COMPUTER TECHNOLOGY

DR. JOHN MANIOTES
COMPUTER TECHNOLOGY DEPT.
PURDUE UNIVERSITY
CALUMET CAMPUS
HAMMOND, IND 46323
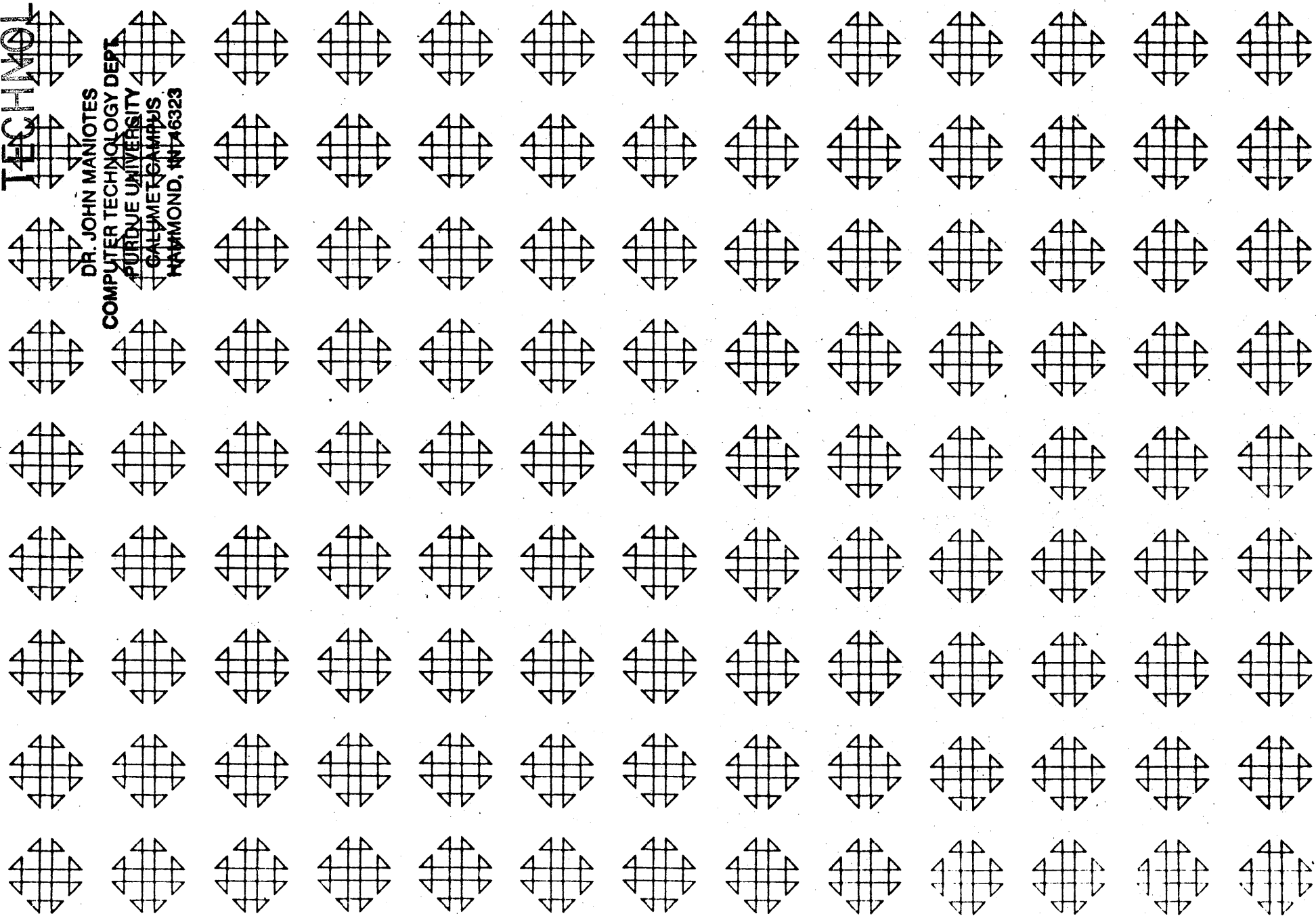
DISCLAIMER

Although each program has been tested by its contributor,
no warranty, express or implied, is made by the contributor
or any User's Group, as to the accuracy and functioning of
the program and related program material, nor shall the fact
of distribution constitute any such warranty, and no responsibility
is assumed by the contributor or any User's Group, in connection
therewith.

COMMON USERS GROUP PROGRAM REVIEW AND EVALUATION
(fill out in typewriter, ink or pencil)

Program No._____   Date_____

Program Name:_____

1. Does the abstract adequately describe what the program is and what   Yes____ No____
   it does?
   Comment_____

2. Does the program do what the abstract says?   Yes____ No____
   Comment_____

3. Is the description clear, understandable, and adequate?   Yes____ No____
   Comment_____

4. Are the Operating Instructions understandable and in sufficient detail?   Yes____ No____
   Comment_____
   Are the Sense Switch options adequately described (if applicable)?   Yes____ No____
   Are the mnemonic labels identified or sufficiently understandable?   Yes____ No____
   Comment_____

5. Does the source program compile satisfactorily (if applicable)?   Yes____ No____
   Comment_____

6. Does the object program run satisfactorily?   Yes____ No____
   Comment_____

7. Number of test cases run____. Are any restrictions as to data,
   size, range, etc. covered adequately in description?   Yes____ No____
   Comment_____

8. Does the Program meet the minimal standards of COMMON?   Yes____ No____
   Comment_____

9. Were all necessary parts of the program received?   Yes____ No____
   Comment_____

10. Please list on the back any suggestions to improve the usefulness of the program.
    These will be passed onto the author for his consideration.

Please return to: Your Name _____

     Miss Gaye Baber   Company   _____
     Research Division
     National Education Association   Address   _____
     1201 Sixteenth Street, N.W.
     Washington, D.C. 20036   Users Group Code _____

THIS REVIEW FORM IS PART OF THE COMMON ORGANIZATION'S PROGRAM REVIEW AND
EVALUATION PROCEDURE. NONMEMBERS ARE CORDIALLY INVITED TO PARTICIPATE
IN THIS EVALUATION.

1/13/67

B
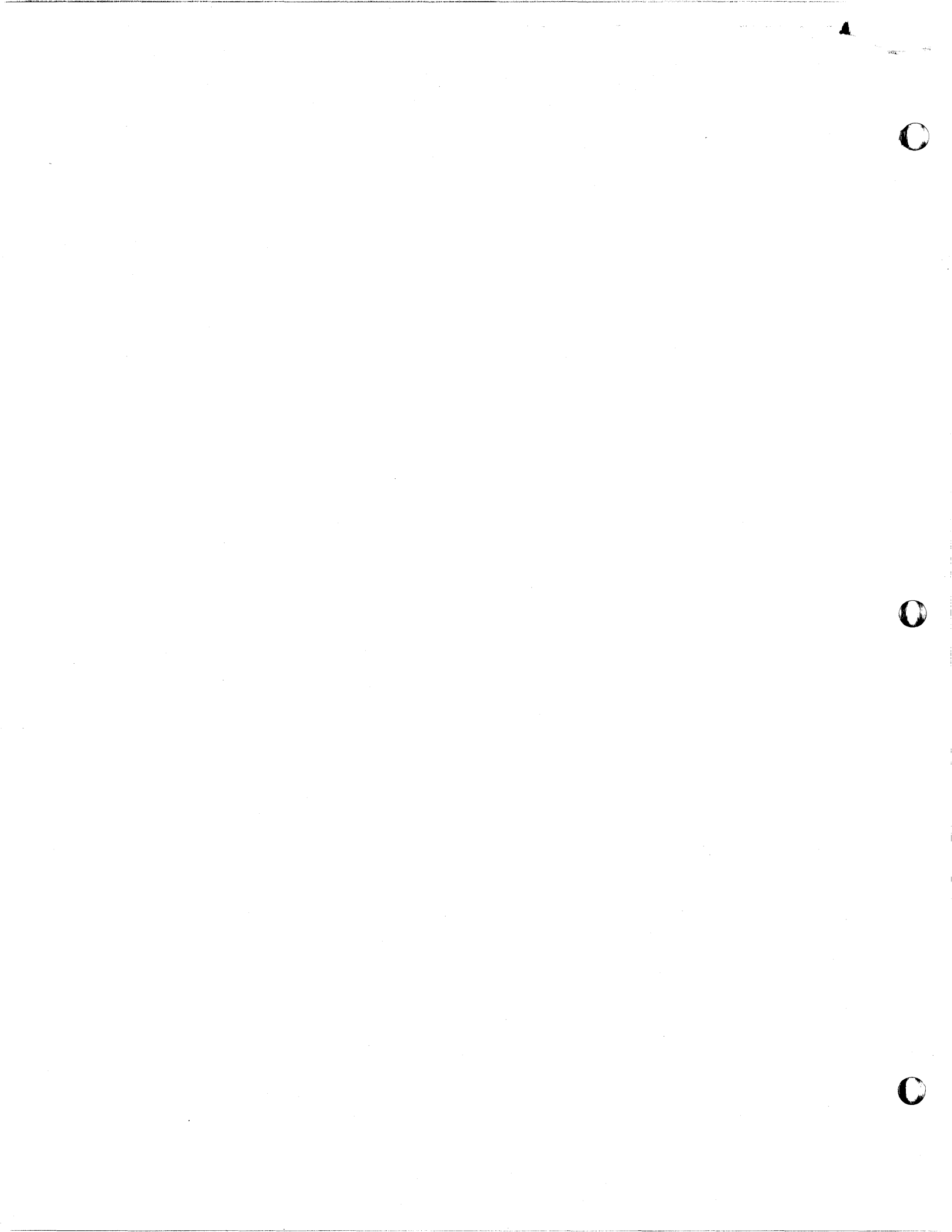
Modified Fortran for
Monitor I, Version 2

Author:

David L. Wilson
Engineering Computing Laboratory
University of Wisconsin
Madison, Wisconsin 53706

Direct Inquiries to:

Prof. C. H. Davidson, Director
Engineering Computing Laboratory
University of Wisconsin
Madison, Wisconsin 53706

Users Group Code: 3155

Date: 12-27-66

Modifications or revisions to this program, as they occur, will be announced in the appropriate Catalog of Programs for IBM Data Processing Systems. When such an announcement occurs, users should order a complete new program from the Program Information Department.

Program Abstract

Title: Modified Fortran for Monitor I, Version 2

Author: David L. Wilson
Engineering Computing Laboratory
University of Wisconsin
Madison, Wisconsin 53706

Date: 12-27-66

Users Group Code: 3155

Direct Inquiries to: Prof. C. H. Davidson, Director
Engineering Computing Laboratory
University of Wisconsin
Madison, Wisconsin 53706
Phone: 608-262-6945

Description / Purpose:

Modified Fortran has free format, variable format, improved execution time diagnostics, improved trace output, and P scaling. All statement map option has been removed.

Specifications:

Storage: 20K

Equipment: 1620 Model I, Card Input-Output, 1 Disk Drive, Automatic divide, Indirect addressing, 1443 Printer.

Program Language: SPS II-D

Additional Remarks:

Do not insert IBM's modifications to Deck #8. This Fortran does not include modification #3 because of core conflict.

DECK LABELING SHEET

BASIC

Deck Number	Sequence Number Range	Description
1	50000-51987	Object deck for modified Fortran--replaces deck #8 in Monitor object
2	bbbbb-03054	Object decks for new library Functions--run under Monitor control

OPTIONAL

1 (optional)	00010-04550	Source--Phase 1-A
2 (optional)	00010-32090	Source--Phase 1-B
3 (optional)	00010-33920	Source--Phase 2
4 (optional)	00010-01540	Source--diagnostic library subprogram
5 (optional)	00010-02500	Source--variable format library subprogram
6 (optional)	00010-02690	Source--free format library subprogram

Optional material will be sent only when specifically requested.

Program Writeup for:

Modified FORTRAN II-D for Monitor I Ver. 2 which will hereafter

be referred to as "Modified Fortran."

A. Misc. Data

Date:	December 1966
Author:	David L. Wilson Engineering Computing Lab. University of Wisconsin Madison, Wisconsin 53706
Phone:	608-262-6945
Users Group Membership Code:	3155

B. Program Description

It is assumed that the reader is   familiar with IBM's
FORTRAN II-D as described in the Monitor I manual. The only feature which
has been removed from FORTRAN II-D on the Modified Fortran is the All
Statement Map option. The new features include Free Format (as in FORGO),
Variable Format (format read at execution time), Improved execution time
diagnostics (including detection of most undefined variables), improved
trace output (including the use of BEGIN TRACE and END TRACE as in PDQ
Fortran), and P scaling.

1. Free Format

In order to relieve the programmer (esp. the beginning programmer) of
the necessity of coding FORMAT statements in his programs, the free format
is provided. i.e.

READ, A

will read the first number on the card into the variable A. If the data
on the first record is not enough to satisfy the input/output statement
the free format routine will move onto the next record. Numbers may be
punch on the input card any way you like (i.e. 1, 1.0, .1E1, 10E-1 will
all be accepted as floating point ones. Only the first will be accepted as
a fixed point one.). Numbers must be separated by a comma and/or by one
or more spaces. A number may not continue from one card onto the next.
All 80 columns of the input card (or all 84 input positions from the type-
writer) are processed.

Output in free format will output as much as six numbers per card, seven
per typewriter line, and ten or twelve per printer line (depending on width
of printer line). Fixed point output format is I12. Floating point output
format is 1PE12.4 after rounding.

The error messages are

ER R1 -- ALPHABETIC DATA ON CARD
ER R2 -- TWO DECIMAL POINTS IN ONE NUMBER
ER R3 -- EXPONENT OUT OF RANGE
ER R4 -- UNDEFINED FLOATING POINT NUMBER
ER R5 -- UNDEFINED FIXED POINT NUMBER
ER R6 -- FIXED NUMBER TO LARGE
ER R7 -- FIXED NUMBER CONTAINS ., E, ETC.
ER R8 -- OVER 28 SIGNIFICANT DIGITS
ER R9 -- NO NUMBER BETWEEN COMMAS

2. Variable Format

Sometimes a programmer doesn't know what his data (or his output for that matter) will look like until execution. To handle this problem a variable format option has been included in FORTRAN. It is used as follows:

READ I, A.

where I is the name of the array which contains the FORMAT in double digit alphabetic coding. As shown above, the variable A will be read under the format in array I. In decoding the format everything before the first left paranthesis is ignored, as is everything after the right parenthesis which is paired with the first left parenthesis.

The array containing the format is assumed to be packed. In the 1620 each alphabetic character of the format occupies two digits. (i.e. an A is 41.) When these are read under A format, these characters are placed in the high order digits of the number. If it is a floating number, the exponent is set to zero. Thus at standard precision an A will read into a fixed point number as 4100 as into a floating point number as .41. The number of alphabetic characters per variable array element should equal the length (not counting the exponent in floating point variables) divided by two (ignore the remainder in case of odd length). However, EXCEPT FOR HOLLERITH FORMAT, an unpacked version will be interpreted correctly. At standard mantissa length the array would be packed if it contains two alphabetic characters per element in a fixed point array or four alphabetic characters per element in a floating point array.

The format is compiled into the array between the last subroutine loaded and the low position of common. Because of this there is a chance for overlap at execution time. In this case 'FORMAT OVERLAP' is typed and execution is halted. If there was any syntax (punctuation) error in the format, the computer will type out 'FORMAT ERROR' and call exit if the array containing the format was floating, otherwise it will do its best to patch up the error and continue execution.

Since the high core loaded indicator is not properly updated by the loader when LOCAL subprograms are used, variable format should not be used with LOCALS unless the last LOCAL loaded was the largest.

At the present time, the variable format routine does not accept P scaling.

3. Improved Execution Time Diagnostics

There is in the Modified Fortran, two different modes for compiling a program. The first is the production run mode where the program is compiled the same way as IBM Fortran II-D; the second is diagnostic mode which is intended for programs which have not yet been debugged. In the Modified Fortran, diagnostic mode is normal. If one is running a program which has been debugged, he should include a *NO DIAGNOSTICS control record.

A program compiled in diagnostic mode takes up a great deal more core than one that is not. Namely 12 extra core for every executable statement with the exception of a simple GO TO, plus 1504 core for an extra library subroutine which will be automatically called.

During execution in diagnostic mode, any non input--output error message will be preceeded by the statement and line number of the FORTRAN statement in which the error occurred. e.g.

0102+05 ER A1

would mean that an undefined variable was detected on the fifth statement following the statement which has the statement number 0102. Dimension, Common, and Equivalence statements, as well as comment and continuation cards, are not included in the line count. 0000+01 would refer to the first statement in the program, excluding Dimension, Common, and Equivalence statements. The line counter cannot exceed 19. After 19 is reached the count starts over at 10. i.e. an error at 0050+13 could actually refer to the statement which was 23 statements past the statement with the statement number 0050.

Two new error messages have been added when in diagnostic mode. ER A1 indicates that an undefined variable has been detected. However, not all undefined variables are found. (Only those variables which are transmitted by the Fortran TOFAC routine are checked). ER A2 indicates that the overflow indicator was on when the statement was finished. This also indicates an undefined variable. It is possible to get ER A1, ER A1 again if the statement is traced, and ER A2 all from the same undefined variable in the same statement. ER A2 can be caused by something other than an undefined variable. e.g. using an SPS written subprogram which turns on the overflow indicator but does not turn it off before it exits. Another common result of having the overflow indicator unexpectedly turned on is invalid division by zero error messages (esp. ER E7).

4. Improved Trace

Trace instruction will now be compiled only between BEGIN TRACE and END TRACE statements. One may have as many of these statements in a program as he desires. The END card will also act as an END TRACE. Thus if one wanted to trace the whole program, he could put a single BEGIN TRACE at the beginning of the program. Sense switch 4 still controls trace output at execution. Both sense switch 4 must be on and trace instructions compiled in order to get any trace output. BEGIN TRACE and END TRACE are NOT executable instructions.

They are merely directives to the compiler to either start compiling trace
instructions or stop compiling trace instructions. Tracing costs 12 extra
core for every IF statement for which the trace instruction is compiled.

If one wants to trace only arithmetic statements, an *ARITHMETIC TRACE control
card should be included. Likewise, if one wants to trace only IF statements,
an *IF TRACE control card should be included. In either case a BEGIN TRACE
is still required. Including neither control card is equivalent to including
both control cards.

If the program being traced was compiled in diagnostic mode the trace output
will include statement and line numbers. (The peculiarities of the statement
and line number counter are mentioned in section 3 above.) Trace output in
diagnostic mode is store up and printed in groups of five statements for a
floating point mantissa length of 8. Trace output will never exceed 120
positions in width. All numbers from the trace are put out in source langu-
age form. Early printing of trace output will be forced by the execution
of any of the following: non-disk input/output statement, computed Go To,
STOP, END, PAUSE, RETURN, or an error message.

5. P-scaling

P-scaling has been implemented for E format output only. Using
P scaling one can specify the number of places before the decimal point,
as well as the number of places after the decimal point for E format output.
For example: 1PE20.4 would mean place 1 digit before the decimal point
and 4 after the decimal point. The output will be right justified in the
20 column field. Thus, 1PE20.4 would be equivalent to 9X, E11.4 in 1620
FORTRAN II-D. The number preceding the P can be any unsigned integer
constant. When present the P must immediately precede the E. Once a P
scale factor occurs in a format, all following E formats in that format
statement will use that scaling factor until another P-scaling factor
appears. If there is no P-scaling factor present, the E formats are com-
piled the same way IBM FORTRAN II-D does it. Thus:

FORMAT(E20.4, 1PE20.4, OP E20.4, 2E20.4)

would be equivalent to

FORMAT (E20.4, 9X, E11.4, 10X, E10.4, 2 (10X, E10.4)).

6. STOP and END change

The object coding for the STOP and END statements has been changed to that
of a CALL EXIT. Thus, the STOP and END statements no longer halt when
executed, but return directly to monitor. The STOP statement no longer
prints STOP. This saves 36 core for every STOP statement in the program,
and 12 core for the END statement.

C. Operating Procedure

The first deck replaces deck #8 of the Monitor object. It should be loaded
using the Monitor loader (deck #1 of the monitor object). The second deck
contains the object deck for the three new library subprograms, including
monitor control card. This deck should be run under Monitor control.

D. EQUIPMENT REQUIRED

Indirect Addressing, Auto Divide, a Disk Drive, and a Printer.

E. Assemblers used:

SPS II-D and AFIT SPS. All op codes used, however, are in SPS II-D.

Warning: Do not insert any of IBM's corrections to Phase 1-A, Phase 1-B,
or Phase 2 of the FORTRAN compiler (deck #8).

Technical Documentation:

All sections of the compiler which have been modified are preceeded by a card with asterisks across it and followed by a card with periods across it. If the change involved only a deletion, a card with dollar signs across it is inserted.

An explanation of the changes made follows:

A. Phase 1-A

Card 00230 — The digit for calling the diagnostic mode debugging routine is initially on.

Cards 02180-02190 — The digit is turn off only if a *NO DIAGNOSTICS control card is found

Cards 02422-02428 — If neither the arithmetic trace switch nor the if trace switch is on at the exit from phase 1-A, turn both switches on. This is not as drastic as it sounds since no trace instructions will be compiled unless there is a BEGIN TRACE in the program.

B. Phase 1-B

Cards 03022-03028 — The first three letters (in double digit coding) of END TRACE and BEGIN TRACE preceeded by the place to go. Since one END TRACE is processed in the END statement routine (see below) previous to this point, the compiler goes directly to the next statement. BEGIN TRACE is processed later in the NONARA routine.

Cards 08442-08453 — Check for END TRACE before processing END statement. If it is an END TRACE the intermediate output will look like: $\overline{0}153\overline{0}140\overline{0}13\overline{2}$.

Cards 08640-08650 and 09040-09050 — Disk assignment of block 1 and block 6 have been switched to create more room in block 1.

Cards 12495-14243 — Changes for P-scaling. The compiler delays the output of an E format into the intermediate output until it is determined if P-scaling is required. Assume a format of Ew.d and a P-scaling factor of p. Then if w' = d + p + 6 and x = w - w' then the format of xX, Ew'.d will create the desired effect using the implied scaling factor of the incore subs. Thus x is calculated and if it is strictly positive an X format specification is placed into the intermediate output ahead of an E format with the reduced width specification. If x is zero or negative, the E format is put into the intermediate format the same way IBM does it. Thus, by using an assumed scale factor of 998, the compiler is assured that, unless a P-scale factor is specified, x will always be negative and all E formats will be compiled as IBM does them.

Cards 14812-14817 — The intermediate output code for BEGIN TRACE would be: $\overline{0}154\overline{0}140\overline{0}13\overline{2}$. The intermediate output codes of 153 and 154 appear to also be in use for function calls. However, since these codes do not occur at the beginning of an intermediate output string, there is no possibility for confusion.

Cards 25485-2552B — The usually intermediate output for a non-disk input/output statement such as READ 10, A could be: $\overline{0}112\overline{1}989\overline{0}123\overline{1}977\overline{0}13Z$ where

$\overline{0}112$ means this is a READ

$\overline{1}989$ means that the symbol table entry in digits 19890-19899 refer to statement number 10.

$\overline{0}123$ is the coding for a comma

$\overline{1}977$ is the first four digits of the symbol table entry for A.

$\overline{0}13\overline{2}$ is the "semi-colon" which separates intermediate output strings.

Now READ, A could be coded as: $\overline{0}112\overline{9}999\overline{0}123\overline{1}977\overline{0}13\overline{2}$

And Read IFOR, A could be coded as: $\overline{0}112\overline{9}998\overline{0}123\overline{1}966\overline{0}123\overline{1}977\overline{0}13\overline{2}$ where

$\overline{9}999$ is a pseudo code for free format

$\overline{9}998$ is a pseudo code for variable format

$\overline{1}966$ is the first four digits of the symbol table entry for IFOR.

The patching done to the CSORN routine is used to make sure the variable used for variable formatting is dimension (otherwise an ERROR 26 will result).

C. Phase 2

Cards 60764-00796 — This routine removes intermediate output from disk. The ADSL and GETX routines have been eliminated.

Cards 00797-00797 and 00931-00931 — Process the BEGIN TRACE and END TRACE statements.

Cards 00932-00937 — Output a BTM to the diagnostic subroutine with the statement and line counter in the Q address as SSSSI where SSSS is the statement number and I is the line counter, where I is flagged if the count is over 10, if the program is in diagnostic mode and there is not a statement number coming up for processing.

Card 01485 — Save statement number for statement and line counter.

Card 01670 — Go back to generate diagnostic statement after processing statement number. Since FORMAT statements result in a branch at card 01660, there will not be a diagnostic statement generated for FORMATS.

Cards 12835-12955 and 19327-19330 — Do not generate trace instructions unless TRCSW has been set by a BEGIN TRACE.

Cards 18040-18050 and 22554-22556 — Force trace output at execution time if in diagnostic mode. Diagnostic mode is indicated by a digit at UFSTR + 27. The TFM-NEXT, 0 moves a four digit zero into the Q address of the instruction immediately preceeding in the output buffer, namely the diagnostic instruction. When executed this will cause the trace routine to empty the contents of its output area if it is not already empty.

Cards 18203-18207 Dorg back over diagnostic statement for a simple GOTO if
this is in diagnostic mode.

Cards 18573-18577
 and 20073-20077
 and 23746-23748 Force trace output for PAUSE, STOP, END, computed GOTOs and
for non-disk input-output statements.

Cards 23751-23756 Linkage to free format routine is as follows:
```
    BTM  -2393, *
    BTM  IOENT, 0, 10
    etc.
```
where -2393 is the indirect entry to the free format routine
IOENT is the entry in the incore subs corresponding to the
    indicated I/O device.
etc. the rest of the code is as for a standard I/O statement.

Cards 23758-2375E Linkage to variable format routine is:
```
    TFM  PAR, ISIZE
    BTM  -2388, ARRAY
    BT   IOENT, 434
    etc.
```
where   PAR   is a five digit storage location in the incore
                  subs.

          ISIZE is the number of elements in the array which
                  has the format

          -2388 is the indirect entry to the variable format
                  routine.

          ARRAY is the address of the first element of the array
                  which contains the format.

          IOENT is the entry in the incore subs corresponding
                  to the indicate I/O device.

          434   is the high core indicator (which will contain
                  the address of the beginning of the compiled
                  format).

Cards 27193-27197 Dorg back over the diagnostic instruction for FUNCTION and
SUBROUTINE declarations.

```
*PUNCH RESEQUENCED SOURCE DECK
*LIST PRINTER
*OUTPUT CARD
*PRINT SYMBOL TABLE
(ID) ** FORTRN FREE FORMAT INPUT/OUTPUT LIBRARY SUB
*LIBR
*STORE RELOADABLE
*ID NUMBER 0039
*ASSEMBLE  RELOCATABLE
*ERROR STOP
```

12

```
PROPUT 00316R    PROGET 01044R    NUMER2 02640R    NEWRET 00308R    MATRIX 06518
LPTEST 01500R    FORMAT 00277R    EPTEST 02696R    EPFORM 00720R    COMPSW 05750
COMPLT 07006     ARRAY2 02276R    ADDEXP 02708R    ADCOW  00005R    AM     02288R
 AR    01616R     ARR   00604R     ARRAY 02204R    BACK   00792R    BB     02336R
 BZ    01736R     CYC   01112R     DECIM 01540R    EFORM  02424R    ER     01344R
ERMES  01363R    ERROR 01384R     FR3   02052R    ER6    01172R    ER7    01596R
 EXP   01606R    EXPAD 00896R     EXPSN 00898R    EXP2   02768R    F      02219
 FAC   02492     FIXFL 01111R      FL   01992R    FLOAT  00612R    FM1MF  03313
FP1MK  03283      FSR  02120R      GAD  01007R    GETSW  06061     HERE   02370R
INPUT  06179      LOUP 00078R      LP   01440R    MANSN  00899R    MAX2   06145
MINUS  01520R     MORE 00254R     NOER  01192R    NONEW  00352R    NOP    00443R
 NUM   01236R    NUMER 01712R     NUM2  02560R     ON    00158R    ONE    01391R
 OUT   00931R     PAR  03378      PERM  00977R    PLACE  05820     PLUS   01816R
PLUS2  02684R     PRO  00984R     READ  00006R    SLASH  06676     SWC    06090
 SWF   05969      TEST 01216R     THERF 01766R    TRANS  02156R    TSTFL  01840R
UNDFX  00436R     VAR  00983R     WELL  00502R    WELLP  00484R    WHAT   00284R
ZERO   02404R     3OZ  02403R
```

13

```
00010        DSA    READ                                          00004 00005 -0006
00020 READ   TR     -ADCOW,NOP          ,,,NOP CALLING INSTRUCTION  00006 LJ 0000N 00443
00030 ADCOW  DS     ,READ-1             ,,,CORE STORAGE ADDRESS     00005 00000
00040 FAC    DS     ,2492               ,,,WORK AREA                02492 00000
00050        TFM    FSR+11,FAC-32       ,,,SET UP FLOAT SHIFT RIGHT 00018 J6 02131 -2460
00060        A      FSR+11,2219         ,,,                         00030 K1 02131 02219
00070        AM     ADCOW,23,10         ,,,MOVE TO Q ADDRESS        00042 J1 00005 000K3
00080        TFM    -ADCOW,FORMAT-5     ,,,                         00054 J0 0000N -0272
00090        AM     ADCOW,7,10          ,,,START CHECKING THOSE ADDRESSES  00066 J1 00005 000-7
00100 LOOP   BNF    ON,-ADCOW           ,,,NEGATIVE ADDRESS MUST BE SUBSCRIPTING  00078 MM 0015R 0000N
00110        CM     -ADCOW,-7400        ,,,                         00090 J4 0000N -740-
00120        BL     MORE                                           00102 M7 00254 01300
00130        AM     ADCOW,7,10          ,,,START LOOKING FOR NEXT INSTRUCTION  00114 J1 00005 000-7
00140        AM     ADCOW,10,10         ,,,                         00126 J1 00005 000J0
00150        BNR    *-12,-ADCOW         ,,,                         00138 MN 00126 0000N
00160        B7     LOOP-12             ,,,                         00150 M9 00066 00000
00170 ON     CM     -ADCOW,COMPLT       ,,,IS THIS THE END          00158 J4 0000N -7006
00180        BE     BB                  ,,,YES START EXECUTION      00170 M6 02336 01200
00190        CM     -ADCOW,SWC          ,,,CHECK FOR SIMPLE VARIABLE ENTRY   00182 J4 0000N -6090
00200        BNE    *+24                ,,,                         00194 M7 00218 01200
00210        TFM    -ADCOW,PRO          ,,,YES - SUBSTITUTE ADDRESS 00206 J0 0000N -0984
00220        CM     -ADCOW,MATRIX       ,,,IS THIS ARRAY ENTRY      00218 J4 0000N -6518
00230        BNE    *+24                ,,,                         00230 M7 00254 01200
00240        TFM    -ADCOW,ARRAY        ,,,YES - SUBSTITUTE ADDRESS 00242 J0 0000N -2204
00250 MORE   AM     ADCOW,12,10         ,,,ONWARD TO THE NEXT P ADDRESS  00254 J1 00005 000J2
00260        B7     LOOP                ,,,                         00266 M9 00078 00000
00270 FORMAT DSA    BB,WHAT                                         00277 00005 -2336
                                                                    00282 00005 -0284
00280 WHAT   SM     SWF,5,10            ,,,                         00284 12 05969 000-5
00290        BD     PROPUT,GETSW        ,,,BRANCH IF WRITE          00296 M3 00316 06061
00300 NEWRET B7     TEST                ,,,                         00308 M9 01216 00000
00310 COMPLT DS     ,7006               ,,,                         07006 00000
00320 MAX2   DS     ,6145                                          06145 00000
00330 SWC    DS     ,6090               ,,,                         06090 00000
00340 MATRIX DS     ,6518               ,,,                         06518 00000
00350 SWF    DS     ,5969               ,,,                         05969 00000
00360 COMPSW DS     ,5750               ,,,                         05750 00000
00370 PLACE  DS     ,5820               ,,,NEXT PLACE ON RECORD--LAST  05820 00000
00380 GETSW  DS     ,6061               ,,,1 FOR WRITE, 0 FOR READ--RWEFSW  06061 00000
00390 INPUT  DS     ,6179               ,,,I/O AREA--INH            06179 00000
00400 SLASH  DS     ,6676               ,,,                         06676 00000
00410 F      DS     ,2219               ,,,                         02219 00000
00420 PAR    DS     ,3378               ,,,                         03378 00000
00430 PROPUT AM     PLACE,24,10                                     00316 11 05820 000K4
00440        C      PLACE,MAX2          ,,,IS I/O AREA FULL         00328 24 05820 06145
00450        BH     SLASH                                          00340 46 06676 01100
00460 FP1MK  DS     ,3283               ,,,HIGH ORDER OF A FIXED NUMBER  03283 00000
00470 FM1MF  DS     ,3313               ,,,HIGH ORDER OF A FLOATING NO.  03313 00000
00480 NONEW  TDM    COMPSW,0            ,,,FORCE OUPUT              00352 15 05750 00000
00490        CF     -FM1MF              ,,,CLEAR HIGH ORDER FLAGS   00364 33 0331L 00000
00500        CF     -FP1MK              ,,,CLEAR HIGH ORDER FLAGS   00376 33 032RL 00000
00510        TF     FAC,-VAR            ,,,MAVE THE VARIABLE INTO FAC  00388 2N 02492 009RL
00520        SM     VAR,2,10        ,,,                             00400 J2 00983 000-2
00530        TF     FAC-2,-VAR                                     00412 2N 02490 009RL
00540        BNF    FLOAT,FIXFL         ,,,GOTO FLOATING OUPUT ROUTINE IF NEEDED  00424 MM 00612 01111
00550 UNDFX  TDM    ERROR-3,5           ,,,UNDEFINED FIXED NUMBER ER R5  00436 J5 0138L 00005
00560 NOP    DSC    3,418,*-4           ,,,                         00443 00003
00570        BNF    ERROR  ,-FP1MK      ,,,CHECK FOR HIGH ORDER FLAG  00448 M4 0138L 0328L
00580        TFM    WELL,OUT+22         ,,,MOVE IN FIXED POINT NUMBER  00460 J0 00502 -0953
```

                                                                        14

```
00590        CF     -FP1MK                                         00472 33 032RL 00000
00600 WELLP  TD     GAD,FAC                                        00484 K5 01007 02492
00610        TF     *-*,GAD                                        00496 2N 00000 01007
00620 WELL   DS     ,*-5                                           00502 00000
00630        TF     FAC,FAC-1                                      00508 26 02492 02491
00640        SM     WELL,2,10                                      00520 J2 00502 000-2
00650        CM     FAC,0,10                                       00532 14 02492 000-0
00660        BNE    WELLP                                          00544 M7 00484 01200
00670        BNF    *+24,OUT+22                                    00556 MM 00580 00953
00680        TFM    -WELL,20,10                                    00568 J6 0050K 000K0
00690        CF     OUT+22                                         00580 L3 00953 00000
00700        TF     -PLACE,OUT+24       ,,,                        00592 2N 0582- 00955
00710 ARR    BB     ARRAY2              ,,,ARRAY CONTOL SWITCH      00604 M2 02276 00000
00720        DORG   *-4                 ,,,                        00611
00730*                                  ,,,
00740 FLOAT  TDM    ERROR-3,4           ,,,                        00612 J5 0138L 00004
00750        BNF    ERROR  ,FAC-1       ,,,CHECK IF FLOATING NUMBER IS DEFINED  00624 M4 0138L 02491
00760        BNF    ERROR  ,-FM1MF      ,,,                        00636 M4 0138L 0331L
00770        TF     OUT+22,PERM                                    00648 KN 00953 00977
00780        TF     99,FAC-2            ,,,MOVE MANTISSA           00660 26 00099 02490
00790        TF     -FSR-11,99                                     00672 K6 0213J 00099
00800        BNF    *+36,FAC-2          ,,,CHECK FOR NEGATIVE      00684 M4 00720 02490
00810        TDM    OUT+1,2,11          ,,,YES - PLACE MINUS       00696 J6 00932 0000K
00820        CF     -FSR-11                                        00708 L3 0213J 00000
00830 EPFORN CM     FAC,-99,10          ,,,CHECK FOR A ZERO        00720 14 02492 000RR
00840        BE     *+24                                           00732 M6 00756 01200
00850        SM     FAC,1,10            ,,,ADJUST EXPONENT FOR OUTPUT  00744 12 02492 000-1
00860        AM     FAC-26,5,10         ,,,ROUND ANSWER            00756 11 02466 000-5
00870        BNV    BACK                ,,,CHECK FOR ALL NINES     00768 M7 00792 01400
00880        TFM    FAC-27,99999        ,,,RESTORE NINES           00780 16 02465 R9999
00890 BACK   TD     OUT+4,FAC-31        ,,,MOVE IN THE NUMBER      00792 K5 00935 02461
00900        CF     OUT+4                                          00804 L3 00935 00000
00910        TD     OUT+14,FAC-27                                  00816 K5 00945 02465
00920        TD     OUT+12,FAC-28                                  00828 K5 00943 02464
00930        TD     OUT+10,FAC-29                                  00840 K5 00941 02463
00940        TD     OUT+ 8,FAC-30                                  00852 K5 00939 02462
00950        BNF    *+24,FAC                                       00864 M4 00888 02492
00960        TDM    OUT+17, 2           ,,,NEGATIVE EXPONENT       00876 J5 00948 00002
00970        CF     FAC-1               ,,,                        00888 33 02491 00000
00980 MANSN  DS     ,*                  ,,,                        00899 00000
00990 EXPSN  DS     ,*-1                ,,,                        00898 00000
01000 EXPAD  DS     ,*-3                ,,,                        00896 00000
01010        TD     OUT+20,FAC-1                                   00900 K5 00951 02491
01020        TD     OUT+22,FAC                                     00912 K5 00953 02492
01030        B7     ARR-24                                         00924 M9 00580 00000
01040 OUT    DS     1                                              00931 00001
01050        DAS    11                                             00933 00022
01060        DSC    2,0                                            00954 00002
01070 PERM   DSAC   11, 0.0000E+00,                                00977 00022
01080        DS     5                   ,,,                        00982 00005
01090 PRO    TD     FIXFL,VAR                                      00984 KN 01111 00983
01100 VAR    DS     ,PRO-1              ,,,                        00983 00000
01110        CF     VAR                                            00996 L3 00983 00000
01120 GAD    DC     4,70,*                                         01007 00004
01130        BV     *                                              01008 M6 01008 01400
01140        TF     FAC,30Z             ,,,CLEAR FAC               01020 2N 02492 02403
01150        BD     PROPUT,GETSW        ,,,GOTO OUTPUT ROUTINE IF NEEDED  01032 M3 00316 06061
01160 PROGET TF     HERE,30Z            ,,,CLEAR THE INPUT AREA    01044 KN 02370 02403
01170        TFM    MANSN,1000          ,,,                        01056 J6 00899 -1000
```

                                                                        15

```
01180        TFM    EXP,0,8          ,,,RESET EXPONENT AREA          01068 J6 01606 0-000
01190        TFM    THERE,HERE-30    ,,,SET UP FOR RECOVERING NUMBER 01080 J0 01766 -2340
01200        TDM    BZ+1,6           ,,,SET UP PRECEDING ZERO SUPRESSION 01092 J5 01737 00006
01210        B7     TEST             ,,,                            01104 M9 01216 00000
01220 FIXFL  DS     1                                               01111 00001
01230 CYC    CM     -PLACE,0,10                                     01112 14 0582- 000-0
01240        BE     TEST-12          ,,,BRANCH IF IT IS A BLANK     01124 M6 01204 01200
01250        CM     -PLACE,23,10     ,,,                            01136 14 0582- 000K3
01260        BNE    NUM              ,,,BRANCH IF NOT A COMMA       01148 M7 01236 01200
01270        BNF    NOER,NOER+9      ,,,                            01160 MM 01192 01201
01280 ER6    TDM    ERROR-3,9        ,,,NO NUMBER BETWEEN COMMAS - ER R9 01172 J5 01381 00009
01290        B7     ERROR            ,,,                            01184 M9 01384 00000
01300 NOER   TDM    NOER+9,-1        ,,,INDICATE COMMA FOUND        01192 J5 01201 0000J
01310        AM     PLACE,2,10       ,,,MOVE ON                     01204 11 05820 000-2
01320 TEST   BNR    CYC,-PLACE       ,,,RECORD MARD - GET NEXT CARD 01216 M5 01112 0582-
01330        B7     SLASH            ,,,                            01228 49 06676 00000
01340 NUM    CM     -PLACE,69,10     ,,,IS IT NUMERIC               01236 14 0582- 00009
01350        TDM    NOER+9,0         ,,,RESET COMMA INDICATOR       01248 J5 01201 00000
01360        BH     NUMER            ,,,YES - BRANCH                01260 M6 01712 01100
01370        CM     -PLACE,3,10      ,,,CHECK FOR A PERIOD          01272 14 0582- 000-3
01380        BE     DECIM            ,,,                            01284 M6 01540 01200
01390        CM     -PLACE,10,10     ,,,CHECK FOR A PLUS SIGN       01296 14 0582- 000J0
01400        BE     PLUS             ,,,                            01308 M6 01816 01200
01410        CM     -PLACE,20,10     ,,,CHECK FOR A MINUS           01320 14 0582- 000K0
01420        BE     MINUS            ,,,                            01332 M6 01520 01200
01430 ER     TDM    ERROR-3,1        ,,,ALPHABETIC DATA ON CARD - ER R1 01344 J5 01381 00001
01440        B7     ERROR            ,,,                            01356 M9 01384 00000
01450 ERMES  DPRA   ,ERROR-11,S                                    01363 00005 -1373
                                                                   01368 00003 K6G
01460        DSAC   6,ER R1@,        ,,,                            01383 00012
01470 ERROR  K      ,951             ,,,ERROR PRINT OUT ROUTINE     01384 34 00000 00951
01480 ONE    DC     6,10000,*-4      ,,,                            01391 00006
01490        PUT    ERMES                                          01396 10 00565 -1419
                                                                   01408 4R 00532 -1363
01500        BD     ARR    ,GETSW    ,,,GO ON IF OUTPUT             01420 M3 06604 06061
01510        B7     LPTEST           ,,,                            01432 M9 01500 00000
01520 LP     CM     -PLACE,0,10      ,,,MOVE TO NEXT BLANK OR COMMA 01440 14 0582- 000-0
01530        BE     TSTFL            ,,,                            01452 M6 01840 01200
01540        CM     -PLACE,23,10     ,,,                            01464 14 0582- 000K3
01550        BE     TSTFL            ,,,                            01476 M6 01840 01200
01560        AM     PLACE,2,10       ,,,                            01488 11 05820 000-2
01570 LPTEST BNR    LP,-PLACE        ,,,                            01500 M5 01440 0582-
01580        B7     TSTFL            ,,,                            01512 M9 01840 00000
01590 MINUS  SF     MANSN            ,,,INDICATE NEGATIVE MANTISSA  01520 L2 00899 00000
01600        B7     PLUS             ,,,                            01532 M9 01816 00000
01610 DECIM  BD     *+32,EXPAD       ,,,CHECK FOR TWO DECIMAL POINTS 01540 ML 01572 00896
01620        TDM    ERROR-3,2        ,,,ER R2                       01552 J5 01381 00002
01630        B7     ERROR            ,,,                            01564 M9 01384 00000
01640        TFM    EXPAD,0,10       ,,,CLEAR EXPONENT ADD AREA     01572 J6 00896 000-0
01650        BNF    PLUS,FIXFL       ,,,CHECK IF FLOATING           01584 MM 01816 01111
01660 ER7    TDM    ERROR-3,7        ,,,NO ER R7                    01596 J5 01381 00007
01670 EXP    DC     4,0,*-1          ,,,                            01606 00004
01680        B7     ERROR            ,,,                            01608 M9 01384 00000
01690 AR     CM     -PLACE,0,10      ,,,IS IT BLEANK                01616 14 0582- 000-0
01700        BE     TSTFL            ,,,                            01628 M6 01840 01200
01710        CM     -PLACE,23,10     ,,,OR A COMMA                  01640 14 0582- 000K3
01720        BE     TSTFL            ,,,                            01652 M6 01840 01200
01730        CM     -PLACE,3,10      ,,,IS IT A PERIOD              01664 14 0582- 000-3
01740        BE     DECIM            ,,,                            01676 M6 01540 01200
```

16

```
01750        CM     -PLACE,69,10     ,,,IS IT NUMERIC               01688 14 0582- 00009
01760        BNH    EFORM            ,,,                            01700 M7 02424 01100
01770 NUMER  A      EXP,EXPAD        ,,,UP EXPONENT BY EXPAD        01712 KJ 01606 00896
01780        CM     -PLACE,70,10     ,,,IS IT ZERO                  01724 14 0582- 000P0
01790 BZ     BE     ZERO             ,,,THIS MAY BE A NOP           01736 M6 02404 01200
01800        TDM    BZ+1,1           ,,,MAKE IT A NOP               01748 J5 01737 00001
01810        TD     *-*,-PLACE       ,,,SAVE THAT DIGIT             01760 25 00000 0582-
01820 THERE  DS     ,*-5             ,,,                            01766 00000
01830        AM     THERE,1,10       ,,,MOVE TO NEXT DIGIT          01772 J1 01766 000-1
01840        BNR    PLUS,-THERE      ,,,CHECK FOR OVER FLOW         01784 MN 01816 01760
01850        TDM    ERROR-3,8        ,,,ER R8                       01796 J5 01381 00008
01860        B7     ERROR            ,,,                            01808 M9 01384 00000
01870 PLUS   AM     PLACE,2,10       ,,,MOVE TO NEXT CHARATER       01816 11 05820 000-2
01880        BNR    AR,-PLACE        ,,,CHECK FOR END OF CARD       01828 M5 01616 0582-
01890 TSTFL  BNF    FL,FIXFL         ,,,TEST IF FLOATING            01840 MM 01992 01111
01900        SM     THERE,1,10       ,,,BACK TRACK                  01852 J2 01766 000-1
01910        A      FAC,-THERE       ,,,ADD IT IN                  01864 2J 02492 01760
01920        MF     FAC,MANSN        ,,,SET SIGN                    01876 7J 02492 00899
01930        SF     -FP1MK           ,,,SET HIGH ORDER FLAG         01888 32 0328L 00000
01940        TF     *+30,FP1MK       ,,,                            01900 K6 01930 03283
01950        SM     *+18,1,10        ,,,                            01912 J2 01930 000-1
01960        CM     *-*,0,10         ,,,CHECK FOR OVERFLOW          01924 14 00000 000-0
01970        BE     TRANS            ,,,                            01936 M6 02156 01200
01980        RCTY                    ,,,YES TYPE ER R6              01948 34 00000 00102
01990        TDM    ERROR-3,6        ,,,                            01960 J5 01381 00006
02000 WATY   WATY   ERROR-11         ,,,                            01972 L9 01373 00100
02010        B7     TRANS            ,,,                            01984 M9 02156 00000
02020 FL     BD     *+24,HERE-30     ,,,CHECK FOR ZERO              01992 ML 02016 02340
02030        TFM    EXP,-99,8        ,,,SET -99 EXPONENT            02004 J6 01606 0-09R
02040        SF     EXP-1            ,,,SET UP EXPONENT             02016 L2 01605 00000
02050        CM     EXP-2,0,10       ,,,CHECK FOR OVERFLOW          02028 J4 01604 000-0
02060        BE     *+44             ,,,                            02040 M6 02084 01200
02070 ER3    TFM    EXP,99,8         ,,,FOR THE SECOND TIME AROUND  02052 J6 01606 0-099
02080        TDM    ERROR-3,3        ,,,                            02064 J5 01381 00003
02090        B7     ERROR            ,,,                            02076 M9 01384 00000
02100        TF     FAC,EXP          ,,,MOVE IN THE EXPONENT        02084 20 02492 01606
02110        SF     HERE-30          ,,,                            02096 L2 02340 00000
02120        TF     FAC-2,HERE-1     ,,,MOVE IN THE MANTISSA        02108 20 02490 02369
02130 FSR    TF     FAC-2,*-*        ,,,SET MANTISSA TO RIGHT LENGTH 02120 26 02490 00000
02140        BNF    *+24,MANSN       ,,,SET CORRECT SIGN            02132 MM 02156 00899
02150        SF     FAC-2            ,,,                            02144 32 02490 00000
02160 TRANS  TF     -VAR,FAC         ,,,MOVE VALUE INTO THE VARIABLE 02156 K6 0098L 02492
02170        SM     VAR,2,10         ,,,                            02168 J2 00983 000-2
02180        TF     -VAR,FAC-2       ,,,                            02180 K6 0098L 02490
02190        B      ARR              ,,,                            02192 M9 00604 00000
02200 ARRAY  TDM    ARR+1,9          ,,,SET ARRAY SWITCH            02204 J5 00605 00009
02210        TF     AM+11,F          ,,,SET UP LENGTH ADDITION      02216 K6 02299 02219
02220        AM     AM+11,2,10       ,,,                            02228 J1 02299 000-2
02230        BNF    *+36,ARRAY-1     ,,,FIXED OR FLOAT              02240 MM 02276 02203
02240        TF     AM+11,2221       ,,,                            02252 K6 02299 02221
02250        SF     AM+11            ,,,                            02264 L2 02299 00000
02260 ARRAY2 TF     VAR,ARRAY-1      ,,,LINKAGE TO SIMPLE VAIABLE HANDELER 02276 KO 00983 02203
02270 AM     AM     ARRAY-1          ,,,                            02288 J1 02203 -0000
02280        SM     PAR,1,10         ,,,TEST FOR END OF ARRAY       02300 12 03378 000-1
02290        BNN    PRU              ,,,                            02312 M6 00984 01300
02300        TDM    ARR+1,2          ,,,RESET THAT SWITCH           02324 J5 00605 00002
02310 BB     BB2                     ,,,RETURN                      02336 42 00000 00000
02320 HERE   DC     33,0             ,,,                            02370 00033
02330        DC     1,@              ,,,                            02371 00001
```

17

```
02340 30Z      DC      32,0            ,,,                              02403 00032
02350 ZERO     SM      EXP,1,10            ,,,PRECEDING ZERO            02404 J2 01606 000-1
02360          B7      PLUS                ,,,                          02416 M9 01816 00000
02370 EFORM    BNF     *+20,FIXFL          ,,,FIXED - WERE IN TROUBLE   02424 MM 02444 01111
02380          B7      ER7                 ,,,                          02436 M9 01596 00000
02390          TFM     NUMER2+6,EXP2-3     ,,,                          02444 J0 02646 -2765
02400          CM      -PLACE,45,10        ,,,CHECK FOR AN E            02456 14 0582- 000M5
02410          BNE     ER                  ,,,NO - BRANCH TO ER R1      02468 M7 01344 01200
02420          AM      PLACE,2,10          ,,,MOVE TO NEXT CHARACTER    02480 11 05820 000-2
02430          CM      -PLACE,10,10        ,,,IS IT A PLUS (+)          02492 14 0582- 000J0
02440          BE      PLUS2               ,,,                          02504 M6 02684 01200
02450          CM      -PLACE,20,10        ,,,IS IT A MINUS (-)         02516 14 0582- 000K0
02460          BNE     EPTEST              ,,,                          02528 M7 02696 01200
02470          SF      EXPSN               ,,,YES - SET EXPONENT SIGN   02540 L2 00898 00000
02480          B7      PLUS2               ,,,                          02552 M9 02684 00000
02490 NUM2     CM      -PLACE,69,10        ,,,IS IT NUMERIC             02560 14 0582- 00009
02500          BH      NUMER2              ,,,YES - BRANCH              02572 M6 02640 01100
02510          CM      -PLACE,0,10         ,,,IS IT BLANK               02584 14 0582- 000-0
02520          BE      ADDEXP              ,,,YES - O.K.                02596 M6 02708 01200
02530          CM      -PLACE,23,10        ,,,IS IT A COMMA             02608 14 0582- 000K3
02540          BE      ADDEXP              ,,,YES - O.K.                02620 M6 02708 01200
02550          B7      ER                  ,,,ERROR                     02632 M9 01344 00000
02560 NUMER2   TD      *-*,-PLACE          ,,,SAVE THAT DIGIT           02640 25 00000 0582-
02570          AM      NUMER2+6,1,10       ,,,MOVE TO NEXT DIGIT        02652 J1 02646 000-1
02580          BNR     PLUS2,NUMER2+6,11   ,,,                          02664 MN 02684 02640
02590          B7      ER3                 ,,,OVER FLOW                 02676 M9 02052 00000
02600 PLUS2    AN      PLACE,2,10          ,,,GOTO NEXT CHARACTER       02684 11 05820 000-2
02610 EPTEST   BNR     NUM2,-PLACE         ,,,                          02696 M5 02560 0582-
02620 ADDEXP   SM      NUMER2+6,1,10       ,,,ADD INTO EXPONENT AREA    02708 J2 02646 000-1
02630          BNF     *+24,EXPSN          ,,,                          02720 MM 02744 00898
02640          SF      NUMER2+6,,6     ,,,SET SIGN                      02732 L2 02640 00000
02650          A       EXP,NUMER2+6,11     ,,,                          02744 KJ 01606 02640
02660          B7      FL                  ,,,                          02756 M9 01992 00000
02670 EXP2     DC      6,0                 ,,,                          02768 00006
02680          DC      1,8                 ,,,                          02769 00001
02690          DEND    1                   ,,,                          00001
```

02770 CORE POSITIONS REQUIRED
PLUS RELOCATION INCREMENT
00269 STATEMENTS PROCESSED

SYMBOL TABLE

12NINE 06089	WAOBJP 04664	USEDFS 02263	SUBFCT 02293	SCSDDA 05859	SCSDAT 05851	SAVSYM 02243
REVSCN 05648	RECMKS 16023	PUSTSN 02294	PRSCAN 02454	PROGST 02257	PHBDDA 02486	PHBDAT 02478
PHADDA 16000	PGRMSW 02226	N21KEY 06099	MULDEF 02384	MONCAL 00796	LOOP41 02994	LENGTH 02248
INTOP1 02385	INPUTD 06091	INDATA 05805	FKTEST 05176	FCTEND 02318	FACTRC 02227	ER6440 02430
ERMES3 06015	ERMES2 05959	ERMES1 05899	DISKSW 02383	DIMDDA 05836	DIMDAT 0582R	COMADD 02262
CHIEND 15999	CALLP2 02400	CALLP1 04244	BUFSCS 06218	BUFEOT 06320	BUFDIM 07122	BIGPRT 02230
ALPHRM 05760	AFTBL 15035	BLK8 02461	B7SCT 00003	BRDAD 17340	CARD 15036	CDCTL 04116
CHI 15139	CHI5 15839	COMST 02382	DUMMY 99999	ENTLN 02248	EPRET 00602	FLNG 02250
FMON 02324	FP2 02298	FWORK 05895	GRMK 02693	HEAD 05755	IFTRC 02226	IMDDA 05813
INDIV 02424	INIT 05875	IOCAL 00716	IOGT 00566	IOPT 00532	IORBC 00520	IORT 00565
IOSK 00554	IPPT 03542	IPTY 03574	JAY 02367	KLNG 02252	KWORK 05897	LDPHA 16024
LIST 02228	LSTAD 02308	NXLOC 02372	N1 02233	N11 02526	N114 02838	N1142 03102
N12 03598	N2 02238	N21 03706	N31 05520	PGHD 05588	PGHD2 05774	PGHD3 05765
PGNUM 02222	PRST 02229	PRTAD 02502	PRTHD 02517	PUT 05720	P2PTR 02313	RDONF 03258
RECLG 02243	STBL 02377	TBCNT 02429	TEND 02303	T111 02933	T112 03065	T113 03089
T114 03149	W 02240	WADK 04868	WASS 04504	WASS2 04644	WW 02296	

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

                          00010  ******      1620 FORTRAN II-D    PHASE  1-A
02218                     00020              DORG 02218
02222      00005          00030              DC   5        ,-100
02222      00003          00040  PGNUM  DC   3,1,*
02223      00001          00050         DSC  1        ,2
02225      00002          00060         DC   2        ,67
02226      00006          00070  PGRMSW DSC  6,8
02226      00000          00080  IFTRC  DS   ,PGRMSW
02227      00000          00090  FACTRC DS   ,PGRMSW+1
02228      00000          00100  LIST   DS   ,PGRMSW+2
02229      00000          00110  PRST   DS   ,PGRMSW+3
02230      00000          00120  BIGPRT DS   ,PGRMSW+4
02233      00002          00130  N1     DC   2        ,0
02238      00005          00140  N2     DC   5        ,0
02240      00002          00150  W      DC   2        ,0
02243      00003          00160  RECLG  DC   3        ,000
02243      00012          00170  SAVSYM DS   12       ,RECLG
02248      00005          00180  LENGTH DS   5
02250      00002          00190  FLNG   DS   2
02252      00002          00200  KLNG   DS   2
02257      00005          00210  PROGST DC   5        ,00000
02262      00005          00220  COMADD DC   5        ,19999
                          00225  **********************************************************************
02263      00030          00230  USEDFS DSC  30       ,100
                          00235  *.................................................................
02293      00001          00240  SUBFCT DC   1        ,0
02294      00001          00250  PUSTSN DSC  1        ,0
02296      00002          00260  WW     DS   2
02298      00002          00270  FP2    DS   2
02303      00005          00280  TEND   DS   5
02308      00005          00290  LSTAD  DS   5
02313      00005          00300  P2PTR  DS   5
02318      00005          00310  FCTEND DS   5
02323      00005          00320         DS   5
02324  26  02366  02323   00330  FMON   TF   *+42,FMON-1,,     SETUP ROUTINE ENTRY
02336  16  00565  02359   00340         TFM  IORT,*+23
02348  49  00566  00000   00350         B    IOGT,,7
02360  49  00000  00000   00360         B    ,,,              GO TO EXECUTE CALLED ROUTINE
02367                     00370         DORG *-4
02367      00001          00380  JAY    DSC  1        ,2
02372      00005          00390  NXLOC  DC   5        ,15999
02377      00005          00400  STBL   DS   5
02382      00005          00410  COMST  DS   5
02383      00001          00420  DISKSW DSC  1,0
02384      00001          00430  MULDEF DC   1,0
02385      00001          00440  INTOP1 DSC  1,0
02390      00005          00450         DC   5,00600
02393      00003          00460         DC   3,001
02398      00005  ±5036   00470         DSA  CARD
02399      00001          00480         DC   1,@
02400  16  02359  02461   00490  CALLP2 TFM  FMON+35,BLK8
02412  17  02324  02400   00500         BTM  FMON,CALLP2
02424      00001          00510  INDIV  DS   1
                          00520  *          INDIV = 0 FOR CARDS, 1 FOR TYPEWRITER,
                          00530  *                 FLAGGED 3 FOR PAPER TAPE
02429      00005          00540  TBCNT  DC   5        ,00000
02248      00000          00550  ENTLN  DS   ,RECLG+5
```

20

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

15035      00000          00560  AFTBL  DS   ,15035
15139      00430  X2      00570  CHI    DAS  430      ,15139
15839      00000          00580  CHI5   DS   ,CHI+700
15999      00000          00590  CHIEND DS   ,CHI+860
15036      00000          00600  CARD   DS   ,CHI-103
00716      00000          00610  IOCAL  DS   ,716
00566      00000          00620  IOGT   DS   ,566
00520      00000          00630  IORBC  DS   ,520
00532      00000          00640  IOPT   DS   ,532
00554      00000          00650  IOSK   DS   ,554
00602      00000          00660  ERRET  DS   ,602
00565      00000          00670  IORT   DS   ,565
00796      00000          00680  MONCAL DS   ,796
02430  16  02359  00000   00690  E86440 TFM  FMON+35,,,BLK7
02442  17  02324  02430   00700         BTM  FMON    ,E86440
02461      00000          00710  BLK8   DS   ,E86440+31
02454  16  02359  02478   00720  PRSCAN TFM  FMON+35 ,PHBDAT
02466  17  02324  ±0512   00730         BTM  FMON ,10512,,    CALL IN PHASEB AND EXECUTE
02478      00002          00740  PHBDAT DSC  2,22
02484      00005  02486   00750         DSA  PHBDDA
02485      00001          00760         DC   1,@
02486      00001          00770  PHBDDA DSC  1,0
02491      00005          00780         DC   5,17200
02494      00003          00790         DC   3,084,,,        SECTOR COUNT OF PHASEB
02499      00005  02430   00800         DSA  E86440
02500      00001          00810         DC   1,@
17340      00000          00820  B8DAD  DS   ,17340
00003      00000          00830  B7SCT  DS   ,3
02502      00014          00840  PRTAD  DDA  ,1,B8DAD,B7SCT,N11+4
02516      00001          00850         DC   1,@
02517      00002          00860  PRTHD  DSC  2,22,,,         READ PAGE OFLO
02523      00005  02502   00870         DSA  PRTAD
02524      00001          00880         DC   1,@
02526  46  02538  01400   00890  N11    BV   *+12
02538  15  00000  00000   00900         TDM  00000   ,0
02550  11  02568  ±0000   00910         AM   *+18    ,20000   ,7,    CALCULATE MEMORY SIZE
02562  31  ±0004  05759   00920         TR   1       ,ALPHRM-1 ,26
02574  45  02550  00000   00930         BNR  *-24    ,0
02586  26  02377  02568   00940         TF   STBL    ,*-18
02598  26  05826  02377   00950         TF   INDDA+13 ,STBL
02610  12  05826  00999   00960         SM   INDDA+13 ,999     ,9
02622  16  00565  02645   00970         TFM  IORT    ,*+23
02634  49  00566  05805   00980         B    IOGT    ,INDATA  ,7,    INITIALIZE SYMBOL TABLE
02646  12  05823  00001   00990         SM   INDDA+10 ,1      ,10
02658  24  05826  02372   01000         C    INDDA+13 ,NXLOC
02670  46  02622  01300   01010         BNL  *-48
02682  15  06318  00000   01020         TDM  BUFSCS+100,*-*
02693      00001          01030  GRMK   DGM  *
02694  25  07120  02693   01040         TD   BUFEQT+800,GRMK
02706  25  07222  02693   01050         TD   BUFDIM+100,GRMK
02718  26  02933  02377   01060         TF   T111    ,STBL
02730  26  02318  02377   01070         TF   FCTEND  ,STBL
02742  16  02765  02765   01080         TFM  IORT    ,*+23
02754  49  00566  05828   01090         B    IOGT    ,DIMDAT  ,7,    GET FIRST 5 DIM ENTRIES
02766  26  05841  07167   01100         TF   DIMDDA+5 ,BUFDIM+45,,    IN EQUIVALENCE TABLE DIM ENTRY
02778  25  05836  07162   01110         TD   DIMDDA  ,BUFDIM+40
02790  16  05844  00008   01120         TFM  DIMDDA+8 ,008     ,9
```

21

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
02802	16	05849	06320	01130		TFM	DIMDDA+13,BUFEQT
02814	16	00565	02837	01140		TFM	IORT ,*+23
02826	49	00566	05828	01150		B	IOGT ,DIMDAT ,7, GET 8 SECTORS OF EQUIV. TABLE
02838	11	02856	00016	01160	N114	AM	*+18 ,16 ,10, LOAD SYM TABLE FROM EQUIV TABLE
02850	24	06315	06089	01170		C	BUFEQT-5 ,12NINE ,2, IS ENTRY ALL NINES
02862	46	03258	01200	01180		BE	RDONE , ,, YES
02874	26	02904	02856	01190		TF	*+30 ,N114+18 ,, NO
02886	11	02904	00004	01200		AM	*+18 ,04 ,10
02898	12	99999	00009	01210		SM	DUMMY ,09 ,10, DETERMINE SUBROUTINE ADDRESS
02910	13	02904	00005	01220		MM	*-6 ,05 ,610
02922	32	00095	00000	01230		SF	95
02933		00005		01240	T111	DS	5 ,* , SYMBOL TABLE POINTER
02934	11	00099	02243	01250		AM	99 ,ENTLN-5
02946	26	02933	00099	01260		TF	T111 ,99 ,6, STORE SUBR. ADDRESS IN SYM TABLE
02958	12	02933	00005	01270		SM	T111 ,5 ,10
02970	26	03065	02856	01280		TF	T112 ,N114+18 ,, ELIMINATE BLANKS FROM NAME
02982	12	03065	00012	01290		SM	T112 ,12 ,10
02994	11	03065	00002	01300	LOOP41	AM	T112 ,02 ,10
03006	24	03065	02856	01310		C	T112 ,N114+18
03018	46	03102	01100	01320		BH	N1142
03030	26	03089	03065	01330		TF	T113 ,T112
03042	12	03089	00001	01340		SM	T113 ,01 ,10
03054	32	03089	00000	01350		SF	T113 , ,6
03065		00005		01360	T112	DS	5 ,*
03066	14	03065	00000	01370		CM	T112 ,00 ,610
03078	33	03089	00000	01380		CF	T113 , ,6
03089		00005		01390	T113	DS	5 ,*
03090	47	02994	01200	01400		BNE	LOOP41
03102	12	03065	00002	01410	N1142	SM	T112 ,02 ,10
03114	26	03089	02856	01420		TF	T113 ,N114+18
03126	12	03089	00011	01430		SM	T113 ,11 ,10
03138	32	03089	00000	01440		SF	T113 , ,6
03149		00005		01450	T114	DS	5 ,*
03150	26	03149	03065	01460		TF	T114 ,T112
03162	22	03149	03089	01470		S	T114 ,T113
03174	11	03149	00001	01480		AM	T114 ,01 ,10
03186	21	02372	03149	01490		A	NXLOC ,T114
03198	26	02372	03065	01500		TF	NXLOC ,T112 ,611, STORE SUBR. NAME IN NAME TABLE
03210	26	02933	02372	01510		TF	T111 ,NXLOC ,6, STORE POINTER IN SYM. TABLE
03222	12	02933	00005	01520		SM	T111 ,05 ,10
03234	26	02318	02933	01530		TF	FCTEND ,T111
03246	11	02429	00001	01540		AM	TBCNT ,01 ,10, UPDATE TABLE COUNT
03258	14	02856	07115	01550	RDONE	CM	N114+18 ,BUFEQT+795
03270	47	02838	01300	01560		BL	N114
03282	12	02318	00005	01570		SM	FCTEND ,05 ,10
03294	12	03312	00002	01580		SM	*+18 ,02 ,10, INITIALIZE READ IN AREA
03306	16	15999	00000	01590		TFM	CHIEND ,00 ,210
03318	14	03312	15139	01600		CM	*-6 ,CHI
03330	46	03294	01300	01610		BNL	*-36
03342	26	15999	05760	01620		TF	CHIEND ,ALPHRM
03354	16	00565	03377	01630		TFM	IORT,*+23,, GET HEAD
03366	49	00566	02517	01640		B	IOGT,PRTHD,7
03378	31	02530	15837	01650		TR	N11+4,CHIEND-162,,,BLANK HEADING SECTOR
03390	16	02693	00000	01660		TFM	N11+4+163,,, CLEAR RM
03402	16	00565	03425	01670		TFM	IORT,*+23,, PUT CLEARED HEADING
03414	49	00520	02517	01680		B	IORBC,PRTHD,7
03426	34	00000	00971	01690		34	,0971,, SKIP TO 1 IMMEDIATE

22

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
03438	25	06091	00426	01700		TD	INPUTD ,426 ,, DETERMINE INPUT DEVICE
03450	33	06091	00000	01710		CF	INPUTD
03462	14	06091	00001	01720		CM	INPUTD ,01 ,10
03474	46	03574	01200	01730		BE	IPTY
03486	14	06091	00003	01740		CM	INPUTD ,03 ,10
03498	46	03542	01200	01750		BE	IPPT
03510	15	02424		01760		TDM	INDIV ,0 ,, CARD INPUT
03522	16	06098	00010	01770		TFM	N21KEY-1 ,10 ,10
03534	49	03598	00000	01780		B	N12
03541				01790		DORG	*-4
03542	15	02424	00003	01800	IPPT	TDM	INDIV ,3 ,11, PAPER TAPE INPUT
03554	16	06098	00008	01810		TFM	N21KEY-1 ,08 ,10
03566	49	03598	00000	01820		B	N12
03573				01830		DORG	*-4
03574	15	02424	00001	01840	IPTY	TDM	INDIV ,1 ,, TYPEWRITER INPUT
03586	16	06098	00006	01850		TFM	N21KEY-1 ,06 ,10
03598	16	00565	03621	01860	N12	TFM	IORT ,*+23
03610	49	00566	05851	01870		B	IOGT ,SCSDAT ,7, GET SYSTEM COMMUNICATION SECTOR
03622	25	02258	06294	01880		TD	COMADD-4 ,BUFSCS+76,, MOVE OBJECT TIME MACHINE SIZE
03634	26	02382	02262	01890		TF	COMST ,COMADD
03646	31	06218	05875	01900		TR	BUFSCS ,INIT ,7, SET UP DIM IN SYS COMM SECTOR
03658	31	00402	05874	01910		TR	00402 ,INIT-1 ,, SET UP DIM IN SYS COMM AREA
03670	26	02250	06264	01920		TF	FLNG ,BUFSCS+46,, MOVE F
03682	26	02252	06266	01930		TF	KLNG ,BUFSCS+48,, MOVE K
03694	25	02230	06283	01940		TD	BIGPRT,BUFSCS+65,,SET PRINTER SIZE
03706	14	06091	00001	01950	N21	CM	INPUTD ,01 ,10
03718	47	03742	01200	01960		BNE	*+24
03730	34	00000	00102	01970		RCTY	
03742	16	00565	03765	01980		TFM	IORT ,*+23 ,, READ AN INPUT RECORD
03754	49	00566	06092	01990		B	IOGT ,N21KEY-7 ,7, USING IORT.
03766	14	06091	00001	02000		CM	INPUTD ,01 ,10
03778	47	03802	01200	02010		BNE	*+24
03790	46	03730	00400	02020		BC4	N21+24 , ,, ALLOWS GOOF SWITCH
03802	14	15139	00014	02030		CM	CHI ,14 ,10, IS THIS A CONTROL STATEMENT
03814	47	04244	01200	02040		BNE	CALLP1 , ,, NO, CALL IN PASS 1
03826	33	15142	00000	02050		CF	CHI+3
03838	14	15143	05762	02060		CM	CHI+4,5762,8, IS THIS APSTSN STATEMENT
03850	46	04504	01200	02070		BE	WASS , ,, YES
03862	14	15143	05756	02080		CM	CHI+4,5756,8, IS THIS A POBJP ST.
03874	46	04664	01200	02090		BE	WAOBJP , ,, YES
03886	14	15143	05344	02100		CM	CHI+4,5344,8, IS THIS A LDISK ST.
03898	46	04868	01200	02110		BE	WADK , ,, YES
03910	14	15143	04641	02120		CM	CHI+4,4641,8, IS THIS A FAND5 ST.
03922	46	05176	01200	02130		BE	FKTEST , ,, YES
03934	14	15143	04946	02140		CM	CHI+4,4946,8, IF TRACE
03946	47	03970	01200	02150		BNE	*+24,,, NO
03958	17	04116	02226	02160		BTM	CDCTL,IFTRC
03970	14	15143	04153	02170		CM	CHI+4,4153,8, ALL STATEMENT MAP
				02173		***
03982	46	04128	01200	02177		BE	CDCTL+12 ,,,YES - IGNORE
03994	14	15143	05556	02180		CM	CHI+4,5556,8 ,,,NO DIAGNOSTICS
04006	47	04038	01200	02183		BNE	*+32 ,,,NO
04018	15	02290	00000	02187		TDM	USEDFS+27,0
04030	49	04128		02190		B7	CDCTL+12
				02193		*..
04038	14	15143	04159	02200		CM	CHI+4,4159,8, ARITHMETIC TRACE
04050	47	04074	01200	02210		BNE	*+24,,, NO

23

```
LOCTN  OP  P/L    Q      PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

04062  17  04116  02227  02220         BTM   CDCTL,FACTRC
04074  14  15143  05349  02230         CM    CHI+4,5349,8,    LIST PRINTER
04086  47  04140  01200  02240         BNE   CDCTL+24,,,      NO
04098  17  04116  02228  02250         BTM   CDCTL,LIST
04114      00005         02260         DC    5,0
04116  15  04115  00001  02270  CDCTL  TDM   *-1,1,611
04128  17  05774  03706  02280         BTM   PGHD2,N21
04140  14  15141  00014  02290         CM    CHI+2,14,10,     TEST FOR **
04152  46  05588  01200  02300         BE    PGHD,,,          YES PAGE HEADING
04164  34  00000  00102  02310         RCTY           ,           ,,        NO, INVALID CTL. ST.
04176  26  15171  05760  02320         TF    CHI+32   ,ALPHRM
04188  39  15139  00100  02330         WATY  CHI
04200  34  00000  00102  02340         RCTY
04212  39  05899  00100  02350         WATY  ERMES1   ,            ,,    ERROR, INVALID CONTROL STATEMENT
04224  48  00000  00000  02360         H
04236  49  03706  00000  02370         B     N21      ,            ,,    BR. TO READ NEXT STATEMENT
04243                    02380         DORG  *-4
04244  32  15142  00000  02390  CALLP1 SF    CHI+3
04256  32  15144  00000  02400         SF    CHI+5
04268  32  15146  00000  02410         SF    CHI+7
04280  32  15148  00000  02420         SF    CHI+9
                        02421  ***********************************************************************
04292  43  04340  02226  02422         BD    *+48,IFTRC    ,,,IF NEITHER TRACE SWITCH IS ON
04304  43  04340  02227  02424         BD    *+36,FACTRC
04316  15  02226  00001  02426         TDM   IFTRC,-1    ,,,TURN THEM BOTH ON
04328  15  02227  00001  02428         TDM   FACTRC,-1
                        02429  *...........................................................................
04340  43  04388  02424  02430         BD    *+48     ,INDIV    ,,    CARD INPUT
04352  26  15299  05760  02440         TF    CHI+160  ,ALPHRM   ,,    YES, MOVE INPUT RECORD
04364  31  15838  15138  02450         TR    CHI5-1   ,CHI-1    ,,       TO  CHI5
04376  16  15299  00000  02460         TFM   CHI+160  ,00       ,10,     ERASE RECORD MARK
04388  26  02298  02250  02470         TF    FP2      ,FLNG
04400  11  02298  00002  02480         AM    FP2      ,02       ,10, CALCULATE F PLUS TWO
04412  26  02240  02252  02490         TF    W        ,KLNG
04424  24  02298  02252  02500         C     FP2      ,KLNG
04436  47  04460  01100  02510         BNH   *+24
04448  26  02240  02298  02520         TF    W        ,FP2      ,,    CALCULATE W, WORD SIZE FOR DISK IO
04460  26  02296  02240  02530         TF    WW       ,W
04472  16  00565  04495  02540         TFM   IORT     ,*+23
04484  49  00532  05851  02550         B     IOPT     ,SCSDAT   ,7,  PUT SYSTEM COMMUNICATION SECTOR
04496  49  02454  00000  02560         B     PRSCAN
04503                    02570         DORG  *-4
04504  26  15153  05760  02580  WASS   TF    CHI+14   ,ALPHRM
04516  17  05774  04528  02590         BTM   PGHD2    ,*+12     ,,    GO TO PRINT PSTSN
04528  14  15151  00072  02600         CM    CHI+12   ,72       ,10, IS DEVICE CODE PAPER TAPE
04540  46  04644  01200  02610         BE    WASS2    ,            ,,    YES
04552  14  15151  00074  02620         CM    CHI+12   ,74       ,10, NO, IS DEVICE CODE CARDS
04564  46  04644  01200  02630         BE    WASS2    ,            ,,       YES
04576  34  00000  00102  02640         RCTY
04588  39  15139  00100  02650         WATY  CHI
04600  34  00000  00102  02660         RCTY     ,            ,,    ERROR, INVALID OUTPUT DEVICE CODE
04612  39  06015  00100  02670         WATY  ERMES3
04624  48  00000  00000  02680         H
04636  49  03706  00000  02690         B     N21      ,            ,,    BR. TO READ NEXT STATEMENT
04643                    02700         DORG  *-4
04644  25  02294  15151  02710  WASS2  TD    PUSTSN   ,CHI+12
04656  49  03706  00000  02720         B     N21
```

