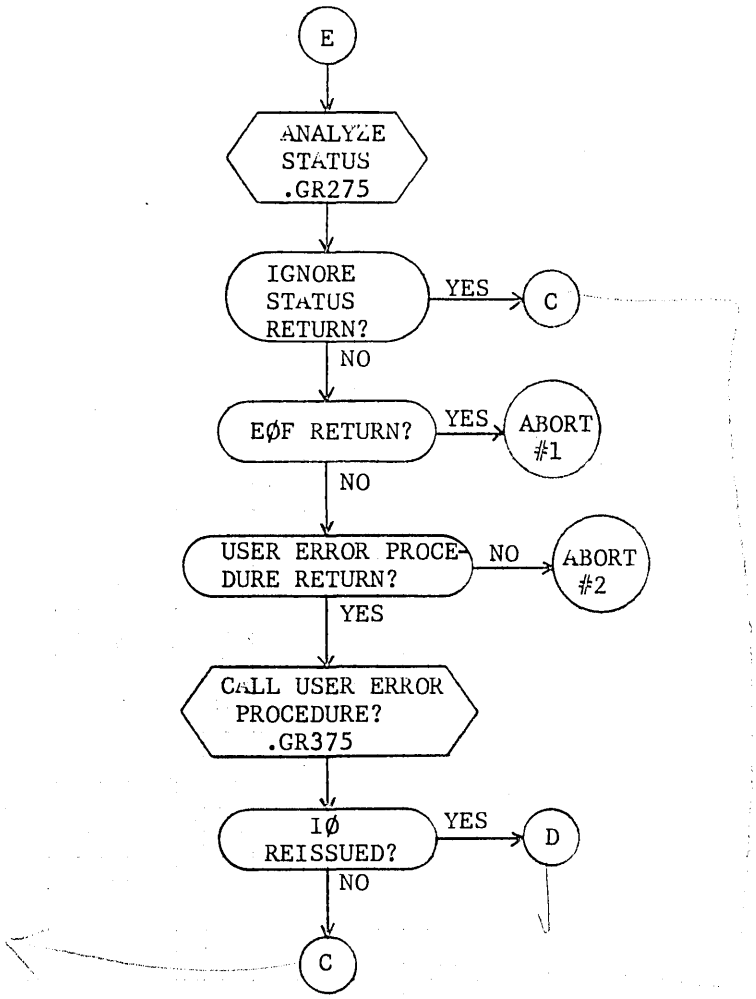
Function: To allocate space within a buffer of the designated output file for inserting the next logical record of that file and, if desired, move that logical record to the allocated area.

Called By: User, .GWTRC

Calls For: .GR200, .GR275, .GR375, .GR960

Number of Words: 150


.GPUT
.GCØPY
.GPTBK
SET FLAG FOR .GPUT ENTRANCE AND 2ND PARAMETER AS ADDRESS TO MOVE RECORD
SET FLAG FOR .GPUT ENTRANCE AND CRX OF INPUT FILE AS ADDRESS TO MOVE RECORD
SET FLAG FOR .GPTBK ENTRANCE AND 2ND PARAMETER AS ADDRESS TO MOVE RECORD
A
A
A
FILE PRESENT, OPEN, OUTPUT WITH BUFFERS?
NO
ABORT #3
YES
RECORD TYPE VARIABLE?
NO
YES
x = 1
x = 0
TEMP = BLOCK SIZE? BUFFER EMPTY?
YES
2 BUFFERS?
NO
D
WAIT FOR IØ TO FINISH
TRANSMISSION OK?
NO
E
YES
C
YES
C
NO
IS FILE ON UNIT RECORD DEVICE OR IS ENTRANCE FROM .GPTBK?
YES
RECORD BIGGER THAN BUFFER?
YES
ABORT #4
NO
NO
ROOM FOR RECORD?
NO
ISSUE WRITE SELECT .GR200
2 BUFFERS?
NO
D
YES
YES
C
PUT LOCATION OF BUFFER +1 +x +(BCW) INTO CRX
IF FILE FOR SYSØUT ADD 2 TO x, IF BLOCK SERIAL #, ADD 1 TO x
PUT TEMP -RECORD SIZE -x INTO TEMP
PUT LOC BUFFER +1 +x INTO CRX
PUT RECORD SIZE +x INTO BCW
PUT BLOCK SIZE -BCW INTO TEMP
PUT (BCW) +RECORD SIZE +x INTO BCW
B
B
IS RECORD TYPE VARIABLE?
YES
PUT RECORD SIZE IN CONTROL WORD
NO
IF REQUESTED, MOVE RECORD INTO BUFFER
RETURN


E
ANALYZE STATUS .GR275
IGNORE STATUS RETURN?
YES
C
NO
EØF RETURN?
YES
ABORT #1
NO
USER ERROR PROCEDURE RETURN?
NO
ABORT #2
YES
CALL USER ERROR PROCEDURE? .GR375
IØ REISSUED?
YES
D
NO
C

Name: .GRDCD

Alternate Names: None

Calling Sequence: CALL .GRDCD (fcb)

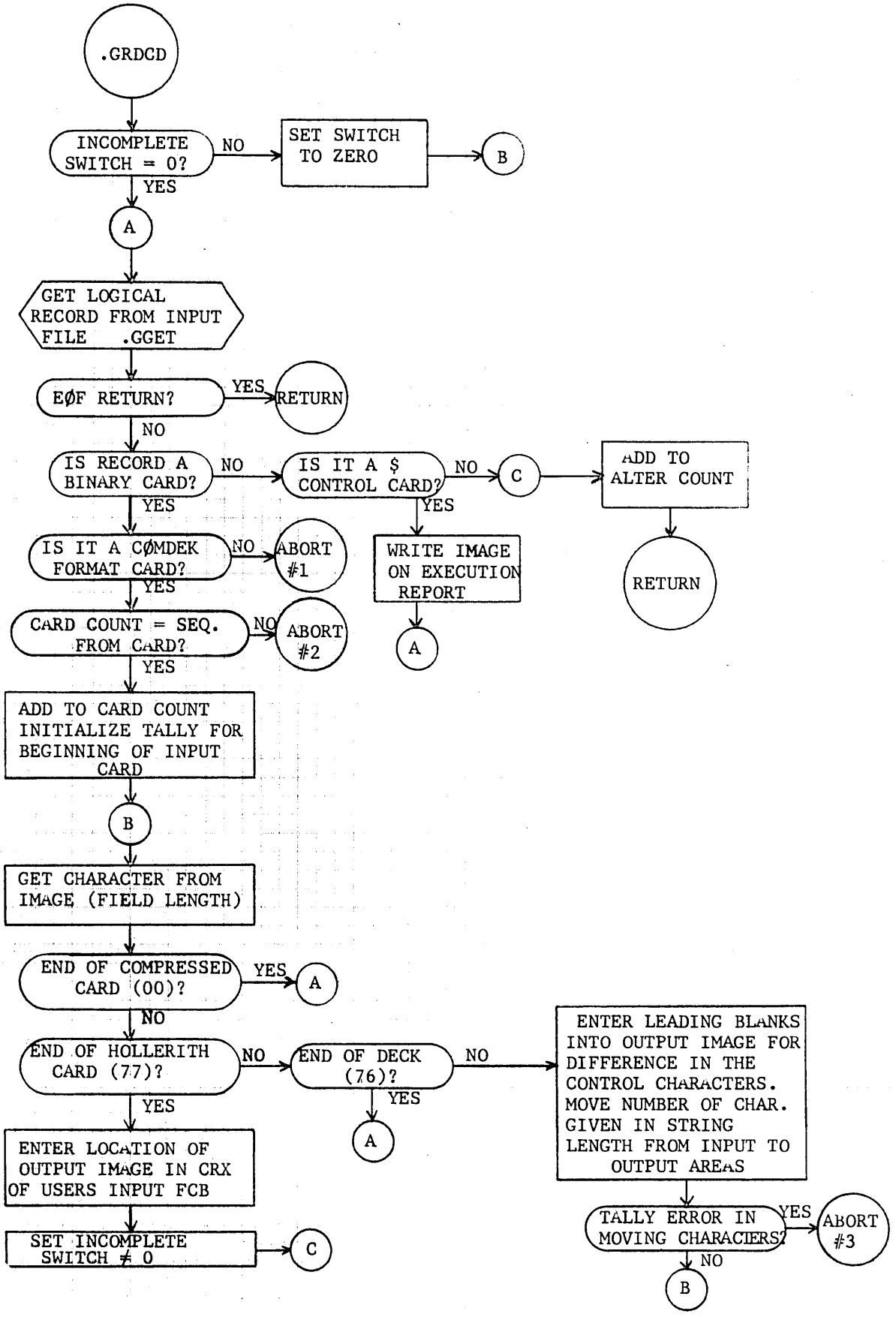
fcb = location of file control block

Function: To get the next logical record from the designated input file, and decompress it if it was recorded as a COMDEK image.

Called By: .GRDRC, .GALTR

Calls For: .GGET, .GR960

Number of Words: 146


.GRDCD
INCOMPLETE SWITCH = 0?
NO
SET SWITCH TO ZERO
B
YES
A
GET LOGICAL RECORD FROM INPUT FILE .GGET
EØF RETURN?
YES
RETURN
NO
IS RECORD A BINARY CARD?
NO
IS IT A $ CONTROL CARD?
NO
C
ADD TO ALTER COUNT
YES
YES
IS IT A CØMDEK FORMAT CARD?
NO
ABORT #1
WRITE IMAGE ON EXECUTION REPORT
RETURN
YES
CARD COUNT = SEQ. FROM CARD?
NO
ABORT #2
A
YES
ADD TO CARD COUNT INITIALIZE TALLY FOR BEGINNING OF INPUT CARD
B
GET CHARACTER FROM IMAGE (FIELD LENGTH)
END OF COMPRESSED CARD (00)?
YES
A
NO
END OF HOLLERITH CARD (77)?
NO
END OF DECK (76)?
NO
YES
A
YES
ENTER LOCATION OF OUTPUT IMAGE IN CRX OF USERS INPUT FCB
SET INCOMPLETE SWITCH ≠ 0
C
ENTER LEADING BLANKS INTO OUTPUT IMAGE FOR DIFFERENCE IN THE CONTROL CHARACTERS. MOVE NUMBER OF CHAR. GIVEN IN STRING LENGTH FROM INPUT TO OUTPUT AREAS
TALLY ERROR IN MOVING CHARACTERS?
YES
ABORT #3
NO
B

Name: .GRDRC

Alternate Names: RDREC, .GARDR

Calling Sequence: CALL RDREC (fcb, eof)

fcb = location of file control block

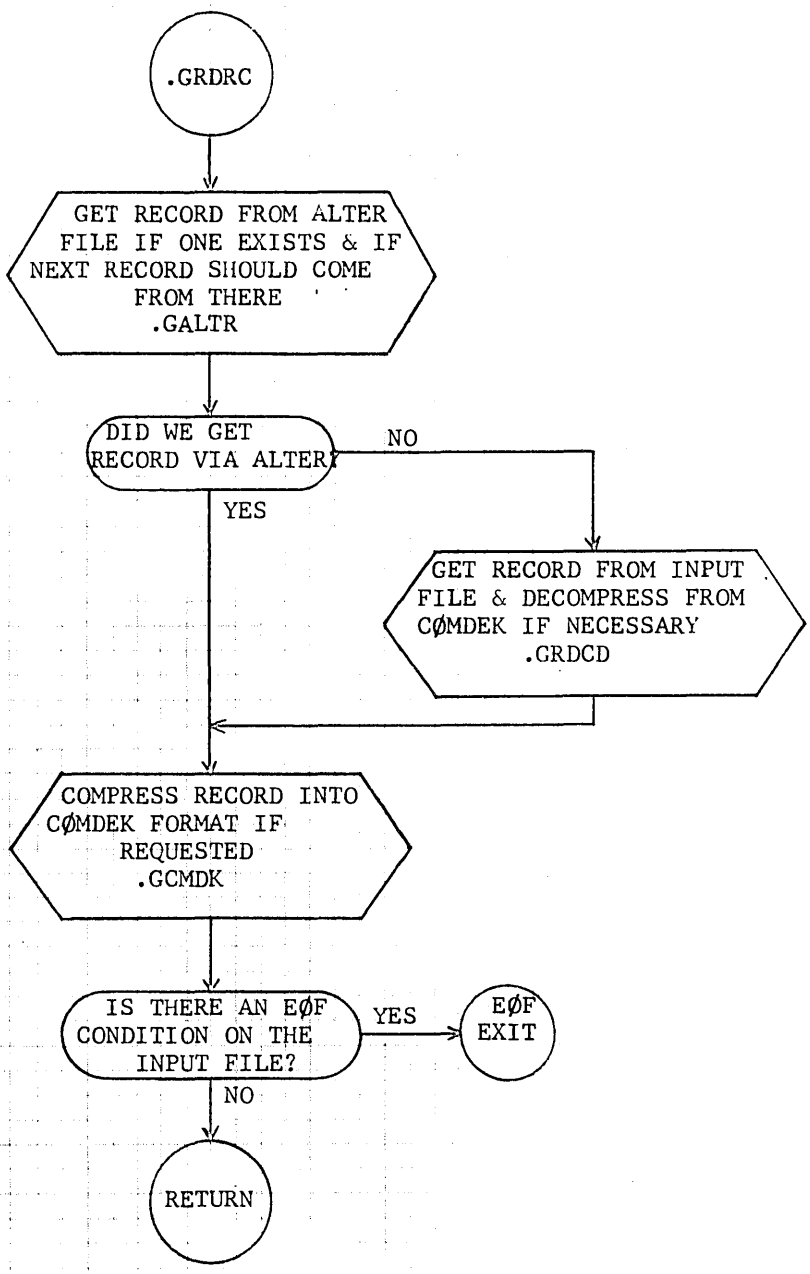
eof = location of end-of-file routine

Function: To obtain the next logical input record from the designated file (with decompression from COMDEK form, if necessary) or from an Alter file of changes to the designated file. Also, if requested, to compress this logical record into the COMDEK format and insert it into the file designated as K*.

Called By: User

Calls For: .GRDCD, .GALTR, .GCMDK

Number of Words: 52


.GRDRC
GET RECORD FROM ALTER FILE IF ONE EXISTS & IF NEXT RECORD SHOULD COME FROM THERE .GALTR
DID WE GET RECORD VIA ALTER?
NO
YES
GET RECORD FROM INPUT FILE & DECOMPRESS FROM CØMDEK IF NECESSARY .GRDCD
COMPRESS RECORD INTO CØMDEK FORMAT IF REQUESTED .GCMDK
IS THERE AN EØF CONDITION ON THE INPUT FILE?
YES
EØF EXIT
NO
RETURN

Name: .GREAD

Alternate Names: READ, .GAREA

Calling Sequence: CALL READ (fcb, cont, cc)

fcb = location of file control block

cont = location of first control word where the control words are DCW's. If the file is random drum/DSU, the first control word gives the relative block address.

