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"AS-BUILT" SPECIFICATION FOR THE ERIM TAPE CONVERSION  
TO LARSYS II PROGRAM  
(ECTL2)  
Job Order 71-695  
(TIRF 76-0057)

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For

EARTH OBSERVATIONS DIVISION



*National Aeronautics and Space Administration*  
**LYNDON B. JOHNSON SPACE CENTER**  
*Houston, Texas*

December 1976

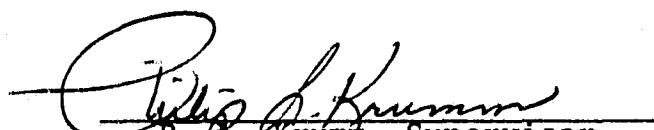
LEC-9857

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TO LARSYS II PROGRAM  
(ECTL2)  
Job Order 71-695  
(TIRF 76-0057)

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LYNDON B. JOHNSON SPACE CENTER  
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## CONTENTS

Section	Page
1. SCOPE . . . . .	1
2. APPLICABLE DOCUMENTS. . . . .	1
3. SYSTEM DESCRIPTION . . . . .	1
3.1 <u>HARDWARE DESCRIPTION.</u> . . . .	1
3.2 <u>SOFTWARE DESCRIPTION.</u> . . . .	1
3.2.1 MAIN PROGRAM. . . . .	1
3.2.1.1 <u>Linkages</u> . . . . .	1
3.2.1.2 <u>Interfaces.</u> . . . .	2
3.2.1.3 <u>Inputs</u> . . . . .	2
3.2.1.4 <u>Outputs.</u> . . . .	2
3.2.1.5 <u>Storage Requirements</u> . . . . .	2
3.2.1.6 <u>Description</u> . . . . .	2
3.2.1.7 <u>Flowcharts.</u> . . . .	2
3.2.1.8 <u>Listing.</u> . . . . .	2
3.2.2 SUBROUTINE SPACE . . . . .	3
3.2.2.1 <u>Linkages</u> . . . . .	3
3.2.2.2 <u>Interfaces.</u> . . . .	3
3.2.2.3 <u>Inputs</u> . . . . .	3
3.2.2.4 <u>Outputs.</u> . . . .	3
3.2.2.5 <u>Storage Requirements</u> . . . . .	3
3.2.2.6 <u>Description</u> . . . . .	3
3.2.2.7 <u>Flowcharts.</u> . . . .	3
3.2.2.8 <u>Listing.</u> . . . . .	4
4. OPERATION . . . . .	4
4.1 <u>USER DOCUMENTATION</u> . . . . .	4

CONTENTS

Appendices	Page
A FLOWCHARTS. . . . .	A-1
B LISTINGS . . . . .	B-1
C FLOWCHART . . . . .	C-1

## 1. SCOPE

This specification establishes the baseline configuration of "ECTL2". This program was developed in response to TIRF 76-0057 "ERIM Tape Conversion to LARSYS II."

## 2. APPLICABLE DOCUMENTS

- TIRF 76-0057 - ERIM Tape Conversion to LARSYS II - August 18, 1976
- LEC-9369 - Technical Memorandum Project Development Plan for the ERIM Tape Conversion to LARSYS II Program - September 3, 1976
- A.D. 63-1327-1693-01 - ERIM Tape Conversion

## 3. SYSTEM DESCRIPTION

### 3.1 HARDWARE DESCRIPTION

N/A

### 3.2 SOFTWARE DESCRIPTION

The program "ECTL2" is designed to take a four file input tape in ERIM format and under option create a two or four file output tape in LARSYS II format.

#### 3.2.1 MAIN PROGRAM

ECTL2 consists of this main routine and one subroutine (3.2.2). This main routine handles all functions of the program except spacing of the input tape.

##### 3.2.1.1 Linkages - None

### 3.2.1.2 Interfaces - None

### 3.2.1.3 Inputs

Input to this program consists of a tape in ERIM format and responses to program queries on the computer terminal.

### 3.2.1.4 Outputs

Output from this program is a magnetic tape in LARSYS II format.

### 3.2.1.5 Storage Requirements

025174<sub>7</sub>

### 3.2.1.6 Description

The main routine functions in the following manner:

- a. Query user for input parameters
- b. Format and write output header record
- c. Space input tape to desired start line
- d. If format 2 is indicated go to h
- e. Read and sort input file
- f. Combine next input file with saved one reformat and write to output tape.
- g. If finished two sets exit program, otherwise go to c.
- h. Read input tape, reformat data and write to output tape
- i. If finished four files exit program, otherwise go to h.

### 3.2.1.7 Flow Charts

See Appendix A.

### 3.2.1.8 Listing

See Appendix B.

### 3.2.2 SUBROUTINE SPACE

This subroutine is used to read the input tape and space forward a requested number of files.

#### 3.2.2.1 Linkages

None

#### 3.2.2.2 Interfaces

None

#### 3.2.2.3 Inputs

Input to this subroutine consists of the number of records to be spaced forward on the input tape and the address of the buffer in which to place the data.

#### 3.2.2.4 Outputs

Output from this subroutine consists of an EOF indicator on/off and the data from the record specified by the number requested.

#### 3.2.2.5 Storage Requirements

272<sub>7</sub>

#### 3.2.2.6 Description

This subroutine simply calls the tape I/O read routine the number of times specified in the calling sequence to SPACE and turns on an EOF indicator if one is encountered during the reading process.

#### 3.2.2.7 Flow Charts

See Appendix C.