24

```
LOCTN  OP  P/L    Q      PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

04663                    02730         DORG  *-4
04664  15  02367  00001  02740  WADBJP TDM   JAY      ,1        ,,    DUP ACTION REQUIRED
04676  26  15153  05760  02750         TF    CHI+14   ,ALPHRM
04688  17  05774  04700  02760         BTM   PGHD2,*+12,,           GO TO PRINT POBJP
04700  14  15151  00072  02770         CM    CHI+12   ,72       ,10, IS DEVICE CODE PAPER TAPE
04712  47  04744  01200  02780         BNE   *+32     ,            ,,    NO
04724  15  06241  00001  02790         TDM   BUFSCS+23,1         ,11, YES
04736  49  03706  00000  02800         B     N21
04743                    02810         DORG  *-4
04744  14  15151  00074  02820         CM    CHI+12   ,74       ,10, IS DEVICE CODE CARDS
04756  47  04788  01200  02830         BNE   *+32     ,            ,,    NO
04768  15  06241  00000  02840         TDM   BUFSCS+23,0         ,11, YES
04780  49  03706  00000  02850         B     N21
04787                    02860         DORG  *-4
04788  15  06241  00000  02870         TDM   BUFSCS+23,0         ,11
04800  34  00000  00102  02880         RCTY
04812  39  15139  00100  02890         WATY  CHI
04824  34  00000  00102  02900         RCTY     ,            ,,    ERROR, INVALID OUTPUT DEVICE CODE
04836  39  06015  00100  02910         WATY  ERMES3
04848  48  00000  00000  02920         H
04860  49  03706  00000  02930         B     N21      ,            ,,    BR. TO READ NEXT STATEMENT
04867                    02940         DORG  *-4
04868  15  06240  00001  02950  WADK   TDM   BUFSCS+22,1         ,11, SET UP TO LOAD OBJECT PROG. ON DK.
04880  15  02367  00001  02960         TDM   JAY      ,1        ,,    DUP ACTION REQUIRED
04892  26  15171  05760  02970         TF    CHI+32   ,ALPHRM
04904  17  05774  04916  02980         BTM   PGHD2,*+12,,           GO TO PRINT LDISK
04916  45  04940  15151  02990         BNR   *+24     ,CHI+12   ,7,  ELIMINATE RECORD MARKS
04928  16  04927  00000  03000         TFM   *-1      ,00       ,610
04940  11  04927  00002  03010         AM    *-13     ,2        ,10
04952  14  04927  15169  03020         CM    *-25     ,CHI+30
04964  47  04916  01100  03030         BNH   *-48
04976  33  15152  00000  03040         CF    CHI+13
04988  33  15154  00000  03050         CF    CHI+15
05000  33  15156  00000  03060         CF    CHI+17
05012  33  15158  00000  03070         CF    CHI+19
05024  33  15160  00000  03080         CF    CHI+21
05036  26  06253  15161  03090         TF    BUFSCS+35,CHI+22
05048  32  15152  00000  03100         SF    CHI+13
05060  32  15154  00000  03110         SF    CHI+15
05072  32  15156  00000  03120         SF    CHI+17
05084  32  15158  00000  03130         SF    CHI+19
05096  32  15160  00000  03140         SF    CHI+21
05108  25  06254  15163  03150         TD    BUFSCS+36,CHI+24
05120  25  06255  15165  03160         TD    BUFSCS+37,CHI+26
05132  25  06256  15167  03170         TD    BUFSCS+38,CHI+28
05144  25  06257  15169  03180         TD    BUFSCS+39,CHI+30
05156  32  06254  00000  03190         SF    BUFSCS+36
05168  49  03706  00000  03200         B     N21
05175                    03210         DORG  *-4
05176  26  15159  05760  03220  FKTEST TF    CHI+20   ,ALPHRM
05188  17  05774  05200  03230         BTM   PGHD2,*+12,,           GO TO PRINT FANOK
05200  25  05894  15150  03240         TD    FWORK-1  ,CHI+11
05212  25  05895  15152  03250         TD    FWORK    ,CHI+13
05224  33  05895  00000  03260         CF    FWORK
05236  14  05895  00077  03270         CM    FWORK    ,77       ,10, IS F NUMERIC
05248  47  05520  01200  03280         BNE   N31      ,            ,,    NO, ERROR
05260  25  05894  15151  03290         TD    FWORK-1  ,CHI+12   ,,    YES, LOAD F
```

25

```
LOCTN  OP   P/L     Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

05272  32  05894  00000     03300         SF   FWORK-1
05284  25  05895  15153     03310         TD   FWORK    ,CHI+14
05296  14  05895  00002     03320         CM   FWORK    ,02    ,10,  F IN RANGE
05308  47  05520  01300     03330         BL   N31      ,      ,,   NO, ERROR
05320  14  05895  00028     03340         CM   FWORK    ,28    ,10
05332  46  05520  01100     03350         BH   N31      ,      ,,   NO, ERROR
05344  26  02250  05895     03360         TF   FLNG     ,FWORK ,,   YES, MOVE F TO FORTRAN COM. AREA
05356  25  05896  15154     03370         TD   KWORK-1  ,CHI+15
05368  25  05897  15156     03380         TD   KWORK    ,CHI+17
05380  33  05897  00000     03390         CF   KWORK
05392  14  05897  00077     03400         CM   KWORK    ,77    ,10,  IS K NUMERIC
05404  47  05520  01200     03410         BNE  N31      ,      ,,   NO, ERROR
05416  25  05896  15155     03420         TD   KWORK-1  ,CHI+16 ,,  YES, LOAD K
05428  32  05896  00000     03430         SF   KWORK-1
05440  25  05897  15157     03440         TD   KWORK    ,CHI+18
05452  14  05897  00004     03450         CM   KWORK    ,04    ,10,  K IN RANGE
05464  47  05520  01300     03460         BL   N31      ,      ,,   NO, ERROR
05476  14  05897  00010     03470         CM   KWORK    ,10    ,10
05488  46  05520  01100     03480         BH   N31      ,      ,,   NO, ERROR
05500  26  02252  05897     03490         TF   KLNG     ,KWORK ,,   YES, MOVE K TO FORTRAN COM. AREA
05512  49  03706  00000     03500         B    N21      ,      ,,   BR. TO READ NEXT STATEMENT
05519                       03510         DORG *-4
05520  34  00000  00102     03520  N31    RCTY          ,      ,,   ERROR, F OR K OUTSIDE RANGE
05532  39  15139  00100     03530         WATY CHI
05544  34  00000  00102     03540         RCTY
05556  39  05959  00100     03550         WATY ERMES2
05568  48  00000  00000     03560         H
05580  49  03706  00000     03570         B    N21      ,      ,,   BR. TO READ NEXT STATEMENT
05587                       03580         DORG *-4
                           03590  **  ROUTINE TO PRINT AND STORE THE PAGE HEADING
05588  26  15303  05760     03600  PGHD   TF   CHI+4+160,ALPHRM
                           03610  **  THE CEARED RECORD IS STILL IN CORE
05600  31  02526  15138     03620         TR   N11,CHI-1,,        LOAD HEADER
05612  16  00565  05635     03630         TFM  IORT,*+23,,        PRINT HEADER
05624  49  00532  05751     03640         B    IOPT,HEAD-4,7
05636  16  15303  00000     03650         TFM  CHI+4+160,0,10,    CLEAR RM
05648  16  05707  02693     03660  REVSCN TFM  *+59,N11+4+163,,   CLEAR RM
05660  12  05707  00002     03670         SM   *+47,2,10
05672  14  05707  02529     03680         CM   *+35,N11+3
05684  47  05720  01300     03690         BL   PUT
05696  45  05660  00000     03700         BNR  *-36,*-*
05708  16  05707  00000     03710         TFM  *-1,0,610
05720  16  00565  05743     03720  PUT    TFM  IORT,*+23,,        WRITE BACK TO DISK
05732  49  05520  02517     03730         B    IORBC,PRTHD,7
05744  49  03706            03740         B7   N21
05755      00005  02527     03750  HEAD   DSA  N11+1
05758      00003            03760         DC   3,18a,,,           DEFINER TO PRINT HEADING
05760      00002            03770  ALPHRM DC   2       ,0a
05765      00005  15139     03780  PGHD3  DSA  CHI
05768      00003            03790         DC   3,18a,,            CONTROL RECORD PRINT DEFINER
05773      00005            03800         DC   5,12345
05774  16  00565  05797     03810  PGHD2  TFM  IORT,*+23,,,       NORMAL CONTROL RECORD PRINT ROUTINE
05786  49  00532  05761     03820         B    IOPT,PGHD3-4,7,
05798  49  05773            03830         B7   PGHD2-1,,6
05805      00002            03840  INDATA DSC  2       ,22
05811      00005  05813     03850         DSA  INDDA
05812      00001            03860         DC   1       ,a
```

26

```
LOCTN  OP   P/L     Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

05813      00001            03870  INDDA  DSC  1       ,0
05818      00005            03880         DC   5       ,17330
05821      00003            03890         DC   3       ,010
05826      00005            03900         DS   5
05827      00001            03910         DC   1       ,a
05828      00002            03920  DIMDAT DSC  2       ,20
05834      00005  05836     03930         DSA  DIMDDA
05835      00001            03940         DC   1       ,a
05836      00001            03950  DIMDDA DSC  1       ,0
05841      00005            03960         DC   5       ,04800
05844      00003            03970         DC   3       ,001
05849      00005  07122     03980         DSA  BUFDIM
05850      00001            03990         DC   1       ,a
05851      00002            04000  SCSDAT DSC  2       ,20
05857      00005  05859     04010         DSA  SCSDDA
05858      00001            04020         DC   1       ,a
05859      00001            04030  SCSDDA DSC  1       ,0
05864      00005            04040         DC   5       ,19663
05867      00003            04050         DC   3       ,001
05872      00005  06218     04060         DSA  BUFSCS
05873      00001            04070         DC   1       ,a
05874      00001            04080         DSC  1       ,1
05879      00005            04090         DC   5       ,00000
05875      00000            04100  INIT   DS           ,*-4
05882      00003            04110         DC   3       ,999
05887      00005            04120         DC   5       ,-99999
05893      00006            04130         DC   6       ,00000a
05895      00002            04140  FWORK  DS   2
05897      00002            04150  KWORK  DS   2
05899      00030  X2        04160  ERMES1 DAC  30,ERROR, INVALID CONTROL RECORDa
05959      00028  X2        04170  ERMES2 DAC  28,ERROR, F OR K OUTSIDE RANGEa
06015      00032  X2        04180  ERMES3 DAC  32,ERROR, INVALID OUTPUT UNIT CODEa
06089      00012            04190  12NINE DC   12      ,999999999999
06091      00002            04200  INPUTD DC   2       ,00
06096      00005  15139     04210         DSA  CHI
06099      00003            04220  N21KEY DC   3       ,00a
06218                       04230         DORG 06218
06218      00100            04240  BUFSCS DSS  100
06319      00002            04250         DS   2
06320      00800            04260  BUFEQT DSS  800
07121      00002            04270         DS   2
07122      00100            04280  BUFDIM DSS  100
07223      00002            04290         DS   2
99999      00000            04300  DUMMY  DS           ,99999
16000                       04310         DORG 16000
16000      00001            04320  PHADDA DSC  1,0
16005      00005            04330         DC   5,17290
16008      00003            04340         DC   3,050
16013      00005            04350         DC   5,02218
16014      00001            04360         DC   1       ,a
16015      00001            04370         DC   1       ,a
16016      00001            04380         DC   1       ,a
16017      00001            04390         DC   1       ,a
16018      00001            04400         DC   1       ,a
16019      00004            04410         DSC  4       ,0000
16023      00001            04420  RECMKS DSC  1       ,0
16024  32  16014  00000     04430  LDPHA  SF   RECMKS-9
```

27

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
16036	15	02693	00000	04440		TDM	GRMK
16047		00001		04450		DGM	*
16048	16	16066	07217	04460		TFM	*+18 ,BUFSCS+999
16060	26	99999	16023	04470		TF	DUMMY ,RECMKS ,, SET SYMBOL TABLE TO RECORD MARKS
16072	12	16066	00010	04480		SM	*-6 ,10 ,10
16084	14	16066	06217	04490		CM	*-18 ,BUFSCS-1
16096	47	16060	01200	04500		BNE	*-36
16108	34	16000	00701	04510		K	PHADDA,701
16120	38	16000	00702	04520		WN	PHADDA,702
16132	36	00012	00500	04530		TRA	
16144	49	00012					
16024				04540		TCD	LDPHA
00000				04550		DEND	

28

SYMBOL TABLE

ZERSYM 06987	XCLDGT 14708	VARFOR 13744	USEDFS 02263	URDATA 09889	TPARCT 14698	TBLFUL 07184	
SUBTST 08348	SUBPUT 13350	SUBFCT 02293	STOPEN 14028	STNOSW 10105	SMLOOP 07068	SINGST 10100	
SETIND 08324	SETFRO 14382	SETDM5 11384	SETDM4 11276	SETDM3 11016	SETDM2 10836	SENSWC 14301	
SAVSYM 02243	RTCALL 13242	RETURN 10368	PUTOUT 09378	PUSTSN 02294	PSCALF 14490	PRTCHI 02526	
PRSCN1 10544	PRSCAN 10512	PROGST 02257	PHBDDA 16008	PHBDAT 16000	PAUSEN 13860	PARCNT 02615	
OUTS12 13262	OUTSN3 13980	OUTSN2 13908	OUTSNE 13844	OUTSC1 10512	OUTSCE 04835	NUMBER 06150	
NOPARM 14700	NONARI 04144	NONARA 10224	NOLIST 03729	NNARAA 10512	MULDEF 02384	MOVEIT 11224	
MOVDIM 11116	MONCAL 00796	MODAFT 09910	MASKLK 13152	LUSTNO 08744	LNGPRT 02798	LITERL 07720	
LINKCT 13131	LINKCD 12718	LENGTH 02248	LEADBL 03098	IVALEN 13179	IOUTER 13264	IOUTEN 13172	
IOLOOP 14271	INTOP1 02385	INITAL 04098	IFSCAN 12274	IFASEN 14658	IATYPE 14389	GOTOEN 14120	
GENDIM 11072	FXORFL 06453	FXNUMB 06358	FUNCTA 13728	FREQSW 14382	FORM99 12370	FORM51 13646	
FORMER 12770	FORMAT 10392	FOMAT1 12230	FNTSW2 07439	FNTSW1 10103	FMTCST 10031	FLNUMB 06462	
FCTEST 08880	FCTEND 02318	E94620 09428	E94270 09128	E86440 02430	F84804 13098	F84710 12926	
ERMES1 03767	EQUIVN 10786	EOLOOP 12306	E84560 12542	E84330 12230	F84240 12126	F83230 11026	
E37061 07932	EXITCT 13123	EXITCD 12662	EXCESS 06770	ESNOP1 03755	FSNOPL 02600	ERROR2 09440	
E84695 12686							
DOLOOP 12058	DKLOOP 14167	DKLIST 13404	DKIOEN 13172	DISKSW 02383	DIMNOT 10545	DIMERR 07500	
DEFINE 14060	DEFCHI 02593	DECODE 03794	DECODA 04018	C5DATA 09905	CSTNO1 05550	CONTEN 13794	
COMPUT 14244	COMMON 10272	COMMEN 11576	COMINA 11924	COMER3 12148	COMER2 09496	COMADD 02262	
COLNAM 04696	CLDGT2 14664	CLDGT1 14604	CLASEN 14678	CKCTAR 04098	CKCNTU 04876	CHAN12 03630	
CDOFLO 03784	CDDATA 09897	CALLSW 10111	CALLP2 02400	CALLER 12202	CALLEN 12058	BIGPRT 02230	
BEGINA 02638	ASC281 14422	ASC27A 14150	ASCAN1 12058	ADXLIT 08712	ADVLOP 08220	ADVAR2 08300	
ADVAR1 08252	ADSUBP 08496	ADSAVE 08519	ADLIT1 08656	ADLIT 08584	ADSTN 08808	ADVAR 08124	
AERR 12214	AFRR1 09484	AFTBL 15035	ALFAT 10976	ASCAN 10440	ASCER 14026	ASC1 12658	
ASC1A 12094	ASC11 14606	ASC12 13874	ASC14 14626	ASC15 13790	ASC21 13282	ASC22 12238	
ASC23 12438	ASC24 12942	ASC25 12986	ASC26 13426	ASC27 14082	ASC28 14318	ASC29 14198	
ASC3 12550	ASC30 12042	ASC31 14478	ASC4 12242	ASC6 12526	ASC7 12598	ASC8 13754	
ASC9 14586	AVOID 06066	A1 11923	A2 11935	BA 02718	BEGIN 02626	BGTR 10773	
BLK1 09724	BLK1A 09732	BLK2 09747	BLK2A 09755	BLK3 09770	BLK3A 09778	BLK4 09793	
BLK4A 09801	BLK5 09816	BLK5A 09824	BLK6 09839	BLK6A 09847	BLK7 09862	BLK7A 09870	
BLK8 02461	BLK9 02497	BLK9A 02505	BLOC 02608	B1 11927	B2 11939	CALC 11176	
CALL 10344	CALLA 12318	CALLB 12338	CALL1 12466	CALL2 12486	CARD 15036	CCNO 02603	
CGTO 10108	CHI 15139	CHI5 15839	CKCN1 04962	CKCN2 05090	CKCN3 05286	CKCN4 05386	
CKEND 02612	CKRM 02938	CLDGT 14548	CMPAR 06638	COMA 11744	COMAB 11812	COMC 12024	
COME 11968	COMER 09496	COMIN 11876	COMM 12068	COMST 02382	COMSW 10112	CONT 11772	
CS 05882	CSORN 05738	CSPVA 03634	CSTNO 05446	CTION 13785	C1 11931	C2 11943	
DEFCT 14477	DIM 10248	DIMEN 10512	DIMNO 10677	DIMSW 10106	DIMTP 11185	DIM1 10596	
DIM2 11484	DIM3 11552	DKA 13708	DKB 13788	DKB1 13968	DKC 14000	DKD 14108	
DKD1 14248	DKE 14316	DKER 13752	DKF 14396	DKG 14544	DKIO 10488	DKIO1 13264	
DKIO2 13332	DKL 13664	DKPUT 13524	DKSW1 14304	DKSW2 14306	DMVAR 08124	DO 12190	
DOA 12518	DOB 12670	DOC 12294	DOCK 12390	DOC1 12446	DOF 12926	DOFF 13110	
DOO 10416	D1 11951	D2 11963	D3 11975	D4 11987	FRASE 12365	FBRAN 13426	
END 09564	ENDCT 10037	ENDTR 09508	EOK 13554	EOBR 11658	EOR 10858	FQUSW 10110	
EQ1 10930	EQ21 11146	EQ22 12274	EQ23 11514	EQ24 11382	E04 11770	EQ7 11826	
EREXT 03694	ERMES 10003	ERR 03737	ERRET 00602	ERROR 09384	ERRO1 04300	ERRO2 13468	
ERRO9 08004	ERR44 14104	ERR60 14490	ERSW 05674	ER1 03486	FSNO 02724	FSNO1 03743	
ETYPE 13034	EXIT 09262	FCMA 13782	FCTST 07980	FLIP 02454	FLIP1 17340	FLIP2 03130	
FLIST 14706	FLNG 02250	FLOP 02466	FLOP1 17207	FMON 02502	FMSW 10104	FNTSW 10102	
FOMAT 12166	FORM 03510	FORMX 14142	FORM1 12570	FORM2 12910	FORM3 13082	FORM4 14110	
FORM5 13602	FORM7 13850	FORM8 13982	FP2 02298	FTYPE 12990	FXLIT 08060	GOTO 10320	
HERE 12762	HOLL 14210	HOLLI 14270	I 11955	IF 10296	IFSW 10107	IF1 13284	
INDIV 02424	IND1 11519	IND2 11538	INOUT 13640	INSW 02611	INTOP 09269	IOA 13952	
IOB 14104	IOCAL 00716	IOD 14212	IOE 14372	IOF 14452	IOG 14636	IOGT 00566	
IOLER 13996	IOPT 00532	IORBC 00520	IORT 00565	IOSK 00554	IOSW 10113	IOUT 10200	
IOUT1 13556	IOUT2 13308	IOUT3 13388	IOUT4 13576	IOUT5 13448	IOZ 13872	J 11967	
JAY 02367	JOE 07204	K 11979	KLNG 02252	LDPHB 16024	LFADZ 03366	LIST 02228	

29

SYMBOL TABLE

LIST1 03662	LITF 07768	LKCD1 12918	LKCD3 12962	LKCD4 13006	LSTAD 02308	LSTEN 07059
LUXIT 07556	L1 04240	L2 04312	L4 11796	L5 11832	L6 11876	MASK 11989
MODAD 07919	MODE 06451	MON 12161	NUMB1 06302	MV1 11604	MV2 11692	MV3 11740
NONUM 03374	NUMB 06230	NUMB1 06302	NUMB2 06606	NUMB3 06510	NUMB5 06338	NXLOC 02372
N1 02233	N2 02238	OFLO 03318	OFLO1 03481	OFLO2 03131	OFLO3 03470	OMM 10109
ONE 03350	ORDCT 14673	OUTAR 13138	OUTSC 10464	OUTSN 13660	OUTSW 07068	PAUS 13916
PA1 10934	PA2 10782	PCNT 14093	PGNUM 02222	PI 11038	PLUS 06866	PLUSS 10033
PR 12651	PRNT1 04042	PRNT2 04094	PRNT4 03130	PTYPE 12866	PUT 09084	P2PTR 02313
READ1 02878	RECLG 02243	REF 09035	RETR 02490	RETRN 13166	ROUTN 13715	RTSW 05673
SALT 05942	SAVE 04036	SAVE1 11621	SAVE2 12937	SAVE3 11849	SCALE 14512	SCHI 06049
SCN1 03828	SCN2 03852	SCN3 03888	SCN4 03956	SC1 10884	SC2 06138	SC22 10620
SC3 10928	SC4 10764	SC5 10824	SC9 11164.	SD 10788	SETDM 10680	SLASH 12674
SMADD 07242	SMCNT 07295	SMLNG 05965	SMTLU 06988	SPERR 09278	SPGS 09362	STAFT 04431
STBL 02377	STC 05677	STNER 03410	STSN 05675	SUBPA 13194	SUBPF 13278	SUBP1 13314
SUBP2 13518	SUBSW 10114	SUBTR 08484	SV3 04179	SWSET 14682	SYM 10081	TBCM 04538
TBCNT 02429	TBST 04692	TEMP 02620	TEMP5 02625	TEND 02303	TFNZ 10093	TINUE 13851
TONY 11508	TPCST 13639	TRIND 02609	TWO 03362	URNCT 13279	VARBR 06546	VARSW 07615
W 02240	WIDCK 14464	WIDTH 14453	WW 02296	X 08172	ZER13 10097	

30

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
				00010	******		1620 FORTRAN II-D PHASE 1-B
02218				00020		DORG	02218
02222		00005		00030	*	DS	5
02222		00003		00040	PGNUM	DS	3,*
02223		00001		00050		DS	1
02225		00002		00060		DS	2
02231		00006		00070		DS	6
02233		00002		00080	N1	DS	2
02238		00005		00090	N2	DS	5
02240		00002		00100	W	DS	2
02243		00003		00110	RECLG	DS	3
02243		00012		00120	SAVSYM	DS	12 ,RECLG
02248		00005		00130	LENGTH	DS	5
02250		00002		00140	FLNG	DS	2
02252		00002		00150	KLNG	DS	2
02257		00005		00160	PROGST	DS	5
02262		00005		00170	COMADD	DS	5
02263		00030		00180	USEDFS	DSS	30
02293		00001		00190	SUBFCT	DS	1
02294		00001		00200	PUSTSN	DS	1
02296		00002		00210	WW	DS	2
02298		00002		00220	FP2	DS	2
02303		00005		00230	TEND	DS	5
02308		00005		00240	LSTAD	DS	5
02313		00005		00250	P2PTR	DS	5
02318		00005		00260	FCTEND	DS	5
02323		00005		00270		DS	5
02324	26	02366	02323	00280	FMON	TF	*+42,FMON-1,, SETUP ROUTINE ENTRY
02336	16	00565	02359	00290		TFM	IORT,*+23
02348	49	00566	00000	00300		B	IOGT,,7
02360	49	00000	00000	00310		B	,,, GO TO EXECUTE CALLED ROUTINE
02367				00320		DORG	*-4
02367		00001		00330	JAY	DS	1
02372		00005		00340	NXLOC	DS	5
02377		00005		00350	STBL	DS	5
02382		00005		00360	COMST	DS	5
02383		00001		00370	DISKSW	DC	1,0
02384		00001		00380	MULDEF	DC	1,0
02385		00001		00390	INTOP1	DSC	1,0
02390		00005		00400		DC	5,00600
02393		00003		00410		DC	3,001
02398		00005	‡5036	00420		DSA	CARD
02399		00001		00430		DC	1,a
02400	16	02359	θ2461	00440	CALLP2	TFM	FMON+35,BLK8
02412	17	02324	θ2400	00450		BTM	FMON,CALLP2
02424		00001		00460	INDIV	DS	1
				00470	*		INDIV = 0 FOR CARDS, 1 FOR TYPEWRITER,
				00480	*		FLAGGED 3 FOR PAPER TAPE
02429		00005		00490	TBCNT	DS	5
02248		00000		00500	ENTLOG	DS	,RECLG+5
15035		00000		00510	AFTBL	DS	,15035
15139		00430	X2	00520	CHI	DAS	430,15139
15839		00000		00530	CHI5	DS	,CHI+700
15036		00000		00540	CARD	DS	,CHI-103
00716		00000		00550	IOCAL	DS	,716
00566		00000		00560	IOGT	DS	,566
00520		00000		00570	IORBC	DS	,520

31

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

00532      00000          00580  IOPT   DS    ,532
00554      00000          00590  IOSK   DS    ,554
00602      00000          00600  ERRET  DS    ,602
00565      00000          00610  IORT   DS    ,565
02228      00000          00620  LIST   DS    ,2228
02230      00000          00630  BIGPRT DS    ,2230
00796      00000          00640  MONCAL DS    ,796
02430  16  02359  09862   00650  E86440 TFM   FMON+35  ,BLK7
02442  17  02324  02430   00660         BTM   FMON      ,E86440
02461      00000          00670  BLK8   DS    ,E86440+31
17340      00000          00680  FLIP1  DS    ,17340,,,          FLIP DISK ADDRESS
17207      00000          00690  FLOP1  DS    ,17200+7,,,        FLOP (RESTORE DISK ADDRESS)
03130      00000          00700  FLIP2  DS    ,E86440+700,,,     FLIP CORE ADDRESS
02454  16  02510  ‡7340   00710  FLIP   TFM   BLK9A+5,FLIP1
02466  16  00565  02489   00720  FLOP   TFM   IORT,*+23,,        BRING IN GENERAL PRINT ROUTINES
02478  49  00566  02497   00730         B     IOGT,BLK9,7
02490  49  00000          00740  RETR   B7    *-*
                          00750  ** TO FLIP  TFM RETRN-5,PRINT ROUTINE- ↑FM RETRN,RETURN ADDRESS B7FLIP
                          00760  ** TO RESTORE TFM BLK9A+5,PARTIAL DISK ADDRESS-TF RETRN-5,RETRN B7FLOP
02497      00002          00770  BLK9   DSC   2,22
02503      00005  02505   00780         DSA   BLK9A
02504      00001          00790         DC    1,ə
02505      00001          00800  BLK9A  DSC   1,0
02510      00005  ‡7340   00810         DSA   FLIP1
02513      00003          00820         DC    3,011
02518      00005  03130   00830         DSA   FLIP2
02519      00001          00840         DC    1,ə
                          00850  ** PRINT CHI OR CHI5    TFM DEFCHI,CHI(OR CHI5), BTM PRTCHI,*+12
                          00860  ** CALL TO PRINT IS   TFM DEFCHI,CHI(OR CHI5), BTM PRTCHI,*+12
02524      00005          00870         DC    5,12345
02526  16  00565  02549   00880  PRTCHI TFM   IORT,*+23
02538  49  00532  02589   00890         B     IOPT,DEFCHI-4,7
02550  47  02582  03400   00900         BNI   *+32,03400
02562  16  02496  03784   00910         TFM   RETR +6,CDOFLO
02574  49  02454          00920         B7    FLIP  ,,,          CALL TO OVERFLOW ROUTINE
02582  49  02525          00930         B7    PRTCHI-1,,6,       RETURN TO PRINT CALLER
02593      00005  ‡5139   00940  DEFCHI DSA   CHI
02596      00003          00950         DC    3,18ə,,,           CHI PRINT DEFINER
02600      00004          00960  ESNOPL DC    4,0
02601      00001          00970         DC    1,ə
02603      00002          00980  CCNO   DC    2,0
02608      00005          00990  BLOC   DC    5,0
02609      00001          01000  TRIND  DSC   1,0
02610      00001          01010  NOIND  DSC   1,0
02611      00001          01020  INSW   DSC   1,0
02612      00001          01030  CKEND  DSC   1,0
02615      00003          01040  PARCNT DC    3,0
02620      00005          01050  TEMP   DC    5,0
02625      00005          01060  TEMP5  DC    5,0
02626  17  09084  00132   01070  BEGIN  BTM   PUT,0132,811,      SEMI COLON
02638  16  02615  00000   01080  BEGINA TFM   PARCNT,0,9
02650  43  09910  10100   01090         BD    MODAFT,SINGST
02662  26  10114  10099   01100         TF    SUBSW,ZER13+2
02674  43  02718  02424   01110         BD    BA,INDIV
02686  15  15983  00000   01120         TDM   CHI5+144
02697      00001          01130         DC    1,ə,*
```

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

02698  31  15138  15838   01140         TR    CHI-1,CHI5-1
02710  49  02902  00000   01150         B     READ1+24
02717                     01160         DORG  *-4
02718  34  00000  00102   01170  BA     RCTY
02724      00000          01180  ESNO   DS    ,*-5
02725      00001          01190         DC    1,ə,*-4
02730  16  00565  02753   01200         TFM   IORT,*+23
02742  49  00566  09885   01210         B     IOGT,URDATA-4,7,   READ STATEMENTS FROM TYPEWRITER
02754  46  02718  00400   01220         BC4   *-36,,,            ALLOWS GOOF SWITCH
                          01230  ** CALL P/T TYPE PRINT ROUTINE FROM DISK-RETURN IS TO LNGPRT
02766  44  02798  02228   01240         BNF   LNGPRT,LIST,,      TOTAL LISTING
02778  16  02496  03828   01250         TFM   RETR +6,SCN1
02790  49  02454          01260         B7    FLIP
02798  14  15139  00043   01270  LNGPRT CM    CHI,43,10,         TEST FOR COMMENT
02810  47  03098  01200   01280         BNE   LEADBL
02822  14  15141  00000   01290         CM    CHI+2,0,10,
02834  47  03098  01200   01300         BNE   LEADBL
02846  14  15143  00000   01310         CM    CHI+4,0,10,
02858  46  02638  01200   01320         BE    BEGINA
02870  49  03098  00000   01330         B     LEADBL
02878                     01340         DORG  *-3
02878  16  00565  02901   01350  READ1  TFM   IORT,*+23
02890  49  00566  09893   01360         B     IOGT,CDDATA-4,7,   READ FIRST CARD
02902  16  02937  ‡5283   01370         TFM   *+35,CHI +144
02914  12  02937  00002   01380         SM    *+23,2,10
02926  26  02612  00000   01390         TF    CKEND
02938  43  02994  02612   01400  CKRM   BD    *+56,CKEND,,       SCAN BACK TO PLACE RECORD MARK
02950  43  02994  02611   01410         BD    *+44,CKEND-1
02962  14  02937  ‡5139   01420         CM    CKRM-1,CHI
02974  46  02914  01100   01430         BH    CKRM-24,,,         CHECK FOR BLANK CARD
02986  49  02878  00000   01440         B     READ1,,,
02994                     01450         DORG  *-3
02994  11  02937  00002   01460         AM    CKRM-1 ,2
03006  15  02937  00000   01470         TDM   CKRM-1 ,,6
03017      00001          01480         DC    1,ə,*
03018  44  03062  02228   01490         BNF   *+44,LIST,,        TOTAL LISTING
                          01500  **          PRINT CARDS FROM CHI
03030  16  02593  ‡5139   01510         TFM   DEFCHI,CHI,,       MODIFY PRINT DEFINER
03042  16  02525  03062   01520         TFM   PRTCHI-1,*+20
03054  49  02526          01530         B7    PRTCHI
03062  14  15139  00043   01540         CM    CHI,43,10
03074  46  02878  01200   01550         BE    READ1
03086  15  15148  00000   01560         TDM   CHI+9,0,11
03098  43  03130  15139   01570  LEADBL BD    *+32,CHI
03110  31  15138  15140   01580         TR    CHI-1,CHI+1
03122  49  03098  00000   01590         B     *-24
03130                     01600         DORG  *-3
03130  11  02600  00001   01610         AM    ESNOPL,1,10
03142  14  15139  00069   01620         CM    CHI,69,10
03154  47  03622  01100   01630         BNH   CSPVA-12,,,        BRANCH IF NO STATEMENT NUMBER
03166  32  07068  00000   01640         SF    OUTSW
03178  17  05446  03190   01650         BTM   CSTNO,*+12,,       OUTPUT STATEMENT NUMBER
03190  17  09084  00134   01660         BTM   PUT,      134,8,COLON
03202  26  02724  10081   01670         TF    ESNO,SYM
03214  16  02600  00000   01680         TFM   ESNOPL,0,8
03226  15  02610  00001   01690         TDM   NOIND,1,11
03238  11  07242  00005   01700         AM    SMADD,5,10
```

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
03250	43	03410	07242	01710		BD	STNER,SMADD,11, TEST IF STATEMENT NO. WAS USED BEFORE
03262	15	07242	00001	01720		TDM	SMADD,1,6, SET INDICATOR THAT STA.NO. APPEARED
03274	12	07242	00002	01730		SM	SMADD,2,10
03286	43	03306	07242	01740		BD	*+20,SMADD,11
03298	49	03342	00000	01750		B	*+44
03306				01760		DORG	*-3
03306	17	09084	08140	01770		BTM	PUT, 140,8,DUMMY
03318	15	07242	00000	01780		TDM	SMADD,0,6
03330	15	10101	00001	01790		TDM	DOTRAN,1
03342	11	07242	00001	01800		AM	SMADD,1,10
03354	43	03510	07242	01810		BD	FORM,SMADD,11
03366	14	15139	00000	01820	LEADZ	CM	CHI,0,10,
03378	47	03430	01200	01830		BNE	STNER+20
03390	31	15138	15140	01840		TR	CHI-1,CHI+1
03402	49	03366	00000	01850		B	*-36
03410				01860		DORG	*-3
03410	16	09373	00076	01870	STNER	TFM	SPGS+11,076,9
03422	49	09290	00000	01880		B	SPERR+12,,, STATEMENT NO. PREVIOUSLY USED
03430				01890		DORG	*-3
03430	14	15139	00046	01900		CM	CHI,46,10
03442	47	03634	01200	01910		BNE	CSPVA
03454	17	04696	00006	01920		BTM	COLNAM,6,10
03466	24	10081	10031	01930		C	SYM,FMTCST
03478	46	03634	01400	01940		BV	CSPVA
03490	46	10392	01200	01950		BE	FORMAT
03502	49	03634	00000	01960		B	CSPVA
03510				01970		DORG	*-3
03510	14	15139	00000	01980	FORM	CM	CHI,00,10, SHIFT OFF BLANKS
03522	47	03554	01200	01990		BNE	*+32
03534	31	15138	15140	02000		TR	CHI-1,CHI+1
03546	49	03510	00000	02010		B	*-36
03554				02020		DORG	*-3
03554	17	04696	00006	02030		BTM	COLNAM,6,10
03566	24	10081	10031	02040		C	SYM,FMTCST,, MUST BE FORMANT STATEMENT
03578	46	03602	01400	02050		BV	*+24
03590	46	10392	01200	02060		BE	FORMAT
03602	16	09373	00277	02070		TFM	SPGS+11,277,9
03614	49	09290	00000	02080		B	SPERR+12,,, ELSE ERROR 27
03622				02090		DORG	*-3
03622	15	02610	00000	02100		TDM	NOIND,
03634	16	08183	15139	02110	CSPVA	TFM	X+11,CHI,
03646	11	08183	00002	02120		AM	X+11,2,10
03658	45	03702	08183	02130		BNR	*+44,X+11,11
03670	16	08183	00037	02140		TFM	X+11 ,37,610
03682	31	08183	06066	02150		TR	X+11 ,AVOID,6, AVOID = FLAG3,7,FLAG0,RECMARK
03694	49	03794	00000	02160		B	DECODE
03702				02170		DORG	*-3
03702	14	08183	00000	02180		CM	X+11 ,0,610
03714	47	03646	01200	02190		BNE	CSPVA+12
03726	26	03780	08183	02200		TF	*+54,X+11
03738	26	03785	03780	02210		TF	*+47,*+42
03750	11	03785	00001	02220		AM	*+35,1,10
03762	12	03780	00001	02230		SM	*+18,1,10
03774	31	00000	00000	02240		TR	,,, ELIMINATE BLANKS
03786	49	03658	00000	02250		B	CSPVA+24
03794				02260		DORG	*-3
03794	16	03829	15137	02270	DECODE	TFM	*+35,CHI-2

34

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
03806	11	03829	00002	02280		AM	*+23,2,10
03818	45	03838	00000	02290		BNR	*+20
03830	49	03910	00000	02300		B	*+80
03838				02310		DORG	*-3
03838	14	03829	00040	02320		CM	DECODE+35,40,610
03850	46	03806	01100	02330		BH	DECODE+12
03862	14	03829	00033	02340		CM	DECODE+35,33,610
03874	47	03930	01200	02350		BNE	*+56
03886	14	02615	00000	02360		CM	PARCNT,0,10
03898	46	04018	01200	02370		BE	DECODA
03910	16	02615	00000	02380		TFM	PARCNT,0,9
03922	49	04144	00000	02390		B	NONARI
03930				02400		DORG	*-3
03930	14	03829	00024	02410		CM	DECODE+35,24,610
03942	47	03974	01200	02420		BNE	*+32
03954	11	02615	00001	02430		AM	PARCNT,1,10
03966	49	03806	00000	02440		B	DECODE+12
03974				02450		DORG	*-3
03974	14	03829	00004	02460		CM	DECODE+35,4,610
03986	47	03806	01200	02470		BNE	DECODE+12
03998	12	02615	00001	02480		SM	PARCNT,1,10
04010	49	03806	00000	02490		B	DECODE+12
04018				02500		DORG	*-3
04018	11	03829	00002	02510	DECODA	AM	DECODE+35,2,10
04030	45	04050	03829	02520		BNR	*+20,DECODE+35,11
04042	49	04098	00000	02530		B	CKCTAR
04050				02540		DORG	*-3
04050	14	03829	00023	02550		CM	DECODE+35,23,610
04062	46	10416	01200	02560		BE	DOO
04074	14	03829	00024	02570		CM	DECODE+35,24,610
04086	47	04018	01200	02580		BNE	DECODA
04098	43	10440	02424	02590	CKCTAR	BD	ASCAN,INDIV
04110	17	04876	00000	02600		BTM	CKCNTU,0,10
04122	49	10440	00000	02610		B	ASCAN
04130				02620		DORG	*-3
04143		00014		02630		DS	14,,, NONARI MUST BE AT LEAST -04144-
04144	16	04246	04692	02640	NONARI	TFM	L1+6,TBST
04156	33	15140	00000	02650		CF	CHI+1
04168	33	15142	00000	02660		CF	CHI+3
				02662			**
04179		00000		02664	SV3	DS	,*
04180	26	04179	15142	02666		TF	SV3,CHI+3 ,,,SAVE FIRST 2 AND 1/2 CHARACTERS
				02668		*	....
04192	24	15143	10041	02670		C	CHI+4,ENDCT+4
04204	46	09564	01200	02680		BE	END
04216	43	04240	02424	02690		BD	*+24,INDIV
04228	17	04876	00000	02700		BTM	CKCNTU,0,10
04240	24	04692	15143	02710	L1	C	TBST,CHI+4
04252	46	04312	01200	02720		BE	L2
04264	12	04246	00001	02730		SM	L1+6,11,10
04276	45	04240	04246	02740		BNR	L1,L1+6,11
04288	31	15138	15144	02750		TR	CHI-1,CHI+5
04300	17	09384	00071	02760	ERRO1	BTM	ERROR,071,9
04312	14	04246	04538	02770	L2	CM	L1+6,TBCM
04324	47	04396	01100	02780		BNH	*+72
04336	15	05675	00000	02790		TDM	STSN,0,,, SET SINGLE STATEMENT SWITCH OFF
04348	44	04396	02609	02800		BNF	*+48,TRIND

35

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
04360	15	02609	00000	02810		TDM	TRIND,0
04372	43	04396	02610	02820		BD	**+24,NOIND
04384	17	09440	00572	02830		BTM	ERROR2,572,9, MISSING STATEMENT NUMBER AFTER TRANSFER
04396	12	04246	00086	02840		SM	L1+6,6,10
04408	31	15138	15144	02850		TR	CHI-1,CHI+5
04420	32	04246	‡5040	02860		SF	L1+6,AFTBL+5,7
04431		00005		02870	START	DS	5 ,*
04432	49	04246	00000	02880		B	L1+6,,6
04439				02890		DORG	*-4
04439		00001		02900		DC	1,a
04444		00005	‡0224	02910		DSA	NONARA
04450		00006		02920		DC	6,466455,, FUNCTION
04455		00005	‡0224	02930		DSA	NONARA
04461		00006		02940		DC	6,626442,, SUBROUTINE
04466		00005	‡0224	02950		DSA	NONARA
04472		00006		02960		DC	6,444546,, DEFINE
04477		00005	‡0224	02970		DSA	NONARA
04483		00006		02980		DC	6,455864,, EQUIVALENCE
04488		00005	‡0272	02990		DSA	COMMON
04494		00006		03000		DC	6,435654,, COMMON
04499		00005	‡0248	03010		DSA	DIM
04505		00006		03020		DC	6,444954,, DIMENSION
				03021		***
04510		00005	02626	03022		DSA	BEGIN
04516		00006		03024		DC	6,455544,, END TRACE
04521		00005	‡0224	03026		DSA	NONARA
04527		00006		03028		DC	6,424547,, BEGIN TRACE
				03029		*...
04532		00005	‡0368	03030		DSA	RETURN
04538		00006		03040	TBCM	DC	6,594563,, RETURN
04543		00005	‡0224	03050		DSA	NONARA
04549		00006		03060		DC	6,626356,, STOP
04554		00005	‡0224	03070		DSA	NONARA
04560		00006		03080		DC	6,574164,, PAUSE
04565		00005	‡0488	03090		DSA	DKIO .
04571		00006		03100		DC	6,464955,, FIND
04576		00005	‡0488	03110		DSA	DKIO
04582		00006		03120		DC	6,464563,, FETCH
04587		00005	‡0488	03130		DSA	DKIO
04593		00006		03140		DC	6,594543,, RECORD
04598		00005	‡0200	03150		DSA	IOUT
04604		00006		03160		DC	6,414343,, ACCEPT
04609		00005	‡0200	03170		DSA	IOUT
04615		00006		03180		DC	6,576455,, PUNCH
04620		00005	‡0200	03190		DSA	IOUT
04626		00006		03200		DC	6,636857,, TYPE
04631		00005	‡0200	03210		DSA	IOUT
04637		00006		03220		DC	6,575949,, PRINT
04642		00005	‡0200	03230		DSA	IOUT
04648		00006		03240		DC	6,594541,, READ
04653		00005	‡0224	03250		DSA	NONARA
04659		00006		03260		DC	6,435655,, CONTINUE
04664		00005	‡0344	03270		DSA	CALL
04670		00006		03280		DC	6,434153,, CALL
04675		00005	‡0320	03290		DSA	GOTO
04681		00006		03300		DC	6,475663,, GOTO

36

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
04686		00005	‡0296	03310		DSA	IF
04692		00006		03320	TBST	DC	6,494624,, IF(
04694		00002		03330		DS	2
04696	16	04738	‡0055	03340	COLNAM	TFM	**+42,SYM-26,, COLLECT NAMES TO DETERMINE TYPE OF STMNT
04708	16	04743	‡5139	03350		TFM	**+35,CHI
04720	11	04738	00082	03360		AM	**+18,2,10
04732	26	00000	‡5139	03370		TF	,CHI,7
04744	11	04743	00082	03380		AM	*-1,2,10
04756	45	04776	04743	03390		BNR	**+20,*-13,11
04768	49	04800	00000	03400		B	**+32
04776				03410		DORG	*-3
04776	12	04695	00081	03420		SM	COLNAM-1,1,10
04788	47	04720	01200	03430		BNZ	COLNAM+24
04800	16	04830	‡0056	03440		TFM	**+30,SYM-25
04812	11	04830	00082	03450		AM	**+18,2,10
04824	33	00000	00000	03460		CF	
04835		00005		03470	OUTSCE	DS	5 ,*
04836	24	04830	04738	03480		C	*-6,COLNAM+42
04848	47	04812	01100	03490		BNH	*-36
04860	26	10081	04738	03500		TF	SYM,COLNAM+42,11
04872	42	00000	00000	03510		BB	
04874				03520		DORG	*-9
				03530	****		CHECK FOR CONTINUATION CARDS ****
04875		00002		03540		DS	2
04876	16	00565	04899	03550	CKCNTU	TFM	IORT,**+23
04888	49	00566	09901	03560		B	IOGT,C5DATA-4,7
04900	43	04962	15849	03570		BD	CKCN1,CHI5+10
04912	16	02603	00080	03580		TFM	CCNO,0,10
04924	14	15839	00043	03590		CM	CHI5,43,10
04936	46	04960	01200	03600		BE	**+24
04948	15	15848	00008	03610		TDM	CHI5+9, 0,11
04960	42	00000	00000	03620		BB	
04961				03630		DORG	*-10
04962	14	02603	00084	03640	CKCN1	CM	CCNO,04,10, TEST FOR MORE THAN 4 CONTINUATION CARDS
04974	47	05042	01200	03650		BNE	**+68
04986	14	15839	00043	03660		CM	CHI5,43,10
04998	46	05042	01200	03670		BE	**+44
05010	16	02603	00080	03680		TFM	CCNO,0,10
05022	16	09373	00273	03690		TFM	SPGS+11,273,9
05034	49	09290	00000	03700		B	SPERR+12
05042				03710		DORG	*-3
05042	16	05089	‡5983	03720		TFM	**+47,CHI5+144
05054	43	05158	10104	03730		BD	CKCN2+68,FMSW
05066	12	05089	00082	03740		SM	**+23,2,10
05078	26	02612	00000	03750		TF	CKEND
05090	43	05146	02612	03760	CKCN2	BD	**+56,CKEND
05102	43	05146	02611	03770		BD	**+44,CKEND-1
05114	14	05089	‡5851	03780		CM	CKCN2-1,CHI5+12
05126	46	05066	01100	03790		BH	CKCN2-24
05138	49	04876	00000	03800		B	CKCNTU
05146				03810		DORG	*-3
05146	11	05089	00082	03820		AM	CKCN2-1 ,2,10
05158	15	05089	00000	03830		TDM	CKCN2-1 ,,6
05169		00001		03840		DC	1,a,*
05170	44	05214	02228	03850		BNF	**+44,LIST,, TOTAL LISTING
				03860	**		PRINT CARDS FROM CHI5
05182	16	02593	‡5839	03870		TFM	DEFCHI,CHI5

37

```
LOCTN  OP  P/L    Q       PG/LN  LABEL   MNEM OPERANDS AND REMARKS

05194  16  02525  05214   03880          TFM  PRTCHI-1,*+20
05206  49  02526          03890          B7   PRTCHI
05214  14  15839  00043   03900          CM   CHI5,43,10,
05226  46  04876  01200   03910          BE   CKCNTU
05238  11  02603  00001   03920          AM   CCNO,1,10
05250  43  05386  10104   03930          BD   CKCN4,FMSW
05262  16  05297  15849   03940          TFM  *+35,CHI5+10
05274  11  05297  00002   03950          AM   *+23,2,10
05286  45  05330  00000   03960  CKCN3   BNR  *+44,
05298  16  08183  00037   03970          TFM  X+11    ,37,610
05310  31  08183  06066   03980          TR   X+11    ,AVOID,6
05322  49  04876  00000   03990          B    CKCNTU
05330                     04000          DORG *-3
05330  14  05297  00000   04010          CM   CKCN3+11,0,610 ,   CHECK FOR BLANKS AND MOVE NON BLANK
05342  46  05274  01200   04020          BE   CKCN3-12,,          TO SCAN AREA
05354  26  08183  05297   04030          TF   X+11    ,CKCN3+11,611
05366  11  08183  00002   04040          AM   X+11    ,2,10
05378  49  05274  00000   04050          B    CKCN3-12
05386                     04060          DORG *-3
05386  26  05416  08183   04070  CKCN4   TF   *+30,X+11
05398  12  05416  00001   04080          SM   *+18,1,10
05410  31  00000  15850   04090          TR   ,CHI5+11
05422  11  08183  00132   04100          AM   X+11    ,132,9
05434  49  04876  00000   04110          B    CKCNTU
                         04120  ******     THE FOLLOWING IS USED TO COLLECT STATEMENT NUMBERS  *****
05446  26  05737  05445   04130  CSTNO   TF   CSORN-1,*-1,,       SET UP RETURN ADDRESS
05458  43  05490  15139   04140          BD   *+32,CHI
05470  31  15138  15140   04150          TR   CHI-1,CHI+1,,      SHIFT OFF LEADING ZEROS
05482  49  05458  00000   04160          B    *-24
05490                     04170          DORG *-3
05490  16  10067  00000   04180          TFM  SYM-14,0000,8
05502  16  05556  10067   04190          TFM  CSTNO1+6,SYM-14
05514  14  15139  00069   04200          CM   CHI,69,10
05526  47  05654  01100   04210          BNH  CSTNO1+104
05538  11  05556  00001   04220          AM   *+18,1,10
05550  25  00000  15139   04230  CSTNO1  TD   ,CHI
05562  31  15138  15140   04240          TR   CHI-1,CHI+1
05574  45  05594  15141   04250          BNR  *+20,CHI+2
05586  49  05618  00000   04260          B    *+32
05594                     04270          DORG *-3
05594  14  15139  00069   04280          CM   CHI,69,10
05606  46  05538  01100   04290          BH   CSTNO1-12
05618  14  05556  10071   04300          CM   CSTNO1+6,SYM-10
05630  47  05654  01100   04310          BNH  *+24
05642  17  09440  00576   04320          BTM  ERROR2,576,9,      STATEMENT NO GREATER THAN 4 DIGITS
05654  26  10081  05556   04330          TF   SYM,CSTNO1+6,11
05666  32  10078  00000   04340          SF   SYM-3
05673      00001          04350  RTSW    DS   1    ,*-4
05674      00001          04360  ERSW    DS   1    ,*-3
05675      00001          04370  STSN    DC   1    ,1,*-2
05677      00002          04380  STC     DC   2    ,00,*
05678  43  05445  10106   04390          BD   CSTNO-1,DIMSW,6,   EXIT IF IN DIMENSION STATEMENT
05690  15  06453  00002   04400          TDM  FXORFL,2
05702  15  07615  00001   04410          TDM  VARSW,1,,           EXIT TO LOOK UP STATEMENT NUMBER
05714  15  10105  00001   04420          TDM  STNOSW,1
05726  49  06988  00000   04430          B    SMTLU
05738  43  05762  10110   04440  CSORN   BD   *+24,EQUSW
```

38

```
LOCTN  OP  P/L    Q       PG/LN  LABEL   MNEM OPERANDS AND REMARKS

05750  16  06049  15139   04450          TFM  SCHI,CHI,,         INITIALIZE IF NOT IN EQUIVALENCE
05762  15  06453  00000   04460          TDM  FXORFL,0,,         INITIALIZE FIX OR FLOAT SWITCH
05774  14  06049  00003   04470          CM   SCHI,3,610,
05786  46  06150  01200   04480          BE   NUMBER
05798  14  06049  00069   04490          CM   SCHI,69,610,
05810  46  06150  01100   04500          BH   NUMBER
05822  14  06049  00048   04510          CM   SCHI,48,610,       TEST FOR FIX VAR.
05834  47  05882  01100   04520          BNH  CS
05846  14  06049  00055   04530          CM   SCHI,55,610
05858  46  05882  01100   04540          BH   CS
05870  15  06453  00002   04550          TDM  FXORFL,2,,         SET FXORFL TO FIX VAR
05882  16  05965  00000   04560  CS      TFM  SMLNG,0,10,        INITIALIZE SYMBOL LENGTH COUNT
05894  16  05948  10069   04570          TFM  SALT+6,SYM-12
05906  16  05960  10068   04580          TFM  SALT+18,SYM-13
05918  11  05948  00002   04590          AM   SALT+6,2,10
05930  11  05960  00002   04600          AM   SALT+18,2,10
05942  26  00000  06049   04610  SALT    TF   ,SCHI,11,
05954  33  00000  00000   04620          CF
05965      00000          04630  SMLNG   DS   ,*
05966  11  05965  00002   04640          AM   SMLNG,2,10
05978  11  06049  00002   04650          AM   SCHI,2,10
05990  14  06049  00040   04660          CM   SCHI,40,610
06002  47  06058  01100   04670          BNH  *+56
06014  14  05965  00012   04680          CM   SMLNG,12,10
06026  47  05918  01300   04690          BL   SALT-24
06038  32  10070  00000   04700          SF   SYM-11
06049      00000          04710  SCHI    DS   ,*
06050  49  06138  00000   04720          B    SC2
06058                     04730          DORG *-3
06058  32  10070  00000   04740          SF   SYM-11
06066      00002          04750  AVOID   DC   2,37,*-3
06068      00002          04760          DC   2,@,*-1
06070  26  10081  05948   04770          TF   SYM,SALT+6,11,
06082  15  07615  00000   04780          TDM  VARSW,0
06094  43  06988  10110   04790          BD   SMTLU,EQUSW,,      TEST  TO SEE IF
06106  12  06049  00001   04800          SM   SCHI,1,10,         SYMBOL IS TO BE
06118  31  15138  06049   04810          TR   CHI-1,SCHI,11,     SHIFTED OFF
06130  49  06988  00000   04820          B    SMTLU
06138                     04830          DORG *-3
06138  17  09384  00078   04840  SC2     BTM  ERROR,78,9,        NAME GREATER THAN 6 CHARACTERS
06150  15  07615  00001   04850  NUMBER  TDM  VARSW,1,,          SET VARIABLE SW. TO INDICATE LITERAL
06162  26  10081  06988   04860          TF   SYM,ZERSYM+1
06174  16  06308  10052   04870          TFM  NUMB1+6,SYM-29
06186  14  15139  00070   04880          CM   CHI,70, 10,        TEST FOR LEADING ZEROS
06198  47  06230  01200   04890          BNE  *+32
06210  31  15138  15140   04900          TR   CHI-1,CHI+1
06222  49  06186  00000   04910          B    *-36
06230                     04920          DORG *-3
06230  14  15139  00003   04930  NUMB    CM   CHI,3, 10
06242  46  06462  01200   04940          BE   FLNUMB
06254  14  15139  00069   04950          CM   CHI,69,10
06266  47  06358  01100   04960          BNH  FXNUMB
06278  14  06308  10082   04970          CM   NUMB1+6,SYM+1
06290  46  06314  01300   04980          BNL  *+24
06302  25  00000  15139   04990  NUMB1   TD   ,CHI,,             COLLECT MANTISSA
06314  31  15138  15140   05000          TR   CHI-1,CHI+1
06326  11  06308  00001   05010          AM   NUMB1+6,1,10
```

39

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
06338	11	10051	00001	05020	NUMB5	AM	SYM-30,1,10
06350	49	06230	00000	05030		B	NUMB
06358				05040		DORG	*-3
06358	15	06453	00002	05050	FXNUMB	TDM	FXORFL,2,,	SET FIX OR FLOAT SW TO FIX CONST
06370	12	10051	00001	05060		SM	SYM-30,1,10
06382	24	02252	10051	05070		C	KLNG,SYM-30,,	TEST IF FIX NUMBER EXCEEDS K
06394	46	06418	01300	05080		BNL	*+24
06406	17	09384	00177	05090		BTM	ERROR,177,9,	FIXED POINT NUMBER GREATER THAN K
06418	26	10051	10093	05100		TF	SYM-30,TENZ
06430	26	10082	06308	05110		TF	SYM+1,NUMB1+6,11,	RIGHT JUSTIFY VALUE
06442	32	10082	00000	05120		SF	SYM+1,,2
06451		00002		05130	MODE	DC	2,0,*-2
06453		00002		05140	FXORFL	DC	2,0,*
06454	49	06988	00000	05150		B	SMTLU
06462				05160		DORG	*-3
06462	16	06552	06510	05170	FLNUMB	TFM	VARBR+6,NUMB3
06474	14	10051	00001	05180		CM	SYM-30,1,10
06486	46	06510	01200	05190		BE	*+24
06498	16	06552	06618	05200		TFM	VARBR+6,NUMB2+12
06510	12	10051	00001	05210	NUMB3	SM	SYM-30,1,10
06522	31	15138	15140	05220		TR	CHI-1,CHI+1
06534	14	15139	00070	05230		CM	CHI,70,10
06546	46	00000	01200	05240	VARBR	BE	,,,	BRANCH BACK TO SHIFT OFF LEADING ZEROS
06558	47	06638	01100	05250		BNH	CMPAR
06570	16	06552	06618	05260		TFM	VARBR+6,NUMB2+12
06582	14	06308	10082	05270		CM	NUMB1+6,SYM+1
06594	46	06618	01300	05280		BNL	*+24
06606	25	06308	15139	05290	NUMB2	TD	NUMB1+6,CHI,6,	COLLECT NUMBER
06618	11	06308	00001	05300		AM	NUMB1+6,1,10
06630	49	06522	00000	05310		B	NUMB3+12
06638				05320		DORG	*-3
06638	14	15139	00045	05330	CMPAR	CM	CHI,45,10,	TEST FOR E TYPE
06650	47	06878	01200	05340		BNE	PLUS+12
06662	16	06877	00000	05350		TFM	PLUS+11,0,10
06674	15	06867	00001	05360		TDM	PLUS+1,1
06686	14	15141	00020	05370		CM	CHI+2,20,10
06698	47	06734	01300	05380		BL	*+36
06710	47	06746	01200	05390		BNE	*+36
06722	15	06867	00002	05400		TDM	PLUS+1,2
06734	31	15138	15140	05410		TR	CHI-1,CHI+1
06746	14	15141	00069	05420		CM	CHI+2,69,10
06758	46	06782	01100	05430		BH	*+24
06770	17	09384	00178	05440	EXCESS	BTM	ERROR,178,9,	INVALID EXPONENT
06782	25	06877	15141	05450		TD	PLUS+11,CHI+2
06794	31	15138	15142	05460		TR	CHI-1,CHI+3
06806	14	15139	00069	05470		CM	CHI,69,10
06818	47	06866	01100	05480		BNH	PLUS
06830	22	06876	06877	05490		S	PLUS+10,PLUS+11
06842	25	06877	15139	05500		TD	PLUS+11,CHI
06854	31	15138	15140	05510		TR	CHI-1,CHI+1
06866	11	10051	00000	05520	PLUS	AM	SYM-30,,7
06878	26	10081	10051	05530		TF	SYM,SYM-30
06890	32	10052	00000	05540		SF	SYM-29
06902	26	10079	10051	05550		TF	SYM-2,SYM-30,7
06914	46	06770	01400	05560		BV	EXCESS
06926	43	06988	10052	05570		BD	SMTLU,SYM-29
06938	16	10081	00099	05580		TFM	SYM,99,1011

40

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
06950	49	06988	00000	05590		B	SMTLU
06958				05600		DORG	*-3
06987		00030		05610	ZERSYM	DC	30,0
06959		00003		05620		DC	3,010,ZERSYM-28
				05630	******		SYMBOL TABLE LOOK UP ******
				05640	*		*
06988	16	07919	02373	05650	SMTLU	TFM	MODAD,STBL-4
07000	16	07242	00000	05660		TFM	SMADD
07012	16	07295	02371	05670		TFM	SMCNT,STBL-6
				05680	******		MODAD IS USED TO TEST FOR FIX OR FLOAT
				05690	**		SMADD WILL CONTAIN THE ADDRESS OF THE SYMBOL ENTRY AT EXIT
				05700	**		SMCNT IS USED TO FIND VARIABLE OR LITERAL
07024	26	07059	02429	05710		TF	LSTEN,TBCNT
07036	11	07059	00001	05720		AM	LSTEN,1,10
07048	33	08124	00000	05730		CF	DMVAR
07059		00000		05740	LSTEN	DS	,*
07060	49	07104	00000	05750		B	SMLOOP+36
07068				05760		DORG	*-3
07068	12	07295	00010	05770	SMLOOP	SM	SMCNT,10,10
07068		00000		05780	OUTSW	DS	,SMLOOP
07080	12	07919	00010	05790		SM	MODAD,10,10
07092	11	07242	00010	05800		AM	SMADD,10,10
07104	12	07059	00001	05810		SM	LSTEN,1,10
07116	46	07204	01100	05820		BH	JOE
07128	26	07163	07295	05830		TF	*+35,SMCNT
07140	12	07163	00050	05840		SM	*+23,50,10
07152	45	07184	00000	05850		BNR	TBLFUL
07164	11	02429	00001	05860		AM	TBCNT,1,10
07176	49	08124	00000	05870		B	ADVAR
07184				05880		DORG	*-3
07184	17	09440	00074	05890	TBLFUL	BTM	ERROR2,74,9,
07196	49	00796	00000	05900		B	MONCAL,,,	ABORT JOB CAN NOT GO ON
07204				05910		DORG	*-3
07204	43	07720	07615	05920	JOE	BD	LITERL,VARSW,,	BRANCH IF SYMBOL IS A CONSTANT
07216	44	07236	07295	05930		BNF	*+20,SMCNT,11,	FLAG AT SMCNT IMPLIES CONSTANT
07228	49	07068	00000	05940		B	SMLOOP
07236				05950		DORG	*-3
07236	24	00000	10081	05960		C	,SYM
07242		00000		05970	SMADD	DS	,*-5
07248	46	07068	01400	05980		BV	SMLOOP
07260	47	07068	01200	05990		BNE	SMLOOP
07272	15	02611	00001	06000		TDM	INSW,1,,	SET DIGIT IN INSW IF VARIABLE FOUND
07284	33	07242	00000	06010		CF	SMADD
07295		00000		06020	SMCNT	DS	,*
07296	24	07242	02318	06030		C	SMADD,FCTEND,,	TEST IF SYMBOL WAS LIBRARY FUNCT
07308	46	08880	01100	06040		BH	FCTEST,,,
07320	11	07295	00003	06050		AM	SMCNT,3,10
07332	43	05737	10106	06060		BD	CSORN-1,DIMSW,6,	RETURN IF IN DIMENSION STATEMENT
07344	43	07376	10010	06070		BD	*+32,EQUSW
07356	14	15139	00024	06080		CM	CHI,24,10
07368	49	07388	00000	06090		B	*+20
07376				06100		DORG	*-3
07376	14	06049	00024	06110		CM	SCHI,24,610
07388	45	07408	07295	06120		BNR	*+20,SMCNT,11
07400	49	07980	00000	06130		B	FCTST
07408				06140		DORG	*-3
07408	46	07512	01200	06150		BE	DIMERR+12

41

```
LOCTN  OP  P/L    Q      PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

07420  43  07440  07295  06160         BD    *+20,SMCNT,11,    TEST FOR DIM VARIABLE
07432  49  07556  00000  06170         B     LUXIT
07439                    06180         DORG  *-4
07439      00001         06190  FNTSW2 DSC   1,0
07440  43  07556  10113  06200         BD    LUXIT,IOSW,,      DIM VAR USED W/O DIM IN I/O STATEMENT
07452  43  07556  07439  06210         BD    LUXIT,FNTSW2
07464  43  07556  10111  06220         BD    LUXIT  ,CALLSW,,  DIM VAR USED W/O DIM IN CALL
07476  43  11968  10112  06230         BD    COME,COMSW,,      SAME FOR COMMON
07488  43  07544  10110  06240         BD    LUXIT-12,EQUSW
07500  17  09384  00073  06250  DIMERR BTM   ERROR,73,9,       DIMENSIONED VAR USED WITH OUT SUBSCRIPT
07512  43  09496  10112  06260         BD    COMER2,COMSW
07524  43  07544  07295  06270         BD    *+20,SMCNT,11
07536  49  07500  00000  06280         B     DIMERR
07544                    06290         DORG  *-3
07544  32  08124  00000  06300         SF    DMVAR,,,          SET DIMENSION VARIABLE SWITCH
                         06310  ****** EXIT FROM TABLE LOOK UP   ******
07556  44  05737  07068  06320  LUXIT  BNF   CSORN-1,OUTSW,6,  EXIT IF OUTSW NOT SET
07568  33  07068  00000  06330         CF    OUTSW
07580  27  09084  07241  06340         BT    PUT,SMADD-1
07592  44  07636  08124  06350         BNF   *+44,DMVAR
07604  33  08124  00000  06360         CF    DMVAR
07615      00000         06370  VARSW  DS    ,*
07616  26  04835  05737  06380         TF    OUTSCE,CSORN-1
07628  49  10464  00000  06390         B     OUTSC
07636                    06400         DORG  *-3
07636  44  07668  10102  06410         BNF   *+32   ,FNTSW,,   TEST IF SYMBOL WAS A FUNCTION NAME
07648  17  09084  00154  06420         BTM   PUT,0154,8,       ARITH STATEMENT CALL
07660  49  05737  00000  06430         B     CSORN-1,,6
07668                    06440         DORG  *-3
07668  43  07688  10102  06450         BD    *+20,FNTSW,,      DIGIT AND NO FLAG IMPLIES SUBPROGRAM
07680  49  05737  00000  06460         B     CSORN-1,,6
07688                    06470         DORG  *-3
07688  43  09484  10109  06480         BD    AERR1,OMM,,       STATEMENT FUNCTION PREV DEFINED
07700  17  09084  00153  06490         BTM   PUT,0153,8,       FUNCTION OPERATOR CALL
07712  49  05737  00000  06500         B     CSORN-1,,6
07720                    06510         DORG  *-3
                         06520  ****** SEARCH SYMBOL TABLE FOR CONSTANTS    ******
07720  44  07068  07295  06530  LITERL BNF   SMLOOP,SMCNT,11,  CONSTS HAVE FLAG
07732  43  08744  10105  06540         BD    LUSTNO,STNOSW,,   BRANCH IF LOOKING-UP STATEMENT NUMBER
07744  43  08060  06453  06550         BD    FXLIT,FXORFL,,    BR IF SEARCHING FOR FIXED CONST
07756  43  07068  07919  06560         BD    SMLOOP,MODAD,11,
07768  24  07242  10081  06570  LITF   C     SMADD,SYM,6,      COMPARE CHARACTERISTICS
07780  47  07068  01200  06580         BNE   SMLOOP
07792  26  08519  07242  06590         TF    ADSAVE,SMADD
07804  33  08519  00000  06600         CF    ADSAVE
07816  33  07295  00000  06610         CF    SMCNT,,6
07828  12  08519  00002  06620         SM    ADSAVE,2,610
07840  24  07242  10079  06630         C     SMADD ,SYM-2,6,   COMPARE MANTISSA
07852  46  07896  01200  06640         BE    *+44
07864  11  08519  00002  06650         AM    ADSAVE,2,610
07876  32  07295  00000  06660         SF    SMCNT,,6
07888  49  07068  00000  06670         B     SMLOOP
07896                    06680         DORG  *-3
07896  11  08519  00002  06690         AM    ADSAVE,2,610
07908  32  07295  00000  06700         SF    SMCNT,,6
07919      00000         06710  MODAD  DS    ,*
07920  15  02611  00001  06720         TDM   INSW,1
```

```
LOCTN  OP  P/L    Q      PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

07932  33  07242  00000  06730  E37061 CF    SMADD
07944  14  15139  00024  06740         CM    CHI,24,10
07956  47  07556  01200  06750         BNE   LUXIT
07968  17  09384  00378  06760         BTM   ERROR,378,9
                         06770  ****** TEST FOR SINGLE STATEMENT FUNCTION OR FUNCTION SUBROUTINE
07980  46  08016  01200  06780  FCTST  BE    *+36
07992  43  08016  10111  06790         BD    *+24,CALLSW
08004  17  09384  00079  06800  ERRO9  BTM   ERROR,079,9,      INCORRECT USE OF SUBPROGRAM NAME
08016  15  10102  00001  06810         TDM   FNTSW,1,,         FUNCTION SUBROUTINE
08028  44  07556  07295  06820         BNF   LUXIT,SMCNT,11
08040  32  10102  00000  06830         SF    FNTSW,,,
08052  49  07556  00000  06840         B     LUXIT
08060                    06850         DORG  *-3
08060  43  08080  07919  06860  FXLIT  BD    *+20,MODAD,11,    DIGIT INDICATES FIX VAR
08072  49  07068  00000  06870         B     SMLOOP
08080                    06880         DORG  *-3
08080  44  07068  07919  06890         BNF   SMLOOP,MODAD,11,  TEST FOR STATEMENT NO.
08092  24  07242  10081  06900         C     SMADD,SYM,6
08104  47  07068  01200  06910         BNE   SMLOOP
08116  49  07932  00000  06920         B     E37061
08124                    06930         DORG  *-3
                         06940  ****** ENTRY TO ADD A NEW VARIABLE TO SYMBOL TABLE    ******
08124  33  07242  00000  06950  ADVAR  CF    SMADD
08124      00000         06960  DMVAR  DS    ,ADVAR
08136  15  02611  00000  06970         TDM   INSW,0
08148  11  07295  00003  06980         AM    SMCNT,3,10
08160  25  07919  06453  06990         TD    MODAD,FXORFL,6,
08172  32  07919  00000  07000  X      SF    MODAD,,6
08184  43  08584  07615  07010         BD    ADLIT,VARSW,,     BRANCH TO ADD CONSTANT
08196  21  02372  05965  07020         A     NXLOC,SMLNG,,     MOD SYMBOL STORAGE BY NUMBER OF CHAR
08208  26  02372  10081  07030         TF    NXLOC,SYM,6,      MOVE SYMBOL INTO SYM STORAGE
08220  26  07242  02372  07040  ADVLOP TF    SMADD,NXLOC,6,    MOVE ADD OF SYM INTO SYMBOL TABLE
08232  43  08252  10106  07050         BD    ADVAR1,DIMSW,,    TEST IF IN DIMENSION STATEMENT
08244  49  08300  00000  07060         B     ADVAR2
08252                    07070         DORG  *-3
08252  12  07242  00010  07080  ADVAR1 SM    SMADD,10,10
08264  11  02429  00001  07090         AM    TBCNT,1,10
08276  26  07242  02372  07100         TF    SMADD,NXLOC,6,    PLACE DOUBLE ENTRY FOR DIMENSION VAR
08288  11  07242  00010  07110         AM    SMADD,10,10
08300  43  08496  10114  07120  ADVAR2 BD    ADSUBP,SUBSW,,    TEST IF IN SUBROUTINE STATEMENT
08312  43  05737  10106  07130         BD    CSORN-1,DIMSW,6,  GOTO COLLECT DIMENSIONS IF IN DIM
08324  44  08348  10112  07140  SETIND BNF   *+24,COMSW,,      TEST IF IN COMMON
08336  32  07295  00000  07150         SF    SMCNT,,6,         SET FLAG ON INDICATOR IF COMMON VARIABLE
08348  43  08380  10110  07160  SUBTST BD    *+32  ,EQUSW,,
08360  14  15139  00024  07170         CM    CHI,24,10
08372  49  08392  00000  07180         B     *+20
08380                    07190         DORG  *-3
08380  14  06049  00024  07200         CM    SCHI,24,610
08392  47  07556  01200  07210         BNE   LUXIT
08404  43  08484  10110  07220         BD    SUBTR,EQUSW,,
08416  43  07556  10114  07230         BD    LUXIT,SUBSW,,     DO NOT SET SWITCH IF IN DECLARATION STMT
08428  43  09496  10112  07240         BD    COMER2,COMSW
08440  15  10102  00001  07250         TDM   FNTSW,1,,         SET SWITCH FOR FUNCTION NAME (A)
08452  15  07295  00000  07260         TDM   SMCNT,,6
08463      00001         07270         DC    1,2,*
08464  43  13282  10109  07280         BD    ASC21,OMM
08476  49  07556  00000  07290         B     LUXIT,
```