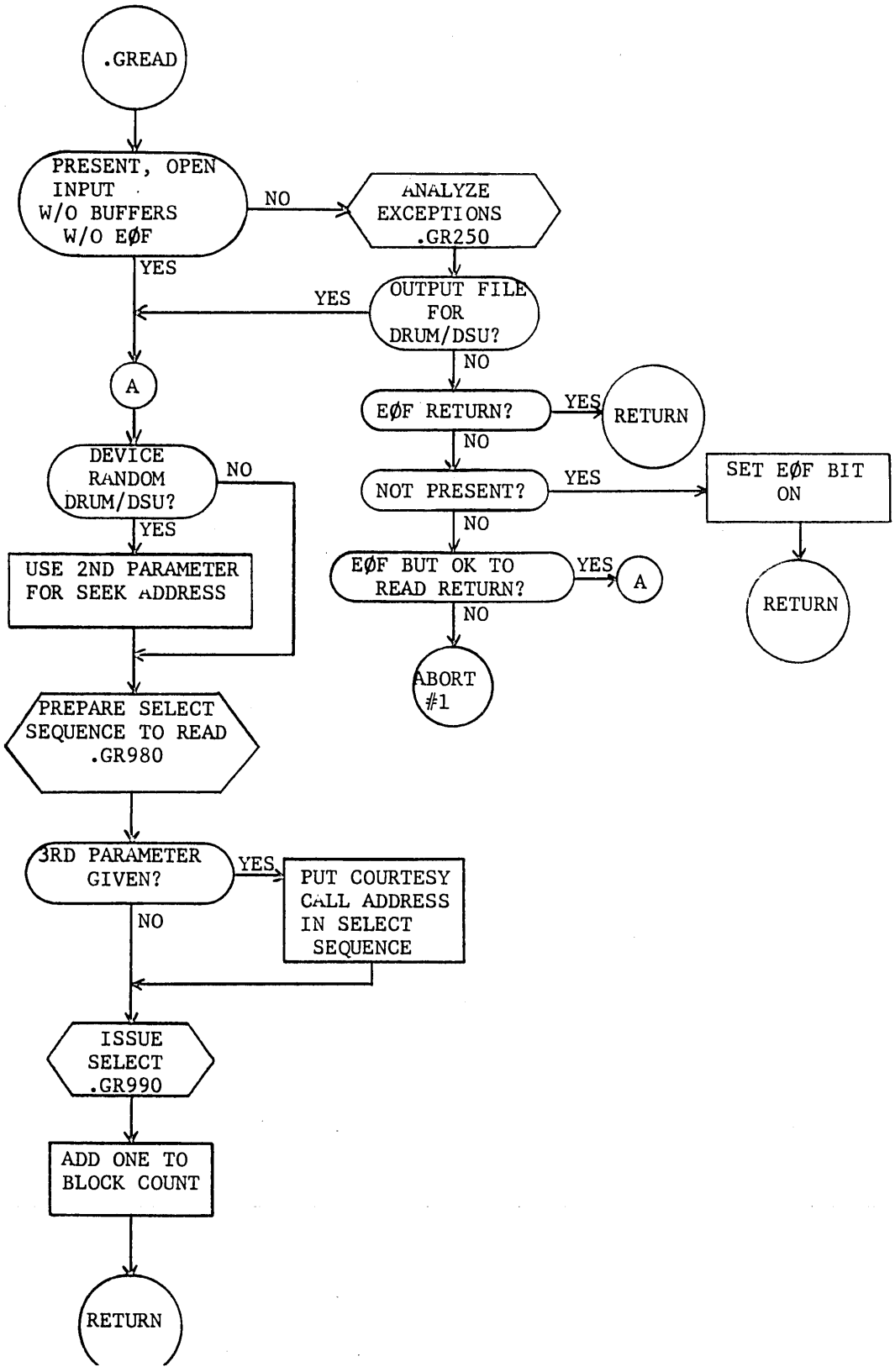
cc = location of a courtesy call routine.

Function: To initiate the reading of a physical record from the designated file under user control.

Called By: User

Calls For: .GR250, .GR960, .GR980, .GR990

Number of Words: 56


.GREAD
PRESENT, OPEN INPUT W/O BUFFERS W/O EØF
NO
ANALYZE EXCEPTIONS .GR250
YES
YES
OUTPUT FILE FOR DRUM/DSU?
NO
A
EØF RETURN?
YES
RETURN
NO
DEVICE RANDOM DRUM/DSU?
NO
NOT PRESENT?
YES
SET EØF BIT ON
YES
NO
USE 2ND PARAMETER FOR SEEK ADDRESS
EØF BUT OK TO READ RETURN?
YES
A
RETURN
NO
ABORT #1
PREPARE SELECT SEQUENCE TO READ .GR980
3RD PARAMETER GIVEN?
YES
PUT COURTESY CALL ADDRESS IN SELECT SEQUENCE
NO
ISSUE SELECT .GR990
ADD ONE TO BLOCK COUNT
RETURN

Name: .GRLSE

Alternate Names: RELSE, .GARLS

Calling Sequence: CALL RELSE (fcb)

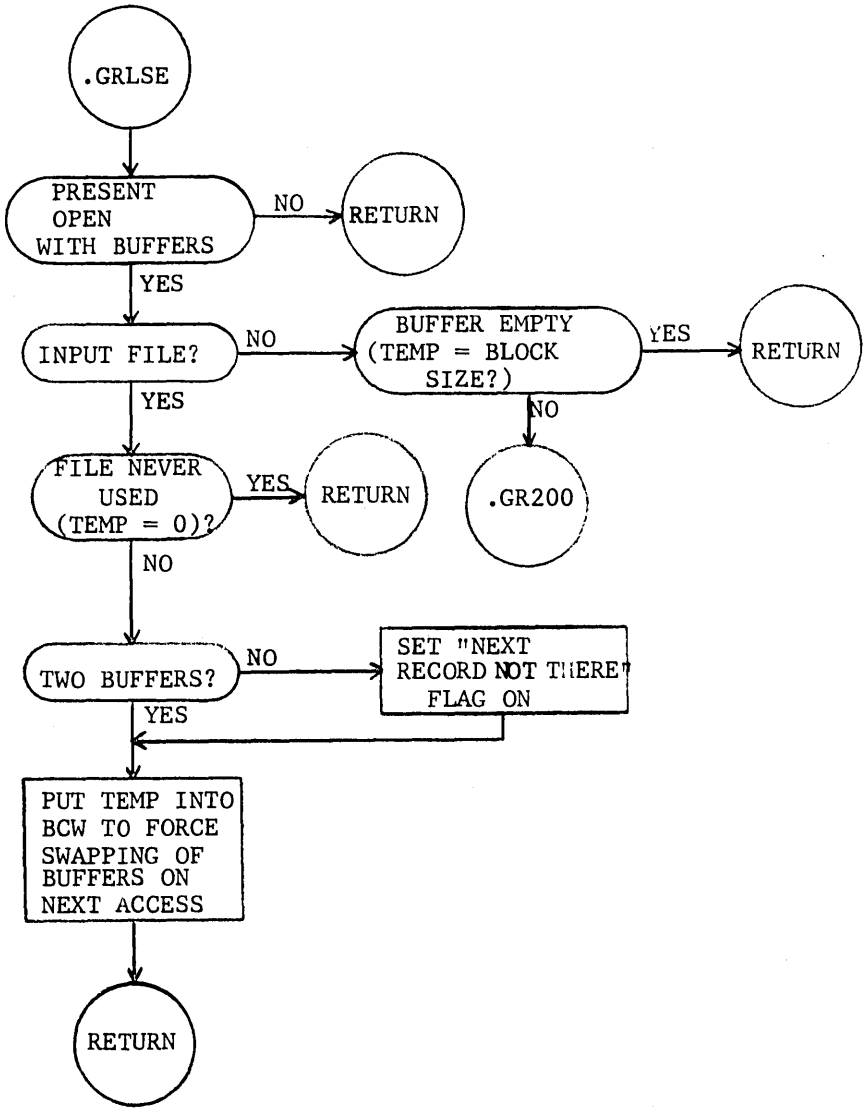
fcb = location of file control block

Function: To cause the next referenced logical record of the designated file to be the first logical record of the next physical record.

Called By: User, .GBSRC, .GFSRC, .GFRCE

Calls For: .GR200

Number of Words: 26


.GRLSE
PRESENT OPEN WITH BUFFERS
NO
RETURN
YES
INPUT FILE?
NO
BUFFER EMPTY (TEMP = BLOCK SIZE?)
YES
RETURN
YES
NO
FILE NEVER USED (TEMP = 0)?
YES
RETURN
.GR200
NO
TWO BUFFERS?
NO
SET "NEXT RECORD NOT THERE" FLAG ON
YES
PUT TEMP INTO BCW TO FORCE SWAPPING OF BUFFERS ON NEXT ACCESS
RETURN

Name: .GRWND

Alternate Names: REWND, .GARWN

Calling Sequence: CALL REWND (fcb)

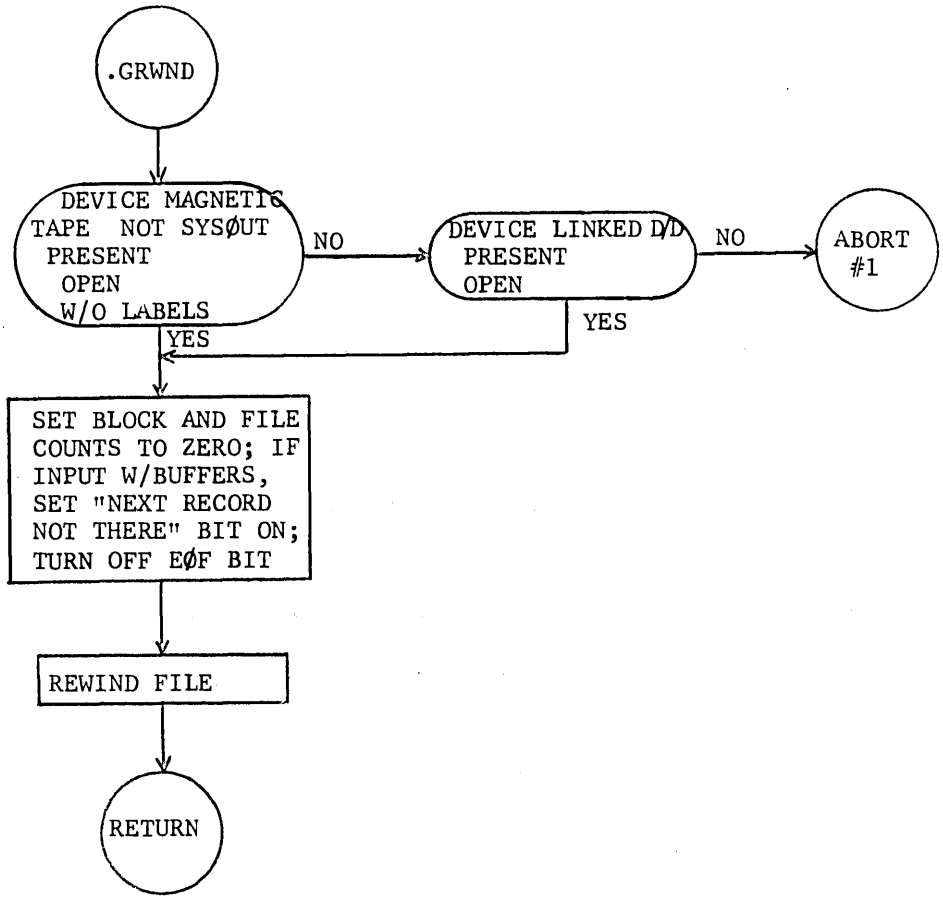
fcb = location of file control block

Function: To rewind a file whose device is unlabeled magnetic tape, linked drum, or linked disc storage unit.

Called By: User

Calls For: .GR960

Number of Words: 44


.GRWND
DEVICE MAGNETIC TAPE NOT SYSØUT PRESENT OPEN W/O LABELS
NO
DEVICE LINKED D/D PRESENT OPEN
NO
ABORT #1
YES
YES
SET BLOCK AND FILE COUNTS TO ZERO; IF INPUT W/BUFFERS, SET "NEXT RECORD NOT THERE" BIT ON; TURN OFF EØF BIT
REWIND FILE
RETURN

Name: .GR200

Alternate Names: None

Calling Sequence: CALL .GR200 (fcb)

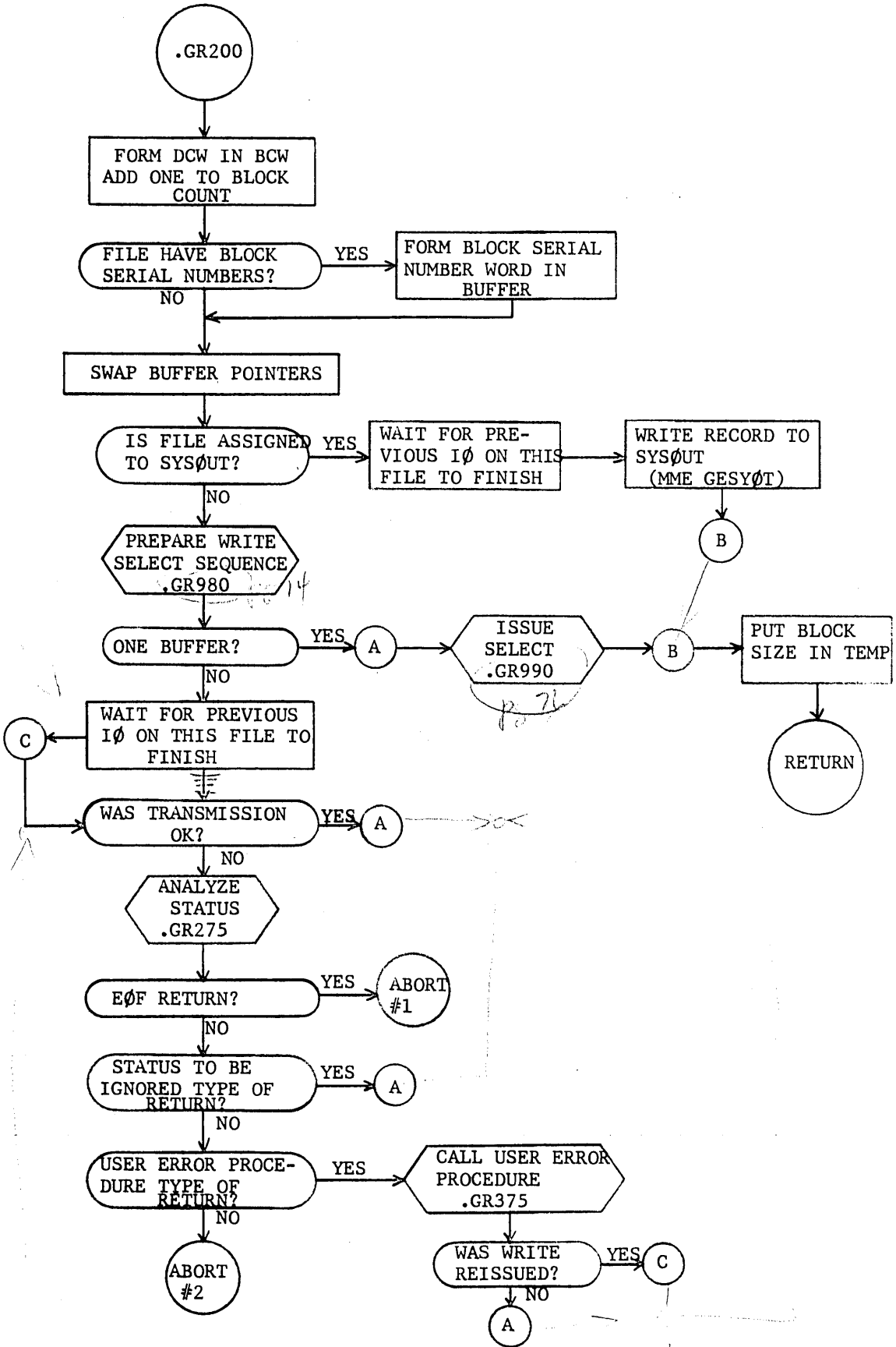
fcb = location of file control block

Function: To effect the writing of the current buffer of the designated file and to do the necessary bookkeeping on that file.