### 3.2.2.8 Listing

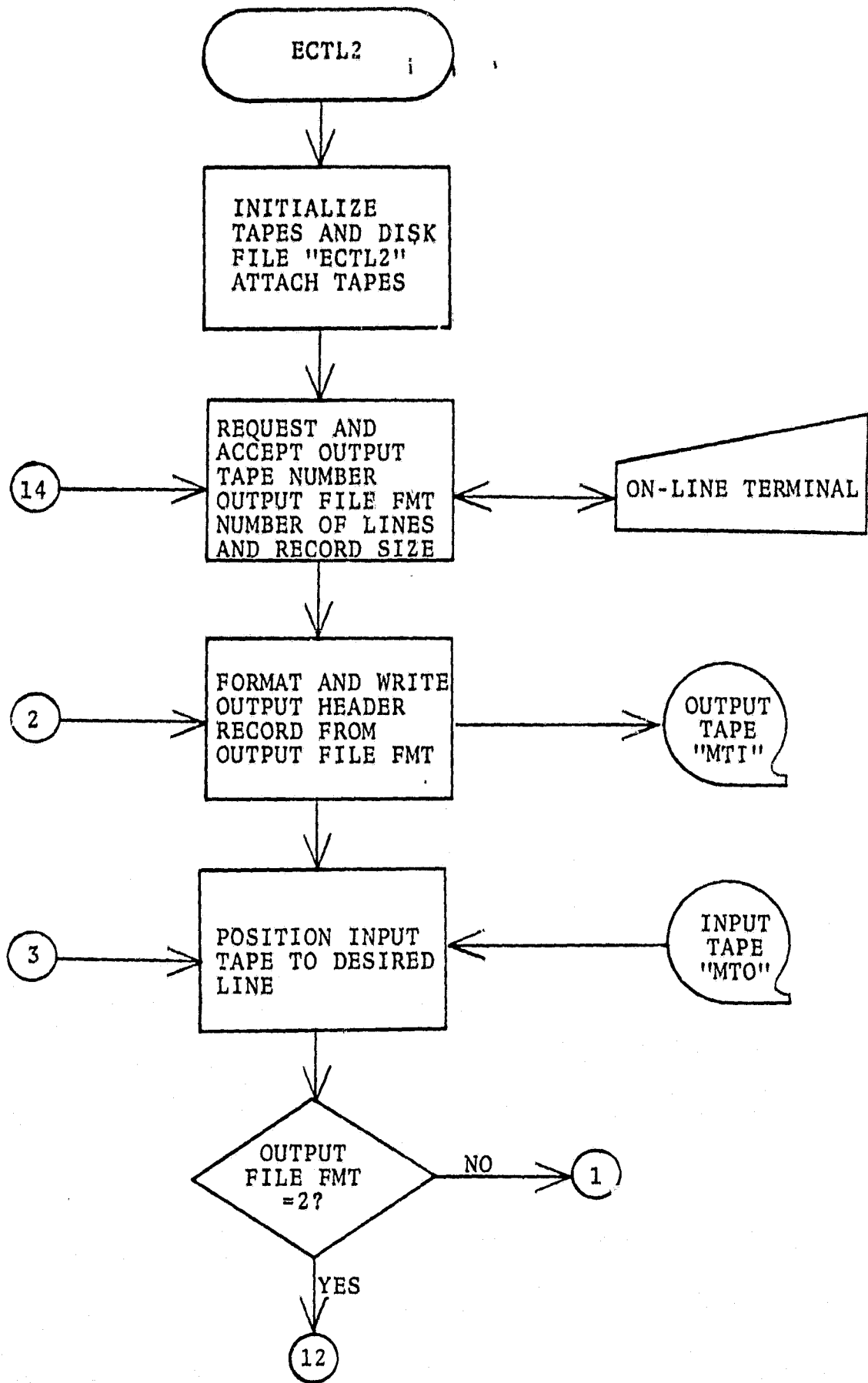
See Appendix D.