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
08484				07300		DORG	*-3
08484	17	09384	00170	07310	SUBTR	BTM	ERROR,170,9, DIM VAR IN EQUIV W/O PREVIOUS DIMENSIONS
				07320	******		ENTRY TO PLACE VARIABLE IN SUBROUTINE DEFINITION IN TABLE
				07330	******		THESE VARIABLE ARE PLACED IN TWICE BECAUSE OF POSSIBLE
				07340	**		DIMENSIONING LATER
08496	44	08540	10114	07350	ADSUBP	BNF	*+44,SUBSW
08508	33	10114	00000	07360		CF	SUBSW
08519		00000		07370	ADSAVE	DS	,*
08520	11	07242	00010	07380		AM	SMADD,10,10
08532	49	08324	00000	07390		B	SETIND
08540				07400		DORG	*-3
08540	32	10114	00000	07410		SF	SUBSW
08552	12	07242	00010	07420		SM	SMADD,10,10
08564	11	02429	00001	07430		AM	TBCNT,1,10
08576	49	08220	00000	07440		B	ADVLOP,,, BRANCH TO PLACE SYMBOL IN SECOND TIME
08584				07450		DORG	*-3
				07460	******		ENTRY TO PLACE CONSTANTS IN TABLE *****
08584	43	08808	10105	07470	ADLIT	BD	ADSTN,STNOSW,, BRANCH TO ADD STATEMENT NUMBER
08596	43	08712	06453	07480		BD	ADXLIT,FXORFL,, BRANCH TO ADD FIX CONST
08608	21	02372	02250	07490		A	NXLOC,FLNG
08620	26	02372	10079	07500		TF	NXLOC,SYM-2,6, MOVE IN FLOATING MANTISSA
08632	11	02372	00002	07510		AM	NXLOC,2,10
08644	26	07242	02372	07520		TF	SMADD,NXLOC,6, SET SYM ADD INTO TABLE
08656	26	02372	10081	07530	ADLIT1	TF	NXLOC,SYM,6, MOVE CHARACTERISTIC OR FIX CONST
08668	12	07242	00001	07540		SM	SMADD,1,10
08680	32	07242	00000	07550		SF	SMADD,,6
08692	11	07242	00001	07560		AM	SMADD,1,10
08704	49	07944	00000	07570		B	E37061+12
08712				07580		DORG	*-3
08712	21	02372	02252	07590	ADXLIT	A	NXLOC,KLNG
08724	26	07242	02372	07600		TF	SMADD,NXLOC,6
08736	49	08656	00000	07610		B	ADLIT1
08744				07620		DORG	*-3
				07630	******		ENTER WHEN LOOKING UP STATEMENT NUMBERS ******
08744	44	08764	07919	07640	LUSTNO	BNF	*+20,MODAD,11,
08756	49	07068	00000	07650		B	SMLOOP
08764				07660		DORG	*-3
08764	24	07242	10081	07670		C	SMADD,SYM,6
08776	47	07068	01200	07680		BNE	SMLOOP
08788	15	10105	00000	07690		TDM	STNOSW,0
08800	49	07920	00000	07700		B	E37061-12,,, BRANCH TO SET INSW AND GO TO LUXIT
08808				07710		DORG	*-3
				07720	******		ENTER TO ADD STATEMENT NUMBER ******
08808	11	02372	00004	07730	ADSTN	AM	NXLOC,4,10
08820	26	07242	02372	07740		TF	SMADD,NXLOC,6, MOVE STAMNT NO. ADDRESS TO TABLE
08832	33	07919	00000	07750		CF	MODAD,,6, CLEAR FLAG FOR STATEMENT NUMBER
08844	15	10105	00000	07760		TDM	STNOSW,0
08856	49	08656	00000	07770		B	ADLIT1
08868	17	09384	00374	07780		BTM	ERROR,374,9, ILLEGAL USE OF FUNCTION NAME
08880	43	08868	10112	07790	FCTEST	BD	*-12,COMSW,, TEST FOR FUNCTION NAME IN COMMON
08892	43	08868	10110	07800		BD	*-24,EQUSW,, FUNCT NAME IN EQUIV
08904	43	08868	10106	07810		BD	*-36,DIMSW,, 1
08916	43	08868	10113	07820		BD	*-48,IOSW,
08928	43	08868	10109	07830		BD	FCTEST-12,OMM
08940	14	15139	00024	07840		CM	CHI,24,10
08952	47	08868	01200	07850		BNE	FCTEST-12
08964	26	08999	07242	07860		TF	*+35,SMADD

44

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
08976	11	08999	00005	07870		AM	*+23,5,10
08988	26	02620	00000	07880		TF	TEMP,,,
09000	12	02620	02243	07890		SM	TEMP,ENTLOG-5
09012	13	02620	00002	07900		MM	TEMP,2,10
09024	32	00097	00000	07910		SF	97
09035		00000		07920	REF	DS	,*
09036	16	09066	02262	07930		TFM	*+30,USEDFS-1
09048	21	09066	00098	07940		A	*+18,98
09060	15	00000	00001	07950		TDM	,1,10, SET INDICATOR FOR FUNCTION USED
09072	49	07556	00000	07960		B	LUXIT
09084	43	09262	05674	07970	PUT	BD	EXIT,ERSW
09096	26	09378	09083	07980		TF	PUTOUT,PUT-1
09108	49	09128	00000	07990		B	E94270
09116				08000		DORG	*-3
09116	26	09378	09082	08010		TF	PUTOUT,PUT-2
09128	31	15036	09375	08020	E94270	TR	CARD,PUTOUT-3,2
09140	11	09134	00004	08030		AM	*-6,4,10
09152	14	09134	15136	08040		CM	*-18,CARD+100
09164	46	09178	01200	08050		BE	*+14
09176	42	00000	00000	08060		BB	
09178				08070		DORG	*-9
09178	16	00565	09201	08080		TFM	IORT,*+23
09190	49	00532	09269	08090		B	IOPT,INTOP,7
09202	11	02390	00001	08100		AM	INTOP1+5,1,10
09214	49	09250	00200	08110		B	*+36,00200,, C9T7 ST ON SW 2
09226	34	00000	00102	08120		RCTY	
09238	38	15036	00100	08130		WNTY	CARD
09250	16	09134	15036	08140		TFM	E94270+6,CARD
09262	42	02430	00000	08150	EXIT	BB	E86440
09269				08160		DORG	*-4
09269		00002		08170	INTOP	DSC	2,02
09275		00005	02385	08180		DSA	INTOP1
09276		00001		08190		DC	1,@
09278	16	09373	00071	08200	SPERR	TFM	SPGS+11,071,9
09290	43	09362	02424	08210		BD	SPGS,INDIV
09302	16	00565	09325	08220		TFM	IORT,*+23
09314	49	00566	09901	08230		B	IOGT,C5DATA-4,7, CHECK FOR CONTINUATION CARDS
09326	14	15839	00043	08240		CM	CHI5,43,10
09338	46	09362	01200	08250		BE	*+24
09350	43	09302	15849	08260		BD	SPERR+24,CHI5+10
09362	17	09384	00071	08270	SPGS	BTM	ERROR,071,9
09378		00005		08280	PUTOUT	DC	5,0
09379		00001		08290		DC	1,@
09383		00004		08300		DS	4
09384	15	05674	00001	08310	ERROR	TDM	ERSW,1
09396	15	09429	00009	08320		TDM	E94620+1,9
				08330	* CALL		ERROR PRINT OUT OF DISK -RETURN IS TO E94620
09408	16	02496	03486	08340		TFM	RETR +6,ER1 ,, SET BRANCH TO ERROR MESSAGE
09420	49	02454		08350		B7	FLIP
09428	49	02638	00000	08360	E94620	B	BEGINA
09440	15	09429	00002	08370	ERROR2	TDM	E94620+1,2
09452	15	02367	00004	08380		TDM	JAY,4
09464	26	09383	09439	08390		TF	ERROR-1,ERROR2-1,, TRANSMIT THE ERROR NUMBER
09476	49	09408		08400		B	ERROR+24
09484				08410		DORG	*-3
09484	17	09384	00376	08420	AERR1	BTM	ERROR,376,9
09496	17	09384	00372	08430	COMER	BTM	ERROR,372,9, INCORRECT COMMON STATEMENT

45

```
LOCTN  OP   P/L    Q        PG/LN  LABEL  MNEM OPERANDS AND REMARKS

09496       00000            08440  COMER2 DS       ,COMER
                             08442  **********************************************************************
09508  14   15145  00063     08443  ENDTR  CM    CHI+6,63,10    ,,,CHECK FOR END TRACE
09520  47   09576  01200     08444         BNE   END+12
09532  17   09084  00153     08445         BTM   PUT,153,8        ,,,PUT END TRACE SYMBOL
09544  17   09084  00140     08446         BTM   PUT,140,8
09556  49   04216            08448         B7    L1-24,,,
09564  45   09508  15145     08450  END    BNR   ENDTR,CHI+6
09576  43   09596  02293     08453         BD    *+20,SUBFCT
                             08457  *...........................................................
09588  49   09620  00000     08460         B     *+32
09596       00000            08470         DORG  *-3
09596  43   09620  05673     08480         BD    *+24,RTSW
09608  17   09440  00578     08490         BTM   ERROR2,578,9
09620  46   09632  01400     08500         BV    *+12
09632  43   00796  05674     08510         BD    MONCAL  ,ERSW,,    SKIP STORAGE ALLOCATION IF PROG HAD ERR
09644  17   09084  00141     08520         BTM   PUT,     141,8,END
09656  17   09084  00140     08530         BTM   PUT,     140,8,DUMMY
09668  17   09084  00132     08540         BTM   PUT,0132,811,     SEMI COLON
09680  14   09134  15036     08550         CM    E94270+6,CARD
09692  46   02430  01200     08560         BE    E86440,,,   EXIT TO STORAGE ALLOCATION
09704  15   09263  00009     08570         TDM   EXIT+1,9
09716  49   09178  00000     08580         B     E94270+50
09724                        08590         DORG  *-3
09724       00002            08600  BLK1   DSC   2,22
09730       00005  09732     08610         DSA   BLK1A
09731       00001            08620         DC    1,a
09732       00001            08630  BLK1A  DSC   1,0
                             08635  **************************************************************************
09737       00005            08640         DC    5,17550
09740       00003            08650         DC    3,046
                             08655  *...........................................................
09745       00005  10200     08660         DSA   IOUT
09746       00001            08670         DC    1,a
09747       00002            08680  BLK2   DSC   2,22
09753       00005  09755     08690         DSA   BLK2A
09754       00001            08700         DC    1,a
09755       00001            08710  BLK2A  DSC   1,0
09760       00005            08720         DC    5,17400
09763       00003            08730         DC    3,046
09768       00005  10200     08740         DSA   IOUT
09769       00001            08750         DC    1,a
09770       00002            08760  BLK3   DSC   2,22
09776       00005  09778     08770         DSA   BLK3A
09777       00001            08780         DC    1,a
09778       00001            08790  BLK3A  DSC   1,0
09783       00005            08800         DC    5,17450
09786       00003            08810         DC    3,046
09791       00005  10200     08820         DSA   IOUT
09792       00001            08830         DC    1,a
09793       00002            08840  BLK4   DSC   2,22
09799       00005  09801     08850         DSA   BLK4A
09800       00001            08860         DC    1,a
09801       00001            08870  BLK4A  DSC   1,0
09806       00005            08880         DC    5,17500
09809       00003            08890         DC    3,046
09814       00005  10200     08900         DSA   IOUT
```

46

```
LOCTN  OP   P/L    Q        PG/LN  LABEL  MNEM OPERANDS AND REMARKS

09815       00001            08910         DC    1,a
09816       00002            08920  BLK5   DSC   2,22
09822       00005  09824     08930         DSA   BLK5A
09823       00001            08940         DC    1,a
09824       00001            08950  BLK5A  DSC   1,0
09829       00005            08960         DC    5,17650
09832       00003            08970         DC    3,046
09837       00005  10200     08980         DSA   IOUT
09838       00001            08990         DC    1,a
09839       00002            09000  BLK6   DSC   2,22
09845       00005  09847     09010         DSA   BLK6A
09846       00001            09020         DC    1,a
09847       00001            09030  BLK6A  DSC   1,0
                             09035  ****************************************************************************
09852       00005            09040         DC    5,17600
09855       00003            09050         DC    3,043
                             09055  *...........................................................
09860       00005  10200     09060         DSA   IOUT
09861       00001            09070         DC    1,a
09862       00002            09080  BLK7   DSC   2,22
09868       00005  09870     09090         DSA   BLK7A
09869       00001            09100         DC    1,a
09870       00001            09110  BLK7A  DSC   1,0
09875       00005            09120         DC    5,17700
09878       00003            09130         DC    3  ,100
09883       00005  02430     09140         DSA   E86440
09884       00001            09150         DC    1,a
09889       00005  15139     09160  URDATA DSA   CHI
09892       00003            09170         DC    3,06a
09897       00005  15139     09180  CDDATA DSA   CHI
09900       00003            09190         DC    3,10a
09905       00005  15839     09200  C5DATA DSA   CHI5
09908       00003            09210         DC    3,10a
09910  16   09945  15040     09220  MODAFT TFM   *+35,AFTBL+5
09922  12   09945  00005     09230         SM    *+23,5,10
09934  26   09952  00000     09240         TF    *+18,,
09946  11   00000  00002     09250         AM    ,2,10
09958  24   09945  04431     09260         C     *-13,STAFT
09970  46   09922  01100     09270         BH    *-48
09982  16   04431  15040     09280         TFM   STAFT,AFTBL+5
09994  49   02662  00000     09290         B     BEGIN+36
10001                        09300         DORG  *-4
10003       00009  X2        09310  ERMES  DAC   9,ERROR 00a
10031       00012            09320  FMTCST DC    12,465659544163
10033       00002  X2        09330  PLUSS  DAC   2,+a
10037       00003  X2        09340  ENDCT  DAC   3,+END
10081       00040            09350  SYM    DS    40
10083       00002            09360         DS    2
10099       00016            09370         DC    16,0
10097       00000            09380  ZER13  DS    ,*-2
10093       00000            09390  TENZ   DS    ,*-6
10100       00001            09400  SINGST DC    1,0
10101       00001            09410  DOTRAN DSC   1,0
10102       00001            09420  FNTSW  DSC   1,0
10103       00001            09430  FNTSW1 DSC   1,0
10104       00001            09440  FMSW   DSC   1,0
10105       00001            09450  STNOSW DSC   1,0
```

47

```
LOCTN  OP   P/L    Q      PG/LN  LABEL  MNEM OPERANDS AND REMARKS

10106       00001         09460  DIMSW  DSC  1,0
10107       00001         09470  IFSW   DSC  1,0
10108       00001         09480  CGTO   DSC  1,0
10109       00001         09490  OMM    DSC  1,0
10110       00001         09500  EQUSW  DSC  1,0
10111       00001         09510  CALLSW DSC  1,0
10112       00001         09520  COMSW  DSC  1,0
10113       00001         09530  IOSW   DSC  1,0
10114       00001         09540  SUBSW  DSC  1,0
10200                     09550         DORG 10200
10200  16   02359  09793  09560  IOUT   TFM  FMON+35,BLK4
10212  17   02324  10200  09570         BTM  FMON,IOUT
10224  16   02359  09747  09580  NONARA TFM  FMON+35,BLK2
10236  17   02324  10224  09590         BTM  FMON,NONARA
10248  16   02359  09724  09600  DIM    TFM  FMON+35,BLK1
10260  17   02324  10248  09610         BTM  FMON,DIM
10272  16   02359  09724  09620  COMMON TFM  FMON+35,BLK1
10284  17   02324  10272  09630         BTM  FMON,COMMON
10296  16   02359  09839  09640  IF     TFM  FMON+35,BLK6
10308  17   02324  10296  09650         BTM  FMON,IF
10320  16   02359  09839  09660  GOTO   TFM  FMON+35,BLK6
10332  17   02324  10320  09670         BTM  FMON,GOTO
10344  16   02359  09839  09680  CALL   TFM  FMON+35,BLK6
10356  17   02324  10344  09690         BTM  FMON,CALL
10368  16   02359  09839  09700  RETURN TFM  FMON+35,BLK6
10380  17   02324  10368  09710         BTM  FMON,RETURN
10392  16   02359  09724  09720  FORMAT TFM  FMON+35,BLK1
10404  17   02324  10392  09730         BTM  FMON,FORMAT
10416  16   02359  09793  09740  DOO    TFM  FMON+35,BLK4
10428  17   02324  10416  09750         BTM  FMON,DOO
10440  16   02359  09770  09760  ASCAN  TFM  FMON+35,BLK3
10452  17   02324  10440  09770         BTM  FMON,ASCAN
10464  16   02359  09770  09780  OUTSC  TFM  FMON+35,BLK3
10476  17   02324  10464  09790         BTM  FMON,OUTSC
10488  16   02359  09816  09800  DKIO   TFM  FMON+35,BLK5
10500  17   02324  10488  09810         BTM  FMON,DKIO
                          09820  **   INITIALIZATION PHASE 1-B
10512  44   10544  02228  09830  PRSCAN BNF  PRSCN1,LIST,,   TOTAL LISTING
10524  16   02496  04098  09840         TFM  RETR +6,INITAL,,   PRINT OUT THE HEAD
10536  49   02454         09850         B7   FLIP
10544  32   00457  00000  09860  PRSCN1 SF   00457
10556  15   00475  00002  09870         TDM  00475,2,,,  SET SYSCAL
10568  43   10588  02424  09880         BD   *+20,INDIV
10580  49   10636  00000  09890         B    *+56
10588                     09900         DORG *-3
10588  44   10636  02424  09910         BNF  *+48,INDIV
10600  16   02719  00041  09920         TFM  BA+1,41,10
10612  16   02755  00041  09930         TFM  BA+37,41,10
10624  16   09891  00008  09940         TFM  URDATA+2,08,10
10636  26   06999  02377  09950         TF   SMTLU+11,STBL
10648  12   06999  00004  09960         SM   SMTLU+11,4,10
10660  22   07011  02377  09970         S    SMTLU+23,STBL
10672  11   07011  00005  09980         AM   SMTLU+23,05,10
10684  26   07023  02377  09990         TF   SMTLU+35,STBL
10696  12   07023  00006  10000         SM   SMTLU+35,6,10
10708  22   06448  02252  10010         S    FXORFL-5,KLNG
10720  21   06913  02250  10020         A    PLUS+47,FLNG
```

48

```
LOCTN  OP   P/L    Q      PG/LN  LABEL  MNEM OPERANDS AND REMARKS

10732  43   02766  02424  10030         BD   BA+48,INDIV
10744  49   02638  00000  10040         B    BEGINA
10752                     10050         DORG *-3
16000                     10060         DORG 16000
16000       00002         10070  PHBDAT DSC  2,22
16006       00005  16008  10080         DSA  PHBDDA
16007       00001         10090         DC   1,a
16008       00001         10100  PHBDDA DSC  1,0
16013       00005         10110         DC   5,17200
16016       00003         10120         DC   3,84
16021       00005  02430  10130         DSA  E86440
16022       00001         10140         DC   1,a
16024  16   00565  16047  10150  LDPHB  TFM  IORT,*+23
16036  49   00532  16000  10160         B    IOPT,PHBDAT,7
16048  36   00012  00500  10170         TRA
16060       00012         10180         TCD  LDPHB
16024  49                 10190  *         OUT OF CORE BLOCK 1  CONTAINS THE FOLLOWING
                          10200  *            DIMENSION
                          10210  *            COMMON
                          10220  *            FORMAT
10200                     10230         DORG IOUT
10200  16   02359  09793  10240         TFM  FMON+35,BLK4     ,,IOUT
10212  17   02324  10200  10250         BTM  FMON,IOUT
10224  16   02359  09747  10260         TFM  FMON+35,BLK2
10236  17   02324  10224  10270         BTM  FMON,NONARA
10248  33   05675  00000  10280         CF   STSN            ,,,DIM
10260  49   10512  00000  10290         B    DIMEN
10272  33   05675  00000  10300         CF   STSN            ,,,COMMON
10284  49   11576  00000  10310         B    COMMEN
10296  16   02359  09839  10320         TFM  FMON+35,BLK6     ,,IF
10308  17   02324  10296  10330         BTM  FMON,IF
10320  16   02359  09839  10340         TFM  FMON+35,BLK6     ,,GOTO
10332  17   02324  10320  10350         BTM  FMON,GOTO
10344  16   02359  09839  10360         TFM  FMON+35,BLK6     ,,CALL
10356  17   02324  10344  10370         BTM  FMON,CALL
10368  16   02359  09839  10380         TFM  FMON+35,BLK6     ,,RETURN
10380  17   02324  10368  10390         BTM  FMON,RETURN
10392  33   14382  00000  10400         CF   FREOSW          ,,,FORMAT
10404  49   12166  00000  10410         B    FOMAT
10416  16   02359  09793  10420         TFM  FMON+35,BLK4     ,,DOO
10428  17   02324  10416  10430         BTM  FMON,DOO
10440  16   02359  09770  10440         TFM  FMON+35,BLK3,,     ASCAN
10452  17   02324  10440  10450         BTM  FMON,ASCAN
10464  16   02359  09770  10460         TFM  FMON+35,BLK3,,     OUTSC
10476  17   02324  10464  10470         BTM  FMON,OUTSC
10488  16   02359  09816  10480         TFM  FMON+35,BLK5     ,,DKIO
10500  17   02324  10488  10490         BTM  FMON,DKIO
                          10500  ******    ENTRY TO DECOMPOSE DIMENSION STATEMENT    *****
10512  17   04696  00006  10510  DIMEN  BTM  COLNAM,6,10
10524  24   10081  11575  10520         C    SYM,ENSION+10
10536  46   04300  01400  10530         BV   ERR01
10548  47   04300  01200  10540         BNE  ERR01
10560  31   15138  15150  10550         TR   CHI-1,CHI+11
10572  15   10106  00001  10560         TDM  DIMSW,1
10584  45   10620  15141  10570         BNR  *+36,CHI+2
10596  17   09384  00072  10580  DIM1   BTM  ERROR,072,9,,
```

49

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
10608	17	09384	00270	10590		BTM	ERROR,270,9
10620	14	15139	00040	10600		CM	CHI,40,10
10632	47	10608	01100	10610		BNH	*-24
10644	14	15139	00069	10620		CM	CHI,69,10
10656	46	10608	01100	10630		BH	DIM1+12
10668	17	05738	±0680	10640		BTM	CSORN,*+12
10680	43	11484	02611	10650	SETDM	BD	DIM2,INSW,, BRANCH IF SYM WAS ALREADY IN TABLE
10692	15	07295	00001	10660		TDM	SMCNT,1,6,
10704	26	08519	07242	10670		TF	ADSAVE,SMADD,11,
10716	12	07242	00005	10680		SM	SMADD,05,10
10728	16	07242	00001	10690		TFM	SMADD,1,67
10740	14	15139	00024	10700		CM	CHI,24,10
10752	47	10596	01200	10710		BNE	DIM1
10764	32	10596	00000	10720		SF	DIM1
10776	32	10680	00000	10730		SF	SETDM
10788	31	15138	15140	10740	SD	TR	CHI-1,CHI+1,, SHIFT OFF LEFT PARN OR COMMA
10800	14	15139	00069	10750		CM	CHI,69,10, TEST FOR ABSOLUTE
10812	47	10860	01100	10760		BNH	SETDM2+24
10824	17	05446	±0836	10770		BTM	CSTNO,*+12
10836	14	10081	00000	10780	SETDM2	CM	SYM,0,10
10848	47	10872	01200	10790		BNE	*+24
10860	17	09384	00179	10800		BTM	ERROR,179,9
10872	11	08519	00005	10810		AM	ADSAVE,5,10
10884	15	10077	00000	10820		TDM	SYM-4,0,11
10896	33	10078	00000	10830		CF	SYM-3
10908	26	08519	10081	10840		TF	ADSAVE,SYM,6
10920	11	02372	00005	10850		AM	NXLOC,5,10
10932	26	02620	10081	10860		TF	TEMP,SYM
10944	14	15139	00004	10870		CM	CHI,04,10
10956	46	11116	01200	10880		BE	MOVDIM
10968	14	15139	00023	10890		CM	CHI,23,10
10980	47	10596	01200	10900		BNE	DIM1
10992	44	11072	10596	10910		BNF	GENDIM,DIM1,, TEST FOR SECOND DIMENSION
11004	15	07295	00002	10920		TDM	SMCNT,2,6
11016	23	07242	02620	10930	SETDM3	M	SMADD,TEMP,6
11028	32	00095	00000	10940		SF	95
11040	26	07242	00099	10950		TF	SMADD,99,6,
11052	33	10596	00000	10960		CF	DIM1
11064	49	10788	00000	10970		B	SD
11072				10980		DORG	*-3
11072	44	10860	10680	10990	GENDIM	BNF	SETDM2+24,SETDM,, TEST FOR THIRD DIMENSION
11084	15	07295	00003	11000		TDM	SMCNT,3,6
11096	33	10680	00000	11010		CF	SETDM
11108	49	11016	00000	11020		B	SETDM3
11116				11030		DORG	*-3
11116	23	07242	02620	11040	MOVDIM	M	SMADD,TEMP,6
11128	32	00095	00000	11050		SF	95
11140	26	07242	00099	11060		TF	SMADD,99,6
11152	31	15138	15140	11070		TR	CHI-1,CHI+1
11164	25	11185	07295	11080		TD	DIMTP,SMCNT,11
11176	14	11185	00002	11090		CM	DIMTP,0002,810
11185		00000		11100	DIMTP	DS	,*-2
11188	46	11276	01100	11110		BH	SETDM4,,, 3 DIMENSIONS
11200	46	11232	01200	11120		BE	*+32,,, 2 DIMENSIONS
11212	16	08519	00001	11130		TFM	ADSAVE,1,67, 1 DIMENSION
11224	49	11396	00000	11140		B	SETDM5+12
11231				11150		DORG	*-4

50

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
11232	26	02620	08519	11160		TF	TEMP,ADSAVE
11244	12	02620	00005	11170		SM	TEMP,5,10
11256	26	08519	02620	11180		TF	ADSAVE,TEMP,611
11268	49	11384	00000	11190		B	SETDM5
11275				11200		DORG	*-4
11276	26	02620	08519	11210	SETDM4	TF	TEMP,ADSAVE
11288	12	08519	00005	11220		SM	ADSAVE,5,10
11300	12	02620	00010	11230		SM	TEMP,10,10
11312	23	02620	08519	11240		M	TEMP,ADSAVE,611
11324	32	00095	00000	11250		SF	95
11336	26	02372	00099	11260		TF	NXLOC,99,6
11348	26	08519	02620	11270		TF	ADSAVE,TEMP,611
11360	26	02620	02372	11280		TF	TEMP,NXLOC,611
11372	21	02620	08519	11290		A	TEMP,ADSAVE,611
11384	11	02620	00001	11300	SETDM5	AM	TEMP,1,610
11396	11	02372	00005	11310		AM	NXLOC,05,10
11408	26	02372	07242	11320		TF	NXLOC,SMADD,611
11420	45	11440	15141	11330		BNR	*+20,CHI+2
11432	49	02638	00000	11340		B	BEGINA
11440				11350		DORG	*-3
11440	14	15139	00023	11360		CM	CHI,23,10
11452	47	10596	01200	11370		BNE	DIM1
11464	31	15138	15140	11380		TR	CHI-1,CHI+1
11476	49	10620	00000	11390		B	DIM1+24
11484				11400		DORG	*-3
11484	11	07919	00002	11410	DIM2	AM	MODAD,2,10
11496	45	11552	07919	11420		BNR	DIM3,MODAD,11, TEST IF DIM VAR WAS PLACED IN TABLE BY
11508	21	02372	05965	11430		A	NXLOC,SMLNG,, SUBROUTINE OR FUNCTION STATEMENT
11520	26	02372	10081	11440		TF	NXLOC,SYM,6
11532	26	07242	02372	11450		TF	SMADD,NXLOC,6
11544	49	10692	00000	11460		B	SETDM+12
11552				11470		DORG	*-3
11552	17	09384	00271	11480	DIM3	BTM	ERROR,271,9
11565		00006	X2	11490	ENSION	DAC	6,ENSION
				11500	******		DECODE COMMON STATEMENTS ******
11576	17	04696	00003	11510	COMMEN	BTM	COLNAM,3,10
11588	24	10081	12165	11520		C	SYM,MON+4
11600	46	04300	01400	11530		BV	ERRO1
11612	47	04300	01200	11540		BNE	ERRO1
11624	31	15138	15144	11550		TR	CHI-1,CHI+5
11636	15	10112	00001	11560		TDM	COMSW,1,11
11648	14	15139	00040	11570		CM	CHI,40,10
11660	47	09496	01100	11580		BNH	COMER
11672	14	15139	00069	11590		CM	CHI,69,10
11684	46	09496	01100	11600		BH	COMER
11696	17	05738	±1708	11610		BTM	CSORN,*+12
11708	14	15139	00024	11620		CM	CHI,24,10
11720	46	09496	01200	11630		BE	COMER
11732	43	11876	02611	11640		BD	COMIN,INSW,, BRANCH IF VARIABLE WAS PREVIOUSLY USED
				11650	******		IF VARIABLE WAS NOT DEFINED THEN IT MUST BE SIMPLE VARIABLE
11744	11	02372	00005	11660	COMA	AM	NXLOC,5,10
11756	26	02372	02262	11670		TF	NXLOC,COMADD,6, MOVE OBJ TIME COMMON ADDRESS TO SYM AREA
11768	43	11800	06453	11680		BD	*+32,FXORFL
11780	22	02262	02298	11690		S	COMADD,FP2,, ADJ COMMON ADDRESS FOR FLOAT VARIABLE
11792	49	11812	00000	11700		B	*+20
11800				11710		DORG	*-3
11800	22	02262	02252	11720		S	COMADD,KLNG,, ADJ COMMON ADDRESS FOR FIX VARIABLE

51

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

11812  45  11832  15141   11730  COMAB  BNR   *+20,CHI+2
11824  49  02638  00000   11740         B     BEGINA
11832                     11750         DORG  *-3
11832  14  15139  00023   11760         CM    CHI,23,10,          TEST FOR MORE LIST ELEMENTS
11844  47  09496  01200   11770         BNE   COMER
11856  31  15138  15140   11780         TR    CHI-1,CHI+1
11868  49  11648  00000   11790         B     COMMEN+72
11876                     11800         DORG  *-3
                          11810  ******      COME HERE IF SIMPLE VARIABLE WAS IN TABLE      ******
11876  44  11900  07295   11820  COMIN  BNF   *+24,SMCNT,11
11888  17  09384  00373   11830         BTM   ERROR,373,9,        VARIABLE WAS PREVIOUSLY PLACED IN COMMON
11900  44  11888  07919   11840         BNF   *-12,MODAD,11,      WAS IT PREVIOUSLY EQUIVALENCED
11912  32  07295  00000   11850         SF    SMCNT,,6,
11924  21  02372  05965   11860  COMINA A     NXLOC,SMLNG
11936  26  07242  02372   11870         TF    SMADD,NXLOC,6,      MOVE NEW SYMBOL ADDRESS INTO TABLE
11948  26  02372  10081   11880         TF    NXLOC,SYM,6
11960  49  11744  00000   11890         B     COMA,,,             BRANCH TO PLACE COMMON ADDRESS IN TABLE
11968                     11900         DORG  *-3
                          11910  ******      RETURN FROM SYM TABLE LOOK UP WHEN VARIABLE WAS DIMENSIONED
11968  44  11988  07295   11920  COME   BNF   *+20,SMCNT,11
11980  49  11888  00000   11930         B     COMIN+12,,,         VARIABLE PREVIOUSLY PLACED IN COMMON
11988                     11940         DORG  *-3
11988  44  11888  07919   11950         BNF   COMIN+12,MODAD,11,  TEST IF VAR WAS PREVIOUSLY EQUIVALENCED
12000  32  07295  00000   11960         SF    SMCNT,,6,
12012  12  07295  00007   11970         SM    SMCNT,07,10
12024  43  12056  06453   11980  COMC   BD    *+32,FXORFL
12036  26  12079  02298   11990         TF    COMM+11,FP2 ,,      SET UP TO MULTIPLY NUMBER
12048  49  12068  00000   12000         B     COMM
12056                     12010         DORG  *-3
12056  26  12079  02252   12020         TF    *+23,KLNG
12068  13  07295  00000   12030  COMM   MM    SMCNT,,6,           GEN. NO. OF LOCATIONS FOR ARRAY
12080  32  00095  00000   12040         SF    95
12092  22  02262  00099   12050         S     COMADD,99,,         UPDATA COMMON ADDRESS
12104  47  12148  01300   12060         BN    COMER3
12116  26  07295  02262   12070         TF    SMCNT,COMADD,6
12128  21  07295  12079   12080         A     SMCNT,COMM+11,6
12140  49  11812  00000   12090         B     COMAB,,,            THIS ADDRESS IS THE LOW ORDER DIGIT OF
12147                     12100         DORG  *-4,,,              FIRST ELEMENT.
12148  17  09384  00474   12110  COMER3 BTM   ERROR,474,9,        COMMON EXCEEDS CORE SIZE
12161      00003  X2      12120  MON    DAC   3,MON
                          12130  ****        UNIT RECORD FORMAT OUTPUT      ****
12166  43  12198  02611   12140  FOMAT  BD    *+32,INSW
12178  15  07242  00001   12150         TDM   SMADD,1,6
12190  49  12230  00000   12160         B     FOMAT1
12198                     12170         DORG  *-3
12198  43  12230  07242   12180         BD    FOMAT1,SMADD,11
12210  16  09373  00277   12190         TFM   SPGS+11,277,9
12222  49  09290  00000   12200         B     SPERR+12,,,         ERROR 27
12230                     12210         DORG  *-3
12230  16  08183  15137   12220  FOMAT1 TFM   X+11    ,CHI-2
12242  16  08183  00002   12230         AM    X+11    ,2,10
12254  45  12242  08183   12240         BNR   *-12,X+11    ,11,   SCAN AHEAD FOR RECORD MARK
12266  43  12370  02424   12250         BD    FORM99,INDIV
12278  11  02937  15285   12260         AM    CKRM-1,CHI+146,711
12290  11  02937  00002   12270         AM    CKRM-1,2,10
12302  46  12346  01200   12280         BE    *+44
12314  16  08183  00000   12290         TFM   X+11    ,0,610
```

52

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

12326  11  08183  00002   12300         AM    X+11    ,2,10
12338  49  12290  00000   12310         B     *-48
12346                     12320         DORG  *-3
12346  15  10104  00001   12330         TDM   FMSW,1
12358  17  04876  00000   12340         BTM   CKCNTU,0,10
12370  16  08183  00037   12350  FORM99 TFM   X+11    ,37,610
12382  31  08183  06066   12360         TR    X+11    ,AVOID,6
12394  31  15138  15150   12370         TR    CHI-1,CHI+11
12406  14  15139  00000   12380         CM    CHI,0,10
12418  47  12450  01200   12390         BNE   *+32
12430  31  15138  15140   12400         TR    CHI-1,CHI+1
12442  49  12406  00000   12410         B     *-36
12450                     12420         DORG  *-3
12450  14  15139  00024   12430         CM    CHI,24,10
12462  46  12486  01200   12440         BE    *+24
12474  17  09384  00375   12450         BTM   ERROR,375,9,        LEFT PAREN DOES NOT FOLLOW FORMAT
12486  17  09084  00128   12460         BTM   PUT,      128,8,FORMAT
12498  17  09084  00124   12470         BTM   PUT,      124,8,LEFT PAREN
12510  11  02615  00001   12480         AM    PARCNT,1,10
12522  16  14453  00145   12490         TFM   WIDTH,145,8,        INITALIZE WIDTH CHECK
                          12491  *********************************************************************
12534  16  14512  00998   12495         TFM   SCALE,998,8         ,,,SET ASSUMED SCALE FACTOR
                          12499  *..............................................................
12546  43  12570  02230   12500         BD    *+24,BIGPRT
12558  12  14453  00024   12510         SM    WIDTH,24,10
12570  31  15138  15140   12520  FORM1  TR    CHI-1,CHI+1
12582  14  15139  00000   12530         CM    CHI,0,10
12594  46  12570  01200   12540         BE    *-24
12606  14  15139  00041   12550         CM    CHI,41,10,
12618  46  12910  01100   12560         BH    FORM2
12630  47  12674  01300   12570         BL    SLASH
12642  17  09084  00144   12580         BTM   PUT,      144,8,A TYPE
12654  15  14389  00001   12590         TDM   IATYPE,1
12666  49  13082  00000   12600         B     FORM3
12674                     12610         DORG  *-3
12674  14  15139  00021   12620  SLASH  CM    CHI,21,10,          TEST FOR SLASH
12686  46  13850  01200   12630         BE    FORM7
12698  14  15139  00024   12640         CM    CHI,24,10
12710  46  14110  01200   12650         BE    FORM4
12722  14  15139  00020   12660         CM    CHI,20,10,          TEST FOR SCALE FACTOR
12734  46  12782  01200   12670         BE    FORMER+12
12746  14  15139  00010   12680         CM    CHI,10,10
12758  46  12782  01200   12690         BE    *+24,,,             INVALID FORMAT SPECIFICATION
12770  17  09384  00375   12700  FORMER BTM   ERROR,375,9,
12782  31  15138  15140   12710         TR    CHI-1,CHI+1
12794  14  15139  00000   12720         CM    CHI,0,10
12806  46  12782  01200   12730         BE    *-24
12818  14  15139  00069   12740         CM    CHI,69,10,          SHIFT OF SCALE FACTOR
12830  46  12782  01100   12750         BH    *-48
12842  14  15139  00057   12760         CM    CHI,57,10,          TEST FOR P
12854  47  12770  01200   12770         BNE   FORMER
12866  31  15138  15140   12780  PTYPE  TR    CHI-1,CHI+1
12878  14  15139  00000   12790         CM    CHI,0,10
12890  47  12990  01200   12800         BNE   FTYPE
12902  49  12866  00000   12810         B     *-36
12910                     12820         DORG  *-3
12910  14  15139  00069   12830  FORM2  CM    CHI,69,10
```

53

```
LOCTN OP  P/L    Q        PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

12922 46  13982  01100    12840         BH    FORM8
12934 14  15139  00049    12850         CM    CHI,49,10,        TEST FOR I TYPE
12946 47  12990  01200    12860         BNE   *+44
12958 17  09084  00149    12870         BTM   PUT,      149,8,I TYPE
12970 15  14389  00001    12880         TDM   IATYPE,1
12982 49  13082  00000    12890         B     FORM3
12990                     12900         DORG  *-3
12990 14  15139  00046    12910  FTYPE  CM    CHI,46,10,        TEST FOR F TYPE
13002 47  13034  01200    12920         BNE   *+32
13014 17  09084  00146    12930         BTM   PUT,      146,8,F TYPE
13026 49  13070  00000    12940         B     FORM3-12
13034                     12950         DORG  *-3
13034 14  15139  00045    12960  ETYPE  CM    CHI,45,10,        TEST FOR E TYPE
13046 47  12770  01200    12970         BNE   FORMER
                          12975  **************************************************
13058 16  13432  13434    12980         TFM   EBRAN+6,EBRAN+8
                          12985  *.................................................
13070 15  14389  00000    12990         TDM   IATYPE,0
13082 31  15138  15140    13000  FORM3  TR    CHI-1,CHI+1
13094 14  15139  00000    13010         CM    CHI,0,10
13106 46  13082  01200    13020         BE    *-24
13118 14  15139  00069    13030         CM    CHI,69,10
13130 47  12770  01100    13040         BNH   FORMER
13142 15  10106  00001    13050         TDM   DIMSW,1,,         SET SWITCH TO RETURN FROM LSTNO
13154 17  05446  13166    13060         BTM   CSTNO,*+12,,      COLLECT NUMBER
13166 14  10081  00000    13070         CM    SYM,0,10
13178 46  12770  01200    13080         BE    FORMER
                          13085  **************************************************
13190 26  14516  10081    13090         TF    SCALE+4,SYM
                          13095  *.................................................
13202 44  13262  14382    13100         BNF   *+60,FREQSW,,     TEST IF SPEC WAS MULT SPECIFICATION
13214 33  14382  00000    13110         CF    FREQSW
13226 23  10081  14393    13120         M     SYM,SETFRQ+11
13238 32  00096  00000    13130         SF    96
13250 26  10081  00099    13140         TF    SYM,99
13262 17  14464  00000    13150         BTM   WIDCK,0,10
                          13155  **************************************************
13274 43  13590  14389    13160         BD    FORM5-12,IATYPE
                          13165  *.................................................
13286 14  15139  00000    13170         CM    CHI,0,10
13298 47  13330  01200    13180         BNE   *+32
13310 31  15138  15140    13190         TR    CHI-1,CHI+1
13322 49  13286  00000    13200         B     *-36
13330                     13210         DORG  *-3
13330 14  15139  00003    13220         CM    CHI,3,10
13342 47  12770  01200    13230         BNE   FORMER
                          13240  *$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
13354 31  15138  15140    13250         TR    CHI-1,CHI+1
13366 14  15139  00000    13260         CM    CHI,0,10
13378 46  13354  01200    13270         BE    *-24
13390 14  15139  00069    13280         CM    CHI,69,10
13402 47  12770  01100    13290         BNH   FORMER
13414 17  05446  13426    13300         BTM   CSTNO,*+12
                          13301  **************************************************
13426 49  13554           13301  EBRAN  B7    EOK
13434 26  14520  14516    13302         TF    SCALE+8,SCALE+4
13446 22  14520  14512    13303         S     SCALE+8,SCALE ,,,CALCULATE SCALE FACTOR
```

54

```
LOCTN OP  P/L    Q        PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

13458 22  14520  10081    13304         S     SCALE+8,SYM
13470 12  14520  00006    13305         SM    SCALE+8,6,10
13482 47  13530  01100    13306         BNH   EOK-24
13494 27  09084  14520    13307         BT    PUT,SCALE+8
13506 17  09084  00147    13308         BTM   PUT,147,8
13518 22  14516  14520    13309         S     SCALE+4,SCALE+8
13530 17  09084  00145    1330A         BTM   PUT,145,8
13542 16  13432  13554    1330B         TFM   EBRAN+6,EOK
13554 27  09084  14516    1330C  EOK    BT    PUT,SCALE+4
13566 17  09084  00103    1330D         BTM   PUT,103,8
13578 26  14516  10081    1330E         TF    SCALE+4,SYM
13590 27  09084  14516    13310         BT    PUT,SCALE+4
                          13315  *.................................................
13602 14  15139  00000    13320  FORM5  CM    CHI,0,10
13614 47  13646  01200    13330         BNE   *+32
13626 31  15138  15140    13340         TR    CHI-1,CHI+1
13638 49  13602  00000    13350         B     FORM5
13646                     13360         DORG  *-3
13646 14  15139  00004    13370  FORM51 CM    CHI,4,10,
13658 47  13782  01200    13380         BNE   FCMA
13670 17  09084  00104    13390         BTM   PUT,      104,8,RIGHT PAREN
13682 31  15138  15140    13400         TR    CHI-1,CHI+1
13694 12  02615  00001    13410         SM    PARCNT,1,10
13706 47  13602  01200    13420         BNZ   FORM5
13718 14  15139  00000    13430         CM    CHI,0,10
13730 46  13762  01200    13440         BE    *+32
13742 45  12770  15141    13450         BNR   FORMER,CHI+2
13754 49  02626  00000    13460         B     BEGIN
13762                     13470         DORG  *-3
13762 31  15138  15140    13480         TR    CHI-1,CHI+1
13774 49  13718  00000    13490         B     *-56
13782                     13500         DORG  *-3
13782 14  15139  00023    13510  FCMA   CM    CHI,23,10
13794 47  13826  01200    13520         BNE   *+32
13806 17  09084  00123    13530         BTM   PUT,      123,8,COMMA
13818 49  12570  00000    13540         B     FORM1
13826                     13550         DORG  *-3
13826 14  15139  00021    13560         CM    CHI,21,10
13838 47  12606  01200    13570         BNE   FORM1+36
13850 17  09084  00121    13580  FORM7  BTM   PUT,      121,8,DIVIDE
13862 16  14453  00145    13590         TFM   WIDTH,145,8,
13874 43  13898  02230    13600         BD    *+24,BIGPRT
13886 12  14453  00024    13610         SM    WIDTH,24,10
13898 31  15138  15140    13620         TR    CHI-1,CHI+1
13910 14  15139  00000    13630         CM    CHI,0,10
13922 46  13898  01200    13640         BE    *-24
13934 14  15139  00024    13650         CM    CHI,24,10
13946 46  14110  01200    13660         BE    FORM4
13958 14  15139  00069    13670         CM    CHI,69,10
13970 47  13646  01100    13680         BNH   FORM51
13982 15  10106  00001    13690  FORM8  TDM   DIMSW,1
13994 17  05446  14006    13700         BTM   CSTNO,*+12
14006 14  15139  00000    13710         CM    CHI,0,10
14018 47  14050  01200    13720         BNE   *+32
14030 31  15138  15140    13730         TR    CHI-1,CHI+1
14042 49  14006  00000    13740         B     *-36
14050                     13750         DORG  *-3
```

55

```
LOCTN  OP  P/L    Q        PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

14050  14  15139  00057    13760         CM    CHI,57,10,         TEST FOR SCALE FACTOR
                           13765         ***********************************************************
14062  46  14490  01200    13770         BE    PSCALE
                           13775         *.........................................................
14074  14  15139  00024    13780         CM    CHI,24,10
14086  47  14142  01200    13790         BNE   FORMX
14098  27  09084  10081    13800         BT    PUT,SYM
14110  11  02615  00001    13810  FORM4  AM    PARCNT,1,10
14122  17  09084  08124    13820         BTM   PUT,      124,8,LEFT PAREN
14134  49  12570  00000.   13830         B     FORM1
14142                      13840         DORG  *-3
14142  14  15139  00067    13850  FORMX  CM    CHI,67,10,         TEST FOR X SPECIFICATION
14154  47  14210  01200    13860         BNE   HOLL
14166  17  14464  00080    13870         BTM   WIDCK,0,10
14178  27  09084  10081    13880         BT    PUT,SYM
14190  17  09084  08147    13890         BTM   PUT,      147,8,X TYPE
14202  49  13626  00000    13900         B     FORM5+24
14210                      13910         DORG  *-3
14210  14  15139  00048    13920  HOLL   CM    CHI,48,10,
14222  47  14382  01200    13930         BNE   SETFRQ
14234  17  14464  00080    13940         BTM   WIDCK,0,10
14246  27  09084  10081    13950         BT    PUT,SYM
14258  17  09084  08148    13960         BTM   PUT,      148,8,H TYPE
14270  31  15138  15140    13970  HOLLI  TR    CHI-1,CHI+1
14282  45  14302  15141    13980         BNR   *+20,CHI+2
14294  49  12770  00000    13990         B     FORMER
14302                      14000         DORG  *-3
14302  26  14337  15139    14010         TF    *+35,CHI
14314  33  14336  00000    14020         CF    *+22
14326  17  09084  00000    14030         BTM   PUT,           ,8,OUTPUT HOLL
14338  12  10081  00001    14040         SM    SYM,1,10
14350  47  14270  01200    14050         BNZ   HOLLI
14362  45  13626  15141    14060         BNR   FORM5+24,CHI+2
14374  49  12770  00000    14070         B     FORMER
14382                      14080         DORG  *-3
14382  32  14382  00000    14090  SETFRQ SF    FREQSW
14382      00000           14100  FREQSW DS    ,SETFRQ
14389      00000           14110  IATYPE DS    ,*-4
14394  27  09084  10081    14120         BT    PUT,SYM
14406  26  14393  10081    14130         TF    SETFRQ+11,SYM
14418  14  15139  00024    14140         CM    CHI,24,10,
14430  47  12606  01200    14150         BNE   FORM1+36
14442  33  14382  00000    14160         CF    FREQSW
14453      00000           14170  WIDTH  DS    ,*
14454  49  14110  00000    14180         B     FORM4
14462                      14190         DORG  *-3
14463      00002           14200         DS    2,
14464  22  14453  10081    14210  WIDCK  S     WIDTH,SYM
14476  47  12770  01300    14220         BN    FORMER
14488  42  00000  00000    14230         BB
14490                      14240         DORG  *-9
                           14241         ***********************************************************
14490  26  14512  10081    14241  PSCALE TF    SCALE,SYM
14502  49  12866           14242         B7    PTYPE
14512      00004  00003    14243  SCALE  DSB   4,3
                           14249         *.........................................................
16000                      14250         DORG  16000
```

56

```
LOCTN  OP  P/L    Q        PG/LN  LABEL   MNEM  OPERANDS AND REMARKS

16000  16  00565  16023    14260          TFM   IORT,*+23
16012  49  00532  09724    14270          B     IOPT,BLK1,7
16024  36  00012  00500    14280          TRA
16036  49  00012           14290          TCD   16000
16000                      14300  *       OUT OF CORE BLOCK 2  CONTAINS THE FOLLOWING
                           14310  *       EQUIVALENCE
                           14320  *       SUBROUTINE
                           14330  *       FUNCTION
                           14340  *       CONTINUE
                           14350  *       PAUSE
                           14360  *       STOP
                           14370  *       DEFINE
10200                      14380          DORG  IOUT
10200  16  02359  09793    14390          TFM   FMON+35,BLK4,,       IOUT
10212  17  02324  10200    14400          BTM   FMON,IOUT
10224  14  15139  00057    14410          CM    CHI,57,10,           CHECK FOR P IN STOP
10236  49  10512  00000    14420          B     NNARAA
10248  16  02359  09724    14430          TFM   FMON+35,BLK1,,       DIM
10260  17  02324  10248    14440          BTM   FMON,DIM
10272  16  02359  09724    14450          TFM   FMON+35,BLK1,,       COMMON
10284  17  02324  10272    14460          BTM   FMON,COMMON
10296  16  02359  09839    14470          TFM   FMON+35,BLK6,,       IF
10308  17  02324  10296    14480          BTM   FMON,IF
10320  16  02359  09839    14490          TFM   FMON+35,BLK6,,       GOTO
10332  17  02324  10320    14500          BTM   FMON,GOTO
10344  16  02359  09839    14510          TFM   FMON+35,BLK6,,       CALL
10356  17  02324  10344    14520          BTM   FMON,CALL
10368  16  02359  09839    14530          TFM   FMON+35,BLK6,,       RETURN
10380  17  02324  10368    14540          BTM   FMON,RETURN
10392  16  02359  09724    14550          TFM   FMON+35,BLK1,,       FORMAT
10404  17  02324  10392    14560          BTM   FMON,FORMAT
10416  16  02359  09793    14570          TFM   FMON+35,BLK4,,       DOO
10428  17  02324  10416    14580          BTM   FMON,DOO
10440  16  02359  09770    14590          TFM   FMON+35,BLK3,,       ASCAN
10452  17  02324  10440    14600          BTM   FMON,ASCAN
10464  16  02359  09770    14610          TFM   FMON+35,BLK3,,       OUTSC
10476  17  02324  10464    14620          BTM   FMON,OUTSC
10488  16  02359  09816    14630          TFM   FMON+35,BLK5,,       DKIO
10500  17  02324  10488    14640          BTM   FMON,DKIO
10512  46  14028  01200    14650  NNARAA  BE    STOPEN
10524  17  04696  00002    14660          BTM   COLNAM,2,10
10536  14  10081  06245    14670          CM    SYM,6245,8
10548  46  04300  01400    14680          BV    ERRO1
10560  46  13860  01200    14690          BE    PAUSEN
10572  17  04696  00005    14700          BTM   COLNAM,5,10
10584  24  10081  13859    14710          C     SYM,TINUE+8
10596  46  04300  01400    14720          BV    ERRO1
10608  46  13794  01200    14730          BE    CONTEN
10620  24  10081  13793    14740          C     SYM,CTION+8
10632  46  13728  01200    14750          BE    FUNCTA
10644  17  04696  00007    14760          BTM   COLNAM,7,10
10656  24  10081  13727    14770          C     SYM,ROUTN+12
10668  46  04300  01400    14780          BV    ERRO1
10680  46  13194  01200    14790          BE    SUBPA
10692  24  10081  14489    14800          C     SYM,DEFCT+12
10704  46  14060  01200    14810          BE    DEFINE
```

57

LOCTN OP   P/L   Q   PG/LN LABEL MNEM OPERANDS AND REMARKS

				14811	***
10716	24	10081	10785	14812	C SYM,BGTR+12 ,,,CHECK FOR BEGIN TRACE
10728	47	10786	01200	14813	BNE EQUIVN
10740	17	09084	00154	14814	BTM PUT,154,8 ,,,OUTPUT BEGIN TRACE SYMBOL
10752	17	09084	00140	14815	BTM PUT,140,8
10764	49	02626		14816	B7 BEGIN
10773		00007	X2	14817	BGTR DAC 7,INTRACE,
				14818	*..
				14820	****** ENTER TO DECOMPOSE EQUIVALENCE STATEMENTS ******
10786	17	04696	00008	14830	EQUIVN BTM COLNAM,8,10
10798	24	10081	13193	14840	C SYM,IVALEN+14
10810	46	04300	01400	14850	BV ERRO1
10822	47	04300	01200	14860	BNE ERRO1
10834	31	15138	15154	14870	TR CHI-1,CHI+15
10846	33	05675	00000	14880	CF STSN
10858	15	10110	00001	14890	EQR TDM EQUSW,1,11, SET SWITCH INDICATING EQUIV STATEMENT
10870	15	12651	00000	14900	TDM PR,,, INITIALIZE PR
10881		00001		14910	DC 1,a,*
10882	14	15139	00024	14920	CM CHI,24,10
10894	46	10918	01200	14930	BE *+24,
10906	17	09384	00072	14940	BTM ERROR,72,9,
10918	16	06049	15139	14950	TFM SCHI,CHI
10930	11	06049	00002	14960	EQ1 AM SCHI,2,10
10942	14	06049	00040	14970	CM SCHI,40,610
10954	46	10978	01100	14980	BH *+24
10966	17	09384	00170	14990	BTM ERROR,170,9, INVALID VAR
10978	14	06049	00069	15000	CM SCHI,69,610
10990	46	10966	01100	15010	BH *-24
11002	17	05738	11014	15020	BTM CSORN,*+12,, GO TO COLLECT NAME
11014	43	11046	02611	15030	BD *+32,INSW,, TEST IF SYM PREVIOUSLY DEFINED
11026	11	02372	00005	15040	E83230 AM NXLOC,5,10, IF SYM NOT PREV DEFINED, SAVE ROOM FOR
11038	49	11146	00000	15050	B EQ021,,, OFFSET VALUE
11046				15060	DORG *-3
11046	43	11146	07295	15070	BD EQ021,SMCNT,11, TEST FOR DIM VAR
11058	44	11146	07919	15080	BNF EQ21 ,MODAD,11, TEST IF SYM WAS PREVIOUSLY EQUIV
11070	44	11090	07295	15090	BNF *+20 ,SMCNT,11, TEST IF VAR WAS IN COMMON
11082	49	11146	00000	15100	B EQ021
11090				15110	DORG *-3
11090	21	02372	05965	15120	A NXLOC,SMLNG
11102	26	02372	10081	15130	TF NXLOC,SYM,6, MOVE SYM NAME INTO TABLE
11114	26	07242	02372	15140	TF SMADD,NXLOC,6, MOVE NEW SYM ADD INTO TABLE
11126	49	11026	00000	15150	B E83230
11134				15160	DORG *-3
11134	17	09384	00171	15170	BTM ERROR,171,9, INVALID NAME USED IN FUNCTION
11146	43	11134	10102	15180	EQ21 BD *-12,FNTSW,, TEST FOR FUNCTION NAME IN EQUIVALENCE
11158	11	07295	00001	15190	AM SMCNT,1,10
11170	45	11190	07295	15200	BNR *+20,SMCNT,11, TEST FOR DUMMY PARAMETERS OF SUBPROGRAM
11182	49	11134	00000	15210	B EQ21-12
11190				15220	DORG *-3
11190	11	07295	00001	15230	AM SMCNT,01,10
11202	45	11222	07295	15240	BNR *+20,SMCNT,11, TEST FOR SUBPROGRAM NAME IN SUBPROGRAM
11214	49	11134	00000	15250	B EQ21-12
11222				15260	DORG *-3
11222	12	07295	00002	15270	SM SMCNT,02,10
11234	45	11254	12651	15280	BNR *+20,PR,, TEST FOR FIRST NAME ON LIST
11246	49	11826	00000	15290	B EQ7
11254				15300	DORG *-3

58

LOCTN OP   P/L   Q   PG/LN LABEL MNEM OPERANDS AND REMARKS

11254	24	06451	06453	15310	C MODE,FXORFL,, TEST FOR MIXED EQUIV
11266	46	11314	01200	15320	BE *+48
11278	24	02298	02252	15330	C FP2,KLNG,, TEST FOR K EQUAL TO F+2 IN MIXED EQUIV
11290	46	11314	01200	15340	BE *+24
11302	17	09384	00172	15350	BTM ERROR,172,9,
11314	44	12274	07919	15360	BNF EQ22,MODAD,11, TEST IF SYM HAD BEEN PREVIOUSLY EQUIV
11326	44	11382	07295	15370	BNF *+56,SMCNT,11, BRANCH IF SYM IS NOT IN COMMON
11338	44	11362	12651	15380	BNF *+24,PR,, TEST IF PREVIOUS SYM WAS IN COMMON
11350	17	09384	00173	15390	BTM ERROR,173,9, ILLEGAL EQUIVALENCE
11362	44	11350	12650	15400	BNF *-12,PR-1,, TEST IF PREV SYM WAS EQUIV
11374	49	11826	00000	15410	B EQ7
11382				15420	DORG *-3
11382	44	11770	08124	15430	EQ24 BNF EQ4,DMVAR,, TEST FOR DIM VAR, BRANCH IF NOT
11394	14	06049	00024	15440	CM SCHI,24,610
11406	47	11666	01200	15450	BNE EQBR+8
11418	11	06049	00002	15460	AM SCHI,2,10
11430	16	11664	11678	15470	TFM EQBR+6,EQBR+20
11442	14	06049	00069	15480	CM SCHI,69,610
11454	46	11478	01100	15490	BH *+24
11466	17	09384	00075	15500	BTM ERROR,75,9, INCORRECT SUBSCRIPTING
11478	16	10078	00000	15510	TFM SYM-3,0,7
11490	16	11520	10077	15520	TFM *+30,SYM-4
11502	11	11520	00001	15530	AM *+18,1,10
11514	25	00000	06049	15540	EQ23 TD ,SCHI,11, COLLECT INDEX
11526	11	06049	00002	15550	AM SCHI,2,10
11538	14	06049	00069	15560	CM SCHI,69,610
11550	47	11598	01100	15570	BNH *+48
11562	14	11520	10081	15580	CM EQ23+6,SYM
11574	47	11502	01200	15590	BNE EQ23-12
11586	17	09384	00075	15600	BTM ERROR,75,9
11598	26	10081	11520	15610	TF SYM,EQ23+6,11,
11610	32	10077	00000	15620	SF SYM-4
11621		00000		15630	SAVE1 DS ,*
11622	14	06049	00004	15640	CM SCHI,4,610, TEST FOR RIGHT PAREN
11634	47	11586	01200	15650	BNE *-48
11646	11	06049	00002	15660	AM SCHI,2,10
11658	49	11678	00000	15670	EQBR B *+20
11666				15680	DORG *-3
11666	16	10081	00001	15690	TFM SYM,1,
11678	43	11770	12651	15700	BD EQ4,PR,, TEST IF PREVIOUS SYM WAS DIM VAR
11690	44	11770	12651	15710	BNF *+20,PR
11702	49	11770	00000	15720	B EQ4
11710				15730	DORG *-3
11710	44	11770	12650	15740	BNF EQ4,PR-1,, TEST IF PREVIOUS SYM WAS EQUIV
11722	26	09035	07242	15750	TF REF,SMADD,
11734	25	12651	07295	15760	TD PR,SMCNT,11,
11746	25	12650	07919	15770	TD PR-1,MODAD,11, SAVE INDICATORS
11758	26	02620	10081	15780	TF TEMP,SYM,, SAVE OFFSET
11770	14	06049	00004	15790	EQ4 CM SCHI,4,610,
11782	46	12306	01200	15800	BE EQLODP,,, END OF LIST
11794	14	06049	00023	15810	CM SCHI,23,610
11806	46	10930	01200	15820	BE EQ1
11818	49	10906	00000	15830	B EQ1-24
11826				15840	DORG *-3
11826	25	06451	07919	15850	EQ7 TD MODE,MODAD,11, SET FIX OR FLOAT
11838	33	06451	00000	15860	CF MODE
11849		00000		15870	SAVE3 DS ,*

59

```
LOCTN  OP  P/L    Q      PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

11850  26  09035  07242  15880         TF    REF,SMADD,
11862  25  12650  07919  15890         TD    PR-1,MODAD,11
11874  25  12651  07295  15900         TD    PR,SMCNT,11
11886  43  11918  12651  15910         BD    *+32  ,PR,,          TEST FOR DIM VAR
11898  16  02620  80001  15920         TFM   TEMP,1
11910  49  12010  00000  15930         B     E84130
11918                    15940         DORG  *-3
11918  14  06049  00024  15950         CM    SCHI,24,610
11930  47  11898  01200  15960         BNE   *-32
11942  11  06049  00002  15970         AM    SCHI,2,10
11954  14  06049  00069  15980         CM    SCHI,69,610
11966  47  11466  01100  15990         BNH   EQ23-48
11978  16  11664  ∓1998  16000         TFM   EQBR+6,*+20
11990  49  11478  00000  16010         B     EQ23-36,,,         GO TO COLLECT SUBSCRIPTING
11998                    16020         DORG  *-3
11998  26  02620  10081  16030         TF    TEMP,SYM
12010  44  12030  07919  16040  E84130  BNF  *+20,MODAD,11,      TEST IF VAR PREVIOUSLY EQUIVALENCED
12022  49  11770  00000  16050         B     EQ4
12030                    16060         DORG  *-3
12030  26  12060  07295  16070         TF    *+30,SMCNT
12042  11  12060  00003  16080         AM    *+18,3,10           TEST IF PREVIOUSLY EQUIV SYM WAS A BASE
12054  14  00000  00000  16090  F84180  CM   ,0,9,               TEST IF PREVIOUSLY EQUIV SYM WAS A BASE
12066  46  11770  01200  16100         BE    EQ4
12078  43  12230  07295  16110         BD    E84330,SMCNT,11,    TEST FOR DIM VAR
12090  26  12125  07242  16120         TF    *+35,SMADD,11
12102  11  12125  00005  16130         AM    *+23,5,10
12114  21  02620  00000  16140         A     TEMP,,,             GENERATE OFFSET TO PREVIOUS BASE
12126  26  08519  02377  16150  E84240  TF   ADSAVE,STBL
12138  22  08518  12060  16160         S     ADSAVE-1,E84180+6,11, GEN ADDRESS OF BASE
12150  11  08518  00001  16170         AM    ADSAVE-1,1,10
12162  26  09035  08519  16180         TF    REF,ADSAVE
12174  12  08519  00004  16190         SM    ADSAVE,04,10
12186  25  12650  08519  16200         TD    PR-1,ADSAVE,11,     SAVE FIX OR FLOAT
12198  11  08519  00001  16210         AM    ADSAVE,1,10
12210  25  12651  08519  16220         TD    PR,ADSAVE,11,       SAVE DIM INDICATOR
12222  49  11770  00000  16230         B     EQ4
12230                    16240         DORG  *-3
12230  12  07242  00005  16250  E84330  SM   SMADD,05,10
12242  26  12265  07242  16260         TF    *+23,SMADD
12254  21  02620  00000  16270         A     TEMP,,,             GEN NEW OFFSET
12266  49  12126  00000  16280         B     E84240
12274                    16290         DORG  *-3
12274  44  11350  12650  16300  EQ22    BNF  EQ24-32,PR-1,,      ENTER FROM E83500, BR TO ERROR IF PREV
12286  44  11826  12651  16310         BNF   EO7,PR,,            SYM  WAS EQUIVALENCED OR IN COMMON
12298  49  11350  00000  16320         B     EQ24-32
12306                    16330         DORG  *-3
12306  16  06049  ∓5139  16340  EQLOOP  TFM  SCHI,CHI,,          ENTER HERE AFTER EQUIV STATEMENT HAS
12318  26  12365  02377  16350         TF    EBASE,STBL
12330  22  12365  09035  16360         S     EBASE,REF
12342  11  12364  00001  16370         AM    EBASE-1,1,10
12354  32  12362  00000  16380         SF    EBASE-3
12365      00000         16390  EBASE   DS   ,*
12366  11  06049  00002  16400         AM    SCHI,2,10,          BEEN SCANNED ONCE TO DETERMINE BASE
12378  17  05738  ∓2390  16410         BTM   CSORN,*+12,
12390  44  13098  07919  16420         BNF   E84804,MODAD,11,    IF SYM WAS PREV EQUIV IT MUST BE THE
12402  24  07242  09035  16430         C     SMADD,REF,,         BASE OF THE PRESENT EQUIV
12414  46  12686  01200  16440         BE    E84695
```

60

```
LOCTN  OP  P/L    Q      PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

12426  43  12542  07295  16450         BD    E84560,SMCNT,11,    TEST FOR DIM VAR
12438  26  08519  07242  16460         TF    ADSAVE,SMADD,11,
12450  11  08519  00005  16470         AM    ADSAVE,5,10,
12462  16  08519  80001  16480         TFM   ADSAVE,1,6711,
12474  21  08519  02620  16490         A     ADSAVE,TEMP,6
12486  11  07242  00005  16500         AM    SMADD,5,10          PLACE OFF SET INTO TABLE
12498  26  07242  12364  16510         TF    SMADD,EBASE-1,6
12510  44  12926  12651  16520         BNF   E84710,PR
12522  32  07295  00000  16530         SF    SMCNT,,6
12534  49  12926  00000  16540         B     E84710
12542                    16550         DORG  *-3
12542  14  06049  00024  16560  F84560  CM   SCHI,24,610
12554  46  12586  01200  16570         BE    *+32
12566  16  10081  80001  16580         TFM   SYM,1,711
12578  49  12630  00000  16590         B     *+52
12586                    16600         DORG  *-3
12586  11  06049  00002  16610         AM    SCHI,2,10
12598  16  11664  ∓2618  16620         TFM   EQBR+6,*+20
12610  49  11478  00000  16630         B     EQ23-36
12618                    16640         DORG  *-3
12618  32  10081  00000  16650         SF    SYM
12630  21  10081  02620  16660         A     SYM,TEMP,,          GEN OFFSET
12642  12  07242  00005  16670         SM    SMADD,05,10
12651      00000         16680  PR      DS   ,*-2
12654  26  07242  10081  16690         TF    SMADD,SYM,6,        MOVE OFFSET INTO TABLE
12666  11  07242  00010  16700         AM    SMADD,10,10
12678  49  12498  00000  16710         B     E84560-44
12686                    16720         DORG  *-3
12686  44  12706  07295  16730  E84695  BNF  *+20,SMCNT,11
12698  49  12762  00000  16740         B     HERE
12706                    16750         DORG  *-3
12706  43  12762  07295  16760         BD    HERE,SMCNT,11
12718  26  08519  07242  16770         TF    ADSAVE,SMADD,11
12730  11  08519  00005  16780         AM    ADSAVE,5,10
12742  26  08519  02620  16790         TF    ADSAVE,TEMP,6
12754  49  12890  00000  16800         B     E84710-36
12762                    16810         DORG  *-3
12762  14  06049  00024  16820  HERE    CM   SCHI,24,610
12774  47  12834  01200  16830         BNE   *+60
12786  11  06049  00002  16840         AM    SCHI,2,10
12798  14  06049  00004  16850         CM    SCHI,4,610
12810  47  12786  01200  16860         BNE   *-24
12822  11  06049  00002  16870         AM    SCHI,2,10
12834  44  12854  07295  16880         BNF   *+20,SMCNT,11
12846  49  12890  00000  16890         B     E84710-36
12854                    16900         DORG  *-3
12854  12  07242  00005  16910         SM    SMADD,5,10
12866  26  07242  02620  16920         TF    SMADD,TEMP,6
12878  11  07242  00005  16930         AM    SMADD,5,10
12890  11  07242  00005  16940         AM    SMADD,5,10
12902  16  07242  00000  16950         TFM   SMADD,0,69
12914  12  07242  00005  16960         SM    SMADD,5,10
12926  33  07919  00000  16970  E84710  CF   MODAD,,6,           CLEAR FLAG INDICATING EQUIV VARIABLE
12937      00000         16980  SAVE2   DS   ,*
12938  14  06049  00004  16990         CM    SCHI,4,610
12950  47  12366  01200  17000         BNE   EQLOOP+60
12962  11  06049  00002  17010         AM    SCHI,2,10
```

61

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
12974	14	06049	00023	17020		CM	SCHI,23,610
12986	47	13042	01200	17030		BNE	*+56
12998	26	13033	06049	17040		TF	*+35,SCHI
13010	11	13033	00001	17050		AM	*+23,1,10
13022	31	15138	00000	17060		TR	CHI-1
13034	49	10858	00000	17070		B	EOR
13042				17080		DORG	*-3
13042	26	13077	06049	17090		TF	*+35,SCHI
13054	11	13077	00002	17100		AM	*+23,2,10
13066	45	13086	00000	17110		BNR	*+20
13078	49	02638	00000	17120		B	BEGINA
13086				17130		DORG	*-3
13086	17	09384	00072	17140		BTM	ERROR,72,9,
13098	14	06049	00024	17150	E84804	CM	SCHI,24,610
13110	47	12926	01200	17160		BNE	E84710
13122	11	06049	00002	17170		AM	SCHI,2,10
13134	14	06049	00004	17180		CM	SCHI,4,610
13146	47	13122	01200	17190		BNE	*-24
13158	11	06049	00002	17200		AM	SCHI,2,10
13170	49	12926	00000	17210		B	E84710
13178				17220		DORG	*-3
13179		00008	X2	17230	IVALEN	DAC	8,IVALENCE
				17240	******		OUTPUT SUBROUTINE DECLARATION STATEMENT *****
13194	16	13361	00135	17250	SUBPA	TFM	SUBPUT+11,0135,8
13206	31	15138	15152	17260		TR	CHI-1,CHI+13
13218	43	13254	02293	17270		BD	*+36,SUBFCT
13230	15	02293	00001	17280		TDM	SUBFCT,1
13242	43	13266	05675	17290		BD	*+24,STSN
13254	17	09384	00370	17300		BTM	ERROR,370,9
13266	44	13254	05675	17310		BNF	*-12,STSN
13278	15	10114	00001	17320	SUBPF	TDM	SUBSW,1
13290	14	15139	00040	17330		CM	CHI,40,10
13302	46	13326	01100	17340		BH	*+24
13314	17	09384	00270	17350	SUBP1	BTM	ERROR,270,9, SUB DECLARATION ERROR
13326	14	15139	00069	17360		CM	CHI,69,10
13338	46	13314	01100	17370		BH	*-24
13350	17	09084	00135	17380	SUBPUT	BTM	PUT,0135,8, OUTPUT SUBROUTINE SYMBOL
13362	32	07068	00000	17390		SF	OUTSW
13374	17	05738	13386	17400		BTM	CSORN,*+12
13386	11	07242	00004	17410		AM	SMADD,04,10
13398	15	07242	00000	17420		TDM	SMADD,,6
13409		00001		17430		DC	1,@,*
13410	26	02243	10081	17440		TF	SAVSYM,SYM
13422	45	13458	15141	17450		BNR	*+36,CHI+2
13434	44	02626	02293	17460		BNF	BEGIN,SUBFCT
13446	17	09384	00371	17470		BTM	ERROR,371,9
13458	14	15139	00024	17480		CM	CHI,24,10
13470	46	13494	01200	17490		BE	*+24
13482	17	09384	00371	17500		BTM	ERROR,371,9
13494	17	09084	00124	17510		BTM	PUT, 124,8,LEFT PAREN
13506	31	15138	15140	17520		TR	CHI-1,CHI+1
13518	14	15139	00040	17530	SUBP2	CM	CHI,40,10
13530	47	13482	01100	17540		BNH	SUBP2-36
13542	14	15139	00069	17550		CM	CHI,69,10
13554	46	13482	01100	17560		BH	SUBP2-36,,, TEST FOR SYMBOLIC ARGUEMENTS
13566	32	07068	00000	17570		SF	OUTSW,
13578	17	05738	13590	17580		BTM	CSORN,*+12,, OUTPUT ARGUEMENT

62

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
13590	43	13482	02611	17590		BD	SUBP2-36,INSW,, ERROR IF ARGUEMENT WAS IN
13602	11	07242	00003	17600		AM	SMADD,3,10
13614	15	07242	00000	17610		TDM	SMADD,,6
13625		00001		17620		DC	1,@,*
13626	14	15139	00023	17630		CM	CHI,23,10
13638	47	13670	01200	17640		BNE	*+32
13650	17	09084	00123	17650		BTM	PUT, 123,8,COMMA
13662	49	13506	00000	17660		B	SUBP2-12
13670				17670		DORG	*-3
13670	14	15139	00004	17680		CM	CHI,4,10
13682	47	13482	01200	17690		BNE	SUBP2-36
13694	17	09084	00104	17700		BTM	PUT, 104,8,RIGHT PAREN
13706	49	02626	00000	17710		B	BEGIN
13714				17720		DORG	*-3
13715		00007	X2	17730	ROUTN	DAC	7,ROUTINE
				17740	******		OUTPUT FUNCTION DECLARATION STATEMENTS ******
13728	31	15138	15148	17750	FUNCTA	TR	CHI-1,CHI+9
13740	16	13361	00136	17760		TFM	SUBPUT+11,136,8
13752	43	13254	02293	17770		BD	SUBPF-24,SUBFCT
13764	15	02293	00001	17780		TDM	SUBFCT,1,11
13776	49	13242	00000	17790		B	SUBPF-36
13784				17800		DORG	*-3
13785		00005	X2	17810	CTION	DAC	5,CTION
				17820	******		OUTPUT CONTINUE STATEMENT ******
13794	43	13818	02610	17830	CONTEN	BD	*+24,NOIND
13806	17	09440	00574	17840		BTM	ERROR2,574,9, UNNUMBERED CONTINUE STATEMENT
13818	17	09084	00127	17850		BTM	PUT, 127,8,CONTINUE
13830	17	09084	00140	17860		BTM	PUT, 140,8,DUMMY
13842	49	02626	00000	17870		B	BEGIN
13850				17880		DORG	*-3
13851		00005	X2	17890	TINUE	DAC	5,TINUE
				17900	****		OUTPUT PAUSE STATEMENT ****
13860	31	15138	15142	17910	PAUSEN	TR	CHI-1,CHI+3
13872	17	09084	00126	17920		BTM	PUT, 126,8,PAUSE
13884	17	09084	00140	17930		BTM	PUT, 140,8,DUMMY
13896	45	13916	15141	17940		BNR	*+20,CHI+2
13908	49	02626	00000	17950		B	BEGIN
13916				17960		DORG	*-3
13916	14	15139	00069	17970	PAUS	CM	CHI,69,10
13928	46	13960	01100	17980		BH	*+32
13940	17	09440	00573	17990		BTM	ERROR2,573,9, CHARACTER AFTER PAUSE NOT NUMERIC
13952	49	02626	00000	18000		B	BEGIN
13960				18010		DORG	*-3
13960	17	09084	00140	18020		BTM	PUT, 140,8,DUMMY
13972	25	13995	15139	18030		TD	*+23,CHI
13984	17	09084	00000	18040		BTM	PUT,0,8
13996	31	15138	15140	18050		TR	CHI-1,CHI+1
14008	45	13972	15141	18060		BNR	*-36,CHI+2
14020	49	02626	00000	18070		B	BEGIN
14028				18080		DORG	*-3
				18090	****		OUTPUT STOP STATEMENT ****
14028	31	15138	15140	18100	STOPEN	TR	CHI-1,CHI+1
14040	17	09084	00125	18110		BTM	PUT, 125,8,STOP
14052	49	13884	00000	18120		B	PAUSEN+24
14059				18130		DORG	*-4
14060	31	15138	15152	18140	DEFINE	TR	CHI-1,CHI+13,, SHIFT OFF INEDISK
14072	33	05675	00000	18150		CF	STSN