Called By: .GCLSE, .GPUT, .GRLSE, .GWEF

Calls For: .GR375, .GR960, .GR980, .GR990

Number of Words: 92


.GR200
FORM DCW IN BCW
ADD ONE TO BLOCK COUNT
FILE HAVE BLOCK SERIAL NUMBERS?
YES
FORM BLOCK SERIAL NUMBER WORD IN BUFFER
NO
SWAP BUFFER POINTERS
IS FILE ASSIGNED TO SYSØUT?
YES
WAIT FOR PREVIOUS IØ ON THIS FILE TO FINISH
WRITE RECORD TO SYSØUT (MME GESYØT)
NO
PREPARE WRITE SELECT SEQUENCE .GR980
B
ONE BUFFER?
YES
A
ISSUE SELECT .GR990
B
PUT BLOCK SIZE IN TEMP
NO
WAIT FOR PREVIOUS IØ ON THIS FILE TO FINISH
C
RETURN
WAS TRANSMISSION OK?
YES
A
NO
ANALYZE STATUS .GR275
EØF RETURN?
YES
ABORT #1
NO
STATUS TO BE IGNORED TYPE OF RETURN?
YES
A
NO
USER ERROR PROCEDURE TYPE OF RETURN?
YES
CALL USER ERROR PROCEDURE .GR375
NO
ABORT #2
WAS WRITE REISSUED?
YES
C
NO
A

Name: .GR225

Alternate Names: None

Calling Sequence: CALL .GR225 (fcb)

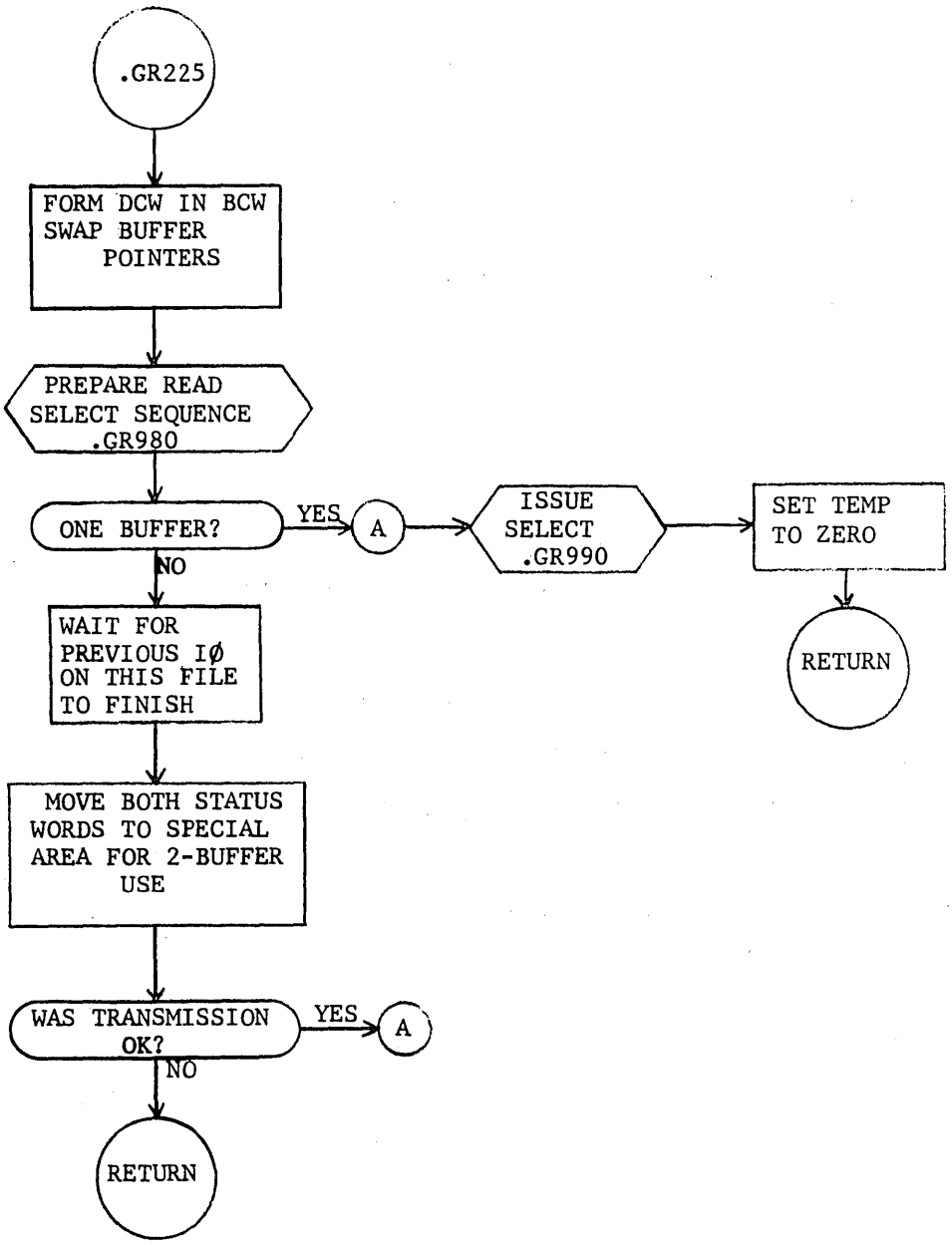
fcb = location of file control block

Function: To effect the reading of the next physical record of the designated file into a buffer for that file and to do the necessary bookkeeping on that file.

Called By: .GGET, .GOPEN, .GSTIN

Calls For: .GR980, .GR990

Number of Words: 44


.GR225
FORM DCW IN BCW
SWAP BUFFER
POINTERS
PREPARE READ
SELECT SEQUENCE
.GR980
ONE BUFFER?
YES
A
ISSUE
SELECT
.GR990
SET TEMP
TO ZERO
RETURN
NO
WAIT FOR
PREVIOUS IØ
ON THIS FILE
TO FINISH
MOVE BOTH STATUS
WORDS TO SPECIAL
AREA FOR 2-BUFFER
USE
WAS TRANSMISSION
OK?
YES
A
NO
RETURN

Name: .GR250

Alternate Names: None

Calling Sequence: A register contains 1-bit in each position where the contents of word-5 of the file control block do not match that required for normal operation of the calling routine. XR2 contains the location of the file control block.

```
 α   TSX0  .GR250
+1   Return here if file not present
+2   Return here if end-of-file cannot be
     overridden
+3   Return here if an end-of-file existed but
     another read command may now be given
+4   Return here if device is random drum/DSU and
     the input-output bit is the only exception
+5   Return here if activity should be aborted
```

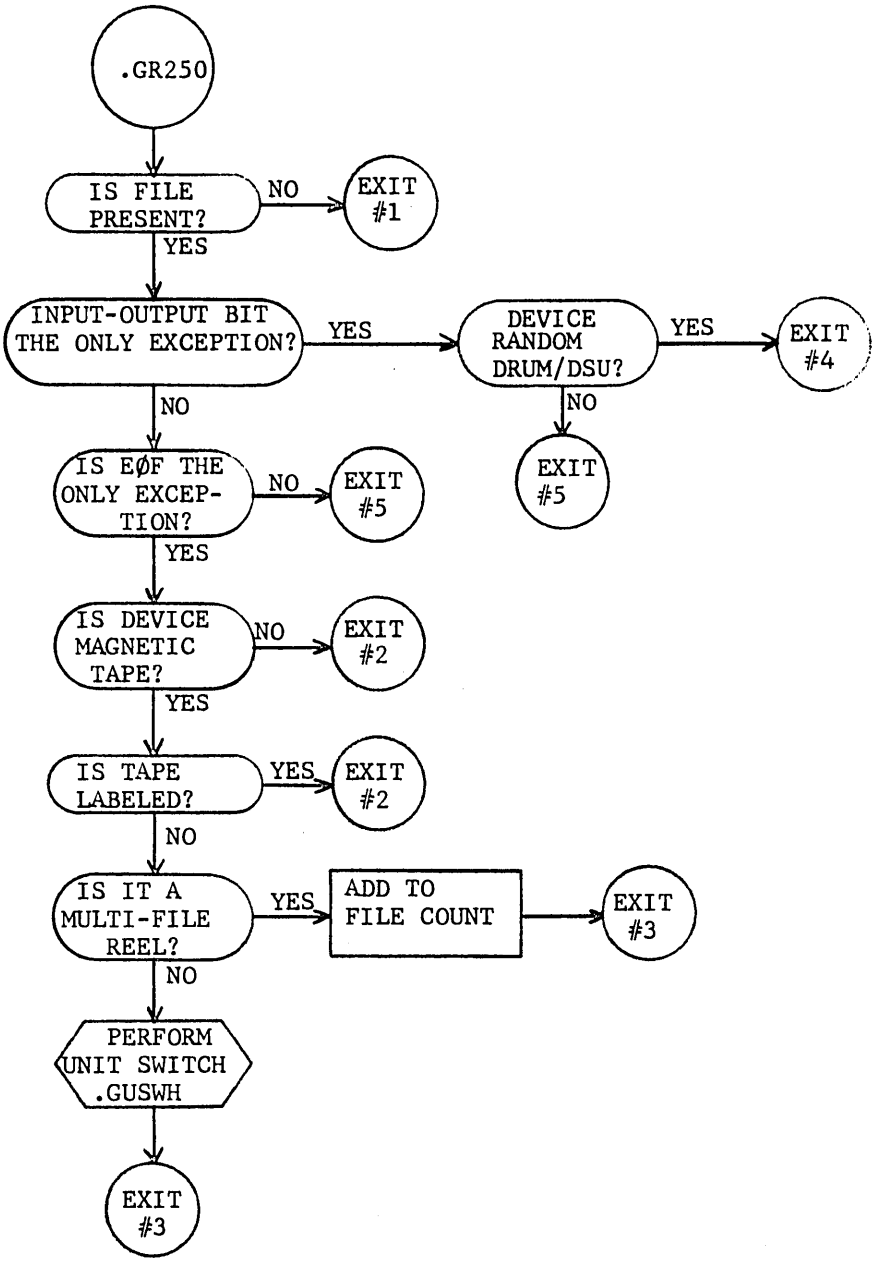
Function: To analyze the exception conditions shown in the file control block and to take any standard actions which are appropriate.

Called By: .GFSRC, .GGET, .GREAD, .GWRIT

.GR250 (continued)

Calls For: .GUSWH

Number of Words: 36


.GR250
IS FILE PRESENT?
NO
EXIT #1
YES
INPUT-OUTPUT BIT THE ONLY EXCEPTION?
YES
DEVICE RANDOM DRUM/DSU?
YES
EXIT #4
NO
EXIT #5
NO
IS EØF THE ONLY EXCEP-TION?
NO
EXIT #5
YES
IS DEVICE MAGNETIC TAPE?
NO
EXIT #2
YES
IS TAPE LABELED?
YES
EXIT #2
NO
IS IT A MULTI-FILE REEL?
YES
ADD TO FILE COUNT
EXIT #3
NO
PERFORM UNIT SWITCH .GUSWH
EXIT #3

Name: .GR275

Alternate Names: None

Calling Sequence: Bits 2-5 of the A register contains the major status returned by IOS, and XR2 contains the location of the file control block.

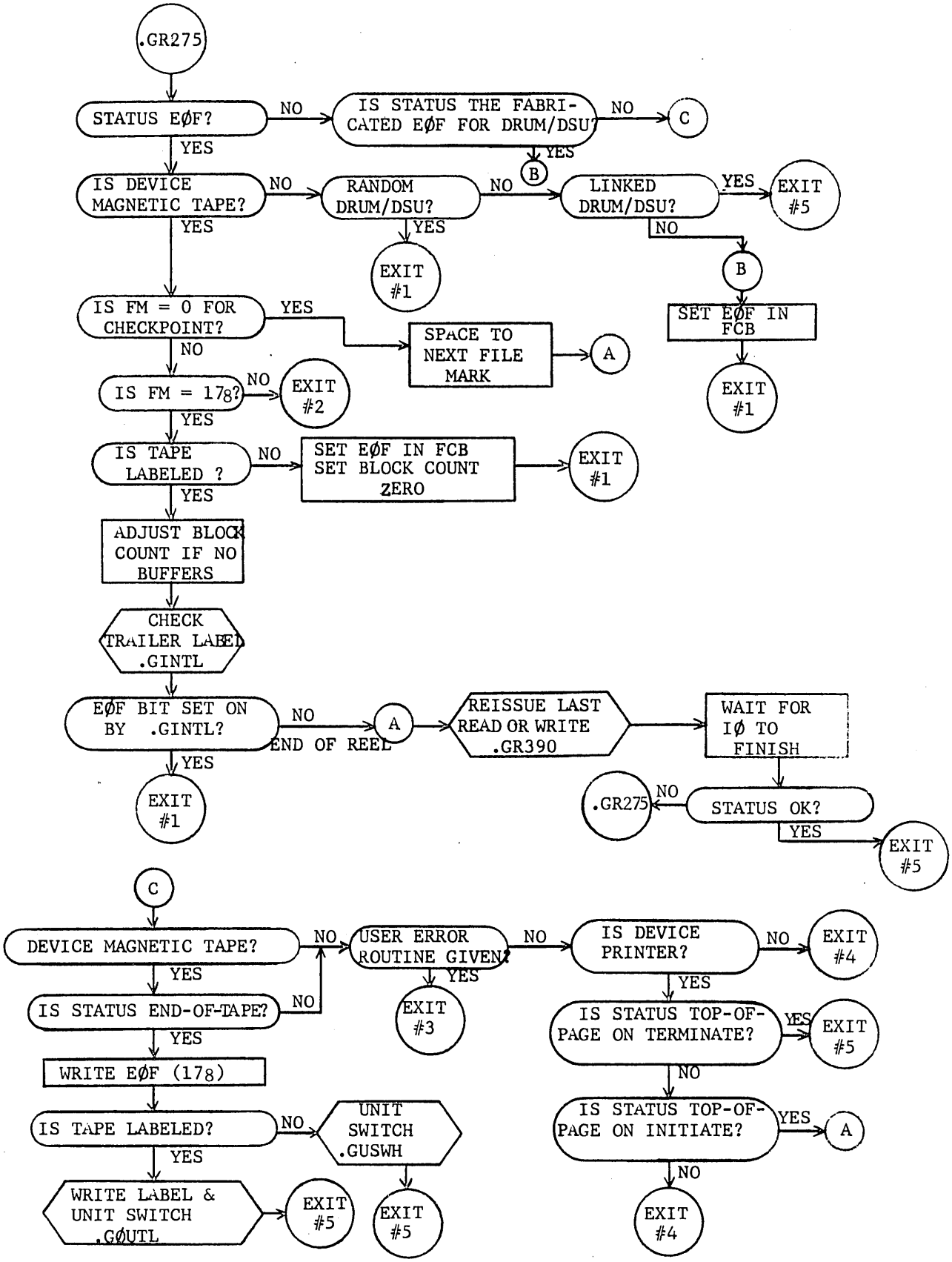
α	TSX0 .GR275
+1	Return here if status is true end-of-file
+2	Return here if non-17_8 file mark on magnetic tape
+3	Return here if user has supplied an error routine which should be called
+4	Return here if program should be aborted
+5	Return here if status should be ignored.

Function: To analyze status returns which are not "channel ready" and to take any standard actions which are appropriate.

Called By: .GCLSE, .GFSRC, .GGET, .GPUT, .GWAIT, .GWEF

Calls For: .GR390, .GINTL, .GUSWH, .GOUTL

Number of Words: 112


.GR275
STATUS EØF?
NO
IS STATUS THE FABRICATED EØF FOR DRUM/DSU?
NO
C
YES
YES
B
IS DEVICE MAGNETIC TAPE?
NO
RANDOM DRUM/DSU?
NO
LINKED DRUM/DSU?
YES
EXIT #5
YES
YES
NO
EXIT #1
B
SET EØF IN FCB
EXIT #1
IS FM = 0 FOR CHECKPOINT?
YES
SPACE TO NEXT FILE MARK
A
NO
IS FM = 17₈?
NO
EXIT #2
YES
IS TAPE LABELED ?
NO
SET EØF IN FCB
SET BLOCK COUNT ZERO
EXIT #1
YES
ADJUST BLOCK COUNT IF NO BUFFERS
CHECK TRAILER LABEL .GINTL
EØF BIT SET ON BY .GINTL?
NO
END OF REEL
A
REISSUE LAST READ OR WRITE .GR390
WAIT FOR IØ TO FINISH
YES
EXIT #1
.GR275
NO
STATUS OK?
YES
EXIT #5
C
DEVICE MAGNETIC TAPE?
NO
USER ERROR ROUTINE GIVEN?
NO
IS DEVICE PRINTER?
NO
EXIT #4
YES
YES
YES
IS STATUS END-OF-TAPE?
NO
EXIT #3
IS STATUS TOP-OF-PAGE ON TERMINATE?
YES
EXIT #5
YES
NO
WRITE EØF (17₈)
IS TAPE LABELED?
NO
UNIT SWITCH .GUSWH
IS STATUS TOP-OF-PAGE ON INITIATE?
YES
A
YES
NO
WRITE LABEL & UNIT SWITCH .GØUTL
EXIT #5
EXIT #5
EXIT #4

Name: .GR375

Alternate Names: None

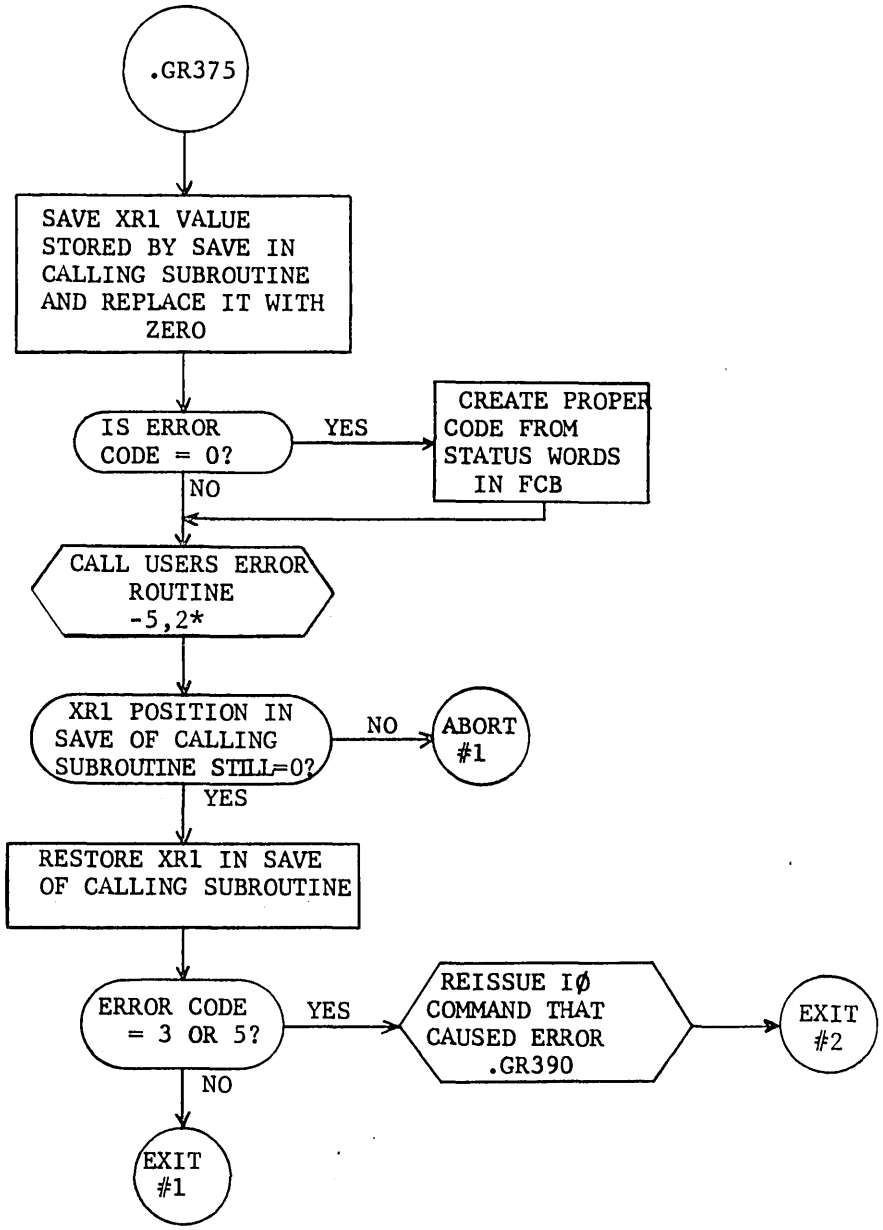
Calling Sequence: TSX0 .GR375
ARG location of SAVE within calling routine
ARG code for type of error
Return here if error to be ignored
Return here if IO request has been reissued
The error code in the second ARG is zero if .GR375 is to determine the type of error. XR2 contains the location the file control block.