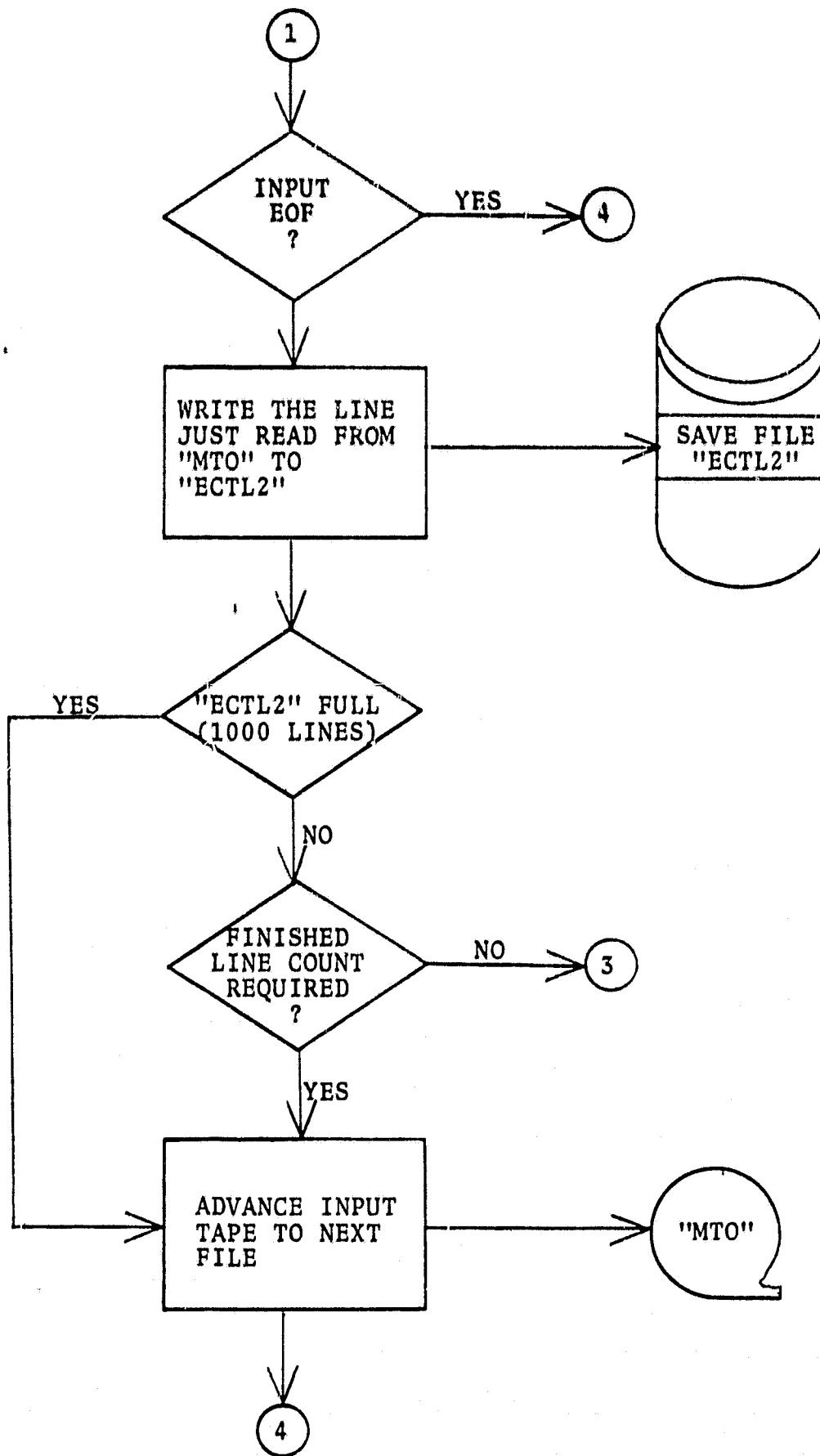
## 4. OPERATION

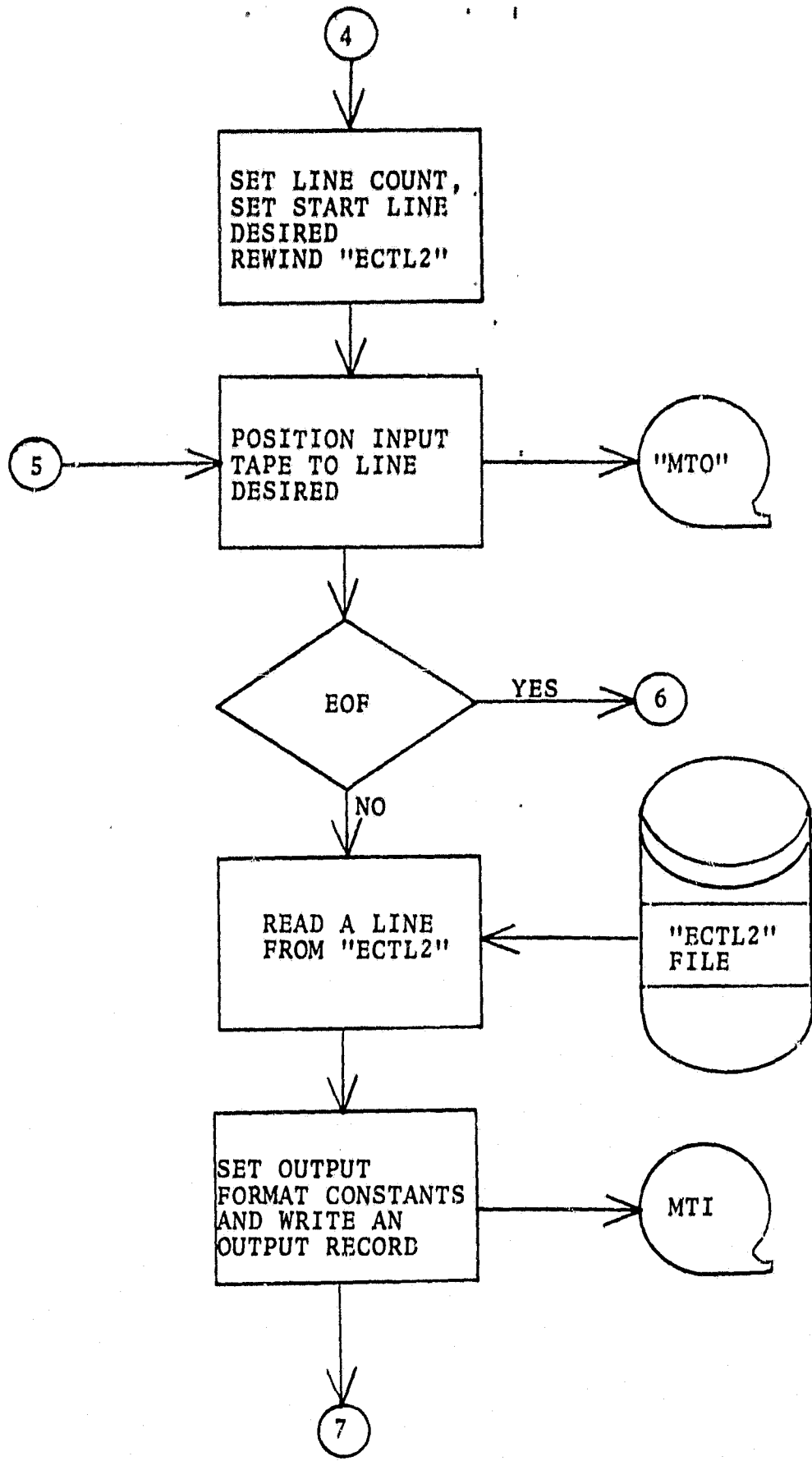
### 4.1 USER DOCUMENTATION

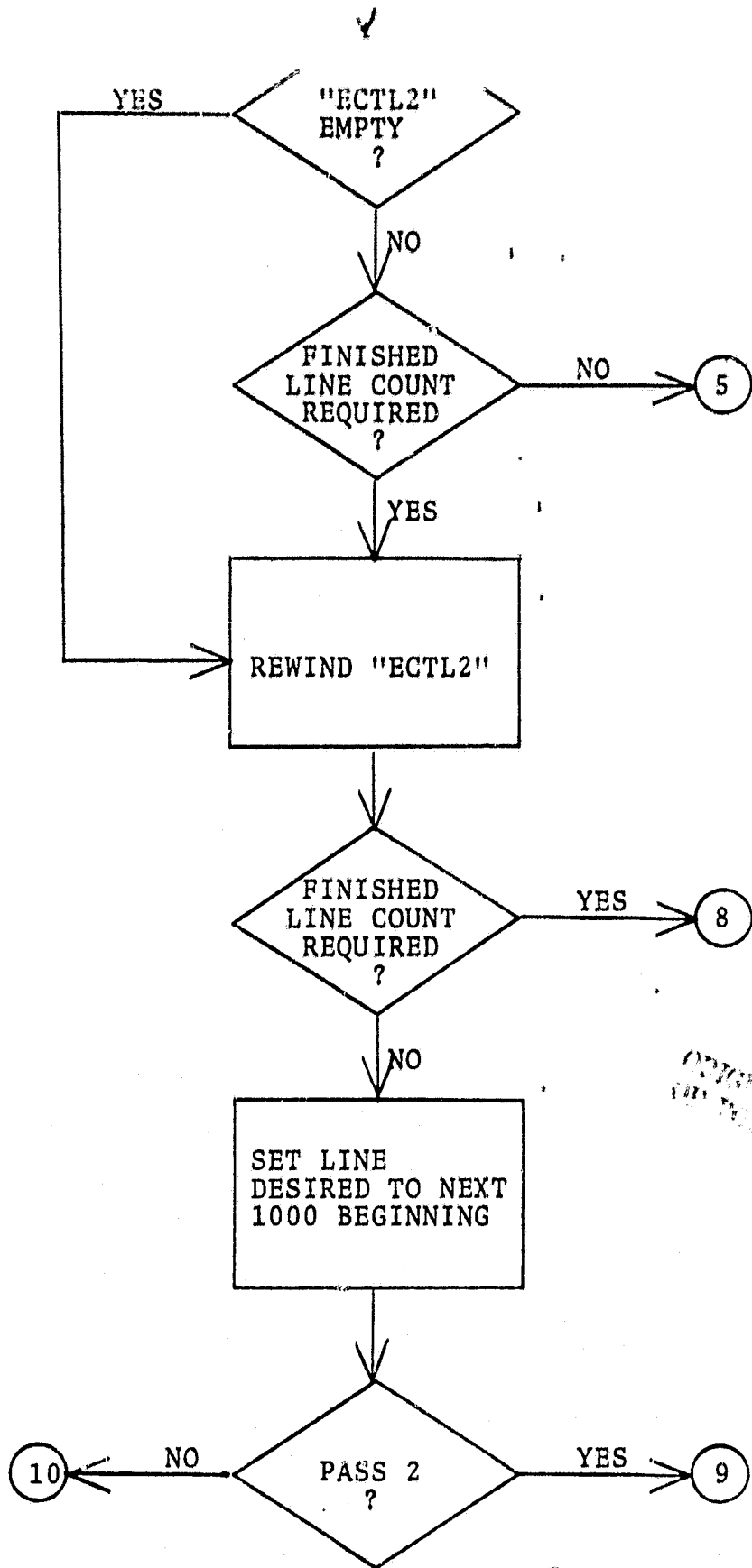
- a. Insure a clean scratch disk
- b. Mount input tape on unit MTI and a new scratch tape for output on unit MTO
- c. Sign on the system
- d. Answer queries from terminal
- e. Observe output tape being written
- f. After processing is complete dismount both tapes and sign off the system.