63

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
14084	43	14502	02293	18160		BD	ERR60+12,SUBFCT
14096	43	14502	02384	18170		BD	ERR60+12,MULDEF
14108	15	02384	00001	18180		TDM	MULDEF,1
14120	14	15139	00024	18190		CM	CHI,24,10, CHECK FOR LEFT PAREN
14132	47	14490	01200	18200		BNE	ERR44
14144	31	15138	15140	18210		TR	CHI-1,CHI+1,, SHIFT OFF LEFT PAREN
14156	14	15139	00069	18220		CM	CHI,69,10
14168	47	14490	01100	18230		BNH	ERR44
14180	17	14548	00003	18240		BTM	CLDGT,03,10, COLLECT N1
14192	32	10080	00000	18250		SF	SYM-1
14204	14	10081	00050	18260		CM	SYM,50,10
14216	46	14490	01100	18270		BH	ERR44,,, N1 GREATER THAN 50
14228	26	02233	10081	18280		TF	N1,SYM
14240	14	15139	00023	18290		CM	CHI,23,10
14252	47	14490	01200	18300		BNE	ERR44
14264	31	15138	15140	18310		TR	CHI-1,CHI+1
14276	23	02240	02233	18320		M	W,N1
14288	14	00099	00100	18330		CM	99,0100,8
14300	15	02243	00002	18340		TDM	RECLG,2
14312	46	14336	01100	18350		BH	*+24
14324	15	02243	00001	18360		TDM	RECLG,1
14336	14	00099	00200	18370		CM	99,0200,8
14348	46	14490	01100	18380		BH	ERR44,,, EXCEEDS TWO SECTORS
14360	14	15139	00069	18390		CM	CHI,69,10
14372	47	14490	01100	18400		BNH	ERR44
14384	17	14548	00006	18410		BTM	CLDGT,06,10, COLLECT N2
14396	32	10077	00000	18420		SF	SYM-4
14408	26	02238	10081	18430		TF	N2,SYM
14420	14	10081	20000	18440		CM	SYM,20000
14432	46	14490	01100	18450		BH	ERR44
14444	14	15139	00004	18460		CM	CHI,04,10
14456	47	14490	01200	18470		BNE	ERR44
14468	49	02638	00000	18480		B	BEGINA
14476				18490		DORG	*-3
14477		00007	X2	18500	DEFCT	DAC	7,INEDISK
14490	16	02243	00000	18510	ERR60	TFM	RECLG,000,9
14502	25	14537	02367	18520		TD	*+35,JAY
14514	17	09440	00670	18530		BTM	ERROR2,670,9
14526	15	02367	00000	18540		TDM	JAY,*-*
14538	49	02638	00000	18550		B	BEGINA
14545				18560		DORG	*-4
14490		00000		18570	ERR44	DS	,ERR60
				18580	***		COLLECT DIGITS SUBROUTINE ***
				18590	*		*
				18600	*		BTM CLDGT,XX,10, XX = NO. OF DIGITS TO COLLECT + 1
				18610	*		*
14546		00002		18620		DS	2
14548	43	14580	15139	18630	CLDGT	BD	*+32,CHI
14560	31	15138	15140	18640		TR	CHI-1,CHI+1
14572	49	14548	00000	18650		B	*-24
14580				18660		DORG	*-3
14580	16	10069	00000	18670		TFM	SYM-12,0
14592	16	14670	10069	18680		TFM	CLDGT2+6,SYM-12
14604	12	14547	00001	18690	CLDGT1	SM	CLDGT-1,1,10
14616	46	14708	01200	18700		BZ	XCLDGT
14628	14	15139	00069	18710		CM	CHI,69,10
14640	47	14708	01100	18720		BNH	XCLDGT

64

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
14652	11	14670	00001	18730		AM	*+18,1,10
14664	25	00000	15139	18740	CLDGT2	TD	,CHI
14676	31	15138	15140	18750		TR	CHI-1,CHI+1
14688	45	14604	15141	18760		BNR	CLDGT1,CHI+2
14700	49	14490	00000	18770		B	ERR44
14708				18780		DORG	*-3
14708	26	10081	14670	18790	XCLDGT	TF	SYM,CLDGT2+6,11
14720	42	00000	00000	18800		BB	
14722				18810		DORG	*-9
				18820	*		DEND *
16000				18830		DORG	16000
16000	16	00565	16023	18840		TFM	IORT,*+23
16012	49	00532	09747	18850		B	IOPT,BLK2,7
16024	36	00012	00500	18860		TRA	
16036	49	00012					
16000				18870		TCD	16000
				18880	*		OUT OF CORE BLOCK 3 CONTAINS THE FOLLOWING
				18890	*		OUTSC
				18900	*		ASCAN
10200				18910		DORG	IOUT
10200	16	02359	09793	18920		TFM	FMON+35,BLK4,, IOUT
10212	17	02324	10200	18930		BTM	FMON,IOUT
10224	16	02359	09747	18940		TFM	FMON+35,BLK2
10236	17	02324	10224	18950		BTM	FMON,NONARA
10248	16	02359	09724	18960		TFM	FMON+35,BLK1,, DIM
10260	17	02324	10248	18970		BTM	FMON,DIM
10272	16	02359	09724	18980		TFM	FMON+35,BLK1,, COMMON
10284	17	02324	10272	18990		BTM	FMON,COMMON
10296	16	02359	09839	19000		TFM	FMON+35,BLK6,, IF
10308	17	02324	10296	19010		BTM	FMON,IF
10320	16	02359	09839	19020		TFM	FMON+35,BLK6,, GOTO
10332	17	02324	10320	19030		BTM	FMON,GOTO
10344	16	02359	09839	19040		TFM	FMON+35,BLK6,, CALL
10356	17	02324	10344	19050		BTM	FMON,CALL
10368	16	02359	09839	19060		TFM	FMON+35,BLK6,, RETURN
10380	17	02324	10368	19070		BTM	FMON,RETURN
10392	16	02359	09724	19080		TFM	FMON+35,BLK1,, FORMAT
10404	17	02324	10392	19090		BTM	FMON,FORMAT
10416	16	02359	09793	19100		TFM	FMON+35,BLK4,, DO STMNT
10428	17	02324	10416	19110		BTM	FMON,DOO
10440	44	12094	02609	19120		BNF	ASC1A ,TRIND,, ASCAN
10452	49	12058	00000	19130		B	ASCAN1
10464	43	10884	10100	19140		BD	SC1 ,SINGST,, OUTSC
10476	49	10512	00000	19150		B	OUTSC1
10488	16	02359	09816	19160		TFM	FMON+35,BLK5,, DKIO
10500	17	02324	10488	19170		BTM	FMON,DKIO
				19180	****		OUTPUT SUBSCRIPTING CODE
10512	26	02620	07242	19190	OUTSC1	TF	TEMP ,SMADD ,11
10524	25	10677	07295	19200		TD	DIMNO,SMCNT,11
10536	33	10677	00000	19210		CF	DIMNO
10545		00002		19220	DIMNOT	DS	2,*-2
10548	26	10545	10677	19230		TF	DIMNOT,DIMNO
10560	33	10620	00000	19240		CF	SC22
10572	31	11920	11989	19250		TR	A1-3,MASK,, SET UP WORK AREA
10584	16	10934	11919	19260		TFM	PA1,A1-4
10596	16	10782	11931	19270		TFM	PA2,A2-4
10608	16	11038	11943	19280		TFM	PI,I-12

65

```
LOCTN  OP   P/L    Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

10620  11   10934  00004   19290  SC22   AM   PA1,4,10
10632  11   10782  00004   19300         AM   PA2,4,10
10644  11   11038  00012   19310         AM   PI,12,10
10656  31   15138  15140   19320         TR   CHI-1,CHI+1
10668  12   10677  08001   19330         SM   DIMNO,0001,810
10677       00002          19340  DIMNO  DS   2,*-2
10680  14   15139  00069   19350         CM   CHI,69,10
10692  47   10976  01100   19360         BNH  ALFAT
10704  15   10106  00001   19370         TDM  DIMSW,1
10716  17   05446  10728   19380         BTM  CSTNO,*+12
10728  15   10106  00000   19390         TDM  DIMSW,0
10740  14   15139  00014   19400         CM   CHI,14,10
10752  46   10928  01200   19410         BE   SC3
10764  15   10106  00000   19420  SC4    TDM  DIMSW,0
10776  26   10782  10081   19430         TF   PA2,SYM
10782       00000          19440  PA2    DS   ,*-5
10788  44   10824  10620   19450         BNF  *+36,SC22
10800  33   10620  00000   19460         CF   SC22
10812  32   10782  00000   19470         SF   PA2,,6
10824  14   15139  00023   19480  SC5    CM   CHI,23,10
10836  46   10620  01200   19490         BE   SC22
10848  14   15139  00004   19500         CM   CHI,4,10
10860  46   10896  01200   19510         BE   *+36
10872  17   09384  00075   19520         BTM  ERROR,75,9
10884  17   09384  00272   19530  SC1    BTM  ERROR,272,9
10896  31   15138  15140   19540         TR   CHI-1,CHI+1
10908  43   10872  10677   19550         BD   SC1-12,DIMNO
10920  49   11164  00000   19560         B    SC9
10928                      19570         DORG *-3
10928  26   10934  10081   19580  SC3    TF   PA1,SYM
10934       00000          19590  PA1    DS   ,*-5
10940  31   15138  15140   19600         TR   CHI-1,CHI+1
10952  14   15139  00069   19610         CM   CHI,69,10
10964  46   10872  01100   19620         BH   SC1-12
10976  14   15139  00040   19630  ALFAT  CM   CHI,40,10
10988  47   10872  01100   19640         BNH  SC1-12
11000  17   05738  11012   19650         BTM  CSORN,*+12
11012  43   11032  06453   19660         BD   *+20,FXORFL
11024  49   10872  00000   19670         B    SC1-12,,       ,   FLOATING VARIABLE USED IN SUBSCRIP
11031                      19680         DORG *-4
11032  26   11038  07241   19690         TF   PI,SMADD-1
11038       00000          19700  PI     DS   ,*-5
11044  14   15139  00010   19710         CM   CHI,10,10
11056  46   11104  01200   19720         BE   *+48
11068  14   15139  00020   19730         CM   CHI,20,10
11080  47   10824  01200   19740         BNE  SC5
11092  32   10620  00000   19750         SF   SC22
11104  31   15138  15140   19760         TR   CHI-1,CHI+1
11116  14   15139  00069   19770         CM   CHI,69,10
11128  47   10872  01100   19780         BNH  SC1-12
11140  15   10106  00001   19790         TDM  DIMSW,1
11152  17   05446  10764   19800         BTM  CSTNO,SC4
11164  16   11230  11939   19810  SC9    TFM  MOVEIT+6,D1-12
11176  13   10545  00005   19820  CALC   MM   DIMNOT,05,10
11188  21   02620  00099   19830         A    TEMP,99
11200  13   10545  00012   19840         MM   DIMNOT,12,10
11212  21   11230  00099   19850         A    MOVEIT+6,99
```

66

```
LOCTN  OP   P/L    Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

11224  21   00000  02620   19860  MOVEIT A    ,TEMP,11
11236  12   10545  00001   19870         SM   DIMNOT,1,10
11248  46   11292  01200   19880         BZ   *+44
11260  12   02620  00005   19890         SM   TEMP,05,10
11272  12   11230  00012   19900         SM   MOVEIT+6,12,10
11284  49   11224  00000   19910         B    MOVEIT
11291                      19920         DORG *-4
11292  22   11987  11951   19930         S    D4,D1
11304  23   11975  11943   19940         M    D3,C2
11316  32   00092  00000   19950         SF   92
11328  21   11987  00099   19960         A    D4,99
11340  23   11963  11939   19970         M    D2,B2
11352  32   00092  00000   19980         SF   92
11364  21   11987  00099   19990         A    D4,99
11376  21   11987  11935   20000         A    D4,A2
11388  23   11975  11931   20010         M    D3,C1
11400  32   00092  00000   20020         SF   92
11412  26   11975  00099   20030         TF   D3,99
11424  23   11963  11927   20040         M    D2,B1
11436  32   00092  00000   20050         SF   92
11448  26   11963  00099   20060         TF   D2,99
11460  13   11923  00001   20070         MM   A1,00001,8
11472  26   11951  00099   20080         TF   D1,99
11484  16   11519  11987   20090         TFM  IND1,D4
11496  16   11538  11980   20100         TFM  IND2,D4-7
11508  44   11544  11519   20110  TONY   BNF  *+36,IND1
11519       00000          20120  IND1   DS   ,*
11520  33   11519  00000   20130         CF   IND1,,6
11532  15   11538  00009   20140         TDM  IND2,9,11
11538       00000          20150  IND2   DS   ,*-5
11544  12   11519  00012   20160         SM   IND1,12,10
11556  12   11538  00012   20170         SM   IND2,12,10
11568  14   11519  11951   20180         CM   IND1,D1,67
11580  46   11508  01300   20190         BNL  TONY
11592  16   11038  11943   20200         TFM  PI,I-12
11604  11   11038  00009   20210  MV1    AM   PI,9,10
11616  45   11636  11038   20220         BNR  *+20,PI,11
11628  49   11772  00000   20230         B    CONT,,,        GO TO OUTPUT STRING
11636                      20240         DORG *-3
11636  11   11038  00003   20250         AM   PI,3,10
11648  14   11038  00000   20260         CM   PI,0,68
11660  46   11692  01200   20270         BE   MV2
11672  11   10545  00001   20280         AM   DIMNOT,01,10
11684  49   11604  00000   20290         B    MV1
11692                      20300         DORG *-3
11692  26   11746  11038   20310  MV2    TF   MV3+6,PI,,      SHIFT OFF SUBSC NOT NEEDED
11704  26   11751  11038   20320         TF   MV3+11,PI
11716  11   11751  00001   20330         AM   MV3+11,1,10
11728  12   11746  00011   20340         SM   MV3+6,11,10
11740  31   00000  00000   20350  MV3    TR   0,0
11752  12   11038  00003   20360         SM   PI,03,10
11764  49   11616  00000   20370         B    MV1+12
11772                      20380         DORG *-3
                           20390  **          S0 = 148 LITERAL SUBSCRIPT, S1 = 149 ONE SUBSCRIPT
                           20400  **          S2 = 150 TWO SUBSCRIPTS, S3 = 151 THREE SUBSCRIPTS
11772  16   11807  00148   20410  CONT   TFM  L4+11,0148,8,     BASE FOR SUBSCRIPT OPERATORS
11784  21   11807  10545   20420         A    L4+11,DIMNOT
```

67

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

11796  17  09084  00000   20430  L4     BTM   PUT,0
11808  17  09084  00124   20440         BTM   PUT,124,8
11820  17  09084  00140   20450         BTM   PUT,140,8
11832  45  11876  11944   20460  L5     BNR   L6,D1-7
11844  17  09084  00104   20470         BTM   PUT,104,8
11856  16  07295  02219   20480         TFM   SMCNT,2219
11868  49  04835  00000   20490         B     OUTSCE,,6
11876                     20500         DORG  *-3
11876  32  11944  00000   20510  L6     SF    D1-7
11888  27  09084  11947   20520         BT    PUT,D1-4
11900  31  11944  11948   20530         TR    D1-7,D1-3
11912  49  11832  00000   20540         B     L5
11920                     20550         DORG  *-3
11923      00004          20560  A1     DS    4
11927      00004          20570  B1     DS    4
11931      00004          20580  C1     DS    4
11935      00004          20590  A2     DS    4
11939      00004          20600  B2     DS    4
11943      00004          20610  C2     DS    4
11951      00008          20620  D1     DS    8
11955      00004          20630  I      DS    4
11963      00008          20640  D2     DS    8
11967      00004          20650  J      DS    4
11975      00008          20660  D3     DS    8
11979      00004          20670  K      DS    4
11987      00008          20680  D4     DS    8
11988      00001          20690         DS    1
11992      00004          20700         DC    4,0001
11989      00000          20710  MASK   DS    ,*-3
11996      00004          20720         DC    4,1
12000      00004          20730         DC    4,1
12004      00004          20740         DC    4,0
12008      00004          20750         DC    4,0
12012      00004          20760         DC    4,0
12020      00008          20770         DC    8,0
12024      00004          20780         DC    4,0
12032      00008          20790         DC    8,0
12036      00004          20800         DC    4,0
12044      00008          20810         DC    8,0
12048      00004          20820         DC    4,0
12056      00008          20830         DC    8,0
12057      00001          20840         DC    1,@
                          20850  ****         ASCAN CODE
12058  33  02609  00000   20860  ASCAN1 CF    TRIND
12070  43  12094  02610   20870         BD    *+24,NOIND
12082  17  09440  00572   20880         BTM   ERROR2,572,9,
12094  15  10109  00001   20890  ASC1A  TDM   OMM   ,1
12106  14  15139  00040   20900         CM    CHI,40,10
12118  47  12214  01100   20910         BNH   AERR
12130  14  15139  00070   20920         CM    CHI,70,10
12142  46  12214  01300   20930         BNL   AERR
12154  32  07068  00000   20940         SF    OUTSW
12166  17  05738  ±2178   20950         BTM   CSORN,*+12
12178  15  05675  00000   20960         TDM   STSN
12190  14  15139  00033   20970         CM    CHI,33,10
12202  46  12226  01200   20980         BE    *+24
12214  17  09384  00376   20990  AERR   BTM   ERROR,376,9
```

68

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

12226  15  10109  00000   21000         TDM   OMM,0
12238  17  09084  00133   21010  ASC22  BTM   PUT,     133,8,EQUAL
12250  16  14700  00080   21020         TFM   NOPARM,00,10
12262  16  14644  ±4697   21030         TFM   ASC14+18,FLIST-9
12274  31  15138  15140   21040  IFSCAN TR    CHI-1,CHI+1
12286  45  12310  15141   21050         BNR   *+24,CHI+2
12298  17  09384  00378   21060         BTM   ERROR,378,9,       MISSING OPERAND
12310  14  15139  00040   21070         CM    CHI,40,10
12322  46  12550  01100   21080         BH    ASC3
12334  14  15139  00020   21090         CM    CHI,20,10
12346  47  12390  01200   21100         BNE   *+44
12358  17  09084  00129   21110         BTM   PUT,     129,8,UNARY MINUS
12370  31  15138  15140   21120         TR    CHI-1,CHI+1
12382  49  12286  00000   21130         B     IFSCAN+12
12390                     21140         DORG  *-3
12390  14  15139  00010   21150         CM    CHI,10,10
12402  46  12274  01200   21160         BE    IFSCAN
12414  14  15139  00024   21170  ASC4   CM    CHI,24,10
12426  47  12502  01200   21180         BNE   ASC6-24
12438  43  12482  10103   21190  ASC23  BD    *+44,FNTSW1
12450  11  02615  00001   21200         AM    PARCNT, 1,10
12462  17  09084  00124   21210         BTM   PUT,     124,8,LEFT PAREN
12474  49  12274  00000   21220         B     IFSCAN
12482                     21230         DORG  *-3
12482  11  14698  00001   21240         AM    TPARCT,1,10
12494  49  12462  00000   21250         B     ASC23+24
12502                     21260         DORG  *-3
12502  14  15139  00003   21270         CM    CHI,3,10
12514  47  12298  01200   21280         BNE   IFSCAN+24
12526  14  15141  00069   21290  ASC6   CM    CHI+2,69,10
12538  47  12298  01100   21300         BNH   IFSCAN+24
12550  32  07068  00000   21310  ASC3   SF    OUTSW
12562  17  05738  ±2574   21320         BTM   CSORN,*+12
12574  43  14586  10103   21330         BD    ASC9,FNTSW1,,     BRANCH IF COLLECTING FUNCTION PARAMETERS
12586  43  13754  10102   21340         BD    ASC8,FNTSW,,      BRANCH IF SYMBOL WAS FUNCTION NAME
12598  43  13242  10111   21350  ASC7   BD    RTCALL,CALLSW,,   RETURN TO CALL ROUTINE
12610  45  12658  15141   21360         BNR   ASC1,CHI+2,
12622  14  02615  00000   21370         CM    PARCNT,0,10
12634  46  02626  01200   21380         BE    BEGIN
12646  17  09384  00379   21390         BTM   ERROR,379,9,      UNBALENCED PARENTHESIS
12658  14  15139  00030   21400  ASC1   CM    CHI,30,10
12670  47  12694  01300   21410         BL    *+24
12682  17  09384  00378   21420         BTM   ERROR,378,9,      INVALID OPERATOR
12694  14  15139  00024   21430         CM    CHI,24,10
12706  46  12438  01200   21440         BE    ASC23
12718  14  15139  00010   21450         CM    CHI,10,10
12730  47  12762  01200   21460         BNE   *+32
12742  17  09084  00110   21470         BTM   PUT,     110,8,ADD
12754  49  12942  00000   21480         B     ASC24
12762                     21490         DORG  *-3
12762  14  15139  00020   21500         CM    CHI,20,10
12774  47  12806  01200   21510         BNE   *+32
12786  17  09084  00120   21520         BTM   PUT,     120,8,SUBTRACT
12798  49  12942  00000   21530         B     ASC24
12806                     21540         DORG  *-3
12806  14  15139  00021   21550         CM    CHI,21,10
12818  47  12850  01200   21560         BNE   *+32
```

69

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
12830	17	09084	00121	21570		BTM	PUT, 121,8,DIVIDE
12842	49	12942	00000	21580		B	ASC24
12850				21590		DORG	*-3
12850	14	15139	00014	21600		CM	CHI,14,10
12862	47	12986	01200	21610		BNE	ASC25
12874	14	15141	00014	21620		CM	CHI+2,14,10
12886	47	12930	01200	21630		BNE	ASC24-12
12898	17	09084	00115	21640		BTM	PUT, 115,8,EXPONENTIAL
12910	31	15138	15140	21650		TR	CHI-1,CHI+1
12922	49	12942	00000	21660		B	*+20
12930				21670		DORG	*-3
12930	17	09084	00114	21680		BTM	PUT, 114,8,MULTIPLY
12942	31	15138	15140	21690	ASC24	TR	CHI-1,CHI+1
12954	14	15139	00040	21700		CM	CHI,40,10
12966	46	12550	01100	21710		BH	ASC3
12978	49	12414	00000	21720		B	ASC4
12986				21730		DORG	*-3
12986	14	15139	00004	21740	ASC25	CM	CHI,4,10
12998	46	13034	01200	21750		BE	*+36
13010	43	14422	10103	21760		BD	ASC281,FNTSW1
13022	17	09384	00378	21770		BTM	ERROR,378,9, INVALID OPERATOR
13034	17	09084	00104	21780		BTM	PUT, 104,8,RIGHT PAREN
13046	43	13078	10103	21790		BD	*+32, FNTSW1
13058	12	02615	00001	21800		SM	PARCNT, 1,10
13070	49	13090	00000	21810		B	*+20
13078				21820		DORG	*-3
13078	12	14698	00001	21830		SM	TPARCT, 1,10
13090	31	15138	15140	21840		TR	CHI-1,CHI+1
13102	47	12646	01300	21850		BN	ASC1-12
13114	47	13162	01100	21860		BNH	*+48
13126	14	15139	00024	21870		CM	CHI,24,10
13138	47	12574	01200	21880		BNE	ASC7-24
13150	17	09384	00378	21890		BTM	ERROR,378,9
13162	14	02615	00000	21900		CM	PARCNT,0,10
13174	47	13198	01200	21910		BNE	*+24
13186	43	13262	10107	21920		BD	OUTS12,IFSW
13198	14	15139	00024	21930		CM	CHI,24,10
13210	46	13150	01200	21940		BE	*-60
13222	43	14466	10103	21950		BD	ASC31-12,FNTSW1
13234	49	12598	00000	21960		B	ASC7
13242				21970		DORG	*-3
13242	16	10367	12486	21980	RTCALL	TFM	CALL+23,CALL2
13254	49	10344	00000	21990		B	CALL
13262				22000		DORG	*-3
13262	16	10319	13672	22010	OUTS12	TFM	IF+23,OUTSN+12
13274	49	10296	00000	22020		B	IF
13281				22030		DORG	*-4
				22040	******		ENTER HERE TO OUTPUT SINGLE STATEMENT FUNCTIONS ******
				22050	******		******
13282	43	13306	05675	22060	ASC21	BD	*+24,STSN
13294	17	09384	00377	22070		BTM	ERROR,377,9, SINGLE STATEMENT PRECEEDED BY OTHER STMT
13306	33	05675	00000	22080		CF	STSN
13318	32	07295	00000	22090		SF	SMCNT,,6
13330	15	10109	00000	22100		TDM	OMM,0
13342	26	02625	07242	22110		TF	TEMP5,SMADD,, SAVE SYMBOL ADDRESS TO MOVE IN NO.OF PAR
13354	17	09084	00137	22120		BTM	PUT, 137,8,ARITH STATEMENT FUNCTION
13366	27	09084	02624	22130		BT	PUT,TEMP5-1,, OUTPUT STMNT NAME

70

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
13378	16	14093	00000	22140		TFM	PCNT,0,10, INITIAL PARAMETER COUNT
13390	17	09084	00124	22150		BTM	PUT, 124,8,LEFT PAREN
13402	31	15138	15140	22160		TR	CHI-1,CHI+1
13414	45	13438	15141	22170		BNR	*+24,CHI+2
13426	17	09384	00376	22180	ASC26	BTM	ERROR,376,9, INCOMPLETE STATEMENT FUNCTION
13438	14	15139	00040	22190		CM	CHI,40,10
13450	47	13426	01100	22200		BNH	*-24
13462	15	10102	00000	22210		TDM	FNTSW,0
13474	14	15139	00069	22220		CM	CHI,69,10
13486	46	13426	01100	22230		BH	ASC26
13498	32	07068	00000	22240		SF	OUTSW
13510	17	05738	13522	22250		BTM	CSORN,*+12
13522	43	13426	02611	22260		BD	ASC26,INSW
13534	11	14093	00001	22270		AM	PCNT,1,10
13546	16	10083	00014	22280		TFM	SYM+2,14,10
13558	33	10082	00000	22290		CF	SYM+1
13570	11	02372	00002	22300		AM	NXLOC,2,10
13582	26	02372	10083	22310		TF	NXLOC,SYM+2,6
13594	12	04431	00005	22320		SM	STAFT,5,10
13606	26	04431	07242	22330		TF	STAFT,SMADD,6
13618	14	15139	00004	22340		CM	CHI,04,10
13630	46	13686	01200	22350		BE	*+56
13642	14	15139	00023	22360		CM	CHI,23,10
13654	47	13426	01200	22370		BNE	ASC26
13666	17	09084	00123	22380		BTM	PUT, 123,8,COMMA
13678	49	13402	00000	22390		B	ASC26-24
13686				22400		DORG	*-3
13686	17	09084	00104	22410		BTM	PUT, 104,8,RIGHT PAREN
13698	31	15138	15140	22420		TR	CHI-1,CHI+1
13710	11	02625	00004	22430		AM	TEMP5,4,10
13722	26	02625	14093	22440		TF	TEMP5,PCNT,6
13734	15	10100	00001	22450		TDM	SINGST,1,11, SET SINGLE STAMT SWITCH, SWITCH TESTED
13746	49	12190	00000	22460		B	AERR-24,,, IN PUTTING OUT SUBSCRIPTING
13754				22470		DORG	*-3
				22480	******		ENTER TO OUTPUT SINGLE STATEMENT FUNCTION CALL AND ******
				22490	******		FUNCTION SUBPROGRAM CALL ******
13754	44	14606	10102	22500	ASC8	BNF	ASC11,FNTSW,, NO FLAG INDICATE FUNCTION SUBPROGRAM
13766	11	07295	00002	22510		AM	SMCNT,2,10
13778	26	14700	07295	22520		TF	NOPARM,SMCNT,11, MOVE NO. OF PARAMETERS TO COUNTER
13790	14	15139	00024	22530	ASC15	CM	CHI,24,10
13802	46	13826	01200	22540		BE	*+24
13814	17	09384	00079	22550		BTM	ERROR,079,9, FUNCT NAME NOT FOLLOWED BY LPAREN
13826	17	09084	00124	22560		BTM	PUT, 124,8,LEFT PAREN
13838	16	14698	00001	22570		TFM	TPARCT,1,10, SET UP TEMPORARYPAREN COUNT
13850	31	15138	15140	22580		TR	CHI-1,CHI+1
13862	15	10102	00000	22590		TDM	FNTSW,0
13874	14	15139	00020	22600	ASC12	CM	CHI,20,10
13886	47	13918	01200	22610		BNE	*+32
13898	17	09084	00129	22620		BTM	PUT, 129,8,UNARY MINUS
13910	49	13942	00000	22630		B	*+32
13918				22640		DORG	*-3
13918	14	15139	00010	22650		CM	CHI,10,10
13930	47	13954	01200	22660		BNE	*+24
13942	31	15138	15140	22670		TR	CHI-1,CHI+1
13954	14	15139	00040	22680		CM	CHI,40,10
13966	46	14082	01100	22690		BH	ASC27
13978	14	15139	00003	22700		CM	CHI,3,10,

71

```
LOCTN  OP  P/L    Q        PG/LN  LABEL  MNEM OPERANDS AND REMARKS

13990  46  14082  01200    22710         BE   ASC27
14002  14  15139  00024    22720         CM   CHI,24,10
14014  46  14038  01200    22730         BE   *+24
14026  17  09384  00470    22740  ASCER  BTM  ERROR,470,9,        INVALID FUNCTION PARAMETER LIST
14038  17  09084  00124    22750         BTM  PUT,     124,8,LEFT PAREN
14050  31  15138  15140    22760         TR   CHI-1,CHI+1
14062  11  14698  00001    22770         AM   TPARCT,1,10
14074  49  13874  00000    22780         B    ASC12
14082                      22790         DORG *-3
14082  32  07068  00000.   22800  ASC27  SF   OUTSW
14093      00002           22810  PCNT   DC   2,0,*
14094  44  14150  14700    22820         BNF  ASC27A,NOPARM
14106  15  07439  00001    22830         TDM  FNTSW2,1
14118  17  05738  14130    22840         BTM  CSORN,*+12
14130  15  07439  00000    22850         TDM  FNTSW2,0
14142  49  14186  00000    22860         B    ASC29-12
14150                      22870         DORG *-3
14150  17  05738  14162    22880  ASC27A BTM  CSORN,*+12
14162  12  14700  00001    22890         SM   NOPARM,1,10
14174  47  14026  01300    22900         BN   ASCER
14186  43  14626  10102    22910         BD   ASC14,FNTSW,,       TEST FOR NESTED FUNCTIONS
14198  45  14218  15141    22920  ASC29  BNR  *+20,CHI+2
14210  49  14026  00000    22930         B    ASCER
14218                      22940         DORG *-3
14218  14  15139  00023    22950         CM   CHI,23,10
14230  47  14318  01200    22960         BNE  ASC28
14242  17  09084  00123    22970  ASC30  BTM  PUT,     123,8,COMMA
14254  31  15138  15140    22980         TR   CHI-1,CHI+1
14266  44  14286  14700    22990         BNF  *+20,NOPARM
14278  49  13874  00000    23000         B    ASC12
14286                      23010         DORG *-3
14286  14  14700  00000    23020         CM   NOPARM,0,10
14298  46  14026  01200    23030         BE   ASCER
14310  49  13874  00000    23040         B    ASC12
14318                      23050         DORG *-3
14318  14  15139  00004    23060  ASC28  CM   CHI,4,10
14330  46  14362  01200    23070         BE   *+32
14342  15  10103  00001    23080         TDM  FNTSW1,1
14354  49  12658  00000    23090         B    ASC1
14362                      23100         DORG *-3
14362  17  09084  00104    23110         BTM  PUT,     104,8,RIGHT PAREN
14374  12  14698  00001    23120         SM   TPARCT,1,10
14386  31  15138  15140    23130         TR   CHI-1,CHI+1
14398  47  14026  01300    23140         BN   ASCER
14410  46  14466  01200    23150         BE   *+56
14422  14  15139  00023    23160  ASC281 CM   CHI,23,10
14434  46  14242  01200    23170         BE   ASC30
14446  45  14342  15141    23180         BNR  ASC28+24,CHI+2
14458  49  14026  00000    23190         B    ASCER
14466                      23200         DORG *-3
14466  44  14554  14700    23210         BNF  ASC9-32,NOPARM
14478  14  14644  14697    23220  ASC31  CM   ASC14+18,FLIST-9,,  TEST IF NEST LIST IS EMPTY
14490  47  14522  01200    23230         BNE  *+32
14502  15  10103  00000    23240         TDM  FNTSW1
14514  49  13198  00000    23250         B    RTCALL-44
14522                      23260         DORG *-3
14522  31  14697  14644    23270         TR   TPARCT-1,ASC14+18,11
```

72

```
LOCTN  OP  P/L    Q        PG/LN  LABEL  MNEM OPERANDS AND REMARKS

14534  12  14644  00005    23280         SM   ASC14+18,5,10
14546  49  14198  00000    23290         B    ASC29
14554                      23300         DORG *-3
14554  14  14700  00000    23310         CM   NOPARM,0,10
14566  46  14478  01200    23320         BZ   ASC31
14578  49  14026  00000    23330         B    ASCER
14586                      23340         DORG *-3
14586  15  10103  00000    23350  ASC9   TDM  FNTSW1,0,,
14598  49  14186  00000    23360         B    ASC29-12
14606                      23370         DORG *-3
14606  16  14700  00000    23380  ASC11  TFM  NOPARM,0,1011
14618  49  13790  00000    23390         B    ASC15
14626                      23400         DORG *-3
                           23410  ******    ENTER HERE TO SHIFT PARAMETER LIST DOWN FOR NESTED CALLS ***
14626  11  14644  00005    23420  ASC14  AM   *+18,5,10
14638  31  14697  14697    23430         TR   FLIST-9,TPARCT-1,2
14650  49  13754  00000    23440         B    ASC8
14657                      23450         DORG *-4
14658  16  14644  14697    23460  IFASEN TFM  ASC14+18,FLIST-9
14670  49  12286  00000    23470         B    IFSCAN+12
14677                      23480         DORG *-4
14678  16  14700  00000    23490  CLASEN TFM  NOPARM,00,1011
14690  49  12262  00000    23500         B    IFSCAN-12
14697                      23510         DORG *-4
14698      00002           23520  TPARCT DS   2
14700  .   00002           23530  NOPARM DS   2
14701      00001           23540         DC   1,@
14706      00005  00020    23550  FLIST  DSB  5,20
16000                      23560         DORG 16000
16000  16  00565  16023    23570         TFM  IORT,*+23
16012  49  00532  09770    23580         B    IOPT,BLK3,7
16024  36  00012  00500    23590         TRA
16036  49  00012           
16000                      23600         TCD  16000
                           23610  *     OUT OF CORE BLOCK 4  CONTAINS THE FOLLOWING
                           23620  *     OUTSC
                           23630  *     DO
                           23640  *     IO OTHER THAN DISK
10200                      23650         DORG IOUT
10200  14  15139  00044    23660         CM   CHI,44,10,          IOUT, NONDISK I/O
10212  49  13172  00000    23670         B    IOUTEN
10224  16  02359  09747    23680         TFM  FMON+35,BLK2
10236  17  02324  10224    23690         BTM  FMON,NONARA
10248  16  02359  09724    23700         TFM  FMON+35,BLK1,,      DIM
10260  17  02324  10248    23710         BTM  FMON,DIM
10272  16  02359  09724    23720         TFM  FMON+35,BLK1,,      COMMON
10284  17  02324  10272    23730         BTM  FMON,COMMON
10296  16  02359  09839    23740         TFM  FMON+35,BLK6,,      IF STMNT
10308  17  02324  10296    23750         BTM  FMON,IF
10320  16  02359  09839    23760         TFM  FMON+35,BLK6,,      GOTO
10332  17  02324  10320    23770         BTM  FMON,GOTO
10344  16  02359  09839    23780         TFM  FMON+35,BLK6,,      CALL
10356  17  02324  10344    23790         BTM  FMON,CALL
10368  16  02359  09839    23800         TFM  FMON+35,BLK6,,      RETURN
10380  17  02324  10368    23810         BTM  FMON,RETURN
10392  16  02359  09724    23820         TFM  FMON+35,BLK1,,      FORMAT
10404  17  02324  10392    23830         BTM  FMON,FORMAT
```

73

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
10416	44	12094	02609	23840		BNF	DOLOOP+36,TRIND,,	DO STATEMENT
10428	49	12058	00000	23850		B	DOLOOP
10440	16	02359	09770	23860		TFM	FMON+35,BLK3,,	ASCAN
10452	17	02324	10440	23870		BTM	FMON,ASCAN
10464	43	10884	10100	23880		BD	SC1,SINGST,,	OUTSC
10476	49	10512	00000	23890		B	OUTSC1
10488	16	02359	09816	23900		TFM	FMON+35,BLK5,,	DISK INPUT/OUTPUT
10500	17	02324	10488	23910		BTM	FMON,DKIO
				23920	**		OUTSC CODE IS HERE
12058				23930		DORG	ASCAN1
				23940	******		OUTPUT DO STATEMENTS ******
12058	15	02609	00000	23950	DOLOOP	TDM	TRIND,0
12070	43	12094	02610	23960		BD	*+24,NOIND
12082	17	09440	00572	23970		BTM	ERROR2,572,9
12094	14	15139	00044	23980		CM	CHI,44,10
12106	47	09278	01200	23990		BNE	SPERR
12118	14	15141	00056	24000		CM	CHI+2,56,10
12130	47	09278	01200	24010		BNE	SPERR
12142	43	12166	02424	24020		BD	*+24,INDIV
12154	17	04876	00000	24030		BTM	CKCNTU,0,10
12166	15	05675	00000	24040		TDM	STSN
12178	31	15138	15142	24050		TR	CHI-1,CHI+3
12190	14	15139	00069	24060	DO	CM	CHI,69,10
12202	46	12226	01100	24070		BH	*+24
12214	17	09384	00275	24080		BTM	ERROR,275,9,	INCORRECT DO STATEMENT
12226	17	09084	00108	24090		BTM	PUT, 108,8,DO
12238	32	07068	00000	24100		SF	OUTSW
12250	17	05446	12262	24110		BTM	CSTNO,*+12
12262	11	07242	00005	24120		AM	SMADD, 5,10
12274	49	12390	00000	24130		B	DOCK
12282				24140		DORG	*-3
12282	15	07242	00001	24150		TDM	SMADD,1,6,	SET BY DO, IF NOT SET DO REF IN TABLE
12294	14	15139	00040	24160	DOC	CM	CHI,40,10
12306	47	12378	01100	24170		BNH	DOCK-12
12318	14	15139	00069	24180		CM	CHI,69,10
12330	46	12378	01100	24190		BH	DOCK-12
12342	17	05738	12354	24200		BTM	CSORN,*+12,,	COLLECT DO INDEX SYMBOL
12354	27	09084	07241	24210		BT	PUT,SMADD-1
12366	43	12446	06453	24220		BD	DOC1,FXORFL	FLOATING POINT VARIABLE FOR INDEX
12378	17	09384	00275	24230		BTM	ERROR,275,9,
12390	43	12434	07242	24240	DOCK	BD	DOC1-12, SMADD,11
12402	12	07242	00002	24250		SM	SMADD, 2,10
12414	43	12294	07242	24260		BD	DOC, SMADD,11
12426	49	12282	00000	24270		B	DOC-12
12434				24280		DORG	*-3
12434	17	09384	00274	24290		BTM	ERROR,274,9,	DO REFERENCING ILLEGAL STAMNT NO
12446	14	15139	00033	24300	DOC1	CM	CHI,33,10,,	TEST FOR EQUAL SIGN NEXT
12458	47	12214	01200	24310		BNE	DO+24
12470	17	09084	00133	24320		BTM	PUT, 133,8,EQUAL
12482	31	15138	15140	24330		TR	CHI-1,CHI+1
12494	33	12518	00000	24340		CF	DOA,,,	INITIALIZE SWITCHES
12506	33	12670	00000	24350		CF	DOB
12518	14	15139	00040	24360	DOA	CM	CHI,40,10
12530	47	12378	01100	24370		BNH	DOCK-12,,,	TEST FOR UNSIGNED VALUES
12542	14	15139	00069	24380		CM	CHI,69,10
12554	47	12578	01100	24390		BNH	*+24,,,
12566	32	12518	00000	24400		SF	DOA

74

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
12578	32	07068	00000	24410		SF	OUTSW
12590	17	05738	12602	24420		BTM	CSORN,*+12,,	COLLECT AND OUTPUT FIRST INDEX
12602	43	12622	06453	24430		BD	*+20,FXORFL
12614	49	12378	00000	24440		B	DOCK-12
12622				24450		DORG	*-3
12622	44	12670	12518	24460		BNF	DOB,DOA
12634	26	13171	10081	24470		TF	DOTEST,SYM
12646	14	10081	00000	24480		CM	SYM,0,10,	TEST IF FIRST INDEX WAS ZERO
12658	46	12378	01200	24490		BE	DOCK-12
12670	14	15139	00023	24500	DOB	CM	CHI,23,10
12682	47	12214	01200	24510		BNE	DO+24
12694	17	09084	00123	24520		BTM	PUT, 123,8,COMMA
12706	31	15138	15140	24530		TR	CHI-1,CHI+1
12718	14	15139	00040	24540		CM	CHI,40,10
12730	47	12378	01100	24550		BNH	DOCK-12
12742	14	15139	00069	24560		CM	CHI,69,10
12754	47	12778	01100	24570		BNH	*+24
12766	32	12670	00000	24580		SF	DOB
12778	17	05738	12790	24590		BTM	CSORN,*+12
12790	27	09084	07241	24600		BT	PUT,SMADD-1
12802	43	12822	06453	24610		BD	*+20,FXORFL
12814	49	12378	00000	24620		B	DOCK-12
12822				24630		DORG	*-3
12822	44	12894	12670	24640		BNF	*+72,DOB
12834	44	12870	12518	24650		BNF	*+36,DOA
12846	24	10081	13171	24660		C	SYM,DOTEST,,	TEST IF SECOND INDEX IS GREATER OR
12858	47	12378	01300	24670		BL	DOCK-12,,,	EQUAL TO THE FIRST IF BOTH ARE CONSTS
12870	14	10081	00000	24680		CM	SYM,0,10
12882	46	12378	01200	24690		BE	DOCK-12
12894	45	12926	15141	24700		BNR	DOE,CHI+2
12906	43	12214	10113	24710		BD	DO+24,IOSW,,	I/O CANNOT END HERE
12918	49	02626	00000	24720		B	BEGIN
12926				24730		DORG	*-3
12926	14	15139	00023	24740	DOE	CM	CHI,23,10
12938	46	12970	01200	24750		BE	*+32
12950	43	14452	10113	24760		BD	IOF,IOSW,,	RETURN TO I/O SCAN
12962	49	12214	00000	24770		B	DO+24
12970				24780		DORG	*-3
12970	17	09084	00123	24790		BTM	PUT, 123,8,COMMA
12982	31	15138	15140	24800		TR	CHI-1,CHI+1
12994	14	15139	00040	24810		CM	CHI,40,10
13006	47	12378	01100	24820		BNH	DOCK-12
13018	32	07068	00000	24830		SF	OUTSW
13030	17	05738	13042	24840		BTM	CSORN,*+12
13042	14	07295	02219	24850		CM	SMCNT,2219
13054	46	12214	01200	24860		BE	DO+24,,, SUBSCRIPTED VARIABLE IN DO
13066	43	13086	06453	24870		BD	*+20,FXORFL
13078	49	12378	00000	24880		B	DOCK-12
13086				24890		DORG	*-3
13086	14	10081	00000	24900		CM	SYM,0,10
13098	46	12378	01200	24910		BE	DOCK-12
13110	43	14452	10113	24920	DOEE	BD	IOF,IOSW,,
13122	45	13142	15141	24930		BNR	*+20 ,CHI+2
13134	49	02626	00000	24940		B	BEGIN
13142				24950		DORG	*-3
13142	17	09440	00573	24960		BTM	ERROR2,573,9
13154	49	02626	00000	24970		B	BEGIN

75

```
LOCTN  OP  P/L   Q      PG/LN  LABEL  MNEM OPERANDS AND REMARKS

13162                   24980         DORG *-3
13171      00010        24990  DOTEST DS   10
                        25000  ****        ENTER HERE TO DECOMPOSE I/O STATEMENTS OTHER THAN DISK   ****
13172  47  13216 01200  25010  IOUTEN BNE  *+44
13184  16  13567 00112  25020         TFM  IOUT1+11,112,8,      OUTPUT READ SYMBOL
13196  31  15138 15140  25030         TR   CHI-1,CHI+1
13208  49  13556 00000  25040         B    IOUT1
13216                   25050         DORG *-3
13216  14  15139 00055  25060         CM   CHI,55,10
13228  47  13308 01200  25070         BNE  IOUT2
13240  14  15141 00063  25080         CM   CHI+2,63,10
13252  46  13276 01200  25090         BE   *+24
13264  17  09384 00071  25100  IOUTER BTM  ERROR,71,9
13276  16  13567 00111  25110         TFM  IOUT1+11,111,8,      OUTPUT PRINT SYMBOL
13288  31  15138 15142  25120         TR   CHI-1,CHI+3
13300  49  13556 00000  25130         B    IOUT1
13308                   25140         DORG *-3
13308  14  15139 00045  25150  IOUT2  CM   CHI,45,10
13320  47  13388 01200  25160         BNE  IOUT3
13332  31  15138 15140  25170         TR   CHI-1,CHI+1,,        SHIFT OFF E
                        25175  *********************************************************************
13344  14  04179 63685  25180         CM   SV3,63685        ,,,COMPARE FOR TYPE
13356  47  10200 01200  25190         BNE  IOUT
                        25195  *.....................................................................
13368  16  13567 00113  25200         TFM  IOUT1+11,0113,8,    OUTPUT TYPE SYMBOL
13380  49  13556 00000  25210         B    IOUT1
13388                   25220         DORG *-3
13388  17  04696 00002  25230  IOUT3  BTM  COLNAM,2,10
13400  14  10081 04348  25240         CM   SYM,4348,8
13412  46  13264 01400  25250         BV   IOUTER
13424  47  13576 01200  25260         BNE  IOUT4
13436  16  13567 00118  25270         TFM  IOUT1+11,118,8,      OUTPUT PUNCH SYMBOL
13448  31  15138 15142  25280  IOUT5  TR   CHI-1,CHI+3
13460  14  15139 00063  25290         CM   CHI,63,10
13472  47  13556 01200  25300         BNE  IOUT1
13484  17  04696 00004  25310         BTM  COLNAM,4,10
13496  24  10081 13639  25320         C    SYM,TPCST
                        25325  ***************************************************************************
13508  46  13556 01400  25530         BV   IOUT1
13520  47  13556 01200  25540         BNE  IOUT1
                        25345  *...................................................................
13532  31  15138 15146  25350         TR   CHI-1,CHI+7
13544  11  13567 00001  25360         AM   IOUT1+11,1,10
13556  17  09084 00000  25370  IOUT1  BTM  PUT,,,               OUTPUT I/O SYMBOL
13568  49  13640 00000  25380         B    INOUT
13576                   25390         DORG *-3
13576  14  10081 05763  25400  IOUT4  CM   SYM,5763,8
13588  46  13264 01400  25410         BV   IOUTER
13600  47  13264 01200  25420         BNE  IOUTER
13612  16  13567 00116  25430         TFM  IOUT1+11,0116,8,     OUTPUT ACCEPT SYMBOL
13624  49  13448 00000  25440         B    IOUT5
13632                   25450         DORG *-3
13639      00008        25460  TPCST  DC   8,63415745,,         TAPE
                        25470  ******    OUTPUT INPUT-OUTPUT LISTS       ******
13640  32  07068 00000  25480  INOUT  SF   OUTSW
                        25481  *****************************************************************************
13652  15  10113 00001  25485         TDM  IOSW,1
```

76

```
LOCTN  OP  P/L   Q      PG/LN  LABEL  MNEM OPERANDS AND REMARKS

13664  14  15139 00069  25490         CM   CHI,69,10
13676  46  13872 01100  25495         BH   IOZ
13688  14  15139 00040  25497         CM   CHI,40,10        ,,,CHECK FOR VARIABLE FORMAT
13700  46  13744 01300  25498         BNL  VARFOR
13712  17  09084 09999  25500         BTM  PUT,9999,8
13724  15  02292 00001  25510         TDM  USEDFS+29,1
13736  49  13952         25520         B7   IOA
13744  17  09084 09998  25521  VARFOR BTM  PUT,9998,8
13756  17  09084 00123  25522         BTM  PUT,123,8
13768  15  02291 00001  25523         TDM  USFDFS+28,1
13780  32  07068 00000  25524         SF   OUTSW
13792  16  07446 13840  25525         TFM  FNTSW2+7,*+48
13804  17  05738 13816  25526         BTM  CSORN,*+12
13816  16  07446 07556  25527         TFM  FNTSW2+7,LUXIT
13828  17  09384 00276  25528         BTM  ERROR,276,9
13840  16  07446 07556  25529         TFM  FNTSW2+7,LUXIT
13852  16  05737 13952  2552A         TFM  CSORN-1,IOA
13864  49  07556         2552B         B7   LUXIT
                        2552Z  *...................................................................
13872  17  05446 13884  25530  IOZ    BTM  CSTNO,*+12
13884  11  07242 00004  25540         AM   SMADD,4,10
13896  43  13928 02611  25550         BD   *+32,INSW
13908  15  07242 00001  25560         TDM  SMADD,1,6,           SET DIGIT FOR FORMAT STAMNT NUMBER
13920  49  13952         25570         B    *+32
13928                   25580         DORG *-3
13928  43  13952 07242  25590         BD   *+24,SMADD,11,       TEST IF STAMNT NUMBER CORRESPONDS TO FMT
13940  17  09384 00277  25600         BTM  ERROR,277,9,         I/O STATEMENT NO. NOT A FORMAT NUMBER
13952  45  13972 15141  25610  IOA    BNR  *+20,CHI+2
13964  49  02626 00000  25620         B    BEGIN
13972                   25630         DORG *-3
13972  14  15139 00023  25640         CM   CHI,23,10
13984  46  14008 01200  25650         BE   *+24
13996  17  09384 00278  25660  IOLER  BTM  ERROR,278,9,         MISSING COMMA OR INVALID LIST ELEMENT
14008  17  09084 00123  25670         BTM  PUT,     123,8,COMMA
14020  31  15138 15140  25680         TR   CHI-1,CHI+1
14032  14  15139 00040  25690         CM   CHI,40,10
14044  47  14104 01100  25700         BNH  IOB
14056  14  15139 00069  25710         CM   CHI,69,10
14068  46  13996 01100  25720         BH   IOLER
14080  32  07068 00000  25730         SF   OUTSW
14092  17  05738 13952  25740         BTM  CSORN,IOA
14104  16  14271 00000  25750  IOB    TFM  IOLOOP,0,10
14116  14  15139 00024  25760         CM   CHI,24,10
14128  47  13996 01200  25770         BNE  IOLER
14140  11  02615 00001  25780         AM   PARCNT,1,10
14152  17  09084 00124  25790         BTM  PUT,     124,8,LEFT PAREN
14164  31  15138 15140  25800         TR   CHI-1,CHI+1
14176  11  14271 00001  25810         AM   IOLOOP,1,10
14188  14  15139 00024  25820         CM   CHI,24,10
14200  46  14636 01200  25830         BE   IOG
14212  14  15139 00040  25840  IOD    CM   CHI,40,10
14224  47  14116 01100  25850         BNH  IOB+12
14236  14  15139 00069  25860         CM   CHI,69,10
14248  46  13996 01100  25870         BH   IOLER
14260  32  07068 00000  25880         SF   OUTSW
14271      00002        25890  IOLOOP DC   2,0,*
14272  17  05738 14284  25900         BTM  CSORN,*+12,,         COLLECT LIST ELEMENT
```

77

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

14284  45  14304  07295   25910         BNR   *+20,SMCNT,11
14296  49  13996          25920         B7    IOLER,,,FUNCTION NAME
14304  14  15139  00023   25930         CM    CHI,23,10
14316  47  14372  01200   25940         BNE   IOE
14328  17  09084  00123   25950         BTM   PUT,      123,8,COMMA
14340  32  10113  00000   25960         SF    IOSW
14352  31  15138  15140   25970         TR    CHI-1,CHI+1
14364  49  14212  00000   25980         B     IOD
14372                     25990         DORG  *-3
14372  44  13996  10113   26000  IOE    BNF   IOLER,IOSW
14384  33  10113  00000   26010         CF    IOSW
14396  14  15139  00033   26020         CM    CHI,33,10
14408  47  14116  01200   26030         BNE   IOB+12
14420  17  09084  00133   26040         BTM   PUT,      133,8,EQUAL
14432  43  12482  06453   26050         BD    DOA-36,FXORFL,,     BRANCH TO COLLECT INDICB OF ARRAY LOOP
14444  49  13996  00000   26060         B     IOLER
14452                     26070         DORG  *-3
                          26080  ******     RETURN HERE FROM DO CODFING   ' *****
14452  14  15139  00004   26090  IOF    CM    CHI,4,10
14464  47  13996  01200   26100         BNE   IOLER
14476  17  09084  00104   26110         BTM   PUT,      104,8,RIGHT PAREN
14488  31  15138  15140   26120         TR    CHI-1,CHI+1
14500  12  02615  00001   26130         SM    PARCNT,1,10
14512  47  13996  01300   26140         BN    IOLER
14524  12  14271  00001   26150         SM    IOLOOP,1,10
14536  47  14568  01200   26160         BNZ   *+32
14548  45  13972  15141   26170         BNR   IOLER-24,CHI+2
14560  49  02626  00000   26180         B     BEGIN
14568                     26190         DORG  *-3
14568  14  15139  00023   26200         CM    CHI,23,10
14580  47  13996  01200   26210         BNE   IOLER
14592  17  09084  00123   26220         BTM   PUT,      123,8,COMMA
14604  31  15138  15140   26230         TR    CHI-1,CHI+1
14616  32  10113  00000   26240         SF    IOSW
14628  49  14212  00000   26250         B     IOD
14636                     26260         DORG  *-3
14636  17  09084  00124   26270  IOG    BTM   PUT,      124,8,LEFT PAREN
14648  11  02615  00001   26280         AM    PARCNT,1,10
14660  31  15138  15140   26290         TR    CHI-1,CHI+1
14672  11  14271  00001   26300         AM    IOLOOP,1,10
14684  14  15139  00024   26310         CM    CHI,24,10
14696  47  14212  01200   26320         BNE   IOD
14708  17  09084  00124   26330         BTM   PUT,      124,8,LEFT PAREN
14720  11  02615  00001   26340         AM    PARCNT,1,10
14732  31  15138  15140   26350         TR    CHI-1,CHI+1
14744  11  14271  00001   26360         AM    IOLOOP,1,10
14756  49  14212  00000   26370         B     IOD
14764                     26380         DORG  *-3
16000                     26390         DORG  16000
16000  16  00565  16023   26400         TFM   IORT,*+23
16012  49  00532  09793   26410         B     IOPT,BLK4,7
16024  36  00012  00500   26420         TRA
16036  49  00012          26430         TCD   16000
16000                     26440  *      OUT OF CORE BLOCK 5  CONTAINS THE FOLLOWING
                          26450  *      OUTSC
                          26460  *      DO
```

78

```
LOCTN  OP  P/L    Q       PG/LN  LABEL   MNEM  OPERANDS AND REMARKS

                          26470  *       DKIO
10200                     26480          DORG  IOUT
10200  16  02359  09793   26490          TFM   FMON+35,BLK4,,      IOUT
10212  17  02324  10200   26500          BTM   FMON,IOUT
10224  16  02359  09747   26510          TFM   FMON+35,BLK2
10236  17  02324  10224   26520          BTM   FMON,NONARA
10248  16  02359  09724   26530          TFM   FMON+35,BLK1,,      DIM
10260  17  02324  10248   26540          BTM   FMON,DIM
10272  16  02359  09724   26550          TFM   FMON+35,BLK1,,      COMMON
10284  17  02324  10272   26560          BTM   FMON,COMMON
10296  16  02359  09839   26570          TFM   FMON+35,BLK6,,      IF STMNT
10308  17  02324  10296   26580          BTM   FMON,IF
10320  16  02359  09839   26590          TFM   FMON+35,BLK6,,      GOTO
10332  17  02324  10320   26600          BTM   FMON,GOTO
10344  16  02359  09839   26610          TFM   FMON+35,BLK6,,      CALL
10356  17  02324  10344   26620          BTM   FMON,CALL
10368  16  02359  09839   26630          TFM   FMON+35,BLK6,,      RETURN
10380  17  02324  10368   26640          BTM   FMON,RETURN
10392  16  02359  09724   26650          TFM   FMON+35,BLK1,,      FORMAT
10404  17  02324  10392   26660          BTM   FMON,FORMAT
10416  44  12094  02609   26670          BNF   DOLOOP+36,TRIND,,   DO STATEMENT
10428  49  12058  00000   26680          B     DOLOOP
10440  16  02359  09770   26690          TFM   FMON+35,BLK3,,      ASCAN
10452  17  02324  10440   26700          BTM   FMON,ASCAN
10464  43  10884  10100   26710          BD    SC1,SINGST,,        OUTSC
10476  49  10512  00000   26720          B     OUTSC1
10488  15  02268  00001   26730          TDM   USEDFS+5,1,,        DISK I/O
10500  49  13172  00000   26740          B     DKIOEN
                          26750  **      OUTSC CODE IS HERE
12058                     26760          DORG  ASCAN1
                          26770  **      OUTPUT DO STATEMENT CODE IS HERE
12950                     26780          DORG  DOE+24
                          26790  **      THE FOLLOWING INSTRUCTION IS A CHANGE TO DO STATEMENT CODE
12950  43  14396  10113   26800          BD    DKF,IOSW,,          RETURN TO I/O SCAN
13110                     26810          DORG  DOEE
13110  43  14396  10113   26820          BD    DKF,IOSW
13172                     26830          DORG  IOUTEN
                          26840  ****    ENTER HERE TO DECODE DISK I/O STATEMENTS    ***
13172  32  10488  00000   26850  DKIOEN  SF    DKIO,,,             FLAG FOR FETCH AND RECORD
13184  14  15139  00043   26860          CM    CHI,43,10
13196  47  13264  01200   26870          BNE   DKIO1
13208  16  13535  00142   26880          TFM   DKPUT+11,0142,8,    FETCH SYMBOL
13220  14  15141  00048   26890          CM    CHI+2,48,10,        CHECK FOR H
13232  47  04300  01200   26900          BNE   ERRO1
13244  31  15138  15142   26910          TR    CHI-1,CHI+3,,       SHIFT OFF TWO CHARACTERS
13256  49  13404  00000   26920          B     DKLIST
13264                     26930          DORG  *-3
13264  14  15139  00044   26940  DKIO1   CM    CHI,44,10
13276  47  13332  01200   26950          BNE   DKIO2
13288  33  10488  00000   26960          CF    DKIO,,,
13300  16  13535  00144   26970          TFM   DKPUT+11,0144,8,    FIND SYMBOL
13312  31  15138  15140   26980          TR    CHI-1,CHI+1,,       SHIFT OFF ONE CHARACTER
13324  49  13404  00000   26990          B     DKLIST
13332                     27000          DORG  *-3
13332  17  04696  00003   27010  DKIO2   BTM   COLNAM,03,10
13344  24  10081  14677   27020          C     SYM,ORDCT+4
13356  46  04300  01400   27030          BV    ERRO1
```

79

```
LOCTN OP  P/L   Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

13368 47  04300 01200   27040         BNE  ERRO1
13380 31  15138 15144   27050         TR   CHI-1,CHI+5,,       SHIFT OFF THREE CHARACTERS
13392 16  13535 00146   27060         TFM  DKPUT+11,0146,8,    RECORD SYMBOL
13404 15  02383 00001   27070  DKLIST TDM  DISKSW,1,11,        SET SW TO INDICATE DISK I/O
13416 14  15139 00024   27080         CM   CHI,24,10,          CHECK FOR LEFT PAREN
13428 47  13752 01200   27090         BNE  DKER
13440 15  10113 00001   27100         TDM  IOSW,1
13452 31  15138 15140   27110         TR   CHI-1,CHI+1,,       SHIFT OFF LEFT PAREN
13464 14  15139 00069   27120         CM   CHI,69,10
13476 47  13500 01300   27130         BL   *+24
13488 11  13535 00001   27140         AM   DKPUT+11,1,10,      ADD ONE FOR LITERAL
13500 14  15139 00040   27150         CM   CHI,40,10
13512 47  13752 01300   27160         BL   DKER
13524 17  09084 00000   27170  DKPUT  BTM  PUT,,,              OUTPUT DISK I/O SYMBOL
13536 17  09084 00124   27180         BTM  PUT,0124,8,         OUTPUT LEFT PAREN
13548 32  07068 00000   27190         SF   OUTSW
13560 17  05738 13572   27200         BTM  CSORN,*+12
13572 43  13592 06453   27210         BD   *+20,FXORFL
13584 49  13752 00000   27220         B    DKER
13591                   27230         DORG *-4
13592 14  15139 00004   27240         CM   CHI,04,10,          CHECK FOR RT PAREN
13604 47  13752 01200   27250         BNE  DKER
13616 17  09084 00104   27260         BTM  PUT,0104,8,         OUTPUT RT PAREN
13628 44  02626 10488   27270         BNF  BEGIN,DKIO,,        BRANCH TO BEGIN IF FIND STMNT
13640 17  09084 00123   27280         BTM  PUT,0123,8,         OUTPUT COMMA
13652 31  15138 15140   27290         TR   CHI-1,CHI+1,,       SHIFT OFF RT PAREN
13664 45  13688 15141   27300  DKL    BNR  *+24,CHI+2
13676 17  09384 00472   27310         BTM  ERROR,472,9,        DISK I/O STMNTS MUST HAVE LISTS
13688 31  14303 14678   27320         TR   DKSW1-1,SWSET-4,,   INIT SWITCHES
13700 49  13788 00000   27330         B    DKB
13708                   27340         DORG *-3
13708 45  13728 15141   27350  DKA    BNR  *+20,CHI+2
13720 49  02626 00000   27360         B    BEGIN
13728                   27370         DORG *-3
13728 14  15139 00023   27380         CM   CHI,23,10
13740 46  13764 01200   27390         BE   *+24
13752 17  09384 00471   27400  DKER   BTM  ERROR,471,9,
13764 17  09084 00123   27410         BTM  PUT,0123,8,         OUTPUT COMMA
13776 31  15138 15140   27420         TR   CHI-1,CHI+1,,       SHIFT OFF ONE CHARACTER
13788 14  15139 00040   27430  DKB    CM   CHI,40,10
13800 47  14000 01100   27440         BNH  DKC
13812 14  15139 00069   27450         CM   CHI,69,10
13824 46  13752 01100   27460         BH   DKER,,,             LITERAL ITEM ON LIST
13836 32  07068 00000   27470         SF   OUTSW
13848 17  05738 13860   27480         BTM  CSORN,*+12
13860 45  13880 07295   27490         BNR  *+20,SMCNT,11
13872 49  13752 00000   27500         B    DKER,,,             FUNCTION NAME
13880                   27510         DORG *-3
13880 43  13912 07295   27520         BD   *+32,SMCNT,11,      DIGIT IMPLIES AN ARRAY NAME
13892 15  14306 00002   27530         TDM  DKSW2,2
13904 49  13924 00000   27540         B    *+20
13912                   27550         DORG *-3
13912 15  14306 00001   27560         TDM  DKSW2,1
13924 43  13944 14304   27570         BD   *+20,DKSW1
13936 49  13980 00000   27580         B    DKB1+12
13943                   27590         DORG *-4
13944 24  14304 14306   27600         C    DKSW1,DKSW2
```

80