Function: To call the users error routine specified in word-5 of the FCB and to insure that his action did not use the routine which encountered the error and called .GR375.

Called By: .GBSRC, .GFSRC, .GGET, .GPUT, .GWAIT, .GR200

Calls For: .GR390, .GR960, User's error routine

Number of Words: 59


.GR375
SAVE XR1 VALUE STORED BY SAVE IN CALLING SUBROUTINE AND REPLACE IT WITH ZERO
IS ERROR CODE = 0?
YES
CREATE PROPER CODE FROM STATUS WORDS IN FCB
NO
CALL USERS ERROR ROUTINE -5,2*
XR1 POSITION IN SAVE OF CALLING SUBROUTINE STILL=0?
NO
ABORT #1
YES
RESTORE XR1 IN SAVE OF CALLING SUBROUTINE
ERROR CODE = 3 OR 5?
YES
REISSUE IØ COMMAND THAT CAUSED ERROR .GR390
EXIT #2
NO
EXIT #1

Name: .GR390

Alternate Names: None

Calling Sequence: TSX4 .GR390
XR2 contains the location of the file control block.

Function: To create a select sequence and issue the command to repeat a read or write operation which previously resulted in an initiation interrupt. A code 3 or 5 error was reported to the user via .GR375 and the user requested that GEFRC retry the operation.

Called By: .GR375, .GR275

Calls For: Uses table of commands in .GR980

Number of Words: 33

Name: .GR960

Alternate Names: None

Calling Sequence: TSX0 .GR960
BCI 1,crrrrr
where c is a code number for the type of error and rrrrr is the name of the routine in which the error was found. The location of the file control block for the file on which the error occurred is in XR2.

Function: To write a message on the execution report via SYSOUT and then abort the program. The format of the message is:
ABORTED BY GEFRC ROUTINE rrrrr CODE c FILE CODE ff
where c and rrrrr are as in the calling sequence and ff is the file code of the file referenced by XR2.

Called By: .GBSFM, .GBSRC, .GCLSE, .GFRCE, .GFSFM, .GFSRC, .GGET, .GOPEN, .GPTSZ, .GPUT, .GRDCD, .GREAD, .GRWND, .GWAIT, .GWEF, .GWRIT, .GR200, .GR375, .GR980

Calls For: None

Number of Words: 32

Name: .GR980

Alternate Names: None

Calling Sequence: TSX4 .GR980

where: $C(Q_{18-35})$ = location of first DCW

$C(X2)$ = location of file control block

$C(A_{8,9})$ = recording mode as in 20-21 of word 0 of FCB

$C(A_{11})$ = zero if read command, one for write

$C(A_{13-17})$ = device code as in 25-29 of word 0 of FCB; all other bits of A register are zero

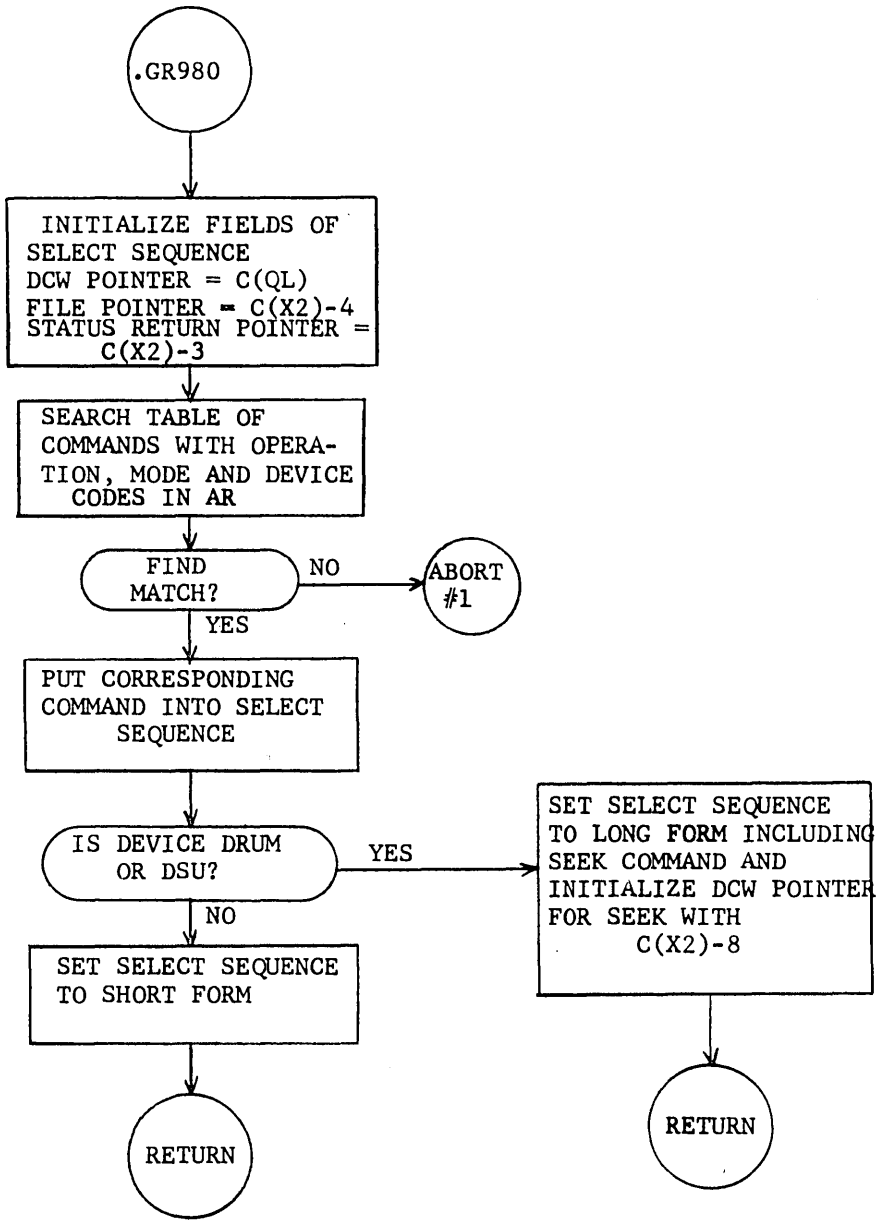
Function: To create a select sequence to IOS for reading or writing with any legal device. The select sequence is within the .GR990 subroutine.

Called By: .GCLSE, .GREAD, .GWRIT, .GR200, .GR225

Referenced by: .GR390

Calls For: .GR960; references .GR990

Number of Words: 66


.GR980
INITIALIZE FIELDS OF SELECT SEQUENCE
DCW POINTER = C(QL)
FILE POINTER = C(X2)-4
STATUS RETURN POINTER = C(X2)-3
SEARCH TABLE OF COMMANDS WITH OPERATION, MODE AND DEVICE CODES IN AR
FIND MATCH?
NO
ABORT #1
YES
PUT CORRESPONDING COMMAND INTO SELECT SEQUENCE
IS DEVICE DRUM OR DSU?
YES
SET SELECT SEQUENCE TO LONG FORM INCLUDING SEEK COMMAND AND INITIALIZE DCW POINTER FOR SEEK WITH C(X2)-8
NO
SET SELECT SEQUENCE TO SHORT FORM
RETURN
RETURN

Name: .GR990

Alternate Names: None

Calling Sequence: CALL .GR990

Function: To issue a select via IOS for a read or write operation. The select sequence contained within this routine was previously prepared by .GR980.

Called By: .GCLSE, .GGET, .GREAD, .GWRIT, .GR200, .GR225

Referenced by: .GR980

Calls For: None

Number of Words: 16

Name: .GSTIN

Alternate Names: SETIN

Calling Sequence: CALL SETIN (fcb)

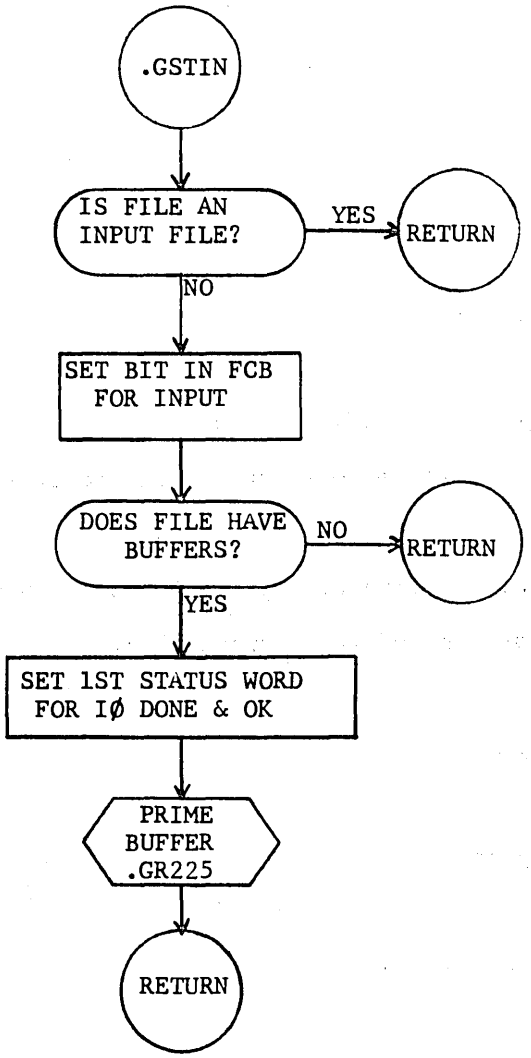
fcb = location of file control block

Function: To set a currently open file to an input file regardless of its current mode.

Called By: User

Calls For: .GR225

Number of Words: 22


.GSTIN
IS FILE AN INPUT FILE?
YES
RETURN
NO
SET BIT IN FCB FOR INPUT
DOES FILE HAVE BUFFERS?
NO
RETURN
YES
SET 1ST STATUS WORD FOR IØ DONE & OK
PRIME BUFFER .GR225
RETURN

Name: .GSTOT

Alternate Names: SETOUT

Calling Sequence: CALL SETOUT (fcb)

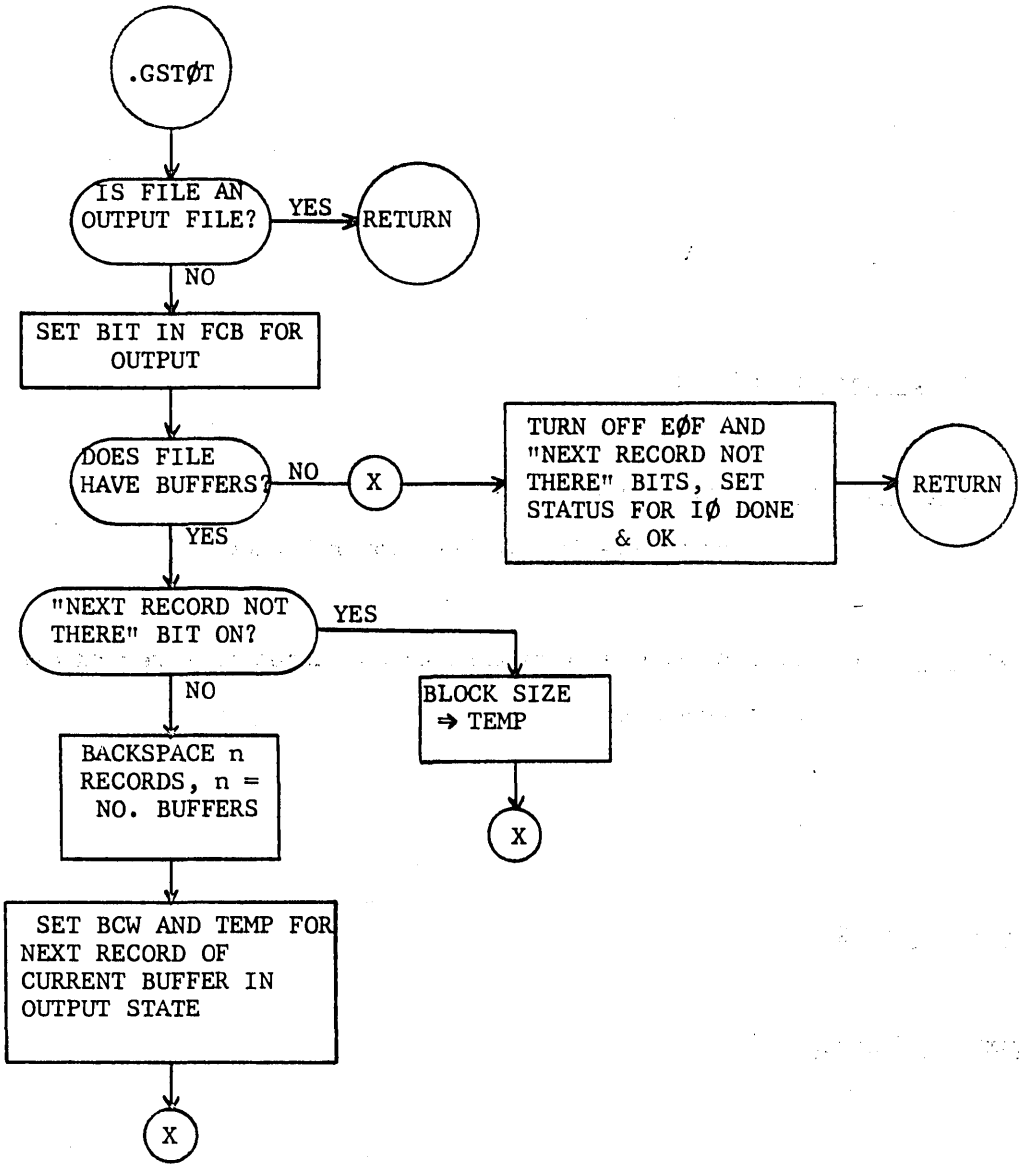
fcb = location of file control block

Function: To set a currently open file to an output file regardless of its current mode.

Called By: User

Calls For: None

Number of Words: 56


.GSTØT
IS FILE AN OUTPUT FILE?
YES
RETURN
NO
SET BIT IN FCB FOR OUTPUT
DOES FILE HAVE BUFFERS?
NO
X
TURN OFF EØF AND "NEXT RECORD NOT THERE" BITS, SET STATUS FOR IØ DONE & OK
RETURN
YES
"NEXT RECORD NOT THERE" BIT ON?
YES
NO
BLOCK SIZE ⇒ TEMP
X
BACKSPACE n RECORDS, n = NO. BUFFERS
SET BCW AND TEMP FOR NEXT RECORD OF CURRENT BUFFER IN OUTPUT STATE
X

Name: .GUSWH

Alternate Names: None

Calling Sequence: CALL .GUSWH

XR2 contains the location of the file control block.

Function: To switch units for a multi-reel tape file and to perform any necessary label procedures.