APPENDIX A

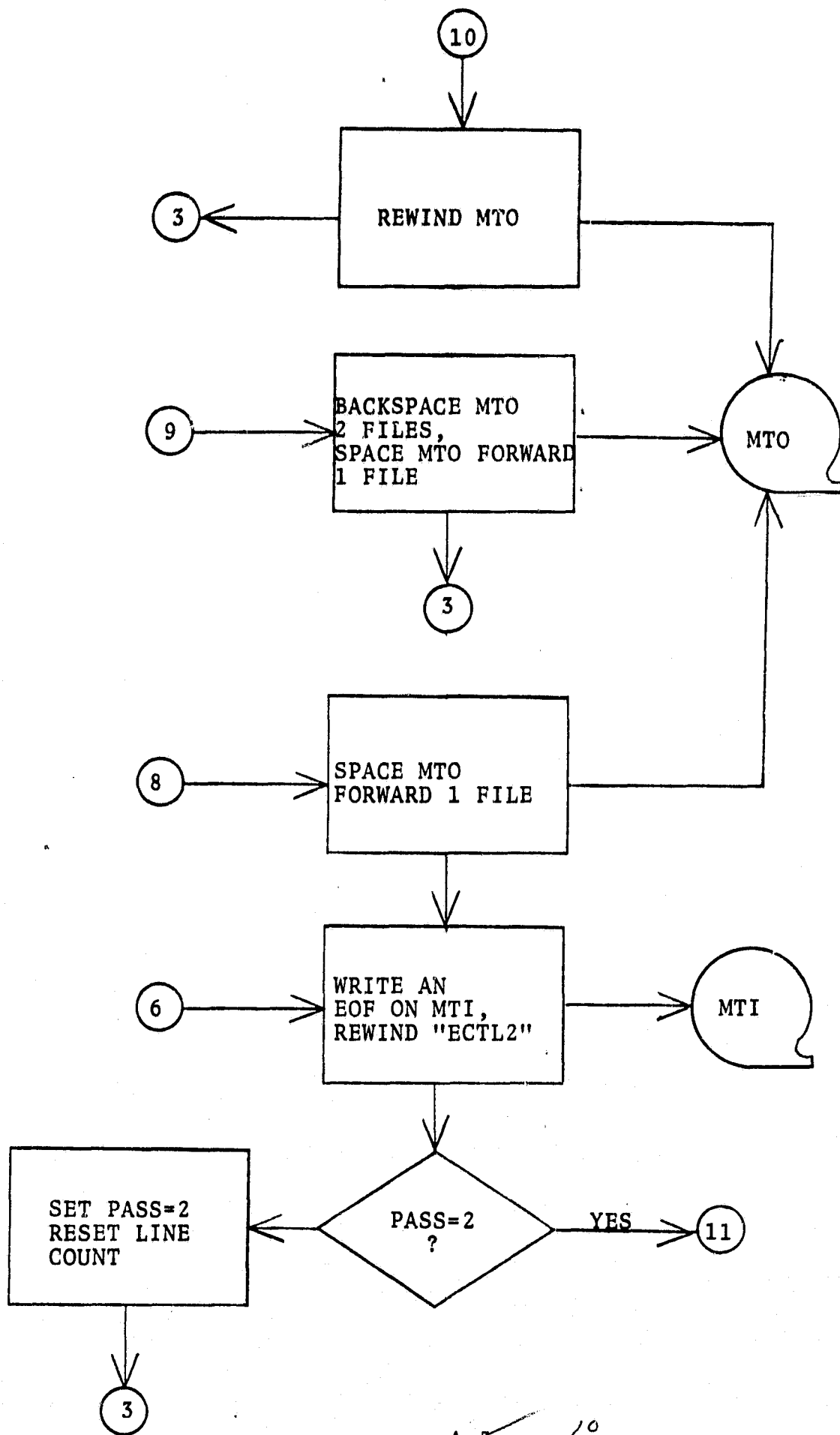


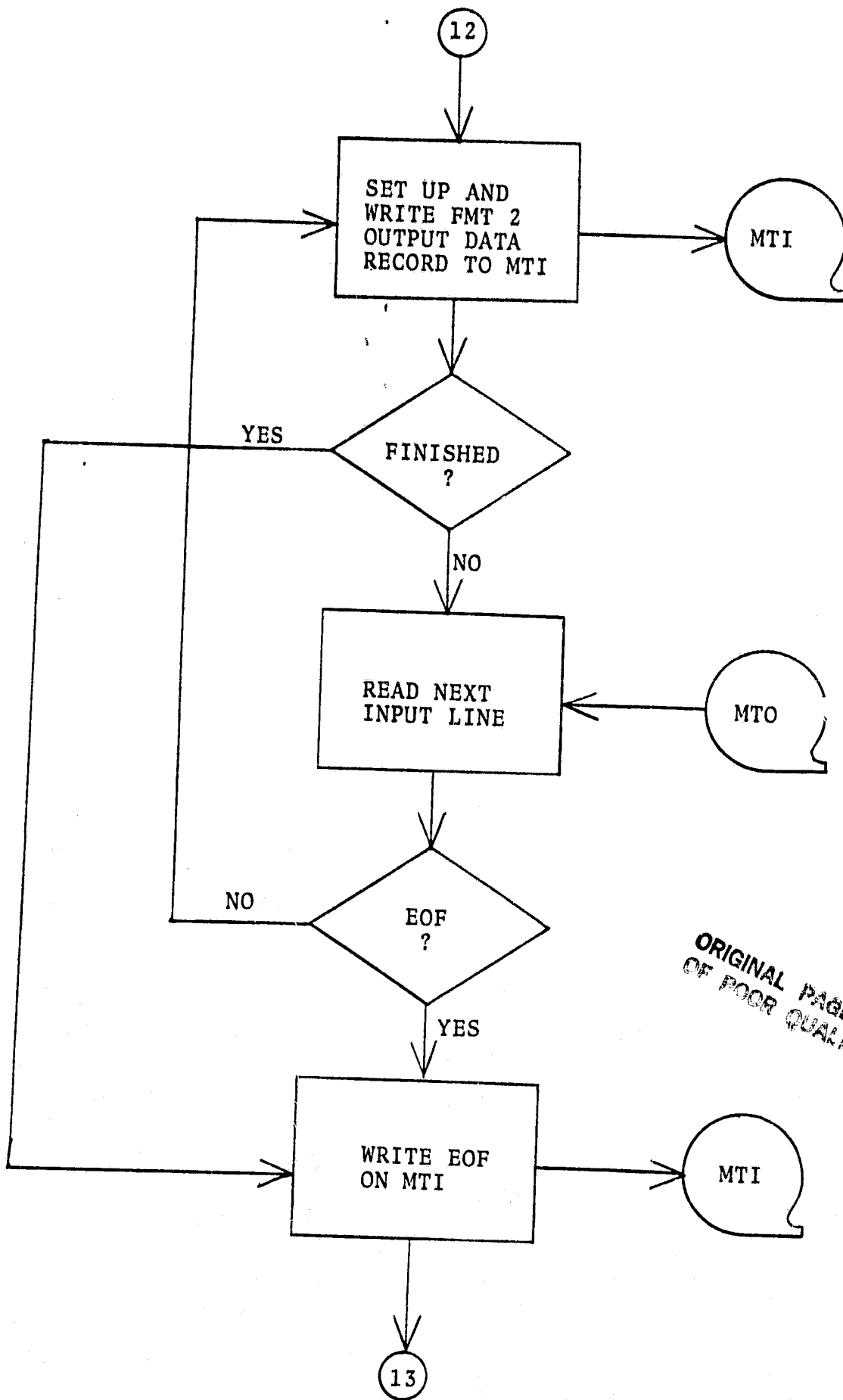






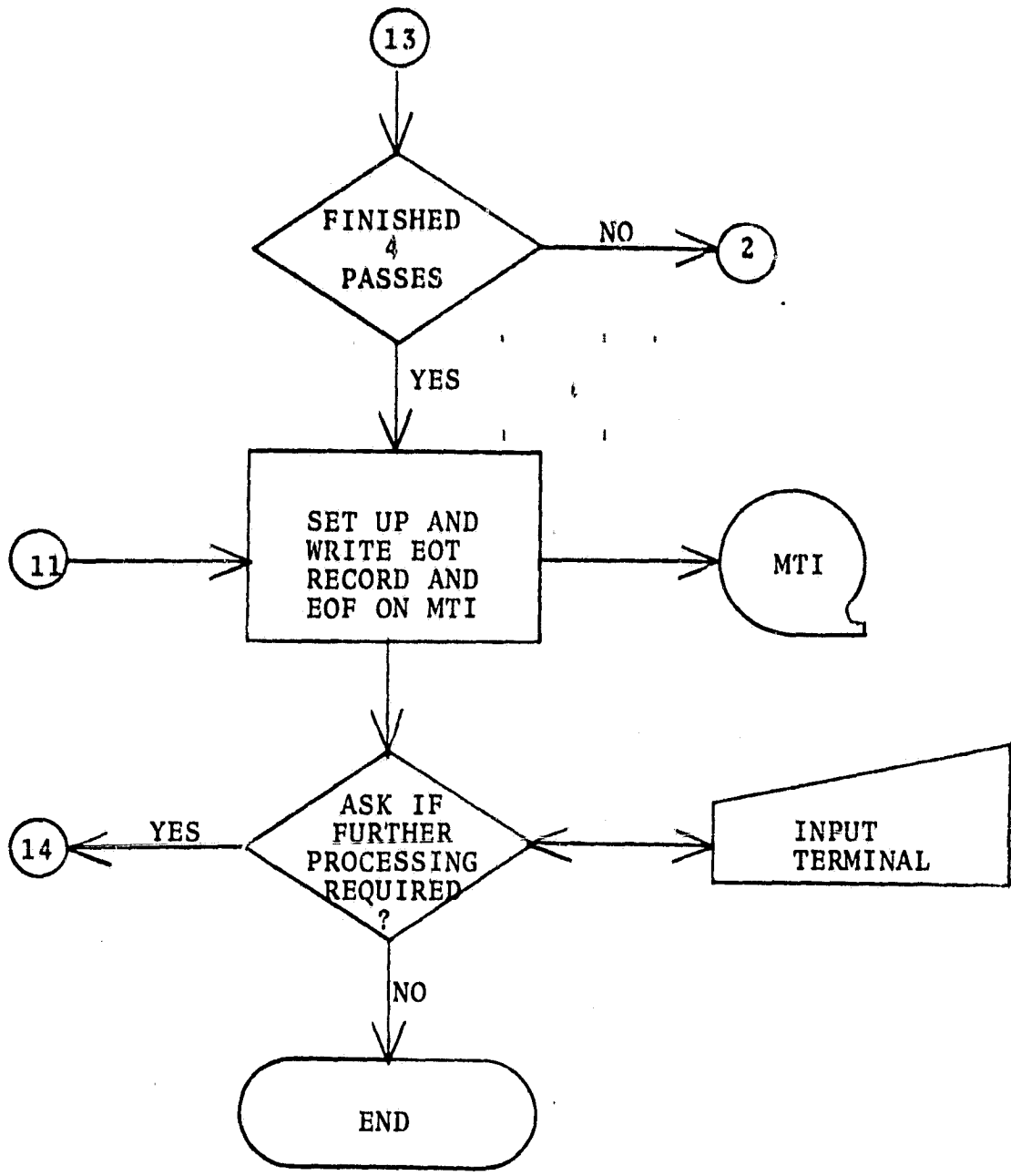
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APPENDIX B

```
0001 PROGRAM ECTL2
0002 IMPLICIT INTEGER (A-Z)
0003 COMMON /STATUS/IRWC(2)
0004 COMMON /WORDS/RECSZ,FLAG
0005 DIMENSION HEAD(60),HEAD0(200),RECIN(1000),RECOUT(2000)
0006 DIMENSION FOTR(200),DSKREC(1000)
```

C  
C  
C

```
0007 CALL TINIT (8,0,0)
0008 CALL TINIT (9,0,1)
0009 CALL ASSIGN ('7,DSK2:ECTL2',0)
```

C  
C

```
0010 CALL TATCH (8)
0011 CALL TATCH (9)
```

C  
C  
C

```
0012 1 TYPE 100
0013 100 FORMAT (1H0,'OUTPUT TAPE NUMBER = ')
0014 ACCEPT 200,OUTTN
0015 200 FORMAT (T4)
0016 10 TYPE 110
0017 110 FORMAT (1H0,'OUTPUT FILE FORMAT = ')
0018 ACCEPT 210,OFF
0019 210 FORMAT (T1)
0020 IF (OFF .LT. 1 .OR. OFF .GT. 2) GO TO 10
0021 20 TYPE 120
0022 120 FORMAT (1H0,'LYNFS = ')
0023 ACCEPT 220,FROM,A,TO
0024 220 FORMAT (T4,A1,T4)
0025 LINEC = TO-FROM+1
0026 IF (LINEC .LT. 1) GO TO 20
0027 130 TYPE 130
0028 130 FORMAT (1H0,'RECORD SIZE IN WORDS = ')
0029 ACCEPT 230,RECSZ
0030 230 FORMAT (T4)
```