```
LOCTN OP  P/L   Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

13956 46  13708 01200   27610         BE   DKA
13968 17  09384 00473   27620  DKB1   BTM  ERROR,473,9,        ARRAYS AND SIMPLE VARIABLES ON SAME I/O
13980 25  14304 14306   27630         TD   DKSW1,DKSW2
13992 49  13708 00000   27640         B    DKA
14000                   27650         DORG *-3
                        27660  *      THE FOLLOWING HANDLES IMPLIED DO LOOPS IN LISTS
14000 16  14167 00000   27670  DKC    TFM  DKLOOP,0,10
14012 14  15139 00024   27680         CM   CHI,24,10
14024 47  13752 01200   27690         BNE  DKER
14036 11  02615 00001   27700         AM   PARCNT,1,10
14048 17  09084 00124   27710         BTM  PUT,0124,8,         OUTPUT LEFT PAREN
14060 31  15138 15140   27720         TR   CHI-1,CHI+1,,       SHIFT OFF ONE CHARACTER
14072 11  14167 00001   27730         AM   DKLOOP,1,10
14084 14  15139 00024   27740         CM   CHI,24,10
14096 46  14544 01200   27750         BE   DKG
14108 14  15139 00040   27760  DKD    CM   CHI,40,10
14120 47  14012 01100   27770         BNH  DKC+12
14132 14  15139 00069   27780         CM   CHI,69,10
14144 46  13752 01100   27790         BH   DKER
14156 32  07068 00000   27800         SF   OUTSW
14167     00002         27810  DKLOOP DC   2,0,*
14168 17  05738 14180   27820         BTM  CSORN,*+12
14180 45  14200 07295   27830         BNR  *+20,SMCNT,11
14192 49  13752         27840         B7   DKER,,,  FUNCTION NAME
14200 43  14236 14304   27850         BD   *+36,DKSW1
14212 24  14304 14306   27860         C    DKSW1,DKSW2
14224 47  13968 01200   27870         BNE  DKB1
14236 25  14304 14306   27880         TD   DKSW1,DKSW2
14248 14  15139 00023   27890  DKD1   CM   CHI,23,10
14260 47  14316 01200   27900         BNE  DKE
14272 17  09084 00123   27910         BTM  PUT,0123,8,         OUTPUT COMMA
14284 31  15138 15140   27920         TR   CHI-1,CHI+1
14296 32  14316 00000   27930         SF   DKE
14304     00002         27940  DKSW1  DS   2,*-3
14306     00002         27950  DKSW2  DS   2,*-1
14308 49  14108 00000   27960         B    DKD
14316                   27970         DORG *-3
14316 44  13752 14316   27980  DKE    BNF  DKER,DKE
14328 33  14316 00000   27990         CF   DKE
14340 14  15139 00033   28000         CM   CHI,33,10
14352 47  14012 01200   28010         BNE  DKC+12
14364 17  09084 00133   28020         BTM  PUT,0133,8,         OUTPUT EQUAL SYMBOL
14376 43  12482 06453   28030         BD   DOA-36,FXORFL,,     GO TO DO CODING FOR IMPLIED DO LOOP
14388 49  13752 00000   28040         B    DKER
14396                   28050         DORG *-3
                        28060  *      RETURN HERE FROM DO CODING
14396 14  15139 00004   28070  DKF    CM   CHI,04,10
14408 47  13752 01200   28080         BNE  DKER
14420 17  09084 00104   28090         BTM  PUT,0104,8,         OUTPUT RT PAREN
14432 31  15138 15140   28100         TR   CHI-1,CHI+1
14444 12  02615 00001   28110         SM   PARCNT,1,10
14456 47  13752 01300   28120         BN   DKER
14468 12  14167 00001   28130         SM   DKLOOP,1,10
14480 47  14512 01200   28140         BNZ  *+32
14492 45  13728 15141   28150         BNR  DKER-24,CHI+2
14504 49  02626 00000   28160         B    BEGIN
14512                   28170         DORG *-3
```

81

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
14512	14	15139	00023	28180		CM	CHI,23,10
14524	47	13752	01200	28190		BNE	DKER
14536	49	14248	00000	28200		B	DKD1
14544				28210		DORG	*-3
14544	17	09084	00124	28220	DKG	BTM	PUT,0124,8, OUTPUT LEFT PAREN
14556	11	02615	00001	28230		AM	PARCNT,1,10
14568	31	15138	15140	28240		TR	CHI-1,CHI+1
14580	11	14167	00001	28250		AM	DKLOOP,1,10
14592	14	15139	00024	28260		CM	CHI,24,10
14604	47	14108	01200	28270		BNE	DKD
14616	17	09084	00124	28280		BTM	PUT,0124,8, OUTPUT LEFT PAREN
14628	11	02615	00001	28290		AM	PARCNT,1,10
14640	31	15138	15140	28300		TR	CHI-1,CHI+1
14652	11	14167	00001	28310		AM	DKLOOP,1,10
14664	49	14108	00000	28320		B	DKD
14672				28330		DORG	*-3
14673		00003	X2	28340	ORDCT	DAC	3,ORD
14679		00002		28350		DC	2,00
14682		00003		28360	SWSET	DC	3,00@
16000				28370		DORG	16000
16000	16	00565	16023	28380		TFM	IORT,*+23
16012	49	00532	09816	28390		B	IOPT,BLK5,7
16024	36	00012	00500	28400		TRA	
16036	49	00012					
16000				28410		TCD	16000
				28420	*		OUT OF CORE BLOCK 6 CONTAINS THE FOLLOWING
				28430	*		OUTSC
				28440	*		CALL
				28450	*		RETURN
				28460	*		IF
				28470	*		IFSENSESWITCH
				28480	*		GOTO
10200				28490		DORG	IOUT
10200	16	02359	09793	28500		TFM	FMON+35,BLK4,, IOUT
10212	17	02324	10200	28510		BTM	FMON,IOUT
10224	16	02359	09747	28520		TFM	FMON+35,BLK2
10236	17	02324	10224	28530		BTM	FMON,NONARA
10248	16	02359	09724	28540		TFM	FMON+35,BLK1,, DIM
10260	17	02324	10248	28550		BTM	FMON,DIM
10272	16	02359	09724	28560		TFM	FMON+35,BLK1,, COMMON
10284	17	02324	10272	28570		BTM	FMON,COMMON
10296	11	02615	00001	28580		AM	PARCNT,01,10, IF
10308	49	13284	00000	28590		B	IF1
10320	14	15139	00056	28600		CM	CHI,56,10, GOTO
10332	49	14120	00000	28610		B	GOTOEN
10344	14	15139	00053	28620		CM	CHI,53,10, CALL
10356	49	12058	00000	28630		B	CALLEN
10368	17	04696	00003	28640		BTM	COLNAM,03,10, RETURN
10380	49	13166	00000	28650		B	RETRN
10392	16	02359	09724	28660		TFM	FMON+35,BLK1,, FORMAT
10404	17	02324	10392	28670		BTM	FMON,FORMAT
10416	16	02359	09793	28680		TFM	FMON+35,BLK4,, DOO
10428	17	02324	10416	28690		BTM	FMON,DOO
10440	16	02359	09770	28700		TFM	FMON+35,BLK3,, ASCAN
10452	17	02324	10440	28710		BTM	FMON,ASCAN
10464	43	10884	10100	28720		BD	SC1,SINGST,, OUTSC
10476	49	10512	00000	28730		B	OUTSC1

82

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
10488	16	02359	09816	28740		TFM	FMON+35,BLK5,, DISK INPUT/OUTPUT
10500	17	02324	10488	28750		BTM	FMON,DKIO
				28760	**		OUTSC CODE IS HERE
12058				28770		DORG	ASCAN1
				28780	***		ENTER HERE TO DECOMPOSE CALL STATEMENT ***
12058	47	04300	01200	28790	CALLEN	BNE	ERRO1
12070	31	15138	15140	28800		TR	CHI-1,CHI+1
12082	17	04696	00004	28810		BTM	COLNAM,04,10
12094	24	10081	13129	28820		C	SYM,EXITCT+6
12106	46	12154	01400	28830		BV	CALLER-48
12118	46	12662	01200	28840		BE	EXITCD
12130	24	10081	13137	28850		C	SYM,LINKCT+6
12142	46	12718	01200	28860		BE	LINKCD
12154	15	10111	00001	28870		TDM	CALLSW,1
12166	17	09084	00138	28880		BTM	PUT, 138,8,CALL
12178	14	15139	00040	28890		CM	CHI,40,10
12190	46	12214	01100	28900		BH	*+24
12202	17	09384	00279	28910	CALLER	BTM	ERROR,279,9, INCORRECT CALL NAME OR LIST
12214	14	15139	00069	28920		CM	CHI,69,10
12226	46	12202	01100	28930		BH	CALLER
12238	32	07068	00000	28940		SF	OUTSW
12250	17	05738	12262	28950		BTM	CSORN,*+12
12262	45	12338	15141	28960		BNR	CALLB,CHI+2
12274	43	12318	02611	28970		BD	CALLA,INSW
12286	17	09084	00153	28980		BTM	PUT,0153,8, FUNCTION OPERATOR CALL
12298	15	07295	00000	28990		TDM	SMCNT,,6
12309		00001		29000		DC	1,@,*
12310	49	02626	00000	29010		B	BEGIN
12318				29020		DORG	*-3
12318	45	08004	07295	29030	CALLA	BNR	ERRO9,SMCNT,11
12330	49	02626	00000	29040		B	BEGIN
12338				29050		DORG	*-3
12338	43	12362	10102	29060	CALLB	BD	*+24,FNTSW
12350	17	09384	00279	29070		BTM	ERROR,279,9, SYM PREVIOUSLY USED NOT AS CALL NAME
12362	44	12382	10102	29080		BNF	*+20,FNTSW
12374	49	12350	00000	29090		B	*-24,,, TRYING TO CALL SINGLE STATMNT FUNCT
12382				29100		DORG	*-3
12382	15	10102	00000	29110		TDM	FNTSW,0
12394	14	15139	00024	29120		CM	CHI,24,10
12406	47	12202	01200	29130		BNE	CALLER
12418	17	09084	00124	29140		BTM	PUT, 124,8,LEFT PAREN
12430	11	02615	00001	29150		AM	PARCNT,1,10
12442	14	15141	00004	29160		CM	CHI+2,4,10, TEST FOR NO FUNCTION ARGUEMENTS
12454	46	12202	01200	29170		BE	CALLER
12466	16	10463	14678	29180	CALL1	TFM	ASCAN+23,CLASEN
12478	49	10440	00000	29190		B	ASCAN,,, GO TO ARITHMETIC SCAN
12486				29200		DORG	*-3
12486	14	15139	00023	29210	CALL2	CM	CHI,23,10, TEST FOR MORE ARGUEMENTS
12498	47	12530	01200	29220		BNE	*+32
12510	17	09084	00123	29230		BTM	PUT, 123,8,COMMA
12522	49	12466	00000	29240		B	CALL1
12530				29250		DORG	*-3
12530	14	15139	00004	29260		CM	CHI,4,10
12542	46	12574	01200	29270		BE	*+32
12554	16	10463	12658	29280		TFM	ASCAN+23,ASC1
12566	49	10440	00000	29290		B	ASCAN,,, GO TO SCAN ARITH EXPRESSION OPERATOR
12574				29300		DORG	*-3

83

LOCTN OP   P/L   Q   PG/LN LABEL MNEM OPERANDS AND REMARKS

12574	17	09084	00104	29310		BTM	PUT, 104,8,RIGHT PAREN
12586	12	02615	00001	29320		SM	PARCNT,1,10
12598	31	15138	15140	29330		TR	CHI-1,CHI+1
12610	46	12642	01200	29340		BZ	*+32
12622	45	12486	15141	29350		BNR	CALL2,CHI+2
12634	49	12202	00000	29360		B	CALLER
12642				29370		DORG	*-3
12642	45	12202	15141	29380		BNR	CALLER,CHI+2
12654	49	02626	00000	29390		B	BEGIN
12662				29400		DORG	*-3
12662	45	12154	15149	29410	EXITCD	BNR	CALLER-48,CHI+10
12674	15	02609	00001	29420		TDM	TRIND,1,11
12686	17	09084	00131	29430		BTM	PUT,0131,8, CALL EXIT SYMBOL
12698	17	09084	00140	29440		BTM	PUT,0140,8, DUMMY
12710	49	02626	00000	29450		B	BEGIN
12718				29460		DORG	*-3
12718	14	15147	00024	29470	LINKCD	CM	CHI+8,24,10
12730	46	12762	01200	29480		BE	*+32
12742	45	12154	15147	29490		BNR	CALLER-48,CHI+8
12754	49	04300	00000	29500		B	ERRO1
12762				29510		DORG	*-3
12762	15	02609	00001	29520		TDM	TRIND,1,11
12774	17	09084	00152	29530		BTM	PUT,0152,8, CALL LINK SYMBOL
12786	17	09084	00140	29540		BTM	PUT,0140,8
12798	17	09084	00140	29550		BTM	PUT,0140,8
12810	31	15138	15148	29560		TR	CHI-1,CHI+9
12822	14	15139	00040	29570		CM	CHI,40,10
12834	47	12202	01100	29580		BNH	CALLER
12846	14	15139	00069	29590		CM .	CHI,69,10
12858	46	12202	01100	29600		BH	CALLER
12870	31	13138	13152	29610		TR	OUTAR,MASKLK
12882	26	13139	15139	29620		TF	OUTAR+1,CHI
12894	31	15138	15140	29630		TR	CHI-1,CHI+1
12906	16	12968	13141	29640		TFM	LKCD3+6,OUTAR+3
12918	14	15139	00040	29650	LKCD1	CM	CHI,40,10
12930	47	13006	01100	29660		BNH	LKCD4
12942	45	12962	12968	29670		BNR	LKCD3,LKCD3+6,11
12954	49	04300	00000	29680		B	ERRO1
12962				29690		DORG	*-3
12962	26	00000	15139	29700	LKCD3	TF	,CHI,
12974	31	15138	15140	29710		TR	CHI-1,CHI+1
12986	11	12968	00002	29720		AM	LKCD3+6,02,10
12998	49	12918	00000	29730		B	LKCD1
13006				29740		DORG	*-3
13006	14	15139	00004	29750	LKCD4	CM	CHI,04,10
13018	47	04300	01200	29760		BNE	ERRO1
13030	45	04300	15143	29770		BNR	ERRO1,CHI+4
13042	33	13140	00000	29780		CF	OUTAR+2
13054	33	13144	00000	29790		CF	OUTAR+6
13066	33	13148	00000	29800		CF	OUTAR+10
13078	27	09084	13141	29810		BT	PUT,OUTAR+3
13090	27	09084	13145	29820		BT	PUT,OUTAR+7
13102	27	09084	13149	29830		BT	PUT,OUTAR+11
13114	49	02626	00000	29840		B	BEGIN
13122				29850		DORG	*-3
13123		00004	X2	29860	EXITCT	DAC	4,EXIT
13131		00004	X2	29870	LINKCT	DAC	4,LINK

84

LOCTN OP   P/L   Q   PG/LN LABEL MNEM OPERANDS AND REMARKS

13138		00014		29880	OUTAR	DSS	14
13155		00004		29890		DC	4,0
13152		00000		29900	MASKLK	DS	,*-3
13159		00004		29910		DC	4,0
13163		00004		29920		DC	4,0
13165		00002		29930		DC	2,0@
				29940	***		ENTER HERE TO OUTPUT RETURN STATEMENT ***
13166	24	10081	13283	29950	RETRN	C	SYM,URNCT+4
13178	47	04300	01200	29960		BNE	ERRO1
13190	43	13234	02293	29970		BD	*+44,SUBFCT
13202	17	09440	00577	29980		BTM	ERROR2,577,9
13214	43	02626	02610	29990		BD	BEGIN,NOIND
13226	49	02638	00000	30000		B	BEGINA
13234				30010		DORG	*-3
13234	17	09084	00139	30020		BTM	PUT, 139,8,RETURN
13246	17	09084	00140	30030		BTM	PUT, 140,8,DUMMY
13258	15	05673	00001	30040		TDM	RTSW,1
13270	49	02626	00000	30050		B	BEGIN
13278				30060		DORG	*-3
13279		00003	X2	30070	URNCT	DAC	3,URN
				30080	******		OUTPUT IF CODING ******
				30090	******		******
13284	15	02609	00001	30100	IF1	TDM	TRIND,1,11, SET TRANSFER INDICATOR ON
13296	17	09084	00107	30110		BTM	PUT, 107,8,IF SYMBOL
13308	17	09084	00124	30120		BTM	PUT, 124,8,LEFT PAREN SYMBOL
13320	43	13340	10101	30130		BD	*+20,DOTRAN,, TEST IF DO LOOP ENDING WITH TRANSFER
13332	49	13352	00000	30140		B	*+20
13340				30150		DORG	*-3
13340	17	09440	00571	30160		BTM	ERROR2,571,9
13352	15	10107	00001	30170		TDM	IFSW,1,, SET SWITCH TO INDICAT IF STATEMENT
13364	16	05677	00003	30180		TFM	STC,3,10
13376	14	15139	00004	30190		CM	CHI,04,10, TEST FOR VACEOUS PARENS
13388	46	13468	01200	30200		BE	ERRO2
				30210	*		IFSS CODE
13400	17	04696	00001	30220		BTM	COLNAM,11,10
13412	24	10081	14321	30230		C	SYM,SENSWC+20
13424	46	13448	01400	30240		BV	*+24
13436	46	13480	01200	30250		BE	ERRO2+12
13448	16	10463	14658	30260		TFM	ASCAN+23,IFASEN
13460	49	10440	00000	30270		B	ASCAN,,, GO TO SCAN EXPRESSION
13468				30280		DORG	*-3
13468	17	09384	00072	30290	ERRO2	BTM	ERROR,72,9
13480	31	15138	15160	30300		TR	CHI-1,CHI+21
13492	17	09084	00130	30310		BTM	PUT, 130,8,SENSE SWITCH SYMBOL
13504	14	15139	00070	30320		CM	CHI,70,10
13516	46	13540	01100	30330		BH	*+24
13528	17	09384	00174	30340		BTM	ERROR,174,9, SWITCH NUMBER IN ERROR
13540	15	10106	00001	30350		TDM	DIMSW,1
13552	17	05446	13564	30360		BTM	CSTNO,*+12,
13564	15	10106	00000	30370		TDM	DIMSW,0
13576	32	10078	00000	30380		SF	SYM-3
13588	27	09084	10081	30390		BT	PUT,SYM,, PUT OUT SWITCH NUMBER
13600	14	15139	00004	30400		CM	CHI,4,10, LOOK FOR RIGHT PAREN
13612	47	13468	01200	30410		BNE	ERRO2
13624	12	02615	00001	30420		SM	PARCNT,1,10
13636	17	09084	00104	30430		BTM	PUT, 104,8,RIGHT PAREN SYMBOL
13648	16	05677	00002	30440		TFM	STC,2,10, SET UP TO OUTPUT TWO STATEMENT NUMBERS

85

```
LOCTN  OP   P/L    Q       PG/LN   LABEL   MNEM  OPERANDS AND REMARKS

13660  31  15138  15140    30450   OUTSN   TR    CHI-1,CHI+1
13672  32  07068  00000    30460           SF    OUTSW
13684  14  15139  00069    30470           CM    CHI,69,10
13696  46  13720  01100    30480           BH    *+24
13708  17  09384  00475    30490           BTM   ERROR,175,9,        INCORRECT STATEMENT NUMBER
13720  17  05446  13732    30500           BTM   CSTNO,*+12,,        COLLECT AND OUTPUT STATEMENT NUMBER
13732  43  13752  02611    30510           BD    *+20,INSW
13744  49  13776  00000    30520           B     *+32
13752                      30530           DORG  *-3
13752  11  07242  00004    30540           AM    SMADD,4,10
13764  43  13832  07242    30550           BD    OUTSNE-12,SMADD,11
13776  43  13908  10108    30560           BD    OUTSN2,CGTO,,       BRANCH IF IN COMPUTED GO TO
13788  12  05677  00001    30570           SM    STC,1,10
13800  46  13864  01100    30580           BH    OUTSNE+20
13812  45  13844  15141    30590           BNR   *+32,CHI+2
13824  49  02626  00000    30600           B     BEGIN
13832                      30610           DORG  *-3
13832  17  09384  00077    30620           BTM   ERROR,77,9
13844  17  09440  00573    30630   OUTSNE  BTM   ERROR2,573,9,       INCORRECT NUMBER OF STATEMENT NUMBERS
13856  49  02626  00000    30640           B     BEGIN
13864                      30650           DORG  *-3
13864  14  15139  00023    30660           CM    CHI,23,10
13876  47  13708  01200    30670           BNE   OUTSN+48
13888  45  13660  15143    30680           BNR   OUTSN,CHI+4
13900  49  13708  00000    30690           B     OUTSN+48
13908                      30700           DORG  *-3
13908  14  15139  00004    30710   OUTSN2  CM    CHI,4,10
13920  47  13864  01200    30720           BNE   OUTSNE+20
13932  12  02615  00001    30730           SM    PARCNT,1,10
13944  31  15138  15140    30740           TR    CHI-1,CHI+1
13956  17  09084  00104    30750           BTM   PUT,104,8
13968  45  13992  15141    30760           BNR   *+24,CHI+2
13980  17  09384  00176    30770   OUTSN3  BTM   ERROR,176,9,        INDEX OF COMP. GO TO MISSING OR INVALD
13992  14  15139  00023    30780           CM    CHI,23,10
14004  47  13980  01200    30790           BNE   *-24
14016  31  15138  15140    30800           TR    CHI-1,CHI+1
14028  14  15139  00049    30810           CM    CHI,49,10,          TEST FOR FIXED POINT VAR
14040  47  13980  01300    30820           BL    OUTSN3
14052  14  15139  00055    30830           CM    CHI,55,10
14064  46  13980  01100    30840           BH    OUTSN3
14076  17  05738  14088    30850           BTM   CSORN,*+12
14088  43  13980  07295    30860           BD    OUTSN3,SMCNT,11
14100  27  09084  07241    30870           BT    PUT,SMADD-1
14112  49  13812  00000    30880           B     OUTSNE-32
14120                      30890           DORG  *-3
                           30900   ***        ENTER HERE TO OUTPUT GO TO STATEMENT     ***
14120  47  04300  01200    30910   GOTOEN  BNE   ERRO1
14132  15  02609  00001    30920           TDM   TRIND,1,11,         SET TRANS INDICATOR
14144  43  14164  10101    30930           BD    *+20,DOTRAN
14156  49  14176  00000    30940           B     *+20
14164                      30950           DORG  *-3
14164  17  09440  00571    30960           BTM   ERROR2,571,9
14176  31  15138  15140    30970           TR    CHI-1,CHI+1
14188  14  15139  00024    30980           CM    CHI,24,10,          TEST FOR COMPUTED GO TO
14200  46  14244  01200    30990           BE    COMPUT
14212  16  05677  00001    31000           TFM   STC,1,10
14224  17  09084  00105    31010           BTM   PUT,      105,8,GO TO SYMBOL
```

86

```
LOCTN  OP   P/L    Q       PG/LN   LABEL   MNEM  OPERANDS AND REMARKS

14236  49  13672  00000    31020           B     OUTSN+12,,,         BRANCH TO OUTPUT STATEMENT NUMBER
14244                      31030           DORG  *-3
14244  17  09084  00106    31040   COMPUT  BTM   PUT,      106,8,COMPUTED GO TO SYMBOL
14256  17  09084  00124    31050           BTM   PUT,      124,8,LEFT PAREN SYMBOL
14268  11  02615  00001    31060           AM    PARCNT,1,10
14280  15  10108  00001    31070           TDM   CGTO,1
14292  49  13660  00000    31080           B     OUTSN,,,            BRANCH TO OUTPUT STATEMENT NUMBERS
14300                      31090           DORG  *-3
14301      00011 X2        31100   SENSWC  DAC   11,SENSESWITCH
16000                      31110           DORG  16000
16000  16  00565  16023    31120           TFM   IORT,*+23
16012  49  00532  09839    31130           B     IOPT,BLK6,7
16024  36  00012  00500    31140           TRA
16036  49  00012           31150           TCD   16000
16000                      31160           DORG  FLIP2
03130                      31160
03131      00082 X2        31170   OFLO2   DAS   82,,,               HEADER INFORMATION
03130      00000           31180   PRNT4   DS    ,OFLO2-1
03295      00009 X2        31190           DAC   09,PAGE   1a,,,     PAGE CONSTANT
                           31200   ** PRINT OVERFLOW PAGE HEADING AND RETURN
03316      00005           31210           DC    5,12345
03318  43  03350  02220    31220   OFLO    BD    ONE,PGNUM-2
03330  43  03362  02221    31230           BD    TWO,PGNUM-1
03342  49  03374           31240           B7    NONUM
03350  15  03304  00007    31250   ONE     TDM   PRNT4+174,7,,       ZERO SUPPRESS STUFF
03362  15  03306  00007    31260   TWO     TDM   PRNT4+176,7,,
03374  25  03309  02222    31270   NONUM   TD    PRNT4+179,PGNUM,,,  PAGE NUMBER
03386  25  03307  02221    31280           TD    PRNT4+177,PGNUM-1
03398  25  03305  02220    31290           TD    PRNT4+175,PGNUM-2
03410  34  00000  00971    31300           34    ,0971,,             SKIP TO 1 IMMEDIATE
03422  34  00000  00962    31310           34    ,0962,,             DOUBLE SPACE AFTER PRINT
03434  16  00565  03457    31320           TFM   IORT,*+23,,         TO1ORT-PRINT PAGE HEAD
03446  49  00532  03477    31330           B     IOPT,OFLO1-4,7,
03458  11  02222  00001    31340           AM    PGNUM,01,10,        ADD 1 TO PAGE NUMBER
03470  49  03317           31350   OFLO3   B7    OFLO-1,,6,          RETURN INDIRECT
03481      00005  03131    31360   OFLO1   DSA   OFLO2
03484      00003           31370           DC    3,18a,,             PAGE OVERFLOW DEFINER
                           31380   ** ERROR MESSAGE ROUTINE
03486  26  03781  09383    31390   ER1     TF    ERMES1+14,ERROR-1,,LOAD THE ERROR NUMBER
03498  43  03662  02228    31400           BD    LIST1,LIST,,        TOTAL LISTING
03510  25  03749  02724    31410           TD    ESNO1+6,ESNO  ,,    NO LISTING-PRINT COMPLETE MESSAGE
03522  25  03747  02723    31420           TD    ESNO1+4,ESNO-1
03534  25  03745  02722    31430           TD    ESNO1+2,ESNO-2
03546  25  03743  02721    31440           TD    ESNO1,ESNO-3
03558  25  03757  02597    31450           TD    ESNOP1+2,ESNOPL-3
03570  25  03759  02598    31460           TD    ESNOP1+4,ESNOPL-2
03582  25  03761  02599    31470           TD    ESNOP1+6,ESNOPL-1
03594  25  03763  02600    31480           TD    ESNOP1+8,ESNOPL
03606  16  00565  03629    31490           TFM   IORT,*+23
03618  49  00532  03725    31500           B     IOPT,NOLIST-4,7
03630  47  03694  03400    31510   CHAN12  BNI   EREXT,3400,,        TEST PRINTER CHAN12
03642  16  03317  03694    31520           TFM   OFLO-1 ,EREXT,,     SET UP ERROR EXIT AFTER OFLOW INDICATION
03654  49  03318           31530           B7    OFLO
03662  16  00565  03685    31540   LIST1   TFM   IORT,*+23,,,        PRINT ERROR IF LISTING
03674  49  00532  03733    31550           B     IOPT,ERR-4,7
03686  49  03630           31560           B7    CHAN12
03694  16  02510  17207    31570   EREXT   TFM   BLK9A+5,FLOP1,,     MODIFY DDA
```

87

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
03706	16	02496	09428	31580		TFM	RETR +6,E94620,, MODIFY RETURN ADDRESS
03718	49	02466		31590		B7	FLOP,,, RESTORE PARTIAL
03729		00005	03743	31600	NOLIST	DSA	ESNO1
03732		00003		31610		DC	3,18a,,, DEFINER PRINT LONG ERROR XXXX+XXXX ERRORXX
03737		00005	03767	31620	ERR	DSA	ERMES1
03740		00003		31630		DC	3,18a,,, DEFINER PRINT SHORT ERROR XX
03743		00004	X2	31640	ESNO1	DAC	4,0000
03751		00002	X2	31650		DAC	2, +
03755		00005	X2	31660	ESNOP1	DAC	5, 0000
03764		00002		31670		DSC	2,00
03767		00009	X2	31680	ERMES1	DAC	9,ERROR 00a
03784	16	02510	+7207	31690	CDOFLO	TFM	BLK9A+5,FLOP1,, MODIFY DDA
03796	26	02496	02525	31700		TF	RETR +6,PRTCHI-1,, MODIFY RETURN ADDRESS-CHI PRINT
03808	16	03317	02466	31710		TFM	OFLO-1 ,FLOP,, SET BRANCH TO RESTORE PARTIAL
03820	49	03318		31720		B7	OFLO
				31730			** ROUTINE TO SCAN AND PRINT CHI FOR P/T OR TYPE INPUT
03828	16	03863	+5137	31740	SCN1	TFM	SCN2+11,CHI-2,, INITIALIZ START OF SCAN
03840	11	03863	00002	31750		AM	SCN2+11,2,10, UP THE CURRENT LOCATION
03852	45	03840	00000	31760	SCN2	BNR	SCN1+12,*-*,, IS THIS AN RM
03864	16	03899	+5359	31770		TFM	SCN3+11,CHI+220,, INITIALIZE END OF FIRST PRINT OUT
03876	16	04094	+5139	31780		TFM	PRNT2,CHI,, INITIALIZE DEFINER
03888	16	03863	00000	31790	SCN3	CM	SCN2+11,*-*,, IS THIS THE END
03900	46	03956	01100	31800		BH	SCN4
03912	17	04042	03924	31810		BTM	PRNT1,*+12,, YES
03924	16	02510	+7207	31820		TFM	BLK9A+5,FLOP1,, MODIFY DDA FOR RETURN
03936	16	02496	02798	31830		TFM	RETR +6,LNGPRT,, MODIFY RETURN ADDRESS
03948	49	02466		31840		B7	FLOP,,, RESTORE PARTIAL AND RETURN
03956	26	04036	03899	31850	SCN4	TF	SAVE,SCN3+11,11, NO-SAVE THE CHARACTER
03968	16	03899	07936	31860		TFM	SCN3+11,*+*,6, SET RM AT END
03979		00002		31870		DC	2,0a,*
03980	17	04042	03992	31880		BTM	PRNT1,*+12,, PRINT THIS INCREMENT
03992	26	03899	04036	31890		TF	SCN3+11,SAVE,6, RESTORE CHARACTER
04004	26	04094	03899	31900		TF	PRNT2,SCN3+11,, MOVE PRINT DEFINER HIGHER
04016	11	03899	00220	31910		AM	SCN3+11,220,9, UP THE POINTER
04028	49	03888		31920		B7	SCN3
04036		00002		31930	SAVE	DC	2,99
04041		00005		31940		DC	5,99999
04042	16	00565	04065	31950	PRNT1	TFM	IORT,*+23,, PRINT THE INPUT STATEMENT
04054	49	00532	04090	31960		B	IOPT,PRNT2-4,7
04066	47	04041	03400	31970		BNI	PRNT1-1,3400,6, TEST PRINT CHAN 12 BRANC BACK INDIRECT
04078	17	03318	04041	31980		BTM	OFLO,PRNT1-1,711, -GO TO OVERFLOW WITH RETURN ADDRESS
04094		00005	+5139	31990	PRNT2	DSA	CHI
04097		00003		32000		DC	3,18a,, PRINT P/T OR TYPE INPUT
04098	16	02510	+7207	32010	INITAL	TFM	BLK9A+5,FLOP1,,, MODIFY DDA
04110	16	02496	+0544	32020		TFM	RETR +6,PRSCN1,, SET RETURN ADDRESS
04122	17	03318	02466	32030		BTM	OFLO,FLOP,,, GO TO OVERFLOW WITH CALL PARTIAL
16000				32040		DORG	16000
16000	16	00565	+6023	32050		TFM	IORT,*+23
16012	49	00532	02497	32060		B	IOPT,BLK9,7
16024	36	00012	00500	32070		TRA	
16036	49	00012					
16000				32080		TCD	16000
00000				32090		DEND	

88

SYMBOL TABLE

ZUB12B 14174	ZUBC12 14150	ZUBCDS 14102	ZUBCAB 14126	ZODE17 10242	ZODE15 10218	ZODE14 10194
ZODE12 10170	ZODESS 10266	ZDSSAB 10290	ZDCALL 10410	YUB12B 14174	YUBC12 14150	YUBCDS 14102
YUBCAB 14126	YODE17 10242	YODE15 10218	YODE14 10194	YODE12 10170	YODESS 10266	YDSSAB 10290
YDCALL 10410	XUB12B 14174	XUBC12 14150	XUBCDS 14102	XUBCAB 14126	XODE17 10242	XODE15 10218
XODE14 10194	XODE12 10170	XODESS 10266	XDSSAB 10290	XDCALL 10410	WUB12B 14174	WUBC12 14150
WUBCDS 14102	VRFRBK 11188	USEDCR 14103	USDCR1 12993	TYPE12 13732	TYPERM 08253
TYPEM2 13717	TYPEK3 14662	TYPEK2 14647	TYPECR 08662	TYPECN 08677	TBLEND 14689	SYSCAL 00475
SWAREA 09325	SVTYNB 13489	SVSTNO 03692	SUB12B 14174	SUBPSW 05075	SUBC12 14150	SUBCOW 13637
SUBCDS 14102	SUBCAB 14126	STEMP2 09319	STEMP1 09318	SRCFFL 04636	SKIPSW 09599	SETNMT 03694
SETFCT 03508	SAVCOW 07365	SARGSW 13632	SADCOW 11215	RXFLAG 05035	RTNAME 09476	RGRNUL 05784
RFXSUB 04157	RFLSUB 04152	REMGET 05704	RECORD 13206	PUT17I 14668	PUT17C 14556	PUT17B 14604
PUTX17 13642	PUTX12 13686	PUTPCH 07874	PUTNXT 07770	PUTINS 07074	PUTEST 07054	PUTDIF 07470
PUTCAD 07394	PUSTSN 02294	PUNTAP 04107	PREBUF 08631	PBLOK1 14310	PATSB2 15450	PATSBO 15786
PASSII 02400	PARCNT 12341	OUTSEQ 07610	OUTARA 15300	N60182 14764	N60107 14832	N60101 14638
N60099 14552	N60095 14512	N60092 14488	N60084 14776	N60072 12850	N60049 11786
N60048 11392	N60046 11056	N60045 10974	N60044 10882	N60043 10752	N60041 10684	N60035 13594
N60034 13570	N60032 13268	N60027 12984	N60026 12948	N60023 12746	N60022 12490	N60021 12544
N60020 12364	N60018 11956	N60017 11688	N60016 11758	N60015 11360	N60014 11360	N60013 11468
N60010 10862	N60009 10838	N60007 10794	N40012 03836	N40011 03831	N40010 03826	N40009 03821
N40008 03816	N40007 03811	N40006 03806	N40005 03801	N40004 03791	N40003 03791	N40002 03786
N40001 03781	N40000 03776	N20001 03837	N20000 03772	N147RM 13773	N13133 09364	N13092 09357
N13089 09352	N13063 09460	N13062 09465	N07495 13351	N02393 11155	N02383 03687	N01300 09552
N01200 09559	N01100 09539	N00951 11050	N00900 11055	N00796 09606	N00716 13761	N00565 13756
NINERM 13419	MONCAL 00716	MODMES 12075	MINUSI 14478	MATRET 13148	LSTYPF 08310
LENGTH 02248	LCOMAD 13377	LCMAD1 13009	J40004 09530	JARNDT 15842	INSETB 11179	INSETA 11155
INDREC 12157	HEADER 02218	GTSBSW 06892	GTFLCL 06682	GTBLKB 02800	GTBLKA 02795	GRBAGF 13560
GCLEAR 06656	FXTOFL 04142	FXORFL 04673	FXIOSW 15448	FULMES 09391	FULLCK 06264	FLTOFX 04147
FLAGSW 05095	FCT1G1 10822	FCTRTP 14702	FCTEND 02318	FACTRC 02227	EOTONY 13078	EOPRT1 14666
EOPETE 13102	EOJSTN 13222	EOJRIT 13222	ENDTRC 02830	ENDMES 13651	D4LNEG 15854
DOTEMP 14892	DOBASE 04102	DISKDD 14294	DIOEND 13191	COUNT8 14691	COMXSW 09600	COMPAR 14598
CODMAT 12858	CODE9P 12164	CODE9C 12812	CODE9B 12564	CODE9A 12662	CODE8P 13722	CODE7P 11236
CODE7C 11596	CODE7B 12022	CODE6P 10438	CODE6B 10624	CODE6A 10676	CODE4P 13436	CODE4A 13512
CODE3Z 13334	CODE3Y 12858	CODE3X 13280	CODE3P 12274	CODE3E 13214	CODE3D 13094	CODE3C 12846
CODE3B 12698	CODE3A 12568	CODE17 10242	CODE15 10218	CODE14 10194	CODE12 10170	CODE1X 11216
CODE1P 10434	CODE1H 10716	CODE1G 11586	CODE1F 11716	CODE1E 11118	CODE1D 11562	CODE1C 11036
CODE1B 10944	CODE1A 10584	CODESS 10266	CODEPA 12100	CODARR 11882	CLLBLK 13622	CD99NF 11232
CD17XX 14408	CD17SC 14372	CD14SV 10940	CD14SL 10960	CD14RV 10900	CD14RM 11334	CD14RL 10920
CD14NR 11382	CD14ND 12466	CD14NC 12570	CD14EN 12766	CD12BP 14198	CDS1FP 15394	CDSSS3 14832
CD14FV 10690	CD14FL 10784	CD14EN 12766	CD12BP 14198	CDS1FP 15394	CDSSS3 14832	CDSSS1 14948
CDSSAB 14310	CDSAB7 14554	CDSAB5 14706	CDSAB4 14750	CDSAB3 14762	CDSAB2 14634
CDSAB1 14506	CDSABZ 15090	CDSABX 15022	CDLINK 13224	CDCALP 13212	CDCALL 10410	CDABXT 15422
CANDSA 08846	CANDRT 08910	CALLSW 09320	CALLBK 13617	CALBLK 13609	B1OMAD 14800	BEGTRC 02810
ADTEMP 02394	ADJUST 03842	ACCTAP 04087	ACCEPT 04077	ADCOW 06843	ADCW1 12985	ADD 09380
ADSL 02724	AM 09335	ANS 02389	ARNDT 12962	ASTOP 04217	ATYPE 04172	B 06848
BAL 08312	BCOW 09554	BD 09570	BE 09559	BEGAD 02257	BGNST 15999	BI 09570
BL 09547	BLANK 09344	BLKH 12503	BLKHA 12511	BLK1 09116	BLK1A 09124	BLK2 09140
BLK2A 09148	BLK3 09164	BLK3A 09172	BLK4 09188	BLK4A 09196	BLK5 09212	BLK5A 09220
BLK6 09236	BLK6A 09244	BLK7 09260	BLK7A 09268	BLK8 09284	BLK8A 09292	BNF 09563
BNH 09541	BNR 13644	BT 09370	BTM 06846	BUF1 08326	BUF2 08401	BUF3 08476
BUF4 08551	B8DAD 17340	C 09543	CALLX 05055	CANDS 08712	CDABP 15308	CDABU 15214
CDABW 14436	CDABZ 14368	CDLGT 13361	CDPCH 13310	CDSSP 14202	CDS1S 15542	CDS1T 15188
CDS1V 14960	CDS1Z 15456	CDXIT 13786	CD117 13786	CD12A 14812	CD12C 14244	CD12D 14282
CD12E 14352	CD12P 14198	CD12X 14408	CD12Y 14258	CD14A 11422	CD14B 12008	CD14C 11852
CD14E 12446	CD14M 12690	CD14P 10434	CD15P 13776	CD17A 12926	CD17B 13400	CD17C 13138
CD17D 13198	CD17E 13328	CD17F 13246	CD17G 14276	CD17H 14244	CD17I 13636	CD17J 13668
CD17K 13830	CD17L 13850	CD17M 13592	CD17N 13750	CD17P 12874	CD94 12064	

89

SYMBOL TABLE

CD95 12052	CD96 11752	CD97 11740	CD98 11684	CD99 11696	CET 13354	CF 09331
CGCOW 12162	CKCOW 09311	CKFMT 03420	CKSW 05105	CKXH 13936	CLEAR 02628	CM 09545
CM96 13156	CM97 13126	CM98 12966	CM99 12990	CODET 08304	CODEO 03764	CODE1 10002
CODE3 10026	CODE4 10050	CODE5 03250	CODE6 10074	CODE7 10098	CODE8 10122	CODE9 10146
CODOA 12658	COMSW 04451	CSW 13412	DFLMS 14313	DI 06858	DIP 16018	DIP1 16002
DJ 06868	DK 06878	DMSW 04450	DOA 09453	DOMAX 09525	DOMES 14895	DOREF 04042
DOSW 09321	DRAY 13196	DSKHD 14285	DX 08987	DY 08991	D1 06853	D2 06863
D3 06873	D4 06883	EM1 09091	ENDM1 13017	EOJ 10386	EOJG 12148	EOJJ 12044
EOJP 12008	EOJW 12376	EOJWG 12292	EOPRT 14382	EOROD 13290	ERMOD 12042	ERRT 08998
ERSWT 09601	ETYPE 04197	EXIND 09322	EXIT 03206	EXITA 14856	F 02250	FAC 09469
FACAD 04232	FACM2 09568	FAF5 14696	FAF6 15100	FANS 04974	FBASE 03977	FCODE 04979
FCTRT 10362	FCTSW 02293	FCT1 10338	FCT1A 10894	FCT1B 11432	FCT1C 11464	FCT1D 11476
FCT1E 12120	FCT1F 11388	FCT1G 10800	FCT1H 10974	FCT1J 11738	FCT1K 11444	FCT1L 11930
FCT1P 10438	FCT11 10634	FCT12 11536	FCT13 11286	FETCH 13211	FFRSW 05065	FIND 13201
FIVE 09471	FLAD 04012	FLDVD 04122	FLEXP 04062	FLGRM 08290	FLG2 07334	FLG3 07354
FLG4 07374	FLMUL 04052	FLRDV 04132	FLSUB 04112	FLV 04758	FMON 02324	FORCB 04932
FORCC 04992	FORCE 04680	FOUR 13648	FPCL 15182	FPSW 09597	FPSWX 09598	FP2 02298
FREQ1 13233	FREQ2 13399	FRFAC 04222	FRV 04842	FSW 09314	FTSW 05045	FTYPE 04192
FT1 04991	FX 04007	FXAD 04017	FXDVD 04127	FXEXP 04067	FXMUL 04057	FXRDV 04137
FXSUB 04117	GA 06457	GADD1 06434	GBASE 09575	GCNT 06007	GCOW 06705	GETSY 02728
GETX 02676	GFLAG 06332	GFREE 06458	GI 06601	GISMO 09718	GLNO 09378	GNONE 06040
GNRP 05830	GPUT 06188	GPUTA 06320	GRMK 08626	GSBI 11672	GTCL 06606	GTFIN 15442
GTJW 06404	GTNS 05540	GTPT 05984	GTSCL 06714	GTST 06494	GYES 05936	H 09339
HTYPE 04207	I 09485	IFTRC 02226	INPUT 09616	INSET 11096	IO 04237	IOCAL 00716
IOEND 04242	IOGT 00566	IOPT 00532	IORT 00565	IO1 09315	IO2 09316	IO3 09317
ITUSD 15898	ITYPE 04187	IXI 04247	J 09490	JAY 02367	JWG 02460	K 02252
L 06891	LH1 12750	LIS 04258	LIST 02228	LNG 09578	LNGAD 08317	LOCOM 02262
LSTAD 02308	LSTN 09084	LV 09505	LVAL 05013	LVP 13179	L12 02850	L13 02862
L15 02898	L2 03042	L23B3 02966	L3 03186	MAT 04257	MM 09337	MNS5 09455
MOD 09366	MOVR 14562	MPY 09368	NAME 13785	NEXT 08322	NGFRE 06526	NLNG 08297
NM22 13768	NONUM 14174	NOTYP 03628	N1 02233	N2 02238	N2THO 13766	OBASE 02917
OFLO1 14106	ONE 14150	ONE2 13646	OP 02379	OPGT 03990	OPJ 15649	OPSR 03888
OPSX 03959	OPT1 03995	OPX 04493	OPY 13181	OPZ 09596	P 09495	PAGE 14281
PAR 04252	PBLOK 14346	PGNUM 02222	PPJA 15922	PRINT 04027	PRST 02229	PUNCH 04097
PUTA 08138	PUTC 08018	PUTCA 08114	PUTCB 08078	PUTD 08102	PUTGT 07193	PUTRM 08222
PUTTA 07750	PUTX 06898	PUTXA 06958	PUTXB 06982	PUTXC 07134	PUTXD 07230	PUTXE 07266
PUTXF 07290	PUTXG 07530	PUTXH 07694	PUTXI 07854	PUTXJ 07730	PUTXX 08268	PUTXY 08276
PUTXZ 08281	PUTX2 13590	PUT1 08636	PUT17 14520	PUT2 08641	PUT3 08646	P1 09589
P2PTR 02313	O 09500	OZP 15044	RCTY 09372	READ 04037	RECLG 02243	REDO 04202
REGSW 09324	REP 04182	REP1 13197	REP2 13327	REP3 14371	REP4 04022	RFLAG 05025
RGR 05600	RGRI 05654	RGRS 05695	RMNS 05510	RMOD 09388	RMSW 05085	RPNS 05570
RSNFL 04162	RSNFX 04167	RSW 09325	RTAD 09510	RV 09515	RVAL 05015	RVSN 09385
SBASE 04671	SCABP 14202	SCNT 09611	SCNT2 13001	SECTO 13586	SECTY 13594	SETAD 03763
SF 09329	SIX9Z 13488	SK 10881	SL 02399	SLASH 04177	SLC 11072	SLNG 08293
SM 09382	SPCOM 08299	SQLNG 08295	SR 02372	SRFCT 04276	SRGT 04398	SRNX 04392
SRSY 04347	SSLNG 08295	SSSW 09313	SS1 07342	SS2 07343	SS3 07344	SS4 07345
ST 09481	SUB 09359	SUBSW 09323	SUB1 04072	SUB2 04082	SUB3 04092	SWF 13186
SX 02377	SXF 09520	SX17 13137	SY 02384	SY17 14243	TBASE 02303	TCOW 06835
TF 09333	TFM 09327	TMAX 06838	TOFAC 04227	TRACE 04032	TRCSW 02840	TSW 13413
TWO 14162	TYPE 04047	TYPEA 08692	TYPET 08291	TYPEX 08647	T1 06888	T2 09534
T3 09594	UFSTR 02263	UGRMK 02323	VARFR 11156	W 02240	WATY 09374	WW 02296
XCTRT 14678	XCT1 10338	XD12B 10314	XODE1 10026	XODE3 10026	XODE4 10050	XODE6 10074
XODE7 10098	XODE8 10122	XODE9 10146	XOJ 10386	XRMNS 12984	XSSX 16002	XTTX 16002
XTYPE 04212	XUUX 16002	XVVX 16002	XWWX 16002	XX1 14614	XX2 14548	XX3 14482
XX4 14672	XX5 14890	XYYX 16016	XZZX 16002	X00X 16002	YCTRT 10362	YCT1 10338
YD12B 10314	YODE1 10002	YODE3 10026	YODE4 10050	YODE6 10074	YODE7 10098	YODE8 10122
YODE9 10146	YOJ 10386	ZCTRT 10362	ZCT1 10338	ZD12B 10314	ZERO 09341	ZERO4 09343

SYMBOL TABLE

ZERO5 09344	ZERO6 09345	ZODE1 10002	ZODE3 10026	ZODE4 10050	ZODE6 10074	ZODE7 10098
ZODE8 10122	ZODE9 10146	ZOJ 10386	ZPT 15714	ZRM 15497		

```
LOCTN  OP   P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

                           00010  ******        SECOND PASS FORTRAN II
00532       00000         00020  IOPT   DS    ,532
00565       00000         00030  IORT   DS    ,565
00566       00000         00040  IOGT   DS    ,566
00796       00000         00050  MONCAL DS    ,796
00716       00000         00060  IOCAL  DS    ,716
00475       00000         00070  SYSCAL DS    ,475
02218                     00080         DORG  2218
02218       00014         00090  HEADER DSS   14
02222       00003         00100  PGNUM  DS    3,2222
02233       00002         00110  N1     DS    2
02238       00005         00120  N2     DS    5
02240       00002         00130  W      DS    2
02243       00003         00140  RECLG  DS    3
02248       00005         00150  LENGTH DS    5
02250       00002         00160  F      DS    2
02252       00002         00170  K      DS    2
02257       00005         00180  BEGAD  DS    5
02262       00005         00190  LOCOM  DS    5
02263       00030         00200  UFSTR  DSS   30
02293       00001         00210  FCTSW  DS    1
02294       00001         00220  PUSTSN DS    1
02296       00002         00230  WW     DS    2
02298       00002         00240  FP2    DS    2
02303       00005         00250  TBASE  DS    5
02308       00005         00260  LSTAD  DS    5
02313       00005         00270  P2PTR  DS    5
02318       00005         00280  FCTEND DS    5
02323       00005         00290         DS.   5
02323       00001         00300  UGRMK  DGM   2323
02324  26   02366  02323  00310  FMON   TF    *+42          ,FMON-1
02336  16   00565  02359  00320         TFM   IORT          ,*+23
02348  49   00566  00000  00330         B     IOGT          ,          ,7
02360  49   00000  00000  00340         B
02367                     00350         DORG  *-4
02367       00001         00360  JAY    DS    1
02372       00005         00370  SR     DS    00005,,SR,,
02377       00005         00380  SX     DS    00005,,SX,,
02379       00002         00390  OP     DS    00002,,OP,,
02384       00005         00400  SY     DS    00005,,SY,,
02389       00005         00410  ANS    DS    00005,,ANS,,
02394       00005         00420  ADTEMP DS    00005,,ADTEMP,,
02399       00005         00430  SL     DS    00005,,SL,,
17340       00000         00440  B8DAD  DS    ,17340,,,      DISK ADDRESS OF PAGE HEADING
14800       00000         00450  B10MAD DS    ,14800,,,      CORE STORAGE OF PAGE HEADING
02226       00000         00460  IFTRC  DS    ,2226
02227       00000         00470  FACTRC DS    ,2227
02228       00000         00480  LIST   DS    ,2228
02229       00000         00490  PRST   DS    ,2229
02400  26   09578  02296  00500  PASSII TF    LNG           ,WW
02412  26   06843  02257  00510         TF    ADCOW,BEGAD
02424  11   06843  00001  00520         AM    ADCOW,1,10
                          00530  *       SET ADDRESS IN ADCOW TO EVEN
02436  17   03842  06843  00540         BTM   ADJUST,ADCOW
02448  26   02257  06843  00550         TF    BEGAD,ADCOW
                          00560  *       INITIALIZE
02460  33   06843  00000  00570  JWG    CF    ADCOW
```

92

```
LOCTN  OP   P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

02472  26   08281  02308  00580         TF    PUTXZ         ,LSTAD
02484  16   00565  02507  00590         TFM   IORT          ,*+23
02496  49   00566  08268  00600         B     IOGT          ,PUTXX        ,7
02508  21   08322  02313  00610         A     NEXT          ,P2PTR
02520  26   08631  08322  00620         TF    PREBUF        ,NEXT
02532  12   08322  00001  00630         SM    NEXT          ,1         ,10
02544  32   08290  00000  00640         SF    FLGRM
02556  26   09525  04102  00650         TF    DOMAX         ,DOBASE    ,  ,
02568  26   02586  08631  00660         TF    *+18          ,PREBUF    ,  ,
02580  31   08326  09642  00670         TR    BUF1          ,INPUT+26  ,  ,
02592  11   02586  00075  00680         AM    *-6           ,75        ,10,
02604  14   02586  08626  00690         CM    *-18          ,BUF4+75   ,  ,
02616  47   02580  01300  00700         BL    *-36          ,          ,  ,
02628  43   10314  09321  00710  CLEAR  BD    CD128,DOSW
                          00720  *       SET UP STRING RECORD CONSTANTS
02640  15   16000  00000  00730         TDM   BGNST+1
02651       00001         00740         DC    1,a,*
02652  26   09325  09352  00750         TF    SWAREA        ,N13089
02664  16   03786  16003  00760         TFM   N40002,BGNST+4
                          00762  ******************************************************************
02676  45   02728  09616  00764  GETX   BNR   GETSY,INPUT   ,,,CHECK IF INPUT AREA EXHAUSTED
02688  16   00565  02707  00766         TFM   IORT,*+19     ,,,YES - GET SOME MORE
02700  49   00716         00768         B7    IOCAL
02707       00002         00770         DSC   2,2
02713       00005  02795  00772         DSA   GTBLKA
02714       00001         00774         DC    1,a
02716  11   02800  00001  00776         AM    GTBLKB,1,10
02724       00002         00777  ADSL   DSC   2,2a,*-3
02728  26   03786  09619  00778  GETSY  TF    -N40002,INPUT+3    ,,,MOVE SYMBOL INTO STACK
02740  14   09616  00432  00780         CM    INPUT+3,-132,9     ,,,CHECK FOR TRAILER SYMBOL
02752  31   09616  09620  00782         TR    INPUT,INPUT+4 ,,,REMOVE SYMBOL FROM INPUT AREA
02764  46   02850  01200  00783         BE    L12           ,,,BRANCH IF TRAILER SYMBOL
02776  11   03786  00004  00784         AM    N40002,4,10
02788  49   02676         00785         B7    GETX
02795       00001         00788  GTBLKA DSC   1,0
02800       00005  00600  00790  GTBLKB DSA   600
02803       00003         00792         DC    3,001
02808       00005  09616  00794         DSA   INPUT
02809       00001         00796         DC    1,a
02810  15   02840  00001  00797  BEGTRC TDM   TRCSW,-1      ,,,TURN ON TRACE SWITCH
02822  49   02628         00797         B7    CLEAR
02830  15   02840  00000  00797  ENDTRC TDM   TRCSW,0       ,,,TURN OFF TRACE SWITCH
02840       00000         00797  TRCSW  DS    ,*-1
02842  49   02628         00797         B7    CLEAR
02850  31   03786  02724  00798  L12    TR    -N40002,ADSL  ,,,CLEAR FLAG + SET REC. MARK
                          00800  *...............................................................
02862  16   09485  00001  00910  L13    TFM   I             ,1         ,8
02874  27   06714  06713  00920         BT    GTSCL         ,GTSCL-1
02886  11   09611  00001  00930         AM    SCNT          ,1         ,10
                          00931  ******************************************************************
02898  14   16003  00154  00931  L15    CM    BGNST+4,154,9
02910  46   02810  01200  00931         BE    BEGTRC        ,,,CHECK FOR BEGIN TRACE
02922  14   16003  00153  00931         CM    BGNST+4,153,9
02934  46   02830  01200  00931         BE    ENDTRC        ,,,CHECK FOR END TRACE
02946  43   02966  02290  00932         BD    *+20,UFSTR+27 ,,,BRANCH IF DIAGNOSTIC MODE
02958  49   03042         00933         B7    L2
02966  25   03692  09611  00934  L2383  TD    SVSTNO,SCNT   ,,,PLACE LINE COUNT AFTER STATEMENT NUMBER
```

93

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
02978	14	16007	00134	00934		CM	BGNST+8,134,9
02990	46	03042	01200	00935		BE	L2 ,,,SKIP IF ST. NO. COMING UP
03002	25	07345	09610	00935		TD	SS4,SCNT-1 ,,,SET FLAG IF LINE COUNT TEN OR OVER
03014	17	06898	03030	00936		BTM	PUTX,*+16 ,,,PLACE INSTRUCTION IN THE OUTPUT
03030		00005	06846	00937		DSA	BTM,N02383,SVSTNO
03035		00005	03687				
03040		00005	03692				
				00939	*...		
03042	17	05540	03058	00940	L2	BTM	GTNS ,*+16
03058		00005	09485	00950		DSA	I
03063		00005	09505	00960		DSA	LV
03064	14	09505	00152	00970		CM	LV ,152 ,8
03076	46	03186	01100	00980		BH	L3
03088	26	03786	09485	00990		TF	N40002 ,I
03100	11	03786	00002	01000		AM	N40002 ,2 ,10
03112	17	05540	03128	01010		BTM	GTNS ,*+16
03128		00005	03786	01020		DSA	N40002
03133		00005	09515	01030		DSA	RV
03134	17	04680	03150	01040		BTM	FORCE ,*+16
03150		00005	09505	01050		DSA	LV
03155		00005	09515	01060		DSA	RV
03160		00005	02389	01070		DSA	ANS
03162	14	02389	00000	01080		CM	ANS
03174	47	02389	01200	01090		BNE	ANS , ,6
03186	11	09485	00001	01100	L3	AM	I ,1 ,10
03198	49	03042	00000	01110		B	L2
03206				01120		DORG	*-3
03206	14	09485	00001	01130	EXIT	CM	I,1,10
03218	46	03042	01200	01140		BE	L2
03230	12	09485	00001	01150		SM	I ,1 ,10
03242	49	03042	00000	01160		B	L2
03250				01170		DORG	*-3
				01180	******		OUTPUT STATEMENT NUMBER ADDRESSES
03250	12	09485	00001	01190	CODE5	SM	I ,1 ,10
03262	17	05510	03278	01200		BTM	RMNS ,*+16
03278		00005	09485	01210		DSA	I
03283		00005	02399	01220		DSA	SL
03284	26	09594	02399	01230		TF	T3, SL
03296	17	05510	03312	01240		BTM	RMNS ,*+16
03312		00005	09485	01250		DSA	I
03317		00005	09505	01260		DSA	LV
03318	17	05540	03334	01270		BTM	GTNS ,*+16
03334		00005	09485	01280		DSA	I
03339		00005	02372	01290		DSA	SR
03340	14	02372	00140	01300		CM	SR, 140,8,DUMMY
03352	47	03420	01200	01310		BNE	CKFMT
03364	15	09321	00001	01320		TDM	DOSW ,1
03376	17	05510	03392	01330		BTM	RMNS ,*+16
03392		00005	09485	01340		DSA	I,SR
03397		00005	02372				
03398	17	05540	03414	01350		BTM	GTNS ,*+16
03414		00005	09485	01360		DSA	I,SR
03419		00005	02372				
03420	14	02372	00128	01370	CKFMT	CM	SR, 128,8,FORMAT
03432	47	03508	01200	01380		BNE	SETFCT
03444	17	06898	03460	01390		BTM	PUTX ,*+16
03460		00005	06848	01400		DSA	B,BLANK,BLANK

94

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
03465		00005	09344				
03470		00005	09344				
03472	26	09520	06843	01410		TF	SXF ,ADCOW
03484	12	09520	00010	01420		SM	SXF ,10 ,10
03496	12	06843	00006	01430		SM	ADCOW ,6 ,10
03508	26	03762	02399	01440	SETFCT	TF	SETAD-1 ,SL
03520	15	03763	00004	01450		TDM	SETAD ,4
03532	45	03694	03763	01460		BNR	SETNMT ,SETAD ,11
03544	15	03763	00005	01470		TDM	SETAD ,5 , , ,
03556	31	09084	03763	01480		TR	LSTN ,SETAD ,11,
				01483	***		
03568	26	03691	09087	01485		TF	SVSTNO-1,LSTN+3,,MOVE STATEMENT NUMBER
				01487	*..		
03580	33	09084	00000	01490		CF	LSTN
03592	16	09611	00000	01500		TFM	SCNT
				01500	*$$$		
03604	15	03763	00004	01610		TDM	SETAD,4,10
03616	26	03763	06843	01620		TF	SETAD ,ADCOW ,6
03628	15	03763	00009	01630	NOTYP	TDM	SETAD ,9
03640	15	03763	00001	01640		TDM	SETAD ,1 ,611
03652	14	02372	00128	01650		CM	SR ,128 ,8
03664	46	10242	01200	01660		BE	CODE17
				01665	***		
03676	49	02898		01670		B7	L15
03687		00005	02383	01673	N02383	DSA	-2383
03692		00005	00000	01677	SVSTNO	DSA	0
				01680	*..		
03694	26	03786	03763	01690	SETNMT	TF	N40002 ,SETAD ,11
03706	33	03786	00000	01700		CF	N40002
03718	12	03786	00004	01710		SM	N40002 ,4 ,10
03730	17	08138	03746	01720		BTM	PUTA ,*+16
03746		00005	03786	01730		DSA	N40002,ADCOW
03751		00005	06843				
03752	49	03544	00004	01740		B	SETFCT+36 ,4
03763		00000		01750	SETAD	DS	,*
03764	49	03206	00000	01760	CODE0	B	EXIT
03772				01770		DORG	*-3
03772		00000		01780	N20000	DS	,*+1
03776		00005		01790	N40000	DS	5
03781		00005		01800	N40001	DS	5
03786		00005		01810	N40002	DS	5
03791		00005		01820	N40003	DS	5
03796		00005		01830	N40004	DS	5
03801		00005		01840	N40005	DS	5
03806		00005		01850	N40006	DS	5
03811		00005		01860	N40007	DS	5
03816		00005		01870	N40008	DS	5
03821		00005		01880	N40009	DS	5
03826		00005		01890	N40010	DS	5
03831		00005		01900	N40011	DS	5
03836		00005		01910	N40012	DS	5
03837		00000		01920	N20001	DS	,*+1
				01930	******		FORTRAN ADJUST PROCEDURE ******
03841		00005		01940		DS	5
03842	13	03841	00005	01950	ADJUST	MM	*-1,5,610, MULTIPLY ADCOW BY 5
03854	43	03868	00099	01960		BD	*+14,99
03866	42	00000	00000	01970		BB	

95

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

03868                     01980         DORG *-9
03868  11  03841  00001   01990         AM   ADJUST-1,1,610,    ADD 1 TO ADCOW
03880  42  00000  00000   02000         BB
03887                     02010         DORG *-4
                          02020  ****** FORTRAN OP SEARCH ROUTINE     ******
03888  26  03959  03887   02030  OPSR   TF   OPSX,*-1,11,       MOVE IN PARAMETERS
03900  11  03887  00005   02040         AM   OPSR-1,5,10
03912  26  03990  03887   02050         TF   OPGT,OPSR-1,11
03924  11  03887  00001   02060         AM   OPSR-1,1,10
03936  16  03995  02917   02070         TFM  OPT1,OBASE
03948  21  03994  00000   02080         A    OPT1-1,,,          GENERATE TABLE ADDRESS
03959      00000          02090  OPSX   DS   ,*
03960  43  03984  04007   02100         BD   *+24,FX,,          IS IT FIXED OR FLOATING VARIABLE
03972  12  03995  00005   02110         SM   OPT1,5,10,         FLOATING, ADJUST TABLE ADDRESS
03984  26  00000  00000   02120         TF   ,,,               MOVE ENTRY ADDRESS TO A GT
03990      00000          02130  OPGT   DS   ,*-5
03995      00000          02140  OPT1   DS   ,*
03996  49  03887  00000   02150         B    OPSR-1,,6,         EXIT
04007      00001          02160  FX     DS   1,*
02917      00000          02170  OBASE  DS   ,*+10-1100
04012      00005          02180  FLAD   DC   5,04090
04017      00005          02190  FXAD   DC   5,03878
04022      00005          02200  REP4   DC   5,07230
04027      00005          02210  PRINT  DC   5,04354
04032      00005          02220  TRACE  DC   5,03496
04037      00005          02230  READ   DC   5,04426
04042      00005          02240  DOREF  DC   00005,17600,,DOREF,
04047      00005          02250  TYPE   DC   5,04282
04052      00005          02260  FLMUL  DC   5,04138
04057      00005          02270  FXMUL  DC   5,03950
04062      00005          02280  FLEXP  DC   5,04258
04067      00005          02290  FXEXP  DC   5,04234
04072      00005          02300  SUB1   DC   5,-02258
04077      00005          02310  ACCEPT DC   5,04378
04082      00005          02320  SUB2   DC   5,-02263
04087      00005          02330  ACCTAP DC   5,04402
04092      00005          02340  SUB3   DC   5,-02268
04097      00005          02350  PUNCH  DC   5,04330
04102      00005          02360  DOBASE DC   00005,17600,,DOBASE,
04107      00005          02370  PUNTAP DC   5,04306
04112      00005          02380  FLSUB  DC   5,04066
04117      00005          02390  FXSUB  DC   5,03902
04122      00005          02400  FLDVD  DC   5,04162
04127      00005          02410  FXDVD  DC   5,03974
04132      00005          02420  FLRDV  DC   5,04186
04137      00005          02430  FXRDV  DC   5,03998
04142      00005          02440  FXTOFL DC   5,04042
04147      00005          02450  FLTOFX DC   5,03854
04152      00005          02460  RFLSUB DC   5,04114
04157      00005          02470  RFXSUB DC   5,03926
04162      00005          02480  RSNFL  DC   5,04020
04167      00005          02490  RSNFX  DC   5,04020
04172      00005          02500  ATYPE  DC   5,04536
04177      00005          02510  SLASH  DC   5,06676
04182      00005          02520  REP    DC   5,07126
04187      00005          02530  ITYPE  DC   5,04448
04192      00005          02540  FTYPE  DC   5,04558
```

96

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

04197      00005          02550  ETYPE  DC   5,04580
04202      00005          02560  REDO   DC   5,07026
04207      00005          02570  HTYPE  DC   5,04602
04212      00005          02580  XTYPE  DC   5,07354
04217      00005          02590  ASTOP  DC   5,02395
04222      00005          02600  FRFAC  DC   5,03452
04227      00005          02610  TOFAC  DC   5,03408
04232      00005          02620  FACAD  DC   5,02492
04237      00005          02630  IO     DC   5,06090
04242      00005          02640  IOEND  DC   5,07006
04247      00005          02650  IXI    DC   5,04210
04252      00005          02660  PAR    DC   5,03378
04257      00005          02670  MAT    DC   5,06518
15999      00000          02680  BGNST  DS   ,15999
04258      00012          02690  LIS    DSC  12,0
17600      00001          02700         DC   1,@,17600
                          02710  ****** FORTRAN SYMBOL TABLE SEARCH ROUTINE     ******
04274      00005          02720         DS   5
04276  26  04347  04275   02730  SRFCT  TF   SRSY,*-1,11,       MOVE IN PARAMETERS
04288  11  04275  00005   02740         AM   SRFCT-1,5,10
04300  26  04398  04275   02750         TF   SRGT,SRFCT-1,11
04312  11  04275  00001   02760         AM   SRFCT-1,1,10
04324  15  04671  00004   02770         TDM  SBASE,4
04336  26  04670  00000   02780         TF   SBASE-1
04347      00000          02790  SRSY   DS   ,*
04348  45  04392  04671   02800         BNR  SRNX,SBASE,11
04360  16  04398  00000   02810         TFM  SRGT,0,67
04372  15  05085  00001   02820         TDM  RMSW,1,11
04384  49  04275  00000   02830         B    SRFCT-1,,6
04392                     02840         DORG *-3
04392  26  00000  04671   02850  SRNX   TF   ,SBASE,11,         MOVE OBJECT ADDRESS OF SYMBOL TO GT
04398      00000          02860  SRGT   DS   ,*-5
04404  15  09597  00000   02870         TDM  FPSW        ,0
04416  44  04484  04398   02880         BNF  *+68,SRGT,11
04428  43  04464  09599   02890         BD   *+36,SKIPSW
04440  33  04398  00000   02900         CF   SRGT,,6
04450      00000          02910  DMSW   DS   ,*-1
04451      00000          02920  COMSW  DS   ,*
04452  15  09597  00001   02930         TDM  FPSW,1,11
04464  16  04493  00027   02940         TFM  OPX,27,10
04476  49  04496  00000   02950         B    *+20
04484                     02960         DORG *-3
04484  16  04493  00017   02970         TFM  OPX,17,10
04493      00000          02980  OPX    DS   ,*-2
04496  11  04671  00001   02990         AM   SBASE,1,10
04508  25  04673  04671   03000         TD   FXORFL,SBASE,11,   SET FIX OR FLOAT
04520  11  04671  00001   03010         AM   SBASE,1,10
04532  25  04450  04671   03020         TD   DMSW,SBASE,11,     SET DIMENSION SWITCH
04544  15  04451  00000   03030         TDM  COMSW       ,0
04556  44  04580  04450   03040         BNF  *+24,DMSW
04568  15  04451  00001   03050         TDM  COMSW,1,,          SET COMMON SWITCH
04580  43  04600  04450   03060         BD   *+20,DMSW,,        IS IT DIMENSIONED
04592  49  04636  00000   03070         B    SRCFFL,,,     NO EXIT
04600                     03080         DORG *-3
04600  12  04671  00007   03090         SM   SBASE,7,10
04612  26  09589  04671   03100         TF   P1,SBASE,11,       SET I MAX
04624  11  04671  00007   03110         AM   SBASE,7,10
```

97

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
04636	33	04673	00000	03120	SRCFFL	CF	FXORFL
04648	12	04671	00002	03130		SM	SBASE,2,10
04660	49	04275	00000	03140		B	SRFCT-1,,6, EXIT
04671		00000		03150	SBASE	DS	,*
04673		00002		03160	FXORFL	DC	2,0
				03170	******		FORTRAN FORCE PROCEDURE ******
04678		00005		03180		DS	5
04680	26	04758	04679	03190	FORCE	TF	FLV,*-1,11, MOVE IN PARAMETERS
04692	11	04679	00005	03200		AM	FORCE-1,5,10
04704	26	04842	04679	03210		TF	FRV,FORCE-1,11
04716	11	04679	00005	03220		AM	FORCE-1,5,10
04728	26	04974	04679	03230		TF	FANS,FORCE-1,11
04740	11	04679	00002	03240		AM	FORCE-1,2,10
04752	14	00000	00104	03250		CM	, 104,8,IS LEFT OPERATOR LESS THAN OP LOW VALUE
04758		00000		03260	FLV	DS	,*-5
04764	47	04956	01300	03270		BL	FORCB+24
04776	16	04991	03977	03280		TFM	FT1,FBASE,, MOVE TABLE BASE TO FT1
04788	21	04990	04758	03290		A	FT1-1,FLV,11, GENERATE TABLE ADDRESS
04800	26	05013	04991	03300		TF	LVAL,FT1,11, REMOVE LEFT VALUE FROM TABLE
04812	11	04991	00007	03310		AM	FT1,7,10, ADD 7 TO TABLE ADDRESS
04824	26	04979	04991	03320		TF	FCODE,FT1,11, REMOVE CODE FROM TABLE
04836	14	00000	00104	03330		CM	, 104,8,IS RIGHT OPERATOR LESS THAN OP LOW VALUE
04842		00000		03340	FRV	DS	,*-5
04848	47	04956	01300	03350		BL	FORCB+24
04860	14	04842	00141	03360		CM	FRV,141,69, IS OP HIGHER THAN HIGH VALUE
04872	46	04992	01100	03370		BH	FORCC
04884	16	04991	03977	03380		TFM	FT1,FBASE,, MOVE TABLE BASE TO FT1
04896	21	04990	04842	03390		A	FT1-1,FRV,11, GENERATE TABLE ADDRESS
04908	11	04991	00002	03400		AM	FT1,2,10, ADD 2 TO TABLE ADDRESS
04920	26	05015	04991	03410		TF	RVAL,FT1,11, REMOVE RIGHT VALUE FROM TABLE
04932	24	05013	05015	03420	FORCB	C	LVAL,RVAL,, COMPARE LEFT VALUE TO RIGHT
04944	47	04968	01100	03430		BNH	*+24
04956	16	04979	00000	03440		TFM	FCODE,,, MOVE ZERO TO CODE
04968	16	00000	00000	03450		TFM	,,, MOVE ZERO OR CODE TO FANS
04979		00000		03460	FCODE	DS	,*
04974		00000		03470	FANS	DS	,*-5
04980	49	04679	00000	03480		B	FORCE-1,,6, EXIT
04991		00005		03490	FT1	DS	5,*
04992	16	05015	00000	03500	FORCC	TFM	RVAL,0,10
05004	49	04932	00000	03510		B	FORCB
05012				03520		DORG	*-3
05013		00002		03530	LVAL	DS	2
05015		00002		03540	RVAL	DS	2
03977		00000		03550	FBASE	DS	,*+2-1040
05017		00002		03560		DC	2,1,, RPAREN
05019		00002		03570		DC	2,50
05024		00005	03186	03580		DSA	L3
05025		00001		03590	RFLAG	DC	1,0
05027		00002		03600		DC	2,60,, GOTO
05029		00002		03610		DC	2,59
05034		00005	10074	03620		DSA	CODE6
05035		00001		03630	RXFLAG	DC	1,0
05037		00002		03640		DC	2,0,, COMPUTED GOTO
05039		00002		03650		DC	2,0
05044		00005	10146	03660		DSA	CODE9
05045		00001		03670	FTSW	DSC	1,0
05047		00002		03680		DC	2,2,, IF

98

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
05049		00002		03690		DC	2,0
05054		00005	10098	03700		DSA	CODE7
05055		00001		03710	CALLX	DC	1,0
05057		00002		03720		DC	2,0,, DO
05059		00002		03730		DC	2,0
05064		00005	10170	03740		DSA	CODE12
05065		00001		03750	FFRSW	DS	1
05067		00002		03760		DC	2,0,, DOA
05069		00002		03770		DC	2,0
05074		00005	03764	03780		DSA	CODE0
05075		00001		03790	SUBPSW	DS	1
05077		00002		03800		DC	2,10,, PLUS
05079		00002		03810		DC	2,10
05084		00005	10002	03820		DSA	CODE1
05085		00001		03830	RMSW	DS	1
05087		00002		03840		DC	2,0,, PRINT
05089		00002		03850		DC	2,0
05094		00005	10194	03860		DSA	CODE14
05095		00001		03870	FLAGSW	DS	1
05097		00002		03880		DC	2,0,, READ
05099		00002		03890		DC	2,0
05104		00005	10194	03900		DSA	CODE14
05105		00001		03910	CKSW	DS	1
05107		00002		03920		DC	2,0,, TYPE
05109		00002		03930		DC	2,0
05114		00005	10194	03940		DSA	CODE14
05115		00001		03950		DC	1,0
05117		00002		03960		DC	2,5,, MPY
05119		00002		03970		DC	2,5
05124		00005	10002	03980		DSA	CODE1
05125		00001		03990		DC	1,0
05127		00002		04000		DC	2,5,, EXP
05129		00002		04010		DC	2,4
05134		00005	10002	04020		DSA	CODE1
05135		00001		04030		DC	1,0
05137		00002		04040		DC	2,0,, ACCEPT
05139		00002		04050		DC	2,0
05144		00005	10194	04060		DSA	CODE14
05145		00001		04070		DC	1,0
05147		00002		04080		DC	2,0,, ACCEPT TAPE
05149		00002		04090		DC	2,0
05154		00005	10194	04100		DSA	CODE14
05155		00001		04110		DC	1,0
05157		00002		04120		DC	2,0,, PUNCH
05159		00002		04130		DC	2,0
05164		00005	10194	04140		DSA	CODE14
05165		00001		04150		DC	1,0
05167		00002		04160		DC	2,0,, PUNCH TAPE
05169		00002		04170		DC	2,0
05174		00005	10194	04180		DSA	CODE14
05175		00001		04190		DC	1,0
05177		00002		04200		DC	2,10,, MINUS
05179		00002		04210		DC	2,10
05184		00005	10002	04220		DSA	CODE1
05185		00001		04230		DC	1,0
05187		00002		04240		DC	2,5,, DIVIDE
05189		00002		04250		DC	2,5

99

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
05194		00005	‡0002	04260		DSA	CODE1
05195		00001		04270		DC	1,0
05197		00002		04280		DC	2,0,, RDVD
05199		00002		04290		DC	2,0
05204		00005	⊖3764	04300		DSA	CODE0
05205		00001		04310		DC	1,0
05207		00002		04320		DC	2,49,, CMA
05209		00002		04330		DC	2,48
05214		00005	‡0122	04340		DSA	CODE8
05215		00001		04350		DC	1,0
05217		00002		04360		DC	2,49,, LPAREN
05219		00002		04370		DC	2,1
05224		00005	‡0026	04380		DSA	CODE3
05225		00001		04390		DC	1,0
05227		00002		04400		DC	2,60,, STOP
05229		00002		04410		DC	2,59
05234		00005	‡0074	04420		DSA	CODE6
05235		00001		04430		DC	1,0
05237		00002		04440		DC	2,60,, PAUSE
05239		00002		04450		DC	2,59
05244		00005	‡0074	04460		DSA	CODE6
05245		00001		04470		DC	1,0
05247		00002		04480		DC	2,60,, CONTINUE
05249		00002		04490		DC	2,59
05254		00005	‡0074	04500		DSA	CODE6
05255		00001		04510		DC	1,0
05257		00002		04520		DC	2,60,, FORMAT
05259		00002		04530		DC	2,59
05264		00005	‡0242	04540		DSA	CODE17
05265		00001		04550		DC	1,0
05267		00002		04560		DC	2,5,, UNMNS
05269		00002		04570		DC	2,0
05274		00005	‡0050	04580		DSA	CODE4
05275		00001		04590		DC	1,0
05277		00002		04600		DC	2,0,, SENSE SWITCH
05279		00002		04610		DC	2,2
05284		00005	⊖3764	04620		DSA	CODE0
05285		00001		04630		DC	1,0
05287		00002		04640		DC	2,0,, CALL EXIT
05289		00002		04650		DC	2,0
05294		00005	‡0410	04660		DSA	CDCALL
05295		00001		04670		DC	1,0
05297		00002		04680		DC	2,60,, SC
05299		00002		04690		DC	2,60
05304		00005	⊖3764	04700		DSA	CODE0
05305		00001		04710		DC	1,0
05307		00002		04720		DC	2,60,, EQUAL
05309		00002		04730		DC	2,59
05314		00005	‡0002	04740		DSA	CODE1
05315		00001		04750		DC	1,0
05317		00002		04760		DC	2,0,, COLON
05319		00002		04770		DC	2,0
05324		00005	⊖3250	04780		DSA	CODE5
05325		00001		04790		DC	1,0
05327		00002		04800		DC	2,0,, SUBP
05329		00002		04810		DC	2,0
05334		00005	‡0338	04820		DSA	FCT1

100

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
05335		00001		04830		DC	1,0
05337		00002		04840		DC	2,0,, SUBF
05339		00002		04850		DC	2,0
05344		00005	‡0338	04860		DSA	FCT1
05345		00001		04870		DC	1,0
05347		00002		04880		DC	2,0,, DEF
05349		00002		04890		DC	2,0
05354		00005	‡0338	04900		DSA	FCT1
05355		00001		04910		DC	1,0
05357		00002		04920		DC	2,0,, CALL
05359		00002		04930		DC	2,0
05364		00005	‡0218	04940		DSA	CODE15
05365		00001		04950		DC	1,0
05367		00002		04960		DC	2,0,, RETURN
05369		00002		04970		DC	2,0
05374		00005	‡0362	04980		DSA	FCTRT
05375		00001		04990		DC	1,0
05377		00002		05000		DC	2,0,, DUMMY
05379		00002		05010		DC	2,60
05384		00005	⊖3764	05020		DSA	CODE0
05385		00001		05030		DC	1,0
05387		00002		05040		DC	2,0,, END
05389		00002		05050		DC	2,0
05394		00005	‡0074	05060		DSA	CODE6
05395		00001		05070		DC	1,0
05397		00002		05080		DC	2,1,, FETCHV
05399		00002		05090		DC	2,0
05404		00005	‡0194	05100		DSA	CODE14
05405		00001		05110		DC	1,0
05407		00002		05120		DC	2,1,, FETCHL
05409		00002		05130		DC	2,0
05414		00005	‡0194	05140		DSA	CODE14
05415		00001		05150		DC	1,0
05417		00002		05160		DC	2,1,, FINDV
05419		00002		05170		DC	2,0
05424		00005	‡0194	05180		DSA	CODE14
05425		00001		05190		DC	1,0
05427		00002		05200		DC	2,1,, FINDL
05429		00002		05210		DC	2,0
05434		00005	‡0194	05220		DSA	CODE14
05435		00001		05230		DC	1,0
05437		00002		05240		DC	2,1,, RECORDV
05439		00002		05250		DC	2,0
05444		00005	‡0194	05260		DSA	CODE14
05445		00001		05270		DC	1,0
05447		00002		05280		DC	2,1,, RECORDL
05449		00002		05290		DC	2,0
05454		00005	‡0194	05300		DSA	CODE14
05455		00001		05310		DC	1,0
05457		00002		05320		DC	2,0,, SO
05459		00002		05330		DC	2,0
05464		00005	‡0290	05340		DSA	CDSSAB
05465		00001		05350		DC	1,0
05467		00002		05360		DC	2,0,, S1
05469		00002		05370		DC	2,0
05474		00005	‡0266	05380		DSA	CODESS
05475		00001		05390		DC	1,0

101

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

05477     00002           05400         DC   2,0,,              S2
05479     00002           05410         DC   2,0
05484     00005  ±0266    05420         DSA  CODESS
05485     00001           05430         DC   1,0
05487     00002           05440         DC   2,0,,              S3
05489     00002           05450         DC   2,0
05494     00005  ±0266    05460         DSA  CODESS
05495     00001           05470         DC   1,0
05497     00002           05480         DC   2,0,,              CALL LINK
05499     00002           05490         DC   2,0
05504     00005  ±0410    05500         DSA  CDCALL
                          05600  *$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
                          05690  ******    FORTRAN II GTNS, RMNS, RPNS ROUTINES     ******
                          05750  *$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
05509     00005           05770         DS   5
05510 15  05518  0000±    05780  RMNS   TDM  RMNS+8,1,11,       SET RMNS SWITCH TO FLAG 1
05522 27  05600  05509    05790         BT   RGR,RMNS-1
05538     00005           05800         DS   5
05540 15  05518  00001    05810  GTNS   TDM  RMNS+8,1,,         SET GTNS SWITCH TO 1
05552 27  05600  05539    05820         BT   RGR,GTNS-1
05568     00005           05830         DS   5
05570 15  05518  00000    05840  RPNS   TDM  RMNS+8,0,,         SET RPNS SWITCH TO 0
05582 27  05600  05569    05850         BT   RGR,RPNS-1
05598     00005           05860         DS   5
05600 26  05654  05599    05870  RGR    TF   RGRI,*-1,11,       MOVE IN ADDRESS OF I
05612 11  05599  0000±    05880         AM   RGR-1,5,10
05624 26  05695  05599    05890         TF   RGRS,RGR-1,11,     MOVE IN ADDRESS OF SYMBOL
05636 11  05599  00001    05900         AM   RGR-1,1,10
05648 13  00000  0000±    05910         MM          ,4             ,10,
05654     00000           05920  RGRI   DS          ,*-5
05660 11  00099  ±5999    05930         AM   99     ,BGNST      , ,SET UP STRING ADDRESS
05672 43  05704  05518    05940         BD   REMGET ,RMNS+8     , ,
05684 26  00099  00000    05950         TF   99     ,           ,6 ,PLACE SYMBOL ON STRING
05695     00000           05960  RGRS   DS          ,*
05696 49  05599           05970         B7   RGR-1  ,           ,6 ,
05704 26  05695  00099    05980  REMGET TF   RGRS,99,611,       TAKE SYMBOL FROM STRING
05716 44  05599  05518    05990         BNF  RGR-1,RMNS+8,6,    EXIT IF GTNS
05728 11  00099  00001    06000         AM   99     ,1          ,10,
05740 26  00092  00099    06010         TF   92     ,99         , ,
05752 12  00092  0000±    06020         SM   92     ,4          ,10,
05764 31  00092  00099    06030         TR   92     ,99         ,611,CLOSE STRING
05776 49  05599  00000    06040         B    RGR-1,,6,          EXIT
05784                     06050         DORG *-3
05784 43  05804  05518    06060  RGRNUL BD   *+20,RMNS+8,,      BRANCH IF RMNS OR GTNS
05796 49  05599  00000    06070         B    RGR-1,,6,          EXIT IF RPNS
05804                     06080         DORG *-3
05804 16  05695  0±0000   06090         TFM  RGRS,0,68,         MOVE NULL TO SYMBOL
05816 49  05599  00000    06100         B    RGR-1,,6,          EXIT
05824                     06110         DORG *-3
                          06120  ******    FORTRAN GENERATE TEMPORARY STORAGE ROUTINE     ******
05828     00005           06130         DS   5
05830 16  06601  0±0000   06140  GNRP   TFM  GI,,8,       SET GI TO ZERO
05842 15  06892  00000    06150         TDM  GTSBSW,0
05854 11  06601  00001    06160         AM   GI,1,10,           ADD 1 TO GI
05866 17  05540  ±5882    06170         BTM  GTNS,*+16,,        GET ITH SYMBOL
05882     00005  ±6601    06180         DSA  GI,GA
05887     00005  ±6457
```