Called By: .GFRCE, .GR250, .GR275

Note: See "Label Checking and Unit Switching" pg 90

Name: .GWAIT

Alternate Names: WAIT, .GAWAI

Calling Sequence: CALL WAIT (fcb, eof)

fcb = location of file control block

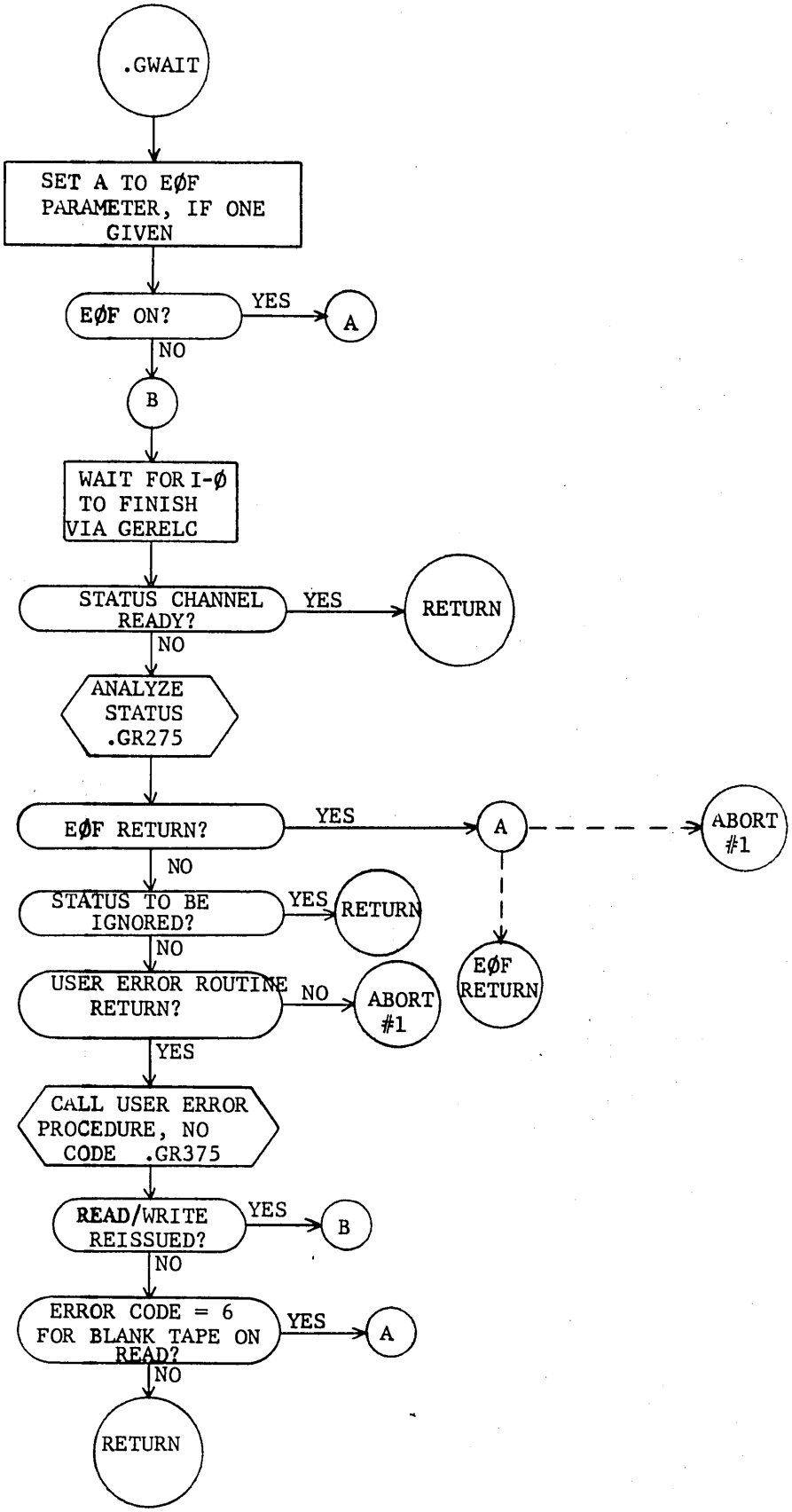
eof = location of end-of-file routine

Function: To delay processing until the satisfactory completion of the last requested I-O activity on the designated file.

Called By: User

Calls For: .GR275, .GR375, .GR960

Number of Words: 50


.GWAIT
SET A TO EØF PARAMETER, IF ONE GIVEN
EØF ON?
YES
A
NO
B
WAIT FOR I-Ø TO FINISH VIA GERELC
STATUS CHANNEL READY?
YES
RETURN
NO
ANALYZE STATUS .GR275
EØF RETURN?
YES
A
ABORT #1
NO
STATUS TO BE IGNORED?
YES
RETURN
NO
EØF RETURN
USER ERROR ROUTINE RETURN?
NO
ABORT #1
YES
CALL USER ERROR PROCEDURE, NO CODE .GR375
READ/WRITE REISSUED?
YES
B
NO
ERROR CODE = 6 FOR BLANK TAPE ON READ?
YES
A
NO
RETURN

Name: .GWEF

Alternate Names: WEF, .GAWEF

Calling Sequence: CALL WEF (fcb, file~mark)

fcb = location of file control block

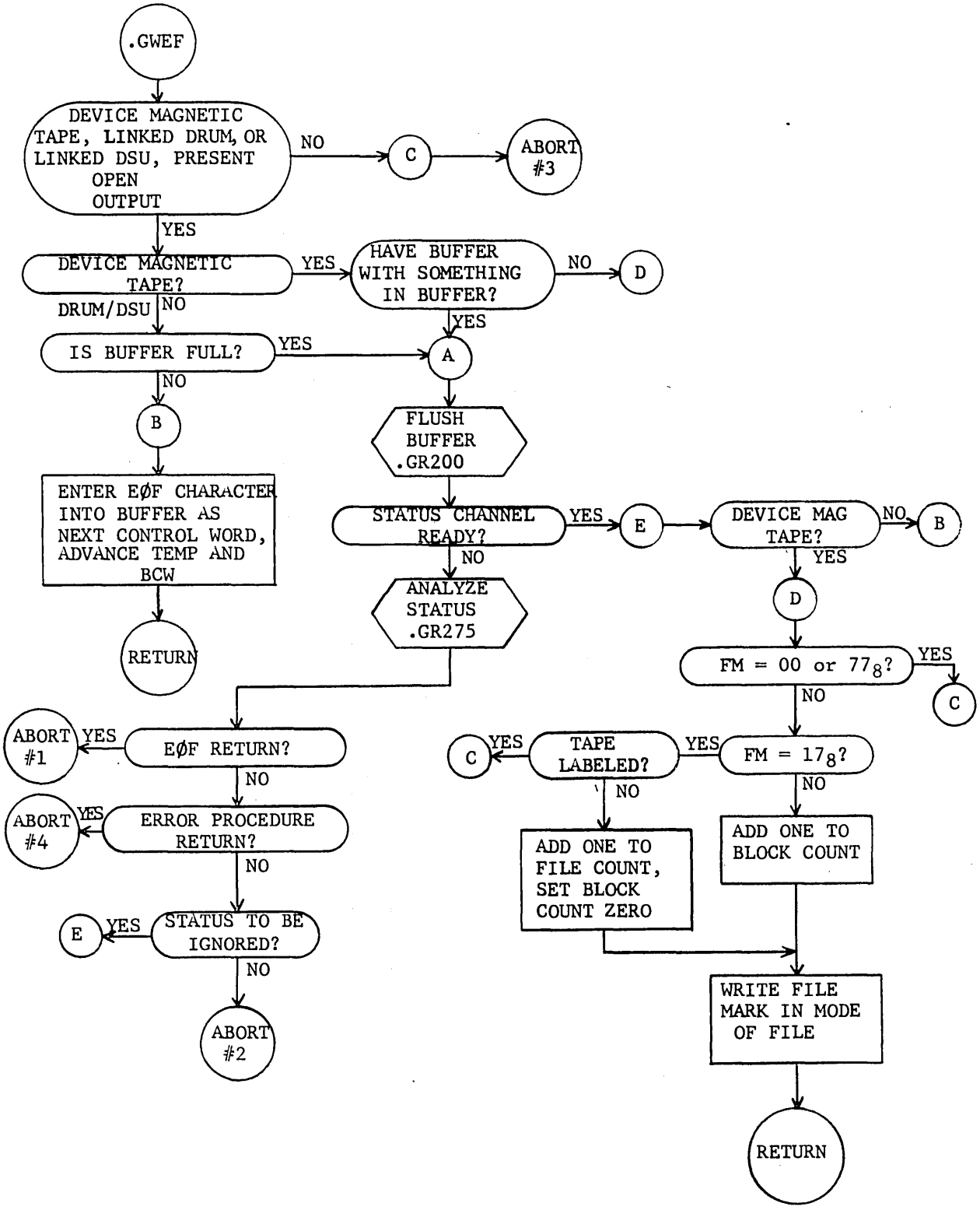
file~mark = location of word containing file mark character in bits 30-35

Function: To write a file mark on an output file whose device is magnetic tape, linked drum, or linked disc storage unit.

Called By: User

Calls For: .GR200, .GR275, .GR960

Number of Words: 114


.GWEF
DEVICE MAGNETIC TAPE, LINKED DRUM, OR LINKED DSU, PRESENT OPEN OUTPUT
NO
C
ABORT #3
YES
DEVICE MAGNETIC TAPE?
YES
HAVE BUFFER WITH SOMETHING IN BUFFER?
NO
D
DRUM/DSU
NO
YES
IS BUFFER FULL?
YES
A
NO
B
FLUSH BUFFER .GR200
ENTER EØF CHARACTER INTO BUFFER AS NEXT CONTROL WORD, ADVANCE TEMP AND BCW
STATUS CHANNEL READY?
YES
E
DEVICE MAG TAPE?
NO
B
YES
NO
ANALYZE STATUS .GR275
D
RETURN
FM = 00 or 77₈?
YES
C
NO
ABORT #1
YES
EØF RETURN?
C
YES
TAPE LABELED?
YES
FM = 17₈?
NO
NO
NO
ABORT #4
YES
ERROR PROCEDURE RETURN?
ADD ONE TO FILE COUNT, SET BLOCK COUNT ZERO
ADD ONE TO BLOCK COUNT
NO
E
YES
STATUS TO BE IGNORED?
WRITE FILE MARK IN MODE OF FILE
NO
ABORT #2
RETURN

Name: .GWRIT

Alternate Names: WRITE, .GAWRI

Calling Sequence: CALL WRITE (fcb, cont, cc)

fcb = location of file control block

cont = location of first control word where the control words are DCW's. If the file is on random drum/DSU, the first control word gives the relative block address

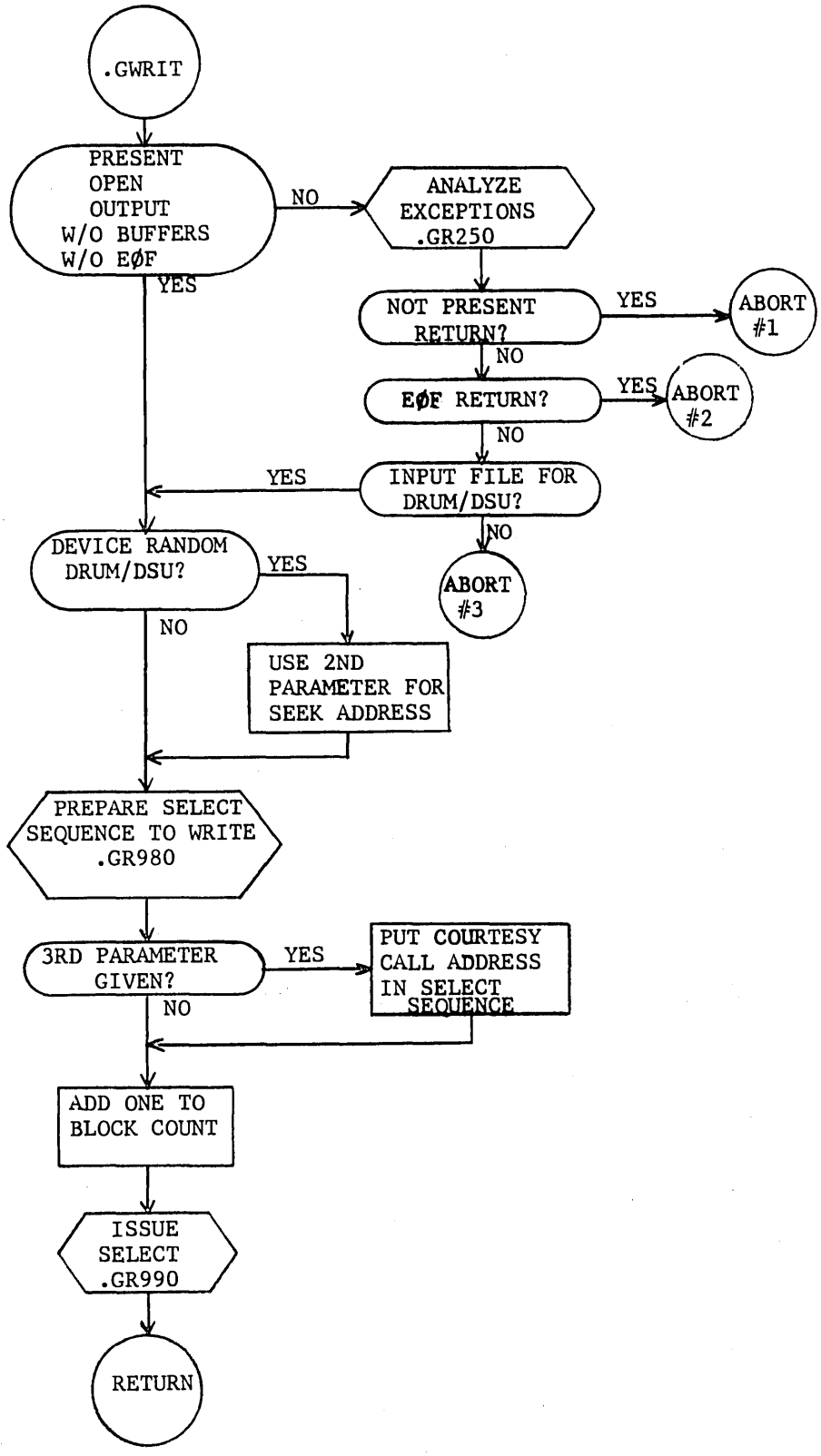
cc = location of a courtesy call routine

Function: To initiate the writing of a physical record on the designated file under user control.