C

```
0031 PASS = 1
0032 LCRV = LINEC
0033 FILEN = 0
```

C

```
0034 22 RECNUM = 0
0035 FROMA = FROM + 1
```

C  
C  
C  
C  
C

WRITE THE OUTPUT HEADER RECORD

```
0036 23 RECOUT(1) = 0
0037 RECOUT(2) = OUTTN
0038 FILEN = FILEN + 1
0039 DO 24 I = 1, 7
0040 24 RECOUT(I+2) = 0
0041 RECOUT(10) = 1
```

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B-1

14

```

0042      IF (OFF .EQ. 1)  RECOUT(10) = 2
0043      RECOUT(11) = 0
0044      RECOUT(12) = (RECSZ*2) + 6
0045      RECOUT(4) = FILEN
0046      DO 555  I = 1, 34A
0047      555 RECOUT(I+12) = 257
      C
0048      DO 66A  I = 1, 400
0049      66A CALL SWAB (RECOUT(I))
      C
      C
0050      CALL IWRIT (9,RECOUT,400)
      C
      C
0051      25  DRC = 1000
0052          START = FROMA
0053      30  CALL SPACE (START,RECIN)
      C
0054      IF (OFF .EQ. 2)  GO TO 1000
      C
0055      IF (FLAG .EQ. 1)  GO TO 2005
      C
      C WRITE A RECORD TO DISK SAVE FILE
      C
0056      WRITE (7) RECIN
0057      LINEC = LINEC + 1
0058      DRC = DRC - 1
0059      START = 1
0060      IF (DRC .EQ. 0)  GO TO 2000
0061      IF (LINEC .NE. 0)  GO TO 30
      C
      C
0062      2000 CALL TFILE (A,I)
      C
0063      2005 ILYN = TO - FROM + 1
0064          IF (LINEC .EQ. 0)  ILYN = LCSV
0065          DRC = 1000
0066          START = FROMA
0067          REWIND 7
0068      40  CALL SPACE (START,RECIN)
0069          IF (FLAG .EQ. 1)  GO TO 3500
0070          READ (7) DSKREC
      C
0071      2010 RECOUT(2) = 32767
0072          RECNUM = RECNUM + 1
0073          RECOUT(1) = RECNUM
0074          CALL SWAB (RECOUT(1))
0075          DO 2020, I=1, RECSZ
0076      2020 RECOUT(I+2) = DSKREC(I)
0077          RECOUT(RECSZ+3) = 0
0078          RECOUT(RECSZ+4) = 0
0079          RECOUT(RECSZ+5) = 0
0080          DO 2030 I = 1, RECSZ
0081      2030 RECOUT(I+5+RECSZ) = RECIN(I)
0082          JBWC = (RECSZ*2)+8
0083          RECOUT(RECSZ*2+6) = 0
  
```

```

0084 RECOU7(RFC SZ+2+7) = 0
0085 RECOU7(RFC SZ+2+8) = 0
      C
0086 CALL TWRIT (9,RECOU7,JBWC)
      C
0087 I L I N = I
0088 DRC = DRC = 1
0089 IF (DRC .EQ. 0) GO TO 3000
0090 START = 1
0091 IF (I L I N .NE. 0) GO TO 40
      C
      C
0092 3000 REWIND 7
0093 IF (L I N E C .EQ. 0) GO TO 3400
0094 FROMA = FROMA + 1000
0095 REWIND 7
0096 LCRV = L I N E C
0097 IF (PASS .EQ. 2) GO TO 3100
0098 CALL TRWD (8)
0099 GO TO 25
0100 3100 CALL TFILE (A,2)
0101 CALL TFILE (A,1)
0102 GO TO 25
      C
      C
      C
0103 3400 CALL TFILE (A,1)
0104 3500 CALL TFOF (9)
0105 REWIND 7
0106 IF (PASS .EQ. 2) GO TO 9000
0107 PASS = 2
0108 L I N E C = TO - FROM + 1
0109 GO TO 22
      C
      C
      C
      C
0110 1000 RECOU7(2) = 32767
0111 RECNUM = RECNUM + 1
0112 RECOU7(1) = RECNUM
0113 CALL SWAP (RECOU7(1))
0114 DO 1010 I=1,RECSZ
0115 1010 RECOU7(I+2) = RECIN(I)
0116 RECOU7(RECSZ+3) = 0
0117 RECOU7(RECSZ+4) = 0
0118 RECOU7(RECSZ+5) = 0
0119 JBWC = RECSZ+5
      C
0120 CALL TWRIT (9,RECOU7,JBWC)
      C
0121 L I N E C = L I N E C + 1
0122 START = 1
0123 IF (L I N E C .EQ. 0) GO TO 1500
0124 CALL SPACE (START,RECIN)
0125 IF (F I A G .EQ. 1) GO TO 1500
0126 GO TO 1000