102

```
LOCTN  OP  P/L    Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

05888 14  06457  0±101    06190         CM   GA,101,8,          COMPARE TO FAC ( 101 )
05900 47  05854  01200    06200         BNE  GNRP+24
05912 14  06838  00000    06210         CM   TMAX,,9,           HAVE ANY TEMPS BEEN GENERATED
05924 46  06040  01200    06220         BE   GNONE
05936 26  09575  02303    06230  GYES   TF   GBASE,TBASE
05948 16  06007  00000    06240         TFM  GCNT,0,9
05960 12  09575  00007    06250         SM   GBASE,7,10
05972 44  06458  09575    06260         BNF  GFREE,GBASE,11,    BRANCH IF FREE ONE FOUND
05984 11  06007  00001    06270  GTPT   AM   GCNT,1,10
05996 14  06838  ±0000    06280         CM   TMAX
06007     00000           06290  GCNT   DS   ,*
06008 46  06040  01200    06300         BE   GNONE
06020 12  09575  00010    06310         SM   GBASE,10,10
06032 49  05972  00000    06320         B    GYES+36
06040                     06330         DORG *-3
06040 11  06838  00001    06340  GNONE  AM   TMAX,1,10
06052 43  06240  06892    06350         BD   FULLCK-24,GTSBSW
06064 26  06705  06843    06360         TF   GCOW,ADCOW,,       MOVE ADCOW TO GCOW
06076 11  06705  00019    06370         AM   GCOW,19,10,        ADD 19 FOR LENGTH OF INSTS
06088 21  06705  09578    06380         A    GCOW,LNG
06100 26  06835  06705    06390         TF   TCOW,GCOW,,        SAVE CONSTANT ADDRESS
06112 15  07343  00001    06400         TDM  SS2,1
06124 17  06898  06140    06410         BTM  PUTX,*+16,,        OUTPUT STORE FAC INST
06140     00005  ±6846    06420         DSA  BTM,FRFAC,GCOW
06145     00005  0±222
06150     00005  ±6705
06152 13  06705  00005    06430         MM   GCOW,5,10,         IS GCOW ODD OR EVEN
06164 43  06434  00099    06440         BD   GADD1,99
06176 11  06705  00002    06450         AM   GCOW,2,10,         ADD 2 TO GCOW
06188 15  07342  00001    06460  GPUT   TDM  SS1,1
06200 17  06898  ±6216    06470         BTM  PUTX,*+16
06216     00005  ±6848    06480         DSA  B,GCOW,BLANK
06221     00005  ±6705
06226     00005  09344
06228 26  06843  06705    06490         TF   ADCOW,GCOW,,       RESERVE SPACE FOR NEW TEMP
06240 26  09575  02303    06500         TF   GBASE,TBASE,,      MOVE IN NEXT AVAILABLE TABLE ADDRESS
06252 22  09574  06838    06510         S    GBASE-1,TMAX
06264 24  09575  09525    06520  FULLCK C    GBASE,DDMAX
06276 46  06320  01300    06530         BNL  GPUTA
06288 17  08998  ±9391    06540         BTM  ERRT,FULMES
06300 46  06312  01400    06550  MNCLOV BV   *+12
06312 49  00796           06560         B7   MONCAL
06320 26  09575  06835    06570  GPUTA  TF   GBASE,TCOW,6
06332 11  09575  00004    06580  GFLAG  AM   GBASE,4,10
06344 16  09575  00010    06590         TFM  GBASE,10,610
06356 12  09575  00003    06600         SM   GBASE,3,10
06368 25  09575  05095    06610         TD   GBASE,FLAGSW,6
06380 43  15442  06892    06620         BD   GTFIN,GTSBSW
06392 15  09314  00000    06630         TDM  FSW,0
06404 17  05570  ±6420    06640  GTJW   BTM  RPNS,*+16
06420     00005  ±6601    06650         DSA  GI,GBASE-1
06425     00005  09574
06426 49  05829  00000    06660         B    GNRP-1,,6,         EXIT
06434                     06670         DORG *-3
06434 11  06705  00001    06680  GADD1  AM   GCOW,1,10,         ADD 1 TO GCOW
06446 49  06188  00000    06690         B    GPUT
06457     00000           06700  GA     DS   ,*
```

103

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
06458	11	09575	00001	06710	GFREE	AM	GBASE,1,10
06470	43	06494	09575	06720		BD	GTST,GBASE,11
06482	44	06526	06892	06730		BNF	NGFRE,GTSBSW
06494	43	06344	06892	06740	GTST	BD	GFLAG+12,GTSBSW
06506	12	09575	00001	06750		SM	GBASE,1,10
06518	49	05984		06760		B7	GTPT
06526	12	09575	00004	06770	NGFRE	SM	GBASE,4,10
06538	26	06835	09575	06780		TF	TCOW,GBASE,11,	MOVE ADDRESS OF GT TO TCOW
06550	15	07343	00001	06790		TDM	SS2,1
06562	17	06898	06578	06800		BTM	PUTX,*+16,,	OUTPUT STORE FAC INST
06578		00005	06846	06810		DSA	BTM,FRFAC,TCOW
06583		00005	04222				
06588		00005	06835				
06590	49	06332	00000	06820		B	GFLAG
06601		00005		06830	GI	DS	5,*
06605		00004		06840		DC	4,1000
06606	14	06605	08101	06850	GTCL	CM	GTCL-1,101,8
06618	46	06654	01200	06860		BE	*+36
06630	24	02302	06605	06870		C	TBASE-1,GTCL-1
06642	46	06682	01100	06880		BH	GTFLCL
06654	42	00000	00000	06890		BB	
06656				06900		DORG	*-9
06656	26	06673	06605	06910	GCLEAR	TF	*+17,GTCL-1
06668	15	00007	00000	06920		TDM	7
06680	42	00000	00000	06930		BB	,,0
06682				06940		DORG	*-9
06682	26	06699	06605	06950	GTFLCL	TF	*+17,GTCL-1
06694	33	00004	00000	06960		CF	4
06705		00005		06970	GCOW	DS	5,*
06706	49	06656	00000	06980		B	GCLEAR
06714				06990		DORG	*-3
06714	26	09575	02303	07000	GTSCL	TF	GBASE,TBASE
06726	22	09574	06838	07010		S	GBASE-1,TMAX
06738	11	09575	00003	07020		AM	GBASE,3,10
06750	24	09575	02303	07030		C	GBASE,TBASE
06762	47	06776	01100	07040		BNH	*+14
06774	42	00000	00000	07050		BB	
06776				07060		DORG	*-9
06776	15	09575	00000	07070		TDM	GBASE,,6
06788	12	09575	00003	07080		SM	GBASE,3,10
06800	33	09575	00000	07090		CF	GBASE,,6
06812	11	09575	00013	07100		AM	GBASE,13,10
06824	49	06750	00000	07110		B	GTSCL+36
06835		00000		07120	TCOW	DS	,*
06838		00003		07130	TMAX	DC	3,0
06843		00005		07140	ADCOW	DC	5,0
06844		00001		07150		DC	1,a
06846		00002		07160	BTM	DC	2,17
06848		00002		07170	B	DC	2,49
06853		00005		07180	D1	DS	5
06858		00005		07190	DI	DS	5
06863		00005		07200	D2	DS	5
06868		00005		07210	DJ	DS	5
06873		00005		07220	D3	DS	5
06878		00005		07230	DK	DS	5
06883		00005		07240	D4	DS	5
06888		00005		07250	T1	DS	5

104

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS		
06891		00003		07260	L	DS	3		
06892		00001		07270	GTSBSW	DSC	1,0		
				07280	******		DISC OUTPUT ROUTINES FOR OBJECT PROGRAM		
06897		00005		07290		DS	5		
06898	26	08636	06897	07300	PUTX	TF	PUT1	,PUTX-1	,11
06910	11	06897	00005	07310		AM	PUTX-1	,5	,10
06922	26	08641	06897	07320		TF	PUT2	,PUTX-1	,11
06934	11	06897	00005	07330		AM	PUTX-1	,5	,10
06946	31	08291	08647	07340		TR	TYPET	,TYPEX	
06958	26	08646	06897	07350	PUTXA	TF	PUT3	,PUTX-1	,11
06970	11	06897	00002	07360		AM	PUTX-1	,2	,10
06982	24	08304	08310	07370	PUTXB	C	CODET	,LSTYPE	
06994	47	07470	01200	07380		BNE	PUTDIF		
07006	24	07365	06843	07390		C	SAVCOW	,ADCOW	
07018	47	07610	01200	07400		BNE	OUTSEQ		
07030	24	08312	08293	07410		C	BAL	,SLNG	
07042	47	07770	01300	07420		BL	PUTNXT		
07054	43	07074	08304	07430	PUTEST	BD	PUTINS	,CODET	
07066	49	07394		07440		B7	PUTCAD		
				07450	******		PLACE INSTRUCTIONS IN OUTPUT BUFFER		
07074	11	08322	00002	07460	PUTINS	AM	NEXT	,2	,10
07086	26	08322	08636	07470		TF	NEXT	,PUT1	,611
07098	24	02262	08646	07480		C	LOCOM	,PUT3	,11
07110	47	07134	01100	07490		BNH	*+24		
07122	43	07334	07343	07500		BD	FLG2	,SS2	
07134	12	08322	00001	07510	PUTXC	SM	NEXT	,1	,10
07146	24	02262	08641	07520		C	LOCOM	,PUT2	,11
07158	47	07182	01100	07530		BNH	*+24		
07170	43	07194	07342	07540		BD	*+24	,SS1	
07182	33	08322	00000	07550		CF	NEXT	,	,6
07193		00000		07560	PUTGT	DS	,*		
07194	11	08322	00006	07570		AM	NEXT	,6	,10
07206	26	08322	08641	07580		TF	NEXT	,PUT2	,611
07218	43	07354	07344	07590		BD	FLG3	,SS3	
07230	11	08322	00005	07600	PUTXD	AM	NEXT	,5	,10
07242	26	08322	08646	07610		TF	NEXT	,PUT3	,611
07254	43	07374	07345	07620		BD	FLG4	,SS4	
07266	16	07345	00000	07630	PUTXE	TFM	SS4	,0	,8
07278	12	08312	00012	07640		SM	BAL	,12	,10
07290	21	06843	08293	07650	PUTXF	A	ADCOW	,SLNG	
07302	26	07365	06843	07660		TF	SAVCOW	,ADCOW	
07314	21	08317	08293	07670		A	LNGAD	,SLNG	,6
07326	49	06897		07680		B7	PUTX-1	,	,6
07334	32	08322	00000	07690	FLG2	SF	NEXT	,	,6
07342		00000		07700	SS1	DS	,*-3		
07343		00000		07710	SS2	DS	,*-2		
07344		00000		07720	SS3	DS	,*-1		
07345		00000		07730	SS4	DS	,*		
07346	49	07134		07740		B7	PUTXC		
07354	32	08322	99999	07750	FLG3	SF	NEXT	,99999	,67
07365		00000		07760	SAVCOW	DS	,*		
07366	49	07230		07770		B7	PUTXD		
07374	32	08322	00000	07780	FLG4	SF	NEXT	,	,6
07386	49	07266		07790		B7	PUTXE		
				07800	******		PLACE DSA ADDRESSES IN OUTPUT BUFFER		
07394	21	08322	08293	07810	PUTCAD	A	NEXT	,SLNG	
07406	22	08312	08293	07820		S	BAL	,SLNG	

105

```
LOCTN  OP   P/L    Q        PG/LN  LABEL   MNEM  OPERANDS AND REMARKS

07418  26  08322  08646     07830          TF    NEXT         ,PUT3        ,611
07430  43  07450  08301     07840          BD    *+20         ,CODET-3
07442  49  07290            07850          B7    PUTXF
07450  16  07365  99999     07860          TFM   SAVCOW       ,99999
07462  49  07314            07870          B7    PUTXF+24
                            07880   ******   THIS TYPE NOT EQUAL TO LAST
07470  26  08310  08304     07890  PUTDIF  TF    LSTYPE       ,CODET
07482  24  07365  06843     07900          C     SAVCOW       ,ADCOW
07494  47  07610  01200     07910          BNE   OUTSEQ
07506  24  08312  08295     07920          C     BAL          ,SSLNG
07518  47  07770  01300     07930          BL    PUTNXT
07530  11  08322  00001     07940  PUTXG   AM    NEXT         ,1           ,10
07542  25  08322  08291     07950          TD    NEXT         ,TYPET       ,6
07554  11  08322  00002     07960          AM    NEXT         ,2           ,10
07566  16  08322  00000     07970          TFM   NEXT         ,0           ,610
07578  26  08317  08322     07980          TF    LNGAD        ,NEXT
07590  12  08312  00003     07990          SM    BAL          ,3           ,10
07602  49  07054            08000          B7    PUTEST
                            08010   ******   OUT OF SEQUENCE
07610  24  08312  08299     08020  OUTSEQ  C     BAL          ,SOLNG
07622  47  07770  01300     08030          BL    PUTNXT
07634  14  08312  00075     08040          CM    BAL          ,75          ,10
07646  46  07694  01200     08050          BE    PUTXH
07658  11  08322  00001     08060          AM    NEXT         ,1           ,10
07670  12  08312  00001     08070          SM    BAL          ,1           ,10
07682  15  08322  00000     08080          TDM   NEXT         ,            ,6
07693      00001            08090          DC    1,@,*
07694  11  08322  00005     08100  PUTXH   AM    NEXT         ,5           ,10
07706  12  08312  00005     08110          SM    BAL          ,5           ,10
07718  43  07750  08301     08120          BD    PUTTA        ,CODET-3
07730  26  08322  06843     08130  PUTXJ   TF    NEXT         ,ADCOW       ,6
07742  49  07530            08140          B7    PUTXG
07750  26  08322  08641     08150  PUTTA   TF    NEXT         ,PUT2        ,611
07762  49  07530            08160          B7    PUTXG
                            08170   ******   NEXT CARD BUFFER TO BE USED
07770  11  08322  00001     08180  PUTNXT  AM    NEXT         ,1           ,10
07782  25  08322  08290     08190          TD    NEXT         ,FLGRM       ,6
07794  14  08631  08551     08200          CM    PREBUF       ,BUF4
07806  46  07874  01200     08210          BE    PUTPCH
07818  11  08631  00075     08220          AM    PREBUF       ,75          ,10
07830  26  08322  08631     08230          TF    NEXT         ,PREBUF
07842  12  08322  00001     08240          SM    NEXT         ,1           ,10
07854  16  08312  00075     08250  PUTXI   TFM   BAL          ,75          ,10
07866  49  07694            08260          B7    PUTXH
                            08270   ******   OUTPUT BUFFER LOAD TO DISC
07874  15  08626  00000     08280  PUTPCH  TDM   BUF4+75
07885      00001            08290          DGM   *
07886  16  00565  07909     08300          TFM   IORT         ,*+23
07898  49  00532  08268     08310          B     IORT         ,PUTXX       ,7
07910  11  08281  00003     08320          AM    PUTXZ        ,3           ,10
07922  16  08631  08326     08330          TFM   PREBUF       ,BUF1
07934  16  08322  08325     08340          TFM   NEXT         ,BUF1-1
07946  16  07964  08626     08350          TFM   *+18         ,BUF4+75
07958  26  08626  09352     08360          TF    BUF4+75      ,N13089
07970  12  07964  00012     08370          SM    *-6          ,12          ,10
07982  14  07964  08326     08380          CM    *-18         ,BUF1
07994  46  07958  01100     08390          BH    *-36
```

106

```
LOCTN  OP   P/L    Q        PG/LN  LABEL   MNEM  OPERANDS AND REMARKS

08006  49  07854  00000     08400          B     PUTXI
08018  26  08041  08017     08410  PUTC    TF    *+23         ,*-1         ,11
08030  33  08041  00000     08420          CF    *+11
08042  24  08041  02262     08430          C     *-1          ,LOCOM       ,6
08054  46  08114  01100     08440          BH    PUTCA
08066  31  08291  08662     08450          TR    TYPET        ,TYPECR
08078  26  06897  08017     08460  PUTCB   TF    PUTX-1       ,PUTC-1
08090  49  06958  00000     08470          B     PUTXA
08102  26  08017  08101     08480  PUTD    TF    PUTC-1,PUTD-1
08114  31  08291  08677     08490  PUTCA   TR    TYPET        ,TYPECN
08126  49  08078  00000     08500          B     PUTCB
08138  26  08641  08137     08510  PUTA    TF    PUT2         ,PUTA-1      ,11
08150  11  08137  00005     08520          AM    PUTA-1       ,5           ,10
08162  26  08646  08137     08530          TF    PUT3         ,PUTA-1      ,11
08174  11  08137  00001     08540          AM    PUTA-1       ,1           ,10
08186  26  06897  08137     08550          TF    PUTX-1       ,PUTA-1
08198  31  08291  08692     08560          TR    TYPET        ,TYPEA
08210  49  07610  00000     08570          B     OUTSEQ
08222  31  08291  08253     08580  PUTRM   TR    TYPET,TYPERM
08234  26  06897  08221     08590          TF    PUTX-1,PUTRM-1
08246  49  06958            08600          B7    PUTXA
08253      00001            08610  TYPERM  DSC   1,2
08255      00002            08620          DC    2,2
08257      00002            08630          DC    2,5
08259      00002            08640          DC    2,10
08261      00002            08650          DC    2,11
08266      00005            08660          DC    5,100
08267      00001            08670          DC    1,@
08268      00002            08680  PUTXX   DSC   2,2
08274      00005  08276     08690          DSA   PUTXY
08275      00001            08700          DC    1,@
08276      00001            08710  PUTXY   DSC   1,0
08281      00005            08720  PUTXZ   DC    5,0
08284      00003            08730          DC    3,3
08289      00005  08326     08740          DSA   BUF1
08290      00001            08750  FLGRM   DC    1,@
08291      00001            08760  TYPET   DS    1
08293      00002            08770  SLNG    DS    2
08295      00002            08780  SSLNG   DS    2
08297      00002            08790  NLNG    DS    2
08299      00002            08800  SOLNG   DS    2
08304      00005            08810  CODET   DS    5
08305      00001            08820          DS    1
08310      00005            08830  LSTYPE  DC    5,0
08312      00002            08840  BAL     DC    2,75
08317      00005            08850  LNGAD   DS    5
08322      00005  08326     08860  NEXT    DSA   BUF1
08325      00001  X2        08870          DAS   1
08326      00050            08880  BUF1    DSC   50,0
08376      00025            08890          DSC   25,0
08401      00050            08900  BUF2    DSC   50,0
08451      00025            08910          DSC   25,0
08476      00050            08920  BUF3    DSC   50,0
08526      00025            08930          DSC   25,0
08551      00050            08940  BUF4    DSC   50,0
08601      00025            08950          DSC   25,0
08626      00001            08960  GRMK    DGM
```

107

```
LOCTN OP  P/L   Q      PG/LN LABEL  MNEM OPERANDS AND REMARKS
08631     00005 08326  08970 PREBUF DSA  BUF1
08636     00005        08980 PUT1   DS   5
08641     00005        08990 PUT2   DS   5
08646     00005        09000 PUT3   DS   5
08647     00001        09010 TYPEX  DSC  1,1
08649     00002        09020        DC   2,12
08651     00002        09030        DC   2,15
08653     00002        09040        DC   2,20
08655     00002        09050        DC   2,21
08660     00005        09060        DC   5,1
08661     00001        09070        DC   1,a
08662     00001        09080 TYPECR DSC  1,3
08664     00002        09090        DC   2,5
08666     00002        09100        DC   2,8
08668     00002        09110        DC   2,13
08670     00002        09120        DC   2,14
08675     00005        09130        DC   5,10
08676     00001        09140        DC   1,a
08677     00001        09150 TYPECN DSC  1,2
08679     00002        09160        DC   2,5
08681     00002        09170        DC   2,8
08683     00002        09180        DC   2,13
08685     00002        09190        DC   2,14
08690     00005        09200        DC   5,100
08691     00001        09210        DC   1,a
08692     00001        09220 TYPEA  DSC  1,3
08694     00002        09230        DC   2,5
08696     00002        09240        DC   2,13
08698     00002        09250        DC · 2,13
08700     00002        09260        DC   2,14
08705     00005        09270        DC   5,1000
08706     00001        09280        DC   1,a
08711     00005        09290        DS   5
08712 26  08846 08711  09300 CANDS  TF   CANDSA     ,*-1      ,11
08724 17  05510 08740  09310        BTM  RMNS       ,*+16
08740     00005 09485  09320        DSA  I,DX
08745     00005 08987
08746 17  05510 08762  09330        BTM  RMNS       ,*+16
08762     00005 09485  09340        DSA  I,DY
08767     00005 08991
08768 33  08988 00000  09350        CF   DY-3
08780 32  08987 00000  09360        SF   DX         ,         ,10
08792 25  08791 08984  09370        TD   *-1        ,DX-3
08804 14  08791 00009  09380        CM   *-13       ,9        ,1011
08816 47  08840 01200  09390        BNE  *+24
08828 32  08991 00000  09400        SF   DY
08840 26  00000 08991  09410        TF              ,DY
08846     00000        09420 CANDSA DS   ,*-5
08852 11  08711 00005  09430        AM   CANDS-1    ,5        ,10
08864 17  05510 08880  09440        BTM  RMNS       ,*+16
08880     00005 09485  09450        DSA  I,DX
08885     00005 08987
08886 14  08987 00104  09460        CM   DX         ,104      ,8
08898 47  08930 01200  09470        BNE  *+32
08910 11  08711 00001  09480 CANDRT AM   CANDS-1    ,1        ,10
08922 49  08711 00000  09490        B    CANDS-1    ,         ,6
08930                  09500        DORG *-3
```

108

```
LOCTN OP  P/L   Q      PG/LN LABEL  MNEM OPERANDS AND REMARKS
08930 17  04276 08946  09510        BTM  SRFCT      ,*+16
08946     00005 08987  09520        DSA  DX,DX
08951     00005 08987
08952 26  08970 08711  09530        TF   *+18       ,CANDS-1  ,11
08964 26  00000 08987  09540        TF              ,DX
08976 49  08910 00000  09550        B    CANDRT
08987     00000        09560 DX     DS   ,*
08991     00004        09570 DY     DS   4
08996     00005        09580        DC   5          ,0        ,  ,
08998 38  09084 00901  09590 ERRT   WN   LSTN       ,901      ,  ,
09010 25  09105 09608  09600        TD   EM1+14,SCNT-3
09022 25  09107 09609  09610        TD   EM1+16,SCNT-2
09034 25  09109 09610  09620        TD   EM1+18,SCNT-1
09046 25  09111 09611  09630        TD   EM1+20,SCNT
09058 39  09091 00901  09640        WA   EM1        ,901      ,  ,
09070 39  08997 00900  09650        WA   ERRT-1     ,900      ,6 ,
09082 42  00000 00000  09660        BB              ,         ,  ,
09084     00000        09670 LSTN   DS   ,*-9       ,  ,
09088                  09680        DORG LSTN+4
09088     00001        09690        DC   1,a
09091     00012 X2     09700 EM1    DAC  12,      + 7777a
09115     00001 X2     09710        DAS  1
09116     00002        09720 BLK1   DSC  2,22
09122     00005 09124  09730        DSA  BLK1A
09123     00001        09740        DC   1,a
09124     00001        09750 BLK1A  DSC  1,0
09129     00005        09760        DC   5,17876
09132     00003        09770        DC   3,41
09137     00005 10000  09780        DSA  CODE1-2
09138     00001        09790        DC   1,a
09139     00001        09800        DS   1
09140     00002        09810 BLK2   DSC  2,22
09146     00005 09148  09820        DSA  BLK2A
09147     00001        09830        DC   1,a
09148     00001        09840 BLK2A  DSC  1,0
09153     00005        09850        DC   5,17936
09156     00003        09860        DC   3,60
09161     00005 10000  09870        DSA  CODE1-2
09162     00001        09880        DC   1,a
09163     00001        09890        DS   1
09164     00002        09900 BLK3   DSC  2,22
09170     00005 09172  09910        DSA  BLK3A
09171     00001        09920        DC   1,a
09172     00001        09930 BLK3A  DSC  1,0
09177     00005        09940        DC   5,18000
09180     00003        09950        DC   3,41
09185     00005 10000  09960        DSA  CODE1-2
09186     00001        09970        DC   1,a
09187     00001        09980        DS   1
09188     00002        09990 BLK4   DSC  2,22
09194     00005 09196  10000        DSA  BLK4A
09195     00001        10010        DC   1,a
09196     00001        10020 BLK4A  DSC  1,0
09201     00005        10030        DC   5,18041
09204     00003        10040        DC   3,41
09209     00005 10000  10050        DSA  CODE1-2
09210     00001        10060        DC   1,a
```

109

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
09211		00001		10070		DS	1
09212		00002		10080	BLK5	DSC	2,22
09218		00005	Θ9220	10090		DSA	BLK5A
09219		00001		10100		DC	1,a
09220		00001		10110	BLK5A	DSC	1,0
09225		00005		10120		DC	5,17917
09228		00003		10130		DC	3,019
09233		00005	±4100	10140		DSA	SUBCDS-2
09234		00001		10150		DC	1,a
09235		00001		10160		DS	1
09236		00002		10170	BLK6	DSC	2,22
09242		00005	Θ9244	10180		DSA	BLK6A
09243		00001		10190		DC	1,a
09244		00001		10200	BLK6A	DSC	1,0
09249		00005		10210		DC	5,18082
09252		00003		10220		DC	3,019
09257		00005	±4100	10230		DSA	SUBCDS-2
09258		00001		10240		DC	1,a
09259		00001		10250		DS	1
09260		00002		10260	BLK7	DSC	2,22
09266		00005	Θ9268	10270		DSA	BLK7A
09267		00001		10280		DC	1,a
09268		00001		10290	BLK7A	DSC	1,0
09273		00005		10300		DC	5,18101
09276		00003		10310		DC	3,019
09281		00005	±4100	10320		DSA	SUBCDS-2
09282		00001		10330		DC	1,a
09283		00001		10340		DS	1
09284		00002		10350	BLK8	DSC	2,22
09290		00005	Θ9292	10360		DSA	BLK8A
09291		00001		10370		DC	1,a
09292		00001		10380	BLK8A	DSC	1,0
09297		00005		10390		DC	5,18120
09300		00003		10400		DC	3,019
09305		00005	±4100	10410		DSA	SUBCDS-2
09306		00001		10420		DC	1,a
09311		00005		10430	CKCOW	DC	5,0
09312		00001		10440		DC	1,a
09313		00001		10450	SSSW	DS	00001,,SSSW,,
09314		00001		10460	FSW	DS	00001,,FSW,,
09315		00001		10470	IO1	DS	00001,,IO1,,
09316		00001		10480	IO2	DS	00001,,IO2,,
09317		00001		10490	IO3	DS	00001,,IO3,,
09318		00001		10500	STEMP1	DS	00001,,STEMP1,,
09319		00001		10510	STEMP2	DS	00001,,STEMP2,,
09320		00001		10520	CALLSW	DS	00001,,CALLSW,,
09321		00001		10530	DOSW	DSC	1,0
09322		00001		10540	EXIND	DS	00001,,EXIND,,
09323		00001		10550	SUBSW	DS	00001,,SUBSW,,
09324		00001		10560	REGSW	DS	1
09325		00001		10570	RSW	DS	1
09325		00000		10580	SWAREA	DS	,*
09327		00002		10590	TFM	DC	00002,16,,TFM,
09329		00002		10600	SF	DC	00002,32,,SF,
09331		00002		10610	CF	DC	00002,33,,CF
09333		00002		10620	TF	DC	00002,26,,TF,
09335		00002		10630	AM	DC	00002,11,,AM,

110

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
09337		00002		10640	MM	DC	00002,13,,MM,
09339		00002		10650	H	DC	00002,48,,H,
09352		00013		10660	N13089	DC	00013,0
09341		00000		10670	ZERO	DS	,*-11
09345		00000		10680	ZERO6	DS	,*-7
09343		00000		10690	ZERO4	DS	,*-9
09344		00000		10700	ZERO5	DS	,*-8
09344		00000		10710	BLANK	DS	,*-8
09357		00005		10720	N13092	DC	5,00099,,,
09359		00002		10730	SUB	DC	00002,22,,SUB,
09364		00005		10740	N13133	DC	5,00095,,,
09366		00002		10750	MOD	DC	2,0
09368		00002		10760	MPY	DC	00002,23
09370		00002		10770	BT	DC	00002,27,,BT,
09372		00002		10780	RCTY	DC	00002,34,,RCTY,
09374		00002		10790	WATY	DC	00002,39,,WATY,
09378		00004		10800	GLNO	DC	00004,000,,GLNO,
09380		00002		10810	ADD	DC	00002,21,,ADD,
09382		00002		10820	SM	DC	00002,12,,SM,
09385		00003		10830	RVSN	DC	3,125
09388		00003		10840	RMOD	DC	3,123
09391		00030	X2	10850	FULMES	DAC	30, SYMBOL TABLE FULLa
09453		00004		10860	DOA	DC	00004,109,,DOA,
09455		00002		10870	MNS5	DC	00002,-05,,MNS5,
09460		00005		10880	N13063	DC	5,00100,,,
09465		00005		10890	N13062	DC	5,00102,,,
09469		00004		10900	FAC	DC	00004,101,,FAC,
09471		00002		10910	FIVE	DC	2,5
09476		00005		10920	RTNAME	DS	00005,,RTNAME,,
09481		00005		10930	ST	DS	00005,,ST,,
09485		00004		10940	I	DS	00004,,I,,
09490		00005		10950	J	DS	00005,,J,,
09495		00005		10960	P	DS	00005,,P,,
09500		00005		10970	Q	DS	00005,,Q,,
09505		00005		10980	LV	DS	00005,,LV,,
09510		00005		10990	RTAD	DS	00005,,RTAD,,
09515		00005		11000	RV	DS	00005,,RV,,
09520		00005		11010	SXF	DS	5
09525		00005		11020	DOMAX	DC	5,17600
09530		00005		11030	J40004	DS	5
09534		00004		11040	T2	DS	4
09539		00005		11050	N01100	DC	5,1100
09541		00002		11060	BNH	DC	2,47
09543		00002		11070	C	DC	2,24
09545		00002		11080	CM	DC	2,14
09547		00002		11090	BL	DC	2,47
09552		00005		11100	N01300	DC	5,1300
09554		00002		11110	BE	DC	2,46
09559		00005		11120	N01200	DC	5,1200
09561		00002		11130	BD	DC	2,43
09563		00002		11140	BNF	DC	2,44
09568		00005		11150	FACM2	DC	5,02490
09570		00002		11160	BI	DC	2,46
09575		00005		11170	GBASE	DS	5
09578		00003		11180	LNG	DS	3
09589		00011		11190	P1	DS	11
09594		00005		11200	T3	DS	5

111

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS		
09596		00002		11210	OPZ	DS	2		
09597		00001		11220	FPSW	DSC	1,0		
09598		00001		11230	FPSWX	DSC	1,0		
09599		00001		11240	SKIPSW	DSC	1,0		
09600		00001		11250	COMXSW	DSC	1,0		
09601		00001		11260	ERSWT	DSC	1,0		
09606		00005	00796	11270	N00796	DSA	MONCAL		
09611		00005		11280	SCNT	DC	5,0		
09612		00001		11290		DC	1,a		
09615		00001	X2	11300		DAS	1		
09616		00001		11310	INPUT	DC	1,a		
09715		00099		11320		DS	99		
09716		00001		11330		DC	1,a		
09718	17	06898	09734	11340	GISMO	BTM	PUTX	,*+16	
09734		00005	04493	11350		DSA	OPX,TOFAC,N13092		
09739		00005	04227						
09744		00005	09357						
09746	17	05570	09762	11360		BTM	RPNS	,*+16	
09762		00005	09485	11370		DSA	I,FAC		
09767		00005	09469						
09768	15	09314	00001	11380		TDM	FSW	,1	,11
09780	25	05095	05035	11390		TD	FLAGSW	,RXFLAG	
09792	43	09812	09320	11400		BD	*+20	,CALLSW	
09804	49	03206		11410		B7	EXIT		
09812	17	05830	09824	11420		BTM	GNRP	,*+12	
09824	12	09575	00001	11430		SM	GBASE	,1	,10
09836	32	09575	00000	11440		SF	GBASE	,	,6
09848	49	03206		11450		B7	EXIT		
10000				11460		DORG	10000		
				11470	******		SECONDARY LINKAGE FOR BLOCK 1		
10001		00002		11480		DC	2,1		
10002	12	09485	00001	11490	CODE1	SM	I	,1	,10
10014	49	10434	00000	11500		B	CODE1P		
10026	26	03786	09485	11510	CODE3	TF	N40002	,I	
10038	49	12274	00000	11520		B	CODE3P		
10050	17	05510	13436	11530	CODE4	BTM	RMNS	,CODE4P	
10062	48	00000	00000	11540		H			
10074	16	02359	09140	11550	CODE6	TFM	FMON+35	,BLK2	
10086	17	02324	10074	11560		BTM	FMON	,CODE6	
10098	16	02359	09140	11570	CODE7	TFM	FMON+35	,BLK2	
10110	17	02324	10098	11580		BTM	FMON	,CODE7	
10122	12	09485	00002	11590	CODE8	SM	I	,2	,10
10134	49	13722	00000	11600		B	CODE8P		
10146	16	02359	09140	11610	CODE9	TFM	FMON+35	,BLK2	
10158	17	02324	10146	11620		BTM	FMON	,CODE9	
10170	49	14150	00000	11630	CODE12	B	SUBC12		
10182	48	00000	00000	11640		H			
10194	16	02359	09164	11650	CODE14	TFM	FMON+35	,BLK3	
10206	17	02324	10194	11660		BTM	FMON	,CODE14	
10218	15	09320	00001	11670	CODE15	TDM	CALLSW	,1	
10230	49	13776	00000	11680		B	CD15P		
10242	16	02359	09140	11690	CODE17	TFM	FMON+35	,BLK2	
10254	17	02324	10242	11700		BTM	FMON	,CODE17	
10266	49	14102	00000	11710	CODESS	B	SUBCDS		
10278	48	00000	00000	11720		H			
10290	49	14126	00000	11730	CDSSAB	B	SUBCAB		
10302	48	00000	00000	11740		H			

//2

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS		
10314	49	14174	00000	11750	CD12B	B	SUB12B		
10326	48	00000	00000	11760		H			
10338	16	02359	09188	11770	FCT1	TFM	FMON+35	,BLK4	
10350	17	02324	10338	11780		BTM	FMON	,FCT1	
10362	16	02359	09140	11790	FCTRT	TFM	FMON+35	,BLK2	
10374	17	02324	10362	11800		BTM	FMON	,FCTRT	
10386	16	02359	09188	11810	EOJ	TFM	FMON+35	,BLK4	
10398	17	02324	10386	11820		BTM	FMON	,EOJ	
10410	16	02359	09164	11830	CDCALL	TFM	FMON+35	,BLK3	
10422	17	02324	10410	11840		BTM	FMON	,CDCALL	
				11850	******		THE FOLLOWING CODES ARITHMETIC OPERATORS		
10434	17	05510	10450	11860	CODE1P	BTM	RMNS	,*+16	
10450		00005	09485	11870		DSA	I		
10455		00005	02399	11880		DSA	SL		
10456	17	05510	10472	11890		BTM	RMNS	,*+16	
10472		00005	09485	11900		DSA	I		
10477		00005	09505	11910		DSA	LV		
10478	17	05540	10494	11920		BTM	GTNS	,*+16	
10494		00005	09485	11930		DSA	I		
10499		00005	02372	11940		DSA	SR		
10500	14	09505	00133	11950		CM	LV,	133,8,EQUAL	
10512	46	11036	01200	11960		BE	CODE1C		
10524	14	09505	00115	11970		CM	LV,	115,8,EXPONENTIAL	
10536	46	11562	01200	11980		BE	CODE1D		
				11990	******		CODE ADD, SUBTRACT, MULTIPLY, DIVIDE		
10548	14	02399	00101	12000		CM	SL,	101,8,FAC	
10560	47	10794	01200	12010		BNE	N60007		
10572	25	09366	05095	12020		TD	MOD	,FLAGSW	
10584	15	07343	00001	12030	CODE1A	TDM	SS2	,1	
10596	17	04276	10612	12040		BTM	SRFCT	,*+16	
10612		00005	02372	12050		DSA	SR		
10617		00005	09490	12060		DSA	J		
				12070	*		TEST FOR MIXED MODE		
10618	24	09366	04673	12080		C	MOD	,FXORFL	
10630	46	10654	01200	12090		BE	*+24		
10642	17	12042	10654	12100		BTM	ERMOD	,*+12	
10654	25	04007	04673	12110		TD	FX	,FXORFL	
				12120	******		FX IS USED BY OPSR ROUTINE		
10666	17	03888	10682	12130		BTM	OPSR	,*+16	
10682		00005	09505	12140		DSA	LV		
10687		00005	03781	12150		DSA	N40001		
10688	17	06898	10704	12160		BTM	PUTX	,*+16	
10704		00005	04493	12170		DSA	OPX		
10709		00005	03781	12180		DSA	N40001		
10714		00005	09490	12190		DSA	J		
10716	17	05570	10732	12200	CODE1H	BTM	RPNS	,*+16	
10732		00005	09485	12210		DSA	I		
10737		00005	09469	12220		DSA	FAC		
10738	15	09314	00001	12230		TDM	FSW	,1	,11
10750	25	05095	04673	12240		TD	FLAGSW	,FXORFL	
10762	27	06606	02399	12250		BT	GTCL	,SL	
10774	27	06606	02372	12260		BT	GTCL	,SR	
10786	49	03206	00000	12270		B	EXIT		
10794				12280		DORG	*-3		
10794	14	02372	00101	12290	N60007	CM	SR,	101,8,FAC	
10806	47	10838	01200	12300		BNE	N60009		
10818	26	02372	02399	12310		TF	SR	,SL	

COMPUTER
TECHNOLOGY

//3

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
10830	49	10944	00000	12320		B	CODE1B
10838				12330		DORG	*-3
10838	44	10862	09314	12340	N60009	BNF	N60010 ,FSW
10850	17	05830	±0862	12350		BTM	GNRP ,*+12
10862	15	07343	00001	12360	N60010	TDM	SS2 ,1
10874	17	04276	±0890	12370		BTM	SRFCT ,*+16
10890		00005	02399	12380		DSA	SL
10895		00005	03781	12390		DSA	N40001
10896	17	06898	±0912	12400		BTM	PUTX ,*+16
10912		00005	04493	12410		DSA	OPX
10917		00005	04227	12420		DSA	TOFAC
10922		00005	03781	12430		DSA	N40001 .
10924	25	09366	04673	12440		TD	MOD ,FXORFL
10936	49	10584	00000	12450		B	CODE1A
10944				12460		DORG	*-3
				12470	******		ENTRY IF RIGHT SYMBOL IS FAC, THEN IF OPERATOR IS DIVIDE
				12480	******		SET UP REVERSE DIVIDE .
10944	25	09366	05095	12490	CODE1B	TD	MOD ,FLAGSW
10956	14	09505	00120	12500		CM	LV, 120,8,SUBTRACT
10968	47	10992	01200	12510		BNE	*+24
10980	16	09505	00124	12520		TFM	LV, 124,8,LEFT PAREN
10992	14	09505	00121	12530		CM	LV, 121,8,DIVIDE
11004	47	10584	01200	12540		BNE	CODE1A
11016	16	09505	00122	12550		TFM	LV, 122,8,
11028	49	10584	00000	12560		B	CODE1A .
11036				12570		DORG	*-3
				12580	******		ENTRY IF OPERATOR IS AN EQUAL SIGN
11036	44	11468	09314	12590	CODE1C	BNF	N60013 ,FSW
11048	25	09322	05095	12600		TD	EXIND ,FLAGSW
11060	43	11094	05045	12610		BD	*+34 ,FTSW
11072	17	04276	±1088	12620	SLC	BTM	SRFCT ,*+16
11088		00005	02399	12630		DSA	SL
11093		00005	02399	12640		DSA	SL
11094	44	11118	09325	12650		BNF	CODE1E ,RSW
11106	25	04673	05025	12660		TD	FXORFL ,RFLAG
				12670	******		FXORFL IS SET BY SRFCT
11118	25	11141	09322	12680	CODE1E	TD	*+23 ,EXIND
11130	14	04673	00000	12690		CM	FXORFL ,0 ,10
11142	46	11216	01200	12700		BE	CODE1X
				12710	******		OUTPUTS FIX TO FLOAT OR FLOAT TO FIX INSTRUCTIONS
11154	25	04007	04673	12720		TD	FX ,FXORFL
11166	17	03888	±1182	12730		BTM	OPSR ,*+16
11182		00005	09388	12740		DSA	RMOD
11187		00005	03781	12750		DSA	N40001
11188	17	06898	±1204	12760		BTM	PUTX ,*+16
11204		00005	06846	12770		DSA	BTM
11209		00005	03781	12780		DSA	N40001
11214		00005	09341	12790		DSA	ZERO
11216	43	12120	05045	12800	CODE1X	BD	FCT1E ,FTSW
11228	44	11360	09325	12810		BNF	N60014 ,RSW
11240	15	09325	00000	12820		TDM	RSW ,0
11252	15	07343	00001	12830		TDM	SS2 ,1
				12833	******	***	
11264	44	11282	02840	12835		BNF	*+18,TRCSW,6 ,,,BRANCH AROUND IF TRACE SWITCH NOT ON
				12837	*..		
11276	44	11324	02227	12840		BNF	*+48,FACTRC,, ARITHMETIC TRACE
				12850	*		OUTPUT TRACE INSTRUCTION

114

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
11288	17	06898	±1304	12860		BTM	PUTX ,*+16
11304		00005	09370	12870		DSA	BT,TRACE,SL
11309		00005	04032				
11314		00005	02399				
11316	49	02628	00000	12880		B	CLEAR
11324				12890		DORG	*-3
				12900	*		OUTPUT FRFAC INSTRUCTION
11324	17	06898	±1340	12910		BTM	PUTX ,*+16
11340		00005	09370	12920		DSA	BT,FRFAC,SL
11345		00005	04222				
11350		00005	02399				
11352	49	02628	00000	12930		B	CLEAR
11360				12940		DORG	*-3
11360	15	07343	00001	12950	N60014	TDM	SS2 ,1
				12953	******	***	
11372	44	11390	02840	12955		BNF	*+18,TRCSW,6 ,,,BRANCH AROUND IF TRACE SWITCH NOT ON
				12957	*..		
11384	44	11432	02227	12960		BNF	*+48,FACTRC,, ARITHMETIC TRACE
				12970	*		OUTPUT TRACE INSTRUCTION .
11396	17	06898	±1412	12980		BTM	PUTX ,*+16
11412		00005	04493	12990		DSA	OPX,TRACE,SL
11417		00005	04032				
11422		00005	02399				
11424	49	02628	00000	13000		B	CLEAR
11432				13010		DORG	*-3
				13020	*		OUTPUT FRFAC INSTRUCTION
11432	17	06898	±1448	13030		BTM	PUTX ,*+16
11448		00005	04493	13040		DSA	OPX
11453		00005	04222	13050		DSA	FRFAC
11458		00005	02399	13060		DSA	SL
11460	49	02628	00000	13070		B	CLEAR
11468				13080		DORG	*-3
11468	17	04276	±1484	13090	N60013	BTM	SRFCT ,*+16
11484		00005	02372	13100		DSA	SR
11489		00005	03786	13110		DSA	N40002
11490	15	07343	00001	13120		TDM	SS2 ,1
11502	17	06898	±1518	13130		BTM	PUTX ,*+16
11518		00005	04493	13140		DSA	OPX
11523		00005	04227	13150		DSA	TOFAC
11528		00005	03786	13160		DSA	N40002
11530	25	09322	04673	13170		TD	EXIND ,FXORFL
11542	44	11072	09325	13180		BNF	SLC ,RSW
11554	49	11060	00000	13190		B	SLC-12
11562				13200		DORG	*-3
				13210	*		ENTRY OPERATOR IS EXPONENTIAL
11562	14	02399	00101	13220	CODE1D	CM	SL, 101,8,FAC
11574	47	11910	01200	13230		BNE	N60015
11586	43	11606	05095	13240	CODE1G	BD	*+20 ,FLAGSW
11598	49	11758	00000	13250		B	N60016
11606				13260		DORG	*-3
11606	15	07343	00001	13270		TDM	SS2 ,1
11618	17	04276	±1634	13280		BTM	SRFCT ,*+16
11634		00005	02372	13290		DSA	SR
11639		00005	09490	13300		DSA	J
11640	25	11663	05095	13310		TD	*+23 ,FLAGSW
11652	14	04673	00000	13320		CM	FXORFL ,0 ,10
11664	46	11688	01200	13330		BE	*+24

115

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS		
11676	17	12042	‡1688	13340		BTM	ERMOD	,*+12	, ,
11688	17	06898	‡1704	13350	N60017	BTM	PUTX	,*+16	
11704		00005	04493	13360		DSA	OPX		
11709		00005	04247	13370		DSA	IXI		
11714		00005	09490	13380		DSA	J		
11716	17	05570	‡1732	13390	CODE1F	BTM	RPNS	,*+16	
11732		00005	09485	13400		DSA	I		
11737		00005	09469	13410		DSA	FAC		
11738	15	09314	00001	13420		TDM	FSW	,1	,11
11750	49	03206	00000	13430		B	EXIT		
11758				13440		DORG	*-3		
11758	17	04276	‡1774	13450	N60016	BTM	SRFCT	,*+16	
11774		00005	02372	13460		DSA	SR		
11779		00005	09490	13470		DSA	J		
11780	25	04007	04673	13480		TD	FX	,FXORFL	
11792	43	11828	04007	13490		BD	*+36	,FX	
11804	15	02263	00001	13500		TDM	UFSTR	,1	
11816	15	02264	00001	13510		TDM	UFSTR+1	,1	
11828	15	07343	00001	13520		TDM	SS2	,1	
11840	17	03888	‡1856	13530		BTM	OPSR	,*+16	
11856		00005	09505	13540		DSA	LV		
11861		00005	03786	13550		DSA	N40002		
11862	17	06898	‡1878	13560		BTM	PUTX	,*+16	
11878		00005	04493	13570		DSA	OPX		
11883		00005	03786	13580		DSA	N40002		
11888		00005	09490	13590		DSA	J		
11890	15	04673	00000	13600		TDM	FXORFL	,0	
11902	49	10716	00000	13610		B	CODE1H		
11910				13620		DORG	*-3		
11910	44	11956	09314	13630	N60015	BNF	N60018	,FSW	
11922	17	05830	‡1934	13640		BTM	GNRP	,*+12	
11934	17	05540	‡1950	13650		BTM	GTNS	,*+16	
11950		00005	09485	13660		DSA	I		
11955		00005	02372	13670		DSA	SR		
11956	17	04276	‡1972	13680	N60018	BTM	SRFCT	,*+16	
11972		00005	02399	13690		DSA	SL		
11977		00005	09490	13700		DSA	J		
11978	25	05095	04673	13710		TD	FLAGSW	,FXORFL	
11990	15	07343	00001	13720		TDM	SS2	,1	
12002	17	06898	‡2018	13730		BTM	PUTX	,*+16	
12018		00005	04493	13740		DSA	OPX		
12023		00005	04227	13750		DSA	TOFAC		
12028		00005	09490	13760		DSA	J		
12030	49	11586	00000	13770		B	CODE1G	,	,5
12042	17	08998	‡2075	13780	ERMOD	BTM	ERRT	,MODMES	
12054	15	09601	00001	13790		TDM	ERSWT	,1	
12066	49	12041		13800		B7	ERMOD-1,,6		
12075		00023	X2	13810	MODMES	DAC	23,	MIXED MODE@	
12120	15	05045	00000	13820	FCT1E	TDM	FTSW	,0	
12132	15	07342	00001	13830		TDM	SS1	,1	
12144	15	07344	00001	13840		TDM	SS3	,1	
12156	26	03831	06888	13850		TF	N40011	,T1	
12168	12	03831	00001	13860		SM	N40011	,1	,10
12180	17	06898	‡2196	13870		BTM	PUTX	,*+16	
12196		00005	06848	13880		DSA	B		
12201		00005	03831	13890		DSA	N40011		
12206		00005	09344	13900		DSA	BLANK		

//6

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS		
12208	12	06843	00004	13910		SM	ADCOW	,4	,10
12220	17	08138	‡2236	13920		BTM	PUTA	,*+16	
12236		00005	09520	13930		DSA	SXF,ADCOW		
12241		00005	06843						
12242	22	02302	06838	13940		S	TBASE-1, TMAX		
12254	16	06838	00000	13950		TFM	TMAX,	0,9	
12266	49	02628	00000	13960		B	CLEAR		
12274				13970		DORG	*-3		
				13980	******		OUTPUT FUNCTION LINKAGE OR REMOVE PARENTHESIS		
12274	12	03786	00001	13990	CODE3P	SM	N40002	,1	,10
12286	17	05540	‡2302	14000		BTM	GTNS	,*+16	
12302		00005	03786	14010		DSA	N40002		
12307		00005	02399	14020		DSA	SL		
12308	14	02399	00101	14030		CM	SL,	101,8,FAC	
12320	47	12364	01300	14040		BL	N60020		
12332	14	02399	00154	14050		CM	SL,	154,8,ARITH STATEMENT CALL	
12344	46	12364	01100	14060		BH	N60020		
12356	49	12698	00000	14070		B	CODE3B		
12364				14080		DORG	*-3		
12364	12	09485	00001	14090	N60020	SM	I	,1	,10
12376	17	05510	‡2392	14100		BTM	RMNS	,*+16	
12392		00005	09485	14110		DSA	I		
12397		00005	02399	14120		DSA	SL		
12398	17	05510	‡2414	14130		BTM	RMNS	,*+16	
12414		00005	09485	14140		DSA	I		
12419		00005	02372	14150		DSA	SR		
12420	17	05510	‡2436	14160		BTM	RMNS	,*+16	
12436		00005	09485	14170		DSA	I		
12441		00005	02372	14180		DSA	SR		
12442	14	02372	00101	14190		CM	SR	,101	,9
12454	46	12544	01200	14200		BE	N60021		
12466	44	12490	09314	14210		BNF	N60022	,FSW	
12478	17	05830	‡2490	14220		BTM	GNRP	,*+12	
12490	17	04276	‡2506	14230	N60022	BTM	SRFCT	,*+16	
12506		00005	02372	14240		DSA	SR		
12511		00005	02372	14250		DSA	SR		
12512	15	07343	00001	14260		TDM	SS2	,1	
12524	25	05095	04673	14270		TD	FLAGSW	,FXORFL	
12536	49	12568	00000	14280		B	CODE3A		
12544				14290		DORG	*-3		
12544	26	02372	04232	14300	N60021	TF	SR	,FACAD	
12556	16	04493	00017	14310		TFM	OPX	,17	,10
				14320	******		OUTPUT LIBRARY FUNCTION LINKAGE		
12568	15	07344	00001	14330	CODE3A	TDM	SS3	,1	
12580	26	03786	02303	14340		TF	N40002	,TBASE	
12592	26	03785	02399	14350		TF	N40002-1	,SL	
12604	15	03786	00009	14360		TDM	N40002	,9	
12616	26	03786	03786	14370		TF	N40002	,N40002	,11
12628	17	06898	‡2644	14380		BTM	PUTX	,*+16	
12644		00005	04493	14390		DSA	OPX		
12649		00005	03786	14400		DSA	N40002		
12654		00005	02372	14410		DSA	SR		
12656	17	05570	‡2672	14420		BTM	RPNS	,*+16	
12672		00005	09485	14430		DSA	I		
12677		00005	09469	14440		DSA	FAC		
12678	15	09314	00001	14450		TDM	FSW	,1	,11
12690	49	03206	00000	14460		B	EXIT		

//7

```
LOCTN  OP   P/L    Q      PG/LN  LABEL   MNEM OPERANDS AND REMARKS

12698                     14470                 DORG  *-3
12698  14   02399  00154  14480  CODE3B  CM    SL,    154,8,ARITH STATEMENT CALL
12710  46   12846  01200  14490          BE    CODE3C
12722  14   02399  00153  14500          CM    SL,    153,8,FUNCTION CALL
12734  46   12846  01200  14510          BE    CODE3C
12746  14   02399  00107  14520  N60023  CM    SL,    107,8,IF
12758  46   10098  01200  14530          BE    CODE7
12770  17   05510  ‡2786  14540          BTM   RMNS      ,*+16
12786       00005  09485  14550          DSA   I
12791       00005  02372  14560          DSA   SR
12792  11   09485  00001  14570          AM    I         ,1          ,10
12804  17   05510  ‡2820  14580          BTM   RMNS      ,*+16
12820       00005  09485  14590          DSA   I
12825       00005  02372  14600          DSA   SR
12826  12   09485  00001  14610          SM    I         ,1          ,10
12838  49   03206  00000  14620          B     EXIT
12846                     14630          DORG  *-3
                          14640  *          ARITH STATEMENT CALL OR FUNCTION CALL OPERATOR
12846  12   09485  00002  14650  CODE3C  SM    I         ,2          ,10
12858  17   05510  ‡2874  14660  CODE3Y  BTM   RMNS      ,*+16
12874       00005  09485  14670          DSA   I
12879       00005  02399  14680          DSA   SL
12880  17   05510  ‡2896  14690          BTM   RMNS      ,*+16
12896       00005  09485  14700          DSA   I
12901       00005  09505  14710          DSA   LV
12902  17   05510  ‡2918  14720          BTM   RMNS      ,*+16
12918       00005  09485  14730          DSA   I
12923       00005  02372  14740          DSA   SR
12924  44   12948  09314  14750          BNF   N60026    ,FSW
12936  17   05830  ‡2948  14760          BTM   GNRP      ,*+12
12948  14   09505  00154  14770  N60026  CM    LV,    154,8,ARITH STATEMENT CALL
12960  46   12984  01200  14780          BE    N60027
12972  15   07344  00001  14790          TDM   SS3       ,1
12984  16   07343  00011  14800  N60027  TFM   SS2       ,11         ,10
12996  17   04276  ‡3012  14810          BTM   SRFCT     ,*+16
13012       00005  02399  14820          DSA   SL
13017       00005  03781  14830          DSA   N40001
13018  26   03791  06843  14840          TF    N40003    ,ADCOW
13030  11   03791  00011  14850          AM    N40003    ,11         ,10
13042  25   05095  04673  14860          TD    FLAGSW    ,FXORFL
13054  17   06898  ‡3070  14870          BTM   PUTX      ,*+16
13070       00005  06846  14880          DSA   BTM
13075       00005  03781  14890          DSA   N40001
13080       00005  03791  14900          DSA   N40003
13082  43   13334  05055  14910          BD    CODE3Z    ,CALLX
13094  15   09597  00000  14920  CODE3D  TDM   FPSW      ,0
13106  17   05510  ‡3122  14930          BTM   RMNS      ,*+16
13122       00005  09485  14940          DSA   I
13127       00005  02399  14950          DSA   SL
13128  17   05540  ‡3144  14960          BTM   GTNS      ,*+16
13144       00005  09485  14970          DSA   I
13149       00005  02372  14980          DSA   SR
13150  17   04276  ‡3166  14990          BTM   SRFCT     ,*+16
13166       00005  02399  15000          DSA   SL
13171       00005  02399  15010          DSA   SL
13172  44   13196  09597  15020          BNF   *+24      ,FPSW
13184  32   02399  00000  15030          SF    SL
```

118

```
LOCTN  OP   P/L    Q      PG/LN  LABEL   MNEM OPERANDS AND REMARKS

13196  17   08018  ‡3212  15040          BTM   PUTC      ,*+16
13212       00005  02399  15050          DSA   SL
13214  14   02372  00104  15060  CODE3E  CM    SR,    104,8,RIGHT PAREN
13226  46   13268  01200  15070          BE    N60032
13238  17   05510  ‡3254  15080          BTM   RMNS      ,*+16
13254       00005  09485  15090          DSA   I
13259       00005  02372  15100          DSA   SR
13260  49   13094  00000  15110          B     CODE3D
13268                     15120          DORG  *-3
13268  17   03842  06843  15130  N60032  BTM   ADJUST    ,ADCOW
13280  43   13354  09320  15140  CODE3X  BD    CET       ,CALLSW
13292  17   05570  ‡3308  15150          BTM   RPNS      ,*+16
13308       00005  09485  15160          DSA   I
13313       00005  09469  15170          DSA   FAC
13314  15   09314  00011  15180          TDM   FSW       ,1          ,11
13326  49   03206  00000  15190          B     EXIT
13334                     15200          DORG  *-3
13334  15   05055  00000  15210  CODE3Z  TDM   CALLX     ,0
13346  49   02628  00000  15220          B     CLEAR
13354                     15230          DORG  *-3
13354  26   03781  09485  15240  CET     TF    N40001    ,I
13366  11   03781  00001  15250          AM    N40001    ,1          ,10
13378  17   05540  ‡3394  15260          BTM   GTNS      ,*+16
13394       00005  03781  15270          DSA   N40001,N40001
13399       00005  03781
13400  14   03781  00132  15280          CM    N40001    ,132        ,8
13412  46   02628  01200  15290          BE    CLEAR
13424  49   13292  00000  15300          B     CODE3X+12
13432                     15310          DORG  *-3
                          15320  ******    OUTPUT REVERSE SIGN INSTRUCTIONS FOR UNARY MINUS
13436       00005  09485  15330  CODE4P  DSA   I
13441       00005  09505  15340          DSA   LV
13442  17   05540  ‡3458  15350          BTM   GTNS      ,*+16
13458       00005  09485  15360          DSA   I
13463       00005  02372  15370          DSA   SR
13464  26   09505  09385  15380          TF    LV        ,RVSN
13476  14   02372  00101  15390          CM    SR,    101,8,FAC
13488  47   13570  01200  15400          BNE   N60034
13500  25   04007  05095  15410          TD    FX        ,FLAGSW
13512  17   03888  ‡3528  15420  CODE4A  BTM   OPSR      ,*+16
13528       00005  09505  15430          DSA   LV,N40003
13533       00005  03791
13534  17   06898  ‡3550  15440          BTM   PUTX      ,*+16
13550       00005  06846  15450          DSA   BTM
13555       00005  03791  15460          DSA   N40003
13560       00005  09341  15470          DSA   ZERO
13562  49   03206  00000  15480          B     EXIT
13570                     15490          DORG  *-3
13570  44   13594  09314  15500  N60034  BNF   N60035    ,FSW
13582  17   05830  ‡3594  15510          BTM   GNRP      ,*+12
13594  15   07343  00001  15520  N60035  TDM   SS2       ,1
13606  17   04276  ‡3622  15530          BTM   SRFCT     ,*+16
13622       00005  02372  15540          DSA   SR
13627       00005  03791  15550          DSA   N40003
13628  17   06898  ‡3644  15560          BTM   PUTX      ,*+16
13644       00005  04493  15570          DSA   OPX
13649       00005  04227  15580          DSA   TOFAC
```

119

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS	
13654		00005	03791	15590		DSA	N40003	
13656	15	09314	00001	15600		TDM	FSW	,1 ,11
13668	25	05095	04673	15610		TD	FLAGSW	,FXORFL
13680	17	05570	13696	15620		BTM	RPNS	,*+16
13696		00005	09485	15630		DSA	I	
13701		00005	09469	15640		DSA	FAC	
13702	25	04007	04673	15650		TD	FX	,FXORFL
13714	49	13512	00000	15660		B	CODE4A	
13722				15670		DORG	*-3	
13722	17	05540	13738	15680	CODE8P	BTM	GTNS	,*+16
13738		00005	09485	15690		DSA	I	
13743		00005	09505	15700		DSA	LV	
13744	14	09505	00124	15710		CM	LV,	124,8,LEFT PAREN
13756	47	10122	01200	15720		BNE	CODE8	
13768	49	10026	00000	15730		B	CODE3	
13776				15740		DORG	*-3	
13776	17	05510	13792	15750	CD15P	BTM	RMNS	,*+16
13792		00005	09485	15760		DSA	I	
13797		00005	02399	15770		DSA	SL	
13798	26	03836	09485	15780		TF	N40012	,I
13810	11	03836	00002	15790		AM	N40012	,2 ,10
13822	17	05540	13838	15800		BTM	GTNS	,*+16
13838		00005	03836	15810		DSA	N40012	
13843		00005	02377	15820		DSA	SX	
13844	14	02377	00132	15830		CM	SX,	132,8,SEMI COLON
13856	47	03206	01200	15840		BNE	EXIT	
13868	15	05055	00001	15850		TDM	CALLX	,1
13880	49	12858	00000	15860		B	CODE3Y	
13888				15870		DORG	*-3	
14100				15880		DORG	14100	
				15890	******		TERTIARY LINKAGE BLOCK 5	
14101		00002		15900		DC	2,5	
14102	17	05510	14202	15910	SUBCDS	BTM	RMNS	,CDSSP
14114	48	00000	00000	15920		H		
14126	16	02359	09236	15930	SUBCAB	TFM	FMON+35	,BLK6
14138	17	02324	14126	15940		BTM	FMON	,SUBCAB
14150	16	02359	09260	15950	SUBC12	TFM	FMON+35	,BLK7
14162	17	02324	14150	15960		BTM	FMON	,SUBC12
14174	16	02359	09284	15970	SUB12B	TFM	FMON+35	,BLK8
14186	17	02324	14174	15980		BTM	FMON	,SUB12B
14202		00005	09485	15990	CDSSP	DSA	I,SR	
14207		00005	02372					
14208	17	05510	14224	16000		BTM	RMNS	,*+16
14224		00005	09485	16010		DSA	I,SY	
14229		00005	02384					
14230	17	05510	14246	16020		BTM	RMNS	,*+16
14246		00005	09485	16030		DSA	I,SY	
14251		00005	02384					
14252	12	09485	00001	16040		SM	I	,1 ,10
14264	17	05540	14280	16050		BTM	GTNS	,*+16
14280		00005	09485	16060		DSA	I,SX	
14285		00005	02377					
14286	11	09485	00001	16070		AM	I	,1 ,10
14298	15	09599	00001	16080		TDM	SKIPSW	,1
14310	17	04276	14326	16090		BTM	SRFCT	,*+16
14326		00005	02377	16100		DSA	SX,SX	
14331		00005	02377					

120

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS	
14332	25	15577	04451	16110		TD	SPCOM	,COMSW
14344	25	05035	04673	16120		TD	RXFLAG	,FXORFL
14356	17	08712	14372	16130		BTM	CANDS	,*+16
14372		00005	06853	16140		DSA	D1,DI	
14377		00005	06858					
14378	26	03801	06843	16150		TF	N40005	,ADCOW
14390	11	03801	00012	16160		AM	N40005	,12 ,10
14402	15	07343	00001	16170		TDM	SS2	,1
14414	43	14434	05035	16180		BD	*+20	,RXFLAG
14426	49	14446		16190		B7	*+20	
14434	32	03801	00000	16200		SF	N40005	
14446	14	02372	00150	16210		CM	SR	,150 ,8
14458	47	14614	01300	16220		BL	XX1	
14470	46	14548	01200	16230		BE	XX2	
14482	11	09485	00006	16240	XX3	AM	I	,6 ,10
14494	26	03806	04092	16250		TF	N40006	,SUB3
14506	17	08712	14522	16260		BTM	CANDS	,*+16
14522		00005	06883	16270		DSA	D4,SY	
14527		00005	02384					
14528	12	09485	00006	16280		SM	I	,6 ,10
14540	49	14672		16290		B7	XX4	
14548	11	09485	00003	16300	XX2	AM	I	,3 ,10
14560	26	03806	04082	16310		TF	N40006	,SUB2
14572	17	08712	14588	16320		BTM	CANDS	,*+16
14588		00005	06883	16330		DSA	D4,SY	
14593		00005	02384					
14594	12	09485	00003	16340		SM	I	,3 ,10
14606	49	14672		16350		B7	XX4	
14614	17	08712	14630	16360	XX1	BTM	CANDS	,*+16
14630		00005	06883	16370		DSA	D4,SY	
14635		00005	02384					
14636	26	03806	04072	16380		TF	N40006	,SUB1
14648	14	06853	00001	16390		CM	D1	,1
14660	46	15394	01200	16400		BE	CDS1FP	
14672	17	06898	14688	16410	XX4	BTM	PUTX	,*+16
14688		00005	06846	16420		DSA	BTM,N40006,N40005	
14693		00005	03806					
14698		00005	03801					
14700	17	08018	14716	16430		BTM	PUTC	,*+16
14716		00005	02377	16440		DSA	SX	
14718	17	08102	14734	16450		BTM	PUTD	,*+16
14734		00005	06883	16460		DSA	D4	
14736	44	14760	09315	16470		BNF	*+24	,I01
14748	32	06853	00000	16480		SF	D1	
14760	17	08102	14776	16490		BTM	PUTD	,*+16
14776		00005	06853	16500		DSA	D1	
14778	17	08018	14794	16510		BTM	PUTC	,*+16
14794		00005	06858	16520		DSA	DI	
14796	14	02372	00150	16530		CM	SR	,150 ,8
14808	47	14948	01300	16540		BL	CDSSS1	
14820	46	14890	01200	16550		BE	XX5	
14832	17	08712	14848	16560	CDSSS3	BTM	CANDS	,*+16
14848		00005	06863	16570		DSA	D2,DJ	
14853		00005	06868					
14854	17	08102	14870	16580		BTM	PUTD	,*+16
14870		00005	06863	16590		DSA	D2	
14872	17	08018	14888	16600		BTM	PUTC	,*+16

121

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS		
14888		00005	06868	16610		DSA	DJ		
14890	17	08712	14906	16620	XX5	BTM	CANDS	,*+16	
14906		00005	06873	16630		DSA	D3,DK		
14911		00005	06878						
14912	17	08102	14928	16640		BTM	PUTD	,*+16	
14928		00005	06873	16650		DSA	D3		
14930	17	08018	14946	16660		BTM	PUTC	,*+16	
14946		00005	06878	16670		DSA	DK		
14948	15	02265	00001	16680	CDSSS1	TDM	UFSTR+2	,1	
14960	17	08222	14976	16690	CDS1V	BTM	PUTRM	,*+16	
14976		00005	15497	16700		DSA	ZRM		
14978	15	09599	00000	16710		TDM	SKIPSW	,0	
14990	44	15044	09315	16720		BNF	QZP	,IO1	
15002	12	09485	00001	16730		SM	I	,1	,10
15014	17	05510	15030	16740		BTM	RMNS	,*+16	
15030		00005	09485	16750		DSA	I,ST		
15035		00005	09481						
15036	49	12008	00000	16760		B	CD14B		
15044				16770		DORG	*-3		
15044	17	05540	15060	16780	QZP	BTM	GTNS	,*+16	
15060		00005	09485	16790		DSA	I,ST		
15065		00005	09481						
15066	12	09485	00001	16800		SM	I	,1	,10
15078	14	09481	00133	16810		CM	ST	,133	,8
15090	47	15188	01200	16820		BNE	CDS1T		
15102	25	05025	05035	16830		TD	RFLAG	,RXFLAG	
15114	15	09325	00001	16840		TDM	RSW	,1	,11
15126	17	06898	15142	16850		BTM	PUTX	,*+16	
15142		00005	09333	16860		DSA	TF,FACAD,N13092		
15147		00005	04232						
15152		00005	09357						
15154	17	05570	15170	16870		BTM	RPNS	,*+16	
15170		00005	09485	16880		DSA	I,FAC		
15175		00005	09469						
15176	17	05830	03206	16890		BTM	GNRP	,EXIT	
15188	44	15212	09314	16900	CDS1T	BNF	*+24	,FSW	
15200	17	05830	15212	16910		BTM	GNRP	,*+12	
15212	43	15244	09320	16920		BD	*+32	,CALLSW	
15224	16	04493	00027	16930		TFM	OPX	,27	,10
15236	49	15256	00000	16940		B	*+20		
15244				16950		DORG	*-3		
15244	16	04493	00017	16960		TFM	OPX	,17	,10
15256	17	06898	15272	16970		BTM	PUTX	,*+16	
15272		00005	04493	16980		DSA	OPX,TOFAC,N13092		
15277		00005	04227						
15282		00005	09357						
15284	17	05570	15300	16990		BTM	RPNS	,*+16	
15300		00005	09485	17000		DSA	I,FAC		
15305		00005	09469						
15306	15	09314	00001	17010		TDM	FSW	,1	,11
15318	25	05095	05035	17020		TD	FLAGSW	,RXFLAG	
15330	43	15350	09320	17030		BD	*+20	,CALLSW	
15342	49	03206		17040		B7	EXIT		
15350	17	05830	15362	17050		BTM	GNRP	,*+12	
15362	12	09575	00001	17060		SM	GBASE	,1	,10
15374	32	09575	00000	17070		SF	GBASE	,	,6
15386	49	03206		17080		B7	EXIT		

122

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS		
15394	15	15448	00000	17090	CDS1FP	TDM	FXIOSW,0		
15406	43	15426	05035	17100		BD	*+20,RXFLAG		
15418	49	15450		17110		B7	PATSB2		
15426	44	15450	09315	17120		BNF	*+24,IO1		
15438	15	15448	00001	17130		TDM	FXIOSW,-1		
15448		00000		17140	FXIOSW	DS	,*-1		
15450	44	15498	02377	17150	PATSB2	BNF	CDS1Z,SX		
15462	43	14672	15448	17160		BD	XX4,FXIOSW		
15474	15	09597	00001	17170		TDM	FPSW,-1		
15486	33	02377	00000	17180		CF	SX		
15497		00002		17190	ZRM	DC	2,@,*		
15498	43	15530	05035	17200	CDS1Z	BD	*+32	,RXFLAG	
15510	26	06891	02298	17210		TF	L	,FP2	
15522	49	15542		17220		B7	CDS1S		
15530	26	06891	02252	17230	CDS1S	TF	L	,K	
15542	15	07343	00000	17240	CDS1S	TDM	SS2	,0	
15554	23	06883	06891	17250		M	D4	,L	
15566	32	00095	00000	17260		SF	95		
15577		00000		17270	SPCOM	DS	,*		
15578	26	06883	00099	17280		TF	D4	,99	
15590	43	15626	09597	17290		BD	*+36,FPSW		
15602	21	06883	02377	17300		A	D4,SX		
15614	26	02384	06883	17310		TF	SY,D4		
15626	44	15650	15448	17320		BNF	*+24,FXIOSW		
15638	32	06891	00021	17330		SF	L,21,10		
15649		00000		17340	OPJ	DS	,*		
15650	15	07342	00001	17350		TDM	SS1	,1	
15662	17	06898	15678	17360		BTM	PUTX	,*+16	
15678		00005	09337	17370		DSA	MM,DI,L		
15683		00005	06858						
15688		00005	06891						
15690	44	15786	09597	17380		BNF	PATSB0,FPSW		
15702	16	15649	00021	17390		TFM	OPJ	,21	,10
15714	43	15738	15577	17400	ZPT	BD	*+24,SPCOM		
15726	15	07343	00001	17410		TDM	SS2,1		
15738	17	06898	15754	17420		BTM	PUTX,*+16		
15754		00005	15649	17430		DSA	OPJ,N13092,SX		
15759		00005	09357						
15764		00005	02377						
15766	43	15922	09597	17440		BD	PPJA	,FPSW	
15778	49	15842		17450		B7	JARNDT		
15786	44	15810	15448	17460	PATSB0	BNF	*+24,FXIOSW		
15798	15	07345	00001	17470		TDM	SS4,1		
15810	44	15842	02384	17480		BNF	JARNDT,SY		
15822	16	15649	00011	17490		TFM	OPJ	,11	,10
15834	49	15714		17500		B7	ZPT		
15842	44	15898	02384	17510	JARNDT	BNF	ITUSO,SY		
15854	22	06883	02377	17520	D4LNEG	S	D4,SX		
15866	44	15922	15448	17530		BNF	PPJA,FXIOSW		
15878	33	06883	00000	17540		CF	D4		
15890	49	15922		17550		B7	PPJA		
15898	43	15922	15577	17560	ITUSO	BD	*+24,SPCOM		
15910	15	07343	00001	17570		TDM	SS2,1		
15922	17	06898	15938	17580	PPJA	BTM	PUTX	,*+16	
15938		00005	09335	17590		DSA	AM,N13092,D4		
15943		00005	09357						
15948		00005	06883						