Called By: User

Calls For: .GR250, .GR960, .GR980, .GR990

Number of Words: 54


.GWRIT
PRESENT OPEN OUTPUT W/O BUFFERS W/O EØF
NO
ANALYZE EXCEPTIONS .GR250
YES
NOT PRESENT RETURN?
YES
ABORT #1
NO
EØF RETURN?
YES
ABORT #2
NO
INPUT FILE FOR DRUM/DSU?
YES
NO
ABORT #3
DEVICE RANDOM DRUM/DSU?
YES
NO
USE 2ND PARAMETER FOR SEEK ADDRESS
PREPARE SELECT SEQUENCE TO WRITE .GR980
3RD PARAMETER GIVEN?
YES
NO
PUT COURTESY CALL ADDRESS IN SELECT SEQUENCE
ADD ONE TO BLOCK COUNT
ISSUE SELECT .GR990
RETURN

Name: .GWTRC

Alternate Names: WTREC, .GAWTR

Calling Sequence: CALL WTREC (fcb, image, media, report)

fcb = location of file control block

image = location of first word of the output image to be moved

media = location of word containing media code in bits 30-35

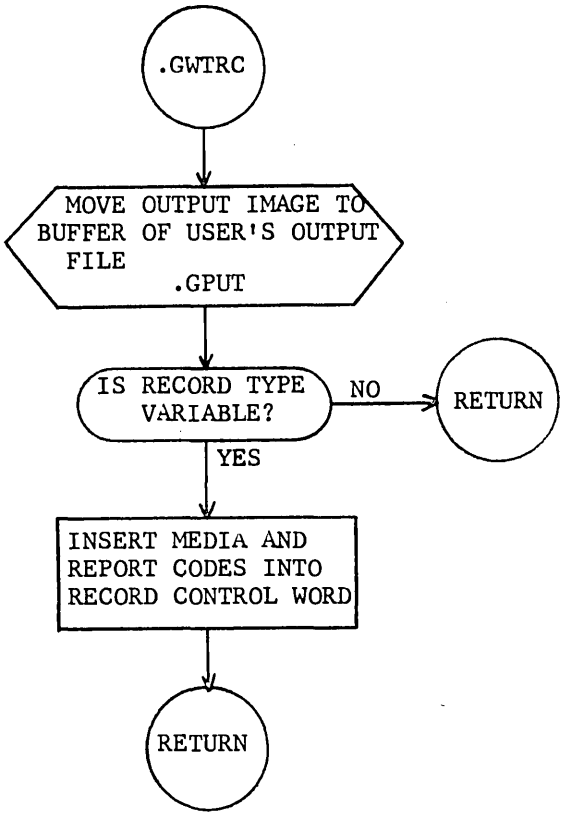
report = location of word containing report code in bits 30-35

Function: To insert in the next available position in the designated output file a logical record whose ultimate form is to be a printed line or a punched card

Called By: User, .GALTR, .GCMDK, .GPRNT, .GPNCH

Calls For: .GPUT

Number of Words: 34


.GWTRC
MOVE OUTPUT IMAGE TO BUFFER OF USER'S OUTPUT FILE
.GPUT
IS RECORD TYPE VARIABLE?
NO
RETURN
YES
INSERT MEDIA AND REPORT CODES INTO RECORD CONTROL WORD
RETURN

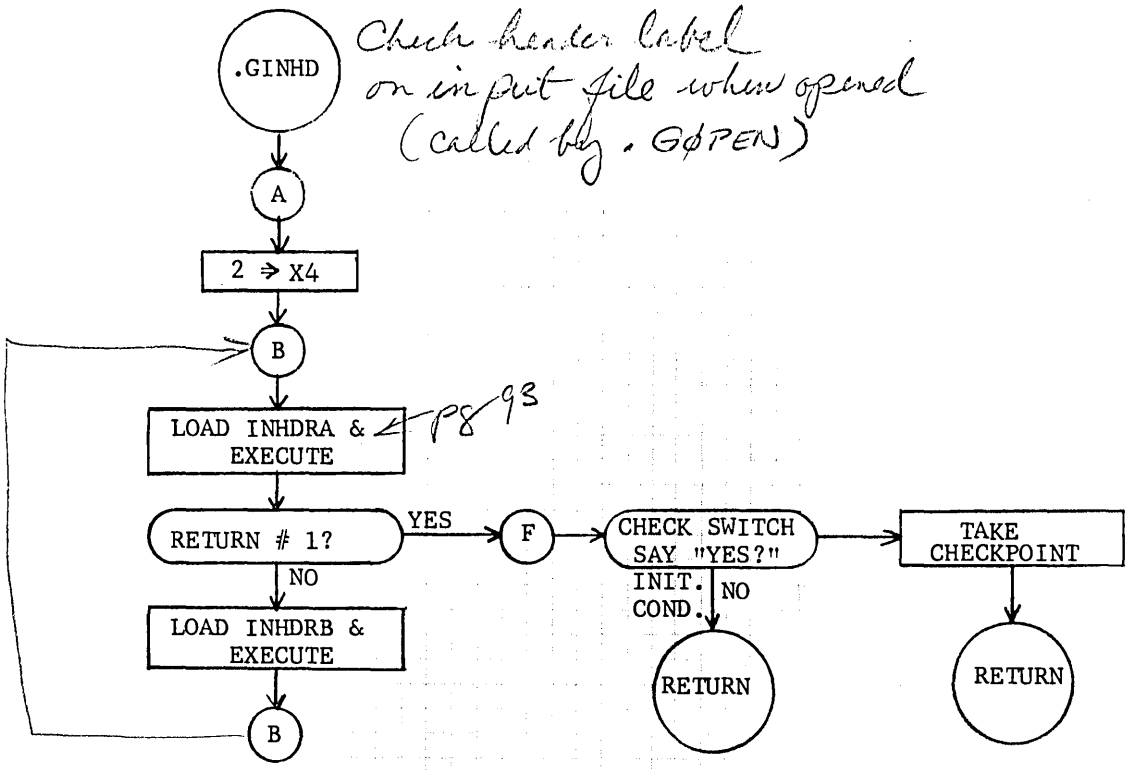
Name: Label Checking and Unit Switching

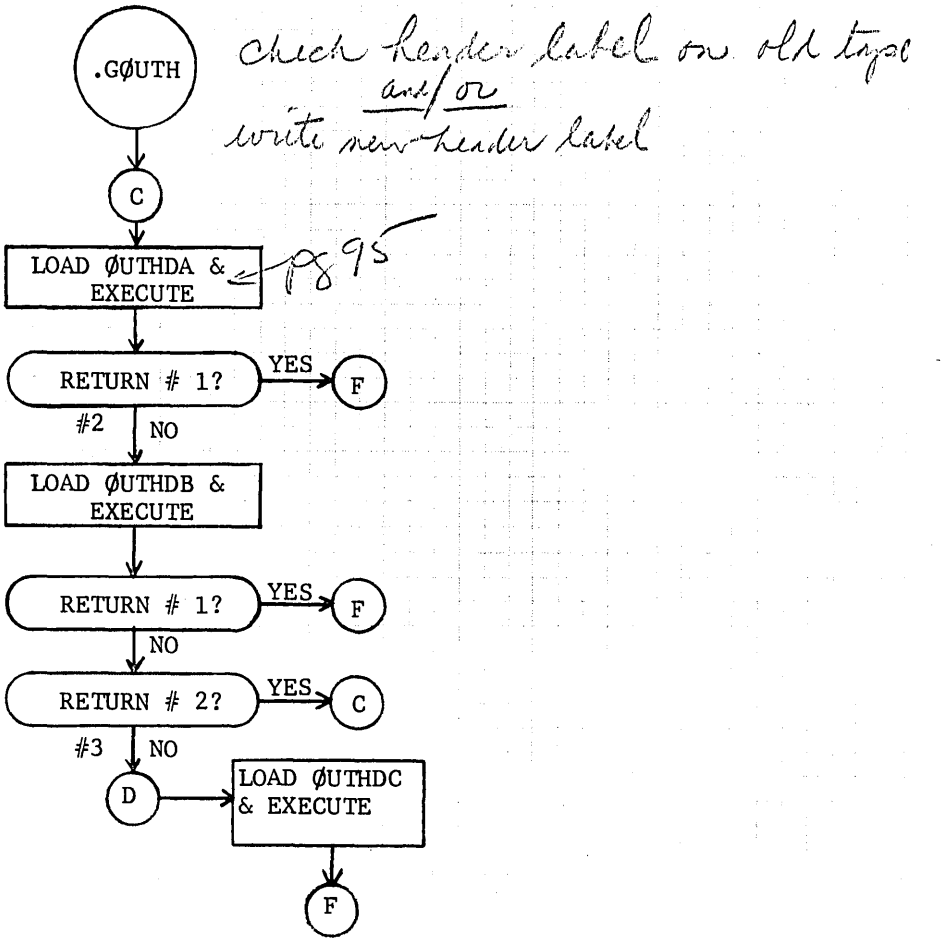
Entry Names: .GINHD, .GINTL, .GOUTH, .GOUTL, .GUSWH

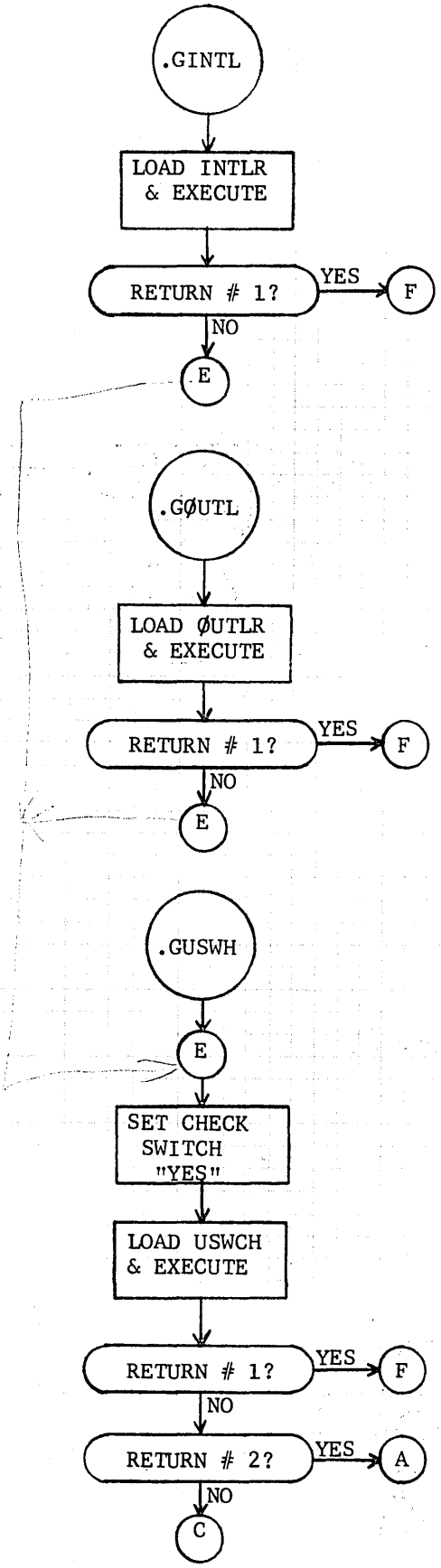
Procedure: The label checking and unit switching control routine has entries for the five names listed above. It calls for the appropriate routine(s) to be loaded into its own overlay area from the system library and for their subsequent execution.

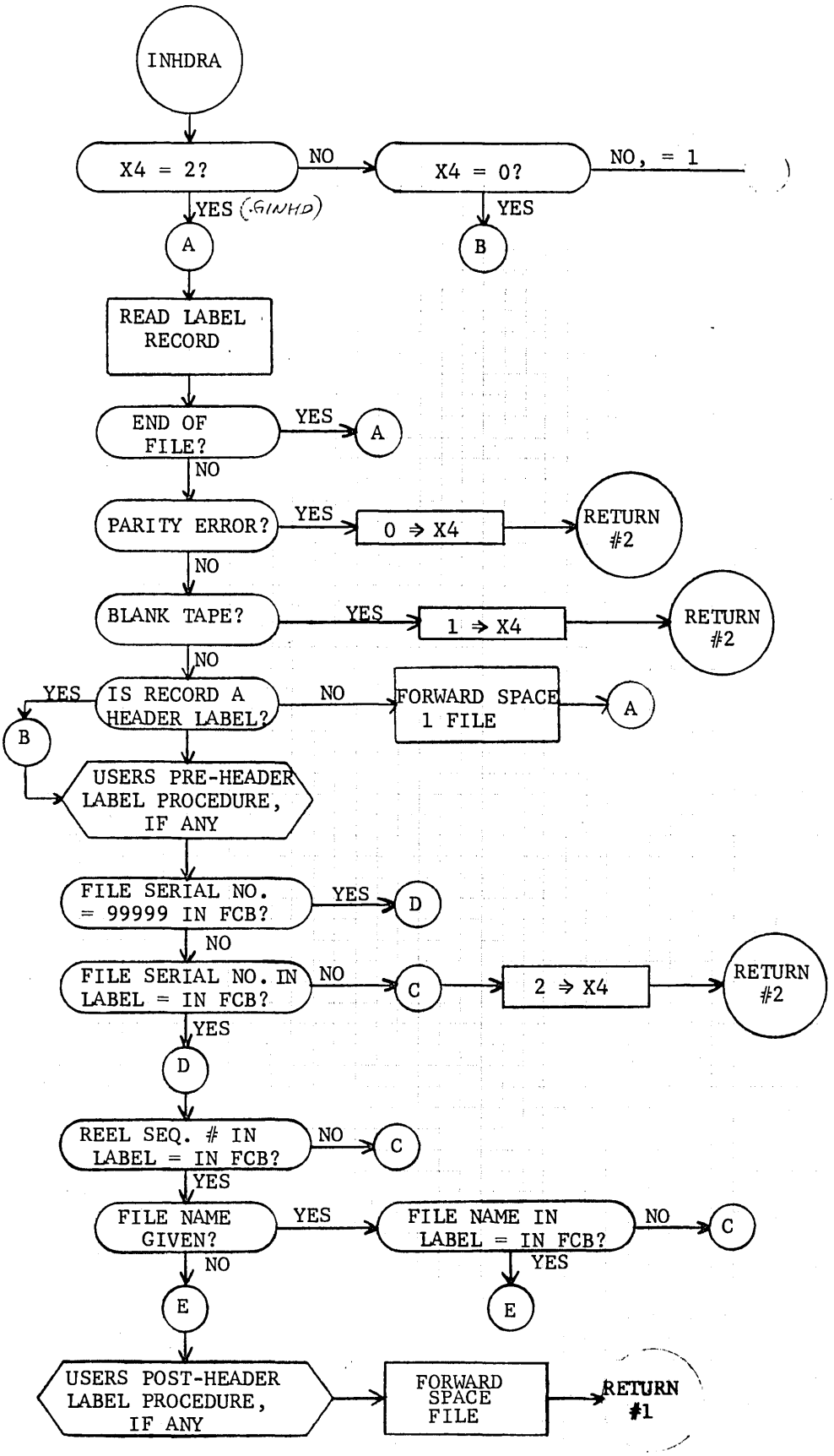
Calls For: Loading of subroutines via MME GECALL

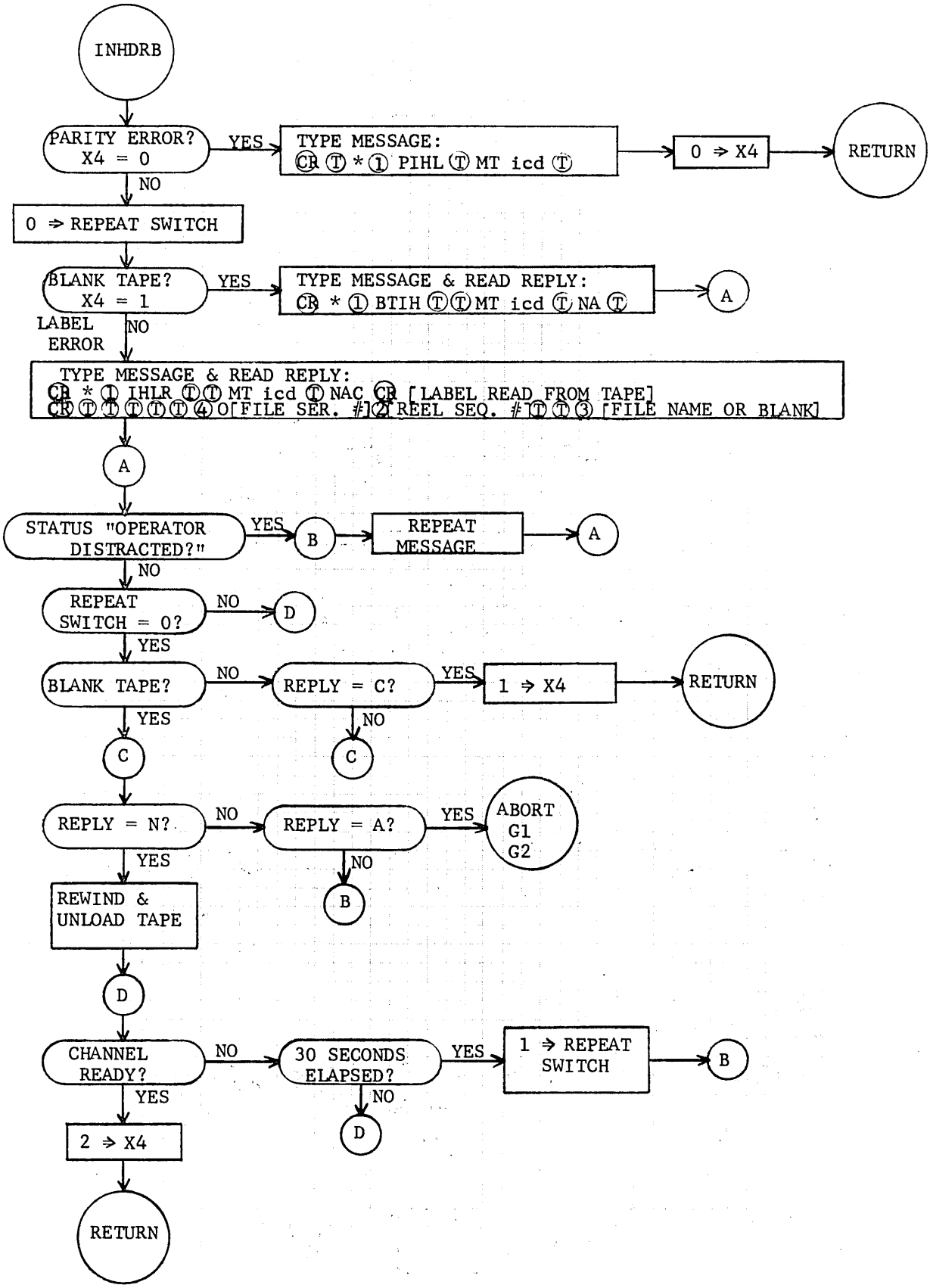
Number of Words: 330 including label and subroutine overlay areas