```

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B-5  
16

```
0127 1500 CALL TEOF (9)
0128 IF (PASS .EQ. 0) GO TO 9000
0129 PASS = PASS + 1
0130 LINEC = TO - FROM + 1
0131 IF (FLAG .EQ. 1) GO TO 22
0132 CALL TFILE (A,1)
0133 FROMA = FROM + 1
0134 GO TO 22

C
C
C
0135 9000 RECOU(1) = OUTTN
0136 DO 9100 I=1,199
0137 RECOU(I) = 0
0138 CALL SWAR (RECOU(1))

C
0139 CALL TWRIT (9,RECOU,200)
0140 CALL TEOF (9)
0141 CALL TRWD (9)
0142 CALL TRWD (8)
0143 REWIND 7

C
C
C
0144 TYPE 9900
0145 9900 FORMAT (1H0,'IRIN COMPLETED')
0146 TYPE 9940
0147 9940 FORMAT (1H0,'FURTHER PROCESSING REQUIRED ? ')
0148 ACCEPT 9950, ANS
0149 9950 FORMAT (A2)
0150 IF (ANS .EQ. 'YS') GO TO 1

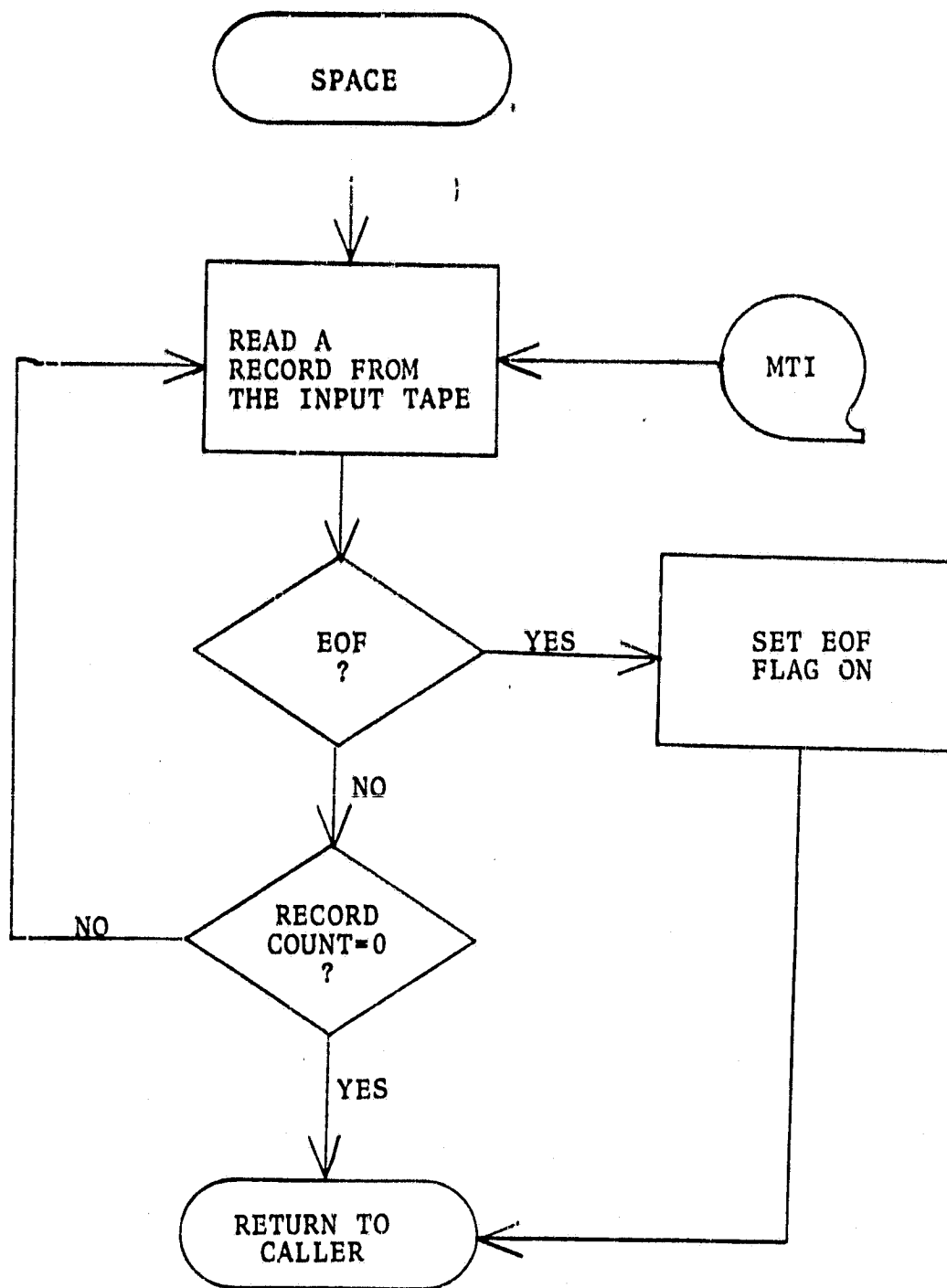
C
C
C
0151 END
```

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17

APPENDIX C





APPENDIX D

```
0001 SUBROUTINE SPAPE (START,RECIN)
      C
      C SPACE INPUT TAPE FORWARD REQUESTED NUMBER OF RECORDS
      C
0002      IMPLICIT INTEGER (A-Z)
0003      COMMON /WORDS/DECSZ,FLAG
0004      COMMON /STATUS/IBWC(2)
0005      DIMENSION RECIN(1000)
      C
0006      IBS = DECSZ
0007      10 CALL TREAD (A,RECIN,IBS)
0008         CALL TSTAT (A,IJSTAT,RESDU)
0009         FLAG = 0
0010         IF (IAND(IJSTAT,'200) .NE. 0) GO TO 20
0011         START = START + 1
0012         IF (START .NF. 0) GO TO 10
0013         RETURN
0014      20 TYPE 30
0015      30 FORMAT (1H0,'END-OF-GD-FILE')
0016         FLAG = 1
0017         RETURN
0018         END
```

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