123

```
LOCTN OP  P/L    Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

15950 17  06898  ±5966   17600         BTM  PUTX          ,*+16
15966     00005  09329   17610         DSA  SF,N13133,BLANK
15971     00005  09364
15976     00005  09344
15978 49  14978          17620         B7   CDS1V+18
16002                    17630         DORG 16002
16002     00014          17640  X00X   DSC  14,01780013602400
16016 34  16002  00701   17650  XYYX   34   X00X,701
16028 25  07885  02323   17660         TD   PUTPCH+11,UGRMK
16040 25  08626  02323   17670         TD   GRMK,UGRMK
16052 38  16002  00702   17680         38   X00X,702
16064 36  00012  00500   17690         TRA
16076 49  00012
16016                    17700         TCD  XYYX
10000                    17710         DORG 10000
                         17720  ****** SECONDARY LINKAGE FOR BLOCK 2
10001     00002          17730         DC   2,2
10002 16  02359  09116   17740  XODE1  TFM  FMON+35       ,BLK1
10014 17  02324  ±0002   17750         BTM  FMON          ,CODE1
10026 16  02359  09116   17760  XODE3  TFM  FMON+35       ,BLK1
10038 17  02324  ±0026   17770         BTM  FMON          ,CODE3
10050 16  02359  09116   17780  XODE4  TFM  FMON+35       ,BLK1
10062 17  02324  ±0050   17790         BTM  FMON          ,CODE4
10074 17  05510  ±0438   17800  XODE6  BTM  RMNS          ,CODE6P
10086 48  00000  00000   17810         H
10098 14  09515  00130   17820  XODE7  CM   RV            ,130          ,8
10110 49  11236  00000   17830         B    CODE7P
10122 16  02359  09116   17840  XODE8  TFM  FMON+35       ,BLK1
10134 17  02324  ±0122   17850         BTM· FMON          ,CODE8
10146 11  09485  00001   17860  XODE9  AM   I             ,1           ,10
10158 49  12164  00000   17870         B    CODE9P
10170 16  02359  09116   17880  XODE12 TFM  FMON+35       ,BLK1
10182 17  02324  ±0170   17890         BTM  FMON          ,CODE12
10194 16  02359  09164   17900  XODE14 TFM  FMON+35       ,BLK3
10206 17  02324  ±0194   17910         BTM  FMON          ,CODE14
10218 16  02359  09116   17920  XODE15 TFM  FMON+35       ,BLK1
10230 17  02324  ±0218   17930         BTM  FMON          ,CODE15
10242 17  05510  ±2874   17940  XODE17 BTM  RMNS          ,CD17P
10254 48  00000  00000   17950         H
10266 16  02359  09116   17960  XODESS TFM  FMON+35       ,BLK1
10278 17  02324  ±0266   17970         BTM  FMON          ,CODESS
10290 16  02359  09116   17980  XDSSAB TFM  FMON+35       ,BLK1
10302 17  02324  ±0290   17990         BTM  FMON          ,CDSSAB
10314 16  02359  09116   18000  XD12B  TFM  FMON+35       ,BLK1
10326 17  02324  ±0314   18010         BTM  FMON          ,CD12B
10338 16  02359  09188   18020  XCT1   TFM  FMON+35       ,BLK4
10350 17  02324  ±0338   18030         BTM  FMON          ,FCT1
                         18035  ***************************************************************
10362 43  14678  02290   18040         BD   XCTRT,UFSTR+27
10374 49  14690  00000   18050         B    XCTRT+12
                         18055  *.............................................................
10386 16  02359  09188   18060  XOJ    TFM  FMON+35       ,BLK4
10398 17  02324  ±0386   18070         BTM  FMON          ,EOJ
10410 16  02359  09164   18080  XDCALL TFM  FMON+35       ,BLK3
10422 17  02324  ±0410   18090         BTM  FMON          ,CDCALL
                         18100  ****** OUTPUTS CODING FOR GO TO, STOP, PAUSE, AND END
10438     00005  09485   18110  CODE6P DSA  I
```

124

```
LOCTN OP  P/L    Q       PG/LN  LABEL  MNEM OPERANDS AND REMARKS

10443     00005  09505   18120         DSA  LV
10444 17  05510  ±0460   18130         BTM  RMNS          ,*+16
10460     00005  09485   18140         DSA  I
10465     00005  02372   18150         DSA  SR
10466 17  05510  ±0482   18160         BTM  RMNS          ,*+16
10482     00005  09485   18170         DSA  I,SX
10487     00005  02377
                         18180  ****** CODE GO TO
10488 14  09515  00105   18190         CM   LV,      105,8,GO TO
10500 47  10684  01200   18200         BNE  N60041
                         18201  ***************************************************************
10512 43  10532  02290   18203         BD   *+20,UFSTR+27 ,,,BRANCH IF DIAGNOSTIC MODE
10524 49  10544          18205         B7   *+20
10532 12  06843  000±2   18207         SM   ADCOW,12,10   ,,,DORG BACK OVER DIAGNOSTIC STATEMENT
                         18209  *.............................................................
10544 15  09599  00001   18210         TDM  SKIPSW        ,1
10556 17  04276  ±0572   18220         BTM  SRFCT         ,*+16
10572     00005  02372   18230         DSA  SR
10577     00005  ±0881   18240         DSA  SK
10578 15  09599  00000   18250         TDM  SKIPSW        ,0
10590 44  10624  05085   18260         BNF  CODE6B        ,RMSW
10602 17  11096  ±0618   18270         BTM  INSET         ,*+16
10618     00005  02372   18280         DSA  SR,ADCOW
10623     00005  06843
10624 15  07342  00001   18290  CODE6B TDM  SS1           ,1
10636 17  06898  ±0652   18300         BTM  PUTX          ,*+16
10652     00005  06848   18310         DSA  B
10657     00005  ±0881   18320         DSA  SK
10662     00005  09344   18330         DSA  BLANK
10664 12  06843  00004   18340         SM   ADCOW         ,4           ,10
10676 49  02628  00000   18350  CODE6A B    CLEAR
10684                    18360         DORG *-3
10684 14  09515  00127   18370  N60041 CM   LV,      127,8,CONTINUE
10696 46  02628  01200   18380         BE   CLEAR
10708 14  02377  00132   18390         CM   SX,      132,8,SEMI COLON
10720 47  10752  01200   18400         BNE  N60043
10732 16  09490  00000   18410         TFM  J             ,0
10744 49  10882  00000   18420         B    N60044
10752                    18430         DORG *-3
10752 16  09490  00000   18440  N60043 TFM  J             ,0
10764 16  10828  09486   18450         TFM  *+64          ,J-4
10776 17  05510  ±0792   18460         BTM  RMNS          ,*+16
10792     00005  09485   18470         DSA  I,SX
10797     00005  02377
10798 14  02377  00132   18480         CM   SX,      132,8,SEMI COLON
10810 46  10870  01200   18490         BE   N60044-12
10822 25  09486  02377   18500         TD   J-4           ,SX
10834 11  10828  00001   18510         AM   *-6           ,1           ,10
10846 14  10828  09491   18520         CM   *-18          ,J+1
10858 47  10776  01300   18530         BL   N60043+24
10870 32  09486  00000   18540         SF   J-4
10881     00000          18550  SK     DS   ,*
                         18560  ****** CODE PAUSE
10882 14  09515  00126   18570  N60044 CM   LV,      126,8,PAUSE
                         18571  ***************************************************************
10894 43  10914  02290   18573         BD   *+20,UFSTR+27 ,,,BRANCH IF IN DIAGNOSTIC MODE
10906 49  10926          18575         B7   *+20
```

125

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
10914	16	08322	00000	18577		TFM	—NEXT,0 ,,,FORCE TRACE PRINT
				18579	*••
10926	47	10974	01200	18580		BNE	N60045
10938	17	06898	10954	18590		BTM	PUTX ,*+16
10954		00005	09339	18600		DSA	H
10959		00005	09490	18610		DSA	J
10964		00005	09344	18620		DSA	BLANK
10966	49	02628	00000	18630		B	CLEAR
10974				18640		DORG	*-3
				18650	******	CODE STOP
10974	14	09505	08125	18660	N60045	CM	LV, 125,8,STOP
10986	47	11056	01200	18670		BNE	N60046
				18700	*$$$
10998	17	06898	11014	18800		BTM	PUTX ,*+16
11014		00005	06848	18810		DSA	B
11019		00005	09606	18820		DSA	N00796
11024		00005	09344	18830		DSA	BLANK
11026	12	06843	00004	18840		SM	ADCOW ,4 ,10
11038	49	02628	00000	18850		B	CLEAR
11046				18860		DORG	*-3
11050		00005		18870	N00951	DC	5,951
11055		00005		18880	N00900	DC	5,900
				18890	******	CODE END
11056	17	06898	11072	18900	N60046	BTM	PUTX ,*+16
				18920	*$$$
11072		00005	06848	18950		DSA	B
11077		00005	09606	18960		DSA	N00796
11082		00005	09344	18970		DSA	BLANK
11084	49	10386	00000	18980		B	EOJ
11096	26	11155	11095	18990	INSET	TF	INSETA ,*-1 ,11
11108	11	11095	00005	19000		AM	INSET-1 ,5 ,10
11120	26	11179	11095	19010		TF	INSETB ,INSET-1 ,11
11132	11	11095	00001	19020		AM	INSET-1 ,1 ,10
11144	26	03762	00000	19030		TF	SETAD-1
11155		00000		19040	INSETA	DS	,*
11156	15	03763	00004	19050		TDM	SETAD ,4
11168	26	11215	00000	19060		TF	SADCOW
11179		00000		19070	INSETB	DS	,*
11180	11	11215	00006	19080		AM	SADCOW ,6 ,10
11192	26	03763	11215	19090		TF	SETAD ,SADCOW ,6
11204	32	03763	00000	19100		SF	SETAD , ,6
11215		00000		19110	SADCOW	DS	,*
11216	15	05085	00000	19120		TDM	RMSW ,0
11228	49	11095	00000	19130		B	INSET-1 , ,6
11236				19140		DORG	*-3
				19150	******	OUTPUT IF CODING
11236	46	12022	01200	19160	CODE7P	BE	CODE7B
11248	26	03781	09485	19170		TF	N40001 ,I
11260	11	03781	00001	19180		AM	N40001 ,1 ,10
11272	17	05540	11288	19190		BTM	GTNS ,*+16
11288		00005	03781	19200		DSA	N40001
11293		00005	02399	19210		DSA	SL
11294	14	02399	00101	19220		CM	SL ,101 ,8
11306	46	11392	01200	19230		BE	N60048
11318	17	04276	11334	19240		BTM	SRFCT ,*+16
11334		00005	02399	19250		DSA	SL
11339		00005	03791	19260		DSA	N40003

126

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
11340	15	07343	00001	19270		TDM	SS2 ,1
11352	17	06898	11368	19280		BTM	PUTX ,*+16
11368		00005	04493	19290		DSA	OPX
11373		00005	04227	19300		DSA	TOFAC
11378		00005	03791	19310		DSA	N40003
11380	25	05095	04673	19320		TD	FLAGSW ,FXORFL
				19323	**
11392	44	11410	02840	19327	N60048	BNF	*+18,TRCSW,6 ,,,SKIP IF TRACE SWITCH NOT ON
11404	44	11444	02226	19330		BNF	*+40,IFTRC,, IF TRACE
				19335	*••
11416	17	06898	11432	19340		BTM	PUTX ,*+16
11432		00005	06846	19350		DSA	BTM
11437		00005	04032	19360		DSA	TRACE
11442		00005	04232	19370		DSA	FACAD
				19380	******	OUTPUT FIXED VARIABLE IF TEST
11444	43	11464	05095	19390		BD	*+20 ,FLAGSW
11456	49	11786	00000	19400		B	N60049
11464				19410		DORG	*-3
11464	11	09485	00002	19420		AM	I ,2 ,10
11476	17	06898	11492	19430		BTM	PUTX ,*+16
11492		00005	09545	19440		DSA	CM,FACAD,ZERO4
11497		00005	04232				
11502		00005	09343				
11504	15	09599	00001	19450		TDM	SKIPSW ,1
11516	17	11672	11528	19460		BTM	GSBI ,*+12
11528	17	06898	11544	19470		BTM	PUTX ,*+16
11544		00005	09547	19480		DSA	BL,N40003,N01300
11549		00005	03791				
11554		00005	09552				
11556	17	11672	11568	19490		BTM	GSBI ,*+12
11568	17	06898	11584	19500		BTM	PUTX ,*+16
11584		00005	09554	19510		DSA	BE,N40003,N01200
11589		00005	03791				
11594		00005	09559				
11596	17	11672	11608	19520	CODE7C	BTM	GSBI ,*+12
11608	17	06898	11624	19530		BTM	PUTX ,*+16
11624		00005	06848	19540		DSA	B,N40003,ZERO5
11629		00005	03791				
11634		00005	09344				
11636	15	09599	00000	19550		TDM	SKIPSW ,0
11648	12	06843	00004	19560		SM	ADCOW ,4 ,10
11660	49	02628	00000	19570		B	CLEAR
11672	11	09485	00001	19580	GSBI	AM	I ,1 ,10
11684	17	05540	11700	19590		BTM	GTNS ,*+16
11700		00005	09485	19600		DSA	I,SK
11705		00005	10881				
11706	17	04276	11722	19610		BTM	SRFCT ,*+16
11722		00005	10881	19620		DSA	SK,N40003
11727		00005	03791				
11728	44	11762	05085	19630		BNF	*+34 ,RMSW
11740	17	11096	11756	19640		BTM	INSET ,*+16
11756		00005	10881	19650		DSA	SK,ADCOW
11761		00005	06843				
11762	15	07342	00001	19660		TDM	SS1 ,1
11774	49	11671	00000	19670		B	GSBI-1 , ,6
11786	26	03781	06843	19680	N60049	TF	N40001 ,ADCOW
11798	11	03781	00020	19690		AM	N40001 ,20 ,10

127

```
LOCTN  OP   P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

11810  26   03796  04232   19700         TF    N40004       ,FACAD
11822  22   03796  02298   19710         S     N40004       ,FP2
11834  11   03796  00001   19720         AM    N40004       ,1              ,10
11846  15   07342  00001   19730         TDM   SS1          ,1
11858  17   06898  ‡1874   19740         BTM   PUTX         ,*+16
11874       00005  09561   19750         DSA   BD,N40001,N40004
11879       00005  03781
11884       00005  03796
11886  11   09485  00003   19760         AM    I            ,3             ,10
11898  15   09599  00001   19770         TDM   SKIPSW       ,1
11910  17   11672  ‡1922   19780         BTM   GSBI         ,*+12
11922  17   06898  ‡1938   19790         BTM   PUTX         ,*+16
11938       00005  06848   19800         DSA   B,N40003,ZERO5
11943       00005  03791
11948       00005  09344
11950  12   06843  00004   19810         SM    ADCOW        ,4             ,10
11962  17   11672  ‡1974   19820         BTM   GSBI         ,*+12
11974  17   06898  ‡1990   19830         BTM   PUTX         ,*+16
11990       00005  09563   19840         DSA   BNF,N40003,FACM2
11995       00005  03791
12000       00005  09568
12002  12   09485  00003   19850         SM    I            ,3             ,10
12014  49   11596  00000   19860         B     CODE7C
12022                      19870         DORG  *-3
12022  11   09485  00003   19880  CODE7B AM    I            ,3             ,10
12034  17   05540  ‡2050   19890         BTM   GTNS         ,*+16
12050       00005  09485   19900         DSA   I,N40001
12055       00005  03781
12056  26   12155  03781   19910         TF    INDREC-2     ,N40001
12068  32   12153  00000   19920         SF    INDREC-4
12080  15   09599  00001   19930         TDM   SKIPSW       ,1
12092  11   09485  00001   19940         AM    I            ,1             ,10
12104  17   11672  ‡2116   19950         BTM   GSBI         ,*+12
12116  17   06898  ‡2132   19960         BTM   PUTX         ,*+16
12132       00005  09570   19970         DSA   BI,N40003,INDREC
12137       00005  03791
12142       00005  ‡2157
12144  49   11596  00000   19980         B     CODE7C
12152                      19990         DORG  *-3
12157       00006          20000  INDREC DC    6,0
12162       00005          20010  CGCOW  DS    5
                           20020  *****         OUTPUT COMPUTED GO TO
12164  17   05540  ‡2180   20030  CODE9P BTM   GTNS         ,*+16
12180       00005  09485   20040         DSA   I
12185       00005  02399   20050         DSA   SL
12186  14   02399  00104   20060         CM    SL,          104,8,RIGHT PAREN
12198  47   10146  01200   20070         BNE   CODE9
                           20071  *************************************************************
12210  43   12230  02290   20073         BD    *+20,UFSTR+27 ,,,BRANCH IF DIAGNOSTIC MODE
12222  49   12242          20075         B7    *+20
12230  16   08322  00000   20077         TFM   -NEXT,0         ,,,FORCE TRACE PRINT
                           20079  *............................................................
12242  26   03796  09485   20080         TF    N40004       ,I
12254  11   03796  00001   20090         AM    N40004       ,1             ,10
12266  17   05540  ‡2282   20100         BTM   GTNS         ,*+16
12282       00005  03796   20110         DSA   N40004
12287       00005  02399   20120         DSA   SL
```

```
LOCTN  OP   P/L    Q       PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

12288  15   07342  00001   20130         TDM   SS1          ,1
12300  15   09599  00001   20140         TDM   SKIPSW       ,1
12312  17   04276  ‡2328   20150         BTM   SRFCT        ,*+16
12328       00005  02399   20160         DSA   SL
12333       00005  03796   20170         DSA   N40004
12334  17   06898  ‡2350   20180         BTM   PUTX         ,*+16
12350       00005  09337   20190         DSA   MM
12355       00005  03796   20200         DSA   N40004
12360       00005  09455   20210         DSA   MNS5
12362  15   07343  00001   20220         TDM   SS2          ,1
12374  26   03781  06843   20230         TF    N40001       ,ADCOW
12386  11   03781  00018   20240         AM    N40001       ,18            ,10
12398  17   06898  ‡2414   20250         BTM   PUTX         ,*+16
12414       00005  09382   20260         DSA   SM
12419       00005  09357   20270         DSA   N13092
12424       00005  03781   20280         DSA   N40001
12426  16   09485  00003   20290         TFM   I            ,3              ,8
12438  15   07344  00001   20300         TDM   SS3          ,1
12450  17   05540  ‡2466   20310         BTM   GTNS         ,*+16
12466       00005  09485   20320         DSA   I
12471       00005  ‡0881   20330         DSA   SK
12472  17   04276  ‡2488   20340         BTM   SRFCT        ,*+16
12488       00005  ‡0881   20350         DSA   SK
12493       00005  03796   20360         DSA   N40004
12494  15   09599  00000   20370         TDM   SKIPSW       ,0
12506  44   12564  05085   20380         BNF   CODE9B       ,RMSW
12518  26   12162  06843   20390         TF    CGCOW        ,ADCOW
12530  11   12162  00005   20400         AM    CGCOW        ,5             ,10
12542  17   11096  ‡2558   20410         BTM   INSET        ,*+16
12558       00005  ‡0881   20420         DSA   SK,CGCOW
12563       00005  ‡2162
12564  15   07343  00001   20430  CODE9B TDM   SS2          ,1
12576  17   06898  ‡2592   20440         BTM   PUTX         ,*+16
12592       00005  06848   20450         DSA   B
12597       00005  09357   20460         DSA   N13092
12602       00005  03796   20470         DSA   N40004
12604  16   09485  00004   20480         TFM   I            ,4              ,8
12616  17   05540  ‡2632   20490         BTM   GTNS         ,*+16
12632       00005  09485   20500         DSA   I
12637       00005  02399   20510         DSA   SL
12638  14   02399  00104   20520         CM    SL,          104,8,RIGHT PAREN
12650  46   02628  01200   20530         BE    CLEAR
12662  17   05540  ‡2678   20540  CODE9A BTM   GTNS         ,*+16
12678       00005  09485   20550         DSA   I,SL
12683       00005  02399
12684  14   02399  00104   20560         CM    SL           ,104            ,8
12696  46   12850  01200   20570         BE    N60072
12708  15   09599  00001   20580         TDM   SKIPSW       ,1
12720  17   04276  ‡2736   20590         BTM   SRFCT        ,*+16
12736       00005  02399   20600         DSA   SL,N40001
12741       00005  03781
12742  15   09599  00000   20610         TDM   SKIPSW       ,0
12754  44   12812  05085   20620         BNF   CODE9C       ,RMSW
12766  26   12162  06843   20630         TF    CGCOW        ,ADCOW
12778  12   12162  00002   20640         SM    CGCOW        ,2             ,10
12790  17   11096  ‡2806   20650         BTM   INSET        ,*+16
12806       00005  02399   20660         DSA   SL,CGCOW
```

```
LOCTN  OP  P/L    Q        PG/LN  LABEL   MNEM  OPERANDS AND REMARKS

12811      00005  ±2162
12812  17  08018  ±2828    20670  CODE9C  BTM   PUTC          ,*+16
12828      00005  03781    20680          DSA   N40001
12830  11  09485  00001    20690          AM    I          ,1             ,10
12842  49  12662  00000    20700          B     CODE9A
12850                      20710          DORG  *-3
12850  17  03842  06843    20720  N60072  BTM   ADJUST        ,ADCOW
12862  49  02628  00000    20730          B     CLEAR
12870                      20740          DORG  *-3
                           20750  ******     OUTPUTS FORMAT SPECIFICATIONS
12874      00005  09485    20760  CD17P   DSA   I,SX17
12879      00005  ±3137
12880  17  05510  ±2896    20770          BTM   RMNS,*+16
12896      00005  09485    20780          DSA   I,SX17
12901      00005  ±3137
12902  26  14371  06843    20790          TF    REP3,ADCOW,,        SAVE ADDRESS OF 1ST SPEC
12914  11  06843  00001    20800          AM    ADCOW      ,1             ,10
12926  17  13936  ±2938    20810  CD17A   BTM   CKXH,*+12
12938  17  05510  ±2954    20820          BTM   RMNS,*+16,,        REMOVE A SYMBOL
12954      00005  09485    20830          DSA   I,SX17
12959      00005  ±3137
12960  14  13137  00101    20840          CM    SX17,    101,8,IS IT AN OPERATOR
12972  46  13400  01300    20850          BNL   CD17B,,,              YES, BRANCH
12984  17  05510  ±3000    20860  XRMNS   BTM   RMNS,*+16,,        REMOVE NEXT SYMBOL
13000      00005  09485    20870          DSA   I,SY17
13005      00005  ±4243
13006  14  14243  00147    20880          CM    SY17,    147,8,IS IT XTYPE
13018  46  13138  01200    20890          BE    CD17C
13030  14  14243  00148    20900          CM    SY17,    148,8,IS IT HTYPE
13042  46  13198  01200    20910          BE    CD17D
13054  14  14243  00124    20920          CM    SY17,    124,8,IS IT LEFT PAREN
13066  46  13328  01200    20930          BE    CD17E
13078  26  13233  13137    20940          TF    FREQ1,SX17,,        OTHER OPERATOR, SAVE FREQ
13090  26  13197  06843    20950          TF    REP1,ADCOW,,        SAVE ADDRESS OF NEXT SPEC
13102  11  13197  00004    20960          AM    REP1,4,10
13114  26  13137  14243    20970          TF    SX17,SY17
13126  49  13400  00000    20980          B     CD17B
13137      00000           20990  SX17    DS    ,*
13138  17  14520  04212    21000  CD17C   BTM   PUT17,XTYPE,,       PUT XTYPE AND LENGTH
13150  13  13137  00002    21010          MM    SX17,2,10
13162  32  00097  00000    21020          SF    97
13174  27  14556  00099    21030          BT    PUT17C,99
13186  49  12926  00000    21040          B     CD17A
13197      00000           21050  REP1    DS    ,*
13198  17  14520  04207    21060  CD17D   BTM   PUT17,HTYPE,,       PUT HTYPE, LENGTH AND CONSTANTS
13210  13  13137  00002    21070          MM    SX17,2,10
13222  32  00097  00000    21080          SF    97,,9
13233      00000           21090  FREQ1   DS    ,*
13234  27  14556  00099    21100          BT    PUT17C,99
13246  17  05510  ±3262    21110  CD17F   BTM   RMNS,*+16
13262      00005  09485    21120          DSA   I,SY17
13267      00005  ±4243
13268  27  14604  14243    21130          BT    PUT17B,SY17
13280  12  13137  00001    21140          SM    SX17,1,10
13292  14  13137  00000    21150          CM    SX17,0,9
13304  46  13246  01100    21160          BH    CD17F
13316  49  12926  00000    21170          B     CD17A
```

/30

```
LOCTN  OP  P/L    Q        PG/LN  LABEL   MNEM  OPERANDS AND REMARKS

13327      00000           21180  REP2    DS    ,*
13328  26  14371  06843    21190  CD17E   TF    REP3,ADCOW,,        SAVE FREQUENCY ADDRESS
13340  12  14371  00001    21200          SM    REP3,1,10
13352  26  13327  06843    21210          TF    REP2,ADCOW
13364  11  13327  00004    21220          AM    REP2,4,10
13376  26  13399  13137    21230          TF    FREQ2,SX17
13388  49  12926  00000    21240          B     CD17A,,9
13399      00000           21250  FREQ2   DS    ,*
13400  14  13137  00104    21260  CD17B   CM    SX17,    104,8,RIGHT PAREN
13412  46  14276  01200    21270          BE    CD17G
13424  14  13137  00145    21280          CM    SX17,    145,8,E TYPE
13436  46  14244  01200    21290          BE    CD17H
13448  14  13137  00121    21300          CM    SX17,    121,8,SLASH
13460  46  13636  01200    21310          BE    CD17I
13472  14  13137  00144    21320          CM    SX17,    144,8,A TYPE
13484  46  13668  01200    21330          BE    CD17J
13496  14  13137  00149    21340          CM    SX17,    149,8,I TYPE
13508  46  13830  01200    21350          BE    CD17K
13520  14  13137  00146    21360          CM    SX17,    146,8,F TYPE
13532  46  13850  01200    21370          BE    CD17L
13544  14  13137  00132    21380          CM    SX17,    132,8,SEMI COLON
13556  46  14372  01200    21390          BE    CD17SC
13568  14  13137  00124    21400          CM    SX17,    124,8,LEFT PAREN
13580  47  12926  01200    21410          BNE   CD17A,,,            CMA
13592  17  13936  ±3604    21420  CD17M   BTM   CKXH,*+12
13604  26  14371  06843    21430          TF    REP3,ADCOW,,        SAVE REPEAT ADDRESS
13616  12  14371  00001    21440          SM    REP3,1,10
13628  49  12926  00000    21450          B     CD17A
13636                      21460          DORG  *-3
13636  17  13936  ±3648    21470  CD17I   BTM   CKXH,*+12
13648  17  14520  04177    21480          BTM   PUT17,SLASH
13660  49  12926  00000    21490          B     CD17A
13668                      21500          DORG  *-3
13668  17  13936  ±3680    21510  CD17J   BTM   CKXH,*+12
13680  17  14520  04172    21520          BTM   PUT17,ATYPE
13692  17  05510  ±3708    21530          BTM   RMNS,*+16
13708      00005  09485    21540          DSA   I,SX17
13713      00005  ±3137
13714  13  13137  00002    21550          MM    SX17,2,10
13726  32  00097  00000    21560          SF    97
13738  27  14556  00099    21570          BT    PUT17C,99
13750  14  13233  00000    21580  CD17N   CM    FREQ1,0,9,          PUT FREQ RETURN ADDRESS
13762  46  12926  01200    21590          BE    CD17A
13774  17  14520  04182    21600          BTM   PUT17,REP
13786  27  14468  13197    21610  CD117   BT    PUT17I,REP1
13798  27  14604  13233    21620          BT    PUT17B,FREQ1
13810  16  13233  00000    21630          TFM   FREQ1,0,9
13822  49  12926  00000    21640          B     CD17A
13830                      21650          DORG  *-3
13830  17  14520  04187    21660  CD17K   BTM   PUT17,ITYPE
13842  49  13692  00000    21670          B     CD17J+24
13850                      21680          DORG  *-3
13850  17  14520  04192    21690  CD17L   BTM   PUT17,FTYPE
13862  17  05510  ±3878    21700          BTM   RMNS,*+16
13878      00005  09485    21710          DSA   I,SX17
13883      00005  ±3137
13884  27  14556  13137    21720          BT    PUT17C,SX17
```

/31

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
13896	17	05510	‡3912	21730		BTM	RMNS,*+16
13912		00005	09485	21740		DSA	I,SX17
13917		00005	‡3137				
13918	49	14198	00000	21750		B	WUB12B+24
13934		00005		21760		DC	5,0
13936	17	05540	‡3952	21770	CKXH	BTM	GTNS,*+16
13952		00005	09485	21780		DSA	I,SY17
13957		00005	‡4243				
13958	14	14243	00‡47	21790		CM	SY17,147,9
13970	46	12984	01200	21800		BE	XRMNS
13982	14	14243	00‡48	21810		CM	SY17,148,9
13994	46	12984	01200	21820		BE	XRMNS
14006	49	13935		21830		B7	CKXH-1,,6
14100				21840		DORG	14100
14101		00002		21850		DC	2,2
14102	16	02359	09212	21860	WUBCDS	TFM	FMON+35 ,BLK5
14114	17	02324	‡4102	21870		BTM	FMON ,SUBCDS
14126	16	02359	09236	21880	WUBCAB	TFM	FMON+35 ,BLK6
14138	17	02324	‡4126	21890		BTM	FMON ,SUBCAB
14150	16	02359	09260	21900	WUBC12	TFM	FMON+35 ,BLK7
14162	17	02324	‡4150	21910		BTM	FMON ,SUBC12
14174	16	02359	09284	21920	WUB12B	TFM	FMON+35 ,BLK8
14186	17	02324	‡4174	21930		BTM	FMON ,SUB12B
14198	17	05510	‡4214	21940		BTM	RMNS,*+16
14214		00005	09485	21950		DSA	I,SX17
14219		00005	‡3137				
14220	27	14604	13137	21960		BT	PUT17B,SX17
14232	49	13750	00000	21970		B	CD17N
14243		00000		21980	SY17	DS	,*
14244	17	13936	‡4256	21990	CD17H	BTM	CKXH,*+12
14256	17	14520	04197	22000		BTM	PUT17,ETYPE
14268	49	13862	00000	22010		B	CD17L+12
14276				22020		DORG	*-3
14276	17	13936	‡4288	22030	CD17G	BTM	CKXH,*+12
14288	14	13399	00800	22040		CM	FREQ2,0,9, PUT FREQ RETURN ADDRESS
14300	46	12926	01200	22050		BE	CD17A
14312	26	13233	13399	22060		TF	FREQ1,FREQ2
14324	26	13197	13327	22070		TF	REP1,REP2
14336	16	13399	00800	22080		TFM	FREQ2,0,9
14348	17	14520	04022	22090		BTM	PUT17, REP4
14360	49	13786	00000	22100		B	CD117
14371		00000		22110	REP3	DS	,*
14372	45	12926	16004	22120	CD17SC	BNR	CD17A,BGNST+5
14384	17	14520	04202	22130		BTM	PUT17,REDO
14396	27	14468	14371	22140		BT	PUT17I,REP3
14408	17	03842	06843	22150	CD17XX	BTM	ADJUST,ADCOW,, ADJUST ADCOW TO EVEN ADDRESS
14420	26	03786	09520	22160		TF	N40002,SXF
14432	17	08138	‡4448	22170		BTM	PUTA ,*+16
14448		00005	09520	22180		DSA	SXF,ADCOW
14453		00005	06843				
14454	49	02628	00000	22190		B	CLEAR
14462				22200		DORG	*-3
14466		00005		22210		DS	5
14468	31	08291	08662	22220	PUT17I	TR	TYPET ,TYPECR
14480	16	08646	‡4467	22230		TFM	PUT3 ,PUT17I-1
14492	16	06897	‡4512	22240		TFM	PUTX-1 ,*+20
14504	49	06982		22250		B7	PUTXB

132

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
14512	42			22260		BB2	
14518		00005		22270		DS	5
14520	31	08291	08677	22280	PUT17	TR	TYPET ,TYPECN
14532	26	08646	14519	22290		TF	PUT3 ,PUT17-1
14544	49	14492	00000	22300		B	PUT17I+24
14555		00000		22310		DS	,*
14556	31	08291	14662	22320	PUT17C	TR	TYPET ,TYPEK3
14568	32	14553	00000	22330		SF	PUT17C-3
14580	16	08646	‡4555	22340		TFM	PUT3 ,PUT17C-1
14592	49	14492	00000	22350		B	PUT17I+24
14603		00000		22360		DS	,*
14604	31	08291	14647	22370	PUT17B	TR	TYPET ,TYPEK2
14616	32	14602	00000	22380		SF	PUT17B-2
14628	16	08646	‡4603	22390		TFM	PUT3 ,PUT17B-1
14640	49	14492		22400		B7	PUT17I+24
14647		00001		22410	TYPEK2	DSC	1,2
14649		00002		22420		DC	2,2
14651		00002		22430		DC	2,5
14653		00002		22440		DC	2,10
14655		00002		22450		DC	2,11
14660		00005		22460		DC	5,10000
14661		00001		22470		DC	1,@
14662		00001		22480	TYPEK3	DSC	1,2
14664		00002		22490		DC	2,3
14666		00002		22500		DC	2,6
14668		00002		22510		DC	2,11
14670		00002		22520		DC	2,12
14675		00005		22530		DC	5,10000
14676		00001		22540		DC	1,@
				22550	*****		OUTPUT RETURN
				22552			
				22556	**		
14678	16	08322	00000	22554	XCTRT	TFM	-NEXT,0 ,,,FORCE TRACE PRINT
14690	43	14764	05075	22556		BD	N60182 ,SUBPSW
				22558	*...		
14702	15	07343	00001	22560	FCTRTP	TDM	SS2 ,1
14714	17	04276	‡4730	22570		BTM	SRFCT ,*+16
14730		00005	09476	22580		DSA	RTNAME
14735		00005	03831	22590		DSA	N40011
14736	17	06898	‡4752	22600		BTM	PUTX ,*+16
14752		00005	06846	22610		DSA	BTM
14757		00005	04227	22620		DSA	TOFAC
14762		00005	03831	22630		DSA	N40011
14764	16	07344	00‡01	22640	N60182	TFM	SS3 ,101 ,9
14776	26	03836	09510	22650		TF	N40012 ,RTAD
14788	12	03836	00001	22660		SM	N40012 ,1 ,10
14800	17	06898	‡4816	22670		BTM	PUTX ,*+16
14816		00005	06848	22680		DSA	B
14821		00005	03836	22690		DSA	N40012
14826		00005	09344	22700		DSA	BLANK
14828	49	02628	00000	22710		B	CLEAR
14836				22720		DORG	*-3
16002				22730		DORG	16002
16002	34	09148	00701	22740	XZZX	34	BLK2A,701
16014	38	09148	00702	22750		38	BLK2A,702
16026	36	00012	00500	22760		TRA	
16038	49	00012					
16002				22770		TCD	XZZX

133

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
16049		00005	09331	22780		DSA	CF
10000				22790		DORG	10000
				22800	******		SECONDARY LINKAGE FOR BLOCK 3
10001		00002		22810		DC	2,3
10002	16	02359	09116	22820	YODE1	TFM	FMON+35 ,BLK1
10014	17	02324	±0002	22830		BTM	FMON ,CODE1
10026	16	02359	09116	22840	YODE3	TFM	FMON+35 ,BLK1
10038	17	02324	±0026	22850		BTM	FMON ,CODE3
10050	16	02359	09116	22860	YODE4	TFM	FMON+35 ,BLK1
10062	17	02324	±0050	22870		BTM	FMON ,CODE4
10074	16	02359	09140	22880	YODE6	TFM	FMON+35 ,BLK2
10086	17	02324	±0074	22890		BTM	FMON ,CODE6
10098	16	02359	09140	22900	YODE7	TFM	FMON+35 ,BLK2
10110	17	02324	±0098	22910		BTM	FMON ,CODE7
10122	16	02359	09116	22920	YODE8	TFM	FMON+35 ,BLK1
10134	17	02324	±0122	22930		BTM	FMON ,CODE8
10146	16	02359	09140	22940	YODE9	TFM	FMON+35 ,BLK2
10158	17	02324	±0146	22950		BTM	FMON ,CODE9
10170	49	14150	00000	22960	YODE12	B	SUBC12
10182	48	00000	00000	22970		H	
10194	15	04007	00001	22980	YODE14	TDM	FX ,1
10206	49	10434	00000	22990		B	CD14P
10218	16	02359	09116	23000	YODE15	TFM	FMON+35 ,BLK1
10230	17	02324	±0218	23010		BTM	FMON ,CODE15
10242	16	02359	09140	23020	YODE17	TFM	FMON+35 ,BLK2
10254	17	02324	±0242	23030		BTM	FMON ,CODE17
10266	49	14102	00000	23040	YODESS	B	SUBCDS
10278	48	00000	00000	23050		H	
10290	49	14126	00000	23060	YDSSAB	B	SUBCAB
10302	48	00000	00000	23070		H	
10314	49	14174	00000	23080	YD12B	B	SUB12B
10326	48	00000	00000	23090		H	
10338	16	02359	09188	23100	YCT1	TFM	FMON+35 ,BLK4
10350	17	02324	±0338	23110		BTM	FMON ,FCT1
10362	16	02359	09140	23120	YCTRT	TFM	FMON+35 ,BLK2
10374	17	02324	±0362	23130		BTM	FMON ,FCTRT
10386	16	02359	09188	23140	YOJ	TFM	FMON+35 ,BLK4
10398	17	02324	±0386	23150		BTM	FMON ,EOJ
10410	14	09505	00131	23160	YDCALL	CM	LV ,131 ,8
10422	49	13212	00000	23170		B	CDCALP
				23180	******		OUTPUT IO STATEMENT
10434	15	05065	00000	23190	CD14P	TDM	FFRSW ,0
10446	17	05510	±0462	23200		BTM	RMNS ,*+16
10462		00005	09485	23210		DSA	I
10467		00005	02372	23220		DSA	SR
10468	17	05540	±0484	23230		BTM	GTNS ,*+16
10484		00005	09485	23240		DSA	I,SL
10489		00005	02399				
10490	14	09505	00142	23250		CM	LV ,142 ,8
10502	47	10980	01300	23260		BL	CD14JG
10514	14	09505	00147	23270		CM	LV ,147 ,8
10526	46	10980	01100	23280		BH	CD14JG
10538	15	05065	00001	23290		TDM	FFRSW ,1
10550	14	09505	00142	23300		CM	LV ,142 ,8
10562	46	10690	01200	23310		BE	CD14FV
10574	14	09505	00143	23320		CM	LV ,143 ,8
10586	46	10784	01200	23330		BE	CD14FL

134

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
10598	14	09505	00146	23340		CM	LV ,146 ,8
10610	46	10900	01200	23350		BE	CD14RV
10622	14	09505	00147	23360		CM	LV ,147 ,8
10634	46	10920	01200	23370		BE	CD14RL
10646	32	05065	00000	23380		SF	FFRSW
10658	14	09505	00144	23390		CM	LV ,144 ,8
10670	46	10940	01200	23400		BE	CD14SV
10682	49	10960	00000	23410		B	CD14SL
10690				23420		DORG	*-3
10690	26	13179	13211	23430	CD14FV	TF	LVP ,FETCH
10702	14	02399	00101	23440		CM	SL ,101 ,8
10714	47	11002	01200	23450		BNE	CD14JW
10726	17	06898	±0742	23460		BTM	PUTX ,*+16
10742		00005	09370	23470		DSA	BT,LVP,N13092
10747		00005	±3179				
10752		00005	09357				
10754	17	05510	±0770	23480		BTM	RMNS ,*+16
10770		00005	09485	23490		DSA	I,SL
10775		00005	02399				
10776	49	11422	00000	23500		B	CD14A
10784				23510		DORG	*-3
10784	26	13179	13211	23520	CD14FL	TF	LVP ,FETCH
10796	17	04276	±0812	23530		BTM	SRFCT ,*+16
10812		00005	02399	23540		DSA	SL,N40004
10817		00005	03796				
10818	15	07343	00001	23550		TDM	SS2 ,1
10830	17	06898	±0846	23560		BTM	PUTX ,*+16
10846		00005	06846	23570		DSA	BTM,TOFAC,N40004
10851		00005	04227				
10856		00005	03796				
10858	17	05570	±0874	23580		BTM	RPNS ,*+16
10874		00005	09485	23590		DSA	I,FAC
10879		00005	09469				
10880	17	05830	±0892	23600		BTM	GNRP ,*+12
10892	49	10702		23610		B7	CD14FV+12
10900	26	13179	13206	23620	CD14RV	TF	LVP ,RECORD
10912	49	10702		23630		B7	CD14FV+12
10920	26	13179	13206	23640	CD14RL	TF	LVP ,RECORD
10932	49	10796		23650		B7	CD14FL+12
10940	26	13179	13201	23660	CD14SV	TF	LVP ,FIND
10952	49	10702		23670		B7	CD14FV+12
10960	26	13179	13201	23680	CD14SL	TF	LVP ,FIND
10972	49	10796		23690		B7	CD14FL+12
10980	17	03888	±0996	23700	CD14JG	BTM	OPSR ,*+16
10996		00005	09505	23710		DSA	LV,LVP
11001		00005	±3179				
11002	17	05510	±1018	23720	CD14JW	BTM	RMNS ,*+16
11018		00005	09485	23730		DSA	I
11023		00005	02399	23740		DSA	SL
				23745	*********		**
11024	43	11044	02290	23746		BD	*+20,UFSTR+27 ,,,BRANCH IF DIAGNOSTIC MODE
11036	49	11056		23747		B7	*+20
11044	16	08322	00000	23748		TFM	-NEXT,0 ,,,FORCE TRACE OUTPUT
11056	14	02399	09998	23751		CM	SL,9998,8 ,,,CHECK FOR VARIABLE OR FREE FORMAT
11068	47	11232	01300	23752		BL	CD99NF ,,,NO-BRANCH
11080	46	11156	01200	23752		BE	VARFR ,,,BRANCH IF VARIABLE FORMAT
11092	15	07343	00001	23752		TDM	SS2,1 ,,,INDICATE Q ADDRESS RELOCATABLE

135

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
11104	17	06898	±1120	23753		BTM	PUTX,*+16 ,,,OUTPUT FREE FORMAT LINKAGE
11120		00005	06846	23754		DSA	BTM,NO2393,ADCOW
11125		00005	±1155				
11130		00005	06843				
11132	16	03796	00000	23755		TFM	N40004,0,10 ,,,
11144	49	11382	02393	23756		B	CD14NR,02393,711 ,,,ONWARD
11155		00000		23757	NO2393	DS	,*
11156	16	13154	±1188	23758	VARFR	TFM	MATRET+6,VRFRBK ,,,SET UP RETURN
11168	16	04257	02388	23759		TFM	MAT,-2388 ,,,SO I CHEAT A LITTLE
11180	49	11422		2375A		B7	CD14A ,,,GO TO OUTPUT VARIABLE FORMAT LINKAGE
11188	16	13154	±1422	2375B	VRFRBK	TFM	MATRET+6,CD14A ,,,RESTORE RETURN ADDRESS
11200	16	04257	06518	2375C		TFM	MAT,6518 ,,,RESTORE MATRIX ENTRY
11212	16	03796	00434	2375D		TFM	N40004,434 ,,,SET UP FORMAT ADDRESS
11224	49	11314		2375E		B7	CD14RM-20 ,,,ONWARD
				23760	******		OUTPUT INSTRUCTION FOR IO DEVICE
11232	15	07343	00001	23769	CD99NF	TDM	SS2,1
11244	17	04276	±1260	23770		BTM	SRFCT,*+16
				23775	*...		
11260		00005	02399	23780		DSA	SL
11265		00005	03796	23790		DSA	N40004
11266	43	11394	05065	23800		BD	CD14NR+12 ,FFRSW
11278	43	11334	05085	23810		BD	CD14RM ,RMSW
11290	11	04671	00005	23820		AM	SBASE ,5 ,10
11302	45	11382	04671	23830		BNR	CD14NR ,SBASE ,11
11314	16	04493	00027	23840		TFM	OPX ,27 ,10
11326	49	11394		23850		B7	CD14NR+12
11334	26	03781	06843	23860	CD14RM	TF	N40001 ,ADCOW
11346	11	03781	00011	23870		AM	N40001 ,11 ,10
11358	26	04671	03781	23880		TF	SBASE ,N40001 ,6
11370	15	05085	00000	23890		TDM	RMSW ,0
11382	16	04493	00017	23900	CD14NR	TFM	OPX ,17 ,10
11394	17	06898	±1410	23910		BTM	PUTX ,*+16
11410		00005	04493	23920		DSA	OPX,LVP,N40004
11415		00005	±3179				
11420		00005	03796				
11422	15	09315	00000	23930	CD14A	TDM	IO1 ,0
11434	44	11454	05065	23940		BNF	*+20 ,FFRSW
11446	49	02628		23950		B7	CLEAR
11454	17	05510	±1470	23960		BTM	RMNS ,*+16
11470		00005	09485	23970		DSA	I
11475		00005	02399	23980		DSA	SL
11476	14	02399	00132	23990		CM	SL, 132,8,SEMI COLON
11488	46	12766	01200	24000		BE	CD14EN
11500	17	05540	±1516	24010		BTM	GTNS ,*+16
11516		00005	09485	24020		DSA	I
11521		00005	02399	24030		DSA	SL
11522	14	02399	00109	24040		CM	SL, 109,8,DOA
11534	46	12658	01200	24050		BE	CODOA
11546	14	02399	00124	24060		CM	SL, 124,8,LEFT PAREN
11558	46	12100	01200	24070		BE	CODEPA
11570	17	04276	±1586	24080		BTM	SRFCT ,*+16
11586		00005	02399	24090		DSA	SL
11591		00005	02372	24100		DSA	SR
11592	43	11882	04450	24110		BD	CODARR ,DMSW
				24120	******		OUTPUT SIMPLE VARIABLE
11604	43	11624	04673	24130		BD	*+20 ,FXORFL
11616	49	11696	00000	24140		B	CD99

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
11624				24150		DORG	*-3
11624	44	11684	09597	24160		BNF	CD98 ,FPSW
11636	15	07342	00001	24170		TDM	SS1 ,1
11648	17	06898	±1664	24180		BTM	PUTX ,*+16
11664		00005	09329	24190		DSA	SF
11669		00005	02372	24200		DSA	SR
11674		00005	09344	24210		DSA	BLANK
11676	49	11696	00000	24220		B	*+20
11684				24230		DORG	*-3
11684	15	07345	00001	24240	CD98	TDM	SS4 ,1
11696	15	07343	00001	24250	CD99	TDM	SS2 ,1
11708	43	11740	05065	24260		BD	CD97 ,FFRSW
11720	26	03796	04237	24270		TF	N40004 ,IO
11732	49	11752		24280		B7	CD96
11740	26	03796	13186	24290	CD97	TF	N40004 ,SWF
11752	17	06898	±1768	24300	CD96	BTM	PUTX ,*+16
11768		00005	04493	24310		DSA	OPX
11773		00005	03796	24320		DSA	N40004
11778		00005	02372	24330		DSA	SR
11780	43	11800	04673	24340		BD	*+20 ,FXORFL
11792	49	11852	00000	24350		B	CD14C
11800				24360		DORG	*-3
11800	44	11852	09597	24370		BNF	CD14C ,FPSW
11812	15	07342	00001	24380		TDM	SS1 ,1
11824	17	06898	±1840	24390		BTM	PUTX ,*+16
11840		00005	09331	24400		DSA	CF
11845		00005	02372	24410		DSA	SR
11850		00005	09344	24420		DSA	BLANK
11852	17	05510	±1868	24430	CD14C	BTM	RMNS ,*+16
11868		00005	09485	24440		DSA	I
11873		00005	02399	24450		DSA	SL
11874	49	11422	00000	24460		B	CD14A
11882				24470		DORG	*-3
				24480	******		OUTPUT DIMENSION VARIABLES IN IO STATEMENTS
11882	26	03796	09485	24490	CODARR	TF	N40004 ,I
11894	11	03796	00001	24500		AM	N40004 ,1 ,10
11906	17	05540	±1922	24510		BTM	GTNS ,*+16
11922		00005	03796	24520		DSA	N40004
11927		00005	09505	24530		DSA	LV
11928	14	09505	00148	24540		CM	LV ,148 ,8
11940	47	12858	01300	24550		BL	CODMAT
11952	11	09485	00001	24560		AM	I ,1 ,10
11964	15	09315	00001	24570		TDM	IO1 ,1 ,11
11976	14	09505	00148	24580		CM	LV ,148 ,8
11988	46	10290	01200	24590		BE	CDSSAB
12000	49	10266		24600		B7	CODESS
12008	15	09315	00000	24610	CD14B	TDM	IO1 ,0
12020	43	12052	05065	24620		BD	CD95 ,FFRSW
12032	26	03796	04237	24630		TF	N40004 ,IO
12044	49	12064		24640		B7	CD94
12052	26	03796	13186	24650	CD95	TF	N40004 ,SWF
12064	17	06898	±2080	24660	CD94	BTM	PUTX ,*+16
12080		00005	09370	24670		DSA	BT
12085		00005	03796	24680		DSA	N40004
12090		00005	09357	24690		DSA	N13092
12092	49	11422	00000	24700		B	CD14A
12100				24710		DORG	*-3

```
LOCTN OP   P/L    Q        PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

12100 16 12341 00001       24720  CODEPA TFM   PARCNT,1,10
12112 11 09485 00001       24730  CD14NA AM    I,1,10
12124 17 05540 ±2140       24740         BTM   GTNS,*+16
12140    00005 09485       24750         DSA   I,SL
12145    00005 02399
12146 14 02399 00104       24760         CM    SL,104,8
12158 46 12274 01200       24770         BE    CD14NB
12170 14 02399 00148       24780         CM    SL,148,9
12182 47 12294 01300       24790         BL    CD14NB+20
12194 14 02399 00151       24800         CM    SL,151,9
12206 46 12294 01100       24810         BH    CD14NB+20
12218 12 02399 00146       24820         SM    SL,146,9
12230 13 02399 00003       24830         MM    SL,3,10
12242 32 00096 00000       24840         SF    96
12254 21 09485 00099       24850         A     I,99
12266 49 12124             24860         B7    CD14NA+12
12274 12 12341 00001       24870  CD14NB SM    PARCNT,1,10
12286 49 12112 00000       24880         B     CD14NA
12294                      24890         DORG  *-3
12294 14 02399 00124       24900         CM    SL,124,8
12306 47 12342 01200       24910         BNE   *+36
12318 11 12341 00001       24920         AM    PARCNT,1,10
12330 49 12112 00000       24930         B     CD14NA
12341    00002             24940  PARCNT DS    2,*
12342 14 02399 00133       24950         CM    SL,133,8
12354 47 12112 01200       24960         BNE   CD14NA
12366 14 12341 00001       24970         CM    PARCNT,1,10
12378 46 12112 01100       24980         BH    CD14NA
12390 11 09378 00001       24990         AM    GLNO,1,10
12402 26 09534 09378       25000         TF    T2,GLNO
12414 12 09485 00003       25010         SM    I,3,10
12426 15 09315 00001       25020         TDM   I01,1
12438 49 10170             25030         B7    CODE12
12446 15 09315 00000       25040  CD14E  TDM   I01,0
12458 11 09485 00002       25050         AM    I,2,10
12470 17 05510 ±2486       25060         BTM   RMNS,*+16
12486    00005 09485       25070         DSA   I,SL
12491    00005 02399
12492 17 05510 ±2508       25080         BTM   RMNS,*+16
12508    00005 09485       25090         DSA   I,SL
12513    00005 02399
12514 17 05570 ±2530       25100         BTM   RPNS,*+16
12530    00005 09485       25110         DSA   I,DOA
12535    00005 09453
12536 11 09485 00001       25120         AM    I,1,10
12548 17 05510 ±2564       25130         BTM   RMNS,*+16
12564    00005 09485       25140         DSA   I,SL
12569    00005 02399
12570 17 05510 ±2586       25150  CD14NC BTM   RMNS,*+16
12586    00005 09485       25160         DSA   I,SL
12591    00005 02399
12592 17 05540 ±2608       25170         BTM   GTNS,*+16
12608    00005 09485       25180         DSA   I,SL
12613    00005 02399
12614 14 02399 00104       25190         CM    SL,104,8
12626 47 12570 01200       25200         BNE   CD14NC
12638 16 09485 00001       25210         TFM   I,1,8
```

138

```
LOCTN OP   P/L    Q        PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

12650 49 11422 00000       25220         B     CD14A
12658                      25230         DORG  *-3
12658 15 09315 00001       25240  CODDA  TDM   I01         ,1
12670 26 09534 09378       25250         TF    T2          ,GLNO
12682 49 10314             25260         B7    CD12B
12690 12 09378 00001       25270  CD14M  SM    GLNO        ,1          ,10
12702 15 09315 00000       25280         TDM   I01         ,0
12714 17 05510 ±2730       25290         BTM   RMNS        ,*+16
12730    00005 09485       25300         DSA   I
12735    00005 02399       25310         DSA   SL
12736 17 05510 ±2752       25320         BTM   RMNS        ,*+16
12752    00005 09485       25330         DSA   I
12757    00005 02399       25340         DSA   SL
12758 49 11422 00000       25350         B     CD14A
12766                      25360         DORG  *-3
12766 43 12826 05065       25370  CD14EN BD    CD14ND      ,FFRSW
12778 26 03796 04242       25380         TF    N40004      ,IOEND
12790 17 06898 ±2806       25390         BTM   PUTX        ,*+16
12806    00005 06846       25400         DSA   BTM
12811    00005 03796       25410         DSA   N40004
12816    00005 09341       25420         DSA   ZERO
12818 49 02628 00000       25430         B     CLEAR
12826                      25440         DORG  *-3
12826 26 03796 13191       25450  CD14ND TF    N40004      ,DIOEND
12838 15 05065 00000       25460         TDM   FFRSW       ,0
12850 49 12790             25470         B7    CD14EN+24
                           25480  ****** OUTPUT CODING FOR COMPLETE MATRICES IN IO STATEMENTS
12858 17 06898 ±2874       25490  CODMAT BTM   PUTX        ,*+16
12874    00005 09327       25500         DSA   TFM
12879    00005 04252       25510         DSA   PAR
12884    00005 09589       25520         DSA   P1
12886 43 12906 04673       25530         BD    *+20        ,FXORFL
12898 49 12990 00000       25540         B     CM99
12906                      25550         DORG  *-3
12906 44 12966 09597       25560         BNF   CM98        ,FPSW
12918 15 07342 00001       25570         TDM   SS1         ,1
12930 17 06898 ±2946       25580         BTM   PUTX        ,*+16
12946    00005 09329       25590         DSA   SF
12951    00005 02372       25600         DSA   SR
12956    00005 09344       25610         DSA   BLANK
12958 49 12978 00000       25620         B     *+20
12966                      25630         DORG  *-3
12966 15 07345 00001       25640  CM98   TDM   SS4         ,1
12978 43 13002 04451       25650         BD    *+24,   COMSW
12990 15 07343 00001       25660  CM99   TDM   SS2         ,1
13002 43 13156 05065       25670         BD    CM96        ,FFRSW
13014 26 03796 04257       25680         TF    N40004      ,MAT
13026 17 06898 ±3042       25690         BTM   PUTX        ,*+16
13042    00005 04493       25700         DSA   OPX
13047    00005 03796       25710         DSA   N40004
13052    00005 02372       25720         DSA   SR
13054 43 13074 04673       25730         BD    *+20        ,FXORFL
13066 49 13126 00000       25740         B     CM97
13074                      25750         DORG  *-3
13074 44 13126 09597       25760         BNF   CM97        ,FPSW
13086 15 07342 00001       25770         TDM   SS1         ,1
13098 17 06898 ±3114       25780         BTM   PUTX        ,*+16
```

139

```
LOCTN  OP   P/L    Q        PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

13114       00005  09331    25790         DSA   CF
13119       00005  02372    25800         DSA   SR
13124       00005  09344    25810         DSA   BLANK
13126  17   05510  ±3142    25820  CM97   BTM   RMNS         ,*+16
13142       00005  09485    25830         DSA   I
13147       00005  02399    25840         DSA   SL
                            25845  **************************************************************
13148  49   11422           25850  MATRET B7    CD14A
                            25855  *...........................................................
13156  26   03796  13196    25870  CM96   TF    N40004       ,DRAY
13168  49   13026           25880         B7    CM99+36
13179       00005           25890  LVP    DS    5
13181       00002           25900  OPY    DS    2
13186       00005           25910  SWF    DC    5,-02288
13191       00005           25920  DIOEND DC    5,-02298
13196       00005           25930  DRAY   DC    5,-02293
13201       00005           25940  FIND   DC    5,-02273
13206       00005           25950  RECORD DC    5,-02278
13211       00005           25960  FETCH  DC    5,-02283
                            25970  ******   CALL EXIT AND CALL LINK ROUTINES
13212  46   13786  01200    25980  CDCALP BE    CDXIT
13224  11   09485  00003    25990  CDLINK AM    I            ,3            ,10
13236  17   05510  ±3252    26000         BTM   RMNS         ,*+16
13252       00005  09485    26010         DSA   I,SY
13257       00005  02384
13258  26   13777  02384    26020         TF    NAME-8       ,SY
13270  17   05510  ±3286    26030         BTM   RMNS         ,*+16
13286       00005  09485    26040         DSA   I,SY
13291       00005  02384
13292  26   13781  02384    26050         TF    NAME-4       ,SY
13304  33   13778  00000    26060         CF    NAME-7
13316  17   05510  ±3332    26070         BTM   RMNS         ,*+16
13332       00005  09485    26080         DSA   I,SY
13337       00005  02384
13338  26   13785  02384    26090         TF    NAME         ,SY
13350  33   13782  00000    26100         CF    NAME-3
13361       00000           26110  CDLGT  DS    ,*
13362  26   13361  06843    26120         TF    CDLGT        ,ADCOW
13374  15   07343  00001    26130         TDM   SS2          ,1
13386  11   13361  00050    26140         AM    CDLGT        ,50           ,10
13398  17   06898  ±3414    26150         BTM   PUTX         ,*+16
13414       00005  09327    26160         DSA   TFM,N07495,CDLGT
13419       00005  ±3751
13424       00005  ±3361
13426  26   13361  06843    26170         TF    CDLGT        ,ADCOW
13438  15   07343  00001    26180         TDM   SS2          ,1
13450  11   13361  00019    26190         AM    CDLGT        ,19           ,10
13462  17   06898  ±3478    26200         BTM   PUTX         ,*+16
13478       00005  09327    26210         DSA   TFM,N00565,CDLGT
13483       00005  ±3756
13488       00005  ±3361
13490  17   06898  ±3506    26220         BTM   PUTX         ,*+16
13506       00005  06848    26230         DSA   B,N00716,N2THO
13511       00005  ±3761
13516       00005  ±3766
13518  12   06843  00004    26240         SM    ADCOW        ,4            ,10
13530  27   13590  13768    26250         BT    PUTX2        ,NM22
```

140

```
LOCTN  OP   P/L    Q        PG/LN  LABEL  MNEM  OPERANDS AND REMARKS

13542  27   13642  13773    26260         BT    PUTX17       ,N147RM
13554  27   13686  13785    26270         BT    PUTX12       ,NAME
13566  11   06843  00001    26280         AM    ADCOW        ,1            ,10
13578  49   02628  00000    26290         B     CLEAR
13589       00000           26300         DS    ,*
13590  31   08291  13717    26310  PUTX2  TR    TYPET        ,TYPEM2
13602  16   08646  ±3589    26320         TFM   PUT3         ,PUTX2-1
13614  16   06897  ±3634    26330         TFM   PUTX-1       ,*+20
13626  49   06982           26340         B7    PUTX8
13634  42                   26350         BB2
13640       00005           26360         DS    5
13642  31   08291  08677    26370  PUTX17 TR    TYPET        ,TYPECN
13654  16   08646  ±3641    26380         TFM   PUT3         ,PUTX17-1
13666  49   13614  00000    26390         B     PUTX2+24
13684       00007           26400         DS    7
13686  31   08291  13732    26410  PUTX12 TR    TYPET        ,TYPE12
13698  16   08646  ±3685    26420         TFM   PUT3         ,PUTX12-1
13710  49   13614           26430         B7    PUTX2+24
13717       00001           26440  TYPEM2 DSC   1,2
13719       00002           26450         DC    2,2
13721       00002           26460         DC    2,5
13723       00002           26470         DC    2,10
13725       00002           26480         DC    2,11
13730       00005           26490         DC    5,10000
13731       00001           26500         DC    1,@
13732       00001           26510  TYPE12 DSC   1,2
13734       00002           26520         DC    2,12
13736       00002           26530         DC    2,15
13738       00002           26540         DC    2,20
13740       00002           26550         DC    2,21
13745       00005           26560         DC    5,10000
13746       00001           26570         DC    1,@
13751       00005           26580  N07495 DC    5,7495
13756       00005  00565    26590  N00565 DSA   IORT
13761       00005  00716    26600  N00716 DSA   IOCAL
13766       00005           26610  N2THO  DC    5,20000
13768       00002           26620  NM22   DC    2,20
13773       00005           26630  N147RM DC    5,147@
13785       00012           26640  NAME   DS    12
13786  17   06898  ±3802    26650  CDXIT  BTM   PUTX         ,*+16
13802       00005  06848    26660         DSA   B,N00796,BLANK
13807       00005  09606
13812       00005  09344
13814  12   06843  00004    26670         SM    ADCOW        ,4            ,10
13826  49   02628           26680         B7    CLEAR
16002                       26690         DORG  16002
16002  34   09172  00701    26700  XWWX   34    BLK3A,701
16014  38   09172  00702    26710         38    BLK3A,702
16026  36   00012  00500    26720         TRA
16038  49   00012           26730         TCD   XWWX
16002                       26740         DORG  10000
10000                       26750  ******   SECONDARY LINKAGE FOR BLOCK 4
10001       00002           26760         DC    2,4
10002  16   02359  09116    26770  ZODE1  TFM   FMON+35      ,BLK1
10014  17   02324  ±0002    26780         BTM   FMON         ,CODE1
10026  16   02359  09116    26790  ZODE3  TFM   FMON+35      ,BLK1
```

141

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
10038	17	02324	‡0026	26800		BTM	FMON ,CODE3
10050	16	02359	θ9116	26810	ZODE4	TFM	FMON+35 ,BLK1
10062	17	02324	‡0050	26820		BTM	FMON ,CODE4
10074	16	02359	θ9140	26830	ZODE6	TFM	FMON+35 ,BLK2
10086	17	02324	‡0074	26840		BTM	FMON ,CODE6
10098	16	02359	θ9140	26850	ZODE7	TFM	FMON+35 ,BLK2
10110	17	02324	‡0098	26860		BTM	FMON ,CODE7
10122	16	02359	θ9116	26870	ZODE8	TFM	FMON+35 ,BLK1
10134	17	02324	‡0122	26880		BTM	FMON ,CODE8
10146	16	02359	θ9140	26890	ZODE9	TFM	FMON+35 ,BLK2
10158	17	02324	‡0146	26900		BTM	FMON ,CODE9
10170	16	02359	θ9116	26910	ZODE12	TFM	FMON+35 ,BLK1
10182	17	02324	‡0170	26920		BTM	FMON ,CODE12
10194	16	02359	θ9164	26930	ZODE14	TFM	FMON+35 ,BLK3
10206	17	02324	‡0194	26940		BTM	FMON ,CODE14
10218	16	02359	θ9116	26950	ZODE15	TFM	FMON+35 ,BLK1
10230	17	02324	‡0218	26960		BTM	FMON ,CODE15
10242	16	02359	θ9140	26970	ZODE17	TFM	FMON+35 ,BLK2
10254	17	02324	‡0242	26980		BTM	FMON ,CODE17
10266	16	02359	θ9116	26990	ZODESS	TFM	FMON+35 ,BLK1
10278	17	02324	‡0266	27000		BTM	FMON ,CODESS
10290	16	02359	θ9116	27010	ZDSSAB	TFM	FMON+35 ,BLK1
10302	17	02324	‡0290	27020		BTM	FMON ,CDSSAB
10314	16	02359	θ9116	27030	ZD12B	TFM	FMON+35 ,BLK1
10326	17	02324	‡0314	27040		BTM	FMON ,CD12B
10338	17	05510	‡0438	27050	ZCT1	BTM	RMNS ,FCT1P
10350	48	00000	00000	27060		H	
10362	16	02359	θ9140	27070	ZCTRT	TFM	FMON+35 ,BLK2
10374	17	02324	‡0362	27080		BTM	FMON ,FCTRT
10386	41	00000	00000	27090	ZOJ	NOP	
10398	49	12008	00000	27100		B	EOJP
10410	16	02359	θ9164	27110	ZDCALL	TFM	FMON+35 ,BLK3
10422	17	02324	‡0410	27120		BTM	FMON ,CDCALL
10438		00005	θ9485	27130	FCT1P	DSA	I,LV
10443		00005	θ9505				
10444	17	05510	‡0460	27140		BTM	RMNS ,*+16
10460		00005	θ9485	27150		DSA	I,SL
10465		00005	θ2399				
10466	14	09505	0θ136	27160		CM	LV ,136 ,8 ,SUBF
10478	46	10514	01200	27170		BE	*+36
10490	14	09505	0θ135	27180		CM	LV ,135 ,8 ,SUBP
10502	47	10634	01200	27190		BNE	FCT11
				27191			**
10514	43	10534	02290	27193		BD	*+20,UFSTR+27 ,,,BRANCH IF DIAGNOSTIC MODE
10526	49	10546		27195		B7	*+20
10534	12	06843	000‡2	27197		SM	ADCOW,12,10 ,,,DORG BACK OVER DIAGNOSTIC STATEMENT
				27199	*		....
10546	11	06843	0000‑6	27200		AM	ADCOW ,6 ,10
10558	26	09510	06843	27210		TF	RTAD ,ADCOW
10570	14	09505	0θ136	27220		CM	LV ,136 ,8 ,SUBF
10582	47	10614	01200	27230		BNE	*+32
10594	26	09476	02399	27240		TF	RTNAME ,SL
10606	49	10800		27250		B7	FCT1G
10614	15	05075	00001	27260		TDM	SUBPSW ,1
10626	49	10800		27270		B7	FCT1G
10634	15	05045	0000‑1	27280	FCT11	TDM	FTSW ,1 ,11
10646	17	04276	‡0662	27290		BTM	SRFCT ,*+16

142

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
10662		00005	θ2399	27300		DSA	SL,N40012
10667		00005	θ3836				
10668	25	05025	04673	27310		TD	RFLAG ,FXORFL
10680	15	09325	0000‑1	27320		TDM	RSW,-1
10692	17	06898	‡0708	27330		BTM	PUTX ,*+16
10708		00005	θ6848	27340		DSA	B,BLANK,BLANK
10713		00005	θ9344				
10718		00005	θ9344				
10720	26	09520	06843	27350		TF	SXF ,ADCOW
10732	12	09520	000‑0	27360		SM	SXF ,10 ,10
10744	16	02394	θ0004	27370		TFM	ADTEMP ,4
10756	26	02393	02399	27380		TF	ADTEMP-1 ,SL
10768	26	02394	06843	27390		TF	ADTEMP ,ADCOW ,6
10780	11	09485	000θ1	27400		AM	I ,1 ,10
10792	49	10822		27410		B7	FCT1G1
10800	17	05510	‡0816	27420	FCT1G	BTM	RMNS ,*+16
10816		00005	θ9485	27430		DSA	I,SL
10821		00005	θ2399				
10822	26	06888	06843	27440	FCT1G1	TF	T1 ,ADCOW
10834	16	09515	00θ00	27450		TFM	RV ,0 ,9
10846	26	09505	06843	27460		TF	LV ,ADCOW
10858	12	09505	000θ1	27470		SM	LV ,1 ,10
10870	14	02399	0θ132	27480		CM	SL ,132 ,8 ,SC
10882	46	11464	01200	27490		BE	FCT1C
10894	17	05510	‡0910	27500	FCT1A	BTM	RMNS ,*+16
10910		00005	θ9485	27510		DSA	I,SL
10915		00005	θ2399				
10916	17	05510	‡0932	27520		BTM	RMNS ,*+16
10932		00005	θ9485	27530		DSA	I,SR
10937		00005	θ2372				
10938	44	11536	05045	27540		BNF	FCT12 ,FTSW
				27550	*****		ARITHMETIC STATEMENT FUNCTION IN MAIN LINE
10950	15	13632	00000	27560		TDM	SARGSW ,0
10962	26	02377	09505	27570		TF	SX ,LV
10974	15	07342	00001	27580	FCT1H	TDM	SS1 ,1
10986	17	06898	‡1002	27590		BTM	PUTX ,*+16
11002		00005	θ9335	27600		DSA	AM,LV,FIVE
11007		00005	θ9505				
11012		00005	θ9471				
11014	15	07345	00001	27610		TDM	SS4 ,1
11026	43	11046	02293	27620		BD	*+20 ,FCTSW
11038	49	11286		27630		B7	FCT13
11046	16	07343	000θ1	27640		TFM	SS2 ,11 ,10
11058	26	13637	06843	27650		TF	SUBCOW ,ADCOW
11070	11	13637	000θ5	27660		AM	SUBCOW ,35 ,10
11082	17	06898	‡1098	27670		BTM	PUTX ,*+16
11098		00005	θ9333	27680		DSA	TF,SUBCOW,LV
11103		00005	‡3637				
11108		00005	θ9505				
11110	26	13642	06843	27690		TF	BCOW ,ADCOW
11122	11	13642	00036	27700		AM	BCOW ,36 ,10
11134	16	07343	000θ1	27710		TFM	SS2 ,11 ,10
11146	17	06898	‡1162	27720		BTM	PUTX ,*+16
11162		00005	θ9563	27730		DSA	BNF,BCOW,SUBCOW
11167		00005	‡3642				
11172		00005	‡3637				
11174	15	07342	00001	27740		TDM	SS1 ,1

143

```
LOCTN  OP  P/L   Q       PG/LN  LABEL   MNEM  OPERANDS AND REMARKS

11186  17  06898 ±1202   27750          BTM   PUTX        ,*+16
11202      00005 09331   27760          DSA   CF,SUBCOW,BLANK
11207      00005 ±3637
11212      00005 09344
11214  16  07345 0±101   27770          TFM   SS4         ,1101         ,8
11226  17  06898 ±1242   27780          BTM   PUTX        ,*+16
11242      00005 09333   27790          DSA   TF,SUBCOW,SUBCOW
11247      00005 ±3637
11252      00005 ±3637
11254  44  11274 13632   27800          BNF   *+20        ,SARGSW
11266  49  11738         27810          B7    FCT1J
11274  26  02377 13637   27820          TF    SX          ,SUBCOW
11286  15  07343 00001   27830  FCT13   TDM   SS2         ,1
11298  17  06898 ±1314   27840          BTM   PUTX        ,*+16
11314      00005 09370   27850          DSA   BT,TOFAC,SX
11319      00005 04227
11324      00005 02377
11326  15  07343 00001   27860          TDM   SS2         ,1
11338  17  04276 ±1354   27870          BTM   SRFCT       ,*+16
11354      00005 02399   27880          DSA   SL,N40012
11359      00005 03836
11360  17  06898 ±1376   27890          BTM   PUTX        ,*+16
11376      00005 06846   27900          DSA   BTM,FRFAC,N40012
11381      00005 04222
11386      00005 03836
11388  14  02372 00104   27910  FCT1F   CM    SR          ,104          ,8     ,RIGHT PAREN
11400  46  11432 01200   27920          BE    FCT1B
11412  11  09515 00005   27930          AM    RV          ,5            ,10
11424  49  10894         27940          B7    FCT1A
11432  43  11464 09515   27950  FCT1B   BD    FCT1C       ,RV
11444  16  02372 00002   27960  FCT1K   TFM   SR          ,2            ,10
11456  49  11476         27970          B7    FCT1D
11464  16  02372 00001   27980  FCT1C   TFM   SR          ,1            ,10
11476  15  07342 00001   27990  FCT1D   TDM   SS1         ,1
11488  17  06898 ±1504   28000          BTM   PUTX        ,*+16
11504      00005 09335   28010          DSA   AM,LV,SR
11509      00005 09505
11514      00005 02372
11516  43  03206 05045   28020          BD    EXIT        ,FTSW
11528  49  02628         28030          B7    CLEAR
11536  17  04276 ±1552   28040  FCT12   BTM   SRFCT       ,*+16
11552      00005 02399   28050          DSA   SL,N40011
11557      00005 03831
11558  14  02372 00104   28060          CM    SR          ,104          ,8     ,RIGHT PAREN
11570  47  11602 01200   28070          BNE   *+32
11582  15  13632 00001   28080          TDM   SARGSW      ,1            ,11
11594  49  10974         28090          B7    FCT1H
11602  16  07343 000±1   28100          TFM   SS2         ,11           ,10
11614  26  03836 06843   28110          TF    N40012      ,ADCOW
11626  11  03836 00090   28120          AM    N40012      ,90           ,10
11638  12  03831 00004   28130          SM    N40011      ,4            ,10
11650  17  06898 ±1666   28140          BTM   PUTX        ,*+16
11666      00005 09327   28150          DSA   TFM,N40012,N40011
11671      00005 03836
11676      00005 03831
11678  15  07342 00001   28160          TDM   SS1         ,1
11690  17  06898 ±1706   28170          BTM   PUTX        ,*+16
```