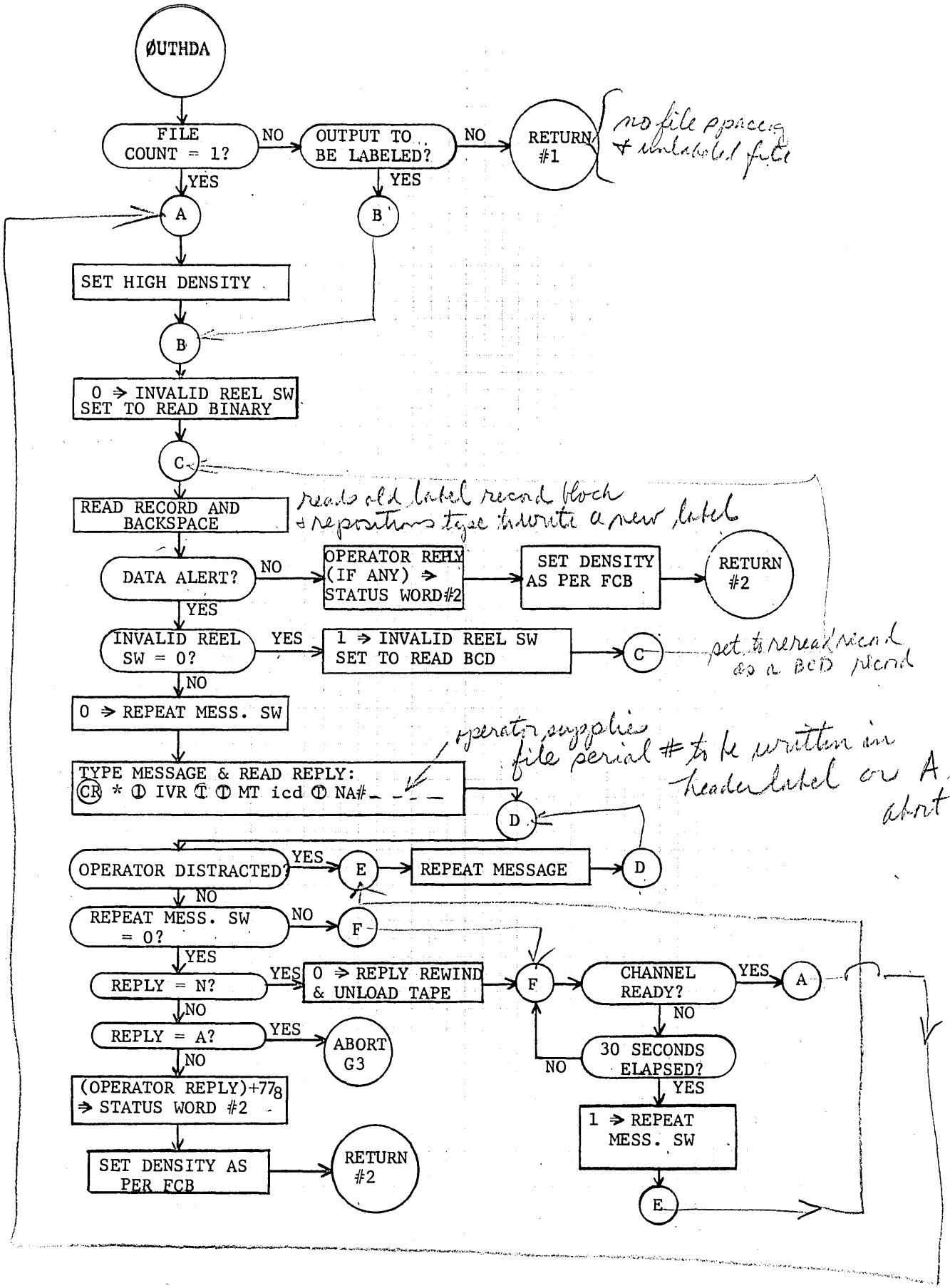

.GINHD
Check header label on input file when opened (called by .GØPEN)
A
2 ⇒ X4
B
LOAD INHDRA & EXECUTE
p893
RETURN # 1?
YES
F
CHECK SWITCH SAY "YES?"
INIT. COND.
NO
TAKE CHECKPOINT
RETURN
NO
LOAD INHDRB & EXECUTE
RETURN
B

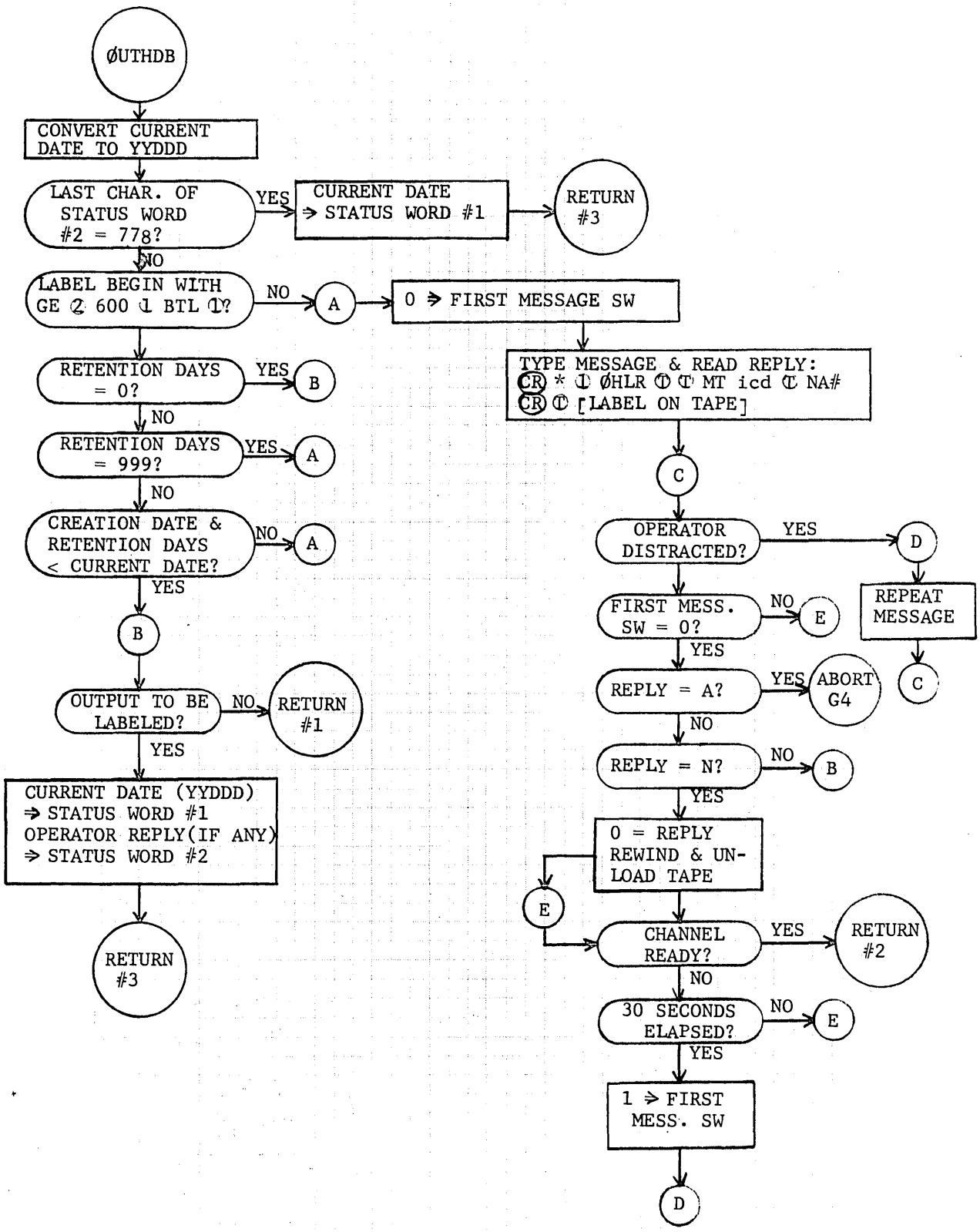

.GØUTH
check header label on old tape and/or write new header label
C
LOAD ØUTHDA & EXECUTE
p895
RETURN # 1?
YES
F
#2
NO
LOAD ØUTHDB & EXECUTE
RETURN # 1?
YES
F
NO
RETURN # 2?
YES
C
#3
NO
D
LOAD ØUTHDC & EXECUTE
F

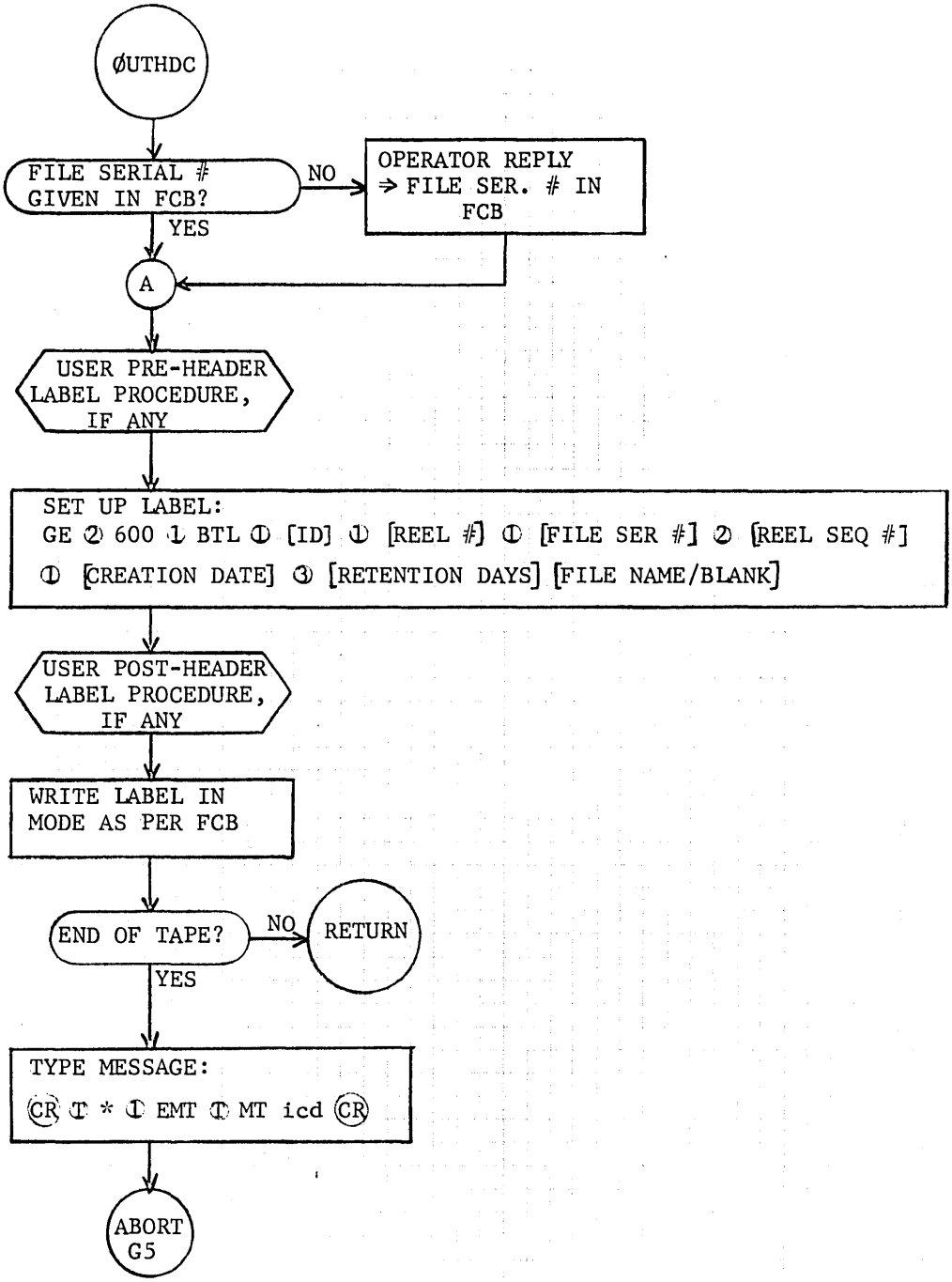

.GINTL
LOAD INTLR
& EXECUTE
RETURN # 1?
YES
F
NO
E
.GØUTL
LOAD ØUTLR
& EXECUTE
RETURN # 1?
YES
F
NO
E
.GUSWH
E
SET CHECK
SWITCH
"YES"
LOAD USWCH
& EXECUTE
RETURN # 1?
YES
F
NO
RETURN # 2?
YES
A
NO
C

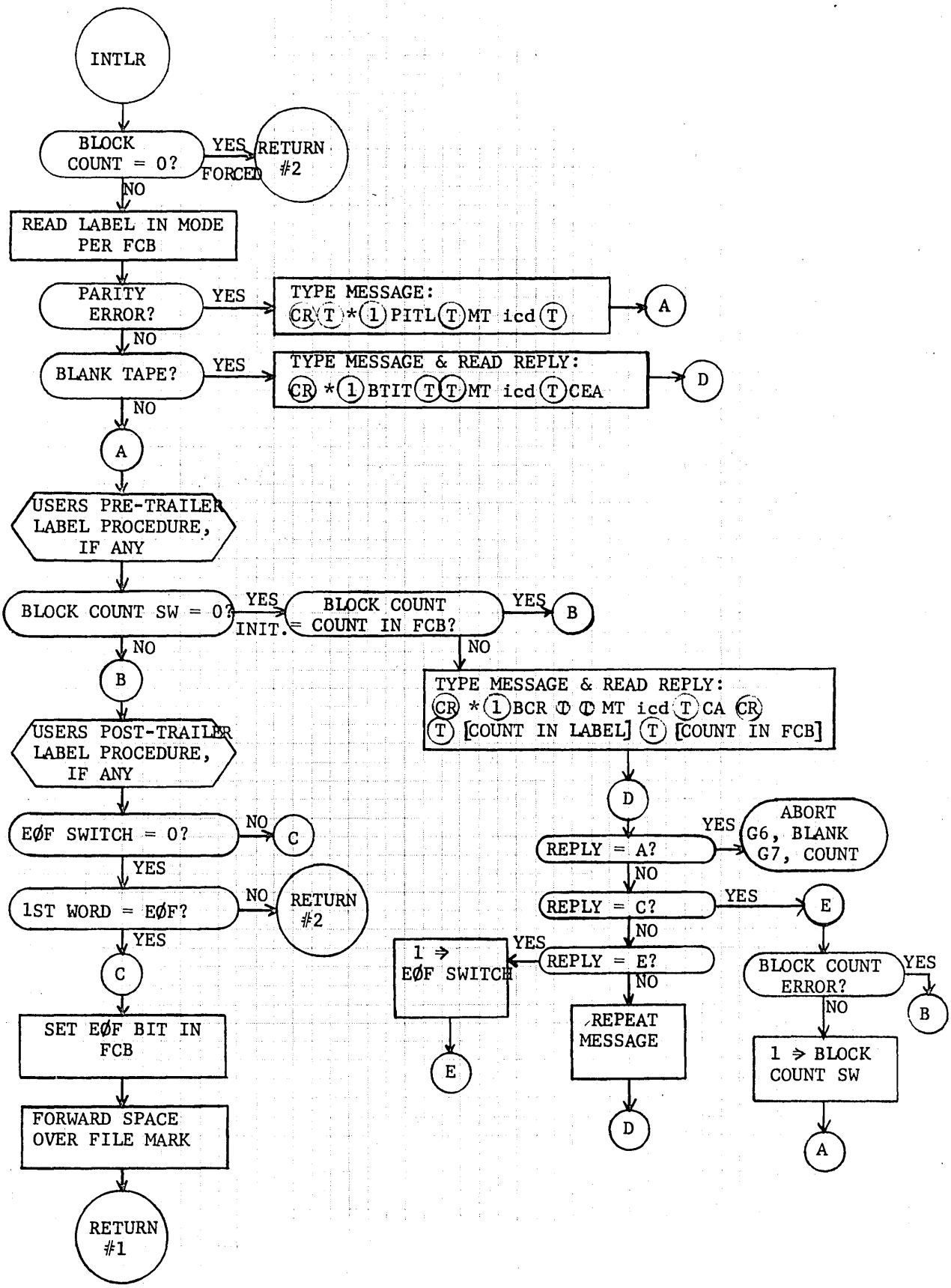

INHDRA
X4 = 2?
NO
X4 = 0?
NO, = 1
YES (GINHD)
YES
A
B
READ LABEL RECORD
END OF FILE?
YES
A
NO
PARITY ERROR?
YES
0 ⇒ X4
RETURN #2
NO
BLANK TAPE?
YES
1 ⇒ X4
RETURN #2
NO
YES
IS RECORD A HEADER LABEL?
NO
FORWARD SPACE 1 FILE
A
B
USERS PRE-HEADER LABEL PROCEDURE, IF ANY
FILE SERIAL NO. = 99999 IN FCB?
YES
D
NO
FILE SERIAL NO. IN LABEL = IN FCB?
NO
C
2 ⇒ X4
RETURN #2
YES
D
REEL SEQ. # IN LABEL = IN FCB?
NO
C
YES
FILE NAME GIVEN?
YES
FILE NAME IN LABEL = IN FCB?
NO
C
NO
YES
E
E
USERS POST-HEADER LABEL PROCEDURE, IF ANY
FORWARD SPACE FILE
RETURN #1

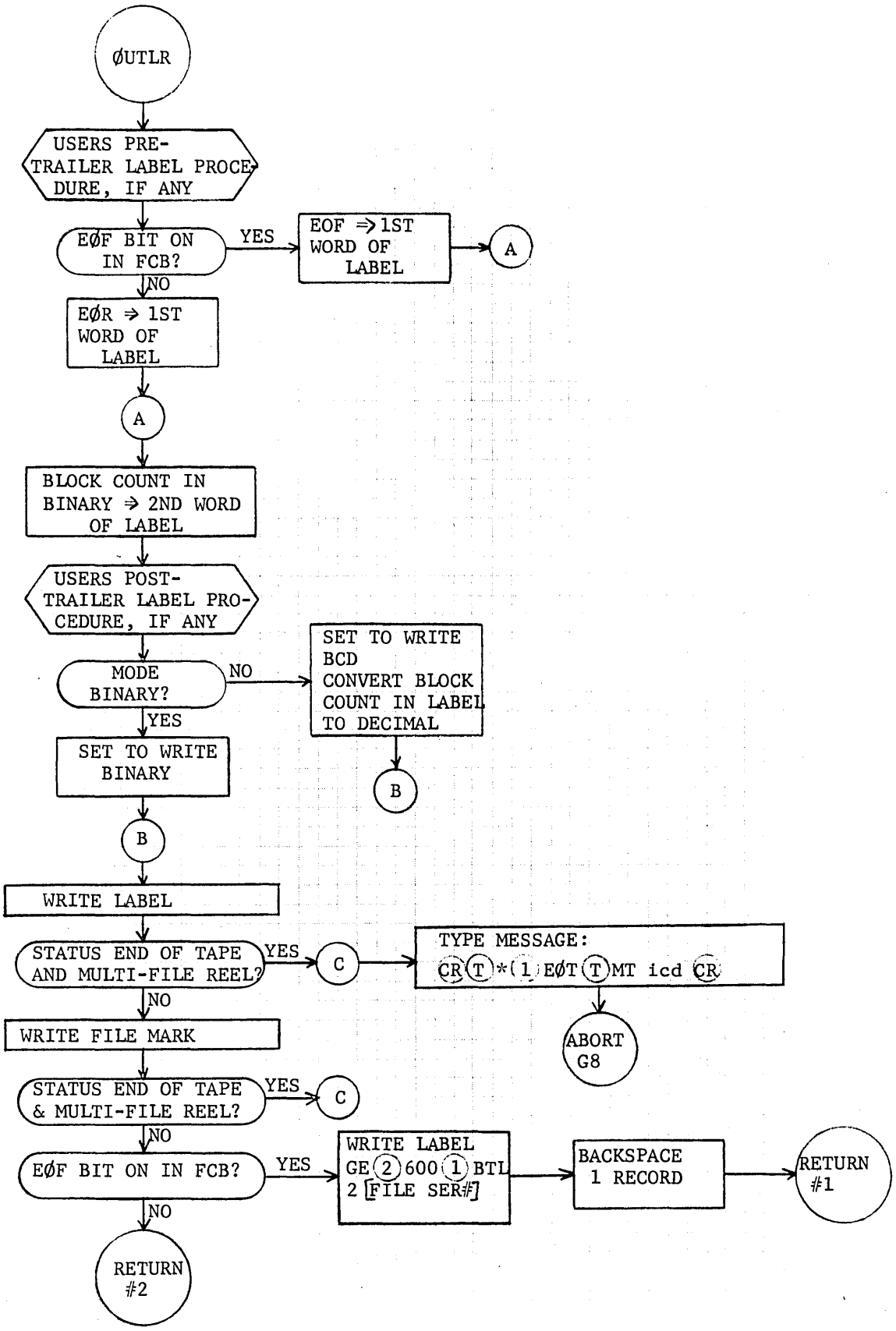

INHDRB
PARITY ERROR? X4 = 0
YES
TYPE MESSAGE: CR T * 1 PIHL T MT icd T
0 ⇒ X4
RETURN
NO
0 ⇒ REPEAT SWITCH
BLANK TAPE? X4 = 1
YES
TYPE MESSAGE & READ REPLY: CR * 1 BTIH T T MT icd T NA T
A
LABEL ERROR
NO
TYPE MESSAGE & READ REPLY: CR * 1 IHLR T T MT icd T NAC CR [LABEL READ FROM TAPE] CR T T T T T 4 0 [FILE SER. #] 2 [REEL SEQ. #] T T T 3 [FILE NAME OR BLANK]
A
STATUS "OPERATOR DISTRACTED?"
YES
B
REPEAT MESSAGE
A
NO
REPEAT SWITCH = 0?
NO
D
YES
BLANK TAPE?
NO
REPLY = C?
YES
1 ⇒ X4
RETURN
YES
NO
C
C
REPLY = N?
NO
REPLY = A?
YES
ABORT G1 G2
YES
NO
REWIND & UNLOAD TAPE
B
D
CHANNEL READY?
NO
30 SECONDS ELAPSED?
YES
1 ⇒ REPEAT SWITCH
B
YES
NO
D
2 ⇒ X4
RETURN

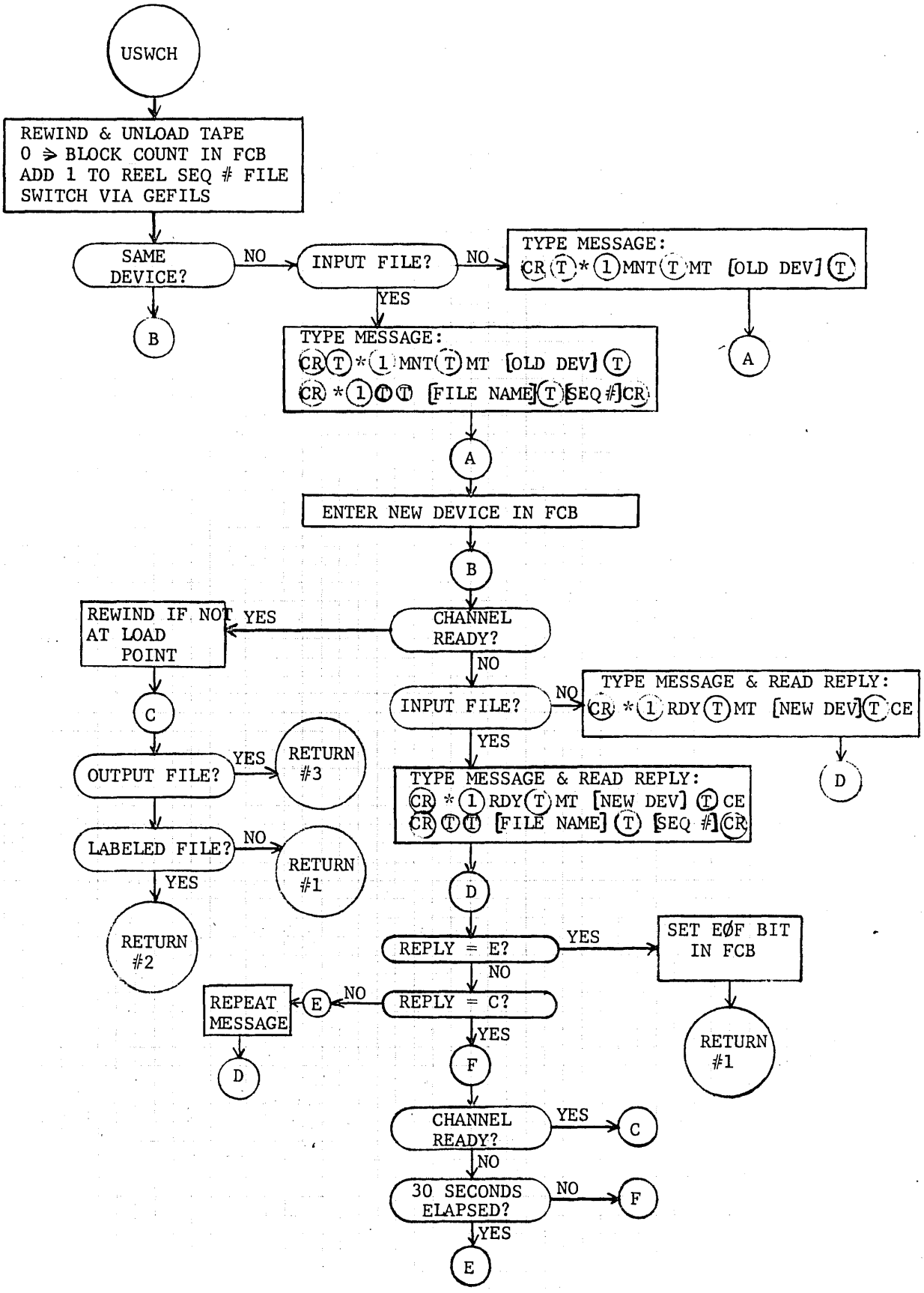

ØUTHDA
FILE COUNT = 1?
NO
OUTPUT TO BE LABELED?
NO
RETURN #1
no file spacing & unlabeled fcb
YES
YES
A
B
SET HIGH DENSITY
B
0 ⇒ INVALID REEL SW
SET TO READ BINARY
C
READ RECORD AND BACKSPACE
reads old label record block & repositions tape to write a new label
DATA ALERT?
NO
OPERATOR REPLY (IF ANY) ⇒ STATUS WORD #2
SET DENSITY AS PER FCB
RETURN #2
YES
INVALID REEL SW = 0?
YES
1 ⇒ INVALID REEL SW
SET TO READ BCD
C
set to reread record as a BCD record
NO
0 ⇒ REPEAT MESS. SW
TYPE MESSAGE & READ REPLY:
CR * ① IVR T ① MT icd ① NA#_ _ _ _
operator supplies file serial # to be written in header label or A to abort job
D
OPERATOR DISTRACTED?
YES
E
REPEAT MESSAGE
D
NO
REPEAT MESS. SW = 0?
NO
F
YES
REPLY = N?
YES
0 ⇒ REPLY REWIND & UNLOAD TAPE
F
CHANNEL READY?
YES
A
NO
NO
REPLY = A?
YES
ABORT G3
NO
30 SECONDS ELAPSED?
NO
YES
(OPERATOR REPLY)+77₈ ⇒ STATUS WORD #2
1 ⇒ REPEAT MESS. SW
SET DENSITY AS PER FCB
RETURN #2
E


ØUTHDB
CONVERT CURRENT DATE TO YYDDD
LAST CHAR. OF STATUS WORD #2 = 778?
YES
CURRENT DATE ⇒ STATUS WORD #1
RETURN #3
NO
LABEL BEGIN WITH GE ② 600 ① BTL ①?
NO
A
0 ⇒ FIRST MESSAGE SW
TYPE MESSAGE & READ REPLY:
CR * ① ØHLR Ⓣ Ⓣ MT icd Ⓒ NA#
CR Ⓒ [LABEL ON TAPE]
RETENTION DAYS = 0?
YES
B
NO
RETENTION DAYS = 999?
YES
A
NO
CREATION DATE & RETENTION DAYS < CURRENT DATE?
NO
A
YES
B
OUTPUT TO BE LABELED?
NO
RETURN #1
YES
CURRENT DATE (YYDDD) ⇒ STATUS WORD #1
OPERATOR REPLY(IF ANY) ⇒ STATUS WORD #2
RETURN #3
C
OPERATOR DISTRACTED?
YES
D
REPEAT MESSAGE
C
FIRST MESS. SW = 0?
NO
E
YES
REPLY = A?
YES
ABORT G4
NO
REPLY = N?
NO
B
YES
0 = REPLY REWIND & UNLOAD TAPE
E
CHANNEL READY?
YES
RETURN #2
NO
30 SECONDS ELAPSED?
NO
E
YES
1 ⇒ FIRST MESS. SW
D


ØUTHDC
FILE SERIAL # GIVEN IN FCB?
NO
OPERATOR REPLY ⇒ FILE SER. # IN FCB
YES
A
USER PRE-HEADER LABEL PROCEDURE, IF ANY
SET UP LABEL:
GE ② 600 ① BTL ① [ID] ① [REEL #] ① [FILE SER #] ② [REEL SEQ #]
① [CREATION DATE] ③ [RETENTION DAYS] [FILE NAME/BLANK]
USER POST-HEADER LABEL PROCEDURE, IF ANY
WRITE LABEL IN MODE AS PER FCB
END OF TAPE?
NO
RETURN
YES
TYPE MESSAGE:
CR T * T EMT T MT icd CR
ABORT G5


INTLR
BLOCK COUNT = 0?
YES
FORCED
RETURN #2
NO
READ LABEL IN MODE PER FCB
PARITY ERROR?
YES
TYPE MESSAGE:
CR T *1 PITL T MT icd T
A
NO
BLANK TAPE?
YES
TYPE MESSAGE & READ REPLY:
CR *1 BTIT T T MT icd T CEA
D
NO
A
USERS PRE-TRAILER LABEL PROCEDURE, IF ANY
BLOCK COUNT SW = 0?
YES
INIT.
BLOCK COUNT = COUNT IN FCB?
YES
B
NO
NO
B
TYPE MESSAGE & READ REPLY:
CR *1 BCR T T MT icd T CA CR
T [COUNT IN LABEL] T [COUNT IN FCB]
USERS POST-TRAILER LABEL PROCEDURE, IF ANY
D
EØF SWITCH = 0?
NO
C
YES
REPLY = A?
YES
ABORT G6, BLANK G7, COUNT
NO
1ST WORD = EØF?
NO
RETURN #2
YES
REPLY = C?
YES
E
NO
C
1 ⇒ EØF SWITCH
YES
REPLY = E?
NO
BLOCK COUNT ERROR?
YES
B
NO
SET EØF BIT IN FCB
REPEAT MESSAGE
1 ⇒ BLOCK COUNT SW
FORWARD SPACE OVER FILE MARK
E
D
A
RETURN #1


ØUTLR
USERS PRE-TRAILER LABEL PROCEDURE, IF ANY
EØF BIT ON IN FCB?
YES
EOF ⇒ 1ST WORD OF LABEL
A
NO
EØR ⇒ 1ST WORD OF LABEL
A
BLOCK COUNT IN BINARY ⇒ 2ND WORD OF LABEL
USERS POST-TRAILER LABEL PROCEDURE, IF ANY
MODE BINARY?
NO
SET TO WRITE BCD
CONVERT BLOCK COUNT IN LABEL TO DECIMAL
B
YES
SET TO WRITE BINARY
B
WRITE LABEL
STATUS END OF TAPE AND MULTI-FILE REEL?
YES
C
TYPE MESSAGE:
CR T *1 EØT T MT icd CR
ABORT G8
NO
WRITE FILE MARK
STATUS END OF TAPE & MULTI-FILE REEL?
YES
C
NO
EØF BIT ON IN FCB?
YES
WRITE LABEL GE 2 600 1 BTL 2 [FILE SER#]
BACKSPACE 1 RECORD
RETURN #1
NO
RETURN #2


USWCH
REWIND & UNLOAD TAPE
0 ⇒ BLOCK COUNT IN FCB
ADD 1 TO REEL SEQ # FILE
SWITCH VIA GEFILS
SAME DEVICE?
NO
INPUT FILE?
NO
TYPE MESSAGE:
CR T * 1 MNT T MT [OLD DEV] T
YES
B
TYPE MESSAGE:
CR T * 1 MNT T MT [OLD DEV] T
CR * 1 T T [FILE NAME] T [SEQ #] CR
A
A
ENTER NEW DEVICE IN FCB
B
REWIND IF NOT AT LOAD POINT
YES
CHANNEL READY?
NO
INPUT FILE?
NO
TYPE MESSAGE & READ REPLY:
CR * 1 RDY T MT [NEW DEV] T CE
YES
D
C
OUTPUT FILE?
YES
RETURN #3
TYPE MESSAGE & READ REPLY:
CR * 1 RDY T MT [NEW DEV] T CE
CR T T [FILE NAME] T [SEQ #] CR
LABELED FILE?
NO
RETURN #1
YES
D
RETURN #2
REPLY = E?
YES
SET EØF BIT IN FCB
NO
REPEAT MESSAGE
E
NO
REPLY = C?
RETURN #1
D
YES
F
CHANNEL READY?
YES
C
NO
30 SECONDS ELAPSED?
NO
F
YES
E

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