144

```
LOCTN  OP  P/L   Q       PG/LN  LABEL   MNEM  OPERANDS AND REMARKS

11706      00005 09335   28180          DSA   AM,N40012,FOUR
11711      00005 03836
11716      00005 ±3648
11718  15  13632 00000   28190          TDM   SARGSW      ,0            ,11
11730  49  10974         28200          B7    FCT1H
11738  16  07343 000±1   28210  FCT1J   TFM   SS2         ,11           ,10
11750  17  06898 ±1766   28220          BTM   PUTX        ,*+16
11766      00005 09333   28230          DSA   TF,N40011,SUBCOW
11771      00005 03831
11776      00005 ±3637
11778  15  07342 00001   28240          TDM   SS1         ,1
11790  43  11444 13632   28250          BD    FCT1K       ,SARGSW
11802  15  07342 00001   28260          TDM   SS1         ,1
11814  26  03831 06843   28270          TF    N40011      ,ADCOW
11826  12  03831 00006   28280          SM    N40011      ,6            ,10
11838  17  06898 ±1854   28290          BTM   PUTX        ,*+16
11854      00005 09335   28300          DSA   AM,N40011,ONE2
11859      00005 03831
11864      00005 ±3646
11866  16  07345 0±101   28310          TFM   SS4         ,1101         ,8
11878  26  03836 09505   28320          TF    N40012      ,LV
11890  11  03836 000±3   28330          AM    N40012      ,13           ,10
11902  17  06898 ±1918   28340          BTM   PUTX        ,*+16
11918      00005 ±3644   28350          DSA   BNR,N40012,N40011
11923      00005 03836
11928      00005 03831
11930  11  09515 00005   28360  FCT1L   AM    RV          ,5            ,10
11942  11  09485 00001   28370          AM    I           ,1            ,10
11954  17  05510 ±1970   28380          BTM   RMNS        ,*+16
11970      00005 09485   28390          DSA   I,SR
11975      00005 02372
11976  14  02372 00104   28400          CM    SR          ,104          ,8     ,RIGHT PAREN
11988  47  11930 01200   28410          BNE   FCT1L
12000  49  11432         28420          B7    FCT1B
                         28430  ******        END OF JOB ROUTINE
12008  12  06843 00005   28440  EOJP    SM    ADCOW       ,5            ,10
12020  14  08312 00000   28450          CM    BAL         ,0            ,10
12032  47  12068 01100   28460          BNH   *+36
12044  11  08322 00001   28470  EOJJ    AM    NEXT        ,1            ,10
12056  25  08322 08290   28480          TD    NEXT        ,FLGRM        ,6
12068  14  08631 08551   28490          CM    PREBUF      ,BUF4
12080  46  12148 01200   28500          BE    EOJG
12092  11  08631 00075   28510          AM    PREBUF      ,75           ,10
12104  26  08322 08631   28520          TF    NEXT        ,PREBUF
12116  11  08322 00004   28530          AM    NEXT        ,4            ,10
12128  16  08322 00000   28540          TFM   NEXT        ,0            ,67
12140  49  12044         28550          B7    EOJJ
12148  26  13622 02800   28560  EOJG    TF    CLLBLK      ,GTBLKB
12160  16  09578 00067   28570          TFM   LNG         ,67           ,10
12172  25  08626 07885   28580          TD    BUF4+75     ,PUTPCH+11
12184  16  00565 ±2207   28590          TFM   IORT        ,*+23
12196  49  00532 08268   28600          B     IOPT        ,PUTXX        ,7
12208  11  08281 00003   28610          AM    PUTXZ       ,3            ,10
12220  16  08631 08326   28620          TFM   PREBUF      ,BUF1
12232  14  09578 00067   28630          CM    LNG         ,67           ,10
12244  47  12400 01200   28640          BNE   EOJW+24
12256  16  00565 ±2279   28650          TFM   IORT        ,*+23
```

145

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
12268	49	00566	‡3609	28660		B	IOGT ,CALBLK ,7
12280	11	13622	00083	28670		AM	CLLBLK ,3 ,10
12292	11	08631	00004	28680	EOJWG	AM	PREBUF ,4 ,10
12304	21	08631	06843	28690		A	PREBUF ,ADCOW ,6
12316	11	08631	00003	28700		AM	PREBUF ,3 ,10
12328	26	09578	08631	28710		TF	LNG ,PREBUF ,11
12340	11	08631	00068	28720		AM	PREBUF ,68 ,10
12352	14	08631	08626	28730		CM	PREBUF ,BUF4+75
12364	46	12172	01200	28740		BE	EOJG+24
12376	14	09578	00067	28750	EOJW	CM	LNG ,67 ,10
12388	46	12292	01200	28760		BE	EOJWG
12400	11	08631	00074	28770		AM	PREBUF ,74 ,10
12412	26	08631	13488	28780		TF	PREBUF ,SIX9Z ,6
12424	16	00565	‡2447	28790		TFM	IORT ,*+23
12436	49	00532	08268	28800		B	IOPT ,PUTXX ,7
12448	44	12526	02228	28810		BNF	EOJEND-12,LIST,, TOTAL LISTING
12460	43	12526	02229	28820		BD	EOJEND-12,PRST,, OMIT NMBRD STMNT IF ALL STMNT MAP
12472	16	00565	‡2495	28830		TFM	IORT,*+23
12484	49	00566	‡2503	28840		B	IOGT,BLKH,7
12496	49	14310		28850		B7	PBLOK1
12503		00002		28860	BLKH	DSC	2,22
12509		00005	‡2511	28870		DSA	BLKHA
12510		00001		28880		DC	1,a
12511		00001		28890	BLKHA	DSC	1,1
12516		00005		28900		DC	5,17351
12519		00003		28910		DC	3,007
12525		00006		28920		DC	6,14100a
12526	43	13022	02294	28930		BD	EOJSTN ,PUSTSN
12538	11	06843	00001	28940	EOJEND	AM	ADCOW ,1 ,10
12550	26	02248	06843	28950		TF	LENGTH ,ADCOW
12562	31	02293	13560	28960		TR	FCTSW ,GRBAGE
12574	26	09611	02262	28970		TF	SCNT ,LOCOM
12586	13	02262	00005	28980		MM	LOCOM ,5 ,10
12598	43	12618	00099	28990		BD	*+20 ,99
12610	49	12630		29000		B7	*+20
12618	12	02262	00001	29010		SM	LOCOM ,1 ,10
12630	16	02230	98789	29020		TFM	2230,98789,, RESTORE CONTROL RECORD SWITCH AREA
12642	16	02222	00100	29030		TFM	PGNUM,100,711
12654	16	00565	‡2677	29040		TFM	IORT ,*+23
12666	49	00532	‡3586	29050		B	IOPT ,SECTO ,7
12678	25	12699	02367	29060		TD	*+21,JAY
12690	14	12699	00004	29070		CM	*+9,4,810
12702	46	12962	01200	29080		BE	ARNDT
12714	43	12962	09601	29090		BD	ARNDT,ERSWT
12726	33	00457	00000	29100		CF	457
12738	25	00475	02367	29110		TD	SYSCAL,JAY
12750	33	06839	00000	29120	LH1	CF	ADCOW-4
12762	33	09607	00000	29130		CF	SCNT-4
12774	34	00000	00952	29140		K	,952
12786	16	00565	‡2809	29150		TFM	IORT,*+23
12798	49	00532	‡2981	29160		B	IOPT,ADCW1-4,7
12810	16	00565	‡2833	29170		TFM	IORT,*+23
12822	49	00532	‡2989	29180		B	IOPT,USDCR1-4,7
12834	16	00565	‡2857	29190		TFM	IORT,*+23
12846	49	00532	‡2997	29200		B	IOPT,SCNT2-4,7
12858	16	00565	‡2881	29210		TFM	IORT,*+23
12870	49	00532	‡3005	29220		B	IOPT,LCMAD1-4,7

146

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
12882	16	00565	‡2905	29230		TFM	IORT,*+23
12894	49	00532	‡3013	29240		B	IOPT,ENDM1-4,7
12906	32	06839	00000	29250		SF	ADCOW-4
12918	32	09607	00000	29260		SF	SCNT-4
12930	46	12942	01400	29270		BV	*+12
12942	34	00000	00971	29280		34	,0971,,SKIPTO 1
12954	49	00796		29290		B7	MONCAL
12962	15	00475	00002	29300	ARNDT	TDM	SYSCAL,2
12974	49	12750		29310		B7	LH1
12985		00005	06839	29320	ADCW1	DSA	ADCOW-4
12988		00003		29330		DC	3,22a
12993		00005	‡3343	29340	USDCR1	DSA	USEDCR
12996		00003		29350		DC	3,18a
13001		00005	09607	29360	SCNT2	DSA	SCNT-4
13004		00003		29370		DC	3,22a
13009		00005	‡3377	29380	LCMAD1	DSA	LCOMAD
13012		00003		29390		DC	3,18a
13017		00005	‡3651	29400	ENDM1	DSA	ENDMES
13020		00003		29410		DC	3,18a
13022	25	13043	02294	29420	EOJSTN	TD	*+21 ,PUSTSN
13034	14	13043	00002	29430		CM	*+9 ,2 ,810
13046	47	13078	01200	29440		BNE	EOTONY
13058	16	13413	00001	29450		TFM	TSW ,1 ,10
13070	49	13102		29460		B7	EOPETE
13078	16	13413	00010	29470	EOTONY	TFM	TSW ,10 ,10
13090	31	09626	13489	29480		TR	INPUT+10 ,SVTYNB
13102	11	02318	00005	29490	EOPETE	AM	FCTEND ,5 ,10
13114	44	13290	02318	29500		BNF	EOROD ,FCTEND ,11
13126	15	02318	00008	29510		TDM	FCTEND ,8
13138	26	09619	02318	29520		TF	INPUT+3 ,FCTEND ,11
13150	33	09616	00000	29530		CF	INPUT
13162	15	02318	00004	29540		TDM	FCTEND ,4
13174	26	09625	02318	29550		TF	INPUT+9 ,FCTEND ,11
13186	33	09621	00000	29560		CF	INPUT+5
13198	43	13310	13412	29570		BD	CDPCH ,CSW
13210	15	09626	00000	29580		TDM	INPUT+10
13221		00001		29590		DC	1,a,*
13222	38	09616	00200	29600	EOJRIT	WNPT	INPUT
13234	38	09621	00200	29610		WNPT	INPUT+5
13246	12	02318	00010	29620		SM	FCTEND ,10 ,10
13258	24	02318	02303	29630		C	FCTEND ,TBASE
13270	46	13102	01300	29640		BNL	EOPETE
13282	49	12538		29650		B7	EOJEND
13290	12	02318	00015	29660	EOROD	SM	FCTEND ,15 ,10
13302	49	13258		29670		B7	EOJRIT+36
13310	25	09620	13489	29680	CDPCH	TD	INPUT+4 ,SVTYNB
13322	38	09616	00400	29690		WNCD	INPUT
13334	49	13246		29700		B7	EOJRIT+24
13343		00017	X2	29710	USEDCR	DAC	17, CORES USEDa
13377		00018	X2	29720	LCOMAD	DAC	18, NEXT COMMONa
13412		00001		29730	CSW	DS	1
13413		00001		29740	TSW	DS	1
13419		00006		29750	NINERM	DC	6,99999a
13420		00050		29760		DSC	50,0
13470		00018		29770		DSC	18,0
13488		00001		29780	SIX9Z	DSC	1,0
13489		00001		29790	SVTYNB	DNB	1

147

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS	
13539		00050		29800		DNB	50	
13558		00019		29810		DNB	19	
13559		00001		29820		DC	1,a	
13560		00000		29830	GRBAGE	DS	,*+1	
13565		00006		29840		DC	6,-0002	
13584		00019		29850		DC	19,1701234567891234567	
13585		00001		29860		DGM		
13586		00002		29870	SECTO	DSC	2,0	
13592		00005	‡3594	29880		DSA	SECTY	
13593		00001		29890		DC	1,a	
13594		00001		29900	SECTY	DSC	1,0	
13599		00005		29910		DC	5,0	
13602		00003		29920		DC	3,1	
13607		00005	θ2218	29930		DSA	HEADER	
13608		00001		29940		DC	1,a	
13609		00002		29950	CALBLK	DSC	2,0	
13615		00005	‡3617	29960		DSA	CALLBK	
13616		00001		29970		DC	1,a	
13617		00001		29980	CALLBK	DSC	1,0	
13622		00005		29990	CLLBLK	DC	5,0	
13625		00003		30000		DC	3,3	
13630		00005	θ8326	30010		DSA	BUF1	
13631		00001		30020		DC	1,a	
13632		00001		30030	SARGSW	DS	1	
13637		00005		30040	SUBCOW	DS	5	
13642		00005		30050	BCOW	DS	5	
13644		00002		30060	BNR	DC	2,45	
13646		00002		30070	ONE2	DC	2,1	
13648		00002		30080	FOUR	DC	2,4	
13651		00019	X2	30090	ENDMES	DAC	19,END OF COMPILATIONa	
16002				30100		DORG	16002	
16002	34	09196	00701	30110	XVVX	34	BLK4A,701	
16014	25	13585	02323	30120		TD	SECTO-1,UGRMK	
16026	38	09196	00702	30130		38	BLK4A,702	
16038	36	00012	00500	30140		TRA		
16050	49	00012						
16002				30150		TCD	XVVX	
14100				30160		DORG	14100	
				30170	******		TERTIARY LINKAGE BLOCK 6	
14101		00002		30180		DC	2,6	
14102	16	02359	θ9212	30190	XUBCDS	TFM	FMON+35	,BLK5
14114	17	02324	‡4102	30200		BTM	FMON	,SUBCDS
14126	17	05510	‡4202	30210	XUBCAB	BTM	RMNS	,SCABP
14138	48	00000	00000	30220		H		
14150	16	02359	θ9260	30230	XUBC12	TFM	FMON+35	,BLK7
14162	17	02324	‡4150	30240		BTM	FMON	,SUBC12
14174	16	02359	θ9284	30250	XUB12B	TFM	FMON+35	,BLK8
14186	17	02324	‡4174	30260		BTM	FMON	,SUB12B
14202		00005	θ9485	30270	SCABP	DSA	I,SX	
14207		00005	θ2377					
14208	17	05510	‡4224	30280		BTM	RMNS	,*+16
14224		00005	θ9485	30290		DSA	I,SY	
14229		00005	θ2384					
14230	17	05510	‡4246	30300		BTM	RMNS	,*+16
14246		00005	θ9485	30310		DSA	I,SY	
14251		00005	θ2384					
14252	15	09599	00001	30320		TDM	SKIPSW	,1

148

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS		
14264	12	09485	00001	30330		SM	I	,1	,10
14276	17	05540	‡4292	30340		BTM	GTNS	,*+16	
14292		00005	θ9485	30350		DSA	I,SX		
14297		00005	θ2377						
14298	17	04276	‡4314	30360		BTM	SRFCT	,*+16	
14314		00005	θ2377	30370		DSA	SX,SX		
14319		00005	θ2377						
14320	25	05035	04673	30380		TD	RXFLAG	,FXORFL	
14332	11	09485	00001	30390		AM	I	,1	,10
14344	44	14368	02377	30400		BNF	CDABZ	,SX	
14356	15	09597	00001	30410		TDM	FPSW	,1	,11
14368	43	14400	04673	30420	CDABZ	BD	*+32	,FXORFL	
14380	26	06891	02298	30430		TF	L	,FP2	
14392	49	14436		30440		B7	CDABW		
14400	26	06891	02252	30450		TF	L	,K	
14412	44	14436	09315	30460		BNF	CDABW	,I01	
14424	32	06891	00000	30470		SF	L		
14436	17	08712	‡4452	30480	CDABW	BTM	CANDS	,*+16	
14452		00005	θ6883	30490		DSA	D4,SY		
14457		00005	θ2384						
14458	33	06883	00000	30500		CF	D4		
14470	23	06883	06891	30510		M	D4	,L	
14482	32	00095	00000	30520		SF	95		
14494	26	06883	00099	30530		TF	D4	,99	
14506	43	14554	09315	30540	CDSAB1	BD	CDSAB7	,I01	
14518	44	15022	09597	30550		BNF	CDSABX	,FPSW	
14530	44	14566	09314	30560		BNF	CDSAB7+12	,FSW	
14542	17	05830	‡4554	30570		BTM	GNRP	,*+12	
14554	44	15022	09597	30580	CDSAB7	BNF	CDSABX	,FPSW	
14566	44	14622	09315	30590		BNF	CDSAB2-12	,I01	
14578	14	06883	00000	30600		CM	D4	,0	
14590	46	14622	01300	30610		BNL	*+32		
14602	16	04493	00022	30620		TFM	OPX	,22	,10
14614	49	14634		30630		B7	CDSAB2		
14622	16	04493	00021	30640		TFM	OPX	,21	,10
14634	15	07342	00001	30650	CDSAB2	TDM	SS1	,1	
14646	26	03801	06843	30660		TF	N40005	,ADCOW	
14658	11	03801	00035	30670		AM	N40005	,35	,10
14670	17	06898	‡4686	30680		BTM	PUTX	,*+16	
14686		00005	θ9327	30690		DSA	TFM,N40005,D4		
14691		00005	θ3801						
14696		00005	θ6883						
14698	49	14914		30700		B7	CDSAB8		
14706	43	14738	05065	30710	CDSAB5	BD	*+32	,FFRSW	
14718	26	03801	04237	30720		TF	N40005	,I0	
14730	49	14750		30730		B7	*+20		
14738	26	03801	13186	30740		TF	N40005	,SWF	
14750	16	04493	00017	30750	CDSAB4	TFM	OPX	,17	,10
14762	15	07343	00001	30760	CDSAB3	TDM	SS2	,1	
14774	17	05540	‡4790	30770		BTM	GTNS	,*+16	
14790		00005	θ9485	30780		DSA	I,ST		
14795		00005	θ9481						
14796	12	09485	00001	30790		SM	I	,1	,10
14808	14	09481	00133	30800		CM	ST	,133	,8
14820	46	15214	01200	30810		BE	CDABU		
14832	17	06898	‡4848	30820		BTM	PUTX	,*+16	
14848		00005	θ4493	30830		DSA	OPX,N40005,D4		

149

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS	
14853		00005	03801					
14858		00005	06883					
14860	44	15308	09315	30840		BNF	CDABP	,IO1
14872	15	09599	00000	30850		TDM	SKIPSW	,0
14884	17	05510	14900	30860		BTM	RMNS	,*+16
14900		00005	09485	30870		DSA	I,ST	
14905		00005	09481					
14906	49	11422		30880		B7	CD14A	
14914	16	07343	00011	30890	CDSAB8	TFM	SS2	,11	,10
14926	33	02377	00000	30900		CF	SX	
14938	17	06898	14954	30910		BTM	PUTX	,*+16
14954		00005	04493	30920		DSA	OPX,N40005,SX	
14959		00005	03801					
14964		00005	02377					
14966	43	15182	09320	30930		BD	FPCL	,CALLSW
14978	26	06883	09344	30940		TF	D4	,BLANK
14990	43	14706	09315	30950		BD	CDSAB5	,IO1
15002	26	03801	04227	30960		TF	N40005	,TOFAC
15014	49	14750		30970		B7	CDSAB4	
15022	44	15090	09315	30980	CDSABX	BNF	CDSABZ	,IO1
15034	44	15090	06883	30990		BNF	CDSABZ	,D4
15046	22	06883	02377	31000		S	D4	,SX
15058	33	06883	00000	31010		CF	D4	
15070	15	07345	00001	31020		TDM	SS4	,1
15082	49	15102		31030		B7	*+20	
15090	21	06883	02377	31040	CDSABZ	A	D4	,SX
15102	43	14706	09315	31050		BD	CDSAB5	,IO1
15114	12	09485	00001	31060		SM	I	,1	,10
15126	26	06601	09485	31070		TF	GI	,I
15138	26	06835	06883	31080		TF	TCOW	,D4
15150	15	06892	00001	31090		TDM	GTSBSW	,1	,11
15162	16	05829	15422	31100		TFM	GNRP-1	,CDABXT
15174	49	05912		31110		B7	GYES-24	
15182	26	03801	04232	31120	FPCL	TF	N40005	,FACAD
15194	16	04493	00016	31130		TFM	OPX	,16	,10
15206	49	14762		31140		B7	CDSAB3	
15214	15	09325	00001	31150	CDABU	TDM	RSW	,1	,11
15226	25	05025	05035	31160		TD	RFLAG	,RXFLAG
15238	17	06898	15254	31170		BTM	PUTX	,*+16
15254		00005	09327	31180		DSA	TFM,FACAD,D4	
15259		00005	04232					
15264		00005	06883					
15266	17	05570	15282	31190		BTM	RPNS	,*+16
15282		00005	09485	31200		DSA	I,FAC	
15287		00005	09469					
15288	17	05830	15300	31210		BTM	GNRP	,*+12
15300	49	15422		31220		B7	CDABXT	
15308	17	05570	15324	31230	CDABP	BTM	RPNS	,*+16
15324		00005	09485	31240		DSA	I,FAC	
15329		00005	09469					
15330	15	09314	00001	31250		TDM	FSW	,1	,11
15342	25	05095	05035	31260		TD	FLAGSW	,RXFLAG
15354	44	15422	09597	31270		BNF	CDABXT	,FPSW
15366	43	15386	09320	31280		BD	*+20	,CALLSW
15378	49	15422		31290		B7	CDABXT	
15386	17	05830	15398	31300		BTM	GNRP	,*+12
15398	12	09575	00001	31310		SM	GBASE	,1	,10

150

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS	
15410	32	09575	00000	31320		SF	GBASE	,	,6
15422	15	09599	00000	31330	CDABXT	TDM	SKIPSW	,0
15434	49	03206		31340		B7	EXIT	
15442	25	09575	05035	31350	GTFIN	TD	GBASE	,RXFLAG	,6
15454	11	09575	00003	31360		AM	GBASE	,3	,10
15466	15	09575	00001	31370		TDM	GBASE	,1	,6
15478	12	09575	00004	31380		SM	GBASE	,4	,10
15490	26	09575	06835	31390		TF	GBASE	,TCOW	,6
15502	49	06404		31400		B7	GTJW	
16002				31410		DORG	16002	
16002	34	09244	00701	31420	XUUX	34	BLK6A,701	
16014	38	09244	00702	31430		38	BLK6A,702	
16026	36	00012	00500	31440		TRA		
16038	49	00012						
16002				31450		TCD	XUUX	
14100				31460		DORG	14100	
				31470	******		TERTIARY LINKAGE BLOCK 7	
14101		00002		31480		DC	2,7	
14102	16	02359	09212	31490	YUBCDS	TFM	FMON+35	,BLK5
14114	17	02324	14102	31500		BTM	FMON	,SUBCDS
14126	16	02359	09236	31510	YUBCAB	TFM	FMON+35	,BLK6
14138	17	02324	14126	31520		BTM	FMON	,SUBCAB
14150	26	03796	09485	31530	YUBC12	TF	N40004	,I
14162	49	14198	00000	31540		B	CD12P	
14174	16	02359	09284	31550	YUB12B	TFM	FMON+35	,BLK8
14186	17	02324	14174	31560		BTM	FMON	,SUB12B
				31570	******		OUTPUT INITIALIZING INSTRUCTION FOR DO CODING AND PLACE	
				31580	******		INDICIES ON DO LIST	
14198	11	03796	00001	31590	CD12P	AM	N40004	,1	,10
14210	43	14244	09315	31600		BD	CD12C	,IO1
14222	17	05540	14238	31610		BTM	GTNS	,*+16
14238		00005	03796	31620		DSA	N40004	
14243		00005	09534	31630		DSA	T2	
14244	11	04042	00021	31640	CD12C	AM	DOREF	,21	,10
14256	24	04042	09575	31650		C	DOREF	,GBASE
14268	47	14352	01100	31660		BNH	CD12E	
14280	17	08998	14313	31670		BTM	ERRT,DFLMS	
14292	46	14304	01400	31680		BV	*+12	
14304	49	00796		31690		B7	MONCAL	
14313		00020	X2	31700	DFLMS	DAC	20,	DO TABLE FULL@
14352	26	09525	04042	31710	CD12E	TF	DOMAX	,DOREF
14364	11	09525	00021	31720		AM	DOMAX	,21	,10
14376	26	04042	09534	31730		TF	DOREF	,T2	,6
14388	11	03796	00001	31740		AM	N40004	,1	,10
14400	17	05540	14416	31750		BTM	GTNS	,*+16
14416		00005	03796	31760		DSA	N40004	
14421		00005	02399	31770		DSA	SL	
14422	26	09530	04042	31780		TF	J40004	,DOREF
14434	11	09530	00009	31790		AM	J40004	,9	,10
14446	26	09530	02399	31800		TF	J40004	,SL	,6
14458	11	03796	00002	31810		AM	N40004	,2	,10
14470	17	05540	14486	31820		BTM	GTNS	,*+16
14486		00005	03796	31830		DSA	N40004	
14491		00005	02372	31840		DSA	SR	
14492	15	07342	00001	31850		TDM	SS1	,1
14504	15	07343	00001	31860		TDM	SS2	,1
14516	15	09599	00001	31870		TDM	SKIPSW	,1

151

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
14528	17	04276	14544	31880		BTM	SRFCT	,*+16
14544		00005	02399	31890		DSA	SL
14549		00005	03781	31900		DSA	N40001
14550	17	04276	14566	31910		BTM	SRFCT	,*+16
14566		00005	02372	31920		DSA	SR
14571		00005	03791	31930		DSA	N40003
14572	17	06898	14588	31940		BTM	PUTX	,*+16
14588		00005	09333	31950		DSA	TF
14593		00005	03781	31960		DSA	N40001
14598		00005	03791	31970		DSA	N40003
14600	15	09599	00000	31980		TDM	SKIPSW	,0
14612	12	09530	00004	31990		SM	J40004	,4	,10
14624	26	09530	06843	32000		TF	J40004	,ADCOW	,6
14636	11	09530	00008	32010		AM	J40004	,8	,10
14648	11	03796	00002	32020		AM	N40004	,2	,10
14660	17	05540	14676	32030		BTM	GTNS	,*+16
14676		00005	03796	32040		DSA	N40004
14681		00005	03781	32050		DSA	N40001
14682	26	09530	03781	32060		TF	J40004	,N40001	,6
14694	11	03796	00001	32070		AM	N40004	,1	,10
14706	17	05540	14722	32080		BTM	GTNS	,*+16
14722		00005	03796	32090		DSA	N40004
14727		00005	02399	32100		DSA	SL
14728	14	02399	00132	32110		CM	SL,	132,8,SEMI COLON
14740	46	14776	01200	32120		BE	N60084
14752	14	02399	00104	32130		CM	SL,	104,8,RIGHT PAREN
14764	47	14820	01200	32140		BNE	N60085
14776	11	09530	00004	32150	N60084	AM	J40004	,4	,10
14788	26	09530	09343	32160		TF	J40004	,ZERO4	,6
14800	43	12446	09315	32170		BD	CD14E	,I01
14812	49	02628	00000	32180	CD12A	B	CLEAR
14820				32190		DORG	*-3
14820	11	09530	00004	32200	N60085	AM	J40004	,4	,10
14832	11	03796	00001	32210		AM	N40004	,1	,10
14844	17	05540	14860	32220		BTM	GTNS	,*+16
14860		00005	03796	32230		DSA	N40004
14865		00005	03791	32240		DSA	N40003
14866	26	09530	03791	32250		TF	J40004	,N40003	,6
14878	49	14800	00000	32260		B	CD12A-12
14886				32270		DORG	*-3
16002				32280		DORG	16002
16002	34	09268	00701	32290	XTTX	34	BLK7A,701
16014	38	09268	00702	32300		38	BLK7A,702
16026	36	00012	00500	32310		TRA
16038	49	00012		32320		TCD	XTTX
16002				32330		DORG	14100
14100				32340	******		TERTIARY LINKAGE BLOCK 8
14101		00002		32350		DC	2,8
14102	16	02359	09212	32360	ZUBCDS	TFM	FMON+35	,BLK5
14114	17	02324	14102	32370		BTM	FMON	,SUBCDS
14126	16	02359	09236	32380	ZUBCAB	TFM	FMON+35	,BLK6
14138	17	02324	14126	32390		BTM	FMON	,SUBCAB
14150	16	02359	09260	32400	ZUBC12	TFM	FMON+35	,BLK7
14162	17	02324	14150	32410		BTM	FMON	,SUBC12
14174	43	14222	09315	32420	ZUB12B	BD	CD12BP+24	,I01
14186	49	14198	00000	32430		B	CD12BP

LOCTN	OP	P/L	Q	PG/LN	LABEL	MNEM	OPERANDS AND REMARKS
				32440	*****		THE FOLLOWING OUTPUTS THE TEST AT THE END OF A DO LOOP
14198	26	09534	09594	32450	CD12BP	TF	T2	,T3
14210	15	09321	00000	32460		TDM	DOSW	,0
14222	26	14892	04042	32470		TF	DOTEMP	,DOREF
14234	15	05105	00001	32480		TDM	CKSW	,1
14246	15	09599	00001	32490		TDM	SKIPSW	,1
14258	24	09534	04042	32500	CD12Y	C	T2	,DOREF	,11
14270	47	14408	01200	32510		BNE	CD12X
14282	26	03791	04042	32520	CD12D	TF	N40003	,DOREF
14294	11	03791	00017	32530		AM	N40003	,17	,10
14306	26	02399	03791	32540		TF	SL	,N40003	,11
14318	14	02399	00000	32550		CM	SL	,	,8
14330	15	09599	00001	32560		TDM	SKIPSW	,1
14342	46	14488	01200	32570		BE	N60092
14354	16	09596	00021	32580		TFM	OPZ	,21	,10
14366	17	04276	14382	32590		BTM	SRFCT	,*+16
14382		00005	02399	32600		DSA	SL
14387		00005	03781	32610		DSA	N40001
14388	15	07343	00001	32620		TDM	SS2	,1
14400	49	14512	00000	32630		B	N60095
14408				32640		DORG	*-3
14408	15	05105	00000	32650	CD12X	TDM	CKSW	,0
14420	15	09601	00001	32660		TDM	ERSWT,1
14432	17	08998	14895	32670		BTM	ERRT,DOMES
14444	12	04042	00021	32680		SM	DOREF	,21	,10
14456	14	04042	04102	32690		CM	DOREF	,DOBASE
14468	47	14856	01300	32700		BL	EXITA
14480	49	14258	00000	32710		B	CD12Y
14488				32720		DORG	*-3
14488	16	09596	00011	32730	N60092	TFM	OPZ	,11	,10
14500	16	03781	00001	32740		TFM	N40001	,1	,10
14512	12	03791	00008	32750	N60095	SM	N40003	,8	,10
14524	26	14552	03791	32760		TF	N60099	,N40003
14536	17	04276	14552	32770		BTM	SRFCT	,*+16
14552		00005	14552	32780		DSA	N60099
14552		00000		32790	N60099	DS	,*
14557		00005	03796	32800		DSA	N40004
14558	15	07342	00001	32810		TDM	SS1	,1
14570	17	06898	14586	32820		BTM	PUTX	,*+16
14586		00005	09596	32830		DSA	OPZ,N40004,N40001
14591		00005	03796				
14596		00005	03781				
14598	11	03791	00004	32840		AM	N40003	,4	,10
14610	26	14638	03791	32850		TF	N60101	,N40003
14622	17	04276	14638	32860		BTM	SRFCT	,*+16
14638		00005	14638	32870		DSA	N60101
14638		00000		32880	N60101	DS	,*
14643		00005	03781	32890		DSA	N40001
14644	16	07343	00011	32900		TFM	SS2	,11	,10
14656	17	06898	14672	32910		BTM	PUTX	,*+16
14672		00005	09543	32920		DSA	C,N40004,N40001
14677		00005	03796				
14682		00005	03781				
14684	12	03791	00008	32930		SM	N40003	,8	,10
14696	26	03796	03791	32940		TF	N40004	,N40003	,11
14708	15	07342	00001	32950		TDM	SS1	,1
14720	17	06898	14736	32960		BTM	PUTX	,*+16

```
LOCTN  OP   P/L    Q      PG/LN  LABEL   MNEM  OPERANDS AND REMARKS

14736       00005  09541  32970          DSA   BNH,N40004,N01100
14741       00005  03796
14746       00005  09539
14748  12   04042  00021  32980          SM    DOREF        ,21          ,10
14760  24   04042  04102  32990          C     DOREF        ,DOBASE
14772  46   14832  01200  33000          BE    N60107
14784  26   03791  04042  33010          TF    N40003       ,DOREF
14796  11   03791  00021  33020          AM    N40003       ,21          ,10
14808  24   04042  03791  33030          C     DOREF        ,N40003      ,611
14820  46   14282  01200  33040          BE    CD12D
14832  43   14856  05105  33050  N60107  BD    *+24         ,CKSW
14844  26   04042  14892  33060          TF    DOREF        ,DOTEMP
14856  15   09599  00000  33070  EXITA   TDM   SKIPSW       ,0
14868  43   12690  09315  33080          BD    CD14M        ,I01
14880  49   02628  00000  33090          B     CLEAR        ,            ,5
14888                     33100          DORG  *-3
14892       00005         33110  DOTEMP  DS    5
14895       00032  X2     33120  DOMES   DAC   32,           IMPROPER DO NESTING@
16002                     33130          DORG  16002
16002  34   09292  00701  33140  XSSX    34    BLK8A,701
16014  38   09292  00702  33150          38    BLK8A,702
16026  36   00012  00500  33160          TRA
16038  49   00012
16002                     33170          TCD   XSSX
14100                     33180          DORG  14100
                         33190   ***     PRINT FIRST PAGE HEAD -THEN PRINT BLOCKS
14104       00005         33200          DC    5,12345
14106  47   14105  03400  33210  OFLO1   BNI   OFLO1-1,3400,6,    TEST PRINTER CHAN 12 BRBACK INDIRECT
14118  43   14150  02220  33220          BD    ONE,PGNUM-2,,      YES- CHAN 12
14130  43   14162  02221  33230          BD    TWO,PGNUM-1
14142  49   14174         33240          B7    NONUM
14150  15   14974  00007  33250  ONE     TDM   B10MAD+174,7
14162  15   14976  00007  33260  TWO     TDM   B10MAD+176,7
14174  25   14979  02222  33270  NONUM   TD    B10MAD+179,PGNUM,,,PAGE NUMBER
14186  25   14977  02221  33280          TD    B10MAD+177,PGNUM-1
14198  25   14975  02220  33290          TD    B10MAD+175,PGNUM-2
14210  34   00000  00971  33300          34    ,0971,,            SKIP TO 1 IMMEDIATE
14222  34   00000  00962  33310          34    ,0962,,            DOUBLE SPACE AFTER PRINT
14234  16   00565  14257  33320          TFM   IORT,*+23,,        TO IORT-PRINT PAGE HEAD
14246  49   00532  14277  33330          B     IOPT,PAGE-4,7
14258  11   02222  00001  33340          AM    PGNUM,01,10,,      ADD 1 TO PAGE NUMBER
14270  49   14105         33350          B7    OFLO1-1,,6,        BRANCH BACK INDIRECT
14281       00005  14801  33360  PAGE    DSA   B10MAD+1
14284       00003         33370          DC    3,18@,,,           PRINT INDICATION AND PAGE NUMBER
14285       00002         33380  DSKHD   DSC   2,22,,             PAGE OFLO DEFINER
14291       00005  14294  33390          DSA   DISKDD
14292       00001         33400          DC    1,@
14294       00014         33410  DISKDD  DDA   ,1,B8DAD,002,B10MAD,,,DDA OF PRINT OUT OFLO
14308       00001         33420          DC    1,@
                         33430   **      PRINT CORE MAP OF LABELS IN BLOCKS
14310  16   00565  14333  33440  PBLOK1  TFM   IORT,*+23,,        BRING IN THE HEADING
14322  49   00566  14285  33450          B     IOGT,DSKHD,7
14334  15   15100  00000  33460          TDM   FAF6,00000,,         RM FOR DUMMY PRINT
14345       00001         33470          DC    1,@,*,,,
14346  32   02314  00000  33480  PBLOK   SF    FCTEND-4
14358  26   14689  02318  33490          TF    TBLEND,FCTEND,,,   INITIALIZE THE POINTER
14370  31   15300  13547  33500          TR    OUTARA,SVTYNB+58
```

154

```
LOCTN  OP   P/L    Q      PG/LN  LABEL   MNEM  OPERANDS AND REMARKS

14382  11   14689  00005  33510  EOPRT   AM    TBLEND,5,10
14394  44   14666  14689  33520          BNF   EOPRT1,TBLEND,11
14406  43   14478  14691  33530          BD    MINUS1,COUNT8
14418  16   14691  00008  33540          TFM   COUNT8,08,10,,     RESET THE COUNT
14430  16   00565  14453  33550          TFM   IORT,*+23,,        PRINT THE LINE OF SYMBOLS
14442  49   00532  14692  33560          B     IOPT,FAF5-4,7
14454  17   14106  14466  33570          BTM   OFLO1,*+12,,,      TEST CHAN 12
14466  16   14568  15100  33580          TFM   MOVR+6   ,FAF6,,   INITIALIZ FOR LOADING PRINT AREA
14478  12   14691  00001  33590  MINUS1  SM    COUNT8,01,10,,     REDUCE THE COUNT
14490  15   14689  00008  33600          TDM   TBLEND,8,,         THE STATEMENT NUMBER IS HERE
14502  26   15303  14689  33610          TF    OUTARA+3,TBLEND,11
14514  33   15300  00000  33620          CF    OUTARA
14526  15   14689  00004  33630          TDM   TBLEND,4,,,        THE CORE ADDRESS IS HERE
14538  26   15309  14689  33640          TF    OUTARA+9,TBLEND,11
14550  33   15305  00000  33650          CF    OUTARA+5
14562  31   15100  15300  33660  MOVR    TR    FAF6,OUTARA,2,     MOVE TO PRINT BUFFER AREA
14574  11   14568  00012  33670          AM    MOVR+6,12,10,      MODIFY THE MOVER
14586  12   14689  00010  33680          SM    TBLEND,10,10,      ADJUST THE POINTER
14598  24   14689  02303  33690  COMPAR  C     TBLEND,TBASE
14610  46   14382  01300  33700          BNL   EOPRT,,,           END OF AREA QM
14622  16   00565  14645  33710          TFM   IORT,*+23,,        YES-PRINT LAST LINE
14634  49   00532  14692  33720          B     IOPT,FAF5-4,7
14646  17   14106  14658  33730          BTM   OFLO1,*+12,,,      TEST CHAN 12
14658  49   12526         33740          B7    EOJEND-12
14666  12   14689  00005  33750  EOPRT1  SM    TBLEND,15,10,      ADJUST THE POINTER
14678  49   14598         33760          B7    COMPAR
14689       00005         33770  TBLEND  DC    5,00000,,,         POINTER FOR PRINTER ROUTINE (TABLE)
14691       00002         33780  COUNT8  DC    2,08
15100       00000         33790  FAF6    DS    ,B10MAD+300
14696       00005  15100  33800  FAF5    DSA   FAF6
14699       00003         33810          DC    3,14@,,,           PRINT TABLE DEFINER
15300       00013         33820  OUTARA  DSC   13,          @,FAF6+200,,INTERMEDIATE OUTPUT BUFFER
16002                     33830          DORG  16002
16002       00001         33840  DIP1    DC    1,1
16007       00005         33850          DC    5,17351
16010       00003         33860          DC    3,007
16016       00006         33870          DC    6,14100@
16018  34   16002  00701  33880  DIP     34    DIP1,701
16030  38   16002  00702  33890          38    DIP1,702
16042  36   00012  00500  33900          TRA
16054  49   00012
16018                     33910          TCD   DIP
02400                     33920          DEND  PASSII
```

155

```
      *PUNCH RESEQUENCED SOURCE DECK
      *LIST PRINTER
      *OUTPUT CARD
      *PRINT SYMBOL TABLE
(ID)  **   FORTRAN DIAGNOSTIC MODE LIBRARY SUB
      *LIBR
      *ASSEMBLE RELOCATABLE
      *ID NUMBER 0037
      *STORE RELOADABLE
```

156

FORTRAN DIAGNOSTIC MODE LIBRARY SUB   PAGE   1

```
TRACEC 00968R    TUFACC 00976R    TNFRET 01496R    TNFADR 01423R    STNOSV 01223R
ERBACK 00248R    ENTRY2 00006R    ENTRST 00940R    CONRET 00220R    BB     01184R
 BUFF  00857R     CLEAR 00696R     CONST 00124R    DBUFF  01191R    ENTRY  00856R
 ERA1  01224R    ERMES 01265R     ERPRT 01255R    ERR    00088R    ERRET  00296R
 ERROR 00960R    ERXV  00068R     ERXVC 00984R    FIXED  00764R    FORCE  01100R
 INC   00371R    OVFL  01292R     RMARK 01099R    SIGN   00536R    SIGN2  00640R
 SIGN3 00824R    TCD   00992R     TFM   00744R    TNF    01400R    TOFAC  01324R
 TOFIX 01386R    TRA   01172R     TRACE 00304R    TRNM   00452R
```

157

```
00010         DSA    ENTRY2                                  00004 00005 -0006
00020 ENTRY2 BV     OVFL                                     00006 M6 01292 01400
00030        CM     ENTRY2-1,0,1011                          00018 J4 00005 000--
00040        BNE    *+24                                     00030 M7 00054 01200
00050        BNF    FORCE,ENTRY2-1                           00042 MM 01100 00005
00060        TF     STNOSV,ENTRY2-1                          00054 K0 01223 00005
00070        BB2                                             00066 42 00000 00000
00080 ERXV   TFM    ERRET+6,3810                             00068 J6 00302 -3810
00090        B7     ERR+12                                   00080 M9 00100 00000
00100 ERR    TFM    ERRET+6,3700                             00088 J6 00302 -3700
00110        TF     ERMES+2*12,2615                          00100 K6 01289 02615
00120        TFM    CONRET+6,CONRET+8                        00112 J0 00226 -0228
00130 CONST  TD     ERMES+2*3,STNOSV-1                       00124 KN 01271 01222
00140        TD     ERMES+2*2,STNOSV-2                       00136 KN 01269 01221
00150        TD     ERMES+2*1,STNOSV-3                       00148 KN 01267 01220
00160        TD     ERMES+2*0,STNOSV-4                       00160 KN 01265 01219
00170        TD     ERMES+2*6,STNOSV                         00172 KN 01277 01223
00180        TDM    ERMES+2*5,0                              00184 J5 01275 00000
00190        BNF    *+24, STNOSV                             00196 MM 00220 01223
00200        TDM    ERMES+2*5,1                              00208 J5 01275 00001
00210 CONRET B7     *-*                                      00220 49 00000 00000
00220        TDM    BB+1,9                                   00228 J5 01185 00009
00230        B7     FORCE                                    00240 M9 01100 00000
00240 ERBACK TDM    BB+1,2                                   00248 J5 01185 00002
00250        K      ,951                                     00260 34 00000 00951
00260        PUT    ERPRT                                    00272 10 00565 -0295
                                                             00284 4R 00532 -1255
00270 ERRET  B7     *-*                                      00296 49 00000 00000
00280 TRACE  TF     3451,3495                                00304 26 03451 03495
00290        BNC4   3452                                     00316 47 03452 00400
00300        TFM    CONRET+6,*+20                            00328 J0 00226 -0348
00310        B7     CONST                                    00340 M9 00124 00000
00320        TF     TFM+11,TRNM+6                            00348 K0 00755 00458
00330        AM     TFM+11,*-*                               00360 J1 00755 -0000
00340 INC    DS     ,*                                       00371 00000
00350        CM     TFM+11,BUFF+2*120-1                      00372 JM 00755 -1096
00360        BNH    TRNM                                     00384 M7 00452 01100
00370        K      ,951                                     00396 34 00000 00951
00380        PUT    DBUFF                                    00408 10 00565 -0431
                                                             00420 4R 00532 -1191
00390        TFM    TRNM+6,BUFF-1                            00432 J0 00458 -0856
00400        B7     TRACE+44                                 00444 M9 00348 00000
00410 TRNM   TRNM   BUFF-1,ERMES-1,2                         00452 L- -0856 01264
00420        BNF    FIXED,2492-1                             00464 M4 00764 02491
00430        BNF    ER A1,2492-1,7     ,,,MODIFIED BY F      00476 M4 01224 -2491
00440        AM     TRNM+6,19,10                             00488 J1 00458 000J9
00450        TDM    SIGN+8,0                                 00500 J5 00544 00000
00460        BNF    *+24,2492-2                              00512 M4 00536 02490
00470        TDM    SIGN+8,2                                 00524 J5 00544 00002
00480 SIGN   TFM    -TRNM-6,02003       ,,,MOVE SIGN AND PERIOD  00536 J6 00450 -2003
00490        AM     TRNM+6,*-*                               00548 J1 00458 -0000
00500        TFM    TNFADR,2492-2                            00560 J6 01423 -2490
00510        TFM    TNFRET+6,*+20                            00572 J0 01502 -0592
00520        B7     TNF                                      00584 M9 01400 00000
00530        AM     TRNM+6,4,10                              00592 J1 00458 000-4
00540        TDM    SIGN2+10,1                               00604 J5 00650 00001
00550        BNF    *+24,2492                                00616 M4 00640 02492
00560        TDM    SIGN2+10,2                               00628 J5 00650 00002
00570 SIGN2  TFM    -TRNM-6,4520,8      ,,,MOVE EXPONENT SIGN   00640 J6 00450 0M520
```

/158

```
00580        AM     TRNM+6,4,10                              00652 J1 00458 000-4
00590        TFM    TNFADR,2492                              00664 J6 01423 -2492
00600        TFM    TNFRET+6,*+20                            00676 J0 01502 -0696
00610        B7     TNF                                      00688 M9 01400 00000
00620 CLEAR  AM     TRNM+6,2,10                              00696 J1 00458 000-2
00630        TFM    -TRNM-6,0,10                             00708 J6 00450 000-0
00640        C      TRNM+6,TFM+11                            00720 KM 00458 00755
00650        BL     CLEAR                                    00732 M7 00696 01300
00660 TFM    TFM    TRNM+6,*-*                               00744 J6 00458 -0000
00670        B7     3452                                     00756 49 03452 00000
00680 FIXED  BNF    ER A1,2492+1,7     ,,,MODIFIED BY K      00764 M4 01224 -2493
00690        AM     TRNM+6,17,10                             00776 J1 00458 000J7
00700        TDM    SIGN3+10,0                               00788 J5 00834 00000
00710        BNF    *+24,2492                                00800 M4 00824 02492
00720        TDM    SIGN3+10,2                               00812 J5 00834 00002
00730 SIGN3  TFM    -TRNM-6,0020,8                           00824 J6 00450 0-020
00740        AM     TRNM+6,*-*                               00836 J1 00458 -0000
00750        B7     CLEAR-32                                 00848 M9 00664 00000
00760****** MODIFY THE INCORE SUBS
00770 ENTRY  TR     3496,TRACEC                              00856 3J 03496 00968
00780        BNF    *+48,3580          ,,,BRANCH IF NOT FLOATING HARDWARE SUBS   00868 M4 00916 03580
00790        TR     3798,ERXVC                               00880 3J 03798 00984
00800        TFM    ERR+11,3620                              00892 J6 00099 -3620
00810        TFM    *+18,3608                                00904 J6 00922 -3608
00820        TR     3688,ERROR                               00916 3J 03688 00960
00830        TR     3408,TOFACC                              00928 3J 03408 00976
00840 ENTRST TFM    2226,*-*                                 00940 16 02226 -0000
00850        B7     -2226                                    00952 49 02220 00000
00860 ERROR  B7     ERR                                      00960 M9 00088 00000
00870        DC     1,a                                      00967 00001
00880 TRACEC B7     TRACE                                    00968 M9 00304 00000
00890        DC     1,a                                      00975 00001
00900 TOFACC B7     TOFAC                                    00976 M9 01324 00000
00910        DC     1,a                                      00983 00001
00920 ERXVC  B7     ERXV                                     00984 M9 00068 00000
00930        DC     1,a                                      00991 00001
00940****** CACULATE SOME CONSTANTS
00950 TCD    TF     INC,2219                                 00992 K6 00371 02219
00960        AM     INC,5,10                                 01004 J1 00371 000-5
00970        C      INC,2221                                 01016 K4 00371 02221
00980        BNL    *+24                                     01028 M6 01052 01300
00990        TF     INC,2221                                 01040 K6 00371 02221
01000        AM     INC,11,10                                01052 J1 00371 000J1
01010        A      INC,INC                                  01064 KJ 00371 00371
01020*       FOR F = 8  INC WOULD BE 48
01030        TF     SIGN+23,2219                             01076 K6 00559 02219
01040        A      SIGN+23,SIGN+23                          01088 KJ 00559 00559
01050        TF     SIGN3+23,2221                            01100 K6 00847 02221
01060        A      SIGN3+23,SIGN3+23                        01112 KJ 00847 00847
01070        S      FIXED+11,2221                            01124 K2 00775 02221
01080        S      TRNM+35,2219                             01136 K2 00487 02219
01090        TF     ENTRST+11,2226                           01148 K6 00951 02226
01100        TFM    2226,ENTRY                               01160 10 02226 -0856
01110 TRA    TRA                                             01172 10 00565 -1191
                                                             01184 49 00716 00000
                                                             01191 00002 2K
                                                             01193 00005 -1199
                                                             01198 00001 a
                                                             01199 00006 1J9783
```

/159

```
01120          TCD    TCD
01130          DORG   ENTRY
01140 BUFF     DAS    72
01150 RMARK    DSAC   50,
01160 FORCE    CM     TRNM+6,BUFF-1          ,,,CHECK FOR EMPTY BUFFER
01170          BE     BB                     ,,,YES - BRANCH BACK
01180          TR     -TRNM-6,RMARK-1
01190          K      ,951
01200          PUT    DBUFF

01210          TFM    TRNM+6,BUFF-1
01220 BB       BB     ERBACK
01230          DORG   *-4
01240 DBUFF    DPRA   ,BUFF,S

01250          SF     2492-1
01260          SF     TRNM+35,,67
01270 STNOSV   DS     ,*
01280 ERA1     TFM    ERMES+2*12,171,9
01290          TFM    ERRET+6,BB
01300          B7     ERR+24
01310 ERPRT    DPRA   ,ERMES,S

01320 ERMES    DAC    14,0000+00 ER A1@
01330 OVFL     TFM    ERMES+2*12,172,9
01340          TFM    ERRET+6,ENTRY2+12
01350          B7     ERR+24
01360 TOFAC    TF     2492,-3407
01370          BNF    TOFIX,2491
01380          SM     3407,2,10
01390          TF     2490,-3407
01400          BNF    ERA1-24,-TRNM-35
01410          BB2
01420 TOFIX    BNF    ERA1-24,-FIXED-11
01430          BB2
01440 TNF      TF     *+30,TRNM+6
01450          TD     *+23,*-*
01460 TNFADR   DS     ,*
01470          TFM    *-*,70,10
01480          SM     TNF+30,2,10
01490          SM     TNFADR,1,10
01500          BNF    TNF+12,-TNFADR
01510          TD     TNF+35,-TNFADR
01520          TF     -TNF-30,TNF+35
01530 TNFRET   B7     *-*
01540          DEND   1

01504 CORE POSITIONS REQUIRED
 PLUS RELOCATION INCREMENT
00154 STATEMENTS PROCESSED
```

```
01205 00003 -03
01208 00006 -0000@
00992
00856
00857 00144
01099 00100
01100 JM 00458 -0856
01112 M6 01184 01200
01124 LJ 00450 01098
01136 34 00000 00951
01148 1O 00565 -1171
01160 4R 00532 -1191
01172 JO 00458 -0856
01184 M2 00248 00000
01191
01191 00005 -0857
01196 00003 K6G
01200 32 02491 00000
01212 L2 0048P -0000
01223 00000
01224 J6 01289 00J71
01236 JO 00302 -1184
01248 M9 00112 00000
01255 00005 -1265
01260 00003 K6G
01265 00028
01292 J6 01289 00J72
01304 JO 00302 -0018
01316 M9 00112 00000
01324 26 02492 0340P
01336 M4 01386 02491
01348 12 03407 000-2
01360 26 02490 0340P
01372 MM 01200 0048P
01384 42 00000 00000
01386 MM 01200 0077N
01398 42 00000 00000
01400 KO 01430 00458
01412 K5 01435 00000
01423 00000
01424 16 00000 000P0
01436 J2 01430 000-2
01448 J2 01423 000-1
01460 MM 01412 0142L
01472 KN 01435 0142L
01484 KO 0143- 01435
01496 49 00000 00000
00001
```

160

```
     *PUNCH RESEQUENCED SOURCE DECK
     *LIST PRINTER
     *OUTPUT CARD
     *PRINT SYMBOL TABLE
(ID) **  FORTRAN VARIABLE FORMAT LIBRARY SUB
     *ASSEMBLE RELOCATABLE
     *STORE RELOADABLE
     *ID NUMBER 0038
     *LIBR
     *ERROR STOP
```

161

SLASHT 06676	SEARCH 00772R	REPEAT 01292R	PUTARN 015 56R	OPENSV 01726R	
NUMRET 00716R	NUMBER 00125R	GETRET 00560R	GETARN 00500R	FORMAT 00006R	
FINISH 00310R	ERTYPE 00052R	COMCHK 02104R	CLOSE2 01752R	CANRET 01248R	
BEFORE 01375R	A 01864R	AM 00444R	ARN 00194R	ATYPE 04536	
BACK 00724R	BACK2 00568R	CAN 00980R	CAN2 01036R	CAN3 01224R	
CHAR 00509R	CLOS 00905R	CLOSE 01616R	CM 00336R	COMMA 02188R	
DRNO 01004R	E 01928R	ER 02260R	ERRET 02320R	ERROR 00480R	
ER2 02224R	ETYPE 04580	F 01440R	FAC 02492	FF 02219	
FIRST 00242R	FLOAT 00146R	FORER 02329R	FTYPE 04558	GAD 01400R	
GET 00408R	GET2 00420R	GO 00348R	GOGO 00324R	GRAND 01143R	
H 01948R	HSAVE 02014R	HTYPE 04602	I 01408R	ITYPE 04448	
K 02221	LOPEN 01695R	NOPE 00828R	NUM 00372R	NUMSV 02278R	
NUM2 00680R	NUM3 00660R	OPEN 01820R	OVLAP 02355R	PAR 03378	
PLACE 00950R	PUT 00968R	RECMK 02403	REDO 07026	REP 07126	
REP4 07230	RET 01351R	SLASH 01884R	STOP 00145R·	SUP 00592R	
TABLE 00872R	TOGET 00640R	TW 01540R	TWO 01352R	X 00944R	
XTYPE 07354					

162

```
00010 FF      DS    ,2219            ,,,FLOATING POINT LENGTH          02219 00000
00020 K       DS    ,2221            ,,,FIXED POINT LENGTH             02221 00000
00030 RECMK   DS    ,2403            ,,,RECORD MARK                    02403 00000
00040 FAC     DS    ,2492            ,,,FLOATING ACCUMULATOR           02492 00000
00050 PAR     DS    ,3378                                              03378 00000
00060 ITYPE   DS    ,4448                                             04448 00000
00070 ATYPE   DS    ,4536                                             04536 00000
00080 FTYPE   DS    ,4558                                             04558 00000
00090 ETYPE   DS    ,4580                                             04580 00000
00100 HTYPE   DS    ,4602                                             04602 00000
00110 SLASHT  DS    ,6676                                             06676 00000
00120 REDO    DS    ,7026                                             07026 00000
00130 REP     DS    ,7126                                             07126 00000
00140 REP4    DS    ,7230                                             07230 00000
00150 XTYPE   DS    ,7354                                             07354 00000
00160         DSA   FORMAT                                            00004 00005 -0006
00170 FORMAT  TFM   GET2+11,FAC+2    ,,,LOCATE HIGH ORDER CHARATER     00006 J6 00431 -2494
00180         TFM   GET+11,FAC+1     ,,,                              00018 J6 00419 -2493
00190         TD    STOP,FORMAT-1    ,,,SAVE FLAG                     00030 KN 00145 00005
00200         TDM   ERTYPE,0         ,,,                              00042 J5 00052 00000
00210 ERTYPE  DS    ,*-1             ,,,                              00052 00000
00220         TFM   TABLE+5,ER       ,,,                              00054 J0 00877 -2260
00230         TFM   ERRET+6,GO       ,,,                              00066 J0 02326 -0348
00240         TFM   GRAND,145+145    ,,,                              00078 J6 01143 -0290
00250         BNF   FLOAT,FORMAT-1   ,,,TEST IF ARRAY IS FLOATING     00090 MM 00146 00005
00260         S     GET2+11,K        ,,,                              00102 K2 00431 02221
00270         CF    FORMAT-1         ,,,                              00114 L3 00005 00000
00280 NUMBER  DS    ,*              ,,,                              00125 00000
00290         TF    AM+11,K          ,,,                              00126 K6 00455 02221
00300         B7    ARN              ,,,                              00138 M9 00194 00000
00310 STOP    DS    1                                                00145 00001
00320 FLOAT   S     GET2+11,FF       ,,,                              00146 K2 00431 02219
00330         SM    FORMAT-1,2,10    ,,,PROCESSES MANTISSA ONLY       00158 J2 00005 000-2
00340         TF    AM+11,FF         ,,,                              00170 K6 00455 02219
00350         AM    AM+11,2,10       ,,,                              00182 J1 00455 000-2
00360 ARN     TD    FAC+2,RECMK      ,,,SET UP BNR TEST               00194 25 02494 02403
00370         TF    LOPEN,434        ,,,SAVE LAST OPEN PAREN          00206 K6 01695 00434
00380         AM    LOPEN,5,10       ,,,                              00218 J1 01695 000-5
00390         TF    PLACE,LOPEN      ,,,                              00230 KN 00950 01695
00400 FIRST   TFM   GETRET+6,*+20    ,,,SET UP RETURN ADDRESS         00242 J0 00566 -0262
00410         B7    GET              ,,,                              00254 M9 00408 00000
00420         CM    CHAR,24,10       ,,,TEST FOR OPEN PAREN           00262 J4 00509 000K4
00430         BE    GO               ,,,                              00274 M6 00348 01200
00440         CM    CHAR,99,10       ,,,TEST FOR SKIP PARAMETER       00286 J4 00509 000R9
00450         BNE   GET              ,,,                              00298 M7 00408 01200
00460 FINISH  BV    *                ,,,TURN OFF OVERFLOW INDICATOR   00310 M6 00310 01400
00470         BB2                    ,,,RETURN TO MAINLINE            00322 42 00000 00000
00480 GOGO    AM    PLACE,5,10       ,,,                              00324 J1 00950 000-5
00490 CM      TFM   TABLE+5,COMMA    ,,,                              00336 J0 00877 -2188
00500 GO      TFM   NUMRET+6,BACK    ,,,SET UP RETURN ADDRESS         00348 J0 00722 -0724
00510         TFM   CLOS,CLOSE       ,,,                              00360 J0 00905 -1616
00520 NUM     TFM   NUM3+6,NUMSV-3   ,,,INITIALIZE                    00372 J0 00666 -2275
00530         TFM   GETRET+6,BACK2   ,,,SET UP RETURN ADDRESS         00384 J0 00566 -0568
00540         TDM   SUP+1,6          ,,,                              00396 J5 00593 00006
00550 GET     BNR   GETARN,*-*       ,,,BRANCH IF NEXT ELEMENT NOT NEEDED  00408 M5 00500 00000
00560 GET2    TFM   GET+11,*-*       ,,,INITIALIZE                    00420 J6 00419 -0000
00570         TF    FAC,FORMAT-1,11  ,,,MOVE IN NEXT ARRAY ELEMENT    00432 2N 02492 0000N
00580 AM      AM    FORMAT-1,*-*     ,,,MOVE TO ADDRESS OF NEXT ARRAY ELEMENT  00444 J1 00005 -0000
00590         SM    PAR ,1,10        ,,,TEST IF BEYOND ARRAY          00456 12 03378 000-1
```

163

```
00600            BNN     GETARN                  ,,,                      00468 M6 00500 01300
00610 ERROR      TFM     ERRET+6,CLOSE           ,,,GO TO TYPE ERROR      00480 J0 02326 -1616
00620            B7      ER                      ,,,                      00492 M9 02260 00000
00630 GETARN     TFM     CHAR,0,10               ,,,                      00500 J6 00509 000-0
00640 CHAR       DS      ,*-2                    ,,,                      00509 00000
00650            A       CHAR,GET+11,11          ,,,                      00512 KJ 00509 0041R
00660            AM      GET+11,2,10             ,,,MOVE TO NEXT CHARACTER 00524 J1 00419 000-2
00670            CM      CHAR,0,10               ,,,CHECK FOR BLANK        00536 J4 00509 000-0
00680            BE      GET                     ,,,                      00548 M6 00408 01200
00690 GETRET     B7      *-*                     ,,,                      00560 49 00000 00000
00700 BACK2      CM      CHAR,70,10              ,,,CHECK IF IT IS NUMERIC 00568 J4 00509 000P0
00710            BL      NUM2                    ,,,                      00580 M7 00680 01300
00720 SUP        BE      GET                     ,,,CHECK FOR PRECEDING ZEROS 00592 M6 00408 01200
00730            TDM     SUP+1,1                 ,,,                      00604 J5 00593 00001
00740            AM      NUM3+6,1,10             ,,,                      00616 J1 00666 000-1
00750            BNR     NUM3,NUM3+6,11          ,,,CHECK FOR TO MANY DIGITS 00628 MN 00660 00660
00760 TOGET      TFM     ERRET+6,GET             ,,,                      00640 J0 02326 -0408
00770            B7      ER                      ,,,                      00652 M9 02260 00000
00780 NUM3       TD      *-*,CHAR                ,,,                      00660 2N 00000 00509
00790            B7      GET                     ,,,                      00672 M9 00408 00000
00800 NUM2       TFM     NUMBER,0,9              ,,,                      00680 J6 00125 00-00
00810            TFM     GAD+6,COMCHK            ,,,FANCY - NO             00692 J0 01406 -2104
00820            A       NUMBER,NUM3+6,11        ,,,SET UP NUMBER          00704 KJ 00125 00660
00830 NUMRET     B7      *-*                     ,,,                      00716 49 00000 00000
00840 BACK       TFM     SEARCH+11,TABLE         ,,,BRANCH TO LOCATION CORRESPONDING 00724 J0 00783 -0872
00850            TFM     GAD+6,CM                ,,,                      00736 J0 01406 -0336
00860            TF      BEFORE,NUMBER           ,,,                      00748 K0 01375 00125
00870            TF      RET,PLACE               ,,,   TO CHAR            00760 K0 01351 00950
00880 SEARCH     C       CHAR,*-*                ,,,                      00772 K4 00509 00000
00890            BNE     NOPE                    ,,,                      00784 M7 00828 01200
00900            AM      SEARCH+11,5,10          ,,,                      00796 J1 00783 000-5
00910            SF      SEARCH+11               ,,,                      00808 L2 00783 00000
00920            B7      SEARCH+11,,6            ,,,                      00820 M9 0078L 00000
00930 NOPE       AM      SEARCH+11,7,10          ,,,                      00828 J1 00783 000-7
00940            BNR     SEARCH,SEARCH+11,11     ,,,TEST FOR END OF TABLE 00840 MN 00772 0078L
00950            TFM     ERRET+6,GO              ,,,                      00852 J0 02326 -0348
00960            B7      ER                      ,,,                      00864 M9 02260 00000
00970 TABLE      DC      2,23                    ,,,CHAR VS CORE TABLE    00872 00002
00980            DSA     *-*                                              00877 00005 -0000
00990            DC      2,67                                             00879 00002
01000            DSA     X                                                00884 00005 -0944
01010            DC      2,49                                             00886 00002
01020            DSA     I                                                00891 00005 -1408
01030            DC      2,46                                             00893 00002
01040            DSA     F                                                00898 00005 -1440
01050            DC      2,04                                             00900 00002
01060 CLOS       DSA     CLOSE                                            00905 00005 -1616
01070            DC      2,24                                             00907 00002
01080            DSA     OPEN                                             00912 00005 -1820
01090            DC      2,41                                             00914 00002
01100            DSA     A                                                00919 00005 -1864
01110            DC      2,48                                             00921 00002
01120            DSA     H                                                00926 00005 -1948
01130            DC      2,21                                             00928 00002
01140            DSA     SLASH                                            00933 00005 -1884
01150            DC      2,45                                             00935 00002
01160            DSA     E                                                00940 00005 -1928
01170            DC      2,a                     ,,,TRAILER RECORD MARK   00942 00002
01180 X          TFM     *-*,XTYPE               ,,,                      00944 16 00000 -7354
```

164

```
01190 PLACE      DS      ,*-5                    ,,,                      00950 00000
01200            TFM     BEFORE,0,10             ,,,                      00956 J6 01375 000-0
01210 PUT        TFM     CANRET+6,REPEAT-12      ,,,                      00968 J0 01254 -1280
01220 CAN        A       NUMBER,NUMBER           ,,,DOUBLE NUMBER         00980 KJ 00125 00125
01230            BP      CAN2                    ,,,CHECK FOR ZERO        00992 M6 01036 01100
01240 DRNO       TFM     NUMBER,2,9              ,,,                      01004 J6 00125 00-02
01250            TFM     ERRET+6,*+20            ,,,                      01016 J0 02326 -1036
01260            B7      ER                      ,,,                      01028 M9 02260 00000
01270 CAN2       AM      PLACE,3,10              ,,,                      01036 J1 00950 000-3
01280            TF      -PLACE,NUMBER           ,,,                      01048 K0 0095- 00125
01290            CM      DRNO+11,2,10            ,,,                      01060 J4 01015 000-2
01300            BE      *+36                    ,,,                      01072 M6 01108 01200
01310            A       NUMBER,NUMBER           ,,,                      01084 KJ 00125 00125
01320            TFM     DRNO+11,2,9             ,,,                      01096 J6 01015 00-02
01330            M       NUMBER,BEFORE           ,,,                      01108 KL 00125 01375
01340            BNP     *+36                    ,,,                      01120 M7 01156 01100
01350            SF      97                      ,,,                      01132 32 00097 00000
01360 GRAND      DS      ,*                      ,,,                      01143 00000
01370            TF      NUMBER,99               ,,,                      01144 K6 00125 00099
01380            BNR     *+20,OPENSV             ,,,                      01156 MN 01176 01726
01390            B7      CAN3                    ,,,                      01168 M9 01224 00000
01400            M       NUMBER,OPENSV           ,,,                      01176 KL 00125 01726
01410            BNP     *+36                    ,,,                      01188 M7 01224 01100
01420            SF      97                      ,,,                      01200 32 00097 00000
01430            TF      NUMBER,99               ,,,                      01212 K6 00125 00099
01440 CAN3       S       GRAND,NUMBER            ,,,                      01224 KK 01143 00125
01450            TFM     NUMBER,0,9              ,,,                      01236 J6 00125 00-00
01460 CANRET     BNN     *-*                     ,,,CHECK FOR MORE THAN 145 COLS. 01248 46 00000 01300
01470            TF      ERRET+6,CANRET+6        ,,,                      01260 K0 02326 01254
01480            B7      ER                      ,,,                      01272 M9 02260 00000
01490            AM      PLACE,5,10              ,,,                      01280 J1 00950 000-5
01500 REPEAT     TFM     -PLACE,REP              ,,,                      01292 J6 0095- -7126
01510            CM      BEFORE,1,10             ,,,                      01304 J4 01375 000-1
01520            BNH     GAD+6,,6                ,,,                      01316 M7 01400 01100
01530            AM      PLACE,5,10              ,,,                      01328 J1 00950 000-5
01540            TFM     -PLACE,*-*              ,,,PLACE IN RETURN ADDRESS FOR REPEAT 01340 J6 0095- -0000
01550 RET        DS      ,*                      ,,,                      01351 00000
01560 TWO        AM      PLACE,2,10              ,,,                      01352 J1 00950 000-2
01570            SF      BEFORE-1                ,,,                      01364 L2 01374 00000
01580 BEFORE     DS      ,*                      ,,,                      01375 00000
01590            TF      -PLACE,BEFORE           ,,,                      01376 K0 0095- 01375
01600            AM      PLACE,5,10              ,,,                      01388 J1 00950 000-5
01610 GAD        B7      *-*                     ,,,                      01400 49 00000 00000
01620 I          TFM     -PLACE,ITYPE            ,,,                      01408 J6 0095- -4448
01630            TFM     NUMRET+6,PUT            ,,,                      01420 J0 00722 -0968
01640            B7      NUM                     ,,,                      01432 M9 00372 00000
01650 F          TFM     -PLACE,FTYPE            ,,,                      01440 J6 0095- -4558
01660            TFM     DRNO+11,1,9             ,,,                      01452 J6 01015 00-01
01670            TFM     NUMRET+6,CAN+12         ,,,                      01464 J0 00722 -0992
01680            TFM     CANRET+6,*+20           ,,,                      01476 J0 01254 -1496
01690            B7      NUM                     ,,,GET THAT NUMBER        01488 M9 00372 00000
01700            CM      CHAR,03,10              ,,,CHECK FOR PERIOD       01496 J4 00509 000-3
01710            BE      PUTARN                  ,,,                      01508 M6 01596 01200
01720            TFM     ERRET+6,*+20            ,,,                      01520 J0 02326 -1540
01730            B7      ER                      ,,,                      01532 M9 02260 00000
01740 TW         AM      PLACE,2,10              ,,,                      01540 J1 00950 000-2
01750            SF      NUMBER-1                ,,,                      01552 L2 00124 00000
01760            TF      -PLACE,NUMBER           ,,,                      01564 K0 0095- 00125
01770            TFM     NUMBER,0,9              ,,,                      01576 J6 00125 00-00
```

165

```
01780         B7      REPEAT-12            ,,,
01790 PUTARN  TFM     NUMRET+6,TW          ,,,SET UP RETURN ADDRESS
01800         B7      NUM                  ,,,
01810 CLOSE   TFM     ERRET+6,*+20         ,,,
01820         B7      ER2                  ,,,
01830         BNR     CLOSE2,OPENSV        ,,,BRANCH IF NOT FINAL PAREN
01840         TFM     -PLACE,REDD          ,,,
01850         AM      PLACE,5,10           ,,,
01860         SM      LOPEN,5,10           ,,,FINISH UP FORMAT
01870         TFM     -PLACE,*-*           ,,,
01880 LOPEN   DS      ,*                   ,,,
01890         C       PLACE,2231           ,,,CHECK FOR OVERLAP
01900         BL      FINISH               ,,,
01910         RCTY                         ,,,
01920 OPENSV  DC      3,@,*-5              ,,,
01930         WATY    OVLAP                ,,,
01940         CALL    EXIT                 ,,,FATAL ERROR
01950 CLOSE2  TF      BEFORE,OPENSV        ,,,
01960         TD      OPENSV,RECMK         ,,,SET UP LINKAGE TO REPEAT
01970         TF      RET,LOPEN            ,,,
01980         TFM     -PLACE,REP4          ,,,
01990         TFM     GAD+6,CM             ,,,
02000         B7      REPEAT+12            ,,,
02010 OPEN    BNR     ERROR,OPENSV         ,,,YOU NEVER KNOW
02020         TF      LOPEN,PLACE          ,,,
02030         TF      OPENSV,NUMBER        ,,,SAVE NUMBER OF REPEATS
02040         B7      GO                   ,,,
02050 A       TFM     -PLACE,ATYPE         ,,,SO MUCH FOR A FORMAT
02060         B7      I+12                 ,,,
02070 SLASH   TFM     -PLACE,SLASHT        ,,,
02080         TFM     GRAND,145+145        ,,,
02090         TFM     ERRET+6,GOGO         ,,,
02100         B7      ER2                  ,,,
02110 E       TFM     -PLACE,ETYPE         ,,,
02120         B7      F+12                 ,,,
02130 H       TFM     -PLACE,HTYPE         ,,,
02140         TF      HSAVE,NUMBER         ,,,
02150         TFM     BEFORE,0,10          ,,,
02160         TFM     CANRET+6,*+20        ,,,
02170         B7      CAN                  ,,,
02180         TDM     GETRET-11,1          ,,,STOP BLANK SUPPRESSION
02190 HSAVE   DS      ,*-1                 ,,,SET UP RETUN ADDRESS
02200         TFM     GETRET+6,*+20        ,,,
02210         B7      GET                  ,,,
02220         AM      PLACE,2,10           ,,,
02230         TF      -PLACE,CHAR          ,,,
02240         SM      HSAVE,1,10           ,,,
02250         BH      GET                  ,,,
02260         TDM     GETRET-11,6          ,,,RETURN BLANK SUPPRESSION
02270         B7      GOGO                 ,,,
02280 COMCHK  CM      CHAR,04,10           ,,,
02290         BE      CLOSE                ,,,
02300         CM      CHAR,21,10           ,,,
02310         BE      SLASH                ,,,
02320         TFM     ERRET+6,BACK         ,,,
02330         CM      CHAR,23,10           ,,,
02340         BNE     ER                   ,,,
02350 COMMA   TFM     TABLE+5,ER           ,,,
02360         TFM     CLOS,ERROR           ,,,
```

```
01588 M9 01280 00000
01596 J0 00722 -1540
01608 M9 00372 00000
01616 J0 02326 -1636
01628 M9 02224 00000
01636 MN 01752 01726
01648 J6 0095- -7026
01660 J1 00950 000-5
01672 J2 01695 000-5
01684 J6 0095- -0000
01695 00000
01696 K4 00950 02231
01708 M7 00310 01300
01720 34 00000 00102
01726 00003
01732 L9 02355 00100
01744 49 00796 00000
01752 K0 01375 01726
01764 K5 01726 02403
01776 K0 01351 01695
01788 J6 0095- -7230
01800 J0 01406 -0336
01812 M9 01304 00000
01820 MN 00480 01726
01832 K0 01695 00950
01844 K0 01726 00125
01856 M9 00348 00000
01864 J6 0095- -4536
01876 M9 01420 00000
01884 J6 0095- -6676
01896 J6 01143 -0290
01908 J0 02326 -0324
01920 M9 02224 00000
01928 J6 0095- -4580
01940 M9 01452 00000
01948 J6 0095- -4602
01960 K0 02014 00125
01972 J6 01375 000-0
01984 J0 01254 -2004
01996 M9 00980 00000
02004 J5 00549 00001
02014 00000
02016 J0 00566 -2036
02028 M9 00408 00000
02036 J1 00950 000-2
02048 K0 0095- 00509
02060 J2 02014 000-1
02072 M6 00408 01100
02084 J5 00549 00006
02096 M9 00324 00000
02104 J4 00509 000-4
02116 M6 01616 01200
02128 J4 00509 000K1
02140 M6 01884 01200
02152 J0 02326 -0724
02164 J4 00509 000K3
02176 M7 02260 01200
02188 J0 00877 -2260
02200 J0 00905 -0480
```

```
02370         TFM     ERRET+6,GO           ,,,
02380 ER2     CM      NUMBER,0,10          ,,,
02390         TFM     NUMBER,0,9           ,,,
02400         BE      ERRET+6,6            ,,,
02410 ER      BD      ERRET+6,ERTYPE,6     ,,,TYPE ERROR MESSAGE ROUTINE
02420         RCTY                         ,,,
02430 NUMSV   DC      5,@,*-5              ,,,
02440         WATY    FORER                ,,,
02450         BNF     796,STOP             ,,,
02460         TDM     ERTYPE,-1            ,,,
02470 ERRET   B7      *-*                  ,,,
02480 FORER   DAC     13,FORMAT ERROR@,    ,,,
02490 OVLAP   DAC     15,FORMAT OVERLAP@,  ,,,
02500         DEND    1                    ,,,
```

```
02384 CORE POSITIONS REQUIRED
 PLUS RELOCATION INCREMENT
00250 STATEMENTS PROCESSED
```

```
02212 J0 02326 -0348
02224 J4 00125 000-0
02236 J6 00125 00-00
02248 M6 02320 01200
02260 ML 02320 00052
02272 34 00000 00102
02278 00005
02284 L9 02329 00100
02296 4M 00796 00145
02308 J5 00052 0000J
02320 49 00000 00000
02329 00026
02355 00030
00001
```